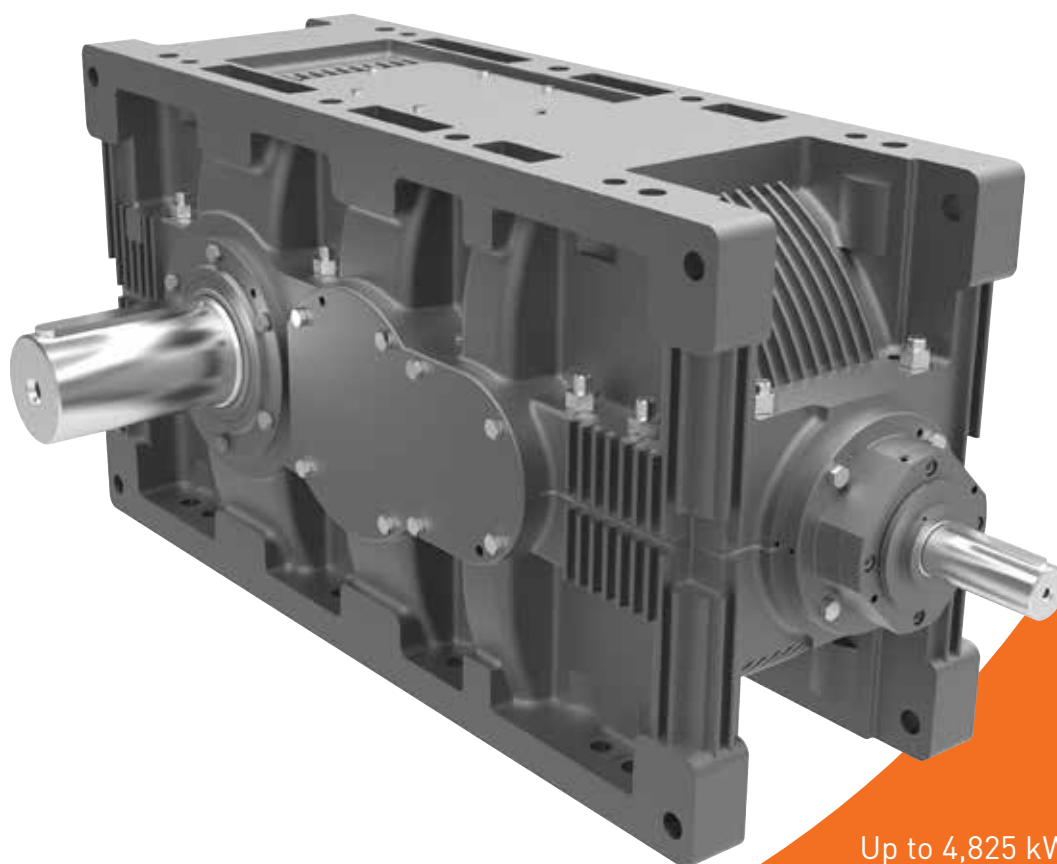


benzlers   
with you at every turn

Series E Industrial Gear Boxes

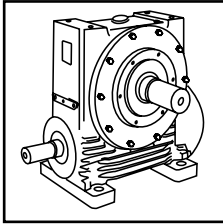


Technical  
Up to 4,825 kW / 132,000 Nm

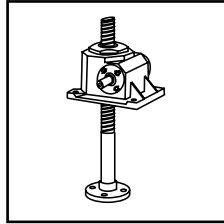
Series E  
CE2.00GBD914

# SERIES E

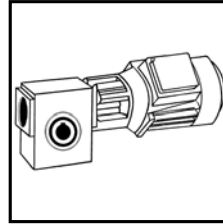
## PRODUCTS IN THE RANGE



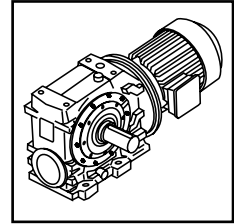
**Series A**  
Worm Gear units  
and geared motors  
in single & double  
reduction types



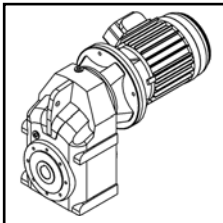
**Series BD**  
Screwjack worm  
gear unit



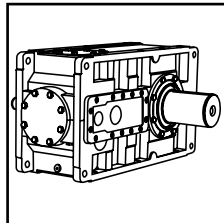
**Series BS**  
Worm gear unit



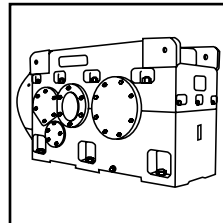
**Series C**  
Right angle drive  
helical worm geared  
motors & reducers



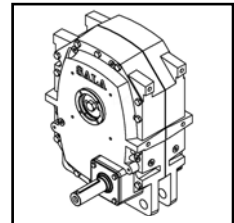
**Series F**  
Parallel shaft helical  
geared motors &  
reducers



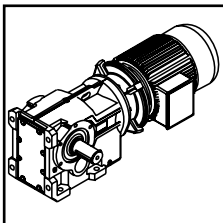
**Series G**  
Helical parallel shaft  
& bevel helical right  
angle drive gear  
units



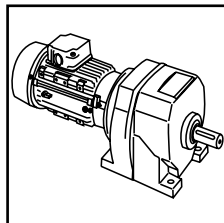
**Series H**  
Large helical parallel  
shaft & bevel helical  
right angle drive units



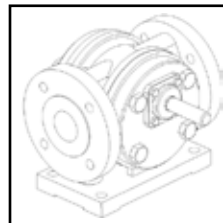
**Series J**  
Shaft mounted  
helical speed  
reducers



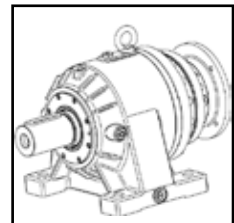
**Series K**  
Right angle helical  
bevel helical geared  
motors & reducers



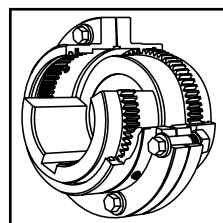
**Series M**  
In-line helical geared  
motors & reducers



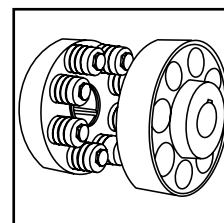
**Roloid Gear Pump**  
Lubrication and fluid  
transportation pump



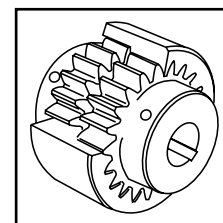
**Series P  
Planetary**  
Foot and flange  
mounted planetary  
units



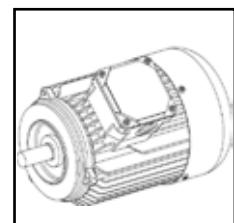
**Series X  
Elign Gear**  
Torsionally rigid,  
high torque coupling



**Series X  
Elflex**  
Pin and bush  
elastomer coupling



**Series X  
Nylicon**  
Gear coupling with  
nylon sleeve



**Motors**  
Full range of IEC  
motors



We offer a wide range of repair services and many years experience of repairing demanding and highly critical transmissions in numerous industries.

We can create custom engineered transmission solutions of any size and configuration.

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## GENERAL DESCRIPTION

Series E Industrial Reducers are proven to be the optimum solution for drive requirements in the market. The Series E Industrial gear unit is designed to meet the requirements of the most demanding applications in the medium and heavy duty sectors of the power transmission market. The modern design and construction of the Series E offers many engineering and performance benefits including higher torque and thermal ratings, with a high degree of interchangeability of components. The gear housing has been designed to withstand the normal forces whilst reducing weight to the ideal level leading to the most optimal industrial gear unit solution available.

The series E has been designed using the latest software, with a tooth geometry which combines maximum efficiency with high load carrying capacity and minimal noise generation. Serviceability was at the forefront of our thoughts in the design guaranteeing durability, reliability and minimal downtime.

### Unit Sizes

11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26

### Types

Parallel Shaft: Single, Double, Triple and Quadruple Reduction

Right Angle Shaft: Double, Triple and Quadruple Reduction

### Input Power

Up to 4,825Kw

### Output Torque

Up to 132,000Nm

### Gear Ratios

1.25/1 to 560/1 in multistage

|                                                              |                                                                 |
|--------------------------------------------------------------|-----------------------------------------------------------------|
| Single Reduction<br>Parallel Shaft S1/H1<br>i = 1.25 to 5    | Double Reduction<br>Right Angle Shaft K2/B2<br>i = 5 to 22.4    |
| Double Reduction<br>Parallel Shaft S2/H2<br>i = 5.6 to 22.4  | Triple Reduction<br>Right Angle Shaft K3/B3<br>i = 20 to 100    |
| Triple Reduction<br>Parallel Shaft S3/H3<br>i = 20 to 112    | Quadruple Reduction<br>Right Angle Shaft K4/B4<br>i = 80 to 560 |
| Quadruple Reduction<br>Parallel Shaft S4/H4<br>i = 90 to 560 |                                                                 |

### Efficiencies:

99 % for single reduction helical gearboxes

98 % for double reduction helical gearboxes

97.5% for triple reduction helical gearboxes

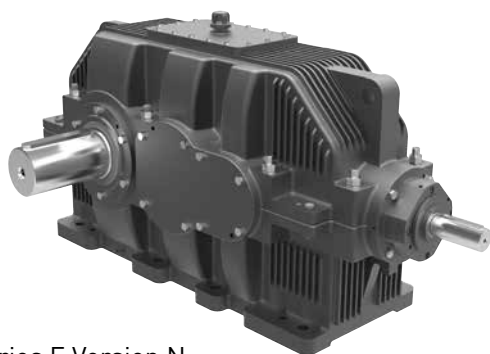
97% for quadruple reduction helical gearboxes

97.5% for double reduction bevel helical gearboxes

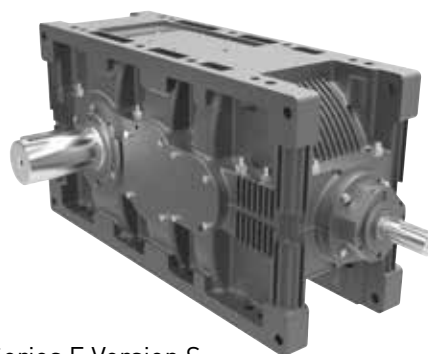
97% for triple reduction bevel helical gearboxes

96.5% for quadruple reduction bevel helical gearboxes

Available with dedicated foot mounted case Version N, which gives the optimum torque/kg, or with multimount case Version S giving flexibility on mounting options.



Series E Version N:  
Horizontal Mounting Applications



Series E Version S:  
Multimount Applications

## GENERAL DESCRIPTION

### Design Features

#### Shaft Mounted Units

Shaft mounted units can be mounted on the driven machine shaft extension and connected to the foundation by a torque arm, supplied as an optional extra.

Additionally, unit feet are available for mounting on a baseplate with motor and coupling, the complete assembly being mounted on the driven machine shaft extension and connected to the foundation by a torque arm.

Shaft mounted units are fitted with a 'shrink disc' device to provide positive clamping on the driven machine shaft extension.

Shaft mounted units with keyed sleeves may also be supplied for fitting on to a keyed shaft.

#### Motorised Gear Units

Gear units are available as standard assemblies comprising IEC standard metric (B5) flanged and NEMA 'C' motors directly mounted on the gearcase input shaft housings by adaptors. Motor and gear unit shafts are connected by flexible couplings.

#### Baseplates

Standard baseplates can be supplied for units with parallel or right angle shafts. Assemblies comprise of gear units and foot mounted motors correctly aligned in manufacture and connected by our couplings. Coupling guards are fitted.

Baseplates for right angle shaft gear units are designed for use with either foot or shaft mounted arrangements, and provision is made for attaching torque arms where required.

Designs provide ample stiffness to prevent distortion under load. Full details are available from our Application Engineers.

#### Backstops

Externally mounted Backstops can be fitted to all Series E gear units, when required to operate in non-reversing drives. They are located on the helical pinion shaft and have adequate capacities to deal with full rated torques. All backstops are centrifugal lift off type. Changing the direction of locking rotation is a simple operation. If required, a torque limiting backstop with controllable tension release can be fitted to all units (consult our Application Engineers).

#### Preservation / Protection

Series E gear units are despatched without oil.

Prior to despatch they are test run with a rust preventative oil giving adequate protection to internal parts for a period of six months covering normal transport and covered storage.

Shaft extensions and hollow output shafts are protected with a rust inhibitor which is proof against sea water and suitable for under-cover storage up to 12 months.

Note: Where gear units are to operate in abnormal conditions, or where they are to stand for long periods without running, eg in plant installation, we must be notified so that suitable protective arrangements can be made.

#### Gears

High quality alloy case hardening materials provide long life wear resistance and fatigue strength.

Profile ground single helical gears and hard finished spiral bevel gears ensure high standards of accuracy, surface finish and quiet running characteristics. Helical gears are fitted in parallel shaft units. Units with shafts at right angles incorporate spiral bevel and helical gears.

#### Gearcases

Standard gearcases are of rigid cast iron construction with modern styling, special cases can be supplied as SG iron or fabricated steel.

Horizontal split case design for ease of maintenance.

Gearcase design using finite element analysis to give high strength to weight ratio.

Inspection cover provided for viewing gear contacts.

Oil level dipstick, ventilator and drain plugs are fitted.

With an option to fit an oil level sight glass.

#### Gearcase Finish

Gearcase housings are shot blasted to SA 2-1/2 (or better) prior to painting.

Standard Paint System - Short oil alkyd resin/pigment semi-gloss, Colour: - RAL 5009 (Blue).

Optional Paint System for Extreme Climatic and Environmental Conditions - Two pack epoxy acrylic semi-gloss finish, Colour: - RAL 5009 (Blue).

Both paint systems are resistant to dilute acids and alkalis, oils and solvents, sea water and temperatures up to 140 Deg C.

#### External Dimensions

Shaft extensions and hollow wheelshaft bores are to metric standards.

Fasteners are metric.

#### Lubrication

Lubrication in most instances is by the transfer of oil by gears dipping in the sumps of gear unit bases. Where high pitch line speeds could cause churning of the lubricant. Spray lubrication is necessary where shown and complete systems can be supplied when required.

The unit oil grade and change period will be stamped on the nameplate.

Units are provided with a dipstick, ventilator and drain plugs.

#### Cooling

Depending on the application standard gear units are cooled by:

- Normal heat dissipation by convection from external surfaces.

- Mechanical fan fitted to high speed shaft.

- Cooling water coil fitted in gear unit base.

- Fan and cooling coil.

- Separate oil cooler incorporated in forced lubrication system.

As improvements in design are being made continually this specification is not to be regarded as binding in detail and drawings and capacities are subject to alteration without notice. Certified drawings will be sent on request.

## GENERAL DESCRIPTION

**H 3 20 H N 1 A 0 0 0 3 1 5 R L**

Shaft Arrangement eg. **R L** **L R L** etc

Nominal Ratio multiplied by 10 

|   |   |   |   |
|---|---|---|---|
| 0 | 3 | 1 | 5 |
| 0 | 0 | 1 | 2 |
| 2 | 8 | 0 | 0 |

 etc

Type of Lubrication  
0 - Splash Lubrication  
3 - Forced Lubrication  
9 - Special

Type of Cooling  
0 - None  
1 - Fan Cooled  
3 - Cooling Coil  
4 - Fan + Cooling Coil  
9 - Special

Backstop  
A - No Backstop  
B - Backstop

Type of Gear Case  
1 - Cast Iron Gear Case  
2 - SG Iron Gear Case  
3 - Fabricated Steel Gear Case

Type of Output Shaft  
N - Solid Shaft with Key      F - Flanged Shaft  
K - Hollow Shaft with Keyway      D - Hollow Shaft with Shrink Disc

Gear Unit Mounting  
H - Horizontal  
V - Vertical

Gear Unit Size 

|   |   |
|---|---|
| 1 | 1 |
|---|---|

|   |   |
|---|---|
| 2 | 6 |
|---|---|

Number of Reduction Stages  
1 - Single Stage  
2 - Two Stages  
3 - Three Stages  
4 - Four Stages

Gear Unit Type  
H - Helical (Multi-Mount Case)  
B - Bevel-Helical (Multi-Mount Case)  
S - Helical (Horizontal Foot Mounted Case)  
K - Bevel-Helical (Horizontal Foot Mounted Case)

## EXPLANATION AND USE OF RATINGS AND ASSOCIATED RATING FACTORS

Gear unit selection is made by comparing actual loading with the catalogue ratings.

Catalogue ratings are based on a standard set of loading conditions, whereas actual loading conditions will vary according to the type of application.

Service factors are used to calculate an equivalent load to compare with the catalogue ratings.

Both Mechanical and Thermal Capacities must be considered.

### Mechanical Ratings

Mechanical ratings measure the gear unit's capacity in terms of life and strength, assuming 10 hours per day continuous operation under uniform loading conditions.

Catalogue ratings allow for 100% overload at starting, braking or momentarily during operation up to 10 times per day.

The Mechanical Service Factor  $F_m$  (table 1) is used to modify the actual load according to the daily operating time, and the type of loading.

The required Mechanical Rating  $P_{(mech)} = \text{Absorbed Power} \times F_m$

The load characteristics for a wide range of applications are listed in the Load Classification by Application (Table 3)

The load classification is used to determine the appropriate Service Factor  $F_m$  (table 1)

Gear units subjected to torque reversals or frequent stop/start overloads require the following check to be made:

$$\text{Gear Unit Nominal Power Rating (kW)} > \frac{T_m \times F_s \times n}{2 \times 9550}$$

$T_m$  = Motor starting torque (Nm) or rating of torque limiting device, fluid coupling etc...

$n$  = Input speed (rpm)

$F_s$  = Starting Frequency Factor

For applications where high inertia loads are involved, e.g. crane travel drives, slewing motion etc. or when units are to operate in extremely dusty or humid environments, the unit selection should be referred to our Application Engineers.

**Table 1. Mechanical Service Factor ( $F_m$ )**

| Prime Mover                                          | Operating Hours/day | Load Classification |          |       |             |
|------------------------------------------------------|---------------------|---------------------|----------|-------|-------------|
|                                                      |                     | Uniform             | Moderate | Heavy | Extra Heavy |
|                                                      |                     | U                   | M        | H     | X           |
| "Electric Motor<br>Steam Turbine<br>Hydraulic Motor" | < 3                 | 1.00                | 1.00     | 1.50  | 2.00        |
|                                                      | 3 to 10             | 1.00                | 1.25     | 1.75  | 2.25        |
|                                                      | > 10                | 1.25                | 1.50     | 2.00  | 2.50        |
| "4 to 6 Cylinder<br>Internal Combustion<br>Engine"   | < 3                 | 1.00                | 1.25     | 1.75  | 2.25        |
|                                                      | 3 to 10             | 1.25                | 1.50     | 2.00  | 2.50        |
|                                                      | > 10                | 1.50                | 1.75     | 2.25  | 2.75        |
| "1 to 3 Cylinder<br>Internal Combustion<br>Engine"   | < 3                 | 1.25                | 1.50     | 2.00  | 2.50        |
|                                                      | 3 to 10             | 1.50                | 1.75     | 2.25  | 2.75        |
|                                                      | > 10                | 1.75                | 2.00     | 2.50  | 3.00        |

| $F_m$ | Starts / Stops per hour |        |         |         |          |           |       |
|-------|-------------------------|--------|---------|---------|----------|-----------|-------|
|       | 1                       | 2 - 20 | 21 - 40 | 41 - 80 | 81 - 160 | 161 - 320 | > 320 |
| 1.00  | 1.00                    | 1.20   | 1.30    | 1.50    | 1.60     | 2.00      | 2.50  |
| 1.25  | 1.00                    | 1.10   | 1.20    | 1.35    | 1.45     | 1.80      | 2.20  |
| 1.50  | 1.00                    | 1.17   | 1.15    | 1.20    | 1.30     | 1.65      | 2.00  |
| 1.75  | 1.00                    | 1.15   | 1.16    | 1.18    | 1.20     | 1.50      | 1.90  |
| 2.00  | 1.00                    | 1.06   | 1.08    | 1.10    | 1.15     | 1.40      | 1.75  |
| 2.25  | 1.00                    | 1.03   | 1.06    | 1.07    | 1.10     | 1.30      | 1.60  |
| 2.50  | 1.00                    | 1.00   | 1.03    | 1.05    | 1.07     | 1.25      | 1.50  |
| 2.75  | 1.00                    | 1.00   | 1.00    | 1.00    | 1.05     | 1.20      | 1.45  |
| 3.00  | 1.00                    | 1.00   | 1.00    | 1.00    | 1.00     | 1.15      | 1.40  |

For Reversing Duty  $F_s = 1.4$  minimum

# SERIES E

## EXPLANATION AND USE OF RATINGS AND ASSOCIATED RATING FACTORS

**Table 3. Load Classification by Application**

**U** Uniform Load   **M** Moderate Shock Load   **H** Heavy Shock Load   **X** Extra Heavy Shock Load   **†** Consult Our Engineers

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

## EXPLANATION AND USE OF RATINGS AND ASSOCIATED RATING FACTORS

### Thermal Capacity Ratings

The thermal capacities are a measure of the gear units capacity to dissipate heat, if the thermal capacity is exceeded the lubricant may overheat and breakdown causing premature gear unit failure.

Thermal capacities are given on the gear unit ratings pages, cooling systems may be utilised as follows:

- Unit with no additional cooling
- Unit with fan cooling
- Unit with water cooling coil
- Unit with fan and water cooling coil

The catalogue Thermal Capacities are based on the unit operating continuously in an environment ambient of 20°C. The actual thermal capacity is affected by ambient temperature, duration of running per hour, the operating environment and altitude. To account for these varying conditions the service factors given in tables 4, 5 and 6 should be applied.

Check: Thermal Capacity Rating  $P_1 \geq P_{\text{therm}}$

$$P_{\text{therm}} = \frac{\text{Absorbed Power (kW)}}{F_t \times F_d \times F_v}$$

- $P_{\text{therm}}$  = The required thermal rating (kW)
- $P_1$  = Thermal capacity rating (kW)
- $F_t$  = Service factor for ambient temperature (table 4)
- $F_h$  = Service factor for operating altitude (table 5)
- $F_v$  = Service factor for operating environment (table 6)

When checking thermal capacities, use the actual load requirement and not the rating of the prime mover.

**Table 4. Ambient Temperature Factor (  $F_t$  )**

| Cooling Type                  | Ambient | Duration of Operation / Hour |      |      |      |      |
|-------------------------------|---------|------------------------------|------|------|------|------|
|                               |         | 100%                         | 80%  | 60%  | 40%  | 20%  |
| No Ad-<br>ditional<br>Cooling | -20°C   | 1.49                         | 1.79 | 2.09 | 2.39 | 2.68 |
|                               | -10°C   | 1.37                         | 1.64 | 1.92 | 2.19 | 2.46 |
|                               | 0°C     | 1.25                         | 1.49 | 1.74 | 1.99 | 2.24 |
|                               | 10°C    | 1.12                         | 1.34 | 1.57 | 1.79 | 2.02 |
|                               | 20°C    | 1.00                         | 1.20 | 1.40 | 1.60 | 1.80 |
|                               | 30°C    | 0.88                         | 1.06 | 1.23 | 1.41 | 1.58 |
|                               | 40°C    | 0.75                         | 0.90 | 1.05 | 1.20 | 1.35 |
|                               | 50°C    | 0.63                         | 0.76 | 0.88 | 1.01 | 1.13 |
| Fan<br>Cooling                | -20°C   | 1.46                         | 1.75 | 2.04 | 2.34 | 2.63 |
|                               | -10°C   | 1.35                         | 1.62 | 1.89 | 2.16 | 2.43 |
|                               | 0°C     | 1.24                         | 1.49 | 1.74 | 1.98 | 2.23 |
|                               | 10°C    | 1.15                         | 1.38 | 1.61 | 1.84 | 2.07 |
|                               | 20°C    | 1.00                         | 1.20 | 1.40 | 1.60 | 1.80 |
|                               | 30°C    | 0.90                         | 1.08 | 1.26 | 1.44 | 1.62 |
|                               | 40°C    | 0.80                         | 0.96 | 1.12 | 1.28 | 1.44 |
|                               | 50°C    | 0.70                         | 0.84 | 0.98 | 1.12 | 1.26 |
| Cooling<br>Coil               | -20°C   | 1.15                         | 1.38 | 1.61 | 1.84 | 2.07 |
|                               | -10°C   | 1.15                         | 1.38 | 1.61 | 1.84 | 2.07 |
|                               | 0°C     | 1.15                         | 1.38 | 1.61 | 1.84 | 2.07 |
|                               | 10°C    | 1.10                         | 1.32 | 1.54 | 1.76 | 1.98 |
|                               | 20°C    | 1.00                         | 1.20 | 1.40 | 1.60 | 1.80 |
|                               | 30°C    | 0.90                         | 1.08 | 1.26 | 1.44 | 1.62 |
|                               | 40°C    | 0.85                         | 1.02 | 1.19 | 1.36 | 1.53 |
|                               | 50°C    | 0.80                         | 0.96 | 1.12 | 1.28 | 1.44 |

**Table 5.  
Altitude Adjustment Factor (  $F_h$  )**

| Altitude (m) | Factor $F_h$ |
|--------------|--------------|
| Sea Level    | 1.00         |
| 500          | 0.97         |
| 1000         | 0.93         |
| 1500         | 0.90         |
| 2000         | 0.87         |
| 3000         | 0.81         |

**Table 6.  
Air Velocity Correction Factor (  $F_v$  )**

| Operating Environment   | Without Fan | Fan Cooled |
|-------------------------|-------------|------------|
| Small Confined Space    | 0.86        | 1.00       |
| Large Indoor Space      | 1.00        | 1.00       |
| Sheltered Outdoor Space | 1.30        | 1.00       |
| Open Outdoor Space      | 1.50        | 1.00       |

## SELECTION PROCEDURE

### EXAMPLE

|                                  |   |                                |
|----------------------------------|---|--------------------------------|
| Absorbed Power of Driven machine | = | 70 kW                          |
| Output Speed                     | = | 57 rpm                         |
| Application                      | = | Uniformly Loaded Belt Conveyor |
| Duration of Service              | = | 24 hours/day                   |
| Input Speed                      | = | 1450 rpm (electric motor)      |
| Unit type                        | = | Right Angle Shaft              |
| Running Time/hour                | = | 100%                           |
| Operating Altitude               | = | Sea level                      |
| Ambient Temperature              | = | 30°C                           |
| Operating Environment            | = | Large Indoor Space             |

### 1. DETERMINE REQUIRED RATIO

$$\frac{\text{Input speed}}{\text{Output speed}} = \frac{1450 \text{ rpm}}{57 \text{ rpm}} = 25.43$$

The nearest nominal transmission ratio (in) = 25

### 2. DETERMINE THE MECHANICAL SERVICE FACTOR (Fm)

Refer to Load Classification by Application (table 3)

Uniformly Loaded Belt Conveyor Load Classification = U

Refer to Mechanical Service Factor (Fm) (table 1)

For Electric Motor driven, Uniform Loading, Operating over 10 hours/day

| Prime Mover    | Operating Hours/day | Load Classification |          |       |             |
|----------------|---------------------|---------------------|----------|-------|-------------|
|                |                     | Uni-form            | Moderate | Heavy | Extra Heavy |
|                |                     | U                   | M        | H     | X           |
| Electric Motor | < 3                 | 1.00                | 1.00     | 1.50  | 2.00        |
| Steam Turbine  | 3 - 10              | 1.00                | 1.25     | 1.75  | 2.25        |

The Mechanical Service Factor Fm = 1.25

### 3. DETERMINE THE STARTING FREQUENCY FACTOR (Fs)

Refer to Starting Frequency Factor (Fs) (table 2)

| Fm   | Starts / Stops per hour |        |         |         |          |           |       |
|------|-------------------------|--------|---------|---------|----------|-----------|-------|
|      | 1                       | 2 - 20 | 21 - 40 | 41 - 80 | 81 - 160 | 161 - 320 | > 320 |
| 1.0  | 1.00                    | 1.20   | 1.30    | 1.50    | 1.60     | 2.00      | 2.50  |
| 1.25 | 1.00                    | 1.10   | 1.20    | 1.35    | 1.45     | 1.80      | 2.20  |
| 1.5  | 1.00                    | 1.17   | 1.15    | 1.20    | 1.30     | 1.65      | 2.00  |

For Fm = 1.25 with < 10 starts/ day, The Starting Frequency Factor Fs = 1.00

### 4. DETERMINE REQUIRED MECHANICAL CAPACITY (kW)

Required Mechanical Rating (P mech) = Absorbed Power (kW) x Factor Fm x Factor Fs

### 5. DETERMINE THE SIZE OF GEARBOX

Check: Nominal Power Rating > P mech

Refer to: Nominal Power Ratings - Unit type K3 (Bevel Helical-Triple Stage)

| i <sub>n</sub> | n <sub>1</sub> | N <sub>2</sub> | Gear Unit Size |    |     |     |      |      |
|----------------|----------------|----------------|----------------|----|-----|-----|------|------|
|                |                |                | 18             | 19 | 20  | 21  | 22   | 23   |
| 25             | 1500           | 60             | 55             | 78 | 104 | 144 | 200* | 259* |
|                | 1000           | 40             | 38             | 53 | 69  | 100 | 138  | 173  |
|                | 750            | 30             | 29             | 40 | 52  | 75  | 106  | 130  |

P mech = 87.5 kW

size K3-20 unit has a power rating > P mech (104 kW)

Go to point 6

## SELECTION PROCEDURE

### 6. DETERMINE THE ACTUAL RATIO OF THE GEARBOX

Refer to the Actual Ratio table:

| Type | $i_n$ | Gear Unit Size |       |       |       |       |       |       |
|------|-------|----------------|-------|-------|-------|-------|-------|-------|
|      |       | 18             | 19    | 20    | 21    | 22    | 23    | 24    |
| K3   | 25    | 24.07          | 25.07 | 26.31 | 23.8  | 24.76 | 26.13 | 24.58 |
|      | 28    | 27.22          | 27.86 | 29.47 | 27.22 | 27.86 | 29.11 | 27.53 |

$$n_1 = 1450$$

$$n_2 = 1450 / 26.31 = 55.1 \text{ rpm}$$

### 7. DETERMINE THE THERMAL RATING

Refer to the Thermal Capacity Ratings

| in      | n1   | Gear Unit Size                                         |    |     |     |     |     |     |
|---------|------|--------------------------------------------------------|----|-----|-----|-----|-----|-----|
|         |      | 18                                                     | 19 | 20  | 21  | 22  | 23  | 24  |
|         |      | Thermal Capacity P1 (kW) for gear unit without cooling |    |     |     |     |     |     |
| 20 - 35 | 1500 | 64                                                     | 81 | 106 | 128 | 166 | 195 | 254 |
|         | 1000 | 61                                                     | 75 | 95  | 125 | 150 | 166 | 239 |
|         | 750  | 56                                                     | 69 | 87  | 119 | 148 | 158 | 229 |

$$\text{Thermal Capacity (P1)} = 106 \text{ kW}$$

### 8. DETERMINE THE AMBIENT TEMPERATURE FACTOR (Ft)

Refer to Ambient Temperature Factor (Ft) (table 4)

| Cooling Type          | Ambient | Duration of Operation / Hour |      |      |
|-----------------------|---------|------------------------------|------|------|
|                       |         | 100%                         | 80%  | 60%  |
| No Additional Cooling | -20°C   | 1.49                         | 1.79 | 2.09 |
|                       | -10°C   | 1.37                         | 1.64 | 1.92 |
|                       | 0°C     | 1.25                         | 1.49 | 1.74 |
|                       | 10°C    | 1.12                         | 1.34 | 1.57 |
|                       | 20°C    | 1.00                         | 1.20 | 1.40 |
|                       | 30°C    | 0.88                         | 1.06 | 1.23 |
|                       | 40°C    | 0.75                         | 0.90 | 1.05 |
|                       | 50°C    | 0.63                         | 0.76 | 0.88 |

$$\text{Ambient Temperature Factor (Ft)} = 0.88$$

### 9. DETERMINE THE ALTITUDE ADJUSTMENT FACTOR (Fh)

Refer to Altitude Adjustment Factor (Fh) (table 5)

| Altitude (m) | Factor Fh |
|--------------|-----------|
| Sea Level    | 1.00      |
| 500          | 0.97      |
| 1000         | 0.93      |
| 1500         | 0.90      |
| 2000         | 0.87      |
| 3000         | 0.81      |

$$\text{Altitude Adjustment Factor (Fh)} = 1.00$$

### 10. DETERMINE THE AIR VELOCITY CORRECTION FACTOR (Fv)

Refer to Air Velocity Correction Factor (Fv) (table 6)

| Operating Environment   | Without Fan | Fan Cooled |
|-------------------------|-------------|------------|
| Small Confined Space    | 0.86        | 1.00       |
| Large Indoor Space      | 1.00        | 1.00       |
| Sheltered Outdoor Space | 1.30        | 1.00       |
| Open Outdoor Space      | 1.50        | 1.00       |

$$\text{Air Velocity Correction Factor (Fv)} = 1.00$$

### 11. CALCULATE THE REQUIRED THERMAL CAPACITY (P therm)

Refer to Air Velocity Correction Factor (Fv) (table 6)

$$P_{\text{therm}} = \frac{\text{Absorbed Power (kW)}}{F_t \times F_h \times F_v}$$

$$P_{\text{therm}} = \frac{70 \text{ kW}}{0.88 \times 1.00 \times 1.00}$$

$$P_{\text{therm}} = 79.5 \text{ kW}$$

### 12. CHECK THE UNIT THERMAL CAPACITY

Check: Thermal Capacity P1 ≥ P therm

$$P_1 = 106 \text{ kW}$$

$$P_{\text{therm}} = 79.5 \text{ kW}$$

**Note!** It advisable that all selections are verified by our application engineers  
If any of the following occur then our application engineers must be consulted:

- The unit shafts are subjected to external overhung loads
- The ambient temperature exceeds 50°C
- If the inertia of the driven machine (referred to the motor shaft) exceeds the inertia of the gear unit and motor

## NOMINAL POWER RATING (kW) - HELICAL - SINGLE STAGE

## TYPE H1/S1

| $i_n$ | n1   | n2    | Gear unit Size |     |     |     |     |       |       |       |       |       |       |       |
|-------|------|-------|----------------|-----|-----|-----|-----|-------|-------|-------|-------|-------|-------|-------|
|       |      |       | 11             | 13  | 15  | 17  | 18  | 20    | 21    | 22    | 23    | 24    | 25    | 26    |
| 1.25  | 1500 | 1200  | 84             | 171 | 319 | 579 | 723 | 1376* | 2015* | 2573* |       |       |       |       |
|       | 1000 | 800   | 56             | 114 | 213 | 386 | 482 | 917   | 1343  | 1716  |       |       |       |       |
|       | 750  | 600   | 42             | 86  | 160 | 290 | 361 | 688   | 1007  | 1287  |       |       |       |       |
| 1.4   | 1500 | 1071  | 75             | 153 | 285 | 517 | 645 | 1228* | 1799* | 2298* |       |       |       |       |
|       | 1000 | 714   | 50             | 102 | 190 | 345 | 430 | 819   | 1199  | 1532  |       |       |       |       |
|       | 750  | 535   | 37             | 76  | 142 | 259 | 323 | 614   | 899   | 1149  |       |       |       |       |
| 1.6   | 1500 | 937   | 63             | 121 | 213 | 381 | 488 | 925   | 1375* | 1875* | 2563* |       |       |       |
|       | 1000 | 625   | 45             | 89  | 163 | 288 | 363 | 688   | 1000  | 1375  | 1813  | 2625  | 3488* |       |
|       | 750  | 468   | 35             | 70  | 131 | 238 | 300 | 569   | 825   | 1125  | 1475  | 1950  | 2850  |       |
| 1.8   | 1500 | 833   | 56             | 114 | 200 | 363 | 444 | 863   | 1250  | 1750* | 2500* |       |       |       |
|       | 1000 | 555   | 40             | 83  | 150 | 275 | 331 | 650   | 938   | 938   | 1750  | 2250  | 3275* | 4825* |
|       | 750  | 416   | 31             | 65  | 123 | 225 | 275 | 531   | 763   | 763   | 1400  | 1813  | 2675  | 3938  |
| 2     | 1500 | 750   | 48             | 99  | 188 | 338 | 425 | 788   | 1188  | 1625* | 2250* |       |       |       |
|       | 1000 | 500   | 34             | 71  | 138 | 250 | 313 | 594   | 875   | 1175  | 1625  | 2100  | 3125  | 4538* |
|       | 750  | 375   | 26             | 55  | 111 | 206 | 263 | 488   | 725   | 963   | 1275  | 1713  | 2488  | 3713  |
| 2.24  | 1500 | 669   | 46             | 85  | 169 | 313 | 388 | 750   | 1113  | 1500* | 2063* |       |       |       |
|       | 1000 | 446   | 33             | 60  | 125 | 238 | 294 | 563   | 813   | 1125  | 1500  | 2000  | 2875  | 4200* |
|       | 750  | 334   | 25             | 46  | 103 | 194 | 238 | 463   | 663   | 925   | 1213  | 1575  | 2275  | 3438  |
| 2.5   | 1500 | 600   | 38             | 71  | 156 | 288 | 363 | 688   | 1025  | 1375  | 1875* | 2563* |       |       |
|       | 1000 | 400   | 26             | 51  | 119 | 213 | 275 | 513   | 775   | 1025  | 1400  | 1813  | 2625  | 3850* |
|       | 750  | 300   | 21             | 40  | 96  | 175 | 225 | 419   | 625   | 838   | 1125  | 1475  | 2150  | 3150  |
| 2.8   | 1500 | 535   | 34             | 60  | 144 | 263 | 331 | 619   | 938   | 1250  | 1688  | 2313* |       |       |
|       | 1000 | 357   | 24             | 43  | 100 | 200 | 250 | 469   | 700   | 938   | 1250  | 1638  | 2388  | 3613  |
|       | 750  | 267   | 19             | 34  | 78  | 163 | 206 | 381   | 575   | 763   | 1025  | 1338  | 1950  | 2950  |
| 3.15  | 1500 | 476   | 29             | 59  | 114 | 238 | 300 | 575   | 850   | 1150  | 1563  | 2063  | 2900* | 4375* |
|       | 1000 | 317   | 20             | 41  | 78  | 175 | 225 | 438   | 638   | 863   | 1150  | 1500  | 2188  | 3300  |
|       | 750  | 238   | 16             | 33  | 59  | 138 | 188 | 356   | 513   | 713   | 938   | 1200  | 1788  | 2688  |
| 3.55  | 1500 | 432   | 25             | 54  | 115 | 231 | 300 | 575   | 850   | 1150  | 1550  | 1888  | 2750  | 4038* |
|       | 1000 | 281   | 18             | 39  | 79  | 163 | 225 | 438   | 613   | 788   | 1125  | 1425  | 2075  | 3038  |
|       | 750  | 211   | 14             | 30  | 59  | 125 | 188 | 344   | 475   | 688   | 888   | 1163  | 1688  | 2488  |
| 4     | 1500 | 375   | 21             | 44  | 94  | 200 | 256 | 575   | 800   | 1063  | 1538  | 1688  | 2488  | 3663  |
|       | 1000 | 250   | 14             | 31  | 66  | 131 | 175 | 438   | 569   | 750   | 1100  | 1275  | 1875  | 2750  |
|       | 750  | 187   | 11             | 24  | 50  | 101 | 138 | 331   | 444   | 613   | 838   | 1038  | 1525  | 2329  |
| 4.5   | 1500 | 333   | 18             | 39  | 68  | 171 | 244 | 469   | 675   | 975   | 1388  | 1550  | 2213  | 3200  |
|       | 1000 | 222   | 12             | 28  | 49  | 115 | 175 | 319   | 475   | 710   | 983   | 1175  | 1538  | 2238  |
|       | 750  | 166   | 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  |

\*Requires forced feed lubrication.

## Thermal Capacity (kW)

| Nominal<br>Transmission<br>Ratio $i_n$                           | n1   | Gear unit Size                                         |     |     |     |     |     |      |      |      |      |      |      |
|------------------------------------------------------------------|------|--------------------------------------------------------|-----|-----|-----|-----|-----|------|------|------|------|------|------|
|                                                                  |      | 11                                                     | 13  | 15  | 17  | 18  | 20  | 21   | 22   | 23   | 24   | 25   | 26   |
|                                                                  |      | Thermal Capacity P1 (kw) for gear unit without cooling |     |     |     |     |     |      |      |      |      |      |      |
| 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  |
| Thermal Capacity P2 (kw) for gear unit with fan cooling          |      |                                                        |     |     |     |     |     |      |      |      |      |      |      |
| 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 |
| Thermal Capacity P3 (kw) for gear unit with cooling coil         |      |                                                        |     |     |     |     |     |      |      |      |      |      |      |
| 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 |
| Thermal Capacity P4 (kw) for gear unit with fan and cooling coil |      |                                                        |     |     |     |     |     |      |      |      |      |      |      |
| 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 |

## NOMINAL POWER RATING (kW) - HELICAL - DOUBLE STAGE

## TYPE H2/S2

| i <sub>N</sub> | n1   | n2  | Gear unit Size |    |     |     |     |     |     |     |     |      |       |       | 26    |
|----------------|------|-----|----------------|----|-----|-----|-----|-----|-----|-----|-----|------|-------|-------|-------|
|                |      |     | 14             | 15 | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23   | 24    | 25    |       |
| 5.6            | 1500 | 267 | 54             | 77 | 112 | 136 | 226 | 318 | 461 | 617 | 829 | 982* | 1547* | 2319* | 3230* |
|                | 1000 | 178 | 36             | 52 | 75  | 91  | 151 | 212 | 308 | 411 | 553 | 748  | 1112  | 1546  | 2153  |
|                | 750  | 133 | 27             | 39 | 56  | 68  | 113 | 159 | 231 | 308 | 415 | 603  | 834   | 1159  | 1615  |
| 6.3            | 1500 | 238 | 45             | 65 | 85  | 123 | 189 | 256 | 371 | 481 | 663 | 898* | 1378* | 1813* | 2525* |
|                | 1000 | 158 | 30             | 44 | 57  | 82  | 130 | 181 | 280 | 364 | 500 | 681  | 1000  | 1375  | 1973  |
|                | 750  | 119 | 23             | 31 | 43  | 62  | 93  | 138 | 214 | 288 | 388 | 553  | 750   | 1125  | 1484  |
| 7.1            | 1500 | 211 | 44             | 62 | 76  | 109 | 182 | 244 | 364 | 475 | 613 | 841  | 1287* | 1688* | 2470* |
|                | 1000 | 140 | 29             | 42 | 51  | 72  | 121 | 169 | 246 | 332 | 456 | 624  | 900   | 1250  | 1769  |
|                | 750  | 105 | 22             | 30 | 38  | 54  | 89  | 125 | 185 | 263 | 344 | 469  | 688   | 988   | 1330  |
| 8              | 1500 | 187 | 38             | 57 | 70  | 96  | 163 | 234 | 332 | 438 | 585 | 766  | 1150  | 1625* | 2275* |
|                | 1000 | 125 | 26             | 39 | 46  | 64  | 111 | 156 | 223 | 319 | 419 | 544  | 850   | 1188  | 1607  |
|                | 750  | 93  | 19             | 28 | 35  | 48  | 85  | 120 | 168 | 238 | 313 | 408  | 650   | 888   | 1208  |
| 9              | 1500 | 166 | 35             | 52 | 62  | 85  | 163 | 231 | 293 | 400 | 563 | 707  | 1025  | 1375  | 1950* |
|                | 1000 | 111 | 24             | 35 | 42  | 57  | 108 | 156 | 203 | 269 | 375 | 507  | 775   | 1000  | 1426  |
|                | 750  | 83  | 18             | 25 | 31  | 43  | 84  | 119 | 153 | 213 | 305 | 380  | 625   | 813   | 1071  |
| 10             | 1500 | 150 | 30             | 46 | 56  | 78  | 130 | 188 | 263 | 364 | 488 | 654  | 950   | 1313  | 1846* |
|                | 1000 | 100 | 20             | 31 | 37  | 52  | 88  | 124 | 175 | 244 | 331 | 437  | 675   | 938   | 1275  |
|                | 750  | 75  | 15             | 23 | 28  | 39  | 63  | 100 | 132 | 194 | 268 | 328  | 525   | 750   | 958   |
| 11.2           | 1500 | 133 | 28             | 42 | 49  | 71  | 124 | 175 | 234 | 325 | 429 | 610  | 850   | 1125  | 1625  |
|                | 1000 | 89  | 19             | 27 | 33  | 48  | 85  | 119 | 162 | 219 | 306 | 408  | 625   | 850   | 1131  |
|                | 750  | 67  | 14             | 20 | 25  | 36  | 61  | 90  | 122 | 163 | 231 | 306  | 500   | 625   | 849   |
| 12.5           | 1500 | 120 | 25             | 38 | 44  | 62  | 104 | 143 | 214 | 293 | 416 | 532  | 800   | 1063  | 1526  |
|                | 1000 | 80  | 17             | 25 | 29  | 41  | 68  | 100 | 143 | 206 | 286 | 355  | 563   | 750   | 1021  |
|                | 750  | 60  | 13             | 19 | 22  | 31  | 53  | 73  | 107 | 156 | 206 | 267  | 413   | 563   | 767   |
| 14             | 1500 | 107 | 22             | 34 | 40  | 54  | 88  | 130 | 195 | 267 | 364 | 459  | 688   | 888   | 1235  |
|                | 1000 | 71  | 15             | 22 | 26  | 36  | 60  | 91  | 131 | 189 | 254 | 306  | 500   | 650   | 903   |
|                | 750  | 53  | 11             | 16 | 20  | 27  | 44  | 65  | 98  | 138 | 181 | 230  | 363   | 525   | 678   |
| 16             | 1500 | 93  | 19             | 29 | 36  | 49  | 78  | 117 | 169 | 241 | 325 | 407  | 613   | 813   | 1118  |
|                | 1000 | 62  | 13             | 20 | 24  | 33  | 52  | 78  | 115 | 163 | 219 | 272  | 438   | 613   | 776   |
|                | 750  | 46  | 9.8            | 14 | 18  | 25  | 40  | 59  | 86  | 118 | 163 | 204  | 338   | 463   | 583   |
| 18             | 1500 | 83  | 17             | 25 | 32  | 43  | 72  | 95  | 150 | 182 | 286 | 361  | 538   | 715   | 962   |
|                | 1000 | 55  | 11             | 18 | 21  | 29  | 49  | 66  | 100 | 122 | 189 | 241  | 396   | 513   | 702   |
|                | 750  | 41  | 8.3            | 13 | 16  | 22  | 38  | 50  | 80  | 96  | 138 | 181  | 313   | 425   | 530   |
| 20             | 1500 | 75  | 15             |    | 28  | 40  |     | 95  | 138 |     | 242 | 324  |       | 650   | 910   |
|                | 1000 | 50  | 10             |    | 19  | 27  |     | 64  | 93  |     | 161 | 216  |       | 475   | 629   |
|                | 750  | 37  | 7.7            |    | 14  | 20  |     | 48  | 73  |     | 121 | 162  |       | 388   | 472   |
| 22.4           | 1500 | 67  | 14             |    | 26  | 35  |     | 85  | 124 |     | 231 | 291  |       | 613   | 850   |
|                | 1000 | 44  | 9.0            |    | 18  | 24  |     | 55  | 83  |     | 156 | 194  |       | 438   | 567   |
|                | 750  | 33  | 6.7            |    | 14  | 18  |     | 43  | 65  |     | 124 | 146  |       | 364   | 426   |

\*Requires forced feed lubrication.

## Thermal Capacity (kW)

| Nominal<br>Transmission<br>Ratio i <sub>n</sub>                  | n1   | Gear Unit Size                                         |     |     |     |     |     |     |     |     |     |      |      |      |
|------------------------------------------------------------------|------|--------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
|                                                                  |      | 14                                                     | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24   | 25   | 26   |
|                                                                  |      | Thermal Capacity P1 (kw) for gear unit without cooling |     |     |     |     |     |     |     |     |     |      |      |      |
| 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  |
| Thermal Capacity P2 (kw) for gear unit with fan cooling          |      |                                                        |     |     |     |     |     |     |     |     |     |      |      |      |
| 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  |
| Thermal Capacity P3 (kw) for gear unit with cooling coil         |      |                                                        |     |     |     |     |     |     |     |     |     |      |      |      |
| 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  |
| Thermal Capacity P4 (kw) for gear unit with fan and cooling coil |      |                                                        |     |     |     |     |     |     |     |     |     |      |      |      |
| 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 H3/S3

| i <sub>N</sub> | n1                  | n2             | Gear unit Size    |                   |                 |                 |                 |                  |                   |                   |                   |                   |                    |
|----------------|---------------------|----------------|-------------------|-------------------|-----------------|-----------------|-----------------|------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
|                |                     |                | 16                | 17                | 18              | 19              | 20              | 21               | 22                | 23                | 24                | 25                | 26                 |
| 20             | 1500<br>1000<br>750 | 75<br>50<br>37 |                   |                   | 74<br>49<br>38  |                 |                 | 181<br>123<br>96 |                   |                   | 481<br>363<br>300 |                   |                    |
| 22.4           | 1500<br>1000<br>750 | 67<br>44<br>33 |                   |                   | 65<br>44<br>33  |                 |                 | 163<br>114<br>86 |                   |                   | 438<br>331<br>269 |                   |                    |
| 25             | 1500<br>1000<br>750 | 60<br>40<br>30 | 24<br>16<br>12    | 33<br>21<br>15    | 55<br>38<br>28  | 78<br>53<br>39  | 104<br>71<br>54 | 150<br>104<br>75 | 208<br>143<br>109 | 257<br>171<br>129 | 413<br>319<br>244 | 563<br>394<br>300 | 754*<br>506<br>378 |
| 28             | 1500<br>1000<br>750 | 53<br>35<br>26 | 21<br>14<br>11    | 29<br>18<br>14    | 50<br>34<br>25  | 70<br>48<br>35  | 94<br>68<br>51  | 131<br>90<br>68  | 181<br>128<br>96  | 231<br>154<br>115 | 388<br>288<br>206 | 506<br>356<br>269 | 680*<br>454<br>341 |
| 31.5           | 1500<br>1000<br>750 | 47<br>31<br>23 | 19<br>13<br>9.4   | 25<br>17<br>13    | 41<br>28<br>21  | 60<br>41<br>31  | 89<br>59<br>43  | 119<br>79<br>61  | 163<br>109<br>81  | 205<br>137<br>103 | 363<br>250<br>188 | 481<br>319<br>238 | 601*<br>401<br>301 |
| 35.5           | 1500<br>1000<br>750 | 43<br>28<br>21 | 17<br>11<br>8.4   | 23<br>15<br>11    | 40<br>28<br>20  | 58<br>38<br>29  | 77<br>52<br>39  | 109<br>73<br>54  | 154<br>103<br>77  | 185<br>124<br>93  | 350<br>231<br>175 | 431<br>288<br>219 | 543<br>362<br>272  |
| 40             | 1500<br>1000<br>750 | 37<br>25<br>18 | 15<br>9.9<br>7.4  | 21<br>15<br>10    | 38<br>26<br>19  | 54<br>35<br>28  | 70<br>47<br>35  | 98<br>65<br>51   | 136<br>91<br>68   | 166<br>111<br>83  | 300<br>206<br>156 | 388<br>256<br>194 | 484<br>323<br>242  |
| 45             | 1500<br>1000<br>750 | 33<br>22<br>16 | 13<br>8.8<br>6.6  | 18<br>13<br>8.6   | 33<br>21<br>16  | 45<br>31<br>23  | 63<br>42<br>31  | 86<br>58<br>45   | 122<br>82<br>61   | 149<br>100<br>75  | 275<br>188<br>144 | 344<br>225<br>175 | 436<br>291<br>218  |
| 50             | 1500<br>1000<br>750 | 30<br>20<br>15 | 12<br>7.9<br>5.9  | 15<br>11<br>8.0   | 29<br>20<br>15  | 40<br>28<br>20  | 56<br>37<br>28  | 78<br>54<br>40   | 112<br>75<br>56   | 130<br>87<br>65   | 250<br>169<br>125 | 306<br>206<br>150 | 380<br>254<br>190  |
| 56             | 1500<br>1000<br>750 | 26<br>17<br>13 | 11<br>7.1<br>5.3  | 14<br>9.6<br>7.0  | 25<br>18<br>13  | 35<br>24<br>19  | 49<br>34<br>26  | 69<br>48<br>35   | 99<br>66<br>50    | 117<br>78<br>59   | 219<br>150<br>114 | 275<br>181<br>138 | 339<br>226<br>169  |
| 63             | 1500<br>1000<br>750 | 23<br>15<br>11 | 9.4<br>6.3<br>4.7 | 12<br>7.6<br>6.1  | 21<br>14<br>11  | 30<br>20<br>15  | 44<br>30<br>23  | 59<br>39<br>29   | 82<br>54<br>40    | 105<br>70<br>53   | 188<br>131<br>98  | 244<br>163<br>123 | 306<br>204<br>153  |
| 71             | 1500<br>1000<br>750 | 21<br>14<br>10 | 8.4<br>5.6<br>4.2 | 10<br>7.1<br>5.4  | 19<br>13<br>9.4 | 26<br>18<br>14  | 40<br>27<br>20  | 52<br>35<br>25   | 73<br>49<br>36    | 99<br>66<br>50    | 169<br>115<br>86  | 219<br>144<br>108 | 270<br>180<br>135  |
| 80             | 1500<br>1000<br>750 | 18<br>12<br>9  | 7.4<br>5.0<br>3.7 | 9.1<br>6.5<br>4.9 | 18<br>11<br>8.8 | 24<br>16<br>13  | 36<br>24<br>18  | 45<br>30<br>24   | 69<br>43<br>34    | 88<br>59<br>44    | 150<br>103<br>79  | 194<br>125<br>95  | 258<br>172<br>129  |
| 90             | 1500<br>1000<br>750 | 16<br>11<br>8  | 6.6<br>4.4<br>3.3 | 8.5<br>5.9<br>4.3 |                 | 21<br>14<br>11  | 32<br>22<br>16  |                  | 58<br>39<br>31    | 79<br>53<br>39    |                   | 175<br>115<br>86  | 230<br>153<br>115  |
| 100            | 1500<br>1000<br>750 | 15<br>10<br>7  | 5.9<br>4.0<br>3.0 | 8.5<br>5.9<br>4.3 |                 | 21<br>14<br>10  | 28<br>19<br>14  |                  | 55<br>37<br>28    | 71<br>47<br>35    |                   | 168<br>112<br>84  | 207<br>138<br>104  |
| 112            | 1500<br>1000<br>750 | 13<br>8<br>6   | 5.3<br>3.5<br>2.7 | 7.4<br>5.1<br>3.6 |                 | 19<br>12<br>9.3 | 26<br>17<br>13  |                  | 48<br>32<br>24    | 62<br>41<br>31    |                   | 144<br>94<br>73   | 183<br>122<br>91   |

\*Requires forced feed lubrication.

