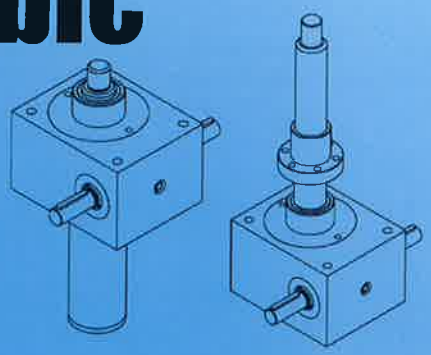
# ENZFELDER GmbH

## Power transmission- and lifting engineering

## Screw jack cubic
## Type BG



# History

**1969** Mr. Enzfelder established a job shop in Vienna. Equipped with some machinery, the Enzfelder Company manufactured machine parts according to drawings.
Within one year the number of employees rose to 3. The Enzfelder company started manufacturing threaded spindles and nuts according to drawings. Then the range of manufacturing was enlarged by toothed wheels, screw wheels and endless screws according to drawings.

**1974** The company including the complete manufacture was relocated to Enzesfeld.

**1975** The manufacture of spindle gears was launched. The company's experience in the manufacture of trapezoid-threaded spindles, nuts, worm gear pairs and casings was a valuable basis for the construction. After many tests, the serial production of spindle gears was launched one year later. The result was a product characterized by a first-rate price-performance ratio. The product was distributed by dealers all over Europe.

**1981** The planning and construction of small hydropower plants was launched to replace diesel generators. Environmental protection was not really a topic at that time, however, and the production was stopped in 1986.

**1989** The Enzfelder GesmbH company replaced the Franz Enzfelder Company.

**1990** Scissor-type lifting platforms and cable winches were added to the delivery program.

**1991** Resilient spacer shafts were tested and added to the production range. At the same time, the telescopic spindle gear was developed. A patent for this principle was applied for and issued.

**1993** The sale of spindle gears under their own name was launched and presented for the first time at the Hannover industrial fair. We have been approached with a variety of tasks and have provided solutions according to the customers' needs ever since.

**1994** In cooperation with our customers we produced the first bevel gears to specification.

**1995** Spindle bearing arrangements were designed and included in the standard program.

**1996** The Enzfelder company produced planet gear to specification for the first time.

**1998-1999** The standard programs were enlarged. Additionally, bevel gears are manufactured in a standard design.

**2000** The development of electric cylinders in standard design for very high loads (5-1000kN) was started. At the same time the telescopic spindle gears were refined to save the customer the guiding and locking devices. Since that time we have been able to offer telescopic cylinders, too.

**2001** The development of electric cylinders was completed, and these cylinders were added to the standard program.
At the same time the development and fabrication of cubic spindle gears for lifting loads between 2.5 and 150kN was started. These gears were added to the standard program as well.

**2002** were extended and optimized the series of the electric cylinders. Further we provide an electronic 2D-3D product catalogue of the spindle gears, it makes it possible to integrate our products into your system.

**2002-2003** We putted our new assembling and packaging hall, beside the manufacturing hall, in operation

**2003** We increased our machinery by buying a CNC machine tool with 7 axes, brand AXA. That new CNC machine allows a precise machining of the screw jack housings in only two clamping.

**2003-2004** The engineering started to use new 3-D CAD software, Solid Edge. That software enables our customers to integrate easily our drawings.

**2004** We opened a sales office in France.

**2004-2005** We started to design the high performance screw jacks HSG and we created a range of 10 different sizes.

**2005** First participation to an exhibition in France: INDUSTRIE 2005 at Lyon.

**2005-2006** We started to design a new range of telescopic screw jacks TSGLR. Today, these new telescopic screw jacks, with a more compact design, are used in the stage industry, in the aircraft industry, on train lifting equipments and in machine building.

**2008** We replaced the tread grinding machine by a new CNC thread grinding machine, brand Mikromat.

**2008-2009** transmission program is certified to ATEX

**2009-2010** beginning of the series production of Quick-lifting screw jacks SHG

**2010** Development of the transmission range Servo lifting gear (backlash & game adjustable)
Expand our global market with traders in Australia

**2011** development Servo lifting electric cylinder SHELZ (Servo lifting gear with cylindrical structure) and the beginning of the ELZP Series Electric cylinders parallel for Industry sector applications.

**2012** acquisition of the product group UniCe worm gear, helical worm geared motors, couplings, torque limiters and slip clutches. Expansion screw jacks cubic BG up to size for 1000kN

**2013-2014** revision of the telescopic spindle cylinder TSGZ the new cost-optimized design.
Development of product group Electric PNEU, electric cylinder with ball screw, stainless version in hygienically optimized design with mounting dimensions, speeds and forces such as pneumatic cylinder.

**2014** first Quick-lifting screw jacks with cylindrical structure can be delivered SHGZ = Quick-lifting electric cylinder

In recent years, customer problems are solved in the drive and lifting technology from us. Depending on the application, we developed the optimal solution and made with the best possible price / performance ratio.

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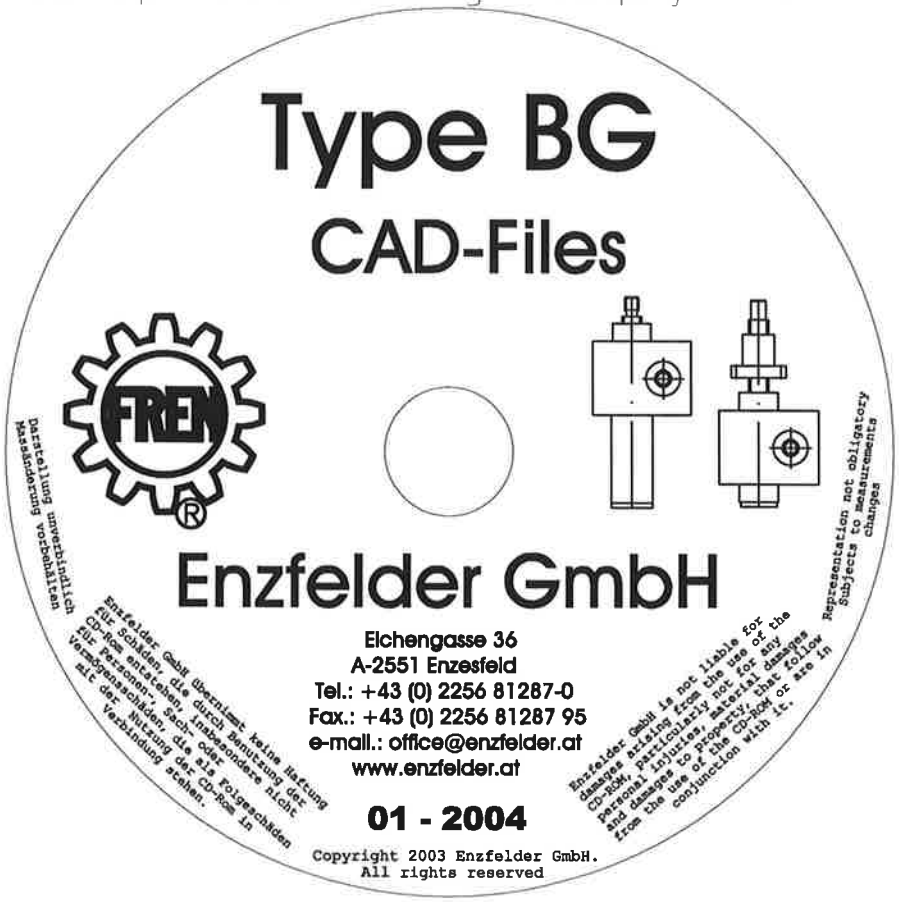
# Content of Catalog



Here I should be! If you need me and I am not here, YOU can request me free of charge at company Enzfelder!



# Selection of spindle gears

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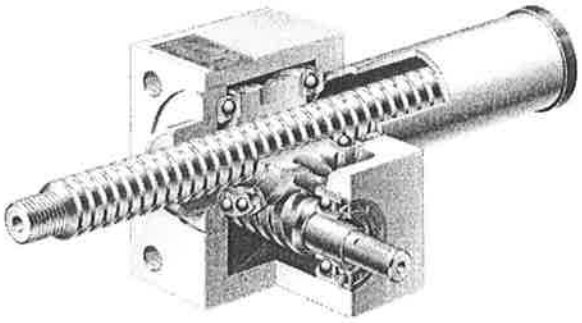

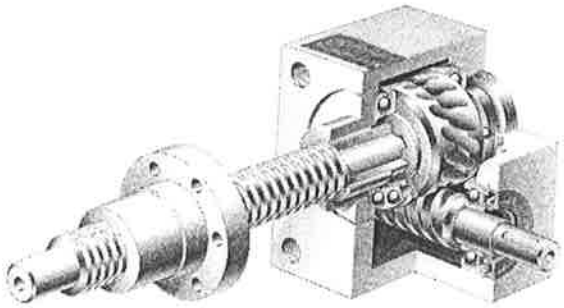

For the correct selection of spindle gears the following data are of decisive importance:

1.) load [kN]
2.) lifting speed [m/min]
3.) operating cycle [%/10min] [%/hour]
4.) spindle length (buckling) [mm]
5.) tensile- or pressure load [kN]
6.) ambient temperature [°C]
7.) fitting length (please indicate when ordering) [mm]
8.) critical speed of the spindle [min-1]

If you use the questionnaire on page 17 please provide the data available.

How to proceed in the selection: on the basis of the desired load data (in kN) a suitable type of gear is selected from the preselection table below.

| Sizes | rated power kN | rated power in kN by ball bearing spindle | gearbox material | size of spindle | size of ball bearing spindle | gear reduction | | length of stroke per rotation in mm | | length of stroke per rotation in mm by ball bearing spindle | efficiency in % | | efficiency in % by ball bearing spindle | max. driving power duty cycle 20%/h in kW | max. driving power duty cycle 10%/h in kW | weight in kg excl. lifting element | weight in kg per 100mm stroke |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | H | L | H | L | H | H | L | | | | | |
| BG 2,5 | 2,5 | --- | AL-Leg. | Tr 14x4 | ------ | 4:1 | 16:1 | 1,0 | 0,25 | ---- | 34 | 24 | --- | 0,18 | 0,25 | 0,6 | 0,1 |
| BG 5 | 5 | 5 | | Tr 18x4 | 1605 | 4:1 | 16:1 | 1,0 | 0,25 | 1,25 | 30 | 23 | 57 | 0,3 | 0,42 | 1,2 | 0,35 |
| BG 10 | 10 | 10 | | Tr 20x4 | 2005 | 4:1 | 16:1 | 1,0 | 0,25 | 1,25 | 28 | 21 | 56 | 0,5 | 0,7 | 2,1 | 0,45 |
| BG 25 | 25 | 12,5 | GG | Tr 30x6 | 2505 | 6:1 | 24:1 | 1,0 | 0,25 | 0,83 | 27 | 19 | 55 | 1,2 | 1,7 | 6,0 | 0,7 |
| BG 50 | 50 | 22/42 | | Tr 40x7 | 4005/10 | 7:1 | 28:1 | 1,0 | 0,25 | 0,71/1,43 | 25 | 18 | 53/56 | 2,3 | 3,2 | 17 | 1,2 |
| BG 100 | 100 | 65 | GGG | Tr 55x9 | 5010 | 9:1 | 36:1 | 1,0 | 0,25 | 1,1 | 19 | 14 | 47 | 5,1 | 7,1 | 32 | 2,0 |
| BG 150 | 150 | --- | | Tr 60x9 | ------ | 9:1 | 36:1 | 1,0 | 0,25 | ---- | 19 | 14 | --- | 7,2 | 10 | 41 | 2,4 |

Read off the dimensioned sketch and the performance table on the corresponding page of the catalog:

1.) whether the dimensions of gear and spindle fit into your system.
2.) which gear reduction must be selected for the desired lifting speed (for higher lifting speeds the use of a double-thread spindle may be necessary).
3.) whether the power required for the desired lifting speed is admissible.
4.) whether under pressure load the critical buckling force is not exceeded.
5.) whether the critical revolutions/min of the spindle are not exceeded.
6.) If one of these requirements cannot be met the type next in size must be chosen.
7.) If point 6 is not sufficient, choose one of the types next in size or ask for special types (questionnaire see page 17)

# Survey of construction modes with exemple for ordering

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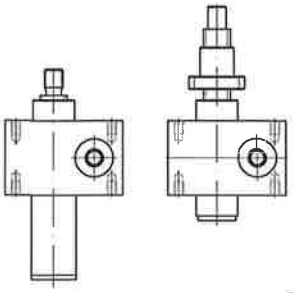
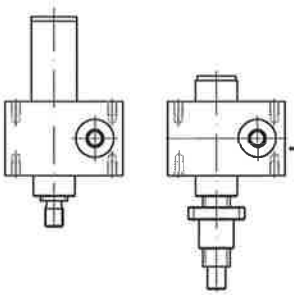
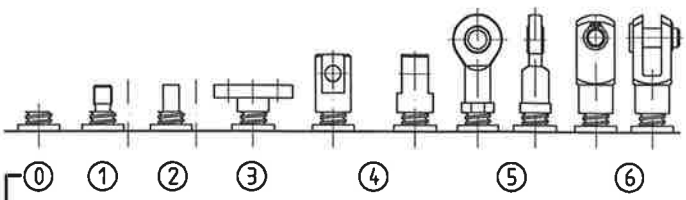
construction above



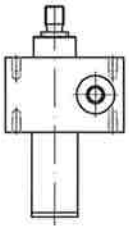
construction below



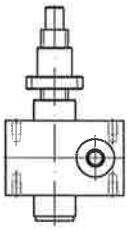
standard spindle noses

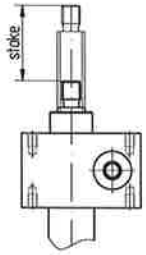


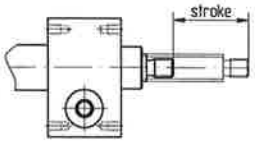

basic type



traveling nut type

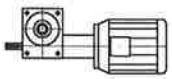




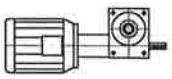




Ⓥ Ⓗ

motor on the right



motor on the left



no motor

standard reductions according to preselection table page 3

type designation according to preselection table page 3

Sizes= BG

**BG 150 - 9 - G - 0 - 2 - 2300 V - MR**

type

reduction i

traveling nut type = L
basic type = G

construction above = 0
construction below = U

spindle nose = 0,1,2,3,4,5,6
special nose = S

effective stroke in mm

fitting position horizontal = H
fitting position vertical = V

motor on the right = MR
motor on the left = ML
no motor = 00

Above example for ordering:
Sizes type 150, reduction 9:1, basic type construction up, spindle nose 2, stroke 2300mm, mounted vertical, with motor mounted on the right.

Additionally available options:

rigid protection
expansion bellows
spring steel spirals
square locking device to prevent twisting

three-phase A.C. motor with or without brake
d.c. motor
gear motor
limit stop

overload clutch
ball bearing spindle
cardanplate
oil lubrication

The required options must be added to the order ID or marked in the questionnaire.

# Spindle gear
## Basic type (G)

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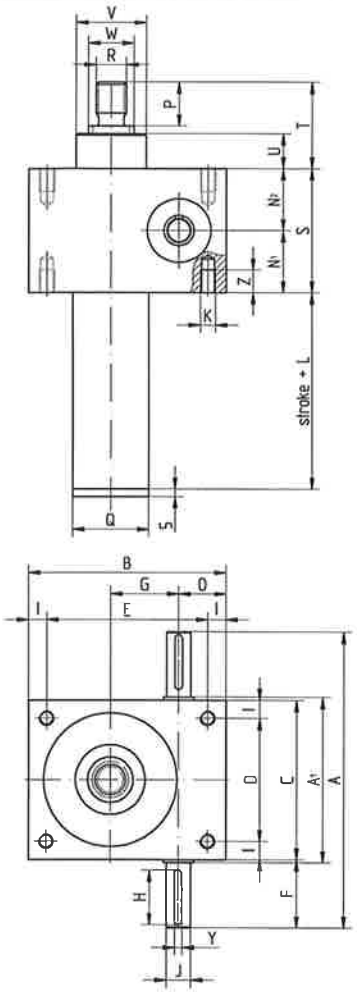
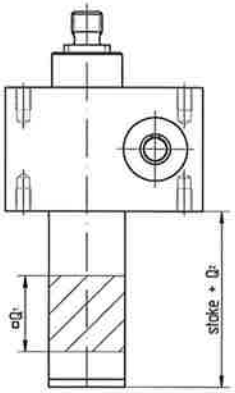
sheet measure







square locking device to prevent twisting




Sizes/Types

| Index | BG 2,5 | BG 5 | BG 10 | BG 25 | BG 50 | BG 100 | BG 150 |
|---|---|---|---|---|---|---|---|
| | BG002,5_GA_? | BG005_GA_? | BG010_GA_? | BG025_GA_? | BG050_GA_? | BG100_GA_? | BG150_GA_? |
| A | 92 | 120 | 140 | 195 | 240 | 300 | 325 |
| $A_1$ | 56 | 75 | 89 | 109 | 150 | 170 | 200 |
| B | 60 | 80 | 100 | 130 | 180 | 200 | 210 |
| C | 50 | 72 | 85 | 105 | 145 | 165 | 195 |
| D | 38 | 52 | 63 | 81 | 115 | 131 | 155 |
| E | 48 | 60 | 78 | 106 | 150 | 166 | 170 |
| F | 21 | 24 | 27,5 | 45 | 47,5 | 67,5 | 65 |
| G | 20 | 25 | 32 | 45 | 63 | 71 | 71 |
| H | 14 | 18 | 20 | 36 | 36 | 56 | 56 |
| I | 6 | 10 | 11 | 12 | 15 | 17 | 20 |
| $J_{j6}$ | 9 | 10 | 14 | 16 | 20 | 25 | 25 |
| K | M6 | M8 | M8 | M10 | M12 | M20 | M24 |
| L [1] | 20/45 | 20/48/76 [4] | 30/55/74 [4] | 30/60 | 45/80 | 55/80 | 55/90 |
| $N_1$ | 25 | 32 | 37 | 41 | 58,5 | 80 | 87,5 |
| $N_2$ | 25 | 30 | 38 | 41 | 58,5 | 80 | 87,5 |
| O | 18 | 24 | 28 | 31 | 39 | 46 | 49 |
| P | 12 | 19 | 20 | 22 | 29 | 48 | 48 |
| Q | 28 | 32 | 42 | 50 | 65 | 90 | 95 |
| $Q_1$ | 30x30 | 35x35 | 40x40 | 50x50 | 65x65 | 90x90 | 100x100 |
| $Q_2$ [3] | 80 | 80 | 85 | 100 | 100 | 110 | 110 |
| R | M8 | M12 | M14 | M20 | M30 | M36 | M48x2 |
| S | 50 | 62 | 75 | 82 | 117 | 160 | 175 |
| T [2] | 27 | 35/48 | 45/49 | 50 | 65 | 95 | 95 |
| U [2] | 12 | 12/25 | 18/22 | 23 | 32 | 40 | 40 |
| V [2] | 26 | 30/48 | 39/57 | 46 | 60 | 85 | 90 |
| W | Tr 14x4 | Tr 18x4 | Tr 20x4 | Tr 30x6 | Tr 40x7 | Tr 55x9 | Tr 60x9 |
| W KGT | ------- | 1605 | 2005 | 2505 | 4005/10 | 5010 | ------- |
| Y | 3 | 3 | 5 | 5 | 6 | 8 | 8 |
| Z | 12 | 13 | 15 | 15 | 16 | 30 | 40 |

1) The second measurement are for type with run off safty
2) The second measurement are for type with ball bearing spindle
3) The second measurement are for type with ball bearing spindle in construction below
4) The measurement are for type with ball bearing spindle and run off safty in construction below
Special executions on request are possible
Subjects to measurements changes, representation not abligatory

# Spindle gear
## Traveling nut type (L)

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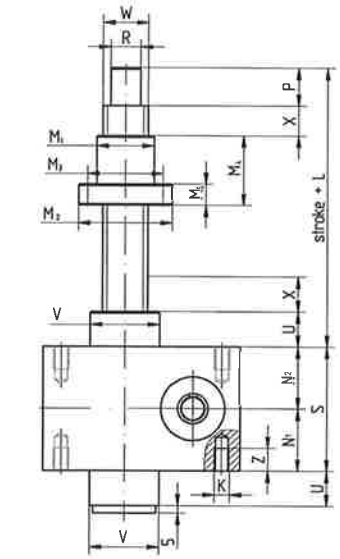
sheet measure




| Index | BG 2,5 | BG 5 | BG 10 | BG 25 | BG 50 | BG 100 | BG 150 |
|---|---|---|---|---|---|---|---|
| | BG002,5_LA_? | BG005_LA_? | BG010_LA_? | BG025_LA_? | BG050_LA_? | BG100_LA_? | BG150_LA_? |
| A | 92 | 120 | 140 | 195 | 240 | 300 | 325 |
| $A_1$ | 56 | 75 | 89 | 109 | 150 | 170 | 200 |
| B | 60 | 80 | 100 | 130 | 180 | 200 | 210 |
| C | 50 | 72 | 85 | 105 | 145 | 165 | 195 |
| D | 38 | 52 | 63 | 81 | 115 | 131 | 155 |
| E | 48 | 60 | 78 | 106 | 150 | 166 | 170 |
| F | 21 | 24 | 27,5 | 45 | 47,5 | 67,5 | 65 |
| G | 20 | 25 | 32 | 45 | 63 | 71 | 71 |
| H | 14 | 18 | 20 | 36 | 36 | 56 | 56 |
| I | 6 | 10 | 11 | 12 | 15 | 17 | 20 |
| $J_{j6}$ | 9 | 10 | 14 | 16 | 20 | 25 | 25 |
| K | M6 | M8 | M8 | M10 | M12 | M20 | M24 |
| L | 69 | 95 | 112 | 134 | 185/171[3] | 232 | 244 |
| $M_1$ [1] | 24 | 28/28 | 32/32 | 38/38 | 63/53 | 72/72 | 85 |
| $M_2$ [1] | 44 | 48/48 | 55/55 | 62/62 | 95/80 | 110/110 | 125 |
| $M_3$ [1] | 34 | 38/38 | 45/45 | 50/50 | 78/68 | 90/90 | 105 |
| $M_4$ [1] | 25 | 44/44 | 44/44 | 46/46 | 73/59 | 97/97 | 99 |
| $M_5$ [1] | 10 | 12/12 | 12/12 | 14/14 | 16/16 | 18/18 | 20 |
| $M_6$ [1] | 6 | 6/5,5 | 7/7 | 7/7 | 9/7 | 11/11 | 11 |
| $N_1$ | 25 | 32 | 37 | 41 | 58,5 | 80 | 87,5 |
| $N_2$ | 25 | 30 | 38 | 41 | 58,5 | 80 | 87,5 |
| O | 18 | 24 | 28 | 31 | 39 | 46 | 49 |
| P | 12 | 15 | 20 | 25 | 30 | 45 | 55 |
| $R_{j6}$ | 8 | 12 | 15 | 20 | 25 | 40 | 45 |
| S | 50 | 62 | 75 | 82 | 117 | 160 | 175 |
| U | 12 | 12 | 18 | 23 | 32 | 40 | 40 |
| V | 26 | 30 | 39 | 46 | 60 | 85 | 90 |
| W [*] | Tr 14x4 | Tr 18x4 | Tr 20x4 | Tr 30x6 | Tr 40x7 | Tr 55x9 | Tr 60x9 |
| $W_{KGT}$ | ------- | 1605 | 2005 | 2505 | 4005/10[2] | 5010 | ------- |
| X | 10 | 12 | 15 | 20 | 25 | 25 | 25 |
| Y | 3 | 3 | 5 | 5 | 6 | 8 | 8 |
| Z | 12 | 13 | 15 | 15 | 16 | 30 | 40 |

1) The second measurement are for type with ball bearing spindle
2) The same measurement as Tr-nut
2) Are for Type with KGT 4005

Special executions on request are possible
Subjects to measurements changes, representation not abligatory

# Spindle gear accessories

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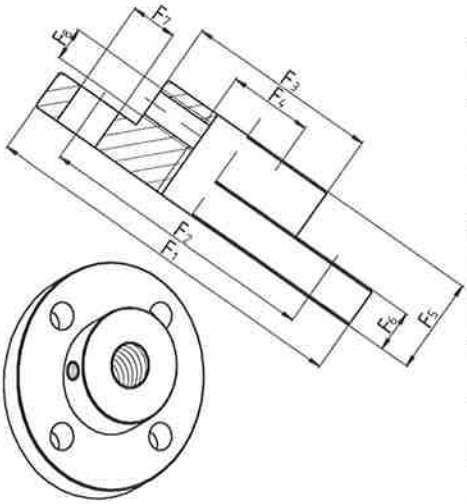
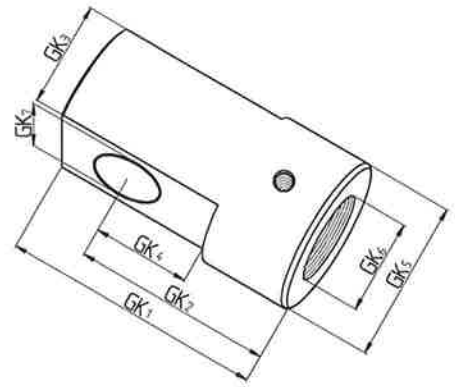
## Flange plate (FP)



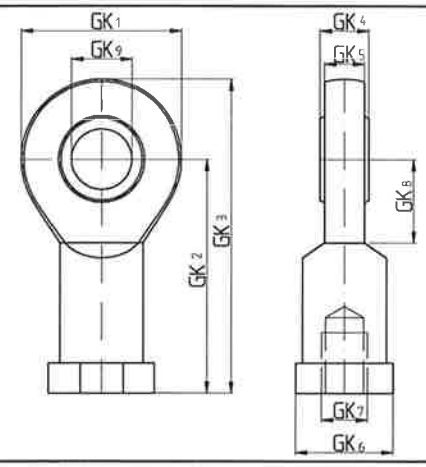

| Sizes | | measurement in mm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | $F_1$ | $F_2$ | $F_3$ | $F_4$ | $F_5$ | $F_6$ | $F_7$ | $F_8$ |
| BG 2,5 | BG002,5_K3 | 50 | 40 | 26 | M8 | 16 | 6 | 7 | M4 |
| BG 5 | BG005_K3 | 65 | 48 | 30 | M12 | 20 | 7 | 9 | M5 |
| BG 10 | BG010_K3 | 80 | 60 | 39 | M14 | 21 | 8 | 11 | M6 |
| BG 25 | BG025_K3 | 90 | 67 | 46 | M20 | 23 | 10 | 11 | M8 |
| BG 50 | BG050_K3 | 110 | 85 | 60 | M30 | 30 | 15 | 13 | M8 |
| BG 100 | BG100_K3 | 150 | 117 | 85 | M36 | 50 | 20 | 17 | M10 |
| BG 150 | BG150_K3 | 170 | 130 | 90 | M48x2 | 50 | 25 | 21 | M10 |

## Spindle nose 4 (SE)




| Sizes | | measurement in mm | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | $GK_1$ | $GK_2$ | $GK_3$ | $GK_4$ | $GK_5$ | $GK_6$ | $GK_7$ H8 |
| BG 2,5 | BG002,5_K4 | 40 | 30 | 12 | 10 | 25 | M8 | 8 |
| BG 5 | BG005_K4 | 55 | 40 | 15 | 15 | 30 | M12 | 10 |
| BG 10 | BG010_K4 | 63 | 45 | 20 | 18 | 40 | M14 | 12 |
| BG 25 | BG025_K4 | 78 | 53 | 30 | 20 | 45 | M20 | 16 |
| BG 50 | BG050_K4 | 100 | 70 | 35 | 30 | 60 | M30 | 20 |
| BG 100 | BG100_K4 | 130 | 97 | 40 | 33 | 85 | M36 | 22 |
| BG 150 | BG150_K4 | 120 | 75 | 60 | 45 | 90 | M48x2 | 40 |

## Pivoting head (GK)




| Baugröße | | measurement in mm | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | $GK_1$ | $GK_2$ | $GK_3$ | $GK_4$ | $GK_5$ | $GK_6$ | $GK_7$ | $GK_8$ | $GK_9$ |
| BG 2,5 | BG002,5_K5 | 24 | 36 | 48 | 8 | 6 | 13 | M8x1,25 | 12 | 8 |
| BG 5 | BG005_K5 | 34 | 50 | 67 | 10 | 8 | 18 | M12x1,75 | 17,5 | 12 |
| BG 10 | BG010_K5 | 40 | 61 | 81 | 12 | 10 | 21 | M14x2 | 20 | 15 |
| BG 25 | BG025_K5 | 53 | 77 | 103,5 | 16 | 13 | 32 | M20x1,5 | 27,5 | 20 |
| BG 50 | BG050_K5 | 73 | 110 | 146,5 | 22 | 19 | 41 | M30x2 | 37 | 30 |
| BG 100 | BG100_K5 | 82 | 125 | 166 | 25 | 21 | 50 | M36x3 | 42 | 35 |
| BG 150 | BG150_K5 | 102 | 145 | 196 | 32 | 27 | 60 | M42x3 | 52 | 45 |

Special executions on request are possible
Subjects to measurements changes, representation not abligatory

# Spindle gear accessories

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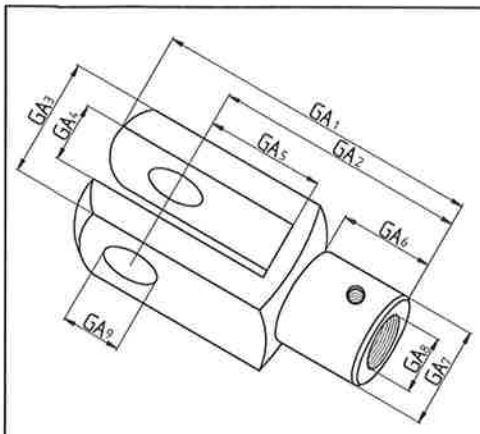
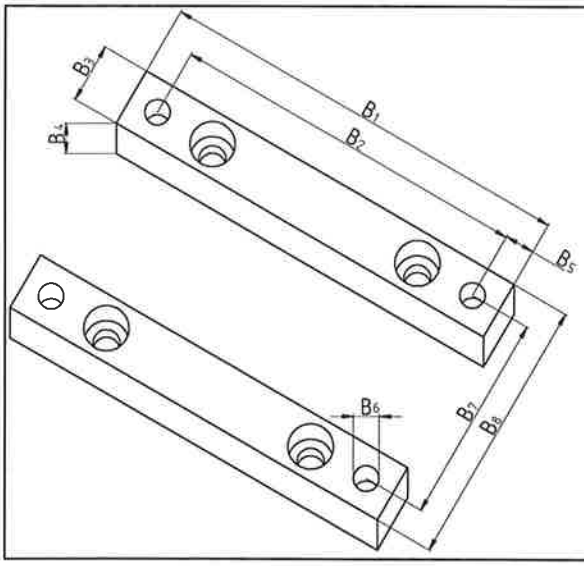
## Fork head (GA)



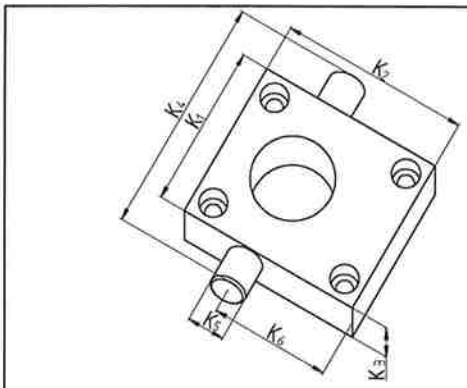

| Sizes | | measurement in mm | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | GA1 | GA2 | GA3 | GA4 | GA5 | GA6 | GA7 | GA8 | GA9 H8 |
| BG 2,5 | BG002,5_K6 | 42 | 32 | 16 | 8 | 16 | 12 | 14 | M8 | 8 |
| BG 5 | BG005_K6 | 62 | 48 | 24 | 12 | 24 | 18 | 20 | M12 | 12 |
| BG 10 | BG010_K6 | 72 | 56 | 27 | 14 | 28 | 22,5 | 24 | M14 | 14 |
| BG 25 | BG025_K6 | 105 | 80 | 40 | 20 | 40 | 30 | 34 | M20 | 20 |
| BG 50 | BG050_K6 | 148 | 110 | 60 | 30 | 60 | 40 | 48 | M30 | 30 |
| BG 100 | BG100_K6 | 188 | 144 | 72 | 36 | 72 | 54 | 60 | M36 | 36 |
| BG 150 | BG150_K6 | -- | -- | -- | -- | -- | -- | -- | -- | -- |

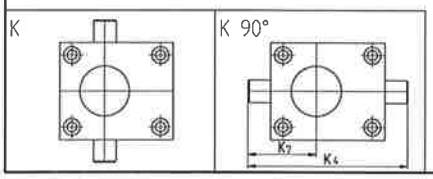
## Fastening strips (BL)




| Sizes | | measurement in mm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 |
| BG 2,5 | BG002,5_BL | 90 | 75 | 12 | 10 | 7,5 | 6,5 | 38 | 50 |
| BG 5 | BG005_BL | 120 | 100 | 20 | 10 | 10 | 8,5 | 52 | 72 |
| BG 10 | BG010_BL | 140 | 120 | 20 | 10 | 10 | 8,5 | 63 | 85 |
| BG 25 | BG025_BL | 170 | 150 | 25 | 12 | 10 | 11 | 81 | 105 |
| BG 50 | BG050_BL | 230 | 204 | 30 | 16 | 13 | 13,5 | 115 | 145 |
| BG 100 | BG100_BL | 270 | 236 | 40 | 25 | 17 | 22 | 131 | 171 |
| BG 150 | BG150_BL | 290 | 250 | 50 | 30 | 20 | 26 | 155 | 205 |

## Cardan plate (K)




| Sizes | | measurement in mm | | | | | | K 90° turned | |
|---|---|---|---|---|---|---|---|---|---|
| | | K1 | K2 | K3 | K4 | K5 | K6 | K4 | K7 |
| BG 2,5 | BG002,5_KAR | 50 | 60 | 15 | 70 | 10 | 38 | 80 | 32 |
| BG 5 | BG005_KAR | 72 | 80 | 20 | 102 | 15 | 49 | 110 | 46 |
| BG 10 | BG010_KAR | 85 | 100 | 25 | 125 | 20 | 60 | 140 | 60 |
| BG 25 | BG025_KAR | 105 | 130 | 30 | 145 | 25 | 76 | 170 | 74 |
| BG 50 | BG050_KAR | 145 | 180 | 40 | 205 | 35 | 102 | 240 | 108 |
| BG 100 | BG100_KAR | 165 | 200 | 50 | 235 | 45 | 117 | 270 | 118 |
| BG 150 | BG150_KAR | 195 | 210 | 60 | 275 | 50 | 120 | 290 | 130 |

Special executions on request are possible
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# Spindle gear accessories

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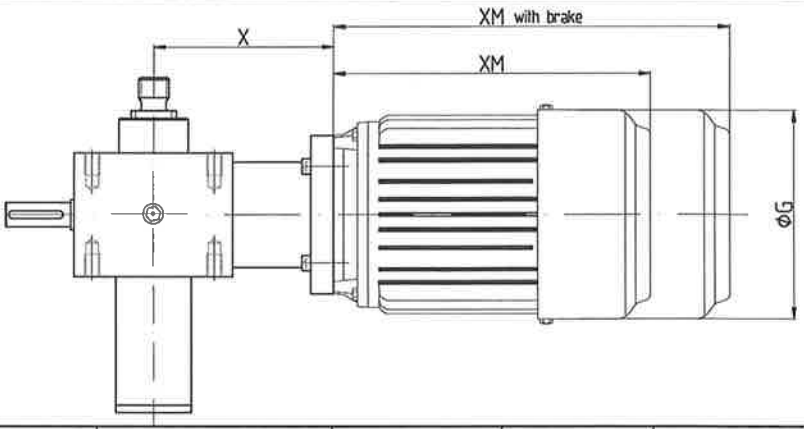
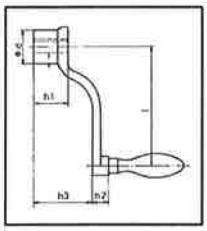
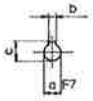
## Spindle gear with elastic coupling and motor

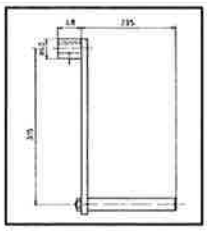



| Sizes | | motortype | IEC-flange ΦA | ΦB | ΦE | motor shaft | X | XM | XM with brake | ΦG |
|---|---|---|---|---|---|---|---|---|---|---|
| BG 2,5 | BG002,5_Flan80 | 56 | 80 | 50 | 65 | Φ9x20 | 79,5 | 167 | -- | 110 |
| | BG002,5_Flan90 | 63 | 90 | 60 | 75 | Φ11x23 | 82,5 | 180 | 231 | 118 |
| BG 5 | BG005_Flan90 | 63 | 90 | 60 | 75 | Φ11x23 | 96,5 | 180 | 231 | 118 |
| | BG005_Flan105 | 71 | 105 | 70 | 85 | Φ14x30 | 103,5 | 210 | 262 | 139 |
| BG 10 | BG010_Flan90 | 63 | 90 | 60 | 75 | Φ11x23 | 106,5 | 180 | 231 | 118 |
| | BG010_Flan105 | 71 | 105 | 70 | 85 | Φ14x30 | 113,5 | 210 | 262 | 139 |
| | BG010_Flan120 | 80 | 120 | 80 | 100 | Φ19x40 | 126,5 | 233 | 288 | 156 |
| BG 25 | BG025_Flan105 | 71 | 105 | 70 | 85 | Φ14x30 | 144 | 210 | 262 | 139 |
| | BG025_Flan120 | 80 | 120 | 80 | 100 | Φ19x40 | 154 | 233 | 288 | 156 |
| BG 50 | BG050_Flan120 | 80 | 120 | 80 | 100 | Φ19x40 | 176,5 | 233 | 288 | 156 |
| | BG050_Flan140 | 90 | 140 | 95 | 115 | Φ24x50 | 186,5 | 281 | 356 | 165 |
| | BG050_Flan160 | 100 | 160 | 110 | 130 | Φ28x60 | 198,5 | 312 | 390 | 196 |
| BG 100 | BG100_Flan120 | 80 | 120 | 80 | 100 | Φ19x40 | 206,5 | 233 | 288 | 156 |
| | BG100_Flan140 | 90 | 140 | 95 | 115 | Φ24x50 | 216,5 | 281 | 356 | 165 |
| | BG100_Flan160 | 112 | 160 | 110 | 130 | Φ28x60 | 228,5 | 371 | 458 | 220 |
| BG 150 | BG150_Flan160 | 100 | 160 | 110 | 130 | Φ28x60 | 241 | 312 | 390 | 196 |
| | BG150_Flan160 | 112 | 160 | 110 | 130 | Φ28x60 | 241 | 371 | 458 | 220 |
| | BG150_Flan200 | 132 | 200 | 130 | 165 | Φ38x80 | 263 | 416 | 522 | 259 |

## Crank handles







Ch 1

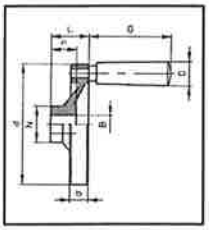
| BG | 5 | 10 | 25 |
|---|---|---|---|
| a F 7 | 10 | 14 | 16 |
| b P 9 | 3 | 5 | 5 |
| c | 11,4 | 16,3 | 18,3 |
| d | 28 | 38 | 38 |
| h1 | 28 | 38 | 38 |
| h2 | 13 | 14 | 14 |
| h3 | 48 | 65 | 65 |
| l | 100 | 160 | 160 |

Ch 2

| BG | 50 | 100 | 150 |
|---|---|---|---|
| a F 7 | 20 | 25 | 25 |
| b P 9 | 6 | 8 | 8 |
| c | 22,8 | 27,3 | 28,3 |

Dimensional variations according to DIN 7168 medium. Deviating dimensions on request.

## Hand wheels



| type | d | N | b | n | L | G | D | Pilot drill B H7 | Weight [Kg] |
|---|---|---|---|---|---|---|---|---|---|
| BG 5 | 80 | 26 | 13,0 | 16 | 30 | 58,5 | 22 | 10 | 0,16 |
| BG 10 | 125 | 31 | 15,0 | 18 | 34 | 67,5 | 23 | 14 | 1,3 |
| BG 25 | 160 | 36 | 18,0 | 20 | 37 | 67,5 | 23 | 14 | 1,5 |
| BG 50, 100 | 200 | 42 | 20,5 | 24 | 45 | 80,0 | 26 | 18 | 1,0 |
| BG 100, 150 | 250 | 48 | 23,0 | 28 | 51 | 90,0 | 28 | 24 | 1,3 |

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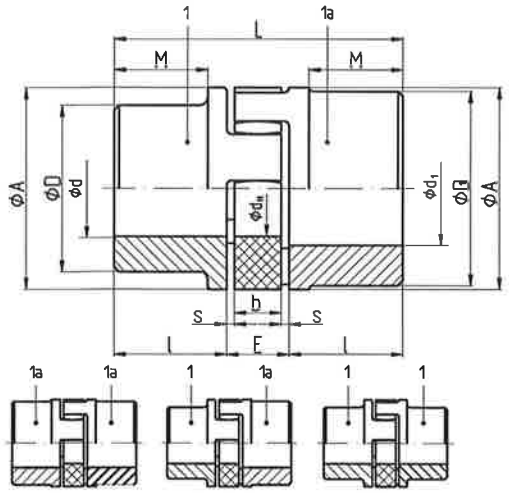
## Elastic couplings (KU)



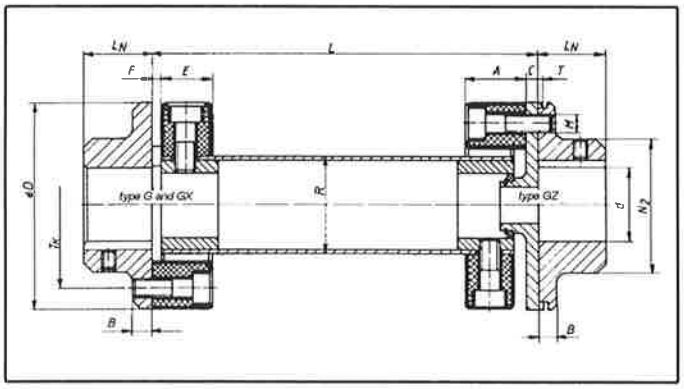

Finish-borings are made according, to the ISO system of tolerances H7. Feather key grooves are made according to DIN 6885/1. The max. angle shift is 1°30 , the twisting angle 3,2° at Mt nom. The operable temperature range lies between -40°C and +100°C.

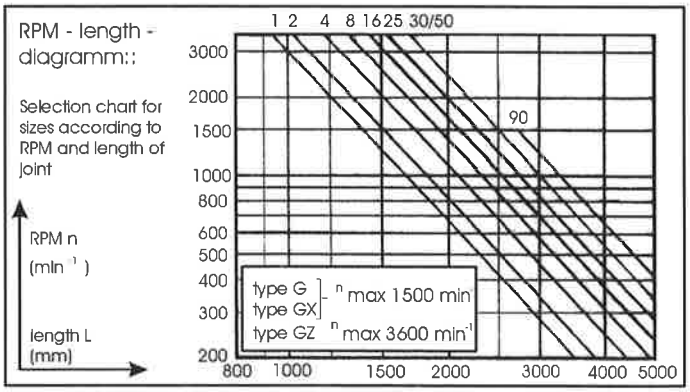
| Type R | Mt nom in Nm at 80° Shore [1] | Mt nom in Nm at 92° Shore [1] | Mt nom in Nm at 98° Shore [1] | holes pilot drill | hub 1 finished Φd min | hub 1 finished Φd max | pilot drill | hub 1a finished Φd1 min | hub 1a finished Φd1 max | ΦA | ΦD | ΦD1 | L | l | E | s | b | M | Φdm | material | weight [3] type 1 in kg | weight [3] type 1a in kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14 | 4 | 7 | 12 | - | 4 | 14 | - | - | - | 30 | 30 | - | 35 | 11 | 13 | 1,5 | 10 | - | 10 | Alu oder GG | 0,14 | 0,14 |
| 19/24 | 5 | 10 | 17 | 4 | 6 | 19 | - | 6 | 24 | 40 | 32 | 40 | 66 | 25 | 16 | 2 | 12 | - | 18 | | 0,32 | 0,36 |
| 24/28 | 17 | 35 | 60 | 6 | 8 | 24 | 6 | 8 | 28 | 55 | 40 | 48 | 78 | 30 | 18 | 2 | 14 | 24 | 27 | | 0,60 | 0,72 |
| 28/38 | 46 | 95 | 160 | 8 | 10 | 28 | 8 | 10 | 38 | 65 | 48 | 65 | 90 | 35 | 20 | 2,5 | 15 | 28 | 30 | | 0,97 | 1,33 |
| 38/45 | 93 | 190 | 325 | 10 | 12 | 38 | 36 | 38 | 45 | 80 | 66 | 77 | 114 | 45 | 24 | 3 | 18 | 37 | 38 | | 2,08 | 2,46 |
| 42/55 | 130 | 265 | 450 | 12 | 14 | 42 | 40 | 42 | 55 | 95 | 75 | 94 | 126 | 50 | 26 | 3 | 20 | 40 | 46 | | 3,21 | 3,93 |
| 48/60 | 150 | 310 | 525 | 13 | 15 | 48 | 46 | 48 | 60 | 105 | 85 | 102 | 140 | 56 | 28 | 3,5 | 21 | 45 | 51 | | 4,41 | 5,19 |
| 55/70 | 180 | 375 | 625 | 18 | 20 | 55 | 52 | 55 | 70 | 120 | 98 | 120 | 160 | 65 | 30 | 4 | 22 | 52 | 60 | GG | 6,64 | 8,10 |
| 65/75 [2] | 205 | 425 | 640 | 20 | 22 | 65 | 63 | 65 | 75 | 135 | 115 | 135 | 185 | 75 | 35 | 4,5 | 26 | 61 | 68 | | 10,13 | 11,65 |
| 75/90 [2] | 475 | 975 | 1465 | 28 | 30 | 75 | 73 | 75 | 90 | 160 | 135 | 160 | 210 | 85 | 40 | 5 | 30 | 69 | 80 | | 16,03 | 19,43 |

[1] The rated turning moments are valid for normal operation with slight jolts; due to the higher start-up moment of three-phase squirrel cage motors an imfact factor of 2 must be taken into account.
[2] from size 65/75 95° Shore on
[3] weight for GG, aluminium approx. 60% less.

Product as delivered: enclosed

## Elastic propeller shafts G/GX/GZ




| size | rated torque [Nm] type G | type GX | type GZ | weight [kg] for 2 hubs | for 1 m tube | max. shift of angle G+GZ | GX | A | B | C | ØD | pilot drill d | d max | E | F | $L_M$ | Ø$N_w$ | R | T | $T_K$ /M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10 | 10 | 10 | 1,0 | 1,1 | 3° | 1° | 24 | 7 | 5 | 56 | 8 | 25 | 22 | 2 | 24 | 36 | 30 | 1,5 | Ø 44 / 2 x M6 |
| 2 | 20 | 30 | 20 | 2,2 | 1,4 | 3° | 1° | 24 | 8 | 5 | 85 | 12 | 38 | 20 | 4 | 28 | 55 | 40 | 1,5 | Ø 68 / 2 x M8 |
| 4 | 40 | 60 | 40 | 3,4 | 1,6 | 3° | 1° | 28 | 8 | 5 | 100 | 15 | 45 | 24 | 4 | 30 | 65 | 45 | 1,5 | Ø 80 / 3 x M8 |
| 8 | 80 | 120 | 80 | 7,3 | 2,2 | 3° | 1° | 32 | 10 | 5 | 120 | 18 | 55 | 28 | 4 | 42 | 80 | 60 | 1,5 | ø100 / 3 x M10 |
| 16 | 160 | 240 | 160 | 12,4 | 2,5 | 3° | 1° | 42 | 12 | 5 | 150 | 20 | 70 | 36 | 6 | 50 | 100 | 70 | 1,5 | ø125 / 3 x M12 |
| 25 | 250 | 370 | 250 | 19,1 | 3,1 | 3° | 1° | 46 | 14 | 5 | 170 | 20 | 85 | 40 | 6 | 55 | 115 | 85 | 1,5 | ø140 / 3 x M14 |
| 30 | 400 | 550 | 400 | 31,1 | 4,8 | 3° | 1° | 58 | 16 | 5 | 200 | 25 | 100 | 50 | 8 | 66 | 140 | 100 | 1,5 | ø165 / 3 x M16 |
| 50 | 600 | - | 600 | 32,1 | 4,8 | 3° | 1° | 58 | 16 | 5 | 200 | 25 | 100 | 50 | 8 | 66 | 140 | 100 | 1,5 | ø165 / 3 x M16 |
| 90 | 900 | - | 900 | 58,7 | 7,6 | 3° | 1° | 70 | 19 | 5 | 260 | 30 | 110 | 62 | 8 | 80 | 160 | 125 | 2,0 | Ø215 / 3 x M20 |

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# Spindle gear accessories

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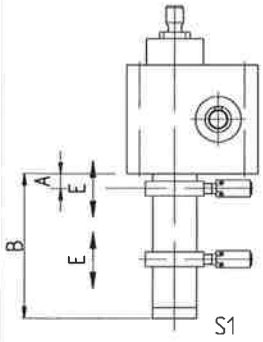
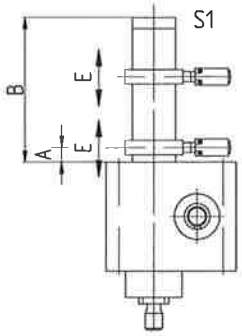
## Limit stop (EA)

type about




type below

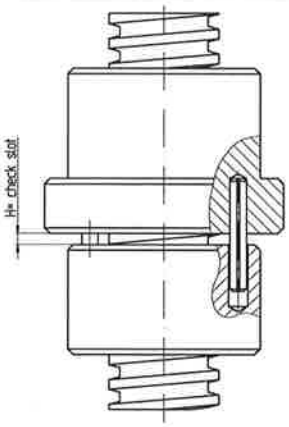



| | A | B |
|---|---|---|
| BG2,5 | 32 | stroke+80 |
| BG5 | 32 | stroke+80 |
| BG10 | 38 | stroke+85 |
| BG25 | 43 | stroke+100 |
| BG50 | 52 | stroke+100 |
| BG100 | 60 | stroke+110 |
| BG150 | 60 | stroke+110 |

| | | |
|---|---|---|
| limit switch type | | S1 |
| current max. at voltage | 250V | 0,25A |
| | 120V | 0,5A |
| | 24V | 7A |
| type of connection | | binding posts |
| setting range E | | ±10 |
| temperature min/max | | -10°C +80°C |
| system of protection | | IP 65 |
| type of switch | | mech. |

Limit switches must be adjusted in situ!
Product as delivered: enclosed

## Safty nuts



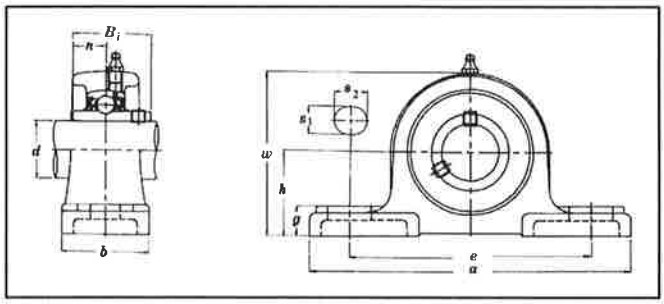

Connected with the loaded traveling nut via driving pins, the locking nut runs at idle. As the threads in the traveling nut wear it approaches the idling, unloaded and therefore unworn safety nut. The wear is ascertained by checking the slot H. When the table entry H has declined by half the traveling nut must be replaced!

The visual check of the slot H can be automated by integrating an automatic disconnecting limit switch which is actuated when the raveling nut sinks.

Standard sheet on request.

Product as delivered: enclosed

## Pedestal bearing




| Typ | ø d (mm) | Dimensions (mm) h | a | e | b | $s_2$ | $s_1$ | g | w | n | Bolt Used (mm) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UCP 205 | 25 | 36,5 | 140 | 105 | 38 | 19 | 13 | 13 | 71 | 14,3 | 10 | 0,8 |
| UCP 206 | 30 | 42,9 | 165 | 121 | 48 | 21 | 17 | 15 | 84 | 15,9 | 14 | 1,3 |
| UCP 207 | 35 | 47,6 | 167 | 127 | 48 | 21 | 17 | 16 | 93 | 17,5 | 14 | 1,6 |
| UCP 208 | 40 | 49,2 | 184 | 137 | 54 | 21 | 17 | 17 | 98 | 19,0 | 14 | 2,0 |
| UCP 209 | 45 | 54,0 | 190 | 146 | 54 | 21 | 17 | 17 | 106 | 19,0 | 14 | 2,2 |
| UCP 210 | 50 | 57,2 | 206 | 159 | 60 | 22 | 20 | 19 | 113 | 19,0 | 16 | 2,9 |
| UCP 212 | 60 | 69,8 | 241 | 184 | 70 | 25 | 20 | 22 | 138 | 25,4 | 16 | 4,9 |
| UCP 214 | 70 | 79,4 | 266 | 210 | 72 | 30 | 25 | 28 | 166 | 30,2 | 20 | 6,8 |
| UCP 216 | 80 | 88,9 | 292 | 232 | 78 | 35 | 25 | 32 | 174 | 33,3 | 20 | 9,0 |
| UCP 217 | 85 | 95,2 | 310 | 247 | 83 | 40 | 25 | 32 | 185 | 34,1 | 20 | 10,8 |

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## Mounting

Spindle gears must be mounted in true alignment on a flat surface which must be so stiff that it can assume the maximal load without oscillations or deformations. The alignment and correct positioning of the spindle gear must be done very carefully as no side forces should act on spindle and guide rings.

In lifting systems the spindle noses (in case of the basic type) or the traveling nuts (in case of the traveling nut type) must lie level with each other before the worms of the spindle gears are connected.

Before the driving gear is mounted the sense of rotation must be checked: in bevel gear driven lifting systems the sense of rotation can easily be confused; the result would be faulty mounting and possible damage of the installation.

Before putting it into service the spindle gear or the lifting system should be turned by hand once. If this requires non uniform forces the spindles are misaligned both to each other and to the installation. Adjustments are necessary; the fastening screws must be worked loose and the whole lifting gear must again be turned by hand.
Spindles must be lubricated before being put into service; they are delivered non-greased!

Oil-lubricated worm gears: the upper screwed sealing plug must be replaced by the vent screw provided.

Attention! Misalignment and faulty gripping lead to increased power consumption, which is converted into friction and noise. The consequence is quick wear.
Additional add-on pieces: check under "Options".

If our specifications and performances according to the technical instructions are nor observed and/or the components are not used as prescribed, any warranty claims will no longer be applicable.

## Maintenance

Greases spindle and worm gear via lubricating nipple at regular intervals (~30-50 operating hours), clean and lubricate the spindel at the same time. The intervals depend on the given operating conditions and the duty cycle of the spindle gears. In case doubt please set up the lubrication plan together with us. The use of spindle spray increases the working life of the spindle and spindle nut. After approx. 200-300 operating hours the wear of the traveling nut or the worm wheel due to the backlash of threads should be checked. The maximal normal backlash of single trapezoid threads must not exceed 1/4 of the thread pitch. In the cases of multiple threads or special threads 1/4 of P is the maximum normal acceptable backlash. When the maximum normal backlash is reached the traveling nut or the worm wheel must be replaced. After a short run-in period all screws must be checked.

After approx. 500 operating hours we recommend cleaning gear and spindle to remove the grease, checking all piece parts as to wear, and recharging them with new grease.

Recommended lubricants: Shell Darina 2, Castrol Grease MS3, BP Energrease LS-EP2.
The lubricant recommended can be used both for gears and spindles. If a high-grade spindle lubricant is to be used, we recommend Klueberplex GE 11-680.
For special conditions (e.g. higher temperatures) we recommend the lubricants specified in the enclosed technical manual.

In case of possible dirt accumulation in or damage of the spindle, expansion bellows or spring steel spirals must beused to protect thespindle. For oil-lubricated gears please ask for a special service manual.

If you order spare parts the gear specifications marked on the type plate must be provided.

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# Critical compressive force

Slender spindles subjected to compression are liable to buckle laterally. Befor defining the permissible compressive force acting on the spindle the safty factors applying to the lifting equipment must be taken into account.

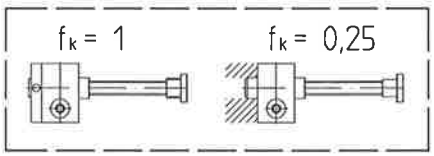
F (kN) = axial force

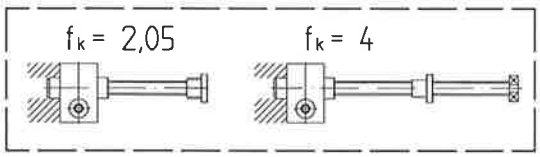
$f_k$ = correction facto taking into account type of spindle bearing arrangement

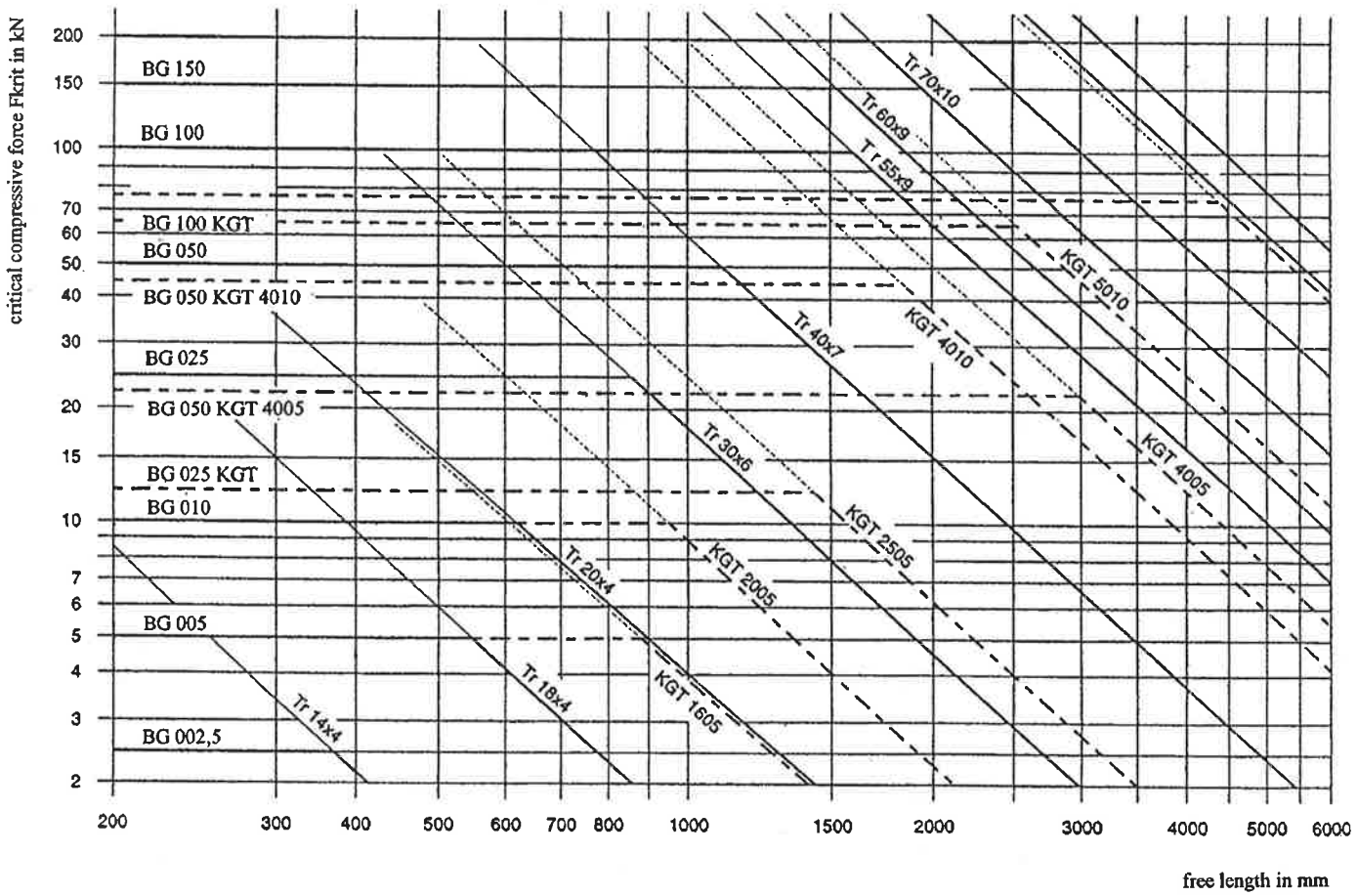
$F_{krit}$ (kN) = critical compressive force depending on free length L.

s = safty factor depends one use usual values between 3 and 6

$$F \leq f_k \times F_{krit} \times \frac{1}{s}$$



# Additional forces acting on the spindle gear

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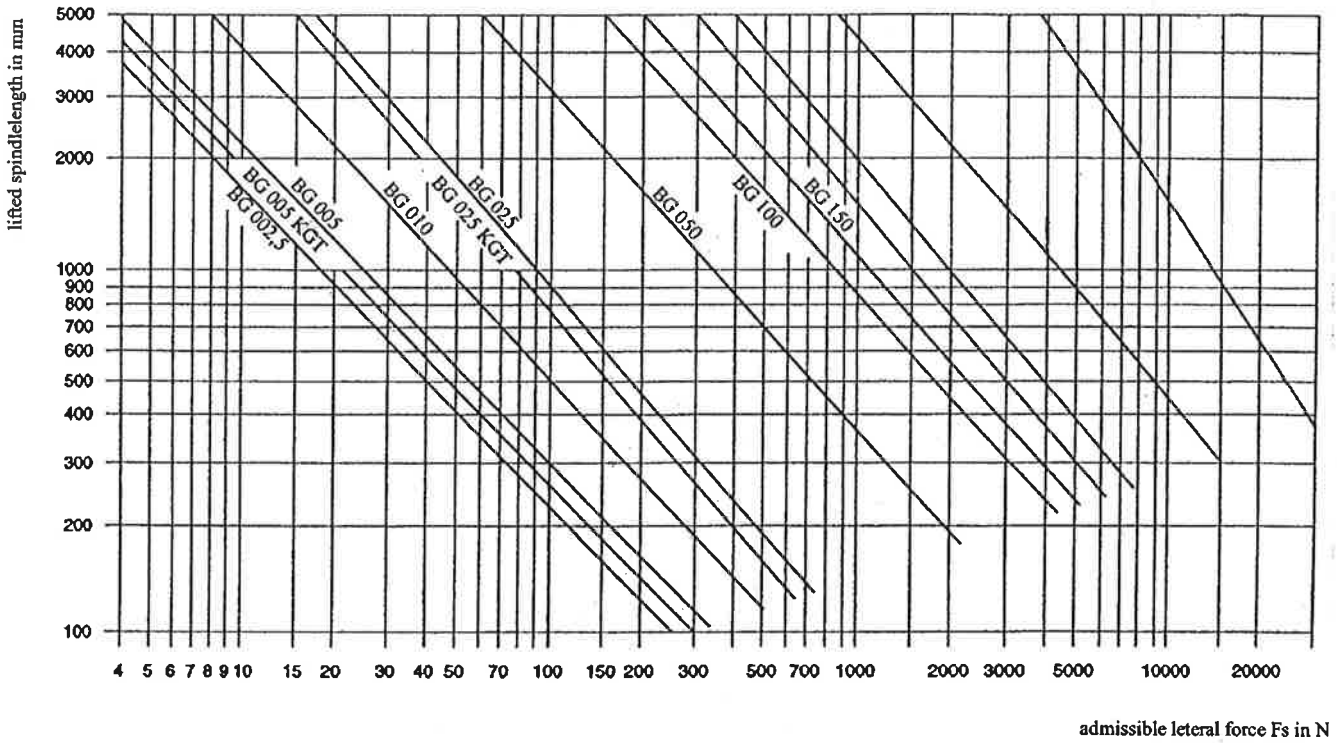
## Lateral forces

When determining the lateral force acting on the spindle, possible forces resulting from the spindle moment $M_{sp}$ and, if the spindle is mounted horizontally, the dead weight must be taken into account.
The diagram below illustrates the maximum permissible lateral force $F_s$ depending on the free spindle length without any additional lateral guide.




## Spindle torque

The Spindle torqe $M_{sp}$ is the torque acting on the various parts of the equipment via the spindle ends 3,4,6 or the running nut. The spindle torque can be calculated using the factor $f_m$ in the table below.

F (kN) = axial force

M (Nm) = torque of the elevating screw

$f_M$ = conversion factor including screw geometry and friction. The lower value applies under normal lubrication conditions, the higher value in case of dry friction and static friction.

$$F \times f_M = M_{sp}$$

| | BG 2,5 | BG 5 | BG 10 | BG 25 | BG 50 | BG 100 | BG 150 |
|---|---|---|---|---|---|---|---|
| $f_M$ | 1,1.....2,6 | 1,5.....3,1 | 1,6.....3,4 | 2,4.....5,1 | 3,0.....6,8 | 4,0.....9,3 | 4,3.....10,1 |

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## Maximum driving torque

If the spindle gear is locking due to an obstacle, the maximum torques illustrated in Table 1 can still be picked up by the toothing at the transmission shaft.

In elevating equipment with serial spindle elevating gears the spindle gear next to the drive can transmit this moment via the transmision shaft.

| | BG 2,5 | BG 5 | BG 10 | BG 25 | BG 50 | BG 100 | BG 150 |
|---|---|---|---|---|---|---|---|
| $M_{T\ max}$ (Nm) | 1,5 | 3,4 | 7,1 | 18 | 38 | 93 | 148 |

Tab. 1

## Forces and moments acting on the transmission shaft

If the spindle gears are driven via belts or chains, care must be taken to ensure that the arising thrust force is kept at a tolerable level. This thrust force is caused by the fact that the equipment is driven via a clutch not free from lateral force.

In this case Table 2 applies

In the worst case quick wear may occur, due to bending of the worm shaft the worm may be lifted from the worm wheel, which must be avoided.

| | BG 2,5 | BG 5 | BG 10 | BG 25 | BG 50 | BG 100 | BG 150 |
|---|---|---|---|---|---|---|---|
| $F_{r\ max}$ (kN) | 0,07 | 0,1 | 0,2 | 0,3 | 0,5 | 0,8 | 0,8 |

Tab. 2

## Required speed of the driving motor

The required speed of the driving motor is calculated from the proposed elevating speed, spindle gear ratio and the gear ratio of the transmission elements (e.g. bevel gears).
There may be serveral possibilities to reach a specific elevating speed.

## Choosing the driving motor

By determining the driving torque and choosing the speed the driving motor can be defined.
After chossing the driving motor the elevating equipment must be tested to avoid overload of the spindle gears or the transmission elements.
In elevating equipment with several spindle lifting gears uneven loading of the individual spindle gears may lead to overstrain.
To avoid this, elevating equipment should be protected with safety switches or torque-limited clutchs.
Also, spindle gears should not be subjected to excessive vibration because the function of the automatic lock may no longer be guaranteed in such case. To avoid accidents brakes or brake motors shoud be integrated in the elevating equipment.

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# Additional forces acting on the spindle gear

## Required driving torque of a spindle gear

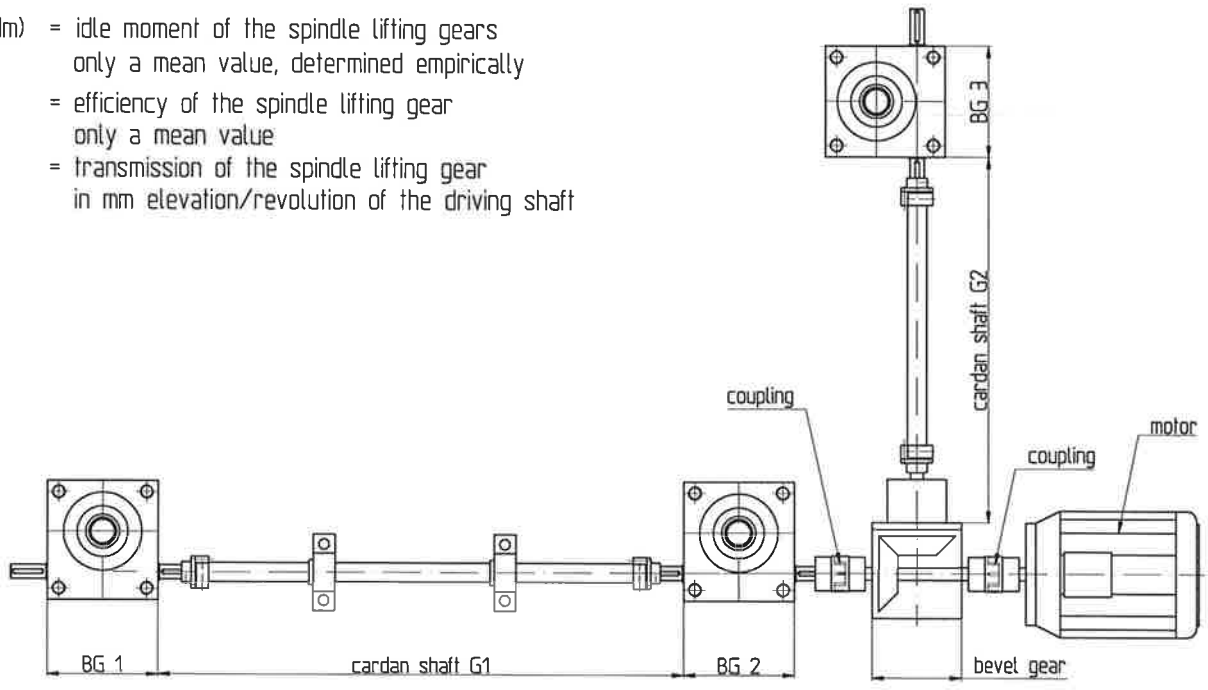
The required driving torque of a spindle gear is calculated from the axial load resting on the spindle, the transmission and the efficiency. Please bear in mind that the starting moment may be higher than the moment tequired during operation.
This applies particularly to spindle gears after a long standstill and to low-efficiency gears.

## Required driving torque of spindle elevating equipment

The required driving troque of spindle elevating equipment is calculated from the driving torques of the individual spindle gears, taking the arising friction losses in the transmission elements (clutches, propeller shaft, bevel gears,...) into account.
It is helpful illustrate the flux of forces in a sketch.

$F$ (kN) = axial force
$M_T$ (Nm) = required driving torque of the spindle lifting gear at the driving shaft
$M_0$ (Nm) = idle moment of the spindle lifting gears only a mean value, determined empirically
$\eta$ = efficiency of the spindle lifting gear only a mean value
$\frac{P}{i}$ = transmission of the spindle lifting gear in mm elevation/revolution of the driving shaft

$$M_T = \frac{F}{2 \times \Pi \times \eta_{G1}} \times \frac{P}{i} + M_0$$




$$M_{driving\ motor} = M_{T\ BG1} \times \frac{1}{\eta_{G1}} + M_{T\ BG2} + M_{T\ BG3} \times \frac{1}{\eta_{G2}} \times \frac{1}{\eta_K}$$

$M_{T\ BG1}$ = required driving torque spindle gear
$\eta_{G1}$ = efficiency cardan shaft G1. Value around 0,75 to 0,95 depending on the number of pedestal bearings
$\eta_K$ = efficiency bevel gear (only in case of flux via toothing, here between cardan shaft G1 and motor) value around 0,9

# Questionnaire

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COMPANY. . . . . .
ADDRESS. . . . . .
NAME. . . . . Dept. . . . . Phone. . . . . Fax. . . . . .

**To be able to prepare a proposal meeting your specific demands, please provide us with the following information:**

In which systems are the lifting elements to be used?

. . . . . .
Number of systems . . . . . .
Number of lifting elements per system . . . . . .

## AXIAL LOAD

| | | | | | | |
|---|---|---|---|---|---|---|
| per system | pressure | dynamic . . . . . | kN | tension | dynamic . . . . . | kN |
| | | static . . . . . | kN | | static . . . . . | kN |
| per spindle | pressure | dynamic . . . . . | kN | tension | dynamic . . . . . | kN |
| | | static . . . . . | kN | | static . . . . . | kN |

Type of buckling load according to Euler I□ , II□ , III□ oder IV□

## OPERATING CONDITIONS

Effective stroke . . . . . mm
Side forces acting. . . . . kN
Lifting speed desired. . . . . mm/min
Mounting of spindle . . . . . vertically/horizontally
Ambient temperature . . . . . °C
Duty cycle/load conditions per 10min . . . . . .
per hour . . . . . .
Distance per alternation of load . . . . . mm

## FOR WHICH PARTS DO YOU WISH TO RECEIVE OUR OFFER?

**Spindle lifting element with lifting spindle:**
Basic type . . . . . O oder U
Spindle nose. . . . . .0/1/2/3/4/5/6

**Spindle lifting element with rotating spindle and traveling nut:**
Travling nut type. . . . . O oder U
Spindle nose. . . . . 0/1/2

**Expansion bellows**. . . . . yes/no
**Bevel gear box** . . . . . yes/no
**Elastic cardan shafts**. . . . . yes/no
**Couplings** . . . . . yes/no
**Pedestal bearings**. . . . . yes/no
**Motor; voltage**. . . . . **frequency**. . . . . **system of protection** . . . . . .
**Limit stop** . . . . . yes/no
**Crank handle, handwheel** . . . . . yes/no
**Fastening strips** . . . . . yes/no
**Cardan plate** . . . . . yes/no
**Safety nut**. . . . . yes/no
Other. . . . . .

# Examples for arrangements

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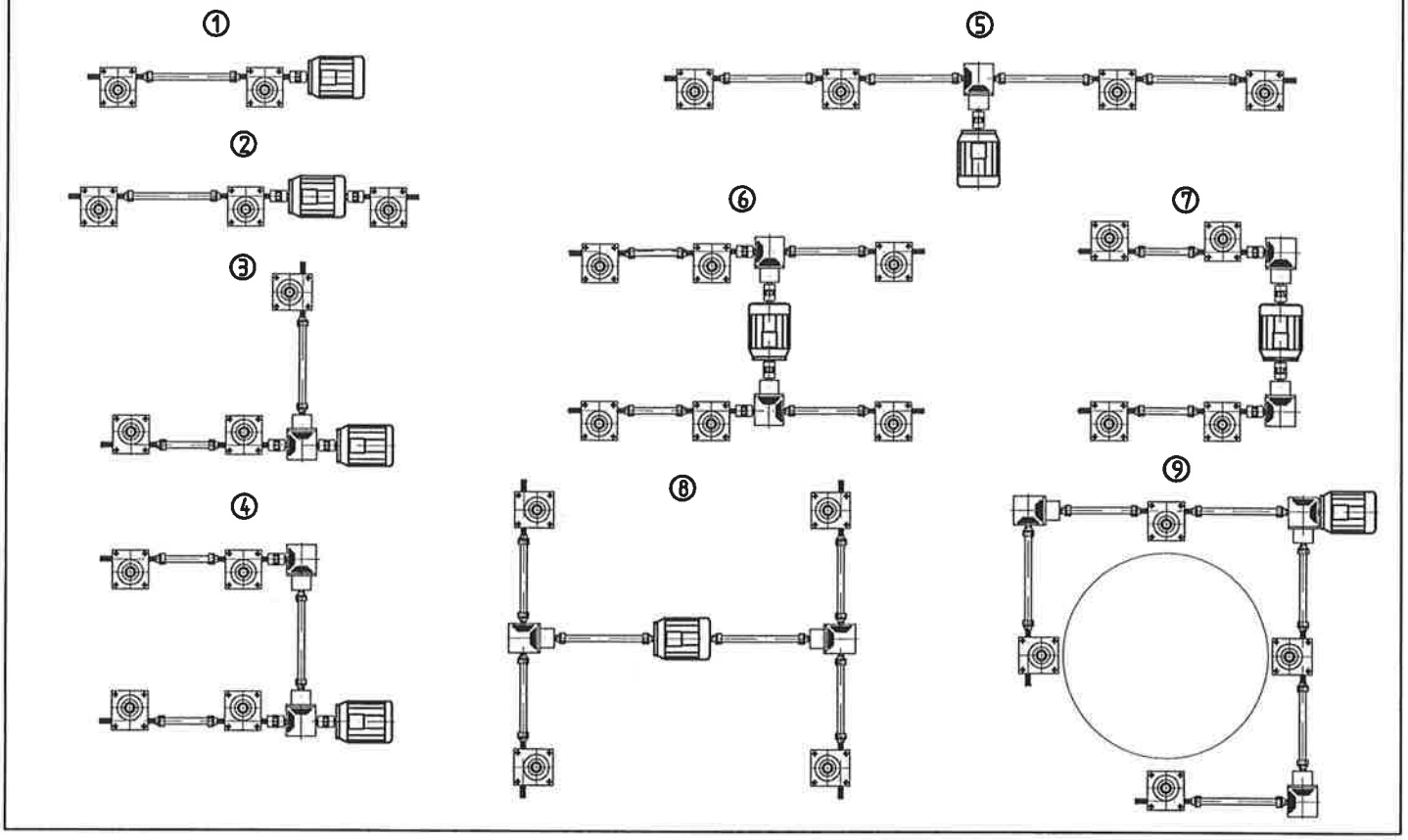


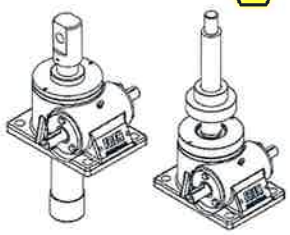

Please provide us with a sketch on the desired arrangement as shown above or according to your own ideas.
Please enter the distance from spindle to spindle and possibly lateral guidings into the sketch.
If you wish to receive an offer on spindle lifting elements actuated by multi-thread spindles or ball screw spindles, or if stainless material is desired, please let us know, too.

## Sketch

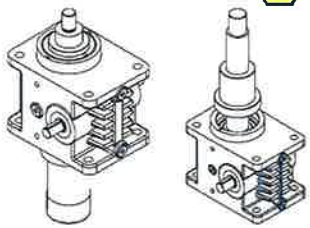
# Product overview 03/2015

Eichengasse 36, A-2551 Enzesfeld, Tel.: +43 (0) 2256 81287 - 00, Fax.: +43 (0) 2256 81287 - 95, office@enzfelder.at, www.enzfelder.at

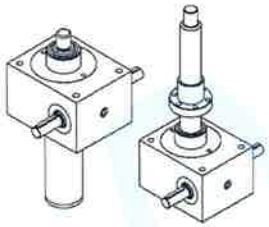
## SG
Screw jack
Classic



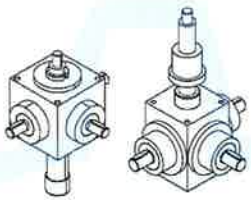
## HSG
High performance-
Screw jack



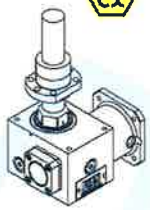
## BG
Screw jack
Cubic



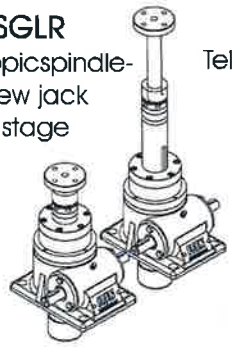
## SHG
Quick-lifting
screw jack



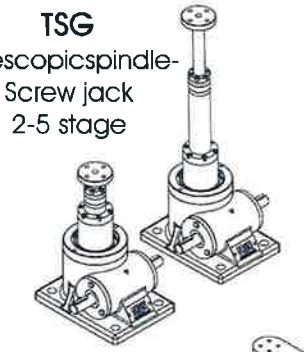
## SH
Servo lifting
gear



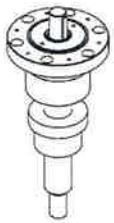
## TSGLR
Telescopicspindle-
Screw jack
2-stage



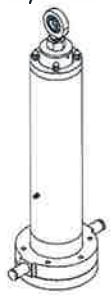
## TSG
Telescopicspindle-
Screw jack
2-5 stage



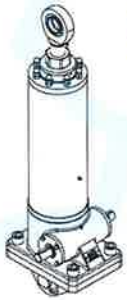
## SLA
Spindlebearing



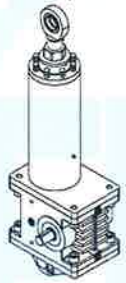
## SEZ
Spindlebearings-
Cylinder



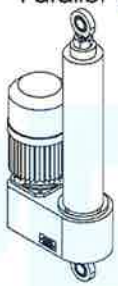
## ELZ
Electric cylinder



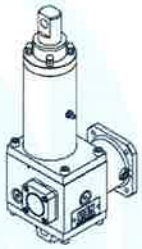
## HELZ
High performance-
Elektric cylinder



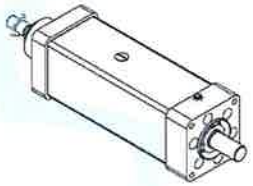
## ELZP
Electric cylinder
Parallel



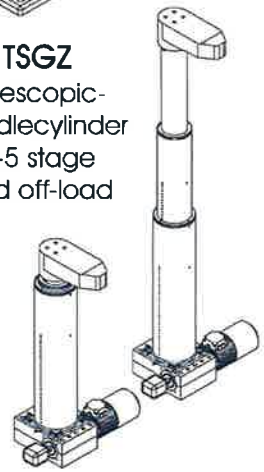
## SHELZ
Servo electric-
cylinder



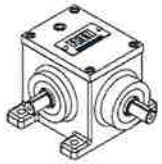
## EPNEU
Spindle-
Elektric cylinder



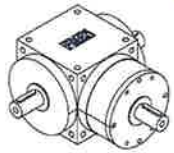
## TSGZ
Telescopic-
spindlecylinder
2-5 stage
And off-load



## K
Bevel gear
Type K

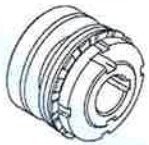


## H
Bevel gear
Type H



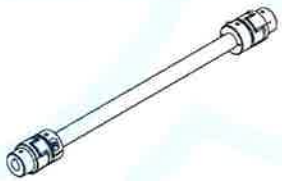
## R / GS
Elastic / backlash-free
Coupling

## RT
Slip hub

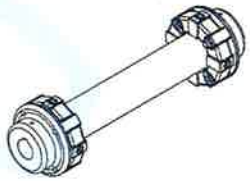


## RK
Slip coupling

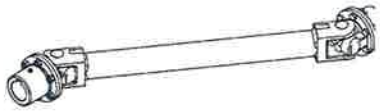
## ZR
FREN
Connecting shaft



## G / GX
Elastic
Connecting shaft

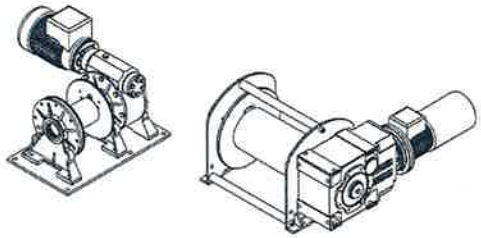


## Cardan shaft



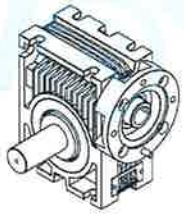
## HT
Lifting table
mechanic / hydraulic

## SW
Rope winche

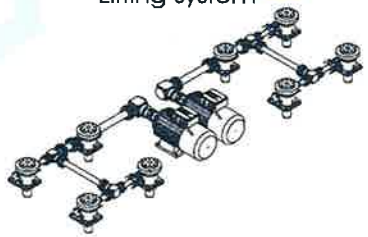


## PLG
Planetary gear

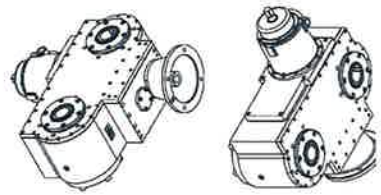
## uniCe
Worm gear



## HA
Lifting system



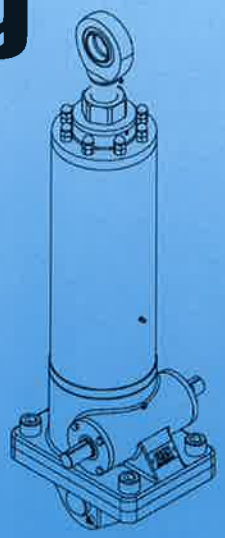
## Special gear



# ENZFELDER GmbH

## Power transmission- and lifting engineering

## Electric cylinder
## Type ELZ



# History

**1969** Mr. Enzfelder established a job shop in Vienna. Equipped with some machinery, the Enzfelder Company manufactured machine parts according to drawings.
Within one year the number of employees rose to 3. The Enzfelder company started manufacturing threaded spindles and nuts according to drawings. Then the range of manufacturing was enlarged by toothed wheels, screw wheels and endless screws according to drawings.

**1974** The company including the complete manufacture was relocated to Enzesfeld.

**1975** The manufacture of spindle gears was launched. The company's experience in the manufacture of trapezoid-threaded spindles, nuts, worm gear pairs and casings was a valuable basis for the construction. After many tests, the serial production of spindle gears was launched one year later. The result was a product characterized by a first-rate price-performance ratio. The product was distributed by dealers all over Europe.

**1981** The planning and construction of small hydropower plants was launched to replace diesel generators. Environmental protection was not really a topic at that time, however, and the production was stopped in 1986.

**1989** The Enzfelder GesmbH company replaced the Franz Enzfelder Company.

**1990** Scissor-type lifting platforms and cable winches were added to the delivery program.

**1991** Resilient spacer shafts were tested and added to the production range. At the same time, the telescopic spindle gear was developed. A patent for this principle was applied for and issued.

**1993** The sale of spindle gears under their own name was launched and presented for the first time at the Hannover industrial fair. We have been approached with a variety of tasks and have provided solutions according to the customers' needs ever since.

**1994** In cooperation with our customers we produced the first bevel gears to specification.

**1995** Spindle bearing arrangements were designed and included in the standard program.

**1996** The Enzfelder company produced planet gear to specification for the first time.

**1998-1999** The standard programs were enlarged. Additionally, bevel gears are manufactured in a standard design.

**2000** The development of electric cylinders in standard design for very high loads (5-1000kN) was started. At the same time the telescopic spindle gears were refined to save the customer the guiding and locking devices. Since that time we have been able to offer telescopic cylinders, too.

**2001** The development of electric cylinders was completed, and these cylinders were added to the standard program.
At the same time the development and fabrication of cubic spindle gears for lifting loads between 2.5 and 150kN was started. These gears were added to the standard program as well.

**2002** were extended and optimized the series of the electric cylinders. Further we provide an electronic 2D-3D product catalogue of the spindle gears, it makes it possible to integrate our products into your system.

**2002-2003** We putted our new assembling and packaging hall, beside the manufacturing hall, in operation

**2003** We increased our machinery by buying a CNC machine tool with 7 axes, brand AXA. That new CNC machine allows a precise machining of the screw jack housings in only two clamping.

**2003-2004** The engineering started to use new 3-D CAD software, Solid Edge. That software enables our customers to integrate easily our drawings.

**2004** We opened a sales office in France.

**2004-2005** We started to design the high performance screw jacks HSG and we created a range of 10 different sizes.

**2005** First participation to an exhibition in France: INDUSTRIE 2005 at Lyon.

**2005-2006** We started to design a new range of telescopic screw jacks TSGLR. Today, these new telescopic screw jacks, with a more compact design, are used in the stage industry, in the aircraft industry, on train lifting equipments and in machine building.

**2008** We replaced the tread grinding machine by a new CNC thread grinding machine, brand Mikromat.

**2008-2009** transmission program is certified to ATEX

**2009-2010** beginning of the series production of Quick-lifting screw jacks SHG

**2010** Development of the transmission range Servo lifting gear (backlash & game adjustable)
Expand our global market with traders in Australia

**2011** development Servo lifting electric cylinder SHELZ (Servo lifting gear with cylindrical structure) and the beginning of the ELZP Series Electric cylinders parallel for Industry sector applications.

**2012** acquisition of the product group UniCe worm gear, helical worm geared motors, couplings, torque limiters and slip clutches. Expansion screw jacks cubic BG up to size for 1000kN

**2013-2014** revision of the telescopic spindle cylinder TSGZ the new cost-optimized design.
Development of product group Electric PNEU, electric cylinder with ball screw, stainless version in hygienically optimized design with mounting dimensions, speeds and forces such as pneumatic cylinder.

**2014** first Quick-lifting screw jacks with cylindrical structure can be delivered SHGZ = Quick-lifting electric cylinder

In recent years, customer problems are solved in the drive and lifting technology from us. Depending on the application, we developed the optimal solution and made with the best possible price / performance ratio.

Issue 01-2015

# Content of Catalog

**ENZFELDER** GMBH
**Power transmission- and lifting engineering**
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FREN Electric cylinders are an advancement of our standard program. By thought construction is an electrical cylinder in the situation also components out to be taken up. The lift link inside electrical cylinders is protected by the tubing system from any damage by environmental influences and is approximately to rotate secured.

In the FREN Electric cylinder there is a robust worm gear pair driving a trapezoid thread spindle. The gear box is made of nodular graphite cast iron 50 fit high loads and meeting high safty standards. The worm is hardened and ground and running on tapered roller bearings. The worm wheel is made of high-strength material which is particularly resistant to abrasion; it is mounted between deep groove ball thrust bearings. The thrust tube consists of steel and is outside polished and chromium plated. The spindle ends can be supplied after customer's request also stainless.

The ELZ5 to ELZ350 line ist the worm gear alternatively filled with grease or oil and the tubing system is lubricated with grease on delivery and fit for operating temperatures ranging between -30°C and +80°C. To be increased the trapezoid thread spindle is the life span additionally coated with lubricating varnish by better fail-safe characteristics to be achieved and thus.The operating factor at maximum load is 20% per hour 30% per 10 minutes.

The trapezoid thread spindles are stand single-threas double-thread three-thread and four-thread execution. For higher demands with regard to lifting speed and operating factor we use ball screw spindles. FREN Electric cylinders are fitted with blue prime coat (RAL 5012)

**Advantages opposite hydraulic cylinders**
Exact synchronism of several lifting spindles also in case of eccentric stress
Automatic lock at standstill, consequently 100% prevention of sinking after customer's request
Synchronous actuation by motors or crank handle possible.
Precise adjustment and measuring possible
Operable in any position
Indifference to temperature over long periods
Many combinations possible thanks to standard piece parts
Large accessory assortment
High thrusts (up to 1000kN) and long strokes (up to 2500mm) feasible
No leakages

# Survey of construction modes with example for ordering

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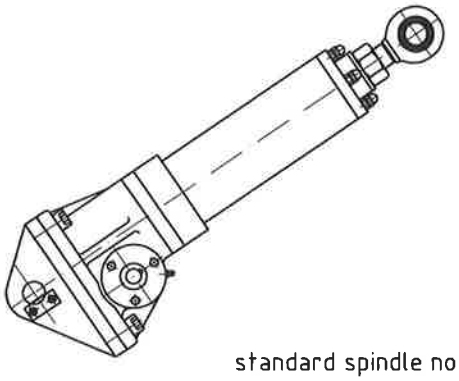

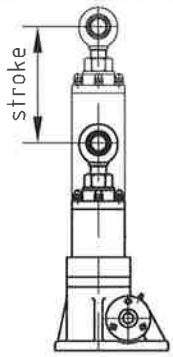


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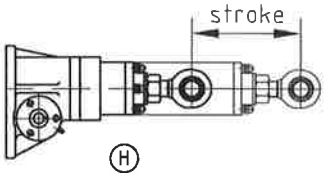
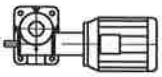



Ⓗ

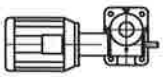
standard spindle noses

① ② ③ ④ ⑤ ⑥

motor on the right



motor on the left



no motor

standard reductions according to preselection table page 5

type designation according to preselection page 5

Electric cylinder = ELZ

**ELZ 150 - 8 - 5 - 230 - H - MR-LK**

type

reduction i

spindle nose = 1,2,3,4,5,6
special nose = So

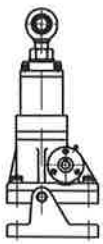
effective stroke in mm

fitting position horizontal = H
fitting position vertical = V

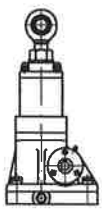
motor on the right = MR
motor on the left = ML
no motor= 00

swivelling console = SK
swivelling plate = SP
bearing console = LK
pivoting plate = GP

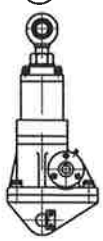
Ⓢⓚ



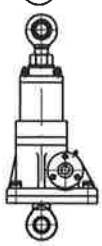
Ⓢⓟ



Ⓛⓚ



Ⓖⓟ



Above example for ordering:
Electric cylinder type 150, reduction 8:1, spindelnose 5, stroke 230, mountet horizontal, with motor mounted on the right and bearing console

additionally available options:

ball bearing spindel
limit stop
stainless execution
safty nut

three-phase A.C. motor with or without brake
d.c. motor
gear motor

impulse transmitter
overload clutch
oil lubrication

the required options must be added to the order ID or marked in the questionnaire.

# Selection of Electric cylinder with trapezoid thread spindle

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For the correct selection of spindle gears the following data are of decisive importance:

| | | |
|---|---|---|
| 1.) load | [kN] | |
| 2.) lifting speed | [m/min] | |
| 3.) operating cycle | [%/10min] [%/hour] | |
| 4.) spindle length (buckling) | [mm] | |
| 5.) tensile- or pressure load | [kN] | |
| 6.) ambient temperature | [°C] | |
| 7.) fitting length (please indicate when ordering) | [mm] | If you use the questionnaire on page 33 |
| 8.) critical speed of the spindle | [min-1] | please provide the data available. |

How to proceed in the selection: on the basis of the desired load data (in kN) a suitable type of gear is selected from the preselection table below.

## Preselection Table

### Single-thread spindle actuated Electric cylinders

| Type | ELZ 5 | | ELZ 15 | | ELZ 30 | | ELZ 50 | | ELZ 100 | | ELZ 150 | | ELZ 200 | | ELZ 300 | | ELZ 350 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| rated power kN | 5 | | 15 | | 30 | | 50 | | 100 | | 150 | | 200 | | 300 | | 350 | |
| size of spindle | Tr 20x6 | | Tr 24x6 | | Tr 30x6 | | Tr 40x9 | | Tr 55x12 | | Tr 60x12 | | Tr 65x12 | | Tr 90x16 | | Tr 100x16 | |
| gear reduction | 10:1 | 20:1 | 6:1 | 25:1 | 6:1 | 24:1 | 6:1 | 24:1 | 8:1 | 24:1 | 8:1 | 24:1 | 8:1 | 24:1 | 10⅔:1 | 32:1 | 10⅔:1 | 32:1 |
| length of stroke per rotation in mm | 0,6 | 0,3 | 1 | 0,24 | 1 | 0,25 | 1,5 | 0,375 | 1,5 | 0,5 | 1,5 | 0,5 | 1,5 | 0,5 | 1,5 | 0,5 | 1,5 | 0,5 |
| torque at rated power Nm | 1,65 | 1,14 | 7,7 | 3,18 | 17,68 | 7,96 | 39,8 | 17,05 | 88,42 | 44,21 | 143,24 | 77 | 199 | 22,6 | 311,3 | 170,5 | 397,8 | 214,3 |
| efficiency in % | 29 | 21 | 31 | 18 | 27 | 15 | 30 | 17,5 | 27 | 18 | 25 | 15,5 | 24 | 15 | 23 | 14 | 21 | 13 |
| max. RPM | 2800 | | 2800 | | 2800 | | 1800 | | 1800 | | 1500 | | 1500 | | 1000 | | 1000 | |
| max. lifting speed m/min | 1,68 | 0,84 | 2,8 | 0,67 | 2,8 | 0,7 | 2,7 | 0,67 | 2,25 | 0,75 | 2,25 | 0,75 | 2,25 | 0,75 | 1,5 | 0,5 | 1,5 | 0,5 |
| max. driving power in kW at 20% duty cycle | 0,18 | | 0,35 | | 0,6 | | 1,2 | | 2,1 | | 2,8 | | 3,9 | | 5,2 | | 6,2 | |
| max. driving power in kW at 10% duty cycle | 0,23 | | 0,46 | | 0,8 | | 1,6 | | 2,8 | | 3,8 | | 5,1 | | 6,9 | | 8,3 | |
| weight, ELZ excl. lifting element in kg | -- | | -- | | -- | | -- | | -- | | -- | | -- | | -- | | -- | |
| 100mm spindle in kg | 0,2 | | 0,3 | | 0,43 | | 0,8 | | 1,5 | | 1,8 | | 2,15 | | 4,2 | | 5,2 | |
| kg of grease contained in spindle gear | 0,05 | | 0,1 | | 0,2 | | 0,35 | | 0,6 | | 0,8 | | 1,2 | | 1,7 | | 2,2 | |
| catalog page | 7 | | 8 | | 10 | | 11 | | 12 | | 13 | | 14 | | 16 | | 17 | |

### Double-thread spindle actuated Electric cylinders

(no longer self-locking - braking motor must be used!)

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| rated power kN | 4 | | 12 | | 24 | | 40 | | 80 | | 120 | | 150 | | 220 | | 280 | |
| size of spindle | Tr 20x12P6 | | Tr 24x12P6 | | Tr 30x12P6 | | Tr 40x18P9 | | Tr 55x24P12 | | Tr 60x24P12 | | Tr 65x24P12 | | Tr 90x32P16 | | Tr 100x32P16 | |
| length of stroke per rotation in mm | 1,2 | 0,6 | 2 | 0,48 | 2 | 0,5 | 3 | 0,75 | 3 | 1 | 3 | 1 | 3 | 1 | 3 | 1 | 3 | 1 |
| max. lifting speed m/min | 3,36 | 1,68 | 5,6 | 1,34 | 5,6 | 1,4 | 5,4 | 1,35 | 4,5 | 1,5 | 4,5 | 1,5 | 4,5 | 1,5 | 3 | 1 | 3 | 1 |
| torque at rated power Nm | 1,96 | 1,32 | 8,9 | 3,53 | 19,6 | 8,3 | 45,5 | 19,1 | 95,5 | 51 | 159,2 | 83 | 204,6 | 108,52 | 300 | 159,2 | 417,7 | 222,8 |
| efficiency in % | 39 | 29 | 43 | 26 | 39 | 23 | 42 | 25 | 40 | 25 | 36 | 23 | 35 | 22 | 35 | 22 | 32 | 20 |

Read off the dimensioned sketch and the performance table on the corresponding page of the catalog:

1.) whether the dimensions of gear and spindle fit into your system.
2.) which gear reduction must be selected for the desired lifting speed
(for higher lifting speeds the use of a double-thread spindle may be necessary).
3.) whether the power required for the desired lifting speed is admissible.
4.) whether under pressure load the critical buckling force is not exceeded.
5.) whether the critical revolutions/min of the spindle are not exceeded.
6.) If one of these requirements cannot be met the type next in size must be chosen.
7.) If point 6 is not sufficient, choose one of the types next in size or ask for special types (questionnaire see pages 33-34)!

# Seletion of Electric cylinder with ball bearing spindle

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For the correct selection of spindle gears the following data are of decisive importance:

| | | |
|---|---|---|
| 1.) load | [kN] | |
| 2.) lifting speed | [m/min] | |
| 3.) operating cycle | [%/10min] [%/hour] | |
| 4.) spindle length (buckling) | [mm] | |
| 5.) tensile- or pressure load | [kN] | |
| 6.) ambient temperature | [°C] | |
| 7.) fitting length (please indicate when ordering) | [mm] | If you use the questionnaire on page 33 |
| 8.) critical speed of the spindle | [min-1] | please provide the data available. |

How to proceed in the selection: on the basis of the desired load data (in kN) a suitable type of gear is selected from the preselection table below.

## Preselection Table

### Electric cylinder with ball bearing spindle

(no longer self-locking - braking motor must be used!)

| Type | ELZ 5 | | ELZ 15 | | ELZ 30 | | ELZ 50 | | ELZ 100 | | ELZ 150 | | ELZ 200 | | ELZ 300 | | ELZ 350 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| rated power kN | 21,8 | | 27 | | 58 | | 82,6 | | 106,8 | | 210,8 | | 210,8 | | 269 | | 336 | |
| size of spindle | KGT 2005 | | KGT 2505 | | KGT 3210 | | KGT 4010 | | KGT 5010 | | KGT 6310 | | KGT 6310 | | KGT 8010 | | KGT 10010 | |
| gear reduction | 10:1 | 20:1 | 6:1 | 25:1 | 6:1 | 24:1 | 6:1 | 24:1 | 8:1 | 24:1 | 8:1 | 24:1 | 8:1 | 24:1 | 10⅔:1 | 32:1 | 10⅔:1 | 32:1 |
| length of stroke per rotation in mm | 0,5 | 0,25 | 0,834 | 0,2 | 1,67 | 0,416 | 1,67 | 0,416 | 1,25 | 0,416 | 1,25 | 0,416 | 1,25 | 0,416 | 0,938 | 0,313 | 0,938 | 0,313 |
| torque at rated power Nm | 3,6 | 2,48 | 6,4 | 2,53 | 27,5 | 11,3 | 39,13 | 16,1 | 37,94 | 19,7 | 76,25 | 42,4 | 76,25 | 42,4 | 75,7 | 39,35 | 96,38 | 50,64 |
| efficiency in % | 48 | 35 | 56 | 34 | 56 | 34 | 56 | 34 | 56 | 36 | 55 | 33 | 55 | 35 | 53 | 34 | 52 | 33 |
| max. RPM | 3000 | | 3000 | | 3000 | | 1800 | | 1800 | | 1500 | | 1500 | | 1000 | | 1000 | |
| max. lifting speed m/min | 1,5 | 0,750 | 2,5 | 0,6 | 5 | 1,248 | 3 | 0,749 | 2,25 | 0,749 | 1,875 | 0,624 | 1,875 | 0,624 | 0,938 | 0,313 | 0,938 | 0,313 |
| max. driving power in kW at 20% duty cycle | 0,18 | | 0,35 | | 0,6 | | 1,2 | | 2,1 | | 2,8 | | 3,9 | | 5,2 | | 6,2 | |
| max. driving power in kW at 10% duty cycle | 0,23 | | 0,46 | | 0,8 | | 1,6 | | 2,8 | | 3,8 | | 5,1 | | 6,9 | | 8,3 | |
| weight, ELZ excl. lifting element in kg | -- | | -- | | -- | | -- | | -- | | -- | | -- | | -- | | -- | |
| 100mm spindle in kg | 0,2 | | 0,34 | | 0,56 | | 0,815 | | 1,325 | | 2,17 | | 2,17 | | 3,6 | | 4 | |
| kg of grease contained in spindle gear | 0,05 | | 0,1 | | 0,2 | | 0,35 | | 0,6 | | 0,8 | | 1,2 | | 1,7 | | 2,2 | |
| catalog page | 7 | | 8 | | 10 | | 11 | | 12 | | 13 | | 14 | | 16 | | 17 | |

### Electric cylinder wit ball bearing spindle

(no longer self-locking - braking motor must be used!)

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| rated power kN | 14,6 | | 27 | | 26,8 | | 36,4 | | 76 | | 250 | | 250 | | 322 | | 478 | |
| size of spindle | KGT 2006 | | KGT 2510 | | KGT 3220 | | KGT 4020 | | KGT 5020 | | KGT 6320 | | KGT 6320 | | KGT 8020 | | KGT 10020 | |
| length of stroke per rotation in mm | 0,6 | 0,3 | 1,67 | 0,4 | 3,33 | 0,833 | 3,33 | 0,833 | 2,5 | 0,833 | 2,5 | 0,833 | 2,5 | 0,833 | 1,875 | 0,625 | 1,875 | 0,625 |
| max. lifting speed m/min | 1,8 | 0,9 | 5 | 1,2 | 10 | 2,5 | 6 | 1,5 | 4,5 | 1,5 | 3,75 | 1,25 | 3,75 | 1,25 | 1,875 | 0,625 | 1,875 | 0,625 |
| torque at rated power Nm | 2,9 | 2 | 12,8 | 5,1 | 25,4 | 10,45 | 34,5 | 14,2 | 54 | 28 | 180,86 | 100,48 | 180,86 | 100,48 | 181,25 | 94,2 | 274,23 | 144,08 |
| efficiency in % | 48 | 35 | 56 | 34 | 56 | 34 | 56 | 34 | 56 | 36 | 55 | 33 | 55 | 35 | 53 | 34 | 52 | 33 |

Read off the dimensioned sketch and the performance table on the corresponding page of the catalog:

1.) whether the dimensions of gear and spindle fit into your system.
2.) which gear reduction must be selected for the desired lifting speed
(for higher lifting speeds the use of a double-thread spindle may be necessary).
3.) whether the power required for the desired lifting speed is admissible.
4.) whether under pressure load the critical buckling force is not exceeded.
5.) whether the critical revolutions/min of the spindle are not exceeded.
6.) If one of these requirements cannot be met the type next in size must be chosen.
7.) If point 6 is not sufficient, choose one of the types next in size or ask for special types (questionnaire see pages 33-34)!

# Electric cylinder ELZ 5

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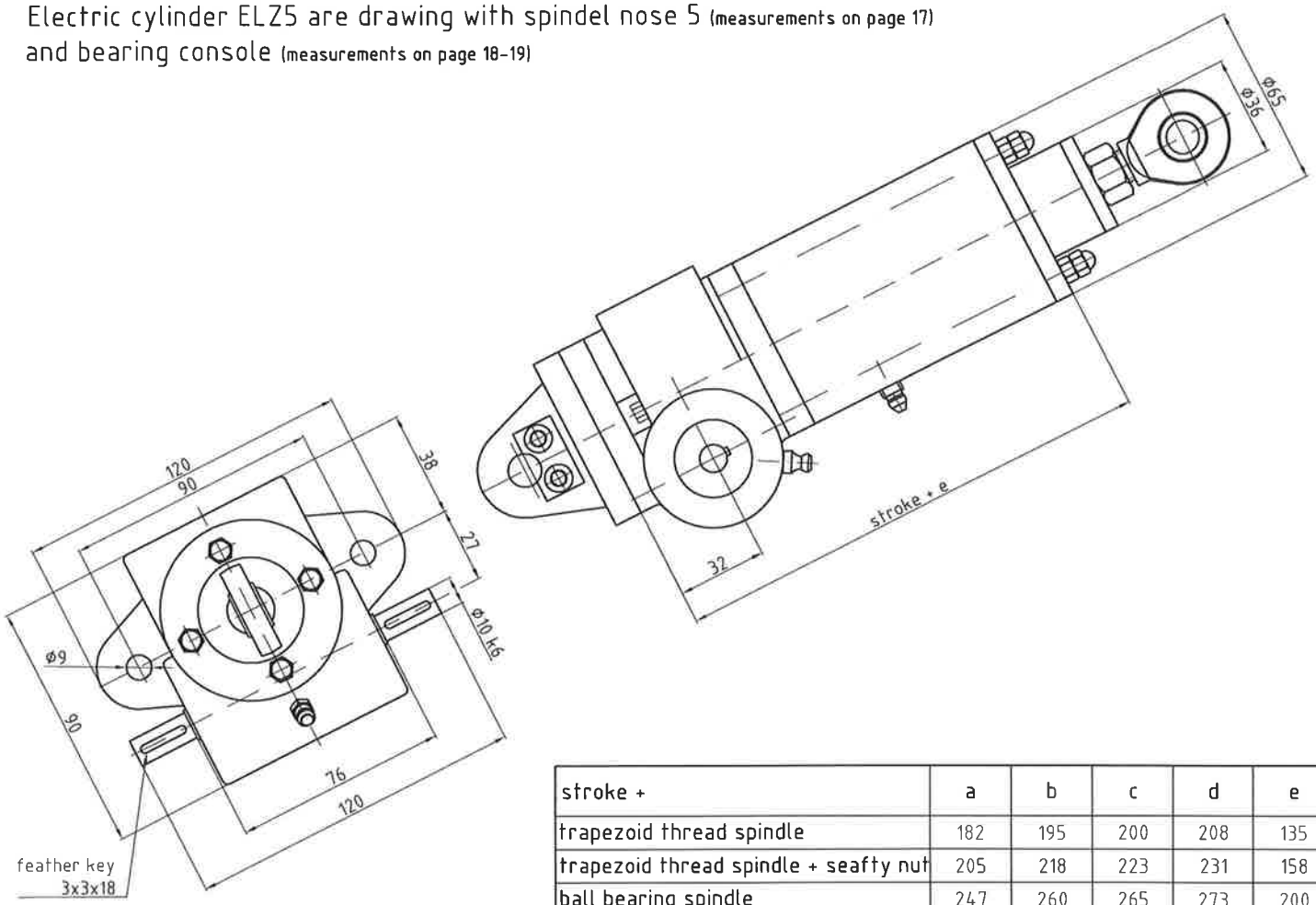
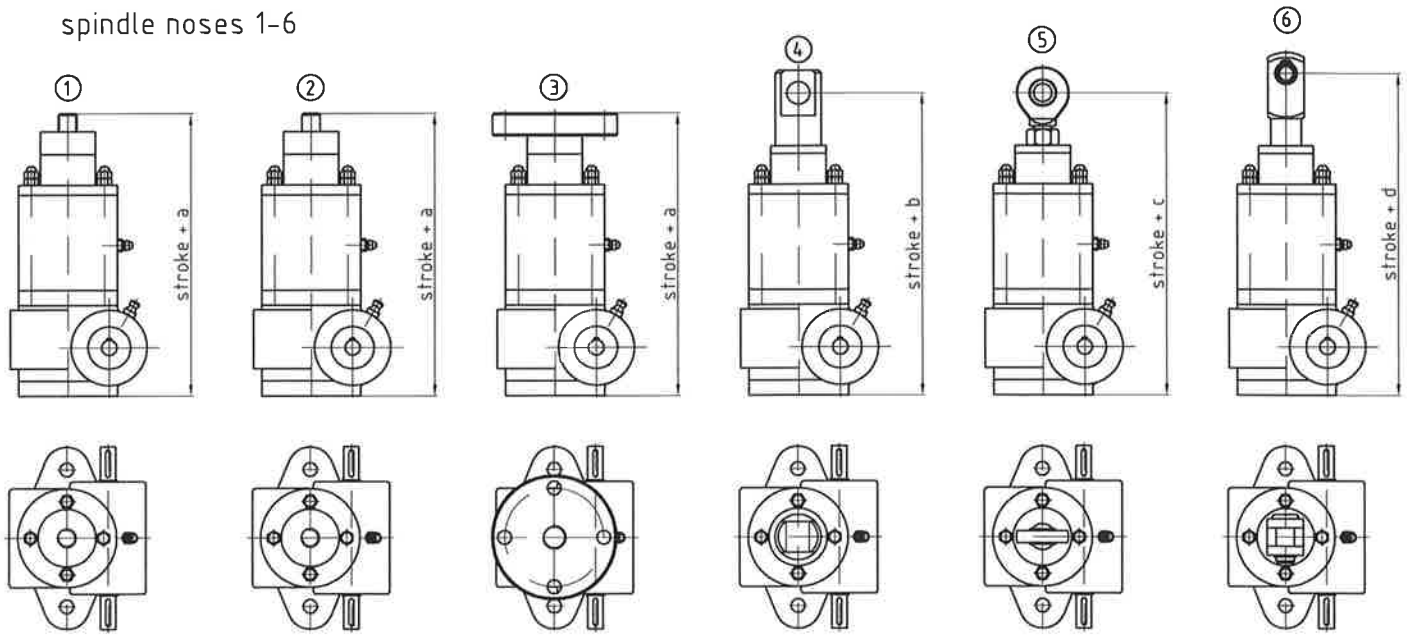
Internet: www.enzfelder.at

Electric cylinder ELZ5 are drawing with spindel nose 5 (measurements on page 17)
and bearing console (measurements on page 18-19)




| stroke + | a | b | c | d | e |
|---|---|---|---|---|---|
| trapezoid thread spindle | 182 | 195 | 200 | 208 | 135 |
| trapezoid thread spindle + seafty nut | 205 | 218 | 223 | 231 | 158 |
| ball bearing spindle | 247 | 260 | 265 | 273 | 200 |
| ball bearing spindle + safety nut | 270 | 283 | 288 | 296 | 223 |

spindle noses 1-6




spindel noses 90° turned are possible

Special executions on request are possible
Subjects to measurements changes, representation not abligatory

# Electric cylinder ELZ 15

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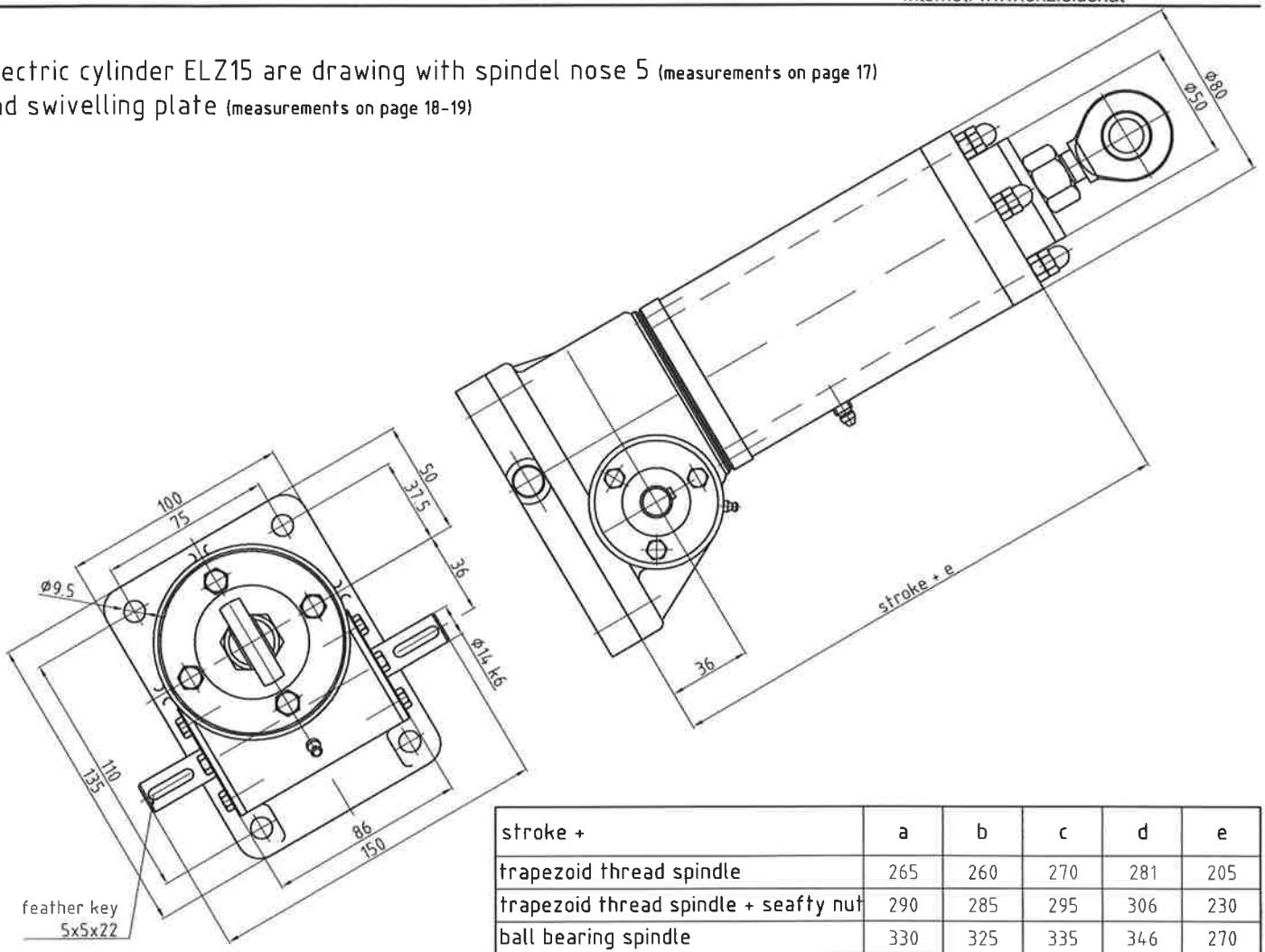
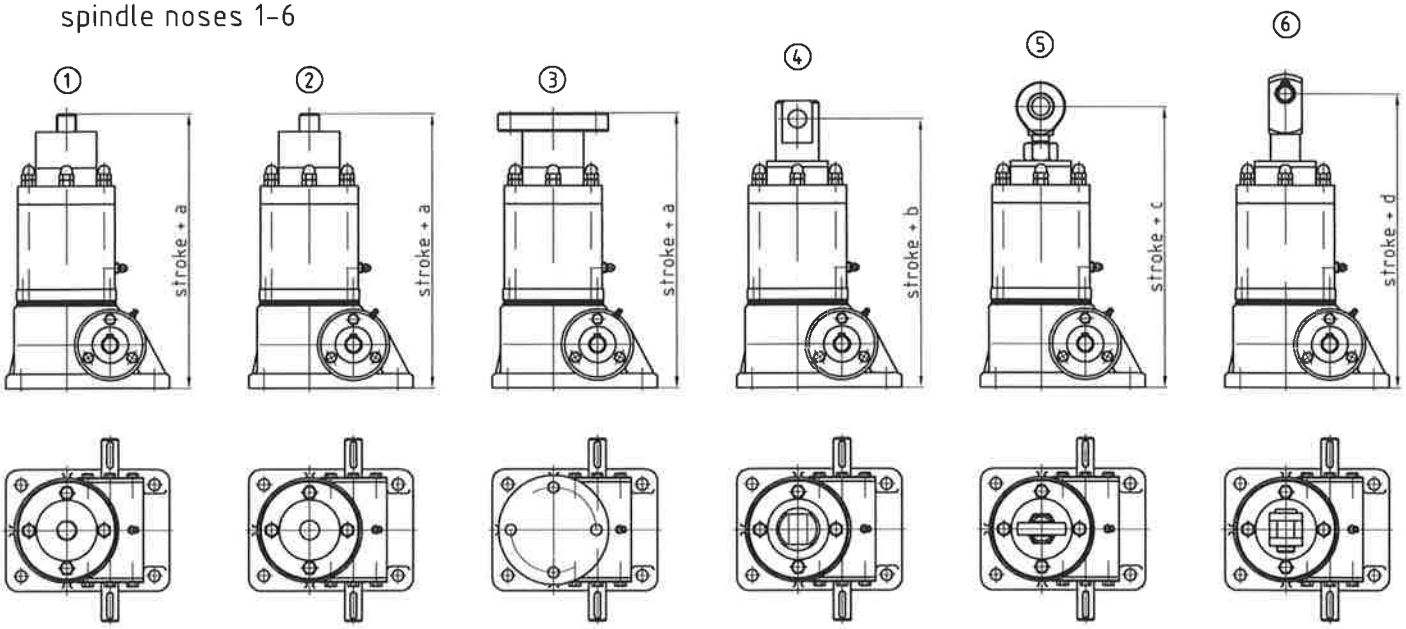
Electric cylinder ELZ15 are drawing with spindel nose 5 (measurements on page 17)
and swivelling plate (measurements on page 18-19)




| stroke + | a | b | c | d | e |
|---|---|---|---|---|---|
| trapezoid thread spindle | 265 | 260 | 270 | 281 | 205 |
| trapezoid thread spindle + seafty nut | 290 | 285 | 295 | 306 | 230 |
| ball bearing spindle | 330 | 325 | 335 | 346 | 270 |
| ball bearing spindle + safety nut | 355 | 350 | 360 | 371 | 295 |

spindle noses 1-6




spindel noses 90° turned are possible

Special executions on request are possible
Subjects to measurements changes, representation not abligatory

# Electric cylinder ELZ 30

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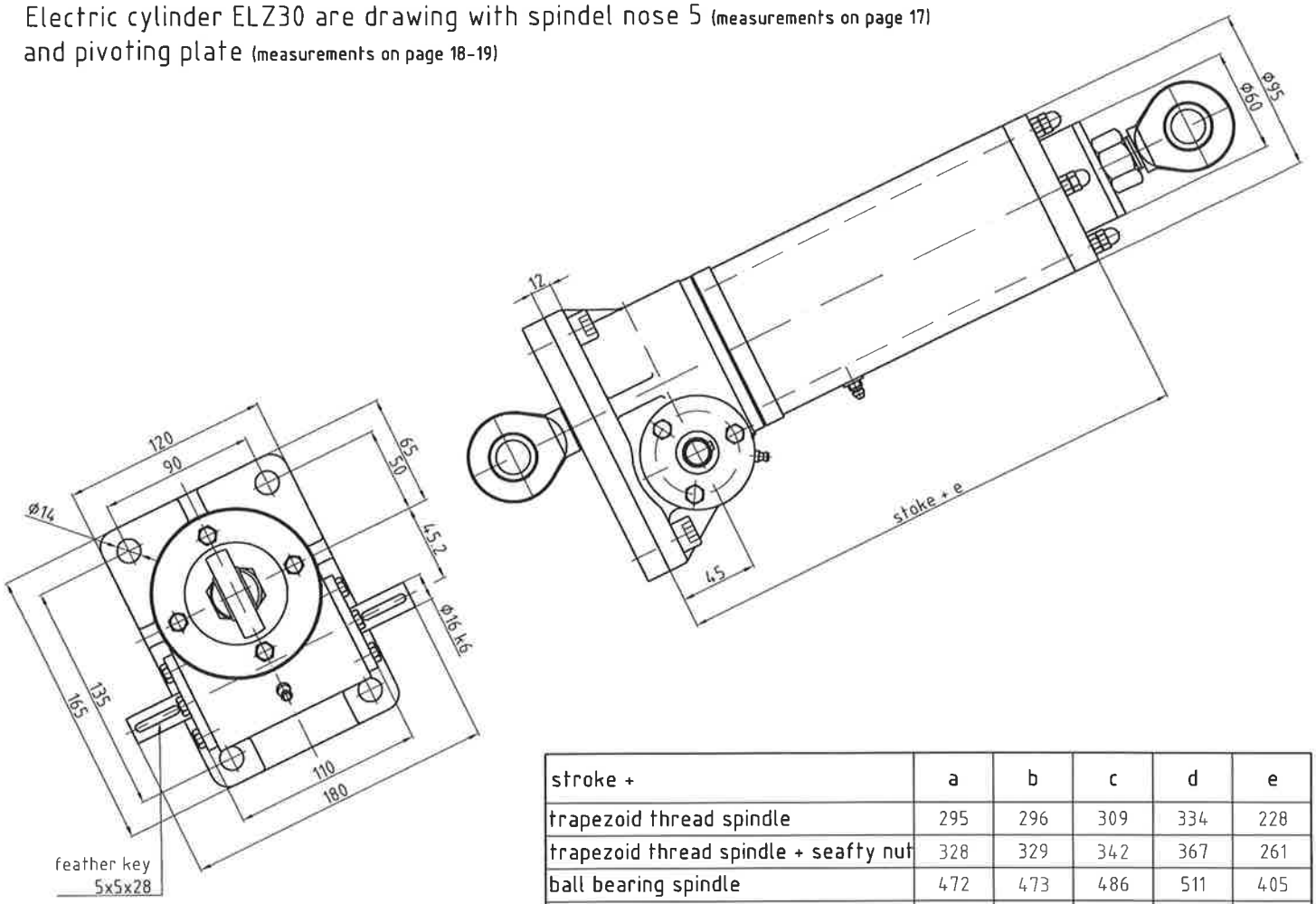
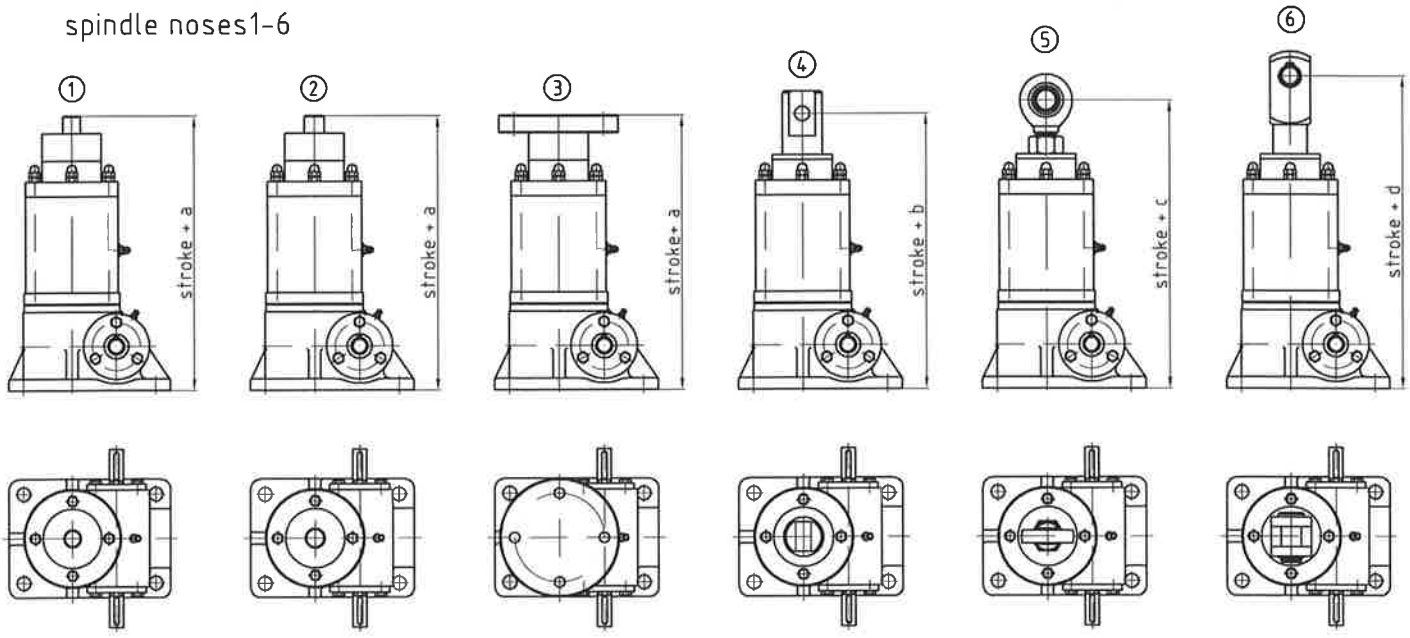
Electric cylinder ELZ30 are drawing with spindel nose 5 (measurements on page 17)
and pivoting plate (measurements on page 18-19)




| stroke + | a | b | c | d | e |
|---|---|---|---|---|---|
| trapezoid thread spindle | 295 | 296 | 309 | 334 | 228 |
| trapezoid thread spindle + seafty nut | 328 | 329 | 342 | 367 | 261 |
| ball bearing spindle | 472 | 473 | 486 | 511 | 405 |
| ball bearing spindle + safety nut | 521 | 522 | 535 | 460 | 438 |

spindle noses1-6




spindel noses 90° turned are possible

Special executions on request are possible
Subjects to measurements changes, representation not abligatory

