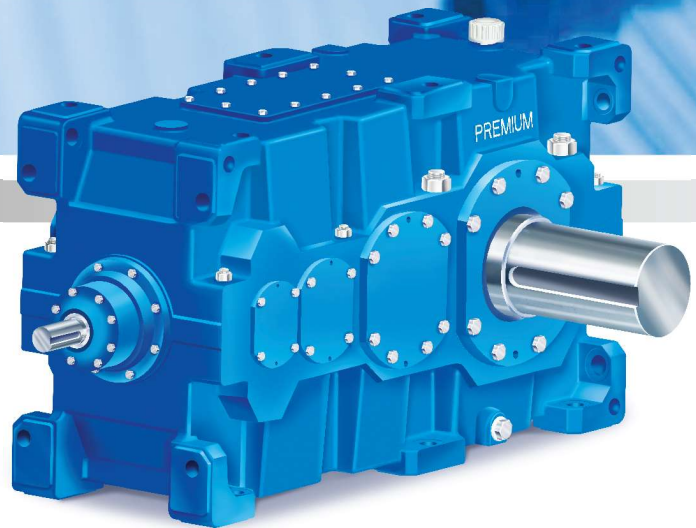




PREMIUM STEPHAN

Your addition in transmission.

www.premium-stephan.com



M series

PREMIUM
STEPHAN
HELICAL GEAR UNITS

Information

Premium Stephan Helical / Bevel Helical Gear Units

Premium Stephan Helical Gear units are fully metric and are suitable for most applications in both horizontal and vertical drives.

Based on a modular design and construction, the high degree of interchangeability of parts and sub-assemblies among all variants effect considerably economies of production, whilst maintaining the highest standard of component and unit elements. A wide choice of ratio is available based on R20 Series.

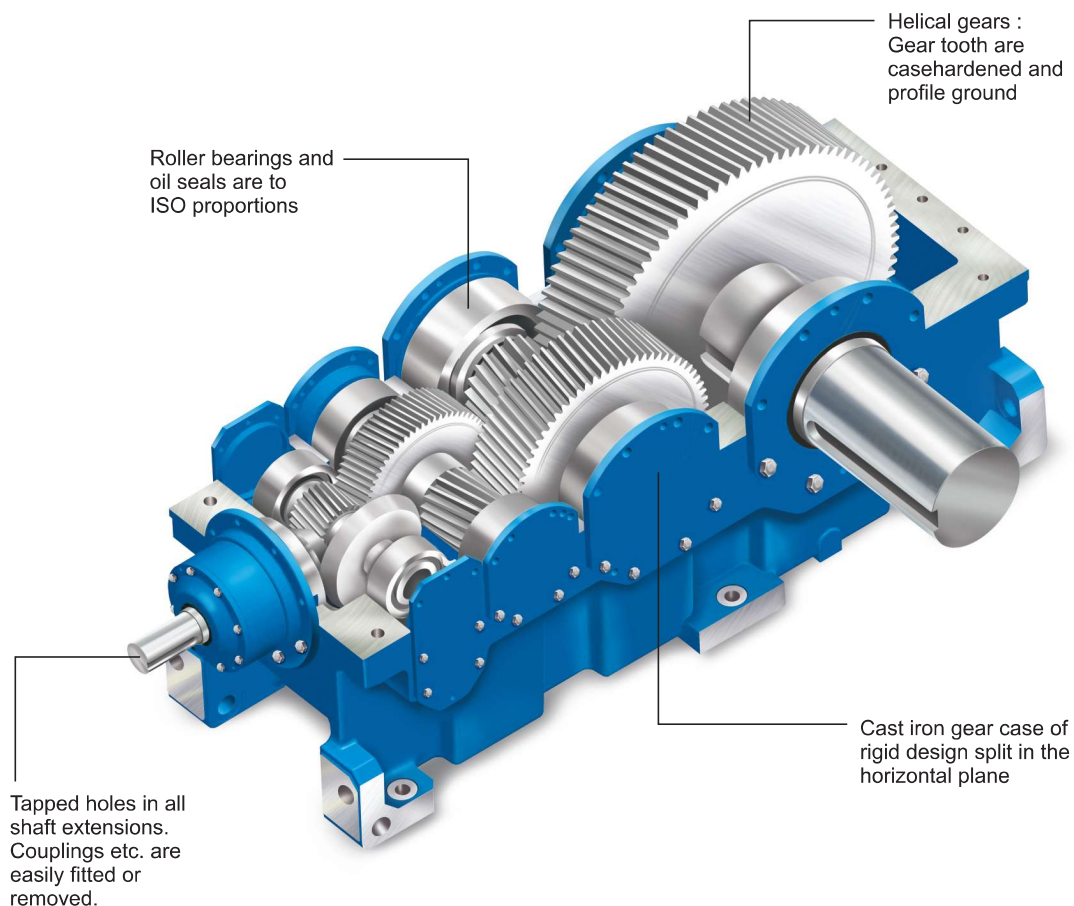
Profile ground helical gears together with spiral bevel gears lapped in pairs, ensure high standards of accuracy, surface finish and quiet running characteristics. Helical gears are fitted in parallel shaft units whilst units with shaft at right angle incorporate spiral bevel and helical gears. High quality alloy case hardening material provide long life wear resistance and fatigue strength.

The high power to weight ratio of all units combines with low volume to enable installation in the most difficult situations.

Horizontal units feature 4 options for shaft arrangements and are available as foot mounted or foot / shaft mounted types.

Significant advantage of Premium Stephan Helical Gear Units

- Compact design with optimum power density.
- Long operating life.
- Modular construction.
- Horizontal / vertical / up-right mounting
- Parallel or right angle drive
- Foot mounted or shaft mounted
- Interchangeability.
- Less noise & vibration.
- Ease to maintenance.



Type MB4SH, horizontal foot mounted Four stage gear unit.

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Design Features



GEARS : High quality alloy case hardening materials provide long life wear resistance and fatigue strength. Profile ground single helical gears and spiral bevel gears lapped in pairs ensure high standards of accuracy, surface finish and quiet running characteristics. Helical gears are fitted in parallel shaft units whilst units with shafts at right angles incorporate spiral bevel and helical gears.

BEARINGS : Roller bearings are used throughout.

GEAR CASES : Gear cases are of rigid cast iron construction with modern styling.

Inspection covers are provided for viewing gear contacts. Oil level dipsticks, ventilators and drain plugs are fitted. Cases are split in horizontal plain for horizontal gearboxes and in the vertical plain for vertical gearboxes.

GEARCASE FINISH : Internal and external surfaces are painted with linear epoxy primer. External surfaces are finished with alkyde semi-gloss blue paint. These paints are resistant to dilute acids and alkalis, oils and solvents, sea water and temperatures upto 140 °C.

EXTERNAL DIMENSIONS : Centre distances are chosen from ISO preferred number series. Shaft extension length and diameters are as per ISO metric standards.

Fasteners are metric.

LUBRICATION : In horizontal units, lubrication in most instances is by transfer of oil by gears dipping in the sumps of gear unit bases. In vertical units, lubrication in most instances is provided by a pump driven by input shaft or first intermediate shaft. In some cases, it is necessary to use a forced lubrication system with a separate oil tank.

All units are provided with dipsticks, air breather and drain plugs. Oil capacity are shown in a separate table. These are approximate capacity as exact quantities vary with ratio.

COOLING : Depending on the application, standard gear units are cooled by :

- Normal heat dissipation by convection from external surfaces.
- Fans fitted to high speed shafts.
- Cooling water coil fitted in gear unit base.
- Fan and cooling coil.

Separate oil cooler incorporated in forced lubrication system.

SHAFT MOUNTED UNITS : Shaft mounted units are of two designs, the first of which is mounted on the driven machine shaft extension and connected to the foundation by torque arm. Additionally foot/ shaft design is available for mounting on a base plate with motor and coupling, the complete assembly being mounted on the driven machine shaft extension and connected to the foundation by a torque arm.

HOLD BACKS / BACK STOPS : Hold backs can be fitted to all gear units as optional, where required to operate in non-reversing drives. They are mounted on shaft and have adequate capacities to deal with full rated torque. Lubrication is provided automatically from the oil in the gear unit.

DIRECTION OF ROTATION : The specified direction of rotation refers to output shaft direction when viewing on the shaft end face.

WEIGHTS AND DIMENSIONS : The stated weights are mean values. Illustrations and dimensions are not strictly binding. All data are subject to change without notice.

OPERATING CONDITION : The ambient temperatures must be known so that they can be taken into consideration when designing for thermal conditions.

Where ambient temperatures are lower than -10 °C, the factors affecting the oil to be used and the materials to be used for the gear unit components must be sufficiently taken into consideration. Please refer to us.

Environmental conditions such as salt water, salt-laden air, aggressive substances, dust, and mud falling or flying stones, excessive pressure, heavy vibrations and extreme shock loads must be disclosed.

DELIVERY : Gear Units are supplied without oil. The Gear housing is protected against corrosion.

PRESERVATION / PROTECTION : Premium Stephan helical gear units are dispatched without oil. Prior to dispatch they are test run with a rust preventative oil giving adequate protection to internal parts for a period of 6 months, covering normal transport and covered storage.

NOTE : Where gear units are to operate in abnormal condition or where they are to stand for long period without running for e.g. in plant installation, Premium Stephan must be notified so that suitable protective arrangements can be made.

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

Key to Symbols



E_D	= Operating Cycle per hours in %, e.g. $E_D=80\%/h$.
f_1	= Factor for driven machine (Table 1)
f_2	= Factor for prime mover (Table 2)
f_3	= Peak torque factor (Table 3)
f_4	= Thermal factor (Table 4)
i	= Actual ratio
i_N	= Nominal ratio
i_S	= Required ratio
n_1	= Input speed (rpm)
n_2	= Output speed (rpm)
P_N	= Nominal mechanical power rating of gear unit (kW) see rating tables
P_1	= Nominal power rating (kW) of prime mover
P_2	= Power Rating of driven machine (kW)
P_G	= Thermal capacity (kW)
P_{G1}	= Thermal capacity (kW) for gear units without auxiliary cooling
P_{G2}	= Thermal capacity (kW) for gear units with fan cooling
P_{G3}	= Thermal capacity (kW) for gear units with cooling coil
P_{G4}	= Thermal capacity (kW) for gear units with fan and cooling coil
T_A	= Max torque on input shaft, i.e. peak operating starting or braking torque (Nm)
T_{2N}	= Nominal output torque rating (KNm) of gear unit
T_2	= Torque of driven machine (KNm)
F_B	= Bearing Life Factor

Explanation of symbols used in the dimension drawings.



Breather



Oil drain



Oil Filler



Oil sight glass



Dip stick



Grease nipple point



Water Inflow



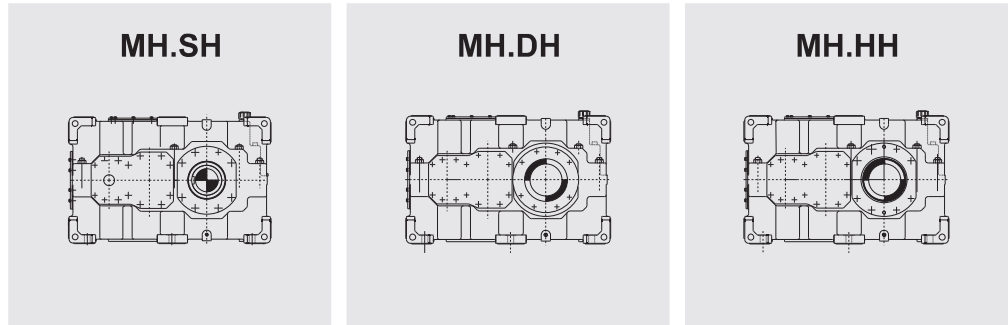
Water Return

Basic types

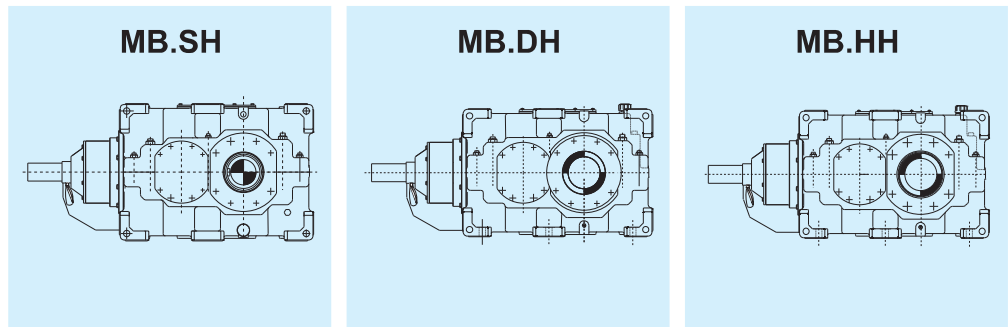
Horizontal and Vertical Mounting Position

Horizontal Mounting Position

Helical Gear Units
Types - MH1, MH2, MH3, MH4
1 - 4 stage, i_N 1.25 - 450



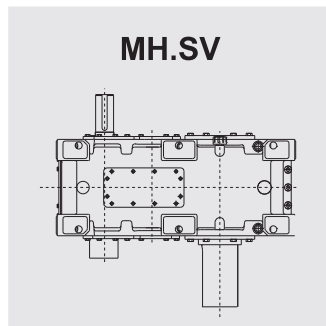
Bevel - Helical Gear Units
Types - MB2, MB3, MB4
2 - 4 stage, i_N 5 - 400



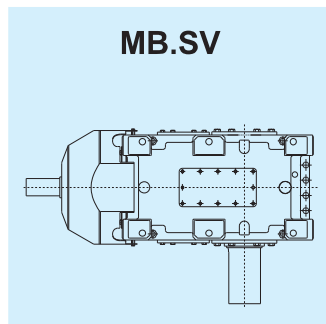
Vertical Mounting Position

Standard Units

Helical Gear Units
Types - MH2, MH3, MH4
2 - 4 stage, i_N 6.3 - 450

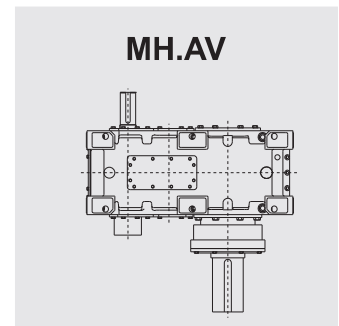


Bevel - Helical Gear Units
Types - MB2, MB3, MB4
2 - 4 stage, i_N 5 - 400

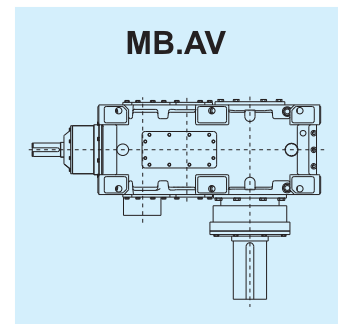


Agitator Units

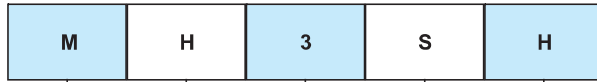
Helical Gear Units
Types - MH2, MH3
2 - 3 stage, i_N 6.3 - 112



Bevel - Helical Gear Units
Types - MB2, MB3
2 - 3 stage, i_N 5 - 90



Designation of Basic Types



Size
6 - 18

Mounting

- H** - Horizontal
- V** - Vertical
- U** - Upright

Output Shaft design

- S** - Solid Shaft
- H** - Hollow shaft with key
- D** - Hollow shaft with Shrink Disc.
- A** - Agitator with bottom bearing housing

No. of Stages.
1, 2, 3 or 4

Type

- H** - Helical gear units
- B** - Bevel-Helical gear units

MODULAR SERIES

Selection



Gearbox Selection Guidelines

1. Determination of gear unit type and size

1.1 Calculation of required transmission Ratio :

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

1.2 Determine the nominal power rating :

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

For f_1 refer Table 1 (Page No. 12) and for f_2 refer Table 2 (Page No. 13)

Note : Use P_1 if P_2 is not available.

1.3 Check for over dimensioning :

$$3.33 \times P_2 \geq P_N \quad \text{See calculation example}$$

1.4 Check for maximum Torque e.g. Peak Operating- starting or breaking torque:

$$P_N \geq \frac{T_A \times n_1}{9550} \times f_3$$

For f_3 refer Table 3 (Page No. 13)

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

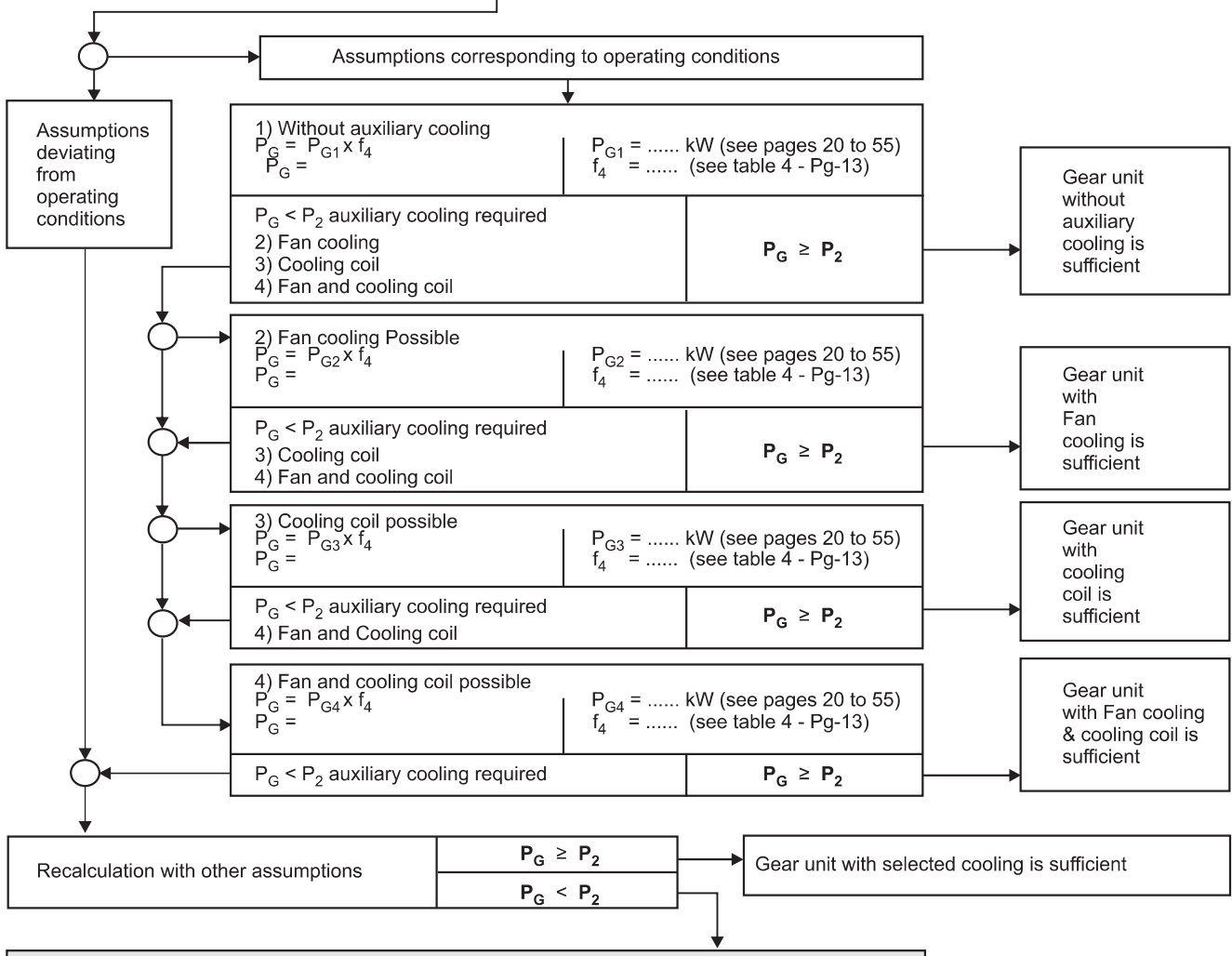
1.5 Check whether the actual ratio i as per tables on page 102-103 is acceptable.

Selection

Gearbox Selection Guidelines

2. Determination of gear unit thermal capacity P_G

Data required:
 Type: _____ size: _____
 Nominal ratio : $i_N =$ _____
 Ambient temperature $t =$ _____
 Input speed $n_1 =$ _____
 Gear unit with Splash lubrication
 • For the calculation following has been considered
 • Operating cycle : 100%
 • Installation in a large hall (wind velocity ≥ 1.4 m/s)
 • Altitude up to 1000 m
 • Gear unit with mineral oil ISO-VG :



Consult Premium Stephan :
 Variation of the following items is possible
 • Oil grade/ viscosity / level
 • Application of an oil supply system

SELECTION

Selection

Selection Example - 1

PRIME MOVER

Electric motor	: $P_1 = 180 \text{ kW}$
Motor speed	: $n_1 = 1500 \text{ rpm}$
Max. starting torque	: $T_A = 1250 \text{ Nm}$

DRIVEN MACHINE

Conveyor	: $P_2 = 170 \text{ kW}$
Output speed	: $n_2 = 31 \text{ rpm}$
Duty	: 24 h/day
Starts per hour	: 1
Operating cycle per hour	: $E_D = 100\%$
Ambient temperature	: 50° C

GEAR UNIT DESIGN

Installed in a large hall.

Parallel shaft gear unit required.

Mounting Position	: Horizontal foot mounted
Output Shaft	: on left hand side handing P1, solid shaft

Direction of rotation

Of output shaft : CW

Looking from output shaft end.

1. Selection of gear unit type

1.1 Calculation of transmission ratio

$$i_s = \frac{n_1}{n_2} = \frac{1500 \text{ rpm}}{31 \text{ rpm}} = 48.38 \quad i_N = 50$$

Determination of gear unit type

Type MH3SH selected (for actual ratio, see page 102)

1.2 Determination of gear unit size

Determination of the nominal gear unit power rating

$$P_N \geq P_2 \times f_1 \times f_2 = 170 \text{ kW} \times 1.5 \times 1 = 255 \text{ kW} ;$$

Selected from power rating table : **type MH3SH. Gear unit size 15**, with $P_N = 285 \text{ kW}$ (see page 30)

1.3 Check for over dimensioning

$$3.33 \times P_2 \geq P_N \quad 3.33 \times 170 \text{ kW} = 566.1 \text{ kW} > P_N = 285 \text{ kW}$$

1.4 Checking the starting power rating

$$P_N \geq \frac{T_A \times n_1}{9550} \times f_3 = \frac{1250 \times 1500}{9550} \times 0.5 = 98.16 \text{ kW} ;$$

$$P_N = 285 \text{ kW} > 98.16 \text{ kW}$$

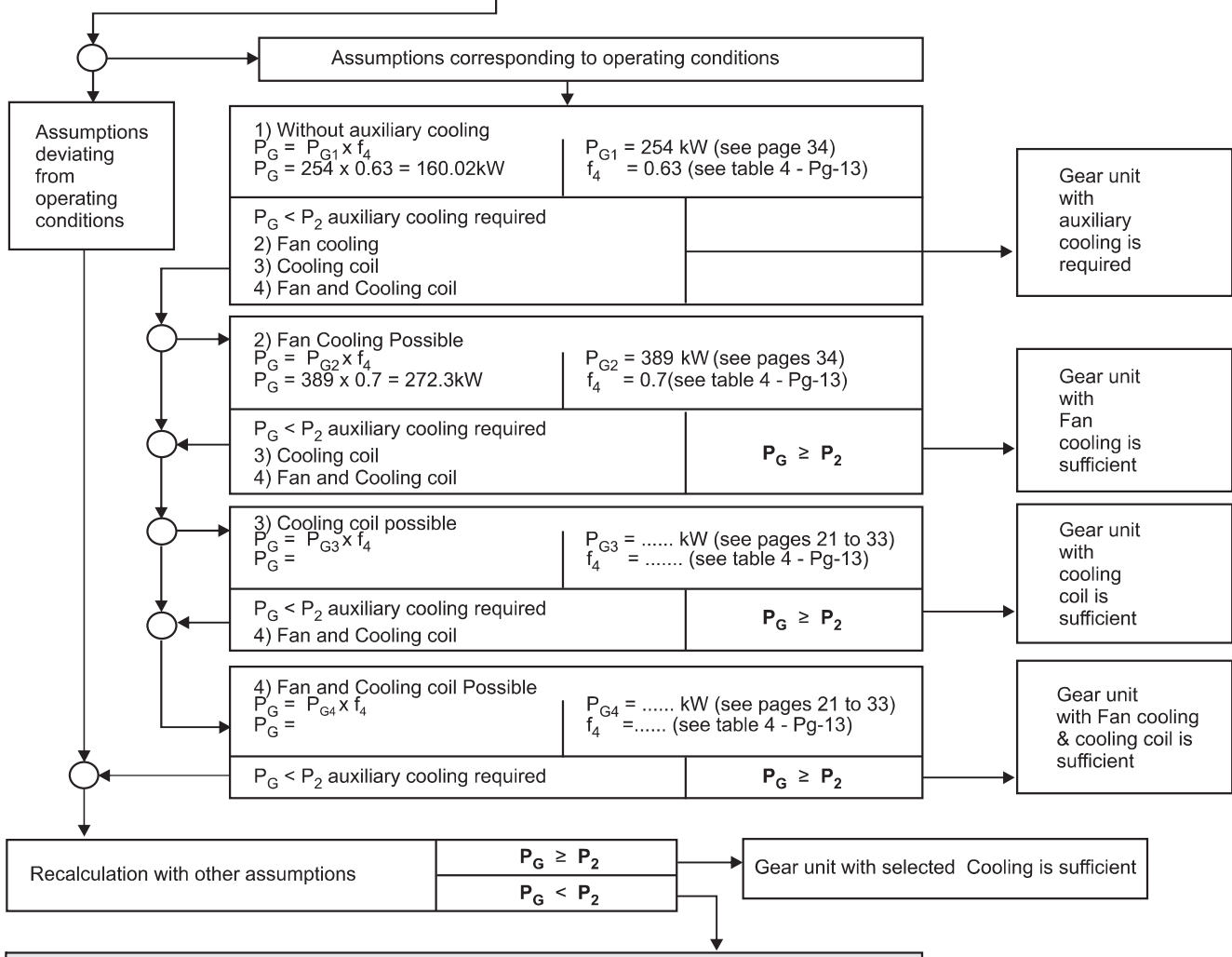
1.5 Check whether the actual ratio i as per table on page 102 is acceptable.

Selection

SELECTION

2. Determination of gear unit thermal capacity P_G

Data required:
 Type : MH3SH Size : 15
 Nominal ratio : $i_N = 50:1$
 Ambient temperature $t = 50^\circ\text{C}$
 Input speed $n_1 = 1500$ rpm
 Gear unit with Splash lubrication
 • For the calculation following has been considered
 • Operating cycle: 100%
 • Installation in a large hall (wind velocity ≥ 1.4 m/s)
 • Altitude up to 1000 m
 • Gear unit with mineral oil ISO-VG : ISO-VG 320



Consult Premium Stephan :
 Variation of the following items is possible
 • Oil grade/ viscosity / level • Application of an oil supply system

Hence selected unit is MH3SH-15, 50/1 ratio with Fan cooling.

Selection

Selection Example - 2

PRIME MOVER

Electric motor	:	$P_1 = 130 \text{ kW}$
Motor speed	:	$n_1 = 1000 \text{ rpm}$
Max. starting torque	:	$T_A = 1410 \text{ Nm}$

DRIVEN MACHINE

Conveyor	:	$P_2 = 120 \text{ kW}$
Output speed	:	$n_2 = 28 \text{ rpm}$
Duty	:	24 h/day
Starts per hour	:	1
Operating cycle per hour	:	$E_D = 100\%$
Ambient temperature	:	50° C

GEAR UNIT DESIGN

Installed in a large hall.

Parallel shaft gear unit required.

Mounting Position	:	Horizontal foot mounted
Output Shaft	:	on right hand side handing P1, solid shaft

Direction of rotation
of output shaft : CW
looking from output shaft end.

1. Selection of gear unit type

1.1 Calculation of transmission ratio

$$i_s = \frac{n_1}{n_2} = \frac{1000 \text{ rpm}}{28 \text{ rpm}} = 35.71; \quad i_N = 35.5$$

Determination of gear unit type

Type MB3SH selected (for actual ratio, see page 103)

1.2 Determination of gear unit size

Determination of the nominal gear unit power rating

$$P_N \geq P_2 \times f_1 \times f_2 = 120 \text{ kW} \times 2 \times 1 = 240 \text{ kW} ;$$

Selected from power rating table : **type MB3SH. Gear unit size 15**, with $P_N = 271 \text{ kW}$ (see page 46)

1.3 Check for over dimensioning

$$3.33 \times P_2 \geq P_N \quad 3.33 \times 120 \text{ kW} = 399.6 \text{ kW} > P_N = 271 \text{ kW}$$

1.4 Checking the starting torque

$$P_N \geq \frac{T_A \times n_1}{9550} \times f_3 = \frac{1410 \times 1000}{9550} \times 0.5 = 73.82 \text{ kW} ;$$

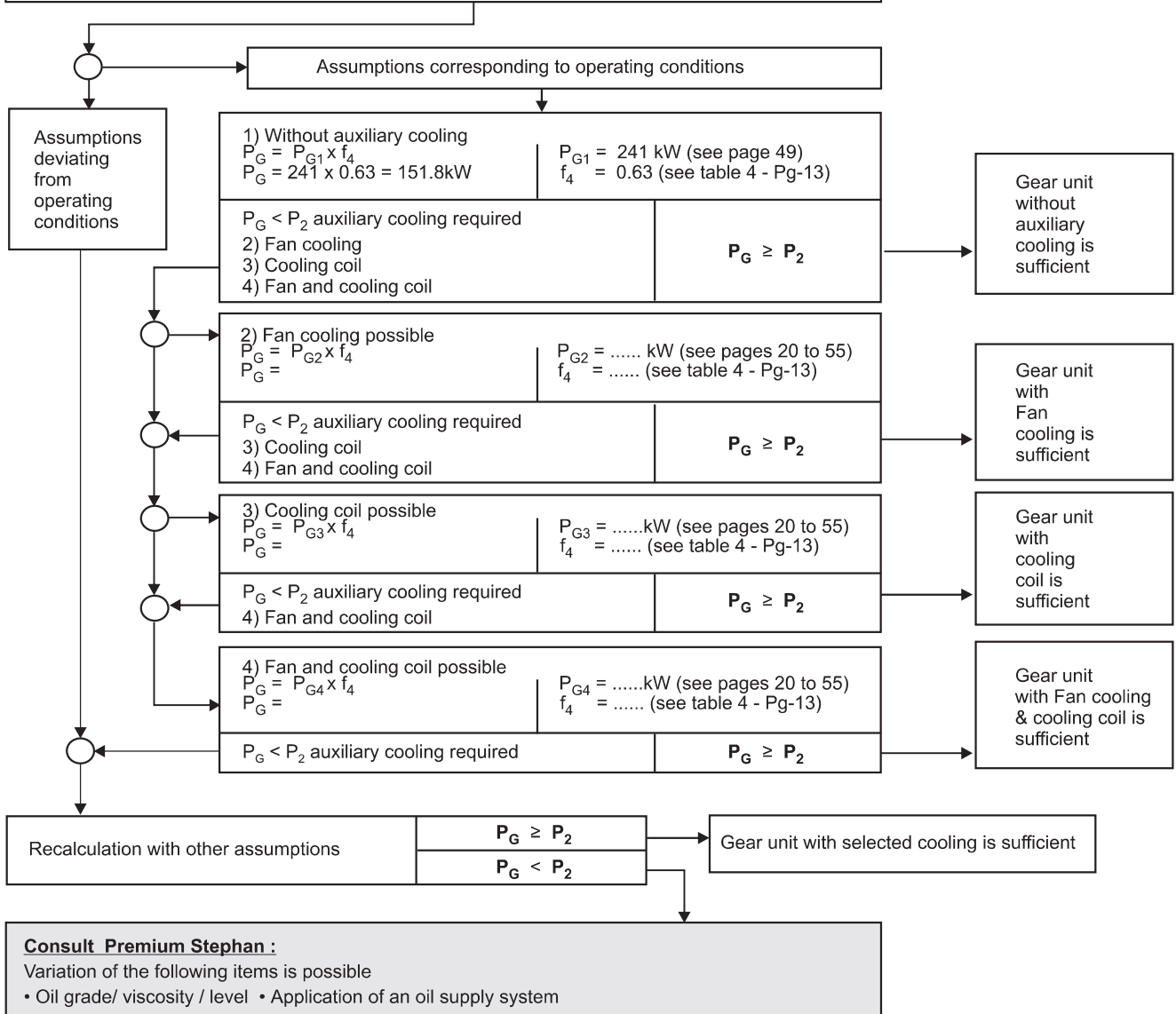
$$P_N = 271 \text{ kW} > 73.82 \text{ kW}$$

1.5 Check whether the actual ratio i as per table on (page 103) is acceptable.

Selection

2. Determination of gear unit thermal capacity P_G

Data required :
 Type : MB3SH Size : 15
 Nominal ratio : $i_N = 35.5 : 1$
 Ambient temperature $t = 50^\circ\text{C}$
 Input speed $n_1 = 1000 \text{ rpm}$
 Gear unit with Splash lubrication
 • For the calculation following has been considered
 • Operating cycle : 100%
 • Installation in a large hall (wind velocity $\geq 1.4 \text{ m/s}$)
 • Altitude up to 1000 m
 • Gear unit with mineral oil ISO-VG : ISO-VG 320



Hence selected unit is MB3SH-15, 35.5/1 ratio without auxiliary cooling.

Service Factors, f_1



Factor for
Driven Machine

SELECTION

Table 1 Driven Machines	Factor for driven machine			Driven Machines	f_1		
	Effective daily operating period under load in hours				Effective daily operating period under load in hours		
	≤ 0.5	≥ 0.5-10	≥ 10		≤ 0.5	≥ 0.5-10	≥ 10
Waste water treatment				Conveyors			
Thickeners(central drive)	-	-	1.2	Bucket conveyors	-	1.2	1.5
Filter presses	1.0	1.3	1.5	Hauling winches	1.4	1.6	1.6
Flocculation apparatus	0.8	1.0	1.3	Hoist	-	1.5	1.8
Aerator	-	1.8	2	Belt conveyors ≤ 150 kW	1.0	1.2	1.3
Raking equipment	1.0	1.2	1.3	Belt conveyors ≥ 150 kW	1.1	1.3	1.4
Combined longitudinal and rotary rakes	1.0	1.3	1.5	Goods lifts*	-	1.2	1.5
Pre-thickeners	-	1.1	1.3	Passenger lifts*	-	1.5	1.8
Screw pumps	-	1.3	1.5	Apron conveyors	-	1.2	1.5
Water turbines	-	-	2.0	Escalators	-	1.2	1.4
Pumps				Rail traveling gears	-	1.5	-
Centrifugal pumps	1.0	1.2	1.3	Frequency converters	-	1.8	2.0
Positive displacement pumps				Reciprocating compressors	-	1.8	1.9
1 piston	1.3	1.4	1.8	Cranes **			
> 1 piston	1.2	1.4	1.5	Slewing gears****	1.0	1.4	1.8
Dredgers				Luffing gears	1.0	1.1	1.4
Bucket conveyors	-	1.6	1.6	Traveling gears	1.1	1.6	2.0
Dumping devices	-	1.3	1.5	Hoisting gears	1.0	1.1	1.4
Caterpillar travelling gears	1.2	1.6	1.8	Derricking jib cranes	1.0	1.2	1.6
Bucket wheel excavators				Cooling towers****			
as pick -up	-	1.7	1.7	Cooling tower fans	-	-	2.0
for primitive material	-	2.2	2.2	Blowers (axial & radial)	-	1.4	1.5
Cutter heads	-	2.2	2.2	Food industry			
Slewing gears*	-	1.4	1.8	Cane sugar production			
Plate bending machines *	-	1.0	1.0	Cane knives *	-	-	1.7
Chemical industry				Cane mills	-	-	1.7
Extruders	-	-	1.6	Beet sugar production			
Dough mills	-	1.8	1.8	Beet cossettes macerators, Extraction plants, Mechanical	-	-	1.2
Rubber calenders	-	1.5	1.5	Refrigerators, Juice boliers, Sugar beet washing machines	-	-	1.4
Cooling drum	-	1.3	1.4	Sugar beet cutters	-	-	1.5
Mixers for				Paper machines			
uniform media	1.0	1.3	1.4	of all kind ***	-	1.8	2.0
non-uniform media	1.4	1.6	1.7	Pulper drives (On request)	-	-	-
Agitators for media with				Centrifugal compressors	-	1.4	1.5
uniform density	1.0	1.3	1.5	Cableways			
non-uniform density	1.2	1.4	1.6	Material ropeways			
non-uniform gas absorption	1.4	1.6	1.8	To-and fro system	-	1.3	1.4
Toasters	1.0	1.3	1.5	Aerial ropeways	-	1.6	1.8
Centrifuges	1.0	1.2	1.3	T-bar lifts	-	1.3	1.4
Metal working mills				Continuous ropeways	-	1.4	1.6
Plate tilters	1.0	1.0	1.2	Cement industry			
Ingot pushers	1.0	1.2	1.2	Concrete mixers	-	1.5	1.5
Winding machines	-	1.6	1.6	Breakers *	-	1.2	1.4
Cooling bed transfer frames	-	1.5	1.5	Rotary kilns	-	-	2.0
Roller straighteners	-	1.6	1.6	Tube mills	-	-	2.0
Roller tables				Separators	-	1.6	1.6
Continuous	-	1.5	1.5	Roll crushers	-	-	2.0
intermittent	-	2.0	2.0				
Reversing tube mills	-	1.8	1.8				
Shears							
continuous *	-	1.5	1.5				
crank type *	1.0	1.0	1.0				
Continuous casting drivers*	-	1.4	1.4				
Rolls							
Reversing blooming mills	-	2.5	2.5				
Reversing slabbing mills	-	2.5	2.5				
Reversing wire mills	-	1.8	1.8				
Reversing sheet mills	-	2.0	2.0				
Reversing plate mills	-	1.8	1.8				
Roll adjustment drives	0.9	1.0	-				

Service Factors, f_2, f_3, f_4

Factor for prime mover
Peak torque factor
Thermal factor

Table 2	Factor for prime mover	f_2
	Electric motors, hydraulic motors, turbines	1.0
	Piston engines 4-6 cylinders cyclic variation 1:100 to 1:200	1.25
	Piston engines 1-3 cylinders cyclic variation up to 1:100	1.5

Table 3	Peak torque factor	f_3			
		Load peaks per hour			
		1-5	6-30	31-100	> 100
	Steady direction of load	0.5	0.65	0.7	0.85
	Alternating direction of load	0.7	0.95	1.1	1.25

Table 4	Thermal factor f_4					
Type of cooling	Ambient Temp.	Operating cycle per hour (ED) in %				
		100	80	60	40	20
Gear boxes without auxiliary cooling	10°C	1.12	1.34	1.57	1.79	2.05
	20°C	1.00	1.2	1.4	1.6	1.8
	30°C	0.88	1.06	1.23	1.41	1.58
	40°C	0.75	0.9	1.05	1.2	1.35
	50°C	0.63	0.76	0.88	1.01	1.13
Gear boxes with Fan cooling	10°C	1.15	1.38	1.61	1.84	2.07
	20°C	1	1.2	1.4	1.6	1.8
	30°C	0.9	1.08	1.26	1.44	1.62
	40°C	0.8	0.96	1.12	1.29	1.44
	50°C	0.7	0.84	0.98	1.12	1.26
Gear boxes with Cooling coil	10°C	1.1	1.32	1.54	1.76	1.98
	20°C	1	1.2	1.4	1.6	1.8
	30°C	0.9	1.08	1.26	1.44	1.62
	40°C	0.85	1.02	1.19	1.36	1.53
	50°C	0.8	0.96	1.12	1.29	1.44
Gear boxes with Fan & Cooling coil	10°C	1.12	1.34	1.57	1.79	2.05
	20°C	1	1.2	1.4	1.6	1.8
	30°C	0.92	1.1	1.29	1.47	1.66
	40°C	0.83	1	1.16	1.33	1.5
	50°C	0.78	0.94	1.09	1.25	1.4

SELECTION

Design for power rating of driven machine P2

- *) Designed power corresponding to max. torque
- **) Load can be exactly classified, for instance, according to FEM 1001
- ***) A check for thermal capacity is absolutely essential
- ****) Load can be exactly classified according to the slewing gear specification
- *****) On request

The listed value of the factors are empirical. Prerequisite for their application is that the machinery and equipment mentioned correspond to generally accepted design and load specifications. In case of deviations from standard conditions, please refer to us.

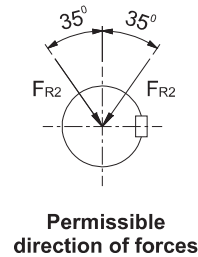
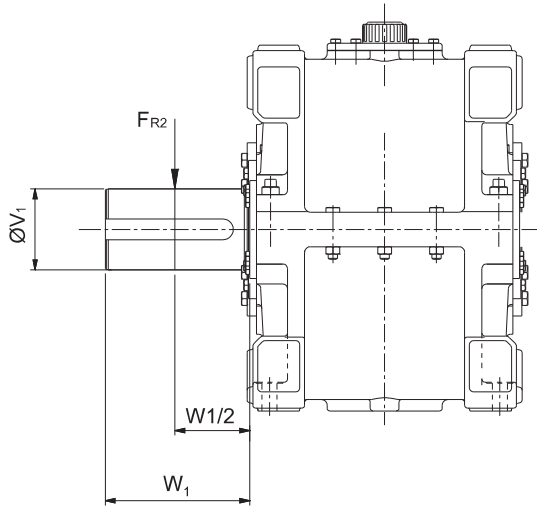
For driven machines which are not listed in this table, please refer to us.

Selection

Overhung Loads - Horizontal Units

Permissible Additional Radial Forces on Output Shaft V_1 (Solid Shaft)

Application of Force On Centre of Shaft End



Whenever a sprocket, gear, sheave or pulley is mounted on the shaft, a calculation should be made to determine the overhung load in kN on the shaft, using the formula :

$$P = \frac{\text{kW} \times 9550 \times K}{N \times R}$$

Where P = equivalent overhung load in kN.
 kW = power carried by the shaft,
 N = rpm of the shaft
 R = pitch radius of sprocket, pinion, sheave or pulley (mm).
 K = factor.

Overhung member	K factor
Sprocket for chain	1
Spur gear	1.25
V belt sheave	1.5
Flat belt pulley	3.0

Notes :

1. Values are calculated for the most unfavourable direction of rotation. Consult us with specific application details.
2. Overhung load values are for loads applied midway along shaft extension.
3. For overhung load for larger sizes consult us.

Table : 5		Permissible additional force F_{R2} in kN with application of force on centre of shaft end												
Type	Handing	Gear unit sizes												
		6	7	8	9	10	11	12	13	14	15	16	17	18
MH2SH	P1/P2	7	18	18	27	27	27	41	60	64	150	140	140	205
	P4/P3	7	10	10	10	10	10	25	32	35	112	112	85	135
MB2SH	P2/P1A	10	24	--	35	35	35	51	75	78	160	160	120	175
	P1/P2A	9	13	--	10	10	10	28	30	38	110	110	75	145
MH3SH	P1/P2	--	25	25	37	37	37	56	80	85	170	170	150	205
MH4SH	P3/P4	--	--	--										
MB3SH	P2/P1A	11	25	25	14	14	14	35	45	50	150	150	120	185
MB4SH	P2A/P1		--	--										
MH3SH	P4/P3	--	15	15	14	14	14	35	45	50	150	150	120	185
MH4SH	P1/P2	--	--	--										
MB3SH	P1/P2A	7	15	15	14	14	14	35	45	50	150	150	120	185
MB4SH	P1A/P2		--	--										

Selection



Axial Thrust Loads - Vertical Units

SELECTION

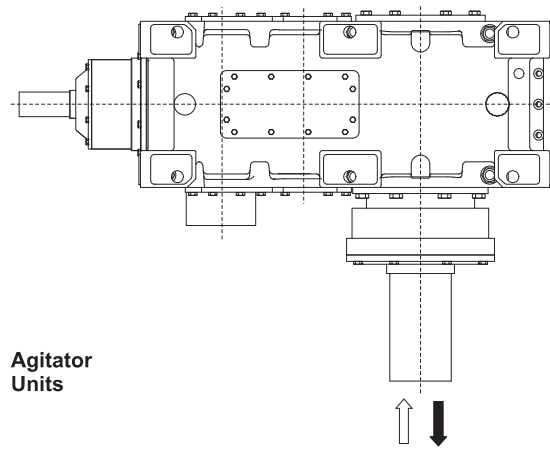
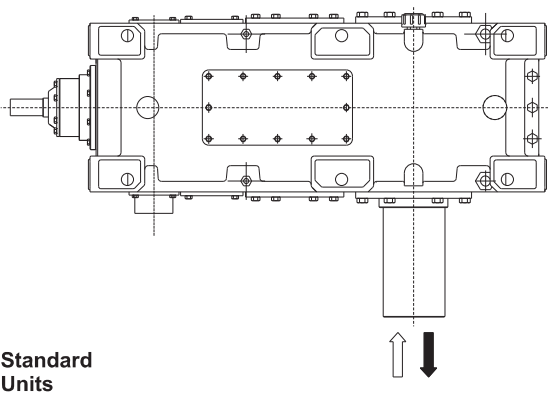


Table : 6 Axial Thrust Capacity (kN)
Allowable axial thrust on output shaft

Standard Units	Unit Types MH2SV, MH3SV, MH4SV, MB2SV, MB3SV, MB4SV												
	Unit Size												
Output Speed (rpm)	6	7	8	9	10	11	12	13	14	15	16	17	18
< 315	7	9	10	12	14	18	23	29	32	36	40	42	45
< 200	8	10	11	13	15	21	25	31.5	35	39	45	48	52.5
< 125	9	11	12	14	16	23	27	34	38.5	45	49	52	58
< 80	11	14	15	17	18	27	32	39.5	44	55	60	64	71.5
< 50	12	14	16	19	22	31	37	46	52	63	70	84	91
< 31.5	16	19	21	25	30	40	47	58.5	65	96	105	114	127
Standard Units	Unit Types MH2SV, MH3SV, MH4SV, MB2SV, MB3SV, MB4SV												
Output Speed (rpm)	Unit Size												
6	7	8	9	10	11	12	13	14	15	16	17	18	
< 315	5	7.5	8.5	11	13	17	21	26	29	32.5	36	40.5	43
< 200	6	9	10	12	14	18.5	22	25	31.5	35	39	45	50
< 125	7	10	11	13	15	21	25	31.5	35	41	45	50	55
< 80	9	11	12	15	16	24	28	36	40	50	55	61	68
< 50	10	12.5	14	18	20	28	33	42	47	57	65	80	86
< 31.5	11	16	18	23	26	36	43	54	60	88	98	109	121
Agitator Units	Unit Types MH2AV, MH3AV, MB2AV, MB3AV												
Output Speed (rpm)	Unit Size												
6	7	8	9	10	11	12	13	14	15	16	17	18	
< 315	10	13	14	16	20	25	29	36	40	42	46	49.5	55
< 200	12	15	17	20	25	31	36	46	52	56.5	60	63	70
< 125	13	17	19	22.4	28	35	41	52	58	64	68	74	82
< 80	14	19	21	25	32	40	47	59	66	70.5	75	81	90
< 50	16	21	24	29	36	46	54.5	68	76	82	87	94.5	105
< 31.5	20	27	31	37	47	59	70	88	98	115	121	126	140
Agitator Units	Unit Types MH2AV, MH3AV, MB2AV, MB3AV												
Output Speed (rpm)	Unit Size												
6	7	8	9	10	11	12	13	14	15	16	17	18	
< 315	8	10	11.5	14	18.4	23	27	34	38	40	43	45	50
< 200	9	13	14	17	21.6	27	32	40.5	45	51	53	56	62
< 125	11	15	17	20	24.8	31	36.5	46	52	57	60	68	75
< 80	12	16	18	23	30	37.5	44	55	61	66	69	76.5	85
< 50	13	19	22	27	34	42.5	50	63	70	74	78	89	98
< 31.5	15	22	26	32	40	51	61	76.5	85	110	115	122	134

Selection

Bending Moment : Vertical Units

SELECTION

To calculate the Bending Moment on the gearbox output shaft using the method recommended in The Engineering Equipment Users' Association Handbook No.9 :

$$\text{Bending Moment} = \frac{\text{Absorbed Power (kW)} \times 9.5 \times L}{\text{Shaft Speed} \times 0.75 R} = \text{kNm}$$

The above information is given for guidance. Where more precise bending moment values are available they should be used.

Check the Bending Moment Capacity of the Gearbox

Agitator AV type is suitable for supporting a paddle directly coupled to the gearbox output shaft and for accepting the bending moments and axial thrusts generated from the forces at the paddle. The AV type unit has an enlarged output shaft, extended bearing span and bigger bearings to accept higher loads than the standard unit. Check the standard unit first and, if this has insufficient capacity, use the AV type.

Table : 7 Bearing Life Factor (F_B)

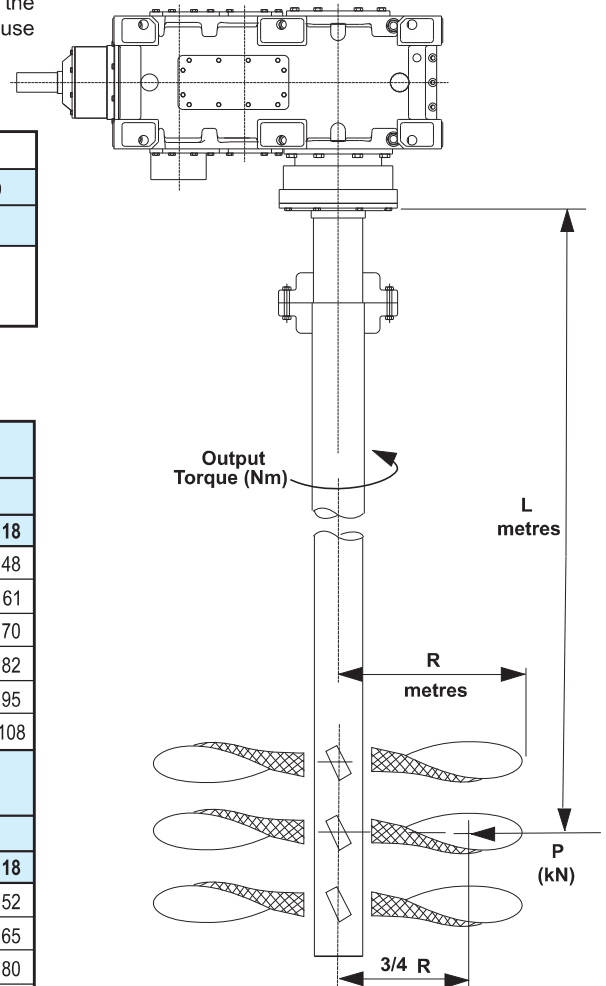
	Required Life (hours)				
	5000	10000	25000	50000	100000
Factor	1	0.81	0.62	0.50	0.41
For intermediate values $F_B = \left\{ \frac{5000}{\text{Required Life (hours)}} \right\}^{0.3}$					

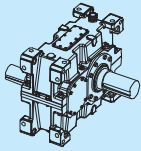
Table : 8 Bending moment capacity (kNm)

Allowable Bending moment on output shaft

Standard Units	Unit Types MH2SV, MH3SV, MH4SV, MB2SV, MB3SV, MB4SV												
	Unit Size												
Output Speed (rpm)	6	7	8	9	10	11	12	13	14	15	16	17	18
< 315	4.5	6	7	10	12	16	24	27	30	33.5	37	43	48
< 200	5.5	7	8.5	11	13	18	28	32	36	42	47	55	61
< 125	6	8	9.5	13	15	20	30	36	40	47	52	63	70
< 80	7	9.5	11	14	16	22	36	40.5	45	54	60	74	82
< 50	8	10	13	17.5	20	25	40	44	49	63	70	85	95
< 31.5	10	11	15	20	22	28	44	49.5	55	78	87	97	108
Agitator Units	Unit Types MH2AV, MH3AV, MB2AV, MB3AV												
Output Speed (rpm)	Unit Size												
	6	7	8	9	10	11	12	13	14	15	16	17	18
< 315	7	10	12	17	21	25	32	36	40	43	45	48	52
< 200	8	12	14	18	23	27	34	43	48	50	52	58	65
< 125	9	14	16	20	25	30	44	48	54	62	65	72	80
< 80	11	16	18	22	29	35	52	58.5	65	73	76	85.5	95
< 50	12	18	21	25	32	41	60	66	74	84	88	95	105
< 31.5	14	21	24	28	36	46	63	70	82	95	100	108	120

*For other lives, multiply values by the factors in table 7.





Single Stage
Helical Units
Size : 7-17

MH1SH

Nominal Mechanical Power Ratings (kW)

Nominal Ratio	Input Speed (rpm)	Nominal Output speed (rpm)	Nominal Mechanical Power Ratings P _N (kW)					
			Unit Size					
			7	9	11	13	15	17
1.25/1.	1750	1400	1175	2230	3630	---	---	---
	1500	1200	1003	1915	3110	---	---	---
	1000	800	668	1270	2070	---	---	---
	750	600	500	955	1550	---	---	---
1.4/1.	1750	1250	1062	2095	3370	---	---	---
	1500	1071	915	1790	2860	---	---	---
	1000	714	610	1196	1920	---	---	---
	750	536	454	900	1430	---	---	---
1.6/1.	1750	1094	980	1875	3090	---	---	---
	1500	938	840	1610	2661	4551	---	---
	1000	625	560	1072	1780	3000	4420	---
	750	469	420	806	1330	2260	3320	---
1.8/1.	1750	972	895	1775	2858	4845	---	---
	1500	833	763	1520	2445	4140	---	---
	1000	556	505	1010	1630	2771	4150	---
	750	417	383	760	1220	2070	3120	---
2/1.	1750	875	856	1630	2638	4500	---	---
	1500	750	732	1400	2255	3853	---	---
	1000	500	490	930	1505	2575	3835	---
	750	375	367	700	1128	1925	2880	---
2.24/1.	1750	781	768	1460	2356	4139	---	---
	1500	670	656	1250	2018	3549	---	---
	1000	446	437	830	1346	2360	3540	---
	750	335	327	625	1010	1770	2650	---
2.5/1.	1750	700	700	1303	2110	3708	---	---
	1500	600	600	1120	1810	3179	4890	---
	1000	400	400	745	1205	2110	3250	4950
	750	300	300	560	905	1590	2450	3700
2.8/1.	1750	625	630	1120	1780	3310	---	---
	1500	536	534	960	1532	2838	4350	---
	1000	357	358	640	1022	1900	2900	4520
	750	268	268	480	765	1420	2180	3400
3.15/1.	1750	556	555	1010	1640	2798	4280	---
	1500	476	475	867	1405	2398	3670	---
	1000	317	318	580	938	1600	2450	4180
	750	238	237	435	700	1200	1840	3130
3.55/1.	1750	493	490	920	1478	2591	3870	---
	1500	423	420	788	1268	2221	3280	---
	1000	282	280	525	845	1480	2200	3800
	750	211	210	393	630	1111	1670	2840
4/1.	1750	438	438	815	1320	2303	3500	---
	1500	375	373	700	1130	1980	3015	---
	1000	250	249	465	755	1320	2011	3400
	750	188	187	350	565	988	1505	2550
4.5/1.	1750	389	312	645	998	1870	2540	4500
	1500	333	268	552	860	1600	2170	3870
	1000	222	178	368	575	1068	1450	2580
	750	167	134	275	428	799	1090	1940
5/1.	1750	350	263	505	860	1418	2160	3560
	1500	300	226	435	740	1216	1850	3060
	1000	200	150	290	493	808	1230	2040
	750	150	113	216	370	608	930	1530
5.6/1.	1750	313	225	430	660	1194	1830	3050
	1500	268	193	368	563	1020	1570	2600
	1000	179	127	245	376	680	1050	1740
	750	134	97	183	282	510	785	1300

Full Load Efficiency- 98.5% (approx.)

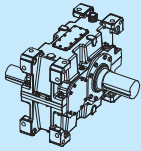
For bigger size refer 'HEAVY DUTY HELICAL GEAR UNIT' catalogue.

