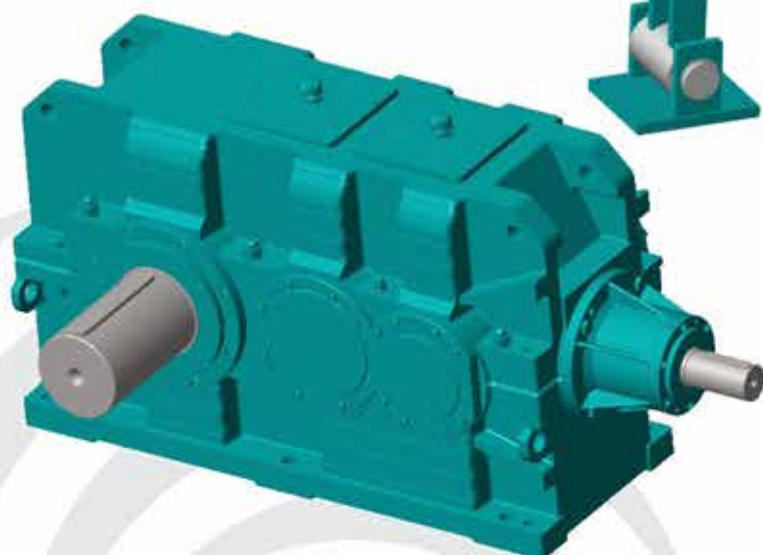


ELECON

EON SERIES GEAR BOX

POWER IS HERE



www.elecon.com



WORLD'S MOST TECHNOLOGICALLY ADVANCED GEAR MANUFACTURING FACILITY

BHANUBHAI MEMORIAL CENTRE OF EXCELLENCE (BMCE)

In the last six decades, Elecon have conducted intensive research in gear technology and manufacturing techniques. We have developed a variety of products in the transmission industry from worm gears to helical, from planetary to variable speed fluid couplings. This development has demanded a significant investment in manufacturing capability from gear cutting right through to heat treatment and profile grinding. This new plant has the capacity to manufacture sufficient helical gears to produce 1000 assembled gear units per month.

This plant is a tribute to our founding Chairman, Lt. Shri Bhanubhai Patel, who wanted to remain "Always a step ahead in technology"



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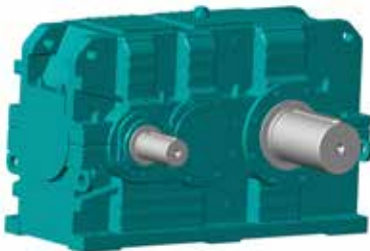
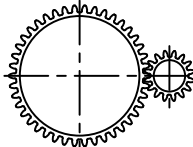
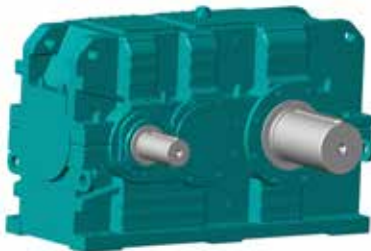
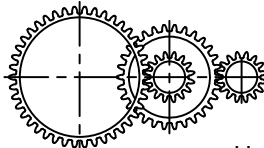
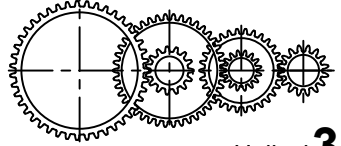
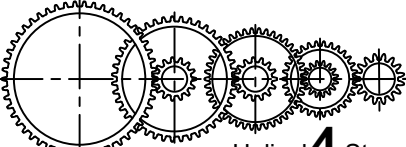
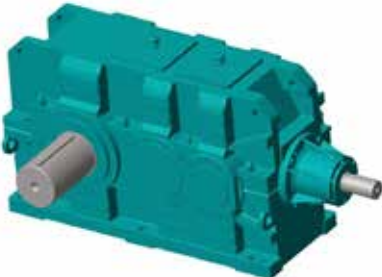
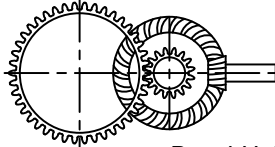
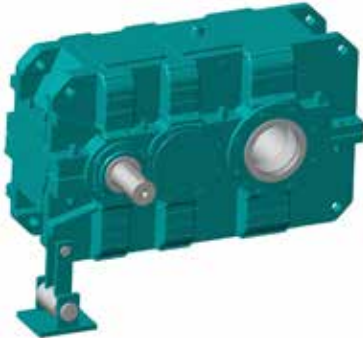
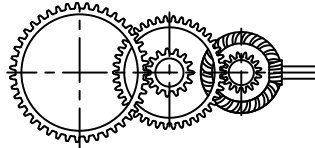
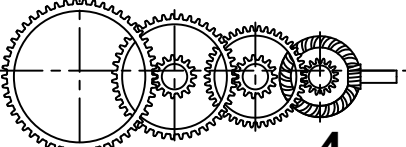
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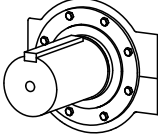
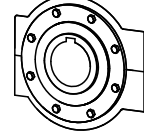
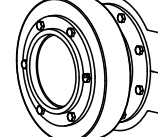
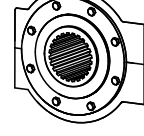
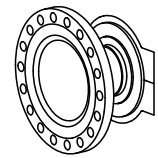
S

3

26

H

Gear Unit Type	Number of Stages	Size	Gear Unit Mounting
Helical  S	 Helical1-Stage	26	Horizontal 
		27	
	 Helical2-Stage	28	
		29	
	 Helical3-Stage	30	
		31	
	 Helical4-Stage	32	
		33	
Bevel-Helical  K	 Bevel-Helical2-Stage	34	Torque Arm 
		35	
	 Bevel-Helical3-Stage	36	
		37	
	 Bevel-Helical4-Stage	38	
		39	

N	1	A	0	0	0500	11
Type of Output Shaft	Type of Gear-Case	Attachments	Type of Cooling	Type of Lubrication	Nominal Ratio * 10	Shaft Attangement (Handing)
N -Sholid Shaft 	1 -Cast Iron Gearcase	A -None	0 -None	0 -Splash 3 -Forced 9 -Special		
Hollow Shaft With K eyway 	2 - Fabricated Steel Gearcase		1 -Single Fan			
Hollow Shaft With shrink D isc 	3 -SG Iron Gearcase		2 -Double Fan			
Hollow Shaft With S pline 	8 -Semi Special Gearcase	B -Backstop	3 -Cooling Coil			
F lange Shaft 	9 -Special Gearcase		4 -Single Fan + Cooling Coil			
		C -RTD	5 -Double Fan + Cooling Coil			
			6 -Oil Heater			
			9 -Special			

Characteristic of Gear Units

Overview

The EON series of helical and bevel helical gear units is designed to Elecon's proven quality standards. These quiet running units provide exceptional levels of performance, versatility and life expectancy to meet the demanding requirements of modern industry.

Elecon EON Series offers a comprehensive range of right angle and parallel shaft combinations with ratios to suit market requirement. Both solid and hollow output shaft combination are available including keyed, keyless including double extended output shaft.

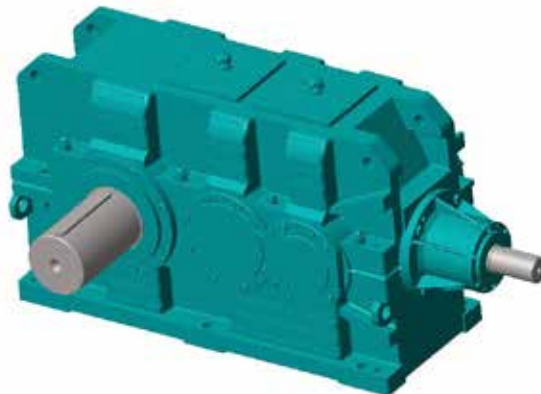
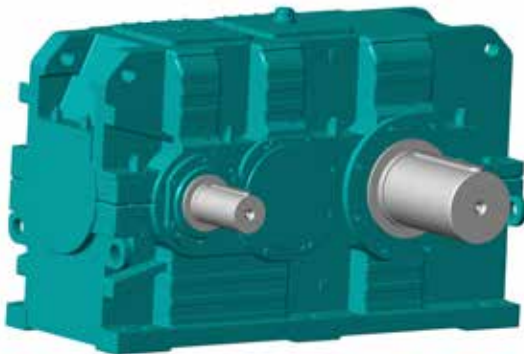
Technical

Elecon's EON series range is designed to balance thermal & mechanical ratings with bearing life to ensure the unit has the best optimal performance.

Gear case have been optimized to reduce weight & increase stiffness ensure superior power to weight ratio. The horizontal split case design makes for simple inspection & maintenance.

Quality & Testing :

Elecon utilize state-of-the art gear & CMM inspection machine which ensures elecon's product are of the highest quality & robustness. All external gears are ground. Elecon offers No-Load testing at assembly line end.



Selection of Gear:

Single stage
Helical Gear
iN =2 to 5.6

Double stage
Helical Gear
iN =6.3 to 20

Triple stage
Helical Gear
iN =22.4 to 90

Quadruple stage
Helical Gear
iN =100 to 355

Double stage
Bevel Helical Gear
iN =5 to 11.2

Triple stage
Bevel Helical Gear
iN =12.5 to 71

Quadruple stage
Bevel Helical Gear
iN =80 to 315

General Information

The following items are absolutely to be observed!

1. The weight of gearbox are mean values and not strictly binding.
2. Prior to commissioning, the operating instructions must be observed. The gear units are delivered ready for operation but without oil filling.
3. Oil quantities given are guide value only. The exact quantity of oil depends on the marks on the oil level dipstick.
4. The oil viscosity has to correspond to the data given on the name plate.
5. Approved lubricants should be used only. (Refer operating instruction manual)
6. The Gear case housings are protected against corrosion.
7. Rating calculations are as per DIN-3990.
8. Foundation bolts are minimum property class-8.8.
9. Allowable vibration limits is generally as per ISO 10816
10. Allowable noise level is 85 ± 2 dB.

Standard Gearbox includes:

1. Oil dipstick
2. Breather plug
3. Lifting provision
4. Oil filling and drain plug
5. RTD provisions
6. Shaft End Key

Symbols used:

1. Oil dipstick 
2. Breather 
3. Drain plug 
4. Oil filling 

Selection of Gear Unit

1. Determination of gear unit type and size:-

1.1 Find the transmission ratio

$$i_N = n_1/n_2$$

1.2 Determine nominal power rating of the gear unit

$$P_N \geq P_e \times f$$

1.3 Checking starting torque

$$\frac{M_k \cdot n_1}{P_N \cdot 9550} < 2.5$$

Gear unit sizes and number of reduction stages are given in rating tables depending on i_N and P_N

1.4 Check whether the actual ratio i as per tables on Pages 39-40

i_N = Nominal transmission ratio

n_1 = Input speed (rpm);

n_2 = Output speed (rpm);

P_N = Nominal gear box rating (kW) (see power table :)

P_e = Absorbed power of the connected machine (kW)

f = Service factor = $f_1 \times f_2$ (from table 1,2 & 3)

f_3 = Service factor (see table :)

M_k = Starting torque or max. Input torque (Nm)

2. Determination of required thermal capacity:-

2.1 Gear unit without additional cooling when

$$P_e \leq P_1 \times F_w$$

2.2 Gear unit with fan possible when

$$P_e \leq P_2 \times F_w$$

2.3 Gear unit with built-in cooling coil possible when

$$P_e \leq P_3 \times F_w$$

2.4 Gear unit with built-in cooling coil & fan when

$$P_e \leq P_4 \times F_w$$

2.5 Gear unit with external oil cooler when

$$P_e \geq P_4 \times F_w$$

t = Ambient temperature (°C)

E_D = Running period (%), e.g. $E_D = 80\%$

P_1 = Thermal capacity without additional cooling at $t = 25\text{ °C}$; $E_D = 100\%$

P_2 = Thermal capacity with fan at $t = 25\text{ °C}$; $E_D = 100\%$

P_3 = Thermal capacity with built-in cooling coil at $t = 25\text{ °C}$; $E_D = 100\%$

P_4 = Thermal capacity with built-in cooling coil & fan at $t = 25\text{ °C}$;

$E_D = 100\%$

$F_w = B_1 \times B_2 \times B_3 \times B_4 \times E_D$ (Table 4/5/6/7/8)

Calculation Example

Prime Mover

Electric Motor = 600 kW
 Motor Speed $n_1 = 1500$ RPM
 Max. starting torque $M_K = 7370$ Nm

Gear Unit Design

Bevel-Helical gear unit

Driven Machine

Heavy rubber-belt conveyor $P_e = 550$ kW
 Speed $n_2 = 60$ RPM
 Duty = 12 h/day
 Starts = 1 per hour
 Running duration per hour, $ED = 100\%$
 Ambient temperature = 40°C
 Wind velocity ≤ 1.4 m/s
 Altitude = Sea Level

Determination of gear unit type and size:-

- 1.1 Calculation of transmission ratio

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

Selected gearbox type is K3, Triple reduction bevel helical unit

- 1.2 Determination of the gear size
 Operating factor "f" from table 1 & 2 = 1.5
 Required nominal gearbox rating

$$\begin{aligned} P_N &= P_e \times f \\ &= 550 \times 1.5 \\ &= 825 \text{ kW} \end{aligned}$$

From power table select K3 gearbox size = 26 with
 $P_N = 970 \text{ kW} \geq 550 \text{ kW} \times 1.5 = 825 \text{ kW}$

- 1.3. Checking starting torque

$$\frac{(M_K \cdot n_1)}{(P_N \cdot 9550)} < 2.5 = \frac{(7370 \cdot 1500)}{(970 \cdot 9550)} = 1.19 < 2.5$$

Checking Heating effects

- 2.1 Gear unit without additional cooling
 From table 4/5/6/7/8, $F_w = 0.67$
 $P_e \leq P_1 \times F_w$,
 As $550 \geq 102.5$ ($153 \cdot 0.67$)
- 2.2 Gear unit with fan cooling
 From table 3, $F_w = 0.67$
 $P_e \leq P_2 \times F_w$,
 As $550 \geq 360$ ($537 \cdot 0.67$)
- 2.3 Gear unit with built-in cooling coil
 From table 3, $F_w = 0.7$
 $P_e \leq P_3 \times F_w$,
 As $550 \geq 679$ ($970 \cdot 0.7$)

Selected Gearbox : K3-26, Ratio - 25:1 And requires built-in cooling coil

Service Factors

Table - 1		Load parameters					
Driven machines		Driven machines		Driven machines		Driven machines	
Bucket chain excavators	S*	Blowers, Fans, Ventilators		Foodstuffs machines		Pipe straightening machines	M**
Travelling gear		Axial blowers	M	Filling machines	G	Roller gear beds	
---Caterpillar track	S*	Rotary piston blowers	M	Kneading machines	M	---Light	M**
---Rail	M	Large ventilators (mining)	M	Packing machines	G	---Heavy	S**
Bucket-wheel stacker	M*	Cooling tower fans	***	Weighing machines	M	Shears	
Bucket wheels		Radial blowers	M	Sugarcane crushers	M**	---Plates	S**
---Clearing	S*	Induced draft fans	M	Sugarcane mills	S**	---Wire	M**
---Coal	S*	Impeller blowers	G	Sugarcane cutters	M**	---Billet	S**
---Lime	S*	Turbo blowers	G	Sugar-beet cutters	M	---Cropping	S**
Cutter heads	S*	Centrifugal blowers	G	Paper machines		---Plate trimming	M**
Slewing machines	M*	Generators		Couchers	S**	Winding turret	M**
Suction pumps	M*	Generators, under uni. load	G	Glazing cylinders	S**	Winding tractor	M**
Cable drums	M	Welding generators	***	Calenders	M**	Continuous casting plants	S**
Winches	M	Rubber and plastics		Mixers	M	Shifting device	S
Winches	M	Extruders		Presses		Roller adjusting device	M
Mining, Rock, Earth		---Rubber	S**	---Glue	S**	Water recycling machine	
Concrete mixer	M	---Plastics	M**	--Wet	S**	Thickeners	M
Crushers	S*	Calenders	M**	--Suction	S**	Gyroscopic ventilators	M
Briquetting presses	H	Kneading machines, rubber	S**	Suction rollers	S**	Mixers	M
Rotary kilns	S**	Mixers	M**	Drying cylinders	S**	Water screw	M
Pneumatic sifters	M*	Mills, rubber	M**	Pumps		Vacuum filter presses	M
Clay mixers	M	Rolling mills, rubber	S**	Proportioning pumps	M	Rate/screen drives	G
Chemical industry		Wood-working machinery		Piston pumps			
Mixers	M	Decorticating drums	S	- U < 1:100	S		
Agitators		Planing machines	M	- U > 1:100 - 1:200	M**		
---Pure liquids	G	Saw frames	M	Centrifugal pumps			
---Liquids and solids	M	Iron and steel industry		Light liquids	G		
Liquids with various density	M	Foundry crane (hoist gear)	S**	- Viscous liquids	M		
Rotary dryer	M	Converters	***	Compression pumps	S		
Centrifuges		Slag cars	G***	Plunger pumps	S**		
---Light	G	Sintering belts	M**	Sand pumps	M**		
---Heavy	M	Crushers	S**	Machines for textile industry			
Petroleum industry		Torpedo mixers	***	Bobbin winding machines	M		
Drilling pumps	***	Car tipper	S	Printing machines	M		
Rotary kilns	M	Cranes		Dyeing machines	M		
Filter presses	M**	Luffing gear	G*	Tan-liquor vessels	M		
Pipeline pumps	M**	Travelling gear	M*	Calenders	M		
Scavenging pumps	M**	Hoisting gear	M*	Willowing machines	M		
Conveying plants		Slewing gear	M*	Drying machines	M		
Uniform load		Winches	G	Looms	M		
Bucket conveyors	G	Metal working		Compressors			
Roasting furnace conveyor	G	Floding presses	S	Rotary piston compressor			
Assembly line belts	G	Plate bending machines	M**	- U < 1:100	S		
Band conveyors	G	Plate straightening presses	S	- U > 1:100 - 1:200	M		
Overhead conveyors	G	Eccentric presses	S	Centrifugal compressors	M		
Chain conveyors	G	Hammers	S**	Turbo compressors	M		
Apron conveyors	G	Planing machines	S	Rolling mills			
Worm conveyors	G	Crank presses	S	Plate titers	M**		
Medium and heavy load		Shearing machine	M**	Bloom pushers	H**		
Shaft- sinking machines	S*	Forging presses	S	Bloom conveying plants	S**		
Bucket conveyors	M	Punching presses	S	Wire pulls	M		
Bucket belts	M**	Mills, rubber		Revoving turrets	M**		
Assembly line conveyors	M	Hammer mills	H**	(conti.casting)			
Conveyors winders	M**	Edge mills	H**	De-scaling crushers	S**		
Conveyors	S*	Ball mills	H**	Reels			
Belt conveyors	M	Pendulum mills	H**	- Strip	M*		
Chain conveyors	M	Impact mills	H**	- Wire	M**		
Goods lifts	M	Tube mills	H**	Walking beam conveyors	M*		
Passengers lifts	***	Beating mills	H**	Chain transporter	M**		
Apron conveyors	M	Rod mills	H**	Cooling trough	M**		
Shaker conveyors	M	Roller mills	H**	Traverse tractors	M**		
Worm conveyors	M			Pipe welding machines	S		
Inclined lifts	S**			Pipe drawing machines	S*		

Service Factors

Table 2	Service factor				f ₁
Prime Mover	Hours of operation/day	Prime mover load parameter			Extra heavy duty H
		Uniform Load G	Medium Load M	Heavy load S	
Electric Motor Turbine	up to 3	0.80	1.00	1.50	2.00
	over 3 to 10	1.00	1.25	1.75	2.25
	over 10 to 24	1.25	1.50	2.00	2.50
Piston Engines 4-6 cylinder U>1:100 - 1:200	up to 3	1.00	1.25	1.75	2.25
	over 3 to 10	1.25	1.50	2.00	2.50
	over 10 to 24	1.50	1.75	2.25	2.75
Piston Engines 1-3 cylinder U<1:100	up to 3	1.25	1.50	2.00	2.50
	over 3 to 10	1.50	1.75	2.25	2.75
	over 10 to 24	1.75	2.00	2.50	3.00

Load parameters

- G = Uniform load
- M = Medium load
- S = Heavy load
- H = Extra heavy load
- * = Detailed calculation on request
- ** = Only calculated for 24-hour period of operation
- *** = Load parameter on request
- U = Cyclic variation

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

Table 3	Starting frequency factor					f ₂
Starts per hour	Service factor (f ₁)					
	1.0	1.2	1.4	1.6	1.8	
1	1.0	1.0	1.0	1.0	1.0	1.0
2 to 20	1.2	1.1	1.1	1.1	1.1	1.1
21 to 40	1.3	1.2	1.2	1.2	1.2	1.1
41 to 80	1.5	1.4	1.3	1.2	1.2	1.1
281 to 160	1.6	1.5	1.4	1.3	1.2	1.1
161 to 320	2.0	1.8	1.7	1.6	1.5	1.4
over 320	2.5	2.3	2.0	1.9	1.8	1.8

Service Factors

Ambient temperature factor, B₁:

When the ambient temperature is below 25°C, B₁ allows an increase in the thermal rating. Conversely, with an ambient air temperature above 25°C, the thermal rating is reduced. See Table 4A & 4B.

Gear units without auxiliary cooling or with fan	
Table 4A Ambient temperature factor, B ₁	
Ambient temperature, °C	B ₁
10	1.15
18	1.07
25	1.00
30	0.93
40	0.83
43	0.75
50	0.67

Gear units with cooling coil or with fan and cooling coil	
Table 4B Ambient temperature factor, B ₁	
Ambient temperature, °C	B ₁
10	1.05
18	1.03
25	1.00
30	0.97
40	0.87
43	0.84
50	0.81

Ambient air velocity factor, B₂ :

When the surrounding air has a steady velocity in excess of 1.4 m/s, due to natural or operational wind fields, the increased convection heat transfer allows the thermal rating to be increased by applying B₂. Conversely, with an ambient air velocity of ≤ 0.50 m/s, the thermal rating is reduced. See Table 5.

Table 5 Ambient air velocity factor, B ₂	
Ambient air velocity, m/s	B ₂
≤ 0.5	0.75
> 0.5 ≤ 1.4	1.00
> 1.4 < 3.7	1.40
≥ 3.7	1.90

Service Factors

Altitudes factor, B₃ :

At high altitudes the decrease in air density results in the derating factor B₃. See Table 6

Table 6 Altitude factor, B ₃	
Altitude, m	B ₃
0 (sea level)	1.15
750	1.07
1500	0.90
2250	0.85
3000	0.81
3750	0.77
4500	0.72
5250	0.68

Maximum allowable oil sump temperature factor, B₄ :

The standard maximum allowable oil sump temperature is 95°C. A lower sump temperature requires a reduction in the thermal rating using B₄ (See Table 7). A maximum allowable sump temperature in excess of 95°C will increase the thermal rating and can provide acceptable gear drive performance in some applications. However, it must be recognized that operating above 95°C may reduce lubricant and contact seal life and increase the surface deterioration on the gears and bearings, with a subsequent increase in the frequency of maintenance. The gear manufacturer should be consulted when a maximum allowable oil sump temperature in excess of 95°C is being considered.

Table 7 Maximum allowable oil sump temperature factor, B ₄	
Maximum oil sump temperature, °C	B ₃
85	0.81
95	1.00
105	1.13

Operation time factor, E_D :

When a gear drive sees less than continuous operation with periods of zero speed, the resulting “cool-off” time allows the thermal rating to be increased by E_D. See Table 8.

Table 8 Operation time factor, E _D	
Operation time per each hour, %	E _D
100 (Continuous)	1.00
80	1.05
70	1.15
40	1.35
20	1.80

Nominal Power Rating (kW)

Helical - Single Stage

Type - S1

Ratio i_N	n_1 rpm	n_2 rpm	GEAR UNIT SIZE													
			26	27	28	29	30	31	32	33	34	35	36	37	38	39
2	1500	750.0	10081	-	12016	-	13586	-	-	-	-	-	-	-	-	-
	1000	500.0	6721	-	8010	-	9058	-	-	-	-	-	-	-	-	-
	750	375.0	5041	-	6008	-	6793	-	-	-	-	-	-	-	-	-
2.24	1500	669.6	9422	-	10550	-	11930	-	-	-	-	-	-	-	-	-
	1000	446.4	6281	-	7034	-	7953	-	-	-	-	-	-	-	-	-
	750	334.8	4711	-	5275	-	5965	-	-	-	-	-	-	-	-	-
2.5	1500	600.0	7420	-	9809	-	10756	-	-	-	-	-	-	-	-	-
	1000	400.0	4946	-	6539	-	7171	-	-	-	-	-	-	-	-	-
	750	300.0	3710	-	4904	-	5378	-	-	-	-	-	-	-	-	-
2.8	1500	535.7	7062	-	9669	-	9782	-	-	-	-	-	-	-	-	-
	1000	357.1	4708	-	6446	-	6521	-	-	-	-	-	-	-	-	-
	750	267.9	3531	-	4835	-	4891	-	-	-	-	-	-	-	-	-
3.15	1500	476.2	6254	-	8909	-	8581	-	-	-	-	-	-	-	-	-
	1000	317.5	4169	-	5939	-	5721	-	-	-	-	-	-	-	-	-
	750	238.1	3127	-	4454	-	4290	-	-	-	-	-	-	-	-	-
3.55	1500	422.5	5724	-	7919	-	7699	-	-	-	-	-	-	-	-	-
	1000	281.7	3816	-	5279	-	5133	-	-	-	-	-	-	-	-	-
	750	211.3	2862	-	3959	-	3849	-	-	-	-	-	-	-	-	-
4	1500	375.0	5131	-	6929	-	9817	-	-	-	-	-	-	-	-	-
	1000	250.0	3421	-	4619	-	6545	-	-	-	-	-	-	-	-	-
	750	187.5	2566	-	3465	-	4908	-	-	-	-	-	-	-	-	-
4.5	1500	333.3	3935	-	5198	-	7679	-	-	-	-	-	-	-	-	-
	1000	222.2	2624	-	3465	-	5119	-	-	-	-	-	-	-	-	-
	750	166.7	1968	-	2599	-	3839	-	-	-	-	-	-	-	-	-
5	1500	300.0	3134	-	3973	-	5575	-	-	-	-	-	-	-	-	-
	1000	200.0	2089	-	2649	-	3717	-	-	-	-	-	-	-	-	-
	750	150.0	1567	-	1987	-	2788	-	-	-	-	-	-	-	-	-
5.6	1500	267.9	2535	-	3361	-	4225	-	-	-	-	-	-	-	-	-
	1000	178.6	1690	-	2241	-	2817	-	-	-	-	-	-	-	-	-
	750	133.9	1268	-	1680	-	2113	-	-	-	-	-	-	-	-	-

Forced lubrication required

Nominal Output Torque (KNm)

