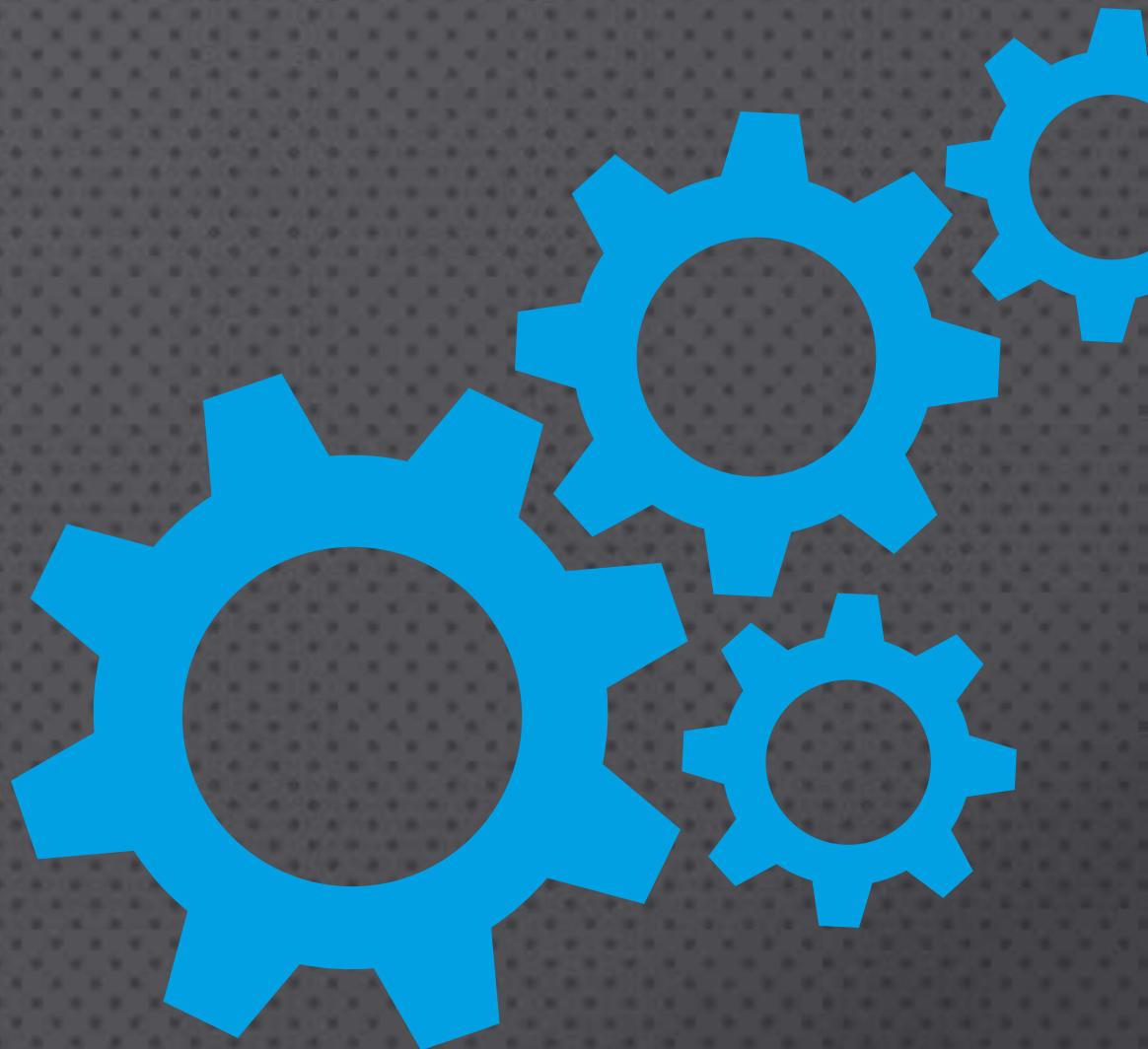


KAVITSU

Excellence In Gear Technology



PLANETARY DRIVE'S
TECHNICAL CATALOGUE

www.kavitsu.in

Sugar Mill Drive



Power : 75 Hp to 500 Hp
Torque : 200 KNm To 2000 KNm
Ratio : 157.14 To 320

- Square end shaft & maximum load distribution.
- Rigid foot mounting Construction.
- High ratio for torque transmission.

