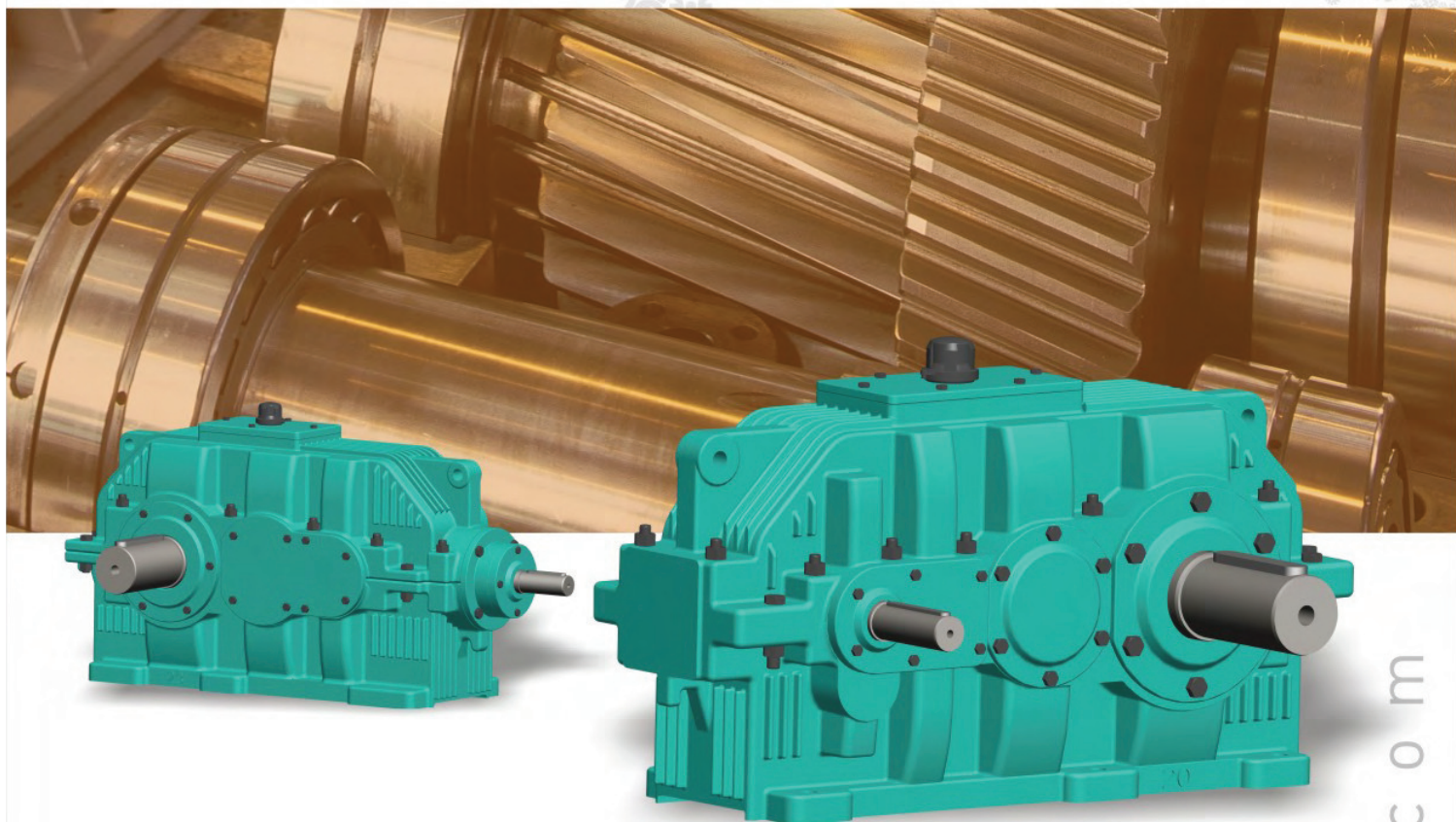


ELECON  
**EON Series**  
Eternal Excellence



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*Always a step ahead in technology*

# Infrastructure



**Gear Hobbing Machine**  
(Internal / External – 2500 mm Dia)



**Spiral Bevel 'Hard Cut' Machine (1100 mm Dia)**



**Profile Grinding Machine**  
(Internal / External – 3000 mm Dia)



**3000mm x 2000mm CNC**  
**Horizontal Machining Centre**



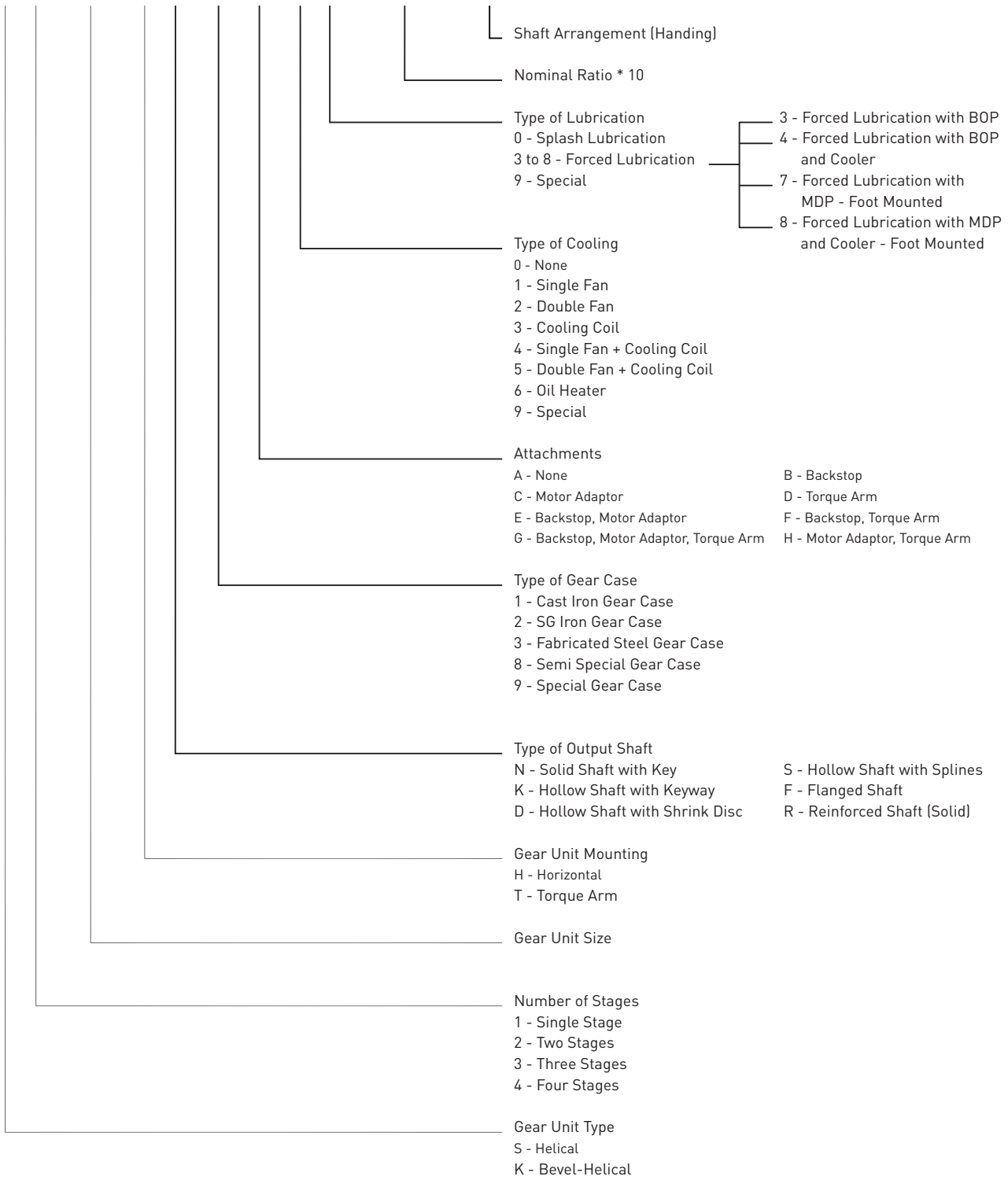
## Characteristic and advantages of the EON-SERIES GEAR UNITS

|   |   |   |
|---|---|---|
| <p><b>Overview :</b><br/>         Keeping in line with it`s strategy of “Always a step ahead in technology” Elecon presents the EON Series -answer to industry needs.</p> <p>The EON series has been developed keeping in mind the industry requirements and offers greater flexibility and advantages and presents a wide range of features:</p> <ul style="list-style-type: none"> <li>• Higher torque ratings</li> <li>• Foot print same as ET Series</li> <li>• Suitable for numerous applications</li> <li>• Various sealing options available</li> <li>• Different cooling options</li> </ul> <p>General Information and Characteristic Features</p> <p><b>Technical :</b><br/>         The power tables apply to normal conditions, i.e., drive by an electric motor, smooth operation, operation for eight hours per day, 2.5-fold starting torque relative to catalogue performance PN, 100% duration of operation, ambient temperature 20Deg C. Power for intermediate speeds can be interpolated linearly.</p> <p>Higher drive speeds than indicated and selection as finite-fatigue strength gears on request. Reinforced bearings are optional for heavy external forces (e.g. output drive by pinion).</p> <p><b>Design :</b></p> <ul style="list-style-type: none"> <li>• Increased torque capacity</li> <li>• Different shaft designs as standard options</li> <li>• Modular concept casings enabling faster deliveries</li> <li>• Different sealing options</li> <li>• Better cost to performance ratio</li> </ul> | <p><b>Efficiencies :</b><br/>         99 % for single reduction helical gear boxes<br/>         98 % for double reduction helical gear boxes<br/>         97.5% for triple reduction helical gear boxes<br/>         97% for quadruple reduction helical gear boxes<br/>         97.5% for double reduction bevel helical gear boxes<br/>         97% for triple reduction bevel helical gear boxes<br/>         96.5% for quadruple reduction bevel helical gear boxes</p> <p><b>Mounting :</b><br/>         Horizontal &amp; Torque Arm mounting positions.</p> <p><b>Noise Levels :</b><br/>         Allowable noise level is 85 dB. Lower noise levels with additional add-ons can be achieved.</p> <p><b>Vibration Levels :</b><br/>         Allowable vibration limits is generally as per ISO 10816.</p> <p><b>Thermal Capacities :</b><br/>         In-addition to higher torques the EON series comes with optimized thermal ratings which is due to larger available surface area.</p> <p><b>Installation :</b><br/>         Before the gear unit is set up the operating instructions should be studied and followed. The plant user should provide protection covers on rotating parts.</p> | <p><b>Selection of Gear:</b></p> <hr/> <p>Single Reduction<br/>         Helical Gear S1<br/> <math>i_N = 1.25</math> to 5</p> <hr/> <p>Double reduction<br/>         Helical Gear S2<br/> <math>i_N = 5.6</math> to 22.4</p> <hr/> <p>Triple reduction<br/>         Helical gear S3<br/> <math>i_N = 20</math> to 112</p> <hr/> <p>Quadruple reduction<br/>         Helical gear S4<br/> <math>i_N = 90</math> to 560</p> <hr/> <p>Double reduction<br/>         Bevel Helical Gear K2<br/> <math>i_N = 5</math> to 22.4</p> <hr/> <p>Triple reduction<br/>         Bevel Helical Gear K3<br/> <math>i_N = 20</math> to 100</p> <hr/> <p>Quadruple reduction<br/>         Bevel Helical Gear K4<br/> <math>i_N = 80</math> to 560</p> |
|---|---|---|

**Nomenclature:**

Helical / Bevel-Helical Gear Units

S 3 - 20 - H N - 1 - A - 0 0 - 0 5 0 0 - 1 1



## Selection Example and symbolic Designation:

1. Determination of the type of gear
- 1.1 Establish whether helical gear or bevel helical gear
- 1.2 Determine the transmission ratio

$$i_N = \frac{n_1}{n_2}$$

The type of gear is then determined

2. Determination of the gear size

- 2.1 Finding out gear box size

$$P_N \geq P_e \times f \quad 'f' \text{ from tables 1,2 and 4}$$

- 2.2 Cheking starting torque

$$\frac{M_{K,n_1}}{P_N \cdot 955} \leq 2.5$$

3. Checking heating effects

- 3.1 Gear unit without additional cooling when

$$P_e \leq P_1 \times f_w$$

- 3.2 Gear unit with fan possible when

$$P_e \leq P_2 \times f_w$$

- 3.3 Gear unit with built-in cooling coil possible when

$$P_e \leq P_3 \times f_w$$

- 3.4 Gear unit with built-in cooling coil and fan possible when

$$P_e \leq P_4 \times f_w$$

- 3.5 Gear unit with external oil cooler necessary when

$$P_e \geq P_4 \times f_w$$

|       |   |  |
|-------|---|--|
| $i_N$ | = | nominal transmission ratio   |
| $n_1$ | = | input speed [rpm];   |
| $n_2$ | = | output speed [rpm];  |
| $P_N$ | = | nominal gear box rating [kw] - see power table   |
| $P_e$ | = | absorbed power of the connected machine [kw]   |
| $f$   | = | service factor = $f_1 \times f_2$  |
| $f_w$ | = | factor for amb. temperatures (table 3)   |
| $t$   | = | ambient temperature [ $^{\circ}$ C]  |
| $E_D$ | = | running period [%], e.g. $E_D = 80\%$  |
| $P_1$ | = | Thermal capacity without additional cooling at $t=20^{\circ}$ C; $E_D = 100$ (see power table) |
| $P_2$ | = | Thermal capacity with fan  |
| $P_3$ | = | Thermal capacity with built-in cooling coil  |
| $P_4$ | = | Thermal capacity with built-in cooling coil and fan  |
| $M_K$ | = | Staring torque or max. input torque [da Nm]  |

### Example selection of calculation

Given

Prime mover :

Electric Motor, P motor = 500 kw,

$n_1 = 1500$  rpm

2 fold starting torque  $M_k = 6370$  Nm

Working Machine

Heavy rubber-belt conveyor

Required output power,  $P_e = 450$  kW

Speed,  $n_2 = 60$  rpm

Period of operation : 16 hours per day

Starts : 1 per hour

Running duration per hour,  $E_D = 100\%$

Ambient temperature :  $40^{\circ}$ C

Gearbox type : Bevel Helical Gearbox

Selection of gear :

Required : Bevel Helical Gearbox

Design :

1. Determination of the gearbox type

- 1.1 Bevel helical gear is specified

$$1.2 \ i_N = \frac{n_1}{n_2} = \frac{1500}{60} = 25 : 1$$

Selected: Gearbox type is K3, triple reduction bevel helical gear unit.

**Operating factors:**

| Table 1                            |     | Load parameters                |     |  |
|------------------------------------|-----|--------------------------------|-----|--|
| Driven machines                    |     | Driven machines                |     | Driven machines                          |
| <b>Excavators and stackers</b>     |     | Impeller blowers               | G   | -- wet                                   |
| Bucket chain excavators            | S*  | Turbo blowers                  | G   | -- suction                               |
| Travelling gear                    |     | Centrifugal blowers            | G   | Suction rollers                          |
| --- caterpillar track              | S*  | <b>Generators</b>              |     | Drying cylinders                         |
| --- rail                           | M   | Generators, under uniform load | G   | <b>Pumps</b>                             |
| Bucket-wheel stackers              | M*  | Welding generators             | *** | Proportioning pumps                      |
| Bucket wheels                      |     | <b>Rubber and Plastics</b>     |     | Piston pumps                             |
| --- clearing                       | S   | Extruders                      |     | - U < 1:100                              |
| --- coal                           | S   | -- rubber                      | S** | - U > 1:100 - 1:200                      |
| --- lime                           | S   | -- plastics                    | M** | Centrifugal pumps                        |
| Cutter heads                       | S*  | Calenders                      | M** | - light liquids                          |
| Slewing machines                   | M*  | Kneading machines, rubber      | S** | - viscous liquids                        |
| Suction pumps                      | M*  | Mixers                         | M** | Compression pumps                        |
| Cable drums                        | M   | Mills, rubber                  | M** | Plunger pumps                            |
| Winches                            | M   | Rolling mills, rubber          | S** | Sand pumps                               |
| <b>Mining, rock, earth</b>         |     | <b>Wood-working machinery</b>  |     | <b>Machines for the Textile Industry</b> |
| Concrete mixers                    | M   | Decorating drums               | S   | Bobbin winding machines                  |
| Crushers                           | S   | Planing machine                | M   | Printing machines                        |
| Briquetting presses                | H   | Saw frames                     | M   | Dyeing machines                          |
| Rotary kilns                       | S** | <b>Iron and Steel Industry</b> |     | Tan-liquor vessels                       |
| Pneumatic sifters                  | M*  | Foundry crane (hoisting gear)  | S** | Calenders                                |
| Clay mixers                        | M   | Converters                     | *** | Willowing machines                       |
| <b>Chemical Industry</b>           |     | Slag cars                      | G** | Drying machines                          |
| Mixers                             | M   | Sintering belts                | M** | Looms                                    |
| Agitators                          |     | Crusher                        | S** | <b>Compressors</b>                       |
| --- pure liquids                   | G   | Torpedo mixers                 | *** | Rotary piston compressors                |
| --- liquids and solids             | M   | Car tipper                     | S   | - U < 1:100                              |
| --- liquids with various densities | M   | <b>Cranes</b>                  |     | - U > 1:100 - 1:200                      |
| Rotary Dryer                       | M   | Luffing gear                   | G*  | Centrifugal compressors                  |
| Centrifuges                        |     | Travelling gear                | M*  | Turbo compressors                        |
| --- light                          | G   | Hoisting gear                  | M*  | <b>Rolling mills</b>                     |
| --- heavy                          | M   | Stewing gear                   | M*  | Plate tilters                            |
| <b>Petroleum Industry</b>          |     | Winches                        | G   | Bloom pushers                            |
| Drilling pumps                     | *** | <b>Metal working</b>           |     | Bloom conveying plant                    |
| Rotary Kilns                       | M   | Folding presses                | S   | Wire pulls                               |
| Filter presses                     | M** | Plate bending machines         | M** | Revolving turrets                        |
| Pipeline pumps                     | M** | Plate straightening presses    | S   | (contin. casting)                        |
| Scavenging pumps                   | M** | Eccentric presses              | S   | De-scaling crushers                      |
| <b>Conveying plants</b>            |     | Hammers                        | S** | Reels                                    |
| Uniform load                       |     | Planing machines               | S   | - strip                                  |
| Bucket conveyors                   | G   | Crank presses                  | S   | - wire                                   |
| Roasting furnace conveyors         | G   | Shearing machine               | M** | Walking beam conveyors                   |
| Assembly line belts                | G   | Forging presses                | S   | Chain transporter                        |
| Band conveyors                     | G   | Punching machines              | S   | Cooling troughs                          |
| Overhead conveyors                 | G   | <b>Mills</b>                   |     | Traverse tractors                        |
| Chain conveyors                    | G   | Hammer mills                   | H** | Pipe welding machine                     |
| Apron conveyors                    | G   | Edge mills                     | H** | Pipe drawing machine                     |
| Worm conveyors                     | G   | Ball mills                     | H** | Roller straightening machine             |
| Medium and heavy load              |     | Pendulum mills                 | H** | Roller gear beds                         |
| Shaft - sinking machines           | S*  | Impact mills                   | H** | --- light                                |
| Bucket conveyors                   | M   | Tube mills                     | H** | --- heavy                                |
| Bucket belts                       | M** | Beating mills                  | H** | Shears                                   |
| Assembly line conveyors            | M   | Rod mills                      | H** | --- plate                                |
| Conveyors winders                  | M** | Roller mills                   | H** | --- wire                                 |
| Conveyors                          | S*  | <b>Foodstuffs machines</b>     |     | --- billet                               |
| Belt Conveyors                     | M   | Filling machines               | G   | --- cropping                             |
| Chain Conveyors                    | M   | Kneading machines              | M   | --- plate trimming                       |
| Goods lifts                        | M   | Packing machines               | G   | Winding turret                           |
| Passenger lifts                    | *** | Weighing machines              | M   | Winding tractor                          |
| Apron conveyors                    | M   | Sugarcane crushers             | M** | Continuous casting plants                |
| Shaker conveyors                   | M   | Sugarcane mills                | S** | Shifting device                          |
| Worm conveyors                     | M   | Sugarcane Cutters              | M** | Roller adjusting device                  |
| Inclined lifts                     | S** | Sugar-beet Cutters             | M   | <b>Water recycling machine</b>           |
| <b>Blowers, fans, ventilators</b>  |     | <b>Paper machines</b>          |     | Thickeners                               |
| Axial blowers                      | M   | Couchers                       | S** | Gyroscopic ventilators                   |
| Rotary piston blowers              | M   | Glazing cylinders              | S** | Mixers                                   |
| Large ventilators (mining)         | M   | Calenders                      | M** | Water screws                             |
| Cooling tower fans                 | *** | Mixers                         | M   | Vacuum filter presses                    |
| Radial blowers                     | M   | Presses                        | M   | Rate/Screen drives                       |
| Induced draft fans                 | M   | --- glue                       | S** |  |

| Table 2                     |                        | Service factor             |               |              | f <sub>1</sub>     |
|-----------------------------|------------------------|----------------------------|---------------|--------------|--------------------|
| Prime mover                 | Hours of operation/day | Prime mover Load parameter |               |              | Extra Heavy duty H |
|                             |                        | Uniform load G             | Medium load M | Heavy load S |                    |
| Electric motor turbine      | up to 3                | 0.80                       | 1.00          | 1.50         | 2.0                |
|                             | over 3 to 10           | 1.00                       | 1.25          | 1.75         | 2.25               |
| Piston engines 4-6 cylinder | up to 3                | 1.00                       | 1.25          | 1.75         | 2.25               |
|                             | over 3 to 10           | 1.25                       | 1.50          | 2.00         | 2.75               |
| U>1:100-1:200               | up to 3                | 1.00                       | 1.25          | 1.75         | 2.25               |
|                             | over 3 to 10           | 1.25                       | 1.50          | 2.00         | 2.75               |
| Piston engines 1-3 cylinder | up to 3                | 1.25                       | 1.50          | 2.00         | 2.5                |
|                             | over 3 to 10           | 1.50                       | 1.75          | 2.25         | 2.75               |
| U<1:100                     | up to 3                | 1.25                       | 1.50          | 2.00         | 2.5                |
|                             | over 3 to 10           | 1.50                       | 1.75          | 2.25         | 3.0                |

1) Cooling water temperature max. 20° C  
Load parameters  
G = Uniform load  
M = Medium load  
S = Heavy load  
H = Extra Heavy duty  
\* = Detailed calculation on request  
\*\* = Only calculated for 24-hour period of operation  
\*\*\* = Load parameter on request.  
U = Cyclic variation

The load parameters quoted are parameters gained from experience. Calculations for driven machines not mentioned above or deviations from the norm obtainable on request.

| Table 3                                     |                     | Factor for amb. temperatures   |      |      |      |      | f <sub>w</sub> |
|---|---------------------|--------------------------------|------|------|------|------|----------------|
| Type of cooling                             | Ambient temperature | Duration of operation per hour |      |      |      |      |                |
|   |                     | 100%                           | 80%  | 60%  | 40%  | 20%  |                |
| For gear boxes                              | 10° C               | 1.12                           | 1.34 | 1.57 | 1.79 | 2.05 |                |
|   | 20° C               | 1.0                            | 1.2  | 1.4  | 1.6  | 1.8  |                |
| without additional cooling                  | 30° C               | 0.88                           | 1.06 | 1.23 | 1.41 | 1.58 |                |
|   | 40° C               | 0.75                           | 0.9  | 1.05 | 1.2  | 1.35 |                |
| For gear boxes with fans                    | 10° C               | 1.15                           | 1.38 | 1.61 | 1.84 | 2.07 |                |
|   | 20° C               | 1.0                            | 1.2  | 1.4  | 1.6  | 1.8  |                |
| cooling coils                               | 30° C               | 0.9                            | 1.08 | 1.26 | 1.44 | 1.62 |                |
|   | 40° C               | 0.8                            | 0.96 | 1.12 | 1.29 | 1.44 |                |
| For gear boxes with fans and cool-ing coils | 10° C               | 1.1                            | 1.32 | 1.54 | 1.76 | 1.98 |                |
|   | 20° C               | 1.0                            | 1.2  | 1.4  | 1.6  | 1.8  |                |
| cooling coils                               | 30° C               | 0.9                            | 1.08 | 1.26 | 1.44 | 1.62 |                |
|   | 40° C               | 0.85                           | 1.02 | 1.19 | 1.36 | 1.53 |                |
| For gear boxes with fans and cool-ing coils | 10° C               | 1.12                           | 1.34 | 1.57 | 1.79 | 2.05 |                |
|   | 20° C               | 1.0                            | 1.2  | 1.4  | 1.6  | 1.8  |                |
| with fans and cool-ing coils                | 30° C               | 0.92                           | 1.1  | 1.29 | 1.47 | 1.66 |                |
|   | 40° C               | 0.83                           | 1.0  | 1.16 | 1.33 | 1.5  |                |
| with fans and cool-ing coils                | 50° C               | 0.78                           | 0.94 | 1.09 | 1.25 | 1.4  |                |

1) Maximum cooling-water temperature 20° C

| Table 4         |                        | Starting-frequency factor |      |      |      |      |      | f <sub>2</sub> |
|-----------------|------------------------|---------------------------|------|------|------|------|------|----------------|
| Starts per hour | Driven machines factor | Driven machines factor    |      |      |      |      |      |                |
|                 |                        | ‡                         | ‡    | ‡    | ‡    | ‡    | ‡    |                |
| 1               |                        | 1.2                       | 1.2  | 1.4  | 1.6  | 1.8  | 2.0  |                |
| 2 to 20         |                        | 1                         | 1    | 1    | 1    | 1    | 1    |                |
| 21 to 40        |                        | 1.2                       | 1.1  | 1.08 | 1.07 | 1.07 | 1.06 |                |
| 41 to 80        |                        | 1.3                       | 1.2  | 1.17 | 1.16 | 1.15 | 1.08 |                |
| 81 to 160       |                        | 1.5                       | 1.4  | 1.25 | 1.23 | 1.18 | 1.10 |                |
| 160 to 320      |                        | 1.6                       | 1.5  | 1.35 | 1.3  | 1.2  | 1.1  |                |
| Over 320        |                        | 2                         | 1.8  | 1.7  | 1.6  | 1.5  | 1.4  |                |
|                 |                        | 2.5                       | 2.25 | 2    | 1.9  | 1.8  | 1.75 |                |

**Nominal Power Rating (kW)**

**Helical - Single Stage**

**Type - S1**

| i <sub>N</sub> | n1   | n2     | Gear unit Size |     |     |     |     |      |      |      |      |      |      |      |
|----------------|------|--------|----------------|-----|-----|-----|-----|------|------|------|------|------|------|------|
|                |      |        | 11             | 13  | 15  | 17  | 18  | 20   | 21   | 22   | 23   | 24   | 25   | 26   |
| 1.25           | 1500 | 1200.0 | 84             | 171 | 319 | 579 | 723 | 1376 | 2015 | 2573 |      |      |      |      |
|                | 1000 | 800.0  | 56             | 114 | 213 | 386 | 482 | 917  | 1343 | 1716 |      |      |      |      |
|                | 750  | 600.0  | 42             | 86  | 160 | 290 | 361 | 688  | 1007 | 1287 |      |      |      |      |
| 1.4            | 1500 | 1071.4 | 75             | 153 | 285 | 517 | 645 | 1228 | 1799 | 2298 |      |      |      |      |
|                | 1000 | 714.3  | 50             | 102 | 190 | 345 | 430 | 819  | 1199 | 1532 |      |      |      |      |
|                | 750  | 535.7  | 37             | 76  | 142 | 259 | 323 | 614  | 899  | 1149 |      |      |      |      |
| 1.6            | 1500 | 937.5  | 63             | 121 | 213 | 381 | 488 | 925  | 1375 | 1875 | 2563 |      |      |      |
|                | 1000 | 625.0  | 45             | 89  | 163 | 288 | 363 | 688  | 1000 | 1375 | 1813 | 2625 | 3488 |      |
|                | 750  | 468.8  | 35             | 70  | 131 | 238 | 300 | 569  | 825  | 1125 | 1475 | 1950 | 2850 |      |
| 1.8            | 1500 | 833.3  | 56             | 114 | 200 | 363 | 444 | 863  | 1250 | 1750 | 2500 |      |      |      |
|                | 1000 | 555.6  | 40             | 83  | 150 | 275 | 331 | 650  | 938  | 938  | 1750 | 2250 | 3275 | 4825 |
|                | 750  | 416.7  | 31             | 65  | 123 | 225 | 275 | 531  | 763  | 763  | 1400 | 1813 | 2675 | 3938 |
| 2              | 1500 | 750.0  | 48             | 99  | 188 | 338 | 425 | 788  | 1188 | 1625 | 2250 |      |      |      |
|                | 1000 | 500.0  | 34             | 71  | 138 | 250 | 313 | 594  | 875  | 1175 | 1625 | 2100 | 3125 | 4538 |
|                | 750  | 375.0  | 26             | 55  | 111 | 206 | 263 | 488  | 725  | 963  | 1275 | 1713 | 2488 | 3713 |
| 2.24           | 1500 | 669.6  | 46             | 85  | 169 | 313 | 388 | 750  | 1113 | 1500 | 2063 |      |      |      |
|                | 1000 | 446.4  | 33             | 60  | 125 | 238 | 294 | 563  | 813  | 1125 | 1500 | 2000 | 2875 | 4200 |
|                | 750  | 334.8  | 25             | 46  | 103 | 194 | 238 | 463  | 663  | 925  | 1213 | 1575 | 2275 | 3438 |
| 2.5            | 1500 | 600.0  | 38             | 71  | 156 | 288 | 363 | 688  | 1025 | 1375 | 1875 | 2563 |      |      |
|                | 1000 | 400.0  | 26             | 51  | 119 | 213 | 275 | 513  | 775  | 1025 | 1400 | 1813 | 2625 | 3850 |
|                | 750  | 300.0  | 21             | 40  | 96  | 175 | 225 | 419  | 625  | 838  | 1125 | 1475 | 2150 | 3150 |
| 2.8            | 1500 | 535.7  | 34             | 60  | 144 | 263 | 331 | 619  | 938  | 1250 | 1688 | 2313 |      |      |
|                | 1000 | 357.1  | 24             | 43  | 100 | 200 | 250 | 469  | 700  | 938  | 1250 | 1638 | 2388 | 3613 |
|                | 750  | 267.9  | 19             | 34  | 78  | 163 | 206 | 381  | 575  | 763  | 1025 | 1338 | 1950 | 2950 |
| 3.15           | 1500 | 476.2  | 29             | 59  | 114 | 238 | 300 | 575  | 850  | 1150 | 1563 | 2063 | 2900 | 4375 |
|                | 1000 | 317.5  | 20             | 41  | 78  | 175 | 225 | 438  | 638  | 863  | 1150 | 1500 | 2188 | 3300 |
|                | 750  | 238.1  | 16             | 33  | 59  | 138 | 188 | 356  | 513  | 713  | 938  | 1200 | 1788 | 2688 |
| 3.55           | 1500 | 422.5  | 25             | 54  | 115 | 231 | 300 | 575  | 850  | 1150 | 1550 | 1888 | 2750 | 4038 |
|                | 1000 | 281.7  | 18             | 39  | 79  | 163 | 225 | 438  | 613  | 788  | 1125 | 1425 | 2075 | 3038 |
|                | 750  | 211.3  | 14             | 30  | 59  | 125 | 188 | 344  | 475  | 688  | 888  | 1163 | 1688 | 2488 |
| 4              | 1500 | 375.0  | 21             | 44  | 94  | 200 | 256 | 575  | 800  | 1063 | 1538 | 1688 | 2488 | 3663 |
|                | 1000 | 250.0  | 14             | 31  | 66  | 131 | 175 | 438  | 569  | 750  | 1100 | 1275 | 1875 | 2750 |
|                | 750  | 187.5  | 11             | 24  | 50  | 101 | 138 | 331  | 444  | 613  | 838  | 1038 | 1525 | 2329 |
| 4.5            | 1500 | 333.3  | 18             | 39  | 68  | 171 | 244 | 469  | 675  | 975  | 1388 | 1550 | 2213 | 3200 |
|                | 1000 | 222.2  | 12             | 28  | 49  | 115 | 175 | 319  | 475  | 710  | 983  | 1175 | 1538 | 2238 |
|                | 750  | 166.7  | 9.0            | 21  | 38  | 87  | 131 | 244  | 369  | 534  | 740  | 963  | 1188 | 1750 |
| 5              | 1500 | 300.0  | 15             | 34  | 63  | 146 | 175 | 451  | 594  | 838  | 1164 | 1388 | 2075 | 3088 |
|                | 1000 | 200.0  | 10             | 24  | 45  | 98  | 123 | 304  | 425  | 594  | 780  | 1050 | 1563 | 2188 |
|                | 750  | 150.0  | 7.9            | 19  | 35  | 74  | 96  | 229  | 325  | 450  | 587  | 863  | 1275 | 1688 |

**Thermal Capacity (kW)**

| Nominal Transmission Ratio i <sub>N</sub>  | n1   | Gear unit Size |     |     |     |     |     |      |      |      |      |      |      |  |
|--|------|----------------|-----|-----|-----|-----|-----|------|------|------|------|------|------|--|
|  |      | 11             | 13  | 15  | 17  | 18  | 20  | 21   | 22   | 23   | 24   | 25   | 26   |  |
| <b>Thermal Capacity P<sub>1</sub> (kW) for gear unit without cooling</b>           |      |                |     |     |     |     |     |      |      |      |      |      |      |  |
| 1.25 to 2.8  | 1500 | 29             | 46  | 74  | 115 | 144 | 219 | 281  | 350  | 444  |      |      |      |  |
|  | 1000 | 26             | 43  | 68  | 109 | 140 | 209 | 273  | 344  | 438  | 550  | 675  | 860  |  |
|  | 750  | 25             | 40  | 64  | 101 | 129 | 200 | 264  | 338  | 431  | 538  | 663  | 810  |  |
| 3.15 to 5  | 1500 | 23             | 39  | 64  | 103 | 128 | 200 | 275  | 338  | 431  | 550  | 700  | 863  |  |
|  | 1000 | 20             | 36  | 56  | 99  | 118 | 189 | 263  | 325  | 419  | 531  | 669  | 813  |  |
|  | 750  | 18             | 28  | 50  | 98  | 108 | 175 | 250  | 300  | 400  | 519  | 656  | 800  |  |
| <b>Thermal Capacity P<sub>2</sub> (kW) for gear unit with fan cooling</b>          |      |                |     |     |     |     |     |      |      |      |      |      |      |  |
| 1.25 to 2.8  | 1500 | 53             | 81  | 128 | 198 | 250 | 388 | 500  | 625  | 800  |      |      |      |  |
|  | 1000 | 44             | 69  | 106 | 165 | 225 | 350 | 406  | 528  | 700  | 863  | 1075 | 1340 |  |
|  | 750  | 38             | 63  | 94  | 150 | 206 | 325 | 388  | 488  | 656  | 788  | 1013 | 1280 |  |
| 3.15 to 5  | 1500 | 48             | 75  | 115 | 190 | 238 | 375 | 473  | 594  | 769  | 981  | 1225 | 1556 |  |
|  | 1000 | 35             | 54  | 94  | 153 | 188 | 300 | 400  | 519  | 656  | 856  | 1044 | 1313 |  |
|  | 750  | 30             | 46  | 81  | 138 | 169 | 300 | 356  | 450  | 594  | 756  | 956  | 1250 |  |
| <b>Thermal Capacity P<sub>3</sub> (kW) for gear unit with cooling coil</b>         |      |                |     |     |     |     |     |      |      |      |      |      |      |  |
| 1.25 to 5  | 1500 | 126            | 180 | 265 | 361 | 419 | 588 | 694  | 813  | 956  | 1155 |      |      |  |
|  | 1000 | 120            | 176 | 255 | 356 | 415 | 571 | 679  | 804  | 950  | 1138 | 1338 | 1420 |  |
|  | 750  | 119            | 175 | 245 | 339 | 410 | 563 | 670  | 800  | 938  | 1113 | 1325 | 1390 |  |
| <b>Thermal Capacity P<sub>4</sub> (kW) for gear unit with fan and cooling coil</b> |      |                |     |     |     |     |     |      |      |      |      |      |      |  |
| 1.25 to 5  | 1500 | 145            | 215 | 326 | 472 | 569 | 836 | 1033 | 1251 | 1540 | 1810 |      |      |  |
|  | 1000 | 133            | 201 | 300 | 441 | 546 | 791 | 950  | 1173 | 1461 | 1785 | 2161 | 2450 |  |
|  | 750  | 127            | 194 | 282 | 413 | 522 | 761 | 925  | 1138 | 1418 | 1706 | 2100 | 2325 |  |

**Type - S2**

**Helical - Double Stage**

**Nominal Power Rating (kW)**

| i <sub>N</sub> | n1   | n2    | Gear unit Size |    |     |     |     |     |     |     |     |     |      |      |      |
|----------------|------|-------|----------------|----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
|                |      |       | 14             | 15 | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24   | 25   | 26   |
| 5.6            | 1500 | 267.9 | 54             | 77 | 112 | 136 | 226 | 318 | 461 | 617 | 829 | 982 | 1547 | 2319 | 3230 |
|                | 1000 | 178.6 | 36             | 52 | 75  | 91  | 151 | 212 | 308 | 411 | 553 | 748 | 1112 | 1546 | 2153 |
|                | 750  | 133.9 | 27             | 39 | 56  | 68  | 113 | 159 | 231 | 308 | 415 | 603 | 834  | 1159 | 1615 |
| 6.3            | 1500 | 238.1 | 45             | 65 | 85  | 123 | 189 | 256 | 371 | 481 | 663 | 898 | 1378 | 1813 | 2525 |
|                | 1000 | 158.7 | 30             | 44 | 57  | 82  | 130 | 181 | 280 | 364 | 500 | 681 | 1000 | 1375 | 1973 |
|                | 750  | 119.0 | 23             | 31 | 43  | 62  | 93  | 138 | 214 | 288 | 388 | 553 | 750  | 1125 | 1484 |
| 7.1            | 1500 | 211.3 | 44             | 62 | 76  | 109 | 182 | 244 | 364 | 475 | 613 | 841 | 1287 | 1688 | 2470 |
|                | 1000 | 140.8 | 29             | 42 | 51  | 72  | 121 | 169 | 246 | 332 | 456 | 624 | 900  | 1250 | 1769 |
|                | 750  | 105.6 | 22             | 30 | 38  | 54  | 89  | 125 | 185 | 263 | 344 | 469 | 688  | 988  | 1330 |
| 8              | 1500 | 187.5 | 38             | 57 | 70  | 96  | 163 | 234 | 332 | 438 | 585 | 766 | 1150 | 1625 | 2275 |
|                | 1000 | 125.0 | 26             | 39 | 46  | 64  | 111 | 156 | 223 | 319 | 419 | 544 | 850  | 1188 | 1607 |
|                | 750  | 93.8  | 19             | 28 | 35  | 48  | 85  | 120 | 168 | 238 | 313 | 408 | 650  | 888  | 1208 |
| 9              | 1500 | 166.7 | 35             | 52 | 62  | 85  | 163 | 231 | 293 | 400 | 563 | 707 | 1025 | 1375 | 1950 |
|                | 1000 | 111.1 | 24             | 35 | 42  | 57  | 108 | 156 | 203 | 269 | 375 | 507 | 775  | 1000 | 1426 |
|                | 750  | 83.3  | 18             | 25 | 31  | 43  | 84  | 119 | 153 | 213 | 305 | 380 | 625  | 813  | 1071 |
| 10             | 1500 | 150.0 | 30             | 46 | 56  | 78  | 130 | 188 | 263 | 364 | 488 | 654 | 950  | 1313 | 1846 |
|                | 1000 | 100.0 | 20             | 31 | 37  | 52  | 88  | 124 | 175 | 244 | 331 | 437 | 675  | 938  | 1275 |
|                | 750  | 75.0  | 15             | 23 | 28  | 39  | 63  | 100 | 132 | 194 | 268 | 328 | 525  | 750  | 958  |
| 11.2           | 1500 | 133.9 | 28             | 42 | 49  | 71  | 124 | 175 | 234 | 325 | 429 | 610 | 850  | 1125 | 1625 |
|                | 1000 | 89.3  | 19             | 27 | 33  | 48  | 85  | 119 | 162 | 219 | 306 | 408 | 625  | 850  | 1131 |
|                | 750  | 67.0  | 14             | 20 | 25  | 36  | 61  | 90  | 122 | 163 | 231 | 306 | 500  | 625  | 849  |
| 12.5           | 1500 | 120.0 | 25             | 38 | 44  | 62  | 104 | 143 | 214 | 293 | 416 | 532 | 800  | 1063 | 1526 |
|                | 1000 | 80.0  | 17             | 25 | 29  | 41  | 68  | 100 | 143 | 206 | 286 | 355 | 563  | 750  | 1021 |
|                | 750  | 60.0  | 13             | 19 | 22  | 31  | 53  | 73  | 107 | 156 | 206 | 267 | 413  | 563  | 767  |
| 14             | 1500 | 107.1 | 22             | 34 | 40  | 54  | 88  | 130 | 195 | 267 | 364 | 459 | 688  | 888  | 1235 |
|                | 1000 | 71.4  | 15             | 22 | 26  | 36  | 60  | 91  | 131 | 189 | 254 | 306 | 500  | 650  | 903  |
|                | 750  | 53.6  | 11             | 16 | 20  | 27  | 44  | 65  | 98  | 138 | 181 | 230 | 363  | 525  | 678  |
| 16             | 1500 | 93.8  | 19             | 29 | 36  | 49  | 78  | 117 | 169 | 241 | 325 | 407 | 613  | 813  | 1118 |
|                | 1000 | 62.5  | 13             | 20 | 24  | 33  | 52  | 78  | 115 | 163 | 219 | 272 | 438  | 613  | 776  |
|                | 750  | 46.9  | 9.8            | 14 | 18  | 25  | 40  | 59  | 86  | 118 | 163 | 204 | 338  | 463  | 583  |
| 18             | 1500 | 83.3  | 17             | 25 | 32  | 43  | 72  | 95  | 150 | 182 | 286 | 361 | 538  | 715  | 962  |
|                | 1000 | 55.6  | 11             | 18 | 21  | 29  | 49  | 66  | 100 | 122 | 189 | 241 | 396  | 513  | 702  |
|                | 750  | 41.7  | 8.3            | 13 | 16  | 22  | 38  | 50  | 80  | 96  | 138 | 181 | 313  | 425  | 530  |
| 20             | 1500 | 75.0  | 15             | 28 | 40  | 55  | 95  | 138 | 242 | 324 | 450 | 650 | 910  |      |      |
|                | 1000 | 50.0  | 10             | 19 | 27  | 37  | 64  | 93  | 161 | 216 | 310 | 475 | 629  |      |      |
|                | 750  | 37.5  | 7.7            | 14 | 20  | 28  | 48  | 73  | 121 | 162 | 247 | 388 | 472  |      |      |
| 22.4           | 1500 | 67.0  | 14             | 26 | 35  | 50  | 85  | 124 | 231 | 291 | 410 | 613 | 850  |      |      |
|                | 1000 | 44.6  | 9.0            | 18 | 24  | 34  | 55  | 83  | 156 | 194 | 280 | 438 | 567  |      |      |
|                | 750  | 33.5  | 6.7            | 14 | 18  | 25  | 43  | 65  | 124 | 146 | 216 | 364 | 426  |      |      |

**Thermal Capacity (kW)**

| Nominal Transmission Ratio i <sub>N</sub>  | n1   | Gear unit Size |     |     |     |     |     |     |     |     |     |      |      |      |
|--|------|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
|  |      | 14             | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24   | 25   | 26   |
| <b>Thermal Capacity P<sub>1</sub> (kW) for gear unit without cooling</b>           |      |                |     |     |     |     |     |     |     |     |     |      |      |      |
| 5.6 to 14  | 1500 | 37             | 52  | 59  | 72  | 104 | 126 | 159 | 207 | 258 | 278 | 386  | 489  | 606  |
|  | 1000 | 32             | 46  | 57  | 63  | 94  | 114 | 157 | 197 | 240 | 293 | 360  | 481  | 612  |
|  | 750  | 29             | 40  | 48  | 60  | 84  | 113 | 139 | 178 | 225 | 298 | 353  | 518  | 601  |
| 16 to 22.4   | 1500 | 32             | 44  | 50  | 64  | 81  | 104 | 133 | 178 | 231 | 240 | 337  | 439  | 548  |
|  | 1000 | 28             | 38  | 43  | 55  | 80  | 105 | 135 | 166 | 219 | 266 | 350  | 466  | 551  |
|  | 750  | 25             | 31  | 39  | 47  | 70  | 94  | 125 | 148 | 203 | 247 | 344  | 449  | 513  |
| <b>Thermal Capacity P<sub>2</sub> (kW) for gear unit with fan cooling</b>          |      |                |     |     |     |     |     |     |     |     |     |      |      |      |
| 5.6 to 14  | 1500 | 60             | 84  | 95  | 116 | 167 | 202 | 256 | 333 | 416 | 448 | 621  | 788  | 976  |
|  | 1000 | 49             | 69  | 85  | 95  | 141 | 172 | 236 | 297 | 362 | 442 | 544  | 727  | 924  |
|  | 750  | 40             | 56  | 67  | 85  | 118 | 158 | 195 | 250 | 315 | 418 | 494  | 725  | 842  |
| 16 to 22.4   | 1500 | 54             | 74  | 83  | 107 | 135 | 173 | 221 | 295 | 383 | 399 | 559  | 728  | 909  |
|  | 1000 | 43             | 57  | 65  | 83  | 120 | 158 | 203 | 250 | 330 | 402 | 529  | 703  | 832  |
|  | 750  | 34             | 44  | 55  | 66  | 98  | 132 | 175 | 207 | 284 | 346 | 482  | 628  | 718  |
| <b>Thermal Capacity P<sub>3</sub> (kW) for gear unit with cooling coil</b>         |      |                |     |     |     |     |     |     |     |     |     |      |      |      |
| 5.6 to 22.4  | 1500 | 184            | 215 | 228 | 236 | 292 | 311 | 349 | 394 | 435 | 443 | 695  | 853  | 1048 |
|  | 1000 | 169            | 203 | 222 | 224 | 282 | 294 | 339 | 380 | 429 | 464 | 546  | 659  | 859  |
|  | 750  | 152            | 175 | 193 | 215 | 260 | 288 | 316 | 354 | 412 | 480 | 526  | 713  | 834  |
| <b>Thermal Capacity P<sub>4</sub> (kW) for gear unit with fan and cooling coil</b> |      |                |     |     |     |     |     |     |     |     |     |      |      |      |
| 5.6 to 22.4  | 1500 | 203            | 252 | 275 | 306 | 405 | 460 | 550 | 672 | 799 | 842 | 1225 | 1534 | 1893 |
|  | 1000 | 181            | 228 | 262 | 276 | 372 | 418 | 527 | 629 | 743 | 864 | 1044 | 1344 | 1724 |
|  | 750  | 159            | 195 | 222 | 259 | 333 | 402 | 468 | 563 | 685 | 861 | 988  | 1408 | 1639 |