Helical - Single Stage

Type – S1

Size	i _N	GEAR UNIT SIZE												38	39
		26	27	28	29	30	31	32	33	34	35	36	37		
S1	2	132	-	153	-	173	-	-	-	-	-	-	-	-	-
	2.24	133	-	153	-	173	-	-	-	-	-	-	-	-	-
	2.5	119	-	153	-	173	-	-	-	-	-	-	-	-	-
	2.8	122	-	174	-	173	-	-	-	-	-	-	-	-	-
	3.15	126	-	176	-	173	-	-	-	-	-	-	-	-	-
	3.55	129	-	176	-	173	-	-	-	-	-	-	-	-	-
	4	133	-	176	-	250	-	-	-	-	-	-	-	-	-
	4.5	111	-	149	-	220	-	-	-	-	-	-	-	-	-
	5	100	-	126	-	177	-	-	-	-	-	-	-	-	-
	5.6	92	-	120	-	153	-	-	-	-	-	-	-	-	-
S2 S2 See pages 20 to 25	6.3	146	-	199	-	298	-	418	-	510	-	815	-	1050	-
	7.1	146	163	199	235	298	342	418	467	530	576	830	920	1050	1210
	8	146	163	199	235	298	342	418	467	551	597	860	950	1060	1210
	9	146	163	199	235	298	342	418	467	566	622	860	990	1090	1210
	10	146	163	199	235	298	342	418	467	587	638	860	1030	1140	1250
	11.2	146	163	199	235	298	342	418	467	587	658	860	1030	1180	1290
	12.5	146	163	199	235	298	342	418	467	612	663	860	1030	1220	1380
	14	146	163	199	235	298	342	418	467	632	689	860	1030	1230	1380
	16	146	163	199	235	298	342	418	467	653	709	860	1030	1230	1400
	18	146	163	199	235	298	342	418	467	653	740	860	1030	1230	1400
S3 S3 See pages 26 to 31	20	146	163	199	235	298	342	418	467	597	740	815	1030	1160	1400
	22.4	153	163	200	235	306	342	420	458	600	673	860	920	1230	1325
	25	153	173	200	245	306	352	420	470	620	675	860	1030	1230	1400
	28	153	173	200	245	306	352	420	470	640	700	860	1030	1230	1400
	31.5	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	35.5	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	40	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	45	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	50	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	56	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
S4 S4 See pages 32 to 35	63	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	71	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	80	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	90	153	173	200	245	296	352	410	470	585	725	800	1030	1150	1400
	100	153	173	200	231	306	342	420	465	640	660	860	910	1230	1310
	112	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	125	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	140	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	160	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	180	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	200	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	224	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	250	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	280	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	315	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	355	140	173	192	245	296	352	410	470	585	725	800	1030	1150	1400
			158		227		342		465		660		910		1310

Thermal Capacity (kW)

Helical - Single Stage

Type-S1

Speed-750 RPM

Nominal Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
2 to 2.4	P ₁	845		978		1179									
	P ₂	1491		1726		2081									
	P ₃	*		*		*									
	P ₄	*		*		*									
2.5 to 2.8	P ₁	887		1027		1237									
	P ₂	1565		1812		2184									
	P ₃	*		*		*									
	P ₄	*		*		*									
3.15 to 3.55	P ₁	727		842		1015									
	P ₂	1284		1486		1486									
	P ₃	*		*		*									
	P ₄	*		*		*									
4 to 4.5	P ₁	676		782		943									
	P ₂	1193		1381		1664									
	P ₃	*		*		*									
	P ₄	*		*		*									
5 to 5.6	P ₁	545		631		761									
	P ₂	962		1114		1343									
	P ₃	*		*		*									
	P ₄	*		*		*									

* Thermal Capacity On Request

- P1 (kW) Gear units without auxiliary cooling
- P2 (kW) Gear units with fan
- P3 (kW) Gear units with built-in cooling coil
- P4 (kW) Gear units with fan and built-in cooling coil

Thermal Capacity (kW)

Helical - Single Stage

Type-S1

Speed-1000 RPM

Nominal Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
2 to 2.4	P ₁	919		1064		1283									
	P ₂	1622		1878		2263									
	P ₃	*		*		*									
	P ₄	*		*		*									
2.5 to 2.8	P ₁	952		1102		1328									
	P ₂	1679		1944		2344									
	P ₃	*		*		*									
	P ₄	*		*		*									
3.15 to 3.55	P ₁	798		924		1113									
	P ₂	1408		1630		1965									
	P ₃	*	-	*	-	*									
	P ₄	*		*		*									
4 to 4.5	P ₁	740		857		1033									
	P ₂	1306		1512		1822									
	P ₃	*		*		*									
	P ₄	*		*		*									
5 to 5.6	P ₁	607		848		847									
	P ₂	1071		1240		1495									
	P ₃	*		*		*									
	P ₄	*		*		*									

* Thermal Capacity On Request

P1 (kW) Gear units without auxiliary cooling

P2 (kW) Gear units with fan

P3 (kW) Gear units with built-in cooling coil

P4 (kW) Gear units with fan and built-in cooling coil

Thermal Capacity (kW) Helical - Single Stage Type-S1 Speed-1500 RPM

Nominal Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
2 to 2.4	P ₁	971		1124		1355									
	P ₂	1713		1984		2391									
	P ₃	*		*		*									
	P ₄	*		*		*									
2.5 to 2.8	P ₁	1042		1206		1454									
	P ₂	1838		2128		2565									
	P ₃	*		*		*									
	P ₄	*		*		*									
3.15 to 3.55	P ₁	892		1033		1245									
	P ₂	1575		1823		2197									
	P ₃	*	-	*	-	*									
	P ₄	*		*		*									
4 to 4.5	P ₁	827		957		1154									
	P ₂	1459		1689		2037									
	P ₃	*		*		*									
	P ₄	*		*		*									
5 to 5.6	P ₁	693		803		968									
	P ₂	1224		1417		1708									
	P ₃	*		*		*									
	P ₄	*		*		*									

* Thermal Capacity On Request

- P1 (kW) Gear units without auxiliary cooling
- P2 (kW) Gear units with fan
- P3 (kW) Gear units with built-in cooling coil
- P4 (kW) Gear units with fan and built-in cooling coil

Thermal Capacity (kW)

Helical - Single Stage

Type-S1

Speed-1800 RPM

Nominal Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
2 to 2.4	P ₁	On Request													
	P ₂														
	P ₃														
	P ₄														
2.5 to 2.8	P ₁														
	P ₂														
	P ₃														
	P ₄														
3.15 to 3.55	P ₁														
	P ₂														
	P ₃														
	P ₄														
4 to 4.5	P ₁														
	P ₂														
	P ₃														
	P ₄														
5 to 5.6	P ₁														
	P ₂														
	P ₃														
	P ₄														

- P1 (kW) Gear units without auxiliary cooling
- P2 (kW) Gear units with fan
- P3 (kW) Gear units with built-in cooling coil
- P4 (kW) Gear units with fan and built-in cooling coil

Nominal Power Rating (kW)

Helical - Double Stage

Type - S2

Ratio i_N	n_1 rpm	n_2 rpm	GEAR UNIT SIZE													
			26	27	28	29	30	31	32	33	34	35	36	37	38	39
6.3	1500	238.1	3568		4857		7390		10366		12635		20190		25846	
	1000	158.7	2379		3238		4927		6911		8423		13460		17231	
	750	119	1784		2429		3695		5183		6317		10095		12923	
7.1	1500	211.3	3249	3570	4318	5099	6436	7539	9027	10228	11673	12580	18280	20093	23605	26257
	1000	140.8	2166	2380	2879	3399	4291	5026	6018	6819	7782	8386	12187	13395	15737	17505
	750	105.6	1624	1785	2159	2549	3218	3770	4514	5114	5836	6290	9140	10046	11803	13129
8	1500	187.5	2894	3250	3907	4533	5708	6565	8007	8907	10980	11591	17137	18445	20607	23981
	1000	125	1929	2167	2605	3022	3805	4377	5338	5938	7320	7728	11425	12297	13738	15987
	750	93.8	1447	1625	1954	2266	2854	3283	4003	4453	5490	5796	8568	9223	10303	11990
9	1500	166.7	2496	2895	3473	4101	5294	5823	7425	7900	9903	10927	15047	17391	19651	20737
	1000	111.1	1664	1930	2315	2734	3529	3882	4950	5266	6602	7284	10031	11594	13101	13825
	750	83.3	1248	1448	1736	2051	2647	2912	3713	3950	4952	5463	7523	8696	9826	10369
10	1500	150	2260	2498	3156	3646	4632	5400	6497	7326	9548	9841	13567	15887	17984	19867
	1000	100	1507	1665	2104	2430	3088	3600	4331	4884	6366	6561	9044	10592	11989	13245
	750	75	1130	1249	1578	1823	2316	2700	3249	3663	4774	4920	6783	7944	8992	9934
11.2	1500	133.9	2046	2261	2801	3313	4299	4725	6029	6410	8257	9436	12339	14324	17275	17940
	1000	89.3	1364	1507	1868	2208	2866	3150	4020	4274	5504	6291	8226	9550	11517	11960
	750	67	1023	1130	1401	1656	2149	2363	3015	3205	4128	4718	6169	7162	8638	8970
12.5	1500	120	1819	2047	2434	2940	3684	4385	5167	5949	7840	8221	10823	13028	15354	17811
	1000	80	1213	1364	1623	1960	2456	2923	3445	3966	5226	5481	7216	8685	10236	11874
	750	60	910	1023	1217	1470	1842	2193	2584	2974	3920	4111	5412	6514	7677	8905
14	1500	107.1	1614	1820	2233	2555	3318	3758	4655	5098	7196	7781	9711	11428	13901	15311
	1000	71.4	1076	1214	1488	1703	2212	2505	3103	3399	4798	5187	6474	7618	9267	10207
	750	53.6	807	910	1116	1277	1659	1879	2327	2549	3598	3890	4855	5714	6950	7655
16	1500	93.8	1412	1615	1954	2344	2883	3385	4044	4592	6506	7117	8568	10253	12255	13949
	1000	62.5	942	1077	1302	1562	1922	2257	2696	3062	4337	4745	5712	6835	8170	9299
	750	46.9	706	807	977	1172	1441	1693	2022	2296	3253	3559	4284	5127	6127	6974
18	1500	83.3	1263	1413	1767	2051	2637	2941	3699	3990	5783	6500	7616	9047	11047	12297
	1000	55.6	842	942	1178	1367	1758	1961	2466	2660	3855	4333	5078	6031	7364	8198
	750	41.7	631	707	884	1025	1318	1471	1849	1995	2892	3250	3808	4523	5523	6148
20	1500	75	1130	1263	1545	1855	2340	2690	3283	3649	4758	5778	6496	8042	9356	11084
	1000	50	753	842	1030	1237	1560	1793	2188	2433	3172	3852	4331	5361	6237	7390
	750	37.5	565	632	772	928	1170	1345	1641	1825	2379	2889	3248	4021	4678	5542
22.4	1500	67		1130		1621		2387		3176		4729		6465		9421
	1000	44.6		754		1081		1592		2118		3153		4310		6281
	750	33.5		565		811		1194		1588		2364		3232		4711

 Forced lubrication required

Nominal Output Torque (KNm)

Helical - Double Stage

Type – S2

Size	i _N	GEAR UNIT SIZE												38	39
		26	27	28	29	30	31	32	33	34	35	36	37		
S1 See pages 14 to 19	2	132	-	153	-	173	-	-	-	-	-	-	-	-	-
	2.24	133	-	153	-	173	-	-	-	-	-	-	-	-	-
	2.5	119	-	153	-	173	-	-	-	-	-	-	-	-	-
	2.8	122	-	174	-	173	-	-	-	-	-	-	-	-	-
	3.15	126	-	176	-	173	-	-	-	-	-	-	-	-	-
	3.55	129	-	176	-	173	-	-	-	-	-	-	-	-	-
	4	133	-	176	-	250	-	-	-	-	-	-	-	-	-
	4.5	111	-	149	-	220	-	-	-	-	-	-	-	-	-
	5	100	-	126	-	177	-	-	-	-	-	-	-	-	-
	5.6	92	-	120	-	153	-	-	-	-	-	-	-	-	-
S2	6.3	146	-	199	-	298	-	418	-	510	-	815	-	1050	-
	7.1	146	163	199	235	298	342	418	467	530	576	830	920	1050	1210
	8	146	163	199	235	298	342	418	467	551	597	860	950	1060	1210
	9	146	163	199	235	298	342	418	467	566	622	860	990	1090	1210
	10	146	163	199	235	298	342	418	467	587	638	860	1030	1140	1250
	11.2	146	163	199	235	298	342	418	467	587	658	860	1030	1180	1290
	12.5	146	163	199	235	298	342	418	467	612	663	860	1030	1220	1380
	14	146	163	199	235	298	342	418	467	632	689	860	1030	1230	1380
	16	146	163	199	235	298	342	418	467	653	709	860	1030	1230	1400
	18	146	163	199	235	298	342	418	467	653	740	860	1030	1230	1400
	20	146	163	199	235	298	342	418	467	597	740	815	1030	1160	1400
S3 See pages 26 to 31	22.4	153	163	200	235	306	342	420	458	600	673	860	920	1230	1325
	25	153	173	200	245	306	352	420	470	620	675	860	1030	1230	1400
	28	153	173	200	245	306	352	420	470	640	700	860	1030	1230	1400
	31.5	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	35.5	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	40	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	45	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	50	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	56	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	63	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	71	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	80	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	90	153	173	200	245	296	352	410	470	585	725	800	1030	1150	1400
S4 See pages 32 to 35	100	153	173	200	231	306	342	420	465	640	660	860	910	1230	1310
	112	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	125	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	140	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	160	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	180	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	200	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	224	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	250	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	280	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	315	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	355	140	173	192	245	296	352	410	470	585	725	800	1030	1150	1400
	400		158		227		342		465		660		910		1310

Thermal Capacity (kW) Helical - Double Stage Type-S2 Speed-750 RPM

Nominal Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
6.3 to 7.1	P ₁	367	384	439	483	564	615	663	729	On Request					
	P ₂	648	677	774	853	995	1086	1170	1286						
	P ₃	1356	1475	1627	1720	1864	1999	2076	2288						
	P ₄	1637	1768	1963	2090	2296	2470	2583	2845						
8 to 9	P ₁	315	329	376	414	484	528	568	625						
	P ₂	556	581	664	731	853	931	1003	1103						
	P ₃	1163	1265	1395	1475	1599	1714	1781	1962						
	P ₄	1404	1516	1683	1792	1969	2118	2215	2440						
10 to 11.2	P ₁	305	318	364	401	468	510	550	605						
	P ₂	538	562	643	707	826	901	971	1067						
	P ₃	1125	1224	1350	1428	1547	1659	1723	1899						
	P ₄	1358	1467	1629	1734	1905	2049	2143	2361						
12.5 to 14	P ₁	273	286	327	360	420	458	494	543						
	P ₂	483	504	577	635	741	809	871	958						
	P ₃	1010	1098	1212	1282	1389	1489	1547	1705						
	P ₄	1219	1317	1462	1557	1710	1840	1924	2120						
16	P ₁	246	257	294	324	378	412	444	488						
	P ₂	434	453	519	571	666	727	783	861						
	P ₃	908	988	1090	1152	1249	1339	1390	1532						
	P ₄	1096	1184	1314	1400	1537	1654	1730	1905						
18	P ₁	233	244	279	307	359	391	421	463						
	P ₂	412	430	492	542	633	690	744	818						
	P ₃	862	938	1034	1094	1185	1271	1320	1455						
	P ₄	1041	1124	1248	1329	1459	1570	1642	1809						
20	P ₁	312	326	373	411	480	523	564	620						
	P ₂	408	426	488	537	627	684	736	810						
	P ₃	854	928	1025	1083	1174	1259	1307	1441						
	P ₄	1031	1113	1236	1316	1445	1555	1626	1792						
22.4	P ₁	-	219	-	276	-	351	-	416						
	P ₂	-	386	-	486	-	619	-	733						
	P ₃	-	841	-	981	-	1140	-	1305						
	P ₄	-	1008	-	1192	-	1408	-	1623						

- P1 (kW) Gear units without auxiliary cooling
 P2 (kW) Gear units with fan
 P3 (kW) Gear units with built-in cooling coil
 P4 (kW) Gear units with fan and built-in cooling coil

Thermal Capacity (kW)

Helical - Double Stage

Type-S2

Speed-1000 RPM

Nominal Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
6.3 to 7.1	P₁	408	427	488	538	627	685	737	811	On Request					
	P₂	721	754	861	949	1107	1208	1301	1431						
	P₃	1508	1642	1810	1915	2074	2225	2309	2547						
	P₄	1820	1968	2183	2326	2553	2749	2873	3167						
8 to 9	P₁	353	369	422	465	543	592	638	701						
	P₂	624	652	745	821	958	1045	1126	1238						
	P₃	1305	1419	1566	1656	1794	1924	1998	2202						
	P₄	1575	1702	1889	2011	2209	2377	2486	2739						
10 to 11.2	P₁	343	358	410	451	526	574	619	680						
	P₂	605	632	723	796	929	1013	1092	1200						
	P₃	1266	1377	1519	1606	1741	1866	1938	2136						
	P₄	1528	1650	1832	1951	2143	2305	2411	2656						
12.5 to 14	P₁	310	324	371	408	476	520	560	615						
	P₂	547	572	654	720	841	917	988	1086						
	P₃	1145	1246	1374	1453	1575	1689	1754	1933						
	P₄	1382	1493	1658	1765	1939	2086	2182	2403						
16	P₁	280	293	335	369	431	470	506	557						
	P₂	495	517	591	651	760	829	893	982						
	P₃	1036	1126	1243	1314	1424	1527	1586	1748						
	P₄	1250	1350	1499	1596	1753	1886	1973	2173						
18	P₁	267	279	319	351	410	447	482	529						
	P₂	471	492	563	619	723	789	850	934						
	P₃	985	1071	1182	1250	1355	1453	1509	1663						
	P₄	1189	1285	1426	1518	1668	1794	1877	2067						
20	P₁	264	276	316	347	405	442	477	524						
	P₂	466	487	557	613	716	781	841	925						
	P₃	975	1060	1170	1237	1341	1438	1493	1645						
	P₄	1177	1271	1411	1503	1651	1776	1857	2046						
22.4	P₁	-	240	-	302	-	384	-	455						
	P₂	-	423	-	533	-	678	-	803						
	P₃	-	921	-	1075	-	1249	-	1429						
	P₄	-	1104	-	1305	-	1543	-	1777						

- P1 (kW) Gear units without auxiliary cooling
- P2 (kW) Gear units with fan
- P3 (kW) Gear units with built-in cooling coil
- P4 (kW) Gear units with fan and built-in cooling coil

Thermal Capacity (kW) Helical - Double Stage Type-S2 Speed-1500 RPM

Nominal Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
6.3 to 7.1	P ₁	464	487	555	613	713	781	838	925	On Request					
	P ₂	819	859	979	1082	1259	1377	149	1631						
	P ₃	1715	1871	2058	2183	2358	2537	2626	2903						
	P ₄	2070	2243	2482	2652	2903	3133	3267	3610						
8 to 9	P ₁	408	426	487	536	626	683	736	809						
	P ₂	719	752	860	946	1105	1205	1298	1427						
	P ₃	1505	1637	1806	1910	2070	2219	2305	2540						
	P ₄	1817	1963	2179	2320	2548	2741	2867	3159						
10 to 11.2	P ₁	397	415	475	523	610	665	717	788						
	P ₂	701	732	838	922	1076	1174	1265	1391						
	P ₃	1467	1595	1760	1861	2016	2162	2246	2475						
	P ₄	1770	1912	2123	2260	2483	2671	2794	3077						
12.5 to 14	P ₁	364	380	435	479	559	609	657	722						
	P ₂	642	671	767	845	986	1076	1159	1274						
	P ₃	1343	1461	1612	1704	1847	1981	2057	2267						
	P ₄	1622	1752	1945	2070	2274	2447	2559	2819						
16	P ₁	331	346	396	436	509	555	598	657						
	P ₂	584	611	699	769	898	979	1055	1160						
	P ₃	1223	1330	1468	1552	1682	1803	1873	2064						
	P ₄	1477	1595	1771	1885	2071	2228	2330	2567						
18	P ₁	316	331	378	416	486	530	571	628						
	P ₂	558	584	667	735	858	936	1008	1108						
	P ₃	1169	1271	1402	1483	1607	1723	1790	1972						
	P ₄	1411	1524	1692	1801	1979	2129	2226	2453						
20	P ₁	312	326	373	411	480	523	564	620						
	P ₂	551	576	659	725	847	924	995	1094						
	P ₃	1154	1255	1384	1464	1586	1701	1766	1947						
	P ₄	1392	1504	1670	1778	1953	2101	2198	2421						
22.4	P ₁	-	254	-	320	-	408	-	483						
	P ₂	-	449	-	565	-	720	-	852						
	P ₃	-	978	-	1140	-	1325	-	1517						
	P ₄	-	1172	-	1385	-	1637	-	1886						

- P1 (kW) Gear units without auxiliary cooling
 P2 (kW) Gear units with fan
 P3 (kW) Gear units with built-in cooling coil
 P4 (kW) Gear units with fan and built-in cooling coil

Thermal Capacity (kW)

Helical - Double Stage

Type-S2

Speed-1800 RPM

Nominal Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
6.3 to 7.1	P ₁	On Request													
	P ₂														
	P ₃														
	P ₄														
8 to 9	P ₁														
	P ₂														
	P ₃														
	P ₄														
10 to 11.2	P ₁														
	P ₂														
	P ₃														
	P ₄														
12.5 to 14	P ₁														
	P ₂														
	P ₃														
	P ₄														
16	P ₁														
	P ₂														
	P ₃														
	P ₄														
18	P ₁														
	P ₂														
	P ₃														
	P ₄														
20	P ₁														
	P ₂														
	P ₃														
	P ₄														
22.4	P ₁														
	P ₂														
	P ₃														
	P ₄														

- P1 (kW) Gear units without auxiliary cooling
- P2 (kW) Gear units with fan
- P3 (kW) Gear units with built-in cooling coil
- P4 (kW) Gear units with fan and built-in cooling coil

Nominal Power Rating (kW)

Helical - Three Stage

Type - S3

Ratio i_N	n_1 rpm	n_2 rpm	GEAR UNIT SIZE													
			26	27	28	29	30	31	32	33	34	35	36	37	38	39
22.4	1500	67	1090	-	1445	-	2100	-	2985	-	4419	-	5981	-	8514	-
	1000	44.6	726	-	963	-	1400	-	1990	-	2946	-	3988	-	5676	-
	750	33.5	545	-	723	-	1050	-	1493	-	2210	-	2991	-	4257	-
25	1500	60	967	1104	1282	1574	1926	2147	2689	2950	4059	4383	5367	6315	7646	8543
	1000	40	644	736	855	1049	1284	1431	1793	1967	2706	2922	3578	4210	5097	5695
	750	30	483	552	641	787	963	1073	1345	1475	2030	2192	2683	3158	3823	4272
28	1500	53.6	846	979	1122	1396	1685	1969	2336	2658	3666	4040	4735	5666	6740	7672
	1000	35.7	564	653	748	931	1123	1313	1558	1772	2444	2694	3157	3777	4493	5114
	750	26.8	423	490	561	698	843	985	1168	1329	1833	2020	2368	2833	3370	3836
31.5	1500	47.6	763	857	1012	1222	1483	1723	2077	2309	3279	3662	4371	5000	6127	6763
	1000	31.7	508	571	674	814	989	1149	1385	1539	2186	2441	2914	3333	4085	4509
	750	23.8	381	429	506	611	741	862	1038	1154	1640	1831	2185	2500	3064	3382
35.5	1500	42.3	677	773	898	1102	1360	1516	1871	2052	2915	3275	3922	4615	5502	6148
	1000	28.2	451	515	598	734	877	1011	1217	1368	1776	2183	2432	3077	3430	4099
	750	21.1	338	386	449	551	680	758	935	1026	1457	1637	1961	2308	2751	3074
40	1500	37.5	592	686	785	977	1190	1391	1625	1849	2551	2911	3460	4141	4851	5521
	1000	25	395	457	524	652	793	927	1084	1233	1700	1941	2307	2760	3234	3681
	750	18.8	296	343	393	489	595	695	813	924	1275	1456	1730	2070	2425	2761
45	1500	33.3	529	600	702	855	1077	1217	1487	1606	2267	2547	3076	3654	4373	4867
	1000	22.2	353	400	468	570	718	811	991	1071	1511	1698	2051	2436	2915	3245
	750	16.7	265	300	351	428	538	609	743	803	1134	1274	1538	1827	2186	2434
50	1500	30	480	536	637	765	974	1101	1336	1469	2082	2264	2775	3248	3942	4388
	1000	20	320	358	425	510	649	734	891	979	1388	1509	1850	2165	2628	2925
	750	15	240	268	318	382	487	551	668	735	1041	1132	1387	1624	1971	2194
56	1500	26.8	420	486	557	693	852	995	1161	1321	1822	2079	2448	2929	3475	3956
	1000	17.9	280	324	371	462	568	664	774	880	1215	1386	1632	1953	2317	2637
	750	13.4	210	243	279	347	426	498	580	660	911	1040	1224	1465	1738	1978
63	1500	23.8	376	426	498	607	771	871	1062	1147	1619	1819	2176	2585	3133	3487
	1000	15.9	250	284	332	404	514	581	708	765	1080	1213	1451	1723	2088	2325
	750	11.9	188	213	249	303	385	436	531	574	810	910	1088	1292	1566	1744
71	1500	21.1	342	381	454	542	679	788	935	1049	1457	1617	1920	2298	2780	3143
	1000	14.1	228	254	303	362	453	525	624	700	972	1078	1280	1532	1853	2096
	750	10.6	171	190	227	271	340	394	468	525	729	809	960	1149	1390	1572
80	1500	18.8	299	347	397	494	595	695	813	924	1275	1456	1694	2027	2451	2790
	1000	12.5	200	231	265	329	396	463	542	616	850	970	1129	1351	1634	1860
	750	9.4	150	173	199	247	297	347	406	462	638	728	847	1013	1225	1395
90	1500	16.7	268	303	355	432	520	608	726	803	1036	1274	1401	1788	2066	2459
	1000	11.1	178	202	237	288	347	405	484	535	691	849	934	1192	1377	1640
	750	8.3	134	152	178	216	260	304	363	402	518	637	700	894	1033	1230
100	1500	15	-	271	-	365	-	534	-	727	-	1031	-	1404	-	2074
	1000	10	-	181	-	243	-	356	-	485	-	687	-	936	-	1383
		7.5	-	136	-	182	-	267	-	363	-	515	-	702	-	1037

 Forced lubrication required

Nominal Output Torque (KNm)

Helical - Three Stage

Type – S3

Size	i_N	GEAR UNIT SIZE												38	39
		26	27	28	29	30	31	32	33	34	35	36	37		
S1 S1 See pages 14 to 19	2	132	-	153	-	173	-	-	-	-	-	-	-	-	-
	2.24	133	-	153	-	173	-	-	-	-	-	-	-	-	-
	2.5	119	-	153	-	173	-	-	-	-	-	-	-	-	-
	2.8	122	-	174	-	173	-	-	-	-	-	-	-	-	-
	3.15	126	-	176	-	173	-	-	-	-	-	-	-	-	-
	3.55	129	-	176	-	173	-	-	-	-	-	-	-	-	-
	4	133	-	176	-	250	-	-	-	-	-	-	-	-	-
	4.5	111	-	149	-	220	-	-	-	-	-	-	-	-	-
	5	100	-	126	-	177	-	-	-	-	-	-	-	-	-
	5.6	92	-	120	-	153	-	-	-	-	-	-	-	-	-
S2 S2 See pages 20 to 25	6.3	146	-	199	-	298	-	418	-	510	-	815	-	1050	-
	7.1	146	163	199	235	298	342	418	467	530	576	830	920	1050	1210
	8	146	163	199	235	298	342	418	467	551	597	860	950	1060	1210
	9	146	163	199	235	298	342	418	467	566	622	860	990	1090	1210
	10	146	163	199	235	298	342	418	467	587	638	860	1030	1140	1250
	11.2	146	163	199	235	298	342	418	467	587	658	860	1030	1180	1290
	12.5	146	163	199	235	298	342	418	467	612	663	860	1030	1220	1380
	14	146	163	199	235	298	342	418	467	632	689	860	1030	1230	1380
	16	146	163	199	235	298	342	418	467	653	709	860	1030	1230	1400
	18	146	163	199	235	298	342	418	467	653	740	860	1030	1230	1400
	20	146	163	199	235	298	342	418	467	597	740	815	1030	1160	1400
S3	22.4	153	163	200	235	306	342	420	458	600	673	860	920	1230	1325
	25	153	173	200	245	306	352	420	470	620	675	860	1030	1230	1400
	28	153	173	200	245	306	352	420	470	640	700	860	1030	1230	1400
	31.5	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	35.5	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	40	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	45	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	50	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	56	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	63	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	71	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	80	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
S4 S4 See pages 32 to 35	90	153	173	200	245	296	352	410	470	585	725	800	1030	1150	1400
	100	153	173	200	231	306	342	420	465	640	660	860	910	1230	1310
	112	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	125	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	140	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	160	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	180	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	200	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	224	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	250	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	280	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	315	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	355	140	173	192	245	296	352	410	470	585	725	800	1030	1150	1400
	400		158		227		342		465		660		910		1310

