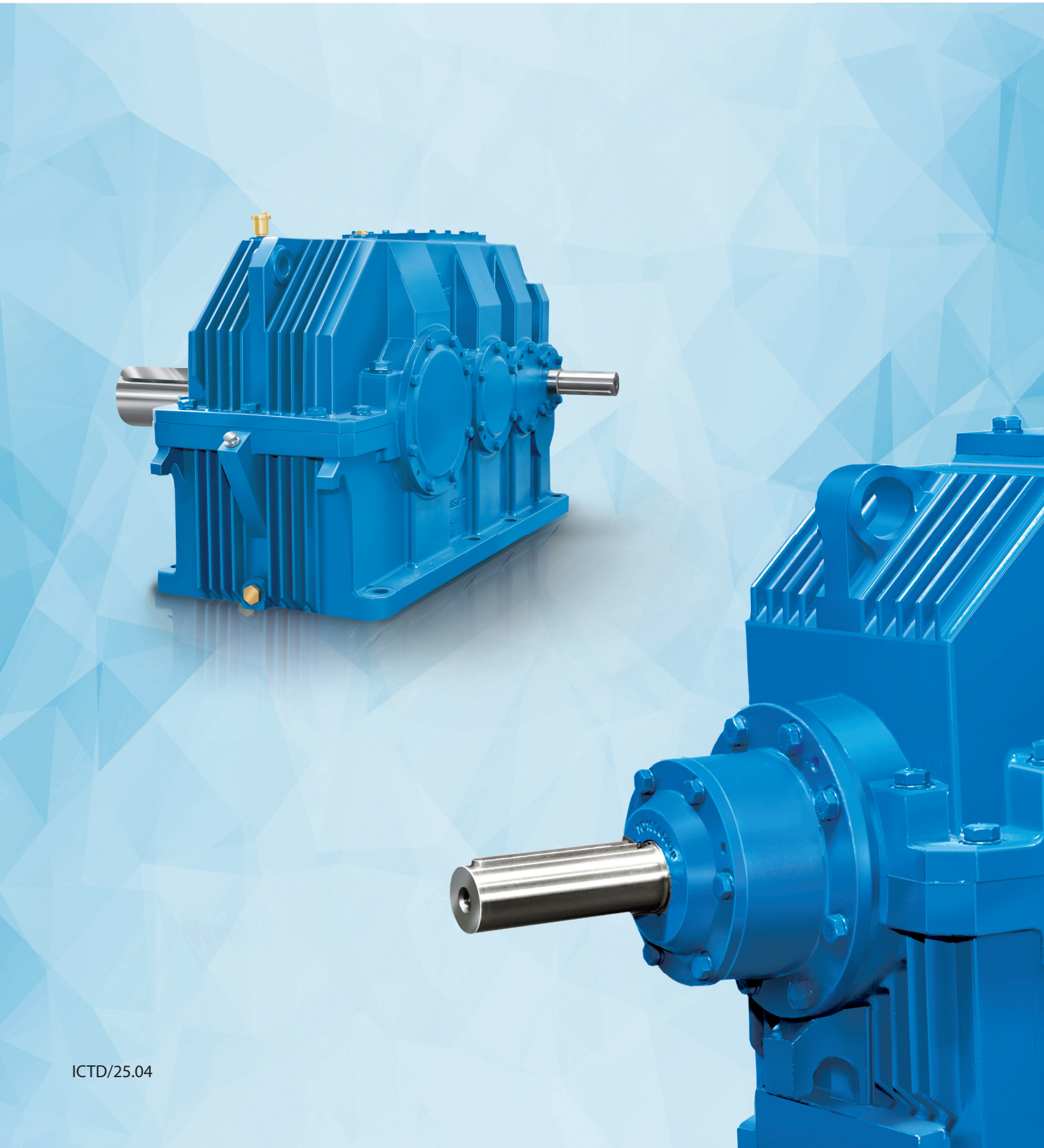
ic TorqueDrive®

INDUSTRIAL GEARBOX



ICTD/25.04

Contents

General	2-2
Gearbox Designation	3-3
Gearbox Selection	4-8
Mechanical & Thermal Capacities	9-16
Dimensions	17-24
Output Shaft Types	25-28
Holdback / Backstops	29-29
Cooling Coil	30-30
Actual (Exact) Ratio	31-32
GD^2 Values	33-34
Lubricants & Oil Capacities	35-35
Net Weight	36-36

General

IC Torque Drive Gear Units are developed with reference to the best in the Industry and offer the following salient features:

- Gear Units are fully metric
- High Power / Torque ratings
- Suitable for various range of applications
- Caters to a wide range of Ratio and Power range

SALIENT FEATURES:

The Mechanical Capacity tables apply to normal conditions, i.e., driven by an electric motor, smooth operation, operation for eight hours per day, 2.5 times starting torque relative to catalogue performance P_N, 100% duration of operation, ambient temperature 20° C. Capacities for intermediate speeds can be interpolated linearly. Higher drive speeds than indicated can be provided on request.

DESIGN FEATURES:

- Centre Distances are chosen from ISO preferred number series
- Highest quality heat treated profile ground helical gears together with heat treated lapped in pair spiral bevel gears
- Modular concept of design ensuring high degree of interchangeability of parts and sub-assemblies
- Optimal power to weight ratio in low volume ensures installation in most difficult situations

GEARBOX CONFIGURATION:

- Gearbox available in both Helical and Bevel Helical versions
- Solid and Hollow output shaft variants
- Mounting in Horizonal position with Foot
- Available in both Cast Iron Housing and Fabricated Housing to cater to all Industrial demands
- Split housing design at the Shaft axes

MECHANICAL CAPACITIES:

- Calculated as per the latest international standards

THERMAL CAPACITIES:

- Optimized Thermal Rating due to increased surface area
- Gear units are cooled by Natural Cooling or Fan Cooling or Cooling Coil or Cooling Coils with Fan Cooling provions
- External Heat Exchangers in place of Cooling Coils can be supplied on request

APPROX. EFFICIENCIES ON FULL LOAD (%):

Single Reduction Helical	Double Reduction Helical	Triple Reduction Helical	Quadruple Reduction Helical	Double Reduction Bevel Helical	Triple Reduction Bevel Helical	Quadruple Reduction Bevel Helical
99	98	97.5	97	97.5	97	96.5

SOUND / NOISE LEVEL:

- Allowable Sound Pressure Level: 85 dB(A) @ 1m distance from gearbox emitting surfaces

VIBRATION LEVEL:

- Allowable vibration level as per latest International Standards

GEARBOX RATIO RANGE:

Single Reduction Helical	Double Reduction Helical	Triple Reduction Helical	Quadruple Reduction Helical	Double Reduction Bevel-Helical	Triple Reduction Bevel-Helical	Quadruple Reduction Bevel-Helical
i_N = 1.25 - 5.6	i_N = 5.6 - 25	i_N = 20 - 125	i_N = 90 - 560	i_N = 5 - 22.4	i_N = 16 - 100	i_N = 80 - 560

Actual ratio deviation: ±3% for Nominal Ratio ≤ 250, ±5% for Nominal Ratio > 250.

DIRECTION OF ROTATION:

Unit may be operated in either direction of rotation.

PRODUCT QUALITY:

Units are manufactured under a stringent quality system certified to ISO: 9001 guaranteeing uniformly high standard.

DELIVERY:

Gear Units are supplied without oil and to be filled with recommended lubricant grade during operation. The Gear housing is protected against corrosion approx. for a period of 180 days from supply.

Where gear units are to operate in abnormal conditions and (or) are to stand for long period without running, consult IC

Explanation of symbols used in the dimensional drawings:

= Breather
= Oil Dipstick
= Oil drain

As improvement in design are being made, this specification is not to be regarded as binding in details and drawings and capacities are subject to alterations without notice. Get Certified Principal dimensions and specifications while Ordering.

Gearbox Designation

1	2	3	4	5	6	7	8	9	10	11	12	No. of Character
H	**3**	**N**	**2**	**8**	**0**	**3**	**1**	**5**	**0**	**0**	**A**	**Model Nomenclature**

Handing Details

Special Features

Accessories

Gear Unit Nominal ratio (example below):

0022 Ratio = 2.24:1
0040 Ratio = 4:1
0315 Ratio = 31.5:1
0630 Ratio = 63:1
2800 Ratio = 280:1

Gear Unit Size (example below):

10 Centre Distance = 100 mm
16 Centre Distance = 160 mm
22 Centre Distance = 225 mm
45 Centre Distance = 450 mm

Mounting Arrangement with Shaft Configuration

N Foot Mounted Unit, Solid Output shaft
H Foot Mounted Unit, Hollow Output shaft with Key
D Foot Mounted Unit, Hollow Output shaft with Shrink Disc

No. of Stages

1 Single stage
2 Double stage
3 Triple stage
4 Quadruple stage

Gear Unit Type

H Helical with Cast Iron Gear Case
F Helical with Fabricated Steel Gear Case
B Bevel Helical with Cast Iron Gear Case
K Bevel Helical with Fabricated Steel Gear Case

As improvement in design are being made, this specification is not to be regarded as binding in details and drawings and capacities are subject to alterations without notice. Get Certified Principal dimensions and specifications while Ordering.

Gearbox Selection

1 Determine the Gear type

1.1 Establish whether Helical gear or Bevel-Helical Gear required

1.2 Determine the nominal ratio

$$I_N = \frac{n1}{n2}$$

1.3 Select appropriate nearest Nominal Ratio i_N

2 Determine required Mechanical Power Capacity

$$P_N \geq P_2 \times f_1 \times f_2$$

2.1 Check maximum Torque (Starting or braking Torque)

$$\frac{T_A \times n1}{P_N \times 9550} \leq 2.5$$

3 Select Type of Cooling

3.1 Natural Air Cooling (without Fan)
if $P_2 \leq P_{G1} \times f_w$

3.2 Fan Cooling
if $P_2 \leq P_{G2} \times f_w$

3.3 Cooling Coil
if $P_2 \leq P_{G3} \times f_w$

3.4 Fan Cooling along with Cooling Coil
if $P_2 \leq P_{G4} \times f_w$

I_N	=	Nominal Transmission Ratio
n_1	=	Input speed (rpm)
n_2	=	Output speed (rpm)
P_2	=	Absorbed power of connected Drive Machine (if not known, consider Prime mover's consumed Power)
P_N	=	Nominal Mechanical Power Capacity (kW)
T_A	=	Starting Torque or Maximum Input Torque (Nm)
f_1	=	Mechanical Service factor - Refer Table 1 when driven by motors (hydraulic or electric) or turbines (steam or gas) Refer Table 2 for conversion Factor of 'f_1' when driven by Single or Multi Cylinder Engines
f_2	=	Frequency starts factor (Refer Table 3)
f_w	=	Thermal Service factor (Refer Table 4)
P_{G1}	=	Thermal Power Capacity kW without Auxiliary Cooling
P_{G2}	=	Thermal Power Capacity kW with Fan Cooling
P_{G3}	=	Thermal Power Capacity kW with Cooling Coil
P_{G4}	=	Thermal Power Capacity kW with Fan Cooling & Cooling Coil

Example 1:

Prime Mover:	**Electric Motor**	**Driven Machine:**	**Belt conveyor**	**Other information**
Power:	75 kW	Power P_2:	59 kW	Gearbox required in Parallel shaft
Speed n_1:	1500 rpm	Speed n_2:	22 rpm	Output Shaft: Solid
Starting Torque T_A:	960 Nm	Duty:	24 hrs/day	
		Starts /hour:	9	
		Running time / hour:	100%	
		Ambient Temp.:	50°C	

Selection:

Gear Unit Design:	Foot Mounted Helical with Solid Output Shaft
Required Transmission Ratio:	$I_{red} = n_1 / n_2 = 1500 / 23 = 65.2$
Nominal Ratio:	$i_N = 63$
Required Mechanical Power Capacity:	$P_2 \times f_1 \times f_2 = 59 \times 1.25 \times 1.08 = 79.65 = 80$ Kw For Conveyor Application, For Uniformly Loaded or fed, Mechanical Service Factor f_1 for duration over 10 hours per day is 1.25 from Table 1 Page 6 For Starts / hour = 9, Mechanical Service Factor f_2 is 1.08 from Table 3 Page 8
Gear Unit Type & Size:	According to Gear Unit Design & Nominal Ratio, Gear Unit type selected is TDH3-280, 63/1 from Page 11 Hence, selected Gear Unit Size is TDH3-280 with $P_N = 85$ kW
Check for Starting Torque:	$960 \times 1500 / 85 \times 9550 = 1.77 \leq 2.5$
Type of Cooling required:	$P_2 = 59$ kW
Required Thermal Power Capacity:	$P_{G1} \times f_W = 165 \times 0.63 = 103.95$ kW, $f_W = 0.63$ from Page 8 $P_2 < P_{G1} \times f_W$, Hence, Additional Cooling is not required.

Selection: Helical Gear Unit, Triple Stage, Horizontal Mounting with Solid Output, TDH3-280, 63/1 with NATURAL Cooling

Gearbox Selection

Example 2:

Prime Mover:	Electric Motor	Driven Machine:	Belt conveyor	Other information
Power:	500 kW	Power P_2:	438 kW	Gearbox required in Right angle shaft
Speed n_1:	1500 rpm	Speed n_2:	80 rpm	Output Shaft: Hollow Output with Shrink Disc connection
Starting Torque T_A:	9300 Nm	Duty:	24 hrs/day	
		Starts / hour:	22	
		Running time / hour:	100%	
		Ambient Temp.:	40°C	

Selection:

Gear Unit Design:	Foot Mounted Bevel Helical with Hollow Output Shaft
Required Transmission Ratio:	$I_{red} = n_1 / n_2 = 1500 / 80 = 18.8$
Nominal Ratio:	$i_N = 20$
Required Mechanical Power Capacity:	$P_2 \times f_1 \times f_2 = 438 \times 1.25 \times 1.17 = 640.58 = 641$ kW
	For Conveyor Application,
	For Uniformly Loaded or fed, Mechanical Service Factor f_1 for duration over 10 hours per day is 1.25 from Table 1 Page 6
	For Starts / hour = 22, Mechanical Service Factor f_2 is 1.17 from Table 3 Page 8
Gear Unit Type & Size:	According to Gear Unit Design & Nominal Ratio, Gear Unit type selected is TDB3SF-400, 20/1 from Page 15. Double Reduction Gear Unit TDB2SF-400, 20/1 is having Mechanical Capacity of 522 kW which is in-sufficient
	Hence, selected Gear Unit Size is TDB3SF-400 with $P_N = 702$ kW.
Check for Starting Torque	$9300 \times 1500 / 702 \times 9550 = 2.08 \leq 2.5$
Type of Cooling required:	$P_2 = 438$ kW
Required Thermal Power Capacity:	$P_{G2} \times f_W = 618 \times 0.8 = 494$ kW, $f_W = 0.8$ from Page 8
	$P_2 < P_{G2} \times f_W$, Hence, Additional Cooling with FAN is required.

Selection: Bevel Helical Gear Unit, Triple Stage, Horizontal Mounting with Hollow Output with Shrink Disc, TDB3SF-400, 20/1 with FAN Cooling

Example 3:

Prime Mover :	Electric Motor	Driven Machine:	Large Industrial fan	Other information
Power :	750 kW	Power P_2:	725 kW	Gearbox required in Parallel shaft
Speed n_1 :	1000 rpm	Speed n_2:	245 rpm	Output Shaft: Solid
Starting Torque T_A:	18020 Nm	Duty:	24 hrs/day	
		Starts /hour:	3	
		Running time / hour:	100%	
		Ambient Temp.:	30°C	

Selection:

Gear Unit Design:	Foot Mounted Helical with Solid Output Shaft
Required Transmission Ratio:	$I_{red} = n_1 / n_2 = 1000 / 245 = 4.08$
Nominal Ratio:	$i_N = 4$
Required Mechanical Power Capacity:	$P_2 \times f_1 \times f_2 = 725 \times 1.5 \times 1.08 = = 1174.5$ Kw
	For Industrial Fan application, Mechanical Service Factor f_1 for duration over 10 hours per day is 1.5 from Table 1 Page 6
	For Starts / hour = 3, Mechanical Service Factor f_2 is 1.08 from Table 3 Page 8
Gear Unit Type & Size:	According to Gear Unit Design & Nominal Ratio, Gear Unit type selected is TDH1-400, 4/1 from Page 9
	Hence, selected Gear Unit Size is TDH1-400 with $P_N = 1661$ kW
Check for Starting Torque	$18020 \times 1000 / 1661 \times 9550 = 1.13 \leq 2.5$
Type of Cooling required:	$P_2 = 725$ kW
Required Thermal Power Capacity:	$P_{G2} \times f_W = 1022 \times 0.9 = 919.8$ kW, $f_W = 0.9$ from Page 8
	$P_2 < P_{G2} \times f_W$, Hence, Additional Cooling with FAN is required.

Selection: Helical Gear Unit, Single Stage, Horizontal Mounting with Solid Output, TDH1-400, 4/1 with FAN Cooling

Service Factors f1 driven by motors or turbines (Table 1)

Application	Load Duration		
	Upto 3 hours per day	3 to 10 hours per day	Over 10 hours per day
Agitators (mixers)			
Pure liquids	1.00	1.00	1.25
Liquids and solids	1.00	1.25	1.50
Liquids - variable density	1.00	1.25	1.50
Blowers			
Centrifugal	1.00	1.00	1.25
Lobe	1.00	1.25	1.50
Vane	1.00	1.25	1.50
Brewing and distilling			
Bottling machinery	1.00	1.00	1.25
Brew kettles - continuous duty	1.25	1.25	1.25
Cookers - continuous duty	1.25	1.25	1.25
Mash tubs - continuous duty	1.25	1.25	1.25
Scale hopper - frequent starts	1.25	1.25	1.50
Can filling machines	1.00	1.00	1.25
Car dumpers	1.50	1.75	2.00
Car pullers	1.00	1.25	1.50
Clarifiers	1.00	1.00	1.25
Classifiers	1.00	1.25	1.50
Clay working machinery			
Brick press	1.50	1.75	2.00
Briquette machine	1.50	1.75	2.00
Pug mill	1.00	1.25	1.50
Compactors	2.00	2.00	2.00
Compressors			
Centrifugal	1.00	1.00	1.25
Lobe	1.00	1.25	1.50
Reciprocating, multi-cylinder	1.50	1.50	1.75
Reciprocating, single-cylinder	1.75	1.75	2.00
Conveyors - General Purpose Includes Apron, Assembly, Belt, Bucket, Chain, Flight, Oven and Screw			
Uniformly Loaded or Fed	1.00	1.00	1.25
Heavy Duty -- Not Uniformly Fed	1.00	1.25	1.50
Severe Duty -- Reciprocating or Shaker	1.50	1.75	2.00
Cranes			
Dry dock			
Main hoist	2.50	2.50	2.50
Auxiliary Hoist	2.50	2.50	3.00
Boom Hoist	2.50	2.50	3.00
Slewing drive	2.50	2.50	3.00
Traction drive	3.00	3.00	3.00
Container			
Main hoist	3.00	3.00	3.00
Boom Hoist	2.00	2.00	2.00
Slewing drive	2.50	2.50	3.00
Trolley drive			
Granty drive	3.00	3.00	3.00
Traction drive	2.00	2.00	2.00
Mill duty			
Main hoist	3.50	3.50	3.50
Auxiliary	3.50	3.50	3.50
Bridge	2.50	3.00	3.00
Trolley travel	2.50	3.00	3.00
Industrial duty			
Main	2.50	2.50	3.00
Auxiliary	2.50	2.50	3.00
Bridge	2.50	3.00	3.00
Trolley travel	2.50	3.00	3.00
Crusher			
Stone or Ore	1.75	1.75	2.00
Dredges			
Cable reels	1.25	1.25	1.50
Conveyors	1.25	1.25	1.50
Cutter head drives	2.00	2.00	2.00
Pumps	2.00	2.00	2.00
Screen drives	1.75	1.75	2.00
Stackers	1.25	1.25	1.50
Winches	1.25	1.25	1.50
Elevators			
Bucket	1.00	1.25	1.50
Centrifugal discharge	1.00	1.00	1.25
Escalators	1.00	1.00	1.25
Freight	1.00	1.25	1.50
Gravity discharge	1.00	1.00	1.25

Application	Load Duration		
	Upto 3 hours per day	3 to 10 hours per day	Over 10 hours per day
Extruders			
General	1.50	1.50	1.50
Plastics			
Variable speed drive	1.50	1.50	1.50
Fixed speed drive	1.75	1.75	1.75
Rubber			
Continuous screw operation	1.75	1.75	1.75
Intermittent screw operation	1.75	1.75	1.75
Fans			
Centrifugal	1.00	1.00	1.25
Cooling towers	2.00	2.00	2.00
Forced draft	1.25	1.25	1.25
Induced draft	1.50	1.50	1.50
Industrial & Mine	1.50	1.50	1.50
Feeders			
Apron	1.00	1.25	1.50
Belt	1.00	1.25	1.50
Disc	1.00	1.00	1.25
Reciprocating	1.50	1.75	2.00
Screw	1.00	1.25	1.50
Food industry			
Cereal cooker	1.00	1.00	1.25
Dough mixer	1.25	1.25	1.50
Meat grinders	1.25	1.25	1.50
Slicers	1.25	1.25	1.50
Generators and exciters	1.00	1.00	1.25
Hammer mills	1.75	1.75	2.00
Hoists			
Heavy duty	1.75	1.75	2.00
Medium duty	1.25	1.25	1.50
Skip hoist	1.25	1.25	1.50
Laundry			
Tumblers	1.25	1.25	1.50
Washers	1.50	1.50	2.00
Lumber industry			
Barkers -- spindle feed	1.25	1.25	1.50
Main drive	1.75	1.75	1.75
Conveyors -- burner	1.25	1.25	1.50
Main or heavy duty	1.50	1.50	1.50
Main log	1.75	1.75	2.00
Re--saw, merry--go--round	1.25	1.25	1.50
Conveyors			
Slab	1.75	1.75	2.00
Transfer	1.25	1.25	1.50
Chains			
Floor	1.50	1.50	1.50
Green	1.50	1.50	1.75
Cut--off saws			
Chain	1.50	1.50	1.75
Drag	1.50	1.50	1.75
Debarking drums	1.75	1.75	2.00
Feeds			
Edger	1.25	1.25	1.50
Gang	1.75	1.75	1.75
Trimmer	1.25	1.25	1.50
Log deck	1.75	1.75	1.75
Log hauls -- incline -- well type	1.75	1.75	1.75
Log turning devices	1.75	1.75	1.75
Planer feed	1.25	1.25	1.50
Planer tilting hoists	1.50	1.50	1.50
Rolls - live-off bearing -roll cases	1.75	1.75	1.75
Sorting table	1.25	1.25	1.50
Tipple hoist	1.25	1.25	1.50
Transfers			
Chain	1.50	1.50	1.75
Craneway	1.50	1.50	1.75
Tray drives	1.25	1.25	1.50
Veneer lathe drives	1.25	1.25	1.50
Metal mills			
Draw bench carriage and main drive	1.25	1.25	1.50
Runout table			
Non-reversing			
Group drives	1.50	1.50	1.50
Individual drives	2.00	2.00	2.00

Service Factors f1 driven by motors or turbines (Table 1)