Planetary Geared motors



Power : 0.25 HP To 10HP
Torque : 20 Nm to 10000 Nm
Ratio : 3.19 To 15000

- Squirrel Cage induction motor with IEC.
- Available in Flange, flange & agitator.
- Can be operated by electric and hydraulic motors.

Parallel Shaft Helical



Power : 5 HP To 200 HP
Torque : 500 Nm To 1500 Nm
Ratio : 2 To 350

- Used for Hoist application.
- Split type housing with M.S.Fabricate.
- Available in combination of planetary and bevel.
- Low noise level of operation.

Clarifier Drive



- Used in Water treatment plant.
- Soft and raw water treatment plant.
- Capacity up to 50 meters.

Slewring Bearing



40 mm to 3200 mm

- External, Internal and Ungeared available.
- Flange and solid sleeve bearings.
- Used in Earthmoving, Pharma, Solar, Defence, rolling mill sectors.

Creep Drive



Available in 100, 160, 200, 250 & 300 MM
Drum diameter:
Ratio 10:1 available

- Used in crane for creep speed.

Combined Bearing



Size Ø52.5 mm To Ø149 mm

- It is a combination of main bearing and axial bearing which takes the radial and axial load well in proportion.
- The design incorporated in KAVITSU combined bearings gives the best resolution of the external load into its components.
- Used in Pallet Stacker, Palletlift, Forklift, eccentric lifting table.

Winch Drive



Lifting Capacity 2 Kn TO 25 Kn
Input Power 0.18 Kw To 30 Kw

- Most reliable brand in material handling sector
- Compact in size
- Available with break motor

Shaft Mounted Speed Reducer



Power : 55 Kw To 40 Kw
Torque : 100 To 5000 Nm
Ratio : 5.13.20.

- Direct mounting on shaft with torque arrester.
- Ground gear helical gear train.

We are happy to present you our catalogue for Kavitsu Planetary Gearboxes.

Kavitsu is the pioneer in planetary gearbox technology. For the past two decades, it has earned its name for supply of high quality and reliable gear boxes. We make use of latest technology in manufacturing of our gearboxes. Our research and development team continuously strives hard to bring innovative products, results of which is a vast range of product.

This, in addition to their excellent performance to price ratio, makes KAVITSU planetary gearboxes extremely attractive alternatives in the sector of power transmission.

All this is made possible by a company characterized by:

- a) Product development is assured by highly professional & competent personnel using state-of-the art design systems.
- b) The use of sophisticated machinery noted for its significant production flexibility guarantees a rapid flow of components & top level quality.
- c) All parts are scrupulously checked on sophisticated equipment as part of the in-house Quality Control Department.

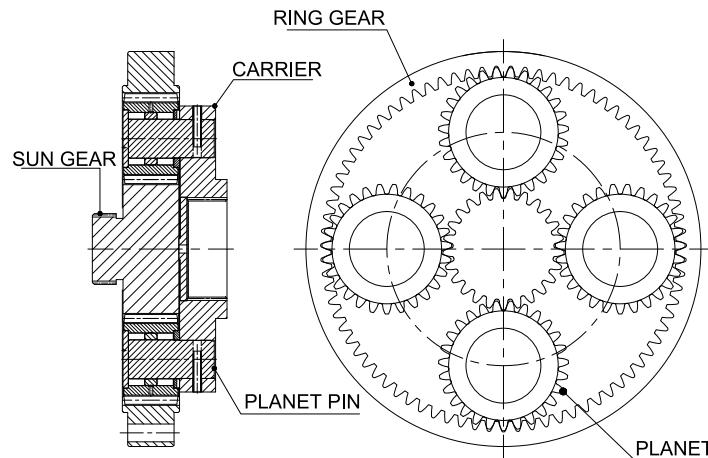
● SYMBOL OF UNIT OF MEASURE:

- Fh1-LIFETIME FACTOR FOR BEARING SHAFT
- Fh2-CALCULATION
- Fh-LIFETIME FACTOR FOR GEAR BOX CALCULATION
- fs-SERVICE FACTOR
- ft-THERMAL FACTOR
- ftp-TEMPERATURE FACTOR
- fv-SPEED FACTOR
- h-LIFETIME IN HOURS
- I-REDUCTION RATIO
- Kr-RADIAL LOAD FACTOR
- M2-REFERANCE TORQUE (Nm)
- Mn2-NOMINAL TORQUE (Nm)
- M2 max-GEARBOX MAX. OUTPUT TORQUE (Nm)
- Mb-RATED BRAKE TORQUE (Nm)
- Mr2-REQUIRED TORQUE AT GEARBOX OUTPUT
- Mc2-CALCULATED TORQUE AT GEARBOX OUTPUT
- n1-ANGULAR SPEED OF GEARBOX INPUT (min-1)
- n2-ANGULAR SPEED OF GEARBOX OUTPUT (min-1)
- P1-MAXIMUM TRANSMISSIBLE POWER AT GEARBOX INPUT
- P2-MAXIMUM TRANSMITTED POWER AT GEARBOX OUTPUT
- Pt-THERMAL POWER (Kw)
- ηd-DYNAMIC EFFIENCY (%)



1.0 Basic Principle:

Planetary gear system is a system in which the planet gears revolve around the sun gear, and both of them are rotating on a ring gear. The planetary gear is fixed upon a carrier through planet pins which gives the output to either the output shaft or the sun gear of next stage of planetary system.



2.0 SPECIFICATIONS:

The series consist of a range of multi-purpose planetary gearboxes that can be operated by either hydraulic or electric motors. Basic features are:

- 20 different models
- Output torque up to 50 00 000 Nm
- Transmissible power up to 2000 kW
- Ratio from 3:0:1 to 45000:1 or more also possible
- Modular design

3.0 VERSIONS:

- In line
- Right angle (with bevel gear pair)
- Reduction stages ranging from 1 to 4 or more also possible
- With Flange-Mounted, Foot-Mounted & Shaft- Mounted.
- Output shaft with keyway, splined , splined hallow shaft, hallow shaft-mounting with shrink disc

3.1 Input adaptors for:

- Electric motors to IEC standards design B5
- Hydraulic motors by major manufacturers & according customers requirements. Its value is a function of the transmitted power, the speed the reduction ratio and oil temperature and viscosity.

3.2 High Speed Shaft:

- Geared motor with KIVI make electric motors
- Hydraulic motors.
- Negative hydraulic parking brakes for operations by hydraulic motors.

3.3 Output shaft accessories :

- Flanges
- Pinion
- Splined bars
- Shrink disc

3.4 More design feature

- High ratio of transmissible torque to overall dimensions
- High radial & axial load capacity of output shaft. Thanks to tapered roller bearings fitted on request.
- High efficiency
- Inner parts are connected using grooved sections instead of tabs
- Planetary gears of reduction stages mounted to floating holders to ensure maximum load distribution among planetary gears
- Housing made of spheriodal cast iron.

4.0 OUTPUT TORQUE:

4.1 Reference torque M2 [Nm] :

Indicative output torque to easily establish the performance class of each gearbox basic size.

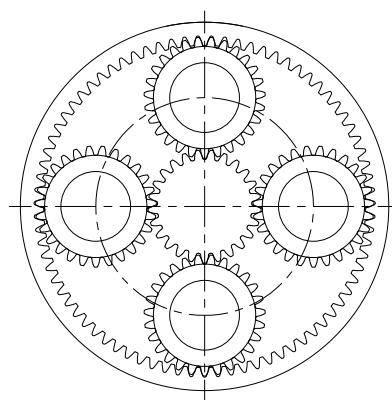
4.2 Nominal torque Mn2 [Nm] :

Torque transmitted at the output at uniform continuous load , services factor FS =1 for different fixed values of the life factor (n2.h).