# Electric cylinder ELZ 50

**ENZFELDER** GMBH
**Power transmission- and lifting engineering**
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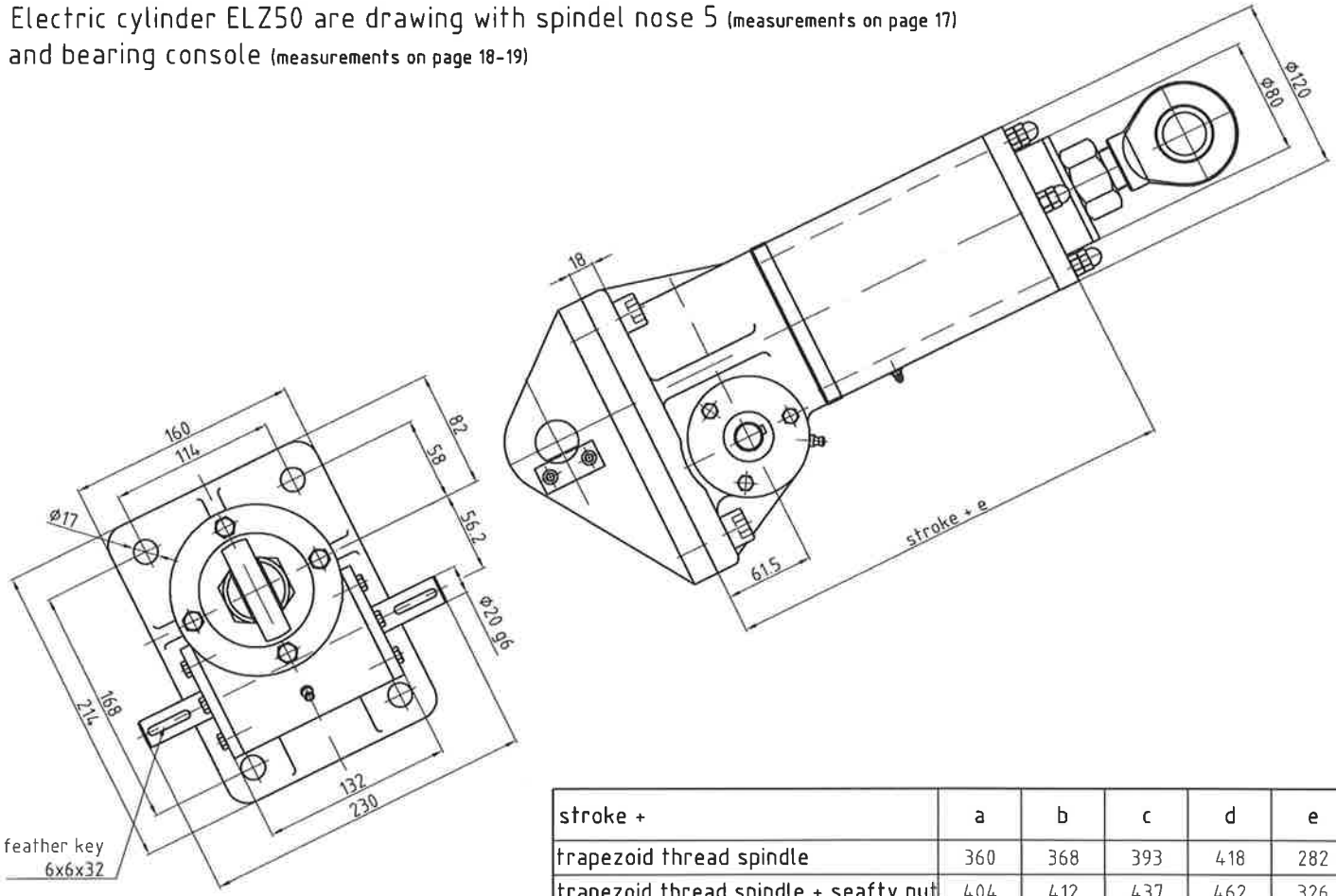
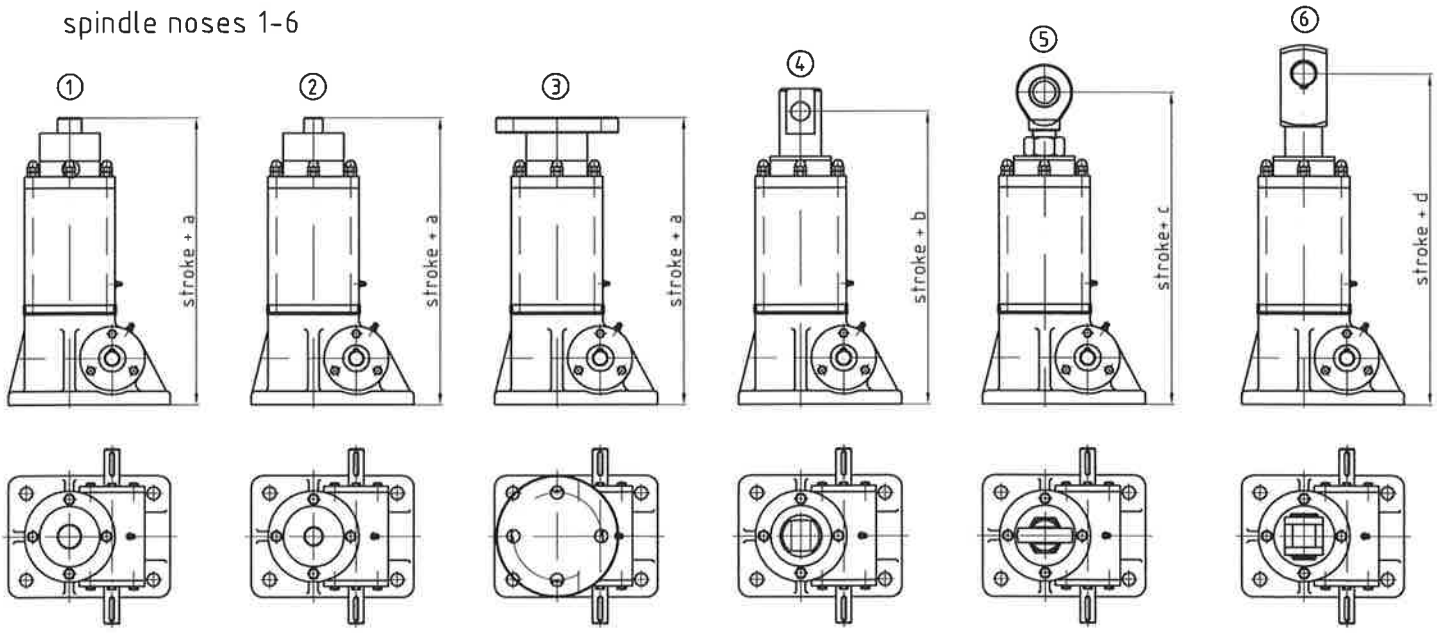
Internet: www.enzfelder.at

Electric cylinder ELZ50 are drawing with spindel nose 5 (measurements on page 17)
and bearing console (measurements on page 18-19)




| stroke + | a | b | c | d | e |
|---|---|---|---|---|---|
| trapezoid thread spindle | 360 | 368 | 393 | 418 | 282 |
| trapezoid thread spindle + seafty nut | 404 | 412 | 437 | 462 | 326 |
| ball bearing spindle | 447 | 455 | 480 | 505 | 369 |
| ball bearing spindle + safety nut | 491 | 499 | 524 | 549 | 413 |

spindle noses 1-6




spindel noses 90° turned are possible

# Electric cylinder ELZ 100

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**Power transmission- and lifting engineering**
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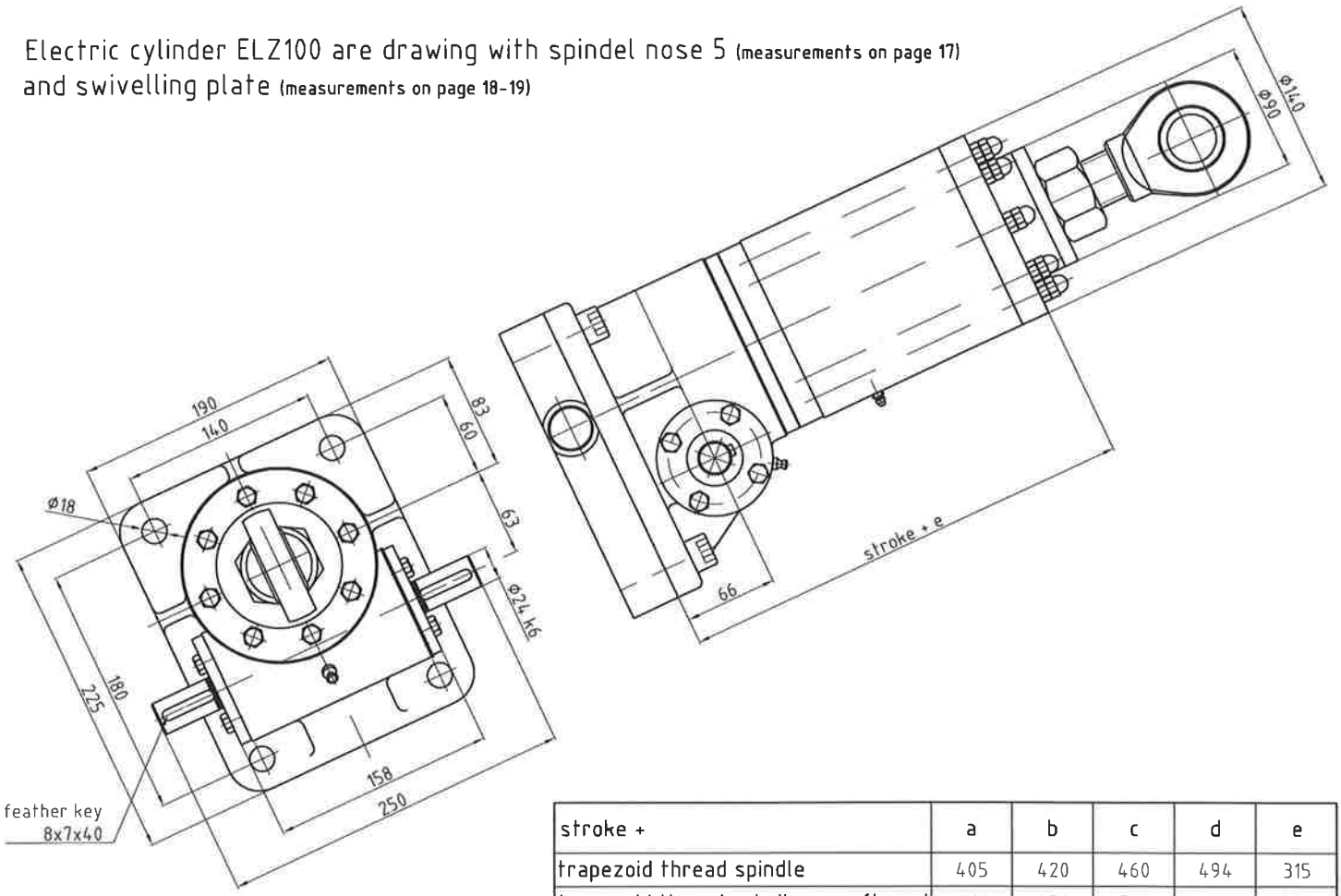
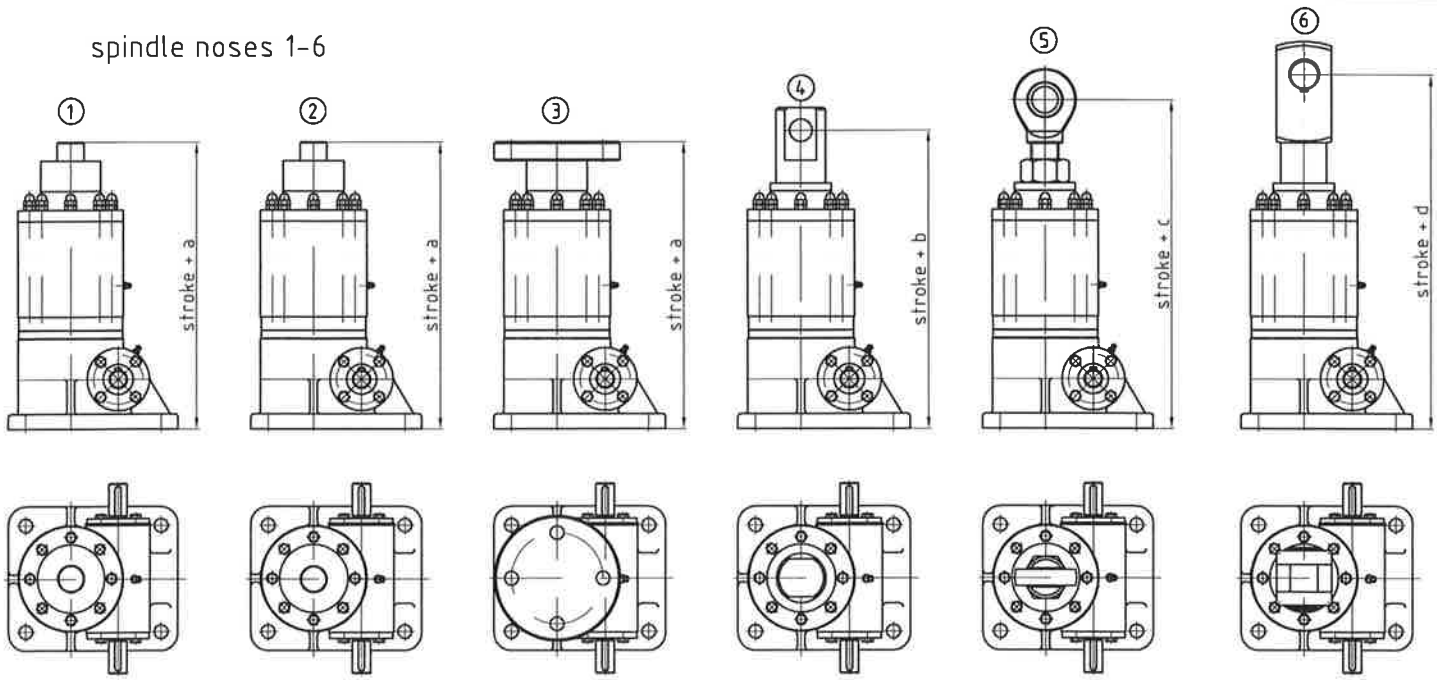
Electric cylinder ELZ100 are drawing with spindel nose 5 (measurements on page 17)
and swivelling plate (measurements on page 18-19)




| stroke + | a | b | c | d | e |
|---|---|---|---|---|---|
| trapezoid thread spindle | 405 | 420 | 460 | 494 | 315 |
| trapezoid thread spindle + seafty nut | 461 | 476 | 516 | 550 | 371 |
| ball bearing spindle | 520 | 535 | 575 | 609 | 430 |
| ball bearing spindle + safety nut | 576 | 591 | 631 | 665 | 486 |

spindle noses 1-6




spindel noses 90° turned are possible

Special executions on request are possible
Subjects to measurements changes, representation not abligatory

# Electric cylinder ELZ 150

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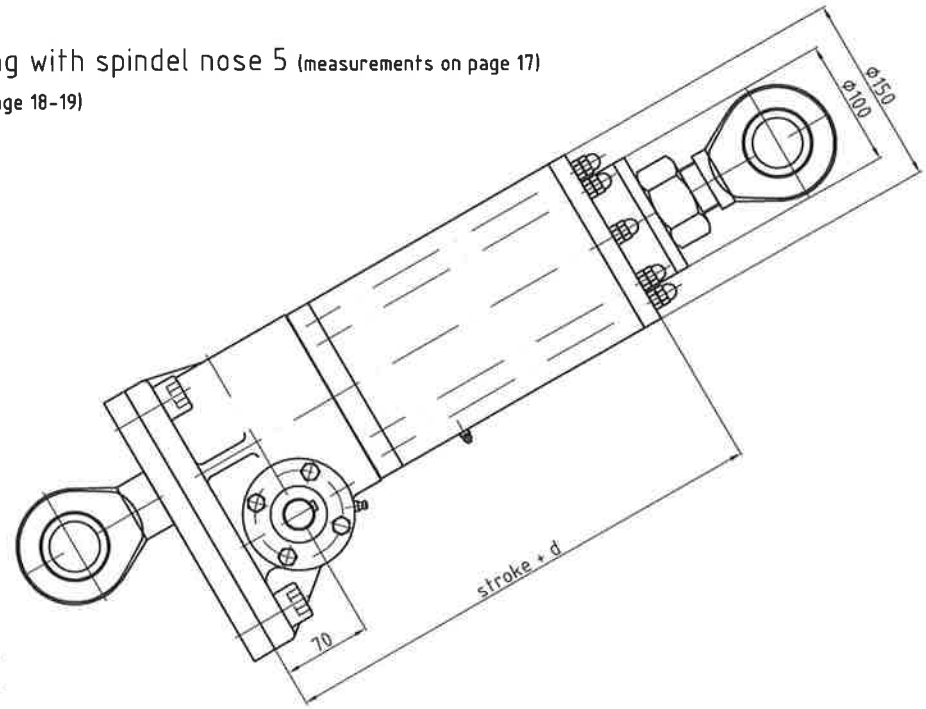
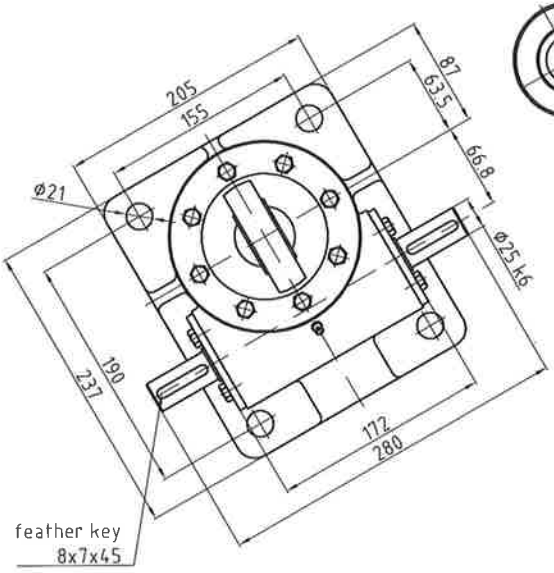
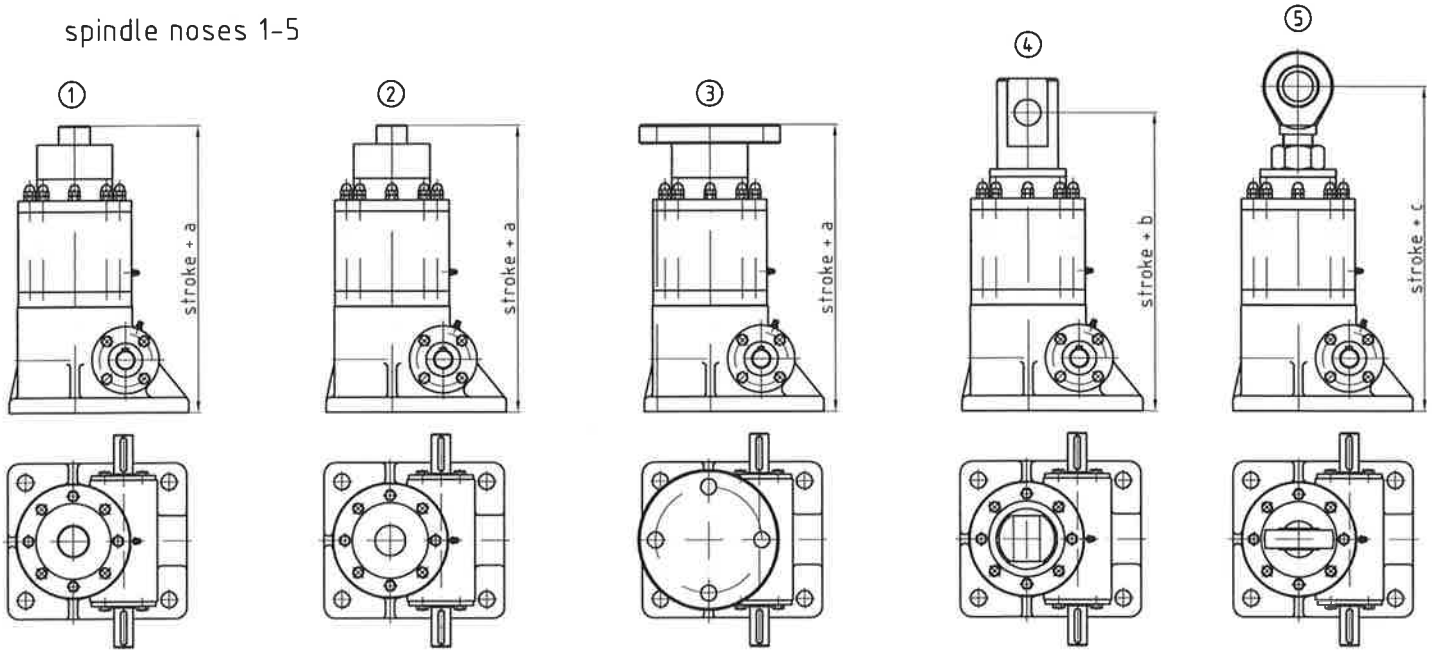
Electric cylinder ELZ150 are drawing with spindel nose 5 (measurements on page 17)
and pivoting console (measurements on page 18-19)




| stroke + | a | b | c | d |
|---|---|---|---|---|
| trapezoid thread spindle | 448 | 463 | 498 | 349 |
| trapezoid thread spindle + seafty nut | 514 | 529 | 564 | 415 |
| ball bearing spindle | 573 | 588 | 623 | 474 |
| ball bearing spindle + safety nut | 639 | 654 | 689 | 540 |

spindle noses 1-5




spindel noses 90° turned are possible

Special executions on request are possible
Subjects to measurements changes, representation not abligatory

# Electric cylinder ELZ 200

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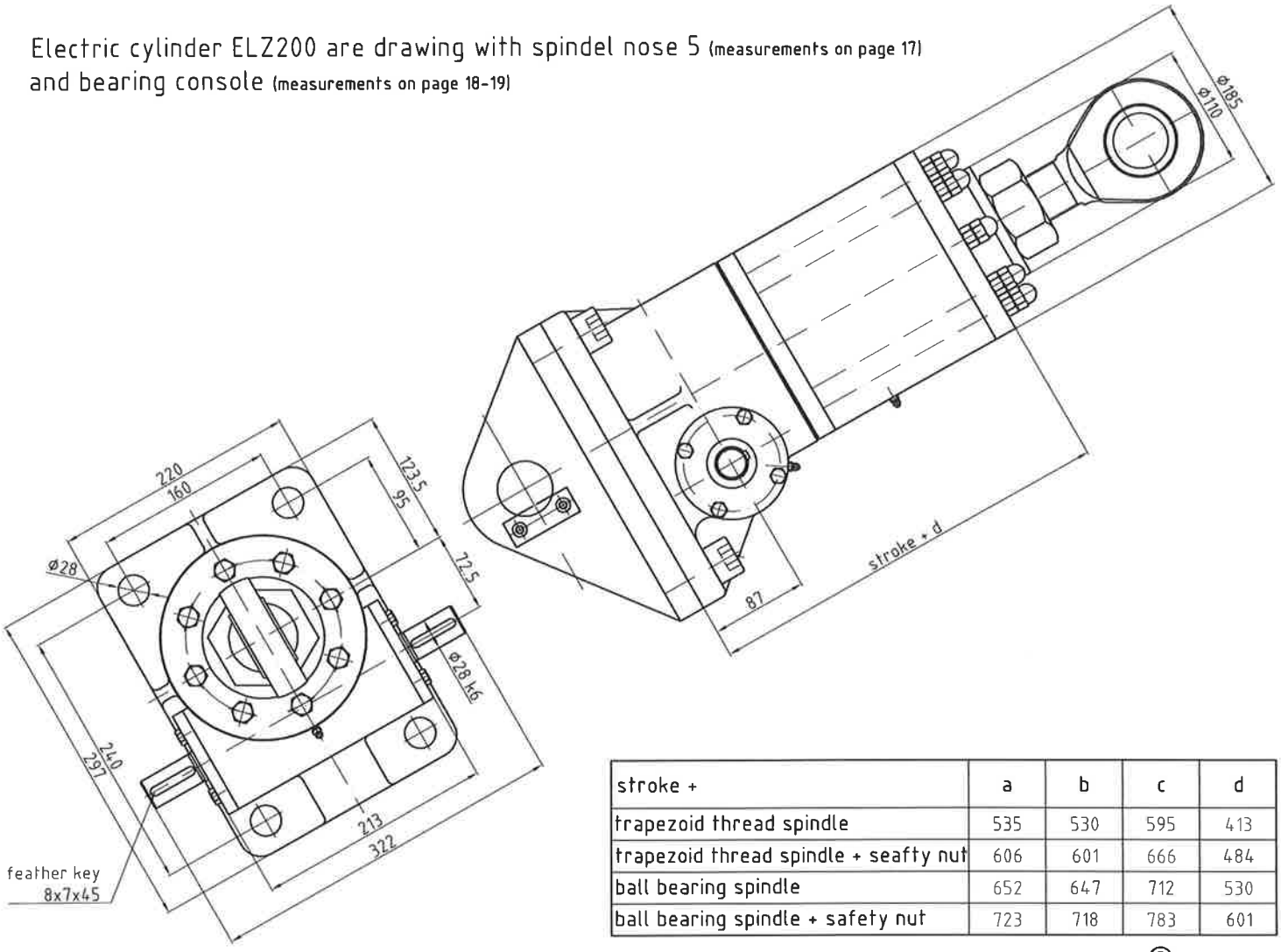
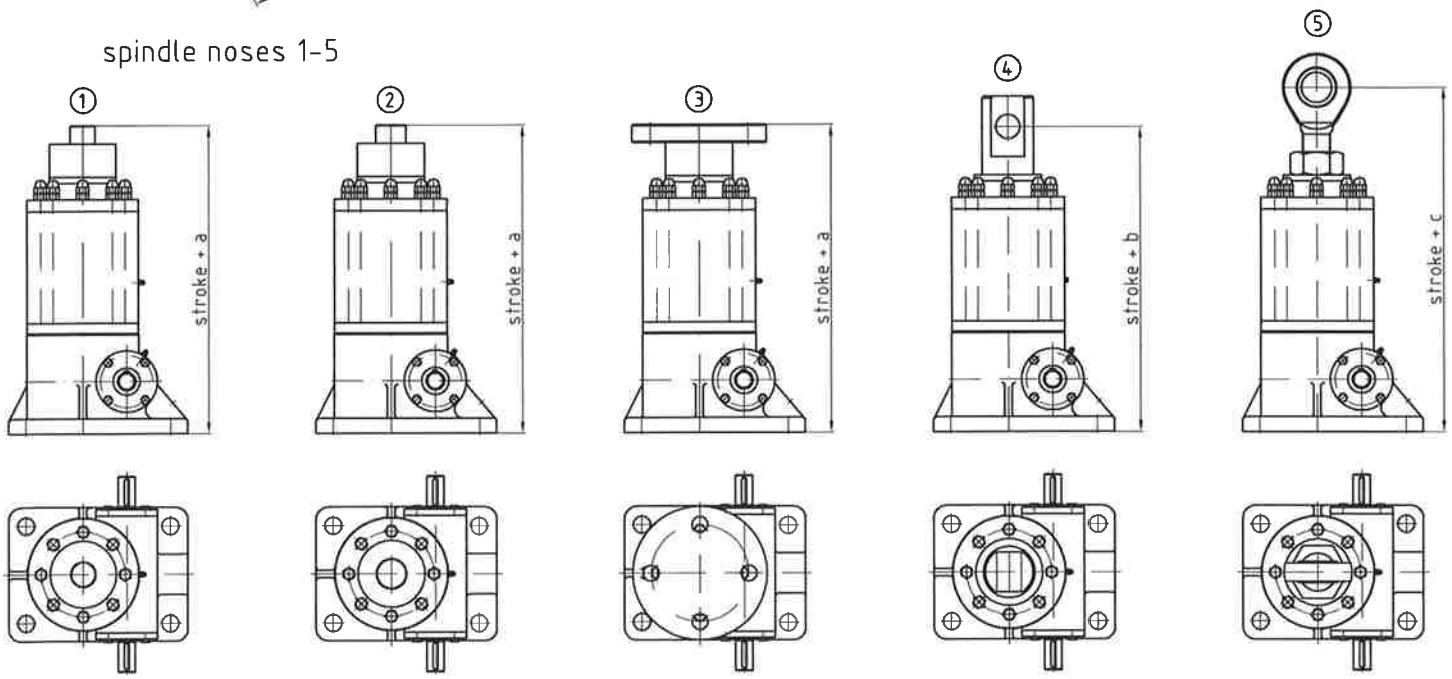
Internet: www.enzfelder.at

Electric cylinder ELZ200 are drawing with spindel nose 5 (measurements on page 17)
and bearing console (measurements on page 18-19)




| stroke + | a | b | c | d |
|---|---|---|---|---|
| trapezoid thread spindle | 535 | 530 | 595 | 413 |
| trapezoid thread spindle + seafty nut | 606 | 601 | 666 | 484 |
| ball bearing spindle | 652 | 647 | 712 | 530 |
| ball bearing spindle + safety nut | 723 | 718 | 783 | 601 |

spindle noses 1-5




spindel noses 90° turned are possible

Special executions on request are possible
Subjects to measurements changes, representation not abligatory

# Electric cylinder ELZ 300

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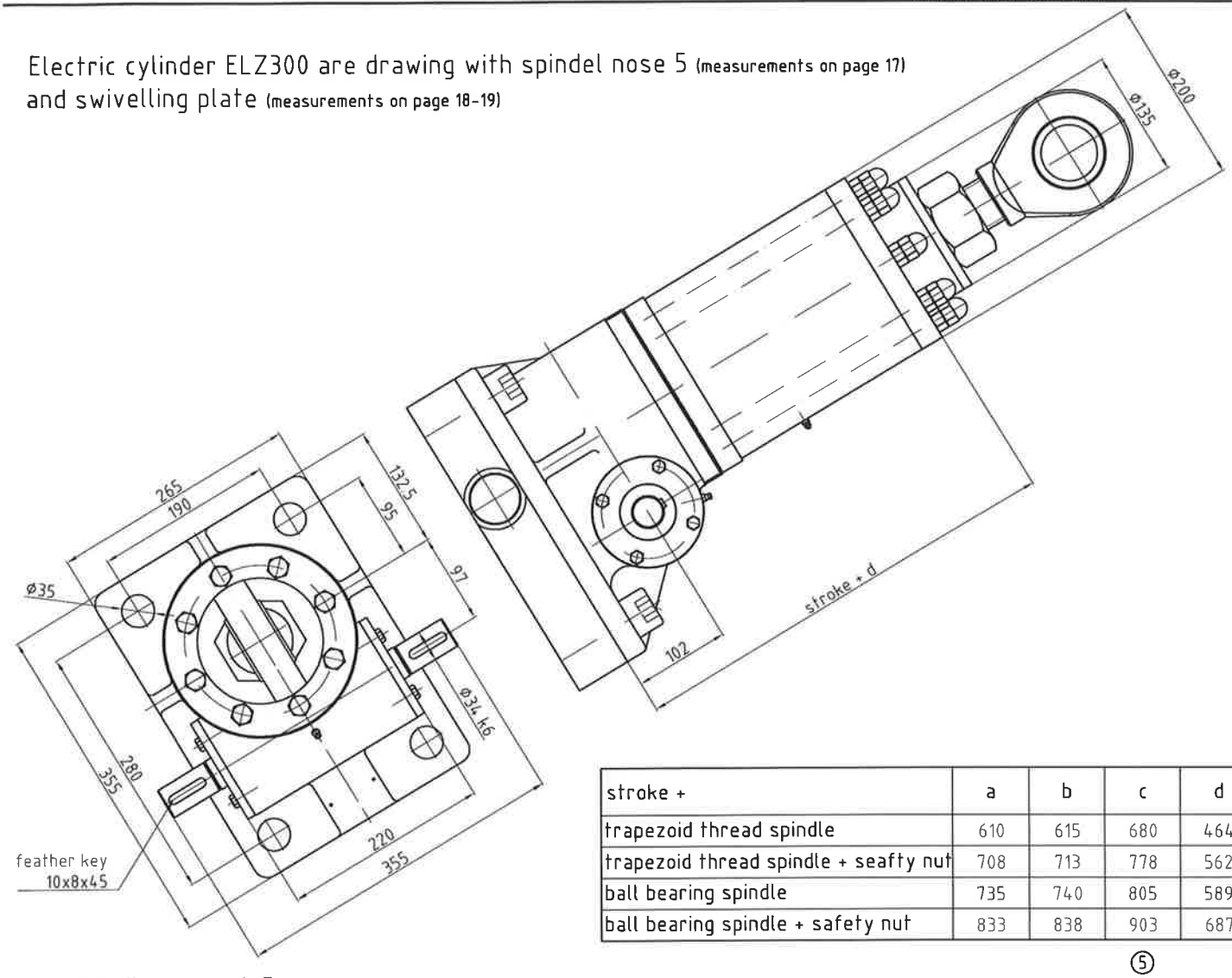
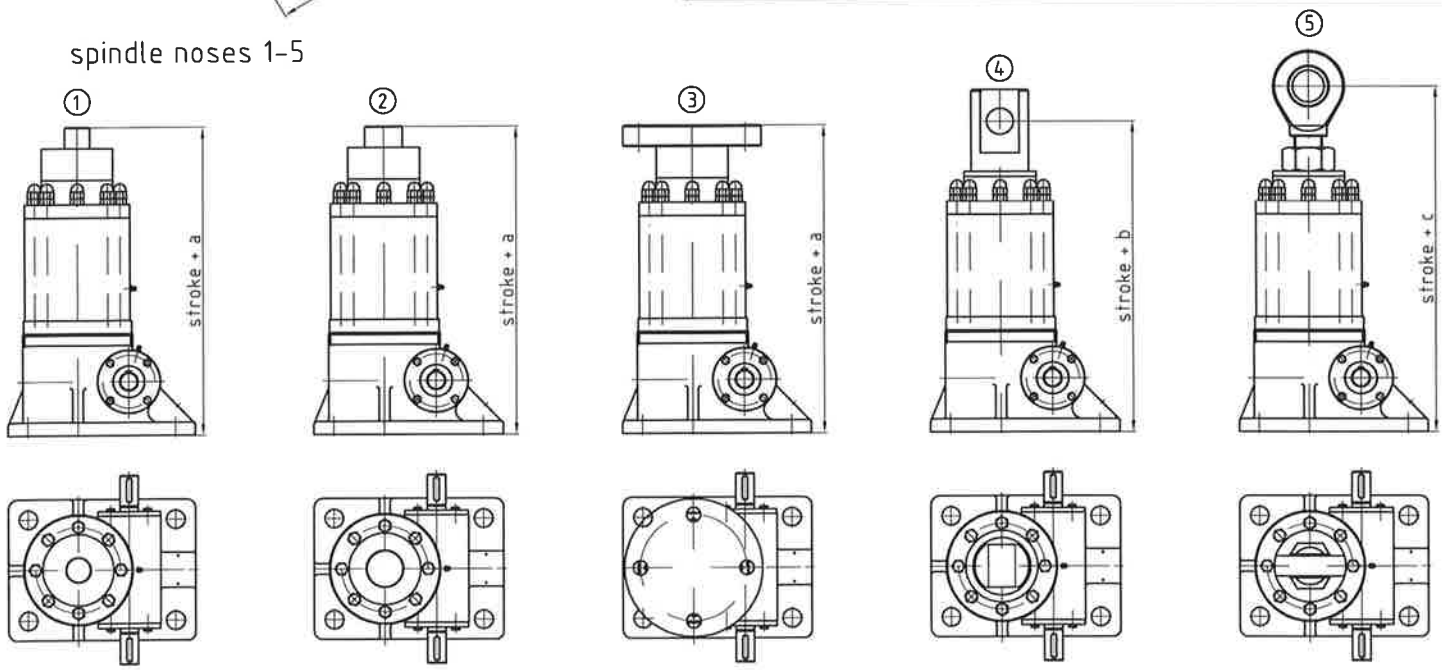
Internet: www.enzfelder.at

Electric cylinder ELZ300 are drawing with spindel nose 5 (measurements on page 17)
and swivelling plate (measurements on page 18-19)




| stroke + | a | b | c | d |
|---|---|---|---|---|
| trapezoid thread spindle | 610 | 615 | 680 | 464 |
| trapezoid thread spindle + seafty nut | 708 | 713 | 778 | 562 |
| ball bearing spindle | 735 | 740 | 805 | 589 |
| ball bearing spindle + safety nut | 833 | 838 | 903 | 687 |

spindle noses 1-5




spindel noses 90° turned are possible

Special executions on request are possible
Subjects to measurements changes, representation not abligatory

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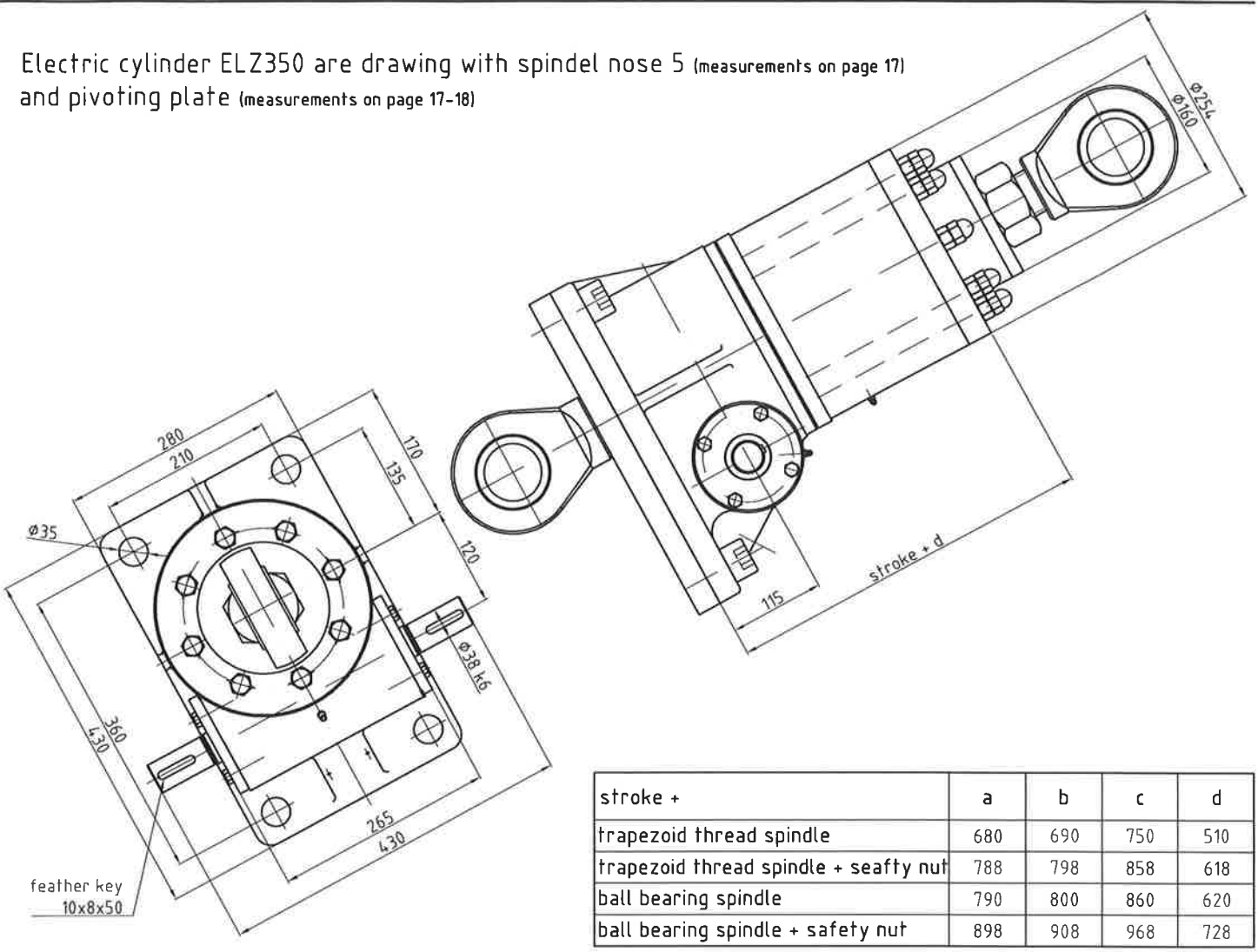
Internet: www.enzfelder.at

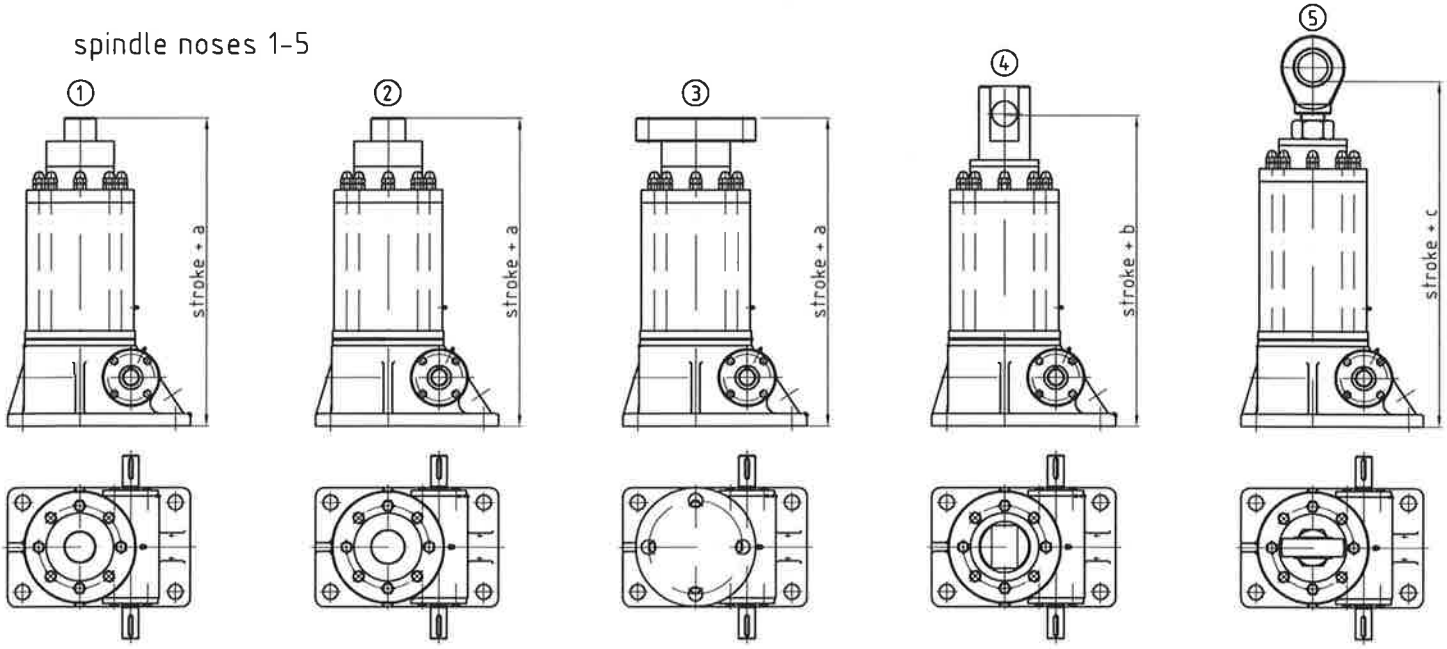
# Electric cylinder ELZ 350

Electric cylinder ELZ350 are drawing with spindel nose 5 (measurements on page 17)
and pivoting plate (measurements on page 17-18)




| stroke + | a | b | c | d |
|---|---|---|---|---|
| trapezoid thread spindle | 680 | 690 | 750 | 510 |
| trapezoid thread spindle + seafty nut | 788 | 798 | 858 | 618 |
| ball bearing spindle | 790 | 800 | 860 | 620 |
| ball bearing spindle + safety nut | 898 | 908 | 968 | 728 |

spindle noses 1-5




spindel noses 90° turned are possible

# Limit stop with infinitely adjustable limit switches

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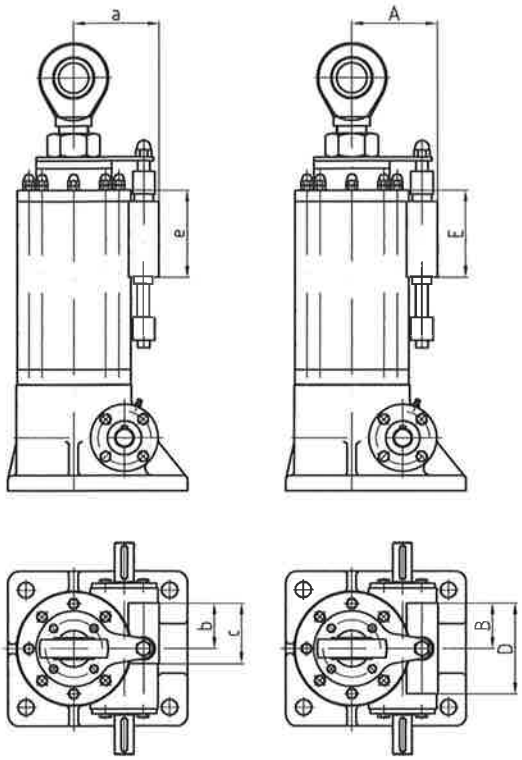
Internet: www.enzfelder.at

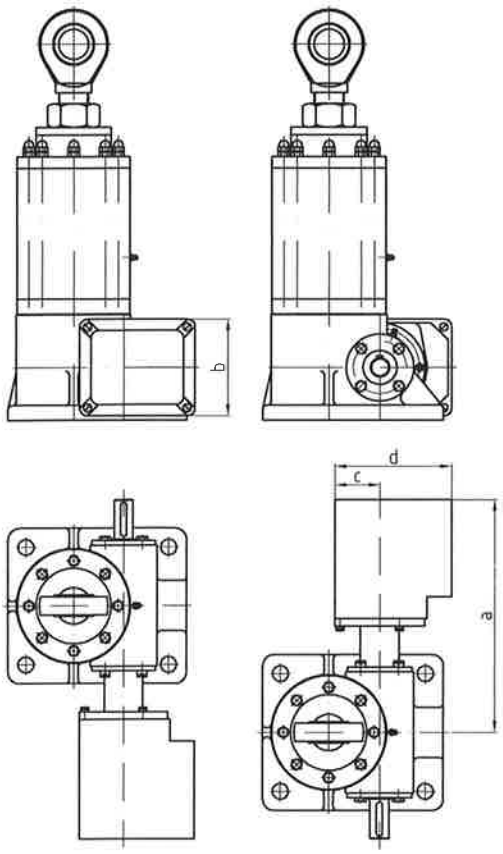



## Limit stop with ever one operating limit switch above and down

| ELZ | 5 | 15 | 30 | 50 | 100 | 150 | 200 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|
| a | 71 | 79 | 81,5 | 99 | 106 | 112 | 132,5 | 136 | 163 |
| b | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| c | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| d | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| e | 106,5 | 115 | 115 | 115 | 115 | 115 | 120 | 125 | 130 |
| | | | | | | | | | |
| Special executions on request | | | | | | | | | |

## Limit stop with ever one operating and emergency limit switch above and down

| ELZ | 5 | 15 | 30 | 50 | 100 | 150 | 200 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|
| A | 71 | 79 | 81,5 | 99 | 106 | 112 | 132,5 | 136 | 163 |
| B | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| C | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| D | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| E | 106,5 | 115 | 115 | 115 | 115 | 115 | 120 | 125 | 130 |
| | | | | | | | | | |
| Special executions on request | | | | | | | | | |




## Limit stop with Geared com limit switch

### with ever one operating limit switch above and down

| ELZ | 5 | 15 | 30 | 50 | 100 | 150 | 200 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|
| a× | 221 | 241,5 | 251 | 260 | 273 | 282 | 298 | 303 | 322 |
| b | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 |
| c | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 |
| d | 153 | 153 | 153 | 153 | 153 | 153 | 153 | 153 | 153 |
| | | | | | | | | | |
| Special executions on request | | | | | | | | | |

× Measure a dependet from stroke

## Limit stop with Geared com limit switch

### with ever one operating and emergency limit switch above and down

| ELZ | 5 | 15 | 30 | 50 | 100 | 150 | 200 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|
| a× | 246 | 266,5 | 276 | 285 | 298 | 307 | 323 | 328 | 347 |
| b | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 |
| c | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 |
| d | 153 | 153 | 153 | 153 | 153 | 153 | 153 | 153 | 153 |
| | | | | | | | | | |
| Special executions on request | | | | | | | | | |

× Measure a dependet from stroke

Limit switch housing made of glass fibre reinforced polycarbonate with the degree of protection IP66

Special executions on request are possible
Subjects to measurements changes, representation not abligatory

# Spindle noses

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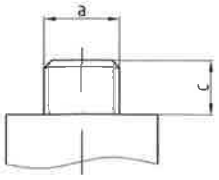
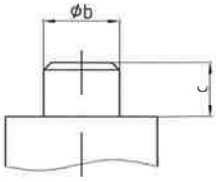
## Spindle nose 1 and 2

1

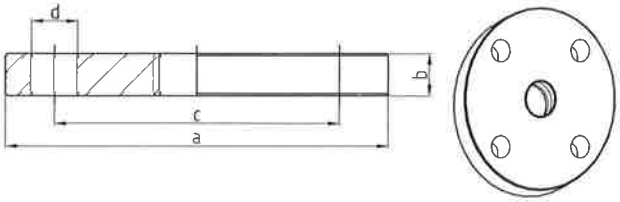



2



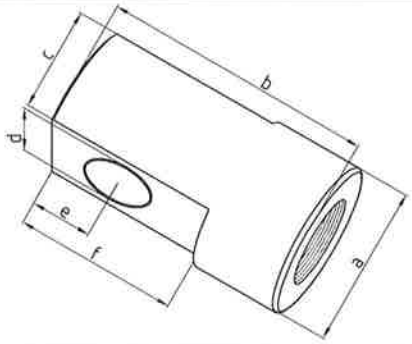

| ELZ | 5 | 15 | 30 | 50 | 100 | 150 | 200 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|
| a | M12 | M16 | M20x1,5 | M30x1,5 | M36x3 | M42x1,5 | M50x3 | M70x3 | M80x3 |
| ϕb | 12 | 16 | 20 | 25 | 35 | 40 | 50 | 70 | 80 |
| c | 22 | 20 | 32 | 42 | 45 | 50 | 62 | 65 | 75 |
| Special executions on request | | | | | | | | | |

## Spindle nose 3



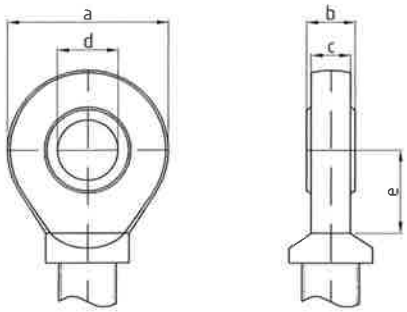

| ELZ | 5 | 15 | 30 | 50 | 100 | 150 | 200 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|
| a | 82 | 90 | 120 | 160 | 165 | 150 | 220 | 260 | 280 |
| b | 15 | 15 | 18 | 20 | 25 | 25 | 30 | 40 | 55 |
| c | 65 | 70 | 90 | 115 | 120 | 140 | 160 | 200 | 220 |
| ϕd | 7 | 9 | 10,5 | 17 | 18 | 21 | 26 | 27 | 33 |
| Special executions on request | | | | | | | | | |

## Spindle nose 4



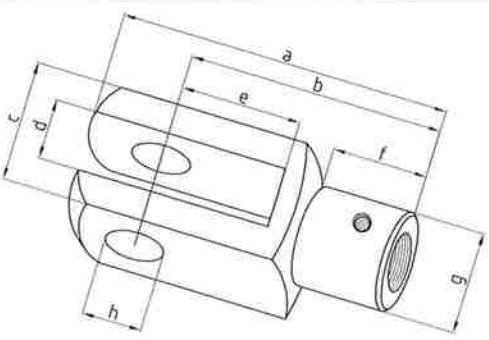

| ELZ | 5 | 15 | 30 | 50 | 100 | 150 | 200 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|
| a | 30 | 35 | 40 | 55 | 65 | 80 | 85 | 108 | 120 |
| b | 50 | 50 | 65 | 90 | 100 | 120 | 130 | 155 | 175 |
| c | 20 | 25 | 30 | 40 | 50 | 60 | 65 | 80 | 100 |
| ϕd | 15 | 15 | 15 | 25 | 30 | 35 | 40 | 50 | 60 |
| e | 15 | 15 | 23 | 30 | 30 | 45 | 50 | 60 | 100 |
| f | 30 | 35 | 46 | 60 | 70 | 90 | 100 | 120 | 130 |
| Special executions on request | | | | | | | | | |

## Spindle nose 5




| ELZ | 5 | 15 | 30 | 50 | 100 | 150 | 200 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|
| a | 34 | 40 | 53 | 73 | 82 | 92 | 112 | 135 | 160 |
| b | 10 | 12 | 16 | 22 | 25 | 28 | 35 | 44 | 49 |
| c | 8,5 | 10,5 | 13,5 | 20 | 22 | 24 | 31 | 39 | 43 |
| ϕd | 12 | 15 | 20 | 30 | 35 | 40 | 50 | 60 | 70 |
| e | 19 | 20 | 27,5 | 37 | 43 | 48 | 60 | 75 | 87 |
| Special executions on request | | | | | | | | | |

## Spindle nose 6




| ELZ | 5 | 15 | 30 | 50 | 100 | 150 | 200 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|
| a | 62 | 72 | 105 | 148 | 188 | 265 | ----- | ----- | ----- |
| b | 48 | 56 | 80 | 110 | 144 | 192 | ----- | ----- | ----- |
| c | 24 | 27 | 40 | 60 | 72 | 96 | ----- | ----- | ----- |
| d | 12 | 14 | 20 | 30 | 36 | 50 | ----- | ----- | ----- |
| e | 24 | 28 | 40 | 60 | 72 | 96 | ----- | ----- | ----- |
| f | 18 | 22,5 | 30 | 40 | 54 | 73 | ----- | ----- | ----- |
| g | 20 | 24 | 34 | 48 | 60 | 82 | ----- | ----- | ----- |
| ϕh | 12 | 14 | 20 | 30 | 36 | 50 | ----- | ----- | ----- |
| Special executions on request | | | | | | | | | |

---- on request

Special executions on request are possible
Subjects to measurements changes, representation not abligatory

# Swivelling console, Swivelling plate, Bearing console and Pivoting plate

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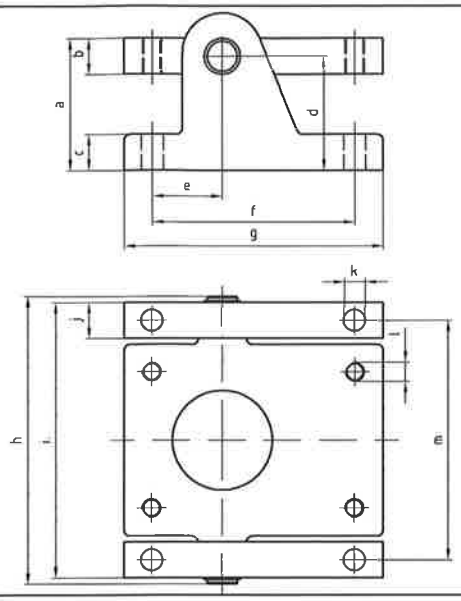
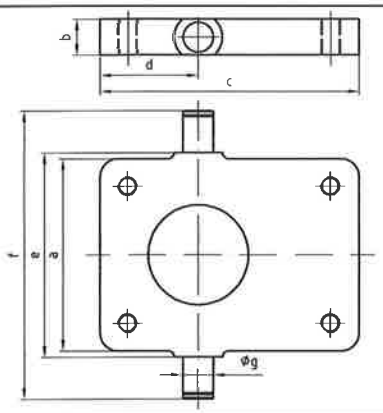
## Swivelling console (SK)




| ELZ | 5 | 15 | 30 | 50 | 100 | 150 | 200 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|
| a | 50 | 67,5 | 90 | 110 | 110 | 150 | 160 | 170 | 210 |
| b | 10 | 15 | 25 | 30 | 35 | 45 | 50 | 60 | 65 |
| c | 8 | 15 | 20 | 30 | 30 | 30 | 40 | 50 | 60 |
| d | 45 | 60 | 77,5 | 95 | 92,5 | 127,5 | 135 | 140 | 177,5 |
| e | 30 | 37,5 | 50 | 58 | 60 | 63,5 | 95 | 95 | 135 |
| f | 60 | 110 | 135 | 168 | 180 | 190 | 240 | 280 | 360 |
| g | 70 | 135 | 165 | 215 | 225 | 237 | 297 | 355 | 430 |
| h | 150 | 150 | 190 | 240 | 270 | 297 | 322 | 411 | 424 |
| i | 144 | 140 | 180 | 230 | 260 | 285 | 310 | 395 | 410 |
| j | 10 | 15 | 25 | 30 | 30 | 35 | 40 | 60 | 60 |
| k | 6 | 9 | 13 | 18 | 18 | 21 | 26 | 35 | 35 |
| l | M8 | M8 | M12 | M16 | M16 | M20 | M24 | M30 | M30 |
| m | 134 | 125 | 155 | 200 | 230 | 250 | 270 | 335 | 350 |
| | | | | | | | | | |
| Special executions on request | | | | | | | | | |

Product as delivered: enclosed

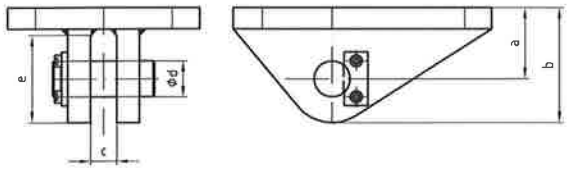
## Swiveling plate (SP)




| ELZ | 5 | 15 | 30 | 50 | 100 | 150 | 200 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|
| a | 120 | 100 | 120 | 160 | 190 | 205 | 220 | 265 | 280 |
| b | 10 | 15 | 25 | 30 | 35 | 45 | 50 | 60 | 65 |
| c | 65 | 135 | 165 | 215 | 225 | 237 | 297 | 355 | 430 |
| d | 32,5 | 50 | 65 | 81,5 | 82,5 | 87 | 123,5 | 133 | 170 |
| e | 124 | 110 | 130 | 170 | 200 | 215 | 230 | 275 | 290 |
| f | 150 | 150 | 190 | 240 | 270 | 297 | 322 | 411 | 424 |
| g | 8 f7 | 14 h7 | 20 h7 | 25 h7 | 32 h7 | 40 h7 | 45 h7 | 55 h7 | 60 h7 |
| | | | | | | | | | |
| Special executions on request | | | | | | | | | |

Product as delivered: enclosed

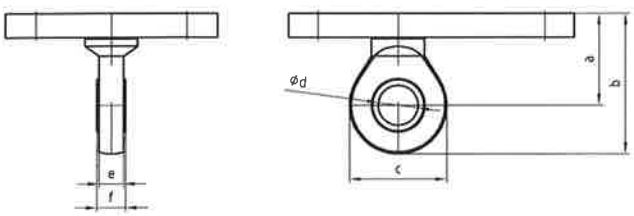
## Bearing console (LK)




| ELZ | 5 | 15 | 30 | 50 | 100 | 150 | 200 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|
| a | 30 | 40 | 46 | 59,5 | 65 | 71 | 86 | 101,5 | 115 |
| b | 47 | 61 | 72,5 | 96 | 106 | 117 | 142 | 169 | 195 |
| c | 10 | 12 | 16 | 22 | 26 | 28 | 35 | 44 | 49 |
| d | 12 | 15 | 20 | 30 | 35 | 40 | 50 | 60 | 70 |
| e | 34 | 42 | 54 | 73 | 82 | 92 | 112 | 135 | 162 |
| Special executions on request | | | | | | | | | |

Product as delivered: enclosed

## Pivoting plate (GP)




| ELZ | 5 | 15 | 30 | 50 | 100 | 150 | 200 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|
| a | 37 | 45 | 52 | 69 | 80 | 96 | 112 | 129 | 144 |
| b | 54 | 65 | 78,5 | 105,5 | 121 | 147 | 168 | 196,5 | 224 |
| c | 34 | 40 | 53 | 73 | 82 | 92 | 112 | 135 | 160 |
| d | 12 | 15 | 20 | 30 | 35 | 40 | 50 | 60 | 70 |
| e | 8 | 10 | 13 | 19 | 21 | 23 | 30 | 38 | 42 |
| f | 10 | 12 | 16 | 22 | 25 | 28 | 35 | 44 | 49 |
| Special executions on request | | | | | | | | | |

Product as delivered: enclosed

Special executions on request are possible
Subjects to measurements changes, representation not Obligatory

# Swivelling console, Swivelling plate, Bearing console and Pivoting plate 90° turned

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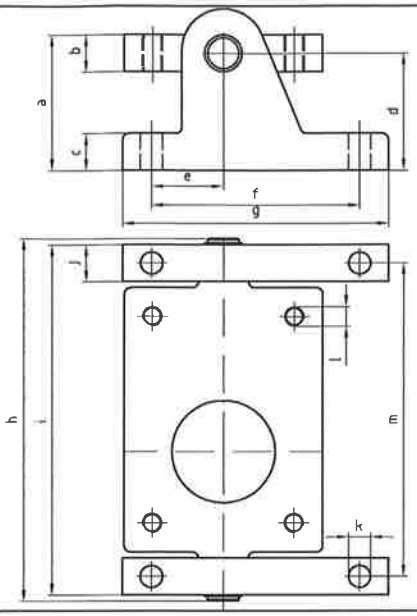
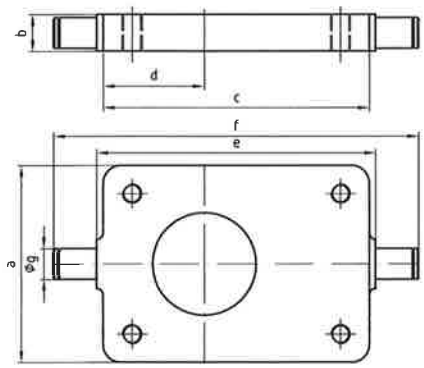



## Swivelling console 90° turned (SK)

| ELZ | 5 | 15 | 30 | 50 | 100 | 150 | 200 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|
| a | 50 | 67,5 | 90 | 110 | 110 | 150 | 160 | 170 | 210 |
| b | 10 | 15 | 25 | 30 | 35 | 45 | 50 | 60 | 65 |
| c | 8 | 15 | 20 | 30 | 30 | 30 | 40 | 50 | 60 |
| d | 45 | 60 | 77,5 | 95 | 92,5 | 127,5 | 135 | 140 | 177,5 |
| e | 30 | 37,5 | 50 | 58 | 60 | 63,5 | 95 | 95 | 135 |
| f | 60 | 110 | 135 | 168 | 180 | 190 | 240 | 280 | 360 |
| g | 70 | 135 | 165 | 215 | 225 | 237 | 297 | 355 | 430 |
| h | 106 | 185 | 235 | 295 | 305 | 329 | 399 | 501 | 574 |
| i | 100 | 175 | 225 | 285 | 295 | 317 | 387 | 485 | 560 |
| j | 10 | 15 | 25 | 30 | 30 | 35 | 40 | 60 | 60 |
| k | 6 | 9 | 13 | 18 | 18 | 21 | 26 | 35 | 35 |
| l | M8 | M8 | M12 | M16 | M16 | M20 | M24 | M30 | M30 |
| m | 90 | 160 | 200 | 255 | 265 | 282 | 347 | 425 | 500 |
| | | | | | | | | | |
| Special executions on request | | | | | | | | | |

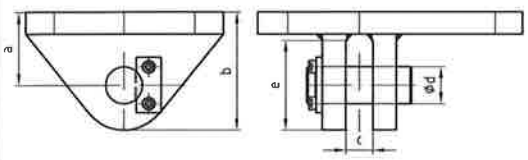
Product as delivered: enclosed




## Swiveling plate 90° turned (SP)

| ELZ | 5 | 15 | 30 | 50 | 100 | 150 | 200 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|
| a | 120 | 100 | 120 | 160 | 190 | 205 | 220 | 265 | 280 |
| b | 10 | 15 | 25 | 30 | 35 | 45 | 50 | 60 | 65 |
| c | 65 | 135 | 165 | 215 | 225 | 237 | 297 | 355 | 430 |
| d | 32,5 | 50 | 65 | 81,5 | 82,5 | 87 | 123,5 | 133 | 170 |
| e | 80 | 145 | 175 | 223,5 | 235 | 247 | 307 | 365 | 440 |
| f | 160 | 185 | 235 | 293,5 | 305 | 329 | 399 | 501 | 574 |
| g | 8 f7 | 14 h7 | 20 h7 | 25 h7 | 32 h7 | 40 h7 | 45 h7 | 55 h7 | 60 h7 |
| | | | | | | | | | |
| Special executions on request | | | | | | | | | |

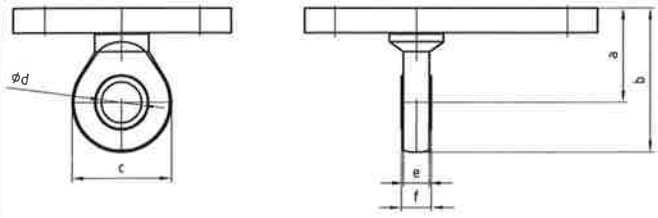
Product as delivered: enclosed




## Bearing console turned (LK)

| ELZ | 5 | 15 | 30 | 50 | 100 | 150 | 200 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|
| a | 30 | 40 | 46 | 59,5 | 65 | 71 | 86 | 101,5 | 115 |
| b | 47 | 61 | 72,5 | 96 | 106 | 117 | 142 | 169 | 195 |
| c | 10 | 12 | 16 | 22 | 26 | 28 | 35 | 44 | 49 |
| d | 12 | 15 | 20 | 30 | 35 | 40 | 50 | 60 | 70 |
| e | 34 | 42 | 54 | 73 | 82 | 92 | 112 | 135 | 162 |
| Special executions on request | | | | | | | | | |

Product as delivered: enclosed




## Pivoting plate (GP)

| ELZ | 5 | 15 | 30 | 50 | 100 | 150 | 200 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|
| a | 37 | 45 | 52 | 69 | 80 | 96 | 112 | 129 | 144 |
| b | 54 | 65 | 78,5 | 105,5 | 121 | 147 | 168 | 196,5 | 224 |
| c | 34 | 40 | 53 | 73 | 82 | 102 | 112 | 135 | 160 |
| d | 12 | 15 | 20 | 30 | 35 | 45 | 50 | 60 | 70 |
| e | 8 | 10 | 13 | 19 | 21 | 27 | 30 | 38 | 42 |
| f | 10 | 12 | 16 | 22 | 25 | 32 | 35 | 44 | 49 |
| Special executions on request | | | | | | | | | |

Product as delivered: enclosed

Special executions on request are possible
Subjects to measurements changes, representation not Obligatory

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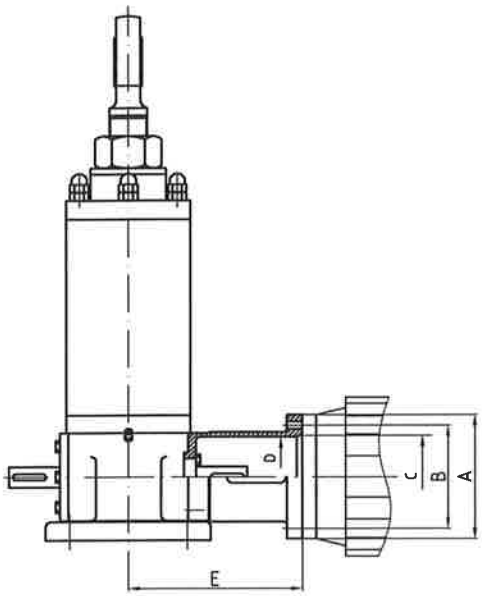
# Motor flanges
# Crank handeles, Hand wheels

## Motor flanges

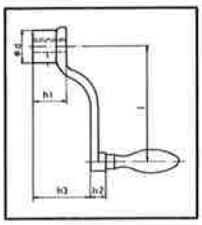


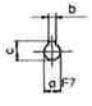

| | type of motor | flange ⌀A | ⌀B | ⌀C | ⌀D | E | shaft ends⌀ SG | shaft ends⌀ Motor | 4 pces bolts DIN 912 f. motor |
|---|---|---|---|---|---|---|---|---|---|
| ELZ 5 | 56 B14 | 80 | 65 | 50 | 44 | 93 | 10 | 9 | M5 x 16 |
| | 63 B14 | 90 | 75 | 60 | 44 | 96 | 10 | 11 | M5 x 20 |
| | 71 B14 | 105 | 85 | 70 | 44 | 103 | 10 | 14 | M6 x 25 |
| ELZ15 | 63 B14 | 90 | 75 | 60 | 52 | 114 | 14 | 11 | M5 x 20 |
| | 71 B14 | 105 | 85 | 70 | 52 | 121 | 14 | 14 | M6 x 25 |
| | 80 B14 | 120 | 100 | 80 | 52 | 131 | 14 | 19 | M6 x 25 |
| ELZ 30 | 71 B14 | 105 | 85 | 70 | 59 | 136 | 16 | 14 | M6 x 25 |
| | 80 B14 | 120 | 100 | 80 | 59 | 146 | 16 | 19 | M6 x 25 |
| | 90 B14 | 140 | 115 | 95 | 59 | 156 | 16 | 24 | M8 x 25 |
| ELZ 50 | 90 B14 | 140 | 115 | 95 | 76 | 181 | 20 | 24 | M8 x 25 |
| | 100 B14 | 160 | 130 | 110 | 76 | 193 | 20 | 28 | M8 x 25 |
| | 112 B14 | 160 | 130 | 110 | 76 | 193 | 20 | 28 | M8 x 25 |
| ELZ 100 | 100 B14 | 160 | 130 | 110 | 80 | 203 | 24 | 28 | M8 x 25 |
| | 112 B14 | 160 | 130 | 110 | 80 | 203 | 24 | 28 | M8 x 25 |
| | 132 B14 | 200 | 215 | 180 | 80 | 225 | 24 | 38 | M10 x 30 |
| ELZ 150 | 100 B14 | 160 | 130 | 110 | 84 | 218 | 25 | 28 | M8 x 25 |
| | 112 B14 | 160 | 130 | 110 | 84 | 218 | 25 | 28 | M8 x 25 |
| | 132 B14 | 200 | 215 | 180 | 84 | 240 | 25 | 38 | M10 x 30 |
| ELZ 200 | 132 B14 | 200 | 215 | 180 | 100 | 263 | 28 | 38 | M10 x 30 |
| | 160 B5 | 350 | 300 | 250 | 100 | 307 | 28 | 42 | M16 x 60 + 4 nuts |
| ELZ 300 | 132 B14 | 200 | 215 | 180 | 114 | 278 | 34 | 38 | M10 x 30 |
| | 160 B5 | 350 | 300 | 250 | 114 | 312 | 34 | 42 | M16 x 60 + 4 nuts |
| ELZ 350 | 160 B5 | 350 | 300 | 250 | 130 | 349 | 38 | 42 | M16 x 60 + 4 nuts |
| | 180 B5 | 350 | 300 | 250 | 130 | 351 | 38 | 48 | M16 x 60 + 4 nuts |

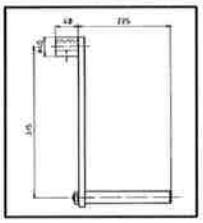
**Important:**

**Unless otherwise requested by the customer, motor flanges are mounted on the right, as shown above!**
**Engines and fastening bolts are delivered non mounted.**

## Crank handles




Ch 1

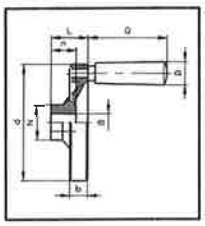
| BG | 5 | 10 | 25 |
|---|---|---|---|
| a F 7 | 10 | 14 | 16 |
| b P 9 | 3 | 5 | 5 |
| c | 11,4 | 16,3 | 18,3 |
| d | 28 | 38 | 38 |
| h1 | 28 | 38 | 38 |
| h2 | 13 | 14 | 14 |
| h3 | 48 | 65 | 65 |
| l | 100 | 160 | 160 |

Ch 2

| BG | 50 | 100 | 150 |
|---|---|---|---|
| a F 7 | 20 | 25 | 25 |
| b P 9 | 6 | 8 | 8 |
| c | 22,8 | 27,3 | 28,3 |

Dimensional variations according to DIN 7168 medium. Deviating dimensions on request.

## Hand wheels




| type | d | N | b | n | L | G | D | Pilot drill ⌀ H7 | Weight [Kg] |
|---|---|---|---|---|---|---|---|---|---|
| BG 5 | 80 | 26 | 13,0 | 16 | 30 | 58,5 | 22 | 10 | 0,16 |
| BG 10 | 125 | 31 | 15,0 | 18 | 34 | 67,5 | 23 | 14 | 1,3 |
| BG 25 | 160 | 36 | 18,0 | 20 | 37 | 67,5 | 23 | 14 | 1,5 |
| BG 50, 100 | 200 | 42 | 20,5 | 24 | 45 | 80,0 | 26 | 18 | 1,0 |
| BG 100, 150 | 250 | 48 | 23,0 | 28 | 51 | 90,0 | 28 | 24 | 1,3 |

Special executions on request are possible
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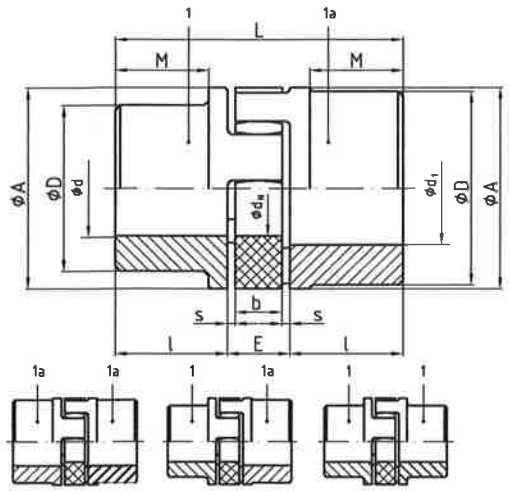
# Elektric cylinder accessories

## Elastic coupling (KU)



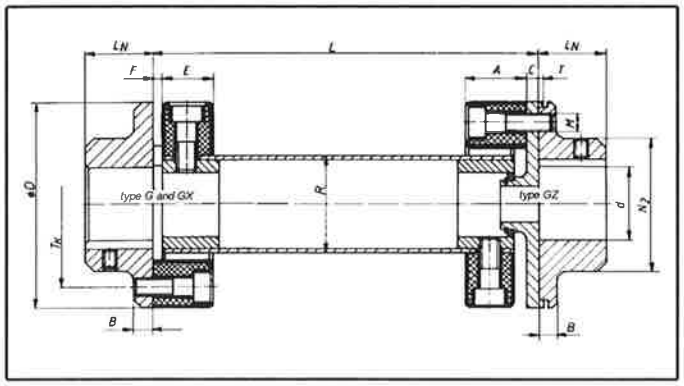

Finish-borings are made according, to the ISO system of tolerances H7. Feather key grooves are made according to DIN 6885/1. The max. angle shift is 1°30 , the twisting angle 3,2° at Mt nom. The operable temperature range lies between -40°C and +100°C.

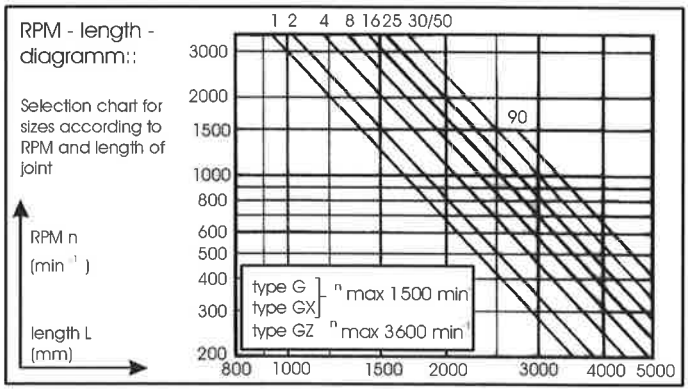
| Type R | Mt nom in Nm at 80° Shore [1] | Mt nom in Nm at 92° Shore [1] | Mt nom in Nm at 98° Shore [1] | holes: pilot drill | hub 1 finished Ød min | hub 1 finished Ød max | pilot drill | hub 1a finished Ød1 min | hub 1a finished Ød1 max | ØA | ØD | ØD1 | L | l | E | s | b | M | Ød1 | material | weight [3] type 1 in kg | weight [3] type 1a in kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14 | 4 | 7 | 12 | - | 4 | 14 | - | - | - | 30 | 30 | - | 35 | 11 | 13 | 1,5 | 10 | - | 10 | Alu oder GG | 0,14 | 0,14 |
| 19/24 | 5 | 10 | 17 | 4 | 6 | 19 | - | 6 | 24 | 40 | 32 | 40 | 66 | 25 | 16 | 2 | 12 | - | 18 | | 0,32 | 0,36 |
| 24/28 | 17 | 35 | 60 | 6 | 8 | 24 | 6 | 8 | 28 | 55 | 40 | 48 | 78 | 30 | 18 | 2 | 14 | 24 | 27 | | 0,60 | 0,72 |
| 28/38 | 46 | 95 | 160 | 8 | 10 | 28 | 8 | 10 | 38 | 65 | 48 | 65 | 90 | 35 | 20 | 2,5 | 15 | 28 | 30 | | 0,97 | 1,33 |
| 38/45 | 93 | 190 | 325 | 10 | 12 | 38 | 36 | 38 | 45 | 80 | 66 | 77 | 114 | 45 | 24 | 3 | 18 | 37 | 38 | | 2,08 | 2,46 |
| 42/55 | 130 | 265 | 450 | 12 | 14 | 42 | 40 | 42 | 55 | 95 | 75 | 94 | 126 | 50 | 26 | 3 | 20 | 40 | 46 | | 3,21 | 3,93 |
| 48/60 | 150 | 310 | 525 | 13 | 15 | 48 | 46 | 48 | 60 | 105 | 85 | 102 | 140 | 56 | 28 | 3,5 | 21 | 45 | 51 | | 4,41 | 5,19 |
| 55/70 | 180 | 375 | 625 | 18 | 20 | 55 | 52 | 55 | 70 | 120 | 98 | 120 | 160 | 65 | 30 | 4 | 22 | 52 | 60 | GG | 6,64 | 8,10 |
| 65/75 [2] | 205 | 425 | 640 | 20 | 22 | 65 | 63 | 65 | 75 | 135 | 115 | 135 | 185 | 75 | 35 | 4,5 | 26 | 61 | 68 | | 10,13 | 11,65 |
| 75/90 [2] | 475 | 975 | 1465 | 28 | 30 | 75 | 73 | 75 | 90 | 160 | 135 | 160 | 210 | 85 | 40 | 5 | 30 | 69 | 80 | | 16,03 | 19,43 |

[1] The rated turning moments are valid for normal operation with slight jolts; due to the higher start-up moment of three-phase squirrel cage motors an imfact factor of 2 must be taken into account.
[2] from size 65/75 95° Shore on
[3] weight for GG, aluminium approx. 60% less.

Product as delivered: enclosed

## Elastic propeller shafts G/GX/GZ




| size | rated torque [Nm] type G | GX | GZ | weight [kg] for 2 hubs | for 1 m tube | max. shift of angle G+GZ | GX | A | B | C | ØD | pilot drill d | d max | E | F | $L_N$ | ØN | R | T | $T_K$ /M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10 | 10 | 10 | 1,0 | 1,1 | 3° | 1° | 24 | 7 | 5 | 56 | 8 | 25 | 22 | 2 | 24 | 36 | 30 | 1,5 | Ø 44 / 2 x M6 |
| 2 | 20 | 30 | 20 | 2,2 | 1,4 | 3° | 1° | 24 | 8 | 5 | 85 | 12 | 38 | 20 | 4 | 28 | 55 | 40 | 1,5 | Ø 68 / 2 x M8 |
| 4 | 40 | 60 | 40 | 3,4 | 1,6 | 3° | 1° | 28 | 8 | 5 | 100 | 15 | 45 | 24 | 4 | 30 | 65 | 45 | 1,5 | Ø 80 / 3 x M8 |
| 8 | 80 | 120 | 80 | 7,3 | 2,2 | 3° | 1° | 32 | 10 | 5 | 120 | 18 | 55 | 28 | 4 | 42 | 80 | 60 | 1,5 | ø100 / 3 x M10 |
| 16 | 160 | 240 | 160 | 12,4 | 2,5 | 3° | 1° | 42 | 12 | 5 | 150 | 20 | 70 | 36 | 6 | 50 | 100 | 70 | 1,5 | ø125 / 3 x M12 |
| 25 | 250 | 370 | 250 | 19,1 | 3,1 | 3° | 1° | 46 | 14 | 5 | 170 | 20 | 85 | 40 | 6 | 55 | 115 | 85 | 1,5 | ø140 / 3 x M14 |
| 30 | 400 | 550 | 400 | 31,1 | 4,8 | 3° | 1° | 58 | 16 | 5 | 200 | 25 | 100 | 50 | 8 | 66 | 140 | 100 | 1,5 | ø165 / 3 x M16 |
| 50 | 600 | - | 600 | 32,1 | 4,8 | 3° | 1° | 58 | 16 | 5 | 200 | 25 | 100 | 50 | 8 | 66 | 140 | 100 | 1,5 | ø165 / 3 x M16 |
| 90 | 900 | - | 900 | 58,7 | 7,6 | 3° | 1° | 70 | 19 | 5 | 260 | 30 | 110 | 62 | 8 | 80 | 160 | 125 | 2,0 | ø215 / 3 x M20 |

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## Symbols:

| | | | |
|---|---|---|---|
| F (kN) | = dynamic load | $P_{Elz}$ (kW) | = operating performance of the spindle gear |
| v (m/min) | = lifting speed | $P_{ges}$ (kW) | = operating performance of all spindle gears |
| s (mm) | = spindle pitch | $P_{Anl}$ (kW) | = operating performance of the system |
| n (R/min) | = revolutions/min at the worm | $\eta_{ges}$ | = operating efficiency (preselection table page 5) |
| i | = worm gear reduction | $\eta_{Anl}$ | = efficiency of the system |
| $f_M$ | = factor for spindle load torque | $M_{sp}$ (Nm) | = spindle load torque |
| | | M (Nm) | = load torque at the worm |

## Driving power:

If the required driving power cannot be read sufficiently clear from the preselection and performance charts, it is computed as follows:

**Driving power $P_{Elz}$ per spindle gear:**

$$P_{Elz} = \frac{F \times v}{61{,}2 \times \eta_{ges}}$$

## Driving power $P_{ges}$ all of multiple spindle systems:

After adding the individual performances $P_{Elz}$ to reach the total performance $P_{ges}$, the losses of spacer shafts, bevel gears, couplings, pedestal bearings, alignment errors etc. must be allowed for.

| | | |
|---|---|---|
| Standard value in case of 2 spindle gears | $\eta$ | 0,95 |
| 3 spindle gears | $\eta$ | 0,90 |
| 4 spindle gears | $\eta$ | 0,85 |
| 6-8 spindle gears | $\eta$ | 0,80 |

$$P_{Anl} = \frac{P_{ges}}{\eta_{Anl}}$$

## Starting capacity:

To compute the starting capacity the performance value $P_{Elz}$ or $P_{Anl}$ is multiplied by 1.3.

## Ambient temperature:

At an ambient temerature higher than +20°C the operating factor must be reduced in correspondence with the following table.

| Ambient temperature °C | 50 | 60 | 70 | 80 |
|---|---|---|---|---|
| max. permiss.OF in %/h | 18 | 15 | 10 | 5 |
| max. permiss.OF in %/10min | 27 | 22 | 15 | 8 |

## Load torque at the worm:

$$M = \frac{F \times s}{2 \times \pi \times i \times \eta_{ges}}$$

$$M = \frac{9550 \times P_{Elz}}{n}$$

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## Mounting

Spindle gears without swivelling equipment must be mounted in true alignment on a flat surface which must be so stiff that it can assume the maximal load without oscillations or deformations.
In lifting systems the spindle noses (in case of the basic type) or the traveling nuts (in case of the traveling nut type) must lie level with each other before the worms of the spindle gears are connected.
Before the driving gear is mounted the sense of rotation must be checked: in bevel gear driven lifting systems the sense of rotation can easily be confused; the result would be faulty mounting and possible damage of the installation.
Before putting it into service the electric cylinder or the lifting system should be turned by hand once. If this requires non uniform forces the electric cylinders are misaligned both to each other and to the installation. Adjustments are necessary; the fastening screws must be worked loose and the whole lifting gear must again be turned by hand.
Oil-lubricated worm gears: the upper screwed sealing plug must be replaced by the vent screw provided.
If our specifications and performances according to the technical instructions are nor observed and/or the components are not used as prescribed, any warranty claims will no longer be applicable.

## Maintenance

By electric cylinder the worm gears are filled with the greasing AGIP GRS M2 and the tube systems are filled with the greasing Klüberplex GE11-680 in the factory.
Grease the worm gear and the tube system only in the driven out condition with the lubricating nipples at regular intervals (~ 30-50 operating hours). The intervals depend on the given operating conditions and the duty cycle of the spindle gears. In case of doubt please set up the lubrication plan together with us. After approx. 200-300 operating hours the wear of the tube system due to the backlash of threads should be checked. The maximal normal backlash of single trapezoid threads must not exceed 1/4 of the thread pitch. In the cases of multiple threads or special threads 1/4 of P is the maximum normal acceptable backlash.
When the maximum normal backlash is reached, the traveling nut in the tube system must be replaced. After a short run-in period all screws must be checked.
After approx. 500 operating hours we recommend cleaning gear and spindle to remove the grease, checking all parts as to wear, and recharging them with new grease.
Recommended lubricants: Shell Darina 2, Castrol Grease MS3, BP Energrease LS-EP2.
The lubricant recommended can be used both for gears and spindles. If a high-grade spindle lubricant has to be used, we recommend Klueberplex GE 11-680.
For special conditions (e.g. higher temperatures) we recommend the lubricants specified in the enclosed technical manual.
For oil-lubricated electric cylinders please ask for a special service manual.
If you order spare parts, the gear specifications, marked on the type plate must be provided.

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## External dimensions

For connecting dimensions, the tolerances given in the corresponding drawings are valid. The values where no tolerance is indicated are untoeranced dimensions.

## The axial backlash of the spindle

The axial backlash of the traveling nut in the tubing system is necessary for the building-up of an adequate lubricating film. Wear during operation will increase the axial backlash; please pay attention to our operating and maintenance instructions.

| Spindle pitch P (mm) | 6 | 7 | 8 | 10 | 12 | 16 |
|---|---|---|---|---|---|---|
| max. axial backlash of the threaded spindle as manufactured (mm) | 0,25 | 0,26 | 0,28 | 0,30 | 0,32 | 0,40 |
| max. permissible axial backlash due to wear (mm) | 1,5 | 1,7 | 2,0 | 2,5 | 3,0 | 4,0 |

## Pitch errors of the spindle

Due to the work tolerances of the processing machines a pitch error of 0,05 to 0,075 mm per 300 mm threaded length results in whirl thread spindles. In the practice this error has hardly any effect on the precision of the lifting. In case of doubt please contact us.

## Backlash of tooth flank

The backlash of the tooth profile between worm and wormwheel is 0,05 to 0,15 mm as manufactured. Due to the high speed-increasing ratios the effect on the lifting motion is practically imperdeptible.

## Adjustment tolerance

An adjustment tolerance around 0,1 mm can easily be achieved with one-side load direction and manual operation. In the case of an alternation of load the above-mentioned points must be observed. For manual operation also fixed stop motion devices can be used.
In case of a motor drive a number of additional factors must be taken into account, e.g. speed of the driving motor, lifting load, flywheel effect, speed-reducing ratios in the piece parts, efficiency, load direction etc..
If suitable limit switches are used, which are adjusted in the process of assemblage, the stop point can be determined relatively exactly (prerequisite: constant operating conditions).
If in certain cases greater halting precision is required, braking motors or motor operators equipped with brakes must be used. Fixed stroke-arresting devices are not permissible. If in certain cases running against fixed devices is unavoidable, adequate steps must be taken to make sure that overstress is prevented (e. g. by slipping clutch, load-controlled motor cutoff, etc.).
For further information please contact us.

# Questionnaire

**ENZFELDER** GMBH
**Power transmission- and lifting engineering**
Eichengasse 36
A-2551 Enzesfeld-Lindabrunn
Tel.: ++43 (0) 2256 81287-0
Fax: ++43 (0) 2256 81287-95
E-Mail: office@enzfelder.at
Internet: www.enzfelder.at

COMPANY .....
ADDRESS .....
NAME ..... Dept ..... Phone ..... Fax .....

**To be able to prepare a proposal meeting your specific demands, please provide us with the following information:**

In which systems are the lifting elements to be used?

.....
Number of systems .....
Number of lifting elements per system .....

## AXIAL LOAD

| | | | | | | |
|---|---|---|---|---|---|---|
| per system | pressure | dynamic | ..... kN | tension | dynamic | ..... kN |
| | | static | ..... kN | | static | ..... kN |
| per spindle | pressure | dynamic | ..... kN | tension | dynamic | ..... kN |
| | | static | ..... kN | | static | ..... kN |

## OPERATING CONDITIONS

Effective stroke ..... mm
Side forces acting ..... kN
Lifting speed desired ..... mm/min
Mounting of spindle ..... vertically/horizontally
Ambient temperature ..... °C
Duty cycle/load conditions per 10min .....
per hour. .....
Distance per alternation of load ..... mm

## FOR WHICH PARTS DO YOU WISH TO RECEIVE OUR OFFER?

**Electric cylinder with trapezoid thread spindle**
Spindle nose ..... 0/1/2/3/4/5/6/So
Separate spindle nose .....

**Electric cylinder with ball bearing spindle**
Spindle nose ..... 0/1/2/3/4/5/6/So
Separate spindle nose .....

**bevel gear box** ..... yes/no
**Elastic cardan shaft** ..... yes/no
**Couplings** ..... yes/no
**Pedestal bearing** ..... yes/no
**Motor flanges** ..... yes/no
**Motor; voltage** ..... **frequency** ..... **system of protection** .....
**Limit stop** ..... yes/no
**Crank handle, handwheel** ..... yes/no
**bearing console** ..... yes/no
**Swivelling console** ..... yes/no
**Swivelling plate** ..... yes/no
**Other** .....

# Examples for arrangements

**ENZFELDER** GMBH
**Power transmission- and lifting engineering**
Eichengasse 36
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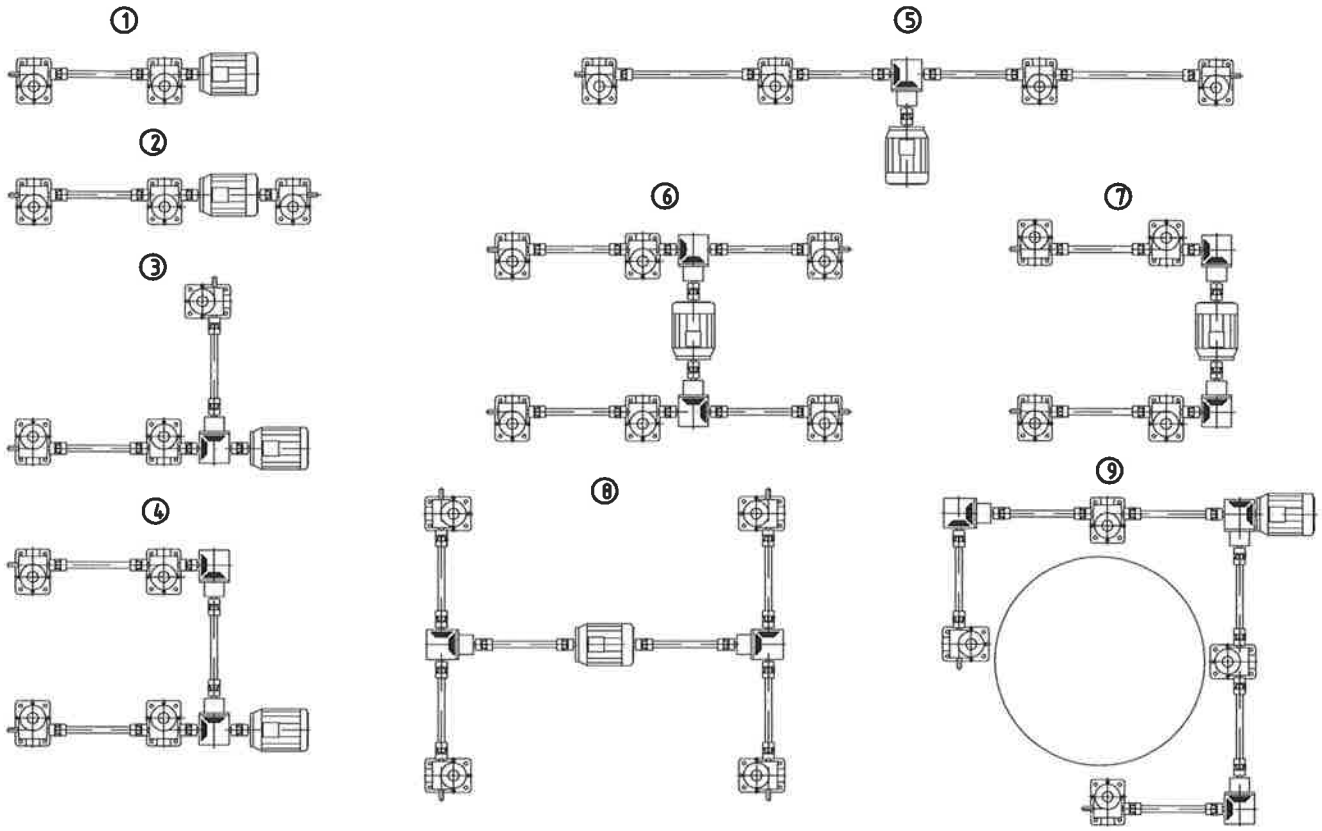
Tel.: ++43 (0) 2256 81287-0
Fax: ++43 (0) 2256 81287-95
E-Mail: office@enzfelder.at
Internet: www.enzfelder.at

## Anordnungsbeispiele



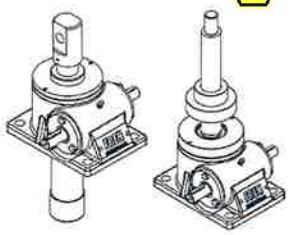

Please provide us with a sketch on the desired arrangement as shown above or according to your own ideas.
Please enter the distance from spindle to spindle and possibly lateral guidings into the sketch.
If you wish to receive an offer on spindle lifting elements actuated by multi-thread spindles or ball screw spindles, or if stainless material is desired, please let us know, too.

## Sketch

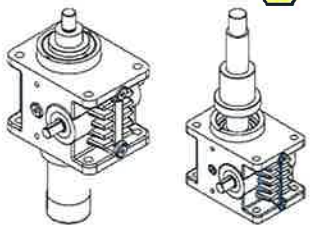
# Product overview 03/2015

Eichengasse 36, A-2551 Enzesfeld, Tel.: +43 (0) 2256 81287 - 00, Fax.: +43 (0) 2256 81287 - 95, office@enzfelder.at, www.enzfelder.at

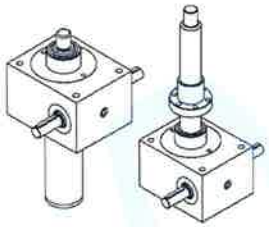
## SG
Screw jack
Classic



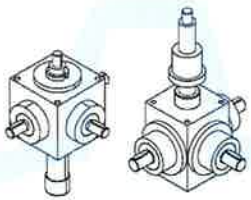
## HSG
High performance-
Screw jack



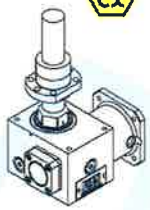
## BG
Screw jack
Cubic



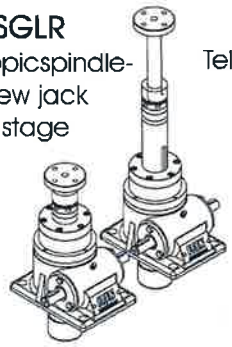
## SHG
Quick-lifting
screw jack



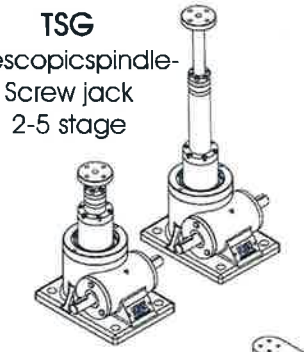
## SH
Servo lifting
gear



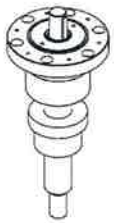
## TSGLR
Telescopicspindle-
Screw jack
2-stage



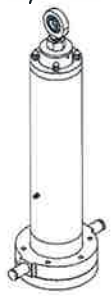
## TSG
Telescopicspindle-
Screw jack
2-5 stage



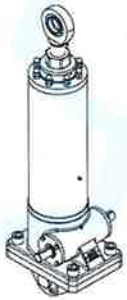
## SLA
Spindlebearing



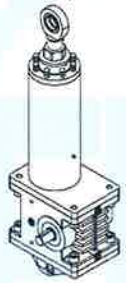
## SEZ
Spindlebearings-
Cylinder



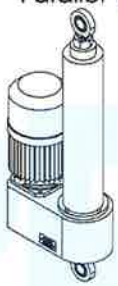
## ELZ
Electric cylinder



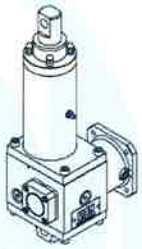
## HELZ
High performance-
Elektric cylinder



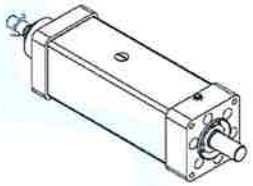
## ELZP
Electric cylinder
Parallel



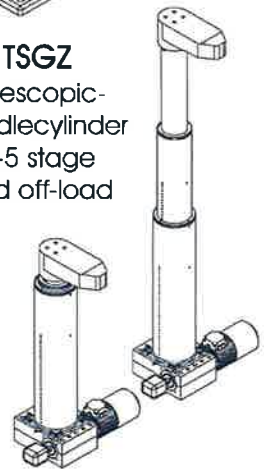
## SHELZ
Servo electric-
cylinder



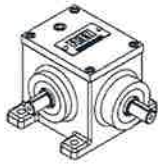
## EPNEU
Spindle-
Elektric cylinder



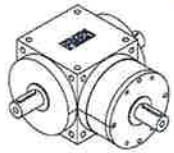
## TSGZ
Telescopic-
spindlecylinder
2-5 stage
And off-load



## K
Bevel gear
Type K

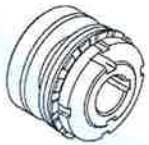


## H
Bevel gear
Type H



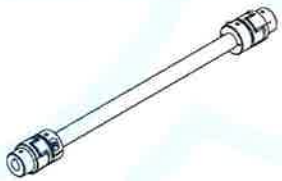
## R / GS
Elastic / backlash-free
Coupling

## RT
Slip hub

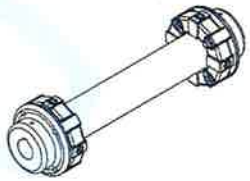


## RK
Slip coupling

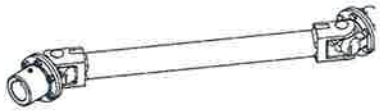
## ZR
FREN
Connecting shaft



## G / GX
Elastic
Connecting shaft

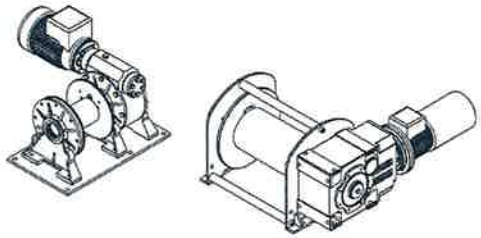


## Cardan shaft



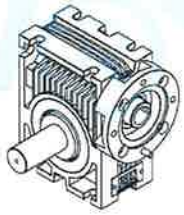
## HT
Lifting table
mechanic / hydraulic

## SW
Rope winche

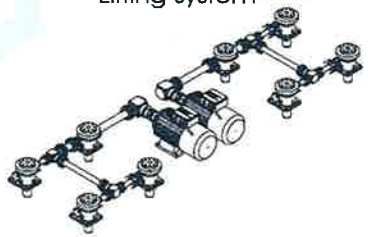


## PLG
Planetary gear

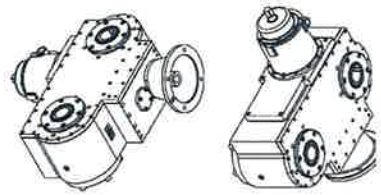
## uniCe
Worm gear



## HA
Lifting system



## Special gear

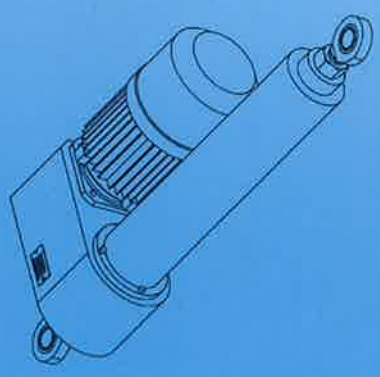


# ENZFELDER GmbH

## Power transmission- and lifting engineering

# Electric cylinder parallel

# Type ELZP



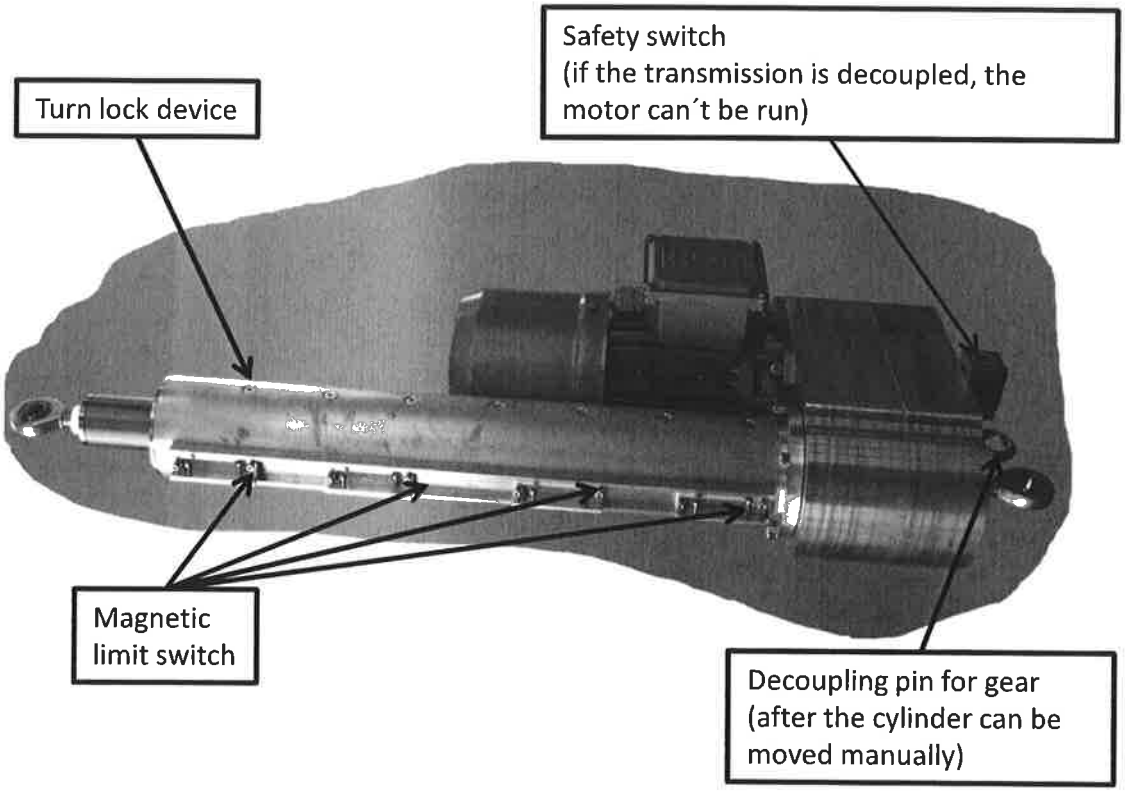
# ELZP

## Elektrozylinder parallel

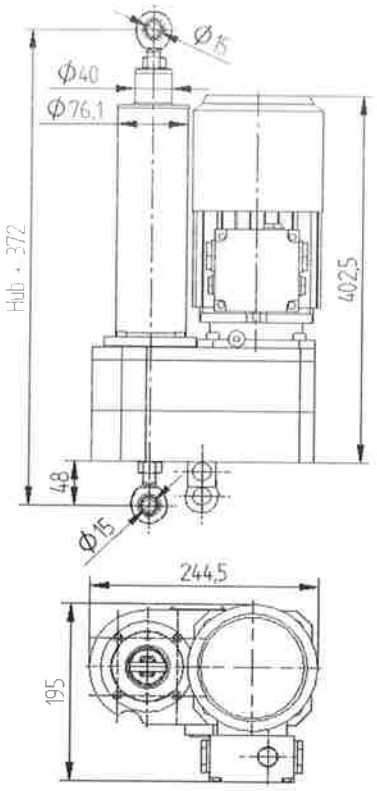
The newly developed electric cylinder ELZP is an ideal extension of the comprehensive program of gear of the company Enzfelder. With the special construction, motor receives parallel to the cylinder tube, you get a very compact cylinder which convinces with its maximum efficiency. In combination with the specially developed transmission decoupling system, for manual emergency operation, the ELZP is ideal for opening and closing of gates, doors, windows and flaps. This is just one of countless possibilities for the cylinder is ideal for, you just need to let your ideas run wild.

## Advantages of the cylinder:

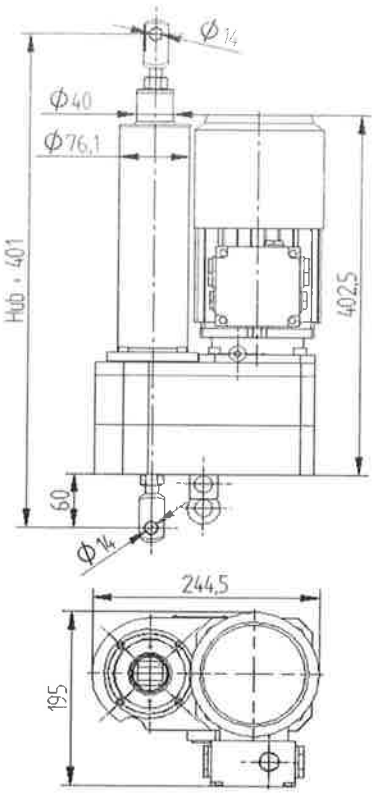
+ Compact design and maximum efficiency
+ High lifting speeds
+ Long life
+ Large selection of custom equipment
+ Transmission decoupling system for manual emergency operation
+ Wide application range



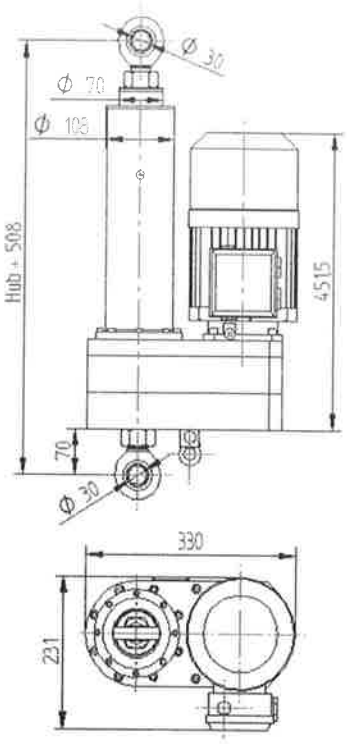
## ELZP 0006/ 0018
with swivel head




## ELZP 0006/ 0018
with clevis




## ELZP 0050
with swivel head




| Gearbox | | | | | | Motor | | | |
|---|---|---|---|---|---|---|---|---|---|
| Designation | Nominal power | Lifting speed | Duty cycle | Spindle | Max. rpm | Designation | Power | Voltage | Brake |
| ELZP 0006 | 6 kN | 2,933 m/min | 30 %/h | KGT 1610 | 1400 | AC motor 7WAR 72N4-BR5 | 0,37 kW | 400 V / AC | 230 V |
| ELZP 0018 | 18 kN | 1,653 m/min | 30 %/h | KGT 2510 | 900 | AC motor 7WAR 81N4-BR5 | 0,75 kW | 400 V / AC | 230V |
| ELZP 0050 | 50 kN | 1,467 m/min | 30 %/h | KGT 3210 | 1370 | AC motor 7WAR 91S4-BR20 | 1,1 kW | 400 V / AC | 230 V |

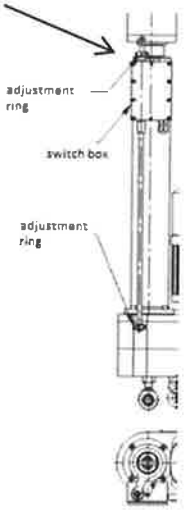
### Stepless limit switch SEA

operating or
operating and emergency
limit switches
turn only at the top
and the lower end position
switch as an opener or
closers possible

**Switching capacity**

| | | |
|---|---|---|
| 250 V | AC | 13 A |
| 250 V | AC | 9 A |
| 250 V | AC | 6 A |
| 250 V | AC | 3 A |
| 24 V | DC | 8 A |
| 24 V | DC | 2 A |

Possibilities:
SEA2 or SEA4




### Magnetic limit switch MEA

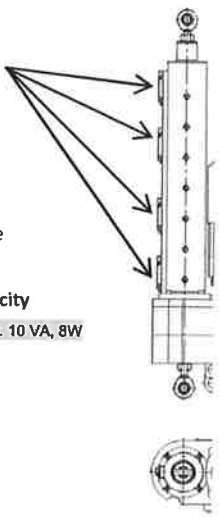
**Magnetic switch:**

adjustable
limit switch, there are
also intermediates
possible. This type of
limit switch is always
with a turn lock device

**Switching capacity**

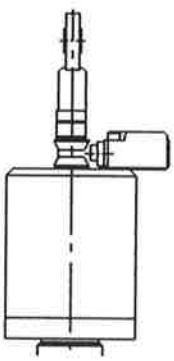
max. 250 V AC/DC 0,5 A max. 10 VA, 8W

Cablelength: 1 m
Possibilities:
MEA1 bis MEA10

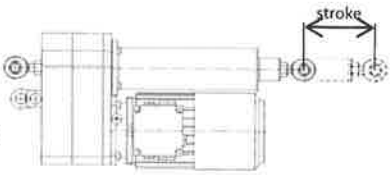


### Tension-pressure Overload protection ÜS

With the Overload
protection the process path
can slightly differ but not
more than 9 mm.

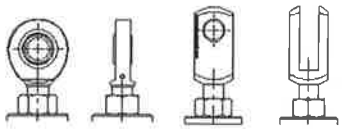


SI = with safety nut
00 = without safety nut




GEK = with transmission decoupling system
00 = without gear decoupling system

AC = AC brake motor
DC = DC brake motor
00 = without motor




00 = without turn lock device
VS = with turn lock device

Standard ratio
on request are
other reductions
possible

00 = no limit switch
MEA = magnetic
limit switch
SEA = stepless
limit switch

00 = no Overload
protection
Üsx = Overload protection
x is the release force
in kN

Refers to the
possible nominal power

ELZP
Electric cylinder
parallel

**ELZP 0006-5,44-5-GEK-SI-450-AC-VS-5-SEA4-ÜS7**

Type

Gear size

Reduction i

Spindle nose

Transmission decoupling

Safety nut

Stroke mm

Motor

Turn lock device

Head on the housing

Limit switch

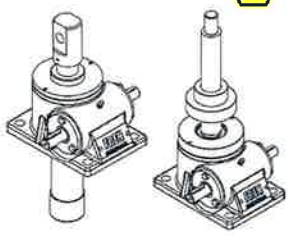
Number of Switches

Tension-pressure -overload protection

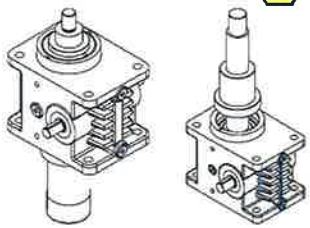
# Product overview 03/2015

Eichengasse 36, A-2551 Enzesfeld, Tel.: +43 (0) 2256 81287 - 00, Fax.: +43 (0) 2256 81287 - 95, office@enzfelder.at, www.enzfelder.at

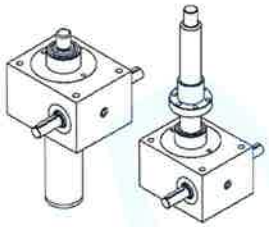
## SG
Screw jack
Classic



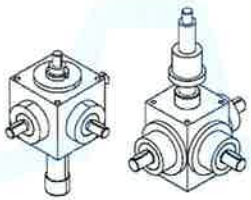
## HSG
High performance-
Screw jack



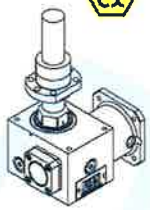
## BG
Screw jack
Cubic



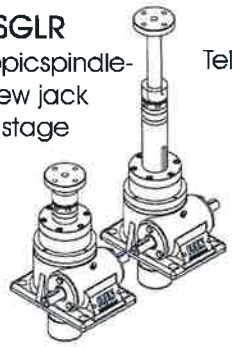
## SHG
Quick-lifting
screw jack



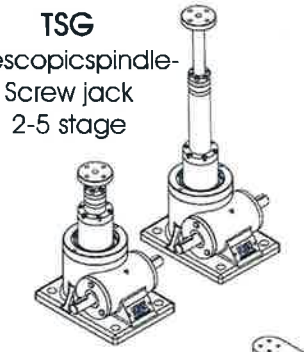
## SH
Servo lifting
gear



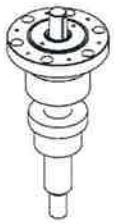
## TSGLR
Telescopicspindle-
Screw jack
2-stage



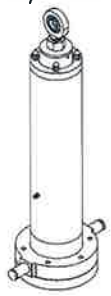
## TSG
Telescopicspindle-
Screw jack
2-5 stage



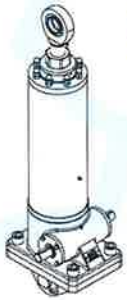
## SLA
Spindlebearing



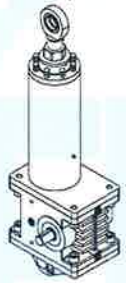
## SEZ
Spindlebearings-
Cylinder



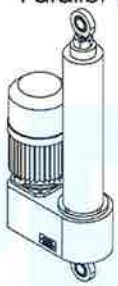
## ELZ
Electric cylinder



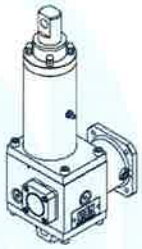
## HELZ
High performance-
Elektric cylinder



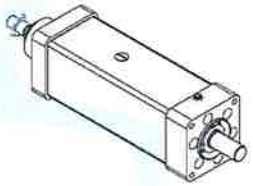
## ELZP
Electric cylinder
Parallel



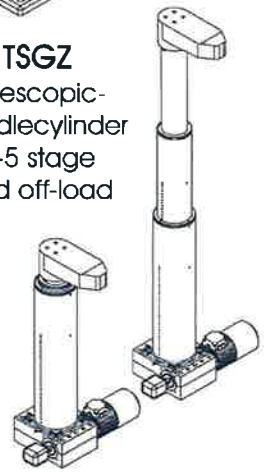
## SHELZ
Servo electric-
cylinder



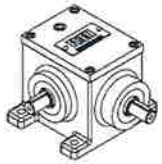
## EPNEU
Spindle-
Elektric cylinder



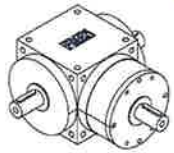
## TSGZ
Telescopic-
spindlecylinder
2-5 stage
And off-load



## K
Bevel gear
Type K

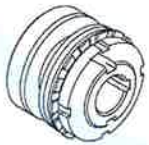


## H
Bevel gear
Type H



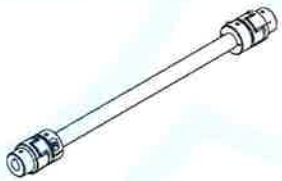
## R / GS
Elastic / backlash-free
Coupling

## RT
Slip hub

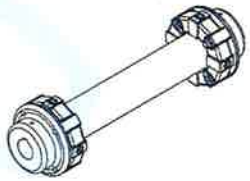


## RK
Slip coupling

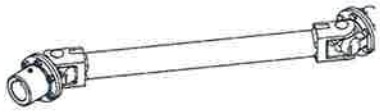
## ZR
FREN
Connecting shaft



## G / GX
Elastic
Connecting shaft

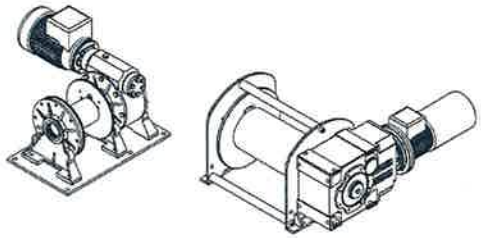


## Cardan shaft



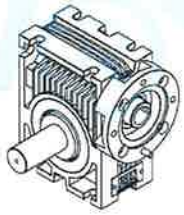
## HT
Lifting table
mechanic / hydraulic

## SW
Rope winche

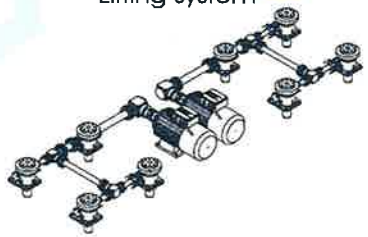


## PLG
Planetary gear

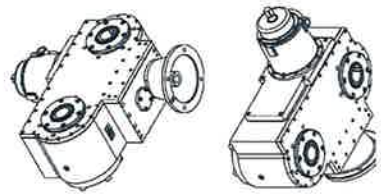
## uniCe
Worm gear



## HA
Lifting system



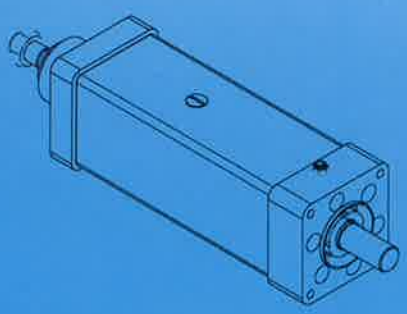
## Special gear



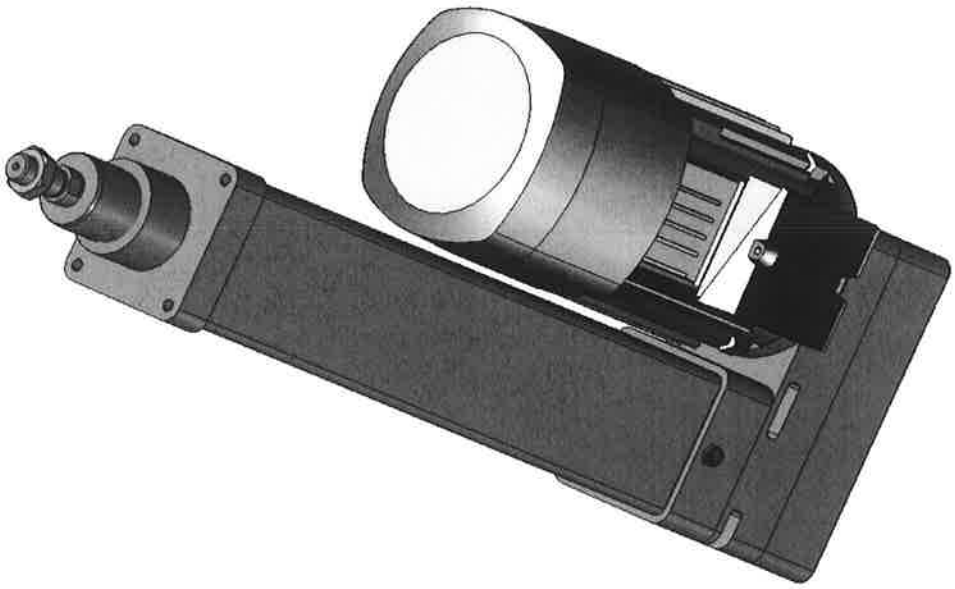
# ENZFELDER GmbH

## Power transmission- and lifting engineering

# electromechanical stainless linear cylinder Type EPNEU



# CATALOG CONTENTS



# GENERAL PRODUCT INFORMATION

for

# EPNEU Stainless linear cylinder

Mechanical linear drives are often more preferred than pneumatic or hydraulic ones. The simple control and precise positioning (up to 1/100mm),
in connection with he high efficiency and the power density makes it to a real allround talent. Because it does not use oil like hydraulic cylinder, even in a case of damage there is no outflow of oil. All outsideparts of the cylinder is made out off stainless steel, it is perfect useable even in the food industrie, chemical industrie and packing industrie.
Through a jointless connection between piston rod and piston end, there is no pullout or twisting even by high loads.
This modular system is rounded off by three-phase AC-motor, direct current or stepping motors / servomotors.
You can choose between direct connection of the motor shaft and cylinder shaft, or through different front end gears (axial or parallel), thereby adjust the speed of the cylinder. So you can reach the max. efficiency of the drive system.
Through lifetimecalculations it is possible to estimate the true lifetime very exactly under real conditions.
The front end gears or other components are also availble in stainless steel.
Because of the simple structure of the electro mechanical linear cylinder „EPNEU", the cost-to-performance ratio is very good.
The standard cylinders are equipped with ball screw drives.
Also useable is, if the situation required, a trapezoid or planetary drive.
The same connection measurements to the standardized pneumatic linear cylinder, makes it possible to use components from the automation sector.
If used as a total closed design (IP66 to IP68), the lubrication and filter points are totaly sealed.
The useage of the cylinder should allthrough be questioned in the factory.
(depends on speed , load, duty cycle,.....)

# QUESTIONNAIRE

traveling distance = stroke(in mm) + 2x safety (2x min.20mm)=_____mm
(for example 100 + 40)

holding force:_____N ( for example 500N)

dyn. force :_____N (for example 400N) (announce the progress at variable force)

self-locking needed: YES / NO (for example No)

pitch:_____mm (for example. ?? uninportant)

moving speed:_____mm/sec (for example 150mm/sec)

number of strokes (double stroke) per minute or per hour:_____ (for example 6 x pro min)

Number of strokes per day:_____ ( for example 2 shift = 2 shift x 8 hour x 60min x 6 = 5760 strokes)

needed lifetime: _____Years ( for example 5 Years)

installation: jointed / cylinder front ***and*** base fixed / cylinder front ***or*** base fixed
( for example jointed )

# SELECTION

## life control

Lifetime calculation for comparison with the table Pre-Selection – Performance Data

lifetime travel =

(number of stroke/day) x (stroke x 2) x (favored lifetime) x 0,000365 = km
for example.: 5760 x (100 x 2 = 200) x 5 x 0,000365 = 2102,4km
in the example, the lifetime of travel in 5 years 2102,4km!!!