Application	Load Duration		
	Upto 3 hours per day	3 to 10 hours per day	Over 10 hours per day
Reversing	2.00	2.00	2.00
Slab pushers	1.50	1.50	1.50
Shears	2.00	2.00	2.00
Wire drawing	1.25	1.25	1.50
Wire winding machine	1.25	1.50	1.50
Metal strip processing machinery			
Bridles	1.25	1.25	1.50
Coilers & uncoilers	1.00	1.00	1.25
Edge trimmers	1.00	1.25	1.50
Flatteners	1.25	1.25	1.50
Loopers (accumulators)	1.00	1.00	1.25
Pinch rolls	1.25	1.25	1.50
Scrap choppers	1.25	1.25	1.50
Shears	2.00	2.00	2.00
Slitters	1.00	1.25	1.50
Mills, rotary type			
Ball & rod			
Spur ring gear	2.00	2.00	2.00
Helical ring gear	1.50	1.50	1.50
Direct connected	2.00	2.00	2.00
Cement kilns	1.50	1.50	1.50
Dryers & coolers	1.50	1.50	1.50
Mixers			
Concrete	1.25	1.25	1.25
Paper mills2)			
Agitator (mixer)	1.50	1.50	1.50
Agitator for pure liquors	1.25	1.25	1.25
Barking drums	2.00	2.00	2.00
Barkers -- mechanical	2.00	2.00	2.00
Beater	1.50	1.50	1.50
Breaker stack	1.25	1.25	1.25
Calender3)	1.25	1.25	1.25
Chipper	2.00	2.00	2.00
Chip feeder	1.50	1.50	1.50
Coating rolls	1.25	1.25	1.25
Conveyors			
Chip, bark, chemical	1.25	1.25	1.25
Log (including slab)	2.00	2.00	2.00
Couch rolls	1.25	1.25	1.25
Cutter	2.00	2.00	2.00
Cylinder molds	1.25	1.25	1.25
Dryers3)			
Paper machine	1.25	1.25	1.25
Conveyor type	1.25	1.25	1.25
Embosser	1.25	1.25	1.25
Extruder	1.50	1.50	1.50
Fourdrinier rolls (includes lump breaker, dandy roll, wire turning, and return rolls)	1.25	1.25	1.25
Jordan	1.50	1.50	1.50
Kiln drive	1.50	1.50	1.50
Mt. Hope roll	1.25	1.25	1.25
Paper rolls	1.25	1.25	1.25
Platter	1.50	1.50	1.50
Presses - felt & suction	1.25	1.25	1.25
Pulper	2.00	2.00	2.00
Pumps - vacuum	1.50	1.50	1.50
Reel (surface type)	1.25	1.25	1.25
Screens			
Chip	1.50	1.50	1.50
Rotary	1.50	1.50	1.50
Vibrating	2.00	2.00	2.00
Size press	1.25	1.25	1.25
Super calender4)	1.25	1.25	1.25
Thickener (AC motor)	1.50	1.50	1.50
(DC motor)	1.25	1.25	1.25
Washer (AC motor)	1.50	1.50	1.50
(DC motor)	1.25	1.25	1.25
Wind and unwind stand	1.00	1.00	1.00
Winders (surface type)	1.25	1.25	1.25
Yankee dryers3)	1.25	1.25	1.25
Plastics industry			
Primary processing			
Intensive internal mixers			
Batch mixers	1.75	1.75	1.75
Continuous mixers	1.50	1.50	1.50
Batch drop mill - 2 smooth rolls	1.25	1.25	1.25
Continuous feed, holding & blend mill	1.25	1.25	1.25
Compounding mill	1.25	1.25	1.25
Calenders	1.50	1.50	1.50
Secondary processing			
Blow molders	1.50	1.50	1.50
Coating	1.25	1.25	1.25
Film	1.25	1.25	1.25
Pipe	1.25	1.25	1.25
Pre--plasticizers	1.50	1.50	1.50
Rods	1.25	1.25	1.25
Sheet	1.25	1.25	1.25
Tubing	1.25	1.25	1.50
Pullers -- barge haul	1.25	1.25	1.50
Pumps			
Centrifugal	1.00	1.00	1.25
Proportioning	1.25	1.25	1.50
Reciprocating			
Single acting, 3 or more cylinders	1.25	1.25	1.50
Double acting, 2 or more cylinders	1.25	1.25	1.50
Rotary			
Gear type	1.00	1.00	1.25
Lobe	1.00	1.00	1.25
Vane	1.00	1.00	1.25
Rubber industry			
Intensive internal mixers			
Batch mixers	1.75	1.75	1.75
Continuous mixers	1.50	1.50	1.50
Mixing mill - 2 smooth rolls (if corrugated rolls are used, then use the same service factors that are used for a cracker warmer)	1.50	1.50	1.50
Batch drop mill - 2 smooth rolls	1.50	1.50	1.50
Cracker warmer - 2 rolls; 1 corrugated roll	1.75	1.75	1.75
Cracker - 2 corrugated rolls	2.00	2.00	2.00
Holding, feed & blend mill - 2 rolls	1.25	1.25	1.25
Refiner - 2 rolls	1.50	1.50	1.50
Calenders	1.50	1.50	1.50
Sand muller	1.25	1.25	1.50
Sewage disposal equipment			
Bar screens	1.25	1.25	1.25
Chemical feeders	1.25	1.25	1.25
Dewatering screens	1.50	1.50	1.50
Scum breakers	1.50	1.50	1.50
Slow or rapid mixers	1.50	1.50	1.50
Sludge collectors	1.25	1.25	1.25
Thickeners	1.50	1.50	1.50
Vacuum filters	1.50	1.50	1.50
Screens			
Air washing	1.00	1.00	1.25
Rotary -- stone or gravel	1.25	1.25	1.50
Traveling water intake	1.00	1.00	1.25
Sugar industry			
Beet slicer	2.00	2.00	2.00
Cane knives	1.50	1.50	1.50
Crushers	1.50	1.50	1.50
Mills (low speed end)	1.75	1.75	1.75
Textile industry			
Batchers	1.25	1.25	1.50
Calenders	1.25	1.25	1.50
Cards	1.25	1.25	1.50
Dry cans	1.25	1.25	1.50
Dryers	1.25	1.25	1.50
Dyeing machinery	1.25	1.25	1.50
Looms	1.25	1.25	1.50
Mangles	1.25	1.25	1.50
Nappers	1.25	1.25	1.50
Pads	1.25	1.25	1.50
Slashers	1.25	1.25	1.50
Soapers	1.25	1.25	1.50
Spinners	1.25	1.25	1.50
Tenter frames	1.25	1.25	1.50
Washers	1.25	1.25	1.50
Winders	1.25	1.25	1.50

Service factor conversion based on Type of Power Source (Table 2)

Steam or Gas Turbine, Hydraulic or Electric Motor	Multi-Cylinder Engines	Single-Cylinder Engines
1.00	1.25	1.50
1.25	1.50	1.75
1.50	1.75	2.00
1.75	2.00	2.25
2.00	2.25	2.50
2.25	2.50	2.75
2.50	2.75	3.00
2.75	3.00	3.25
3.00	3.25	3.50

Frequency starts factor f_2 (Table 3)

Starts / Hour	Service Factor f_2					
	0.8	1	1.25	1.5	1.75	2
1	1	1	1	1	1	1
2 - 20	1.2	1.1	1.08	1.07	1.07	1.06
21 - 40	1.3	1.2	1.17	1.16	1.15	1.08
41 - 80	1.5	1.4	1.25	1.23	1.18	1.10
81 - 160	1.6	1.5	1.35	1.3	1.2	1.1
161 - 320	2	1.8	1.7	1.6	1.5	1.4
Over 320	2.5	2.25	2	1.9	1.8	1.75

Thermal service factor f_w (Table 4) for ambient temperature and duration of operation

Type of Cooling	Ambient Temp. °C	Service Factor f_w				
		100%	80%	60%	40%	20%
Gear Units without additional Cooling	10	1.12	1.34	1.57	1.79	2.05
	20	1.00	1.2	1.4	1.6	1.8
	30	0.88	1.06	1.23	1.41	1.58
	40	0.75	0.9	1.05	1.2	1.35
	50	0.63	0.76	0.88	1.01	1.13
Gear Units with Fan	10	1.15	1.38	1.61	1.84	2.07
	20	1.0	1.2	1.4	1.6	1.8
	30	0.9	1.08	1.26	1.44	1.62
	40	0.8	0.96	1.12	1.29	1.44
	50	0.7	0.84	0.98	1.12	1.26
Gear Units with Cooling Coil	10	1.1	1.32	1.54	1.76	1.98
	20	1.0	1.2	1.4	1.6	1.8
	30	0.9	1.08	1.26	1.44	1.62
	40	0.85	1.02	1.19	1.36	1.53
	50	0.80	0.96	1.12	1.29	1.44
Gear Units with Fan & Cooling Coil	10	1.12	1.34	1.57	1.79	2.05
	20	1.0	1.20	1.4	1.6	1.8
	30	0.92	1.1	1.29	1.47	1.66
	40	0.83	1.0	1.16	1.33	1.5
	50	0.78	0.94	1.09	1.25	1.4

Mechanical Capacity (kW)

Nom. Ratio iN	Input speed (rpm) n1	Nom. Output speed (rpm) n2	Unit - TDH1															
			80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
1.25	1500	1200	85	110	172	218	319	450	585	725	1369	1382	2020	2580	-	-	-	-
	1000	800	57	73	115	145	213	300	390	483	913	921	1347	1720	-	-	-	-
	750	600	43	55	86	109	160	225	293	363	684	691	1010	1290	-	-	-	-
1.4	1500	1071	76	105	153	207	285	429	520	648	1268	1232	1805	2302	-	-	-	-
	1000	714	51	70	102	138	190	286	347	432	845	821	1203	1535	-	-	-	-
	750	536	38	53	77	104	143	215	260	324	634	616	903	1151	-	-	-	-
1.6	1500	938	64	98	122	182	216	381	385	490	1167	930	1380	1880	-	-	-	-
	1000	625	43	65	81	121	144	254	257	327	778	620	920	1253	1709	2627#	3490#	-
	750	469	32	49	61	91	108	191	193	245	583	465	690	940	1282	1970	2618	-
1.8	1500	833.3	57	92	115	168	204	333	365	445	1046	868	1256	1755	2504	-	-	-
	1000	555.6	38	61	77	112	136	222	243	297	697	579	837	1170	1669	2252	3277#	4825#
	750	416.7	29	46	58	84	102	167	183	223	523	434	628	878	1252	1689	2458	3619
2	1500	750	50	76	100	154	191	306	341	428	926	792	1192	1630	2252	-	-	-
	1000	500	33	51	67	103	127	204	227	285	617	528	795	1087	1501	2100	3127#	4540#
	750	375	25	38	50	77	96	153	171	214	463	396	596	815	1126	1575	2345	3405
2.24	1500	670	48	71	87	140	172	262	316	390	861	755	1120	1505	2070	3010#	4315#	-
	1000	446	32	47	58	93	115	174	211	260	574	503	747	1003	1380	2007	2877	4207#
	750	335	24	36	44	70	86	131	158	195	430	378	560	753	1035	1505	2158	3155
2.5	1500	600	39	66	73	120	164	238	292	366	708	693	1030	1380	1880	2565#	3940#	-
	1000	400	26	44	49	80	109	159	195	244	472	462	687	920	1253	1710	2627	3852#
	750	300	20	33	37	60	82	119	146	183	354	347	515	690	940	1283	1970	2889
2.8	1500	536	35	55	62	101	146	210	266	335	619	622	942	1255	1692	2315#	3584#	-
	1000	357	23	37	41	68	97	140	177	223	413	415	628	837	1128	1543	2389	3614
	750	268	18	28	31	51	73	105	133	168	310	311	471	628	846	1158	1792	2711
3.15	1500	476	30	48	60	86	117	173	242	320	545	595	870	1202	1568	2065	2904#	4485#
	1000	317	20	32	40	57	78	115	161	213	363	397	580	801	1045	1377	1936	2990
	750	238	15	24	30	43	59	87	121	160	273	298	435	601	784	1033	1452	2243
3.55	1500	423	26	36	55	76	118	153	235	302	490	578	852	1155	1555	1900	2755#	4042#
	1000	282	17	24	37	50	79	102	157	201	326	385	568	770	1037	1267	1837	2695
	750	211	13	18	28	38	59	77	118	151	245	289	426	578	778	950	1378	2021
4	1500	375	23	32	45	63	98	129	205	260	398	577	808	1070	1542	1690	2492	3670#
	1000	250	15.3	21.3	30.0	42.0	65.3	86.0	136.7	173.3	265.3	385	539	713	1028	1127	1661	2447
	750	188	11.5	16.0	22.5	31.5	49.0	64.5	102.5	130.0	199.0	289	404	535	771	845	1246	1835
4.5	1500	333	19.0	28.0	40.0	52.5	72.0	106.9	175.0	248.0	325.2	472	680	980	1392	1552	2220	3210
	1000	222	12.7	18.7	26.7	35.0	48.0	71.3	116.7	165.3	216.8	315	453	653	928	1035	1480	2140
	750	167	9.5	14.0	20.0	26.3	36.0	53.5	87.5	124.0	162.6	236	340	490	696	776	1110	1605
5	1500	300	17.0	22.0	35.0	42.6	68.0	82.0	150.0	178.0	220.0	455	600	842	1170	1391	2080	3095
	1000	200	11.3	14.7	23.3	28.4	45.3	54.7	100.0	118.7	146.7	303	400	561	780	927	1387	2063
	750	150	8.5	11.0	17.5	21.3	34.0	41.0	75.0	89.0	110.0	228	300	421	585	696	1040	1548
5.6	1500	300	15.0	20.0	34.0	42.6	64.0	85.2	135.0	170.0	229.0	448	585	832	1050	1194	1805	2800
	1000	200	10.0	13.3	22.7	28.4	42.7	56.8	94.7	113.3	152.7	299	390	555	700	796	1203	1867
	750	150	7.5	10.0	17.0	21.3	32.0	42.6	71.0	85.0	114.5	224	293	416	525	597	903	1400

- # Forced lubrication is necessary.
- Interpolate for other Input speeds.

Thermal Capacity (kW)

Nom. Ratio iN	Input speed (rpm) n1	Unit - TDH1															
		80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
		Thermal Capacity P_{G1} (kw) without Cooling															
1.25 - 2.8	1500	31	35	45	60	75	91	118	145	175	218	278	348	432	-	-	-
	1000	29	32	42	56	71	86	112	139	169	212	268	342	419	540	662	833
	750	27	30	39	53	67	81	105	133	162	205	260	338	411	530	652	804
3.15 - 5.6	1500	24	28	38	50	63	78	103	130	160	202	258	335	408	528	644	803
	1000	21	26	35	47	59	73	97	124	154	197	251	329	400	521	636	762
	750	20	24	31	42	54	68	92	118	148	192	245	310	392	515	628	748
		Thermal Capacity P_{G2} (kW) with FAN Cooling															
1.25 - 2.8	1500	52	66	80	100	125	158	195	255	318	384	491	620	782	-	-	-
	1000	43	55	67	88	105	136	164	228	285	346	410	533	692	846	1065	1352
	750	37	51	62	78	92	123	150	208	262	320	376	491	651	768	986	1267
3.15 - 5.6	1500	47	58	68	92	112	153	186	240	304	372	465	588	756	960	1180	1544
	1000	36	44	51	72	91	122	152	190	245	304	402	511	646	841	1022	1286
	750	32	38	44	65	82	112	136	172	233	296	354	446	581	740	944	1221
		Thermal Capacity P_{G3} (kW) with COOLING COIL															
1.25 - 5.6	1500	-	-	-	202	255	294	344	396	480	580	700	820	955	1150	-	-
	1000	-	-	-	196	248	288	333	388	472	571	692	812	948	1142	1332	1450
	750	-	-	-	182	236	281	325	381	466	562	682	803	935	1132	1318	1410
		Thermal Capacity P_{G4} (kW) with COOLING COIL & FAN															
1.25 - 5.6	1500	-	-	-	265	325	374	468	560	682	818	1002	1190	1440	1750	-	-
	1000	-	-	-	252	304	355	438	532	614	774	880	1105	1338	1712	1998	2385
	750	-	-	-	241	285	332	411	520	585	745	850	1068	1292	1655	1920	2260

Mechanical Capacity (kW)

Nom. Ratio iN	Input speed (rpm) n1	Nom. Output speed (rpm) n2	Unit - TDH2															
			80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
5.6	1500	268	-	-	41	56	78	114	140	229	320	465	620	832	982	1552#	2324#	3233#
	1000	179	-	-	27	37	52	76	93	153	213	310	413	555	655	1035	1549	2155
	750	134	-	-	21	28	39	57	70	115	160	233	310	416	491	776	1162	1615
6.3	1500	238	-	-	37	48	66	88	127	190	260	374	483	666	899	1382	1818#	2526#
	1000	159	-	-	25	32	44	59	85	127	173	249	322	444	599	921	1212	1684
	750	119	-	-	19	24	33	44	64	95	130	187	242	333	450	691	909	1263
7.1	1500	211	-	-	33	46	63	79	112	183	248	368	480	620	845	1292	1690#	2472#
	1000	141	-	-	22	31	42	53	75	122	165	245	320	413	563	861	1127	1648
	750	106	-	-	17	23	32	40	56	92	124	184	240	310	423	646	845	1236
8	1500	187.5	-	-	28	41	58	75	100	174	238	336	440	590	770	1158	1630#	2278#
	1000	125	-	-	19	27	39	50	67	116	159	224	293	393	513	772	1087	1519
	750	93.8	-	-	14	21	29	38	50	87	119	168	220	295	385	579	815	1139
9	1500	167	-	-	25	38	53	65	88	164	231	300	406	568	715	1030	1378	1956#
	1000	111	-	-	17	25	35	43	59	109	154	200	271	379	477	687	919	1304
	750	83	-	-	13	19	27	33	44	82	116	150	203	284	358	515	689	978
10	1500	150	-	-	23	32	47	60	81	132	192	270	368	492	658	956	1318	1848
	1000	100	-	-	15	21	31	40	54	88	128	180	245	328	439	637	879	1232
	750	75	-	-	11	16	24	30	41	66	96	135	184	246	329	478	659	924
11.2	1500	150	-	-	20	31	43	52	72	126	178	235	330	433	615	852	1126	1627
	1000	100	-	-	14	21	29	35	48	84	119	157	220	289	410	568	751	1085
	750	75	-	-	10	16	22	26	36	63	89	118	165	217	308	426	563	814
12.5	1500	120	-	-	18	28	39	48	65	106	154	216	301	416	536	806	1070	1529
	1000	80	-	-	12	19	26	32	43	71	103	144	201	277	357	537	713	1019
	750	60	-	-	9	14	20	24	33	53	77	108	151	208	268	403	535	765
14	1500	107	-	-	16	24	35	43	55	92	132	197	271	364	462	692	892	1236
	1000	71	-	-	11	16	23	29	37	61	88	131	181	243	308	461	595	824
	750	54	-	-	8	12	18	22	28	46	66	99	136	182	231	346	446	618
16	1500	94	-	-	13	21	30	39	52	82	120	170	244	326	410	614	818	1120
	1000	63	-	-	8.7	14.0	20.0	26.0	34.7	54.7	80.0	113.3	162.7	217.3	273.3	409.3	545.3	746.7
	750	47	-	-	6.6	10.5	15.0	19.5	26.0	41.0	60.0	85.0	122.0	163.0	205.0	307.0	409.0	560.0
18	1500	83	-	-	11.7	18.0	26.0	34.0	44.0	75.0	102.0	155.0	185.0	287.0	365.0	540.0	716.0	965.0
	1000	56	-	-	7.8	12.0	17.3	22.7	29.3	50.0	68.0	103.3	123.3	191.3	243.3	360.0	477.3	643.3
	750	42	-	-	5.9	9.0	13.0	17.0	22.0	37.5	51.0	77.5	92.5	143.5	182.5	270.0	358.0	482.5
20	1500	75	-	-	10	16	21	30	42	68	98	141	164	244	330	531	652	912
	1000	50	-	-	6.9	10.7	14.0	20.0	28.0	45.3	65.3	94.0	109.3	162.7	220.0	354.0	434.7	608.0
	750	38	-	-	5.2	8.0	10.5	15.0	21.0	34.0	49.0	70.5	82.0	122.0	165.0	265.5	326.0	456.0
22.4	1500	67	-	-	8.8	14.8	18.0	27.0	37.0	54.0	92.9	128.0	152.0	135.0	295.0	480.0	615.0	855.0
	1000	45	-	-	6	10	12	18	25	36	62	85	101	90	197	320	410	570
	750	33	-	-	4.4	7.4	9.0	13.5	18.5	27.0	46.5	64.0	76.0	67.5	147.5	240.0	307.5	427.5
25	1500	60	-	-	6.9	10.0	14.0	20.0	32.0	37.0	65.4	90.0	122.0	122.0	260.0	332.0	476.0	630.0
	1000	40	-	-	4.6	6.7	9.3	13.3	21.3	24.7	43.6	60.0	81.3	81.3	173.3	221.3	317.3	420.0
	750	30	-	-	3.5	5.0	7.0	10.0	16.0	18.5	32.7	45.0	61.0	61.0	130.0	166.0	238.0	315.0

■ # Forced lubrication is necessary. ■ Interpolate for other Input speeds.

Thermal Capacity (kW)

Nom. Ratio iN	Input speed (rpm) n1	Unit - TDH2															
		80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
		Thermal Capacity P_{G1} (kW) without Cooling															
5.6 - 14	1500	-	-	22	36	47	60	74	102	122	155	202	251	282	378	478	588
	1000	-	-	20	32	42	58	64	92	114	151	186	232	284	356	462	570
	750	-	-	18	29	40	50	62	83	110	135	175	222	276	344	432	560
16 - 25	1500	-	-	17	30	38	51	64	84	108	134	177	236	286	352	438	548
	1000	-	-	15	27	35	44	56	76	104	130	160	215	271	347	436	538
	750	-	-	13	24	30	40	50	72	94	122	150	201	248	342	419	532
		Thermal Capacity P_{G2} (kW) with FAN Cooling															
5.6 - 14	1500	-	-	50	62	85	98	122	168	205	258	337	415	454	625	792	978
	1000	-	-	45	50	68	86	98	138	180	238	281	355	441	550	732	922
	750	-	-	38	40	57	68	88	120	161	211	255	315	432	506	711	851
16 - 25	1500	-	-	40	55	73	86	112	142	180	237	306	386	440	582	776	950
	1000	-	-	35	44	56	65	84	122	155	205	255	338	420	548	702	844
	750	-	-	32	34	42	57	71	108	133	167	216	282	348	480	626	762
		Thermal Capacity P_{G3} (kW) with COOLING COIL															
5.6 - 25	1500	-	-	-	185	210	232	242	286	316	345	384	432	480	680	800	950
	1000	-	-	-	173	200	225	232	272	296	328	372	425	470	550	645	840
	750	-	-	-	155	178	210	225	262	290	320	350	410	455	520	630	825
		Thermal Capacity P_{G4} (kW) with FAN & COOLING COIL															
5.6 - 25	1500	-	-	-	222	255	285	324	390	452	500	610	720	815	1160	1450	1710
	1000	-	-	-	205	230	265	298	340	412	472	575	672	770	998	1242	1550
	750	-	-	-	175	198	232	271	315	385	405	520	605	742	925	1105	1460

Mechanical Capacity (kW)