Nominal Output Torque Ratings (kNm)

Helical Gear Units
All Types
Size : 6-18

Ratio	Nominal Output Torque Ratings T_{2N} (kNm)												
	Unit Size												
	6	7	8	9	10	11	12	13	14	15	16	17	18
1.25	--	8	--	15	-	25	-	46	---	---	---	---	---
1.4	--	8.2	--	16	-	25	-	47	---	---	---	---	---
1.6	--	8.6	--	16	-	27	-	49	---	67	---	---	---
1.8	--	8.8	--	17	-	28	-	50	---	71	---	---	---
2	--	9.4	--	18	-	29	-	50	---	73	---	---	---
2.24	--	9.4	--	18	-	29	-	50	---	76	---	---	---
2.5	--	9.6	--	18	-	29	-	50	---	77	---	118	---
2.8	--	9.6	--	17	-	27	-	50	---	77	---	120	---
3.15	--	9.6	--	17	-	28	-	50	---	74	---	125	---
3.55	--	9.5	--	18	-	29	-	50	---	74	---	128	---
4	--	9.6	--	18	-	29	-	50	---	75	---	129	---
4.5	--	7.7	--	16	-	25	-	45	---	76	---	110	---
5	--	7.2	--	14	-	24	-	39	---	58	---	97	---
5.6	--	6.9	--	13	-	20	-	36	---	56	---	93	---
6.3	6.3	10.6	--	20	-	34	-	59	---	86	---	143	---
7.1	6.4	11.1	--	20	-	34	-	59	---	86	---	143	160
8	6.7	11.2	13.5	20	26	34	43	59	73	87	107	143	160
9	6.7	11.2	13.4	20	26	34	43	59	73	87	107	143	160
10	6.2	11.2	14.3	20	26	34	43	59	73	87	108	143	160
11.2	6.3	11.2	14.4	20	26	34	43	59	73	87	107	143	160
12.5	6.7	11.2	13.4	20	26	34	43	59	74	86	107	143	160
14	6.6	11.2	13.4	20	26	34	42	59	74	88	107	143	160
16	6.6	11.2	14.4	20	26	34	43	59	74	87	107	144	160
18	6.2	10.5	14.2	19	26	34	43	59	74	87	107	143	160
20	6.5	11.2	14.3	19	26	34	43	59	74	88	108	143	160
22.4	6.3	10.8	14	19	24	33	43	59	74	90	109	143	160
25	--	11.5	14.3	22	24	35	43	63	74	90	109	153	173
28	--	11.5	13.9	22	25	35	42	63	76	90	112	152	173
31.5	--	11.6	15.5	22	27	35	44	63	76	90	112	155	173
35.5	--	11.5	15.5	22	27	35	44	63	76	91	112	154	174
40	--	11.5	15.5	22	27	35	44	63	76	91	112	155	173
45	--	11.5	15.5	22	27	36	44	63	76	91	112	156	175
50	--	11.5	15.5	22	27	35	44	63	76	91	112	157	173
56	--	11.2	15.5	22	27	35	44	63	76	91	112	154	173
63	--	11.2	15.5	22	27	35	44	63	76	91	112	153	173
71	--	11.2	15.5	22	27	35	44	63	76	91	112	155	173
80	--	11.2	15.5	22	27	35	44	63	76	91	112	155	174
90	--	11.2	15.5	20	27	34	44	63	76	90	112	156	176
100	--	--	14.3	22	27	35	44	61	77	92	112	153	174
112	--	--	15	22	25	35	44	61	77	92	116	153	173
125	--	--	--	22	27	35	44	61	77	92	116	154	173
140	--	--	--	22	27	35	44	61	77	92	116	153	173
160	--	--	--	22	27	35	44	61	77	92	116	153	173
180	--	--	--	22	27	35	45	61	77	92	117	153	174
200	--	--	--	22	27	35	44	61	77	92	117	153	174
224	--	--	--	22	27	35	44	61	77	92	116	154	175
250	--	--	--	22	27	34	44	61	77	92	116	153	174
280	--	--	--	22	26	35	44	61	77	92	116	153	174
315	--	--	--	22	26	35	44	61	77	92	116	153	168
355	--	--	--	22	26	35	44	61	77	93	117	153	172
400	--	--	--	-	26	-	45	61	77	---	116	---	168
450	--	--	--	-	25	-	44	61	77	---	---	---	---

RATINGS



MH1SH

Single Stage
Helical Units
Size : 7-17

Thermal Capacities (kW) @ n_1 - 750 (rpm)

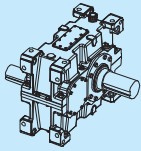
Nominal Ratio		Thermal Capacities P _G (kW)					
		Unit Size					
		7	9	11	13	15	17
1.25/1.	PG1	---	---	---	---	---	---
	PG2	430	501	602	830	954	1165
	PG3	435	795	1102	2082	2078	1875
	PG4	620	1115	1601	2785	2478	1945
1.4/1.	PG1	---	---	---	---	---	---
	PG2	415	507	610	841	950	1162
	PG3	425	788	1095	2045	2058	1875
	PG4	608	1108	1581	2750	2466	1925
1.6/1.	PG1	---	---	---	---	---	---
	PG2	402	513	617	852	945	1159
	PG3	418	780	1085	2013	2040	1850
	PG4	598	1100	1575	2712	2453	1906
1.8/1.	PG1	---	---	---	---	---	---
	PG2	388	520	625	863	941	1155
	PG3	405	775	1078	1980	2023	1828
	PG4	582	1100	1568	2675	2440	1887
2/1.	PG1	---	---	---	---	---	---
	PG2	375	525	633	875	937	1154
	PG3	395	770	1072	1945	2005	1805
	PG4	573	1098	1560	2640	2428	1865
2.24/1.	PG1	---	---	---	---	---	---
	PG2	360	531	640	886	933	1150
	PG3	388	763	1062	1910	1986	1755
	PG4	560	1097	1554	2602	2415	1848
2.5/1.	PG1	---	---	---	---	---	---
	PG2	346	538	645	897	925	1149
	PG3	376	756	1050	1878	1968	1734
	PG4	550	1095	1546	2566	2405	1830
2.8/1.	PG1	---	---	---	---	---	---
	PG2	333	545	655	908	923	1146
	PG3	365	752	1045	1844	1950	1708
	PG4	537	1094	1541	2530	2393	1810
3.15/1.	PG1	---	---	---	---	---	---
	PG2	319	550	663	918	918	1144
	PG3	357	744	1038	1810	1930	1687
	PG4	525	1090	1531	2493	2380	1790
3.55/1.	PG1	124	228	343	---	---	---
	PG2	305	555	672	933	914	1141
	PG3	347	738	1030	1777	1910	1663
	PG4	510	1092	1526	2455	2366	1772
4/1.	PG1	122	222	341	---	---	---
	PG2	290	563	680	941	910	1138
	PG3	337	730	1025	1745	1895	1640
	PG4	501	1088	1520	2420	2356	1753
4.5/1.	PG1	118	216	338	---	---	---
	PG2	278	568	686	953	905	1135
	PG3	327	724	1014	1710	1876	1616
	PG4	488	1088	1512	2384	2345	1733
5/1.	PG1	118	205	333	---	---	---
	PG2	263	575	696	964	900	1132
	PG3	317	718	1006	1675	1858	1593
	PG4	477	1087	1506	2348	2332	1714
5.6/1.	PG1	116	197	330	---	---	---
	PG2	250	585	702	975	896	1130
	PG3	308	712	998	1642	1840	1570
	PG4	465	1085	1498	2312	2320	1695

** Values refer to: 1. Ambient Temperature : 20°C
2. Operating cycle : 100%,
3. Installation in a large hall,
4. Altitude up to 1000 m above sea level

*** Values refer to a cooling water inlet temperature of 20°C
† Cooling coil not available for vertical units.
Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxillary cooling (Horizontal & Vertical)
Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

Thermal Capacities PG3 (kW)**Units with cooling coil (Horizontal)
Thermal Capacities PG4 (kW)**Units with Fan & cooling coil (Horizontal)



MH1SH

Single Stage
Helical Units
Size : 7-17

Thermal Capacities (kW) @ n_1 - 1000 (rpm)

Nominal Ratio		Thermal Capacities P_G (kW)					
		Unit Size					
		7	9	11	13	15	17
1.25/1.	PG1	---	---	---	---	---	---
	PG2	560	565	652	---	---	---
	PG3	572	815	1179	---	---	---
	PG4	820	1198	1642	---	---	---
1.4/1.	PG1	---	---	---	---	---	---
	PG2	549	569	659	---	---	---
	PG3	562	811	1173	---	---	---
	PG4	809	1196	1639	---	---	---
1.6/1.	PG1	---	---	---	---	---	---
	PG2	525	573	664	875	---	---
	PG3	545	808	1160	2012	2087	---
	PG4	788	1189	1629	2810	2535	---
1.8/1.	PG1	---	---	---	---	---	---
	PG2	510	575	679	880	---	---
	PG3	539	805	1155	1964	2063	---
	PG4	776	1184	1623	2769	2520	---
2/1.	PG1	---	---	---	---	---	---
	PG2	491	579	677	896	---	---
	PG3	522	801	1143	1973	2049	---
	PG4	751	1182	1611	2727	2501	---
2.24/1.	PG1	---	---	---	---	---	---
	PG2	477	583	682	905	---	---
	PG3	510	798	1139	1910	2018	---
	PG4	744	1180	1607	2685	2494	---
2.5/1.	PG1	---	---	---	---	---	---
	PG2	456	586	692	919	982	---
	PG3	499	796	1131	1883	2004	2042
	PG4	729	1175	1600	2636	2471	2091
2.8/1.	PG1	---	---	---	---	---	---
	PG2	444	590	697	930	977	---
	PG3	485	794	1126	1855	1975	2016
	PG4	707	1172	1595	2609	2461	2035
3.15/1.	PG1	---	---	---	---	---	---
	PG2	428	592	701	942	971	---
	PG3	472	789	1115	1828	1959	1990
	PG4	690	1168	1586	2561	2448	2020
3.55/1.	PG1	138	235	358	---	---	---
	PG2	419	599	710	951	964	---
	PG3	460	787	1107	1801	1932	1957
	PG4	674	1166	1581	2520	2431	2012
4/1.	PG1	136	227	353	---	---	---
	PG2	395	601	720	963	960	---
	PG3	447	781	1099	1773	1916	1936
	PG4	658	1159	1576	2475	2416	2001
4.5/1.	PG1	132	219	349	---	---	---
	PG2	380	603	722	975	956	1230
	PG3	434	779	1091	1746	1894	1907
	PG4	642	1152	1563	2440	2401	1995
5/1.	PG1	130	214	346	---	---	---
	PG2	363	608	729	982	949	1215
	PG3	422	775	1081	1720	1873	1880
	PG4	626	1147	1558	2390	2387	1988
5.6/1.	PG1	127	205	343	---	---	---
	PG2	347	612	736	995	945	1202
	PG3	410	772	1075	1690	1852	1853
	PG4	610	1145	1552	2355	2373	1975

** Values refer to: 1. Ambient Temperature : 20°C
2. Operating cycle : 100% ,
3. Installation in a large hall,
4. Altitude up to 1000 m above sea level

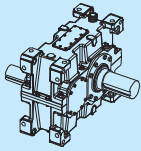
Thermal Capacities PG1 (kW)**Units without auxiliary cooling (Horizontal & Vertical)
Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

*** Values refer to a cooling water inlet temperature of 20°C

† Cooling coil not available for vertical units.
Full load Efficiency 98.5%(approx.)

Thermal Capacities PG3 (kW)**†Units with cooling coil (Horizontal)
Thermal Capacities PG4 (kW)**†Units with Fan & cooling coil (Horizontal)

RATINGS



MH1SH

Single Stage
Helical Units
Size : 7-17

Thermal Capacities (kW) @ n_1 - 1500 (rpm)

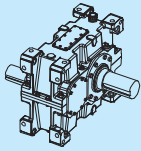
Nominal Ratio		Thermal Capacities P _G (kW)					
		Unit Size					
		7	9	11	13	15	17
1.25/1.	PG1	---	---	---	---	---	---
	PG2	437	556	668	---	---	---
	PG3	623	901	1245	---	---	---
	PG4	1015	1460	1955	---	---	---
1.4/1.	PG1	---	---	---	---	---	---
	PG2	437	567	680	---	---	---
	PG3	613	899	1244	---	---	---
	PG4	996	1458	1955	---	---	---
1.6/1.	PG1	---	---	---	---	---	---
	PG2	435	580	693	---	---	---
	PG3	601	895	1242	1985	---	---
	PG4	978	1455	1952	3102	---	---
1.8/1.	PG1	---	---	---	---	---	---
	PG2	435	590	705	---	---	---
	PG3	592	890	1240	1972	---	---
	PG4	960	1452	1951	3080	---	---
2/1.	PG1	---	---	---	---	---	---
	PG2	430	603	720	---	---	---
	PG3	580	886	1238	1963	---	---
	PG4	945	1450	1951	3060	---	---
2.24/1.	PG1	---	---	---	---	---	---
	PG2	427	614	732	---	---	---
	PG3	570	882	1236	1949	---	---
	PG4	923	1460	1949	3035	---	---
2.5/1.	PG1	---	---	---	---	---	---
	PG2	425	626	745	---	894	---
	PG3	558	877	1239	1937	2094	---
	PG4	905	1457	1947	3010	2585	---
2.8/1.	PG1	---	---	---	---	---	---
	PG2	425	638	757	---	892	---
	PG3	548	876	1239	1925	2080	---
	PG4	885	1455	1942	2991	2556	---
3.15/1.	PG1	---	---	---	---	---	---
	PG2	422	650	771	---	890	---
	PG3	537	880	1232	1915	2058	---
	PG4	868	1450	1938	2970	2532	---
3.55/1.	PG1	---	---	---	---	---	---
	PG2	419	660	783	1045	886	---
	PG3	526	875	1236	1902	1992	---
	PG4	850	1449	1937	2950	2409	---
4/1.	PG1	---	---	---	---	---	---
	PG2	420	673	796	1038	884	---
	PG3	515	872	1231	1890	1959	---
	PG4	830	1447	1934	2925	2485	---
4.5/1.	PG1	---	---	---	---	---	---
	PG2	415	685	808	1035	884	1590
	PG3	504	870	1229	1878	1926	2235
	PG4	812	1445	1934	2904	2462	2340
5/1.	PG1	---	---	---	---	---	---
	PG2	415	697	822	1029	883	1530
	PG3	493	866	1225	1866	1893	2055
	PG4	793	1441	1933	2882	2438	2270
5.6/1.	PG1	---	---	---	---	---	---
	PG2	413	708	835	1025	880	1475
	PG3	483	865	1225	1855	1860	1880
	PG4	775	1440	1931	2862	2415	2216

** Values refer to: 1. Ambient Temperature : 20°C
 2. Operating cycle : 100% ,
 3. Installation in a large hall,
 4. Altitude up to 1000 m above sea level

*** Values refer to a cooling water inlet temperature of 20°C
 † Cooling coil not available for vertical units.
 Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxiliary cooling (Horizontal & Vertical)
 Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

Thermal Capacities PG3 (kW)**Units with cooling coil (Horizontal)
 Thermal Capacities PG4 (kW)**Units with Fan & cooling coil (Horizontal)



MH1SH

Single Stage
Helical Units
Size : 7-17

Thermal Capacities (kW) @ n_1 - 1750 (rpm)

Nominal Ratio		Thermal Capacities P_G (kW)					
		Unit Size					
		7	9	11	13	15	17
1.25/1.	PG1	---	---	---	---	---	---
	PG2	408	472	743	---	---	---
	PG3	605	860	1165	---	---	---
	PG4	1063	1525	2005	---	---	---
1.4/1.	PG1	---	---	---	---	---	---
	PG2	409	491	755	---	---	---
	PG3	596	864	1172	---	---	---
	PG4	1045	1529	1965	---	---	---
1.6/1.	PG1	---	---	---	---	---	---
	PG2	409	510	768	---	---	---
	PG3	586	867	1180	---	---	---
	PG4	1025	1533	1925	---	---	---
1.8/1.	PG1	---	---	---	---	---	---
	PG2	411	529	780	---	---	---
	PG3	578	872	1187	1605	---	---
	PG4	1010	1534	1888	2965	---	---
2/1.	PG1	---	---	---	---	---	---
	PG2	412	547	790	---	---	---
	PG3	569	875	1195	1625	---	---
	PG4	993	1540	1850	2978	---	---
2.24/1.	PG1	---	---	---	---	---	---
	PG2	415	568	795	---	---	---
	PG3	558	880	1202	1648	---	---
	PG4	975	1545	1810	2980	---	---
2.5/1.	PG1	---	---	---	---	---	---
	PG2	414	585	807	---	---	---
	PG3	550	883	1210	1665	---	---
	PG4	960	1549	1770	2995	---	---
2.8/1.	PG1	---	---	---	---	---	---
	PG2	416	605	833	---	---	---
	PG3	543	886	1215	1684	---	---
	PG4	940	1551	1732	3005	---	---
3.15/1.	PG1	---	---	---	---	---	---
	PG2	419	625	844	---	782	---
	PG3	535	891	1224	1708	2124	---
	PG4	924	1555	1690	3018	2492	---
3.55/1.	PG1	---	---	---	---	---	---
	PG2	419	640	870	961	778	---
	PG3	525	894	1230	1725	2099	---
	PG4	906	1560	1655	3022	2440	---
4/1.	PG1	---	---	---	---	---	---
	PG2	421	660	884	954	775	---
	PG3	518	898	1240	1745	2049	---
	PG4	889	1563	1615	3035	2385	---
4.5/1.	PG1	---	---	---	---	---	---
	PG2	420	681	898	952	771	1725
	PG3	507	900	1244	1766	2004	1855
	PG4	870	1568	1575	3045	2333	2215
5/1.	PG1	---	---	---	---	---	---
	PG2	422	700	911	945	765	1700
	PG3	498	905	1253	1785	1920	1780
	PG4	854	1570	1537	3052	2280	2185
5.6/1.	PG1	---	---	---	---	---	---
	PG2	425	720	900	940	760	1680
	PG3	490	910	1261	1806	1810	1705
	PG4	837	1575	1498	3065	2228	2155

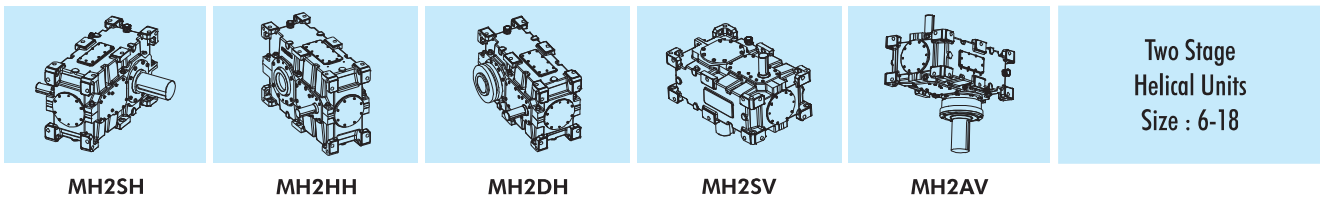
** Values refer to: 1. Ambient Temperature : 20°C
2. Operating cycle : 100% ,
3. Installation in a large hall,
4. Altitude up to 1000 m above sea level

*** Values refer to a cooling water inlet temperature of 20°C
† Cooling coil not available for vertical units.
Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxiliary cooling (Horizontal & Vertical)
Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

Thermal Capacities PG3 (kW)**Units with cooling coil (Horizontal)
Thermal Capacities PG4 (kW)**Units with Fan & cooling coil (Horizontal)

RATINGS



Nominal Mechanical Power Ratings (kW)

Nominal Ratio	Input Speed (rpm)	Nominal Output speed (rpm)	Nominal Mechanical Power Ratings P _n (kW)												
			Unit Size												
			6	7	8	9	10	11	12	13	14	15	16	17	18
6.3/1.	1750	278	182.7	309	--	592	---	980	---	1720	---	2500	---	4180	---
	1500	238	156.5	265	--	504	---	840	---	1475	---	2160	---	3563	---
	1000	159	105	177	--	337	---	560	---	988	---	1470	---	2380	---
	750	119	78.5	133	--	252	---	422	---	738	---	1105	---	1780	---
7.1/1.	1750	246	166	287	--	522	---	870	---	1530	---	2245	---	3700	4140
	1500	211	142	245	--	449	---	746	---	1308	---	1920	---	3180	3540
	1000	141	95	163	--	299	---	495	---	875	---	1280	---	2110	2350
	750	106	71.5	121	--	225	---	373	---	655	---	970	---	1580	1770
8/1.	1750	219	153	254	308	465	583	770	975	1360	1650	1969	2450	3275	3664
	1500	188	130.5	217	261	398	500	662	835	1160	1420	1710	2100	2800	3150
	1000	125	87	145	174	265	333	441	558	780	950	1140	1400	1895	2100
	750	94	65.5	109	31	199	250	330	416	580	725	860	1060	1410	1575
9/1.	1750	194	137	227	272	414	515	686	870	1210	1480	1751	2180	2910	3257
	1500	167	116	195	233	353	444	590	745	1032	1265	1515	1870	2500	2800
	1000	111	77.5	129	156	236	296	391	495	688	845	1010	1250	1660	1860
	750	83	58	98	118	177	221	294	372	516	645	765	940	1250	1400
10/1.	1750	175	114	203	265	372	466	618	780	1087	1320	1575	1970	2620	2931
	1500	150	98	175	224	319	400	528	670	930	1140	1360	1700	2250	2513
	1000	100	65.5	116	151	213	266	352	448	620	770	910	1140	1500	1682
	750	75	49	87	112	159	200	265	336	465	580	680	860	1120	1260
11.2/1.	1750	156	103	182	233	330	416	552	700	975	1180	1408	1750	2345	2630
	1500	134	88	156	200	285	357	473	600	830	1010	1220	1500	2000	2250
	1000	89	58.5	104	134	190	237	316	400	555	690	823	1020	1340	1500
	750	67	44	78	100	142	178	236	300	415	520	618	765	1000	1120
12.5/1.	1750	140	98	163	197	296	371	495	626	870	1060	1260	1570	2096	2350
	1500	120	84	140	169	255	320	425	536	745	910	1090	1350	1820	2020
	1000	80	56	93	112	169	213	283	358	495	620	725	915	1200	1340
	750	60	42	70	84	126	160	212	269	372	465	550	685	900	1010
14/1.	1750	125	87	146	174	264	333	440	554	775	950	1140	1400	1877	2100
	1500	107	74	124	150	227	285	379	472	665	815	990	1200	1600	1800
	1000	71	49.5	83	100	151	190	252	320	445	553	660	815	1070	1200
	750	54	37	63	75	114	142	189	238	330	415	495	610	800	900
16/1.	1750	109	76	127	165	232	291	386	490	680	830	1000	1230	1645	1840
	1500	94	65	109	141	199	250	330	420	580	712	860	1050	1410	1570
	1000	63	43.5	73	94	132	166	220	280	390	485	575	716	940	1050
	750	47	32.5	54	70	100	125	166	210	290	362	430	538	700	788
18/1.	1750	97	63	107	145	194	259	342	433	605	740	890	1090	1460	1630
	1500	83	54	91	124	166	222	295	372	520	630	765	930	1250	1400
	1000	56	36	61	83	110	148	196	249	345	430	510	635	830	930
	750	42	27	45	63	83	111	147	186	260	322	385	475	625	700
20/1.	1750	88	59.5	102	130	174	233	310	392	545	666	810	980	1310	1465
	1500	75	51	87	111	149	200	264	334	464	570	695	850	1120	1260
	1000	50	34	58	75	99	133	177	224	310	385	465	570	750	840
	750	38	25.5	43	56	74	100	132	166	232	290	348	430	560	630
22.4/1.	1750	78	51.5	88	110	162	195	272	350	475	592	---	871	---	1310
	1500	67	44	75	94	139	166	232	299	410	508	---	758	---	1120
	1000	45	29	50	62	93	111	155	199	272	345	---	510	---	750
	750	33	21.7	38	47	69.5	83	116	149	205	260	---	383	---	560
25/1.	1750	70	--	--	104	--	175	--	313	---	531	---	783	---	---
	1500	60	--	--	90	--	150	--	269	---	456	---	680	---	---
	1000	40	--	--	60	--	100	--	179	---	308	---	455	---	---
	750	30	--	--	45	--	75	--	134	---	231	---	342	---	---
28/1.	1750	63	--	--	89	--	162	--	276	---	465	---	---	---	---
	1500	54	--	--	78	--	139	--	236	---	403	---	---	---	---
	1000	36	--	--	52	--	93	--	157	---	270	---	---	---	---
	750	27	--	--	39	--	69	--	118	---	204	---	---	---	---

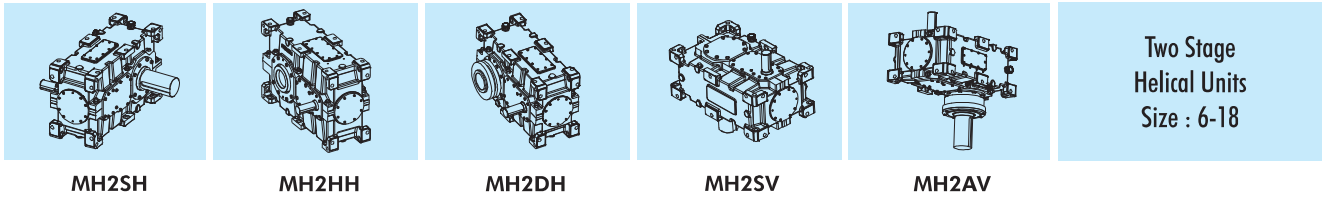
Full Load Efficiency- 98% (approx.)

Nominal Output Torque Ratings (kNm)

Helical Gear Units
All Types
Size : 6-18

Ratio	Nominal Output Torque Ratings T_{2N} (kNm)												
	Unit Size												
	6	7	8	9	10	11	12	13	14	15	16	17	18
1.25	--	8	--	15	-	25	-	46	---	---	---	---	---
1.4	--	8.2	--	16	-	25	-	47	---	---	---	---	---
1.6	--	8.6	--	16	-	27	-	49	---	67	---	---	---
1.8	--	8.8	--	17	-	28	-	50	---	71	---	---	---
2	--	9.4	--	18	-	29	-	50	---	73	---	---	---
2.24	--	9.4	--	18	-	29	-	50	---	76	---	---	---
2.5	--	9.6	--	18	-	29	-	50	---	77	---	118	---
2.8	--	9.6	--	17	-	27	-	50	---	77	---	120	---
3.15	--	9.6	--	17	-	28	-	50	---	74	---	125	---
3.55	--	9.5	--	18	-	29	-	50	---	74	---	128	---
4	--	9.6	--	18	-	29	-	50	---	75	---	129	---
4.5	--	7.7	--	16	-	25	-	45	---	76	---	110	---
5	--	7.2	--	14	-	24	-	39	---	58	---	97	---
5.6	--	6.9	--	13	-	20	-	36	---	56	---	93	---
6.3	6.3	10.6	--	20	-	34	-	59	---	86	---	143	---
7.1	6.4	11.1	--	20	-	34	-	59	---	86	---	143	160
8	6.7	11.2	13.5	20	26	34	43	59	73	87	107	143	160
9	6.7	11.2	13.4	20	26	34	43	59	73	87	107	143	160
10	6.2	11.2	14.3	20	26	34	43	59	73	87	108	143	160
11.2	6.3	11.2	14.4	20	26	34	43	59	73	87	107	143	160
12.5	6.7	11.2	13.4	20	26	34	43	59	74	86	107	143	160
14	6.6	11.2	13.4	20	26	34	42	59	74	88	107	143	160
16	6.6	11.2	14.4	20	26	34	43	59	74	87	107	144	160
18	6.2	10.5	14.2	19	26	34	43	59	74	87	107	143	160
20	6.5	11.2	14.3	19	26	34	43	59	74	88	108	143	160
22.4	6.3	10.8	14	19	24	33	43	59	74	90	109	143	160
25	--	11.5	14.3	22	24	35	43	63	74	90	109	153	173
28	--	11.5	13.9	22	25	35	42	63	76	90	112	152	173
31.5	--	11.6	15.5	22	27	35	44	63	76	90	112	155	173
35.5	--	11.5	15.5	22	27	35	44	63	76	91	112	154	174
40	--	11.5	15.5	22	27	35	44	63	76	91	112	155	173
45	--	11.5	15.5	22	27	36	44	63	76	91	112	156	175
50	--	11.5	15.5	22	27	35	44	63	76	91	112	157	173
56	--	11.2	15.5	22	27	35	44	63	76	91	112	154	173
63	--	11.2	15.5	22	27	35	44	63	76	91	112	153	173
71	--	11.2	15.5	22	27	35	44	63	76	91	112	155	173
80	--	11.2	15.5	22	27	35	44	63	76	91	112	155	174
90	--	11.2	15.5	20	27	34	44	63	76	90	112	156	176
100	--	--	14.3	22	27	35	44	61	77	92	112	153	174
112	--	--	15	22	25	35	44	61	77	92	116	153	173
125	--	--	--	22	27	35	44	61	77	92	116	154	173
140	--	--	--	22	27	35	44	61	77	92	116	153	173
160	--	--	--	22	27	35	44	61	77	92	116	153	173
180	--	--	--	22	27	35	45	61	77	92	117	153	174
200	--	--	--	22	27	35	44	61	77	92	117	153	174
224	--	--	--	22	27	35	44	61	77	92	116	154	175
250	--	--	--	22	27	34	44	61	77	92	116	153	174
280	--	--	--	22	26	35	44	61	77	92	116	153	174
315	--	--	--	22	26	35	44	61	77	92	116	153	168
355	--	--	--	22	26	35	44	61	77	93	117	153	172
400	--	--	--	-	26	-	45	61	77	---	116	---	168
450	--	--	--	-	25	-	44	61	77	---	---	---	---

RATINGS



Thermal Capacities (kW) @ n_1 - 750 (rpm)

RATINGS

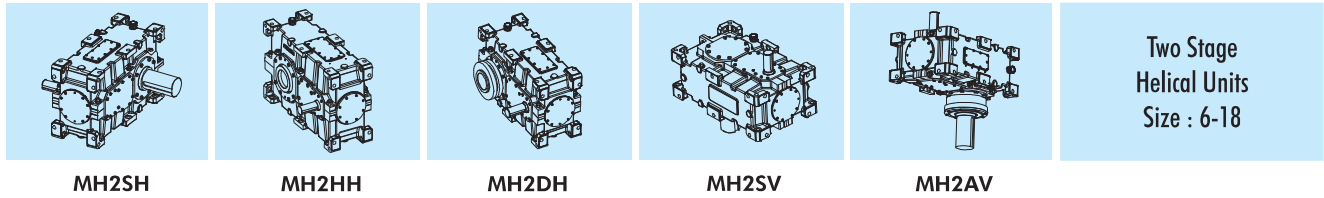
Nominal Ratio		Thermal Capacities P _G (kW)												
		Unit Size												
		6	7	8	9	10	11	12	13	14	15	16	17	18
6.3/1.	PG1	166	98	--	161	--	196	--	268	--	337	--	375	--
	PG2	223	144	--	250	--	260	--	476	--	544	--	653	--
	PG3	465	178	--	279	--	476	--	702	--	1168	--	953	--
	PG4	514	233	--	402	--	620	--	929	--	1378	--	1235	--
7.1/1.	PG1	164	102	--	144	--	208	--	280	--	362	--	425	621
	PG2	243	149	--	228	--	309	--	437	--	583	--	743	936
	PG3	489	184	--	321	--	417	--	699	--	1253	--	1084	1403
	PG4	561	241	--	441	--	596	--	876	--	1479	--	1404	1720
8/1.	PG1	163	85	118	155	241	205	280	278	375	376	440	493	594
	PG2	230	125	188	241	310	305	457	435	591	605	786	861	915
	PG3	469	188	192	269	350	372	517	696	933	1300	1278	1096	1393
	PG4	529	234	269	387	456	545	607	872	1146	1533	1618	1462	1716
9/1.	PG1	160	102	120	152	219	226	278	266	365	401	444	528	622
	PG2	237	149	189	236	308	301	454	414	574	459	732	920	925
	PG3	476	184	195	263	301	387	470	643	907	1392	1206	1172	1563
	PG4	545	241	255	378	425	539	561	812	1114	1642	1609	1563	1871
10/1.	PG1	158	95	122	168	217	196	271	260	375	397	451	522	601
	PG2	223	140	187	230	310	291	458	405	596	641	745	911	880
	PG3	457	172	192	242	354	355	470	591	912	1376	1228	1161	1283
	PG4	514	226	258	332	411	520	566	755	1130	1623	1514	1547	1564
11.2/1.	PG1	155	95	113	143	219	213	261	274	369	400	448	537	616
	PG2	230	140	175	220	313	285	442	385	569	645	739	600	897
	PG3	462	191	180	225	363	365	474	642	820	1184	1217	1055	1167
	PG4	529	226	240	320	414	509	563	773	1017	1436	1501	1136	1451
12.5/1.	PG1	151	79	125	142	212	195	251	266	362	392	463	528	607
	PG2	223	115	179	215	262	257	456	374	588	633	734	920	885
	PG3	449	142	189	222	325	307	475	623	741	1164	1206	1035	1151
	PG4	514	187	241	317	407	433	504	750	966	1411	1469	1420	1431
14/1.	PG1	153	74	115	134	229	193	258	277	363	385	456	520	582
	PG2	217	117	170	203	294	258	450	393	584	619	738	908	927
	PG3	445	141	182	210	331	296	480	562	722	1137	1109	1156	1043
	PG4	498	189	239	299	432	423	493	699	940	1379	1381	1543	1388
16/1.	PG1	151	70	124	154	202	188	256	245	353	367	442	608	565
	PG2	203	119	182	196	288	278	427	344	567	591	700	1061	869
	PG3	423	152	209	212	321	288	438	523	702	938	997	1077	1013
	PG4	467	193	266	283	423	441	465	640	914	1170	1245	1518	1317
18/1.	PG1	146	68	119	145	202	210	241	260	355	358	449	493	556
	PG2	196	116	200	184	289	255	430	351	563	577	718	861	861
	PG3	408	150	205	198	301	275	442	480	631	916	904	968	972
	PG4	451	188	285	265	424	381	472	590	838	1141	1161	1329	1277
20/1.	PG1	141	64	111	144	202	197	249	252	343	309	429	485	538
	PG2	189	98	187	183	260	239	432	340	556	498	687	847	877
	PG3	394	124	192	197	305	259	452	465	559	841	812	951	888
	PG4	436	157	266	264	344	358	460	572	770	1035	1056	1306	1225
22.4/1.	PG1	135	59	114	133	208	196	248	253	351	--	439	--	520
	PG2	183	101	189	169	268	281	430	335	563	--	708	--	897
	PG3	380	139	195	183	288	290	440	380	623	--	757	--	974
	PG4	420	163	259	244	354	363	462	510	771	--	1011	--	1182
25/1.	PG1	--	--	94	--	180	--	212	--	319	--	342	--	--
	PG2	--	--	159	--	242	--	361	--	495	--	611	--	--
	PG3	--	--	163	--	251	--	372	--	519	--	688	--	--
	PG4	--	--	226	--	340	--	461	--	694	--	947	--	--
28/1.	PG1	--	--	93	--	180	--	206	--	188	--	--	--	--
	PG2	--	--	134	--	257	--	378	--	350	--	--	--	--
	PG3	--	--	142	--	287	--	402	--	463	--	--	--	--
	PG4	--	--	176	--	340	--	419	--	625	--	--	--	--

** Values refer to: 1. Ambient Temperature : 20°C
 2. Operating cycle : 100% ,
 3. Installation in a large hall,
 4. Altitude up to 1000 m above sea level

*** Values refer to a cooling water inlet temperature of 20°C
 † Cooling coil not available for vertical units.
 Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxillary cooling (Horizontal & Vertical)
 Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

Thermal Capacities PG3 (kW)**†Units with cooling coil (Horizontal)
 Thermal Capacities PG4 (kW)**†Units with Fan & cooling coil (Horizontal)



MH2SH

MH2HH

MH2DH

MH2SV

MH2AV

Two Stage
Helical Units
Size : 6-18

Thermal Capacities (kW) @ n_1 - 1000 (rpm)

Nominal Ratio		Thermal Capacities P_G (kW)												
		Unit Size												
		6	7	8	9	10	11	12	13	14	15	16	17	18
6.3/1.	PG1	180	104	--	155	--	194	--	258	--	340	--	393	---
	PG2	262	178	--	265	--	298	--	502	--	578	--	666	---
	PG3	477	185	--	339	--	564	--	728	--	1235	--	1088	---
	PG4	559	260	--	450	--	667	--	973	--	1472	--	1362	---
7.1/1.	PG1	178	108	--	138	--	206	--	269	--	365	--	446	653
	PG2	285	184	--	241	--	353	--	461	--	620	--	757	981
	PG3	502	191	--	390	--	494	--	726	--	1325	--	1237	1521
	PG4	610	268	--	494	--	641	--	918	--	1580	--	1548	1850
8/1.	PG1	177	90	126	149	224	203	267	268	394	379	475	517	624
	PG2	270	155	209	256	345	348	375	459	614	643	802	878	959
	PG3	482	196	211	327	366	440	536	722	952	1374	1340	1251	1510
	PG4	576	260	295	434	488	586	643	913	1173	1638	1667	1612	1845
9/1.	PG1	174	108	129	146	203	224	265	255	383	405	479	553	653
	PG2	278	184	199	250	342	345	372	438	597	488	747	938	969
	PG3	489	191	210	320	366	458	488	668	926	1471	1265	1338	1695
	PG4	593	268	279	424	455	580	595	850	1140	1754	1657	1723	2012
10/1.	PG1	172	101	130	161	201	194	259	250	394	401	488	547	632
	PG2	262	172	201	276	345	333	383	428	620	681	760	929	922
	PG3	469	179	212	292	362	420	475	613	930	1455	1287	1325	1391
	PG4	559	251	283	372	440	559	600	791	1157	1734	1559	1706	1682
11.2/1.	PG1	168	101	121	137	203	211	249	264	388	404	483	563	647
	PG2	270	172	187	235	347	326	389	407	592	685	753	612	941
	PG3	474	179	197	260	360	432	458	666	836	1252	1276	1204	1266
	PG4	576	251	263	359	443	547	598	809	1041	1534	1546	1252	1560
12.5/1.	PG1	164	83	134	136	197	193	240	256	380	396	500	553	638
	PG2	262	143	188	233	291	294	374	395	612	673	748	938	928
	PG3	461	148	210	258	341	364	401	646	756	1230	1264	1181	1249
	PG4	559	208	264	355	435	465	535	785	988	1507	1513	1566	1539
14/1.	PG1	166	78	123	128	212	191	246	266	382	388	492	545	611
	PG2	254	145	192	220	327	295	369	415	607	658	752	926	972
	PG3	457	147	199	243	347	351	400	583	736	1202	1162	1320	1131
	PG4	542	210	262	335	463	455	523	731	962	1473	1422	1701	1492
16/1.	PG1	164	74	133	148	187	186	244	235	371	370	477	637	593
	PG2	238	138	191	208	320	318	350	363	590	628	714	1082	911
	PG3	434	145	233	257	331	341	388	543	716	992	1045	1230	1098
	PG4	508	215	292	317	452	474	493	670	935	1250	1282	1674	1416
18/1.	PG1	158	72	127	139	187	208	230	250	373	361	485	517	584
	PG2	230	137	210	195	316	291	354	370	586	613	732	878	902
	PG3	419	150	229	241	322	326	364	498	644	968	948	1105	1055
	PG4	491	209	312	297	454	410	500	618	858	1219	1196	1465	1373
20/1.	PG1	153	68	119	138	187	195	238	243	360	312	463	508	565
	PG2	222	113	197	194	264	274	341	359	564	529	700	863	919
	PG3	405	129	214	239	290	306	364	483	578	889	851	1086	964
	PG4	474	175	292	295	369	385	428	599	788	1106	1088	1440	1318
22.4/1.	PG1	147	62	121	128	193	194	237	243	368	--	474	--	546
	PG2	214	118	199	180	275	270	349	354	568	--	722	--	941
	PG3	390	126	207	222	298	300	360	424	585	--	793	--	960
	PG4	457	182	284	273	379	391	426	534	789	--	1042	--	1271
25/1.	PG1	--	--	101	--	167	--	202	--	335	--	369	--	--
	PG2	--	--	167	--	240	--	321	--	515	--	623	--	--
	PG3	--	--	181	--	285	--	355	--	530	--	722	--	--
	PG4	--	--	247	--	364	--	383	--	710	--	976	--	--
28/1.	PG1	--	--	99	--	167	--	197	--	197	--	--	--	--
	PG2	--	--	140	--	266	--	329	--	364	--	--	--	--
	PG3	--	--	152	--	285	--	361	--	473	--	--	--	--
	PG4	--	--	193	--	364	--	386	--	639	--	--	--	--

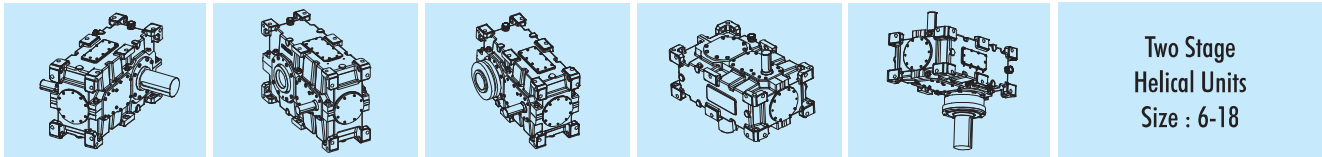
** Values refer to: 1. Ambient Temperature : 20°C
2. Operating cycle : 100% ,
3. Installation in a large hall,
4. Altitude up to 1000 m above sea level

*** Values refer to a cooling water inlet temperature of 20°C
† Cooling coil not available for vertical units.
Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxillary cooling (Horizontal & Vertical)
Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

Thermal Capacities PG3 (kW)**Units with cooling coil (Horizontal)
Thermal Capacities PG4 (kW)**Units with Fan & cooling coil (Horizontal)

RATINGS



MH2SH

MH2HH

MH2DH

MH2SV

MH2AV

Two Stage
Helical Units
Size : 6-18

Thermal Capacities (kW) @ n₁ - 1500 (rpm)

Nominal Ratio		Thermal Capacities P _G (kW)												
		Unit Size												
		6	7	8	9	10	11	12	13	14	15	16	17	18
6.3/1.	PG1	82	97	--	140	--	191	--	278	--	340	--	393	--
	PG2	142	178	--	240	--	318	--	412	--	578	--	666	--
	PG3	161	259	--	454	--	662	--	1013	--	1235	--	1088	--
	PG4	221	341	--	554	--	790	--	1147	--	1472	--	1362	--
7.1/1.	PG1	82	84	--	138	--	252	--	297	--	365	--	446	--
	PG2	142	155	--	210	--	392	--	416	--	620	--	757	1135
	PG3	161	260	--	442	--	612	--	1002	--	1325	--	1237	1330
	PG4	221	330	--	514	--	752	--	1122	--	1580	--	1548	1756
8/1.	PG1	87	94	84	155	227	233	250	275	402	379	545	517	588
	PG2	135	162	184	266	350	359	422	425	676	643	983	878	981
	PG3	162	278	246	387	444	600	586	915	1104	1374	1511	1251	1459
	PG4	211	346	347	498	567	726	758	1064	1379	1638	1948	1612	1851
9/1.	PG1	70	98	60	149	208	213	263	268	407	405	489	553	639
	PG2	130	195	132	256	327	365	422	414	680	488	1095	938	1013
	PG3	149	231	299	372	440	585	593	892	1163	1471	1310	1338	1635
	PG4	208	328	371	478	560	737	752	1038	1436	1754	1916	1723	2010
10/1.	PG1	70	95	132	146	214	210	259	297	409	401	497	547	632
	PG2	128	190	245	250	329	360	415	451	683	681	979	929	1016
	PG3	147	225	270	363	418	504	584	846	1084	1455	1430	1325	1587
	PG4	206	320	383	467	534	654	740	1000	1358	1734	1911	1706	1971
11.2/1.	PG1	66	93	76	127	229	227	254	287	399	404	487	563	663
	PG2	121	173	167	211	353	351	408	424	667	685	872	612	1002
	PG3	139	194	244	368	375	513	510	817	976	1252	1459	1204	1594
	PG4	195	275	335	453	500	637	664	954	1244	1534	1844	1252	1933
12.5/1.	PG1	63	97	149	139	221	211	246	257	399	396	499	553	633
	PG2	119	167	228	239	334	336	394	419	667	673	834	938	1017
	PG3	121	211	253	348	363	475	493	781	894	1230	1394	1181	1483
	PG4	177	280	360	447	476	600	642	943	1161	1507	1729	1566	1868
14/1.	PG1	64	93	130	132	216	217	239	247	384	388	500	545	614
	PG2	119	172	234	226	337	339	384	423	641	658	852	926	1005
	PG3	136	199	247	289	342	472	480	748	859	1202	1397	1320	1439
	PG4	191	278	333	383	463	594	624	925	1116	1473	1749	1701	1830
16/1.	PG1	57	90	128	131	193	200	241	244	378	370	494	637	654
	PG2	105	162	225	225	327	326	388	398	631	628	786	1082	1037
	PG3	120	170	240	288	333	389	467	670	846	992	1381	1230	1389
	PG4	168	238	303	381	468	515	614	824	1099	1250	1673	1674	1772
18/1.	PG1	56	79	123	130	196	186	245	240	386	361	489	517	624
	PG2	94	146	205	201	327	319	371	411	650	613	779	878	944
	PG3	102	179	215	270	333	359	461	658	836	968	1269	1105	1404
	PG4	132	246	290	341	430	492	586	829	1101	1219	1559	1465	1723
20/1.	PG1	59	84	119	126	192	198	240	256	377	312	472	508	613
	PG2	110	149	201	215	314	321	363	399	635	529	788	863	973
	PG3	116	168	210	238	337	356	452	611	816	889	1074	1086	1226
	PG4	167	218	281	328	388	479	575	754	1074	1106	1390	1440	1586
22.4/1.	PG1	46	74	125	127	193	200	240	242	389	--	463	--	604
	PG2	86	132	197	213	318	327	363	395	629	--	774	--	959
	PG3	91	141	208	230	330	350	381	497	711	--	1054	--	1057
	PG4	131	199	277	315	414	442	504	651	950	--	1364	--	1411
25/1.	PG1	--	--	96	--	167	--	228	--	359	--	495	--	--
	PG2	--	--	179	--	285	--	326	--	628	--	787	--	--
	PG3	--	--	190	--	300	--	361	--	650	--	986	--	--
	PG4	--	--	246	--	364	--	460	--	907	--	1278	--	--
28/1.	PG1	--	--	92	--	145	--	153	--	379	--	--	--	--
	PG2	--	--	167	--	192	--	263	--	550	--	--	--	--
	PG3	--	--	194	--	305	--	310	--	580	--	--	--	--
	PG4	--	--	259	--	352	--	420	--	844	--	--	--	--

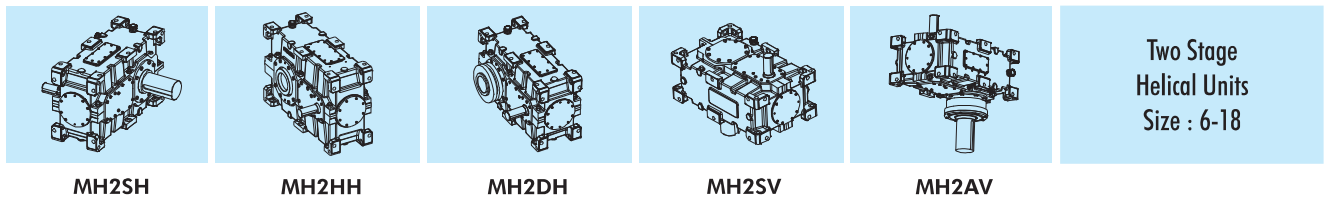
** Values refer to: 1. Ambient Temperature : 20°C
 2. Operating cycle : 100% ,
 3. Installation in a large hall,
 4. Altitude up to 1000 m above sea level

*** Values refer to a cooling water inlet temperature of 20°C
 † Cooling coil not available for vertical units.
 Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxillary cooling (Horizontal & Vertical)
 Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

Thermal Capacities PG3 (kW)**Units with cooling coil (Horizontal)
 Thermal Capacities PG4 (kW)**Units with Fan & cooling coil (Horizontal)

RATINGS



Thermal Capacities (kW) @ n_1 - 1750 (rpm)

Nominal Ratio		Thermal Capacities P _G (kW)												
		Unit Size												
		6	7	8	9	10	11	12	13	14	15	16	17	18
6.3/1.	PG1	79	84	--	115	--	--	--	--	--	--	--	--	--
	PG2	140	179	--	260	--	341	--	432	--	551	--	593	--
	PG3	159	274	--	488	--	705	--	1067	--	1262	--	1059	--
	PG4	218	354	--	621	--	882	--	1269	--	1451	--	1449	--
7.1/1.	PG1	79	73	--	113	--	--	--	--	--	--	--	--	--
	PG2	140	156	--	227	--	420	--	437	--	591	--	674	936
	PG3	159	274	--	475	--	652	--	1056	--	1354	--	1204	1330
	PG4	218	344	--	576	--	841	--	1242	--	1558	--	1647	1686
8/1.	PG1	84	82	74	127	175	--	--	--	--	--	--	--	--
	PG2	133	163	197	288	351	384	445	446	657	613	934	782	809
	PG3	160	294	262	416	491	638	615	964	1142	1404	1363	1217	1459
	PG4	208	359	375	558	661	811	835	1178	1492	1615	1765	1715	1777
9/1.	PG1	68	85	53	122	161	--	--	--	--	--	--	--	--
	PG2	128	196	142	277	328	391	444	435	660	466	930	836	836
	PG3	147	244	318	399	487	623	623	939	1204	1503	1181	1302	1635
	PG4	205	341	401	536	653	823	829	1149	1554	1729	1736	1833	1930
10/1.	PG1	67	83	116	119	165	--	--	--	--	--	--	--	--
	PG2	127	191	263	270	330	386	437	473	663	650	930	828	838
	PG3	145	238	287	390	463	536	613	890	1122	1487	1290	1289	1587
	PG4	203	333	414	523	623	730	816	1107	1470	1710	1732	1815	1892
11.2/1.	PG1	64	81	67	104	177	--	--	--	--	--	--	--	--
	PG2	120	174	179	229	354	375	430	446	648	653	829	545	826
	PG3	137	205	260	395	415	546	536	860	1010	1280	1316	1171	1594
	PG4	192	286	363	507	582	711	732	1056	1346	1513	1670	1332	1856
12.5/1.	PG1	64	95	152	131	203	191	209	211	--	--	--	--	--
	PG2	118	179	258	242	339	377	440	455	739	682	847	961	986
	PG3	123	240	280	378	399	525	552	836	938	1279	1454	1190	1580
	PG4	179	308	392	507	543	680	725	1070	1257	1578	1846	1657	2006
14/1.	PG1	65	91	133	123	199	197	203	202	--	--	--	--	--
	PG2	121	186	255	229	342	380	428	459	710	667	866	948	973
	PG3	138	226	274	314	376	521	537	801	901	1250	1457	1331	1533
	PG4	194	305	363	434	528	673	705	1050	1208	1542	1868	1800	1965
16/1.	PG1	58	88	131	123	177	181	204	200	--	--	--	--	--
	PG2	106	180	245	228	335	366	433	432	699	636	799	1108	1005
	PG3	122	183	270	313	363	430	522	717	888	1032	1440	1240	1479
	PG4	171	262	330	432	534	584	694	935	1190	1309	1786	1771	1903
18/1.	PG1	57	77	125	122	180	168	208	196	--	--	--	--	--
	PG2	91	157	224	204	328	358	414	446	721	621	791	899	914
	PG3	99	204	240	294	341	397	516	704	877	1007	1324	1114	1495
	PG4	135	271	316	386	490	558	663	941	1191	1276	1665	1550	1851
20/1.	PG1	60	82	121	118	176	180	204	209	--	--	--	--	--
	PG2	111	156	227	218	302	360	405	433	703	536	801	884	943
	PG3	117	167	241	259	320	394	506	654	856	925	1120	1095	1306
	PG4	169	239	306	371	442	543	650	856	1162	1158	1485	1524	1703
22.4/1.	PG1	47	72	127	119	178	181	204	198	--	--	--	--	--
	PG2	87	142	218	216	310	361	405	429	697	--	786	--	929
	PG3	92	161	230	250	324	380	427	532	745	--	1099	--	1125
	PG4	133	219	302	357	473	501	570	739	1028	--	1457	--	1516
25/1.	PG1	--	--	98	--	153	--	193	--	--	--	--	--	--
	PG2	--	--	172	--	268	--	364	--	650	--	800	--	--
	PG3	--	--	198	--	290	--	404	--	665	--	1028	--	--
	PG4	--	--	269	--	416	--	519	--	982	--	1365	--	--
28/1.	PG1	--	--	94	--	133	--	130	--	--	--	--	--	--
	PG2	--	--	180	--	195	--	293	--	628	--	--	--	--
	PG3	--	--	200	--	336	--	347	--	658	--	--	--	--
	PG4	--	--	283	--	402	--	475	--	913	--	--	--	--

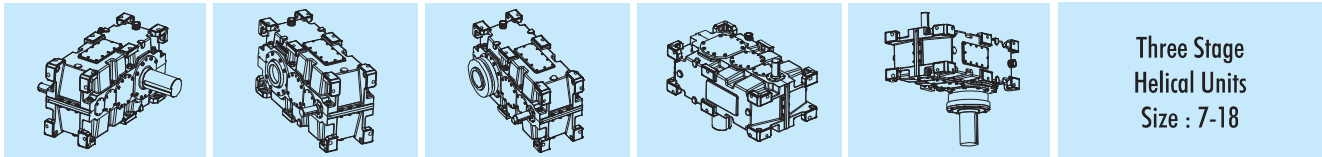
** Values refer to: 1. Ambient Temperature : 20°C
 2. Operating cycle : 100% ,
 3. Installation in a large hall,
 4. Altitude up to 1000 m above sea level

*** Values refer to a cooling water inlet temperature of 20°C
 † Cooling coil not available for vertical units.
 Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxillary cooling (Horizontal & Vertical)
 Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

Thermal Capacities PG3 (kW)**Units with cooling coil (Horizontal)
 Thermal Capacities PG4 (kW)**Units with Fan & cooling coil (Horizontal)

RATINGS



MH3SH

MH3HH

MH3DH

MH3SV

MH3AV

Three Stage
Helical Units
Size : 7-18

Nominal Mechanical Power Ratings (kW)

Nominal Ratio	Input Speed (rpm)	Nominal Output speed (rpm)	Nominal Mechanical Power Ratings P _N (kW)												
			Unit Size												
			7	8	9	10	11	12	13	14	15	16	17	18	
22.4/1.	1750	78	---	---	---	---	---	---	---	---	---	745	---	1250	---
	1500	67	---	---	---	---	---	---	---	---	---	633	---	1070	---
	1000	45	---	---	---	---	---	---	---	---	---	422	---	715	---
	750	33	---	---	---	---	---	---	---	---	---	318	---	540	---
25/1.	1750	70	84	---	159	---	260	---	464	---	666	---	1120	1270	
	1500	60	72	---	137	---	221	---	395	---	568	---	960	1086	
	1000	40	48	---	91	---	148	---	265	---	380	---	640	732	
	750	30	36	---	68	---	111	---	199	---	285	---	482	550	
28/1.	1750	63	75	---	142	---	231	---	414	---	593	735	1000	1130	
	1500	54	64	---	122	---	196	---	355	---	510	630	855	970	
	1000	36	43	---	81	---	131	---	237	---	340	420	570	645	
	750	27	32	---	61	---	98	---	178	---	255	315	430	485	
31.5/1.	1750	56	67.0	90	126	157.0	207	256	370	440	528	650	900	1010	
	1500	48	58.0	77	108	134.0	178	218	315	378	452	560	770	860	
	1000	32	38.0	51	72	89.5	119	145	212	252	302	372	515	575	
	750	24	29.0	38	54	67.0	89	109	159	189	226	280	385	432	
35.5/1.	1750	49	59.0	80	112	139.0	185	228	326	390	470	582	795	900	
	1500	42	51.0	68	96	119.0	158	196	278	336	402	497	683	770	
	1000	28	34.0	45.5	64	79.0	105	130	185	224	268	331	455	514	
	750	21	25.0	34.5	48	59.5	79	98	138	171	201	248	342	385	
40/1.	1750	44	53.0	71	99	123.0	163	202	290	348	417	515	710	790	
	1500	38	45.0	61	85	106.0	140	173	250	298	357	441	608	680	
	1000	25	30.3	40	57	70.5	93	116	166	199	238	294	405	455	
	750	19	22.5	30	42.5	53.0	70	87	125	150	178	220	303	339	
45/1.	1750	39	47.0	62	88	110.0	146	181	258	309	370	455	636	715	
	1500	33	40.0	53	75.5	94.0	125	155	218	265	317	392	546	610	
	1000	22	26.5	36	50.5	62.5	83	103	147	177	211	260	364	408	
	750	17	20.0	27	38	47.0	62.5	77	110	133	158	195	273	306	
50/1.	1750	35	42.0	57	79.5	99.0	130.5	162	232	278	333	413	573	632	
	1500	30	36.0	48.5	68	85.0	112	139	198	238	285	353	492	545	
	1000	20	24.0	32.5	46	56.5	74.5	93	132	160	190	235	328	365	
	750	15	18.0	24.5	34	42.5	56	69.5	99	120	143	177	245	275	
56/1.	1750	31	36.0	50.5	71	88.0	114	145	207	248	298	368	504	565	
	1500	27	31.0	43.5	61	75.5	98	124	178	215	255	315	432	485	
	1000	18	21.0	29	41	50.5	65.5	83	118	143	170	210	288	322	
	750	13	16.0	21.5	30.5	37.8	49	62	88	107	127	157	216	242	
63/1.	1750	28	33.0	45	63	78.0	102	129	184	221	264	328	444	507	
	1500	24	28.0	38	54	67.0	88	110	158	189	227	280	381	435	
	1000	16	18.5	26	36	45.0	58	73	105	127	151	186	254	290	
	750	12	14.0	19	27	33.5	43.5	55	79	95	113	140	190	218	
71/1.	1750	25	29.0	40	56	69.0	91	114	163	196	235	290	400	446	
	1500	21	25.0	34	48	59.0	77.5	98	138	168	201	248	342	382	
	1000	14	16.5	22	32	39.5	51.5	65	93	113	134	165	229	255	
	750	11	12.5	17	24	29.5	39	49	70	85	101	124	171	193	
80/1.	1750	22	26.0	35	49.5	61.0	80	101	144	174	208	258	355	399	
	1500	19	22.0	30	42.5	52.0	68.5	87	123	149	178	220	304	342	
	1000	13	15.0	20	28.5	35.0	46	58	82	100	119	147	204	228	
	750	9	11.0	15	21	26.0	34.6	43.5	62	76	89	110	153	171	
90/1.	1750	19	23.0	31	41	54.0	70	90	128	154	183	228	318	358	
	1500	17	20.0	27	35	46.0	60.5	77	110	133	157	196	272	308	
	1000	11	13.0	18	23	31.0	40	51	73.5	89	104	130	182	205	
	750	8	10.0	13	17.5	23.0	29.5	38.5	55	67	78	98	135	154	
100/1.	1750	18	---	26	---	49.0	---	81	---	139	---	206	---	319	
	1500	15	---	22.5	---	42.0	---	69.5	---	120	---	176	---	273	
	1000	10	---	15	---	28.0	---	46.5	---	81	---	117	---	182	
	750	8	---	14	---	21.0	---	34.5	---	61	---	88	---	136	
112/1.	1750	16	---	24	---	40.5	---	72	---	124	---	184	---	---	
	1500	13	---	21	---	34.5	---	62	---	107	---	157	---	---	
	1000	9	---	14	---	23.0	---	41	---	72	---	105	---	---	
	750	7	---	10	---	17.3	---	31	---	54	---	79	---	---	

Full Load Efficiency- 97.5% (approx.)