Now select the size and pitch from Table Pre-Selection – Performances
In the example chosen: EPNEU040 with KGT1605

## Congestion control

compare permissible travel with size, holding force and load:

| control force – traveling distance | | | | |
|---|---|---|---|---|
| **Type / size** | **max. stroke** | **jointed** | **front *or* base fixed** | **front *and* base fixed** |
| EPNEU040 | 800mm | 1.300N | 2.000N | 2.600N |
| EPNEU050 | 900mm | 2.800N | 4.000N | 4.500N |
| EPNEU063 | 1100mm | 3.500N | 4.500N | 6.000N |
| EPNEU080 | 1200mm | 6.000N | 8.500N | 8.500N |
| EPNEU100 | 1500mm | 10.000N | 13.000N | 13.000N |
| EPNEU125 | 1500mm | 15.000N | 18.000N | 18.000N |

For example.: holding force is bigger as dyn. load = 500N is lesser as 1300N therefore the cylinder is sufficient!

## Speed control

Calculate drive speed:

( movement speed x 60) / pitch of spindle = Revolutions per minute for example
(50mm/sec 5mm = 1800U/min

| Maximum speed (RPM) at traveling distance | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Type / traveling distance** | **200mm** | **350mm** | **600mm** | **800mm** | **1000mm** | **1250mm** | **1500mm** |
| EPNEU040 | 3000 | 1500 | 700 | 450 | 300 | 200 | 150 |
| EPNEU050 | 3000 | 1700 | 800 | 500 | 350 | 240 | 180 |
| EPNEU063 | 3000 | 2500 | 1120 | 720 | 500 | 320 | 240 |
| EPNEU080 | 3000 | 3000 | 1400 | 900 | 600 | 400 | 300 |
| EPNEU100 | 3000 | 3000 | 1900 | 1150 | 800 | 520 | 370 |
| EPNEU125 | 3000 | 3000 | 2200 | 1400 | 950 | 650 | 480 |

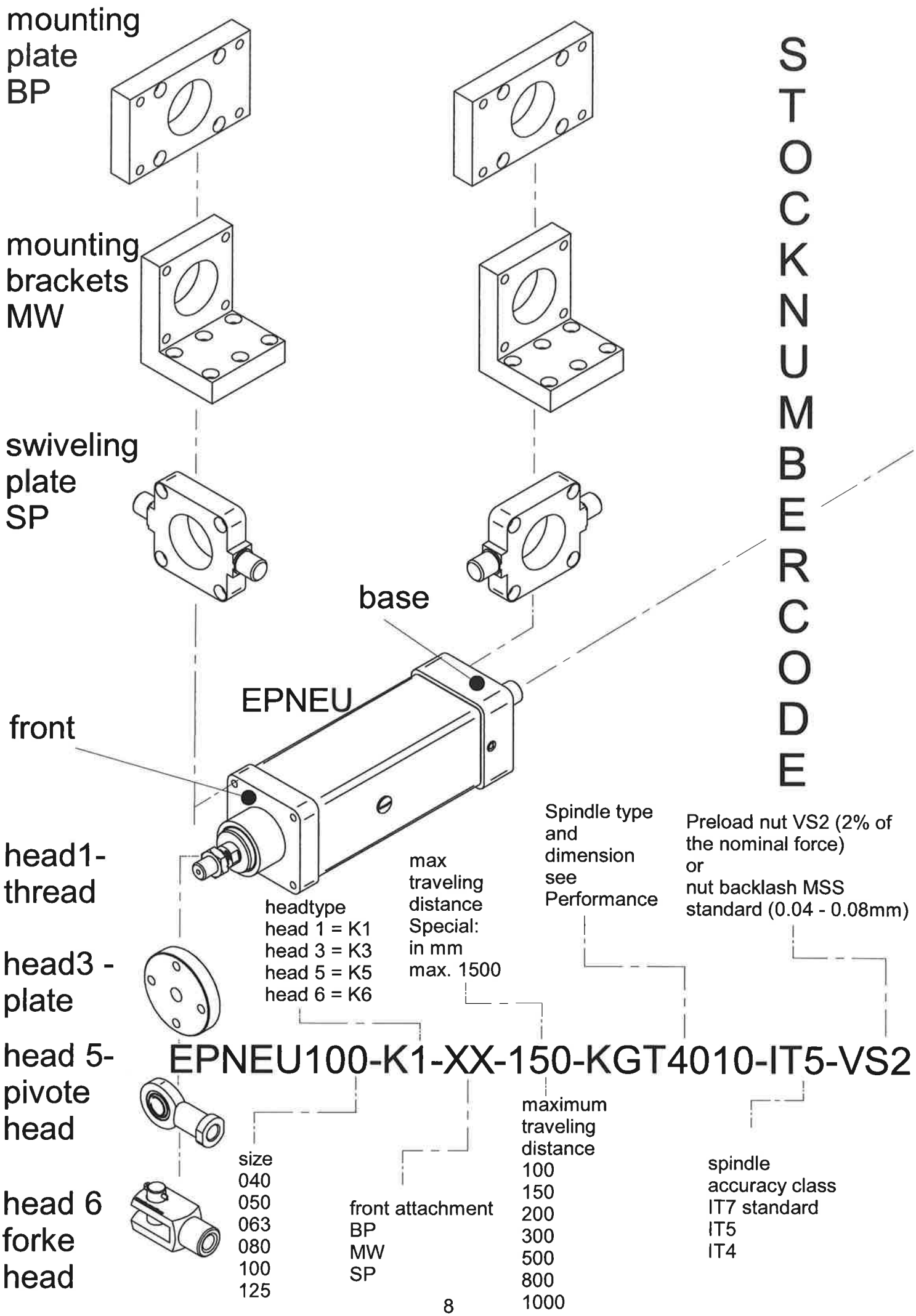
For example: actual speed is less than maximum speed (3000RPM at 200mm traveling distance), therefore the cylinder is usable!

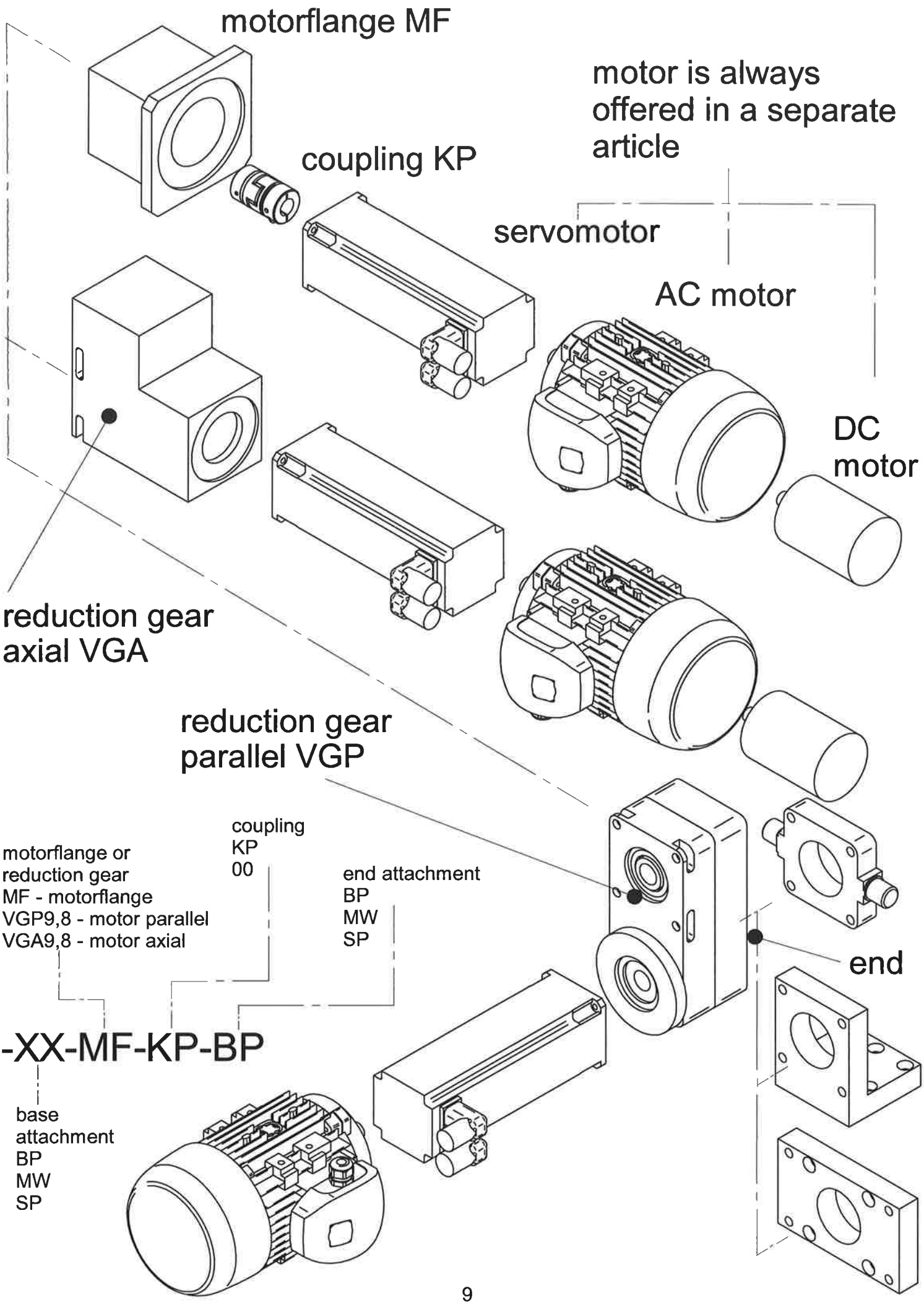
| PRE-SELECTION – PERFORMANCE DATA | | | | | | |
|---|---|---|---|---|---|---|
| **TYPE** | **EPNEU 040** | **EPNEU 050** | **EPNEU 063** | **EPNEU 080** | **EPNEU 100** | **EPNEU 125** |
| **Spindle** | **KGT 1605** | **KGT 2005** | **KGT 2505** | **KGT 3205** | **KGT 4005** | |
| Nominal force N | 2100 | 2500 | 3000 | 4500 | 5200 | |
| Efficiency cylinder | 0,86 | 0,84 | 0,8 | 0,78 | 0,75 | |
| Torque without load * | 0,6 | 0,7 | 0,8 | 0,9 | 1 | |
| Torque for nominal force ** | 2,54 | 3,07 | 3,78 | 5,49 | 6,52 | |
| Lifetime distance at nominal force (km) | 630 | 630 | 630 | 630 | 630 | |
| Lifetime distance at 50% nominal force (km) | 5000 | 5000 | 5000 | 5000 | 5000 | |
| force stat. N | | | | | | |
| **Spindle** | **KGT1610** | **KGT2010** | **KGT 2510** | **KGT3210** | **KGT 4010** | |
| Nominal force N | 2600 | 3000 | 3500 | 8000 | 10000 | |
| Efficiency cylinder | 0,9 | 0,88 | 0,87 | 0,86 | 0,83 | |
| Torque without load * | 1 | 1,1 | 1,15 | 1,2 | 1,3 | |
| Torque for nominal force ** | 5,6 | 6,53 | 7,55 | 16,01 | 20,48 | |
| Lifetime distance at nominal force (km) | 1250 | 1250 | 1250 | 1250 | 1250 | |
| Lifetime distance at 50% nominal force (km) | 10000 | 10000 | 10000 | 10000 | 10000 | |
| force stat. N | | | | | | |
| **Spindle** | | **KGT 2020** | **KGT 2520** | **KGT 3220** | **KGT 4020** | |
| Nominal force N | | 3200 | 4800 | 8500 | 11000 | |
| Efficiency cylinder | | 0,9 | 0,9 | 0,89 | 0,88 | |
| Torque without load * | | 1,9 | 1,9 | 2 | 2,2 | |
| Torque for nominal force ** | | 13,22 | 18,88 | 32,4 | 41,99 | |
| Lifetime distance at nominal force (km) | | 1250 | 1250 | 1250 | 1250 | |
| Lifetime distance at 50% nominal force (km) | | 10000 | 10000 | 10000 | 10000 | |
| force stat. N | | | | | | |

For deviating data or higher loads, please ask at the factory!
Attention: Observe for strokes EPNEU-linear cylinders ( except those marked) are not self-locking!

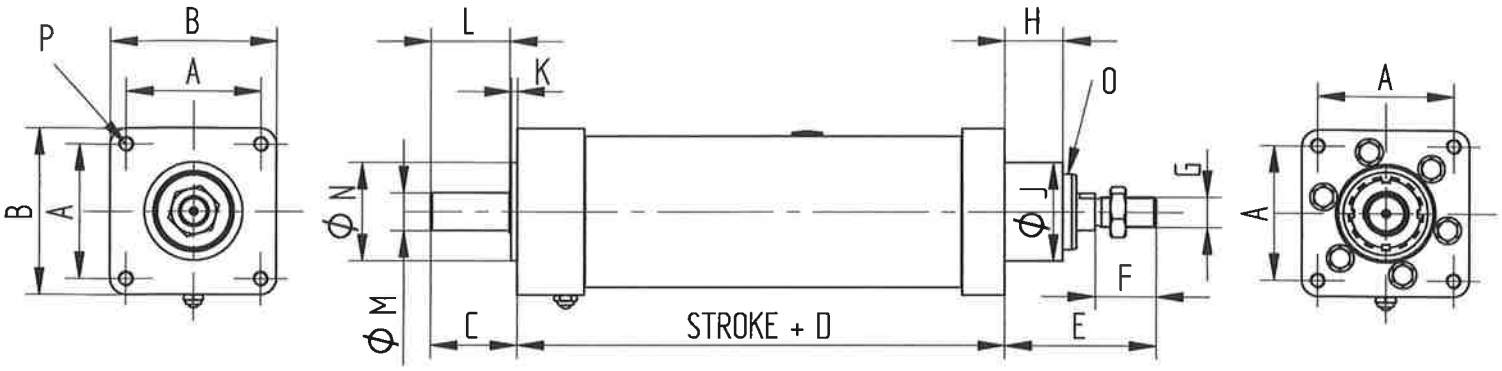
| PRE-SELECTION – PERFORMANCE DATA | | | | | | |
|---|---|---|---|---|---|---|
| **TYPE** | **EPNEU 040** | **EPNEU 050** | **EPNEU 063** | **EPNEU 080** | **EPNEU 100** | **EPNEU 125** |
| **Spindle** | | **KGT 2050** | **KGT 2550** | **KGT 3240** | **KGT 4040** | |
| Nominal force N | | 2200 | 4200 | 5500 | 13000 | |
| Efficiency cylinder | | 0,9 | 0,9 | 0,9 | 0,9 | |
| Torque without load * | | 4 | 4 | 3,5 | 3,7 | |
| Torque for nominal force ** | | 23,45 | 41,14 | 42,4 | 95,66 | |
| Lifetime distance at nominal force (km) | | 1250 | 1250 | 1250 | 1250 | |
| Lifetime distance at 50% nominal force (km) | | 10000 | 10000 | 10000 | 10000 | |
| force stat. N | | | | | | |
| **Spindle** | **Tr 16 x 2** | **Tr 20 x 3** | **Tr 25 x 3** | **Tr 32 x 4** | **Tr 40 x 6** | |
| Nennkraft | 1500 | 2600 | 3300 | 5600 | 10500 | |
| Efficiency cylinder | 0,28 | 0,28 | 0,28 | 0,28 | 0,28 | |
| Torque without load * | 1 | 1,1 | 1,2 | 1,3 | 1,5 | |
| Torque for nominal force ** | 2,71 | 5,53 | 6,83 | 14,03 | 37,31 | |
| Lifetime distance at nominal force (km) | 650 | 650 | 650 | 650 | 650 | |
| Lifetime distance at 50% nominal force (km) | 5000 | 5000 | 5000 | 5000 | 5000 | |
| force stat. N | | | | | | |
| **Spindle** | **Tr 16 x 4** | **Tr 20 x 4** | **Tr 24 x 5** | **Tr 30 x 6** | **Tr 40 x 7** | |
| Nominal force N | 1500 | 2600 | 3300 | 5600 | 10500 | |
| Efficiency cylinder | 0,35 | 0,38 | 0,39 | 0,38 | 0,34 | |
| Torque without load * | 1,2 | 1,3 | 1,4 | 1,5 | 1,7 | |
| Torque for nominal force ** | 3,93 | 5,66 | 8,13 | 15,57 | 36,11 | |
| Lifetime distance at nominal force (km) | 650 | 650 | 650 | 650 | 650 | |
| Lifetime distance at 50% nominal force (km) | 5000 | 5000 | 5000 | 5000 | 5000 | |
| force stat. N | | | | | | |

* The idle torque is in new condition, a fluctuation band of 30%
** To accelerate an approximately 1,5f-to 1.8-fold torque should be provided
*** dynamic and static self-locking, except in case of vibrations


mounting plate BP
mounting brackets MW
swiveling plate SP
base
EPNEU
front
head1-thread
head3 - plate
head 5- pivote head
head 6 forke head
STOCKNUMBERCODE
headtype
head 1 = K1
head 3 = K3
head 5 = K5
head 6 = K6
max traveling distance Special: in mm max. 1500
Spindle type and dimension see Performance
Preload nut VS2 (2% of the nominal force) or nut backlash MSS standard (0.04 - 0.08mm)
EPNEU100-K1-XX-150-KGT4010-IT5-VS2
size
040
050
063
080
100
125
front attachment
BP
MW
SP
maximum traveling distance
100
150
200
300
500
800
1000
spindle accuracy class
IT7 standard
IT5
IT4


motorflange MF
motor is always offered in a separate article
coupling KP
servomotor
AC motor
DC motor
reduction gear axial VGA
reduction gear parallel VGP
motorflange or reduction gear
MF - motorflange
VGP9,8 - motor parallel
VGA9,8 - motor axial
coupling KP 00
end attachment
BP
MW
SP
end
-XX-MF-KP-BP
base attachment
BP
MW
SP

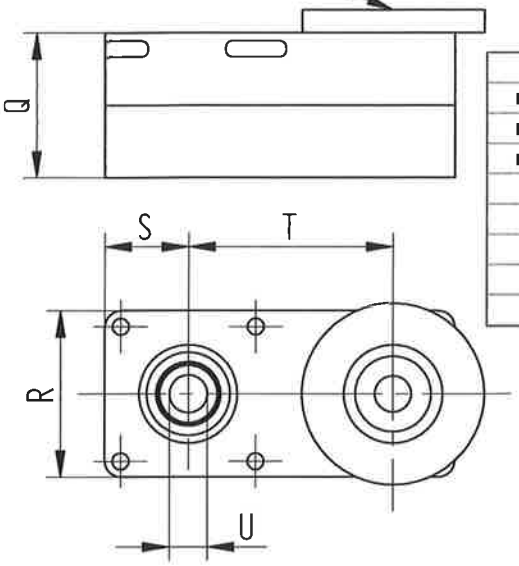
# DIMENSIONS




| Type | EPNEU 040 | EPNEU050 | EPNEU 063 | EPNEU 080 | EPNEU 100 | EPNEU 125 |
|---|---|---|---|---|---|---|
| A | 38 | 46,5 | 56,5 | 72 | 89 | 110 |
| B | 52 | 64 | 74 | 93 | 110 | 134 |
| C | 25 | 30 | 35 | 45 | 55 | 65 |
| D | 134 | 142 | 152 | 163 | 171 | 194 |
| E | 60 | 75 | 75 | 90 | 99 | 118 |
| F | 25 | 30 | 30 | 40 | 40 | 54 |
| G | M12x1,5 | M16x1,5 | M16x1,5 | M20x1,5 | M20x1,5 | M27x2 |
| H | 20 | 25 | 25 | 33 | 38 | 44 |
| J | 35 | 40 | 45 | 55 | 65 | 75 |
| K | 4 | 4 | 4 | 4 | 4 | 4 |
| L | 20 | 25 | 30 | 40 | 50 | 60 |
| M | 8 | 10 | 15 | 18 | 25 | 28 |
| N | 35 | 40 | 45 | 55 | 65 | 92 |
| O | 20 | 25 | 30 | 38 | 50 | 65 |
| P | M6 | M8 | M8 | M10 | M10 | M12 |

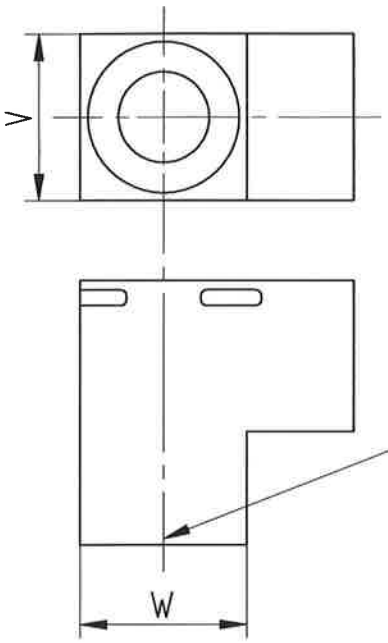
# DIMENSIONS

Flangesize depending
on the motor




## reduction gear unit VGP

| Type | EPNEU 040 | EPNEU 050 | EPNEU 063 | EPNEU 080 | EPNEU 100 | EPNEU 125 |
|---|---|---|---|---|---|---|
| reduction A | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 |
| reduction B | 4,6 | 4,6 | 4,6 | 4,6 | 4,6 | 4,6 |
| reduction C | 9,8 | 9,8 | 9,8 | 9,8 | 9,8 | 9,8 |
| Q | 48 | 66 | 77 | 90 | 96 | 108 |
| R | 52 | 64 | 74 | 93 | 110 | 134 |
| S | 26 | 32 | 37 | 46,5 | 55 | 67 |
| T | | | | | 135 | |
| U | 8 | 10 | 15 | 18 | 25 | 28 |



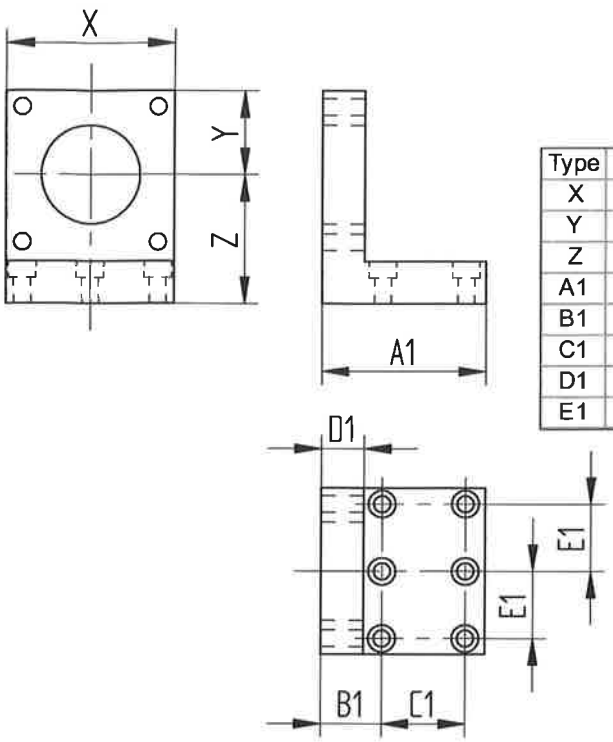

## reduction gear unit VGA

| Type | EPNEU 040 | EPNEU 050 | EPNEU 063 | EPNEU 080 | EPNEU 100 | EPNEU 125 |
|---|---|---|---|---|---|---|
| reduction A | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 |
| reduction B | 4,6 | 4,6 | 4,6 | 4,6 | 4,6 | 4,6 |
| reduction C | 9,8 | 9,8 | 9,8 | 9,8 | 9,8 | 9,8 |
| V | 52 | 64 | 74 | 93 | 110 | 134 |
| W | 52 | 64 | 74 | 93 | 110 | 134 |

Flangesize depending
on the motor

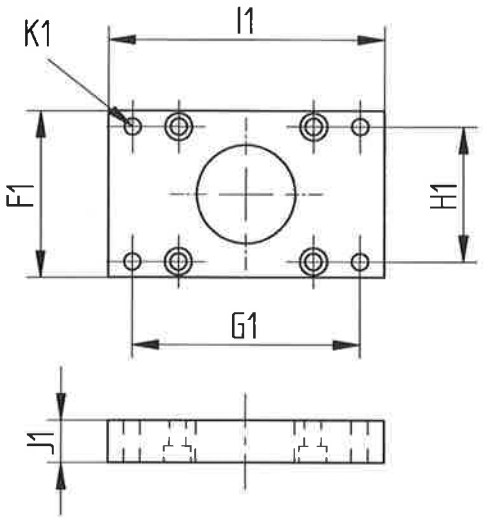
# DIMENSIONS

## mounting brackets MW



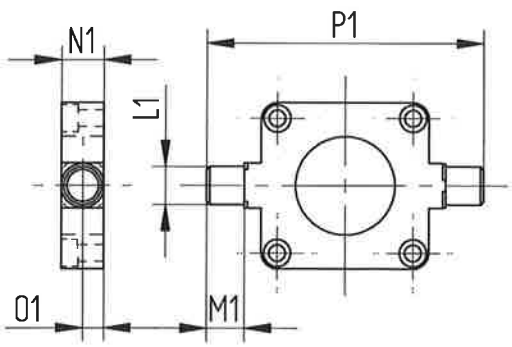

| Type | EPNEU 040 | EPNEU 050 | EPNEU 063 | EPNEU 080 | EPNEU 100 | EPNEU 125 |
|---|---|---|---|---|---|---|
| X | 52 | 64 | 74 | 93 | 110 | 134 |
| Y | 26 | 32 | 37 | 46,5 | 55 | 67 |
| Z | 45 | 55 | 65 | 75 | 85 | 100 |
| A1 | 52 | 64 | 74 | 93 | 108 | 134 |
| B1 | 24 | 30 | 32 | 35 | 40 | 46 |
| C1 | 21 | 25 | 33 | 47 | 57 | 75 |
| D1 | 16 | 20 | 23 | 24 | 28 | 33 |
| E1 | 19 | 23,25 | 28,25 | 36 | 44,5 | 55 |

## mounting plate BP



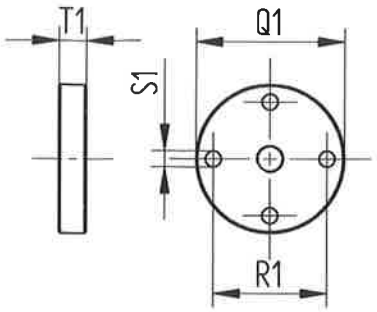

| Type | EPNEU 040 | EPNEU 050 | EPNEU 063 | EPNEU 080 | EPNEU 100 | EPNEU 125 |
|---|---|---|---|---|---|---|
| F1 | 52 | 64 | 74 | 93 | 110 | 134 |
| I1 | 90 | 110 | 120 | 150 | 175 | 210 |
| G1 | 72 | 90 | 100 | 126 | 150 | 180 |
| H1 | 36 | 45 | 50 | 63 | 75 | 90 |
| J1 | 10 | 12 | 12 | 16 | 16 | 20 |
| K1 | 9 | 9 | 9 | 12 | 14 | 16 |

## swiveling plate SP



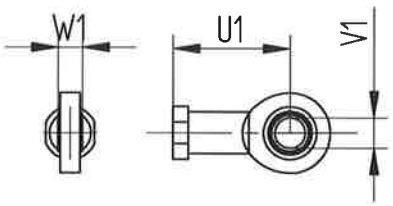

| Type | EPNEU 040 | EPNEU 050 | EPNEU 063 | EPNEU 080 | EPNEU 100 | EPNEU 125 |
|---|---|---|---|---|---|---|
| K1 | 95 | 107 | 130 | 150 | 182 | 210 |
| L1 | 16 | 16 | 20 | 20 | 25 | 25 |
| M1 | 16 | 16 | 20 | 20 | 25 | 25 |
| N1 | 20 | 24 | 24 | 28 | 38 | 50 |
| O1 | 10 | 12 | 12 | 14 | 19 | 25 |
| P1 | 95 | 107 | 130 | 150 | 182 | 210 |

# DIMENSIONS



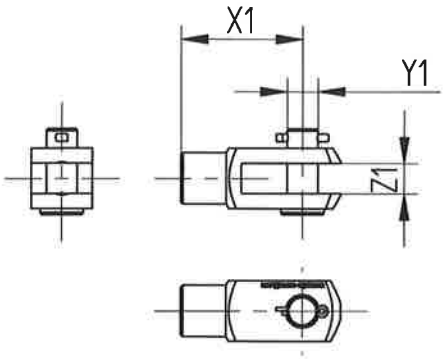

## head3 = plate

| Type | EPNEU 040 | EPNEU 050 | EPNEU 063 | EPNEU 080 | EPNEU 100 | EPNEU 125 |
|---|---|---|---|---|---|---|
| Q1 | 65 | 72 | 72 | 98 | 98 | 120 |
| R1 | 45 | 50 | 50 | 75 | 75 | 100 |
| S1 | 7 | 9 | 9 | 10,5 | 10,5 | 13 |
| T1 | 12 | 12 | 12 | 18 | 18 | 25 |




## head5 = pivoting head

| Type | EPNEU 040 | EPNEU 050 | EPNEU 063 | EPNEU 080 | EPNEU 100 | EPNEU 125 |
|---|---|---|---|---|---|---|
| U1 | 50 | 64 | 64 | 77 | 77 | 110 |
| V1 | 12 | 16 | 16 | 20 | 20 | 30 |
| W1 | 16 | 21 | 21 | 25 | 25 | 37 |




## head6 = fork head

| Type | EPNEU 040 | EPNEU 050 | EPNEU 063 | EPNEU 080 | EPNEU 100 | EPNEU 125 |
|---|---|---|---|---|---|---|
| X1 | 48 | 64 | 64 | 80 | 80 | 110 |
| Y1 | 12 | 16 | 16 | 20 | 20 | 30 |
| Z1 | 12 | 16 | 16 | 20 | 20 | 30 |

# MOUNTING and OPERATING INSTRUCTIONS
# short version

Control the good against grease lekage and damage when unpacking.
Attention: Because the EPNEU linear cylinder usually is not selflocking, it may be possible that the piston rod moves out! Risk against being trapped or damage of the cylinder.
Control that the cylinder corresponds to the order confirmation and make sure that the limit values are not getting overdrived.
If there are special environments (temparature over 50°C or under 0°C, glass fibre dust, thinner, very short stroke (under50mm), rolling mills, steel mills, salt water, ... it is necessary to consultate the factory to take defense against it(expansion below, vibration damper,..).
During installation make sure, that the piston rod is parallel to the guides to avoide side forces.
If there is no motor or other drive mounted, keep attention that no side forces are on the drive shaft.
During headmounting, hold the piston rod with a key to tighten.
The mounting may take place only with retracted piston rod.
There should not be any tension in the piston rod, cylinder tube, bottom- or top plate.

Before test drive, check the direction of rotation (drive in and out) and the limit settings.
Only after slow drive test, control of the limit settings and electric (software) was positive, raise up the speed (but still keep attention to the limit values!!).
There is a risk of injury by the moving parts such as piston rod.

Lubrication: once every 500 working hours, if the travel is reach before then once a year.
(for ball screw drives use only grease without MoS2 aditives)
(for trapezoid drives use grease Klüberplex GE11-680 and only for the bearings grease whitout MoS2 aditives)
the below mentioned quantities and measurements are approx values.
The indication „stroke" is the position of the piston rod, to reach the lubrication point.

| type/travel/quantiy /pitch/stroke | | EPNEU 040 | | EPNEU 050 | | EPNEU 063 | | EPNEU 080 | | EPNEU 100 | | EPNEU 125 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KGT pitch 5 | 200km | 30mm | 0,5g | 30mm | 0,8g | 30mm | 1,1g | 30mm | 1,6g | 30mm | 2,2g | 30mm | 3g |
| KGT pitch10 | 400km | 30mm | 0,7g | 30mm | 1,1g | 30mm | 1,4g | 30mm | 2,3g | 30mm | 3,5g | 30mm | 5g |
| KGT pitch 16 | 700km | 30mm | 0,9g | 30mm | | 30mm | | 30mm | | 30mm | | 30mm | |
| KGT pitch 20 | 800km | 30mm | | 30mm | 2g | 30mm | 1,8g | 30mm | 2,6g | 30mm | 6g | 30mm | 8g |
| KGT pitch 40 | 1600km | 30mm | | 30mm | | 30mm | | 30mm | 4,2g | 30mm | 10g | 30mm | 13g |
| KGT pitch 50 | 1600km | 30mm | | 30mm | 2,8g | 30mm | 5g | 30mm | | 30mm | | 30mm | |
| Tr all pitch | 250km | 30mm | 1,1g | 30mm | 1,6g | 30m | 2,2g | 30m | 3,2g | 30m | 4,4g | 30m | 7 |

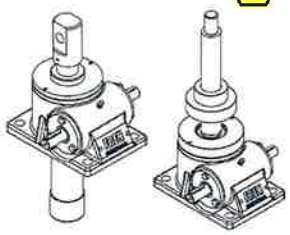
On the stainless piston rod a mixture of grease and/or abrasion of the piston rod sealing can build up by and by.
The usage in the food industrie has to be specified, to use required seals and grease.
Attention: The EPNEU linear cylinder can get up to 70°C, depending on the duty cycle!!!

# NOTES

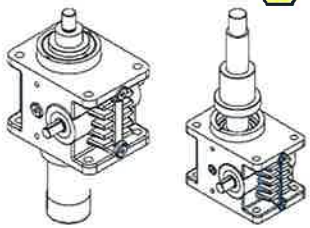
# Product overview 03/2015

Eichengasse 36, A-2551 Enzesfeld, Tel.: +43 (0) 2256 81287 - 00, Fax.: +43 (0) 2256 81287 - 95, office@enzfelder.at, www.enzfelder.at

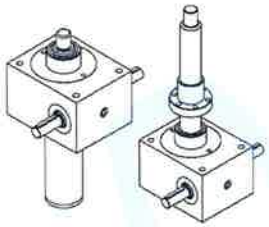
## SG
Screw jack
Classic



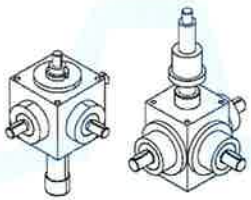
## HSG
High performance-
Screw jack



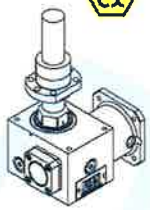
## BG
Screw jack
Cubic



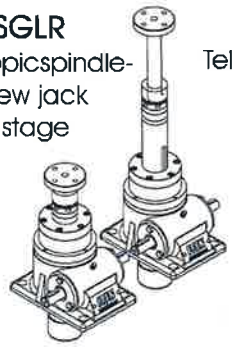
## SHG
Quick-lifting
screw jack



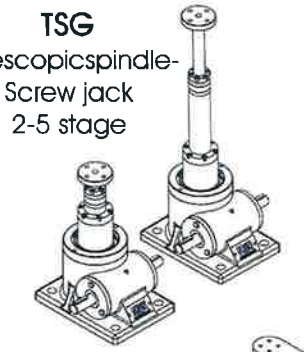
## SH
Servo lifting
gear



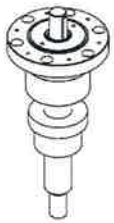
## TSGLR
Telescopicspindle-
Screw jack
2-stage



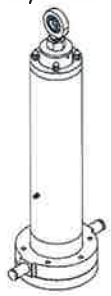
## TSG
Telescopicspindle-
Screw jack
2-5 stage



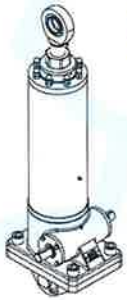
## SLA
Spindlebearing



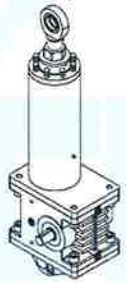
## SEZ
Spindlebearings-
Cylinder



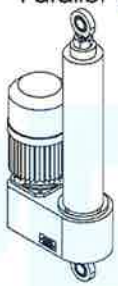
## ELZ
Electric cylinder



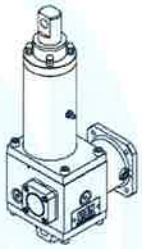
## HELZ
High performance-
Elektric cylinder



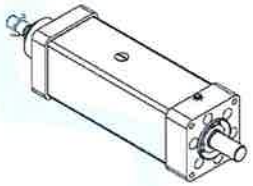
## ELZP
Electric cylinder
Parallel



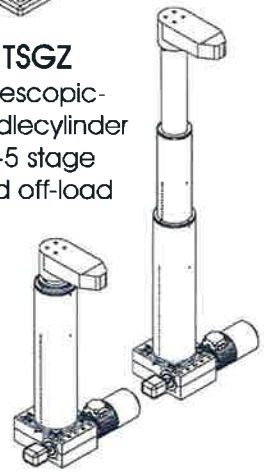
## SHELZ
Servo electric-
cylinder



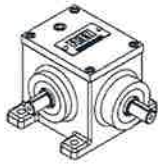
## EPNEU
Spindle-
Elektric cylinder



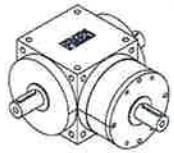
## TSGZ
Telescopic-
spindlecylinder
2-5 stage
And off-load



## K
Bevel gear
Type K

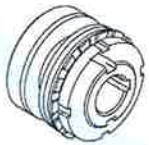


## H
Bevel gear
Type H



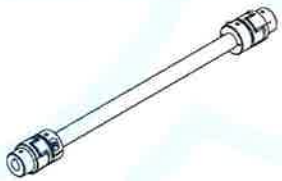
## R / GS
Elastic / backlash-free
Coupling

## RT
Slip hub

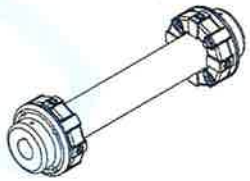


## RK
Slip coupling

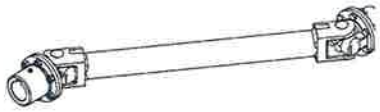
## ZR
FREN
Connecting shaft



## G / GX
Elastic
Connecting shaft

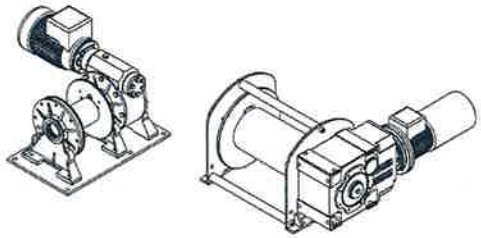


## Cardan shaft



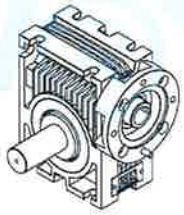
## HT
Lifting table
mechanic / hydraulic

## SW
Rope winche

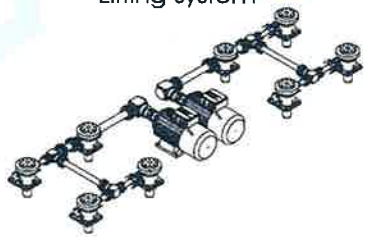


## PLG
Planetary gear

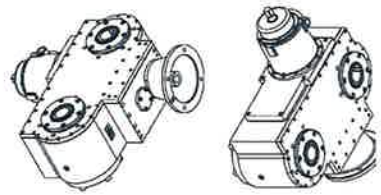
## uniCe
Worm gear



## HA
Lifting system



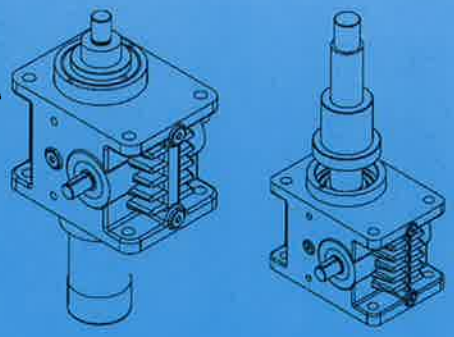
## Special gear



# ENZFELDER GmbH

## Power transmission- and lifting engineering

## High performances Screw jack Type HSG



# History

**1969** Mr. Enzfelder established a job shop in Vienna. Equipped with some machinery, the Enzfelder Company manufactured machine parts according to drawings.
Within one year the number of employees rose to 3. The Enzfelder company started manufacturing threaded spindles and nuts according to drawings. Then the range of manufacturing was enlarged by toothed wheels, screw wheels and endless screws according to drawings.

**1974** The company including the complete manufacture was relocated to Enzesfeld.

**1975** The manufacture of spindle gears was launched. The company's experience in the manufacture of trapezoid-threaded spindles, nuts, worm gear pairs and casings was a valuable basis for the construction. After many tests, the serial production of spindle gears was launched one year later. The result was a product characterized by a first-rate price-performance ratio. The product was distributed by dealers all over Europe.

**1981** The planning and construction of small hydropower plants was launched to replace diesel generators. Environmental protection was not really a topic at that time, however, and the production was stopped in 1986.

**1989** The Enzfelder GesmbH company replaced the Franz Enzfelder Company.

**1990** Scissor-type lifting platforms and cable winches were added to the delivery program.

**1991** Resilient spacer shafts were tested and added to the production range. At the same time, the telescopic spindle gear was developed. A patent for this principle was applied for and issued.

**1993** The sale of spindle gears under their own name was launched and presented for the first time at the Hannover industrial fair. We have been approached with a variety of tasks and have provided solutions according to the customers' needs ever since.

**1994** In cooperation with our customers we produced the first bevel gears to specification.

**1995** Spindle bearing arrangements were designed and included in the standard program.

**1996** The Enzfelder company produced planet gear to specification for the first time.

**1998-1999** The standard programs were enlarged. Additionally, bevel gears are manufactured in a standard design.

**2000** The development of electric cylinders in standard design for very high loads (5-1000kN) was started. At the same time the telescopic spindle gears were refined to save the customer the guiding and locking devices. Since that time we have been able to offer telescopic cylinders, too.

**2001** The development of electric cylinders was completed, and these cylinders were added to the standard program.
At the same time the development and fabrication of cubic spindle gears for lifting loads between 2.5 and 150kN was started. These gears were added to the standard program as well.

**2002** were extended and optimized the series of the electric cylinders. Further we provide an electronic 2D-3D product catalogue of the spindle gears, it makes it possible to integrate our products into your system.

**2002-2003** We putted our new assembling and packaging hall, beside the manufacturing hall, in operation

**2003** We increased our machinery by buying a CNC machine tool with 7 axes, brand AXA. That new CNC machine allows a precise machining of the screw jack housings in only two clamping.

**2003-2004** The engineering started to use new 3-D CAD software, Solid Edge. That software enables our customers to integrate easily our drawings.

**2004** We opened a sales office in France.

**2004-2005** We started to design the high performance screw jacks HSG and we created a range of 10 different sizes.

**2005** First participation to an exhibition in France: INDUSTRIE 2005 at Lyon.

**2005-2006** We started to design a new range of telescopic screw jacks TSGLR. Today, these new telescopic screw jacks, with a more compact design, are used in the stage industry, in the aircraft industry, on train lifting equipments and in machine building.

**2008** We replaced the tread grinding machine by a new CNC thread grinding machine, brand Mikromat.

**2008-2009** transmission program is certified to ATEX

**2009-2010** beginning of the series production of Quick-lifting screw jacks SHG

**2010** Development of the transmission range Servo lifting gear (backlash & game adjustable)
Expand our global market with traders in Australia

**2011** development Servo lifting electric cylinder SHELZ (Servo lifting gear with cylindrical structure) and the beginning of the ELZP Series Electric cylinders parallel for Industry sector applications.

**2012** acquisition of the product group UniCe worm gear, helical worm geared motors, couplings, torque limiters and slip clutches. Expansion screw jacks cubic BG up to size for 1000kN

**2013-2014** revision of the telescopic spindle cylinder TSGZ the new cost-optimized design.
Development of product group Electric PNEU, electric cylinder with ball screw, stainless version in hygienically optimized design with mounting dimensions, speeds and forces such as pneumatic cylinder.

**2014** first Quick-lifting screw jacks with cylindrical structure can be delivered SHGZ = Quick-lifting electric cylinder

In recent years, customer problems are solved in the drive and lifting technology from us. Depending on the application, we developed the optimal solution and made with the best possible price / performance ratio.

Issue 01-2015

# Technical Data

**ENZFELDER** GMBH
**Power transmission- and lifting engineering**
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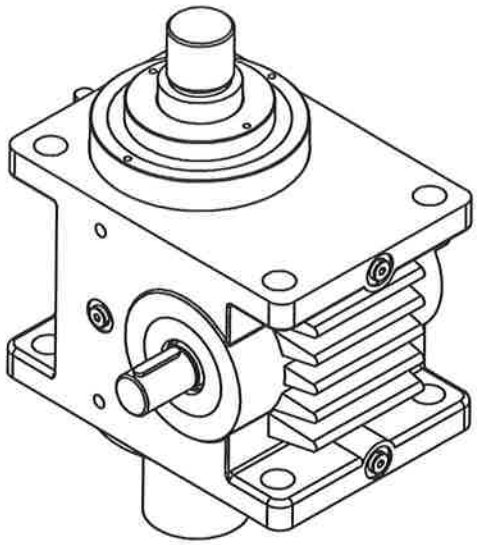

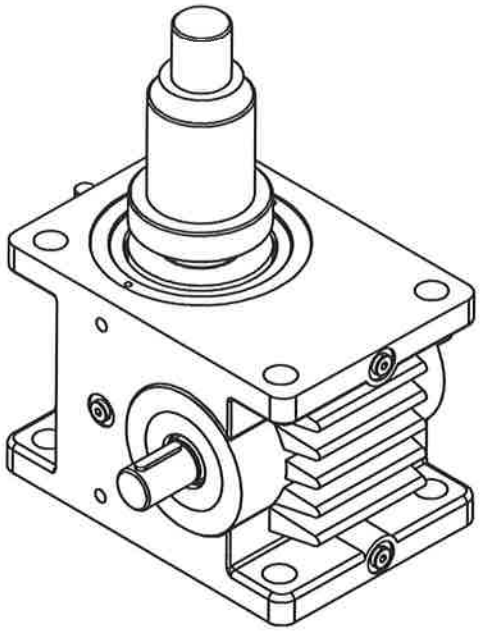

FREN high performances screw jacks are strong worm gear reducers driving a trapezoidal lifting screw. The reducer cases are made of nodular cast iron GGG40 for high loads and meeting high safety standards.
The worm hardened and ground is running on angular ball bearings. The worm wheel is made of high strength material which is particularly abrasion resistant. It is running on thrust ball bearings.
The sizes HSG 31 (force 5kN) to HSG 200 (force 1000kN) are filled with oil on delivery.
The trapezoidal lifting screw can be delivered on standard as a single- start spindle or as a multi- start spindle. For higher demands on regards to lifting speed or duty cycle we use ball screws (KHSG) or planetary roller spindle drives (PHSG).

| Type | | 31 | 36 | 50 | 63 | 80 | 100 | 125 | 140 | 180 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Max. capacity | kN | 5 | 10 | 25 | 50 | 100 | 200 | 350 | 500 | 750 | 1000 |
| Max. tensile force | kN | 5 | 10 | 25 | 50 | 100 | 200 | 350 | 500 | 750 | 1000 |
| Lifting screw | | Tr 18x4 | Tr 22x5 | Tr 40x8 | Tr 50x9 | Tr 60x12 | Tr 70x12 | Tr 100x16 | Tr 120x16 | Tr 140x20 | Tr 160x20 |
| Ratio N | | 4:1 | 5:1 | 6:1 | 7:1 | 8:1 | 8:1 | 10 2/3:1 | 10 2/3:1 | 13 1/3:1 | 13 1/3:1 |
| Raise per revolution N | mm/r | 1,0 | 1,0 | 1,33 | 1,28 | 1,5 | 1,5 | 1,5 | 1,5 | 1,50 | 1,5 |
| Ratio L | | 16:1 | 20:1 | 24:1 | 28:1 | 32:1 | 32:1 | 32:1 | 32:1 | 40:1 | 40:1 |
| Raise per revolution L | mm/r | 0,25 | 0,25 | 0,33 | 0,32 | 0,375 | 0,375 | 0,5 | 0,5 | 0,5 | 0,5 |
| Max. input power at 20% ED/ hour | kW | 0,6 | 0,9 | 1,5 | 2,3 | 3,6 | 4,8 | 7,7 | 10,2 | 12,2 | 17,9 |
| Max. input power at 10% ED/ hour | kW | 1 | 1,5 | 2,6 | 4 | 6,3 | 8,4 | 13,5 | 18 | 21 | 31 |
| Efficiency at ratio N | % | | | | | | | | | | |
| Efficiency at ratio L | % | | | | | on request if needed | | | | | |
| Lifting screw efficiency | % | 42,5 | 43 | 40 | 36,5 | 39,5 | 35,5 | 34 | 30 | 32 | 28,5 |
| Torque on lifting screw at max load | Nm | 7,5 | 18,5 | 80 | 190 | 478 | 1060 | 2600 | 4235 | - | 11115 |
| Max. permissible torque on input shaft | Nm | 13 | 29,5 | 49 | 168 | 398 | 705 | 975 | 1640 | - | 4260 |
| case material | | Al alloy | Al alloy | GGG 40 | GGG 40 | GGG 40 | GGG 40 | GGG 40 | GGG 40 | GGG 40 | GGG 40 |
| Weight without spindle or protection tube | kg | 2 | 4 | 13 | 25 | 47 | 74 | 145 | 335 | - | 870 |
| Weight for each 100mm stroke | kg | 0,16 | 0,23 | 0,82 | 1,3 | 1,79 | 2,52 | 5,2 | 7,7 | 10,87 | 13,82 |

# HSG dimensions translating screw version

**ENZFELDER** GMBH
**Power transmission- and lifting engineering**
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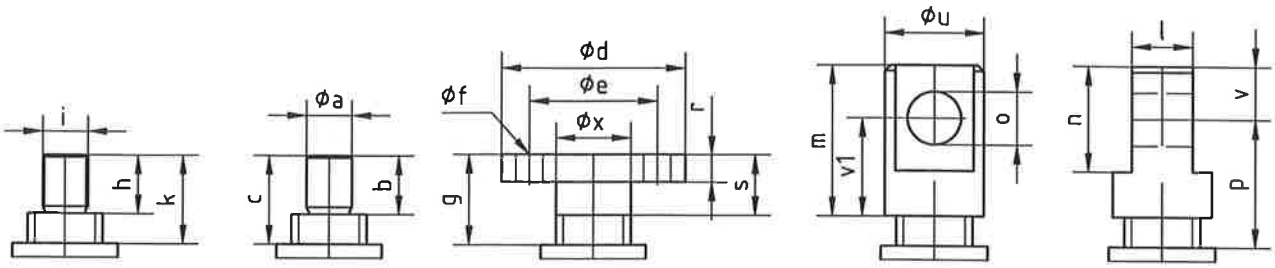
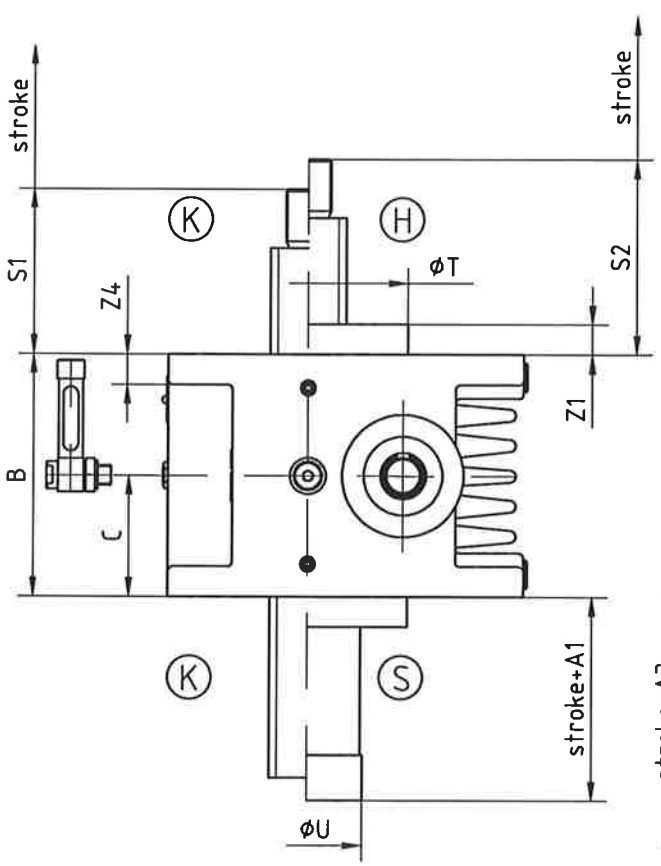
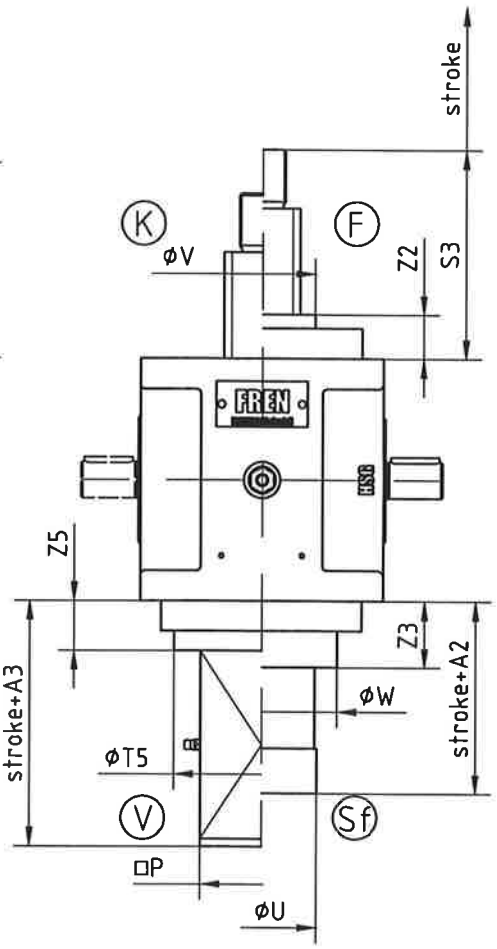
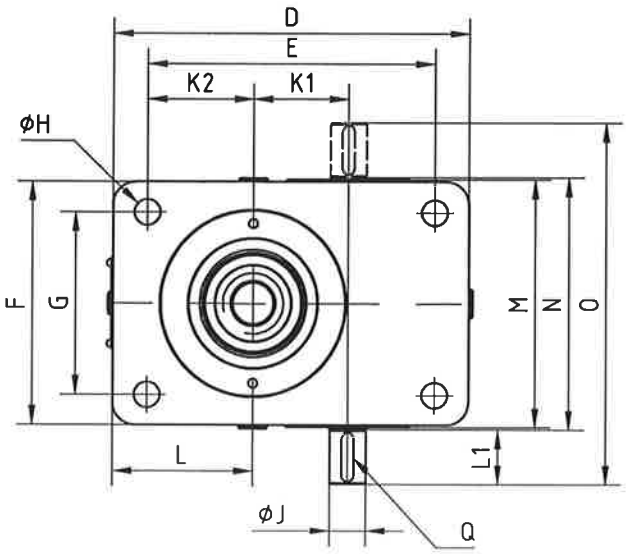
Internet: www.enzfelder.at

Spindle nose 1 Spindle nose 2 Spindle nose 3 Spindle nose 4




**Possible executions:**

K____ Short cover
H____ high cover
F____ Guide
S____ Protection tube
Sf___ protection tube with guide
V____ locked against rotation

# HSG dimensions translating screw version

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Fax: ++43 (0) 2256 81287-95
E-Mail: office@enzfelder.at
Internet: www.enzfelder.at

| Type | 31 | 36 | 50 | 63 | 80 | 100 | 125 | 140 | 180 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|
| Lifting screw | Tr 18x4 | Tr 22x5 | Tr 40x8 | Tr 50x9 | Tr 60x12 | Tr 70x12 | Tr 100x16 | Tr 120x16 | Tr 140x20 | Tr 160x20 |
| A 1 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 |
| A 2 | 39 | 44 | 46 | 52 | 61 | 71 | 76 | 86 | 96 | 101 |
| A 3 | 98 | 104 | 117 | 123 | 136 | 152 | 154 | 179 | 189 | 199 |
| B | 80 | 105 | 130 | 160 | 200 | 230 | 300 | 350 | 400 | 450 |
| C | 40 | 52,5 | 65 | 80 | 100 | 15 | 150 | 175 | 200 | 225 |
| D | 117 | 138 | 175 | 235 | 275 | 330 | 410 | 490 | 595 | 680 |
| E | 95 | 110 | 140 | 190 | 220 | 270 | 330 | 390 | 500 | 550 |
| F | 80 | 105 | 130 | 160 | 200 | 230 | 300 | 350 | 420 | 460 |
| G | 62 | 80 | 100 | 120 | 150 | 175 | 230 | 260 | 320 | 330 |
| ø H | 9 | 9 | 13 | 17 | 21 | 28 | 39 | 46 | 52 | 66 |
| ø J k6 | 10 | 14 | 16 | 24 | 32 | 38 | 42 | 50 | 60 | 70 |
| K 1 | 31 | 36 | 50 | 63 | 80 | 100 | 125 | 140 | 180 | 200 |
| K 2 | 31 | 40 | 50 | 70 | 75 | 87,5 | 110 | 130 | 172,5 | 185 |
| L | 42 | 54 | 67,5 | 92,5 | 102,5 | 117,5 | 150 | 180 | 222,5 | 250 |
| L 1 | 15 | 18 | 28 | 36 | 58 | 58 | 82 | 82 | 95 | 105 |
| M | 83 | 108 | 133 | 163 | 204 | 235 | 305 | 355 | 430 | 470 |
| N | 86 | 112 | 136 | 166 | 206 | 240 | 310 | 360 | 432 | 472 |
| O | 116 | 148 | 192 | 238 | 322 | 356 | 474 | 524 | 622 | 682 |
| Square P | 30 | 40 | 70 | 80 | 80 | 100 | 140 | 180 | 200 | 220 |
| Q | 3x3x12 | 5x5x16 | 5x5x25 | 8x7x32 | 10x8x50 | 10x8x50 | 12x8x70 | 14x9x70 | 18x11x80 | 20x12x100 |
| S 1 | 43 | 45 | 50 | 60 | 70 | 75 | 100 | 120 | 130 | 140 |
| S 2 | 58 | 61 | 68 | 80 | 95 | 105 | 135 | 160 | 175 | 190 |
| S 3 | 66 | 69 | 76 | 89 | 109 | 124 | 154 | 184 | 204 | 219 |
| ø T f7 | 62 | 72 | 92 | 122 | 152 | 182 | 222 | 262 | 332 | 352 |
| ø T 5 | 50 | - | 100 | 115 | 130 | - | 200 | 260 | 285 | 310 |
| ø U | 28 | 37 | 66 | 82 | 78 | 92 | 136 | 143 | 175 | 198 |
| ø V | 35 | 40 | 60 | 70 | 100 | 125 | 160 | 195 | 220 | 240 |
| ø W | 45 | 50 | 80 | 100 | 120 | 150 | 180 | 220 | 270 | 290 |
| Z 1 | 15 | 16 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |
| Z 2 | 23 | 24 | 26 | 29 | 39 | 49 | 54 | 64 | 74 | 79 |
| Z 3 | 29 | 34 | 39 | 44 | 54 | 64 | 74 | 84 | 94 | 109 |
| Z 4 | 10 | 12 | 15 | 20 | 25 | 28 | 35 | 45 | 55 | 60 |
| Z 5 | 27 | - | 28 | 33 | 40 | - | 54 | 63 | 68 | 73 |
| **Spindel end 1** | | | | | | | | | | |
| h | 17 | 24 | 29 | 39 | 49 | 54 | 79 | 99 | 109 | 119 |
| i | M 12x1,5 | M 16x1,5 | M 20x1,5 | M 30x2 | M 42x3 | M 56x3 | M 80x3 | M 100x4 | M120x4 | M140x4 |
| k | 37 | 44 | 49 | 59 | 69 | 74 | 99 | 119 | 129 | 139 |
| **Spindle end 2** | | | | | | | | | | |
| ø a k6 | 12 | 15 | 20 | 30 | 40 | 50 | 80 | 95 | 110 | 130 |
| b | 17 | 24 | 29 | 39 | 49 | 54 | 79 | 99 | 109 | 119 |
| c | 37 | 44 | 49 | 59 | 69 | 74 | 99 | 119 | 129 | 139 |
| **Spindle end 3** | | | | | | | | | | |
| ø d | 62 | 72 | 92 | 122 | 150 | 182 | 222 | 262 | 332 | 352 |
| ø e | 45 | 50 | 65 | 85 | 105 | 135 | 170 | 205 | 250 | 270 |
| ø f | 4x ø6,6 | 4x ø9 | 4x ø14 | 4x ø18 | 4x ø22 | 6x ø26 | 8x ø30 | 8x ø33 | 8x ø39 | 8x ø45 |
| g | 43 | 45 | 50 | 60 | 70 | 75 | 100 | 120 | 130 | 140 |
| r | 8 | 10 | 12 | 18 | 20 | 25 | 30 | 35 | 45 | 50 |
| s | 48 | 25 | 30 | 40 | 50 | 55 | 80 | 100 | 110 | 120 |
| ø x | 20 | 30 | 35 | 50 | 65 | 85 | 115 | 140 | 165 | 185 |
| **Spindle end 4** | | | | | | | | | | |
| l -0,2 | 20 | 25 | 30 | 40 | 60 | 75 | 100 | 120 | 140 | 160 |
| m | 50 | 60 | 70 | 100 | 130 | 150 | 230 | 300 | 330 | 360 |
| n | 30 | 40 | 50 | 70 | 100 | 120 | 160 | 200 | 240 | 280 |
| ø o H8 | 15 | 20 | 25 | 35 | 50 | 60 | 80 | 100 | 120 | 140 |
| p | 55 | 60 | 65 | 85 | 100 | 110 | 170 | 220 | 230 | 240 |
| ø u | 30 | 40 | 50 | 65 | 90 | 110 | 140 | 170 | 200 | 220 |
| v | 15 | 20 | 25 | 35 | 50 | 60 | 80 | 100 | 120 | 140 |
| v1 | 35 | 40 | 45 | 65 | 80 | 90 | 150 | 200 | 210 | 220 |

# HSG dimensions
# Traveling nut version

**ENZFELDER** GMBH
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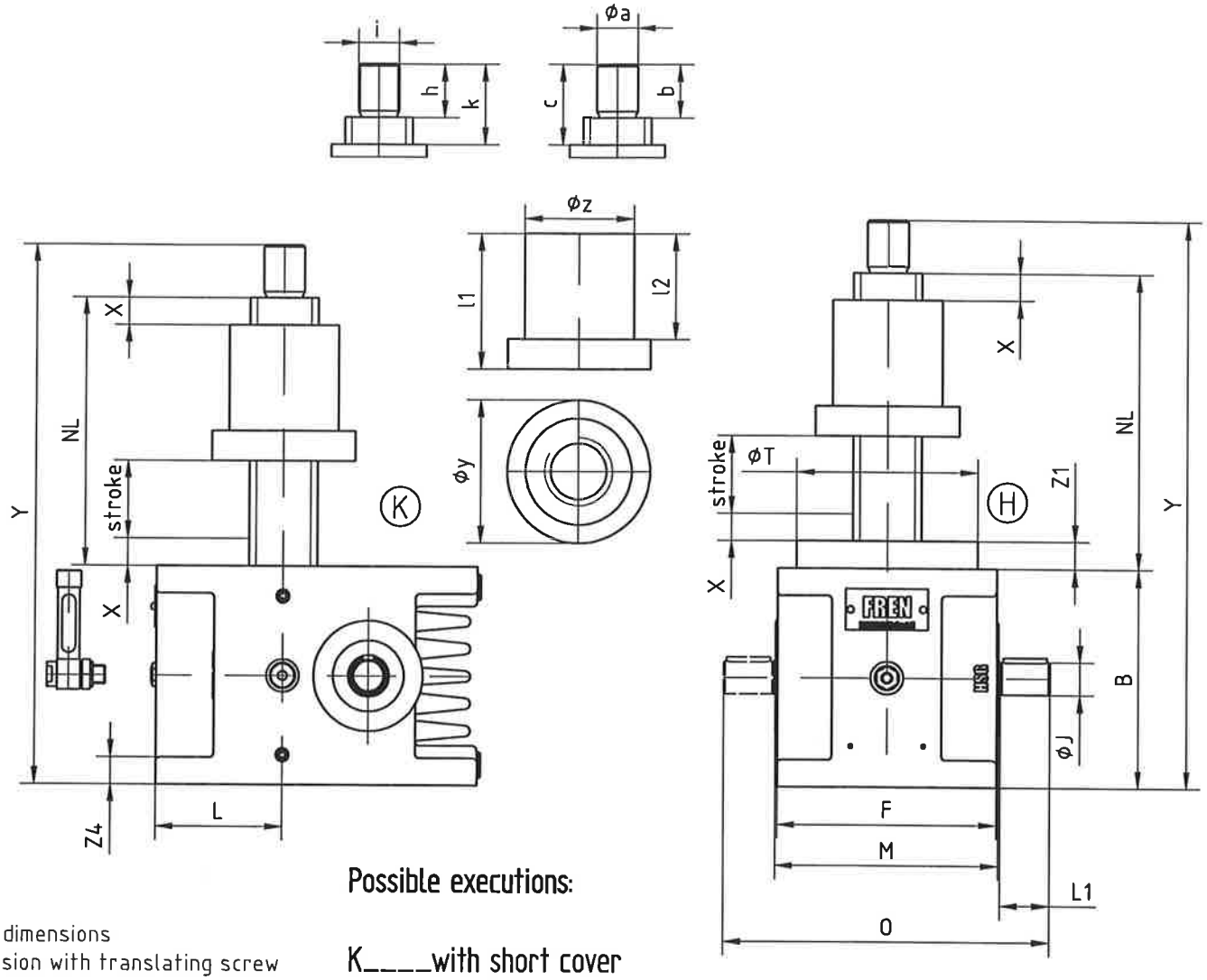
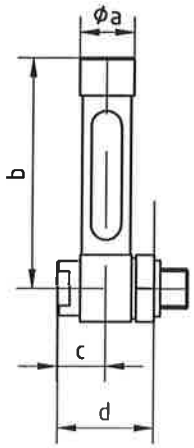
Spindle nose 1 Spindle nose 2




Missing dimensions
See version with translating screw

**Possible executions:**

K____with short cover
H____with high cover




## Oil gauges dimensions

| Size | 31 | 36 | 50 | 63 | 80 | 100 | 125 | 140 | 180 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|
| ø a | For these sizes we use an oil sight glass | | | | 18 | 18 | 18 | 18 | 18 | 18 |
| b | | | | | 80 | 100 | 125 | 150 | 200 | 200 |
| c | | | | | 16 | 16 | 16 | 16 | 16 | 16 |
| d | | | | | 33 | 33 | 33 | 33 | 33 | 33 |

# HSG dimensions
# Traveling nut version

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**Power transmission- and lifting engineering**

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| Type | 31 | 36 | 50 | 63 | 80 | 100 | 125 | 140 | 180 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|
| Lifting screw | Tr 18x4 | Tr 22x5 | Tr 40x8 | Tr 50x9 | Tr 60x12 | Tr 70x12 | Tr 100x16 | Tr 120x16 | Tr 140x20 | Tr 160x20 |
| B | 80 | 105 | 130 | 160 | 200 | 230 | 300 | 350 | 400 | 450 |
| C | 40 | 52,5 | 65 | 80 | 100 | 15 | 150 | 175 | 200 | 225 |
| F | 80 | 105 | 130 | 160 | 200 | 230 | 300 | 350 | 420 | 460 |
| ø J k6 | 10 | 14 | 16 | 24 | 32 | 38 | 42 | 50 | 60 | 70 |
| L | 42 | 54 | 67,5 | 92,5 | 102,5 | 117,5 | 150 | 180 | 222,5 | 250 |
| L 1 | 15 | 18 | 28 | 36 | 58 | 58 | 82 | 82 | 95 | 105 |
| M | 83 | 108 | 133 | 163 | 204 | 235 | 305 | 355 | 430 | 470 |
| NL version "K" | stroke + 85 | stroke + 95 | stroke + 120 | stroke + 140 | stroke + 170 | stroke + 170 | stroke +200 | stroke + 220 | stroke + 240 | stroke + 260 |
| NL version "H" | stroke + 100 | stroke + 111 | stroke + 138 | stroke + 160 | stroke + 195 | stroke + 200 | stroke +235 | stroke + 260 | stroke + 285 | stroke + 310 |
| O | 116 | 148 | 192 | 238 | 322 | 356 | 474 | 524 | 622 | 682 |
| Q | 3x3x12 | 5x5x16 | 5x5x25 | 8x7x32 | 10x8x50 | 10x8x50 | 12x8x70 | 14x9x70 | 18x11x80 | 20x12x100 |
| ø T f7 | 62 | 72 | 92 | 122 | 152 | 182 | 222 | 262 | 332 | 352 |
| Savety X | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Y | NL + 97 | NL + 129 | NL + 169 | NL + 199 | NL + 249 | NL + 284 | NL + 379 | NL + 449 | NL + 509 | NL + 569 |
| Z 1 | 15 | 16 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |
| Z 4 | 10 | 12 | 15 | 20 | 25 | 28 | 35 | 45 | 55 | 60 |
| **Lifting nut** | | | | | | | | | | |
| l 1 | 45 | 55 | 80 | 100 | 130 | 130 | 160 | 180 | 200 | 220 |
| l 2 | 35 | 43 | 62 | 78 | 105 | 100 | 115 | 130 | 135 | 140 |
| ø y | 50 | 65 | 87 | 105 | 110 | 120 | 190 | 225 | 240 | 260 |
| ø z h9 | 40 | 45 | 70 | 80 | 90 | 90 | 150 | 160 | 180 | 200 |
| **Spindel end 1** | | | | | | | | | | |
| h | 17 | 24 | 29 | 39 | 49 | 54 | 79 | 99 | 109 | 119 |
| i | M 12x1,5 | M 16x1,5 | M 20x1,5 | M 30x2 | M 42x3 | M 56x3 | M 80x3 | M 100x4 | M120x4 | M140x4 |
| k | 37 | 44 | 49 | 59 | 69 | 74 | 99 | 119 | 129 | 139 |
| **Spindel end 2** | | | | | | | | | | |
| ø a k6 | 12 | 15 | 20 | 30 | 40 | 50 | 80 | 95 | 110 | 130 |
| b | 17 | 24 | 29 | 39 | 49 | 54 | 79 | 99 | 109 | 119 |
| c | 37 | 44 | 49 | 59 | 69 | 74 | 99 | 119 | 129 | 139 |

# Product overview 03/2015

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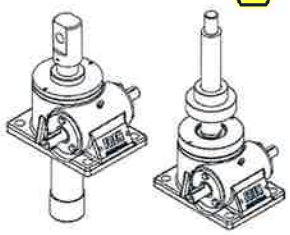
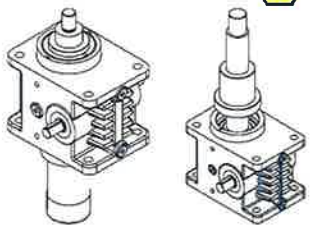
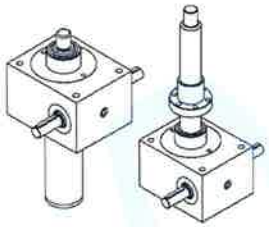
## SG
Screw jack
Classic



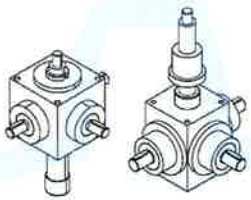
## HSG
High performance-
Screw jack



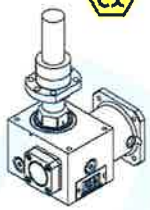
## BG
Screw jack
Cubic



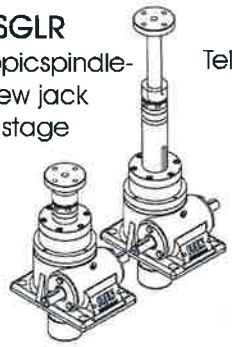
## SHG
Quick-lifting
screw jack



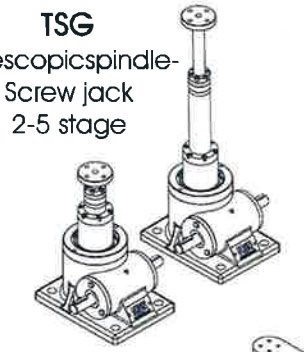
## SH
Servo lifting
gear



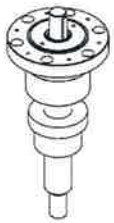
## TSGLR
Telescopicspindle-
Screw jack
2-stage



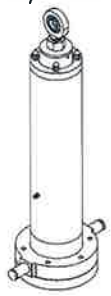
## TSG
Telescopicspindle-
Screw jack
2-5 stage



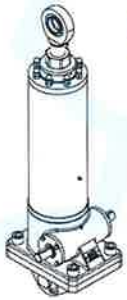
## SLA
Spindlebearing



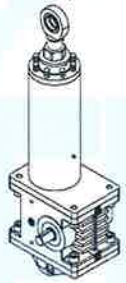
## SEZ
Spindlebearings-
Cylinder



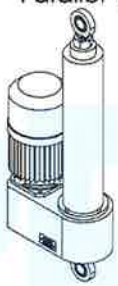
## ELZ
Electric cylinder



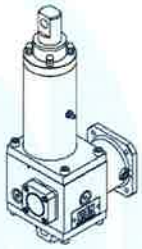
## HELZ
High performance-
Elektric cylinder



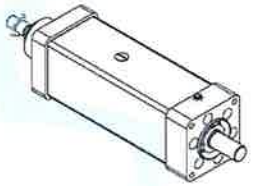
## ELZP
Electric cylinder
Parallel



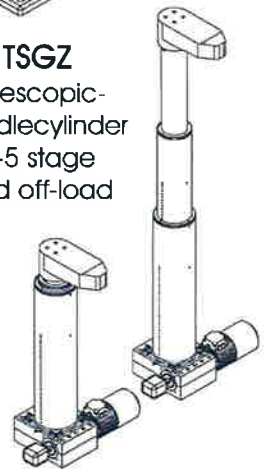
## SHELZ
Servo electric-
cylinder



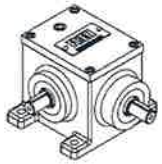
## EPNEU
Spindle-
Elektric cylinder



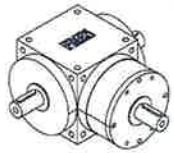
## TSGZ
Telescopic-
spindlecylinder
2-5 stage
And off-load



## K
Bevel gear
Type K

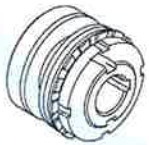


## H
Bevel gear
Type H



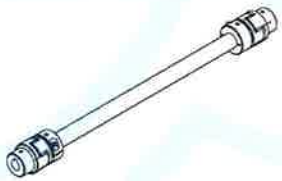
## R / GS
Elastic / backlash-free
Coupling

## RT
Slip hub

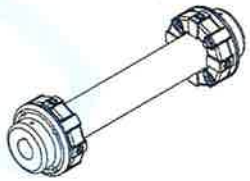


## RK
Slip coupling

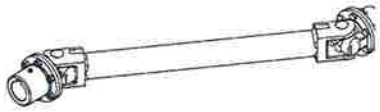
## ZR
FREN
Connecting shaft



## G / GX
Elastic
Connecting shaft

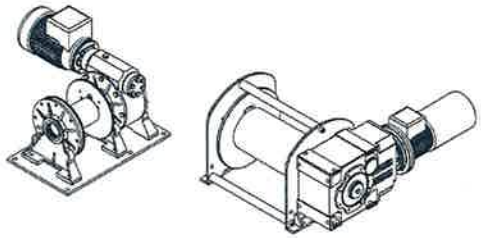


## Cardan shaft



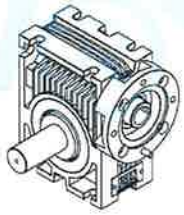
## HT
Lifting table
mechanic / hydraulic

## SW
Rope winche

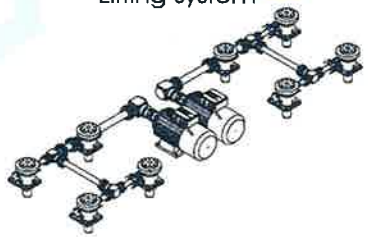


## PLG
Planetary gear

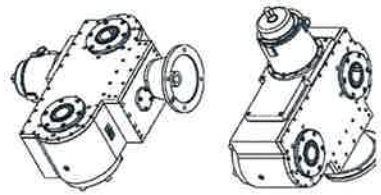
## uniCe
Worm gear



## HA
Lifting system



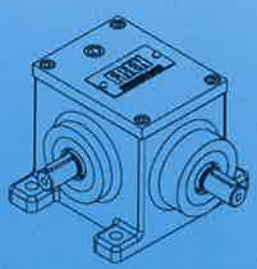
## Special gear

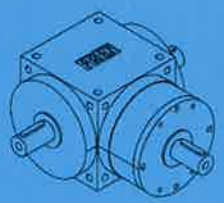


# ENZFELDER GmbH

## Power transmission- and lifting engineering

# Bevel Gear Box
# Type K and H





# History

**1969** Mr. Enzfelder established a job shop in Vienna. Equipped with some machinery, the Enzfelder Company manufactured machine parts according to drawings.
Within one year the number of employees rose to 3. The Enzfelder company started manufacturing threaded spindles and nuts according to drawings. Then the range of manufacturing was enlarged by toothed wheels, screw wheels and endless screws according to drawings.

**1974** The company including the complete manufacture was relocated to Enzesfeld.

**1975** The manufacture of spindle gears was launched. The company's experience in the manufacture of trapezoid-threaded spindles, nuts, worm gear pairs and casings was a valuable basis for the construction. After many tests, the serial production of spindle gears was launched one year later. The result was a product characterized by a first-rate price-performance ratio. The product was distributed by dealers all over Europe.

**1981** The planning and construction of small hydropower plants was launched to replace diesel generators. Environmental protection was not really a topic at that time, however, and the production was stopped in 1986.

**1989** The Enzfelder GesmbH company replaced the Franz Enzfelder Company.

**1990** Scissor-type lifting platforms and cable winches were added to the delivery program.

**1991** Resilient spacer shafts were tested and added to the production range. At the same time, the telescopic spindle gear was developed. A patent for this principle was applied for and issued.

**1993** The sale of spindle gears under their own name was launched and presented for the first time at the Hannover industrial fair. We have been approached with a variety of tasks and have provided solutions according to the customers' needs ever since.

**1994** In cooperation with our customers we produced the first bevel gears to specification.

**1995** Spindle bearing arrangements were designed and included in the standard program.

**1996** The Enzfelder company produced planet gear to specification for the first time.

**1998-1999** The standard programs were enlarged. Additionally, bevel gears are manufactured in a standard design.

**2000** The development of electric cylinders in standard design for very high loads (5-1000kN) was started. At the same time the telescopic spindle gears were refined to save the customer the guiding and locking devices. Since that time we have been able to offer telescopic cylinders, too.

**2001** The development of electric cylinders was completed, and these cylinders were added to the standard program.
At the same time the development and fabrication of cubic spindle gears for lifting loads between 2.5 and 150kN was started. These gears were added to the standard program as well.

**2002** were extended and optimized the series of the electric cylinders. Further we provide an electronic 2D-3D product catalogue of the spindle gears, it makes it possible to integrate our products into your system.

**2002-2003** We putted our new assembling and packaging hall, beside the manufacturing hall, in operation

**2003** We increased our machinery by buying a CNC machine tool with 7 axes, brand AXA. That new CNC machine allows a precise machining of the screw jack housings in only two clamping.

**2003-2004** The engineering started to use new 3-D CAD software, Solid Edge. That software enables our customers to integrate easily our drawings.

**2004** We opened a sales office in France.

**2004-2005** We started to design the high performance screw jacks HSG and we created a range of 10 different sizes.

**2005** First participation to an exhibition in France: INDUSTRIE 2005 at Lyon.

**2005-2006** We started to design a new range of telescopic screw jacks TSGLR. Today, these new telescopic screw jacks, with a more compact design, are used in the stage industry, in the aircraft industry, on train lifting equipments and in machine building.

**2008** We replaced the tread grinding machine by a new CNC thread grinding machine, brand Mikromat.

**2008-2009** transmission program is certified to ATEX

**2009-2010** beginning of the series production of Quick-lifting screw jacks SHG

**2010** Development of the transmission range Servo lifting gear (backlash & game adjustable)
Expand our global market with traders in Australia

**2011** development Servo lifting electric cylinder SHELZ (Servo lifting gear with cylindrical structure) and the beginning of the ELZP Series Electric cylinders parallel for Industry sector applications.

**2012** acquisition of the product group UniCe worm gear, helical worm geared motors, couplings, torque limiters and slip clutches. Expansion screw jacks cubic BG up to size for 1000kN

**2013-2014** revision of the telescopic spindle cylinder TSGZ the new cost-optimized design.
Development of product group Electric PNEU, electric cylinder with ball screw, stainless version in hygienically optimized design with mounting dimensions, speeds and forces such as pneumatic cylinder.

**2014** first Quick-lifting screw jacks with cylindrical structure can be delivered SHGZ = Quick-lifting electric cylinder

In recent years, customer problems are solved in the drive and lifting technology from us. Depending on the application, we developed the optimal solution and made with the best possible price / performance ratio.

Issue 01-2015

# Table of Contents

**ENZFELDER** GMBH
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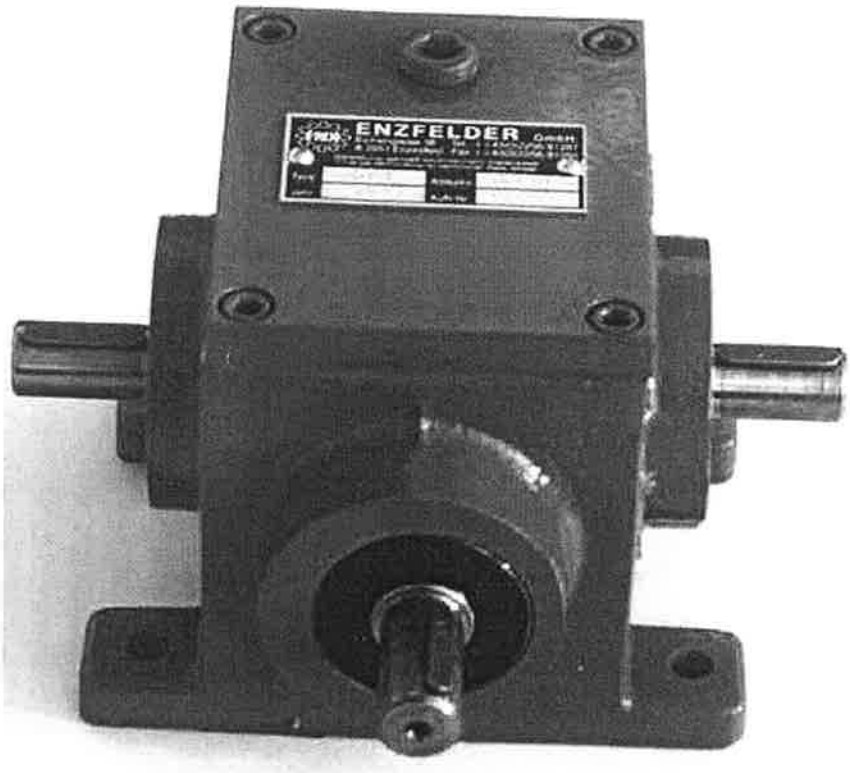

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In our lifting systems 2 types of bevel gears can be used. The types H and the types K. Both of them have been used during many years. On the great diverity of the intonation has been considert, while planing and constructioning them.
The gears are built very compact and they have a very small weight. Both series can be delivered also with flange or hollow shaft. It is possible, too to deliver our gears in stainless type. If you need any other type or size, which you can not fing in our catalogue, do not hesitate to cantact us.

## Type H

The compact nad stable construction guarantees highest power an smallest dimension and little weight. Because of the lubrication for duration of life, dependend on the gear-size, the gears are maintenance free, under normal application.
The gear housing is made of casting GGG50. The storage of the shafts is made by taper roller bearings which guarantees a long duration of life.
The toothing is a Glearson helix toothing for highest torques. Because of the contact refelction-optimized assembly mounting, an equal tooth load can be reached. Through this measures a very high efficiency of 98° can be reached.
The serie H embraces 8 sizes from type H075 to type H280.
The gear reductions are 1:1, 1,5:1, 2:1, 3:1, 4:1 and 5:1. The entrance number of revolution can go up to 6000RpM, dependend on the size.

## Type K

The bevel gears are helix toothed and hardened. The gear housing can be made of Alu, steel or casting GGG50. The storage is a well dimensioned bearing. The advantage of the type K are the gearfeet which are casted in one piece with the housing, to allow a simply fitting, because it is possible to fit with screws fromthe above side.
The gears are filled with oil or ghrease.
The serie contents aof 4 sizes from type K80 to type K70.
The effeciency from this serie goes up from 80% to 85%.
It is possible to deliver gears from two shafts to four shafts.
The gear reductions are 1:1, 2:1 and 3:1.

## Mountain and Operating Instruction

The operating and mounting instructions you can find enclosed each delivery.

# Performance Table Type H

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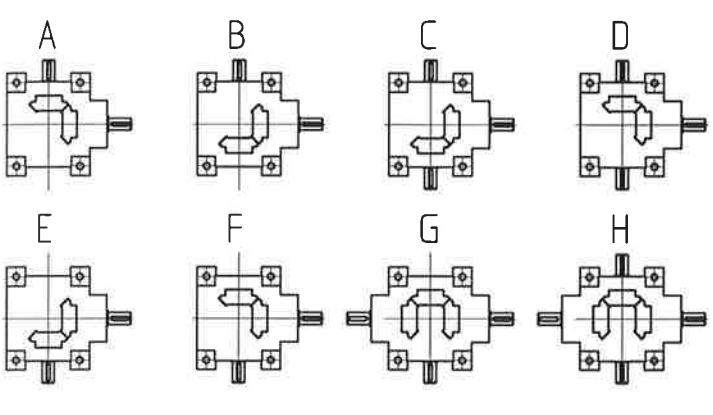
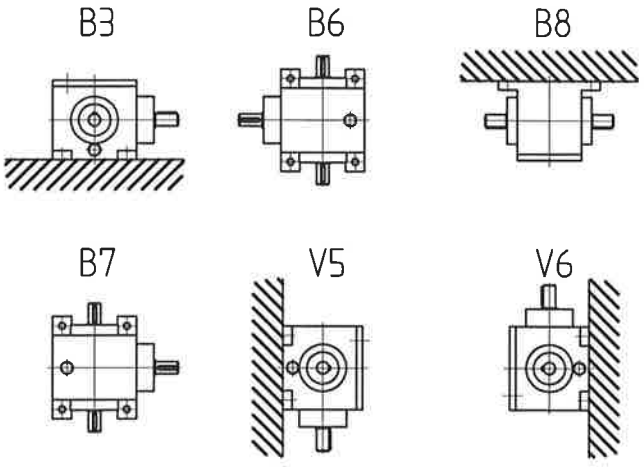
| i | Title | Unit | H75 | H90 | H110 | H140 | H170 | H210 | H240 | H280 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1:1 | Nominal torque M2 | Nm | 45 | 78 | 150 | 360 | 585 | 1300 | 2150 | 3200 |
| | max. permissible torque M2* | | 68 | 117 | 225 | 540 | 878 | 1950 | 3225 | 4800 |
| 1,5:1 | Nominal torque M2 | Nm | 45 | 78 | 150 | 360 | 585 | 1300 | 2150 | 3200 |
| | max. permissible torque M2* | | 68 | 117 | 225 | 540 | 878 | 1950 | 3225 | 4800 |
| 2:1 | Nominal torque M2 | Nm | 42 | 68 | 150 | 330 | 544 | 1220 | 2010 | 3050 |
| | max. permissible torque M2* | | 63 | 102 | 225 | 495 | 816 | 1830 | 3015 | 4575 |
| 3:1 | Nominal torque M2 | Nm | 33 | 54 | 120 | 270 | 450 | 1020 | 1650 | 2850 |
| | max. permissible torque M2* | | 50 | 81 | 180 | 405 | 675 | 1530 | 2475 | 4275 |
| 4:1 | Nominal torque M2 | Nm | 28 | 52 | 100 | 224 | 376 | 860 | 1410 | 2300 |
| | max. permissible torque M2* | | 42 | 78 | 150 | 336 | 564 | 1290 | 2115 | 3450 |
| 5:1 | Nominal torque M2 | Nm | 25 | 40 | 85 | 196 | 320 | 740 | 1210 | 2000 |
| | max. permissible torque M2* | | 38 | 60 | 128 | 294 | 480 | 1110 | 1815 | 3000 |
| | max. rpm at input | rpm | 6500 | 5500 | 4500 | 3500 | 3000 | 2200 | 2000 | 1700 |
| at 2% max Load standard output backlash | | arcmin | 6 bis 15 | 6 bis 14 | 6 bis 13 | 6 bis 13 | 6 bis 12 | 6 bis 12 | 6 bis 12 | 6 bis 11 |
| at 2% max Load minmal output backlash | | arcmin | 5 bis 6 | 4 bis 6 | 4 bis 6 | 3 bis 6 | 3 bis 6 | 3 bis 6 | 3 bis 6 | 3 bis 6 |
| Force contact point is midth of shaft | Permissible Radial Load Input Shaft d1 | N | 900 | 1.300 | 2.000 | 3.500 | 5.000 | 8.500 | 11.000 | 15.000 |
| | Permissible Radial Load Output Shaft d1 | N | 1.100 | 1.600 | 2.500 | 4.500 | 6.000 | 10.500 | 15.000 | 18.000 |
| | Permissible Axial Load Input Shaft d1 | N | 450 | 650 | 1.000 | 1.750 | 2.500 | 4.250 | 5.500 | 7.500 |
| | Permissible Axial Load Output Shaft d1 | N | 550 | 800 | 1.250 | 2.250 | 3.000 | 5.250 | 7.500 | 9.000 |
| Efficiency at max. Load | | % | > 98 | | | | | | | |
| Running Noise at 1500rpm, Partial Load | | db(A) | 70 | 74 | 76 | 77 | 78 | 80 | 82 | 83 |
| Weight | | kg | 4,5 | 8 | 13 | 22 | 38,5 | 71 | 103,5 | 155 |
| Service Live | | h | > 15.000 | | | | | | | |
| Lubrication | | | up to and including H140: Synthetic Lubrication Oil, ISO VG 150 | | | | | | | |
| Operating Temperature | | | -30°C up to 100°C | | | | | | | |

## Arrangement of Shafts (Type H and K):




## Fitting Position (Type H and K):



# Performance Table Type K

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| i | Title | Einheit | K32 | K52,5 | K61,5 | K70 |
|---|---|---|---|---|---|---|
| 1:1 | Nominal torque M2 | Nm | 7,5 | 35 | 63 | 232 |
| | max. permissible torque M2* | | 11,25 | 52,5 | 94 | 348 |
| 2:1 | Nominal torque M2 | Nm | 5,8 | 34 | 68 | 216 |
| | max. permissible torque M2* | | 8,7 | 51 | 102 | 324 |
| 2,5:1 | Nominal torque M2 | Nm | - | - | - | 162 |
| | max. permissible torque M2* | | - | - | - | 243 |
| 3:1 | Nominal torque M2 | Nm | 6,6 | 30 | 62 | - |
| | max. permissible torque M2* | | 10 | 45 | 93 | - |
| max. rpm at input | | rpm | 3000 | 1500 | 2000 | 1500 |
| at 2% max Load standard output backlash | | arcmin | 30 | 30 | 30 | 30 |
| Force contact point is midth of shaft | Permissible Radial Load Input Shaft d1 | N | 100 | 200 | 500 | 1.200 |
| | Permissible Radial Load Output Shaft d1 | N | 100 | 250 | 800 | 1.650 |
| | Permissible Axial Load Input Shaft d1 | N | 40 | 50 | 100 | 405 |
| | Permissible Axial Load Output Shaft d1 | N | 80 | 160 | 290 | 635 |
| Material | | | AL | ST or GG | | |
| Efficiency | | % | > 80 | | | |
| Running noise | | db(A) | 75 | 78 | 78 | 78 |
| Weight | | kg | 1,1 | 5,5 | 9 | 27 |
| Service Life | | h | > 10000 | | | |
| Lubrication | | | Grease or Oil | | | |
| Temperature | | | -30°C up to 100°C | | | |

*** temporary**

## Thermal performance limit (Type H and K):

| Type | K32 | K52,5 | K61,5 | K70 | H75 | H90 | H110 | H140 | H170 | H210 | H240 | H280 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Thermal Performance Limit (Kw) | 2,3 | 4 | 7,9 | 12 | 5,5 | 7,4 | 10,8 | 16,1 | 23,4 | 28,6 | 45,3 | 60,3 |

**The gearbox performance is limited by the maximum allowable oil bath temperature. The required effective performance must not exceed the lkimit values allowed for continuous duty.**

| Duty Cycle per Hour % | 100 | 80 | 60 | 40 | 20 |
|---|---|---|---|---|---|
| Factor | 1 | 1,2 | 1,4 | 1,6 | 1,8 |

**If on intermitted duty or in the event of increased ambient tempereature, the following factors can be applied as guide values for the determination of the related allowable thermal performance limit.**
**Duty cycle per hour in %**

| Duty Cycle per Hour % | 100 | 80 | 60 | 40 | 20 |
|---|---|---|---|---|---|
| Factor | 1 | 1,2 | 1,4 | 1,6 | 1,8 |

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Performance P [kW] at $n_{input}$ [rpm] ($P_{input}$ - $P_{output\ at\ h > 98\%}$)
Gear Ratio i
Speed $n_{input}$; $n_{output} = n_{input} : n$

Output Torque $M_{output}$ [Nm] = (9550 x $P_{output}$ ): $n_{output}$

Output Torque $M_{output}$ < Nominal Torque $M2_{Nominl}$

Maximum Output-torque $M_{output\ max}$ < Maximum permissible Outputtorque $M2_{max}$
at up to 10 start-ups per Minute

Maximum Output Torque $M_{output\ max}$ < Nominal Torque $M2_{nominal}$
at up to 60 start-ups per Minute

Maximum values for start numbers ranging between 10 to 60 start-ups will be interpolated

Speed $n_{input}$ < Speed $n_{1max}$

Performance P < Thermal Performance Limit $P_{therm}$ (20°C, 100% ED)
Thermal performance limit changes with deviating temperature values and duty times according to factor indicated in the table on page 5

radial and axial
Shaft Loads < permissible values FQ1, FQ2, FA1, FA2
From table on page 4 and 5 (Force contact point is midth of shaft, to realize higher values, a re-calculation mast be made

Example: given: n1 = 3000 rpm
Distributiongearbox n2 = 750 rpm
P = 15,5 kW
ED = 100%
Ambient temperature = 20°C

Selection: i = n1 / n2 i = 3000 rpm : 750 rpm
i = 4:1

M2 = 9550xP / n2 M2 = 9550 x 15,5 : 750
M2 = 197,37
Gear box H140 4:1

$M2_{exist}$ < $M2_{nominal}$ $M2_{exist}$ 197,37 Nm < $M2_{nominal}$ 224 Nm
$n1_{exist}$ < $n1_{max}$ 3000 rpm < 3500 rpm max
$P_{exist}$ < $P_{therm}$ P = 15,5 kW < $P_{therm}$ 16,1 kW

Selected: H140 4:1

# Bevel Gear Box K32

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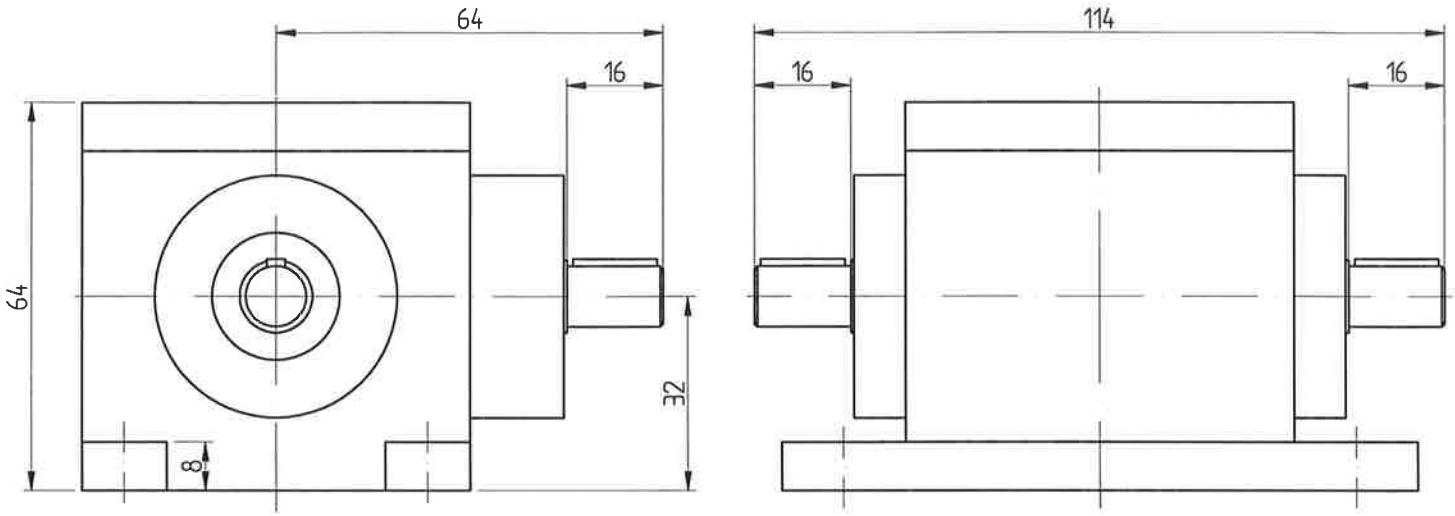


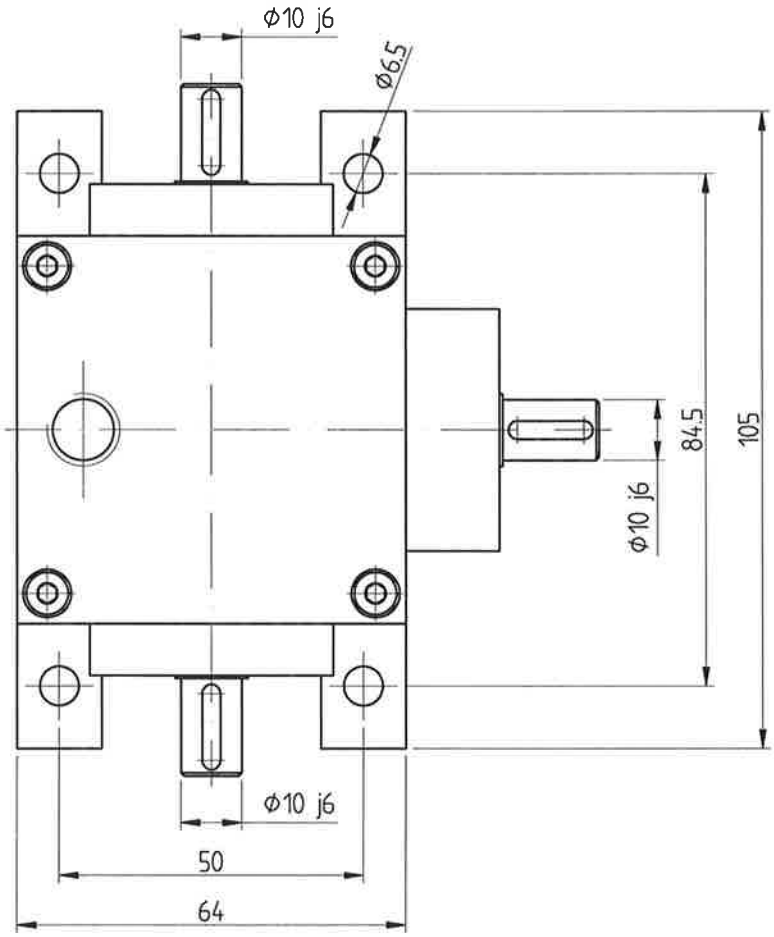

# Bevel Gear Box K 52,5

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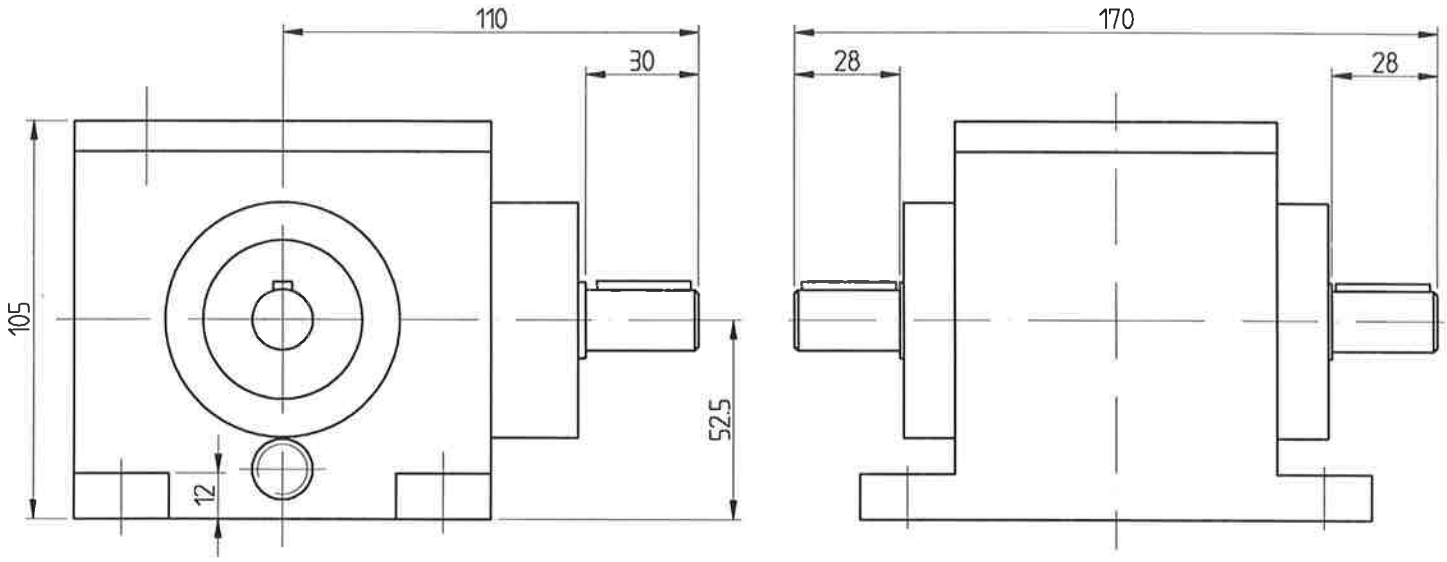


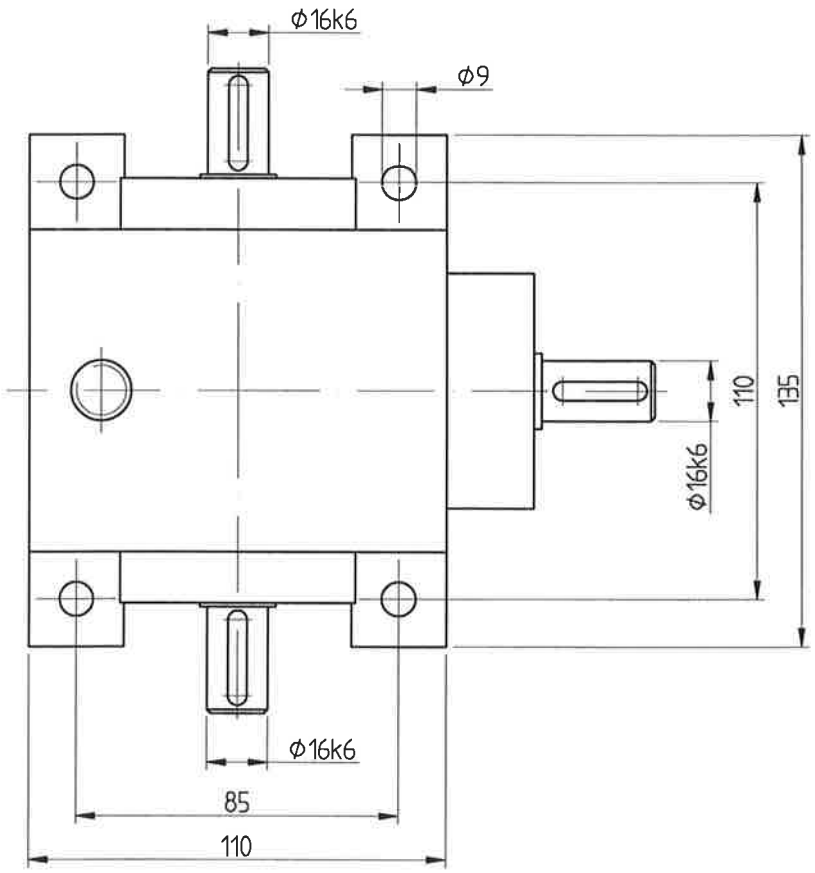

# Bevel Gear Box K 61.5

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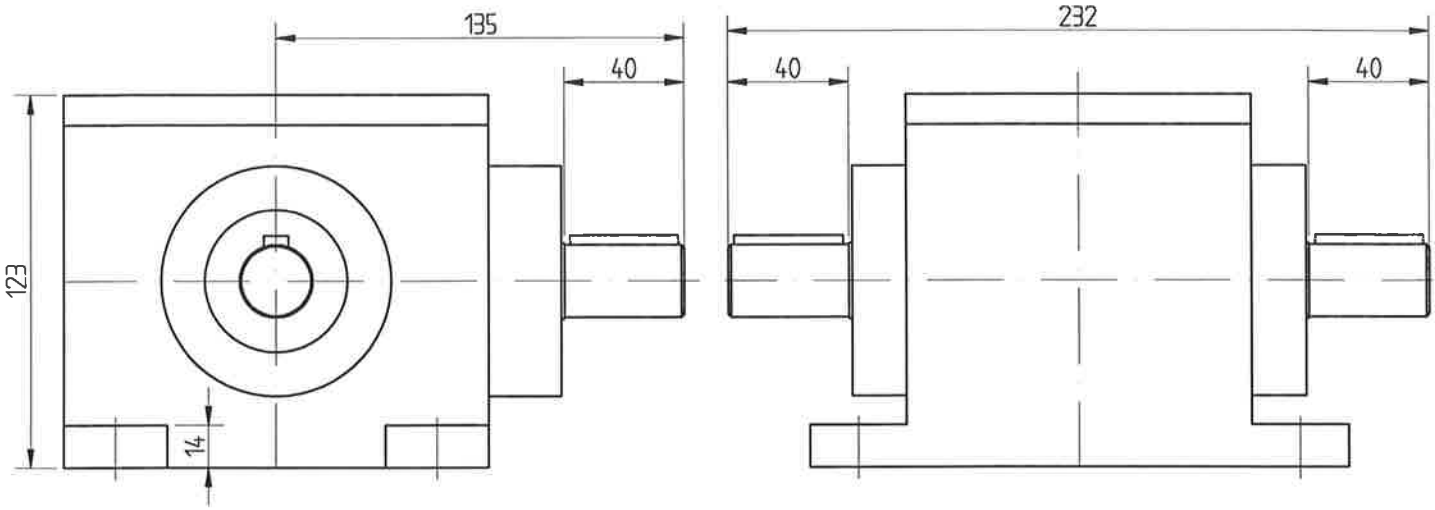


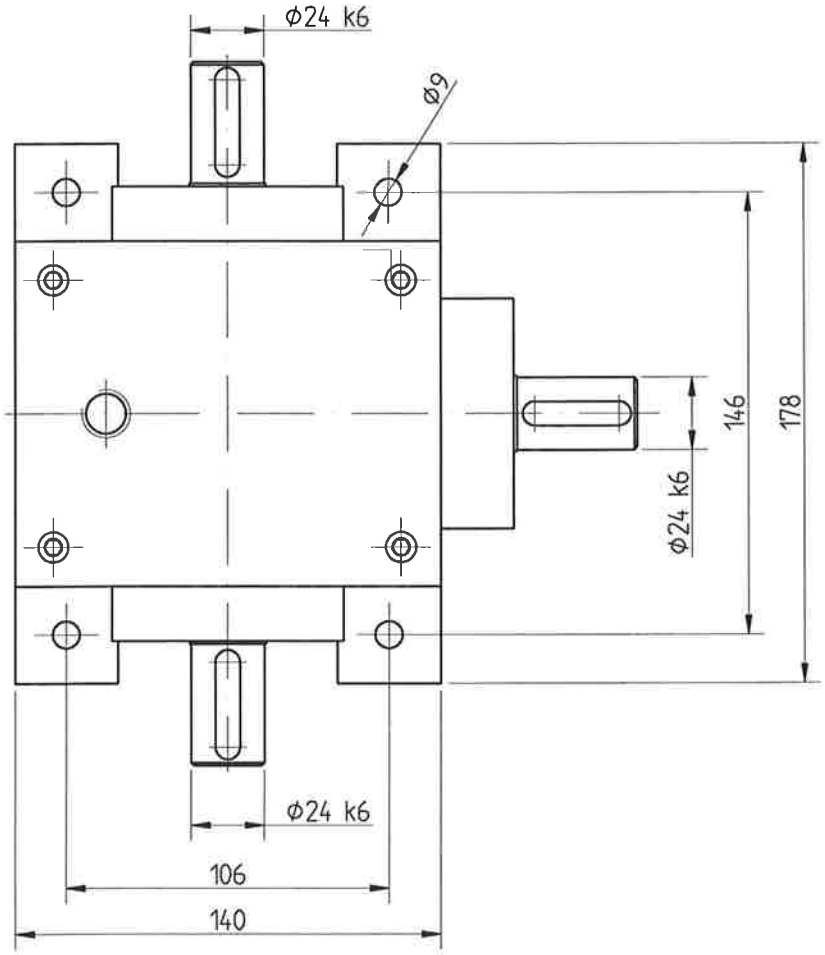

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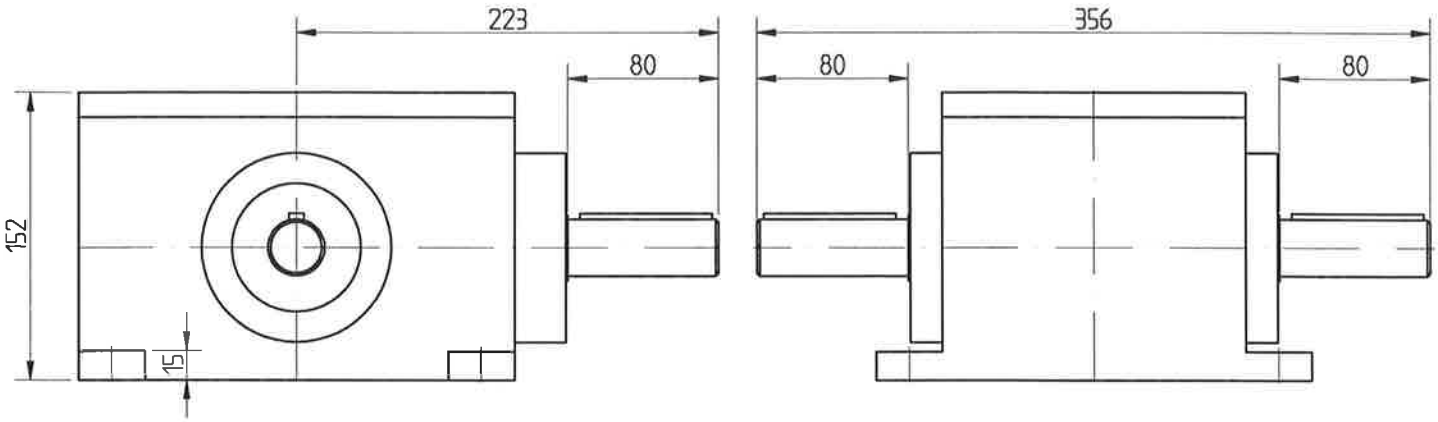


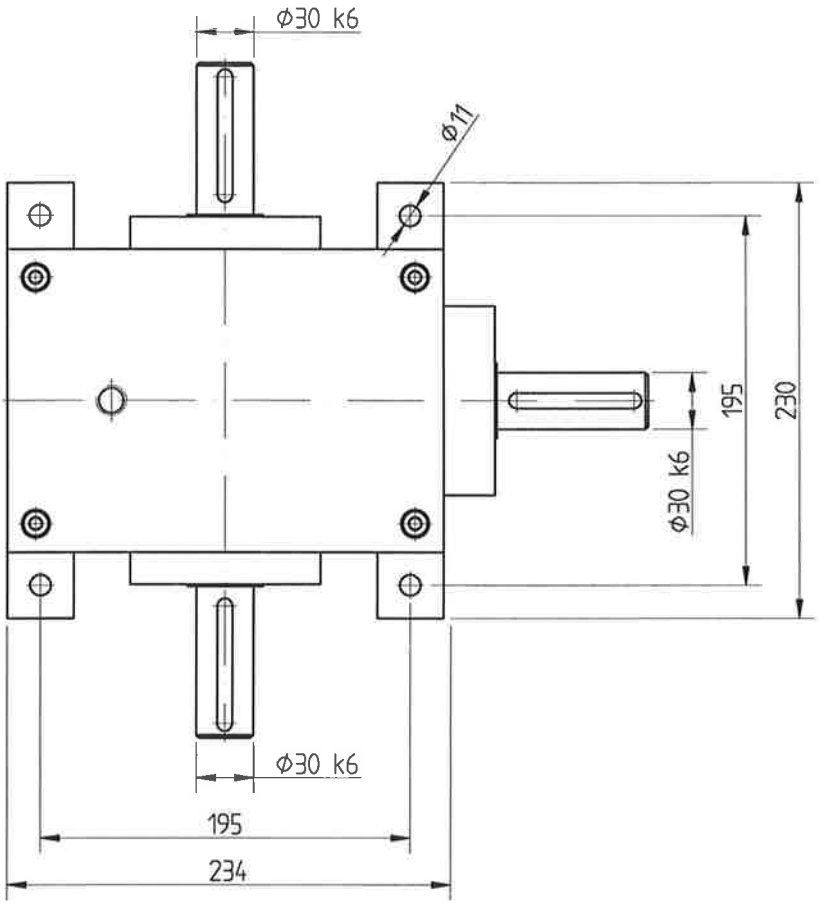

# Bevel Gear Box H075

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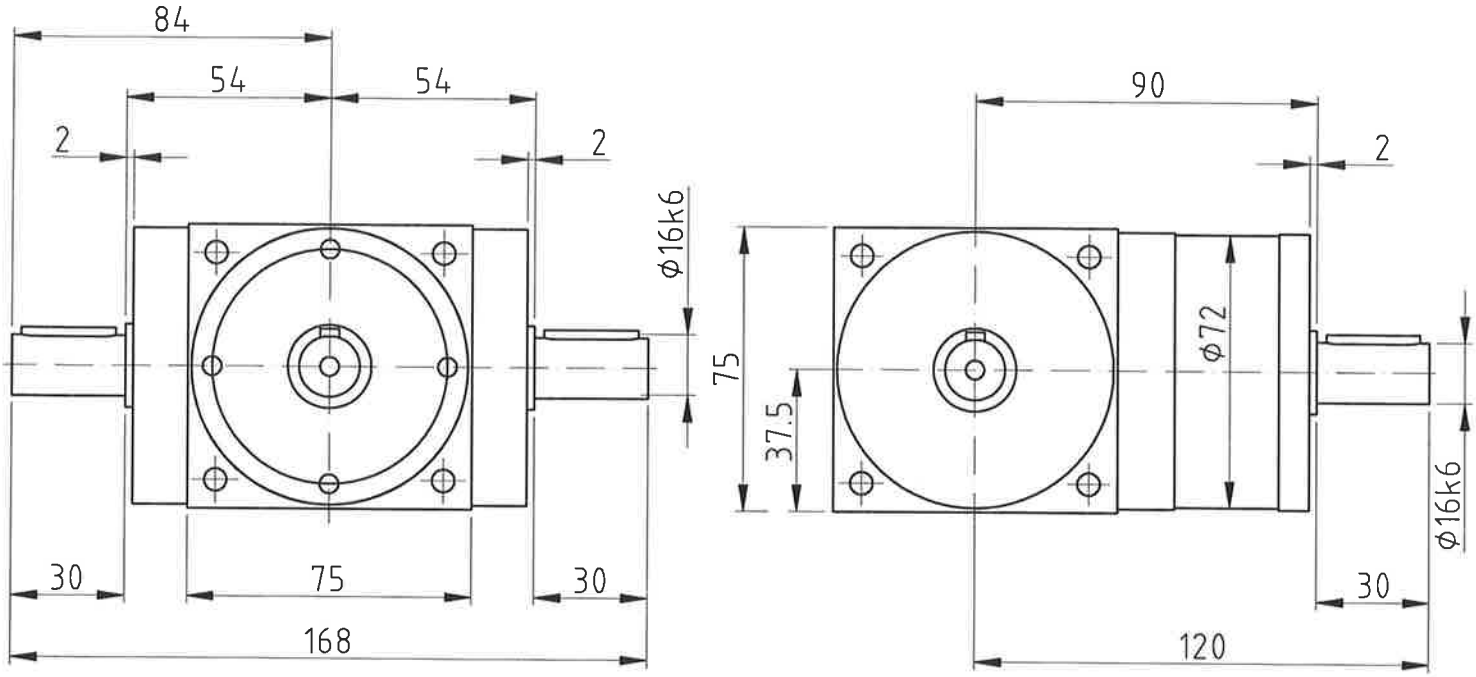


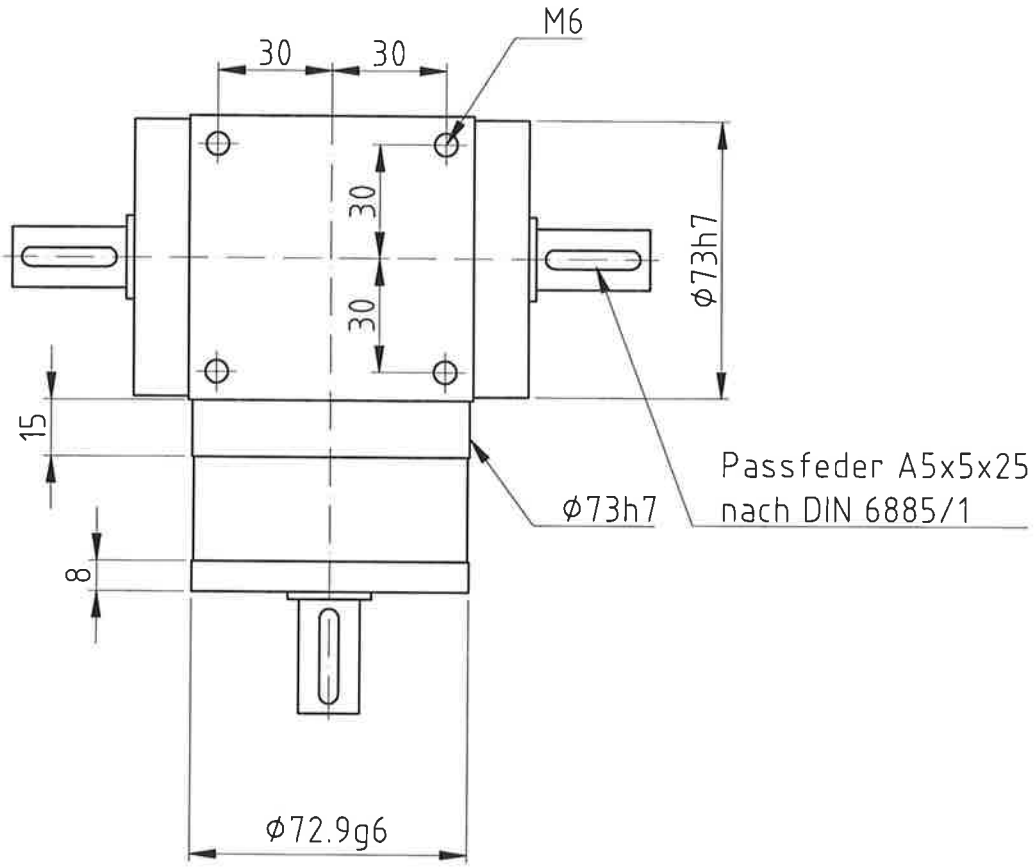

# Bevel Gear Box H090

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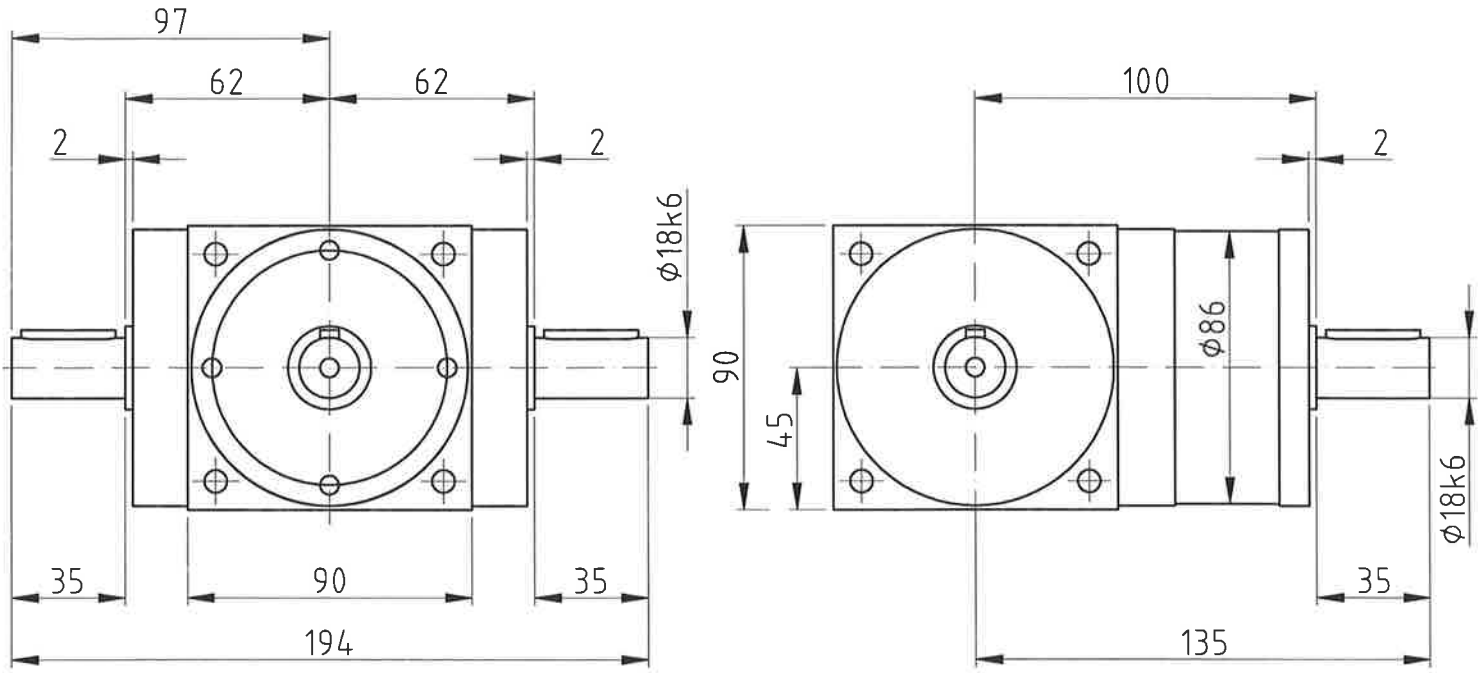