Nom. Ratio iN	Input speed (rpm) n1	Nom. Output speed (rpm) n2	Unit - TDH3															
			80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
20	1500	75	-	-	-	-	23	32	46	75	125	128	186	264	288	482	638	870
	1000	50	-	-	-	-	15	21	31	50	83	85	124	176	192	321	425	580
	750	38	-	-	-	-	12	16	23	38	62	64	93	132	144	241	319	435
22.4	1500	67	-	-	-	-	22	29	40	68	112	114	166	232	262	439	612	830
	1000	45	-	-	-	-	15	19	27	45	75	76	111	155	175	293	408	553
	750	33	-	-	-	-	11	15	20	34	56	57	83	116	131	220	306	415
25	1500	60	-	-	-	-	18	25	35	58	79	104	152	210	258	415	567	762
	1000	40	-	-	-	-	12	17	23	39	53	69	101	140	172	277	378	508
	750	30	-	-	-	-	9	13	18	29	40	52	76	105	129	208	284	381
28	1500	54	-	-	-	-	17	22	30	52	71	96	135	182	233	390	510	690
	1000	36	-	-	-	-	11	15	20	35	47	64	90	121	155	260	340	460
	750	27	-	-	-	-	9	11	15	26	36	48	68	91	117	195	255	345
31.5	1500	48	-	-	-	-	15	20	26	42	61	90	123	165	206	365	493	610
	1000	32	-	-	-	-	10	13	17	28	41	60	82	110	137	243	329	407
	750	24	-	-	-	-	8	10	13	21	31	45	62	83	103	183	247	305
35.5	1500	42	-	-	-	-	13	18	24	41	59	78	112	159	188	352	435	550
	1000	28	-	-	-	-	9	12	16	27	39	52	75	106	125	235	290	367
	750	21	-	-	-	-	7	9	12	21	30	39	56	80	94	176	218	275
40	1500	38	-	-	-	-	12	16	22	38	54	70	101	138	167	305	392	490
	1000	25	-	-	-	-	8.0	10.7	14.7	25.3	36.0	46.7	67.3	92.0	111.3	203.3	261.3	326.7
	750	19	-	-	-	-	6.0	8.0	11.0	19.0	27.0	35.0	50.5	69.0	83.5	152.5	196.0	245.0
45	1500	33	-	-	-	-	11.0	14.0	19.0	33.0	46.0	63.0	89.0	125.0	152.0	278.0	348.0	442.0
	1000	22	-	-	-	-	7.3	9.3	12.7	22.0	30.7	42.0	59.3	83.3	101.3	185.3	232.0	294.7
	750	17	-	-	-	-	5.5	7.0	9.5	16.5	23.0	31.5	44.5	62.5	76.0	139.0	174.0	221.0
50	1500	30	-	-	-	-	9	12	16	29	41	56	81	114	132	251	312	386
	1000	20	-	-	-	-	6.0	8.0	10.7	19.3	27.3	37.3	54.0	76.0	88.0	167.3	208.0	257.3
	750	15	-	-	-	-	4.5	6.0	8.0	14.5	20.5	28.0	40.5	57.0	66.0	125.5	156.0	193.0
56	1500	27	-	-	-	-	8.5	11.0	15.0	25.0	36.0	50.0	72.0	102.0	119.0	222.0	279.0	346.0
	1000	18	-	-	-	-	5.7	7.3	10.0	16.7	24.0	33.3	48.0	68.0	79.3	148.0	186.0	230.7
	750	13	-	-	-	-	4.3	5.5	7.5	12.5	18.0	25.0	36.0	51.0	59.5	111.0	139.5	173.0
63	1500	24	-	-	-	-	7	10	13	21	31	44	62	85	108	191	245	312
	1000	16	-	-	-	-	4.7	6.7	8.7	14.0	20.7	29.3	41.3	56.7	72.0	127.3	163.3	208.0
	750	12	-	-	-	-	3.5	5.0	6.5	10.5	15.5	22.0	31.0	42.5	54.0	95.5	122.5	156.0
71	1500	21	-	-	-	-	7	9	11	19	27	40	54	76	102	171	222	280
	1000	14	-	-	-	-	4.4	6.0	7.3	12.7	18.0	26.7	36.0	50.7	68.0	114.0	148.0	186.7
	750	11	-	-	-	-	3.3	4.5	5.5	9.5	13.5	20.0	27.0	38.0	51.0	85.5	111.0	140.0
80	1500	19	-	-	-	-	6	8	10	18	25	36	46	72	90	153	197	262
	1000	13	-	-	-	-	3.7	5.3	6.7	12.0	16.7	24.0	30.7	48.0	60.0	102.0	131.3	174.7
	750	9	-	-	-	-	2.8	4.0	5.0	9.0	12.5	18.0	23.0	36.0	45.0	76.5	98.5	131.0
90	1500	17	-	-	-	-	4.7	7.0	9.2	16.0	22.0	32.0	43.0	62.0	80.0	135.0	178.0	234.0
	1000	11	-	-	-	-	3.1	4.7	6.1	10.7	14.7	21.3	28.7	41.3	53.3	90.0	118.7	156.0
	750	8	-	-	-	-	2.4	3.5	4.6	8.0	11.0	16.0	21.5	31.0	40.0	67.5	89.0	117.0
100	1500	15	-	-	-	-	4.0	6.0	8.6	14.0	22.8	28.0	38.0	58.0	71.0	120.0	168.0	211.0
	1000	10	-	-	-	-	2.7	4.0	5.7	9.3	15.2	18.7	25.3	38.7	47.3	80.0	112.0	140.7
	750	8	-	-	-	-	2.0	3.0	4.3	7.0	11.4	14.0	19.0	29.0	35.5	60.0	84.0	105.5
112	1500	13	-	-	-	-	3.5	5.4	7.5	11.0	18.6	26.0	30.0	47.4	62.2	99.0	144.0	185.0
	1000	9	-	-	-	-	2.3	3.6	5.0	7.3	12.4	17.3	20.0	31.6	41.5	66.0	96.0	123.3
	750	7	-	-	-	-	1.8	2.7	3.8	5.5	9.3	13.0	15.0	23.7	31.1	49.5	72.0	92.5
125	1500	12	-	-	-	-	3.0	4.5	6.3	7.5	13.1	18.0	22.0	36.0	56.0	76.0	112.0	132.0
	1000	8	-	-	-	-	2.0	3.0	4.2	5.0	8.7	12.0	14.7	24.0	37.3	50.7	74.7	88.0
	750	6	-	-	-	-	1.5	2.3	3.2	3.8	6.6	9.0	11.0	18.0	28.0	38.0	56.0	66.0

■ Interpolate for other Input speeds.

Thermal Capacity (kW)

Nom. Ratio iN	Input speed (rpm) n1	Unit - TDH3															
		80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
		Thermal Capacity P_{G1} (kW) without Cooling															
20 - 40	1500	-	-	-	-	30	39	52	68	96	110	135	175	232	256	310	380
	1000	-	-	-	-	26	35	44	61	81	102	130	161	221	246	302	362
	750	-	-	-	-	22	30	40	54	74	90	117	146	202	226	276	350
45 - 125	1500	-	-	-	-	24	34	45	64	86	105	127	165	218	272	316	331
	1000	-	-	-	-	21	28	40	60	76	92	120	152	202	258	302	368
	750	-	-	-	-	19	27	36	51	72	80	109	136	172	237	288	328
		Thermal Capacity P_{G2} (kW) with FAN Cooling															
20 - 40	1500	-	-	-	-	50	68	88	114	155	184	225	275	322	365	445	538
	1000	-	-	-	-	47	62	76	106	142	172	212	262	304	343	422	513
	750	-	-	-	-	42	57	69	96	132	160	198	254	292	318	404	490
45 - 125	1500	-	-	-	-	45	65	79	110	151	177	217	260	297	347	414	525
	1000	-	-	-	-	41	59	72	102	144	164	202	252	282	322	394	501
	750	-	-	-	-	39	53	64	97	136	150	191	140	269	301	378	477
		Thermal Capacity P_{G3} (kW) with COOLING COIL															
20 - 125	1500	-	-	-	-	85	92	118	150	180	212	254	315	398	440	500	620
	1000	-	-	-	-	80	84	100	138	165	195	248	305	375	415	482	600
	750	-	-	-	-	65	70	90	125	150	185	232	290	350	402	455	575
		Thermal Capacity P_{G4} (kW) with FAN & COOLING COIL															
20 - 125	1500	-	-	-	-	108	126	170	205	258	305	376	475	600	635	750	855
	1000	-	-	-	-	98	117	148	188	245	285	362	445	540	615	700	825
	750	-	-	-	-	90	102	140	175	230	265	340	420	500	595	650	795

Nom. Ratio iN	Input speed (rpm) n1	Unit - TDH3 Offset Input															
		80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
		Thermal Capacity P_{G1} (kW) without Cooling															
20 - 40	1500	-	-	-	-	22	36	48	60	72	83	101	131	174	192	233	285
	1000	-	-	-	-	20	31	44	56	61	77	98	121	166	185	227	272
	750	-	-	-	-	18	28	41	52	56	68	88	110	152	170	207	263
45 - 125	1500	-	-	-	-	18	28	39	54	65	79	95	124	164	204	237	248
	1000	-	-	-	-	16	26	36	51	57	69	90	114	152	194	227	276
	750	-	-	-	-	14	23	32	48	54	60	82	102	129	178	216	246
		Thermal Capacity P_{G2} (kW) with FAN Cooling															
20 - 40	1500	-	-	-	-	38	51	66	86	116	138	169	206	242	274	334	404
	1000	-	-	-	-	35	47	57	80	107	129	159	197	228	257	317	385
	750	-	-	-	-	32	43	52	72	99	120	149	191	219	239	303	368
45 - 125	1500	-	-	-	-	34	49	59	83	113	133	163	195	223	260	311	394
	1000	-	-	-	-	31	44	54	77	108	123	152	189	212	242	296	376
	750	-	-	-	-	29	40	48	73	102	113	143	105	202	226	284	358
		Thermal Capacity P_{G3} (kW) with COOLING COIL															
20 - 125	1500	-	-	-	-	77	83	106	135	162	191	229	284	358	396	450	558
	1000	-	-	-	-	72	76	90	124	149	176	223	275	338	374	434	540
	750	-	-	-	-	59	63	81	113	135	167	209	261	315	362	410	518
		Thermal Capacity P_{G4} (kW) with FAN & COOLING COIL															
20 - 125	1500	-	-	-	-	97	113	153	185	232	275	338	428	540	572	675	770
	1000	-	-	-	-	88	105	133	169	221	257	326	401	486	554	630	743
	750	-	-	-	-	81	92	126	158	207	239	306	378	450	536	585	716

Mechanical Capacity (kW)

Nom. Ratio iN	Input speed (rpm) n1	Nom. Output speed (rpm) n2	Unit - TDH4															
			80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
90	1500	16.7	-	-	-	-	-	-	14	18	21	30	47	58	76	139	174	220
	1000	11.1	-	-	-	-	-	-	9.0	12.0	14.0	20.0	31.3	38.7	50.7	92.7	116.0	146.7
	750	8.3	-	-	-	-	-	-	6.8	9.0	10.5	15.0	23.5	29.0	38.0	69.5	87.0	110.0
100	1500	15.0	-	-	-	-	-	-	12	18	20	27	41	52	69	127	152	190
	1000	10.0	-	-	-	-	-	-	8.0	11.8	13.3	18.0	27.3	34.7	46.0	84.7	101.3	126.7
	750	7.5	-	-	-	-	-	-	6.0	8.9	10.0	13.5	20.5	26.0	34.5	63.5	76.0	95.0
112	1500	13.4	-	-	-	-	-	-	11	16	20	24	36	48	62	115	138	170
	1000	8.9	-	-	-	-	-	-	7.1	10.5	13.2	16.0	24.0	32.0	41.3	76.7	92.0	113.3
	750	6.7	-	-	-	-	-	-	5.4	7.9	9.9	12.0	18.0	24.0	31.0	57.5	69.0	85.0
125	1500	12.0	-	-	-	-	-	-	10	14	19	23	34	44	56	101	124	154
	1000	8.0	-	-	-	-	-	-	6.4	9.3	12.7	15.1	22.7	29.3	37.3	67.3	82.7	102.7
	750	6.0	-	-	-	-	-	-	4.8	7.0	9.6	11.4	17.0	22.0	28.0	50.5	62.0	77.0
140	1500	10.7	-	-	-	-	-	-	9	12	18	22	29	41	55	90	112	136
	1000	7.1	-	-	-	-	-	-	5.7	8.3	11.8	14.3	19.3	27.3	36.7	60.0	74.7	90.7
	750	5.4	-	-	-	-	-	-	4.3	6.2	8.9	10.8	14.5	20.5	27.5	45.0	56.0	68.0
160	1500	9.4	-	-	-	-	-	-	7.6	11.2	15.7	20.0	26.0	36.0	51.0	80.0	96.0	124.0
	1000	6.3	-	-	-	-	-	-	5.1	7.5	10.5	13.3	17.3	24.0	34.0	53.3	64.0	82.7
	750	4.7	-	-	-	-	-	-	3.8	5.6	7.9	10.0	13.0	18.0	25.5	40.0	48.0	62.0
180	1500	8.3	-	-	-	-	-	-	6.7	10.0	14.0	15.5	24.5	33.0	42.0	71.0	90.0	106.0
	1000	5.6	-	-	-	-	-	-	4.5	6.7	9.3	10.3	16.3	22.0	28.0	47.3	60.0	70.7
	750	4.2	-	-	-	-	-	-	3.4	5.0	7.0	7.8	12.3	16.5	21.0	35.5	45.0	53.0
200	1500	7.5	-	-	-	-	-	-	5.5	8.3	11.4	13.6	20.0	29.0	35.0	61.2	80.0	96.0
	1000	5.0	-	-	-	-	-	-	3.7	5.5	7.6	9.1	13.3	19.3	23.3	40.8	53.3	64.0
	750	3.8	-	-	-	-	-	-	2.8	4.2	5.7	6.8	10.0	14.5	17.5	30.6	40.0	48.0
224	1500	6.7	-	-	-	-	-	-	4.9	7.4	10.0	12.0	18.2	24.0	31.0	54.0	72.0	88.0
	1000	4.5	-	-	-	-	-	-	3.3	4.9	6.7	8.0	12.1	16.0	20.7	36.0	48.0	58.7
	750	3.3	-	-	-	-	-	-	2.5	3.7	5.0	6.0	9.1	12.0	15.5	27.0	36.0	44.0
250	1500	6.0	-	-	-	-	-	-	4.3	6.4	8.9	11.0	16.5	23.0	28.0	49.0	62.0	76.0
	1000	4.0	-	-	-	-	-	-	2.9	4.3	5.9	7.3	11.0	15.3	18.7	32.7	41.3	50.7
	750	3.0	-	-	-	-	-	-	2.2	3.2	4.5	5.5	8.3	11.5	14.0	24.5	31.0	38.0
280	1500	5.4	-	-	-	-	-	-	3.8	5.7	8.0	9.8	14.5	20.0	25.8	44.0	56.0	69.0
	1000	3.6	-	-	-	-	-	-	2.5	3.8	5.3	6.5	9.7	13.3	17.2	29.3	37.3	46.0
	750	2.7	-	-	-	-	-	-	1.9	2.9	4.0	4.9	7.3	10.0	12.9	22.0	28.0	34.5
315	1500	4.8	-	-	-	-	-	-	3.4	5.1	7.1	8.8	12.6	18.0	22.6	39.0	51.0	62.0
	1000	3.2	-	-	-	-	-	-	2.3	3.4	4.7	5.9	8.4	12.0	15.1	26.0	34.0	41.3
	750	2.4	-	-	-	-	-	-	1.7	2.6	3.6	4.4	6.3	9.0	11.3	19.5	25.5	31.0
355	1500	4.2	-	-	-	-	-	-	3.1	4.5	6.3	7.5	12.3	16.5	20.8	35.2	45.0	54.0
	1000	2.8	-	-	-	-	-	-	2.1	3.0	4.2	5.0	8.2	11.0	13.9	23.5	30.0	36.0
	750	2.1	-	-	-	-	-	-	1.6	2.3	3.2	3.8	6.2	8.3	10.4	17.6	22.5	27.0
400	1500	3.8	-	-	-	-	-	-	2.7	4.0	5.6	6.8	11.1	14.5	18.2	31.3	39.0	49.0
	1000	2.5	-	-	-	-	-	-	1.8	2.7	3.7	4.5	7.4	9.7	12.1	20.9	26.0	32.7
	750	1.9	-	-	-	-	-	-	1.4	2.0	2.8	3.4	5.6	7.3	9.1	15.7	19.5	24.5
450	1500	3.3	-	-	-	-	-	-	2.4	3.6	5.0	6.3	9.8	12.7	16.5	27.0	37.0	47.0
	1000	2.2	-	-	-	-	-	-	1.6	2.4	3.3	4.2	6.5	8.5	11.0	18.0	24.7	31.3
	750	1.7	-	-	-	-	-	-	1.2	1.8	2.5	3.2	4.9	6.4	8.3	13.5	18.5	23.5
500	1500	3.0	-	-	-	-	-	-	2.2	3.2	4.5	5.7	8.0	11.6	14.2	24.0	33.0	38.0
	1000	2.0	-	-	-	-	-	-	1.5	2.1	3.0	3.8	5.3	7.7	9.5	16.0	22.0	25.3
	750	1.5	-	-	-	-	-	-	1.1	1.6	2.3	2.9	4.0	5.8	7.1	12.0	16.5	19.0
560	1500	2.7	-	-	-	-	-	-	1.9	2.5	3.7	5.0	6.0	9.5	13.0	18.0	28.0	33.0
	1000	1.8	-	-	-	-	-	-	1.3	1.7	2.5	3.3	4.0	6.3	8.7	12.0	18.7	22.0
	750	1.3	-	-	-	-	-	-	1.0	1.3	1.9	2.5	3.0	4.8	6.5	9.0	14.0	16.5

■ Interpolate for other Input speeds.

Thermal Capacity (kW)

Nom. Ratio iN	Input speed (rpm) n1	Unit - TDH4															
		80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
		Thermal Capacity P_{G1} (kW) without Cooling															
90 - 560	1500	-	-	-	-	-	-	20	28	39	48	63	81	106	135	158	196
	1000	-	-	-	-	-	-	18	26	36	46	55	72	88	126	141	171
	750	-	-	-	-	-	-	16	23	32	38	52	69	74	115	135	160

Mechanical Capacity (kW)

Nom. Ratio iN	Input speed (rpm) n1	Nom. Output speed (rpm) n2	Unit - TDB2															
			80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
5	1500	300.0	20	27	31	50	64	134	132	171	318	345	454	602	820	-	-	-
	1000	200.0	13	18	21	33	43	89	88	114	212	230	303	401	547	683	-	-
	750	150.0	10	14	16	25	32	67	66	86	159	173	227	301	410	512	-	-
5.6	1500	267.9	18	25	27	50	60	134	118	167	318	325	449	596	812	-	-	-
	1000	178.6	12	17	18	33	40	89	79	111	212	217	299	397	541	673	1194#	-
	750	133.9	9	13	14	25	30	67	59	84	159	163	225	298	406	505	896	-
6.3	1500	238.1	16	23	26	45	58	113	101	159	316	302	442	581	794	-	-	-
	1000	158.7	11	15	17	30	39	76	67	106	211	201	295	387	529	663	1077#	1235#
	750	119.0	8	12	13	22	29	57	51	80	158	151	221	291	397	498	808	926
7.1	1500	211.3	15	21	26	40	57	103	94	153	280	285	433	562	782	987#	1477#	-
	1000	140.8	10	14	17	27	38	68	63	102	187	190	289	375	521	659	985	1209#
	750	105.6	8	11	13	20	29	51	47	77	140	143	217	281	391	494	739	907
8	1500	187.5	12	18	25	34	52	91	85	145	220	260	402	547	765	941#	1356#	-
	1000	125.0	8	12	17	23	35	61	57	97	147	173	268	365	510	627	904	1203
	750	93.8	6	9	13	17	26	45	43	73	110	130	201	274	383	471	678	903
9	1500	166.7	10	16	24	29	46	79	81	130	191	243	267	497	676	815#	1228#	1795#
	1000	111.1	7	11	16	19	31	52	54	87	128	162	178	331	451	543	819	1197
	750	83.3	5	8	12	15	23	39	41	65	96	122	134	249	338	408	614	898
10	1500	150.0	9	13	21	23	41	63	76	116	154	210	323	432	587	768	1142	1720#
	1000	100.0	6	9	14	16	27	42	51	77	103	140	215	288	391	512	761	1147
	750	75.0	5	7	11	12	21	32	38	58	77	105	162	216	294	384	571	860
11.2	1500	133.9	8	12	17	22	37	58	61	104	142	188	297	392	426	704	1056	1506#
	1000	89.3	5	8	11	14	25	39	41	69	94	125	198	261	284	469	704	1004
	750	67.0	4	6	9	11	19	29	31	52	71	94	149	196	213	352	528	753
12.5	1500	120.0	7	11	16	22	34	55	58	97	142	180	265	358	490	628	962	1232#
	1000	80.0	5	7	11	14	23	37	39	65	94	120	177	239	327	419	641	821
	750	60.0	4	6	8	11	17	27	29	49	71	90	133	179	245	314	481	616
14	1500	107.1	6	9	14	18	30	48	55	74	118	160	228	326	425	585	731	982
	1000	71.4	4.0	6.0	9.3	11.7	20.0	32.1	36.7	49.3	78.5	106.7	152.0	217.3	283.3	390.0	487.3	654.7
	750	53.6	3.0	4.5	7.0	8.8	15.0	24.1	27.5	37.0	58.9	80.0	114.0	163.0	212.5	292.5	365.5	491.0
16	1500	93.8	5.5	8.0	10.0	16.2	24.0	43.1	44.0	67.0	106.4	136.0	176.0	275.0	328.0	516.0	611.0	760.0
	1000	62.5	4	5	7	11	16	29	29	45	71	91	117	183	219	344	407	507
	750	46.9	2.8	4.0	5.0	8.1	12.0	21.6	22.0	33.5	53.2	68.0	88.0	137.5	164.0	258.0	305.5	380.0
18	1500	83.3	5	7	8	14	18	34	36	61	83	120	155	256	285	443	582	730
	1000	55.6	3.3	4.3	5.3	9.1	12.0	22.9	24.0	40.7	55.3	80.0	103.3	170.7	190.0	295.3	388.0	486.7
	750	41.7	2.5	3.3	4.0	6.9	9.0	17.2	18.0	30.5	41.5	60.0	77.5	128.0	142.5	221.5	291.0	365.0
20	1500	75.0	4	6	8	12	17	30	35	59	74	106	151	230	256	418	522	655
	1000	50.0	2.7	3.7	5.0	8.1	11.3	20.3	23.3	39.4	49.1	70.7	100.7	153.3	170.7	278.7	348.0	436.7
	750	37.5	2.0	2.8	3.8	6.1	8.5	15.2	17.5	29.6	36.8	53.0	75.5	115.0	128.0	209.0	261.0	327.5
22.4	1500	67.0	3.6	4.5	6.0	9.6	16.0	26.8	32.0	52.9	66.1	95.0	136.0	201.0	229.0	375.0	495.0	585.0
	1000	44.6	2.4	3.0	4.0	6.4	10.7	17.9	21.3	35.3	44.1	63.3	90.7	134.0	152.7	250.0	330.0	390.0
	750	33.5	1.8	2.3	3.0	4.8	8.0	13.4	16.0	26.5	33.1	47.5	68.0	100.5	114.5	187.5	247.5	292.5

- # Forced lubrication is necessary.
- Interpolate for other Input speeds.