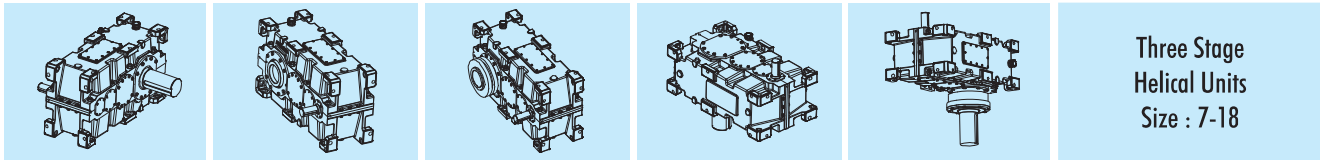
RATINGS

Nominal Output Torque Ratings (kNm)

Helical Gear Units
All Types
Size : 6-18

Ratio	Nominal Output Torque Ratings T_{2N} (kNm)												
	Unit Size												
	6	7	8	9	10	11	12	13	14	15	16	17	18
1.25	--	8	--	15	-	25	-	46	---	---	---	---	---
1.4	--	8.2	--	16	-	25	-	47	---	---	---	---	---
1.6	--	8.6	--	16	-	27	-	49	---	67	---	---	---
1.8	--	8.8	--	17	-	28	-	50	---	71	---	---	---
2	--	9.4	--	18	-	29	-	50	---	73	---	---	---
2.24	--	9.4	--	18	-	29	-	50	---	76	---	---	---
2.5	--	9.6	--	18	-	29	-	50	---	77	---	118	---
2.8	--	9.6	--	17	-	27	-	50	---	77	---	120	---
3.15	--	9.6	--	17	-	28	-	50	---	74	---	125	---
3.55	--	9.5	--	18	-	29	-	50	---	74	---	128	---
4	--	9.6	--	18	-	29	-	50	---	75	---	129	---
4.5	--	7.7	--	16	-	25	-	45	---	76	---	110	---
5	--	7.2	--	14	-	24	-	39	---	58	---	97	---
5.6	--	6.9	--	13	-	20	-	36	---	56	---	93	---
6.3	6.3	10.6	--	20	-	34	-	59	---	86	---	143	---
7.1	6.4	11.1	--	20	-	34	-	59	---	86	---	143	160
8	6.7	11.2	13.5	20	26	34	43	59	73	87	107	143	160
9	6.7	11.2	13.4	20	26	34	43	59	73	87	107	143	160
10	6.2	11.2	14.3	20	26	34	43	59	73	87	108	143	160
11.2	6.3	11.2	14.4	20	26	34	43	59	73	87	107	143	160
12.5	6.7	11.2	13.4	20	26	34	43	59	74	86	107	143	160
14	6.6	11.2	13.4	20	26	34	42	59	74	88	107	143	160
16	6.6	11.2	14.4	20	26	34	43	59	74	87	107	144	160
18	6.2	10.5	14.2	19	26	34	43	59	74	87	107	143	160
20	6.5	11.2	14.3	19	26	34	43	59	74	88	108	143	160
22.4	6.3	10.8	14	19	24	33	43	59	74	90	109	143	160
25	--	11.5	14.3	22	24	35	43	63	74	90	109	153	173
28	--	11.5	13.9	22	25	35	42	63	76	90	112	152	173
31.5	--	11.6	15.5	22	27	35	44	63	76	90	112	155	173
35.5	--	11.5	15.5	22	27	35	44	63	76	91	112	154	174
40	--	11.5	15.5	22	27	35	44	63	76	91	112	155	173
45	--	11.5	15.5	22	27	36	44	63	76	91	112	156	175
50	--	11.5	15.5	22	27	35	44	63	76	91	112	157	173
56	--	11.2	15.5	22	27	35	44	63	76	91	112	154	173
63	--	11.2	15.5	22	27	35	44	63	76	91	112	153	173
71	--	11.2	15.5	22	27	35	44	63	76	91	112	155	173
80	--	11.2	15.5	22	27	35	44	63	76	91	112	155	174
90	--	11.2	15.5	20	27	34	44	63	76	90	112	156	176
100	--	--	14.3	22	27	35	44	61	77	92	112	153	174
112	--	--	15	22	25	35	44	61	77	92	116	153	173
125	--	--	--	22	27	35	44	61	77	92	116	154	173
140	--	--	--	22	27	35	44	61	77	92	116	153	173
160	--	--	--	22	27	35	44	61	77	92	116	153	173
180	--	--	--	22	27	35	45	61	77	92	117	153	174
200	--	--	--	22	27	35	44	61	77	92	117	153	174
224	--	--	--	22	27	35	44	61	77	92	116	154	175
250	--	--	--	22	27	34	44	61	77	92	116	153	174
280	--	--	--	22	26	35	44	61	77	92	116	153	174
315	--	--	--	22	26	35	44	61	77	92	116	153	168
355	--	--	--	22	26	35	44	61	77	93	117	153	172
400	--	--	--	-	26	-	45	61	77	---	116	---	168
450	--	--	--	-	25	-	44	61	77	---	---	---	---

RATINGS



MH3SH

MH3HH

MH3DH

MH3SV

MH3AV

Three Stage
Helical Units
Size : 7-18

Thermal Capacities (kW) @ n_1 - 750 (rpm)

RATINGS

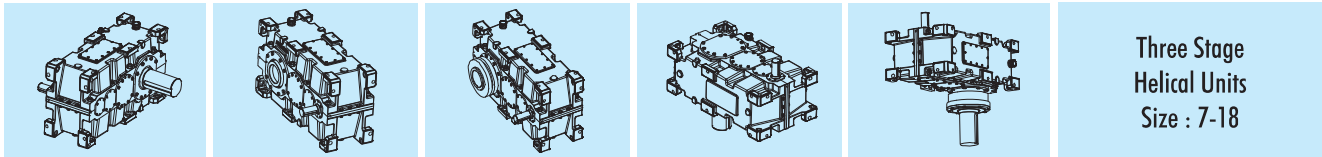
Nominal Ratio		Thermal Capacities P_G (kW)											
		Unit Size											
		7	8	9	10	11	12	13	14	15	16	17	18
22.4/1.	PG1	---	---	---	---	---	---	---	---	273	---	318	---
	PG2	---	---	---	---	---	---	---	---	381	---	545	---
	PG3	---	---	---	---	---	---	---	---	547	---	872	---
	PG4	---	---	---	---	---	---	---	---	650	---	1100	---
25/1.	PG1	50	---	82	---	133	---	144	---	269	---	308	392
	PG2	80	---	134	---	216	---	238	---	370	---	529	630
	PG3	117	---	159	---	272	---	353	---	515	---	792	703
	PG4	147	---	219	---	316	---	409	---	630	---	1012	1094
28/1.	PG1	48	---	78	---	131	---	147	---	264	---	325	386
	PG2	76	---	129	---	211	---	236	---	363	---	501	559
	PG3	114	---	154	---	269	---	344	---	482	---	770	694
	PG4	142	---	202	---	305	---	398	---	612	---	946	1018
31.5/1.	PG1	46	77	71	114	128	158	150	259	261	305	325	374
	PG2	74	126	126	187	207	229	233	332	359	471	501	536
	PG3	110	141	150	253	261	326	335	384	452	526	732	672
	PG4	138	200	197	290	295	356	386	485	594	695	908	987
35.5/1.	PG1	44	74	68	109	124	154	153	256	258	301	313	383
	PG2	71	122	123	175	188	226	229	324	353	464	470	555
	PG3	108	138	145	228	253	312	327	374	424	520	695	630
	PG4	133	198	192	276	285	344	372	471	575	673	852	884
40/1.	PG1	45	72	66	107	122	152	150	251	253	298	325	362
	PG2	69	116	121	162	201	224	226	312	347	458	482	560
	PG3	105	134	141	222	246	297	318	348	411	514	650	586
	PG4	132	193	188	266	274	332	362	442	557	652	806	826
45/1.	PG1	45	68	62	104	119	149	147	246	249	290	311	361
	PG2	67	112	118	151	197	221	224	305	340	445	436	566
	PG3	101	130	136	217	241	288	310	334	396	501	621	527
	PG4	132	188	183	255	262	320	352	414	537	631	747	704
50/1.	PG1	44	65	60	88	113	144	150	248	238	281	287	359
	PG2	63	106	113	157	198	229	232	283	336	430	381	549
	PG3	100	132	134	184	226	282	323	330	385	488	579	606
	PG4	128	182	169	245	255	312	378	245	521	608	677	796
56/1.	PG1	45	61	57	86	111	142	146	244	235	277	288	346
	PG2	61	105	110	150	194	228	229	278	334	419	395	529
	PG3	98	128	130	177	220	270	309	309	368	473	562	546
	PG4	121	178	168	237	244	299	366	406	502	585	736	761
63/1.	PG1	45	57	55	83	108	139	143	238	228	274	280	349
	PG2	59	101	107	142	187	224	227	271	332	414	385	526
	PG3	95	128	125	171	206	259	294	302	382	454	519	536
	PG4	114	164	166	225	233	288	354	399	483	563	632	722
71/1.	PG1	43	55	52	80	105	136	141	232	223	263	277	341
	PG2	57	95	103	134	183	221	223	254	318	404	370	530
	PG3	91	123	121	164	193	246	276	282	330	442	498	540
	PG4	110	160	164	220	224	269	341	213	465	541	598	727
80/1.	PG1	42	52	51	78	102	129	138	228	218	250	276	344
	PG2	56	90	98	127	171	209	217	237	321	397	378	530
	PG3	87	118	116	166	182	234	257	269	332	431	498	545
	PG4	101	155	161	207	211	268	328	376	446	519	608	668
90/1.	PG1	58	50	48	76	99	122	135	224	215	244	276	332
	PG2	69	86	94	122	168	198	212	219	318	387	370	502
	PG3	85	114	112	154	184	221	238	249	337	425	448	510
	PG4	93	155	157	197	201	266	317	367	427	493	553	612
100/1.	PG1	---	45	---	73	---	114	---	214	---	233	---	314
	PG2	---	82	---	120	---	187	---	203	---	365	---	497
	PG3	---	109	---	147	---	211	---	236	---	415	---	512
	PG4	---	147	---	195	---	264	---	354	---	475	---	589
112/1.	PG1	---	42	---	71	---	106	---	205	---	223	---	---
	PG2	---	78	---	118	---	177	---	194	---	353	---	---
	PG3	---	104	---	143	---	203	---	229	---	406	---	---
	PG4	---	142	---	194	---	263	---	342	---	450	---	---

** Values refer to: 1. Ambient Temperature : 20°C
 2. Operating cycle : 100% ,
 3. Installation in a large hall,
 4. Altitude up to 1000 m above sea level

*** Values refer to a cooling water inlet temperature of 20°C
 † Cooling coil not available for vertical units.
 Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxillary cooling (Horizontal & Vertical)
 Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

Thermal Capacities PG3 (kW)**†Units with cooling coil (Horizontal)
 Thermal Capacities PG4 (kW)**††Units with Fan & cooling coil (Horizontal)



MH3SH

MH3HH

MH3DH

MH3SV

MH3AV

Three Stage
Helical Units
Size : 7-18

Thermal Capacities (kW) @ $n_1 = 1000$ (rpm)

Nominal Ratio		Thermal Capacities P_G (kW)											
		Unit Size											
		7	8	9	10	11	12	13	14	15	16	17	18
22.4/1.	PG1	---	---	---	---	---	---	---	---	295	---	340	---
	PG2	---	---	---	---	---	---	---	---	412	---	583	---
	PG3	---	---	---	---	---	---	---	---	568	---	932	---
	PG4	---	---	---	---	---	---	---	---	678	---	1175	---
25/1.	PG1	54	---	100	---	138	---	166	---	290	---	330	420
	PG2	93	---	150	---	237	---	275	---	400	---	565	794
	PG3	128	---	178	---	290	---	410	---	534	---	846	875
	PG4	166	---	250	---	342	---	488	---	658	---	1081	1320
28/1.	PG1	52	---	95	---	135	---	170	---	285	343	347	413
	PG2	88	---	145	---	232	---	272	---	393	520	535	777
	PG3	125	---	173	---	286	---	400	---	500	600	823	864
	PG4	161	---	230	---	330	---	474	---	639	759	1011	1228
31.5/1.	PG1	50	84	87	125	132	175	173	281	282	328	347	400
	PG2	86	140	142	226	227	264	269	388	388	508	535	753
	PG3	121	156	168	266	278	345	390	446	469	546	782	837
	PG4	156	220	225	311	319	395	460	578	620	727	970	1190
35.5/1.	PG1	48	81	83	120	129	171	176	277	278	324	335	410
	PG2	82	135	139	211	206	261	264	379	382	500	502	691
	PG3	118	152	163	240	269	330	380	435	440	540	742	784
	PG4	151	218	219	296	308	382	444	561	600	703	910	1066
40/1.	PG1	49	79	80	118	126	168	173	272	273	320	348	388
	PG2	80	129	136	195	221	258	261	365	375	494	515	654
	PG3	115	148	158	234	262	314	370	405	426	534	694	729
	PG4	150	212	214	285	296	369	432	527	581	681	861	996
45/1.	PG1	49	75	76	114	123	165	169	267	269	312	332	387
	PG2	78	124	133	182	216	255	258	357	368	480	466	580
	PG3	111	144	153	228	257	305	360	388	411	520	664	656
	PG4	149	207	209	273	284	355	419	494	561	659	798	849
50/1.	PG1	48	71	73	111	120	161	165	261	262	308	314	392
	PG2	74	117	130	173	210	252	256	335	369	474	477	602
	PG3	109	139	148	220	252	294	345	357	395	505	635	719
	PG4	147	200	205	266	273	342	406	480	542	635	798	928
56/1.	PG1	48	67	69	108	117	158	161	256	258	304	315	378
	PG2	72	116	127	165	205	250	253	329	367	462	495	580
	PG3	106	135	143	212	245	281	330	334	378	490	616	647
	PG4	139	196	203	258	261	328	393	465	522	611	868	888
63/1.	PG1	48	63	67	104	114	155	157	250	251	301	307	381
	PG2	69	111	124	157	198	247	250	320	365	456	483	587
	PG3	103	135	138	204	230	270	315	327	392	470	569	636
	PG4	131	180	201	245	250	315	380	457	502	588	746	842
71/1.	PG1	46	60	63	101	111	152	155	244	245	289	303	373
	PG2	67	105	119	148	194	242	247	300	355	445	463	598
	PG3	99	130	133	196	215	256	295	305	385	458	546	623
	PG4	126	176	198	239	240	295	366	444	483	565	706	848
80/1.	PG1	45	57	62	98	108	144	152	239	240	275	302	376
	PG2	65	99	113	140	190	230	240	280	357	437	473	581
	PG3	95	124	128	198	200	244	275	291	380	446	546	600
	PG4	116	170	195	225	226	293	352	430	464	542	717	780
90/1.	PG1	62	55	58	95	105	136	149	235	236	268	302	363
	PG2	81	95	108	135	184	218	234	259	357	427	464	561
	PG3	92	120	123	184	191	230	255	270	370	440	491	570
	PG4	107	170	190	214	215	291	340	420	444	515	652	714
100/1.	PG1	---	50	---	92	---	127	---	225	---	256	---	343
	PG2	---	90	---	132	---	206	---	240	---	402	---	560
	PG3	---	115	---	176	---	220	---	255	---	430	---	584
	PG4	---	162	---	212	---	289	---	405	---	496	---	687
112/1.	PG1	---	46	---	89	---	118	---	216	---	245	---	---
	PG2	---	86	---	130	---	194	---	229	---	389	---	---
	PG3	---	110	---	170	---	212	---	247	---	420	---	---
	PG4	---	156	---	211	---	288	---	391	---	470	---	---

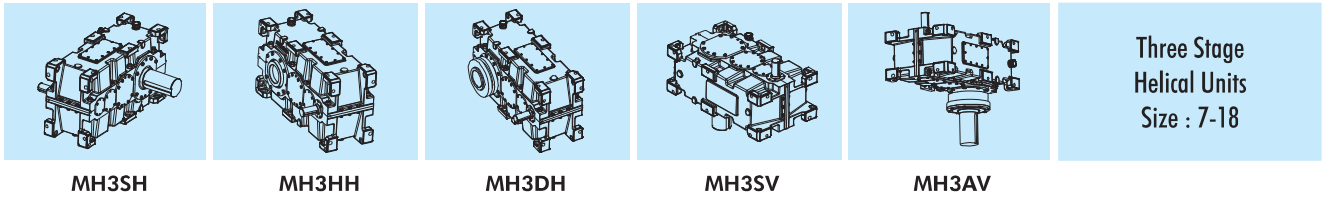
** Values refer to: 1. Ambient Temperature : 20°C
 2. Operating cycle : 100% ,
 3. Installation in a large hall,
 4. Altitude up to 1000 m above sea level

*** Values refer to a cooling water inlet temperature of 20°C
 † Cooling coil not available for vertical units.
 Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxillary cooling (Horizontal & Vertical)
 Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

Thermal Capacities PG3 (kW)**†Units with cooling coil (Horizontal)
 Thermal Capacities PG4 (kW)**†Units with Fan & cooling coil (Horizontal)

RATINGS



MH3SH

MH3HH

MH3DH

MH3SV

MH3AV

Three Stage
Helical Units
Size : 7-18

Thermal Capacities (kW) @ $n_1 = 1500$ (rpm)

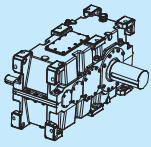
Nominal Ratio		Thermal Capacities P_G (kW)											
		Unit Size											
		7	8	9	10	11	12	13	14	15	16	17	18
22.4/1.	PG1	---	---	---	---	---	---	---	---	278	---	347	---
	PG2	---	---	---	---	---	---	---	---	451	---	595	---
	PG3	---	---	---	---	---	---	---	---	697	---	1102	---
	PG4	---	---	---	---	---	---	---	---	870	---	1350	---
25/1.	PG1	82	---	120	---	145	---	191	---	274	---	350	416
	PG2	132	---	165	---	230	---	333	---	445	---	601	659
	PG3	150	---	245	---	322	---	525	---	642	---	960	1096
	PG4	194	---	270	---	412	---	687	---	823	---	1211	1339
28/1.	PG1	80	---	111	---	141	---	190	---	270	265	340	412
	PG2	127	---	157	---	227	---	328	---	438	527	534	670
	PG3	149	---	233	---	315	---	503	---	619	718	986	1011
	PG4	172	---	264	---	399	---	658	---	787	979	1179	1268
31.5/1.	PG1	78	100	105	138	139	180	187	268	270	336	336	421
	PG2	121	138	150	231	225	290	321	432	430	548	559	640
	PG3	147	148	220	270	299	385	485	549	594	689	960	1008
	PG4	166	210	258	312	384	490	630	713	670	901	1198	1227
35.5/1.	PG1	74	97	98	134	136	176	184	276	271	340	336	413
	PG2	117	133	143	225	222	278	315	424	423	525	538	661
	PG3	145	146	207	260	284	369	466	521	559	667	882	988
	PG4	156	202	252	311	370	471	597	668	710	855	1084	1236
40/1.	PG1	70	94	93	131	134	166	178	268	267	345	333	407
	PG2	112	132	141	220	220	268	300	410	416	505	533	603
	PG3	144	145	195	253	276	350	435	485	541	647	820	904
	PG4	192	199	246	310	356	448	573	630	615	807	1020	1100
45/1.	PG1	65	91	89	129	131	158	167	260	260	334	331	395
	PG2	108	131	138	215	218	250	285	398	401	517	511	604
	PG3	142	144	181	248	267	335	415	451	525	583	851	846
	PG4	180	196	240	310	335	425	545	590	666	767	1031	1054
50/1.	PG1	60	88	84	127	129	150	155	264	254	337	331	396
	PG2	105	129	135	208	215	240	270	392	389	512	500	595
	PG3	138	142	170	243	256	316	388	445	506	558	838	849
	PG4	178	193	234	309	320	408	516	577	640	735	1007	1048
56/1.	PG1	58	85	81	125	127	142	140	267	253	339	337	395
	PG2	100	128	131	202	212	227	257	389	388	508	515	604
	PG3	133	140	168	238	248	298	360	442	483	533	772	833
	PG4	172	188	226	309	306	383	485	564	615	702	950	1042
63/1.	PG1	54	82	78	122	124	134	131	259	252	336	328	402
	PG2	94	125	140	197	208	214	243	388	387	505	511	594
	PG3	134	138	167	233	240	279	338	427	452	521	702	784
	PG4	168	179	220	308	293	359	449	556	587	690	885	976
71/1.	PG1	52	64	70	117	125	125	121	258	250	323	321	392
	PG2	86	122	125	193	215	211	224	385	384	400	500	593
	PG3	130	135	147	224	233	260	321	390	424	480	686	719
	PG4	152	170	193	300	296	346	424	520	560	658	865	919
80/1.	PG1	51	60	63	112	127	120	118	254	249	310	329	402
	PG2	82	120	115	188	202	203	212	300	380	450	502	601
	PG3	124	132	140	215	228	235	303	357	404	500	635	704
	PG4	146	162	180	291	286	330	395	486	535	629	808	904
90/1.	PG1	50	56	60	107	130	116	115	254	256	305	322	351
	PG2	80	118	103	183	196	195	205	340	361	485	491	578
	PG3	120	129	135	204	222	220	285	360	382	501	610	653
	PG4	140	157	167	280	270	324	360	481	509	619	780	880
100/1.	PG1	---	52	---	95	---	113	---	250	---	290	---	409
	PG2	---	115	---	166	---	186	---	301	---	380	---	594
	PG3	---	125	---	189	---	210	---	325	---	405	---	613
	PG4	---	150	---	261	---	305	---	460	---	610	---	798
112/1.	PG1	---	48	---	84	---	109	---	246	---	275	---	---
	PG2	---	112	---	149	---	175	---	300	---	375	---	---
	PG3	---	120	---	177	---	205	---	338	---	400	---	---
	PG4	---	143	---	242	---	284	---	445	---	600	---	---

** Values refer to: 1. Ambient Temperature : 20°C
 2. Operating cycle : 100% ,
 3. Installation in a large hall,
 4. Altitude up to 1000 m above sea level

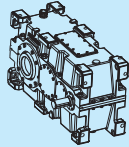
*** Values refer to a cooling water inlet temperature of 20°C
 † Cooling coil not available for vertical units.
 Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxillary cooling (Horizontal & Vertical)
 Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

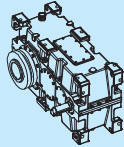
Thermal Capacities PG3 (kW)***)†Units with cooling coil (Horizontal)
 Thermal Capacities PG4 (kW)***)†Units with Fan & cooling coil (Horizontal)



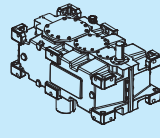
MH3SH



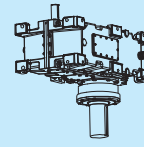
MH3HH



MH3DH



MH3SV



MH3AV

Three Stage
Helical Units
Size : 7-18

Thermal Capacities (kW) @ n_1 - 1750 (rpm)

Nominal Ratio		Thermal Capacities P_G (kW)											
		Unit Size											
		7	8	9	10	11	12	13	14	15	16	17	18
22.4/1.	PG1	---	---	---	---	---	---	---	---	280	---	379	---
	PG2	---	---	---	---	---	---	---	---	519	---	651	---
	PG3	---	---	---	---	---	---	---	---	686	---	1157	---
	PG4	---	---	---	---	---	---	---	---	916	---	1432	---
25/1.	PG1	91	---	128	---	148	---	202	---	277	---	383	418
	PG2	147	---	186	---	269	---	389	---	513	---	658	702
	PG3	158	---	264	---	352	---	596	---	632	---	1008	1101
	PG4	211	---	303	---	447	---	794	---	867	---	1285	1387
28/1.	PG1	89	---	119	---	144	---	201	---	272	270	371	414
	PG2	141	---	177	---	265	---	383	---	505	537	584	714
	PG3	156	---	251	---	345	---	571	---	609	758	1035	1016
	PG4	187	---	296	---	433	---	761	---	829	1025	1251	1314
31.5/1.	PG1	87	104	112	148	142	191	198	274	273	341	367	423
	PG2	135	153	170	253	263	322	375	444	495	558	612	682
	PG3	154	160	237	292	327	410	550	589	584	728	1008	1013
	PG4	181	233	290	345	416	547	728	757	706	944	1271	1271
35.5/1.	PG1	82	100	105	143	138	187	195	283	274	346	367	415
	PG2	130	148	161	247	260	308	368	435	487	535	589	704
	PG3	152	158	223	281	310	393	529	558	550	704	926	993
	PG4	170	224	282	344	401	525	690	709	748	895	1150	1281
40/1.	PG1	78	97	99	140	137	176	188	274	270	351	364	409
	PG2	125	147	159	241	257	298	351	421	479	515	583	642
	PG3	151	156	210	273	302	373	494	520	532	683	861	909
	PG4	209	221	276	343	386	500	662	668	648	845	1082	1139
45/1.	PG1	72	94	95	138	134	167	177	266	263	339	362	397
	PG2	120	146	156	236	255	278	333	409	462	527	560	643
	PG3	149	155	195	268	292	357	471	484	516	616	894	850
	PG4	196	218	270	343	363	474	630	626	702	803	1094	1092
50/1.	PG1	63	93	90	134	137	160	159	277	265	351	343	411
	PG2	118	146	156	228	240	266	307	410	456	533	551	654
	PG3	145	150	196	266	286	349	402	465	550	581	918	880
	PG4	194	211	263	351	374	457	563	604	735	765	1123	1117
56/1.	PG1	61	90	87	132	135	152	144	280	264	353	350	409
	PG2	113	144	151	222	237	252	292	407	455	529	568	664
	PG3	140	148	193	261	277	329	373	463	525	555	845	863
	PG4	187	205	254	351	357	429	530	590	707	731	1060	1110
63/1.	PG1	57	87	84	129	131	143	135	271	263	350	341	417
	PG2	106	141	161	216	233	237	276	406	453	526	564	654
	PG3	141	146	192	255	268	307	350	446	491	542	769	812
	PG4	183	196	247	350	342	402	491	582	674	718	987	1041
71/1.	PG1	54	68	75	124	133	133	124	270	261	336	333	407
	PG2	97	138	145	212	241	234	254	403	450	416	551	652
	PG3	137	143	169	246	260	287	333	408	461	500	751	745
	PG4	165	186	217	341	346	387	462	544	643	685	964	980
80/1.	PG1	53	64	67	118	135	128	121	266	260	323	341	416
	PG2	92	135	133	206	226	225	241	314	445	468	554	661
	PG3	130	140	161	236	254	259	314	374	440	521	695	730
	PG4	159	177	202	331	334	369	431	508	615	655	901	964
90/1.	PG1	53	59	64	113	138	124	118	266	267	317	334	364
	PG2	90	133	119	201	219	216	233	356	423	505	542	636
	PG3	126	136	155	223	248	243	295	377	415	456	668	677
	PG4	152	172	188	318	315	363	393	504	585	644	870	938
100/1.	PG1	---	55	---	101	---	121	---	262	---	302	---	423
	PG2	---	124	---	182	---	206	---	315	---	396	---	654
	PG3	---	132	---	207	---	232	---	340	---	422	---	635
	PG4	---	164	---	296	---	341	---	481	---	635	---	851
112/1.	PG1	---	51	---	89	---	117	---	258	---	286	---	---
	PG2	---	122	---	164	---	194	---	314	---	390	---	---
	PG3	---	127	---	194	---	226	---	354	---	416	---	---
	PG4	---	156	---	275	---	318	---	465	---	625	---	---

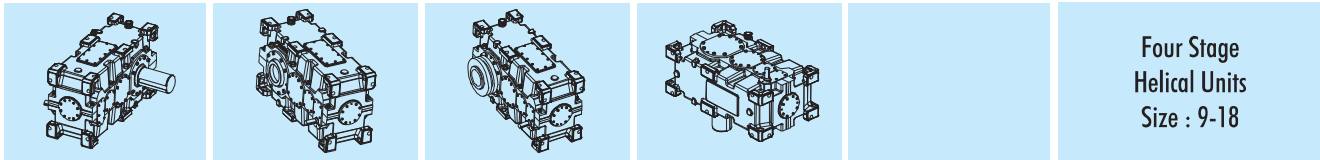
** Values refer to: 1. Ambient Temperature : 20°C
2. Operating cycle : 100% ,
3. Installation in a large hall,
4. Altitude up to 1000 m above sea level

*** Values refer to a cooling water inlet temperature of 20°C
† Cooling coil not available for vertical units.
Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxillary cooling (Horizontal & Vertical)
Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

Thermal Capacities PG3 (kW)**†Units with cooling coil (Horizontal)
Thermal Capacities PG4 (kW)**†Units with Fan & cooling coil (Horizontal)

RATINGS



MH4SH

MH4HH

MH4DH

MH4SV

Four Stage
Helical Units
Size : 9-18

Nominal Mechanical Power Ratings (kW)

Nominal Ratio	Input Speed (rpm)	Nominal Output speed (rpm)	Nominal Mechanical Power Ratings P _N (kW)									
			Unit Size									
			9	10	11	12	13	14	15	16	17	18
100/1.	1750	17.5	40	---	63.5	---	111	---	169	---	280	---
	1500	15	34	---	54.4	---	95	---	146	---	240	---
	1000	10	23	---	36.3	---	63.5	---	97	---	160	---
	750	7.5	17	---	27.3	---	48	---	73	---	120	---
112/1.	1750	15.6	36	---	56.5	---	100	---	152	---	250	282
	1500	13.4	31	---	48.5	---	86	---	129	---	215	244
	1000	8.9	20.5	---	32.5	---	57.5	---	86	---	143	162
	750	6.7	15	---	24	---	43	---	65	---	107	121
125/1.	1750	14	32	39.0	51.5	65	90	112	136	170	226	254
	1500	12	27	33.5	44	56	77.5	96	116	146	194	218
	1000	8	18	22.5	29.3	37	51.5	65	77	97.5	129	145
	750	6	13.5	16.8	21.7	27.5	38.7	49	58	73	97	109
140/1.	1750	12.5	28.6	35.0	46	58	80	100	121	153	200	228
	1500	10.7	24	30.0	39	50	68	87	104	131	172	194
	1000	7.1	16	20.0	26	33.2	46	58	69	87	114	130
	750	5.4	12	15.0	20	25	34.5	43	52	65	86	97
160/1.	1750	10.9	25	30.6	40.5	51	70	88	106	133	175	198
	1500	9.4	21	26.0	34.8	44	60.5	75.5	91	114	151	170
	1000	6.3	14	17.5	23	29	40	51	60	76	101	113
	750	4.7	10.7	13.2	17.3	22	30	38	46	57	75	85
180/1.	1750	9.7	22	27.0	36	45	62.5	79	94	119	157	178
	1500	8.3	19	23.3	31	39	52.8	68	81	102	135	152
	1000	5.6	12.8	15.5	20.6	26	35.5	45.5	54	68	90	101
	750	4.2	9.5	11.5	15.4	19.5	26.8	34	40.5	51	67.5	76
200/1.	1750	8.8	20	24.5	32	41	56	70	85	107	140	158
	1500	7.5	17	21.0	27.5	35	48	60	73	91	120	137
	1000	5	11.5	14.0	18.5	23.2	32	41	48.5	61	80	91
	750	3.8	9	10.5	13.8	17.5	24	31	36.5	45.5	60	68
224/1.	1750	7.8	18	21.8	28.5	36	50	63	76	95	126	143
	1500	6.7	15.3	18.7	24.5	31	42.8	54	65	81.5	108	122
	1000	4.5	10.2	12.5	16.3	20.5	28.6	36	43	54.5	72	81
	750	3.3	7.5	9.4	12.3	15.5	21.5	27	33	41	54	61
250/1.	1750	7	16	19.5	25	32	45	56	68.5	85	112	128
	1500	6	13.5	17.0	21.5	28	38.8	49	58.5	73	96	110
	1000	4	9	11.2	14.5	18.5	25.8	32.5	39	49	64	73
	750	3	7	8.3	11	14	19.4	24.5	29	36.5	48	55
280/1.	1750	6.3	14	17.3	22.6	29	40	50.5	60	76	99.5	114
	1500	5.4	12	14.8	19.6	25	34.5	43.5	52	65	85	97
	1000	3.6	8	10.0	13.2	16.5	23	29	35	43.5	56.5	65
	750	2.7	6	7.5	10	12.5	17.3	22	26.2	32.5	43	49
315/1.	1750	5.6	13	15.4	20.3	26	36	45	54	68	90	98
	1500	4.8	11	13.5	17.2	22	30.8	38.5	46	58	77	83.5
	1000	3.2	7.3	8.8	11.8	14.8	20.5	25.7	31	39	51	56
	750	2.4	5.5	6.6	9	11	15.3	19.7	23.5	29	38	42
355/1.	1750	4.9	10.3	13.6	18	23	31.8	40	48	60	79.5	88.5
	1500	4.2	8.7	11.6	15.5	19.6	27.3	34	41.5	51.7	68	76
	1000	2.8	5.8	7.7	10.5	13	18.2	22.8	27.5	34.5	45	51
	750	2.1	4.2	5.8	7.8	9.8	13.6	17.4	20.7	25.8	34	38
400/1.	1750	4.4	---	12.0	---	20.5	---	35.5	---	53.5	---	77.5
	1500	3.8	---	10.2	---	17.5	---	30.5	---	45.5	---	66
	1000	2.5	---	7.0	---	11.7	---	20.3	---	30.5	---	44
	750	1.9	---	5.2	---	8.7	---	15.2	---	22.8	---	33
450/1.	1750	3.9	---	10.2	---	17.5	---	31.5	---	47.5	---	---
	1500	3.3	---	8.8	---	15	---	27	---	40.5	---	---
	1000	2.2	---	5.9	---	10	---	18	---	27	---	---
	750	1.7	---	4.4	---	7.5	---	13.5	---	20.4	---	---

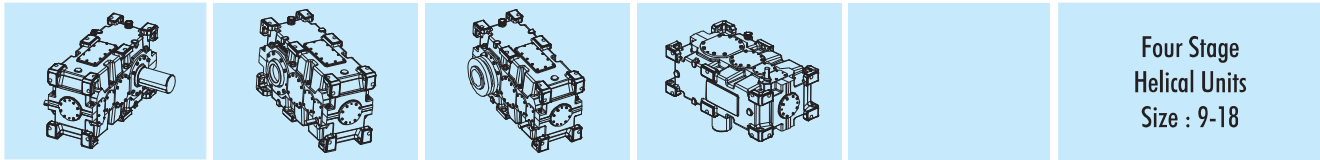
Full Load Efficiency- 96.5% (approx.)

Nominal Output Torque Ratings (kNm)

Helical Gear Units
All Types
Size : 6-18

Ratio	Nominal Output Torque Ratings T_{2N} (kNm)												
	Unit Size												
	6	7	8	9	10	11	12	13	14	15	16	17	18
1.25	--	8	--	15	-	25	-	46	---	---	---	---	---
1.4	--	8.2	--	16	-	25	-	47	---	---	---	---	---
1.6	--	8.6	--	16	-	27	-	49	---	67	---	---	---
1.8	--	8.8	--	17	-	28	-	50	---	71	---	---	---
2	--	9.4	--	18	-	29	-	50	---	73	---	---	---
2.24	--	9.4	--	18	-	29	-	50	---	76	---	---	---
2.5	--	9.6	--	18	-	29	-	50	---	77	---	118	---
2.8	--	9.6	--	17	-	27	-	50	---	77	---	120	---
3.15	--	9.6	--	17	-	28	-	50	---	74	---	125	---
3.55	--	9.5	--	18	-	29	-	50	---	74	---	128	---
4	--	9.6	--	18	-	29	-	50	---	75	---	129	---
4.5	--	7.7	--	16	-	25	-	45	---	76	---	110	---
5	--	7.2	--	14	-	24	-	39	---	58	---	97	---
5.6	--	6.9	--	13	-	20	-	36	---	56	---	93	---
6.3	6.3	10.6	--	20	-	34	-	59	---	86	---	143	---
7.1	6.4	11.1	--	20	-	34	-	59	---	86	---	143	160
8	6.7	11.2	13.5	20	26	34	43	59	73	87	107	143	160
9	6.7	11.2	13.4	20	26	34	43	59	73	87	107	143	160
10	6.2	11.2	14.3	20	26	34	43	59	73	87	108	143	160
11.2	6.3	11.2	14.4	20	26	34	43	59	73	87	107	143	160
12.5	6.7	11.2	13.4	20	26	34	43	59	74	86	107	143	160
14	6.6	11.2	13.4	20	26	34	42	59	74	88	107	143	160
16	6.6	11.2	14.4	20	26	34	43	59	74	87	107	144	160
18	6.2	10.5	14.2	19	26	34	43	59	74	87	107	143	160
20	6.5	11.2	14.3	19	26	34	43	59	74	88	108	143	160
22.4	6.3	10.8	14	19	24	33	43	59	74	90	109	143	160
25	--	11.5	14.3	22	24	35	43	63	74	90	109	153	173
28	--	11.5	13.9	22	25	35	42	63	76	90	112	152	173
31.5	--	11.6	15.5	22	27	35	44	63	76	90	112	155	173
35.5	--	11.5	15.5	22	27	35	44	63	76	91	112	154	174
40	--	11.5	15.5	22	27	35	44	63	76	91	112	155	173
45	--	11.5	15.5	22	27	36	44	63	76	91	112	156	175
50	--	11.5	15.5	22	27	35	44	63	76	91	112	157	173
56	--	11.2	15.5	22	27	35	44	63	76	91	112	154	173
63	--	11.2	15.5	22	27	35	44	63	76	91	112	153	173
71	--	11.2	15.5	22	27	35	44	63	76	91	112	155	173
80	--	11.2	15.5	22	27	35	44	63	76	91	112	155	174
90	--	11.2	15.5	20	27	34	44	63	76	90	112	156	176
100	--	--	14.3	22	27	35	44	61	77	92	112	153	174
112	--	--	15	22	25	35	44	61	77	92	116	153	173
125	--	--	--	22	27	35	44	61	77	92	116	154	173
140	--	--	--	22	27	35	44	61	77	92	116	153	173
160	--	--	--	22	27	35	44	61	77	92	116	153	173
180	--	--	--	22	27	35	45	61	77	92	117	153	174
200	--	--	--	22	27	35	44	61	77	92	117	153	174
224	--	--	--	22	27	35	44	61	77	92	116	154	175
250	--	--	--	22	27	34	44	61	77	92	116	153	174
280	--	--	--	22	26	35	44	61	77	92	116	153	174
315	--	--	--	22	26	35	44	61	77	92	116	153	168
355	--	--	--	22	26	35	44	61	77	93	117	153	172
400	--	--	--	-	26	-	45	61	77	---	116	---	168
450	--	--	--	-	25	-	44	61	77	---	---	---	---

RATINGS



MH4SH

MH4HH

MH4DH

MH4SV

Four Stage
Helical Units
Size : 9-18

Thermal Capacities (kW)

n_1 - 750 (rpm)

Nominal Ratio		Thermal Capacities P_G (kW)									
		Unit Size									
		9	10	11	12	13	14	15	16	17	18
100/1.	PG1	83	--	119	--	138	--	219	--	254	--
112/1.	PG1	83	--	117	--	136	--	217	--	252	--
125/1.	PG1	80	117	116	125	134	146	214	247	252	272
140/1.	PG1	77	114	115	123	132	144	213	243	249	269
160/1.	PG1	75	112	113	121	131	143	211	242	247	267
180/1.	PG1	72	109	112	121	129	141	209	242	245	266
200/1.	PG1	70	108	109	119	128	141	208	239	245	264
224/1.	PG1	68	105	109	117	127	139	206	236	243	263
250/1.	PG1	66	105	106	117	126	136	205	235	242	261
280/1.	PG1	65	103	105	114	124	135	203	233	239	259
315/1.	PG1	63	101	102	112	124	132	203	231	238	257
355/1.	PG1	60	100	101	111	122	130	200	230	236	256
400/1.	PG1	--	88	--	109	--	128	--	228	--	255
450/1.	PG1	--	88	--	107	--	128	--	228	--	253

Thermal Capacities (kW)

n_1 - 1000 (rpm)

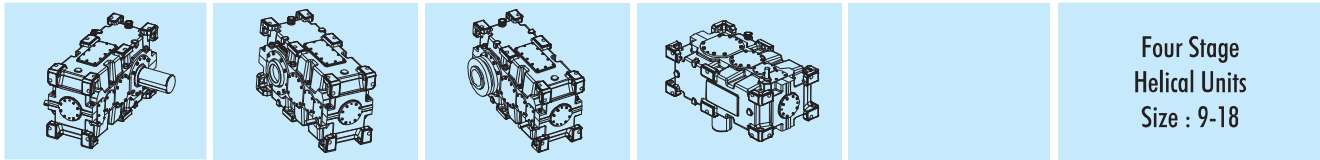
Nominal Ratio		Thermal Capacities P_G (kW)									
		Unit Size									
		9	10	11	12	13	14	15	16	17	18
100/1.	PG1	77	--	117	--	138	--	--	--	130	--
112/1.	PG1	74	--	113	--	137	--	119	--	129	132
125/1.	PG1	73	112	111	131	135	164	116	232	128	131
140/1.	PG1	71	108	109	127	132	162	114	228	128	129
160/1.	PG1	69	107	106	125	129	161	113	227	126	128
180/1.	PG1	67	105	107	125	129	159	109	224	126	127
200/1.	PG1	65	103	107	123	127	158	107	223	125	125
224/1.	PG1	64	103	105	121	126	158	105	221	124	125
250/1.	PG1	63	102	101	119	126	156	105	219	124	123
280/1.	PG1	63	99	102	116	124	156	103	219	122	122
315/1.	PG1	62	98	100	116	123	155	102	217	120	122
355/1.	PG1	60	95	88	114	121	153	100	215	118	119
400/1.	PG1	--	93	--	113	--	152	--	212	--	119
450/1.	PG1	--	90	--	111	--	150	--	211	--	--

** Values refer to: 1. Ambient Temperature : 20°C
2. Operating cycle : 100% ,
3. Installation in a large hall,
4. Altitude up to 1000 m above sea level

*** Values refer to a cooling water inlet temperature of 20°C
† Cooling coil not available for vertical units.
Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxillary cooling (Horizontal & Vertical)
Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

Thermal Capacities PG3 (kW)***)†Units with cooling coil (Horizontal)
Thermal Capacities PG4 (kW)***)†Units with Fan & cooling coil (Horizontal)



MH4SH

MH4HH

MH4DH

MH4SV

Four Stage
Helical Units
Size : 9-18

Thermal Capacities (kW)

n_1 - 1500 (rpm)

Nominal Ratio		Thermal Capacities P_G (kW)									
		Unit Size									
		9	10	11	12	13	14	15	16	17	18
100/1.	PG1	70	--	118	--	139	--	251	--	266	--
112/1.	PG1	70	--	117	--	139	--	249	--	254	273
125/1.	PG1	69	106	116	131	138	171	246	261	262	271
140/1.	PG1	68	105	112	131	137	170	241	259	259	268
160/1.	PG1	68	103	109	130	137	169	237	257	253	263
180/1.	PG1	67	103	106	129	136	169	233	252	249	259
200/1.	PG1	67	101	105	129	134	167	230	249	246	253
224/1.	PG1	67	99	102	128	134	165	228	246	241	249
250/1.	PG1	66	99	100	127	132	163	222	239	238	245
280/1.	PG1	65	98	99	127	132	163	218	236	235	239
315/1.	PG1	64	97	97	125	131	161	215	232	228	235
355/1.	PG1	64	96	95	123	130	159	214	228	226	231
400/1.	PG1	--	96	--	121	--	158	--	222	--	228
450/1.	PG1	--	95	--	120	--	157	--	220	--	--

RATINGS

Thermal Capacities (kW)

n_1 - 1750 (rpm)

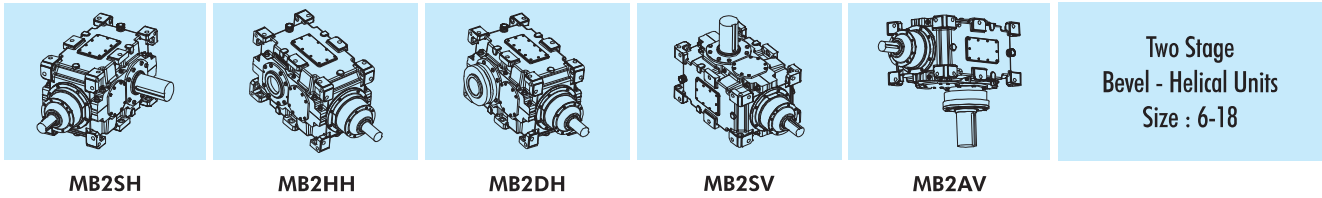
Nominal Ratio		Thermal Capacities P_G (kW)									
		Unit Size									
		9	10	11	12	13	14	15	16	17	18
100/1.	PG1	76	--	124	--	145	--	260	--	275	--
112/1.	PG1	76	--	121	--	145	--	258	--	270	280
125/1.	PG1	75	112	118	133	144	178	257	270	267	278
140/1.	PG1	75	111	117	132	142	176	254	268	263	274
160/1.	PG1	74	109	117	131	142	173	253	265	261	269
180/1.	PG1	74	108	116	130	141	172	249	261	258	265
200/1.	PG1	73	107	114	130	141	172	245	258	255	261
224/1.	PG1	72	107	111	128	140	170	241	253	253	257
250/1.	PG1	70	106	108	128	138	167	237	249	248	252
280/1.	PG1	70	106	105	127	138	165	232	244	243	247
315/1.	PG1	70	105	103	126	137	164	227	241	238	243
355/1.	PG1	69	104	101	124	137	162	222	237	234	238
400/1.	PG1	--	103	--	125	--	163	--	232	--	234
450/1.	PG1	--	102	--	125	--	163	--	228	--	--

** Values refer to: 1. Ambient Temperature : 20°C
2. Operating cycle : 100% ,
3. Installation in a large hall,
4. Altitude up to 1000 m above sea level

*** Values refer to a cooling water inlet temperature of 20°C
† Cooling coil not available for vertical units.
Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxillary cooling (Horizontal & Vertical)
Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

Thermal Capacities PG3 (kW)***)†Units with cooling coil (Horizontal)
Thermal Capacities PG4 (kW)***)†Units with Fan & cooling coil (Horizontal)



Nominal Mechanical Power Ratings (kW)

Nominal Ratio	Input Speed (rpm)	Nominal Output Speed (rpm)	Nominal Mechanical Power Ratings P _n (kW)							
			Unit Size							
			6	7	9	11	13	15	17	18
5/1.	1750	350	223	345	698	1100	1700	2530	4460	---
	1500	300	191	296	597	940	1460	2180	3820	---
	1000	200	128	197	398	626	976	1450	2560	---
	750	150	96	148	298	470	730	1090	1920	---
5.6/1.	1750	313	203	307	622	978	1575	2290	4000	4400
	1500	268	174	264	532	838	1350	1965	3420	3788
	1000	179	116	177	355	560	900	1320	2280	2520
	750	134	87	132	266	420	675	990	1710	1900
6.3/1.	1750	278	180	274	555	869	1460	2170	3800	4100
	1500	238	155	235	475	754	1250	1850	3250	3529
	1000	159	103	156	315	497	835	1240	2150	2350
	750	119	77	117	237	373	626	930	1620	1750
7.1/1.	1750	246	160	242	500	772	1353	1960	3370	3750
	1500	211	137	208	425	662	1160	1700	2910	3203
	1000	141	91	139	282	441	773	1130	1950	2140
	750	106	69	104	211	331	580	850	1460	1600
8/1.	1750	219	142	216	435	685	1237	1840	3030	3400
	1500	188	122	184	373	587	1060	1580	2600	2900
	1000	125	81	123	248	391	707	1060	1730	1940
	750	94	61	92	186	293	530	790	1300	1450
9/1.	1750	194	126	192	386	609	1090	1650	2680	3000
	1500	167	108	165	331	522	933	1430	2310	2580
	1000	111	72	109	221	348	621	950	1540	1717
	750	83	54	82	168	261	467	715	1150	1290
10/1.	1750	175	114	172	350	548	990	1485	2430	2700
	1500	150	97	148	301	470	848	1280	2070	2320
	1000	100	65	98	200	313	566	852	1380	1545
	750	75	48	74	150	235	425	643	1040	1165
11.2/1.	1750	156	101	154	310	489	884	1330	2150	2420
	1500	134	87	132	270	420	757	1150	1850	2070
	1000	89	58	88	178	279	505	765	1240	1380
	750	67	44	66	133	210	379	575	930	1040
12.5/1.	1750	140	--	--	---	---	---	---	---	2180
	1500	120	--	--	---	---	---	---	---	1860
	1000	80	--	--	---	---	---	---	---	1240
	750	60	--	--	---	---	---	---	---	930
14/1.	1750	125	--	--	---	---	---	---	---	---
	1500	107	--	--	---	---	---	---	---	---
	1000	71	--	--	---	---	---	---	---	---
	750	54	--	--	---	---	---	---	---	---

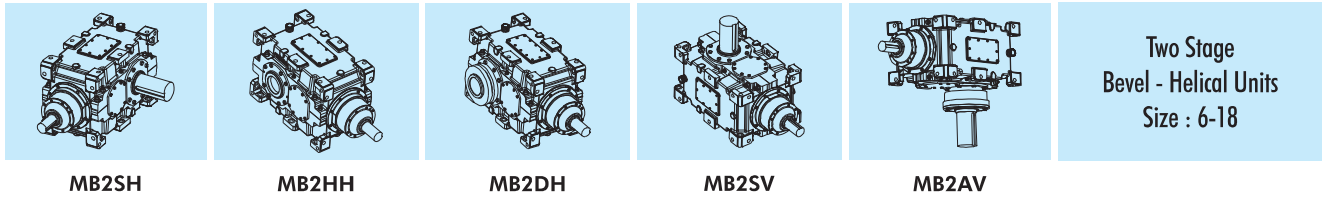
Full Load Efficiency- 97.5% (approx.)

Nominal Torque Ratings (kNm)

Bevel - Helical Gear Units
All Types
Size : 6-18

Ratio	Nominal Output Torque P _{N2} (kNm)												
	Unit Size												
	6	7	8	9	10	11	12	13	14	15	16	17	18
5	6.1	9.4	--	19	--	30	--	46	--	69	--	122	135
5.6	6.2	9.4	--	19	--	30	--	48	--	70	--	122	141
6.3	6.2	9.4	--	19	--	30	--	50	--	74	--	130	145
7.1	6.2	9.4	--	19	--	30	--	54	--	76	--	132	148
8	6.2	9.4	--	19	--	30	--	54	--	80	--	132	148
9	6.2	9.4	--	19	--	30	--	54	--	81	--	132	148
10	6.2	9.4	--	19	--	30	--	54	--	81	--	132	148
11.2	6.2	9.4	--	19	--	30	--	52	--	82	--	133	148
12.5	5.5	9.4	--	17	--	28	--	53	--	80	--	132	148
14	6	9.8	--	18	--	30	--	57	--	82	102	137	148
16	6.6	10.5	12.2	20	22	31	36	60	74	85	105	142	155
18	6.7	11.3	12.8	21	23	34	38	62	74	87	105	147	160
20	6.7	11.7	13.5	21	25	36	40	64	74	83	108	153	167
22.4	6.7	11.4	14.3	22	27	36	43	64	74	92	110	153	167
25	6.7	11.6	15.5	22	27	36	44	64	74	91	109	153	172
28	6.7	11.6	15.5	22	27	36	44	64	76	93	115	153	173
31.5	6.6	11.6	15.5	22	27	36	44	64	76	93	115	153	173
35.5	6.6	11.6	15.5	22	27	36	45	64	76	92	115	153	174
40	6.6	11.6	15.5	22	27	36	45	64	76	91	115	153	173
45	6.6	11.6	15.5	22	27	36	45	64	76	91	115	153	174
50	6.7	11.6	15.5	22	27	36	45	64	76	91	115	153	173
56	6.6	11.6	15.5	22	27	36	45	64	76	91	115	153	173
63	6.5	11.6	15.5	22	27	35	45	63	76	91	116	153	173
71	6.5	10.8	15.5	20	27	34	45	60	76	91	115	153	173
80	--	11.6	14.3	22	27	35	45	62	76	93	115	155	173
90	--	11.6	14.3	22	27	35	44	62	76	93	116	155	174
100	--	11.6	15.5	22	27	35	45	62	77	94	112	155	175
112	--	11.6	15.5	22	27	35	45	62	77	93	112	154	174
125	--	11.6	15.5	22	27	35	45	62	77	94	116	156	175
140	--	11.6	15.5	22	27	35	45	62	77	93	117	156	175
160	--	11.6	15.5	22	27	35	45	62	77	94	117	156	175
180	--	11.6	15.5	22	27	35	45	62	77	94	117	156	174
200	--	11.6	15.5	22	27	35	45	62	77	94	117	156	174
224	--	11.6	15.5	22	27	35	45	62	77	94	117	156	175
250	--	11.6	15.5	22	27	35	45	62	77	94	117	156	175
280	--	11.6	15.5	22	27	35	45	62	77	94	117	153	174
315	--	11.6	15.5	22	27	34	46	60	77	94	117	153	156
355	--	11.6	15.5	--	27	--	44	--	77	94	117	153	174
400	--	11.6	15.5	--	26	--	--	--	77	--	117	--	173
450	--	11.2	15.5	--	--	--	--	--	77	--	--	--	--

RATINGS



MB2SH

MB2HH

MB2DH

MB2SV

MB2AV

Two Stage
Bevel - Helical Units
Size : 6-18

Thermal Capacities (kW)
n₁ - 750 (rpm)

Nominal Ratio		Thermal Capacities P _G (kW)							
		Unit Size							
		6	7	9	11	13	15	17	18
5/1.	PG1	52	67	136	135	145	---	---	---
	PG2	96	157	250	411	345	646	899	---
	PG3	111	169	317	759	702	1398	1209	---
	PG4	156	227	428	911	926	1639	1810	---
5.6/1.	PG1	49	65	134	166	135	---	---	---
	PG2	91	158	293	342	322	664	873	---
	PG3	105	162	320	777	712	1344	1263	---
	PG4	148	221	441	900	924	1615	1757	---
6.3/1.	PG1	47	64	116	167	152	---	---	---
	PG2	86	155	226	356	362	656	997	---
	PG3	100	160	257	467	594	1129	1236	---
	PG4	140	214	364	593	823	1404	1862	---
7.1/1.	PG1	37	62	112	176	160	---	---	---
	PG2	76	157	220	361	346	648	913	---
	PG3	101	161	250	404	584	1157	1189	---
	PG4	141	209	354	488	771	1442	1771	---
8/1.	PG1	44	60	109	166	163	---	---	---
	PG2	81	152	238	340	342	654	826	---
	PG3	119	159	261	363	566	944	934	---
	PG4	158	195	334	496	721	1238	1326	---
9/1.	PG1	39	55	112	166	175	---	---	---
	PG2	77	143	245	340	333	582	844	1090
	PG3	121	152	272	348	553	917	870	1348
	PG4	161	188	343	482	686	1150	1281	1782
10/1.	PG1	45	52	106	171	188	---	---	---
	PG2	88	136	224	352	325	383	858	1065
	PG3	92	149	236	287	479	876	842	1276
	PG4	137	179	350	428	623	1067	1223	1770
11.2/1.	PG1	39	49	96	144	174	---	---	---
	PG2	86	136	218	344	414	362	873	991
	PG3	101	146	243	377	501	773	804	1204
	PG4	149	170	332	439	579	936	1095	1759
12.5/1.	PG1	---	---	---	---	---	---	---	---
	PG2	---	---	---	---	---	---	---	960
	PG3	---	---	---	---	---	---	---	1155
	PG4	---	---	---	---	---	---	---	1752

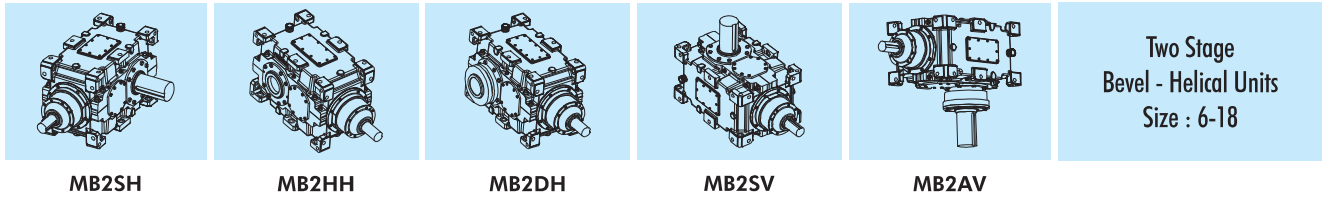
** Values refer to:
 1. Ambient Temperature : 20°C
 2. Operating cycle : 100% ,
 3. Installation in a large hall,
 4. Altitude up to 1000 m above sea level

*** Values refer to a cooling water inlet temperature of 20°C
 † Cooling coil not available for vertical units.
 Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxillary cooling (Horizontal & Vertical)
 Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

Thermal Capacities PG3 (kW)***)†Units with cooling coil (Horizontal)
 Thermal Capacities PG4 (kW)***)†Units with Fan & cooling coil (Horizontal)

RATINGS



Thermal Capacities (kW)
n₁ - 1000 (rpm)

Nominal Ratio		Thermal Capacities P _G (kW)							
		Unit Size							
		6	7	9	11	13	15	17	18
5/1.	PG1	69	89	151	159	168	177	---	---
	PG2	129	165	264	426	370	685	917	---
	PG3	148	227	347	794	759	1451	1417	---
	PG4	208	303	460	983	961	1772	1851	---
5.6/1.	PG1	66	87	149	196	157	---	---	---
	PG2	122	166	308	354	345	705	891	---
	PG3	141	217	350	813	770	1395	1481	---
	PG4	197	294	474	971	958	1746	1797	---
6.3/1.	PG1	62	85	128	196	177	---	---	---
	PG2	116	168	238	368	388	696	1017	---
	PG3	133	207	281	489	642	1172	1449	---
	PG4	187	285	391	640	854	1518	1903	---
7.1/1.	PG1	49	83	125	207	186	---	---	---
	PG2	102	165	232	373	370	687	931	---
	PG3	136	197	274	423	631	1201	1394	---
	PG4	189	278	381	527	800	1559	1811	---
8/1.	PG1	59	80	121	196	190	---	---	---
	PG2	110	160	251	352	366	693	843	---
	PG3	160	182	286	380	612	981	1095	---
	PG4	210	260	359	536	748	1338	1355	---
9/1.	PG1	52	73	125	196	203	---	---	---
	PG2	104	150	258	352	357	617	861	1112
	PG3	162	171	298	364	598	952	1020	1580
	PG4	214	250	369	520	712	1243	1310	1822
10/1.	PG1	59	69	118	202	219	---	---	---
	PG2	119	143	236	355	348	406	876	1087
	PG3	123	161	259	381	517	910	987	1496
	PG4	182	238	376	462	647	1154	1250	1810
11.2/1.	PG1	52	66	106	169	202	---	---	---
	PG2	116	143	230	356	443	384	891	1011
	PG3	135	196	266	394	542	803	943	1411
	PG4	198	227	357	474	601	1012	1120	1799
12.5/1.	PG1	---	---	---	---	---	---	---	---
	PG2	---	---	---	---	---	---	---	979
	PG3	---	---	---	---	---	---	---	1354
	PG4	---	---	---	---	---	---	---	1791

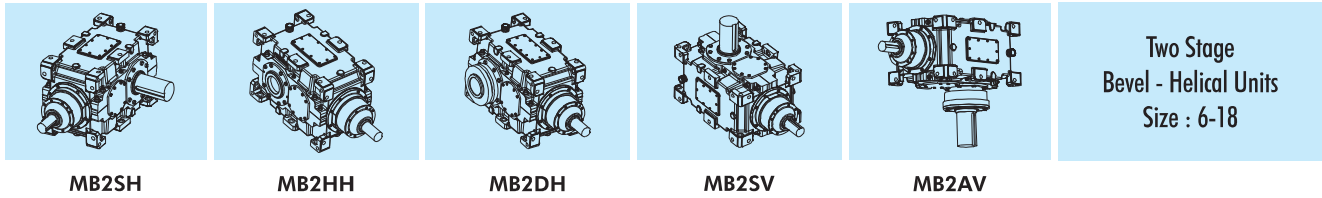
RATINGS

** Values refer to:
 1. Ambient Temperature : 20°C
 2. Operating cycle : 100% ,
 3. Installation in a large hall,
 4. Altitude up to 1000 m above sea level

*** Values refer to a cooling water inlet temperature of 20°C
 † Cooling coil not available for vertical units.
 Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxillary cooling (Horizontal & Vertical)
 Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

Thermal Capacities PG3 (kW)***)†Units with cooling coil (Horizontal)
 Thermal Capacities PG4 (kW)***)†Units with Fan & cooling coil (Horizontal)



MB2SH

MB2HH

MB2DH

MB2SV

MB2AV

Two Stage
Bevel - Helical Units
Size : 6-18

Thermal Capacities (kW)
n₁ - 1500 (rpm)

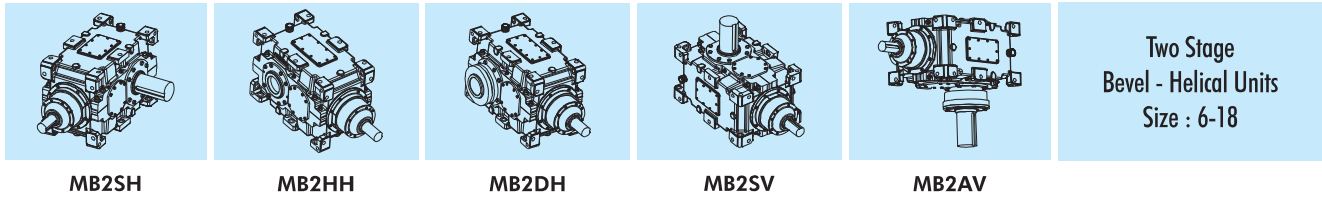
Nominal Ratio		Thermal Capacities P _G (kW)							
		Unit Size							
		6	7	9	11	13	15	17	18
5/1.	PG1	68	---	---	---	---	---	---	---
	PG2	142	161	299	388	486	785	893	---
	PG3	177	266	350	507	915	1240	881	---
	PG4	251	341	503	717	1128	1655	1417	---
5.6/1.	PG1	66	---	---	---	---	---	---	---
	PG2	136	161	293	372	526	801	893	923
	PG3	178	254	352	463	876	1221	930	1467
	PG4	248	333	500	662	1135	1657	1417	2022
6.3/1.	PG1	64	---	---	---	---	---	---	---
	PG2	135	163	289	373	526	801	992	1285
	PG3	173	243	355	434	755	1221	1012	1334
	PG4	244	325	500	625	1013	1657	1553	1922
7.1/1.	PG1	65	---	---	---	---	---	---	---
	PG2	111	165	285	375	513	770	973	1314
	PG3	172	235	355	394	786	1174	1052	1329
	PG4	217	316	498	593	1014	1593	1524	1935
8/1.	PG1	65	---	---	---	---	---	---	---
	PG2	118	165	281	384	514	761	976	1254
	PG3	136	230	356	392	658	1161	1056	1281
	PG4	189	309	499	528	885	1576	1555	1886
9/1.	PG1	65	82	135	195	287	---	---	---
	PG2	111	167	277	390	515	739	981	1144
	PG3	136	224	356	412	643	1048	1058	1206
	PG4	182	300	497	520	871	1451	1577	1763
10/1.	PG1	65	81	132	199	261	---	---	---
	PG2	111	170	273	370	515	742	998	1101
	PG3	113	219	355	392	545	1131	1039	1172
	PG4	158	295	496	500	800	1535	1583	1709
11.2/1.	PG1	60	79	129	191	287	---	---	---
	PG2	108	172	271	394	515	702	998	1009
	PG3	126	215	354	421	592	920	1039	1120
	PG4	151	291	496	490	729	1303	1583	1768
12.5/1.	PG1	---	---	---	---	---	---	---	---
	PG2	---	---	---	---	---	---	---	959
	PG3	---	---	---	---	---	---	---	1092
	PG4	---	---	---	---	---	---	---	1510

** Values refer to:
 1. Ambient Temperature : 20°C
 2. Operating cycle : 100% ,
 3. Installation in a large hall,
 4. Altitude up to 1000 m above sea level

Thermal Capacities PG1 (kW)**Units without auxillary cooling (Horizontal & Vertical)
 Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

*** Values refer to a cooling water inlet temperature of 20°C
 † Cooling coil not available for vertical units.
 Full load Efficiency 98.5%(approx.)