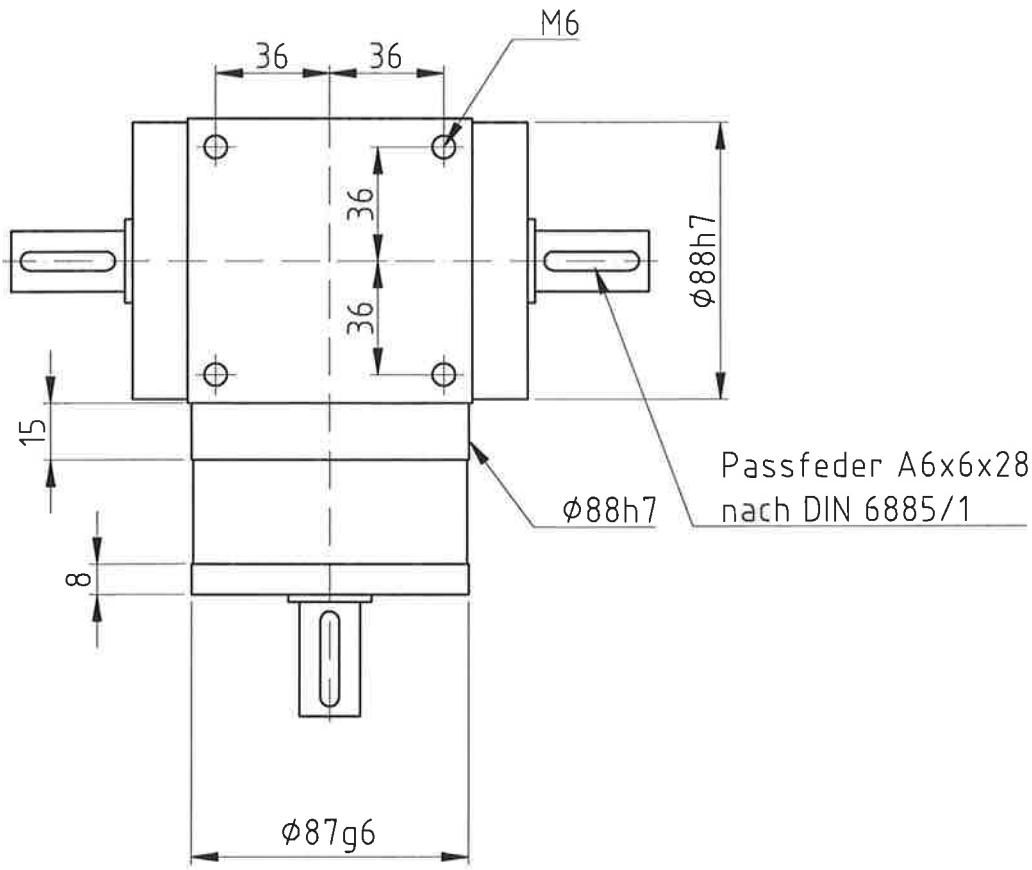

# Bevel Gear Box H110

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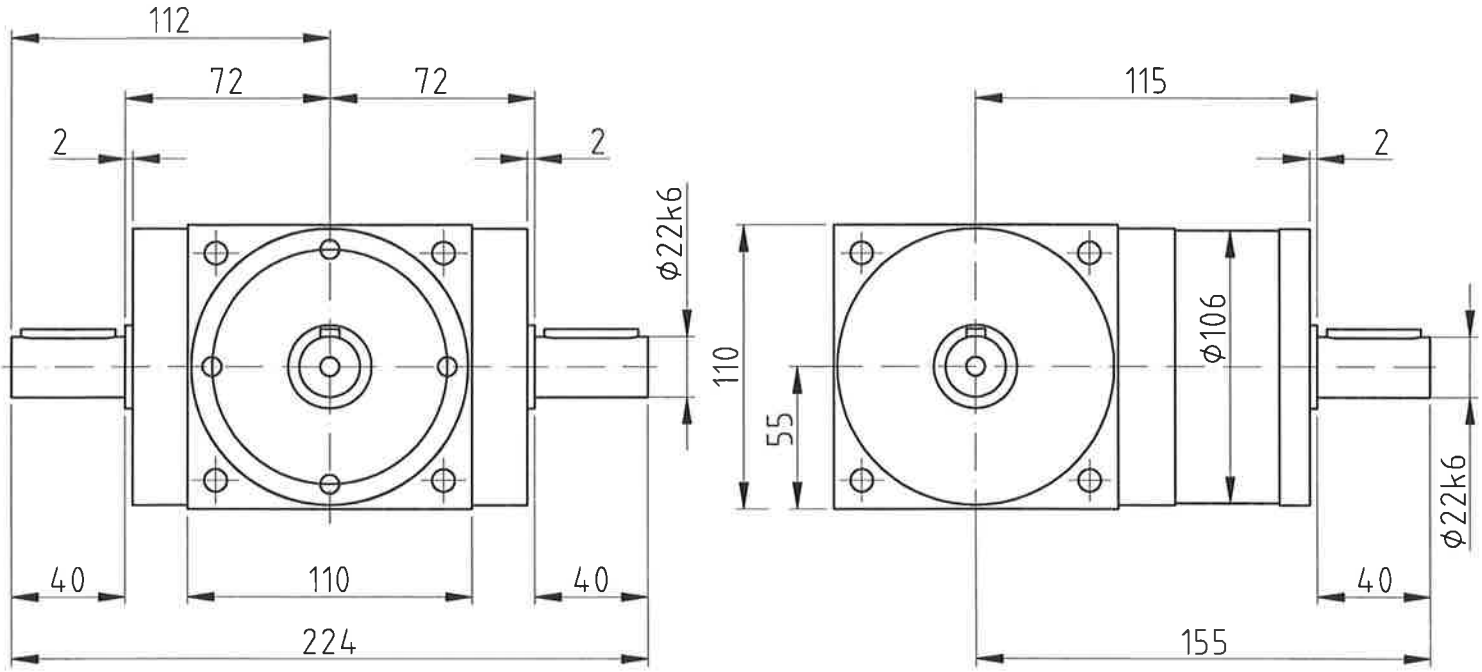


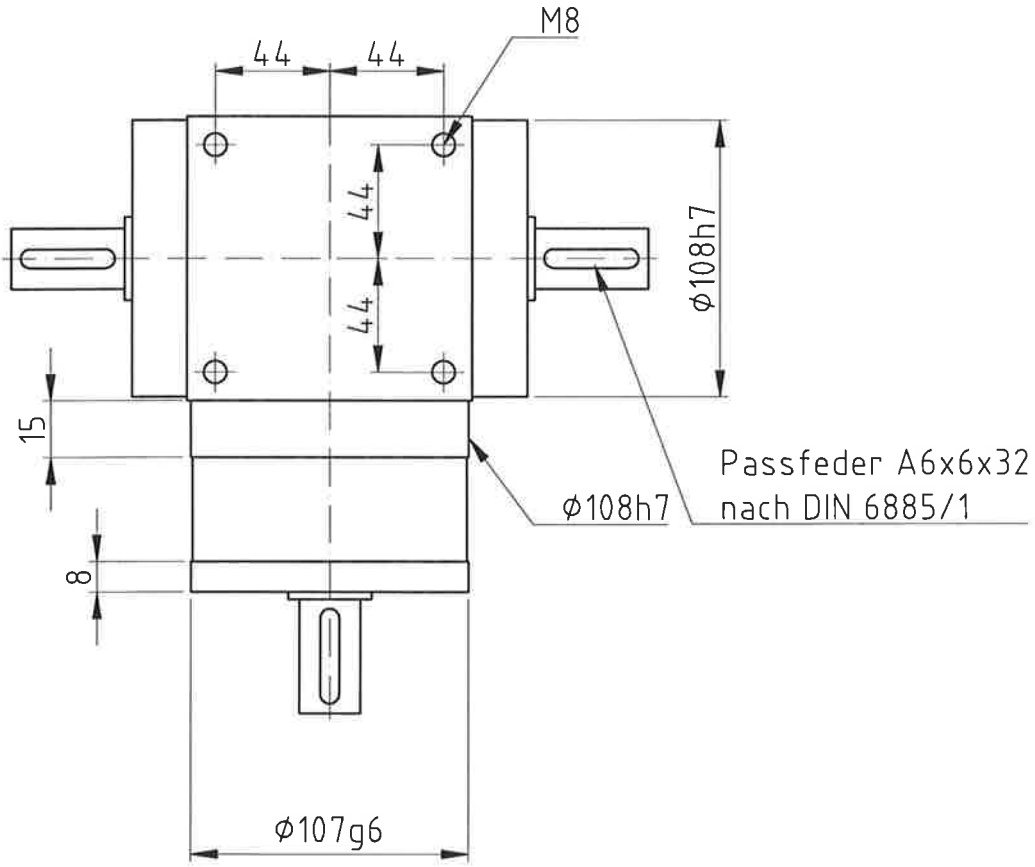

# Bevel Gear Box H140

**ENZFELDER** GMBH
**Power transmission- and lifting engineering**
Eichengasse 36
A-2551 Enzesfeld-Lindabrunn
Tel.: ++43 (0) 2256 81287-0
Fax: ++43 (0) 2256 81287-95
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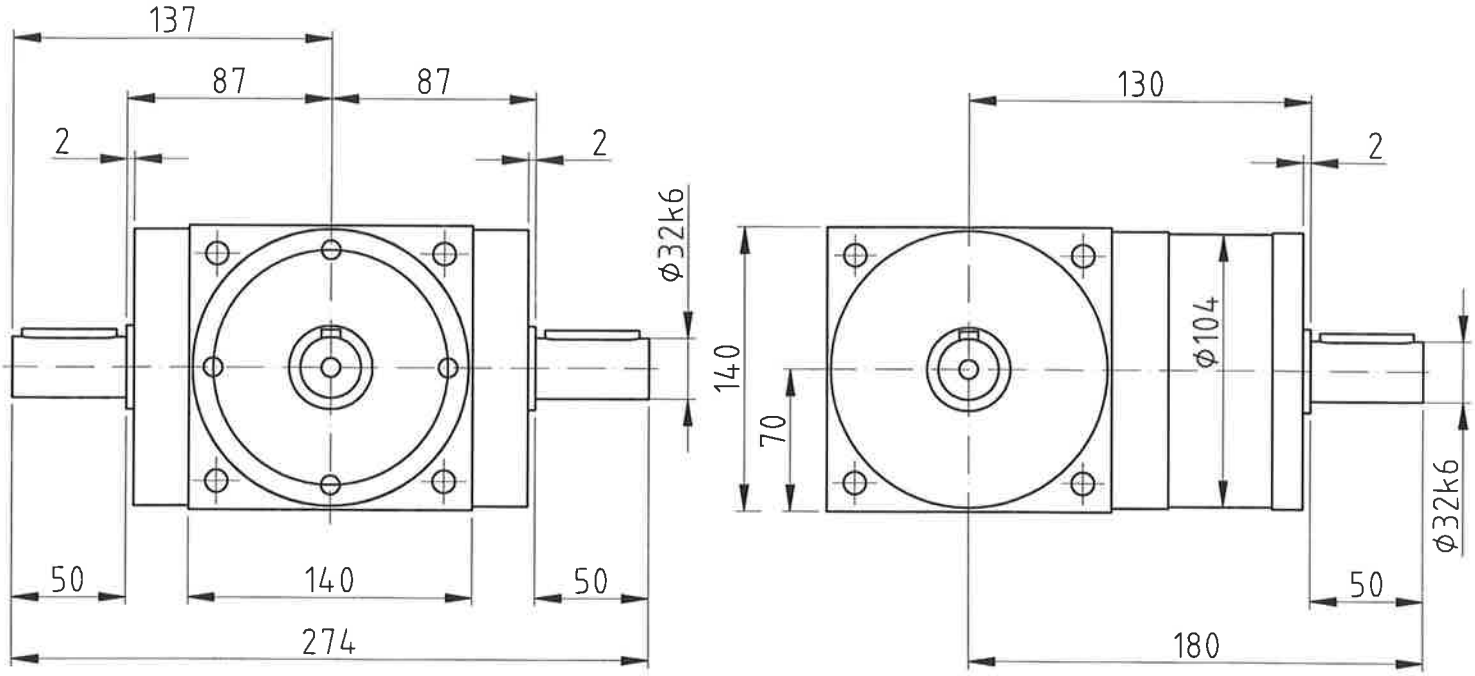
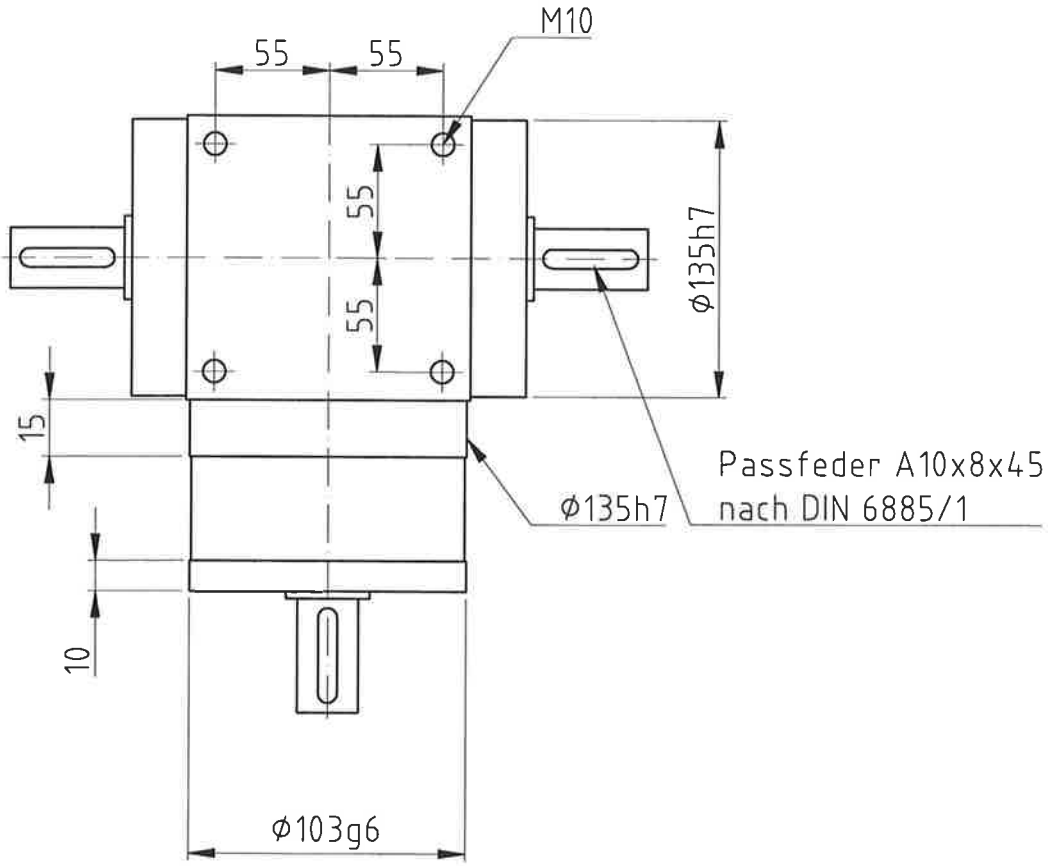
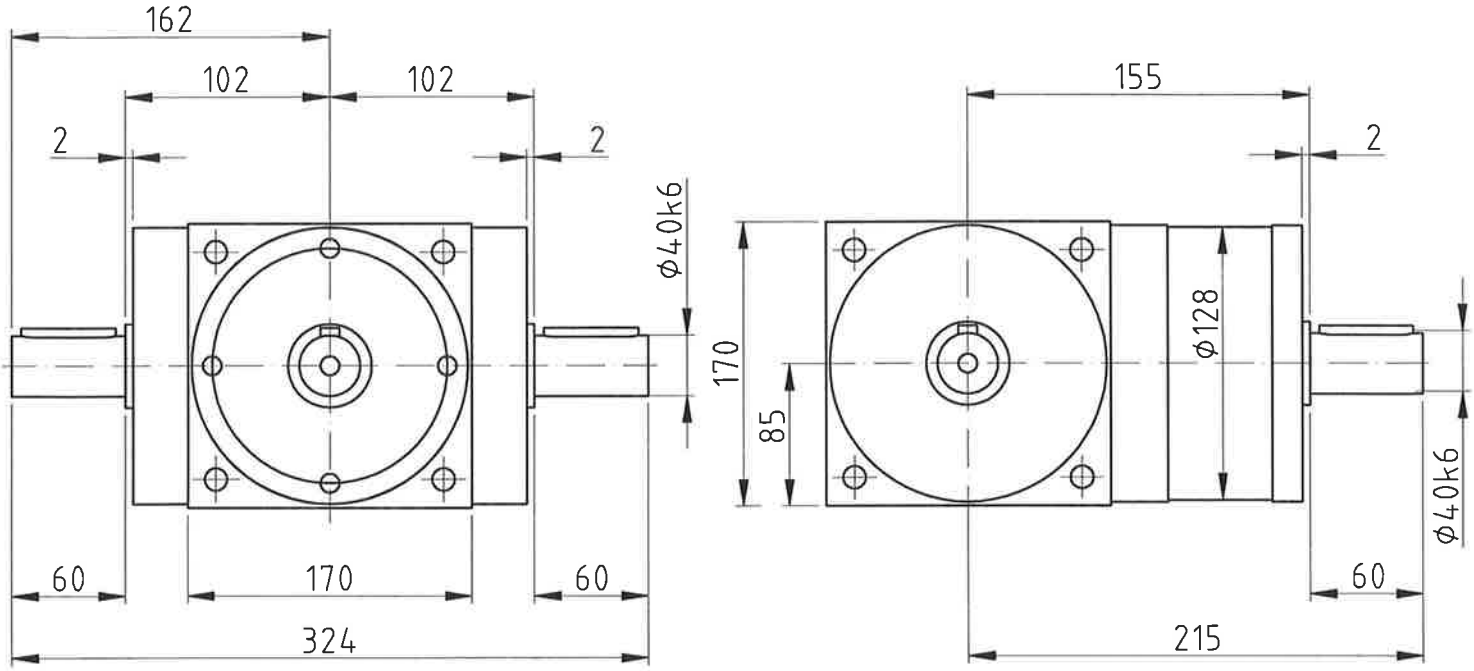
Internet: www.enzfelder.at

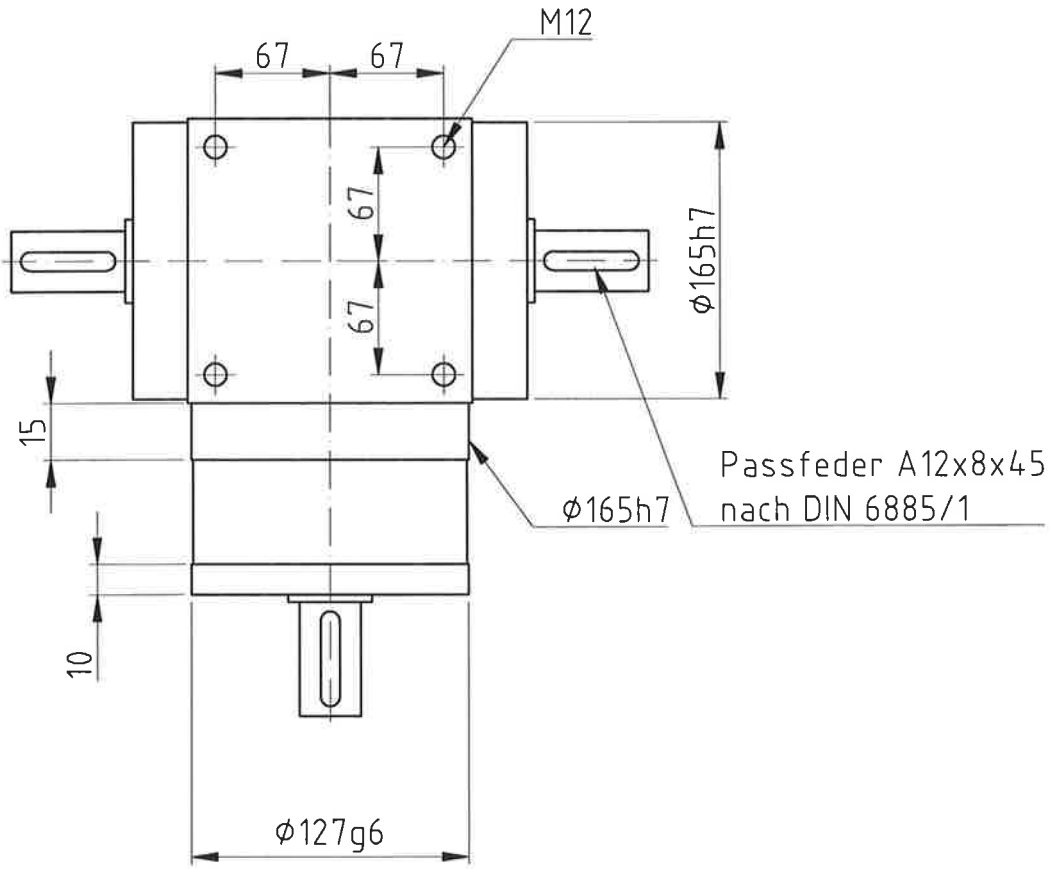


# Bevel Gear Box H170

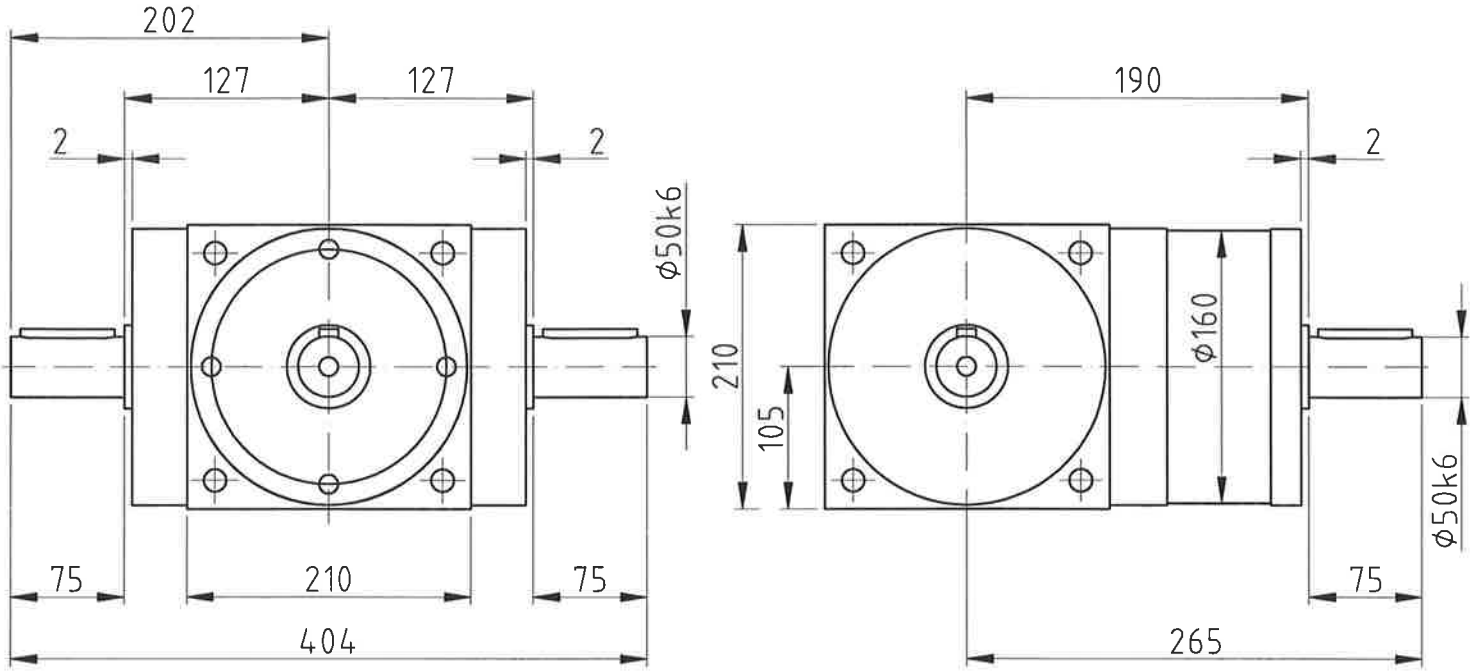
**ENZFELDER** GMBH
**Power transmission- and lifting engineering**
Eichengasse 36
A-2551 Enzesfeld-Lindabrunn
Tel.: ++43 (0) 2256 81287-0
Fax: ++43 (0) 2256 81287-95
E-Mail: office@enzfelder.at
Internet: www.enzfelder.at

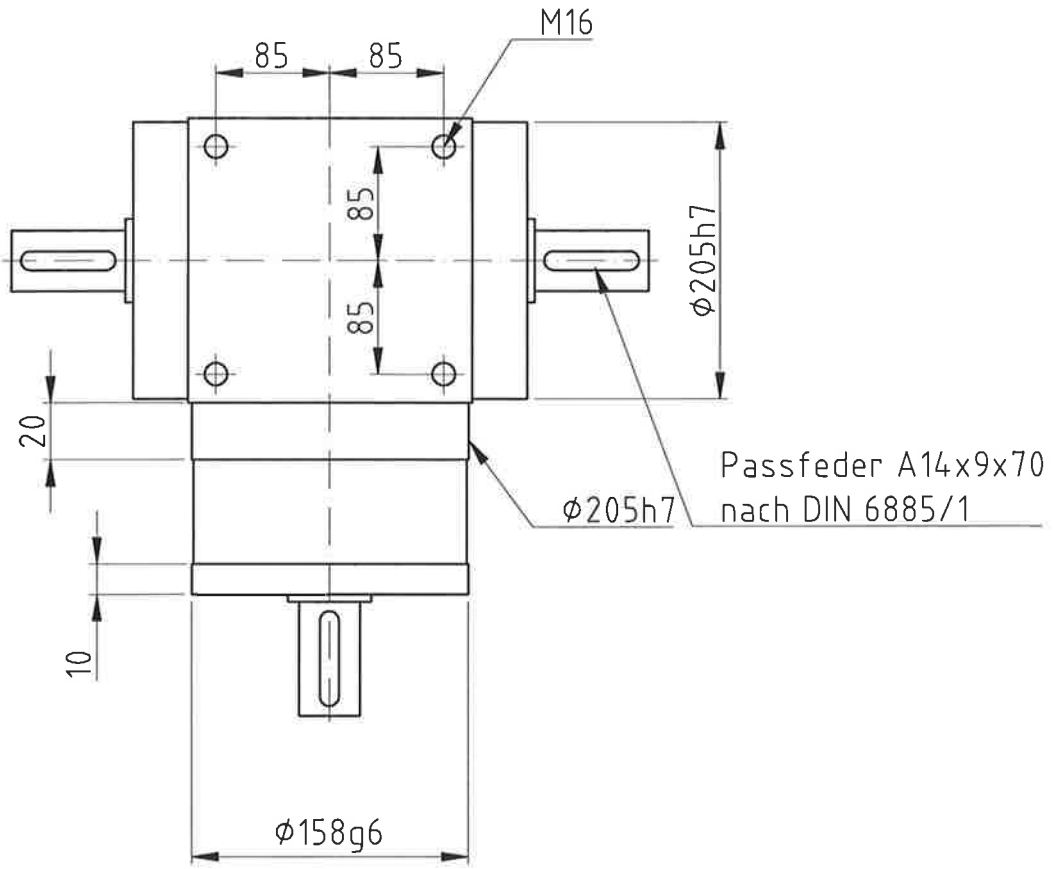


# Bevel Gear Box H210

**ENZFELDER** GMBH
**Power transmission- and lifting engineering**
Eichengasse 36
A-2551 Enzesfeld-Lindabrunn
Tel.: ++43 (0) 2256 81287-0
Fax: ++43 (0) 2256 81287-95
E-Mail: office@enzfelder.at
Internet: www.enzfelder.at



**ENZFELDER** GMBH
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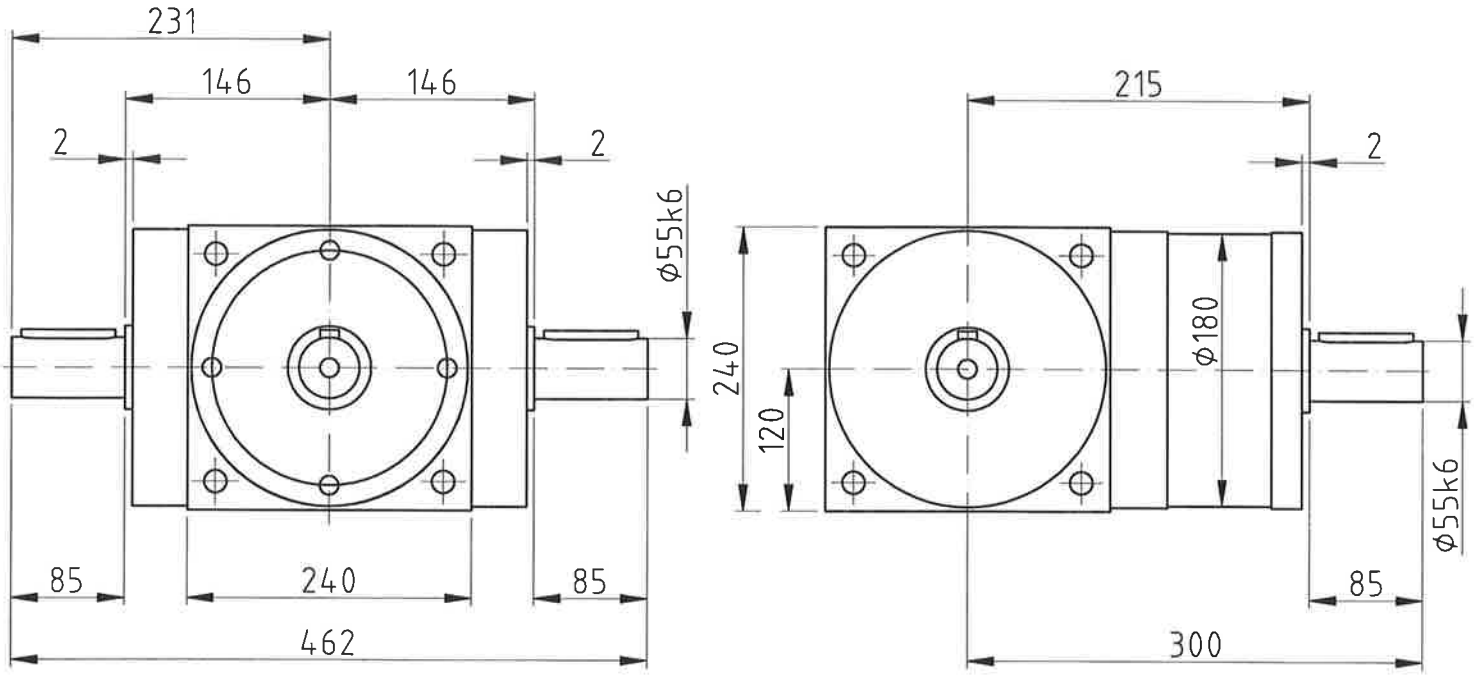
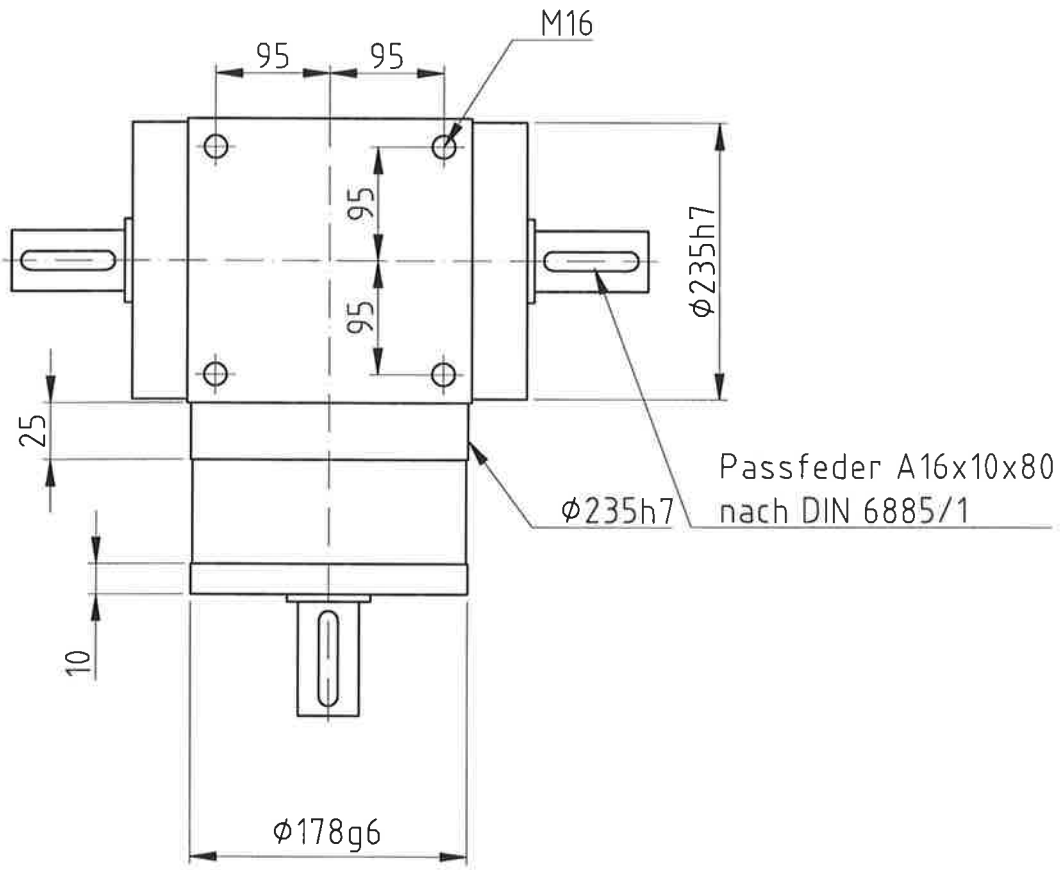
E-Mail: office@enzfelder.at
Internet: www.enzfelder.at

# Bevel Gear Box H240



# Bevel Gear Box H280

**ENZFELDER** GMBH
**Power transmission- and lifting engineering**
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Tel.: ++43 (0) 2256 81287-0
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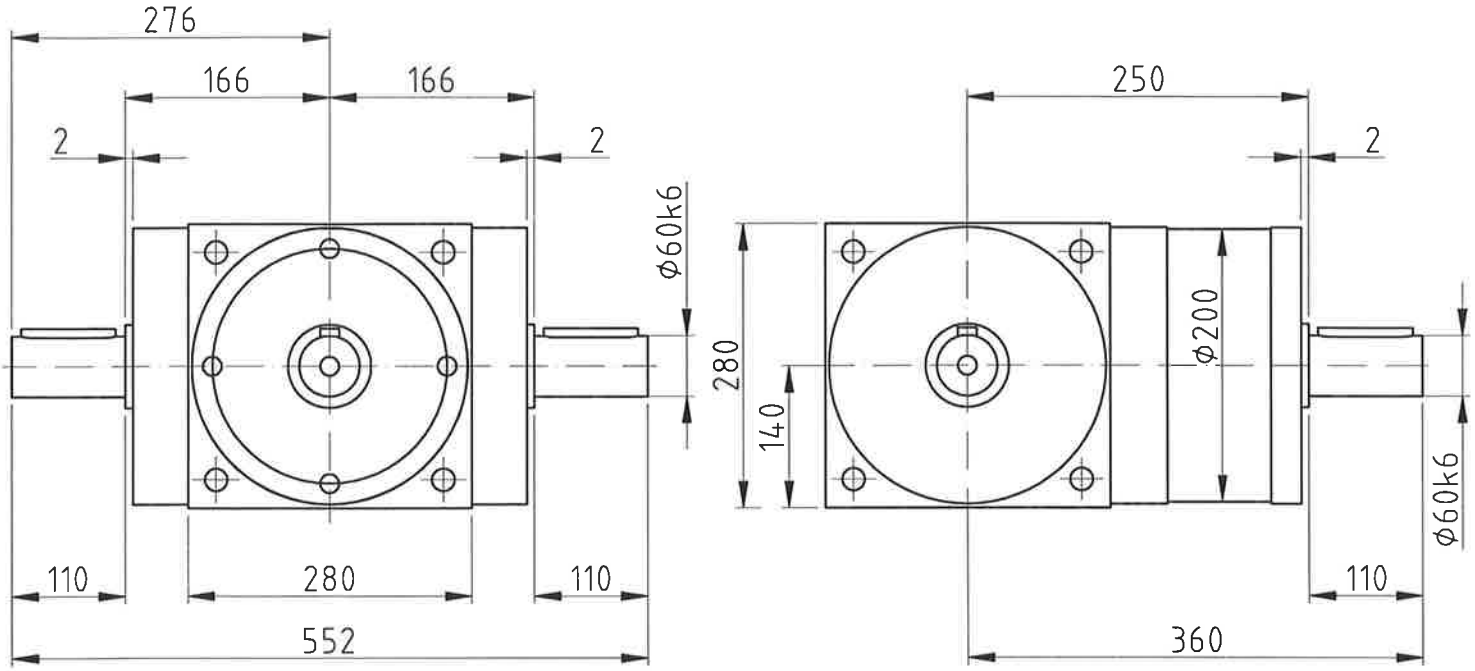
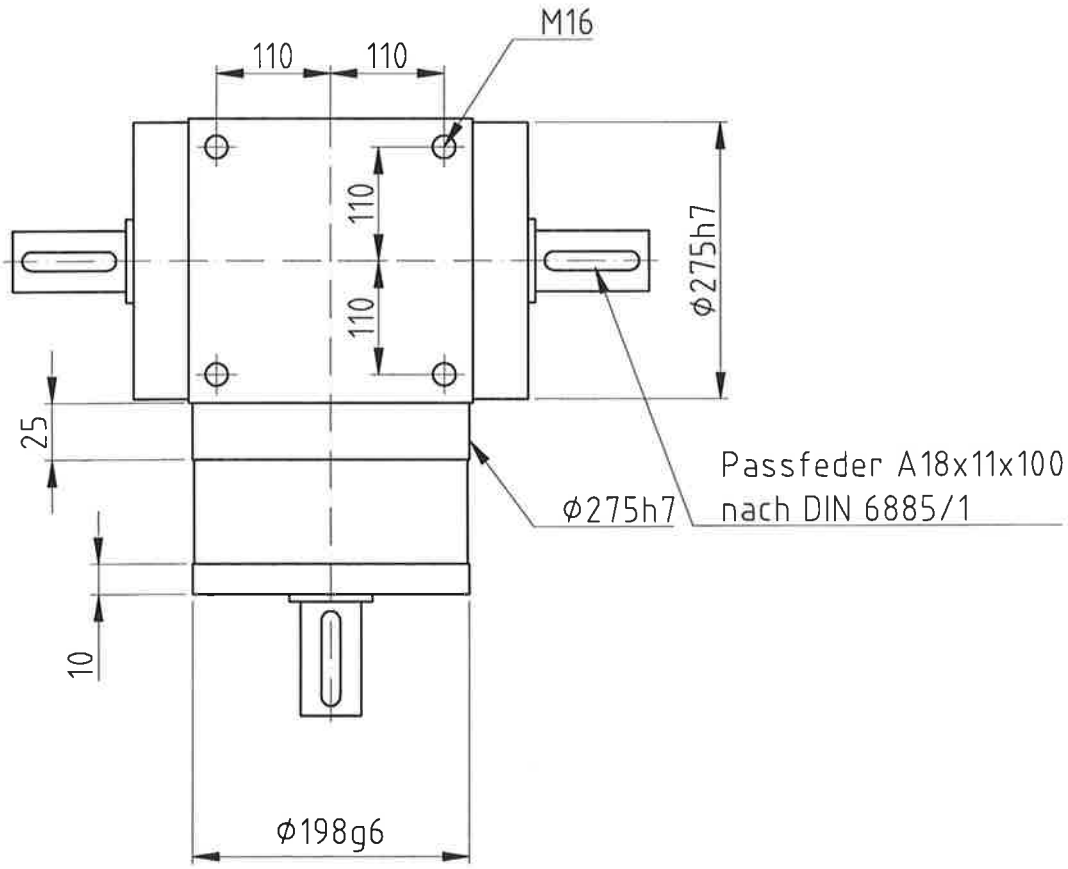
E-Mail: office@enzfelder.at
Internet: www.enzfelder.at

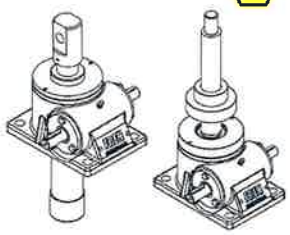


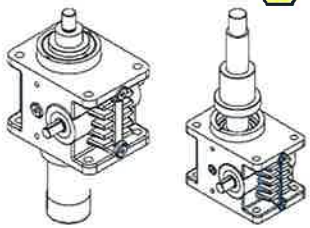
# Product overview 03/2015

Eichengasse 36, A-2551 Enzesfeld, Tel.: +43 (0) 2256 81287 - 00, Fax.: +43 (0) 2256 81287 - 95, office@enzfelder.at, www.enzfelder.at

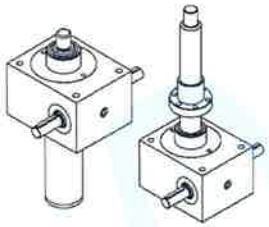
## SG
Screw jack
Classic



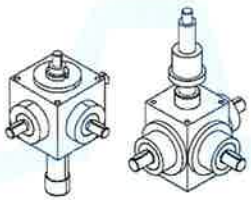
## HSG
High performance-
Screw jack



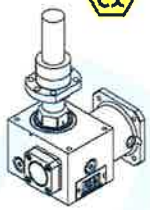
## BG
Screw jack
Cubic



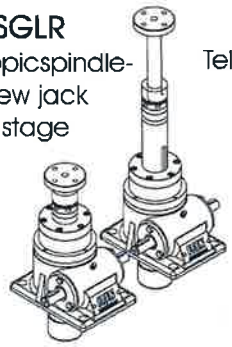
## SHG
Quick-lifting
screw jack



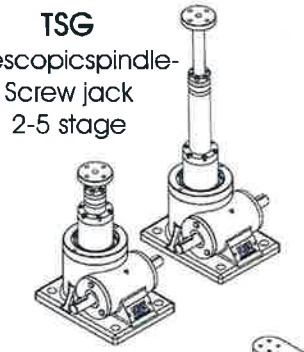
## SH
Servo lifting
gear



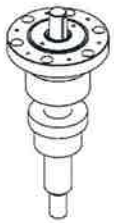
## TSGLR
Telescopicspindle-
Screw jack
2-stage



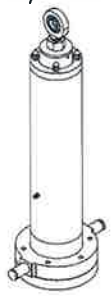
## TSG
Telescopicspindle-
Screw jack
2-5 stage



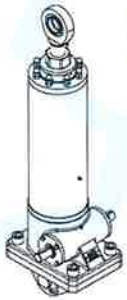
## SLA
Spindlebearing



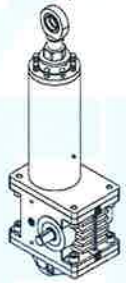
## SEZ
Spindlebearings-
Cylinder



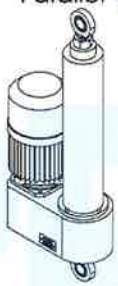
## ELZ
Electric cylinder



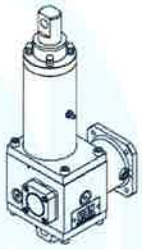
## HELZ
High performance-
Elektric cylinder



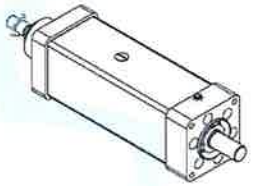
## ELZP
Electric cylinder
Parallel



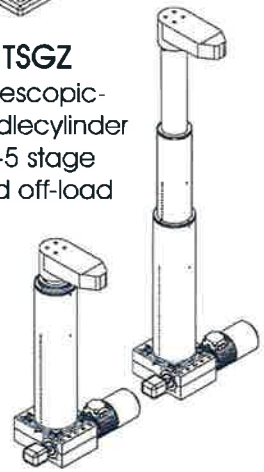
## SHELZ
Servo electric-
cylinder



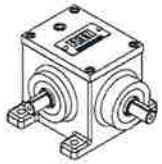
## EPNEU
Spindle-
Elektric cylinder



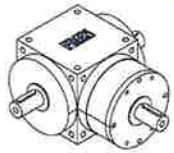
## TSGZ
Telescopic-
spindlecylinder
2-5 stage
And off-load



## K
Bevel gear
Type K

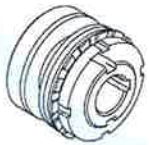


## H
Bevel gear
Type H



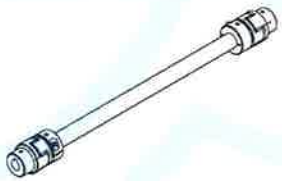
## R / GS
Elastic / backlash-free
Coupling

## RT
Slip hub

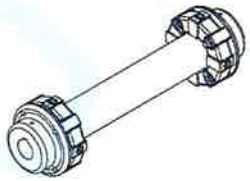


## RK
Slip coupling

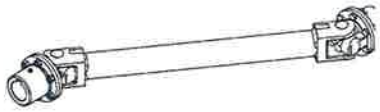
## ZR
FREN
Connecting shaft



## G / GX
Elastic
Connecting shaft

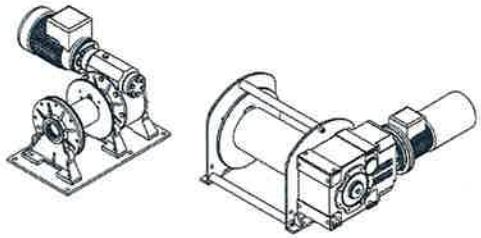


## Cardan shaft



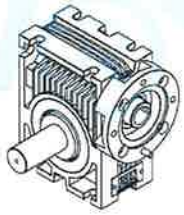
## HT
Lifting table
mechanic / hydraulic

## SW
Rope winche

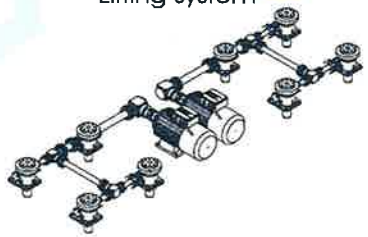


## PLG
Planetary gear

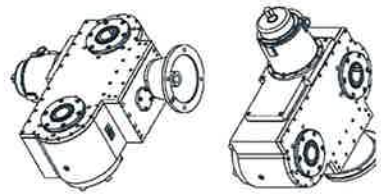
## uniCe
Worm gear



## HA
Lifting system



## Special gear



# ENZFELDER GmbH

## Power transmission- and lifting engineering

**Claw Coupling R/GS**

**Slip Hub RT**

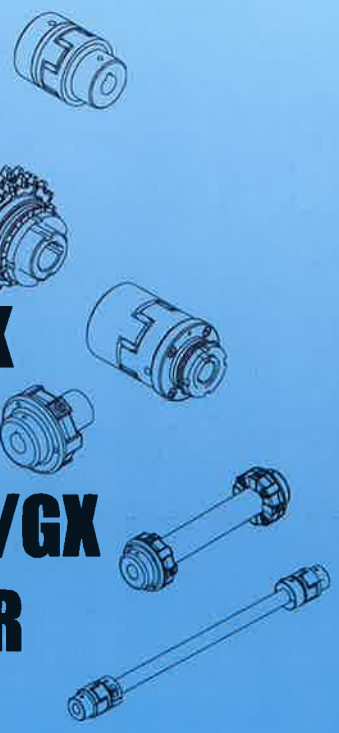
**Slip Coupling RK**

**Slip Claw Coupling RKK**

**Elastic Coupling EK**

**elastic Connectingshaft G/GX**

**FREN Connectingshaft ZR**



Edition 06/2016

# History

**1969** Mr. Enzfelder established a job shop in Vienna. Equipped with some machinery, the Enzfelder Company manufactured machine parts according to drawings.
Within one year the number of employees rose to 3. The Enzfelder company started manufacturing threaded spindles and nuts according to drawings. Then the range of manufacturing was enlarged by toothed wheels, screw wheels and endless screws according to drawings.

**1974** The company including the complete manufacture was relocated to Enzesfeld.

**1975** The manufacture of spindle gears was launched. The company's experience in the manufacture of trapezoid-threaded spindles, nuts, worm gear pairs and casings was a valuable basis for the construction. After many tests, the serial production of spindle gears was launched one year later. The result was a product characterized by a first-rate price-performance ratio. The product was distributed by dealers all over Europe.

**1981** The planning and construction of small hydropower plants was launched to replace diesel generators. Environmental protection was not really a topic at that time, however, and the production was stopped in 1986.

**1989** The Enzfelder GesmbH company replaced the Franz Enzfelder Company.

**1990** Scissor-type lifting platforms and cable winches were added to the delivery program.

**1991** Resilient spacer shafts were tested and added to the production range. At the same time, the telescopic spindle gear was developed. A patent for this principle was applied for and issued.

**1993** The sale of spindle gears under their own name was launched and presented for the first time at the Hannover industrial fair. We have been approached with a variety of tasks and have provided solutions according to the customers' needs ever since.

**1994** In cooperation with our customers we produced the first bevel gears to specification.

**1995** Spindle bearing arrangements were designed and included in the standard program.

**1996** The Enzfelder company produced planet gear to specification for the first time.

**1998-1999** The standard programs were enlarged. Additionally, bevel gears are manufactured in a standard design.

**2000** The development of electric cylinders in standard design for very high loads (5-1000kN) was started. At the same time the telescopic spindle gears were refined to save the customer the guiding and locking devices. Since that time we have been able to offer telescopic cylinders, too.

**2001** The development of electric cylinders was completed, and these cylinders were added to the standard program.
At the same time the development and fabrication of cubic spindle gears for lifting loads between 2.5 and 150kN was started. These gears were added to the standard program as well.

**2002** were extended and optimized the series of the electric cylinders. Further we provide an electronic 2D-3D product catalogue of the spindle gears, it makes it possible to integrate our products into your system.

**2002-2003** We putted our new assembling and packaging hall, beside the manufacturing hall, in operation

**2003** We increased our machinery by buying a CNC machine tool with 7 axes, brand AXA. That new CNC machine allows a precise machining of the screw jack housings in only two clamping.

**2003-2004** The engineering started to use new 3-D CAD software, Solid Edge. That software enables our customers to integrate easily our drawings.

**2004** We opened a sales office in France.

**2004-2005** We started to design the high performance screw jacks HSG and we created a range of 10 different sizes.

**2005** First participation to an exhibition in France: INDUSTRIE 2005 at Lyon.

**2005-2006** We started to design a new range of telescopic screw jacks TSGLR. Today, these new telescopic screw jacks, with a more compact design, are used in the stage industry, in the aircraft industry, on train lifting equipments and in machine building.

**2008** We replaced the tread grinding machine by a new CNC thread grinding machine, brand Mikromat.

**2008-2009** transmission program is certified to ATEX

**2009-2010** beginning of the series production of Quick-lifting screw jacks SHG

**2010** Development of the transmission range Servo lifting gear (backlash & game adjustable)
Expand our global market with traders in Australia

**2011** development Servo lifting electric cylinder SHELZ (Servo lifting gear with cylindrical structure) and the beginning of the ELZP Series Electric cylinders parallel for Industry sector applications.

**2012** acquisition of the product group UniCe worm gear, helical worm geared motors, couplings, torque limiters and slip clutches. Expansion screw jacks cubic BG up to size for 1000kN

**2013-2014** revision of the telescopic spindle cylinder TSGZ the new cost-optimized design.
Development of product group Electric PNEU, electric cylinder with ball screw, stainless version in hygienically optimized design with mounting dimensions, speeds and forces such as pneumatic cylinder.

**2014** first Quick-lifting screw jacks with cylindrical structure can be delivered SHGZ = Quick-lifting electric cylinder

In recent years, customer problems are solved in the drive and lifting technology from us. Depending on the application, we developed the optimal solution and made with the best possible price / performance ratio.

Issue 01-2015

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# Couplings, Connectingshafts

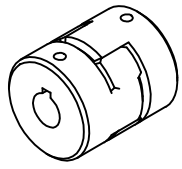
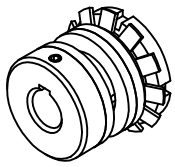
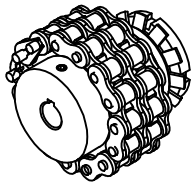
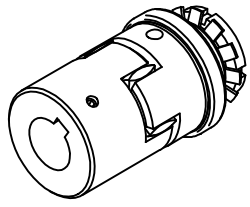
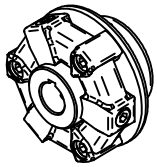
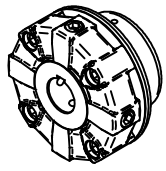
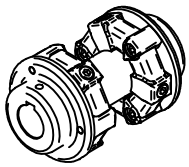
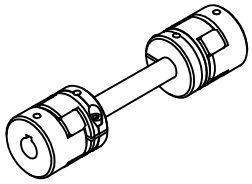
## Content

DEAR CUSTOMER

Our new catalog "Couplings, Connectingshafts" is in front of you. It shows all quality products from our house in a clear form. If you have any questions about the interpretation / dimensioning, our technical staff are gladly at your disposal. We hope that we have presented to you with our new catalog a purchase and sales assistance and wish you great success!

Your team from Enzfelder Power transmission- and lifting engineering



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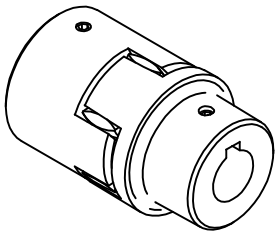
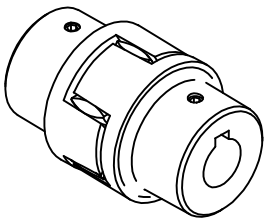
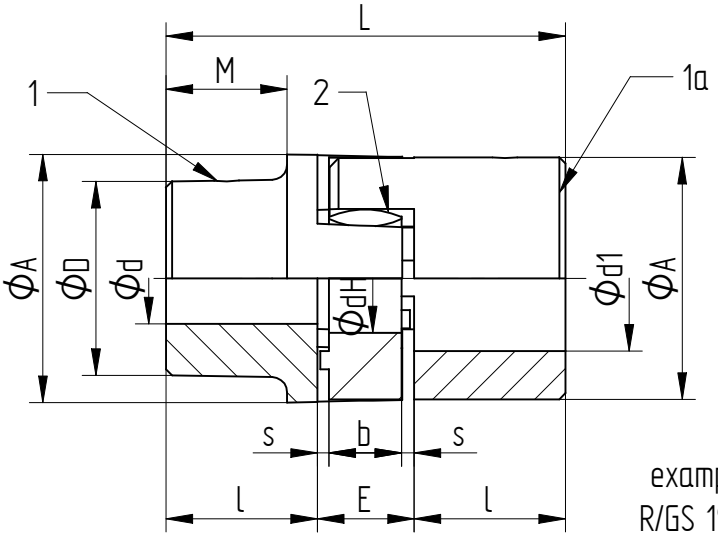
# Claw Coupling R/GS

- torsionally flexible, low maintenance
- vibration damping
- axially pluggable
- compact design / low centrifugal moment
- drilling hole by ISO-clearance H7
- feather key groove by DIN 6885/1 - JS9
- explosion protection on request
- max. angular displacement = 1°30'
- Rotation angle with nominal torque = 3,2°
- Operating temperature range = -40°C bis +100°C



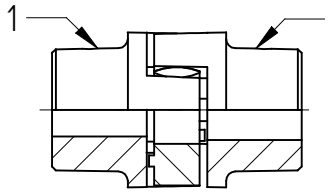


The nominal torques are valid for normal operation with soft shocks; because of the higher starting torque of three-phase squirrel-cage motors, a shock factor of 2 shall be used.

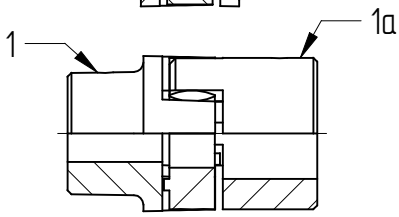



example of order:
R/GS 19 - 16 - 19
size - d/d1 - d/d1

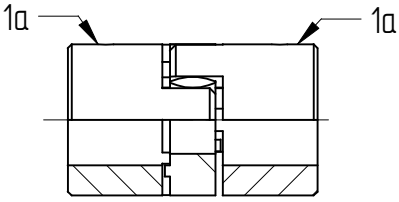
design 1-1




design 1-1a




design 1a-1a




| size | element (design) | gear ring (part 2) nominal torque [Nm] 98 Sh A (red) | pilot hole | drilling hole Ød min | drilling hole Ød max | pilot hole | drilling hole Ød1 min | drilling hole Ød1 max | dimensions [mm] ØA | ØD | ØD1 | L | l | E | s | b | M | Ød_H | material Alu | cast material | steel | resistant against rust (1.4301 & 1.4305) on enquiry |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R14 | 1a | 12,5 | - | - | - | - | 4 | 14 | 30 | - | 30 | 35 | 11 | 13 | 1,5 | 10 | 10 | 10 | • | - | • | |
| R19/24 | 1 | 17 | 4 | 6 | 19 | - | | | 40 | 32 | - | 66 | 25 | 16 | 2 | 12 | 20 | 18 | • | - | • | |
| | 1a | | - | - | - | - | 6 | 24 | | - | 40 | | | | | | | | | | | |
| R24/28 | 1 | 60 | 6 | 8 | 24 | - | - | - | 55 | 40 | - | 78 | 30 | 18 | 2 | 14 | 24 | 27 | • | • | • | |
| | 1a | | - | - | - | 6 | 8 | 28 | | - | 48 | | | | | | | | | | | |
| R28/38 | 1 | 160 | 8 | 10 | 28 | - | - | - | 65 | 48 | - | 90 | 35 | 20 | 2,5 | 15 | 28 | 30 | • | • | • | |
| | 1a | | - | - | - | 8 | 10 | 38 | | - | 65 | | | | | | | | | | | |
| R38/45 | 1 | 325 | 10 | 12 | 38 | - | - | - | 80 | 66 | - | 114 | 45 | 24 | 3 | 18 | 37 | 38 | • | • | • | |
| | 1a | | - | - | - | 36 | 38 | 45 | | - | 77 | | | | | | | | | | | |
| R42/55 | 1 | 450 | 12 | 14 | 42 | - | - | - | 95 | 75 | - | 126 | 50 | 26 | 3 | 20 | 40 | 46 | - | • | • | |
| | 1a | | - | - | - | 40 | 42 | 55 | | - | 94 | | | | | | | | | | | |
| R48/60 | 1 | 525 | 13 | 15 | 48 | - | - | - | 105 | 85 | - | 140 | 56 | 28 | 3,5 | 21 | 45 | 51 | - | • | • | |
| | 1a | | - | - | - | 46 | 48 | 60 | | - | 102 | | | | | | | | | | | |
| R55/70 | 1 | 685 | 18 | 20 | 55 | - | - | - | 120 | 98 | - | 160 | 65 | 30 | 4 | 22 | 52 | 60 | - | • | • | |
| | 1a | | - | - | - | 52 | 55 | 70 | | - | 120 | | | | | | | | | | | |
| R65/75 | 1 | 940 | 20 | 22 | 65 | - | - | - | 135 | 115 | - | 185 | 75 | 35 | 4,5 | 26 | 61 | 68 | - | • | • | |
| | 1a | | - | - | - | 63 | 65 | 75 | | - | 135 | | | | | | | | | | | |
| R75/90 | 1 | 1920 | 28 | 30 | 75 | - | - | - | 160 | 135 | - | 210 | 85 | 40 | 5 | 30 | 69 | 80 | - | • | • | |
| | 1a | | - | - | - | 73 | 75 | 90 | | - | 160 | | | | | | | | | | | |
| R90/97 | 1 | 3600 | 38 | 40 | 97 | - | - | - | 200 | 160 | - | 245 | 100 | 45 | 5,5 | 34 | 81 | 100 | - | • | • | |
| R100/115 | 1 | 4950 | 48 | 50 | 115 | - | - | - | 225 | 180 | - | 270 | 110 | 50 | 6 | 38 | 89 | 113 | - | • | • | |
| R110/125 | 1 | 7200 | 58 | 60 | 125 | - | - | - | 255 | 200 | - | 295 | 120 | 55 | 6,5 | 42 | 96 | 127 | - | • | • | |
| R125/145 | 1 | 10000 | 58 | 60 | 145 | - | - | - | 290 | 230 | - | 340 | 140 | 60 | 7 | 46 | 112 | 147 | - | • | • | |
| R140/160 | 1 | 12800 | 58 | 60 | 160 | - | - | - | 320 | 255 | - | 375 | 155 | 65 | 7,5 | 50 | 124 | 165 | - | • | • | |
| R160/185 | 1 | 19200 | 78 | 80 | 185 | - | - | - | 370 | 290 | - | 425 | 175 | 75 | 9 | 57 | 140 | 190 | - | • | • | |
| R180/200 | 1 | 28000 | 83 | 85 | 200 | - | - | - | 420 | 325 | - | 475 | 195 | 85 | 10,5 | 64 | 156 | 220 | - | • | • | |

Subjects to measurement changes

# Slip Hub
# RT

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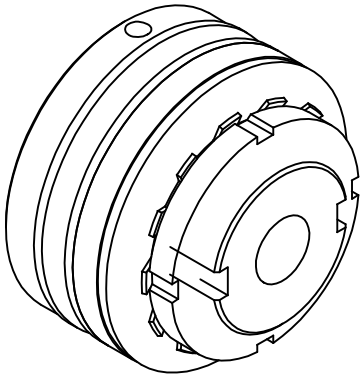
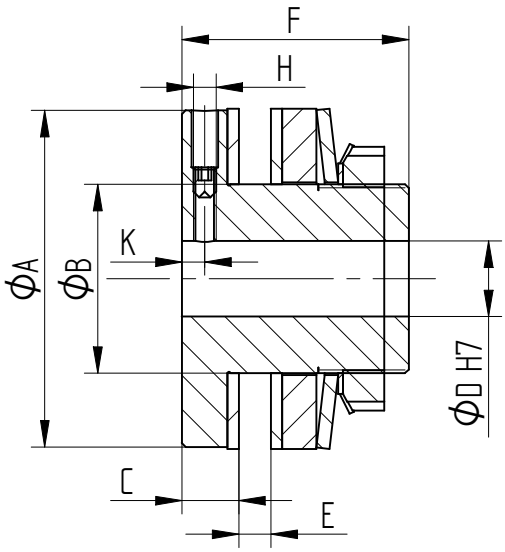
RT-Slip Hubs
protect against damage by:
- overload
- shocks
- machine jams

RT-Slip Hubs are used for:
- sprockets and gears
- levers
- pulleys and wheels

advantages of RT-Slip Hubs:
- easily assembled
- low maintenance
- compact and reliable
- torque setting by adjusting nut

RT-Slip Hubs cost farless than a shutdown of a customer's plant. The determined torque should be 25 to 100% of the maximum shown in the tables. Too high torque will cause to much wear, too little will cause polished friction members, causing unwanted variance in the required torque. RT-Slip Hubs must be protected against oil and grease. It is necessary to check the functions from time to time. Build-in parts are to be grounded with a roughness of max. 6µm.






example for order: RT120-20
RT120 = slip hub with 120Nm max. torque
20 = drilled hole Φ20mm with feather key groove DIN 6885/1

| size | | RT12 | RT20 | RT40 | RT70 | RT120 | RT190 | RT350 | RT630 | RT1200 | RT1700 | RT2400 | RT3500 | RT5000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $T_{max.}$ | Nm | 12 | 20 | 40 | 70 | 120 | 190 | 350 | 630 | 1200 | 1700 | 2400 | 3500 | 5000 |
| $n_{max.}$ | $min.^{-1}$ | 800 | 800 | 800 | 600 | 500 | 450 | 410 | 380 | 340 | 320 | 300 | 250 | 220 |
| ØA | mm | 30 | 38 | 45 | 55 | 65 | 75 | 90 | 110 | 140 | 160 | 180 | 210 | 240 |
| ØB H8 | mm | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 60 | 70 | 80 | 80 | 110 | 120 |
| C | mm | 11 | 11 | 11 | 13 | 13 | 15 | 15 | 18 | 18 | 23 | 25 | 25 | 28 |
| $ØD_{min}$ | mm | 0 | 0 | 0 | 0 | 0 | 15 | 20 | 20 | 25 | 30 | 35 | 40 | 0 |
| $ØD_{max}$ | mm | 12 | 15 | 19 | 22 | 25 | 30 | 32 | 40 | 50 | 55 | 65 | 80 | 100 |
| $E_{min}$ | mm | 3 | 3 | 3 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 13 | 14 | 16 |
| $E_{max}$ | mm | 7 | 7 | 9 | 13 | 13 | 15 | 16 | 19 | 22 | 24 | 28 | 30 | 32 |
| F | mm | 33 | 34 | 38 | 48 | 48 | 55 | 60 | 72 | 82 | 95 | 110 | 118 | 130 |
| H | | M4 | M4 | M4 | M4 | M4 | M4 | M4 | M6 | M6 | M8 | M8 | M10 | M10 |
| K | mm | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 7 | 10 | 10 | 11 | 12 |
| m | kg | 0,4 | 0,6 | 0,9 | 1,4 | 1,7 | 2 | 2,2 | 3,3 | 6,4 | 9,1 | 13,4 | 20,1 | 24,5 |
| smallest chain wheel | | number of teeth | | | | | | | | | | | | |
| chain pitch | 6mm | 19 | 23 | 27 | 32 | 37 | 42 | - | - | - | - | - | - | - |
| | 8mm | 15 | 18 | 21 | 25 | 29 | 32 | 38 | - | - | - | - | - | - |
| | 3/8" | 13 | 16 | 18 | 22 | 25 | 28 | 33 | 39 | - | - | - | - | - |
| | 1/2" | 11 | 13 | 15 | 17 | 19 | 22 | 25 | 30 | 38 | - | - | - | - |
| | 5/8" | 9 | 11 | 12 | 14 | 16 | 18 | 21 | 25 | 31 | 35 | 39 | - | - |
| | 3/4" | - | 9 | 10 | 12 | 14 | 15 | 18 | 21 | 26 | 29 | 33 | 38 | - |
| | 1" | - | - | 9 | 10 | 11 | 12 | 14 | 17 | 21 | 23 | 26 | 29 | 33 |
| | 1 1/4" | - | - | - | - | 9 | 10 | 12 | 14 | 17 | 19 | 21 | 24 | 27 |
| | 1 1/2" | - | - | - | - | - | 9 | 11 | 12 | 15 | 17 | 18 | 21 | 23 |
| | 1 3/4" | - | - | - | - | - | - | 9 | 11 | 13 | 15 | 16 | 18 | 20 |
| | 2" | - | - | - | - | - | - | 9 | 10 | 12 | 13 | 14 | 16 | 18 |

Subjects to measurement changes

# Slip Coupling
# RK

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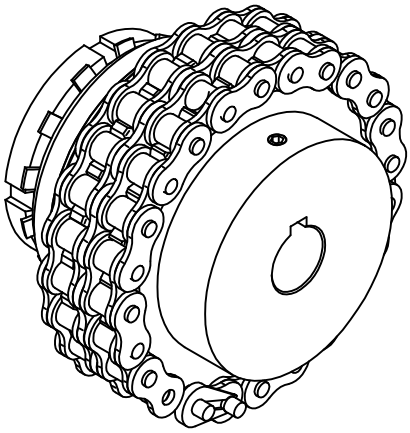
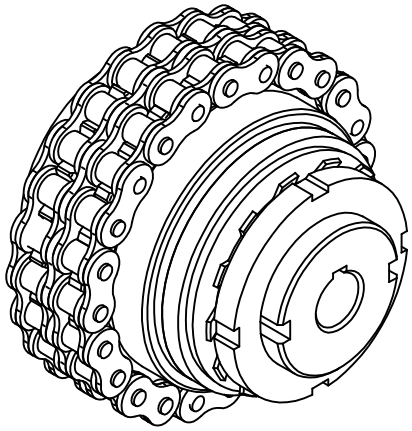
RK-Slip Couplings work as torquelimiter when connecting two shafts.
They consist of a RT-Slip Hub and a Chain-Coupling.



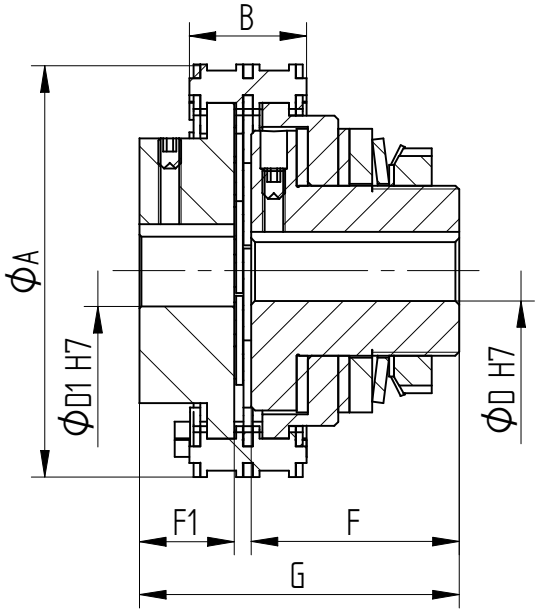


advantages of RK-Slip Couplings:
- low maintenance
- easily assembled
- easy to unfasten

Only RK-Slip Couplings allow pure radial disassembling without axial dislocation of any part.

they allow parallel misalignement of:
- 0,2mm ..... RK12 bis RK120
- 0,25mm ... RK190 bis RK1200
- 0,5mm ..... RK1700 bis RK5000

a misalignement of 0,5° is tolerable




example for order: RK190-170-20-25
RK190 = RK-slip coupling with 190Nm max. torque
170 = adjusted torque
20 = drilled hole ΦD 20mm with feather key groove DIN 6885/1
25 = drilled hole ΦD1 25mm with feather key groove DIN 6885/1

| size | | RK12 | RK20 | RK40 | RK70 | RK120 | RK190 | RK350 | RK630 | RK1200 | RK1700 | RK2400 | RK3500 | RK5000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $T_{max.}$ | Nm | 12 | 20 | 40 | 70 | 120 | 190 | 350 | 630 | 1200 | 1700 | 2400 | 3500 | 5000 |
| $n_{max.}$ | $min.^{-1}$ | 800 | 800 | 800 | 600 | 500 | 450 | 410 | 380 | 340 | 320 | 300 | 250 | 220 |
| ØA | mm | 54 | 63 | 72 | 82 | 91 | 110 | 134 | 146 | 194 | 216 | 240 | 288 | 337 |
| ØB | mm | 24 | 24 | 24 | 24 | 24 | 31 | 31 | 31 | 31 | 68 | 68 | 68 | 68 |
| $ØD_{min}$ | mm | 0 | 0 | 0 | 0 | 0 | 15 | 20 | 20 | 25 | 30 | 35 | 40 | 0 |
| $ØD_{max}$ | mm | 12 | 15 | 19 | 22 | 25 | 30 | 32 | 40 | 50 | 55 | 65 | 80 | 100 |
| $ØD_{1\ min}$ | mm | 8 | 10 | 12 | 12 | 16 | 16 | 16 | 16 | 20 | 25 | 25 | 25 | 25 |
| $ØD_{1\ max}$ | mm | 22 | 28 | 32 | 38 | 40 | 43 | 46 | 46 | 58 | 74 | 76 | 90 | 105 |
| F | mm | 33 | 34 | 38 | 48 | 48 | 55 | 60 | 72 | 82 | 95 | 110 | 118 | 130 |
| $F_1$ | mm | 16 | 16 | 20 | 20 | 20 | 25 | 30 | 30 | 40 | 50 | 50 | 55 | 65 |
| G | mm | 52 | 53 | 61 | 67 | 70 | 84 | 94 | 105 | 125 | 151 | 168 | 181 | 201 |
| m | kg | 0,7 | 1 | 1,4 | 2,1 | 2,5 | 3,6 | 4,6 | 6 | 12,1 | 20,9 | 29 | 41,9 | 55,8 |

Subjects to measurement changes

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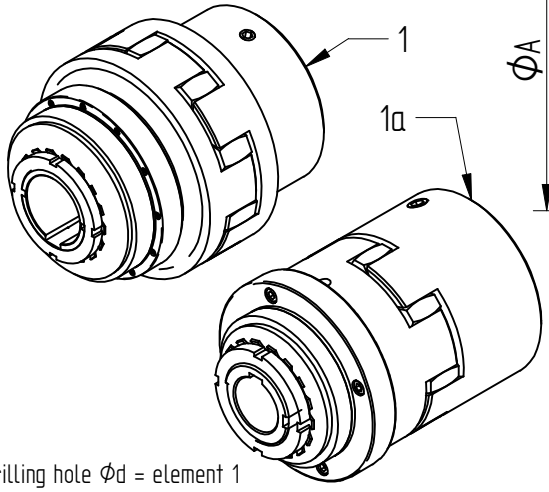
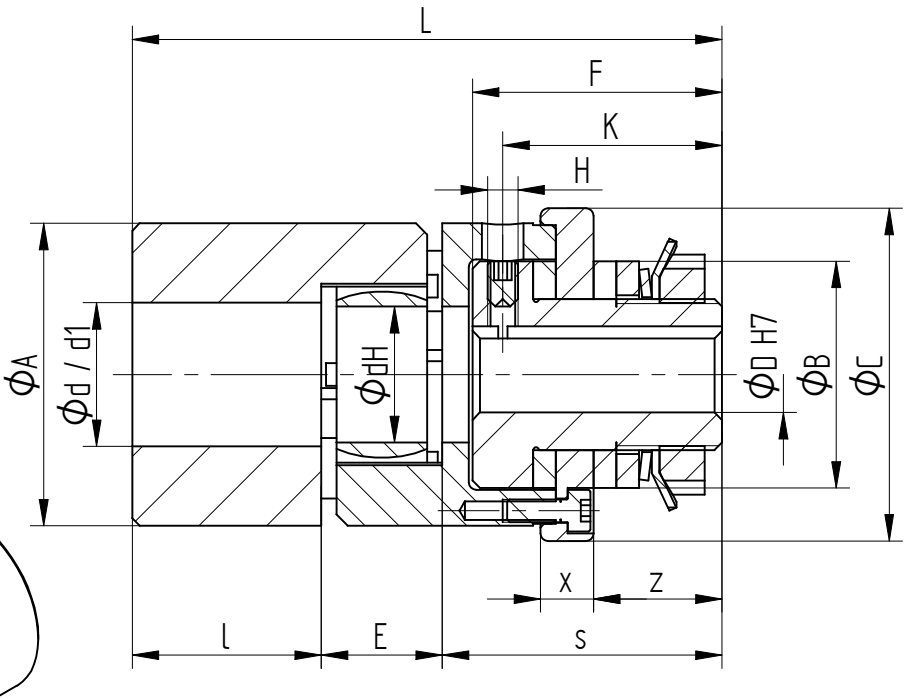
# Slip Claw Coupling
# RKK

RRK Slip Claw Couplings work as torquelimiter when connecting two shafts.
They consist of a RT-Slip Hub and a elastic Coupling.

Advantages of RKK Slip Claw Couplings:
- axial pluggable
- easily assembled
- torque setting in mounted situation
- drilling hole by ISO-clearance H7
- coupling half 1 & 1a possible




drilling hole Φd = element 1
drilling hole Φd1 = element 1a

example of order:
RKK 24 - 10 - 12 - 16
size - Nm - D H7 - d/d1

material on request

| size slip claw coupling | torque $T_{max.}$ | size elastic coupling | element (design) | pilot hole | drilling hole [mm] | | pilot hole | drilling hole [mm] | | dimensions [mm] | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ød | Ød | | Ød$_1$ | Ød$_1$ | | | | | | | | | | | | | | | |
| | Nm | | | min | max | | min | max | ØA | ØD min | ØD max | L | l | E | s | x | z | ØB | ØC | F | K | H | Ød$_H$ |
| RKK19 | 12 | R19 | 1 | 4 | 6 | 19 | - | | | 40 | 0 | 12 | 78 | 25 | 16 | 2 | 7 | 17 | 30 | 44 | 33 | 29 | M4 | 18 |
| | | | 1a | - | - | - | - | 6 | 24 | | | | | | | | | | | | | | |
| RKK24 | 20 | R24 | 1 | 6 | 8 | 24 | - | - | - | 55 | 0 | 15 | 90 | 30 | 18 | 2 | 9 | 17 | 38 | 58 | 34 | 30 | M4 | 27 |
| | | | 1a | - | - | - | 6 | 8 | 28 | | | | | | | | | | | | | | |
| RKK28 | 70 | R28 | 1 | 8 | 10 | 28 | - | - | - | 65 | 0 | 22 | 112 | 35 | 20 | 2,5 | 15 | 22 | 55 | 70 | 45 | 40 | M5 | 30 |
| | | | 1a | - | - | - | 8 | 10 | 38 | | | | | | | | | | | | | | |
| RKK38 | 120 | R38 | 1 | 10 | 12 | 38 | - | - | - | 80 | 0 | 25 | 129 | 45 | 24 | 3 | 16 | 24 | 65 | 86 | 48 | 43 | M5 | 38 |
| | | | 1a | - | - | - | 36 | 38 | 45 | | | | | | | | | | | | | | |
| RKK42 | 190 | R42 | 1 | 12 | 14 | 42 | - | - | - | 95 | 15 | 30 | 144 | 50 | 26 | 3 | 18 | 27 | 75 | 100 | 55 | 49 | M6 | 46 |
| | | | 1a | - | - | - | 40 | 42 | 55 | | | | | | | | | | | | | | |
| RKK48 | 350 | R48 | 1 | 13 | 15 | 48 | - | - | - | 105 | 20 | 32 | 161 | 56 | 28 | 3,5 | 18 | 32 | 90 | 110 | 60 | 54 | M6 | 51 |
| | | | 1a | - | - | - | 46 | 48 | 60 | | | | | | | | | | | | | | |
| RKK55 | 630 | R55 | 1 | 18 | 20 | 55 | - | - | - | 120 | 20 | 40 | 187 | 65 | 30 | 4 | 21 | 38 | 110 | 130 | 72 | 64,5 | M6 | 60 |
| | | | 1a | - | - | - | 52 | 55 | 70 | | | | | | | | | | | | | | |
| RKK65 | 630 | R65 | 1 | 20 | 22 | 65 | - | - | - | 135 | 20 | 40 | 202 | 75 | 35 | 4,5 | 21 | 38 | 110 | 145 | 72 | 64,5 | M6 | 68 |
| | | | 1a | - | - | - | 63 | 65 | 75 | | | | | | | | | | | | | | |
| RKK75 | 1200 | R75 | 1 | 28 | 30 | 75 | - | - | - | 160 | 25 | 50 | 230 | 85 | 40 | 5 | 25 | 44 | 140 | 170 | 82 | 74,5 | M6 | 80 |
| | | | 1a | - | - | - | 73 | 75 | 90 | | | | | | | | | | | | | | |
| RKK90 | 1700 | R90 | 1 | 38 | 40 | 97 | - | - | - | 200 | 30 | 55 | 265 | 100 | 45 | 5,5 | 30 | 52 | 160 | 210 | 95 | 85 | M8 | 100 |
| RKK100 | 1700 | R100 | 1 | 48 | 50 | 115 | - | - | - | 225 | 30 | 55 | 279 | 110 | 50 | 6 | 28 | 52 | 160 | 190 | 95 | 85 | M8 | 113 |
| RKK110 | 2400 | R110 | 1 | 58 | 60 | 125 | - | - | - | 255 | 35 | 65 | 316 | 120 | 55 | 6,5 | 34 | 59 | 180 | 210 | 110 | 99 | M8 | 127 |
| RKK125 | 3500 | R125 | 1 | 58 | 60 | 145 | - | - | - | 290 | 40 | 80 | 350 | 140 | 60 | 7 | 36 | 65 | 210 | 240 | 118 | 107 | M10 | 147 |
| RKK140 | 5000 | R140 | 1 | 58 | 60 | 160 | - | - | - | 320 | 0 | 100 | 385 | 155 | 65 | 7,5 | 38 | 72 | 240 | 265 | 130 | 117,5 | M10 | 165 |
| RKK160 | 5000 | R160 | 1 | 78 | 80 | 185 | - | - | - | 370 | 0 | 100 | 417 | 175 | 75 | 9 | 38 | 72 | 240 | 300 | 130 | 117,5 | M10 | 190 |
| RKK180 | 5000 | R180 | 1 | 83 | 85 | 200 | - | - | - | 420 | 0 | 100 | 452 | 195 | 85 | 10,5 | 38 | 72 | 240 | 335 | 130 | 117,5 | M10 | 220 |

Subjects to measurement changes

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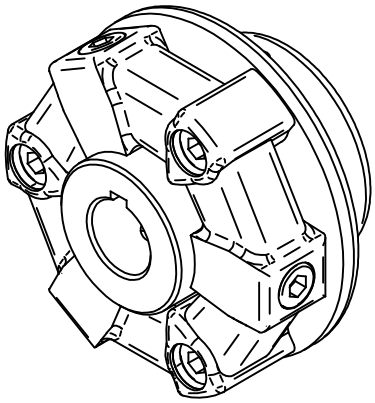
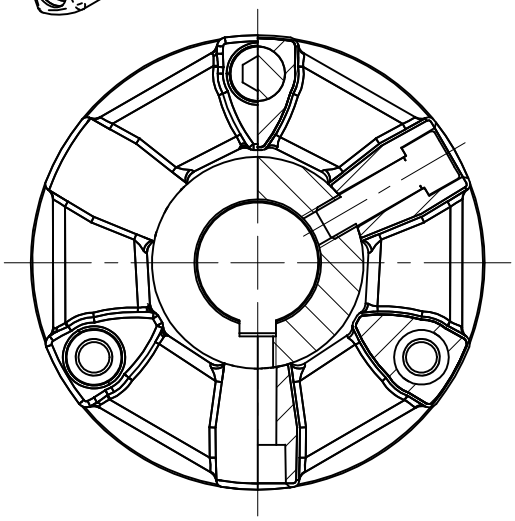
# elastic Coupling EK





characteristics and advantages of elastic Couplings:

- low weight, low torque of inertia
- high permissible rotation speed
- puncture proof
- high elasticity and misalignment capability by all directions (radial, axial, angular) with low counter forces on the shaft and bearings
- no precise alignment of shaft required
- shock and vibration damping
- uniformly backlash-free torque transmission
- maintenance-free, long lifetime
- no abrasion of rubber elements
- assembly requires no special tools
- attached units can be uninstalled transversely without axial screw
- by solving the radial screw the drive can be easily separated and rotated without dismantling
- no axial reaction forces on shaft and bearings

performance diagram elastic Coupling EK

| size | nominal torque $T_{KN}$ | max-torque $T_{Kmax}$ | torsion angle by $T_{KN}$ | torsion angle by $T_{Kmax}$ | max. rotational speed | angular compliancy (rotation speed dependent) | axial compliancy | radial compliancy (rotation speed dependent) | permanently changing torque | acceptable power dissipation | dynamictorsional rigidity by 50 Shore | dynamictorsional rigidity by 60 Shore | axial spring value | radial spring value | angular spring value |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Nm | Nm | deg | deg | $min^{-1}$ | deg | mm | mm | Nm | W | Nm/rad | Nm/rad | N/mm | N/mm | Nm/deg |
| EK01 | 10 | 25 | 6 ° | 17 ° | 10000 | 3 ° | 2 | 1,5 | 5 | 6 | 90 | 140 | 38 | 150 | 0,3 |
| EK02 | 20 | 60 | 6 ° | 17 ° | 8000 | 3 ° | 3 | 1,5 | 10 | 10 | 180 | 290 | 22 | 150 | 0,3 |
| EK04 | 50 | 125 | 5 ° | 12 ° | 7000 | 3 ° | 3 | 1,5 | 20 | 15 | 550 | 850 | 75 | 500 | 2,4 |
| EK08 | 100 | 280 | 5 ° | 14 ° | 6500 | 3 ° | 4 | 2 | 40 | 25 | 900 | 1500 | 75 | 500 | 3,6 |
| EK12 | 140 | 360 | 3 ° | 7,5 ° | 6500 | 2 ° | 4 | 2 | 50 | 30 | 2700 | 4400 | 250 | 1000 | 9,0 |
| EK16 | 200 | 560 | 5 ° | 14 ° | 6000 | 3 ° | 5 | 2 | 80 | 40 | 2000 | 3400 | 100 | 500 | 5,0 |
| EK22 | 275 | 750 | 3 ° | 7,5 ° | 6000 | 2 ° | 5 | 2 | 100 | 50 | 6100 | 9000 | 500 | 1300 | 12,0 |
| EK25 | 315 | 875 | 5 ° | 14 ° | 5000 | 3 ° | 5 | 2 | 125 | 68 | 2800 | 4500 | 140 | 600 | 7,0 |
| EK28 | 420 | 1200 | 3 ° | 7,5 ° | 5000 | 2 ° | 5 | 2 | 150 | 75 | 7500 | 12000 | 550 | 1400 | 17,0 |
| EK30 | 500 | 1400 | 5 ° | 14 ° | 4000 | 3 ° | 5 | 2 | 200 | 80 | 4800 | 7800 | 190 | 750 | 9,0 |
| EK50 | 700 | 2100 | 3 ° | 7,5 ° | 4000 | 2 ° | 5 | 2 | 300 | 90 | 12000 | 19000 | 650 | 2200 | 26,0 |
| EK80 | 900 | 2100 | 3 ° | 7,5 ° | 4000 | 2 ° | 3 | 1,5 | 320 | 100 | 16000 | 25000 | 850 | 2900 | 34,0 |
| EK90 | 1100 | 3150 | 5 ° | 14 ° | 3600 | 3 ° | 5 | 2 | 450 | 120 | 10500 | 16000 | 220 | 1000 | 17,0 |
| EK140 | 1700 | 4900 | 3 ° | 7,5 ° | 3600 | 2 ° | 5 | 2 | 700 | 150 | 26500 | 40000 | 650 | 2300 | 38,0 |
| EK200 | 2400 | 6000 | 3 ° | 7,5 ° | 3000 | 2 ° | 5 | 2 | 960 | 170 | 38700 | 60000 | 900 | 3100 | 48,0 |
| EK250 | 3000 | 8750 | 3 ° | 7,5 ° | 3000 | 2 ° | 5 | 2 | 1250 | 200 | 43000 | 77000 | 1150 | 4100 | 68,0 |
| EK400 | 5000 | 12500 | 3 ° | 7,5 ° | 2500 | 2 ° | 5 | 2 | 2000 | 250 | 75000 | 120000 | 1300 | 6000 | 88,0 |

angular compliancy, axial spring value, radial spring value and angular spring value by 60 Shore (static measured $C_{dyn} = C_{stat} * 1,3$)

Subjects to measurement changes

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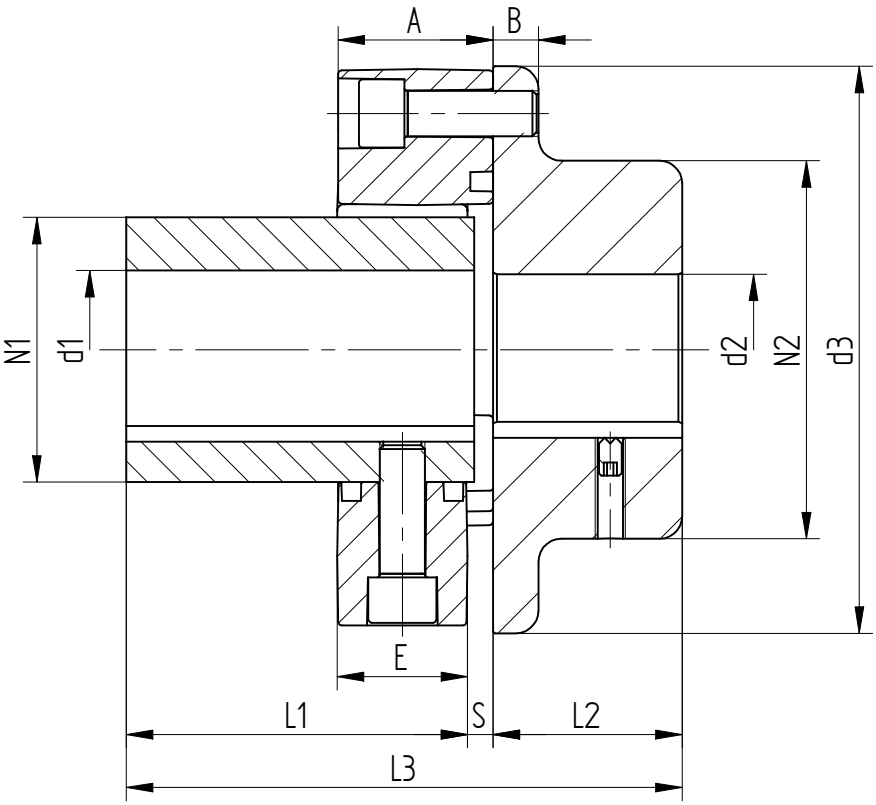
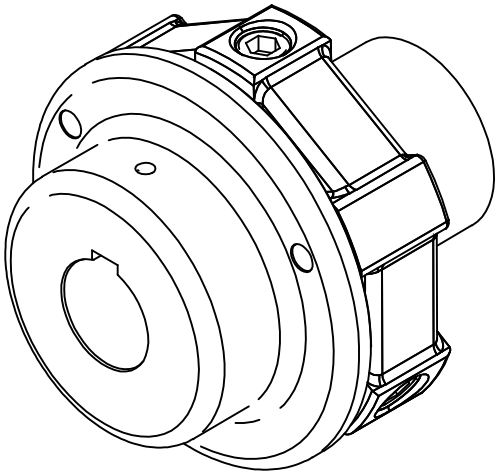
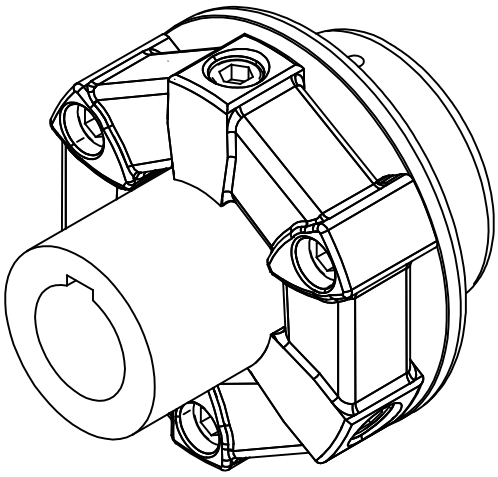
# elastic Coupling
# EK





example for order:
EK 01 – 10 – 20
size – d1 – d2

L1, L3 = special length on request

| size | dimensions [mm] | | | | | | | | | | | | | | weight [kg] | mass moment of inertia J [kg*cm²] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $d_1$ | | $d_2$ | | $d_3$ | A | B | E | $L_1$ | $L_2$ | $L_3$ | $N_1$ | $N_2$ | S | | |
| | pilot hole | max. | pilot hole | max. | | | | | | | | | | | | |
| EK01 | 8 | 19 | 8 | 25 | 56 | 24 | 7 | 22 | 24 | 24 | 50 | 30 | 36 | 2 | 0,47 | 1,6 |
| EK02 | 10 | 26 | 12 | 38 | 85 | 24 | 8 | 20 | 28 | 28 | 60 | 40 | 55 | 4 | 1,06 | 7,3 |
| EK04 | 12 | 30 | 15 | 45 | 100 | 28 | 8 | 24 | 30 | 30 | 64 | 45 | 65 | 4 | 2,31 | 11,3 |
| EK08 | 12 | 38 | 18 | 55 | 120 | 32 | 10 | 28 | 42 | 42 | 88 | 60 | 80 | 4 | 3,45 | 41,0 |
| EK12 | 12 | 38 | 18 | 55 | 122 | 32 | 10 | 28 | 42 | 42 | 88 | 60 | 80 | 4 | 3,55 | 44,2 |
| EK16 | 15 | 48 | 20 | 70 | 150 | 42 | 12 | 36 | 50 | 50 | 106 | 70 | 100 | 6 | 6,16 | 118,8 |
| EK22 | 15 | 48 | 20 | 70 | 150 | 42 | 12 | 36 | 50 | 50 | 106 | 70 | 100 | 6 | 6,42 | 126,5 |
| EK25 | 15 | 55 | 20 | 85 | 170 | 46 | 14 | 40 | 55 | 55 | 116 | 85 | 115 | 6 | 9,31 | 215,0 |
| EK28 | 15 | 55 | 20 | 85 | 170 | 46 | 14 | 40 | 55 | 55 | 116 | 85 | 115 | 6 | 9,51 | 247,8 |
| EK30 | 20 | 65 | 25 | 100 | 200 | 58 | 16 | 50 | 66 | 66 | 140 | 100 | 140 | 8 | 15,21 | 545,5 |
| EK50 | 20 | 65 | 25 | 100 | 200 | 58 | 16 | 50 | 66 | 66 | 140 | 100 | 140 | 8 | 15,6 | 550,5 |
| EK80 | 20 | 65 | 25 | 100 | 205 | 65 | 16 | 61 | 66 | 66 | 141,5 | 100 | 140 | 9,5 | 16,6 | 585,5 |
| EK90 | 30 | 85 | 30 | 110 | 260 | 70 | 19 | 62 | 80 | 80 | 168 | 125 | 160 | 8 | 28,67 | 1630,1 |
| EK140 | 30 | 85 | 30 | 110 | 260 | 70 | 19 | 62 | 80 | 80 | 168 | 125 | 160 | 8 | 29,45 | 1742,6 |
| EK200 | 35 | 105 | 35 | 110 | 300 | 80 | 19 | 72 | 94 | 90 | 192 | 145 | 160 | 8 | 33,16 | 3050,0 |
| EK250 | 40 | 115 | 40 | 130 | 340 | 85 | 19 | 77 | 100 | 100 | 208 | 160 | 195 | 8 | 44,42 | 5264,0 |
| EK400 | 40 | 120 | 40 | 140 | 370 | 105 | 25 | 95 | 125 | 125 | 260 | 170 | 200 | 10 | 57,23 | 9130,0 |

Subjects to measurement changes

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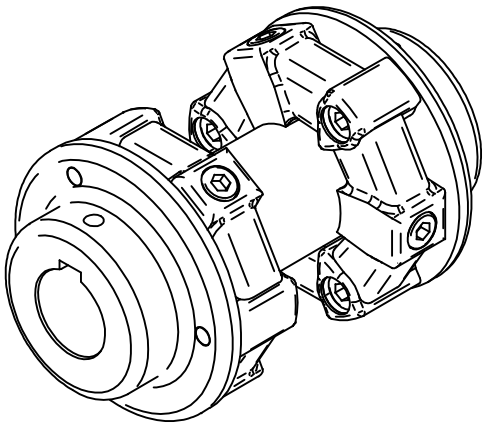
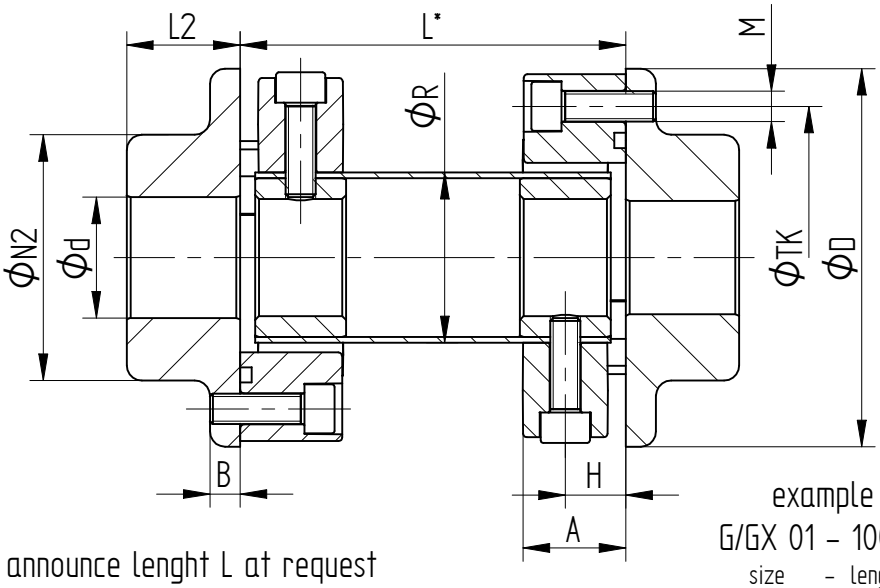
# elastic Connectingshaft G/GX

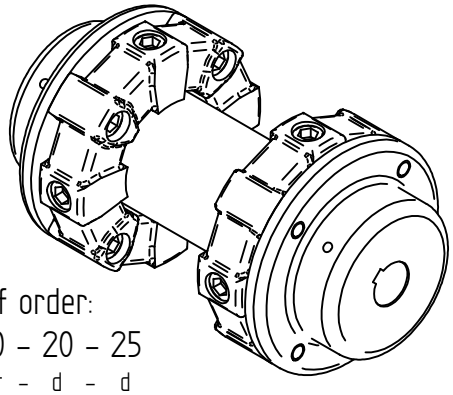
characteristics and advantages of elastic Connectingshaft G/GX

- simple design, highly torsionally flexible
- noise and vibration damping
- no standardized lengths, individually according to customer
- Compensation of axial, radial and angular displacement
- maintenance-free
- removal of the middle part without axial displacement






Please indicate the speed to review the critical speed



example of order:
G/GX 01 - 1000 - 20 - 25
size - lenght - d - d

* announce lenght L at request

| size G | $T_{KN}$ [Nm] | size GX | $T_{KN}$ [Nm] | dimensions [mm] | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | D | d pilot hole | d max. | H | $L_2$ | $N_2$ | R | $T_K$ | M |
| G01 | 10 | GX01 | 10 | 24 | 7 | 56 | 8 | 25 | 13 | 24 | 36 | 30 | 44 | 2xM6 |
| G02 | 20 | GX02 | 30 | 24 | 8 | 85 | 12 | 38 | 14 | 28 | 55 | 40 | 68 | 2xM8 |
| G04 | 50 | GX04 | 60 | 28 | 8 | 100 | 15 | 45 | 16 | 30 | 65 | 45 | 80 | 3xM8 |
| G08 | 100 | GX08 | 120 | 32 | 10 | 120 | 18 | 55 | 18 | 42 | 80 | 60 | 100 | 3xM10 |
| G12 | 140 | - | - | 32 | 10 | 122 | 18 | 55 | 18 | 42 | 80 | 60 | 100 | 4xM10 |
| G16 | 200 | GX16 | 240 | 42 | 12 | 150 | 20 | 70 | 24 | 50 | 100 | 70 | 125 | 3xM12 |
| G22 | 275 | - | - | 42 | 12 | 150 | 20 | 70 | 24 | 50 | 100 | 70 | 125 | 4xM12 |
| G25 | 315 | GX25 | 370 | 46 | 14 | 170 | 20 | 85 | 26 | 55 | 115 | 85 | 140 | 3xM14 |
| G28 | 420 | - | - | 46 | 14 | 170 | 20 | 85 | 26 | 55 | 115 | 85 | 140 | 4xM14 |
| G30 | 500 | GX30 | 550 | 58 | 16 | 200 | 25 | 100 | 33 | 66 | 140 | 100 | 165 | 3xM16 |
| G50 | 700 | - | - | 58 | 16 | 200 | 25 | 100 | 33 | 66 | 140 | 100 | 165 | 4xM16 |
| G80 | 900 | - | - | 65 | 16 | 205 | 25 | 100 | 34,5 | 66 | 140 | 100 | 165 | 4xM16 |
| G90 | 1100 | GX90 | 1500 | 70 | 19 | 260 | 30 | 110 | 39 | 80 | 160 | 125 | 215 | 3xM20 |
| G140 | 1700 | - | - | 70 | 19 | 260 | 30 | 110 | 39 | 80 | 160 | 125 | 215 | 4xM20 |
| G200 | 2400 | - | - | 80 | 19 | 300 | 35 | 110 | 44 | 90 | 160 | 145 | 250 | 4xM20 |
| G250 | 3000 | - | - | 85 | 19 | 340 | 40 | 130 | 46 | 100 | 195 | 160 | 280 | 4xM20 |
| G400 | 5000 | - | - | 105 | 25 | 370 | 40 | 140 | 57 | 125 | 200 | 170 | 300 | 4xM24 |

Subjects to measurement changes

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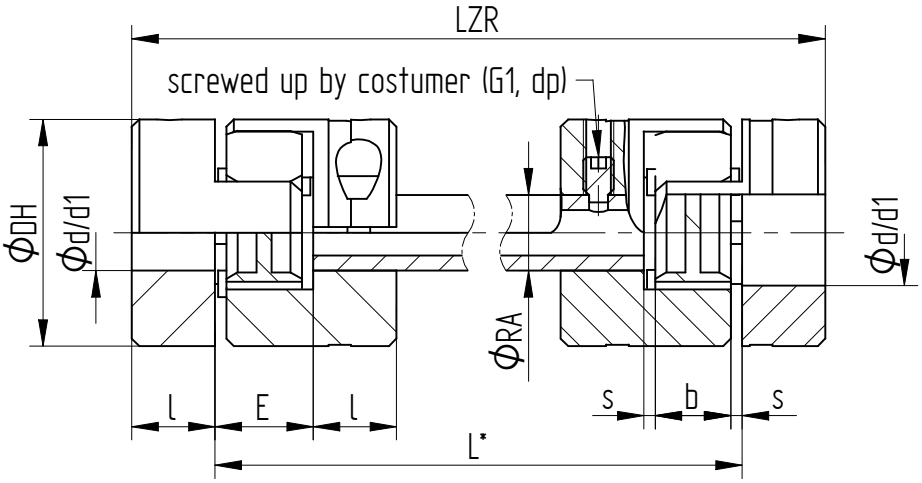
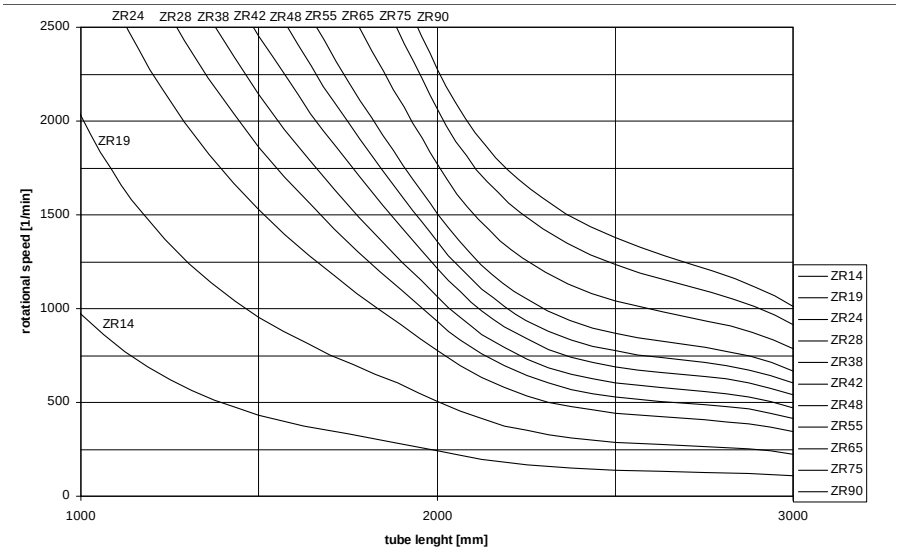
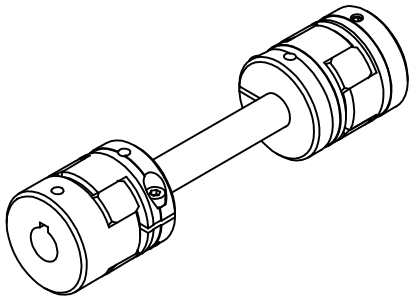
# FREN-Connectingshaft ZR

FREN-connectingshaft are used to overcome large shaft distances.




Please indicate the speed to review the critical speed



example of order:
ZR 24 – 1000 – 19 – 24
size – lenght – d/d1 – d/d1

* announce lenght L at request

| size | element (design) | drilling hole element 1 | | drilling hole element 1a | | dimensions [mm] | | | | | intermediate pipe | attachment screw part 2 property class 10.9 | | $L_{ZR}$ | safety screw $G_1$ | pin hole $d_p$ [mm] | axial displacement [mm] | angular displacement [mm] | material | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Ød | Ød | $Ød_1$ | $Ød_1$ | | | | | | | | | | | | | | | | | |
| | | min | max | min | max | $ØD_H$ | l | E | s | b | $R_A$ | $M_1$ | $T_A$ [Nm] | | | | | | Alu | cast material | steel | |
| ZR14 | 1a | - | - | 4 | 14 | 30 | 11 | 13 | 1,5 | 10 | Ø10x2 | M3 | 1,8 | $L_{ZR} = L + 2*l$ | M4 | 2,5 | 1 | 0,9 | • | - | • | resistant against rust (1.4301 & 1.4305) on enquiry |
| ZR19/24 | 1 | 6 | 19 | | | 40 | 25 | 16 | 2 | 12 | Ø20x3 | M6 | 14 | | M6 | 4 | 1,2 | 0,9 | • | - | • | |
| | 1a | - | - | 6 | 24 | | | | | | | | | | | | | | | | | |
| ZR24/28 | 1 | 8 | 24 | - | - | 55 | 30 | 18 | 2 | 14 | Ø30x4 | M6 | 14 | | M8 | 5,5 | 1,4 | 0,9 | • | • | • | |
| | 1a | - | - | 8 | 28 | | | | | | | | | | | | | | | | | |
| ZR28/38 | 1 | 10 | 28 | - | - | 65 | 35 | 20 | 2,5 | 15 | Ø35x4 | M8 | 35 | | M10 | 7 | 1,5 | 0,9 | • | • | • | |
| | 1a | - | - | 10 | 38 | | | | | | | | | | | | | | | | | |
| ZR38/45 | 1 | 12 | 38 | - | - | 80 | 45 | 24 | 3 | 18 | Ø40x4 | M8 | 25 | | M12 | 8,5 | 1,8 | 1,0 | • | • | • | |
| | 1a | - | - | 38 | 45 | | | | | | | | | | | | | | | | | |
| ZR42/55 | 1 | 14 | 42 | - | - | 95 | 50 | 26 | 3 | 20 | Ø45x4 | M10 | 49 | | M12 | 8,5 | 2 | 1,0 | - | • | • | |
| | 1a | - | - | 42 | 55 | | | | | | | | | | | | | | | | | |
| ZR48/60 | 1 | 15 | 48 | - | - | 105 | 56 | 28 | 3,5 | 21 | Ø50x4 | M12 | 86 | | M16 | 12 | 2,1 | 1,1 | - | • | • | |
| | 1a | - | - | 48 | 60 | | | | | | | | | | | | | | | | | |
| ZR55/70 | 1 | 20 | 55 | - | - | 120 | 65 | 30 | 4 | 22 | Ø55x4 | M12 | 120 | | M16 | 12 | 2,2 | 1,1 | - | • | • | |
| | 1a | - | - | 55 | 70 | | | | | | | | | | | | | | | | | |
| ZR65/75 | 1 | 22 | 65 | - | - | 135 | 75 | 35 | 4,5 | 26 | Ø65x5 | M12 | 120 | | M16 | 12 | 2,6 | 1,2 | - | • | • | |
| | 1a | - | - | 65 | 75 | | | | | | | | | | | | | | | | | |
| ZR75/90 | 1 | 30 | 75 | - | - | 160 | 85 | 40 | 5 | 30 | Ø75x5 | M16 | 295 | | M16 | 12 | 3 | 1,2 | - | • | • | |
| | 1a | - | - | 75 | 90 | | | | | | | | | | | | | | | | | |
| ZR90/97 | 1 | 40 | 97 | - | - | 200 | 100 | 45 | 5,5 | 34 | Ø80x5 | M20 | 590 | | M20 | 15 | 3,4 | 1,2 | - | • | • | |

Subjects to measurement changes

# Product overview 03/2015

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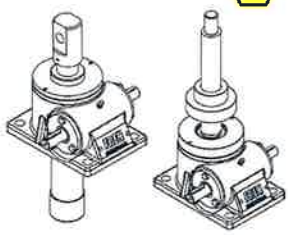
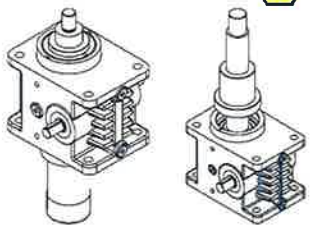
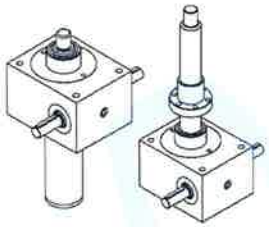
## SG
Screw jack
Classic



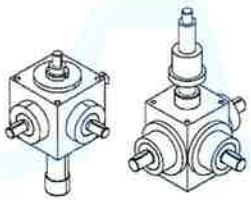
## HSG
High performance-
Screw jack



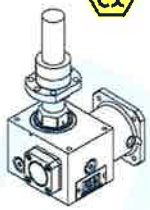
## BG
Screw jack
Cubic



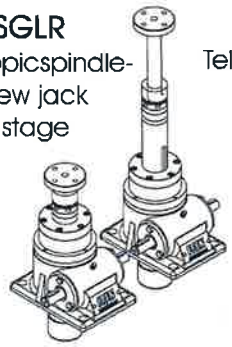
## SHG
Quick-lifting
screw jack



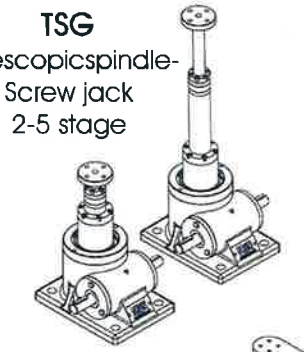
## SH
Servo lifting
gear



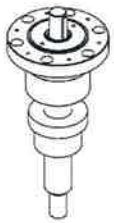
## TSGLR
Telescopicspindle-
Screw jack
2-stage



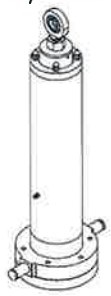
## TSG
Telescopicspindle-
Screw jack
2-5 stage



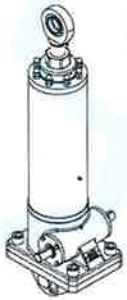
## SLA
Spindlebearing



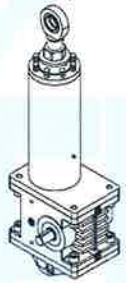
## SEZ
Spindlebearings-
Cylinder



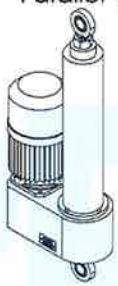
## ELZ
Electric cylinder



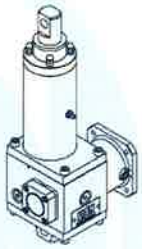
## HELZ
High performance-
Elektric cylinder



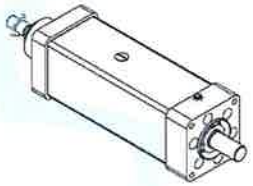
## ELZP
Electric cylinder
Parallel



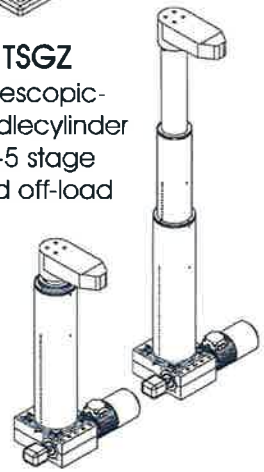
## SHELZ
Servo electric-
cylinder



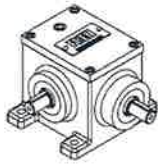
## EPNEU
Spindle-
Elektric cylinder



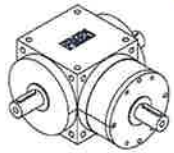
## TSGZ
Telescopic-
spindlecylinder
2-5 stage
And off-load



## K
Bevel gear
Type K

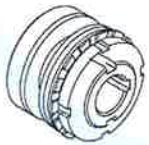


## H
Bevel gear
Type H



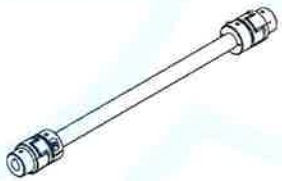
## R / GS
Elastic / backlash-free
Coupling

## RT
Slip hub

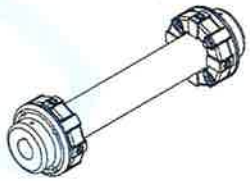


## RK
Slip coupling

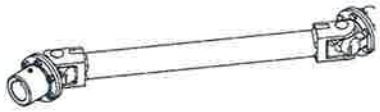
## ZR
FREN
Connecting shaft



## G / GX
Elastic
Connecting shaft

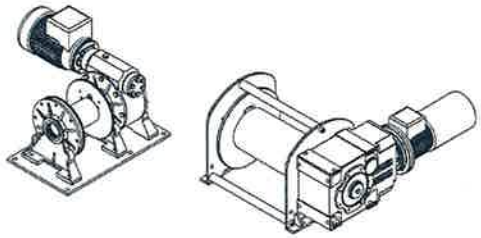


## Cardan shaft



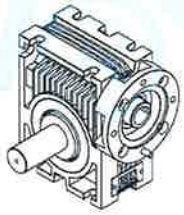
## HT
Lifting table
mechanic / hydraulic

## SW
Rope winche

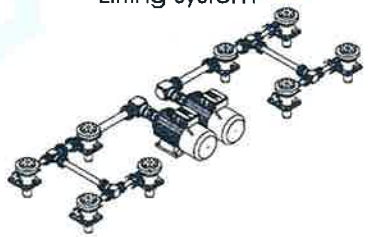


## PLG
Planetary gear

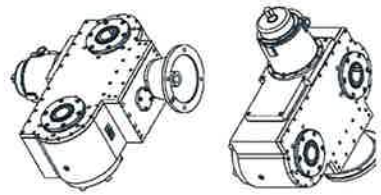
## uniCe
Worm gear



## HA
Lifting system



## Special gear



# Rope winches

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# Table of contents



# Explanation rope winches

## Customized rope winch

Thre are many constructions possible for rope winches. However, a large number of standards and rules must be observed. Therefore, a few issues are addressed below.

## Rope strength

The rope strength indicated in this catalog is always for the first layer. If any other layer applies, it is specified. The rope strenght is indicated in kg. The indicated rope strenght is always the maximum rope strenght. It is also important to indicate the working length of the rope because a minimum of 3 safety windings must always remain on the drum.

## Rope types

For lifting operations a minimum of 5-fold rope safety must be ensured in any case. Ropes for draw winches usually have a 3-fold safty against traction. However, there are uses or standards that require higher rope safty. The safety is related to the breaking load of a rope.

For normal ropes (6x36) the maximum entry is 2° for plain drums and 3° for grooved drums. The following help or pulled block shoud not be more than 20 x the drum lenght in case of grooved drums.

## Velocity

The velocity varies according to rope layer. If this does not meet your requirements, the rope must be rolled up, which odviously increases the drum lenght. To be able to vary the speed during operation, frequency converters or, in hydraulic winches, proportional valves are required.

## Brakes

Each hoist must be equipped with a safty brake system. The only self-locking winches are worm gear winches. For lifting operations two independent breakes must be installed. In worm gear winches one brake is replaced by self-lock. During idle intervals the brakes must be closed.

# Worm gear winch Type AK

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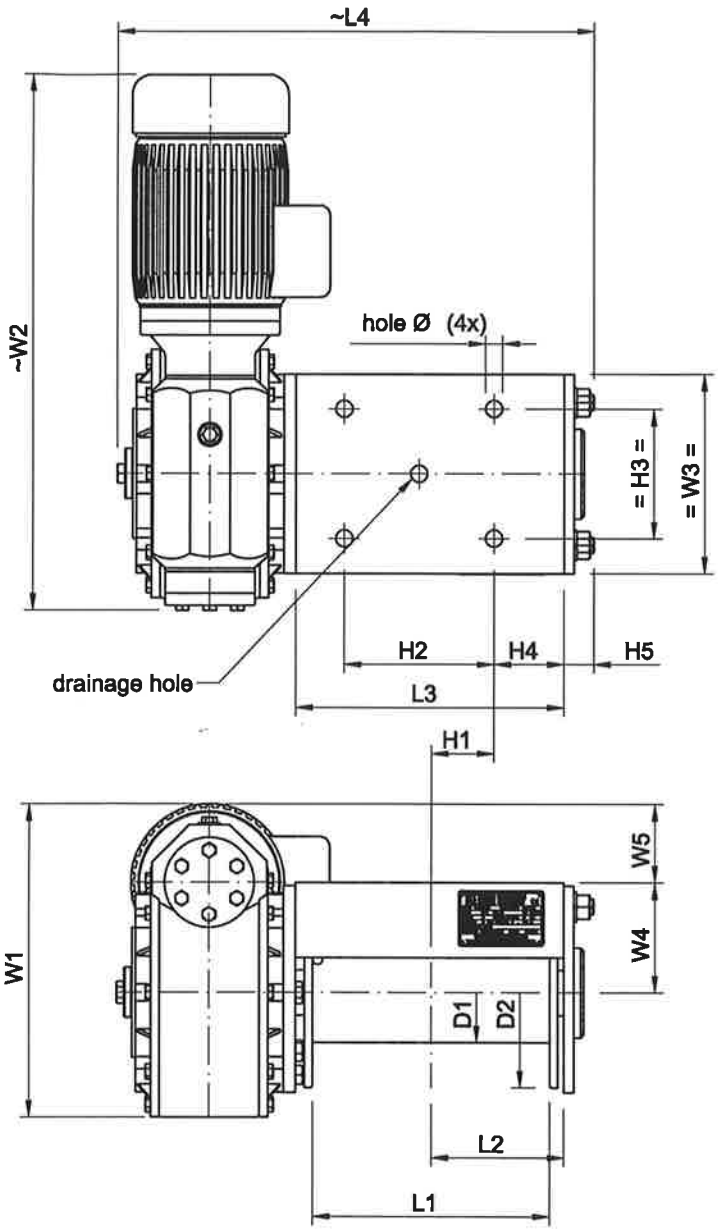


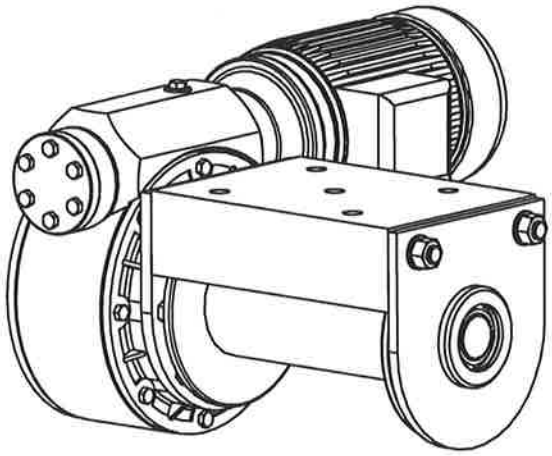

## Rope winch AK

The self-locking worm gear winches, AK; wich come in two sizes, were developed specifically for hoisting loads. The winches can be used for lifting e.g. cars. Please find the avialable accessories on page 14 ff.

| Winch type | Rope strenght first layer KG. | Rope strenght third layer KG. | Recommended rope diameter MM. | Speed first layer M/MIN. | Drum capacity first layer M. | Drum capacity fifth layer M. | Engine capacity 400 V kW | Weight without rope KG. |
|---|---|---|---|---|---|---|---|---|
| MC 1200 AK | 960 | 740 | 8 | 5 | 6 | 40 | 2,2 | 92 |
| MC 1700 AK | 1250 | 1000 | 10 | 5,5 | 8 | 54 | 3 | 140 |

| AK TYPE | D1 | D2 | L1 | L2 | L3 | L4 | H1 | H2 | H3 | H4 | H5 | W1 | W2 | W3 | W4 | W5 | HOLEØ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1200 | 100 | 190 | 237 | 132.5 | 268 | 477 | 62.5 | 150 | 130 | 70 | 30 | 313.5 | 537 | 200 | 110 | 78.5 | 17 |
| 1700 | 121 | 240 | 240 | 134 | 291 | 540 | 59 | 170 | 160 | 75 | 30 | 400 | 638 | 240 | 150 | 105 | 17 |

# Worm gear winch
# Types MC and MC-B

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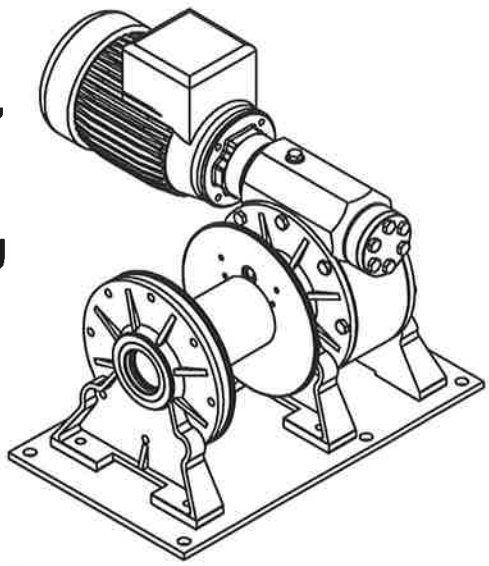
## Rope winch MC

The compact and robust MC rope winch is used for traction of horizontal loads. The worm gear is self-locking, acting as simple brake.

## Rope winch MC-B

If the load is lifted up and down or moved on slopes, the motor must be designed as brake motor to be able to stop lowering immediately.



## Construction

In the construction all current safty regulations and standards were observed. The materials and manufacturing processes were selected carefully. Both winches can be operated in all mounting positions. The winches are equipped with threephase motors (400V-50Hz). The standard model is not supplied with a grooved drum.