Thermal Capacity (kW)

Helical - Triple Stage

Type-S3

Speed-750 RPM

Nominal Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
22.4	P ₁	232	-	259	-	333	-	402	-	On Request					
	P ₂	409	-	457	-	588	-	709	-						
	P ₃	773	-	928	-	1063	-	1184	-						
	P ₄	951	-	1126	-	1318	-	1491	-						
25 to 28	P ₁	197	212	220	243	284	300	342	374						
	P ₂	348	373	389	428	501	529	603	660						
	P ₃	658	715	789	835	905	970	1007	1110						
	P ₄	809	877	958	1020	1122	1199	1269	1396						
31.5 to 35.5	P ₁	191	205	214	236	275	291	332	363						
	P ₂	345	370	385	424	496	523	597	653						
	P ₃	638	694	766	810	878	941	978	1077						
	P ₄	785	851	930	990	1088	1164	1231	1355						
40 to 45	P ₁	187	200	208	229	268	283	323	354						
	P ₂	329	353	368	405	473	500	570	624						
	P ₃	622	677	747	789	855	917	953	1050						
	P ₄	765	830	906	965	1060	1134	1200	1320						
50 to 56	P ₁	194	208	217	239	279	295	336	368						
	P ₂	342	367	382	421	492	520	593	649						
	P ₃	647	703	776	821	889	953	990	1091						
	P ₄	795	862	942	1003	1102	1179	1247	1373						
63 to 71	P ₁	183	196	204	225	263	277	316	346						
	P ₂	322	346	360	396	463	489	558	611						
	P ₃	609	662	731	772	837	898	932	1027						
	P ₄	748	812	887	944	1038	1110	1174	1292						
80 to 90	P ₁	173	186	194	213	249	263	300	329						
	P ₂	306	328	342	377	440	465	530	580						
	P ₃	578	629	694	734	795	853	886	976						
	P ₄	711	771	842	897	986	1054	1116	1228						
100	P ₁	-	162	-	185	-	229	-	286						
	P ₂	-	285	-	327	-	404	-	505						
	P ₃	-	547	-	638	-	741	-	849						
	P ₄	-	671	-	780	-	916	-	1067						

- P1 (kW) Gear units without auxiliary cooling
- P2 (kW) Gear units with fan
- P3 (kW) Gear units with built-in cooling coil
- P4 (kW) Gear units with fan and built-in cooling coil

Thermal Capacity (kW)

Helical - Triple Stage

Type-S3

Speed-1000 RPM

Nominal Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
22.4	P ₁	254	-	284	-	365	-	440	-	On Request					
	P ₂	448	-	501	-	645	-	776	-						
	P ₃	847	-	1016	-	1165	-	1297	-						
	P ₄	1041	-	1233	-	1444	-	1633	-						
25 to 28	P ₁	212	228	237	261	305	322	367	402						
	P ₂	374	402	418	460	538	569	648	710						
	P ₃	707	769	849	897	973	1043	1083	1194						
	P ₄	870	943	1030	1097	1206	1289	1364	1501						
31.5 to 35.5	P ₁	214	229	239	263	308	325	371	406						
	P ₂	378	405	422	464	543	573	654	716						
	P ₃	713	776	856	905	981	1052	1092	1204						
	P ₄	877	951	1039	1106	1216	1300	1376	1514						
40 to 45	P ₁	189	202	211	232	271	287	327	358						
	P ₂	333	357	372	410	479	506	577	631						
	P ₃	629	684	755	798	865	928	963	1062						
	P ₄	773	839	916	976	1073	1147	1213	1335						
50 to 56	P ₁	198	213	222	244	285	301	344	376						
	P ₂	350	376	391	431	504	532	607	664						
	P ₃	662	720	794	840	910	976	1013	1117						
	P ₄	813	882	964	1026	1128	1206	1276	1404						
63 to 71	P ₁	199	213	222	245	286	302	345	377						
	P ₂	351	377	392	432	505	533	608	666						
	P ₃	664	722	796	842	912	978	1016	1120						
	P ₄	816	885	966	1029	1131	1210	1280	1408						
80 to 90	P ₁	186	200	208	229	268	283	322	353						
	P ₂	328	352	367	404	472	499	569	623						
	P ₃	621	675	745	787	853	915	950	1047						
	P ₄	763	828	904	962	1058	1131	1197	1317						
100	P ₁	-	170	-	195	-	240	-	300						
	P ₂	-	299	-	343	-	424	-	529						
	P ₃	-	574	-	669	-	778	-	890						
	P ₄	-	703	-	818	-	961	-	1119						

- P1 (kW) Gear units without auxiliary cooling
- P2 (kW) Gear units with fan
- P3 (kW) Gear units with built-in cooling coil
- P4 (kW) Gear units with fan and built-in cooling coil

Thermal Capacity (kW)

Helical - Triple Stage

Type-S3

Speed-1500 RPM

Nominal Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
22.4	P ₁	270	-	301	-	388	-	467	-	On Request					
	P ₂	476	-	531	-	684	-	824	-						
	P ₃	899	-	1079	-	1236	-	1376	-						
	P ₄	1105	-	1309	-	1532	-	1733	-						
25 to 28	P ₁	235	252	262	289	338	357	407	445						
	P ₂	456	489	510	561	656	693	790	865						
	P ₃	862	938	1034	1094	1185	1271	1320	1455						
	P ₄	962	1044	1140	1214	1334	1427	1510	1661						
31.5 to 35.5	P ₁	248	266	277	305	357	377	430	470						
	P ₂	438	470	489	539	630	665	758	830						
	P ₃	827	900	993	1050	1138	1220	1267	1396						
	P ₄	1017	1103	1205	1283	1410	1508	1595	1756						
40 to 45	P ₁	219	234	244	269	314	332	378	414						
	P ₂	386	414	431	474	554	586	668	731						
	P ₃	729	792	874	924	1002	1074	1116	1230						
	P ₄	896	972	1061	1130	1242	1328	1405	1546						
50 to 56	P ₁	201	216	225	248	290	306	349	382						
	P ₂	355	381	397	437	511	540	615	674						
	P ₃	671	730	806	852	923	990	1028	1133						
	P ₄	825	895	978	1041	1145	1224	1295	1425						
63 to 71	P ₁	202	217	226	249	291	307	350	383						
	P ₂	357	383	399	439	516	542	618	677						
	P ₃	674	733	809	855	927	994	1032	1138						
	P ₄	829	899	982	1046	1149	1229	1300	1431						
80 to 90	P ₁	193	207	216	238	278	293	334	366						
	P ₂	341	366	381	419	490	518	590	646						
	P ₃	644	700	773	817	885	949	986	1087						
	P ₄	792	859	938	999	1098	1174	1242	1367						
100	P ₁	-	183	-	210	-	260	-	324						
	P ₂	-	324	-	371	-	459	-	572						
	P ₃	-	620	-	724	-	841	-	963						
	P ₄	-	761	-	885	-	1040	-	1211						

- P1 (kW) Gear units without auxiliary cooling
 P2 (kW) Gear units with fan
 P3 (kW) Gear units with built-in cooling coil
 P4 (kW) Gear units with fan and built-in cooling coil

Thermal Capacity (kW)

Helical - Triple Stage

Type-S3

Speed-1800 RPM

Nominal Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
22.4	P ₁	On Request													
	P ₂														
	P ₃														
	P ₄														
25 to 28	P ₁														
	P ₂														
	P ₃														
	P ₄														
31.5 to 35.5	P ₁														
	P ₂														
	P ₃														
	P ₄														
40 to 45	P ₁														
	P ₂														
	P ₃														
	P ₄														
50 to 56	P ₁														
	P ₂														
	P ₃														
	P ₄														
63 to 71	P ₁														
	P ₂														
	P ₃														
	P ₄														
80 to 90	P ₁														
	P ₂														
	P ₃														
	P ₄														
100	P ₁														
	P ₂														
	P ₃														
	P ₄														

- P1 (kW) Gear units without auxiliary cooling
 P2 (kW) Gear units with fan
 P3 (kW) Gear units with built-in cooling coil
 P4 (kW) Gear units with fan and built-in cooling coil

Nominal Power Rating (kW)

Helical - Four Stage

Type - S4

Ratio i_N	n_1 rpm	n_2 rpm	GEAR UNIT SIZE													
			26	27	28	29	30	31	32	33	34	35	36	37	38	39
100	1500	15	241	-	320	-	481	-	668	-	1041	-	1362	-	1969	-
	1000	10	161	-	214	-	321	-	445	-	694	-	908	-	1313	-
	750	7.5	121	-	160	-	241	-	334	-	521	-	681	-	985	-
112	1500	13.4	211	245	280	349	421	492	580	660	911	1040	1202	1438	1736	1976
	1000	8.9	141	163	187	233	281	328	387	440	607	693	801	959	1157	1317
	750	6.7	106	122	140	174	211	246	290	330	455	520	601	719	868	988
125	1500	12	189	214	251	305	381	431	531	574	810	910	1068	1269	1565	1742
	1000	8	126	143	167	203	254	287	354	382	540	606	712	846	1043	1161
	750	6	94	107	125	153	191	215	265	287	405	455	534	634	782	871
140	1500	10.7	164	191	218	273	346	390	468	525	729	809	962	1128	1370	1570
	1000	7.1	109	128	145	182	231	260	312	350	486	539	641	752	913	1047
	750	5.4	82	96	109	136	173	195	234	262	364	404	481	564	685	785
160	1500	9.4	144	166	191	237	303	354	406	462	638	728	849	1016	1208	1375
	1000	6.3	96	111	127	158	202	236	271	308	425	485	566	677	805	916
	750	4.7	72	83	95	119	152	177	203	231	319	364	424	508	604	687
180	1500	8.3	128	146	170	207	274	310	372	402	567	637	754	896	1089	1212
	1000	5.6	86	97	114	138	183	207	248	268	378	425	503	597	726	808
	750	4.2	64	73	85	104	137	155	186	201	283	318	377	448	544	606
200	1500	7.5	120	130	160	186	245	280	332	367	517	566	688	797	979	1092
	1000	5	80	87	106	124	163	187	221	245	345	377	459	531	652	728
	750	3.8	60	65	80	93	123	140	166	184	259	283	344	398	489	546
224	1500	6.7	105	122	140	174	215	251	288	328	452	516	607	727	863	982
	1000	4.5	70	81	93	116	143	167	192	219	302	344	405	485	575	655
	750	3.3	53	61	70	87	107	125	144	164	226	258	304	363	431	491
250	1500	6	94	107	125	152	194	219	264	285	402	452	540	641	778	866
	1000	4	63	71	83	101	129	146	176	190	268	301	360	428	518	577
	750	3	47	53	62	76	97	110	132	142	201	226	270	321	389	433
280	1500	5.4	82	95	109	136	166	199	224	261	352	402	479	570	675	780
	1000	3.6	55	64	73	91	111	132	150	174	235	268	319	380	450	520
	750	2.7	41	48	55	68	83	99	112	130	176	201	239	285	337	390
315	1500	4.8	74	83	98	119	150	170	205	222	313	352	426	506	608	677
	1000	3.2	49	56	65	79	100	113	137	148	209	234	284	337	406	451
	750	2.4	37	42	49	59	75	85	103	111	157	176	213	253	304	339
355	1500	4.2	60	75	84	106	127	153	178	203	258	313	356	449	511	610
	1000	2.8	40	50	56	71	85	102	119	135	172	208	238	300	341	407
	750	2.1	30	37	42	53	63	77	89	101	129	156	178	225	255	305
400	1500	3.8	-	61	-	88	-	130	-	178	-	256	-	357	-	513
	1000	2.5	-	41	-	59	-	87	-	119	-	171	-	238	-	342
	750	1.9	-	30	-	44	-	65	-	89	-	128	-	179	-	256

 Forced lubrication required

Nominal Output Torque (KNm)

Helical - Four Stage

Type – S4

Size	i_N	GEAR UNIT SIZE												38	39
		26	27	28	29	30	31	32	33	34	35	36	37		
S1 S1 See pages 14 to 19	2	132	-	153	-	173	-	-	-	-	-	-	-	-	-
	2.24	133	-	153	-	173	-	-	-	-	-	-	-	-	-
	2.5	119	-	153	-	173	-	-	-	-	-	-	-	-	-
	2.8	122	-	174	-	173	-	-	-	-	-	-	-	-	-
	3.15	126	-	176	-	173	-	-	-	-	-	-	-	-	-
	3.55	129	-	176	-	173	-	-	-	-	-	-	-	-	-
	4	133	-	176	-	250	-	-	-	-	-	-	-	-	-
	4.5	111	-	149	-	220	-	-	-	-	-	-	-	-	-
	5	100	-	126	-	177	-	-	-	-	-	-	-	-	-
	5.6	92	-	120	-	153	-	-	-	-	-	-	-	-	-
S2 S2 See pages 20 to 25	6.3	146	-	199	-	298	-	418	-	510	-	815	-	1050	-
	7.1	146	163	199	235	298	342	418	467	530	576	830	920	1050	1210
	8	146	163	199	235	298	342	418	467	551	597	860	950	1060	1210
	9	146	163	199	235	298	342	418	467	566	622	860	990	1090	1210
	10	146	163	199	235	298	342	418	467	587	638	860	1030	1140	1250
	11.2	146	163	199	235	298	342	418	467	587	658	860	1030	1180	1290
	12.5	146	163	199	235	298	342	418	467	612	663	860	1030	1220	1380
	14	146	163	199	235	298	342	418	467	632	689	860	1030	1230	1380
	16	146	163	199	235	298	342	418	467	653	709	860	1030	1230	1400
	18	146	163	199	235	298	342	418	467	653	740	860	1030	1230	1400
S3 S3 See pages 26 to 31	20	146	163	199	235	298	342	418	467	597	740	815	1030	1160	1400
	22.4	153	163	200	235	306	342	420	458	600	673	860	920	1230	1325
	25	153	173	200	245	306	352	420	470	620	675	860	1030	1230	1400
	28	153	173	200	245	306	352	420	470	640	700	860	1030	1230	1400
	31.5	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	35.5	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	40	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	45	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	50	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	56	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	63	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	71	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
S4	80	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	90	153	173	200	245	296	352	410	470	585	725	800	1030	1150	1400
	100	153	173	200	231	306	342	420	465	640	660	860	910	1230	1310
	112	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	125	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	140	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	160	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	180	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	200	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	224	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	250	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	280	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	315	153	173	200	245	306	352	420	470	640	725	860	1030	1230	1400
	355	140	173	192	245	296	352	410	470	585	725	800	1030	1150	1400
	400		158		227		342		465		660		910		1310

Thermal Capacity (kW)

Helical - Four Stage

Type-S4

Speed-750 RPM

Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
100	P_1	151	-	168	-	217	-	261	-	On Request					
112	P_1	144	155	161	177	207	219	250	273						
125	P_1	140	150	156	172	201	212	242	265						
140	P_1	138	148	154	170	199	210	239	262						
160	P_1	129	139	145	159	186	197	224	245						
180	P_1	125	134	139	153	179	189	216	236						
200	P_1	134	143	149	164	192	203	231	253						
224	P_1	126	136	141	156	182	192	219	240						
250	P_1	120	129	134	148	173	182	208	228						
280	P_1	129	138	144	158	185	195	223	244						
315	P_1	126	135	140	154	181	191	218	238						
355	P_1	126	135	140	155	181	191	218	238						
400	P_1	-	135	-	154	-	191	-	238						

Thermal Capacity (kW)

Helical - Four Stage

Type-S4

Speed-1000 RPM

Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
100	P_1	158	-	177	-	227	-	274	-	On Request					
112	P_1	147	158	164	181	212	224	255	279						
125	P_1	136	146	152	167	195	206	235	257						
140	P_1	155	166	173	191	223	235	269	294						
160	P_1	145	155	162	178	208	220	251	275						
180	P_1	137	147	153	168	197	208	237	259						
200	P_1	141	152	158	174	203	215	245	268						
224	P_1	134	143	149	164	192	203	232	254						
250	P_1	131	140	146	161	188	198	226	247						
280	P_1	122	131	137	151	176	186	212	232						
315	P_1	121	130	135	149	174	184	210	230						
355	P_1	121	129	135	148	173	183	209	229						
400	P_1	-	129	-	148	-	183	-	228						

P_1 (kW) Gear units without auxiliary cooling

Thermal Capacity (kW)

Helical - Four Stage

Type-S4

Speed-1500 RPM

Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
100	P_1	171	-	191	-	246	-	296	-	On Request					
112	P_1	159	170	177	195	228	241	275	301						
125	P_1	151	162	169	186	218	230	262	287						
140	P_1	148	159	165	182	213	225	257	281						
160	P_1	138	148	154	169	198	209	238	261						
180	P_1	131	140	146	161	188	198	226	248						
200	P_1	149	160	167	184	215	227	259	283						
224	P_1	142	152	159	175	204	216	246	269						
250	P_1	139	149	155	171	200	211	240	263						
280	P_1	141	151	158	173	203	214	244	267						
315	P_1	135	145	151	166	194	205	234	256						
355	P_1	139	150	156	172	201	212	242	264						
400	P_1	-	150	-	171	-	212	-	264						

Thermal Capacity (kW)

Helical - Four Stage

Type-S4

Speed-1800 RPM

Ratio i_N	n_1 rpm	GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
100	P_1	On Request													
112	P_1														
125	P_1														
140	P_1														
160	P_1														
180	P_1														
200	P_1														
224	P_1														
250	P_1														
280	P_1														
315	P_1														
355	P_1														
400	P_1														

P_1 (kW) Gear units without auxiliary cooling

Nominal Power Rating (kW)

Bevel - Double Stage

Type - K2

Ratio i_N	n_1 rpm	n_2 rpm	GEAR UNIT SIZE													
			26	27	28	29	30	31	32	33	34	35	36	37	38	39
5	1500	300	3295		5033		-	-	-	-	-	-	-	-	-	-
	1000	200	2197		3355		-	-	-	-	-	-	-	-	-	-
	750	150	1648		2516		-	-	-	-	-	-	-	-	-	-
5.6	1500	268	3289	3294	5128	5105	-	-	-	-	-	-	-	-	-	-
	1000	179	2193	2196	3419	3403	-	-	-	-	-	-	-	-	-	-
	750	134	1644	1647	2564	2552	-	-	-	-	-	-	-	-	-	-
6.3	1500	238	3214	3316	5023	4960	-	-	-	-	-	-	-	-	-	-
	1000	159	2143	2210	3349	3307	-	-	-	-	-	-	-	-	-	-
	750	119	1607	1658	2512	2480	-	-	-	-	-	-	-	-	-	-
7.1	1500	211	3007	3239	4465	5161	-	-	-	-	-	-	-	-	-	-
	1000	141	2004	2159	2977	3441	-	-	-	-	-	-	-	-	-	-
	750	106	1503	1620	2233	2580	-	-	-	-	-	-	-	-	-	-
8	1500	188	2612	2965	3907	4579	-	-	-	-	-	-	-	-	-	-
	1000	125	1741	1976	2605	3053	-	-	-	-	-	-	-	-	-	-
	750	94	1306	1482	1954	2290	-	-	-	-	-	-	-	-	-	-
9	1500	167	2389	2618	3473	4014	-	-	-	-	-	-	-	-	-	-
	1000	111	1593	1745	2315	2676	-	-	-	-	-	-	-	-	-	-
	750	83	1195	1309	1736	2007	-	-	-	-	-	-	-	-	-	-
10	1500	150	2171	2402	3225	3613	-	-	-	-	-	-	-	-	-	-
	1000	100	1448	1601	2150	2408	-	-	-	-	-	-	-	-	-	-
	750	75	1086	1201	1612	1806	-	-	-	-	-	-	-	-	-	-
11.2	1500	134	1887	2141	2822	3307	-	-	-	-	-	-	-	-	-	-
	1000	89	1258	1427	1881	2205	-	-	-	-	-	-	-	-	-	-
	750	67	943	1071	1411	1654	-	-	-	-	-	-	-	-	-	-
12.5	1500	120		1891		2899	-	-	-	-	-	-	-	-	-	-
	1000	80		1261		1933	-	-	-	-	-	-	-	-	-	-
	750	60		945		1449	-	-	-	-	-	-	-	-	-	-

Nominal Output Torque (KNm)

Bevel - Double Stage

Type – K2

Size	i _N	GEAR UNIT SIZE												38	39
		26	27	28	29	30	31	32	33	34	35	36	37		
K2	5	106	-	157	-	-	-	-	-	-	-	-	-	-	-
	5.6	114	117	185	182	-	-	-	-	-	-	-	-	-	-
	6.3	130	129	199	200	-	-	-	-	-	-	-	-	-	-
	7.1	135	148	199	230	-	-	-	-	-	-	-	-	-	-
	8	135	151	199	230	-	-	-	-	-	-	-	-	-	-
	9	135	151	199	230	-	-	-	-	-	-	-	-	-	-
	10	135	151	199	230	-	-	-	-	-	-	-	-	-	-
	11.2	135	151	199	230	-	-	-	-	-	-	-	-	-	-
K3 <i>See pages 40 to 45</i>	12.5	135	151	199	230	255	-	340	-	-	-	-	-	-	-
	14	140	151	199	235	267	301	360	405	-	-	-	-	-	-
	16	145	157	203	235	280	314	380	422	-	-	-	-	-	-
	18	151	163	203	245	294	326	400	438	-	-	-	-	-	-
	20	153	170	203	245	306	339	420	455	640	-	860	-	1230	-
	22.4	153	173	203	245	306	352	420	470	640	725	860	1030	1230	1400
	25	153	173	203	245	306	352	420	470	640	725	860	1030	1230	1400
	28	153	173	203	245	306	352	420	470	640	725	860	1030	1230	1400
	31.5	153	173	203	245	306	352	420	470	640	725	860	1030	1230	1400
	35.5	153	173	203	245	306	352	420	470	630	725	860	1030	1230	1400
	40	153	173	203	245	306	352	420	470	630	700	860	1030	1230	1400
	45	153	173	203	245	306	352	420	470	630	700	860	1030	1230	1400
	50	153	173	203	245	306	352	420	470	630	700	860	1030	1230	1400
	56	153	173	203	245	306	352	420	470	630	700	860	1030	1230	1400
	63	153	173	203	245	306	352	420	470	630	700	860	1030	1230	1400
	71	153	173	203	245	306	352	420	470	630	700	800	1030	1150	1400
K4 <i>See pages 46 to 49</i>	80	153	173	203	245	306	352	420	470	640	700	840	910	1225	1310
	90	153	173	203	245	306	352	420	470	640	725	850	960	1225	1400
	100	153	173	203	245	306	352	420	470	640	725	860	970	1220	1400
	112	153	173	203	245	306	352	420	470	640	725	860	990	1220	1400
	125	153	173	203	245	306	352	420	470	640	725	860	990	1215	1400
	140	153	173	203	245	306	352	420	470	640	725	860	1030	1215	1400
	160	153	173	203	245	306	352	420	470	640	725	860	1030	1210	1400
	180	153	173	203	245	306	352	420	470	640	725	860	1030	1210	1400
	200	153	173	203	245	306	347	420	470	640	725	860	1030	1205	1400
	224	153	173	203	245	306	352	420	470	640	725	860	1030	1205	1400
	250	153	173	203	245	306	352	420	470	640	725	860	1030	1200	1400
	280	153	173	203	245	306	347	420	470	640	725	860	1030	1200	1400
	315	153	173	203	245	306	352	420	470	640	725	800	1030	1150	1400
	355		173		245		352		470		660		910		1310

Thermal Capacity (kW) Bevel-Helical - Double Stage Type-K2 Speed-750 RPM

Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
5 to 5.6	P ₁	*	*	*	*										
	P ₂	724	807	908	979										
	P ₃	1512	1579	1815	1842										
	P ₄	1839	1929	2225	2266										
6.3 to 7.1	P ₁	*	*	*	*										
	P ₂	648	723	813	877										
	P ₃	1336	1452	1603	1694										
	P ₄	1624	1774	1965	2085										
8 to 9	P ₁	*	*	*	*										
	P ₂	613	684	769	829										
	P ₃	1272	1383	1526	1614										
	P ₄	1547	1690	1871	1985										
10 to 12.5	P ₁	*	*	*	*										
	P ₂	509	567	638	688										
	P ₃	1112	1209	1334	1411										
	P ₄	1352	1477	1636	1736										

Thermal Capacity (kW) Bevel-Helical - Double Stage Type-K2 Speed-1000 RPM

Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
5 to 5.6	P ₁	*	*	*	*										
	P ₂	775	864	972	1049										
	P ₃	1616	1691	1939	1973										
	P ₄	1965	2066	2377	2427										
6.3 to 7.1	P ₁	*	*	*	*										
	P ₂	702	782	880	949										
	P ₃	1441	1568	1730	1829										
	P ₄	1753	1915	2120	2250										
8 to 9	P ₁	*	*	*	*										
	P ₂	664	740	832	898										
	P ₃	1373	1494	1648	1742										
	P ₄	1670	1824	2020	2144										
10 to 12.5	P ₁	*	*	*	*										
	P ₂	555	619	696	751										
	P ₃	1208	1314	1450	1533										
	P ₄	1470	1605	1778	1886										

*Thermal Capacity On Request

- P1 (kW) Gear units without auxiliary cooling
- P2 (kW) Gear units with fan
- P3 (kW) Gear units with built-in cooling coil
- P4 (kW) Gear units with fan and built-in cooling coil

Thermal Capacity (kW) Bevel-Helical - Double Stage Type-K2 Speed-1500 RPM

Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
5 to 5.6	P ₁	*	*	*	*										
	P ₂	806	988	1011	1199										
	P ₃	1778	1933	2133	2256										
	P ₄	2162	2362	2615	2775										
6.3 to 7.1	P ₁	*	*	*	*										
	P ₂	769	858	965	1041										
	P ₃	1575	1713	1890	1998										
	P ₄	1915	2092	2317	2458										
8 to 9	P ₁	*	*	*	*										
	P ₂	582	649	730	788										
	P ₃	1501	1632	1801	1904										
	P ₄	1825	1994	2208	2343										
10 to 12.5	P ₁	*	*	*	*										
	P ₂	616	687	773	833										
	P ₃	1333	1450	1600	1692										
	P ₄	1621	1771	1961	2081										

Thermal Capacity (kW) Bevel-Helical - Double Stage Type-K2 Speed-1800 RPM

Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
5 to 5.6	P ₁	*	*	*	*										
	P ₂	*	*	*	*										
	P ₃	*	*	*	*										
	P ₄	*	*	*	*										
6.3 to 7.1	P ₁	*	*	*	*										
	P ₂	*	*	*	*										
	P ₃	*	*	*	*										
	P ₄	*	*	*	*										
8 to 9	P ₁	*	*	*	*										
	P ₂	*	*	*	*										
	P ₃	*	*	*	*										
	P ₄	*	*	*	*										
10 to 12.5	P ₁	*	*	*	*										
	P ₂	*	*	*	*										
	P ₃	*	*	*	*										
	P ₄	*	*	*	*										

*Thermal Capacity On Request

- P1 (kW) Gear units without auxiliary cooling
- P2 (kW) Gear units with fan
- P3 (kW) Gear units with built-in cooling coil
- P4 (kW) Gear units with fan and built-in cooling coil

Nominal Power Rating (kW)