Thermal Capacity (kW)

Nom. Ratio iN	Input speed (rpm) n1	Unit - TDB2															
		80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
		Thermal Capacity P_{G1} (kW) without Cooling															
5 - 11.2	1500	16	21	26	35	44	48	52	87	117	148	170	195	260	345	390	425
	1000	15	19	24	33	43	45	48	84	109	135	167	170	245	330	380	415
	750	14	18	22	31	40	43	47	76	97	118	161	150	240	315	370	408
12.5 - 22.4	1500	12	17	22	27	32	41	51	80	85	135	166	205	252	325	385	420
	1000	11	15	20	25	30	39	48	75	80	126	163	195	242	315	375	410
	750	10	14	18	23	28	35	42	70	78	120	160	190	238	305	360	402
		Thermal Capacity P_{G2} (kW) with FAN Cooling															
5 - 11.2	1500	36	40	50	60	84	140	165	190	260	330	400	430	600	700	780	815
	1000	33	40	48	58	82	135	157	180	255	270	390	390	555	685	730	795
	750	31	38	44	55	78	132	143	155	250	240	370	320	530	640	680	755
12.5 - 22.4	1500	32	45	48	59	83	100	110	172	235	295	382	420	580	688	765	805
	1000	26	40	42	56	74	90	95	145	200	255	322	402	528	634	730	750
	750	22	36	38	54	68	82	85	135	190	245	308	390	515	620	692	735
		Thermal Capacity P_{G3} (kW) with COOLING COIL															
5 - 22.4	1500	-	-	-	55	72	83	95	140	180	220	260	310	420	540	725	750
	1000	-	-	-	52	70	80	90	135	172	210	255	300	405	530	695	700
	750	-	-	-	49	66	77	88	130	167	205	250	290	392	520	675	650
		Thermal Capacity P_{G4} (kW) with FAN & COOLING COIL															
5 - 22.4	1500	-	-	-	85	100	115	130	210	282	355	402	480	650	800	950	1000
	1000	-	-	-	80	88	106	125	205	267	330	390	444	608	840	885	970
	750	-	-	-	74	85	101	118	198	250	302	385	405	585	760	825	955

Mechanical Capacity (kW)

Nom. Ratio iN	Input speed (rpm) n1	Nom. Output speed (rpm) n2	Unit - TDB3															
			80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
16	1500	93.8	-	-	-	-	25	38	52	78	105	132	191	255	302	561	745#	855#
	1000	62.5	-	-	-	-	17	25	35	52	70	88	127	170	201	374	497	570
	750	46.9	-	-	-	-	13	19	26	39	53	66	96	128	151	281	373	428
18	1500	83.3	-	-	-	-	23	35	48	74	95	126	182	238	296	555	722#	832#
	1000	55.6	-	-	-	-	15	23	32	49	63	84	121	159	197	370	481	555
	750	41.7	-	-	-	-	12	18	24	37	48	63	91	119	148	278	361	416
20	1500	75.0	-	-	-	-	21	37	42	69	89	119	172	232	282	542	702	802#
	1000	50.0	-	-	-	-	14	24	28	46	59	79	115	155	188	361	468	535
	750	37.5	-	-	-	-	11	18	21	35	45	60	86	116	141	271	351	401
22.4	1500	67.0	-	-	-	-	20	33	38	66	83	112	165	222	272	553	642	755#
	1000	44.6	-	-	-	-	13	22	25	44	55	75	110	148	181	369	428	503
	750	33.5	-	-	-	-	10	16	19	33	42	56	83	111	136	277	321	378
25	1500	60.0	-	-	-	-	19	29	33	58	80	107	145	202	262	484	568	707#
	1000	40.0	-	-	-	-	13	19	22	39	53	71	97	135	175	323	379	471
	750	30.0	-	-	-	-	10	15	17	29	40	54	73	101	131	242	284	354
28	1500	53.6	-	-	-	-	15	26	29	48	63	95	117	178	235	440	508	630#
	1000	35.7	-	-	-	-	10	17	19	32	42	63	78	119	157	293	339	420
	750	26.8	-	-	-	-	8	13	15	24	32	48	59	89	118	220	254	315
31.5	1500	47.6	-	-	-	-	14	23	27	43	58	90	109	152	210	391	484	570#
	1000	31.7	-	-	-	-	9.3	15.3	18.0	28.7	38.7	60.0	72.7	101.3	140.0	260.5	322.7	380.0
	750	23.8	-	-	-	-	7.0	11.5	13.5	21.5	29.0	45.0	54.5	76.0	105.0	195.4	242.0	285.0
35.5	1500	42.3	-	-	-	-	13	21	24	39	52	77	97	141	188	352	433	506#
	1000	28.2	-	-	-	-	8.4	13.7	16.0	26.1	34.7	51.3	64.7	94.0	125.3	234.5	288.7	337.3
	750	21.1	-	-	-	-	6.3	10.3	12.0	19.6	26.0	38.5	48.5	70.5	94.0	175.9	216.5	253.0
40	1500	37.5	-	-	-	-	11	19	21	35	47	67	89	125	165	315	390	455
	1000	25.0	-	-	-	-	7.6	12.3	14.0	23.3	31.3	44.7	59.3	83.3	110.0	209.8	260.0	303.3
	750	18.8	-	-	-	-	5.7	9.3	10.5	17.5	23.5	33.5	44.5	62.5	82.5	157.4	195.0	227.5
45	1500	33.3	-	-	-	-	10	16	19	32	43	63	82	115	147	280	346	404
	1000	22.2	-	-	-	-	6.8	10.9	12.8	21.1	28.3	42.0	54.7	76.7	98.0	186.5	230.7	269.3
	750	16.7	-	-	-	-	5.1	8.2	9.6	15.8	21.3	31.5	41.0	57.5	73.5	139.9	173.0	202.0
50	1500	30.0	-	-	-	-	9	15	17	28	40	54	74	102	131	253	309	365
	1000	20.0	-	-	-	-	6.0	9.9	11.3	18.3	26.7	36.0	49.3	68.0	87.3	168.7	206.0	243.3
	750	15.0	-	-	-	-	4.5	7.5	8.5	13.8	20.0	27.0	37.0	51.0	65.5	126.6	154.5	182.5
56	1500	26.8	-	-	-	-	8	13	15	25	35	48	66	91	119	224	278	322
	1000	17.9	-	-	-	-	5.1	8.8	10.0	16.7	23.3	32.0	44.0	60.7	79.3	149.6	185.3	214.7
	750	13.4	-	-	-	-	3.8	6.6	7.5	12.5	17.5	24.0	33.0	45.5	59.5	112.2	139.0	161.0
63	1500	23.8	-	-	-	-	7.0	11.6	14.0	22.0	31.0	45.0	58.0	81.0	107.0	198.2	246.0	290.0
	1000	15.9	-	-	-	-	4.7	7.7	9.3	14.7	20.7	30.0	38.7	54.0	71.3	132.1	164.0	193.3
	750	11.9	-	-	-	-	3.5	5.8	7.0	11.0	15.5	22.5	29.0	40.5	53.5	99.1	123.0	145.0
71	1500	21.1	-	-	-	-	7.4	10.4	12.0	20.0	27.5	38.0	52.0	71.0	95.0	176.3	222.0	255.0
	1000	14.1	-	-	-	-	4.9	6.9	8.0	13.3	18.3	25.3	34.7	47.3	63.3	117.5	148.0	170.0
	750	10.6	-	-	-	-	3.7	5.2	6.0	10.0	13.8	19.0	26.0	35.5	47.5	88.2	111.0	127.5
80	1500	18.8	-	-	-	-	6.5	9.2	11.0	20.6	28.5	35.0	55.9	70.0	83.0	156.3	203.0	222.0
	1000	12.5	-	-	-	-	4.3	6.1	7.3	13.7	19.0	23.3	37.3	46.7	55.3	104.2	135.3	148.0
	750	9.4	-	-	-	-	3.3	4.6	5.5	10.3	14.3	17.5	28.0	35.0	41.5	78.2	101.5	111.0
90	1500	16.7	-	-	-	-	5.4	7.6	9.5	16.1	23.2	33.0	45.9	59.0	75.0	128.6	177.0	201.0
	1000	11.1	-	-	-	-	3.6	5.1	6.3	10.7	15.5	22.0	30.6	39.3	50.0	85.7	118.0	134.0
	750	8.3	-	-	-	-	2.7	3.8	4.8	8.1	11.6	16.5	23.0	29.5	37.5	64.3	88.5	100.5
100	1500	15.0	-	-	-	-	4.9	6.9	8.5	14.4	20.9	27.0	41.2	52.0	65.0	115.5	159.0	178.0
	1000	10.0	-	-	-	-	3.3	4.6	5.7	9.6	13.9	18.0	27.5	34.7	43.3	77.0	106.0	118.7
	750	7.5	-	-	-	-	2.5	3.5	4.3	7.2	10.5	13.5	20.6	26.0	32.5	57.8	79.5	89.0

- # Forced lubrication is necessary.
- Interpolate for other Input speeds.

Thermal Capacity (kW)

Nom. Ratio iN	Input speed (rpm) n1	Unit - TDB3															
		80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
		Thermal Capacity P_{G1} (kW) without Cooling															
16 - 35.5	1500	-	-	-	-	37	42	45	68	88	112	138	175	200	270	320	335
	1000	-	-	-	-	35	38	42	65	78	102	130	160	170	250	300	295
	750	-	-	-	-	32	35	38	60	70	93	122	150	155	232	275	285
40 - 100	1500	-	-	-	-	30	42	44	62	82	89	125	155	160	245	295	312
	1000	-	-	-	-	28	35	39	60	75	82	120	145	152	233	275	292
	750	-	-	-	-	25	30	38	55	70	78	118	135	146	218	262	270
		Thermal Capacity P_{G2} (kW) with FAN Cooling															
16 - 35.5	1500	-	-	-	-	82	105	112	148	178	240	275	365	420	540	618	675
	1000	-	-	-	-	72	90	102	140	165	215	265	335	355	510	598	605
	750	-	-	-	-	70	85	90	132	160	200	240	300	312	455	530	545
40 - 100	1500	-	-	-	-	72	100	108	140	170	210	268	320	330	480	590	630
	1000	-	-	-	-	68	85	102	132	165	180	252	298	302	445	540	595
	750	-	-	-	-	62	76	92	122	155	175	238	270	275	390	503	540
		Thermal Capacity P_{G3} (kW) with COOLING COIL															
16 - 100	1500	-	-	-	-	108	130	135	175	210	265	315	400	420	480	525	590
	1000	-	-	-	-	105	122	125	163	198	240	308	382	390	450	490	540
	750	-	-	-	-	102	115	118	148	185	225	290	368	360	430	450	520
		Thermal Capacity P_{G4} (kW) with FAN & COOLING COIL															
16 - 100	1500	-	-	-	-	165	200	210	280	350	450	515	670	730	940	1100	1140
	1000	-	-	-	-	155	175	185	265	330	395	498	620	650	870	1040	1060
	750	-	-	-	-	148	170	175	250	300	360	476	595	600	820	980	1020

Mechanical Capacity (kW)

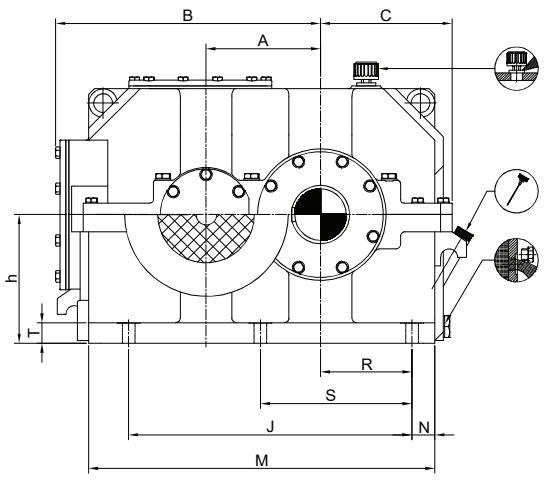
Nom. Ratio iN	Input speed (rpm) n1	Nom. Output speed (rpm) n2	Unit - TDB4															
			80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
80	1500	18.8	-	-	-	-	-	-	11.0	20.6	24.0	32.0	49.0	59.0	83.0	156.0	197.0	202.0
	1000	12.5	-	-	-	-	-	-	7.3	13.7	16.0	21.3	32.7	39.3	55.3	104.0	131.3	134.7
	750	9.4	-	-	-	-	-	-	5.5	10.3	12.0	16.0	24.5	29.5	41.5	78.0	98.5	101.0
90	1500	16.7	-	-	-	-	-	-	9.5	18.8	22.0	30.0	43.0	55.0	74.0	138.3	181.0	190.0
	1000	11.1	-	-	-	-	-	-	6.3	12.5	14.7	20.0	28.7	36.7	49.3	92.2	120.7	126.7
	750	8.3	-	-	-	-	-	-	4.8	9.4	11.0	15.0	21.5	27.5	37.0	69.2	90.5	95.0
100	1500	15.0	-	-	-	-	-	-	8.5	16.6	20.0	27.0	39.0	52.0	67.0	122.0	166.0	180.0
	1000	10.0	-	-	-	-	-	-	5.7	11.1	13.3	18.0	26.0	34.7	44.7	81.3	110.7	120.0
	750	7.5	-	-	-	-	-	-	4.3	8.3	10.0	13.5	19.5	26.0	33.5	61.0	83.0	90.0
112	1500	13.4	-	-	-	-	-	-	7.2	14.6	17.0	25.0	34.0	46.0	60.0	109.2	138.0	166.0
	1000	8.9	-	-	-	-	-	-	4.8	9.7	11.3	16.7	22.7	30.7	40.0	72.8	92.0	110.7
	750	6.7	-	-	-	-	-	-	3.6	7.3	8.5	12.5	17.0	23.0	30.0	54.6	69.0	83.0
125	1500	12.0	-	-	-	-	-	-	6.6	12.8	15.2	25.5	31.0	41.0	66.0	97.1	123.0	161.0
	1000	8.0	-	-	-	-	-	-	4.4	8.5	10.1	17.0	20.7	27.3	44.0	64.7	82.0	107.3
	750	6.0	-	-	-	-	-	-	3.3	6.4	7.6	12.8	15.5	20.5	33.0	48.6	61.5	80.5
140	1500	10.7	-	-	-	-	-	-	5.9	11.6	15.9	20.0	28.5	36.0	59.0	87.3	111.0	145
	1000	7.1	-	-	-	-	-	-	3.9	7.7	10.6	13.3	19.0	24.0	39.3	58.2	74.0	96.7
	750	5.4	-	-	-	-	-	-	3.0	5.8	8.0	10.0	14.3	18.0	29.5	43.7	55.5	72.5
160	1500	9.4	-	-	-	-	-	-	5.4	10.3	14.2	18.0	25.2	35.0	46.0	78.2	97.0	118.0
	1000	6.3	-	-	-	-	-	-	3.6	6.9	9.5	12.0	16.8	23.3	30.7	52.1	64.7	78.7
	750	4.7	-	-	-	-	-	-	2.7	5.2	7.1	9.0	12.6	17.5	23.0	39.1	48.5	59.0
180	1500	8.3	-	-	-	-	-	-	4.8	9.2	12.6	16.0	22.0	31.0	40.0	70.3	88.0	108.0
	1000	5.6	-	-	-	-	-	-	3.2	6.1	8.4	10.7	14.7	20.7	26.7	46.9	58.7	72.0
	750	4.2	-	-	-	-	-	-	2.4	4.6	6.3	8.0	11.0	15.5	20.0	35.2	44.0	54.0
200	1500	7.5	-	-	-	-	-	-	4.2	8.2	11.3	14.0	19.5	29.0	38.0	62.9	79.0	98.0
	1000	5.0	-	-	-	-	-	-	2.8	5.5	7.5	9.3	13.0	19.3	25.3	41.9	52.7	65.3
	750	3.8	-	-	-	-	-	-	2.1	4.1	5.7	7.0	9.8	14.5	19.0	31.5	39.5	49.0
224	1500	6.7	-	-	-	-	-	-	3.8	7.3	10.2	12.6	18.0	25.0	37.0	55.9	70.0	91.0
	1000	4.5	-	-	-	-	-	-	2.5	4.9	6.8	8.4	12.0	16.7	24.7	37.3	46.7	60.7
	750	3.3	-	-	-	-	-	-	1.9	3.7	5.1	6.3	9.0	12.5	18.5	28.0	35.0	45.5
250	1500	6.0	-	-	-	-	-	-	3.4	6.6	9.2	12.0	16.0	22.0	34.0	50.6	61.0	83.0
	1000	4.0	-	-	-	-	-	-	2.3	4.4	6.1	8.0	10.7	14.7	22.7	33.7	40.7	55.3
	750	3.0	-	-	-	-	-	-	1.7	3.3	4.6	6.0	8.0	11.0	17.0	25.3	30.5	41.5
280	1500	5.4	-	-	-	-	-	-	3.0	4.8	8.2	11.0	14.5	20.0	29.0	44.9	56.0	75.0
	1000	3.6	-	-	-	-	-	-	2.0	3.2	5.5	7.3	9.7	13.3	19.3	29.9	37.3	50.0
	750	2.7	-	-	-	-	-	-	1.5	2.4	4.1	5.5	7.3	10.0	14.5	22.5	28.0	37.5
315	1500	4.8	-	-	-	-	-	-	2.7	4.2	7.2	8.7	12.5	19.0	27.0	39.6	50.0	67.0
	1000	3.2	-	-	-	-	-	-	1.8	2.8	4.8	5.8	8.3	12.7	18.0	26.4	33.3	44.7
	750	2.4	-	-	-	-	-	-	1.4	2.1	3.6	4.4	6.3	9.5	13.5	19.8	25.0	33.5
355	1500	4.2	-	-	-	-	-	-	2.4	4.0	5.9	8.3	11.6	14.3	19.0	32.6	44.0	50.0
	1000	2.8	-	-	-	-	-	-	1.6	2.7	3.9	5.5	7.7	9.5	12.7	21.7	29.3	33.3
	750	2.1	-	-	-	-	-	-	1.2	2.0	3.0	4.2	5.8	7.2	9.5	16.3	22.0	25.0
400	1500	3.8	-	-	-	-	-	-	2.1	3.6	5.2	6.6	10.3	12.6	17.7	29.0	39.0	45.0
	1000	2.5	-	-	-	-	-	-	1.4	2.4	3.5	4.4	6.9	8.4	11.8	19.3	26.0	30.0
	750	1.9	-	-	-	-	-	-	1.1	1.8	2.6	3.3	5.2	6.3	8.9	14.5	19.5	22.5
450	1500	3.3	-	-	-	-	-	-	1.8	3.2	4.6	6.0	9.2	11.2	16.2	25.7	35.0	44.0
	1000	2.2	-	-	-	-	-	-	1.2	2.1	3.1	4.0	6.1	7.5	10.8	17.1	23.3	29.3
	750	1.7	-	-	-	-	-	-	0.9	1.6	2.3	3.0	4.6	5.6	8.1	12.9	17.5	22.0
500	1500	3.0	-	-	-	-	-	-	1.8	2.3	3.3	4.9	7.1	9.0	14.4	19.6	28.0	32.0
	1000	2.0	-	-	-	-	-	-	1.2	1.5	2.2	3.3	4.7	6.0	9.6	13.1	18.7	21.3
	750	1.5	-	-	-	-	-	-	0.9	1.2	1.7	2.5	3.6	4.5	7.2	9.8	14.0	16.0
560	1500	2.7	-	-	-	-	-	-	1.6	2.1	2.9	4.6	6.4	8.0	12.9	17.6	25.0	29.0
	1000	1.8	-	-	-	-	-	-	1.1	1.4	1.9	3.1	4.3	5.3	8.6	11.7	16.7	19.3
	750	1.3	-	-	-	-	-	-	0.8	1.1	1.5	2.3	3.2	4.0	6.5	8.8	12.5	14.5

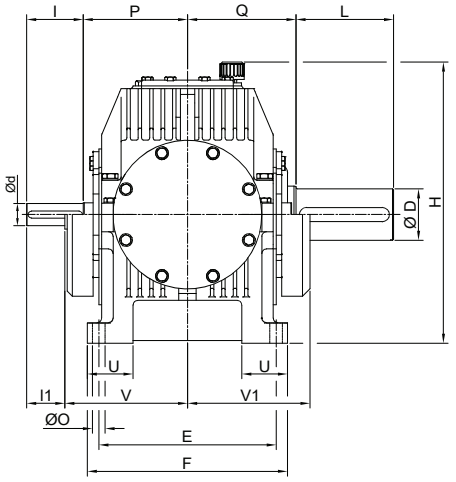
- Interpolate for other Input speeds.

Thermal Capacity (kW)

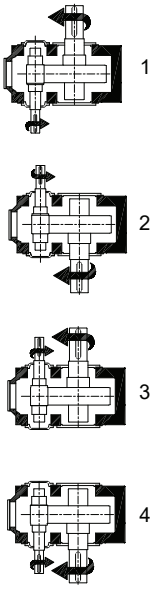
Nom. Ratio iN	Input speed (rpm) n1	Unit - TDB4															
		80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
		Thermal Capacity P_{G1} (kW) without Cooling															
80 - 560	1500	-	-	-	-	-	-	19	26	36	43	57	76	78	132	180	210
	1000	-	-	-	-	-	-	17	24	33	39	50	66	65	125	152	182
	750	-	-	-	-	-	-	16	22	29	35	45	58	60	114	144	175

Dimensions Horizontal Mounting Unit - TDH1





SHAFT HANDING / ROTATION

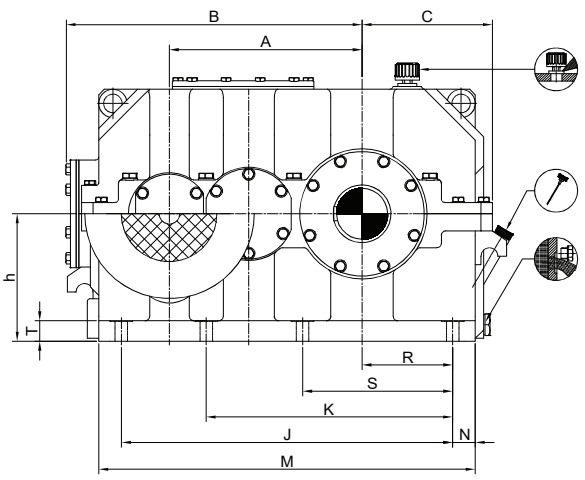


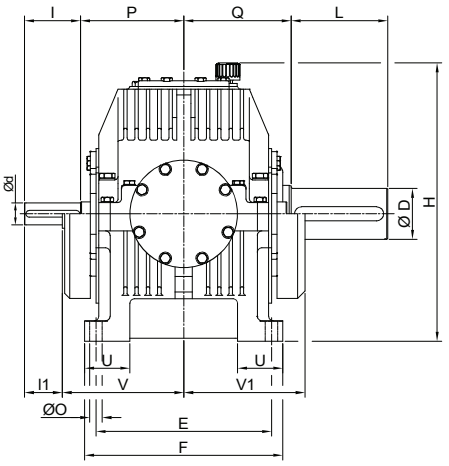
Unit	Input Shaft										Output Shaft		
	iN = 1.25 - 3.55				iN = 4 - 5.6								
	d	l	l1	V	d	l	l1	V	P	~ V1	D	L	Q
TDH1-80	22	80	40	140	20	80	40	140	100	140	32	80	100
TDH1-90	26	80	40	145	24	80	40	145	105	145	40	110	105
TDH1-100	32	100	60	155	30	100	60	155	115	155	45	110	115
TDH1-110	42	120	80	165	35	100	60	165	125	165	50	110	125
TDH1-125	45	120	80	175	40	120	80	175	135	175	55	110	135
TDH1-140	50	130	80	195	45	120	80	185	145	195	60	140	145
TDH1-160	60	160	110	205	50	130	80	205	155	205	70	140	155
TDH1-180	70	160	110	220	55	130	80	220	170	220	80	170	170
TDH1-200	75	160	110	240	65	160	110	240	190	240	90	170	190
TDH1-225	85	190	130	270	75	160	110	260	210	270	100	210	210
TDH1-250	95	190	130	285	80	180	130	275	225	285	110	210	225
TDH1-280	105	230	170	300	90	190	130	300	240	300	120	210	240
TDH1-315	115	230	170	335	95	190	130	335	275	335	140	250	275
TDH1-355	130	260	200	360	110	230	170	360	300	360	160	300	300
TDH1-400	145	260	200	395	120	230	170	395	335	395	180	300	335
TDH1-450	160	300	240	430	130	260	200	430	370	430	200	350	370

Unit	Foundation														
	A	~ B	C	E	F	h	~ H	R	S	J	M	N	O	T	U
TDH1-80	80	195	100	155	180	90	225	60	-	210	250	20	14	24	40
TDH1-90	90	210	110	160	190	100	245	70	-	230	270	20	14	24	45
TDH1-100	100	225	120	180	210	110	265	80	-	255	295	20	14	24	50
TDH1-110	110	250	130	200	230	125	295	90	-	280	320	20	14	24	50
TDH1-125	125	275	150	210	240	140	325	105	-	320	360	20	14	24	55
TDH1-140	140	305	165	230	260	160	365	115	-	355	405	25	14	24	60
TDH1-160	160	345	185	250	290	180	405	130	-	400	460	30	18	30	65
TDH1-180	180	385	210	275	310	200	465	145	-	445	515	35	18	30	70
TDH1-200	200	420	235	310	350	225	515	160	-	490	570	40	22	36	80
TDH1-225	225	470	270	350	390	250	565	185	-	555	635	40	22	36	100
TDH1-250	250	520	300	390	440	280	625	205	320	620	710	45	27	45	115
TDH1-280	280	580	330	420	470	315	700	230	370	695	795	50	27	45	130
TDH1-315	315	645	370	470	530	355	780	260	410	785	895	55	33	55	145
TDH1-355	355	715	410	520	580	400	870	295	460	880	1000	60	33	55	160
TDH1-400	400	815	460	590	670	450	970	335	525	1005	1135	65	39	65	180
TDH1-450	450	915	530	640	720	500	1070	380	600	1145	1285	70	39	65	200

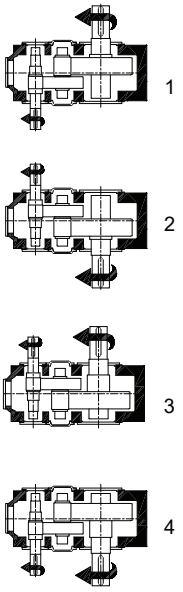
- Key and Keyways for shaft conform to IS 2048 / DIN 6885-1 / ISO/R773.
- Shaft centering conform to DIN 332/2 Form DS (with threads)