## Special models and accessories

As our winches are used for such a variety of applications a large number of accessories are available, so that your winch meets your individual requierments. The range goes from pressure roller to reversing switch. The winches are not ready for operating before you have chosen a control, a reversing switch, a spindle end switch, a rope pressure roller or a grooved drum. Pleas take note of the available accessories on page 14 ff.

| Winch type | Rope traction first layer KG. | Rope traction third layer KG. | Required lifting power first layer KG. | Required lifting power third layer KG. | Proposed rope diameter MM. | Speed first layer M/MIN. | Drum capacity first layer M. | Drum capacity fifth layer M. | Motor rating 400 V kW | Weight without rope KG. |
|---|---|---|---|---|---|---|---|---|---|---|
| MC 250 | 250 | 200 | 200 | 160 | 6 | 6 | 3 | 20 | 0,55 | 22 |
| MC 500 | 500 | 400 | 400 | 330 | 6 | 6 | 3 | 20 | 1,1 | 35 |
| MC 950 | 950 | 730 | 760 | 490 | 8 | 5 | 6 | 40 | 1,5 | 55 |
| MC 1200 | 1200 | 930 | 960 | 740 | 8 | 5 | 6 | 40 | 2,2 | 92 |
| MC 1700 | 1700 | 1310 | 1300 | 1000 | 10 | 5,5 | 8 | 54 | 3 | 140 |
| MC 2200 | 2200 | 1690 | 1700 | 1300 | 12 | 6,5 | 10 | 65 | 4 | 180 |
| MC 2800 | 2800 | 2150 | 2000 | 1800 | 13 | 7 | 12 | 81 | 5,5 | 254 |

# Worm gear winch
# Types MC and MC-B

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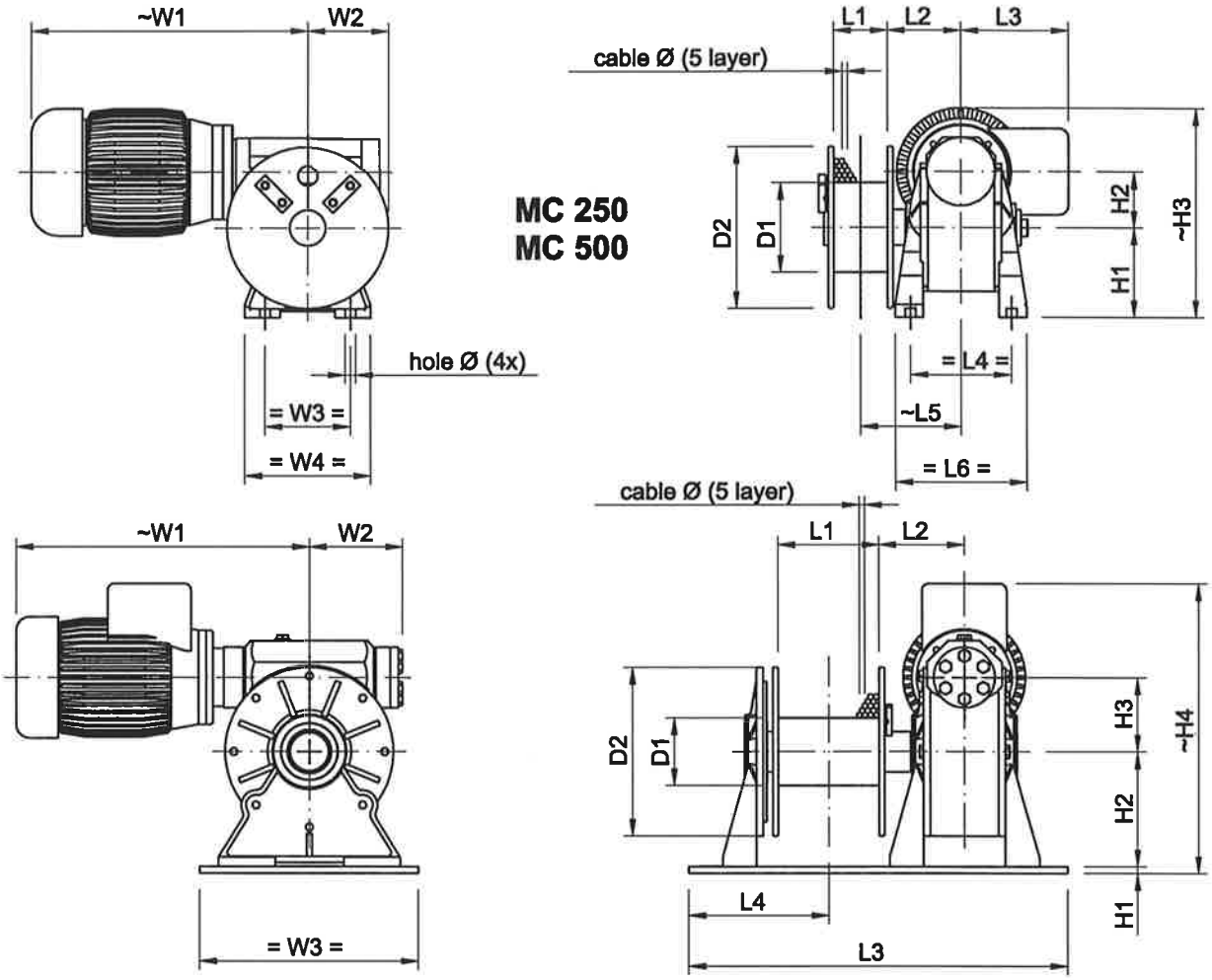
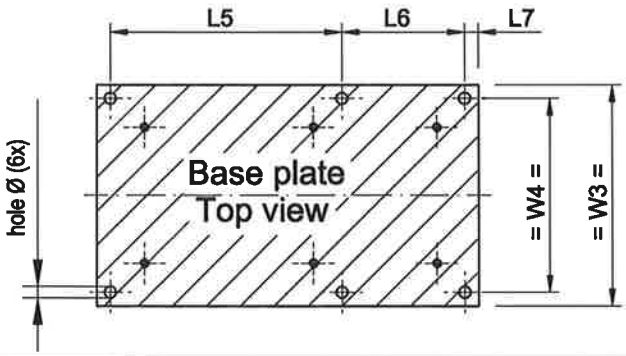
**MC 250**
**MC 500**




| TYPE | D1 | D2 | L1 | L2 | L3 | L4 | L5 | L6 | L7 | H1 | H2 | H3 | H4 | W1 | W2 | W3 | W4 | HOLE Ø |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MC 250 | 100 | 180 | 60 | 81 | 118.5 | 111 | 111 | 143 | - | 100 | 62.17 | 233 | - | 326 | 90 | 95 | 140 | 11.5 |
| MC 500 | 100 | 200 | 60 | 91 | 91.9 | 146 | 121 | 186 | - | 142 | 86.9 | 319 | - | 374 | 110 | 140 | 218 | 11.5 |
| MC 950 | 100 | 200 | 150 | 104 | 500 | 180 | 320 | 150 | 15 | 10 | 142 | 86.9 | 378.4 | 383 | 110 | 270 | 240 | 13 |
| MC 1200 | 100 | 250 | 150 | 125.5 | 560 | 208 | 340 | 180 | 20 | 10 | 170 | 110 | 429.5 | 436 | 132 | 325 | 285 | 17 |
| MC 1700 | 121 | 280 | 200 | 146.5 | 640 | 232.5 | 415 | 185 | 20 | 15 | 195 | 130 | 487 | 498 | 154.3 | 370 | 320 | 17 |
| MC 2200 | 146 | 320 | 250 | 157 | 710 | 265 | 470 | 200 | 20 | 15 | 220 | 150 | 580 | 524 | 154 | 410 | 360 | 17 |
| MC 2800 | 159 | 370 | 300 | 183 | 850 | 317.5 | 565 | 235 | 25 | 15 | 254 | 117.5 | 641.5 | 551 | 205 | 440 | 380 | 20 |

# Planetary gear winch Type SB

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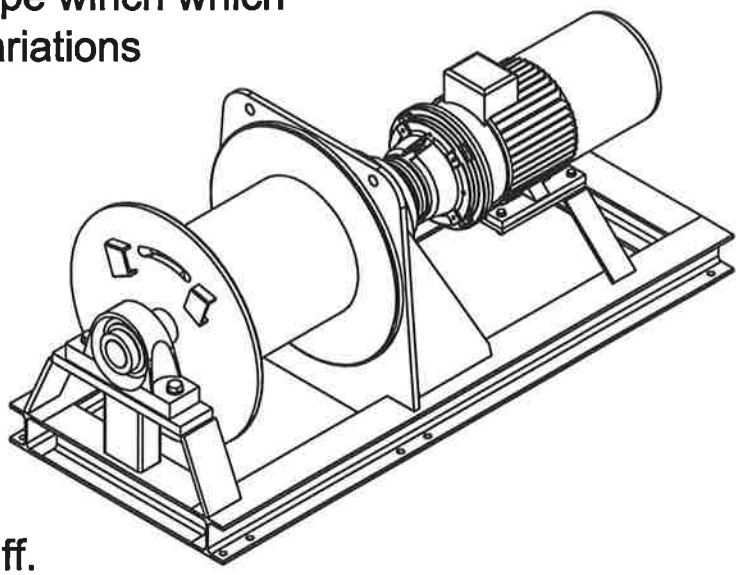
## Rope winch SB

The rope winch SB is a very robust rope winch which offers the basis for large number of variations for lifting and traction of loads. The rope winch SB is cost-favorable compared to MC-3.. becaus it is larger, and the planetary gear is outside the drum. The winch SB is used where overall lenght and weight play no role, or the drum length devaites considerabley from the standard length. Please find the available accessories on page 14 ff.



| Winch type | Rope strength first layer KG. | Rope strength fifth layer KG. | Proposed rope diameter MM. | Speed first layer M/MIN. | Speed fifth layer M/MIN. | Drum capacity first layer M. | Drum capacity fifth layer M. | Motor rating 400V kW | Weight without rope KG. |
|---|---|---|---|---|---|---|---|---|---|
| SB 300 E | 1200 | 860 | 10 | 7 | 9 | 32 | 190 | 1,5 | 245 |
| SB 301 E | 2100 | 1400 | 12 | 7 | 10 | 27 | 167 | 3 | 260 |
| SB 303 E | 2500 | 1700 | 15 | 8 | 12 | 27 | 167 | 4 | 340 |
| SB 305 E | 4000 | 2850 | 16 | 8 | 11 | 31 | 186 | 5,5 | 400 |
| SB 306 E | 5500 | 3970 | 18 | 12 | 17 | 32 | 194 | 11 | 620 |
| SB 307 E | 7000 | 4950 | 22 | 12 | 17 | 31 | 184 | 15 | 790 |
| SB 309 E | 9000 | 6300 | 26 | 14 | 19 | 29 | 176 | 22 | 1065 |
| SB 310 E | 13000 | 8950 | 28 | 9 | 13 | 28 | 171 | 22 | 1360 |
| SB 311 E | 16000 | 10660 | 34 | 10 | 15 | 25 | 157 | 30 | 1575 |
| SB 313 E | 20000 | 13600 | 38 | 6 | 8 | 27 | 160 | 22 | 2220 |
| SB 315 E | 32000 | 21700 | 48 | 7 | 11 | 26 | 156 | 45 | 2450 |

| Winch type | Rope strength first layer KG. | Rope strength fifth layer KG. | Proposed rope diameter MM. | Speed first layer M/MIN. | Speed fifth layer M/MIN. | Drum capacity first layer M. | Drum capacity fifth layer M. | Motor rating kW | Oil pressure BAR | Volume flow L/MIN. |
|---|---|---|---|---|---|---|---|---|---|---|
| SB 303 H | 2500 | 1700 | 15 | 20 | 29 | 27 | 167 | 9 | 130 | 50 |
| SB 305 H | 4000 | 2850 | 16 | 26 | 37 | 31 | 186 | 19 | 215 | 55 |
| SB 306 H | 5500 | 3970 | 18 | 27 | 37 | 32 | 194 | 27 | 215 | 80 |
| SB 307 H | 7000 | 4950 | 22 | 30 | 42 | 29 | 184 | 39 | 185 | 130 |
| SB 309 H | 9500 | 6630 | 26 | 26 | 37 | 29 | 176 | 45 | 225 | 125 |
| SB 310 H | 13000 | 8950 | 28 | 12 | 18 | 28 | 171 | 30 | 200 | 55 |
| SB 311 H | 14000 | 9700 | 32 | 10 | 15 | 25 | 157 | 30 | 210 | 115 |
| SB 313 H | 20000 | 13600 | 38 | 10 | 15 | 27 | 160 | 38 | 170 | 120 |
| SB 315 H | 32000 | 21700 | 48 | 8 | 12 | 26 | 156 | 50 | 190 | 160 |

# Planetary gear winch
# Type SB

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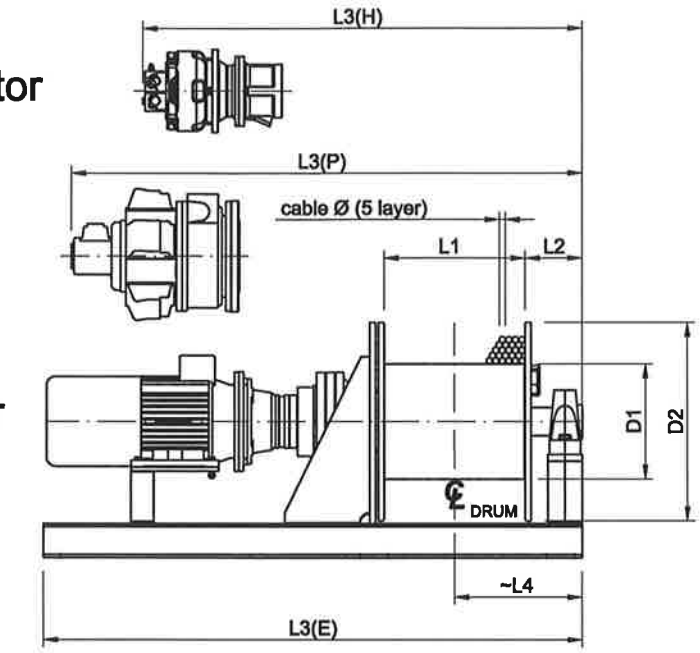
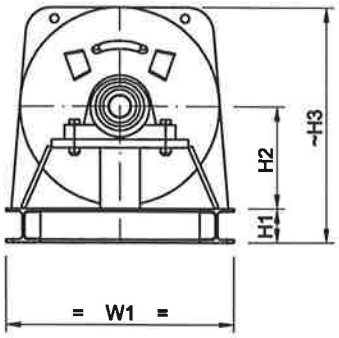
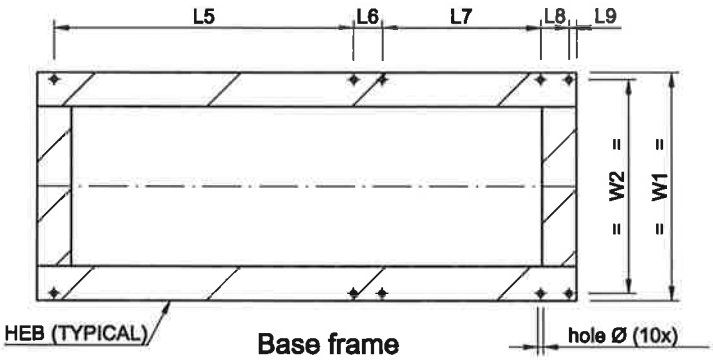
Hydraulic motor

Air motor

Electric motor




Base frame
Top view

## The L3 measurement depends on the motor

| TYPE | D1 | D2 | L1 | L2 | L3(E) | L3(H) | L3(P) | L4 | L5 | L6 | L7 | L8 | L9 | H1 | H2 | H3 | W1 | W2 | HEB | HOLE Ø |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | 195 | 410 | 500 | 155 | 1400 | - | 1450 | 405 | 630 | 80 | 540 | 80 | 20 | 100 | 215 | 520 | 500 | 460 | 100 | 14 |
| 301 | 195 | 410 | 500 | 155 | 1500 | - | - | 405 | 730 | 80 | 540 | 80 | 20 | 100 | 215 | 520 | 500 | 460 | 100 | 14 |
| 303 | 244 | 500 | 500 | 155 | 1500 | 1300 | 1600 | 405 | 720 | 80 | 550 | 80 | 20 | 100 | 260 | 610 | 600 | 560 | 100 | 14 |
| 305 | 298 | 500 | 500 | 155 | 1600 | 1300 | 1600 | 405 | 820 | 80 | 550 | 80 | 20 | 100 | 260 | 610 | 600 | 560 | 100 | 14 |
| 306 | 355 | 600 | 500 | 165 | 1900 | 1500 | 1800 | 415 | 1110 | 80 | 560 | 80 | 20 | 100 | 310 | 710 | 700 | 660 | 100 | 17 |
| 307 | 406 | 700 | 500 | 200 | 1900 | 1550 | 1900 | 450 | 1055 | 100 | 560 | 100 | 25 | 120 | 360 | 830 | 800 | 750 | 120 | 19 |
| 309 | 455 | 750 | 500 | 215 | 1950 | 1550 | 1950 | 465 | 1070 | 110 | 560 | 110 | 30 | 140 | 385 | 900 | 900 | 840 | 140 | 22 |
| 310 | 470 | 850 | 500 | 259 | 2000 | 1600 | - | 509 | 1050 | 120 | 590 | 120 | 40 | 160 | 435 | 1020 | 1000 | 940 | 160 | 26 |
| 311 | 508 | 950 | 500 | 259 | 2050 | 1650 | 1950 | 509 | 1100 | 120 | 590 | 120 | 40 | 160 | 495 | 1130 | 1100 | 1040 | 160 | 26 |
| 313 | 610 | 1100 | 500 | 260 | 2100 | 1800 | 2150 | 510 | 1140 | 120 | 590 | 120 | 40 | 180 | 570 | 1300 | 1300 | 1230 | 180 | 32 |
| 315 | 660 | 1200 | 500 | 299 | 2500 | 2100 | - | 549 | 1490 | 140 | 590 | 140 | 40 | 200 | 620 | 1420 | 1500 | 1420 | 200 | 36 |

# Compact winch Type MC 3 . .

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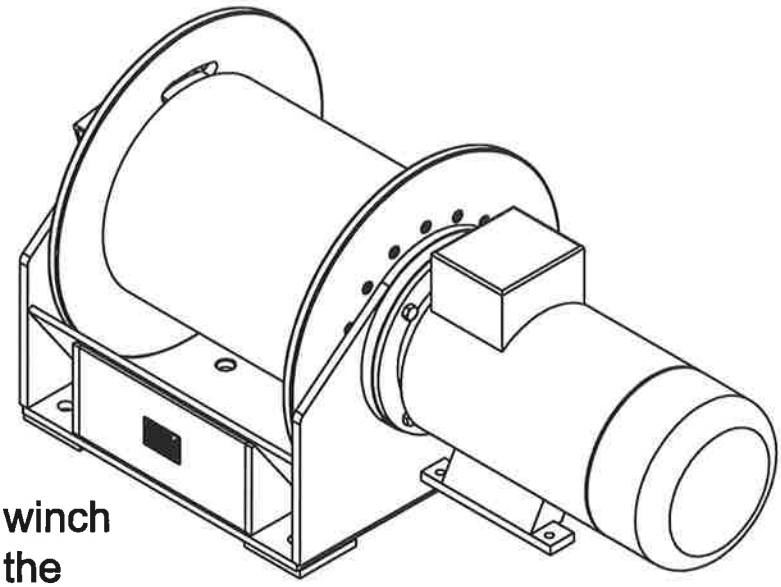
## Rope winch MC303 to 313



The compact winch series MC303 to MC313 has been popular as lifting and traction winch for many years. As the planetary gear is inside the drum this is a very compact version. Also, the gear is protected inside the drum. The winch can be equipped with electromotor, hydraulic motor or air motor, whichever you prefer. Moreover, the winch is very variable in rope speed due to the planetary gear. Please find the available accessories on page 14 ff.

| Winch type | Rope strenght first layer KG. | Rope strength fifth layer KG. | Proposed rope diameter MM. | Speed first layer M/MIN. | Speed fifth layer M/MIN. | Drum capacity first layer M. | Drum capacity fift layer M. | Motor rating 400V kW | Weight KG. |
|---|---|---|---|---|---|---|---|---|---|
| MC 303 E | 2000 | 1560 | 12 | 11 | 14 | 40 | 227 | 4 | 325 |
| MC 305 E | 4000 | 2900 | 16 | 9 | 12 | 29 | 173 | 5,5 | 400 |
| MC 306 E | 5500 | 3970 | 18 | 12 | 17 | 30 | 179 | 11 | 560 |
| MC 307 E | 7000 | 4960 | 22 | 12 | 17 | 30 | 184 | 15 | 710 |
| MC 309 E | 9000 | 6425 | 24 | 13 | 19 | 35 | 211 | 22 | 850 |
| MC 311 E | 14000 | 9700 | 30 | 13 | 19 | 45 | 276 | 30 | 1100 |
| MC 313 E | 20000 | 14000 | 34 | 8 | 12 | 46 | 214 | 30 | 1500 |

| Winch type | Rope strenght first layer KG. | Rope strength fifth layer KG. | Proposed rope diameter MM. | Speed first layer M/MIN. | Speed fifth layer M/MIN. | Drum capacity first layer M. | Drum capacity fifth layer M. | Oil pressure BAR | Volume flow L/MIN. |
|---|---|---|---|---|---|---|---|---|---|
| MC 303 H | 2000 | 1560 | 12 | 15 | 19 | 40 | 227 | 85 | 45 |
| MC 305 H | 4000 | 2900 | 16 | 9 | 12 | 29 | 173 | 130 | 38 |
| MC 306 H | 5500 | 3970 | 18 | 12 | 17 | 30 | 179 | 170 | 50 |
| MC 307 H | 7000 | 4960 | 22 | 12 | 17 | 30 | 184 | 155 | 80 |
| MC 309 H | 9000 | 6425 | 24 | 13 | 19 | 35 | 211 | 225 | 70 |
| MC 311 H | 14000 | 9700 | 30 | 13 | 19 | 45 | 276 | 210 | 115 |
| MC 313 H | 20000 | 14000 | 34 | 8 | 12 | 46 | 214 | 190 | 115 |

# Compact winch
# Type MC 3 . .

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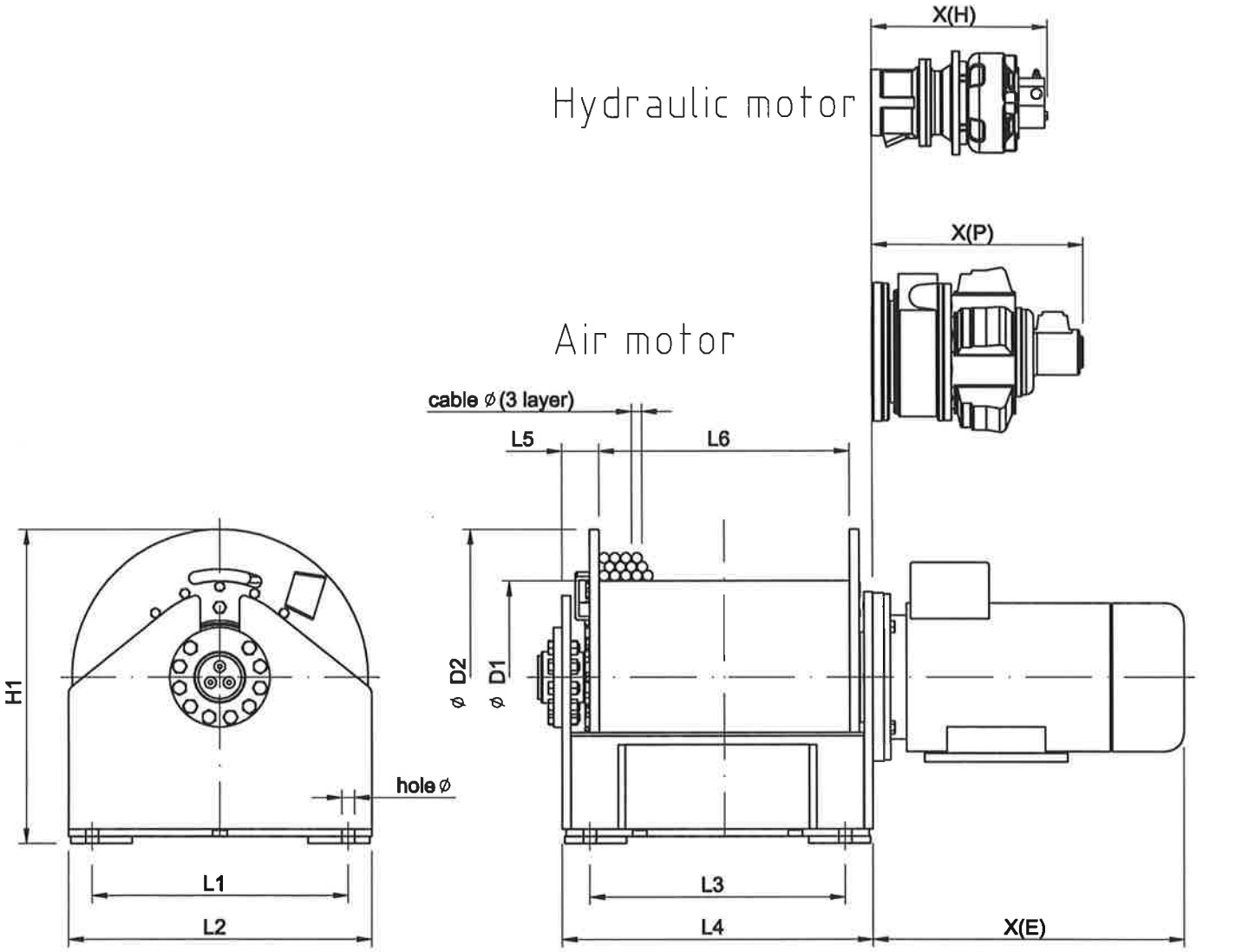


The measurement X depens on the motor.

| TYPE | D1 | D2 | L1 | L2 | L3 | L4 | L5 | L6 | H1 | HOLEØ |
|---|---|---|---|---|---|---|---|---|---|---|
| MC 303 | 326 | 480 | 440 | 500 | 440 | 546 | 58 | 450 | 510 | 20 |
| MC 305 | 326 | 480 | 440 | 500 | 440 | 546 | 58 | 450 | 510 | 20 |
| MC 306 | 355 | 540 | 490 | 560 | 505 | 615 | 74 | 500 | 575 | 22 |
| MC 307 | 405 | 625 | 560 | 640 | 520 | 656 | 78 | 530 | 660 | 25 |
| MC 309 | 457 | 700 | 640 | 720 | 585 | 721 | 80 | 590 | 738 | 27 |
| MC 311 | 508 | 800 | 720 | 820 | 825 | 985 | 100 | 830 | 840 | 33 |
| MC 313 | 610 | 950 | 878 | 980 | 880 | 1055 | 110 | 890 | 995 | 34 |

# Planetary gear winch Type FD

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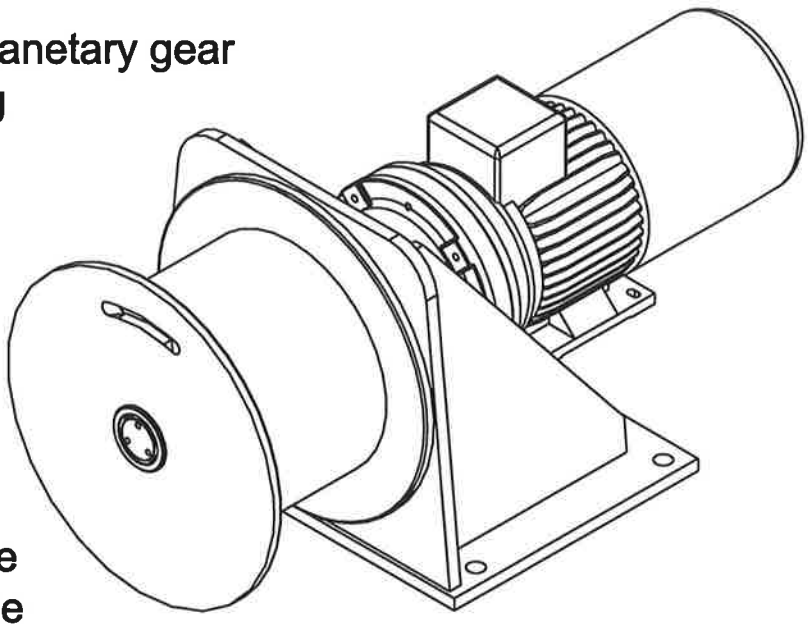
Internet: www.enzfelder.at

## Rope winch FD

The FD winch is equipped with a planetary gear and a drum without a thrust bearing (flying drum). It is used where only a short rope lenght is required. Thus a short drum is sufficient, and no thrust bearing is required. The drum diameter is 22 times as large as the rope diameter, this is why this winch can be classified as 3M train of gears. Also, due to this large drum diameter the working life of the rope. Please find the available accessories on page 14 ff.



| Winch type | Rope strength first layer KG. | Rope strength KG. / IN LAYER | Proposed rope diameter MM. | Speed first layer M/MIN. | Speed top layer M/MIN. | Drum capacity first layer M. | Drum capacity M./ IN LAYER | Motor rating 400V kW | Weight KG. |
|---|---|---|---|---|---|---|---|---|---|
| FD 300 E | 950 | 800/4 | 8 | 15 | 18 | 17 | 70/4 | 2,2 | 120 |
| FD 301 E | 1850 | 1500/4 | 11 | 15 | 19 | 12 | 53/4 | 4 | 140 |
| FD 303 E | 2300 | 2000/3 | 12 | 12 | 14 | 14 | 43/3 | 4 | 200 |
| FD 305 E | 3350 | 2800/3 | 14 | 14 | 17 | 13 | 42/3 | 7,5 | 240 |
| FD 306 E | 4100 | 3500/3 | 16 | 11 | 13 | 18 | 59/3 | 7,5 | 370 |
| FD 307 E | 5250 | 4500/3 | 18 | 15 | 18 | 19 | 60/3 | 11 | 590 |

| Winch type | Rope strength first layer KG. | Rope strength KG. / IN LAYER | Proposed rope diameter MM. | Speed first layer M/MIN. | Speed top layer M/MIN. | Drum capacity first layer M. | Drum capacity M./ IN LAYER | Oil pressure BAR | Volume flow L/MIN. |
|---|---|---|---|---|---|---|---|---|---|
| FD 300 H | 950 | 800/4 | 8 | 20 | 24 | 17 | 70/4 | 130 | 65 |
| FD 301 H | 1850 | 1500/4 | 11 | 15 | 19 | 12 | 53/4 | 120 | 70 |
| FD 303 H | 2300 | 2000/3 | 12 | 12 | 14 | 14 | 43/3 | 135 | 52 |
| FD 305 H | 3350 | 2800/3 | 14 | 14 | 17 | 13 | 42/3 | 140 | 50 |
| FD 306 H | 4100 | 3500/3 | 16 | 11 | 13 | 18 | 59/3 | 130 | 70 |
| FD 307 H | 5250 | 4500/3 | 18 | 15 | 18 | 19 | 60/3 | 140 | 70 |

# Planetary gear winch
# Type FD

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**Power transmission- and lifting engineering**
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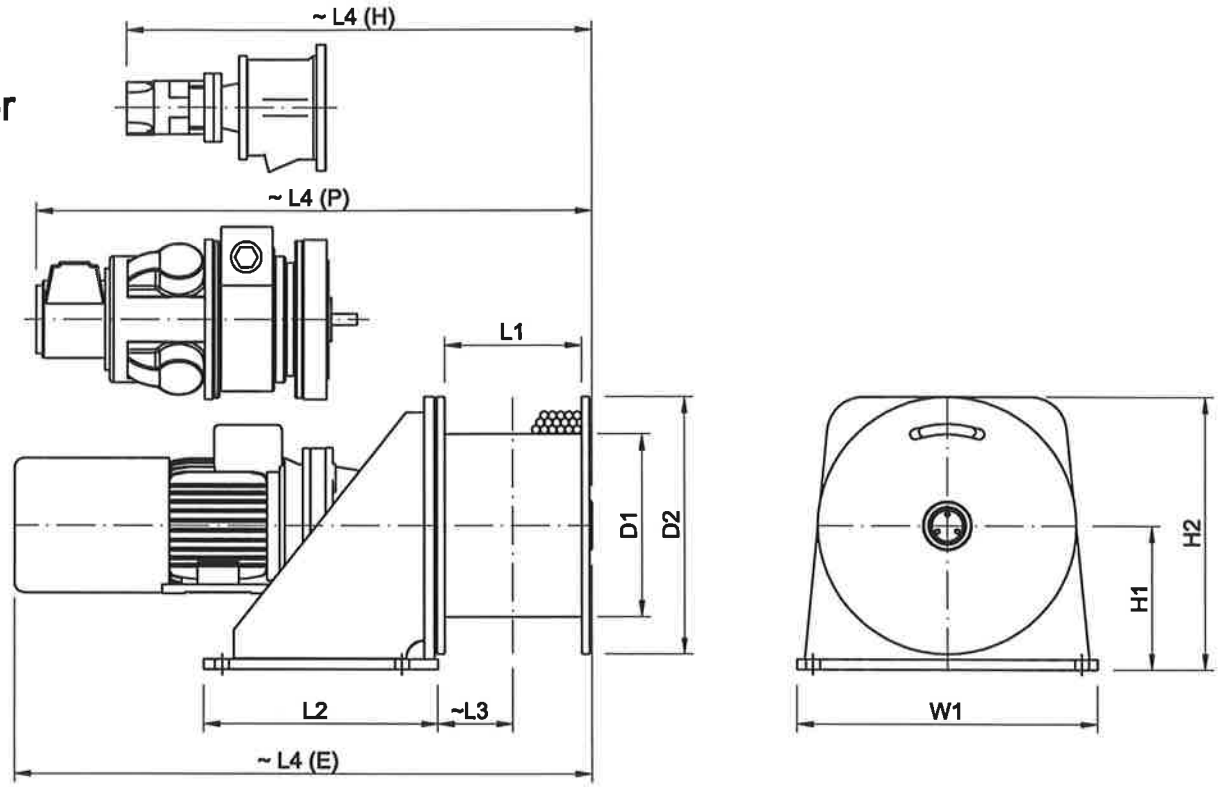
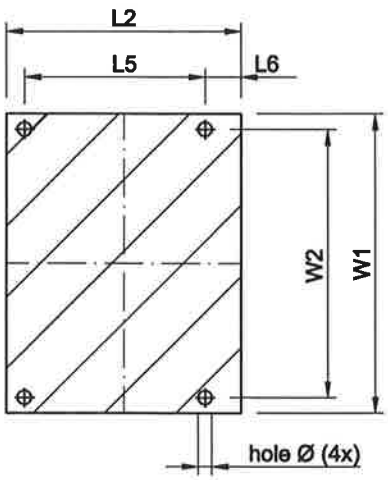
Hydraulic motor

Air motor

Electric motor




Base plate
Top view

| TYPE | D1 | D2 | L1 | L2 | L3 | L4(E) | L4(H) | L4(P) | L5 | L6 | H1 | H2 | W1 | W2 | HOLEØ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | 244 | 380 | 176 | 310 | 93 | 774 | 548.5 | 742 | 240 | 44 | 215 | 405 | 440 | 400 | 18 |
| 301 | 244 | 380 | 176 | 310 | 93 | 832 | 557.5 | 765 | 240 | 44 | 215 | 405 | 440 | 400 | 18 |
| 303 | 272 | 410 | 191 | 350 | 107.5 | 894 | 623 | 928 | 275 | 50 | 235 | 440 | 500 | 450 | 22 |
| 305 | 272 | 410 | 210 | 350 | 116 | 1064 | 669 | 1054 | 275 | 50 | 235 | 440 | 500 | 450 | 22 |
| 306 | 355 | 500 | 266 | 455 | 146 | 1120 | 831 | 1110 | 350 | 70 | 280 | 530 | 580 | 520 | 27 |
| 307 | 406 | 625 | 270 | 510 | 150 | 1332 | 922 | 1258 | 400 | 75 | 355 | 668 | 750 | 680 | 27 |

# Electric winch Type AM

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**Power transmission- and lifting engineering**
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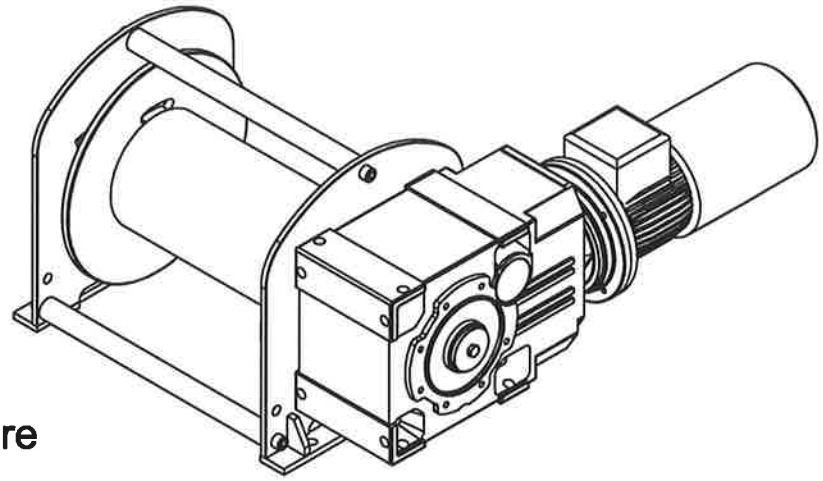
## Rope winch AM

The AM rope winch is a completely new construction. Thanks to its structure this winch is able to meet any customer requirement. The gears are highly efficient. The drum and the gear are borne on 2 large cheeks and the same time fastened to your construction. The winch can be used for all lifting and traction operations. We configure the winch according to your use. They are available with 3 different speeds.



Please find the available accessories on page 14 ff.

| Winch type | Rope traction first layer KG. | Rope traction third layer KG. | Rope lifting power first layer KG. | Rope lifting power third layer KG. | Proposed rope diameter MM. | Speed first layer M/MIN. | Drum capacity first layer M. | Drum capacity fifth layer M. | Motor rating 400 V kW |
|---|---|---|---|---|---|---|---|---|---|
| AL 300 | 300 | 245 | 250 | 200 | 6 | 6 | 3 | 20 | 0,26 |
| AH 300 | 300 | 245 | 250 | 200 | 6 | 13 | 3 | 20 | 0,55 |
| AL 500 | 500 | 450 | 450 | 370 | 6 | 3 | 3 | 20 | 0,24 |
| AM 500 | 500 | 450 | 470 | 370 | 6 | 6 | 3 | 20 | 0,50 |
| AH 500 | 500 | 450 | 480 | 370 | 6 | 13 | 3 | 20 | 1,10 |
| AL 750 | 750 | 600 | 700 | 570 | 8 | 3 | 8 | 48 | 0,37 |
| AM 750 | 750 | 600 | 700 | 570 | 8 | 6 | 8 | 48 | 0,75 |
| AH 750 | 750 | 600 | 700 | 570 | 8 | 12 | 8 | 48 | 1,50 |
| AL 1200 | 1200 | 1000 | 1000 | 825 | 9 | 4 | 12 | 70 | 0,75 |
| AM 1200 | 1200 | 1000 | 1000 | 825 | 9 | 6 | 12 | 70 | 1,10 |
| AH 1200 | 1200 | 1000 | 1000 | 825 | 9 | 12 | 12 | 70 | 2,20 |
| AL 1800 | 1800 | 1460 | 1600 | 1300 | 11 | 5 | 14 | 83 | 1,50 |
| AM 1800 | 1800 | 1460 | 1700 | 1380 | 11 | 7 | 14 | 83 | 2,20 |
| AH 1800 | 1800 | 1460 | 1650 | 1340 | 11 | 14 | 14 | 83 | 4,00 |
| AL 2800 | 2800 | 2500 | 2480 | 2210 | 14 | 5 | 24 | 146 | 2,20 |
| AM 2800 | 2800 | 2500 | 2420 | 2160 | 14 | 8 | 24 | 146 | 3,00 |

# Electric winch
# Type AM

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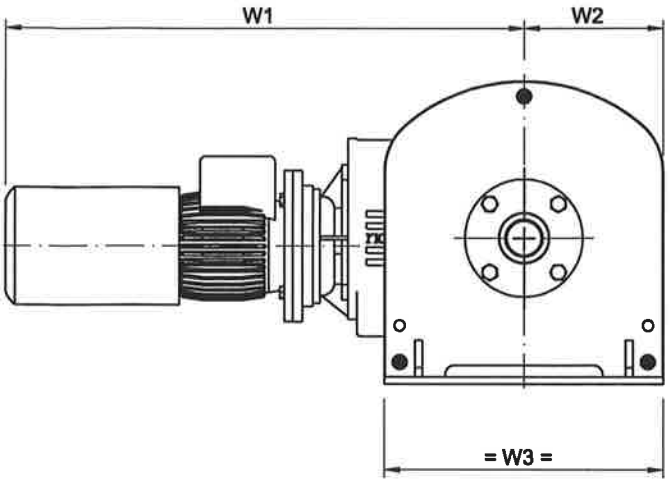


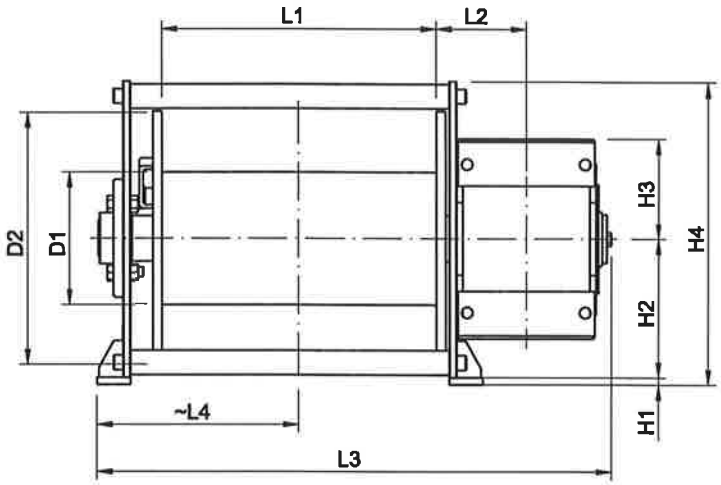


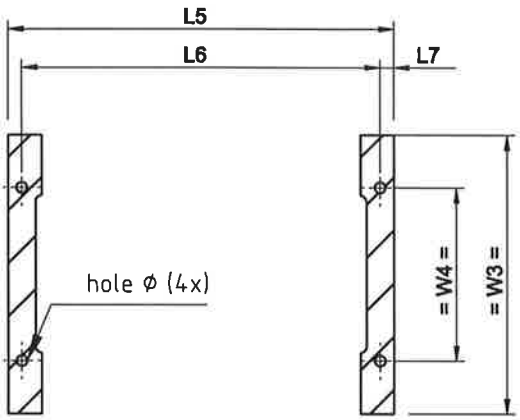


Base plate
Top view

| TYPE | D1 | D2 | L1 | L2 | L3 | L4 | L5 | L6 | L7 | H1 | H2 | H3 | H4 | W1 | W2 | W3 | W4 | HOLEØ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AM 300 | 100 | 200 | 60 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AM 500 | 100 | 200 | 60 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AM 750 | 127 | 280 | 150 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AM1200 | 159 | 320 | 200 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AM 1800 | 178 | 370 | 250 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AM 2800 | 220 | 420 | 450 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

# Accessories

**ENZFELDER** GMBH
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## Grooved drum
For easy windings. Required by standards depending on use.

## Extended drum
Allows winding more rope or winding rope only in first layer.

## 2nd rope connection
With an extra rope connenction you can lift or pull one equipment with two ropes at the same time to prevent tilling, for example.
For certain applications the use of two ropes- one as carrier rope, the other one as emergency rope- is mandatory. In such case each of the ropes must carry the whole weight.

## Spacer
If you wind two ropes in serveral layers the drum must be equipped with spacer.

## Slack rope switch
To ensure that the ropes ins always under tension.

## Spindle end switch
A spindle end switch is added to switch off the rope winch at the end positions.

## Rope pressure roller
For easy windings of the rope.

## Band break
For decelerating the rope winch.

## Motor brake
For decelerating the rope winch.

## Overriding clutch
For unwinding a rope without starting up the winch.

## Reversing switch
Mounted directly on the winch motor for switching on and off in dead man' s handle version. (Only without spindle end switch)

## Remote rope handling device
Directly connected up with the winch motor. Spindle end switches can not be used.

## Switchbox 1
Supplied loose. On and Off buttons are mounted at the switchbox. The switshbox is equipped with a main switch and an emergency stop button.

## Switchbox 2
Supplied loose. On and Off buttons are mounted at a remote rope control device. The switchbox is equipped with a main switch and an emergency stop button.

## Switchbox 3
Options see switchbox 1 and 2, plus velocity.

## Electric load limiting
Switches winch off in case of overload.

Other versions upon request!

# Questionnaire

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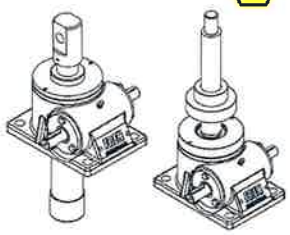
Internet: www.enzfelder.at

Name of company : .....
Attm. : .....
Telephone number : .....
Fax number : .....
Date of offer : .....
Proposed date of delivery : .....
Place of use : .....
Application : .....
Type of winch : lifting or traction .....
Rope strength FIRST LAYER : .....
TOP LAYER : .....
Speed fixed (rope wound in 1 layer) : .....m/min
Speed varying (rope in serveral layer) : .....m/min
Proposed rope diameter : .....
Drum design : smooth / spiral grooves / grooved acc. to DIN
Number of rope connections : .....
Spacer (2 rope connections or more) : .....
Temperature during use : .....°C
Environmental conditions : .....
Type of drive : by hand / electric / hydraulic / pneumatic
Brake motor : yes / no
Motor standard version : 400V-50Hz-IP54 .....
Maximum dimensions of winch
in case of cramped conditions : .....
Color (standard 1 component color blue) : .....
Accessories (see page 14) : .....

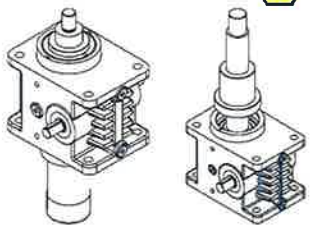
# Product overview 03/2015

Eichengasse 36, A-2551 Enzesfeld, Tel.: +43 (0) 2256 81287 - 00, Fax.: +43 (0) 2256 81287 - 95, office@enzfelder.at, www.enzfelder.at

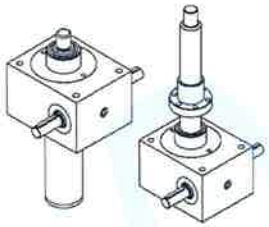
## SG
Screw jack
Classic



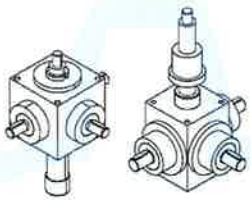
## HSG
High performance-
Screw jack



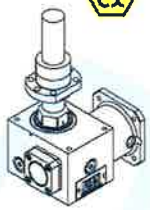
## BG
Screw jack
Cubic



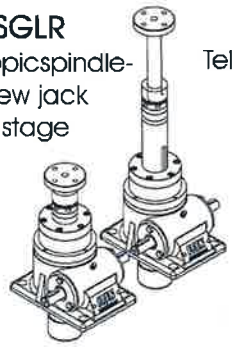
## SHG
Quick-lifting
screw jack



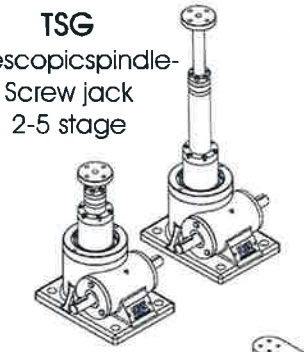
## SH
Servo lifting
gear



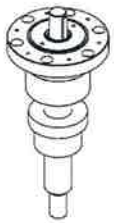
## TSGLR
Telescopicspindle-
Screw jack
2-stage



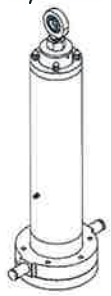
## TSG
Telescopicspindle-
Screw jack
2-5 stage



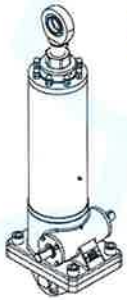
## SLA
Spindlebearing



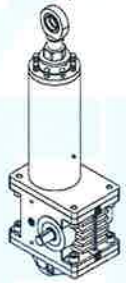
## SEZ
Spindlebearings-
Cylinder



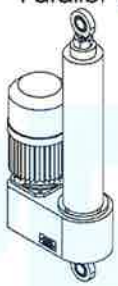
## ELZ
Electric cylinder



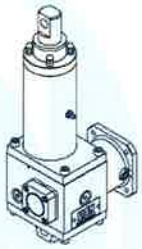
## HELZ
High performance-
Elektric cylinder



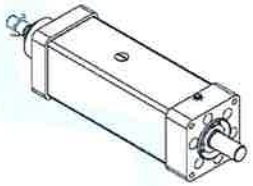
## ELZP
Electric cylinder
Parallel



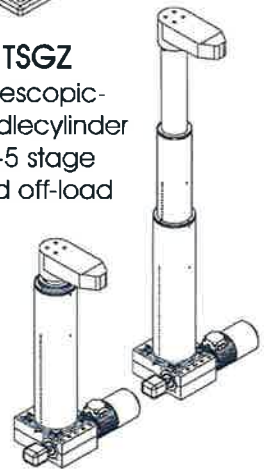
## SHELZ
Servo electric-
cylinder



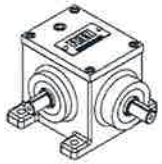
## EPNEU
Spindle-
Elektric cylinder



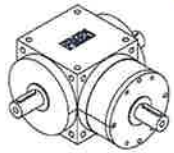
## TSGZ
Telescopic-
spindlecylinder
2-5 stage
And off-load



## K
Bevel gear
Type K

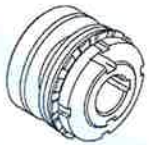


## H
Bevel gear
Type H



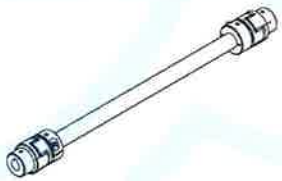
## R / GS
Elastic / backlash-free
Coupling

## RT
Slip hub

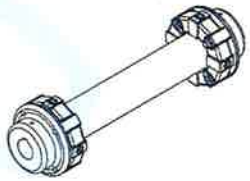


## RK
Slip coupling

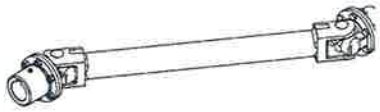
## ZR
FREN
Connecting shaft



## G / GX
Elastic
Connecting shaft

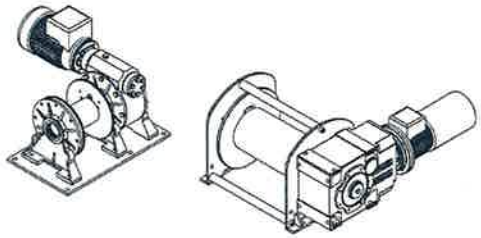


## Cardan shaft



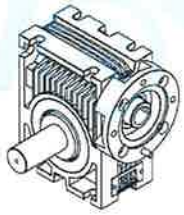
## HT
Lifting table
mechanic / hydraulic

## SW
Rope winche

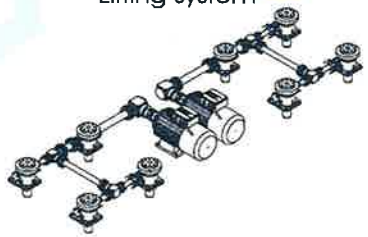


## PLG
Planetary gear

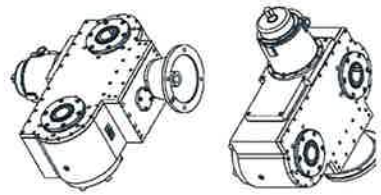
## uniCe
Worm gear



## HA
Lifting system



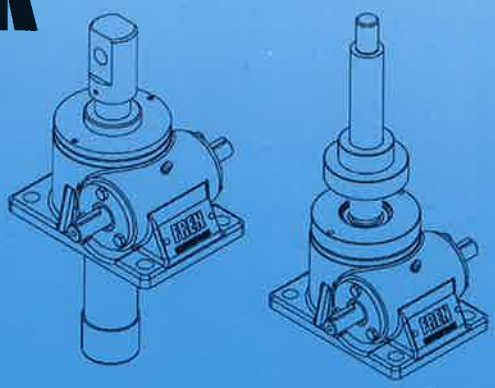
## Special gear



# ENZFELDER GmbH

## Power transmission- and lifting engineering

## Screw jack
## Type SG



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E-Mail: office@enzfelder.at
Internet: www.enzfelder.at

## Product information

### General:

FREN screw jacks are robust worm gear pairs driving a trapezoid thread spindle. The gearbox cases are made of ductile cast iron for high loads and meeting high safety standards. The worm is hardened and grounded and running on tapered roller bearings. The worm wheel is made of high-strength material which is particularly resistant to abrasion; it is mounted between deep groove ball thrust bearings.
The SG0005 to SG0500 line is filled with grease on delivery and fit for operating temperatures ranging between -30°C and +80°C. The operating factor at maximum load is 20% per hour or 30% per 10 minutes. The trapezoid thread spindles are stand single-threads and double-threads execution. For higher demands with regard to lifting speed and operating factor we use ball screw spindles. FREN spindle gears are fitted with a water-soluble blue prime coat (RAL 5012). The spindle is non-lubricated on delivery: it is not to be lubricated before mounting.

### Types/Sizes:

In basically two types are to be differentiated: the basic type and the traveling nut type. The basic type is equiped with a non-rotating spindle which moves up and down. The traveling nut type is equiped with a rotating spindle on which a traveling nut moves up and down. Both types can be mounted to exit the gear either upwardly or downwardly (see page 6). FREN screw jacks are manufactured in 15 standard sizes ranging from 5kN to 3000kN and equiped with single- or double- trapezoid thread spindles or ball screw spindles.
Lifting spindles in the basic type must be secured against torsion. If this is not possible on the part of the constructor we deliver a mounted securing device.

### Applications:

Screw jacks are prefabricated parts used in engine construction and plant engineering and are widely in use there.
Expediently designed, precisely manufactured according to the latest standards. Highly efficient and long-lasting, screw jacks are holding an irreplaceable position in the market and have become a fundamentally building block for the constructing engineer of today.

**Plant Engineering:** aluminium electric analysis, agitator, gate valve operating mechanism.
**Production:** machine tools, presses, lifting tables, take-up devices, tilting devices, material loadings, inlay presses, waste presses, filter screen, adjustment of the press table.
**Installation and repair:** lifting systems for rail vehicles, climbing scaffolds, working platform, mounting table, lifting ramp, loading platform, mounting table for chassis.
**Structural engineering:** concrete formwork, casting mold for a precast concrete part, adjustable mold, linear actuators for theater, impulse for window- and roof constructions, adjustment drive for tunnel formwork.
**Hydraulic engineering and shipbuilding:** impulse for sluice and slide, height adjustment of bridges, adjustment device in dockyards, adjustment for deck of ships.
**Environment engineering:** filter plant, level control system, control of flood-gates.
**Aerotechnics:** adjustment unit for Airbus.
**Machine tools:** sheet metal profiling machine, lining machine, bending machine, adjustments for compactor, gluing machine, bath for impregnation.
**Rolling mill and Foundry technology:** roller- and calender adjustment, stacking table for steel plates, height adjustment for pouring cars.
**Research and new Technologys:** closing safety device and portable hoisting platforms in nuclear power plants, laboratory and research institution, lifting gears for solar plants, wind power station.

### Advantages:

Exact synchronism of several lifting spindles also in case of eccentric stress.
Automatic lock at standstill, consequently 100% prevention of sinking.
Synchronous actuation by motors or crank handle possible.
Precise adjustment and measuring possible.
Operable in any position.
Indifference to temperature over long periods.
Many combinations possible because of the standard parts.
High thrusts (up to 3000kN) and long spindles (up to 10 000mm) feasible.

# Attachments, Example for application

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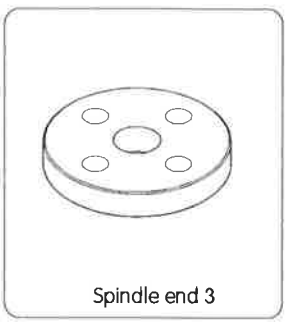
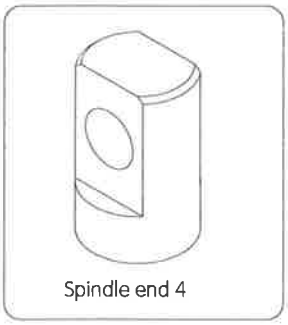
## Examples for attachments


Traveling nut


traveling nut - flattened


swivelling console


Spindle end 3

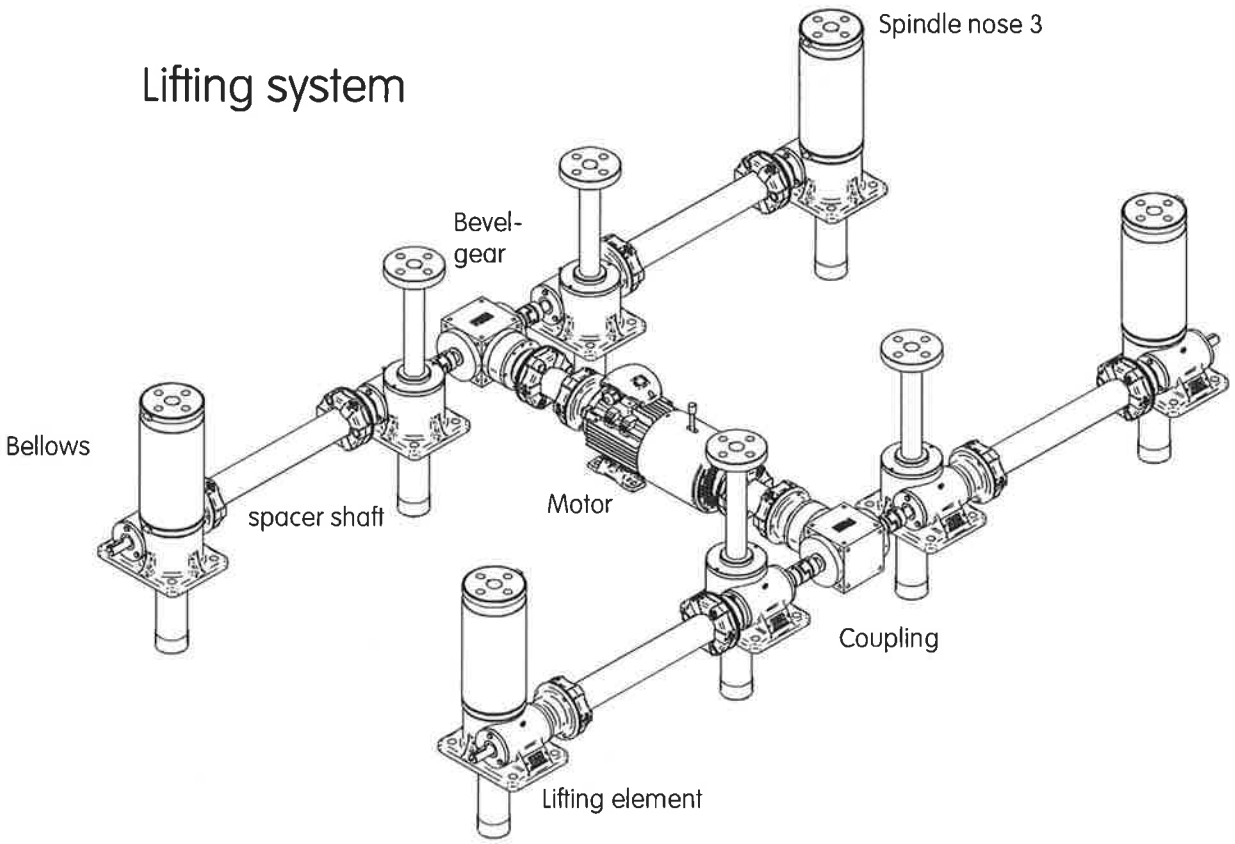

Spindle end 4


Spindle end 5


pedestal bearing


flange bearing

## Lifting system



# Selection of spindle gears

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For the correct selection of spindle gears the following datas are of decisive importance:

| | | |
|---|---|---|
| 1.) load | [kN] | |
| 2.) lifting speed | [m/min] | |
| 3.) operating cycle | [%/10min] [%/hour] | |
| 4.) spindle length (buckling) | [mm] | |
| 5.) tensile- or pressure load | [kN] | |
| 6.) ambient temperature | [°C] | |
| 7.) fitting length (please indicate when ordering) | [mm] | If you use the questionnaire on page 33 |
| 8.) critical speed of the spindle | [min-1] | please provide the data available. |

How to proceed in the selection: on the base of the desired load data (in kN) a suitable type of gear is selected from the preselection table below.

## Preselection Table

Single-thread- spindle actuated gears

| Type | SG 0005 | | SG 0010 | | SG 0015 | | SG 0020 | | SG 0030 | | SG * 0050 | | SG 0100 | | SG 0150 | | SG 0200 | | SG 0240 | | SG 0300 | | SG 0350 | | SG 0500 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| rated power kN | 5 | | 10 | | 15 | | 20 | | 30 | | 50 | | 100 | | 150 | | 200 | | 240 | | 300 | | 350 | | 500 | |
| size of spindle | Tr 20x6 | | Tr 22x5 | | Tr 24x6 | | Tr 26x6 | | Tr 30x6 | | Tr 40x9 (Tr 40x7) | | Tr 55x12 | | Tr 60x12 | | Tr 65x12 | | Tr 75x14 | | Tr 90x16 | | Tr 100x16 | | Tr 120x16 | |
| gear reduction | 10:1 | 20:1 | 5:1 | 20:1 | 6:1 | 25:1 | 6:1 | 24:1 | 6:1 | 24:1 | 6:1 | 24:1 | 8:1 | 24:1 | 8:1 | 24:1 | 8:1 | 24:1 | 9⅓:1 | 28:1 | 10⅔:1 | 32:1 | 10⅔:1 | 32:1 | 10⅔:1 | 32:1 |
| length of stroke per rotation in mm | 0,6 | 0,3 | 1 | 0,25 | 1 | 0,24 | 1 | 0,25 | 1 | 0,25 | 1,5 (1,17) | 0,375 (0,29) | 1,5 | 0,5 | 1,5 | 0,5 | 1,5 | 0,5 | 1,5 | 0,5 | 1,5 | 0,5 | 1,5 | 0,5 | 1,5 | 0,5 |
| torque at rated power Nm | 1,54 | 1,04 | 4,97 | 1,8 | 7,23 | 2,86 | 9,8 | 4,1 | 16,5 | 7 | 37,3 (35,2) | 15,3 (14,2) | 81 | 39 | 133 | 68,2 | 184 | 93,6 | 221 | 112 | 286 | 149 | 363 | 186 | 586 | 300 |
| efficiency in % | 31 | 23 | 32 | 44,5 | 33 | 20 | 32 | 19 | 29 | 17 | 32 (26) | 19,5 (16) | 29 | 20 | 27 | 17,5 | 26 | 17 | 25 | 17 | 25 | 16 | 23 | 15 | 20 | 13 |
| max. RPM | 2800 | | 2800 | | 2800 | | 2800 | | 2800 | | 1800 | | 1800 | | 1500 | | 1500 | | 1500 | | 1000 | | 1000 | | 1000 | |
| max. lifting speed m/min | 1,68 | 0,84 | 2,8 | 0,7 | 2,8 | 0,67 | 2,8 | 0,7 | 2,8 | 0,7 | 2,7 | 0,67 | 2,25 | 0,75 | 2,25 | 0,75 | 2,25 | 0,75 | 2,25 | 0,75 | 1,5 | 0,5 | 1,5 | 0,5 | 1,5 | 0,5 |
| max. driving power in kW at 20% duty cycle | 0,18 | | 0,4 | | 0,35 | | 0,5 | | 0,6 | | 1,2 | | 2,1 | | 2,8 | | 3,9 | | 4,5 | | 5,2 | | 6,2 | | 7,8 | |
| max. driving power in kW at 10% duty cycle | 0,23 | | 0,6 | | 0,46 | | 0,7 | | 0,8 | | 1,6 | | 2,8 | | 3,8 | | 5,1 | | 5,9 | | 6,9 | | 8,3 | | 10,8 | |
| weight, basic type excl. lifting element in kg | 1,5 | | 3,2 | | 3,2 | | 7,8 | | 8,2 | | 18 | | 23 | | 28 | | 40 | | 58 | | 75 | | 90 | | 180 | |
| 100mm spindle in kg | 0,2 | | 0,23 | | 0,3 | | 0,34 | | 0,43 | | 0,8 | | 1,5 | | 1,8 | | 2,15 | | 2,8 | | 4,2 | | 5,2 | | 7,7 | |
| g of grease contained in spindle gear | 40 | | 40 | | 55 | | 115 | | 115 | | 225 | | 320 | | 400 | | 500 | | 650 | | 800 | | 1200 | | 2500 | |
| catalog page | 9 | | 10 | | 11 | | 12 | | 13 | | 14 | | 15 | | 16 | | 17 | | 18 | | 19 | | 20 | | 21 | |

### Double-thread spindle actuated gears

(no longer self-locking - braking motor must be used!)

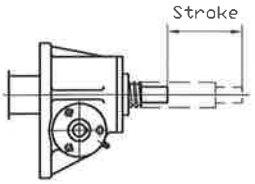
| rated power kN | 4 | | 8 | | 12 | | 16 | | 24 | | 40 | | 80 | | 120 | | 150 | | 180 | | 220 | | 280 | | 400 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| size of spindle | Tr20x12P6 | | Tr22x10P5 | | Tr24x12P6 | | Tr26x12P6 | | Tr30x12P6 | | Tr40x18P9 | | Tr55x24P12 | | Tr60x24P12 | | Tr65x24P12 | | Tr75x28P14 | | Tr90x32P16 | | Tr100x32P16 | | Tr120x32P16 | |
| length of stroke per rotation in mm | 1,2 | 0,6 | 2 | 0,5 | 2 | 0,48 | 2 | 0,5 | 2 | 0,5 | 3 | 0,75 | 3 | 1 | 3 | 1 | 3 | 1 | 3 | 1 | 3 | 1 | 1 | 3 | 3 | 1 |
| max. lifting speed m/min | 3,36 | 1,68 | 5,6 | 1,4 | 5,6 | 1,34 | 5,6 | 1,4 | 5,6 | 1,4 | 5,4 | 1,35 | 4,5 | 1,5 | 4,5 | 1,5 | 4,5 | 1,5 | 4,5 | 1,5 | 3 | 1 | 1 | 3 | 3 | 1 |
| torque at rated power Nm | 1,86 | 1,23 | 5,72 | 2,08 | 8,48 | 3,27 | 12,1 | 4,89 | 18,2 | 7,64 | 43,4 | 17,7 | 91,2 | 47,2 | 151 | 77 | 194 | 100 | 232 | 120 | 284 | 146 | 393 | 203 | 637 | 318 |
| efficiency in % | 41 | 31 | 44,5 | 30,5 | 45 | 28 | 42 | 26 | 41 | 25 | 44 | 27 | 42 | 27 | 38 | 25 | 37 | 24 | 37 | 24 | 37 | 24 | 34 | 22 | 30 | 20 |

*SG0050 is also available actuated by a lead screw Tr 40x7. Corresponding data in ( ).
For the standard gears SG0750 and SG1000 please request the standard sheet!

Read of the dimensioned sketch and the performance table on the corresponding page of the catalog:

1.) whether the dimensions of gear and spindle fit into your system.
2.) which gear reduction must be selected for the desired lifting speed
(for higher lifting speeds the use of a double-thread spindle may be necessary).
3.) whether the power required for the desired lifting speed is admissible.
4.) whether under pressure load the critical buckling force is not exceeded (see diagram on page 29).
5.) whether the critical revolutions/min of the spindle are not exceeded (see diagram on page 28).
6.) If one of these requirements cannot be met the type next in size must be chosen.
7.) If point 6 is not sufficient, choose one of the types next in size or ask for special types (questionnaire see pages 33-34)!

# Survey of construction modes with




Stroke:
0-10000 mm

Attachment-Driving shaft:
00 _ without attachments
(M)R _ motor flange right
(M)L _ motor flange left
(M)R/L _ motor flange right and left
MR _ motor right
ML _ motor left
MRL _ motor right and left
GMR _ gearmotor right
GML _ gearmotor left
GMRL _ gearmotor right and left

HK _ hand crank
HR _ hand wheel
KR _ coupling right
KL _ coupling left
FR _ flange right
FL _ flange left
GER _ gear limit switch at the right
GEL _ gear limit switch at the left
IGR _ incremental encoder at the right
IGL _ incremental encoder at the left
AGR _ absolute encoder at the right
AGL _ absolute encoder at the left

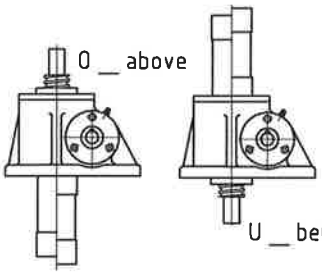
Reduction i
see chart page 4

SG _ screw jack
KSG _ screw jack with ball screw drive
PSG _ screw jack with planetary roller drive
SE _ swiveling element
KSE _ swiveling element with ball screw drive
PSE _ swiveling element with planetary roller drive
SK _ design with swivel housing
SSG _ special screw jack

## SG 0000 - 0 - G - 0 - 1 - Stroke - M10 - 00-

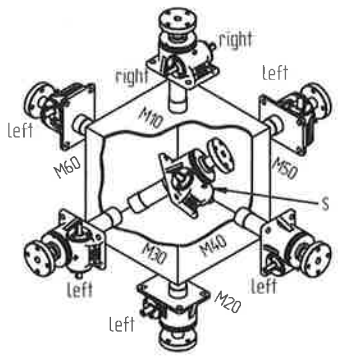
Type:
0005 / 0015 / 0020 / 0030 / 0050 /
0100 / 0150 / 0200 / 0240 / 0300 /
0350 / 0500 / 0750 / 1000 / 1500/
2000 / 2500/ 3000

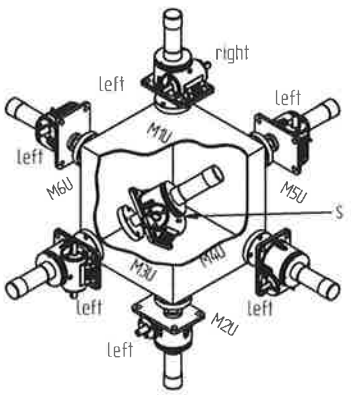
G _ Standard type




Design:
0_above
U_below

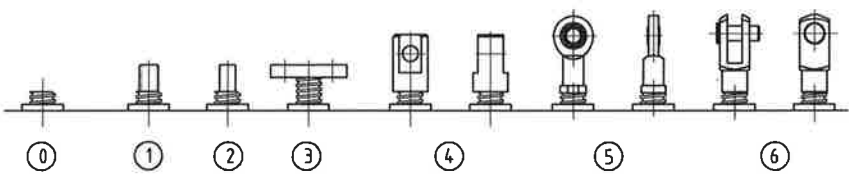
Mounting position:
M10 / M1U / M20 / M2U / M30 /
M3U / M40 / M4U /M50 / M5U /
M60 / M6U/ S (=obliquely)




Spindle end SG:
0, 1, 2, 3, 4, 5, 6, So
Spindle end SE:
1/4, 4/4, 5/5

standard spindle ends



# example for ordering - Basic Type

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Driving shaft:

B __ both sides
R __ right
L __ left
R/LS __ standard on right / special on left
L/RS __ standard on left / special on right
R/LoP __ standard on right / standard on left without parallel key
L/RoP __ standard on left / standard on right without parallel key
BoP __ standard without parallel key
BHW __ both sides with quill shaft
R/LHW __ standard on right /left side with quill shaft
L/RHW __ standard on left /right side with quill shaft

Attachment-Spindle side:

0 __ without guiding
F __ guiding standard
FFB __ guiding for bellow
FSA __ guiding for lubrication
FSE __ guiding adjustable
FSE/A __ guiding adjustable with lubrication connection
SIO __ safety nut optical (short without guiding/travelling nut type)
SIF __ safety nut optical with guiding
SIFSA __ safety nut optical with guiding + lubrication connection
SIE __ safety nut electrically monitored with guiding
SIESA __ safety nut electrically monitored with guiding + lubrication connection
SIM __ safety nut electronically monitored with guiding
VS __ turn lock device with feather key on spindle

- B - F - Sf - Tr55x12 - __ - __ - __ - __ - __

Attachment-protection tube side:

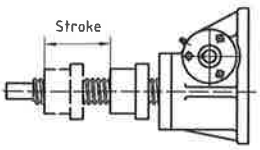
0 __ without guiding
F __ with guiding without protecting tube
FFB __ guiding with bellow
S __ protecting tube
Sf __ protecting tube with guide ring
SfSA __ guiding with lubrication connection
SfSE __ guiding adjustable
SfSE/A __ guiding adjustable with lubrication connection
VV __ square tube turn lock device
VP __ turn lock device by 2x parallel key in the protection tube
SIO __ safety nut optical (short without guiding/travelling nut type)
SIF __ safety nut optical with guiding
SIFSA __ safety nut optical with guiding + lubrication connection
SIE __ safety nut electrically monitored with guiding
SIESA __ safety nut electrically monitored with guiding + lubrication connection
SIM __ safety nut electronically monitored with guiding

Spindle code:
for example: Tr30x12P6
Tr40x7 LH (left-handed)
KGT2005

## Additional gear descriptive designations:

- Spindle protection:
  FB __ bellow
  FS __ flat spiral spring cover
- AS __ turn out device
- ES __ turn in device
- DÜ __ drive monitoring
- GD __ noise attenuation (rubber plate, distance sleeve for boring)
- Stub covering
  SR __ stub covering at the right for retrospectivally building in
  SL __ stub covering at the left for retrospectivally building in
- Limit stop:
  EAS1 __ limit switch mechanical
  EAS2 __ limit switch magnetical
  EAS3 __ limit switch inductive
  DFE __ compression spring turn off
- Swivelling consoles:
  SP __ swivelling plate
  SP90 __ swivelling plate 90° turned
  SK __ swivelling console
  SK90 __ swivelling console 90° turned
  SL __ swivelling bearing
  SLA __ swivel feet
  GL __ bearing for swivelling housing
- VL __ spindle extension
  VL10 __ spindle extension 10mm
- FI __ filter for bellow ventilation
- SSG __ lubricator
- SO __ special parts

# Survey of construction modes with example




Stroke:
0-10000 mm

Attachment-Driving shaft:
00 _ without motor
(M)R _ motor flange right
(M)L _ motor flange left
(M)R/L _ motor flange right and left
MR _ motor right
ML _ motor left
MRL _ motor right and left
GMR _ gearmotor right
GML _ gearmotor left
GMRL _ gearmotor right and left

HK _ hand crank
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KR _ coupling right
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GER _ gear limit switch at the right
GEL _ gear limit switch at the left
IGR _ incremental encoder at the right
IGL _ incremental encoder at the left
AGR _ absolute encoder at the right
AGL _ absolute encoder at the left

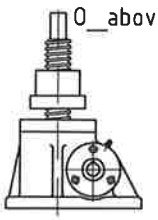
Reduction i
see chart page 4

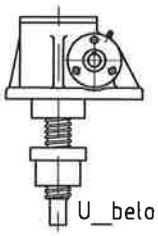
SG _ screw jack
KSG _ screw jack with ball screw drive
SSG _ special screw jack

**SG 0000 - 0 - L - 0 - 0 - Stroke - M10 - 00-**

Type:
0005 / 0015 / 0020 / 0030 / 0050 /
0100 / 0150 / 0200 / 0240 / 0300 /
0350 / 0500 / 0750 / 1000 / 1500/
2000 / 2500/ 3000

L _ Travelling nut type

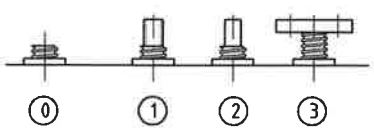


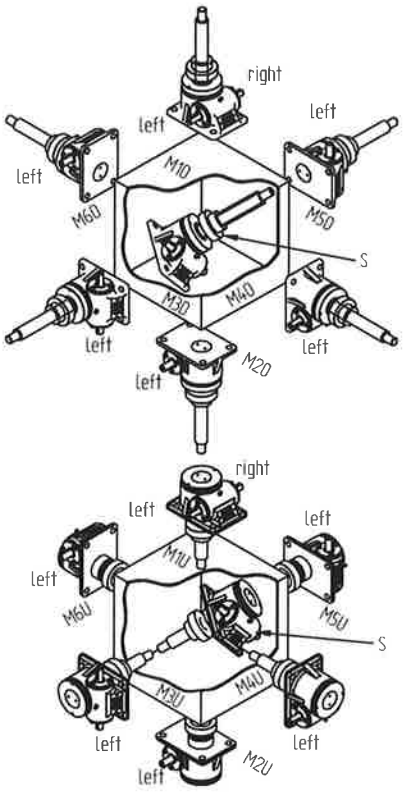

Design:
0 _ above
U _ below

Spindle end: 0, 1, 2, 3, So
3 _ spindle end 3 with bearing
FL _ bearing of the flange UCFL
SL _ pedestal bearing UCP
LL _ floating bearing
AS _ securing against hollowing
AH _ spindle end with
spacer like the ELZ

standard spindle ends




Mounting position:
M10 / M1U / M20 / M2U / M30 /
M3U / M40 / M4U /M50 / M5U /
M60 / M6U/ S (=obliquely)



# for ordering - Travelling nut Type

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Internet: www.enzfelder.at

Driving shaft:

B __both sides
R __right
L __left
R/LS __standard on right / special on left
L/RS __standard on left / special on right
R/LoP __standard on right / standard on left
without parallel key
L/RoP __standard on left / standard on right
without parallel key
BoP __standard without parallel key
BHW __both sides with quill shaft
R/LHW __standard on right /left side with quill shaft
L/RHW __standard on left /right side with quill shaft

Travelling nut:

LS __travelling nut standard
LF __travelling nut with guiding rings
LJP __travelling nut with yoke plate
LSF __travelling nut with key area
LSA __travelling nut with lubrication connection
LFI __travelling nut with filter for bellow ventilation
LSR __travelling nut with protection tube
LSP __travelling nut with spherical plate

by ball screw:
EFM __single flange nut
EFDM __single flange double nut
MFM __middle flange nut

- B - LS - Tr60x12 - __ - __ - __ - __ - __

Spindle code:
for example: Tr30x12P6
Tr40x7 LH (left-handed)
KGT2005

## Additional gear descriptive designations:

- Spindle protection:
  FB __bellow
  FS __flat spiral spring cover
- GD __noise attenuation (rubber plate, distance sleeve for boring)
- Safety nut:
  SIO __safety nut optically
  (short without guiding/travelling nut)
  SIE __safety nut electrically monitored
- Stub covering:
  SR __stub covering at the right for retrospectively building in
  SL __stub covering at the left for retrospectively building in
- VL __spindle extension
  VL10 __spindle extension 10mm
- FI __filter for bellow ventilation
- SSG __lubricator
- AS __turn out device
- SO __special parts

- Swivelling consoles:
  SP __swivelling plate
  SP90__swivelling plate 90° turned
  SK __swivelling console
  SK90__swivelling console 90° turned
  SL __swivelling bearing
  SLA __swivel feet
  GL __bearing for swivelling housing

# Screw jack SG 0005

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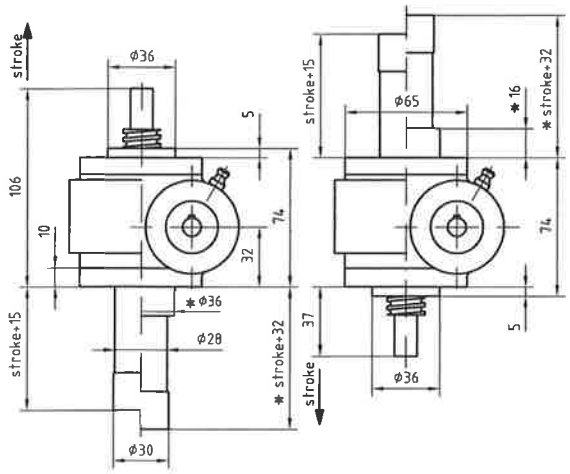
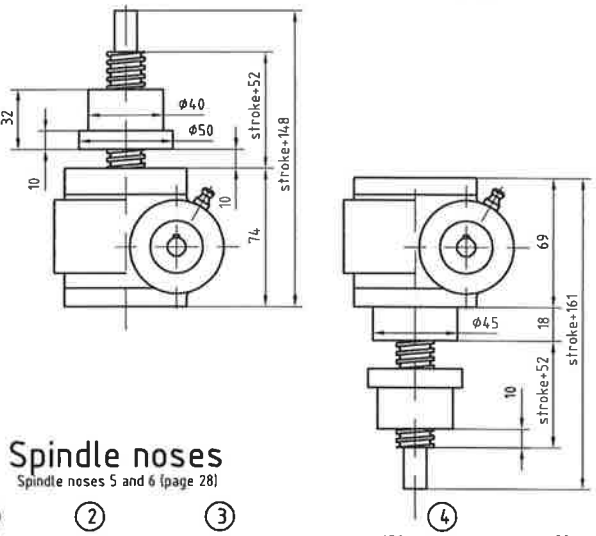
## Basic type (G)

above (O) below (U)



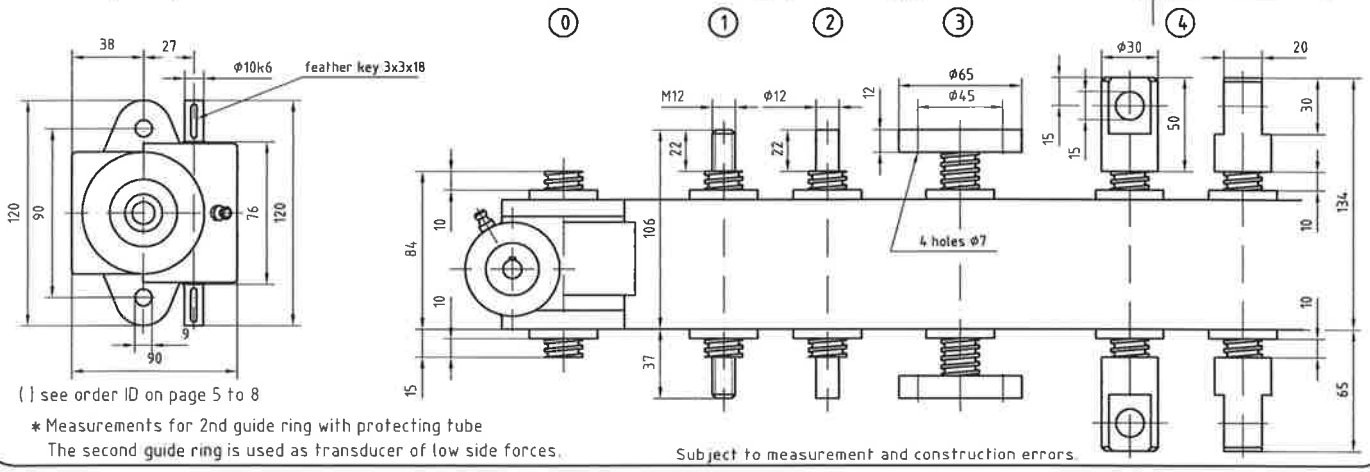

## Traveling nut type (L)

above (O) below (U)




## Spindle noses

Spindle noses 5 and 6 (page 28)




( ) see order ID on page 5 to 8

* Measurements for 2nd guide ring with protecting tube
The second guide ring is used as transducer of low side forces.

Subject to measurement and construction errors.

### Tr 20x6 single-thread lifting power in kN

10:1 = 0,6mm/R
20:1 = 0,3mm/R

| $n_1$ | lift. speed m/min | | 5 | | | | 4 | | | | 3 | | | | 2 | | | | 1,5 | | | | 1 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10:1 | 20:1 | 10:1 | | 20:1 | | 10:1 | | 20:1 | | 10:1 | | 20:1 | | 10:1 | | 20:1 | | 10:1 | | 20:1 | | 10:1 | | 20:1 | |
| min$^{-1}$ | | | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW |
| 2800 | 1,68 | 0,84 | *1,54* | *0,44* | *1,04* | *0,3* | *1,23* | *0,36* | *0,83* | *0,24* | *0,92* | *0,27* | 0,62 | 0,18 | 0,61 | 0,18 | 0,41 | 0,12 | 0,46 | 0,14 | 0,31 | 0,09 | 0,3 | 0,1 | 0,21 | 0,06 |
| 1500 | 0,90 | 0,45 | *1,54* | *0,24* | 1,04 | 0,16 | *1,23* | *0,19* | 0,83 | 0,13 | 0,92 | 0,14 | 0,62 | 0,1 | 0,61 | 0,1 | 0,41 | 0,07 | 0,46 | 0,08 | 0,31 | 0,06 | 0,3 | 0,06 | 0,21 | 0,04 |
| 1000 | 0,60 | 0,30 | 1,54 | 0,16 | 1,04 | 0,11 | 1,23 | 0,13 | 0,83 | 0,09 | 0,92 | 0,1 | 0,62 | 0,07 | 0,61 | 0,07 | 0,41 | 0,05 | 0,46 | 0,06 | 0,31 | 0,04 | 0,3 | 0,05 | 0,21 | 0,04 |
| 750 | 0,45 | 0,22 | 1,54 | 0,12 | 1,04 | 0,08 | 1,23 | 0,1 | 0,83 | 0,07 | 0,92 | 0,08 | 0,62 | 0,06 | 0,61 | 0,06 | 0,41 | 0,04 | 0,46 | 0,05 | 0,31 | 0,04 | 0,3 | 0,04 | 0,21 | 0,04 |
| 500 | 0,30 | 0,15 | 1,54 | 0,08 | 1,04 | 0,06 | 1,23 | 0,07 | 0,83 | 0,05 | 0,92 | 0,06 | 0,62 | 0,04 | 0,61 | 0,04 | 0,41 | 0,04 | 0,46 | 0,04 | 0,31 | 0,04 | 0,3 | 0,04 | 0,21 | 0,04 |
| 200 | 0,12 | 0,06 | 1,54 | 0,04 | 1,04 | 0,05 | 1,23 | 0,04 | 0,83 | 0,04 | 0,92 | 0,04 | 0,62 | 0,04 | 0,61 | 0,04 | 0,41 | 0,04 | 0,46 | 0,04 | 0,31 | 0,04 | 0,3 | 0,04 | 0,21 | 0,04 |

RPM, power demand and admissible lifting speed at a reduction of 10:1 and 20:1 single-thread and double-thread spindle actuated, apply to the dynamic lifting power and a 20%/h or 30%/10min duty cycle at 20°C.
In the range of the spaces containing italics (above the lines) the spindle gears are overheated, the surface pressure in the thread is too high. We do not furnish a guarantee in this area.
However, it is feasible to transmit higher powers at a reduced duty cycle, or lower powers at a higher temperature (see preselection table, page 4).
Please ask for further information.

For lifting speeds higher than those given in the tables, also oil-lubricated ball bearing spindles or special reductions are available.

### Tr 20x12P6 double-thread lifting power in kN

10:1 = 1,2mm/R
20:1 = 0,6mm/R

| $n_1$ | lift. speed m/min | | 4 | | | | 3 | | | | 2 | | | | 1,5 | | | | 1 | | | | 0,5 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10:1 | 20:1 | 10:1 | | 20:1 | | 10:1 | | 20:1 | | 10:1 | | 20:1 | | 10:1 | | 20:1 | | 10:1 | | 20:1 | | 10:1 | | 20:1 | |
| min$^{-1}$ | | | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW |
| 2800 | 3,36 | 1,68 | *1,86* | *0,54* | *1,23* | *0,36* | *1,39* | *0,4* | *0,92* | *0,27* | *0,93* | *0,27* | 0,62 | 0,18 | *0,7* | *0,2* | 0,46 | 0,14 | 0,47 | 0,14 | 0,31 | 0,09 | 0,23 | 0,08 | 0,16 | 0,05 |
| 1500 | 1,80 | 0,90 | *1,86* | *0,29* | *1,23* | *0,19* | *1,39* | *0,22* | 0,92 | 0,15 | 0,93 | 0,15 | 0,62 | 0,1 | 0,7 | 0,11 | 0,46 | 0,08 | 0,47 | 0,07 | 0,31 | 0,06 | 0,23 | 0,04 | 0,16 | 0,04 |
| 100 | 1,20 | 0,60 | *1,86* | *0,19* | 1,23 | 0,13 | 1,39 | 0,14 | 0,92 | 0,1 | 0,93 | 0,1 | 0,62 | 0,07 | 0,7 | 0,07 | 0,46 | 0,06 | 0,47 | 0,05 | 0,31 | 0,04 | 0,23 | 0,04 | 0,16 | 0,04 |
| 750 | 0,90 | 0,45 | 1,86 | 0,15 | 1,23 | 0,1 | 1,39 | 0,11 | 0,92 | 0,08 | 0,93 | 0,08 | 0,62 | 0,05 | 0,7 | 0,06 | 0,46 | 0,04 | 0,47 | 0,04 | 0,31 | 0,04 | 0,23 | 0,04 | 0,16 | 0,04 |
| 500 | 0,60 | 0,30 | 1,86 | 0,1 | 1,23 | 0,07 | 1,39 | 0,08 | 0,92 | 0,05 | 0,93 | 0,06 | 0,62 | 0,04 | 0,7 | 0,05 | 0,46 | 0,04 | 0,47 | 0,04 | 0,31 | 0,04 | 0,23 | 0,04 | 0,16 | 0,04 |
| 200 | 0,24 | 0,12 | 1,86 | 0,05 | 1,23 | 0,04 | 1,39 | 0,04 | 0,92 | 0,04 | 0,93 | 0,04 | 0,62 | 0,04 | 0,7 | 0,04 | 0,46 | 0,04 | 0,47 | 0,04 | 0,31 | 0,04 | 0,23 | 0,04 | 0,16 | 0,04 |

### Technical specifications

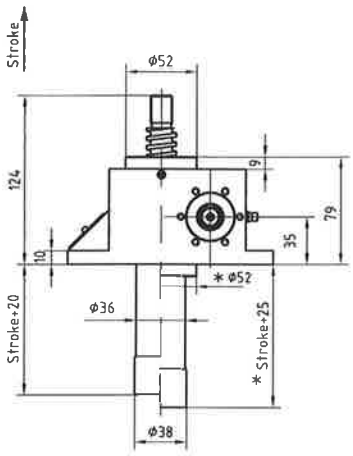
| | |
|---|---|
| max. lifting power | 5 kN |
| gear reduction | 10:1 / 20:1 |
| dimension of spindle | Tr20x6 / Tr20x12P6 |
| start-up moment | table entry x 1,3 |
| casing material | aluminium |
| weight without lifting (kg) | 1,5 |
| weight of spindle per 100mm lifting (kg) | 0,2 |
| lubricant | grease |
| quantity of lubricant (kg) | 0,05 |
| max. driving power (duty cycle 20%/h) | 0,18 kW |
| max. driving power (duty cycle 10%/h) | 0,23 kW |

# Screw jack SG 0010

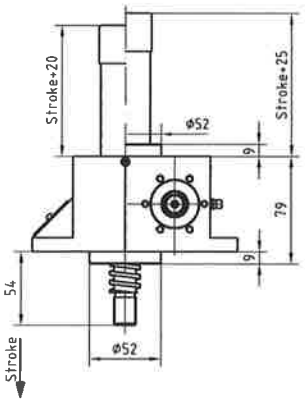
**ENZFELDER GmbH.**
WERK ENZESFELD:
A-2551 ENZESFELD, EICHENGASSE 36
Tel.:++43(0)2256/81287
Fax.:++43(0)2256/81287-95
E-Mail: office@enzfelder.at
Internet: www.enzfelder.at

## Basic type (G)

### above (0)

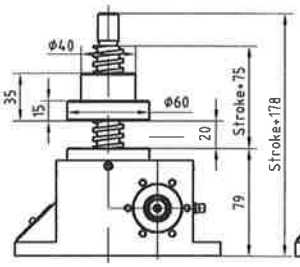



### below (U)

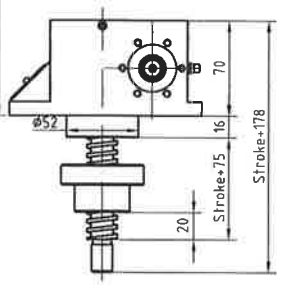



## Traveling nut type (L)

### above (0)

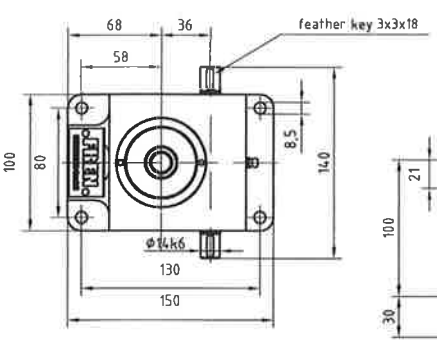


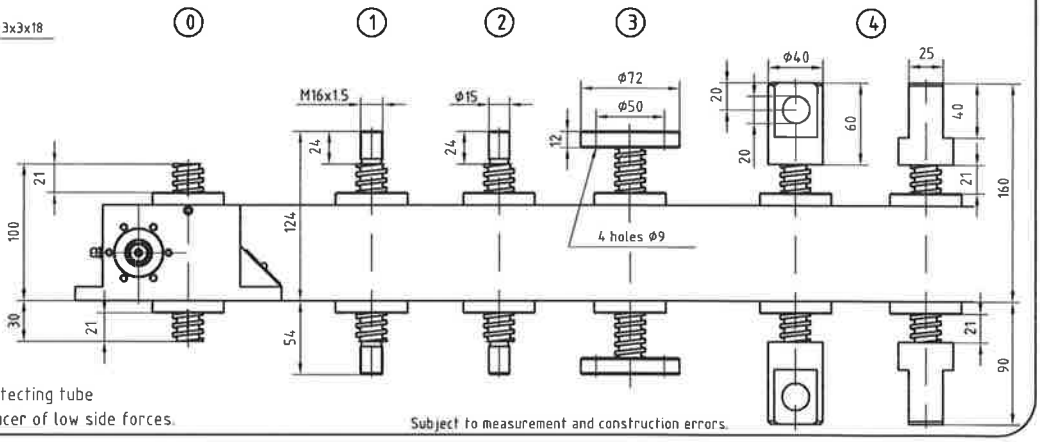

### below (U)




## Spindle noses

Spindle noses 5 and 6 (page 28)




( ) see order ID on page 5 to 8

*Measurements for 2nd guide ring with protecting tube
The second guide ring is used as transducer of low side forces.

Subject to measurement and construction errors.

**Tr 22x5 single-thread lifting power in kN** — 5:1 = 1,0mm/U, 20:1 = 0,25mm/U

| $n_1$ min$^{-1}$ | Hubgeschw. m/min 5:1 | 20:1 | 10 5:1 Nm | kW | 10 20:1 Nm | kW | 8 5:1 Nm | kW | 8 20:1 Nm | kW | 6 5:1 Nm | kW | 6 20:1 Nm | kW | 4 5:1 Nm | kW | 4 20:1 Nm | kW | 3 5:1 Nm | kW | 3 20:1 Nm | kW | 1 5:1 Nm | kW | 1 20:1 Nm | kW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2800 | 2,80 | 0,70 | *4,97* | *1,43* | *1,8* | *0,52* | *3,98* | *1,14* | *1,44* | *0,42* | *2,98* | *0,86* | *1,08* | *0,32* | *1,98* | *0,57* | *0,72* | *0,21* | *1,49* | *0,43* | 0,54 | 0,16 | 0,5 | 0,15 | 0,18 | 0,06 |
| 1500 | 1,50 | 0,375 | *4,97* | *0,77* | *1,8* | *0,28* | *3,98* | *0,61* | *1,44* | *0,15* | *2,98* | *0,46* | 1,08 | 0,17 | *1,98* | *0,31* | 0,72 | 0,12 | 1,49 | 0,23 | 0,54 | 0,09 | 0,5 | 0,08 | 0,18 | 0,03 |
| 1000 | 1,00 | 0,25 | *4,97* | *0,51* | *1,8* | *0,19* | *3,98* | *0,41* | 1,44 | 0,15 | *2,98* | *0,31* | 1,08 | 0,12 | 1,98 | 0,21 | 0,72 | 0,08 | 1,49 | 0,16 | 0,54 | 0,06 | 0,5 | 0,06 | 0,18 | 0,02 |
| 750 | 0,75 | 0,19 | *4,97* | *0,39* | 1,8 | 0,14 | *3,98* | *0,31* | 1,44 | 0,12 | *2,98* | *0,23* | 1,08 | 0,09 | 1,98 | 0,16 | 0,72 | 0,06 | 1,49 | 0,12 | 0,54 | 0,05 | 0,5 | 0,04 | 0,18 | 0,02 |
| 500 | 0,50 | 0,125 | *4,97* | *0,26* | 1,8 | 0,10 | 3,98 | 0,21 | 1,44 | 0,08 | 2,98 | 0,16 | 1,08 | 0,06 | 1,98 | 0,11 | 0,72 | 0,04 | 1,49 | 0,08 | 0,54 | 0,03 | 0,5 | 0,03 | 0,18 | 0,01 |
| 200 | 0,20 | 0,05 | 4,97 | 0,11 | 1,8 | 0,04 | 3,98 | 0,09 | 1,44 | 0,03 | 2,98 | 0,07 | 1,08 | 0,03 | 1,98 | 0,05 | 0,72 | 0,02 | 1,49 | 0,04 | 0,54 | 0,02 | 0,5 | 0,01 | 0,18 | 0,01 |

RPM, power demand and admissible lifting speed at a reduction of 10:1 and 20:1 single-thread and double-thread spindle actuated, apply to the dynamic lifting power and a 20%/h or 30%/10min duty cycle at 20°C.
In the range of the spaces containing italics (above the lines) the spindle gears are overheated, the surface pressure in the thread is too high. We do not furnish a guarantee in this area.
However, it is feasible to transmit higher powers at a reduced duty cycle, or lower powers at a higher temperature (see preselection table, page 4).
Please ask for further information.

For lifting speeds higher than those given in the tables, also oil-lubricated ball bearing spindles or special reductions are available.

**Tr 22x10P5 double-thread lifting power in kN** — 5:1 = 2,0mm/U, 20:1 = 0,5mm/U

| $n_1$ min$^{-1}$ | liff. speed m/min 5:1 | 20:1 | 8 5:1 Nm | kW | 8 20:1 Nm | kW | 6 5:1 Nm | kW | 6 20:1 Nm | kW | 4 5:1 Nm | kW | 4 20:1 Nm | kW | 3 5:1 Nm | kW | 3 20:1 Nm | kW | 1 5:1 Nm | kW | 1 20:1 Nm | kW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2800 | 5,6 | 1,4 | *5,72* | *1,64* | *2,08* | *0,6* | *4,3* | *1,23* | *1,56* | *0,45* | *2,86* | *0,82* | *1,04* | *0,3* | *2,15* | *0,62* | 0,78 | 0,23 | 0,72 | 0,21 | 0,2 | 0,08 |
| 1500 | 3,0 | 0,75 | *5,72* | *0,88* | *2,08* | *0,32* | *4,3* | *0,66* | 1,56 | 0,24 | *2,86* | *0,44* | 1,04 | 0,16 | 2,15 | 0,33 | 0,78 | 0,12 | 0,72 | 0,11 | 0,2 | 0,04 |
| 1000 | 2,5 | 0,5 | *5,72* | *0,59* | 2,08 | 0,22 | *4,3* | *0,44* | 1,56 | 0,16 | *2,86* | *0,3* | 1,04 | 0,11 | 2,15 | 0,22 | 0,78 | 0,08 | 0,72 | 0,08 | 0,2 | 0,03 |
| 750 | 1,5 | 0,38 | *5,72* | *0,44* | 2,08 | 0,16 | *4,3* | *0,33* | 1,56 | 0,12 | 2,86 | 0,22 | 1,04 | 0,08 | 2,15 | 0,17 | 0,78 | 0,06 | 0,72 | 0,06 | 0,2 | 0,02 |
| 500 | 1,0 | 0,25 | *5,72* | *0,3* | 2,08 | 0,11 | 4,3 | 0,22 | 1,56 | 0,08 | 2,86 | 0,15 | 1,04 | 0,06 | 2,15 | 0,11 | 0,78 | 0,04 | 0,72 | 0,04 | 0,2 | 0,02 |
| 200 | 0,4 | 0,1 | 5,72 | 0,12 | 2,08 | 0,05 | 4,3 | 0,09 | 1,56 | 0,04 | 2,86 | 0,06 | 1,04 | 0,03 | 2,15 | 0,05 | 0,78 | 0,02 | 0,72 | 0,02 | 0,2 | 0,01 |

**Technical specifications**

| | |
|---|---|
| max. lifting power | 10 kN |
| gear reduction | 5:1 / 20:1 |
| dimension of spindle | Tr22x5 / Tr22x10P5 |
| start-up moment | table entry x 1,3 |
| casing material | GJS400-15 |
| weight without lifting (kg) | 3,2 |
| weight of spindle per 100mm lifting (kg) | 0,23 |
| lubrication | grease |
| quantity of lubricat (kg) | 0,04 |
| max. driving power (duty cycle 20%/h) | 0,4 kW |
| max. driving power (duty cycle 10%/h) | 0,6 kW |

# Screw jack SG 0015

**ENZFELDER GmbH.**
WERK ENZESFELD:
A-2551 ENZESFELD, EICHENGASSE 36
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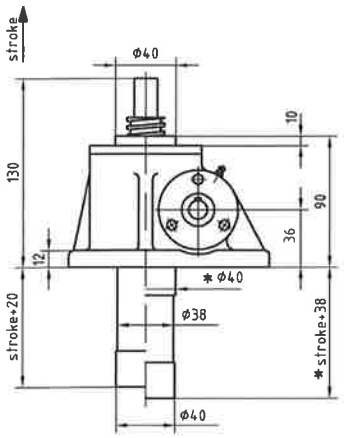
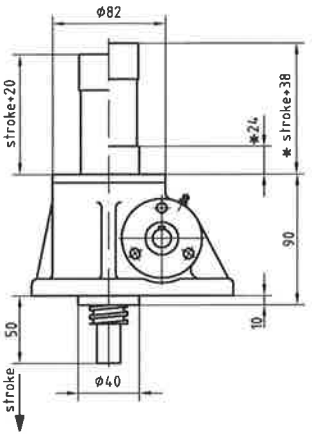
Fax.:++43(0)2256/81287-95
E-Mail: office@enzfelder.at
Internet: www.enzfelder.at

## Basic type (G)

### above (0)

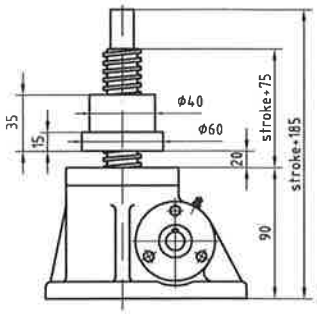



### below (U)

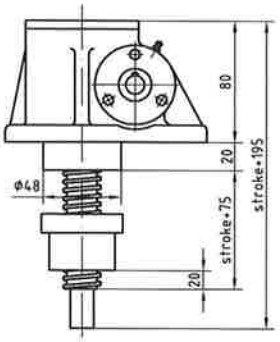


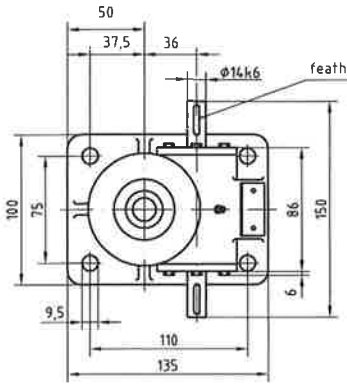

## Traveling nut type (L)

### above (0)



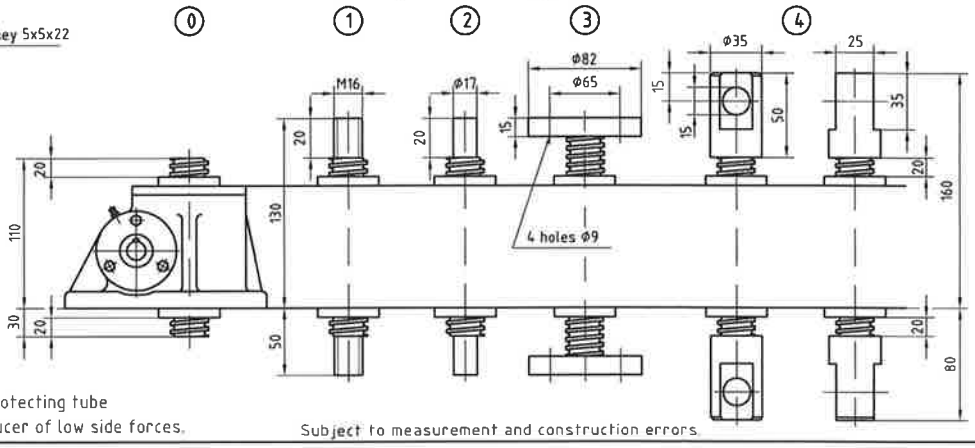

### below (U)




## Spindle noses

Spindle noses 5 and 6 (page 28)




( ) see order ID on page 5 to 8

* Measurements for 2nd guide ring with protecting tube
The second guide ring is used as transducer of low side forces.

Subject to measurement and construction errors.

### Tr 24x6 single-thread lifting power in kN

6:1 = 1,0mm/R
25:1 = 0,24mm/R

| $n_1$ min$^{-1}$ | lift. speed m/min 6:1 | lift. speed m/min 25:1 | 15 6:1 Nm | 15 6:1 kW | 15 25:1 Nm | 15 25:1 kW | 12 6:1 Nm | 12 6:1 kW | 12 25:1 Nm | 12 25:1 kW | 8 6:1 Nm | 8 6:1 kW | 8 25:1 Nm | 8 25:1 kW | 5 6:1 Nm | 5 6:1 kW | 5 25:1 Nm | 5 25:1 kW | 3 6:1 Nm | 3 6:1 kW | 3 25:1 Nm | 3 25:1 kW | 1 6:1 Nm | 1 6:1 kW | 1 25:1 Nm | 1 25:1 kW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2800 | 2,80 | 0,67 | *7,23* | *2,08* | *2,86* | *0,82* | *5,78* | *1,66* | *2,29* | *0,66* | *3,86* | *1,11* | *1,52* | *0,44* | *2,41* | *0,7* | 0,95 | 0,28 | *1,45* | *0,42* | 0,57 | 0,17 | 0,48 | 0,14 | 0,19 | 0,07 |
| 1500 | 1,50 | 0,36 | *7,23* | *1,11* | *2,86* | *0,45* | *5,78* | *0,9* | *2,29* | *0,36* | *3,86* | *0,6* | 1,52 | 0,23 | *2,41* | *0,37* | 0,95 | 0,16 | 1,45 | 0,23 | 0,57 | 0,11 | 0,48 | 0,09 | 0,19 | 0,06 |
| 1000 | 1,00 | 0,24 | *7,23* | *0,74* | 2,86 | 0,3 | *5,78* | *0,6* | 2,29 | 0,24 | *3,86* | *0,4* | 1,52 | 0,16 | 2,41 | 0,25 | 0,95 | 0,11 | 1,45 | 0,15 | 0,57 | 0,08 | 0,48 | 0,07 | 0,19 | 0,06 |
| 750 | 0,75 | 0,18 | *7,23* | *0,56* | 2,86 | 0,22 | *5,78* | *0,45* | 2,29 | 0,18 | 3,86 | 0,3 | 1,52 | 0,12 | 2,41 | 0,2 | 0,95 | 0,08 | 1,45 | 0,12 | 0,57 | 0,06 | 0,48 | 0,06 | 0,19 | 0,06 |
| 500 | 0,50 | 0,12 | *7,23* | *0,37* | 2,86 | 0,15 | 5,78 | 0,3 | 2,29 | 0,12 | 3,86 | 0,2 | 1,52 | 0,09 | 2,41 | 0,13 | 0,95 | 0,06 | 1,45 | 0,09 | 0,57 | 0,06 | 0,48 | 0,06 | 0,19 | 0,06 |
| 200 | 0,20 | 0,05 | 7,23 | 0,15 | 2,86 | 0,08 | 5,78 | 0,12 | 2,29 | 0,06 | 3,86 | 0,1 | 1,52 | 0,06 | 2,41 | 0,07 | 0,95 | 0,06 | 1,45 | 0,06 | 0,57 | 0,06 | 0,48 | 0,06 | 0,19 | 0,06 |

RPM, power demand and admissible lifting speed at a reduction of 10:1 and 20:1 single-thread and double-thread spindle actuated, apply to the dynamic lifting power and a 20%/h or 30%/10min duty cycle at 20°C.
In the range of the spaces containing italics (above the lines) the spindle gears are overheated, the surface pressure in the thread is too high. We do not furnish a guarantee in this area.
However, it is feasible to transmit higher powers at a reduced duty cycle, or lower powers at a higher temperature (see preselection table, page 4).
Please ask for further information.

For lifting speeds higher than those given in the tables, also oil-lubricated ball bearing spindles or special reductions are available.

### Tr 24x12P6 double-thread lifting power in kN

6:1 = 2,0mm/R
25:1 = 0,48mm/R

| $n_1$ min$^{-1}$ | lift. speed m/min 6:1 | lift. speed m/min 25:1 | 12 6:1 Nm | 12 6:1 kW | 12 25:1 Nm | 12 25:1 kW | 10 6:1 Nm | 10 6:1 kW | 10 25:1 Nm | 10 25:1 kW | 8 6:1 Nm | 8 6:1 kW | 8 25:1 Nm | 8 25:1 kW | 5 6:1 Nm | 5 6:1 kW | 5 25:1 Nm | 5 25:1 kW | 3 6:1 Nm | 3 6:1 kW | 3 25:1 Nm | 3 25:1 kW | 1 6:1 Nm | 1 6:1 kW | 1 25:1 Nm | 1 25:1 kW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2800 | 5,60 | 1,34 | *8,48* | *2,44* | *3,27* | *0,94* | *7,07* | *2,03* | *2,72* | *0,78* | *5,65* | *1,65* | *2,18* | *0,62* | *3,53* | *1,1* | *1,36* | *0,39* | *2,12* | *0,62* | 0,82 | 0,24 | 0,71 | 0,21 | 0,27 | 0,09 |
| 1500 | 3,00 | 0,72 | *8,48* | *1,31* | *3,27* | *0,51* | *7,07* | *1,09* | *2,72* | *0,42* | *5,65* | *0,87* | 2,18 | 0,34 | *3,53* | *0,55* | 1,36 | 0,21 | 2,12 | 0,33 | 0,82 | 0,13 | 0,71 | 0,11 | 0,27 | 0,06 |
| 1000 | 2,00 | 0,48 | *8,48* | *0,87* | 3,27 | 0,34 | *7,07* | *0,73* | 2,72 | 0,28 | *5,65* | *0,58* | 2,18 | 0,23 | *3,53* | *0,36* | 1,36 | 0,15 | 2,12 | 0,22 | 0,82 | 0,1 | 0,71 | 0,08 | 0,27 | 0,06 |
| 750 | 1,50 | 0,36 | *8,48* | *0,66* | 3,27 | 0,26 | *7,07* | *0,55* | 2,72 | 0,22 | *5,65* | *0,44* | 2,18 | 0,17 | 3,53 | 0,28 | 1,36 | 0,11 | 2,12 | 0,17 | 0,82 | 0,07 | 0,71 | 0,06 | 0,27 | 0,06 |
| 500 | 1,00 | 0,24 | *8,48* | *0,44* | 3,27 | 0,17 | *7,07* | *0,37* | 2,72 | 0,15 | 5,65 | 0,29 | 2,18 | 0,13 | 3,53 | 0,19 | 1,36 | 0,08 | 2,12 | 0,12 | 0,82 | 0,06 | 0,71 | 0,06 | 0,27 | 0,06 |
| 200 | 0,40 | 0,10 | 8,48 | 0,18 | 3,27 | 0,08 | 7,07 | 0,15 | 2,72 | 0,07 | 5,65 | 0,12 | 2,18 | 0,06 | 3,53 | 0,09 | 1,36 | 0,06 | 2,12 | 0,06 | 0,82 | 0,06 | 0,71 | 0,06 | 0,27 | 0,06 |

### Technical specifications

| | |
|---|---|
| max. lifting power | 15 kN |
| gear reduction | 6:1 / 25:1 |
| dimension of spindle | Tr24x6 / Tr24x12P6 |
| start-up moment | table entry x 1,3 |
| casing material | GJS400-15 |
| weight without lifting (kg) | 3,2 |
| weight of spindle per 100mm lifting (kg) | 0,3 |
| lubricant | grease |
| quantity of lubricant (kg) | 0,1 |
| max. driving power (duty cycle 20%/h) | 0,35 kW |
| max. driving power (duty cycle 10%/h) | 0,46 kW |

# Screw jack SG 0020

**ENZFELDER GmbH.**
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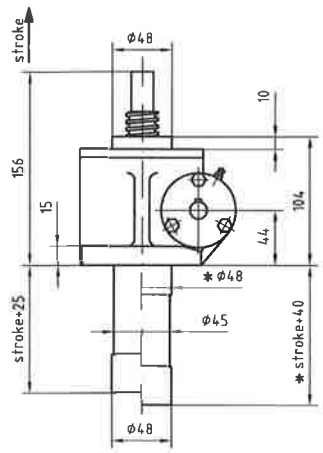
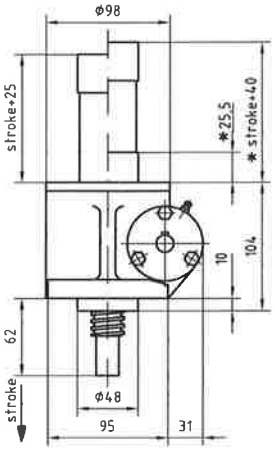
Internet: www.enzfelder.at

## Basic type (G)

### above (O)

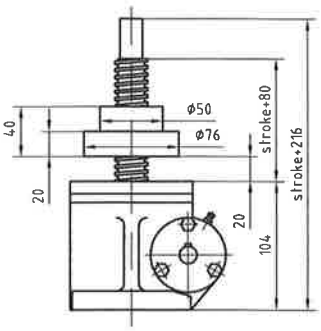



### below (U)

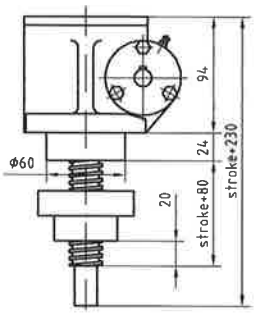



## Traveling nut type (L)

### above (O)

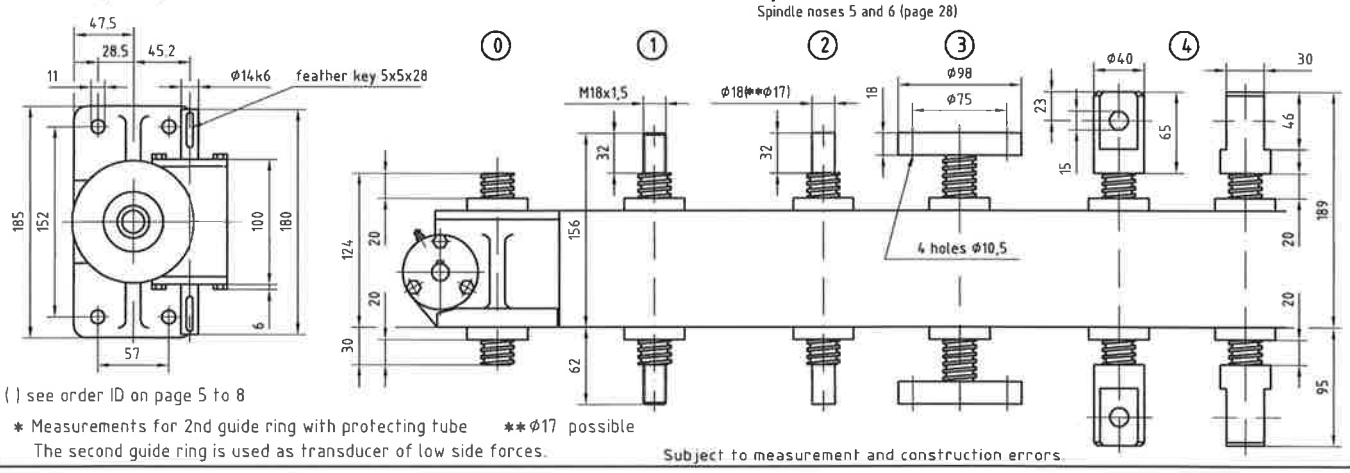



### below (U)




## Spindle noses

Spindle noses 5 and 6 (page 28)




( ) see order ID on page 5 to 8

* Measurements for 2nd guide ring with protecting tube **Ø17 possible
The second guide ring is used as transducer of low side forces.

Subject to measurement and construction errors.

## Tr 26x6 single-thread lifting power in kN

6:1 = 1,0mm/R
24:1 = 0,25mm/R

| $n_1$ | lift. speed m/min | | 20 | | | | 15 | | | | 10 | | | | 8 | | | | 5 | | | | 2 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 6:1 | 24:1 | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | |
| min$^{-1}$ | | | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW |
| 2800 | 2,80 | 0,70 | *9,8* | *2,86* | *4,1* | *1,2* | *7,35* | *2,15* | *2,14* | *0,9* | *4,9* | *1,44* | *1,43* | *0,6* | *3,92* | *1,15* | 1,14 | 0,48 | *2,45* | *0,72* | 0,71 | 0,3 | 0,98 | 0,29 | 0,28 | 0,12 |
| 1500 | 1,50 | 0,375 | *9,8* | *1,53* | *4,1* | *0,65* | *7,35* | *1,15* | 2,14 | 0,48 | *4,9* | *0,77* | 1,43 | 0,32 | *3,92* | *0,61* | 1,14 | 0,26 | 2,45 | 0,38 | 0,71 | 0,16 | 0,98 | 0,16 | 0,28 | 0,08 |
| 1000 | 1,00 | 0,25 | *9,8* | *1,02* | 4,1 | 0,43 | *7,35* | *0,77* | 2,14 | 0,32 | *4,9* | *0,51* | 1,43 | 0,22 | 3,92 | 0,41 | 1,14 | 0,18 | 2,45 | 0,26 | 0,71 | 0,12 | 0,98 | 0,11 | 0,28 | 0,06 |
| 750 | 0,75 | 0,19 | *9,8* | *0,77* | 4,1 | 0,33 | *7,35* | *0,58* | 2,14 | 0,25 | 4,9 | 0,38 | 1,43 | 0,16 | 3,92 | 0,31 | 1,14 | 0,13 | 2,45 | 0,19 | 0,71 | 0,09 | 0,98 | 0,09 | 0,28 | 0,06 |
| 500 | 0,50 | 0,125 | 9,8 | 0,51 | 4,1 | 0,22 | 7,35 | 0,39 | 2,14 | 0,16 | 4,9 | 0,26 | 1,43 | 0,12 | 3,92 | 0,22 | 1,14 | 0,1 | 2,45 | 0,13 | 0,71 | 0,07 | 0,98 | 0,07 | 0,28 | 0,06 |
| 200 | 0,20 | 0,05 | 9,8 | 0,21 | 4,1 | 0,1 | 7,35 | 0,16 | 2,14 | 0,08 | 4,9 | 0,11 | 1,43 | 0,06 | 3,92 | 0,09 | 1,14 | 0,06 | 2,45 | 0,06 | 0,71 | 0,06 | 0,98 | 0,06 | 0,28 | 0,06 |

RPM, power demand and admissible lifting speed at a reduction of 10:1 and 20:1 single-thread and double-thread spindle actuated, apply to the dynamic lifting power and a 20%/h or 30%/10min duty cycle at 20°C.
In the range of the spaces containing italics (above the lines) the spindle gears are overheated, the surface pressure in the thread is too high. We do not furnish a guarantee in this area.
However, it is feasible to transmit higher powers at a reduced duty cycle, or lower powers at a higher temperature (see preselection table, page 4).
Please ask for further information.

For lifting speeds higher than those given in the tables, also oil-lubricated ball bearing spindles or special reductions are available.

## Tr 26x12P6 double-thread lifting power in kN

6:1 = 2,0mm/R
24:1 = 0,5mm/R

| $n_1$ | lift. speed m/min | | 16 | | | | 12 | | | | 8 | | | | 6 | | | | 4 | | | | 2 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 6:1 | 24:1 | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | |
| min$^{-1}$ | | | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW |
| 2800 | 5,60 | 1,40 | *12,1* | *3,48* | *4,9* | *1,4* | *9,09* | *2,61* | *3,68* | *1,06* | *6,06* | *1,8* | *2,45* | *0,7* | *4,55* | *1,3* | *1,83* | *0,53* | *3,03* | *0,9* | 1,23 | 0,35 | 1,51 | 0,45 | 0,62 | 0,18 |
| 1500 | 3,00 | 0,75 | *12,1* | *1,86* | *4,9* | *0,75* | *9,09* | *1,4* | *3,68* | *0,57* | *6,06* | *0,93* | 2,45 | 0,37 | *4,55* | *0,7* | 1,83 | 0,28 | 3,03 | 0,46 | 1,23 | 0,19 | 1,51 | 0,23 | 0,62 | 0,1 |
| 1000 | 2,00 | 0,50 | *12,1* | *1,25* | 4,9 | 0,5 | *9,09* | *0,93* | 3,68 | 0,38 | *6,06* | *0,62* | 2,45 | 0,25 | 4,55 | 0,47 | 1,83 | 0,19 | 3,03 | 0,31 | 1,23 | 0,13 | 1,51 | 0,16 | 0,62 | 0,08 |
| 750 | 1,50 | 0,375 | *12,1* | *0,93* | 4,9 | 0,38 | *9,09* | *0,7* | 3,68 | 0,28 | 6,06 | 0,47 | 2,45 | 0,19 | 4,55 | 0,35 | 1,83 | 0,15 | 3,03 | 0,23 | 1,23 | 0,1 | 1,51 | 0,13 | 0,62 | 0,06 |
| 500 | 1,00 | 0,25 | *12,1* | *0,62* | 4,9 | 0,25 | 9,09 | 0,46 | 3,68 | 0,19 | 6,06 | 0,31 | 2,45 | 0,13 | 4,55 | 0,23 | 1,83 | 0,1 | 3,03 | 0,16 | 1,23 | 0,08 | 1,51 | 0,09 | 0,62 | 0,06 |
| 200 | 0,40 | 0,10 | 12,1 | 0,25 | 4,9 | 0,1 | 9,09 | 0,19 | 3,68 | 0,09 | 6,06 | 0,13 | 2,45 | 0,07 | 4,55 | 0,1 | 1,83 | 0,06 | 3,03 | 0,07 | 1,23 | 0,06 | 1,51 | 0,06 | 0,62 | 0,06 |

### Technical specifications

| | |
|---|---|
| max. lifting power | 20 kN |
| gear reduction | 6:1 / 24:1 |
| dimension of spindle | Tr26x6 / Tr26x12P6 |
| start-up moment | table entry x 1,3 |
| casing material | GJS400-15 |
| weight without lifting (kg) | 7,8 |
| weight of spindle per 100mm lifting (kg) | 0,34 |
| lubricant | grease |
| quantity of lubricant (kg) | 0,15 |
| max. driving power (duty cycle 20%/h) | 0,5 kW |
| max. driving power (duty cycle 10%/h) | 0,7 kW |

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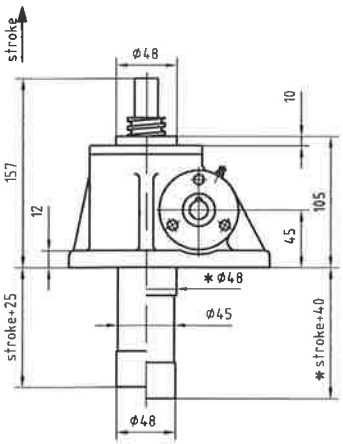
Internet: www.enzfelder.at

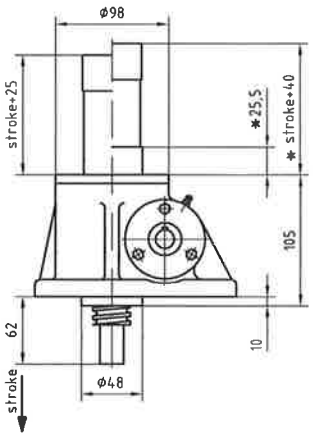
# Screw jack SG 0030

## Basic type (G)

### above (0)

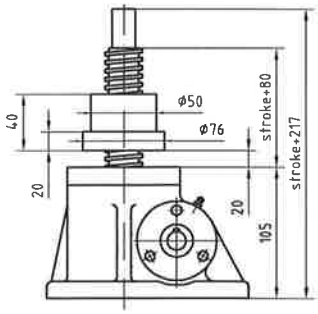



### below (U)

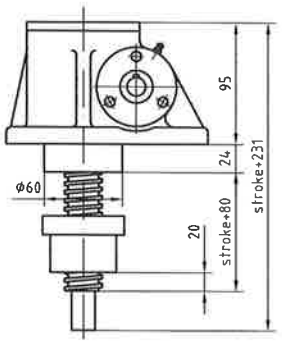



## Traveling nut type (L)

### above (0)

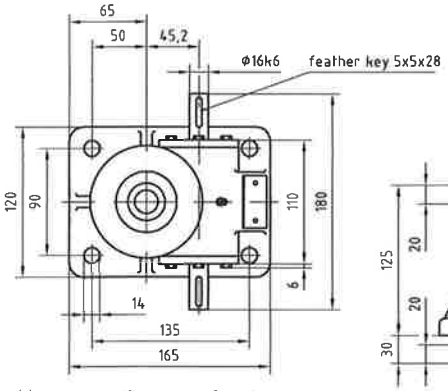


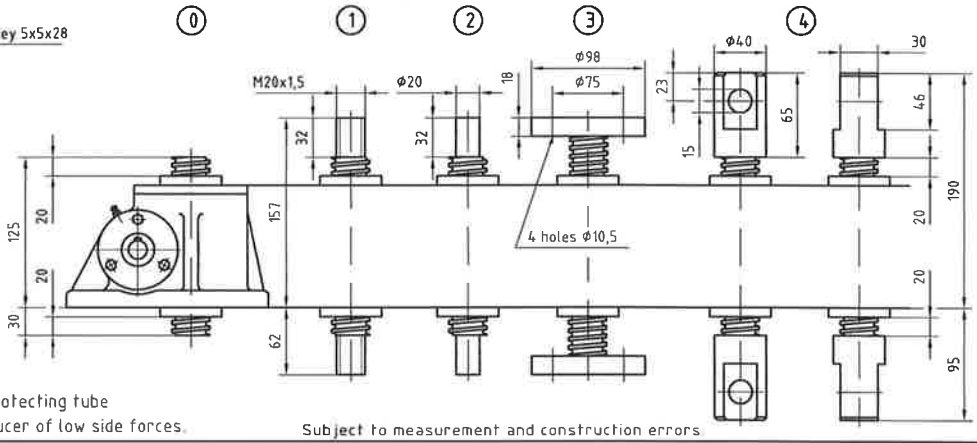

### below (U)




## Spindle noses

Spindle noses 5 and 6 (page 28)




( ) see order ID on page 5 to 8

* Measurements for 2nd guide ring with protecting tube
The second guide ring is used as transducer of low side forces.

Subject to measurement and construction errors.