Bevel - Three Stage

Type - K3

Ratio i_N	n_1 rpm	n_2 rpm	GEAR UNIT SIZE													
			26	27	28	29	30	31	32	33	34	35	36	37	38	39
12.5	1500	120	1659		2496		3256		4341							
	1000	80	1106		1664		2170		2894							
	750	60	830		1248		1628		2170							
14	1500	107	1558	1663	2268	2620	2986	3416	4022	4566						
	1000	71	1038	1109	1512	1747	1990	2277	2681	3044						
	750	54	779	831	1134	1310	1493	1708	2011	2283						
16	1500	94	1460	1565	2054	2381	2908	3118	3940	4163						
	1000	63	973	1043	1369	1587	1939	2079	2626	2776						
	750	47	730	783	1027	1190	1454	1559	1970	2082						
18	1500	83	1353	1471	1785	2203	2610	3004	3554	4010						
	1000	56	902	981	1190	1469	1740	2003	2369	2674						
	750	42	676	735	892	1102	1305	1502	1777	2005						
20	1500	75	1216	1365	1637	1914	2449	2677	3362	3570	5238		6980		9991	
	1000	50	811	910	1091	1276	1633	1785	2241	2380	3492		4653		6661	
	750	38	608	682	818	957	1225	1339	1681	1785	2619		3490		4996	
22.4	1500	67	1064	1232	1432	1756	2128	2504	2920	3322	4583	5231	6159	7369	8808	10026
	1000	45	709	821	955	1171	1419	1669	1947	2215	3055	3487	4106	4913	5872	6684
	750	33	532	616	716	878	1064	1252	1460	1661	2292	2615	3079	3685	4404	5013
25	1500	60	951	1078	1296	1537	1946	2176	2671	2886	4074	4577	5474	6502	7940	8838
	1000	40	634	719	864	1024	1297	1450	1781	1924	2716	3051	3650	4335	5293	5892
	750	30	476	539	648	768	973	1088	1336	1443	2037	2288	2737	3251	3970	4419
28	1500	54	851	964	1133	1390	1727	1990	2371	2640	3666	4068	4927	5780	7130	7967
	1000	36	567	643	755	927	1152	1327	1580	1760	2444	2712	3285	3853	4754	5311
	750	27	426	482	566	695	864	995	1185	1320	1833	2034	2463	2890	3565	3983
31.5	1500	48	740	862	996	1215	1480	1766	2032	2343	3188	3662	4284	5202	6127	7155
	1000	32	493	575	664	810	987	1177	1354	1562	2125	2441	2856	3468	4085	4770
	750	24	370	431	498	607	740	883	1016	1171	1594	1831	2142	2601	3064	3577
35.5	1500	42	662	750	902	1069	1354	1514	1858	2008	2790	3184	3808	4523	5523	6148
	1000	28	441	500	601	713	903	1009	1239	1339	1860	2123	2539	3016	3682	4099
	750	21	331	375	451	534	677	757	929	1004	1395	1592	1904	2262	2762	3074
40	1500	38	592	670	788	967	1202	1384	1649	1836	2511	2733	3427	4021	4960	5542
	1000	25	395	447	525	645	801	923	1099	1224	1674	1822	2285	2681	3307	3695
	750	19	296	335	394	484	601	692	825	918	1255	1366	1714	2010	2480	2771
45	1500	33	524	600	713	845	1056	1229	1450	1630	2232	2459	3013	3619	4325	4977
	1000	22	349	400	475	563	704	819	967	1087	1488	1640	2009	2413	2883	3318
	750	17	262	300	357	423	528	614	725	815	1116	1230	1507	1809	2163	2489
50	1500	30	478	531	651	765	978	1080	1342	1433	2015	2186	2750	3181	3989	4340
	1000	20	319	354	434	510	652	720	895	955	1343	1457	1834	2121	2659	2893
	750	15	239	266	326	383	489	540	671	716	1007	1093	1375	1591	1995	2170
56	1500	27	428	484	569	698	868	1000	1191	1326	1813	1974	2475	2904	3582	4003
	1000	18	285	323	379	466	579	667	794	884	1209	1316	1650	1936	2388	2668
	750	13	214	242	285	349	434	500	596	663	907	987	1238	1452	1791	2001
63	1500	24	379	433	515	610	763	887	1047	1177	1612	1776	2176	2614	3124	3595
	1000	16	252	289	343	407	509	592	698	785	1075	1184	1451	1742	2083	2396
	750	12	189	217	258	305	381	444	524	589	806	888	1088	1307	1562	1797
71	1500	21	331	384	451	553	677	780	929	1035	1395	1579	1771	2298	2582	3134
	1000	14	221	256	301	368	451	520	619	690	930	1053	1181	1532	1721	2090
	750	11	165	192	225	276	338	390	465	517	697	789	886	1149	1291	1567
80	1500	19		335		484		692		918		1366		1776		2593
	1000	13		223		322		461		612		911		1184		1729
	750	9		168		242		346		459		683		888		1296

 Forced lubrication required

Nominal Output Torque (KNm)

Bevel - Three Stage

Type – K3

Size	i _N	GEAR UNIT SIZE												38	39
		26	27	28	29	30	31	32	33	34	35	36	37		
K2 <i>K2 See pages 36 to 39</i>	5	106	-	157	-	-	-	-	-	-	-	-	-	-	-
	5.6	114	117	185	182	-	-	-	-	-	-	-	-	-	-
	6.3	130	129	199	200	-	-	-	-	-	-	-	-	-	-
	7.1	135	148	199	230	-	-	-	-	-	-	-	-	-	-
	8	135	151	199	230	-	-	-	-	-	-	-	-	-	-
	9	135	151	199	230	-	-	-	-	-	-	-	-	-	-
	10	135	151	199	230	-	-	-	-	-	-	-	-	-	-
	11.2	135	151	199	230	-	-	-	-	-	-	-	-	-	-
K3	12.5	135	151	199	230	255	-	340	-	-	-	-	-	-	-
	14	140	151	199	235	267	301	360	405	-	-	-	-	-	-
	16	145	157	203	235	280	314	380	422	-	-	-	-	-	-
	18	151	163	203	245	294	326	400	438	-	-	-	-	-	-
	20	153	170	203	245	306	339	420	455	640	-	860	-	1230	-
	22.4	153	173	203	245	306	352	420	470	640	725	860	1030	1230	1400
	25	153	173	203	245	306	352	420	470	640	725	860	1030	1230	1400
	28	153	173	203	245	306	352	420	470	640	725	860	1030	1230	1400
	31.5	153	173	203	245	306	352	420	470	640	725	860	1030	1230	1400
	35.5	153	173	203	245	306	352	420	470	630	725	860	1030	1230	1400
	40	153	173	203	245	306	352	420	470	630	700	860	1030	1230	1400
	45	153	173	203	245	306	352	420	470	630	700	860	1030	1230	1400
	50	153	173	203	245	306	352	420	470	630	700	860	1030	1230	1400
	56	153	173	203	245	306	352	420	470	630	700	860	1030	1230	1400
	63	153	173	203	245	306	352	420	470	630	700	860	1030	1230	1400
K4 <i>K4 See pages 46 to 49</i>	71	153	173	203	245	306	352	420	470	630	700	800	1030	1150	1400
	80	153	173	203	245	306	352	420	470	640	700	840	910	1225	1310
	90	153	173	203	245	306	352	420	470	640	725	850	960	1225	1400
	100	153	173	203	245	306	352	420	470	640	725	860	970	1220	1400
	112	153	173	203	245	306	352	420	470	640	725	860	990	1220	1400
	125	153	173	203	245	306	352	420	470	640	725	860	990	1215	1400
	140	153	173	203	245	306	352	420	470	640	725	860	1030	1215	1400
	160	153	173	203	245	306	352	420	470	640	725	860	1030	1210	1400
	180	153	173	203	245	306	352	420	470	640	725	860	1030	1210	1400
	200	153	173	203	245	306	347	420	470	640	725	860	1030	1205	1400
	224	153	173	203	245	306	352	420	470	640	725	860	1030	1205	1400
	250	153	173	203	245	306	352	420	470	640	725	860	1030	1200	1400
	280	153	173	203	245	306	347	420	470	640	725	860	1030	1200	1400
	315	153	173	203	245	306	352	420	470	640	725	800	1030	1150	1400
	355		173		245		352		470		660		910		1310

Thermal Capacity (kW)

Bevel-Helical - Three Stage

Type-K3

Speed-750 RPM

Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
12.5 to 14	P₁	219	231	263	292	341	374	396	439	On Request					
	P₂	390	407	469	514	607	660	706	774						
	P₃	796	866	955	1010	1095	1174	1219	1343						
	P₄	965	1042	1158	1233	1358	1459	1525	1679						
16 to 18	P₁	238	249	286	314	371	403	431	473						
	P₂	421	440	506	556	656	712	762	836						
	P₃	860	935	1032	1091	1182	1268	1316	1451						
	P₄	1042	1126	1251	1332	1466	1576	1647	1813						
20 to 22.4	P₁	212	221	254	279	329	358	383	420						
	P₂	413	431	496	544	642	698	747	819						
	P₃	842	916	1011	1068	1158	1242	1316	1451						
	P₄	1021	1102	1225	1304	1436	1544	1613	1776						
25 to 28	P₁	200	209	241	264	312	339	363	398						
	P₂	356	372	428	470	555	603	645	708						
	P₃	727	791	873	923	1000	1072	1114	1227						
	P₄	882	952	1058	1126	1240	1333	1393	1534						
31.5 to 35.5	P₁	176	184	212	232	274	298	319	349						
	P₂	322	336	387	424	501	544	582	639						
	P₃	657	714	788	833	903	968	10006	1108						
	P₄	796	860	956	1017	1120	1204	1258	1385						
40 to 45	P₁	191	199	229	251	297	322	345	378						
	P₂	338	352	406	445	525	571	611	670						
	P₃	689	749	827	874	947	1015	1055	1162						
	P₄	835	902	1002	1067	1175	1263	1319	1453						
50 to 56	P₁	186	194	224	246	290	315	337	370						
	P₂	336	351	404	443	523	568	608	667						
	P₃	686	746	823	970	943	1011	1050	1157						
	P₄	831	897	998	1062	1169	1257	1313	1446						
63 to 80	P₁	171	178	205	225	266	289	309	339						
	P₂	316	329	379	416	491	534	571	626						
	P₃	614	668	737	780	845	906	941	1037						
	P₄	781	843	937	997	1098	1180	1233	1358						

- P1 (kW) Gear units without auxiliary cooling
- P2 (kW) Gear units with fan
- P3 (kW) Gear units with built-in cooling coil
- P4 (kW) Gear units with fan and built-in cooling coil

Thermal Capacity (kW)

Bevel-Helical - Three Stage

Type-K3

Speed-1000 RPM

Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
12.5 to 14	P ₁	246	257	295	324	383	416	445	488	On Request					
	P ₂	434	453	521	572	675	733	785	861						
	P ₃	885	962	1062	1123	1217	1305	1355	1493						
	P ₄	1073	1159	1288	1371	1509	1622	1695	1866						
16 to 18	P ₁	268	280	322	353	417	453	485	532						
	P ₂	435	454	523	574	677	736	787	864						
	P ₃	888	966	1065	1127	1221	1309	1360	1498						
	P ₄	1076	1162	1292	1375	1514	1628	1701	1873						
20 to 22.4	P ₁	237	247	284	312	368	400	428	470						
	P ₂	418	436	502	551	650	706	756	829						
	P ₃	852	927	1023	1082	1172	1257	1305	1438						
	P ₄	1033	1116	1240	1320	1454	1563	1633	1798						
25 to 28	P ₁	225	235	270	297	350	380	407	447						
	P ₂	400	417	480	527	622	676	723	793						
	P ₃	815	887	979	1035	1121	1202	1249	1376						
	P ₄	989	1068	1187	1263	1391	1495	1562	1720						
31.5 to 35.5	P ₁	212	222	255	280	330	359	384	421						
	P ₂	335	350	403	442	522	567	607	665						
	P ₃	684	744	821	868	941	1009	1047	1154						
	P ₄	829	896	995	1059	1167	1254	1310	1443						
40 to 45	P ₁	193	201	232	254	300	326	349	383						
	P ₂	328	342	394	432	510	554	593	650						
	P ₃	669	727	802	848	919	986	1024	1128						
	P ₄	811	875	973	1036	1140	1226	1281	1410						
50 to 56	P ₁	191	200	230	252	298	323	346	380						
	P ₂	335	350	403	442	521	566	606	665						
	P ₃	683	743	820	867	940	1008	1047	1153						
	P ₄	829	895	995	1059	1166	1253	1309	1441						
63 to 80	P ₁	173	181	208	228	269	292	313	343						
	P ₂	328	343	395	433	511	555	594	652						
	P ₃	657	714	788	833	903	968	1005	1108						
	P ₄	813	878	975	1038	1143	1229	1284	1414						

- P1 (kW) Gear units without auxiliary cooling
- P2 (kW) Gear units with fan
- P3 (kW) Gear units with built-in cooling coil
- P4 (kW) Gear units with fan and built-in cooling coil

Thermal Capacity (kW)

Bevel-Helical - Three Stage

Type-K3

Speed-1500 RPM

Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
12.5 to 14	P ₁	279	292	336	369	435	473	506	555	On Request					
	P ₂	494	515	593	651	769	835	893	980						
	P ₃	1008	1096	1209	1278	1385	1485	1543	1700						
	P ₄	1222	1319	1466	1561	1718	1847	1930	2125						
16 to 18	P ₁	268	280	322	353	417	453	485	532						
	P ₂	497	518	597	655	773	840	899	986						
	P ₃	1013	1102	1216	1286	1393	1494	1552	1710						
	P ₄	1228	1327	1475	1569	1728	1858	1941	2137						
20 to 22.4	P ₁	237	247	284	312	368	400	428	470						
	P ₂	457	477	549	603	712	773	827	908						
	P ₃	933	1015	1120	1184	1283	1375	1429	1574						
	P ₄	1131	1221	1358	1445	1591	1710	1787	1968						
25 to 28	P ₁	225	235	270	297	350	380	407	447						
	P ₂	399	417	480	527	622	675	722	793						
	P ₃	815	886	978	1034	1120	1201	1247	1375						
	P ₄	988	1067	1186	1262	1389	1494	1561	1718						
31.5 to 35.5	P ₁	212	222	255	280	330	359	384	421						
	P ₂	380	396	456	501	591	642	687	754						
	P ₃	775	843	930	983	1065	1142	1186	1308						
	P ₄	939	1014	1128	1200	1322	1421	1484	1634						
40 to 45	P ₁	193	201	232	254	300	326	349	383						
	P ₂	380	397	457	501	592	643	688	755						
	P ₃	776	843	931	984	1066	1143	1188	1309						
	P ₄	940	1015	1129	1201	1323	1422	1486	1636						
50 to 56	P ₁	191	200	230	252	298	323	346	380						
	P ₂	338	353	407	446	527	572	612	672						
	P ₃	690	751	828	876	946	1018	1057	1165						
	P ₄	837	904	1004	1069	1177	1266	1322	1456						
63 to 80	P ₁	173	181	208	228	269	292	313	343						
	P ₂	314	328	378	415	490	532	569	624						
	P ₃	623	677	747	790	856	918	954	1051						
	P ₄	778	840	934	994	1095	1177	1229	1354						

- P1 (kW) Gear units without auxiliary cooling
- P2 (kW) Gear units with fan
- P3 (kW) Gear units with built-in cooling coil
- P4 (kW) Gear units with fan and built-in cooling coil

Thermal Capacity (kW)

Bevel-Helical - Three Stage

Type-K3

Speed-1800 RPM

Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
12.5 to 14	P ₁	On Request													
	P ₂														
	P ₃														
	P ₄														
16 to 18	P ₁														
	P ₂														
	P ₃														
	P ₄														
20 to 22.4	P ₁														
	P ₂														
	P ₃														
	P ₄														
25 to 28	P ₁														
	P ₂														
	P ₃														
	P ₄														
31.5 to 35.5	P ₁														
	P ₂														
	P ₃														
	P ₄														
40 to 45	P ₁														
	P ₂														
	P ₃														
	P ₄														
50 to 56	P ₁														
	P ₂														
	P ₃														
	P ₄														
63 to 80	P ₁														
	P ₂														
	P ₃														
	P ₄														

- P1 (kW) Gear units without auxiliary cooling
- P2 (kW) Gear units with fan
- P3 (kW) Gear units with built-in cooling coil
- P4 (kW) Gear units with fan and built-in cooling coil

Nominal Power Rating (kW)

Bevel - Four Stage

Type - K4

Ratio i_N	n_1 rpm	n_2 rpm	GEAR UNIT SIZE													
			26	27	28	29	30	31	32	33	34	35	36	37	38	39
80	1500	19	300		404		617		840		1309		1704		2452	
	1000	13	200		270		411		560		873		1136		1634	
	750	9	150		202		308		420		655		852		1226	
90	1500	17	263	304	354	434	540	631	730	831	1146	1308	1522	1717	2161	2470
	1000	11	175	203	236	289	360	421	487	554	764	872	1014	1145	1441	1647
	750	8	131	152	177	217	270	315	365	415	573	654	761	859	1081	1235
100	1500	15	235	266	316	380	488	552	668	722	1018	1144	1369	1531	1940	2178
	1000	10	157	178	211	253	326	368	445	481	679	763	912	1021	1294	1452
	750	8	118	133	158	190	244	276	334	361	509	572	684	765	970	1089
112	1500	13	210	238	283	339	427	499	593	660	917	1017	1232	1389	1742	1963
	1000	9	140	159	189	226	285	333	395	440	611	678	821	926	1162	1309
	750	7	105	119	142	170	213	250	296	330	458	509	616	694	871	981
125	1500	12	183	213	246	304	375	436	508	586	797	915	1071	1250	1491	1763
	1000	8	122	142	164	202	250	291	339	390	531	610	714	833	994	1175
	750	6	91	107	123	152	188	218	254	293	399	458	536	625	746	881
140	1500	11	163	185	220	264	340	384	465	502	708	796	952	1131	1344	1515
	1000	7	109	124	147	176	226	256	310	335	472	531	635	754	896	1010
	750	5	82	93	110	132	170	192	232	251	354	398	476	565	672	757
160	1500	9	146	166	197	236	297	347	412	459	638	708	857	1005	1202	1365
	1000	6	98	110	131	157	198	232	275	306	425	472	571	670	801	910
	750	5	73	83	98	118	148	174	206	230	319	354	428	503	601	683
180	1500	8	130	148	174	211	269	304	362	407	567	637	753	905	1048	1226
	1000	6	86	99	116	141	179	202	242	272	378	425	502	603	699	818
	750	4	65	74	87	106	134	152	181	204	283	318	377	452	524	613
200	1500	8	118	131	159	187	245	271	336	358	512	566	688	795	963	1069
	1000	5	79	87	106	125	164	181	224	239	341	377	458	530	642	713
	750	4	59	66	79	94	123	135	168	179	256	283	344	398	481	535
224	1500	7	106	120	142	171	214	251	298	332	461	511	619	726	865	986
	1000	4	70	80	95	114	143	167	199	221	307	341	413	484	576	657
	750	3	53	60	71	85	107	125	149	166	230	256	309	363	432	493
250	1500	6	94	107	126	153	194	219	262	294	409	460	544	653	751	886
	1000	4	62	71	84	102	129	146	175	196	273	307	363	436	501	590
	750	3	47	54	63	76	97	110	131	147	205	230	272	327	375	443
280	1500	5	82	95	110	135	170	196	232	259	354	409	476	574	664	772
	1000	4	54	63	73	90	113	130	155	172	236	273	317	383	443	515
	750	3	41	47	55	68	85	98	116	129	177	204	238	287	332	386
315	1500	5	73	83	98	118	148	174	206	230	319	354	399	503	571	683
	1000	3	49	55	66	79	99	116	137	153	213	236	266	335	381	455
	750	2	37	41	49	59	74	87	103	115	159	177	199	251	286	341
355	1500	4		74		106		152		204		290		400		574
	1000	3		49		70		101		136		193		266		382
	750	2		37		53		76		102		145		200		287

 Forced lubrication required

Nominal Output Torque (KNm)

Bevel - Four Stage

Type – K4

Size	i _N	GEAR UNIT SIZE												38	39
		26	27	28	29	30	31	32	33	34	35	36	37		
K2 <i>K2 See pages 36 to 39</i>	5	106	-	157	-	-	-	-	-	-	-	-	-	-	-
	5.6	114	117	185	182	-	-	-	-	-	-	-	-	-	-
	6.3	130	129	199	200	-	-	-	-	-	-	-	-	-	-
	7.1	135	148	199	230	-	-	-	-	-	-	-	-	-	-
	8	135	151	199	230	-	-	-	-	-	-	-	-	-	-
	9	135	151	199	230	-	-	-	-	-	-	-	-	-	-
	10	135	151	199	230	-	-	-	-	-	-	-	-	-	-
	11.2	135	151	199	230	-	-	-	-	-	-	-	-	-	-
K3 <i>K3 See pages 40 to 45</i>	12.5	135	151	199	230	255	-	340	-	-	-	-	-	-	-
	14	140	151	199	235	267	301	360	405	-	-	-	-	-	-
	16	145	157	203	235	280	314	380	422	-	-	-	-	-	-
	18	151	163	203	245	294	326	400	438	-	-	-	-	-	-
	20	153	170	203	245	306	339	420	455	640	-	860	-	1230	-
	22.4	153	173	203	245	306	352	420	470	640	725	860	1030	1230	1400
	25	153	173	203	245	306	352	420	470	640	725	860	1030	1230	1400
	28	153	173	203	245	306	352	420	470	640	725	860	1030	1230	1400
	31.5	153	173	203	245	306	352	420	470	640	725	860	1030	1230	1400
	35.5	153	173	203	245	306	352	420	470	630	725	860	1030	1230	1400
	40	153	173	203	245	306	352	420	470	630	700	860	1030	1230	1400
	45	153	173	203	245	306	352	420	470	630	700	860	1030	1230	1400
	50	153	173	203	245	306	352	420	470	630	700	860	1030	1230	1400
	56	153	173	203	245	306	352	420	470	630	700	860	1030	1230	1400
	63	153	173	203	245	306	352	420	470	630	700	860	1030	1230	1400
K4	71	153	173	203	245	306	352	420	470	630	700	800	1030	1150	1400
	80	153	173	203	245	306	352	420	470	640	700	840	910	1225	1310
	90	153	173	203	245	306	352	420	470	640	725	850	960	1225	1400
	100	153	173	203	245	306	352	420	470	640	725	860	970	1220	1400
	112	153	173	203	245	306	352	420	470	640	725	860	990	1220	1400
	125	153	173	203	245	306	352	420	470	640	725	860	990	1215	1400
	140	153	173	203	245	306	352	420	470	640	725	860	1030	1215	1400
	160	153	173	203	245	306	352	420	470	640	725	860	1030	1210	1400
	180	153	173	203	245	306	352	420	470	640	725	860	1030	1210	1400
	200	153	173	203	245	306	347	420	470	640	725	860	1030	1205	1400
	224	153	173	203	245	306	352	420	470	640	725	860	1030	1205	1400
	250	153	173	203	245	306	352	420	470	640	725	860	1030	1200	1400
	280	153	173	203	245	306	347	420	470	640	725	860	1030	1200	1400
	315	153	173	203	245	306	352	420	470	640	725	800	1030	1150	1400
	355		173		245		352		470		660		910		1310

Thermal Capacity (kW) Bevel-Helical - Four Stage Type-K4 Speed-750 RPM

Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
80	P_1	159	-	178	-	228	-	275	-	On Request					
90	P_1	144	153	161	178	206	218	248	272						
100	P_1	153	163	171	189	219	231	264	289						
112	P_1	155	165	174	192	222	235	268	293						
125	P_1	167	177	187	206	239	252	288	315						
140	P_1	149	158	166	184	213	225	256	280						
160	P_1	153	163	172	190	220	232	265	290						
180	P_1	141	150	158	175	203	214	244	267						
200	P_1	139	148	156	172	199	210	240	263						
224	P_1	142	152	160	177	204	215	246	269						
250	P_1	132	140	147	163	189	199	227	248						
280	P_1	134	143	151	167	193	203	232	254						
315	P_1	137	145	153	169	196	207	236	258						
355	P_1	-	141	-	164	-	200	-	250						

Thermal Capacity (kW) Bevel-Helical - Four Stage Type-K4 Speed-1000 RPM

Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
80	P_1	173	-	194	-	248	-	299	-	On Request					
90	P_1	161	171	180	200	231	244	278	304						
100	P_1	155	165	173	192	222	234	267	292						
112	P_1	149	159	167	185	214	226	258	282						
125	P_1	157	167	176	194	225	237	271	296						
140	P_1	146	155	163	180	209	220	251	275						
160	P_1	153	163	171	190	219	231	264	289						
180	P_1	140	149	157	173	201	212	242	264						
200	P_1	144	153	161	178	206	217	248	271						
224	P_1	148	157	165	183	212	223	255	279						
250	P_1	132	141	148	164	189	200	228	249						
280	P_1	130	138	145	161	186	196	224	245						
315	P_1	133	141	146	164	190	201	229	251						
355	P_1	-	136	-	158	-	193	-	241						

P_1 (kW) Gear units without auxiliary cooling.

Thermal Capacity (kW) Bevel-Helical - Four Stage Type-K4 Speed-1500 RPM

Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
80	P_1	173	-	193	-	248	-	298	-	On Request					
90	P_1	177	188	198	219	253	267	305	334						
100	P_1	166	177	186	206	239	252	287	314						
112	P_1	167	177	187	207	239	252	288	315						
125	P_1	162	172	181	201	232	245	280	306						
140	P_1	151	160	169	187	216	228	260	284						
160	P_1	152	162	170	188	218	230	262	287						
180	P_1	140	149	157	173	201	212	242	264						
200	P_1	145	154	162	180	208	219	250	274						
224	P_1	148	157	165	183	212	223	255	279						
250	P_1	138	147	154	171	197	208	238	260						
280	P_1	137	146	153	170	196	207	237	259						
315	P_1	140	149	157	174	201	212	243	265						
355	P_1	-	143	-	167	-	204	-	254						

Thermal Capacity (kW) Bevel-Helical - Four Stage Type-K4 Speed-1800 RPM

Ratio i_N		GEAR UNIT SIZE													
		26	27	28	29	30	31	32	33	34	35	36	37	38	39
80	P_1	On Request													
90	P_1														
100	P_1														
112	P_1														
125	P_1														
140	P_1														
160	P_1														
180	P_1														
200	P_1														
224	P_1														
250	P_1														
280	P_1														
315	P_1														
355	P_1														

P_1 (kW) Gear units without auxiliary cooling.