## Thermal Capacity (kW)

| Nominal<br>Transmission<br>Ratio i <sub>N</sub>                  | n1   | Gear Unit Size                                         |     |     |     |     |     |     |     |     |     |     |
|------------------------------------------------------------------|------|--------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                                                                  |      | 16                                                     | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  |
|                                                                  |      | Thermal Capacity P1 (kw) for gear unit without cooling |     |     |     |     |     |     |     |     |     |     |
| 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 |
| Thermal Capacity P2 (kw) for gear unit with fan cooling          |      |                                                        |     |     |     |     |     |     |     |     |     |     |
| 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 |
| Thermal Capacity P3 (kw) for gear unit with cooling coil         |      |                                                        |     |     |     |     |     |     |     |     |     |     |
| 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 |
| Thermal Capacity P4 (kw) for gear unit with fan and cooling coil |      |                                                        |     |     |     |     |     |     |     |     |     |     |
| 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 |

## NOMINAL POWER RATING (kW) - HELICAL - QUADRUPLE STAGE

## TYPE H4/S4

| i <sub>N</sub> | n1   | n2 | Gear unit Size |     |     |     |     |     |     |     |     |
|----------------|------|----|----------------|-----|-----|-----|-----|-----|-----|-----|-----|
|                |      |    | 18             | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  |
| 90             | 1500 | 16 | 17             |     |     | 45  |     |     | 138 |     |     |
|                | 1000 | 11 | 11             |     |     | 30  |     |     | 92  |     |     |
|                | 750  | 8  | 8.3            |     |     | 23  |     |     | 69  |     |     |
| 100            | 1500 | 15 | 15             |     |     | 41  |     |     | 125 |     |     |
|                | 1000 | 10 | 9.9            |     |     | 27  |     |     | 83  |     |     |
|                | 750  | 7  | 7.4            |     |     | 20  |     |     | 62  |     |     |
| 112            | 1500 | 13 | 13             |     |     | 36  |     |     | 114 |     |     |
|                | 1000 | 8  | 8.8            |     |     | 25  |     |     | 74  |     |     |
|                | 750  | 6  | 6.6            |     |     | 19  |     |     | 54  |     |     |
| 125            | 1500 | 12 | 12             | 19  | 21  | 33  | 43  | 55  | 101 | 121 | 152 |
|                | 1000 | 8  | 7.9            | 13  | 14  | 21  | 28  | 37  | 66  | 80  | 101 |
|                | 750  | 6  | 5.9            | 9.5 | 11  | 16  | 21  | 28  | 50  | 60  | 76  |
| 140            | 1500 | 10 | 11             | 17  | 21  | 29  | 38  | 54  | 90  | 109 | 133 |
|                | 1000 | 7  | 7.1            | 11  | 14  | 20  | 25  | 36  | 59  | 71  | 89  |
|                | 750  | 5  | 5.3            | 8.3 | 10  | 15  | 19  | 27  | 45  | 55  | 66  |
| 160            | 1500 | 9  | 9.3            | 15  | 18  | 25  | 34  | 49  | 79  | 95  | 121 |
|                | 1000 | 6  | 6.2            | 9.8 | 12  | 18  | 23  | 33  | 53  | 64  | 81  |
|                | 750  | 4  | 4.6            | 7.4 | 9.0 | 13  | 17  | 24  | 40  | 49  | 61  |
| 180            | 1500 | 8  | 8.3            | 12  | 15  | 24  | 31  | 39  | 71  | 86  | 100 |
|                | 1000 | 5  | 5.5            | 8.0 | 9.8 | 15  | 21  | 26  | 48  | 58  | 68  |
|                | 750  | 4  | 4.1            | 6.0 | 7.3 | 12  | 16  | 19  | 36  | 44  | 51  |
| 200            | 1500 | 7  | 7.4            | 11  | 13  | 19  | 28  | 34  | 64  | 78  | 92  |
|                | 1000 | 5  | 5.0            | 7.1 | 8.9 | 13  | 18  | 23  | 43  | 51  | 61  |
|                | 750  | 3  | 3.7            | 5.3 | 6.7 | 10  | 14  | 17  | 26  | 38  | 44  |
| 225            | 1500 | 6  | 6.6            | 8.7 | 12  | 18  | 24  | 30  | 56  | 69  | 82  |
|                | 1000 | 4  | 4.4            | 5.8 | 8.0 | 11  | 17  | 20  | 38  | 46  | 54  |
|                | 750  | 3  | 3.3            | 4.3 | 6.0 | 8.8 | 12  | 15  | 29  | 28  | 41  |
| 250            | 1500 | 6  | 5.9            | 8.5 | 10  | 15  | 22  | 27  | 50  | 60  | 71  |
|                | 1000 | 4  | 4.0            | 5.6 | 7.0 | 11  | 15  | 18  | 34  | 40  | 48  |
|                | 750  | 3  | 3.0            | 4.2 | 5.2 | 8.1 | 11  | 14  | 25  | 30  | 36  |
| 280            | 1500 | 5  | 5.3            | 7.4 | 9.5 | 14  | 19  | 25  | 45  | 55  | 65  |
|                | 1000 | 3  | 3.5            | 5.0 | 6.4 | 9.4 | 13  | 16  | 30  | 36  | 43  |
|                | 750  | 2  | 2.7            | 3.7 | 4.8 | 6.9 | 9.7 | 12  | 23  | 28  | 32  |
| 315            | 1500 | 4  | 4.7            | 6.1 | 8.4 | 12  | 16  | 22  | 40  | 49  | 58  |
|                | 1000 | 3  | 3.1            | 4.1 | 5.6 | 8.1 | 12  | 15  | 26  | 31  | 37  |
|                | 750  | 2  | 2.4            | 3.0 | 4.2 | 6.3 | 8.8 | 11  | 20  | 25  | 29  |
| 355            | 1500 | 4  | 4.2            | 4.8 | 7.3 | 11  | 16  | 20  | 36  | 44  | 51  |
|                | 1000 | 2  | 2.8            | 3.2 | 4.9 | 7.5 | 10  | 13  | 24  | 29  | 34  |
|                | 750  | 2  | 2.1            | 2.4 | 3.7 | 5.6 | 7.8 | 9.9 | 18  | 21  | 25  |
| 400            | 1500 | 3  | 3.7            | 4.9 | 6.7 | 10  | 14  | 18  | 33  | 39  | 45  |
|                | 1000 | 2  | 2.5            | 3.3 | 4.5 | 6.3 | 9.4 | 12  | 21  | 25  | 30  |
|                | 750  | 1  | 1.9            | 2.5 | 3.3 | 5.0 | 7.0 | 8.9 | 13  | 19  | 23  |
| 450            | 1500 | 3  | 3.3            | 3.9 | 6.3 | 9.4 | 12  | 16  | 26  | 36  | 46  |
|                | 1000 | 2  | 2.2            | 2.6 | 4.2 | 6.3 | 8.3 | 10  | 18  | 24  | 31  |
|                | 750  | 1  | 1.7            | 1.9 | 3.2 | 4.4 | 6.2 | 7.8 | 14  | 18  | 21  |
| 500            | 1500 | 3  |                | 4.8 | 5.7 |     | 11  | 14  |     | 32  | 37  |
|                | 1000 | 2  |                | 3.2 | 3.8 |     | 7.5 | 9.4 |     | 22  | 25  |
|                | 750  | 1  |                | 2.4 | 2.8 |     | 5.6 | 7.0 |     | 16  | 20  |
| 560            | 1500 | 2  |                | 4.0 | 4.9 |     | 10  | 13  |     | 28  | 33  |
|                | 1000 | 1  |                | 2.6 | 3.3 |     | 6.6 | 8.4 |     | 19  | 22  |
|                | 750  | 1  |                | 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 P1 (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 OUTPUT TORQUE RATING (NM)

| Type      | i <sub>N</sub> | Gear unit Size |      |      |      |      |      |      |       |       |       |       |       |       |        |        |
|-----------|----------------|----------------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|--------|--------|
|           |                | 11             | 13   | 14   | 15   | 16   | 17   | 18   | 19    | 20    | 21    | 22    | 23    | 24    | 25     | 26     |
| H1/<br>S1 | 1.25           | 648            | 1345 | -    | 2539 | -    | 4658 | 5664 | -     | 10948 | 16153 | 20480 | -     | -     | -      | -      |
|           | 1.4            | 660            | 1350 | -    | 2454 | -    | 4572 | 5820 | -     | 10828 | 16034 | 20480 | -     | -     | -      | -      |
|           | 1.6            | 630            | 1244 | -    | 2136 | -    | 3911 | 4938 | -     | 9325  | 14083 | 19204 | 26245 | 39502 | 51957  | -      |
|           | 1.8            | 651            | 1321 | -    | 2279 | -    | 4103 | 4978 | -     | 9984  | 14108 | 15871 | 28216 | 39394 | 55753  | 83296  |
|           | 2              | 590            | 1257 | -    | 2388 | -    | 4195 | 5412 | -     | 9789  | 15121 | 20692 | 28650 | 40110 | 58331  | 88472  |
|           | 2.24           | 673            | 1210 | -    | 2417 | -    | 4503 | 5482 | -     | 10807 | 15657 | 21374 | 29389 | 42748 | 60404  | 91159  |
|           | 2.5            | 585            | 1134 | -    | 2425 | -    | 4485 | 5566 | -     | 10630 | 16507 | 22116 | 30158 | 40045 | 62672  | 91043  |
|           | 2.8            | 597            | 1082 | -    | 2517 | -    | 4642 | 5707 | -     | 10989 | 16414 | 21664 | 30083 | 39261 | 64982  | 96235  |
|           | 3.15           | 568            | 1188 | -    | 2215 | -    | 4914 | 5955 | -     | 11844 | 16553 | 23338 | 31502 | 40085 | 57148  | 87542  |
|           | 3.55           | 562            | 1208 | -    | 2563 | -    | 5521 | 6741 | -     | 13351 | 18941 | 25841 | 36389 | 42413 | 61740  | 93029  |
|           | 4              | 541            | 1079 | -    | 2354 | -    | 5161 | 6345 | -     | 15074 | 19864 | 27058 | 39731 | 40961 | 63348  | 95726  |
|           | 4.5            | 502            | 1079 | -    | 1910 | -    | 5030 | 6983 | -     | 13693 | 18861 | 27623 | 40243 | 43174 | 61627  | 93478  |
|           | 5              | 498            | 1074 | -    | 1990 | -    | 4913 | 5440 | -     | 14689 | 18901 | 26660 | 37409 | 42610 | 66054  | 99514  |
| H2/<br>S2 | 5.6            | -              | -    | 1810 | 2738 | 3952 | 5086 | 8025 | 11430 | 17026 | 21864 | 29389 | 35591 | 55923 | 82665  | 118808 |
|           | 6.3            | -              | -    | 1736 | 2437 | 3505 | 5081 | 7439 | 10365 | 15032 | 18885 | 27316 | 36044 | 54892 | 74255  | 106214 |
|           | 7.1            | -              | -    | 1923 | 2595 | 3536 | 5133 | 7977 | 11108 | 17131 | 21169 | 27806 | 38605 | 57839 | 76183  | 116072 |
|           | 8              | -              | -    | 1930 | 2724 | 3551 | 5155 | 8216 | 11587 | 17215 | 21664 | 29119 | 40379 | 57123 | 82767  | 117810 |
|           | 9              | -              | -    | 1921 | 2785 | 3556 | 5159 | 8832 | 13181 | 16682 | 21497 | 32231 | 40024 | 58258 | 78371  | 113926 |
|           | 10             | -              | -    | 1927 | 2772 | 3557 | 5160 | 7724 | 11933 | 17363 | 21948 | 31727 | 42944 | 58704 | 84442  | 120689 |
|           | 11.2           | -              | -    | 1911 | 2779 | 3562 | 5151 | 8420 | 12256 | 16747 | 22578 | 30205 | 42960 | 58424 | 77992  | 119922 |
|           | 12.5           | -              | -    | 1934 | 2838 | 3566 | 5129 | 7975 | 11608 | 17382 | 23004 | 32751 | 43002 | 62918 | 86248  | 124849 |
|           | 14             | -              | -    | 1923 | 2806 | 3555 | 5127 | 7755 | 11490 | 18513 | 23094 | 32582 | 43044 | 60249 | 79771  | 114242 |
|           | 16             | -              | -    | 1908 | 2758 | 3529 | 5118 | 7790 | 11842 | 18486 | 23565 | 33107 | 43069 | 60405 | 82767  | 120429 |
|           | 18             | -              | -    | 1828 | 2687 | 3537 | 5106 | 8033 | 10876 | 18043 | 19801 | 31126 | 43094 | 60390 | 81029  | 114060 |
|           | 20             | -              | -    | 1913 | -    | 3545 | 5122 | 9134 | 12084 | 18521 | 22508 | 30767 | 43114 | 60214 | 82767  | 121099 |
|           | 22.4           | -              | -    | 1898 | -    | 3696 | 5109 | 9150 | 11949 | 19079 | 22234 | 32564 | 43130 | 60996 | 89690  | 125336 |
| H3/<br>S3 | 25             | -              | -    | -    | -    | 3786 | 4811 | 8724 | 12491 | 15946 | 23670 | 33455 | 43149 | 64720 | 90127  | 125428 |
|           | 28             | -              | -    | -    | -    | 3711 | 4873 | 8739 | 13003 | 16136 | 23225 | 33040 | 43164 | 67724 | 91929  | 125475 |
|           | 31.5           | -              | -    | -    | -    | 3725 | 4877 | 8125 | 12539 | 16745 | 23032 | 32913 | 43179 | 70595 | 95958  | 125542 |
|           | 35.5           | -              | -    | -    | -    | 3685 | 5190 | 8877 | 12429 | 17440 | 24254 | 34969 | 43187 | 76020 | 99058  | 125581 |
|           | 40             | -              | -    | -    | -    | 3591 | 5089 | 9195 | 13370 | 17443 | 23455 | 34980 | 43195 | 73558 | 100063 | 125622 |
|           | 45             | -              | -    | -    | -    | 3604 | 4857 | 8808 | 12893 | 17446 | 26160 | 34984 | 43203 | 75134 | 97744  | 125654 |
|           | 50             | -              | -    | -    | -    | 3832 | 4903 | 8952 | 12478 | 17448 | 23771 | 34989 | 43213 | 76866 | 95170  | 125696 |
|           | 56             | -              | -    | -    | -    | 3756 | 4995 | 8390 | 12584 | 12674 | 24031 | 34993 | 43220 | 73408 | 97747  | 125723 |
|           | 63             | -              | -    | -    | -    | 3770 | 4596 | 7920 | 12094 | 16697 | 22146 | 31426 | 43224 | 71997 | 97494  | 125740 |
|           | 71             | -              | -    | -    | -    | 3823 | 4715 | 8114 | 11797 | 17455 | 22283 | 32039 | 43226 | 72202 | 96624  | 125769 |
|           | 80             | -              | -    | -    | -    | 3651 | 4819 | 8228 | 12097 | 17456 | 21759 | 32470 | 43231 | 72225 | 95500  | 125772 |
|           | 90             | -              | -    | -    | -    | 3563 | 5092 | 9395 | 11818 | 17458 | 27270 | 32541 | 43238 | 76983 | 97744  | 125794 |
|           | 100            | -              | -    | -    | -    | 3621 | 5716 | 9529 | 13074 | 17460 | 27785 | 35015 | 43239 | 77066 | 106648 | 125803 |
|           | 112            | -              | -    | -    | -    | 3695 | 5333 | 9587 | 13153 | 17461 | 27102 | 35018 | 43243 | 76091 | 99011  | 125823 |
| H4/<br>S4 | 125            | -              | -    | -    | -    | -    | -    | 9295 | 14943 | 16464 | 24759 | 35020 | 41061 | 79132 | 96505  | 125710 |
|           | 140            | -              | -    | -    | -    | -    | -    | 9353 | 14944 | 18252 | 24606 | 35023 | 46433 | 78194 | 97410  | 121949 |
|           | 160            | -              | -    | -    | -    | -    | -    | 9221 | 14945 | 18475 | 24759 | 35024 | 48555 | 78635 | 96328  | 125873 |
|           | 180            | -              | -    | -    | -    | -    | -    | 9104 | 13056 | 17465 | 24519 | 35024 | 43256 | 77132 | 98044  | 120927 |
|           | 200            | -              | -    | -    | -    | -    | -    | 9234 | 13149 | 17466 | 22514 | 33425 | 43258 | 62726 | 96624  | 117131 |
|           | 224            | -              | -    | -    | -    | -    | -    | 9248 | 12165 | 17467 | 23447 | 33602 | 43258 | 76359 | 80768  | 121009 |
|           | 250            | -              | -    | -    | -    | -    | -    | 9344 | 13414 | 17467 | 22612 | 35027 | 43260 | 78647 | 93583  | 117582 |
|           | 280            | -              | -    | -    | -    | -    | -    | 9402 | 13508 | 17468 | 23466 | 35029 | 43263 | 78872 | 96118  | 120098 |
|           | 315            | -              | -    | -    | -    | -    | -    | 9417 | 12520 | 17468 | 22330 | 32458 | 43264 | 77664 | 92182  | 117966 |
|           | 355            | -              | -    | -    | -    | -    | -    | 9400 | 10924 | 17469 | 23119 | 35031 | 43264 | 78647 | 93908  | 117811 |
|           | 400            | -              | -    | -    | -    | -    | -    | 9133 | 11927 | 17470 | 23212 | 35031 | 43264 | 66347 | 95500  | 120144 |
|           | 450            | -              | -    | -    | -    | -    | -    | 9133 | 10786 | 17469 | 23505 | 35033 | 43264 | 76312 | 102936 | 116299 |
|           | 500            | -              | -    | -    | -    | -    | -    | -    | 14947 | 17470 | -     | 35033 | 43268 | -     | 102936 | 116291 |
|           | 560            | -              | -    | -    | -    | -    | -    | -    | 13812 | 17469 | -     | 35033 | 43270 | -     | 102933 | 116292 |

## NOMINAL POWER RATING (kW) - BEVEL HELICAL - DOUBLE STAGE

## TYPE B2/K2

| i <sub>n</sub> | n1   | n2  | Gear unit Size |     |     |    |     |     |     |     |      |      |       |       |
|----------------|------|-----|----------------|-----|-----|----|-----|-----|-----|-----|------|------|-------|-------|
|                |      |     | 11             | 13  | 15  | 17 | 18  | 20  | 21  | 22  | 23   | 24   | 25    | 26    |
| 5              | 1500 | 300 |                |     | 63  |    | 166 |     | 544 |     |      | 988* |       |       |
|                | 1000 | 200 |                |     | 53  |    | 111 |     | 366 |     |      | 738* |       |       |
|                | 750  | 150 |                |     | 39  |    | 84  |     | 275 |     |      | 613  |       |       |
| 5.6            | 1500 | 268 |                | 26  | 59  |    | 164 |     | 543 | 545 |      | 988* | 1787* |       |
|                | 1000 | 179 |                | 18  | 47  |    | 111 |     | 365 | 366 |      | 738* | 1207* |       |
|                | 750  | 134 |                | 13  | 36  |    | 84  |     | 275 | 276 |      | 613  | 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)

\*Requires forced feed lubrication.

| Nominal Transmission Ratio i <sub>n</sub>                        | n1   | Gear unit Size                                         |    |    |     |     |     |     |     |     |     |     |      |
|------------------------------------------------------------------|------|--------------------------------------------------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|                                                                  |      | 11                                                     | 13 | 15 | 17  | 18  | 20  | 21  | 22  | 23  | 24  | 25  | 26   |
|                                                                  |      | Thermal Capacity P1 (kW) for gear unit without cooling |    |    |     |     |     |     |     |     |     |     |      |
| 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  |
| Thermal Capacity P2 (kW) for gear unit with fan cooling          |      |                                                        |    |    |     |     |     |     |     |     |     |     |      |
| 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  |
| Thermal Capacity P3 (kW) for gear unit with cooling coil         |      |                                                        |    |    |     |     |     |     |     |     |     |     |      |
| 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  |
| Thermal Capacity P4 (kW) for gear unit with fan and cooling coil |      |                                                        |    |    |     |     |     |     |     |     |     |     |      |
| 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 |

## NOMINAL POWER RATING (kW) - BEVEL HELICAL - TRIPLE STAGE

## TYPE B3/K3

| i <sub>n</sub> | n1                  | n2              | Gear unit Size    |                   |                   |                   |                 |                |                 |                  |                    |                    |                    |                    | 25                  | 26 |
|----------------|---------------------|-----------------|-------------------|-------------------|-------------------|-------------------|-----------------|----------------|-----------------|------------------|--------------------|--------------------|--------------------|--------------------|---------------------|----|
|                |                     |                 | 14                | 15                | 16                | 17                | 18              | 19             | 20              | 21               | 22                 | 23                 | 24                 |                    |                     |    |
| 20             | 1500<br>1000<br>750 | 75<br>50<br>37. |                   | 21<br>15<br>11    |                   |                   | 66<br>45<br>35  |                |                 | 169<br>119<br>94 |                    |                    | 538*<br>394<br>306 |                    |                     |    |
| 22.4           | 1500<br>1000<br>750 | 66<br>44<br>33  |                   | 19<br>14<br>10    | 28<br>19<br>14    |                   | 63<br>43<br>31  | 81<br>60<br>45 |                 | 163<br>113<br>88 | 219*<br>163<br>119 |                    | 500*<br>363<br>275 | 638*<br>450<br>344 |                     |    |
| 25             | 1500<br>1000<br>750 | 60<br>40<br>30  | 11<br>8.0<br>5.9  | 18<br>12<br>8.8   | 25<br>17<br>13    | 32<br>21<br>16    | 55<br>38<br>29  | 78<br>53<br>40 | 104<br>69<br>52 | 144<br>100<br>75 | 200*<br>138<br>106 | 259*<br>173<br>130 | 438*<br>319<br>244 | 563*<br>394<br>300 | 701*<br>468*<br>351 |    |
| 28             | 1500<br>1000<br>750 | 53<br>35<br>26  | 10<br>6.9<br>5.1  | 14<br>10<br>7.5   | 23<br>15<br>11    | 28<br>19<br>14    | 46<br>31<br>24  | 60<br>43<br>33 | 93<br>62<br>47  | 115<br>83<br>63  | 175*<br>118<br>89  | 233*<br>155<br>117 | 400<br>281<br>213  | 506*<br>356<br>269 | 625*<br>420*<br>315 |    |
| 31.5           | 1500<br>1000<br>750 | 47<br>31<br>23  | 8.8<br>6.0<br>4.5 | 13<br>8.8<br>6.9  | 16<br>11<br>8.2   | 25<br>17<br>13    | 41<br>28<br>21  | 55<br>39<br>29 | 86<br>58<br>43  | 106<br>74<br>55  | 150*<br>104<br>78  | 209*<br>140<br>105 | 363<br>250<br>188  | 481*<br>319<br>238 | 564*<br>377*<br>283 |    |
| 35.5           | 1500<br>1000<br>750 | 43<br>28<br>21  | 8.1<br>5.4<br>4.0 | 12<br>8.1<br>6.0  | 18<br>12<br>9.1   | 22<br>15<br>11    | 38<br>25<br>19  | 50<br>35<br>26 | 74<br>49<br>37  | 96<br>66<br>50   | 138<br>94<br>70    | 186*<br>124<br>93  | 325<br>225<br>169  | 431<br>288<br>219  | 500*<br>340*<br>250 |    |
| 40             | 1500<br>1000<br>750 | 37<br>25<br>18  | 7.5<br>4.9<br>3.6 | 11<br>6.9<br>5.5  | 16<br>11<br>8.0   | 20<br>13<br>10    | 34<br>23<br>18  | 45<br>31<br>24 | 65<br>43<br>32  | 86<br>59<br>45   | 123<br>84<br>65    | 162<br>120<br>82   | 294<br>200<br>156  | 388<br>269<br>194  | 450*<br>330<br>230  |    |
| 45             | 1500<br>1000<br>750 | 33<br>22<br>16  | 6.3<br>4.4<br>3.4 | 9.4<br>6.3<br>5.0 | 12<br>8.0<br>6.0  | 18<br>12<br>8.8   | 30<br>20<br>15  | 41<br>28<br>22 | 63<br>41<br>33  | 80<br>53<br>40   | 113<br>75<br>58    | 146<br>97<br>74    | 269<br>181<br>138  | 344<br>225<br>175  | 400*<br>265<br>205  |    |
| 50             | 1500<br>1000<br>750 | 30<br>20<br>15  | 5.8<br>3.9<br>3.0 | 8.8<br>5.8<br>4.4 | 13<br>8.7<br>6.6  | 16<br>10<br>7.9   | 26<br>18<br>14  | 38<br>25<br>19 | 53<br>36<br>27  | 71<br>48<br>36   | 100<br>68<br>51    | 130<br>87<br>65    | 244<br>163<br>124  | 306<br>206<br>150  | 360*<br>240<br>180  |    |
| 56             | 1500<br>1000<br>750 | 26<br>17<br>13  | 5.1<br>3.5<br>2.6 | 7.5<br>5.3<br>3.9 | 12<br>7.7<br>5.7  | 14<br>9.5<br>7.1  | 24<br>16<br>13  | 33<br>23<br>18 | 47<br>31<br>23  | 63<br>43<br>33   | 89<br>61<br>46     | 117<br>78<br>59    | 213<br>144<br>110  | 275<br>181<br>138  | 320<br>215<br>165   |    |
| 63             | 1500<br>1000<br>750 | 23<br>15<br>11  | 4.6<br>3.1<br>2.4 | 6.9<br>4.6<br>3.5 | 8.5<br>5.5<br>4.2 | 13<br>8.4<br>6.4  | 21<br>15<br>11  | 29<br>21<br>16 | 44<br>30<br>23  | 55<br>38<br>29   | 79<br>54<br>40     | 105<br>70<br>52    | 188<br>131<br>98   | 244<br>163<br>123  | 285<br>190<br>145   |    |
| 71             | 1500<br>1000<br>750 | 21<br>14<br>10  | 4.0<br>2.8<br>2.1 | 6.0<br>4.1<br>3.1 | 9.1<br>6.1<br>4.6 | 11<br>7.5<br>5.6  | 19<br>13<br>9.4 | 26<br>18<br>15 | 37<br>25<br>19  | 50<br>34<br>25   | 70<br>46<br>34     | 93<br>62<br>47     | 169<br>101<br>74   | 219<br>144<br>108  | 250<br>166<br>125   |    |
| 80             | 1500<br>1000<br>750 | 18<br>12<br>9   | 2.9<br>2.5<br>1.9 |                   | 7.5<br>5.3<br>3.9 | 10<br>6.7<br>5.0  |                 | 24<br>17<br>13 | 32<br>22<br>16  |                  | 69<br>46<br>34     | 81<br>54<br>41     |                    | 200<br>135<br>101  | 218<br>146<br>110   |    |
| 90             | 1500<br>1000<br>750 | 16<br>11<br>8   | 2.9<br>1.9<br>1.4 |                   | 5.7<br>3.8<br>2.9 | 8.9<br>5.9<br>4.4 |                 | 22<br>15<br>11 | 33<br>21<br>16  |                  | 58<br>36<br>26     | 73<br>49<br>36     |                    | 176<br>117<br>85   | 197<br>131<br>99    |    |
| 100            | 1500<br>1000<br>750 | 15<br>10<br>7   | 2.7<br>1.8<br>1.3 |                   |                   | 7.9<br>5.2<br>3.9 |                 |                | 26<br>16<br>12  |                  |                    | 63<br>39<br>29     |                    |                    | 174<br>106<br>78    |    |

\*Requires forced feed lubrication.

## Thermal Capacity (kW)

| Nominal<br>Transmission<br>Ratio i <sub>n</sub>                  | n1   | Gear Unit Size                                         |     |     |     |     |     |     |     |     |     |     |      |      |  |
|------------------------------------------------------------------|------|--------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|--|
|                                                                  |      | 14                                                     | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25   | 26   |  |
|                                                                  |      | Thermal Capacity P1 (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 P2 (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 P3 (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 P4 (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 B4/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 Ratio i <sub>n</sub> | n1   | Gear Unit Size                                         |    |    |    |    |    |    |     |     |     |
|-------------------------------------------|------|--------------------------------------------------------|----|----|----|----|----|----|-----|-----|-----|
|                                           |      | 17                                                     | 18 | 19 | 20 | 21 | 22 | 23 | 24  | 25  | 26  |
|                                           |      | Thermal Capacity P1 (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 |

## NOMINAL OUTPUT TORQUE RATING (NM)

| Type      | i <sub>N</sub> | Gear unit Size |      |      |      |      |      |      |       |       |       |       |       |       |        |        |
|-----------|----------------|----------------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|--------|--------|
|           |                | 11             | 13   | 14   | 15   | 16   | 17   | 18   | 19    | 20    | 21    | 22    | 23    | 24    | 25     | 26     |
| B2/<br>K2 | 5              | -              | -    | -    | 1947 | -    | -    | 5083 | -     | -     | 17515 | -     | -     | 46331 | -      | -      |
|           | 5.6            | -              | 953  | -    | 2079 | -    | -    | 5647 | -     | -     | 19009 | 18884 | -     | 44942 | 64853  | -      |
|           | 6.3            | 593            | 1049 | -    | 2191 | -    | 3890 | 5707 | -     | 12250 | 17129 | 22077 | 30746 | 38384 | 63553  | 74035  |
|           | 7.1            | 674            | 1166 | -    | 2507 | -    | 4489 | 6460 | -     | 13061 | 19219 | 24445 | 35803 | 44379 | 66230  | 82626  |
|           | 8              | 557            | 1172 | -    | 2511 | -    | 4247 | 6809 | -     | 13436 | 19864 | 27681 | 39408 | 45512 | 68760  | 93670  |
|           | 9              | 521            | 1253 | -    | 2547 | -    | 4687 | 7163 | -     | 13876 | 20258 | 27978 | 39155 | 45263 | 68243  | 104527 |
|           | 10             | 517            | 1273 | -    | 2483 | -    | 4975 | 7199 | -     | 13423 | 19786 | 27456 | 37711 | 47730 | 72421  | 110392 |
|           | 11.2           | 512            | 1087 | -    | 2536 | -    | 4341 | 6983 | -     | 13385 | 20318 | 27630 | 38360 | 47332 | 74490  | 109825 |
|           | 12.5           | 500            | 1209 | -    | 2562 | -    | 4571 | 7183 | -     | 14241 | 20433 | 28117 | 38378 | 48496 | 69834  | 99685  |
|           | 14             | 509            | 1081 | -    | 2451 | -    | 4962 | 6337 | -     | 13597 | 17827 | 25495 | 32467 | 52244 | 64292  | 87542  |
|           | 16             | 500            | 913  | -    | 2072 | -    | 4222 | 5695 | -     | 11728 | 14650 | 22411 | 27909 | 43691 | 61120  | 76485  |
|           | 18             | 456            | 808  | -    | 1804 | -    | 3869 | 6703 | -     | 13328 | 16902 | 25441 | 32726 | 48900 | 64368  | 84173  |
|           | 20             | 482            | 897  | -    | 2555 | -    | 4359 | 7996 | -     | 13362 | 20368 | 28232 | 32650 | 65609 | 66207  | 83586  |
|           | 22.4           | 485            | -    | -    | 2541 | 3780 | 4233 | 8502 | 11528 | 13171 | 22696 | 31038 | 33033 | 68682 | 90452  | 84765  |
| B3/<br>K3 | 25             | -              | -    | 1797 | 2755 | 3880 | 5176 | 8430 | 12371 | 17382 | 21783 | 31530 | 43145 | 68465 | 88789  | 115832 |
|           | 28             | -              | -    | 1736 | 2374 | 3991 | 4920 | 8016 | 10641 | 17433 | 19931 | 31038 | 43162 | 70108 | 89787  | 115888 |
|           | 31.5           | -              | -    | 1717 | 2433 | 3217 | 5047 | 8057 | 11096 | 18253 | 21308 | 29420 | 43175 | 71500 | 96881  | 115931 |
|           | 35.5           | -              | -    | 1688 | 2684 | 4075 | 5077 | 8253 | 11460 | 17442 | 20943 | 31126 | 43185 | 73029 | 97744  | 116412 |
|           | 40             | -              | -    | 1807 | 2480 | 4071 | 5101 | 8147 | 11460 | 17446 | 20821 | 31197 | 43197 | 71712 | 98683  | 119768 |
|           | 45             | -              | -    | 1761 | 2541 | 3380 | 5115 | 8162 | 11949 | 19079 | 21998 | 31684 | 43205 | 73834 | 98843  | 117278 |
|           | 50             | -              | -    | 1742 | 2715 | 4065 | 5102 | 8047 | 11972 | 17878 | 21594 | 31530 | 43361 | 76290 | 94709  | 120352 |
|           | 56             | -              | -    | 1779 | 2590 | 4066 | 5108 | 8232 | 11528 | 17453 | 21664 | 31481 | 43219 | 74490 | 96438  | 118628 |
|           | 63             | -              | -    | 1815 | 2676 | 3246 | 5047 | 8301 | 11600 | 18790 | 22061 | 30891 | 43224 | 73966 | 99431  | 117120 |
|           | 71             | -              | -    | 1688 | 2712 | 4072 | 5081 | 8253 | 12033 | 17457 | 21759 | 30560 | 43230 | 66288 | 97461  | 116200 |
|           | 80             | -              | -    | 1445 | -    | 3820 | 5151 | 8457 | 12097 | 17459 | 23239 | 34380 | 43236 | 76001 | 101867 | 116169 |
|           | 90             | -              | -    | 1550 | -    | 3221 | 5153 | 8730 | 12963 | 19657 | 22761 | 29571 | 43240 | 75277 | 99575  | 116185 |
|           | 100            | -              | -    | 1607 | -    | -    | 5131 | 8853 | 11963 | 16034 | 23704 | 31690 | 38357 | 75336 | 98590  | 103637 |
| B4/<br>K4 | 112            | -              | -    | -    | -    | -    | 5111 | 8363 | 11528 | 17462 | 22730 | 32811 | 43799 | 75703 | 93113  | 116685 |
|           | 125            | -              | -    | -    | -    | -    | 5104 | 8974 | 11972 | 19096 | 23109 | 32515 | 54268 | 76900 | 94709  | 137900 |
|           | 140            | -              | -    | -    | -    | -    | 5120 | 8988 | 12193 | 17464 | 24512 | 32146 | 54729 | 77664 | 96438  | 137908 |
|           | 160            | -              | -    | -    | -    | -    | 5103 | 9101 | 12609 | 17464 | 23572 | 33098 | 43373 | 79630 | 96881  | 119902 |
|           | 180            | -              | -    | -    | -    | -    | 5110 | 8889 | 12893 | 17466 | 22799 | 33956 | 44141 | 78273 | 97744  | 118147 |
|           | 200            | -              | -    | -    | -    | -    | 5108 | 8920 | 12733 | 17466 | 23278 | 33425 | 44290 | 78813 | 95500  | 117809 |
|           | 224            | -              | -    | -    | -    | -    | 5117 | 8803 | 12674 | 17467 | 22730 | 33444 | 49127 | 79224 | 100673 | 122910 |
|           | 250            | -              | -    | -    | -    | -    | 5128 | 9174 | 9178  | 19296 | 23109 | 33501 | 49016 | 78872 | 94709  | 124453 |
|           | 280            | -              | -    | -    | -    | -    | 5108 | 7191 | 11972 | 17468 | 24512 | 33254 | 48467 | 79883 | 96438  | 121756 |
|           | 315            | -              | -    | -    | -    | -    | 5136 | 7584 | 12609 | 17468 | 22968 | 33098 | 49132 | 79630 | 95607  | 122921 |
|           | 355            | -              | -    | -    | -    | -    | 5111 | 7170 | 12893 | 19112 | 23246 | 31126 | 38839 | 62635 | 96328  | 104899 |
|           | 400            | -              | -    | -    | -    | -    | 4947 | 6981 | 11938 | 16182 | 21957 | 28650 | 38460 | 58947 | 89133  | 113793 |
|           | 450            | -              | -    | -    | -    | -    | 4540 | -    | 10863 | 17469 | -     | 31684 | 49138 | -     | 102503 | 115898 |
|           | 500            | -              | -    | -    | -    | -    | 5036 | -    | 11187 | 16080 | -     | 26566 | 49153 | -     | 85950  | 91822  |
|           | 560            | -              | -    | -    | -    | -    | 5056 | -    | 11362 | 17367 | -     | 25923 | 46389 | -     | 87610  | 93306  |

## ACTUAL RATIO - HELICAL TYPE

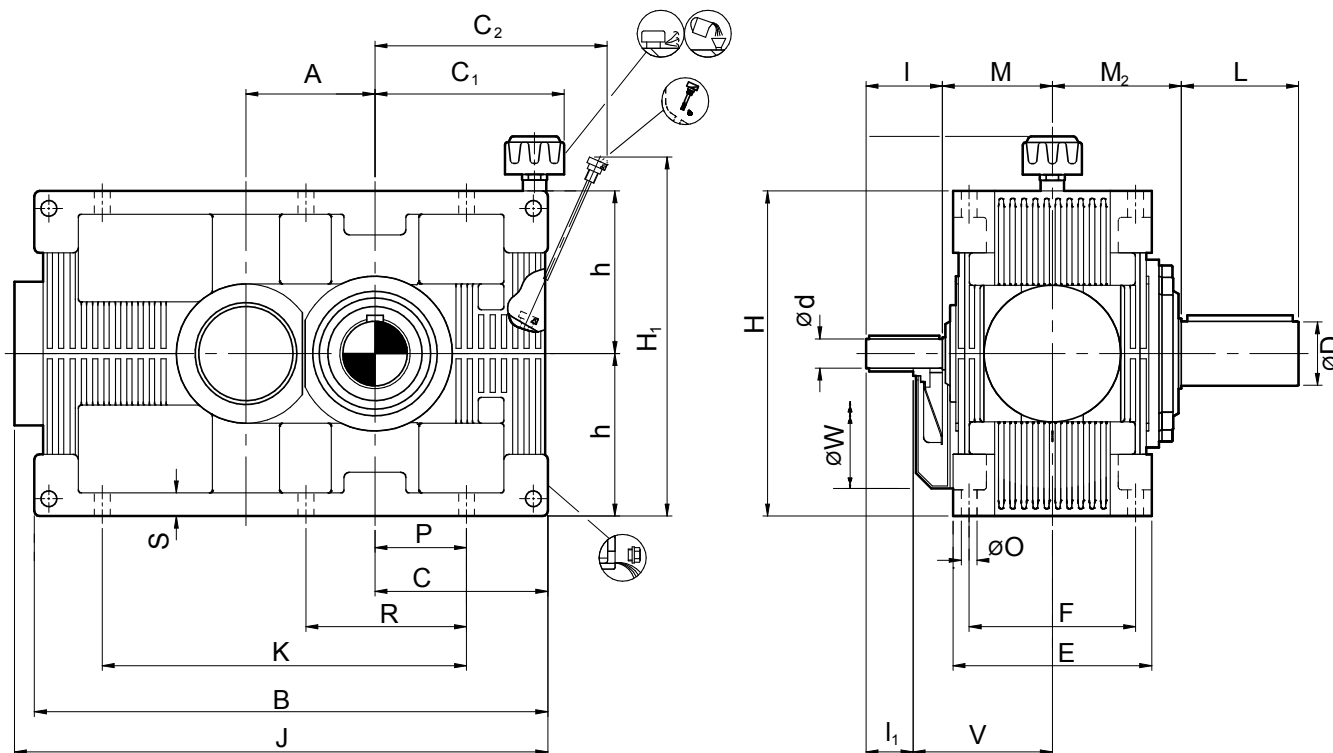
## H1, H2, H3, H4/ S1, S2, S3, S4

| Type      | i <sub>n</sub> | Gear unit Size |      |       |       |        |        |        |        |        |        |        |        |        |        |        |
|-----------|----------------|----------------|------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|           |                | 11             | 13   | 14    | 15    | 16     | 17     | 18     | 19     | 20     | 21     | 22     | 23     | 24     | 25     | 26     |
| H1/<br>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   |
| H2/<br>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  |
| H3/<br>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  | 53.53  | 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 |
| H4/<br>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

## B2, B3, B4/ 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     |
| B2/<br>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  |
| B3/<br>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 |
| B4/<br>K4 | 112            | -              | -     | -     | -     | -     | 112.53 | 110.61 | 111.43 | 115.53 | 105.78 | 111.43 | 116.09 | 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 |



| Size   | Input Shaft     |     |     |           |     |    |     |     |     | Output Shaft |     |     |  |  |
|--------|-----------------|-----|-----|-----------|-----|----|-----|-----|-----|--------------|-----|-----|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|        | i = 1.25 - 3.55 |     |     | i = 4 - 5 |     |    |     |     |     |              |     |     |                                                                                     |                                                                                     |
|        |                 |     |     |           |     |    |     |     |     |              |     |     |                                                                                     |                                                                                     |
| H1..11 | 25              | 100 | 50  | 20        | 100 | 50 | 150 | 200 | 180 | 32           | 60  | 120 | 35                                                                                  | 1.5                                                                                 |
| H1..13 | 35              | 110 | 60  | 30        | 110 | 60 | 150 | 200 | 180 | 45           | 90  | 125 | 65                                                                                  | 2.5                                                                                 |
| H1..15 | 50              | 130 | 80  | 40        | 130 | 80 | 160 | 210 | 230 | 55           | 90  | 135 | 115                                                                                 | 4                                                                                   |
| H1..17 | 60              | 155 | 105 | 50        | 130 | 80 | 165 | 215 | 300 | 70           | 125 | 150 | 205                                                                                 | 7                                                                                   |
| H1..18 | 70              | 155 | 105 | 55        | 135 | 85 | 190 | 240 | 300 | 80           | 150 | 170 | 275                                                                                 | 9                                                                                   |

| Size   | Foundation |     |     |                              |                              |     |     |     |                              |                 |     |     |    |     |   |    |
|--------|------------|-----|-----|------------------------------|------------------------------|-----|-----|-----|------------------------------|-----------------|-----|-----|----|-----|---|----|
|        | A          | B   | C   | C <sub>1</sub> <sup>2)</sup> | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <sup>2)</sup> | J   | K   | O  | P   | R | S  |
| H1..11 | 80         | 356 | 140 | 176                          | 171                          | 180 | 150 | 100 | 248                          | 260             | 356 | 175 | 14 | 60  | — | 24 |
| H1..13 | 100        | 435 | 155 | 192                          | 195                          | 190 | 150 | 125 | 295                          | 330             | 435 | 220 | 14 | 75  | — | 24 |
| H1..15 | 125        | 520 | 182 | 218                          | 231                          | 228 | 170 | 160 | 352                          | 400             | 530 | 290 | 14 | 100 | — | 24 |
| H1..17 | 160        | 640 | 220 | 248                          | 282                          | 250 | 210 | 200 | 432                          | 480             | 652 | 350 | 18 | 120 | — | 32 |
| H1..18 | 180        | 716 | 246 | 273                          | 311                          | 284 | 230 | 225 | 475                          | 530             | 726 | 410 | 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 Ø50m6.

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

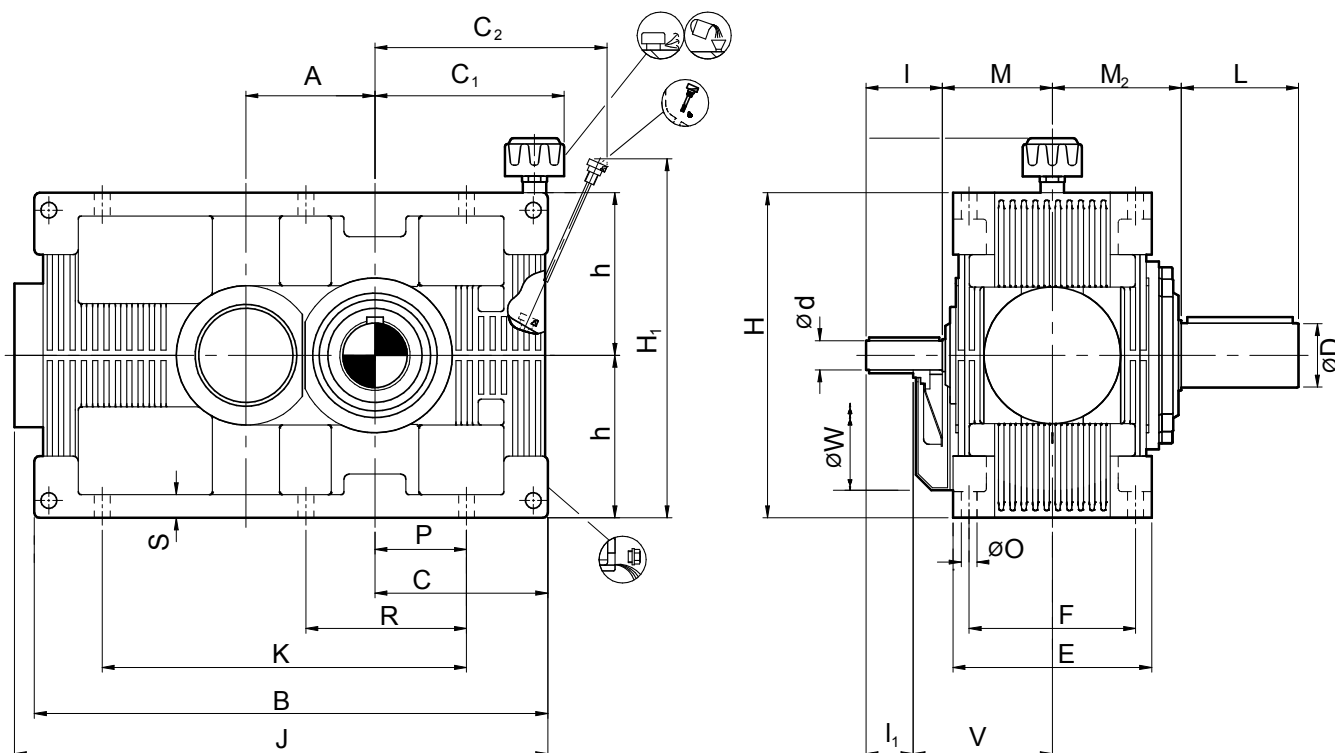
2) Approximate values; exact values acc. to order related documents

# SERIES E

## TYPE H1HN

### HORIZONTAL MOUNTING - HELICAL GEAR UNIT

### SINGLE STAGE - SIZE 20 TO 26



| Size   | Input Shaft     |     |     |           |     |     |     |     |     | Output Shaft |     |     |  |  |
|--------|-----------------|-----|-----|-----------|-----|-----|-----|-----|-----|--------------|-----|-----|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|        | i = 1.25 - 3.55 |     |     | i = 4 - 5 |     |     |     |     |     |              |     |     |                                                                                     |                                                                                     |
|        |                 |     |     |           |     |     |     |     |     |              |     |     |                                                                                     |                                                                                     |
| H1..20 | 85              | 180 | 130 | 70        | 155 | 105 | 215 | 265 | 380 | 100          | 175 | 210 | 495                                                                                 | 18                                                                                  |
| H1..21 | 95              | 180 | 130 | 80        | 180 | 130 | 260 | 310 | 530 | 110          | 180 | 220 | 665                                                                                 | 25                                                                                  |
| H1..22 | 105             | 220 | 170 | 90        | 180 | 130 | 270 | 320 | 530 | 120          | 200 | 230 | 900                                                                                 | 36                                                                                  |
| H1..23 | 115             | 220 | 170 | 95        | 180 | 130 | 280 | 330 | 650 | 140          | 225 | 260 | 1215                                                                                | 51                                                                                  |
| H1..24 | 130             | 250 | 200 | 110       | 220 | 170 | 320 | 370 | 650 | 160          | 260 | 295 | 1630                                                                                | 69                                                                                  |
| H1..25 | 145             | 250 | 200 | 120       | 220 | 170 | 360 | 410 | 650 | 170          | 270 | 305 | 2205                                                                                | 95                                                                                  |
| H1..26 | 160             | 300 | 250 | 130       | 250 | 200 | 360 | 410 | 650 | 190          | 300 | 345 | 2975                                                                                | 130                                                                                 |

| Size   | Foundation |      |     |                              |                              |     |     |     |                              |                 |      |      |    |     |     |    |
|--------|------------|------|-----|------------------------------|------------------------------|-----|-----|-----|------------------------------|-----------------|------|------|----|-----|-----|----|
|        | A          | B    | C   | C <sub>1</sub> <sup>2)</sup> | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <sup>2)</sup> | J    | K    | O  | P   | R   | S  |
| H1..20 | 225        | 893  | 303 | 319                          | 387                          | 314 | 270 | 280 | 588                          | 640             | 918  | 520  | 23 | 180 | —   | 36 |
| H1..21 | 250        | 995  | 335 | 374                          | 435                          | 385 | 310 | 315 | 664                          | 720             | 1010 | 570  | 27 | 195 | —   | 45 |
| H1..22 | 280        | 1095 | 370 | 405                          | 474                          | 400 | 340 | 355 | 741                          | 800             | 1110 | 630  | 27 | 215 | 370 | 45 |
| H1..23 | 315        | 1250 | 425 | 442                          | 537                          | 450 | 380 | 400 | 831                          | 890             | 1260 | 705  | 33 | 240 | 420 | 55 |
| H1..24 | 355        | 1365 | 465 | 482                          | 598                          | 515 | 410 | 450 | 908                          | 990             | 1380 | 810  | 33 | 280 | 480 | 55 |
| H1..25 | 400        | 1505 | 510 | 528                          | 670                          | 535 | 460 | 500 | 1013                         | 1090            | 1565 | 910  | 33 | 315 | 540 | 55 |
| H1..26 | 450        | 1710 | 580 | 593                          | 753                          | 600 | 510 | 560 | 1137                         | 1210            | 1765 | 1025 | 39 | 355 | 615 | 65 |

Modification of dimensions reserved.

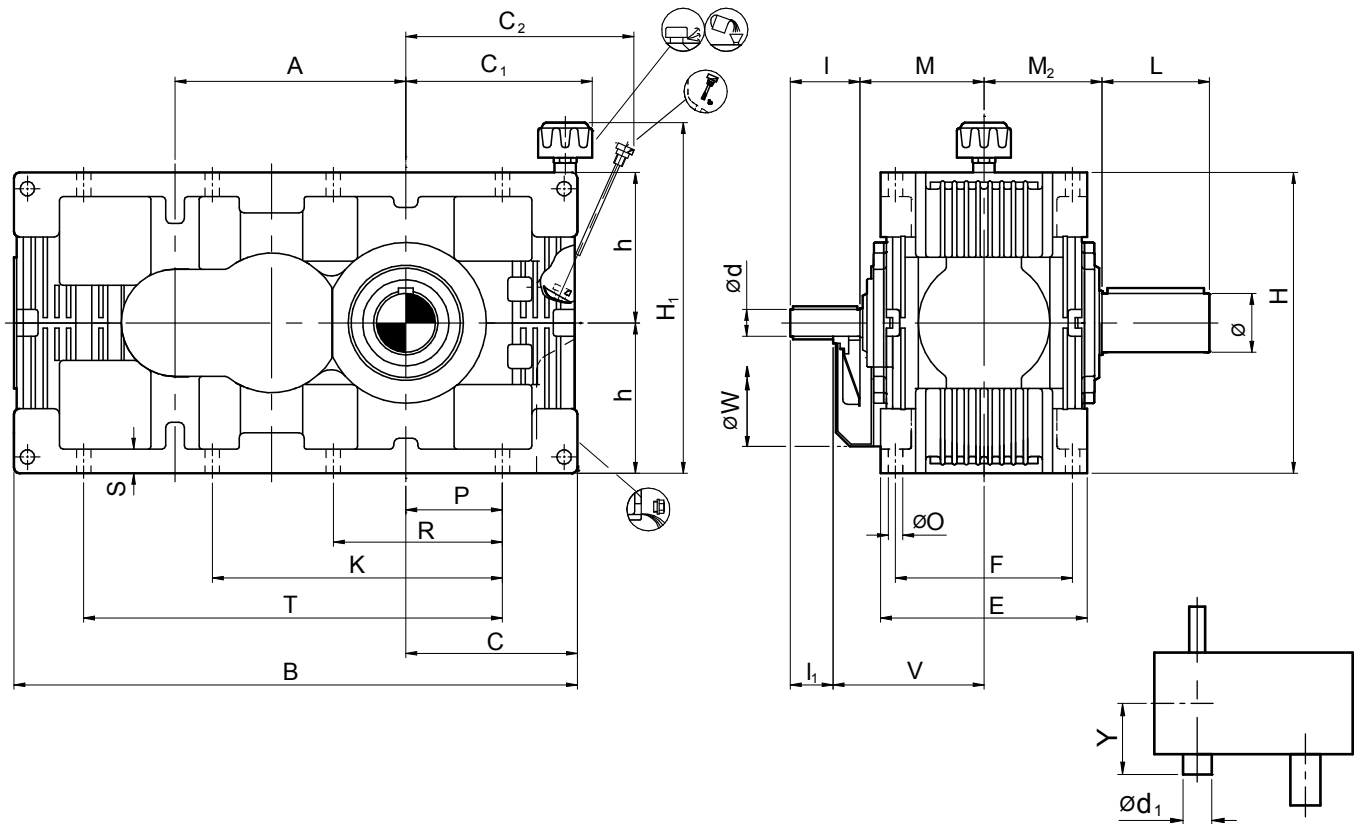
Shaft ends with keys according to DIN 6885, part 1, Shape A.

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

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50m6.

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

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



| Size   | Input Shaft    |     |                |             |     |                |          |     |                |     |     |     | Output Shaft |     |                | Back Stop                    |                 |  |  |
|--------|----------------|-----|----------------|-------------|-----|----------------|----------|-----|----------------|-----|-----|-----|--------------|-----|----------------|------------------------------|-----------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|        | i = 5.6 - 12.5 |     |                | i = 14 - 18 |     |                | i = 22.4 |     |                |     |     |     |              |     |                |                              |                 |                                                                                       |                                                                                       |
|        | i = 5.6 - 12.5 |     |                | i = 14 - 20 |     |                |          |     |                |     |     |     |              |     |                |                              |                 |                                                                                       |                                                                                       |
|        | d              | l   | l <sub>1</sub> | d           | l   | l <sub>1</sub> | d        | l   | l <sub>1</sub> | M   | V   | W   | D            | L   | M <sub>2</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                                                                                       |                                                                                       |
| H2..14 | 25             | 100 | —              | 20          | 100 | —              | 20       | 100 | —              | 140 | —   | —   | 48           | 95  | 125            | 95                           | 190             | 85                                                                                    | 2                                                                                     |
| H2..15 | 30             | 110 | —              | 25          | 100 | —              | —        | —   | —              | 155 | —   | —   | 55           | 95  | 135            | 110                          | 210             | 115                                                                                   | 3                                                                                     |
| H2..16 | 35             | 110 | 65             | 30          | 110 | 65             | 20       | 100 | 55             | 155 | 200 | 270 | 60           | 130 | 145            | 135                          | 220             | 165                                                                                   | 4                                                                                     |
| H2..17 | 45             | 130 | 85             | 35          | 110 | 65             | 25       | 100 | 55             | 160 | 205 | 300 | 70           | 135 | 150            | 140                          | 230             | 220                                                                                   | 5                                                                                     |
| H2..18 | 50             | 130 | 85             | 40          | 130 | 85             | —        | —   | —              | 180 | 225 | 300 | 80           | 160 | 170            | 150                          | 250             | 300                                                                                   | 8                                                                                     |

| Size   | Foundation |     |     |                              |                              |     |     |     |                              |                 |   |    |     |     |    |     |
|--------|------------|-----|-----|------------------------------|------------------------------|-----|-----|-----|------------------------------|-----------------|---|----|-----|-----|----|-----|
|        | A          | B   | C   | C <sub>1</sub> <sup>2)</sup> | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <sup>2)</sup> | K | O  | P   | R   | S  | T   |
| H2..14 | 190        | 488 | 162 | 198                          | 194                          | 190 | 150 | 125 | 278                          | 330             | — | 14 | 80  | 140 | 24 | 310 |
| H2..15 | 215        | 548 | 177 | 213                          | 215                          | 228 | 170 | 140 | 306                          | 360             | — | 14 | 95  | 170 | 24 | 355 |
| H2..16 | 240        | 615 | 195 | 228                          | 231                          | 233 | 190 | 160 | 327                          | 400             | — | 14 | 110 | 195 | 24 | 400 |
| H2..17 | 270        | 684 | 210 | 238                          | 257                          | 250 | 210 | 180 | 378                          | 440             | — | 18 | 115 | 210 | 32 | 440 |
| H2..18 | 305        | 764 | 236 | 263                          | 281                          | 284 | 230 | 200 | 404                          | 480             | — | 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 Ø50m6.