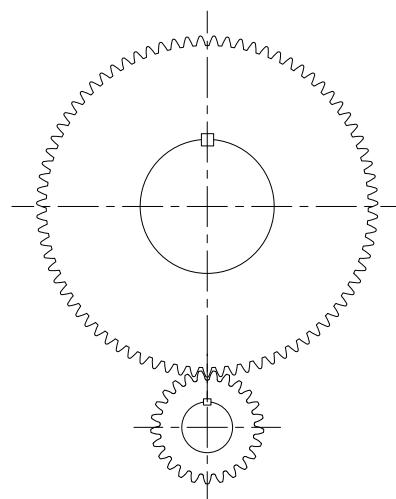
4.3 High Load Ability :

Eight transmissions contact points can afford high torque & great impact. All gears are hardened with 45HRC.Those precision machine gears makes running noiseless.also allow high radial loads on the output shaft because planetary gear can share output radial force stably point contact easily broken the teeth by great impact on the contrary.

Normal helical gears only have one point contact.



(a) PLANETARY GEAR TRAIN



(b) HELICAL GEAR TRAIN

Because of each planetary gear can contact more teeth at the same time it cause the planetary gear can afford high torque, small volume & light weight also can help designer do the good job, for helical/worm gear only have one contact tooth & cant afford great impact torque easy to break the gears during heavy transmissions.

Technical Data

Type of Gear	Planetary Gear	Helical Gear
Ratio	5.25	5.25
Output torque Nm	10000	10000
Module	4	4
Teeth Z1	15	15
Teeth Z2	63	63
Lead Angle	-	20
Gear width	60	60
Volume cm3	6000	13000
Weight in KG	145	320

5.0 POWER :

5.1 Input rated power P1 [kW]:

Power P1 indicated in the specification table for each gearbox size is either the intermitted or continuous power which can be transmitted at the gear box input under the following conditions: Input speed- n1, T theoretical duration 1000h, Service factor FS=1 Check that the formula here below is always satisfied: $P1 \times fs \leq p1$

5.2 Output power P2 [kW]:

This value is power transmitted at the gear box output . It can be calculated with the following formulas:
 $P2 = P1 \cdot Hd$

6.0 THERMAL POWER PT [kW]:

This value indicates the gearbox's thermal capacity (refer to the technical data concerning the gearboxes under consideration) & is the power that can be transmitted under continuous duty at an input speed n1 of 1500 min-1 at an ambient temperature of 20

For a duty cycle with short operating periods and sufficiently long pauses to allow the unit to cool, thermal power is not particularly important and therefore it does not need to be taken into consideration.

At an ambient temperature other than 20° C under intermitten duty conditions and with an input speed n1 other than 1500 min -1 it is possible to calculate the Pt value according to the thermal factor fv, shown in table. Make sure that the following condition is always satisfied.

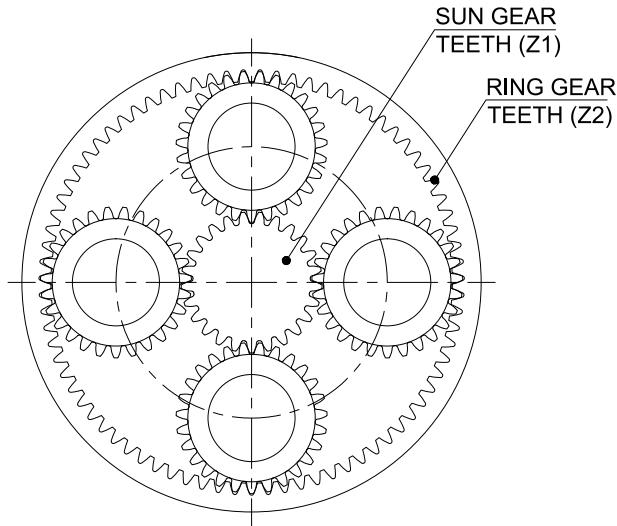
The intermittence factor (I)% is obtained from the ratio between perating time under load tf and total (tf + tr), where rest time tr, expressed as a percentage.

$$I = tf / (tf + tr) * 100$$

NOTE : The thermal power values indicated in the selection charts for each size apply to the versions without negative multidisc brake.