Dimensions Horizontal Mounting Unit - TDH2





SHAFT HANDING / ROTATION

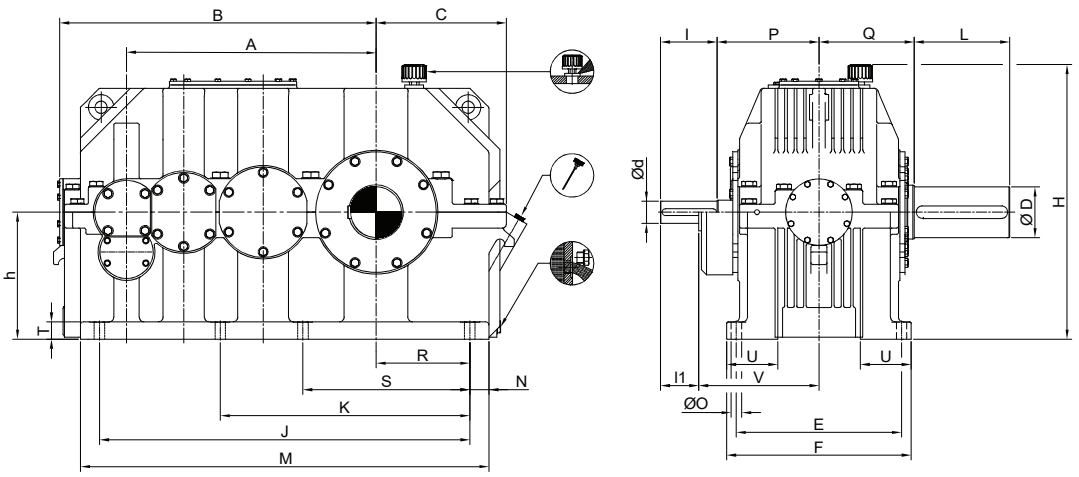


Unit	Input Shaft										Output Shaft		
	iN = 5.6-12.5				iN = 14-25								
	d	l	l1	V	d	l	l1	V	P	~V1	D	L	Q
TDH2-100	22	80	40	155	20	80	40	155	115	-	45	110	115
TDH2-110	22	80	40	165	20	80	40	165	125	-	50	110	125
TDH2-125	26	80	40	175	24	80	40	175	135	175	55	110	135
TDH2-140	32	100	60	185	30	100	60	185	145	185	60	140	145
TDH2-160	42	120	80	195	35	100	60	195	155	195	70	140	155
TDH2-180	46	120	80	210	40	120	80	210	170	210	80	170	170
TDH2-200	55	130	80	240	48	120	80	230	190	240	90	170	190
TDH2-225	60	160	110	260	52	130	80	260	210	260	100	210	210
TDH2-250	70	160	110	275	60	160	110	275	225	275	110	210	225
TDH2-280	75	160	110	290	65	160	110	290	240	290	120	210	240
TDH2-315	85	190	130	335	70	160	110	325	275	335	140	250	275
TDH2-355	95	190	130	360	80	180	130	350	300	360	160	300	300
TDH2-400	105	230	170	395	90	190	130	395	335	395	180	300	335
TDH2-450	120	230	170	430	100	230	170	430	370	430	200	350	370

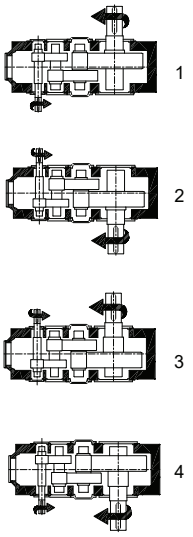
Unit	Foundation															
	A	~B	C	E	F	h	~H	R	S	K	J	M	N	O	T	U
TDH2-100	171	265	120	180	210	110	265	80	140	-	305	345	20	14	24	50
TDH2-110	190	290	130	200	230	125	295	90	160	-	340	380	20	14	24	50
TDH2-125	215	340	150	210	240	140	325	105	185	-	385	425	20	14	24	55
TDH2-140	240	365	165	230	260	160	365	115	205	-	420	470	25	14	24	60
TDH2-160	270	410	185	250	290	180	405	130	235	-	465	525	30	18	30	65
TDH2-180	305	455	210	275	310	200	465	145	260	-	515	585	35	18	30	70
TDH2-200	340	505	235	310	350	225	515	160	290	-	575	655	40	22	36	80
TDH2-225	385	570	270	350	390	250	565	185	330	-	660	740	40	22	36	100
TDH2-250	430	635	300	390	440	280	625	205	360	-	740	830	45	27	45	115
TDH2-280	480	700	330	420	470	315	700	230	405	-	820	920	50	27	45	130
TDH2-315	540	785	370	470	530	355	780	260	460	-	925	1035	55	33	55	145
TDH2-355	605	875	410	520	580	400	870	295	520	-	1045	1165	60	33	55	160
TDH2-400	680	980	460	590	670	450	970	335	580	-	1180	1310	65	39	65	180
TDH2-450	765	1100	530	640	720	500	1070	380	680	1000	1335	1475	70	39	65	200

- TDH2-100 & TDH2-110 are with Single Fan Design
- Key and Keyways for shaft conform to IS 2048 / DIN 6885-1 / ISO/R773.
- Shaft centering conform to DIN 332/2 Form DS (with threads)

Dimensions Horizontal Mounting Unit - TDH3



SHAFT HANDING / ROTATION

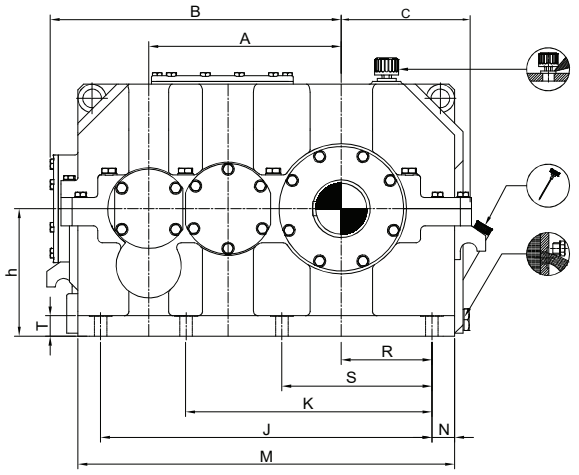


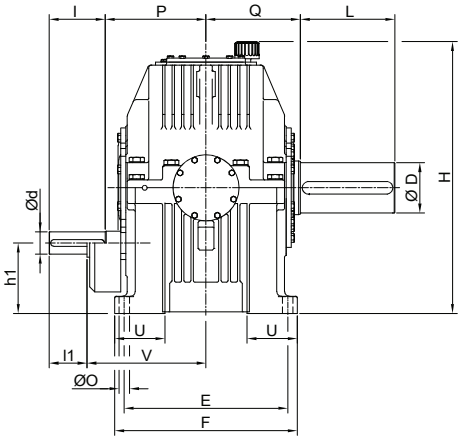
Unit	Input Shaft									Output Shaft		
	iN = 20-45				iN = 50-125							
	d	l	l1	V	d	l	l1	V	P	D	L	Q
TDH3-125	18	70	30	175	18	70	30	175	135	55	110	135
TDH3-140	22	80	40	185	22	80	40	185	145	60	140	145
TDH3-160	25	80	40	195	22	80	40	195	155	70	140	155
TDH3-180	25	80	40	210	25	80	40	210	170	80	170	170
TDH3-200	32	100	60	230	30	100	60	230	190	90	170	190
TDH3-225	40	120	80	250	35	100	60	250	210	100	210	210
TDH3-250	50	130	80	275	40	120	80	265	225	110	210	225
TDH3-280	55	130	80	290	45	120	80	280	240	120	210	240
TDH3-315	60	160	110	325	50	130	80	325	275	140	250	275
TDH3-355	70	160	110	350	55	130	80	350	300	160	300	300
TDH3-400	75	160	110	385	60	160	110	385	335	180	300	335
TDH3-450	85	190	130	430	70	160	110	420	370	200	350	370

Unit	Foundation															
	A	~B	C	E	F	h	~H	R	S	K	J	M	N	O	T	U
TDH3-125	278	370	150	210	240	140	325	105	185	-	430	470	20	14	24	55
TDH3-140	311	420	165	230	260	160	365	115	205	-	470	520	25	14	24	60
TDH3-160	350	470	185	250	290	180	405	130	235	-	525	585	30	18	30	65
TDH3-180	395	520	210	275	310	200	465	145	260	-	580	650	35	18	30	70
TDH3-200	440	570	235	310	350	225	515	160	290	-	645	720	40	22	36	80
TDH3-225	495	640	270	350	390	250	565	185	330	-	735	805	40	22	36	100
TDH3-250	555	710	300	390	440	280	625	205	360	-	815	900	45	27	45	115
TDH3-280	620	790	330	420	470	315	700	230	405	-	915	1005	50	27	45	130
TDH3-315	700	890	370	470	530	355	780	260	460	710	1035	1140	55	33	55	145
TDH3-355	785	995	410	520	580	400	870	295	520	785	1165	1285	60	33	55	160
TDH3-400	880	1105	460	590	670	450	970	335	580	890	1315	1435	65	39	65	180
TDH3-450	990	1240	530	640	720	500	1070	380	680	1000	1485	1615	70	39	65	200

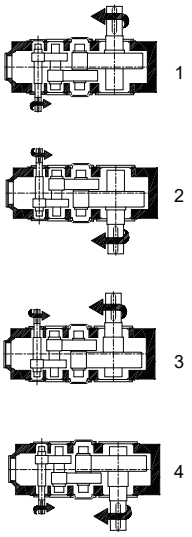
- Key and Keyways for shaft conform to IS 2048 / DIN 6885-1 / ISO/R773.
- Shaft centering conform to DIN 332/2 Form DS (with threads)

Dimensions Horizontal Mounting Unit - TDH3 Offset Input





SHAFT HANDING / ROTATION

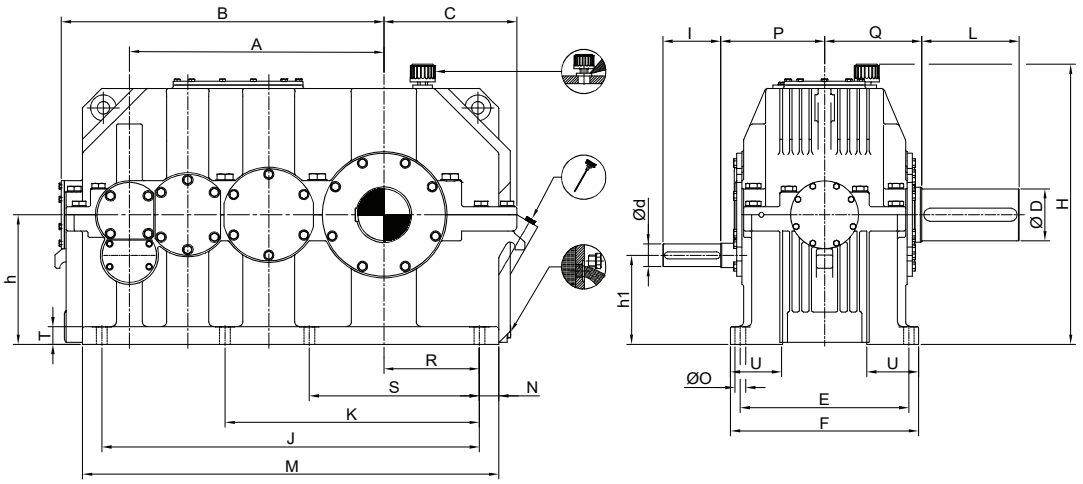


Unit	Input Shaft									Output Shaft		
	iN = 20-45				iN = 50-125							
	d	l	l1	V	d	l	l1	V	P	D	L	Q
TDH3-125	18	70	30	175	18	70	30	175	135	55	110	135
TDH3-140	22	80	40	185	22	80	40	185	145	60	140	145
TDH3-160	25	80	40	195	22	80	40	195	155	70	140	155
TDH3-180	25	80	40	210	25	80	40	210	170	80	170	170
TDH3-200	32	100	60	230	30	100	60	230	190	90	170	190
TDH3-225	40	120	80	250	35	100	60	250	210	100	210	210
TDH3-250	50	130	80	275	40	120	80	265	225	110	210	225
TDH3-280	55	130	80	290	45	120	80	280	240	120	210	240
TDH3-315	60	160	110	325	50	130	80	325	275	140	250	275
TDH3-355	70	160	110	350	55	130	80	350	300	160	300	300
TDH3-400	75	160	110	385	60	160	110	385	335	180	300	335
TDH3-450	85	190	130	430	70	160	110	420	370	200	350	370

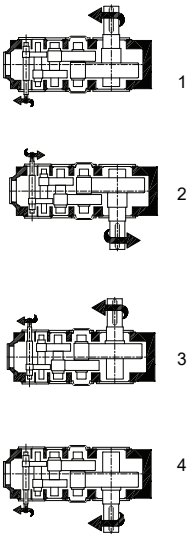
Unit	Foundation																
	A	~B	C	E	F	h	h1	~H	R	S	K	J	M	N	O	T	U
TDH3-125	215	340	150	210	240	140	77	325	105	185	-	385	425	20	14	24	55
TDH3-140	240	365	165	230	260	160	89	365	115	205	-	420	470	25	14	24	60
TDH3-160	270	410	185	250	290	180	100	405	130	235	-	465	525	30	18	30	65
TDH3-180	305	455	210	275	310	200	110	465	145	260	-	515	585	35	18	30	70
TDH3-200	340	505	235	310	350	225	125	515	160	290	-	575	655	40	22	36	80
TDH3-225	385	570	270	350	390	250	140	565	185	330	-	660	740	40	22	36	100
TDH3-250	430	635	300	390	440	280	155	625	205	360	-	740	830	45	27	45	115
TDH3-280	480	700	330	420	470	315	175	700	230	405	-	820	920	50	27	45	130
TDH3-315	540	785	370	470	530	355	195	780	260	460	-	925	1035	55	33	55	145
TDH3-355	605	875	410	520	580	400	220	870	295	520	-	1045	1165	60	33	55	160
TDH3-400	680	980	460	590	670	450	250	970	335	580	-	1180	1310	65	39	65	180
TDH3-450	765	1100	530	640	720	500	275	1070	380	680	1000	1335	1475	70	39	65	200

- Key and Keyways for shaft conform to IS 2048 / DIN 6885-1 / ISO/R773.
- Shaft centering conform to DIN 332/2 Form DS (with threads)

Dimensions Horizontal Mounting Unit - TDH4 Offset Input



SHAFT HANDING / ROTATION

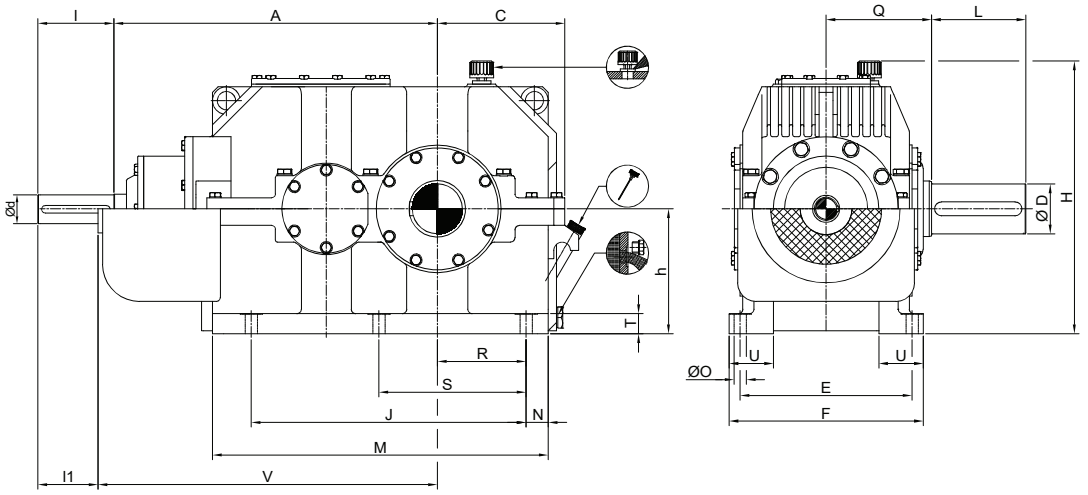


Unit	Input Shaft							Output Shaft		
	iN = 90-224			iN = 250-560						
	d	l	l1	d	l	l1	P	D	L	Q
TDH4-160	18	70	30	18	70	30	155	70	140	155
TDH4-180	18	70	30	18	70	30	170	80	170	170
TDH4-200	22	80	40	22	80	40	190	90	170	190
TDH4-225	22	80	40	22	80	40	210	100	210	210
TDH4-250	25	80	40	25	80	40	225	110	210	225
TDH4-280	32	100	60	30	100	60	240	120	210	240
TDH4-315	40	120	80	35	100	60	275	140	250	275
TDH4-355	45	120	80	40	120	80	300	160	300	300
TDH4-400	50	130	80	45	120	80	335	180	300	335
TDH4-450	55	130	80	50	130	80	370	200	350	370

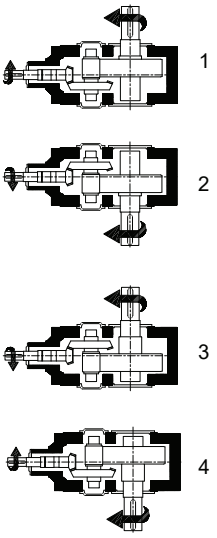
Unit	Foundation																
	A	~B	C	E	F	h	h1	~H	R	S	K	J	M	N	O	T	U
TDH4-160	350	470	185	250	290	180	117	405	130	235	-	525	585	30	18	30	65
TDH4-180	395	520	210	275	310	200	137	465	145	260	-	580	650	35	18	30	70
TDH4-200	440	570	235	310	350	225	154	515	160	290	-	645	720	40	22	36	80
TDH4-225	495	640	270	350	390	250	170	565	185	330	-	735	805	40	22	36	100
TDH4-250	555	710	300	390	440	280	190	625	205	360	-	815	900	45	27	45	115
TDH4-280	620	790	330	420	470	315	215	700	230	405	-	915	1005	50	27	45	130
TDH4-315	700	890	370	470	530	355	245	780	260	460	710	1035	1140	55	33	55	145
TDH4-355	785	995	410	520	580	400	275	870	295	520	785	1165	1285	60	33	55	160
TDH4-400	880	1105	460	590	670	450	310	970	335	580	890	1315	1435	65	39	65	180
TDH4-450	990	1240	530	640	720	500	340	1070	380	680	1000	1485	1615	70	39	65	200

- Key and Keyways for shaft conform to IS 2048 / DIN 6885-1 / ISO/R773.
- Shaft centering conform to DIN 332/2 Form DS (with threads)

Dimensions Horizontal Mounting Unit - TDB2



SHAFT HANDING / ROTATION

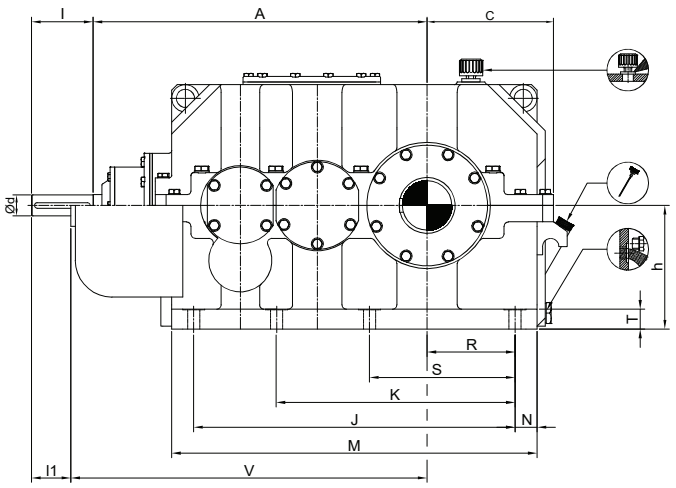


Unit	Input Shaft								Output Shaft		
	iN = 5-12.5				iN = 14-22.4						
	d	I	I1	V	d	I	I1	V	D	L	Q
TDB2-80	19	70	30	290	19	70	30	290	32	80	100
TDB2-90	22	80	40	320	22	80	40	320	40	110	105
TDB2-100	24	80	40	345	24	80	40	345	45	110	115
TDB2-110	28	80	40	380	28	80	40	380	50	110	125
TDB2-125	32	100	60	415	28	80	40	415	55	110	135
TDB2-140	38	100	60	450	32	100	60	450	60	140	145
TDB2-160	42	120	80	500	38	100	60	500	70	140	155
TDB2-180	48	120	80	545	42	120	80	545	80	170	170
TDB2-200	52	130	80	600	48	120	80	590	90	170	190
TDB2-225	58	130	80	660	52	130	80	660	100	210	210
TDB2-250	65	160	110	725	58	130	80	725	110	210	225
TDB2-280	70	160	110	795	65	160	110	795	120	210	240
TDB2-315	85	190	130	900	80	180	130	890	140	250	275
TDB2-355	90	190	130	980	85	190	130	980	160	300	300
TDB2-400	100	230	170	1105	90	190	130	1105	180	300	335
TDB2-450	110	230	170	1220	100	230	170	1220	200	350	370

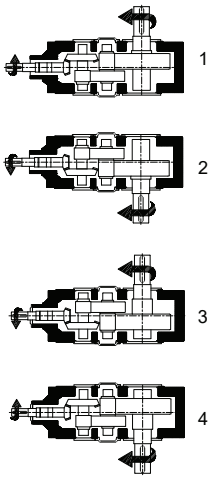
Unit	Foundation													
	A	C	E	F	h	~H	R	S	J	M	N	O	T	U
TDB2-80	250	100	155	180	90	225	60	-	210	250	20	14	24	40
TDB2-90	280	110	160	190	100	245	70	-	230	270	20	14	24	45
TDB2-100	305	120	180	210	110	265	80	-	255	295	20	14	24	50
TDB2-110	340	130	195	230	125	295	90	-	280	320	20	14	24	50
TDB2-125	375	150	210	240	140	325	105	-	320	360	20	14	24	55
TDB2-140	410	165	230	260	160	365	115	-	355	405	25	14	24	60
TDB2-160	460	185	250	290	180	405	130	-	400	460	30	18	30	65
TDB2-180	505	210	275	310	200	465	145	-	445	515	35	18	30	70
TDB2-200	550	235	310	350	225	515	160	-	490	570	40	22	36	80
TDB2-225	610	270	350	390	250	565	185	-	555	635	40	22	36	100
TDB2-250	675	300	390	440	280	625	205	320	620	710	45	27	45	115
TDB2-280	745	330	420	470	315	700	230	370	695	795	50	27	45	130
TDB2-315	840	370	470	530	355	780	260	410	785	895	55	33	55	145
TDB2-355	920	410	520	580	400	870	295	460	880	1000	60	33	55	160
TDB2-400	1045	460	590	670	450	970	335	525	1005	1135	65	39	65	180
TDB2-450	1160	530	640	720	500	1070	380	600	1145	1285	70	39	65	200

- Key and Keyways for shaft conform to IS 2048 / DIN 6885-1 / ISO/R773.
- Shaft centering conform to DIN 332/2 Form DS (with threads)

Dimensions Horizontal Mounting Unit - TDB3



SHAFT HANDING / ROTATION

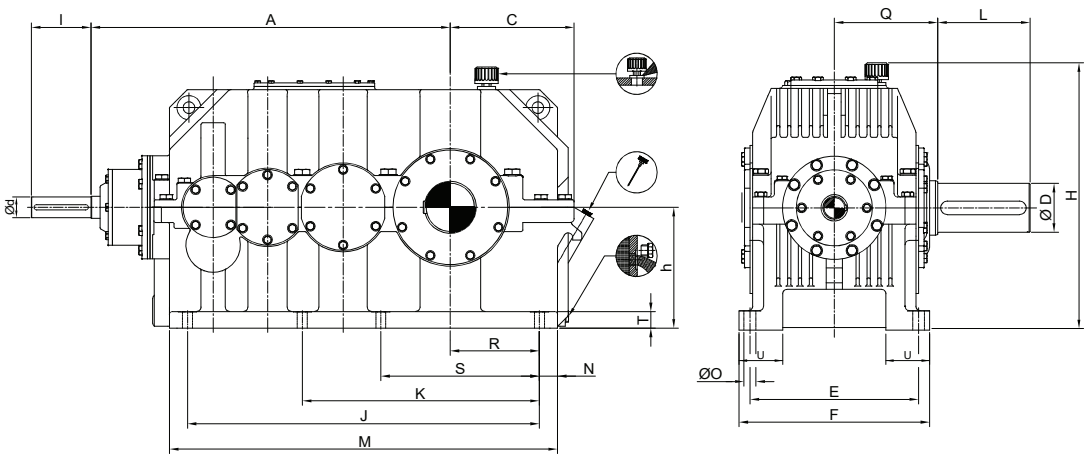


Unit	Input Shaft								Output Shaft		
	iN = 16 - 56				iN = 63 -100						
	d	l	l1	V	d	l	l1	V	D	L	Q
TDB3-125	22	80	40	445	22	80	40	445	55	110	135
TDB3-140	24	80	40	485	24	80	40	485	60	140	145
TDB3-160	28	80	40	540	28	80	40	540	70	140	155
TDB3-180	32	100	60	595	28	80	40	595	80	170	170
TDB3-200	38	100	60	650	32	100	60	650	90	170	190
TDB3-225	42	120	80	725	38	100	60	725	100	210	210
TDB3-250	48	120	80	795	42	120	80	795	110	210	225
TDB3-280	52	130	80	880	48	120	80	870	120	210	240
TDB3-315	58	130	80	975	52	130	80	975	140	250	275
TDB3-355	65	160	110	1080	58	130	80	1080	160	300	300
TDB3-400	70	160	110	1195	65	160	110	1195	180	300	335
TDB3-450	85	190	130	1350	80	180	130	1340	200	350	370