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

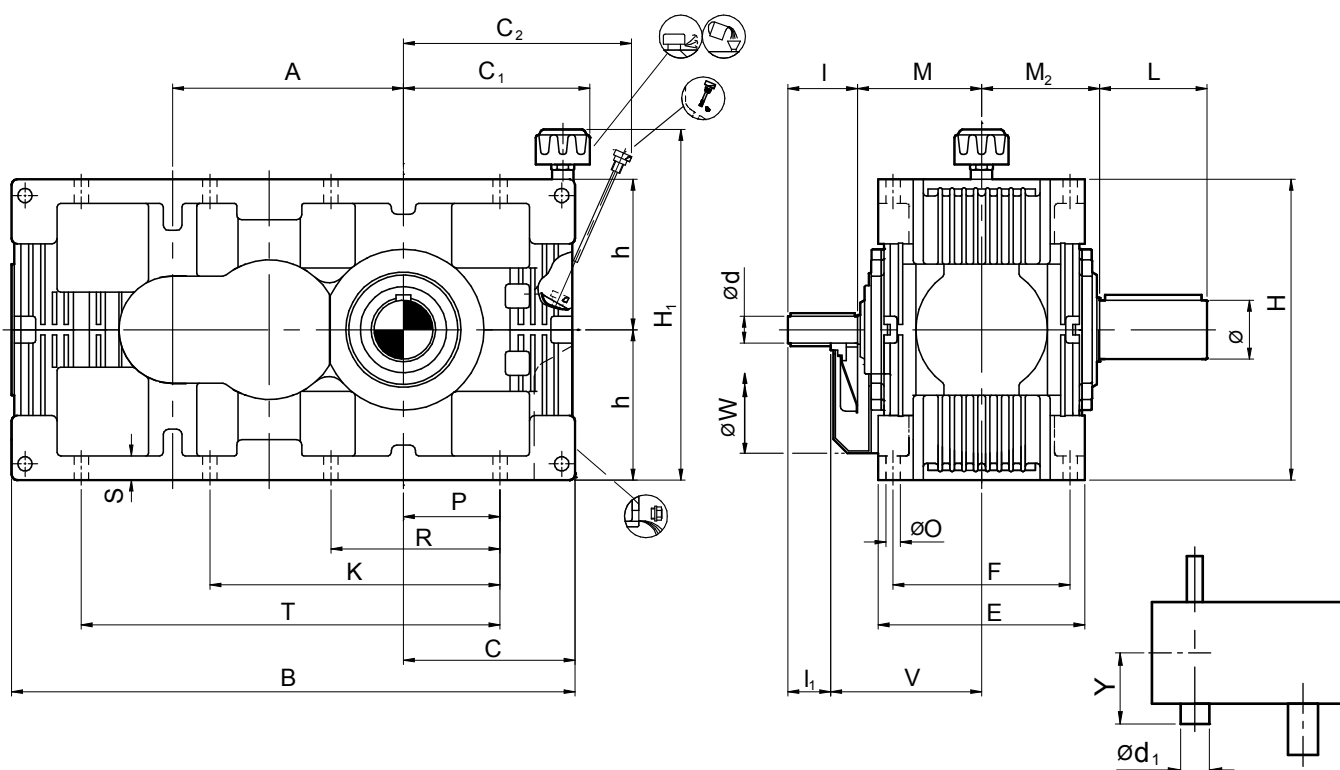
2) Approximate values; exact values acc. to order related documents

# SERIES E

## TYPE H2H

### HORIZONTAL MOUNTING - HELICAL GEAR UNIT

### DOUBLE STAGE - SIZE 19 TO 26



| Size   | Input Shaft    |     |                |             |     |                |          |     |                |     |     |     | Output Shaft |     |                | Back Stop                    |                 |  |  |
|--------|----------------|-----|----------------|-------------|-----|----------------|----------|-----|----------------|-----|-----|-----|--------------|-----|----------------|------------------------------|-----------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|        | i = 5.6 - 12.5 |     |                | i = 14 - 18 |     |                |          |     |                |     |     |     |              |     |                |                              |                 |                                                                                       |                                                                                       |
|        | i = 5.6 - 12.5 |     |                | i = 14 - 20 |     |                | i = 22.4 |     |                |     |     |     |              |     |                |                              |                 |                                                                                       |                                                                                       |
|        | d              | l   | l <sub>1</sub> | d           | l   | l <sub>1</sub> | d        | l   | l <sub>1</sub> | M   | V   | W   | D            | L   | M <sub>2</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                                                                                       |                                                                                       |
| H2..19 | 55             | 135 | 85             | 45          | 130 | 80             | 35       | 110 | 60             | 195 | 245 | 320 | 90           | 165 | 180            | 175                          | 280             | 405                                                                                   | 11                                                                                    |
| H2..20 | 60             | 155 | 105            | 50          | 130 | 80             | 40       | 130 | 80             | 205 | 255 | 360 | 100          | 200 | 200            | 190                          | 295             | 540                                                                                   | 14                                                                                    |
| H2..21 | 70             | 155 | 105            | 55          | 135 | 85             | —        | —   | —              | 245 | 295 | 360 | 110          | 200 | 220            | 210                          | 335             | 735                                                                                   | 21                                                                                    |
| H2..22 | 75             | 155 | 105            | 60          | 155 | 105            | 55       | 135 | 85             | 260 | 310 | 430 | 120          | 210 | 230            | 210                          | 345             | 1015                                                                                  | 29                                                                                    |
| H2..23 | 85             | 180 | 130            | 70          | 155 | 105            | 60       | 155 | 105            | 275 | 325 | 430 | 140          | 250 | 260            | 245                          | 370             | 1365                                                                                  | 42                                                                                    |
| H2..24 | 95             | 180 | 130            | 80          | 180 | 130            | —        | —   | —              | 340 | 390 | 450 | 160          | 290 | 295            | 290                          | 445             | 1845                                                                                  | 60                                                                                    |
| H2..25 | 105            | 220 | 170            | 90          | 180 | 130            | 70       | 155 | 105            | 350 | 400 | 550 | 170          | 300 | 305            | 290                          | 455             | 2515                                                                                  | 85                                                                                    |
| H2..26 | 115            | 220 | 170            | 95          | 180 | 130            | 80       | 180 | 130            | 350 | 400 | 550 | 190          | 350 | 345            | 310                          | 465             | 3390                                                                                  | 115                                                                                   |

| Size   | Foundation |      |     |                              |                              |     |     |     |                              |                 |     |    |     |     |    | T    |
|--------|------------|------|-----|------------------------------|------------------------------|-----|-----|-----|------------------------------|-----------------|-----|----|-----|-----|----|------|
|        | A          | B    | C   | C <sub>1</sub> <sup>2)</sup> | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <sup>2)</sup> | K   | O  | P   | R   | S  |      |
| H2..19 | 340        | 850  | 265 | 283                          | 315                          | 303 | 250 | 225 | 455                          | 530             | —   | 23 | 145 | 255 | 36 | 555  |
| H2..20 | 385        | 945  | 288 | 304                          | 345                          | 314 | 270 | 250 | 496                          | 580             | —   | 23 | 165 | 290 | 36 | 635  |
| H2..21 | 430        | 1050 | 320 | 359                          | 394                          | 385 | 310 | 280 | 572                          | 650             | —   | 27 | 180 | 315 | 45 | 705  |
| H2..22 | 480        | 1170 | 355 | 390                          | 429                          | 400 | 340 | 315 | 635                          | 720             | —   | 27 | 200 | 355 | 45 | 785  |
| H2..23 | 540        | 1335 | 405 | 422                          | 481                          | 450 | 380 | 355 | 705                          | 800             | —   | 33 | 220 | 405 | 55 | 875  |
| H2..24 | 605        | 1465 | 435 | 452                          | 541                          | 515 | 410 | 400 | 795                          | 890             | —   | 33 | 245 | 450 | 55 | 975  |
| H2..25 | 680        | 1605 | 475 | 493                          | 591                          | 535 | 460 | 450 | 865                          | 990             | —   | 33 | 280 | 510 | 55 | 1105 |
| H2..26 | 765        | 1820 | 540 | 553                          | 659                          | 600 | 510 | 500 | 954                          | 1090            | 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 Ø50m6.

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

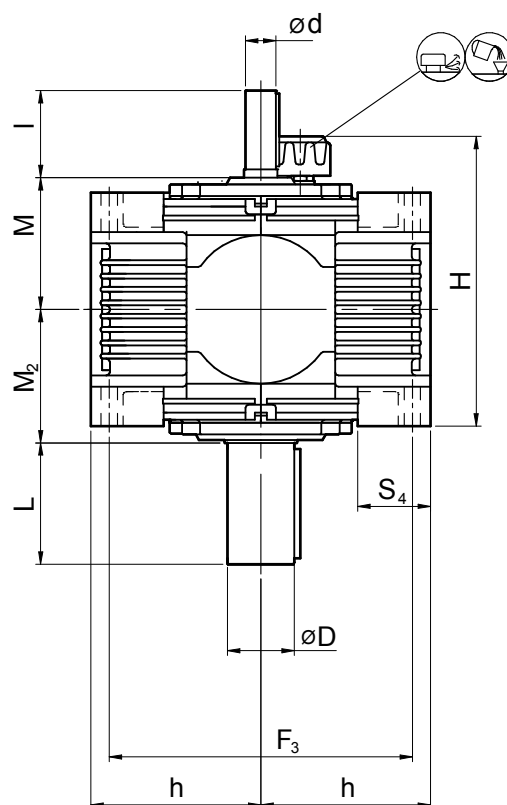
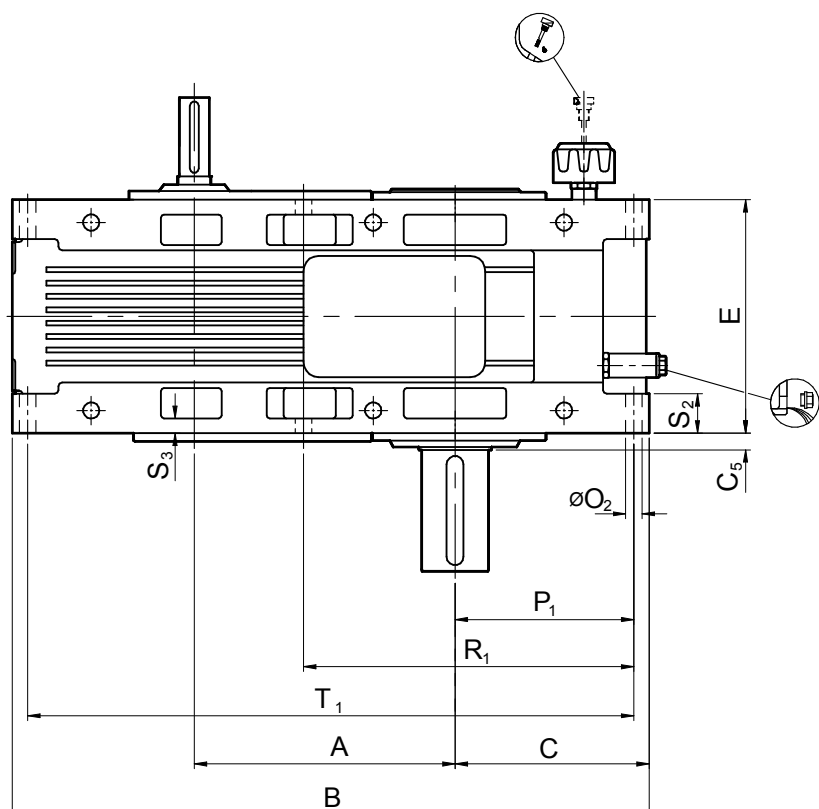
2) Approximate values; exact values acc. to order related documents

# SERIES E

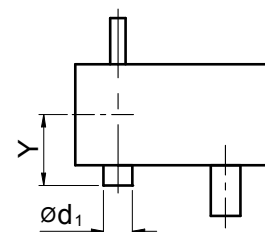
## TYPE H2V

DOUBLE STAGE - SIZE 14 TO 18

VERTICAL MOUNTING - HELICAL GEAR UNIT



| Size   | Input Shaft    |     |             |     |          |     |     |              |                |                              |                              |                 |  |
|--------|----------------|-----|-------------|-----|----------|-----|-----|--------------|----------------|------------------------------|------------------------------|-----------------|-------------------------------------------------------------------------------------|
|        | i = 5.6 - 12.5 |     | i = 14 - 18 |     |          |     | M   | Output Shaft |                |                              | Back Stop                    |                 |                                                                                     |
|        | i = 5.6 - 12.5 |     | i = 14 - 20 |     | i = 22.4 |     |     | D            | L              | M <sub>2</sub>               | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                                                                                     |
|        | d              | l   | d           | l   | d        | l   | D   | L            | M <sub>2</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup>              |                 |                                                                                     |
| H2..14 | 25             | 100 | 20          | 100 | 20       | 100 | 140 | 48           | 95             | 125                          | 95                           | 190             | 85                                                                                  |
| H2..15 | 30             | 110 | 25          | 100 | —        | —   | 155 | 55           | 95             | 135                          | 110                          | 210             | 115                                                                                 |
| H2..16 | 35             | 110 | 30          | 110 | 20       | 100 | 155 | 60           | 130            | 145                          | 135                          | 220             | 165                                                                                 |
| H2..17 | 45             | 130 | 35          | 110 | 25       | 100 | 160 | 70           | 135            | 150                          | 140                          | 230             | 220                                                                                 |
| H2..18 | 50             | 130 | 40          | 130 | —        | —   | 180 | 80           | 160            | 170                          | 150                          | 250             | 300                                                                                 |



| Size   | Foundation |     |     |                |     |                |     |                 |                |                |                |                |                |                |                |
|--------|------------|-----|-----|----------------|-----|----------------|-----|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|        | A          | B   | C   | C <sub>5</sub> | E   | F <sub>3</sub> | h   | H <sup>2)</sup> | O <sub>2</sub> | P <sub>1</sub> | R <sub>1</sub> | S <sub>2</sub> | S <sub>3</sub> | S <sub>4</sub> | T <sub>1</sub> |
| H2..14 | 190        | 488 | 162 | 30             | 190 | 200            | 125 | 270             | 14             | 146            | 292            | 36             | -              | 70             | 456            |
| H2..15 | 215        | 548 | 177 | 21             | 228 | 230            | 140 | 308             | 14             | 160            | 285            | 45             | 15             | 70             | 515            |
| H2..16 | 240        | 615 | 195 | 28.50          | 233 | 270            | 160 | 313             | 14             | 176            | 316            | 38             | 15             | 70             | 578            |
| H2..17 | 270        | 684 | 210 | 25             | 250 | 310            | 180 | 330             | 18             | 190            | 350            | 40             | 20             | 95             | 645            |
| H2..18 | 305        | 764 | 236 | 28             | 284 | 350            | 200 | 364             | 18             | 215            | 395            | 45             | 20             | 90             | 722            |

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

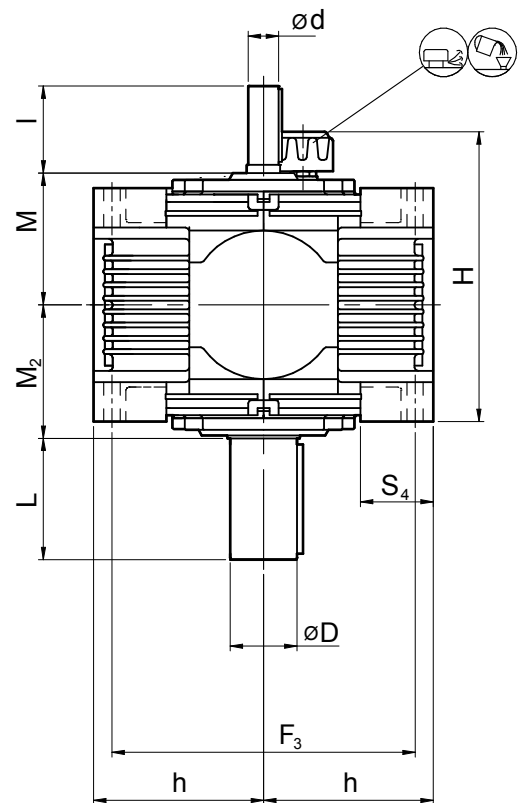
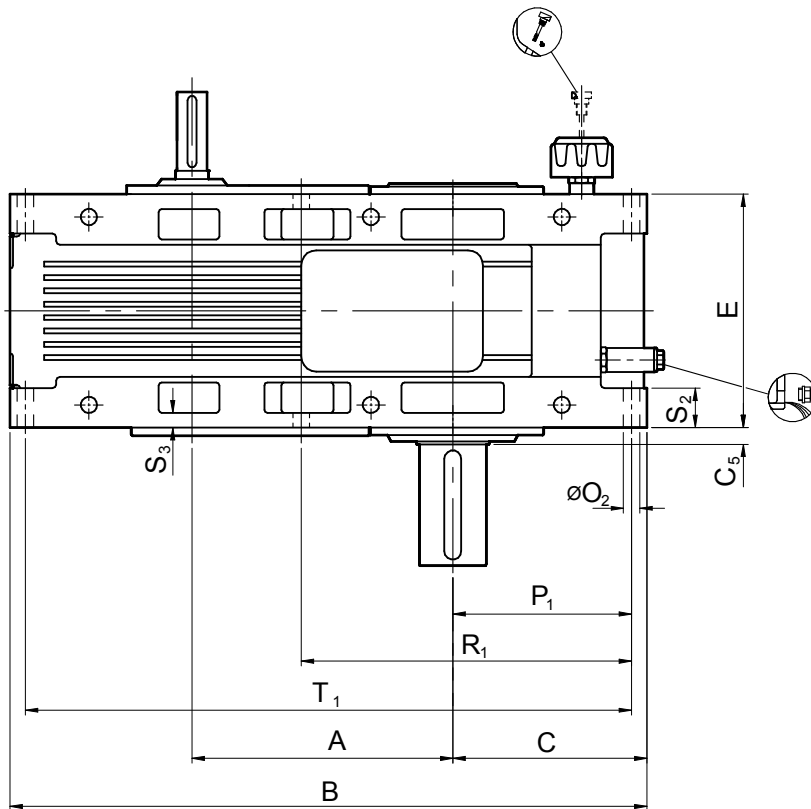
2) Approximate values; exact values acc. to order related documents

# SERIES E

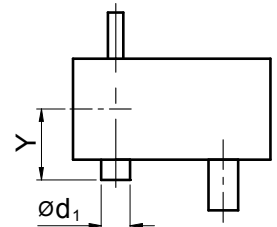
## TYPE H2V

### VERTICAL MOUNTING - HELICAL GEAR UNIT

### DOUBLE STAGE - SIZE 19 TO 26



| Size   | Input Shaft    |             |             |     |    |     |              |     |     |                |                              |                 |  <b>KG</b> |
|--------|----------------|-------------|-------------|-----|----|-----|--------------|-----|-----|----------------|------------------------------|-----------------|-----------------------------------------------------------------------------------------------|
|        | i = 5.6 - 12.5 |             | i = 14 - 18 |     |    |     | Output Shaft |     |     | Back Stop      |                              |                 |                                                                                               |
|        | i = 5.6 - 12.5 | i = 14 - 20 | i = 22.4    |     |    |     |              |     |     |                |                              |                 |                                                                                               |
|        | d              | l           | d           | l   | d  | l   | M            | D   | L   | M <sub>2</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                                                                                               |
| H2..19 | 55             | 135         | 45          | 130 | 35 | 110 | 195          | 90  | 165 | 180            | 175                          | 280             | 405                                                                                           |
| H2..20 | 60             | 155         | 50          | 130 | 40 | 130 | 205          | 100 | 200 | 200            | 190                          | 295             | 540                                                                                           |
| H2..21 | 70             | 155         | 55          | 135 | —  | —   | 245          | 110 | 200 | 220            | 210                          | 335             | 735                                                                                           |
| H2..22 | 75             | 155         | 60          | 155 | 55 | 135 | 260          | 120 | 210 | 230            | 210                          | 345             | 1015                                                                                          |
| H2..23 | 85             | 180         | 70          | 155 | 60 | 155 | 275          | 140 | 250 | 260            | 245                          | 370             | 1365                                                                                          |
| H2..24 | 95             | 180         | 80          | 180 | —  | —   | 340          | 160 | 290 | 295            | 290                          | 445             | 1845                                                                                          |
| H2..25 | 105            | 220         | 90          | 180 | 70 | 155 | 350          | 170 | 300 | 305            | 290                          | 455             | 2515                                                                                          |
| H2..26 | 115            | 220         | 95          | 180 | 80 | 180 | 350          | 190 | 350 | 345            | 310                          | 465             | 3390                                                                                          |



| Size   | Foundation |      |     |                |     |                |     |                 |                |                |                |                |                |                |                |  |
|--------|------------|------|-----|----------------|-----|----------------|-----|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--|
|        | A          | B    | C   | C <sub>5</sub> | E   | F <sub>3</sub> | h   | H <sup>2)</sup> | O <sub>2</sub> | P <sub>1</sub> | R <sub>1</sub> | S <sub>2</sub> | S <sub>3</sub> | S <sub>4</sub> | T <sub>1</sub> |  |
| H2..19 | 340        | 850  | 265 | 28.50          | 303 | 400            | 225 | 383             | 23             | 240            | 440            | 48.5           | 22             | 105            | 800            |  |
| H2..20 | 385        | 945  | 288 | 43             | 314 | 440            | 250 | 394             | 23             | 262            | 487            | 45             | 24             | 105            | 893            |  |
| H2..21 | 430        | 1050 | 320 | 27.5           | 385 | 500            | 280 | 475             | 27             | 295            | 545            | 65             | 28             | 120            | 1000           |  |
| H2..22 | 480        | 1170 | 355 | 30             | 400 | 560            | 315 | 490             | 27             | 325            | 605            | 60             | 28             | 120            | 1110           |  |
| H2..23 | 540        | 1335 | 405 | 35             | 450 | 630            | 355 | 540             | 33             | 370            | 685            | 70             | 35             | 150            | 1265           |  |
| H2..24 | 605        | 1465 | 435 | 37.5           | 515 | 700            | 400 | 605             | 33             | 398            | 753            | 87.5           | 35             | 150            | 1391           |  |
| H2..25 | 680        | 1605 | 475 | 37.5           | 535 | 800            | 450 | 625             | 33             | 436            | 836            | 80             | 35             | 150            | 1528           |  |
| H2..26 | 765        | 1820 | 540 | 45             | 600 | 890            | 500 | 700             | 39             | 495            | 945            | 100            | 45             | 175            | 1730           |  |

Modification of dimensions reserved.

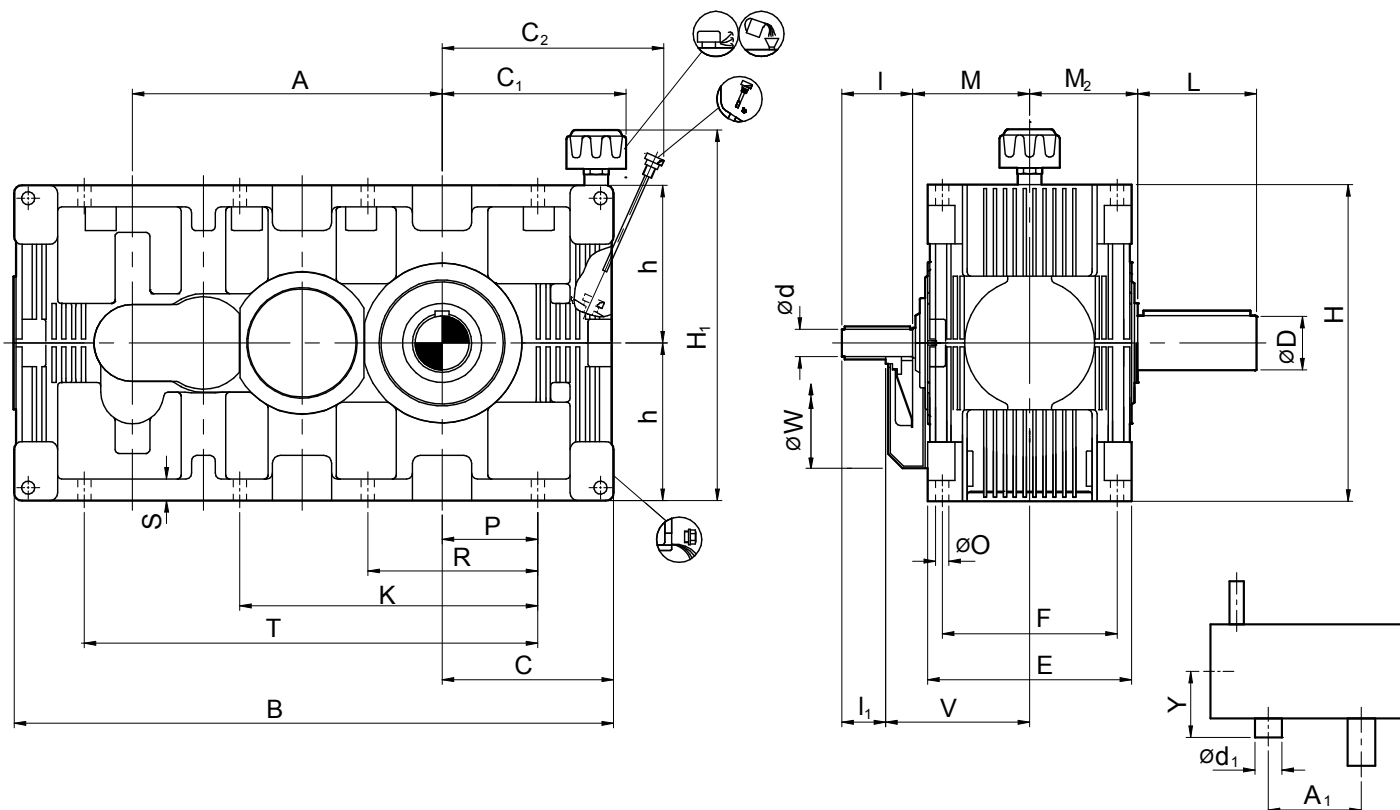
Shaft ends with keys according to DIN 6885, part 1, Shape A.

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

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50m6.

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

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



| Size   | Input Shaft |     |                |            |     |                |         |     |                |     |     |     | Output Shaft |     |                | Back Stop      |                              |                 |  |  |
|--------|-------------|-----|----------------|------------|-----|----------------|---------|-----|----------------|-----|-----|-----|--------------|-----|----------------|----------------|------------------------------|-----------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|        | i = 20-50   |     |                | i = 56-80  |     |                | i = 112 |     |                |     |     |     |              |     |                |                |                              |                 |                                                                                       |                                                                                       |
|        | i = 25-63   |     |                | i = 71-100 |     |                |         |     |                |     |     |     |              |     |                |                |                              |                 |                                                                                       |                                                                                       |
|        | i = 25-71   |     |                | i = 80-100 |     |                |         |     |                |     |     |     |              |     |                |                |                              |                 |                                                                                       |                                                                                       |
|        | d           | l   | l <sub>1</sub> | d          | l   | l <sub>1</sub> | d       | l   | l <sub>1</sub> | M   | V   | W   | D            | L   | M <sub>2</sub> | A <sub>1</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                                                                                       |                                                                                       |
| H3..16 | 24          | 100 | 50             | 19         | 100 | 50             | 19      | 100 | 50             | 155 | 200 | 270 | 60           | 130 | 145            | 240            | 95                           | 215             | 180                                                                                   | 6.5                                                                                   |
| H3..17 |             |     |                |            |     |                |         |     |                |     |     |     |              |     |                |                |                              |                 |                                                                                       |                                                                                       |
| H3..18 | 30          | 110 | 60             | 25         | 100 | 50             | —       | —   | —              | 180 | 225 | 300 | 80           | 160 | 170            | 305            | 140                          | 265             | 325                                                                                   | 10                                                                                    |

| Size   | Foundation |     |     |                              |                              |     |     |     |                              |                              |   |    |     |     |    |     |
|--------|------------|-----|-----|------------------------------|------------------------------|-----|-----|-----|------------------------------|------------------------------|---|----|-----|-----|----|-----|
|        | A          | B   | C   | C <sub>1</sub> <sup>2)</sup> | 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 | O  | P   | R   | S  | T   |
| H3..16 | 311        | 631 | 175 | 231                          | 195                          | 233 | 190 | 160 | 327                          | 400                          | — | 14 | 110 | 195 | 24 | 450 |
| H3..17 | 350        | 696 | 190 | 257                          | 210                          | 250 | 210 | 180 | 378                          | 440                          | — | 18 | 115 | 210 | 32 | 495 |
| H3..18 | 395        | 787 | 215 | 281                          | 236                          | 284 | 230 | 200 | 404                          | 480                          | — | 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 Ø50m6.

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

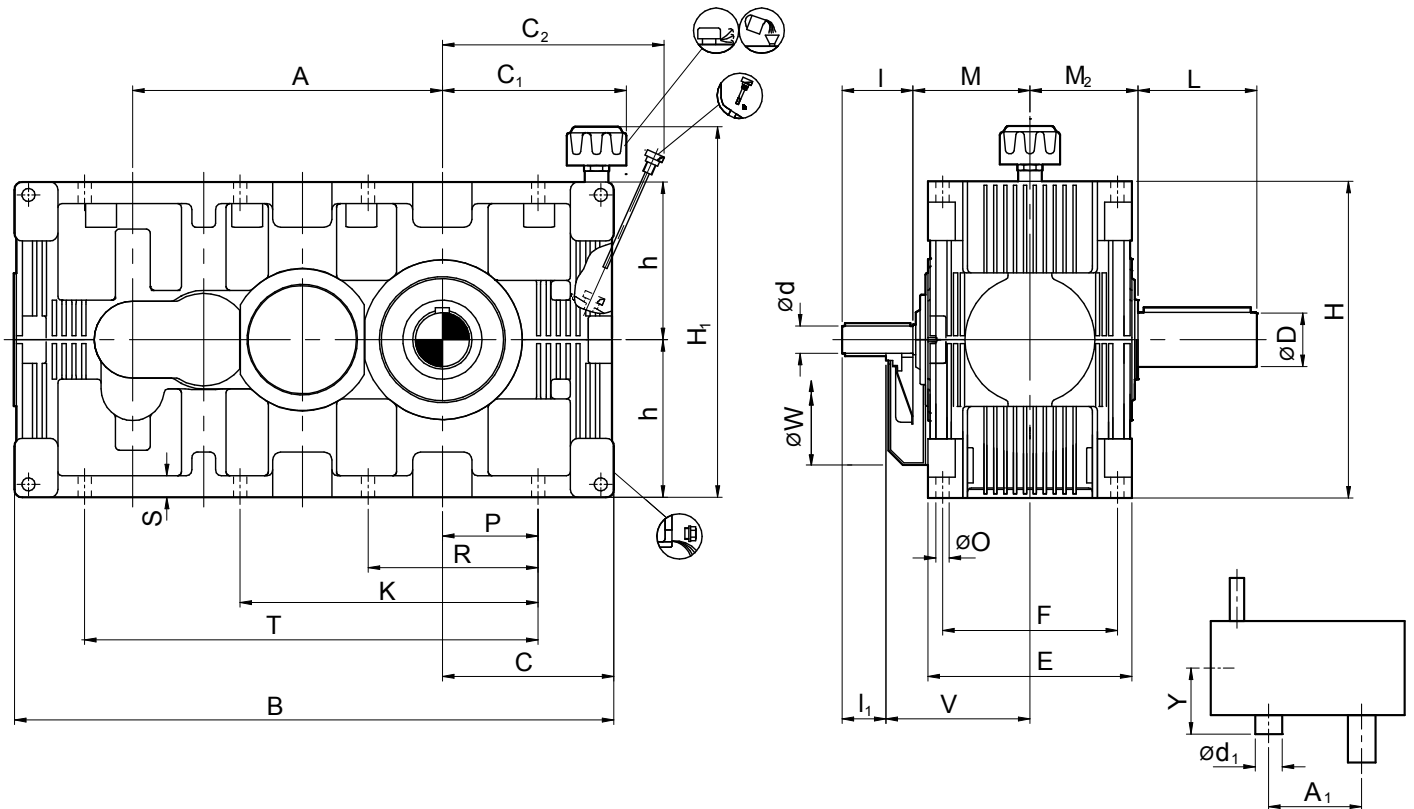
2) Approximate values; exact values acc. to order related documents

# SERIES E

## TYPE H3H

### HORIZONTAL MOUNTING - HELICAL GEAR UNIT

### TRIPLE STAGE - SIZE 19 TO 26



| Size   | Input Shaft |     |                |            |     |                |         |     |                |     |     |     | Output Shaft |     |                | Back Stop      |                              |                 |  |  |
|--------|-------------|-----|----------------|------------|-----|----------------|---------|-----|----------------|-----|-----|-----|--------------|-----|----------------|----------------|------------------------------|-----------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|        | i = 20-50   |     |                | i = 56-80  |     |                | i = 112 |     |                |     |     |     |              |     |                |                |                              |                 |                                                                                       |                                                                                       |
|        | i = 25-63   |     |                | i = 71-100 |     |                |         |     |                |     |     |     |              |     |                |                |                              |                 |                                                                                       |                                                                                       |
|        | i = 25-71   |     |                | i = 80-100 |     |                |         |     |                |     |     |     |              |     |                |                |                              |                 |                                                                                       |                                                                                       |
|        | d           | l   | l <sub>1</sub> | d          | l   | l <sub>1</sub> | d       | l   | l <sub>1</sub> | M   | V   | W   | D            | L   | M <sub>2</sub> | A <sub>1</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                                                                                       |                                                                                       |
| H3..19 | 35          | 110 | 60             | 30         | 110 | 60             | 25      | 100 | 50             | 190 | 240 | 320 | 90           | 165 | 180            | 340            | 150                          | 265             | 445                                                                                   | 14                                                                                    |
| H3..20 | 45          | 130 | 80             | 35         | 110 | 60             | 25      | 100 | 50             | 195 | 245 | 360 | 100          | 200 | 200            | 385            | 150                          | 265             | 610                                                                                   | 22                                                                                    |
| H3..21 | 50          | 130 | 80             | 40         | 130 | 80             | —       | —   | —              | 240 | 290 | 360 | 110          | 200 | 220            | 430            | 190                          | 340             | 810                                                                                   | 28                                                                                    |
| H3..22 | 55          | 135 | 85             | 45         | 130 | 80             | 35      | 110 | 60             | 250 | 300 | 430 | 120          | 210 | 230            | 480            | 190                          | 340             | 1080                                                                                  | 39                                                                                    |
| H3..23 | 60          | 155 | 105            | 50         | 130 | 80             | 40      | 130 | 80             | 270 | 320 | 430 | 140          | 250 | 260            | 540            | 190                          | 340             | 1455                                                                                  | 56                                                                                    |
| H3..24 | 70          | 155 | 105            | 55         | 135 | 85             | —       | —   | —              | 325 | 375 | 450 | 160          | 290 | 295            | 605            | 245                          | 440             | 1950                                                                                  | 80                                                                                    |
| H3..25 | 75          | 155 | 105            | 60         | 155 | 105            | 50      | 130 | 80             | 335 | 385 | 450 | 170          | 300 | 305            | 680            | 245                          | 440             | 2655                                                                                  | 115                                                                                   |
| H3..26 | 85          | 180 | 130            | 70         | 155 | 105            | 70      | 155 | 105            | 350 | 400 | 450 | 190          | 350 | 345            | 765            | 245                          | 440             | 3525                                                                                  | 165                                                                                   |

| Size   | Foundation |      |     |     |     |     |     |     |     |      |     |    |     |     |    |      |
|--------|------------|------|-----|-----|-----|-----|-----|-----|-----|------|-----|----|-----|-----|----|------|
|        |            |      |     |     |     |     |     |     |     |      |     |    |     |     |    |      |
| H3..19 | 440        | 885  | 265 | 283 | 315 | 303 | 250 | 225 | 455 | 530  | —   | 23 | 145 | 255 | 36 | 615  |
| H3..20 | 495        | 987  | 288 | 304 | 345 | 314 | 270 | 250 | 496 | 580  | —   | 23 | 165 | 290 | 36 | 705  |
| H3..21 | 555        | 1098 | 320 | 359 | 394 | 385 | 310 | 280 | 572 | 650  | —   | 27 | 180 | 315 | 45 | 780  |
| H3..22 | 620        | 1220 | 355 | 390 | 429 | 400 | 340 | 315 | 635 | 720  | —   | 27 | 200 | 355 | 45 | 880  |
| H3..23 | 700        | 1377 | 405 | 422 | 481 | 450 | 380 | 355 | 705 | 800  | 655 | 33 | 220 | 405 | 55 | 985  |
| H3..24 | 785        | 1520 | 435 | 452 | 541 | 515 | 410 | 400 | 795 | 890  | 740 | 33 | 245 | 450 | 55 | 1110 |
| H3..25 | 880        | 1690 | 475 | 493 | 591 | 535 | 460 | 450 | 865 | 990  | 840 | 33 | 280 | 510 | 55 | 1245 |
| H3..26 | 990        | 1920 | 540 | 553 | 659 | 600 | 510 | 500 | 954 | 1090 | 940 | 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 Ø50m6.

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

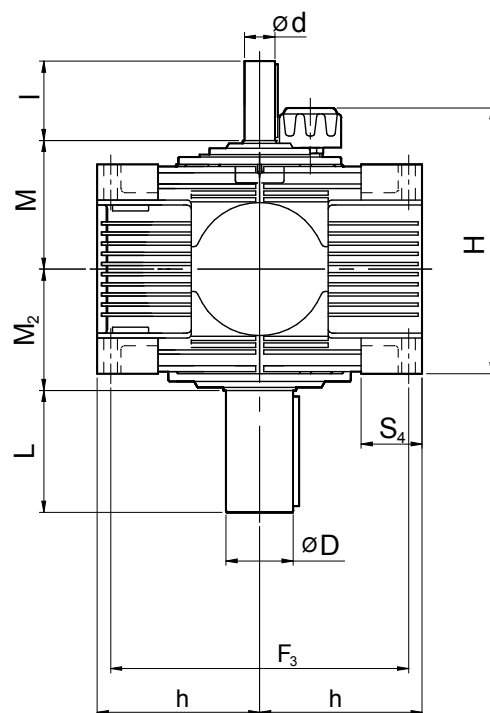
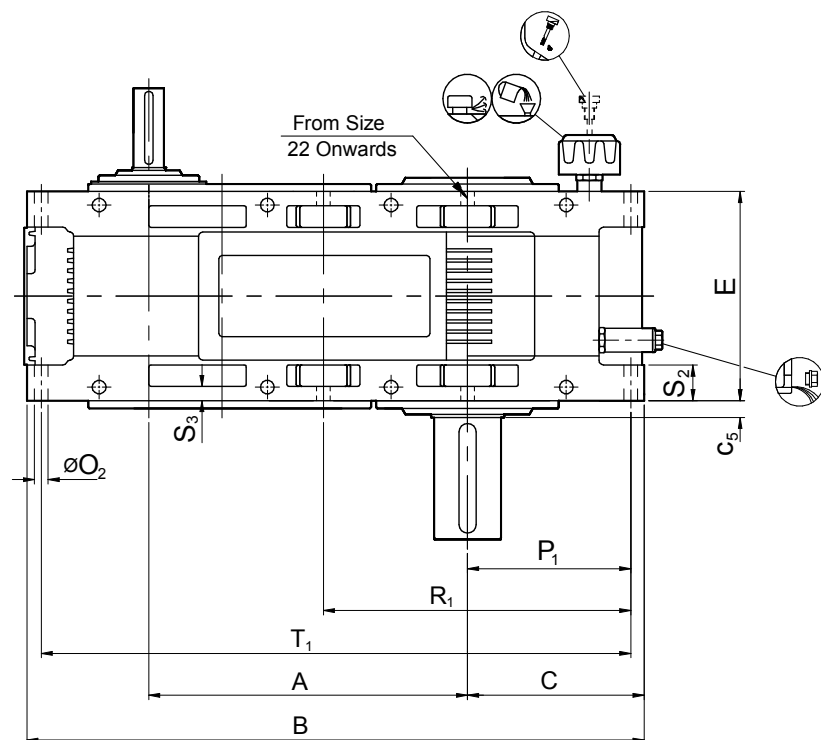
2) Approximate values; exact values acc. to order related documents

# SERIES E

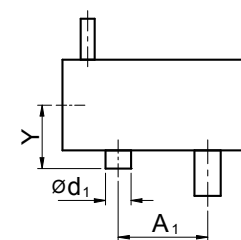
## TYPE H3V

TRIPLE STAGE - SIZE 16 TO 18

### VERTICAL MOUNTING - HELICAL GEAR UNIT



| Size   | Input Shaft |     |            |     |         |     |     | Output Shaft |     |                | Back Stop      |                              |                 |  |
|--------|-------------|-----|------------|-----|---------|-----|-----|--------------|-----|----------------|----------------|------------------------------|-----------------|-------------------------------------------------------------------------------------|
|        | i = 20-50   |     | i = 56-80  |     | i = 112 |     |     |              |     |                |                |                              |                 |                                                                                     |
|        | i = 25-63   |     | i = 71-100 |     |         |     |     |              |     |                |                |                              |                 |                                                                                     |
|        | i = 25-71   |     | i = 80-100 |     |         |     |     |              |     |                |                |                              |                 |                                                                                     |
|        | d           | l   | d          | l   | d       | l   | M   | D            | L   | M <sub>2</sub> | A <sub>1</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                                                                                     |
| H3..16 | 24          | 100 | 19         | 100 | 19      | 100 | 155 | 60           | 130 | 145            | 240            | 95                           | 215             | 180                                                                                 |
| H3..17 |             |     |            |     |         |     |     |              |     |                |                |                              |                 |                                                                                     |
| H3..18 | 30          | 110 | 25         | 100 | —       | —   | 180 | 80           | 160 | 170            | 305            | 140                          | 265             | 325                                                                                 |



| Size   | Foundation |     |     |                |     |                |     |                 |                |                |                |                |                |                |                |
|--------|------------|-----|-----|----------------|-----|----------------|-----|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|        | A          | B   | C   | C <sub>5</sub> | E   | F <sub>3</sub> | h   | H <sup>2)</sup> | O <sub>2</sub> | P <sub>1</sub> | R <sub>1</sub> | S <sub>2</sub> | S <sub>3</sub> | S <sub>4</sub> | T <sub>1</sub> |
| H3..16 | 311        | 631 | 195 | 28.50          | 233 | 270            | 160 | 313             | 14             | 176            | 316            | 38             | 15             | 70             | 594            |
| H3..17 | 350        | 696 | 210 | 25             | 250 | 310            | 180 | 330             | 18             | 190            | 350            | 40             | 20             | 90             | 655            |
| H3..18 | 395        | 787 | 236 | 28             | 284 | 350            | 200 | 364             | 18             | 215            | 395            | 45             | 20             | 90             | 744            |

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

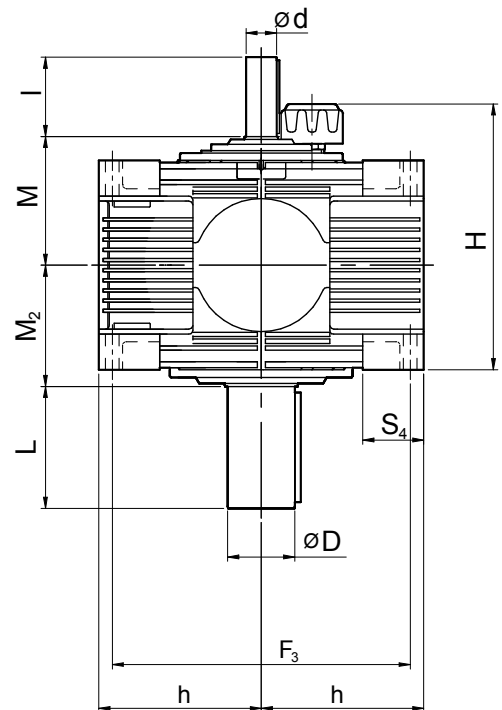
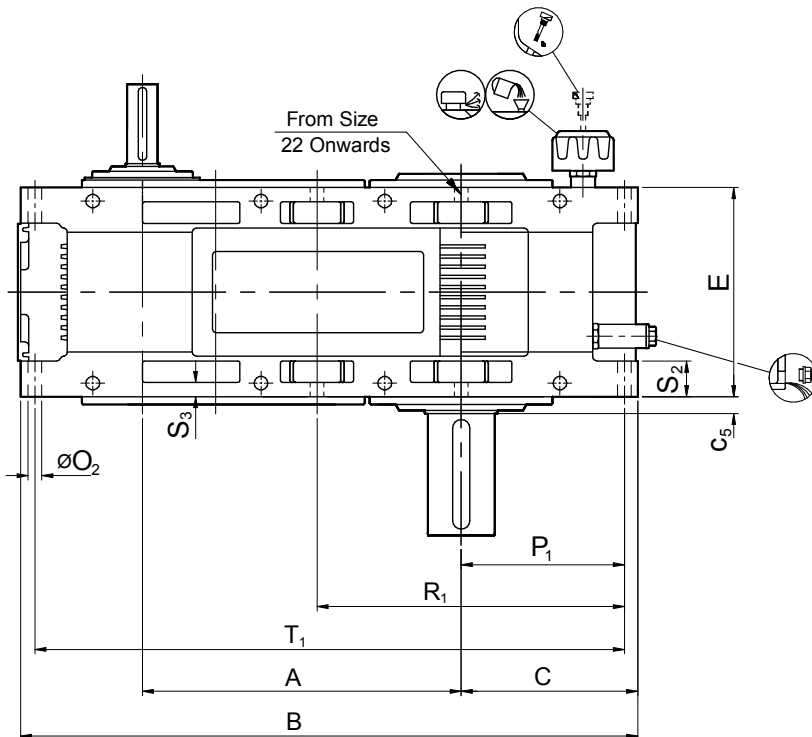
2) Approximate values; exact values acc. to order related documents

# SERIES E

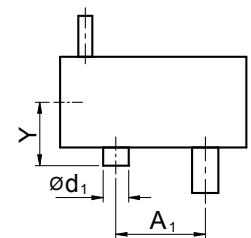
## TYPE H3V

### VERTICAL MOUNTING - HELICAL GEAR UNIT

### TRIPLE STAGE - SIZE 19 TO 26



| Size   | Input Shaft |     |            |     |         |     |     | Output Shaft |     |                | Back Stop      |                              |                 |  |
|--------|-------------|-----|------------|-----|---------|-----|-----|--------------|-----|----------------|----------------|------------------------------|-----------------|--------------------------------------------------------------------------------------|
|        | i = 20-50   |     | i = 56-80  |     | i = 112 |     |     |              |     |                |                |                              |                 |                                                                                      |
|        | i = 25-63   |     | i = 71-100 |     |         |     |     |              |     |                |                |                              |                 |                                                                                      |
|        | i = 25-71   |     | i = 80-100 |     |         |     |     |              |     |                |                |                              |                 |                                                                                      |
|        | d           | l   | d          | l   | d       | l   | M   | D            | L   | M <sub>2</sub> | A <sub>1</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                                                                                      |
| H3..19 | 35          | 110 | 30         | 110 | 25      | 100 | 190 | 90           | 165 | 180            | 340            | 150                          | 265             | 445                                                                                  |
| H3..20 | 45          | 130 | 35         | 110 | 25      | 100 | 195 | 100          | 200 | 200            | 385            | 150                          | 265             | 610                                                                                  |
| H3..21 | 50          | 130 | 40         | 130 | —       | —   | 240 | 110          | 200 | 220            | 430            | 190                          | 340             | 810                                                                                  |
| H3..22 | 55          | 135 | 45         | 130 | 35      | 110 | 250 | 120          | 210 | 230            | 480            | 190                          | 340             | 1080                                                                                 |
| H3..23 | 60          | 155 | 50         | 130 | 40      | 130 | 270 | 140          | 250 | 260            | 540            | 190                          | 340             | 1455                                                                                 |
| H3..24 | 70          | 155 | 55         | 135 | —       | —   | 325 | 160          | 290 | 295            | 605            | 245                          | 440             | 1950                                                                                 |
| H3..25 | 75          | 155 | 60         | 155 | 50      | 130 | 335 | 170          | 300 | 305            | 680            | 245                          | 440             | 2655                                                                                 |
| H3..26 | 85          | 180 | 70         | 155 | 70      | 155 | 350 | 190          | 350 | 345            | 765            | 245                          | 440             | 3525                                                                                 |



| Size   | Foundation |      |     |       |     |     |     |     |    |     |     |      |    |     |      |
|--------|------------|------|-----|-------|-----|-----|-----|-----|----|-----|-----|------|----|-----|------|
|        |            |      |     |       |     |     |     |     |    |     |     |      |    |     |      |
| H3..19 | 440        | 885  | 265 | 28.50 | 303 | 400 | 225 | 383 | 23 | 240 | 440 | 48.5 | 22 | 105 | 836  |
| H3..20 | 495        | 987  | 288 | 43    | 314 | 440 | 250 | 394 | 23 | 262 | 487 | 45   | 24 | 105 | 935  |
| H3..21 | 555        | 1098 | 320 | 27.50 | 385 | 500 | 280 | 475 | 27 | 295 | 545 | 65   | 28 | 120 | 1045 |
| H3..22 | 620        | 1220 | 355 | 30    | 400 | 560 | 315 | 490 | 27 | 325 | 605 | 60   | 28 | 120 | 1160 |
| H3..23 | 700        | 1377 | 405 | 35    | 450 | 630 | 355 | 540 | 33 | 370 | 685 | 70   | 35 | 150 | 1305 |
| H3..24 | 785        | 1520 | 435 | 37.5  | 515 | 700 | 400 | 605 | 33 | 398 | 753 | 87.5 | 35 | 150 | 1443 |
| H3..25 | 880        | 1690 | 475 | 37.5  | 535 | 800 | 450 | 625 | 33 | 436 | 836 | 80   | 35 | 150 | 1612 |
| H3..26 | 990        | 1920 | 540 | 45    | 600 | 890 | 500 | 700 | 39 | 495 | 945 | 100  | 45 | 175 | 1830 |

Modification of dimensions reserved.

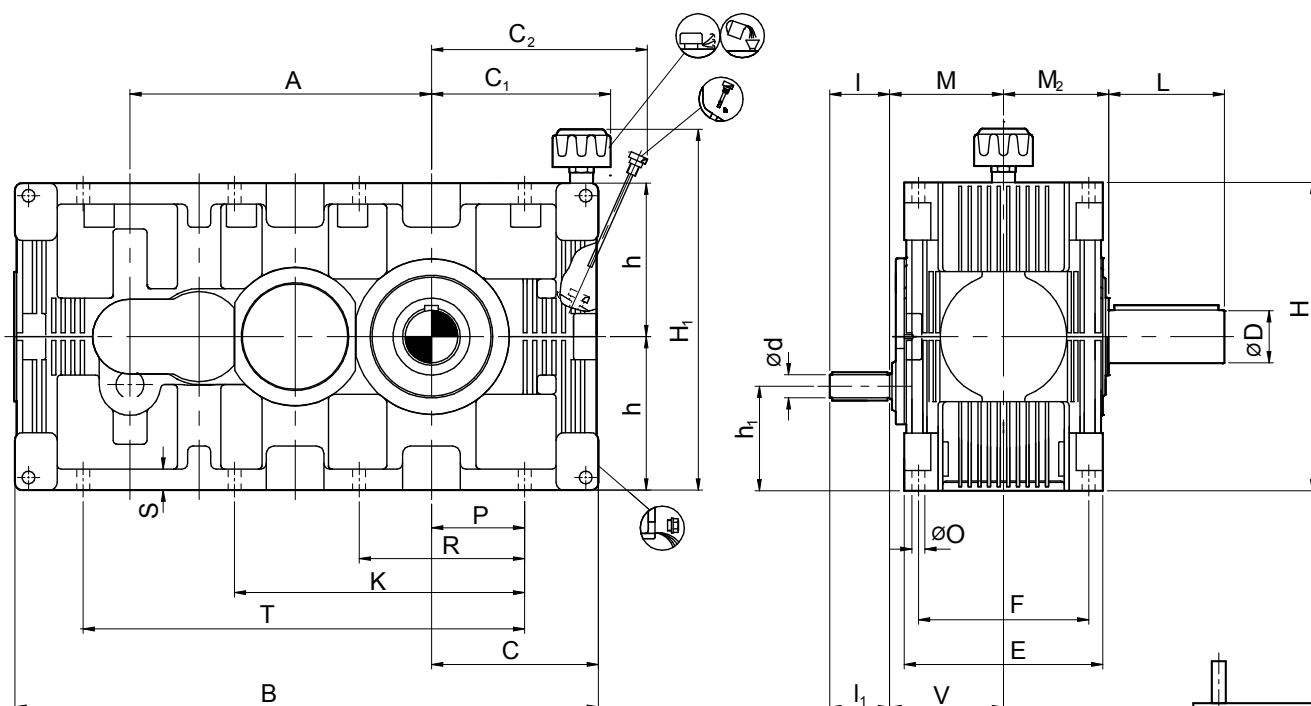
Shaft ends with keys according to DIN 6885, part 1, Shape A.

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



| Size   | Input Shaft   |     |               |     |                |     | Output Shaft |                |                | Back Stop                    |                 |     |  |  |
|--------|---------------|-----|---------------|-----|----------------|-----|--------------|----------------|----------------|------------------------------|-----------------|-----|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|        | i = 90 - 225  |     | i = 250 - 450 |     |                |     |              |                |                |                              |                 |     |                                                                                       |                                                                                       |
|        | i = 125 - 355 |     | i = 400 - 560 |     |                |     |              |                |                |                              |                 |     |                                                                                       |                                                                                       |
|        | i = 125 - 400 |     | i = 450 - 560 |     |                |     |              |                |                |                              |                 |     |                                                                                       |                                                                                       |
| 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> |     |                                                                                       |                                                                                       |
| H4..18 | 20            | 50  | 19            | 50  | 170            | 137 | 80           | 160            | 170            | 395                          | 95              | 255 | 325                                                                                   | 13                                                                                    |
| H4..19 | 20            | 50  | 19            | 50  | 180            | 154 | 90           | 165            | 180            | 440                          | 95              | 255 | 445                                                                                   | 18                                                                                    |
| H4..20 | 20            | 50  | 20            | 50  | 190            | 170 | 100          | 200            | 200            | 495                          | 95              | 255 | 610                                                                                   | 22                                                                                    |
| H4..21 | 30            | 80  | 25            | 60  | 220            | 190 | 110          | 200            | 220            | 555                          | 135             | 310 | 810                                                                                   | 28                                                                                    |
| H4..22 | 35            | 80  | 25            | 60  | 230            | 215 | 120          | 210            | 230            | 620                          | 135             | 310 | 1080                                                                                  | 39                                                                                    |
| H4..23 | 40            | 110 | 35            | 80  | 260            | 245 | 140          | 250            | 260            | 700                          | 140             | 310 | 1455                                                                                  | 56                                                                                    |
| H4..24 | 40            | 110 | 40            | 110 | 295            | 275 | 160          | 290            | 295            | 785                          | 175             | 415 | 1950                                                                                  | 80                                                                                    |
| H4..25 | 45            | 110 | 45            | 110 | 305            | 310 | 170          | 300            | 305            | 880                          | 175             | 415 | 2655                                                                                  | 115                                                                                   |
| H4..26 | 50            | 110 | 50            | 110 | 345            | 340 | 190          | 350            | 345            | 990                          | 190             | 415 | 3525                                                                                  | 165                                                                                   |

| Size   | Foundation |      |     |                              |                              |     |     |     |                              |                 |     |    |     |     |    |      |
|--------|------------|------|-----|------------------------------|------------------------------|-----|-----|-----|------------------------------|-----------------|-----|----|-----|-----|----|------|
|        | A          | B    | C   | C <sub>1</sub> <sup>2)</sup> | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <sup>2)</sup> | K   | O  | P   | R   | S  | T    |
| H4..18 | 395        | 787  | 236 | 263                          | 281                          | 284 | 230 | 200 | 404                          | 480             | —   | 18 | 135 | 240 | 32 | 565  |
| H4..19 | 440        | 885  | 265 | 283                          | 315                          | 303 | 250 | 225 | 455                          | 530             | —   | 23 | 145 | 255 | 36 | 615  |
| H4..20 | 495        | 987  | 288 | 304                          | 345                          | 314 | 270 | 250 | 496                          | 580             | —   | 23 | 165 | 290 | 36 | 705  |
| H4..21 | 555        | 1098 | 320 | 359                          | 394                          | 385 | 310 | 280 | 572                          | 650             | —   | 27 | 180 | 315 | 45 | 780  |
| H4..22 | 620        | 1220 | 355 | 390                          | 429                          | 400 | 340 | 315 | 635                          | 720             | —   | 27 | 200 | 355 | 45 | 880  |
| H4..23 | 700        | 1377 | 405 | 422                          | 481                          | 450 | 380 | 355 | 705                          | 800             | 655 | 33 | 220 | 405 | 55 | 985  |
| H4..24 | 785        | 1520 | 435 | 452                          | 541                          | 515 | 410 | 400 | 795                          | 890             | 740 | 33 | 245 | 450 | 55 | 1110 |
| H4..25 | 880        | 1690 | 475 | 493                          | 591                          | 535 | 460 | 450 | 865                          | 990             | 840 | 33 | 280 | 510 | 55 | 1245 |
| H4..26 | 990        | 1920 | 540 | 553                          | 659                          | 600 | 510 | 500 | 954                          | 1090            | 940 | 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 Ø50m6.