Actual Ratios

Helical Units

Type - S1, S2, S3, S4

Size	i_N	GEAR UNIT SIZE												38	39
		26	27	28	29	30	31	32	33	34	35	36	37		
S1	2	2.05	-	2	-	2	-	-	-	-	-	-	-	-	-
	2.24	2.211	-	2.278	-	2.278	-	-	-	-	-	-	-	-	-
	2.5	2.526	-	2.45	-	2.526	-	-	-	-	-	-	-	-	-
	2.8	2.722	-	2.833	-	2.778	-	-	-	-	-	-	-	-	-
	3.15	3.176	-	3.111	-	3.167	-	-	-	-	-	-	-	-	-
	3.55	3.526	-	3.5	-	3.529	-	-	-	-	-	-	-	-	-
	4	4.059	-	4	-	4	-	-	-	-	-	-	-	-	-
	4.5	4.438	-	4.5	-	4.5	-	-	-	-	-	-	-	-	-
	5	5	-	5	-	5	-	-	-	-	-	-	-	-	-
	5.6	5.688	-	5.625	-	5.688	-	-	-	-	-	-	-	-	-
S2	6.3	6.426	-	6.435	-	6.333	-	6.333	-	6.34	-	6.34	-	6.381	-
	7.1	7.059	7.172	7.238	7.239	7.273	7.125	7.273	7.172	7.132	7.192	7.132	7.192	6.987	7.238
	8	7.924	7.877	8	8.143	8.2	8.182	8.2	8.235	7.882	8.09	7.882	8.09	8.079	7.925
	9	9.186	8.843	9	9	8.842	9.225	8.842	9.285	8.977	8.941	8.977	8.941	8.712	9.165
	10	10.147	10.251	9.905	10.125	10.105	9.947	10.105	10.012	9.656	10.183	9.957	10.183	9.957	9.882
	11.2	11.21	11.324	11.158	11.143	10.889	11.368	10.889	11.443	11.167	10.953	10.948	11.294	10.729	11.294
	12.5	12.604	12.51	12.842	12.553	12.706	12.25	12.706	12.33	12.261	12.667	12.48	12.418	12.48	12.17
	14	14.206	14.065	14	14.447	14.105	14.294	14.105	14.388	13.794	13.908	13.91	14.157	13.898	14.157
	16	16.235	15.853	16	15.75	16.235	15.868	16.235	15.972	15.765	15.647	15.765	15.779	15.765	15.765
	18	18.158	18.118	17.684	18	17.75	18.265	17.75	18.384	17.735	17.882	17.735	17.882	17.489	17.882
	20	20.294	20.263	20.235	19.895	20	19.969	20	20.099	19.706	20.118	19.706	20.118	19.474	19.838
S3	22.4	22.057	22.647	21.737	22.765	22.892	22.5	22.097	22.647	21.324	22.353	22.584	22.353	22.692	22.09
	25	24.86	24.614	24.5	24.454	24.957	25.754	24.531	25.022	23.99	24.189	25.171	25.617	25.269	25.74
	28	28.412	27.743	28	27.563	28.522	28.076	28.235	27.778	27.417	27.212	28.527	28.552	28.663	28.663
	31.5	31.509	31.706	31.053	31.5	32.411	32.087	31.765	31.972	30.654	31.1	30.904	32.359	31.529	32.513
	35.5	35.515	35.163	35	34.934	35.333	36.462	35.263	35.969	34.485	34.771	34.444	35.055	35.11	35.765
	40	40.588	39.632	40	39.375	40.381	39.75	40.588	39.93	39.412	39.118	39.036	39.071	39.827	39.827
	45	45.395	45.294	44.737	45	44.632	45.429	44.375	45.96	44.338	44.706	43.916	44.28	44.183	45.176
	50	50.059	50.658	49.333	50.329	49.368	50.211	49.368	50.248	48.279	50.294	48.685	49.815	49.008	50.118
	56	57.21	55.863	56.381	55.5	56.421	55.539	56.824	55.902	55.176	54.765	55.176	55.225	55.591	55.591
	63	63.985	63.843	63.058	63.429	62.36	63.474	62.125	64.344	62.074	62.588	62.074	62.588	61.672	63.059
	71	70.24	71.404	69.222	70.94	70.737	70.155	70.526	70.347	68.971	70.412	70.368	70.412	69.489	69.956
	80	80.275	78.384	79.111	77.875	80.842	79.579	81.176	79.861	78.824	78.235	79.751	79.821	78.824	78.824
	90	89.781	89.582	88.48	89	89.352	90.947	88.75	91.92	88.676	89.412	89.72	90.464	87.445	89.412
S4	100	99.519	100.19	98.077	99.539	99.826	100.521	98.737	100.496	96.559	100.588	99.185	101.772	98.102	99.191
	112	113.736	111.058	112.088	110.337	114.087	112.304	113.647	111.805	110.353	109.529	112.409	112.508	111.28	111.28
	125	127.205	126.923	125.361	126.099	126.096	128.348	124.25	128.689	124.147	125.176	126.46	127.509	123.452	126.228
	140	146.364	141.953	144.242	141.032	138.783	141.858	141.053	140.695	137.941	140.824	140.425	143.448	141.022	140.035
	160	167.273	163.333	164.848	162.273	158.609	156.13	162.353	159.721	157.647	156.471	159.148	159.288	159.965	159.965
	180	187.081	186.667	184.37	185.455	175.304	178.435	177.5	183.841	177.353	178.824	179.042	180.527	177.462	181.453
	200	199.737	208.772	196.842	207.416	196	197.217	198.817	200.993	194.431	201.176	196.205	203.092	197.431	201.3
	224	228.271	222.895	224.962	221.447	224	220.5	228.84	225.131	222.207	220.549	222.365	222.561	223.952	223.952
	250	255.303	254.737	251.603	253.083	247.579	252	250.19	259.128	249.983	252.056	250.161	252.235	248.446	254.035
	280	292.063	284.903	287.831	283.053	289.882	278.526	293.944	283.304	285.424	283.563	282.105	283.765	286.254	281.82
	315	326.65	325.926	321.916	323.81	320.396	326.118	321.368	332.849	321.102	323.765	317.368	320	317.563	324.706
	355	365.079	364.522	360	362.155	366.616	360.446	362.105	363.902	356.78	364.235	352.632	360	353.608	360.221
	400		407.407		404.762		412.443		410.031		404.706		400		401.107

Actual Ratios

Bevel Units

Type - K2, K3, K4

Size	i _N	GEAR UNIT SIZE												38	39
		26	27	28	29	30	31	32	33	34	35	36	37		
K2	5	4.906		4.87		2	-	-	-	-	-	-	-	-	-
	5.6	5.647	5.565	5.565	5.488	2.278	-	-	-	-	-	-	-	-	-
	6.3	6.353	6.302	6.222	6.261	2.526	-	-	-	-	-	-	-	-	-
	7.1	7.053	7.176	7	7	2.778	-	-	-	-	-	-	-	-	-
	8	8.118	8	8	7.889	3.167	-	-	-	-	-	-	-	-	-
	9	8.875	9.059	9	9	3.529	-	-	-	-	-	-	-	-	-
	10	9.765	9.875	9.692	10	4	-	-	-	-	-	-	-	-	-
	11.2	11.24	11.077	11.077	10.923	4.5	-	-	-	-	-	-	-	-	-
K3	12.5	12.78	12.543	12.522	12.462	12.302		12.302							
	14	14.118	14.262	13.781	14.087	14.059	13.84	14.059	13.93						
	16	15.597	15.754	15.524	15.503	15.15	15.817	15.15	15.92						
	18	17.536	17.405	17.867	17.465	17.678	17.043	17.678	17.155						
	20	19.765	19.569	19.478	20.101	19.625	19.887	19.625	20.017	19.192		19.353		19.336	
	22.4	22.588	22.056	22.261	21.913	22.588	22.078	22.588	22.222	21.934	21.77	21.934	21.953	21.934	21.934
	25	25.263	25.207	24.604	25.043	24.696	25.412	24.696	25.578	24.675	24.88	24.675	24.88	24.332	24.88
	28	28.235	28.192	28.153	27.68	27.826	27.783	27.826	27.964	27.417	27.99	27.417	27.99	27.094	27.601
	31.5	32.471	31.509	32	31.673	32.471	31.304	32.471	31.509	31.529	31.1	31.529	31.1	31.529	30.734
	35.5	36.316	36.235	35.368	36	35.5	36.529	35.5	36.768	35.471	35.765	35.471	35.765	34.978	35.765
	40	40.588	40.526	40.471	39.789	40	39.938	40	40.199	39.412	40.235	39.412	40.235	38.948	39.676
	45	45.841	45.294	44.706	45.529	45.5	45	45.5	45.294	44.338	44.706	44.831	44.706	44.667	44.18
	50	50.283	51.156	48.972	50.294	49.154	51.188	49.154	51.522	49.113	50.294	49.113	50.853	48.431	50.667
	56	56.199	56.113	56.036	55.093	55.385	55.298	55.385	55.66	54.57	55.71	54.57	55.71	53.928	54.937
	63	63.472	62.715	61.9	63.041	63	62.308	63	62.715	61.391	61.9	62.074	61.9	61.846	61.172
	71	72.632	70.831	70.737	69.638	71	70.875	71	71.338	70.941	69.638	70.941	70.412	69.956	70.154
K4	80	80	81.053	78.841	79.579	77.913	79.875	78.499	80.397	76.767	80.471	77.412	80.471	78.482	79.353
	90	91.429	89.275	90.104	88.696	89.043	87.652	90.353	88.888	87.734	87.079	87.734	87.811	89.024	89.024
	100	102.256	102.029	100.774	101.366	98.416	100.174	98.783	102.311	98.701	99.519	98.701	99.519	98.761	100.983
	112	114.286	114.111	112.629	113.37	112.614	110.719	111.304	111.857	109.668	111.959	109.668	111.959	109.971	112.028
	125	131.429	127.536	129.524	126.708	128	126.691	129.882	126.036	126.118	124.399	126.118	124.399	127.972	124.743
	140	146.992	146.667	144.862	145.714	141.474	144	142	147.073	141.882	143.059	141.882	143.059	141.969	145.163
	160	164.286	164.035	161.905	162.97	161.882	159.158	160	160.794	157.647	160.941	157.647	160.941	158.083	161.04
	180	185.546	183.333	182.857	182.143	178.824	182.118	182	181.176	177.353	178.824	179.324	178.824	181.294	179.319
	200	203.528	207.059	200.578	205.714	195.887	201.176	196.615	206.088	196.452	201.176	196.452	203.412	196.573	205.647
	224	227.473	227.126	224.176	225.651	224.145	220.372	221.538	222.638	218.281	222.842	218.281	222.842	218.885	222.978
	250	256.91	253.846	253.187	252.198	247.602	252.163	252	250.86	245.566	247.602	248.294	247.602	251.023	248.287
	280	293.985	286.697	289.724	284.835	282.947	278.552	284	285.353	283.765	278.552	283.765	281.647	283.939	284.742
	315	328.571	328.07	323.81	325.94	323.765	318.316	320	321.588	315.294	321.882	315.294	321.882	316.167	322.08
	355		366.667		364.286		364.235		362.353		357.647		357.647		358.637

Mass moments of inertia (kg-m²)

Helical Gear Units

Type - S1, S2, S3, S4

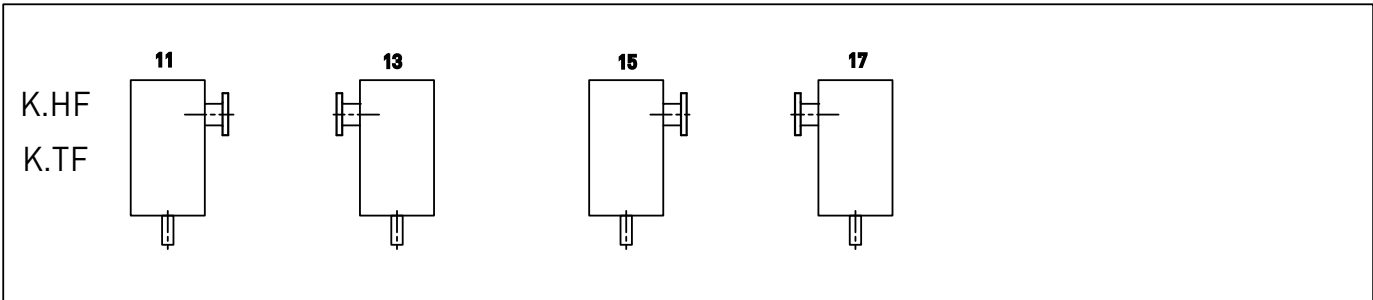
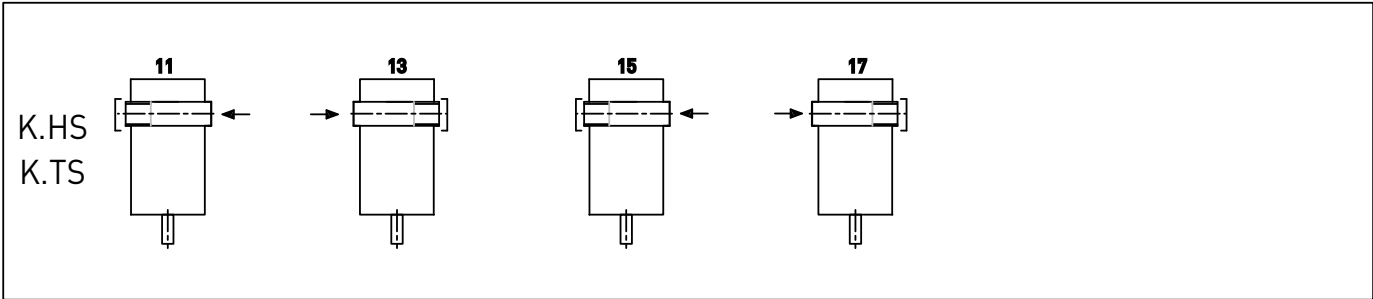
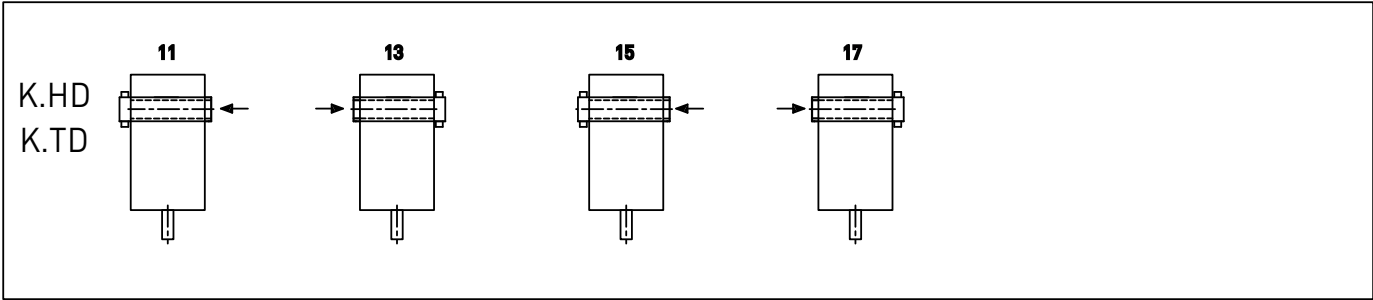
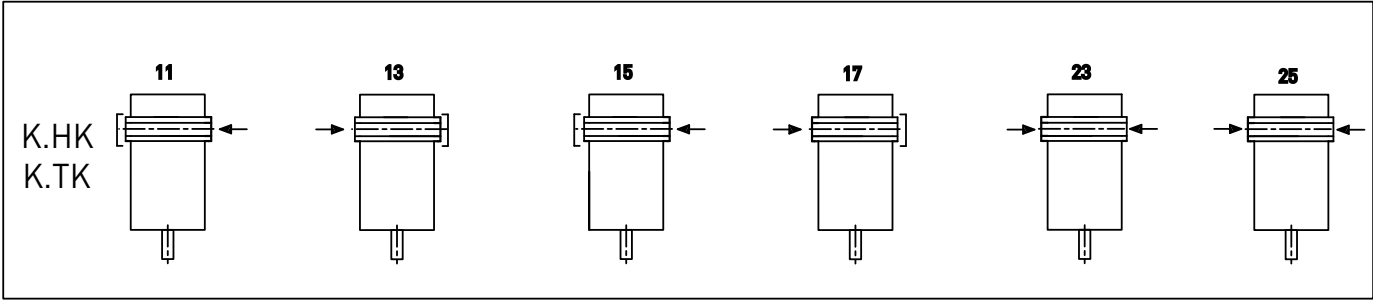
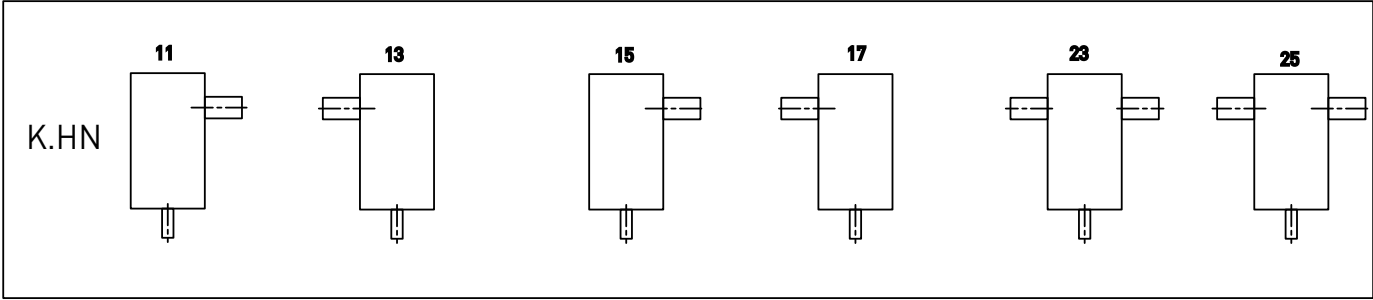
Size	i _N	GEAR UNIT SIZE												38	39
		26	27	28	29	30	31	32	33	34	35	36	37		
S1	2	8.309	-	15.419	-	26.037	-	-	-	-	-	-	-	-	-
	2.24	7.718	-	13.356	-	22.313	-	-	-	-	-	-	-	-	-
	2.5	6.616	-	12.285	-	19.545	-	-	-	-	-	-	-	-	-
	2.8	6.076	-	10.575	-	17.615	-	-	-	-	-	-	-	-	-
	3.15	4.977	-	7.967	-	13.69	-	-	-	-	-	-	-	-	-
	3.55	4.426	-	6.873	-	12.154	-	-	-	-	-	-	-	-	-
	4	3.787	-	5.793	-	10.252	-	-	-	-	-	-	-	-	-
	4.5	3.414	-	4.635	-	8.216	-	-	-	-	-	-	-	-	-
	5	2.955	-	3.954	-	7.062	-	-	-	-	-	-	-	-	-
	5.6	2.539	-	3.34	-	5.909	-	-	-	-	-	-	-	-	-
S2	6.3	3.509	-	6.34	-	14.091	-	17.603	-	29.123	-	On Request			
	7.1	3.104	3.749	5.365	4.5895	11.789	14.899	14.524	18.867	24.648	31.627				
	8	2.658	3.302	4.677	3.8287	10.01	12.4	12.244	15.482	21.612	26.62				
	9	2.203	2.816	3.974	3.6090	9.156	10.49	11.118	12.99	18.018	23.226				
	10	1.938	2.32	3.494	3.0349	7.675	9.567	9.258	11.767	15.047	19.262				
	11.2	1.697	2.034	2.972	2.8558	6.963	7.988	8.375	9.755	13.415	17.324				
	12.5	1.269	1.776	2.306	2.4383	5.303	7.232	6.196	9.018	10.861	14.219				
	14	1.063	1.331	2.06	1.7830	4.604	5.513	5.346	6.51	9.192	11.521				
	16	0.871	1.112	1.685	1.6426	3.639	4.777	4.405	5.605	7.6	9.708				
	18	0.755	0.908	1.454	1.3494	3.357	3.933	3.869	4.51	6.437	7.993				
	20	0.646	0.785	1.2	1.1024	2.813	3.461	3.24	4.03	5.691	6.745				
S3	22.4	22.057	22.647	21.737	22.765	22.892	22.5	22.097	22.647	21.324	22.353	On Request			
	25	24.86	24.614	24.5	24.454	24.957	25.754	24.531	25.022	23.99	24.189				
	28	28.412	27.743	28	27.563	28.522	28.076	28.235	27.778	27.417	27.212				
	31.5	31.509	31.706	31.053	31.5	32.411	32.087	31.765	31.972	30.654	31.1				
	35.5	35.515	35.163	35	34.934	35.333	36.462	35.263	35.969	34.485	34.771				
	40	40.588	39.632	40	39.375	40.381	39.75	40.588	39.93	39.412	39.118				
	45	45.395	45.294	44.737	45	44.632	45.429	44.375	45.96	44.338	44.706				
	50	50.059	50.658	49.333	50.329	49.368	50.211	49.368	50.248	48.279	50.294				
	56	57.21	55.863	56.381	55.5	56.421	55.539	56.824	55.902	55.176	54.765				
	63	63.985	63.843	63.058	63.429	62.36	63.474	62.125	64.344	62.074	62.588				
	71	70.24	71.404	69.222	70.94	70.737	70.155	70.526	70.347	68.971	70.412				
	80	80.275	78.384	79.111	77.875	80.842	79.579	81.176	79.861	78.824	78.235				
S4	90	89.781	89.582	88.48	89	89.352	90.947	88.75	91.92	88.676	89.412	On Request			
	100	99.519	100.19	98.077	99.539	99.826	100.521	98.737	100.496	96.559	100.588				
	112	113.736	111.058	112.088	110.337	114.087	112.304	113.647	111.805	110.353	109.529				
	125	127.205	126.923	125.361	126.099	126.096	128.348	124.25	128.689	124.147	125.176				
	140	146.364	141.953	144.242	141.032	138.783	141.858	141.053	140.695	137.941	140.824				
	160	167.273	163.333	164.848	162.273	158.609	156.13	162.353	159.721	157.647	156.471				
	180	187.081	186.667	184.37	185.455	175.304	178.435	177.5	183.841	177.353	178.824				
	200	199.737	208.772	196.842	207.416	196	197.217	198.817	200.993	194.431	201.176				
	224	228.271	222.895	224.962	221.447	224	220.5	228.84	225.131	222.207	220.549				
	250	255.303	254.737	251.603	253.083	247.579	252	250.19	259.128	249.983	252.056				
	280	292.063	284.903	287.831	283.053	289.882	278.526	293.944	283.304	285.424	283.563				
	315	326.65	325.926	321.916	323.81	320.396	326.118	321.368	332.849	321.102	323.765				
	355	365.079	364.522	360	362.155	366.616	360.446	362.105	363.902	356.78	364.235				
	400		407.407		404.762		412.443		410.031		404.706				

Mass moments of inertia (kg-m²)

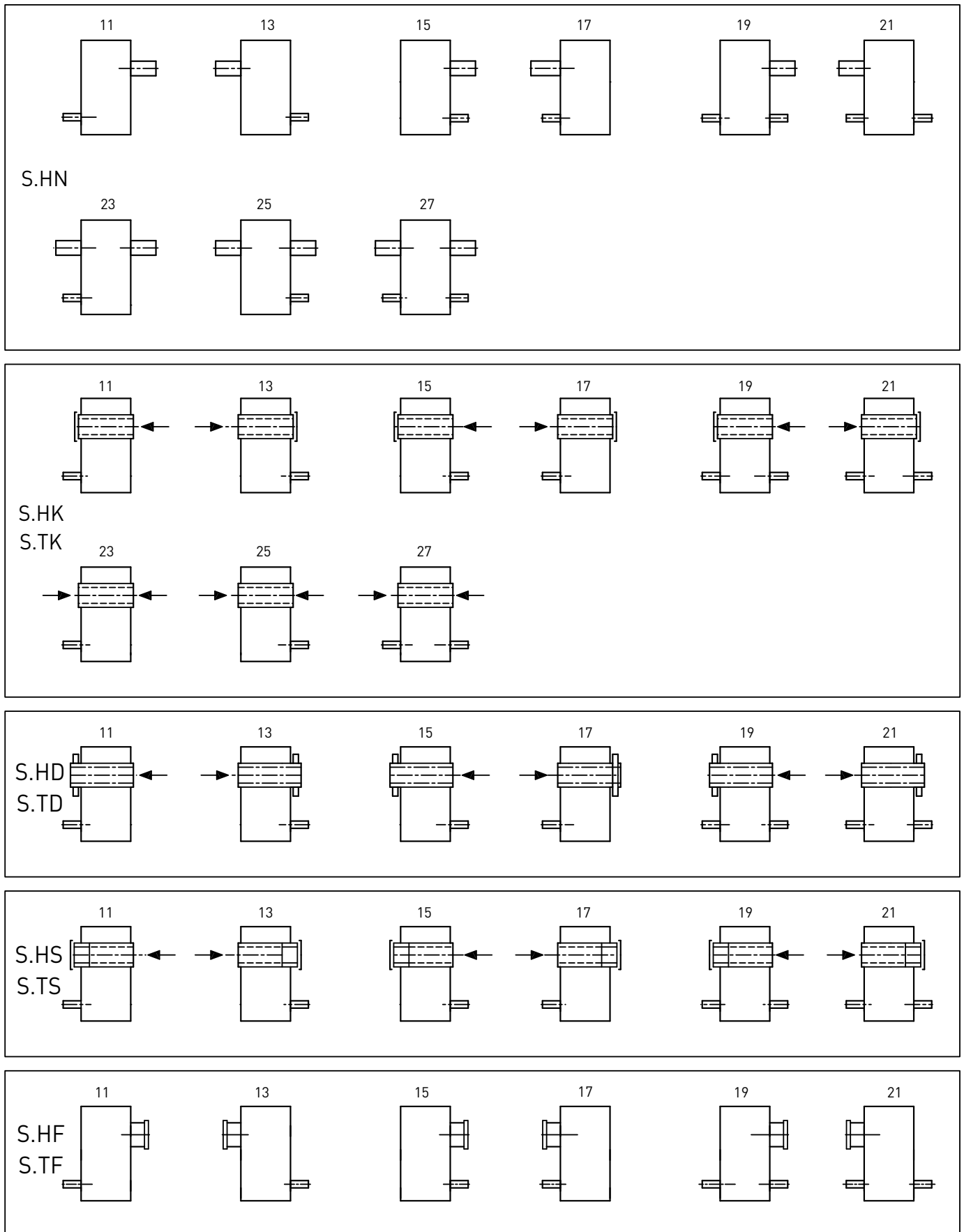
Bevel Gear Units

Type - S1, S2, S3, S4

Size	i _N	GEAR UNIT SIZE												38	39
		26	27	28	29	30	31	32	33	34	35	36	37		
K2	5	4.6248	-	8.7069	-	-	-	-	-	-	-	-	-	-	-
	5.6	4.4851	6.656	8.1791	-	-	-	-	-	-	-	-	-	-	-
	6.3	4.2022	5.723	7.8543	-	-	-	-	-	-	-	-	-	-	-
	7.1	4.0605	4.745	7.5241	9.065	-	-	-	-	-	-	-	-	-	-
	8	3.8962	3.965	7.2179	7.519	-	-	-	-	-	-	-	-	-	-
	9	3.8008	2.932	6.9853	5.300	-	-	-	-	-	-	-	-	-	-
	10	1.8408	2.167	4.0646	4.775	-	-	-	-	-	-	-	-	-	-
	11.2	1.7551	2.268	3.9050	4.045	-	-	-	-	-	-	-	-	-	-
K3	12.5	2.2770	1.897	4.5869	3.482	8.7944	-	10.5192	-	-	-	-	-	-	-
	14	2.1407	1.760	4.3403	3.604	8.0176	8.9483	9.5726	10.8327	-	-	-	-	-	-
	16	2.0168	1.709	4.0720	3.544	7.6447	8.1355	9.1228	9.8126	-	-	-	-	-	-
	18	1.9015	1.521	3.8007	3.140	6.9215	7.7463	8.2728	9.3295	-	-	-	-	-	-
	20	1.7958	1.489	3.6743	3.103	6.5563	6.9961	7.8414	8.4246	-	-	-	-	-	-
	22.4	1.6965	1.399	3.4813	2.930	6.1404	6.6168	7.3558	7.9646	On Request					
	25	1.6370	1.167	3.3623	2.467	5.9049	6.1861	7.0851	7.4487						
	28	1.5805	0.918	3.2317	1.949	5.6212	5.9431	6.7633	7.1629						
	31.5	0.7256	0.786	2.0342	1.700	2.7329	5.6513	4.2019	6.8245						
	35.5	0.6969	0.572	1.9766	1.234	2.6189	2.7313	4.0709	4.2593						
	40	0.6695	0.515	1.9134	1.112	2.4816	2.6137	3.9151	4.1210						
	45	0.6454	0.437	1.8764	0.960	2.3585	2.4725	3.7764	3.9573						
	50	0.3357	0.375	0.7483	0.829	1.2280	2.3461	1.8807	3.8118						
	56	0.3215	0.280	0.7153	0.579	1.1563	1.2375	1.7994	1.9003						
	63	0.3019	0.232	0.6960	0.476	1.0921	1.1629	1.7271	1.8149						
	71	0.1583	0.198	0.3790	0.410	0.6370	1.0979	0.8980	1.7390						
K4	80	0.2113	0.161	0.2270	0.337	0.6678	0.6416	1.8478	0.9074	On Request					
	90	0.2053	0.223	0.1930	0.195	0.6530	0.6732	1.8174	1.8560						
	100	0.2016	0.189	0.1540	0.156	0.6440	0.6524	1.8005	1.8236						
	112	0.1982	0.151	0.1320	0.133	0.6341	0.6474	1.7805	1.8057						
	125	0.1013	0.130	0.0980	0.099	0.2820	0.6367	0.7689	1.7845						
	140	0.0996	0.097	0.0870	0.089	0.2777	0.2817	0.7607	0.7647						
	160	0.0979	0.086	0.0750	0.076	0.2729	0.2793	0.7510	0.7561						
	180	0.0964	0.074	0.0650	0.065	0.2701	0.2741	0.7423	0.7458						
	200	0.0466	0.064	0.0483	0.049	0.1354	0.2711	0.3673	0.7367						
	224	0.0458	0.048	0.0400	0.040	0.1329	0.1362	0.3622	0.3686						
	250	0.0450	0.040	0.0339	0.034	0.1314	0.1335	0.3577	0.3632						
	280	0.0242	0.034	0.0272	0.027	0.0674	0.1320	0.1649	0.3585						
	315	0.0237	0.027	0.0228	0.022	0.0662	0.0678	0.1625	0.1656						
	355	-	0.022	-	-	-	0.0666	-	0.1630						



→ The arrow indicates the direction of insertion of the drive machine shaft.