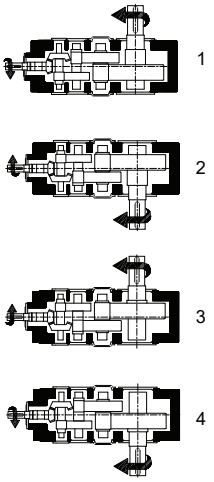
Unit	Foundation														
	A	C	E	F	h	~H	R	S	K	J	M	N	O	T	U
TDB3-125	405	150	210	240	140	325	105	185	-	385	425	20	14	24	55
TDB3-140	445	165	230	260	160	365	115	205	-	420	470	25	14	24	60
TDB3-160	500	185	250	290	180	405	130	235	-	465	525	30	18	30	65
TDB3-180	555	210	275	310	200	465	145	260	-	515	585	35	18	30	70
TDB3-200	610	235	310	350	225	515	160	290	-	575	655	40	22	36	80
TDB3-225	685	270	350	390	250	565	185	330	-	660	740	40	22	36	100
TDB3-250	755	300	390	440	280	625	205	360	-	740	830	45	27	45	115
TDB3-280	830	330	420	470	315	700	230	405	-	820	920	50	27	45	130
TDB3-315	925	370	470	530	355	780	260	460	-	925	1035	55	33	55	145
TDB3-355	1030	410	520	580	400	870	295	520	-	1045	1165	60	33	55	160
TDB3-400	1145	460	590	670	450	970	335	580	-	1180	1310	65	39	65	180
TDB3-450	1290	530	640	720	500	1070	380	680	1000	1335	1475	70	39	65	200

- Key and Keyways for shaft conform to IS 2048 / DIN 6885-1 / ISO/R773.
- Shaft centering conform to DIN 332/2 Form DS (with threads)

Dimensions Horizontal Mounting Unit - TDB4



SHAFT HANDING / ROTATION



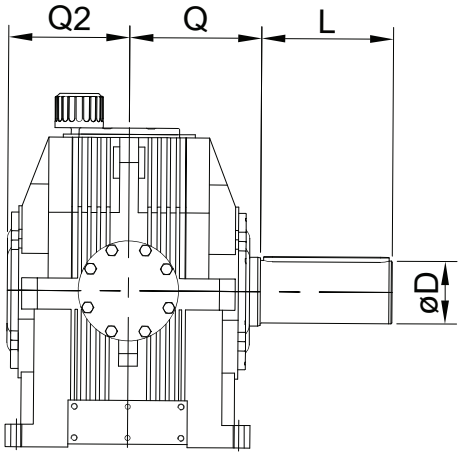
Unit	Input Shaft						Output Shaft		
	iN=80 - 280			iN= 315 - 560					
	d	l	l1	d	l	l1	D	L	Q
TDB4-160	19	70	30	19	70	30	70	140	155
TDB4-180	22	80	40	22	80	40	80	170	170
TDB4-200	28	80	40	28	80	40	90	170	190
TDB4-225	28	80	40	28	80	40	100	210	210
TDB4-250	32	100	60	28	80	40	110	210	225
TDB4-280	38	100	60	32	100	60	120	210	240
TDB4-315	42	120	80	38	100	60	140	250	275
TDB4-355	48	120	80	42	120	80	160	300	300
TDB4-400	52	130	80	48	120	80	180	300	335
TDB4-450	58	130	80	52	130	80	200	350	370

Unit	Foundation														
	A	C	E	F	h	~H	R	S	K	J	M	N	O	T	U
TDB4-160	520	185	250	290	180	405	130	235	-	525	585	30	18	30	65
TDB4-180	585	210	275	310	200	465	145	260	-	580	650	35	18	30	70
TDB4-200	645	235	310	350	225	515	160	290	-	645	720	40	22	36	80
TDB4-225	725	270	350	390	250	565	185	330	-	735	805	40	22	36	100
TDB4-250	805	300	390	440	280	625	205	360	-	815	900	45	27	45	115
TDB4-280	890	330	420	470	315	700	230	405	-	915	1005	50	27	45	130
TDB4-315	1000	370	470	530	355	780	260	460	710	1035	1140	55	33	55	145
TDB4-355	1110	410	520	580	400	870	295	520	785	1165	1285	60	33	55	160
TDB4-400	1230	460	590	670	450	970	335	580	890	1315	1435	65	39	65	180
TDB4-450	1375	530	640	720	500	1070	380	680	1000	1485	1615	70	39	65	200

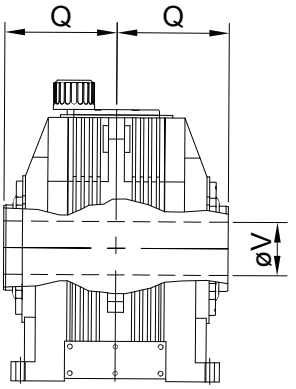
- Key and Keyways for shaft conform to IS 2048 / DIN 6885-1 / ISO/R773.
- Shaft centering conform to DIN 332/2 Form DS (with threads)

Output Shaft types

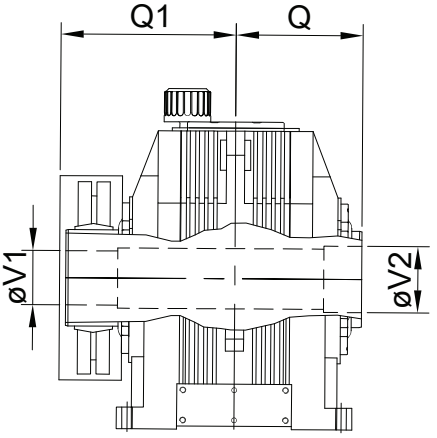
Size	Solid Output			
	D	L	Q	Q2
80	32	80	100	91
90	40	110	105	96
100	45	110	115	106
110	50	110	125	117
125	55	110	135	125
140	60	140	145	135
160	70	140	155	145
180	80	170	170	160
200	90	170	190	175
225	100	210	210	200
250	110	210	225	220
280	120	210	240	235
315	140	250	275	270
355	160	300	300	295
400	180	300	335	330
450	200	350	370	365



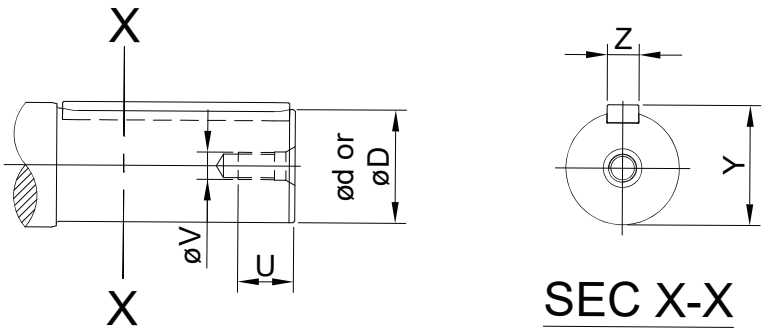
Size	Hollow Output with Keyway	
	V	Q
100	50	115
110	55	125
125	60	135
140	70	145
160	80	155
180	90	170
200	100	190
225	110	210
250	120	225



Size	Hollow Output with Shrink Disc			
	V1	V2	Q	Q1
125	60	65	135	185
140	70	75	145	195
160	75	80	155	215
180	85	90	170	240
200	95	100	190	265
225	115	120	210	295
250	125	130	225	315
280	140	145	240	345
315	160	165	275	385
355	170	180	300	430
400	190	200	335	485
450	220	230	370	535

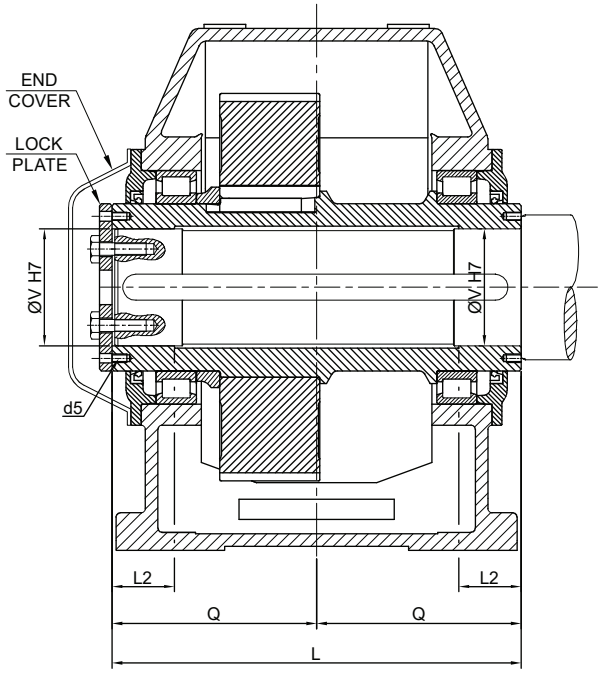


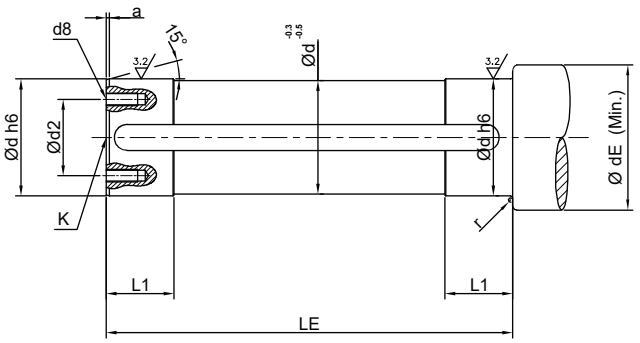
Solid Shaft details (mm)



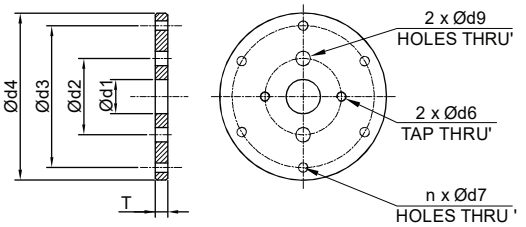
d or D	Solid Output					
	Z		Y		V	U
	Max.	Min.	Max.	Min.		
18	6.000	5.970	20.5	20.4	M6	16
19	6.000	5.970	21.5	21.4	M6	16
20	6.000	5.970	22.5	22.4	M6	16
22	6.000	5.970	24.5	24.4	M8	19
24	8.000	7.964	27.0	26.8	M8	19
25	8.000	7.964	28.0	27.8	M10	22
26	8.000	7.964	29.0	28.8	M10	22
28	8.000	7.964	31.0	30.8	M10	22
30	8.000	7.964	33.0	32.8	M10	22
32	10.000	9.964	35.0	34.8	M12	28
35	10.000	9.964	38.0	37.8	M12	28
38	10.000	9.964	41.0	40.8	M12	28
40	12.000	11.957	43.0	42.8	M16	36
42	12.000	11.957	45.0	44.8	M16	36
45	14.000	13.957	48.5	48.3	M16	36
46	14.000	13.957	49.5	49.3	M16	36
48	14.000	13.957	51.5	51.3	M16	36
50	14.000	13.957	53.5	53.3	M16	36
52	16.000	15.957	56.0	55.8	M20	42
55	16.000	15.957	59.0	58.8	M20	42
58	16.000	15.957	62.0	61.8	M20	42
60	18.000	17.957	64.0	63.8	M20	42
65	18.000	17.957	69.0	68.8	M20	42
70	20.000	19.948	74.5	74.3	M20	42
75	20.000	19.948	79.5	79.3	M20	42
80	22.000	21.948	85.0	84.8	M20	42
85	22.000	21.948	90.0	89.8	M20	42
90	25.000	24.948	95.0	94.8	M24	50
95	25.000	24.948	100.0	99.8	M24	50
100	28.000	27.948	106.0	105.8	M24	50
105	28.000	27.948	111.0	110.8	M24	50
110	28.000	27.948	116.0	115.8	M24	50
115	32.000	31.938	122.0	121.8	M24	50
120	32.000	31.938	127.0	126.8	M24	50
130	32.000	31.938	137.0	136.8	M24	50
145	36.000	35.938	153.0	152.7	M30	60
160	40.000	39.938	169.0	168.7	M30	60
180	45.000	44.938	190.0	189.7	M30	60
200	45.000	44.938	210.0	209.7	M30	60
200	45.000	44.938	210.0	209.7	M30	60

Hollow Output Shaft details with Keyway (mm)



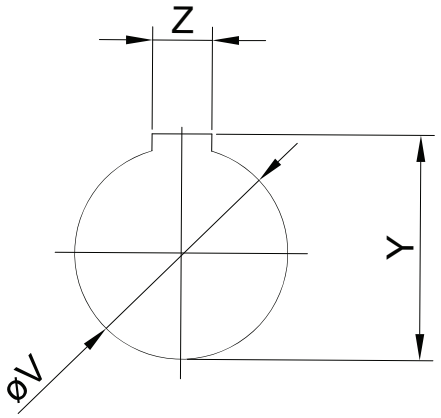


EQUIPMENT SHAFT



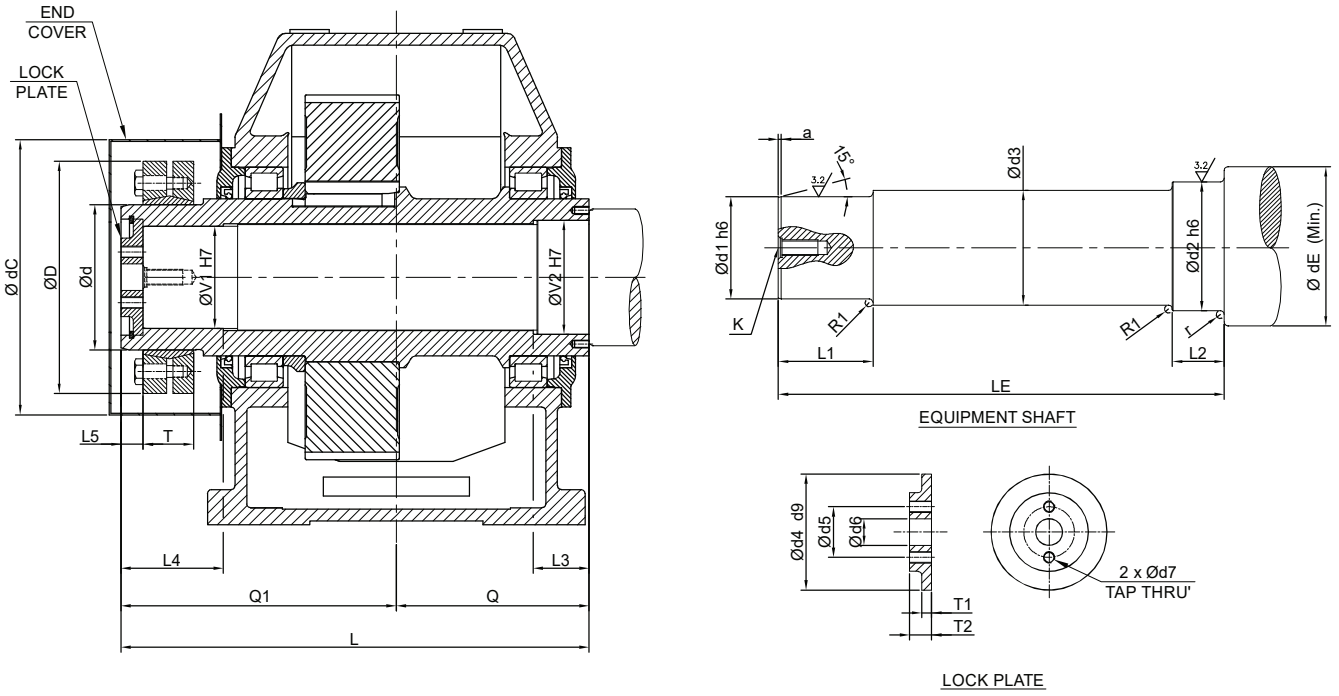
LOCK PLATE

Unit	Hollow Output with Keyway					Equipment Shaft (Driven Shaft) dimensions									Lock Plate dimensions								
	V	L	Q	L2	d5	d	dE	d2	d8	L1	LE	a	r	K	d1	d2	d3	d4	d6	d7	d9	n	T
100	50	230	115	40	M6x12	50	65	30	M8x16	50	227	3	2.5	M16	18	30	62	73	M8	6.6	9	4	8
110	55	250	125	45	M6x12	55	75	35	M8x16	55	247	4	2.5	M16	18	35	70	83	M8	6.6	9	4	8
125	60	270	135	50	M6x12	60	80	40	M10x20	60	267	4	2.5	M20	22	40	75	88	M10	6.6	11	4	8
140	70	290	145	55	M6x12	70	90	50	M10x20	70	287	4	2.5	M20	22	50	90	108	M10	6.6	11	6	8
160	80	310	155	65	M6x12	80	100	60	M10x20	80	307	5	4	M20	22	60	100	118	M10	6.6	11	6	10
180	90	340	170	75	M8x16	90	110	70	M10x20	90	337	5	4	M20	22	70	110	128	M10	9	11	6	10
200	100	380	190	85	M8x16	100	120	75	M12x25	100	377	5	4	M24	27	75	120	137	M10	9	11	6	10
225	110	420	210	95	M10x20	110	135	85	M12x25	110	417	5	4	M24	27	85	135	158	M12	11	14	6	12
250	120	450	225	105	M10x20	120	145	95	M12x25	120	447	6	5	M24	27	95	155	178	M12	11	14	6	12



V	Hollow Output Shaft Bore & Keyway Details			
	Z		Y	
	Max.	Min.	Max.	Min.
45	14.022	13.979	49.0	48.8
50	14.022	13.979	54.0	53.8
55	16.022	15.979	59.5	59.3
60	18.022	17.979	64.6	64.4
70	20.026	19.974	75.1	74.9
80	22.026	21.974	85.6	85.4
90	25.026	24.974	95.6	95.4
100	28.026	27.974	106.6	106.4
110	28.026	27.974	116.6	116.4

Hollow Output Shaft details with Shrink Disc (mm)



Unit	Hollow Output with Shrink Disc								Equipment Shaft (Driven Shaft) dimensions									Lock Plate dimensions						Lock Circlip Size
	V1	V2	L	Q	Q1	L3	L4	L5	d1	d2	d3	dE	L1	L2	LE	a	r	K	d4	d5	d6	d7	T1	T2	
125	60	65	320	135	185	30	50	12	60	65	62	80	55	45	305	3	2	M20x42	65	35	22	M8	5	13	65x2.5
140	70	75	340	145	195	30	65	12	70	75	72	90	65	45	323	3	2	M20x42	75	40	22	M8	7	15	75x2.5
160	75	80	370	155	215	35	70	12	75	80	77	95	70	50	351	3	2	M20x42	80	45	22	M8	7	17	80x2.5
180	85	90	410	170	240	40	80	16	85	90	87	105	80	55	388	3	2	M20x42	90	50	22	M10	8	20	90x3
200	95	100	455	190	265	45	90	16	95	100	97	120	90	60	433	3	2	M24x50	100	60	27	M10	8	20	100x3
225	115	120	505	210	295	55	110	16	115	120	117	140	110	70	480	3	2	M24x50	120	70	27	M10	8	23	120x4
250	125	130	540	225	315	60	120	16	125	130	127	150	120	80	512	3	3	M24x50	130	80	27	M12	10	25	130x4
280	140	145	585	240	345	65	130	16	140	145	142	170	135	90	554	4	3	M30x60	145	85	33	M12	10	28	145x4
315	160	165	660	275	385	75	150	20	160	165	162	190	150	100	629	4	3	M30x60	165	90	33	M12	10	28	165x4
355	170	180	730	300	430	80	160	20	170	180	177	205	160	110	699	4	3	M30x60	175	100	33	M16	12	28	175x4
400	190	200	820	335	485	90	180	23	190	200	197	225	180	120	789	5	3	M30x60	195	110	33	M16	12	28	195x4
450	220	230	905	370	535	100	200	23	220	230	227	260	190	130	870	5	4	M30x60	230	120	33	M20	12	32	230x5

Unit	Shrink Disc Details							
	V1	Size	d	D	T	~ dC	Screws	Tightening Torque (Nm)
125	60	80 x 145	80	145	32.5	170	M8	30
140	70	90 x 155	90	155	39	195	M8	30
160	75	100 x 170	100	170	44	210	M8	30
180	85	110 x 185	110	185	50	205	M10	59
200	95	125 x 215	125	215	54	235	M10	59
225	115	155 x 265	155	265	64.5	285	M12	100
250	125	165 x 290	165	290	71	310	M16	250
280	140	185 x 330	185	330	86	350	M16	250
315	160	200 x 350	200	350	86	380	M16	250
355	170	220 x 370	220	370	104	400	M16	250
400	190	260 x 430	260	430	120	470	M20	490
450	220	280 x 460	280	460	134	510	M20	490

Holdback / Backstop

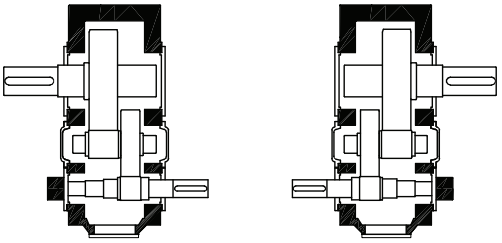
Centrifugally Lift off type Roller Holdback device are available for all Units except for single reduction units (Model TDH1). For Helical units these are installed in the Input (Hi-speed) shafts and for Bevel-Helical units fitted on the 2nd pinion shaft lines (Bevel Gear line).

All Holdbacks have adequate capacities to meet full rated torque. These can run with immersion lubrication, circulating lubrication or – in the case of operation above the sprag lift-off speed – without oil lubrication.

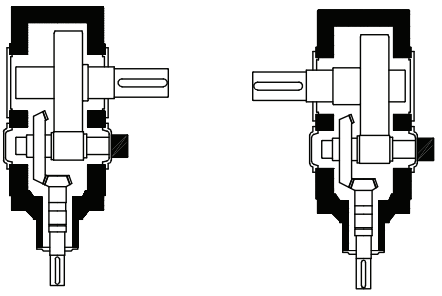
Lubrication is provided automatically from the oil in the gear unit.