7.0 REDUCTION RATIO (I):

7.1 Calculated Ratio of planetary stage :



$$I = (Z_2/Z_1) + 1$$

I- Ratio.

Z1- Sun gear teeth.

Z2- Ring Gear teeth.

7.2 This is the ratio of gearbox input speed to gearbox output speed.

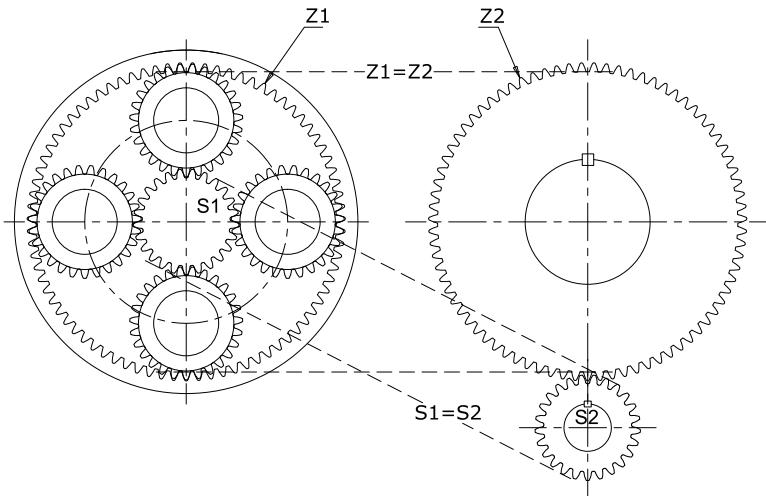
$$i = n_1/n_2$$

7.3 Advantages for planetary gear train over helical:

I- We can get 20% more ratio in planetary gear box than same main gear teeth & pinion gear combination in helical gear box. As show in below fig.

a) $I_1 = (Z_1/S_1) + 1 = (60/12) + 1 = 6$

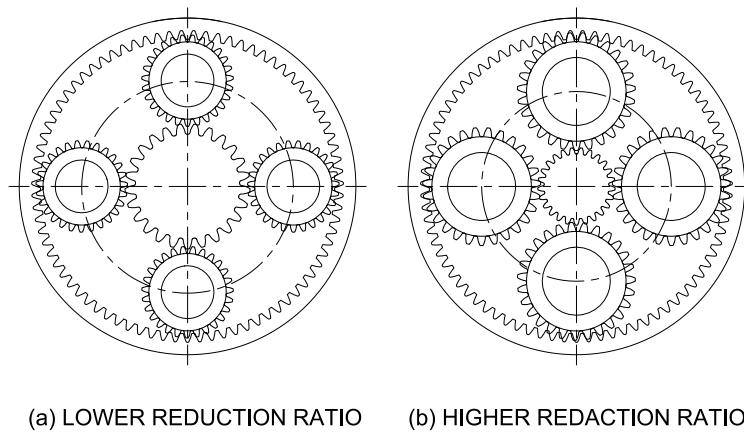
b) $I_2 = (Z_2/S_2) = (60/12) = 5$



II) Planetary gear can easily reach high reduction ratio by increase planetary reduction stages.
i.e. if we need 30.73 ratio,then only need combine first stage ratio of 5.43:1 & second stage ratio of 5.66:1 then we will get 30.73 ratio. It very easy for assembly & maintenance.

7.4 We can modify reduction ratio by replace sun gear & planets.

There fore no need to change ring gear :



8.0 EFFICIENCY:

8.1 Dynamic efficiency η_d

Obtained from the ratio of output power P_2 to input power P_1 according to the following equation:

$$\eta_d = P_2 / P_1 \times 100\%$$

8.2 Maximum Stage wise efficiency:

Stages	Reduction ratio	efficiency
1st	3.38 To 7.20	95%
2nd	10.71 To 48.17	90%
3rd	53.15 To 404.61	85%
4th	442.88 To 2913.2	81%

9.0 ANGULAR SPEED:

9.1 Input speed:

- n_1 [min⁻¹]

Refer to the speed of motor if motor is directly connected to gearbox. In the case of an indirect drive, this value is the speed of the motor divided by the transmission ratio of the indirect drive accessories (Belt, Chain, Gears etc.) Input speed should not exceed the value indicated in the table on gearbox technical features. As for continuous operation in industrial applications, we recommend that speed of 1500 min⁻¹ be never exceeded.