→ The arrow indicates the direction of insertion of the drive machine shaft.

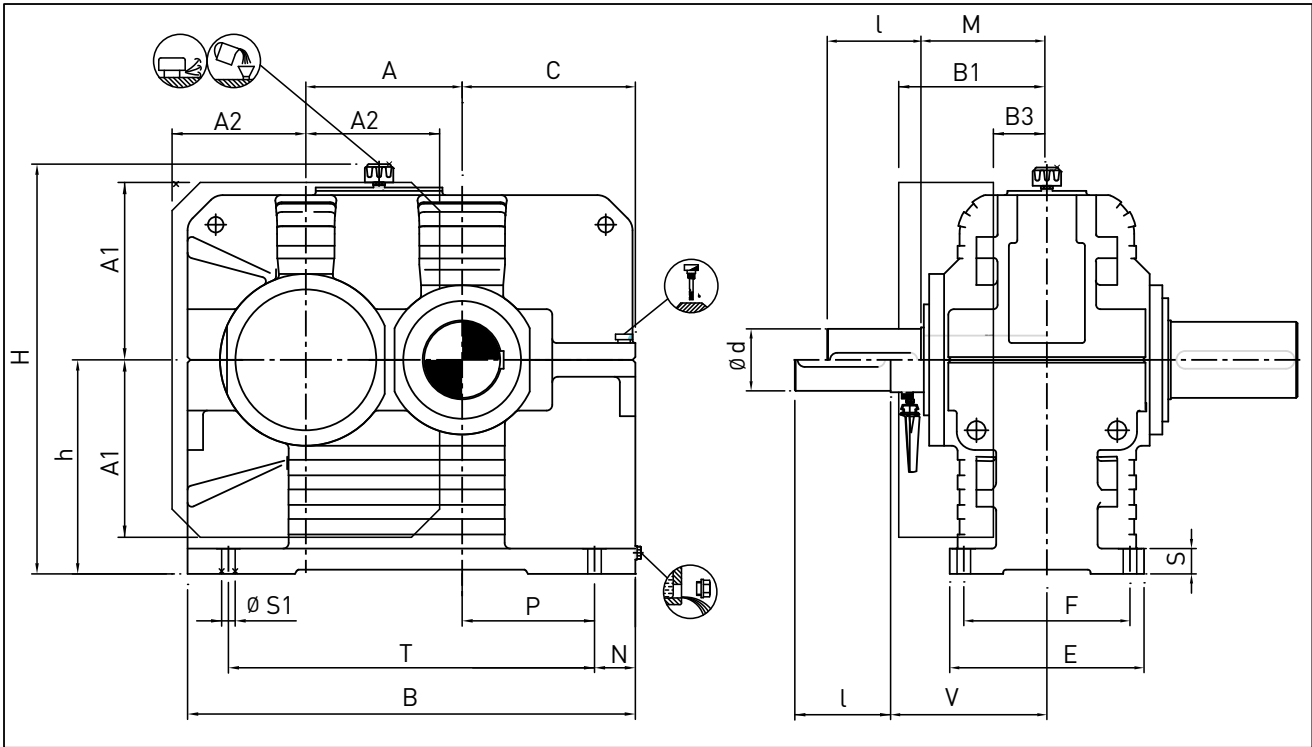
Types S1H

Horizontal Mounting

Helical Gear Unit

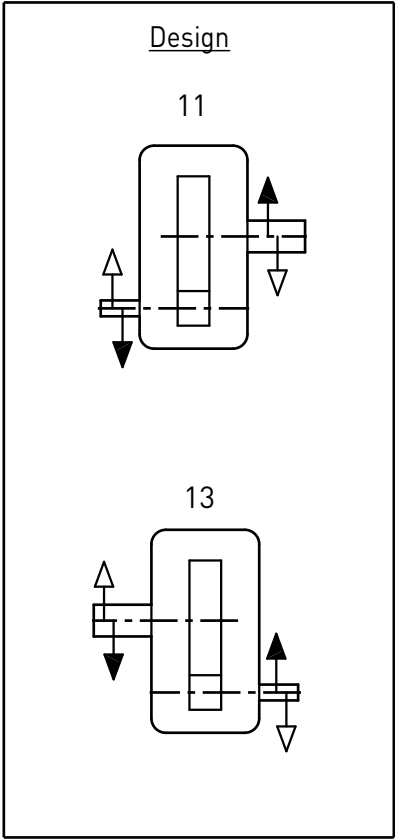
Single Stage

Size 26 to 30



Size	Input											
	$i_N = 2 \text{ to } 2.8$			$i_N = 3.15 \text{ to } 4$			$i_N = 4.5 \text{ to } 5.6$				Fan	
	d	l	d	l	d	l	M	V	A1			
26	180	290	150	250	125	250	360	465	*	*	450	80
28	200	330	170	290	140	250	400	505	*	*	530	80
30	220	340	190	340	160	300	440	545	*	*	590	90

Size	Gear Units											
	E	F	S	S1	A	B	C	h	H	K	N	P
26	545	450	80	48	449	1295	505	600	1170	1010	145	360
28	615	530	80	48	496	1410	545	670	1300	1300	115	430
30	690	590	90	48	555	1590	615	760	1455	1455	145	470



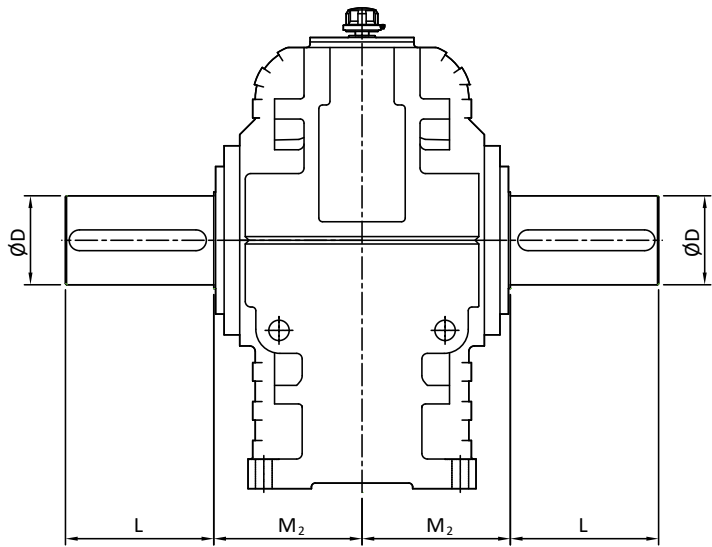
Types S1H

Single Stage

Horizontal Mounting

Helical Gear Unit

Size 26 to 30



Size	S1HN				
	D	L	M2	Weight (kg)	Oil Qty
26	220	350	360	2900	160
28	240	400	400	3850	220
30	270	450	440	5250	330

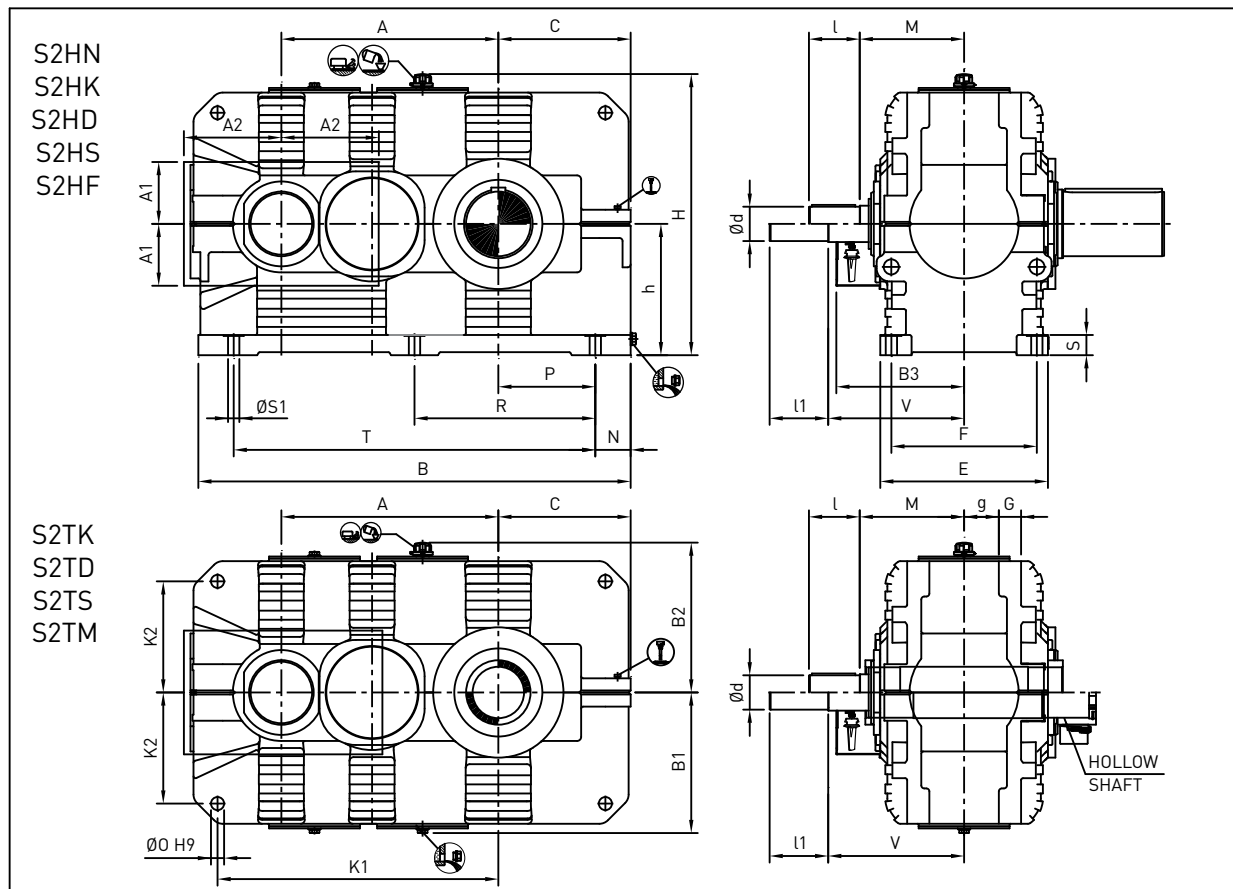
Types S2H, S2T

Horizontal/Torque Arm Mounting

Helical Gear Unit

Double Stage

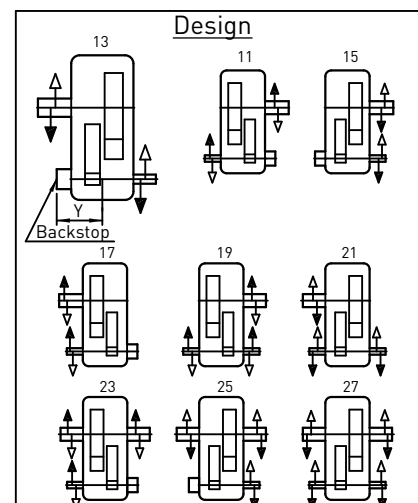
Size 26 to 39



Size		Input									Gear Units									
		$i_N = 6.3$ to 11.2			$i_N = 12.5$ to 20			Fan												
		$i_N = 7.1$ to 12.5			$i_N = 14$ to 22.4															
		d	l	d	l	M	V	A1	A2	B3	E	S	G	O	g	B ₂	B ₂	F	S ₁	
26	+27	120	270	100	270	365	470	*	*	680	625	70	80	45	125.5	570	610	535	42	
28	+29	125	305	110	270	420	525	*	*	780	690	80	80	45	160	615	655	600	42	
30	+31	150	305	120	270	475	580	*	*	880	790	90	100	55	172	690	730	690	48	
32	+33	170	345	140	305	495	600	*	*	940	830	100	105	65	177	730	780	720	56	
34	+35	190	385	150	305	560	665	*	*	1020	930	115	125	60	194	840	880	810	56	
36	+37	200	405	170	345	600	705	*	*	1120	1045	130	*	*	*	*	*	910	66	
38	+39	240	435	200	385	670	775	*	*	1260	1170	150	*	*	*	*	*	1030	74	

Size	Gear Units											
	B	C	A	h	H	N	P	R	T	K ₁	K ₂	B ₁
26	1550	485	772	460	1030	135	350	640	1280	1004	395	560
27	1640	530	813	500	1110	130	400	750	1380	1040	430	590
28	1740	525	870	510	1125	145	380	725	1450	1135	435	600
29	1860	585	924	550	1205	135	450	810	1590	1165	480	640
30	2010	590	1004	580	1270	160	430	845	1690	1310	490	670
31	2130	650	1059	620	1310	150	500	925	1830	1365	520	710
32	2140	655	1074	650	1380	175	480	895	1790	1390	550	710
33	2250	710	1134	700	1480	160	550	1000	1930	1450	580	760
34	2380	730	1186	740	1580	180	550	1010	2020	1535	595	820
35	2510	795	1256	780	1660	185	610	1145	2140	1610	660	860
36	2645	790	1325	820	*	210	580	1115	2225	*	*	*
37	2825	880	1415	860	*	190	690	1300	2445	*	*	*
38	2960	880	1490	880	*	230	650	1250	2500	*	*	*
39	3150	975	1580	950	*	215	760	1480	2720	*	*	*

* On Request



Types S2H, S2T

Double Stage

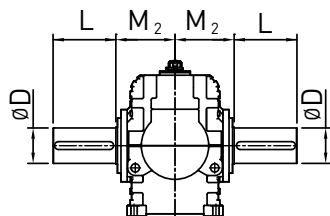
Horizontal/Torque Arm Mounting

Output Shaft Types

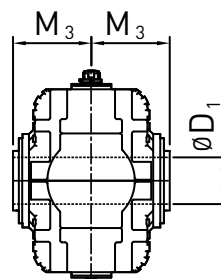
Helical Gear Unit

Size 26 to 39

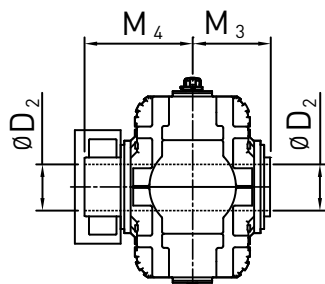
S2HN Solid Shaft	Size	S2HN		
		D	L	M ₂
	26	230	410	380
	27	240	410	380
	28	250	410	415
	29	270	470	415
	30	290	470	465
	31	300	500	465
	32	320	500	490
	33	340	550	490
	34	360	590	540
	35	380	590	540
	36	400	650	605
	37	420	650	605
	38	440	690	680
	39	460	750	680



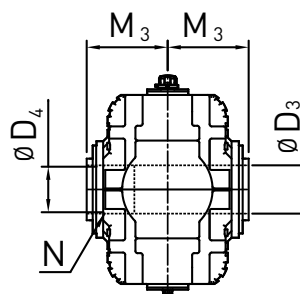
S2HK, S2TK Hollow Shaft	Size	S2HK, S2TK	
		D ₁	M ₃
	26	235	380
	27	245	380
	28	260	415
	29	285	415
	30	285	465
	31	315	465
	32	335	490
	33	345	490
	34	375	540
	35	395	540
	36	415	610
	37	435	610
	38	465	680
	39	475	680



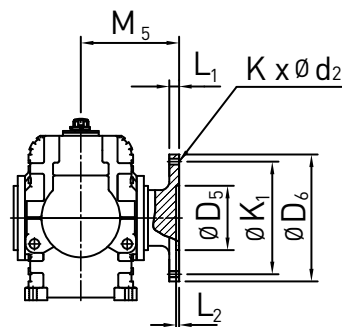
S2HD, S2TD Hollow Shaft for Shrink Disk (D)	Size	S2HD, S2TD		
		D ₂	M ₃	M ₄
	26	235	380	550
	27	245	380	550
	28	260	415	600
	29	285	415	600
	30	285	465	670
	31	315	465	670
	32	335	490	715
	33	345	490	725
	34	375	540	800
	35	395	540	820
	36	415	610	895
	37	435	610	925
	38	465	680	1000
	39	475	680	1020



S2HS, S2TS Hollow Shaft with Spline	Size	S2HS, S2TS	
		N, D ₃ , D ₄ , M ₃	
	26	On Request	
	27		
	28		
	29		
	30		
	31		
	32		
	33		
	34		
	35		
	36		
	37		
	38		
	39		



S2HF, S2TF Flanged Shaft (F)	Size	S2HF, S2TF						
		L ₁	D ₆	D5	K1	K x d2	L2	M5
	26	55	710	360	630	28 x 33	17	550
	27	55	740	360	660	30 x 33	17	550
	28	60	750	410	660	24 x 39	18	600
	29	60	800	410	710	26 x 39	18	600
	30	65	860	460	770	30 x 39	18	670
	31	65	930	460	830	32 x 39	18	670
	32	75	950	520	850	28 x 45	20	710
	33	75	1040	520	940	28 x 45	20	710
	34	On Request						
	35							
	36							
	37							
	38							
	39							



Size	Weight (kg)		Oil Qty
	S2H	S2T	S2H
26	3090	2910	170
27	3290	3110	160
28	4190	3980	240
29	4620	4380	245
30	5940	5670	290
31	6750	6480	300
32	8010	7560	340
33	8640	8280	370
34	10440	9900	440
35	11700	11070	460
36	14000	13300	650
37	15800	15000	680
38	19800	19000	880
39	23000	21700	940

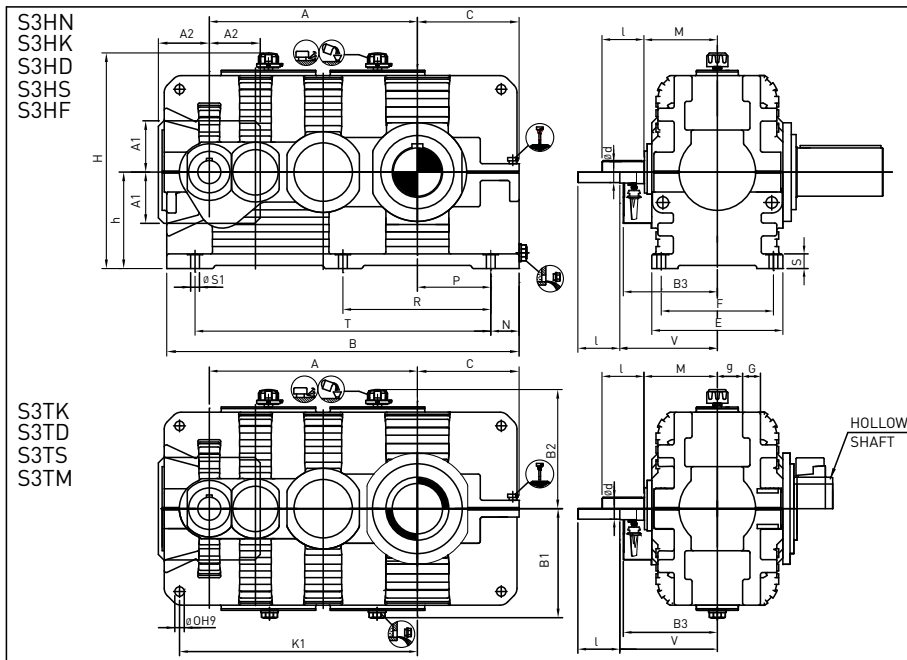
Types S3H, S3T

Horizontal/Torque Arm Mounting

Helical Gear Unit

Three Stage

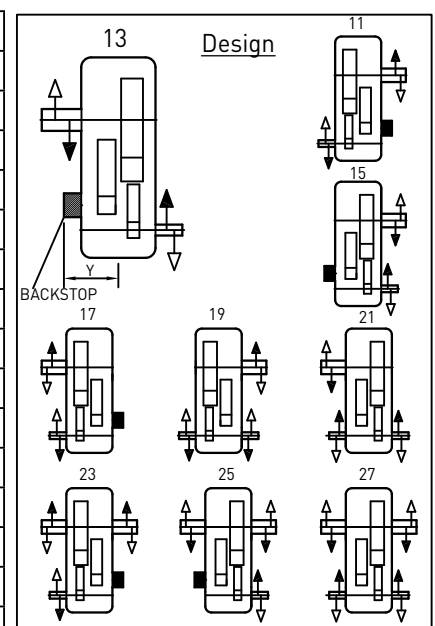
Size 26 to 39



Size		Gear Units	
		B ₂	B ₂
26 +	27	570	610
28 +	29	620	660
30 +	31	690	730
32 +	33	760	810
34 +	35	850	890
36 +	37	*	*
38 +	39	*	*

Size		Input												Gear Units							
		$i_N = 22.4$ to 45			$i_N = 50$ to 63			$i_N = 71$ to 90				Fan									
		$i_N = 25$ to 50			$i_N = 56$ to 71			$i_N = 80$ to 100													
		d	l	d	l	d	l	M	V	A1	A2	B3	E	S	G	O	g	F	S ₁		
26 +	27	100	165	75	140	60	140	350	455	*	*		625	70	80	45	125.5	535	42		
28 +	29	100	165	75	140	60	140	380	485	*	*		690	80	80	45	160	600	42		
30 +	31	110	180	90	165	75	140	430	535	*	*		790	90	100	55	172	690	48		
32 +	33	130	180	110	205	90	170	470	575	*	*		830	100	105	65	177	720	56		
34 +	35	130	200	110	220	90	185	515	620	*	*		930	115	125	60	194	810	56		
36 +	37	150	200	130	255	100	220	580	685	*	*		1045	130	*	*	*	910	66		
38 +	39	180	240	150	255	125	255	650	755	*	*		1170	150	*	*	*	1030	74		

Size	Gear Units											
	B	C	A	h	H	N	P	R	T	K ₁	K ₂	B1
26	1680	485	992	460	1030	135	350	705	1410	1134	395	550
27	1770	530	1033	500	1110	130	400	755	1510	1175	435	590
28	1770	525	1039	510	1130	145	380	740	1480	1189	445	600
29	1895	585	1093	550	1210	135	450	810	1620	1235	485	640
30	2030	590	1199	580	1270	160	430	855	1710	1330	480	670
31	2150	650	1254	620	1350	150	500	925	1850	1400	520	710
32	2340	655	1397	650	1410	175	480	995	1990	1595	550	740
33	2450	710	1457	700	1510	160	550	1065	2130	1655	580	790
34	2530	730	1509	740	1590	180	550	1085	2170	1695	595	830
35	2660	795	1579	780	1670	185	610	1145	2290	1765	660	870
36	2830	790	1699	820	*	210	580	1205	2410	*	*	*
37	3010	880	1789	860	*	190	690	1415	2630	*	*	*
38	3220	880	1939	880	*	230	650	1380	2760	*	*	*
39	3410	950	2029	950	*	215	760	1585	2980	*	*	*



* On Request

Types S3H, S3T

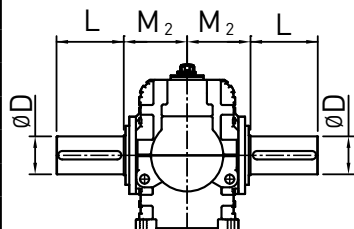
Triple Stage

Horizontal/Torque Arm Mounting

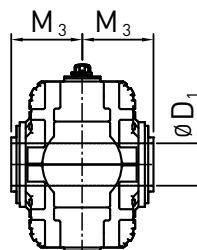
Helical Gear Unit

Size 26 to 39

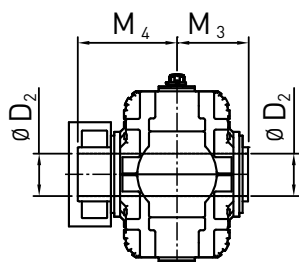
S3HN Solid Shaft	Size	S3HN		
		D	L	M ₂
	26	230	410	380
	27	240	410	380
	28	250	410	415
	29	270	470	415
	30	290	470	465
	31	300	500	465
	32	320	500	490
	33	340	550	490
	34	360	590	540
	35	380	590	540
	36	400	650	605
	37	420	650	605
	38	440	690	680
	39	460	750	680



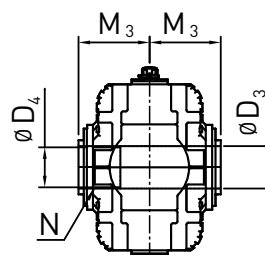
S3HK, S3TK Hollow Shaft	Size	S3HK, S3TK	
		D ₁	M ₃
	26	235	380
	27	245	380
	28	260	415
	29	285	415
	30	285	465
	31	315	465
	32	335	490
	33	345	490
	34	375	540
	35	395	540
	36	415	610
	37	435	610
	38	465	680
	39	475	680



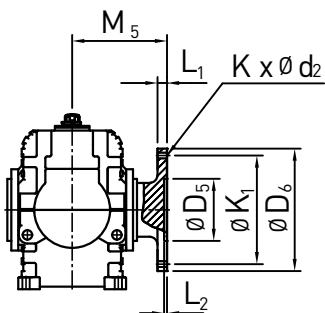
S3HD, S3TD Hollow Shaft for Shrink Disk	Size	S3HD, S3TD		
		D ₂	M ₃	M ₄
	26	235	380	550
	27	245	380	550
	28	260	415	600
	29	285	415	600
	30	285	465	670
	31	315	465	670
	32	335	490	715
	33	345	490	725
	34	375	540	800
	35	395	540	820
	36	415	610	895
	37	435	610	925
	38	465	680	1000
	39	475	680	1020



S3HS, S3TS Hollow Shaft with Spline	Size	S3HS, S3TS	
		N, D ₃ , D ₄ , M ₃	
	26	On Request	
	27		
	28		
	29		
	30		
	31		
	32		
	33		
	34		
	35		
	36		
	37		
	38		
	39		



S3HF, S3TF Flanged Shaft	Size	S3HF, S3TF						
		L ₁	D ₆	D ₅	K ₁	K x d ₂	L ₂	M ₅
	26	55	710	360	630	28 x 33	17	550
	27	55	740	360	660	30 x 33	17	550
	28	60	750	410	660	24 x 39	18	600
	29	60	800	410	710	26 x 39	18	600
	30	65	860	460	770	30 x 39	18	670
	31	65	930	460	830	32 x 39	18	670
	32	75	950	520	850	28 x 45	20	710
	33	75	1040	520	940	28 x 45	20	710
	34	On Request						
	35							
	36							
	37							
	38							
	39							



Size	Weight (kg)		Oil Qty
	S3H	S3T	S3H
26	3130	2930	190
27	3500	3270	195
28	4100	3830	240
29	4530	4270	250
30	6040	5590	390
31	7300	6850	415
32	8200	7650	515
33	8830	8370	540
34	On Request		
35			
36			
37			
38			
39			