The holdback position for all units are shown below. Units with Right-angled shafts like TDB2, TDB2SF, TDB3 & TDB3SF depends on relative shaft rotations and are also shown:

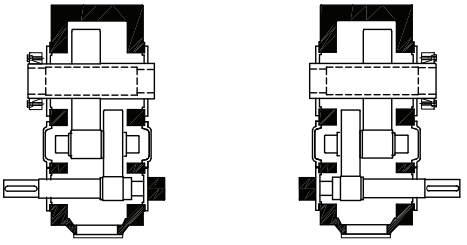
2 STAGE HELICAL



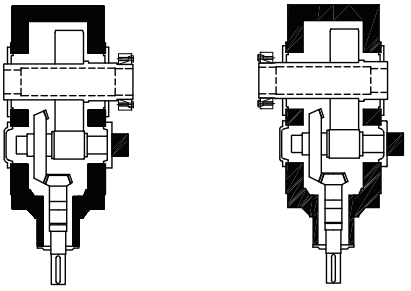
2 STAGE BEVEL HELICAL



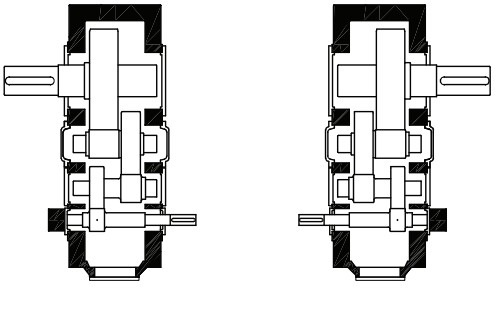
2 STAGE HELICAL
HOLLOW SHAFT



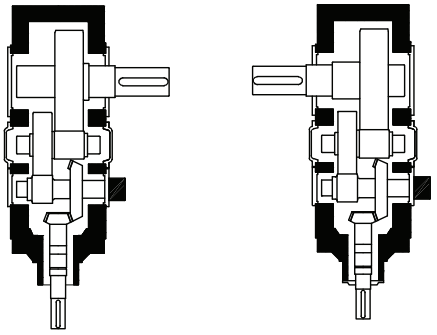
2 STAGE BEVEL HELICAL
HOLLOW SHAFT



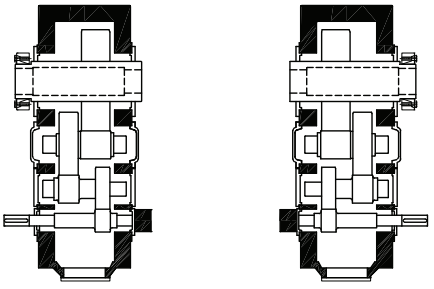
3 STAGE HELICAL



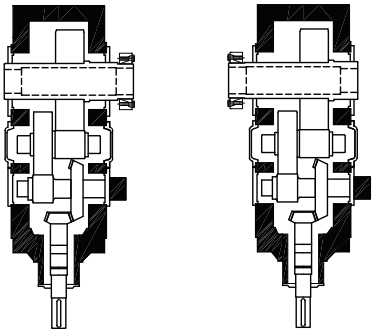
3 STAGE BEVEL HELICAL



3 STAGE HELICAL
HOLLOW SHAFT



3 STAGE BEVEL HELICAL
HOLLOW SHAFT



Cooling Coil connections

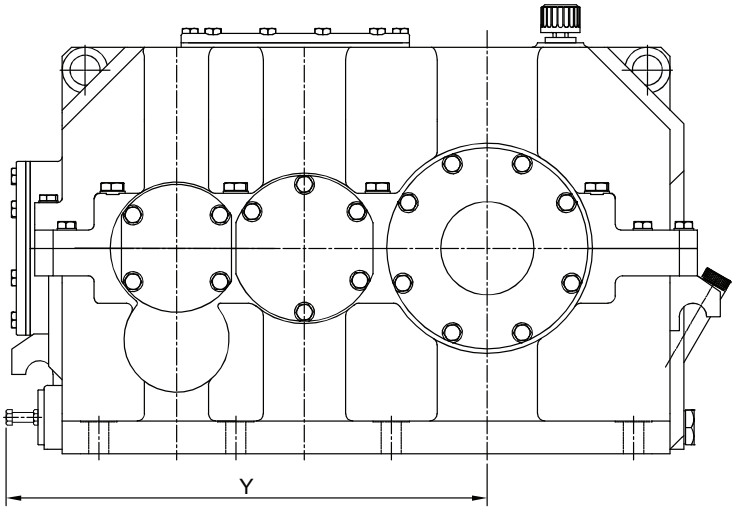
Standard Cooling coils supplied in-built with the Gear units are suitable for fresh water. Brackish or sea water if used would require special design.

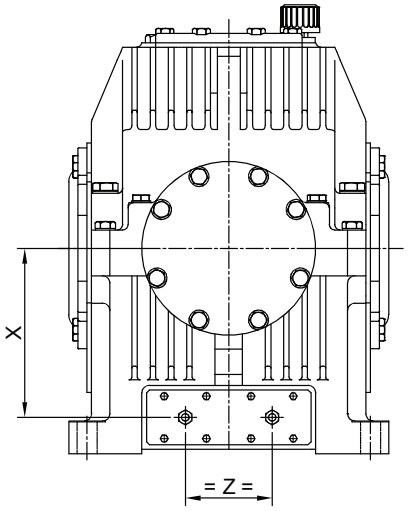
The water flow is suitable in both direction of rotations and hence the connections are interchangeable. Cooling coil connections for water inlet and outlet pipes are ø12mm on all sizes. Fittings for cooling coils supplied with gear units are to be provided by the customers. These are not under IC's scope of supply.

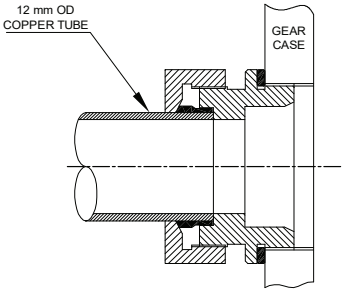
The ratings mentioned below for cooling coil are based on a cooling water inlet temperature of 20°C and as per following flow rates with inlet pressure of 2-8 bar:

Size ≤ model 200 : 5.7 litre/min.

Size > model 200 : 9.1 litre/min.







Size of Unit	TDH1, TDB2, TDB2SF			TDH2, TDH2SF, TDH3 (Offset Input), TDH3SF (Offset Input), TDB3, TDB3SF			TDH3, TDH3SF		
	X	Y	Z	X	Y	Z	X	Y	Z
110	103	255	50	103	315	50	-	-	-
125	112	280	60	112	345	60	112	390	60
140	127	325	90	127	390	90	127	440	90
160	145	665	110	145	430	110	145	490	110
180	165	405	110	165	475	110	165	550	110
200	185	440	135	185	525	135	185	590	135
225	210	485	135	210	590	135	210	655	135
250	237	535	150	237	655	150	237	725	150
280	272	595	150	272	720	150	272	505	150
315	305	660	150	305	800	150	305	905	150
355	345	725	150	345	890	150	345	1010	150
400	393	820	150	393	995	150	393	1120	150
450	442	920	150	442	1110	150	442	1250	150

Actual (Exact) ratio - Helical Units TDH1, TDH2, TDH3 & TDH4

Type	Nom. Ratio iN	Unit Size															
		80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
TDH1	1.25	1.261	1.273	1.238	1.250	1.250	1.250	1.259	1.258	1.241	1.250	1.258	1.267	1.265	1.267	1.265	1.257
	1.4	1.381	1.417	1.391	1.409	1.409	1.400	1.385	1.414	1.407	1.400	1.414	1.393	1.406	1.406	1.406	1.394
	1.6	1.591	1.591	1.619	1.600	1.600	1.609	1.583	1.593	1.600	1.607	1.593	1.615	1.621	1.621	1.600	1.600
	1.8	1.800	1.810	1.800	1.810	1.810	1.810	1.818	1.800	1.783	1.808	1.793	1.792	1.815	1.815	1.786	1.806
	2	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000
	2.24	2.263	2.263	2.250	2.227	2.238	2.211	2.238	2.250	2.250	2.227	2.240	2.250	2.261	2.261	2.269	2.222
	2.5	2.500	2.500	2.500	2.500	2.500	2.526	2.500	2.500	2.500	2.520	2.522	2.500	2.480	2.500	2.480	2.480
	2.8	2.778	2.833	2.800	2.800	2.778	2.778	2.800	2.800	2.800	2.783	2.810	2.792	2.783	2.800	2.783	2.783
	3.15	3.158	3.105	3.143	3.150	3.158	3.158	3.158	3.158	3.158	3.143	3.158	3.136	3.143	3.167	3.143	3.143
	3.55	3.529	3.526	3.526	3.526	3.556	3.550	3.529	3.579	3.526	3.526	3.556	3.550	3.579	3.529	3.526	3.579
	4	3.944	4.000	4.000	4.000	3.944	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
	4.5	4.474	4.556	4.444	4.471	4.444	4.500	4.474	4.500	4.444	4.444	4.444	4.500	4.556	4.444	4.444	4.444
	5	5.059	5.053	5.000	4.944	5.000	5.000	5.000	5.000	5.056	5.000	5.000	5.000	5.000	5.063	5.000	5.000
	5.6	5.579	5.556	5.529	5.667	5.611	5.611	5.588	5.632	5.588	5.579	5.611	5.611	5.611	5.647	5.588	5.579
Type	**Nom. Ratio iN**	**80**	**90**	**100**	**110**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**	**355**	**400**	**450**
TDH2 / TDH2SF	5.6	-	-	5.714	5.670	5.714	5.684	5.714	5.714	5.714	5.714	5.684	5.591	5.681	5.678	5.631	5.704
	6.3	-	-	6.286	6.300	6.316	6.316	6.316	6.316	6.316	6.286	6.316	6.273	6.286	6.333	6.286	6.286
	7.1	-	-	7.113	7.129	7.147	7.105	7.033	7.068	6.981	7.034	7.105	7.057	7.000	7.093	7.071	7.106
	8	-	-	7.981	7.981	8.047	7.988	7.861	8.010	7.795	7.892	8.000	7.988	7.971	7.906	7.934	8.092
	9	-	-	8.909	8.816	8.889	8.875	8.824	8.947	8.909	8.816	8.889	8.875	9.019	8.900	8.816	8.876
	10	-	-	9.991	9.795	10.074	9.940	9.882	9.942	9.795	9.874	9.956	9.940	9.959	9.916	9.844	9.959
	11.2	-	-	11.136	11.136	11.041	11.157	11.118	11.302	11.136	11.136	11.228	11.211	11.248	11.146	11.060	11.248
	12.5	-	-	12.518	12.446	12.538	12.518	12.446	12.725	12.518	12.446	12.725	12.518	12.620	12.549	12.518	12.809
	14	-	-	14.105	13.909	14.222	14.200	14.118	14.117	14.105	14.105	14.222	14.200	14.316	14.118	14.105	14.316
	16	-	-	16.000	15.778	15.778	16.000	16.000	15.778	16.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000
	18	-	-	18.000	17.895	17.969	17.778	17.882	17.778	18.000	17.895	18.000	17.778	17.778	17.778	18.000	18.222
	20	-	-	20.222	20.235	19.930	20.000	19.778	20.000	20.000	20.000	20.000	20.222	20.000	20.000	20.000	20.000
	22.4	-	-	22.469	22.616	22.456	22.500	22.120	22.500	22.222	22.222	22.222	22.750	22.778	22.222	22.222	22.222
	25	-	-	25.278	25.013	25.263	25.000	24.722	25.000	25.278	25.000	25.000	25.278	25.000	25.313	25.000	25.000
Type	**Nom. Ratio iN**	**80**	**90**	**100**	**110**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**	**355**	**400**	**450**
TDH3 / TDH3SF	20	-	-	-	-	20.249	20.011	20.011	19.852	19.737	19.600	19.789	19.412	19.573	20.018	19.741	19.478
	22.4	-	-	-	-	22.632	22.338	22.105	21.930	21.930	22.000	22.105	22.186	21.863	22.242	21.935	22.038
	25	-	-	-	-	25.351	25.053	24.561	24.854	24.561	24.640	24.561	24.394	24.487	24.911	24.567	24.335
	28	-	-	-	-	28.543	28.163	27.451	28.168	27.427	27.646	27.654	27.611	27.885	27.765	27.564	27.711
	31.5	-	-	-	-	31.283	31.612	30.882	32.022	31.180	31.180	31.189	31.140	31.495	31.207	30.967	31.299
	35.5	-	-	-	-	34.866	35.233	35.108	35.095	34.998	35.078	35.457	35.402	35.520	35.196	34.926	35.351
	40	-	-	-	-	39.594	39.532	39.303	39.515	39.344	39.204	40.185	39.532	39.854	39.628	39.532	40.256
	45	-	-	-	-	44.580	44.440	43.926	44.873	44.144	43.888	45.245	44.440	44.543	44.912	44.144	45.168
	50	-	-	-	-	50.812	50.074	49.092	50.901	50.074	49.783	50.194	50.074	50.482	50.196	50.074	51.235
	56	-	-	-	-	57.637	56.800	55.686	56.468	56.421	56.421	56.099	56.800	57.263	56.471	56.421	57.263
	63	-	-	-	-	64.000	63.900	63.158	64.311	62.690	63.059	63.210	63.900	64.044	63.529	62.690	63.626
	71	-	-	-	-	71.000	72.000	71.579	71.877	71.111	71.529	71.111	72.000	71.579	72.000	71.111	71.111
	80	-	-	-	-	79.678	80.889	80.941	79.719	80.000	79.111	80.000	80.000	80.000	80.000	80.889	80.000
	90	-	-	-	-	90.744	89.877	90.464	89.825	90.000	88.480	90.000	88.889	88.889	88.889	91.000	91.111
	100	-	-	-	-	100.646	101.111	100.052	101.053	100.000	98.889	100.000	101.111	100.000	100.000	101.111	100.000
	112	-	-	-	-	113.404	113.750	111.901	113.684	111.111	109.877	111.111	113.750	113.889	111.111	112.346	111.111
Type	**Nom. Ratio iN**	**80**	**90**	**100**	**110**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**	**355**	**400**	**450**
TDH4 / TDH4SF	90	-	-	-	-	-	-	88.948	88.191	89.010	87.353	89.226	87.314	87.495	88.889	89.010	88.378
	100	-	-	-	-	-	-	99.412	99.950	99.394	98.011	100.462	98.830	99.636	99.071	99.870	100.641
	112	-	-	-	-	-	-	111.357	111.959	111.474	108.901	113.857	110.689	111.592	110.079	109.811	112.718
	125	-	-	-	-	-	-	124.458	127.140	125.074	121.911	128.194	124.433	124.720	124.756	122.622	126.471
	140	-	-	-	-	-	-	138.715	141.704	139.402	138.593	140.498	139.670	140.310	141.828	139.402	142.636
	160	-	-	-	-	-	-	157.348	157.203	157.072	157.072	157.027	158.431	159.158	159.557	157.072	159.417
	180	-	-	-	-	-	-	177.163	176.999	176.576	175.552	178.318	177.762	178.172	179.649	176.576	178.172
	200	-	-	-	-	-	-	200.784	197.822	200.295	199.133	200.608	200.295	199.133	203.602	200.295	199.133
	224	-	-	-	-	-	-	224.395	224.395	227.200	225.882	222.550	225.684	225.684	227.556	227.200	225.882
	250	-	-	-	-	-	-	255.766	255.766	256.000	252.444	252.444	256.000	256.000	252.444	256.000	256.000
	280	-	-	-	-	-	-	290.083	291.289	284.444	282.144	284.444	288.000	286.316	284.000	284.444	284.444
	315	-	-	-	-	-	-	322.105	323.444	320.000	320.000	323.951	320.000	320.000	320.000	320.000	318.129
	355	-	-	-	-	-	-	360.000	364.444	360.000	357.895	364.444	355.556	355.556	355.556	360.000	362.313
	400	-	-	-	-	-	-	404.000	408.988	404.444	404.706	404.211	400.000	393.242	400.000	400.000	404.938
	450	-	-	-	-	-	-	456.842	453.614	455.000	447.602	454.737	444.444	439.506	444.444	455.000	455.556
	500	-	-	-	-	-	-	505.264	510.316	505.556	500.261	505.263	505.556	494.444	500.000	505.556	500.000
	560	-	-	-	-	-	-	565.098	574.105	561.728	555.846	561.404	568.750	563.117	555.556	561.728	555.556

Actual (Exact) ratio - Bevel Helical Units TDB2, TDB3 & TDB4

Type	Nom. Ratio iN	Unit Size															
		80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
TDB2 / TDB2SF	5	5.113	5.028	5.088	5.100	5.113	5.113	5.113	5.113	5.113	5.088	5.113	5.078	5.088	5.127	5.088	5.088
	5.6	5.714	5.709	5.709	5.709	5.757	5.748	5.714	5.794	5.709	5.709	5.757	5.748	5.794	5.714	5.709	5.794
	6.3	6.386	6.476	6.476	6.476	6.386	6.476	6.476	6.476	6.476	6.476	6.476	6.476	6.476	6.476	6.476	6.476
	7.1	7.058	7.158	7.158	7.158	7.058	7.158	7.158	7.158	7.158	7.158	7.158	7.158	7.158	7.158	7.158	7.158
	8	7.889	8.000	8.000	8.000	7.889	8.000	8.000	8.000	8.000	8.000	8.000	8.000	8.000	8.000	8.000	8.000
	9	8.817	8.941	8.941	8.941	8.817	8.941	8.941	8.941	8.941	8.941	8.941	8.941	8.941	8.941	8.941	8.941
	10	9.745	9.882	9.882	9.882	9.745	9.882	9.882	9.882	9.882	9.882	9.882	9.882	9.882	9.882	9.882	9.882
	11.2	10.988	11.143	11.143	11.143	10.988	11.143	11.143	11.143	11.143	11.143	11.143	11.143	11.143	11.143	11.143	11.143
	12.5	12.462	12.690	12.381	12.454	12.381	12.536	12.462	12.536	12.381	12.381	12.381	12.536	12.690	12.381	12.381	12.381
	14	14.109	14.368	14.017	14.100	14.017	14.192	14.109	14.192	14.017	14.017	14.017	14.192	14.368	14.017	14.017	14.017
	16	15.861	16.152	15.758	15.850	15.758	15.955	15.861	15.955	15.758	15.758	15.758	15.955	16.152	15.758	15.758	15.758
	18	17.936	17.914	17.727	17.530	17.727	17.727	17.727	17.727	17.924	17.727	17.727	17.727	17.727	17.949	17.727	17.727
	20	20.235	20.211	20.000	19.778	20.000	20.000	20.000	20.000	20.222	20.000	20.000	20.000	20.000	20.250	20.000	20.000
	22.4	22.535	22.507	22.273	22.025	22.273	22.273	22.273	22.273	22.520	22.273	22.273	22.273	22.273	22.551	22.273	22.273
Type	**Nom. Ratio iN**	**80**	**90**	**100**	**110**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**	**355**	**400**	**450**
TDB3 / TDB3SF	16	-	-	-	-	15.966	16.190	16.190	16.190	16.361	16.190	16.190	16.190	16.320	16.331	16.190	16.061
	18	-	-	-	-	18.094	18.133	18.133	17.989	17.989	18.133	18.133	18.133	18.021	18.195	18.079	18.021
	20	-	-	-	-	19.999	20.042	20.042	19.883	19.883	20.042	20.042	20.042	19.918	20.110	19.982	19.918
	22.4	-	-	-	-	21.918	22.496	22.547	22.604	22.604	22.604	22.604	22.604	22.496	22.604	22.450	22.496
	25	-	-	-	-	24.497	25.143	25.200	25.263	25.263	25.263	25.263	25.263	25.143	25.263	25.091	25.143
	28	-	-	-	-	27.819	28.211	28.211	28.444	28.400	28.235	28.632	28.211	28.211	28.444	28.400	28.632
	31.5	-	-	-	-	31.556	32.000	32.000	31.556	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000
	35.5	-	-	-	-	35.938	35.556	35.765	35.556	36.000	35.789	36.000	35.556	35.556	35.556	36.000	36.444
	40	-	-	-	-	40.166	39.739	39.972	39.739	40.235	40.000	40.235	39.739	39.739	39.739	40.235	40.732
	45	-	-	-	-	44.549	44.706	44.209	44.706	44.706	44.706	44.706	45.203	44.706	44.706	44.706	44.706
	50	-	-	-	-	49.238	49.412	48.863	49.412	49.412	49.412	49.412	49.961	49.412	49.412	49.412	49.412
	56	-	-	-	-	55.519	55.714	55.095	55.714	55.714	55.714	55.714	56.333	55.714	55.714	55.714	55.714
	63	-	-	-	-	62.856	63.077	62.376	63.077	63.077	63.077	63.077	63.778	63.077	63.077	63.077	63.077
	71	-	-	-	-	70.660	70.909	70.121	70.909	70.909	70.909	70.909	71.697	70.909	70.909	70.909	70.909
	80	-	-	-	-	79.719	80.000	79.111	80.000	80.000	80.000	80.000	80.889	80.000	80.000	80.000	80.000
	90	-	-	-	-	89.825	90.000	88.480	90.000	88.889	88.889	88.889	91.000	91.111	88.889	88.889	88.889
	100	-	-	-	-	100.032	100.227	98.534	100.227	98.990	98.990	98.990	101.341	101.465	98.990	98.990	98.990
Type	**Nom. Ratio iN**	**80**	**90**	**100**	**110**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**	**355**	**400**	**450**
TDB4 / TDB4SF	80	-	-	-	-	-	-	79.532	79.996	80.168	80.168	79.532	79.532	80.168	80.168	80.168	79.670
	90	-	-	-	-	-	-	90.416	87.674	89.985	90.189	90.416	90.416	90.416	90.416	90.416	89.985
	100	-	-	-	-	-	-	101.053	99.562	100.964	100.964	101.801	101.642	101.053	102.471	100.964	100.964
	112	-	-	-	-	-	-	112.936	112.936	114.526	114.526	112.936	114.526	114.526	114.526	114.526	114.526
	125	-	-	-	-	-	-	128.089	128.621	127.251	128.000	127.251	128.842	128.089	128.842	127.251	127.251
	140	-	-	-	-	-	-	144.842	142.656	143.158	141.567	143.158	143.158	143.158	143.158	144.749	143.158
	160	-	-	-	-	-	-	161.882	159.439	160.000	158.222	160.000	160.000	160.000	160.000	161.778	160.000
	180	-	-	-	-	-	-	180.927	179.649	180.000	176.959	180.000	177.778	177.778	177.778	182.000	182.222
	200	-	-	-	-	-	-	202.213	200.784	201.176	197.778	201.176	198.693	198.693	198.693	203.412	203.660
	224	-	-	-	-	-	-	223.646	225.882	223.529	221.046	223.529	226.013	223.529	223.529	226.013	223.529
	250	-	-	-	-	-	-	247.188	249.659	247.059	244.314	247.059	249.804	247.059	247.059	249.804	247.059
	280	-	-	-	-	-	-	278.717	281.504	278.571	275.476	278.571	281.667	278.571	278.571	281.667	278.571
	315	-	-	-	-	-	-	315.550	318.704	315.385	311.880	315.385	318.889	315.385	315.385	318.889	315.385
	355	-	-	-	-	-	-	352.917	358.543	350.427	346.534	350.427	358.750	359.188	350.427	354.321	350.427
	400	-	-	-	-	-	-	396.738	403.062	393.939	389.562	393.939	403.295	403.788	393.939	398.316	393.939
	450	-	-	-	-	-	-	447.602	454.737	444.444	439.506	444.444	455.000	455.556	444.444	449.383	444.444
	500	-	-	-	-	-	-	500.261	505.263	505.556	494.444	500.000	505.556	500.000	506.250	505.556	500.000
	560	-	-	-	-	-	-	557.109	562.679	563.005	550.631	556.818	563.005	556.818	563.778	563.005	556.818