**Nominal Power Rating (kW)**

**Helical - Triple Stage**

**Type - S3**

| i <sub>N</sub> | n1   | n2   | Gear unit Size |     |     |     |     |     |     |     |     |     |     |  |
|----------------|------|------|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
|                |      |      | 16             | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  |  |
| 20             | 1500 | 75.0 |                |     | 74  |     |     |     | 181 |     |     | 481 |     |  |
|                | 1000 | 50.0 |                |     | 49  |     |     |     | 123 |     |     | 363 |     |  |
|                | 750  | 37.5 |                |     | 38  |     |     |     | 96  |     |     | 300 |     |  |
| 22.4           | 1500 | 67.0 |                |     | 65  |     |     |     | 163 |     |     | 438 |     |  |
|                | 1000 | 44.6 |                |     | 44  |     |     |     | 114 |     |     | 331 |     |  |
|                | 750  | 33.5 |                |     | 33  |     |     |     | 86  |     |     | 269 |     |  |
| 25             | 1500 | 60.0 | 24             | 33  | 55  | 78  | 104 | 150 | 208 | 257 | 413 | 563 | 754 |  |
|                | 1000 | 40.0 | 16             | 21  | 38  | 53  | 71  | 104 | 143 | 171 | 319 | 394 | 506 |  |
|                | 750  | 30.0 | 12             | 15  | 28  | 39  | 54  | 75  | 109 | 129 | 244 | 300 | 378 |  |
| 28             | 1500 | 53.6 | 21             | 29  | 50  | 70  | 94  | 131 | 181 | 231 | 388 | 506 | 680 |  |
|                | 1000 | 35.7 | 14             | 18  | 34  | 48  | 68  | 90  | 128 | 154 | 288 | 356 | 454 |  |
|                | 750  | 26.8 | 11             | 14  | 25  | 35  | 51  | 68  | 96  | 115 | 206 | 269 | 341 |  |
| 31.5           | 1500 | 47.6 | 19             | 25  | 41  | 60  | 89  | 119 | 163 | 205 | 363 | 481 | 601 |  |
|                | 1000 | 31.7 | 13             | 17  | 28  | 41  | 59  | 79  | 109 | 137 | 250 | 319 | 401 |  |
|                | 750  | 23.8 | 9.4            | 13  | 21  | 31  | 43  | 61  | 81  | 103 | 188 | 238 | 301 |  |
| 35.5           | 1500 | 43.3 | 17             | 23  | 40  | 58  | 77  | 109 | 154 | 185 | 350 | 431 | 543 |  |
|                | 1000 | 28.2 | 11             | 15  | 28  | 38  | 52  | 73  | 103 | 124 | 231 | 288 | 362 |  |
|                | 750  | 21.1 | 8.4            | 11  | 20  | 29  | 39  | 54  | 77  | 93  | 175 | 219 | 272 |  |
| 40             | 1500 | 37.5 | 15             | 21  | 38  | 54  | 70  | 98  | 136 | 166 | 300 | 388 | 484 |  |
|                | 1000 | 25.0 | 9.9            | 15  | 26  | 35  | 47  | 65  | 91  | 111 | 206 | 256 | 323 |  |
|                | 750  | 18.8 | 7.4            | 10  | 19  | 28  | 35  | 51  | 68  | 83  | 156 | 194 | 242 |  |
| 45             | 1500 | 33.3 | 13             | 18  | 33  | 45  | 63  | 86  | 122 | 149 | 275 | 344 | 436 |  |
|                | 1000 | 22.2 | 8.8            | 13  | 21  | 31  | 42  | 58  | 82  | 100 | 188 | 225 | 291 |  |
|                | 750  | 16.7 | 6.6            | 8.6 | 16  | 23  | 31  | 45  | 61  | 75  | 144 | 175 | 218 |  |
| 50             | 1500 | 30.0 | 12             | 15  | 29  | 40  | 56  | 78  | 112 | 130 | 250 | 306 | 380 |  |
|                | 1000 | 20.0 | 7.9            | 11  | 20  | 28  | 37  | 54  | 75  | 87  | 169 | 206 | 254 |  |
|                | 750  | 15.0 | 5.9            | 8.0 | 15  | 20  | 28  | 40  | 56  | 65  | 125 | 150 | 190 |  |
| 56             | 1500 | 26.8 | 11             | 14  | 25  | 35  | 49  | 69  | 99  | 117 | 219 | 275 | 339 |  |
|                | 1000 | 17.9 | 7.1            | 9.6 | 18  | 24  | 34  | 48  | 66  | 78  | 150 | 181 | 226 |  |
|                | 750  | 13.4 | 5.3            | 7.0 | 13  | 19  | 26  | 35  | 50  | 59  | 114 | 138 | 169 |  |
| 63             | 1500 | 23.8 | 9.4            | 12  | 21  | 30  | 44  | 59  | 82  | 105 | 188 | 244 | 306 |  |
|                | 1000 | 15.9 | 6.3            | 7.6 | 14  | 20  | 30  | 39  | 54  | 70  | 131 | 163 | 204 |  |
|                | 750  | 11.9 | 4.7            | 6.1 | 11  | 15  | 23  | 29  | 40  | 53  | 98  | 123 | 153 |  |
| 71             | 1500 | 21.1 | 8.4            | 10  | 19  | 26  | 40  | 52  | 73  | 99  | 169 | 219 | 270 |  |
|                | 1000 | 14.1 | 5.6            | 7.1 | 13  | 18  | 27  | 35  | 49  | 66  | 115 | 144 | 180 |  |
|                | 750  | 10.6 | 4.2            | 5.4 | 9.4 | 14  | 20  | 25  | 36  | 50  | 86  | 108 | 135 |  |
| 80             | 1500 | 18.8 | 7.4            | 9.1 | 18  | 24  | 36  | 45  | 69  | 88  | 150 | 194 | 258 |  |
|                | 1000 | 12.5 | 5.0            | 6.5 | 11  | 16  | 24  | 30  | 43  | 59  | 103 | 125 | 172 |  |
|                | 750  | 9.4  | 3.7            | 4.9 | 8.8 | 13  | 18  | 24  | 34  | 44  | 79  | 95  | 129 |  |
| 90             | 1500 | 16.7 | 6.6            | 8.5 |     | 21  | 32  |     | 58  | 79  |     | 175 | 230 |  |
|                | 1000 | 11.1 | 4.4            | 5.9 |     | 14  | 22  |     | 39  | 53  |     | 115 | 153 |  |
|                | 750  | 8.3  | 3.3            | 4.3 |     | 11  | 16  |     | 31  | 39  |     | 86  | 115 |  |
| 100            | 1500 | 15.0 | 5.9            | 8.5 |     | 21  | 28  |     | 55  | 71  |     | 168 | 207 |  |
|                | 1000 | 10.0 | 4.0            | 5.9 |     | 14  | 19  |     | 37  | 47  |     | 112 | 138 |  |
|                | 750  | 7.5  | 3.0            | 4.3 |     | 10  | 14  |     | 28  | 35  |     | 84  | 104 |  |
| 112            | 1500 | 13.4 | 5.3            | 7.4 |     | 19  | 26  |     | 48  | 62  |     | 144 | 183 |  |
|                | 1000 | 8.9  | 3.5            | 5.1 |     | 12  | 17  |     | 32  | 41  |     | 94  | 122 |  |
|                | 750  | 6.7  | 2.7            | 3.6 |     | 9.3 | 13  |     | 24  | 31  |     | 73  | 91  |  |

**Thermal Capacity (kW)**

| Nominal Transmission Ratio i <sub>N</sub>  | n1   | Gear unit Size |     |     |     |     |     |     |     |     |     |     |
|--|------|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|  |      | 16             | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  |
| <b>Thermal Capacity P<sub>1</sub> (kW) for gear unit without cooling</b>           |      |                |     |     |     |     |     |     |     |     |     |     |
| 20 to 35.5   | 1500 | 40             | 50  | 68  | 99  | 112 | 141 | 187 | 248 | 248 | 285 | 340 |
|  | 1000 | 36             | 42  | 62  | 88  | 104 | 137 | 177 | 231 | 244 | 265 | 320 |
|  | 750  | 30             | 38  | 54  | 78  | 92  | 119 | 154 | 217 | 227 | 242 | 305 |
| 40 to 112  | 1500 | 33             | 44  | 67  | 94  | 109 | 128 | 175 | 229 | 300 | 328 | 335 |
|  | 1000 | 28             | 39  | 64  | 83  | 99  | 127 | 168 | 208 | 307 | 310 | 327 |
|  | 750  | 28             | 34  | 53  | 77  | 86  | 115 | 140 | 177 | 279 | 295 | 318 |
| <b>Thermal Capacity P<sub>2</sub> (kW) for gear unit with fan cooling</b>          |      |                |     |     |     |     |     |     |     |     |     |     |
| 20 to 35.5   | 1500 | 67             | 86  | 114 | 161 | 183 | 230 | 279 | 393 | 369 | 440 | 540 |
|  | 1000 | 61             | 73  | 103 | 143 | 170 | 225 | 264 | 366 | 363 | 418 | 478 |
|  | 750  | 56             | 67  | 95  | 130 | 156 | 197 | 244 | 339 | 339 | 399 | 447 |
| 40 to 112  | 1500 | 67             | 81  | 118 | 162 | 182 | 215 | 275 | 367 | 402 | 425 | 506 |
|  | 1000 | 56             | 71  | 111 | 151 | 173 | 221 | 265 | 330 | 385 | 405 | 481 |
|  | 750  | 54             | 63  | 96  | 142 | 150 | 206 | 241 | 298 | 365 | 385 | 451 |
| <b>Thermal Capacity P<sub>3</sub> (kW) for gear unit with cooling coil</b>         |      |                |     |     |     |     |     |     |     |     |     |     |
| 20 to 112  | 1500 | 95             | 113 | 147 | 187 | 208 | 266 | 313 | 422 | 402 | 450 | 550 |
|  | 1000 | 87             | 96  | 132 | 167 | 193 | 260 | 297 | 393 | 396 | 435 | 540 |
|  | 750  | 72             | 85  | 116 | 148 | 171 | 224 | 259 | 368 | 368 | 425 | 520 |
| <b>Thermal Capacity P<sub>4</sub> (kW) for gear unit with fan and cooling coil</b> |      |                |     |     |     |     |     |     |     |     |     |     |
| 20 to 112  | 1500 | 125            | 154 | 204 | 278 | 312 | 395 | 483 | 659 | 631 | 700 | 834 |
|  | 1000 | 114            | 131 | 184 | 247 | 289 | 386 | 458 | 614 | 622 | 650 | 815 |
|  | 750  | 98             | 118 | 164 | 221 | 260 | 335 | 407 | 573 | 579 | 600 | 773 |

**Type - S4**

**Helical - Quadruple Stage**

**Nominal Power Rating (kW)**

| i <sub>N</sub> | n1   | n2   | Gear unit Size |     |     |     |     |     |     |     |     |
|----------------|------|------|----------------|-----|-----|-----|-----|-----|-----|-----|-----|
|                |      |      | 18             | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  |
| 90             | 1500 | 16.7 | 17             |     |     | 45  |     |     | 138 |     |     |
|                | 1000 | 11.1 | 11             |     |     | 30  |     |     | 92  |     |     |
|                | 750  | 8.3  | 8.3            |     |     | 23  |     |     | 69  |     |     |
| 100            | 1500 | 15.0 | 15             |     |     | 41  |     |     | 125 |     |     |
|                | 1000 | 10.0 | 9.9            |     |     | 27  |     |     | 83  |     |     |
|                | 750  | 7.5  | 7.4            |     |     | 20  |     |     | 62  |     |     |
| 112            | 1500 | 13.4 | 13             |     |     | 36  |     |     | 114 |     |     |
|                | 1000 | 8.9  | 8.8            |     |     | 25  |     |     | 74  |     |     |
|                | 750  | 6.7  | 6.6            |     |     | 19  |     |     | 54  |     |     |
| 125            | 1500 | 12.0 | 12             | 19  | 21  | 33  | 43  | 55  | 101 | 121 | 152 |
|                | 1000 | 8.0  | 7.9            | 13  | 14  | 21  | 28  | 37  | 66  | 80  | 101 |
|                | 750  | 6.0  | 5.9            | 9.5 | 11  | 16  | 21  | 28  | 50  | 60  | 76  |
| 140            | 1500 | 10.7 | 11             | 17  | 21  | 29  | 38  | 54  | 90  | 109 | 133 |
|                | 1000 | 7.1  | 7.1            | 11  | 14  | 20  | 25  | 36  | 59  | 71  | 89  |
|                | 750  | 5.4  | 5.3            | 8.3 | 10  | 15  | 19  | 27  | 45  | 55  | 66  |
| 160            | 1500 | 9.4  | 9.3            | 15  | 18  | 25  | 34  | 49  | 79  | 95  | 121 |
|                | 1000 | 6.3  | 6.2            | 9.8 | 12  | 18  | 23  | 33  | 53  | 64  | 81  |
|                | 750  | 4.7  | 4.6            | 7.4 | 9.0 | 13  | 17  | 24  | 40  | 49  | 61  |
| 180            | 1500 | 8.3  | 8.3            | 12  | 15  | 24  | 31  | 39  | 71  | 86  | 100 |
|                | 1000 | 5.6  | 5.5            | 8.0 | 9.8 | 15  | 21  | 26  | 48  | 58  | 68  |
|                | 750  | 4.2  | 4.1            | 6.0 | 7.3 | 12  | 16  | 19  | 36  | 44  | 51  |
| 200            | 1500 | 7.5  | 7.4            | 11  | 13  | 19  | 28  | 34  | 64  | 78  | 92  |
|                | 1000 | 5.0  | 5.0            | 7.1 | 8.9 | 13  | 18  | 23  | 43  | 51  | 61  |
|                | 750  | 3.8  | 3.7            | 5.3 | 6.7 | 10  | 14  | 17  | 26  | 38  | 44  |
| 225            | 1500 | 6.7  | 6.6            | 8.7 | 12  | 18  | 24  | 30  | 56  | 69  | 82  |
|                | 1000 | 4.4  | 4.4            | 5.8 | 8.0 | 11  | 17  | 20  | 38  | 46  | 54  |
|                | 750  | 3.3  | 3.3            | 4.3 | 6.0 | 8.8 | 12  | 15  | 29  | 28  | 41  |
| 250            | 1500 | 6.0  | 5.9            | 8.5 | 10  | 15  | 22  | 27  | 50  | 60  | 71  |
|                | 1000 | 4.0  | 4.0            | 5.6 | 7.0 | 11  | 15  | 18  | 34  | 40  | 48  |
|                | 750  | 3.0  | 3.0            | 4.2 | 5.2 | 8.1 | 11  | 14  | 25  | 30  | 36  |
| 280            | 1500 | 5.4  | 5.3            | 7.4 | 9.5 | 14  | 19  | 25  | 45  | 55  | 65  |
|                | 1000 | 3.6  | 3.5            | 5.0 | 6.4 | 9.4 | 13  | 16  | 30  | 36  | 43  |
|                | 750  | 2.7  | 2.7            | 3.7 | 4.8 | 6.9 | 9.7 | 12  | 23  | 28  | 32  |
| 315            | 1500 | 4.8  | 4.7            | 6.1 | 8.4 | 12  | 16  | 22  | 40  | 49  | 58  |
|                | 1000 | 3.2  | 3.1            | 4.1 | 5.6 | 8.1 | 12  | 15  | 26  | 31  | 37  |
|                | 750  | 2.4  | 2.4            | 3.0 | 4.2 | 6.3 | 8.8 | 11  | 20  | 25  | 29  |
| 355            | 1500 | 4.2  | 4.2            | 4.8 | 7.3 | 11  | 16  | 20  | 36  | 44  | 51  |
|                | 1000 | 2.8  | 2.8            | 3.2 | 4.9 | 7.5 | 10  | 13  | 24  | 29  | 34  |
|                | 750  | 2.1  | 2.1            | 2.4 | 3.7 | 5.6 | 7.8 | 9.9 | 18  | 21  | 25  |
| 400            | 1500 | 3.8  | 3.7            | 4.9 | 6.7 | 10  | 14  | 18  | 33  | 39  | 45  |
|                | 1000 | 2.5  | 2.5            | 3.3 | 4.5 | 6.3 | 9.4 | 12  | 21  | 25  | 30  |
|                | 750  | 1.9  | 1.9            | 2.5 | 3.3 | 5.0 | 7.0 | 8.9 | 13  | 19  | 23  |
| 450            | 1500 | 3.3  | 3.3            | 3.9 | 6.3 | 9.4 | 12  | 16  | 26  | 36  | 46  |
|                | 1000 | 2.2  | 2.2            | 2.6 | 4.2 | 6.3 | 8.3 | 10  | 18  | 24  | 31  |
|                | 750  | 1.7  | 1.7            | 1.9 | 3.2 | 4.4 | 6.2 | 7.8 | 14  | 18  | 21  |
| 500            | 1500 | 3.0  |                | 4.8 | 5.7 |     | 11  | 14  |     | 32  | 37  |
|                | 1000 | 2.0  |                | 3.2 | 3.8 |     | 7.5 | 9.4 |     | 22  | 25  |
|                | 750  | 1.5  |                | 2.4 | 2.8 |     | 5.6 | 7.0 |     | 16  | 20  |
| 560            | 1500 | 2.7  |                | 4.0 | 4.9 |     | 10  | 13  |     | 28  | 33  |
|                | 1000 | 1.8  |                | 2.6 | 3.3 |     | 6.6 | 8.4 |     | 19  | 22  |
|                | 750  | 1.3  |                | 2.0 | 2.5 |     | 5.0 | 6.3 |     | 15  | 17  |

**Thermal Capacity (kW)**

| Nominal Transmission Ratio i <sub>N</sub>                          | n1   | Gear unit Size |    |    |    |    |     |     |     |     |
|--|------|----------------|----|----|----|----|-----|-----|-----|-----|
|  |      | 18             | 19 | 20 | 21 | 22 | 23  | 24  | 25  | 26  |
| Thermal Capacity P <sub>1</sub> (kW) for gear unit without cooling |      |                |    |    |    |    |     |     |     |     |
| 90 to 560  | 1500 | 25             | 40 | 46 | 65 | 82 | 107 | 139 | 161 | 190 |
|  | 1000 | 23             | 37 | 40 | 54 | 73 | 87  | 124 | 143 | 164 |
|  | 750  | 20             | 32 | 35 | 54 | 68 | 72  | 113 | 139 | 161 |

**Nominal Power Rating (kW)**

**Bevel Helical - Double Stage**

**Type - K2**

| $i_N$ | n1   | n2  | Gear unit Size |     |     |    |     |     |     |     |     |      |      |      |
|-------|------|-----|----------------|-----|-----|----|-----|-----|-----|-----|-----|------|------|------|
|       |      |     | 11             | 13  | 15  | 17 | 18  | 20  | 21  | 22  | 23  | 24   | 25   | 26   |
| 5     | 1500 | 300 |                |     | 63  |    | 166 |     | 544 |     |     | 1482 |      |      |
|       | 1000 | 200 |                |     | 53  |    | 111 |     | 366 |     |     | 988  |      |      |
|       | 750  | 150 |                |     | 39  |    | 84  |     | 275 |     |     | 741  |      |      |
| 5.6   | 1500 | 268 |                | 26  | 59  |    | 164 |     | 543 | 545 |     | 1324 | 1787 |      |
|       | 1000 | 179 |                | 18  | 47  |    | 111 |     | 365 | 366 |     | 882  | 1207 |      |
|       | 750  | 134 |                | 13  | 36  |    | 84  |     | 275 | 276 |     | 662  | 911  |      |
| 6.3   | 1500 | 238 | 15             | 26  | 56  | 94 | 144 | 297 | 440 | 544 | 763 | 988  | 1613 | 1850 |
|       | 1000 | 159 | 10             | 17  | 43  | 70 | 108 | 200 | 338 | 366 | 581 | 738  | 1205 | 1380 |
|       | 750  | 119 | 7.5            | 13  | 30  | 56 | 84  | 151 | 263 | 275 | 475 | 613  | 910  | 1030 |
| 7.1   | 1500 | 211 | 15             | 26  | 56  | 94 | 144 | 281 | 431 | 544 | 763 | 988  | 1475 | 1793 |
|       | 1000 | 141 | 10             | 17  | 40  | 70 | 108 | 200 | 331 | 366 | 581 | 738  | 1113 | 1310 |
|       | 750  | 106 | 7.5            | 13  | 30  | 56 | 83  | 150 | 250 | 275 | 475 | 613  | 900  | 1030 |
| 8     | 1500 | 188 | 11             | 24  | 50  | 81 | 144 | 256 | 400 | 543 | 763 | 938  | 1350 | 1792 |
|       | 1000 | 125 | 7.1            | 16  | 34  | 56 | 108 | 194 | 306 | 366 | 581 | 700  | 1013 | 1260 |
|       | 750  | 94  | 5.3            | 13  | 25  | 42 | 69  | 150 | 231 | 275 | 425 | 581  | 825  | 950  |
| 9     | 1500 | 167 | 9.2            | 23  | 45  | 80 | 125 | 238 | 363 | 494 | 675 | 813  | 1225 | 1789 |
|       | 1000 | 111 | 6.2            | 15  | 30  | 53 | 95  | 181 | 275 | 357 | 494 | 638  | 925  | 1207 |
|       | 750  | 83  | 4.6            | 12  | 24  | 40 | 64  | 149 | 219 | 268 | 371 | 525  | 750  | 910  |
| 10    | 1500 | 150 | 8.0            | 20  | 40  | 74 | 115 | 206 | 319 | 431 | 586 | 763  | 1138 | 1713 |
|       | 1000 | 100 | 5.4            | 14  | 28  | 49 | 78  | 152 | 244 | 319 | 392 | 581  | 775  | 1188 |
|       | 750  | 75  | 4.1            | 10  | 21  | 37 | 58  | 115 | 194 | 239 | 295 | 475  | 638  | 888  |
| 11.2  | 1500 | 134 | 7.4            | 16  | 36  | 59 | 101 | 183 | 294 | 389 | 526 | 700  | 1050 | 1500 |
|       | 1000 | 89  | 5.0            | 11  | 25  | 40 | 76  | 130 | 219 | 261 | 352 | 538  | 788  | 1009 |
|       | 750  | 67  | 3.8            | 8.0 | 19  | 31 | 51  | 98  | 175 | 196 | 264 | 438  | 588  | 758  |
| 12.5  | 1500 | 120 | 6.5            | 16  | 33  | 56 | 94  | 175 | 263 | 356 | 488 | 625  | 950  | 1225 |
|       | 1000 | 80  | 4.4            | 10  | 23  | 37 | 70  | 131 | 181 | 257 | 331 | 475  | 600  | 825  |
|       | 750  | 60  | 3.1            | 7.8 | 16  | 28 | 45  | 95  | 138 | 188 | 238 | 338  | 456  | 625  |
| 14    | 1500 | 107 | 5.7            | 13  | 29  | 53 | 71  | 156 | 225 | 325 | 422 | 581  | 725  | 975  |
|       | 1000 | 71  | 3.8            | 8.1 | 19  | 35 | 47  | 105 | 138 | 206 | 256 | 388  | 519  | 650  |
|       | 750  | 54  | 2.9            | 6.1 | 14  | 27 | 35  | 75  | 100 | 144 | 181 | 294  | 388  | 500  |
| 16    | 1500 | 94  | 5.2            | 9.4 | 23  | 42 | 64  | 131 | 169 | 225 | 325 | 513  | 600  | 750  |
|       | 1000 | 63  | 3.5            | 6.3 | 14  | 28 | 40  | 79  | 101 | 151 | 188 | 313  | 438  | 513  |
|       | 750  | 47  | 2.6            | 4.6 | 11  | 21 | 29  | 58  | 74  | 110 | 138 | 225  | 325  | 381  |
| 18    | 1500 | 83  | 4.1            | 7.5 | 16  | 33 | 58  | 114 | 151 | 225 | 282 | 439  | 578  | 720  |
|       | 1000 | 56  | 2.8            | 4.9 | 11  | 22 | 39  | 76  | 101 | 150 | 188 | 293  | 385  | 480  |
|       | 750  | 42  | 2.0            | 3.6 | 8.1 | 16 | 29  | 57  | 76  | 112 | 141 | 219  | 289  | 360  |
| 20    | 1500 | 75  | 3.8            | 7.0 |     | 33 |     | 103 |     | 225 | 254 |      | 520  | 648  |
|       | 1000 | 50  | 2.5            | 4.7 |     | 22 |     | 68  |     | 149 | 169 |      | 347  | 432  |
|       | 750  | 38  | 1.9            | 3.5 |     | 16 |     | 51  |     | 111 | 127 |      | 260  | 324  |
| 22.4  | 1500 | 67  | 3.5            |     |     | 29 |     | 92  |     |     | 227 |      |      | 579  |
|       | 1000 | 45  | 2.4            |     |     | 19 |     | 60  |     |     | 151 |      |      | 386  |
|       | 750  | 33  | 1.8            |     |     | 14 |     | 45  |     |     | 113 |      |      | 289  |

**Thermal Capacity (kW)**

| Nominal Transmission Ratio $i_N$   | n1   | Gear unit Size |    |    |     |     |     |     |     |     |     |     |      |
|--|------|----------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|  |      | 11             | 13 | 15 | 17  | 18  | 20  | 21  | 22  | 23  | 24  | 25  | 26   |
| <b>Thermal Capacity P<sub>1</sub> (kW) for gear unit without cooling</b>           |      |                |    |    |     |     |     |     |     |     |     |     |      |
| 5 to 11.2  | 1500 | 14             | 23 | 39 | 50  | 82  | 155 | 172 | 201 | 275 | 346 | 400 | 426  |
|  | 1000 | 13             | 22 | 36 | 48  | 77  | 122 | 169 | 176 | 262 | 339 | 380 | 414  |
|  | 750  | 11             | 20 | 32 | 46  | 69  | 108 | 163 | 154 | 257 | 325 | 360 | 412  |
| 12.5 to 22.4   | 1500 | 12             | 22 | 35 | 51  | 78  | 138 | 168 | 207 | 268 | 331 | 390 | 527  |
|  | 1000 | 10             | 20 | 31 | 47  | 67  | 131 | 156 | 190 | 255 | 323 | 370 | 520  |
|  | 750  | 8              | 18 | 29 | 43  | 63  | 125 | 150 | 188 | 249 | 317 | 350 | 513  |
| <b>Thermal Capacity P<sub>2</sub> (kW) for gear unit with fan cooling</b>          |      |                |    |    |     |     |     |     |     |     |     |     |      |
| 5 to 11.2  | 1500 | 36             | 48 | 84 | 104 | 185 | 323 | 387 | 427 | 588 | 704 | 810 | 841  |
|  | 1000 | 33             | 46 | 78 | 101 | 175 | 255 | 381 | 372 | 560 | 691 | 750 | 818  |
|  | 750  | 28             | 40 | 69 | 95  | 148 | 212 | 326 | 299 | 500 | 624 | 700 | 774  |
| 12.5 to 22.4   | 1500 | 30             | 50 | 85 | 111 | 176 | 289 | 386 | 463 | 599 | 750 | 780 | 830  |
|  | 1000 | 24             | 44 | 73 | 96  | 149 | 250 | 324 | 380 | 535 | 646 | 750 | 770  |
|  | 750  | 20             | 41 | 67 | 87  | 139 | 239 | 312 | 375 | 523 | 635 | 700 | 750  |
| <b>Thermal Capacity P<sub>3</sub> (kW) for gear unit with cooling coil</b>         |      |                |    |    |     |     |     |     |     |     |     |     |      |
| 5 to 22.4  | 1500 | 25             | 35 | 70 | 90  | 139 | 210 | 257 | 308 | 412 | 534 | 731 | 752  |
|  | 1000 | 20             | 29 | 60 | 101 | 145 | 197 | 307 | 290 | 513 | 685 | 851 | 947  |
|  | 750  | 20             | 35 | 69 | 90  | 140 | 204 | 251 | 333 | 392 | 522 | 732 | 908  |
| <b>Thermal Capacity P<sub>4</sub> (kW) for gear unit with fan and cooling coil</b> |      |                |    |    |     |     |     |     |     |     |     |     |      |
| 5 to 22.4  | 1500 | 37             | 53 | 97 | 122 | 203 | 344 | 408 | 468 | 637 | 792 | 900 | 1009 |
|  | 1000 | 33             | 48 | 87 | 125 | 198 | 287 | 429 | 419 | 668 | 858 | 880 | 1089 |
|  | 750  | 29             | 47 | 85 | 115 | 178 | 262 | 369 | 393 | 575 | 736 | 800 | 1047 |

Type - K3

Bevel Helical - Triple Stage

Nominal Power Rating (kW)

| i <sub>N</sub> | n1   | n2    | Gear unit Size |     |     |     |    |     |    |     |     |     |     |     |     |     |
|----------------|------|-------|----------------|-----|-----|-----|----|-----|----|-----|-----|-----|-----|-----|-----|-----|
|                |      |       | 14             | 15  | 16  | 17  | 18 | 19  | 20 | 21  | 22  | 23  | 24  | 25  | 26  |     |
| 20             | 1500 | 75.00 |                | 21  |     |     |    | 66  |    |     | 169 |     |     | 538 |     |     |
|                | 1000 | 50.00 |                | 15  |     |     |    | 45  |    |     | 119 |     |     | 394 |     |     |
|                | 750  | 37.50 |                | 11  |     |     |    | 35  |    |     | 94  |     |     | 306 |     |     |
| 22.4           | 1500 | 66.96 |                | 19  | 28  |     |    | 63  | 81 |     | 163 | 219 |     | 500 | 638 |     |
|                | 1000 | 44.64 |                | 14  | 19  |     |    | 43  | 60 |     | 113 | 163 |     | 363 | 450 |     |
|                | 750  | 33.48 |                | 10  | 14  |     |    | 31  | 45 |     | 88  | 119 |     | 275 | 344 |     |
| 25             | 1500 | 60.00 | 11             | 18  | 25  | 32  |    | 55  | 78 | 104 | 144 | 200 | 259 | 438 | 563 | 701 |
|                | 1000 | 40.00 | 8.0            | 12  | 17  | 21  |    | 38  | 53 | 69  | 100 | 138 | 173 | 319 | 394 | 468 |
|                | 750  | 30.00 | 5.9            | 8.8 | 13  | 16  |    | 29  | 40 | 52  | 75  | 106 | 130 | 244 | 300 | 351 |
| 28             | 1500 | 53.57 | 10             | 14  | 23  | 28  |    | 46  | 60 | 93  | 115 | 175 | 233 | 400 | 506 | 625 |
|                | 1000 | 35.71 | 6.9            | 10  | 15  | 19  |    | 31  | 43 | 62  | 83  | 118 | 155 | 281 | 356 | 420 |
|                | 750  | 26.79 | 5.1            | 7.5 | 11  | 14  |    | 24  | 33 | 47  | 63  | 89  | 117 | 213 | 269 | 315 |
| 31.5           | 1500 | 47.62 | 8.8            | 13  | 16  | 25  |    | 41  | 55 | 86  | 106 | 150 | 209 | 363 | 481 | 564 |
|                | 1000 | 31.75 | 6.0            | 8.8 | 11  | 17  |    | 28  | 39 | 58  | 74  | 104 | 140 | 250 | 319 | 377 |
|                | 750  | 23.81 | 4.5            | 6.9 | 8.2 | 13  |    | 21  | 29 | 43  | 55  | 78  | 105 | 188 | 238 | 283 |
| 35.5           | 1500 | 43.25 | 8.1            | 12  | 18  | 22  |    | 38  | 50 | 74  | 96  | 138 | 186 | 325 | 431 | 500 |
|                | 1000 | 28.17 | 5.4            | 8.1 | 12  | 15  |    | 25  | 35 | 49  | 66  | 94  | 124 | 225 | 288 | 340 |
|                | 750  | 21.13 | 4.0            | 6.0 | 9.1 | 11  |    | 19  | 26 | 37  | 50  | 70  | 93  | 169 | 219 | 250 |
| 40             | 1500 | 37.50 | 7.5            | 11  | 16  | 20  |    | 34  | 45 | 65  | 86  | 123 | 162 | 294 | 388 | 450 |
|                | 1000 | 25.00 | 4.9            | 6.9 | 11  | 13  |    | 23  | 31 | 43  | 59  | 84  | 120 | 200 | 269 | 330 |
|                | 750  | 18.75 | 3.6            | 5.5 | 8.0 | 10  |    | 18  | 24 | 32  | 45  | 65  | 82  | 156 | 194 | 230 |
| 45             | 1500 | 33.33 | 6.3            | 9.4 | 12  | 18  |    | 30  | 41 | 63  | 80  | 113 | 146 | 269 | 344 | 400 |
|                | 1000 | 22.22 | 4.4            | 6.3 | 8.0 | 12  |    | 20  | 28 | 41  | 53  | 75  | 97  | 181 | 225 | 265 |
|                | 750  | 16.67 | 3.4            | 5.0 | 6.0 | 8.8 |    | 15  | 22 | 33  | 40  | 58  | 74  | 138 | 175 | 205 |
| 50             | 1500 | 30.00 | 5.8            | 8.8 | 13  | 16  |    | 26  | 38 | 53  | 71  | 100 | 130 | 244 | 306 | 360 |
|                | 1000 | 20.00 | 3.9            | 5.8 | 8.7 | 10  |    | 18  | 25 | 36  | 48  | 68  | 87  | 163 | 206 | 240 |
|                | 750  | 15.00 | 3.0            | 4.4 | 6.6 | 7.9 |    | 14  | 19 | 27  | 36  | 51  | 65  | 124 | 150 | 180 |
| 56             | 1500 | 26.79 | 5.1            | 7.5 | 12  | 14  |    | 24  | 33 | 47  | 63  | 89  | 117 | 213 | 275 | 320 |
|                | 1000 | 17.86 | 3.5            | 5.3 | 7.7 | 9.5 |    | 16  | 23 | 31  | 43  | 61  | 78  | 144 | 181 | 215 |
|                | 750  | 13.39 | 2.6            | 3.9 | 5.7 | 7.1 |    | 13  | 18 | 23  | 33  | 46  | 59  | 110 | 138 | 165 |
| 63             | 1500 | 23.81 | 4.6            | 6.9 | 8.5 | 13  |    | 21  | 29 | 44  | 55  | 79  | 105 | 188 | 244 | 285 |
|                | 1000 | 15.87 | 3.1            | 4.6 | 5.5 | 8.4 |    | 15  | 21 | 30  | 38  | 54  | 70  | 131 | 163 | 190 |
|                | 750  | 11.90 | 2.4            | 3.5 | 4.2 | 6.4 |    | 11  | 16 | 23  | 29  | 40  | 52  | 98  | 123 | 145 |
| 71             | 1500 | 21.13 | 4.0            | 6.0 | 9.1 | 11  |    | 19  | 26 | 37  | 50  | 70  | 93  | 169 | 219 | 250 |
|                | 1000 | 14.08 | 2.8            | 4.1 | 6.1 | 7.5 |    | 13  | 18 | 25  | 34  | 46  | 62  | 101 | 144 | 166 |
|                | 750  | 10.56 | 2.1            | 3.1 | 4.6 | 5.6 |    | 9.4 | 15 | 19  | 25  | 34  | 47  | 74  | 108 | 125 |
| 80             | 1500 | 18.75 | 2.9            |     | 7.5 | 10  |    | 24  | 32 |     |     | 69  | 81  |     | 200 | 218 |
|                | 1000 | 12.50 | 2.5            |     | 5.3 | 6.7 |    | 17  | 22 |     |     | 46  | 54  |     | 135 | 146 |
|                | 750  | 9.38  | 1.9            |     | 3.9 | 5.0 |    | 13  | 16 |     |     | 34  | 41  |     | 101 | 110 |
| 90             | 1500 | 16.67 | 2.9            |     | 5.7 | 8.9 |    | 22  | 33 |     |     | 58  | 73  |     | 176 | 197 |
|                | 1000 | 11.11 | 1.9            |     | 3.8 | 5.9 |    | 15  | 21 |     |     | 36  | 49  |     | 117 | 131 |
|                | 750  | 8.33  | 1.4            |     | 2.9 | 4.4 |    | 11  | 16 |     |     | 26  | 36  |     | 85  | 99  |
| 100            | 1500 | 15.00 | 2.7            |     |     | 7.9 |    |     | 26 |     |     |     | 63  |     |     | 174 |
|                | 1000 | 10.00 | 1.8            |     |     | 5.2 |    |     | 16 |     |     |     | 39  |     |     | 106 |
|                | 750  | 7.50  | 1.3            |     |     | 3.9 |    |     | 12 |     |     |     | 29  |     |     | 78  |

Thermal Capacity (kW)

| Nominal Transmission Ration i <sub>N</sub> | n1   | Gear unit Size   |     |     |     |     |     |     |     |     |     |     |      |      |  |
|--|------|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|--|
|  |      | 14   | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25   | 26   |  |
|  |      | Thermal Capacity P <sub>1</sub> (kW) for gear unit without cooling           |     |     |     |     |     |     |     |     |     |     |      |      |  |
| 20 to 35.5                                 | 1500 | 26   | 33  | 42  | 44  | 64  | 81  | 106 | 128 | 166 | 195 | 254 | 315  | 330  |  |
|  | 1000 | 23   | 29  | 36  | 40  | 61  | 75  | 95  | 125 | 150 | 166 | 239 | 280  | 295  |  |
|  | 750  | 21   | 25  | 33  | 36  | 56  | 69  | 87  | 119 | 148 | 158 | 229 | 260  | 285  |  |
| 40 to 100                                  | 1500 | 23   | 30  | 40  | 45  | 60  | 75  | 87  | 120 | 154 | 159 | 239 | 285  | 300  |  |
|  | 1000 | 21   | 26  | 31  | 43  | 58  | 71  | 78  | 118 | 144 | 150 | 226 | 260  | 277  |  |
|  | 750  | 19   | 24  | 30  | 38  | 53  | 68  | 78  | 115 | 138 | 140 | 213 | 240  | 265  |  |
|  |      | Thermal Capacity P <sub>2</sub> (kW) for gear unit with fan cooling          |     |     |     |     |     |     |     |     |     |     |      |      |  |
| 20 to 35.5                                 | 1500 | 66   | 85  | 109 | 111 | 150 | 183 | 237 | 269 | 360 | 425 | 542 | 617  | 672  |  |
|  | 1000 | 59   | 75  | 95  | 100 | 143 | 169 | 213 | 263 | 325 | 363 | 510 | 586  | 601  |  |
|  | 750  | 58   | 73  | 90  | 95  | 138 | 156 | 193 | 237 | 288 | 313 | 451 | 527  | 535  |  |
| 40 to 100                                  | 1500 | 59   | 75  | 101 | 112 | 144 | 175 | 208 | 265 | 319 | 325 | 488 | 600  | 620  |  |
|  | 1000 | 56   | 70  | 82  | 104 | 135 | 163 | 174 | 244 | 300 | 290 | 438 | 538  | 580  |  |
|  | 750  | 54   | 65  | 81  | 94  | 125 | 150 | 174 | 225 | 275 | 270 | 388 | 513  | 520  |  |
|  |      | Thermal Capacity P <sub>3</sub> (kW) for gear unit with cooling coil         |     |     |     |     |     |     |     |     |     |     |      |      |  |
| 20 to 100                                  | 1500 | 89   | 105 | 126 | 129 | 176 | 207 | 261 | 310 | 391 | 368 | 461 | 500  | 584  |  |
|  | 1000 | 85   | 102 | 116 | 119 | 167 | 200 | 235 | 300 | 375 | 324 | 445 | 475  | 522  |  |
|  | 750  | 84   | 96  | 111 | 110 | 150 | 188 | 220 | 287 | 370 | 313 | 436 | 450  | 517  |  |
|  |      | Thermal Capacity P <sub>4</sub> (kW) for gear unit with fan and cooling coil |     |     |     |     |     |     |     |     |     |     |      |      |  |
| 20 to 100                                  | 1500 | 130  | 160 | 199 | 204 | 281 | 339 | 435 | 509 | 660 | 711 | 905 | 1111 | 1141 |  |
|  | 1000 | 121  | 148 | 178 | 187 | 268 | 320 | 391 | 495 | 611 | 614 | 860 | 1055 | 1021 |  |
|  | 750  | 117  | 140 | 168 | 174 | 248 | 297 | 360 | 463 | 580 | 564 | 803 | 1000 | 1011 |  |

**Nominal Power Rating (kW)**

**Bevel Helical - Quadruple Stage**

**Type - K4**

| i <sub>N</sub> | n1   | n2   | Gear unit Size |     |     |     |    |     |     |     |     |     |     |
|----------------|------|------|----------------|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|
|                |      |      | 17             | 18  | 19  | 20  | 21 | 22  | 23  | 24  | 25  | 26  |     |
| 80             | 1500 | 18.8 |                | 18  |     |     |    | 48  |     |     | 154 |     |     |
|                | 1000 | 12.5 |                | 12  |     |     |    | 32  |     |     | 103 |     |     |
|                | 750  | 9.4  |                | 9   |     |     |    | 24  |     |     | 77  |     |     |
| 90             | 1500 | 16.7 |                | 16  |     |     |    | 42  |     |     | 137 |     |     |
|                | 1000 | 11.1 |                | 10  |     |     |    | 28  |     |     | 91  |     |     |
|                | 750  | 8.3  |                | 8   |     |     |    | 21  |     |     | 69  |     |     |
| 100            | 1500 | 15.0 |                | 14  | 19  |     |    | 38  | 51  |     | 123 | 164 |     |
|                | 1000 | 10.0 |                | 9   | 13  |     |    | 25  | 34  |     | 81  | 105 |     |
|                | 750  | 7.5  |                | 7   | 10  |     |    | 19  | 26  |     | 63  | 80  |     |
| 112            | 1500 | 13.4 | 7.1            | 12  | 16  | 24  |    | 34  | 46  | 59  | 108 | 138 | 160 |
|                | 1000 | 8.9  | 4.8            | 8.8 | 12  | 16  |    | 23  | 31  | 39  | 75  | 88  | 105 |
|                | 750  | 6.7  | 3.6            | 6.3 | 8.8 | 12  |    | 18  | 24  | 29  | 55  | 66  | 83  |
| 125            | 1500 | 12.0 | 6.5            | 11  | 15  | 23  |    | 30  | 41  | 64  | 98  | 121 | 160 |
|                | 1000 | 8.0  | 4.3            | 7.5 | 11  | 15  |    | 20  | 29  | 43  | 66  | 81  | 107 |
|                | 750  | 6.0  | 3.3            | 5.8 | 8.1 | 11  |    | 15  | 21  | 32  | 50  | 60  | 80  |
| 140            | 1500 | 10.7 | 5.8            | 10  | 14  | 19  |    | 28  | 36  | 57  | 88  | 109 | 145 |
|                | 1000 | 7.1  | 3.8            | 6.9 | 9.4 | 12  |    | 19  | 26  | 38  | 60  | 73  | 97  |
|                | 750  | 5.4  | 2.9            | 5.1 | 6.9 | 9.4 |    | 14  | 20  | 28  | 45  | 55  | 73  |
| 160            | 1500 | 9.4  | 5.3            | 9.4 | 13  | 17  |    | 25  | 34  | 41  | 79  | 95  | 115 |
|                | 1000 | 6.3  | 3.5            | 6.1 | 8.6 | 11  |    | 16  | 23  | 27  | 53  | 64  | 75  |
|                | 750  | 4.7  | 2.6            | 4.5 | 6.3 | 8.4 |    | 13  | 18  | 21  | 40  | 49  | 58  |
| 180            | 1500 | 8.3  | 4.7            | 8.1 | 11  | 15  |    | 21  | 30  | 37  | 71  | 86  | 100 |
|                | 1000 | 5.6  | 3.1            | 5.4 | 7.5 | 9.7 |    | 15  | 20  | 25  | 48  | 58  | 68  |
|                | 750  | 4.2  | 2.3            | 4.0 | 5.6 | 7.3 |    | 11  | 15  | 19  | 36  | 44  | 51  |
| 200            | 1500 | 7.5  | 4.1            | 7.3 | 10  | 13  |    | 19  | 28  | 33  | 64  | 78  | 92  |
|                | 1000 | 5.0  | 2.8            | 4.8 | 6.9 | 8.9 |    | 13  | 18  | 22  | 43  | 51  | 61  |
|                | 750  | 3.8  | 2.1            | 3.6 | 5.2 | 6.7 |    | 10  | 14  | 17  | 33  | 38  | 44  |
| 225            | 1500 | 6.7  | 3.7            | 6.3 | 8.8 | 12  |    | 18  | 24  | 36  | 56  | 69  | 90  |
|                | 1000 | 4.4  | 2.4            | 4.3 | 5.9 | 7.8 |    | 11  | 16  | 24  | 38  | 46  | 60  |
|                | 750  | 3.3  | 1.9            | 3.3 | 4.5 | 5.8 |    | 8.8 | 12  | 18  | 29  | 35  | 45  |
| 250            | 1500 | 6.0  | 3.3            | 5.8 | 8.1 | 12  |    | 15  | 21  | 32  | 50  | 60  | 81  |
|                | 1000 | 4.0  | 2.2            | 3.9 | 3.9 | 7.5 |    | 11  | 15  | 21  | 34  | 40  | 54  |
|                | 750  | 3.0  | 1.6            | 2.9 | 2.9 | 5.6 |    | 8.1 | 11  | 16  | 25  | 30  | 41  |
| 280            | 1500 | 5.4  | 2.9            | 4.3 | 6.9 | 9.3 |    | 14  | 19  | 28  | 45  | 55  | 72  |
|                | 1000 | 3.6  | 1.9            | 2.9 | 4.8 | 6.2 |    | 9.4 | 13  | 19  | 30  | 36  | 48  |
|                | 750  | 2.7  | 1.4            | 2.0 | 3.4 | 4.7 |    | 6.9 | 9.9 | 14  | 23  | 28  | 36  |
| 315            | 1500 | 4.8  | 2.6            | 3.9 | 6.3 | 8.4 |    | 12  | 18  | 26  | 40  | 49  | 65  |
|                | 1000 | 3.2  | 1.8            | 2.6 | 4.3 | 5.6 |    | 8.1 | 11  | 17  | 26  | 31  | 43  |
|                | 750  | 2.4  | 1.3            | 1.9 | 3.2 | 4.2 |    | 6.3 | 8.8 | 13  | 20  | 25  | 32  |
| 355            | 1500 | 4.2  | 2.3            | 3.5 | 5.8 | 8.1 |    | 11  | 14  | 18  | 29  | 44  | 49  |
|                | 1000 | 2.8  | 1.6            | 2.4 | 3.8 | 5.4 |    | 7.5 | 9.4 | 12  | 20  | 29  | 33  |
|                | 750  | 2.1  | 1.2            | 1.6 | 2.9 | 4.0 |    | 5.5 | 6.9 | 9.1 | 15  | 21  | 25  |
| 400            | 1500 | 3.8  | 2.1            | 3.0 | 4.8 | 6.3 |    | 9.4 | 11  | 16  | 24  | 35  | 43  |
|                | 1000 | 2.5  | 1.4            | 1.9 | 3.1 | 4.1 |    | 6.3 | 7.5 | 11  | 16  | 24  | 29  |
|                | 750  | 1.9  | 1.0            | 1.5 | 2.4 | 3.1 |    | 4.6 | 5.6 | 8.1 | 12  | 18  | 21  |
| 450            | 1500 | 3.3  | 1.6            |     | 3.8 | 5.8 |    |     | 11  | 18  |     | 35  | 44  |
|                | 1000 | 2.2  | 1.1            |     | 2.5 | 3.9 |    |     | 7.5 | 12  |     | 23  | 30  |
|                | 750  | 1.7  | 0.9            |     | 1.9 | 2.9 |    |     | 5.6 | 8.9 |     | 18  | 21  |
| 500            | 1500 | 3.0  | 1.6            |     | 3.6 | 4.8 |    |     | 8.8 | 16  |     | 28  | 31  |
|                | 1000 | 2.0  | 1.1            |     | 2.4 | 3.1 |    |     | 5.8 | 11  |     | 19  | 21  |
|                | 750  | 1.5  | 0.9            |     | 1.8 | 2.4 |    |     | 4.3 | 8.0 |     | 14  | 15  |
| 560            | 1500 | 2.7  | 1.4            |     | 3.2 | 4.6 |    |     | 7.5 | 14  |     | 25  | 28  |
|                | 1000 | 1.8  | 1.0            |     | 2.1 | 3.1 |    |     | 5.0 | 9.0 |     | 16  | 19  |
|                | 750  | 1.3  | 0.8            |     | 1.6 | 2.3 |    |     | 3.8 | 6.8 |     | 13  | 14  |