Thermal Capacities PG3 (kW)***)†Units with cooling coil (Horizontal)
 Thermal Capacities PG4 (kW)***)†Units with Fan & cooling coil (Horizontal)



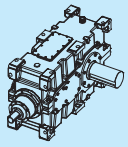
Thermal Capacities (kW)
n₁ - 1750 (rpm)

Nominal Ratio	Thermal Capacities P _G (kW)								
	Unit Size								
	6	7	9	11	13	15	17	18	
5/1.	PG1	48	---	---	---	---	---	---	---
	PG2	150	171	317	411	515	832	947	---
	PG3	184	277	364	528	952	1290	917	---
	PG4	271	369	544	776	1220	1790	1533	---
5.6/1.	PG1	47	---	---	---	---	---	---	---
	PG2	144	171	311	394	558	849	947	978
	PG3	186	264	366	482	912	1271	968	1527
	PG4	269	360	541	717	1228	1793	1533	2188
6.3/1.	PG1	45	---	---	---	---	---	---	---
	PG2	143	173	306	395	558	849	1051	1362
	PG3	180	253	370	452	785	1271	1054	1389
	PG4	264	352	541	676	1097	1793	1680	2079
7.1/1.	PG1	46	---	---	---	---	---	---	---
	PG2	118	175	302	397	544	816	1031	1393
	PG3	179	244	370	411	819	1222	1095	1430
	PG4	235	342	539	641	1097	1724	1649	2094
8/1.	PG1	46	---	---	---	---	---	---	---
	PG2	125	175	298	417	545	807	483	1330
	PG3	142	239	371	450	685	1208	484	1261
	PG4	204	334	540	572	958	1705	772	2041
9/1.	PG1	46	---	---	---	---	---	---	---
	PG2	118	177	294	413	546	783	1040	1212
	PG3	142	233	371	429	669	1091	1102	1256
	PG4	197	325	538	563	943	1570	1706	1908
10/1.	PG1	46	---	---	---	---	---	---	---
	PG2	118	180	289	392	546	786	1058	1167
	PG3	136	228	370	408	568	1177	1082	1220
	PG4	171	319	537	541	866	1661	1712	1849
11.2/1.	PG1	42	---	---	---	---	---	---	---
	PG2	115	182	288	418	546	744	1058	1070
	PG3	131	224	369	438	616	958	1082	1166
	PG4	164	315	537	530	789	1410	1712	1913
12.5/1.	PG1	---	---	---	---	---	---	---	---
	PG2	---	---	---	---	---	---	---	1017
	PG3	---	---	---	---	---	---	---	1137
	PG4	---	---	---	---	---	---	---	1634

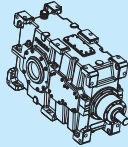
RATINGS

** Values refer to:
 1. Ambient Temperature : 20°C
 2. Operating cycle : 100% ,
 3. Installation in a large hall,
 4. Altitude up to 1000 m above sea level
 Thermal Capacities PG1 (kW)**Units without auxillary cooling (Horizontal & Vertical)
 Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

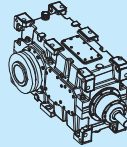
*** Values refer to a cooling water inlet temperature of 20°C
 † Cooling coil not available for vertical units.
 Full load Efficiency 98.5%(approx.)
 Thermal Capacities PG3 (kW)***)†Units with cooling coil (Horizontal)
 Thermal Capacities PG4 (kW)***)†Units with Fan & cooling coil (Horizontal)



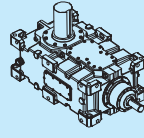
MB3SH



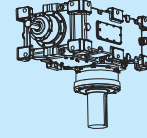
MB3HH



MB3DH



MB3SV



MB3AV

Three Stage
Bevel - Helical Units
Size : 6-18

Nominal Mechanical Power Ratings (kW)

Nominal Ratio	Input Speed (rpm)	Nominal Output Speed (rpm)	Nominal Mechanical Power Ratings P _n (kW)													
			Unit Size													
			6	7	8	9	10	11	12	13	14	15	16	17	18	
12.5/1.	1750	140.0	81	138	--	250	---	412	---	770	---	1180	---	1940	---	
	1500	120.0	69	119	--	213	---	351	---	658	---	1010	---	1660	---	
	1000	80.0	46	79	--	142	---	234	---	440	---	675	---	1110	---	
	750	60.0	35	59	--	107	---	176	---	330	---	505	---	830	---	
14/1.	1750	125.0	78.5	128	--	238	---	388	---	740	810	1080	---	1795	1940	
	1500	107.1	67	110	--	204	---	331	---	635	700	925	---	1538	1658	
	1000	71.4	45	73	--	136	---	221	---	422	470	615	---	1025	1110	
	750	53.6	33.5	55	--	102	---	166	---	318	354	463	---	770	830	
16/1.	1750	109.4	76	120	140	226	247	355	415	685	775	963	1165	1626	1770	
	1500	93.8	64	102	120	194	211	303	355	590	662	830	1000	1400	1510	
	1000	62.5	43	69	80	130	141	202	238	393	442	555	666	930	1010	
	750	46.9	33	52	60	97	106	152	178	293	332	415	500	700	755	
18/1.	1750	97.2	68	115	130	215	236	345	390	630	710	890	1064	1507	1630	
	1500	83.3	58	99	112	184	202	297	335	540	608	767	912	1290	1400	
	1000	55.6	39	66	74	123	135	197	222	360	404	508	606	858	930	
	750	41.7	29.2	50	56	92	102	148	167	270	302	383	452	645	700	
20/1.	1750	87.5	62	106	123	198	230	328	366	580	660	840	980	1402	1530	
	1500	75.0	52	90	106	170	197	280	315	498	567	730	845	1201	1311	
	1000	50.0	35	61	70	114	132	187	210	333	378	485	560	802	875	
	750	37.5	26	46	53	85	99	140	158	250	283	365	420	601	655	
22.4/1.	1750	78.1	55	94	118	178	218	295	353	520	620	752	900	1252	1410	
	1500	67.0	47	80	101	152	187	250	303	445	530	644	772	1073	1210	
	1000	44.6	31.2	53	67	101	125	165	202	297	355	428	515	715	805	
	750	33.5	23.5	40	50	75	93	123	151	222	265	320	386	537	605	
25/1.	1750	70.0	49	85	116	159	200	265	320	465	560	670	842	1122	1266	
	1500	60.0	42	73	99	137	171	226	274	397	482	575	725	960	1090	
	1000	40.0	28	48	66	91	115	151	183	265	321	384	484	642	728	
	750	30.0	21	36.5	49	68	85	112	138	200	241	288	362	480	545	
28/1.	1750	62.5	44	76	100	142	178	234	289	414	505	608	755	1001	1127	
	1500	53.6	37	65	87	122	152	200	247	360	432	520	645	859	970	
	1000	35.7	25	43.5	58	81	101	133	165	240	290	345	430	572	650	
	750	26.8	18.7	32	44	61	76	100	124	178	216	260	322	429	484	
31.5/1.	1750	55.6	39	67.5	91	126	159	210	258	370	447	540	672	890	1003	
	1500	47.6	33	58	78	108	136	180	220	316	384	460	575	763	860	
	1000	31.7	22	38.5	52	72	91	120	147	212	256	308	382	509	575	
	750	23.8	17	29	39	54	68	90	110	158	192	230	288	385	430	
35.5/1.	1750	49.3	34.5	60	81	112	141	185	230	327	400	472	597	790	890	
	1500	42.3	29	51.5	69	96	121	160	197	280	340	404	510	675	763	
	1000	28.2	19.5	34	46	64	80	106	130	190	228	271	340	450	510	
	750	21.1	14.5	25	34.7	48	60	80	98	140	171	202	255	338	382	
40/1.	1750	43.8	30.7	53	72	99	126	165	204	290	352	422	530	701	793	
	1500	37.5	26	45	62	85	107	141	175	250	303	363	453	601	680	
	1000	25.0	17.4	30	41	57	71	94	117	166	202	242	302	401	453	
	750	18.8	13	22.5	31	42	54	71	88	125	152	181	227	301	340	
45/1.	1750	38.9	27.2	47	64	88	111	146	182	260	315	376	470	624	703	
	1500	33.3	23	40.5	55	76	95	126	156	222	270	322	402	535	606	
	1000	22.2	15.3	27	36	51	64	84	104	148	180	215	268	356	404	
	750	16.7	11.5	20.3	27	38	48	63	78	112	135	162	201	267	303	
50/1.	1750	35.0	24.5	42.5	58	80	100	132	163	235	282	340	422	561	634	
	1500	30.0	21	36.5	49	68	85	113	140	200	243	292	363	481	543	
	1000	20.0	14	24.3	33	46	57	76	94	133	161	194	242	321	361	
	750	15.0	10.5	18.3	24.5	34	43	57	70	100	121	146	181	241	273	
56/1.	1750	31.3	22	38	52	71	90	118	146	210	250	303	376	501	563	
	1500	26.8	18	32	44.8	61	76	101	125	180	216	259	322	432	485	
	1000	17.9	12.5	21	29.8	40	51	68	83	120	144	173	215	288	322	
	750	13.4	9.3	16	22.4	30	38	51	62.5	90	108	130	162	216	242	
63/1.	1750	27.8	19	33	46.5	62	80	104	130	183	227	270	336	444	504	
	1500	23.8	16	28.3	39.8	53	68	90	111	157	194	230	288	381	430	
	1000	15.9	10.7	19	26.5	36	46	59	74	104	129	154	192	254	287	
	750	11.9	8.1	14	20	27	34	44	55.5	78	96	115	144	190	216	
71/1.	1750	24.6	17	28	41.3	52	71	89	115	156	200	239	297	396	445	
	1500	21.1	14	24	35.3	44	61	76	99	132	171	204	255	338	383	
	1000	14.1	9.6	16	23.5	29.4	40	50	66	88	115	136	170	225	255	
	750	10.6	7.3	12	17.7	22	30	38	49	66	86	102	128	169	191	
80/1.	1750	21.9	--	--	33	--	62	--	102	--	179	--	264	--	399	
	1500	18.8	--	--	28	--	53	--	88	--	154	--	226	--	342	
	1000	12.5	--	--	19	--	35	--	59	--	102	--	151	--	228	
	750	9.4	--	--	14	--	26.6	--	44	--	77	--	113	--	171	
90/1.	1750	19.4	--	--	29	--	52	--	90	--	153	--	234	--	342	
	1500	16.7	--	--	25	--	44	--	77.5	--	132	--	202	--	303	
	1000	11.1	--	--	17	--	29.7	--	51.5	--	87	--	134	--	203	
	750	8.3	--	--	13	--	22	--	38.5	--	66	--	101	--	153	

Full Load Efficiency- 97% (approx.)

Nominal Torque Ratings (kNm)

Bevel - Helical Gear Units
All Types
Size : 6-18

Ratio	Nominal Output Torque P _{Nz} (kNm)												
	Unit Size												
	6	7	8	9	10	11	12	13	14	15	16	17	18
5	6.1	9.4	--	19	24	30	39	46	--	69	--	122	135
5.6	6.2	9.4	--	19	24	30	39	48	--	70	--	122	141
6.3	6.2	9.4	--	19	24	30	39	50	--	74	--	130	145
7.1	6.2	9.4	--	19	24	30	39	54	--	76	--	132	148
8	6.2	9.4	--	19	24	30	39	54	--	80	--	132	148
9	6.2	9.4	--	19	24	30	39	54	--	81	--	132	148
10	6.2	9.4	--	19	24	30	39	54	--	81	--	132	148
11.2	6.2	9.4	--	19	24	30	39	52	--	82	--	133	148
12.5	5.5	9.4	--	17	24	28	39	53	--	80	--	132	148
14	6	9.8	--	18	24	30	39	57	--	82	102	137	148
16	6.6	10.5	12.2	20	22	31	36	60	74	85	105	142	155
18	6.7	11.3	12.8	21	23	34	38	62	74	87	105	147	160
20	6.7	11.7	13.5	21	25	36	40	64	74	83	108	153	167
22.4	6.7	11.4	14.3	22	27	36	43	64	74	92	110	153	167
25	6.7	11.6	15.5	22	27	36	44	64	74	91	109	153	172
28	6.7	11.6	15.5	22	27	36	44	64	76	93	115	153	173
31.5	6.6	11.6	15.5	22	27	36	44	64	76	93	115	153	173
35.5	6.6	11.6	15.5	22	27	36	45	64	76	92	115	153	174
40	6.6	11.6	15.5	22	27	36	45	64	76	91	115	153	173
45	6.6	11.6	15.5	22	27	36	45	64	76	91	115	153	174
50	6.7	11.6	15.5	22	27	36	45	64	76	91	115	153	173
56	6.6	11.6	15.5	22	27	36	45	64	76	91	115	153	173
63	6.5	11.6	15.5	22	27	35	45	63	76	91	116	153	173
71	6.5	10.8	15.5	20	27	34	45	60	76	91	115	153	173
80	--	11.6	14.3	22	27	35	45	62	76	93	115	155	173
90	--	11.6	14.3	22	27	35	44	62	76	93	116	155	174
100	--	11.6	15.5	22	27	35	45	62	77	94	112	155	175
112	--	11.6	15.5	22	27	35	45	62	77	93	112	154	174
125	--	11.6	15.5	22	27	35	45	62	77	94	116	156	175
140	--	11.6	15.5	22	27	35	45	62	77	93	117	156	175
160	--	11.6	15.5	22	27	35	45	62	77	94	117	156	175
180	--	11.6	15.5	22	27	35	45	62	77	94	117	156	174
200	--	11.6	15.5	22	27	35	45	62	77	94	117	156	174
224	--	11.6	15.5	22	27	35	45	62	77	94	117	156	175
250	--	11.6	15.5	22	27	35	45	62	77	94	117	156	175
280	--	11.6	15.5	22	27	35	45	62	77	94	117	153	174
315	--	11.6	15.5	22	27	34	46	60	77	94	117	153	156
355	--	11.6	15.5	--	27	--	44	--	77	94	117	153	174
400	--	11.6	15.5	--	26	--	--	--	77	--	117	--	173
450	--	11.2	15.5	--	--	--	--	--	77	--	--	--	--

RATINGS

Thermal Capacities (kW) @ n₁ - 750 (rpm)

Type - MB3SH / MB3HH / MB3DH / MB3SV / MB3AV

Three Stage - Bevel - Helical Units - Size : 6-18

Nominal Ratio		Thermal Capacities P _G (kW)													
		Unit Size													
		6	7	8	9	10	11	12	13	14	15	16	17	18	
12.5/1	PG1	49	55	---	75	---	127	---	219	---	249	---	449	---	
	PG2	88	88	---	140	---	235	---	393	---	458	---	704	---	
	PG3	97	127	---	199	---	309	---	460	---	739	---	1110	---	
	PG4	131	165	---	295	---	402	---	631	---	931	---	1377	---	
14/1.	PG1	49	54	---	72	---	127	---	205	---	246	---	400	---	
	PG2	85	87	---	137	---	232	---	385	---	467	---	658	---	
	PG3	96	124	---	208	---	303	---	442	---	722	---	1060	---	
	PG4	126	165	---	282	---	382	---	604	---	905	---	1323	---	
16/1.	PG1	50	52	87	70	103	126	151	200	238	242	278	349	363	
	PG2	83	86	165	135	218	230	317	374	447	480	591	616	764	
	PG3	93	120	189	199	238	296	335	428	572	688	721	998	988	
	PG4	124	159	282	271	329	369	504	579	788	872	1029	1274	1390	
18/1.	PG1	47	50	85	69	105	124	151	195	236	238	276	299	361	
	PG2	71	86	162	132	216	227	312	364	442	476	587	571	758	
	PG3	91	114	185	194	237	290	325	413	565	655	690	943	937	
	PG4	123	151	273	257	322	357	491	552	780	842	995	1225	1366	
20/1.	PG1	46	49	83	67	104	123	152	189	233	237	275	295	358	
	PG2	80	84	159	130	215	226	309	354	437	476	582	562	752	
	PG3	87	108	181	184	235	284	319	398	558	651	658	904	886	
	PG4	120	143	265	243	317	344	479	527	769	798	960	1182	1351	
22.4/1.	PG1	46	48	82	65	101	120	153	183	230	235	274	291	352	
	PG2	78	82	155	127	213	224	305	343	432	475	579	555	743	
	PG3	88	103	178	178	236	277	313	384	552	646	636	865	850	
	PG4	118	136	254	232	312	331	468	502	760	756	935	1136	1343	
25/1.	PG1	45	45	81	65	102	118	155	178	225	234	273	288	369	
	PG2	76	81	152	124	212	221	301	333	423	477	576	544	735	
	PG3	88	98	173	159	234	273	306	369	516	639	612	826	832	
	PG4	116	128	245	219	307	319	455	477	720	714	886	1092	1279	
28/1.	PG1	45	43	78	63	101	118	154	171	220	232	271	286	366	
	PG2	72	81	146	121	211	218	298	323	411	216	574	550	726	
	PG3	83	97	158	140	232	265	299	354	480	615	589	772	821	
	PG4	109	126	233	214	302	307	443	451	680	683	885	1047	1215	
31.5/1.	PG1	43	41	75	63	100	116	155	166	214	232	271	283	359	
	PG2	68	79	139	120	210	213	291	311	403	214	571	556	731	
	PG3	78	95	149	132	233	259	293	340	444	595	627	719	815	
	PG4	104	122	220	206	297	295	431	427	639	652	859	1003	1160	
35.5/1.	PG1	38	39	72	62	100	115	152	162	202	231	266	281	353	
	PG2	66	78	133	118	208	214	282	302	401	471	563	561	737	
	PG3	75	91	142	127	231	253	285	325	445	576	617	666	800	
	PG4	97	112	206	198	293	281	415	399	612	621	810	958	1101	
40/1.	PG1	34	36	68	57	92	98	117	152	175	232	267	260	362	
	PG2	64	70	128	113	205	121	251	265	391	395	529	546	678	
	PG3	65	79	143	125	227	227	254	330	417	535	647	661	780	
	PG4	88	90	200	178	276	284	390	367	557	569	750	903	986	
45/1.	PG1	31	33	65	53	92	99	115	147	166	232	262	258	368	
	PG2	60	68	121	110	205	207	242	256	389	382	519	544	654	
	PG3	60	76	133	122	220	225	244	315	420	506	638	642	761	
	PG4	83	84	185	171	266	281	376	342	529	533	700	847	915	
50/1.	PG1	29	32	66	63	92	98	109	142	158	232	255	267	346	
	PG2	57	65	121	111	202	206	235	258	367	371	531	565	623	
	PG3	61	72	134	122	215	223	237	310	427	478	628	645	742	
	PG4	79	78	186	172	260	277	358	337	511	497	695	849	869	
56/1.	PG1	30	31	64	55	88	94	103	140	155	225	262	257	343	
	PG2	57	63	120	109	200	206	226	256	371	370	530	554	640	
	PG3	60	75	132	119	211	225	228	306	410	460	613	626	733	
	PG4	78	77	184	159	249	272	343	327	488	482	658	816	876	
63/1.	PG1	31	29	64	48	85	91	99	140	158	217	269	250	334	
	PG2	57	60	118	108	200	205	216	255	367	368	531	543	632	
	PG3	60	67	131	110	209	223	219	303	396	449	598	606	724	
	PG4	76	76	186	154	244	267	326	317	467	466	627	784	823	
71/1.	PG1	31	27	65	40	84	90	95	139	150	210	259	239	325	
	PG2	57	60	116	101	191	186	208	254	351	368	497	533	615	
	PG3	60	62	129	105	200	202	211	300	382	435	556	587	712	
	PG4	76	74	180	148	230	236	311	309	432	452	581	749	780	
80/1.	PG1	---	---	64	---	83	---	124	---	143	---	251	---	318	
	PG2	---	---	117	---	170	---	201	---	334	---	469	---	617	
	PG3	---	---	134	---	187	---	201	---	365	---	513	---	683	
	PG4	---	---	162	---	210	---	294	---	409	---	532	---	745	
90/1.	PG1	---	---	61	---	81	---	126	---	137	---	243	---	---	
	PG2	---	---	117	---	155	---	192	---	318	---	439	---	---	
	PG3	---	---	138	---	160	---	194	---	354	---	471	---	---	
	PG4	---	---	147	---	200	---	278	---	377	---	487	---	---	

** Values refer to: 1. Ambient Temperature : 20°C
 2. Operating cycle : 100% ,
 3. Installation in a large hall,
 4. Altitude up to 1000 m above sea level

*** Values refer to a cooling water inlet temperature of 20°C
 † Cooling coil not available for vertical units.
 Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxiliary cooling (Horizontal & Vertical)
 Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

Thermal Capacities PG3 (kW)**†Units with cooling coil (Horizontal)
 Thermal Capacities PG4 (kW)**†Units with Fan & cooling coil (Horizontal)

RATINGS

Thermal Capacities (kW) @ n₁ - 1000 (rpm)

Type - MB3SH / MB3HH / MB3DH / MB3SV / MB3AV

Three Stage - Bevel - Helical Units - Size : 6-18

Nominal Ratio		Thermal Capacities P _G (kW)													
		Unit Size													
		6	7	8	9	10	11	12	13	14	15	16	17	18	
12.5/1	PG1	54	60	---	80	---	135	---	230	---	260	---	463	---	
	PG2	101	90	---	149	---	268	---	416	---	512	---	749	---	
	PG3	105	132	---	210	---	329	---	505	---	757	---	1136	---	
	PG4	150	173	---	310	---	462	---	691	---	1009	---	1421	---	
14/1.	PG1	54	59	---	77	---	135	---	216	---	256	---	412	385	
	PG2	98	89	---	146	---	264	---	408	---	503	---	700	809	
	PG3	104	128	---	220	---	322	---	485	---	740	---	1085	1051	
	PG4	145	172	---	296	---	438	---	662	---	980	---	1365	1475	
16/1.	PG1	55	57	95	75	122	134	160	211	262	252	303	360	382	
	PG2	96	88	181	143	249	262	335	397	496	495	603	655	802	
	PG3	101	124	207	210	260	315	363	470	584	705	748	1022	1000	
	PG4	143	166	308	284	363	423	538	635	818	945	1047	1315	1420	
18/1.	PG1	52	55	93	74	124	132	160	205	259	248	301	308	380	
	PG2	82	88	178	140	246	258	330	386	490	489	599	608	796	
	PG3	99	118	203	205	259	308	353	453	577	671	716	965	948	
	PG4	141	158	299	270	355	409	525	605	810	912	1013	1264	1395	
20/1.	PG1	50	54	91	72	123	131	162	199	256	247	299	304	376	
	PG2	92	86	175	138	245	257	327	375	484	486	594	598	790	
	PG3	95	112	199	195	257	302	346	437	570	667	683	925	897	
	PG4	138	149	290	255	350	395	512	578	799	865	978	1220	1380	
22.4/1.	PG1	51	52	90	70	120	128	163	193	252	245	299	300	370	
	PG2	90	84	170	135	243	255	322	364	478	483	591	590	780	
	PG3	96	107	195	188	258	295	340	422	564	662	660	885	860	
	PG4	136	142	278	243	344	380	500	550	790	819	952	1172	1372	
25/1.	PG1	50	50	88	69	121	126	165	187	247	243	297	297	388	
	PG2	87	83	167	131	241	252	318	353	468	481	588	579	772	
	PG3	95	101	190	168	256	290	332	405	527	655	635	845	842	
	PG4	133	134	268	230	339	366	486	523	748	773	902	1127	1306	
28/1.	PG1	49	47	85	67	120	125	164	180	241	242	295	295	385	
	PG2	83	83	160	129	240	248	315	342	455	480	586	585	763	
	PG3	90	100	173	148	254	282	325	389	490	630	611	790	831	
	PG4	125	132	255	225	333	352	473	495	706	740	901	1081	1241	
31.5/1.	PG1	47	45	82	67	119	123	165	175	235	242	295	292	377	
	PG2	78	81	153	127	239	243	308	330	446	479	583	591	768	
	PG3	85	98	164	140	255	275	318	373	453	610	650	736	825	
	PG4	120	127	241	216	328	338	461	468	664	706	875	1035	1185	
35.5/1.	PG1	42	43	79	66	119	122	161	170	222	241	290	290	371	
	PG2	76	80	146	125	237	244	298	320	444	479	574	597	774	
	PG3	81	94	156	134	253	269	309	357	455	590	640	682	810	
	PG4	112	117	225	208	323	322	443	438	635	673	825	989	1124	
40/1.	PG1	37	40	74	63	118	121	156	163	210	241	285	287	376	
	PG2	72	78	139	123	138	240	288	308	442	465	565	596	750	
	PG3	75	89	148	127	252	262	294	341	457	560	660	676	799	
	PG4	105	110	210	203	318	309	426	411	605	635	775	939	1045	
45/1.	PG1	33	37	71	59	119	119	150	157	200	241	280	284	382	
	PG2	68	75	132	120	236	236	278	297	440	450	554	594	724	
	PG3	70	85	137	134	250	256	282	325	460	530	650	656	780	
	PG4	98	103	195	196	314	294	410	383	575	595	723	880	970	
50/1.	PG1	32	35	72	71	118	112	147	152	190	242	272	295	359	
	PG2	65	72	131	134	235	245	269	300	415	437	567	617	690	
	PG3	71	81	138	140	248	259	274	320	468	500	640	660	760	
	PG4	94	95	196	196	311	297	391	377	555	555	718	882	920	
56/1.	PG1	32	34	70	61	113	107	143	150	187	234	280	284	356	
	PG2	65	70	130	126	235	241	259	298	420	436	566	605	708	
	PG3	69	84	136	137	250	250	264	316	450	482	625	640	751	
	PG4	93	94	193	182	305	282	374	366	530	538	680	848	928	
63/1.	PG1	33	32	69	54	109	102	138	150	190	226	287	276	347	
	PG2	65	67	128	118	234	235	248	296	415	434	566	593	699	
	PG3	70	75	135	132	248	244	253	313	434	470	610	620	742	
	PG4	91	93	196	176	299	267	356	355	507	520	647	815	872	
71/1.	PG1	34	30	71	45	108	98	133	149	180	219	276	264	338	
	PG2	64	66	126	110	212	231	238	295	397	433	530	582	680	
	PG3	70	70	134	126	225	236	244	310	419	456	567	600	729	
	PG4	90	91	189	169	265	250	339	346	470	504	600	779	826	
80/1.	PG1	---	---	69	---	107	---	128	---	172	---	268	---	330	
	PG2	---	---	127	---	189	---	230	---	378	---	500	---	683	
	PG3	---	---	138	---	202	---	233	---	400	---	523	---	700	
	PG4	---	---	170	---	245	---	321	---	445	---	550	---	789	
90/1.	PG1	---	---	67	---	105	---	131	---	165	---	259	---	---	
	PG2	---	---	126	---	167	---	220	---	360	---	468	---	---	
	PG3	---	---	143	---	180	---	225	---	388	---	480	---	---	
	PG4	---	---	154	---	219	---	304	---	410	---	503	---	---	

RATINGS

** Values refer to: 1. Ambient Temperature : 20°C
 2. Operating cycle : 100% ,
 3. Installation in a large hall,
 4. Altitude up to 1000 m above sea level

*** Values refer to a cooling water inlet temperature of 20°C
 † Cooling coil not available for vertical units.
 Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxillary cooling (Horizontal & Vertical)
 Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

Thermal Capacities PG3 (kW)**†Units with cooling coil (Horizontal)
 Thermal Capacities PG4 (kW)**††Units with Fan & cooling coil (Horizontal)

Thermal Capacities (kW) @ n_1 - 1500 (rpm)

Type - MB3SH / MB3HH / MB3DH / MB3SV / MB3AV

Three Stage - Bevel - Helical Units - Size : 6-18

Nominal Ratio		Thermal Capacities P_G (kW)													
		Unit Size													
		6	7	8	9	10	11	12	13	14	15	16	17	18	
12.5/1	PG1	57	47	---	86	---	139	---	151	---	272	---	357	---	
	PG2	101	120	---	193	---	278	---	333	---	530	---	722	---	
	PG3	149	162	---	290	---	333	---	481	---	780	---	890	---	
	PG4	234	240	---	400	---	471	---	663	---	1020	---	1295	---	
14/1.	PG1	55	44	---	85	---	135	---	148	---	270	---	348	405	
	PG2	125	130	---	189	---	280	---	326	---	540	---	720	891	
	PG3	154	158	---	284	---	336	---	451	---	751	---	882	965	
	PG4	231	230	---	383	---	464	---	638	---	1000	---	1270	1392	
16/1.	PG1	54	42	100	82	131	133	172	180	222	268	324	339	401	
	PG2	120	126	226	185	287	273	373	320	489	555	737	719	880	
	PG3	152	155	250	273	303	331	392	431	588	715	887	875	944	
	PG4	229	225	337	367	459	456	577	608	854	982	1168	1243	1386	
18/1.	PG1	53	46	97	81	127	130	184	142	224	267	320	330	396	
	PG2	112	128	220	181	283	268	365	311	493	550	727	718	867	
	PG3	148	152	230	256	301	325	383	413	580	680	763	867	927	
	PG4	222	222	340	350	458	449	560	590	846	963	1115	1216	1379	
20/1.	PG1	51	47	98	80	128	130	182	150	227	268	317	324	392	
	PG2	105	125	213	175	279	263	356	304	498	551	719	715	856	
	PG3	145	148	226	242	299	320	370	399	570	643	843	860	908	
	PG4	218	220	335	336	455	445	545	557	839	925	1065	1210	1372	
22.4/1.	PG1	51	45	95	77	124	131	180	137	229	270	315	317	386	
	PG2	107	120	209	169	274	260	345	295	503	550	718	711	849	
	PG3	139	144	223	230	299	314	359	374	558	607	835	852	897	
	PG4	215	213	330	321	448	434	527	529	832	890	1038	1203	1360	
25/1.	PG1	50	48	93	75	123	130	177	146	223	267	318	310	380	
	PG2	108	117	201	164	271	255	338	290	490	552	720	707	843	
	PG3	137	139	219	217	298	309	348	354	539	571	824	847	886	
	PG4	210	207	326	307	444	426	510	502	805	856	1010	1197	1349	
28/1.	PG1	49	46	89	71	120	128	173	140	217	264	316	308	374	
	PG2	101	109	199	160	267	249	328	281	476	250	715	694	837	
	PG3	132	134	215	254	296	306	340	342	521	575	816	833	875	
	PG4	211	190	324	389	439	419	493	483	780	863	984	1167	1338	
31.5/1.	PG1	47	49	84	69	125	126	170	136	211	258	314	305	371	
	PG2	102	100	198	156	263	245	319	274	463	248	714	686	815	
	PG3	130	131	210	186	295	300	350	320	503	580	805	816	844	
	PG4	209	175	325	260	434	411	477	465	755	869	957	1133	1283	
35.5/1.	PG1	44	47	78	68	121	125	166	137	205	253	312	302	368	
	PG2	100	93	197	150	259	239	317	266	447	545	686	680	793	
	PG3	126	127	211	174	293	296	348	310	500	583	760	800	812	
	PG4	204	168	330	248	429	404	470	453	710	875	895	1100	1237	
40/1.	PG1	42	44	72	65	120	128	159	133	197	247	310	281	356	
	PG2	98	90	190	144	255	234	315	274	432	518	658	595	768	
	PG3	122	119	209	160	292	291	348	293	498	549	715	689	810	
	PG4	199	160	323	234	425	396	460	423	665	822	834	954	1222	
45/1.	PG1	37	42	67	63	120	127	156	131	190	241	308	260	345	
	PG2	101	85	184	130	251	229	311	287	417	493	631	490	743	
	PG3	118	110	206	143	290	286	342	303	495	520	670	577	808	
	PG4	191	156	323	218	420	389	452	391	621	772	773	807	1206	
50/1.	PG1	40	39	70	75	124	127	154	162	183	235	308	256	357	
	PG2	90	86	177	167	263	221	313	323	402	468	618	489	674	
	PG3	112	104	200	176	286	233	337	349	473	488	656	565	712	
	PG4	162	151	308	267	414	336	445	509	657	721	739	800	1029	
56/1.	PG1	41	37	72	75	128	118	149	156	190	234	305	252	390	
	PG2	92	83	172	165	263	222	316	312	420	466	625	484	662	
	PG3	111	99	194	174	280	235	331	323	460	491	652	544	699	
	PG4	162	144	294	265	409	337	438	474	665	719	720	687	971	
63/1.	PG1	42	35	76	74	131	105	143	151	200	233	303	248	387	
	PG2	92	77	167	163	270	215	315	284	436	462	632	477	656	
	PG3	110	94	188	174	290	232	333	301	447	494	650	532	694	
	PG4	161	133	279	262	403	339	430	444	687	715	700	672	968	
71/1.	PG1	40	33	73	73	120	94	138	144	192	232	300	243	383	
	PG2	94	72	169	162	250	207	316	288	419	460	595	472	650	
	PG3	108	87	185	220	271	234	329	294	429	497	632	520	688	
	PG4	163	126	280	260	398	346	425	404	657	710	693	658	964	
80/1.	PG1	---	---	70	---	112	---	134	---	184	---	295	---	380	
	PG2	---	---	168	---	250	---	312	---	395	---	557	---	644	
	PG3	---	---	182	---	266	---	325	---	411	---	614	---	683	
	PG4	---	---	280	---	392	---	421	---	632	---	687	---	960	
90/1.	PG1	---	---	66	---	105	---	132	---	177	---	288	---	---	
	PG2	---	---	169	---	230	---	310	---	388	---	520	---	---	
	PG3	---	---	180	---	262	---	324	---	394	---	597	---	---	
	PG4	---	---	283	---	387	---	415	---	606	---	680	---	---	

** Values refer to: 1. Ambient Temperature : 20°C
 2. Operating cycle : 100% ,
 3. Installation in a large hall,
 4. Altitude up to 1000 m above sea level

*** Values refer to a cooling water inlet temperature of 20°C
 † Cooling coil not available for vertical units.
 Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxiliary cooling (Horizontal & Vertical)
 Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

Thermal Capacities PG3 (kW)**†Units with cooling coil (Horizontal)
 Thermal Capacities PG4 (kW)**†Units with Fan & cooling coil (Horizontal)

Thermal Capacities (kW) @ n_1 - 1750 (rpm)

Type - MB3SH / MB3HH / MB3DH / MB3SV / MB3AV

Three Stage - Bevel - Helical Units - Size : 6-18

Nominal Ratio		Thermal Capacities P _G (kW)													
		Unit Size													
		6	7	8	9	10	11	12	13	14	15	16	17	18	
12.5/1	PG1	59	48	---	87	---	135	---	138	---	245	---	389	---	
	PG2	114	131	---	216	---	304	---	336	---	605	---	781	---	
	PG3	165	170	---	322	---	366	---	562	---	831	---	894	---	
	PG4	263	261	---	459	---	557	---	745	---	1153	---	1378	---	
14/1.	PG1	57	45	---	86	---	132	---	135	---	243	---	379	325	
	PG2	141	141	---	212	---	307	---	329	---	617	---	780	909	
	PG3	171	165	---	315	---	370	---	527	---	800	---	886	1004	
	PG4	260	250	---	440	---	549	---	716	---	1130	---	1351	1487	
16/1.	PG1	56	43	102	83	127	130	168	165	178	241	296	369	322	
	PG2	135	137	228	207	316	299	421	323	508	634	852	779	898	
	PG3	169	162	256	303	328	365	433	504	596	761	892	879	982	
	PG4	258	244	355	421	519	539	642	683	925	1110	1177	1323	1480	
18/1.	PG1	55	47	99	82	123	127	180	130	179	240	292	359	318	
	PG2	126	139	222	203	311	293	412	314	512	629	840	778	884	
	PG3	164	159	236	284	327	358	423	483	588	724	768	870	964	
	PG4	250	241	358	402	518	531	623	663	916	1089	1123	1294	1473	
20/1.	PG1	53	48	100	81	124	127	178	137	182	241	290	353	314	
	PG2	119	136	215	196	307	288	402	307	517	629	830	774	873	
	PG3	161	155	231	269	324	353	409	466	578	685	848	863	945	
	PG4	245	239	353	386	514	526	607	626	909	1045	1072	1287	1466	
22.4/1.	PG1	53	46	97	78	120	128	176	125	183	243	288	345	310	
	PG2	121	131	211	189	301	285	389	298	523	628	829	770	866	
	PG3	154	151	228	255	324	346	397	437	566	646	840	855	933	
	PG4	242	231	347	369	506	513	587	594	902	1006	1045	1280	1452	
25/1.	PG1	52	49	95	76	119	127	173	134	178	240	291	338	305	
	PG2	122	127	203	183	298	279	381	293	509	630	825	765	860	
	PG3	152	146	225	241	323	341	385	414	547	638	836	851	921	
	PG4	236	225	344	352	502	504	568	564	872	967	1017	1274	1441	
28/1.	PG1	51	47	91	72	116	125	169	128	174	237	289	335	300	
	PG2	114	119	201	179	294	273	370	284	495	601	820	752	854	
	PG3	146	140	220	282	321	337	376	400	528	612	829	836	910	
	PG4	237	206	341	447	496	496	549	542	845	975	991	1242	1429	
31.5/1.	PG1	49	50	86	70	121	123	166	124	168	232	287	332	298	
	PG2	115	109	200	175	289	268	359	276	481	586	805	743	831	
	PG3	144	137	215	206	320	331	387	374	510	618	817	819	878	
	PG4	235	190	342	298	490	486	531	522	818	982	964	1206	1370	
35.5/1.	PG1	45	48	80	69	117	122	162	125	164	228	285	329	295	
	PG2	113	101	199	168	285	262	358	268	464	544	765	736	809	
	PG3	140	133	216	193	318	326	385	362	507	599	792	803	845	
	PG4	230	182	347	285	485	478	523	509	769	989	901	1170	1321	
40/1.	PG1	44	47	76	68	122	125	161	135	199	236	303	274	337	
	PG2	107	101	200	162	279	266	344	304	467	532	676	627	840	
	PG3	136	125	222	180	308	333	371	310	508	574	765	732	837	
	PG4	226	174	342	265	487	461	508	500	700	866	892	1024	1319	
45/1.	PG1	39	45	71	65	123	124	158	132	192	230	300	254	327	
	PG2	111	95	194	146	275	261	339	319	450	506	649	516	813	
	PG3	131	115	218	160	306	328	365	336	505	543	717	613	834	
	PG4	218	170	343	247	481	453	499	462	654	814	827	865	1301	
50/1.	PG1	41	42	74	78	126	124	156	164	185	225	301	250	338	
	PG2	98	96	187	187	288	251	341	358	435	481	636	515	737	
	PG3	124	109	212	197	302	267	360	369	482	510	702	601	786	
	PG4	184	165	326	303	474	391	491	602	691	760	790	858	1110	
56/1.	PG1	43	39	76	78	131	116	151	158	192	223	298	246	369	
	PG2	101	93	181	185	288	253	345	346	454	479	643	510	725	
	PG3	124	104	206	195	296	269	353	341	469	513	698	578	755	
	PG4	184	157	312	301	468	393	484	561	700	758	770	737	1048	
63/1.	PG1	44	37	80	77	133	103	145	153	202	223	296	242	366	
	PG2	101	86	176	183	296	245	344	315	471	474	650	502	718	
	PG3	122	98	199	195	306	266	355	318	456	516	696	566	729	
	PG4	183	145	296	297	461	395	475	525	722	754	748	721	1044	
71/1.	PG1	41	35	77	76	122	92	140	146	194	222	293	237	362	
	PG2	103	80	178	182	274	235	345	320	453	473	612	497	711	
	PG3	120	91	196	247	286	268	351	326	466	520	676	553	720	
	PG4	185	137	297	295	456	404	469	478	691	748	741	706	1040	
80/1.	PG1	---	---	74	---	114	---	136	---	186	---	288	---	360	
	PG2	---	---	177	---	274	---	340	---	427	---	573	---	705	
	PG3	---	---	193	---	281	---	347	---	438	---	657	---	711	
	PG4	---	---	297	---	449	---	465	---	665	---	734	---	1036	
90/1.	PG1	---	---	70	---	107	---	134	---	178	---	281	---	---	
	PG2	---	---	178	---	252	---	338	---	419	---	535	---	---	
	PG3	---	---	191	---	276	---	346	---	433	---	638	---	---	
	PG4	---	---	300	---	443	---	458	---	637	---	727	---	---	

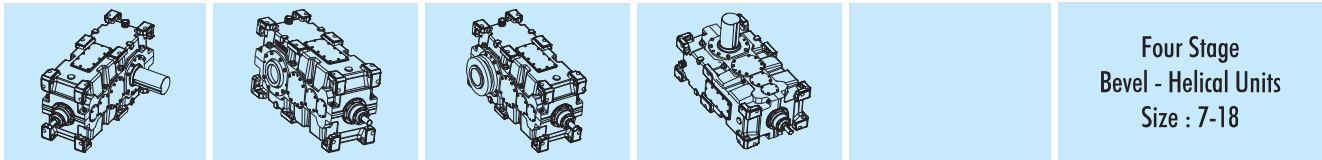
RATINGS

** Values refer to: 1. Ambient Temperature : 20°C
 2. Operating cycle : 100% ,
 3. Installation in a large hall,
 4. Altitude up to 1000 m above sea level

*** Values refer to a cooling water inlet temperature of 20°C
 † Cooling coil not available for vertical units.
 Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxiliary cooling (Horizontal & Vertical)
 Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

Thermal Capacities PG3 (kW)**†Units with cooling coil (Horizontal)
 Thermal Capacities PG4 (kW)**††Units with Fan & cooling coil (Horizontal)



MB4SH

MB4HH

MB4DH

MB4SV

Four Stage
Bevel - Helical Units
Size : 7-18

Nominal Mechanical Power Rating (kW)

Nominal Ratio	Input Speed (rpm)	Nominal Output Speed (rpm)	Nominal Mechanical Power Ratings P _N (kW)											
			UNIT SIZE											
			7	8	9	10	11	12	13	14	15	16	17	18
80/1.	1750	21.9	27.0	--	50	--	80.3	--	141	---	208	---	355	---
	1500	18.8	23.0	--	43	--	69.2	--	121	---	178	---	303	---
	1000	12.5	15.0	--	29	--	46.0	--	81	---	119	---	202	---
	750	9.4	11.0	--	21.5	--	34.2	--	61	---	89	---	152	---
90/1.	1750	19.4	24.0	--	44	--	71.2	--	125	---	186	---	316	355
	1500	16.7	20.0	--	38	--	61.0	--	108	---	159	---	270	306
	1000	11.1	13.5	--	25	--	40.8	--	72	---	106	---	180	203
	750	8.3	10.0	--	19	--	30.8	--	54	---	79	---	135	153
100/1.	1750	17.5	21.5	29.0	40	50	64.0	82	113	139	171	206	284	319
	1500	15.0	18.5	25.0	34	42.8	55.0	70	98	119	147	176	242	275
	1000	10.0	12.3	16.5	23	28.5	36.5	47	65	79	98	117	162	183
	750	7.5	9	12.5	17	21.2	27.5	35	49	59.5	73.5	88	121	137
112/1.	1750	15.6	19	25.0	36	44.3	57.5	73	100	124	153	184	252	285
	1500	13.4	16.5	22.0	31	38	49.0	63	87	106	131	157	216	244
	1000	8.9	11	14.5	20.6	25.5	33.0	42	58	71	87	105	144	163
	750	6.7	8	11.0	15.5	19	24.5	31.5	44	53	66	79	108	122
125/1.	1750	14.0	17	23.0	32	39.3	51.3	66	90	110.5	137	170	228	255
	1500	12.0	14.5	20.0	27	33.9	44.0	56.5	78	95	117	146	196	219
	1000	8.0	10	13.0	18	22.5	29.3	38	52	64	78	97.5	131	146
	750	6.0	7.5	10.0	13.8	17	23.0	28.5	39	48	58.5	73	98	110
140/1.	1750	12.5	15.2	20.0	28.8	35.5	46.0	59.5	81	99	122	153	204	228
	1500	10.7	13	17.5	24.6	30.5	39.2	51	69	85	105	131	175	197
	1000	7.1	9	11.6	16.5	20.3	26.2	34	46	56.5	70	87	117	131
	750	5.4	6.5	9.0	12.5	15.3	19.7	25.5	35	43	53	65	88	98
160/1.	1750	10.9	13.5	18.0	25	31	40.2	52	71	89	107	133	178	200
	1500	9.4	11.5	15.5	21	27	34.0	44.5	61	76.5	92	114	153	172
	1000	6.3	7.5	10.5	14.5	18	23.0	29.7	40	51	61	76	102	114
	750	4.7	5.8	8.0	10.8	13.5	17.0	22.3	30	38.3	46	57	77	86
180/1.	1750	9.7	12	16.0	22	28	36.5	47.5	62	79	95	119	159	178
	1500	8.3	10	13.5	19	24	30.4	39.7	53	67.5	81.5	102	136	152
	1000	5.6	7	9.0	12.8	16	20.4	26.4	36	45	54.5	68	91	102
	750	4.2	5	7.0	9.5	12	15.0	19.8	27	33.2	40.5	51	68	76
200/1.	1750	8.8	11	14.5	20	25	32.0	41.6	57	70	86	107	143	160
	1500	7.5	9	12.3	17	21.3	27.5	35.8	48	60	73.5	91	122	137
	1000	5.0	6	8.0	11	14.2	18.3	23.8	32.5	40	49	61	82	92
	750	3.8	4.5	6.0	8.6	10.7	13.8	17.8	24	30	37	46	61	69
224/1.	1750	7.8	9.5	12.5	18	22	28.8	37.3	51	62	77	95	128	143
	1500	6.7	8	11.0	15.5	19	24.5	32	43	53	66	81.5	109	122
	1000	4.5	5.5	7.0	10	12.8	16.3	21.3	29	35.2	44	54.5	73	82
	750	3.3	4	5.3	7.6	9.5	12.3	16	21.5	26.4	33	41	55	61
250/1.	1750	7.0	8.5	11.5	16	20	25.6	33.3	45	56	69	85	114	128
	1500	6.0	7.5	9.7	13.7	17	22.0	28.5	39	48	59	73	98	110
	1000	4.0	5	6.5	9	11.5	14.7	19	26	32	39	49	66	73
	750	3.0	3.7	5.0	7	8.6	11.1	14.3	19.5	24	29	36.5	49	55
280/1.	1750	6.3	7.5	10.0	14.5	17.6	22.7	29.8	40	51	61	76	101	114
	1500	5.4	6.5	8.7	12.5	15.2	19.5	25.5	35	44	53	65	87	98
	1000	3.6	4.5	6.0	8.2	10.2	13.0	17	23	29	35	43.5	58	65
	750	2.7	3.3	4.5	6.1	7.7	9.8	12.8	17.3	22	26	33	44	49
315/1.	1750	5.6	6.5	9.0	12	15.6	19.4	26.5	35	44	55	68	90	102
	1500	4.8	5.5	7.7	10.3	13.4	16.6	22.8	30	38	47	58	77	87
	1000	3.2	3.8	5.0	7	9	11.2	15.2	20	26	31	39	51	58
	750	2.4	2.8	4.0	5.2	6.8	8.4	11.3	15	19.6	23	29	38	43
355/1.	1750	4.9	--	8.0	--	13.5	--	23.6	---	40	---	60	---	90
	1500	4.2	--	6.8	--	11.7	--	20.1	---	34	---	51.7	---	77
	1000	2.8	--	4.6	--	7.8	--	13.4	---	22.8	---	34.5	---	51
	750	2.1	--	3.5	--	6	--	10.1	---	17.2	---	25.8	---	39
400/1.	1750	4.4	--	7.0	---	11.7	---	20	---	34	---	53.5	---	---
	1500	3.8	--	6.0	---	10.2	---	17	---	29.5	---	45.5	---	---
	1000	2.5	--	4.0	---	6.8	---	11.5	---	19.6	---	30.5	---	---
	750	1.9	--	3.0	---	5.1	---	8.6	---	14.7	---	22.8	---	---

Full Load Efficiency- 96.5% (approx.)

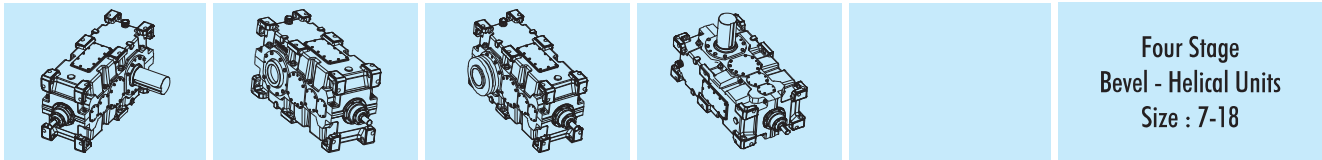
For bigger size refer 'HEAVY DUTY HELICAL GEAR UNIT' catalogue.