GD^2 value kg-m^2 - Helical Units TDH1, TDH2, TDH3 & TDH4

Type	Nom. Ratio iN	Unit Size															
		80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
TDH1	1.25	0.0108	0.0205	0.0362	0.0579	0.1056	0.1786	0.3382	0.6083	1.0591	1.8161	3.0216	5.0949	8.9824	16.4240	29.4738	52.7805
	1.4	0.0096	0.0175	0.0312	0.0509	0.0925	0.1548	0.2496	0.5384	0.9279	1.6129	2.6713	4.5999	8.0307	14.4911	26.3796	47.3230
	1.6	0.0082	0.0153	0.0264	0.0441	0.0801	0.1334	0.2160	0.4754	0.8102	1.3980	2.3552	3.9490	6.9054	12.4667	23.0652	40.7318
	1.8	0.0071	0.0133	0.0235	0.0376	0.0689	0.1171	0.1858	0.4181	0.7214	1.2346	2.0293	3.5306	6.1193	11.0579	20.5345	35.4402
	2	0.0061	0.0117	0.0202	0.0339	0.0621	0.1056	0.1642	0.3737	0.6347	1.1075	1.8072	3.0820	5.4926	9.9470	17.8830	31.7731
	2.24	0.0054	0.0102	0.0179	0.0296	0.0557	0.0947	0.1446	0.3256	0.5623	0.9848	1.6006	2.7163	4.8072	8.7033	15.6422	28.3428
	2.5	0.0047	0.0091	0.0158	0.0261	0.0478	0.0805	0.1277	0.2913	0.4896	0.8810	1.4080	2.4236	4.2825	7.8177	19.1253	25.1265
	2.8	0.0042	0.0078	0.0137	0.0228	0.0417	0.0727	0.1104	0.2578	0.4323	0.7607	1.2509	2.1120	3.7690	6.9006	12.5342	22.1288
	3.15	0.0035	0.0069	0.0122	0.0205	0.0365	0.0634	0.0962	0.2313	0.3795	0.6668	1.0987	1.8590	3.2869	6.0032	10.9604	19.2727
	3.55	0.0030	0.0059	0.0105	0.0177	0.0321	0.0542	0.0847	0.1971	0.3342	0.5790	0.9631	1.6212	2.8354	5.3127	9.6477	16.6193
	4	0.0027	0.0051	0.0090	0.0155	0.0286	0.0478	0.0722	0.1727	0.2918	0.5051	0.8464	1.4218	2.4950	4.6160	8.2381	14.3851
	4.5	0.0023	0.0044	0.0081	0.0134	0.0251	0.0420	0.0627	0.1540	0.2583	0.4585	0.7428	1.2323	2.1284	4.0605	7.3772	12.6281
	5	0.0020	0.0039	0.0070	0.0123	0.0221	0.0375	0.0544	0.1374	0.2245	0.4015	0.6506	1.0871	1.9145	3.4835	6.4880	11.1758
	5.6	0.0017	0.0035	0.0064	0.0109	0.0197	0.0333	0.0484	0.1220	0.2026	0.3543	0.5734	0.9690	1.6696	3.0705	5.7074	9.8665
Type	**Nom. Ratio iN**	**80**	**90**	**100**	**110**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**	**355**	**400**	**450**
TDH2	5.6	-	-	0.0069	0.0125	0.0218	0.0386	0.0686	0.1309	0.2248	0.3998	0.7234	1.2211	2.1526	3.6840	6.5797	11.4110
	6.3	-	-	0.0060	0.0106	0.0187	0.0325	0.0597	0.1143	0.1969	0.3464	0.6278	1.0378	1.8739	3.1617	5.5741	9.9189
	7.1	-	-	0.0050	0.0089	0.0156	0.0276	0.0508	0.0999	0.1724	0.2967	0.5339	0.8872	1.6201	2.7056	4.7333	8.3561
	8	-	-	0.0047	0.0084	0.0148	0.0257	0.0481	0.0929	0.1632	0.2791	0.5071	0.8402	1.5287	2.5677	4.4740	7.8370
	9	-	-	0.0040	0.0072	0.0129	0.0222	0.0412	0.0786	0.1368	0.2415	0.4451	0.7204	1.3382	2.1972	3.8906	6.8666
	10	-	-	0.0034	0.0063	0.0108	0.0188	0.0353	0.0675	0.1222	0.2068	0.3877	0.6224	1.1415	1.9109	3.3337	5.9021
	11.2	-	-	0.0029	0.0053	0.0094	0.0164	0.0310	0.0588	0.1064	0.1780	0.3436	0.5354	0.9847	1.6470	2.8743	5.0436
	12.5	-	-	0.0025	0.0045	0.0077	0.0138	0.0264	0.0514	0.0910	0.1557	0.2905	0.4652	0.8447	1.4219	2.4638	4.2795
	14	-	-	0.0021	0.0039	0.0065	0.0115	0.0228	0.0457	0.0803	0.1331	0.2534	0.4003	0.7317	1.2350	2.1339	3.7292
	16	-	-	0.0020	0.0038	0.0063	0.0111	0.0218	0.0442	0.0777	0.1285	0.2462	0.3878	0.7109	1.1914	2.0458	3.6042
	18	-	-	0.0017	0.0032	0.0054	0.0099	0.0188	0.0390	0.0691	0.1127	0.2205	0.3418	0.6454	1.0458	1.7733	3.0732
	20	-	-	0.0015	0.0028	0.0047	0.0084	0.0172	0.0348	0.0627	0.0990	0.1981	0.2959	0.5678	0.9162	1.5631	2.7653
	22.4	-	-	0.0015	0.0027	0.0046	0.0082	0.0168	0.0341	0.0614	0.0972	0.1940	0.2885	0.5531	0.8939	1.5294	2.6943
	25	-	-	0.0014	0.0027	0.0045	0.0080	0.0164	0.0334	0.0600	0.0950	0.1903	0.2828	0.5445	0.8707	1.4946	2.6275
Type	**Nom. Ratio iN**	**80**	**90**	**100**	**110**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**	**355**	**400**	**450**
TDH3	20	-	-	-	-	0.0052	0.0071	0.0124	0.0223	0.0395	0.0699	0.1298	0.2325	0.4032	0.6988	1.2326	2.3678
	22.4	-	-	-	-	0.0044	0.0060	0.0106	0.0193	0.0337	0.0588	0.1073	0.1916	0.3431	0.6002	1.0457	2.0529
	25	-	-	-	-	0.0038	0.0051	0.0091	0.0160	0.0283	0.0496	0.0898	0.1687	0.2900	0.5111	0.8898	1.7461
	28	-	-	-	-	0.0037	0.0050	0.0089	0.0154	0.0276	0.0482	0.0877	0.1648	0.2826	0.5000	0.8683	1.7018
	31.5	-	-	-	-	0.0035	0.0047	0.0083	0.0143	0.0256	0.0445	0.0822	0.1535	0.2626	0.4663	0.8096	1.5910
	35.5	-	-	-	-	0.0030	0.0041	0.0069	0.0126	0.0222	0.0388	0.0705	0.1329	0.2242	0.4074	0.6911	1.3775
	40	-	-	-	-	0.0029	0.0038	0.0065	0.0118	0.0206	0.0364	0.0652	0.1256	0.2102	0.3841	0.6499	1.3002
	45	-	-	-	-	0.0025	0.0033	0.0055	0.0098	0.0175	0.0309	0.0564	0.1074	0.1836	0.3208	0.5648	1.1308
	50	-	-	-	-	0.0021	0.0029	0.0049	0.0084	0.0147	0.0265	0.0497	0.0948	0.1573	0.2767	0.4867	0.9957
	56	-	-	-	-	0.0021	0.0027	0.0046	0.0080	0.0141	0.0251	0.0473	0.0907	0.1502	0.2654	0.4660	0.9623
	63	-	-	-	-	0.0018	0.0024	0.0040	0.0070	0.0126	0.0216	0.0415	0.0809	0.1323	0.2359	0.4128	0.8863
	71	-	-	-	-	0.0018	0.0024	0.0039	0.0069	0.0125	0.0214	0.0411	0.0803	0.1313	0.2338	0.4083	0.8792
	80	-	-	-	-	0.0016	0.0021	0.0035	0.0061	0.0109	0.0196	0.0364	0.0731	0.1159	0.2088	0.3564	0.7917
	90	-	-	-	-	0.0015	0.0021	0.0033	0.0059	0.0105	0.0190	0.0354	0.0713	0.1134	0.2030	0.3457	0.7706
	100	-	-	-	-	0.0015	0.0020	0.0033	0.0058	0.0103	0.0184	0.0345	0.0694	0.1103	0.1978	0.3375	0.7584
	112	-	-	-	-	0.0015	0.0020	0.0033	0.0057	0.0102	0.0183	0.0343	0.0691	0.1097	0.1969	0.3362	0.7556
	125	-	-	-	-	0.0015	0.0020	0.0032	0.0057	0.0102	0.0182	0.0342	0.0689	0.1094	0.1960	0.3348	0.7532
Type	**Nom. Ratio iN**	**80**	**90**	**100**	**110**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**	**355**	**400**	**450**
TDH4	90	-	-	-	-	-	-	0.0023	0.0034	0.0061	0.0111	0.0200	0.0330	0.0604	0.1122	0.1877	0.3553
	100	-	-	-	-	-	-	0.0023	0.0033	0.0061	0.0110	0.0198	0.0327	0.0598	0.1113	0.1861	0.3520
	112	-	-	-	-	-	-	0.0020	0.0028	0.0052	0.0095	0.0167	0.0275	0.0511	0.0944	0.1637	0.3006
	125	-	-	-	-	-	-	0.0019	0.0025	0.0048	0.0088	0.0156	0.0252	0.0478	0.0866	0.1527	0.2813
	140	-	-	-	-	-	-	0.0016	0.0022	0.0041	0.0074	0.0138	0.0219	0.0420	0.0754	0.1316	0.2426
	160	-	-	-	-	-	-	0.0016	0.0021	0.0041	0.0073	0.0135	0.0214	0.0411	0.0740	0.1288	0.2382
	180	-	-	-	-	-	-	0.0013	0.0019	0.0035	0.0062	0.0114	0.0180	0.0353	0.0648	0.1092	0.2095
	200	-	-	-	-	-	-	0.0013	0.0019	0.0035	0.0062	0.0113	0.0180	0.0351	0.0645	0.1086	0.2087
	224	-	-	-	-	-	-	0.0013	0.0018	0.0033	0.0059	0.0108	0.0170	0.0332	0.0614	0.1030	0.1986
	250	-	-	-	-	-	-	0.0011	0.0015	0.0029	0.0053	0.0095	0.0144	0.0291	0.0551	0.0907	0.1728
	280	-	-	-	-	-	-	0.0010	0.0014	0.0028	0.0051	0.0091	0.0138	0.0280	0.0532	0.0875	0.1674
	315	-	-	-	-	-	-	0.0009	0.0013	0.0025	0.0045	0.0081	0.0124	0.0246	0.0476	0.0778	0.1495
	355	-	-	-	-	-	-	0.0009	0.0013	0.0025	0.0044	0.0081	0.0123	0.0245	0.0472	0.0771	0.1482
	400	-	-	-	-	-	-	0.0008	0.0011	0.0022	0.0040	0.0073	0.0107	0.0227	0.0427	0.0700	0.1343
	450	-	-	-	-	-	-	0.0008	0.0011	0.0022	0.0039	0.0071	0.0104	0.0222	0.0417	0.0680	0.1310
	500	-	-	-	-	-	-	0.0008	0.0011	0.0021	0.0039	0.0071	0.0104	0.0220	0.0415	0.0677	0.1305
	560	-	-	-	-	-	-	0.0008	0.0011	0.0021	0.0039	0.0071	0.0103	0.0220	0.0415	0.0677	0.1304

- GD^2 Values referred to High Speed (Input) Shaft
- For Values other than High Speed Shafts, Refer ICIL

GD^2 value kg-m^2 - Bevel Helical Units TDB2, TDB3 & TDB4

Type	Nom. Ratio iN	Unit Size															
		80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
TDB2	5	0.0050	0.0085	0.0151	0.0262	0.0504	0.0894	0.1559	0.2821	0.4766	0.8457	1.4513	2.6362	4.8254	8.6621	14.8529	26.1960
	5.6	0.0048	0.0081	0.0146	0.0254	0.0487	0.0869	0.1507	0.2708	0.4593	0.8157	1.4028	2.5455	4.6526	8.3982	14.3524	25.1842
	6.3	0.0047	0.0078	0.0140	0.0245	0.0474	0.0844	0.1450	0.2624	0.4432	0.7870	1.3610	2.4695	4.5225	8.1148	13.8687	24.4218
	7.1	0.0036	0.0061	0.0109	0.0191	0.0369	0.0659	0.1136	0.2057	0.3470	0.6175	1.0662	1.9328	3.5231	6.3186	10.8222	19.1167
	8	0.0028	0.0047	0.0084	0.0147	0.0280	0.0500	0.0879	0.1569	0.2642	0.4714	0.8121	1.4694	2.6864	4.7763	8.2015	14.5463
	9	0.0022	0.0038	0.0065	0.0114	0.0220	0.0387	0.0683	0.1219	0.2048	0.3665	0.6301	1.1275	2.0709	3.6743	6.3248	11.2698
	10	0.0018	0.0030	0.0052	0.0092	0.0175	0.0312	0.0545	0.0984	0.1627	0.2920	0.5008	0.8934	1.6348	2.9138	4.9933	9.0429
	11.2	0.0014	0.0024	0.0041	0.0071	0.0138	0.0243	0.0426	0.0769	0.1266	0.2281	0.3901	0.6925	1.2741	2.2600	3.8546	7.0275
	12.5	0.0014	0.0023	0.0040	0.0069	0.0134	0.0235	0.0412	0.0742	0.1223	0.2211	0.3776	0.6681	1.2268	2.1940	3.7255	6.7990
	14	0.0011	0.0019	0.0031	0.0054	0.0104	0.0186	0.0326	0.0586	0.0958	0.1718	0.2923	0.5135	0.9498	1.6871	2.8894	5.2785
	16	0.0009	0.0016	0.0025	0.0044	0.0085	0.0152	0.0267	0.0471	0.0765	0.1379	0.2336	0.4071	0.7593	1.3378	2.2955	4.2281
	18	0.0009	0.0015	0.0024	0.0044	0.0082	0.0148	0.0260	0.0458	0.0738	0.1334	0.2267	0.3967	0.7423	1.2918	2.2248	4.0953
	20	0.0007	0.0012	0.0020	0.0036	0.0066	0.0119	0.0213	0.0374	0.0595	0.1080	0.1805	0.3124	0.5907	1.0169	1.7674	3.2661
	22.4	0.0006	0.0011	0.0017	0.0029	0.0056	0.0101	0.0179	0.0313	0.0499	0.0901	0.1512	0.2503	0.4937	0.8335	1.4515	2.7117
Type	**Nom. Ratio iN**	**80**	**90**	**100**	**110**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**	**355**	**400**	**450**
TDB3	16	-	-	-	-	0.0106	0.0188	0.0330	0.0628	0.1108	0.1949	0.3481	0.5889	1.0438	1.8199	3.2951	6.0002
	18	-	-	-	-	0.0098	0.0176	0.0309	0.0594	0.1057	0.1824	0.3276	0.5540	0.9908	1.7194	3.0974	5.6579
	20	-	-	-	-	0.0077	0.0138	0.0243	0.0468	0.0833	0.1442	0.2591	0.4378	0.7843	1.3597	2.4468	4.4531
	22.4	-	-	-	-	0.0073	0.0130	0.0229	0.0438	0.0776	0.1358	0.2442	0.4123	0.7384	1.2834	2.3136	4.2025
	25	-	-	-	-	0.0057	0.0101	0.0178	0.0335	0.0594	0.1056	0.1878	0.3166	0.5682	0.9860	1.7744	3.2307
	28	-	-	-	-	0.0054	0.0096	0.0169	0.0317	0.0567	0.1004	0.1769	0.3000	0.5386	0.9337	1.6786	3.0513
	31.5	-	-	-	-	0.0051	0.0091	0.0161	0.0304	0.0542	0.0950	0.1690	0.2847	0.5112	0.8901	1.6014	2.9216
	35.5	-	-	-	-	0.0048	0.0087	0.0154	0.0291	0.0521	0.0910	0.1617	0.2732	0.4921	0.8539	1.5327	2.7889
	40	-	-	-	-	0.0038	0.0067	0.0119	0.0229	0.0404	0.0709	0.1258	0.2121	0.3831	0.6636	1.1782	2.1534
	45	-	-	-	-	0.0037	0.0065	0.0115	0.0221	0.0391	0.0683	0.1214	0.2029	0.3675	0.6377	1.1397	2.0918
	50	-	-	-	-	0.0030	0.0052	0.0093	0.0175	0.0316	0.0545	0.0980	0.1611	0.2929	0.5071	0.9034	1.6523
	56	-	-	-	-	0.0024	0.0041	0.0072	0.0139	0.0246	0.0426	0.0767	0.1254	0.2288	0.3950	0.7004	1.2882
	63	-	-	-	-	0.0019	0.0032	0.0057	0.0107	0.0194	0.0338	0.0605	0.0982	0.1778	0.3059	0.5387	0.9981
	71	-	-	-	-	0.0016	0.0026	0.0047	0.0088	0.0158	0.0276	0.0487	0.0784	0.1427	0.2444	0.4271	0.7978
	80	-	-	-	-	0.0013	0.0021	0.0038	0.0070	0.0127	0.0226	0.0397	0.0631	0.1153	0.1944	0.3363	0.6396
	90	-	-	-	-	0.0013	0.0021	0.0038	0.0070	0.0126	0.0224	0.0394	0.0627	0.1144	0.1931	0.3338	0.6352
	100	-	-	-	-	0.0011	0.0017	0.0031	0.0059	0.0107	0.0188	0.0330	0.0525	0.0952	0.1614	0.2759	0.5258
Type	**Nom. Ratio iN**	**80**	**90**	**100**	**110**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**	**355**	**400**	**450**
TDB4	80	-	-	-	-	-	-	0.0048	0.0081	0.0150	0.0257	0.0492	0.0874	0.1509	0.2719	0.4633	0.8383
	90	-	-	-	-	-	-	0.0044	0.0077	0.0140	0.0241	0.0457	0.0809	0.1412	0.2548	0.4338	0.7843
	100	-	-	-	-	-	-	0.0042	0.0071	0.0133	0.0228	0.0433	0.0771	0.1338	0.2393	0.4102	0.7413
	112	-	-	-	-	-	-	0.0040	0.0067	0.0126	0.0216	0.0414	0.0735	0.1263	0.2283	0.3884	0.7020
	125	-	-	-	-	-	-	0.0038	0.0064	0.0121	0.0207	0.0396	0.0705	0.1208	0.2180	0.3723	0.6747
	140	-	-	-	-	-	-	0.0037	0.0061	0.0116	0.0200	0.0381	0.0683	0.1164	0.2102	0.3562	0.6473
	160	-	-	-	-	-	-	0.0028	0.0048	0.0091	0.0155	0.0290	0.0519	0.0902	0.1598	0.2717	0.4953
	180	-	-	-	-	-	-	0.0028	0.0047	0.0090	0.0153	0.0287	0.0515	0.0894	0.1583	0.2690	0.4900
	200	-	-	-	-	-	-	0.0022	0.0038	0.0070	0.0118	0.0226	0.0399	0.0696	0.1231	0.2087	0.3814
	224	-	-	-	-	-	-	0.0022	0.0037	0.0070	0.0117	0.0224	0.0395	0.0689	0.1221	0.2072	0.3789
	250	-	-	-	-	-	-	0.0018	0.0030	0.0057	0.0095	0.0178	0.0319	0.0550	0.0986	0.1647	0.3022
	280	-	-	-	-	-	-	0.0014	0.0024	0.0046	0.0074	0.0141	0.0249	0.0431	0.0771	0.1282	0.2361
	315	-	-	-	-	-	-	0.0011	0.0019	0.0036	0.0058	0.0109	0.0196	0.0341	0.0609	0.1004	0.1836
	355	-	-	-	-	-	-	0.0011	0.0019	0.0036	0.0058	0.0109	0.0196	0.0341	0.0608	0.1002	0.1833
	400	-	-	-	-	-	-	0.0009	0.0016	0.0030	0.0047	0.0089	0.0160	0.0279	0.0489	0.0800	0.1470
	450	-	-	-	-	-	-	0.0008	0.0013	0.0025	0.0039	0.0071	0.0128	0.0228	0.0398	0.0644	0.1187
	500	-	-	-	-	-	-	0.0008	0.0013	0.0025	0.0039	0.0071	0.0128	0.0227	0.0398	0.0643	0.1185
	560	-	-	-	-	-	-	0.0007	0.0011	0.0022	0.0032	0.0060	0.0108	0.0191	0.0333	0.0538	0.0985

- GD^2 Values referred to High Speed (Input) Shaft
- For Values other than High Speed Shafts, Refer ICIL

Oil Capacity approx. (litres)

Unit Type	Oil Capacity - Horizontal Units															
	80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
TDH1	1.4	1.7	2.5	3.2	4.1	4.5	7.5	13	16	24	34	45	70	95	135	177
TDH2 / TDH2SF	-	-	3.7	4.1	4.7	5.5	8.3	15	18	27	37	48	74	102	141	183
TDH3 / TDH3SF	-	-	-	-	5.3	7.7	10.0	17	20	30	42	52	78	125	162	192
TDH3 / TDH3SF (Offset Input)	-	-	-	-	4.8	5.7	8.6	16	19	28	38	49	76	104	145	186
TDH4 / TDH4SF (Offset Input)	-	-	-	-	-	-	10.0	17	20	30	42	52	79	127	165	193
TDB2 / TDB2SF	1.4	1.7	2.5	3.2	4.4	4.6	7.8	13	16	24	34	45	71	96	137	180
TDB3 / TDB3SF	-	-	-	-	4.7	5	8.6	15	18	27	37	48	75	104	143	185
TDB4 / TDB4SF	-	-	-	-	-	-	10.3	17	20	30	42	52	79	127	166	195

Lubricant specification

Viscosity grade guideline							
Temperature		# Pitch line velocity of Final stage m/s					
		<5.0	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35
Ambient (approx.) °C	Sump Oil (approx.) °C	1.4	1.7	2.5	3.2	4.1	4.5	7.5
-40 to -20	< +15	68S	68S	46S	46S	46S	32S	32S
-20 to -10	+15 to +32	100S	100S	68S	68S	46S	32S	32S
-10 to +5	+32 to +65	150	150	150	68	68	68	46
+5 to +30	+65 to +90	320	220	220	150	100	100	100
+30 to +50	+90 to +100	460	460	320	320	220	150	100
> +50	> +100	Consult IC						

- Values with 'S' Suffix indicates Synthetic Oil and without any suffix indicates Mineral based Oil.
- Variations in operating conditions, temperature rise, loading conditions & pattern etc. may necessitate lubricants of one grade higher or lower. Consult IC.
- Certain types of lubricants may adversely affect clutch performance with Drives incorporating wet clutches or overrunning clutches as backstopping devices. Consult IC.
- # Consult IC.

Viscosity Grade ISO-VG at 40 °C in mm2/s (cSt)	Recommended Lubricants							
	IndianOil	Bharat Petroleum	HP	Mobil	Castrol	KLÜBER LUBRICATION	Shell	bp
	Indian Oil	Bharat Petroleum	Hindustan Petroleum	Mobilgear	Castrol	Klüber	Shell	BP Energol
Recommended Mineral Oil								
VG 220	Servomesh SP 220	MAK Amocam 220	Parthan EP 220	Mobilgear™ SHC 630	Alpha SP 220	Klüberoil GEM 1N 220	Omala S2G 220	GR-XP 220
VG 320	Servomesh SP 320	MAK Amocam 320	Parthan EP 320	Mobilgear™ SHC 632	Alpha SP 320	Klüberoil GEM 1N 320	Omala S2G 320	GR-XP 320
VG 460	Servomesh SP 460	MAK Amocam 460	Parthan EP 460	Mobilgear™ SHC 634	Alpha SP 460	Klüberoil GEM 1N 460	Omala S2G 460	GR-XP 460
Recommended Synthetic Oil PAO (Polyalphaolefin) type								
VG 220	ServoSynGear Plus 220	MAK Syngear 220	Parthan EP SA 220	-	Alphasyn EP 220	Klübersynth GH6 220	Omala S4 GX 220	-
VG 320	ServoSynGear Plus 320	MAK Syngear 320	Parthan EP SA 320	Mobilgear™ SHC XM 320	Alphasyn EP 320	Klübersynth GH6 320	Omala S4 GX 320	-
VG 460	ServoSynGear Plus 460	MAK Syngear 460	Parthan EP SA 460	Mobilgear™ SHC XM 320	Alphasyn EP 460	Klübersynth GH6 460	Omala S4 GX 460	-

Proper lubricant maintenance is vital to gear drive performance throughout its design life. Under normal operating conditions, the lubricants should be changed every 2500 operating hours or six months, whichever occurs first.

Extending the change period may be acceptable based on the type of lubricant, amount of lubricant, system down time, or environmental consideration of the used lubricant. In the absence of more specific limits, General guidelines for Oil change are as under:

- water content greater than 0.05% (500 ppm);
- iron content exceeds 150 ppm;
- silicon (dust/dirt) exceeds 25 ppm;
- viscosity changes more than 15%

Net Weight approx. (kg)

Unit Type	Net Weight - Horizontal Units (Without Oil)															
	80	90	100	110	125	140	160	180	200	225	250	280	315	355	400	450
TDH1	25	35	40	55	75	100	135	185	245	340	450	595	825	1190	1590	2195
TDH2 / TDH2SF	-	-	50	65	85	120	160	220	285	400	535	710	995	1390	1925	2670
TDH3 / TDH3SF	-	-	-	-	95	125	170	235	305	430	580	760	1065	1540	2075	2880
TDH3 / TDH3SF(Offset Input)	-	-	-	-	90	120	165	220	295	410	545	745	1020	1420	1980	2840
TDH4 / TDH4SF (Offset Input)	-	-	-	-	-	-	175	235	310	435	580	775	1100	1545	2120	2895
TDB2 / TDB2SF	30	40	50	65	85	115	160	220	285	395	520	695	970	1375	1905	2590
TDB3 / TDB3SF	-	-	-	-	90	125	170	230	305	425	570	760	1075	1475	2045	2865
TDB4 / TDB4SF	-	-	-	-	-	-	180	240	320	445	590	790	1105	1555	2145	2955

As improvement in design are being made, this specification is not to be regarded as binding in details and drawings and capacities are subject to alterations without notice. Get Certified Principal dimensions and specifications while Ordering.



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