9.2 Output speed n_2 [min⁻¹]:

Calculated from input speed n_1 and transmission ratio i according to the following equation.

- $n_2 = n_1/i$

10.0 SERVICE FACTOR f_s :

Factor depends on the application type. This factor takes into consideration (with sufficient approximation) load variations which the gearbox may undergo for a specific type of duty . It also takes into consideration the selected type of the drive unit

Table gives indications for the services factor to be selected according to the applications & operation type.

11.0. LIFE FACTOR (F_{h1}, F_{h2}):

Factor resulting by multiplying angular speed at input (n_1) or output (n_2) by actual operating working hours h , break times excluded.

- $F_{h1} = (n_1 \times h)$
- $F_{h2} = (n_2 \times h)$

Life factor is directly proportional to gearbox rpm's during the whole duty time.

12.0 GEAR BOX SELECTION :

a) Determine the following according to the required application.

- Service factor f_s
- Required gearbox working life h
- Required drive unit (Hydraulic, Electric or Others)

b) Define the calculated torque with the required output torque M_{r2} .

$$\bullet M_{c2} = M_{r2} \times f_s$$

c) Calculate the life factor, it required working life h & output speed n_2 :

$$\bullet F_{h2} = (n_2 \times h)$$

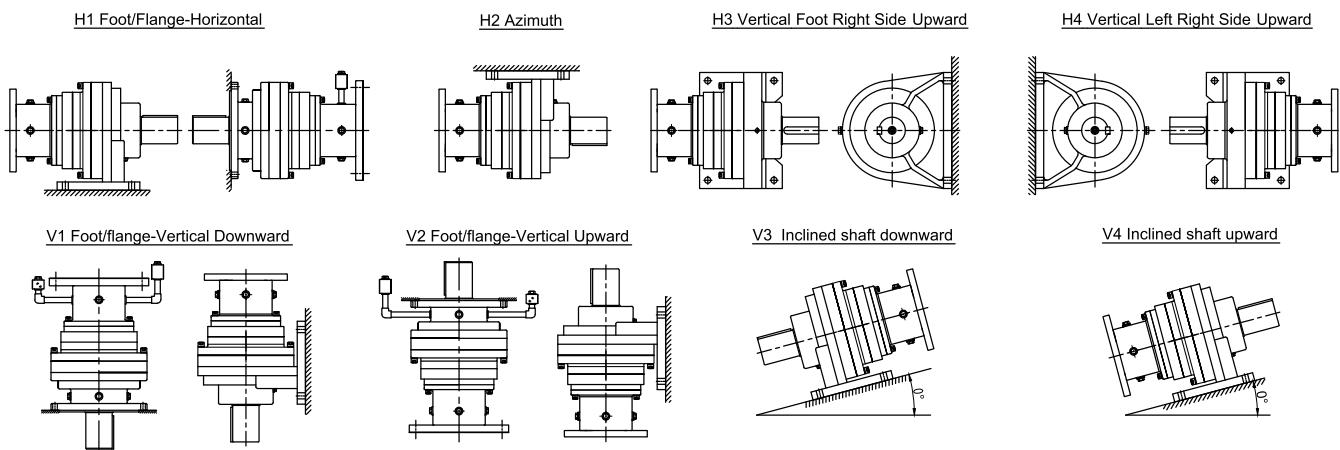
d) Calculate the required reduction ratio. $i = n_1/n_2$

e) Select gearbox size which , having a reduction ratio close to the calculated value , and stastics the following :

- $m_{c2} < M_{n2}$
- con / with / mit / avec
- $F_{h2} < (n_2 \times h)$

Where M_{n2} & F_{h2} are indicated in the selection tables for each gearbox size.