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

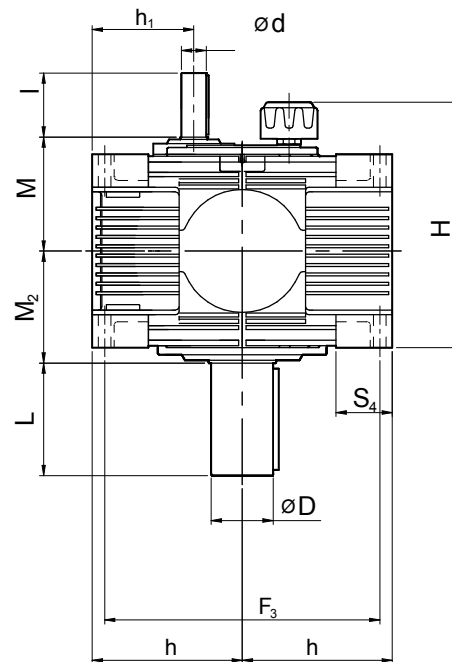
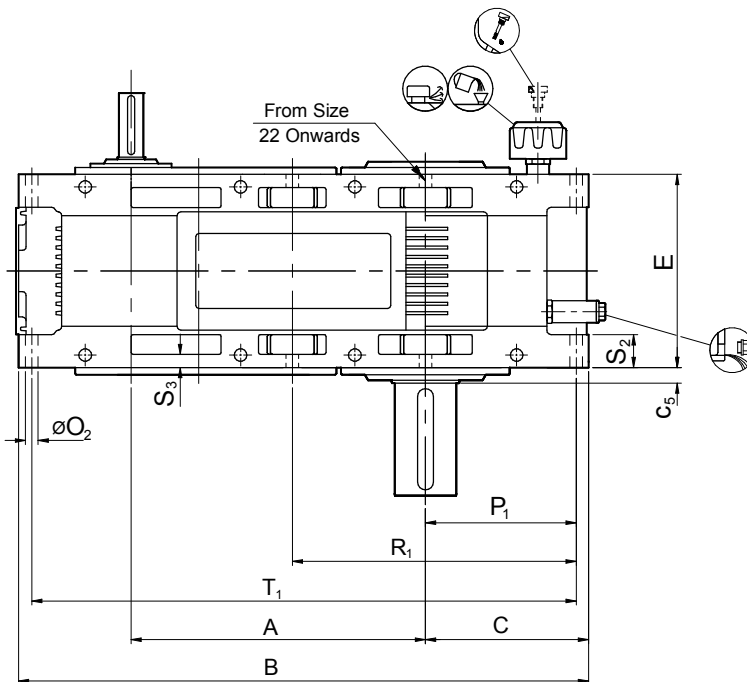
2) Approximate values; exact values acc. to order related documents

# SERIES E

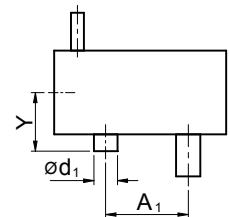
## TYPE H4V

### VERTICAL MOUNTING - HELICAL GEAR UNIT

### QUADRUPLE STAGE - SIZE 18 TO 26



| Size   | Input Shaft   |     |               |     |     |                | Output Shaft |     |                | Back Stop      |                              |                 |  |
|--------|---------------|-----|---------------|-----|-----|----------------|--------------|-----|----------------|----------------|------------------------------|-----------------|--------------------------------------------------------------------------------------|
|        | i = 90 - 225  |     | i = 250 - 450 |     |     |                |              |     |                |                |                              |                 |                                                                                      |
|        | i = 125 - 355 |     | i = 400 - 560 |     |     |                |              |     |                |                |                              |                 |                                                                                      |
|        | i = 125 - 400 |     | i = 450 - 560 |     |     |                |              |     |                |                |                              |                 |                                                                                      |
|        | 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> |                                                                                      |
| H4..18 | 20            | 50  | 19            | 50  | 170 | 137            | 80           | 160 | 170            | 395            | 95                           | 255             | 325                                                                                  |
| H4..19 | 20            | 50  | 19            | 50  | 180 | 154            | 90           | 165 | 180            | 440            | 95                           | 255             | 445                                                                                  |
| H4..20 | 20            | 50  | 20            | 50  | 190 | 170            | 100          | 200 | 200            | 495            | 95                           | 255             | 610                                                                                  |
| H4..21 | 30            | 80  | 25            | 60  | 220 | 190            | 110          | 200 | 220            | 555            | 135                          | 310             | 810                                                                                  |
| H4..22 | 35            | 80  | 25            | 60  | 230 | 215            | 120          | 210 | 230            | 620            | 135                          | 310             | 1080                                                                                 |
| H4..23 | 40            | 110 | 35            | 80  | 260 | 245            | 140          | 250 | 260            | 700            | 140                          | 310             | 1455                                                                                 |
| H4..24 | 40            | 110 | 40            | 110 | 295 | 275            | 160          | 290 | 295            | 785            | 175                          | 415             | 1950                                                                                 |
| H4..25 | 45            | 110 | 45            | 110 | 305 | 310            | 170          | 300 | 305            | 880            | 175                          | 415             | 2655                                                                                 |
| H4..26 | 50            | 110 | 50            | 110 | 345 | 340            | 190          | 350 | 345            | 990            | 190                          | 415             | 3525                                                                                 |



| Size   | Foundation |      |     |                |     |                |     |                 |                |                |                |                |                |                |                |
|--------|------------|------|-----|----------------|-----|----------------|-----|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|        | A          | B    | C   | C <sub>5</sub> | E   | F <sub>3</sub> | h   | H <sup>2)</sup> | O <sub>2</sub> | P <sub>1</sub> | R <sub>1</sub> | S <sub>2</sub> | S <sub>3</sub> | S <sub>4</sub> | T <sub>1</sub> |
| H4..18 | 395        | 787  | 236 | 28             | 284 | 350            | 200 | 364             | 18             | 215            | 395            | 45             | 20             | 90             | 744            |
| H4..19 | 440        | 885  | 265 | 28.50          | 303 | 400            | 225 | 383             | 23             | 240            | 440            | 48.5           | 22             | 105            | 836            |
| H4..20 | 495        | 987  | 288 | 43             | 314 | 440            | 250 | 394             | 23             | 262            | 487            | 45             | 24             | 105            | 935            |
| H4..21 | 555        | 1098 | 320 | 27.50          | 385 | 500            | 280 | 475             | 27             | 295            | 545            | 65             | 28             | 120            | 1045           |
| H4..22 | 620        | 1220 | 355 | 30             | 400 | 560            | 315 | 490             | 27             | 325            | 605            | 60             | 28             | 120            | 1160           |
| H4..23 | 700        | 1377 | 405 | 35             | 450 | 630            | 355 | 540             | 33             | 370            | 685            | 70             | 35             | 150            | 1305           |
| H4..24 | 785        | 1520 | 435 | 37.5           | 515 | 700            | 400 | 605             | 33             | 398            | 753            | 87.5           | 35             | 150            | 1443           |
| H4..25 | 880        | 1690 | 475 | 37.5           | 535 | 800            | 450 | 625             | 33             | 436            | 836            | 80             | 35             | 150            | 1612           |
| H4..26 | 990        | 1920 | 540 | 45             | 600 | 890            | 500 | 700             | 39             | 495            | 945            | 100            | 45             | 175            | 1830           |

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)

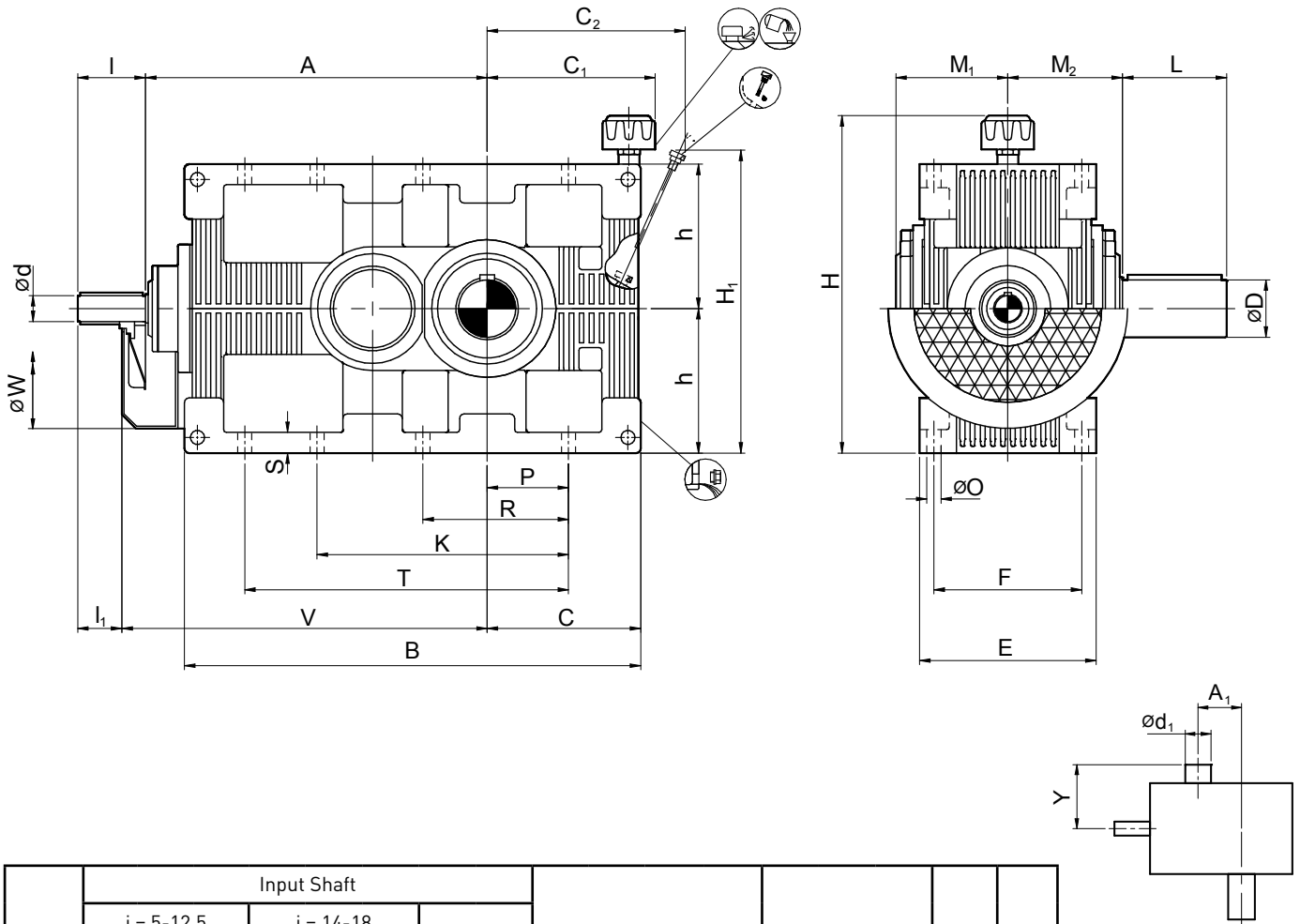
Tolerance field for shaft ends ISO fit, up to  $\phi 50$  k6; over  $\phi 50$  m6.

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

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

## HORIZONTAL MOUNTING - BEVEL HELICAL GEAR UNIT

## TYPE B2H DOUBLE STAGE - SIZE 11 TO 18



| Size   | Input Shaft |                |    |             |                |    |     |     | Output Shaft |                |                |                | Back Stop                    |                 |     |  |  |
|--------|-------------|----------------|----|-------------|----------------|----|-----|-----|--------------|----------------|----------------|----------------|------------------------------|-----------------|-----|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|        | i = 5-12.5  |                |    | i = 14-18   |                |    |     |     |              |                |                |                |                              |                 |     |                                                                                       |                                                                                       |
|        | i = 5.6-14  |                |    | i = 16-20   |                |    |     |     |              |                |                |                |                              |                 |     |                                                                                       |                                                                                       |
|        | i = 6.3-16  |                |    | i = 18-22.4 |                |    |     |     |              |                |                |                |                              |                 |     |                                                                                       |                                                                                       |
| 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> |     |                                                                                       |                                                                                       |
| B2..11 | 19          | 90             | 40 | 19          | 90             | 40 | 325 | 210 | 32           | 55             | 94             | 105            | 80                           | 95              | 180 | 40                                                                                    | 1.5                                                                                   |
|        |             |                |    |             |                |    |     |     |              |                |                |                |                              |                 |     |                                                                                       |                                                                                       |
| B2..15 | 32          | 110            | 60 | 28          | 100            | 50 | 465 | 300 | 55           | 95             | 127            | 135            | 125                          | 140             | 255 | 135                                                                                   | 4                                                                                     |
| B2..17 | 42          | 130            | 80 | 38          | 110            | 60 | 570 | 360 | 70           | 135            | 141            | 150            | 160                          | 175             | 255 | 250                                                                                   | 7                                                                                     |
| B2..18 | 48          | 130            | 80 | 42          | 130            | 80 | 635 | 360 | 80           | 160            | 158            | 170            | 180                          | 190             | 305 | 330                                                                                   | 9                                                                                     |

| Size   | Foundation |     |     |                              |                              |     |     |     |                              |                              |   |    |     |     |    |     |
|--------|------------|-----|-----|------------------------------|------------------------------|-----|-----|-----|------------------------------|------------------------------|---|----|-----|-----|----|-----|
|        | A          | B   | C   | C <sub>1</sub> <sup>2)</sup> | 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 | O  | P   | R   | S  | T   |
| B2..11 | 275        | 356 | 140 | 176                          | 171                          | 180 | 150 | 100 | 248                          | 260                          | — | 14 | 50  | 95  | 24 | 215 |
| B2..13 | 340        | 435 | 155 | 192                          | 195                          | 190 | 150 | 125 | 295                          | 330                          | — | 14 | 65  | 120 | 24 | 270 |
| B2..15 | 415        | 520 | 182 | 218                          | 231                          | 228 | 170 | 160 | 352                          | 400                          | — | 14 | 95  | 170 | 24 | 355 |
| B2..17 | 520        | 640 | 220 | 248                          | 282                          | 250 | 210 | 200 | 432                          | 480                          | — | 18 | 115 | 210 | 32 | 440 |
| B2..18 | 585        | 716 | 246 | 273                          | 311                          | 284 | 230 | 225 | 475                          | 530                          | — | 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)

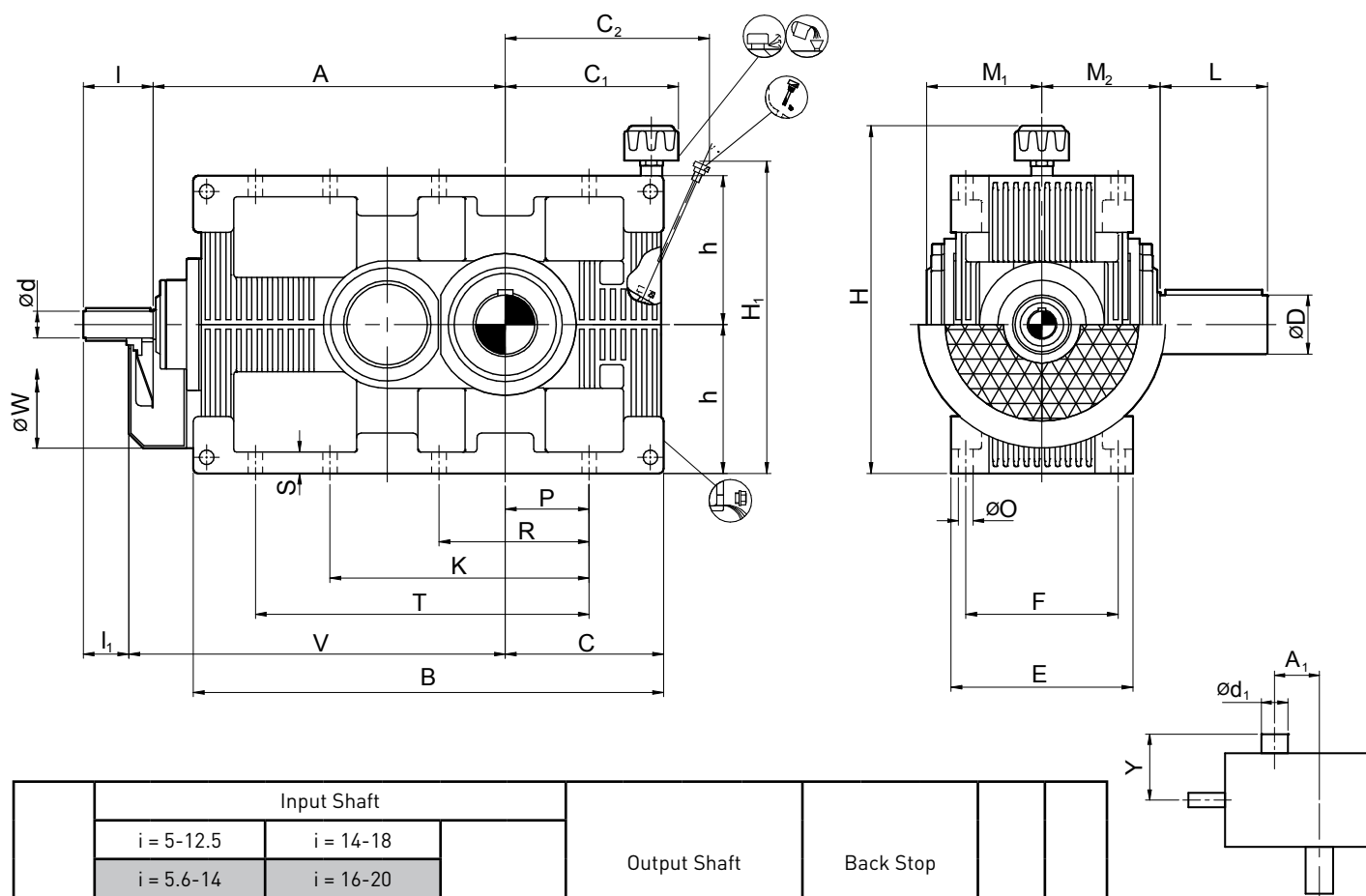
Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50m6.

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

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

## HORIZONTAL MOUNTING - BEVEL HELICAL GEAR UNIT

## TYPE B2H DOUBLE STAGE - SIZE 20 TO 26



| Size   | Input Shaft |                |     |             |                |     |      |     | Output Shaft |                |                |                | Back Stop                    |                 |     |  |  |
|--------|-------------|----------------|-----|-------------|----------------|-----|------|-----|--------------|----------------|----------------|----------------|------------------------------|-----------------|-----|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|        | i = 5-12.5  |                |     | i = 14-18   |                |     |      |     |              |                |                |                |                              |                 |     |                                                                                       |                                                                                       |
|        | i = 5.6-14  |                |     | i = 16-20   |                |     |      |     |              |                |                |                |                              |                 |     |                                                                                       |                                                                                       |
|        | i = 6.3-16  |                |     | i = 18-22.4 |                |     |      |     |              |                |                |                |                              |                 |     |                                                                                       |                                                                                       |
| 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> |     |                                                                                       |                                                                                       |
| B2..20 | 58          | 135            | 85  | 52          | 135            | 85  | 770  | 460 | 100          | 200            | 176            | 200            | 225                          | 210             | 305 | 595                                                                                   | 18                                                                                    |
|        |             |                |     |             |                |     |      |     |              |                |                |                |                              |                 |     |                                                                                       |                                                                                       |
| B2..22 | 70          | 155            | 105 | 70          | 155            | 105 | 925  | 550 | 120          | 210            | 220            | 230            | 280                          | 290             | 390 | 1080                                                                                  | 36                                                                                    |
| B2..23 | 85          | 180            | 130 | 80          | 180            | 130 | 1025 | 550 | 140          | 250            | 234            | 260            | 315                          | 290             | 390 | 1455                                                                                  | 51                                                                                    |
| B2..24 | 90          | 180            | 130 | 90          | 180            | 130 | 1135 | 650 | 160          | 290            | 283            | 295            | 355                          | 310             | 470 | 1960                                                                                  | 69                                                                                    |
| B2..25 | 100         | 220            | 170 | 100         | 220            | 170 | 1265 | 700 | 170          | 300            | 293            | 305            | 400                          | 310             | 470 | 2650                                                                                  | 95                                                                                    |
| B2..26 | 110         | 220            | 170 | 110         | 220            | 170 | 1415 | 700 | 190          | 350            | 306            | 345            | 450                          | 400             | 470 | 3570                                                                                  | 130                                                                                   |

| Size   | Foundation |      |     |                              |                              |     |     |     |                              |                 |     |    |     |     |    |      |
|--------|------------|------|-----|------------------------------|------------------------------|-----|-----|-----|------------------------------|-----------------|-----|----|-----|-----|----|------|
|        | A          | B    | C   | C <sub>1</sub> <sup>2)</sup> | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <sup>2)</sup> | K   | O  | P   | R   | S  | T    |
| B2..20 | 720        | 893  | 303 | 319                          | 387                          | 314 | 270 | 280 | 588                          | 640             | —   | 23 | 165 | 290 | 36 | 635  |
| B2..21 | 790        | 995  | 335 | 374                          | 435                          | 385 | 310 | 315 | 664                          | 720             | —   | 27 | 180 | 315 | 45 | 705  |
| B2..22 | 875        | 1095 | 370 | 405                          | 474                          | 400 | 340 | 355 | 741                          | 800             | —   | 27 | 200 | 355 | 45 | 785  |
| B2..23 | 975        | 1250 | 425 | 442                          | 537                          | 450 | 380 | 400 | 831                          | 890             | —   | 33 | 220 | 405 | 55 | 875  |
| B2..24 | 1085       | 1365 | 465 | 482                          | 598                          | 515 | 410 | 450 | 908                          | 990             | —   | 33 | 245 | 450 | 55 | 975  |
| B2..25 | 1215       | 1505 | 510 | 528                          | 670                          | 535 | 460 | 500 | 1013                         | 1090            | —   | 33 | 280 | 510 | 55 | 1105 |
| B2..26 | 1365       | 1710 | 580 | 593                          | 753                          | 600 | 510 | 560 | 1137                         | 1210            | 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)

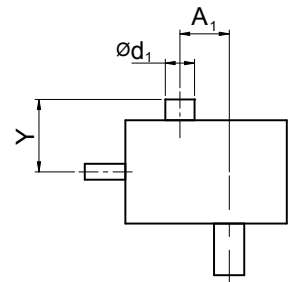
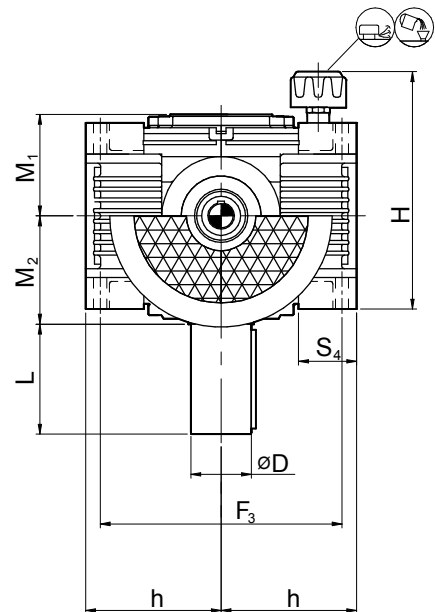
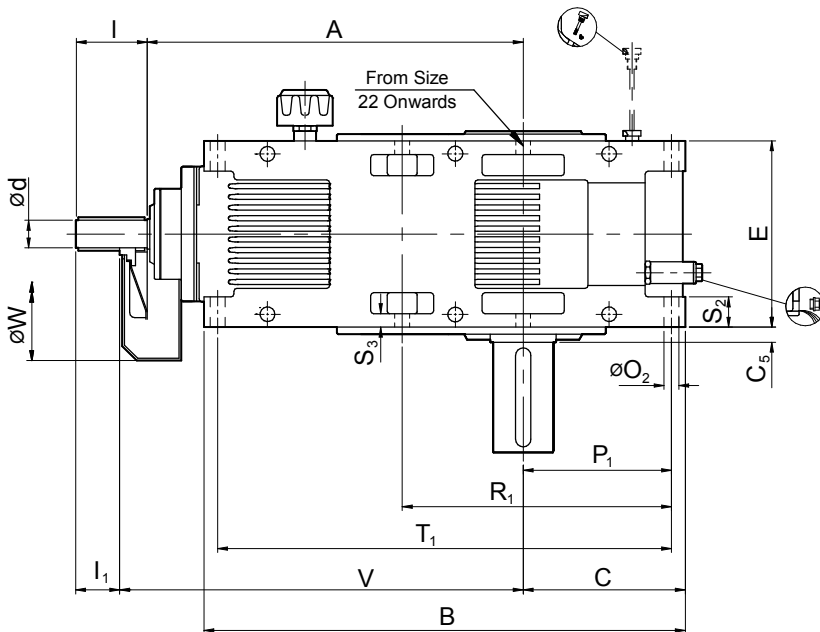
Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50m6.

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

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

## VERTICAL MOUNTING - BEVEL HELICAL GEAR UNIT

## TYPE B2V DOUBLE STAGE - SIZE 11 TO 18



| Size   | Input Shaft |                |    |             |                |    |     |     | Output Shaft |                |                |                | Back Stop                    |                 |     | <br>KG |
|--------|-------------|----------------|----|-------------|----------------|----|-----|-----|--------------|----------------|----------------|----------------|------------------------------|-----------------|-----|---------------------------------------------------------------------------------------------|
|        | i = 5-12.5  |                |    | i = 14-18   |                |    | V   | W   |              |                |                |                |                              |                 |     |                                                                                             |
|        | i = 5.6-14  |                |    | i = 16-20   |                |    |     |     |              |                |                |                |                              |                 |     |                                                                                             |
|        | i = 6.3-16  |                |    | i = 18-22.4 |                |    |     |     |              |                |                |                |                              |                 |     |                                                                                             |
| d      | l           | l <sub>1</sub> | d  | l           | l <sub>1</sub> | V  | W   | D   | L            | M <sub>i</sub> | M <sub>2</sub> | A <sub>1</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |     |                                                                                             |
| B2..11 | 19          | 90             | 40 | 19          | 90             | 40 | 325 | 210 | 32           | 55             | 94             | 105            | 80                           | 95              | 180 | 40                                                                                          |
|        |             |                |    |             |                |    |     |     |              |                |                |                |                              |                 |     |                                                                                             |
| B2..15 | 32          | 110            | 60 | 28          | 100            | 50 | 365 | 300 | 55           | 95             | 127            | 135            | 125                          | 140             | 255 | 135                                                                                         |
| B2..17 | 42          | 130            | 80 | 38          | 110            | 60 | 570 | 360 | 70           | 135            | 141            | 150            | 160                          | 175             | 255 | 250                                                                                         |
| B2..18 | 48          | 130            | 80 | 42          | 130            | 80 | 635 | 360 | 80           | 160            | 158            | 170            | 180                          | 190             | 305 | 330                                                                                         |

| Size   | Foundation |     |     |                |     |                |     |                 |                |                |                |                |                |                |                |
|--------|------------|-----|-----|----------------|-----|----------------|-----|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|        | A          | B   | C   | C <sub>5</sub> | E   | F <sub>3</sub> | h   | H <sup>2)</sup> | O <sub>2</sub> | P <sub>1</sub> | R <sub>1</sub> | S <sub>2</sub> | S <sub>3</sub> | S <sub>4</sub> | T <sub>1</sub> |
| B2..11 | 275        | 356 | 140 | 22.50          | 180 | 160            | 100 | 225             | 14             | 124            | —              | —              | 14             | 66             | 324            |
| B2..13 | 340        | 435 | 155 | 20             | 190 | 210            | 125 | 270             | 14             | 140            | —              | —              | 15             | 66             | 406            |
| B2..15 | 415        | 520 | 182 | 21             | 228 | 270            | 160 | 308             | 14             | 165            | 290            | 45             | 15             | 70             | 486            |
| B2..17 | 520        | 640 | 220 | 25             | 250 | 350            | 200 | 330             | 18             | 202            | 362            | 40             | 20             | 90             | 604            |
| B2..18 | 585        | 716 | 246 | 28             | 284 | 400            | 225 | 364             | 18             | 224            | 404            | 45             | 20             | 90             | 672            |

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 Ø50m6.

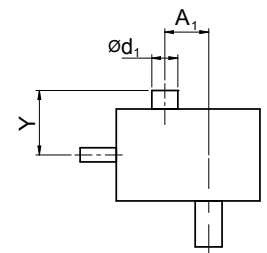
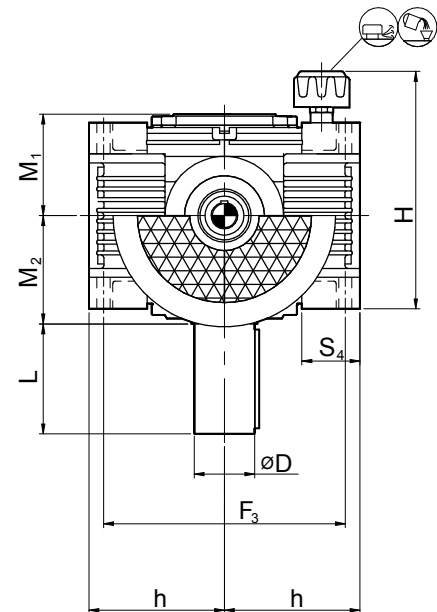
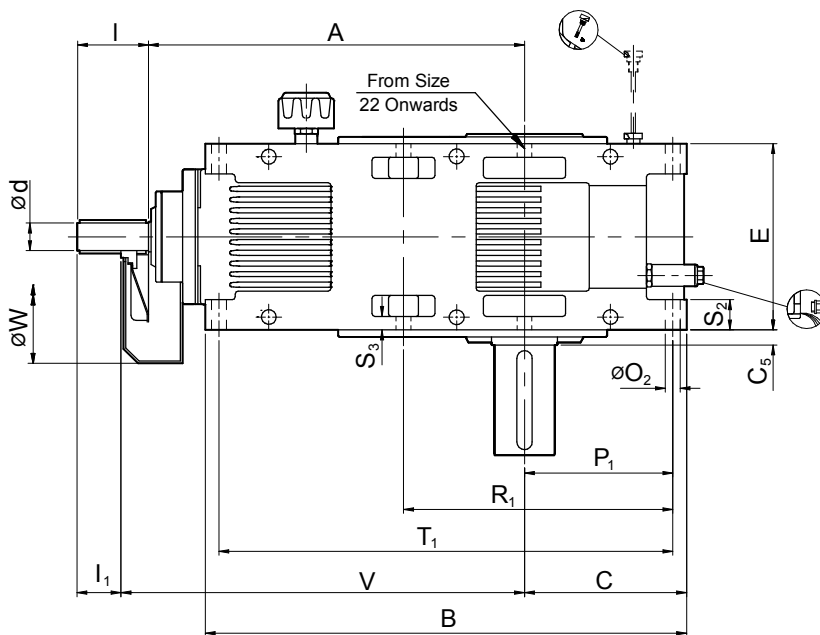
1) Max. dimensions; details acc. to order related documents

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

# SERIES E

## VERTICAL MOUNTING - BEVEL HELICAL GEAR UNIT

## TYPE B2V DOUBLE STAGE - SIZE 20 TO 26



| Size   | Input Shaft |     |                |             |     |                |      |     | Output Shaft |     |                |                | Back Stop      |                              |                 |  |  |
|--------|-------------|-----|----------------|-------------|-----|----------------|------|-----|--------------|-----|----------------|----------------|----------------|------------------------------|-----------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|        | i = 5-12.5  |     |                | i = 14-18   |     |                |      |     |              |     |                |                |                |                              |                 |                                                                                       |                                                                                       |
|        | i = 5.6-14  |     |                | i = 16-20   |     |                |      |     |              |     |                |                |                |                              |                 |                                                                                       |                                                                                       |
|        | i = 6.3-16  |     |                | i = 18-22.4 |     |                |      |     |              |     |                |                |                |                              |                 |                                                                                       |                                                                                       |
|        | 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> |                                                                                       |                                                                                       |
| B2..20 | 58          | 135 | 85             | 52          | 135 | 85             | 770  | 460 | 100          | 200 | 176            | 200            | 225            | 210                          | 305             | 595                                                                                   | 18                                                                                    |
|        |             |     |                |             |     |                |      |     |              |     |                |                |                |                              |                 |                                                                                       |                                                                                       |
| B2..22 | 70          | 155 | 105            | 70          | 155 | 105            | 925  | 550 | 120          | 210 | 220            | 230            | 280            | 290                          | 390             | 1080                                                                                  | 36                                                                                    |
| B2..23 | 85          | 180 | 130            | 80          | 180 | 130            | 1025 | 550 | 140          | 250 | 234            | 260            | 315            | 290                          | 390             | 1455                                                                                  | 51                                                                                    |
| B2..24 | 90          | 180 | 130            | 90          | 180 | 130            | 1135 | 650 | 160          | 290 | 283            | 295            | 355            | 310                          | 470             | 1960                                                                                  | 69                                                                                    |
| B2..25 | 100         | 220 | 170            | 100         | 220 | 170            | 1265 | 700 | 170          | 300 | 293            | 305            | 400            | 310                          | 470             | 2650                                                                                  | 95                                                                                    |
| B2..26 | 110         | 220 | 170            | 110         | 220 | 170            | 1415 | 700 | 190          | 350 | 306            | 345            | 450            | 400                          | 470             | 3570                                                                                  | 130                                                                                   |

| Size   | Foundation |      |     |                |     |                |     |                 |                |                |                |                |                |                |                |  |
|--------|------------|------|-----|----------------|-----|----------------|-----|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--|
|        | A          | B    | C   | C <sub>5</sub> | E   | F <sub>3</sub> | h   | H <sup>2)</sup> | O <sub>2</sub> | P <sub>1</sub> | R <sub>1</sub> | S <sub>2</sub> | S <sub>3</sub> | S <sub>4</sub> | T <sub>1</sub> |  |
| B2..20 | 720        | 893  | 303 | 43             | 314 | 500            | 280 | 394             | 23             | 276            | 501            | 45             | 24             | 105            | 839            |  |
| B2..21 | 790        | 995  | 335 | 27.5           | 385 | 570            | 315 | 475             | 27             | 305            | 555            | 65             | 28             | 120            | 935            |  |
| B2..22 | 875        | 1095 | 370 | 30             | 400 | 640            | 355 | 490             | 27             | 339            | 619            | 60             | 28             | 120            | 1033           |  |
| B2..23 | 975        | 1250 | 425 | 35             | 450 | 720            | 400 | 540             | 33             | 386            | 701            | 70             | 35             | 150            | 1173           |  |
| B2..24 | 1085       | 1365 | 465 | 37.5           | 515 | 800            | 450 | 605             | 33             | 426            | 781            | 87.5           | 35             | 150            | 1287           |  |
| B2..25 | 1215       | 1505 | 510 | 37.5           | 535 | 900            | 500 | 625             | 33             | 474            | 874            | 80             | 35             | 150            | 1432           |  |
| B2..26 | 1365       | 1710 | 580 | 45             | 600 | 1010           | 560 | 700             | 39             | 532            | 982            | 100            | 45             | 175            | 1614           |  |

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)

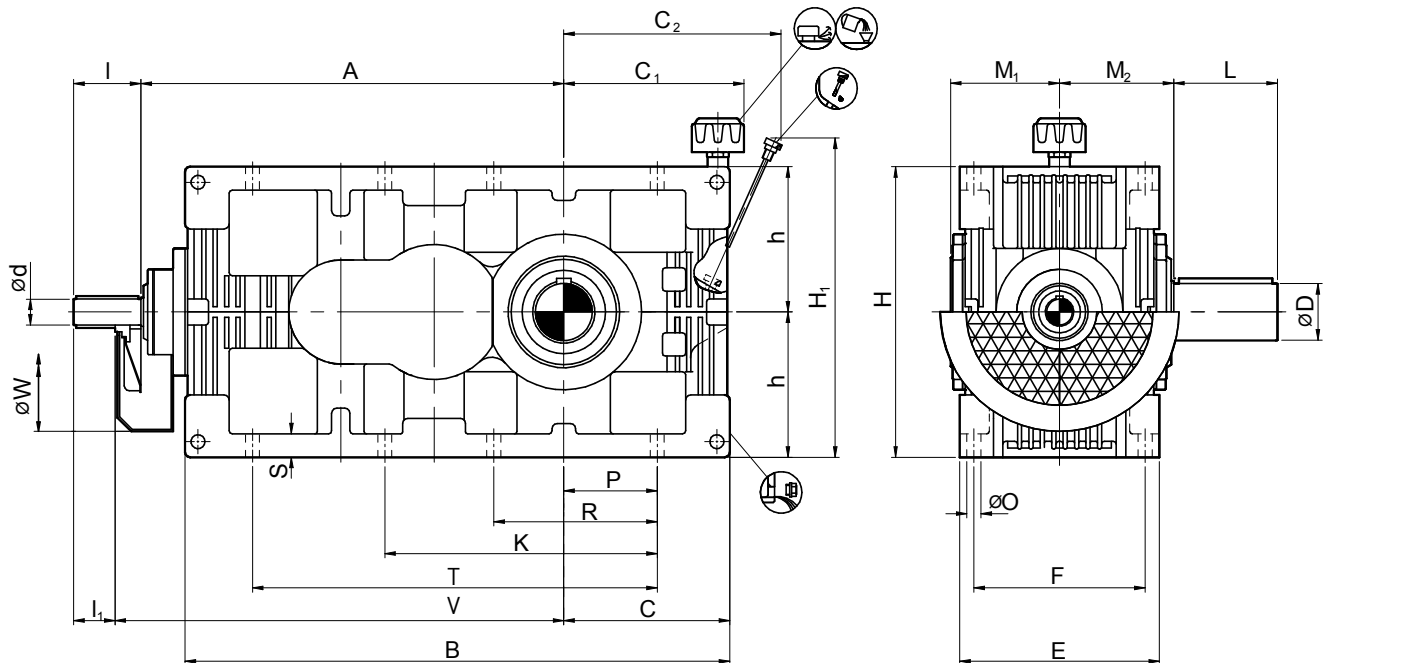
Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50m6.

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

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

## HORIZONTAL MOUNTING - BEVEL HELICAL GEAR UNIT

## TYPE B3H TRIPLE STAGE - SIZE 14 TO 18



| Size   | Input Shaft |     |                |            |     |                |     |     | Output Shaft |     |                |                | Back Stop      |                              |                 |  |  |
|--------|-------------|-----|----------------|------------|-----|----------------|-----|-----|--------------|-----|----------------|----------------|----------------|------------------------------|-----------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|        | i = 20-50   |     |                | i = 56-71  |     |                |     |     |              |     |                |                |                |                              |                 |                                                                                       |                                                                                       |
|        | i = 22.4-63 |     |                | i = 71-90  |     |                |     |     |              |     |                |                |                |                              |                 |                                                                                       |                                                                                       |
|        | i = 25-71   |     |                | i = 80-100 |     |                |     |     |              |     |                |                |                |                              |                 |                                                                                       |                                                                                       |
|        | 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> |                                                                                       |                                                                                       |
| B3..14 | 19          | 90  | 40             | 19         | 90  | 40             | 435 | 240 | 48           | 95  | 106            | 125            | 190            | 90                           | 180             | 105                                                                                   | 3.5                                                                                   |
|        |             |     |                |            |     |                |     |     |              |     |                |                |                |                              |                 |                                                                                       |                                                                                       |
| B3..16 | 24          | 100 | 50             | 24         | 100 | 50             | 530 | 300 | 60           | 130 | 133            | 145            | 240            | 95                           | 215             | 195                                                                                   | 6.5                                                                                   |
| B3..17 | 28          | 100 | 50             | 24         | 100 | 50             | 580 | 340 | 70           | 135 | 141            | 150            | 270            | 95                           | 215             | 265                                                                                   | 9                                                                                     |
| B3..18 | 32          | 110 | 60             | 28         | 100 | 50             | 645 | 360 | 80           | 160 | 158            | 170            | 305            | 140                          | 265             | 355                                                                                   | 13                                                                                    |

| Size   | Foundation |     |     |                              |                              |     |     |     |                              |                              |   |    |     |     |    |     |
|--------|------------|-----|-----|------------------------------|------------------------------|-----|-----|-----|------------------------------|------------------------------|---|----|-----|-----|----|-----|
|        | A          | B   | C   | C <sub>1</sub> <sup>2)</sup> | 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 | O  | P   | R   | S  | T   |
| B3..14 | 385        | 488 | 162 | 198                          | 194                          | 190 | 150 | 125 | 278                          | 330                          | — | 14 | 80  | 140 | 24 | 345 |
| B3..15 | 420        | 548 | 177 | 213                          | 215                          | 228 | 170 | 140 | 306                          | 360                          | — | 14 | 95  | 170 | 24 | 395 |
| B3..16 | 480        | 615 | 195 | 228                          | 231                          | 233 | 190 | 160 | 327                          | 400                          | — | 14 | 110 | 195 | 24 | 450 |
| B3..17 | 530        | 684 | 210 | 238                          | 257                          | 250 | 210 | 180 | 378                          | 440                          | — | 18 | 115 | 210 | 32 | 495 |
| B3..18 | 595        | 764 | 236 | 263                          | 281                          | 284 | 230 | 200 | 404                          | 480                          | — | 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 Ø50m6.

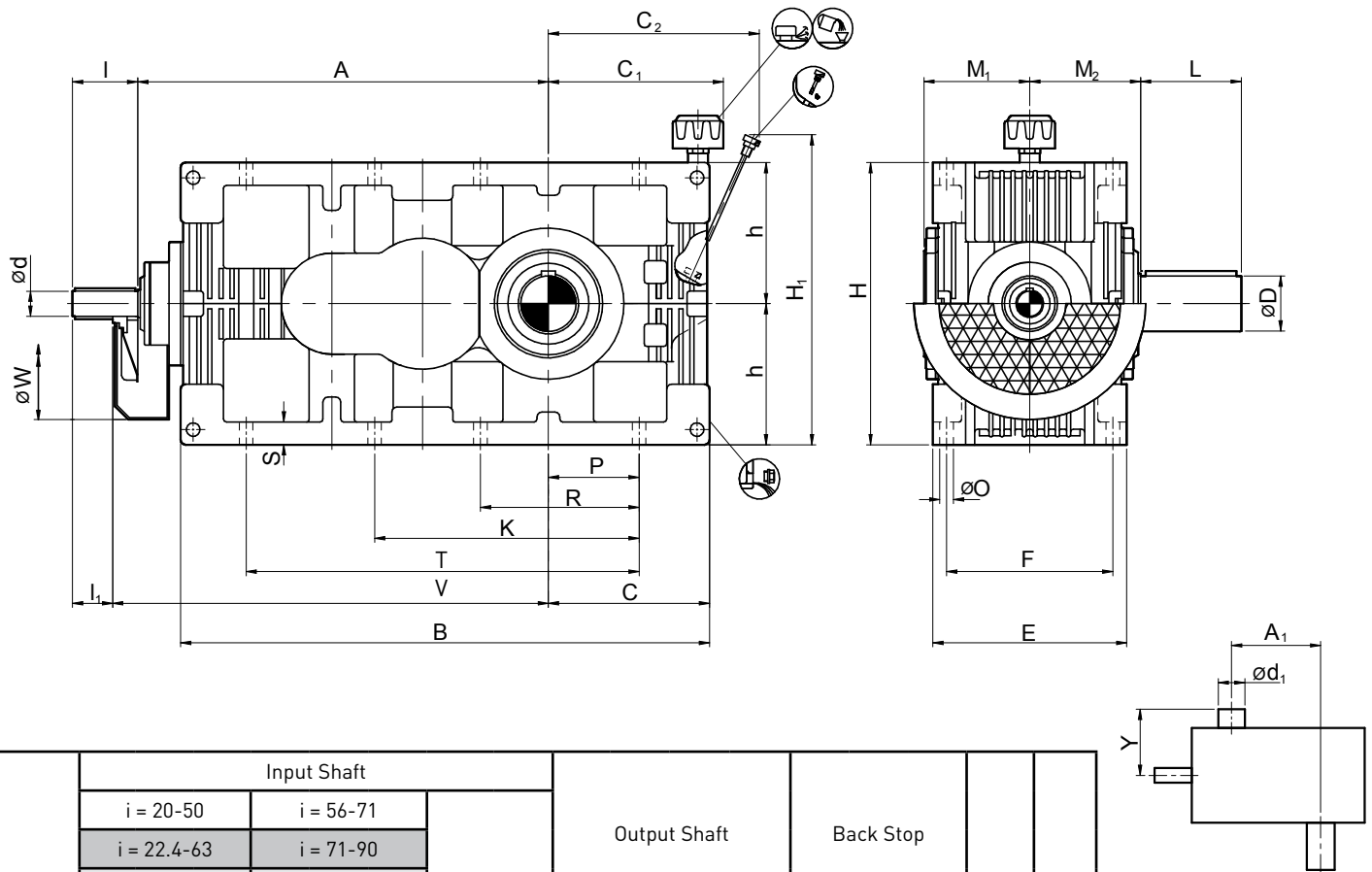
1) Max. dimensions; details acc. to order related documents

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

# SERIES E

## HORIZONTAL MOUNTING - BEVEL HELICAL GEAR UNIT

## TYPE B3H TRIPLE STAGE - SIZE 19 TO 26



| Size   | Input Shaft |     |                |    |     |                |      |     | Output Shaft |     |                |                | Back Stop      |                              |                 |  |  |
|--------|-------------|-----|----------------|----|-----|----------------|------|-----|--------------|-----|----------------|----------------|----------------|------------------------------|-----------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|        | i = 20-50   |     |                |    |     |                |      |     |              |     |                |                |                |                              |                 |                                                                                       |                                                                                       |
|        | i = 22.4-63 |     |                |    |     |                |      |     |              |     |                |                |                |                              |                 |                                                                                       |                                                                                       |
|        | i = 25-71   |     |                |    |     |                |      |     |              |     |                |                |                |                              |                 |                                                                                       |                                                                                       |
|        | 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> |                                                                                       |                                                                                       |
| B3..19 | 38          | 110 | 60             | 32 | 110 | 60             | 710  | 360 | 90           | 165 | 171            | 180            | 340            | 150                          | 265             | 480                                                                                   | 18                                                                                    |
|        |             |     |                |    |     |                |      |     |              |     |                |                |                |                              |                 |                                                                                       |                                                                                       |
| B3..21 | 48          | 130 | 80             | 42 | 130 | 80             | 885  | 460 | 110          | 200 | 210            | 220            | 430            | 190                          | 340             | 870                                                                                   | 33                                                                                    |
| B3..22 | 52          | 130 | 80             | 48 | 130 | 80             | 970  | 530 | 120          | 210 | 220            | 230            | 480            | 190                          | 340             | 1170                                                                                  | 46                                                                                    |
| B3..23 | 58          | 135 | 85             | 52 | 130 | 80             | 1085 | 550 | 140          | 250 | 234            | 260            | 540            | 190                          | 340             | 1590                                                                                  | 65                                                                                    |
| B3..24 | 65          | 155 | 105            | 65 | 155 | 105            | 1195 | 600 | 160          | 290 | 283            | 295            | 605            | 245                          | 440             | 2145                                                                                  | 90                                                                                    |
| B3..25 | 70          | 155 | 105            | 70 | 155 | 105            | 1325 | 650 | 170          | 300 | 293            | 305            | 680            | 245                          | 440             | 2895                                                                                  | 125                                                                                   |
| B3..26 | 85          | 180 | 130            | 80 | 180 | 130            | 1475 | 700 | 190          | 350 | 306            | 345            | 765            | 245                          | 440             | 3885                                                                                  | 180                                                                                   |

| Size   | Foundation |      |     |                              |                              |     |     |     |                              |                              |     |    |     |     |    |      |
|--------|------------|------|-----|------------------------------|------------------------------|-----|-----|-----|------------------------------|------------------------------|-----|----|-----|-----|----|------|
|        | A          | B    | C   | C <sub>1</sub> <sup>2)</sup> | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <sub>2</sub> <sup>1)</sup> | K   | O  | P   | R   | S  | T    |
| B3..19 | 660        | 850  | 265 | 283                          | 315                          | 303 | 250 | 225 | 455                          | 530                          | —   | 23 | 145 | 255 | 36 | 615  |
| B3..20 | 745        | 945  | 288 | 304                          | 345                          | 314 | 270 | 250 | 496                          | 580                          | —   | 23 | 165 | 290 | 36 | 705  |
| B3..21 | 835        | 1050 | 320 | 359                          | 394                          | 385 | 310 | 280 | 572                          | 650                          | —   | 27 | 180 | 315 | 45 | 780  |
| B3..22 | 920        | 1170 | 355 | 390                          | 429                          | 400 | 340 | 315 | 635                          | 720                          | —   | 27 | 200 | 355 | 45 | 880  |
| B3..23 | 1035       | 1335 | 405 | 422                          | 481                          | 450 | 380 | 355 | 705                          | 800                          | 655 | 33 | 220 | 405 | 55 | 985  |
| B3..24 | 1145       | 1465 | 435 | 452                          | 541                          | 515 | 410 | 400 | 795                          | 890                          | 740 | 33 | 245 | 450 | 55 | 1110 |
| B3..25 | 1275       | 1605 | 475 | 493                          | 591                          | 535 | 460 | 450 | 865                          | 990                          | 840 | 33 | 280 | 510 | 55 | 1245 |
| B3..26 | 1425       | 1820 | 540 | 553                          | 659                          | 600 | 510 | 500 | 954                          | 1090                         | 940 | 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)

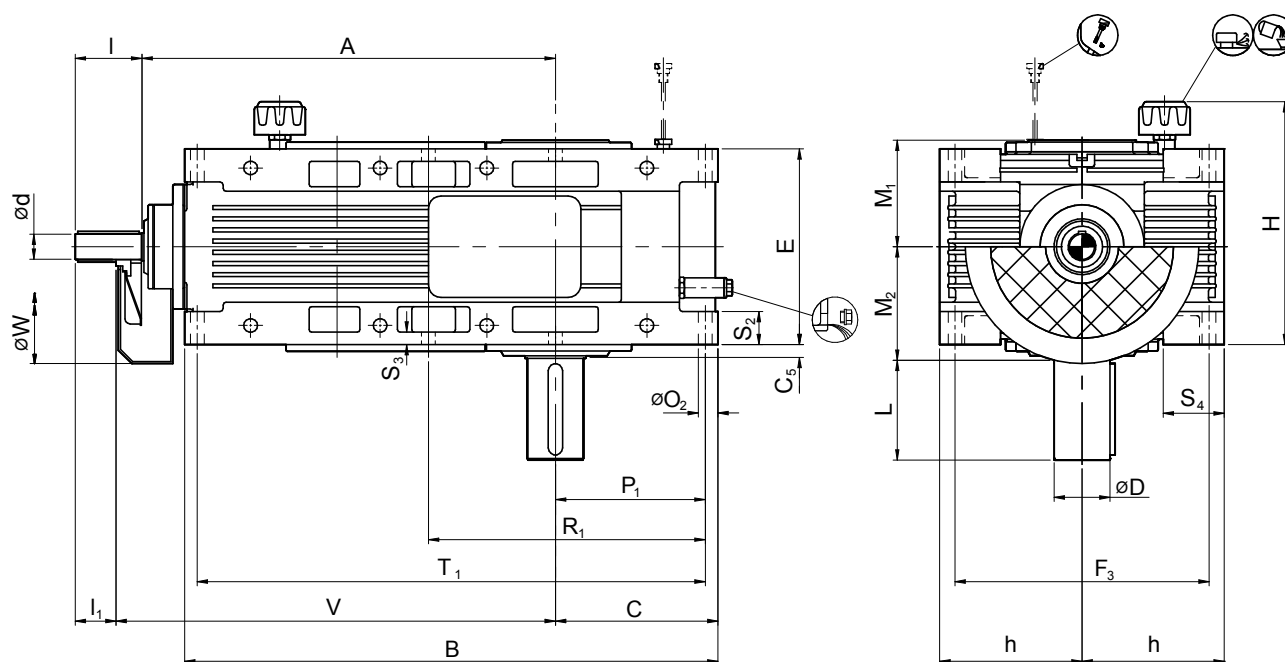
Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50m6.

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

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

## VERTICAL MOUNTING - BEVEL HELICAL GEAR UNIT

## TYPE B3V TRIPLE STAGE - SIZE 14 TO 18



| Size   | Input Shaft |     |                |            |     |                |     |     | Output Shaft |     |                |                | Back Stop      |                              |                 |  |
|--------|-------------|-----|----------------|------------|-----|----------------|-----|-----|--------------|-----|----------------|----------------|----------------|------------------------------|-----------------|---------------------------------------------------------------------------------------|
|        | i = 20-50   |     |                | i = 56-71  |     |                |     |     |              |     |                |                |                |                              |                 |                                                                                       |
|        | i = 22.4-63 |     |                | i = 71-90  |     |                |     |     |              |     |                |                |                |                              |                 |                                                                                       |
|        | i = 25-71   |     |                | i = 80-100 |     |                |     |     |              |     |                |                |                |                              |                 |                                                                                       |
|        | 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> |                                                                                       |
| B3..14 | 19          | 90  | 40             | 19         | 90  | 40             | 435 | 240 | 48           | 95  | 106            | 125            | 190            | 90                           | 180             | 105                                                                                   |
|        |             |     |                |            |     |                |     |     |              |     |                |                |                |                              |                 |                                                                                       |
| B3..16 | 24          | 100 | 50             | 24         | 100 | 50             | 530 | 300 | 60           | 130 | 133            | 145            | 240            | 95                           | 215             | 195                                                                                   |
| B3..17 | 28          | 100 | 50             | 24         | 100 | 50             | 580 | 340 | 70           | 135 | 141            | 150            | 270            | 95                           | 215             | 265                                                                                   |
| B3..18 | 32          | 110 | 60             | 28         | 100 | 50             | 645 | 360 | 80           | 160 | 158            | 170            | 305            | 140                          | 265             | 355                                                                                   |

| Size   | Foundation |     |     |                |     |                |     |                 |                |                |                |                |                |                |                |  |
|--------|------------|-----|-----|----------------|-----|----------------|-----|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--|
|        | A          | B   | C   | C <sub>5</sub> | E   | F <sub>3</sub> | h   | H <sup>2)</sup> | O <sub>2</sub> | P <sub>1</sub> | R <sub>1</sub> | S <sub>2</sub> | S <sub>3</sub> | S <sub>4</sub> | T <sub>1</sub> |  |
| B3..14 | 385        | 488 | 162 | 30             | 190 | 200            | 125 | 270             | 14             | 146            | 292            | 36             | —              | 70             | 456            |  |
| B3..15 | 420        | 548 | 177 | 21             | 228 | 230            | 140 | 308             | 14             | 160            | 285            | 45             | 15             | 70             | 515            |  |
| B3..16 | 480        | 615 | 195 | 28.50          | 233 | 270            | 160 | 313             | 14             | 176            | 316            | 38             | 15             | 70             | 578            |  |
| B3..17 | 530        | 684 | 210 | 25             | 250 | 310            | 180 | 330             | 18             | 190            | 350            | 40             | 20             | 95             | 645            |  |
| B3..18 | 595        | 764 | 236 | 28             | 284 | 350            | 200 | 364             | 18             | 215            | 395            | 45             | 20             | 90             | 722            |  |

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)

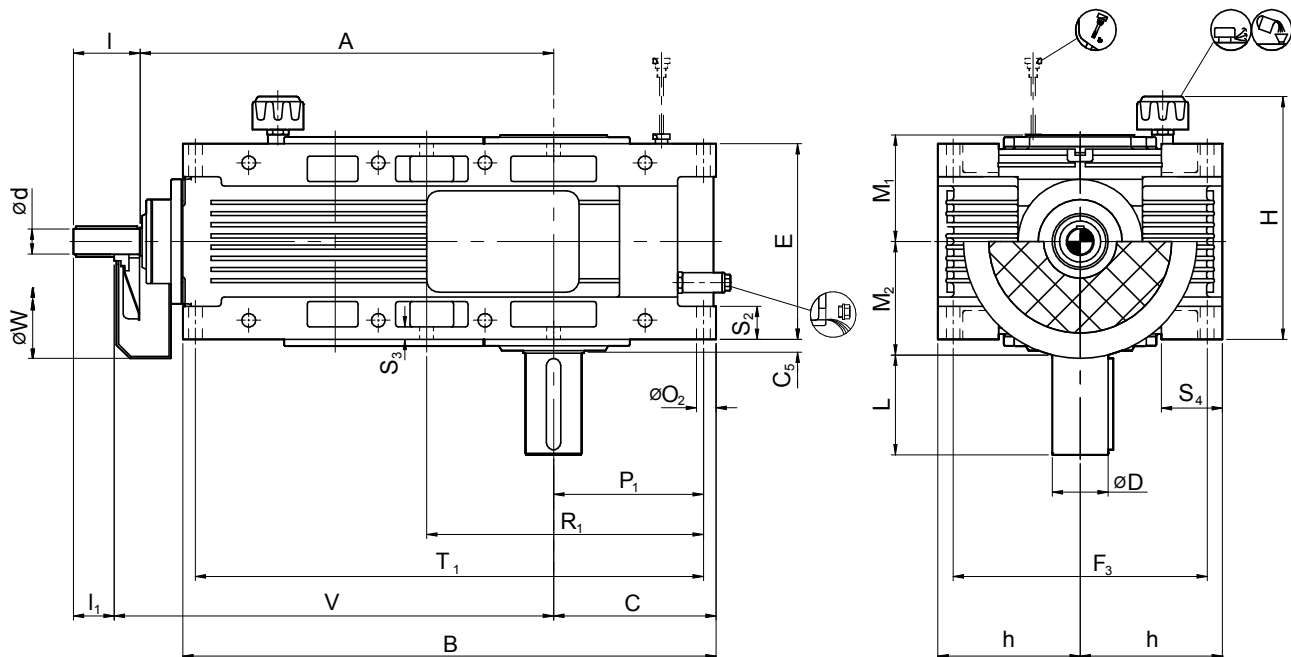
Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50m6.