**Thermal Capacity (kW)**

| Nominal Transmission Ration i <sub>N</sub>                         | n1   | Gear unit Size |    |    |    |    |    |    |     |     |     |
|--|------|----------------|----|----|----|----|----|----|-----|-----|-----|
|  |      | 17             | 18 | 19 | 20 | 21 | 22 | 23 | 24  | 25  | 26  |
| Thermal Capacity P <sub>1</sub> (kW) for gear unit without cooling |      |                |    |    |    |    |    |    |     |     |     |
| 80 to 560  | 1500 | 20             | 28 | 35 | 41 | 56 | 75 | 76 | 138 | 177 | 206 |
|  | 1000 | 17             | 23 | 30 | 36 | 50 | 69 | 66 | 127 | 148 | 178 |
|  | 750  | 17             | 20 | 29 | 36 | 44 | 56 | 62 | 118 | 142 | 177 |

**Actual Ratio - Helical Type - S1, S2, S3, S4**

| Type | i <sub>N</sub> | Gear unit Size |       |       |        |        |        |        |        |        |        |        |        |        |        |        |
|------|----------------|----------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|      |                | 11             | 13    | 14    | 15     | 16     | 17     | 18     | 19     | 20     | 21     | 22     | 23     | 24     | 25     | 26     |
| S1   | 1.25           | 1.21           | 1.24  | -     | 1.25   | -      | 1.26   | 1.23   | -      | 1.25   | 1.26   | 1.25   | -      | -      | -      | -      |
|      | 1.4            | 1.38           | 1.39  | -     | 1.35   | -      | 1.39   | 1.42   | -      | 1.38   | 1.40   | 1.40   | -      | -      | -      | -      |
|      | 1.6            | 1.58           | 1.61  | -     | 1.58   | -      | 1.61   | 1.59   | -      | 1.58   | 1.61   | 1.61   | 1.61   | 1.59   | 1.56   | -      |
|      | 1.8            | 1.82           | 1.82  | -     | 1.79   | -      | 1.78   | 1.76   | -      | 1.82   | 1.77   | 1.77   | 1.77   | 1.83   | 1.78   | 1.81   |
|      | 2              | 1.95           | 2.00  | -     | 2.00   | -      | 1.95   | 2.00   | -      | 1.95   | 2.00   | 2.00   | 2.00   | 2.00   | 1.95   | 2.04   |
|      | 2.24           | 2.29           | 2.24  | -     | 2.25   | -      | 2.26   | 2.22   | -      | 2.26   | 2.21   | 2.24   | 2.24   | 2.24   | 2.20   | 2.27   |
|      | 2.5            | 2.45           | 2.50  | -     | 2.44   | -      | 2.45   | 2.41   | -      | 2.43   | 2.53   | 2.53   | 2.53   | 2.45   | 2.50   | 2.48   |
|      | 2.8            | 2.78           | 2.83  | -     | 2.75   | -      | 2.78   | 2.71   | -      | 2.79   | 2.75   | 2.72   | 2.80   | 2.67   | 2.85   | 2.79   |
|      | 3.15           | 3.11           | 3.18  | -     | 3.06   | -      | 3.25   | 3.12   | -      | 3.24   | 3.06   | 3.19   | 3.17   | 3.05   | 3.10   | 3.14   |
|      | 3.55           | 3.53           | 3.53  | -     | 3.50   | -      | 3.75   | 3.53   | -      | 3.65   | 3.50   | 3.53   | 3.69   | 3.53   | 3.53   | 3.62   |
|      | 4              | 4.12           | 3.88  | -     | 3.94   | -      | 4.12   | 3.89   | -      | 4.12   | 3.90   | 4.00   | 4.06   | 3.81   | 4.00   | 4.11   |
|      | 4.5            | 4.47           | 4.38  | -     | 4.44   | -      | 4.61   | 4.50   | -      | 4.59   | 4.39   | 4.45   | 4.56   | 4.38   | 4.38   | 4.59   |
| 5    | 5.06           | 5.00           | -     | 5.00  | -      | 5.28   | 4.88   | -      | 5.11   | 5.00   | 5.00   | 5.05   | 4.82   | 5.00   | 5.06   |        |
| S2   | 5.6            | -              | -     | 5.31  | 5.56   | 5.56   | 5.89   | 5.57   | 5.65   | 5.80   | 5.57   | 5.57   | 5.69   | 5.68   | 5.60   | 5.78   |
|      | 6.3            | -              | -     | 6.06  | 6.13   | 6.44   | 6.51   | 6.32   | 6.35   | 6.37   | 6.17   | 6.48   | 6.31   | 6.26   | 6.43   | 6.61   |
|      | 7.1            | -              | -     | 6.93  | 6.79   | 7.29   | 7.43   | 7.06   | 7.16   | 7.39   | 7.00   | 7.13   | 7.21   | 7.06   | 7.09   | 7.38   |
|      | 8              | -              | -     | 7.95  | 7.78   | 8.00   | 8.45   | 7.94   | 7.78   | 8.16   | 7.78   | 7.82   | 8.28   | 7.80   | 8.00   | 8.13   |
|      | 9              | -              | -     | 8.54  | 8.75   | 8.94   | 9.49   | 8.60   | 8.95   | 8.96   | 8.44   | 9.00   | 8.89   | 8.93   | 8.95   | 9.18   |
|      | 10             | -              | -     | 10.00 | 9.68   | 10.00  | 10.38  | 9.71   | 10.12  | 10.38  | 9.47   | 10.22  | 10.31  | 9.71   | 10.11  | 10.27  |
|      | 11.2           | -              | -     | 10.72 | 10.91  | 11.33  | 11.39  | 10.80  | 11.00  | 11.24  | 10.91  | 11.06  | 11.06  | 10.80  | 10.89  | 11.59  |
|      | 12.5           | -              | -     | 12.15 | 12.03  | 12.71  | 13.06  | 12.35  | 12.75  | 12.75  | 12.35  | 12.47  | 12.71  | 12.35  | 12.75  | 12.85  |
|      | 14             | -              | -     | 13.59 | 13.56  | 14.12  | 14.86  | 13.92  | 13.88  | 14.91  | 13.61  | 14.12  | 14.74  | 13.76  | 14.12  | 14.53  |
|      | 16             | -              | -     | 15.44 | 15.75  | 15.50  | 16.27  | 15.69  | 16.00  | 17.21  | 15.75  | 16.00  | 16.61  | 15.49  | 16.00  | 16.92  |
|      | 18             | -              | -     | 18.01 | 17.09  | 17.50  | 18.44  | 17.65  | 18.00  | 18.89  | 17.09  | 17.78  | 18.76  | 17.65  | 17.80  | 18.62  |
|      | 20             | -              | -     | 19.57 | -      | 20.00  | 20.17  | 19.62  | 20.00  | 21.16  | 19.50  | 20.00  | 20.90  | 19.65  | 20.00  | 20.90  |
| 22.4 | -              | -              | 22.13 | -     | 22.12  | 22.77  | 22.11  | 22.75  | 24.22  | 21.49  | 22.12  | 23.28  | 21.90  | 23.00  | 23.17  |        |
| S3   | 25             | -              | -     | -     | -      | 25.03  | 24.50  | 24.91  | 25.31  | 24.14  | 24.87  | 25.26  | 26.40  | 24.64  | 25.17  | 26.13  |
|      | 28             | -              | -     | -     | -      | 27.48  | 27.65  | 27.45  | 29.18  | 27.03  | 27.79  | 28.63  | 29.41  | 27.45  | 28.52  | 28.96  |
|      | 31.5           | -              | -     | -     | -      | 31.02  | 31.15  | 30.94  | 32.82  | 30.94  | 30.63  | 31.81  | 33.09  | 30.59  | 31.73  | 32.82  |
|      | 35.5           | -              | -     | -     | -      | 34.59  | 36.01  | 34.86  | 34.71  | 35.42  | 35.44  | 35.71  | 36.62  | 34.42  | 36.08  | 36.36  |
|      | 40             | -              | -     | -     | -      | 37.98  | 39.39  | 38.51  | 40.00  | 38.90  | 37.79  | 40.47  | 40.81  | 38.51  | 40.89  | 40.81  |
|      | 45             | -              | -     | -     | -      | 42.88  | 44.45  | 43.40  | 45.00  | 43.56  | 47.64  | 44.97  | 45.46  | 42.91  | 45.49  | 45.24  |
|      | 50             | -              | -     | -     | -      | 50.66  | 51.23  | 48.90  | 49.00  | 48.75  | 48.18  | 49.00  | 52.11  | 48.29  | 49.83  | 51.95  |
|      | 56             | -              | -     | -     | -      | 55.62  | 56.04  | 52.71  | 56.47  | 40.83  | 54.90  | 55.53  | 58.06  | 52.71  | 56.47  | 58.31  |
|      | 63             | -              | -     | -     | -      | 62.79  | 63.24  | 60.31  | 63.53  | 59.94  | 60.49  | 61.70  | 64.68  | 60.31  | 62.82  | 64.63  |
|      | 71             | -              | -     | -     | -      | 71.76  | 70.70  | 67.97  | 70.59  | 68.82  | 70.00  | 69.41  | 68.41  | 67.20  | 70.59  | 73.24  |
|      | 80             | -              | -     | -     | -      | 77.23  | 83.07  | 76.59  | 80.00  | 75.57  | 75.95  | 80.00  | 77.24  | 75.63  | 80.00  | 76.68  |
|      | 90             | -              | -     | -     | -      | 84.79  | 93.75  | 89.42  | 90.00  | 84.63  | 94.14  | 88.89  | 86.07  | 87.35  | 89.00  | 86.07  |
| 100  | -              | -              | -     | -     | 95.74  | 105.61 | 100.78 | 100.00 | 96.86  | 106.57 | 100.00 | 95.88  | 97.16  | 100.00 | 95.41  |        |
| 112  | -              | -              | -     | -     | 109.41 | 114.75 | 113.55 | 110.59 | 105.94 | 117.43 | 113.75 | 110.32 | 111.18 | 110.59 | 108.11 |        |
| S4   | 125            | -              | -     | -     | -      | -      | -      | 122.88 | 123.05 | 122.08 | 122.00 | 128.72 | 117.19 | 125.07 | 126.32 | 130.13 |
|      | 140            | -              | -     | -     | -      | -      | -      | 138.48 | 141.82 | 138.41 | 134.43 | 145.88 | 134.61 | 139.37 | 143.16 | 144.22 |
|      | 160            | -              | -     | -     | -      | -      | -      | 156.04 | 159.55 | 161.94 | 155.56 | 162.09 | 156.12 | 156.84 | 159.26 | 163.11 |
|      | 180            | -              | -     | -     | -      | -      | -      | 173.30 | 170.06 | 186.86 | 171.16 | 176.47 | 175.99 | 170.03 | 178.55 | 189.94 |
|      | 200            | -              | -     | -     | -      | -      | -      | 195.31 | 196.00 | 205.18 | 188.60 | 200.00 | 197.64 | 189.47 | 202.35 | 209.06 |
|      | 224            | -              | -     | -     | -      | -      | -      | 220.07 | 220.50 | 229.77 | 218.24 | 222.22 | 223.14 | 213.22 | 225.12 | 234.65 |
|      | 250            | -              | -     | -     | -      | -      | -      | 247.06 | 249.07 | 262.99 | 236.78 | 249.13 | 248.64 | 247.06 | 244.98 | 260.12 |
|      | 280            | -              | -     | -     | -      | -      | -      | 278.43 | 287.06 | 287.90 | 268.05 | 282.35 | 276.97 | 275.29 | 277.65 | 294.74 |
|      | 315            | -              | -     | -     | -      | -      | -      | 313.73 | 322.94 | 326.90 | 295.35 | 313.73 | 307.08 | 309.80 | 308.88 | 333.85 |
|      | 355            | -              | -     | -     | -      | -      | -      | 352.94 | 358.82 | 374.17 | 341.76 | 352.94 | 342.17 | 352.94 | 347.06 | 370.09 |
|      | 400            | -              | -     | -     | -      | -      | -      | 386.38 | 379.72 | 409.61 | 388.89 | 390.31 | 381.17 | 400.81 | 400.00 | 419.35 |
|      | 450            | -              | -     | -     | -      | -      | -      | 434.67 | 437.65 | 432.73 | 421.93 | 442.35 | 433.52 | 456.62 | 445.00 | 440.92 |
| 500  | -              | -              | -     | -     | -      | -      | -      | 492.35 | 484.59 | -      | 491.50 | 483.07 | -      | 500.00 | 494.88 |        |
| 560  | -              | -              | -     | -     | -      | -      | -      | 547.06 | 554.65 | -      | 552.94 | 538.12 | -      | 568.75 | 548.60 |        |

**Actual Ratio - Bevel Helical Type - K2, K3, K4**

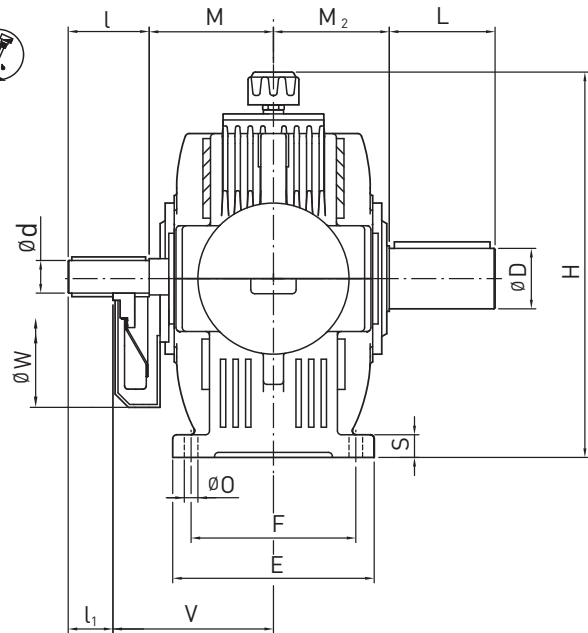
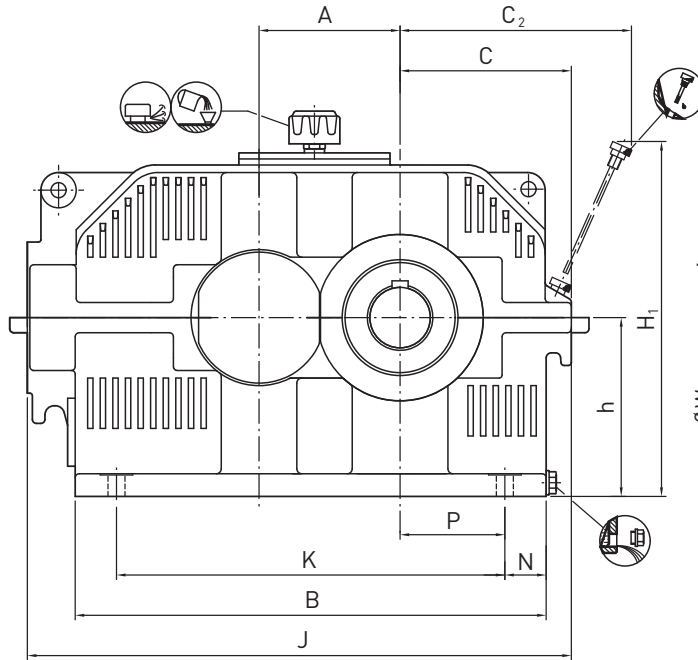
| Type | i <sub>N</sub> | Gear unit Size |       |       |       |        |        |        |        |        |        |        |        |        |        |        |
|------|----------------|----------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|      |                | 11             | 13    | 14    | 15    | 16     | 17     | 18     | 19     | 20     | 21     | 22     | 23     | 24     | 25     | 26     |
| K2   | 5              | -              | -     | -     | 4.88  | -      | -      | 4.82   | -      | -      | 5.06   | -      | -      | 4.91   | -      | -      |
|      | 5.6            | -              | 5.67  | -     | 5.50  | -      | -      | 5.41   | -      | -      | 5.50   | 5.44   | -      | 5.33   | 5.70   | -      |
|      | 6.3            | 6.21           | 6.35  | -     | 6.12  | -      | 6.50   | 6.24   | -      | 6.47   | 6.12   | 6.38   | 6.33   | 6.11   | 6.19   | 6.29   |
|      | 7.1            | 7.06           | 7.06  | -     | 7.00  | -      | 7.50   | 7.06   | -      | 7.29   | 7.00   | 7.06   | 7.38   | 7.06   | 7.05   | 7.24   |
|      | 8              | 8.24           | 7.75  | -     | 7.89  | -      | 8.24   | 7.78   | -      | 8.24   | 7.80   | 8.00   | 8.12   | 7.63   | 8.00   | 8.21   |
|      | 9              | 8.95           | 8.75  | -     | 8.89  | -      | 9.22   | 9.00   | -      | 9.18   | 8.78   | 8.90   | 9.11   | 8.75   | 8.75   | 9.18   |
|      | 10             | 10.12          | 10.00 | -     | 9.75  | -      | 10.56  | 9.83   | -      | 10.22  | 9.75   | 10.00  | 10.10  | 9.83   | 10.00  | 10.13  |
|      | 11.2           | 10.88          | 10.79 | -     | 10.99 | -      | 11.56  | 10.83  | -      | 11.50  | 10.86  | 11.14  | 11.44  | 10.62  | 11.14  | 11.50  |
|      | 12.5           | 12.46          | 12.19 | -     | 12.38 | -      | 12.85  | 12.54  | -      | 12.78  | 12.23  | 12.40  | 12.69  | 12.19  | 12.19  | 12.78  |
|      | 14             | 14.09          | 13.93 | -     | 14.00 | -      | 14.70  | 14.12  | -      | 14.24  | 14.00  | 13.93  | 14.07  | 14.12  | 13.93  | 14.10  |
|      | 16             | 15.15          | 15.50 | -     | 15.78 | -      | 16.10  | 15.56  | -      | 16.02  | 15.60  | 16.00  | 15.94  | 15.25  | 16.00  | 16.02  |
|      | 18             | 17.89          | 17.50 | -     | 17.78 | -      | 18.44  | 18.00  | -      | 18.35  | 17.56  | 17.80  | 18.22  | 17.50  | 17.50  | 18.35  |
|      | 20             | 20.24          | 20.00 | -     | 18.89 | -      | 21.11  | 18.96  | -      | 20.44  | 18.96  | 20.00  | 20.20  | 19.17  | 20.00  | 20.25  |
| 22.4 | 21.75          | -              | -     | 21.29 | 21.59 | 23.11  | 21.37  | 22.29  | 23.00  | 21.94  | 22.29  | 22.89  | 21.58  | 22.29  | 23.00  |        |
| K3   | 25             | -              | -     | 25.09 | 24.72 | 24.38  | 25.69  | 24.07  | 25.07  | 26.31  | 23.80  | 24.76  | 26.13  | 24.58  | 24.79  | 25.94  |
|      | 28             | -              | -     | 27.26 | 27.12 | 27.86  | 28.10  | 27.22  | 27.86  | 29.47  | 27.22  | 27.86  | 29.11  | 27.53  | 27.86  | 29.11  |
|      | 31.5           | -              | -     | 30.83 | 30.57 | 30.81  | 31.71  | 30.68  | 31.69  | 33.73  | 31.50  | 30.81  | 32.43  | 30.98  | 32.04  | 32.27  |
|      | 35.5           | -              | -     | 33.13 | 35.50 | 35.00  | 35.73  | 34.57  | 36.00  | 36.92  | 34.18  | 35.56  | 36.49  | 35.29  | 35.60  | 36.57  |
|      | 40             | -              | -     | 39.14 | 37.77 | 40.00  | 40.35  | 37.92  | 40.00  | 42.31  | 37.92  | 40.00  | 41.80  | 38.34  | 40.00  | 41.80  |
|      | 45             | -              | -     | 44.26 | 42.58 | 44.24  | 45.53  | 42.73  | 45.50  | 48.43  | 43.88  | 44.24  | 46.57  | 43.15  | 46.00  | 46.34  |
|      | 50             | -              | -     | 47.58 | 49.45 | 48.75  | 51.30  | 48.15  | 50.14  | 53.02  | 47.60  | 49.52  | 52.39  | 49.16  | 49.59  | 52.51  |
|      | 56             | -              | -     | 54.52 | 54.24 | 55.71  | 56.20  | 54.44  | 55.71  | 58.94  | 54.44  | 55.71  | 58.23  | 55.06  | 55.71  | 58.23  |
|      | 63             | -              | -     | 61.65 | 61.14 | 61.61  | 63.42  | 61.36  | 63.38  | 67.46  | 63.00  | 61.61  | 64.86  | 61.96  | 64.07  | 64.55  |
|      | 71             | -              | -     | 66.27 | 71.00 | 70.00  | 71.45  | 69.14  | 72.00  | 73.85  | 68.35  | 71.11  | 72.97  | 70.59  | 71.20  | 73.14  |
|      | 80             | -              | -     | 78.29 | -     | 80.00  | 80.69  | 75.14  | 80.00  | 84.63  | 76.47  | 80.00  | 83.61  | 77.43  | 80.00  | 83.61  |
|      | 90             | -              | -     | 88.53 | -     | 88.47  | 91.07  | 87.26  | 91.00  | 96.86  | 84.26  | 88.47  | 93.14  | 86.28  | 92.00  | 92.68  |
|      | 100            | -              | -     | 95.16 | -     | -      | 102.60 | 98.32  | 96.68  | 106.04 | 97.50  | 98.32  | 104.78 | 97.09  | 98.32  | 105.02 |
| K4   | 112            | -              | -     | -     | -     | -      | 112.53 | 110.61 | 111.43 | 115.53 | 105.78 | 111.43 | 118.61 | 110.61 | 111.43 | 116.37 |
|      | 125            | -              | -     | -     | -     | -      | 123.26 | 125.29 | 125.36 | 133.31 | 120.99 | 123.81 | 133.71 | 123.88 | 123.96 | 135.50 |
|      | 140            | -              | -     | -     | -     | -      | 139.69 | 141.18 | 139.29 | 146.38 | 140.00 | 139.29 | 150.96 | 139.41 | 139.29 | 149.15 |
|      | 160            | -              | -     | -     | -     | -      | 152.79 | 158.82 | 158.44 | 163.92 | 151.90 | 154.03 | 168.21 | 158.82 | 160.18 | 167.40 |
|      | 180            | -              | -     | -     | -     | -      | 172.43 | 174.52 | 180.00 | 187.62 | 168.52 | 177.78 | 187.38 | 172.55 | 178.00 | 185.57 |
|      | 200            | -              | -     | -     | -     | -      | 194.26 | 196.64 | 200.00 | 205.39 | 195.00 | 200.00 | 210.80 | 194.18 | 200.00 | 210.27 |
|      | 224            | -              | -     | -     | -     | -      | 219.39 | 221.22 | 227.50 | 235.37 | 211.57 | 221.18 | 216.76 | 221.22 | 230.00 | 214.16 |
|      | 250            | -              | -     | -     | -     | -      | 247.60 | 250.59 | 250.71 | 269.40 | 241.98 | 247.62 | 241.53 | 247.76 | 247.93 | 240.37 |
|      | 280            | -              | -     | -     | -     | -      | 278.94 | 282.35 | 278.57 | 294.92 | 280.00 | 278.57 | 269.06 | 278.82 | 278.57 | 266.46 |
|      | 315            | -              | -     | -     | -     | -      | 305.58 | 317.65 | 316.88 | 327.84 | 303.79 | 308.07 | 301.92 | 317.65 | 320.36 | 298.30 |
|      | 355            | -              | -     | -     | -     | -      | 344.86 | 346.52 | 360.00 | 375.24 | 343.64 | 355.56 | 336.42 | 342.19 | 356.00 | 334.80 |
|      | 400            | -              | -     | -     | -     | -      | 388.52 | 389.84 | 400.00 | 410.78 | 372.83 | 400.00 | 374.76 | 389.84 | 400.00 | 420.55 |
|      | 450            | -              | -     | -     | -     | -      | 438.78 | -      | 455.00 | 470.74 | -      | 442.35 | 433.52 | -      | 460.00 | 428.33 |
| 500  | -              | -              | -     | -     | -     | 495.19 | -      | 490.91 | 538.80 | -      | 490.91 | 483.07 | -      | 490.91 | 480.75 |        |
| 560  | -              | -              | -     | -     | -     | 557.87 | -      | 558.41 | 589.84 | -      | 542.89 | 538.12 | -      | 564.55 | 532.92 |        |

## Type - S1HN

Single Stage  
Size 11 to 18

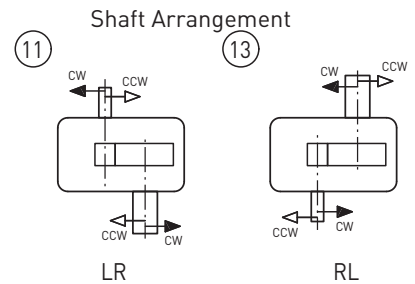
### Horizontal Mounting

### Helical Gear Unit



\*For other shaft options refer page 60 to 64.

| Size   | Input Shaft     |                |     |           |                |    | Output Shaft |     |     |    |     |                | Average Weight [kg] | Oil Quantity [Litres] |
|--------|-----------------|----------------|-----|-----------|----------------|----|--------------|-----|-----|----|-----|----------------|---------------------|-----------------------|
|        | i = 1.25 - 3.55 |                |     | i = 4 - 5 |                |    | M            | V   | W   | D  | L   | M <sub>2</sub> |                     |                       |
| d      | l               | l <sub>1</sub> | d   | l         | l <sub>1</sub> |    |              |     |     |    |     |                |                     |                       |
| S1..11 | 25              | 100            | 50  | 20        | 100            | 50 | 150          | 200 | 180 | 32 | 60  | 120            | 35                  | 1.5                   |
| S1..13 | 35              | 110            | 60  | 30        | 110            | 60 | 150          | 200 | 180 | 45 | 90  | 125            | 65                  | 2.5                   |
| S1..15 | 50              | 130            | 80  | 40        | 130            | 80 | 160          | 210 | 230 | 55 | 90  | 135            | 115                 | 4                     |
| S1..17 | 60              | 155            | 105 | 50        | 130            | 80 | 165          | 215 | 300 | 70 | 125 | 150            | 205                 | 7                     |
| S1..18 | 70              | 155            | 105 | 55        | 135            | 85 | 190          | 240 | 300 | 80 | 150 | 170            | 275                 | 9                     |



| Size   | Foundation |     |     |                              |     |     |     |                              |                              |     |     |    |    |     |    |
|--------|------------|-----|-----|------------------------------|-----|-----|-----|------------------------------|------------------------------|-----|-----|----|----|-----|----|
|        | A          | B   | C   | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <sub>2</sub> <sup>2)</sup> | J   | K   | N  | O  | P   | S  |
| S1..11 | 80         | 268 | 115 | 171                          | 180 | 150 | 100 | 248                          | 290                          | 331 | 175 | 36 | 14 | 60  | 24 |
| S1..13 | 100        | 349 | 135 | 195                          | 190 | 150 | 125 | 295                          | 340                          | 415 | 220 | 37 | 14 | 75  | 24 |
| S1..15 | 125        | 432 | 165 | 231                          | 228 | 170 | 160 | 352                          | 410                          | 513 | 290 | 38 | 14 | 100 | 24 |
| S1..17 | 160        | 536 | 205 | 282                          | 250 | 210 | 200 | 432                          | 480                          | 637 | 350 | 48 | 18 | 120 | 32 |
| S1..18 | 180        | 600 | 220 | 311                          | 284 | 230 | 225 | 475                          | 525                          | 700 | 410 | 43 | 18 | 145 | 32 |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

1) Max. dimensions; details acc. to order related documents

2) Approximate values; exact values acc. to order related documents

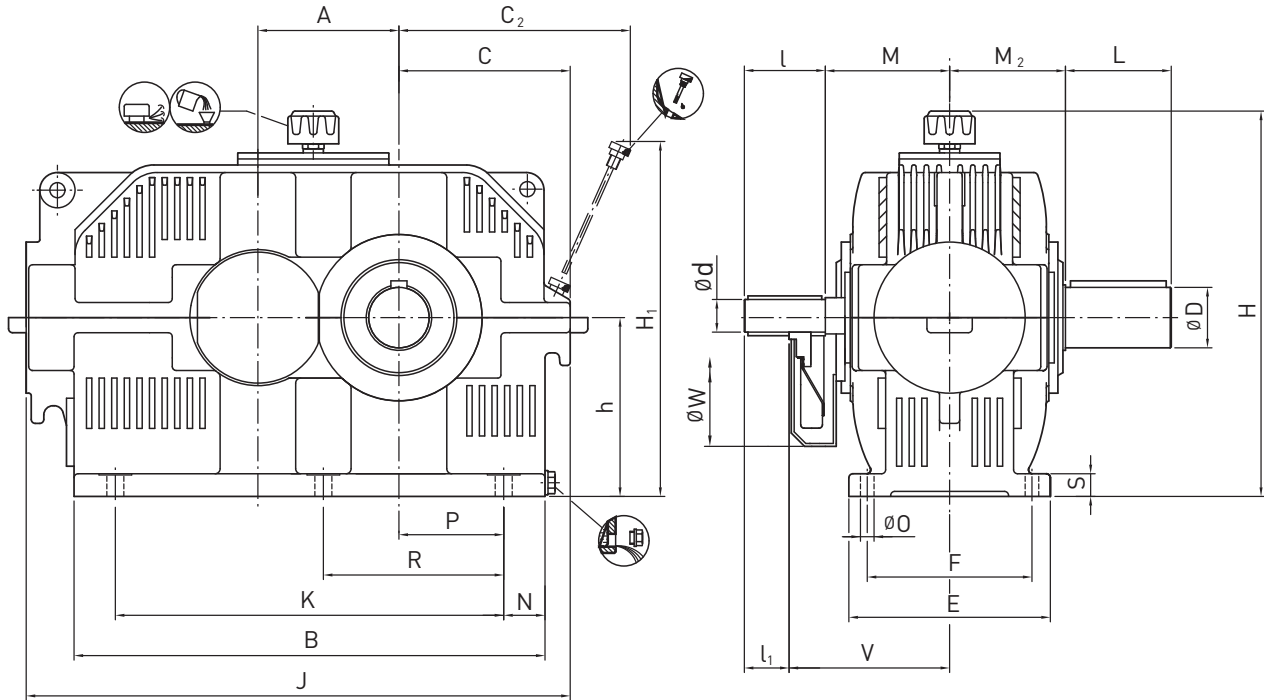


**Helical Gear Unit**

**Horizontal Mounting**

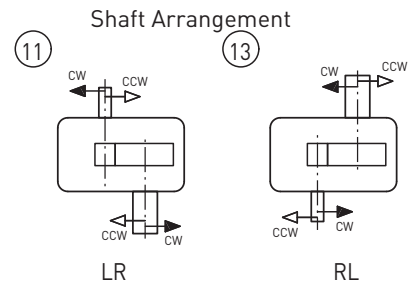
**Type - S1HN**

Single Stage  
 Size 20 to 26



\*For other shaft options refer page 60 to 64.

| Size   | Input Shaft     |     |                |           |     |                | Output Shaft |     |     |     |     | Average Weight [kg] | Oil Quantity [Litres] |                |
|--------|-----------------|-----|----------------|-----------|-----|----------------|--------------|-----|-----|-----|-----|---------------------|-----------------------|----------------|
|        | i = 1.25 - 3.55 |     |                | i = 4 - 5 |     |                | M            | V   | W   | D   | L   |                     |                       | M <sub>2</sub> |
|        | d               | l   | l <sub>1</sub> | d         | l   | l <sub>1</sub> |              |     |     |     |     |                     |                       |                |
| S1..20 | 85              | 180 | 130            | 70        | 155 | 105            | 215          | 265 | 380 | 100 | 175 | 210                 | 320                   | 12             |
| S1..21 | 95              | 180 | 130            | 80        | 180 | 130            | 260          | 310 | 530 | 110 | 180 | 220                 | 415                   | 16             |
| S1..22 | 105             | 220 | 170            | 90        | 180 | 130            | 270          | 320 | 530 | 120 | 200 | 230                 | 570                   | 21             |
| S1..23 | 115             | 220 | 170            | 95        | 180 | 130            | 280          | 330 | 650 | 140 | 225 | 260                 | 760                   | 30             |
| S1..24 | 130             | 250 | 200            | 110       | 220 | 170            | 320          | 370 | 650 | 160 | 260 | 295                 | 1025                  | 42             |
| S1..25 | 145             | 250 | 200            | 120       | 220 | 170            | 360          | 410 | 650 | 170 | 270 | 305                 | 1400                  | 58             |
| S1..26 | 160             | 300 | 250            | 130       | 250 | 200            | 360          | 410 | 650 | 190 | 300 | 345                 | 1900                  | 80             |



| Size   | Foundation |      |     |                              |     |     |     |                              |                              |      |      |     |    |     |     |    |
|--------|------------|------|-----|------------------------------|-----|-----|-----|------------------------------|------------------------------|------|------|-----|----|-----|-----|----|
|        | A          | B    | C   | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <sub>2</sub> <sup>2)</sup> | J    | K    | N   | O  | P   | R   | S  |
| S1..20 | 225        | 755  | 275 | 387                          | 314 | 270 | 280 | 588                          | 620                          | 890  | 520  | 54  | 23 | 180 |     | 36 |
| S1..21 | 250        | 843  | 305 | 435                          | 385 | 310 | 315 | 664                          | 685                          | 980  | 570  | 64  | 27 | 195 |     | 45 |
| S1..22 | 280        | 935  | 340 | 474                          | 400 | 340 | 355 | 741                          | 760                          | 1080 | 630  | 75  | 27 | 215 | 370 | 45 |
| S1..23 | 315        | 1054 | 375 | 537                          | 450 | 380 | 400 | 831                          | 845                          | 1210 | 705  | 87  | 33 | 240 | 420 | 55 |
| S1..24 | 355        | 1169 | 425 | 598                          | 515 | 410 | 450 | 908                          | 940                          | 1340 | 810  | 87  | 33 | 280 | 480 | 55 |
| S1..25 | 400        | 1311 | 475 | 670                          | 535 | 460 | 500 | 1013                         | 1040                         | 1530 | 910  | 98  | 33 | 315 | 540 | 55 |
| S1..26 | 450        | 1476 | 535 | 753                          | 600 | 510 | 560 | 1137                         | 1150                         | 1720 | 1025 | 108 | 39 | 355 | 615 | 65 |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

1) Max. dimensions; details acc. to order related documents

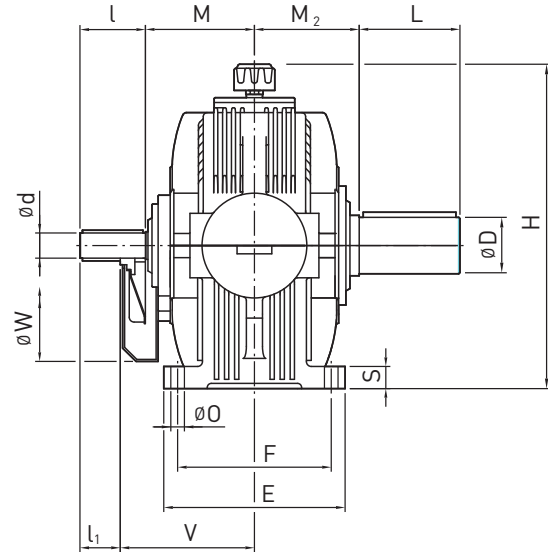
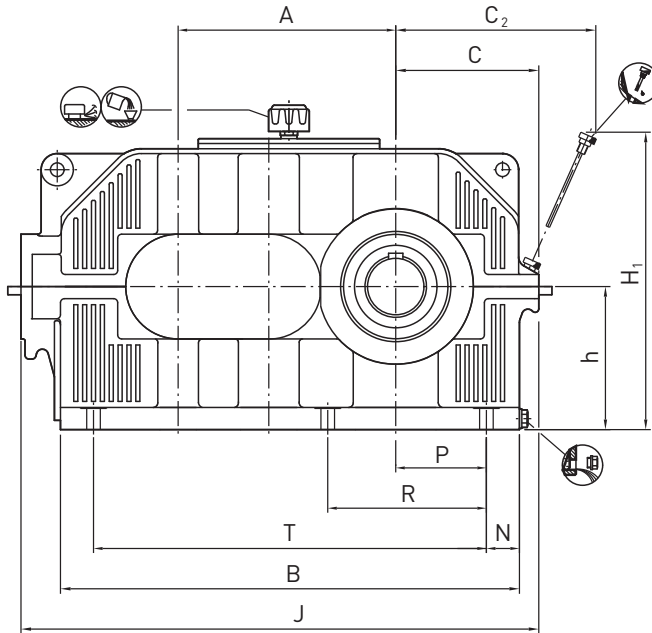
2) Approximate values; exact values acc. to order related documents

## Type - S2H

Double Stage  
Size 14 to 18

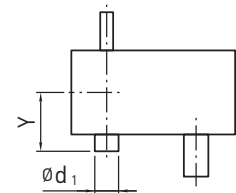
## Horizontal Mounting

## Helical Gear Unit



\*For other shaft options refer page 60 to 64.

| Size   | Input Shaft    |     |                |             |     |                |          |     |                |     |     | Output Shaft |    |                | Backstop                     |                 | Average Weight [kg] | Oil Quantity [Litres] |   |
|--------|----------------|-----|----------------|-------------|-----|----------------|----------|-----|----------------|-----|-----|--------------|----|----------------|------------------------------|-----------------|---------------------|-----------------------|---|
|        | i = 5.6 - 12.5 |     |                | i = 14 - 18 |     |                | i = 22.4 |     |                |     |     | D            | L  | M <sub>2</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                     |                       |   |
|        | d              | l   | l <sub>1</sub> | d           | l   | l <sub>1</sub> | d        | l   | l <sub>1</sub> | M   | V   |              |    |                |                              |                 |                     |                       | W |
| S2..14 | 25             | 100 | 55             | 20          | 100 | 55             | 20       | 100 | 55             | 140 | 185 | 210          | 48 | 95             | 125                          | 95              | 190                 | 58                    | 2 |
| S2..15 | 30             | 110 | 65             | 25          | 100 | 55             |          |     |                | 155 | 200 | 250          | 55 | 95             | 135                          | 110             | 210                 | 78                    | 3 |
| S2..16 | 35             | 110 | 65             | 30          | 110 | 65             | 20       | 100 | 55             | 155 | 200 | 270          | 60 | 130            | 145                          | 135             | 220                 | 110                   | 4 |
| S2..17 | 45             | 130 | 85             | 35          | 110 | 65             | 25       | 100 | 55             | 160 | 205 | 300          | 70 | 135            | 150                          | 140             | 230                 | 145                   | 5 |
| S2..18 | 50             | 130 | 85             | 40          | 130 | 85             |          |     |                | 180 | 225 | 300          | 80 | 160            | 170                          | 150             | 250                 | 200                   | 8 |



| Size   | Foundation |     |     |                              |     |     |     |                              |                              |     |    |    |     |     |    |     |
|--------|------------|-----|-----|------------------------------|-----|-----|-----|------------------------------|------------------------------|-----|----|----|-----|-----|----|-----|
|        | A          | B   | C   | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <sub>2</sub> <sup>2)</sup> | J   | N  | O  | P   | R   | S  | T   |
| S2..14 | 190        | 400 | 140 | 194                          | 190 | 150 | 125 | 278                          | 340                          | 466 | 38 | 14 | 80  | 140 | 24 | 310 |
| S2..15 | 215        | 460 | 155 | 215                          | 228 | 170 | 140 | 306                          | 370                          | 526 | 38 | 14 | 95  | 170 | 24 | 355 |
| S2..16 | 240        | 521 | 175 | 231                          | 233 | 190 | 160 | 327                          | 410                          | 595 | 38 | 14 | 110 | 195 | 24 | 400 |
| S2..17 | 270        | 580 | 190 | 257                          | 250 | 210 | 180 | 378                          | 450                          | 664 | 43 | 18 | 115 | 210 | 32 | 440 |
| S2..18 | 305        | 648 | 215 | 281                          | 284 | 230 | 200 | 404                          | 490                          | 743 | 43 | 18 | 135 | 240 | 32 | 505 |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

1) Max. dimensions; details acc. to order related documents

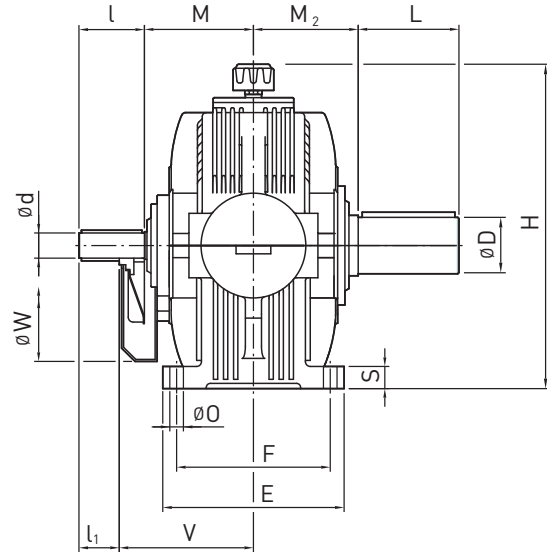
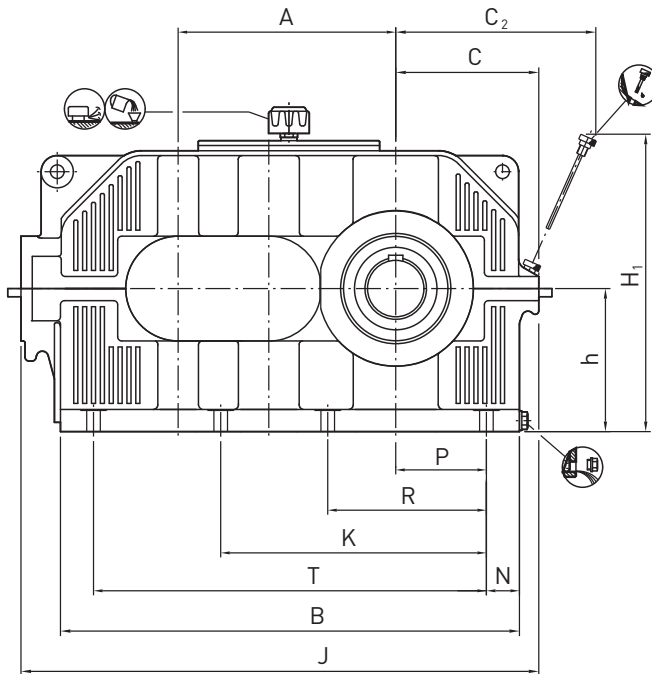
2) Approximate values; exact values acc. to order related documents

**Helical Gear Unit**

**Horizontal Mounting**

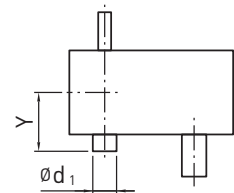
**Type - S2H**

Double Stage  
 Size 19 to 26



\*For other shaft options refer page 60 to 64.

| Size   | Input Shaft    |     |                |             |     |                |          |     |                | Output Shaft |     |     | Backstop |     | Average Weight [kg] | Oil Quantity [Litres] |                |                              |                 |
|--------|----------------|-----|----------------|-------------|-----|----------------|----------|-----|----------------|--------------|-----|-----|----------|-----|---------------------|-----------------------|----------------|------------------------------|-----------------|
|        | i = 5.6 - 12.5 |     |                | i = 14 - 18 |     |                | i = 22.4 |     |                | M            | V   | W   | D        | L   |                     |                       | M <sub>2</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |
|        | d              | l   | l <sub>1</sub> | d           | l   | l <sub>1</sub> | d        | l   | l <sub>1</sub> |              |     |     |          |     |                     |                       |                |                              |                 |
| S2..19 | 55             | 135 | 85             | 45          | 130 | 80             | 35       | 110 | 60             | 195          | 245 | 320 | 90       | 165 | 180                 | 175                   | 280            | 270                          | 11              |
| S2..20 | 60             | 155 | 105            | 50          | 130 | 80             | 40       | 130 | 80             | 205          | 255 | 360 | 100      | 200 | 200                 | 190                   | 295            | 360                          | 14              |
| S2..21 | 70             | 155 | 105            | 55          | 135 | 85             |          |     |                | 245          | 295 | 360 | 110      | 200 | 220                 | 210                   | 335            | 490                          | 21              |
| S2..22 | 75             | 155 | 105            | 60          | 155 | 105            | 55       | 135 | 85             | 260          | 310 | 430 | 120      | 210 | 230                 | 210                   | 345            | 675                          | 29              |
| S2..23 | 85             | 180 | 130            | 70          | 155 | 105            | 60       | 155 | 105            | 275          | 325 | 430 | 140      | 250 | 260                 | 245                   | 370            | 910                          | 42              |
| S2..24 | 95             | 180 | 130            | 80          | 180 | 130            |          |     |                | 340          | 390 | 450 | 160      | 290 | 295                 | 290                   | 445            | 1230                         | 60              |
| S2..25 | 105            | 220 | 170            | 90          | 180 | 130            | 70       | 155 | 105            | 350          | 400 | 550 | 170      | 300 | 305                 | 290                   | 455            | 1675                         | 85              |
| S2..26 | 115            | 220 | 170            | 95          | 180 | 130            | 80       | 180 | 130            | 350          | 400 | 550 | 190      | 350 | 345                 | 310                   | 465            | 2260                         | 115             |



| Size   | Foundation |      |     |                              |     |     |     |                              |                              |      |     |     |    |     |     |    |      |
|--------|------------|------|-----|------------------------------|-----|-----|-----|------------------------------|------------------------------|------|-----|-----|----|-----|-----|----|------|
|        | A          | B    | C   | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <sub>2</sub> <sup>2)</sup> | J    | N   | K   | O  | P   | R   | S  | T    |
| S2..19 | 340        | 716  | 240 | 315                          | 303 | 250 | 225 | 455                          | 540                          | 825  | 53  |     | 23 | 145 | 255 | 36 | 555  |
| S2..20 | 385        | 807  | 260 | 345                          | 314 | 270 | 250 | 496                          | 590                          | 917  | 54  |     | 23 | 165 | 290 | 36 | 635  |
| S2..21 | 430        | 898  | 290 | 394                          | 385 | 310 | 280 | 572                          | 650                          | 1020 | 64  |     | 27 | 180 | 315 | 45 | 705  |
| S2..22 | 480        | 1010 | 325 | 429                          | 400 | 340 | 315 | 635                          | 720                          | 1140 | 75  |     | 27 | 200 | 355 | 45 | 785  |
| S2..23 | 540        | 1139 | 355 | 481                          | 450 | 380 | 355 | 705                          | 800                          | 1285 | 87  |     | 33 | 220 | 405 | 55 | 875  |
| S2..24 | 605        | 1269 | 390 | 541                          | 515 | 410 | 400 | 795                          | 890                          | 1420 | 92  |     | 33 | 245 | 450 | 55 | 975  |
| S2..25 | 680        | 1411 | 440 | 591                          | 535 | 460 | 450 | 865                          | 990                          | 1580 | 98  |     | 33 | 280 | 510 | 55 | 1105 |
| S2..26 | 765        | 1586 | 490 | 659                          | 600 | 510 | 500 | 954                          | 1090                         | 1775 | 108 | 940 | 39 | 315 | 575 | 65 | 1245 |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