## Tr 30x6 single-thread lifting power in kN

6:1 = 1,0mm/R
24:1 = 0,25mm/R

| $n_1$ | lift. speed m/min | | 30 | | | | 20 | | | | 15 | | | | 10 | | | | 5 | | | | 2 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | |
| min$^{-1}$ | 6:1 | 24:1 | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW |
| 2800 | 2,80 | 0,70 | *16,5* | *4,73* | *6,9* | *2,02* | *11* | *3,15* | *4,6* | *1,35* | *8,25* | *2,37* | *3,45* | *1* | *5,5* | *1,57* | *2,3* | *0,67* | *2,75* | *0,79* | 1,15 | 0,34 | 1,1 | 0,32 | 0,46 | 0,15 |
| 1500 | 1,50 | 0,375 | *16,5* | *2,53* | *6,9* | *1,08* | *11* | *1,69* | *4,6* | *0,72* | *8,25* | *1,27* | 3,45 | 0,54 | *5,5* | *0,85* | 2,3 | 0,36 | 2,75 | 0,42 | 1,15 | 0,18 | 1,1 | 0,17 | 0,46 | 0,09 |
| 1000 | 1,00 | 0,25 | *16,5* | *1,69* | *6,9* | *0,72* | *11* | *1,13* | 4,6 | 0,48 | *8,25* | *0,84* | 3,45 | 0,36 | 5,5 | 0,56 | 2,3 | 0,24 | 2,75 | 0,28 | 1,15 | 0,13 | 1,1 | 0,12 | 0,46 | 0,07 |
| 750 | 0,75 | 0,19 | *16,5* | *1,26* | 6,9 | 0,55 | *11* | *0,84* | 4,6 | 0,37 | *8,25* | *0,63* | 3,45 | 0,28 | 5,5 | 0,42 | 2,3 | 0,18 | 2,75 | 0,21 | 1,15 | 0,10 | 1,1 | 0,10 | 0,46 | 0,06 |
| 500 | 0,50 | 0,125 | *16,5* | *0,84* | 6,9 | 0,36 | 11 | 0,56 | 4,6 | 0,24 | 8,25 | 0,42 | 3,45 | 0,18 | 5,5 | 0,28 | 2,3 | 0,12 | 2,75 | 0,14 | 1,15 | 0,08 | 1,1 | 0,07 | 0,46 | 0,06 |
| 200 | 0,20 | 0,05 | 16,5 | 0,34 | 6,9 | 0,15 | 11 | 0,23 | 4,6 | 0,11 | 8,25 | 0,17 | 3,45 | 0,09 | 5,5 | 0,12 | 2,3 | 0,07 | 2,75 | 0,07 | 1,15 | 0,06 | 1,1 | 0,06 | 0,46 | 0,06 |

## Tr 30x12P6 double-thread lifting power in kN

6:1 = 2,0mm/R
24:1 = 0,5mm/R

| $n_1$ | lift. speed m/min | | 24 | | | | 18 | | | | 12 | | | | 8 | | | | 5 | | | | 2 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | |
| min$^{-1}$ | 6:1 | 24:1 | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW |
| 2800 | 5,60 | 1,40 | *18,2* | *5,35* | *7,64* | *2,19* | *13,7* | *4* | *5,7* | *1,64* | *9,1* | *2,9* | *3,8* | *1,09* | *6,1* | *1,8* | *2,6* | *0,73* | *3,8* | *1,12* | 1,6 | 0,46 | 1,5 | 0,45 | 0,7 | 0,19 |
| 1500 | 3,00 | 0,75 | *18,2* | *2,87* | *7,64* | *1,18* | *13,7* | *2,15* | *5,7* | *0,88* | *9,1* | *1,43* | 3,8 | 0,59 | *6,1* | *0,96* | 2,6 | 0,40 | 3,8 | 0,60 | 1,6 | 0,25 | 1,5 | 0,24 | 0,7 | 0,11 |
| 1000 | 2,00 | 0,50 | *18,2* | *1,91* | *7,64* | *0,78* | *13,7* | *1,43* | 5,7 | 0,59 | *9,1* | *0,96* | 3,8 | 0,40 | *6,1* | *0,64* | 2,6 | 0,26 | 3,8 | 0,40 | 1,6 | 0,17 | 1,5 | 0,16 | 0,7 | 0,08 |
| 750 | 1,50 | 0,375 | *18,2* | *1,43* | 7,64 | 0,59 | *13,7* | *1,08* | 5,7 | 0,44 | *9,1* | *0,72* | 3,8 | 0,30 | 6,1 | 0,48 | 2,6 | 0,20 | 3,8 | 0,30 | 1,6 | 0,13 | 1,5 | 0,12 | 0,7 | 0,07 |
| 500 | 1,00 | 0,25 | *18,2* | *0,96* | 7,64 | 0,40 | *13,7* | *0,71* | 5,7 | 0,30 | 9,1 | 0,48 | 3,8 | 0,20 | 6,1 | 0,32 | 2,6 | 0,13 | 3,8 | 0,20 | 1,6 | 0,10 | 1,5 | 0,09 | 0,7 | 0,06 |
| 200 | 0,40 | 0,10 | 18,2 | 0,38 | 7,64 | 0,20 | 13,7 | 0,29 | 5,7 | 0,13 | 9,1 | 0,20 | 3,8 | 0,10 | 6,1 | 0,14 | 2,6 | 0,07 | 3,8 | 0,10 | 1,6 | 0,06 | 1,5 | 0,07 | 0,7 | 0,06 |

RPM, power demand and admissible lifting speed at a reduction of 10:1 and 20:1 single-thread and double-thread spindle actuated, apply to the dynamic lifting power and a 20%/h or 30%/10min duty cycle at 20°C.
In the range of the spaces containing italics (above the lines) the spindle gears are overheated, the surface pressure in the thread is too high. We do not furnish a guarantee in this area.
However, it is feasible to transmit higher powers at a reduced duty cycle, or lower powers at a higher temperature (see preselection table, page 4).
Please ask for further information.

For lifting speeds higher than those given in the tables, also oil-lubricated ball bearing spindles or special reductions are available.

### Technical specifications

| | |
|---|---|
| max. lifting power | 30 kN |
| gear reduction | 6:1 / 24:1 |
| dimension of spindle | Tr30x6 / Tr30x12P6 |
| start-up moment | table entry x 1,3 |
| casing material | GJS400-15 |
| weight without lifting (kg) | 8,2 |
| weight of spindle per 100mm lifting (kg) | 0,43 |
| lubricant | grease |
| quantity of lubricant (kg) | 0,2 |
| max. driving power (duty cycle 20%/h) | 0,6 kW |
| max. driving power (duty cycle 10%/h) | 0,8 kW |

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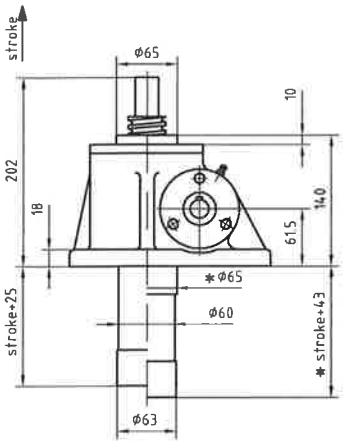
Internet: www.enzfelder.at

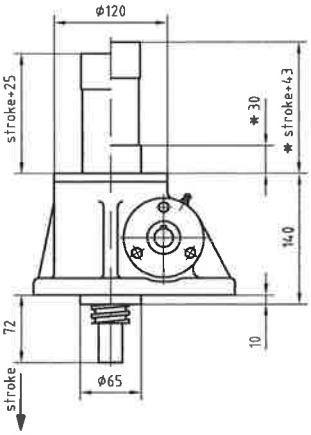
# Screw jack SG 0050

## Basic type (G)

### above (0)

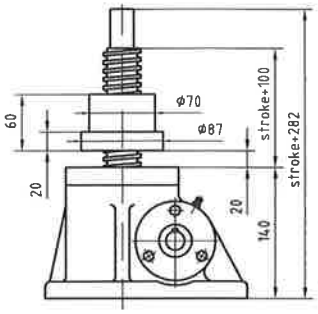



### below (U)

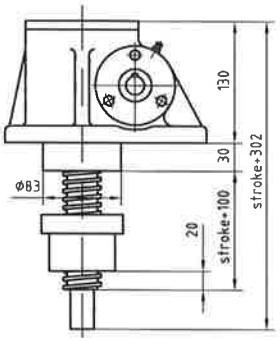



## Traveling nut type (L)

### above (0)

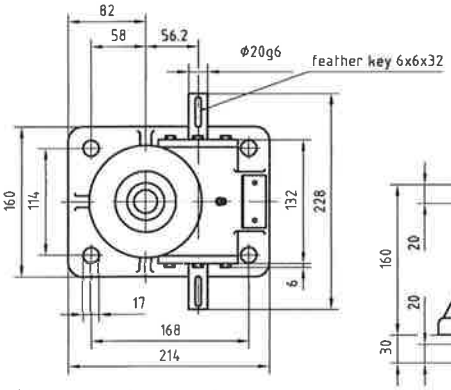


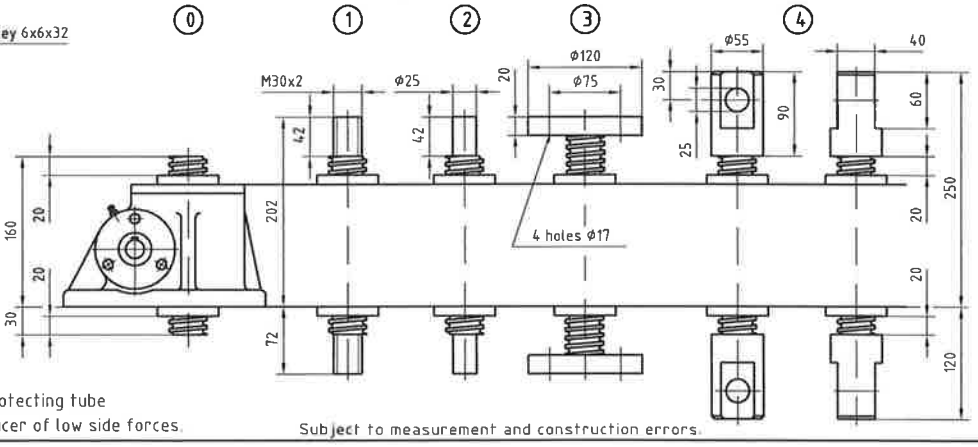

### below (U)




## Spindle noses

Spindle noses 5 and 6 (page 28)




( ) see order ID on page 5 to 8

* Measurements for 2nd guide ring with protecting tube
The second guide ring is used as transducer of low side forces.

Subject to measurement and construction errors.

## Tr 40x9 single-thread lifting power in kN

6:1 = 1,5mm/R
24:1 = 0,375mm/R

| $n_1$ | lift. speed m/min | | 50 | | | | 40 | | | | 30 | | | | 20 | | | | 15 | | | | 10 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 6:1 | 24:1 | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | |
| min$^{-1}$ | | | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW |
| 1800 | 2,70 | 0,67 | *37,3* | *6,9* | *15,3* | *2,82* | *29,8* | *5,52* | *12,2* | *2,26* | *22,4* | *4,13* | *9,18* | *1,7* | *14,9* | *2,75* | 6,12 | 1,13 | *11,2* | *2,07* | 4,59 | 0,85 | *7,46* | *1,37* | 3,06 | 0,57 |
| 1500 | 2,25 | 0,56 | *37,3* | *5,75* | *15,3* | *2,35* | *29,8* | *4,59* | *12,2* | *1,88* | *22,4* | *3,44* | *9,18* | *1,41* | *14,9* | *2,29* | 6,12 | 0,94 | *11,2* | *1,72* | 4,59 | 0,71 | 7,46 | 1,15 | 3,06 | 0,47 |
| 1000 | 1,50 | 0,37 | *37,3* | *3,83* | *15,3* | *1,57* | *29,8* | *3,06* | *12,2* | *1,25* | *22,4* | *2,29* | 9,18 | 0,94 | *14,9* | *1,53* | 6,12 | 0,63 | 11,2 | 1,15 | 4,59 | 0,47 | 7,46 | 0,77 | 3,06 | 0,31 |
| 750 | 1,12 | 0,28 | *37,3* | *2,87* | 15,3 | 1,17 | *29,8* | *2,29* | 12,2 | 0,94 | *22,4* | *1,72* | 9,18 | 0,7 | 14,9 | 1,15 | 6,12 | 0,47 | 11,2 | 0,86 | 4,59 | 0,35 | 7,46 | 0,58 | 3,06 | 0,23 |
| 500 | 0,75 | 0,19 | *37,3* | *1,91* | 15,3 | 0,78 | *29,8* | *1,53* | 12,2 | 0,63 | 22,4 | 1,15 | 9,18 | 0,47 | 14,9 | 0,77 | 6,12 | 0,31 | 11,2 | 0,58 | 4,59 | 0,23 | 7,46 | 0,38 | 3,06 | 0,16 |
| 200 | 0,30 | 0,075 | 37,3 | 0,77 | 15,3 | 0,31 | 29,8 | 0,61 | 12,2 | 0,26 | 22,4 | 0,45 | 9,18 | 0,19 | 14,9 | 0,3 | 6,12 | 0,13 | 11,2 | 0,23 | 4,59 | 0,09 | 7,46 | 0,15 | 3,06 | 0,07 |

RPM, power demand and admissible lifting speed at a reduction of 10:1 and 20:1 single-thread and double-thread spindle actuated, apply to the dynamic lifting power and a 20%/h or 30%/10min duty cycle at 20°C.
In the range of the spaces containing italics (above the lines) the spindle gears are overheated, the surface pressure in the thread is too high. We do not furnish a guarantee in this area.
However, it is feasible to transmit higher powers at a reduced duty cycle, or lower powers at a higher temperature (see preselection table, page 4).
Please ask for further information.

For lifting speeds higher than those given in the tables, also oil-lubricated ball bearing spindles or special reductions are available.

## Tr 40x18P9 double-thread lifting power in kN

6:1 = 3,0mm/R
24:1 = 0,75mm/R

| $n_1$ | lift. speed m/min | | 40 | | | | 30 | | | | 20 | | | | 15 | | | | 10 | | | | 5 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 6:1 | 24:1 | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | | 6:1 | | 24:1 | |
| min$^{-1}$ | | | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW |
| 1800 | 5,40 | 1,35 | *43,4* | *8* | *17,7* | *3,26* | *32* | *6* | *13,3* | *2,45* | *21,7* | *4* | *8,84* | *1,63* | *16,3* | *3* | *6,63* | *1,23* | *10,9* | *2* | 4,42 | 0,82 | 5,42 | 1,0 | 2,21 | 0,41 |
| 1500 | 4,50 | 1,12 | *43,4* | *6,68* | *17,7* | *2,72* | *32* | *5* | *13,3* | *2,04* | *21,7* | *3,34* | *8,84* | *1,36* | *16,3* | *2,5* | 6,63 | 1,02 | *10,9* | *1,67* | 4,42 | 0,68 | 5,42 | 0,84 | 2,21 | 0,35 |
| 1000 | 3,00 | 0,75 | *43,4* | *4,46* | *17,7* | *1,82* | *32* | *3,34* | *13,3* | *1,36* | *21,7* | *2,23* | 8,84 | 0,9 | *16,3* | *1,67* | 6,63 | 0,68 | 10,9 | 1,11 | 4,42 | 0,45 | 5,42 | 0,56 | 2,21 | 0,23 |
| 750 | 2,25 | 0,56 | *43,4* | *3,34* | *17,7* | *1,36* | *32* | *2,5* | 13,3 | 1,02 | *21,7* | *1,67* | 8,84 | 0,68 | *16,3* | *1,25* | 6,63 | 0,51 | 10,9 | 0,84 | 4,42 | 0,39 | 5,42 | 0,42 | 2,21 | 0,2 |
| 500 | 1,50 | 0,37 | *43,4* | *2,23* | 17,7 | 0,9 | *32* | *1,67* | 13,3 | 0,68 | 21,7 | 1,11 | 8,84 | 0,45 | 16,3 | 0,84 | 6,63 | 0,34 | 10,9 | 0,56 | 4,42 | 0,23 | 5,42 | 0,28 | 2,21 | 0,11 |
| 200 | 0,60 | 0,15 | 43,4 | 0,89 | 17,7 | 0,38 | 32 | 0,67 | 13,3 | 0,28 | 21,7 | 0,44 | 8,84 | 0,2 | 16,3 | 0,34 | 6,63 | 0,14 | 10,9 | 0,22 | 4,42 | 0,1 | 5,42 | 0,11 | 2,21 | 0,06 |

### Technical specifications

| | |
|---|---|
| max. lifting power | 50 kN |
| gear reduction | 6:1 / 24:1 |
| dimension of spindle* | Tr40x9 / Tr40x18P9 |
| start-up moment | table entry x 1,3 |
| casing material | GJS400-15 |
| weight without lifting (kg) | 18 |
| weight of spindle per 100mm lifting (kg) | 0,8 |
| lubricant | grease |
| quantity of lubricant (kg) | 0,35 |
| max. driving power (duty cycle 20%/h) | 1,2 kW |
| max. driving power (duty cycle 10%/h) | 1,6 kW |
| *also available with spindle Tr40x7 or Tr40x14/7 | |

ENZFELDER GmbH.
WERK ENZESFELD:
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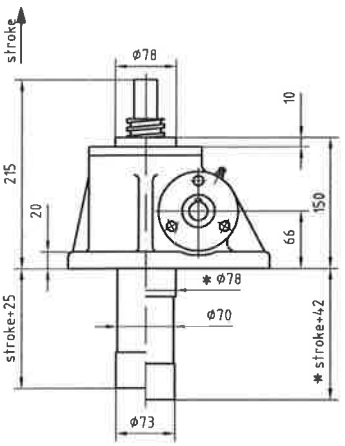
Fax.:++43(0)2256/81287-95
E-Mail: office@enzfelder.at
Internet: www.enzfelder.at

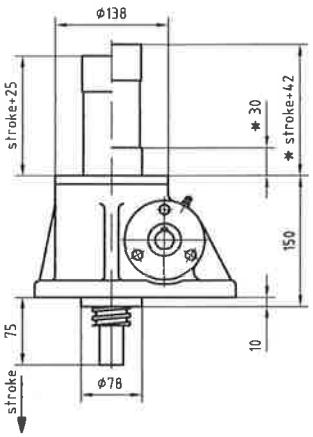
# Screw jack SG 0100

## Basic type (G)

### above (O)

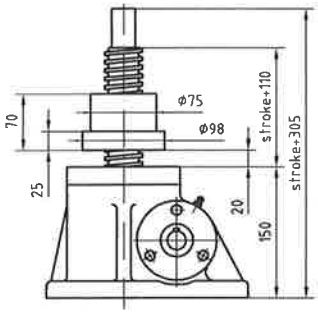



### below (U)

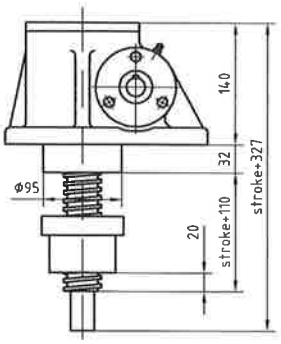


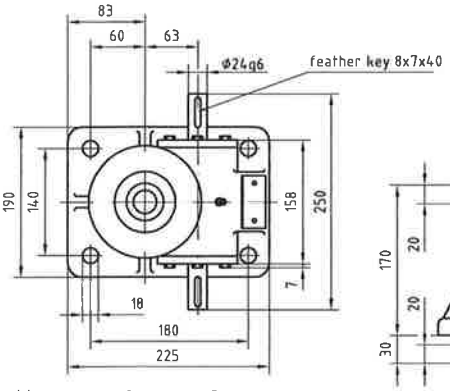

## Traveling nut type (L)

### above (O)



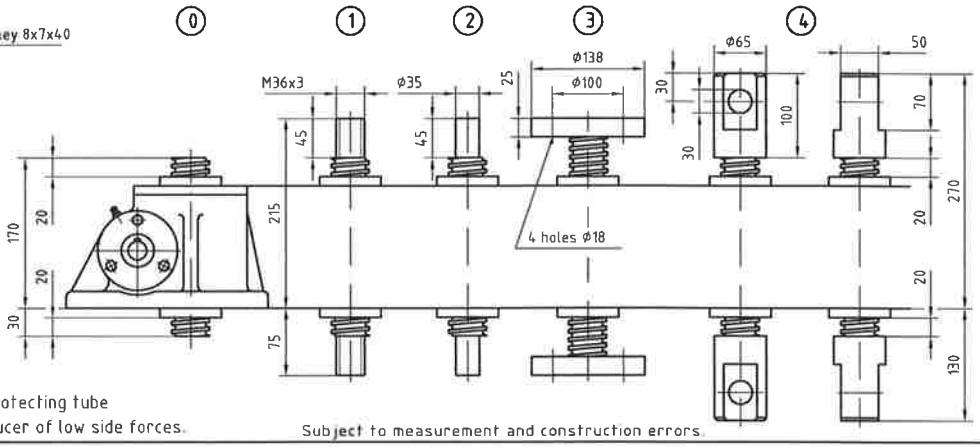

### below (U)




## Spindle noses

Spindle noses 5 and 6 (page 28)




( ) see order ID on page 5 to 8

* Measurements for 2nd guide ring with protecting tube
The second guide ring is used as transducer of low side forces.

Subject to measurement and construction errors.

## Tr 55x12 single-thread lifting power in kN

8:1 = 1,5mm/R
24:1 = 0,5mm/R

| $n_1$ | lift. speed m/min | | 100 | | | | 80 | | | | 60 | | | | 40 | | | | 20 | | | | 10 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 8:1 | 24:1 | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | |
| min$^{-1}$ | | | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW |
| 1800 | 2,70 | 0,90 | *81* | *15,2* | *39* | *7,4* | *64,8* | *12,2* | *31,2* | *5,9* | *48,6* | *9,1* | *23,4* | *4,4* | *32,4* | *6,1* | *15,6* | *3* | *16,2* | *3,1* | 7,8 | 1,5 | 8,1 | 1,5 | 3,9 | 0,75 |
| 1500 | 2,25 | 0,75 | *81* | *12,7* | *39* | *6,1* | *64,8* | *10,2* | *31,2* | *4,9* | *48,6* | *7,6* | *23,4* | *3,7* | *32,4* | *5,1* | *15,6* | *2,5* | *16,2* | *2,5* | 7,8 | 1,3 | 8,1 | 1,3 | 3,9 | 0,62 |
| 1000 | 1,50 | 0,50 | *81* | *8,5* | *39* | *4,1* | *64,8* | *6,8* | *31,2* | *3,3* | *48,6* | *5,1* | *23,4* | *2,5* | *32,4* | *3,4* | 15,6 | 1,6 | 16,2 | 1,7 | 7,8 | 0,8 | 8,1 | 0,85 | 3,9 | 0,42 |
| 750 | 1,125 | 0,375 | *81* | *6,4* | *39* | *3,1* | *64,8* | *5,1* | *31,2* | *2,5* | *48,6* | *3,8* | 23,4 | 1,9 | *32,4* | *2,5* | 15,6 | 1,3 | 16,2 | 1,3 | 7,8 | 0,62 | 8,1 | 0,63 | 3,9 | 0,31 |
| 500 | 0,75 | 0,25 | *81* | *4,2* | 39 | 2 | *64,8* | *3,4* | 31,2 | 1,65 | *48,6* | *2,5* | 23,4 | 1,3 | 32,4 | 1,7 | 15,6 | 0,82 | 16,2 | 0,85 | 7,8 | 0,41 | 8,1 | 0,42 | 3,9 | 0,21 |
| 200 | 0,30 | 0,10 | 81 | 1,7 | 39 | 0,82 | 64,8 | 1,4 | 31,2 | 0,65 | 48,6 | 1 | 23,4 | 0,5 | 32,4 | 0,68 | 15,6 | 0,33 | 16,2 | 0,35 | 7,8 | 0,17 | 8,1 | 0,18 | 3,9 | 0,10 |

## Tr 55x24P12 double-thread lifting power in kN

8:1 = 3,0mm/R
24:1 = 1,0mm/R

| $n_1$ | lift. speed m/min | | 80 | | | | 60 | | | | 40 | | | | 20 | | | | 10 | | | | 5 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 8:1 | 24:1 | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | |
| min$^{-1}$ | | | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW |
| 1800 | 5,40 | 1,80 | *91,2* | *16,8* | *47,2* | *8,7* | *68,4* | *12,6* | *31,7* | *6,5* | *45,6* | *8,4* | *21,1* | *4,4* | *22,8* | *4,2* | *10,6* | *2,2* | 11,4 | 2,1 | 5,3 | 1,1 | 5,7 | 1,1 | 2,7 | 0,6 |
| 1500 | 4,50 | 1,50 | *91,2* | *14* | *47,2* | *7,3* | *68,4* | *10,5* | *31,7* | *5,5* | *45,6* | *7* | *21,1* | *3,6* | *22,8* | *3,5* | 10,6 | 1,8 | 11,4 | 1,8 | 5,3 | 0,9 | 5,7 | 0,9 | 2,7 | 0,5 |
| 1000 | 3,00 | 1,00 | *91,2* | *9,3* | *47,2* | *4,9* | *68,4* | *7* | *31,7* | *3,6* | *45,6* | *4,7* | *21,1* | *2,4* | *22,8* | *2,3* | 10,6 | 1,2 | 11,4 | 1,2 | 5,3 | 0,6 | 5,7 | 0,6 | 2,7 | 0,4 |
| 750 | 2,25 | 0,75 | *91,2* | *7* | *47,2* | *3,6* | *68,4* | *5,3* | *31,7* | *2,8* | *45,6* | *3,5* | 21,1 | 1,8 | 22,8 | 1,75 | 10,6 | 0,9 | 11,4 | 0,9 | 5,3 | 0,5 | 5,7 | 0,5 | 2,7 | 0,3 |
| 500 | 1,50 | 0,50 | *91,2* | *4,7* | *47,2* | *2,4* | *68,4* | *3,5* | 31,7 | 1,8 | *45,6* | *2,3* | 21,1 | 1,2 | 22,8 | 1,2 | 10,6 | 0,6 | 11,4 | 0,6 | 5,3 | 0,3 | 5,7 | 0,3 | 2,7 | 0,2 |
| 200 | 0,60 | 0,20 | 91,2 | 1,9 | 47,2 | 1,0 | 68,4 | 1,4 | 31,7 | 0,8 | 45,6 | 1,0 | 21,1 | 0,6 | 22,8 | 0,5 | 10,6 | 0,3 | 11,4 | 0,3 | 5,3 | 0,2 | 5,7 | 0,2 | 2,7 | 0,2 |

RPM, power demand and admissible lifting speed at a reduction of 10:1 and 20:1 single-thread and double-thread spindle actuated, apply to the dynamic lifting power and a 20%/h or 30%/10min duty cycle at 20°C.
In the range of the spaces containing italics (above the lines) the spindle gears are overheated, the surface pressure in the thread is too high. We do not furnish a guarantee in this area.
However, it is feasible to transmit higher powers at a reduced duty cycle, or lower powers at a higher temperature (see preselection table, page 4).
Please ask for further information.

For lifting speeds higher than those given in the tables, also oil-lubricated ball bearing spindles or special reductions are available.

### Technical specifications

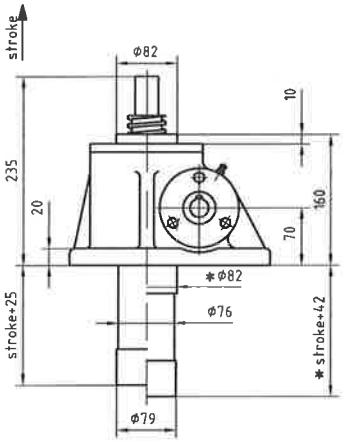
| | |
|---|---|
| max. lifting power | 100 kN |
| gear reduction | 8:1 / 24:1 |
| dimension of spindle | Tr55x12 / Tr55x24P12 |
| start-up moment | table entry x 1,3 |
| casing material | GJS400-15 |
| weight without lifting (kg) | 23 |
| weight of spindle per 100mm lifting (kg) | 1,5 |
| lubricant | grease |
| quantity of lubricant (kg) | 0,6 |
| max. driving power (duty cycle 20%/h) | 2,1 kW |
| max. driving power (duty cycle 10%/h) | 2,8 kW |

# Screw jack SG 0150

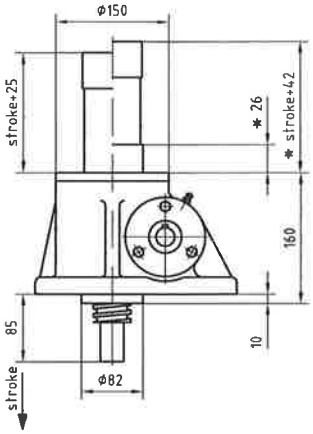
**ENZFELDER GmbH.**
WERK ENZESFELD:
A-2551 ENZESFELD, EICHENGASSE 36
Tel.:++43(0)2256/81287
Fax.:++43(0)2256/81287-95
E-Mail: office@enzfelder.at
Internet: www.enzfelder.at

## Basic type (G)

### above (O)

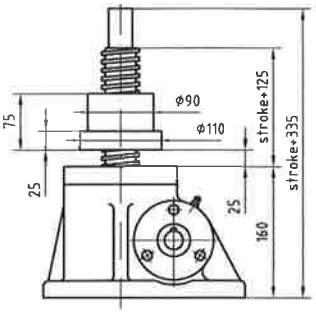



### below (U)

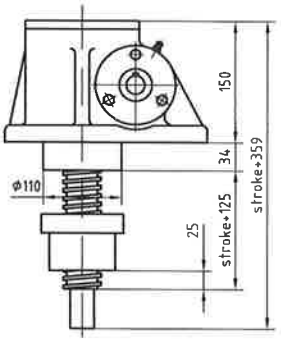



## Traveling nut type (L)

### above (O)

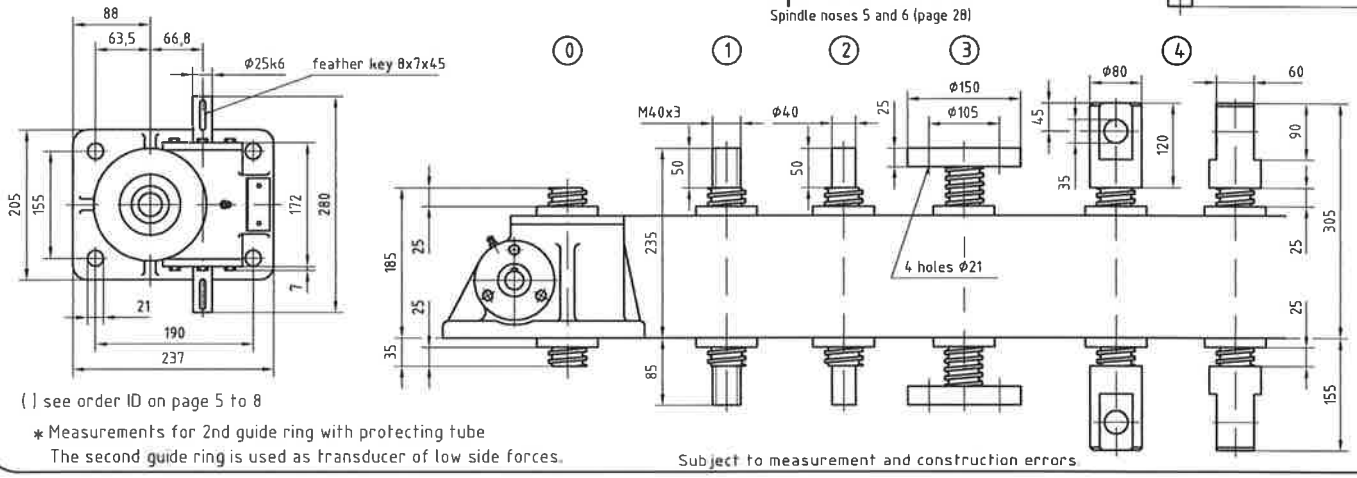



### below (U)




## Spindle noses

Spindle noses 5 and 6 (page 28)




( ) see order ID on page 5 to 8

* Measurements for 2nd guide ring with protecting tube
The second guide ring is used as transducer of low side forces.

Subject to measurement and construction errors.

### Tr 60x12 single-thread lifting power in kN

8:1 = 1,5mm/R
24:1 = 0,5mm/R

| $n_1$ | lift. speed m/min | | 150 | | | | 120 | | | | 100 | | | | 80 | | | | 50 | | | | 20 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 8:1 | 24:1 | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | |
| min$^{-1}$ | | | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW |
| 1500 | 2,25 | 0,75 | *133* | *20,4* | *68,2* | *10,5* | *106* | *16,3* | *54,6* | *8,4* | *89* | *13,6* | *45,5* | *7* | *71* | *10,9* | *36,4* | *5,6* | *44,3* | *6,8* | *22,7* | *3,5* | 17,7 | 2,7 | 9,1 | 1,4 |
| 1000 | 1,50 | 0,50 | *133* | *13,6* | *68,2* | *7,0* | *106* | *10,9* | *54,6* | *5,6* | *89* | *9,1* | *45,5* | *4,7* | *71* | *7,3* | *36,4* | *3,8* | *44,3* | *4,6* | 22,7 | 2,4 | 17,7 | 1,8 | 9,1 | 1,0 |
| 750 | 1,125 | 0,375 | *133* | *10,2* | *68,2* | *5,3* | *106* | *8,2* | *54,6* | *4,2* | *89* | *6,8* | *45,5* | *3,5* | *71* | *5,5* | 36,4 | 2,8 | *44,3* | *3,4* | 22,7 | 1,8 | 17,7 | 1,4 | 9,1 | 0,7 |
| 500 | 0,75 | 0,25 | *133* | *6,8* | *68,2* | *3,5* | *106* | *5,5* | 54,6 | 2,8 | *89* | *4,6* | 45,5 | 2,4 | *71* | *3,7* | 36,4 | 1,9 | 44,3 | 2,3 | 22,7 | 1,2 | 17,7 | 0,9 | 9,1 | 0,5 |
| 320 | 0,48 | 0,16 | *133* | *4,4* | 68,2 | 2,3 | *106* | *3,5* | 54,6 | 1,8 | *89* | *2,9* | 45,5 | 1,5 | 71 | 2,4 | 36,4 | 1,2 | 44,3 | 1,5 | 22,7 | 0,8 | 17,7 | 0,6 | 9,1 | 0,3 |
| 160 | 0,24 | 0,08 | 133 | 2,2 | 68,2 | 1,2 | 106 | 1,8 | 54,6 | 0,9 | 89 | 1,5 | 45,5 | 0,8 | 71 | 1,2 | 36,4 | 0,6 | 44,3 | 0,8 | 22,7 | 0,4 | 17,7 | 0,3 | 9,1 | 0,2 |

RPM, power demand and admissible lifting speed at a reduction of 10:1 and 20:1 single-thread and double-thread spindle actuated, apply to the dynamic lifting power and a 20%/h or 30%/10min duty cycle at 20°C.
In the range of the spaces containing italics (above the lines) the spindle gears are overheated, the surface pressure in the thread is too high. We do not furnish a guarantee in this area.
However, it is feasible to transmit higher powers at a reduced duty cycle, or lower powers at a higher temperature (see preselection table, page 4).
Please ask for further information.

For lifting speeds higher than those given in the tables, also oil-lubricated ball bearing spindles or special reductions are available.

### Tr 60x24P12 double-thread lifting power in kN

8:1 = 3,0mm/R
24:1 = 1,0mm/R

| $n_1$ | lift. speed m/min | | 120 | | | | 100 | | | | 80 | | | | 50 | | | | 20 | | | | 10 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 8:1 | 24:1 | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | |
| min$^{-1}$ | | | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW |
| 1500 | 4,50 | 1,50 | *151* | *23,2* | *77* | *11,8* | *126* | *19,4* | *64,2* | *9,8* | *101* | *15,5* | *51,3* | *7,8* | *62,9* | *9,7* | *32,1* | *4,9* | *25,2* | *3,9* | 12,8 | 2,0 | 12,6 | 2,0 | 6,4 | 1,0 |
| 1000 | 3,00 | 1,00 | *151* | *15,5* | *77* | *7,9* | *126* | *12,9* | *64,2* | *6,6* | *101* | *10,3* | *51,3* | *5,3* | *62,9* | *6,5* | *32,1* | *3,3* | 25,2 | 2,6 | 12,8 | 1,3 | 12,6 | 1,3 | 6,4 | 0,7 |
| 750 | 2,25 | 0,75 | *151* | *11,6* | *77* | *5,9* | *126* | *9,7* | *64,2* | *4,9* | *101* | *7,7* | *51,3* | *4* | *62,9* | *4,8* | 32,1 | 2,5 | 25,2 | 2,0 | 12,8 | 1,0 | 12,6 | 1,0 | 6,4 | 0,5 |
| 500 | 1,50 | 0,50 | *151* | *7,7* | *77* | *3,9* | *126* | *6,5* | *64,2* | *3,3* | *101* | *5,2* | 51,3 | 2,6 | *62,9* | *3,2* | 32,1 | 1,6 | 25,2 | 1,3 | 12,8 | 0,7 | 12,6 | 0,7 | 6,4 | 0,4 |
| 320 | 0,96 | 0,32 | *151* | *5* | 77 | 2,5 | *126* | *4,2* | 64,2 | 2,1 | *101* | *3,3* | 51,3 | 1,7 | 62,9 | 2,1 | 32,1 | 1,1 | 25,2 | 0,8 | 12,8 | 0,5 | 12,6 | 0,4 | 6,4 | 0,3 |
| 160 | 0,48 | 0,16 | 151 | 2,5 | 77 | 1,3 | 126 | 2,1 | 64,2 | 1,1 | 101 | 1,7 | 51,3 | 0,9 | 62,9 | 1,1 | 32,1 | 0,6 | 25,2 | 0,4 | 12,8 | 0,3 | 12,6 | 0,2 | 6,4 | 0,2 |

### Technical specifications

| | |
|---|---|
| max. lifting power | 150 kN |
| gear reduction | 8:1 / 24:1 |
| dimension of spindle | Tr60x12 / Tr60x24P12 |
| start-up moment | table entry x 1,3 |
| casing material | GJS400-15 |
| weight without lifting (kg) | 28 |
| weight of spindle per 100mm lifting (kg) | 1,8 |
| lubricant | grease |
| quantity of lubricant (kg) | 0,8 |
| max. driving power (duty cycle 20%/h) | 2,8 kW |
| max. driving power (duty cycle 10%/h) | 3,8 kW |

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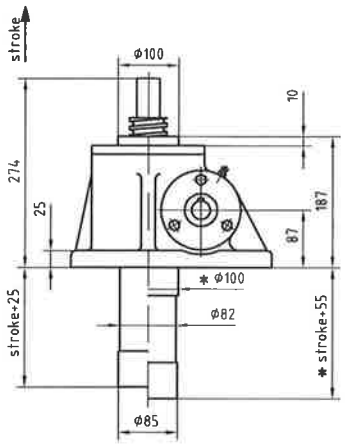
Internet: www.enzfelder.at

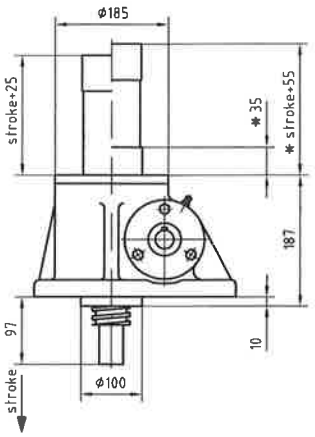
# Screw jack SG 0200

## Basic type (G)

### above (0)

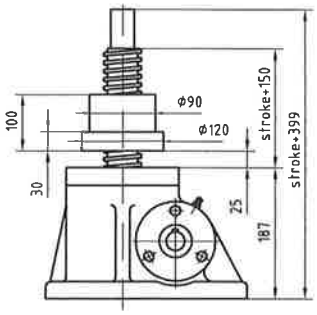



### below (U)

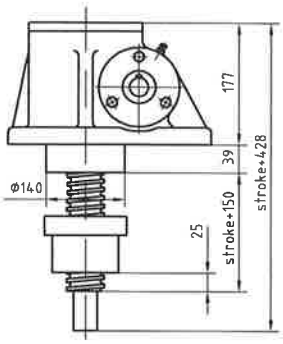



## Traveling nut type (L)

### above (0)

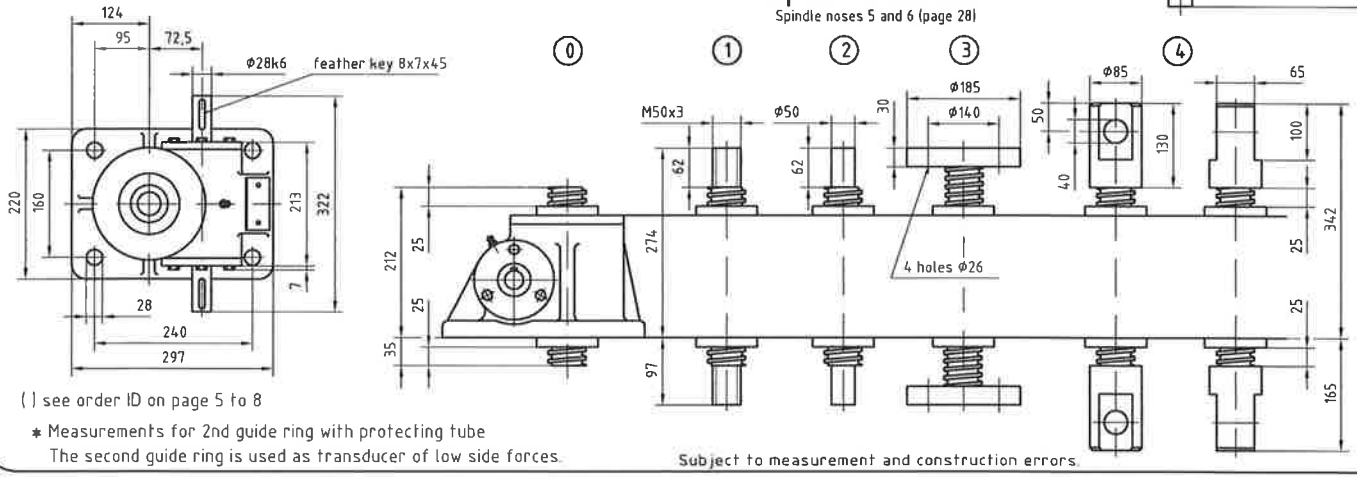



### below (U)




## Spindle noses

Spindle noses 5 and 6 (page 28)




( ) see order ID on page 5 to 8

* Measurements for 2nd guide ring with protecting tube
The second guide ring is used as transducer of low side forces.

Subject to measurement and construction errors.

### Tr 65x12 single-thread lifting power in kN

8:1 = 1,5mm/R
24:1 = 0,5mm/R

| $n_1$ | lift. speed m/min | | 200 | | | | 150 | | | | 100 | | | | 75 | | | | 50 | | | | 25 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 8:1 | 24:1 | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | |
| min$^{-1}$ | | | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW |
| 1500 | 2,25 | 0,75 | 184 | 28,3 | 93,6 | 14,4 | 138 | 21,2 | 70,2 | 10,8 | 92 | 14,2 | 46,8 | 7,2 | 69 | 10,6 | 35,1 | 5,4 | 46 | 7,1 | 23,4 | 3,6 | 23 | 3,6 | 11,7 | 1,8 |
| 1000 | 1,50 | 0,50 | 184 | 18,9 | 93,6 | 9,6 | 138 | 14,2 | 70,2 | 7,2 | 92 | 9,5 | 46,8 | 4,8 | 69 | 7,1 | 35,1 | 3,6 | 46 | 4,7 | 23,4 | 2,4 | 23 | 2,3 | 11,7 | 1,2 |
| 750 | 1,125 | 0,375 | 184 | 14,2 | 93,6 | 7,2 | 138 | 10,6 | 70,2 | 5,4 | 92 | 7,1 | 46,8 | 3,6 | 69 | 5,3 | 35,1 | 2,7 | 46 | 3,6 | 23,4 | 1,8 | 23 | 1,6 | 11,7 | 0,9 |
| 500 | 0,75 | 0,25 | 184 | 9,4 | 93,6 | 4,8 | 138 | 7,1 | 70,2 | 3,6 | 92 | 4,7 | 46,8 | 2,4 | 69 | 3,6 | 35,1 | 1,8 | 46 | 2,3 | 23,4 | 1,2 | 23 | 1,2 | 11,7 | 0,7 |
| 320 | 0,48 | 0,16 | 184 | 6 | 93,6 | 3,1 | 138 | 4,5 | 70,2 | 2,3 | 92 | 3,0 | 46,8 | 1,6 | 69 | 2,3 | 35,1 | 1,2 | 46 | 1,6 | 23,4 | 0,8 | 23 | 0,8 | 11,7 | 0,5 |
| 160 | 0,24 | 0,08 | 184 | 3,0 | 93,6 | 1,6 | 138 | 2,3 | 70,2 | 1,2 | 92 | 1,6 | 46,8 | 0,8 | 69 | 1,2 | 35,1 | 0,6 | 46 | 0,8 | 23,4 | 0,5 | 23 | 0,5 | 11,7 | 0,4 |

### Tr 65x24P12 double-thread lifting power in kN

8:1 = 3,0mm/R
24:1 = 1,0mm/R

| $n_1$ | lift. speed m/min | | 150 | | | | 100 | | | | 75 | | | | 50 | | | | 25 | | | | 16 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 8:1 | 24:1 | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | | 8:1 | | 24:1 | |
| min$^{-1}$ | | | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW |
| 1500 | 4,50 | 1,50 | 194 | 29,8 | 100 | 15,4 | 130 | 20 | 66,7 | 10,2 | 97 | 15,3 | 50 | 7,7 | 64,7 | 10 | 33,3 | 5,1 | 32,4 | 5 | 16,7 | 2,6 | 20,7 | 3,2 | 10,7 | 1,7 |
| 1000 | 3,00 | 1,00 | 194 | 20 | 100 | 10,2 | 130 | 13,3 | 66,7 | 6,8 | 97 | 10,3 | 50 | 5,1 | 64,7 | 6,7 | 33,3 | 3,4 | 32,4 | 3,4 | 16,7 | 1,7 | 20,7 | 2,2 | 10,7 | 1,2 |
| 750 | 2,25 | 0,75 | 194 | 15 | 100 | 7,7 | 130 | 10 | 66,7 | 5,1 | 97 | 7,8 | 50 | 3,9 | 64,7 | 5 | 33,3 | 2,6 | 32,4 | 2,5 | 16,7 | 1,3 | 20,7 | 1,6 | 10,7 | 0,9 |
| 500 | 1,50 | 0,50 | 194 | 10 | 100 | 5,1 | 130 | 6,7 | 66,7 | 3,4 | 97 | 5,2 | 50 | 2,6 | 64,7 | 3,4 | 33,3 | 1,7 | 32,4 | 1,7 | 16,7 | 0,9 | 20,7 | 1,1 | 10,7 | 0,6 |
| 320 | 0,96 | 0,32 | 194 | 6,4 | 100 | 3,3 | 130 | 4,3 | 66,7 | 2,2 | 97 | 3,3 | 50 | 1,7 | 64,7 | 2,2 | 33,3 | 1,1 | 32,4 | 1,1 | 16,7 | 0,6 | 20,7 | 0,7 | 10,7 | 0,5 |
| 160 | 0,48 | 0,16 | 194 | 3,2 | 100 | 1,7 | 130 | 2,2 | 66,7 | 1,1 | 97 | 1,7 | 50 | 0,9 | 64,7 | 1,1 | 33,3 | 0,6 | 32,4 | 0,6 | 16,7 | 0,5 | 20,7 | 0,5 | 10,7 | 0,5 |

RPM, power demand and admissible lifting speed at a reduction of 10:1 and 20:1 single-thread and double-thread spindle actuated, apply to the dynamic lifting power and a 20%/h or 30%/10min duty cycle at 20°C.
In the range of the spaces containing italics (above the lines) the spindle gears are overheated, the surface pressure in the thread is too high. We do not furnish a guarantee in this area.
However, it is feasible to transmit higher powers at a reduced duty cycle, or lower powers at a higher temperature (see preselection table, page 4).
Please ask for further information.

For lifting speeds higher than those given in the tables, also oil-lubricated ball bearing spindles or special reductions are available.

### Technical specifications

| | |
|---|---|
| max. lifting power | 200 kN |
| gear reduction | 8:1 / 24:1 |
| dimension of spindle | Tr65x12 / Tr65x24P12 |
| start-up moment | table entry x 1,3 |
| casing material | GJS400-15 |
| weight without lifting (kg) | 40 |
| weight of spindle per 100mm lifting (kg) | 2,15 |
| lubricant | grease |
| quantity of lubricant (kg) | 1,2 |
| max. driving power (duty cycle 20%/h) | 3,9 kW |
| max. driving power (duty cycle 10%/h) | 5,1 kW |

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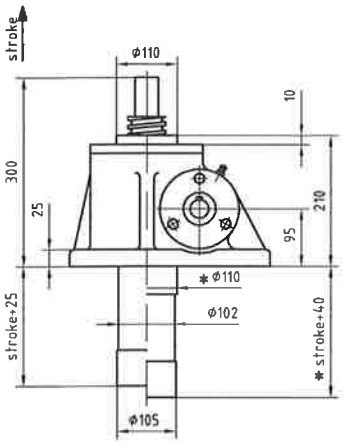
Internet: www.enzfelder.at

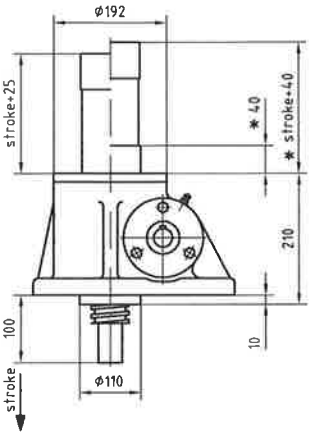
# Screw jack SG 0240

## Basic type (G)

### above (O)

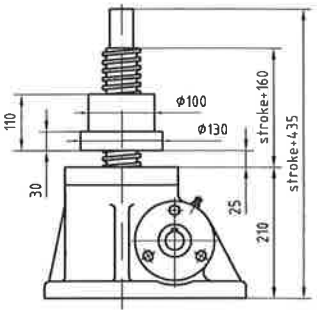



### below (U)

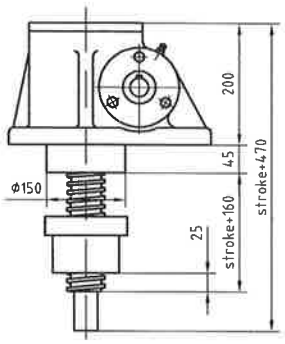



## Traveling nut type (L)

### above (O)

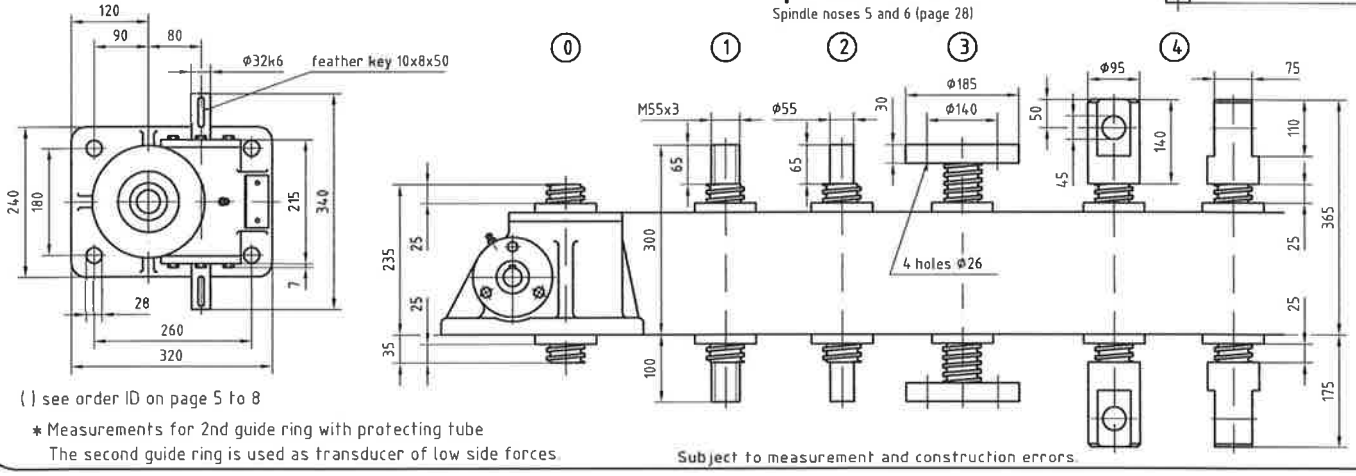



### below (U)




## Spindle noses

Spindle noses 5 and 6 (page 28)




( ) see order ID on page 5 to 8

* Measurements for 2nd guide ring with protecting tube
The second guide ring is used as transducer of low side forces.

Subject to measurement and construction errors.

## Tr 75x14 single-thread lifting power in kN

9⅓ :1 = 1,5mm/R
28:1 = 0,5mm/R

| $n_1$ min$^{-1}$ | lift. speed m/min 9⅓:1 | 28:1 | 240 9⅓:1 Nm | kW | 240 28:1 Nm | kW | 160 9⅓:1 Nm | kW | 160 28:1 Nm | kW | 120 9⅓:1 Nm | kW | 120 28:1 Nm | kW | 80 9⅓:1 Nm | kW | 80 28:1 Nm | kW | 60 9⅓:1 Nm | kW | 60 28:1 Nm | kW | 40 9⅓:1 Nm | kW | 40 28:1 Nm | kW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 2,25 | 0,75 | *221* | *35,3* | *112* | *17,3* | *147* | *23,5* | *74,7* | *11,6* | *110* | *17,7* | *56* | *8,7* | *73,7* | *11,8* | *37,3* | *5,8* | *55,3* | *8,8* | 28,0 | 4,4 | *36,8* | *5,9* | 18,7 | 2,9 |
| 1000 | 1,50 | 0,50 | *221* | *23,6* | *112* | *11,6* | *147* | *15,7* | *74,7* | *7,7* | *110* | *11,8* | *56* | *5,8* | *73,7* | *7,9* | 37,3 | 3,8 | *55,3* | *5,9* | 28,0 | 2,9 | 36,8 | 4,0 | 18,7 | 1,9 |
| 750 | 1,125 | 0,375 | *221* | *17,7* | *112* | *8,7* | *147* | *11,8* | *74,7* | *5,8* | *110* | *8,9* | 56 | 4,4 | *73,7* | *5,9* | 37,3 | 2,9 | 55,3 | 4,4 | 28,0 | 2,2 | 36,8 | 3,0 | 18,7 | 1,5 |
| 500 | 0,75 | 0,25 | *221* | *11,8* | *112* | *5,8* | *147* | *7,9* | 74,7 | 3,8 | *110* | *5,9* | 56 | 2,9 | 73,7 | 4,0 | 37,3 | 1,9 | 55,3 | 3,0 | 28,0 | 1,5 | 36,8 | 2,0 | 18,7 | 0,9 |
| 320 | 0,48 | 0,16 | *221* | *7,6* | 112 | 3,7 | *147* | *5,1* | 74,7 | 2,5 | 110 | 3,8 | 56 | 1,9 | 73,7 | 2,5 | 37,3 | 1,3 | 55,3 | 1,9 | 28,0 | 1,0 | 36,8 | 1,3 | 18,7 | 0,7 |
| 160 | 0,24 | 0,08 | 221 | 3,8 | 112 | 1,9 | 147 | 2,6 | 74,7 | 1,3 | 110 | 1,9 | 56 | 1,0 | 73,7 | 1,3 | 37,3 | 0,7 | 55,3 | 1,0 | 28,0 | 0,6 | 36,8 | 0,7 | 18,7 | 0,5 |

RPM, power demand and admissible lifting speed at a reduction of 10:1 and 20:1 single-thread and double-thread spindle actuated, apply to the dynamic lifting power and a 20%/h or 30%/10min duty cycle at 20°C.
In the range of the spaces containing italics (above the lines) the spindle gears are overheated, the surface pressure in the thread is too high. We do not furnish a guarantee in this area.
However, it is feasible to transmit higher powers at a reduced duty cycle, or lower powers at a higher temperature (see preselection table, page 4).
Please ask for further information.

For lifting speeds higher than those given in the tables, also oil-lubricated ball bearing spindles or special reductions are available.

## Tr 75x28P14 double-thread lifting power in kN

9⅓ :1 = 3,0mm/R
28:1 = 1,0mm/R

| $n_1$ min$^{-1}$ | lift. speed m/min 9⅓:1 | 28:1 | 180 9⅓:1 Nm | kW | 180 28:1 Nm | kW | 120 9⅓:1 Nm | kW | 120 28:1 Nm | kW | 90 9⅓:1 Nm | kW | 90 28:1 Nm | kW | 60 9⅓:1 Nm | kW | 60 28:1 Nm | kW | 45 9⅓:1 Nm | kW | 45 28:1 Nm | kW | 30 9⅓:1 Nm | kW | 30 28:1 Nm | kW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 4,50 | 1,50 | *232* | *35,8* | *120* | *18,4* | *155* | *23,8* | *80* | *12,2* | *116* | *17,9* | *60* | *9,2* | *77,3* | *11,9* | *40* | *6,1* | *58* | *9* | *30* | *4,6* | *38,7* | *6* | 40 | 3,2 |
| 1000 | 3,00 | 1,00 | *232* | *23,8* | *120* | *12,2* | *155* | *16* | *80* | *8,1* | *116* | *11,9* | *60* | *6,1* | *77,3* | *8* | 40 | 4 | *58* | *6* | 30 | 3,2 | 38,7 | 4 | 40 | 2 |
| 750 | 2,25 | 0,75 | *232* | *17,9* | *120* | *9,2* | *155* | *11,9* | *80* | *6,1* | *116* | *9* | *60* | *4,6* | *77,3* | *6* | 40 | 3,2 | 58 | 4,5 | 30 | 2,3 | 38,7 | 3 | 40 | 1,6 |
| 500 | 1,50 | 0,50 | *232* | *11,9* | *120* | *6,1* | *155* | *8* | 80 | 4 | *116* | *6* | 60 | 3,2 | 77,3 | 4 | 40 | 2 | 58 | 3 | 30 | 1,6 | 38,7 | 2 | 40 | 1 |
| 320 | 0,96 | 0,32 | *232* | *7,6* | 120 | 4 | *155* | *5,1* | 80 | 2 | 116 | 4 | 60 | 2 | 77,3 | 2,6 | 40 | 1 | 58 | 2 | 30 | 1 | 38,7 | 1,3 | 40 | 0,6 |
| 160 | 0,48 | 0,16 | 232 | 3,8 | 120 | 2 | 155 | 2,6 | 80 | 1 | 116 | 2 | 60 | 1 | 77,3 | 1,3 | 40 | 0,6 | 58 | 1 | 30 | 0,6 | 38,7 | 0,8 | 40 | 0,5 |

### Technical specifications

| | |
|---|---|
| max. lifting power | 240 kN |
| gear reduction | 9⅓:1 / 28:1 |
| dimension of spindle | Tr75x14 / Tr75x28P14 |
| start-up moment | table entry x 1,3 |
| casing material | GJS400-15 |
| weight without lifting (kg) | 58 |
| weight of spindle per 100mm lifting (kg) | 2,8 |
| lubricant | grease |
| quantity of lubricant (kg) | 1,5 |
| max. driving power (duty cycle 20%/h) | 4,5 kW |
| max. driving power (duty cycle 10%/h) | 5,9 kW |

# Screw jack SG 0300

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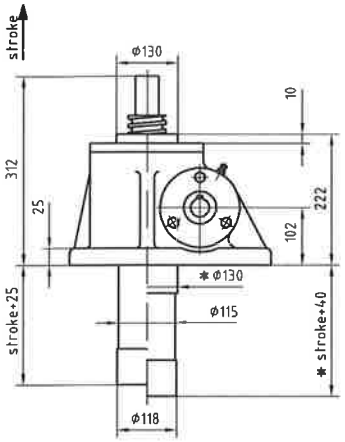
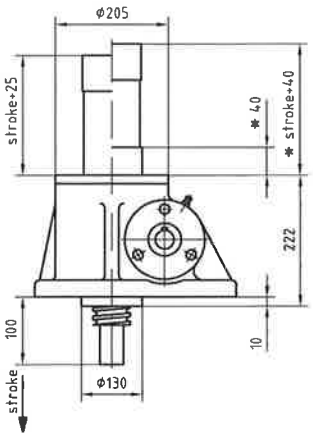
## Basic type (G)

### above (0)

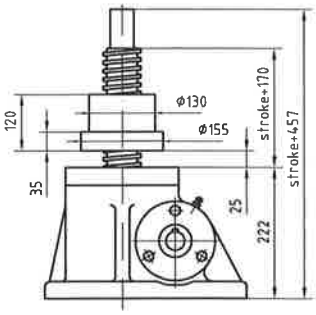



### below (U)

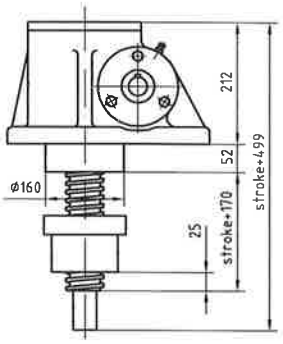



## Traveling nut type (L)

### above (0)

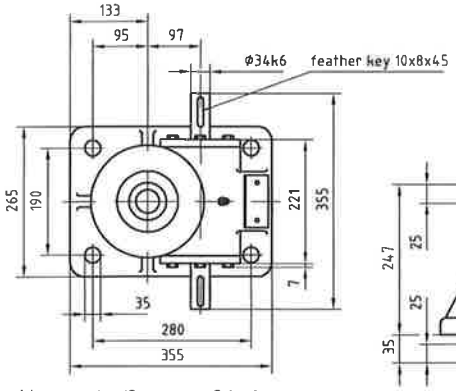


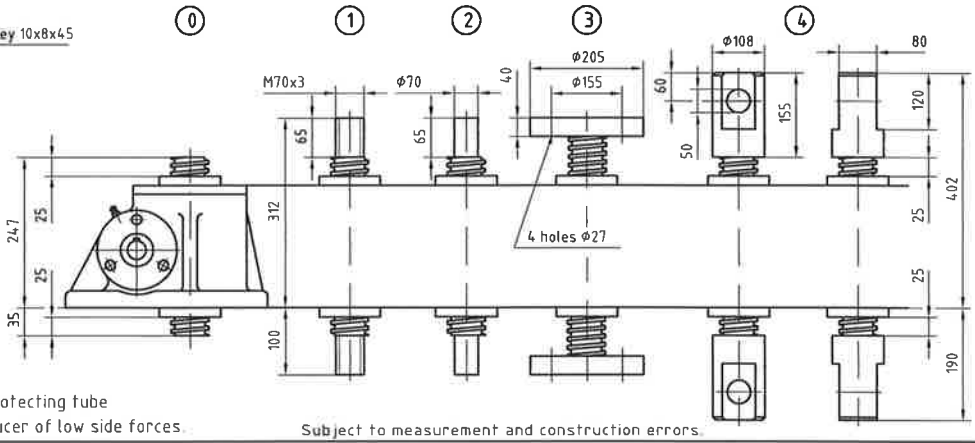

### below (U)




## Spindle noses

Spindle noses 5 and 6 (page 28)




( ) see order ID on page 5 to 8

* Measurements for 2nd guide ring with protecting tube
The second guide ring is used as transducer of low side forces.

Subject to measurement and construction errors.

## Tr 90x16 single-thread lifting power in kN

10³⁄₃1 = 1,5mm/R
32:1 = 0,5mm/R

| $n_1$ | lift. speed m/min | | 300 | | | | 200 | | | | 150 | | | | 100 | | | | 75 | | | | 50 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10³⁄₃1 | 32:1 | 10³⁄₃1 | | 32:1 | | 10³⁄₃1 | | 32:1 | | 10³⁄₃1 | | 32:1 | | 10³⁄₃1 | | 32:1 | | 10³⁄₃1 | | 32:1 | | 10³⁄₃1 | | 32:1 | |
| min⁻¹ | | | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW |
| 1000 | 1,50 | 0,50 | *286* | *29,4* | *14,9* | *15,3* | *191* | *19,6* | *99,3* | *10,2* | *143* | *14,7* | *74,5* | *7,7* | *95* | *9,8* | 49,7 | 5,1 | *71,6* | *7,4* | 37,3 | 3,9 | 47,7 | 4,9 | 24,8 | 2,6 |
| 750 | 1,125 | 0,375 | *286* | *22,1* | *14,9* | *11,5* | *191* | *14,7* | *99,3* | *7,7* | *143* | *11,1* | *74,5* | *5,8* | *95* | *7,4* | 49,7 | 3,9 | *71,6* | *5,5* | 37,3 | 2,9 | 47,7 | 3,7 | 24,8 | 2 |
| 500 | 0,75 | 0,25 | *286* | *14,7* | *14,9* | *7,7* | *191* | *9,8* | 99,3 | 5,1 | *143* | *7,4* | 74,5 | 3,9 | 95 | 4,9 | 49,7 | 2,6 | 71,6 | 3,7 | 37,3 | 2 | 47,7 | 2,5 | 24,8 | 1,3 |
| 360 | 0,54 | 0,18 | *286* | *10,6* | *14,9* | *5,5* | *191* | *7,1* | 99,3 | 3,7 | 143 | 5,2 | 74,5 | 2,8 | 95 | 3,6 | 49,7 | 1,9 | 71,6 | 2,7 | 37,3 | 1,4 | 47,7 | 1,8 | 24,8 | 1 |
| 240 | 0,36 | 0,12 | *286* | *7,1* | 149 | 3,7 | 191 | 4,8 | 99,3 | 2,5 | 143 | 3,6 | 74,5 | 1,9 | 95 | 2,4 | 49,7 | 1,3 | 71,6 | 1,8 | 37,3 | 1 | 47,7 | 1,2 | 24,8 | 0,8 |
| 120 | 0,18 | 0,06 | 286 | 3,6 | 149 | 1,9 | 191 | 2,4 | 99,3 | 1,3 | 143 | 1,8 | 74,5 | 1 | 95 | 1,2 | 49,7 | 0,8 | 71,6 | 1 | 37,3 | 0,7 | 47,7 | 0,7 | 24,8 | 0,6 |

## Tr 90x32P16 double-thread lifting power in kN

10³⁄₃1 = 3,0mm/R
32:1 = 1,0mm/R

| $n_1$ | lift. speed m/min | | 220 | | | | 160 | | | | 120 | | | | 80 | | | | 60 | | | | 40 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10³⁄₃1 | 32:1 | 10³⁄₃1 | | 32:1 | | 10³⁄₃1 | | 32:1 | | 10³⁄₃1 | | 32:1 | | 10³⁄₃1 | | 32:1 | | 10³⁄₃1 | | 32:1 | | 10³⁄₃1 | | 32:1 | |
| min⁻¹ | | | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW |
| 1000 | 3,00 | 1,00 | *284* | *29,2* | *14,6* | *15* | *207* | *21,2* | *106* | *10,9* | *155* | *16* | *79,6* | *7,3* | *103* | *10,6* | *53,1* | *5,8* | *77,5* | *8* | 39,8 | 3,7 | 51,7 | 5,2 | 26,6 | 2,9 |
| 750 | 2,25 | 0,75 | *284* | *21,9* | *14,6* | *11,3* | *207* | *15,9* | *106* | *8,2* | *155* | *12* | *79,6* | *5,5* | *103* | *8* | 53,1 | 4,1 | *77,5* | *6* | 39,8 | 2,8 | 51,7 | 4 | 26,6 | 2,2 |
| 500 | 1,50 | 0,50 | *284* | *14,6* | *14,6* | *7,5* | *207* | *10,6* | *106* | *5,5* | *155* | *8* | 79,6 | 3,7 | 103 | 5,2 | 53,1 | 2,8 | 77,5 | 4 | 39,8 | 2 | 51,7 | 2,7 | 26,6 | 1,5 |
| 360 | 1,08 | 0,36 | *284* | *10,5* | *14,6* | *5,4* | *207* | *7,7* | 106 | 4 | 155 | 5,2 | 79,6 | 2,7 | 103 | 3,9 | 53,1 | 2,1 | 77,5 | 2,6 | 39,8 | 1,5 | 51,7 | 2 | 26,6 | 1,1 |
| 240 | 0,72 | 0,24 | *284* | *7* | 146 | 3,6 | 207 | 5,2 | 106 | 2,8 | 155 | 3,5 | 79,6 | 1,9 | 103 | 2,6 | 53,1 | 1,5 | 77,5 | 1,8 | 39,8 | 1,1 | 51,7 | 1,4 | 26,6 | 0,8 |
| 120 | 0,36 | 0,12 | 284 | 3,5 | 146 | 1,8 | 207 | 2,6 | 106 | 1,4 | 155 | 1,8 | 79,6 | 1 | 103 | 1,5 | 53,1 | 0,9 | 77,5 | 1,1 | 39,8 | 0,7 | 51,7 | 0,9 | 26,6 | 0,6 |

RPM, power demand and admissible lifting speed at a reduction of 10:1 and 20:1 single-thread and double-thread spindle actuated, apply to the dynamic lifting power and a 20%/h or 30%/10min duty cycle at 20°C.
In the range of the spaces containing italics (above the lines) the spindle gears are overheated, the surface pressure in the thread is too high. We do not furnish a guarantee in this area.
However, it is feasible to transmit higher powers at a reduced duty cycle, or lower powers at a higher temperature (see preselection table, page 4).
Please ask for further information.

For lifting speeds higher than those given in the tables, also oil-lubricated ball bearing spindles or special reductions are available.

### Technical specifications

| | |
|---|---|
| max. lifting power | 300 kN |
| gear reduction | 10³⁄₃1 / 32:1 |
| dimension of spindle | Tr90x16 / Tr90x32P16 |
| start-up moment | table entry x 1,3 |
| casing material | GJS400-15 |
| weight without lifting (kg) | 75 |
| weight of spindle per 100mm lifting (kg) | 4,2 |
| lubricant | grease |
| quantity of lubricant (kg) | 1,7 |
| max. driving power (duty cycle 20%/h) | 5,2 kW |
| max. driving power (duty cycle 10%/h) | 6,9 kW |

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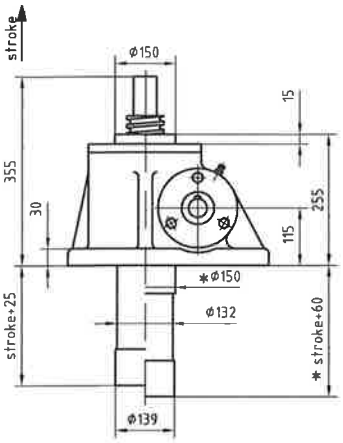
Internet: www.enzfelder.at

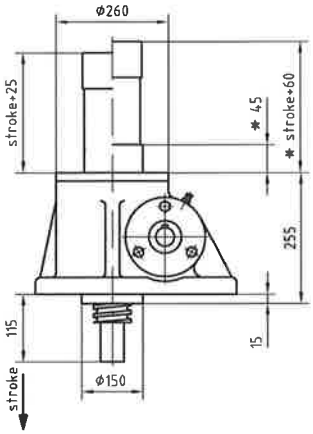
# Screw jack SG 0350

## Basic type (G)

### above (O)

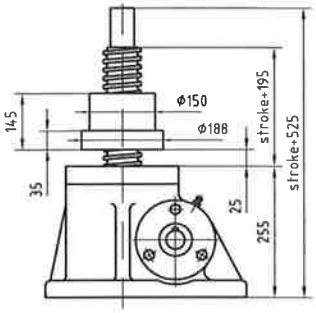



### below (U)

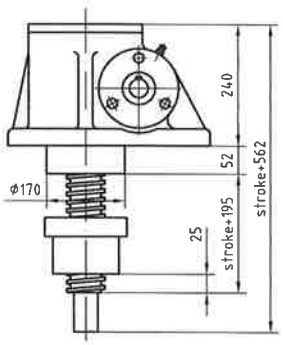



## Traveling nut type (L)

### above (O)

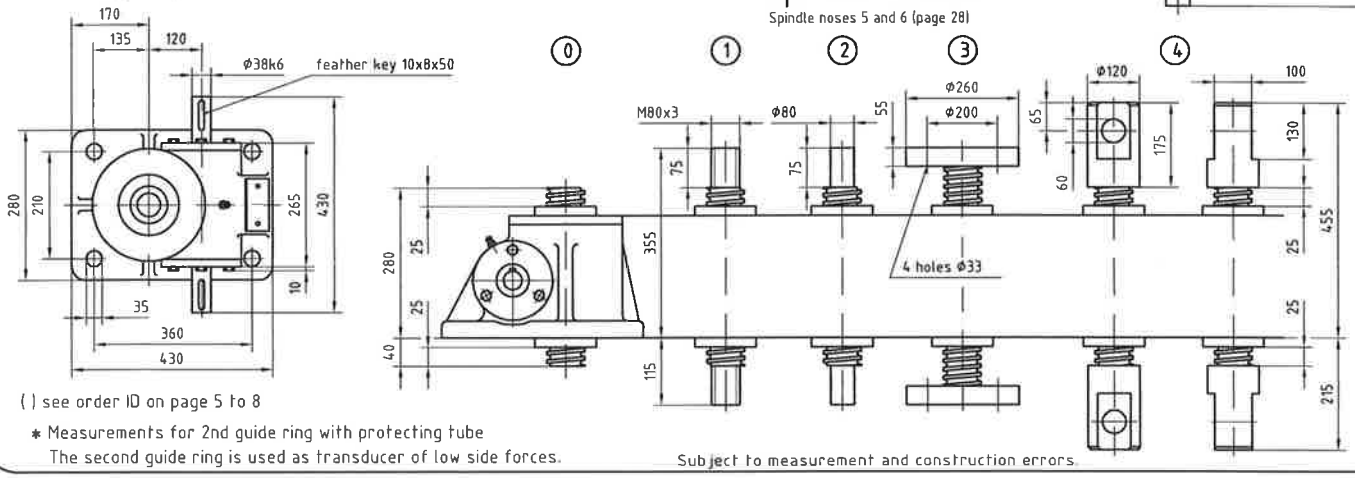



### below (U)




## Spindle noses

Spindle noses 5 and 6 (page 28)




( ) see order ID on page 5 to 8

* Measurements for 2nd guide ring with protecting tube
The second guide ring is used as transducer of low side forces.

Subject to measurement and construction errors.

**Tr 100x16 single-thread lifting power in kN**

10⅔:1 = 1,5mm/R
32:1 = 0,5mm/R

| $n_1$ | lift speed m/min | | 350 | | | | 250 | | | | 200 | | | | 150 | | | | 100 | | | | 50 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10⅔:1 | 32:1 | 10⅔:1 | | 32:1 | | 10⅔:1 | | 32:1 | | 10⅔:1 | | 32:1 | | 10⅔:1 | | 32:1 | | 10⅔:1 | | 32:1 | | 10⅔:1 | | 32:1 | |
| min$^{-1}$ | | | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW |
| 1000 | 1,50 | 0,50 | *363* | *37,3* | 186 | 19,1 | *260* | *26,6* | 133 | 13,7 | *208* | *21,3* | 106 | 10,9 | *156* | *16* | *79,7* | *8,2* | *104* | *10,7* | 53,1 | 5,5 | 51,9 | 5,4 | 26,6 | 2,8 |
| 750 | 1,125 | 0,375 | *363* | *28* | 186 | 14,3 | *260* | *20* | 133 | 10,2 | *208* | *16* | *106* | *8,2* | *156* | *12* | 79,7 | 6,2 | *104* | *8* | 53,1 | 4,1 | 51,9 | 4 | 26,6 | 2,1 |
| 500 | 0,75 | 0,25 | *363* | *18,7* | 186 | 9,6 | *260* | *13,3* | 133 | 6,8 | *208* | *10,7* | 106 | 5,5 | *156* | *8* | 79,7 | 4,1 | 104 | 5,4 | 53,1 | 2,8 | 51,9 | 2,7 | 26,6 | 1,5 |
| 360 | 0,54 | 0,18 | *363* | *13,4* | 186 | 6,9 | *260* | *9,6* | 133 | 5 | *208* | *7,7* | 106 | 4 | 156 | 5,8 | 79,7 | 3 | 104 | 3,9 | 53,1 | 2,1 | 51,9 | 2 | 26,6 | 1,1 |
| 240 | 0,36 | 0,12 | *363* | *9* | 186 | 4,6 | *260* | *6,4* | 133 | 3,3 | 208 | 5,2 | 106 | 2,6 | 156 | 4 | 79,7 | 2,1 | 104 | 2,8 | 53,1 | 1,5 | 51,9 | 1,5 | 26,6 | 0,9 |
| 120 | 0,18 | 0,06 | 363 | 4,5 | 186 | 2,4 | 260 | 3,2 | 133 | 1,8 | 208 | 2,6 | 106 | 1,4 | 156 | 2 | 79,7 | 1,1 | 104 | 1,4 | 53,1 | 0,9 | 51,9 | 0,8 | 26,6 | 0,6 |

**Tr 100x32P16 double-thread lifting power in kN**

10⅔:1 = 3,0mm/R
32:1 = 1,0mm/R

| $n_1$ | lift speed m/min | | 280 | | | | 200 | | | | 150 | | | | 100 | | | | 60 | | | | 40 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10⅔:1 | 32:1 | 10⅔:1 | | 32:1 | | 10⅔:1 | | 32:1 | | 10⅔:1 | | 32:1 | | 10⅔:1 | | 32:1 | | 10⅔:1 | | 32:1 | | 10⅔:1 | | 32:1 | |
| min$^{-1}$ | | | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW |
| 1000 | 3,00 | 1,00 | *393* | *40,4* | *203* | *21,2* | *281* | *28,8* | *145* | *15,1* | *211* | *21,6* | *109* | *11,3* | *141* | *14,4* | *72,5* | *7,6* | *84,2* | *8,7* | 43,5 | 4,6 | 56,1 | 4,4 | 29 | 3,1 |
| 750 | 2,25 | 0,75 | *393* | *30,3* | *203* | *15,9* | *281* | *21,6* | *145* | *11,4* | *211* | *16,2* | *109* | *8,6* | *141* | *10,8* | 72,5 | 5,7 | *84,2* | *6,6* | 43,5 | 3,5 | 56,1 | 3,3 | 29 | 2,5 |
| 500 | 1,50 | 0,50 | *393* | *20,2* | *203* | *10,6* | *281* | *14,4* | *145* | *7,6* | *211* | *10,8* | *109* | *10,7* | *141* | *7,2* | 72,5 | 3,8 | 84,2 | 4,4 | 43,5 | 2,4 | 56,1 | 2,3 | 29 | 1,8 |
| 360 | 1,08 | 0,36 | *393* | *14,6* | *203* | *7,6* | *281* | *10,4* | 145 | 5,6 | *211* | *7,8* | 109 | 4,2 | 141 | 5,2 | 72,5 | 2,9 | 84,2 | 3,3 | 43,5 | 1,9 | 56,1 | 1,8 | 29 | 1,3 |
| 240 | 0,72 | 0,24 | *393* | *9,7* | 203 | 5,2 | *281* | *7* | 145 | 3,8 | 211 | 5,2 | 109 | 2,9 | 141 | 3,5 | 72,5 | 2 | 84,2 | 2,2 | 43,5 | 1,3 | 56,1 | 1,2 | 29 | 1,0 |
| 120 | 0,36 | 0,12 | 393 | 4,9 | 203 | 2,6 | 281 | 3,5 | 145 | 2 | 211 | 2,6 | 109 | 1,5 | 141 | 1,9 | 72,5 | 1,2 | 84,2 | 1,2 | 43,5 | 0,8 | 56,1 | 0,7 | 29 | 0,6 |

RPM, power demand and admissible lifting speed at a reduction of 10:1 and 20:1 single-thread and double-thread spindle actuated, apply to the dynamic lifting power and a 20%/h or 30%/10min duty cycle at 20°C.
In the range of the spaces containing italics (above the lines) the spindle gears are overheated, the surface pressure in the thread is too high. We do not furnish a guarantee in this area.
However, it is feasible to transmit higher powers at a reduced duty cycle, or lower powers at a higher temperature (see preselection table, page 4).
Please ask for further information.

For lifting speeds higher than those given in the tables, also oil-lubricated ball bearing spindles or special reductions are available.

**Technical specifications**

| | |
|---|---|
| max. lifting power | 350 kN |
| gear reduction | 10⅔:1 / 32:1 |
| dimension of spindle | Tr100x16 / Tr100x32P16 |
| start-up moment | table entry x 1,3 |
| casing material | GJS400-15 |
| weight without lifting (kg) | 90 |
| weight of spindle per 100mm lifting (kg) | 5,2 |
| lubricant | grease |
| quantity of lubricant (kg) | 2,2 |
| max. driving power (duty cycle 20%/h) | 6,2 kW |
| max. driving power (duty cycle 10%/h) | 8,3 kW |

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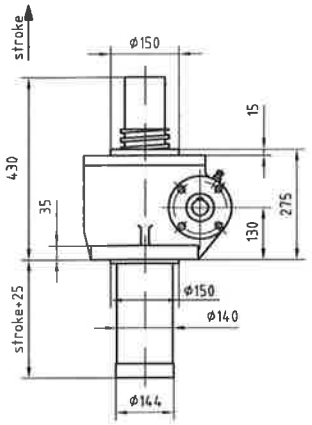
E-Mail: office@enzfelder.at
Internet: www.enzfelder.at

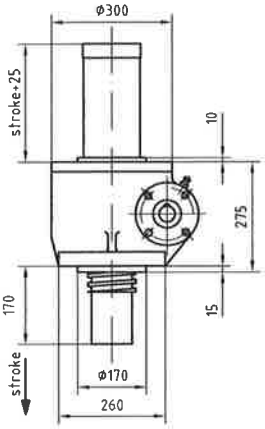
# Screw jack SG 0500

## Basic type (G)

### above (O)

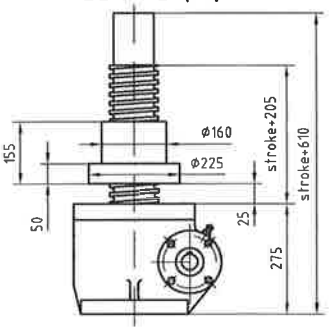



### below (U)

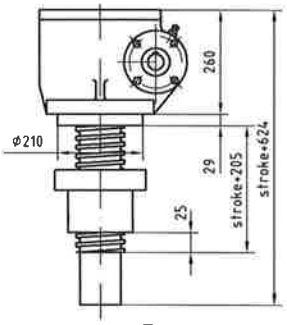



## Traveling nut type (L)

### above (O)

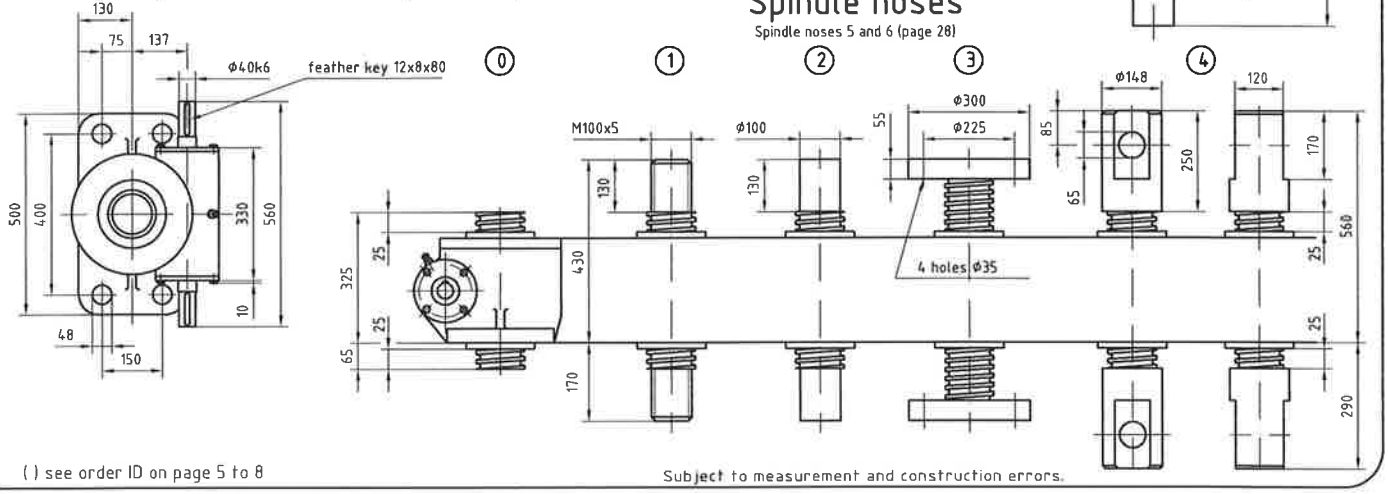



### below (U)




## Spindle noses

Spindle noses 5 and 6 (page 28)




( ) see order ID on page 5 to 8

Subject to measurement and construction errors.

## Tr 120x16 single-thread lifting power in kN

10⅔ :1 = 1,5mm/R
32:1 = 0,5mm/R

| $n_1$ | lift. speed m/min | | 500 | | | | 400 | | | | 250 | | | | 200 | | | | 100 | | | | 50 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | 10⅔:1 | 32:1 | 10⅔:1 | | 32:1 | | 10⅔:1 | | 32:1 | | 10⅔:1 | | 32:1 | | 10⅔:1 | | 32:1 | | 10⅔:1 | | 32:1 | | 10⅔:1 | | 32:1 | |
| | | | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW |
| 1000 | 1,50 | 0,50 | 586 | 61,3 | 300 | 31,4 | 487 | 49 | 240 | 25,2 | 293 | 30,7 | 150 | 15,7 | 235 | 24,5 | 120 | 12,6 | 117 | 12,3 | 60 | 6,3 | 58,6 | 6,2 | 30 | 3,2 |
| 750 | 1,125 | 0,375 | 586 | 46 | 300 | 23,6 | 487 | 36,8 | 240 | 18,9 | 293 | 23 | 150 | 11,8 | 235 | 18,4 | 120 | 9,5 | 117 | 9,2 | 60 | 4,8 | 58,6 | 4,6 | 30 | 2,5 |
| 500 | 0,75 | 0,25 | 586 | 30,6 | 300 | 15,7 | 487 | 24,5 | 240 | 12,6 | 293 | 15,3 | 150 | 7,9 | 235 | 12,3 | 120 | 6,3 | 117 | 6,2 | 60 | 3,2 | 58,6 | 3,1 | 30 | 1,7 |
| 360 | 0,54 | 0,18 | 586 | 22,1 | 300 | 11,3 | 487 | 17,7 | 240 | 9,1 | 293 | 11,1 | 150 | 5,7 | 235 | 8,9 | 120 | 4,6 | 117 | 4,5 | 60 | 2,4 | 58,6 | 2,3 | 30 | 1,3 |
| 240 | 0,36 | 0,12 | 586 | 14,7 | 300 | 7,6 | 487 | 11,8 | 240 | 6,1 | 293 | 7,4 | 150 | 3,8 | 235 | 6 | 120 | 3,1 | 117 | 3,1 | 60 | 1,6 | 58,6 | 1,6 | 30 | 0,9 |
| 120 | 0,18 | 0,06 | 586 | 7,4 | 300 | 3,8 | 487 | 6 | 240 | 3,1 | 293 | 3,8 | 150 | 2 | 235 | 3,1 | 120 | 1,6 | 117 | 1,6 | 60 | 0,9 | 58,6 | 0,9 | 30 | 0,6 |

RPM, power demand and admissible lifting speed at a reduction of 10:1 and 20:1 single-thread and double-thread spindle actuated, apply to the dynamic lifting power and a 20%/h or 30%/10min duty cycle at 20°C.
In the range of the spaces containing italics (above the lines) the spindle gears are overheated, the surface pressure in the thread is too high. We do not furnish a guarantee in this area.
However, it is feasible to transmit higher powers at a reduced duty cycle, or lower powers at a higher temperature (see preselection table, page 4).
Please ask for further information.

For lifting speeds higher than those given in the tables, also oil-lubricated ball bearing spindles or special reductions are available.

## Tr 120x32P16 double-thread lifting power in kN

10⅔ :1 = 3,0mm/R
32:1 = 1,0mm/R

| $n_1$ | lift. speed m/min | | 400 | | | | 300 | | | | 200 | | | | 150 | | | | 75 | | | | 50 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | 10⅔:1 | 32:1 | 10⅔:1 | | 32:1 | | 10⅔:1 | | 32:1 | | 10⅔:1 | | 32:1 | | 10⅔:1 | | 32:1 | | 10⅔:1 | | 32:1 | | 10⅔:1 | | 32:1 | |
| | | | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW | Nm | kW |
| 1000 | 3,00 | 1,00 | 637 | 65,4 | 318 | 32,7 | 478 | 49 | 239 | 24,5 | 319 | 32,7 | 159 | 16,4 | 239 | 24,5 | 120 | 12,3 | 120 | 12,3 | 60 | 6,2 | 80 | 8,2 | 40 | 4,1 |
| 750 | 2,25 | 0,75 | 637 | 49 | 318 | 24,5 | 478 | 36,8 | 239 | 18,4 | 319 | 24,5 | 159 | 12,3 | 239 | 18,4 | 120 | 9,2 | 120 | 9,2 | 60 | 4,6 | 80 | 6,2 | 40 | 3,2 |
| 500 | 1,50 | 0,50 | 637 | 32,7 | 318 | 16,4 | 478 | 24,5 | 239 | 12,3 | 319 | 16,4 | 159 | 8,2 | 239 | 12,3 | 120 | 6,2 | 120 | 6,2 | 60 | 3,2 | 80 | 4,1 | 40 | 2,1 |
| 360 | 1,08 | 0,36 | 637 | 23,6 | 318 | 11,8 | 478 | 17,7 | 239 | 8,8 | 319 | 11,8 | 159 | 5,9 | 239 | 8,9 | 120 | 4,5 | 120 | 4,5 | 60 | 2,3 | 80 | 3 | 40 | 1,6 |
| 240 | 0,72 | 0,24 | 637 | 15,7 | 318 | 7,8 | 478 | 11,8 | 239 | 6 | 319 | 7,9 | 159 | 4 | 239 | 5,6 | 120 | 3,1 | 120 | 3 | 60 | 1,6 | 80 | 2 | 40 | 1,1 |
| 120 | 0,36 | 0,12 | 637 | 7,8 | 318 | 4 | 478 | 6 | 239 | 3 | 319 | 4 | 159 | 2,1 | 239 | 2,9 | 120 | 1,6 | 120 | 1,6 | 60 | 0,9 | 80 | 1,2 | 40 | 0,7 |

### Technical specifications

| | |
|---|---|
| max. lifting power | 500 kN |
| gear reduction | 10⅔1 / 32:1 |
| dimension of spindle | Tr120x16 / Tr120x32P16 |
| start-up moment | table entry x 1,3 |
| casing material | GJS400-15 |
| weight without lifting (kg) | 180 |
| weight of spindle per 100mm lifting (kg) | 7,7 |
| lubricant | grease |
| quantity of lubricant (kg) | 3,3 |
| max. driving power (duty cycle 20%/h) | 7,8 kW |
| max. driving power (duty cycle 10%/h) | 10,8 kW |

# Ball screw jack
# Swinging elements

**ENZFELDER GmbH.**
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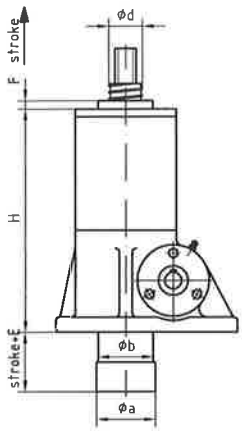
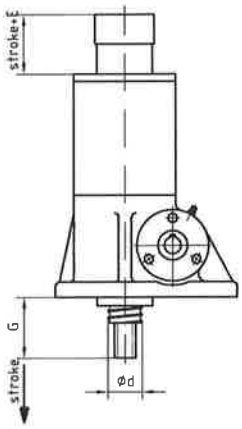
Internet: www.enzfelder.at

## Basic type, ball-screw actuated (KSG)

above (O)



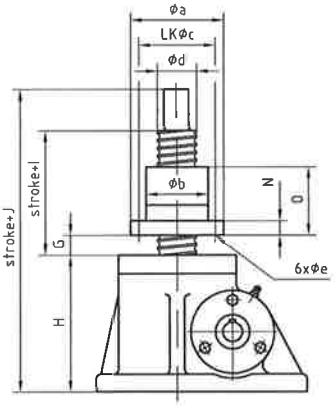

below (U)



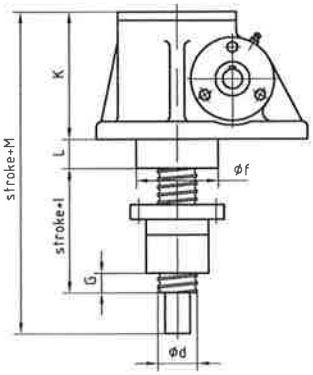

Exakt dimensions after consulting by the factory!

## Traveling nut type, ball-screw actuated (KSG)

above (O)

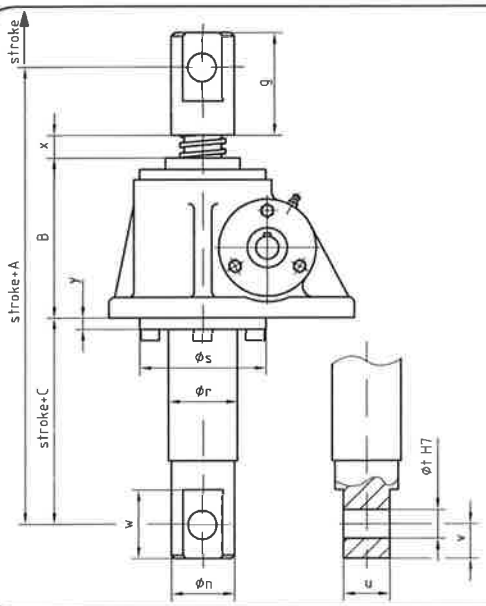



below (U)




Exakt dimensions after consulting by the factory!

## Swinging element (SE)




| SE | 0005 | 0015 | 0020 | 0030 | 0050 | 0100 | 0150 | 0200 | 0240 | 0300 | 0500 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | stroke+180 | stroke+215 | stroke+247 | stroke+250 | stroke+320 | stroke+350 | stroke+390 | stroke+432 | stroke+475 | stroke+502 | stroke+762 |
| B | 74 | 90 | 103 | 106 | 140 | 150 | 160 | 187 | 210 | 222 | 282 |
| C | stroke+61 | stroke+75 | stroke+82 | stroke+82 | stroke+100 | stroke+110 | stroke+130 | stroke+140 | stroke+150 | stroke+160 | stroke+265 |
| g | 50 | 50 | 65 | 65 | 90 | 100 | 120 | 130 | 140 | 155 | 250 |
| øn | 30 | 35 | 40 | 40 | 55 | 65 | 80 | 85 | 95 | 108 | 148 |
| ør | 28 | 36 | 45 | 45 | 60 | 70 | 80 | 90 | 110 | 127 | 150 |
| øs | 59 | 65 | 80 | 80 | 110 | 120 | 140 | 160 | 180 | 190 | 240 |
| øt H7 | 15 | 15 | 15 | 15 | 25 | 30 | 35 | 40 | 45 | 50 | 65 |
| u | 20 | 25 | 30 | 30 | 40 | 50 | 60 | 65 | 75 | 80 | 120 |
| v | 15 | 15 | 23 | 23 | 30 | 30 | 45 | 50 | 50 | 60 | 85 |
| w | 30 | 35 | 46 | 46 | 60 | 70 | 90 | 100 | 110 | 120 | 170 |
| x | 10 | 20 | 20 | 20 | 20 | 20 | 25 | 25 | 25 | 25 | 50 |
| y | 8 | 10 | 10 | 10 | 10 | 12 | 15 | 20 | 20 | 20 | 25 |

Special types available on request

# Elastic Cardan Shafts, Pedestal Bearings, Flange Bearings

**ENZFELDER GmbH.**
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Fax.:++43(0)2256/81287-95
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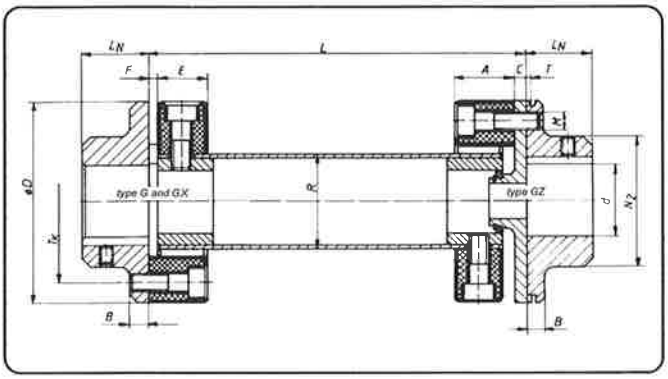
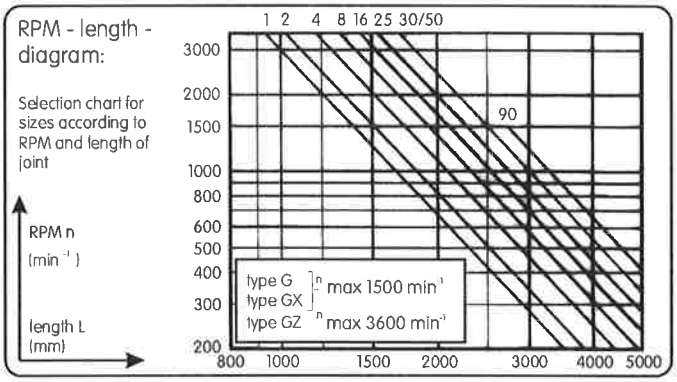
Internet: www.enzfelder.at

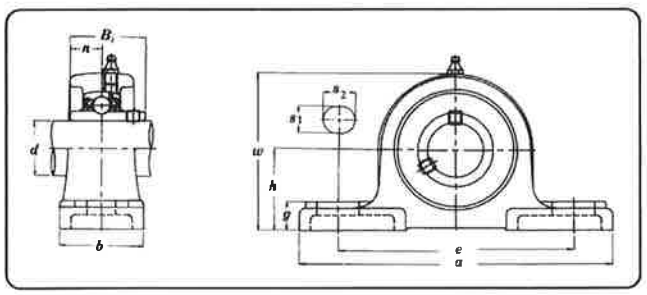
## Elastic propeller shafts G/GX/GZ



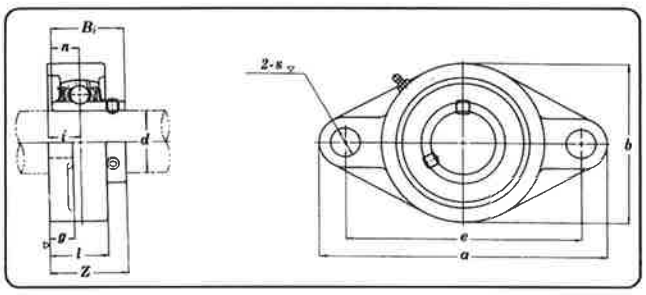

| size | rated torque (Nm) type G | GX | GZ | weight (kg) for 2 hubs | for 1 m tube | max. shift of angle G+GZ | GX | A | B | C | ØD | pilot drill d | d max | E | F | $L_N$ | $ØN_2$ | R | T | $T_K$ /M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10 | 10 | 10 | 1,0 | 1,1 | 3° | 1° | 24 | 7 | 5 | 56 | 8 | 25 | 22 | 2 | 24 | 36 | 30 | 1,5 | Ø 44 / 2 x M6 |
| 2 | 20 | 30 | 20 | 2,2 | 1,4 | 3° | 1° | 24 | 8 | 5 | 85 | 12 | 38 | 20 | 4 | 28 | 55 | 40 | 1,5 | Ø 68 / 2 x M8 |
| 4 | 40 | 60 | 40 | 3,4 | 1,6 | 3° | 1° | 28 | 8 | 5 | 100 | 15 | 45 | 24 | 4 | 30 | 65 | 45 | 1,5 | Ø 80 / 3 x M8 |
| 8 | 80 | 120 | 80 | 7,3 | 2,2 | 3° | 1° | 32 | 10 | 5 | 120 | 18 | 55 | 28 | 4 | 42 | 80 | 60 | 1,5 | Ø 100 / 3 x M10 |
| 16 | 160 | 240 | 160 | 12,4 | 2,5 | 3° | 1° | 42 | 12 | 5 | 150 | 20 | 70 | 36 | 6 | 50 | 100 | 70 | 1,5 | Ø 125 / 3 x M12 |
| 25 | 250 | 370 | 250 | 19,1 | 3,1 | 3° | 1° | 46 | 14 | 5 | 170 | 20 | 85 | 40 | 6 | 55 | 115 | 85 | 1,5 | Ø 140 / 3 x M14 |
| 30 | 400 | 550 | 400 | 31,1 | 4,8 | 3° | 1° | 58 | 16 | 5 | 200 | 25 | 100 | 50 | 8 | 66 | 140 | 100 | 1,5 | Ø 165 / 3 x M16 |
| 50 | 600 | - | 600 | 32,1 | 4,8 | 3° | 1° | 58 | 16 | 5 | 200 | 25 | 100 | 50 | 8 | 66 | 140 | 100 | 1,5 | Ø 165 / 3 x M16 |
| 90 | 900 | - | 900 | 58,7 | 7,6 | 3° | 1° | 70 | 19 | 5 | 260 | 30 | 110 | 62 | 8 | 80 | 160 | 125 | 2,0 | Ø 215 / 3 x M20 |

## Pedestal bearing




| Type | ø d (mm) | Dimensions (mm) h | a | e | b | $s_2$ | $s_1$ | g | w | n | Bolt Used (mm) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UCP 205 | 25 | 36,5 | 140 | 105 | 38 | 19 | 13 | 13 | 71 | 14,3 | 10 | 0,8 |
| UCP 206 | 30 | 42,9 | 165 | 121 | 48 | 21 | 17 | 15 | 84 | 15,9 | 14 | 1,3 |
| UCP 207 | 35 | 47,6 | 167 | 127 | 48 | 21 | 17 | 16 | 93 | 17,5 | 14 | 1,6 |
| UCP 208 | 40 | 49,2 | 184 | 137 | 54 | 21 | 17 | 17 | 98 | 19,0 | 14 | 2,0 |
| UCP 209 | 45 | 54,0 | 190 | 146 | 54 | 21 | 17 | 17 | 106 | 19,0 | 14 | 2,2 |
| UCP 210 | 50 | 57,2 | 206 | 159 | 60 | 22 | 20 | 19 | 113 | 19,0 | 16 | 2,9 |
| UCP 212 | 60 | 69,8 | 241 | 184 | 70 | 25 | 20 | 22 | 138 | 25,4 | 16 | 4,9 |
| UCP 214 | 70 | 79,4 | 266 | 210 | 72 | 30 | 25 | 28 | 156 | 30,2 | 20 | 6,8 |
| UCP 216 | 80 | 88,9 | 292 | 232 | 78 | 35 | 25 | 32 | 174 | 33,3 | 20 | 9,0 |
| UCP 217 | 85 | 95,2 | 310 | 247 | 83 | 40 | 25 | 32 | 185 | 34,1 | 20 | 10,8 |

## Flange bearing




| Type | ø d (mm) | Dimensions (mm) a | e | i | g | l | s | b | Z | Bi | n | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UCFL 201 | 12 | 113 | 90 | 15 | 11 | 25,5 | 12 | 60 | 33,3 | 31,0 | 12,7 | 0,48 |
| UCFL 203 | 17 | 113 | 90 | 15 | 11 | 25,5 | 12 | 60 | 33,3 | 31,0 | 12,7 | 0,48 |
| UCFL 204 | 20 | 113 | 90 | 15 | 11 | 25,5 | 12 | 60 | 33,3 | 31,0 | 12,7 | 0,48 |
| UCFL 205 | 25 | 130 | 99 | 16 | 13 | 27 | 16 | 68 | 35,7 | 34,0 | 14,3 | 0,64 |
| UCFL 207 | 35 | 161 | 130 | 19 | 14 | 34 | 16 | 90 | 44,4 | 42,9 | 17,5 | 1,2 |
| UCFL 208 | 40 | 175 | 144 | 21 | 14 | 36 | 16 | 100 | 51,2 | 49,2 | 19,0 | 1,6 |
| UCFL 210 | 50 | 197 | 157 | 22 | 15 | 40 | 19 | 115 | 54,6 | 51,6 | 19,0 | 2,2 |
| UCFL 212 | 60 | 250 | 202 | 29 | 18 | 48 | 23 | 140 | 68,7 | 65,1 | 25,4 | 4,2 |
| UCFL 214 | 70 | 265 | 216 | 31 | 20 | 54 | 23 | 160 | 75,4 | 74,6 | 30,2 | 5,7 |
| UCFL 216 | 80 | 290 | 233 | 34 | 20 | 58 | 25 | 180 | 83,3 | 82,6 | 33,3 | 7,8 |

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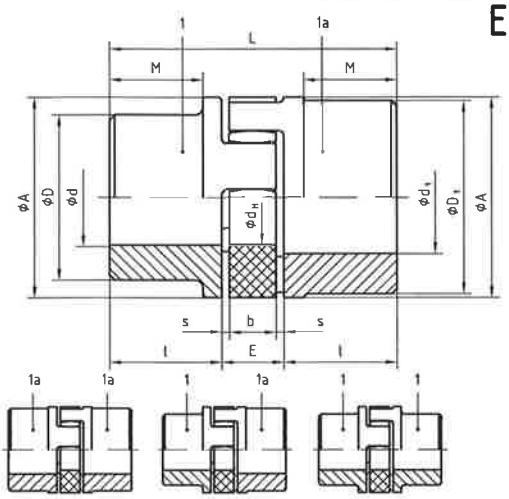
Internet: www.enzfelder.at

# Couplings, expansion bellows

## Elastic couplings (KU)




| Type R | Mt nom in Nm at 80° Shore[1] | Mt nom in Nm at 92° Shore[1] | Mt nom in Nm at 98° Shore[1] | holes pilot drill | hub 1 finished Ød min | hub 1 finished Ød max | pilot drill | hub 1a finished Ød1 min | hub 1a finished Ød1 max | ØA | ØD | ØD1 | L | l | E | s | b | M | ØdH | material | weight[3] type 1 in kg | weight[3] type 1a in kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14 | 4 | 7 | 12 | - | 4 | 14 | - | - | - | 30 | 30 | - | 35 | 11 | 13 | 1,5 | 10 | - | 10 | aluminium or GG | 0,14 | 0,14 |
| 19/24 | 5 | 10 | 17 | 4 | 6 | 19 | - | 6 | 24 | 40 | 32 | 40 | 66 | 25 | 16 | 2 | 12 | - | 18 | | 0,32 | 0,36 |
| 24/28 | 17 | 35 | 60 | 6 | 8 | 24 | 6 | 8 | 28 | 55 | 40 | 48 | 78 | 30 | 18 | 2 | 14 | 24 | 27 | | 0,60 | 0,72 |
| 28/38 | 46 | 95 | 160 | 8 | 10 | 28 | 8 | 10 | 38 | 65 | 48 | 65 | 90 | 35 | 20 | 2,5 | 15 | 28 | 30 | | 0,97 | 1,33 |
| 38/45 | 93 | 190 | 325 | 10 | 12 | 38 | 36 | 38 | 45 | 80 | 66 | 77 | 114 | 45 | 24 | 3 | 18 | 37 | 38 | | 2,08 | 2,46 |
| 42/55 | 130 | 265 | 450 | 12 | 14 | 42 | 40 | 42 | 55 | 95 | 75 | 94 | 126 | 50 | 26 | 3 | 20 | 40 | 46 | | 3,21 | 3,93 |
| 48/60 | 150 | 310 | 525 | 13 | 15 | 48 | 46 | 48 | 60 | 105 | 85 | 102 | 140 | 56 | 28 | 3,5 | 21 | 45 | 51 | | 4,41 | 5,19 |
| 55/70 | 180 | 375 | 625 | 18 | 20 | 55 | 52 | 55 | 70 | 120 | 98 | 120 | 160 | 65 | 30 | 4 | 22 | 52 | 60 | GG | 6,64 | 8,10 |
| 65/75[2] | 205 | 425 | 640 | 20 | 22 | 65 | 63 | 65 | 75 | 135 | 115 | 135 | 185 | 75 | 35 | 4,5 | 26 | 61 | 68 | | 10,13 | 11,65 |
| 75/90[2] | 475 | 975 | 1465 | 28 | 30 | 75 | 73 | 75 | 90 | 160 | 135 | 160 | 210 | 85 | 40 | 5 | 30 | 69 | 80 | | 16,03 | 19,43 |

Finish-borings are made according, to the ISO system of tolerances H7. Feather key grooves are made according to DIN 6885/1. The max. angle shift is 1°30', the twisting angle 3,2° at Mt nom. The operable temperature range lies between -40°C and +100°C.

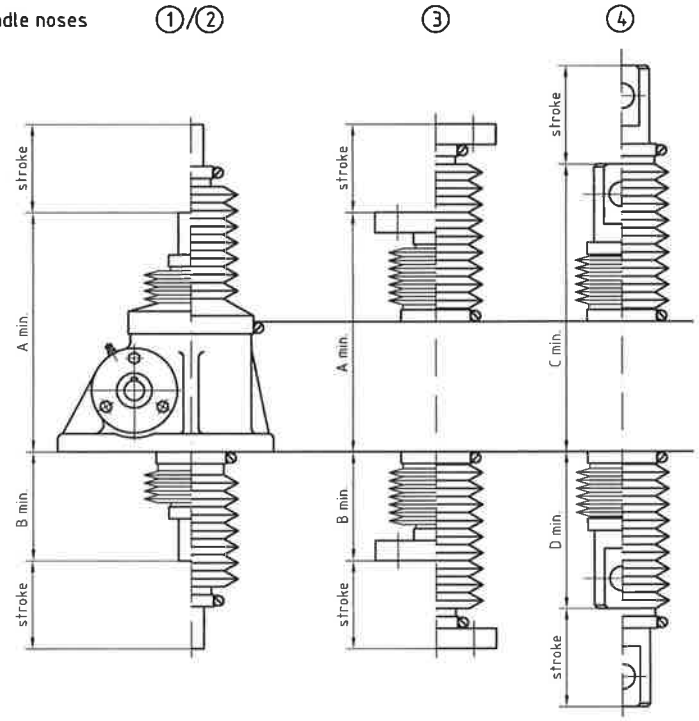
1) The rated turning moments are valid for normal operation with slight jolts; due to the higher start-up moment of three-phase squirrel cage motors an imfact factor of 2 must be taken into account.
2) from size 65/75 95° Shore on
3) weight for GG, aluminium approx. 60% less.

Product as delivered: enclosed

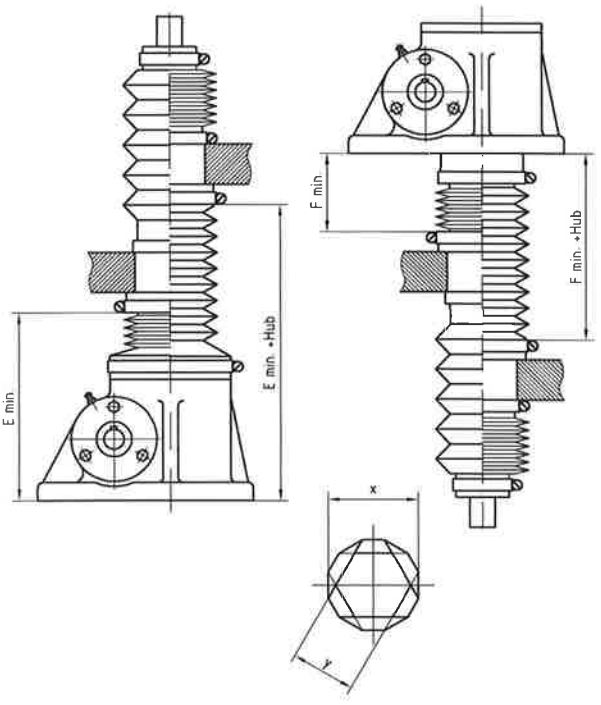
## Expansion bellows (FB)

### basic type

spindle noses ①/② ③ ④




### traveling nut type




| SG | 0005 | 0015 | 0020 | 0030 | 0050 | 0100 | 0150 | 0200 | 0240 | 0300 | 0350 | 0500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A min. | 106+0,15xstroke | 130+0,15xstroke | 156+0,15xstroke | 157+0,15xstroke | 202+0,15xstroke | 215+0,15xstroke | 235+0,15xstroke | 274+0,15xstroke | 300+0,15xstroke | 312+0,15xstroke | 355+0,15xstroke | 455+0,15xstroke |
| B min. | 37+0,15xstroke | 50+0,15xstroke | 62+0,15xstroke | 62+0,15xstroke | 72+0,15xstroke | 75+0,15xstroke | 85+0,15xstroke | 97+0,15xstroke | 100+0,15xstroke | 100+0,15xstroke | 115+0,15xstroke | 195+0,15xstroke |
| C min. | 134+0,15xstroke | 160+0,15xstroke | 189+0,15xstroke | 190+0,15xstroke | 250+0,15xstroke | 270+0,15xstroke | 305+0,15xstroke | 342+0,15xstroke | 365+0,15xstroke | 402+0,15xstroke | 455+0,15xstroke | 575+0,15xstroke |
| D min. | 65+0,15xstroke | 80+0,15xstroke | 95+0,15xstroke | 95+0,15xstroke | 120+0,15xstroke | 130+0,15xstroke | 155+0,15xstroke | 165+0,15xstroke | 175+0,15xstroke | 190+0,15xstroke | 215+0,15xstroke | 315+0,15xstroke |
| E min. | 84+0,15xstroke | 110+0,15xstroke | 124+0,15xstroke | 125+0,15xstroke | 160+0,15xstroke | 170+0,15xstroke | 185+0,15xstroke | 212+0,15xstroke | 235+0,15xstroke | 247+0,15xstroke | 280+0,15xstroke | 325+0,15xstroke |
| F min. | 28+0,15xstroke | 40+0,15xstroke | 44+0,15xstroke | 44+0,15xstroke | 50+0,15xstroke | 52+0,15xstroke | 59+0,15xstroke | 64+0,15xstroke | 70+0,15xstroke | 77+0,15xstroke | 77+0,15xstroke | 79+0,15xstroke |
| x | 75 | 75 | 75 | 105 | 105 | 125 | 125 | 140 | 140 | 150 | 180 | 210 |
| y | 38 | 38 | 38 | 63 | 63 | 75 | 75 | 100 | 100 | 110 | 120 | 150 |

This chart is valid for closed rooms at a normal ambient temperature
In case of deviations please inquire.

Product as delivered: enclosed

# Crank Handles, Handwheels

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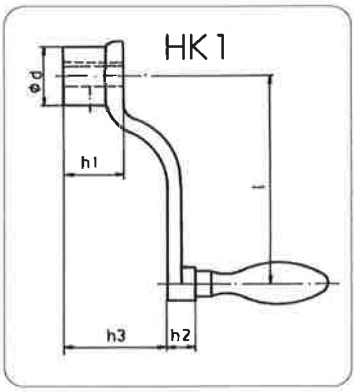
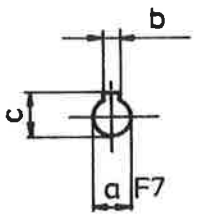
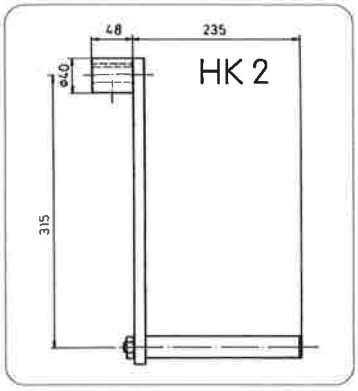
Internet: www.enzfelder.at

## Crank handles (HK)




HK 1

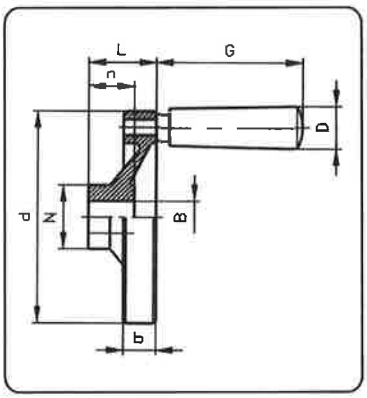
| SG | 0005 | 0010 | 0015 | 0020 | 0030 | 0050 | 0100 |
|---|---|---|---|---|---|---|---|
| a F 7 | 10 | 14 | 14 | 14 | 16 | 20 | 24 |
| b P 9 | 3 | 5 | 5 | 5 | 5 | 6 | 8 |
| c | 11,4 | 16,3 | 16,3 | 16,3 | 18,3 | 22,8 | 27,3 |
| d | 28 | 38 | 38 | 38 | 38 | 44 | 48 |
| h1 | 28 | 38 | 38 | 38 | 38 | 44 | 48 |
| h2 | 13 | 14 | 14 | 14 | 14 | 21 | 21 |
| h3 | 48 | 65 | 65 | 65 | 65 | 78 | 90 |
| l | 100 | 160 | 160 | 160 | 160 | 200 | 250 |

HK 2

| SG | 0150 | 0200 |
|---|---|---|
| a F 7 | 25 | 28 |
| b P 9 | 8 | 8 |
| c | 28,3 | 31,3 |

Dimensional variations according to DIN 7168 medium. Deviating dimensions on request.

## Hand wheels (HR)




| Type | d | N | b | n | L | G | D | Pilot drill H7 | Weight kg |
|---|---|---|---|---|---|---|---|---|---|
| SG 0005 | 80 | 26 | 13,0 | 16 | 30 | 58,5 | 22 | 10 | 0,16 |
| SG 0010, 0015, 0020, 0030 | 125 | 31 | 15,0 | 18 | 34 | 67,5 | 23 | 14 | 1,3 |
| SG 0030, 0050 | 160 | 36 | 18,0 | 20 | 37 | 67,5 | 23 | 14 | 1,5 |
| SG 0050, 0100 | 200 | 42 | 20,5 | 24 | 45 | 80,0 | 26 | 18 | 1,0 |
| SG 0100, 0150 | 250 | 48 | 23,0 | 28 | 51 | 90,0 | 28 | 24 | 1,3 |

# Swivelling console, Limit stop, Turn-lock device

**ENZFELDER GmbH.**
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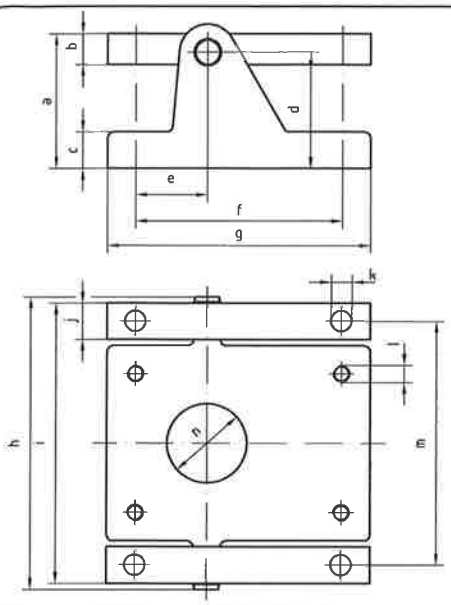
## Swivelling console (SK)




| SG | 0005 | 0015 | 0030 | 0050 | 0100 | 0150 | 0200 | 0240 | 0300 | 0350 | 0500 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| a | 50 | 67,5 | 90 | 110 | 110 | 150 | 160 | 155 | 170 | 210 | 200 |
| b | 10 | 15 | 25 | 30 | 35 | 45 | 50 | 55 | 60 | 65 | 80 |
| c | 8 | 15 | 20 | 30 | 30 | 30 | 40 | 40 | 50 | 60 | 80 |
| d | 45 | 60 | 77,5 | 95 | 92,5 | 127,5 | 135 | 127,5 | 140 | 177,5 | 160 |
| e | 30 | 37,5 | 50 | 58 | 60 | 63,5 | 95 | 90 | 95 | 135 | 175 |
| f | 60 | 110 | 135 | 168 | 180 | 190 | 240 | 260 | 280 | 360 | 350 |
| g | 70 | 135 | 165 | 215 | 225 | 237 | 297 | 320 | 355 | 430 | 440 |
| h | 150 | 150 | 190 | 240 | 270 | 297 | 322 | 344 | 411 | 424 | 685 |
| i | 144 | 140 | 180 | 230 | 260 | 285 | 310 | 330 | 395 | 410 | 670 |
| j | 10 | 15 | 25 | 30 | 30 | 35 | 40 | 40 | 60 | 60 | 80 |
| k | 6 | 9 | 13 | 18 | 18 | 21 | 26 | 26 | 35 | 35 | 48 |
| l | M8 | M8 | M12 | M16 | M16 | M20 | M24 | M24 | M30 | M30 | M42 |
| m | 134 | 125 | 155 | 200 | 230 | 250 | 270 | 290 | 335 | 350 | 590 |
| n | 45,2 | 48,2 | 60,2 | 83,2 | 95,2 | 110,2 | 140,2 | 150,2 | 160,2 | 170,5 | 210,5 |

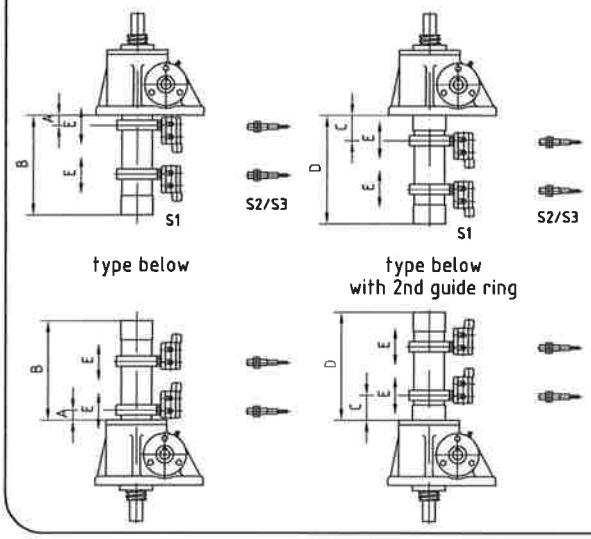
Special executions on request

Product as delivered: enclosed

## Limit stop (EAS)

type above

type above with 2nd guide ring




type below

type below with 2nd guide ring

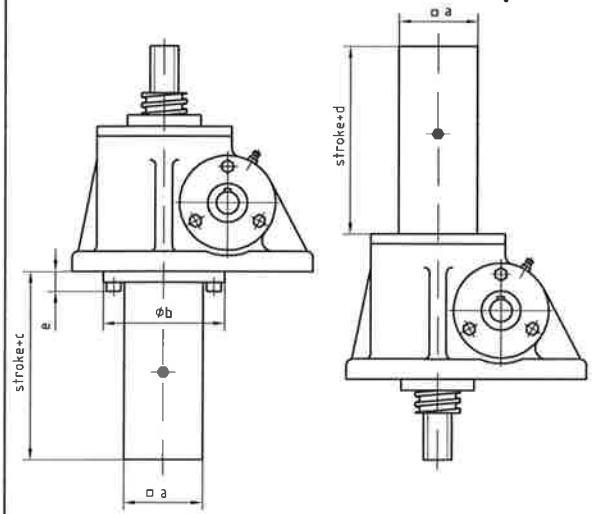


| | A | B | C | D |
|---|---|---|---|---|
| SG 0005 | 32 | stroke+95 | 47 | stroke+119 |
| SG 0015 | 32 | stroke+105 | 57 | stroke+130 |
| SG 0020 | 32 | stroke+105 | 57 | stroke+130 |
| SG 0030 | 32 | stroke+105 | 62 | stroke+135 |
| SG 0050 | 32 | stroke+105 | 62 | stroke+135 |
| SG 0100 | 32 | stroke+105 | 62 | stroke+135 |
| SG 0150 | 32 | stroke+105 | 58 | stroke+131 |
| SG 0200 | 32 | stroke+105 | 67 | stroke+140 |
| SG 0240 | 32 | stroke+105 | 72 | stroke+145 |
| SG 0300 | 32 | stroke+105 | 72 | stroke+145 |
| SG 0350 | 32 | stroke+105 | 77 | stroke+150 |
| SG 0500 | - | - | 45 | stroke+120 |

Limit switches must be adjusted in situ!
Product as delivered: enclosed

| limit switch type | | S1 | S2 | S3 |
|---|---|---|---|---|
| current max. at voltage | 250V | 0,25A | 220mA | - |
| | 120V | 0,5A | 500mA | - |
| | 24V | 7A | 1A | 1A |
| type of connection | | binding posts | cable 3x0,5mm² 1m length | cable |
| setting range E | | ±15 | the entire range | the entire range |
| temperature min/max | | -10°C +80°C | -5°C +70°C | -25°C +70°C |
| system of protection | | IP 65 | IP 67 | IP 65 |
| type of switch | | mech. | magnet | inductive |

## Square turn-lock device (VV)




| SG | 0005 | 0015 | 0020 0030 | 0050 | 0100 | 0150 | 0200 | 0240 0300 | 0350 | 0500 |
|---|---|---|---|---|---|---|---|---|---|---|
| □a | 30 | 40 | 40 | 70 | 80 | 90 | 110 | 120 | 140 | 180 |
| ϕb | 59 | 70 | 70 | 108 | 116 | 129 | 148 | 177 | 197 | 240 |
| c | stroke+67 | stroke+92 | stroke+92 | stroke+106 | stroke+112 | stroke+115 | stroke+121 | stroke+132 | stroke+137 | stroke+158 |
| d | stroke+60 | stroke+77 | stroke+77 | stroke+90 | stroke+90 | stroke+100 | stroke+110 | stroke+110 | stroke+115 | stroke+158 |
| e | 11 | 14 | 14 | 18 | 20 | 22 | 22 | 26 | 26 | 26 |

A turn-lock device comprised of a grooved spindle and feather key is also available on request.