Nominal Torque Ratings (kNm)

Bevel - Helical Gear Units
All Types
Size : 6-18

Ratio	Nominal Output Torque P _{N2} (kNm)												
	Unit Size												
	6	7	8	9	10	11	12	13	14	15	16	17	18
5	6.1	9.4	--	19	24	30	39	46	--	69	--	122	135
5.6	6.2	9.4	--	19	24	30	39	48	--	70	--	122	141
6.3	6.2	9.4	--	19	24	30	39	50	--	74	--	130	145
7.1	6.2	9.4	--	19	24	30	39	54	--	76	--	132	148
8	6.2	9.4	--	19	24	30	39	54	--	80	--	132	148
9	6.2	9.4	--	19	24	30	39	54	--	81	--	132	148
10	6.2	9.4	--	19	24	30	39	54	--	81	--	132	148
11.2	6.2	9.4	--	19	24	30	39	52	--	82	--	133	148
12.5	5.5	9.4	--	17	24	28	39	53	--	80	--	132	148
14	6	9.8	--	18	24	30	39	57	--	82	102	137	148
16	6.6	10.5	12.2	20	22	31	36	60	74	85	105	142	155
18	6.7	11.3	12.8	21	23	34	38	62	74	87	105	147	160
20	6.7	11.7	13.5	21	25	36	40	64	74	83	108	153	167
22.4	6.7	11.4	14.3	22	27	36	43	64	74	92	110	153	167
25	6.7	11.6	15.5	22	27	36	44	64	74	91	109	153	172
28	6.7	11.6	15.5	22	27	36	44	64	76	93	115	153	173
31.5	6.6	11.6	15.5	22	27	36	44	64	76	93	115	153	173
35.5	6.6	11.6	15.5	22	27	36	45	64	76	92	115	153	174
40	6.6	11.6	15.5	22	27	36	45	64	76	91	115	153	173
45	6.6	11.6	15.5	22	27	36	45	64	76	91	115	153	174
50	6.7	11.6	15.5	22	27	36	45	64	76	91	115	153	173
56	6.6	11.6	15.5	22	27	36	45	64	76	91	115	153	173
63	6.5	11.6	15.5	22	27	35	45	63	76	91	116	153	173
71	6.5	10.8	15.5	20	27	34	45	60	76	91	115	153	173
80	--	11.6	14.3	22	27	35	45	62	76	93	115	155	173
90	--	11.6	14.3	22	27	35	44	62	76	93	116	155	174
100	--	11.6	15.5	22	27	35	45	62	77	94	112	155	175
112	--	11.6	15.5	22	27	35	45	62	77	93	112	154	174
125	--	11.6	15.5	22	27	35	45	62	77	94	116	156	175
140	--	11.6	15.5	22	27	35	45	62	77	93	117	156	175
160	--	11.6	15.5	22	27	35	45	62	77	94	117	156	175
180	--	11.6	15.5	22	27	35	45	62	77	94	117	156	174
200	--	11.6	15.5	22	27	35	45	62	77	94	117	156	174
224	--	11.6	15.5	22	27	35	45	62	77	94	117	156	175
250	--	11.6	15.5	22	27	35	45	62	77	94	117	156	175
280	--	11.6	15.5	22	27	35	45	62	77	94	117	153	174
315	--	11.6	15.5	22	27	34	46	60	77	94	117	153	156
355	--	11.6	15.5	--	27	--	44	--	77	94	117	153	174
400	--	11.6	15.5	--	26	--	--	--	77	--	117	--	173
450	--	11.2	15.5	--	--	--	--	--	77	--	--	--	--

RATINGS



MB4SH

MB4HH

MB4DH

MB4SV

Four Stage
Bevel - Helical Units
Size : 7-18

Thermal Capacities (kW)

n_1 - 750 (rpm)

Nominal Ratio		Thermal Capacities P_G (kW)											
		Unit Size											
		7	8	9	10	11	12	13	14	15	16	17	18
80/1.	PG1	26	--	37	--	58	--	111	--	132	--	208	--
90/1.	PG1	26	--	36	--	57	--	109	--	131	--	207	256
100/1.	PG1	25	34	36	49	55	86	106	121	131	156	205	254
112/1.	PG1	25	33	35	47	53	85	105	120	130	155	200	251
125/1.	PG1	24	33	35	46	52	83	104	119	129	153	197	250
140/1.	PG1	24	32	35	44	50	80	102	118	129	152	196	248
160/1.	PG1	23	32	34	44	49	77	99	117	129	149	194	246
180/1.	PG1	23	30	34	42	48	77	96	116	127	147	193	245
200/1.	PG1	22	29	34	42	47	75	96	116	126	147	192	241
224/1.	PG1	20	29	33	40	47	75	95	115	124	146	190	239
250/1.	PG1	20	28	33	39	46	73	94	115	124	145	189	236
280/1.	PG1	19	28	32	39	46	73	94	112	122	144	189	232
315/1.	PG1	19	28	32	39	45	70	93	111	121	142	187	225
355/1.	PG1	--	27	--	38	--	69	--	109	--	142	--	221
400/1.	PG1	--	27	--	38	--	68	--	108	--	141	--	--

Thermal Capacities (kW)

n_1 - 1000 (rpm)

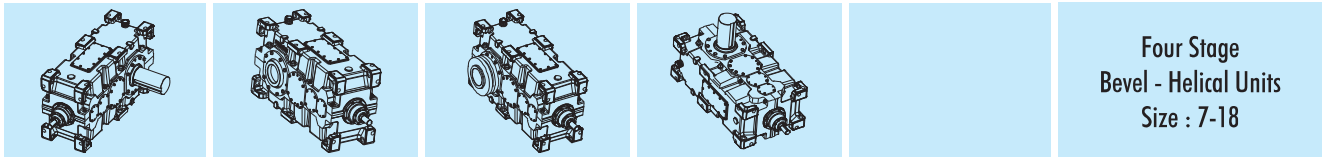
Nominal Ratio		Thermal Capacities P_G (kW)											
		Unit Size											
		7	8	9	10	11	12	13	14	15	16	17	18
80/1.	PG1	28	--	42	--	71	--	122	--	144	--	216	--
90/1.	PG1	28	--	41	--	71	--	120	--	144	--	216	262
100/1.	PG1	28	35	41	61	70	94	120	131	143	178	215	260
112/1.	PG1	27	34	40	60	68	96	119	130	143	176	215	257
125/1.	PG1	27	34	40	58	67	94	117	129	142	175	215	255
140/1.	PG1	26	33	39	56	65	91	114	129	141	173	213	252
160/1.	PG1	26	33	39	54	63	89	114	128	140	173	212	248
180/1.	PG1	26	32	39	52	61	86	113	128	138	172	210	245
200/1.	PG1	25	32	38	50	60	85	111	126	136	169	208	242
224/1.	PG1	25	31	38	49	57	82	111	125	135	167	206	238
250/1.	PG1	23	31	37	46	57	81	109	124	134	167	205	236
280/1.	PG1	23	30	37	46	56	78	107	122	132	166	204	234
315/1.	PG1	22	29	35	44	54	78	107	122	131	165	205	231
355/1.	PG1	--	29	--	42	--	77	--	120	--	164	--	228
400/1.	PG1	--	29	--	41	--	76	--	119	--	164	--	--

** Values refer to: 1. Ambient Temperature : 20°C
2. Operating cycle : 100% ,
3. Installation in a large hall,
4. Altitude up to 1000 m above sea level

*** Values refer to a cooling water inlet temperature of 20°C
† Cooling coil not available for vertical units.
Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxillary cooling (Horizontal & Vertical)
Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

Thermal Capacities PG3 (kW)***)†Units with cooling coil (Horizontal)
Thermal Capacities PG4 (kW)***)†Units with Fan & cooling coil (Horizontal)



MB4SH

MB4HH

MB4DH

MB4SV

Four Stage
Bevel - Helical Units
Size : 7-18

Thermal Capacities (kW)

n₁ - 1500 (rpm)

Nominal Ratio		Thermal Capacities P _G (kW)											
		Unit Size											
		7	8	9	10	11	12	13	14	15	16	17	18
80/1.	PG1	33	--	48	--	83	--	--	--	158	--	241	--
90/1.	PG1	33	--	48	--	83	--	--	--	155	--	240	268
100/1.	PG1	32	42	47	69	81	119	134	145	152	197	238	266
112/1.	PG1	31	41	47	67	81	118	134	145	149	195	236	263
125/1.	PG1	32	42	46	66	79	117	132	144	147	193	234	260
140/1.	PG1	31	41	46	64	77	115	130	142	145	189	232	257
160/1.	PG1	31	41	45	62	76	113	131	140	145	186	230	255
180/1.	PG1	30	40	43	61	73	109	129	141	144	184	227	251
200/1.	PG1	30	39	44	58	74	106	127	140	143	181	225	247
224/1.	PG1	30	39	43	56	73	104	127	138	141	178	221	245
250/1.	PG1	29	37	41	55	70	101	125	135	139	177	218	242
280/1.	PG1	29	36	40	53	69	99	124	136	139	175	216	239
315/1.	PG1	29	36	40	49	68	96	121	134	137	173	212	237
355/1.	PG1	--	--	--	47	--	94	120	131	--	171	--	234
400/1.	PG1	--	--	--	47	--	92	117	129	--	171	--	--

RATINGS

Thermal Capacities (kW)

n₁ - 1750 (rpm)

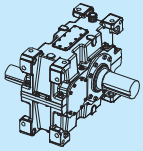
Nominal Ratio		Thermal Capacities P _G (kW)											
		Unit Size											
		7	8	9	10	11	12	13	14	15	16	17	18
80/1.	PG1	37	--	55	--	98	--	146	--	174	--	235	---
90/1.	PG1	37	--	55	--	96	--	144	--	172	--	235	270
100/1.	PG1	37	48	52	76	94	124	142	162	171	209	234	267
112/1.	PG1	36	47	50	75	93	124	143	162	169	208	233	266
125/1.	PG1	35	48	52	73	90	121	141	160	167	206	231	263
140/1.	PG1	36	46	51	71	87	120	140	158	163	204	229	259
160/1.	PG1	34	47	50	70	88	118	137	154	160	201	226	256
180/1.	PG1	35	46	48	69	86	117	137	155	158	199	227	254
200/1.	PG1	33	45	47	68	83	115	136	152	158	198	226	250
224/1.	PG1	32	43	45	65	81	113	134	149	156	196	224	247
250/1.	PG1	30	44	43	63	80	114	132	147	155	194	222	248
280/1.	PG1	31	42	44	64	77	112	131	144	152	196	220	246
315/1.	PG1	31	40	43	62	77	110	128	144	149	195	219	243
355/1.	PG1	--	41	--	60	--	109	--	143	--	193	--	240
400/1.	PG1	--	41	--	58	--	109	--	141	--	193	--	--

** Values refer to: 1. Ambient Temperature : 20°C
2. Operating cycle : 100% ,
3. Installation in a large hall,
4. Altitude up to 1000 m above sea level

*** Values refer to a cooling water inlet temperature of 20°C
† Cooling coil not available for vertical units.
Full load Efficiency 98.5%(approx.)

Thermal Capacities PG1 (kW)**Units without auxillary cooling (Horizontal & Vertical)
Thermal Capacities PG2 (kW)**Units with fan cooling (Horizontal)

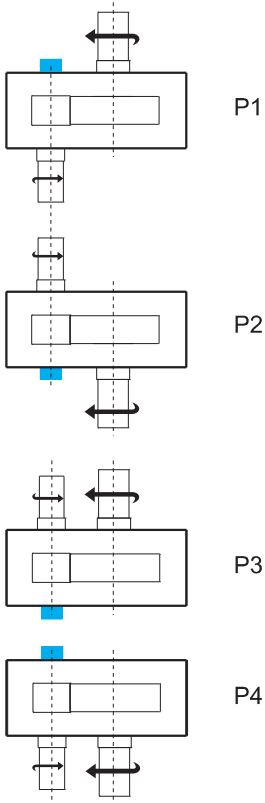
Thermal Capacities PG3 (kW)***)†Units with cooling coil (Horizontal)
Thermal Capacities PG4 (kW)***)†Units with Fan & cooling coil (Horizontal)




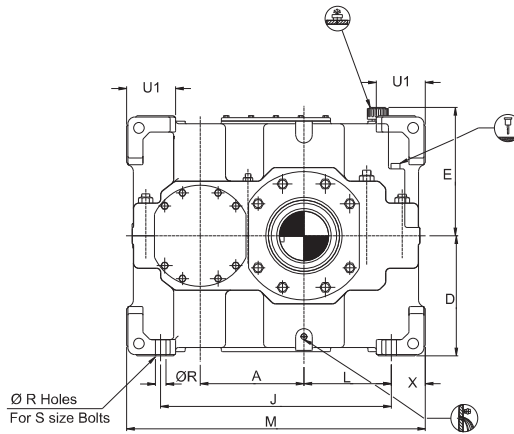
MH1SH

Single Stage
Helical Units
Size : 7 - 17
Horizontal Foot Mounted

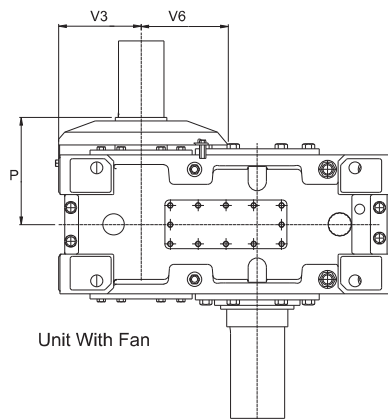
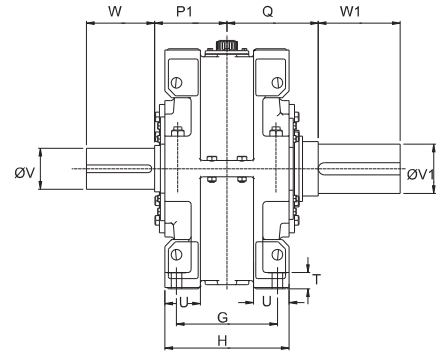
Shafts Handing / Rotation



 Hold Backs/Stop Backs
Opposite Rotation Available



Unit Without Fan

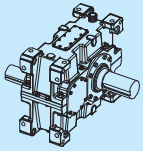


Unit With Fan

DIMENSIONS

Unit Size	Dimensions in mm									
	A	D	E	G	H	L	J	M	P1	Q
7	185	250	290	230	270	170	455	635	180	180
9	225	295	345	260	310	200	545	745	185	195
11	265	325	375	300	365	245	660	860	220	230
13	320	385	420	330	395	280	770	1010	235	245
15	380	440	470	370	455	320	845	1095	265	335
17	450	500	530	420	505	385	960	1270	290	300

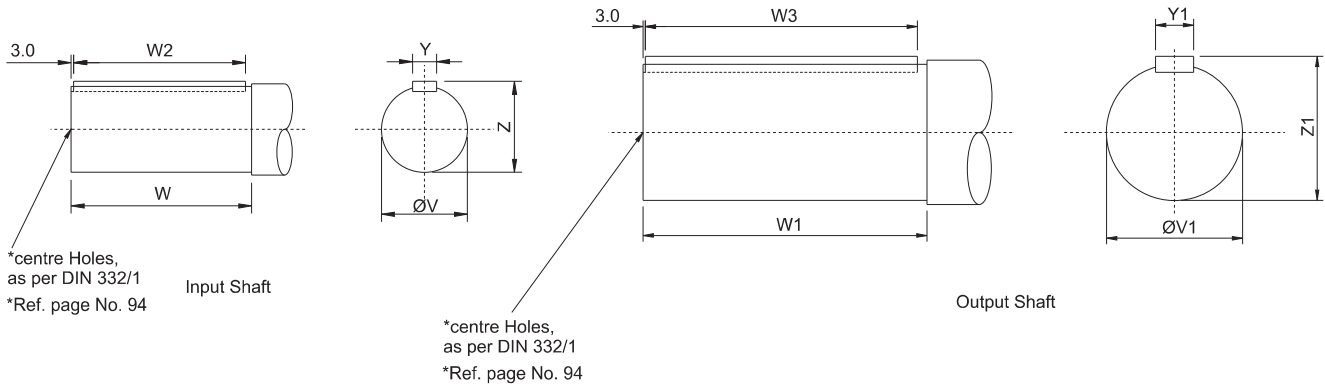
Unit Size	Dimensions in mm								
	R	S	T	U	U1	X	P	V3	V6
7	22	20	30	75	125	90	270	245	260
9	26	24	35	85	135	100	300	220	260
11	26	24	35	100	135	100	335	245	260
13	33	30	55	100	170	120	370	275	285
15	39	36	60	130	185	125	400	275	285
17	45	42	65	130	215	155	410	280	300



MH1SH

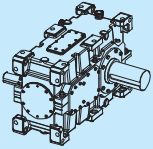
Single Stage
Helical Units
Size : 7 - 17
Horizontal Foot Mounted

Shaft End Details



Note : Tolerance on shaft extension diameters : $k6 \leq \varnothing 50$; $m6 > \varnothing 50$.
(As per IS : 3688 : 1990)

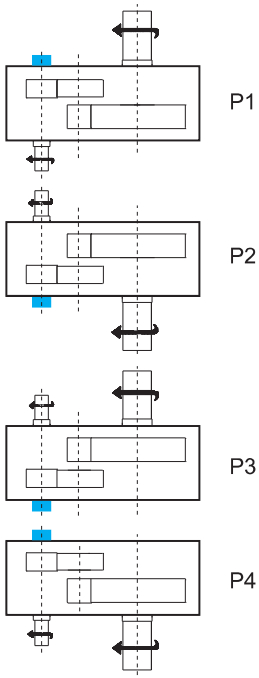
Size	Input															Output				
	* Ratio 1.6-2.8					* Ratio 3.15-4.0					* Ratio 4.5-5.6									
	** Ratio 2.5-2.8					** Ratio 3.15-4.0					** Ratio 4.5-5.6									
	§ Ratio 1.25-2.8					*§ **Ratio 3.15-4.0					*§ **Ratio 4.5-5.6									
	V	W	W2	Y	Z	V	W	W2	Y	Z	V	W	W2	Y	Z	V1	W1	W3	Y1	Z1
\$ 7	85	170	160	22.000 21.948	90.0 89.8	60	140	130	18.000 17.957	64.0 63.8	50	110	100	14.000 13.957	53.5 53.3	85	170	160	22.000 21.948	90.0 89.8
\$ 9	100	210	200	28.000 27.948	106.0 105.8	75	140	130	20.000 19.948	79.5 79.3	60	140	130	18.000 17.957	64.0 63.8	100	210	200	28.000 27.948	116.0 115.8
\$ 11	110	210	200	28.000 27.948	106.0 105.8	90	170	160	25.000 24.948	95.0 94.8	75	140	130	20.000 19.948	79.5 79.3	125	210	200	32.000 31.938	132.0 131.8
*13	130	250	240	32.000 31.938	137.0 136.8	110	210	200	28.000 27.948	116.0 115.8	90	170	160	25.000 24.948	95.0 94.8	150	250	240	36.000 35.938	158.0 157.7
*15	150	250	240	36.000 35.938	158.0 157.7	130	250	240	32.000 31.938	137.0 136.8	100	210	200	28.000 27.948	106.0 105.8	180	300	290	45.000 44.938	190.0 189.7
**17	180	300	290	45.000 44.938	190.0 189.7	150	250	240	36.000 35.938	158.0 157.7	125	210	200	32.000 31.938	132.0 131.8	220	350	340	50.000 49.938	231.0 230.7



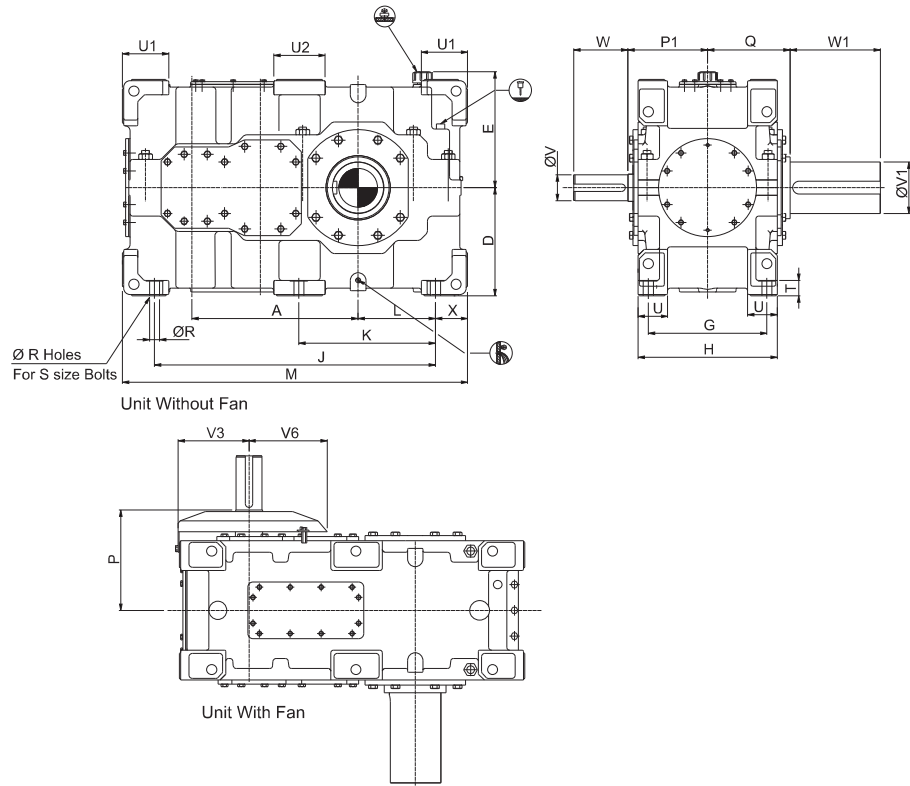
Two Stage
Helical Units
Size : 6-18
Horizontal Foot Mounted

MH2SH

Shafts Handing / Rotation



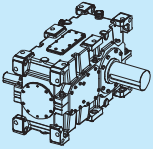
Hold Back / Back Stops
Opposite Rotation Available



DIMENSIONS

Unit Size	Dimensions in mm									
	A	D	E	G	H	L	K	J	M	Q
6	270	225	260	230	276	150	-	460	620	185
7	315	245	280	260	300	160	-	520	700	195
8	355	285	320	260	300	205	-	610	780	195
9	385	285	335	300	346	190	-	640	840	220
10	425	320	370	300	346	230	-	720	920	220
11	450	320	370	340	396	215	-	775	975	250
12	505	380	415	340	396	270	-	875	1115	250
13	545	380	415	410	470	265	465	920	1160	285
14	605	430	460	410	470	325	545	1035	1285	285
15	645	420	450	470	540	300	545	1090	1340	320
16	715	500	530	470	540	380	640	1240	1500	320
17	770	480	510	550	626	375	640	1320	1630	365
18	810	525	550	550	626	400	660	1370	1680	365

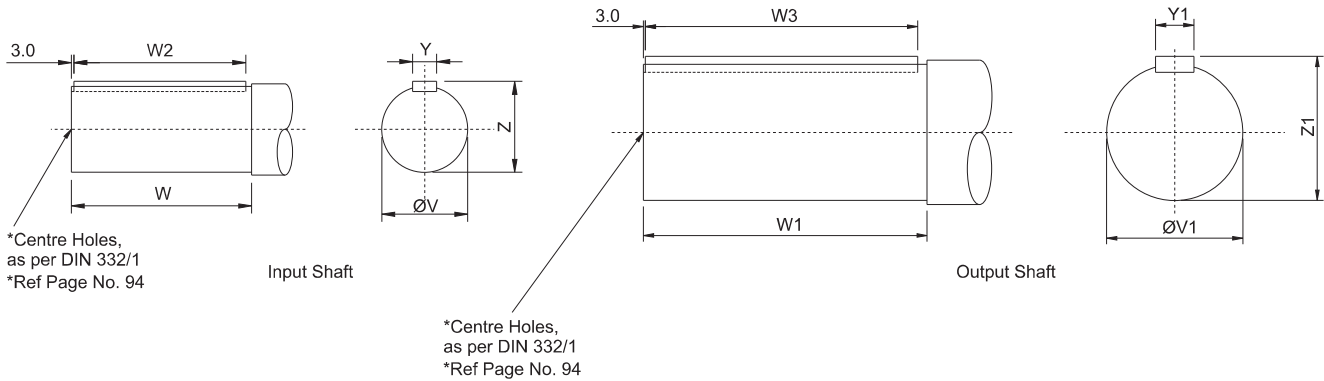
Unit Size	Dimensions in mm										
	P1	R	S	T	U	U1	U2	X	P	V3	V6
6	165	18	16	25	75	105	-	80	240	120	130
7	180	22	20	30	75	125	-	90	260	135	145
8	180	22	20	30	75	125	-	90	260	130	145
9	200	26	24	35	85	135	-	100	280	135	145
10	200	26	24	35	85	135	-	100	290	160	200
11	225	26	24	35	100	135	-	100	325	205	225
12	225	33	30	55	100	170	-	120	335	205	230
13	275	33	30	55	105	170	190	120	390	215	240
14	275	33	30	55	105	170	190	125	390	215	240
15	310	39	36	60	120	185	200	125	410	255	265
16	310	39	36	60	120	185	200	130	445	255	290
17	355	45	42	65	130	215	230	155	480	310	325
18	355	45	42	65	130	215	230	155	480	310	320



MH2SH

Two Stage
Helical Units
Size : 6-18
Horizontal Foot Mounted

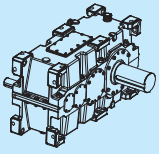
Shaft End Details



Note : Tolerance on shaft extension diameters : k6 <= Ø50; m6 > Ø50.
(As per IS : 3688 : 1990)

Size	Input										Output				
	\$ Ratio 6.3-11.2					\$ Ratio 12.5 - 22.4									
	Ratio 6.3-11.2					Ratio 12.5-20									
	* Ratio 7.1-12.5					* Ratio 14-22.5									
	** Ratio 8-14					** Ratio 16-25									
	*** Ratio 8-14					*** Ratio 16-28									
	V	W	W2	Y	Z	V	W	W2	Y	Z	V1	W1	W3	Y1	Z1
\$ 6	45	110	100	14.00 13.957	48.5 48.3	32	80	70	10.00 9.964	35.00 34.8	80	170	160	22.00 21.948	85.00 84.8
\$ 7	50	110	100	14.00 13.957	53.5 53.3	38	80	70	10.00 9.964	41.00 40.8	100	210	200	28.00 27.948	106.00 105.8
***8	50	110	100	14.00 13.957	53.5 53.3	38	80	70	10.00 9.964	41.00 40.8	110	210	200	28.00 27.948	116.00 115.8
\$ 9	60	140	130	18.000 17.957	64.0 63.8	50	110	100	14.000 13.957	53.5 53.3	120	210	200	32.000 31.938	127.0 126.8
***10	60	140	130	18.000 17.957	64.0 63.8	50	110	100	14.000 13.957	53.5 53.3	130	250	240	32.000 31.938	137.0 136.8
\$ 11	75	140	130	20.000 19.948	79.5 79.3	60	140	130	18.000 17.957	64.0 63.8	140	250	240	36.000 35.938	148.0 147.7
***12	75	140	130	20.000 19.948	79.5 79.3	60	140	130	18.000 17.957	64.0 63.8	160	300	290	40.000 39.938	169.0 168.7
\$ 13	90	170	160	25.000 24.948	95.0 94.8	90	140	130	20.000 19.948	95.0 94.8	170	300	290	40.000 39.938	179.0 178.7
***14	90	170	160	25.000 24.948	95.0 94.8	70	140	130	20.000 19.948	74.5 74.3	180	300	290	45.000 44.938	190.0 189.7
15	100	210	200	28.000 27.948	106.0 105.8	85	170	160	22.000 21.948	90.0 89.8	200	350	340	45.000 44.938	210.0 209.7
**16	100	210	200	28.000 27.948	106.0 105.8	85	170	160	22.000 21.948	90.0 89.8	220	350	340	50.000 49.938	231.0 230.7
17	120	210	200	32.000 31.938	127.0 126.8	100	210	200	28.000 27.948	106.0 105.8	240	410	400	56.000 55.926	252.0 251.7
*18	120	210	200	32.000 31.938	127.0 126.8	100	210	200	28.000 27.948	106.0 105.8	240	410	400	56.000 55.926	252.0 251.7

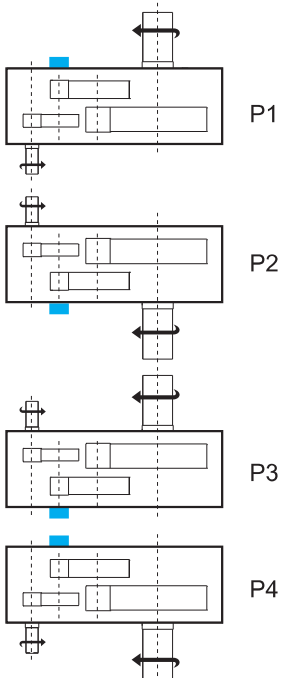
DIMENSIONS



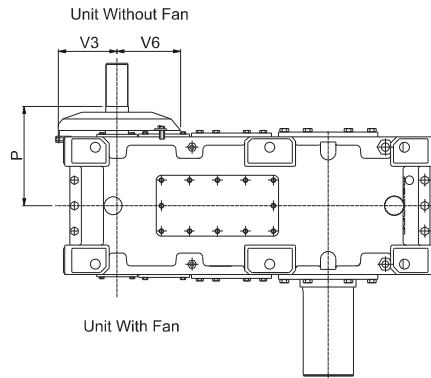
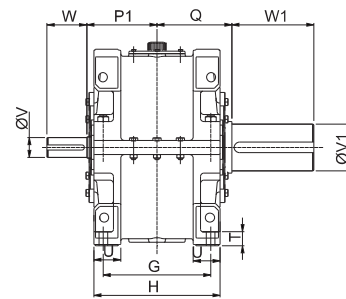
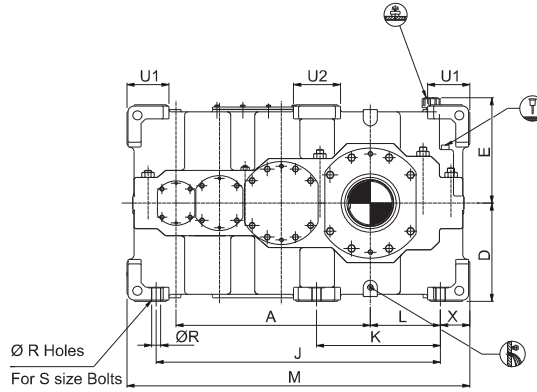
Three Stage
Helical Units
Size : 7-18
Horizontal Foot Mounted

MH3SH

Shafts Handing / Rotation



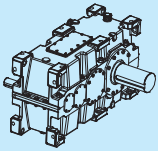
■ Holdback / Backstop
Opposite Rotation available



DIMENSIONS

Unit Size	Dimensions in mm									
	A	D	E	G	H	L	K	J	M	P1
7	405	245	280	260	300	160	-	595	775	180
8	445	285	320	260	300	200	-	675	855	180
9	495	285	335	300	346	190	-	725	925	200
10	535	320	370	300	346	230	-	805	1005	200
11	580	320	370	340	396	215	-	840	1040	225
12	635	380	415	340	396	270	-	940	1180	225
13	705	380	415	410	470	265	465	1050	1290	265
14	765	430	460	410	470	325	545	1165	1415	265
15	830	420	450	470	540	300	545	1215	1465	300
16	900	500	530	470	540	380	640	1365	1625	300
17	995	480	510	550	626	375	640	1460	1770	345
18	1035	525	550	550	626	400	660	1525	1835	345

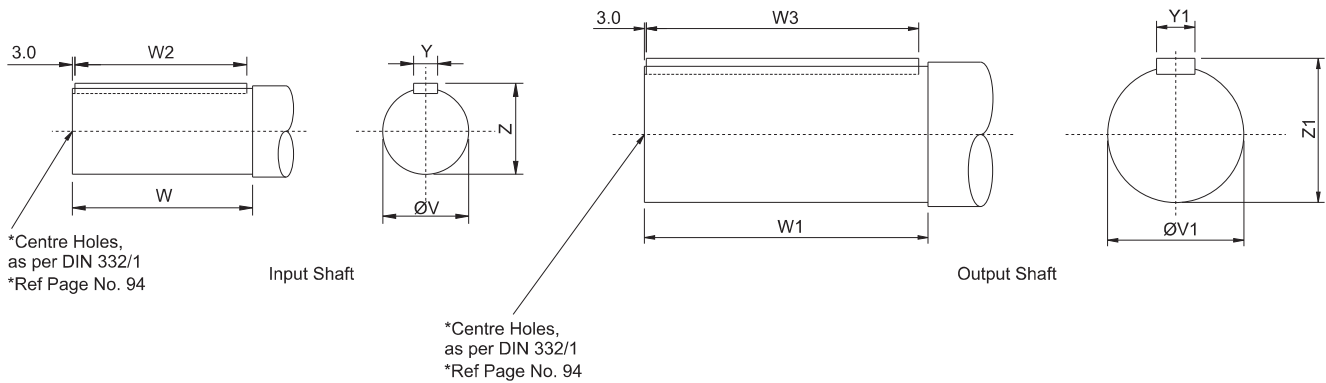
Unit Size	Dimensions in mm										
	Q	R	S	T	U	U1	U2	X	P	V3	V6
7	195	22	20	30	75	125	-	90	245	120	130
8	195	22	20	30	75	125	-	90	255	120	130
9	220	26	24	35	85	135	-	100	280	145	160
10	220	26	24	35	85	135	-	100	280	145	160
11	250	26	24	35	100	135	-	100	305	150	175
12	250	33	30	55	100	170	-	120	305	150	175
13	285	33	30	55	105	170	190	120	380	195	240
14	285	33	30	55	105	170	190	125	380	195	240
15	320	39	36	60	120	185	200	125	410	215	240
16	320	39	36	60	120	185	200	130	410	205	215
17	365	45	42	65	130	215	230	155	460	225	240
18	365	45	42	65	130	215	230	155	460	240	250



MH3SH

Three Stage
Helical Units
Size : 7-18
Horizontal Foot Mounted

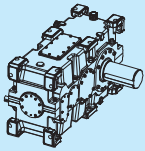
Shaft End Details



Note : Tolerance on shaft extension diameters : k6 <= Ø50; m6 > Ø50.
(As per IS : 3688 : 1990)

Size	Input															Output				
	\$ Ratio 25-45					\$ Ratio 50-63					\$ Ratio 71-90									
	Ratio 22.4-45					Ratio 50-63					Ratio 71-90									
	* Ratio 25-50					* Ratio 56-71					* Ratio 80-100									
	** Ratio 28-56					** Ratio 63-80					** Ratio 90-112									
	*** Ratio 31.5-56					*** Ratio 63-80					*** Ratio 90-112									
	V	W	W2	Y	Z	V	W	W2	Y	Z	V	W	W2	Y	Z					
\$ 7	40	110	100	12.00 11.957	43.0 42.8	30	80	70	8.000 7.964	33.0 32.8	24	50	40	8.000 7.964	27.0 26.8	100	210	200	28.000 27.948	106.0 105.8
***8	40	110	100	12.00 11.957	43.0 42.8	30	80	70	8.000 7.964	33.0 32.8	24	50	40	8.000 7.964	27.0 26.8	100	210	200	28.000 27.948	106.0 105.8
\$ 9	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	30	80	70	8.000 7.964	33.0 32.8	120	210	200	32.000 31.938	127.0 126.8
***10	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	30	80	70	8.000 7.964	33.0 32.8	130	250	240	32.000 31.938	137.0 136.8
\$ 11	60	140	130	18.000 17.957	64.0 63.8	45	110	100	14.000 13.957	48.5 48.3	32	80	70	10.000 9.964	33.0 34.8	140	250	240	36.000 35.938	148.0 147.7
***12	60	140	130	18.000 17.957	64.0 63.8	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	160	300	290	40.000 39.938	169.0 168.7
\$ 13	70	140	130	20.000 19.948	74.5 74.3	50	110	100	14.000 13.957	53.5 53.3	45	110	100	14.000 13.957	48.5 48.3	170	300	290	40.000 39.938	179.0 178.7
***14	70	140	130	20.000 19.948	74.5 74.3	50	110	100	14.000 13.957	53.5 53.3	45	110	100	14.000 13.957	48.5 48.3	180	300	290	45.000 44.938	190.0 189.7
15	85	170	160	22.000 21.948	90.0 89.8	60	140	130	18.000 17.957	64.0 63.8	50	110	100	14.000 13.957	53.5 53.3	200	350	340	45.000 44.938	210.0 209.7
**16	85	170	160	22.000 21.948	90.0 89.8	60	140	130	18.000 17.957	64.0 63.8	50	110	100	14.000 13.957	53.5 53.3	220	350	340	50.000 49.938	231.0 230.7
17	100	210	200	28.000 27.948	106.0 105.8	75	140	130	20.000 19.948	79.5 79.3	60	140	130	18.000 17.957	64.0 63.8	240	410	400	56.000 55.926	252.0 251.7
*18	100	210	200	28.000 27.948	106.0 105.8	75	140	130	20.000 19.948	79.5 79.3	60	140	130	18.000 17.957	64.0 63.8	240	410	400	56.000 55.926	252.0 251.7

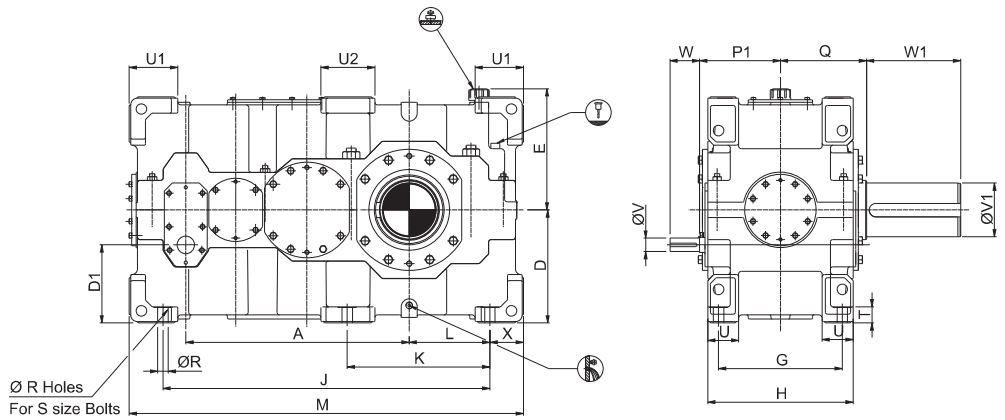
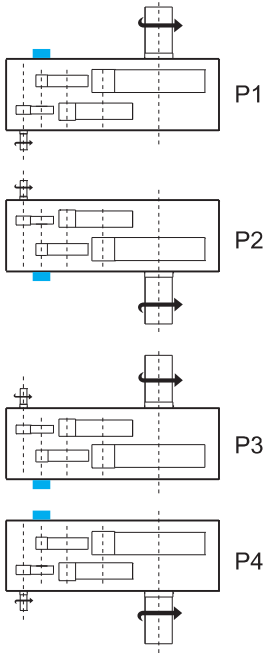
DIMENSIONS



Four Stage
Helical Units
Size : 9-18
Horizontal Foot Mounted

MH4SH

Shafts Handing / Rotation

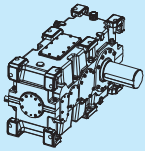


■ Holdback / Backstop
Opposite Rotation available

DIMENSIONS

Unit Size	Dimensions in mm									
	A	D	D1	E	G	H	L	K	J	M
9	495	285	205	335	300	346	190	-	725	925
10	535	320	240	370	300	346	230	-	805	1005
11	580	320	230	370	330	396	215	-	840	1040
12	635	380	290	415	340	396	270	-	940	1180
13	705	380	270	415	410	470	265	465	1050	1290
14	765	430	320	460	410	470	325	545	1165	1415
15	830	420	290	450	470	540	300	545	1215	1465
16	900	500	370	530	470	540	380	640	1365	1625
17	995	480	320	510	550	626	375	640	1460	1770
18	1035	525	365	550	550	626	400	660	1525	1835

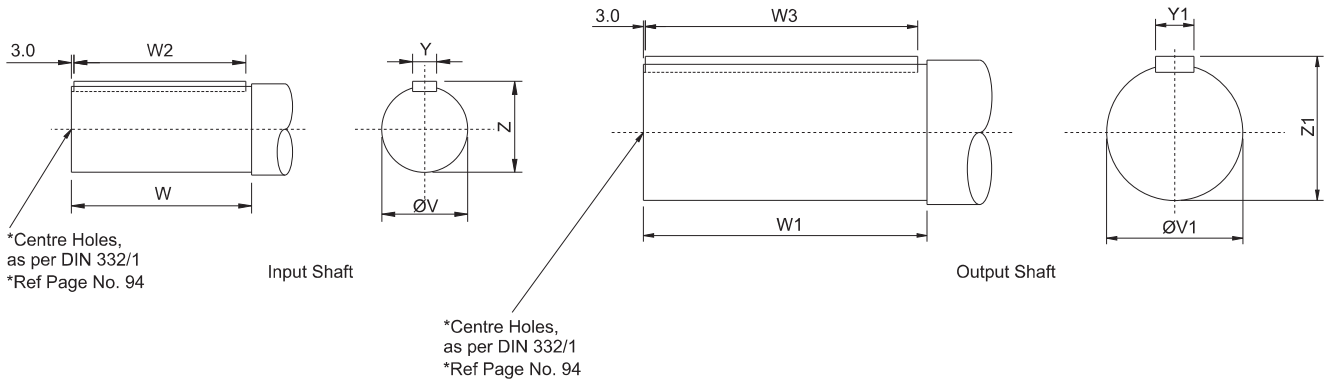
Unit Size	Dimensions in mm								
	P1	Q	R	S	T	U	U1	U2	X
9	200	220	26	24	35	85	135	-	100
10	200	220	26	24	35	85	135	-	100
11	225	250	26	24	35	100	135	-	100
12	225	250	33	30	55	100	170	-	120
13	265	280	33	30	55	105	170	190	120
14	265	285	33	30	55	105	170	190	125
15	300	320	39	36	60	120	185	200	125
16	300	320	39	36	60	120	185	200	130
17	345	365	45	42	65	130	215	230	155
18	345	365	45	42	65	130	215	230	155



MH4SH

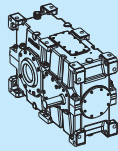
Four Stage
Helical Units
Size : 9-18
Horizontal Foot Mounted

Shaft End Details

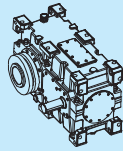


Note : Tolerance on shaft extension diameters : k6 <= Ø50; m6 > Ø50.
(As per IS : 3688 : 1990)

Size	Input										Output				
	Ratio 100-180					Ratio 200-355									
	* Ratio 112-200					* Ratio 224-400									
	** Ratio 125-224					** Ratio 250-450									
	V	W	W2	Y	Z	V	W	W2	Y	Z					
9	30	80	70	8.000 7.964	33.0 32.8	24	50	40	8.000 7.964	27.0 26.8	120	210	200	32.000 31.938	127.0 126.8
**10	30	80	70	8.000 7.964	33.0 32.8	24	50	40	8.000 7.964	27.0 26.8	130	250	240	32.000 31.938	137.0 136.8
11	35	80	70	10.000 9.964	38.0 37.8	28	60	40	8.000 7.964	31.0 30.8	140	250	240	36.000 35.938	148.0 147.7
**12	35	80	70	10.000 9.964	38.0 37.8	28	60	50	8.000 7.964	31.0 30.8	160	300	290	40.000 39.938	169.0 168.7
13	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	170	300	290	40.000 39.938	179.0 178.7
**14	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	180	300	290	45.000 44.938	190.0 189.7
15	50	110	100	14.000 13.957	53.5 53.3	40	110	100	12.000 11.957	43.0 43.2	200	350	340	45.000 44.938	210.0 209.7
**16	50	110	100	14.000 13.957	53.5 53.3	40	110	100	12.000 11.957	43.0 43.2	220	350	340	50.000 49.938	231.0 230.7
17	60	140	130	18.000 17.957	64.0 63.8	50	110	100	14.000 13.957	53.5 53.3	240	410	400	56.000 55.926	252.0 251.7
*18	60	140	130	18.000 17.957	64.0 63.8	50	110	100	14.000 13.957	53.5 53.3	240	410	400	56.000 55.926	252.0 251.7



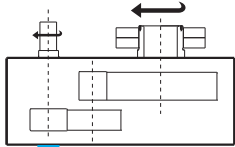
MH2HH



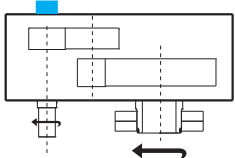
MH2DH

Two Stage
Helical Units
Size : 6-18
Horizontal Shaft Mounted


Shafts Handing / Rotation

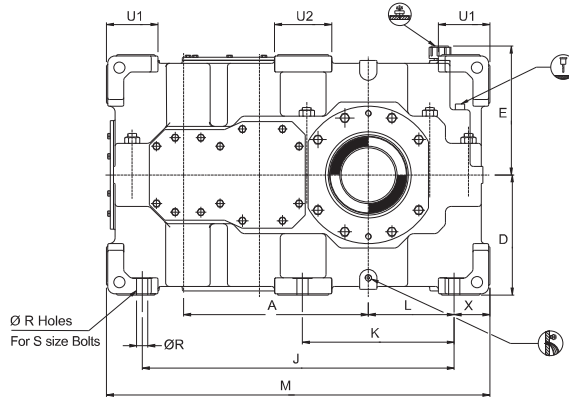


P1

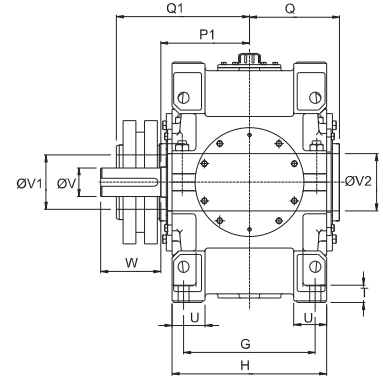


P2

 Holdback / Backstop
Opposite Rotation Available



Unit Without Fan

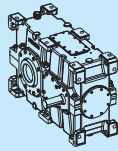


Unit With Fan

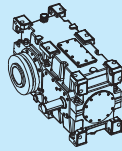
DIMENSIONS

Unit Size	Dimensions in mm										
	A	D	E	G	H	L	K	J	M	P1	Q
6	270	225	260	230	276	150	-	460	620	165	185
7	315	245	280	260	300	160	-	520	700	180	195
8	355	285	320	260	300	205	-	610	780	180	195
9	385	285	335	300	346	190	-	640	840	200	220
10	425	320	370	300	346	230	-	720	920	200	220
11	450	320	370	340	396	215	-	775	975	225	250
12	505	380	415	340	396	270	-	875	1115	225	250
13	545	380	415	410	470	265	465	920	1160	275	280
14	605	430	460	410	470	325	545	1035	1285	275	280
15	645	420	450	470	540	300	545	1090	1340	310	320
16	715	500	530	470	540	380	640	1240	1500	310	320
17	770	480	510	550	626	375	640	1320	1630	355	365
18	810	525	550	550	626	400	660	1370	1680	355	365

Unit Size	Dimensions in mm									
	R	S	T	U	U1	U2	X	P	V3	V6
6	18	16	25	75	105	-	80	240	120	130
7	22	20	30	75	125	-	90	260	135	145
8	22	20	30	75	125	-	90	260	130	145
9	26	24	35	85	135	-	100	280	135	145
10	26	24	35	85	135	-	100	290	160	200
11	26	24	35	100	135	-	100	325	205	225
12	33	30	55	100	170	-	120	335	205	230
13	33	30	55	105	170	190	120	390	215	240
14	33	30	55	105	170	190	125	390	215	240
15	39	36	60	120	185	200	125	410	255	265
16	39	36	60	120	185	200	130	445	255	290
17	45	42	65	130	215	230	155	480	310	325
18	45	42	70	130	215	230	155	480	310	320

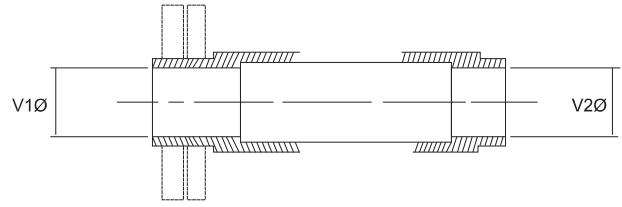
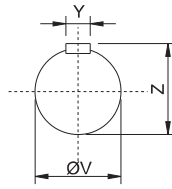
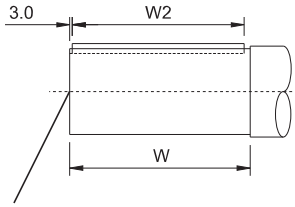


MH2HH



MH2DH

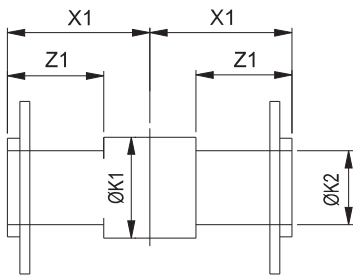
Two Stage
Helical Units
Size : 6-18
Horizontal Shaft Mounted



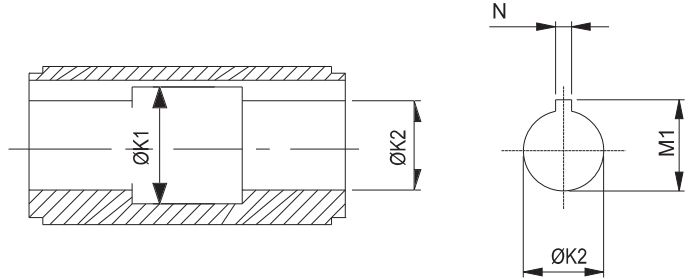
*Centre holes as per DIN 332/1

Input Shaft

For hollow output shaft with shrink disk for details refer page no. 95



For shaft end details refer page no. 94

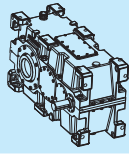


For Hollow output shaft with keyway

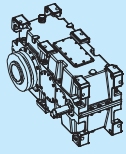
Note : Tolerance on shaft extension diameters : k6 <= Ø50; m6 > Ø50.
(As per IS : 3688 : 1990)

Size	Input										Output			Hollow Output Shaft with keyway					
	\$ Ratio 6.3 - 11.2					\$ Ratio 12.5 - 22.4													
	Ratio 6.3-11.2					Ratio 12.5-20													
	* Ratio 7.1-12.5					* Ratio 14-22.5													
	** Ratio 8-14					** Ratio 16-25													
	*** Ratio 8-14					*** Ratio 16-28													
	V	W	W2	Y	Z	V	W	W2	Y	Z	V1	Q1	V2	Øk2	Øk1	X1	Z1	N	M1
\$ 6	45	110	100	14.00 13.957	48.5 48.3	32	80	70	10.00 9.964	35.00 34.8	80	255	85	80.030 80.000	81	185	30	22.026 21.974	85.6 85.4
\$ 7	50	110	100	14.00 13.957	53.5 53.3	38	80	70	10.00 9.964	41.00 40.8	100	265	105	100.035 100.000	101	195	35	28.026 27.974	106.6 106.4
***8	50	110	100	14.00 13.957	53.5 53.3	38	80	70	10.00 9.964	41.00 40.9	110	270	115	110.035 110.000	111	195	45	28.026 27.974	116.6 116.4
\$ 9	60	140	130	18.000 17.957	64.0 63.8	50	110	100	14.000 13.957	53.5 53.3	115	300	120	115.035 115.000	116	220	50	32.031 31.969	122.6 122.4
***10	60	140	130	18.000 17.957	64.0 63.8	50	110	100	14.000 13.957	53.5 53.3	125	310	130	125.040 125.000	126	220	55	32.031 31.969	132.6 132.4
\$ 11	75	140	130	20.000 19.948	79.5 79.3	60	140	130	18.000 17.957	64.0 63.8	140	355	145	140.040 140.000	141	250	60	36.031 35.969	148.6 148.4
***12	75	140	130	20.000 19.948	79.5 79.3	60	140	130	18.000 17.957	64.0 63.8	150	360	155	150.040 150.000	151	250	65	36.031 35.969	158.6 158.4
\$ 13	90	170	160	25.000 24.948	95.0 94.8	70	140	130	20.000 19.948	74.5 74.3	165	410	170	165.040 165.000	166	280	70	40.031 39.969	174.7 174.4
***14	90	170	160	25.000 24.948	95.0 94.8	70	140	130	20.000 19.948	74.5 74.3	180	425	190	180.040 180.000	181	285	70	45.031 44.969	190.7 190.4
15	100	210	200	28.000 27.948	106.0 105.8	85	170	160	22.000 21.948	90.0 89.8	190	465	200	190.046 190.000	191	320	75	45.031 44.969	200.7 200.4
**16	100	210	200	28.000 27.948	106.0 105.8	85	170	160	22.000 21.948	90.0 89.8	210	480	220	210.046 210.000	211	320	85	50.031 49.969	221.7 221.4
17	120	210	200	32.000 31.938	127.0 126.8	100	210	200	28.000 27.948	106.0 105.8	230	535	240	230.046 230.000	231	365	100	50.031 49.969	241.7 241.4
*18	120	210	200	32.000 31.938	127.0 126.8	100	210	200	28.000 27.948	106.0 105.8	240	535	250	240.046 240.000	241	365	100	56.037 55.963	252.7 252.4

Recommended tolerance for shaft customer end diameter k2 is h6.



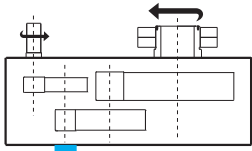
MH3HH



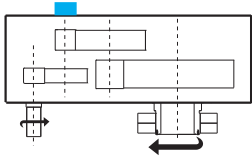
MH3DH

Three Stage
Helical Units
Size : 7-18
Horizontal Shaft Mounted


Shafts Handing / Rotation

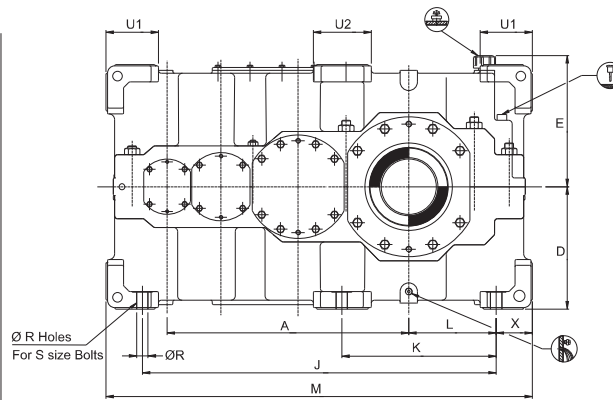


P1

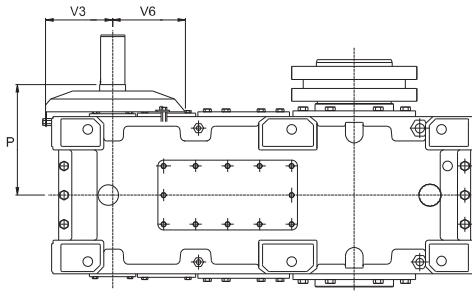


P2

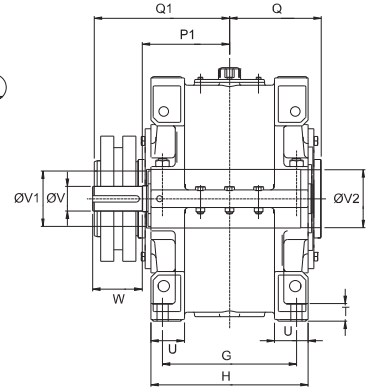
 Holdback / Backstop
Opposite Rotation Available



Unit Without Fan



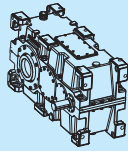
Unit With Fan



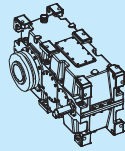
DIMENSIONS

Unit Size	Dimensions in mm										
	A	D	E	G	H	L	K	J	M	P1	Q
7	405	245	280	260	300	160	-	595	775	180	195
8	445	285	320	260	300	200	-	675	855	180	195
9	495	285	335	300	346	190	-	725	925	200	220
10	535	320	370	300	346	230	-	805	1005	200	220
11	580	320	370	340	396	215	-	840	1040	225	250
12	635	380	415	340	396	270	-	940	1175	225	250
13	705	380	415	410	470	265	465	1050	1290	265	280
14	765	430	460	410	470	325	545	1165	1415	265	285
15	830	420	450	470	540	300	545	1215	1465	300	320
16	900	500	530	470	540	380	640	1365	1625	300	320
17	995	480	510	550	626	375	640	1460	1770	345	365
18	1035	525	550	550	626	400	660	1525	1835	345	365

Unit Size	Dimensions in mm									
	R	S	T	U	U1	U2	X	P	V3	V6
7	22	20	30	75	125	-	90	245	120	130
8	22	20	30	75	125	-	90	255	120	130
9	26	24	35	85	135	-	100	280	145	160
10	26	24	35	85	135	-	100	280	145	160
11	26	24	35	100	135	-	100	305	150	175
12	33	30	55	100	170	-	120	305	150	175
13	33	30	55	105	170	190	120	380	195	240
14	33	30	55	105	170	190	125	380	195	240
15	39	36	60	120	185	200	125	410	215	240
16	39	36	60	120	185	200	130	410	205	215
17	45	42	65	130	215	230	155	460	225	240
18	45	42	70	130	215	230	155	460	240	250

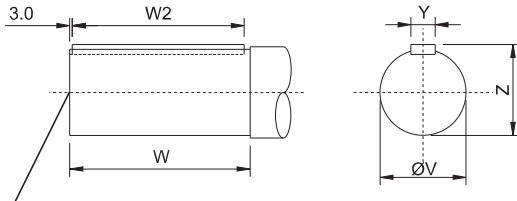


MH3HH



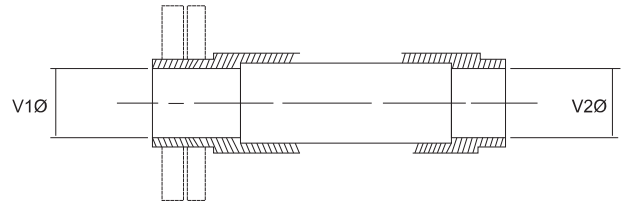
MH3DH

Three Stage
Helical Units
Size : 7-18
Horizontal Shaft Mounted

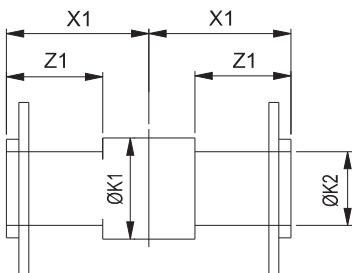


*Centre holes
as per DIN 332/1

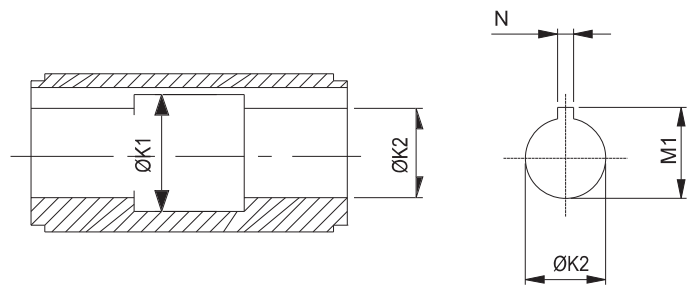
Input Shaft



For hollow output shaft with shrink disk for details refer page no. 95



For shaft end details refer page no. 94

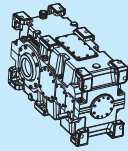


For Hollow output shaft with keyway

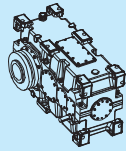
Note : Tolerance on shaft extension diameters : $k6 \leq \varnothing 50$; $m6 > \varnothing 50$.
(As per IS : 3688 : 1990)

Size	Input															Output			Hollow Output Shaft with keyway					
	\$ Ratio 25 - 45					\$ Ratio 50 - 63					\$ Ratio 71-90													
	Ratio 22.4-45					Ratio 50-63					Ratio 71-90													
	* Ratio 25-50					* Ratio 56-71					* Ratio 80-100													
	** Ratio 28-56					** Ratio 63-80					** Ratio 90-112													
	*** Ratio 31.5-56					*** Ratio 63-80					*** Ratio 90-112													
	V	W	W2	Y	Z	V	W	W2	Y	Z	V	W	W2	Y	Z	V1	V2	Q1	Øk2	Øk1	X1	Z1	N	M1
\$7	40	110	100	12.00 11.957	43.0 42.8	30	80	70	8.000 7.964	33.0 32.8	24	50	40	8.000 7.964	27.0 26.8	100	105	265	100.035 100.000	101	195	35	28.026 27.974	106.6 106.4
***8	40	110	100	12.00 11.957	43.0 42.8	30	80	70	8.000 7.964	33.0 32.8	24	50	40	8.000 7.964	27.0 26.8	110	115	270	110.035 110.000	111	195	45	28.026 27.974	116.6 116.4
\$9	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	30	80	70	8.000 7.964	33.0 32.8	120	115	300	115.035 115.000	116	220	50	32.031 31.969	122.6 122.4
***10	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	30	80	70	8.000 7.964	33.0 32.8	130	125	310	125.040 125.000	126	220	55	32.031 31.969	132.6 132.4
\$11	60	140	130	18.000 17.957	64.0 63.8	45	110	100	14.000 13.957	48.5 48.3	32	80	70	10.000 9.964	35.0 34.8	145	140	355	140.040 140.000	141	250	60	36.031 35.969	148.6 148.4
***12	60	140	130	18.000 17.957	64.0 63.8	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	155	150	360	150.040 150.000	151	250	65	36.031 35.969	158.6 158.4
\$13	70	140	130	20.000 19.948	74.5 74.3	50	110	100	14.000 13.957	53.5 53.3	45	110	100	14.000 13.957	48.5 48.3	170	165	410	165.040 165.000	166	280	70	40.031 39.969	174.7 174.4
***14	70	140	130	20.000 19.948	74.5 74.3	50	110	100	14.000 13.957	53.5 53.3	45	110	100	14.000 13.957	48.5 48.3	180	190	425	180.040 180.000	181	285	75	45.031 44.969	190.7 190.4
15	85	170	160	22.000 21.948	90.0 89.8	60	140	130	18.000 17.957	64.0 63.8	50	110	100	14.000 13.957	53.5 53.3	190	200	465	190.046 190.000	191	320	80	45.031 44.969	200.7 200.4
**16	85	170	160	22.000 21.948	90.0 89.8	60	140	130	18.000 17.957	64.0 63.8	50	110	100	14.000 13.957	53.5 53.3	210	220	320	210.046 210.000	211	320	85	50.031 49.969	221.7 221.4
17	100	210	200	28.000 27.948	106.0 105.8	75	140	130	20.000 19.948	79.5 79.3	60	140	130	18.000 17.957	64.0 63.8	230	240	535	230.046 230.000	231	365	100	50.031 49.969	241.7 241.4
*18	100	210	200	28.000 27.948	106.0 105.8	75	140	130	20.000 19.948	79.5 79.3	60	140	130	18.000 17.957	64.0 63.8	240	250	535	240.046 240.000	241	365	100	56.037 55.963	252.7 252.4

Recommended tolerance for shaft customer end diameter k2 is h6.