13.0 INSTALLATION :



Observing the few rules of correct installation is essential to the reliable & proper operation of the gearbox or gear motor. The rules set out here are intended as a preliminary guide to select gearbox or gear motor. For effective & proper installation , follow the instructions given in Installation,use & Maintenance manual for the gearboxes.

Following is a brief outline of installation rules:

- a) Fastening :** Place gearbox on a surface providing adequate rigidity. Mating surface should be machined & flat Mating surfaces must be within definite geometric tolerances. This is especially true for flange - mounted gearboxes with splined hollow shafts.In applications that involve high radial load at the output end, flange mounting is recommended for some gearbox sizes as this mounting makes use of the double pilot diameters provided on these gearboxes. See section "Loads on shafts" for the different gear boxes. Make sure the gearbox is suitable for the required mounting position. Use screw of resistance class 8.8 to secure the gearbox. Torque up screws to the figures indicated in the relevant tables. With transmitted output torque greater than or equal to 70% of the indicated M2 max. torque , & with frequent movement reversals , use screw with minimum resistance 10.9. Some gearbox sizes can be fastened using either screw or pins. If a pin is used , the length of pin seated in the frame the gearbox being installed should be at least 1.5 times pin diameter.
- b) Connections:** Secure the connection parts e.g. couplings pulleys etc, to gearbox input & output . Do not tap them with hammers or similar tools. To insert these parts, use the service screws & threaded holes provided on the shafts. Be sure to clean off any grease.
- Fitting hydraulic motors:**
Be careful of the O ring between motor flange & gearbox input flange when assembling . Install the hydraulic motor before filling lube oil into the gearbox.
- Connecting the hydraulic brakes:**
The hydraulic circuit should be such to ensure that brake is released instants before gearbox starts & applied after gearbox has stopped. Check that pressure in the hydraulic line for brake release is at zero whenever gearbox is stopped.
- c) Direction of rotation:**
Motors are connected to the suitable electric or hydraulic circuit according to their direction of rotations. When performing these connections , bear in mind that all gearboxes , whether in the in-line or right angle design , have the same direction of rotation.
- d) Lubrication**
Before start up fill the gearbox with the recommended lube oil up to correct level. Level is checked through the suitable plug or sight glass provided on each gearbox depending on designated mounting position.

14.0 MAINTENANCE:

- Check the tightness of mounting bolts after the initial 50 hours of operation.
- Change the oil first after 100-150 hours operation.
- Subsequently, change the oil every 2000-3000 hours operation depending on application.
Alternatively change oil once a year.
- Check the oil level in the gearbox every month and top up as necessary.
- Have a general checkup every day.

15.0 STORAGE:

Observe the following instructions to ensure correct storage of delivered products.

- a) Do not store outdoors, in areas exposed to weather or with excessive humidity.
 - b) Always place boards in wood or other material between floor and products to avoid direct contact with the floor.
 - c) For storage periods of over 60 days all machined surfaces such as flanges, shafts and couplings must be protected with a suitable anti-oxidation product (Mobilarma 248 or equivalent product).
 - d) The following measures must be taken in receipt of products for which the expected storage period exceeds 6 months.
 - d1) Cover outer machined parts and mating parts with grease to avoid oxidation.
 - d2) Position the gearbox with the breather plug up and fill them with oil.
- Before use the gearbox should be filled with the proper amount of lubricant of the recommended type.

16.0 SUPPLY CONDITIONS:

Gearboxes are supplied as follows:

- a) Ready for installation in the mounting position specified on order.
- b) Dry inner parts are protected by a film of the oil used for final testing. (without oil filled)
- c) Painted with colors. Mating surface are not painted
- d) Tested to in - house specification;
- e) Suitably packed;
- f) Complete with mounting nuts & bolts for IEC electric motors or hydraulic motors;

17.0 LUBRICATION (Prior to start - up):

All gearboxes are oil-bath lubricated. For applications calling for gearboxes with vertically positioned axis , in which oil coverage during operation would not be sufficient to ensure correct lubrication of upper bearings, suitable life lubrication system.