# Motor flanges, Safety nuts

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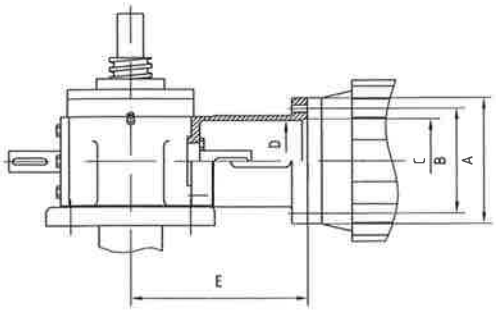
## Motor flanges (M)

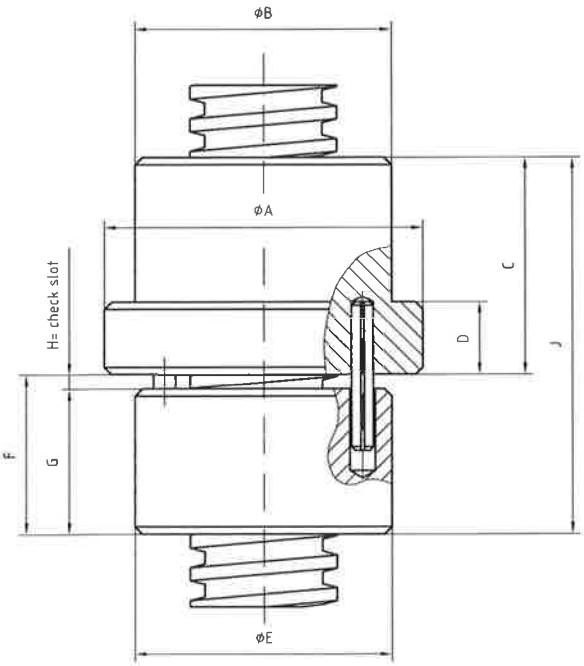



| | type of motor | flange ØA | ØB | ØC | ØD | E | shaft ends Ø SG | shaft ends Ø motor | 4 pieces bolts DIN 912 for motor |
|---|---|---|---|---|---|---|---|---|---|
| SG 0005 | 56 B14 | 80 | 65 | 50 | 44 | 93 | 10 | 9 | M5 x 16 |
| | 63 B14 | 90 | 75 | 60 | 44 | 96 | 10 | 11 | M5 x 20 |
| | 71 B14 | 105 | 85 | 70 | 44 | 103 | 10 | 14 | M6 x 25 |
| SG 0015 | 63 B14 | 90 | 75 | 60 | 52 | 114 | 14 | 11 | M5 x 20 |
| | 71 B14 | 105 | 85 | 70 | 52 | 119 | 14 | 14 | M6 x 25 |
| | 80 B14 | 120 | 100 | 80 | 52 | 131 | 14 | 19 | M6 x 25 |
| SG 0030 | 71 B14 | 105 | 85 | 70 | 61 | 136 | 16 | 14 | M6 x 25 |
| | 80 B14 | 120 | 100 | 80 | 61 | 146 | 16 | 19 | M6 x 25 |
| | 90 B14 | 140 | 115 | 95 | 61 | 156 | 16 | 24 | M8 x 25 |
| SG 0050 | 80 B14 | 120 | 100 | 80 | 77 | 171 | 20 | 19 | M6 x 25 |
| | 90 B14 | 140 | 115 | 95 | 76 | 181 | 20 | 24 | M8 x 25 |
| | 100 B14 | 160 | 130 | 110 | 76 | 193 | 20 | 28 | M8 x 25 |
| | 112 B14 | 160 | 130 | 110 | 76 | 193 | 20 | 28 | M8 x 25 |
| SG 0100 | 90 B14 | 140 | 115 | 95 | 83 | 192 | 24 | 24 | M8 x 25 |
| | 100 B14 | 160 | 130 | 110 | 80 | 203 | 24 | 28 | M8 x 25 |
| | 112 B14 | 160 | 130 | 110 | 80 | 203 | 24 | 28 | M8 x 25 |
| | 132 B14 | 200 | 165 | 130 | 80 | 225 | 24 | 38 | M10 x 30 |
| SG 0150 | 100 B14 | 160 | 130 | 110 | 84 | 218 | 25 | 28 | M8 x 25 |
| | 112 B14 | 160 | 130 | 110 | 84 | 218 | 25 | 28 | M8 x 25 |
| | 132 B14 | 200 | 165 | 130 | 84 | 240 | 25 | 38 | M10 x 30 |
| SG 0200 | 132 B14 | 200 | 165 | 130 | 100 | 263 | 28 | 38 | M10 x 30 |
| | 160 B5 | 350 | 300 | 250 | 100 | 307 | 28 | 42 | M16 x 60 + 4 nuts |
| SG 0240 | 132 B14 | 200 | 165 | 130 | 108 | 270 | 32 | 38 | M10 x 30 |
| | 160 B5 | 350 | 300 | 250 | 108 | 304 | 32 | 42 | M16 x 60 + 4 nuts |
| SG 0300 | 132 B14 | 200 | 165 | 130 | 114 | 278 | 34 | 38 | M10 x 30 |
| | 160 B5 | 350 | 300 | 250 | 114 | 312 | 34 | 42 | M16 x 60 + 4 nuts |
| SG 0350 | 160 B5 | 350 | 300 | 250 | 130 | 349 | 38 | 42 | M16 x 60 + 4 nuts |
| | 180 B5 | 350 | 300 | 250 | 130 | 351 | 38 | 48 | M16 x 60 + 4 nuts |
| SG 0500 | 160 B5 | 350 | 300 | 250 | 150 | 414 | 40 | 42 | M16 x 60 + 4 nuts |
| | 180 B5 | 350 | 300 | 250 | 150 | 416 | 40 | 48 | M16 x 60 + 4 nuts |

Important:

Unless otherwise requested by the customer, motor flanges are mounted on the right, as shown above!
Engines and fastening bolts are delivered non mounted.

## Safety nuts (SI0)




| SG | 0005 | 0010 0015 | 0020 0030 | 0050 | 0100 | 0150 | 0200 | 0240 | 0300 | 0350 | 0500 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØA | 50 | 60 | 76 | 87 | 98 | 110 | 120 | 130 | 155 | 188 | 225 |
| ØB | 40 | 40 | 50 | 70 | 75 | 90 | 90 | 100 | 130 | 150 | 160 |
| C | 32 | 35 | 40 | 60 | 70 | 75 | 100 | 110 | 120 | 145 | 155 |
| D | 10 | 15 | 20 | 20 | 25 | 25 | 30 | 30 | 35 | 35 | 50 |
| ØE | 40 | 38 | 50 | 70 | 73 | 85 | 90 | 98 | 120 | 145 | 160 |
| F | 23 | 25 | 33 | 44 | 56 | 66 | 71 | 80 | 98 | 108 | 128 |
| G | 20 | 22 | 30 | 40 | 50 | 60 | 65 | 73 | 90 | 100 | 120 |
| H | 3 | 3 | 3 | 4 | 6 | 6 | 6 | 7 | 8 | 8 | 8 |
| J | 55 | 60 | 73 | 104 | 126 | 141 | 171 | 190 | 218 | 253 | 283 |

Connected with the loaded traveling nut via driving pins, the locking nut runs at idle. As the threads in the traveling nut wear, it approaches the idling, unloaded and therefore unworn safety nut. The wear is ascertained by checking the slot H. When the table entry H has declined by half of the traveling nut must be replaced!

The visual check of the slot H can be automated by integrating an automatic disconnecting limit switch which is actuated when the traveling nut sinks.

Also available for the basic type
Standard sheet on request

Product as delivered: enclosed

# Pivoting Heads, Fork Heads, Critical Speed

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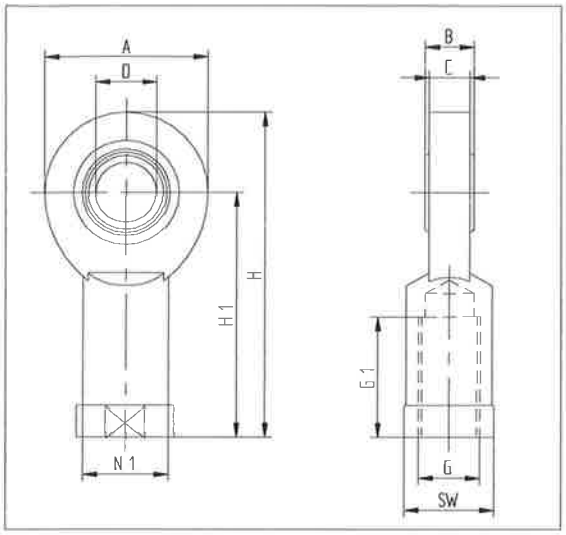
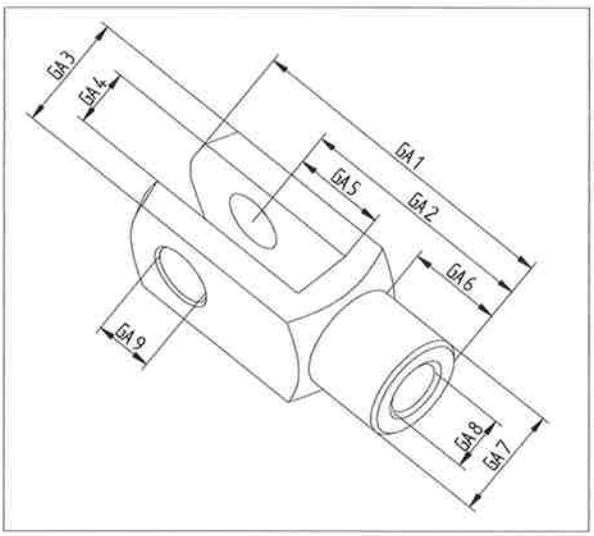



## Pivoting heads

| Type | A | B | C | D | G | G 1 | H | H 1 | SW | N 1 |
|---|---|---|---|---|---|---|---|---|---|---|
| SG 0005 | 34 | 10 | 8,5 | 12 | M12 | 18 | 67 | 50 | 18 | 19 |
| SG 0010 | 40 | 12 | 10,5 | 15 | M14 | 21 | 81 | 61 | 21 | 21 |
| SG 0015 | 40 | 12 | 10,5 | 15 | M14 | 21 | 81 | 61 | 21 | 21 |
| SG 0020 | 46 | 14 | 11,5 | 17 | M16 | 24 | 90 | 67 | 27 | 25 |
| SG 0030 | 53 | 16 | 13,5 | 20 | M20 x 1,5 | 30 | 103,5 | 77 | 30 | 28 |
| SG 0050 | 73 | 22 | 20 | 30 | M30 x 3 | 45 | 146,5 | 110 | 46 | 42 |
| SG 0100 | 82 | 25 | 22 | 35 | M36 x 3 | 60 | 166 | 125 | 55 | 48 |
| SG 0150 | 92 | 28 | 24 | 40 | M39 x 3 | 65 | 188 | 142 | 60 | 52 |
| SG 0200 | 112 | 35 | 31 | 50 | M45 x 3 | 68 | 216 | 130 | 70 | 62 |
| SG 0240 | 112 | 35 | 31 | 50 | M45 x 3 | 68 | 216 | 130 | 70 | 62 |
| SG 0300 | 135 | 44 | 39 | 60 | M52 x 3 | 70 | 242,5 | 175 | 80 | 70 |
| SG 0350 | 160 | 49 | 43 | 70 | M56 x 4 | 80 | 280 | 200 | 85 | 80 |
| SG 0500 | 180 | 55 | 48 | 80 | M64 x 4 | 85 | 320 | 230 | 95 | 95 |

Special versions on request




## Fork heads

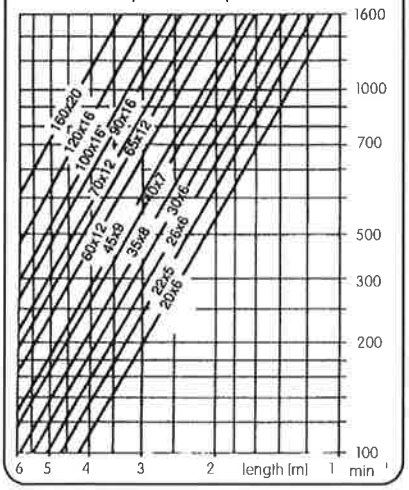
| Type | GA 1 | GA 2 | GA 3 | GA 4 | GA 5 | GA 6 | GA 7 | GA 8 | GA 9 |
|---|---|---|---|---|---|---|---|---|---|
| SG 0005 | 62 | 48 | 24 | 12 | 24 | 18 | 20 | M12 | 12 |
| SG 0010 | 72 | 56 | 27 | 14 | 28 | 22,5 | 24 | M14 | 14 |
| SG 0015 | 72 | 56 | 27 | 14 | 28 | 22,5 | 24 | M14 | 14 |
| SG 0020 | 83 | 64 | 32 | 16 | 32 | 24 | 26 | M16 | 16 |
| SG 0030 | 105 | 80 | 40 | 20 | 40 | 30 | 34 | M20 | 20 |
| SG 0050 | 148 | 110 | 60 | 30 | 60 | 40 | 48 | M30 | 30 |
| SG 0100 | 188 | 144 | 72 | 36 | 72 | 54 | 60 | M36 | 36 |
| SG 0150 | 265 | 192 | 96 | 50 | 96 | 73 | 82 | M45 x 2 | 50 |
| SG 0200 | - | - | - | - | - | - | - | - | - |
| SG 0240 | - | - | - | - | - | - | - | - | - |
| SG 0300 | - | - | - | - | - | - | - | - | - |
| SG 0350 | - | - | - | - | - | - | - | - | - |
| SG 0500 | - | - | - | - | - | - | - | - | - |

Special versions on request

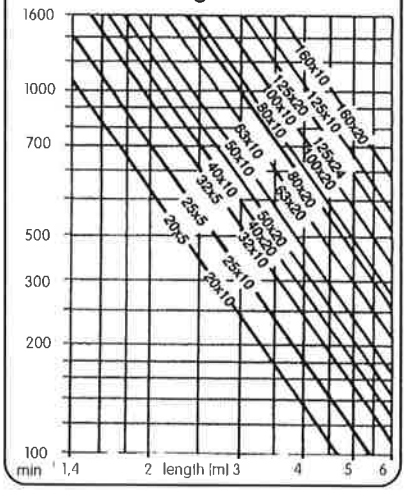
## Critical speed

In the L execution the critical speed depends on diameter and length of the spindle and on the spindle bearing arrangement.
The basis is a fixed bearing arrangement in the transmission case of the screw jacks and a single-row movalbe bearing arrangement at the spindle nose. If no movable bearing arrangement is available, the admissible RPMs of the spindle are reduced to: TPM = table entry x 0,2.

trapezoid spindles




recirculating ball screw



# Critical Buckling Force

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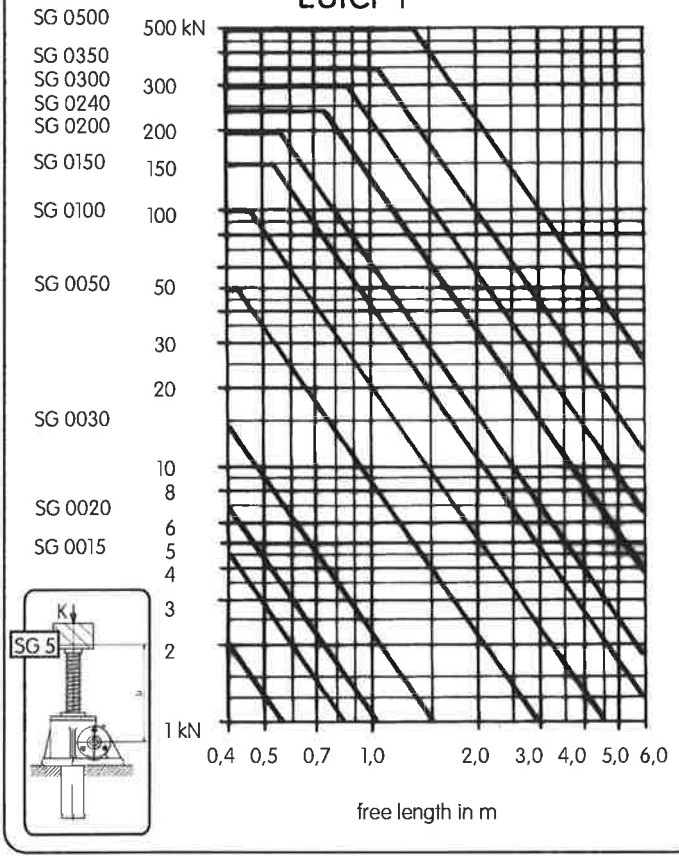
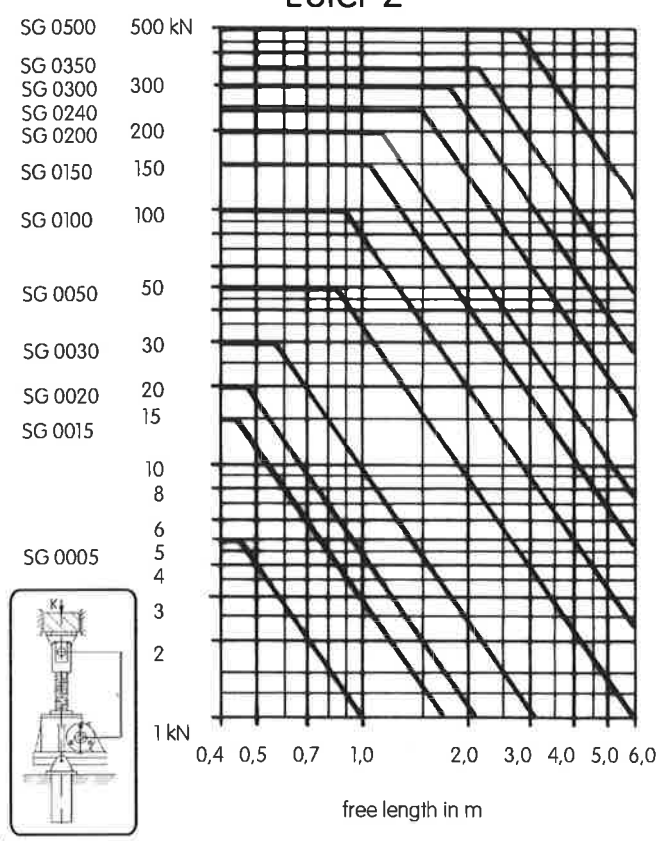
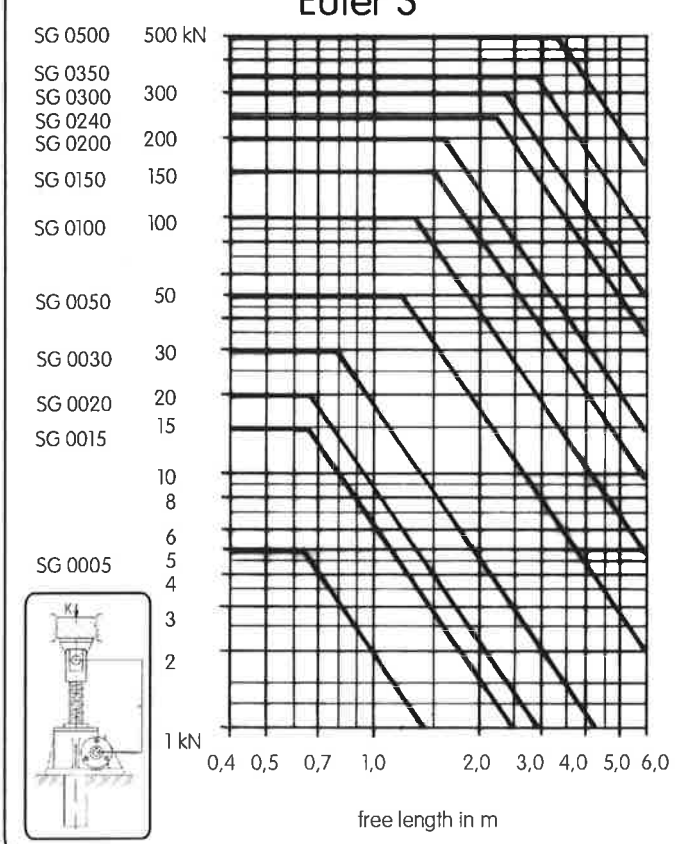
## Euler 1



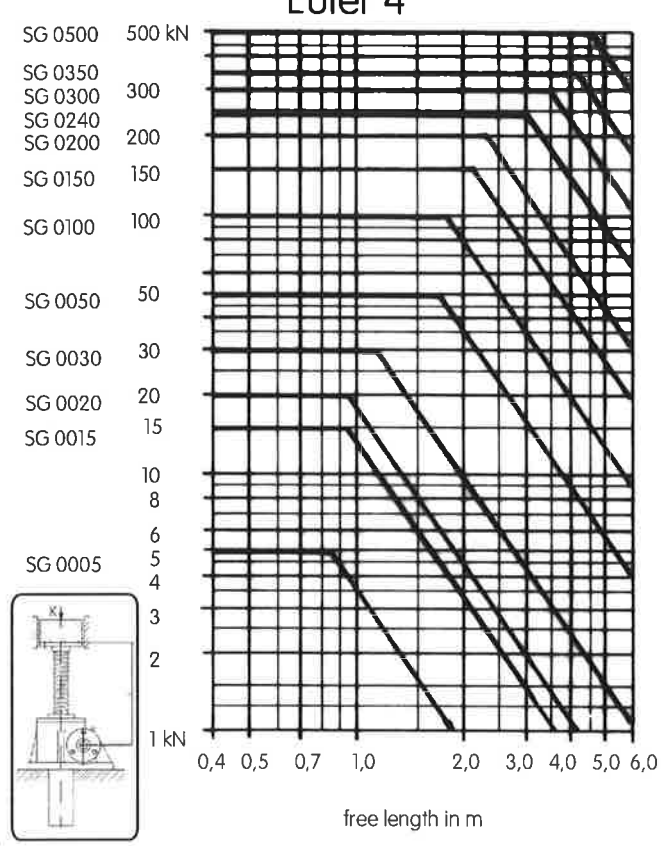

## Euler 2




## Euler 3




## Euler 4



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## Symbols:

| | | | |
|---|---|---|---|
| F (kN) | = dynamic load | $P_{SG}$ (kW) | = operating performance of the screw jack |
| v (m/min) | = lifting speed | $P_{ges}$ (kW) | = operating performance of all screw jacks |
| s (mm) | = spindle pitch | $P_{Anl}$ (kW) | = operating performance of the system |
| n (R/min) | = revolutions/min at the worm | $\eta_{ges}$ | = operating efficiency (preselection table page 4) |
| i | = worm gear reduction | $\eta_{Anl}$ | = efficiency of the system |
| $f_M$ | = factor for spindle load torque | $M_{sp}$ (Nm) | = spindle load torque |
| | | M (Nm) | = load torque at the worm |

## Driving power:

If the required driving power cannot be read sufficiently clear from the preselection and performance charts, it is computed as follows:

**Driving power $P_{SG}$ per spindle gear:**

$$P_{SG} = \frac{F \times v}{61{,}2 \times \eta_{ges}}$$

## Driving power $P_{ges}$ all of multiple spindle systems:

After adding the individual performances $P_{SG}$ to reach the total performance $P_{ges}$, the losses of spacer shafts, bevel gears, couplings, pedestal bearings, alignment errors etc. must be allowed for.

| | | |
|---|---|---|
| Standard value in case of 2 screw jacks | $\eta$ | 0,95 |
| 3 screw jacks | $\eta$ | 0,90 |
| 4 screw jacks | $\eta$ | 0,85 |
| 6-8 screw jacks | $\eta$ | 0,80 |

$$P_{Anl} = \frac{P_{ges}}{\eta_{Anl}}$$

## Starting capacity:

To compute the starting capacity the performance value $P_{SG}$ or $P_{Anl}$ is multiplied by 1.3.

## Ambient temperature:

At an ambient temerature higher than +20°C the operating factor must be reduced in correspondence with the following table.

| Ambient temperature °C | 50 | 60 | 70 | 80 |
|---|---|---|---|---|
| max. possible duty cycle in %/h | 18 | 15 | 10 | 5 |
| max. possible duty cycle in %/10min | 27 | 22 | 15 | 8 |

## Load torque at the worm:

$$M = \frac{F \times s}{2 \times \pi \times i \times \eta_{ges}}$$

$$M = \frac{9550 \times P_{SG}}{n}$$

## Spindle load torque:

The spindle load torque $M_{sp}$ is the load torque acting on the various parts of the system via the spindle noses 3,4 or the traveling nut. The spindle load torque can be computed with the help of the $f_M$ factor in the table below.

$$F \times f_M = M_{sp}$$

| SG | 0005 | 0010 | 0015 | 0020 | 0030 | 0050 | 0100 | 0150 | 0200 | 0240 | 0300 | 0350 | 0500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $f_M$ SG single-thread | 1,87 | 1,81 | 2,07 | 2,17 | 2,42 | 3,29 | 4,5 | 4,84 | 5,0 | 5,8 | 6,98 | 7,5 | 8,5 |
| $f_M$ SG double-thread | 2,85 | 2,57 | 3,06 | 3,16 | 3,35 | 4,77 | 6,47 | 6,7 | 6,95 | 8,1 | 9,43 | 10,0 | 11,1 |
| $f_M$ KSG | | | | | 1,67 | 1,67 | | 3,35 | | | | | |

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## Mounting

Spindle gears must be mounted in true alignment on a flat surface which must be so stiff that it can assume the maximal load without oscillations or deformations.

Align the screw jack and spindle with a machine spirit level and bolt them into place (do not tighten yet).

In lifting systems the spindle noses (in case of the basic type) or the traveling nuts (in case of the traveling nut type) must lie even with each other before the worms of the spindle gears are connected.

Before the driving gear is mounted the sense of rotation must be checked: in bevel gear driven lifting systems the sense of rotation can easily be confused; the result would be faulty mounting and possible damage of the installation.

Ensure that the spindle is parallel to any guidance. Use the position with the least amount of play between the screw jack element and the guidance as the point of reference.

Only when the spindle runs lightly and evenly over the entired stroke, can the mounting screws can be tightened and if necessary the screw jacks additionally pinned. An increased power requirement and increased temperatures are indicative of abnormal lateral forces.

Clean the spindle and re-lubricate it along the entired stroke length.

Attention! Misalignment and faulty gripping lead to increased power consumption, which is converted into friction and noise. The consequence is quick wear.
Additional add-on pieces: check under "Options".

If our specifications and performances according to the technical instructions are not observed and/or the components are not used as prescribed, any warranty claims will no longer be applicable.

## Maintenance

Screw jacks are filled with the greasing AGIP GRS M2 in the factory.
Grease the spindle and all lubricating nipples at regular intervals (~ 30-50 operating hours). The intervals depend on the given operating conditions and the duty cycle of the screw jacks. In case doubt please set up the lubrication plan together with us. After approx. 200-300 operating hours the wear of the traveling nut or the worm wheel due to the backlash of threads should be checked. The maximal normal backlash of single trapezoid threads must not exceed 1/4 of the thread pitch. In the cases of multiple threads or special threads 1/4 of P is the maximum normal acceptable backlash. When the maximum normal backlash is reached the traveling nut or the worm wheel must be replaced. After a short run-in period all screws must be checked.

After approx. 500 operating hours we recommend cleaning gear and spindle to remove the grease, checking all piece parts as to wear, and recharging them with new grease.

Recommended lubricants: Shell Darina 2, Castrol Grease MS3, BP Energrease LS-EP2.
The lubricant recommended can be used both for gears and spindles. If a high-grade spindle lubricant is to be used, we recommend Klueberplex GE 11-680.
For special conditions (e.g. higher temperatures) we recommend the lubricants specified in the enclosed technical manual.

In case of possible dirt accumulation in or damage of the spindle, expansion bellows or spring steel spirals must be used to protect the spindle. For oil-lubricated gears please ask for a special service manual.

If you order spare parts, the gear specifications marked on the type plate must be provided.

For more information apply for the detailed installation instructions in the company.

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# Tolerances

## 1.) External dimensions

For connecting dimensions the tolerances given in the corresponding drawings are valid. The values where no tolerance is indicated are not toleranced dimensions.

## 2.) The lateral backlash of the spindle

In the basic type (the spindle travels in and out) the lateral backlash of the spindle is the result of the difference between outside diameter of the spindle and inside diameter of the guide rings. Depending on the type of lifting element it is 0,1 to 0,3 mm. The result of these values is a lateral backlash at the end of the spindle, depending on the stroke (or how far the spindle is actually extended) if 2 guide rings are used. The approximate values of this lateral backlash "S" are listed in the table below. This lateral backlash can be reduced if required.

| Backlash "S" (mm) with second guide ring | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| stroke in mm | SG 0005 | SG 0010/0015/0020 | SG 0030 | SG 0050 | SG 0100/0150 | SG 0200 | SG 0300 | SG 0350 | SG 0500 |
| 0 | 0,6 | 0,7 | 0,7 | 0,9 | 1,0 | 1,0 | 1,0 | 1,1 | 1,1 |
| 75 | 0,9 | 1,0 | 1,0 | 1,2 | 1,3 | 1,2 | 1,3 | 1,3 | 1,3 |
| 150 | 1,3 | 1,3 | 1,3 | 1,5 | 1,6 | 1,5 | 1,4 | 1,5 | 1,5 |
| 300 | 2,0 | 1,9 | 1,9 | 2,1 | 2,2 | 2,0 | 2,0 | 1,9 | 1,9 |
| 500 | 3,0 | 2,7 | 2,7 | 2,9 | 3,0 | 2,6 | 2,6 | 2,5 | 2,4 |
| 750 | | 3,7 | 3,7 | 4,0 | 4,0 | 3,5 | 3,4 | 3,2 | 3,0 |
| 1000 | | 4,7 | 4,7 | 5,0 | 5,0 | 4,3 | 4,2 | 3,9 | 3,6 |
| 1500 | | | 6,7 | 7,1 | 7,0 | 6,0 | 5,8 | 5,3 | 4,8 |
| 2000 | | | 8,6 | 9,1 | 9,0 | 7,7 | 7,4 | 6,7 | 6,1 |
| 2500 | | | | 11,2 | 11,0 | 9,3 | 9,0 | 8,2 | 7,3 |

## 3.) The axial backlash of the spindle

The axial backlash of the spindle (basic type) and of the traveling nut (traveling nut type) is necessary for the building-up of an adequate lubricating film. Wear during operation will increase the axial backlash; please pay attention to our operating and maintenance instructions.
If desired the axial backlash can be limited accordingly through low-backlash or adjustable backlash executions.

| spindle pitch (mm) | 6 | 7 | 8 | 10 | 12 | 16 |
|---|---|---|---|---|---|---|
| max. axial backlash of the threaded spindle as manufactured (mm) | 0,25 | 0,26 | 0,28 | 0,30 | 0,32 | 0,40 |
| max. permissible axial backlash due to wear (mm) | 1,5 | 1,7 | 2,0 | 2,5 | 3,0 | 4,0 |

## 4.) Pitch errors of the spindle

Due to the work tolerances of the processing machines a pitch error of 0,05 to 0,075 mm per 300 mm threaded length results in whirl thread spindles. In the practice this error has hardly any effect on the precision of the lifting. In case of doubt please contact us.

## 5.) Straightness of the spindle

The threaded spindles are made of drawn material and deviate from straightness max. by 0,5 mm per 1 m spindle length.

## 6.) Backlash of tooth flank

The backlash of the tooth profile between worm and wormwheel is 0,0 to 0,15 mm as manufactured. Due to the high speed-increasing ratios the effect on the lifting motion is practically imperceptible.

## 7.) Adjustment tolerance

An adjustment tolerance around 0,1 mm can easily be achieved with one-side load direction and manual operation. In the case of an alternation of load the above-mentioned points must be observed. For manual operation also fixed stop motion devices can be used.
In case of a motor drive a number of additional factors must be taken into account, e.g. speed of the driving motor, lifting load, flywheel effect, speed-reducing ratios in the piece parts, efficiency, load direction etc..
If suitable limit switches are used, which are adjusted in the process of assemblage, the point can be determined relatively exactly (prerequisite: constant operating conditions).
If in certain cases greater consider accuracy is required, braking motors or motor operators equipped with brakes must be used. Fixed stroke-arresting devices are not permissible. If in certain cases running against fixed devices is unavoidable, adequate steps must be taken to make sure that overstress is prevented (e.g. by slipping clutch, load-controlled motor cutoff, etc.).

# Questionnaire

**ENZFELDER GmbH.**
WERK ENZESFELD:
A-2551 ENZESFELD, EICHENGASSE 36
Tel.:++43(0)2256/81287
Fax.:++43(0)2256/81287-95
E-Mail: office@enzfelder.at
Internet: www.enzfelder.at

COMPANY .....
ADDRESS .....
NAME ..... Dept ..... Phone ..... Fax .....

**To be able to prepare a proposal meeting your specific demands, please provide us with the following information:**

In which systems are the lifting elements to be used?
.....
Number of systems .....
Number of lifting elements per system .....

## AXIAL LOAD

| | | | | | | |
|---|---|---|---|---|---|---|
| per system | pressure | dynamic ..... kN | | tension | dynamic ..... kN | |
| | | static ..... kN | | | static ..... kN | |
| per spindle | pressure | dynamic ..... kN | | tension | dynamic ..... kN | |
| | | static ..... kN | | | static ..... kN | |

Type of buckling load according to Euler (see page 29) I□ , II□ , III□ oder IV□

## OPERATING CONDITIONS

Effective stroke ..... mm
Side forces acting ..... kN
Lifting speed desired ..... mm/min
Mounting of spindle ..... vertically/horizontally
Ambient temperature ..... °C
Duty cycle/load conditions per 10min .....
per hour .....
Distance per alternation of load ..... mm

## FOR WHICH PARTS DO YOU WISH TO RECEIVE OUR OFFER?

**Spindle lifting element with lifting spindle:**
Basic type ..... O or U
Spindle nose ..... 0/1/2/3/4/5/6/So

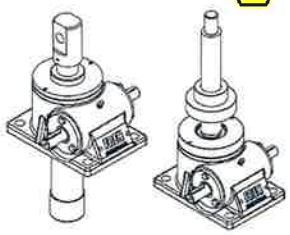
**Spindle lifting element with rotating spindle and traveling nut:**
Travling nut type ..... O or U
Spindle nose ..... 0/1/2/3/So

**Expansion bellows** ..... yes/no
**Bevel gear box** ..... yes/no
**Elastic cardan shafts** ..... yes/no
**Couplings** ..... yes/no
**Pedestal bearings** ..... yes/no
**Motor; voltage** ..... **frequency** ..... **system of protection** .....
**Limit stop** ..... yes/no
**Crank handle, handwheel** ..... yes/no
**Swinging element** ..... yes/no
**Swivelling console** ..... yes/no
**Safety nut** ..... yes/no
**Other** .....

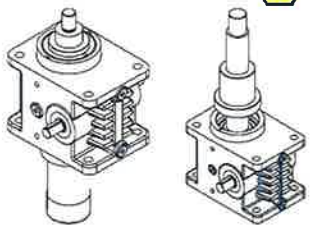
# Product overview 03/2015

Eichengasse 36, A-2551 Enzesfeld, Tel.: +43 (0) 2256 81287 - 00, Fax.: +43 (0) 2256 81287 - 95, office@enzfelder.at, www.enzfelder.at

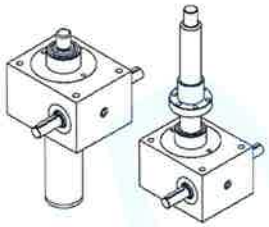
## SG
Screw jack
Classic



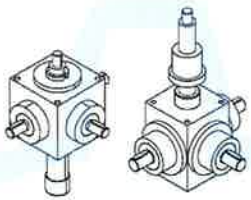
## HSG
High performance-
Screw jack



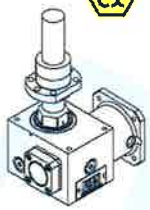
## BG
Screw jack
Cubic



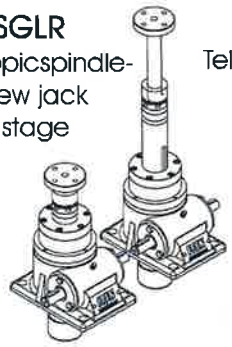
## SHG
Quick-lifting
screw jack



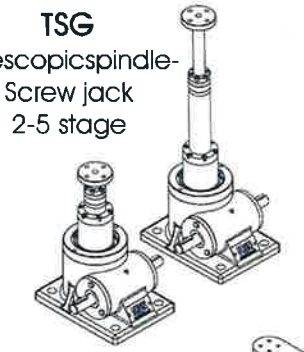
## SH
Servo lifting
gear



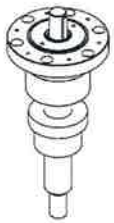
## TSGLR
Telescopicspindle-
Screw jack
2-stage



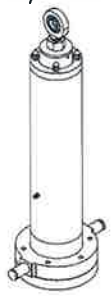
## TSG
Telescopicspindle-
Screw jack
2-5 stage



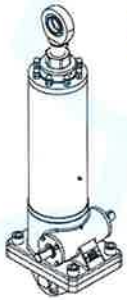
## SLA
Spindlebearing



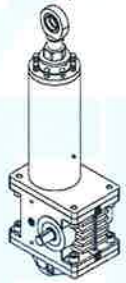
## SEZ
Spindlebearings-
Cylinder



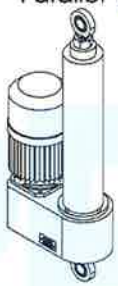
## ELZ
Electric cylinder



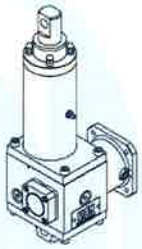
## HELZ
High performance-
Elektric cylinder



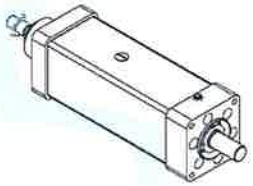
## ELZP
Electric cylinder
Parallel



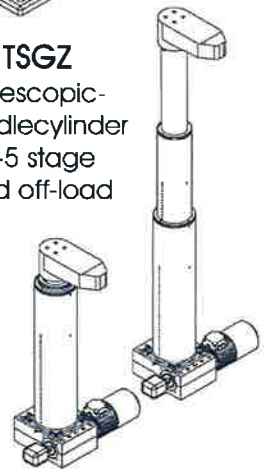
## SHELZ
Servo electric-
cylinder



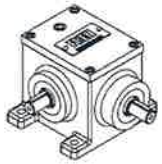
## EPNEU
Spindle-
Elektric cylinder



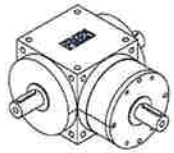
## TSGZ
Telescopic-
spindlecylinder
2-5 stage
And off-load



## K
Bevel gear
Type K

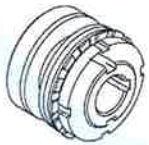


## H
Bevel gear
Type H



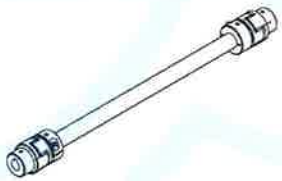
## R / GS
Elastic / backlash-free
Coupling

## RT
Slip hub

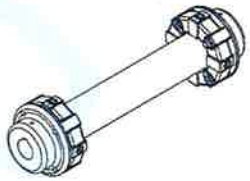


## RK
Slip coupling

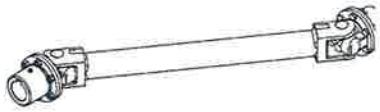
## ZR
FREN
Connecting shaft



## G / GX
Elastic
Connecting shaft

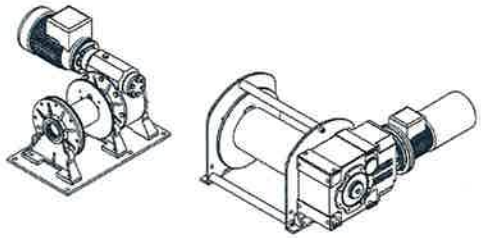


## Cardan shaft



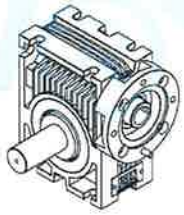
## HT
Lifting table
mechanic / hydraulic

## SW
Rope winche

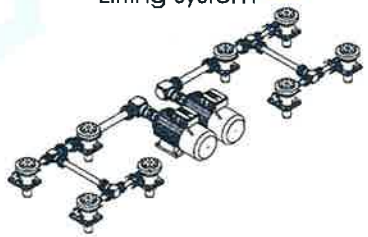


## PLG
Planetary gear

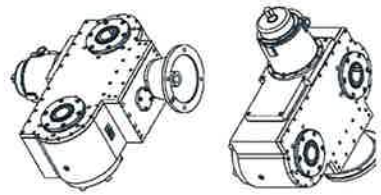
## uniCe
Worm gear



## HA
Lifting system



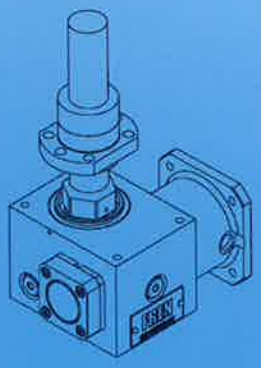
## Special gear



# ENZFELDER GmbH

## Power transmission- and lifting engineering

## Servo lifting gear
## Type SH



FEM = Flanged single nut
ZEM = Cylindrical single nut
FEMV= Flanged single nut prestressed
ZEMV= Cylindrical single nut prestressed
FDM = Double flange nut
ZDM = Cylindrical double nut

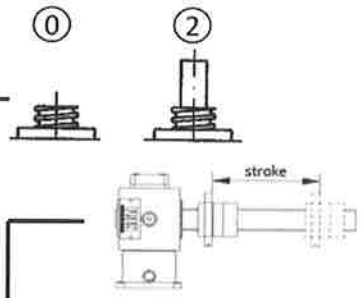
Standard:
10arcmin = 10 arcmin
Special :
5arcmin = 5 arcmin

Reductions:
45 = 45:1
30 = 30:1
15 = 15:1

Refers to the axis distance

SH
Servo
lifting
gear

O = Version above
U = Version below




H = horizontal
V = vertical

00 = without motor
M = with motor

00 = without nut housing
MG = with nut housing

00 = without floating bearing
LL = with floating bearing

SH 35 - 45(10arcmin) - FEM - O - 0 - 500 - H - M - MG - LL

Type

Gear size

Reduction i

Backlash

Traveling nut version

Version

Spindle nose

Stroke mm

Fitting position

Motor

Nut housing

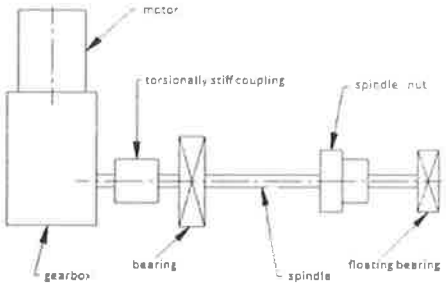
Floating bearing

# SH

## Servo lifting gear

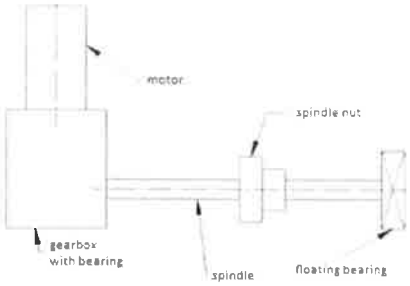
The revolutionary servo lifting gear series is one of the high-end products of the company Enzfelder. These transmissions are specially designed for the high demands of precise adjustment and driving elements. Only through years of experience and know-how of the company Enzfelder, it is possible to realize such a precise and simple gear. Thanks to a special gear a backlash torque transmission can be guaranteed. To really achieve the highest accuracy, it was also important to simplify and improve the previously existing types of drive.

**Prior art to 2008**




- Unnecessary expensive components
- Complicated mounting
- Very susceptible to stresses in the spindle
- Many different suppliers
- Requires lots of space

**Enzfelder solution**



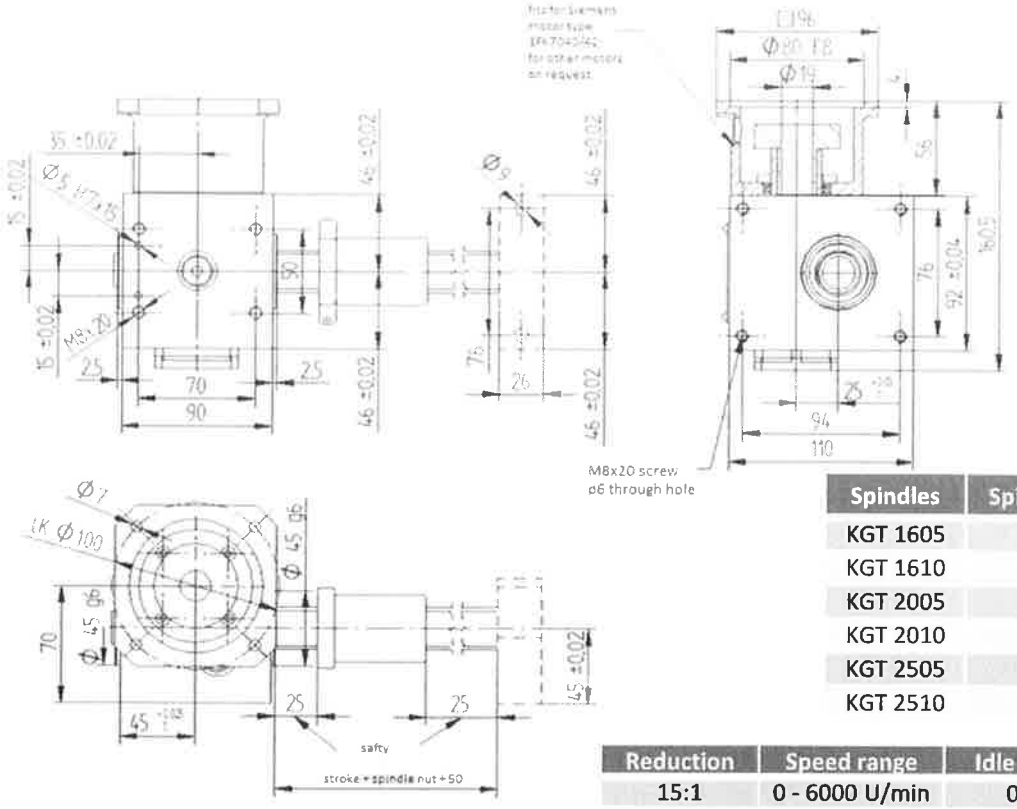

+ Effective overall concept
+ Easy installation
+ Space saving
+ Everything from one source
+ The highest possible efficiency
+ Positioning accuracy to 0.02 mm possible
+ Backlash of 10 arc minutes (on request 5 arcmin)
+ Adjustable backlash

The company Enzfelder solves the problem with a hollow shaft, in combination with a special clamping system. This makes it possible to connect the motor directly to the gearbox and so there is no play between the motor and gearbox.

## Advantages of servo lifting gear:

+ Compact design and maximum efficiency
+ High lifting speeds
+ Long life
+ Very precise torque transmission
+ Simple gear mounting
+ Large selection of custom equipment
+ Wide application range

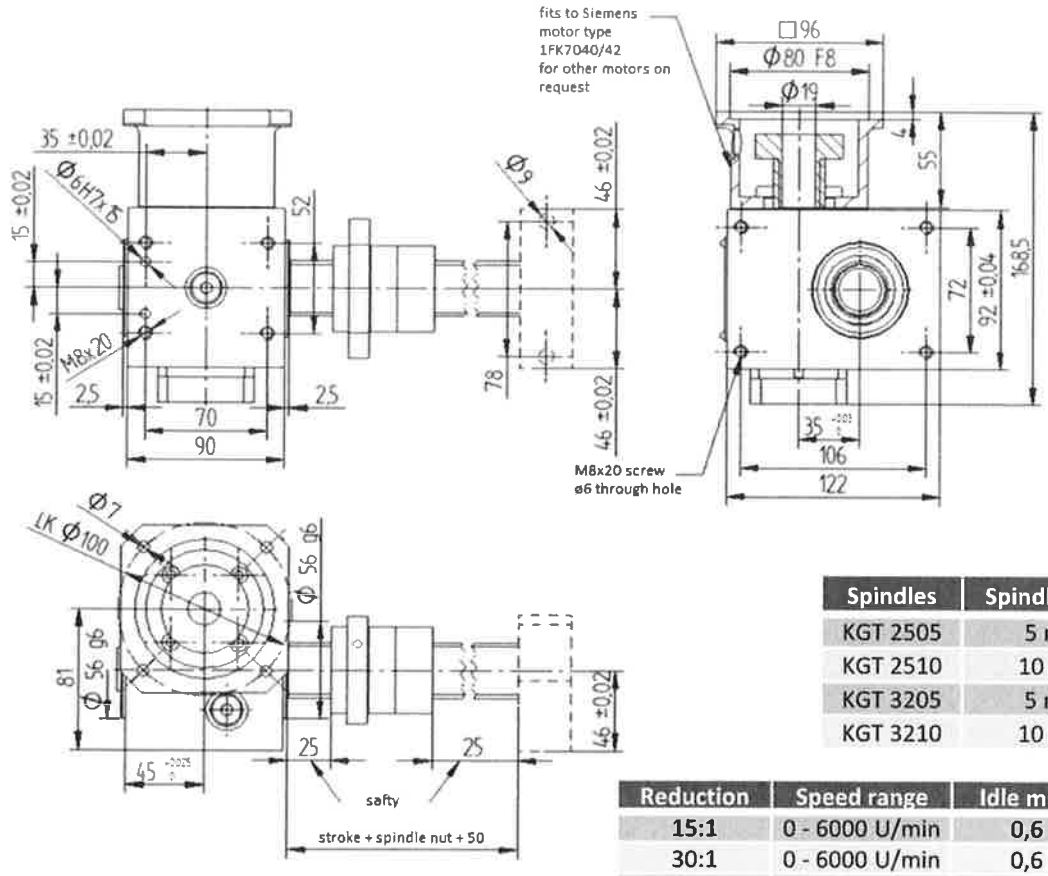
## Servo lifting gear SH 025




| Spindles | Spindle pitch |
|---|---|
| KGT 1605 | 5 mm |
| KGT 1610 | 10 mm |
| KGT 2005 | 5 mm |
| KGT 2010 | 10 mm |
| KGT 2505 | 5 mm |
| KGT 2510 | 10 mm |

| Reduction | Speed range | Idle moment |
|---|---|---|
| 15:1 | 0 - 6000 U/min | 0,6 Nm |
| 30:1 | 0 - 6000 U/min | 0,6 Nm |
| 45:1 | 0- 6000 U/min | 0,6 Nm |

## Servo lifting gear SH 035



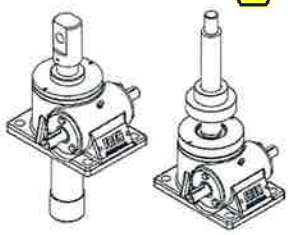

| Spindles | Spindle pitch |
|---|---|
| KGT 2505 | 5 mm |
| KGT 2510 | 10 mm |
| KGT 3205 | 5 mm |
| KGT 3210 | 10 mm |

| Reduction | Speed range | Idle moment |
|---|---|---|
| 15:1 | 0 - 6000 U/min | 0,6 Nm |
| 30:1 | 0 - 6000 U/min | 0,6 Nm |
| 45:1 | 0- 6000 U/min | 0,6 Nm |

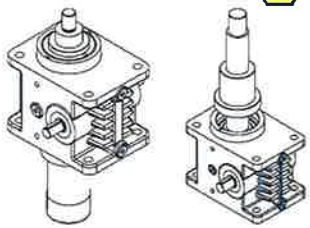
# Product overview 03/2015

Eichengasse 36, A-2551 Enzesfeld, Tel.: +43 (0) 2256 81287 - 00, Fax.: +43 (0) 2256 81287 - 95, office@enzfelder.at, www.enzfelder.at

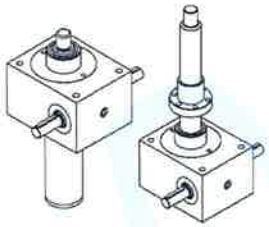
## SG
Screw jack
Classic



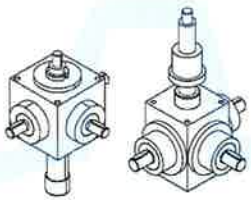
## HSG
High performance-
Screw jack



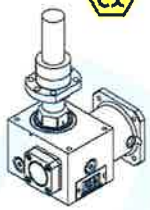
## BG
Screw jack
Cubic



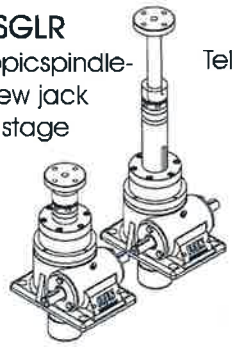
## SHG
Quick-lifting
screw jack



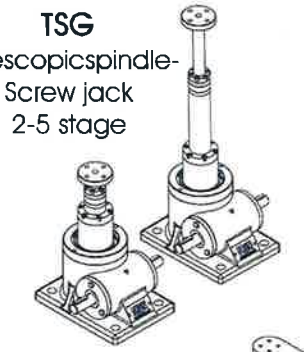
## SH
Servo lifting
gear



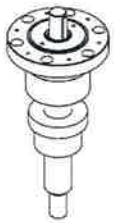
## TSGLR
Telescopicspindle-
Screw jack
2-stage



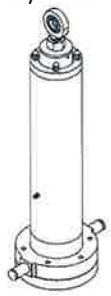
## TSG
Telescopicspindle-
Screw jack
2-5 stage



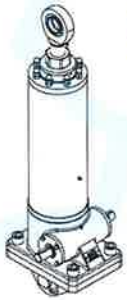
## SLA
Spindlebearing



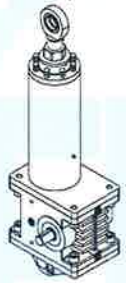
## SEZ
Spindlebearings-
Cylinder



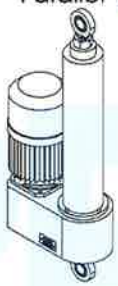
## ELZ
Electric cylinder



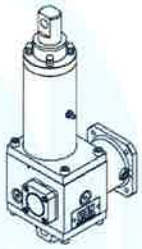
## HELZ
High performance-
Elektric cylinder



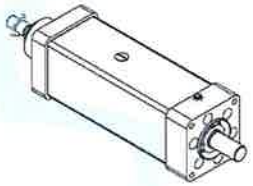
## ELZP
Electric cylinder
Parallel



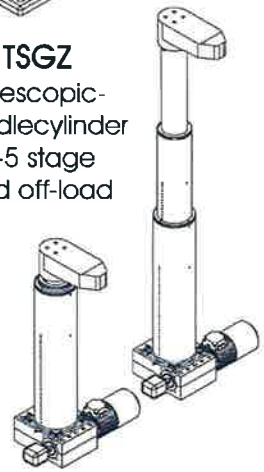
## SHELZ
Servo electric-
cylinder



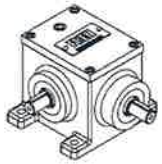
## EPNEU
Spindle-
Elektric cylinder



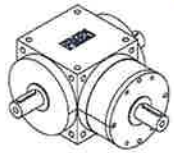
## TSGZ
Telescopic-
spindlecylinder
2-5 stage
And off-load



## K
Bevel gear
Type K

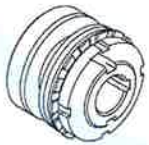


## H
Bevel gear
Type H



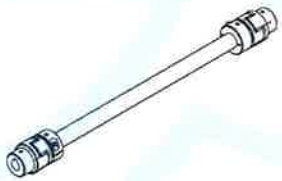
## R / GS
Elastic / backlash-free
Coupling

## RT
Slip hub

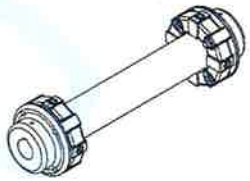


## RK
Slip coupling

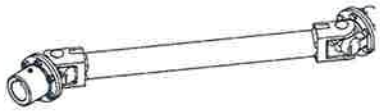
## ZR
FREN
Connecting shaft



## G / GX
Elastic
Connecting shaft

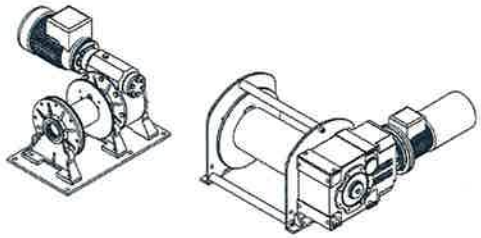


## Cardan shaft



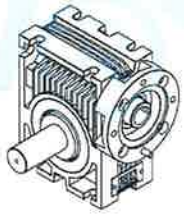
## HT
Lifting table
mechanic / hydraulic

## SW
Rope winche

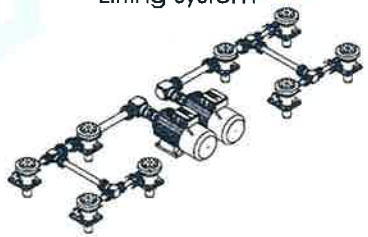


## PLG
Planetary gear

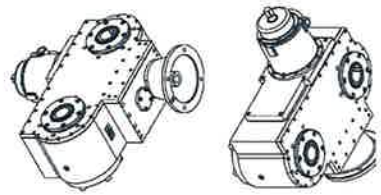
## uniCe
Worm gear



## HA
Lifting system



## Special gear



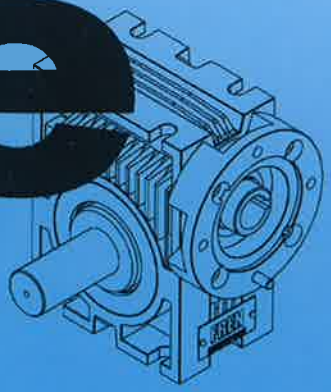
FREN®

# ENZFELDER GmbH

## Power transmission- and lifting engineering

unice®

worm gear units



## Introduction

Variety, quality, price and delivery capacity are important points at the choice of innovative gears.

The perfect combination of this points and also to find the best solution for every industrial sector and any application, that is what we are looking after.

Gears of Enzfelder GmbH are used all over the world.
It does not matter if food-, automotive-, material- or metalworking- industry, we always have a solution for your drive.

If you do not find in our catalog what are you looking for, than ask please for a consultation.

We work continuing on a further development of our products.

All specifications in this catalog are not strictly obligatory.
Change of measurements are reserved

## index of contents page

## advantage
## Why should you choice uniCe gear?

Approved application since 1967 with quality from austria!


UniCe worm gear units can be fixed on each side as the housing is strictly prismatic and shows accordingly holes or slots


UniCe worm gear units can be fixed in any required position. After this the upper oilscrew is changed against a breather – in so far as a breather is necessary


high overload is allowed by special gear teeth. At least 100% more load is obtainable before breaking of teeth is possible.

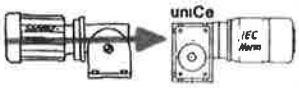

The housing is consequently made of one piece (size 35, 40, 50, 63) or in such a wax, that sealing surfaces are cylindrical and do not transmit torque.

Hollow output shaft allows direct assembly on driven machines without coupling; saves room where compactness is desired.


Extremely high hung overload because the bearings are bigger then the worm gear.


The one-piece-housing consequently is very stiff.


Built in slip coupling:
(torque limiter) allows a determined safety factor for all the parts before and after the gear unit.
The desired torque cannot be exceeded.
Further advantages: Protection against shock loads, operating faults and overloads. Also available with double end shafts and hollow shafts.




Assembly of IEC-flanged motors with B5-flange (with through holes), in most cases also B14 type (with tapped holes), NEMA-flanges, air- or hydraulic-motors is possible. An oilseal in the Motorflange is not necessary.
Changing the motor for another frequency or voltage is as easy as replacing a motor because of electric damage.

Housing made from warm hardened aluminium of higher rigidity than cast-iron.
Aluminium gives three times better heat dissipation and shows the same heat expansion as the bronze-rim (whilst a cast-iron housing only has half of this) therefore the mating situation of worm and wheel does not change from cold to warm gear.

Integrated fan from size 63 or bigger (when necessary) allowing highly increased heat-dissipation.
Cool air is driven along the fins, designed so that the whole area is effected. Special information can be obtained on request.

## Application

you can find worm gears in the most different applications.
For Example:
conveyor plant (belt conveyor)
food industry, special purpose machinery manufacture, aerotechnics,
automation, automotive industry, and much more

## type designation

example for the designation of a worm gear

e.g.: uniCe-35-N-6-W-QH-Fl-QC

1 -2 -3-4-5 - 6 - 7 -8

1. uniCe = normal worm gear
   uniTeCe = pre-stage worm gear

2. distance between axles [mm] (size)
   35 , 40 , 50 , 63, 80 , 100

3. N = normal version
   R = version with built in slip coupling

4. reduction
   6 , 8 , 10, 12 , 16 , 20 , 25 , 30 , 36 , 40 , 50 , 63 , 80

   attention at pre-stage gear (uniTeCe)
   pre-stage reduction size dependency = 6,25 / 10 / 12,5

   gear reduction x pre-stage reduction = total reduction
   z.B.: 20 x 6,25 = 125

5. driving side :
   5.1 axle drive shaft

   **W** = drive shaft

   5.2 motor flange and hollow shaft

   z.B.: **JM / 140 / 24**

   **JM** = driving side motor flange for motor according to IEC-norm

   **140** = flange diameter [mm] dependent to size
   uniCe 35 : ø90, ø105, ø120, ø140, ø160
   uniCe 40 : ø90, ø105, ø120, ø140, ø160, ø200
   uniCe 50 : ø120, ø140, ø160, ø200
   uniCe 63 : ø140, ø160, ø200, ø250
   uniCe 80 : ø160, ø200, ø250, ø300
   uniCe 100 : ø200, ø250, ø300, ø350

**24** = hole diameter of worm [mm] dependent to size
(drilled and grooved)
uniCe 35 : ø9, ø11 ø14
uniCe 40 : ø9, ø11, ø14, ø19
uniCe 50 : ø11, ø14, ø19, ø24
uniCe 63 : ø14, ø19, ø24, ø28
uniCe 80 : ø19, ø24, ø28, ø38
uniCe 100 : ø24, ø28, ø38, ø42,ø48

5.3 engine mounting

e.g.: ATDC 63 A 2 B 14 KK1 PTO 2W

ATDC = motor with brake (optional)

63 = size

A = power class

2 = number of poles
standard 2 poles or 4 poles

B 14 = flange according IEC look on page 7

please choice size, power class and number of poles out of table on page 40.

KK1 = terminal box position
KK1, KK2, KK3, KK4 (page 5)

PTO = bimetallic device PTO (optional)
or PTC

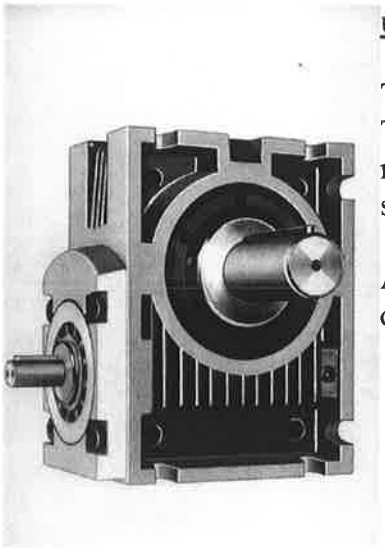
2W = second driving shaft (optional)

6. output side:
QH = driven hollow shaft
QAB = driven shaft on both sides
QA = driven shaft on side QA (=right)
QB = driven shaft on side QB (=left)

7. Fl = flange on output side
only on side QB

8. QC = second driving shaft

## mounting position



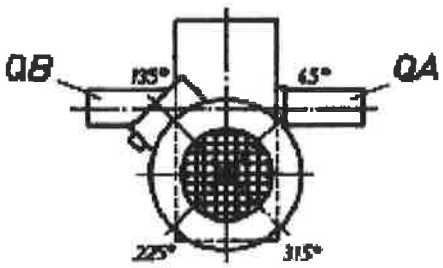
**universal mounting:**

The gears can be fixed on each housing side.
The housing have holes and sluts which are not only used for mounting, also they are used to assemble covers, arm, end switch, torque reaction bar and much more.

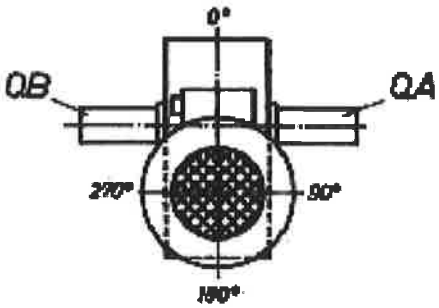
Attention at size 80 and 100 , after mounting the upper oilscrew is changed against a breather.

## Terminal box position

Please give us the position of the terminal box by your order




uniCe 35, 40, 50 and 63




uniCe 80 and 100

the position depends on size

0° / 45° = KK1
90° / 135° = KK2
180° / 225° = KK3
270° / 315° = KK4

## selection of size

power ratings are based upon 20.000 hours of continuous, uniform running (i.e. 10 years of 2000 hours).

Thermal limits of power ratings are based upon an ambient temperature of 76°F (20°C), synthetic lubricants and a maximum temperature of 195°F (90°C). During the first 10 hours 212°F (100°C) is permitted.

Other conditions are to be corrected by service factors shown below.

$$T_{2Tab} \geqq T_2 \cdot b_1 \cdot b_2 \cdot b_3 \cdot b_4$$

$$P_{1Tab} \geqq \frac{P_2}{\eta} \cdot b_1 \cdot b_2 \cdot b_3 \cdot b_4 \left( P_2 = \frac{T_2 \cdot n_2}{9550} \right)$$

**Attention!** Please check after selection:

if $T_{2max} \geqq T_2$ and

if $\frac{P_{Mot} \cdot \eta \cdot 9550}{n_2} \leqq T_{2max}$

$T_{2Tab}$ = allowed torque acc. table [Nm]
$T_2$ = required torque for driven maschine [Nm]
$T_{2max}$ = allowed max. torque of choosen gear [Nm]
$P_{1Tab}$ = allowed input power acc. table [kW]
$P_2$ = power required to drive the machine [kW]
= output power of the gear
$P_{Mot}$ = motor power [kW]
$\eta$ = efficiency of the gear
$n_2$ = positive output speed of the gear

**$b_1$**

| Betriebsart<br>Class of Load<br>conditions de service | Lebensdauer<br>Life time of Gear<br>durée de vie du réducteur | | | |
|---|---|---|---|---|
| | 4000 h | 12000 h | 20000 h | 30000 h |
| fast stoßfrei<br>uniform $T_2$ + 10 %<br>presque sans à-coup | 0,7 | 0,9 | 1,0 | 1,2 |
| mittlere Stöße<br>moderate shocks $T_2$ + 25 %<br>à-coups moyens | 0,8 | 1,0 | 1,2 | 1,4 |
| starke Stöße<br>heavy shocks $T_2$ + 100 %<br>à-coups forts | 1,0 | 1,3 | 1,5 | 1,8 |

**$b_2$**

| Art des Antriebes<br>Type of Motor<br>genre d'entrainement | Zahl der Anläufe pro Stunde<br>number of starts per hour<br>nombre de démarrages par heure | | | |
|---|---|---|---|---|
| | 1 ... 6 | 6 ... 30 | 30 ... 120 | 120 ... 600 |
| Elektro-, Öl-, Druckluftmotor<br>Electric-, Oil-, Air-Motor<br>Moteur électrique, hydr., pneum. | 1,0 | 1,1 | 1,2 | 1,3 |
| Verbrennungsmotor 4—8 Zyl.<br>Combustion engine 4—8 cyl.<br>moteur thermique à 4—8 cyl. | 1,2 | 1,3 | 1,4 | 1,6 |
| Verbrennungsmotor 1—3 Zyl.<br>Combustion engine 1—3 cyl.<br>moteur thermique à 1—3 cyl. | 1,3 | 1,4 | 1,6 | 1,7 |

**$b_3$**

| Gehäusetemperatur<br>Temperature of the gearbox<br>température du carter | Umgebungstemperatur ° C<br>Ambient Temperature ° C<br>température environnante ° C | | | | |
|---|---|---|---|---|---|
| | 15-25 | 25-32 | 32-40 | 40-45 | 45-50 |
| 65 — 75 °C | 1,2 | 1,4 | 1,8 | 2,2 | 2,4 |
| 75 — 85 °C | 1,0 | 1,2 | 1,5 | 1,8 | 2,0 |
| 85 — 95 °C | 0,9 | 1,1 | 1,4 | 1,6 | 1,8 |
| 95 — 100 °C | 0,8 | 1,0 | 1,2 | 1,4 | 1,6 |

**$b_4$**

| max. Einschaltdauer<br>bezogen auf 10 Minuten<br>max. Running-Time under<br>Load during 10 minutes<br>durée maximale de marche<br>durant 10 min. | |
|---|---|
| 0—2 min | 0,6 |
| 2—4 min | 0,7 |
| 4—6 min | 0,8 |
| 6—8 min | 0,9 |
| 8—10 min | 1,0 |

## standard IEC flange:

| | standard IEC flange | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| size | 56B5 | 63B5 | 63B14 | 71B5 | 71B14 | 80B5 | 80B14 | 90B5 | 90B14 | 100B14 | 100B5 | 112B14 | 112B5 | 132B5 | 160B5 | 180B5 |
| uniCe 035 | X | | X | | X | | | | | | | | | | | |
| uniTeCe 035 | X | | X | | X | | | | | | | | | | | |
| uniCe 040 | X | | X | | X | | X | | | | | | | | | |
| uniTeCe 040 | X | | X | | X | | | | | | | | | | | |
| uniCe 050 | | X | | X | | | X | | X | | | | | | | |
| uniTeCe 050 | | X | | X | | | X | | | | | | | | | |
| uniCe 063 | | | | X | | X | | | X | X | | X | | | | |
| uniTeCe 063 | | | | X | | X | | | X | | | | | | | |
| uniCe 080 | | | | | | X | | X | | | X | | X | X | | |
| uniCe 100 | | | | | | X | | X | | | X | | X | X | X | X |

the table shows possible motor flange depended to the size

## max. torque:

below-mentioned the max. torque,
depended on size and rpm.
By the same the efficiency and max. allowed driving power.

| $n_1$ = 3000 min$^{-1}$ | uniCe 035 | | | uniCe 040 | | | uniCe 050 | | | uniCe 063 | | | uniCe 080 | | | uniCe 100 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $i_{ges}$ | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] |
| 6,00 | 62 | 1,27 | 0,88 | 124 | 1,85 | 0,89 | 176 | 3,30 | 0,91 | 338 | 8,69 | 0,94 | 640 | 9,91 | 0,93 | 1000 | 22,80 | 0,95 |
| 8,00 | 67 | 0,99 | 0,85 | 104 | 1,41 | 0,85 | 204 | 2,63 | 0,89 | 468 | 6,04 | 0,93 | 750 | 8,14 | 0,91 | 1160 | 19,00 | 0,94 |
| 10,00 | 88 | 0,86 | 0,82 | 142 | 1,28 | 0,83 | 288 | 2,32 | 0,87 | 746 | 5,38 | 0,90 | 634 | 7,65 | 0,90 | 1300 | 15,20 | 0,92 |
| 12,00 | 74 | 0,75 | 0,78 | 115 | 1,06 | 0,79 | 228 | 1,97 | 0,84 | 636 | 4,83 | 0,90 | 874 | 7,35 | 0,89 | 1300 | 13,20 | 0,90 |
| 16,00 | 56 | 0,59 | 0,73 | 91 | 0,84 | 0,74 | 191 | 1,62 | 0,81 | 498 | 3,84 | 0,87 | 693 | 6,25 | 0,87 | 1450 | 10,00 | 0,88 |
| 20,00 | 100 | 0,56 | 0,70 | 158 | 0,82 | 0,72 | 328 | 1,43 | 0,77 | 858 | 3,84 | 0,83 | 549 | 4,68 | 0,82 | 1160 | 7,78 | 0,85 |
| 25,00 | 84 | 0,47 | 0,65 | 130 | 0,68 | 0,66 | 259 | 1,21 | 0,72 | 730 | 2,87 | 0,82 | 1030 | 4,50 | 0,80 | 2070 | 7,04 | 0,83 |
| 30,00 | 67 | 0,42 | 0,60 | 103 | 0,62 | 0,60 | 235 | 1,05 | 0,70 | 608 | 2,30 | 0,85 | 856 | 4,09 | 0,78 | 1760 | 6,14 | 0,80 |
| 36,00 | 53 | 0,38 | 0,54 | 89 | 0,56 | 0,55 | 197 | 0,93 | 0,66 | 433 | 2,01 | 0,78 | 691 | 3,75 | 0,76 | 1420 | 5,26 | 0,76 |
| 40,00 | 51 | 0,36 | 0,52 | 84 | 0,56 | 0,56 | 172 | 0,87 | 0,63 | 438 | 1,76 | 0,76 | 615 | 3,46 | 0,74 | 1320 | 4,67 | 0,74 |
| 50,00 | 71 | 0,32 | 0,45 | 71 | 0,48 | 0,50 | 140 | 0,77 | 0,57 | 355 | 1,53 | 0,71 | 487 | 3,10 | 0,71 | 1030 | 4,06 | 0,68 |
| 63,00 | 33 | 0,27 | 0,38 | 56 | 0,42 | 0,43 | 113 | 0,62 | 0,50 | 280 | 1,32 | 0,66 | 386 | 2,65 | 0,66 | 836 | 3,27 | 0,63 |
| 80,00 | 28 | 0,27 | 0,35 | 41 | 0,36 | 0,34 | 76 | 0,51 | 0,44 | 233 | 1,21 | 0,53 | 370 | 2,09 | 0,57 | 740 | 3,15 | 0,58 |

| $n_1$ = 1500 min$^{-1}$ | uniCe 035 | | | uniCe 040 | | | uniCe 050 | | | uniCe 063 | | | uniCe 080 | | | uniCe 100 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $i_{ges}$ | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] |
| 6,00 | 70 | 0,87 | 0,89 | 140 | 1,29 | 0,89 | 198 | 2,34 | 0,91 | 406 | 6,18 | 0,94 | 820 | 10,10 | 0,94 | 1200 | 22,10 | 0,94 |
| 8,00 | 75 | 0,68 | 0,86 | 117 | 0,97 | 0,86 | 229 | 1,78 | 0,89 | 524 | 4,14 | 0,93 | 940 | 7,77 | 0,92 | 1310 | 16,80 | 0,93 |
| 10,00 | 98 | 0,56 | 0,83 | 158 | 0,84 | 0,84 | 321 | 1,53 | 0,87 | 832 | 3,58 | 0,90 | 708 | 6,35 | 0,89 | 1460 | 13,80 | 0,91 |
| 12,00 | 82 | 0,49 | 0,80 | 122 | 0,71 | 0,80 | 253 | 1,31 | 0,84 | 707 | 3,16 | 0,90 | 987 | 5,97 | 0,88 | 2030 | 11,80 | 0,89 |
| 16,00 | 64 | 0,37 | 0,74 | 103 | 0,56 | 0,74 | 217 | 1,08 | 0,81 | 565 | 2,48 | 0,87 | 783 | 5,17 | 0,86 | 1640 | 8,98 | 0,87 |
| 20,00 | 112 | 0,36 | 0,72 | 178 | 0,54 | 0,73 | 370 | 0,97 | 0,77 | 967 | 2,27 | 0,83 | 620 | 3,64 | 0,80 | 1310 | 7,46 | 0,83 |
| 25,00 | 93 | 0,30 | 0,66 | 144 | 0,43 | 0,66 | 288 | 0,77 | 0,72 | 811 | 1,81 | 0,82 | 1140 | 3,36 | 0,78 | 2300 | 6,74 | 0,81 |
| 30,00 | 74 | 0,28 | 0,61 | 113 | 0,40 | 0,61 | 257 | 0,69 | 0,70 | 666 | 1,50 | 0,83 | 951 | 3,15 | 0,76 | 1970 | 5,80 | 0,78 |
| 36,00 | 58 | 0,24 | 0,56 | 98 | 0,35 | 0,56 | 215 | 0,64 | 0,65 | 473 | 1,28 | 0,78 | 768 | 2,68 | 0,75 | 1570 | 5,00 | 0,74 |
| 40,00 | 57 | 0,23 | 0,53 | 93 | 0,35 | 0,57 | 190 | 0,58 | 0,62 | 484 | 1,15 | 0,76 | 683 | 2,45 | 0,72 | 1480 | 4,73 | 0,72 |
| 50,00 | 46 | 0,20 | 0,46 | 79 | 0,31 | 0,51 | 156 | 0,52 | 0,56 | 395 | 1,00 | 0,71 | 542 | 1,90 | 0,68 | 1150 | 3,95 | 0,66 |
| 63,00 | 36 | 0,17 | 0,40 | 62 | 0,25 | 0,44 | 125 | 0,42 | 0,50 | 311 | 0,84 | 0,65 | 429 | 1,56 | 0,64 | 907 | 3,40 | 0,60 |
| 80,00 | 31 | 0,17 | 0,36 | 45 | 0,23 | 0,34 | 82 | 0,32 | 0,44 | 252 | 0,77 | 0,52 | 411 | 1,49 | 0,54 | 801 | 2,81 | 0,56 |

| $n_1$ = 1000 min$^{-1}$ | uniCe 035 | | | uniCe 040 | | | uniCe 050 | | | uniCe 063 | | | uniCe 080 | | | uniCe 100 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $i_{ges}$ | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] |
| 6,00 | 74 | 0,70 | 0,87 | 148 | 1,02 | 0,88 | 208 | 1,83 | 0,90 | 428 | 4,73 | 0,93 | 870 | 7,21 | 0,93 | 1270 | 16,70 | 0,94 |
| 8,00 | 80 | 0,53 | 0,84 | 126 | 0,76 | 0,84 | 248 | 1,44 | 0,87 | 566 | 3,26 | 0,92 | 1016 | 5,62 | 0,91 | 1410 | 12,90 | 0,92 |
| 10,00 | 105 | 0,45 | 0,82 | 170 | 0,67 | 0,82 | 346 | 1,23 | 0,85 | 895 | 2,87 | 0,89 | 739 | 5,80 | 0,88 | 1610 | 10,50 | 0,90 |
| 12,00 | 88 | 0,40 | 0,78 | 138 | 0,56 | 0,77 | 272 | 1,03 | 0,82 | 760 | 2,55 | 0,88 | 1030 | 4,67 | 0,86 | 2150 | 8,79 | 0,88 |
| 16,00 | 68 | 0,31 | 0,72 | 110 | 0,44 | 0,72 | 232 | 0,81 | 0,79 | 606 | 1,94 | 0,85 | 814 | 3,65 | 0,84 | 1760 | 6,74 | 0,85 |
| 20,00 | 117 | 0,29 | 0,69 | 186 | 0,43 | 0,69 | 387 | 0,76 | 0,75 | 1012 | 1,80 | 0,81 | 644 | 2,98 | 0,79 | 1430 | 5,60 | 0,82 |
| 25,00 | 98 | 0,24 | 0,64 | 152 | 0,34 | 0,63 | 304 | 0,62 | 0,69 | 857 | 1,45 | 0,80 | 1200 | 2,50 | 0,77 | 2420 | 5,10 | 0,79 |
| 30,00 | 79 | 0,22 | 0,58 | 120 | 0,31 | 0,57 | 257 | 0,55 | 0,67 | 709 | 1,16 | 0,82 | 1000 | 2,15 | 0,75 | 2050 | 4,44 | 0,76 |
| 36,00 | 62 | 0,19 | 0,53 | 104 | 0,29 | 0,52 | 229 | 0,51 | 0,62 | 504 | 1,01 | 0,76 | 807 | 1,79 | 0,74 | 1650 | 3,79 | 0,72 |
| 40,00 | 60 | 0,19 | 0,50 | 98 | 0,29 | 0,53 | 200 | 0,47 | 0,59 | 509 | 0,89 | 0,74 | 718 | 1,68 | 0,70 | 1570 | 3,63 | 0,69 |
| 50,00 | 48 | 0,15 | 0,43 | 84 | 0,25 | 0,47 | 162 | 0,42 | 0,53 | 410 | 0,75 | 0,68 | 569 | 1,40 | 0,66 | 1190 | 3,04 | 0,63 |
| 63,00 | 38 | 0,13 | 0,37 | 65 | 0,21 | 0,40 | 131 | 0,34 | 0,46 | 323 | 0,66 | 0,62 | 450 | 1,21 | 0,61 | 943 | 2,59 | 0,57 |
| 80,00 | 33 | 0,13 | 0,33 | 47 | 0,19 | 0,31 | 87 | 0,25 | 0,41 | 266 | 0,60 | 0,49 | 435 | 1,11 | 0,49 | 847 | 2,09 | 0,53 |

| $n_1$ = 750 min$^{-1}$ | uniCe 035 | | | uniCe 040 | | | uniCe 050 | | | uniCe 063 | | | uniCe 080 | | | uniCe 100 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $i_{ges}$ | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] |
| 6,00 | 78 | 0,58 | 0,87 | 155 | 0,83 | 0,87 | 220 | 1,53 | 0,89 | 457 | 3,98 | 0,93 | 924 | 5,81 | 0,93 | 1350 | 14,00 | 0,93 |
| 8,00 | 84 | 0,44 | 0,84 | 133 | 0,64 | 0,84 | 260 | 1,19 | 0,87 | 600 | 2,67 | 0,92 | 1060 | 4,77 | 0,91 | 1480 | 10,30 | 0,92 |
| 10,00 | 109 | 0,37 | 0,82 | 176 | 0,56 | 0,82 | 358 | 1,05 | 0,85 | 928 | 2,45 | 0,88 | 799 | 4,47 | 0,87 | 1650 | 8,31 | 0,90 |
| 12,00 | 82 | 0,32 | 0,78 | 144 | 0,46 | 0,77 | 285 | 0,87 | 0,81 | 794 | 2,16 | 0,87 | 1100 | 3,81 | 0,85 | 2250 | 7,17 | 0,88 |
| 16,00 | 70 | 0,25 | 0,72 | 113 | 0,36 | 0,71 | 238 | 0,70 | 0,78 | 619 | 1,61 | 0,84 | 874 | 3,12 | 0,83 | 1840 | 5,55 | 0,85 |
| 20,00 | 122 | 0,23 | 0,69 | 194 | 0,36 | 0,69 | 404 | 0,63 | 0,74 | 1056 | 1,49 | 0,80 | 691 | 2,45 | 0,77 | 1460 | 4,50 | 0,81 |
| 25,00 | 104 | 0,20 | 0,63 | 160 | 0,29 | 0,63 | 320 | 0,52 | 0,68 | 901 | 1,20 | 0,78 | 1280 | 2,02 | 0,75 | 2550 | 4,09 | 0,79 |
| 30,00 | 81 | 0,18 | 0,58 | 124 | 0,26 | 57,00 | 282 | 0,46 | 0,66 | 732 | 0,95 | 0,81 | 1060 | 1,80 | 0,73 | 2140 | 3,50 | 0,76 |
| 36,00 | 65 | 0,15 | 0,52 | 108 | 0,23 | 0,52 | 238 | 0,43 | 0,61 | 523 | 0,87 | 0,74 | 859 | 1,53 | 0,72 | 1720 | 3,04 | 0,71 |
| 40,00 | 62 | 0,15 | 0,50 | 102 | 0,23 | 0,53 | 208 | 0,40 | 0,58 | 529 | 0,75 | 0,72 | 764 | 1,37 | 0,67 | 1600 | 2,86 | 0,69 |
| 50,00 | 49 | 0,13 | 0,43 | 83 | 0,20 | 0,46 | 165 | 0,34 | 0,51 | 419 | 0,64 | 0,67 | 606 | 1,23 | 0,62 | 1240 | 2,41 | 0,63 |
| 63,00 | 39 | 0,11 | 0,37 | 67 | 0,17 | 0,40 | 135 | 0,29 | 0,45 | 335 | 0,56 | 0,60 | 480 | 1,07 | 0,57 | 996 | 2,06 | 0,56 |
| 80,00 | 34 | 0,10 | 0,33 | 49 | 0,15 | 0,30 | 90 | 0,22 | 0,40 | 227 | 0,53 | 0,46 | 450 | 0,90 | 0,49 | 878 | 1,62 | 0,53 |

| $n_1$ = 500 min$^{-1}$ | uniCe 035 | | | uniCe 040 | | | uniCe 050 | | | uniCe 063 | | | uniCe 080 | | | uniCe 100 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $i_{ges}$ | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] |
| 6,00 | 84 | 0,44 | 0,87 | 167 | 0,65 | 0,87 | 236 | 1,21 | 0,88 | 480 | 3,17 | 0,92 | 973 | 4,32 | 0,92 | 1420 | 10,60 | 0,93 |
| 8,00 | 90 | 0,33 | 0,84 | 142 | 0,48 | 0,83 | 279 | 0,92 | 0,86 | 637 | 2,04 | 0,91 | 1140 | 3,65 | 0,90 | 1590 | 7,94 | 0,92 |
| 10,00 | 115 | 0,29 | 0,81 | 186 | 0,43 | 0,81 | 379 | 0,78 | 0,84 | 980 | 1,78 | 0,88 | 828 | 3,23 | 0,86 | 1800 | 6,31 | 0,90 |
| 12,00 | 97 | 0,24 | 0,77 | 152 | 0,35 | 0,76 | 301 | 0,66 | 0,80 | 839 | 1,59 | 0,86 | 1140 | 2,79 | 0,84 | 2380 | 5,48 | 0,88 |
| 16,00 | 76 | 0,19 | 0,71 | 123 | 0,28 | 0,70 | 258 | 0,54 | 0,77 | 673 | 1,25 | 0,83 | 904 | 2,20 | 0,81 | 1920 | 4,23 | 0,85 |
| 20,00 | 129 | 0,19 | 0,68 | 204 | 0,26 | 0,68 | 425 | 0,51 | 0,72 | 1045 | 1,15 | 0,79 | 716 | 1,80 | 0,76 | 1550 | 3,41 | 0,81 |
| 25,00 | 108 | 0,15 | 0,63 | 167 | 0,22 | 0,62 | 333 | 0,41 | 0,66 | 937 | 0,91 | 0,77 | 1330 | 1,50 | 0,74 | 2650 | 3,09 | 0,79 |
| 30,00 | 85 | 0,13 | 0,57 | 130 | 0,20 | 0,56 | 296 | 0,36 | 0,64 | 768 | 0,73 | 0,80 | 1110 | 1,30 | 0,72 | 2220 | 2,63 | 0,76 |
| 36,00 | 68 | 0,12 | 0,51 | 113 | 0,18 | 0,51 | 249 | 0,33 | 0,59 | 548 | 0,64 | 0,73 | 897 | 1,18 | 0,70 | 1790 | 2,28 | 0,71 |
| 40,00 | 65 | 0,11 | 0,48 | 107 | 0,18 | 0,52 | 218 | 0,31 | 0,55 | 553 | 0,57 | 0,70 | 798 | 1,07 | 0,64 | 1690 | 2,09 | 0,69 |
| 50,00 | 52 | 0,10 | 0,42 | 88 | 0,15 | 0,45 | 174 | 0,26 | 0,49 | 442 | 0,48 | 0,66 | 633 | 0,92 | 0,58 | 1300 | 1,79 | 0,63 |
| 63,00 | 41 | 0,09 | 0,36 | 70 | 0,12 | 0,39 | 142 | 0,22 | 0,42 | 350 | 0,42 | 0,58 | 500 | 0,83 | 0,51 | 1010 | 1,50 | 0,56 |
| 80,00 | 34 | 0,08 | 0,32 | 50 | 0,12 | 0,30 | 91 | 0,17 | 0,38 | 282 | 0,41 | 0,45 | 459 | 0,63 | 0,48 | 894 | 1,10 | 0,53 |

| $n_1$ = 150 min$^{-1}$ | uniCe 035 | | | uniCe 040 | | | uniCe 050 | | | uniCe 063 | | | uniCe 080 | | | uniCe 100 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $i_{ges}$ | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] | $T_{2max}$ | $P_{1Tab}$ | η [%] |
| 6,00 | 99 | 0,20 | 0,85 | 198 | 0,28 | 0,85 | 280 | 0,53 | 0,88 | 575 | 1,32 | 0,92 | 1170 | 1,51 | 0,91 | 1700 | 4,71 | 0,92 |
| 8,00 | 106 | 0,14 | 0,82 | 164 | 0,21 | 0,81 | 322 | 0,35 | 0,85 | 737 | 0,86 | 0,91 | 1320 | 1,37 | 0,89 | 1830 | 3,50 | 0,90 |
| 10,00 | 131 | 0,12 | 0,79 | 212 | 0,19 | 0,79 | 433 | 0,33 | 0,83 | 1045 | 0,77 | 0,87 | 904 | 1,24 | 0,79 | 2070 | 2,79 | 0,88 |
| 12,00 | 109 | 0,10 | 0,75 | 170 | 0,15 | 0,74 | 336 | 0,28 | 0,78 | 936 | 0,68 | 0,86 | 1250 | 1,05 | 0,76 | 2800 | 2,38 | 0,85 |
| 16,00 | 85 | 0,08 | 0,68 | 137 | 0,12 | 0,67 | 289 | 0,22 | 0,75 | 754 | 0,52 | 0,82 | 995 | 0,89 | 0,72 | 2210 | 1,80 | 0,82 |
| 20,00 | 145 | 0,08 | 0,65 | 231 | 0,11 | 0,65 | 479 | 0,20 | 0,70 | 1045 | 0,48 | 0,76 | 787 | 0,72 | 0,66 | 1740 | 1,49 | 0,77 |
| 25,00 | 120 | 0,07 | 0,59 | 186 | 0,09 | 0,58 | 371 | 0,17 | 0,65 | 1045 | 0,37 | 0,76 | 1440 | 0,59 | 0,64 | 2910 | 1,34 | 0,74 |
| 30,00 | 95 | 0,06 | 0,54 | 145 | 0,09 | 0,52 | 330 | 0,14 | 0,62 | 854 | 0,29 | 0,79 | 1210 | 0,53 | 0,62 | 2430 | 1,14 | 0,71 |
| 36,00 | 74 | 0,06 | 0,48 | 124 | 0,08 | 0,47 | 274 | 0,13 | 0,57 | 605 | 0,26 | 0,72 | 973 | 0,46 | 0,60 | 1980 | 0,99 | 0,65 |
| 40,00 | 71 | 0,04 | 0,45 | 117 | 0,08 | 0,48 | 240 | 0,12 | 0,54 | 610 | 0,23 | 0,70 | 865 | 0,42 | 0,55 | 1850 | 0,94 | 0,63 |
| 50,00 | 56 | 0,04 | 0,39 | 96 | 0,07 | 0,42 | 190 | 0,11 | 0,47 | 481 | 0,20 | 0,64 | 687 | 0,39 | 0,49 | 1420 | 0,79 | 0,56 |
| 63,00 | 44 | 0,03 | 0,33 | 76 | 0,06 | 0,36 | 153 | 0,09 | 0,41 | 377 | 0,16 | 0,58 | 543 | 0,32 | 0,42 | 1110 | 0,56 | 0,50 |
| 80,00 | 37 | 0,03 | 0,29 | 54 | 0,04 | 0,26 | 99 | 0,06 | 0,37 | 306 | 0,14 | 0,43 | 498 | 0,22 | 0,44 | 971 | 0,41 | 0,46 |

## selection table based on power:

| $P_{Mot}$ [kW] | $n_2$ [1/min] | $T_{2\,Tab}$ [Nm] | $i_{ges}$ | η [%] | $f_B$ | Getriebe | $i_{Vorstufe}$ | Motor |
|---|---|---|---|---|---|---|---|---|
| 0,06 | 16,65 | 12,39 | 80,00 | 0,36 | 2,48 | uniCe 035 | - | 56A-4B5 |
| | 21,14 | 10,84 | 63,00 | 0,40 | 3,36 | uniCe 035 | - | 56A-4B5 |
| | 26,64 | 9,89 | 50,00 | 0,46 | 4,67 | uniCe 035 | - | 56A-4B5 |
| | 33,30 | 9,12 | 40,00 | 0,53 | 6,21 | uniCe 035 | - | 56A-4B5 |
| | 37,00 | 8,67 | 36,00 | 0,56 | 6,72 | uniCe 035 | - | 56A-4B5 |
| | 44,40 | 7,87 | 30,00 | 0,61 | 9,37 | uniCe 035 | - | 56A-4B5 |
| | 53,28 | 7,10 | 25,00 | 0,66 | 13,13 | uniCe 035 | - | 56A-4B5 |
| | 66,60 | 6,19 | 20,00 | 0,72 | 18,08 | uniCe 035 | - | 56A-4B5 |
| | 83,25 | 5,09 | 16,00 | 0,74 | 12,51 | uniCe 035 | - | 56A-4B5 |
| | 111,00 | 4,13 | 12,00 | 0,80 | 19,86 | uniCe 035 | - | 56A-4B5 |
| | 133,20 | 3,57 | 10,00 | 0,83 | 27,31 | uniCe 035 | - | 56A-4B5 |
| | 166,50 | 2,96 | 8,00 | 0,86 | 25,48 | uniCe 035 | - | 56A-4B5 |
| | 222,00 | 2,30 | 6,00 | 0,89 | 30,52 | uniCe 035 | - | 56A-4B5 |
| | | | | | | | | |
| | 16,65 | 11,70 | 80,00 | 0,34 | 3,83 | uniCe 040 | - | 56A-4B5 |
| | 21,14 | 11,92 | 63,00 | 0,44 | 5,22 | uniCe 040 | - | 56A-4B5 |
| | 26,64 | 10,97 | 50,00 | 0,51 | 7,17 | uniCe 040 | - | 56A-4B5 |
| | 33,30 | 9,81 | 40,00 | 0,57 | 9,49 | uniCe 040 | - | 56A-4B5 |
| | 37,00 | 8,67 | 36,00 | 0,56 | 11,24 | uniCe 040 | - | 56A-4B5 |
| | 44,40 | 7,87 | 30,00 | 0,61 | 14,35 | uniCe 040 | - | 56A-4B5 |
| | 53,28 | 7,10 | 25,00 | 0,66 | 20,29 | uniCe 040 | - | 56A-4B5 |
| | 66,60 | 6,28 | 20,00 | 0,73 | 28,34 | uniCe 040 | - | 56A-4B5 |
| | 83,25 | 5,09 | 16,00 | 0,74 | 20,22 | uniCe 040 | - | 56A-4B5 |
| | 111,00 | 4,13 | 12,00 | 0,80 | 29,54 | uniCe 040 | - | 56A-4B5 |
| | 133,20 | 3,61 | 10,00 | 0,84 | 43,72 | uniCe 040 | - | 56A-4B5 |
| | 166,50 | 2,96 | 8,00 | 0,86 | 39,53 | uniCe 040 | - | 56A-4B5 |
| | 222,00 | 2,30 | 6,00 | 0,89 | 60,94 | uniCe 040 | - | 56A-4B5 |
| | | | | | | | | |
| | 4,26 | 86,06 | 312,50 | 0,64 | 1,08 | uniTeCe 035 | 12,5 | 56A-4B5 |
| | 5,33 | 55,29 | 250,00 | 0,51 | 1,02 | uniTeCe 035 | 6,25 | 56A-4B5 |
| | 5,33 | 75,11 | 250,00 | 0,70 | 1,49 | uniTeCe 035 | 12,5 | 56A-4B5 |
| | 5,92 | 52,58 | 225,00 | 0,54 | 1,11 | uniTeCe 035 | 6,25 | 56A-4B5 |
| | 6,66 | 61,76 | 200,00 | 0,72 | 1,03 | uniTeCe 035 | 12,5 | 56A-4B5 |
| | 7,10 | 47,73 | 187,50 | 0,59 | 1,55 | uniTeCe 035 | 6,25 | 56A-4B5 |
| | 8,52 | 43,03 | 156,25 | 0,64 | 2,17 | uniTeCe 035 | 6,25 | 56A-4B5 |
| | 8,88 | 50,07 | 150,00 | 0,78 | 1,64 | uniTeCe 035 | 12,5 | 56A-4B5 |
| | 10,66 | 37,55 | 125,00 | 0,70 | 2,98 | uniTeCe 035 | 6,25 | 56A-4B5 |
| | 13,32 | 30,88 | 100,00 | 0,72 | 2,06 | uniTeCe 035 | 6,25 | 56A-4B5 |
| | 17,76 | 27,85 | 75,00 | 0,86 | 2,52 | uniTeCe 035 | 12,5 | 56A-4B5 |
| | | | | | | | | |
| | 2,96 | 105,15 | 450,00 | 0,54 | 0,93 | uniTeCe 040 | 12,5 | 56A-4B5 |
| | 3,38 | 72,29 | 393,75 | 0,43 | 0,86 | uniTeCe 040 | 6,25 | 56A-4B5 |
| | 3,55 | 95,45 | 375,00 | 0,59 | 1,18 | uniTeCe 040 | 12,5 | 56A-4B5 |
| | 4,26 | 66,50 | 312,50 | 0,49 | 1,18 | uniTeCe 040 | 6,25 | 56A-4B5 |
| | 4,26 | 86,06 | 312,50 | 0,64 | 1,67 | uniTeCe 040 | 12,5 | 56A-4B5 |
| | 5,33 | 59,46 | 250,00 | 0,55 | 1,57 | uniTeCe 040 | 6,25 | 56A-4B5 |
| | 5,33 | 76,15 | 250,00 | 0,71 | 2,34 | uniTeCe 040 | 12,5 | 56A-4B5 |
| | 5,92 | 52,58 | 225,00 | 0,54 | 1,85 | uniTeCe 040 | 6,25 | 56A-4B5 |
| | 6,66 | 61,76 | 200,00 | 0,72 | 1,67 | uniTeCe 040 | 12,5 | 56A-4B5 |
| | 7,10 | 47,73 | 187,50 | 0,59 | 2,37 | uniTeCe 040 | 6,25 | 56A-4B5 |
| | 8,88 | 50,07 | 150,00 | 0,78 | 2,44 | uniTeCe 040 | 12,5 | 56A-4B5 |

## selection table based on power:

| $P_{Mot}$ [kW] | $n_2$ [1/min] | $T_{2\,Tab}$ [Nm] | $i_{ges}$ | η [%] | $f_B$ | Getriebe | $i_{Vorstufe}$ | Motor |
|---|---|---|---|---|---|---|---|---|
| 0,09 | 16,83 | 18,39 | 80,00 | 0,36 | 1,67 | uniCe 035 | - | 56B-4B5 |
| | 21,37 | 16,09 | 63,00 | 0,40 | 2,26 | uniCe 035 | - | 56B-4B5 |
| | 26,92 | 14,69 | 50,00 | 0,46 | 3,15 | uniCe 035 | - | 56B-4B5 |
| | 33,75 | 8,91 | 80,00 | 0,35 | 3,18 | uniCe 035 | - | 56A-2B5 |
| | | | | | | | | |
| | 35,89 | 20,67 | 37,50 | 0,86 | 3,39 | uniTeCe 035 | 6,25 | 56B-4B5 |
| | | | | | | | | |
| | 3,59 | 141,69 | 375,00 | 0,59 | 0,80 | uniTeCe 040 | 12,5 | 56B-4B5 |
| | 4,31 | 127,75 | 312,50 | 0,64 | 1,13 | uniTeCe 040 | 12,5 | 56B-4B5 |
| | 5,38 | 113,04 | 250,00 | 0,71 | 1,57 | uniTeCe 040 | 12,5 | 56B-4B5 |
| | 5,98 | 78,04 | 225,00 | 0,54 | 1,25 | uniTeCe 040 | 6,25 | 56B-4B5 |
| | 6,73 | 91,67 | 200,00 | 0,72 | 1,12 | uniTeCe 040 | 12,5 | 56B-4B5 |
| | 7,18 | 70,84 | 187,50 | 0,59 | 1,60 | uniTeCe 040 | 6,25 | 56B-4B5 |
| | 8,61 | 63,88 | 156,25 | 0,64 | 2,25 | uniTeCe 040 | 6,25 | 56B-4B5 |
| | 10,77 | 56,52 | 125,00 | 0,71 | 3,15 | uniTeCe 040 | 6,25 | 56B-4B5 |
| | 12,00 | 38,21 | 225,00 | 0,53 | 2,33 | uniTeCe 040 | 6,25 | 56A-2B5 |
| | 13,46 | 45,84 | 100,00 | 0,72 | 2,25 | uniTeCe 040 | 6,25 | 56B-4B5 |
| | 14,40 | 34,74 | 187,50 | 0,58 | 2,97 | uniTeCe 040 | 6,25 | 56A-2B5 |
| | 17,95 | 37,16 | 75,00 | 0,78 | 3,28 | uniTeCe 040 | 6,25 | 56B-4B5 |
| | 27,00 | 22,85 | 100,00 | 0,72 | 3,97 | uniTeCe 040 | 6,25 | 56A-2B5 |

| $P_{Mot}$ [kW] | $n_2$ [1/min] | $T_{2\,Tab}$ [Nm] | $i_{ges}$ | η [%] | $f_B$ | Getriebe | $i_{Vorstufe}$ | Motor |
|---|---|---|---|---|---|---|---|---|
| 0,13 | 16,94 | 26,39 | 80,00 | 0,36 | 1,16 | uniCe 035 | - | 63A-4B14 |
| | 21,51 | 23,09 | 63,00 | 0,40 | 1,58 | uniCe 035 | - | 63A-4B14 |
| | 27,10 | 21,07 | 50,00 | 0,46 | 2,19 | uniCe 035 | - | 63A-4B14 |
| | 33,88 | 19,42 | 40,00 | 0,53 | 2,91 | uniCe 035 | - | 63A-4B14 |
| | 34,50 | 12,59 | 80,00 | 0,35 | 2,25 | uniCe 035 | - | 56B-2B5 |
| | 37,64 | 18,47 | 36,00 | 0,56 | 3,16 | uniCe 035 | - | 63A-4B14 |
| | 43,81 | 10,77 | 63,00 | 0,38 | 3,06 | uniCe 035 | - | 56B-2B5 |
| | | | | | | | | |
| | 8,67 | 91,65 | 156,25 | 0,64 | 1,02 | uniTeCe 035 | 6,25 | 63A-4B14 |
| | 10,84 | 79,99 | 125,00 | 0,70 | 1,40 | uniTeCe 035 | 6,25 | 63A-4B14 |
| | 11,04 | 56,72 | 250,00 | 0,50 | 0,90 | uniTeCe 035 | 6,25 | 56B-2B5 |
| | 12,27 | 53,01 | 225,00 | 0,52 | 1,01 | uniTeCe 035 | 6,25 | 56B-2B5 |
| | 13,55 | 65,77 | 100,00 | 0,72 | 0,97 | uniTeCe 035 | 6,25 | 63A-4B14 |
| | 14,72 | 49,09 | 187,50 | 0,58 | 1,37 | uniTeCe 035 | 6,25 | 56B-2B5 |
| | 17,66 | 44,31 | 156,25 | 0,63 | 1,89 | uniTeCe 035 | 6,25 | 56B-2B5 |
| | 18,07 | 53,32 | 75,00 | 0,78 | 1,54 | uniTeCe 035 | 6,25 | 63A-4B14 |
| | 22,08 | 38,18 | 125,00 | 0,68 | 2,61 | uniTeCe 035 | 6,25 | 56B-2B5 |
| | 36,13 | 29,66 | 37,50 | 0,86 | 2,36 | uniTeCe 035 | 6,25 | 63A-4B14 |
| | 44,16 | 22,36 | 62,50 | 0,80 | 3,91 | uniTeCe 035 | 6,25 | 56B-2B5 |
| | 55,20 | 18,54 | 50,00 | 0,82 | 3,63 | uniTeCe 035 | 6,25 | 56B-2B5 |
| | | | | | | | | |
| | 5,42 | 162,20 | 250,00 | 0,71 | 1,10 | uniTeCe 040 | 12,5 | 63A-4B14 |
| | 6,02 | 111,98 | 225,00 | 0,54 | 0,87 | uniTeCe 040 | 6,25 | 63A-4B14 |
| | 7,23 | 101,65 | 187,50 | 0,59 | 1,11 | uniTeCe 040 | 6,25 | 63A-4B14 |
| | 9,03 | 106,65 | 150,00 | 0,78 | 1,14 | uniTeCe 040 | 12,5 | 63A-4B14 |
| | | | | | | | | |
| | 3,61 | 233,30 | 375,00 | 0,68 | 1,10 | uniTeCe 050 | 12,5 | 63A-4B5 |
| | 4,34 | 155,53 | 312,50 | 0,54 | 1,00 | uniTeCe 050 | 6,25 | 63A-4B5 |

## selection table based on power:

| $P_{Mot}$ [kW] | $n_2$ [1/min] | $T_{2\,Tab}$ [Nm] | $i_{ges}$ | η [%] | $f_B$ | Getriebe | $i_{Vorstufe}$ | Motor |
|---|---|---|---|---|---|---|---|---|
| 0,18 | 17,41 | 35,54 | 80,00 | 0,36 | 0,86 | uniCe 035 | - | 63B-4B14 |
| | 22,11 | 31,10 | 63,00 | 0,40 | 1,17 | uniCe 035 | - | 63B-4B14 |
| | 27,86 | 28,38 | 50,00 | 0,46 | 1,63 | uniCe 035 | - | 63B-4B14 |
| | 34,83 | 26,16 | 40,00 | 0,53 | 2,16 | uniCe 035 | - | 63B-4B14 |
| | 38,69 | 24,88 | 36,00 | 0,56 | 2,34 | uniCe 035 | - | 63B-4B14 |
| | 43,67 | 14,96 | 63,00 | 0,38 | 2,20 | uniCe 035 | - | 63A-2B14 |
| | 46,43 | 22,58 | 30,00 | 0,61 | 3,27 | uniCe 035 | - | 63B-4B14 |
| | 68,78 | 13,00 | 40,00 | 0,52 | 3,95 | uniCe 035 | - | 63A-2B14 |
| | | | | | | | | |
| | 11,14 | 107,73 | 125,00 | 0,70 | 1,04 | uniTeCe 035 | 6,25 | 63B-4B14 |
| | 18,57 | 71,82 | 75,00 | 0,78 | 1,14 | uniTeCe 035 | 6,25 | 63B-4B14 |
| | 36,68 | 35,46 | 75,00 | 0,76 | 2,08 | uniTeCe 035 | 6,25 | 63A-2B14 |
| | 37,15 | 39,95 | 37,50 | 0,86 | 1,75 | uniTeCe 035 | 6,25 | 63B-4B14 |
| | 44,02 | 31,06 | 62,50 | 0,80 | 2,82 | uniTeCe 035 | 6,25 | 63A-2B14 |
| | 55,02 | 25,76 | 50,00 | 0,82 | 2,61 | uniTeCe 035 | 6,25 | 63A-2B14 |
| | 73,36 | 20,00 | 37,50 | 0,85 | 3,11 | uniTeCe 035 | 6,25 | 63A-2B14 |
| | | | | | | | | |
| | 7,43 | 136,91 | 187,50 | 0,59 | 0,83 | uniTeCe 040 | 6,25 | 63B-4B14 |
| | 8,92 | 123,44 | 156,25 | 0,64 | 1,17 | uniTeCe 040 | 6,25 | 63B-4B14 |
| | 9,29 | 143,64 | 150,00 | 0,78 | 0,85 | uniTeCe 040 | 12,5 | 63B-4B14 |
| | 12,23 | 75,01 | 225,00 | 0,53 | 1,19 | uniTeCe 040 | 6,25 | 63A-2B14 |
| | 13,93 | 88,58 | 100,00 | 0,72 | 1,16 | uniTeCe 040 | 6,25 | 63B-4B14 |
| | | | | | | | | |
| | 3,71 | 314,21 | 375,00 | 0,68 | 0,82 | uniTeCe 050 | 12,5 | 63B-4B5 |
| | 4,46 | 269,33 | 312,50 | 0,70 | 1,07 | uniTeCe 050 | 12,5 | 63B-4B5 |
| | 5,57 | 185,54 | 250,00 | 0,60 | 1,02 | uniTeCe 050 | 6,25 | 63B-4B5 |
| | 6,19 | 175,06 | 225,00 | 0,63 | 1,23 | uniTeCe 050 | 6,25 | 63B-4B5 |

## selection table based on power:

| $P_{Mot}$ [kW] | $n_2$ [1/min] | $T_{2\,Tab}$ [Nm] | $i_{ges}$ | η [%] | $f_B$ | Getriebe | $i_{Vorstufe}$ | Motor |
|---|---|---|---|---|---|---|---|---|
| | 21,75 | 43,92 | 63,00 | 0,40 | 0,83 | uniCe 035 | - | 71A-4B14 |
| | 27,40 | 40,08 | 50,00 | 0,46 | 1,15 | uniCe 035 | - | 71A-4B14 |
| | 34,25 | 36,95 | 40,00 | 0,53 | 1,53 | uniCe 035 | - | 71A-4B14 |
| | 38,06 | 35,13 | 36,00 | 0,56 | 1,66 | uniCe 035 | - | 71A-4B14 |
| | 43,95 | 20,64 | 63,00 | 0,38 | 1,59 | uniCe 035 | - | 63B-2B14 |
| | 45,67 | 31,89 | 30,00 | 0,61 | 2,31 | uniCe 035 | - | 71A-4B14 |
| | 46,00 | 31,66 | 30,00 | 0,61 | 2,33 | uniCe 035 | - | 63C-4B14 |
| | 54,80 | 28,75 | 25,00 | 0,66 | 3,24 | uniCe 035 | - | 71A-4B14 |
| | 55,20 | 28,55 | 25,00 | 0,66 | 3,26 | uniCe 035 | - | 63C-4B14 |
| | 69,23 | 17,93 | 40,00 | 0,52 | 2,86 | uniCe 035 | - | 63B-2B14 |
| | 76,92 | 16,76 | 36,00 | 0,54 | 3,18 | uniCe 035 | - | 63B-2B14 |
| | 85,63 | 20,63 | 16,00 | 0,74 | 3,09 | uniCe 035 | - | 71A-4B14 |
| | 86,25 | 20,48 | 16,00 | 0,74 | 3,11 | uniCe 035 | - | 63C-4B14 |
| | | | | | | | | |
| | 17,13 | 47,40 | 80,00 | 0,34 | 0,95 | uniCe 040 | - | 71A-4B14 |
| | | | | | | | | |
| | 17,72 | 84,94 | 156,25 | 0,63 | 0,99 | uniTeCe 035 | 6,25 | 63B-2B14 |
| | 18,27 | 101,43 | 75,00 | 0,78 | 0,81 | uniTeCe 035 | 6,25 | 71A-4B14 |
| 0,25 | 21,92 | 87,69 | 62,50 | 0,81 | 1,11 | uniTeCe 035 | 6,25 | 71A-4B14 |
| | 36,53 | 56,42 | 37,50 | 0,86 | 1,24 | uniTeCe 035 | 6,25 | 71A-4B14 |
| | 44,30 | 42,86 | 62,50 | 0,80 | 2,04 | uniTeCe 035 | 6,25 | 63B-2B14 |
| | 73,84 | 27,60 | 37,50 | 0,85 | 2,26 | uniTeCe 035 | 6,25 | 63B-2B14 |
| | | | | | | | | |
| | 8,77 | 174,32 | 156,25 | 0,64 | 0,83 | uniTeCe 040 | 6,25 | 71A-4B14 |
| | 10,96 | 177,49 | 125,00 | 0,81 | 0,89 | uniTeCe 040 | 12,5 | 71A-4B14 |
| | 11,04 | 176,21 | 125,00 | 0,81 | 0,90 | uniTeCe 040 | 12,5 | 63C-4B14 |
| | 12,31 | 103,50 | 225,00 | 0,53 | 0,86 | uniTeCe 040 | 6,25 | 63B-2B14 |
| | 13,70 | 145,38 | 100,00 | 0,83 | 0,80 | uniTeCe 040 | 12,5 | 71A-4B14 |
| | 14,77 | 94,09 | 187,50 | 0,58 | 1,09 | uniTeCe 040 | 6,25 | 63B-2B14 |
| | | | | | | | | |
| | 5,48 | 325,41 | 250,00 | 0,75 | 1,14 | uniTeCe 050 | 12,5 | 71A-4B5 |
| | 6,09 | 247,22 | 225,00 | 0,63 | 0,87 | uniTeCe 050 | 6,25 | 71A-4B5 |
| | 7,31 | 221,87 | 187,50 | 0,68 | 1,16 | uniTeCe 050 | 6,25 | 71A-4B5 |
| | 9,13 | 212,99 | 150,00 | 0,81 | 1,19 | uniTeCe 050 | 12,5 | 71A-4B5 |
| | | | | | | | | |
| | 3,04 | 593,34 | 450,00 | 0,76 | 0,80 | uniTeCe 063 | 12,5 | 71A-4B5 |
| | 4,38 | 375,06 | 312,50 | 0,69 | 1,05 | uniTeCe 063 | 6,25 | 71A-4B5 |

## selection table based on power:

| $P_{Mot}$ [kW] | $n_2$ [1/min] | $T_{2\,Tab}$ [Nm] | $i_{ges}$ | η [%] | $f_B$ | Getriebe | $i_{Vorstufe}$ | Motor |
|---|---|---|---|---|---|---|---|---|
| 0,37 | 34,15 | 54,84 | 40,00 | 0,53 | 1,03 | uniCe 035 | - | 71B-4B14 |
| | 35,13 | 35,21 | 80,00 | 0,35 | 0,80 | uniCe 035 | - | 71A-2B14 |
| | 37,94 | 52,15 | 36,00 | 0,56 | 1,12 | uniCe 035 | - | 71B-4B14 |
| | 44,38 | 30,25 | 63,00 | 0,38 | 1,09 | uniCe 035 | - | 63C-2B14 |
| | 45,53 | 47,34 | 30,00 | 0,61 | 1,56 | uniCe 035 | - | 71B-4B14 |
| | 54,64 | 42,68 | 25,00 | 0,66 | 2,18 | uniCe 035 | - | 71B-4B14 |
| | 55,92 | 28,43 | 50,00 | 0,45 | 2,50 | uniCe 035 | - | 63C-2B14 |
| | 56,20 | 28,29 | 50,00 | 0,45 | 2,51 | uniCe 035 | - | 71A-2B14 |
| | 68,30 | 37,25 | 20,00 | 0,72 | 3,01 | uniCe 035 | - | 71B-4B14 |
| | 69,90 | 26,29 | 40,00 | 0,52 | 1,95 | uniCe 035 | - | 63C-2B14 |
| | 70,25 | 26,16 | 40,00 | 0,52 | 1,96 | uniCe 035 | - | 71A-2B14 |
| | 77,67 | 24,57 | 36,00 | 0,54 | 2,17 | uniCe 035 | - | 63C-2B14 |
| | 78,06 | 24,45 | 36,00 | 0,54 | 2,18 | uniCe 035 | - | 71A-2B14 |
| | 85,38 | 30,63 | 16,00 | 0,74 | 2,08 | uniCe 035 | - | 71B-4B14 |
| | 93,20 | 22,75 | 30,00 | 0,60 | 2,96 | uniCe 035 | - | 63C-2B14 |
| | 113,83 | 24,83 | 12,00 | 0,80 | 3,30 | uniCe 035 | - | 71B-4B14 |
| | 174,75 | 14,76 | 16,00 | 0,73 | 3,80 | uniCe 035 | - | 63C-2B14 |
| | 175,63 | 14,69 | 16,00 | 0,73 | 3,82 | uniCe 035 | - | 71A-2B14 |
| | | | | | | | | |
| | 21,68 | 71,70 | 63,00 | 0,44 | 0,87 | uniCe 040 | - | 71B-4B14 |
| | 27,32 | 65,96 | 50,00 | 0,51 | 1,19 | uniCe 040 | - | 71B-4B14 |
| | | | | | | | | |
| | 17,08 | 91,05 | 80,00 | 0,44 | 0,90 | uniCe 050 | - | 71B-4B5 |
| | | | | | | | | |
| | 22,37 | 107,26 | 125,00 | 0,68 | 0,93 | uniTeCe 035 | 6,25 | 63C-2B14 |
| | 36,43 | 83,74 | 37,50 | 0,86 | 0,84 | uniTeCe 035 | 6,25 | 71B-4B14 |
| | 74,56 | 40,45 | 37,50 | 0,85 | 1,54 | uniTeCe 035 | 6,25 | 63C-2B14 |
| | | | | | | | | |
| | 18,21 | 150,55 | 75,00 | 0,78 | 0,81 | uniTeCe 040 | 6,25 | 71B-4B14 |
| | 28,10 | 90,26 | 100,00 | 0,72 | 1,00 | uniTeCe 040 | 6,25 | 71A-2B14 |
| | | | | | | | | |
| | 8,74 | 282,28 | 156,25 | 0,70 | 1,02 | uniTeCe 050 | 6,25 | 71B-4B5 |
| | 9,11 | 316,15 | 150,00 | 0,81 | 0,80 | uniTeCe 050 | 12,5 | 71B-4B5 |
| | 10,93 | 241,51 | 125,00 | 0,75 | 1,53 | uniTeCe 050 | 6,25 | 71B-4B5 |
| | 11,18 | 193,07 | 250,00 | 0,61 | 0,89 | uniTeCe 050 | 6,25 | 63C-2B5 |
| | 12,43 | 182,04 | 225,00 | 0,64 | 1,08 | uniTeCe 050 | 6,25 | 63C-2B5 |
| | 13,66 | 203,24 | 100,00 | 0,79 | 1,07 | uniTeCe 050 | 6,25 | 71B-4B5 |
| | 14,91 | 160,89 | 187,50 | 0,68 | 1,46 | uniTeCe 050 | 6,25 | 63C-2B5 |
| | | | | | | | | |
| | 3,64 | 780,97 | 375,00 | 0,81 | 0,85 | uniTeCe 063 | 12,5 | 71B-4B5 |
| | 4,37 | 642,97 | 312,50 | 0,80 | 1,26 | uniTeCe 063 | 12,5 | 71B-4B5 |
| | 5,46 | 476,74 | 250,00 | 0,74 | 1,02 | uniTeCe 063 | 6,25 | 71B-4B5 |
| | 6,07 | 440,36 | 225,00 | 0,76 | 1,07 | uniTeCe 063 | 6,25 | 71B-4B5 |
| | 7,29 | 390,49 | 187,50 | 0,81 | 1,71 | uniTeCe 063 | 6,25 | 71B-4B5 |

## selection table based on power:

| $P_{Mot}$ [kW] | $n_2$ [1/min] | $T_{2\,Tab}$ [Nm] | $i_{ges}$ | η [%] | $f_B$ | Getriebe | $i_{Vorstufe}$ | Motor |
|---|---|---|---|---|---|---|---|---|
| 0,55 | 45,47 | 70,47 | 30,00 | 0,61 | 1,05 | uniCe 035 | - | 71C-4B14 |
| | 54,56 | 63,54 | 25,00 | 0,66 | 1,47 | uniCe 035 | - | 71C-4B14 |
| | 56,20 | 42,06 | 50,00 | 0,45 | 1,69 | uniCe 035 | - | 71B-2B14 |
| | 68,20 | 55,45 | 20,00 | 0,72 | 2,02 | uniCe 035 | - | 71C-4B14 |
| | 70,25 | 38,88 | 40,00 | 0,52 | 1,32 | uniCe 035 | - | 71B-2B14 |
| | 78,06 | 36,34 | 36,00 | 0,54 | 1,47 | uniCe 035 | - | 71B-2B14 |
| | 85,25 | 45,59 | 16,00 | 0,74 | 1,40 | uniCe 035 | - | 71C-4B14 |
| | 93,67 | 33,65 | 30,00 | 0,60 | 2,00 | uniCe 035 | - | 71B-2B14 |
| | 112,40 | 30,37 | 25,00 | 0,65 | 2,76 | uniCe 035 | - | 71B-2B14 |
| | 113,67 | 36,97 | 12,00 | 0,80 | 2,22 | uniCe 035 | - | 71C-4B14 |
| | 136,40 | 31,96 | 10,00 | 0,83 | 3,05 | uniCe 035 | - | 71C-4B14 |
| | 140,50 | 26,17 | 20,00 | 0,70 | 3,80 | uniCe 035 | - | 71B-2B14 |
| | 170,50 | 26,49 | 8,00 | 0,86 | 2,85 | uniCe 035 | - | 71C-4B14 |
| | 175,63 | 21,83 | 16,00 | 0,73 | 2,57 | uniCe 035 | - | 71B-2B14 |
| | 227,33 | 20,56 | 6,00 | 0,89 | 3,41 | uniCe 035 | - | 71C-4B14 |
| | | | | | | | | |
| | 27,28 | 98,20 | 50,00 | 0,51 | 0,80 | uniCe 040 | - | 71C-4B14 |
| | 34,10 | 87,80 | 40,00 | 0,57 | 1,06 | uniCe 040 | - | 71C-4B14 |
| | 35,13 | 50,84 | 80,00 | 0,34 | 0,81 | uniCe 040 | - | 71B-2B14 |
| | 37,89 | 77,63 | 36,00 | 0,56 | 1,26 | uniCe 040 | - | 71C-4B14 |
| | 38,64 | 76,13 | 36,00 | 0,56 | 1,28 | uniCe 040 | - | 80A-4B14 |
| | 44,60 | 50,64 | 63,00 | 0,43 | 1,11 | uniCe 040 | - | 71B-2B14 |
| | 46,37 | 69,10 | 30,00 | 0,61 | 1,64 | uniCe 040 | - | 80A-4B14 |
| | 55,64 | 62,30 | 25,00 | 0,66 | 2,31 | uniCe 040 | - | 80A-4B14 |
| | 69,55 | 55,13 | 20,00 | 0,73 | 3,23 | uniCe 040 | - | 80A-4B14 |
| | 86,94 | 44,71 | 16,00 | 0,74 | 2,30 | uniCe 040 | - | 80A-4B14 |
| | 115,92 | 36,25 | 12,00 | 0,80 | 3,37 | uniCe 040 | - | 80A-4B14 |
| | | | | | | | | |
| | 21,65 | 121,30 | 63,00 | 0,50 | 1,03 | uniCe 050 | - | 71C-4B5 |
| | 22,08 | 118,95 | 63,00 | 0,50 | 1,05 | uniCe 050 | - | 80A-4B14 |
| | | | | | | | | |
| | 17,05 | 160,19 | 80,00 | 0,52 | 1,57 | uniCe 063 | - | 71C-4B5 |
| | | | | | | | | |
| | 74,93 | 59,83 | 37,50 | 0,85 | 1,04 | uniTeCe 035 | 6,25 | 71B-2B14 |
| | | | | | | | | |
| | 36,37 | 124,67 | 37,50 | 0,86 | 1,12 | uniTeCe 040 | 6,25 | 71C-4B14 |
| | | | | | | | | |
| | 10,91 | 359,52 | 125,00 | 0,75 | 1,03 | uniTeCe 050 | 6,25 | 71C-4B5 |
| | 11,13 | 352,54 | 125,00 | 0,75 | 1,05 | uniTeCe 050 | 6,25 | 80A-4B14 |
| | 14,99 | 237,97 | 187,50 | 0,68 | 0,99 | uniTeCe 050 | 6,25 | 71B-2B5 |
| | 18,19 | 235,32 | 75,00 | 0,81 | 1,08 | uniTeCe 050 | 6,25 | 71C-4B5 |
| | 28,10 | 146,86 | 100,00 | 0,79 | 1,30 | uniTeCe 050 | 6,25 | 71B-2B5 |
| | | | | | | | | |
| | 4,36 | 957,17 | 312,50 | 0,80 | 0,85 | uniTeCe 063 | 12,5 | 71C-4B5 |
| | 5,46 | 775,07 | 250,00 | 0,81 | 1,25 | uniTeCe 063 | 12,5 | 71C-4B5 |
| | 6,82 | 649,94 | 200,00 | 0,84 | 0,87 | uniTeCe 063 | 12,5 | 71C-4B5 |
| | 7,27 | 581,30 | 187,50 | 0,81 | 1,15 | uniTeCe 063 | 6,25 | 71C-4B5 |
| | 8,73 | 478,58 | 156,25 | 0,80 | 1,69 | uniTeCe 063 | 6,25 | 71C-4B5 |
| | 9,09 | 504,26 | 150,00 | 0,87 | 1,40 | uniTeCe 063 | 12,5 | 71C-4B5 |
| | 12,49 | 318,21 | 225,00 | 0,76 | 1,36 | uniTeCe 063 | 6,25 | 71B-2B5 |
| | 13,64 | 324,97 | 100,00 | 0,84 | 1,74 | uniTeCe 063 | 6,25 | 71C-4B5 |