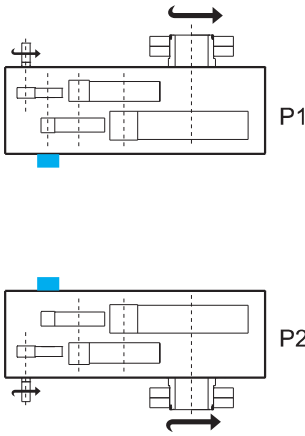
MH4HH



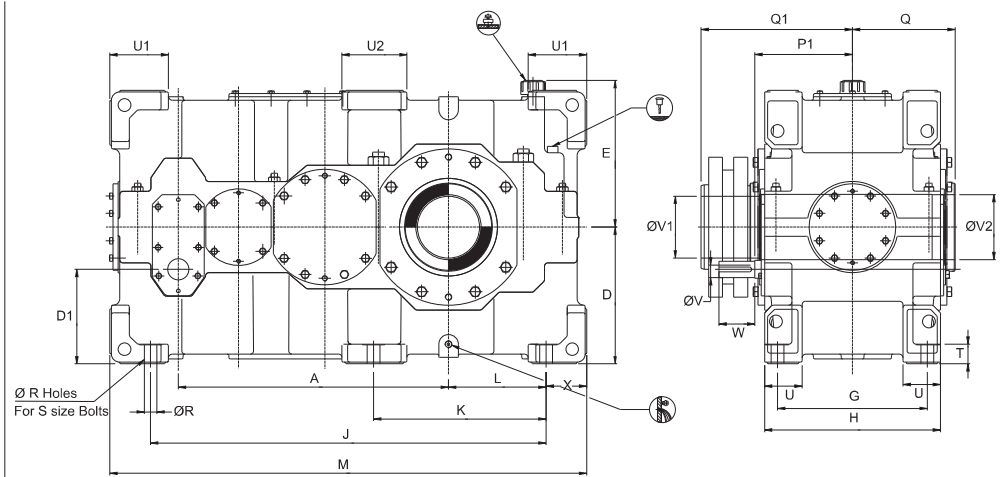
MH4DH

Four Stage
Helical Units
Size : 9-18
Horizontal Shaft Mounted

Shafts Handing / Rotation



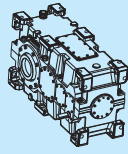
Holdback / Backstop
Opposite Rotation Available



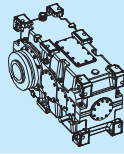
DIMENSIONS

Unit Size	Dimensions in mm									
	A	D	D1	E	G	H	L	K	J	M
9	495	285	205	335	300	346	190	-	725	925
10	535	320	240	370	300	346	230	-	805	1005
11	580	320	230	370	330	396	215	-	840	1040
12	635	380	290	415	340	396	270	-	940	1180
13	705	380	270	415	410	470	265	465	1050	1290
14	765	430	320	460	410	470	325	545	1165	1415
15	830	420	290	450	470	540	300	545	1215	1465
16	900	500	370	530	470	540	380	640	1365	1625
17	995	480	320	510	550	626	375	635	1460	1770
18	1035	525	365	550	550	626	400	660	1525	1835

Unit Size	Dimensions in mm									
	R	S	T	U	U1	U2	X	P1	Q	
9	26	24	35	85	135	-	100	200	220	
10	26	24	35	85	135	-	100	200	220	
11	26	24	35	100	135	-	100	225	250	
12	33	30	55	100	170	-	120	225	250	
13	33	30	55	105	170	190	120	265	280	
14	33	30	55	105	170	190	125	265	285	
15	39	36	60	120	185	200	125	300	320	
16	39	36	60	120	185	200	130	300	320	
17	45	42	65	130	215	230	155	345	365	
18	45	42	70	130	215	230	155	345	365	

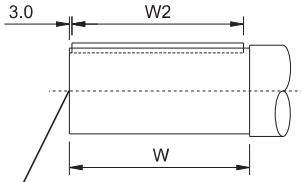


MH4HH



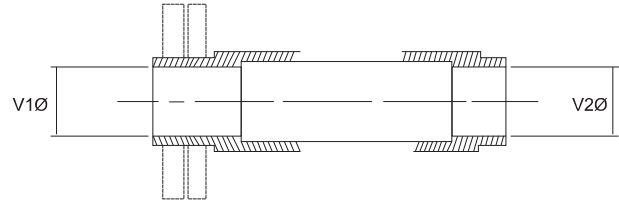
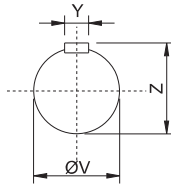
MH4DH

Four Stage
Helical Units
Size : 9-18
Horizontal Shaft Mounted

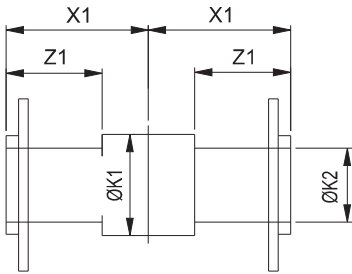


*Centre holes as per DIN 332/1

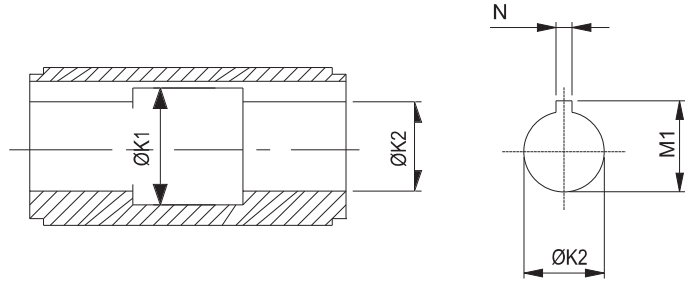
Input Shaft



For hollow output shaft with shrink disk for details refer page no. 95



For shaft end details refer page no. 94

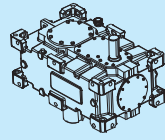


For Hollow output shaft with keyway

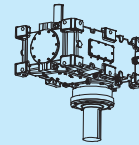
Note : Tolerance on shaft extension diameters : k6 <= Ø50; m6 > Ø50.
(As per IS : 3688 : 1990)

Size	Input										Output			Hollow Output Shaft with keyway					
	Ratio 100-180					Ratio 200-355													
	* Ratio 112-200					* Ratio 224-400													
	** Ratio 125-224					** Ratio 250-450													
	V	W	W2	Y	Z	V	W	W2	Y	Z	V1	V2	Q1	Øk2	Øk1	X1	Z1	N	M1
\$ 9	30	80	70	8.000 7.964	33.0 32.8	24	50	40	8.000 7.964	27.0 26.8	115	120	300	115.035 115.000	116	220	50	32.031 31.969	122.6 122.4
***10	30	80	70	8.000 7.964	33.0 32.8	24	50	40	8.000 7.964	27.0 26.8	125	130	310	125.040 125.000	126	220	55	32.031 31.969	132.6 132.4
\$ 11	35	80	70	10.000 9.964	38.0 37.8	28	60	40	8.000 7.964	31.0 30.8	140	145	355	140.040 140.000	141	250	60	36.031 35.969	148.6 148.4
***12	35	80	70	10.000 9.964	38.0 37.8	28	60	50	8.000 7.964	31.0 30.8	150	155	360	150.040 150.000	151	250	65	36.031 35.969	158.6 158.4
\$ 13	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	165	170	410	165.040 165.000	166	280	70	40.031 39.969	174.7 174.4
**14	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	180	190	425	180.040 180.000	181	285	75	45.031 44.969	190.7 190.4
15	50	110	100	14.000 13.957	53.5 53.3	40	110	100	12.000 11.957	43.0 42.8	190	200	465	190.046 190.000	191	320	80	45.031 44.969	200.7 200.4
**16	50	110	100	14.000 13.957	53.5 53.3	40	110	100	12.000 11.957	43.0 42.8	210	220	480	210.046 210.000	211	320	85	50.031 49.969	221.7 221.4
17	60	140	130	18.000 17.957	64.0 63.8	50	110	100	14.000 13.957	53.5 53.3	230	240	535	230.046 230.000	231	365	100	50.031 49.969	241.7 241.4
*18	60	140	130	18.000 17.957	64.0 63.8	50	110	100	14.000 13.957	53.5 53.3	240	250	535	240.046 240.000	241	365	100	56.037 55.963	252.7 252.4

Recommended tolerance for shaft customer end diameter k2 is h6.

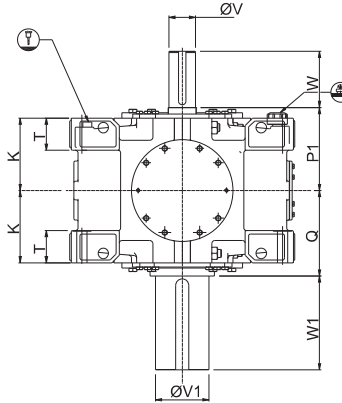
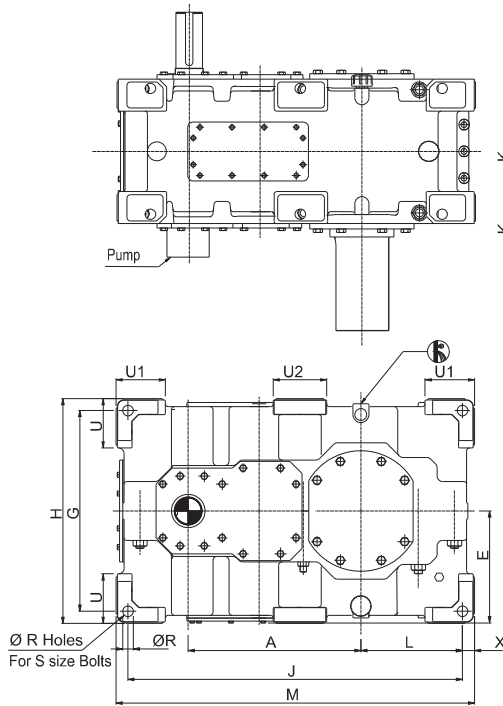


MH2SV

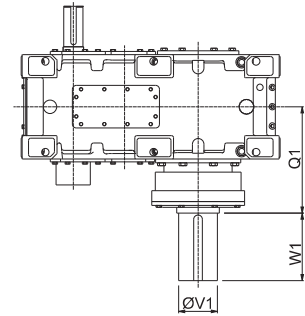


MH2AV

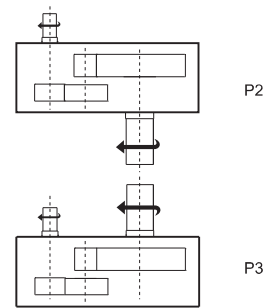
Two Stage
Helical Units
Size : 6-18
Vertical Foot Mounted



MH2AV AGITATOR UNITS



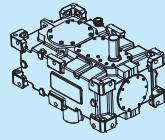
Shafts Handling / Rotation



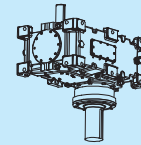
DIMENSIONS

Unit Size	Dimensions in mm								
	A	E	G	H	L	K	J	M	P1
6	270	232	400	450	205	138	570	620	165
7	315	252	430	490	220	150	640	700	180
8	355	292	510	570	265	150	730	780	180
9	385	297	510	570	260	173	780	840	200
10	425	332	580	640	300	173	860	920	200
11	450	332	580	640	285	198	915	975	225
12	505	378	680	760	350	198	1035	1115	225
13	545	378	680	760	345	235	1080	1160	275
14	605	427	780	860	410	235	1205	1285	275
15	645	418	750	840	380	270	1250	1340	310
16	715	498	910	1000	465	270	1410	1500	310
17	770	480	850	960	475	313	1520	1630	355
18	810	520	950	1050	500	313	1570	1680	355

Unit Size	Dimensions in mm								
	Q	Q1	R	S	T	U	U1	U2	X
6	185	280	18	16	75	105	105	-	25
7	195	320	22	20	75	125	125	-	30
8	195	325	22	20	75	125	125	-	30
9	220	385	26	24	85	130	135	-	30
10	220	415	26	24	85	130	135	-	30
11	250	440	26	24	100	130	135	-	30
12	250	455	33	30	100	170	170	-	40
13	280	540	33	30	105	170	170	190	40
14	285	475	33	30	105	170	170	190	40
15	320	550	39	36	120	185	185	200	45
16	320	545	39	36	120	185	185	200	45
17	365	625	45	42	130	215	215	230	55
18	365	625	45	42	130	215	215	230	55



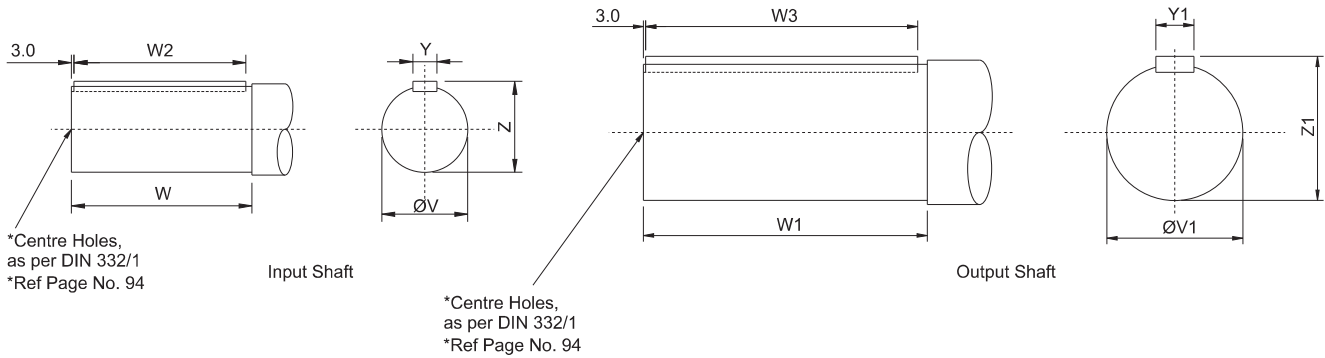
MH2SV



MH2AV

Two Stage
Helical Units
Size : 6-18
Vertical Foot Mounted

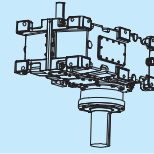
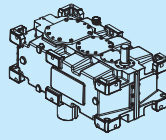
Shaft End Details



Note : Tolerance on shaft extension diameters : k6 <= Ø50; m6 > Ø50.
(As per IS : 3688 : 1990)

Size	Input										Output									
	\$ Ratio 6.3-11.2					\$ Ratio 12.5-22.4														
	Ratio 6.3-11.2					Ratio 12.5-20														
	* Ratio 7.1-12.5					* Ratio 14-22.5														
	** Ratio 8-14					** Ratio 16-25					Std. Units					Agitator Drives				
	*** Ratio 8-14					*** Ratio 16-28														
	V	W	W2	Y	Z	V	W	W2	Y	Z	V1	W1	W3	Y1	Z1	V1	W1	W3	Y1	Z1
\$6	45	110	100	14.000 13.957	48.5 48.3	32	80	70	10.000 9.964	35.0 34.8	80	170	160	22.000 21.948	85.0 84.8	80	170	160	22.000 21.948	85.0 84.8
\$7	50	110	100	14.000 13.957	53.5 53.3	38	80	70	10.000 9.964	41.0 40.8	100	210	200	28.000 27.948	106.0 105.8	90	170	160	25.000 24.948	95.0 94.8
***8	50	110	100	14.000 13.957	53.5 53.3	40	80	70	10.000 9.964	41.0 40.8	110	210	200	28.000 27.948	116.0 115.8	100	210	200	28.000 27.948	106.0 105.8
\$ 9	60	140	130	18.000 17.957	64.0 63.8	50	110	100	14.000 13.957	53.5 53.3	120	210	200	32.000 31.938	127.0 126.8	110	210	200	28.000 27.948	116.0 115.8
***10	60	140	130	18.000 17.957	64.0 63.8	50	110	100	14.000 13.957	53.5 53.3	130	250	240	32.000 31.938	137.0 136.8	130	250	240	32.000 31.938	137.0 136.8
\$ 11	75	140	130	20.000 19.948	79.5 79.3	60	140	130	18.000 17.957	64.0 63.8	140	250	240	36.000 35.938	148.0 147.7	140	250	240	36.000 35.938	148.0 147.7
***12	75	140	130	20.000 19.948	79.5 79.3	60	140	130	18.000 17.957	64.0 63.8	160	300	290	40.000 39.938	169.0 168.7	160	300	290	40.000 39.938	169.0 168.7
\$ 13	90	170	160	25.000 24.948	95.0 94.8	70	140	130	20.000 19.948	74.5 74.3	170	300	290	40.000 39.938	179.0 178.7	170	300	290	40.000 39.938	179.0 178.7
***14	90	170	160	25.000 24.948	95.0 94.8	70	140	130	20.000 19.948	74.5 74.3	180	300	290	45.000 44.938	190.0 189.7	170	300	290	40.000 39.938	179.0 178.7
15	100	210	200	28.000 27.948	106.0 105.8	85	170	160	22.000 21.948	90.0 89.8	200	350	340	45.000 44.938	210.0 209.7	200	350	340	45.000 44.938	210.0 209.7
**16	100	210	200	28.000 27.948	106.0 105.8	85	170	160	22.000 21.948	90.0 89.8	220	350	340	50.000 49.938	231.0 230.7	200	350	340	45.000 44.938	210.0 209.7
17	120	210	200	32.000 31.938	127.0 126.8	100	210	200	28.000 27.948	106.0 105.8	240	410	400	56.000 55.926	252.0 251.7	220	350	340	50.000 49.938	231.0 230.7
*18	120	210	200	32.000 31.938	127.0 126.8	100	210	200	28.000 27.948	106.0 105.8	240	410	400	56.000 55.926	252.0 251.7	220	350	340	50.000 49.938	231.0 230.7

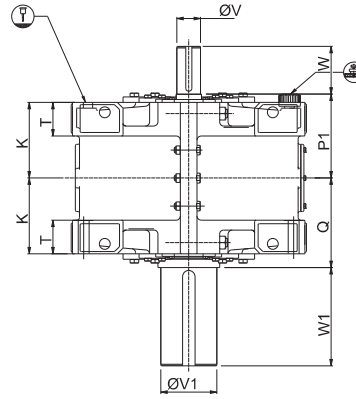
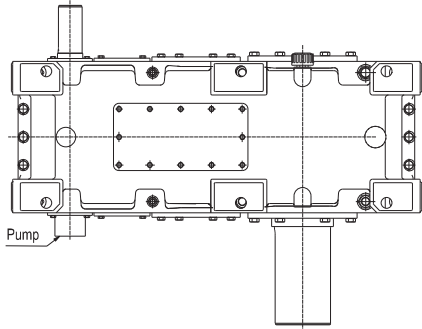
DIMENSIONS



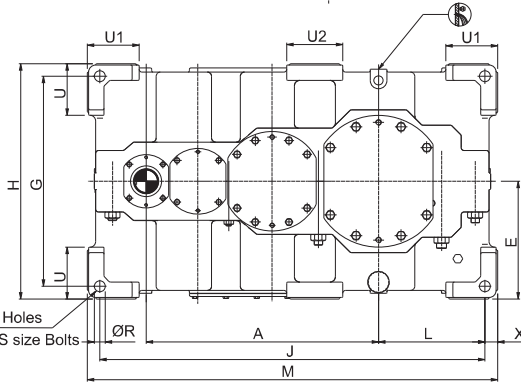
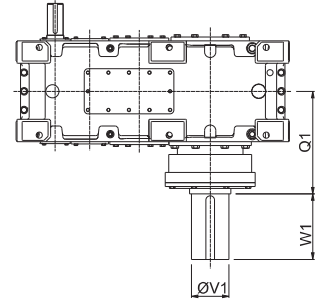
Three Stage
Helical Units
Size : 7-18
Vertical Foot Mounted

MH3SV

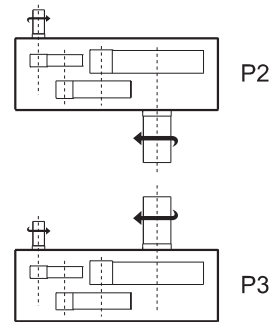
MH3AV



MH3AV AGITATOR UNITS



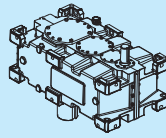
Shafts Handling / Rotation



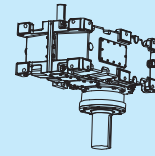
DIMENSIONS

Unit Size	Dimensions in mm								
	A	E	G	H	L	K	J	M	
7	405	252	430	490	220	150	715	775	
8	445	285	510	570	260	150	795	855	
9	495	297	510	570	260	173	865	925	
10	535	332	580	640	300	173	945	1005	
11	580	332	580	640	285	198	980	1040	
12	635	378	680	760	350	198	1100	1180	
13	705	378	680	760	345	235	1210	1290	
14	765	428	770	860	405	235	1325	1415	
15	830	418	750	840	380	270	1375	1465	
16	900	498	910	1000	465	270	1535	1625	
17	995	480	850	960	475	313	1660	1770	
18	1035	520	950	1050	500	313	1725	1835	

Unit Size	Dimensions in mm									
	P1	Q	Q1	R	S	T	U	U1	U2	X
7	180	195	320	22	20	75	125	125	-	200
8	180	195	325	22	20	75	125	125	-	225
9	200	220	385	26	24	85	130	135	-	30
10	200	220	415	26	24	85	130	135	-	30
11	225	250	440	26	24	100	130	135	-	30
12	225	250	455	33	30	100	170	170	-	40
13	265	280	540	33	30	105	170	170	190	40
14	265	285	475	33	30	105	170	170	190	45
15	300	320	550	39	36	120	185	185	200	45
16	300	320	545	39	36	120	185	185	200	45
17	345	365	365	45	42	130	215	215	230	55
18	345	365	625	45	42	130	215	215	230	55



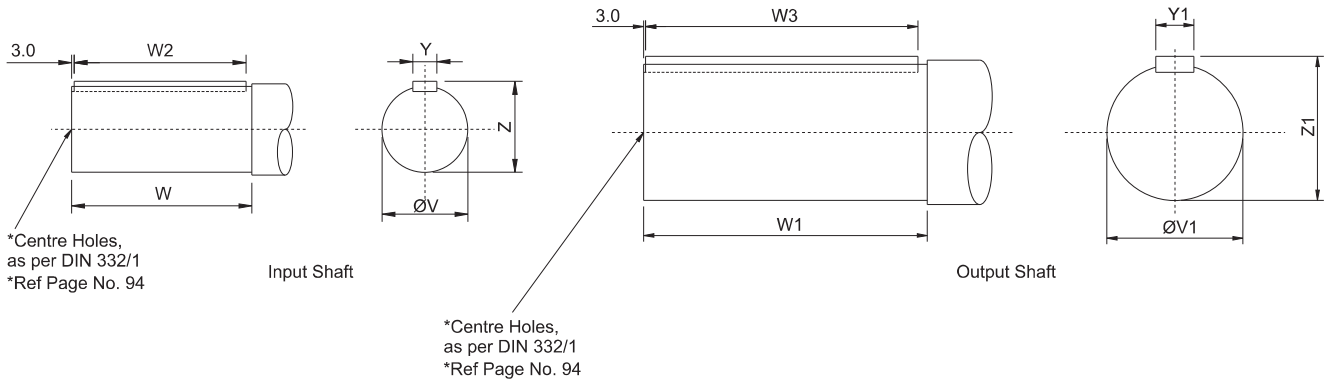
MH3SV



MH3AV

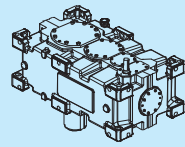
Three Stage
Helical Units
Size : 7-18
Vertical Foot Mounted

Shaft End Details



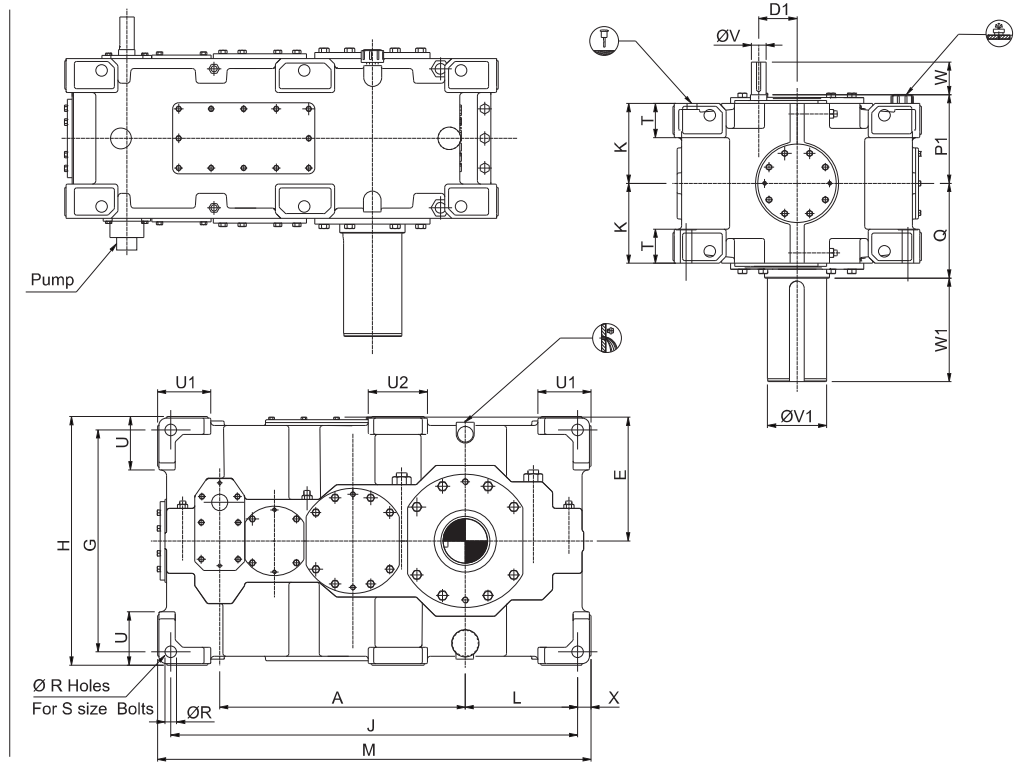
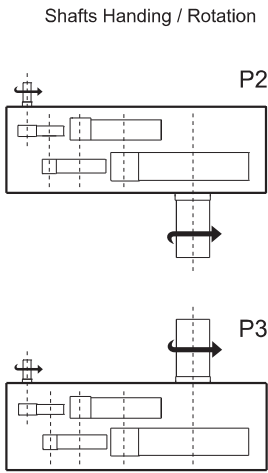
Note : Tolerance on shaft extension diameters : k6 <= Ø50; m6 > Ø50.
(As per IS : 3688 : 1990)

Size	Input															Output									
	\$ Ratio 25 - 45					\$ Ratio 50 - 63					\$ Ratio 71-90														
	Ratio 22.4-45					Ratio 50-63					Ratio 71-90					Standard Unit					Agitator unit				
	* Ratio 25-50					* Ratio 56-71					* Ratio 80-100														
	** Ratio 28-56					** Ratio 63-80					** Ratio 90-112														
	*** Ratio 31.5-56					*** Ratio 63-80					*** Ratio 90-112														
V	W	W2	Y	Z	V	W	W2	Y	Z	V	W	W2	Y	Z	V1	W1	W3	Y1	Z1	V1	W1	W3	Y1	Z1	
\$7	40	110	100	12.000 11.957	43.0 42.8	30	50	40	8.000 7.964	33.0 32.8	24	40	30	8.000 7.964	27.0 26.8	100	210	200	28.000 27.948	106.0 105.8	90	170	160	25.000 24.948	95.0 94.8
***8	40	110	100	12.000 11.957	43.0 42.8	30	80	70	8.000 7.964	33.0 32.8	24	50	40	8.000 7.964	27.0 26.8	110	210	200	28.000 27.948	116.0 115.8	100	210	200	28.000 27.948	106.0 105.8
\$9	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	30	80	70	8.000 7.964	33.0 32.8	120	210	200	32.000 31.938	127.0 126.8	110	210	200	28.000 27.948	116.0 115.8
***10	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	30	80	70	8.000 7.964	33.0 32.8	130	250	240	32.000 31.938	137.0 136.8	130	250	240	32.000 31.938	137.0 136.8
\$11	60	140	130	18.000 17.957	64.0 63.8	45	110	100	14.000 13.957	48.5 48.3	32	80	70	10.000 9.964	35.0 34.8	140	250	240	36.000 35.938	148.0 147.7	140	250	240	36.000 35.938	148.0 147.7
***12	60	140	130	18.000 17.957	64.0 63.8	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	160	300	290	40.000 39.938	169.0 168.7	160	300	290	40.000 39.938	169.0 168.7
\$13	70	140	130	20.000 19.948	74.5 74.3	50	110	100	14.000 13.957	53.5 53.3	45	110	100	14.000 13.957	48.5 48.3	170	300	290	40.000 39.938	179.0 178.7	170	300	290	40.000 39.938	179.0 178.7
***14	70	140	130	20.000 19.948	74.5 74.3	50	110	100	14.000 13.957	53.5 53.3	45	110	100	14.000 13.957	48.5 48.3	180	300	290	45.000 44.938	190.0 189.7	170	300	290	40.000 39.938	179.0 178.7
15	85	170	160	22.000 21.948	89.0 89.8	60	140	130	18.000 17.957	64.0 63.8	50	110	100	14.000 13.957	53.5 53.3	200	350	340	45.000 44.938	210.0 209.7	200	350	340	45.000 44.938	210.0 209.7
**16	85	170	160	22.000 21.948	90.0 89.8	60	140	130	18.000 17.957	64.0 63.8	50	110	100	14.000 13.957	53.5 53.3	220	350	340	50.000 49.938	231.0 230.7	200	350	340	45.000 44.938	210.0 209.7
17	100	210	200	28.000 27.948	106.0 105.8	75	140	130	20.000 19.948	79.5 79.3	60	140	130	18.000 17.957	64.0 63.8	240	410	400	56.000 55.926	252.0 251.7	220	350	340	50.000 49.938	231.0 230.7
*18	100	210	200	28.000 27.948	106.0 105.8	75	140	130	20.000 19.948	79.5 79.3	60	140	130	18.000 17.957	64.0 63.8	240	410	400	56.000 55.926	252.0 251.7	220	350	340	50.000 49.938	231.0 230.7



Four Stage
Helical Units
Size : 9-18
Vertical Foot Mounted

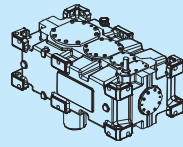
MH4SV



DIMENSIONS

Unit Size	Dimensions in mm								
	A	D1	E	G	H	L	K	J	M
9	495	80	297	510	570	260	173	865	925
10	535	80	332	580	640	300	173	945	1005
11	580	90	332	580	640	285	198	980	1040
12	635	90	378	680	760	350	198	1100	1180
13	705	110	378	680	760	345	235	1210	1290
14	765	110	428	770	860	405	235	1325	1415
15	830	130	418	750	840	380	270	1375	1465
16	900	130	498	910	1000	465	270	1525	1625
17	995	160	480	850	960	475	313	1660	1770
18	1035	160	520	950	1050	500	313	1725	1835

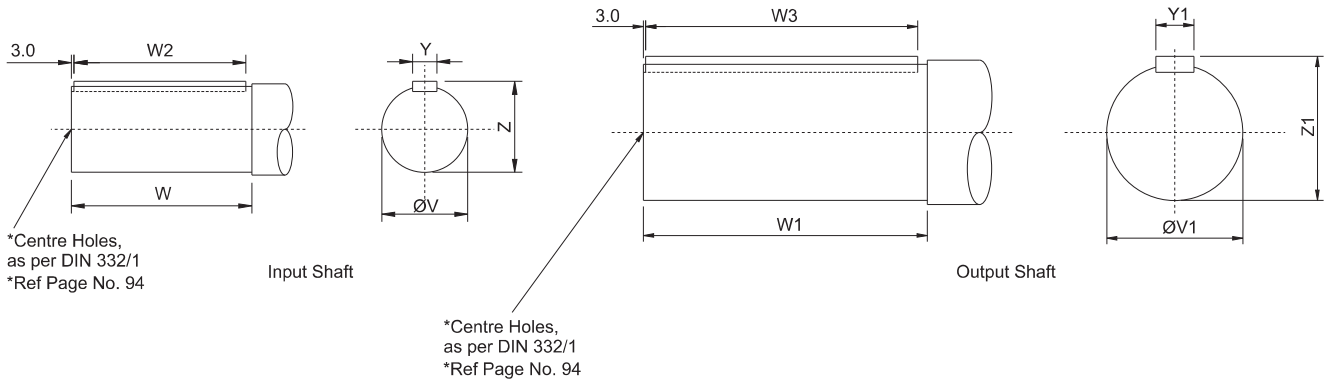
Unit Size	Dimensions in mm								
	P1	Q	R	S	T	U	U1	U2	X
9	200	220	26	24	85	130	135	-	30
10	200	220	26	24	85	130	135	-	30
11	225	250	26	24	100	130	135	-	30
12	225	250	33	30	100	170	170	-	40
13	265	285	33	30	105	170	170	190	40
14	265	285	33	30	105	170	170	190	45
15	300	320	39	36	120	185	185	200	45
16	300	320	39	36	120	185	185	200	45
17	345	365	45	42	130	215	215	230	55
18	345	365	45	42	130	215	215	230	55



Four Stage
Helical Units
Size : 9-18
Vertical Foot Mounted

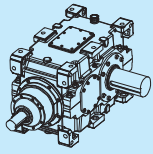
MH4SV

Shaft End Details



Note : Tolerance on shaft extension diameters : k6 <= Ø50; m6 > Ø50.
(As per IS : 3688 : 1990)

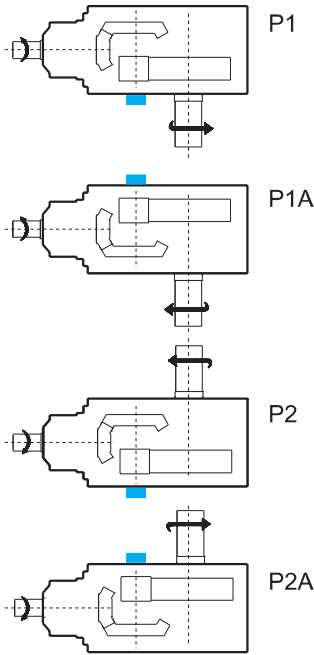
Size	Input										Output				
	Ratio 100-180					Ratio 200-355									
	* Ratio 112-200					* Ratio 224-400									
	** Ratio 125-224					** Ratio 250-450									
	V	W	W2	Y	Z	V	W	W2	Y	Z					
9	30	80	70	8.000 7.964	33.0 32.8	24	50	40	8.000 7.964	27.0 26.8	120	210	200	32.000 31.938	127.0 126.8
**10	30	80	70	8.000 7.964	33.0 32.8	24	50	40	8.000 7.964	27.0 26.8	130	250	240	32.000 31.938	137.0 136.8
11	35	80	70	10.000 9.964	38.0 37.8	28	60	40	8.000 7.964	31.0 30.8	140	250	240	36.000 35.938	148.0 147.7
**12	35	80	70	10.000 9.964	38.0 37.8	28	60	50	8.000 7.964	31.0 30.8	160	300	290	40.000 39.938	169.0 168.7
13	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	170	300	290	40.000 39.938	179.0 178.7
**14	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	180	300	290	45.000 44.938	190.0 189.7
15	50	110	100	14.000 13.957	53.5 53.3	40	110	100	12.000 11.957	43.0 42.8	200	350	340	45.000 44.938	210.0 209.7
**16	50	110	100	14.000 13.957	53.5 53.3	40	110	100	12.000 11.957	43.0 42.8	220	350	340	50.000 49.938	231.0 230.7
17	60	140	130	18.000 17.957	64.0 63.8	50	110	100	14.000 13.957	53.5 53.3	240	410	400	56.000 55.926	252.0 251.7
*18	60	140	130	18.000 17.957	64.0 63.8	50	110	100	14.000 13.957	53.5 53.3	240	410	400	56.000 55.926	252.0 251.7




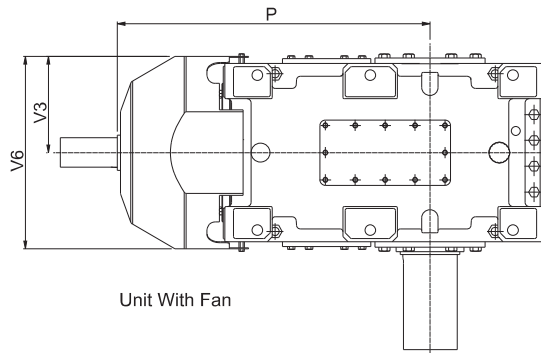
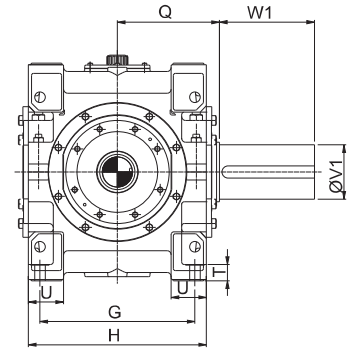
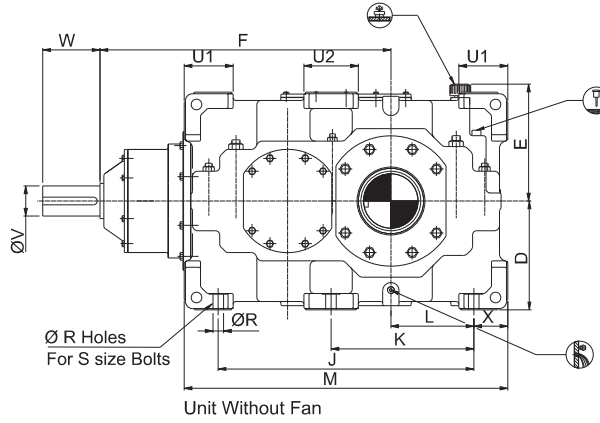
Two Stage
Bevel - Helical Units
Size : 6-18
Horizontal Foot Mounted

MB2SH

Shafts Handing / Rotation



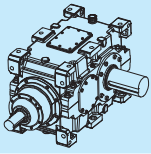
 Holdback / Backstop
Opposite Rotation available



DIMENSIONS

Unit Size	Dimensions in mm								
	D	E	F	G	H	L	K	J	M
6	230	265	485	290	326	155	-	370	530
7	255	285	575	310	352	170	-	445	625
8	-	-	-	-	-	-	-	-	-
9	285	335	680	400	446	205	-	565	755
11	320	370	790	430	500	235	-	670	870
13	380	415	930	490	556	275	-	765	1005
15	420	450	1070	570	656	305	525	940	1190
17	480	510	1290	680	766	375	615	1120	1430
18	525	550	1330	680	786	400	660	1170	1480

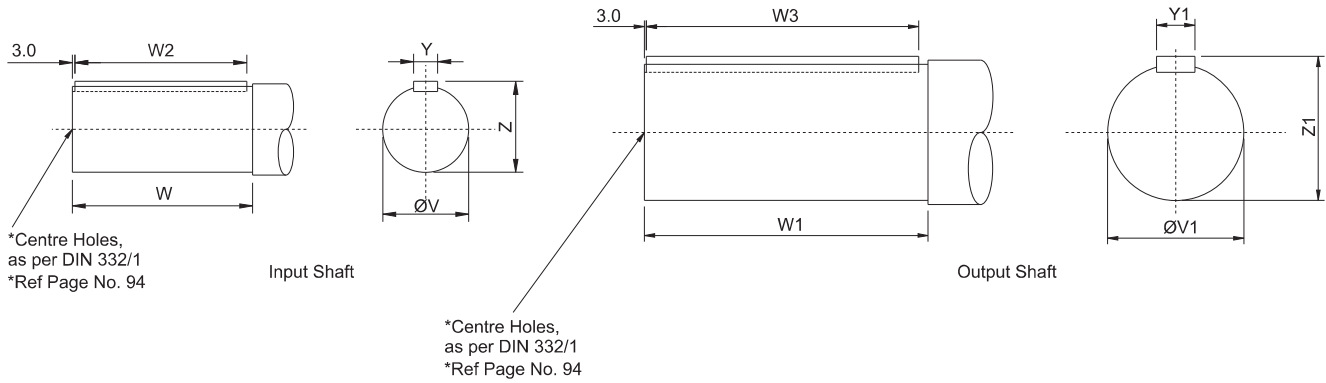
Unit Size	Dimensions in mm										
	Q	R	S	T	U	U1	U2	X	P	V3	V6
6	205	18	16	25	75	105	-	80	555	180	360
7	220	22	20	30	75	125	-	90	655	190	380
8	-	-	-	-	-	-	-	-	-	-	-
9	270	26	24	35	90	135	-	95	780	250	500
11	300	26	24	35	100	135	-	100	895	275	550
13	330	33	30	55	110	170	-	120	1045	305	610
15	375	39	36	60	130	185	200	125	1195	338	676
17	440	45	42	65	150	215	230	155	1420	395	790
18	450	45	42	65	150	215	230	155	1460	405	810



MB2SH

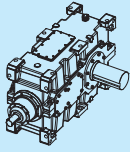
Two Stage
Bevel - Helical Units
Size : 6-18
Horizontal Foot Mounted

Shaft End Details



Note : Tolerance on shaft extension diameters : k6 <= Ø50; m6 > Ø50.
(As per IS : 3688 : 1990)

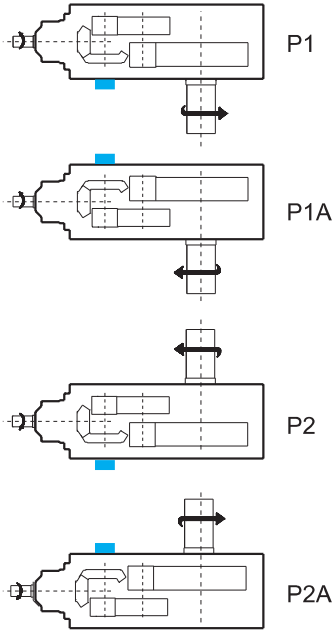
Size	Input					Output				
	Ratio 5-11.2									
	* Ratio 5.6-12.5									
	V	W	W2	Y	Z	V1	W1	W3	Y1	Z1
6	45	110	100	14.000 13.957	48.5 48.3	80	170	160	22.00 21.948	85.00 84.8
7	55	110	100	16.00 15.957	59.0 58.8	100	210	200	28.00 27.948	106.00 105.8
9	70	140	130	20.000 19.948	74.5 74.3	120	210	200	32.000 31.938	127.0 126.8
11	90	170	160	25.000 24.948	85.0 84.8	140	250	240	36.000 35.938	148.0 147.7
13	100	210	200	28.000 27.948	95.0 94.8	170	300	290	40.000 39.938	179.0 178.7
15	110	210	200	28.000 27.948	116.0 115.8	200	350	340	45.000 44.938	210.0 209.7
17	150	250	240	36.000 35.938	158.0 157.7	240	410	400	56.000 55.926	252.0 251.7
*18	150	250	240	36.000 35.938	158.0 157.7	240	410	400	56.000 55.926	252.0 251.7



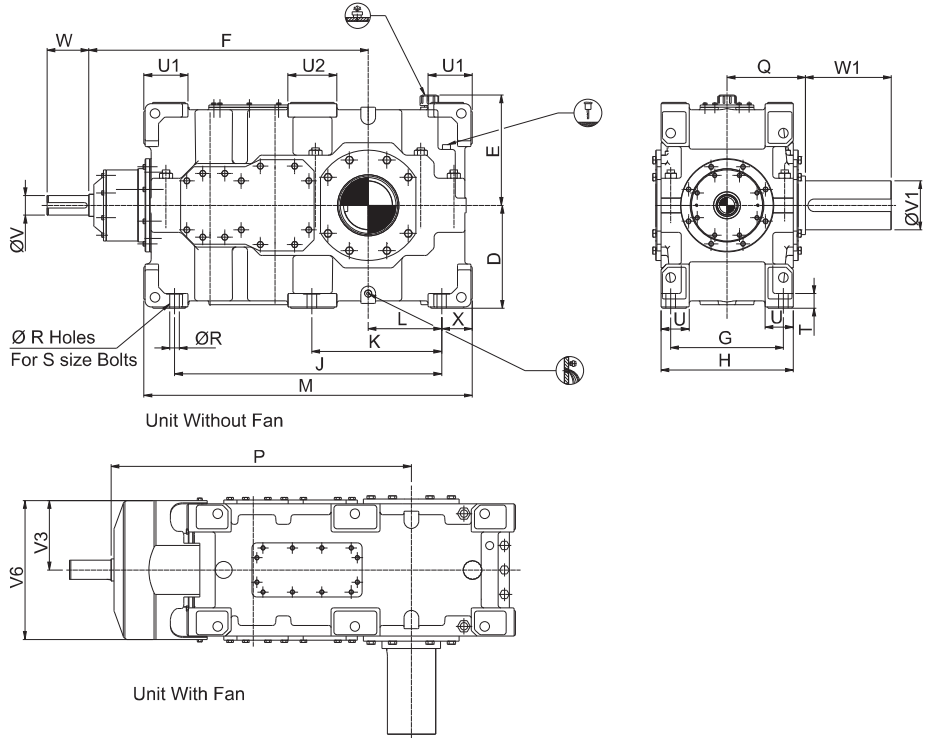
Three Stage
Bevel - Helical Units
Size : 6-18
Horizontal Foot Mounted

MB3SH

Shafts Handing / Rotation



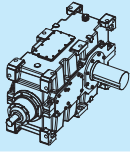
■ Holdback / Backstop
Opposite Rotation available



DIMENSIONS

Unit Size	Dimensions in mm									
	D	E	F	G	H	L	K	J	M	Q
6	225	260	525	230	276	150	-	460	620	185
7	245	280	595	260	300	160	-	520	700	195
8	285	320	635	260	300	205	-	610	780	195
9	285	335	720	300	346	190	-	640	840	220
10	320	370	760	300	346	230	-	720	920	220
11	320	370	830	340	396	215	-	775	975	250
12	380	415	885	340	396	270	-	875	1115	250
13	380	415	995	410	470	265	465	920	1160	285
14	430	460	1055	410	470	325	545	1035	1285	285
15	420	450	1140	470	540	300	545	1090	1340	320
16	500	530	1210	470	540	380	640	1240	1500	320
17	480	510	1375	550	626	375	640	1320	1630	365
18	525	550	1415	550	626	400	660	1370	1680	365

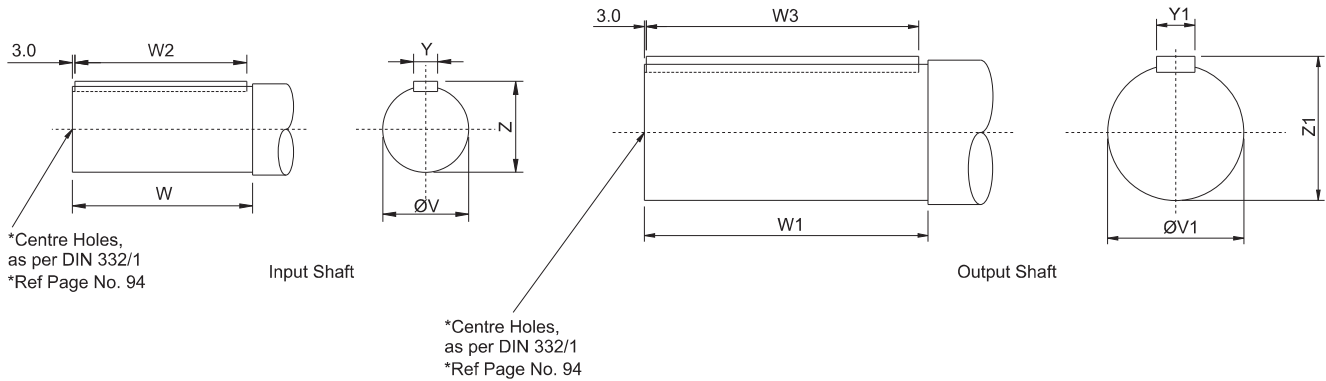
Unit Size	Dimensions in mm									
	R	S	T	U	U1	U2	X	P	V3	V6
6	18	16	25	75	105	-	80	600	150	300
7	22	20	30	75	125	-	90	675	170	340
8	22	20	30	75	125	-	90	715	170	340
9	26	24	35	85	135	-	100	800	195	390
10	26	24	35	85	135	-	100	840	195	390
11	26	24	35	100	135	-	100	920	230	460
12	33	30	55	100	170	-	120	975	230	460
13	33	30	55	105	170	190	120	1095	250	500
14	33	30	55	105	170	190	125	1170	245	490
15	39	36	60	120	185	200	125	1275	280	560
16	39	36	60	120	185	200	130	1340	280	560
17	45	42	65	130	215	230	155	1505	325	650
18	45	42	65	130	215	230	155	1525	325	650



MB3SH

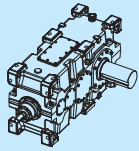
Three Stage
Bevel - Helical Units
Size : 6-18
Horizontal Foot Mounted

Shaft End Details



Note : Tolerance on shaft extension diameters : k6 <= Ø50; m6 > Ø50.
(As per IS : 3688 : 1990)

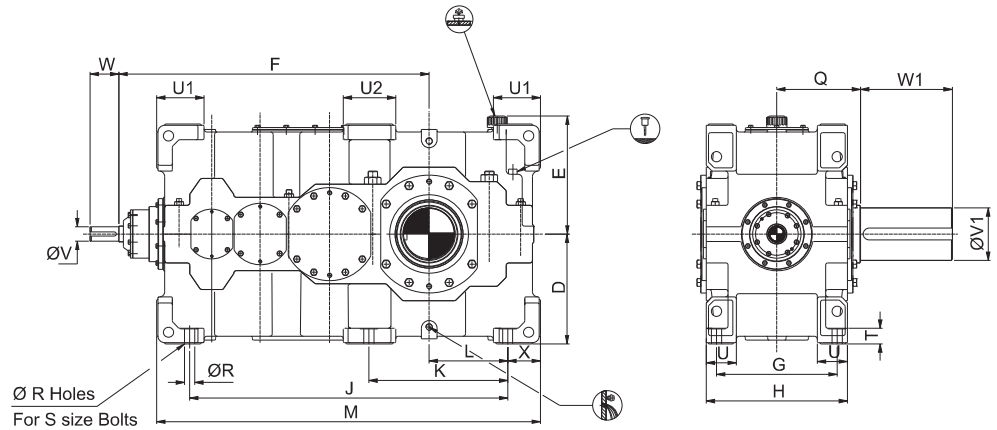
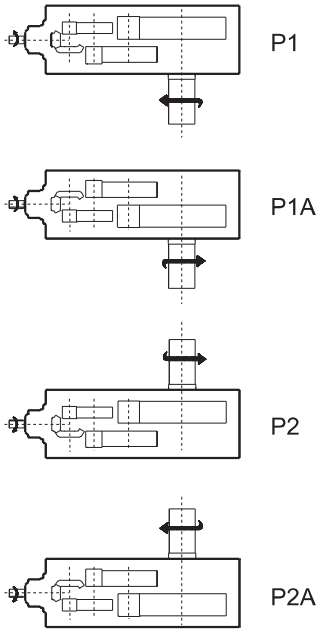
Size	Input										Output				
	Ratio 12.5-45					Ratio 50-71									
	* Ratio 14-50					* Ratio 56-80									
	** Ratio 16-56					** Ratio 63-90									
	V	W	W2	Y	Z	V	W	W2	Y	Z	V1	W1	W3	Y1	Z1
6	30	80	70	8.000 7.964	33.0 32.8	25	60	50	8.00 7.964	28.0 27.8	80	170	160	22.00 21.948	85.00 84.8
7	35	80	70	10.000 9.764	38.0 37.8	30	80	70	8.000 7.964	33.0 32.8	100	210	200	28.00 27.948	106.00 105.8
**8	35	80	70	10.000 9.764	38.0 37.8	30	80	70	8.000 7.964	33.0 32.8	110	210	200	28.00 27.948	116.0 115.8
9	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.764	38.0 37.8	120	210	200	32.000 31.938	127.0 126.8
**10	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.764	38.0 37.8	130	250	240	32.000 31.938	137.0 136.8
11	55	110	100	16.000 15.957	59.0 58.8	40	110	100	12.000 11.957	43.0 42.8	140	250	240	36.000 35.938	148.0 147.7
**12	55	110	100	16.000 15.957	59.0 58.8	40	110	100	12.000 11.957	43.0 42.8	160	300	290	40.000 39.938	169.0 168.7
13	75	140	130	20.000 19.948	79.5 79.3	50	110	100	14.000 13.957	53.5 53.3	170	300	290	40.000 39.938	179.0 178.7
**14	75	140	130	20.000 19.948	79.5 79.3	50	110	100	14.000 13.957	53.5 53.3	180	300	290	45.000 44.938	190.0 189.7
15	80	170	160	22.000 21.948	85.0 84.8	60	140	130	18.000 17.957	64.0 63.8	200	350	340	45.000 44.938	210.0 209.7
**16	80	170	160	22.000 21.948	85.0 84.8	60	140	130	18.000 17.957	64.0 63.8	220	350	340	50.000 49.938	231.0 230.7
17	90	170	160	25.000 24.948	95.0 94.8	70	140	130	20.000 19.948	74.5 74.3	240	410	400	56.000 55.926	252.0 251.7
*18	90	170	160	25.000 24.948	95.0 94.8	70	140	130	20.000 19.948	74.5 74.3	240	410	400	56.000 55.926	252.0 251.7



Four Stage
Bevel - Helical Units
Size : 7-18
Horizontal Foot Mounted

MB4SH

Shafts Handing / Rotation

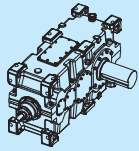


Ø R Holes
For S size Bolts

DIMENSIONS

Unit Size	Dimensions in mm								
	D	E	F	G	H	L	K	J	M
7	245	280	635	260	300	160	-	595	775
8	285	320	675	260	300	200	-	675	855
9	285	335	755	300	346	190	-	725	925
10	320	370	795	300	346	230	-	805	1005
11	320	370	860	340	396	215	-	840	1040
12	380	415	915	340	396	270	-	940	1180
13	380	415	1005	410	470	265	465	1050	1290
14	430	460	1065	410	470	325	545	1165	1415
15	420	450	1185	470	540	300	545	1215	1465
16	500	530	1260	470	540	380	640	1365	1625
17	480	510	1415	550	626	375	640	1460	1770
18	525	550	1455	550	626	400	660	1525	1835

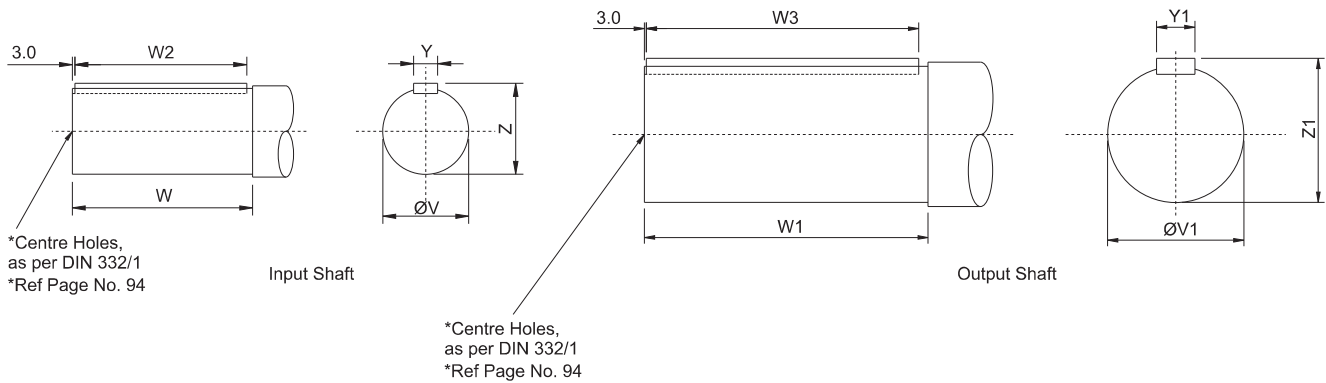
Unit Size	Dimensions in mm								
	Q	R	S	T	U	U1	U2	X	
7	195	22	20	30	75	125	-	90	
8	195	22	20	30	75	125	-	90	
9	220	26	24	35	85	135	-	100	
10	220	26	24	35	85	135	-	100	
11	250	26	24	35	100	135	-	100	
12	250	33	30	55	100	170	-	120	
13	285	33	30	55	105	170	190	120	
14	285	33	30	55	105	170	190	125	
15	320	39	36	60	120	185	200	125	
16	320	39	36	60	120	185	200	130	
17	365	45	42	65	130	215	230	155	
18	365	45	42	65	130	215	230	155	



MB4SH

Four Stage
Bevel - Helical Units
Size : 7-18
Horizontal Foot Mounted

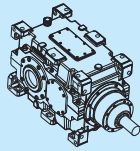
Shaft End Details



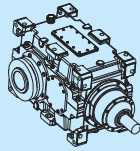
Note : Tolerance on shaft extension diameters : k6 <= Ø50; m6 > Ø50.
(As per IS : 3688 : 1990)

Size	Input										Output				
	Ratio 80-180					Ratio 200-315									
	* Ratio 90-200					* Ratio 224-355									
	** Ratio 100-224					** Ratio 250-400									
	V	W	W2	Y	Z	V	W	W2	Y	Z					
7	28	60	50	8.000 7.964	31.0 30.8	20	50	40	6.00 5.964	22.7 22.5	100	210	200	28.00 27.948	106.0 105.8
**8	28	60	50	8.000 7.964	31.0 30.8	20	50	40	6.00 5.964	22.7 22.5	110	210	200	28.00 27.948	116.0 115.8
9	30	80	70	8.000 7.964	33.5 33.3	25	60	50	8.000 7.964	28.0 27.8	120	210	200	32.000 31.938	127.0 126.8
**10	30	80	70	8.000 7.964	33.5 33.3	25	60	50	8.000 7.964	28.0 27.8	130	250	240	32.000 31.938	137.0 136.8
11	35	80	70	10.000 9.964	38.0 37.8	28	60	50	8.000 7.964	31.0 30.8	140	250	240	36.000 35.938	148.0 147.7
**12	35	80	70	10.000 9.964	38.0 37.8	28	60	50	8.000 7.964	31.0 30.8	160	300	290	40.000 39.938	169.0 168.7
13	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	170	300	290	40.000 39.938	179.0 178.7
**14	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	180	300	290	45.000 44.938	190.0 189.7
15	55	110	100	16.000 15.957	59.0 58.8	40	110	100	12.000 11.957	43.0 42.8	200	350	340	45.000 44.938	210.0 209.7
**16	55	110	100	16.000 15.957	59.0 58.8	40	110	100	12.000 11.957	43.0 42.8	220	350	340	50.000 49.938	231.0 230.7
17	70	140	130	20.000 19.948	74.5 74.3	50	110	100	14.000 13.957	53.5 53.3	240	410	400	56.000 55.926	252.0 251.7
*18	70	140	130	20.000 19.948	74.5 74.3	50	110	100	14.000 13.957	53.5 53.3	240	410	400	56.000 55.926	252.0 251.7