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

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

## VERTICAL MOUNTING - BEVEL HELICAL GEAR UNIT

## TYPE B3V TRIPLE STAGE - SIZE 19 TO 26



| Size   | Input Shaft |     |                |            |     |                |      |     | Output Shaft |     |     |                | Back Stop      |                |                              |  |
|--------|-------------|-----|----------------|------------|-----|----------------|------|-----|--------------|-----|-----|----------------|----------------|----------------|------------------------------|---------------------------------------------------------------------------------------|
|        | i = 20-50   |     |                | i = 56-71  |     |                |      |     |              |     |     |                |                |                |                              |                                                                                       |
|        | i = 22.4-63 |     |                | i = 71-90  |     |                |      |     |              |     |     |                |                |                |                              |                                                                                       |
|        | i = 25-71   |     |                | i = 80-100 |     |                |      |     |              |     |     |                |                |                |                              |                                                                                       |
|        | 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> |                                                                                       |
| B3..19 | 38          | 110 | 60             | 32         | 110 | 60             | 710  | 360 | 90           | 165 | 171 | 180            | 340            | 150            | 265                          | 480                                                                                   |
|        |             |     |                |            |     |                |      |     |              |     |     |                |                |                |                              |                                                                                       |
| B3..21 | 48          | 130 | 80             | 42         | 130 | 80             | 885  | 460 | 110          | 200 | 210 | 220            | 430            | 190            | 340                          | 870                                                                                   |
| B3..22 | 52          | 130 | 80             | 48         | 130 | 80             | 970  | 530 | 120          | 210 | 220 | 230            | 480            | 190            | 340                          | 1170                                                                                  |
| B3..23 | 58          | 135 | 85             | 52         | 130 | 80             | 1085 | 550 | 140          | 250 | 234 | 260            | 540            | 190            | 340                          | 1590                                                                                  |
| B3..24 | 65          | 155 | 105            | 65         | 155 | 105            | 1195 | 600 | 160          | 290 | 283 | 295            | 605            | 245            | 440                          | 2145                                                                                  |
| B3..25 | 70          | 155 | 105            | 70         | 155 | 105            | 1325 | 650 | 170          | 300 | 293 | 305            | 680            | 245            | 440                          | 2895                                                                                  |
| B3..26 | 85          | 180 | 130            | 80         | 180 | 130            | 1475 | 700 | 190          | 350 | 306 | 345            | 765            | 245            | 440                          | 3885                                                                                  |

| Size   | Foundation |      |     |                |     |                |     |                 |                |                |                |                |                |                |                |
|--------|------------|------|-----|----------------|-----|----------------|-----|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|        | A          | B    | C   | C <sub>5</sub> | E   | F <sub>3</sub> | h   | H <sup>2)</sup> | O <sub>2</sub> | P <sub>1</sub> | R <sub>1</sub> | S <sub>2</sub> | S <sub>3</sub> | S <sub>4</sub> | T <sub>1</sub> |
| B3..19 | 660        | 850  | 265 | 28.50          | 303 | 400            | 225 | 383             | 23             | 240            | 440            | 48.5           | 22             | 105            | 800            |
| B3..20 | 745        | 945  | 288 | 43             | 314 | 440            | 250 | 394             | 23             | 262            | 487            | 45             | 24             | 105            | 893            |
| B3..21 | 835        | 1050 | 320 | 27.50          | 385 | 500            | 280 | 475             | 27             | 295            | 545            | 65             | 28             | 120            | 1000           |
| B3..22 | 920        | 1170 | 355 | 30             | 400 | 560            | 315 | 490             | 27             | 325            | 605            | 60             | 28             | 120            | 1110           |
| B3..23 | 1035       | 1335 | 405 | 35             | 450 | 630            | 355 | 540             | 33             | 370            | 685            | 70             | 35             | 150            | 1265           |
| B3..24 | 1145       | 1465 | 435 | 37.5           | 515 | 700            | 400 | 605             | 33             | 398            | 753            | 87.5           | 35             | 150            | 1391           |
| B3..25 | 1275       | 1605 | 475 | 37.5           | 535 | 800            | 450 | 625             | 33             | 436            | 836            | 80             | 35             | 150            | 1528           |
| B3..26 | 1425       | 1820 | 540 | 45             | 600 | 890            | 500 | 700             | 39             | 495            | 945            | 100            | 45             | 175            | 1730           |

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)

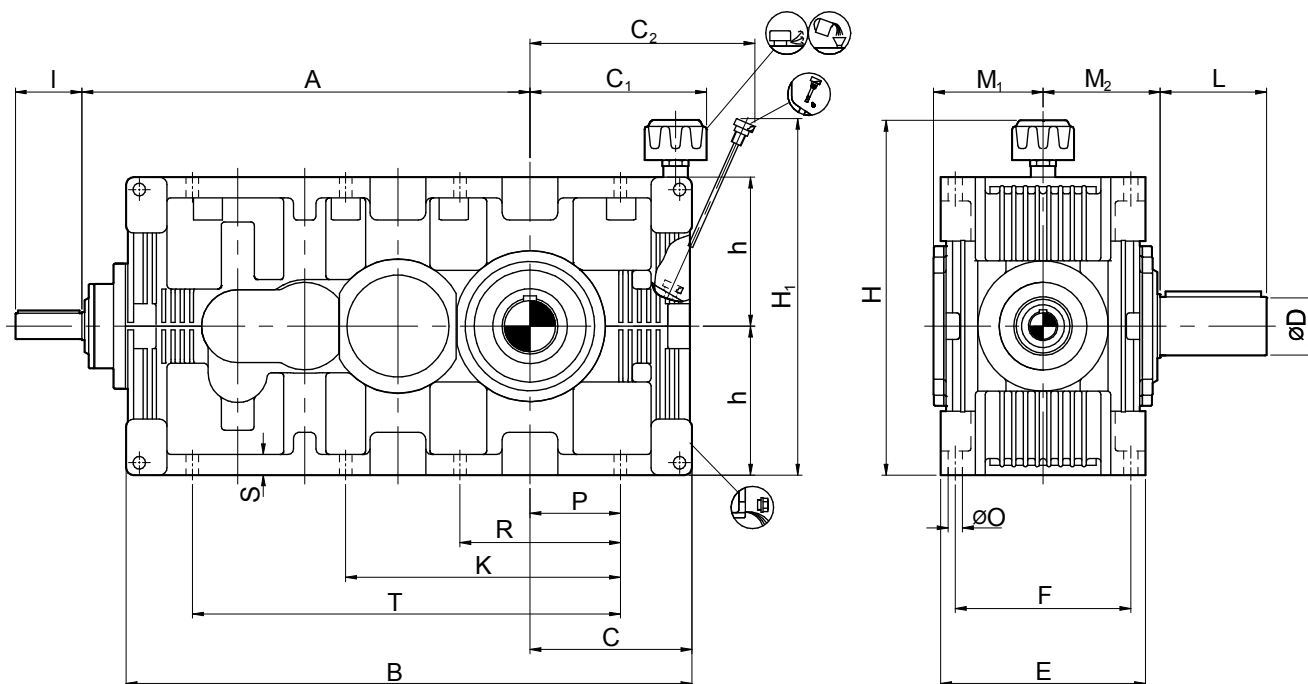
Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50m6.

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

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

## HORIZONTAL MOUNTING - BEVEL HELICAL GEAR UNIT

## TYPE B4H QUADRUPLE STAGE - SIZE 17 TO 18



| Size   | Input Shaft |     |             |     | Output Shaft |     |                |                | Back Stop      |                              |                 |  |  |
|--------|-------------|-----|-------------|-----|--------------|-----|----------------|----------------|----------------|------------------------------|-----------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|        | i = 80-225  |     | i = 250-400 |     |              |     |                |                |                |                              |                 |                                                                                     |                                                                                     |
|        | i = 112-400 |     | i = 450-560 |     |              |     |                |                |                |                              |                 |                                                                                     |                                                                                     |
|        | 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> |                                                                                     |                                                                                     |
| B4..17 | 19          | 90  | 19          | 90  | 70           | 135 | 141            | 150            | 350            | 85                           | 210             | 265                                                                                 | 9                                                                                   |
| B4..18 | 24          | 100 | 24          | 100 | 80           | 160 | 158            | 170            | 395            | 95                           | 255             | 355                                                                                 | 13                                                                                  |

| Size   | Foundation |     |     |                              |                              |     |     |     |                              |                              |   |    |     |     |    |     |
|--------|------------|-----|-----|------------------------------|------------------------------|-----|-----|-----|------------------------------|------------------------------|---|----|-----|-----|----|-----|
|        | A          | B   | C   | C <sub>1</sub> <sup>2)</sup> | 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 | O  | P   | R   | S  | T   |
| B4..17 | 545        | 696 | 210 | 238                          | 257                          | 250 | 210 | 180 | 378                          | 440                          | — | 18 | 115 | 210 | 32 | 495 |
| B4..18 | 600        | 787 | 236 | 263                          | 281                          | 284 | 230 | 200 | 404                          | 480                          | — | 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)

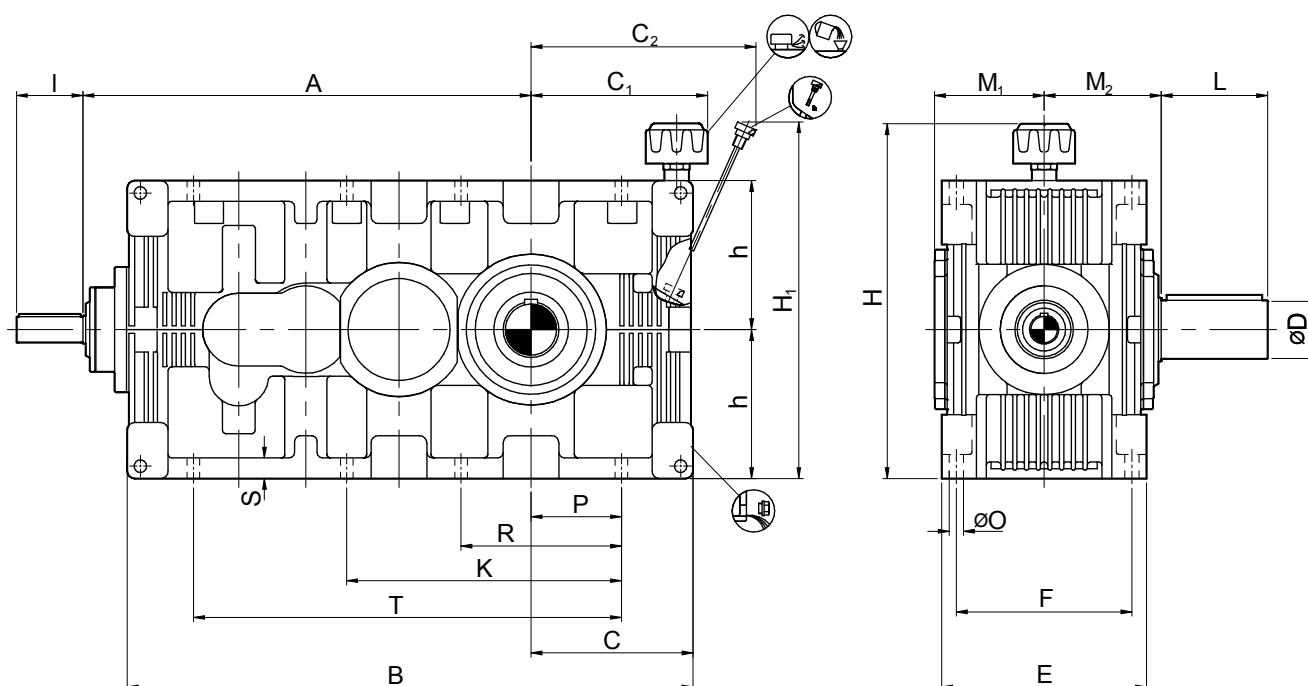
Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50m6.

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

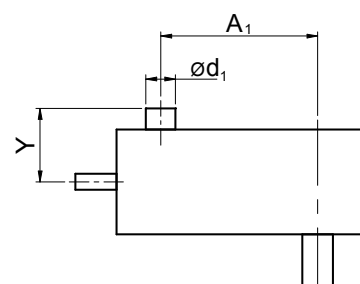
2) Approximate values; exact values acc. to order related documents

## HORIZONTAL MOUNTING - BEVEL HELICAL GEAR UNIT

## TYPE B4H QUADRUPLE STAGE - SIZE 19 TO 26



| Size   | Input Shaft |     |             |     | Output Shaft |     |                |                | Back Stop      |                              |                 |  |  |
|--------|-------------|-----|-------------|-----|--------------|-----|----------------|----------------|----------------|------------------------------|-----------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|        | i = 80-225  |     | i = 250-400 |     |              |     |                |                |                |                              |                 |                                                                                     |                                                                                      |
|        | i = 100-315 |     | i = 355-560 |     |              |     |                |                |                |                              |                 |                                                                                     |                                                                                      |
|        | i = 112-400 |     | i = 450-560 |     |              |     |                |                |                |                              |                 |                                                                                     |                                                                                      |
|        | 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> |                                                                                     |                                                                                      |
| B4..19 | 24          | 100 | 24          | 100 | 90           | 165 | 171            | 180            | 440            | 95                           | 255             | 480                                                                                 | 18                                                                                   |
|        |             |     |             |     |              |     |                |                |                |                              |                 |                                                                                     |                                                                                      |
| B4..21 | 32          | 110 | 28          | 100 | 110          | 200 | 210            | 220            | 555            | 135                          | 310             | 870                                                                                 | 33                                                                                   |
| B4..22 | 38          | 110 | 32          | 110 | 120          | 210 | 220            | 230            | 620            | 135                          | 310             | 1170                                                                                | 46                                                                                   |
| B4..23 | 42          | 130 | 38          | 110 | 140          | 250 | 234            | 260            | 700            | 140                          | 310             | 1590                                                                                | 65                                                                                   |
| B4..24 | 48          | 130 | 42          | 130 | 160          | 290 | 283            | 295            | 785            | 175                          | 415             | 2145                                                                                | 90                                                                                   |
| B4..25 | 52          | 130 | 48          | 130 | 170          | 300 | 293            | 305            | 880            | 175                          | 415             | 2895                                                                                | 125                                                                                  |
| B4..26 | 58          | 135 | 52          | 130 | 190          | 350 | 306            | 345            | 990            | 190                          | 415             | 3885                                                                                | 180                                                                                  |



| Size   | Foundation |      |     |                              |                              |     |     |     |                              |                              |     |    |     |     |    |      |
|--------|------------|------|-----|------------------------------|------------------------------|-----|-----|-----|------------------------------|------------------------------|-----|----|-----|-----|----|------|
|        | A          | B    | C   | C <sub>1</sub> <sup>2)</sup> | 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   | O  | P   | R   | S  | T    |
| B4..19 | 680        | 885  | 265 | 283                          | 315                          | 303 | 250 | 225 | 455                          | 530                          | —   | 23 | 145 | 255 | 36 | 615  |
| B4..20 | 755        | 987  | 288 | 304                          | 345                          | 314 | 270 | 250 | 496                          | 580                          | —   | 23 | 165 | 290 | 36 | 705  |
| B4..21 | 845        | 1098 | 320 | 359                          | 394                          | 385 | 310 | 280 | 572                          | 650                          | —   | 27 | 180 | 315 | 45 | 780  |
| B4..22 | 940        | 1220 | 355 | 390                          | 429                          | 400 | 340 | 315 | 635                          | 720                          | —   | 27 | 200 | 355 | 45 | 880  |
| B4..23 | 1060       | 1377 | 405 | 422                          | 481                          | 450 | 380 | 355 | 705                          | 800                          | 655 | 33 | 220 | 405 | 55 | 985  |
| B4..24 | 1190       | 1520 | 435 | 452                          | 541                          | 515 | 410 | 400 | 795                          | 890                          | 740 | 33 | 245 | 450 | 55 | 1110 |
| B4..25 | 1320       | 1690 | 475 | 493                          | 591                          | 535 | 460 | 450 | 865                          | 990                          | 840 | 33 | 280 | 510 | 55 | 1245 |
| B4..26 | 1485       | 1920 | 540 | 553                          | 659                          | 600 | 510 | 500 | 954                          | 1090                         | 940 | 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)

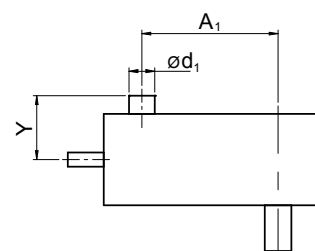
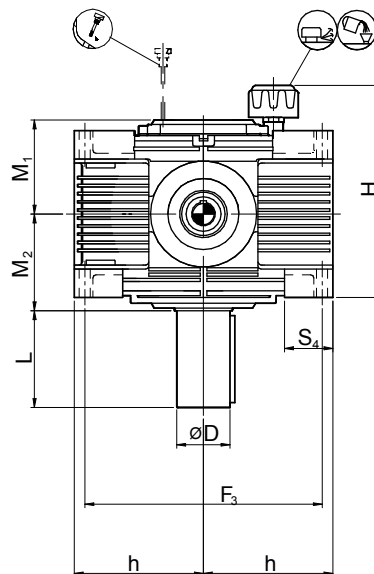
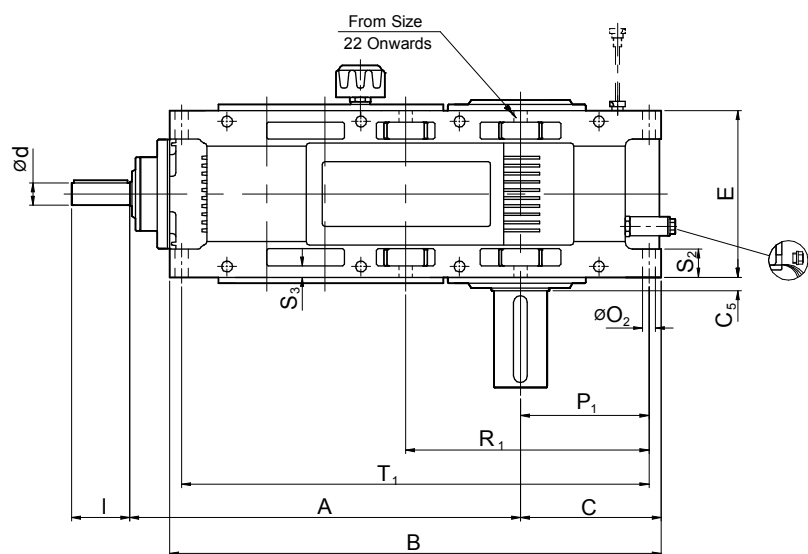
Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50m6.

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

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

## VERTICAL MOUNTING - BEVEL HELICAL GEAR UNIT

## TYPE B4V QUADRUPLE STAGE - SIZE 17 TO 18



| Size   | Input Shaft |     |             |     | Output Shaft |     |                |                | Back Stop      |                              |                 |  |
|--------|-------------|-----|-------------|-----|--------------|-----|----------------|----------------|----------------|------------------------------|-----------------|-------------------------------------------------------------------------------------|
|        | i = 80-225  |     | i = 250-400 |     |              |     |                |                |                |                              |                 |                                                                                     |
|        | i = 112-400 |     | i = 450-560 |     |              |     |                |                |                |                              |                 |                                                                                     |
|        | 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> |                                                                                     |
| B4..17 | 19          | 90  | 19          | 90  | 70           | 135 | 141            | 150            | 350            | 85                           | 210             | 265                                                                                 |
| B4..18 | 24          | 100 | 24          | 100 | 80           | 160 | 158            | 170            | 395            | 95                           | 255             | 355                                                                                 |

| Size   | Foundation |     |     |                |     |                |     |                 |                |                |                |                |                |                |     |
|--------|------------|-----|-----|----------------|-----|----------------|-----|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----|
|        | A          | B   | C   | C <sub>5</sub> | E   | F <sub>3</sub> | h   | H <sup>2)</sup> | O <sub>2</sub> | P <sub>1</sub> | R <sub>1</sub> | S <sub>2</sub> | S <sub>3</sub> | S <sub>4</sub> | T   |
| B4..17 | 545        | 696 | 210 | 25             | 250 | 310            | 180 | 330             | 18             | 190            | 350            | 40             | 20             | 90             | 655 |
| B4..18 | 600        | 787 | 236 | 28             | 284 | 350            | 200 | 364             | 18             | 215            | 395            | 45             | 20             | 90             | 744 |

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)

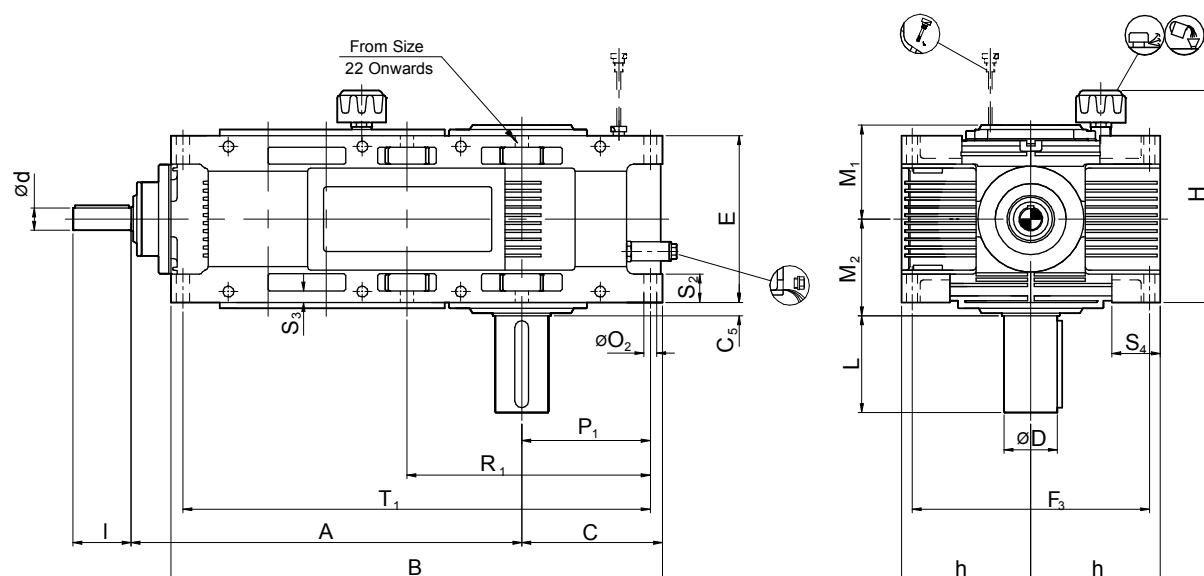
Tolerance field for shaft ends ISO fit, up to  $\varnothing 50$  k6; over  $\varnothing 50$  m6.

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

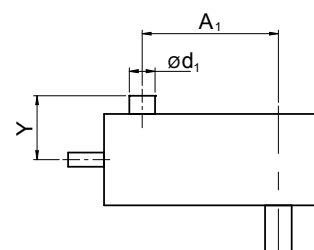
2) Approximate values; exact values acc. to order related documents

## VERTICAL MOUNTING - BEVEL HELICAL GEAR UNIT

## TYPE B4V QUADRUPLE STAGE - SIZE 19 TO 26



| Size   | Input Shaft |     |             |     | Output Shaft |     |                |                | Back Stop      |                              |                 |  |
|--------|-------------|-----|-------------|-----|--------------|-----|----------------|----------------|----------------|------------------------------|-----------------|-------------------------------------------------------------------------------------|
|        | i = 80-225  |     | i = 250-400 |     |              |     |                |                |                |                              |                 |                                                                                     |
|        | i = 100-315 |     | i = 355-560 |     |              |     |                |                |                |                              |                 |                                                                                     |
|        | i = 112-400 |     | i = 450-560 |     |              |     |                |                |                |                              |                 |                                                                                     |
|        | 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> |                                                                                     |
| B4..19 | 24          | 100 | 24          | 100 | 90           | 165 | 171            | 180            | 440            | 95                           | 255             | 480                                                                                 |
|        |             |     |             |     |              |     |                |                |                |                              |                 |                                                                                     |
| B4..21 | 32          | 110 | 28          | 100 | 110          | 200 | 210            | 220            | 555            | 135                          | 310             | 870                                                                                 |
| B4..22 | 38          | 110 | 32          | 110 | 120          | 210 | 220            | 230            | 620            | 135                          | 310             | 1170                                                                                |
| B4..23 | 42          | 130 | 38          | 110 | 140          | 250 | 234            | 260            | 700            | 140                          | 310             | 1590                                                                                |
| B4..24 | 48          | 130 | 42          | 130 | 160          | 290 | 283            | 295            | 785            | 175                          | 415             | 2145                                                                                |
| B4..25 | 52          | 130 | 48          | 130 | 170          | 300 | 293            | 305            | 880            | 175                          | 415             | 2895                                                                                |
| B4..26 | 58          | 135 | 52          | 130 | 190          | 350 | 306            | 345            | 990            | 190                          | 415             | 3885                                                                                |



| Size   | Foundation |      |     |                |     |                |     |                 |                |                |                |                |                |                |                |
|--------|------------|------|-----|----------------|-----|----------------|-----|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|        | A          | B    | C   | C <sub>5</sub> | E   | F <sub>3</sub> | h   | H <sup>2)</sup> | O <sub>2</sub> | P <sub>1</sub> | R <sub>1</sub> | S <sub>2</sub> | S <sub>3</sub> | S <sub>4</sub> | T <sub>1</sub> |
| B4..19 | 680        | 885  | 265 | 28.50          | 303 | 400            | 225 | 383             | 23             | 240            | 440            | 48.5           | 22             | 105            | 836            |
| B4..20 | 755        | 987  | 288 | 43             | 314 | 440            | 250 | 394             | 23             | 262            | 487            | 45             | 24             | 105            | 935            |
| B4..21 | 845        | 1098 | 320 | 27.50          | 385 | 500            | 280 | 475             | 27             | 295            | 545            | 65             | 28             | 120            | 1045           |
| B4..22 | 940        | 1220 | 355 | 30             | 400 | 560            | 315 | 490             | 27             | 325            | 605            | 60             | 28             | 120            | 1160           |
| B4..23 | 1060       | 1377 | 405 | 35             | 450 | 630            | 355 | 540             | 33             | 370            | 685            | 70             | 35             | 150            | 1305           |
| B4..24 | 1190       | 1520 | 435 | 37.5           | 515 | 700            | 400 | 605             | 33             | 398            | 753            | 87.5           | 35             | 150            | 1443           |
| B4..25 | 1320       | 1690 | 475 | 37.5           | 535 | 800            | 450 | 625             | 33             | 436            | 836            | 80             | 35             | 150            | 1612           |
| B4..26 | 1485       | 1920 | 540 | 45             | 600 | 890            | 500 | 700             | 39             | 495            | 945            | 100            | 45             | 175            | 1830           |

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 Ø50m6.

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

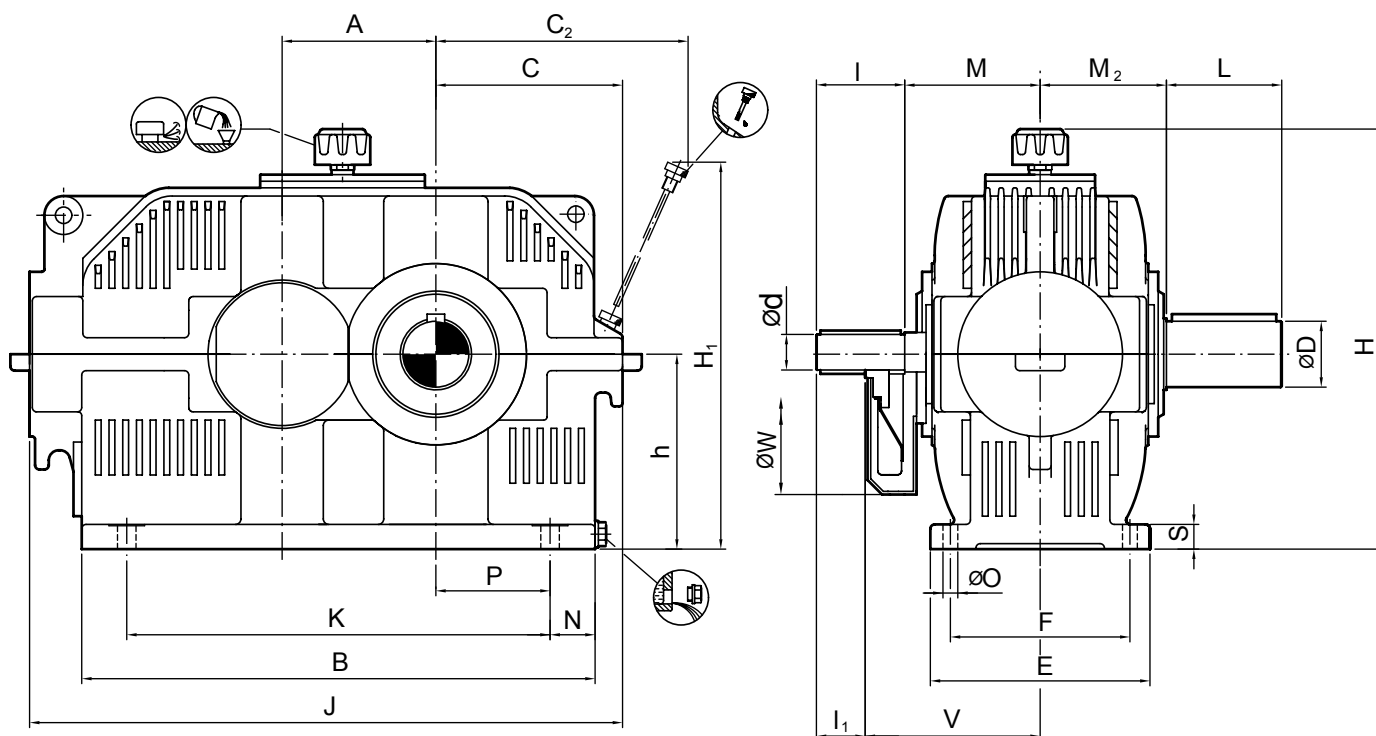
2) Approximate values; exact values acc. to order related documents

# SERIES E

## TYPE S1HN

### HORIZONTAL MOUNTING - HELICAL GEAR UNIT

### SINGLE STAGE - SIZE 11 TO 18



| Size   | Input Shaft     |     |                |           |     |                |     |     |     | Output Shaft |     |                |  |  |
|--------|-----------------|-----|----------------|-----------|-----|----------------|-----|-----|-----|--------------|-----|----------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|        | i = 1.25 - 3.55 |     |                | i = 4 - 5 |     |                |     |     |     |              |     |                |                                                                                     |                                                                                     |
|        | d               | l   | l <sub>1</sub> | d         | l   | l <sub>1</sub> | M   | V   | W   | D            | L   | M <sub>2</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   | 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 Ø50m6.

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

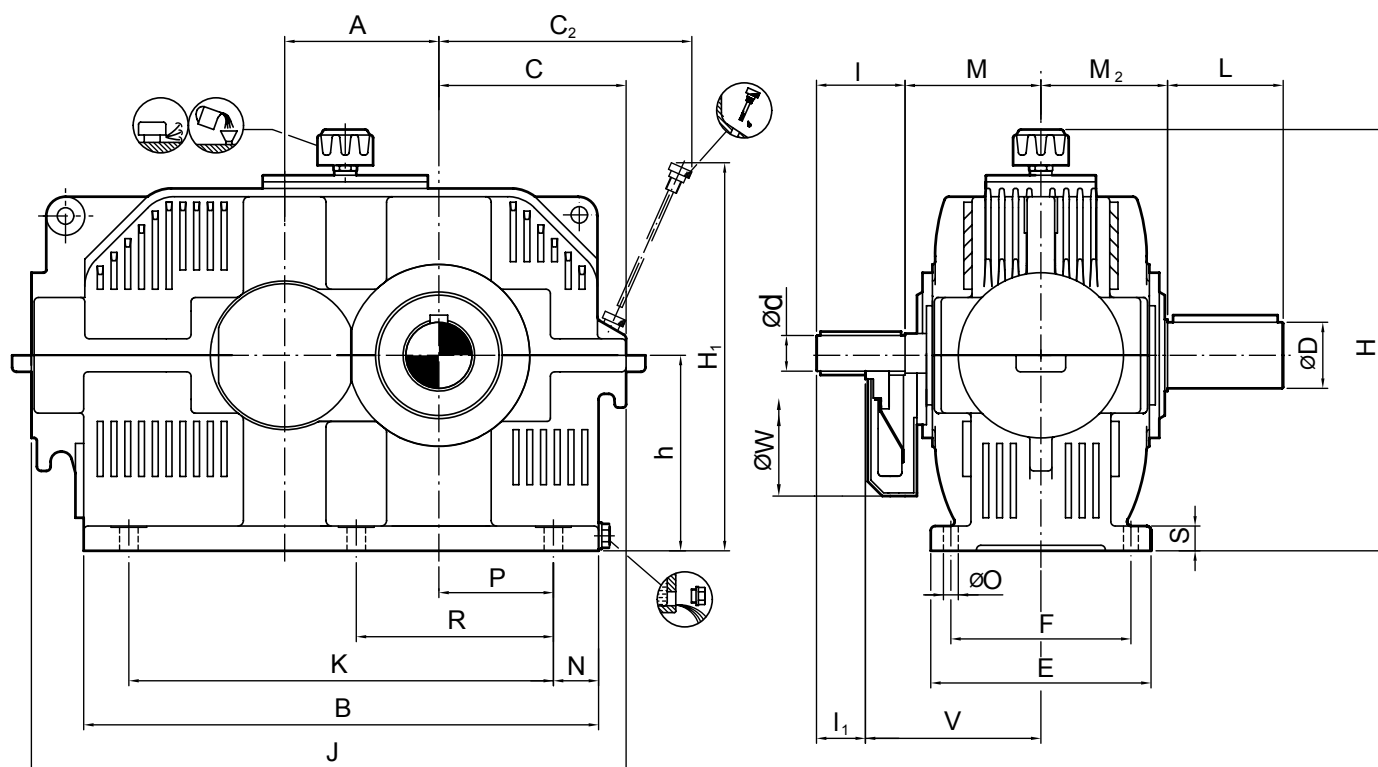
2) Approximate values; exact values acc. to order related documents

# SERIES E

## TYPE S1HN

### HORIZONTAL MOUNTING - HELICAL GEAR UNIT

### SINGLE STAGE - SIZE 20 TO 26



| Size   | Input Shaft     |     |                |           |     |                |     |     |     | Output Shaft |     |                |  |  |
|--------|-----------------|-----|----------------|-----------|-----|----------------|-----|-----|-----|--------------|-----|----------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|        | i = 1.25 - 3.55 |     |                | i = 4 - 5 |     |                |     |     |     |              |     |                |                                                                                     |                                                                                      |
|        | d               | l   | l <sub>1</sub> | d         | l   | l <sub>1</sub> | M   | V   | W   | D            | L   | M <sub>2</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   | 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.

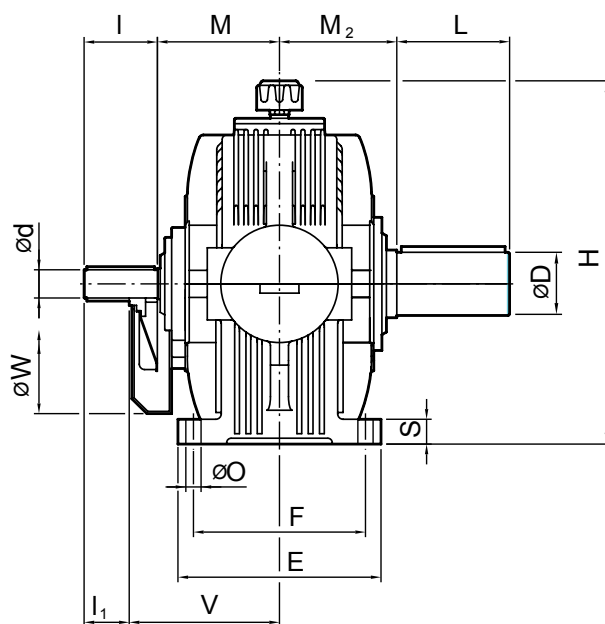
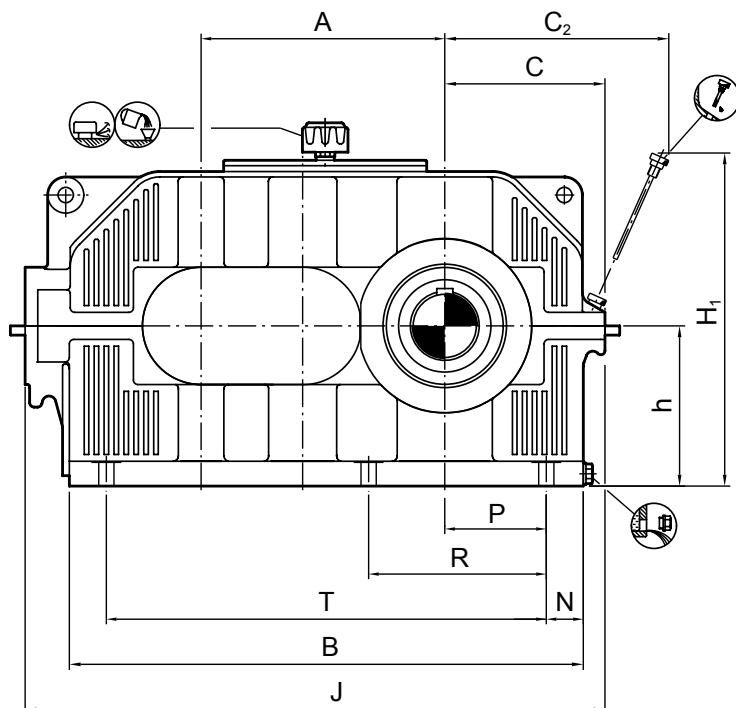
Shaft ends with keys according to DIN 6885, part 1, Shape A.

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

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50m6.

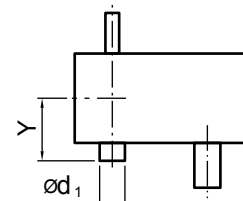
1) Max. dimensions; details acc. to order related documents

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



| Size   | Input Shaft    |     |                |             |     |                |          |     |                |     |     |     | Output Shaft |     |                | Backstop                     |                 |  |  |
|--------|----------------|-----|----------------|-------------|-----|----------------|----------|-----|----------------|-----|-----|-----|--------------|-----|----------------|------------------------------|-----------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|        | i = 5.6 - 12.5 |     |                | i = 14 - 18 |     |                | i = 22.4 |     |                |     |     |     |              |     |                |                              |                 |                                                                                       |                                                                                       |
|        | i = 5.6 - 12.5 |     |                | i = 14 - 18 |     |                |          |     |                |     |     |     |              |     |                |                              |                 |                                                                                       |                                                                                       |
|        | d              | l   | l <sub>1</sub> | d           | l   | l <sub>1</sub> | d        | l   | l <sub>1</sub> | M   | V   | W   | D            | L   | M <sub>2</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                                                                                       |                                                                                       |
| 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 | 230 | 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   | A   | B   | C   | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <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 Ø50m6.

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

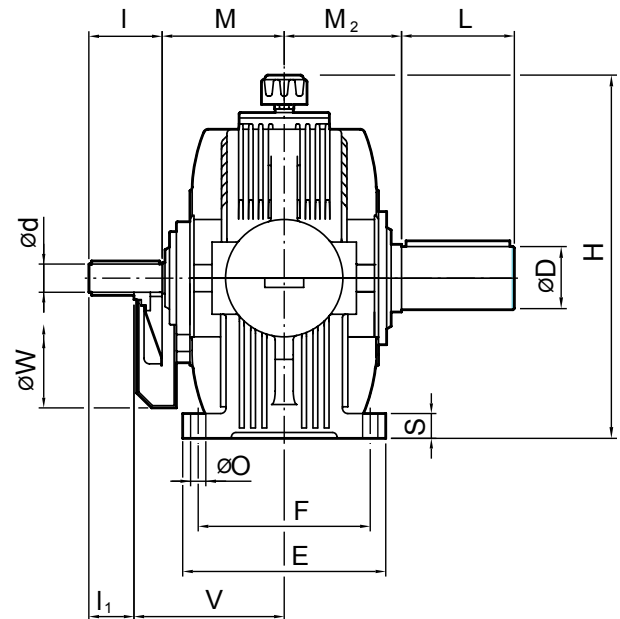
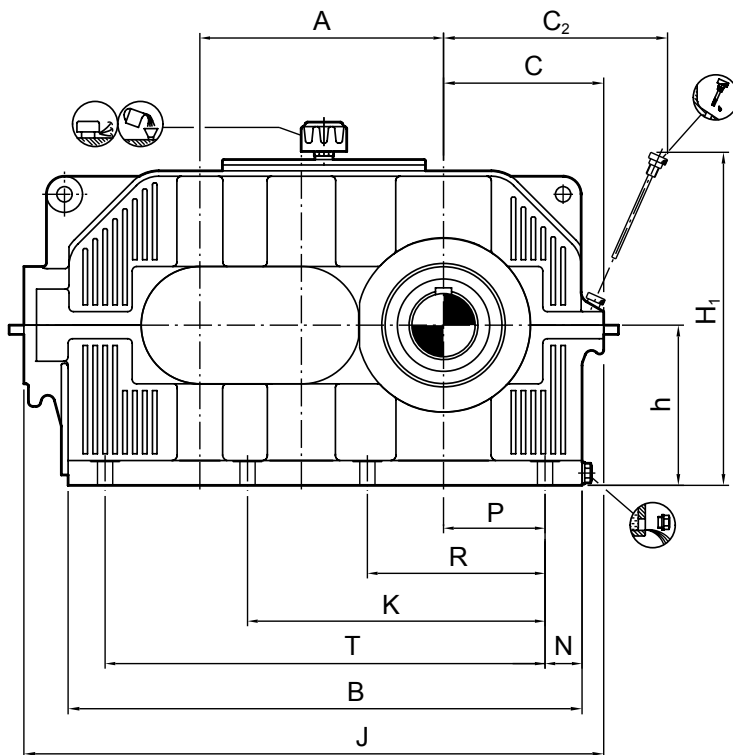
2) Approximate values; exact values acc. to order related documents

# SERIES E

## TYPE S2H

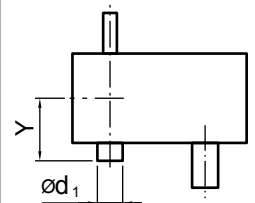
### HORIZONTAL MOUNTING - HELICAL GEAR UNIT

### SINGLE STAGE - SIZE 19 TO 26



| Size   | Input Shaft    |     |                |             |     |                |          |     |                |     |     |     | Output Shaft |     |                | Backstop                     |                 |  |  |
|--------|----------------|-----|----------------|-------------|-----|----------------|----------|-----|----------------|-----|-----|-----|--------------|-----|----------------|------------------------------|-----------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|        | i = 5.6 - 12.5 |     |                | i = 14 - 18 |     |                | i = 22.4 |     |                |     |     |     |              |     |                |                              |                 |                                                                                       |                                                                                       |
|        | i = 5.6 - 12.5 |     |                | i = 14 - 18 |     |                |          |     |                |     |     |     |              |     |                |                              |                 |                                                                                       |                                                                                       |
|        | d              | l   | l <sub>1</sub> | d           | l   | l <sub>1</sub> | d        | l   | l <sub>1</sub> | M   | V   | W   | D            | L   | M <sub>2</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |                                                                                       |                                                                                       |
| 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   | A   | B    | C   | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <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.

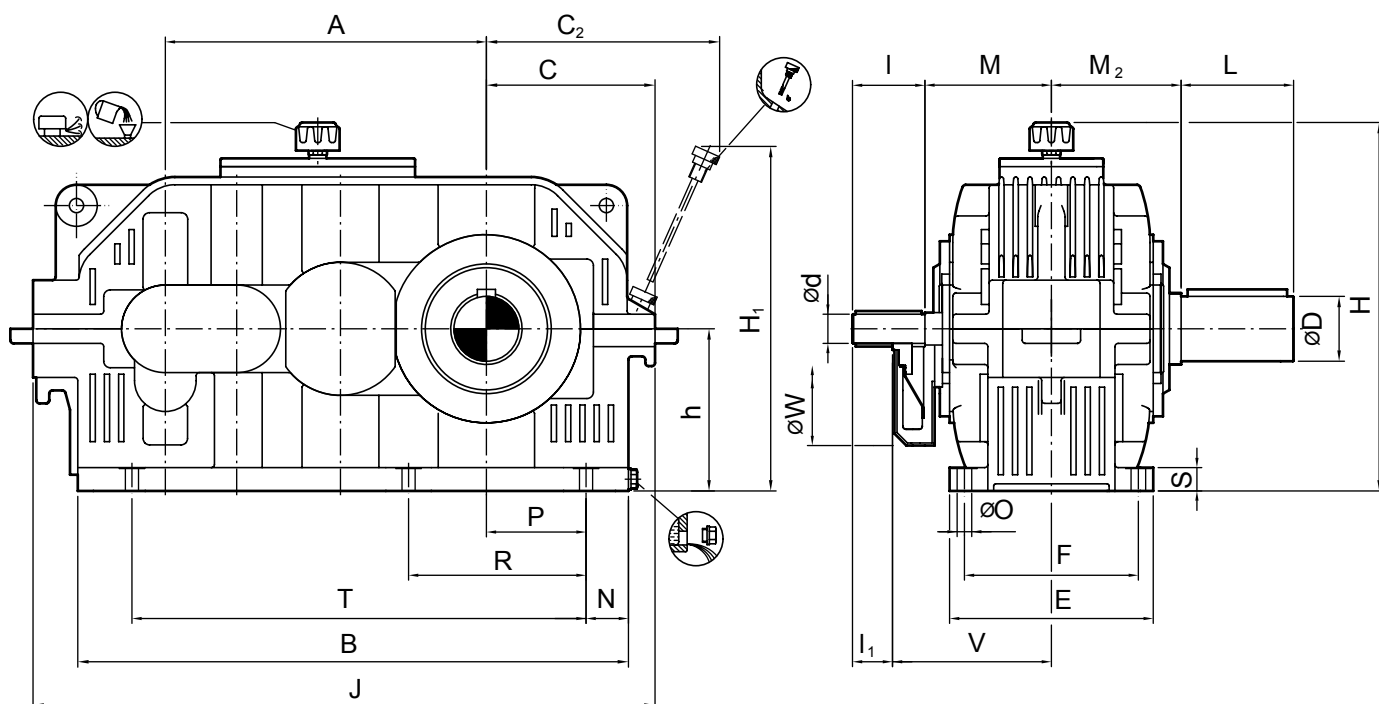
Shaft ends with keys according to DIN 6885, part 1, Shape A.

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

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50m6.

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

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



| Size   | Input Shaft |     |                |              |     |                |         |     |                |     |     |     | Output Shaft |     |                | Backstop       |                              |                 |  |  |
|--------|-------------|-----|----------------|--------------|-----|----------------|---------|-----|----------------|-----|-----|-----|--------------|-----|----------------|----------------|------------------------------|-----------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|        | i = 20 - 50 |     |                | i = 56 - 80  |     |                | i = 112 |     |                |     |     |     |              |     |                |                |                              |                 |                                                                                       |                                                                                       |
|        | i = 25 - 63 |     |                | i = 71 - 100 |     |                |         |     |                |     |     |     |              |     |                |                |                              |                 |                                                                                       |                                                                                       |
|        | i = 25 - 71 |     |                | i = 80 - 100 |     |                |         |     |                |     |     |     |              |     |                |                |                              |                 |                                                                                       |                                                                                       |
|        | d           | l   | l <sub>1</sub> | d            | l   | l <sub>1</sub> | d       | l   | l <sub>1</sub> | M   | V   | W   | D            | L   | M <sub>2</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 | 205 | 270 | 60           | 130 | 145            | 240            | 95                           | 215             | 120                                                                                   | 7                                                                                     |
| S3..17 | 28          | 100 | 50             | 24           | 100 | 50             | 19      | 100 | 50             | 160 | 210 | 270 | 70           | 135 | 150            | 270            | 95                           | 215             | 160                                                                                   | 8                                                                                     |
| S3..18 | 30          | 110 | 60             | 25           | 100 | 50             | —       | —   | —              | 180 | 230 | 300 | 80           | 160 | 170            | 305            | 140                          | 265             | 215                                                                                   | 10                                                                                    |

| Size   | A   | B   | C   | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <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 Ø50m6.

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

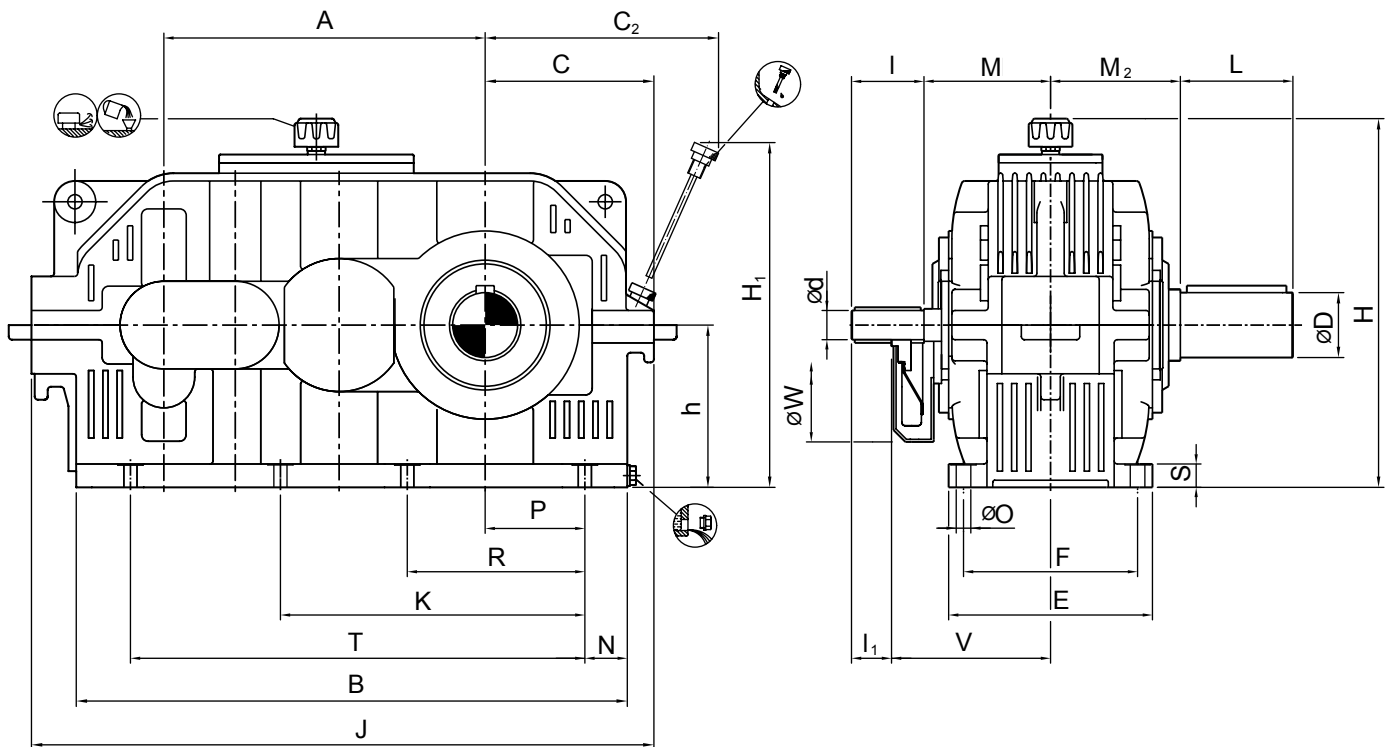
2) Approximate values; exact values acc. to order related documents

# SERIES E

## TYPE S3H

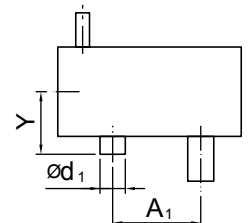
### HORIZONTAL MOUNTING - HELICAL GEAR UNIT

### TRIPLE STAGE - SIZE 19 TO 26



| Size   | Input Shaft |                |     |              |                |     |         |                |     |     |     |     | Output Shaft |                |                | Backstop                     |                 |     |  |  |
|--------|-------------|----------------|-----|--------------|----------------|-----|---------|----------------|-----|-----|-----|-----|--------------|----------------|----------------|------------------------------|-----------------|-----|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|        | i = 20 - 50 |                |     | i = 56 - 80  |                |     | i = 112 |                |     |     |     |     |              |                |                |                              |                 |     |                                                                                       |                                                                                       |
|        | i = 25 - 63 |                |     | i = 71 - 100 |                |     |         |                |     |     |     |     |              |                |                |                              |                 |     |                                                                                       |                                                                                       |
|        | i = 25 - 71 |                |     | i = 80 - 100 |                |     |         |                |     |     |     |     |              |                |                |                              |                 |     |                                                                                       |                                                                                       |
| d      | l           | l <sub>1</sub> | d   | l            | l <sub>1</sub> | d   | l       | l <sub>1</sub> | M   | V   | W   | D   | L            | M <sub>2</sub> | A <sub>1</sub> | d <sub>1</sub> <sup>1)</sup> | Y <sup>1)</sup> |     |                                                                                       |                                                                                       |
| 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   | 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    |
|--------|-----|------|-----|------------------------------|-----|-----|-----|------------------------------|------------------------------|------|-----|-----|----|-----|-----|----|------|
| 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 | 87  | 655 | 33 | 220 | 405 | 55 | 985  |
| S3..24 | 785 | 1324 | 390 | 541                          | 515 | 410 | 400 | 795                          | 890                          | 1475 | 92  | 740 | 33 | 245 | 450 | 55 | 1110 |
| S3..25 | 880 | 1496 | 440 | 591                          | 535 | 460 | 450 | 865                          | 990                          | 1655 | 98  | 840 | 33 | 280 | 510 | 55 | 1245 |
| S3..26 | 990 | 1686 | 490 | 659                          | 600 | 510 | 500 | 954                          | 1090                         | 1870 | 108 | 940 | 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)

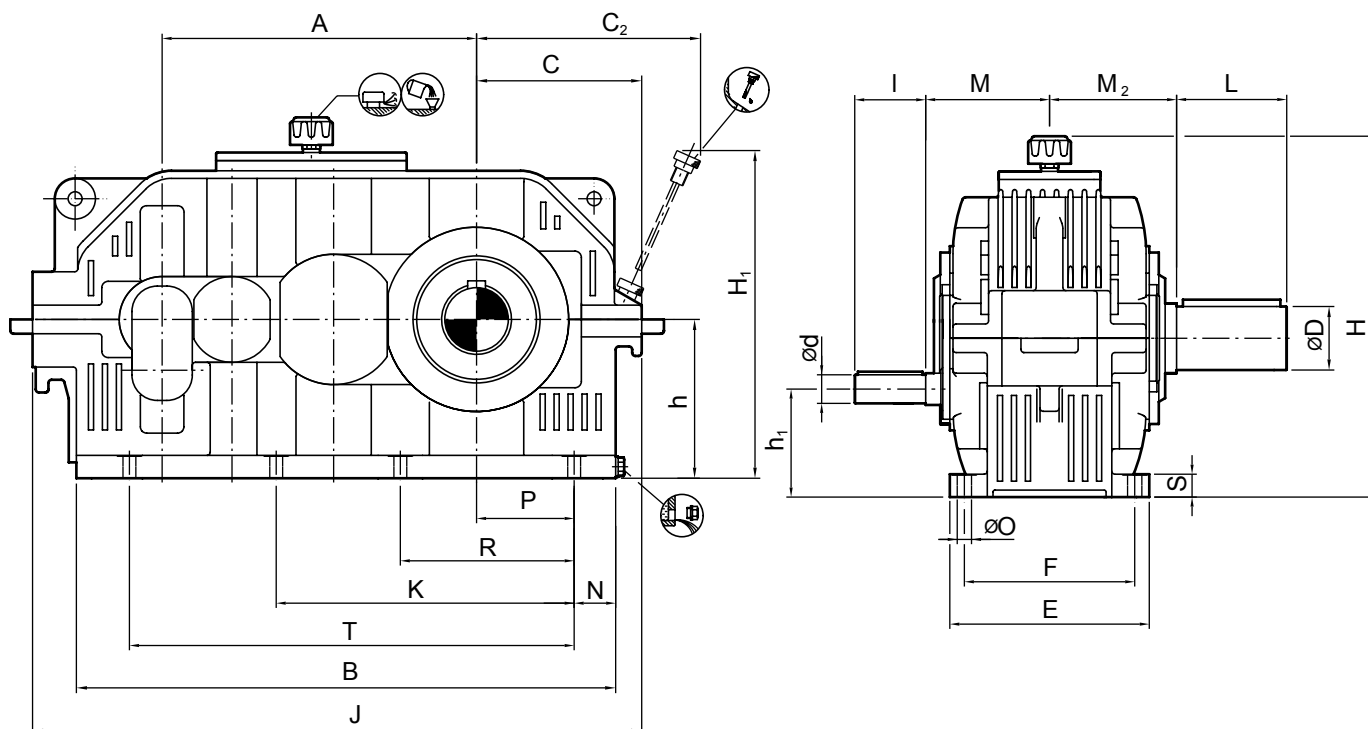
Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50m6.