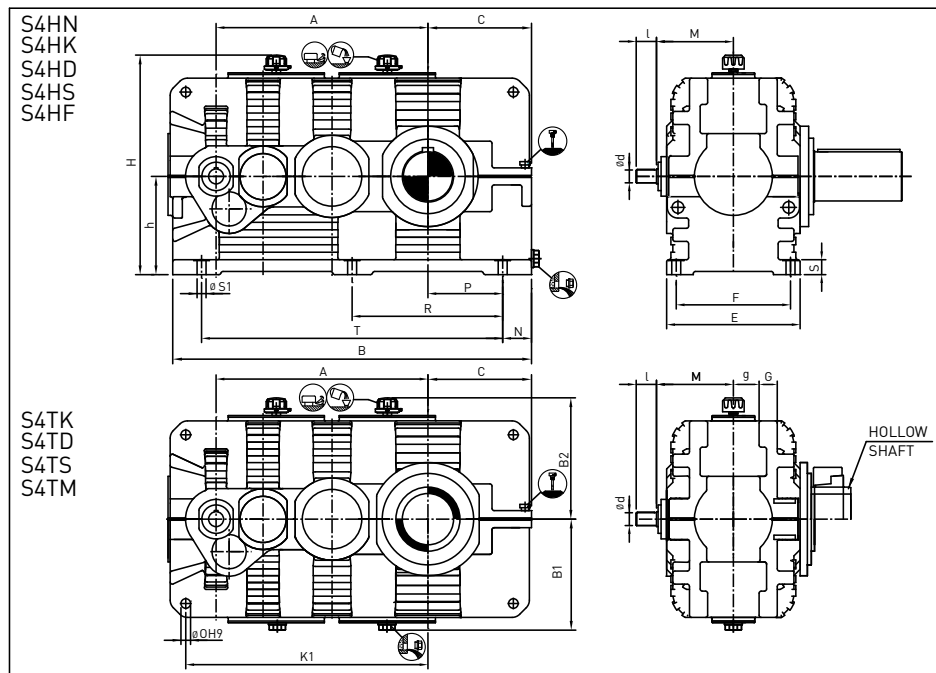
Types S4H, S4T

Horizontal/Torque Arm Mounting

Helical Gear Unit

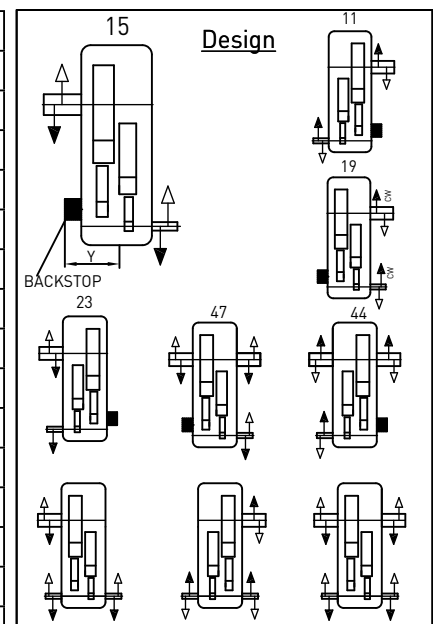
Four Stage

Size 26 to 39



Size		Input					Gear Units									
		i _N = 100 to 180		i _N = 200 to 355												
		i _N = 112 to 200		i _N = 224 to 400												
		d	l	d	l		M	E	S	G	O	g	B ₂	B ₂	F	S ₁
26 +	27	60	135	50	110	345	625	70	80	45	125.5	570	610	535	42	
28 +	29	60	105	50	80	380	690	80	80	45	160	620	660	600	42	
30 +	31	75	105	60	105	440	790	90	100	55	172	690	730	690	48	
32 +	33	90	165	70	140	460	830	100	105	65	177	760	810	720	56	
34 +	35	90	165	70	140	515	930	115	125	60	194	850	890	810	56	
36 +	37	100	205	85	170	575	1045	130	*	*	*	*	*	910	66	
38 +	39	120	210	100	210	645	1170	150	*	*	*	*	*	1030	74	

Size	Gear Units											
	B	C	A	h	H	N	P	R	T	K ₁	K ₂	B1
26	1680	485	992	460	1030	135	350	705	1410	1134	395	550
27	1770	530	1033	500	1110	130	400	755	1510	1175	435	590
28	1770	525	1039	510	1130	145	380	740	1480	1189	445	600
29	1895	585	1093	550	1210	135	450	810	1620	1235	485	640
30	2030	590	1199	580	1270	160	430	855	1710	1330	480	670
31	2150	650	1254	620	1350	150	500	925	1850	1400	520	710
32	2340	655	1397	650	1410	175	480	995	1990	1595	550	740
33	2450	710	1457	700	1510	160	550	1065	2130	1655	580	790
34	2530	730	1509	740	1590	180	550	1085	2170	1695	595	830
35	2660	795	1579	780	1670	185	610	1145	2290	1765	660	870
36	2830	790	1699	820	*	210	580	1205	2410	*	*	*
37	3010	880	1789	860	*	190	690	1415	2630	*	*	*
38	3220	880	1939	880	*	230	650	1380	2760	*	*	*
39	3410	975	2029	950	*	215	760	1585	2980	*	*	*



* On Request

Types S4H, S4T

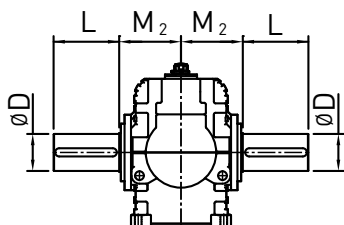
Four Stage

Horizontal/Torque Arm Mounting

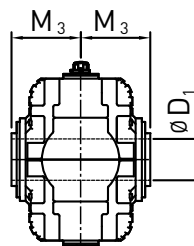
Helical Gear Unit

Size 26 to 39

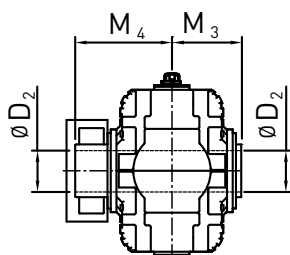
S4HN Solid Shaft	Size	S4HN		
		D	L	M ₂
	26	230	410	380
	27	240	410	380
	28	250	410	415
	29	270	470	415
	30	290	470	465
	31	300	500	465
	32	320	500	490
	33	340	550	490
	34	360	590	540
	35	380	590	540
	36	400	650	605
	37	420	650	605
	38	440	690	680
	39	460	750	680



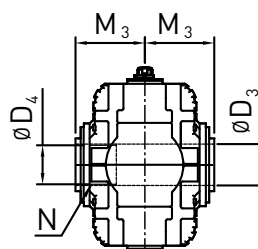
S4HK, S4TK Hollow Shaft	Size	S4HK, S4TK	
		D ₁	M ₃
	26	235	380
	27	245	380
	28	260	415
	29	285	415
	30	285	465
	31	315	465
	32	335	490
	33	345	490
	34	375	540
	35	395	540
	36	415	610
	37	435	610
	38	465	680
	39	475	680



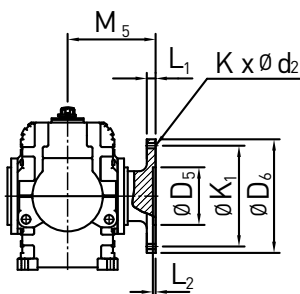
S4HD, S4TD Hollow Shaft for Shrink Disk	Size	S4HD, S4TD		
		D ₂	M ₃	M ₄
	26	235	380	550
	27	245	380	550
	28	260	415	600
	29	285	415	600
	30	285	465	670
	31	315	465	670
	32	335	490	715
	33	345	490	725
	34	375	540	800
	35	395	540	820
	36	415	610	895
	37	435	610	925
	38	465	680	1000
	39	475	680	1020



S4HS, S4TS Hollow Shaft with Spline	Size	S4HS, S4TS	
		N, D ₃ , D ₄ , M ₃	
	26	On Request	
	27		
	28		
	29		
	30		
	31		
	32		
	33		
	34		
	35		
	36		
	37		
	38		
	39		



S4HF, S4TF Flanged Shaft	Size	S4HF, S4TF						
		L ₁	D ₆	D ₅	K ₁	K x d ₂	L ₂	M ₅
	26	55	710	360	630	28 x 33	17	550
	27	55	740	360	660	30 x 33	17	550
	28	60	750	410	660	24 x 39	18	600
	29	60	800	410	710	26 x 39	18	600
	30	65	860	460	770	30 x 39	18	670
	31	65	930	460	830	32 x 39	18	670
	32	75	950	520	850	28 x 45	20	710
	33	75	1040	520	940	28 x 45	20	710
	34	On Request						
	35							
	36							
	37							
	38							
	39							



Size	Weight (kg)		Oil Qty
	S4H	S4T	S4H
26	3280	3110	230
27	3570	3400	235
28	4230	4000	290
29	4700	4450	305
30	6200	5700	430
31	7500	7000	380
32	8300	7750	395
33	9000	8500	420
34	On Request		On Request
35			
36			
37			
38			
39			

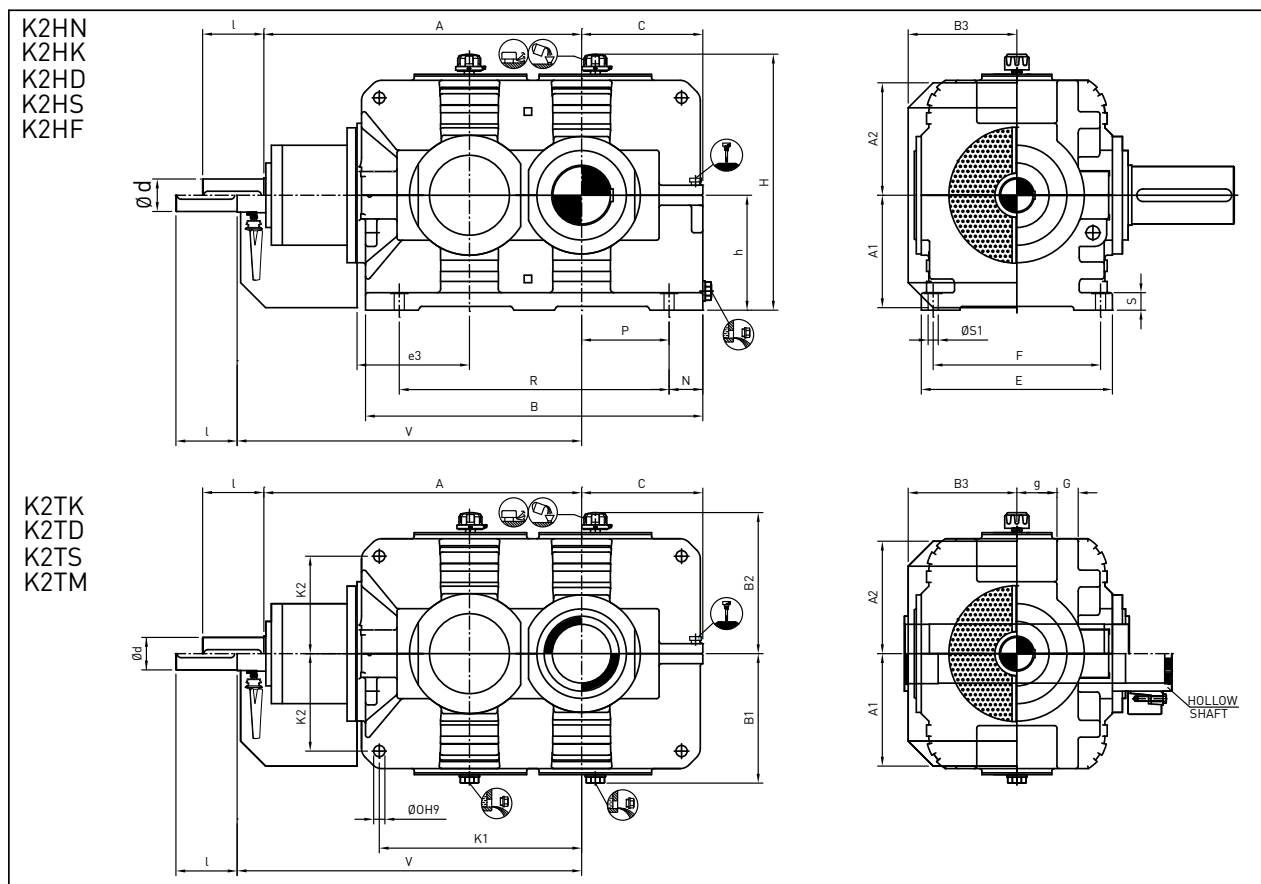
Types K2H, K2T

Horizontal/Torque Arm Mounting

Bevel-Helical Gear Unit

Double Stage

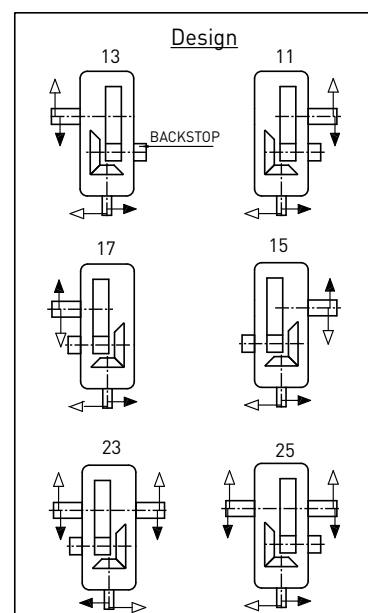
Size 26 to 29



Size		Input		Fan					Gear Units								
		$i_N = 5$ to 11.2															
		$i_N = 5.6$ to 12.5															
		d	l	V	V	A1	A2	B3	E	S	G	O	g	B2	B2	F	S ₁
26 +	27	130	245	930	930	*	*	*	765	70	80	45	165.5	570	570	670	42
28 +	29	150	245	1052	1052	*	*	*	885	80	95	45	210	570	660	780	42

Size	Gear Units											
	B	C	A	h	H	N	P	R	T	K1	K2	B1
26	1350	485	1272	460	1030	135	350	540	810	390	550	550
27	1440	530	1313	500	1070	130	400	640	850	430	550	550
28	1490	525	1435	510	1080	145	380	600	810	390	550	550
29	1610	585	1489	550	1210	135	450	740	925	470	640	640

* On Request



Types K2H, K2T

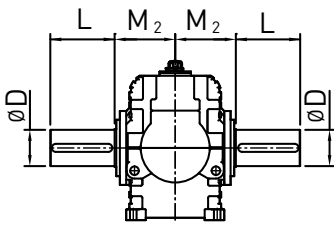
Horizontal/Torque Arm Mounting

Helical Gear Unit

Double Stage

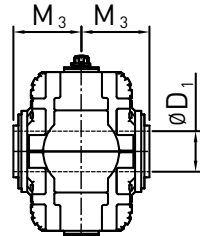
Size 26 to 29

K2HN
Solid Shaft



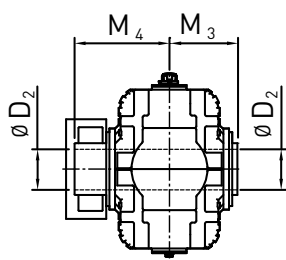
Size	K2HN		
	D	L	M ₂
26	230	410	460
27	240	410	460
28	250	410	540
29	270	470	540

K2HK, K2TK
Hollow Shaft



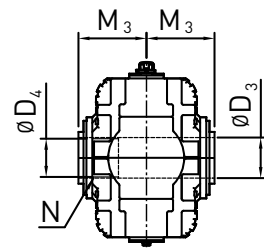
Size	K2HK, K2TK	
	D ₁	M ₃
26	235	450
27	245	450
28	260	515
29	285	515

K2HD, K2TD
Hollow Shaft for Shrink Disk



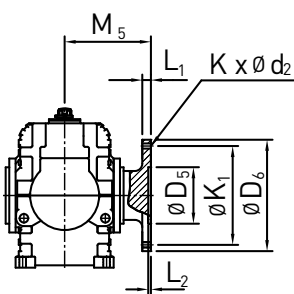
Size	K2HD, K2TD		
	D ₂	M ₃	M ₄
26	235	450	620
27	245	450	620
28	260	515	700
29	285	515	700

K2HS, K2TS
Hollow Shaft with Spline



Size	K2HS, K2TS	
	N, D ₃ , D ₄ , M ₃	
26	On Request	
27		
28		
29		

K2HF, K2TF
Flanged Shaft



Size	K2HF, K2TF						
	L ₁	D ₆	D ₅	K ₁	K x d2	L ₂	M ₅
26	55	710	360	630	28 x 33	17	625
27	55	740	360	660	30 x 33	17	625
28	60	750	410	660	24 x 39	18	695
29	60	800	410	710	26 x 39	18	695

Size	Weight (kg)		Oil Qty
	K2H	K2T	K2H
26	220	3600	3420
27	230	4000	3800
28	320	5100	4800
29	340	5500	5300

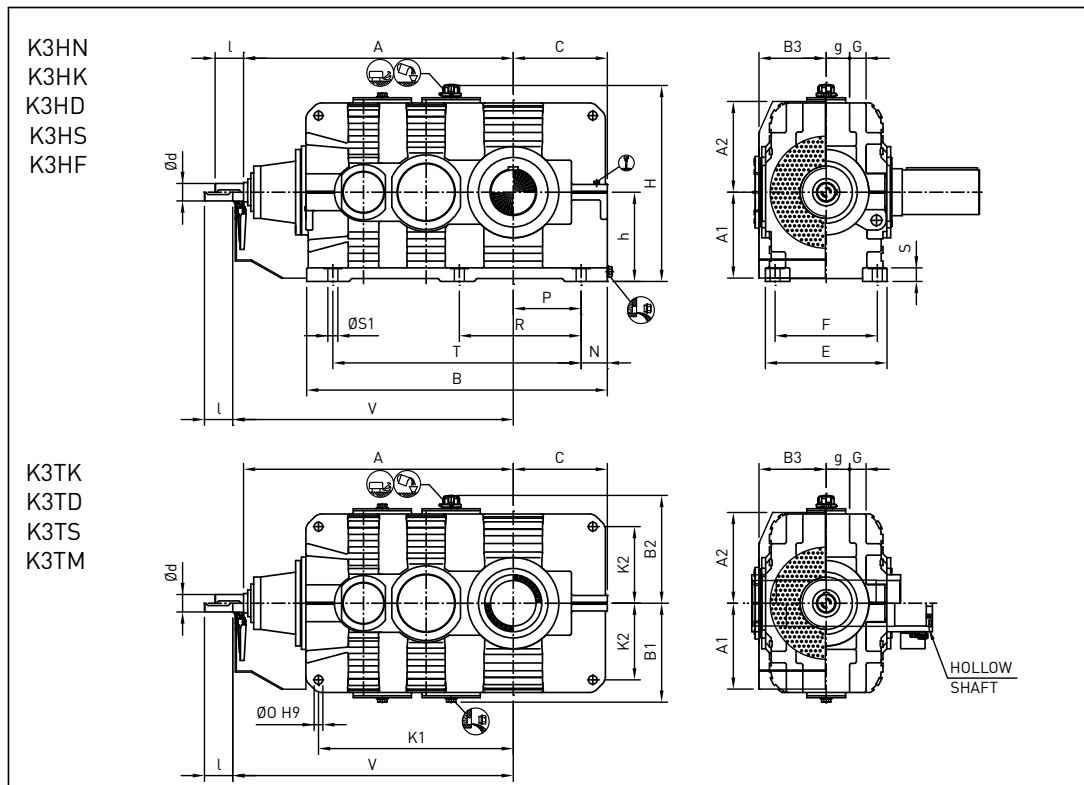
Types K3H, K3T

Horizontal/Torque Arm Mounting

Bevel-Helical Gear Unit

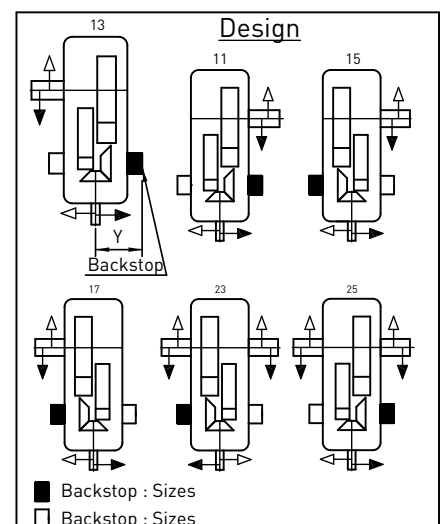
Triple Stage

Size 26 to 39



Size		Input									Gear Units								
		$i_N = 12.5$ to 45		$i_N = 50$ to 71															
		$i_N = 14$ to 50		$i_N = 56$ to 80		Fan													
		d	l	d	l	M	V	A1	A2	B3	E	S	G	O	g	B ₂	B ₂	F	S ₁
26	+27	90	130	70	105	1477	1517	*	*	*	625	70	80	45	125.5	570	610	535	42
28	+29	110	165	80	130	1671	1725	*	*	*	690	80	80	45	160	615	655	600	42
30	+31	130	200	100	165	1942	1997	*	*	*	790	90	100	55	172	690	730	690	48
32	+33	130	200	100	165	2002	2062	*	*	*	830	100	105	65	177	730	780	720	56
34	+35	150	200	110	165	2230	2300	*	*	*	930	115	125	60	194	840	880	810	56
36	+37	160	240	120	165	2480	2570	*	*	*	1045	130	*	*	*	*	*	910	66
38	+39	180	240	130	200	2735	2825	*	*	*	1170	150	*	*	*	*	*	1030	74

Size	Gear Units											
	B	C	A	h	H	N	P	R	T	K ₁	K ₂	B1
26	1550	485	1372	460	1030	135	350	640	1280	1004	395	560
27	1640	530	1412	500	1110	130	400	750	1380	1040	430	590
28	1740	525	1566	510	1125	145	380	725	1450	1135	435	600
29	1860	585	1620	550	1205	135	450	810	1590	1165	480	640
30	2010	590	1837	580	1270	160	430	845	1690	1310	490	670
31	2130	650	1892	620	1310	150	500	925	1830	1365	520	710
32	2140	655	1897	650	1380	175	480	895	1790	1390	550	710
33	2250	710	1957	700	1480	160	550	1000	1930	1450	580	760
34	2380	730	2125	740	1580	180	550	1010	2020	1535	595	820
35	2510	795	2195	780	1660	185	610	1145	2140	1610	660	860
36	2645	790	2375	820	*	210	580	1115	2225	*	*	*
37	2825	880	2465	860	*	190	690	1300	2445	*	*	*
38	2960	880	2630	880	*	230	650	1250	2500	*	*	*
39	3150	975	2720	950	*	215	760	1480	2720	*	*	*



* On Request

Types K3H, K3T

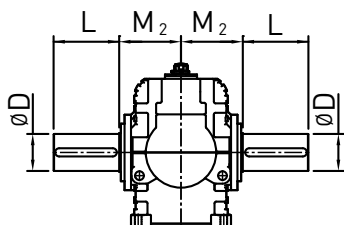
Horizontal/Torque Arm Mounting

Bevel-Helical Gear Unit

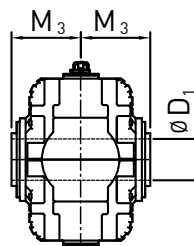
Three Stage

Size 26 to 29

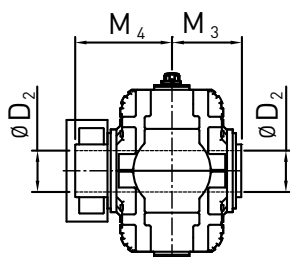
K3HN Solid Shaft	Size	K3HN		
		D	L	M ₂
	26	230	410	380
	27	240	410	380
	28	250	410	415
	29	270	470	415
	30	290	470	465
	31	300	500	465
	32	320	500	490
	33	340	550	490
	34	360	590	540
	35	380	590	540
	36	400	650	605
	37	420	650	605
	38	440	690	680
	39	460	750	680



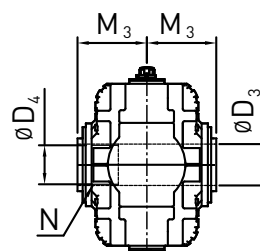
K3HK, K3TK Hollow Shaft	Size	K3HK, K3TK	
		D ₁	M ₃
	26	235	380
	27	245	380
	28	260	415
	29	285	415
	30	285	465
	31	315	465
	32	335	490
	33	345	490
	34	375	540
	35	395	540
	36	415	610
	37	435	610
	38	465	680
	39	475	680



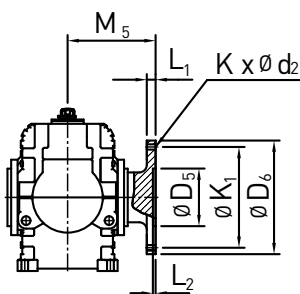
K3HD, K3TD Hollow Shaft for Shrink Disk	Size	K3HD, K3TD		
		D ₂	M ₃	M ₄
	26	235	380	550
	27	245	380	550
	28	260	415	600
	29	285	415	600
	30	285	465	670
	31	315	465	670
	32	335	490	715
	33	345	490	725
	34	375	540	800
	35	395	540	820
	36	415	610	895
	37	435	610	925
	38	465	680	1000
	39	475	680	1020



K3HS, K3TS Hollow Shaft with Spline	Size	K3HS, K3TS	
		N, D ₃ , D ₄ , M ₃	
	26	On Request	
	27		
	28		
	29		
	30		
	31		
	32		
	33		
	34		
	35		
	36		
	37		
	38		
	39		



K3HF, K3TF Flanged Shaft	Size	K3HF, K3TF						
		L ₁	D ₆	D ₅	K ₁	K x d2	L ₂	M ₅
	26	55	710	360	630	28 x 33	17	550
	27	55	740	360	660	30 x 33	17	550
	28	60	750	410	660	24 x 39	18	600
	29	60	800	410	710	26 x 39	18	600
	30	65	860	460	770	30 x 39	18	670
	31	65	930	460	830	32 x 39	18	670
	32	75	950	520	850	28 x 45	20	710
	33	75	1040	520	940	28 x 45	20	710
	34	On Request						
	35							
	36							
	37							
	38							
	39							



Size	Weight (kg)		Oil Qty
	K3H	K3T	K3H
26	3360	3200	160
27	3600	3400	165
28	4500	4300	230
29	5000	4700	235
30	6300	5900	360
31	7300	6900	420
32	8300	7800	420
33	8910	8500	490
34	On Request		
35			
36			
37			
38			
39			

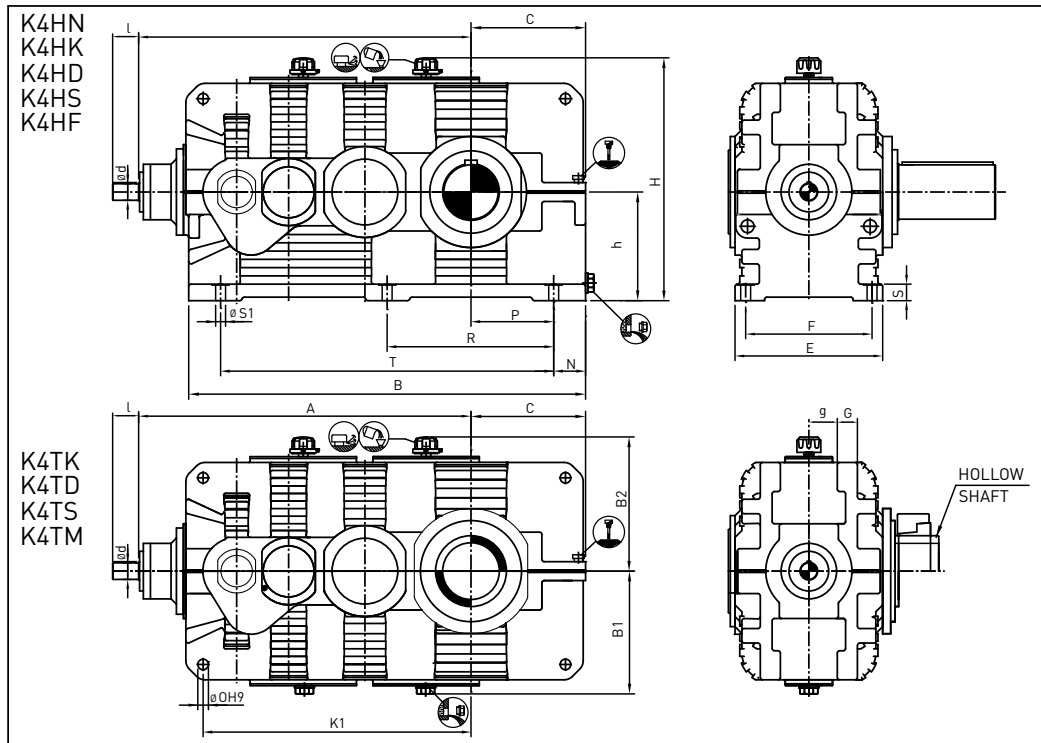
Types K4H, K4T

Horizontal/Torque Arm Mounting

Bevel-Helical Gear Unit

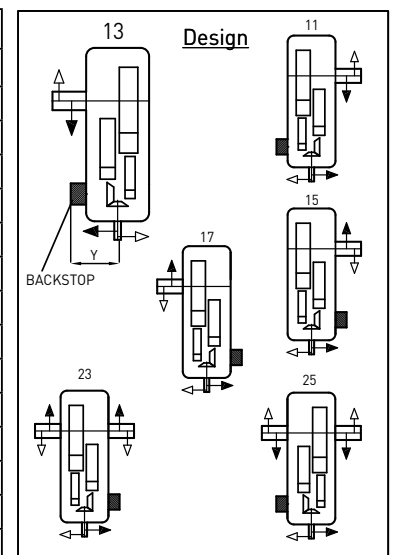
Four Stage

Size 26 to 39



Size		Input				Gear Units								
		$i_N = 80 \text{ to } 180$		$i_N = 200 \text{ to } 315$										
		$i_N = 90 \text{ to } 200$		$i_N = 224 \text{ to } 355$										
		d	l	d	l	E	S	G	O	g	B ₂	B ₂	F	S1
26 +	27	70	135	75	110	625	70	80	45	125.5	570	610	535	42
28 +	29	70	135	75	110	690	80	80	45	160	620	660	600	42
30 +	31	80	165	90	140	790	90	100	55	172	690	730	690	48
32 +	33	90	165	110	140	830	100	105	65	177	760	810	720	56
34 +	35	90	165	110	140	930	115	125	60	194	850	890	810	56
36 +	37	110	205	130	170	1045	130	*	*	*	*	*	910	66
38 +	39	130	245	150	210	1170	150	*	*	*	*	*	1030	74