DIMENSIONS



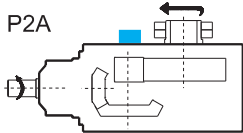
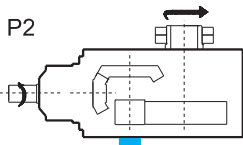
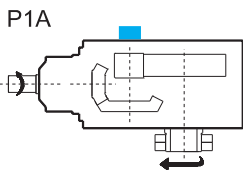
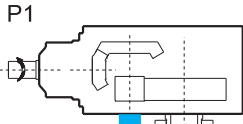
MB2HH




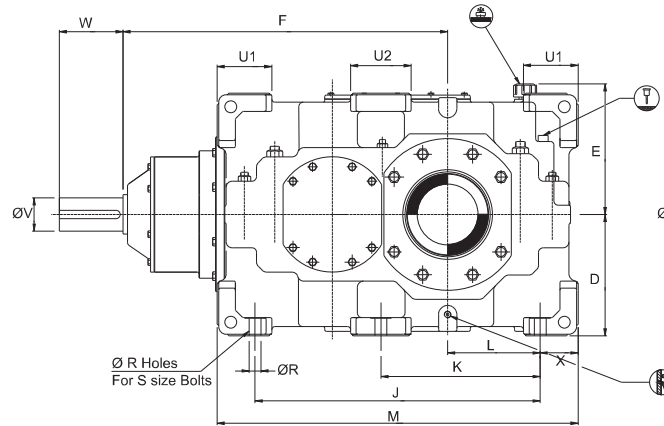
MB2DH

Two Stage
Bevel -Helical Units
Size : 6-18
Horizontal Shaft Mounted

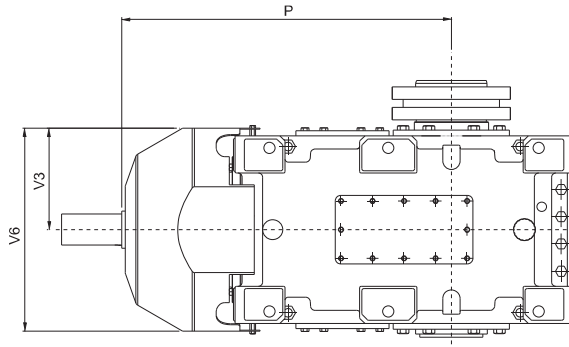
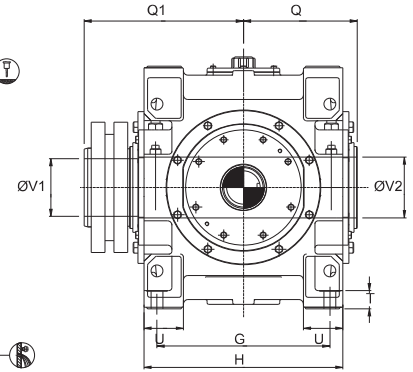
Shafts Handing / Rotation



 Holdback / Backstop
Opposite Rotation Available



Unit without Fan

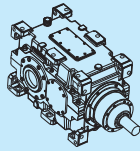


Unit with Fan

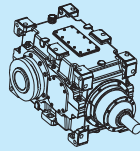
DIMENSIONS

Unit Size	Dimensions in mm									
	D	E	F	G	H	L	K	J	M	Q
6	230	260	485	290	326	155	-	370	530	205
7	255	285	575	310	352	170	-	445	625	220
9	285	335	680	400	446	205	-	565	755	270
11	320	370	790	430	500	235	-	670	870	300
13	380	415	930	490	556	275	-	765	1005	330
15	420	450	1070	570	655	305	525	940	1190	375
17	480	510	1290	680	765	375	615	1120	1430	440
18	525	550	1330	680	785	400	660	1170	1480	450

Unit Size	Dimensions in mm									
	R	S	T	U	U1	U2	X	P	V3	V6
6	18	16	25	75	105	-	80	555	180	360
7	22	20	30	75	125	-	90	655	190	380
9	26	24	35	90	135	-	95	780	250	500
11	26	24	35	100	135	-	100	895	275	550
13	33	30	55	110	170	-	120	1045	305	610
15	39	36	60	130	185	200	125	1195	338	676
17	45	42	65	150	215	230	155	1420	395	790
18	45	42	70	150	215	230	155	1460	405	810

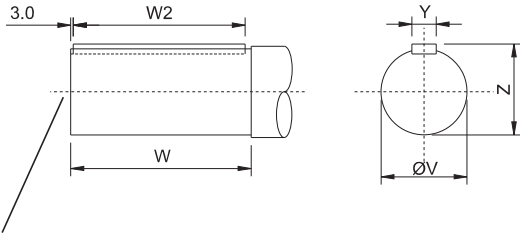


MB2HH



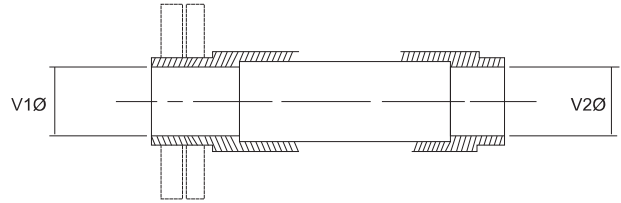
MB2DH

Two Stage
Bevel -Helical Units
Size : 6-18
Horizontal Shaft Mounted

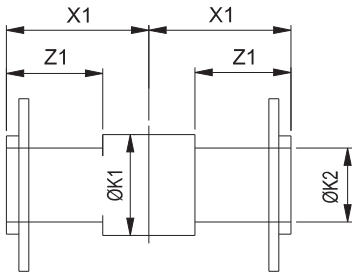


*Centre holes as per DIN 332/1

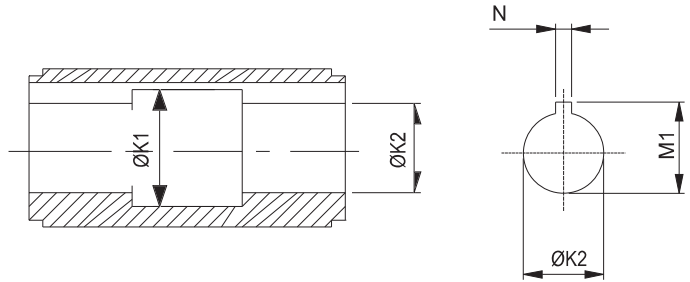
Input Shaft



For hollow output shaft with shrink disk for details refer page no. 95



For shaft end details refer page no. 94

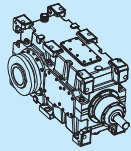
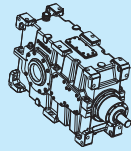


For Hollow output shaft with keyway

Note : Tolerance on shaft extension diameters : $k6 \leq \varnothing 50$; $m6 > \varnothing 50$.
(As per IS : 3688 : 1990)

Size	Input					Output			Hollow Output Shaft with keyway					
	Ratio 5-11.2								V1	Q1	V2	Øk2	Øk1	X1
	*Ratio 5.6-12.5													
	V	W	W2	Y	Z									
6	45	110	100	14.000 13.957	48.5 48.3	80	270	85	80.030 80.000	81	205	30	22.026 21.974	85.6 85.4
7	55	110	100	16.00 15.957	59.0 58.8	100	290	105	100.035 100.000	101	220	35	28.026 27.974	106.6 106.4
9	70	140	130	20.000 19.948	74.5 74.3	115	350	120	115.035 115.000	116	270	50	32.031 31.969	122.6 122.4
11	90	170	160	25.000 24.948	95.0 94.8	140	405	145	140.040 140.000	141	300	60	36.031 35.969	148.6 148.4
13	100	210	200	28.000 27.948	106.0 105.8	165	460	170	165.040 165.000	166	330	70	40.031 39.969	174.7 174.4
15	110	210	200	28.000 27.948	116.0 115.8	190	525	200	190.046 190.000	191	375	80	45.031 44.969	200.7 200.4
17	150	250	240	36.000 35.938	158.0 157.7	230	600	240	230.046 230.000	231	440	100	50.031 49.969	241.7 241.4
*18	150	250	240	36.000 35.938	158.0 157.7	240	610	250	240.046 240.000	241	450	100	56.037 55.963	252.7 252.4

Recommended tolerance for customer end solid shaft diameter k2 is h6.

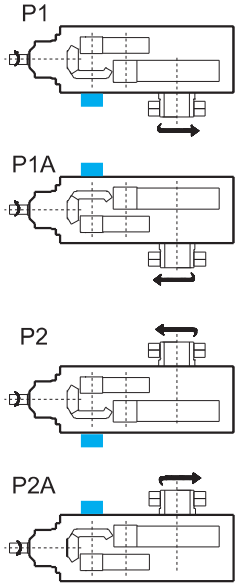



Three Stage
Bevel -Helical Units
Size : 6-18
Horizontal Shaft Mounted

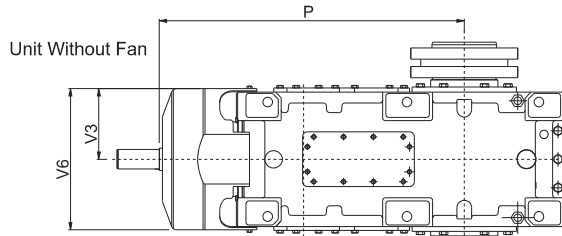
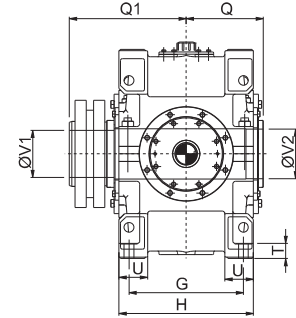
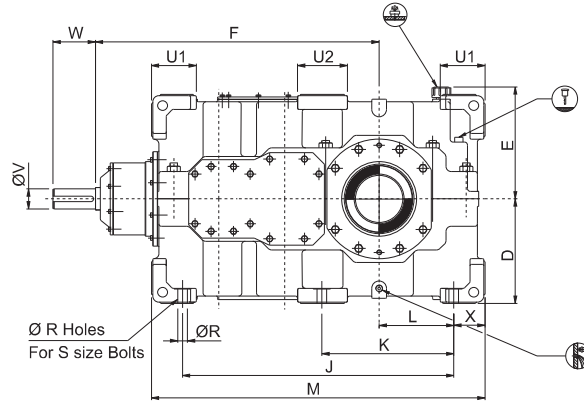
MB3HH

MB3DH

Shafts Handing / Rotation



 Holdback / Backstop
Opposite Rotation Available

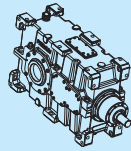


Unit With Fan

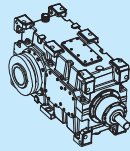
DIMENSIONS

Unit Size	Dimensions in mm									
	D	E	F	G	H	L	K	J	M	Q
6	225	215	525	230	275	150	-	460	620	185
7	245	255	595	260	300	160	-	520	700	195
8	285	320	635	260	300	205	-	610	780	195
9	285	335	720	300	346	190	-	640	840	220
10	320	370	760	300	346	230	-	720	920	220
11	320	370	830	340	396	215	-	775	975	250
12	380	415	885	340	396	270	-	875	1115	250
13	380	415	995	410	470	265	465	920	1160	285
14	430	460	1055	410	470	325	530	1035	1285	280
15	420	450	1140	470	540	300	530	1090	1340	285
16	500	530	1210	470	540	380	640	1240	1500	320
17	480	510	1375	550	626	375	640	1320	1630	365
18	525	550	1415	550	626	400	660	1370	1680	365

Unit Size	Dimensions in mm									
	R	S	T	U	U1	U2	X	P	V3	V6
6	18	16	25	75	105	-	80	600	150	300
7	22	20	30	75	125	-	90	675	170	340
8	22	20	30	75	125	-	90	715	170	340
9	26	24	35	85	135	-	100	800	195	390
10	26	24	35	85	135	-	100	840	195	390
11	26	24	35	100	135	-	100	920	230	460
12	33	30	55	100	170	-	120	975	230	460
13	33	30	55	105	170	190	120	1095	250	500
14	33	30	55	105	170	190	125	1170	245	490
15	39	36	60	120	185	200	125	1275	280	560
16	39	36	60	120	185	200	130	1340	280	560
17	45	42	65	130	215	230	155	1505	325	650
18	45	42	70	130	215	230	155	1525	325	650

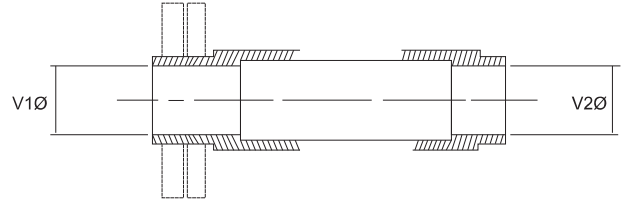
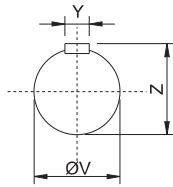
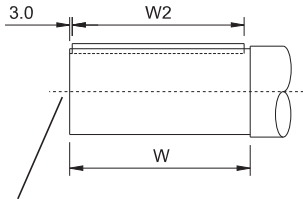


MB3HH



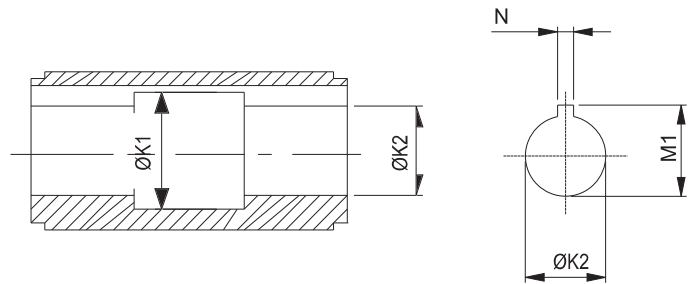
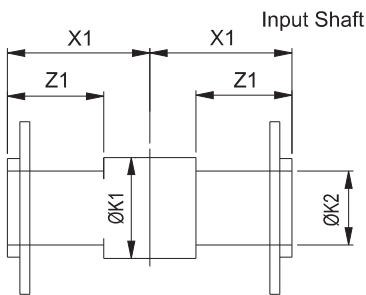
MB3DH

Three Stage
Bevel -Helical Units
Size : 6-18
Horizontal Shaft Mounted



*Centre holes
as per DIN 332/1

For hollow output shaft with shrink disk for details refer page no. 95



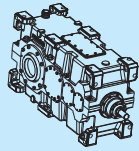
For shaft end details refer page no. 94

For Hollow output shaft with keyway

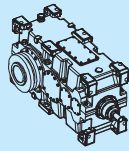
Note : Tolerance on shaft extension diameters : k6 < = Ø50; m6 > Ø50.
(As per IS : 3688 : 1990)

Size	Input										Output			Hollow Output Shaft with keyway					
	Ratio 12.5-45					Ratio 50-71													
	* Ratio 14-50					* Ratio 56-80													
	** Ratio 16-56					** Ratio 63-90													
	V	W	W2	Y	Z	V	W	W2	Y	Z	V1	V2	Q1	Ø k2	Ø k1	X1	Z1	N	M1
6	30	80	70	8.000 7.964	33.0 32.8	25	60	50	8.00 7.964	28.0 27.8	80	85	250	80.030 80.000	81	185	30	22.026 21.974	85.6 85.4
7	35	80	70	10.000 9.764	38.0 37.8	30	80	70	8.000 7.964	33.0 32.8	100	105	265	100.035 100.000	101	195	35	28.026 27.974	106.6 106.4
**8	35	80	70	10.000 9.764	38.0 37.8	30	80	70	8.000 7.964	33.0 32.8	110	115	270	110.035 110.000	111	195	45	28.026 27.974	116.6 116.47
9	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.764	38.0 37.8	115	120	300	115.035 115.000	116	220	50	32.031 31.969	122.6 122.4
**10	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.764	38.0 37.8	125	130	310	125.040 125.000	126	220	55	32.031 31.969	132.6 132.4
11	55	110	100	16.000 15.957	59.0 58.8	40	110	100	12.000 11.957	43.0 42.8	140	145	355	140.040 140.000	141	250	60	36.031 35.969	148.6 148.4
**12	55	110	100	16.000 15.957	59.0 58.8	40	110	100	12.000 11.957	43.0 42.8	150	155	360	150.040 150.000	151	250	65	36.031 35.969	158.6 158.4
13	75	140	130	20.000 19.948	79.5 79.3	50	110	100	14.000 13.957	53.5 53.3	165	170	410	165.040 165.000	166	280	70	40.031 39.969	174.7 174.4
**14	75	140	130	20.000 19.948	79.5 79.3	50	110	100	14.000 13.957	53.5 53.3	180	190	425	180.040 180.000	181	285	75	45.031 44.969	190.7 190.4
15	80	170	160	22.000 21.948	85.0 84.8	60	140	130	18.000 17.957	64.0 63.8	190	200	465	190.046 190.000	191	320	80	45.031 44.969	200.7 200.4
**16	80	170	160	22.000 21.948	85.0 84.8	60	140	130	18.000 17.957	64.0 63.8	210	220	480	210.046 210.000	211	320	85	50.031 49.969	221.7 221.4
17	90	170	160	25.000 24.948	95.0 94.8	70	140	130	20.000 19.948	74.5 74.3	230	240	535	230.046 230.000	231	365	100	50.031 49.969	241.7 241.4
*18	90	170	160	25.000 24.948	95.0 94.8	70	140	130	20.000 19.948	74.5 74.3	240	250	535	240.046 240.000	241	365	100	56.037 55.963	252.7 252.4

Recommended tolerance for shaft customer end diameter k2 is h6.



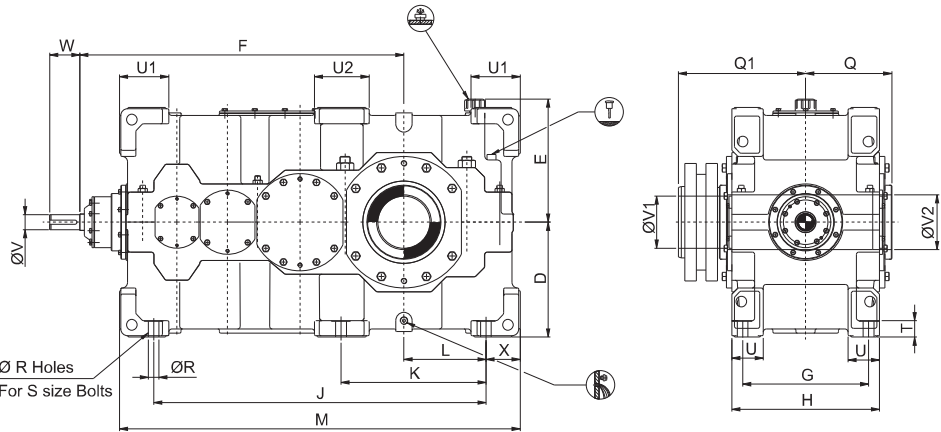
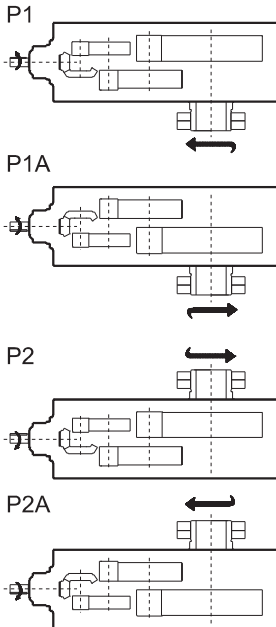
MB4HH



MB4DH

Four Stage
Bevel -Helical Units
Size : 7-18
Horizontal Shaft Mounted

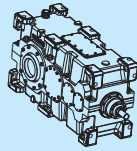
Shafts Handing / Rotation



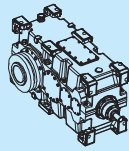
DIMENSIONS

Unit Size	Dimensions in mm								
	D	E	F	G	H	L	K	J	M
7	245	285	640	260	300	160	-	595	775
8	285	320	675	260	300	200	-	675	855
9	285	335	755	300	346	190	-	725	925
10	320	370	795	300	346	230	-	805	1005
11	320	370	860	340	396	215	-	840	1040
12	380	415	915	340	396	270	-	940	1180
13	380	415	1005	410	470	265	465	1050	1290
14	430	460	1065	410	470	325	545	1165	1415
15	420	450	1185	470	540	300	545	1215	1465
16	500	530	1260	470	540	380	640	1365	1625
17	480	510	1415	550	626	375	640	1460	1770
18	525	550	1455	550	626	400	660	1525	1835

Unit Size	Dimensions in mm							
	Q	R	S	T	U	U1	U2	X
7	195	22	20	30	75	125	-	90
8	195	22	20	30	75	125	-	90
9	220	26	24	35	85	135	-	100
10	220	26	24	35	85	135	-	100
11	250	26	24	35	100	135	-	100
12	250	33	30	55	100	170	-	120
13	285	33	30	55	105	170	190	120
14	285	33	30	55	105	170	190	125
15	320	39	36	60	120	185	200	125
16	320	39	36	60	120	185	200	130
17	365	45	42	65	130	215	230	155
18	365	45	42	70	130	215	230	155

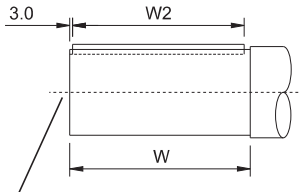


MB4HH



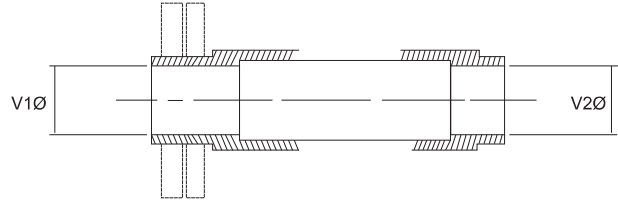
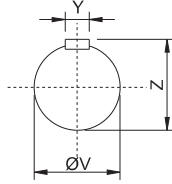
MB4DH

Four Stage
Bevel -Helical Units
Size : 7-18
Horizontal Shaft Mounted

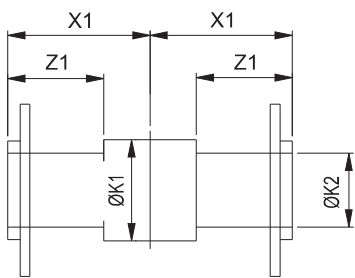


*Centre holes as per DIN 332/1

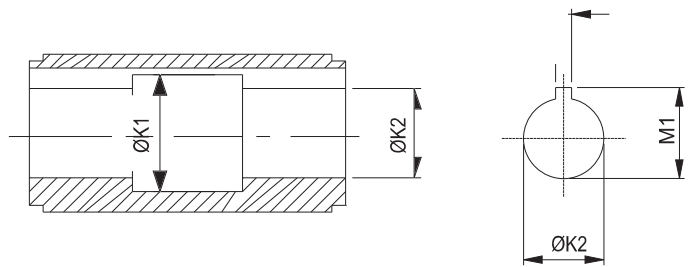
Input Shaft



For hollow output shaft with shrink disk for details refer page no. 95



For shaft end details refer page no. 94



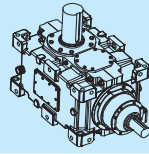
For Hollow output shaft with keyway

Note : Tolerance on shaft extension diameters : k6 <= Ø50; m6 > Ø50.
(As per IS : 3688 : 1990)

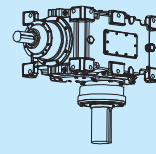
Size	Input										Output			Hollow Output Shaft with keyway					
	Ratio 80-180					Ratio 200-315													
	*Ratio 90-200					*Ratio 224-355													
	**Ratio 100-224					**Ratio 250-400													
	V	W	W2	Y	Z	V	W	W2	Y	Z	V1	V2	Q1	Øk2	Øk1	X1	Z1	N	M1
7	28	60	50	8.000 7.964	31.0 30.8	20	50	40	6.00 5.964	22.7 22.5	100	105	265	100.035 100.000	101	195	35	28.026 27.974	106.6 106.4
**8	28	60	50	8.000 7.964	31.0 30.8	20	50	40	6.00 5.964	22.7 22.5	110	115	270	110.035 110.000	111	195	45	28.026 27.974	116.6 116.4
9	30	80	70	8.000 7.964	33.5 33.4	25	60	50	8.000 7.964	28.0 27.8	115	120	300	115.035 115.000	116	220	50	32.031 31.969	122.6 122.4
**10	30	80	70	8.000 7.964	33.5 33.4	25	60	50	8.000 7.964	28.0 27.8	125	130	310	125.040 125.000	126	220	55	32.031 31.969	132.6 132.4
11	35	80	70	10.000 9.964	38.0 37.8	28	60	50	8.000 7.964	31.0 30.8	140	145	355	140.040 140.000	141	250	60	36.031 35.969	148.6 148.4
**12	35	80	70	10.000 9.964	38.0 37.8	28	60	50	8.000 7.964	31.0 30.8	150	155	360	150.040 150.000	151	250	65	36.031 35.969	158.6 158.4
13	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	165	170	410	165.040 165.000	166	285	70	40.031 39.969	174.7 174.4
**14	45	110	100	14.000 13.975	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	180	190	425	180.040 180.000	181	285	75	45.031 44.969	190.7 190.4
15	55	110	100	16.000 15.957	59.0 58.8	40	110	100	12.000 11.957	43.0 42.8	190	200	465	190.046 190.000	191	320	80	45.031 44.969	200.7 200.4
**16	55	110	100	16.000 15.957	59.0 58.8	40	110	100	12.000 11.957	43.0 42.8	210	220	480	210.046 210.000	211	320	85	50.031 49.969	221.7 221.4
17	70	140	130	20.000 19.948	74.5 74.3	50	110	100	14.000 13.957	53.5 53.3	230	240	535	230.046 230.000	231	365	100	50.031 49.969	241.7 241.4
*18	70	140	130	20.000 19.948	74.5 74.3	50	110	100	14.000 13.957	53.5 53.3	240	250	535	240.046 240.000	241	365	100	56.037 55.963	252.7 252.4

Recommended tolerance for shaft customer end diameter k2 is h6.

DIMENSIONS

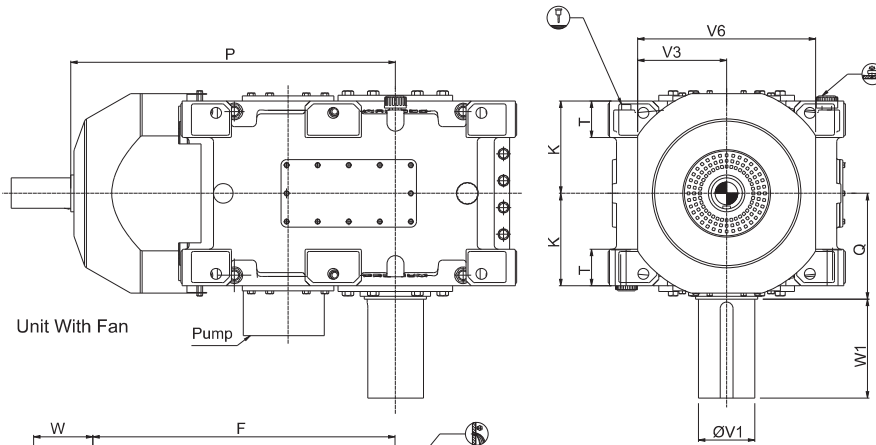


MB2SV

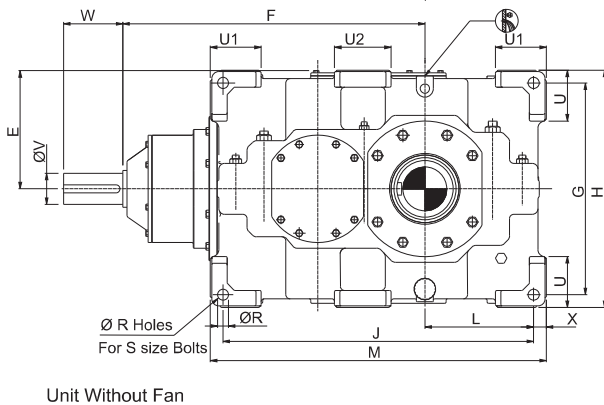
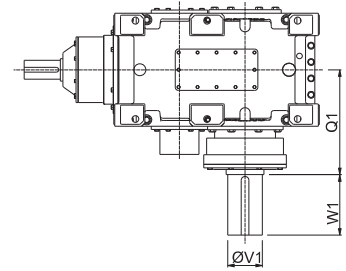


MB2AV

Two Stage
Bevel - Helical Units
Size : 6-18
Vertical Foot Mounted

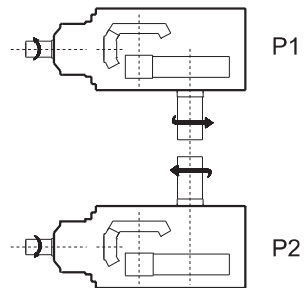


MB2AV AGITATOR UNITS



Unit Without Fan

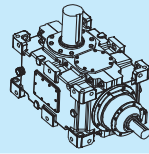
Shafts Handing / Rotation



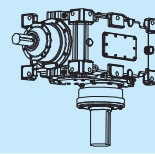
DIMENSIONS

Unit Size	Dimensions in mm									
	E	F	G	H	L	K	J	M	Q	Q1
6	237	485	410	460	210	163	480	530	205	305
7	257	575	450	510	230	176	565	625	220	345
9	297	680	510	570	270	223	695	755	270	435
11	332	790	580	640	305	250	810	870	300	490
13	378	930	680	760	355	278	925	1005	330	585
15	418	1070	750	840	385	328	1100	1190	375	610
17	480	1290	850	960	475	383	1320	1430	440	695
18	520	1330	950	1050	500	393	1370	1480	450	695

Unit Size	Dimensions in mm									
	R	S	T	U	U1	U2	X	P	V3	V6
6	18	16	75	105	105	-	25	555	180	360
7	22	20	75	125	125	-	30	655	190	380
9	26	24	90	130	135	-	30	780	250	500
11	26	24	100	130	135	-	30	895	275	550
13	33	30	110	170	170		40	1045	305	610
15	39	36	130	185	185	200	45	1195	338	676
17	45	42	150	215	215	230	55	1420	395	790
18	45	42	150	215	215	230	55	1460	405	810



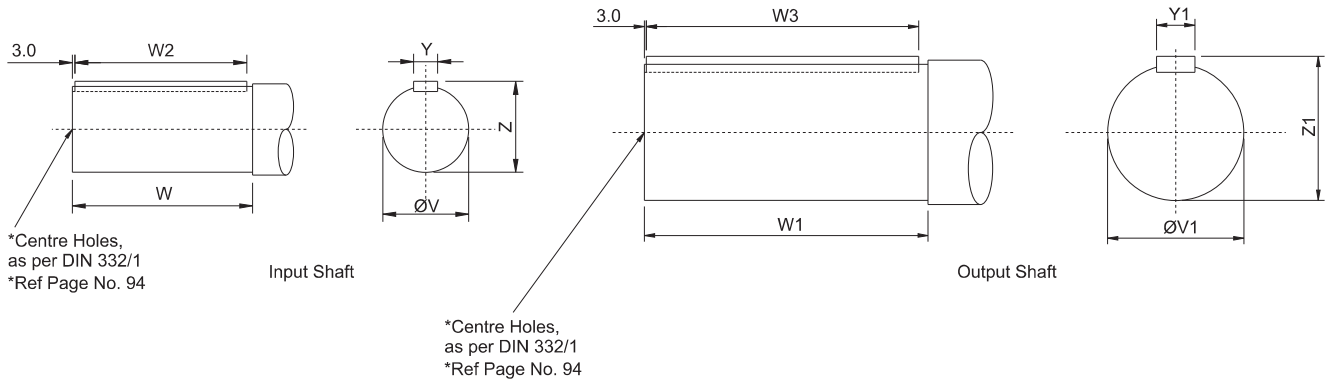
MB2SV



MB2AV

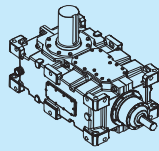
Two Stage
Bevel - Helical Units
Size : 6-18
Vertical Foot Mounted

Shaft End Details

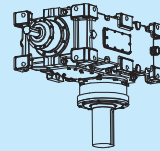


Note : Tolerance on shaft extension diameters : k6 <= Ø50; m6 > Ø50.
(As per IS : 3688 : 1990)

Size	Input					Output									
	Ratio 5-11.2					Standard Unit					Agitator Unit				
	* Ratio 5.6-12.5														
	V	W	W2	Y	Z	V1	W1	W3	Y1	Z1	V1	W1	W3	Y1	Z1
6	45	110	100	14.000 13.957	48.5 48.3	80	170	160	22.000 21.948	85.0 84.8	80	170	160	22.000 21.948	85.0 84.8
7	55	110	100	16.000 15.957	59.0 58.8	100	210	200	28.000 27.948	106.0 105.8	90	170	160	25.000 24.948	95.0 94.8
9	70	140	130	20.000 19.948	74.5 74.3	120	210	200	32.000 31.938	127.0 126.8	110	210	200	28.000 27.948	116.0 115.8
11	90	170	160	25.000 24.948	95.0 94.8	140	250	240	36.000 35.938	148.0 147.7	140	250	240	36.000 35.938	148.0 147.7
13	100	210	200	28.000 27.948	106.0 105.8	170	300	290	40.000 39.938	179.0 178.7	170	300	290	40.000 39.938	179.0 178.7
15	110	210	200	28.000 27.948	116.0 115.8	200	350	340	45.000 44.938	210.0 209.7	200	350	340	45.000 44.938	210.0 209.7
17	150	250	240	36.000 35.938	158.0 157.7	240	410	400	56.000 55.926	252.0 251.7	220	350	340	50.000 49.938	231.0 230.7
*18	150	250	240	36.000 35.938	158.0 157.7	240	410	400	56.000 55.926	252.0 251.7	220	350	340	50.000 49.938	231.0 230.7

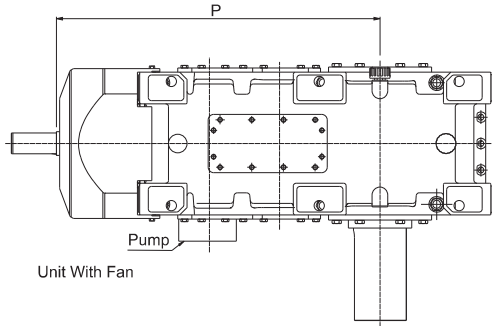


MB3SV

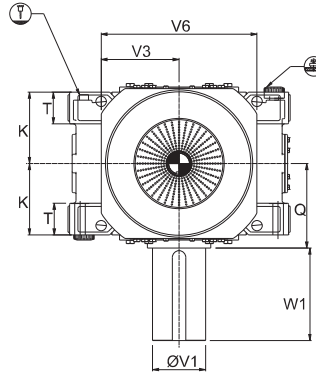


MB3AV

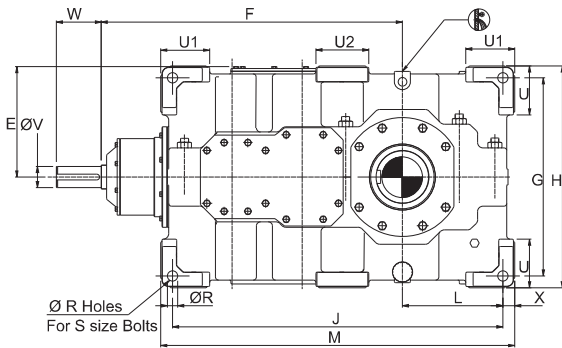
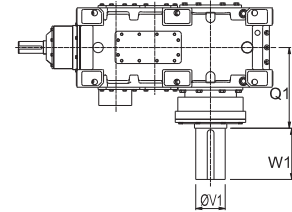
Three Stage
Bevel - Helical Units
Size : 6-18
Vertical Foot Mounted



Unit With Fan

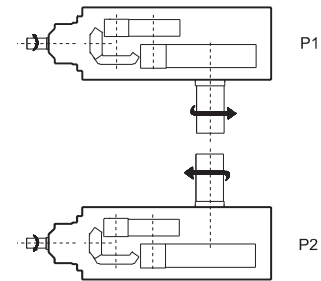


MB3AV AGITATOR UNITS



Unit Without Fan

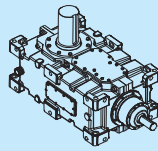
Shafts Handling / Rotation



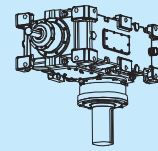
DIMENSIONS

Unit Size	Dimensions in mm									
	E	F	G	H	L	K	J	M	Q	Q1
6	232	525	400	450	205	138	570	620	185	280
7	252	595	430	490	220	150	640	700	195	320
8	292	635	510	570	265	150	730	780	195	325
9	297	720	510	570	260	173	780	840	220	385
10	332	760	580	640	300	173	860	920	220	415
11	332	830	580	640	285	198	915	975	250	440
12	378	885	680	760	350	198	1035	1115	250	455
13	378	995	680	760	345	235	1080	1160	285	540
14	427	1055	780	860	410	235	1205	1285	285	475
15	418	1140	750	840	380	270	1250	1340	320	550
16	498	1210	910	1000	465	270	1410	1500	320	545
17	480	1375	850	960	475	313	1520	1630	365	625
18	520	1415	950	1050	500	313	1570	1680	365	625

Unit Size	Dimensions in mm									
	R	S	T	U	U1	U2	X	P	V3	V6
6	18	16	75	105	105	-	25	600	150	300
7	22	20	75	125	125	-	30	675	170	340
8	22	20	75	125	125	-	30	715	170	340
9	26	24	85	130	135	-	30	800	195	390
10	26	24	85	130	135	-	30	840	195	390
11	26	24	100	130	135	-	30	920	230	460
12	33	30	100	170	170	-	40	975	230	460
13	33	30	105	170	170	190	40	1095	250	500
14	33	30	105	170	170	190	40	1170	245	490
15	39	36	120	185	185	200	45	1275	280	560
16	39	36	120	185	185	200	45	1340	280	560
17	45	42	130	215	215	230	55	1505	325	650
18	45	42	130	215	215	230	55	1525	325	650



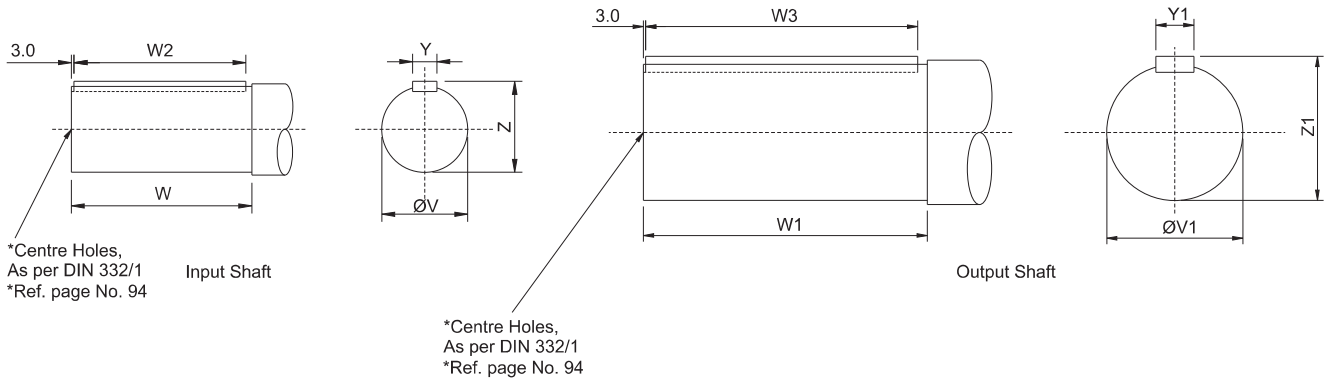
MB3SV



MB3AV

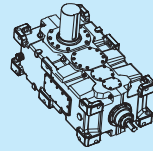
Three Stage
Bevel - Helical Units
Size : 6-18
Vertical Foot Mounted

Shaft End Details



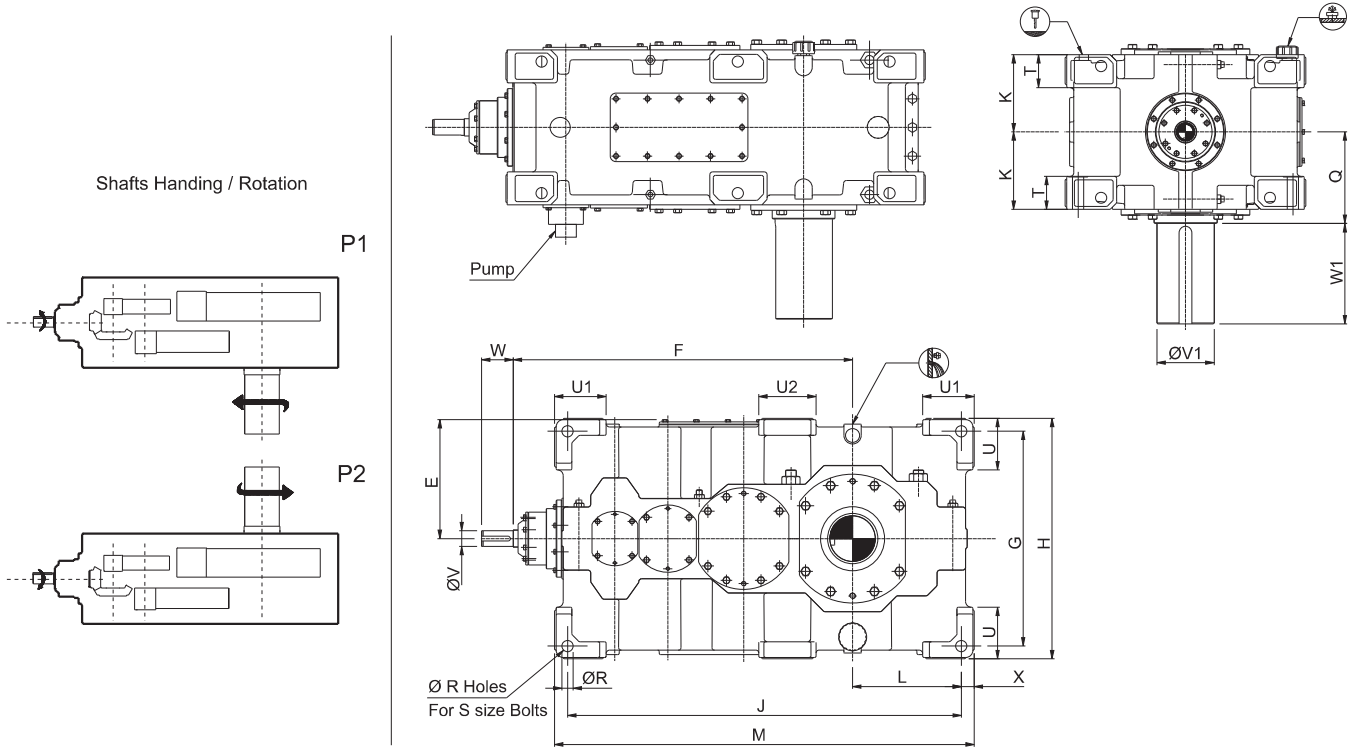
Note : Tolerance on shaft extension diameters : k6 <= Ø50; m6 > Ø50.
(As per IS : 3688 : 1990)

Size	Input										Output									
	Ratio 12.5-45					Ratio 50-71					Std. Units					Agitator Units				
	* Ratio 14-50					* Ratio 56-80														
	** Ratio 16-56					** Ratio 63-90														
	V	W	W2	Y	Z	V	W	W2	Y	Z	V1	W1	W3	Y1	Z1	V1	W1	W3	Y1	Z1
6	30	80	70	8.000 7.964	33.0 32.8	25	60	50	8.000 7.964	28.0 27.8	80	170	160	22.000 21.948	85.0 84.8	80	170	160	22.000 21.948	85.0 84.8
7	35	80	70	10.000 7.964	38.0 37.8	28	60	50	8.000 7.964	31.0 31.8	100	210	200	28.000 27.948	106.0 105.8	90	170	160	25.000 24.948	95.0 94.8
**8	35	80	70	10.000 7.964	38.0 37.8	28	60	50	8.000 7.964	31.0 31.8	110	210	200	28.000 27.948	116.0 115.8	100	210	200	28.000 27.948	106.0 105.8
9	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.764	38.0 37.8	120	210	200	32.000 31.938	127.0 126.8	110	210	200	28.000 27.948	116.0 115.8
**10	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.764	38.0 37.8	130	250	240	32.000 31.938	137.0 136.8	130	250	240	32.000 31.938	137.0 136.8
11	55	110	100	16.000 15.957	59.0 58.8	40	110	100	12.000 11.957	43.0 42.8	140	250	240	36.000 35.938	148.0 147.7	140	250	240	36.000 35.938	148.0 147.7
**12	55	110	100	16.000 15.957	59.0 58.8	40	110	100	12.000 11.957	43.0 42.8	160	300	290	40.000 39.938	169.0 168.7	160	300	290	40.000 39.938	169.0 168.7
13	75	140	130	20.000 19.948	79.5 79.3	50	110	100	14.000 13.957	53.5 53.3	170	300	290	40.000 39.938	179.0 178.7	170	300	290	40.000 39.938	179.0 178.7
**14	75	140	130	20.000 19.948	79.5 79.3	50	110	100	14.000 13.957	53.5 53.3	180	300	290	45.000 44.938	190.0 189.7	170	300	290	40.000 39.938	179.0 178.7
15	80	170	160	22.000 21.948	85.0 84.8	60	140	130	18.000 17.957	64.0 63.8	200	350	340	45.000 44.938	210.0 209.7	200	350	340	45.000 44.938	210.0 209.7
**16	80	170	160	22.000 21.948	85.0 84.8	60	140	130	18.000 17.957	64.0 63.8	220	350	340	50.000 49.938	231.0 230.7	200	350	340	45.000 44.938	210.0 209.7
17	90	170	160	25.000 24.948	95.0 94.8	70	140	130	20.000 19.948	74.5 74.3	240	410	400	56.000 55.926	252.0 251.7	220	350	340	50.000 49.938	231.0 230.7
*18	90	170	160	25.000 24.948	95.0 94.8	70	140	130	20.000 19.948	74.5 74.3	240	410	400	56.000 55.926	252.0 251.7	220	350	340	50.000 49.938	231.0 230.7



Four Stage
Bevel - Helical Units
Size : 7-18
Vertical Foot Mounted

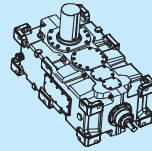
MB4SV



DIMENSIONS

Unit Size	Dimensions in mm							
	E	F	G	H	L	K	J	M
7	252	635	430	490	220	150	715	775
8	292	675	510	570	260	150	795	855
9	297	755	510	570	260	173	865	925
10	332	795	580	640	300	173	945	1005
11	332	860	580	640	285	198	980	1040
12	378	915	680	760	350	198	1100	1180
13	378	1005	680	760	345	235	1210	1290
14	428	1065	770	860	405	235	1325	1415
15	418	1185	750	840	380	270	1375	1465
16	498	1260	910	1000	465	270	1535	1625
17	480	1415	850	960	475	313	1660	1770
18	520	1455	950	1050	500	313	1725	1835

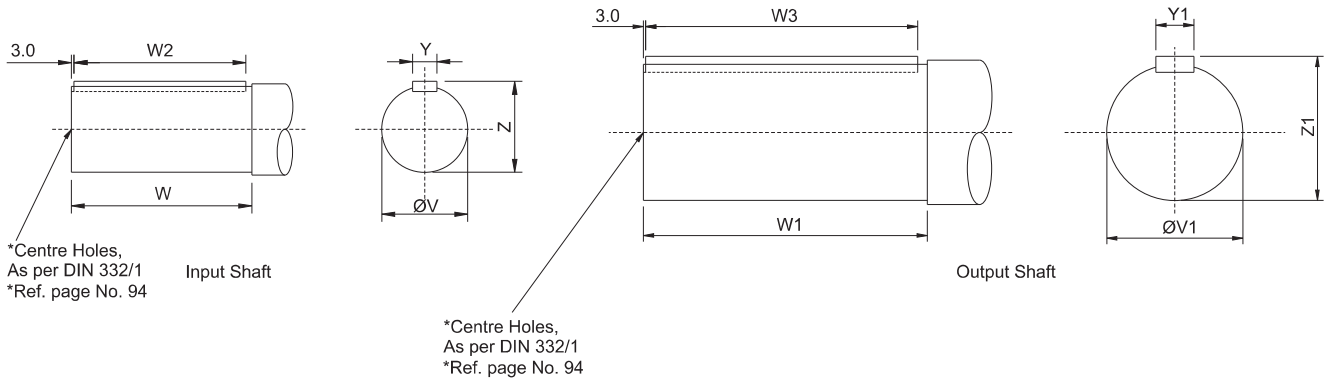
Unit Size	Dimensions in mm							
	Q	R	S	T	U	U1	U2	X
7	195	22	20	75	125	125	-	30
8	195	22	20	75	125	125	-	30
9	220	26	24	85	130	135	-	30
10	220	26	24	85	130	135	-	30
11	250	26	24	100	130	135	-	30
12	250	33	30	100	170	170	-	40
13	285	33	30	105	170	170	190	40
14	285	33	30	105	170	170	190	45
15	320	39	36	120	185	185	200	45
16	320	39	36	120	185	185	200	45
17	365	45	42	130	215	215	230	55
18	365	45	42	130	215	215	230	55



Four Stage
Bevel - Helical Units
Size : 7-18
Vertical Foot Mounted

MB4SV

Shaft End Details



Note : Tolerance on shaft extension diameters : k6 <= Ø50; m6 > Ø50.
(As per IS : 3688 : 1990)

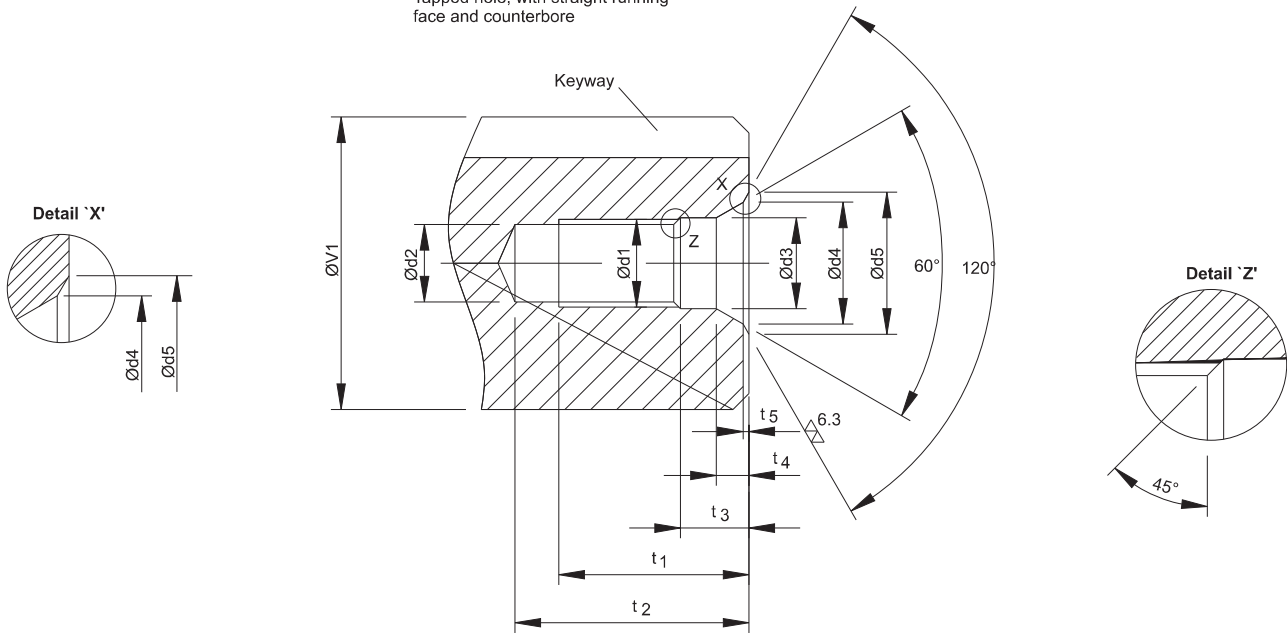
Size	Input										Output				
	Ratio 80-180					Ratio 200-315									
	* Ratio 90-200					* Ratio 224-355									
	** Ratio 100-224					** Ratio 250-400									
	V	W	W2	Y	Z	V	W	W2	Y	Z					
7	30	80	70	8.000 7.964	33.5 33.4	20	50	40	6.000 5.970	22.5 22.4	100	210	200	28.000 27.948	106.0 105.8
**8	30	80	70	8.000 7.964	33.5 33.4	20	50	40	6.000 5.970	22.5 22.4	110	210	200	28.000 27.948	116.0 115.8
9	30	80	70	8.000 7.964	33.5 33.4	25	60	50	8.000 7.964	28.0 27.8	120	210	200	32.000 31.938	127.0 126.8
** 10	30	80	70	8.000 7.964	33.5 33.4	25	60	50	8.000 7.964	28.0 27.8	130	250	240	32.000 31.938	137.0 136.8
11	35	80	70	10.000 9.964	38.0 37.8	28	60	50	8.000 7.964	31.0 30.8	140	250	240	36.000 35.938	148.0 147.7
** 12	35	80	70	10.000 9.964	38.0 37.8	28	60	50	8.000 7.964	31.0 30.8	160	300	290	40.000 39.938	169.0 168.7
13	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	170	300	290	40.000 39.938	179.0 178.7
**14	45	110	100	14.000 13.957	48.5 48.3	35	80	70	10.000 9.964	38.0 37.8	180	300	290	45.000 44.938	190.0 189.7
15	55	110	100	16.000 15.957	59.0 58.8	40	110	100	12.000 11.957	43.0 43.2	200	350	340	45.000 44.938	210.0 209.7
**16	55	110	100	16.000 15.957	59.0 58.8	40	110	100	12.000 11.957	43.0 43.2	220	350	340	50.000 49.938	231.0 230.7
17	70	140	130	20.000 19.948	74.5 74.3	50	110	100	14.000 13.957	53.5 53.3	240	410	400	56.000 55.926	252.0 251.7
*18	70	140	130	20.000 19.948	74.5 74.3	50	110	100	14.000 13.957	53.5 53.3	240	410	400	56.000 55.926	252.0 251.7

Shaft End Details

Center Holes, Form DS in Shaft Ends DIN 332/1

Form DS

Tapped hole, with straight running face and counterbore



Recommended diameters V1 above to mm		Form DS											
		DS	d1	d2 2)	d3	d4	d5	t1 +2	t2		t3 +1	t4	t5
									min	max			
mm													
16	21	DS 6	M 6	5	6.4	9.6	10.5	16	20	22	5	2.8	0.4
21	24	DS 8	M 8	6.8	8.4	12.2	13.2	19	25	28	6	3.3	0.4
24	30	DS 10	M 10	8.5	10.5	14.9	16.3	22	30	34	7.5	3.8	0.6
30	38	DS 12	M 12	10.2	13	18.1	19.8	28	37	42	9.5	4.4	0.7
38	50	DS 16	M 16	14	17	23	25.3	36	45	50	12	5.2	1.0
50	85	DS 20	M 20	17.5	21	28.4	31.3	42	53	59	15	6.4	1.3
85	130	DS 24	M 24	21	25	34.2	38	50	63	68	18	8	1.6
130*	225*	DS 30	M 30*	26.5	31	44	48	60	77	83	17	11	1.9
225*	320*	DS 36	M 36*	32	37	55	60	74	93	99	22	15	2.3
320*	500*	DS 42	M 42*	37.5	43	65	71	84	105	111	26	19	2.7

1) Diameter of the finished work piece

2) Drill diameter for tapping-size holes acc. To Din 336 Pt. 1

*) Dimensions not acc. To Din 332

Output Shaft & Shrink Disc Details (mm)

Types MH2DH - MH3DH - MH4DH - MB2DH - MB3DH - MB4DH

Each shaft mounted gear unit can be fitted with a 'shrink disc' device located on the hollow output shaft to provide a positive outer locking connection between gear unit and driven shaft. The 'shrink disc' is a friction device, without keys, which exerts an external clamping force on the hollow output shaft, thus establishing a mechanical shrink fit between the gear unit hollow shaft & driven shaft. 'Shrink disc' capacities have ample margins in dealing with transmitted torques and external loading imposed on gear units.

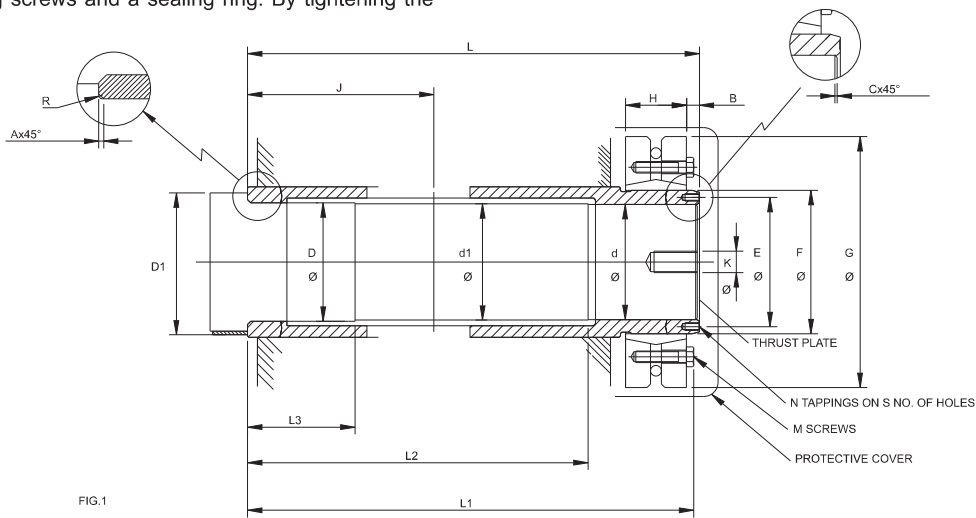
Working Principle

The 'shrink disc' consists of two locking collars, a double tapered inner ring, locking screws and a sealing ring. By tightening the

locking screws, the locking collars are pulled together, exerting radial forces on the inner ring, thus creating a positive friction connection between hollow shaft and driven shaft *See fig.2.*

As the tapered surfaces of locking collars and inner ring are lubricated with Molykote 321 R or similar and the taper angle is not self locking, locking collars will not seize on the inner ring and can be released easily when removal is necessary.