## selection table based on power:

| $P_{Mot}$ [kW] | $n_2$ [1/min] | $T_{2\,Tab}$ [Nm] | $i_{ges}$ | η [%] | $f_B$ | Getriebe | $i_{Vorstufe}$ | Motor |
|---|---|---|---|---|---|---|---|---|
| 0,75 | 55,60 | 57,97 | 50,00 | 0,45 | 1,22 | uniCe 035 | - | 71C-2B14 |
| | 69,50 | 53,59 | 40,00 | 0,52 | 0,96 | uniCe 035 | - | 71C-2B14 |
| | 77,22 | 50,09 | 36,00 | 0,54 | 1,06 | uniCe 035 | - | 71C-2B14 |
| | 92,67 | 46,38 | 30,00 | 0,60 | 1,45 | uniCe 035 | - | 71C-2B14 |
| | 111,20 | 41,87 | 25,00 | 0,65 | 2,00 | uniCe 035 | - | 71C-2B14 |
| | 139,00 | 36,07 | 20,00 | 0,70 | 2,76 | uniCe 035 | - | 71C-2B14 |
| | 173,75 | 30,09 | 16,00 | 0,73 | 1,86 | uniCe 035 | - | 71C-2B14 |
| | 231,67 | 24,12 | 12,00 | 0,78 | 3,06 | uniCe 035 | - | 71C-2B14 |
| | 347,50 | 17,52 | 8,00 | 0,85 | 3,84 | uniCe 035 | - | 71C-2B14 |
| | | | | | | | | |
| | 35,33 | 115,57 | 40,00 | 0,57 | 0,81 | uniCe 040 | - | 80B-4B14 |
| | 39,25 | 102,19 | 36,00 | 0,56 | 0,95 | uniCe 040 | - | 80B-4B14 |
| | 44,13 | 69,80 | 63,00 | 0,43 | 0,80 | uniCe 040 | - | 71C-2B14 |
| | 45,30 | 67,99 | 63,00 | 0,43 | 0,83 | uniCe 040 | - | 80A-2B14 |
| | 47,10 | 92,76 | 30,00 | 0,61 | 1,22 | uniCe 040 | - | 80B-4B14 |
| | 56,52 | 83,64 | 25,00 | 0,66 | 1,72 | uniCe 040 | - | 80B-4B14 |
| | 57,08 | 62,74 | 50,00 | 0,50 | 1,13 | uniCe 040 | - | 80A-2B14 |
| | 70,65 | 74,01 | 20,00 | 0,73 | 2,41 | uniCe 040 | - | 80B-4B14 |
| | 71,35 | 56,22 | 40,00 | 0,56 | 1,50 | uniCe 040 | - | 80A-2B14 |
| | 79,28 | 49,69 | 36,00 | 0,55 | 1,79 | uniCe 040 | - | 80A-2B14 |
| | 88,31 | 60,02 | 16,00 | 0,74 | 1,72 | uniCe 040 | - | 80B-4B14 |
| | 95,13 | 45,17 | 30,00 | 0,60 | 2,28 | uniCe 040 | - | 80A-2B14 |
| | 114,16 | 41,41 | 25,00 | 0,66 | 3,14 | uniCe 040 | - | 80A-2B14 |
| | 117,75 | 48,66 | 12,00 | 0,80 | 2,51 | uniCe 040 | - | 80B-4B14 |
| | 141,30 | 42,58 | 10,00 | 0,84 | 3,71 | uniCe 040 | - | 80B-4B14 |
| | 176,63 | 34,87 | 8,00 | 0,86 | 3,35 | uniCe 040 | - | 80B-4B14 |
| | 178,38 | 29,71 | 16,00 | 0,74 | 3,05 | uniCe 040 | - | 80A-2B14 |
| | | | | | | | | |
| | 28,26 | 141,93 | 50,00 | 0,56 | 1,10 | uniCe 050 | - | 80B-4B14 |
| | 34,75 | 90,69 | 80,00 | 0,44 | 0,83 | uniCe 050 | - | 71C-2B5 |
| | | | | | | | | |
| | 17,66 | 210,87 | 80,00 | 0,52 | 1,20 | uniCe 063 | - | 80B-4B5 |
| | 22,43 | 207,58 | 63,00 | 0,65 | 1,50 | uniCe 063 | - | 80B-4B5 |
| | | | | | | | | |
| | 74,13 | 83,41 | 37,50 | 0,86 | 1,49 | uniTeCe 040 | 6,25 | 71C-2B14 |
| | | | | | | | | |
| | 18,84 | 309,77 | 75,00 | 0,81 | 0,82 | uniTeCe 050 | 6,25 | 80B-4B14 |
| | 27,80 | 202,43 | 100,00 | 0,79 | 0,94 | uniTeCe 050 | 6,25 | 71C-2B5 |
| | 37,68 | 167,79 | 37,50 | 0,88 | 1,18 | uniTeCe 050 | 6,25 | 80B-4B14 |
| | 38,05 | 153,36 | 75,00 | 0,81 | 1,49 | uniTeCe 050 | 6,25 | 80A-2B14 |
| | 76,11 | 83,07 | 37,50 | 0,88 | 2,12 | uniTeCe 050 | 6,25 | 80A-2B14 |
| | | | | | | | | |
| | 5,65 | 1020,26 | 250,00 | 0,81 | 0,95 | uniTeCe 063 | 12,5 | 80B-4B5 |
| | 7,54 | 765,20 | 187,50 | 0,81 | 0,87 | uniTeCe 063 | 6,25 | 80B-4B5 |
| | 8,90 | 640,41 | 312,50 | 0,80 | 1,14 | uniTeCe 063 | 12,5 | 71C-2B5 |
| | 9,04 | 629,98 | 156,25 | 0,80 | 1,29 | uniTeCe 063 | 6,25 | 80B-4B5 |
| | 11,30 | 510,13 | 125,00 | 0,81 | 1,90 | uniTeCe 063 | 6,25 | 80B-4B5 |
| | 12,68 | 427,23 | 225,00 | 0,76 | 1,01 | uniTeCe 063 | 6,25 | 80A-2B5 |
| | 13,90 | 434,85 | 200,00 | 0,84 | 1,15 | uniTeCe 063 | 12,5 | 71C-2B5 |
| | 14,27 | 423,58 | 200,00 | 0,84 | 1,18 | uniTeCe 063 | 12,5 | 80A-2B5 |
| | 15,22 | 387,97 | 187,50 | 0,82 | 1,57 | uniTeCe 063 | 6,25 | 80A-2B5 |
| | 19,03 | 328,64 | 150,00 | 0,87 | 1,94 | uniTeCe 063 | 12,5 | 80A-2B5 |

## selection table based on power:

| $P_{Mot}$ [kW] | $n_2$ [1/min] | $T_{2\,Tab}$ [Nm] | $i_{ges}$ | η [%] | $f_B$ | Getriebe | $i_{Vorstufe}$ | Motor |
|---|---|---|---|---|---|---|---|---|
| | 45,87 | 139,71 | 30,00 | 0,61 | 0,81 | uniCe 040 | - | 80C-4B14 |
| | 55,04 | 125,97 | 25,00 | 0,66 | 1,14 | uniCe 040 | - | 80C-4B14 |
| | 68,80 | 111,46 | 20,00 | 0,73 | 1,60 | uniCe 040 | - | 80C-4B14 |
| | 71,53 | 82,25 | 40,00 | 0,56 | 1,03 | uniCe 040 | - | 80B-2B14 |
| | 79,47 | 72,70 | 36,00 | 0,55 | 1,22 | uniCe 040 | - | 80B-2B14 |
| | 86,00 | 90,39 | 16,00 | 0,74 | 1,14 | uniCe 040 | - | 80C-4B14 |
| | 95,37 | 66,09 | 30,00 | 0,60 | 1,56 | uniCe 040 | - | 80B-2B14 |
| | 114,67 | 73,29 | 12,00 | 0,80 | 1,66 | uniCe 040 | - | 80C-4B14 |
| | 137,60 | 64,13 | 10,00 | 0,84 | 2,46 | uniCe 040 | - | 80C-4B14 |
| | 143,05 | 52,87 | 20,00 | 0,72 | 2,99 | uniCe 040 | - | 80B-2B14 |
| | 172,00 | 52,53 | 8,00 | 0,86 | 2,23 | uniCe 040 | - | 80C-4B14 |
| | 178,81 | 43,47 | 16,00 | 0,74 | 2,09 | uniCe 040 | - | 80B-2B14 |
| | 229,33 | 40,77 | 6,00 | 0,89 | 3,43 | uniCe 040 | - | 80C-4B14 |
| | 238,42 | 34,81 | 12,00 | 0,79 | 3,30 | uniCe 040 | - | 80B-2B14 |
| | | | | | | | | |
| | 34,40 | 189,33 | 40,00 | 0,62 | 1,00 | uniCe 050 | - | 80C-4B14 |
| | 37,83 | 180,48 | 36,00 | 0,65 | 1,19 | uniCe 050 | - | 90S-4B14 |
| | 38,22 | 178,65 | 36,00 | 0,65 | 1,20 | uniCe 050 | - | 80C-4B14 |
| | 54,48 | 138,83 | 25,00 | 0,72 | 2,07 | uniCe 050 | - | 90S-4B14 |
| | 57,22 | 104,65 | 50,00 | 0,57 | 1,34 | uniCe 050 | - | 80B-2B14 |
| | 85,13 | 99,96 | 16,00 | 0,81 | 2,17 | uniCe 050 | - | 90S-4B14 |
| | 113,50 | 77,75 | 12,00 | 0,84 | 3,25 | uniCe 050 | - | 90S-4B14 |
| | | | | | | | | |
| 1,1 | 21,62 | 315,84 | 63,00 | 0,65 | 0,98 | uniCe 063 | - | 90S-4B14 |
| | 21,84 | 312,63 | 63,00 | 0,65 | 0,99 | uniCe 063 | - | 80C-4B5 |
| | 27,24 | 273,81 | 50,00 | 0,71 | 1,44 | uniCe 063 | - | 90S-4B14 |
| | 35,76 | 155,68 | 80,00 | 0,53 | 1,50 | uniCe 063 | - | 80B-2B5 |
| | 45,40 | 192,05 | 30,00 | 0,83 | 3,47 | uniCe 063 | - | 90S-4B14 |
| | | | | | | | | |
| | 17,20 | 329,81 | 80,00 | 0,54 | 1,25 | uniCe 080 | - | 80C-4B5 |
| | | | | | | | | |
| | 22,89 | 342,81 | 125,00 | 0,75 | 0,96 | uniTeCe 050 | 6,25 | 80B-2B14 |
| | 57,22 | 158,49 | 50,00 | 0,86 | 1,29 | uniTeCe 050 | 6,25 | 80B-2B14 |
| | 76,29 | 121,54 | 37,50 | 0,88 | 1,45 | uniTeCe 050 | 6,25 | 80B-2B14 |
| | | | | | | | | |
| | 8,72 | 958,57 | 156,25 | 0,80 | 0,85 | uniTeCe 063 | 6,25 | 90S-4B14 |
| | 9,16 | 912,67 | 312,50 | 0,80 | 0,80 | uniTeCe 063 | 12,5 | 80B-2B5 |
| | 10,90 | 776,21 | 125,00 | 0,81 | 1,25 | uniTeCe 063 | 6,25 | 90S-4B14 |
| | 11,01 | 768,31 | 125,00 | 0,81 | 1,26 | uniTeCe 063 | 6,25 | 80C-4B5 |
| | 13,62 | 650,89 | 100,00 | 0,84 | 0,87 | uniTeCe 063 | 6,25 | 90S-4B14 |
| | 14,31 | 619,73 | 200,00 | 0,84 | 0,80 | uniTeCe 063 | 12,5 | 80B-2B5 |
| | 15,26 | 567,64 | 187,50 | 0,82 | 1,07 | uniTeCe 063 | 6,25 | 80B-2B5 |
| | 18,16 | 505,00 | 75,00 | 0,87 | 1,40 | uniTeCe 063 | 6,25 | 90S-4B14 |
| | 19,07 | 480,82 | 150,00 | 0,87 | 1,32 | uniTeCe 063 | 12,5 | 80B-2B5 |
| | 27,24 | 347,89 | 50,00 | 0,90 | 1,51 | uniTeCe 063 | 6,25 | 90S-4B14 |
| | 28,61 | 309,86 | 100,00 | 0,84 | 1,61 | uniTeCe 063 | 6,25 | 80B-2B5 |
| | 36,32 | 263,72 | 37,50 | 0,91 | 1,54 | uniTeCe 063 | 6,25 | 90S-4B14 |

## selection table based on power:

| $P_{Mot}$ [kW] | $n_2$ [1/min] | $T_{2\,Tab}$ [Nm] | $i_{ges}$ | η [%] | $f_B$ | Getriebe | $i_{Vorstufe}$ | Motor |
|---|---|---|---|---|---|---|---|---|
| 1,5 | 78,89 | 99,87 | 36,00 | 0,55 | 0,89 | uniCe040 | - | 80C-2B14 |
| | 94,67 | 90,79 | 30,00 | 0,60 | 1,13 | uniCe040 | - | 80C-2B14 |
| | 113,60 | 83,23 | 25,00 | 0,66 | 1,56 | uniCe040 | - | 80C-2B14 |
| | 142,00 | 72,63 | 20,00 | 0,72 | 2,18 | uniCe040 | - | 80C-2B14 |
| | 177,50 | 59,72 | 16,00 | 0,74 | 1,52 | uniCe040 | - | 80C-2B14 |
| | 236,67 | 47,82 | 12,00 | 0,79 | 2,40 | uniCe040 | - | 80C-2B14 |
| | 284,00 | 41,87 | 10,00 | 0,83 | 3,39 | uniCe040 | - | 80C-2B14 |
| | 355,00 | 34,30 | 8,00 | 0,85 | 3,03 | uniCe040 | - | 80C-2B14 |
| | | | | | | | | |
| | 39,25 | 237,23 | 36,00 | 0,65 | 0,91 | uniCe050 | - | 90L-4B14 |
| | 47,10 | 212,90 | 30,00 | 0,70 | 1,21 | uniCe050 | - | 90L-4B14 |
| | 56,52 | 182,48 | 25,00 | 0,72 | 1,58 | uniCe050 | - | 90L-4B14 |
| | 70,65 | 156,13 | 20,00 | 0,77 | 2,37 | uniCe050 | - | 90L-4B14 |
| | 71,00 | 127,11 | 40,00 | 0,63 | 1,35 | uniCe050 | - | 80C-2B14 |
| | 88,31 | 131,39 | 16,00 | 0,81 | 1,65 | uniCe050 | - | 90L-4B14 |
| | 117,75 | 102,19 | 12,00 | 0,84 | 2,48 | uniCe050 | - | 90L-4B14 |
| | 141,30 | 88,20 | 10,00 | 0,87 | 3,64 | uniCe050 | - | 90L-4B14 |
| | 176,63 | 72,18 | 8,00 | 0,89 | 3,17 | uniCe050 | - | 90L-4B14 |
| | 235,50 | 55,35 | 6,00 | 0,91 | 3,58 | uniCe050 | - | 90L-4B14 |
| | | | | | | | | |
| | 28,26 | 359,90 | 50,00 | 0,71 | 1,10 | uniCe063 | - | 90L-4B14 |
| | 35,33 | 308,20 | 40,00 | 0,76 | 1,57 | uniCe063 | - | 90L-4B14 |
| | 44,98 | 210,17 | 63,00 | 0,66 | 1,33 | uniCe063 | - | 90S-2B14 |
| | 45,08 | 209,73 | 63,00 | 0,66 | 1,34 | uniCe063 | - | 80C-2B5 |
| | | | | | | | | |
| | 17,66 | 437,96 | 80,00 | 0,54 | 0,94 | uniCe080 | - | 90L-4B5 |
| | 22,43 | 408,76 | 63,00 | 0,64 | 1,05 | uniCe080 | - | 90L-4B5 |
| | | | | | | | | |
| | 75,73 | 166,96 | 37,50 | 0,88 | 1,05 | uniTeCe50 | 6,25 | 80C-2B14 |
| | | | | | | | | |
| | 11,30 | 1020,26 | 125,00 | 0,81 | 0,95 | uniTeCe63 | 6,25 | 90L-4B14 |
| | 18,84 | 663,79 | 75,00 | 0,87 | 1,07 | uniTeCe63 | 6,25 | 90L-4B14 |
| | 22,61 | 553,15 | 62,50 | 0,87 | 1,50 | uniTeCe63 | 6,25 | 90L-4B14 |
| | 28,26 | 457,27 | 50,00 | 0,90 | 1,15 | uniTeCe63 | 6,25 | 90L-4B14 |
| | 37,68 | 346,64 | 37,50 | 0,91 | 1,17 | uniTeCe63 | 6,25 | 90L-4B14 |

## selection table based on power:

| $P_{Mot}$ [kW] | $n_2$ [1/min] | $T_{2\,Tab}$ [Nm] | $i_{ges}$ | η [%] | $f_B$ | Getriebe | $i_{Vorstufe}$ | Motor |
|---|---|---|---|---|---|---|---|---|
| 2,2 | 47,07 | 312,47 | 30,00 | 0,70 | 0,82 | uniCe 050 | - | 90LB-4B14 |
| | 56,48 | 267,83 | 25,00 | 0,72 | 1,08 | uniCe 050 | - | 90LB-4B14 |
| | 70,60 | 229,15 | 20,00 | 0,77 | 1,61 | uniCe 050 | - | 90LB-4B14 |
| | 77,92 | 177,97 | 36,00 | 0,66 | 1,11 | uniCe 050 | - | 90L-2B14 |
| | 88,25 | 192,84 | 16,00 | 0,81 | 1,13 | uniCe 050 | - | 90LB-4B14 |
| | 93,50 | 157,29 | 30,00 | 0,70 | 1,49 | uniCe 050 | - | 90L-2B14 |
| | 112,20 | 134,82 | 25,00 | 0,72 | 1,92 | uniCe 050 | - | 90L-2B14 |
| | 117,67 | 149,99 | 12,00 | 0,84 | 1,69 | uniCe 050 | - | 90LB-4B14 |
| | 140,25 | 115,35 | 20,00 | 0,77 | 2,84 | uniCe 050 | - | 90L-2B14 |
| | 141,20 | 129,45 | 10,00 | 0,87 | 2,48 | uniCe 050 | - | 90LB-4B14 |
| | 175,31 | 97,07 | 16,00 | 0,81 | 1,97 | uniCe 050 | - | 90L-2B14 |
| | 176,50 | 105,94 | 8,00 | 0,89 | 2,16 | uniCe 050 | - | 90LB-4B14 |
| | 233,75 | 75,50 | 12,00 | 0,84 | 3,02 | uniCe 050 | - | 90L-2B14 |
| | 235,33 | 81,24 | 6,00 | 0,91 | 2,44 | uniCe 050 | - | 90LB-4B14 |
| | 350,63 | 53,33 | 8,00 | 0,89 | 3,83 | uniCe 050 | - | 90L-2B14 |
| | | | | | | | | |
| | 35,30 | 452,34 | 40,00 | 0,76 | 1,07 | uniCe 063 | - | 90LB-4B14 |
| | 39,22 | 417,82 | 36,00 | 0,78 | 1,13 | uniCe 063 | - | 90LB-4B14 |
| | 44,52 | 311,44 | 63,00 | 0,66 | 0,90 | uniCe 063 | - | 90L-2B14 |
| | 57,24 | 300,98 | 25,00 | 0,82 | 2,69 | uniCe 063 | - | 100LA-4B14 |
| | 71,55 | 243,72 | 20,00 | 0,83 | 3,97 | uniCe 063 | - | 100LA-4B14 |
| | 89,44 | 204,37 | 16,00 | 0,87 | 2,76 | uniCe 063 | - | 100LA-4B14 |
| | | | | | | | | |
| | 28,24 | 505,91 | 50,00 | 0,68 | 1,07 | uniCe 080 | - | 90LB-4B5 |
| | | | | | | | | |
| | 17,65 | 666,61 | 80,00 | 0,56 | 1,20 | uniCe 100 | - | 90LB-4B5 |
| | | | | | | | | |
| | 22,59 | 811,87 | 62,50 | 0,87 | 1,02 | uniTeCe 063 | 6,25 | 90LB-4B14 |
| | 37,65 | 508,77 | 37,50 | 0,91 | 0,80 | uniTeCe 063 | 6,25 | 90LB-4B14 |
| | 74,80 | 256,11 | 37,50 | 0,91 | 1,32 | uniTeCe 063 | 6,25 | 90L-2B14 |

## selection table based on power:

| $P_{Mot}$ [kW] | $n_2$ [1/min] | $T_{2\,Tab}$ [Nm] | $i_{ges}$ | η [%] | $f_B$ | Getriebe | $i_{Vorstufe}$ | Motor |
|---|---|---|---|---|---|---|---|---|
| | 79,08 | 239,10 | 36,00 | 0,66 | 0,82 | uniCe 050 | - | 90LB-2B14 |
| | 94,90 | 211,33 | 30,00 | 0,70 | 1,11 | uniCe 050 | - | 90LB-2B14 |
| | 113,88 | 181,14 | 25,00 | 0,72 | 1,43 | uniCe 050 | - | 90LB-2B14 |
| | 142,35 | 154,97 | 20,00 | 0,77 | 2,12 | uniCe 050 | - | 90LB-2B14 |
| | 237,25 | 101,44 | 12,00 | 0,84 | 2,25 | uniCe 050 | - | 90LB-2B14 |
| | 284,70 | 87,55 | 10,00 | 0,87 | 3,29 | uniCe 050 | - | 90LB-2B14 |
| | 355,88 | 71,65 | 8,00 | 0,89 | 2,85 | uniCe 050 | - | 90LB-2B14 |
| | 474,50 | 54,95 | 6,00 | 0,91 | 3,20 | uniCe 050 | - | 90LB-2B14 |
| | | | | | | | | |
| | 39,39 | 567,34 | 36,00 | 0,78 | 0,83 | uniCe 063 | - | 100LB-4B14 |
| | 47,27 | 503,09 | 30,00 | 0,83 | 1,32 | uniCe 063 | - | 100LB-4B14 |
| | 56,72 | 414,19 | 25,00 | 0,82 | 1,96 | uniCe 063 | - | 100LB-4B14 |
| | 57,70 | 352,54 | 50,00 | 0,71 | 1,01 | uniCe 063 | - | 100L-2B14 |
| | 70,90 | 335,39 | 20,00 | 0,83 | 2,88 | uniCe 063 | - | 100LB-4B14 |
| | 71,18 | 305,92 | 40,00 | 0,76 | 1,43 | uniCe 063 | - | 90LB-2B14 |
| | 72,13 | 301,89 | 40,00 | 0,76 | 1,45 | uniCe 063 | - | 100L-2B14 |
| | 80,14 | 278,85 | 36,00 | 0,78 | 1,55 | uniCe 063 | - | 100L-2B14 |
| | 88,63 | 281,25 | 16,00 | 0,87 | 2,01 | uniCe 063 | - | 100LB-4B14 |
| 3 | 96,17 | 253,23 | 30,00 | 0,85 | 2,40 | uniCe 063 | - | 100L-2B14 |
| | 115,40 | 203,58 | 25,00 | 0,82 | 3,59 | uniCe 063 | - | 100L-2B14 |
| | 118,17 | 218,21 | 12,00 | 0,90 | 3,24 | uniCe 063 | - | 100LB-4B14 |
| | 177,25 | 150,32 | 8,00 | 0,93 | 3,49 | uniCe 063 | - | 100LB-4B14 |
| | 180,31 | 138,24 | 16,00 | 0,87 | 3,60 | uniCe 063 | - | 100L-2B14 |
| | 236,33 | 113,95 | 6,00 | 0,94 | 3,56 | uniCe 063 | - | 100LB-4B14 |
| | | | | | | | | |
| | 35,45 | 581,89 | 40,00 | 0,72 | 1,17 | uniCe 080 | - | 100LB-4B5 |
| | 36,06 | 452,84 | 80,00 | 0,57 | 0,82 | uniCe 080 | - | 100L-2B5 |
| | 45,19 | 418,43 | 63,00 | 0,66 | 0,92 | uniCe 080 | - | 90LB-2B5 |
| | 141,80 | 179,82 | 10,00 | 0,89 | 3,94 | uniCe 080 | - | 100LB-4B5 |
| | 144,25 | 162,86 | 20,00 | 0,82 | 3,37 | uniCe 080 | - | 100L-2B5 |
| | | | | | | | | |
| | 17,73 | 905,16 | 80,00 | 0,56 | 0,88 | uniCe 100 | - | 100LB-4B5 |
| | 22,51 | 763,73 | 63,00 | 0,60 | 1,19 | uniCe 100 | - | 100LB-4B5 |
| | 28,36 | 666,75 | 50,00 | 0,66 | 1,72 | uniCe 100 | - | 100LB-4B5 |
| | | | | | | | | |
| | 37,96 | 658,89 | 75,00 | 0,87 | 0,97 | uniTeCe 063 | 6,25 | 90LB-2B14 |
| | 75,92 | 344,09 | 37,50 | 0,91 | 0,98 | uniTeCe 063 | 6,25 | 90LB-2B14 |

## selection table based on power:

| $P_{Mot}$ [kW] | $n_2$ [1/min] | $T_{2\,Tab}$ [Nm] | $i_{ges}$ | η [%] | $f_B$ | Getriebe | $i_{Vorstufe}$ | Motor |
|---|---|---|---|---|---|---|---|---|
| 4 | 47,17 | 672,21 | 30,00 | 0,83 | 0,99 | uniCe 063 | - | 100LC-4B14 |
| | 56,60 | 553,43 | 25,00 | 0,82 | 1,47 | uniCe 063 | - | 100LC-4B14 |
| | 57,70 | 470,05 | 50,00 | 0,71 | 0,76 | uniCe 063 | - | 100LB-2B14 |
| | 70,75 | 448,14 | 20,00 | 0,83 | 2,16 | uniCe 063 | - | 100LC-4B14 |
| | 72,13 | 402,52 | 40,00 | 0,76 | 1,09 | uniCe 063 | - | 100LB-2B14 |
| | 80,14 | 371,80 | 36,00 | 0,78 | 1,16 | uniCe 063 | - | 100LB-2B14 |
| | 88,44 | 375,79 | 16,00 | 0,87 | 1,50 | uniCe 063 | - | 100LC-4B14 |
| | 96,17 | 337,64 | 30,00 | 0,85 | 1,80 | uniCe 063 | - | 100LB-2B14 |
| | 115,40 | 271,44 | 25,00 | 0,82 | 2,69 | uniCe 063 | - | 100LB-2B14 |
| | 117,92 | 291,56 | 12,00 | 0,90 | 2,42 | uniCe 063 | - | 100LC-4B14 |
| | 141,50 | 242,97 | 10,00 | 0,90 | 3,42 | uniCe 063 | - | 100LC-4B14 |
| | 144,25 | 219,80 | 20,00 | 0,83 | 3,90 | uniCe 063 | - | 100LB-2B14 |
| | 176,88 | 200,85 | 8,00 | 0,93 | 2,61 | uniCe 063 | - | 100LC-4B14 |
| | 180,31 | 184,31 | 16,00 | 0,87 | 2,70 | uniCe 063 | - | 100LB-2B14 |
| | 235,83 | 152,26 | 6,00 | 0,94 | 2,67 | uniCe 063 | - | 100LC-4B14 |
| | | | | | | | | |
| | 22,46 | 1020,47 | 63,00 | 0,60 | 0,89 | uniCe 100 | - | 100LC-4B5 |
| | 28,30 | 890,88 | 50,00 | 0,66 | 1,29 | uniCe 100 | - | 100LC-4B5 |
| | 35,38 | 777,50 | 40,00 | 0,72 | 1,90 | uniCe 100 | - | 100LC-4B5 |
| | 36,06 | 614,38 | 80,00 | 0,58 | 1,20 | uniCe 100 | - | 100LB-2B5 |
| | 39,31 | 719,19 | 36,00 | 0,74 | 2,18 | uniCe 100 | - | 100LC-4B5 |
| | 45,79 | 525,53 | 63,00 | 0,63 | 1,59 | uniCe 100 | - | 100LB-2B5 |

## selection table based on power:

| $P_{Mot}$ [kW] | $n_2$ [1/min] | $T_{2\,Tab}$ [Nm] | $f_{ges}$ | η [%] | $f_B$ | Getriebe | $f_{Vorstufe}$ | Motor |
|---|---|---|---|---|---|---|---|---|
| | 57,92 | 743,62 | 25,00 | 0,82 | 1,09 | uniCe 063 | - | 112MB-4B14 |
| | 72,40 | 602,15 | 20,00 | 0,83 | 1,61 | uniCe 063 | - | 112MB-4B14 |
| | 80,42 | 509,47 | 36,00 | 0,78 | 0,85 | uniCe 063 | - | 112MB-2B14 |
| | 90,50 | 504,94 | 16,00 | 0,87 | 1,12 | uniCe 063 | - | 112MB-4B14 |
| | 96,50 | 462,66 | 30,00 | 0,85 | 1,31 | uniCe 063 | - | 112MB-2B14 |
| | 115,80 | 371,94 | 25,00 | 0,82 | 1,96 | uniCe 063 | - | 112MB-2B14 |
| | 120,67 | 391,76 | 12,00 | 0,90 | 1,80 | uniCe 063 | - | 112MB-4B14 |
| | 144,80 | 326,47 | 10,00 | 0,90 | 2,55 | uniCe 063 | - | 112MB-4B14 |
| | 180,94 | 252,56 | 16,00 | 0,87 | 1,97 | uniCe 063 | - | 112MB-2B14 |
| | 181,00 | 269,88 | 8,00 | 0,93 | 1,94 | uniCe 063 | - | 112MB-4B14 |
| | 241,33 | 204,59 | 6,00 | 0,94 | 1,98 | uniCe 063 | - | 112MB-4B14 |
| | 361,88 | 134,99 | 8,00 | 0,93 | 3,47 | uniCe 063 | - | 112MB-2B14 |
| | 482,50 | 102,33 | 6,00 | 0,94 | 3,30 | uniCe 063 | - | 112MB-2B14 |
| | | | | | | | | |
| 5,5 | 58,20 | 703,94 | 25,00 | 0,78 | 1,62 | uniCe 080 | - | 132S-4B5 |
| | 81,08 | 492,32 | 36,00 | 0,76 | 1,40 | uniCe 080 | - | 132SA-2B5 |
| | 97,30 | 421,06 | 30,00 | 0,78 | 2,03 | uniCe 080 | - | 132SA-2B5 |
| | 116,76 | 359,88 | 25,00 | 0,80 | 2,86 | uniCe 080 | - | 132SA-2B5 |
| | 121,25 | 381,21 | 12,00 | 0,88 | 2,59 | uniCe 080 | - | 132S-4B5 |
| | 145,50 | 321,29 | 10,00 | 0,89 | 2,20 | uniCe 080 | - | 132S-4B5 |
| | 182,44 | 250,48 | 16,00 | 0,87 | 2,77 | uniCe 080 | - | 132SA-2B5 |
| | 291,90 | 161,95 | 10,00 | 0,90 | 3,91 | uniCe 080 | - | 132SA-2B5 |
| | | | | | | | | |
| | 28,96 | 1197,05 | 50,00 | 0,66 | 0,96 | uniCe 100 | - | 112MB-4B5 |
| | 29,10 | 1191,29 | 50,00 | 0,66 | 0,97 | uniCe 100 | - | 132S-4B5 |
| | 36,20 | 1044,70 | 40,00 | 0,72 | 1,42 | uniCe 100 | - | 112MB-4B5 |
| | 40,22 | 966,34 | 36,00 | 0,74 | 1,62 | uniCe 100 | - | 112MB-4B5 |
| | 45,95 | 720,11 | 63,00 | 0,63 | 1,16 | uniCe 100 | - | 112MB-2B5 |
| | 46,33 | 714,19 | 63,00 | 0,63 | 1,17 | uniCe 100 | - | 132SA-2B5 |

## selection table based on power:

| $P_{Mot}$ [kW] | $n_2$ [1/min] | $T_{2\,Tab}$ [Nm] | $i_{ges}$ | η [%] | $f_B$ | Getriebe | $i_{Vorstufe}$ | Motor |
|---|---|---|---|---|---|---|---|---|
| | 58,12 | 1010,54 | 25,00 | 0,82 | 0,80 | uniCe 063 | - | 112MC-4B14 |
| | 72,65 | 818,29 | 20,00 | 0,83 | 1,18 | uniCe 063 | - | 112MC-4B14 |
| | 90,81 | 686,18 | 16,00 | 0,87 | 0,82 | uniCe 063 | - | 112MC-4B14 |
| | 96,00 | 634,18 | 30,00 | 0,85 | 0,96 | uniCe 063 | - | 112MC-2B14 |
| | 115,20 | 509,83 | 25,00 | 0,82 | 1,43 | uniCe 063 | - | 112MC-2B14 |
| | 121,08 | 532,38 | 12,00 | 0,90 | 1,33 | uniCe 063 | - | 112MC-4B14 |
| | 144,00 | 412,84 | 20,00 | 0,83 | 2,08 | uniCe 063 | - | 112MC-2B14 |
| | 145,30 | 443,65 | 10,00 | 0,90 | 1,88 | uniCe 063 | - | 112MC-4B14 |
| | 180,00 | 346,19 | 16,00 | 0,87 | 1,44 | uniCe 063 | - | 112MC-2B14 |
| | 181,63 | 366,75 | 8,00 | 0,93 | 1,43 | uniCe 063 | - | 112MC-4B14 |
| | 240,00 | 268,59 | 12,00 | 0,90 | 2,37 | uniCe 063 | - | 112MC-2B14 |
| | 242,17 | 278,02 | 6,00 | 0,94 | 1,46 | uniCe 063 | - | 112MC-4B14 |
| | 288,00 | 223,83 | 10,00 | 0,90 | 3,33 | uniCe 063 | - | 112MC-2B14 |
| | 360,00 | 185,03 | 8,00 | 0,93 | 2,53 | uniCe 063 | - | 112MC-2B14 |
| | 480,00 | 140,27 | 6,00 | 0,94 | 2,41 | uniCe 063 | - | 112MC-2B14 |
| | | | | | | | | |
| 7,5 | 48,73 | 1117,00 | 30,00 | 0,76 | 0,85 | uniCe 080 | - | 132MA-4B5 |
| | 80,92 | 673 | 36,00 | 0,76 | 1,0 | uniCe 080 | - | 132SB-2B5 |
| | 91,38 | 674,12 | 16,00 | 0,86 | 1,16 | uniCe 080 | - | 132MA-4B5 |
| | 97,10 | 575,36 | 30,00 | 0,78 | 1,49 | uniCe 080 | - | 132SB-2B5 |
| | 116,52 | 491,76 | 25,00 | 0,80 | 2,09 | uniCe 080 | - | 132SB-2B5 |
| | 146,20 | 436,02 | 10,00 | 0,89 | 1,62 | uniCe 080 | - | 132MA-4B5 |
| | 182,75 | 360,57 | 8,00 | 0,92 | 2,61 | uniCe 080 | - | 132MA-4B5 |
| | 243,67 | 276,31 | 6,00 | 0,94 | 2,97 | uniCe 080 | - | 132MA-4B5 |
| | 291,30 | 221,29 | 10,00 | 0,90 | 2,86 | uniCe 080 | - | 132SB-2B5 |
| | | | | | | | | |
| | 36,33 | 1419,68 | 40,00 | 0,72 | 1,04 | uniCe 100 | - | 112MC-4B5 |
| | 40,36 | 1313,21 | 36,00 | 0,74 | 1,20 | uniCe 100 | - | 112MC-4B5 |
| | 45,71 | 987,08 | 63,00 | 0,63 | 0,85 | uniCe 100 | - | 112MC-2B5 |
| | 46,24 | 975,90 | 63,00 | 0,63 | 0,86 | uniCe 100 | - | 132SB-2B5 |
| | 57,60 | 845,57 | 50,00 | 0,68 | 1,22 | uniCe 100 | - | 112MC-2B5 |
| | 73,10 | 813,25 | 20,00 | 0,83 | 1,61 | uniCe 100 | - | 132MA-4B5 |

| $P_{Mot}$ [kW] | $n_2$ [1/min] | $T_{2\,Tab}$ [Nm] | $i_{ges}$ | η [%] | $f_B$ | Getriebe | $i_{Vorstufe}$ | Motor |
|---|---|---|---|---|---|---|---|---|
| | 58,80 | 1165,49 | 25,00 | 0,78 | 0,98 | uniCe 080 | - | 132MB-4B5 |
| | 81,75 | 816,80 | 36,00 | 0,76 | 0,85 | uniCe 080 | - | 132MA-2B5 |
| | 91,88 | 822,42 | 16,00 | 0,86 | 0,95 | uniCe 080 | - | 132MB-4B5 |
| | 98,10 | 698,58 | 30,00 | 0,78 | 1,23 | uniCe 080 | - | 132MA-2B5 |
| | 117,72 | 597,08 | 25,00 | 0,80 | 1,73 | uniCe 080 | - | 132MA-2B5 |
| | 122,50 | 631,16 | 12,00 | 0,88 | 1,56 | uniCe 080 | - | 132MB-4B5 |
| | 147,00 | 531,94 | 10,00 | 0,89 | 1,33 | uniCe 080 | - | 132MB-4B5 |
| | 183,75 | 439,90 | 8,00 | 0,92 | 2,14 | uniCe 080 | - | 132MB-4B5 |
| 9,2 | 245,00 | 337,10 | 6,00 | 0,94 | 2,43 | uniCe 080 | - | 132MB-4B5 |
| | 294,30 | 268,69 | 10,00 | 0,90 | 2,36 | uniCe 080 | - | 132MA-2B5 |
| | 367,88 | 217,34 | 8,00 | 0,91 | 3,45 | uniCe 080 | - | 132MA-2B5 |
| | 490,50 | 166,58 | 6,00 | 0,93 | 3,84 | uniCe 080 | - | 132MA-2B5 |
| | | | | | | | | |
| | 36,75 | 1721,34 | 40,00 | 0,72 | 0,86 | uniCe 100 | - | 132MB-4B5 |
| | 40,83 | 1592,24 | 36,00 | 0,74 | 0,99 | uniCe 100 | - | 132MB-4B5 |
| | 49,00 | 1398,59 | 30,00 | 0,78 | 1,41 | uniCe 100 | - | 132MB-4B5 |
| | 73,50 | 992,16 | 20,00 | 0,83 | 1,32 | uniCe 100 | - | 132MB-4B5 |

## selection table based on power:

| $P_{Mot}$ [kW] | $n_2$ [1/min] | $T_{2\,Tab}$ [Nm] | $i_{ges}$ | η [%] | $f_B$ | Getriebe | $i_{Vorstufe}$ | Motor |
|---|---|---|---|---|---|---|---|---|
| 11 | 97,30 | 842,13 | 30,00 | 0,78 | 1,02 | uniCe 080 | - | 132MB-2B5 |
| | 116,76 | 719,77 | 25,00 | 0,80 | 1,43 | uniCe 080 | - | 132MB-2B5 |
| | 121,67 | 759,81 | 12,00 | 0,88 | 1,30 | uniCe 080 | - | 132MC-4B5 |
| | 146,00 | 640,37 | 10,00 | 0,89 | 1,11 | uniCe 080 | - | 132MC-4B5 |
| | 182,50 | 529,57 | 8,00 | 0,92 | 1,78 | uniCe 080 | - | 132MC-4B5 |
| | 243,33 | 405,81 | 6,00 | 0,94 | 2,02 | uniCe 080 | - | 132MC-4B5 |
| | 291,90 | 323,90 | 10,00 | 0,90 | 1,96 | uniCe 080 | - | 132MB-2B5 |
| | 364,88 | 262,00 | 8,00 | 0,91 | 2,86 | uniCe 080 | - | 132MB-2B5 |
| | 486,50 | 200,82 | 6,00 | 0,93 | 3,19 | uniCe 080 | - | 132MB-2B5 |
| | | | | | | | | |
| | 40,56 | 1916,80 | 36,00 | 0,74 | 0,82 | uniCe 100 | - | 132MC-4B5 |
| | 48,67 | 1683,68 | 30,00 | 0,78 | 1,17 | uniCe 100 | - | 132MC-4B5 |
| | 58,40 | 1457,03 | 25,00 | 0,81 | 1,58 | uniCe 100 | - | 132MC-4B5 |
| | 73,00 | 1194,40 | 20,00 | 0,83 | 1,10 | uniCe 100 | - | 132MC-4B5 |
| | 81,08 | 984,64 | 36,00 | 0,76 | 1,44 | uniCe 100 | - | 132MB-2B5 |
| | 91,25 | 1001,57 | 16,00 | 0,87 | 1,64 | uniCe 100 | - | 132MC-4B5 |

| $P_{Mot}$ [kW] | $n_2$ [1/min] | $T_{2\,Tab}$ [Nm] | $i_{ges}$ | η [%] | $f_B$ | Getriebe | $i_{Vorstufe}$ | Motor |
|---|---|---|---|---|---|---|---|---|
| 15 | 117,44 | 975,82 | 25,00 | 0,80 | 1,06 | uniCe 080 | - | 132MC-2B5 |
| | 121,42 | 1038,24 | 12,00 | 0,88 | 0,95 | uniCe 080 | - | 132MD-4B5 |
| | 145,70 | 875,03 | 10,00 | 0,89 | 0,81 | uniCe 080 | - | 132MD-4B5 |
| | 182,13 | 723,62 | 8,00 | 0,92 | 1,30 | uniCe 080 | - | 132MD-4B5 |
| | 242,83 | 554,52 | 6,00 | 0,94 | 1,48 | uniCe 080 | - | 132MD-4B5 |
| | 293,60 | 439,12 | 10,00 | 0,90 | 1,44 | uniCe 080 | - | 132MC-2B5 |
| | 367,00 | 355,20 | 8,00 | 0,91 | 2,11 | uniCe 080 | - | 132MC-2B5 |
| | 489,33 | 272,25 | 6,00 | 0,93 | 2,35 | uniCe 080 | - | 132MC-2B5 |
| | | | | | | | | |
| | 48,57 | 2300,65 | 30,00 | 0,78 | 0,86 | uniCe 100 | - | 132MD-4B5 |
| | 58,28 | 1990,95 | 25,00 | 0,81 | 1,16 | uniCe 100 | - | 132MD-4B5 |
| | 72,85 | 1632,09 | 20,00 | 0,83 | 0,80 | uniCe 100 | - | 132MD-4B5 |
| | 73,30 | 1622,07 | 20,00 | 0,83 | 0,81 | uniCe 100 | - | 160L-4B5 |
| | 81,56 | 1334,92 | 36,00 | 0,76 | 1,06 | uniCe 100 | - | 132MC-2B5 |
| | 91,06 | 1368,59 | 16,00 | 0,87 | 1,20 | uniCe 100 | - | 132MD-4B5 |
| | 97,87 | 1170,98 | 30,00 | 0,80 | 1,50 | uniCe 100 | - | 132MC-2B5 |
| | 98,03 | 1168,99 | 30,00 | 0,80 | 1,51 | uniCe 100 | - | 160MB-2B5 |
| | 122,17 | 1043,59 | 12,00 | 0,89 | 1,95 | uniCe 100 | - | 160L-4B5 |
| | 146,60 | 889,21 | 10,00 | 0,91 | 1,64 | uniCe 100 | - | 160L-4B5 |
| | 147,05 | 828,03 | 20,00 | 0,85 | 1,40 | uniCe 100 | - | 160MB-2B5 |
| | 183,25 | 727,00 | 8,00 | 0,93 | 1,80 | uniCe 100 | - | 160L-4B5 |
| | 244,33 | 551,11 | 6,00 | 0,94 | 2,18 | uniCe 100 | - | 160L-4B5 |
| | 245,08 | 526,05 | 12,00 | 0,90 | 2,47 | uniCe 100 | - | 160MB-2B5 |
| | 294,10 | 448,11 | 10,00 | 0,92 | 2,90 | uniCe 100 | - | 160MB-2B5 |
| | 490,17 | 277,64 | 6,00 | 0,95 | 3,60 | uniCe 100 | - | 160MB-2B5 |

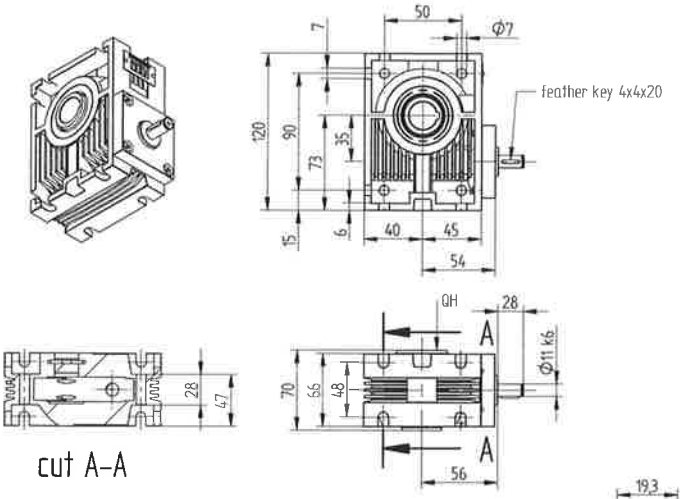
## selection table based on power:

| $P_{Mot}$ [kW] | $n_2$ [1/min] | $T_{2\,Tab}$ [Nm] | $i_{ges}$ | η [%] | $f_B$ | Getriebe | $i_{Vorstufe}$ | Motor |
|---|---|---|---|---|---|---|---|---|
| 18,5 | 59,04 | 2423,89 | 25,00 | 0,81 | 0,95 | uniCe 100 | - | 180M-4B5 |
| | 81,94 | 1638,59 | 36,00 | 0,76 | 0,87 | uniCe 100 | - | 160L-2B5 |
| | 92,25 | 1666,20 | 16,00 | 0,87 | 0,98 | uniCe 100 | - | 180M-4B5 |
| | 123,00 | 1278,38 | 12,00 | 0,89 | 1,59 | uniCe 100 | - | 180M-4B5 |
| | 147,60 | 1089,26 | 10,00 | 0,91 | 1,34 | uniCe 100 | - | 180M-4B5 |
| | 184,50 | 890,56 | 8,00 | 0,93 | 1,47 | uniCe 100 | - | 180M-4B5 |
| | 246,00 | 675,10 | 6,00 | 0,94 | 1,78 | uniCe 100 | - | 180M-4B5 |
| | 295,00 | 550,99 | 10,00 | 0,92 | 2,36 | uniCe 100 | - | 160L-2B5 |
| | 368,75 | 450,37 | 8,00 | 0,94 | 2,58 | uniCe 100 | - | 160L-2B5 |
| | 491,67 | 341,37 | 6,00 | 0,95 | 2,93 | uniCe 100 | - | 160L-2B5 |

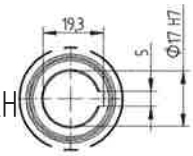
# measurements uniCe 035 & uniTeCe 035

## uniCe-035-N-00-W-QH

gear with axle drive shaft and output hollow shaft

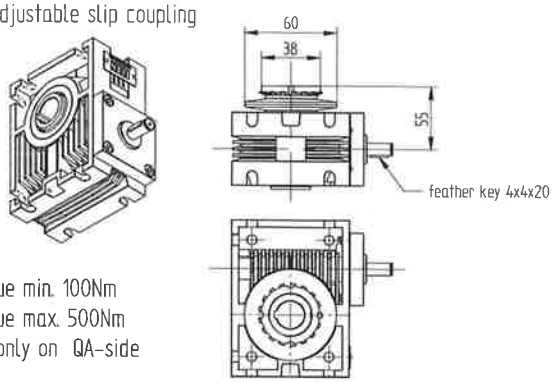



output hollow shaft QH




## uniCe-035-R-00-W-QH

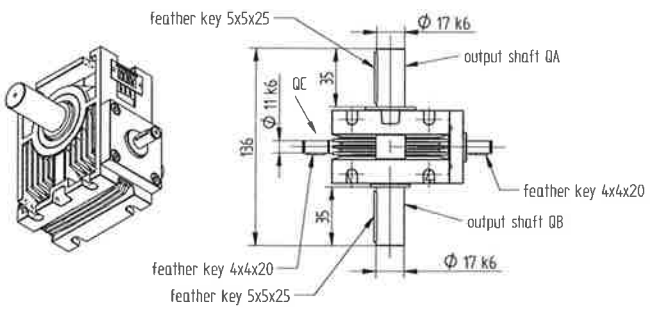
gear with axle drive shaft, output hollow shaft and adjustable slip coupling



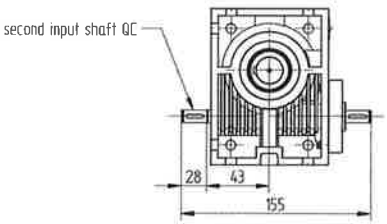

output torque min. 100Nm
output torque max. 500Nm
adjustable only on QA-side

## uniCe-035-N-00-W-QAB-00-QC

gear with two input and output shafts

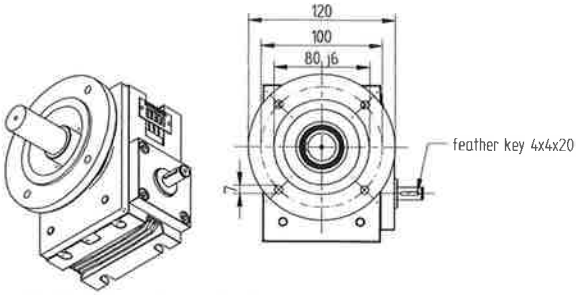



specify output shaft by order

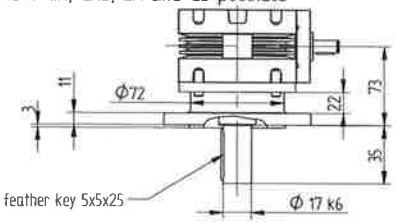



## uniCe-035-N-00-W-QB-Fl

gear with output shaft QB, output flange and axle drive shaft



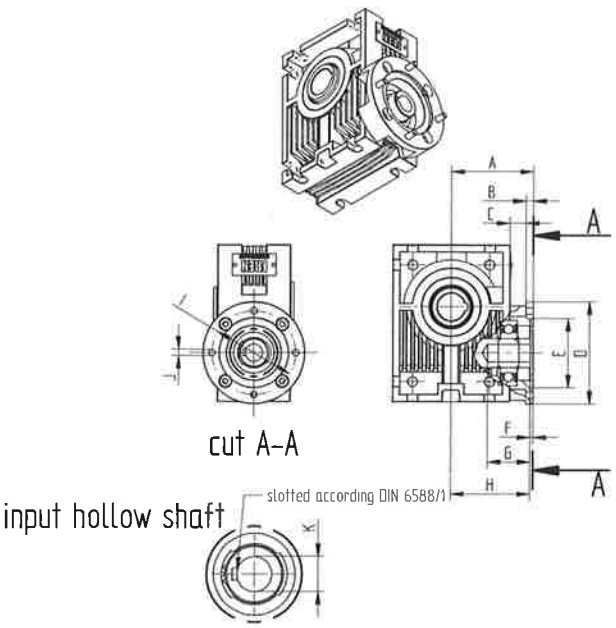

output flange only on QB-side
output shaft QH, QAB, QA and QB possible




choice the gear according to the typ designation on page 3

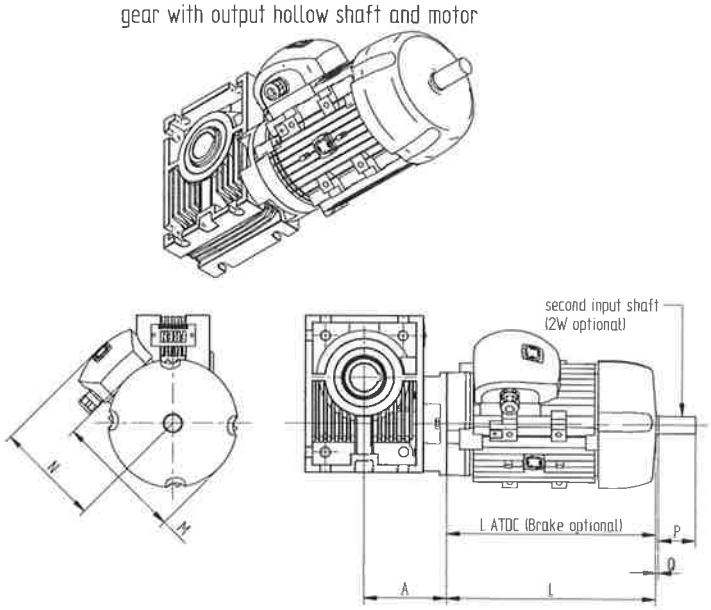
## uniCe-035-N-00-JM/000/00-QH

gear with input hollow shaft, output hollow shaft and flange



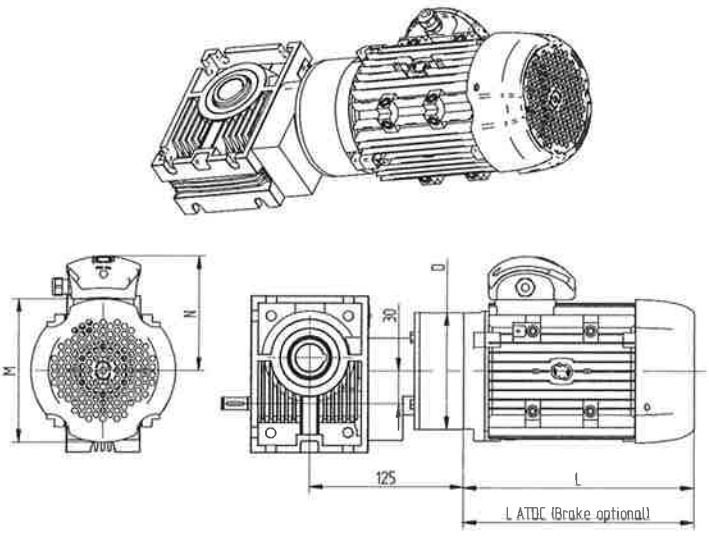

## uniCe-035-N-00-Motor-QH

gear with output hollow shaft and motor



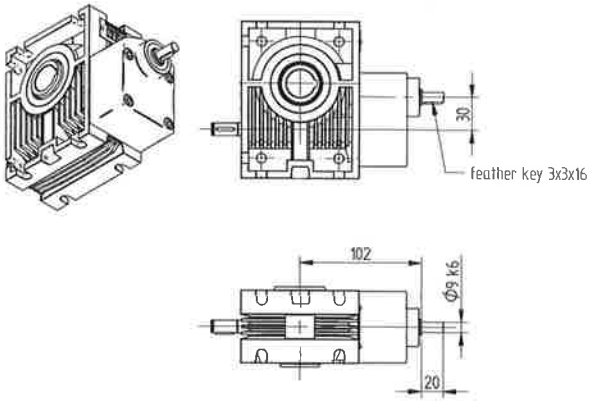

## uniTeCe-035-N-00-Motor-QH-00-QC

gear with pre-stage, output hollow shaft, second input shaft and motor




## uniTeCe-035-N-00-W-QH

gear with pre-stage, output hollow shaft,
axle drive shaft and scond input shaft

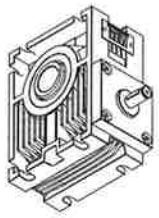


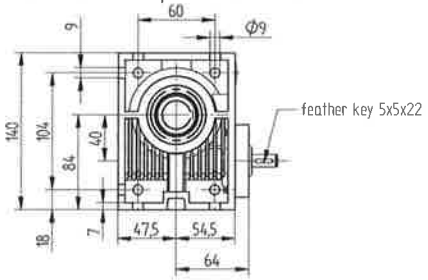

| uniCe 035 | A | B | C | D | E H7 | F | G | H | I | J | K | L | L ATDC | M | N | O | P | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 63B14 | 65 | 7 | 13 | 90 | 60 | 3,5 | 30 | 62 | 75 | 6 | 9,11,14 | 186,5 | 214,5 | 130 | 114 | 11 | 23 | 3 |
| 71B14 | | 8 | 12 | 105 | 70 | | | | 85 | 7 | | 207,5 | 237,5 | 145 | 119 | 14 | 30 | 3 |
| 56B5 | | | | 120 | 80 | 4 | | | 100 | | | 141 | | 120 | 102 | 9 | 20 | 3 |
| | | 10 | 10 | 140 | 95 | | | | 115 | 9 | | | | | | | | |

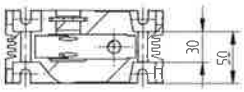
# measurements uniCe 040 & uniTeCe 040

## uniCe-040-N-00-W-QH

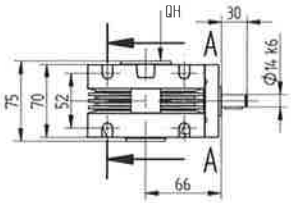
gear with axle drive shaft and output hollow shaft



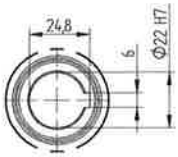



cut A-A

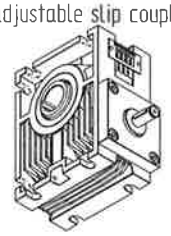


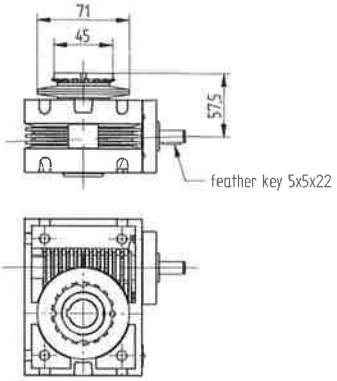

Abtriebshohlwelle QH




## uniCe-040-R-00-W-QH

gear with axle drive shaft, output hollow shaft and adjustable slip coupling

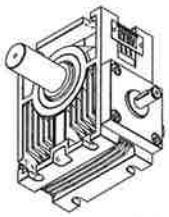


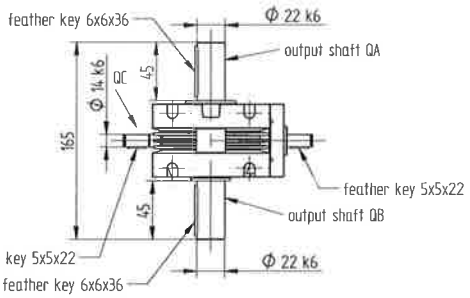



output torque min. 100Nm
output torque max. 500Nm
adjustable only on QA-side

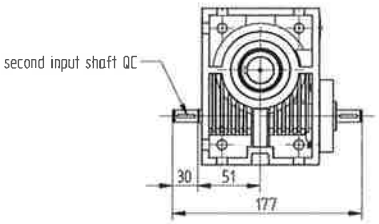
## uniCe-040-N-00-W-QAB-00-QC

gear with two input and output shafts



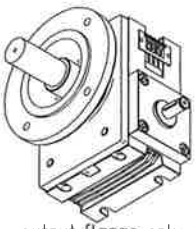


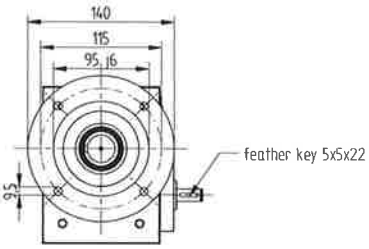

specify output shaft by order



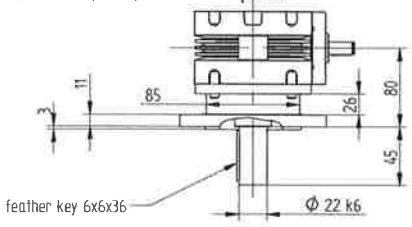

## uniCe-040-N-00-W-QB-Fl

gear with output shaft QB, output flange and axle drive shaft





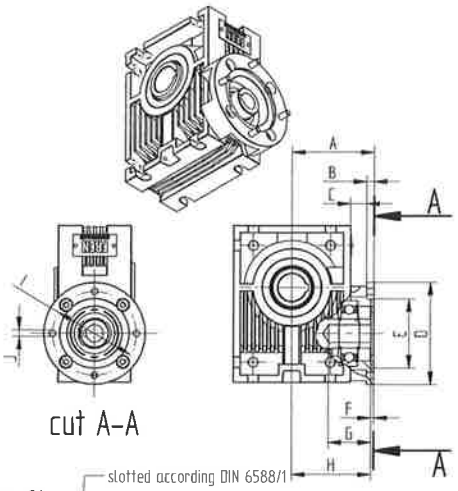

output flange only on QB-side
output shaft QH, QAB, QA and QB possible




choice the gear according to the typ designation on page 3

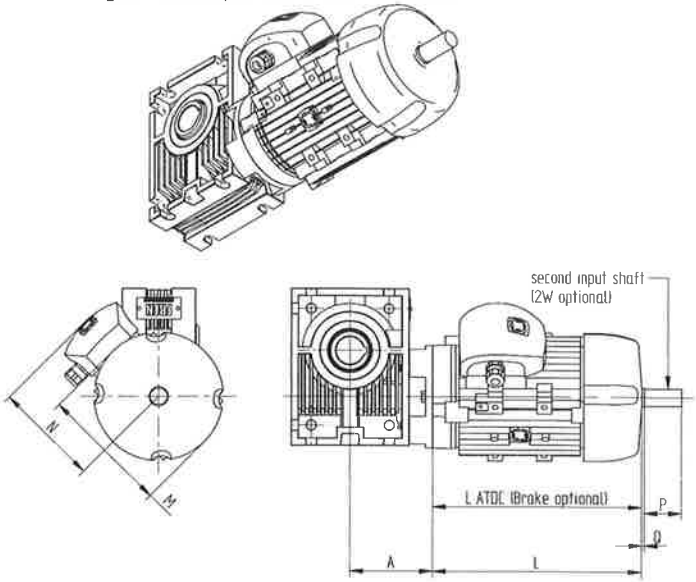
## uniCe-040-N-00-JM/000/00-QH

gear with input hollow shaft, output hollow shaft and flange



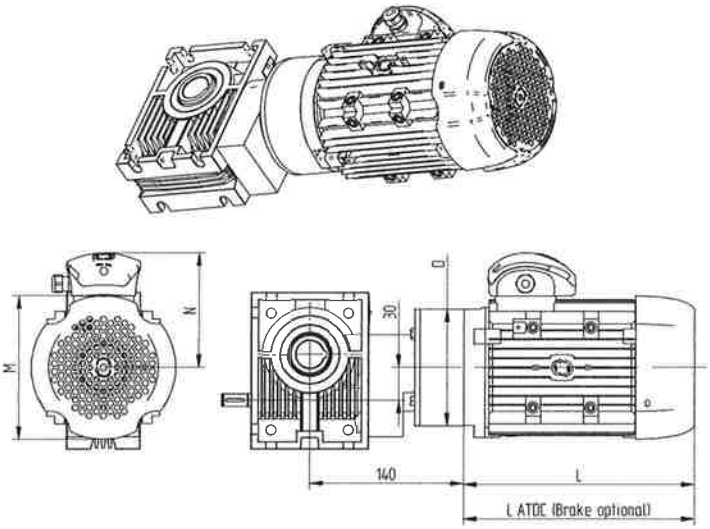

## uniCe-040-N-00-Motor-QH

gear with output hollow shaft and motor



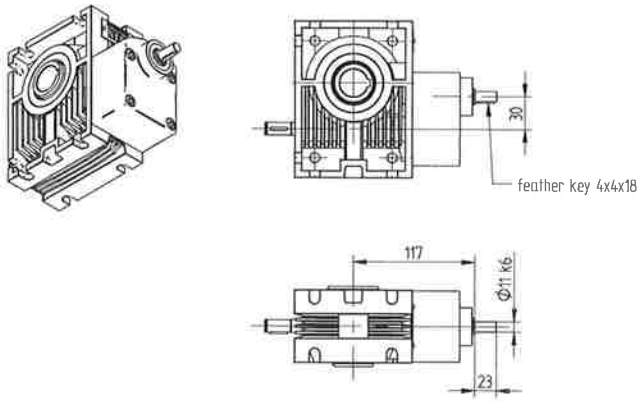

## uniTeCe-040-N-00-Motor-QH-00-QC

gear with pre-stage, output hollow shaft, second input shaft and motor




## uniTeCe-040-N-00-W-QH

gear with pre-stage, output hollow shaft,
axle drive shaft and scond input shaft

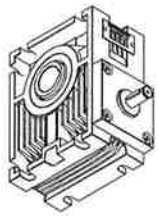


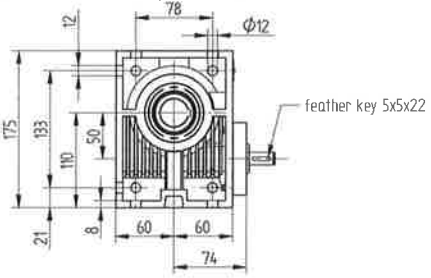

| uniCe 040 | A | B | C | D | E H7 | F | G | H | I | J | K | L | L ATDC | M | N | O | P | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 63B14 | 74,5 | 8 | 12 | 90 | 60 | 3,5 | 40 | 71 | 75 | 6 | 9,11,14,19 | 186,5 | 214,5 | 130 | 114 | 11 | 23 | 3 |
| 71B14 | | | | 105 | 70 | 3,5 | | | 85 | 7 | | 207,5 | 237,5 | 145 | 119 | 14 | 30 | 3 |
| 56B5 | | | | 120 | 80 | 4 | | | 100 | | | 141 | | 120 | 102 | 9 | 20 | 3 |
| 80B14 | | | | | | | | | | | | 233 | 332 | 175 | 130 | 19 | 40 | 3 |
| | | 10 | 10 | 140 | 95 | 4 | | | 115 | 9 | | | | | | | | |
| | | | | 160 | 110 | 4,5 | | | 130 | | | | | | | | | |

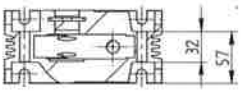
# measurements uniCe 050 & uniTeCe 050

## uniCe-050-N-00-W-QH

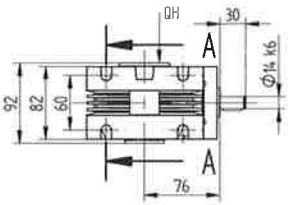
gear with axle drive shaft and output hollow shaft



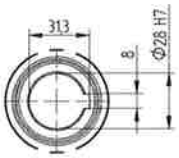



cut A-A

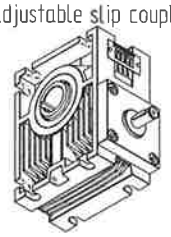


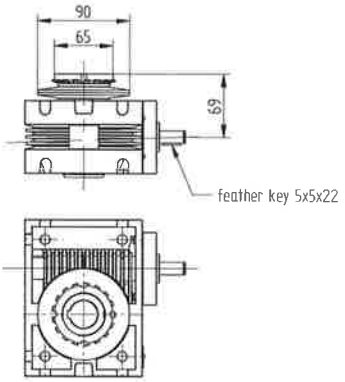

output hollow shaft QH




## uniCe-050-R-00-W-QH

gear with axle drive shaft, output hollow shaft and adjustable slip coupling

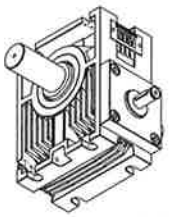


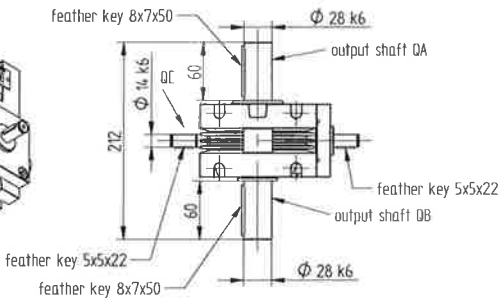



output torque min. 100Nm
output torque max. 500Nm
adjustable only on QA-side

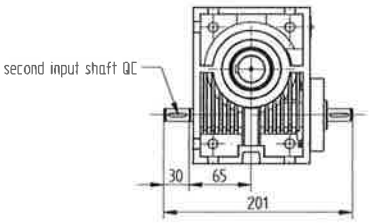
## uniCe-050-N-00-W-QAB-00-QC

gear with two input and output shafts



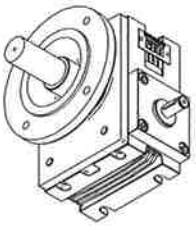


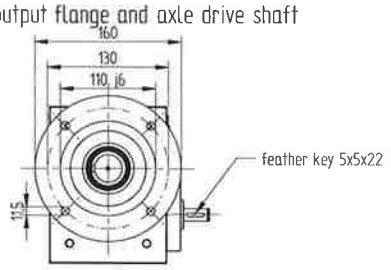

specify output shaft by order



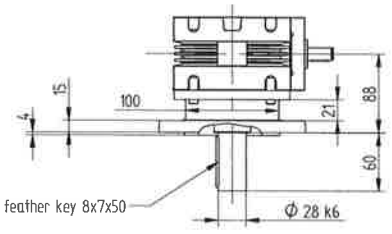

## uniCe-050-N-00-W-QB-Fl

gear with output shaft QB, output flange and axle drive shaft





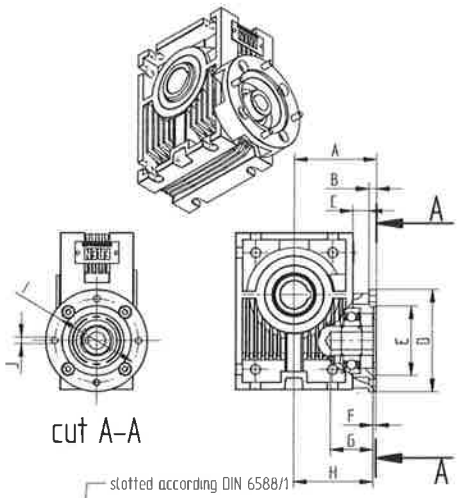

output flange only on QB-side
output shaft QH, QAB, QA and QB possible




choice the gear according to the typ designation on page 3

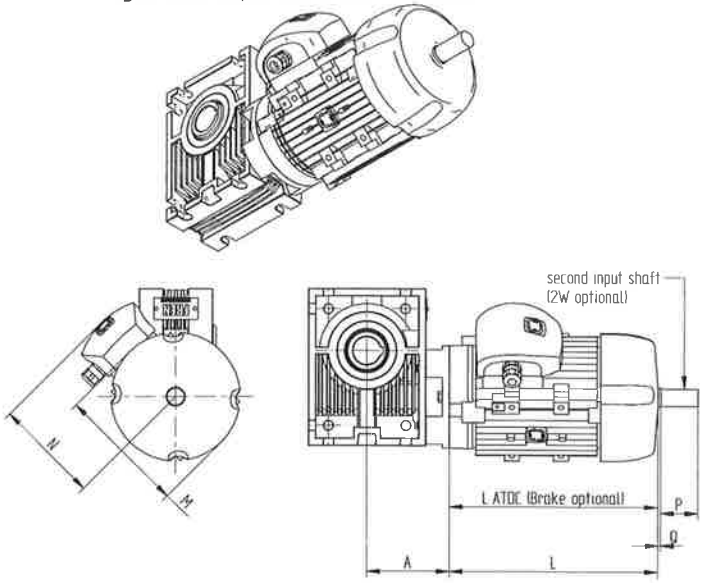
## uniCe-050-N-00-JM/000/00-QH

gear with input hollow shaft, output hollow shaft and flange



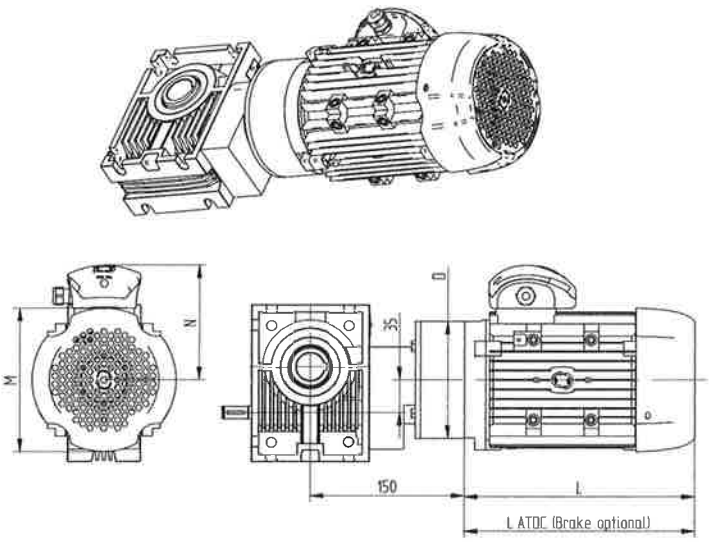

## uniCe-050-N-00-Motor-QH

gear with output hollow shaft and motor



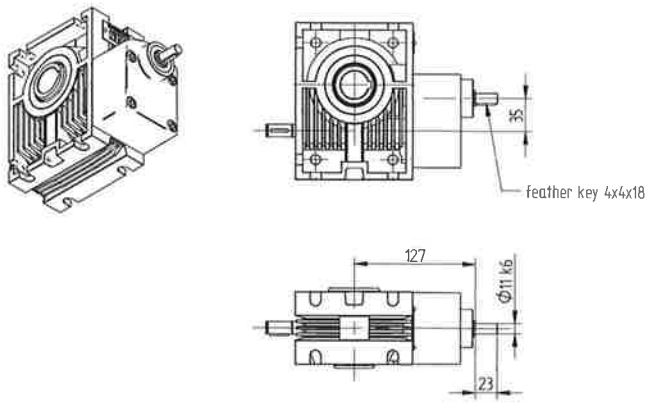

## uniTeCe-050-N-00-Motor-QH-00-QC

gear with pre-stage, output hollow shaft, second input shaft and motor




## uniTeCe-050-N-00-W-QH

gear with pre-stage, output hollow shaft,
axle drive shaft and scond input shaft

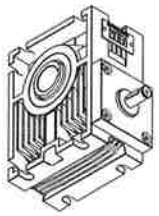


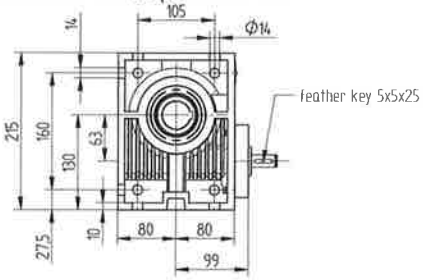

| uniCe 050 | A | B | C | D | E H7 | F | G | H | I | J | K | L | L ATDC | M | N | O | P | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80B14 | 88 | 8 | 20 | 120 | 80 | 4 | 50 | 86 | 100 | 7 | 11,14,19,24 | 233 | 332 | 175 | 130 | 19 | 40 | 3 |
| 63B5 | | 10 | 18 | 140 | 95 | | | | 115 | 9 | | 186,5 | 214,5 | 130 | 114 | 11 | 23 | 3 |
| 90SB14 | | | | | | | | | | | | 252 | 347 | 195 | 145 | 24 | 50 | 5 |
| 90LB14 | | | | | | | | | | | | 277 | 373 | 195 | 145 | 24 | 50 | 5 |
| 71B5 | | | | 160 | 110 | 4,5 | | | 130 | | | 207,5 | 237,5 | 145 | 119 | 14 | 30 | 3 |
| | | 13 | 15 | 200 | 130 | | | | 165 | 11 | | | | | | | | |

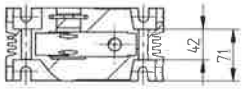
# measurements uniCe 063 & uniTeCe 063

## uniCe-063-N-00-W-QH

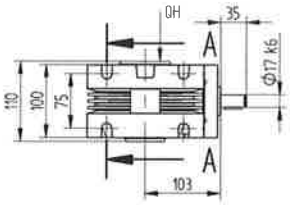
gear with axle drive shaft and output hollow shaft



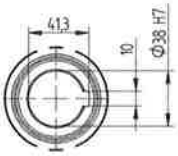



cut A-A

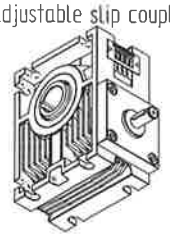


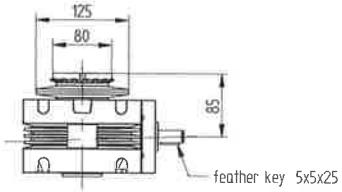

output hollow shaft QH

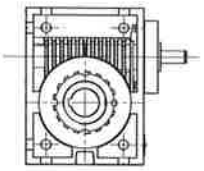



## uniCe-063-R-00-W-QH

gear with axle drive shaft, output hollow shaft and adjustable slip coupling



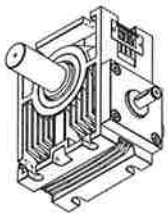


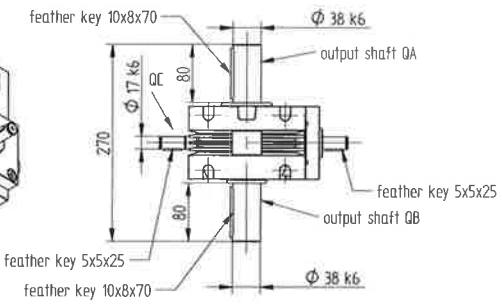



output torque min. 100Nm
output torque max. 500Nm
adjustable only on QA-side

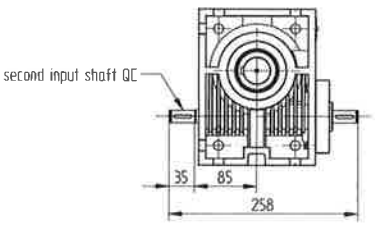
## uniCe-063-N-00-W-QAB-00-QC

gear with two input and output shafts



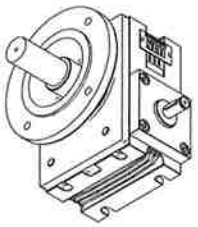


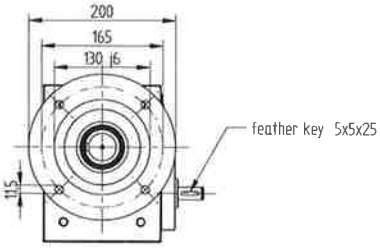

specify output shaft by order



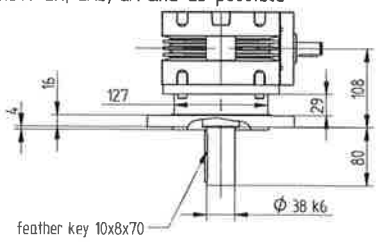

## uniCe-063-N-00-W-QB-Fl

gear with output shaft QB, output flange and axle drive shaft





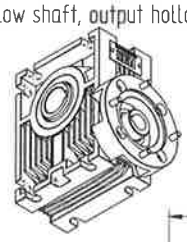

output flange only on QB-side
output shaft QH, QAB, QA and QB possible

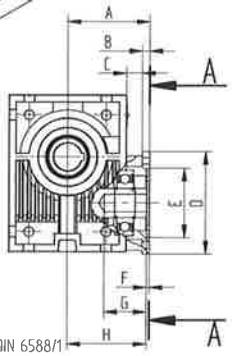


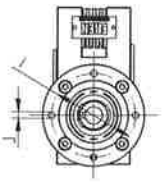

choice the gear according to the typ designation on page 3

## uniCe-063-N-00-JM/000/00-QH

gear with input hollow shaft, output hollow shaft and flange

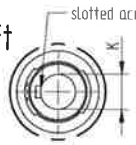




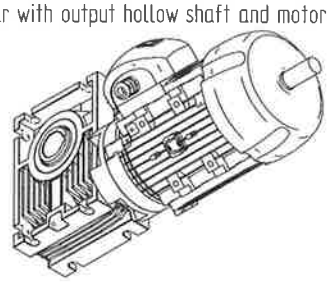
cut A-A

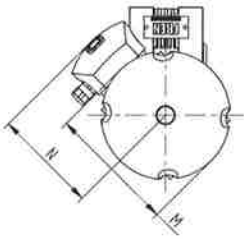
input hollow shaft

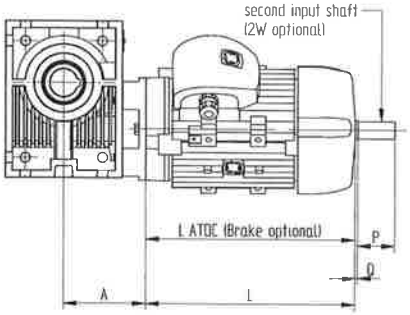



## uniCe-063-N-00-Motor-QH

gear with output hollow shaft and motor

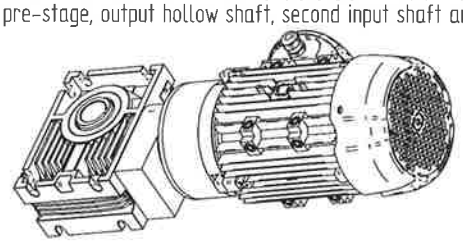


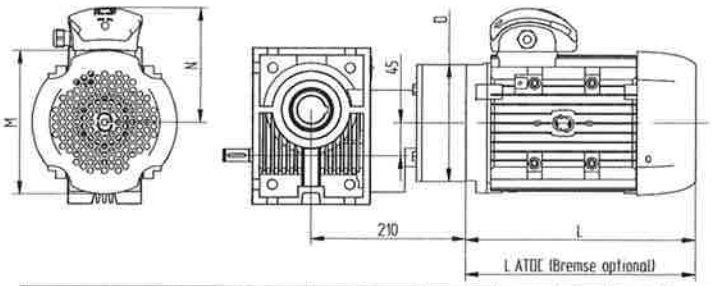



## uniTeCe-063-N-00-Motor-QH-00-QC

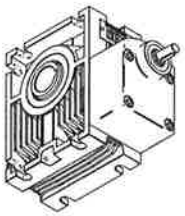
gear with pre-stage, output hollow shaft, second input shaft and motor

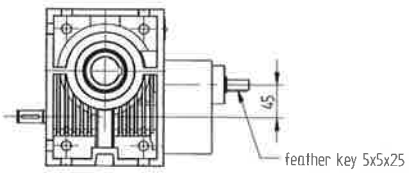


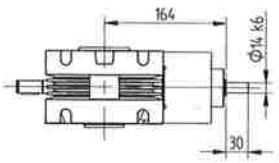



## uniTeCe-063-N-00-W-QH

gear with pre-stage, output hollow shaft,
axle drive shaft and scond input shaft





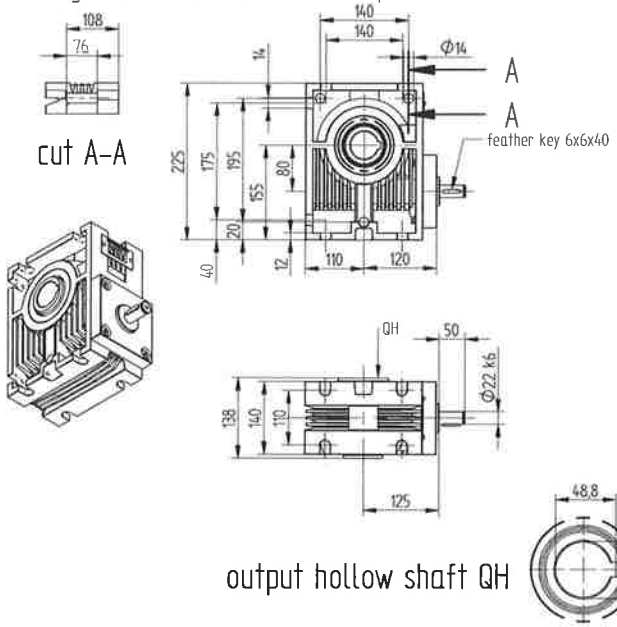




| uniCe 063 | A | B | C | D | E H7 | F | G | H | I | J | K | L | L ATDC | M | N | O | P | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 90SB14 | 112 | 10 | 22 | 140 | 95 | 4 | 60 | 108 | 115 | 9 | 14,19,24,28 | 252 | 347 | 195 | 145 | 24 | 50 | 5 |
| 90LB14 | | | | | | | | | | | | 277 | 373 | 195 | 145 | 24 | 50 | 5 |
| 71B5 | | | | 160 | 110 | 4,5 | | | 130 | | | 207,5 | 237,5 | 145 | 119 | 14 | 30 | 3 |
| 100B14 | | | | | | | | | | | | 307,5 | 401,5 | 215 | 170 | 28 | 60 | 5 |
| 112B14 | | | | | | | | | | | | 316,5 | 431,5 | 240 | 177 | 28 | 60 | 5 |
| 80B5 | | 16 | 16 | 200 | 130 | | | | 165 | 11 | | 233 | 332 | 175 | 130 | 19 | 40 | 3 |
| | | 21 | 11 | 250 | 180 | 5 | | | 215 | 14 | | | | | | | | |

# measurements uniCe 080

## uniCe-080-N-00-W-QH

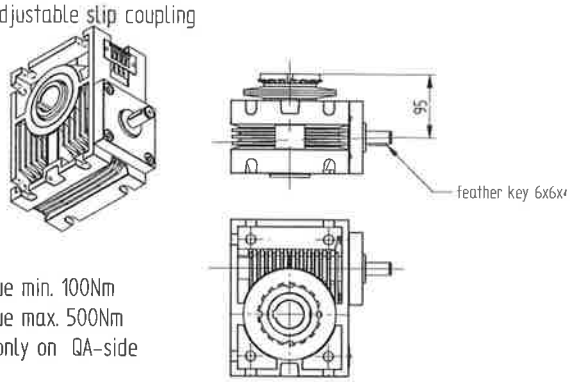
gear with axle drive shaft and output hollow shaft




output hollow shaft QH

## uniCe-080-R-00-W-QH

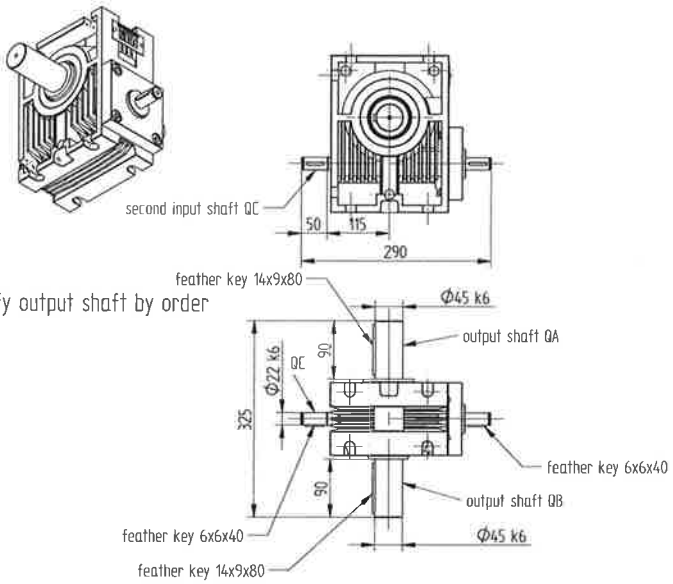
gear with axle drive shaft, output hollow shaft and adjustable slip coupling




output torque min. 100Nm
output torque max. 500Nm
adjustable only on QA-side

## uniCe-080-N-00-W-QAB-00-QC

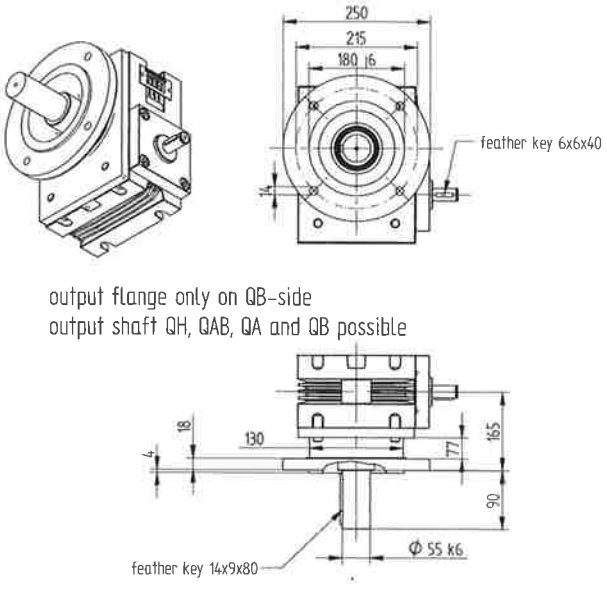
gear with two input and output shafts




specify output shaft by order

## uniCe-080-N-00-W-QB-Fl

gear with output shaft QB, output flange and axle drive shaft

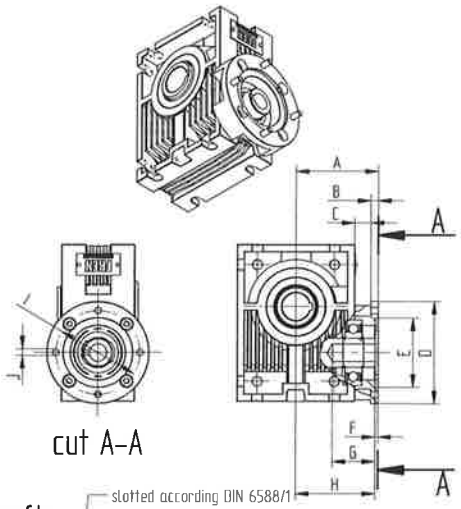



output flange only on QB-side
output shaft QH, QAB, QA and QB possible

choice the gear according to the typ designation on page 3

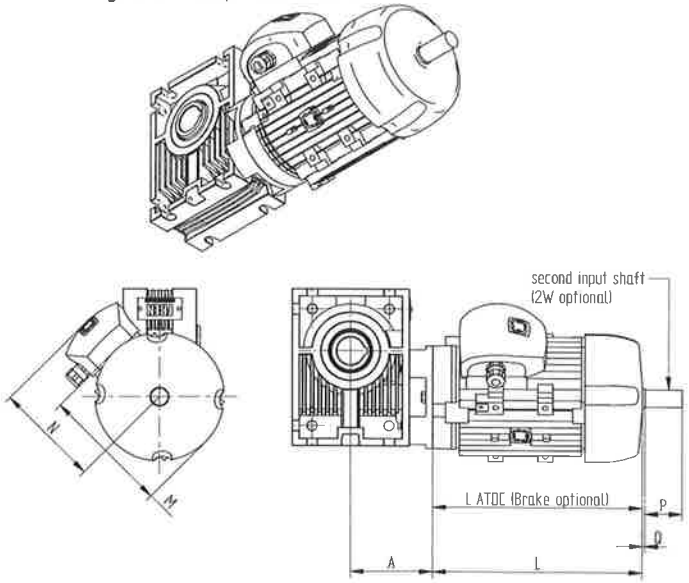
## uniCe-080-N-00-JM/000/00-QH

gear with input hollow shaft, output hollow shaft and flange




## uniCe-080-N-00-Motor-QH

gear with output hollow shaft and motor

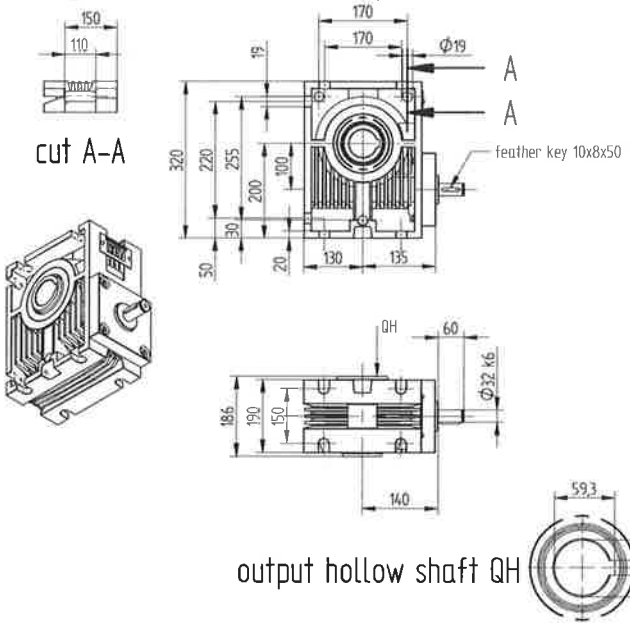



| uniCe 080 | A | B | C | D | E H7 | F | G | H | I | J | K | L | LATDC | M | N | O | P | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 131 | 13 | | 160 | 110 | 4,5 | 80 | 115 | 130 | M10 | 19,24,28,38 | | | | | | | |
| 80B5 | 120 | | | 200 | 130 | | | | 165 | | | 233 | 332 | 175 | 130 | 19 | 40 | 3 |
| 90SB5 | | | | | | | | | | | | 252 | 347 | 195 | 145 | 24 | 50 | 5 |
| 90LB5 | | | | | | | | | | | | 277 | 373 | 195 | 145 | 24 | 50 | 5 |
| 100B5 | 140 | 17 | | 250 | 180 | 5 | | | 215 | M12 | | 307,5 | 401,5 | 215 | 170 | 28 | 60 | 5 |
| 112B5 | | | | | | | | | | | | 316,5 | 431,5 | 240 | 177 | 28 | 60 | 5 |
| 132SB5 | | | | 300 | 230 | | | | 265 | | | 371 | 486 | 275 | 197 | 38 | 80 | 5 |
| 132MB5 | | | | | | | | | | | | 411 | 526 | 275 | 197 | 38 | 80 | 5 |

# measurements uniCe 100

## uniCe-100-N-00-W-QH

gear with axle drive shaft and output hollow shaft

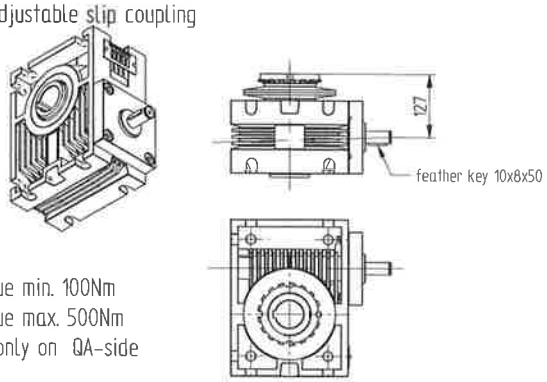



output hollow shaft QH




## uniCe-100-R-00-W-QH

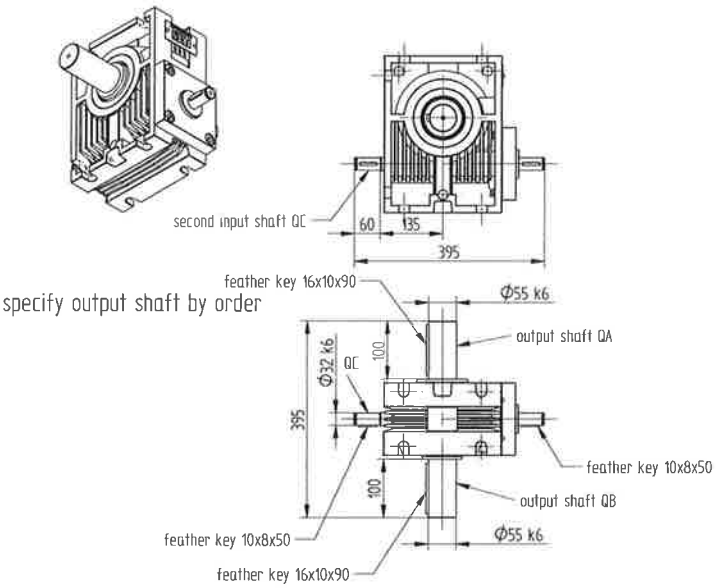
gear with axle drive shaft, output hollow shaft and adjustable slip coupling




output torque min. 100Nm
output torque max. 500Nm
adjustable only on QA-side

## uniCe-100-N-00-W-QAB-00-QC

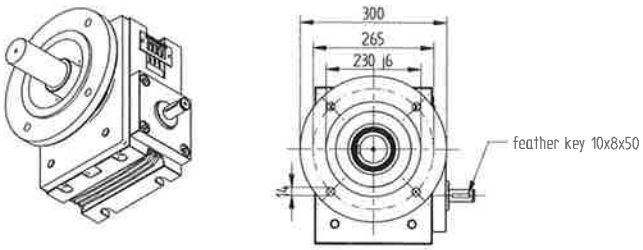
gear with two input and output shafts



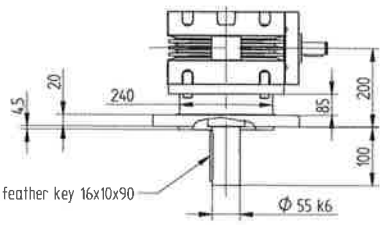

specify output shaft by order

## uniCe-100-N-00-W-QB-Fl

gear with output shaft QB, output flange and axle drive shaft



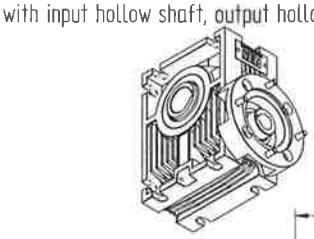

output flange only on QB-side
output shaft QH, QAB, QA and QB possible

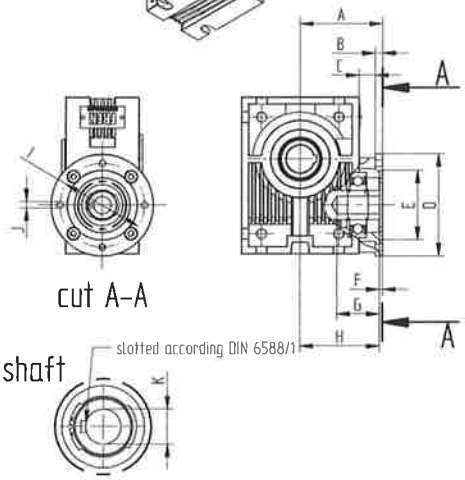



choice the gear according to the typ designation on page 3

## uniCe-100-N-00-JM/000/00-QH

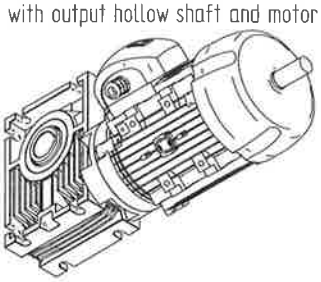
gear with input hollow shaft, output hollow shaft and flange

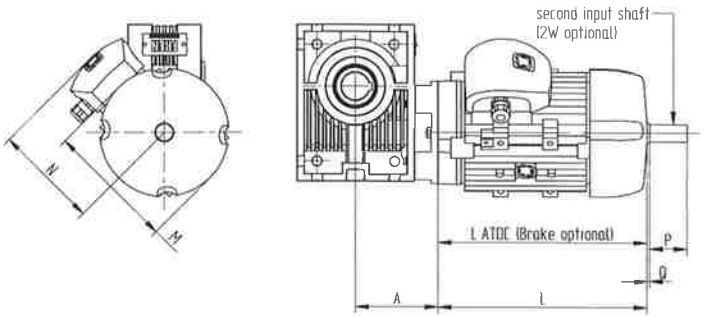





## uniCe-100-N-00-Motor-QH

gear with output hollow shaft and motor






| uniCe 100 | A | B | C | D | E H7 | F | G | H | I | J | K | L | LATDC | M | N | O | P | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 90SB5 | 146 | 13 | | 200 | 130 | 4,5 | | | 165 | M10 | | 252 | 347 | 195 | 145 | 24 | 50 | 5 |
| 90LB5 | | | | | | | | | | | | 277 | 373 | 195 | 145 | 24 | 50 | 5 |
| 100B5 | 135 | 16 | | 250 | 180 | | | | 215 | | | 307,5 | 401,5 | 215 | 170 | 28 | 60 | 5 |
| 112B5 | | | | | | 5 | 110 | 129 | | M12 | 24,28,38,42 | 316,5 | 431,5 | 240 | 177 | 28 | 60 | 5 |
| 132SB5 | 160 | 20 | | 300 | 230 | | | | 265 | | | 371,5 | 486,5 | 275 | 197 | 38 | 80 | 5 |
| 132MB5 | | | | | | | | | | | | 411,5 | 526,5 | 275 | 197 | 38 | 80 | 5 |
| 160MB5 | 175 | 25 | | 350 | 250 | 6 | | | 300 | 18 | | 500 | 600 | 330 | 255 | 42 | 110 | 5 |
| 160LB5 | | | | | | | | | | | | 555 | 645 | 330 | 255 | 42 | 110 | 5 |

## overhung load:

on output-shaft in kN
(in the middle of normal output shaft extension)

| | $T_2$ uniCe 035 | | $T_2$ uniCe 040 | | $T_2$ uniCe 050 | | $T_2$ uniCe 063 | | $T_2$ uniCe 080 | | $T_2$ uniCe 100 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $n_2$ | 20 | 40 | 30 | 80 | 60 | 120 | 120 | 250 | 250 | 500 | 400 | 800 |
| 25 | 3,1 | 3,0 | 3,1 | 3,1 | 5,0 | 4,5 | 7,2 | 7,2 | 7,5 | 7,5 | 15,0 | 14,6 |
| 40 | 2,8 | 2,5 | 3,1 | 2,7 | 4,2 | 3,7 | 7,2 | 6,8 | 7,5 | 7,5 | 13,8 | 12,0 |
| 100 | 2,0 | 1,7 | 2,3 | 1,8 | 3,0 | 2,5 | 5,3 | 4,7 | 6,3 | 4,9 | 9,7 | 7,9 |
| 250 | 1,4 | 1,1 | 1,6 | 1,1 | 2,0 | 1,5 | 3,7 | 3,1 | 4,2 | 2,8 | 6,4 | 4,6 |

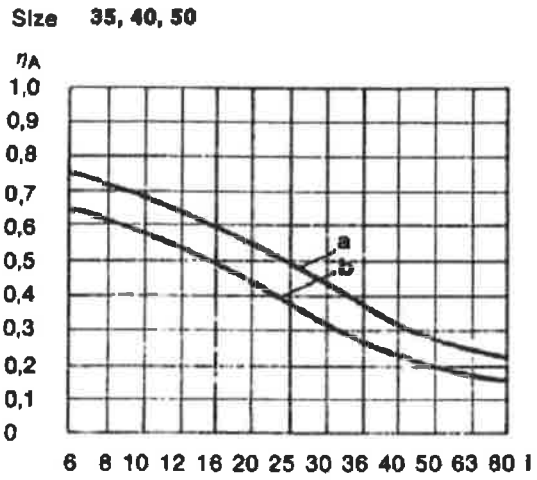
## efficiency:

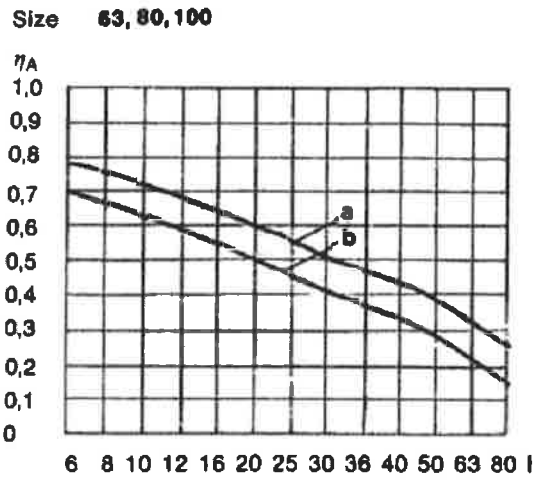
The efficiency given in the tables is applicable for the worm gear with torque take off which is reached with the mentioned motor power.
If you need a higher efficiency or self-locking, please contact us!

## self-locking:

**static** self-locking (from the standstill):

exists when starting efficiency $\eta_A \leq 0,5$

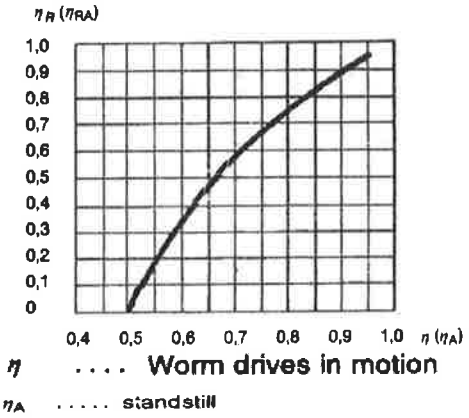



a;b..... borderlines
i ..... ratio

**dynamic** self-locking (when running):

require an efficiency of running $\eta_R \leq 0{,}5$




## calculation of input Brakes

$\eta$ = Efficiency
$\eta R = \eta Rück$ = reactive Efficiency

$$\eta = \frac{tg\,\gamma}{tg\,(\gamma + \rho)} \qquad \eta_R = \frac{tg\,(\gamma - \rho)}{tg\,\gamma} \qquad \eta_R \sim 2 - \frac{1}{\eta}$$

$\gamma$ = Lead Angle
$\eta$ = Friction Angle
i = Ratio
$\eta_R$ = see diagramme
$\eta_{RA}$= acc. $\eta_A$ for holding brakes
$T_{Mas}$= torque which is need
$T_{Br}$ = brake torque on the outputshaft

$T_{BrMoterf}$ = brake torque on the input shaft which is need
$T_{BrWirk}$ = real brake torqe on the output shaft

formula: $T_{BrMoterf} = \frac{T_{Br}}{i} \cdot \eta_{Rück}$ $\eta_R = \eta_{Rück} = 2 - \frac{1}{\eta}$ $\eta_{RA} = \eta_{RückAuslauf} = 2 - \frac{1}{\eta_{Anlauf}}$ 1)

After selection of brake it is necessary to control it with the starting efficiency $\eta_{Anlauf}$
The brake torque is not allowed to be higher then the max. torque of the gear

$$T_{BrWirk} = \frac{T_{Mas} \cdot i}{\eta_{RückAuslauf}} = \frac{T_{Mas} \cdot i}{2 - \frac{1}{\eta_{Anlauf}}}$$ (difference ± 30 %)

example: $T_{Mas}$ = 130 Nm 120 rpm ; Motor 2,2 kW/1440 rpm ($T_{mot}$ = 15 Nm) with gear uniCe-63-N-12 ; $n_2$ = 120 rpm

choice for this: $T_2 = T_{mot} \cdot i \cdot \eta = 15 \cdot 12 \cdot 0{,}83$ 2) = 149 Nm

$T_{BrMas} = T_V - T_{Mas}$

$T_V$ = decelaration torque on the output shaft

$T_V$ = 300 Nm

$$\eta_{Rück} = 2 - \frac{1}{\eta} = 2 - \frac{1}{0{,}83} = 2 - 1{,}21 = 0{,}79$$

$$\eta_{RückAuslauf} = 2 - \frac{1}{\eta_{Anlauf}} = 2 - \frac{1}{0{,}6}\ ^{1)} = 2 - 1{,}67 = 0{,}33$$

$T_{BrMas} = T_V - T_{Mas} = 300 - 130 = 170$ Nm

$$T_{BrMoterf} = \frac{T_{BrMas}}{i} \cdot \eta_{Rück} = \frac{170}{12} \cdot 0{,}79 = 11{,}2 \text{ Nm}$$

brake torque choiced 15 Nm = $T_{BrMot}$

control calculation:

$$T_{V\text{-}Auslauf} = \frac{T_{BrMot}}{\eta_{RückAuslauf}} \cdot i = \frac{15}{0{,}33} \cdot 12 = 540 \text{ Nm}$$

540 Nm smaller $T_{2max}$ 589 2) Nm of the gear the choice of the brake with 15 Nm is correct

1) $\eta_{Anlauf}$ - see page 37
2) $\eta$ und $T_{2max}$ see table value for 1500 rpm

## slip coupling:

the built in slip coupling which is running immersed in oil and is practically maintenance free.
It is designed as a friction coupling. The torque can be ajusted.

Created temperature is dissipated by the oil, when slipping continuously for more than 15 minutes temperature increases to a max. 36°F (20°C).

**advantages**
- exact calculation of the unit as well as the machine without excessive safety considerations
- protection against operator's mistakes and accidents
- no overloads for gear resp. plant
- smoothes peaks of load during starting-up, decelaration and normal service

A type of slip-coupling with limited adjustable torque, simply and economically constructed, is available to suit mast requirements. Deliverable in most sizes.

## Special versions:

- worm left handed
- special ratio
- oil seals for high temperature
- special dimensions for input and output shafts
- stainless shafts
- special notox lubrication

Please sent an inquiry for special wishes.

## lubrication:

lubrication for life (synthetic lubricant) is included.
Size 035 – 063 lubricate with low-viscosity grease **Marson SY 00** from **Total**
Size 080 – 100 lubricate with oil **Carter SY 220** from **Total**

| | uniCe 035 | uniCe 040 | uniCe 050 | uniCe 063 | uniCe 080 | uniCe 100 |
|---|---|---|---|---|---|---|
| amount [$cm^3$] | 40 | 50 | 125 | 250 | 880 | 1100 |

amount of lubrication

## maintenance:

uniCe-worm-gears are practically maintenance free.
After 100 hours of running (later each1000 hours) it is recommended to check for lack of lubrication.

## motor:

the motors are built according to:

multiple voltage 230/400V or 400/690V
multi-frequency 50/60Hz
F class insulation
S1 continuous duty service
IP55 protection
IE2 efficiency class
tropicalized winding
painting RAL 9006
Flange according IEC

optional is:

a second shaft = 2W
a brake with hand lever = ATDC

| kW | Typ | braking torque [Nm] | braking time no load [sek] | brake power [W] | Kg |
|---|---|---|---|---|---|
| 0,18 | ATDC 63A-2 | 4,5 | 0,15 | 22 | 7,8 |
| 0,25 | ATDC 63B-2 | 4,5 | 0,15 | 22 | 8,1 |
| 0,37 | ATDC 71A-2 | 8,0 | 0,15 | 28 | 9,0 |
| 0,55 | ATDC 71B-2 | 8,0 | 0,15 | 28 | 9,5 |
| 0,75 | ATDC 80A-2 | 12,5 | 0,20 | 30 | 12,7 |
| 1,1 | ATDC 80B-2 | 12,5 | 0,20 | 30 | 13,5 |
| 1,5 | ATDC 90S-2 | 25,0 | 0,25 | 45 | 16,3 |
| 2,2 | ATDC 90L-2 | 25,0 | 0,25 | 45 | 18,0 |
| 3 | ATDC 100L-2 | 38,0 | 0,30 | 60 | 27,0 |
| 4 | ATDC 112M-2 | 70,0 | 0,35 | 65 | 37,0 |
| 5,5 | ATDC 132SA-2 | 140,0 | 0,40 | 88 | 49,1 |
| 7,5 | ATDC 132SB-2 | 140,0 | 0,40 | 88 | 54,5 |
| 11 | ATDC 160MA-2 | 210,0 | 0,50 | 110 | 130,0 |
| 15 | ATDC 160MB-2 | 210,0 | 0,50 | 110 | 140,0 |
| 18,5 | ATDC 160L-2 | 210,0 | 0,50 | 110 | 155,0 |

| kW | Typ | braking torque [Nm] | braking time no load [sek] | brake power [W] | Kg |
|---|---|---|---|---|---|
| 0,12 | ATDC 63A-4 | 4,5 | 0,15 | 22 | 7,8 |
| 0,18 | ATDC 63B-4 | 4,5 | 0,15 | 22 | 8,1 |
| 0,25 | ATDC 71A-4 | 8,0 | 0,15 | 28 | 9,0 |
| 0,37 | ATDC 71B-4 | 8,0 | 0,15 | 28 | 9,5 |
| 0,55 | ATDC 80A-4 | 12,5 | 0,20 | 30 | 13,4 |
| 0,75 | ATDC 80B-4 | 12,5 | 0,20 | 30 | 14,8 |
| 1,1 | ATDC 90S-4 | 25,0 | 0,25 | 45 | 16,5 |
| 1,5 | ATDC 90L-4 | 25,0 | 0,25 | 45 | 18,3 |
| 2,2 | ATDC 100LA-4 | 38,0 | 0,30 | 60 | 26,8 |
| 3 | ATDC 100LB-4 | 38,0 | 0,30 | 60 | 29,5 |
| 4 | ATDC 112M-4 | 70,0 | 0,35 | 65 | 37,5 |
| 5,5 | ATDC 132S-4 | 140,0 | 0,40 | 88 | 51,5 |
| 7,5 | ATDC 132M-4 | 140,0 | 0,40 | 88 | 57,5 |
| 11 | ATDC 160M-4 | 210,0 | 0,50 | 110 | 138,0 |
| 15 | ATDC 160L-4 | 210,0 | 0,50 | 110 | 152,0 |

inner thermal overload cut-out switches
bimetallic device = PTO
thermistor device = PTC

**motor-power-table:**

motor with 2 poles

| kW | Typ | rpm | In[A] | Is/In | Cn[Nm] | Cs/Cn | η % | cosφ | J Kgm² | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 0,09 | 56A-2 | 2700 | 0,25 | 3,8 | 0,32 | 2,8 | 63,4 | 0,83 | 0,000080 | 3,5 |
| 0,13 | 56B2 | 2760 | 0,34 | 4,3 | 0,45 | 2,7 | 64,0 | 0,86 | 0,000100 | 3,6 |
| 0,18 | 63A-2 | 2751 | 0,50 | 4,0 | 0,62 | 2,9 | 66,7 | 0,77 | 0,000210 | 4,5 |
| 0,25 | 63B-2 | 2769 | 0,70 | 4,1 | 0,86 | 2,9 | 67,3 | 0,77 | 0,000300 | 4,7 |
| 0,37 | 63C-2 | 2796 | 0,93 | 4,8 | 1,26 | 3,3 | 74,7 | 0,77 | 0,000430 | 5,7 |
| 0,37 | 71A-2 | 2810 | 1,06 | 4,2 | 1,26 | 3,0 | 70,9 | 0,71 | 0,000550 | 6,0 |
| 0,55 | 71B-2 | 2810 | 1,29 | 5,4 | 1,87 | 3,3 | 77,9 | 0,79 | 0,000600 | 6,3 |
| 0,75 | 71C-2 | 2780 | 1,74 | 6,0 | 2,58 | 2,8 | 75,0 | 0,83 | 0,000680 | 7,3 |
| 0,75 | 80A-2 | 2854 | 1,76 | 5,9 | 2,51 | 2,8 | 79,0 | 0,78 | 0,000750 | 10,0 |
| 1,1 | 80B-2 | 2861 | 2,45 | 6,0 | 3,67 | 2,8 | 81,0 | 0,80 | 0,000900 | 11,0 |
| 1,5 | 80C-2 | 2840 | 3,26 | 6,0 | 5,04 | 2,5 | 79,0 | 0,84 | 0,001050 | 12,5 |
| 1,5 | 90S-2 | 2834 | 3,28 | 5,6 | 5,05 | 2,5 | 79,3 | 0,83 | 0,001200 | 13,0 |
| 2,2 | 90L-2 | 2805 | 4,75 | 5,2 | 7,49 | 2,9 | 80,6 | 0,83 | 0,001400 | 14,0 |
| 3 | 90LB-2 | 2847 | 6,20 | 6,5 | 10,06 | 3,4 | 83,2 | 0,84 | 0,002150 | 16,0 |
| 3 | 100L-2 | 2885 | 6,06 | 6,8 | 9,93 | 3,0 | 83,1 | 0,86 | 0,002900 | 25,0 |
| 4 | 100LB-2 | 2885 | 7,86 | 6,6 | 13,24 | 2,9 | 84,4 | 0,87 | 0,004200 | 27,0 |
| 4 | 112M-2 | 2886 | 7,56 | 7,0 | 13,24 | 2,3 | 84,6 | 0,90 | 0,005500 | 28,0 |
| 5,5 | 112MB-2 | 2895 | 10,35 | 7,1 | 18,14 | 2,5 | 85,8 | 0,89 | 0,008200 | 34,0 |
| 5,5 | 132SA-2 | 2919 | 10,45 | 7,7 | 17,99 | 2,4 | 85,9 | 0,88 | 0,010900 | 40,0 |
| 7,5 | 112MC-2 | 2880 | 14,55 | 7,6 | 24,87 | 2,4 | 85,5 | 0,87 | 0,010000 | 37,0 |
| 7,5 | 132SB-2 | 2913 | 13,90 | 7,3 | 24,59 | 2,5 | 87,2 | 0,89 | 0,012600 | 45,0 |
| 9,2 | 132MA-2 | 2943 | 17,63 | 6,3 | 29,85 | 3,0 | 87,6 | 0,86 | 0,020000 | 53,0 |
| 11 | 132MB-2 | 2919 | 19,71 | 5,6 | 35,99 | 2,3 | 88,6 | 0,91 | 0,025000 | 55,0 |
| 11 | 160MA-2 | 2941 | 20,02 | 7,2 | 35,72 | 2,7 | 88,5 | 0,90 | 0,037700 | 110,0 |
| 15 | 132MC-2 | 2936 | 26,76 | 7,6 | 48,79 | 2,4 | 90,7 | 0,89 | 0,032000 | 58,0 |
| 15 | 160MB-2 | 2941 | 27,06 | 7,0 | 48,71 | 2,7 | 89,8 | 0,89 | 0,049900 | 120,0 |
| 18,5 | 160L-2 | 2950 | 32,68 | 7,0 | 59,89 | 2,5 | 90,8 | 0,90 | 0,055000 | 135,0 |

motor with 4 poles

| kW | Typ | rpm | In[A] | Is/In | Cn[Nm] | Cs/Cn | η % | cosφ | J Kgm² | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 0,06 | 56A-4 | 1332 | 0,23 | 2,8 | 0,43 | 2,8 | 56,0 | 0,67 | 0,00015 | 3,5 |
| 0,09 | 56B-4 | 1346 | 0,33 | 2,9 | 0,64 | 2,8 | 60,7 | 0,65 | 0,00015 | 3,6 |
| 0,13 | 63A-4 | 1355 | 0,40 | 3,2 | 0,92 | 2,3 | 64,7 | 0,72 | 0,00030 | 4,5 |
| 0,18 | 63B-4 | 1393 | 0,56 | 3,6 | 1,23 | 2,4 | 68,2 | 0,68 | 0,00040 | 4,7 |
| 0,25 | 63C-4 | 1380 | 0,74 | 3,4 | 1,73 | 2,3 | 69,5 | 0,70 | 0,00045 | 5,7 |
| 0,25 | 71A-4 | 1370 | 0,78 | 3,4 | 1,74 | 2,6 | 70,2 | 0,66 | 0,00050 | 6,0 |
| 0,37 | 71B-4 | 1366 | 1,04 | 3,6 | 2,59 | 2,3 | 71,5 | 0,72 | 0,00080 | 6,3 |
| 0,55 | 71C-4 | 1364 | 1,51 | 3,8 | 3,85 | 2,5 | 73,3 | 0,72 | 0,00150 | 7,3 |
| 0,55 | 80A-4 | 1391 | 1,49 | 4,3 | 3,78 | 2,4 | 75,0 | 0,71 | 0,00180 | 10,0 |
| 0,75 | 80B-4 | 1413 | 2,02 | 4,5 | 5,07 | 2,6 | 77,7 | 0,69 | 0,00210 | 11,0 |
| 1,1 | 80C-4 | 1376 | 2,89 | 4,2 | 7,63 | 2,7 | 76,4 | 0,72 | 0,00220 | 12,5 |
| 1,1 | 90S-4 | 1362 | 2,73 | 4,0 | 7,71 | 2,7 | 76,5 | 0,76 | 0,00240 | 13,0 |
| 1,5 | 90L-4 | 1413 | 3,62 | 4,9 | 10,14 | 2,6 | 78,7 | 0,76 | 0,00300 | 14,0 |
| 2,2 | 90LB-4 | 1412 | 5,32 | 5,3 | 14,88 | 3,2 | 80,7 | 0,74 | 0,00410 | 16,0 |
| 2,2 | 100LA-4 | 1431 | 5,00 | 5,1 | 14,68 | 2,3 | 81,4 | 0,78 | 0,00540 | 23,0 |
| 3 | 100LB-4 | 1418 | 6,55 | 5,4 | 20,20 | 2,7 | 82,6 | 0,80 | 0,00670 | 25,0 |
| 4 | 100LC-4 | 1415 | 8,36 | 6,0 | 27,00 | 3,0 | 84,2 | 0,82 | 0,00810 | 27,0 |
| 4 | 112M-4 | 1453 | 8,52 | 6,4 | 26,29 | 2,5 | 85,8 | 0,79 | 0,00950 | 28,0 |
| 5,5 | 112MB-4 | 1448 | 11,64 | 6,5 | 36,27 | 3,5 | 86,3 | 0,79 | 0,01500 | 35,0 |
| 5,5 | 132S-4 | 1455 | 11,42 | 6,5 | 36,10 | 2,4 | 87,8 | 0,79 | 0,02140 | 45,0 |
| 7,5 | 112MC-4 | 1453 | 15,68 | 6,9 | 49,29 | 3,0 | 87,4 | 0,79 | 0,02230 | 37,0 |
| 7,5 | 132MA-4 | 1462 | 15,02 | 7,1 | 48,99 | 2,5 | 87,9 | 0,82 | 0,02960 | 55,0 |
| 9,2 | 132MB-4 | 1470 | 19,32 | 6,2 | 59,77 | 2,6 | 88,1 | 0,78 | 0,03100 | 56,0 |
| 11 | 132MC-4 | 160 | 22,78 | 7,2 | 71,95 | 2,3 | 88,9 | 0,78 | 0,04000 | 557,0 |
| 11 | 160M-4 | 1466 | 21,61 | 6,3 | 71,66 | 2,7 | 89,4 | 0,82 | 0,06100 | 118,0 |
| 15 | 132MD-4 | 1457 | 30,62 | 6,6 | 98,32 | 2,4 | 89,5 | 0,79 | 0,05000 | 58,0 |
| 15 | 160L-4 | 1470 | 28,77 | 6,2 | 97,45 | 2,1 | 89,6 | 0,84 | 0,09180 | 132,0 |

# ENZFELDER GmbH

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# Product overview 03/2015

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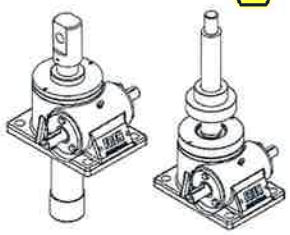
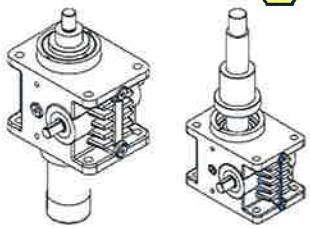
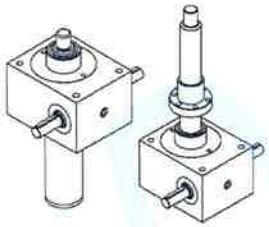
## SG
Screw jack
Classic



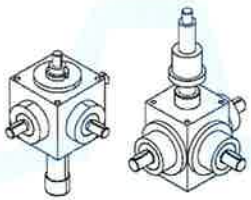
## HSG
High performance-
Screw jack



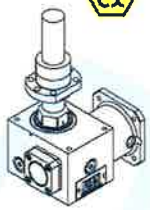
## BG
Screw jack
Cubic



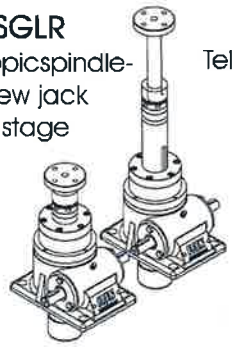
## SHG
Quick-lifting
screw jack



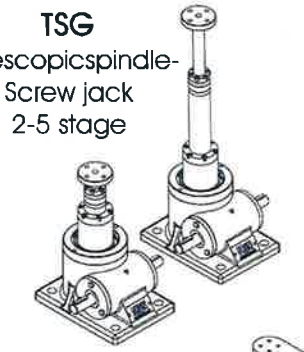
## SH
Servo lifting
gear



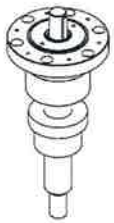
## TSGLR
Telescopicspindle-
Screw jack
2-stage



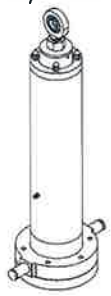
## TSG
Telescopicspindle-
Screw jack
2-5 stage



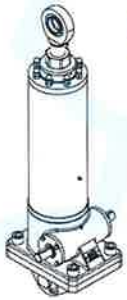
## SLA
Spindlebearing



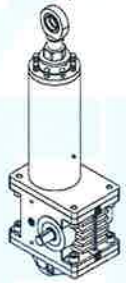
## SEZ
Spindlebearings-
Cylinder



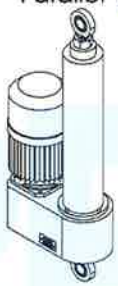
## ELZ
Electric cylinder



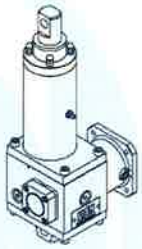
## HELZ
High performance-
Elektric cylinder



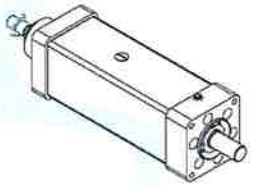
## ELZP
Electric cylinder
Parallel



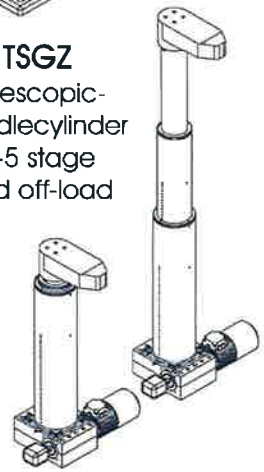
## SHELZ
Servo electric-
cylinder



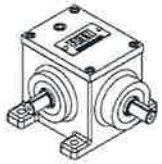
## EPNEU
Spindle-
Elektric cylinder



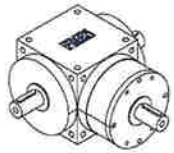
## TSGZ
Telescopic-
spindlecylinder
2-5 stage
And off-load



## K
Bevel gear
Type K

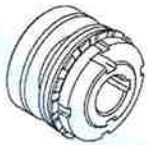


## H
Bevel gear
Type H



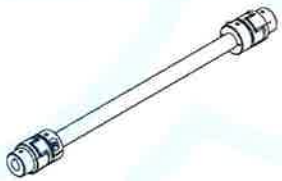
## R / GS
Elastic / backlash-free
Coupling

## RT
Slip hub

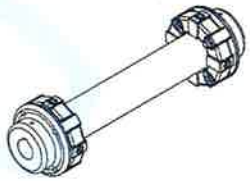


## RK
Slip coupling

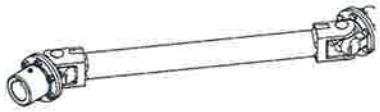
## ZR
FREN
Connecting shaft



## G / GX
Elastic
Connecting shaft

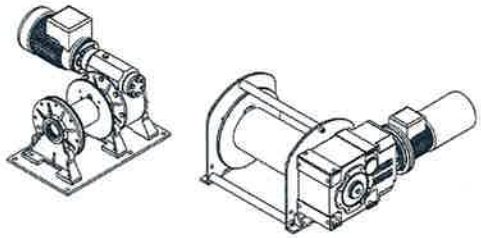


## Cardan shaft



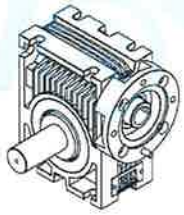
## HT
Lifting table
mechanic / hydraulic

## SW
Rope winche

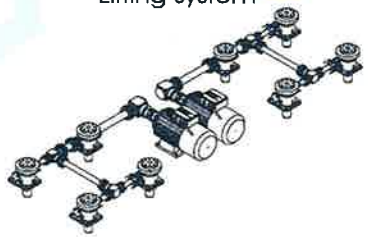


## PLG
Planetary gear

## uniCe
Worm gear



## HA
Lifting system



## Special gear