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

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

### HORIZONTAL MOUNTING - HELICAL GEAR UNIT

### QUADRUPLE STAGE - SIZE 18 TO 26



| Size   | Input Shaft   |     |               |     |                |     | Output Shaft |                |                | Backstop                     |                 |     |  |  |
|--------|---------------|-----|---------------|-----|----------------|-----|--------------|----------------|----------------|------------------------------|-----------------|-----|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|        | i = 90 - 225  |     | i = 250 - 450 |     |                |     |              |                |                |                              |                 |     |                                                                                     |                                                                                       |
|        | i = 125 - 355 |     | i = 400 - 560 |     |                |     |              |                |                |                              |                 |     |                                                                                     |                                                                                       |
|        | i = 125 - 400 |     | i = 450 - 560 |     |                |     |              |                |                |                              |                 |     |                                                                                     |                                                                                       |
| 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   | A   | B   | C   | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <sup>2)</sup> | N  | O  | P   | R   | S  | T   |
|--------|-----|-----|-----|------------------------------|-----|-----|-----|------------------------------|-----------------|----|----|-----|-----|----|-----|
| S4..18 | 395 | 671 | 215 | 281                          | 284 | 230 | 200 | 404                          | 490             | 43 | 18 | 135 | 240 | 32 | 565 |

| Size   | A   | B    | C   | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <sup>2)</sup> | J    | K   | N   | O  | P   | R   | S  | T    |
|--------|-----|------|-----|------------------------------|-----|-----|-----|------------------------------|-----------------|------|-----|-----|----|-----|-----|----|------|
| 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)

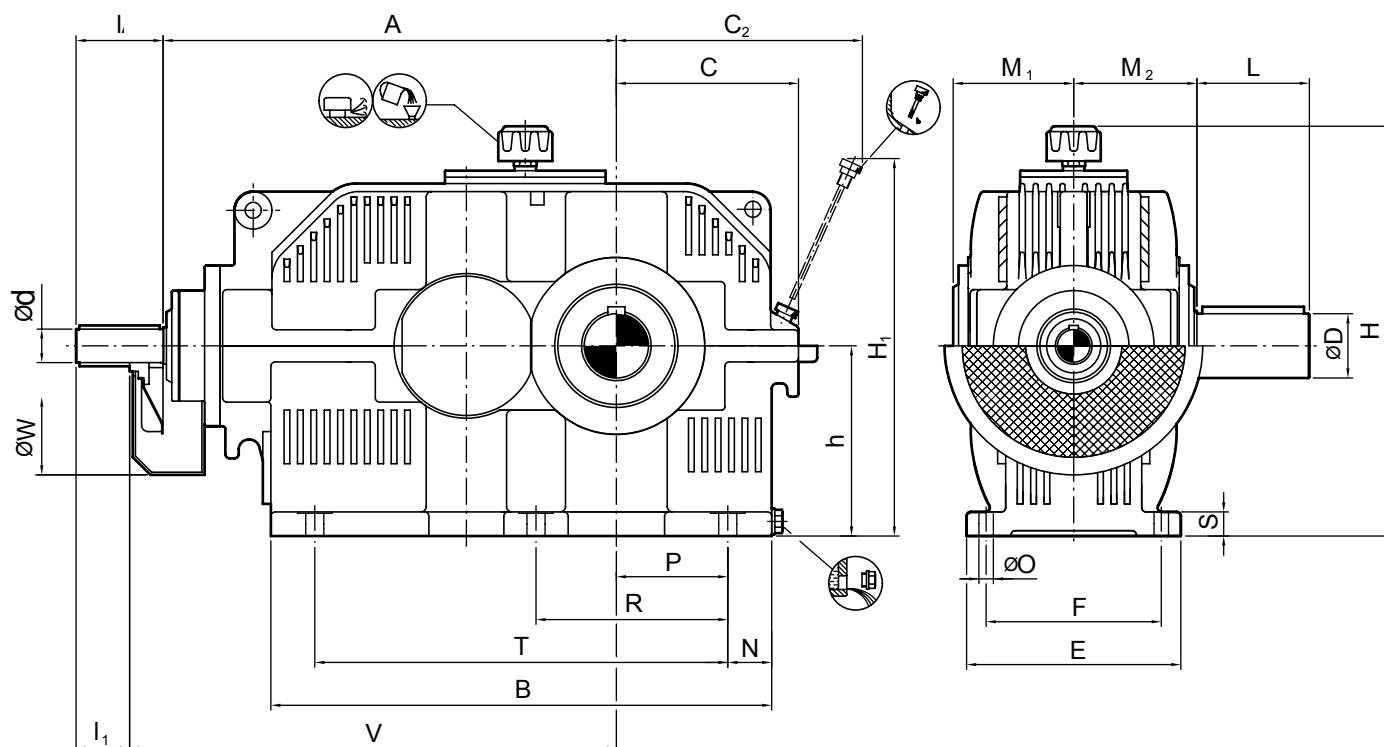
Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50m6.

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

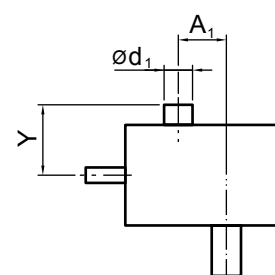
2) Approximate values; exact values acc. to order related documents

## HORIZONTAL MOUNTING - BEVEL HELICAL GEAR UNIT

## TYPE K2H DOUBLE STAGE - SIZE 11 TO 18



| Size   | Input Shaft  |                |    |               |                |    |     |     | Output Shaft |                |                |                | Backstop                     |                 |     |  KG |  ltr |
|--------|--------------|----------------|----|---------------|----------------|----|-----|-----|--------------|----------------|----------------|----------------|------------------------------|-----------------|-----|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
|        | i = 5 - 12.5 |                |    | i = 14 - 18   |                |    |     |     |              |                |                |                |                              |                 |     |                                                                                          |                                                                                           |
|        | i = 5.6 - 14 |                |    | i = 16 - 20   |                |    |     |     |              |                |                |                |                              |                 |     |                                                                                          |                                                                                           |
|        | i = 6.3 - 16 |                |    | i = 18 - 22.4 |                |    |     |     |              |                |                |                |                              |                 |     |                                                                                          |                                                                                           |
| 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> |     |                                                                                          |                                                                                           |
| K2..11 | 19           | 90             | 40 | 19            | 90             | 40 | 325 | 210 | 32           | 55             | 94             | 105            | 80                           | 95              | 180 | 29                                                                                       | 1.5                                                                                       |
| K2..13 | 24           | 100            | 50 | 24            | 100            | 50 | 390 | 270 | 45           | 95             | 106            | 115            | 100                          | 105             | 190 | 52.5                                                                                     | 2.5                                                                                       |
| K2..15 | 32           | 110            | 60 | 28            | 100            | 50 | 465 | 300 | 55           | 95             | 127            | 135            | 125                          | 140             | 255 | 95                                                                                       | 4                                                                                         |
| K2..17 | 42           | 130            | 80 | 38            | 110            | 60 | 570 | 360 | 70           | 135            | 141            | 150            | 160                          | 175             | 255 | 174                                                                                      | 7                                                                                         |
| K2..18 | 48           | 130            | 80 | 42            | 130            | 80 | 635 | 360 | 80           | 160            | 158            | 170            | 180                          | 190             | 305 | 230                                                                                      | 9                                                                                         |



| Size   | 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   |
|--------|-----|-----|-----|------------------------------|-----|-----|-----|------------------------------|------------------------------|----|----|-----|-----|----|-----|
| K2..11 | 275 | 268 | 115 | 171                          | 180 | 150 | 100 | 248                          | 290                          | 46 | 14 | 50  | 95  | 24 | 215 |
| K2..13 | 340 | 349 | 135 | 195                          | 190 | 150 | 125 | 295                          | 340                          | 47 | 14 | 65  | 120 | 24 | 270 |
| K2..15 | 415 | 432 | 165 | 231                          | 228 | 170 | 160 | 352                          | 410                          | 43 | 14 | 95  | 170 | 24 | 355 |
| K2..17 | 520 | 536 | 205 | 282                          | 250 | 210 | 200 | 432                          | 480                          | 53 | 18 | 115 | 210 | 32 | 440 |
| K2..18 | 585 | 600 | 220 | 311                          | 284 | 230 | 225 | 475                          | 525                          | 53 | 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)

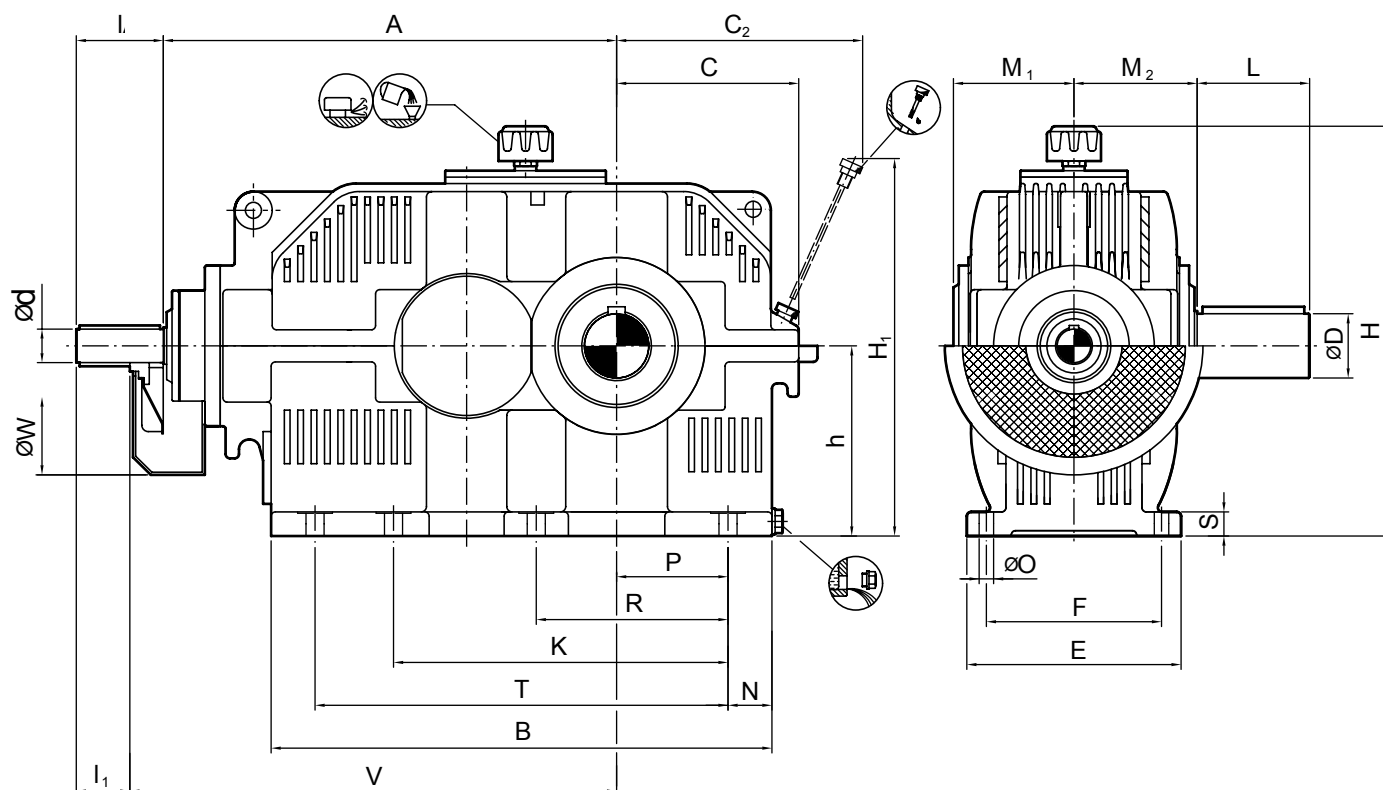
Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50m6.

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

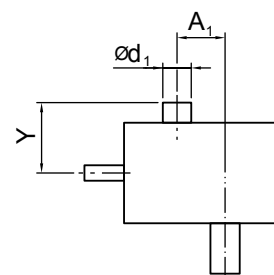
2) Approximate values; exact values acc. to order related documents

## HORIZONTAL MOUNTING - BEVEL HELICAL GEAR UNIT

## TYPE K2H DOUBLE STAGE - SIZE 20 TO 26



| Size   | Input Shaft  |                |     |               |                |     |      |     | Output Shaft |                |                |                | Backstop                     |                 |     |  |  |
|--------|--------------|----------------|-----|---------------|----------------|-----|------|-----|--------------|----------------|----------------|----------------|------------------------------|-----------------|-----|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|        | i = 5 - 12.5 |                |     | i = 14 - 18   |                |     |      |     |              |                |                |                |                              |                 |     |                                                                                       |                                                                                       |
|        | i = 5.6 - 14 |                |     | i = 16 - 20   |                |     |      |     |              |                |                |                |                              |                 |     |                                                                                       |                                                                                       |
|        | i = 6.3 - 16 |                |     | i = 18 - 22.4 |                |     |      |     |              |                |                |                |                              |                 |     |                                                                                       |                                                                                       |
| 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> |     |                                                                                       |                                                                                       |
| K2..20 | 58           | 135            | 85  | 52            | 130            | 80  | 770  | 460 | 100          | 200            | 176            | 200            | 225                          | 210             | 305 | 415                                                                                   | 18                                                                                    |
| K2..21 | 65           | 155            | 105 | 65            | 155            | 105 | 840  | 530 | 110          | 200            | 210            | 220            | 250                          | 245             | 390 | 557                                                                                   | 25                                                                                    |
| K2..22 | 70           | 155            | 105 | 70            | 155            | 105 | 925  | 550 | 120          | 210            | 220            | 230            | 280                          | 290             | 390 | 756                                                                                   | 36                                                                                    |
| K2..23 | 85           | 180            | 130 | 80            | 180            | 130 | 1025 | 550 | 140          | 250            | 234            | 260            | 315                          | 290             | 390 | 1020                                                                                  | 51                                                                                    |
| K2..24 | 90           | 180            | 130 | 90            | 180            | 130 | 1135 | 650 | 160          | 290            | 283            | 295            | 355                          | 310             | 470 | 1370                                                                                  | 69                                                                                    |
| K2..25 | 100          | 220            | 170 | 100           | 220            | 170 | 1265 | 700 | 170          | 300            | 293            | 305            | 400                          | 310             | 470 | 1855                                                                                  | 95                                                                                    |
| K2..26 | 110          | 220            | 170 | 110           | 220            | 170 | 1415 | 700 | 190          | 350            | 306            | 345            | 450                          | 400             | 470 | 2500                                                                                  | 130                                                                                   |



| Size   | 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    |
|--------|------|------|-----|------------------------------|-----|-----|-----|------------------------------|------------------------------|-----|-----|----|-----|-----|----|------|
| K2..20 | 720  | 755  | 275 | 387                          | 314 | 270 | 280 | 588                          | 620                          | —   | 69  | 23 | 165 | 290 | 36 | 635  |
| K2..21 | 790  | 843  | 305 | 435                          | 385 | 310 | 315 | 664                          | 685                          | —   | 79  | 27 | 180 | 315 | 45 | 705  |
| K2..22 | 875  | 935  | 340 | 474                          | 400 | 340 | 355 | 741                          | 760                          | —   | 90  | 27 | 200 | 355 | 45 | 785  |
| K2..23 | 975  | 1054 | 375 | 537                          | 450 | 380 | 400 | 831                          | 845                          | —   | 107 | 33 | 220 | 405 | 55 | 875  |
| K2..24 | 1085 | 1169 | 425 | 598                          | 515 | 410 | 450 | 908                          | 940                          | —   | 122 | 33 | 245 | 450 | 55 | 975  |
| K2..25 | 1215 | 1311 | 475 | 670                          | 535 | 460 | 500 | 1013                         | 1040                         | —   | 133 | 33 | 280 | 510 | 55 | 1105 |
| K2..26 | 1365 | 1476 | 535 | 753                          | 600 | 510 | 560 | 1137                         | 1150                         | 940 | 148 | 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 Ø50m6.

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

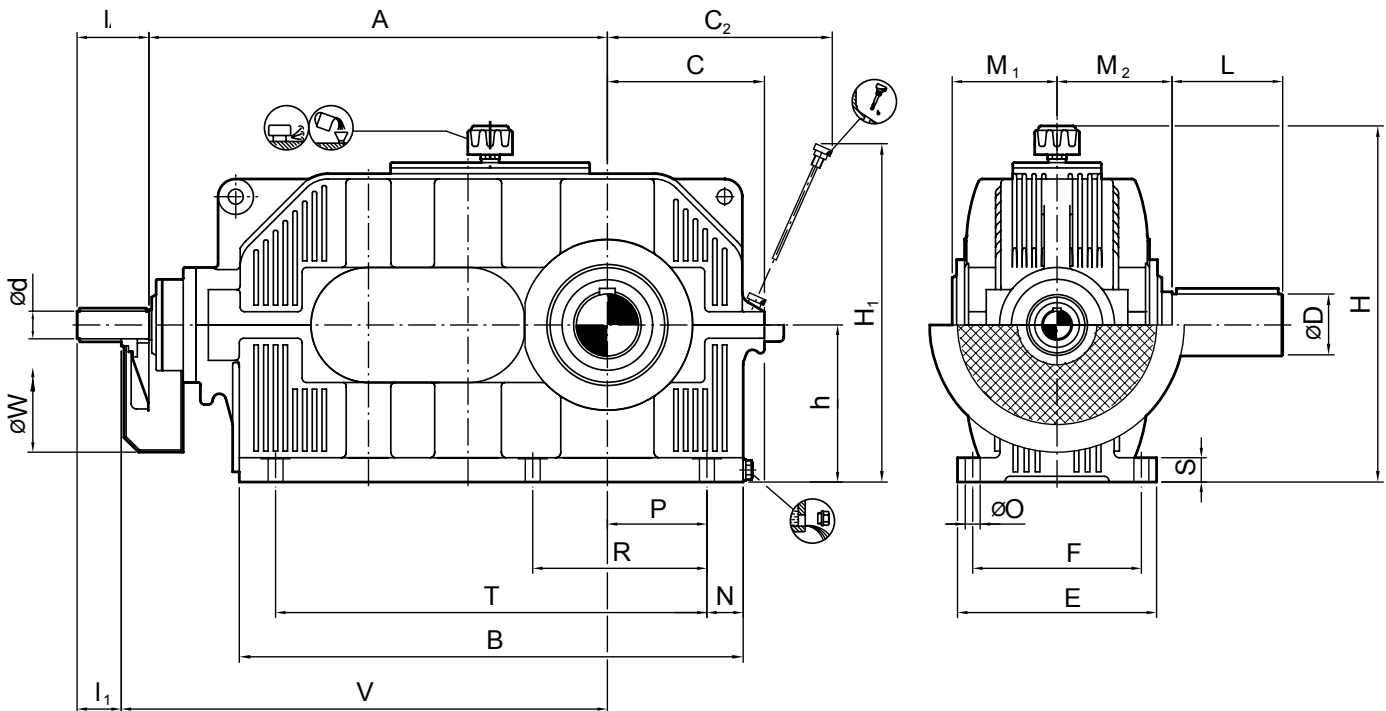
2) Approximate values; exact values acc. to order related documents

# SERIES E

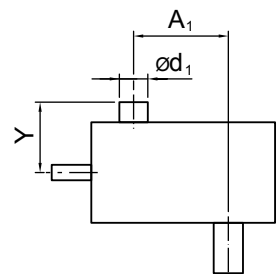
## TYPE K3H

### HORIZONTAL MOUNTING - BEVEL HELICAL GEAR UNIT

### TRIPLE STAGE - SIZE 14 - 18



| Size   | Input Shaft   |                |    |              |                |    |     |     | Output Shaft |                |                |                | Backstop                     |                 |     |  |  |
|--------|---------------|----------------|----|--------------|----------------|----|-----|-----|--------------|----------------|----------------|----------------|------------------------------|-----------------|-----|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|        | i = 20 - 50   |                |    | i = 56 - 71  |                |    |     |     |              |                |                |                |                              |                 |     |                                                                                       |                                                                                       |
|        | i = 22.4 - 63 |                |    | i = 71 - 90  |                |    |     |     |              |                |                |                |                              |                 |     |                                                                                       |                                                                                       |
|        | i = 25 - 71   |                |    | i = 80 - 100 |                |    |     |     |              |                |                |                |                              |                 |     |                                                                                       |                                                                                       |
| 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..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 | 470 | 270 | 55           | 95             | 127            | 135            | 215                          | 95              | 215 | 95                                                                                    | 4.5                                                                                   |
| K3..16 | 24            | 100            | 50 | 24           | 100            | 50 | 530 | 300 | 60           | 130            | 133            | 145            | 240                          | 95              | 215 | 130                                                                                   | 6.5                                                                                   |
| K3..17 | 28            | 100            | 50 | 24           | 100            | 50 | 580 | 340 | 70           | 135            | 141            | 150            | 270                          | 95              | 215 | 175                                                                                   | 9                                                                                     |
| K3..18 | 32            | 110            | 60 | 28           | 100            | 50 | 645 | 360 | 80           | 160            | 158            | 170            | 305                          | 140             | 265 | 235                                                                                   | 13                                                                                    |



| Size   | 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.

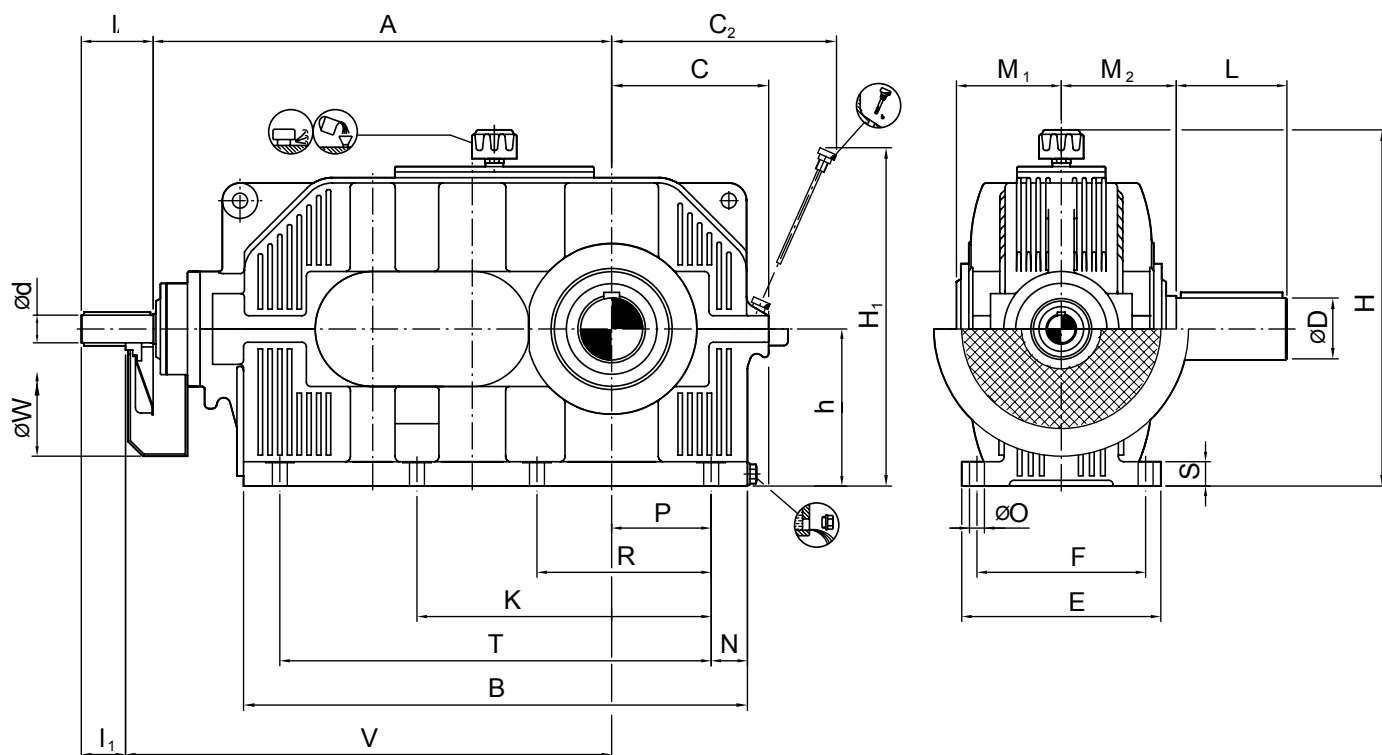
Shaft ends with keys according to DIN 6885, part 1, Shape A.

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

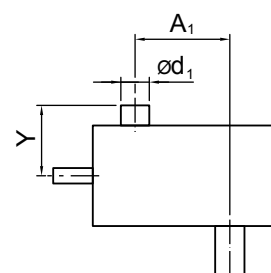
Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50m6.

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

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



| Size   | Input Shaft   |                |     |              |                |     |      |     | Output Shaft |                |                |                | Backstop                     |                 |     |  |  |
|--------|---------------|----------------|-----|--------------|----------------|-----|------|-----|--------------|----------------|----------------|----------------|------------------------------|-----------------|-----|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|        | i = 20 - 50   |                |     | i = 56 - 71  |                |     |      |     |              |                |                |                |                              |                 |     |                                                                                       |                                                                                       |
|        | i = 22.4 - 63 |                |     | i = 71 - 90  |                |     |      |     |              |                |                |                |                              |                 |     |                                                                                       |                                                                                       |
|        | i = 25 - 71   |                |     | i = 80 - 100 |                |     |      |     |              |                |                |                |                              |                 |     |                                                                                       |                                                                                       |
| 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  | 710  | 360 | 90           | 165            | 171            | 180            | 340                          | 150             | 265 | 320                                                                                   | 18                                                                                    |
| K3..20 | 42            | 130            | 80  | 38           | 110            | 60  | 795  | 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  | 1085 | 550 | 140          | 250            | 234            | 260            | 540                          | 190             | 340 | 1060                                                                                  | 65                                                                                    |
| K3..24 | 65            | 155            | 105 | 65           | 155            | 105 | 1195 | 600 | 160          | 290            | 283            | 295            | 605                          | 245             | 440 | 1430                                                                                  | 90                                                                                    |
| K3..25 | 70            | 155            | 105 | 70           | 155            | 105 | 1325 | 650 | 170          | 300            | 293            | 305            | 680                          | 245             | 440 | 1930                                                                                  | 125                                                                                   |
| K3..26 | 85            | 180            | 130 | 80           | 180            | 130 | 1475 | 700 | 190          | 350            | 306            | 345            | 765                          | 245             | 440 | 2590                                                                                  | 180                                                                                   |



| Size   | 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 Ø50 k6; over Ø50m6.

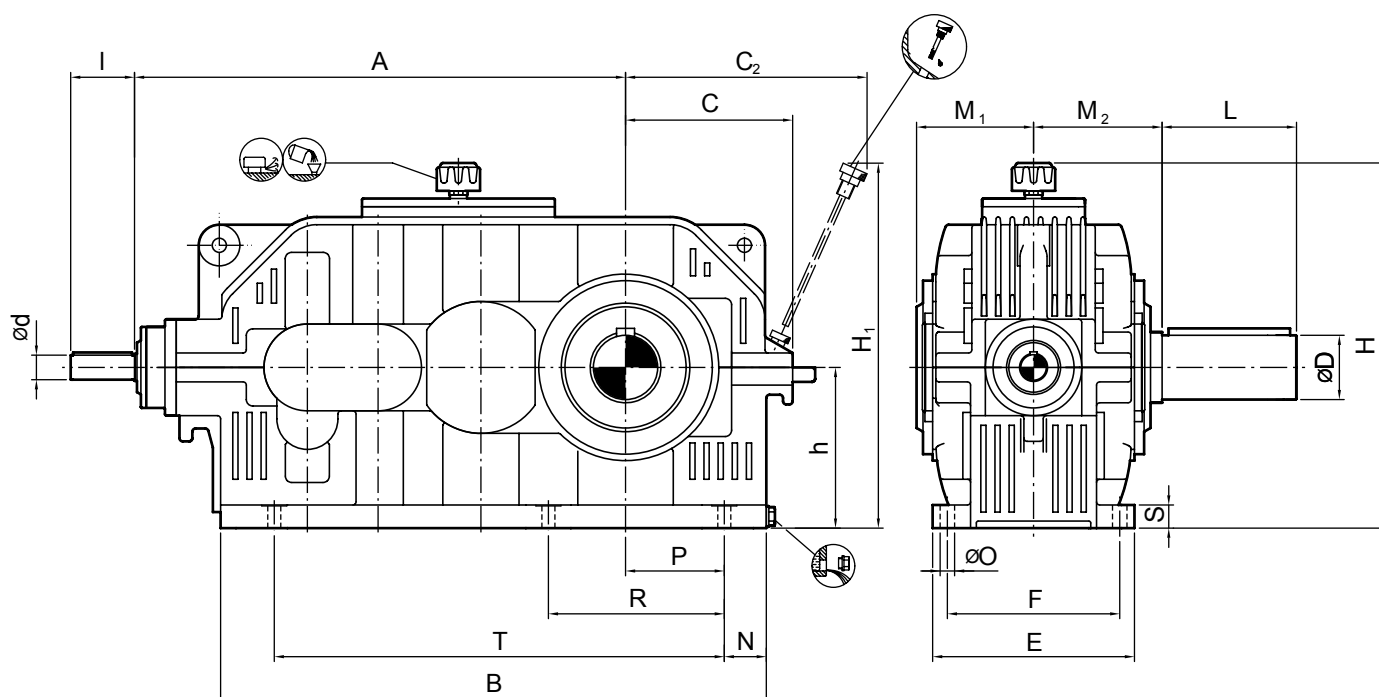
1) Max. dimensions; details acc. to order related documents

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

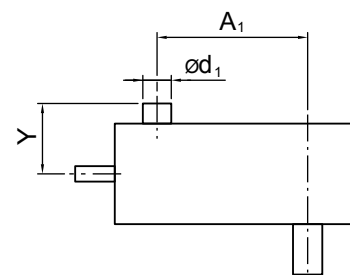
# SERIES E

## HORIZONTAL MOUNTING - BEVEL HELICAL GEAR UNIT

## TYPE K4H QUADRUPLE STAGE - SIZE 17 TO 18



| Size   | Input Shaft   |     |               |     | Output Shaft |     |                |                | Backstop       |                              |                 |  |  |
|--------|---------------|-----|---------------|-----|--------------|-----|----------------|----------------|----------------|------------------------------|-----------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|        | i = 80 - 225  |     | i = 250 - 400 |     |              |     |                |                |                |                              |                 |                                                                                     |                                                                                     |
|        | i = 112 - 400 |     | i = 450 - 560 |     |              |     |                |                |                |                              |                 |                                                                                     |                                                                                     |
|        | 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   | 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)

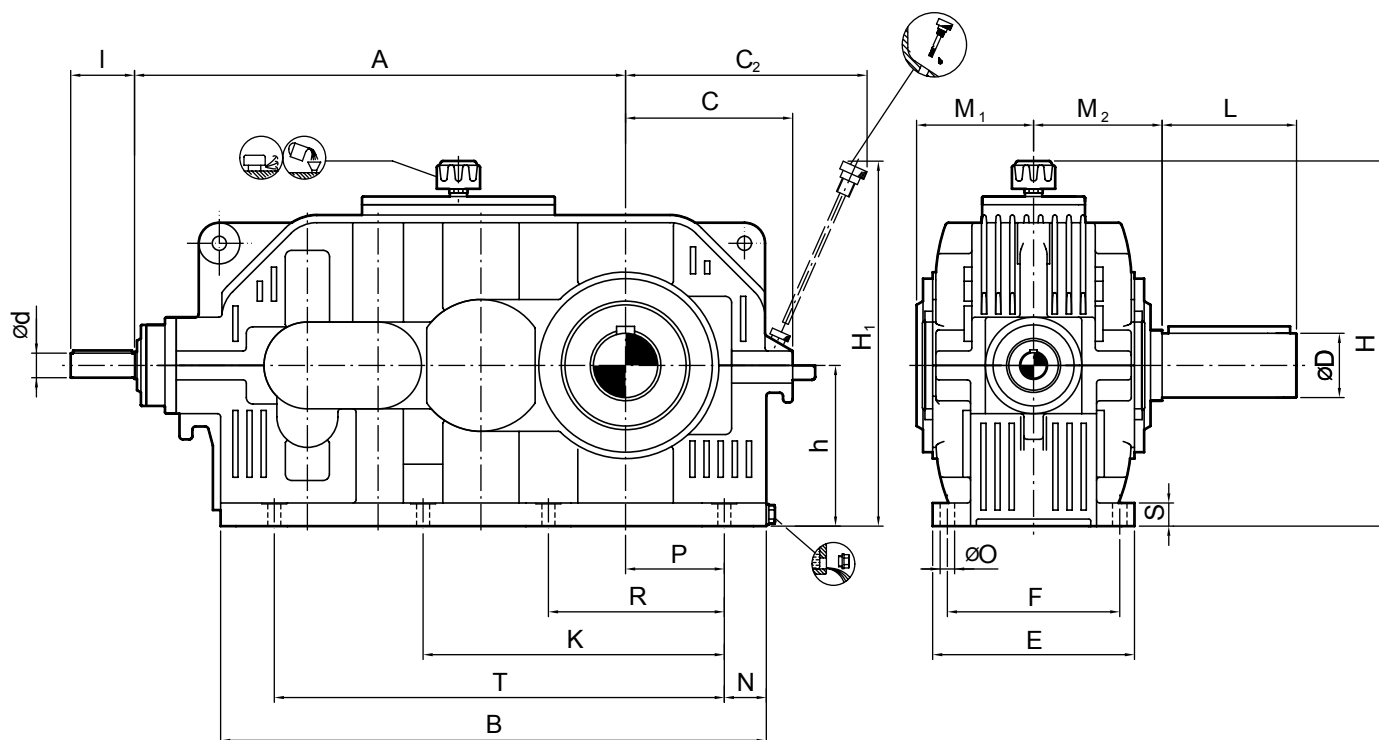
Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50m6.

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

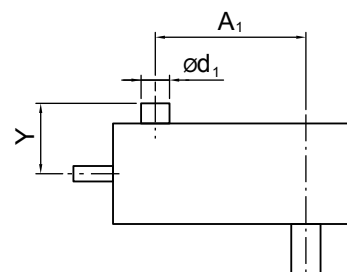
2) Approximate values; exact values acc. to order related documents

## HORIZONTAL MOUNTING - BEVEL HELICAL GEAR UNIT

## TYPE K4H QUADRUPLE STAGE - SIZE 19 TO 26



| Size   | Input Shaft   |     |               |     | Output Shaft |     |                |                | Backstop       |                              |                 |  |  |
|--------|---------------|-----|---------------|-----|--------------|-----|----------------|----------------|----------------|------------------------------|-----------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|        | i = 80 - 225  |     | i = 250 - 400 |     |              |     |                |                |                |                              |                 |                                                                                     |                                                                                      |
|        | i = 100 - 315 |     | i = 355 - 560 |     |              |     |                |                |                |                              |                 |                                                                                     |                                                                                      |
|        | i = 112 - 400 |     | i = 450 - 560 |     |              |     |                |                |                |                              |                 |                                                                                     |                                                                                      |
|        | 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   | A    | B    | C   | C <sub>2</sub> <sup>1)</sup> | E   | F   | h   | H <sub>1</sub> <sup>1)</sup> | H <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.

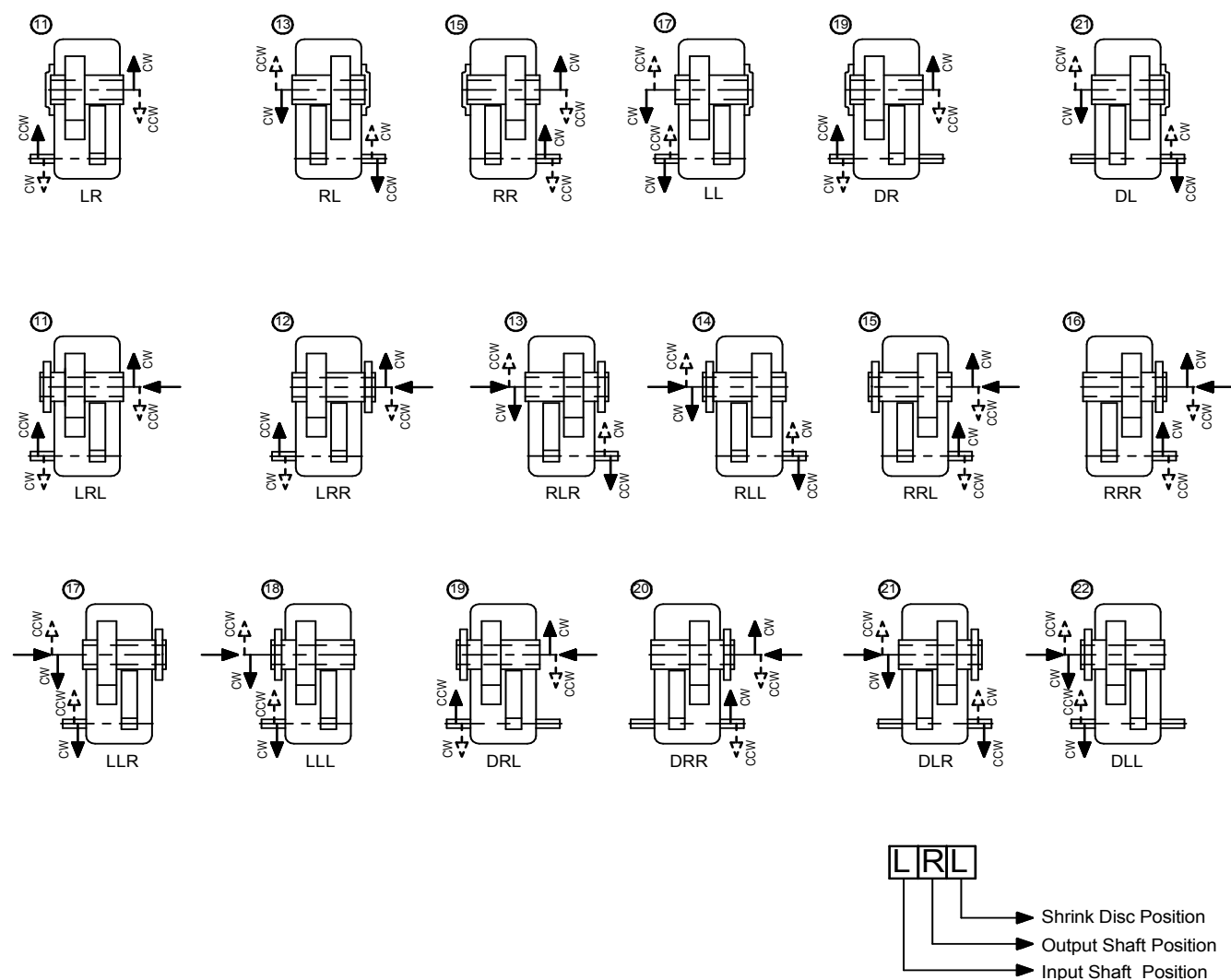
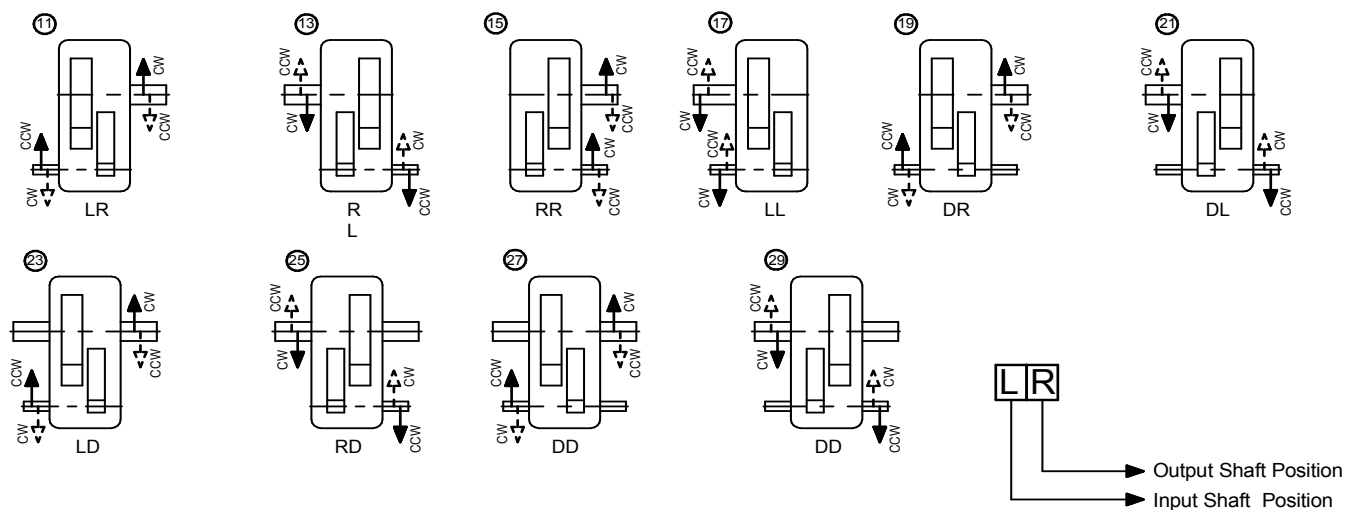
Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50m6.

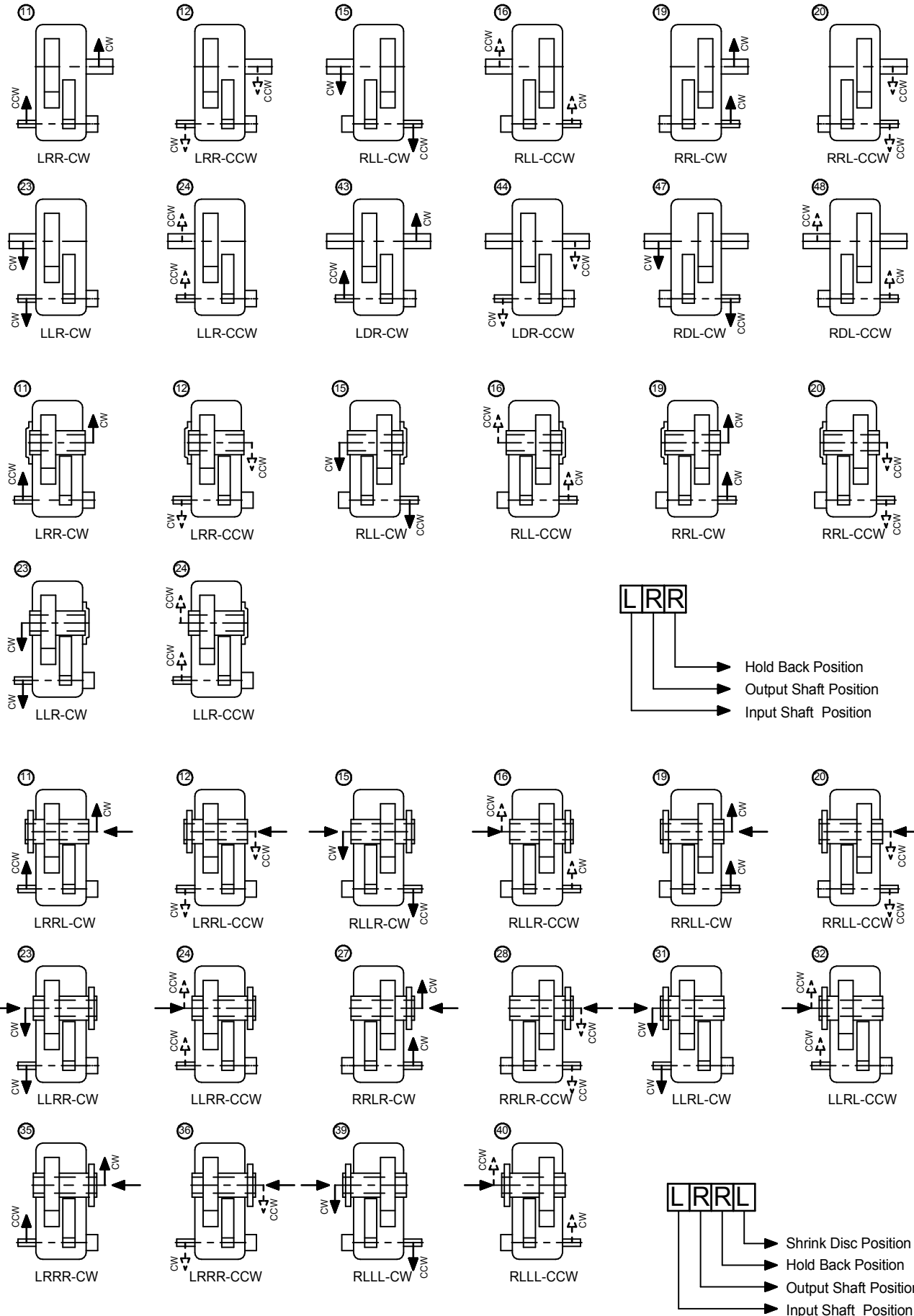
1) Max. dimensions; details acc. to order related documents

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

### SHAFT ARRANGEMENT - HELICAL GEAR UNIT



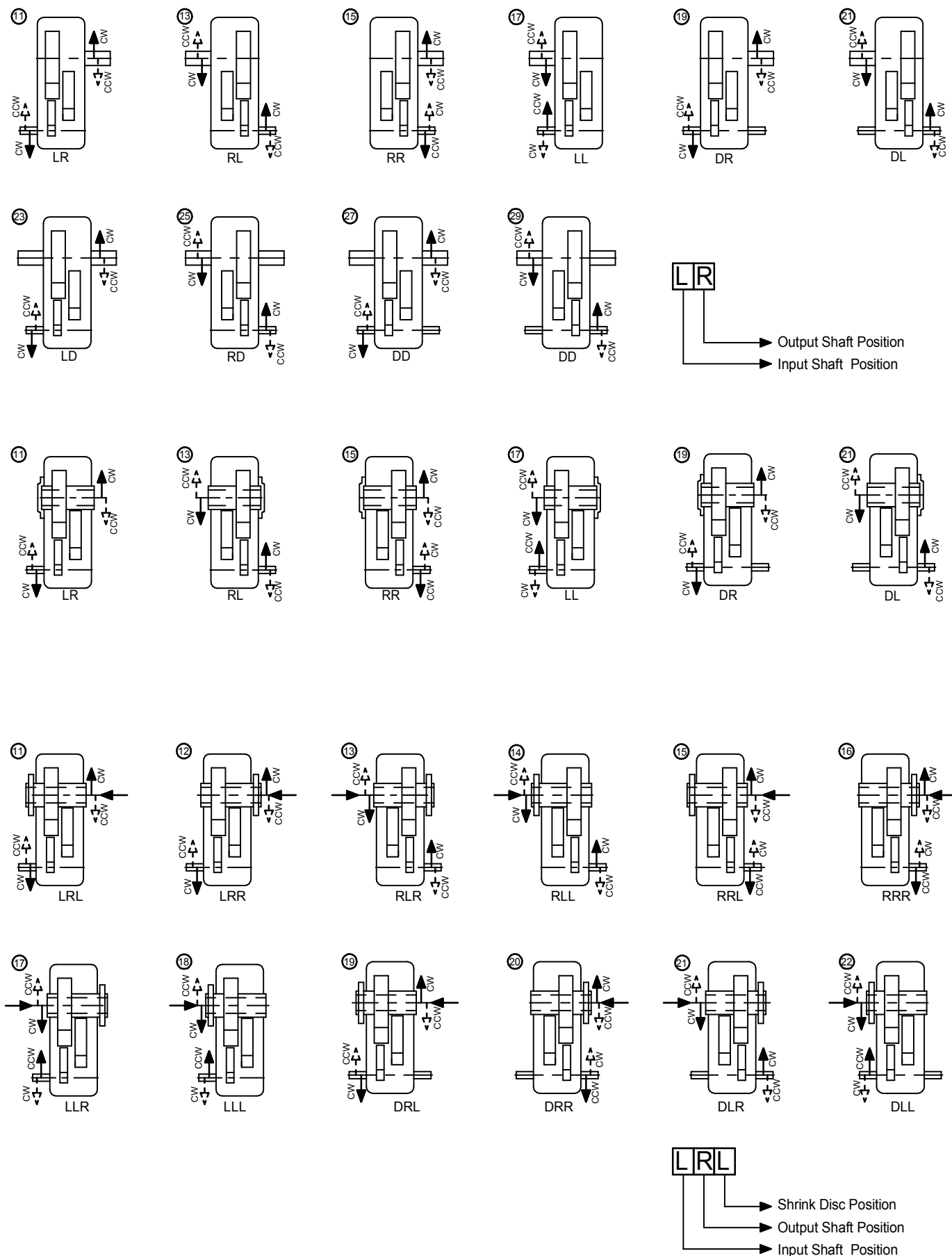
### SHAFT ARRANGEMENT - HOLDBACK - HELICAL GEAR UNIT



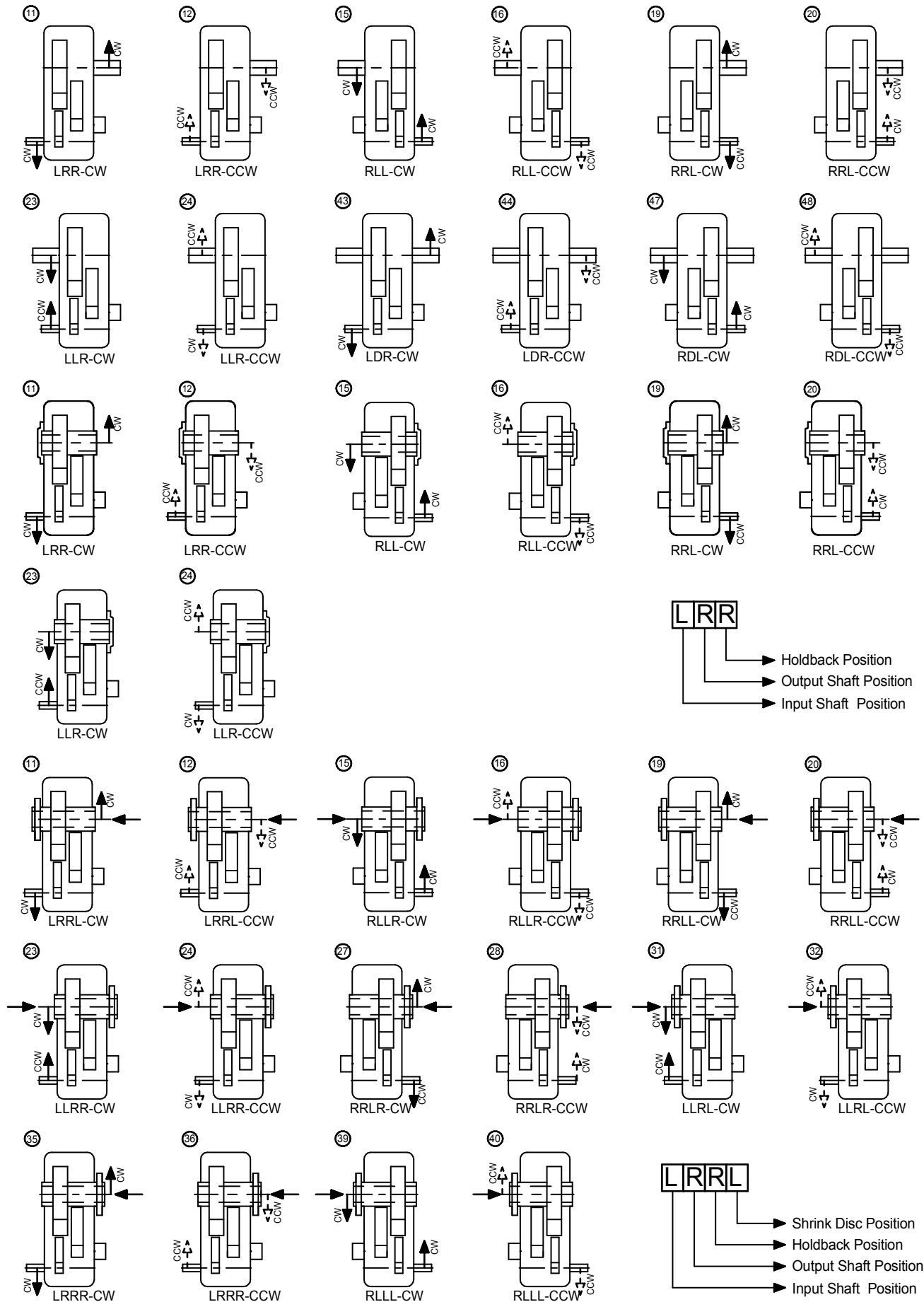
# SERIES E

## TYPE H3/S3 TRIPLE STAGE

### SHAFT ARRANGEMENT - HELICAL GEAR UNIT



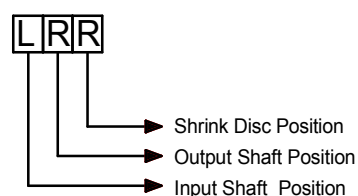
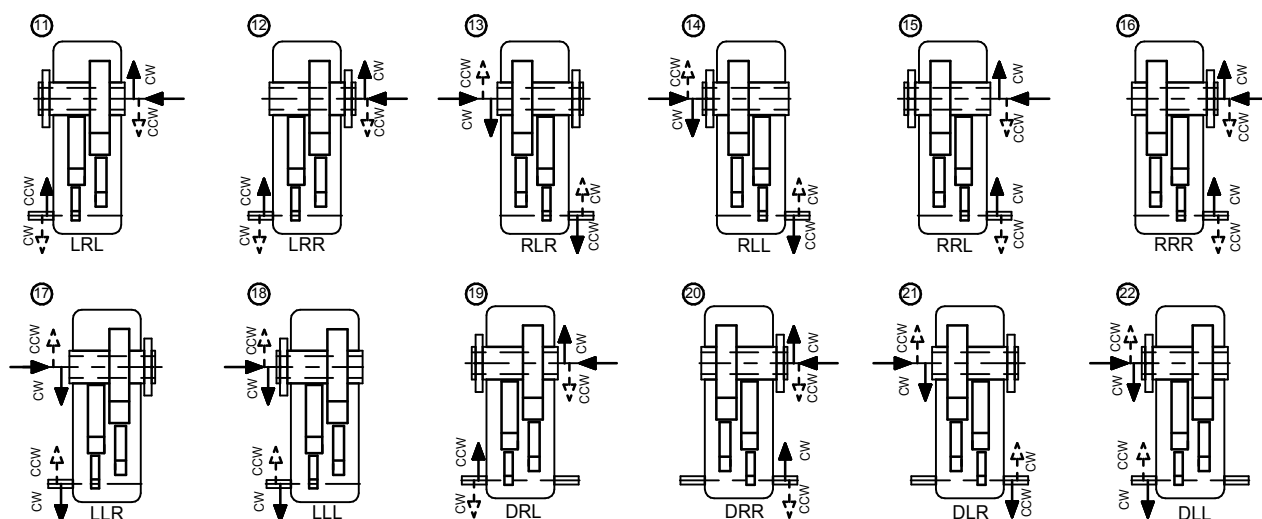
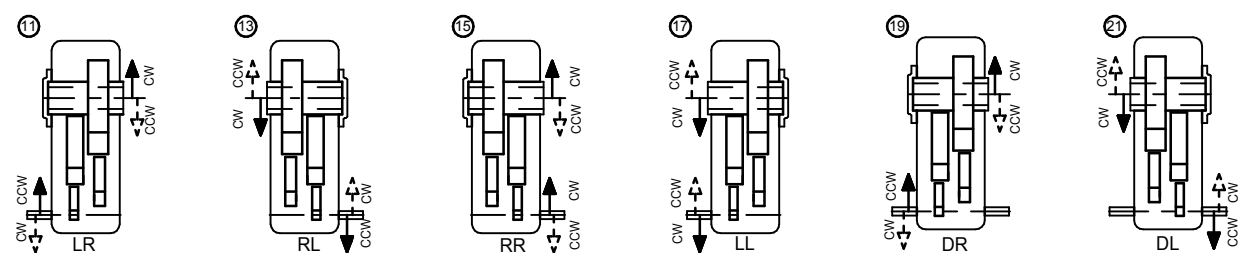
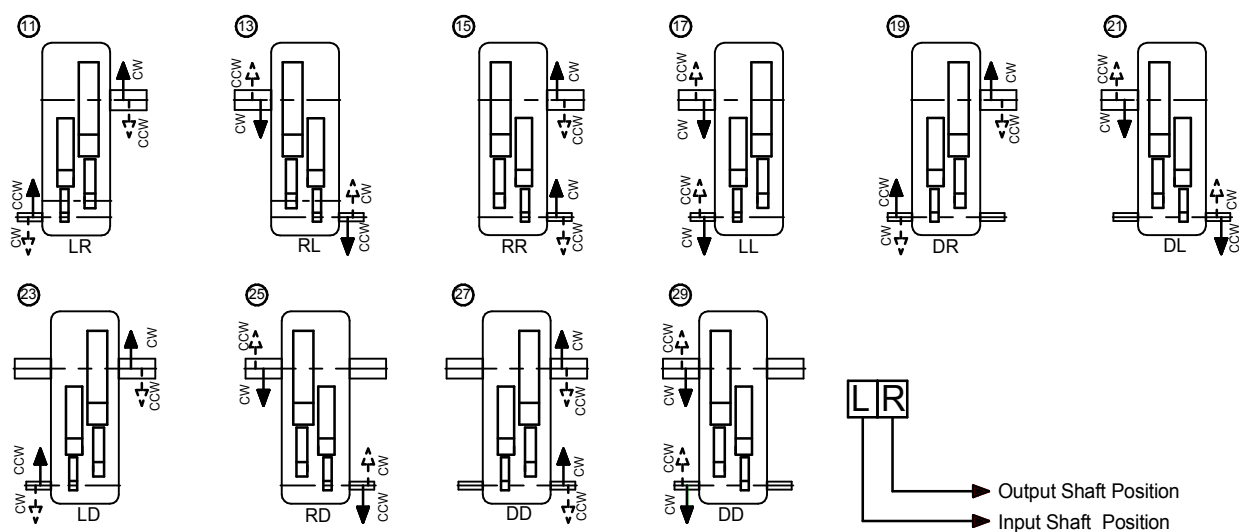
### SHAFT ARRANGEMENT - HOLD BACK - HELICAL GEAR UNIT