Size	Gear Units											
	B	C	A	h	H	N	P	R	T	K ₁	K ₂	B1
26	1680	485	1407	460	1030	135	350	705	1410	1134	395	550
27	1770	530	1448	500	1110	130	400	755	1510	1175	435	590
28	1770	525	1454	510	1130	145	380	740	1480	1189	445	600
29	1895	585	1508	550	1210	135	450	810	1620	1235	485	640
30	2030	590	1685	580	1270	160	430	855	1710	1330	480	670
31	2150	650	1740	620	1350	150	500	925	1850	1400	520	710
32	2340	655	1997	650	1410	175	480	995	1990	1595	550	740
33	2450	710	2057	700	1510	160	550	1065	2130	1655	580	790
34	2530	730	2109	740	1590	180	550	1085	2170	1695	595	830
35	2660	795	2179	780	1670	185	610	1145	2290	1765	660	870
36	2830	790	2395	820	*	210	580	1205	2410	*	*	*
37	3010	880	2485	860	*	190	690	1415	2630	*	*	*
38	3220	880	2762	880	*	230	650	1380	2760	*	*	*
39	3410	975	2852	950	*	215	760	1585	2980	*	*	*



* On Request

Types K4H, K4T

Horizontal/Torque Arm Mounting

Bevel-Helical Gear Unit

Four Stage

Size 26 to 29

K4HN Solid Shaft	Size	K4HN		
		D	L	M ₂
	26	230	410	380
	27	240	410	380
	28	250	410	415
	29	270	470	415
	30	290	470	465
	31	300	500	465
	32	320	500	490
	33	340	550	490
	34	360	590	540
	35	380	590	540
	36	400	650	605
	37	420	650	605
	38	440	690	680
	39	460	750	680

K4HK, K4TK Hollow Shaft	Size	K4HK, K4TK	
		D ₁	M ₃
	26	235	380
	27	245	380
	28	260	415
	29	285	415
	30	285	465
	31	315	465
	32	335	490
	33	345	490
	34	375	540
	35	395	540
	36	415	610
	37	435	610
	38	465	680
	39	475	680

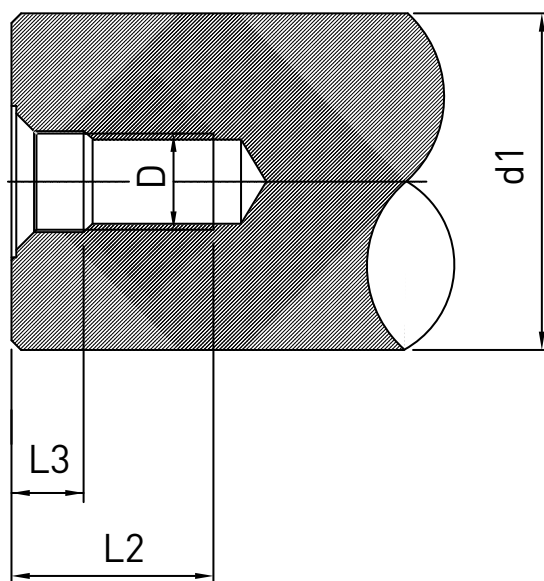
K4HD, K4TD Hollow Shaft for Shrink Disk	Size	K4HD, K4TD		
		D ₂	M ₃	M ₄
	26	235	380	550
	27	245	380	550
	28	260	415	600
	29	285	415	600
	30	285	465	670
	31	315	465	670
	32	335	490	715
	33	345	490	725
	34	375	540	800
	35	395	540	820
	36	415	610	895
	37	435	610	925
	38	465	680	1000
	39	475	680	1020

K4HS, K4TS Hollow Shaft with Spline	Size	K4HS, K4TS	
		N, D ₃ , D ₄ , M ₃	
	26	On Request	
	27		
	28		
	29		
	30		
	31		
	32		
	33		
	34		
	35		
	36		
	37		
	38		
	39		

K3HF, K3TF Flanged Shaft	Size	K3HF, K3TF						
		L ₁	D ₆	D ₅	K ₁	K x d2	L ₂	M ₅
	26	55	710	360	630	28 x 33	17	550
	27	55	740	360	660	30 x 33	17	550
	28	60	750	410	660	24 x 39	18	600
	29	60	800	410	710	26 x 39	18	600
	30	65	860	460	770	30 x 39	18	670
	31	65	930	460	830	32 x 39	18	670
	32	75	950	520	850	28 x 45	20	710
	33	75	1040	520	940	28 x 45	20	710
	34	On Request						
	35							
	36							
	37							
	38							
	39							

Size	Weight (kg)		Oil Qty
	K3H	K3T	K3H
26	3270	3100	230
27	3600	3400	235
28	4250	4000	295
29	4700	4500	305
30	6150	5700	480
31	7400	7000	550
32	8300	7750	540
33	8900	8500	620
34	On Request		
35			
36			
37			
38			
39			

Centre Hole Details in Shaft Ends

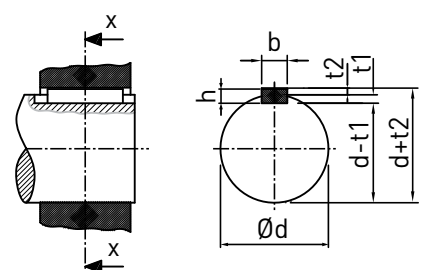


Diameter range as per DIN 332 Nominal dimensions, d1		Dimensions		
Above	To	D	L2	L3
mm		mm		
16	21	M6	16	5
21	24	M8	19	6
24	30	M10	22	7.5
30	38	M12	28	9.5
38	50	M16	36	12
50	85	M20	42	15
85	130	M24	50	18
130	225	M30	60	22
225	320	M36	74	22
320	500	M42	84	26

Tolerance Classes

Diameter range as per DIN 332		Tolerance Classes		
From	To	Shafts	Split Bore	Non Split Bore
mm				
10	≤ 18	j6		
> 18	≤ 100	k6		
> 100	≤ 200	m6	J7 & H7	H6
> 200		n6		

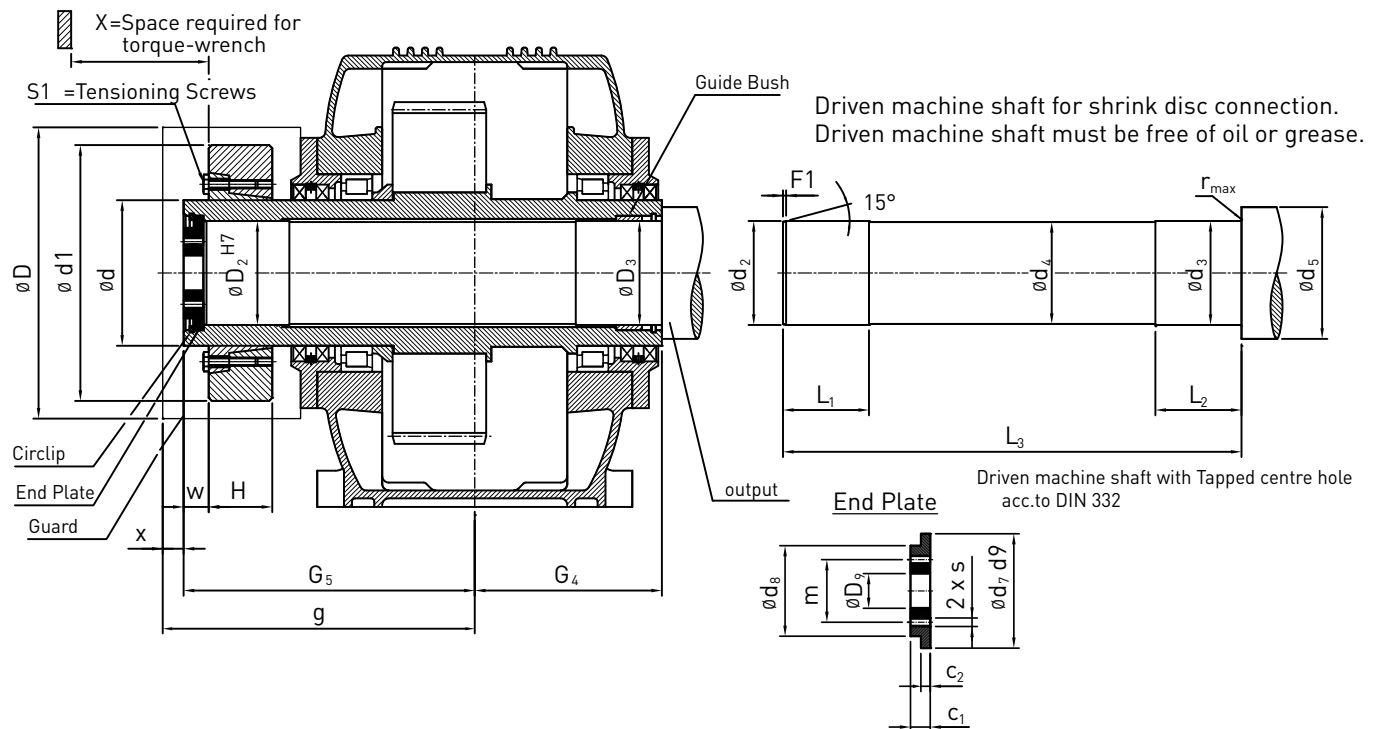
Parallel keyways and parallel keys

Nominal Diameter, d		Width	Height	Depth of key-way in shaft	Depth of key-way in hub	Parallel key acc. to DIN 6885/1 form B and parallel keyway acc. to DIN 6885/1
Above	To	b	h	t1	t2	
mm		mm				
17	22	6	6	3.5	2.8	 SECTION X-X The tolerance zone for the hub keyway width b is JS9.
22	30	8	7	4	3.3	
30	38	10	8	5	3.3	
38	44	12	8	5	3.3	
44	50	14	9	5.5	3.8	
50	58	16	10	6	4.3	
58	65	18	11	7	4.4	
65	75	20	12	7.5	4.9	
75	85	22	14	9	5.4	
85	95	25	14	9	5.4	
95	110	28	16	10	6.4	
110	130	32	18	11	7.4	
130	150	36	20	12	8.4	
150	170	40	22	13	9.4	
170	200	45	25	15	10.4	
200	230	50	28	17	11.4	
230	260	56	32	20	12.4	
260	290	63	32	20	12.4	
290	330	70	36	22	14.4	
330	380	80	40	25	15.4	
380	440	90	45	28	17.4	

Types S2,S2,S4,K3,K4

Hollow Shafts For Shrink Disks

Size 26 to 39



Gear Unit Size	Driven Machine Shaft									End Plate								Qty.	Circclip DIN 472
	d ₂	d ₃	d ₄	d ₅	f ₁	L	L1	L2	r	c ₁	c ₂	d ₇	d ₈	D ₉	m	S			
	mm																		
26	235 f6	235 m6	234.5	253	8	899	157	140	3	28	14	240	180	39	140	M16	2	240 x 5	
27	245 f6	245 m6	244.5	263	8	899	157	140	3	28	14	250	180	39	150	M20	2	250 x 5	
28	260 f6	260 m6	259.5	278	8	980	177	150	3	32	14	270	200	39	150	M20	2	270 x 5	
29	285 f6	285 m6	284.5	306	9	980	177	150	3	32	14	290	210	39	160	M20	2	290 x 5	
30	285 f6	285 m6	284.5	306	9	1096	187	150	3	36	15	290	220	39	170	M24	2	290 x 5	
31	315 f6	315 m6	314.5	336	9	1096	187	150	3	36	15	320	230	39	180	M24	2	320 x 6	
32	335 f6	335 m6	334.5	358	9	1157	205	160	3	45	20	340	250	45	190	M24	2	340 x 6	
33	345 f6	345 m6	344.5	368	9	1167	215	160	3	45	20	350	260	45	200	M24	2	350 x 6	
34	375 f6	375 m6	374.5	398	10	1292	225	160	3	45	20	380	270	45	210	M30	2	380 x 6	
35	395 f6	395 m6	394.5	425	10	1312	245	160	3	45	20	400	280	45	220	M30	2	400 x 6	
36	415 f6	415 m6	414.5	445	10	1452	-	-	5	50	25	420	290	45	230	M30	2	420 x 7	
37	435 f6	435 m6	434.5	465	10	1482	-	-	5	50	25	440	310	45	250	M30	2	440 x 7	
38	465 f6	465 m6	464.5	495	10	1627	-	-	5	50	25	470	340	45	280	M30	2	470 x 7	
39	475 f6	475 m6	474.5	505	10	1648	-	-	5	50	25	480	350	45	290	M30	2	480 x 7	

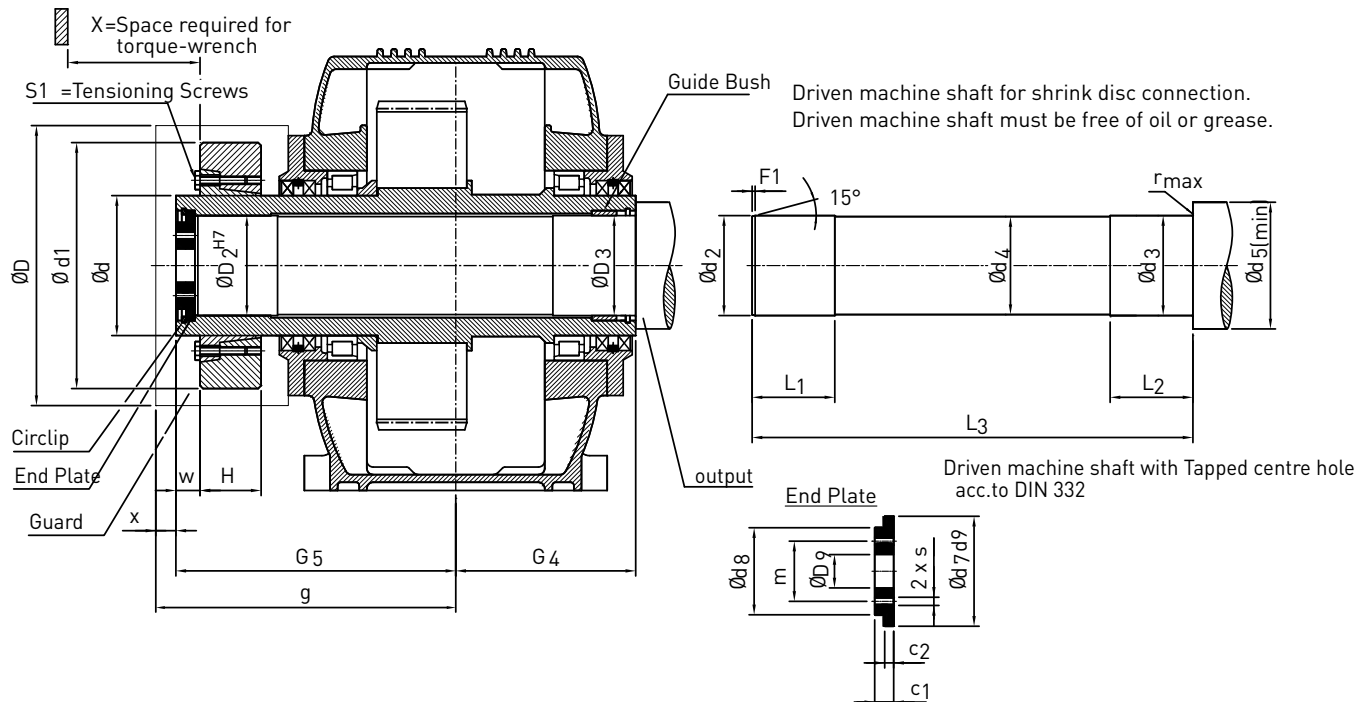
Gear Unit Size		Hollow Shaft					Shrink Disk									Guard			
		D ₂		M ₃	M ₄		d		d ₁		H		W	s ₁		D		g	
		mm																	
26 +	27	235	245	380	550	550	300	320	485	520	140	140	35	M24	M24	575	595	575	575
28 +	29	260	285	415	600	600	340	360	570	590	155	162	35	M24	M24	615	635	630	625
30 +	31	285	315	465	670	670	380	390	640	650	166	166	40	M27	M27	685	695	695	695
32 +	33	335	345	490	715	725	420	440	670	740	185	194	45	M27	M27	715	785	740	750
34 +	35	375	395	540	800	820	460	480	770	800	194	213	45	M27	M30	815	845	825	845
36 +	37	415	435	610	895	925	500	530	850	910	213	238	50	M30	M30	895	955	920	950
38 +	39	465	475	680	1000	1020	560	590	940	960	238	260	50	M30	M30	985	1005	1025	1045

Note :- Shrink disk on machine side on request.

Types K2

Hollow Shafts For Shrink Disks

Size 26 to 39



Gear Unit Size	Driven Machine Shaft									End Plate								Circlip	
	d ₂	d ₃	d ₄	d ₅	f ₁	L	L1	L2	r	c ₁	c ₂	d ₇	d ₈	D ₉	m	S	Qty.	DIN 472	
	mm																		
26	235 f6	235 m6	234.5	253	8	-	157	140	3	28	14	240	180	39	140	M16	2	240 x 5	
27	245 f6	245 m6	244.5	263	8	-	157	140	3	28	14	250	180	39	150	M20	2	250 x 5	
28	260 f6	260 m6	259.5	278	8	-	177	150	3	32	14	270	200	39	150	M20	2	270 x 5	
29	285 f6	285 m6	284.5	306	9	-	177	150	3	32	14	290	210	39	160	M20	2	290 x 5	
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

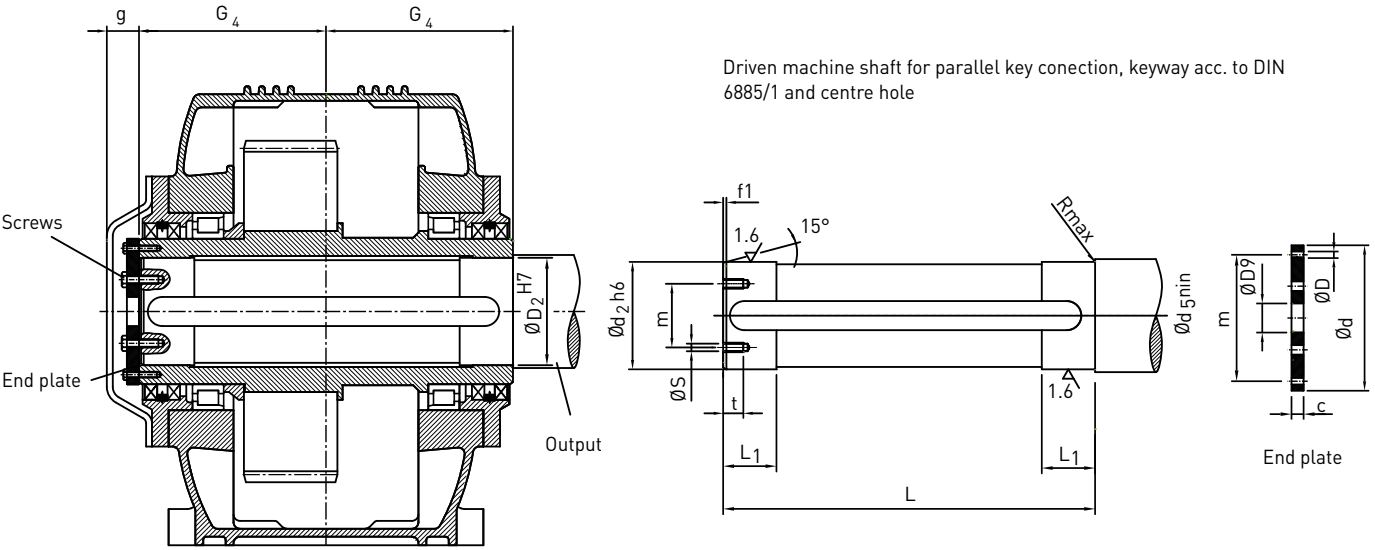
Gear Unit Size		Hollow Shaft					Shrink Disk									Guard			
		D ₂		M ₃	M ₄		d		d ₁		H		W	s ₁		D		g	
		mm																	
26 +	27	235	245	450	620	620	300	320	485	520	140	140	35	M24	M24	575	595	575	575
28 +	29	260	285	515	700	700	340	360	570	590	155	162	35	M24	M24	615	635	630	625
30 +	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32 +	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34 +	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36 +	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38 +	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note :- Shrink disk on machine side on request.

Types S2,S2,S4,K3,K4

Hollow Shafts For Key Connections

Size 26 to 39

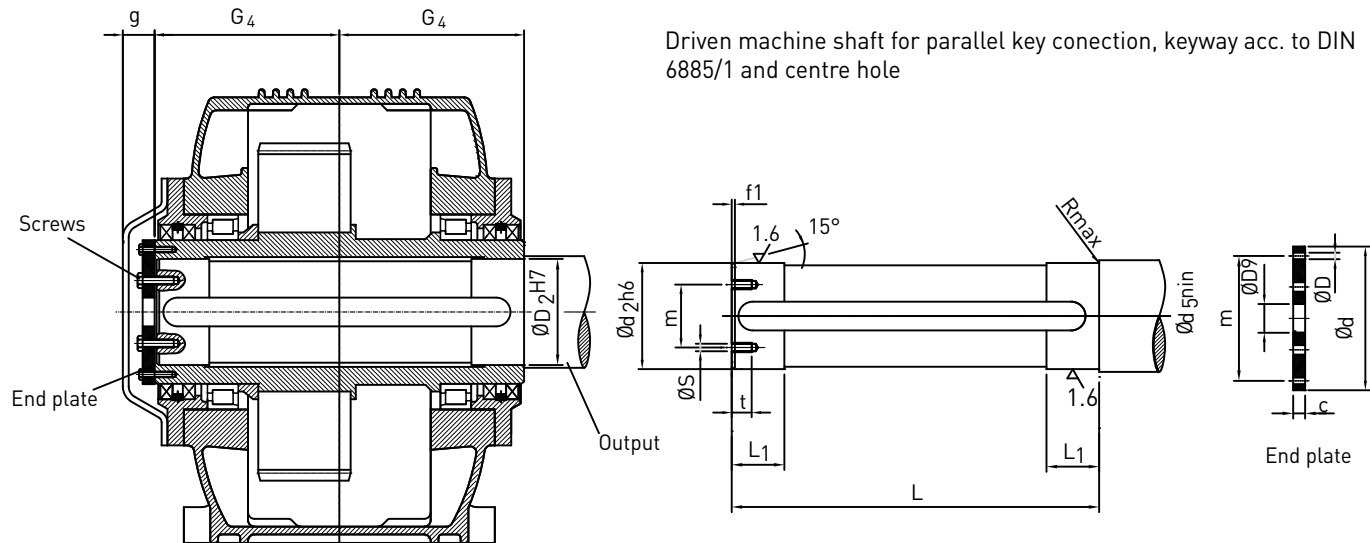


Gear Unit Size	Driven Machine Shaft									End Plate						Hollow Shaft		
	d ₂	d ₄	d ₅	f ₁	L	L ₁	r	s	t	c	D	D ₇	d	m	Screw Size & Qty	D ₁	M ₃	g
	mm															mm		
26	On Request																	
27																		
28																		
29																		
30																		
31																		
32																		
33																		
34																		
35																		
36																		
37																		
38																		
39																		

Types K2

Hollow Shafts For Key Connections

Size 26 to 39

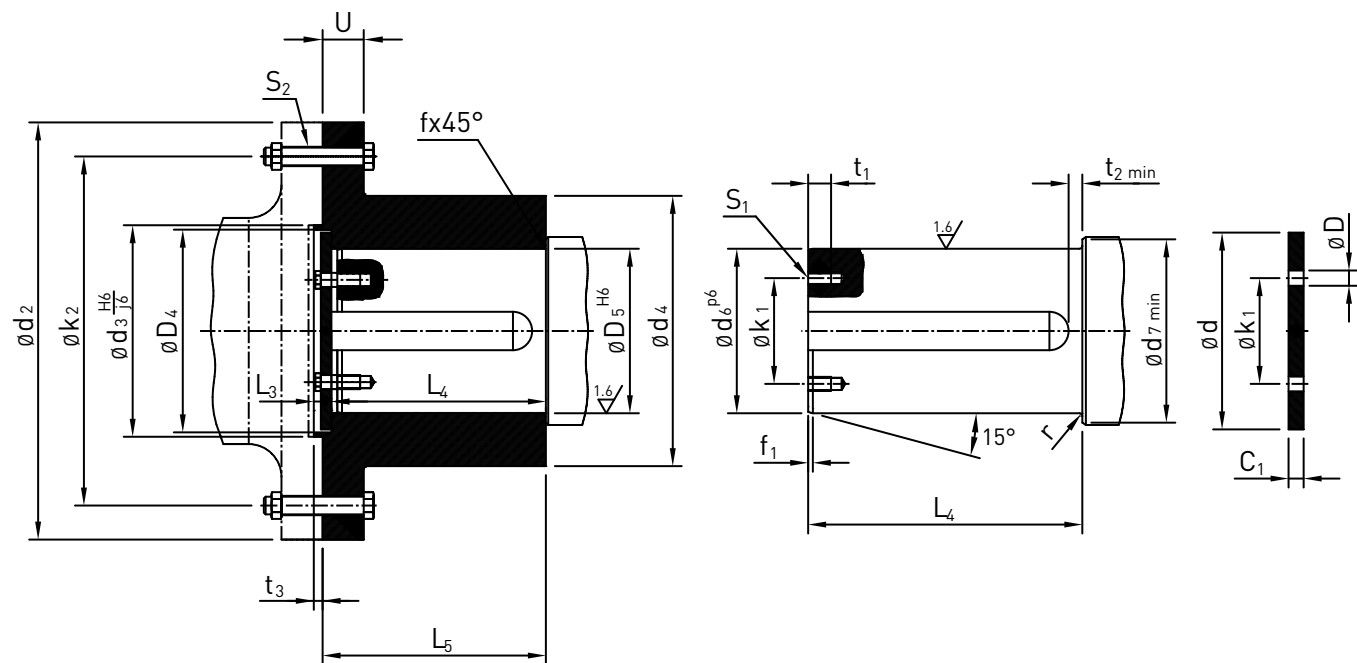


Gear Unit Size	Driven Machine Shaft									End Plate						Circlip		
	d2	d4	d5	f1	l	l1	r	s	t	c	D	D9	d	m	Screw Size & Qty	D1	M3	g
	mm															mm		
26	On Request																	
27																		
28																		
29																		
30																		
31																		
32																		
33																		
34																		
35																		
36																		
37																		
38																		
39																		

Types S2,S3,S4,K2,K3,K4

Flanged Shafts

Size 26 to 39



Gear Unit Size	Flange										Bolt			Driven Machine Shaft			
	d ₂	d ₃	d ₄	D ₅	k ₂	l ₄	l ₅	s ₂	t ₃	u	Size	Qty	T _a	d ₆	f ₁	l ₆	Weight
	mm												Nm	mm			kg
26	On Request																
27																	
28																	
29																	
30																	
31																	
32																	
33																	
34																	
35																	
36																	
37																	
38																	
39																	

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