1) Max. dimensions; details acc. to order related documents

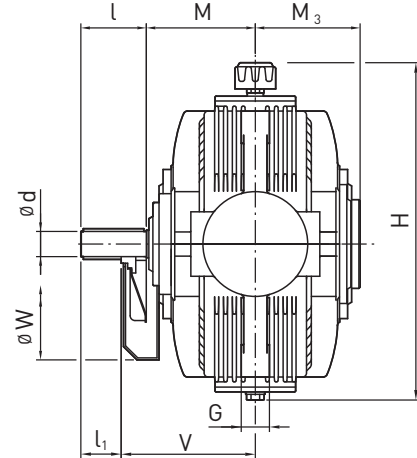
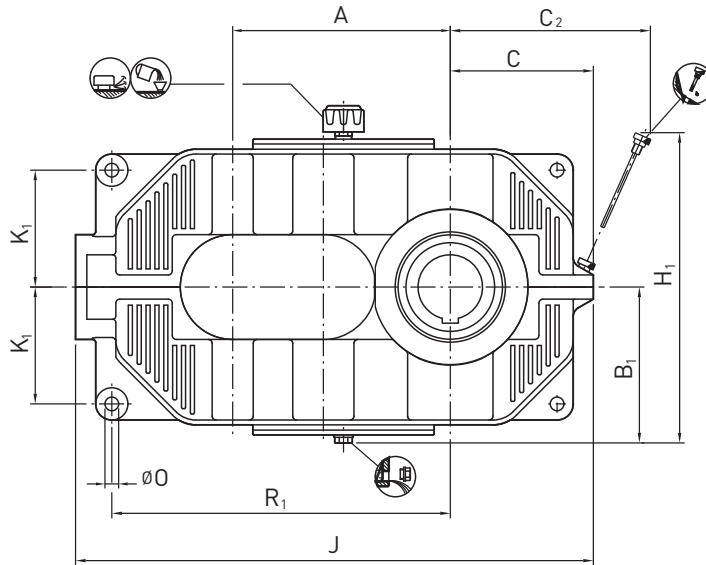
2) Approximate values; exact values acc. to order related documents

### Type - S2T

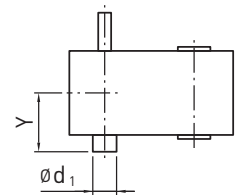
Double Stage  
Size 14 to 18

### Torque Arm Mounting

### Helical Gear Unit



| Size   | Input Shaft    |     |                |             |     |                |          |     |                |     |     | Output Shaft | Backstop |                | Average Weight [kg] | Oil Quantity [Litres] |                              |                 |
|--------|----------------|-----|----------------|-------------|-----|----------------|----------|-----|----------------|-----|-----|--------------|----------|----------------|---------------------|-----------------------|------------------------------|-----------------|
|        | i = 5.6 - 12.5 |     |                | i = 14 - 18 |     |                | i = 22.4 |     |                | M   | V   |              | W        | M <sub>3</sub> |                     |                       | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |
|        | d              | l   | l <sub>1</sub> | d           | l   | l <sub>1</sub> | d        | l   | l <sub>1</sub> |     |     |              |          |                |                     |                       |                              |                 |
| S2..14 | 25             | 100 | 55             | 20          | 100 | 55             | 20       | 100 | 55             | 140 | 185 | 210          | 120      | 95             | 190                 | 51                    | 1                            |                 |
| S2..15 | 30             | 110 | 65             | 25          | 100 | 55             |          |     |                | 155 | 200 | 250          | 135      | 110            | 210                 | 68                    | 2                            |                 |
| S2..16 | 35             | 110 | 65             | 30          | 110 | 65             | 20       | 100 | 55             | 155 | 200 | 270          | 145      | 135            | 220                 | 96                    | 3                            |                 |
| S2..17 | 45             | 130 | 85             | 35          | 110 | 65             | 25       | 100 | 55             | 160 | 205 | 300          | 150      | 140            | 230                 | 127                   | 4                            |                 |
| S2..18 | 50             | 130 | 85             | 40          | 130 | 85             |          |     |                | 180 | 225 | 300          | 170      | 150            | 250                 | 174                   | 5                            |                 |



| Size   | Foundation |                              |     |                              |    |                              |                 |                |    |                |
|--------|------------|------------------------------|-----|------------------------------|----|------------------------------|-----------------|----------------|----|----------------|
|        | A          | B <sub>1</sub> <sup>2)</sup> | C   | C <sub>2</sub> <sup>1)</sup> | G  | H <sub>1</sub> <sup>1)</sup> | H <sup>2)</sup> | K <sub>1</sub> | O  | R <sub>1</sub> |
| S2..14 | 190        | 155                          | 140 | 194                          | 25 | 308                          | 370             | 90             | 18 | 300            |
| S2..15 | 215        | 170                          | 155 | 215                          | 28 | 336                          | 400             | 102            | 18 | 336            |
| S2..16 | 240        | 190                          | 175 | 231                          | 30 | 357                          | 440             | 115            | 20 | 380            |
| S2..17 | 270        | 210                          | 190 | 257                          | 32 | 408                          | 480             | 136            | 20 | 430            |
| S2..18 | 305        | 230                          | 215 | 281                          | 35 | 434                          | 520             | 146            | 24 | 478            |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

1) Max. dimensions; details acc. to order related documents

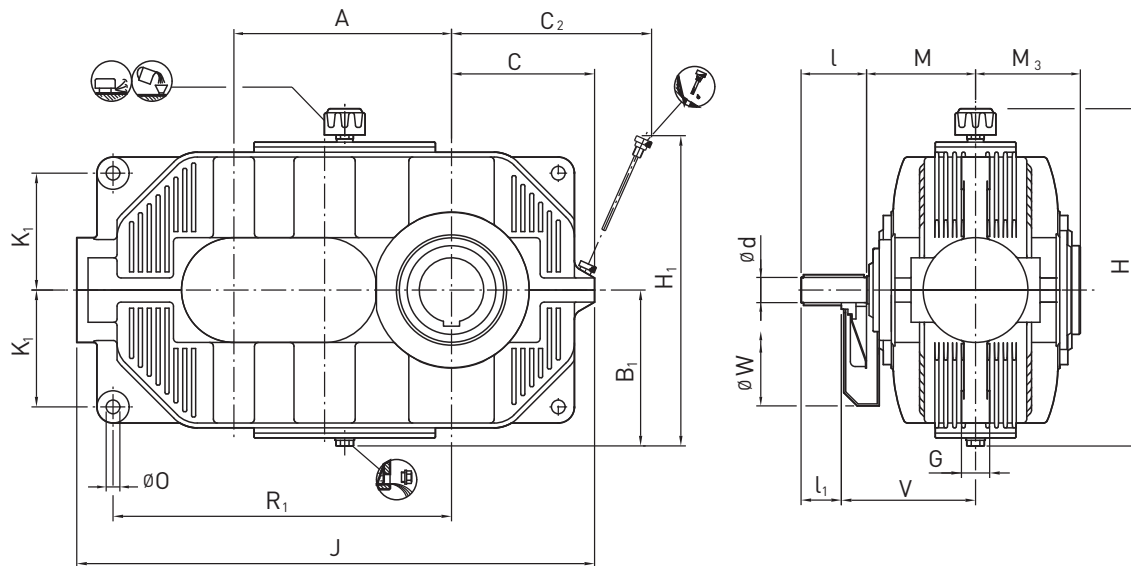
2) Approximate values; exact values acc. to order related documents

**Helical Gear Unit**

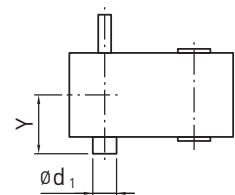
**Torque Arm Mounting**

**Type - S2T**

Double Stage  
 Size 19 to 26



| Size   | Input Shaft    |     |                |             |     |                |          |     |                |     |     |     | Output Shaft | Backstop       |                              | Average Weight [kg] | Oil Quantity [Litres] |                 |
|--------|----------------|-----|----------------|-------------|-----|----------------|----------|-----|----------------|-----|-----|-----|--------------|----------------|------------------------------|---------------------|-----------------------|-----------------|
|        | i = 5.6 - 12.5 |     |                | i = 14 - 18 |     |                | i = 22.4 |     |                | M   | V   | W   |              | M <sub>3</sub> | d <sub>1</sub> <sup>1)</sup> |                     |                       | Y <sup>1)</sup> |
|        | d              | l   | l <sub>1</sub> | d           | l   | l <sub>1</sub> | d        | l   | l <sub>1</sub> |     |     |     |              |                |                              |                     |                       |                 |
| S2..19 | 55             | 135 | 85             | 45          | 130 | 80             | 35       | 110 | 60             | 195 | 245 | 320 | 180          | 175            | 280                          | 235                 | 6                     |                 |
| S2..20 | 60             | 155 | 105            | 50          | 130 | 80             | 40       | 130 | 80             | 205 | 255 | 360 | 190          | 190            | 295                          | 314                 | 8                     |                 |
| S2..21 | 70             | 155 | 105            | 55          | 135 | 85             |          |     |                | 245 | 295 | 360 | 220          | 210            | 335                          | 428                 | 12                    |                 |
| S2..22 | 75             | 155 | 105            | 60          | 155 | 105            | 55       | 135 | 85             | 260 | 310 | 430 | 230          | 210            | 345                          | 595                 | 17                    |                 |
| S2..23 | 85             | 180 | 130            | 70          | 155 | 105            | 60       | 155 | 105            | 275 | 325 | 430 | 260          | 245            | 370                          | 800                 | 24                    |                 |
| S2..24 | 95             | 180 | 130            | 80          | 180 | 130            |          |     |                | 340 | 390 | 450 | 295          | 290            | 445                          | 1080                | 35                    |                 |
| S2..25 | 105            | 220 | 170            | 90          | 180 | 130            | 70       | 155 | 105            | 350 | 400 | 550 | 305          | 290            | 455                          | 1475                | 50                    |                 |
| S2..26 | 115            | 220 | 170            | 95          | 180 | 130            | 80       | 180 | 130            | 350 | 400 | 550 | 345          | 310            | 465                          | 1990                | 65                    |                 |



| Size   | Foundation |                              |     |                              |     |                              |                 |                |    |                |
|--------|------------|------------------------------|-----|------------------------------|-----|------------------------------|-----------------|----------------|----|----------------|
|        | A          | B <sub>1</sub> <sup>2)</sup> | C   | C <sub>2</sub> <sup>1)</sup> | G   | H <sub>1</sub> <sup>1)</sup> | H <sup>2)</sup> | K <sub>1</sub> | O  | R <sub>1</sub> |
| S2..19 | 340        | 255                          | 240 | 315                          | 45  | 485                          | 570             | 170            | 24 | 525            |
| S2..20 | 385        | 280                          | 260 | 345                          | 50  | 526                          | 620             | 190            | 28 | 590            |
| S2..21 | 430        | 310                          | 290 | 394                          | 55  | 602                          | 680             | 220            | 28 | 660            |
| S2..22 | 480        | 345                          | 325 | 429                          | 60  | 665                          | 750             | 255            | 36 | 740            |
| S2..23 | 540        | 385                          | 355 | 481                          | 70  | 735                          | 830             | 290            | 40 | 840            |
| S2..24 | 605        | 430                          | 390 | 541                          | 80  | 825                          | 920             | 325            | 48 | 930            |
| S2..25 | 680        | 480                          | 440 | 591                          | 90  | 895                          | 1020            | 370            | 48 | 1035           |
| S2..26 | 765        | 530                          | 490 | 659                          | 105 | 984                          | 1120            | 415            | 55 | 1165           |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

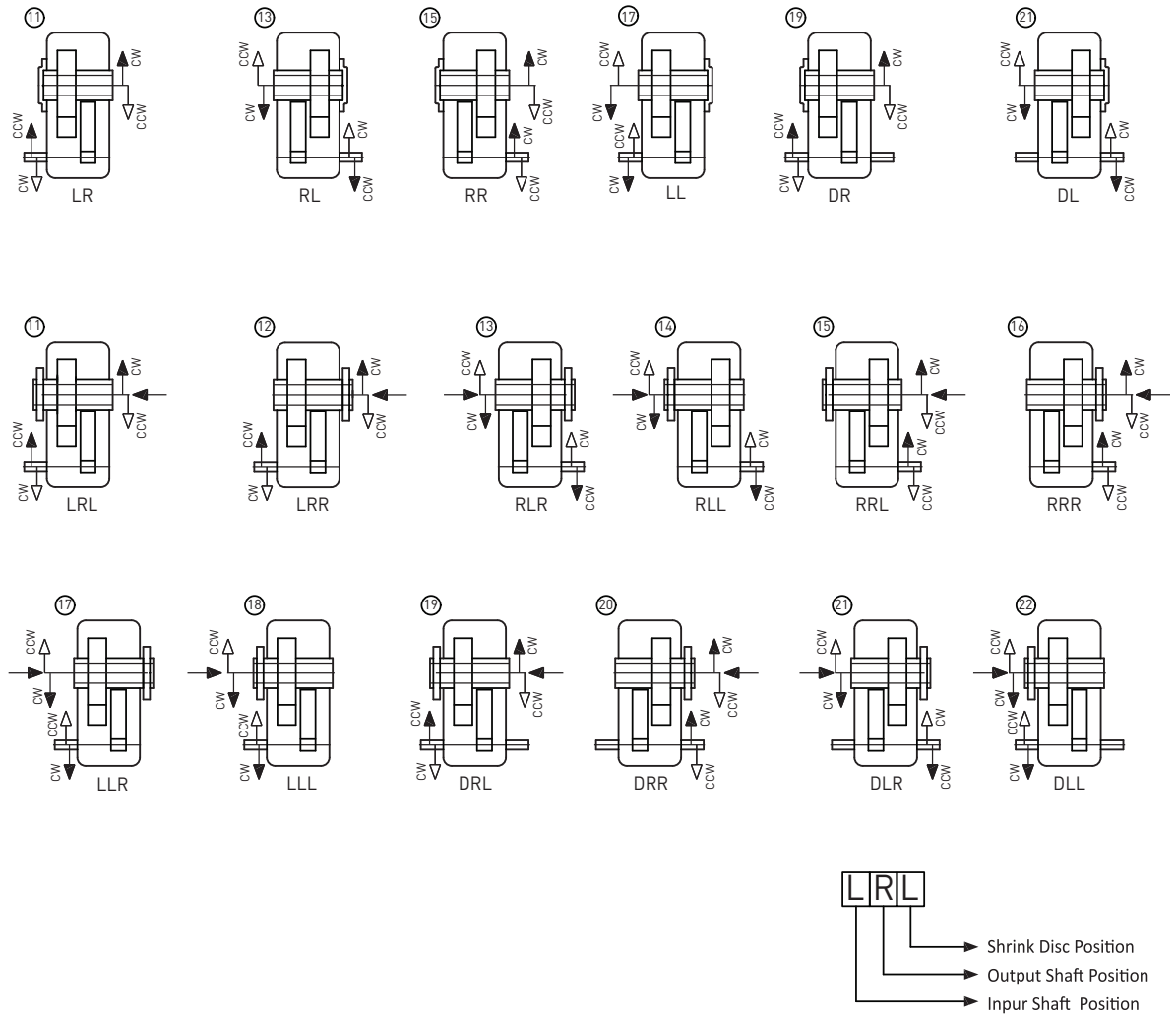
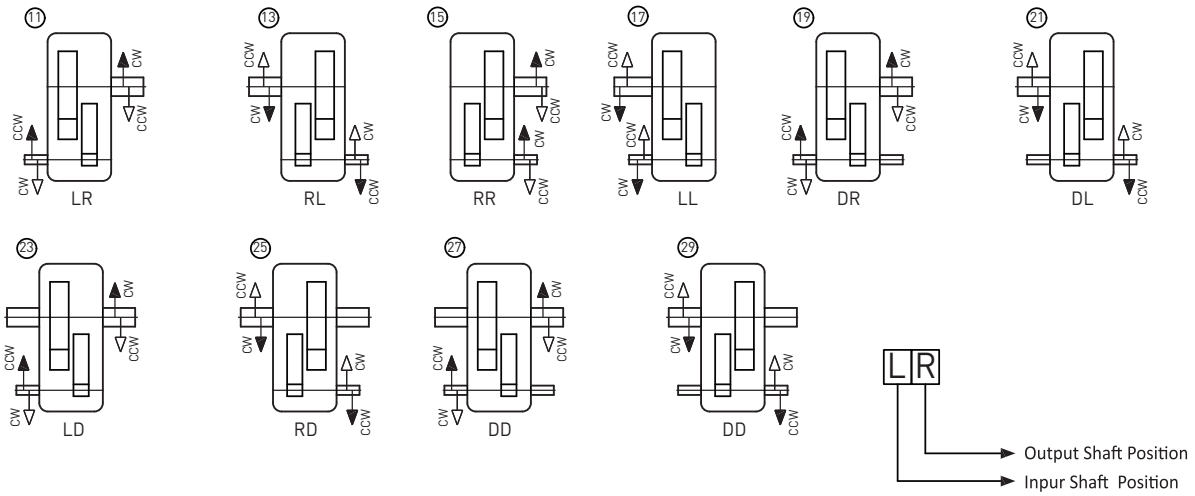
1) Max. dimensions; details acc. to order related documents

2) Approximate values; exact values acc. to order related documents

**Type - S2**  
Double Stage

**Shaft Arrangement**

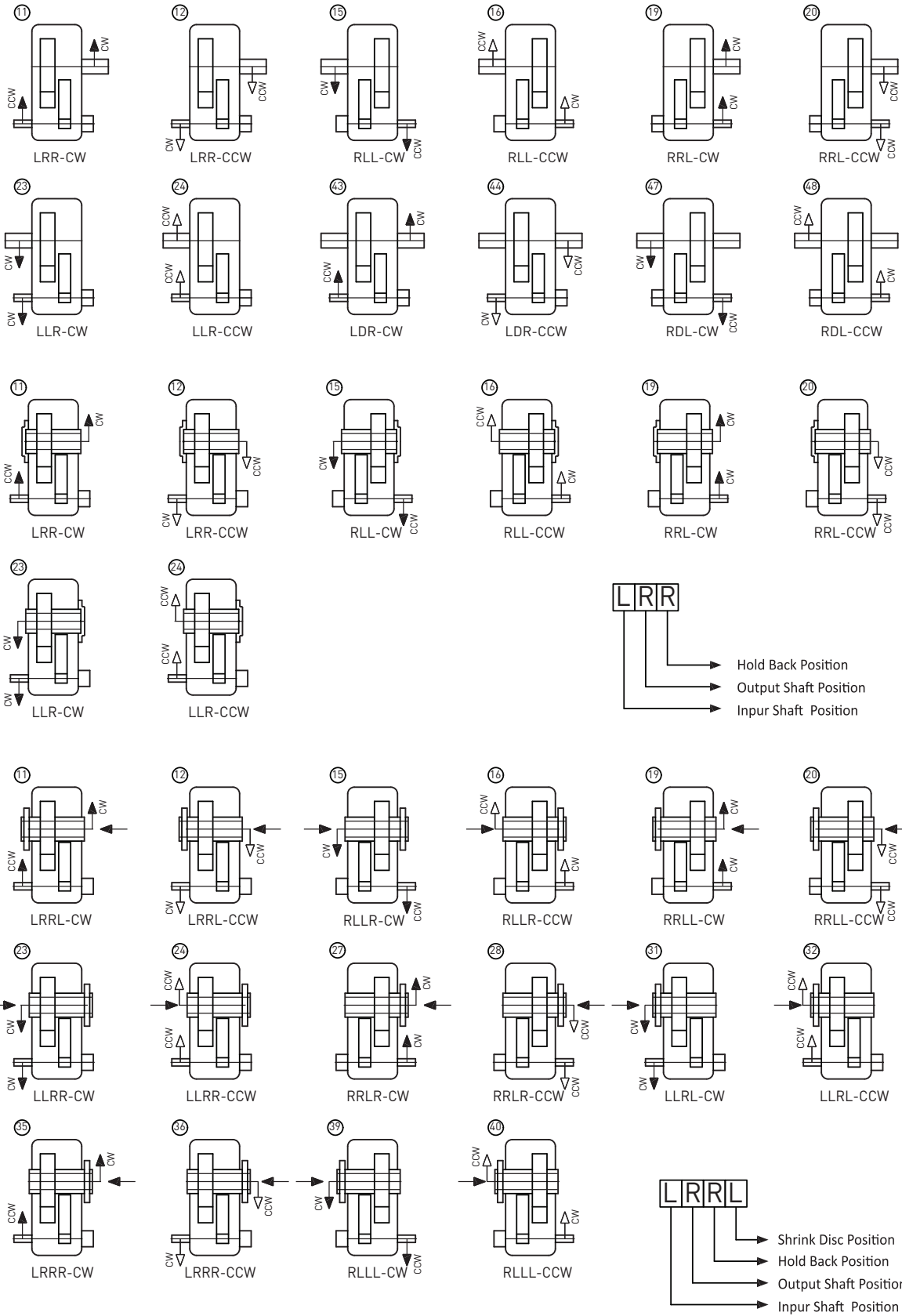
**Helical Gear Unit**



**Helical Gear Unit**

**Shaft Arrangement - Hold Back**

**Type - S2**  
**Double Stage**

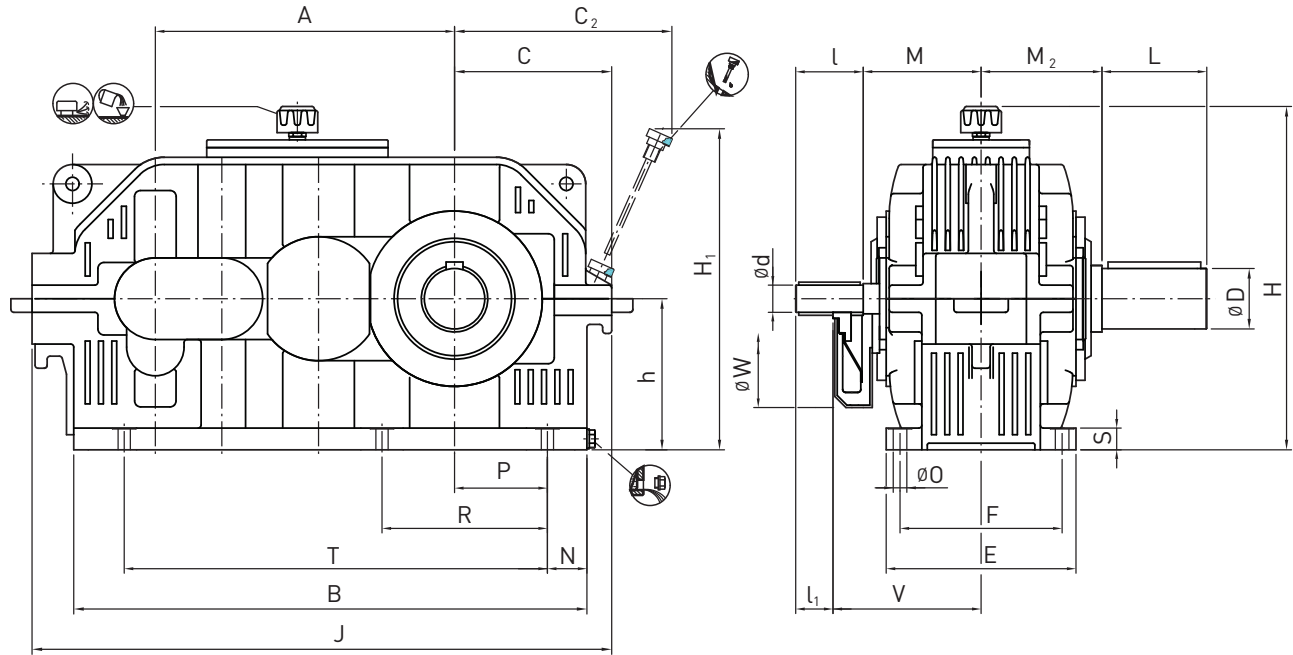


### Type - S3H

Triple Stage  
Size 16 to 18

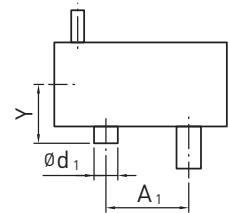
### Horizontal Mounting

### Helical Gear Unit



\*For other shaft options refer page 60 to 64.

| Size   | Input Shaft |     |                |           |     |                |         |     |                | Output Shaft |     |                | Backstop       |                              |                 | Average Weight [kg] | Oil Quantity [Litres] |     |     |    |
|--------|-------------|-----|----------------|-----------|-----|----------------|---------|-----|----------------|--------------|-----|----------------|----------------|------------------------------|-----------------|---------------------|-----------------------|-----|-----|----|
|        | i = 25-50   |     |                | i = 56-80 |     |                | i = 112 |     |                | D            | L   | M <sub>2</sub> | A <sub>1</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                     |                       |     |     |    |
|        | d           | l   | l <sub>1</sub> | d         | l   | l <sub>1</sub> | d       | l   | l <sub>1</sub> |              |     |                |                |                              |                 |                     |                       | M   | V   | W  |
| S3..16 | 24          | 100 | 50             | 19        | 100 | 50             | 19      | 100 | 50             | 155          | 200 | 270            | 60             | 130                          | 145             | 240                 | 95                    | 215 | 120 | 7  |
| S3..17 | 28          | 100 | 50             | 24        | 100 | 50             | 19      | 100 | 50             | 160          | 205 | 270            | 70             | 135                          | 150             | 270                 | 95                    | 215 | 160 | 8  |
| S3..18 | 30          | 110 | 60             | 25        | 100 | 50             |         |     |                | 180          | 225 | 300            | 80             | 160                          | 170             | 305                 | 140                   | 265 | 215 | 10 |



| Size   | Foundation |     |     |                              |     |     |     |                              |                              |     |    |    |     |     |    |     |
|--------|------------|-----|-----|------------------------------|-----|-----|-----|------------------------------|------------------------------|-----|----|----|-----|-----|----|-----|
|        | A          | B   | C   | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <sub>2</sub> <sup>2)</sup> | J   | N  | O  | P   | R   | S  | T   |
| S3..16 | 311        | 537 | 175 | 231                          | 233 | 190 | 160 | 327                          | 410                          | 591 | 38 | 14 | 110 | 195 | 24 | 450 |
| S3..17 | 350        | 592 | 190 | 257                          | 250 | 210 | 180 | 378                          | 450                          | 676 | 43 | 18 | 115 | 210 | 32 | 495 |
| S3..18 | 395        | 671 | 215 | 281                          | 284 | 230 | 200 | 404                          | 490                          | 766 | 43 | 18 | 135 | 240 | 32 | 565 |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

1) Max. dimensions; details acc. to order related documents

2) Approximate values; exact values acc. to order related documents

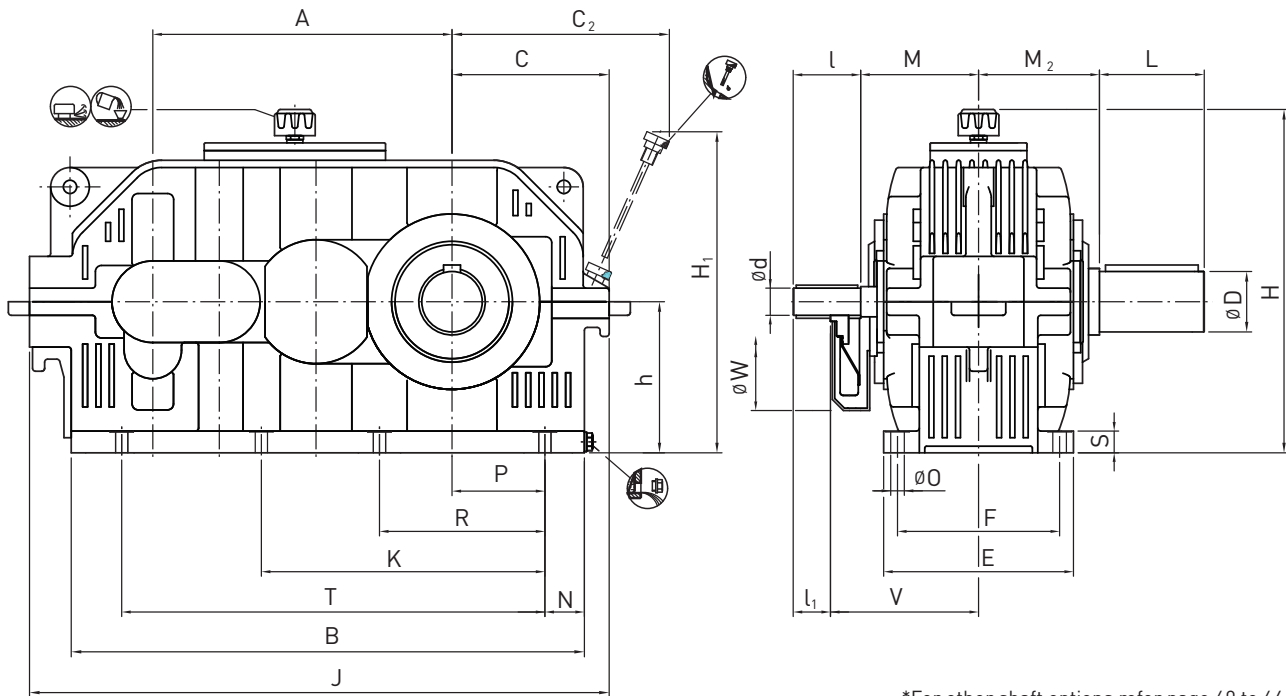


**Helical Gear Unit**

**Horizontal Mounting**

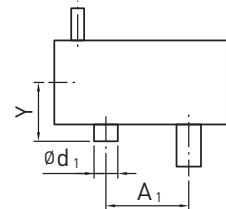
**Type - S3H**

Triple Stage  
 Size 19 to 26



\*For other shaft options refer page 60 to 64.

| Size   | Input Shaft |     |                |             |     |                |         |     |                | Output Shaft |     |                | Backstop       |                              |                 | Average Weight [kg] | Oil Quantity [Litres] |     |      |     |
|--------|-------------|-----|----------------|-------------|-----|----------------|---------|-----|----------------|--------------|-----|----------------|----------------|------------------------------|-----------------|---------------------|-----------------------|-----|------|-----|
|        | i = 25 - 50 |     |                | i = 56 - 80 |     |                | i = 112 |     |                | D            | L   | M <sub>2</sub> | A <sub>1</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                     |                       |     |      |     |
|        | d           | l   | l <sub>1</sub> | d           | l   | l <sub>1</sub> | d       | l   | l <sub>1</sub> |              |     |                |                |                              |                 | M                   | V                     | W   |      |     |
| S3..19 | 35          | 110 | 60             | 30          | 110 | 60             | 25      | 100 | 50             | 190          | 240 | 320            | 90             | 165                          | 180             | 340                 | 150                   | 265 | 295  | 14  |
| S3..20 | 45          | 130 | 80             | 35          | 110 | 60             | 25      | 100 | 50             | 195          | 245 | 360            | 100            | 200                          | 200             | 385                 | 150                   | 265 | 405  | 22  |
| S3..21 | 50          | 130 | 80             | 40          | 130 | 80             |         |     |                | 240          | 290 | 360            | 110            | 200                          | 220             | 430                 | 190                   | 340 | 540  | 28  |
| S3..22 | 55          | 135 | 85             | 45          | 130 | 80             | 35      | 110 | 60             | 250          | 300 | 430            | 120            | 210                          | 230             | 480                 | 190                   | 340 | 720  | 39  |
| S3..23 | 60          | 155 | 105            | 50          | 130 | 80             | 40      | 130 | 80             | 270          | 320 | 430            | 140            | 250                          | 260             | 540                 | 190                   | 340 | 970  | 56  |
| S3..24 | 70          | 155 | 105            | 55          | 135 | 85             |         |     |                | 325          | 375 | 450            | 160            | 290                          | 295             | 605                 | 245                   | 440 | 1300 | 80  |
| S3..25 | 75          | 155 | 105            | 60          | 155 | 105            | 50      | 130 | 80             | 335          | 385 | 450            | 170            | 300                          | 305             | 680                 | 245                   | 440 | 1770 | 115 |
| S3..26 | 85          | 180 | 130            | 70          | 155 | 105            | 70      | 155 | 105            | 350          | 400 | 450            | 190            | 350                          | 345             | 765                 | 245                   | 440 | 2350 | 165 |



| Size   | Foundation |      |     |                              |     |     |     |                              |                              |      |     |     |    |     |     |    |      |
|--------|------------|------|-----|------------------------------|-----|-----|-----|------------------------------|------------------------------|------|-----|-----|----|-----|-----|----|------|
|        | A          | B    | C   | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <sub>2</sub> <sup>2)</sup> | J    | K   | N   | O  | P   | R   | S  | T    |
| S3..19 | 440        | 751  | 240 | 315                          | 303 | 250 | 225 | 455                          | 540                          | 860  |     | 53  | 23 | 145 | 255 | 36 | 615  |
| S3..20 | 495        | 849  | 260 | 345                          | 314 | 270 | 250 | 496                          | 590                          | 959  |     | 54  | 23 | 165 | 290 | 36 | 705  |
| S3..21 | 555        | 946  | 290 | 394                          | 385 | 310 | 280 | 572                          | 650                          | 1068 |     | 64  | 27 | 180 | 315 | 45 | 780  |
| S3..22 | 620        | 1060 | 325 | 429                          | 400 | 340 | 315 | 635                          | 720                          | 1190 |     | 75  | 27 | 200 | 355 | 45 | 880  |
| S3..23 | 700        | 1181 | 355 | 481                          | 450 | 380 | 355 | 705                          | 800                          | 1327 | 655 | 87  | 33 | 220 | 405 | 55 | 985  |
| S3..24 | 785        | 1324 | 390 | 541                          | 515 | 410 | 400 | 795                          | 890                          | 1475 | 740 | 92  | 33 | 245 | 450 | 55 | 1110 |
| S3..25 | 880        | 1496 | 440 | 591                          | 535 | 460 | 450 | 865                          | 990                          | 1655 | 840 | 98  | 33 | 280 | 510 | 55 | 1245 |
| S3..26 | 990        | 1686 | 490 | 659                          | 600 | 510 | 500 | 954                          | 1090                         | 1870 | 940 | 108 | 39 | 315 | 575 | 65 | 1400 |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

1) Max. dimensions; details acc. to order related documents

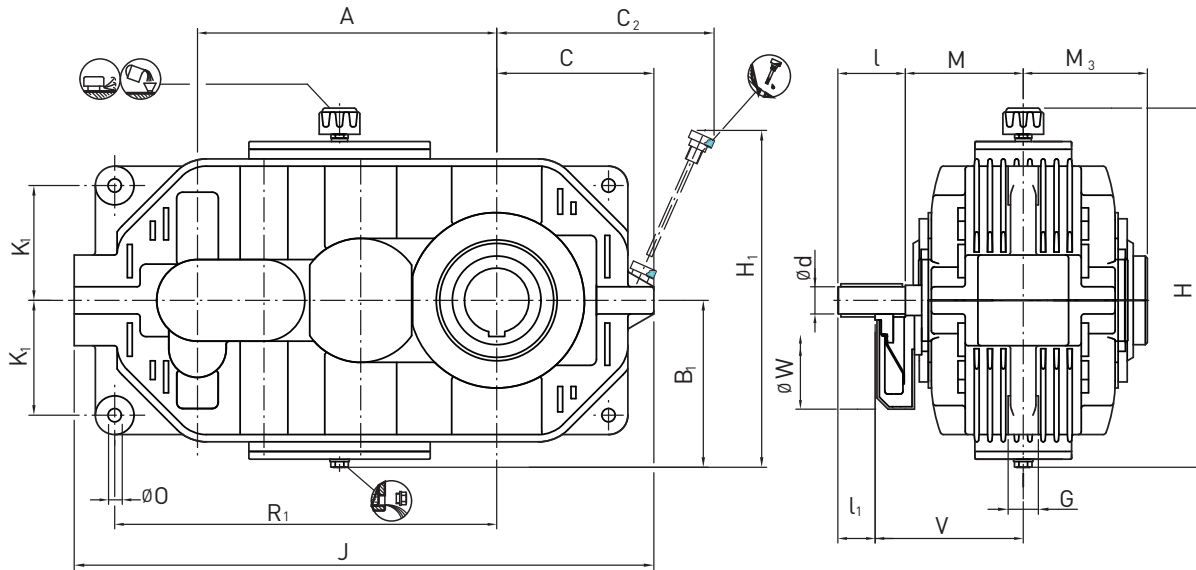
2) Approximate values; exact values acc. to order related documents

## Type - S3T

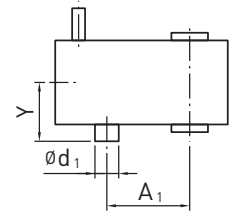
Triple Stage  
Size 14 to 18

## Torque Arm Mounting

## Helical Gear Unit



| Size   | Input Shaft                         |     |                |                                       |     |                |         |     |                | Output Shaft | Backstop       |                              |                 | Average Weight [kg] | Oil Quantity [Litres]        |                 |     |   |
|--------|-------------------------------------|-----|----------------|---------------------------------------|-----|----------------|---------|-----|----------------|--------------|----------------|------------------------------|-----------------|---------------------|------------------------------|-----------------|-----|---|
|        | i = 25-50<br>i = 25-63<br>i = 25-71 |     |                | i = 56-80<br>i = 71-100<br>i = 80-100 |     |                | i = 112 |     |                |              | A <sub>1</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                     |                              |                 |     |   |
|        | d                                   | l   | l <sub>1</sub> | d                                     | l   | l <sub>1</sub> | d       | l   | l <sub>1</sub> | M            | V              | W                            | M <sub>3</sub>  | A <sub>1</sub>      | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |     |   |
| S3..16 | 24                                  | 100 | 50             | 19                                    | 100 | 50             | 19      | 100 | 50             | 155          | 200            | 270                          | 145             | 240                 | 95                           | 215             | 105 | 3 |
| S3..17 | 28                                  | 100 | 50             | 24                                    | 100 | 50             | 19      | 100 | 50             | 160          | 205            | 270                          | 150             | 270                 | 95                           | 215             | 141 | 5 |
| S3..18 | 30                                  | 110 | 60             | 25                                    | 100 | 50             |         |     |                | 180          | 225            | 300                          | 170             | 305                 | 140                          | 265             | 188 | 7 |



| Size   | Foundation |                              |     |                              |    |                 |                              |     |                |    |                |
|--------|------------|------------------------------|-----|------------------------------|----|-----------------|------------------------------|-----|----------------|----|----------------|
|        | A          | B <sub>1</sub> <sup>2)</sup> | C   | C <sub>2</sub> <sup>1)</sup> | G  | H <sup>2)</sup> | H <sub>1</sub> <sup>1)</sup> | J   | K <sub>1</sub> | O  | R <sub>1</sub> |
| S3..16 | 311        | 190                          | 175 | 231                          | 30 | 440             | 357                          | 591 | 116            | 20 | 392            |
| S3..17 | 350        | 210                          | 190 | 257                          | 32 | 480             | 408                          | 676 | 136            | 20 | 442            |
| S3..18 | 395        | 230                          | 215 | 281                          | 35 | 520             | 434                          | 766 | 145            | 24 | 500            |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

1) Max. dimensions; details acc. to order related documents

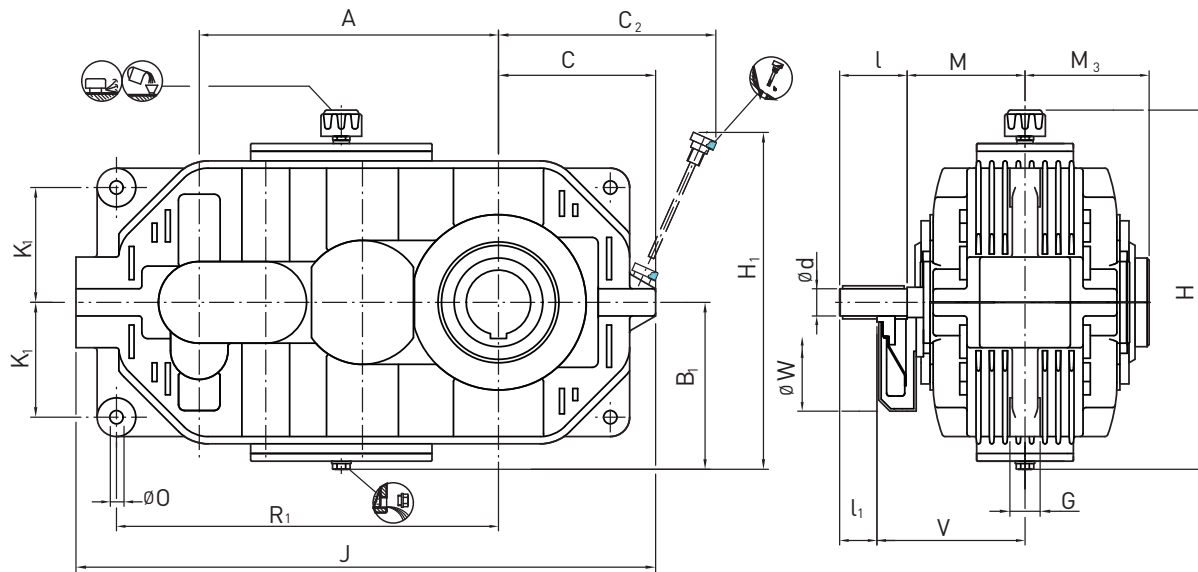
2) Approximate values; exact values acc. to order related documents

**Helical Gear Unit**

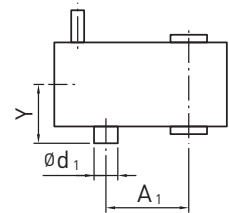
**Torque Arm Mounting**

**Type - S3T**

Triple Stage  
 Size 19 to 26



| Size   | Input Shaft |     |                |             |     |                |         |     |                |     |     |     | Output Shaft   | Backstop       |                              |                 | Average Weight [kg] | Oil Quantity [Litres] |
|--------|-------------|-----|----------------|-------------|-----|----------------|---------|-----|----------------|-----|-----|-----|----------------|----------------|------------------------------|-----------------|---------------------|-----------------------|
|        | i = 25 - 50 |     |                | i = 56 - 80 |     |                | i = 112 |     |                |     |     |     |                | A <sub>1</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                     |                       |
|        | d           | l   | l <sub>1</sub> | d           | l   | l <sub>1</sub> | d       | l   | l <sub>1</sub> | M   | V   | W   | M <sub>3</sub> | A <sub>1</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> | Average Weight [kg] | Oil Quantity [Litres] |
| S3..19 | 35          | 110 | 60             | 30          | 110 | 60             | 25      | 100 | 50             | 190 | 240 | 320 | 180            | 340            | 150                          | 265             | 257                 | 9                     |
| S3..20 | 45          | 130 | 80             | 35          | 110 | 60             | 25      | 100 | 50             | 195 | 245 | 360 | 190            | 385            | 150                          | 265             | 345                 | 11                    |
| S3..21 | 50          | 130 | 80             | 40          | 130 | 80             |         |     |                | 240 | 290 | 360 | 220            | 430            | 190                          | 340             | 460                 | 17                    |
| S3..22 | 55          | 135 | 85             | 45          | 130 | 80             | 35      | 110 | 60             | 250 | 300 | 430 | 230            | 480            | 190                          | 340             | 610                 | 23                    |
| S3..23 | 60          | 155 | 105            | 50          | 130 | 80             | 40      | 130 | 80             | 270 | 320 | 430 | 260            | 540            | 190                          | 340             | 820                 | 36                    |
| S3..24 | 70          | 155 | 105            | 55          | 135 | 85             |         |     |                | 325 | 375 | 450 | 295            | 605            | 245                          | 440             | 1100                | 50                    |
| S3..25 | 75          | 155 | 105            | 60          | 155 | 105            | 50      | 130 | 80             | 335 | 385 | 450 | 305            | 680            | 245                          | 440             | 1520                | 70                    |
| S3..26 | 85          | 180 | 130            | 70          | 155 | 105            | 70      | 155 | 105            | 350 | 400 | 450 | 345            | 765            | 245                          | 440             | 2000                | 100                   |



| Size   | Foundation |                              |     |                              |     |                 |                              |      |                |    |                |
|--------|------------|------------------------------|-----|------------------------------|-----|-----------------|------------------------------|------|----------------|----|----------------|
|        | A          | B <sub>1</sub> <sup>2)</sup> | C   | C <sub>2</sub> <sup>1)</sup> | G   | H <sup>2)</sup> | H <sub>1</sub> <sup>1)</sup> | J    | K <sub>1</sub> | O  | R <sub>1</sub> |
| S3..19 | 440        | 255                          | 240 | 315                          | 45  | 570             | 485                          | 860  | 170            | 24 | 560            |
| S3..20 | 495        | 280                          | 260 | 345                          | 50  | 620             | 526                          | 959  | 190            | 28 | 632            |
| S3..21 | 555        | 310                          | 290 | 394                          | 55  | 680             | 602                          | 1068 | 222            | 28 | 710            |
| S3..22 | 620        | 345                          | 325 | 429                          | 60  | 750             | 665                          | 1190 | 255            | 36 | 790            |
| S3..23 | 700        | 385                          | 355 | 481                          | 70  | 830             | 735                          | 1327 | 290            | 40 | 882            |
| S3..24 | 785        | 430                          | 390 | 541                          | 80  | 920             | 830                          | 1475 | 325            | 48 | 985            |
| S3..25 | 880        | 480                          | 440 | 591                          | 90  | 1020            | 900                          | 1655 | 370            | 48 | 1115           |
| S3..26 | 990        | 530                          | 490 | 659                          | 105 | 1120            | 989                          | 1870 | 415            | 55 | 1265           |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