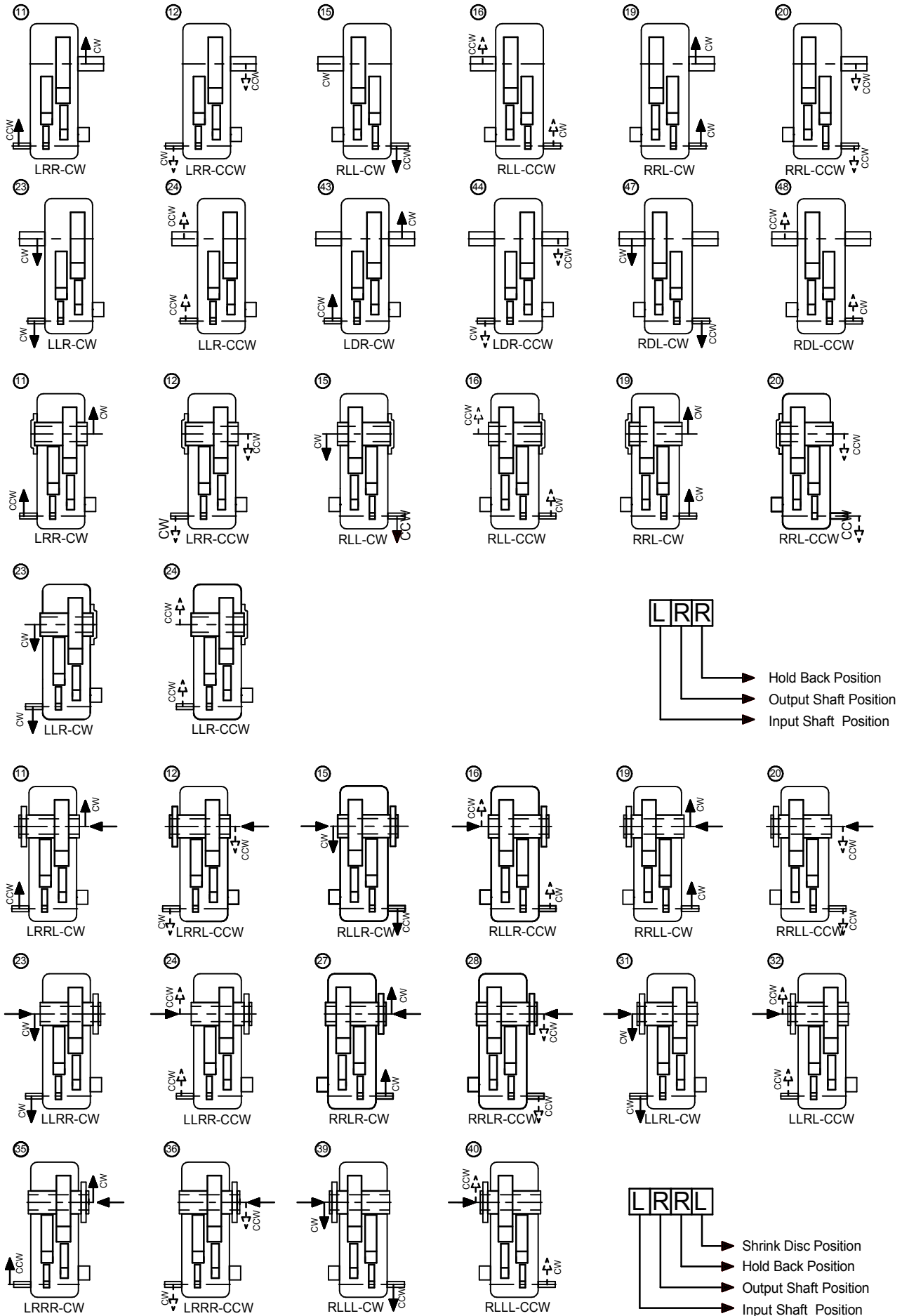
# SERIES E

## TYPE H4/S4 QUADRUPLE STAGE

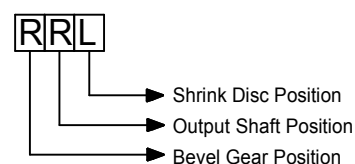
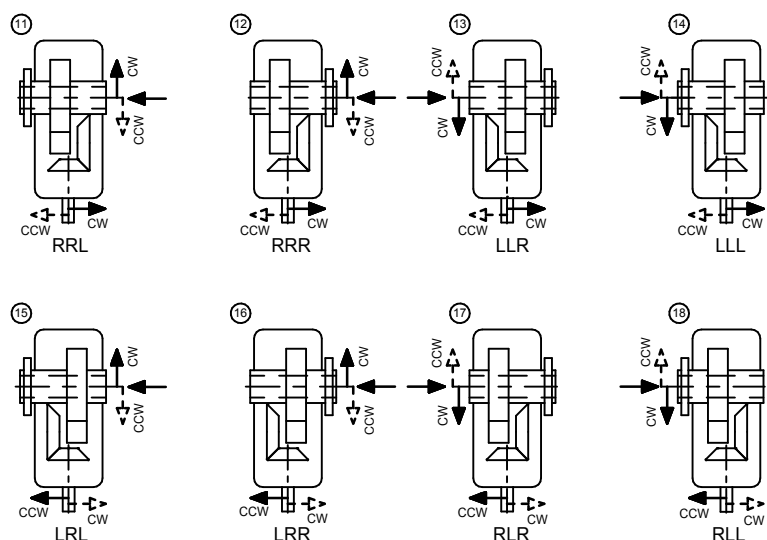
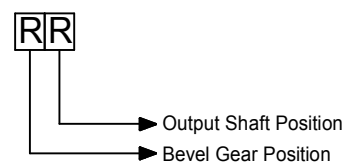
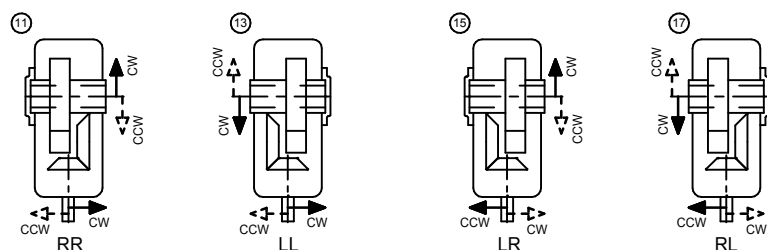
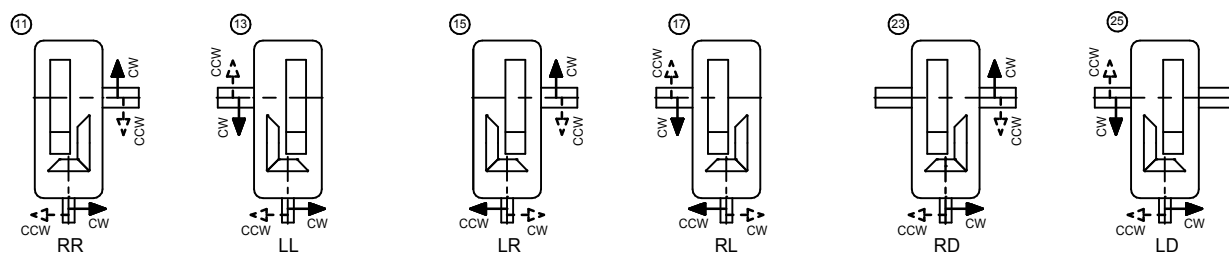
### SHAFT ARRANGEMENT - HELICAL GEAR UNIT



### SHAFT ARRANGEMENT - HOLDBACK - HELICAL GEAR UNIT

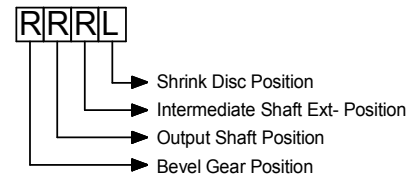
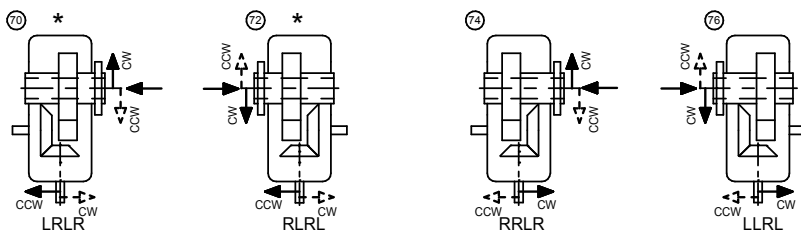
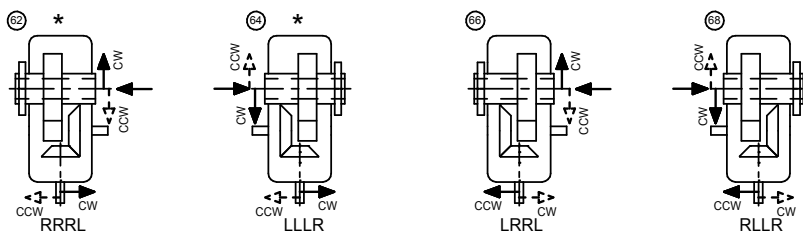
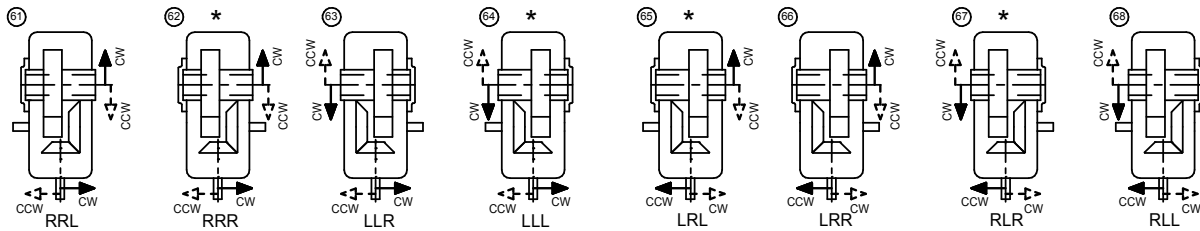
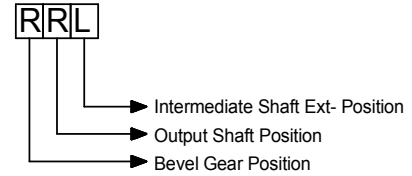
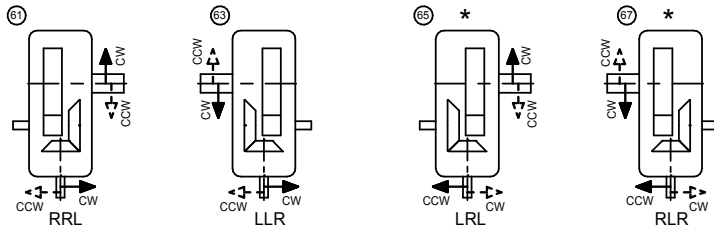


### SHAFT ARRANGEMENT - BEVEL HELICAL GEAR UNIT

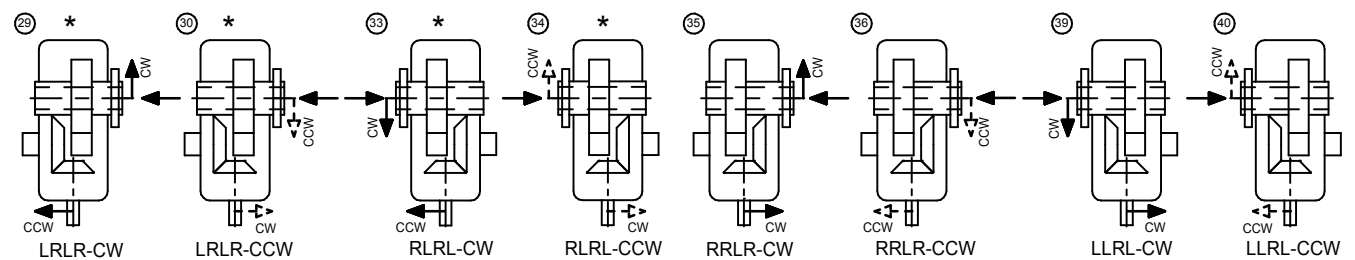
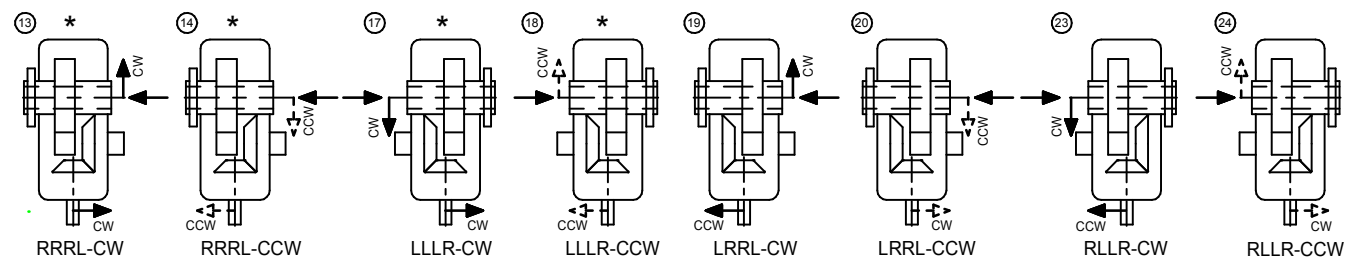
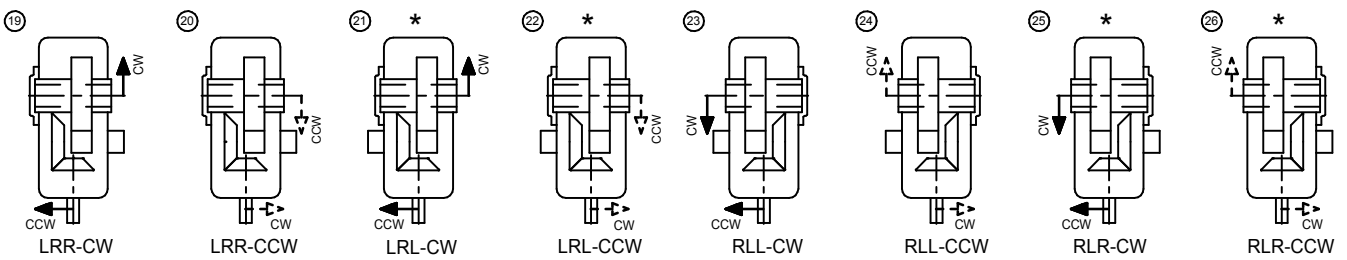
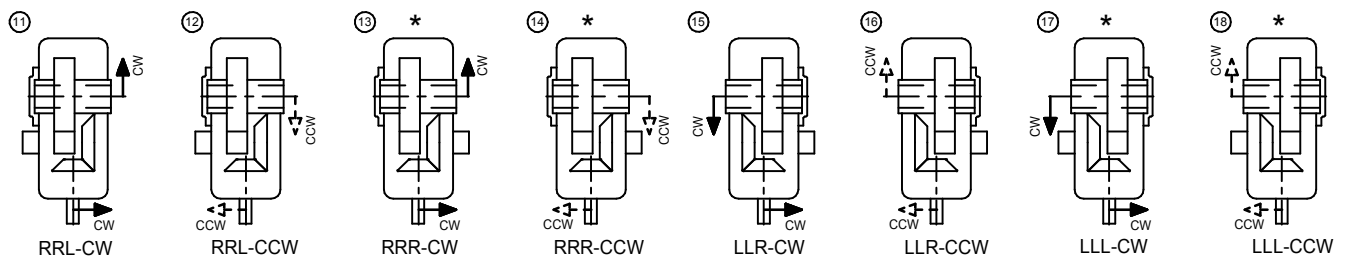
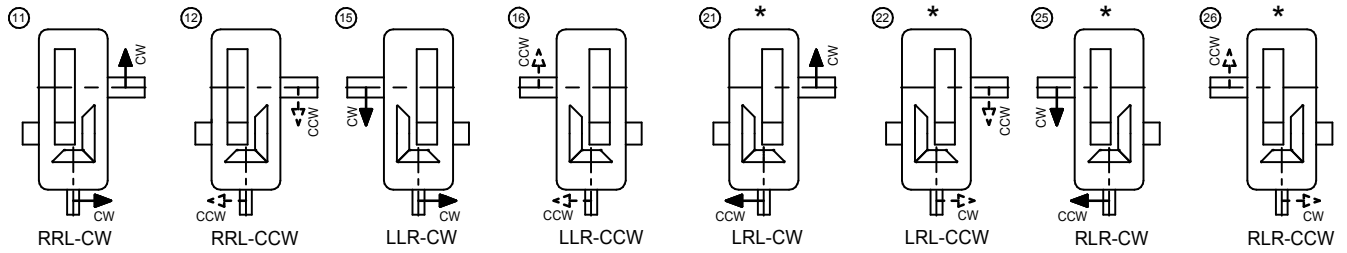


## SHAFT ARRANGEMENT - INT. EXTENSION - BEVEL HELICAL GEAR UNIT

## TYPE B2/K2 DOUBLE STAGE



### SHAFT ARRANGEMENT - HOLDBACK - BEVEL HELICAL GEAR UNIT



RRL

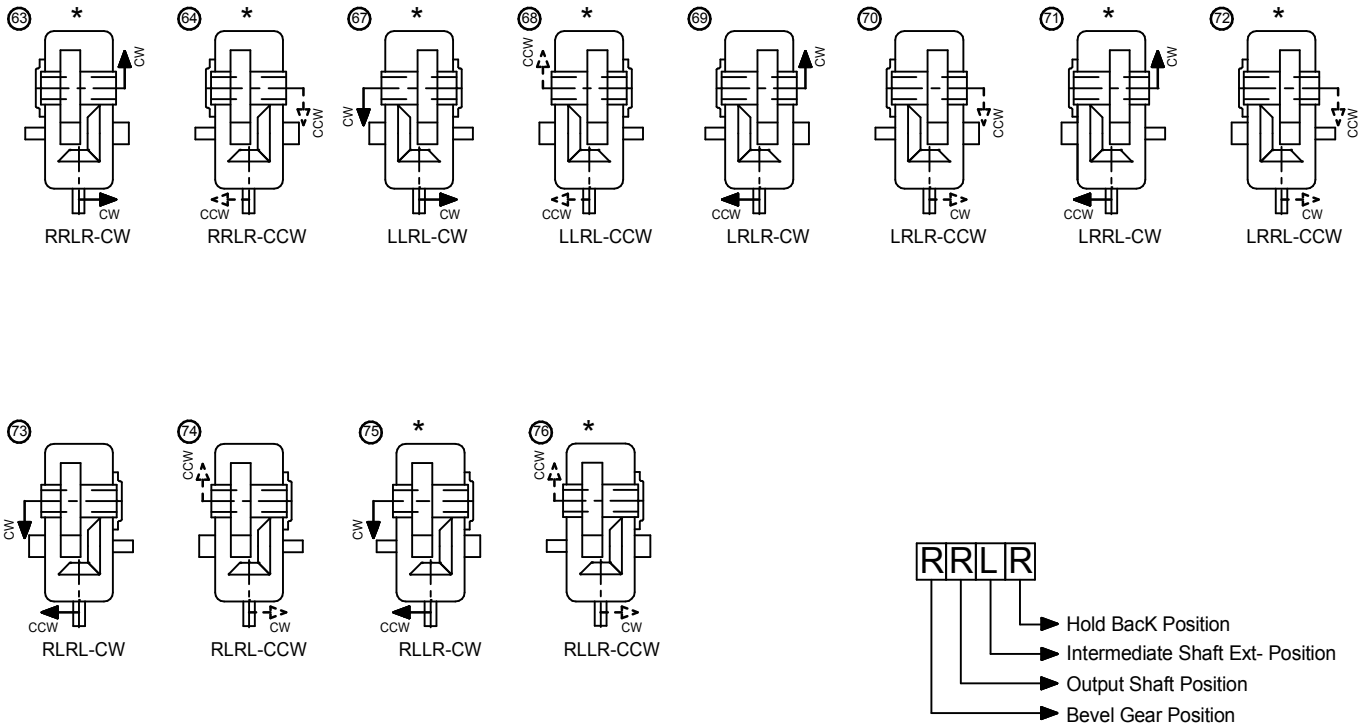
- Hold Back Position
- Output Shaft Position
- Bevel Gear Position

RRRL

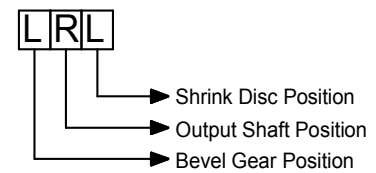
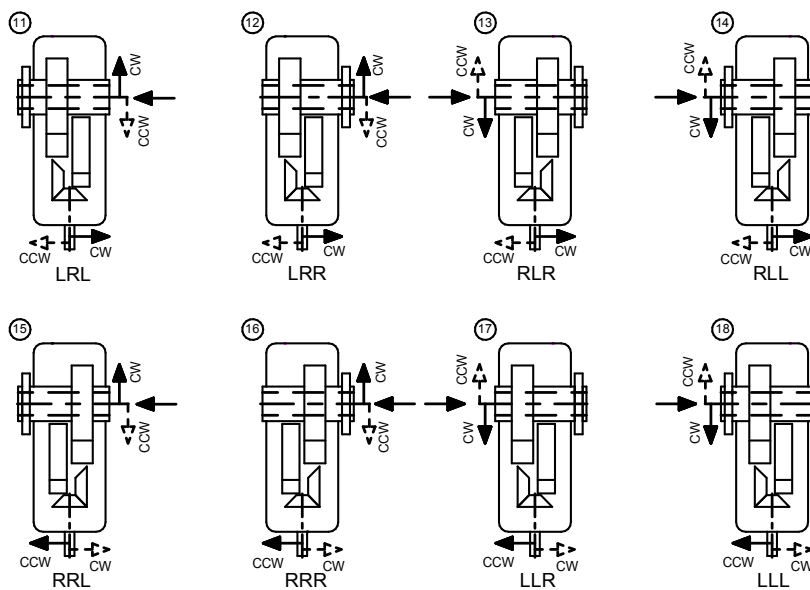
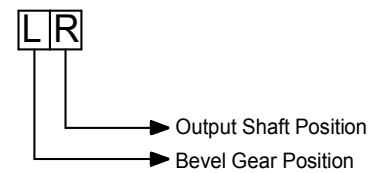
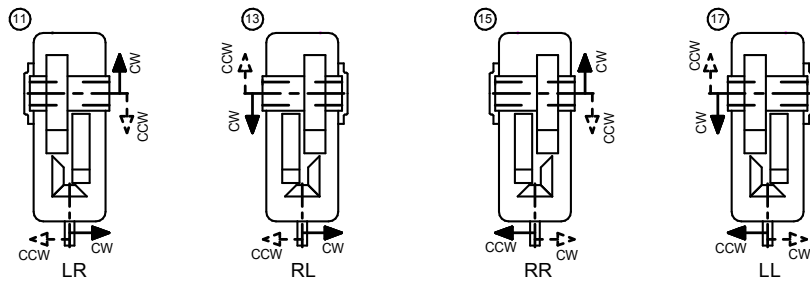
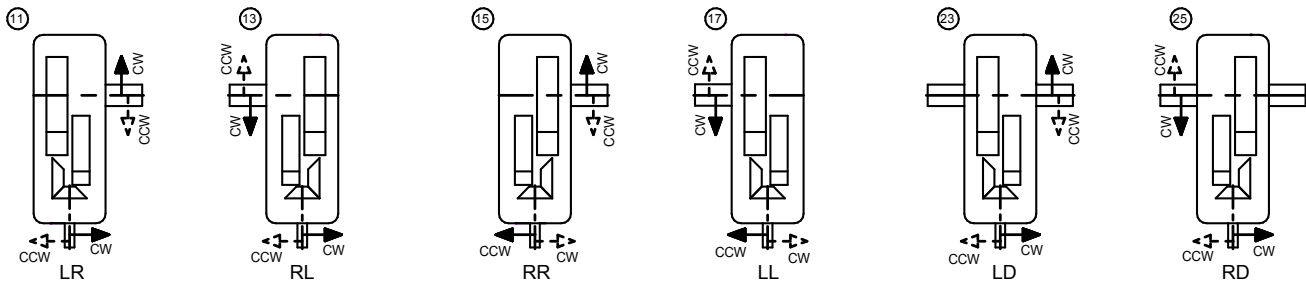
- Shrink Disc Position
- Hold Back Position
- Output Shaft Position
- Bevel Gear Position

## SHAFT ARRANGEMENT - INT. EXT. & HOLDBACK - BEVEL HELICAL GEAR UNIT

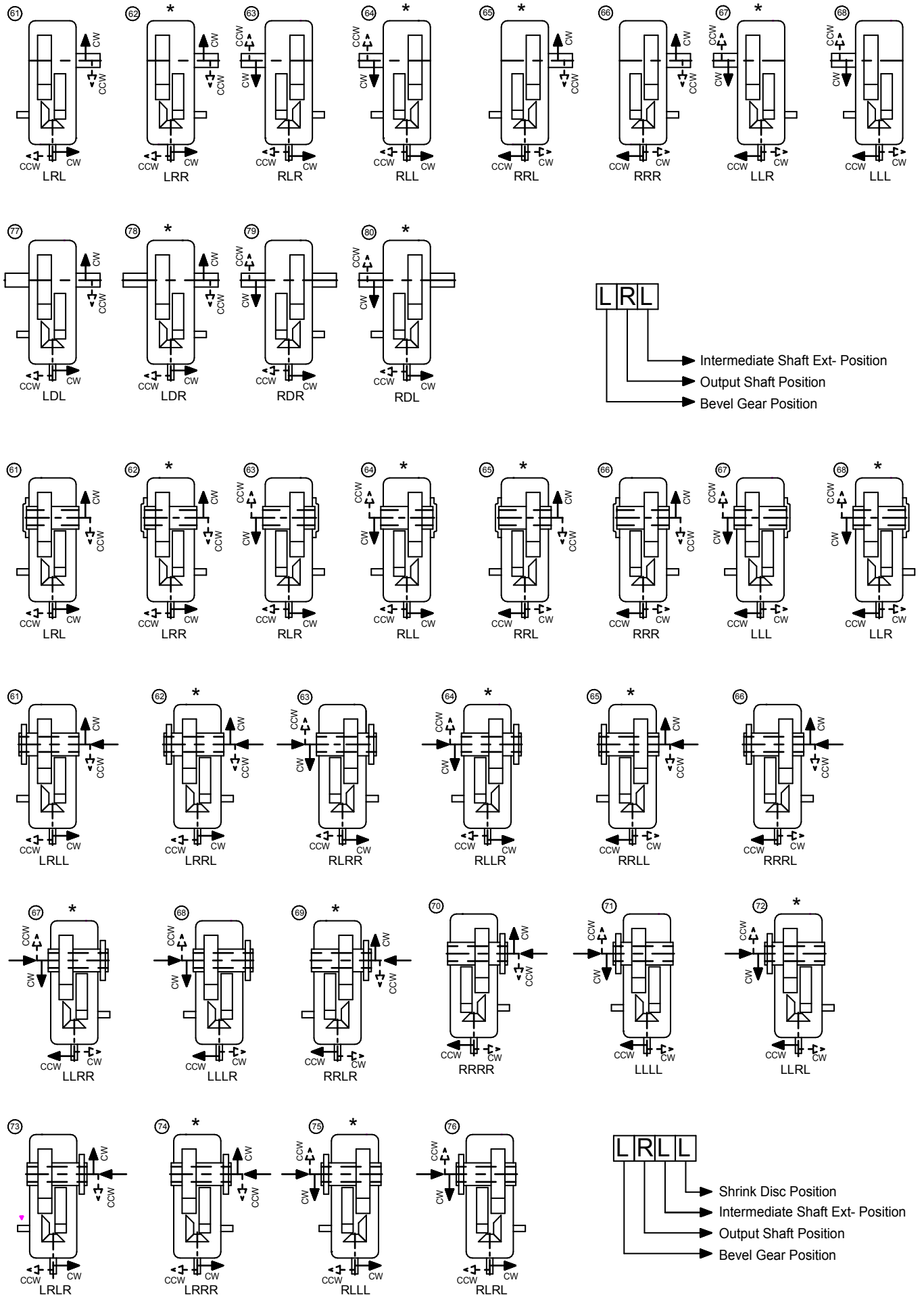
## TYPE B2/K2 DOUBLE STAGE



### SHAFT ARRANGEMENT - BEVEL HELICAL GEAR UNIT



### SHAFT ARRANGEMENT - INT. EXT. - BEVEL HELICAL GEAR UNIT

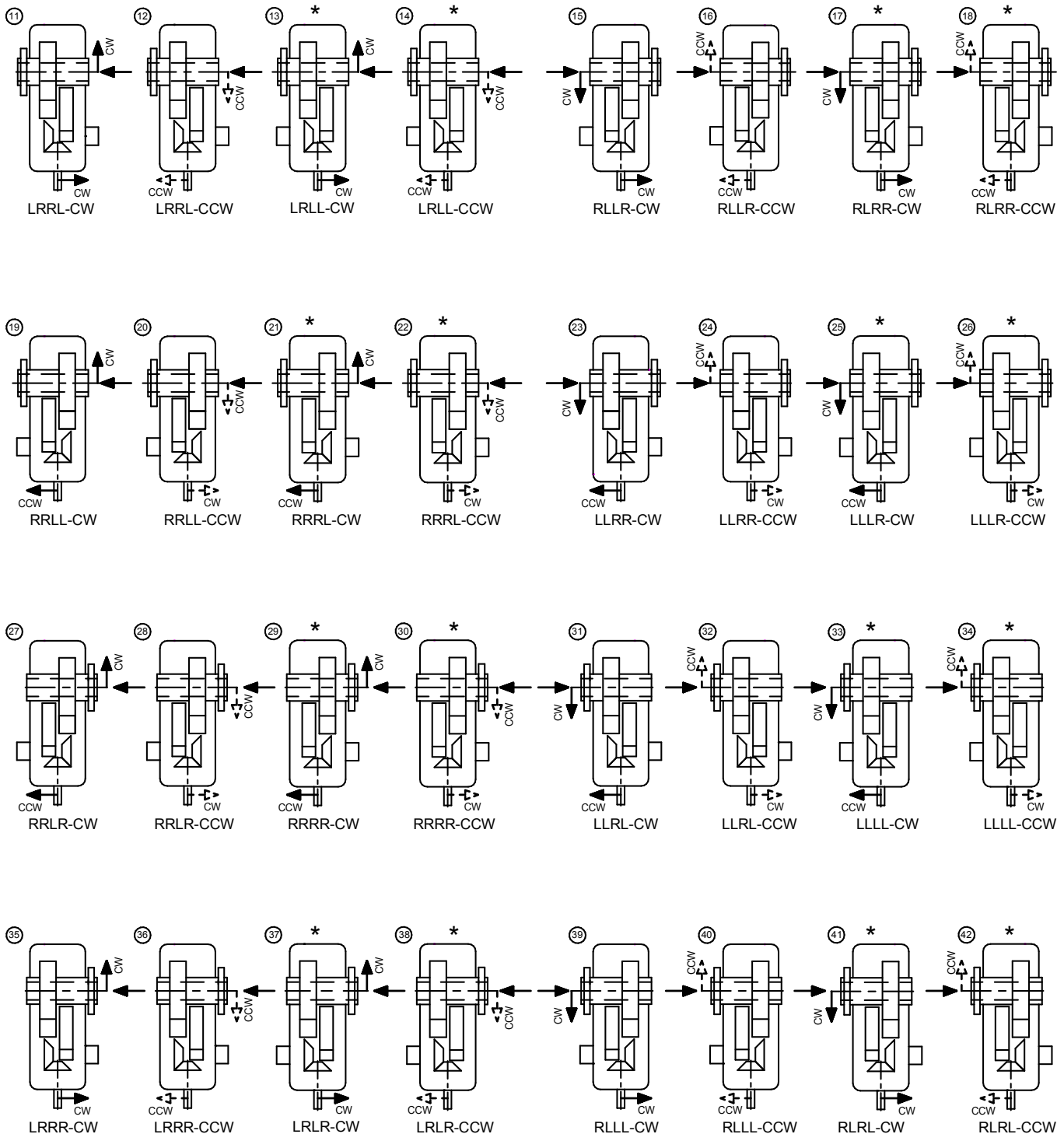


# SERIES E

## TYPE B3/K3

### TRIPLE STAGE

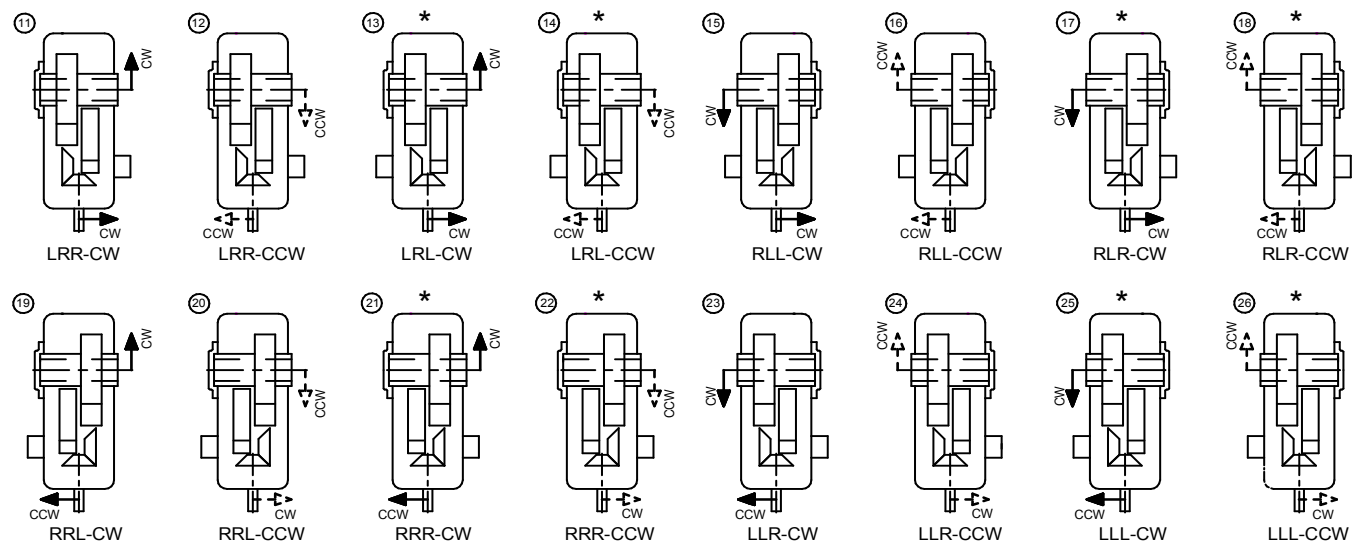
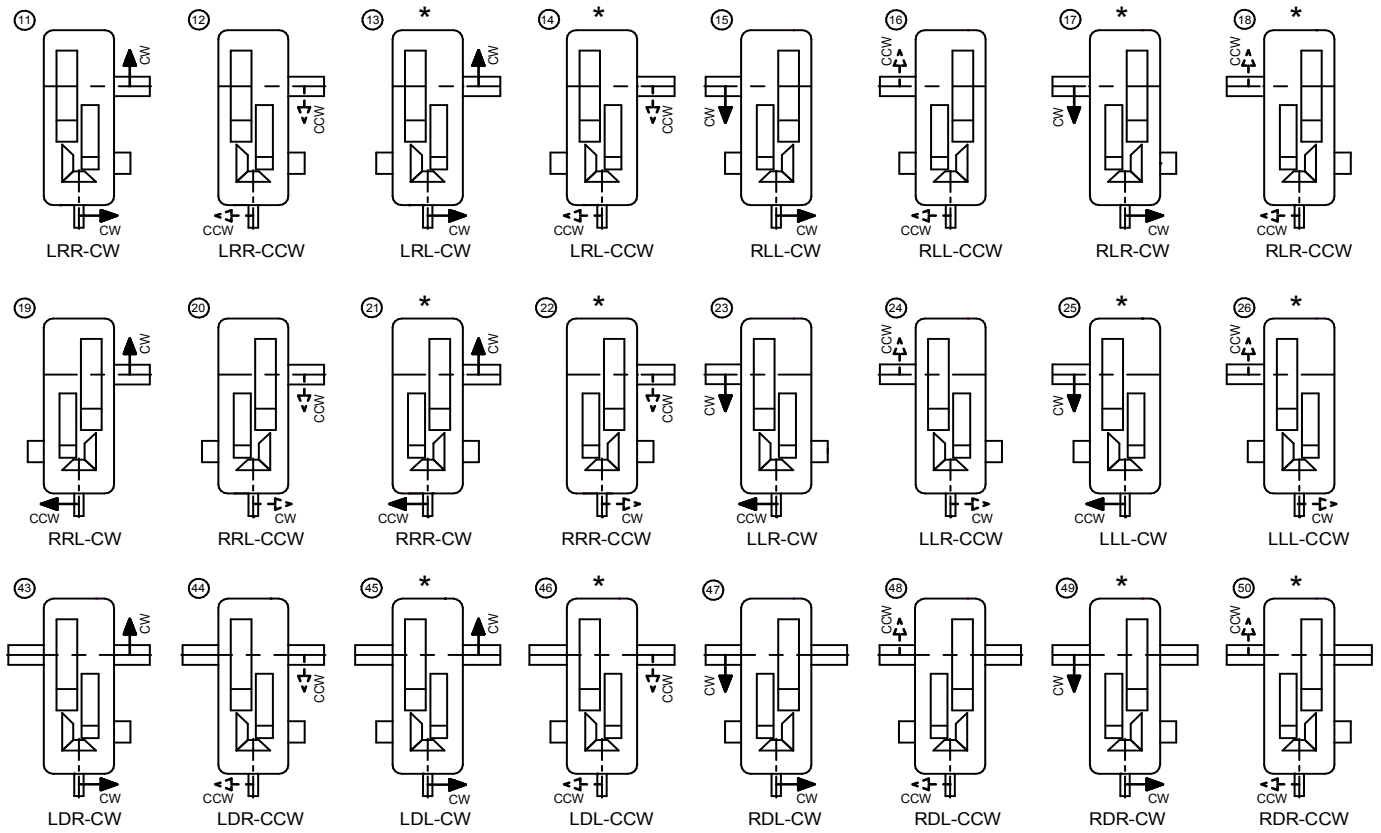
### SHAFT ARRANGEMENT - HOLDBACK - BEVEL HELICAL GEAR UNIT



LRRL

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

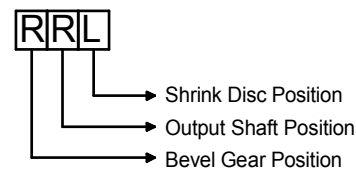
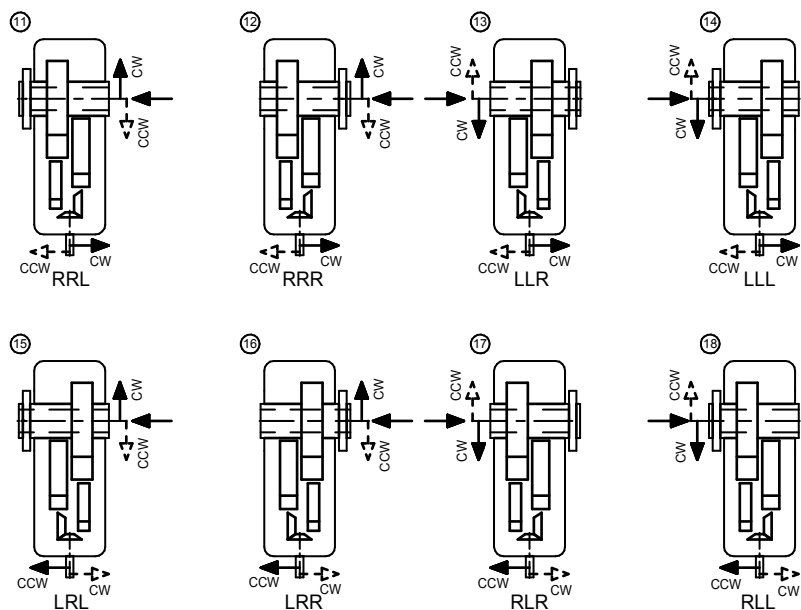
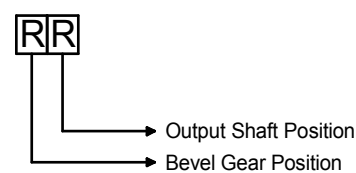
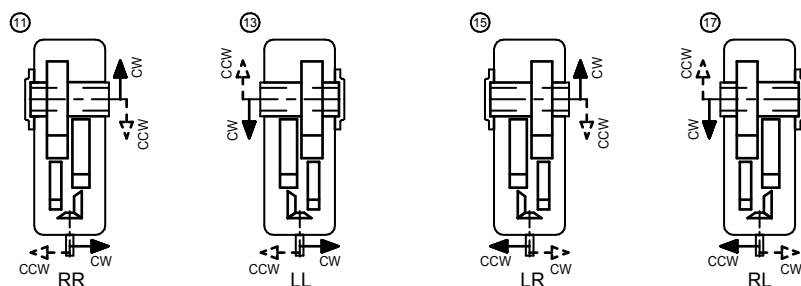
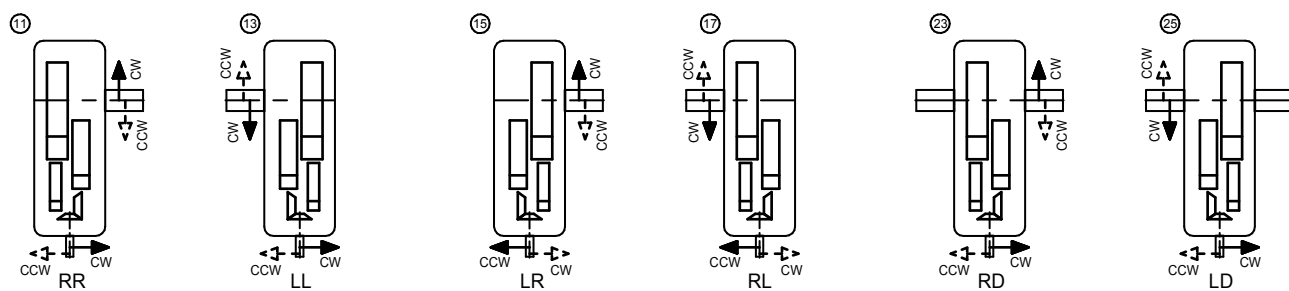
### SHAFT ARRANGEMENT - HOLDBACK - BEVEL HELICAL GEAR UNIT



**LRR**

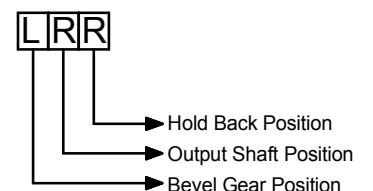
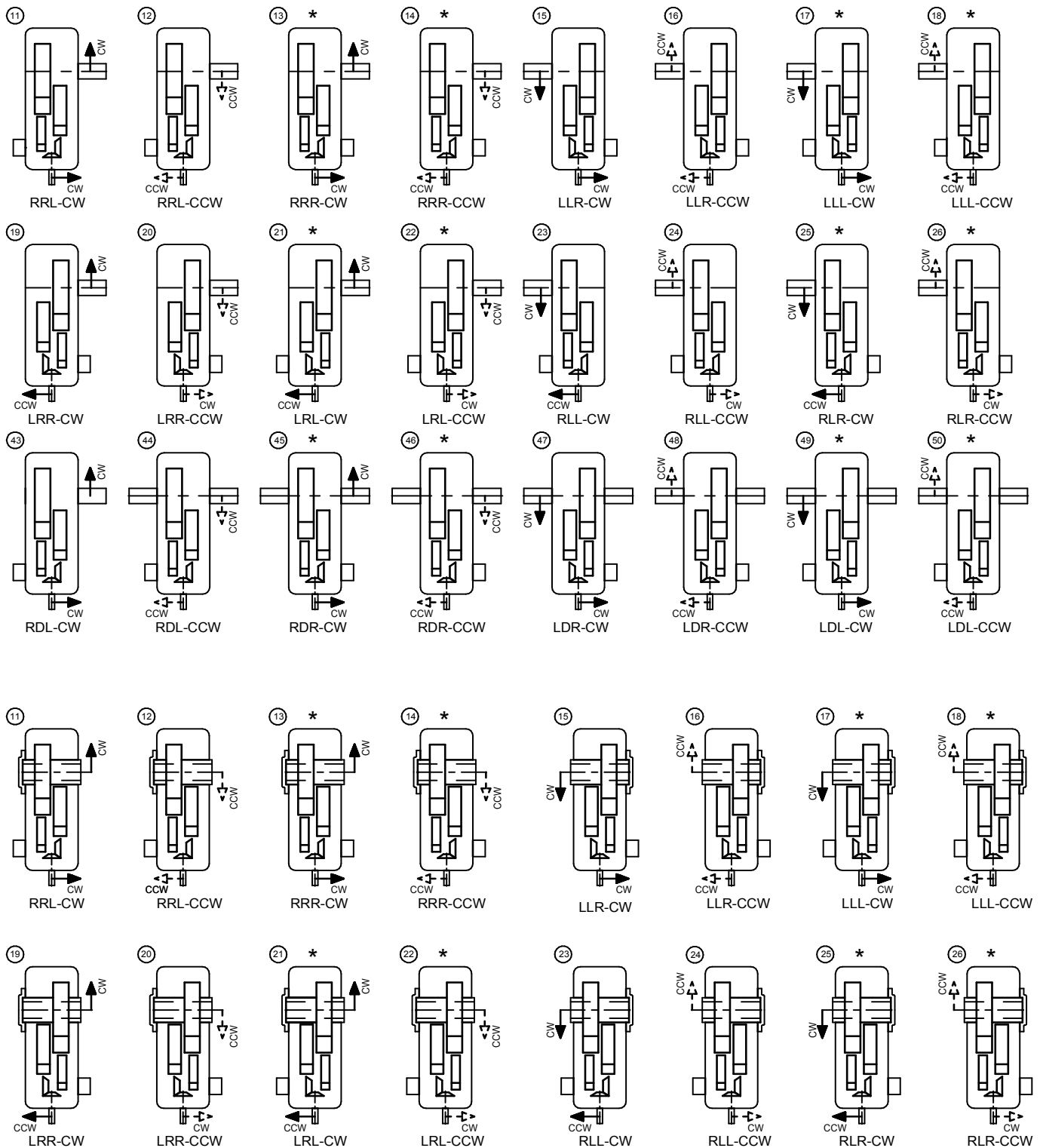
- Hold Back Position
- Output Shaft Position
- Bevel Gear Position

### SHAFT ARRANGEMENT - BEVEL HELICAL GEAR UNIT



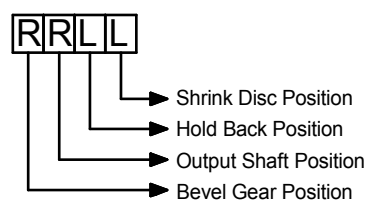
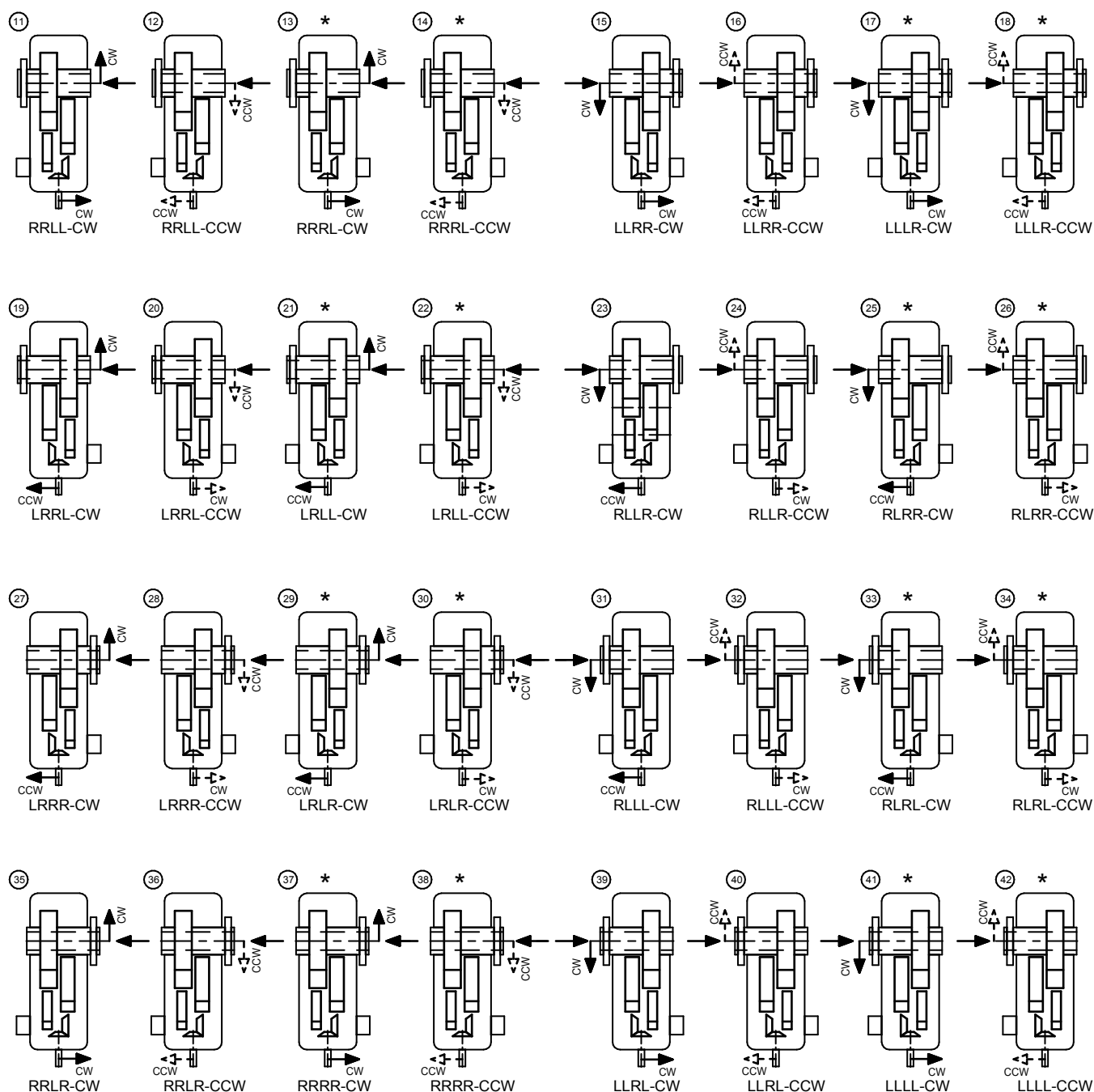
## SHAFT ARRANGEMENT - HOLD BACK - BEVEL HELICAL GEAR UNIT

## TYPE B4/K4 QUADRUPLE STAGE



## SHAFT ARRANGEMENT - HOLD BACK - BEVEL HELICAL GEAR UNIT

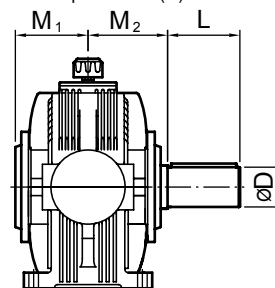
## TYPE B4/K4 QUADRUPLE STAGE



## OUTPUT SHAFT OPTIONS

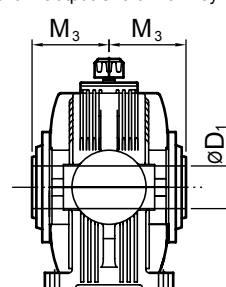
| Size | Solid Output Shaft |     |                |                |
|------|--------------------|-----|----------------|----------------|
|      | D                  | L   | M <sub>1</sub> | M <sub>2</sub> |
| 11   | 32                 | 55  | 93.5           | 105            |
| 13   | 45         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

Solid Output Shaft - (N)



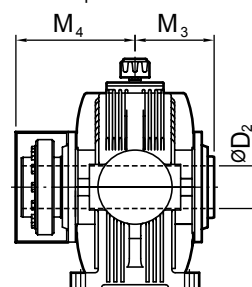
| Size | Hollow Shaft Key |                |
|------|------------------|----------------|
|      | D <sub>1</sub>   | M <sub>3</sub> |
| 11   | 35               | 105            |
| 13   | 50               | 115            |
| 14   | 55               | 125            |
| 15   | 60               | 135            |
| 16   | 70               | 145            |
| 17   | 75               | 150            |
| 18   | 90               | 170            |

Hollow Output Shaft With Keyway - (K)



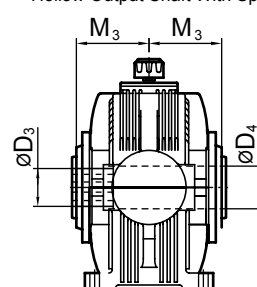
| Size | Hollow Shaft (Shrink Disc) |                |                |
|------|----------------------------|----------------|----------------|
|      | D <sub>2</sub>             | M <sub>3</sub> | M <sub>4</sub> |
| 14   | 60                         | 120            | 200            |
| 15   | 65 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

Hollow Output Shaft With Shrink Disc - (D)



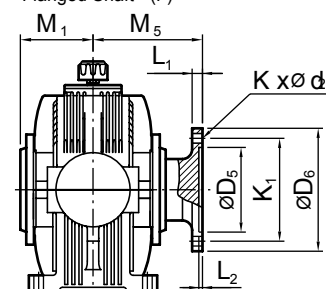
| Size | Hollow Shaft (Spline) |                |                |
|------|-----------------------|----------------|----------------|
|      | D <sub>3</sub>        | D <sub>4</sub> | M <sub>3</sub> |
| 11   | Dimension on Request  |                |                |
| 13   |                       |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

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>2</sub> | L <sub>1</sub> | L <sub>2</sub> | M <sub>1</sub> | M <sub>5</sub> |
| 11   | Dimension on Request |                |                |                      |                |                |                |                |
| 13   |                      |                |                |                      |                |                |                |                |
| 14   |                      |                |                |                      |                |                |                |                |
| 15   |                      |                |                |                      |                |                |                |                |
| 16   |                      |                |                |                      |                |                |                |                |
| 17   |                      |                |                |                      |                |                |                |                |
| 18   |                      |                |                |                      |                |                |                |                |

Flanged Shaft - (F)



Modification of dimensions reserved.

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

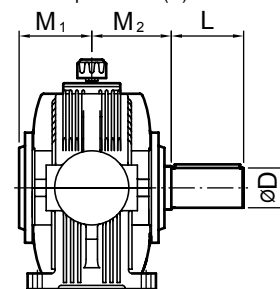
Shaft centering according to DIN 332, shape DS (with thread)

Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50m6.