When the shrink disc is clamped in position the high contact pressures between tapered surfaces and screw heads and their seatings ensure hermetic sealing and eliminate the possibility of fretting corrosion.



Output shaft & Shrink Disc Details (mm)

Shrink Disc		Hollow Shaft											Shaft of Driven Machine										
Unit Size	Size Rel.	Screws					J	L	A	B	N	S	E	d*	d1	D**	D1	L1	L2	L3	C	R	K
6	110-72	110	185	49	M10	58	185	440	4.5	12	M5	6	97.5	80	82	85	113	435	360	80	3	2	M24x50
6*	110-72	110	185	49	M10	58	205	475	4.5	12	M5	6	97.5	80	82	85	113	472	395	80	3	2	M24x50
7	125-72	125	215	53	M10	58	195	460	4.5	12	M5	6	110	95	97	100	113	455	370	90	3	2	M24x50
7*	125-72	125	215	53	M10	58	220	510	4.5	12	M5	6	110	95	97	100	113	507	420	90	3	2	M24x50
8	140-71	140	230	58	M10	58	195	465	4.5	12	M5	6	117.5	105	107	110	113	462	350	115	3	2	M24x50
9	155-71	155	263	62	M12	100	220	520	4.5	18	M10	6	135	115	117	120	133	510	390	125	3	2	M24x50
9*	155-71	155	263	62	M12	100	270	620	4.5	18	M10	6	135	115	117	120	133	610	490	125	3	2	M24x50
10	165-71	165	290	68	M16	240	220	530	4.5	18	M10	6	145	125	127	130	143	522	390	135	3	2	M24x50
11	185-71	185	330	85	M16	240	250	605	4.5	18	M10	6	160	140	142	145	160	597	455	145	3	2	M30x60
11*	185-71	185	330	85	M16	240	300	705	4.5	18	M10	6	160	140	142	145	160	697	555	145	4	2	M30x60
12	200-71	200	350	85	M16	240	250	610	4.5	18	M10	6	170	150	152	155	170	602	450	155	4	2	M30x60
13	220-71	220	370	103	M16	240	285	700	4.5	22	M12	6	190	165	167	170	190	692	530	165	4	2	M30x60
13*	220-71	220	370	103	M16	240	330	790	4.5	22	M12	6	190	165	167	170	190	782	620	165	4	2	M30x60
14	240-71	240	405	107	M20	490	285	700	4.5	22	M12	6	210	180	187	190	210	702	525	175	4	2	M30x65
15	260-71	260	430	119	M20	490	320	790	4.5	22	M12	6	225	190	197	200	220	782	600	185	4	2	M30x60
15*	260-71	260	430	119	M20	490	375	900	4.5	22	M12	6	225	190	197	200	220	892	710	185	4	2	M30x60
16	280-71	280	460	132	M20	490	320	800	4.5	22	M12	6	245	210	217	220	240	792	600	195	4	2	M30x60
17	300-71	300	485	140	M20	490	365	900	4.5	22	M12	6	265	230	235	240	260	892	690	205	4	2	M36x70
17*	300-71	300	485	140	M20	490	440	1050	4.5	22	M12	6	265	230	235	240	260	1022	840	205	4	2	M36x70
18	320-91	320	520	140	M20	490	365	900	4.5	22	M12	6	280	240	245	250	270	892	680	215	4	2	M36x70
18*	320-91	320	520	140	M20	490	450	1070	4.5	22	M12	6	280	240	245	250	270	1042	850	215	4	2	M36x70

Dimension for Unit size with * are applicable only for MB2DH models.

Shrink disc locking screws M must be tightened to the torque figures Ma shown in Nm. **Tolerances for shaft diameters D and d are to h6 for diameters 95 to 165 and g6 for 165 and above. As improvements in design are continually being made, this specification is not to be regarded as binding in detail and dimensions are subject to alternation without notice.

Output Shaft & Shrink Disc Details (mm)

Types MH2DH - MH3DH - MH4DH - MB2DH - MB3DH - MB4DH

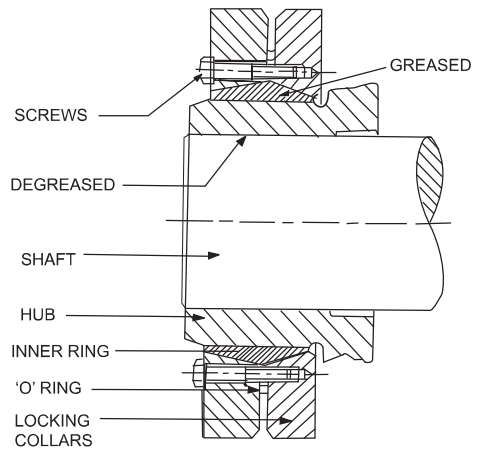
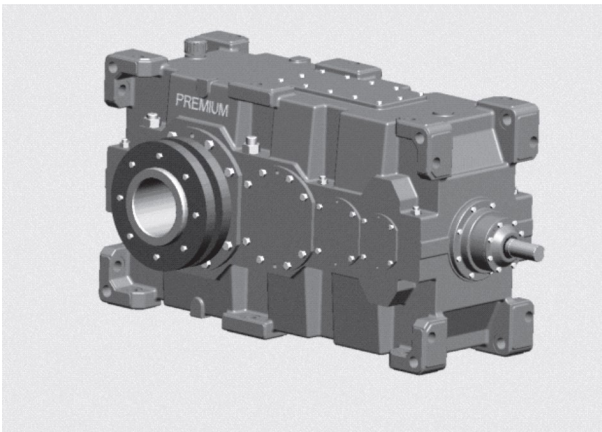


FIG. 2

Installation

'Shrink discs' are optionally supplied with shaft mounted units. The following procedures should be followed when fitting or removing units from driven shafts

1. Release locking screws gradually and in succession. Initially a quarter of a turn on each screw will avoid tilting and jamming of collars.
2. Remove collars and clean 'shrink disc' thoroughly.
3. Clean and degrease locating diameters of gear unit hollow shaft, driven shaft and 'shrink disc' locating diameter on hollow shaft extension.
4. Draw the gear unit onto the driven shaft. See Fig.3
5. Grease tapered surfaces of locking collars and inner ring with Molykote 321 R or similar.
6. Fit 'Shrink Disc' on gear unit hollow shaft to position shown in Fig.1.
7. Tighten all locking screws gradually and in succession. Do not tighten in a diametrically opposite sequences. Several passes are required until all screws are tightened to the torque figures Ma shown in the table opposite in Nm. This is stamped on the inner face of the 'shrink disc.'

Locking collars must remain equidistant over 360°.

Note : When the hollow output shaft is to operate in a vertical position it is essential that the shaft of the driven machine is provided with a shoulder. When the thrust load is not taken by the shoulder on the driven shaft, a thrust plate, as shown in Fig.1 must be fitted.

It is recommended that customers shafts at the non-clamped end of the sleeve should be coated with Molykote 321 R or equivalent.

Removal

1. Removal procedure is similar to the reverse of installation. *Note :* Do not remove 'shrink disc' locking screws completely.
2. Remove any rust and dirt from gear unit hollow shaft.
3. Withdraw gear unit from driven shaft. See Fig.4.

Note: 'Shrink disc' should be removed and cleaned thoroughly, and Molykote 321 R or similar applied to the tapered surfaces of inner ring and locking collars before re-use. The 'O' ring should be replaced if worn or damaged.

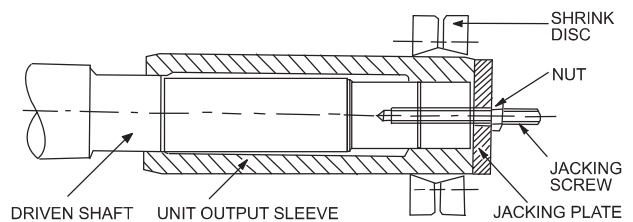


FIG.3 MOUNTING GEAR UNIT

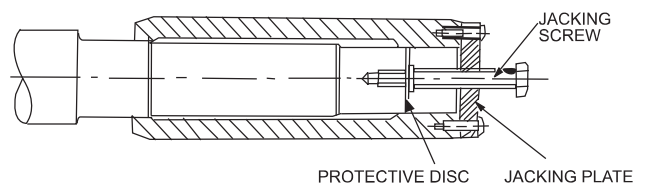
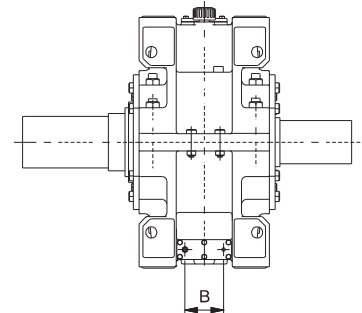
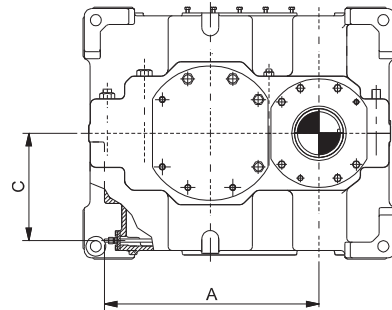


FIG.4 REMOVING GEAR UNIT

As improvements in design are continually being made, this specification is not to be regarded as binding in detail and dimensions are subject to alteration without notice.

Cooling Coil Connections (mm)

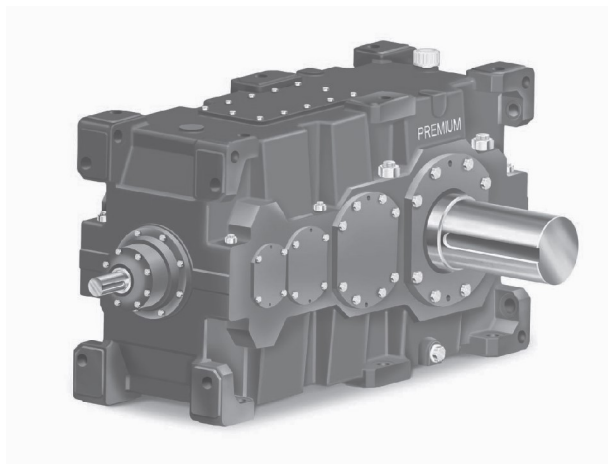
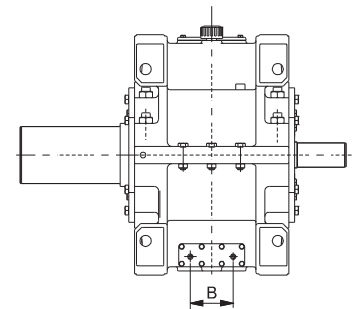
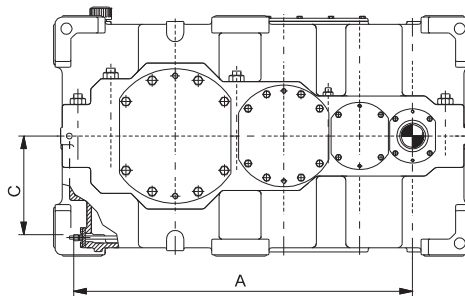
Types MH1SH - MH2SH - MH2DH - MH3SH -
MH3DH - MB2SH - MB2DH - MB3SH - MB3DH



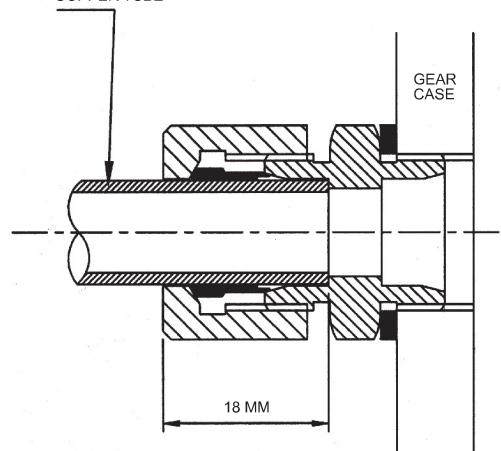
Cooling Coil connections for water inlet and outlet pipes are provided as indicated. One size of fitting is used for all gear unit sizes.

Fittings which are supplied with gear units fitted with cooling coils are to suits 12 mm diameter copper pipe which is provided by customers.

Cooling coils are suitable for fresh, brackish or sea water with flow in either direction. Connections are therefore interchangeable.



CUSTOMER'S 12 MM Ø COPPER TUBE



BULKHEAD FITTING FOR 12 MM DIAMETER PIPE

Unit Size	MH1SH			MB2SH-MB2DH			MH2SH-MH2DH-MB3SH-MB3DH			MH3SH-MH3DH		
	A	B	C	A	B	C	A	B	C	A	B	C
6	-	-	-	370	90	176	450	50	171	-	-	-
7	405	50	196	450	110	196	510	50	191	580	50	191
8	-	-	-	-	-	-	580	50	231	665	50	231
9	465	90	241	455	150	231	615	110	231	725	135	231
10	-	-	-	-	-	-	695	110	266	805	110	266
11	540	110	271	530	150	266	700	150	266	833	150	266
12	-	-	-	-	-	-	820	150	309	953	150	309
13	640	150	314	635	150	309	850	150	309	1015	150	309
14	-	-	-	-	-	-	975	150	353	1145	150	353
15	750	135	375	730	150	320	990	150	340	1185	150	345
16	-	-	-	-	-	-	1140	150	416	1330	150	416
17	885	135	435	875	150	375	1195	150	400	1410	150	400
18	-	-	-	965	150	420	1285	150	438	1495	150	438

Hold Backs/Back Stops

Principle of Operation

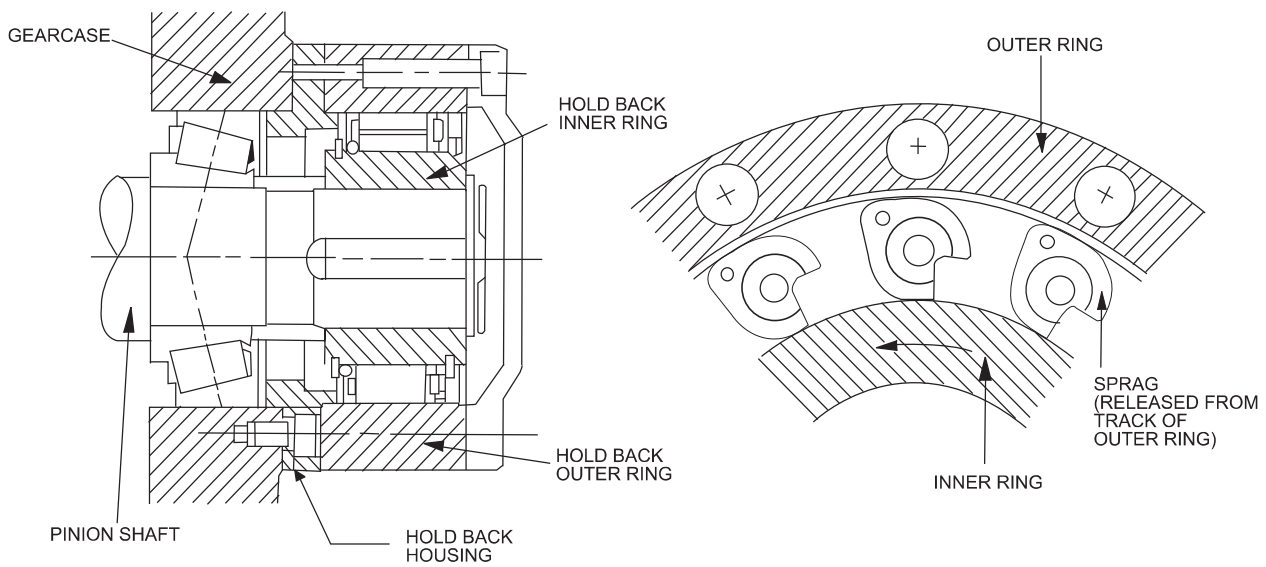


FIG.1

FIG.2

Holdbacks can be fitted to all Helical Units, with the exception of MH1SH single reduction type, where required to operate in non-reversing drives. They are located on input pinion-shaft in case of MH2SH/MH2DH type units and on second reduction pinion-shaft in case of MB2SH/MB2DH, MH3SH/MH3DH and MB3SH/MB3DH type of units.

All the holdbacks have adequate capacities to deal with full rated torque. Lubrication is provided automatically from the oil in the gear unit.

Holdbacks are located externally as shown in *Fig. 1* and are positioned on different units as shown on dimension sheet.

Holdbacks fitted on Helical units are of centrifugally released sprag type. In case of these holdbacks the sprags rotate along with cage and inner ring of holdback in free direction of rotation. The sprags are so designed that they get released from track of outer ring of the holdback. (see *fig. 2*) due to centrifugal force at normal running speed of gearbox. Contact between the sprag and the stationary outer race therefore takes place only during starting and stopping. Contact-free running during normal operating conditions reduces wear of the sprags and ensures the longer life.

Moment of Inertia (kg-m²)

Referred to High speed shafts - All Types

$$GD^2 \text{ (kg m}^2\text{)} = 4 \times \text{Mass Moment of Inertia (kg-m}^2\text{)}$$

i	6	7	8	9	10	11	12	13	14	15	16	17	18
1.25	-	0.15609	-	0.42400	-	0.92938	-	---	-	--	-	---	-
1.4	-	0.14249	-	0.38222	-	0.84326	-	---	-	--	-	---	-
1.6	-	0.12152	-	0.33509	-	0.72841	-	1.74537	-	3.752212	-	---	-
1.8	-	0.10803	-	0.30525	-	0.66017	-	1.58768	-	3.21022	-	---	-
2	-	0.09832	-	0.27737	-	0.59714	-	1.43737	-	2.90121	-	6.87241	-
2.24	-	0.09028	-	0.23954	-	0.53849	-	1.29648	-	2.62585	-	6.24512	-
2.5	-	0.08157	-	0.21612	-	0.48316	-	1.16395	-	2.34845	-	5.52135	-
2.8	-	0.07498	-	0.20153	-	0.44578	-	1.04355	-	2.10542	-	4.96231	-
3.15	-	0.05004	-	0.14034	-	0.31389	-	0.84221	-	1.68952	-	3.98521	-
3.55	-	0.04469	-	0.12356	-	0.27390	-	0.73525	-	1.47689	-	3.42154	-
4	-	0.03897	-	0.10484	-	0.23776	-	0.64630	-	1.29856	-	2.93551	-
4.5	-	0.02875	-	0.08633	-	0.19580	-	0.49653	-	0.96558	-	2.31245	-
5	-	0.02656	-	0.07482	-	0.17049	-	0.40628	-	0.88921	-	1.97124	-
5.6	-	0.02366	-	0.06507	-	0.14164	-	0.37473	-	0.75921	-	1.66231	-

6.3	0.01483	0.03480	-	0.09219	-	0.20194	-	0.52303	-	1.11851	-	2.69514	-
7.1	0.01350	0.02712	-	0.07543	-	0.16752	-	0.45478	-	0.96988	-	2.37524	2.94251
8	0.01155	0.02303	0.03869	0.06430	0.11065	0.14562	0.23996	0.39683	0.64892	0.82658	1.29851	2.08421	2.57412
9	0.01050	0.02127	0.03160	0.05825	0.08936	0.12791	0.19514	0.32266	0.56221	0.73542	1.12585	1.82154	2.24512
10	0.00850	0.01757	0.02577	0.05258	0.07789	0.11103	0.16926	0.27947	0.48752	0.63789	0.96542	1.57854	1.95421
11.2	0.00750	0.01519	0.02438	0.04427	0.06723	0.09526	0.14600	0.25122	0.38952	0.54355	0.83542	1.38412	1.68541
12.6	0.00530	0.01287	0.02059	0.03300	0.05774	0.07909	0.12235	0.19236	0.33221	0.42852	0.71245	1.15421	1.47211
14	0.00425	0.01112	0.01709	0.02671	0.05033	0.06302	0.10763	0.16347	0.28559	0.38221	0.62145	0.98254	1.2121
16	0.00385	0.00950	0.01240	0.02274	0.03862	0.05153	0.08157	0.13653	0.23458	0.32547	0.48752	0.83211	1.03541
18	0.00321	0.00750	0.01133	0.02015	0.03054	0.04485	0.06862	0.12199	0.19582	0.29858	0.41252	0.69821	0.87521
20	0.00280	0.00648	0.00959	0.01718	0.02552	0.04069	0.05727	0.10462	0.16254	0.25895	0.35682	0.57211	0.73213
22.4	0.00234	0.00555	0.00844	0.01538	0.02247	0.03464	0.04839	0.08849	0.14542	-	0.31452	-	0.57652
25	-	-	0.00700	-	0.01882	-	0.04462	-	0.12254	-	0.26452	-	-
28	-	-	0.00578	-	0.01714	-	0.03727	-	0.09952	-	-	-	-

22.4	-	-	-	-	-	-	-	-	-	0.29858	-	0.74251	0.78251
25	-	0.00648	-	0.01635	-	0.03915	-	0.10292	-	0.23585	-	0.61425	0.63214
28	-	0.00530	-	0.01487	-	0.03238	-	0.08336	-	0.19858	0.29561	0.52652	0.54214
31.5	-	0.00470	0.00685	0.01207	0.01784	0.02822	0.04182	0.07243	0.1203	0.17342	0.24512	0.46521	0.47515
35.5	-	0.00425	0.00560	0.01040	0.01537	0.02530	0.03433	0.06283	0.08952	0.15245	0.18522	0.38214	0.37982
40	-	0.00330	0.00488	0.00899	0.01268	0.02229	0.03321	0.05443	0.07652	0.11255	0.17542	0.32154	0.33521
45	-	0.00299	0.00448	0.00781	0.01169	0.01894	0.02677	0.04769	0.06789	0.10879	0.14858	0.29542	0.29521
50	-	0.00225	0.00348	0.00575	0.00934	0.01353	0.02261	0.03663	0.05821	0.07521	0.13521	0.21321	0.22351
56	-	0.00200	0.00353	0.00483	0.00813	0.01165	0.01999	0.02855	0.05248	0.06458	0.12522	0.18124	0.19521
63	-	0.00165	0.00218	0.00410	0.00596	0.00986	0.01409	0.02376	0.03952	0.05582	0.07852	0.15213	0.16321
71	-	0.00120	0.00201	0.00365	0.00504	0.00732	0.01230	0.01920	0.02985	0.04321	0.06725	0.12543	0.15851
80	-	0.00105	0.00165	0.00270	0.00460	0.00627	0.01090	0.01590	0.02566	0.03876	0.05721	0.11341	0.12568
90	-	0.00077	0.00118	0.00220	0.00339	0.00560	0.00767	0.01450	0.01852	0.03288	0.04368	0.08658	0.11219
100	-	-	0.00105	-	0.00283	-	0.00698	-	0.01725	-	0.03859	-	0.08852
112	-	-	0.00085	-	0.00235	-	0.00569	-	0.01588	-	0.03452	-	-

100	-	-	-	0.00338	-	0.00669	-	0.01754	-	0.03989	-	0.11412	-
112	-	-	-	0.00275	-	0.00562	-	0.01570	-	0.03452	-	0.08925	0.10895
125	-	-	-	0.00253	0.00336	0.00476	0.00689	0.01313	0.01895	0.02788	0.04125	0.07632	0.08852
140	-	-	-	0.00208	0.00208	0.00423	0.00567	0.01167	0.01565	0.02654	0.03368	0.06521	0.07812
160	-	-	-	0.00174	0.00259	0.00344	0.00426	0.00975	0.01395	0.02148	0.02889	0.05821	0.06521
180	-	-	-	0.00157	0.00235	0.00310	0.00439	0.00844	0.01252	0.01986	0.02674	0.04995	0.05821
200	-	-	-	0.00125	0.00138	0.00236	0.00351	0.00575	0.00978	0.01458	0.02241	0.03798	0.05121
224	-	-	-	0.00096	0.00165	0.00180	0.00303	0.00568	0.00882	0.01214	0.01958	0.02925	0.03845
250	-	-	-	0.00080	0.00125	0.00167	0.00231	0.00448	0.00612	0.00958	0.01456	0.02598	0.03121
280	-	-	-	0.00060	0.00094	0.00139	0.00193	0.00356	0.00524	0.00852	0.01254	0.02154	0.02548
315	-	-	-	0.00063	0.00089	0.00114	0.00163	0.00306	0.00489	0.00698	0.00982	0.01854	0.02251
255	-	-	-	0.00052	0.00067	0.00090	0.00146	0.00292	0.00389	0.00621	0.00815	0.01785	0.01817
400	-	-	-	-	0.00065	-	0.00113	-	0.00319	-	0.00689	-	0.01612
450	-	-	-	-	0.00053	-	0.00096	-	0.00242	-	0.00575	-	-

Moment of Inertia (kg-m²)



Referred to High speed shafts - All Types

$$GD^2 \text{ (kg m}^2\text{)} = 4 \times \text{Mass Moment of Inertia (kg-m}^2\text{)}$$

i _N	6	7	8	9	10	11	12	13	14	15	16	17	18
5	0.03210	0.07301	-	0.20164	-	0.44666	-	1.29558	-	2.78122	-	6.23845	-
5.6	0.03066	0.06815	-	0.17197	-	0.37334	-	1.08260	-	2.31525	-	5.45825	6.65698
6.3	0.02655	0.05691	-	0.13619	-	0.30238	-	0.85225	-	1.85465	-	4.48644	5.70458
7.1	0.02288	0.04855	-	0.11345	-	0.25754	-	0.73660	-	1.50255	-	3.79528	4.73585
8	0.01816	0.03899	-	0.08898	-	0.18963	-	0.53120	-	1.15258	-	2.79852	3.91548
9	0.01466	0.03225	-	0.07972	-	0.17237	-	0.48036	-	1.06542	-	2.51858	2.91548
10	0.01044	0.02638	-	0.06833	-	0.14914	-	0.41223	-	0.92555	-	2.18525	2.64854
11.2	0.00923	0.02276	-	0.05976	-	0.12582	-	0.35289	-	0.81451	-	1.95542	2.22551
12.5	-	-	-	-	-	-	-	-	-	-	-	-	1.78312
14	-	-	-	-	-	-	-	-	-	-	-	-	-

12.5	0.00760	0.01612	-	0.04544	-	0.10233	-	0.27886	-	0.63854	-	1.61548	-
14	0.00739	0.01565	-	0.04466	-	0.09969	-	0.26978	-	0.58241	-	1.64851	1.77581
16	0.00633	0.01361	0.01740	0.03738	0.04988	0.08767	0.11200	0.23471	0.31357	0.50965	0.68465	1.45182	1.74565
18	0.00615	0.01336	0.01699	0.03719	0.04846	0.08590	0.10760	0.23305	0.28219	0.49555	0.67658	1.46822	1.50555
20	0.00570	0.01250	0.01460	0.03463	0.04055	0.07994	0.09266	0.21540	0.26333	0.45563	0.53531	1.39455	1.42588
22.4	0.00529	0.01155	0.01425	0.03233	0.03930	0.07333	0.09016	0.18197	0.25689	0.41256	0.51254	1.12511	1.35845
25	0.00460	0.01077	0.01309	0.02825	0.03687	0.06090	0.08360	0.14645	0.21778	0.33256	0.47551	0.93456	1.14255
28	0.00395	0.00885	0.01208	0.02366	0.03303	0.05202	0.07630	0.12905	0.19856	0.24212	0.41659	0.78955	0.93525
31.5	0.00336	0.00735	0.01105	0.01933	0.02966	0.04017	0.06327	0.09379	0.16458	0.19525	0.35545	0.52486	0.74859
35.5	0.00273	0.00596	0.00910	0.01538	0.02467	0.03265	0.05388	0.08451	0.15213	0.17552	0.28212	0.49581	0.54855
40	0.00195	0.00419	0.00750	0.01133	0.01977	0.02640	0.04177	0.07275	0.07854	0.15255	0.21551	0.45861	0.50255
45	0.00179	0.00395	0.00604	0.00987	0.01633	0.02220	0.03355	0.06269	0.09784	0.14099	0.17554	0.35846	0.44525
50	0.00130	0.00307	0.00433	0.00818	0.01166	0.01714	0.02766	0.04633	0.06514	0.11255	0.15612	0.28462	0.35825
56	0.00110	0.00250	0.00411	0.00687	0.01060	0.01482	0.02350	0.03450	0.05498	0.08845	0.14558	0.20065	0.27895
63	0.00089	0.00210	0.00315	0.00583	0.00860	0.01240	0.01840	0.03224	0.04865	0.07065	0.11225	0.19456	0.24855
71	0.00069	0.00160	0.00251	0.00464	0.00707	0.00990	0.01510	0.02620	0.03589	0.05625	0.09048	0.17515	0.18646
80	-	-	0.00215	-	0.00600	-	0.01285	-	0.02932	-	0.08056	-	0.14658
90	-	-	0.00166	-	0.00489	-	0.01033	-	0.23586	-	0.61812	-	-

80	-	0.00250	-	0.00579	-	0.01295	-	0.03522	-	0.08152	-	0.21545	-
90	-	0.00225	-	0.00553	-	0.01197	-	0.03333	-	0.07655	-	0.17425	0.21556
100	-	0.00203	0.00250	0.00460	0.00644	0.01133	0.01323	0.02894	0.03545	0.06565	0.08158	0.14698	0.19525
112	-	0.00156	0.00235	0.00403	0.00559	0.00907	0.01262	0.02437	0.03245	0.05212	0.07154	0.11525	0.17648
125	-	0.00150	0.00205	0.00349	0.00470	0.00744	0.01163	0.01963	0.02825	0.04325	0.06582	0.09546	0.15847
140	-	0.00119	0.00180	0.00275	0.00406	0.00677	0.00911	0.01607	0.27482	0.03454	0.05215	0.08845	0.09585
160	-	0.00099	0.00150	0.00190	0.00349	0.00425	0.00753	0.01157	0.02125	0.02623	0.04062	0.07123	0.08855
180	-	0.00080	0.00120	0.00188	0.00284	0.00406	0.00604	0.01040	0.01952	0.02485	0.37584	0.06354	0.07252
200	-	0.00055	0.00095	0.00139	0.00193	0.00301	0.00438	0.00835	0.01521	0.01765	0.02584	0.04985	0.06055
224	-	0.00044	0.00088	0.00103	0.00184	0.00252	0.00401	0.00693	0.01155	0.01595	0.02251	0.03354	0.04752
250	-	0.00040	0.00060	0.00093	0.00139	0.00213	0.00314	0.00633	0.00952	0.01158	0.01755	0.03125	0.03752
280	-	0.00035	0.00050	0.00070	0.00102	0.00164	0.00259	0.00472	0.00944	0.08753	0.01655	0.02584	0.03152
315	-	0.00030	0.00046	0.00059	0.00097	0.00138	0.00215	0.00404	0.00901	0.00659	0.01125	0.02245	0.27895
255	-	-	0.00039	-	0.00074	-	0.00163	-	0.00852	-	0.01125	-	0.02555
400	-	-	0.00029	-	0.00055	-	0.00139	-	0.00614	-	0.00752	-	-

Actual Ratios (i)



Helical Gear Units

MH1SH, MH2SH, MH3SH, MH4SH, MH2SV, MH3SV, MH4SV, MH2DH, MH3DH, MH4DH

Gear Unit Sizes													
Nominal Ratio	6	7	8	9	10	11	12	13	14	15	16	17	18
1.25	--	1.250	--	1.256	-	1.242	-	-	-	-	-	-	-
1.4	--	1.367	--	1.378	-	1.433	-	-	-	-	-	-	-
1.6	--	1.630	--	1.559	-	1.607	-	1.563	-	1.643	-	-	-
1.8	--	1.781	--	1.806	-	1.808	-	1.767	-	1.846	-	-	-
2	--	1.967	--	1.966	-	1.966	-	2.034	-	2.042	-	-	-
2.24	--	2.259	--	2.259	-	2.269	-	2.259	-	2.217	-	-	-
2.5	--	2.520	--	2.480	-	2.542	-	2.520	-	2.538	-	2.480	-
2.8	--	2.826	--	2.826	-	2.760	-	2.800	-	2.833	-	2.783	-
3.15	--	3.136	--	3.143	-	3.160	-	3.174	-	3.182	-	3.143	-
3.55	--	3.550	--	3.579	-	3.522	-	3.524	-	3.455	-	3.619	-
4	--	3.944	--	3.900	-	3.952	-	4.053	-	3.950	-	3.955	-
4.5	--	4.409	--	4.450	-	4.476	-	4.474	-	4.579	-	4.450	-
5	--	4.950	--	4.952	-	5.053	-	4.947	-	4.944	-	4.900	-
5.6	--	5.550	--	5.579	-	5.647	-	5.737	-	5.647	-	5.579	-
6.3	6.441	6.198	--	6.110	-	6.120	-	6.317	-	6.348	-	6.179	-
7.1	6.956	7.130	--	7.078	-	7.040	-	7.321	-	7.140	-	6.986	6.960
8	7.740	7.725	7.782	7.650	7.916	7.773	7.660	7.966	7.712	7.764	7.875	8.045	7.870
9	8.969	8.785	8.762	8.811	9.170	8.929	8.813	9.156	8.937	8.963	8.858	8.934	9.063
10	10.046	9.697	9.698	9.828	9.911	9.960	9.730	10.051	9.724	10.040	9.631	9.965	10.064
11.2	10.959	10.937	11.030	11.022	11.415	11.170	11.177	11.453	11.177	10.902	11.119	11.073	11.225
12.5	12.234	12.425	12.175	12.443	12.733	12.396	12.467	12.737	12.269	12.482	12.454	12.551	12.473
14	13.937	14.164	13.732	13.735	14.279	14.031	13.982	14.504	13.982	13.911	13.524	13.935	14.138
16	15.602	15.975	15.600	15.414	16.120	15.590	15.517	15.805	15.549	15.612	15.484	16.026	15.697
18	18.098	17.947	17.784	17.447	17.794	17.426	17.563	18.034	17.706	17.681	17.257	17.691	18.053
20	19.542	19.515	20.057	19.314	19.970	19.564	19.515	20.070	19.295	19.958	19.367	19.565	19.928
22.4	21.634	22.213	22.533	21.758	22.604	21.218	21.813	22.609	22.016	21.336	21.933	22.090	22.038
25	--	25.028	24.501	24.549	25.023	25.406	24.489	25.615	24.501	25.442	24.758	25.739	24.883
28	--	27.956	27.890	27.129	28.188	28.182	26.560	28.684	27.601	27.809	26.468	28.951	28.994
31.5	--	31.336	31.423	30.186	31.804	30.530	31.802	31.003	31.271	30.703	31.560	31.500	32.611
35.5	--	35.278	35.100	34.979	35.147	34.723	35.276	35.708	35.016	35.271	34.497	36.208	35.483
40	--	38.979	39.343	39.178	39.108	38.325	38.216	39.829	37.847	39.342	38.088	39.745	40.786
45	--	43.758	44.293	42.740	45.316	43.227	43.464	44.667	43.592	44.121	43.754	45.292	44.771
50	--	50.207	48.939	47.711	50.757	49.108	47.973	50.426	48.623	48.965	48.804	50.368	51.018
56	--	54.176	54.939	54.356	55.371	55.982	54.109	55.662	54.529	55.422	54.732	57.357	56.737
63	--	61.903	63.037	60.846	61.812	63.139	61.471	62.468	61.559	61.580	60.741	62.503	64.609
71	--	69.709	68.020	70.581	70.420	70.934	70.075	70.708	67.951	68.834	68.752	71.317	70.405
80	--	77.479	77.721	76.215	78.829	77.129	79.034	78.274	76.260	77.279	76.391	79.368	80.334
90	--	87.863	87.522	84.373	91.441	87.796	88.792	88.177	86.319	86.646	85.389	89.410	89.404
100	--	--	97.277	95.325	98.740	98.918	96.546	99.487	95.555	96.769	95.865	97.921	100.715
112	--	--	110.314	106.480	109.309	110.494	109.898	109.944	107.644	111.318	107.485	113.431	110.302
125	--	--	--	119.352	123.498	123.850	123.820	122.334	121.451	120.595	120.043	122.601	127.773
140	--	--	--	134.368	137.950	139.433	138.310	141.755	134.218	137.156	138.091	141.210	138.103
160	--	--	--	152.115	154.625	154.060	155.029	158.774	149.343	151.385	149.599	157.507	159.064
180	--	--	--	173.411	174.080	172.947	174.534	173.208	173.052	170.745	170.143	176.638	177.421
200	--	--	--	185.303	197.072	198.438	192.843	193.355	193.828	193.978	187.794	199.413	198.971
224	--	--	--	209.918	224.662	214.125	216.485	220.283	211.449	221.129	211.811	220.118	224.626
250	--	--	--	229.555	240.069	244.665	248.393	246.586	236.043	249.400	240.631	247.034	247.949
280	--	--	--	265.800	271.959	275.517	268.029	286.040	268.917	280.190	274.312	279.617	278.268
315	--	--	--	295.537	297.399	306.226	306.258	308.872	301.027	304.660	309.383	309.537	314.971
355	--	--	--	329.849	344.357	347.266	344.877	341.932	349.191	346.794	347.578	348.699	348.674
400	--	--	--	-	382.882	-	383.316	-	377.064	-	377.933	-	392.787
450	--	--	--	-	427.334	-	434.688	-	417.424	-	430.200	-	-

Actual Ratios (i)



Bevel Helical Gear Units

MB2SH, MB3SH, MB4SH, MB2SV, MB3SV, MB4SV, MB2DH, MB3DH, MB4DH

Gear Unit Sizes													
Nominal Ratio	6	7	8	9	10	11	12	13	14	15	16	17	18
5	5.047	4.911	--	4.946	-	4.929	-	5.000	-	5.060	-	4.969	-
5.6	5.697	5.601	--	5.500	-	5.643	-	5.668	-	5.682	-	5.612	5.612
6.3	6.289	6.339	--	6.263	-	6.289	-	6.293	-	6.169	-	6.463	6.378
7.1	7.058	7.044	--	6.825	-	7.058	-	7.237	-	7.054	-	7.062	7.237
8	7.989	7.895	--	7.788	-	7.993	-	7.989	-	7.846	-	7.706	7.955
9	8.835	8.685	--	8.703	-	8.751	-	8.656	-	8.811	-	8.703	8.703
10	9.753	9.831	--	9.911	-	9.753	-	9.610	-	9.566	-	10.022	9.890
11.2	10.945	10.923	--	10.800	-	10.945	-	11.053	-	10.938	-	10.951	11.223
12.5	12.558	12.425	--	12.706	-	12.503	-	12.248	-	12.319	-	12.849	12.500
14	14.271	14.119	--	14.439	-	14.208	-	13.919	-	13.999	-	14.040	14.388
16	16.016	15.688	15.575	15.734	15.892	15.945	15.883	16.350	16.256	16.006	15.868	15.954	15.815
18	17.939	17.316	17.699	17.550	18.059	17.786	18.049	17.947	18.473	17.928	18.032	17.795	17.971
20	19.569	19.530	19.697	19.682	20.384	19.946	19.960	20.452	19.960	20.199	19.856	19.773	20.045
22.4	21.846	22.188	21.740	22.219	22.737	22.136	22.263	22.744	21.910	22.289	22.240	22.413	22.273
25	24.888	25.293	24.521	24.526	25.499	25.055	24.967	25.900	24.967	24.841	25.057	24.884	25.247
28	27.860	28.527	27.857	27.526	28.786	27.839	27.708	28.224	27.766	27.509	27.650	28.618	28.030
31.5	30.884	30.822	31.756	31.061	31.775	31.478	31.363	32.277	31.619	31.877	30.815	31.205	32.237
35.5	34.476	35.016	35.816	35.066	35.661	34.934	34.848	35.895	34.455	35.177	34.125	35.372	35.150
40	39.278	39.917	38.698	38.707	40.241	39.542	39.403	40.875	39.403	39.203	39.544	39.272	39.844
45	43.968	45.020	43.964	43.440	45.430	43.935	43.729	44.542	43.820	43.414	43.637	45.165	44.237
50	48.781	49.574	50.117	48.072	50.147	49.108	49.496	50.765	49.900	48.688	48.632	48.773	50.876
56	54.605	55.913	56.525	53.950	56.279	54.565	54.996	55.318	54.376	53.918	53.855	56.092	54.939
63	63.342	62.815	62.242	61.066	62.279	61.158	61.471	63.120	61.972	61.883	60.398	61.920	63.184
71	74.201	73.584	70.200	71.534	69.895	71.642	68.301	73.940	67.532	72.492	66.885	72.535	69.749
80	--	78.139	78.867	76.321	79.114	77.190	76.554	79.763	77.055	78.787	76.767	80.878	81.706
90	--	89.656	92.387	85.198	92.676	87.693	89.678	90.047	90.265	87.437	89.927	89.944	91.104
100	--	97.693	98.106	96.864	98.877	96.156	96.623	98.884	97.373	97.674	97.736	100.267	101.316
112	--	107.942	112.566	108.493	110.378	106.132	109.770	110.296	109.927	108.947	108.466	110.064	112.945
125	--	121.175	122.657	118.356	125.491	119.705	120.363	123.693	120.716	122.180	121.166	125.423	123.980
140	--	139.035	135.525	132.122	140.558	135.992	132.850	139.642	134.648	135.594	135.150	139.482	141.281
160	--	153.152	152.139	149.589	153.336	151.293	149.840	156.335	151.002	154.422	151.565	158.836	157.117
180	--	175.725	174.563	166.988	171.171	171.879	170.228	176.492	170.472	171.376	168.206	173.084	178.918
200	--	189.616	192.287	190.245	193.799	195.937	189.381	194.817	190.850	193.978	191.562	200.751	194.968
224	--	220.911	220.629	209.928	216.341	212.803	215.149	221.876	215.458	215.444	212.593	218.759	226.133
250	--	238.375	238.070	239.165	246.471	242.589	245.263	244.913	237.829	243.858	240.631	252.372	246.418
280	--	272.374	277.362	267.722	271.971	273.604	266.375	274.861	270.861	270.953	267.260	275.012	284.281
315	--	306.720	299.287	310.557	309.849	307.382	303.659	311.114	298.985	303.693	302.507	313.795	309.783
355	--	--	341.974	-	346.846	-	342.482	-	335.545	-	336.119	-	353.471
400	--	--	385.097	-	402.341	-	384.763	-	379.802	-	376.733	-	-
450	--	--	-	-	-	-	-	-	-	-	-	-	-



All Types

Net Weight for Gear Units in kg (approx.)

Unit Type	6	7	8	9	10	11	12	13	14	15	16	17	18
MH1SH	---	307	---	490	---	725	---	1090	---	1800	---	2600	---
MH2SH	255	345	419	535	630	815	1030	1305	1625	2036	2530	3240	3585
MH2SV	255	345	419	535	630	815	1030	1305	1625	2036	2530	3240	3585
MH2DH	247	331	347	535	630	815	1030	1305	1625	2036	2530	3240	3585
MH2HH	236	322	337	515	600	780	990	1235	1536	1926	2395	3083	3408
MH3SH	---	388	452	575	680	855	1075	1425	1708	2145	2610	3410	3750
MH3SV	---	388	452	575	680	855	1075	1425	1708	2145	2610	3410	3750
MH3DH	---	381	439	575	680	855	1075	1425	1708	2145	2610	3410	3750
MH3HH	---	371	428	555	650	820	1035	1355	1619	2035	2475	3253	3573
MH4SH	---	---	---	600	680	905	1070	1475	1720	2180	2650	3470	3810
MH4SV	---	---	---	600	680	905	1070	1475	1720	2180	2650	3470	3810
MH4DH	---	---	---	600	680	905	1070	1475	1720	2180	2650	3470	3810
MH4HH	---	---	---	580	650	870	1030	1405	1631	2070	2515	3313	3633
MB2SH	285	398	---	660	---	1010	---	1550	---	2375	---	3800	4170
MB2SV	285	398	---	660	---	1010	---	1550	---	2375	---	3800	4170
MB2DH	278	387	---	660	---	1010	---	1550	---	2375	---	3800	4170
MB2HH	269	378	---	630	---	950	---	1470	---	2265	---	3643	3993
MB3SH	268	368	425	540	660	860	1075	1365	1710	2180	2665	3485	3790
MB3SV	268	368	425	540	660	860	1075	1365	1710	2180	2665	3485	3790
MB3DH	265	359	430	540	660	860	1075	1365	1710	2180	2665	3485	3790
MB3HH	256	350	421	520	630	825	1035	1295	1621	2070	2530	3328	3613
MB4SH	---	400	464	600	695	890	1075	1495	1760	2280	2710	3590	3825
MB4SV	---	400	464	600	695	890	1075	1495	1760	2280	2710	3590	3825
MB4DH	---	392	515	600	695	890	1075	1495	1760	2280	2710	3590	3825
MB4HH	---	384	504	580	665	855	1035	1425	1689	2170	2710	3433	3648

Oil Capacities* of Gear Units Oil Capacities for Horizontal Units in liters (approx.)

Unit Type	6	7	8	9	10	11	12	13	14	15	16	17	18
MH1SH	--	15	--	25	--	30	--	40	--	70	--	95	--
MH2SH	15	15	25	30	35	45	55	75	95	105	150	190	205
MH2DH	15	15	25	30	35	45	55	75	95	105	150	190	205
MH2HH	15	15	25	30	35	45	55	75	95	105	150	190	205
MH3SH	--	20	30	35	40	50	55	80	100	125	165	195	220
MH3DH	--	20	30	35	40	50	55	80	100	125	165	195	220
MH3HH	--	20	30	35	40	50	55	80	100	125	165	195	220
MH4SH	--	--	--	35	40	45	60	80	105	125	160	200	225
MH4DH	--	--	--	35	40	45	60	80	105	125	160	200	225
MH4HH	--	--	--	35	40	45	60	80	105	125	160	200	225
MB2SH	15	20	--	35	--	55	--	85	--	120	--	210	240
MB2DH	15	20	--	35	--	55	--	85	--	120	--	210	240
MB2HH	15	20	--	35	--	55	--	85	--	120	--	210	240
MB3SH	12	18	25	30	35	45	52	80	90	110	150	190	205
MB3DH	12	18	25	30	35	45	52	80	90	110	150	190	205
MB3HH	12	18	25	30	35	45	52	80	90	110	150	190	205
MB4SH	--	20	30	35	40	50	60	85	105	125	160	200	225
MB4DH	--	20	30	35	40	50	60	85	105	125	160	200	225
MB4HH	--	20	30	35	40	50	60	85	105	125	160	200	225

Oil Capacities for Vertical Units in Liters (approx.)

Unit Type	6	7	8	9	10	11	12	13	14	15	16	17	18
MH2SV	15	20	25	35	40	40	55	75	90	115	135	190	195
MH3SV	--	25	35	35	40	50	55	75	100	125	150	195	205
MH4SV	--	--	--	40	40	55	60	80	105	125	160	195	200
MB2SV	20	25	--	40	--	60	--	90	--	120	--	205	235
MB3SV	15	20	25	35	40	40	55	75	95	115	135	190	200
MB4SV	--	25	35	40	40	55	60	80	105	125	165	195	200

*NOTE : Oil capacities mentioned in the tables are indicative. It is recommended to maintain oil up to the oil level indicator. Requirement of oil quantity varies, sometime substantially, depending on reduction ratio and special mounting of Gearboxes.

Approved Lubricants



Premium Stephan gear units are supplied without oil. Before operating it is essential to ensure that they are filled to correct oil levels as indicated by markings on dipsticks, with lubricants recommended by Premium Stephan. Overfilling can cause overheating and leakage.

Correct lubricant is most important and it should be noted that EP oils are recommended in all instances.

Lubricants listed are suitable for normal ambient temperatures and operating duties. All gear units in this range are designed to operate under full load at a maximum temperature of 95°C.

In certain applications maximum temperature may be exceeded by the use of special lubricants. Such cases, or others where extreme conditions, are to be met, e.g. low temperature operation or unusual loading conditions, should be referred, with full details, to Premium for recommendations.
















Recommended lubricants are based on information provided by oil suppliers and responsibility cannot be accepted for the quality or suitability of oil supplied, nor to any mechanical defect resulting from unsatisfactory lubrication due to the use of sub-standard oil.

Lubricant Grade selection guideline based on ambient temperature

Lubricant	Ambient Temp, °C		
	ISO VG 220	ISO VG 320	ISO VG 460
Mineral Oil (EP additives)	0°C - 20°C	10°C - 45°C	As per Premium Stephan Recommendation
Synthetic Oil	0°C - 30°C	10°C - 50°C	-

Lubricant specification (CLP DIN 51517)

If the gear drive is started when the ambient temperature is below -7°C (20°F) use a lube oil heater.

Viscosity mm/s (cSt) at 40°C															
	Bharat Petroleum	Indian Oil	Hindustan Petroleum	BP Energol	Castrol	SPARAN	Mobilgear	Shell Omala Oil	Cepsa Engranjes	Klüberoil GEM 1	Aral	Chevron Gear Compound	Tribo	Balmer Lawrie	Blasia
VG 460	Amocam Oil 460	Servomesh SP 460	Parthan EP-460	GR-XP 460	Alpha MW 460	Spartan EP 460	Mobilgear 634	Omala 460	HP 460	460	Degol BG 460	EP 460	Trebol 1100/460	Balmerol Protomac 460 SP	Blasia 460
VG 320	Amocam Oil 320	Servomesh SP 320	Parthan EP-320	GR-XP 320	Alpha MW 320	Spartan EP 320	Mobilgear 632	Omala 320	HP 320	320	Degol BG 320	EP 320	Trebol 1100/320	Balmerol Protomac 320 SP	Blasia 320
VG 220	Amocam Oil 220	Servomesh SP 220	Parthan EP-460	GR-XP 220	Alpha MW 220	Spartan 220	Mobilgear 930	Omala 220	HP 220	220	Degol BG 220	EP 220	Trebol 1100/220	Balmerol Protomac 220 SP	Blasia 220

Product Safety



Product Safety Information :

General - The following information is important in ensuring safety. It must be brought to the attention of personnel involved in the selection of Premium Stephan power transmission equipment, those responsible for the design of the machinery in which it is to be incorporated and those involved in its installation, use and maintenance.

Premium Stephan power transmission equipment will operate safely provided it is selected, installed, used and maintained properly. As with any power transmission equipment proper precautions must be taken as indicated in the following paragraphs, to ensure safety.

Potential Hazards - these are not necessarily listed in any order of severity as the degree of danger varies in individual circumstances. It is important therefore that the list is studied in its entirety:-

1) Fire/Explosion

- (a) Oil mists and vapour are generated within gear units. It is therefore dangerous to use naked lights in the proximity of gearbox openings, due to the risk of fire or explosion.
- (b) In the event of fire or serious overheating (over 300 °C), certain materials (rubber, plastics, etc.) may decompose and produce fumes. Care should be taken to avoid exposure to the fumes and burned or overheated plastic/rubber materials should be handled with rubber gloves.

2) Guards - Rotating shafts and couplings must be guarded to eliminate the possibility of physical contact or entanglement of clothing. Guards should be of rigid construction and firmly secured.

3) Noise - High speed gearboxes and gearbox driven machinery may produce noise levels which are damaging to the hearing with prolonged exposure. Ear defenders should be provided for personnel in these circumstances. Reference should be made to the Department of Employment Code of Practice for reducing exposure of persons to noise.

4) Lifting - Where provided (on larger units) only the lifting points or eyebolts must be used for lifting operations (see maintenance manual or general arrangement drawing for lifting point positions). Failure to use the lifting points provided may result in personal injury and/or damage to the product or surrounding equipment. Keep clear of raised equipment.

5) Lubricants and Lubrication

- (a) Prolonged contact with lubricants can be detrimental to the skin. The manufacturer's instruction must be followed when handling lubricants.
- (b) The lubrication status of the equipment must be checked before commissioning. Read and carry out all instructions on the lubricant plate and in the installation and maintenance literature. Heed all warning tags. Failure to do so could result in mechanical damage and in extreme cases risk of injury to personnel.

6) Electrical Equipment - Observe hazard warnings on electrical equipment and isolate power before working on the gearbox or associated equipment, in order to prevent the machinery being started.

7) Installation, Maintenance and Storage

- (a) In the event that equipment is to be held in storage, for a period exceeding 6 months, prior to installation or commissioning, Premium Stephan must be consulted regarding special preservation requirements. Unless otherwise agreed, equipment must be stored in a building protected from extremes of temperature and humidity to prevent deterioration. The rotating components (gears and shafts) must be turned a few revolutions once a month (to prevent bearings brinelling).

- (b) External gearbox components may be supplied with preservative materials applied, in the form of a "waxed" tape or wax film preservative. Gloves should be worn when removing these materials. The former can be removed manually, the latter using white spirit as a solvent. Preservatives applied to the internal parts of the gear units do not require removal prior to operation.

- (c) Installation must be performed in accordance with the manufacturer's instructions and be undertaken by suitably qualified personnel.

- (d) Before working on a gearbox or associated equipment, ensure that the load has been removed from the system to eliminate the possibility of any movement of the machinery and isolate power supply. Where necessary, provide mechanical means to ensure the machinery cannot move or rotate. Ensure removal of such devices after work is complete.

- (e) Ensure the proper maintenance of gearboxes in operation. Use only the correct tools and Premium Stephan approved spare parts for repair and maintenance. Consult the Maintenance Manual before dismantling or performing maintenance work.

8) Hot Surfaces and Lubricants

- (a) During operation, gear units may become sufficiently hot to cause skin burns. Care must be taken to avoid accidental contact.
- (b) After extended running the lubricant in gear units and lubrication systems may reach temperatures sufficient to cause burns. Allow equipment to cool before servicing or performing adjustments.

9) Selection and Design

- (a) Where gear units provide a holdback facility, ensure that back-up systems are provided. Failure of the holdback device would endanger personnel or result in damage.
- (b) The driving and driven equipment must be correctly selected to ensure that the complete machinery installation will perform satisfactorily, avoiding system critical speeds, system torsional vibration, etc.
- (c) The equipment must not be operated in an environment or at speeds, powers, torques or with external loads beyond those for which it was designed.
- (d) As improvements in design are being made continually the contents of this catalogue are not to be regarded as binding in detail, and drawings and capacities are subject to alterations without notice.

The above guidance is based on the current state of knowledge and our best assessment of the potential hazards in the operation of the gear units. Any further information or clarification required may be obtained by telephoning or writing to:

Premium Stephan Hameln

Branch Office of Premium Stephan B.V.
Ohsener Str. 79-83
D - 31789 Hameln

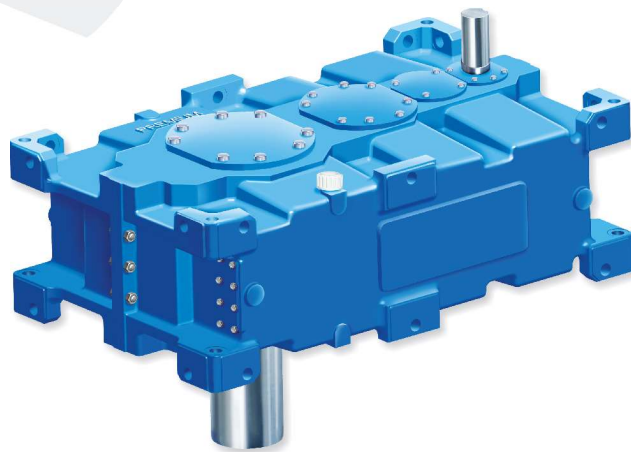
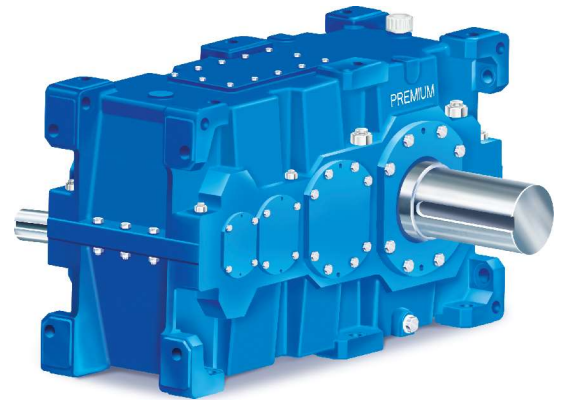
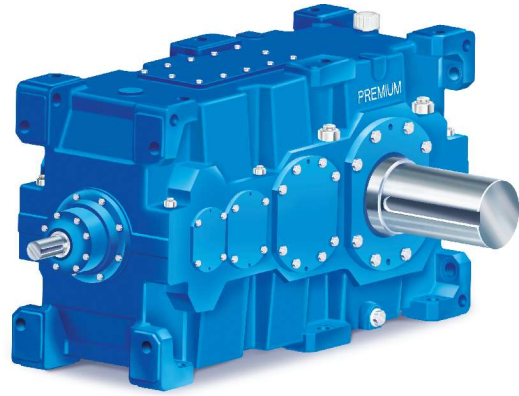
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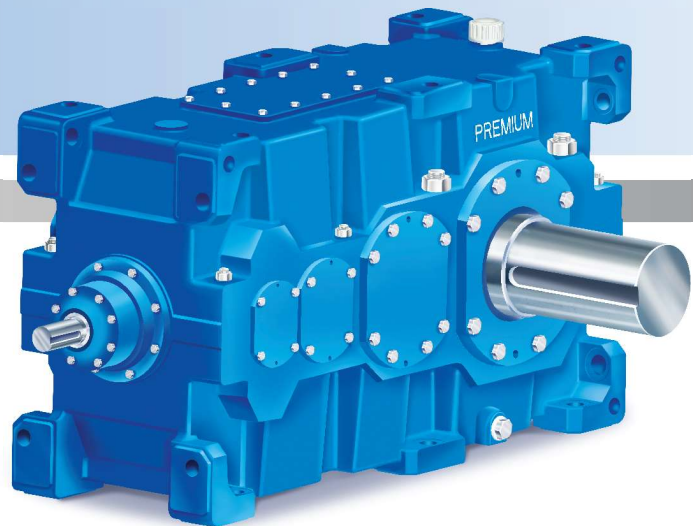
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