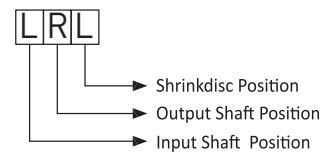
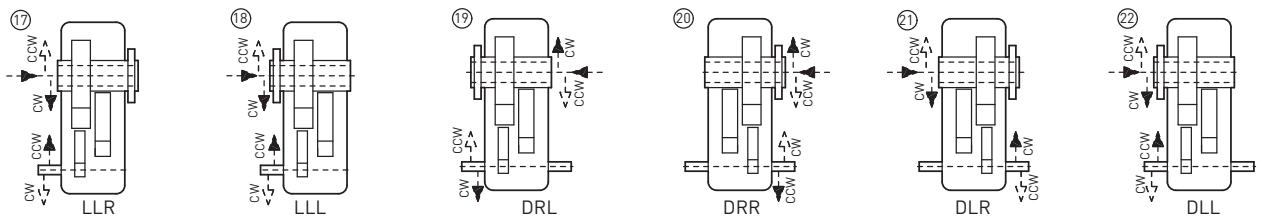
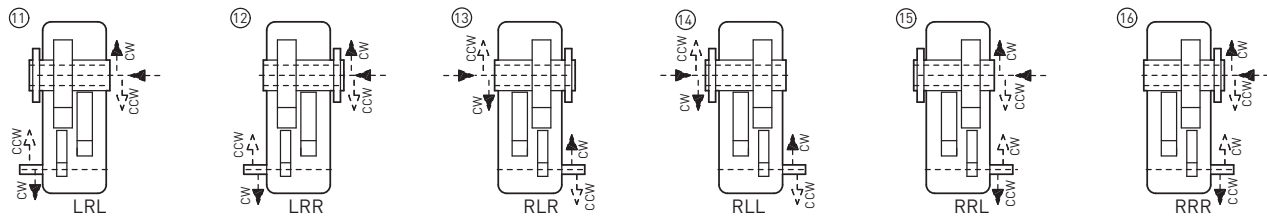
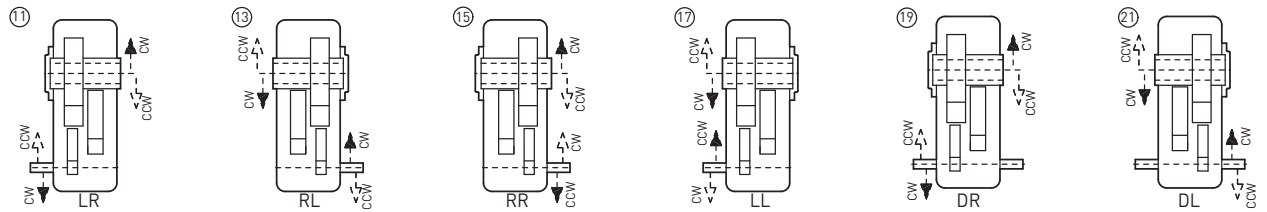
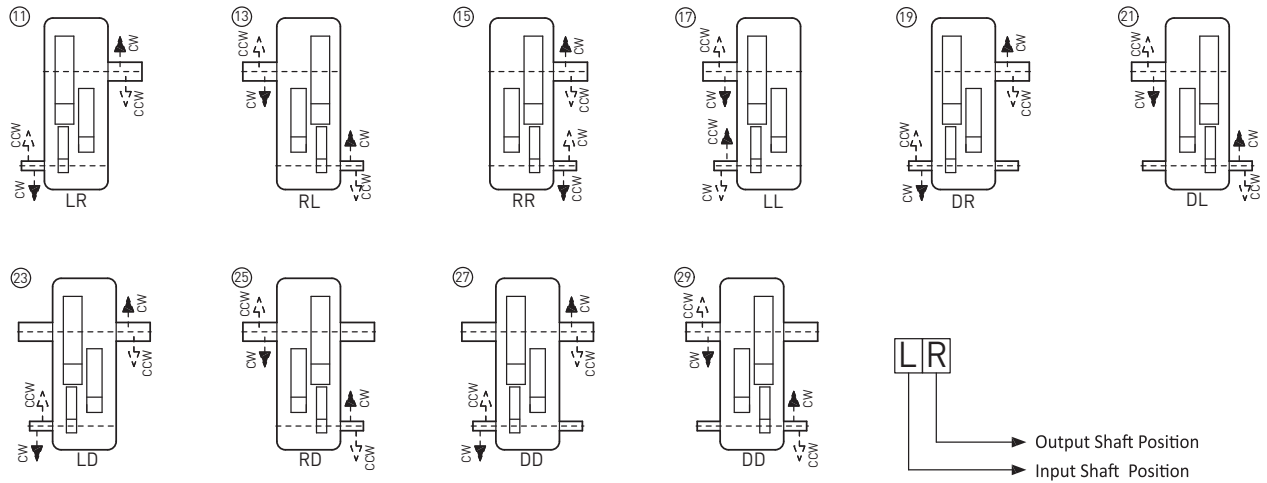
1) Max. dimensions; details acc. to order related documents

2) Approximate values; exact values acc. to order related documents

**Type - S3**  
Triple Stage

**Shaft Arrangement**

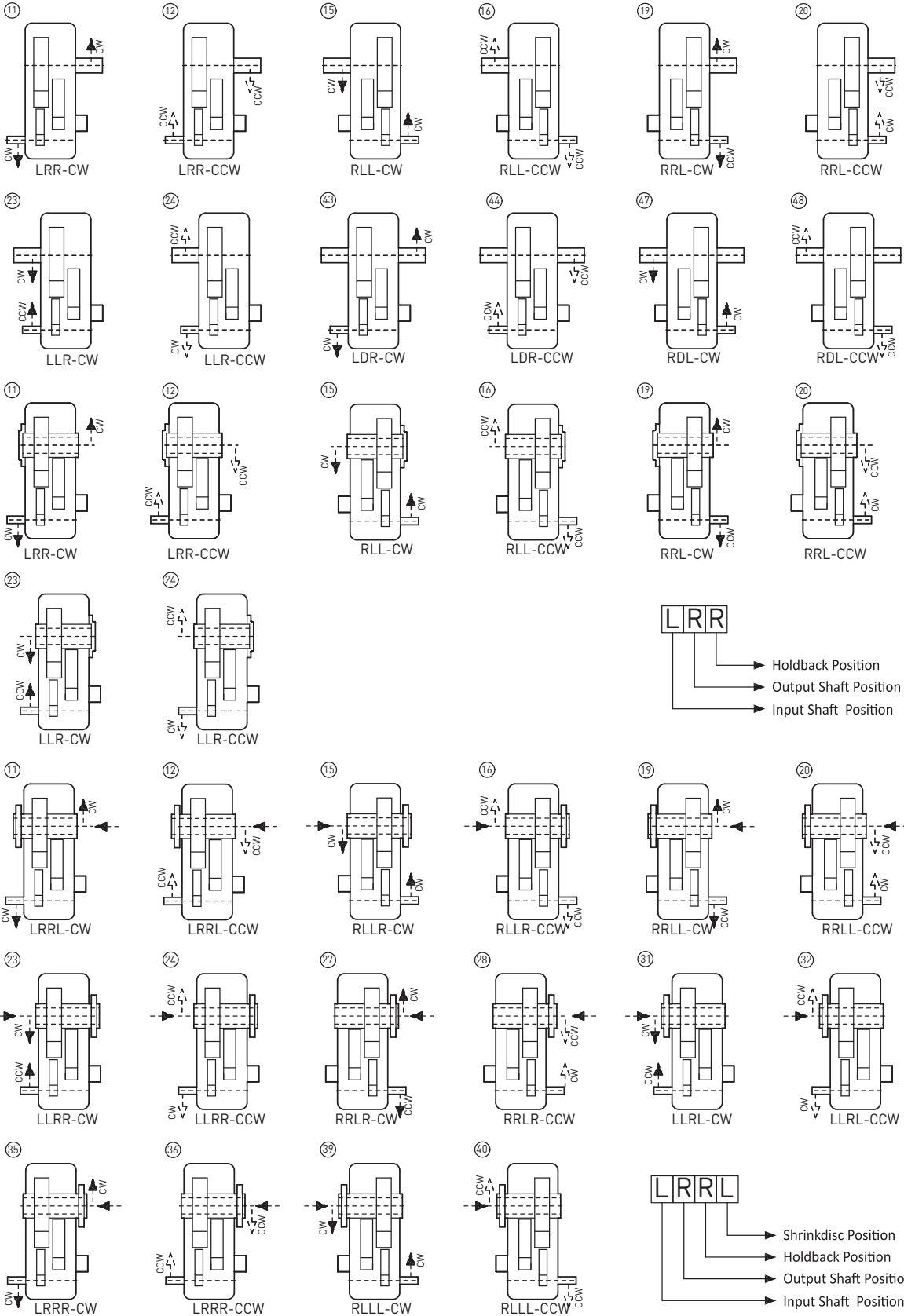
**Helical Gear Unit**



**Helical Gear Unit**

**Shaft Arrangement - Hold Back**

**Type - S3**  
**Triple Stage**

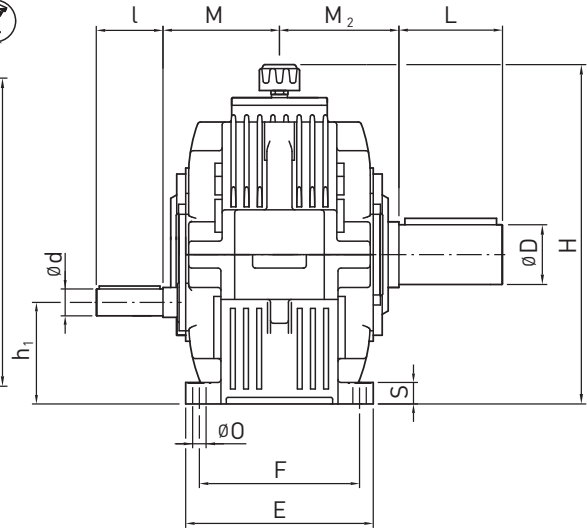
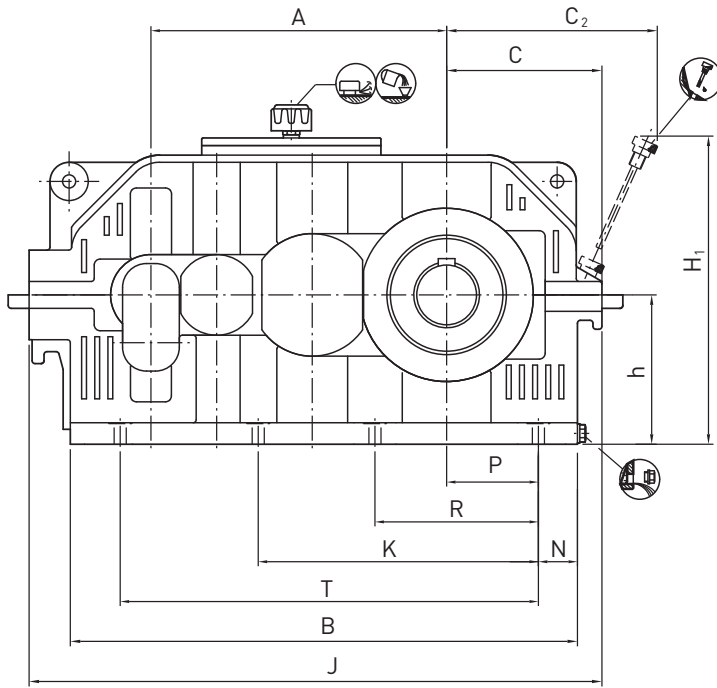


### Type - S4H

Quadruple Stage  
Size 18 to 26

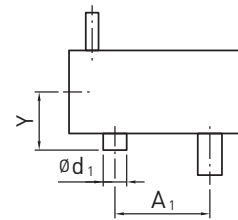
### Horizontal Mounting

### Helical Gear Unit



\*For other shaft options refer page 60 to 64.

| Size   | Input Shaft  |     |               |     | Output Shaft |                |     | Backstop |                |                | Average Weight [kg] | Oil Quantity [Litres] |                              |                 |
|--------|--------------|-----|---------------|-----|--------------|----------------|-----|----------|----------------|----------------|---------------------|-----------------------|------------------------------|-----------------|
|        | i = 90 - 225 |     | i = 250 - 450 |     |              |                |     |          |                |                |                     |                       |                              |                 |
|        | d            | l   | d             | l   | M            | h <sub>1</sub> | D   | L        | M <sub>2</sub> | A <sub>1</sub> |                     |                       | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |
| S4..18 | 20           | 50  | 19            | 50  | 170          | 137            | 80  | 160      | 170            | 395            | 95                  | 255                   | 215                          | 13              |
| S4..19 | 20           | 50  | 19            | 50  | 180          | 154            | 90  | 165      | 180            | 440            | 95                  | 255                   | 300                          | 18              |
| S4..20 | 20           | 50  | 20            | 50  | 190          | 170            | 100 | 200      | 200            | 495            | 95                  | 255                   | 405                          | 22              |
| S4..21 | 30           | 80  | 25            | 60  | 220          | 190            | 110 | 200      | 220            | 555            | 135                 | 310                   | 540                          | 28              |
| S4..22 | 35           | 80  | 25            | 60  | 230          | 215            | 120 | 210      | 230            | 620            | 135                 | 310                   | 720                          | 39              |
| S4..23 | 40           | 110 | 35            | 80  | 260          | 245            | 140 | 250      | 260            | 700            | 140                 | 310                   | 970                          | 56              |
| S4..24 | 40           | 110 | 40            | 110 | 295          | 275            | 160 | 290      | 295            | 785            | 175                 | 415                   | 1300                         | 80              |
| S4..25 | 45           | 110 | 45            | 110 | 305          | 310            | 170 | 300      | 305            | 880            | 175                 | 415                   | 1770                         | 115             |
| S4..26 | 50           | 110 | 50            | 110 | 345          | 340            | 190 | 350      | 345            | 990            | 190                 | 415                   | 2350                         | 165             |



| Size   | Foundation |      |     |                              |     |     |     |                |                 |      |                 |     |    |     |     |    |      |
|--------|------------|------|-----|------------------------------|-----|-----|-----|----------------|-----------------|------|-----------------|-----|----|-----|-----|----|------|
|        | A          | B    | C   | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> | H <sup>1)</sup> | J    | K <sup>2)</sup> | N   | O  | P   | R   | S  | T    |
| S4..18 | 395        | 671  | 215 | 281                          | 284 | 230 | 200 | 404            | 490             | 766  |                 | 43  | 18 | 135 | 240 | 32 | 565  |
| S4..19 | 440        | 751  | 240 | 315                          | 303 | 250 | 225 | 455            | 540             | 860  |                 | 53  | 23 | 145 | 255 | 36 | 615  |
| S4..20 | 495        | 849  | 260 | 345                          | 314 | 270 | 250 | 496            | 590             | 959  |                 | 54  | 23 | 165 | 290 | 36 | 705  |
| S4..21 | 555        | 946  | 290 | 394                          | 385 | 310 | 280 | 572            | 650             | 1068 |                 | 64  | 27 | 180 | 315 | 45 | 780  |
| S4..22 | 620        | 1060 | 325 | 429                          | 400 | 340 | 315 | 635            | 720             | 1190 |                 | 75  | 27 | 200 | 355 | 45 | 880  |
| S4..23 | 700        | 1181 | 355 | 481                          | 450 | 380 | 355 | 705            | 800             | 1327 | 655             | 87  | 33 | 220 | 405 | 55 | 985  |
| S4..24 | 785        | 1324 | 390 | 541                          | 515 | 410 | 400 | 795            | 890             | 1475 | 740             | 92  | 33 | 245 | 450 | 55 | 1110 |
| S4..25 | 880        | 1496 | 440 | 591                          | 535 | 460 | 450 | 865            | 990             | 1655 | 840             | 98  | 33 | 280 | 510 | 55 | 1245 |
| S4..26 | 990        | 1686 | 490 | 659                          | 600 | 510 | 500 | 954            | 1090            | 1870 | 940             | 108 | 39 | 315 | 575 | 65 | 1400 |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

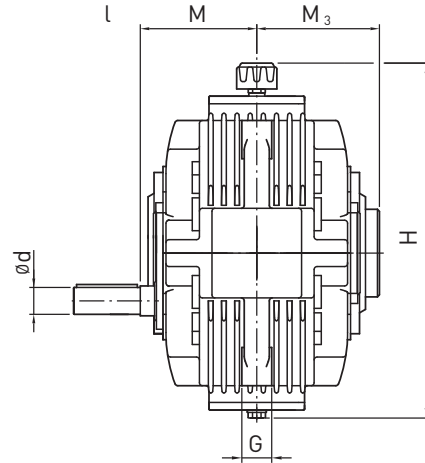
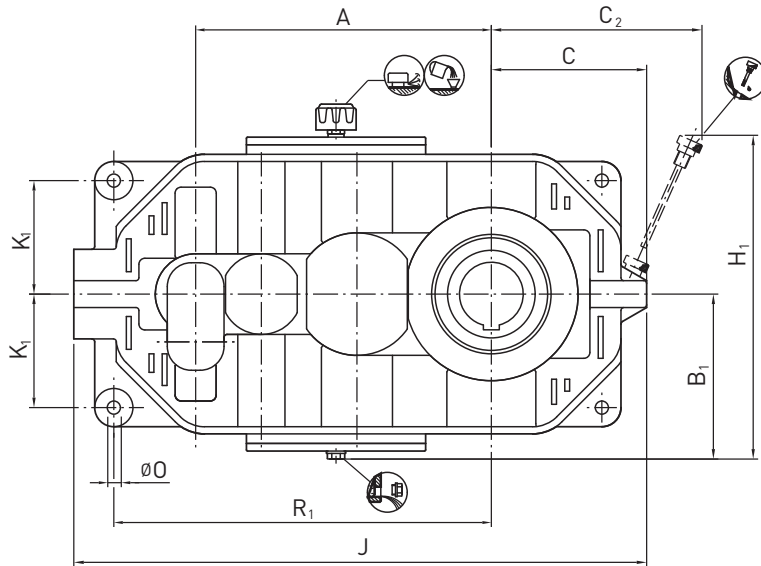
1) Max. dimensions; details acc. to order related documents

2) Approximate values; exact values acc. to order related documents

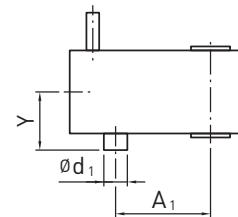
**Helical Gear Unit**

**Torque Arm Mounting**

**Type - S4T**  
 Quadruple Stage  
 Size 18 to 26



| Size   | Input Shaft  |     |               |     |     | Output Shaft | Backstop       |                |                              |                 | Average Weight [kg] | Oil Quantity [Litres] |
|--------|--------------|-----|---------------|-----|-----|--------------|----------------|----------------|------------------------------|-----------------|---------------------|-----------------------|
|        | i = 90 - 225 |     | i = 250 - 450 |     |     |              | M <sub>3</sub> | A <sub>1</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                     |                       |
|        | d            | l   | d             | l   | M   |              |                |                |                              |                 |                     |                       |
| S4..18 | 20           | 50  | 19            | 50  | 170 | 137          | 170            | 395            | 95                           | 255             | 190                 | 7                     |
| S4..19 | 20           | 50  | 19            | 50  | 180 | 154          | 180            | 440            | 95                           | 255             | 255                 | 9                     |
| S4..20 | 20           | 50  | 20            | 50  | 190 | 170          | 190            | 495            | 95                           | 255             | 345                 | 11                    |
| S4..21 | 30           | 80  | 25            | 60  | 220 | 190          | 220            | 555            | 135                          | 310             | 460                 | 17                    |
| S4..22 | 35           | 80  | 25            | 60  | 230 | 215          | 230            | 620            | 135                          | 310             | 610                 | 23                    |
| S4..23 | 40           | 110 | 35            | 80  | 260 | 245          | 260            | 700            | 140                          | 310             | 820                 | 36                    |
| S4..24 | 40           | 110 | 40            | 110 | 295 | 275          | 295            | 785            | 175                          | 415             | 1100                | 50                    |
| S4..25 | 45           | 110 | 45            | 110 | 305 | 310          | 305            | 880            | 175                          | 415             | 1520                | 70                    |
| S4..26 | 50           | 110 | 50            | 110 | 345 | 340          | 345            | 990            | 190                          | 415             | 2000                | 100                   |



| Size   | Foundation |                              |     |                              |     |                 |                              |      |                |    |                |
|--------|------------|------------------------------|-----|------------------------------|-----|-----------------|------------------------------|------|----------------|----|----------------|
|        | A          | B <sub>1</sub> <sup>2)</sup> | C   | C <sub>2</sub> <sup>1)</sup> | G   | H <sup>2)</sup> | H <sub>1</sub> <sup>1)</sup> | J    | K <sub>1</sub> | O  | R <sub>1</sub> |
| S4..18 | 395        | 230                          | 215 | 281                          | 35  | 520             | 434                          | 766  | 145            | 24 | 500            |
| S4..19 | 440        | 255                          | 240 | 315                          | 45  | 570             | 485                          | 860  | 170            | 24 | 560            |
| S4..20 | 495        | 280                          | 260 | 345                          | 50  | 620             | 526                          | 959  | 190            | 28 | 632            |
| S4..21 | 555        | 310                          | 290 | 394                          | 55  | 680             | 602                          | 1068 | 222            | 28 | 710            |
| S4..22 | 620        | 345                          | 325 | 429                          | 60  | 750             | 665                          | 1190 | 255            | 36 | 790            |
| S4..23 | 700        | 385                          | 355 | 481                          | 70  | 830             | 735                          | 1327 | 290            | 40 | 882            |
| S4..24 | 785        | 430                          | 390 | 541                          | 80  | 920             | 825                          | 1475 | 325            | 48 | 985            |
| S4..25 | 880        | 480                          | 440 | 591                          | 90  | 1020            | 895                          | 1655 | 370            | 48 | 1115           |
| S4..26 | 990        | 530                          | 490 | 659                          | 105 | 1120            | 984                          | 1870 | 415            | 55 | 1265           |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

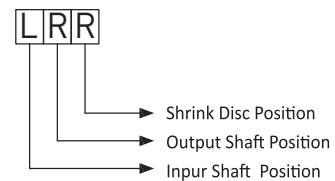
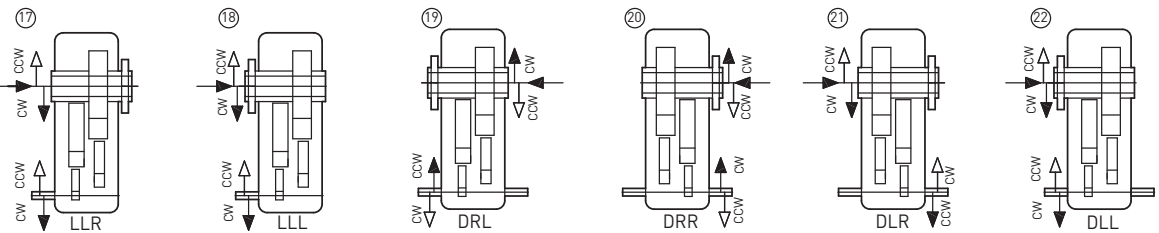
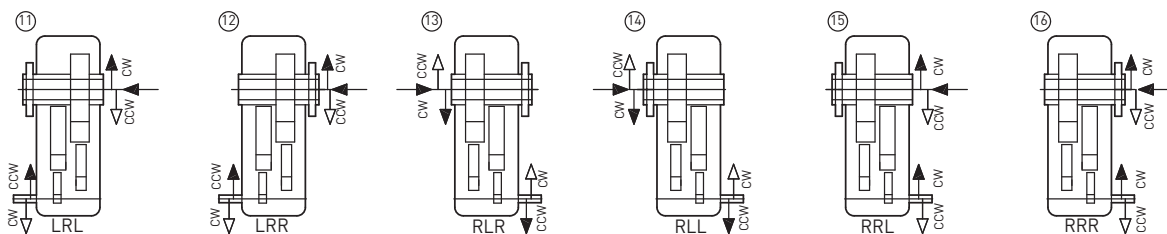
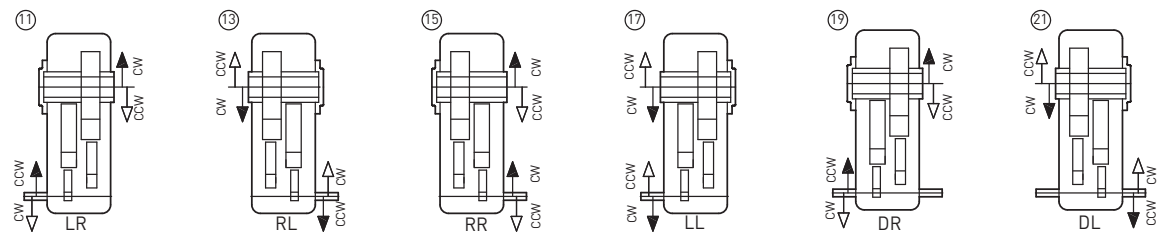
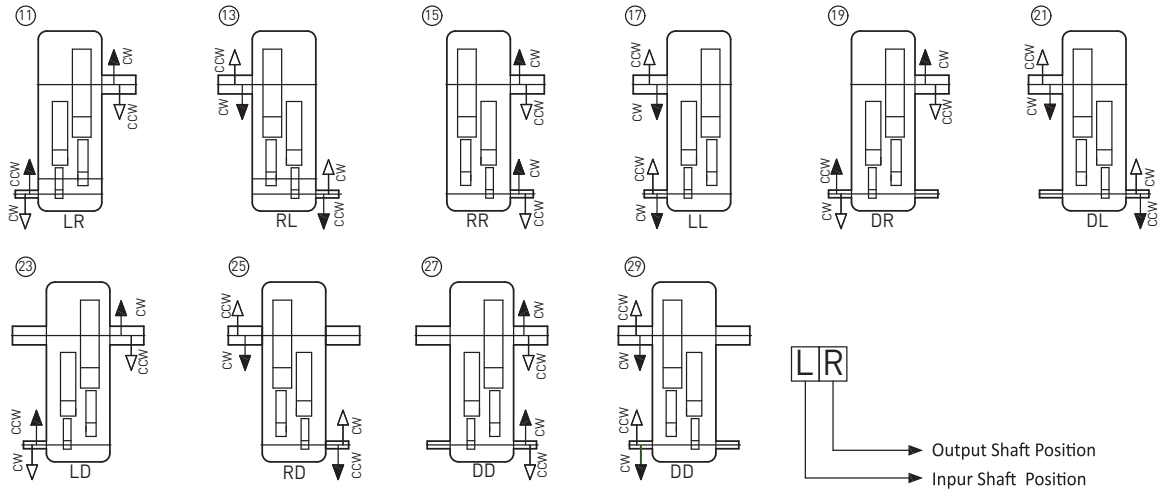
1) Max. dimensions; details acc. to order related documents

2) Approximate values; exact values acc. to order related documents

**Type - S4**  
Quadruple Stage

**Shaft Arrangement**

**Helical Gear Unit**

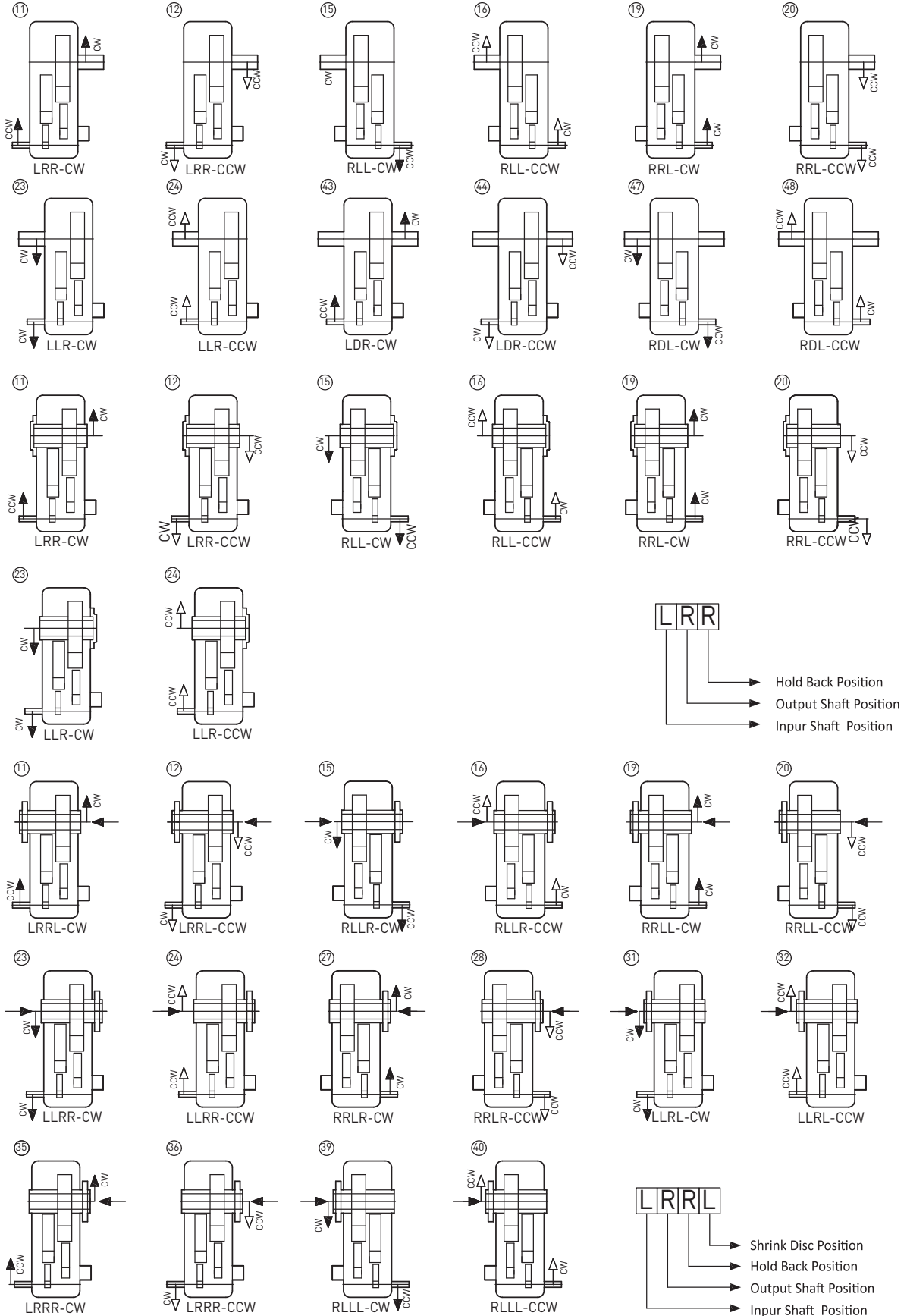




**Helical Gear Unit**

**Shaft Arrangement - Hold Back**

**Type - S4**  
**Quadruple Stage**





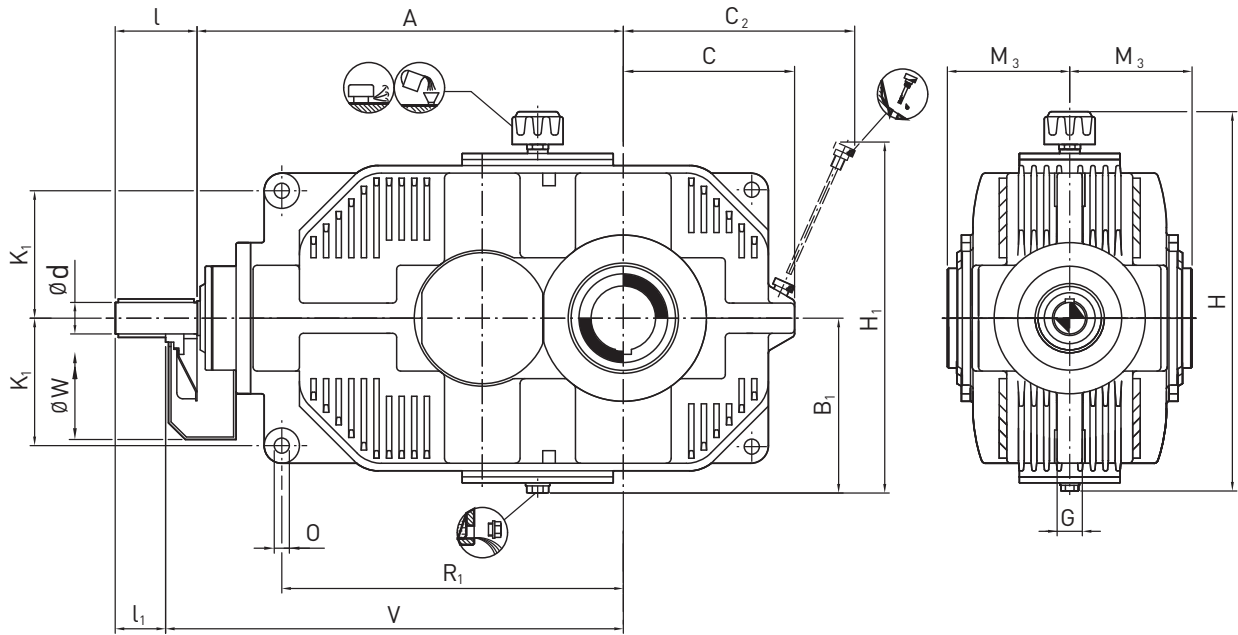


### Type - K2T

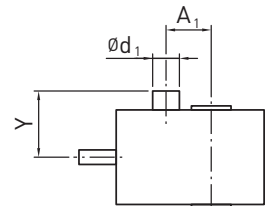
Double Stage  
Size 11 to 18

### Torque Arm Mounting

### Bevel Helical Gear Unit



| Size   | Input Shaft |     |                |           |     |                | V   | W   | M <sub>3</sub> | Backstop       |                              |                 | Average Weight [kg] | Oil Quantity [Litres] |
|--------|-------------|-----|----------------|-----------|-----|----------------|-----|-----|----------------|----------------|------------------------------|-----------------|---------------------|-----------------------|
|        | i = 5-12.5  |     |                | i = 14-18 |     |                |     |     |                | A <sub>1</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                     |                       |
|        | d           | l   | l <sub>1</sub> | d         | l   | l <sub>1</sub> |     |     |                |                |                              |                 |                     |                       |
| K2..11 | 19          | 90  | 40             | 19        | 90  | 40             | 325 | 210 | 105            | 80             | 95                           | 180             | 25                  | 0.5                   |
| K2..13 | 24          | 100 | 50             | 24        | 100 | 50             | 365 | 270 | 115            | 100            | 105                          | 190             | 44                  | 1                     |
| K2..15 | 32          | 110 | 60             | 28        | 100 | 50             | 460 | 300 | 135            | 125            | 140                          | 255             | 84                  | 2.5                   |
| K2..17 | 42          | 130 | 80             | 38        | 110 | 60             | 565 | 360 | 150            | 160            | 175                          | 255             | 152                 | 4                     |
| K2..18 | 48          | 130 | 80             | 42        | 130 | 80             | 635 | 360 | 170            | 180            | 190                          | 305             | 200                 | 5                     |



| Size   | Foundation |                              |     |                              |    |                              |                 |                |    |                |
|--------|------------|------------------------------|-----|------------------------------|----|------------------------------|-----------------|----------------|----|----------------|
|        | A          | B <sub>1</sub> <sup>2)</sup> | C   | C <sub>2</sub> <sup>1)</sup> | G  | H <sub>1</sub> <sup>1)</sup> | H <sup>2)</sup> | K <sub>1</sub> | O  | R <sub>1</sub> |
| K2..11 | 275        | 130                          | 115 | 171                          | 20 | 278                          | 320             | 66             | 10 | 192            |
| K2..13 | 340        | 155                          | 135 | 195                          | 25 | 325                          | 370             | 90             | 15 | 255            |
| K2..15 | 415        | 190                          | 165 | 231                          | 28 | 382                          | 440             | 120            | 18 | 316            |
| K2..17 | 520        | 230                          | 205 | 282                          | 32 | 452                          | 510             | 146            | 20 | 396            |
| K2..18 | 585        | 255                          | 220 | 311                          | 35 | 505                          | 555             | 156            | 24 | 445            |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

1) Max. dimensions; details acc. to order related documents

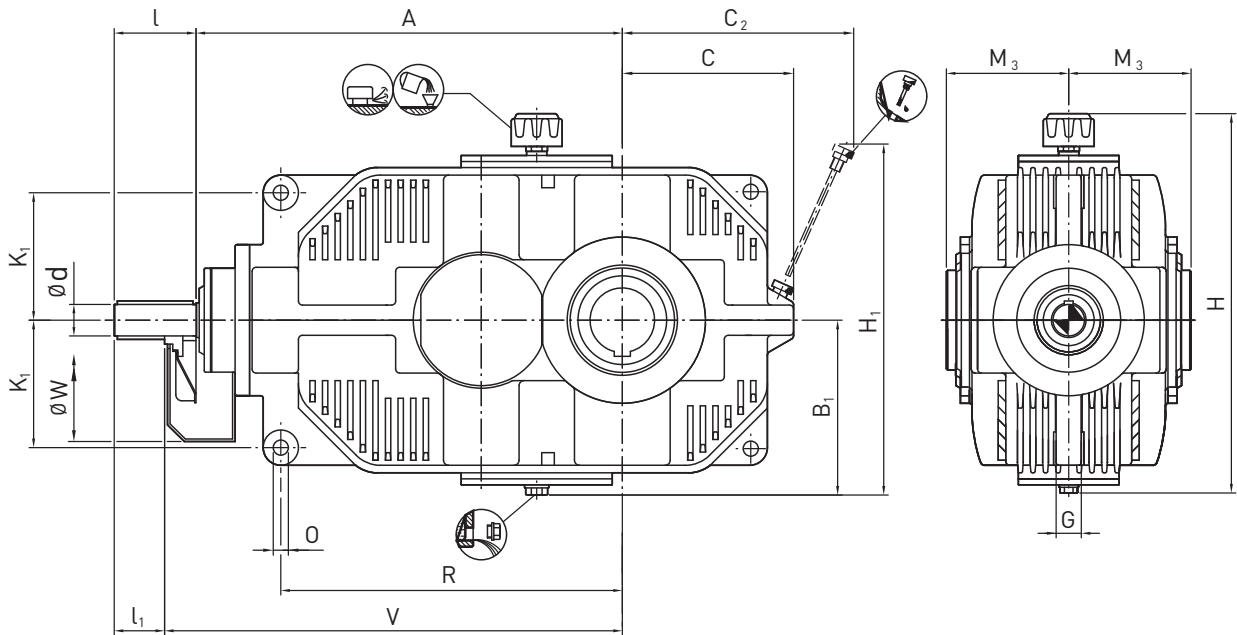
2) Approximate values; exact values acc. to order related documents

**Bevel Helical Gear Unit**

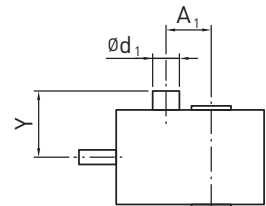
**Torque Arm Mounting**

**Type - K2T**

Double Stage  
 Size 20 to 26



| Size   | Input Shaft |     |                |           |     |                | V    | W   | M <sub>3</sub> | Backstop       |                              |                 | Average Weight [kg] | Oil Quantity [Litres] |
|--------|-------------|-----|----------------|-----------|-----|----------------|------|-----|----------------|----------------|------------------------------|-----------------|---------------------|-----------------------|
|        | i = 5-12.5  |     |                | i = 14-18 |     |                |      |     |                | A <sub>1</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                     |                       |
|        | d           | l   | l <sub>1</sub> | d         | l   | l <sub>1</sub> |      |     |                |                |                              |                 |                     |                       |
| K2..20 | 58          | 135 | 85             | 52        | 135 | 85             | 780  | 460 | 190            | 225            | 210                          | 305             | 330                 | 12                    |
| K2..21 | 65          | 155 | 105            | 65        | 155 | 105            | 860  | 530 | 220            | 250            | 245                          | 390             | 460                 | 15                    |
| K2..22 | 70          | 155 | 105            | 70        | 155 | 105            | 950  | 550 | 230            | 280            | 290                          | 390             | 620                 | 21                    |
| K2..23 | 85          | 180 | 130            | 80        | 180 | 130            | 1050 | 550 | 260            | 315            | 290                          | 390             | 840                 | 30                    |
| K2..24 | 90          | 180 | 130            | 90        | 180 | 130            | 1170 | 650 | 295            | 355            | 310                          | 470             | 1130                | 40                    |
| K2..25 | 100         | 220 | 170            | 100       | 220 | 170            | 1300 | 700 | 305            | 400            | 310                          | 470             | 1500                | 55                    |
| K2..26 | 110         | 220 | 170            | 110       | 220 | 170            | 1450 | 700 | 345            | 450            | 400                          | 470             | 2000                | 75                    |



| Size   | Foundation |                              |     |                              |     |                              |                 |                |    |                |
|--------|------------|------------------------------|-----|------------------------------|-----|------------------------------|-----------------|----------------|----|----------------|
|        | A          | B <sub>1</sub> <sup>2)</sup> | C   | C <sub>2</sub> <sup>1)</sup> | G   | H <sub>1</sub> <sup>1)</sup> | H <sup>2)</sup> | K <sub>1</sub> | O  | R <sub>1</sub> |
| K2..20 | 720        | 310                          | 275 | 387                          | 50  | 618                          | 650             | 192            | 28 | 549            |
| K2..21 | 790        | 345                          | 305 | 435                          | 55  | 694                          | 715             | 220            | 28 | 610            |
| K2..22 | 875        | 385                          | 340 | 474                          | 60  | 771                          | 790             | 255            | 36 | 670            |
| K2..23 | 975        | 430                          | 375 | 537                          | 70  | 861                          | 875             | 290            | 40 | 745            |
| K2..24 | 1085       | 480                          | 425 | 598                          | 80  | 938                          | 920             | 325            | 48 | 810            |
| K2..25 | 1215       | 530                          | 475 | 670                          | 90  | 1043                         | 1020            | 370            | 48 | 926            |
| K2..26 | 1365       | 590                          | 535 | 753                          | 105 | 1167                         | 1180            | 416            | 55 | 1041           |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

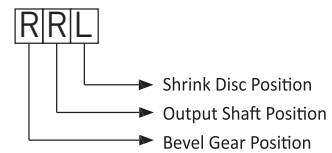
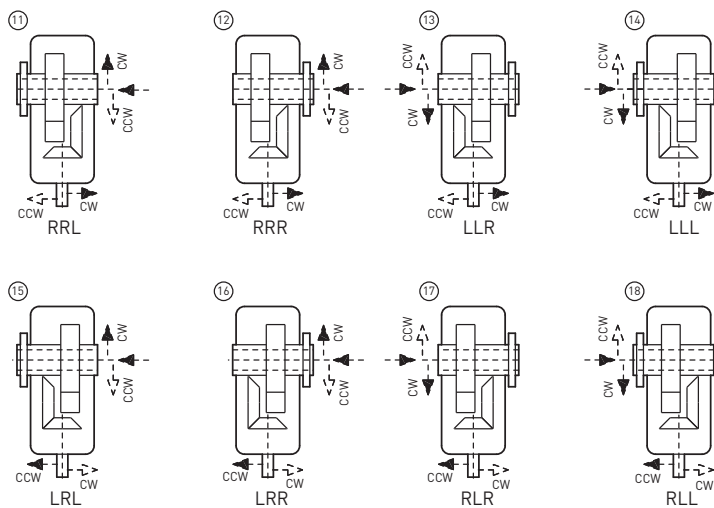
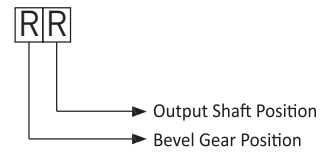
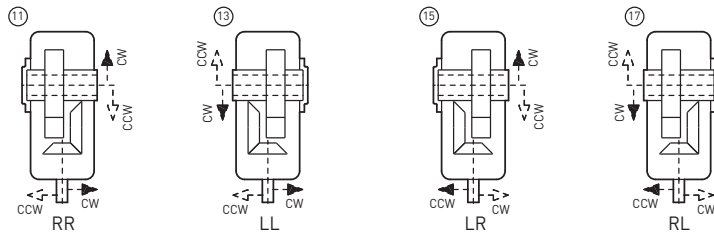
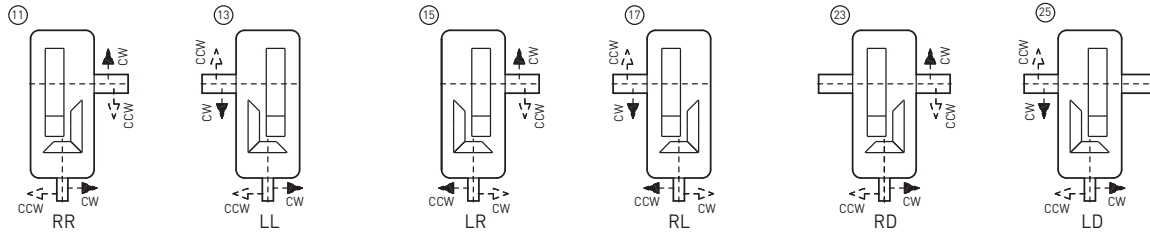
1) Max. dimensions; details acc. to order related documents

2) Approximate values; exact values acc. to order related documents

**Type - K2**  
Double Stage

**Shaft Arrangement**

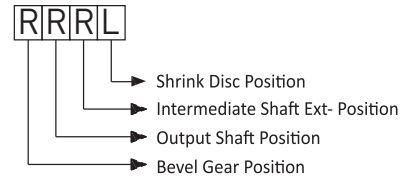
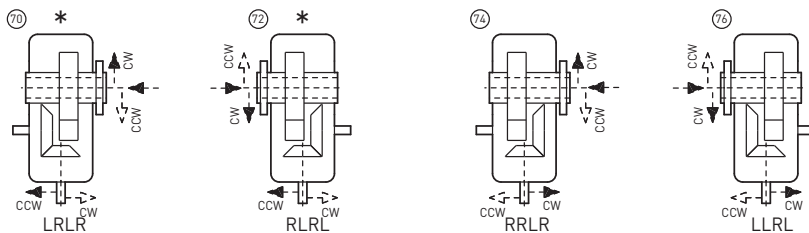
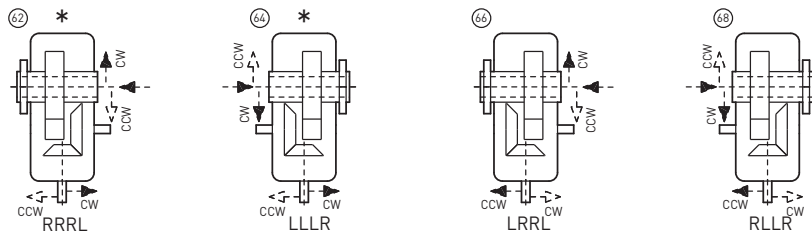
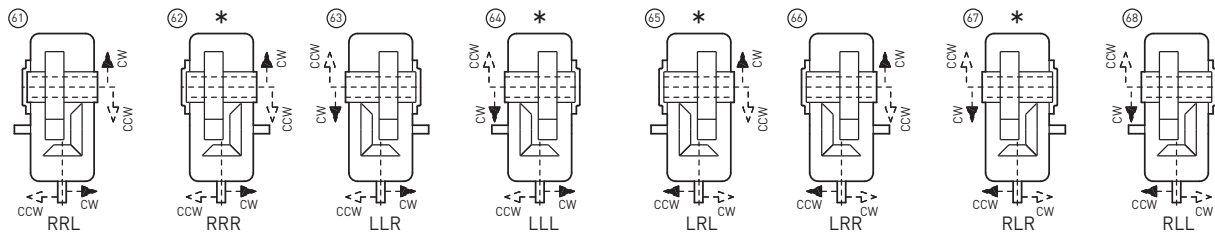
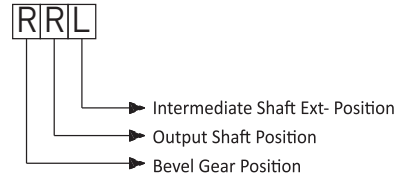
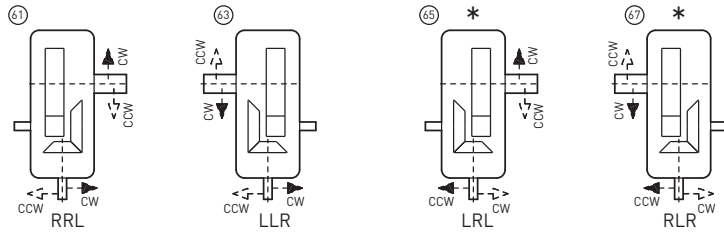
**Bevel Helical Gear Unit**