## OUTPUT SHAFT OPTIONS

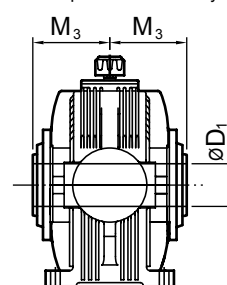
| Size | Solid Output Shaft |     |                |                |
|------|--------------------|-----|----------------|----------------|
|      | D                  | L   | M <sub>1</sub> | M <sub>2</sub> |
| 19   | 90                 | 165 | 170.5          | 180            |
| 20   | 100                | 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)



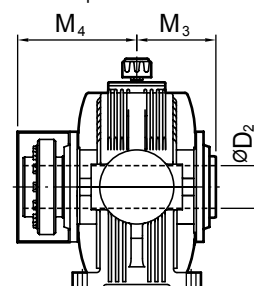
| Size | Hollow Shaft Key |                |
|------|------------------|----------------|
|      | D <sub>1</sub>   | M <sub>3</sub> |
| 19   | 105              | 180            |
| 20   | 110              | 190            |
| 21   | 120              | 220            |

Hollow Output Shaft With Keyway - (K)



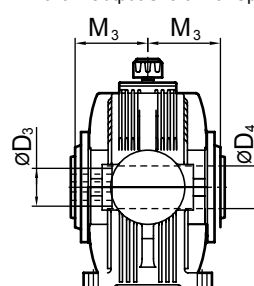
| Size | Hollow Shaft (Shrink Disc) |                |                |
|------|----------------------------|----------------|----------------|
|      | D <sub>2</sub>             | M <sub>3</sub> | M <sub>4</sub> |
| 19   | 105                        | 180            | 300            |
| 20   | 115                        | 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)



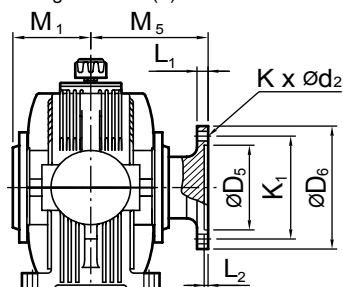
| Size | Hollow Shaft (Spline) |                |                |
|------|-----------------------|----------------|----------------|
|      | D <sub>3</sub>        | D <sub>4</sub> | M <sub>3</sub> |
| 19   | Dimension on Request  |                |                |
| 20   |                       |                |                |
| 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>2</sub> | L <sub>1</sub> | L <sub>2</sub> | M <sub>1</sub> | M <sub>5</sub> |
| 19   | Dimension on Request |                |                |                      |                |                |                |                |
| 20   |                      |                |                |                      |                |                |                |                |
| 21   |                      |                |                |                      |                |                |                |                |
| 22   |                      |                |                |                      |                |                |                |                |
| 23   |                      |                |                |                      |                |                |                |                |
| 24   |                      |                |                |                      |                |                |                |                |
| 25   |                      |                |                |                      |                |                |                |                |
| 26   |                      |                |                |                      |                |                |                |                |

Flanged Shaft - (F)



Modification of dimensions reserved.

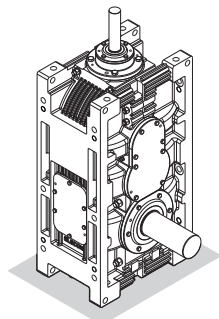
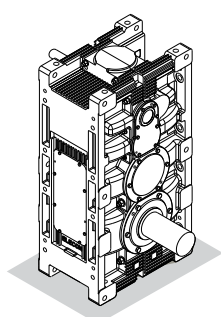
Shaft ends with keys according to DIN 6885, part 1, Shape A.

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

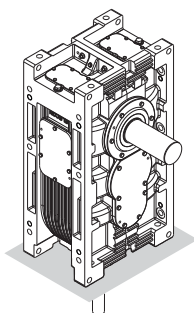
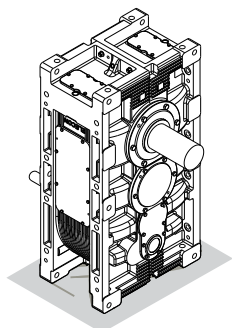
Tolerance field for shaft ends ISO fit, up to Ø50 k6; over Ø50m6.

## ALTERNATIVE CONFIGURATIONS

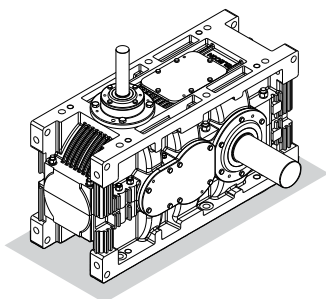
Series e also offers the following alternative configurations. Please contact our application engineers for details.



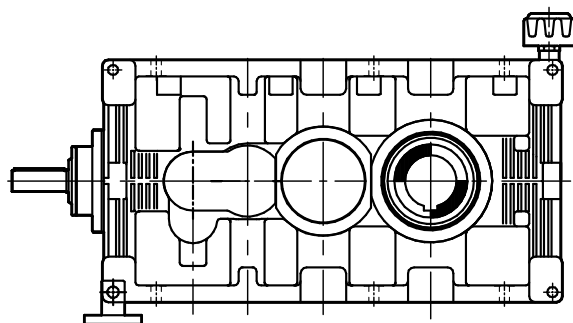
**Over Driven Applications**



**Under Driven Applications**



**Mounting Positions and Surfaces for  
Compact (Bevel-Helical) Gear Unit  
Version S**



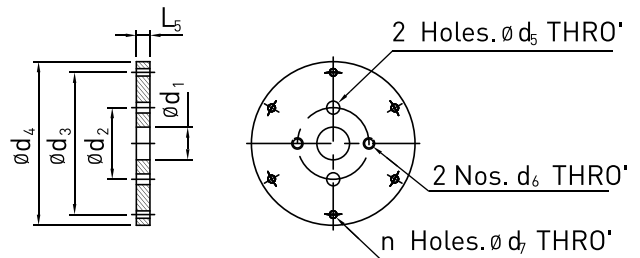
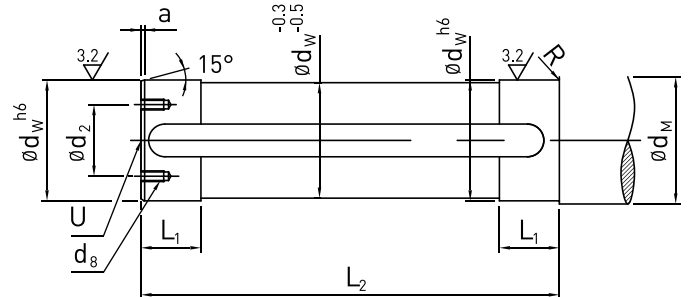
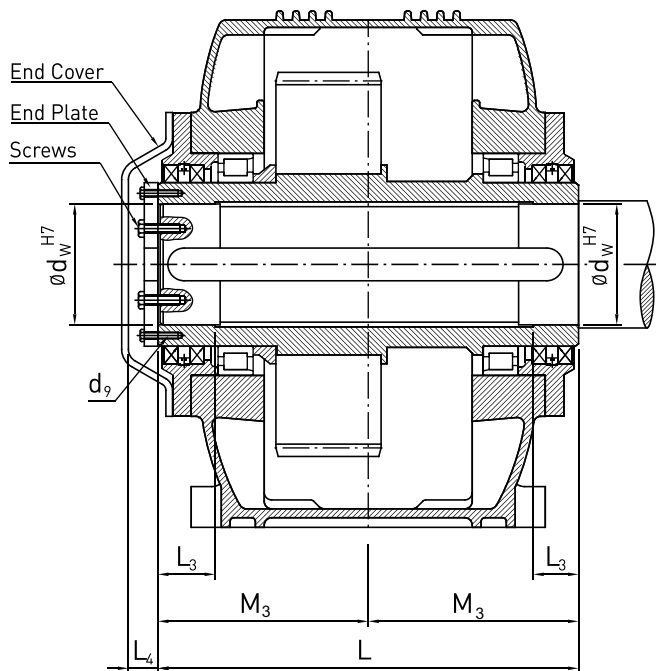
**Torque Arm Mounting arrangement for  
Version S**

H4 /H3 / B4

# SERIES E

## HELICAL / BEVEL HELICAL GEAR UNITS

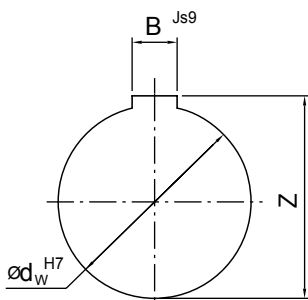
## HOLLOW OUTPUT SHAFT DESIGN WITH FITTED KEY



End Plate (Size 13 onwards)

| Size | Hollow Shaft   |     |                |                |                |                | Driven Machine Shaft |                |                |                |                |                |   |     |     | End Plate      |                |                |                |                |                |                |   |                |  |  |
|------|----------------|-----|----------------|----------------|----------------|----------------|----------------------|----------------|----------------|----------------|----------------|----------------|---|-----|-----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|----------------|--|--|
|      | d <sub>w</sub> | L   | M <sub>3</sub> | L <sub>3</sub> | L <sub>4</sub> | d <sub>9</sub> | d <sub>w</sub>       | d <sub>M</sub> | d <sub>2</sub> | d <sub>8</sub> | L <sub>1</sub> | L <sub>2</sub> | a | R   | U   | d <sub>1</sub> | d <sub>2</sub> | d <sub>3</sub> | d <sub>4</sub> | d <sub>5</sub> | d <sub>6</sub> | d <sub>7</sub> | n | L <sub>5</sub> |  |  |
| 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 x20        | 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

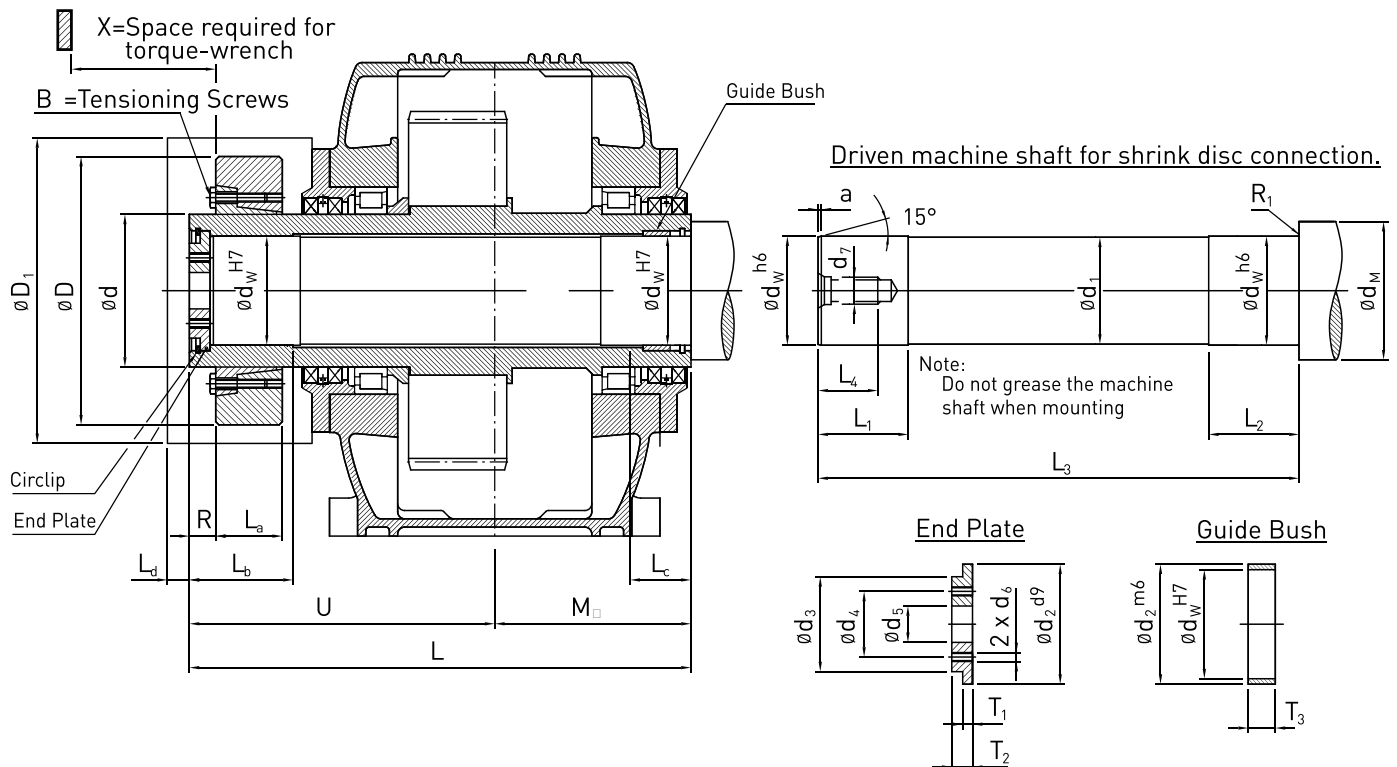


| $d_w$ | B  | Z    | tol. on Z |
|-------|----|------|-----------|
| 35    | 10 | 38   | 0.2       |
| 50    | 14 | 53.5 |           |
| 55    | 16 | 59   |           |
| 60    | 18 | 64   |           |
| 70    | 20 | 74.5 |           |
| 75    | 20 | 79.5 |           |
| 90    | 25 | 95   |       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

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

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

### Standard Shaft Mounting Position



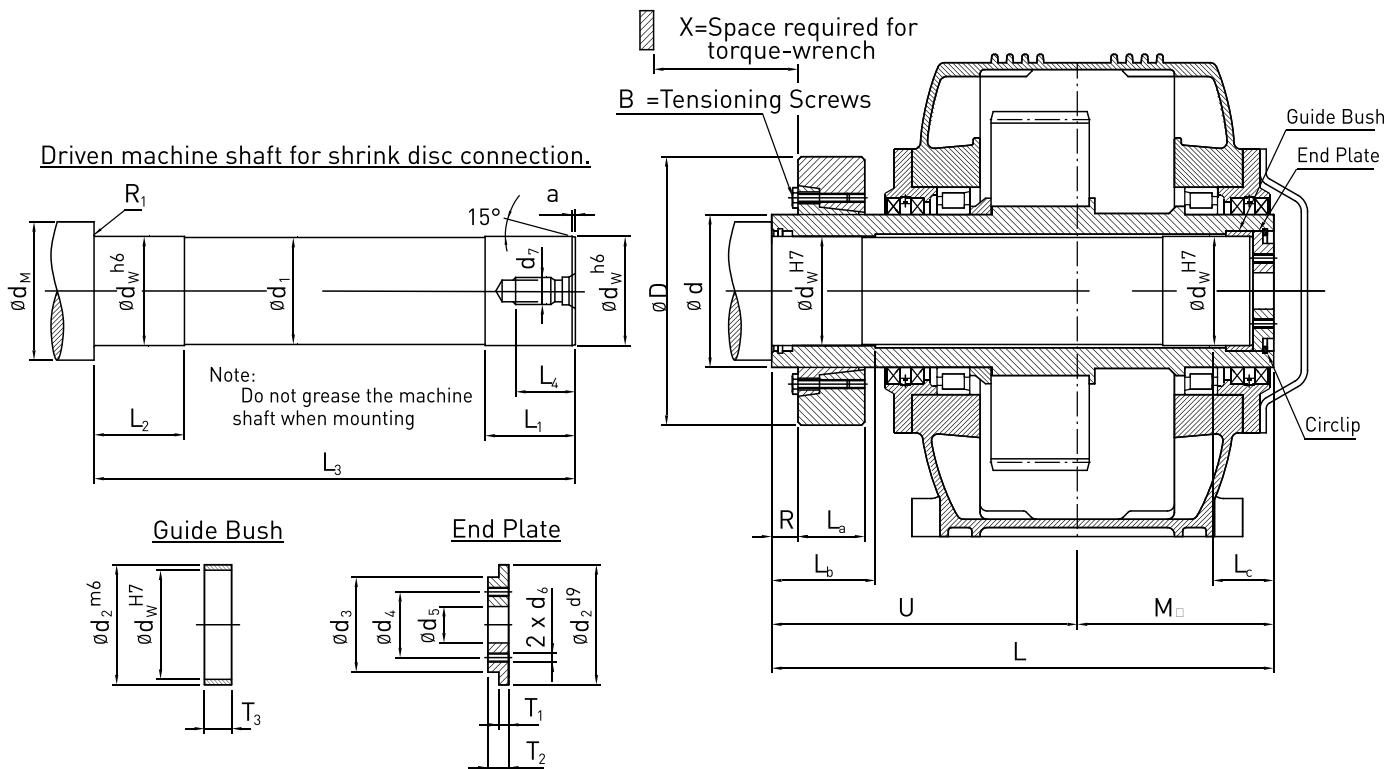
| Size | Hollow Shaft |     |       |       |     |       |    | Shrink Disc |     |     |                   |       |       |                  |     |                  |      |
|------|--------------|-----|-------|-------|-----|-------|----|-------------|-----|-----|-------------------|-------|-------|------------------|-----|------------------|------|
|      | $d_w$        | L   | $L_b$ | $L_c$ | U   | $M_3$ | R  | Type        | D   | d   | $D_1$<br>(Approx) | $L_a$ | $L_d$ | $M_2$<br>(da Nm) | B   | $M_a$<br>(da Nm) | KG   |
| 14   | 60           | 300 | 50    | 30    | 180 | 120   | 17 | 80 - 60     | 141 | 80  | 175               | 31    | 20    | 319              | M10 | 5.8              | 2.3  |
| 15   | 65           | 330 | 55    | 35    | 195 | 135   | 17 | 90 - 65     | 155 | 90  | 190               | 38    | 20    | 540              | M10 | 5.8              | 3.2  |
| 16   | 75           | 360 | 65    | 40    | 215 | 145   | 20 | 100 - 75    | 170 | 100 | 215               | 43.5  | 20    | 720              | M10 | 5.8              | 4.3  |
| 17   | 80           | 380 | 80    | 41    | 230 | 150   | 26 | 110 - 80    | 185 | 110 | 225               | 49    | 20    | 1000             | M12 | 10               | 5.8  |
| 18   | 95           | 430 | 85    | 44    | 260 | 170   | 27 | 125 - 95    | 215 | 125 | 260               | 53.5  | 20    | 1650             | M12 | 10               | 8.7  |
| 19   | 105          | 460 | 95    | 49    | 280 | 180   | 32 | 140 - 105   | 230 | 140 | 270               | 58    | 20    | 2210             | M14 | 16               | 10.3 |
| 20   | 115          | 485 | 100   | 49    | 295 | 190   | 33 | 155 - 115   | 263 | 155 | 305               | 63    | 20    | 2950             | M14 | 16               | 15.2 |
| 21   | 125          | 555 | 120   | 68    | 335 | 220   | 35 | 165 - 125   | 290 | 165 | 335               | 68    | 25    | 4120             | M16 | 24               | 21.5 |
| 22   | 140          | 600 | 135   | 68    | 370 | 230   | 35 | 180 - 140   | 320 | 180 | 365               | 85.5  | 25    | 6400             | M16 | 24               | 32.7 |
| 23   | 160          | 680 | 155   | 73    | 420 | 260   | 37 | 220 - 160   | 370 | 220 | 415               | 105   | 25    | 10300            | M20 | 47               | 53   |
| 24   | 180          | 755 | 160   | 83    | 460 | 295   | 38 | 240 - 180   | 405 | 240 | 460               | 109   | 25    | 14000            | M20 | 47               | 66   |
| 25   | 200          | 795 | 180   | 88    | 490 | 305   | 46 | 260 - 200   | 430 | 260 | 495               | 120   | 25    | 18400            | M20 | 47               | 82   |
| 26   | 220          | 895 | 190   | 103   | 550 | 345   | 48 | 280 - 220   | 460 | 280 | 530               | 135   | 25    | 24000            | M20 | 47               | 103  |

| Size | Driven Machine Shaft |                |                         |                |                |                |                |                |                |   | End Plate      |                |                |                |                |                |                |                | Guide Bush     |                |          |  |
|------|----------------------|----------------|-------------------------|----------------|----------------|----------------|----------------|----------------|----------------|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------|--|
|      | d <sub>w</sub>       | d <sub>1</sub> | d <sub>m</sub><br>(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  |  |

$M_a$  = Required tightening torque

$M_t$  = maximum torque transmitted by shrink disc

### Alternate Shaft Mounting Option



| Size | Hollow Shaft   |     |                |                |     |                |    | Shrink Disc |     |     |                            |                |                |                           |     |                           |      |
|------|----------------|-----|----------------|----------------|-----|----------------|----|-------------|-----|-----|----------------------------|----------------|----------------|---------------------------|-----|---------------------------|------|
|      | d <sub>w</sub> | L   | L <sub>b</sub> | L <sub>c</sub> | U   | M <sub>3</sub> | R  | Type        | D   | d   | D <sub>1</sub><br>(Approx) | L <sub>a</sub> | L <sub>d</sub> | M <sub>2</sub><br>(da Nm) | B   | M <sub>a</sub><br>(da Nm) | KG   |
| 14   | 60             | 300 | 50             | 30             | 180 | 120            | 17 | 80 - 60     | 141 | 80  | 175                        | 31             | 20             | 319                       | M10 | 5.8                       | 2.3  |
| 15   | 65             | 330 | 55             | 35             | 195 | 135            | 17 | 90 - 65     | 155 | 90  | 190                        | 38             | 20             | 540                       | M10 | 5.8                       | 3.2  |
| 16   | 75             | 360 | 65             | 40             | 215 | 145            | 20 | 100 - 75    | 170 | 100 | 215                        | 43.5           | 20             | 720                       | M10 | 5.8                       | 4.3  |
| 17   | 80             | 380 | 80             | 41             | 230 | 150            | 26 | 110 - 80    | 185 | 110 | 225                        | 49             | 20             | 1000                      | M12 | 10                        | 5.8  |
| 18   | 95             | 430 | 85             | 44             | 260 | 170            | 27 | 125 - 95    | 215 | 125 | 260                        | 53.5           | 20             | 1650                      | M12 | 10                        | 8.7  |
| 19   | 105            | 460 | 95             | 49             | 280 | 180            | 32 | 140 - 105   | 230 | 140 | 270                        | 58             | 20             | 2210                      | M14 | 16                        | 10.3 |
| 20   | 115            | 485 | 100            | 49             | 295 | 190            | 33 | 155 - 115   | 263 | 155 | 305                        | 63             | 20             | 2950                      | M14 | 16                        | 15.2 |
| 21   | 125            | 555 | 120            | 68             | 335 | 220            | 35 | 165 - 125   | 290 | 165 | 335                        | 68             | 25             | 4120                      | M16 | 24                        | 21.5 |
| 22   | 140            | 600 | 135            | 68             | 370 | 230            | 35 | 180 - 140   | 320 | 180 | 365                        | 85.5           | 25             | 6400                      | M16 | 24                        | 32.7 |
| 23   | 160            | 680 | 155            | 73             | 420 | 260            | 37 | 220 - 160   | 370 | 220 | 415                        | 105            | 25             | 10300                     | M20 | 47                        | 53   |
| 24   | 180            | 755 | 160            | 83             | 460 | 295            | 38 | 240 - 180   | 405 | 240 | 460                        | 109            | 25             | 14000                     | M20 | 47                        | 66   |
| 25   | 200            | 795 | 180            | 88             | 490 | 305            | 46 | 260 - 200   | 430 | 260 | 495                        | 120            | 25             | 18400                     | M20 | 47                        | 82   |
| 26   | 220            | 895 | 190            | 103            | 550 | 345            | 48 | 280 - 220   | 460 | 280 | 530                        | 135            | 25             | 24000                     | M20 | 47                        | 103  |

| Size | Driven Machine Shaft |                |                         |                |                |                |                |                |                |   | End Plate      |                |                |                |                |                |                | Guide Bush     |                |                |          |
|------|----------------------|----------------|-------------------------|----------------|----------------|----------------|----------------|----------------|----------------|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------|
|      | d <sub>w</sub>       | d <sub>1</sub> | d <sub>m</sub><br>(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  |

M<sub>a</sub> = Required tightening torque

M<sub>t</sub> = maximum torque transmitted by shrink disc

## OUTPUT SHAFT EXTERNAL LOADS

### Maximum Permissible Overhung Loads

When a sprocket or gear etc. is mounted on the shaft, a calculation must be made to determine the overhung load and the results compared to the maximum permissible overhung loads tabulated. Overhung loads can be reduced by increasing the diameter of the sprocket or gear, etc. If the maximum permissible overhung load is exceeded, the sprocket or gear, etc. should be mounted on a separate shaft, flexibly coupled and supported in its own bearings.

The values tabulated are for the most unfavourable direction with the unit transmitting full rated power and with the load P applied midway along the shaft extension. Hence they can sometimes be increased for a more favourable direction of rotation, or if the power transmitted is less than the rated capacity of the gear unit, or if the load is applied nearer to the gear unit case. Refer to our Application Engineers for further details. In any event, the sprocket, gear etc. should be positioned as close as possible to the gear unit case in order to reduce bearing loads and shaft stresses, and to prolong life.

All units will accept 100% momentary overload on stated capacities.

### Overhung load (kN)

$$P = \frac{kW \times 9,500 \times K}{n2 \times R}$$

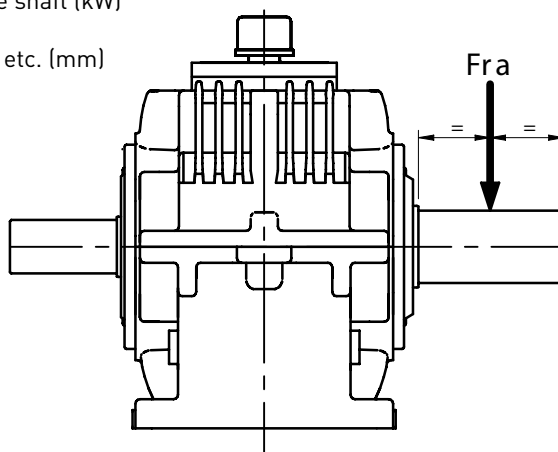
where

- P = equivalent overhung load (kN)  
 kW = power transmitted by the shaft (kW)  
 n2 = speed of shaft (rpm)  
 R = pitch radius of sprocket, etc. (mm)  
 K = factor

### Overhung member

- Chain sprocket 1.00  
 Spur or helical pinion 1.25  
 Vee belt sheave 1.50  
 Flat belt pulley 2.00

### K (factor)



### Maximum Permissible Output Shaft Overhung Load Fra (kN)

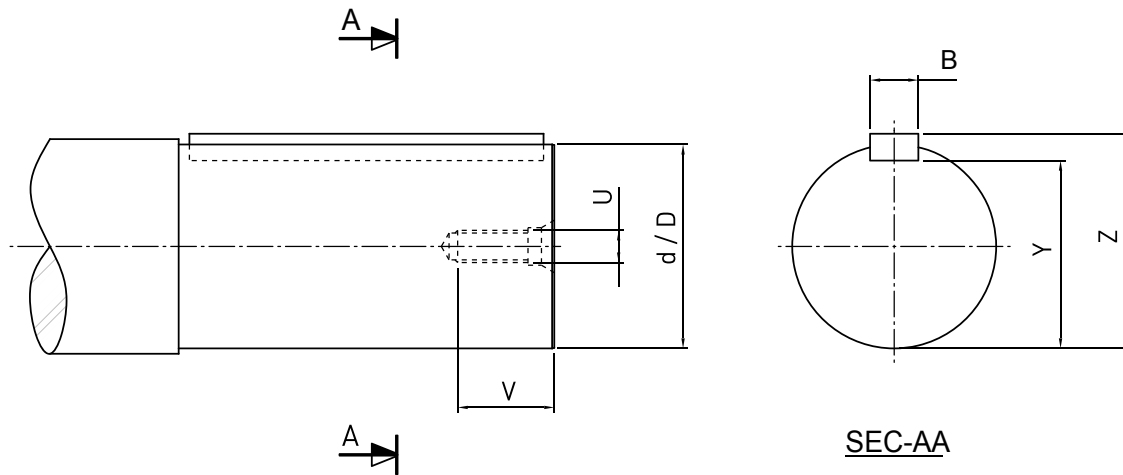
| n2<br>(rpm) | Unit Size |    |    |    |    |    |    |    |     |     |     |     |     |
|-------------|-----------|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|
|             | 14        | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22  | 23  | 24  | 25  | 26  |
| 315         | 8.0       | 10 | 11 | 11 | 10 | 15 | 19 | 22 | 21  | 18  | 20  | 30  | 27  |
| 260         | 6.1       | 11 | 12 | 13 | 12 | 17 | 22 | 25 | 23  | 20  | 24  | 36  | 33  |
| 180         | 7         | 13 | 14 | 15 | 13 | 22 | 27 | 32 | 30  | 22  | 34  | 48  | 47  |
| 160         | 8         | 13 | 15 | 16 | 14 | 24 | 29 | 34 | 32  | 24  | 37  | 53  | 51  |
| 120         | 9         | 16 | 17 | 19 | 16 | 28 | 34 | 40 | 38  | 30  | 46  | 64  | 63  |
| 100         | 10        | 17 | 19 | 20 | 18 | 31 | 37 | 44 | 43  | 34  | 52  | 71  | 71  |
| 71          | 12        | 20 | 22 | 24 | 21 | 36 | 43 | 52 | 52  | 43  | 64  | 87  | 87  |
| 63          | 12        | 21 | 22 | 25 | 23 | 38 | 46 | 55 | 55  | 46  | 69  | 93  | 93  |
| 40          | 15        | 23 | 22 | 30 | 28 | 47 | 50 | 67 | 68  | 58  | 88  | 116 | 118 |
| 25          | 18        | 23 | 22 | 36 | 34 | 56 | 50 | 82 | 79  | 74  | 111 | 129 | 148 |
| 12          | 23        | 23 | 22 | 41 | 37 | 56 | 50 | 87 | 79  | 102 | 132 | 129 | 172 |
| 6           | 23        | 23 | 22 | 41 | 37 | 76 | 79 | 96 | 100 | 160 | 180 | 180 | 185 |

### Maximum Permissible Axial Load

No check is required if the axial load does not exceed 50% of the permissible overhung load.

When the axial load exceeds this value or there is a combination of axial and overhung loads please consult our Application Engineers.

## SHAFT EXTENSION DETAILS



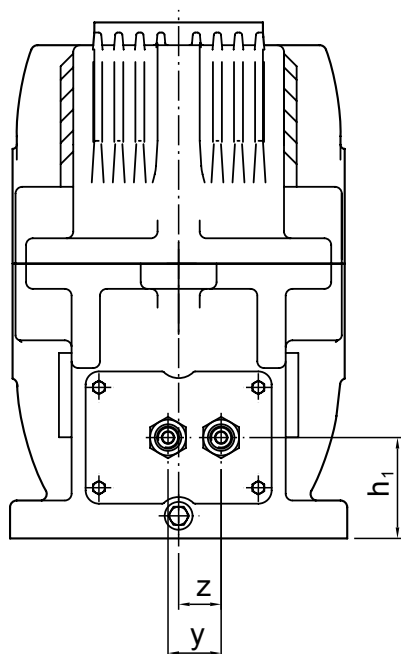
| d / D | B  | Y    | Z    | tol. on Z | U   | V  |
|-------|----|------|------|-----------|-----|----|
| 19    | 6  | 15.5 | 21.5 | -0.1      | M6  | 16 |
| 20    | 6  | 16.5 | 22.5 |           | M6  | 16 |
| 24    | 8  | 20   | 27   | -0.2      | M8  | 19 |
| 25    | 8  | 21   | 28   |           | 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 |

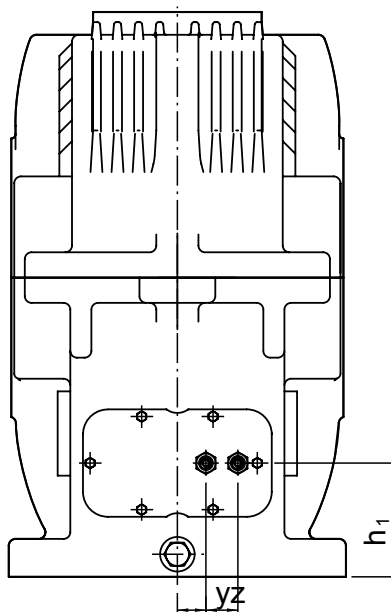
| B     | tol. field | tol         |
|-------|------------|-------------|
| 3-6   | h9         | 0<br>-0.030 |
| 8-10  |            | 0<br>-0.036 |
| 12-18 |            | 0<br>-0.043 |
| 20-28 |            | 0<br>-0.052 |
| 32-50 |            | 0<br>-0.062 |

## HELICAL / BEVEL HELICAL GEAR UNITS

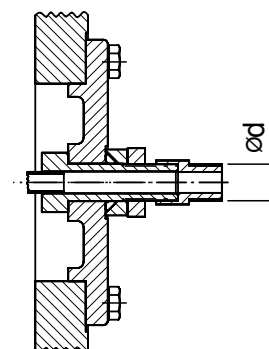
## COOLING COIL



Size 17



Size 18 and above



Cooling Coil Connections

| Size | S1                   |                              |   |   |
|------|----------------------|------------------------------|---|---|
|      | d                    | H <sub>1</sub> <sup>2)</sup> | y | z |
| 11   | Dimension on Request |                              |   |   |
| 13   |                      |                              |   |   |
| 15   |                      |                              |   |   |
| 16   |                      |                              |   |   |
| 17   |                      |                              |   |   |
| 18   |                      |                              |   |   |
| 20   |                      |                              |   |   |
| 21   |                      |                              |   |   |
| 22   |                      |                              |   |   |
| 23   |                      |                              |   |   |
| 24   |                      |                              |   |   |
| 25   |                      |                              |   |   |
| 26   |                      |                              |   |   |

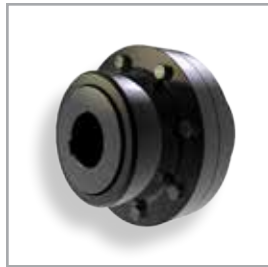
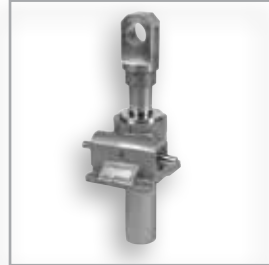
| Size | S2, S3, S4, K2, K3 & K4 |                              |    |    |
|------|-------------------------|------------------------------|----|----|
|      | d                       | H <sub>1</sub> <sup>2)</sup> | y  | z  |
| 11   | Dimension on Request    |                              |    |    |
| 13   |                         |                              |    |    |
| 14   |                         |                              |    |    |
| 15   |                         |                              |    |    |
| 16   |                         |                              |    |    |
| 17   |                         |                              |    |    |
| 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 |

## GD SQUARE VALUES (kg-m<sup>2</sup>) - H1, H2, H3, H4/ 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      |
| H1/<br>S1 | 1.25           | 0.0110         | 0.0381 | -      | 0.1171 | -          | 0.3736 | 0.6788     | -          | 1.9447 | 3.1712 | 5.4903 | -      | -       | -       | -       |
|           | 1.4            | 0.0096         | 0.0331 | -      | 0.1034 | -          | 0.3256 | 0.5967     | -          | 1.7091 | 2.8137 | 4.8453 | -      | -       | -       | -       |
|           | 1.6            | 0.0084         | 0.0288 | -      | 0.0914 | -          | 0.2838 | 0.5246     | -          | 1.5021 | 2.4966 | 4.2761 | 7.5047 | 13.7072 | 24.5190 | -       |
|           | 1.8            | 0.0074         | 0.0251 | -      | 0.0807 | -          | 0.2474 | 0.4611     | -          | 1.3202 | 2.2152 | 3.7737 | 6.4097 | 12.0608 | 21.4817 | 38.8289 |
|           | 2              | 0.0066         | 0.0225 | -      | 0.0728 | -          | 0.2229 | 0.4115     | -          | 1.1754 | 1.9670 | 3.3594 | 5.9417 | 10.7405 | 19.2453 | 34.7051 |
|           | 2.24           | 0.0057         | 0.0201 | -      | 0.0642 | -          | 0.1974 | 0.3624     | -          | 1.0437 | 1.7430 | 2.9678 | 5.2070 | 9.4628  | 17.1708 | 30.7868 |
|           | 2.5            | 0.0053         | 0.0176 | -      | 0.0578 | -          | 0.1775 | 0.3236     | -          | 0.9308 | 1.5483 | 2.6808 | 4.6199 | 8.3181  | 15.0927 | 27.4575 |
|           | 2.8            | 0.0047         | 0.0155 | -      | 0.0507 | -          | 0.1563 | 0.2618     | -          | 0.8321 | 1.3719 | 2.3846 | 4.1078 | 7.3197  | 13.4406 | 23.9837 |
|           | 3.15           | 0.0042         | 0.0138 | -      | 0.0455 | -          | 0.1389 | 0.2513     | -          | 0.7322 | 1.2101 | 2.0733 | 3.6029 | 6.4733  | 11.7963 | 21.1103 |
|           | 3.55           | 0.0033         | 0.0111 | -      | 0.0344 | -          | 0.1085 | 0.1937     | -          | 0.5787 | 0.9804 | 1.6860 | 2.9046 | 5.4212  | 9.7838  | 17.7320 |
|           | 4              | 0.0029         | 0.0098 | -      | 0.0296 | -          | 0.0947 | 0.1688     | -          | 0.4977 | 0.8441 | 1.4502 | 2.5070 | 4.7576  | 8.5308  | 15.4682 |
|           | 4.5            | 0.0026         | 0.0084 | -      | 0.0257 | -          | 0.0807 | 0.1451     | -          | 0.4344 | 0.7397 | 1.2788 | 2.1729 | 4.0887  | 7.4270  | 13.3917 |
|           | 5              | 0.0023         | 0.0074 | -      | 0.0224 | -          | 0.0708 | 0.1269     | -          | 0.3794 | 0.6393 | 1.0965 | 1.8998 | 3.5340  | 6.3119  | 11.3897 |
| H2/<br>S2 | 5.6            | -              | -      | 0.0158 | 0.0295 | 0.0530     | 0.0970 | 0.1754     | 0.2827     | 0.5422 | 0.9295 | 1.5542 | 3.0090 | 5.1498  | 9.2019  | 16.2044 |
|           | 6.3            | -              | -      | 0.0135 | 0.0254 | 0.0449     | 0.0824 | 0.1491     | 0.2450     | 0.4536 | 0.8105 | 1.3527 | 2.5445 | 4.3722  | 7.6863  | 13.5713 |
|           | 7.1            | -              | -      | 0.0116 | 0.0218 | 0.0380     | 0.0699 | 0.1268     | 0.2123     | 0.3795 | 0.7067 | 1.1774 | 2.1516 | 3.7121  | 6.4203  | 11.3660 |
|           | 8              | -              | -      | 0.0099 | 0.0188 | 0.0330     | 0.0611 | 0.1113     | 0.1842     | 0.3272 | 0.9962 | 0.9962 | 1.8209 | 3.1782  | 5.5056  | 9.7374  |
|           | 9              | -              | -      | 0.0078 | 0.0150 | 0.0261     | 0.0489 | 0.0887     | 0.1475     | 0.2624 | 0.4778 | 0.7890 | 1.4477 | 2.4744  | 4.3944  | 7.5695  |
|           | 10             | -              | -      | 0.0074 | 0.0143 | 0.0249     | 0.0468 | 0.0848     | 0.1409     | 0.2501 | 0.4563 | 0.7520 | 1.3820 | 2.3663  | 4.1903  | 7.1912  |
|           | 11.2           | -              | -      | 0.0059 | 0.0114 | 0.0198     | 0.0375 | 0.0675     | 0.1122     | 0.2016 | 0.3705 | 0.5906 | 1.0835 | 1.8389  | 3.2372  | 5.6135  |
|           | 12.5           | -              | -      | 0.0057 | 0.0110 | 0.0191     | 0.0363 | 0.0651     | 0.1082     | 0.1938 | 0.3570 | 0.5672 | 1.0421 | 1.7708  | 3.1086  | 5.3753  |
|           | 14             | -              | -      | 0.0045 | 0.0086 | 0.0155     | 0.0261 | 0.0482     | 0.0809     | 0.1461 | 0.2621 | 0.4412 | 0.8091 | 1.4061  | 2.4413  | 4.2239  |
|           | 16             | -              | -      | 0.0039 | 0.0074 | 0.0134     | 0.0225 | 0.0416     | 0.0710     | 0.1280 | 0.2276 | 0.3791 | 0.6932 | 1.2030  | 2.0904  | 3.5957  |
|           | 18             | -              | -      | 0.0030 | 0.0056 | 0.0102     | 0.0170 | 0.0315     | 0.0533     | 0.0968 | 0.1761 | 0.2916 | 0.5363 | 0.9437  | 1.6269  | 2.7644  |
|           | 20             | -              | -      | 0.0029 | -      | 0.0099     | 0.0164 | 0.0588     | 0.0516     | 0.0936 | 0.3453 | 0.2823 | 0.5199 | 1.8413  | 1.5759  | 2.6699  |
|           | 22.4           | -              | -      | 0.0026 | -      | 0.0077     | 0.0128 | 0.0535     | 0.0444     | 0.0744 | 0.3005 | 0.2192 | 0.4130 | 1.4295  | 1.2269  | 2.1566  |
| H3/<br>S3 | 25             | -              | -      | -      | -      | On Request | 0.0225 | 0.0413     | 0.0705     | 0.1263 | 0.2308 | 0.3925 | 0.7303 | 1.3073  | 2.1930  | 3.9525  |
|           | 28             | -              | -      | -      | -      |            | 0.0195 | 0.0355     | 0.0608     | 0.1093 | 0.2000 | 0.3390 | 0.6258 | 1.1173  | 1.8748  | 3.3368  |
|           | 31.5           | -              | -      | -      | -      |            | 0.0198 | 0.0360     | 0.0615     | 0.1090 | 0.2008 | 0.3403 | 0.6398 | 1.1490  | 1.8940  | 3.4198  |
|           | 35.5           | -              | -      | -      | -      |            | 0.0140 | 0.0260     | 0.0443     | 0.0808 | 0.1473 | 0.2498 | 0.4603 | 0.8165  | 1.3610  | 2.5735  |
|           | 40             | -              | -      | -      | -      |            | 0.0110 | 0.0200     | 0.0343     | 0.0653 | 0.1150 | 0.1948 | 0.3605 | 0.6355  | 1.0770  | 1.9133  |
|           | 45             | -              | -      | -      | -      |            | 0.0103 | 0.0190     | 0.0323     | 0.0618 | 0.1085 | 0.1878 | 0.3395 | 0.5988  | 0.9855  | 1.7985  |
|           | 50             | -              | -      | -      | -      |            | 0.0080 | 0.0150     | 0.0263     | 0.0440 | 0.0823 | 0.1415 | 0.2623 | 0.4643  | 0.7860  | 3.7035  |
|           | 56             | -              | -      | -      | -      |            | 0.0068 | 0.0128     | 0.0220     | 0.0380 | 0.0700 | 0.1218 | 0.2243 | 0.3945  | 0.6665  | 3.2085  |
|           | 63             | -              | -      | -      | -      |            | 0.0073 | 0.0138     | 0.0240     | 0.0395 | 0.0748 | 0.1280 | 0.2390 | 0.4235  | 0.7093  | 1.2845  |
|           | 71             | -              | -      | -      | -      |            | 0.0063 | 0.0115     | 0.0200     | 0.0345 | 0.0640 | 0.1110 | 0.2058 | 0.3623  | 0.6058  | 1.0883  |
|           | 80             | -              | -      | -      | -      |            | 0.0053 | 0.0098     | 0.0178     | 0.0288 | 0.0545 | 0.0930 | 0.1750 | 0.3115  | 0.5100  | 0.9308  |
|           | 90             | -              | -      | -      | -      |            | 0.0053 | On Request | 0.0150     | 0.0248 | 0.0386 | 0.0798 | 0.1520 | 0.2182  | 0.4403  | 0.8135  |
|           | 100            | -              | -      | -      | -      |            | 0.0045 |            | 0.0148     | 0.0245 | 0.0353 | 0.0793 | 0.1510 | 0.2013  | 0.4420  | 0.8073  |
| 112       | -              | -              | -      | -      | 0.0038 | 0.0118     | 0.0200 |            | 0.0324     | 0.0640 | 0.1215 | 0.1857 | 0.3620 | 0.6558  |         |         |
| H4/<br>S4 | 125            | -              | -      | -      | -      | -          | -      | On Request | On Request | 0.0162 | 0.0297 | 0.0510 | 0.0936 | 0.1713  | 0.2862  | 0.5244  |
|           | 140            | -              | -      | -      | -      | -          | -      |            |            | 0.0135 | 0.0252 | 0.0432 | 0.0852 | 0.1452  | 0.2454  | 0.4509  |
|           | 160            | -              | -      | -      | -      | -          | -      |            |            | 0.0132 | 0.0246 | 0.0423 | 0.0831 | 0.1419  | 0.2394  | 0.4401  |
|           | 180            | -              | -      | -      | -      | -          | -      |            |            | 0.0105 | 0.0195 | 0.0342 | 0.0609 | 0.1077  | 0.1845  | 0.3405  |
|           | 200            | -              | -      | -      | -      | -          | -      |            |            | 0.0126 | 0.0237 | 0.0408 | 0.0804 | 0.1368  | 0.2301  | 0.4233  |
|           | 224            | -              | -      | -      | -      | -          | -      |            |            | 0.0102 | 0.0189 | 0.0330 | 0.0585 | 0.1038  | 0.1773  | 0.3273  |
|           | 250            | -              | -      | -      | -      | -          | -      |            |            | 0.0129 | 0.0240 | 0.0408 | 0.0741 | 0.1368  | 0.2265  | 0.4185  |
|           | 280            | -              | -      | -      | -      | -          | -      |            |            | 0.0111 | 0.0204 | 0.0354 | 0.0696 | 0.1182  | 0.1980  | 0.3675  |
|           | 315            | -              | -      | -      | -      | -          | -      |            |            | 0.0090 | 0.0162 | 0.0288 | 0.0501 | 0.0891  | 0.1521  | 0.2832  |
|           | 355            | -              | -      | -      | -      | -          | -      |            |            | 0.0075 | 0.0138 | 0.0243 | 0.0429 | 0.0762  | 0.1323  | 0.2445  |
|           | 400            | -              | -      | -      | -      | -          | -      |            |            | 0.0063 | 0.0117 | 0.0213 | 0.0360 | 0.0654  | 0.1107  | 0.2079  |
|           | 450            | -              | -      | -      | -      | -          | -      |            |            | 0.0063 | 0.0114 | 0.0204 | 0.0342 | 0.0651  | 0.1107  | 0.2076  |
|           | 500            | -              | -      | -      | -      | -          | -      |            |            | -      | 0.0057 | -      | 0.0174 | 0.0288  | -       | 0.0951  |
| 560       | -              | -              | -      | -      | -      | -          | -      | 0.0045     | -          | 0.0138 | 0.0240 | -      | 0.0771 | 0.1455  |         |         |

## GD SQUARE VALUES (kg-m<sup>2</sup>) - B2, B3, B4/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      |
| B2/<br>K2 | 5              | -              | -      | -      | 0.0329 | -      | -      | 0.2005 | -      | -      | 1.1220 | -      | -      | 6.4715 | -       | -       |
|           | 5.6            | -              | 0.0114 | -      | 0.0318 | -      | -      | 0.1929 | -      | -      | 1.0842 | 1.8418 | -      | 6.2213 | 10.9504 | -       |
|           | 6.3            | 0.0038         | 0.0110 | -      | 0.0306 | -      | 0.1044 | 0.1856 | -      | 0.5898 | 1.0478 | 1.7804 | 3.2670 | 5.9807 | 10.5095 | 20.1875 |
|           | 7.1            | 0.0038         | 0.0105 | -      | 0.0296 | -      | 0.1001 | 0.1785 | -      | 0.5673 | 1.0125 | 1.7210 | 3.1574 | 5.7494 | 10.0863 | 19.5288 |
|           | 8              | 0.0036         | 0.0102 | -      | 0.0285 | -      | 0.0968 | 0.1724 | -      | 0.5483 | 0.9789 | 1.6631 | 3.0548 | 5.5805 | 9.7674  | 18.9378 |
|           | 9              | 0.0030         | 0.0083 | -      | 0.0233 | -      | 0.0783 | 0.1409 | -      | 0.4449 | 0.7886 | 1.3380 | 2.4473 | 4.4955 | 7.8683  | 15.2442 |
|           | 10             | 0.0024         | 0.0069 | -      | 0.0192 | -      | 0.0644 | 0.1164 | -      | 0.3663 | 0.6435 | 1.0830 | 1.9863 | 3.6575 | 6.4106  | 12.4238 |
|           | 11.2           | 0.0021         | 0.0057 | -      | 0.0158 | -      | 0.0525 | 0.0963 | -      | 0.3015 | 0.5253 | 0.8841 | 1.6217 | 2.9885 | 5.2424  | 10.1013 |
|           | 12.5           | 0.0018         | 0.0048 | -      | 0.0131 | -      | 0.0435 | 0.0807 | -      | 0.2499 | 0.4317 | 0.7197 | 1.3122 | 2.4492 | 4.2938  | 8.2713  |
|           | 14             | 0.0015         | 0.0041 | -      | 0.0108 | -      | 0.0362 | 0.0680 | -      | 0.2100 | 0.3567 | 0.5903 | 1.0761 | 2.0273 | 3.5610  | 6.8516  |
|           | 16             | 0.0014         | 0.0035 | -      | 0.0092 | -      | 0.0299 | 0.0567 | -      | 0.1754 | 0.2991 | 0.4905 | 0.8919 | 1.6979 | 2.9880  | 5.7323  |
|           | 18             | 0.0012         | 0.0030 | -      | 0.0078 | -      | 0.0254 | 0.0485 | -      | 0.1488 | 0.2487 | 0.4044 | 0.7304 | 1.4079 | 2.4804  | 4.8758  |
|           | 20             | 0.0011         | 0.0027 | -      | 0.0173 | -      | 0.0222 | 0.0870 | -      | 0.1310 | 0.5048 | 0.3491 | 0.6252 | 2.9313 | 2.1473  | 4.1493  |
|           | 22.4           | 0.0009         | -      | -      | 0.0165 | 0.0285 | 0.0194 | 0.0803 | 0.1498 | 0.1152 | 0.4795 | 0.8760 | 0.5352 | 2.7888 | 4.7188  | 3.5311  |
| B3/<br>K3 | 25             | -              | -      | 0.0078 | 0.0130 | 0.0228 | 0.0388 | 0.0648 | 0.1180 | 0.2135 | 0.3815 | 0.6983 | 1.2320 | 2.1905 | 3.5663  | 6.6940  |
|           | 28             | -              | -      | 0.0090 | 0.0153 | 0.0268 | 0.0415 | 0.0760 | 0.1383 | 0.2488 | 0.4418 | 0.8095 | 1.4475 | 2.5883 | 4.3400  | 7.9568  |
|           | 31.5           | -              | -      | 0.0073 | 0.0120 | 0.0213 | 0.0323 | 0.0595 | 0.1090 | 0.1963 | 0.3515 | 0.6458 | 1.1413 | 2.0323 | 3.4060  | 6.1613  |
|           | 35.5           | -              | -      | 0.0060 | 0.0098 | 0.0173 | 0.0265 | 0.0485 | 0.0885 | 0.1595 | 0.2863 | 0.5233 | 0.9300 | 1.6493 | 2.7660  | 5.0145  |
|           | 40             | -              | -      | 0.0050 | 0.0080 | 0.0140 | 0.0215 | 0.0395 | 0.0718 | 0.1293 | 0.2340 | 0.4258 | 0.7548 | 1.3283 | 2.2255  | 4.0178  |
|           | 45             | -              | -      | 0.0040 | 0.0065 | 0.0118 | 0.0175 | 0.0325 | 0.0588 | 0.1060 | 0.1935 | 0.3538 | 0.6210 | 1.0838 | 1.8013  | 3.2613  |
|           | 50             | -              | -      | 0.0035 | 0.0055 | 0.0098 | 0.0145 | 0.0268 | 0.0483 | 0.0865 | 0.1603 | 0.2938 | 0.5110 | 0.8845 | 1.4708  | 2.6635  |
|           | 56             | -              | -      | 0.0030 | 0.0045 | 0.0080 | 0.0120 | 0.0223 | 0.0398 | 0.0718 | 0.1340 | 0.2460 | 0.4233 | 0.7268 | 1.1975  | 2.1560  |
|           | 63             | -              | -      | 0.0025 | 0.0038 | 0.0068 | 0.0100 | 0.0183 | 0.0335 | 0.0598 | 0.1130 | 0.2083 | 0.3553 | 0.6000 | 0.9820  | 1.7690  |
|           | 71             | -              | -      | 0.0023 | 0.0033 | 0.0058 | 0.0085 | 0.0153 | 0.0278 | 0.0493 | 0.0943 | 0.1740 | 0.2965 | 0.5030 | 0.8160  | 1.4675  |
|           | 80             | -              | -      | 0.0023 | -      | 0.0058 | 0.0083 | 0.0234 | 0.0275 | 0.0490 | 0.1057 | 0.1730 | 0.2948 | 0.6429 | 0.8108  | 1.4575  |
|           | 90             | -              | -      | 0.0020 | -      | 0.0050 | 0.0073 | 0.0188 | 0.0238 | 0.0418 | 0.0847 | 0.1495 | 0.2498 | 0.5002 | 0.6688  | 1.1943  |
|           | 100            | -              | -      | 0.0018 | -      | -      | 0.0063 | 0.0150 | 0.0210 | 0.0365 | 0.0678 | 0.1293 | 0.2198 | 0.3891 | 0.6774  | 1.0233  |
|           | 112            | -              | -      | -      | -      | -      | 0.0093 | 0.0120 | 0.0168 | 0.0306 | 0.0543 | 0.0972 | 0.1716 | 0.3027 | 0.5274  | 0.9471  |
| B4/<br>K4 | 125            | -              | -      | -      | -      | -      | 0.0087 | 0.0108 | 0.0147 | 0.0270 | 0.0480 | 0.0855 | 0.1515 | 0.2661 | 0.4665  | 0.8379  |
|           | 140            | -              | -      | -      | -      | -      | 0.0099 | 0.0117 | 0.0150 | 0.0276 | 0.0483 | 0.0939 | 0.1599 | 0.2745 | 0.4833  | 0.8631  |
|           | 160            | -              | -      | -      | -      | -      | 0.0078 | 0.0093 | 0.0120 | 0.0219 | 0.0393 | 0.0693 | 0.1218 | 0.2124 | 0.3744  | 0.6711  |
|           | 180            | -              | -      | -      | -      | -      | 0.0093 | 0.0105 | 0.0126 | 0.0234 | 0.0414 | 0.0810 | 0.1359 | 0.2313 | 0.4101  | 0.7293  |
|           | 200            | -              | -      | -      | -      | -      | 0.0075 | 0.0084 | 0.0102 | 0.0186 | 0.0336 | 0.0591 | 0.1032 | 0.1782 | 0.3171  | 0.5658  |
|           | 224            | -              | -      | -      | -      | -      | 0.0051 | 0.0057 | 0.0072 | 0.0129 | 0.0234 | 0.0402 | 0.0726 | 0.1257 | 0.2268  | 0.4020  |
|           | 250            | -              | -      | -      | -      | -      | 0.0048 | 0.0054 | 0.0066 | 0.0120 | 0.0219 | 0.0372 | 0.0675 | 0.1161 | 0.2109  | 0.3729  |
|           | 280            | -              | -      | -      | -      | -      | 0.0048 | 0.0054 | 0.0063 | 0.0114 | 0.0207 | 0.0351 | 0.0633 | 0.1083 | 0.1977  | 0.3486  |
|           | 315            | -              | -      | -      | -      | -      | 0.0048 | 0.0051 | 0.0060 | 0.0108 | 0.0195 | 0.0330 | 0.0597 | 0.1023 | 0.1875  | 0.3300  |
|           | 355            | -              | -      | -      | -      | -      | 0.0048 | 0.0051 | 0.0057 | 0.0102 | 0.0186 | 0.0315 | 0.0570 | 0.0978 | 0.1794  | 0.3156  |
|           | 400            | -              | -      | -      | -      | -      | 0.0045 | 0.0048 | 0.0054 | 0.0099 | 0.0180 | 0.0303 | 0.0549 | 0.0936 | 0.1725  | 0.3027  |
|           | 450            | -              | -      | -      | -      | -      | 0.0045 | -      | 0.0054 | 0.0099 | -      | 0.0303 | 0.0546 | -      | 0.1722  | 0.3024  |
|           | 500            | -              | -      | -      | -      | -      | 0.0045 | -      | 0.0051 | 0.0096 | -      | 0.0294 | 0.0534 | -      | 0.1680  | 0.2943  |
|           | 560            | -              | -      | -      | -      | -      | 0.0039 | -      | 0.0045 | 0.0081 | -      | 0.0246 | 0.0426 | -      | 0.1353  | 0.2538  |



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