**Bevel Helical Gear Unit**

**Shaft Arrangement - Int. Extension**

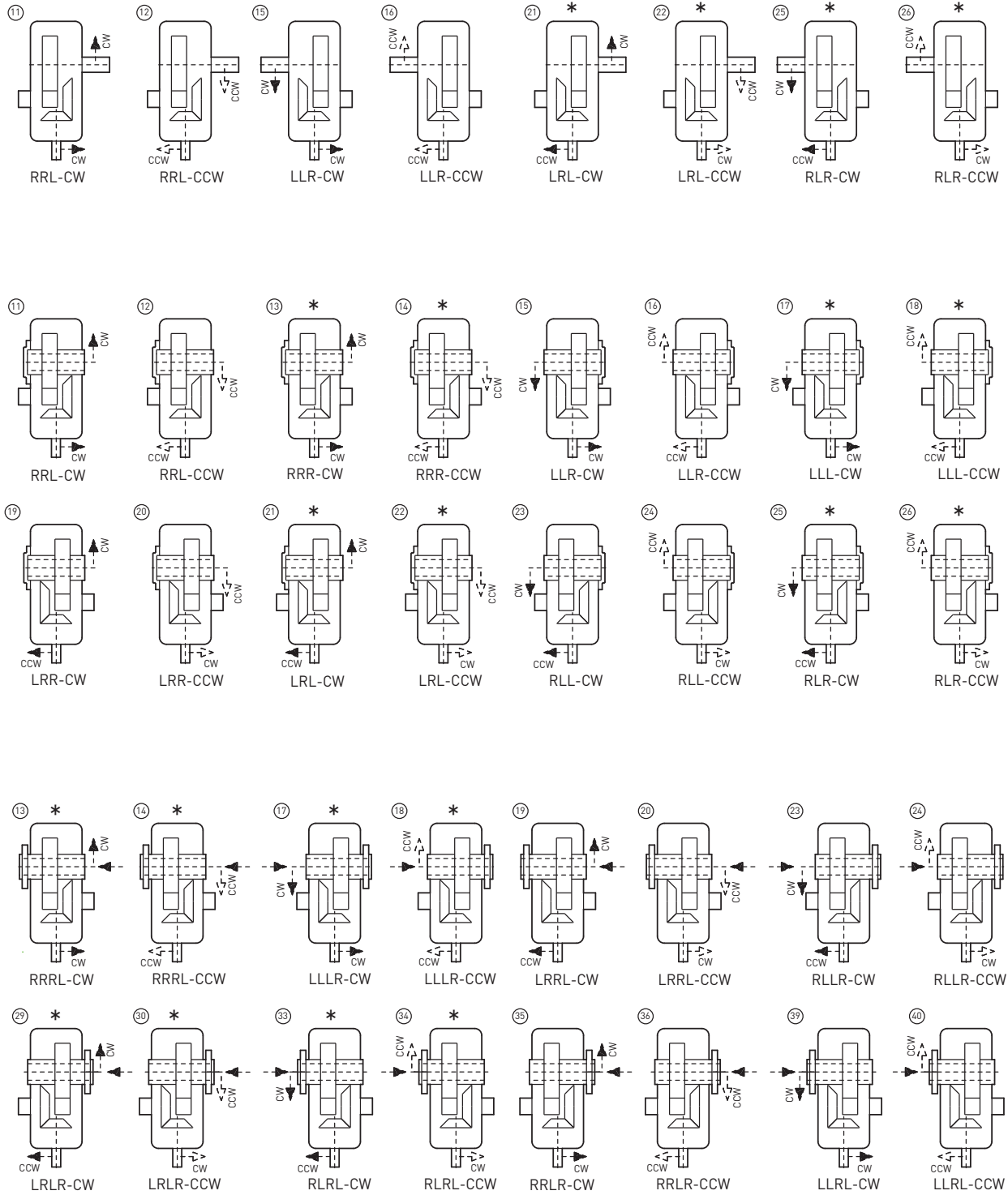
**Type - K2**  
 Double Stage



**Type - K2**  
Double Stage

**Shaft Arrangement - Hold Back**

**Bevel Helical Gear Unit**



**RRRL**

- Hold Back Position
- Output Shaft Position
- Bevel Gear Position

**RRRL**

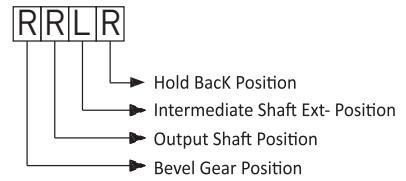
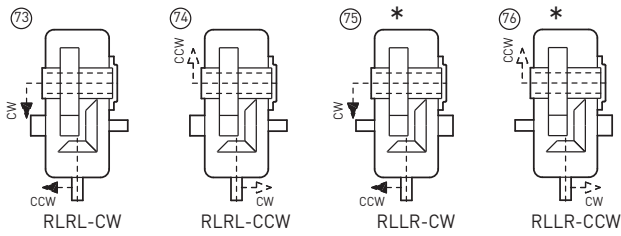
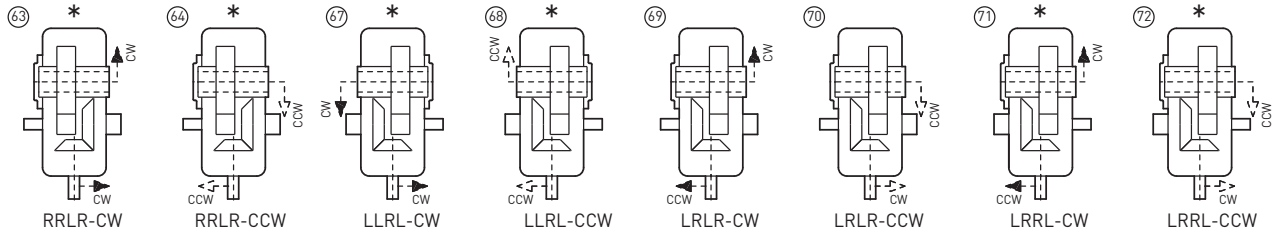
- Shrink Disc Position
- Hold Back Position
- Output Shaft Position
- Bevel Gear Position



**Bevel Helical Gear Unit**

**Shaft Arrangement - Int. Ext. & Hold Back**

**Type - K2**  
**Double Stage**

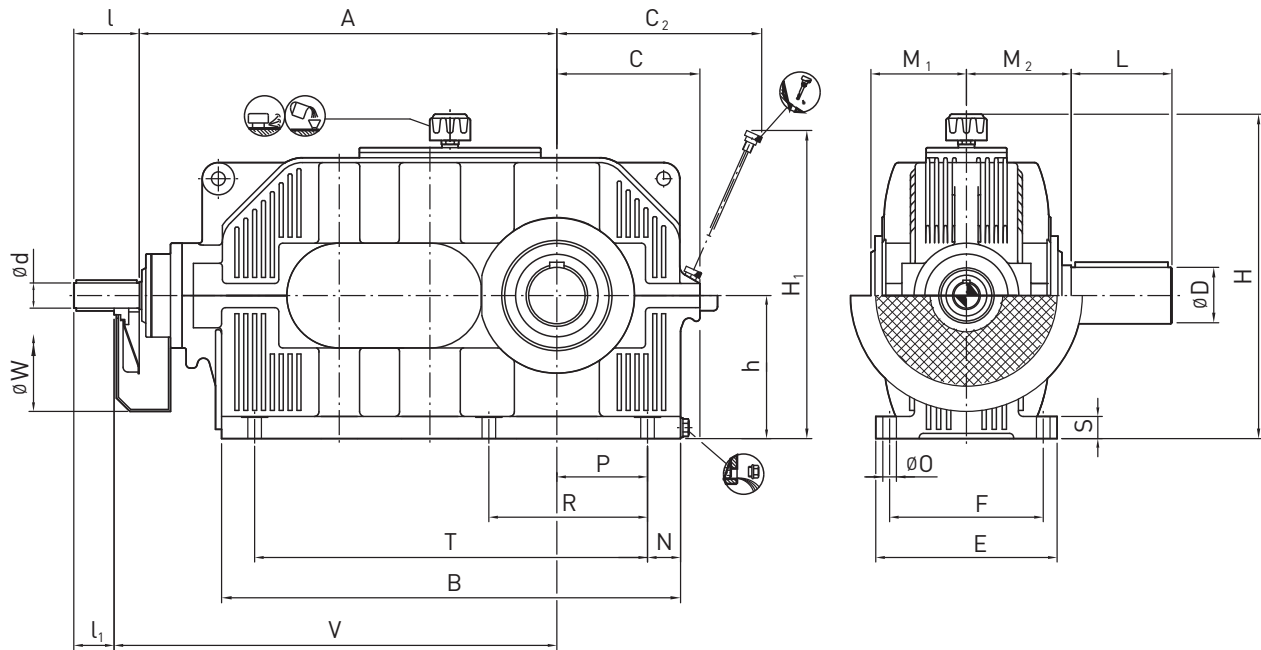


## Type - K3H

Triple Stage  
Size 14 to 18

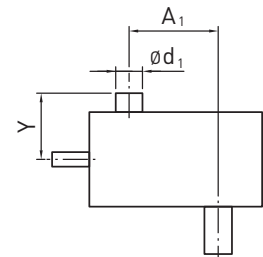
## Horizontal Mounting

## Bevel Helical Gear Unit



\*For other shaft options refer page 60 to 64.

| Size   | Input Shaft<br>i = 20-50 |     |                | Input Shaft<br>i = 56-71 |     |                | V   | W   | Output Shaft |     |                |                | Backstop       |                              |                 | Average Weight [kg] | Oil Quantity [Litres] |
|--------|--------------------------|-----|----------------|--------------------------|-----|----------------|-----|-----|--------------|-----|----------------|----------------|----------------|------------------------------|-----------------|---------------------|-----------------------|
|        | d                        | l   | l <sub>1</sub> | d                        | l   | l <sub>1</sub> |     |     | D            | L   | M <sub>1</sub> | M <sub>2</sub> | A <sub>1</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                     |                       |
|        |                          |     |                |                          |     |                |     |     |              |     |                |                |                |                              |                 |                     |                       |
| K3..14 | 19                       | 90  | 40             | 19                       | 90  | 40             | 435 | 240 | 48           | 95  | 106            | 125            | 190            | 90                           | 180             | 70                  | 3.5                   |
| K3..15 | 24                       | 100 | 50             | 24                       | 100 | 50             | 475 | 270 | 55           | 95  | 127            | 135            | 215            | 95                           | 215             | 95                  | 4.5                   |
| K3..16 | 24                       | 100 | 50             | 24                       | 100 | 50             | 525 | 300 | 60           | 130 | 133            | 145            | 240            | 95                           | 215             | 130                 | 6.5                   |
| K3..17 | 28                       | 100 | 50             | 24                       | 100 | 50             | 575 | 340 | 70           | 135 | 141            | 150            | 270            | 95                           | 215             | 175                 | 9                     |
| K3..18 | 32                       | 110 | 60             | 28                       | 100 | 50             | 640 | 360 | 80           | 160 | 158            | 170            | 305            | 140                          | 265             | 235                 | 13                    |



| Size   | Foundation |     |     |                              |     |     |     |                              |                              |    |    |     |     |    |     |
|--------|------------|-----|-----|------------------------------|-----|-----|-----|------------------------------|------------------------------|----|----|-----|-----|----|-----|
|        | A          | B   | C   | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <sub>2</sub> <sup>2)</sup> | N  | O  | P   | R   | S  | T   |
| K3..14 | 385        | 400 | 140 | 194                          | 190 | 150 | 125 | 278                          | 340                          | 38 | 14 | 80  | 140 | 24 | 345 |
| K3..15 | 420        | 460 | 155 | 215                          | 228 | 170 | 140 | 306                          | 370                          | 38 | 14 | 95  | 170 | 24 | 395 |
| K3..16 | 480        | 521 | 175 | 231                          | 233 | 190 | 160 | 327                          | 410                          | 38 | 14 | 110 | 195 | 24 | 450 |
| K3..17 | 530        | 580 | 190 | 257                          | 250 | 210 | 180 | 378                          | 450                          | 43 | 18 | 115 | 210 | 32 | 495 |
| K3..18 | 595        | 648 | 215 | 281                          | 284 | 230 | 200 | 404                          | 490                          | 43 | 18 | 135 | 240 | 32 | 565 |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

1) Max. dimensions; details acc. to order related documents

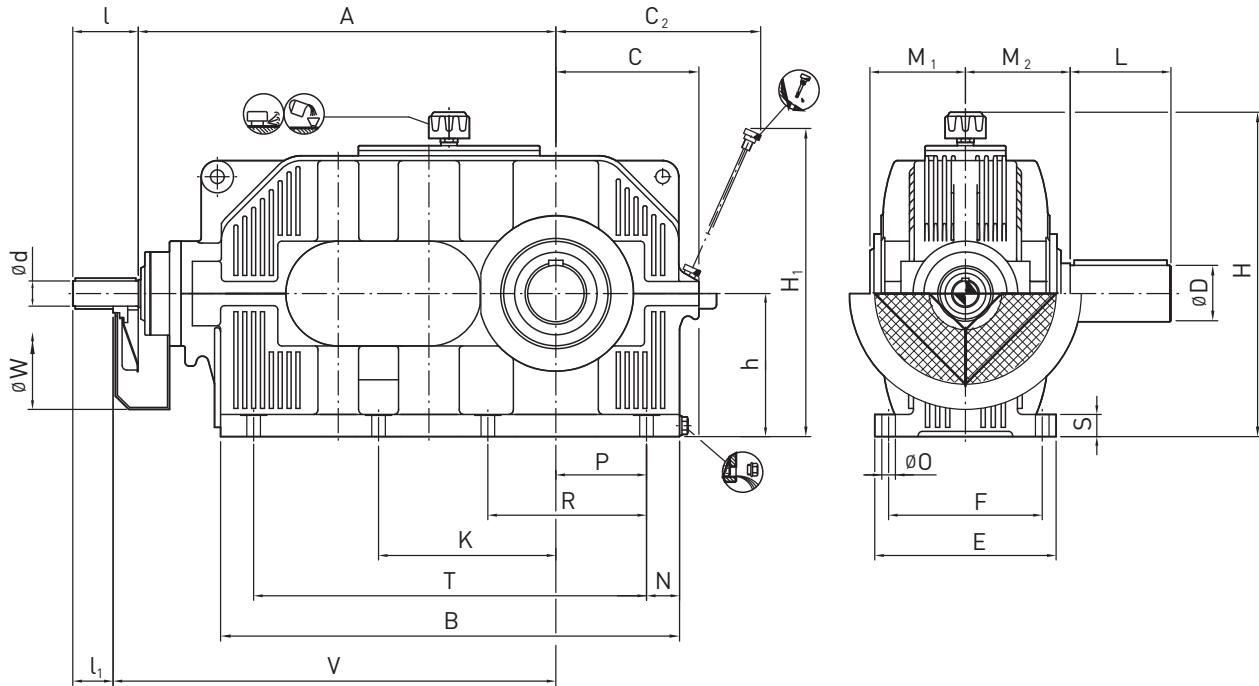
2) Approximate values; exact values acc. to order related documents

**Bevel Helical Gear Unit**

**Horizontal Mounting**

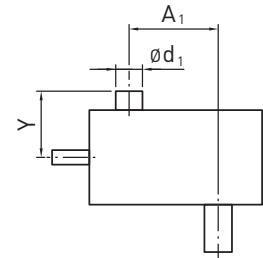
**Type - K3H**

Triple Stage  
 Size 19 to 26



\*For other shaft options refer page 60 to 64.

| Size   | i = 20-50 |     |                | Input Shaft<br>i = 56-71 |     |                | Output Shaft |     |     |     |                |                | Backstop       |                              |                 | Average Weight [kg] | Oil Quantity [Litres] |
|--------|-----------|-----|----------------|--------------------------|-----|----------------|--------------|-----|-----|-----|----------------|----------------|----------------|------------------------------|-----------------|---------------------|-----------------------|
|        | d         | l   | l <sub>1</sub> | d                        | l   | l <sub>1</sub> | V            | W   | D   | L   | M <sub>1</sub> | M <sub>2</sub> | A <sub>1</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                     |                       |
|        |           |     |                |                          |     |                |              |     |     |     |                |                |                |                              |                 |                     |                       |
| K3..19 | 38        | 110 | 60             | 32                       | 110 | 60             | 705          | 360 | 90  | 165 | 171            | 180            | 340            | 150                          | 265             | 320                 | 18                    |
| K3..20 | 42        | 130 | 80             | 38                       | 110 | 60             | 790          | 400 | 100 | 200 | 176            | 200            | 385            | 150                          | 265             | 430                 | 26                    |
| K3..21 | 48        | 130 | 80             | 42                       | 130 | 80             | 885          | 460 | 110 | 200 | 210            | 220            | 430            | 190                          | 340             | 580                 | 33                    |
| K3..22 | 52        | 130 | 80             | 48                       | 130 | 80             | 970          | 530 | 120 | 210 | 220            | 230            | 480            | 190                          | 340             | 780                 | 46                    |
| K3..23 | 58        | 135 | 85             | 52                       | 130 | 80             | 1095         | 550 | 140 | 250 | 234            | 260            | 540            | 190                          | 340             | 1060                | 65                    |
| K3..24 | 65        | 155 | 105            | 65                       | 155 | 105            | 1215         | 600 | 160 | 290 | 283            | 295            | 605            | 245                          | 440             | 1430                | 90                    |
| K3..25 | 70        | 155 | 105            | 70                       | 155 | 105            | 1350         | 650 | 170 | 300 | 293            | 305            | 680            | 245                          | 440             | 1930                | 125                   |
| K3..26 | 85        | 180 | 130            | 80                       | 180 | 130            | 1500         | 700 | 190 | 350 | 306            | 345            | 765            | 245                          | 440             | 2590                | 180                   |



| Size   | Foundation |      |     |                              |     |     |     |                              |                              |     |     |    |     |     |    |      |
|--------|------------|------|-----|------------------------------|-----|-----|-----|------------------------------|------------------------------|-----|-----|----|-----|-----|----|------|
|        | A          | B    | C   | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <sub>2</sub> <sup>2)</sup> | K   | N   | O  | P   | R   | S  | T    |
| K3..19 | 660        | 716  | 240 | 315                          | 303 | 250 | 225 | 455                          | 540                          |     | 53  | 23 | 145 | 255 | 36 | 615  |
| K3..20 | 745        | 807  | 260 | 345                          | 314 | 270 | 250 | 496                          | 590                          |     | 54  | 23 | 165 | 290 | 36 | 705  |
| K3..21 | 835        | 898  | 290 | 394                          | 385 | 310 | 280 | 572                          | 650                          |     | 64  | 27 | 180 | 315 | 45 | 780  |
| K3..22 | 920        | 1010 | 325 | 429                          | 400 | 340 | 315 | 635                          | 720                          |     | 75  | 27 | 200 | 355 | 45 | 880  |
| K3..23 | 1035       | 1139 | 355 | 481                          | 450 | 380 | 355 | 705                          | 800                          | 655 | 87  | 33 | 220 | 405 | 55 | 985  |
| K3..24 | 1145       | 1269 | 390 | 541                          | 515 | 410 | 400 | 795                          | 890                          | 740 | 92  | 33 | 245 | 450 | 55 | 1110 |
| K3..25 | 1275       | 1411 | 440 | 591                          | 535 | 460 | 450 | 865                          | 990                          | 840 | 98  | 33 | 280 | 510 | 55 | 1245 |
| K3..26 | 1425       | 1586 | 490 | 659                          | 600 | 510 | 500 | 954                          | 1090                         | 940 | 108 | 39 | 315 | 575 | 65 | 1400 |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to  $\varnothing 50$  k6; over  $\varnothing 50$  m6.

1) Max. dimensions; details acc. to order related documents

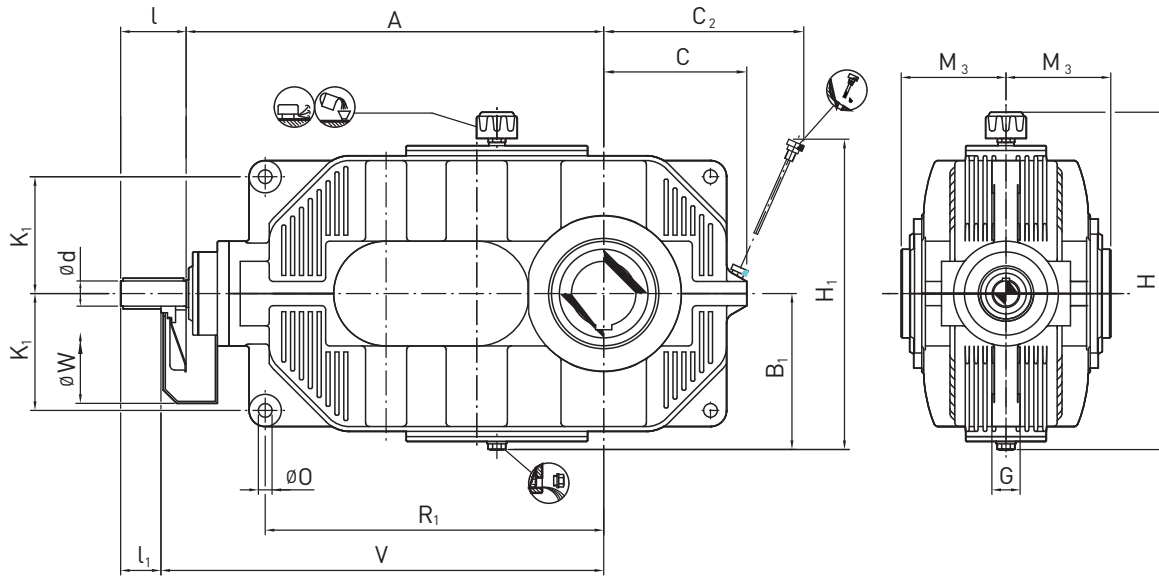
2) Approximate values; exact values acc. to order related documents

### Type - K3T

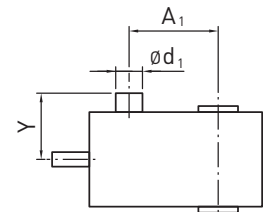
Triple Stage  
Size 14 to 18

### Torque Arm Mounting

### Bevel Helical Gear Unit



| Size   | Input Shaft |     |                |           |     |                | V   | W   | M <sub>3</sub> | Backstop     |                |                              | Average Weight [kg] | Oil Quantity [Litres] |                 |
|--------|-------------|-----|----------------|-----------|-----|----------------|-----|-----|----------------|--------------|----------------|------------------------------|---------------------|-----------------------|-----------------|
|        | i = 20-50   |     |                | i = 56-71 |     |                |     |     |                | Output Shaft | A <sub>1</sub> | d <sub>1</sub> <sup>1)</sup> |                     |                       | Y <sup>1)</sup> |
|        | d           | l   | l <sub>1</sub> | d         | l   | l <sub>1</sub> |     |     |                |              |                |                              |                     |                       |                 |
| K3..14 | 19          | 90  | 40             | 19        | 90  | 40             | 435 | 240 | 120            | 190          | 90             | 180                          | 65                  | 2                     |                 |
| K3..15 | 24          | 100 | 50             | 24        | 100 | 50             | 475 | 270 | 135            | 215          | 95             | 215                          | 85                  | 3                     |                 |
| K3..16 | 24          | 100 | 50             | 24        | 100 | 50             | 525 | 300 | 145            | 240          | 95             | 215                          | 115                 | 4                     |                 |
| K3..17 | 28          | 100 | 50             | 24        | 100 | 50             | 575 | 340 | 150            | 270          | 95             | 215                          | 150                 | 6                     |                 |
| K3..18 | 32          | 110 | 60             | 28        | 100 | 50             | 640 | 360 | 170            | 305          | 140            | 265                          | 205                 | 8                     |                 |



| Size   | Foundation |                              |     |                              |    |                              |                 |                |    |                |
|--------|------------|------------------------------|-----|------------------------------|----|------------------------------|-----------------|----------------|----|----------------|
|        | A          | B <sub>1</sub> <sup>2)</sup> | C   | C <sub>2</sub> <sup>1)</sup> | G  | H <sub>1</sub> <sup>1)</sup> | H <sup>2)</sup> | K <sub>1</sub> | O  | R <sub>1</sub> |
| K3..14 | 385        | 155                          | 140 | 194                          | 25 | 308                          | 370             | 90             | 18 | 300            |
| K3..15 | 420        | 170                          | 155 | 215                          | 28 | 336                          | 400             | 102            | 18 | 336            |
| K3..16 | 480        | 190                          | 175 | 231                          | 30 | 357                          | 440             | 115            | 20 | 380            |
| K3..17 | 530        | 210                          | 190 | 257                          | 32 | 408                          | 480             | 136            | 20 | 430            |
| K3..18 | 595        | 230                          | 215 | 281                          | 35 | 434                          | 520             | 146            | 24 | 478            |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

1) Max. dimensions; details acc. to order related documents

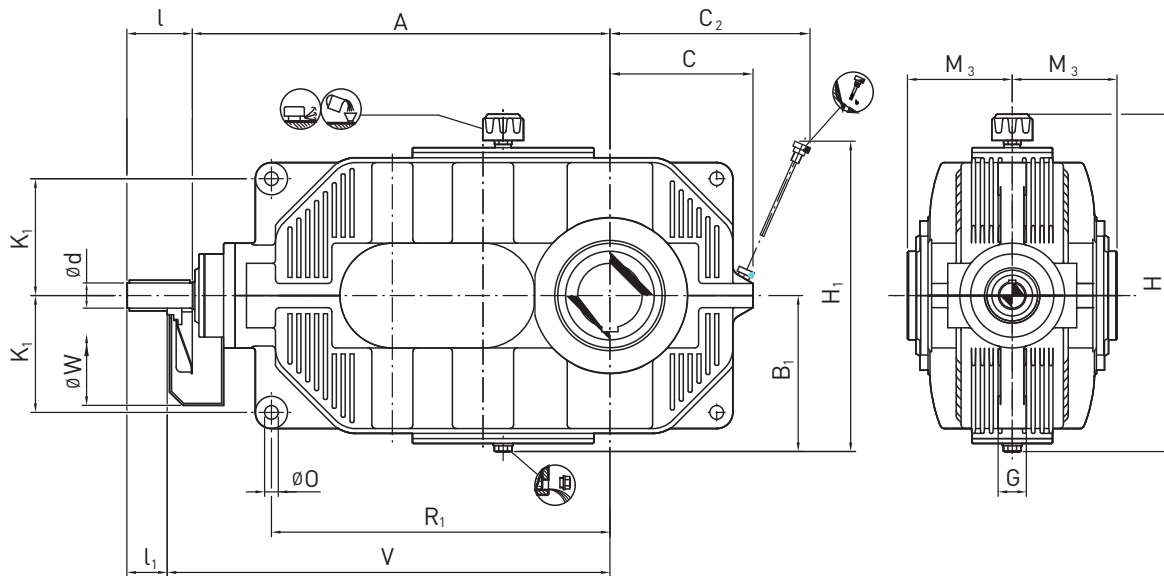
2) Approximate values; exact values acc. to order related documents

**Bevel Helical Gear Unit**

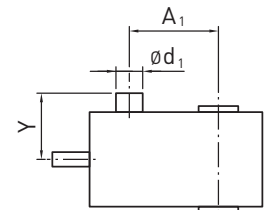
**Torque Arm Mounting**

**Type - K3T**

Triple Stage  
 Size 19 to 26



| Size   | Input Shaft |     |           |    |                |                | V    | W   | Output Shaft | Backstop       |                              |                 | Average Weight [kg] | Oil Quantity [Litres] |
|--------|-------------|-----|-----------|----|----------------|----------------|------|-----|--------------|----------------|------------------------------|-----------------|---------------------|-----------------------|
|        | i = 20-50   |     | i = 56-71 |    | l <sub>1</sub> | M <sub>3</sub> |      |     |              | A <sub>1</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                     |                       |
|        | d           | l   | d         | l  |                |                |      |     |              |                |                              |                 |                     |                       |
| K3..19 | 38          | 110 | 60        | 32 | 110            | 60             | 705  | 360 | 180          | 340            | 150                          | 265             | 280                 | 12                    |
| K3..20 | 42          | 130 | 80        | 38 | 110            | 60             | 790  | 400 | 190          | 385            | 150                          | 265             | 370                 | 17                    |
| K3..21 | 48          | 130 | 80        | 42 | 130            | 80             | 885  | 460 | 220          | 430            | 190                          | 340             | 500                 | 21                    |
| K3..22 | 52          | 130 | 80        | 48 | 130            | 80             | 970  | 530 | 230          | 480            | 190                          | 340             | 670                 | 28                    |
| K3..23 | 58          | 135 | 85        | 52 | 130            | 80             | 1095 | 550 | 260          | 540            | 190                          | 340             | 910                 | 40                    |
| K3..24 | 65          | 155 | 105       | 65 | 155            | 105            | 1215 | 600 | 295          | 605            | 245                          | 440             | 1170                | 55                    |
| K3..25 | 70          | 155 | 105       | 70 | 155            | 105            | 1350 | 650 | 305          | 680            | 245                          | 440             | 1580                | 80                    |
| K3..26 | 85          | 180 | 130       | 80 | 180            | 130            | 1500 | 700 | 345          | 765            | 245                          | 440             | 2070                | 115                   |



| Size   | Foundation |                              |     |                              |     |                              |                              |                |    |                |
|--------|------------|------------------------------|-----|------------------------------|-----|------------------------------|------------------------------|----------------|----|----------------|
|        | A          | B <sub>1</sub> <sup>2)</sup> | C   | C <sub>2</sub> <sup>1)</sup> | G   | H <sub>1</sub> <sup>1)</sup> | H <sub>2</sub> <sup>2)</sup> | K <sub>1</sub> | O  | R <sub>1</sub> |
| K3..19 | 660        | 255                          | 240 | 315                          | 45  | 485                          | 570                          | 170            | 24 | 525            |
| K3..20 | 745        | 280                          | 260 | 345                          | 50  | 526                          | 620                          | 190            | 28 | 590            |
| K3..21 | 835        | 310                          | 290 | 394                          | 55  | 602                          | 680                          | 220            | 28 | 660            |
| K3..22 | 920        | 345                          | 325 | 429                          | 60  | 665                          | 750                          | 255            | 36 | 740            |
| K3..23 | 1035       | 385                          | 355 | 481                          | 70  | 735                          | 830                          | 290            | 40 | 840            |
| K3..24 | 1145       | 430                          | 390 | 541                          | 80  | 825                          | 920                          | 325            | 48 | 930            |
| K3..25 | 1275       | 480                          | 440 | 591                          | 90  | 895                          | 1020                         | 370            | 48 | 1035           |
| K3..26 | 1425       | 530                          | 490 | 659                          | 105 | 984                          | 1120                         | 415            | 55 | 1165           |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

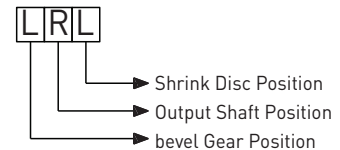
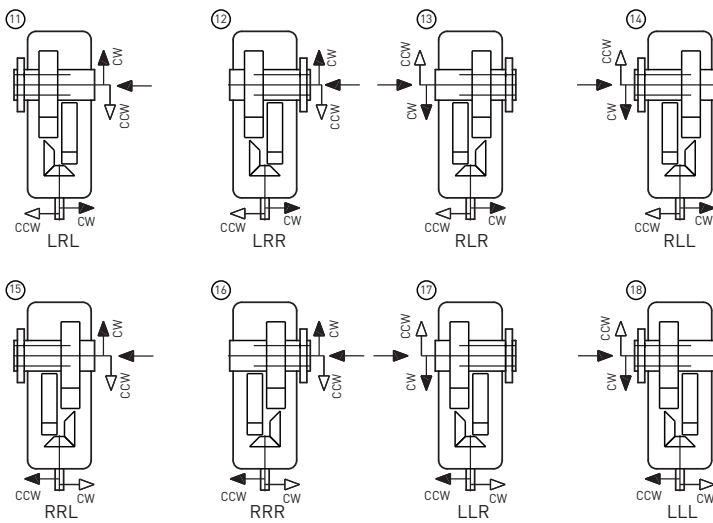
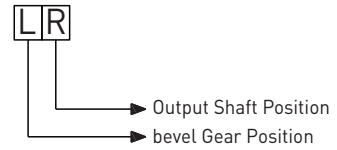
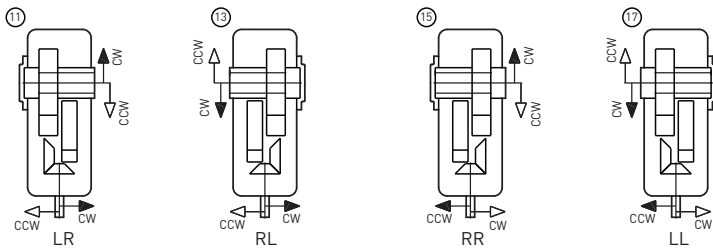
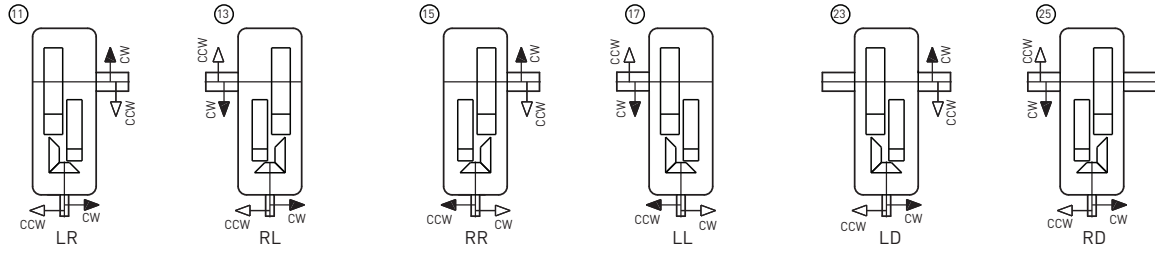
1) Max. dimensions; details acc. to order related documents

2) Approximate values; exact values acc. to order related documents

**Type - K3**  
Triple Stage

**Shaft Arrangement**

**Bevel Helical Gear Unit**



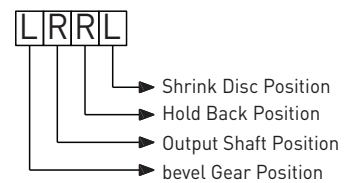
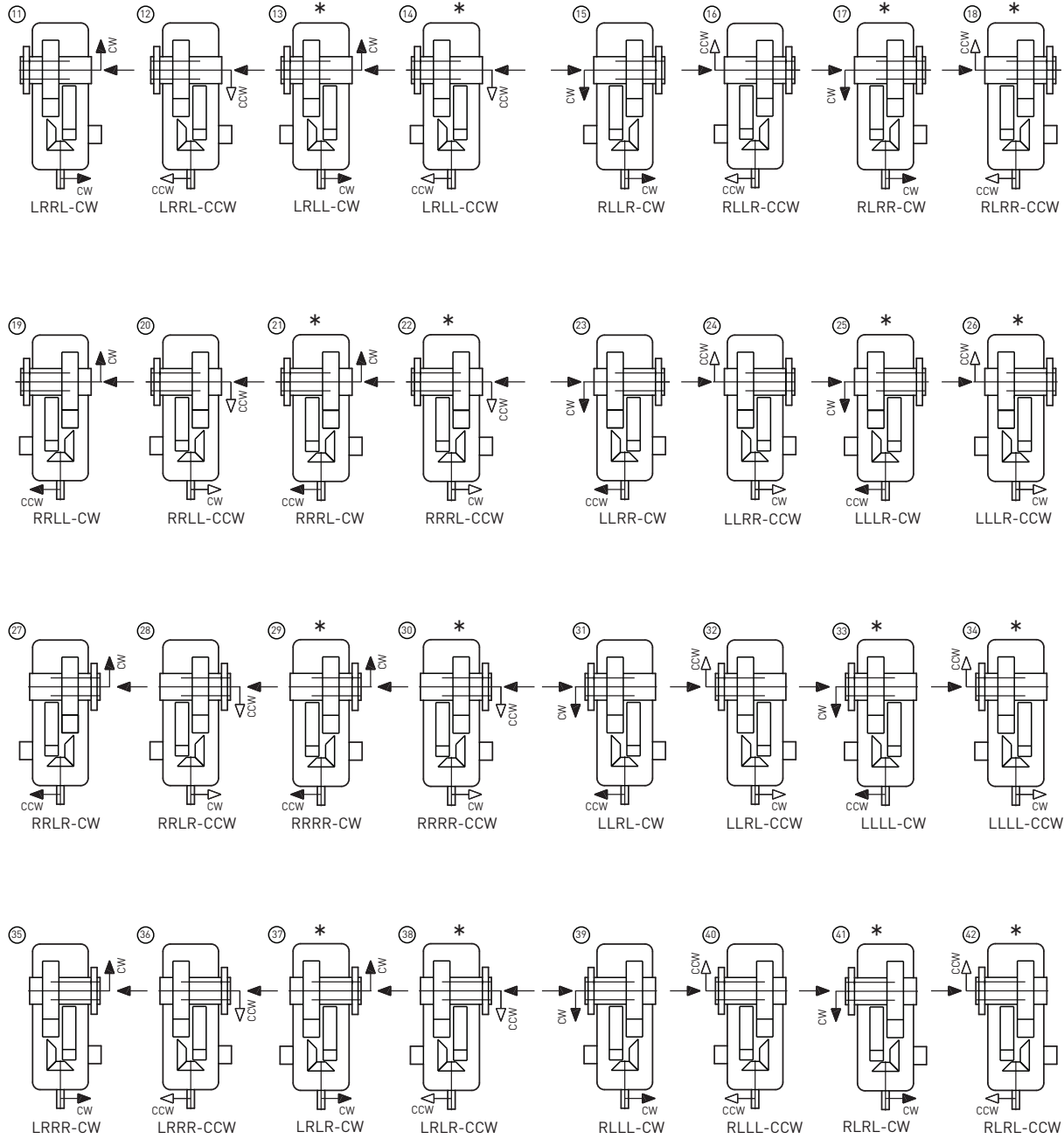


**Type - K3**

Triple Stage

**Shaft Arrangement - Hold Back**

**Bevel Helical Gear Unit**

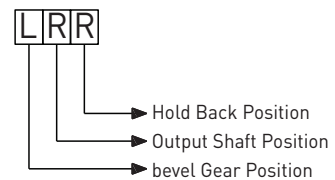
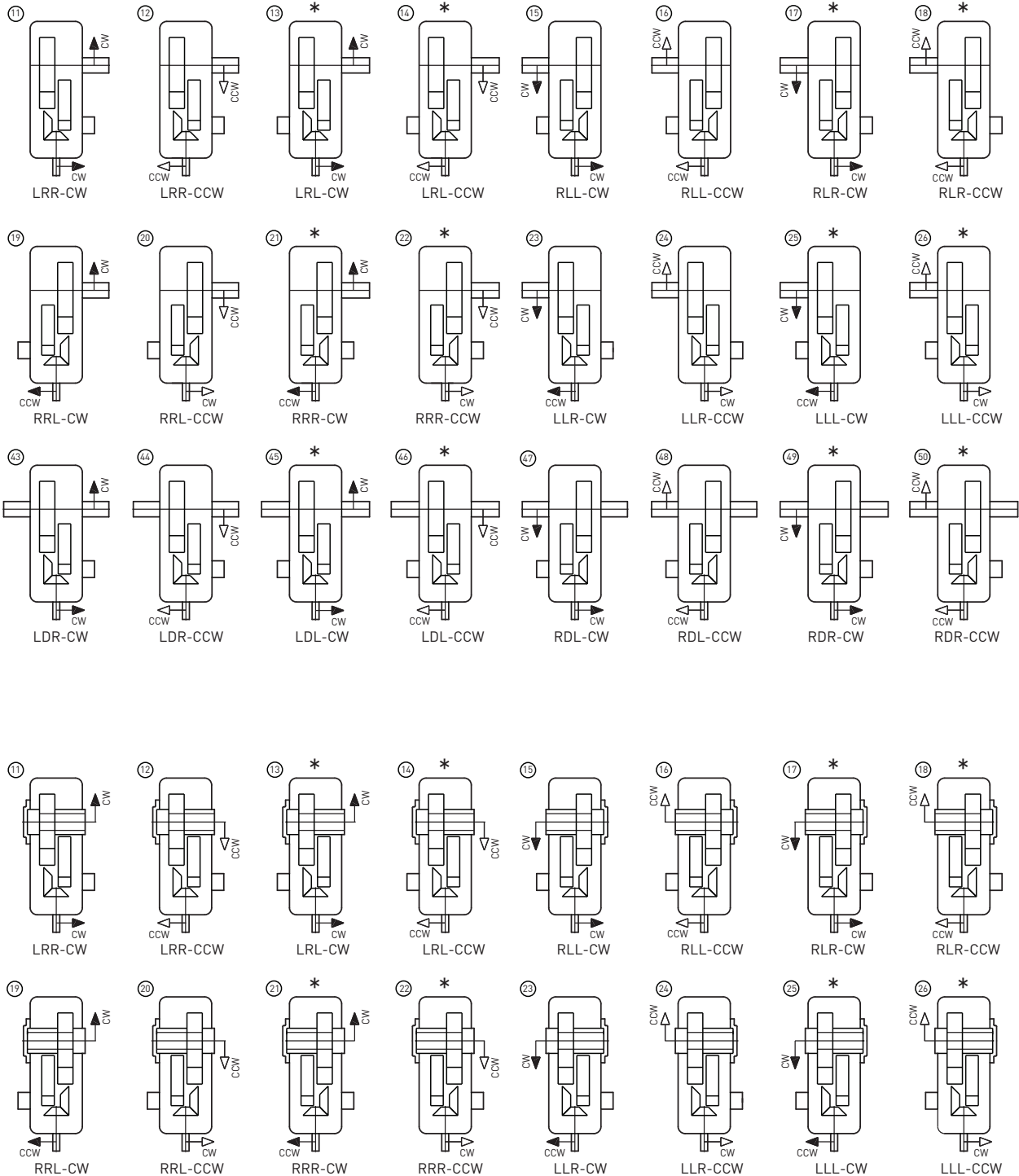




**Bevel Helical Gear Unit**

**Shaft Arrangement - Hold Back**

**Type - K3**  
 Triple Stage



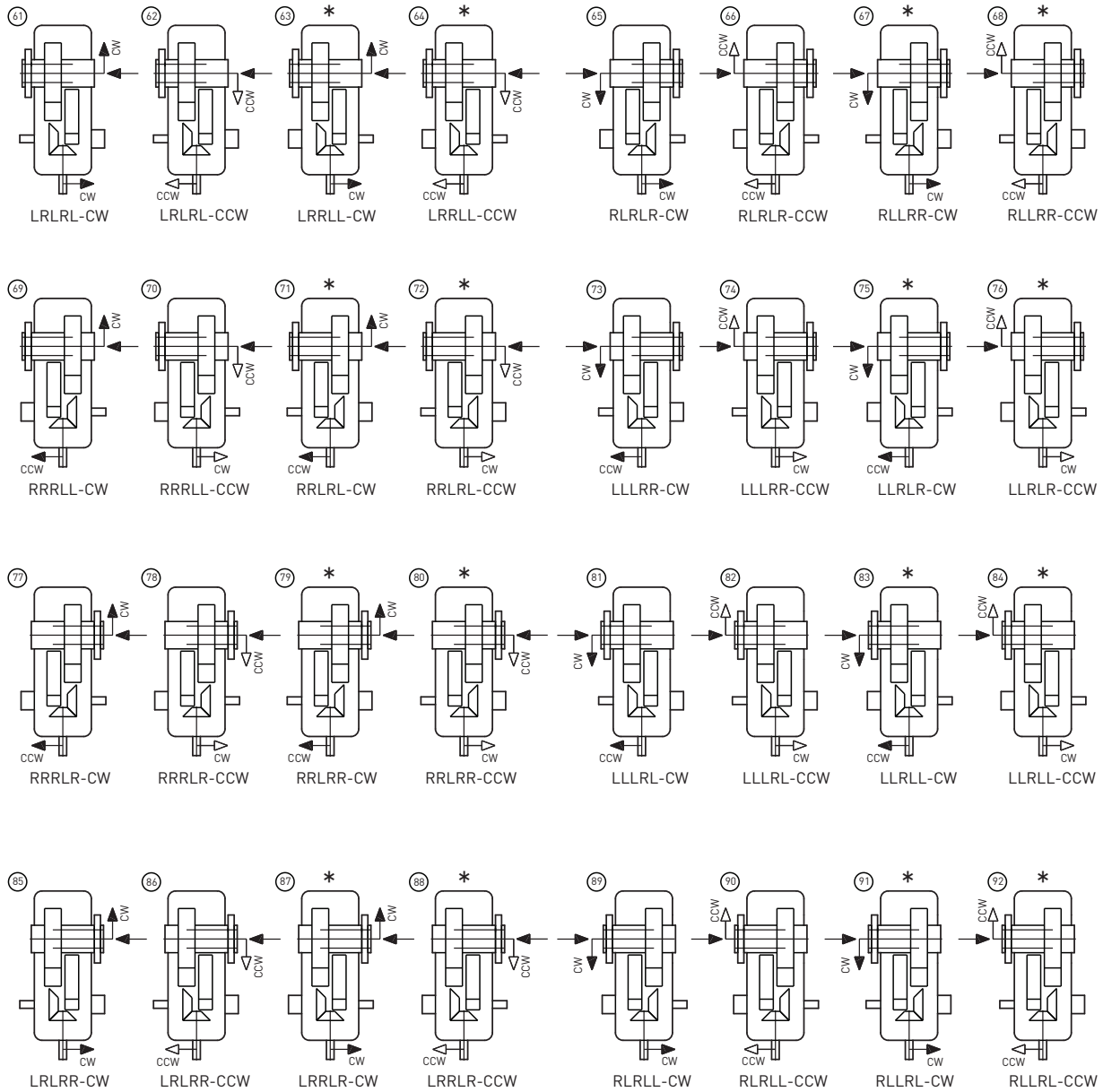


**Bevel Helical Gear Unit**

**Shaft Arrangement-Int Ext & Hold Back**

**Type - K3**

**Triple Stage**



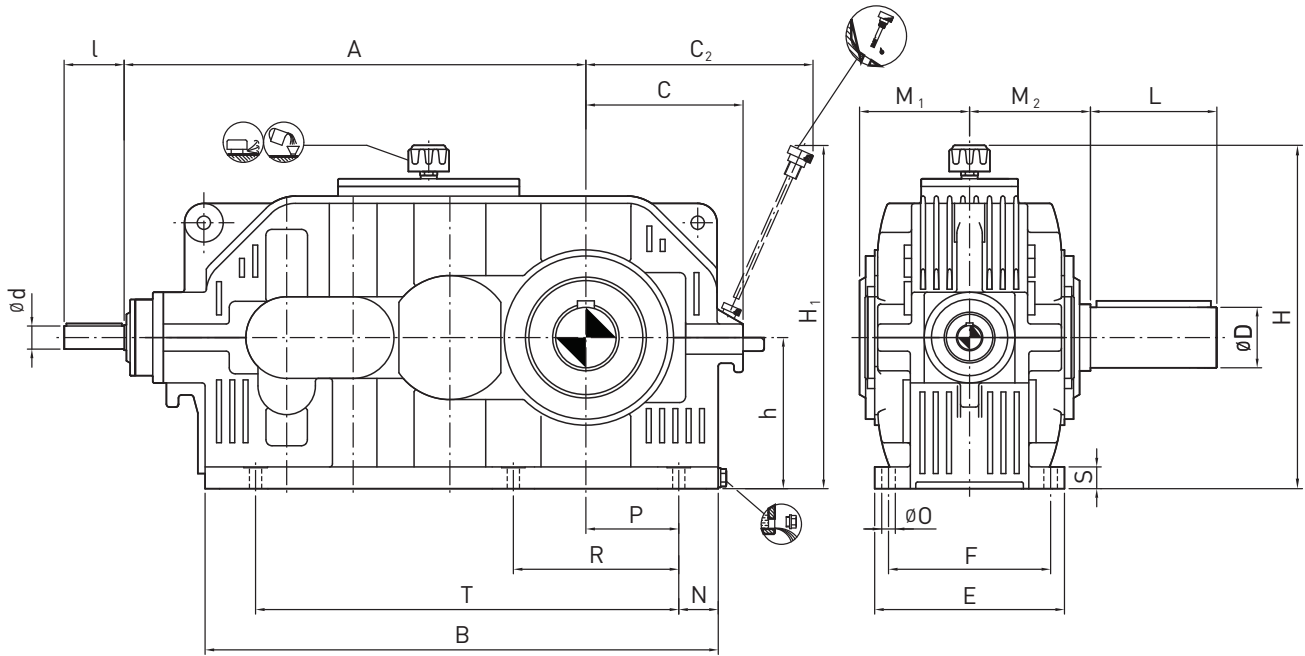
- Shrink Disc Position
- Hold Back Position
- Intermediate Shaft Ext- Position
- Output Shaft Position
- Bevel Gear Position

## Type - K4H

Quadruple Stage  
Size 17 to 18

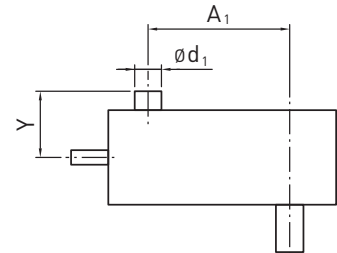
## Horizontal Mounting

## Bevel Helical Gear Unit



\*For other shaft options refer page 60 to 64.

| Size   | Input Shaft |     |    |     | Output Shaft |     |                |                | Backstop       |                              |                 | Average Weight [kg] | Oil Quantity [Litres] |
|--------|-------------|-----|----|-----|--------------|-----|----------------|----------------|----------------|------------------------------|-----------------|---------------------|-----------------------|
|        | d           | l   | d  | l   | D            | L   | M <sub>1</sub> | M <sub>2</sub> | A <sub>1</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                     |                       |
| K4..17 | 19          | 90  | 19 | 90  | 70           | 135 | 141            | 150            | 350            | 85                           | 210             | 175                 | 9                     |
|        |             |     |    |     |              |     |                |                |                |                              |                 |                     |                       |
| K4..18 | 24          | 100 | 24 | 100 | 80           | 160 | 158            | 170            | 395            | 95                           | 255             | 235                 | 13                    |
|        |             |     |    |     |              |     |                |                |                |                              |                 |                     |                       |



| Size   | Foundation |     |     |                              |     |     |     |                              |                              |    |    |     |     |    |     |
|--------|------------|-----|-----|------------------------------|-----|-----|-----|------------------------------|------------------------------|----|----|-----|-----|----|-----|
|        | A          | B   | C   | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <sub>2</sub> <sup>2)</sup> | N  | O  | P   | R   | S  | T   |
| K4..17 | 545        | 592 | 190 | 257                          | 250 | 210 | 180 | 378                          | 450                          | 43 | 18 | 115 | 210 | 32 | 495 |
| K4..18 | 600        | 671 | 215 | 281                          | 284 | 230 | 200 | 404                          | 490                          | 43 | 18 | 135 | 240 | 32 | 565 |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

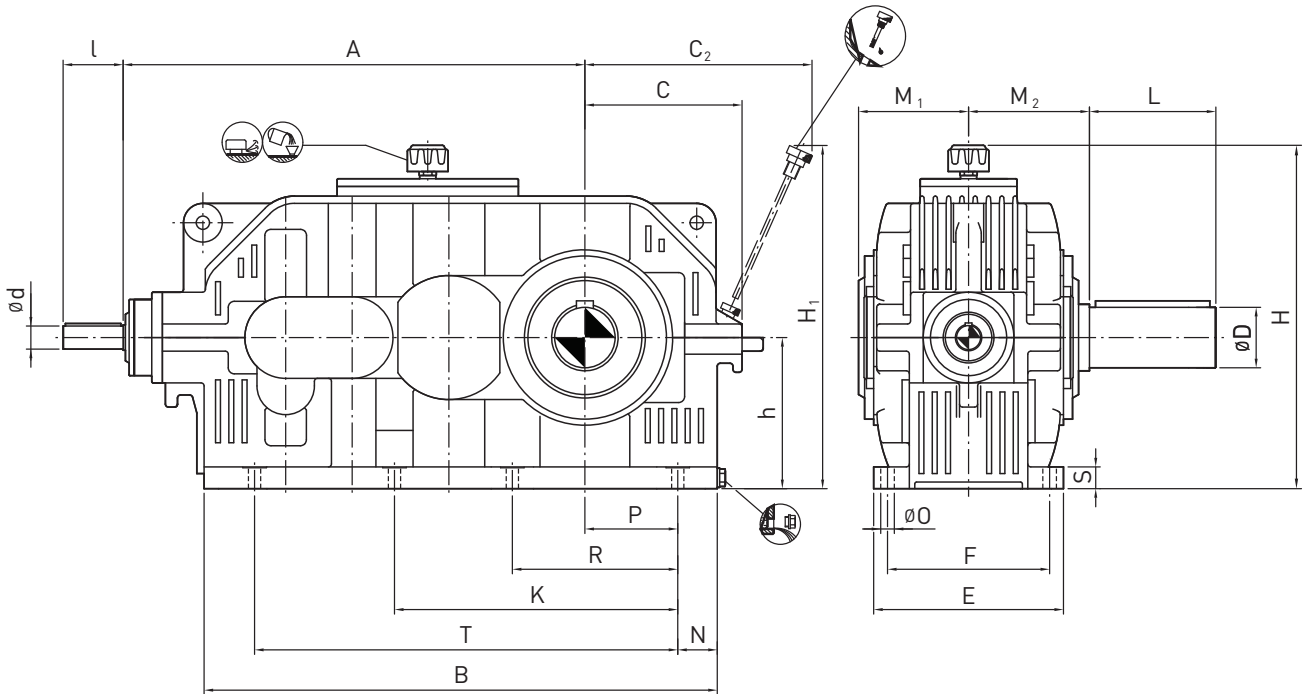
1) Max. dimensions; details acc. to order related documents

2) Approximate values; exact values acc. to order related documents

**Bevel Helical Gear Unit**

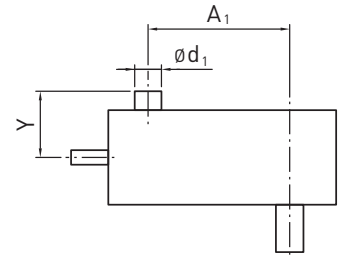
**Horizontal Mounting**

**Type - K4H**  
 Quadruple Stage  
 Size 19 to 26



\*For other shaft options refer page 60 to 64.

| Size   | Input Shaft |     |    |     | Output Shaft |     |                |                | Backstop       |                              |                 | Average Weight [kg] | Oil Quantity [Litres] |
|--------|-------------|-----|----|-----|--------------|-----|----------------|----------------|----------------|------------------------------|-----------------|---------------------|-----------------------|
|        | d           | l   | d  | l   | D            | L   | M <sub>1</sub> | M <sub>2</sub> | A <sub>1</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                     |                       |
| K4..19 | 24          | 100 | 24 | 100 | 90           | 165 | 171            | 180            | 440            | 95                           | 255             | 320                 | 18                    |
| K4..20 | 28          | 100 | 24 | 100 | 100          | 200 | 176            | 200            | 495            | 95                           | 255             | 430                 | 26                    |
| K4..21 | 32          | 110 | 28 | 100 | 110          | 200 | 210            | 220            | 555            | 135                          | 310             | 580                 | 33                    |
| K4..22 | 38          | 110 | 32 | 110 | 120          | 210 | 220            | 230            | 620            | 135                          | 310             | 780                 | 46                    |
| K4..23 | 42          | 130 | 38 | 110 | 140          | 250 | 234            | 260            | 700            | 140                          | 310             | 1060                | 65                    |
| K4..24 | 48          | 130 | 42 | 130 | 160          | 290 | 283            | 295            | 785            | 175                          | 415             | 1430                | 90                    |
| K4..25 | 52          | 130 | 48 | 130 | 170          | 300 | 293            | 305            | 880            | 175                          | 415             | 1930                | 125                   |
| K4..26 | 58          | 135 | 52 | 130 | 190          | 350 | 306            | 345            | 990            | 190                          | 415             | 2590                | 180                   |



| Size   | Foundation |      |     |                              |     |     |     |                              |                              |     |     |    |     |     |    |      |
|--------|------------|------|-----|------------------------------|-----|-----|-----|------------------------------|------------------------------|-----|-----|----|-----|-----|----|------|
|        | A          | B    | C   | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <sub>2</sub> <sup>2)</sup> | K   | N   | O  | P   | R   | S  | T    |
| K4..19 | 680        | 751  | 240 | 315                          | 303 | 250 | 225 | 455                          | 540                          |     | 53  | 23 | 145 | 255 | 36 | 615  |
| K4..20 | 755        | 849  | 260 | 345                          | 314 | 270 | 250 | 496                          | 590                          |     | 54  | 23 | 165 | 290 | 36 | 705  |
| K4..21 | 845        | 946  | 290 | 394                          | 385 | 310 | 280 | 572                          | 650                          |     | 64  | 27 | 180 | 315 | 45 | 780  |
| K4..22 | 940        | 1060 | 325 | 429                          | 400 | 340 | 315 | 635                          | 720                          |     | 75  | 27 | 200 | 355 | 45 | 880  |
| K4..23 | 1060       | 1181 | 355 | 481                          | 450 | 380 | 355 | 705                          | 800                          | 655 | 87  | 33 | 220 | 405 | 55 | 985  |
| K4..24 | 1190       | 1324 | 390 | 541                          | 515 | 410 | 400 | 795                          | 890                          | 740 | 92  | 33 | 245 | 450 | 55 | 1110 |
| K4..25 | 1320       | 1496 | 440 | 591                          | 535 | 460 | 450 | 865                          | 990                          | 840 | 98  | 33 | 280 | 510 | 55 | 1245 |
| K4..26 | 1485       | 1686 | 490 | 659                          | 600 | 510 | 500 | 954                          | 1090                         | 940 | 108 | 39 | 315 | 575 | 65 | 1400 |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

1) Max. dimensions; details acc. to order related documents

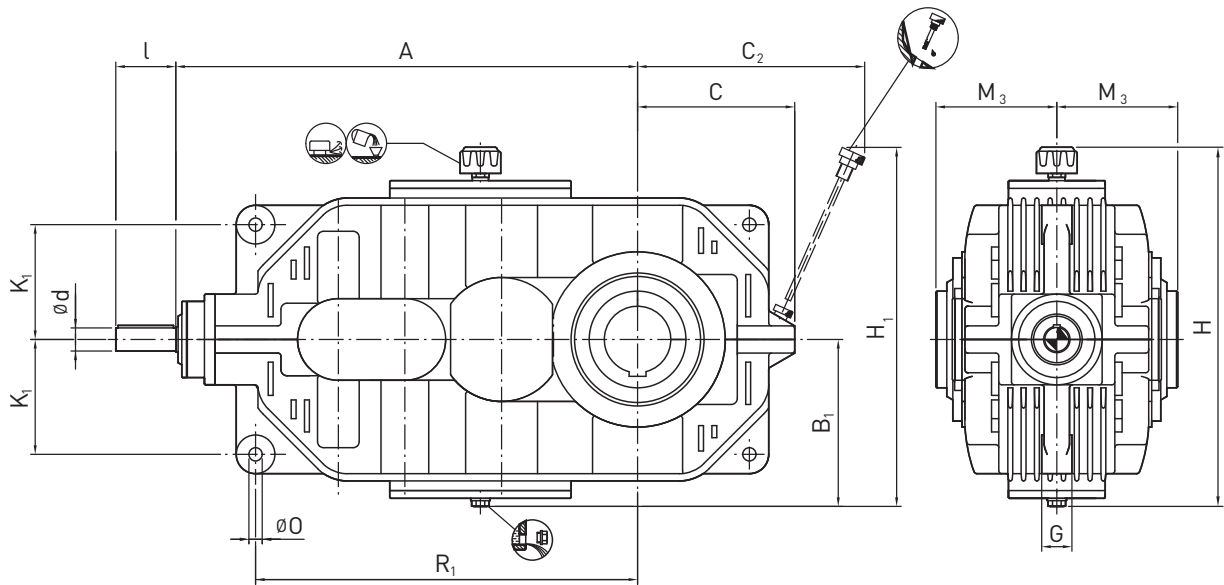
2) Approximate values; exact values acc. to order related documents

## Type - K4T

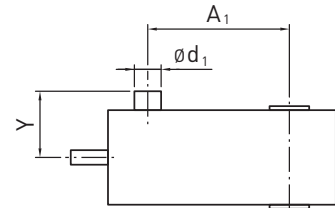
Quadruple Stage  
Size 17 to 18

## Torque Arm Mounting

## Bevel Helical Gear Unit



| Size   | Input Shaft |     |             |     | Output Shaft | Backstop |       |            | Average Weight [kg] | Oil Quantity [Litres] |          |
|--------|-------------|-----|-------------|-----|--------------|----------|-------|------------|---------------------|-----------------------|----------|
|        | i = 80-225  |     | i = 250-400 |     |              | $M_3$    | $A_1$ | $d_1^{1)}$ |                     |                       | $Y^{1)}$ |
|        | d           | l   | d           | l   |              |          |       |            |                     |                       |          |
| K4..17 | 19          | 90  | 19          | 90  | 150          | 350      | 85    | 210        | 150                 | 6                     |          |
| K4..18 | 24          | 100 | 24          | 100 | 170          | 395      | 95    | 255        | 205                 | 8                     |          |



| Size   | Foundation |            |     |            |    |          |            |       |    |       |
|--------|------------|------------|-----|------------|----|----------|------------|-------|----|-------|
|        | A          | $B_1^{2)}$ | C   | $C_2^{1)}$ | G  | $H^{2)}$ | $H_1^{1)}$ | $K_1$ | O  | $R_1$ |
| K4..17 | 545        | 210        | 190 | 257        | 32 | 480      | 408        | 136   | 20 | 442   |
| K4..18 | 600        | 230        | 215 | 281        | 35 | 520      | 434        | 145   | 24 | 500   |

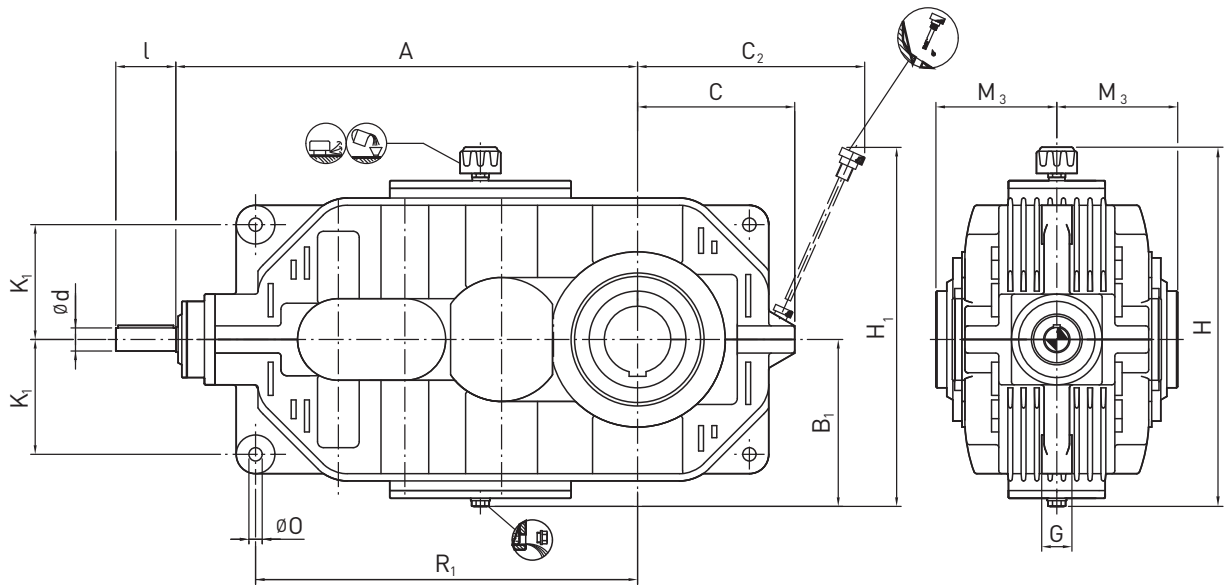
Modification of dimensions reserved.  
Shaft ends with keys according to DIN 6885, part 1, Shape A.  
Shaft centering according to DIN 332, shape DS (with thread)  
Tolerance field for shaft ends ISO fit, up to  $\varnothing 50$  k6; over  $\varnothing 50$  m6.

1) Max. dimensions; details acc. to order related documents  
2) Approximate values; exact values acc. to order related documents

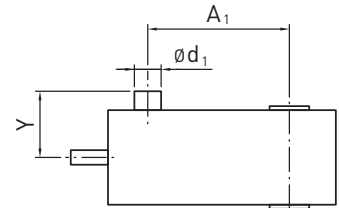
**Bevel Helical Gear Unit**

**Torque Arm Mounting**

**Type - K4T**  
 Quadruple Stage  
 Size 19 to 26



| Size   | Input Shaft  |     |               |     | Output Shaft<br>$M_3$ | Backstop |            |          | Average Weight<br>[kg] | Oil Quantity<br>[Litres] |
|--------|--------------|-----|---------------|-----|-----------------------|----------|------------|----------|------------------------|--------------------------|
|        | $i = 80-225$ |     | $i = 250-400$ |     |                       | $A_1$    | $d_1^{1)}$ | $Y^{1)}$ |                        |                          |
|        | $d$          | $l$ | $d$           | $l$ |                       |          |            |          |                        |                          |
| K4..19 | 24           | 100 | 24            | 100 | 180                   | 440      | 95         | 255      | 280                    | 12                       |
| K4..20 | 28           | 100 | 24            | 100 | 190                   | 495      | 95         | 255      | 370                    | 17                       |
| K4..21 | 32           | 110 | 28            | 100 | 220                   | 555      | 135        | 310      | 500                    | 21                       |
| K4..22 | 38           | 110 | 32            | 110 | 230                   | 620      | 135        | 310      | 670                    | 28                       |
| K4..23 | 42           | 130 | 38            | 110 | 260                   | 700      | 140        | 310      | 910                    | 40                       |
| K4..24 | 48           | 130 | 42            | 130 | 295                   | 785      | 175        | 415      | 1170                   | 55                       |
| K4..25 | 52           | 130 | 48            | 130 | 305                   | 880      | 175        | 415      | 1580                   | 80                       |
| K4..26 | 58           | 135 | 52            | 130 | 345                   | 990      | 190        | 415      | 2070                   | 115                      |



| Size   | Foundation |            |     |            |     |          |            |       |     |       |
|--------|------------|------------|-----|------------|-----|----------|------------|-------|-----|-------|
|        | $A$        | $B_1^{2)}$ | $C$ | $C_2^{1)}$ | $G$ | $H^{2)}$ | $H_1^{1)}$ | $K_1$ | $O$ | $R_1$ |
| K4..19 | 680        | 255        | 240 | 315        | 45  | 570      | 485        | 170   | 24  | 560   |
| K4..20 | 755        | 280        | 260 | 345        | 50  | 620      | 526        | 190   | 28  | 632   |
| K4..21 | 845        | 310        | 290 | 394        | 55  | 680      | 602        | 222   | 28  | 710   |
| K4..22 | 940        | 345        | 325 | 429        | 60  | 750      | 665        | 255   | 36  | 790   |
| K4..23 | 1060       | 385        | 355 | 481        | 70  | 830      | 735        | 290   | 40  | 882   |
| K4..24 | 1190       | 430        | 390 | 541        | 80  | 920      | 825        | 325   | 48  | 985   |
| K4..25 | 1320       | 480        | 440 | 591        | 90  | 1020     | 895        | 370   | 48  | 1115  |
| K4..26 | 1485       | 530        | 490 | 659        | 105 | 1120     | 984        | 415   | 55  | 1265  |

Modification of dimensions reserved.

Shaft ends with keys according to DIN 6885, part 1, Shape A.

Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to  $\phi 50$  k6; over  $\phi 50$  m6.

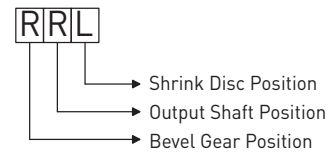
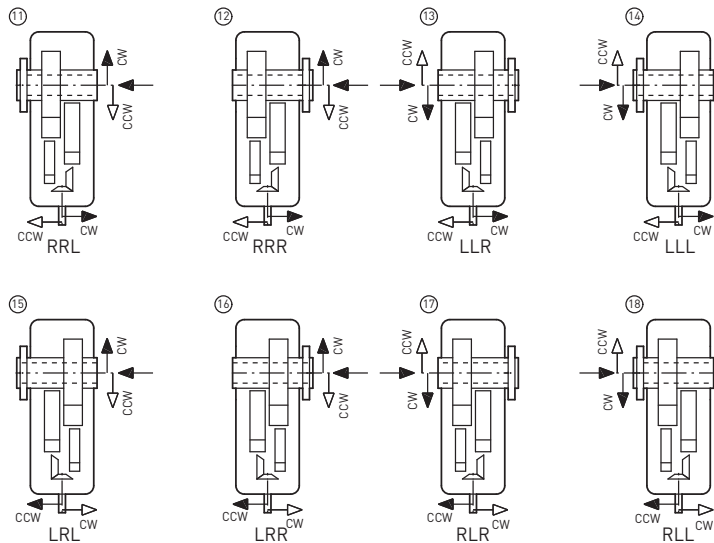
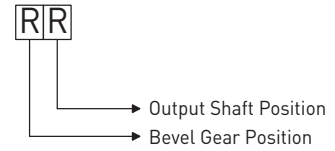
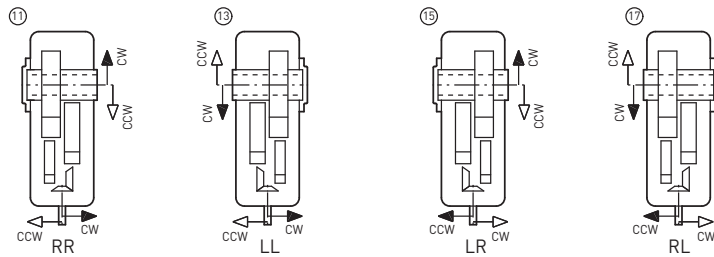
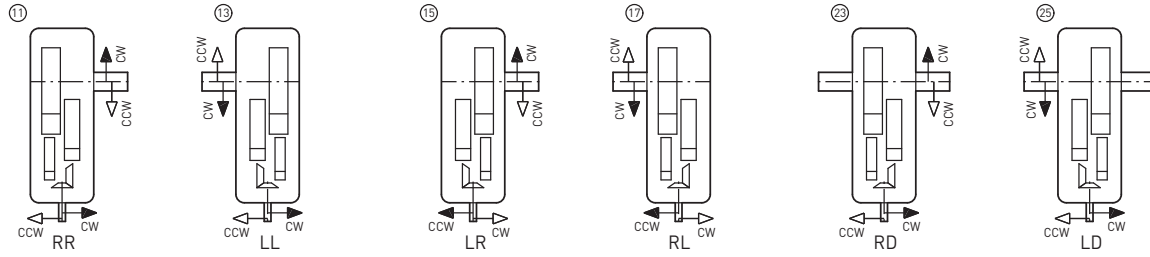
1) Max. dimensions; details acc. to order related documents

2) Approximate values; exact values acc. to order related documents

**Type - K4**  
Quadruple Stage

**Shaft Arrangement**

**Bevel Helical Gear Unit**

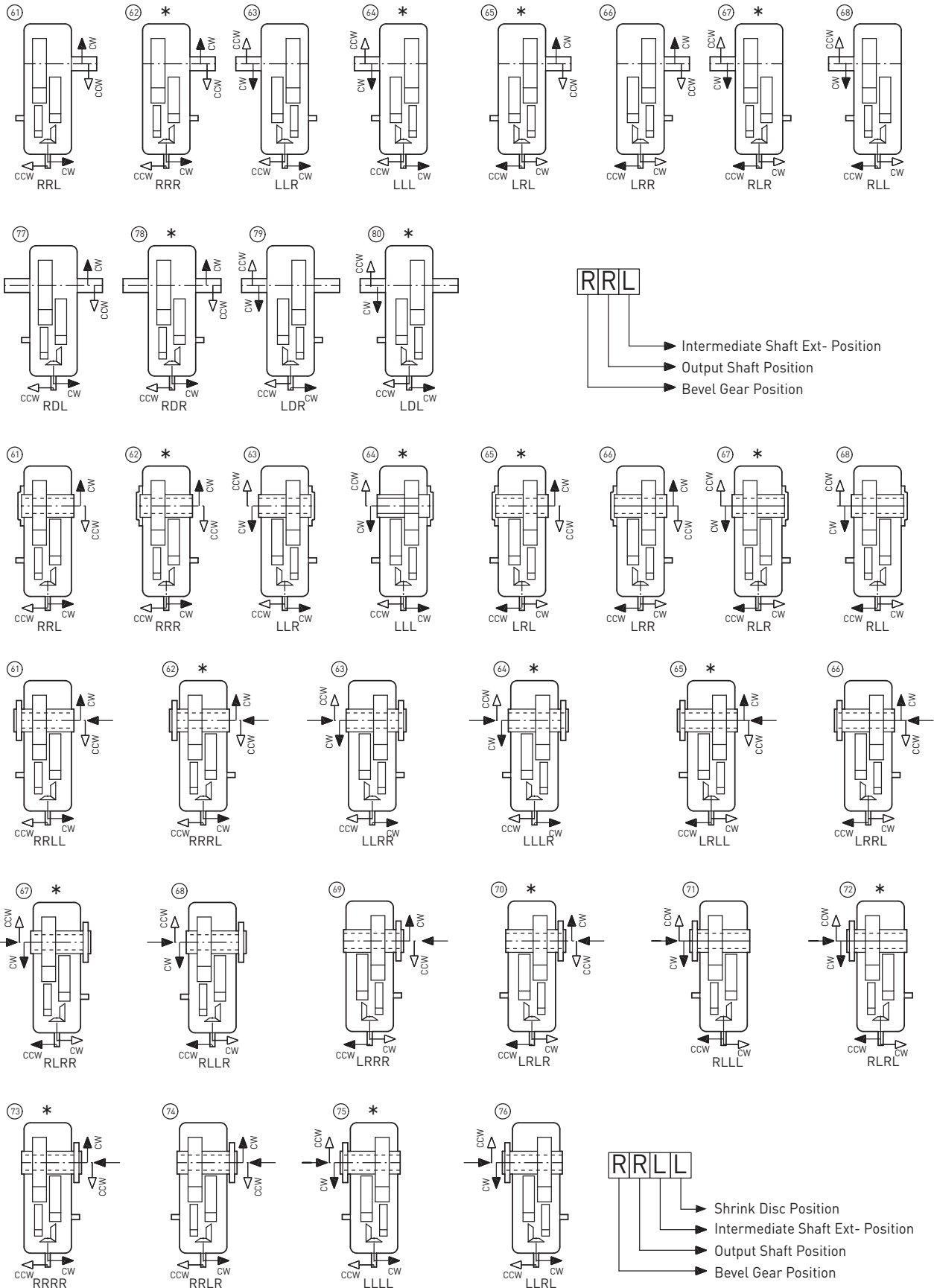




**Bevel Helical Gear Unit**

**Shaft Arrangement - Int. Ext.**

**Type - K4**  
**Quadruple Stage**

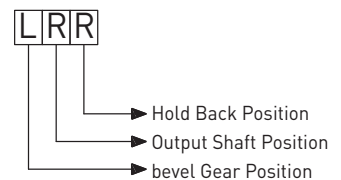
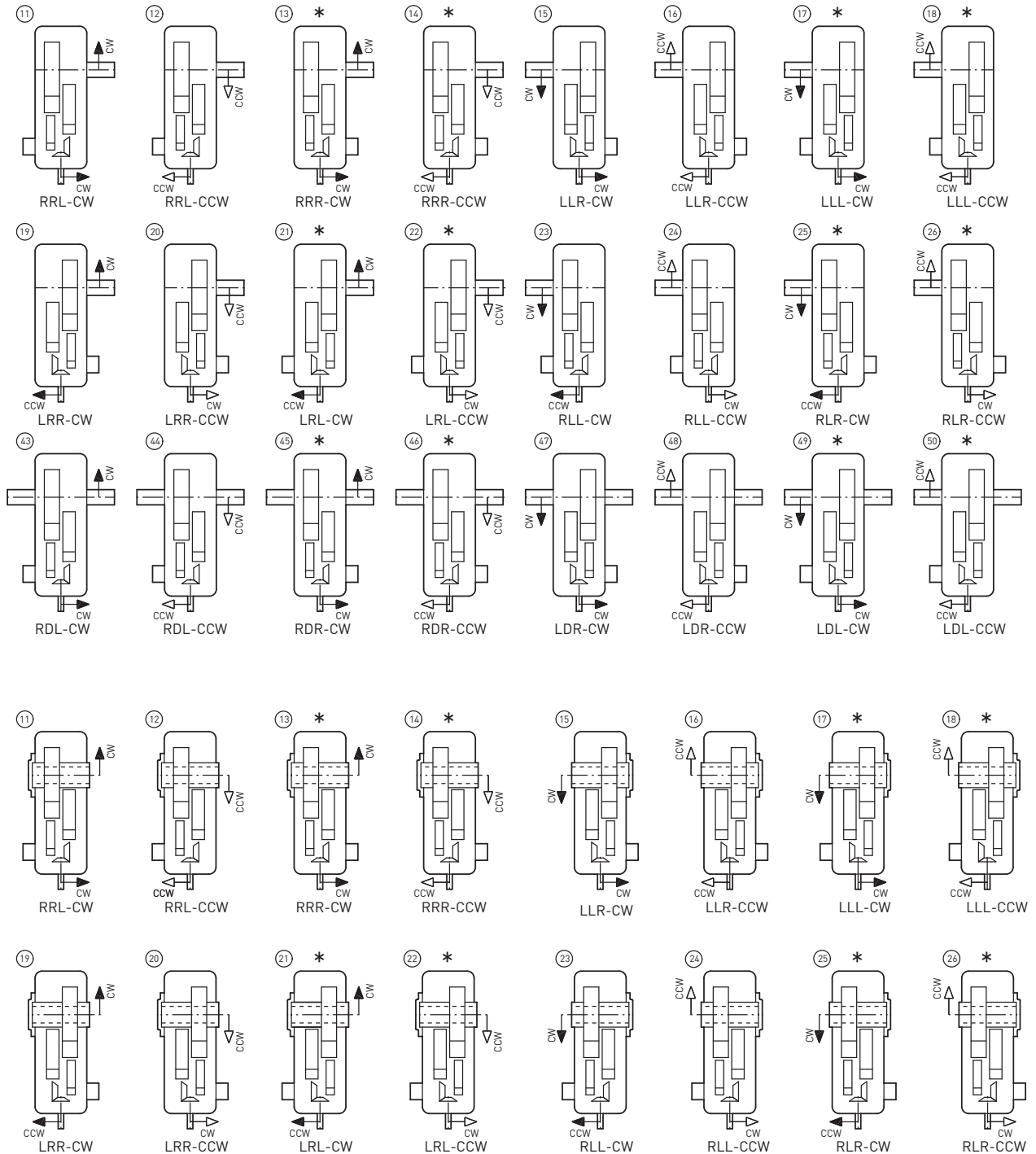


**Type - K4**

Quadruple Stage

Shaft Arrangement - Hold Back

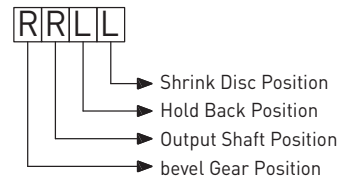
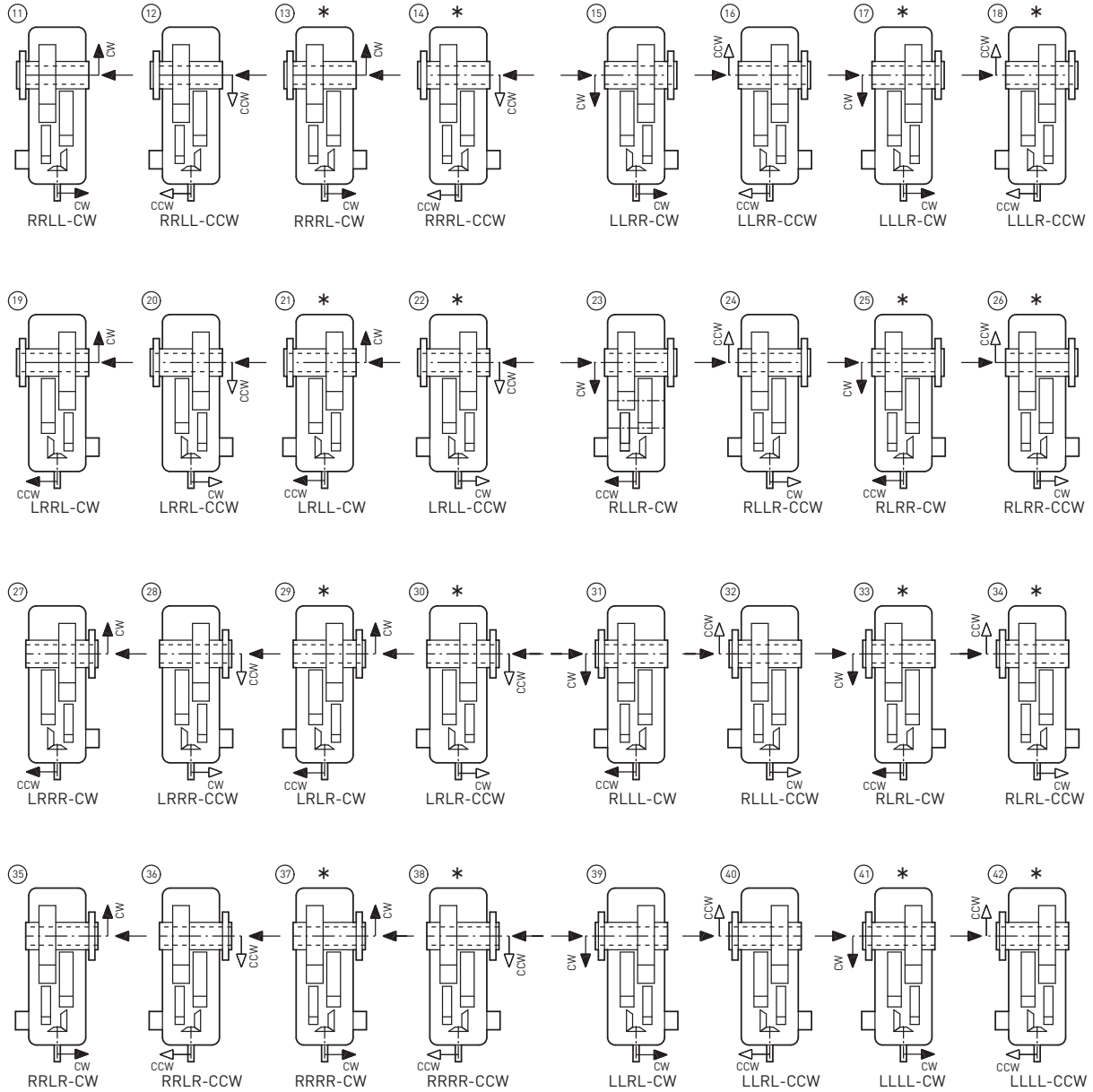
Bevel Helical Gear Unit



Bevel Helical Gear Unit

Shaft Arrangement - Hold Back

**Type - K4**  
 Quadruple Stage

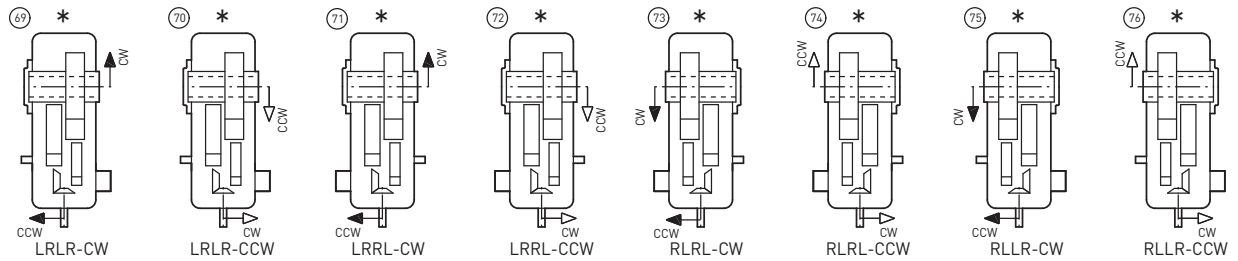
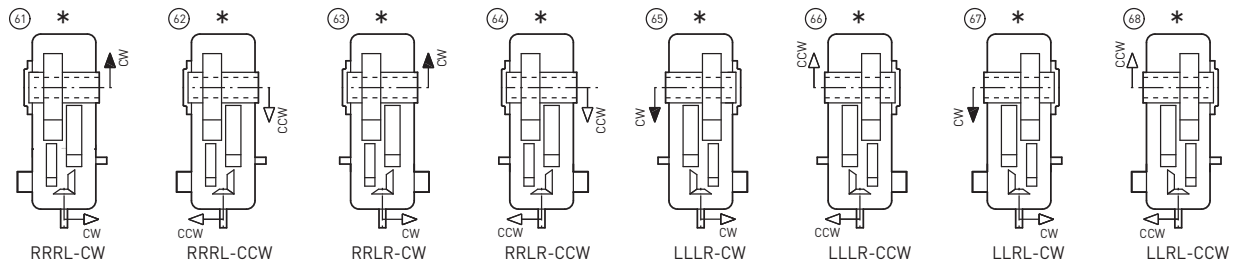
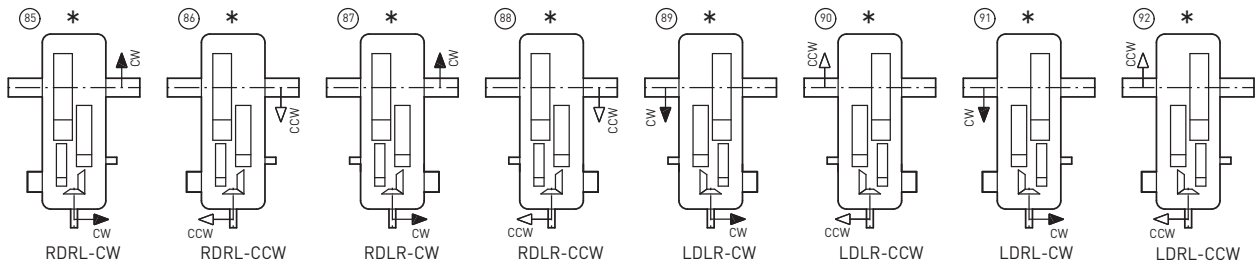
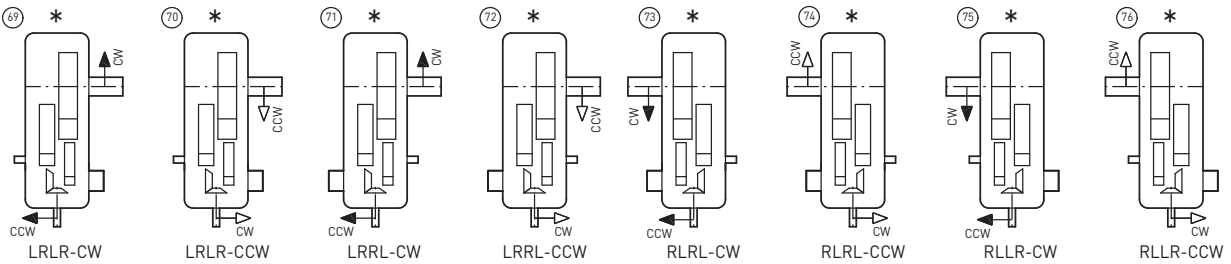
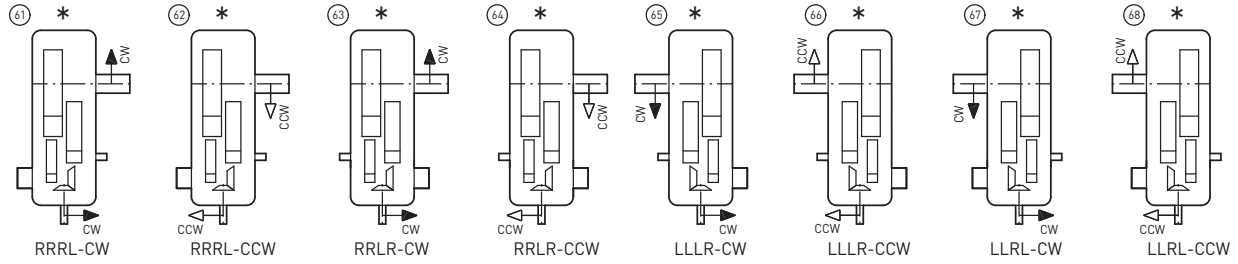


**Type - K4**

**Shaft Arrangement - Int.Ext. & Hold Back**

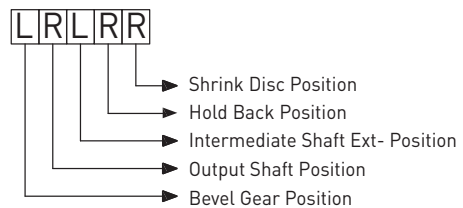
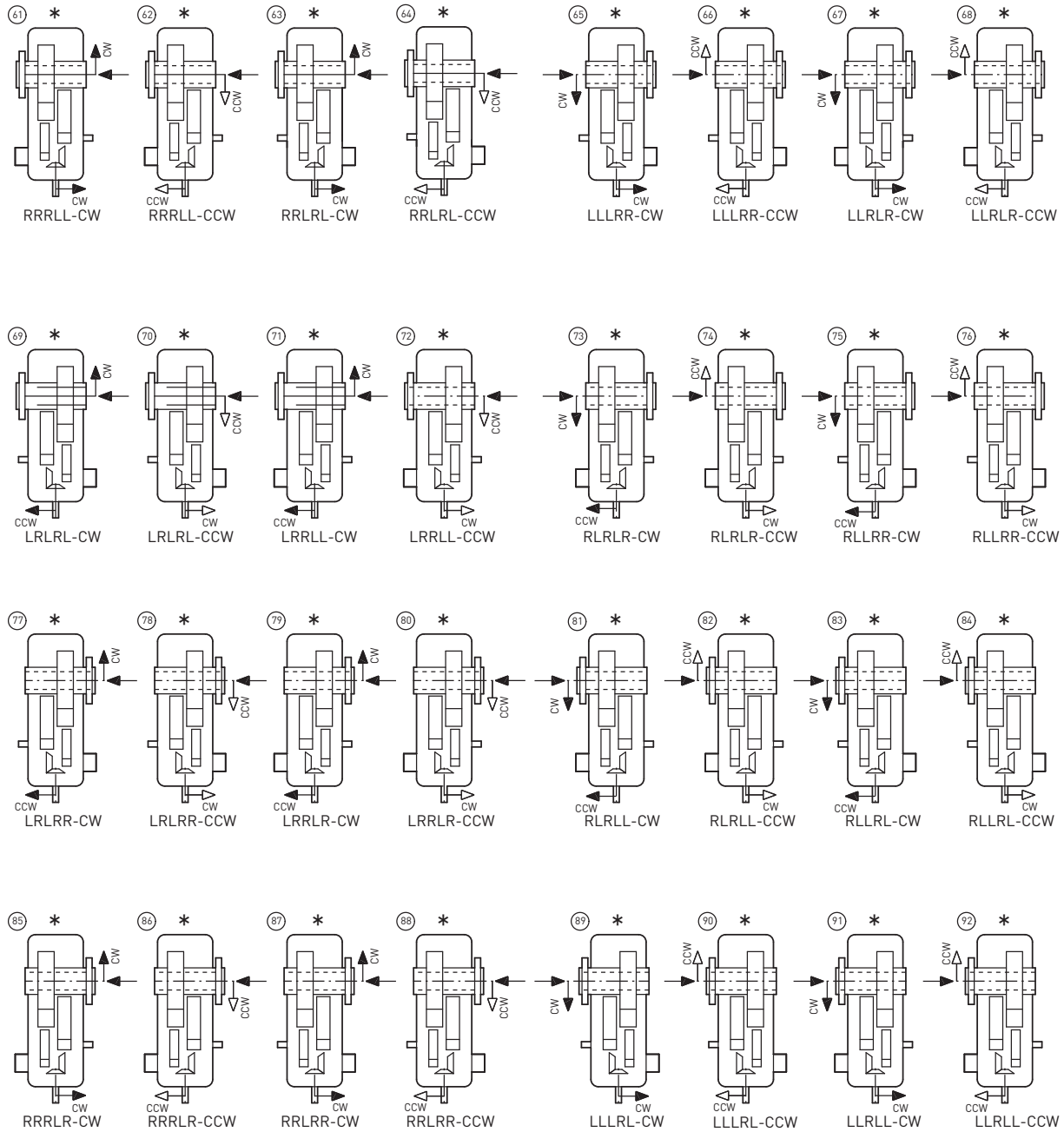
**Bevel Helical Gear Unit**

**Quadruple Stage**



**Bevel Helical Gear Unit    Shaft Arrangement - Int.Ext. & Hold Back**

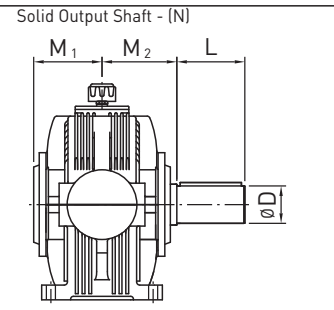
**Type - K4**  
**Quadruple Stage**



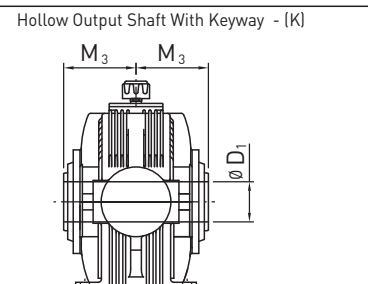
## Helical / Bevel-Helical Gear Units

## Output Shaft Types

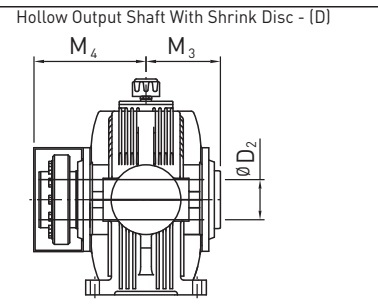
| Size | Solid Output Shaft |     |                |                |
|------|--------------------|-----|----------------|----------------|
|      | D                  | L   | M <sub>1</sub> | M <sub>2</sub> |
| 11   | 32                 | 55  | 93.5           | 105            |
| 13   | 45                 | 95  | 106            | 115            |
| 14   | 48                 | 95  | 106            | 125            |
| 15   | 55                 | 95  | 127            | 135            |
| 16   | 60                 | 130 | 132.5          | 145            |
| 17   | 70                 | 135 | 141            | 150            |
| 18   | 80                 | 160 | 158            | 170            |



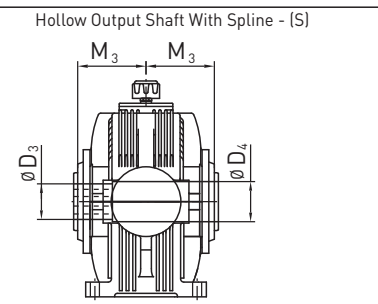
| Size | Hollow Shaft Key |                |
|------|------------------|----------------|
|      | D <sub>1</sub>   | M <sub>3</sub> |
| 11   | 35               | 105            |
| 13   | 50               | 115            |
| 14   | 55               | 120            |
| 15   | 60               | 135            |
| 16   | 70               | 145            |
| 17   | 75               | 150            |
| 18   | 90               | 170            |



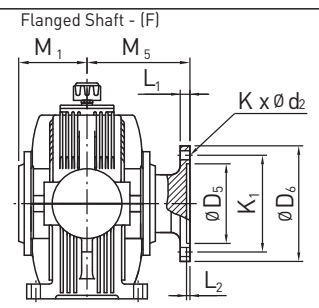
| Size | Hollow Shaft (Shrink Disc) |                |                |
|------|----------------------------|----------------|----------------|
|      | D <sub>2</sub>             | M <sub>3</sub> | M <sub>4</sub> |
| 14   | 60                         | 120            | 200            |
| 15   | 65                         | 135            | 215            |
| 16   | 75                         | 145            | 235            |
| 17   | 80                         | 150            | 250            |
| 18   | 95                         | 170            | 280            |



| Size | Hollow Shaft (Spline) |                |                |
|------|-----------------------|----------------|----------------|
|      | D <sub>3</sub>        | D <sub>4</sub> | M <sub>3</sub> |
| 11   | Dimensions on request |                |                |
| 13   |                       |                |                |
| 14   |                       |                |                |
| 15   |                       |                |                |
| 16   |                       |                |                |
| 17   |                       |                |                |
| 18   |                       |                |                |



| Size | Flanged Shaft         |                |                |                      |                |                |                |                |
|------|-----------------------|----------------|----------------|----------------------|----------------|----------------|----------------|----------------|
|      | D <sub>5</sub>        | D <sub>6</sub> | K <sub>1</sub> | K x Ø d <sub>z</sub> | L <sub>1</sub> | L <sub>2</sub> | M <sub>1</sub> | M <sub>5</sub> |
| 11   | Dimensions on request |                |                |                      |                |                |                |                |
| 13   |                       |                |                |                      |                |                |                |                |
| 14   |                       |                |                |                      |                |                |                |                |
| 15   |                       |                |                |                      |                |                |                |                |
| 16   |                       |                |                |                      |                |                |                |                |
| 17   |                       |                |                |                      |                |                |                |                |
| 18   |                       |                |                |                      |                |                |                |                |

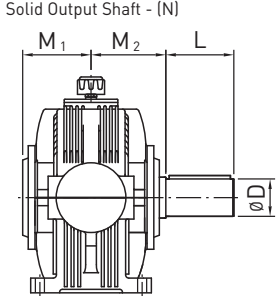


Modification of dimensions reserved.  
Shaft ends with keys according to DIN 6885, part 1, Shape A.  
Shaft centering according to DIN 332, shape DS (with thread)  
Tolerance field for Shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

## Helical / Bevel-Helical Gear Units

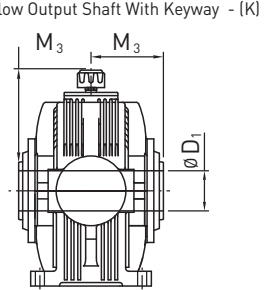
## Output Shaft Types

| Size | Solid Output Shaft |     |                |                |
|------|--------------------|-----|----------------|----------------|
|      | D                  | L   | M <sub>1</sub> | M <sub>2</sub> |
| 19   | 90                 | 165 | 170.5          | 180            |
| 20   | 100                | 200 | 176            | 200            |
| 21   | 110                | 200 | 210            | 220            |
| 22   | 120                | 210 | 220            | 230            |
| 23   | 140                | 250 | 234            | 260            |
| 24   | 160                | 290 | 282.5          | 295            |
| 25   | 170                | 300 | 292.5          | 305            |
| 26   | 190                | 350 | 305.5          | 345            |



Solid Output Shaft - (N)

| Size | Hollow Shaft Key |                |
|------|------------------|----------------|
|      | D <sub>1</sub>   | M <sub>3</sub> |
| 19   | 105              | 180            |
| 20   | 110              | 190            |
| 21   | 120              | 220            |



Hollow Output Shaft With Keyway - (K)

| Size | Hollow Shaft (Shrink Disc) |                |                |
|------|----------------------------|----------------|----------------|
|      | D <sub>2</sub>             | M <sub>3</sub> | M <sub>4</sub> |
| 19   | 105                        | 180            | 300            |
| 20   | 115                        | 190            | 315            |
| 21   | 125                        | 220            | 360            |
| 22   | 140                        | 230            | 395            |
| 23   | 160                        | 260            | 445            |
| 24   | 180                        | 295            | 485            |
| 25   | 200                        | 305            | 515            |
| 26   | 220                        | 345            | 575            |



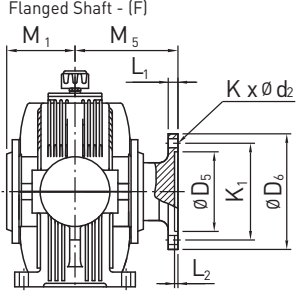
Hollow Output Shaft With Shrink Disc - (D)

| Size | Hollow Shaft (Spline) |                |                |
|------|-----------------------|----------------|----------------|
|      | D <sub>3</sub>        | D <sub>4</sub> | M <sub>3</sub> |
| 19   | Dimensions on request |                |                |
| 20   |                       |                |                |
| 21   |                       |                |                |
| 22   |                       |                |                |
| 23   |                       |                |                |
| 24   |                       |                |                |
| 25   |                       |                |                |
| 26   |                       |                |                |



Hollow Output Shaft With Spline - (S)

| Size | Flanged Shaft         |                |                |                      |                |                |                |                |
|------|-----------------------|----------------|----------------|----------------------|----------------|----------------|----------------|----------------|
|      | D <sub>5</sub>        | D <sub>6</sub> | K <sub>1</sub> | K x Ø d <sub>z</sub> | L <sub>1</sub> | L <sub>2</sub> | M <sub>1</sub> | M <sub>5</sub> |
| 19   | Dimensions on request |                |                |                      |                |                |                |                |
| 20   |                       |                |                |                      |                |                |                |                |
| 21   |                       |                |                |                      |                |                |                |                |
| 22   |                       |                |                |                      |                |                |                |                |
| 23   |                       |                |                |                      |                |                |                |                |
| 24   |                       |                |                |                      |                |                |                |                |
| 25   |                       |                |                |                      |                |                |                |                |
| 26   |                       |                |                |                      |                |                |                |                |

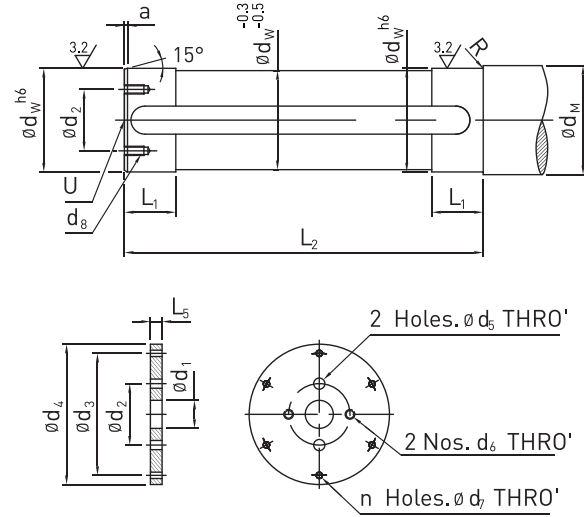
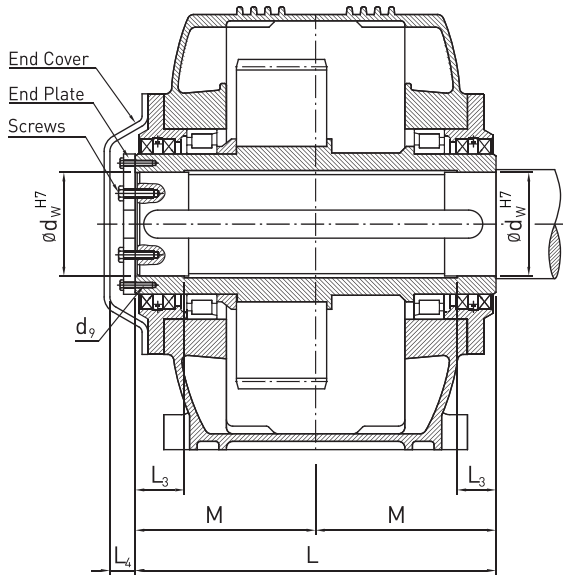


Flanged Shaft - (F)

Modification of dimensions reserved.  
 Shaft ends with keys according to DIN 6885, part 1, Shape A.  
 Shaft centering according to DIN 332, shape DS (with thread)  
 Tolerance field for Shaft ends ISO fit, up to Ø50 k6; over Ø50 m6.

### Helical/Bevel-Helical Gear Units

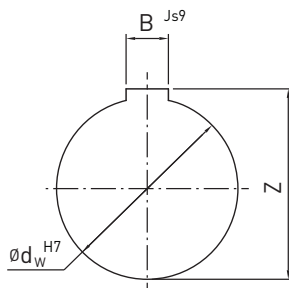
### Hollow Output Shaft Design with Fitted Key



End Plate (Size 13 onwards)

| Size | Hollow Shaft |     |     |       |       |          | Driven Machine Shaft |       |       |          |       |       |   |     |     |       | End Plate |       |       |       |       |       |   |       |  |  |
|------|--------------|-----|-----|-------|-------|----------|----------------------|-------|-------|----------|-------|-------|---|-----|-----|-------|-----------|-------|-------|-------|-------|-------|---|-------|--|--|
|      | $d_w$        | L   | M   | $L_3$ | $L_4$ | $d_9$    | $d_w$                | $d_M$ | $d_2$ | $d_8$    | $L_1$ | $L_2$ | a | R   | U   | $d_1$ | $d_2$     | $d_3$ | $d_4$ | $d_5$ | $d_6$ | $d_7$ | n | $L_5$ |  |  |
| 11   | 35           | 210 | 105 | 30    | 23    | M5 x 9   | 35                   | 55    | -     | -        | 35    | 207   | 3 | 2.5 | M10 | -     | -         | -     | -     | -     | -     | -     | - | -     |  |  |
| 13   | 50           | 230 | 115 | 45    | 23    | M5 x 9   | 50                   | 70    | 35    | M8 x 16  | 50    | 227   | 3 | 2.5 | M16 | 18    | 35        | 60    | 69.5  | 9     | M8    | 5.5   | 4 | 8     |  |  |
| 14   | 55           | 240 | 120 | 50    | 25    | M6 x 12  | 55                   | 75    | 40    | M8 x 16  | 55    | 237   | 4 | 2.5 | M20 | 22    | 40        | 67.5  | 79    | 9     | M10   | 6.6   | 4 | 8     |  |  |
| 15   | 60           | 270 | 135 | 55    | 25    | M6 x 12  | 60                   | 80    | 45    | M10 x 20 | 60    | 267   | 4 | 2.5 | M20 | 22    | 45        | 72.5  | 89    | 11    | M10   | 6.6   | 6 | 8     |  |  |
| 16   | 70           | 290 | 145 | 65    | 25    | M6 x 12  | 70                   | 90    | 50    | M10 x 20 | 70    | 287   | 4 | 2.5 | M20 | 22    | 50        | 85    | 99    | 11    | M10   | 6.6   | 6 | 8     |  |  |
| 17   | 75           | 300 | 150 | 70    | 30    | M6 x 12  | 75                   | 95    | 55    | M10 x 20 | 75    | 297   | 5 | 4   | M20 | 22    | 55        | 90    | 109   | 11    | M10   | 6.6   | 6 | 10    |  |  |
| 18   | 90           | 340 | 170 | 85    | 30    | M8 x 15  | 90                   | 110   | 65    | M10 x 20 | 90    | 337   | 5 | 4   | M24 | 26    | 65        | 110   | 129   | 11    | M10   | 9     | 4 | 10    |  |  |
| 19   | 105          | 360 | 180 | 100   | 32    | M8 x 15  | 105                  | 125   | 70    | M12 x 25 | 105   | 357   | 5 | 4   | M24 | 26    | 70        | 120   | 139   | 14    | M12   | 9     | 4 | 10    |  |  |
| 20   | 110          | 380 | 190 | 110   | 32    | M10 x 17 | 110                  | 135   | 75    | M12 x 25 | 115   | 377   | 5 | 4   | M24 | 26    | 75        | 125   | 159   | 14    | M12   | 11    | 4 | 12    |  |  |
| 21   | 120          | 440 | 220 | 120   | 32    | M10 x 17 | 120                  | 150   | 80    | M12 x 25 | 130   | 437   | 6 | 6   | M24 | 26    | 80        | 140   | 169   | 14    | M12   | 11    | 4 | 12    |  |  |

### Hollow Shaft Bore Details



| $d_w$ | B  | Z    | tol. on Z |
|-------|----|------|-----------|
| 35    | 10 | 38   | +0.2      |
| 50    | 14 | 53.5 |           |
| 55    | 16 | 59   |           |
| 60    | 18 | 64   |           |
| 70    | 20 | 74.5 |           |
| 75    | 20 | 79.5 |           |
| 90    | 25 | 95   |           |
| 105   | 28 | 111  |           |
| 110   | 28 | 116  |           |
| 120   | 32 | 127  |           |

| $d_w$ | tol. field | tol    |
|-------|------------|--------|
| 35    | H7         | +0.025 |
| 50    |            | 0      |
| 55    | H7         | +0.030 |
| 60    |            |        |
| 70    |            |        |
| 75    |            |        |
| 90    | H7         | +0.035 |
| 105   |            |        |
| 110   |            |        |
| 120   |            |        |
| 120   |            |        |

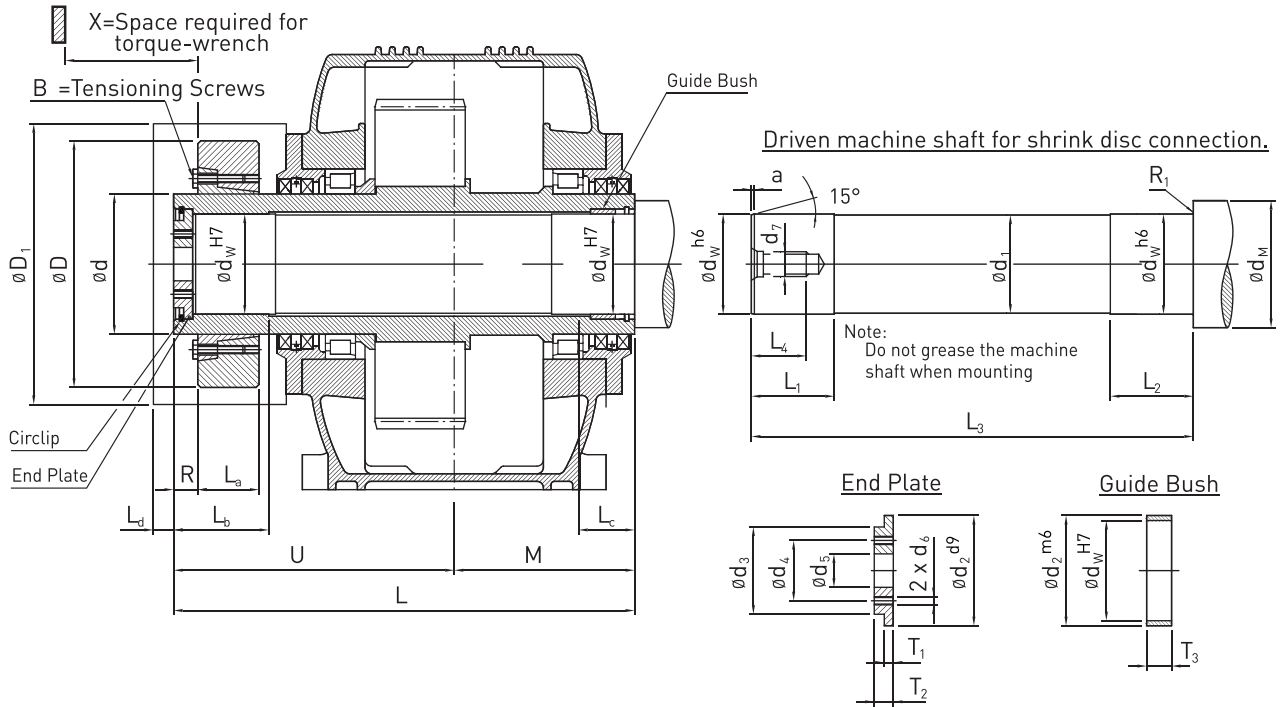
| B  | tol. field | tol    |
|----|------------|--------|
| 10 | Js9        | +0.018 |
|    |            | -0.018 |
| 12 | Js9        | +0.022 |
| 14 |            |        |
| 16 |            |        |
| 18 | Js9        | +0.026 |
| 20 |            |        |
| 25 | Js9        | -0.026 |
| 28 | Js9        | +0.031 |
| 32 |            |        |
|    |            | -0.031 |



Helical/Bevel-Helical Gear Units

Hollow Output Shaft Design with Shrink Disc

Standard Shaft Mounting Position



| Size | Hollow Shaft |     |       |       |     |     |    | Shrink Disc |     |     |       |       |       |               |     |               |      |  | Weight (kg) |
|------|--------------|-----|-------|-------|-----|-----|----|-------------|-----|-----|-------|-------|-------|---------------|-----|---------------|------|--|-------------|
|      | $d_w$        | L   | $L_b$ | $L_c$ | U   | M   | R  | Type        | D   | d   | $D_1$ | $L_a$ | $L_d$ | $M_t$ (da Nm) | B   | $M_a$ (da Nm) |      |  |             |
| 14   | 60           | 300 | 50    | 30    | 180 | 120 | 17 | 80 - 60     | 141 | 80  | 160   | 31    | 20    | 319           | M10 | 5.8           | 2.3  |  |             |
| 15   | 65           | 330 | 55    | 35    | 195 | 135 | 17 | 90 - 65     | 155 | 90  | 185   | 38    | 20    | 540           | M10 | 5.8           | 3.2  |  |             |
| 16   | 75           | 360 | 65    | 40    | 215 | 145 | 20 | 100 - 75    | 170 | 100 | 200   | 43.5  | 20    | 720           | M10 | 5.8           | 4.3  |  |             |
| 17   | 80           | 380 | 80    | 41    | 230 | 150 | 26 | 110 - 80    | 185 | 110 | 220   | 49    | 20    | 1000          | M12 | 10            | 5.8  |  |             |
| 18   | 95           | 430 | 85    | 44    | 260 | 170 | 27 | 125 - 95    | 215 | 125 | 290   | 53.5  | 20    | 1650          | M12 | 10            | 8.7  |  |             |
| 19   | 105          | 460 | 95    | 49    | 280 | 180 | 32 | 140 - 105   | 230 | 140 | 320   | 58    | 20    | 2210          | M14 | 16            | 10.3 |  |             |
| 20   | 115          | 485 | 100   | 49    | 295 | 190 | 33 | 155 - 115   | 263 | 155 | 350   | 63    | 20    | 2950          | M14 | 16            | 15.2 |  |             |
| 21   | 125          | 555 | 120   | 68    | 335 | 220 | 35 | 165 - 125   | 290 | 165 | 380   | 68    | 25    | 4120          | M16 | 24            | 21.5 |  |             |
| 22   | 140          | 600 | 135   | 68    | 370 | 230 | 35 | 180 - 140   | 320 | 180 | 410   | 85.5  | 25    | 6400          | M16 | 24            | 32.7 |  |             |
| 23   | 160          | 680 | 155   | 73    | 420 | 260 | 37 | 220 - 160   | 370 | 220 | 480   | 105   | 25    | 10300         | M20 | 47            | 53   |  |             |
| 24   | 180          | 755 | 160   | 83    | 460 | 295 | 38 | 240 - 180   | 405 | 240 | 530   | 109   | 25    | 14000         | M20 | 47            | 66   |  |             |
| 25   | 200          | 795 | 180   | 88    | 490 | 305 | 46 | 260 - 200   | 430 | 260 | 550   | 120   | 25    | 18400         | M20 | 47            | 82   |  |             |
| 26   | 220          | 895 | 190   | 103   | 550 | 345 | 48 | 280 - 220   | 460 | 280 | 570   | 135   | 25    | 24000         | M20 | 47            | 103  |  |             |

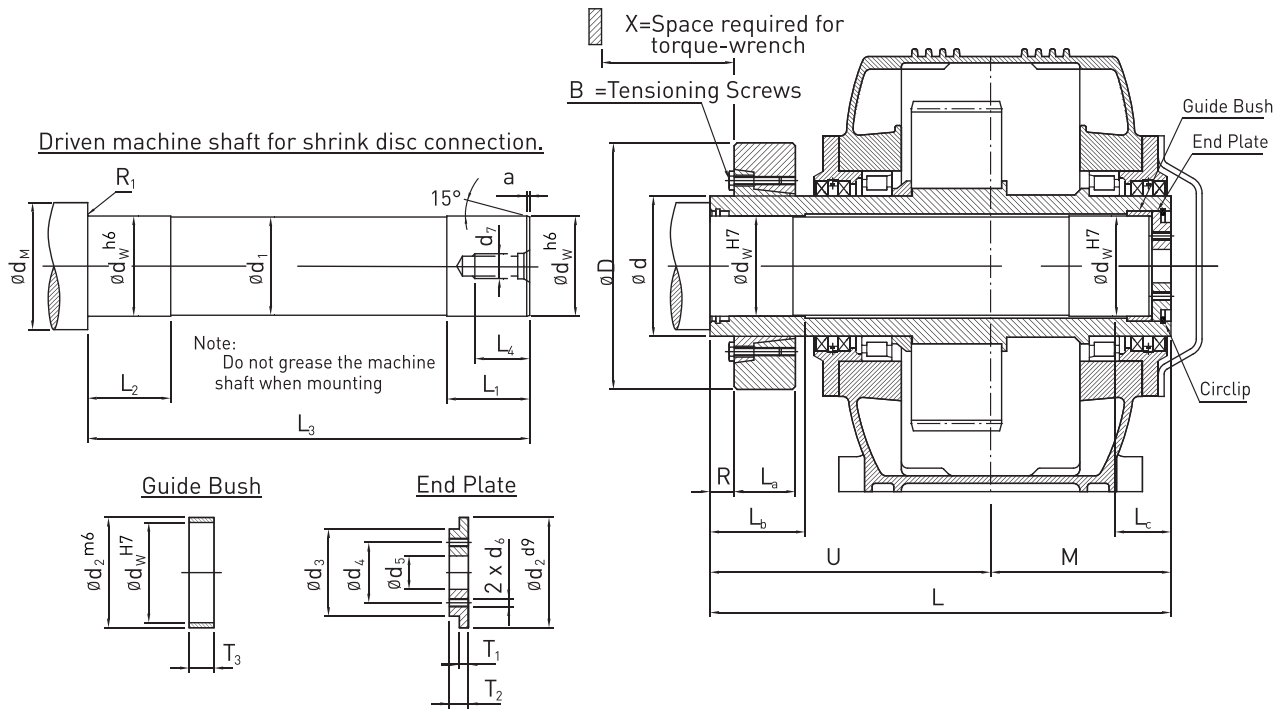
| Size | Driven Machine Shaft |       |             |       |       |       |       |       |       |   | End Plate |       |       |       |       |       | Guide Bush |       |       |       |          |
|------|----------------------|-------|-------------|-------|-------|-------|-------|-------|-------|---|-----------|-------|-------|-------|-------|-------|------------|-------|-------|-------|----------|
|      | $d_w$                | $d_1$ | $d_m$ (min) | $R_1$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $d_7$ | a | $d_2$     | $d_3$ | $d_4$ | $d_5$ | $d_6$ | $T_1$ | $T_2$      | $d_w$ | $d_2$ | $T_3$ | Circlip  |
| 14   | 60                   | 59.5  | 80          | 1.5   | 45    | 65    | 286   | 42    | M20   | 4 | 70        | 50    | 35    | 22    | M6    | 5     | 13         | 60    | 70    | 17    | 70 x 2.5 |
| 15   | 65                   | 64.5  | 85          | 1.5   | 50    | 70    | 316   | 42    | M20   | 4 | 75        | 55    | 40    | 22    | M8    | 5     | 13         | 65    | 75    | 22    | 75 x 2.5 |
| 16   | 75                   | 74.5  | 95          | 1.5   | 55    | 75    | 342   | 42    | M20   | 4 | 85        | 65    | 45    | 22    | M8    | 7     | 17         | 75    | 85    | 23    | 85 x 3   |
| 17   | 80                   | 79.5  | 100         | 1.6   | 70    | 90    | 362   | 42    | M20   | 5 | 90        | 70    | 50    | 22    | M8    | 7     | 17         | 80    | 90    | 24    | 90 x 3   |
| 18   | 95                   | 94.5  | 120         | 1.6   | 70    | 90    | 408   | 50    | M24   | 5 | 105       | 80    | 55    | 26    | M10   | 8     | 20         | 95    | 105   | 24    | 105 x 4  |
| 19   | 105                  | 104.5 | 130         | 1.6   | 80    | 100   | 438   | 50    | M24   | 5 | 120       | 90    | 60    | 26    | M10   | 8     | 20         | 105   | 120   | 29    | 120 x 4  |
| 20   | 115                  | 114.5 | 140         | 1.6   | 85    | 105   | 463   | 50    | M24   | 5 | 130       | 100   | 65    | 26    | M10   | 8     | 20         | 115   | 130   | 29    | 130 x 4  |
| 21   | 125                  | 124.5 | 160         | 2.5   | 85    | 110   | 530   | 50    | M24   | 6 | 140       | 105   | 65    | 26    | M12   | 10    | 23         | 125   | 140   | 45    | 140 x 4  |
| 22   | 140                  | 139.5 | 170         | 2.5   | 105   | 130   | 575   | 60    | M30   | 6 | 155       | 115   | 75    | 33    | M12   | 10    | 23         | 140   | 155   | 45    | 155 x 4  |
| 23   | 160                  | 159.5 | 190         | 2.5   | 130   | 155   | 655   | 60    | M30   | 6 | 175       | 120   | 80    | 33    | M12   | 10    | 23         | 160   | 175   | 50    | 175 x 4  |
| 24   | 180                  | 179.5 | 210         | 2.5   | 130   | 160   | 725   | 60    | M30   | 6 | 195       | 125   | 85    | 33    | M16   | 12    | 28         | 180   | 195   | 55    | 195 x 4  |
| 25   | 200                  | 199.5 | 240         | 4     | 150   | 180   | 765   | 60    | M30   | 8 | 220       | 140   | 95    | 33    | M16   | 12    | 28         | 200   | 220   | 60    | 220 x 5  |
| 26   | 220                  | 219.5 | 260         | 4     | 165   | 195   | 865   | 80    | M36   | 8 | 240       | 160   | 110   | 39    | M20   | 12    | 28         | 220   | 240   | 75    | 240 x 5  |

$M_a$  = Required tightening torque.  
 $M_t$  = Maximum torque transmitted by shrink disc.

Helical/Bevel-Helical Gear Units

Hollow Output Shaft Design with Shrink Disc

Alternate Shaft Mounting Option



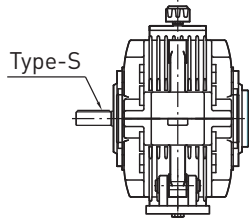
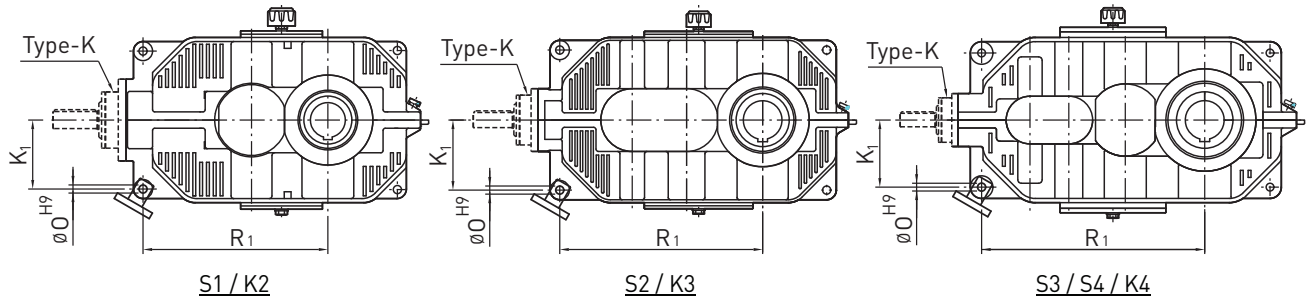
| Size | Hollow Shaft   |     |                |                |     |     |    | Type      | D   | d   | Shrink Disc    |                |                        |     | Weight (kg) |                        |
|------|----------------|-----|----------------|----------------|-----|-----|----|-----------|-----|-----|----------------|----------------|------------------------|-----|-------------|------------------------|
|      | d <sub>w</sub> | L   | L <sub>b</sub> | L <sub>c</sub> | U   | M   | R  |           |     |     | L <sub>a</sub> | L <sub>d</sub> | M <sub>t</sub> (da Nm) | B   |             | M <sub>a</sub> (da Nm) |
| 14   | 60             | 300 | 50             | 30             | 180 | 120 | 17 | 80 - 60   | 141 | 80  | 31             | 25             | 319                    | M10 | 5.8         | 2.3                    |
| 15   | 65             | 330 | 55             | 35             | 195 | 135 | 17 | 90 - 65   | 155 | 90  | 38             | 25             | 540                    | M10 | 5.8         | 3.2                    |
| 16   | 75             | 360 | 65             | 40             | 215 | 145 | 20 | 100 - 75  | 170 | 100 | 43.5           | 25             | 720                    | M10 | 5.8         | 4.3                    |
| 17   | 80             | 380 | 80             | 41             | 230 | 150 | 26 | 110 - 80  | 185 | 110 | 49             | 30             | 1000                   | M12 | 10          | 5.8                    |
| 18   | 95             | 430 | 85             | 44             | 260 | 170 | 27 | 125 - 95  | 215 | 125 | 53.5           | 30             | 1650                   | M12 | 10          | 8.7                    |
| 19   | 105            | 460 | 95             | 49             | 280 | 180 | 32 | 140 - 105 | 230 | 140 | 58             | 32             | 2210                   | M14 | 16          | 10.3                   |
| 20   | 115            | 485 | 100            | 49             | 295 | 190 | 33 | 155 - 115 | 263 | 155 | 63             | 32             | 2950                   | M14 | 16          | 15.2                   |
| 21   | 125            | 555 | 120            | 68             | 335 | 220 | 35 | 165 - 125 | 290 | 165 | 68             | 32             | 4120                   | M16 | 24          | 21.5                   |
| 22   | 140            | 600 | 135            | 68             | 370 | 230 | 35 | 180 - 140 | 320 | 180 | 85.5           | 40             | 6400                   | M16 | 24          | 32.7                   |
| 23   | 160            | 680 | 155            | 73             | 420 | 260 | 37 | 220 - 160 | 370 | 220 | 105            | 40             | 10300                  | M20 | 47          | 53                     |
| 24   | 180            | 755 | 160            | 83             | 460 | 295 | 38 | 240 - 180 | 405 | 240 | 109            | 40             | 14000                  | M20 | 47          | 66                     |
| 25   | 200            | 795 | 180            | 88             | 490 | 305 | 46 | 260 - 200 | 430 | 260 | 120            | 40             | 18400                  | M20 | 47          | 82                     |
| 26   | 220            | 895 | 190            | 103            | 550 | 345 | 48 | 280 - 220 | 460 | 280 | 135            | 40             | 24000                  | M20 | 47          | 103                    |

| Size | Driven Machine Shaft |                |                      |                |                |                |                |                |                |   | End Plate      |                |                |                |                |                |                | Guide Bush     |                |                |          |
|------|----------------------|----------------|----------------------|----------------|----------------|----------------|----------------|----------------|----------------|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------|
|      | d <sub>w</sub>       | d <sub>1</sub> | d <sub>m</sub> (min) | R <sub>1</sub> | L <sub>1</sub> | L <sub>2</sub> | L <sub>3</sub> | L <sub>4</sub> | d <sub>7</sub> | a | d <sub>2</sub> | d <sub>3</sub> | d <sub>4</sub> | d <sub>5</sub> | d <sub>6</sub> | T <sub>1</sub> | T <sub>2</sub> | d <sub>w</sub> | d <sub>2</sub> | T <sub>3</sub> | Circlip  |
| 14   | 60                   | 59.5           | 80                   | 1.5            | 45             | 65             | 286            | 42             | M20            | 4 | 70             | 50             | 35             | 22             | M6             | 5              | 13             | 60             | 70             | 17             | 70 x 2.5 |
| 15   | 65                   | 64.5           | 85                   | 1.5            | 50             | 70             | 316            | 42             | M20            | 4 | 75             | 55             | 40             | 22             | M8             | 5              | 13             | 65             | 75             | 22             | 75 x 2.5 |
| 16   | 75                   | 74.5           | 95                   | 1.5            | 55             | 75             | 342            | 42             | M20            | 4 | 85             | 65             | 45             | 22             | M8             | 7              | 17             | 75             | 85             | 23             | 85 x 3   |
| 17   | 80                   | 79.5           | 100                  | 1.6            | 70             | 90             | 362            | 42             | M20            | 5 | 90             | 70             | 50             | 22             | M8             | 7              | 17             | 80             | 90             | 24             | 90 x 3   |
| 18   | 95                   | 94.5           | 120                  | 1.6            | 70             | 90             | 408            | 50             | M24            | 5 | 105            | 80             | 55             | 26             | M10            | 8              | 20             | 95             | 105            | 24             | 105 x 4  |
| 19   | 105                  | 104.5          | 130                  | 1.6            | 80             | 100            | 438            | 50             | M24            | 5 | 120            | 90             | 60             | 26             | M10            | 8              | 20             | 105            | 120            | 29             | 120 x 4  |
| 20   | 115                  | 114.5          | 140                  | 1.6            | 85             | 105            | 463            | 50             | M24            | 5 | 130            | 100            | 65             | 26             | M10            | 8              | 20             | 115            | 130            | 29             | 130 x 4  |
| 21   | 125                  | 124.5          | 160                  | 2.5            | 85             | 110            | 530            | 50             | M24            | 6 | 140            | 105            | 65             | 26             | M12            | 10             | 23             | 125            | 140            | 45             | 140 x 4  |
| 22   | 140                  | 139.5          | 170                  | 2.5            | 105            | 130            | 575            | 60             | M30            | 6 | 155            | 115            | 75             | 33             | M12            | 10             | 23             | 140            | 155            | 45             | 155 x 4  |
| 23   | 160                  | 159.5          | 190                  | 2.5            | 130            | 155            | 655            | 60             | M30            | 6 | 175            | 120            | 80             | 33             | M12            | 10             | 23             | 160            | 175            | 50             | 175 x 4  |
| 24   | 180                  | 179.5          | 210                  | 2.5            | 130            | 160            | 725            | 60             | M30            | 6 | 195            | 125            | 85             | 33             | M16            | 12             | 28             | 180            | 195            | 55             | 195 x 4  |
| 25   | 200                  | 199.5          | 240                  | 4              | 150            | 180            | 765            | 60             | M30            | 8 | 220            | 140            | 95             | 33             | M16            | 12             | 28             | 200            | 220            | 60             | 220 x 5  |
| 26   | 220                  | 219.5          | 260                  | 4              | 165            | 195            | 865            | 80             | M36            | 8 | 240            | 160            | 110            | 39             | M20            | 12             | 28             | 220            | 240            | 75             | 240 x 5  |

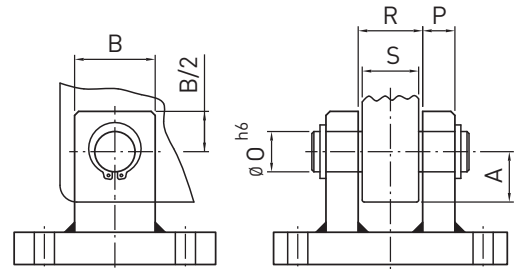
M<sub>a</sub> = Required tightening torque.  
M<sub>t</sub> = Maximum torque transmitted by shrink disc.

Helical/Bevel-Helical Gear Units

Torque Arm Mounting (Shaft Mounting)



Torque Arm on Driven Machine Side



Torque Reaction Arm Details  
 (Torque Arm not supplied by Elecon)

S1 / K2

| Size | R <sub>1</sub> | K <sub>1</sub> | O  |
|------|----------------|----------------|----|
| 11   | 192            | 66             | 10 |
| 13   | 255            | 90             | 15 |
| 15   | 316            | 120            | 18 |
| 17   | 396            | 146            | 20 |
| 18   | 445            | 156            | 24 |
| 20   | 550            | 192            | 28 |
| 21   | 610            | 220            | 28 |
| 22   | 670            | 255            | 36 |
| 23   | 745            | 290            | 40 |
| 24   | 810            | 325            | 48 |
| 25   | 925            | 370            | 48 |
| 26   | 1040           | 416            | 55 |

S2 / K3

| Size | R <sub>1</sub> | K <sub>1</sub> | O  |
|------|----------------|----------------|----|
| 14   | 300            | 90             | 18 |
| 15   | 336            | 102            | 18 |
| 16   | 380            | 115            | 20 |
| 17   | 430            | 136            | 20 |
| 18   | 478            | 146            | 24 |
| 19   | 525            | 170            | 24 |
| 20   | 590            | 190            | 28 |
| 21   | 660            | 220            | 28 |
| 22   | 740            | 255            | 36 |
| 23   | 840            | 290            | 40 |
| 24   | 930            | 325            | 48 |
| 25   | 1035           | 370            | 48 |
| 26   | 1165           | 415            | 55 |

S3 / S4 / K4

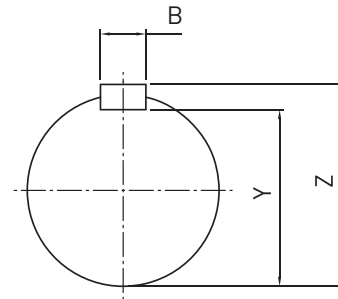
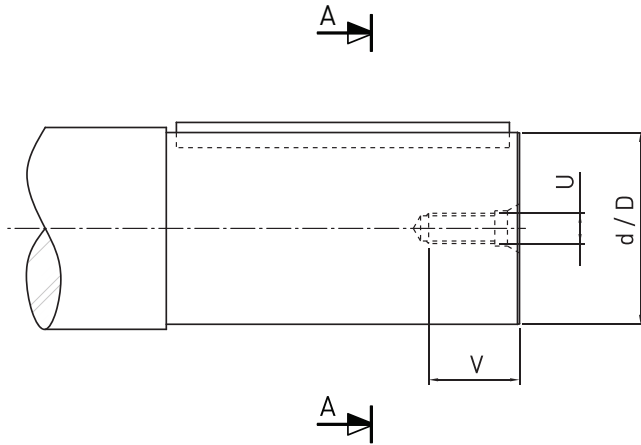
| Size | R <sub>1</sub> | K <sub>1</sub> | O  |
|------|----------------|----------------|----|
| 16   | 392            | 116            | 20 |
| 17   | 442            | 136            | 20 |
| 18   | 500            | 145            | 24 |
| 19   | 560            | 170            | 24 |
| 20   | 632            | 190            | 28 |
| 21   | 710            | 222            | 28 |
| 22   | 790            | 255            | 36 |
| 23   | 882            | 290            | 40 |
| 24   | 985            | 325            | 48 |
| 25   | 1115           | 370            | 48 |
| 26   | 1265           | 415            | 55 |

| Size | O  | A  | B  | P  | R   | S   |
|------|----|----|----|----|-----|-----|
| 11   | 10 | 20 | 20 | 10 | 23  | 20  |
| 13   | 15 | 20 | 26 | 12 | 28  | 25  |
| 14   | 18 | 25 | 30 | 12 | 28  | 25  |
| 15   | 18 | 25 | 30 | 12 | 32  | 28  |
| 16   | 20 | 25 | 32 | 16 | 34  | 30  |
| 17   | 20 | 25 | 32 | 16 | 36  | 32  |
| 18   | 24 | 25 | 40 | 20 | 40  | 35  |
| 19   | 24 | 25 | 40 | 20 | 50  | 45  |
| 20   | 28 | 30 | 45 | 25 | 55  | 50  |
| 21   | 28 | 30 | 45 | 25 | 60  | 55  |
| 22   | 36 | 35 | 60 | 32 | 65  | 60  |
| 23   | 40 | 40 | 65 | 36 | 75  | 70  |
| 24   | 48 | 50 | 80 | 40 | 85  | 80  |
| 25   | 48 | 50 | 80 | 40 | 95  | 90  |
| 26   | 55 | 55 | 90 | 45 | 110 | 105 |

Modification of dimensions reserved.

Helical / Bevel-Helical Gear Units

Solid Shaft Extension Details



SEC-AA

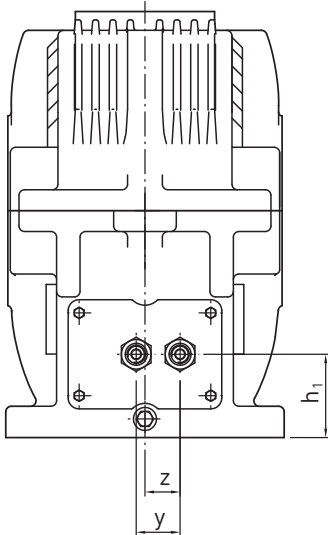
| d / D | B  | Y    | Z    | tol. on Z | U   | V  |
|-------|----|------|------|-----------|-----|----|
| 19    | 6  | 15.5 | 21.5 | -0.1      | M6  | 16 |
| 20    | 6  | 16.5 | 22.5 |           | M6  | 16 |
| 24    | 8  | 20   | 27   | -0.2      | M8  | 19 |
| 25    | 8  | 21   | 28   |           | M10 | 22 |
| 28    | 8  | 24   | 31   |           | M10 | 22 |
| 30    | 8  | 26   | 33   |           | M10 | 22 |
| 32    | 10 | 27   | 35   |           | M12 | 28 |
| 35    | 10 | 30   | 38   |           | M12 | 28 |
| 38    | 10 | 33   | 41   |           | M12 | 28 |
| 40    | 12 | 35   | 43   |           | M16 | 36 |
| 42    | 12 | 37   | 45   |           | M16 | 36 |
| 45    | 14 | 39.5 | 48.5 |           | M16 | 36 |
| 48    | 14 | 42.5 | 51.5 | M16       | 36  |    |
| 50    | 14 | 44.5 | 53.5 | M16       | 36  |    |
| 52    | 16 | 46   | 56   | M20       | 42  |    |
| 55    | 16 | 49   | 59   | M20       | 42  |    |
| 58    | 16 | 52   | 62   | M20       | 42  |    |
| 60    | 18 | 53   | 64   | M20       | 42  |    |
| 65    | 18 | 58   | 69   | M20       | 42  |    |
| 68    | 20 | 60.5 | 72.5 | M20       | 42  |    |
| 70    | 20 | 62.5 | 74.5 | M20       | 42  |    |
| 75    | 20 | 67.5 | 79.5 | M20       | 42  |    |
| 80    | 22 | 71   | 85   | M20       | 42  |    |
| 85    | 22 | 76   | 90   | M20       | 42  |    |
| 90    | 25 | 81   | 95   | M24       | 50  |    |
| 95    | 25 | 86   | 100  | M24       | 50  |    |
| 100   | 28 | 90   | 106  | M24       | 50  |    |
| 105   | 28 | 95   | 111  | M24       | 50  |    |
| 110   | 28 | 100  | 116  | M24       | 50  |    |
| 115   | 32 | 104  | 122  | M24       | 50  |    |
| 120   | 32 | 109  | 127  | M24       | 50  |    |
| 140   | 36 | 128  | 148  | -0.3      | M30 | 60 |
| 160   | 40 | 147  | 169  |           | M30 | 60 |
| 170   | 40 | 157  | 179  |           | M36 | 80 |
| 190   | 45 | 175  | 200  |           | M36 | 80 |

| d / D   | tol. field | tol              |
|---------|------------|------------------|
| 19-30   | k6         | +0.015<br>+0.002 |
| 32-50   | k6         | +0.018<br>+0.002 |
| 52-80   | m6         | +0.030<br>+0.011 |
| 85-120  | m6         | +0.035<br>+0.013 |
| 140-180 | m6         | +0.040<br>+0.015 |
| 190-250 | m6         | +0.046<br>+0.017 |

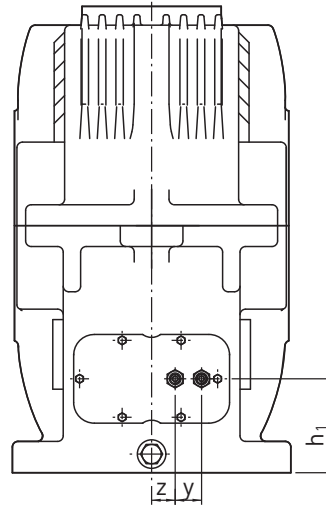
| B       | tol. field | tol         |
|---------|------------|-------------|
| 3 - 6   | h9         | 0<br>-0.030 |
| 8 - 10  |            | 0<br>-0.036 |
| 12 - 18 |            | 0<br>-0.043 |
| 20 - 28 |            | 0<br>-0.052 |
| 32 - 50 |            | 0<br>-0.062 |

Helical / Bevel-Helical Gear Units

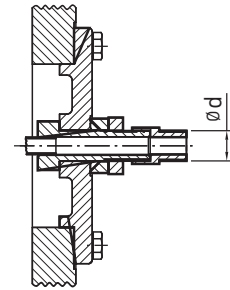
Cooling Coil



Size 17



Size 18 and above



Cooling Coil Connections

| Size | S1                    |            |   |   |
|------|-----------------------|------------|---|---|
|      | d                     | $h_1^{2)}$ | y | z |
| 11   | Dimensions on request |            |   |   |
| 13   |                       |            |   |   |
| 15   |                       |            |   |   |
| 17   |                       |            |   |   |
| 18   |                       |            |   |   |
| 20   |                       |            |   |   |
| 21   |                       |            |   |   |
| 22   |                       |            |   |   |
| 23   |                       |            |   |   |
| 24   |                       |            |   |   |
| 25   |                       |            |   |   |
| 26   |                       |            |   |   |

| Size | S2,S3,S4,K2,K3 & K4   |            |    |    |
|------|-----------------------|------------|----|----|
|      | d                     | $h_1^{2)}$ | y  | z  |
| 11   | Dimensions on request |            |    |    |
| 13   |                       |            |    |    |
| 14   |                       |            |    |    |
| 15   |                       |            |    |    |
| 16   |                       |            |    |    |
| 17   | 3/8"                  | 75         | 40 | 32 |
| 18   | 3/8"                  | 88         | 40 | 28 |
| 19   | 3/8"                  | 88         | 40 | 28 |
| 20   | 3/8"                  | 88         | 40 | 28 |
| 21   | 3/8"                  | 110        | 40 | 40 |
| 22   | 3/8"                  | 110        | 40 | 40 |
| 23   | 3/8"                  | 110        | 40 | 40 |
| 24   | 1/2"                  | 125        | 60 | 53 |
| 25   | 1/2"                  | 125        | 60 | 53 |
| 26   | 1/2"                  | 125        | 60 | 53 |

Built-in cooling coils of normal design suitable for fresh water.  
 (mains and recirculated water not to be chemically polluted)  
 Sea water and brackish water require cooling coils of special design.  
 Maximum permissible pressure of water: 8 bar.  
 The direction of flow of the water is optional.  
 Contact thermometers and water control valves can also be offered.

2) Approximate values; exact values acc. to order related documents



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