Before start-up fill the gearbox with the correct quantity of oil selecting the viscosity level as per table . These gearboxes are provided with oil filling, level & drain plugs.

For a proper plug positioning for adequate lubrication, please always specify the required mounting position.The table lists the most common brands of lubricant & the types recommended for normal applications.

Note : For applications with special operating conditions , consult the factory with complete information.

Oil temperature must not exceed 95 deg C.

Units are delivered without oil but with filing, draining & oil level plugs correctly positioned.

The oil capacities indicated on gearbox for the various types of unit are indicative only. Check the oil level plug to ensure the correct amount of oil.

Material Of Construction

Sr.No.	Item	Material	Heat Treatment
1	Planet,Sun Gear,Planet Pin, Gear Pinion	SAE 8620/17 CrNiMo6	Case Carburising & Hardning
2	Ring Gear	C-45 Up to 3000 Kgm,En-24 Above 3000 Kgm	Toughning
3	Output Shaft	En-24	Toughning
4	Input Shaft	En-9/En-8	Toughning
5	Planet Carrier	En-9	Toughning
6	Input Casing,Intermediate Casing	Cast Iron Grade-25 Cast Iron Grade-25 Below 250 Kgm	-
7	Output Casing	Cast Steel,IS1030 Grade-II above 250 Kgm, SG Iron GRADE 400/12-600/3	-
8	Bearings	Antifriction Bearings (SKF/FAG Make)	-
9	Oil Seal	Nitrile / Viton (Universal Make)	-

THERMAL POWER FACTOR

AMBIENT TEMP	CONTINUES	INTERMEDIATE DUTY CYCLE(CYCLIC DURATION FACTOR%)			
		80%	60%	40%	20%
10	1.2	1.3	1.6	1.8	2
20	1.0	1.1	1.3	1.5	1.7
30	0.9	1	1.2	1.3	1.5
40	0.7	0.8	0.9	1	1.2
50	0.5	0.6	0.7	0.8	0.9

INPUT SPEED FACTOR	
INPUT SPEED n1	FACTOR f _v
750	1.5
1000	1.2
1500	1
2000	0.7

SERVICE FACTOR f_s RELATED TO NO OFF STARTS / HOUR

TYPE OF LOAD	TYPE OF DRIVE UNIT	NO OF STARTS/HOUR				
		16	32	63	125	250
UNIFORM LOAD	ELECTRIC MOTOR	1	1.1	1.15	1.25	1.4
	HYDRAULIC MOTOR	1	1	1.1	1.15	1.2
	ENDOTHERMIC ENGINE	1.25	1.5	1.75	2	2.25
MODERATE LOAD	ELECTRIC MOTOR	1.1	1.15	1.2	1.4	1.6
	HYDRAULIC MOTOR	1	1	1.1	1.2	1.3
	ENDOTHERMIC ENGINE	1.5	1.75	2	2.25	2.5
HEAVY SHOCK LOAD	ELECTRIC MOTOR	1.2	1.3	1.4	1.6	1.8
	HYDRAULIC MOTOR	1.1	1.2	1.25	1.35	1.5
	ENDOTHERMIC ENGINE	2	2.25	2.5	2.5	3

MECHANICAL SERVICE FACTOR		Note - The starting torque should not exceed 2.0 time the normal torque.		
POWER SOURCE	DURATION OF WORKING IN HRS./DAY	LOAD CLASSIFICATION		
		UNIFORM	MODERATE	HEAVY SHOCK
Electric Motor, Steam Turbine or Hydraulic Motor	Under - 3	0.80	1.00	1.50
	3 to 10	1.00	1.25	1.75
	Over 10	1.25	1.50	2.00
Multi-cylinder internal combustion engine	Under - 3	1.00	1.25	1.75
	3 to 10	1.25	1.50	2.00
	Over 10	1.50	1.75	2.25
Single cylinder internal combustion engine	Under - 3	1.25	1.50	2.00
	3 to 10	1.50	1.75	2.25
	Over 10	1.75	2.00	2.50

RECOMMENDED OIL BRANDS		
ISO Standard EP grade oils		
Ambient Temperature	ISO VG 220	ISO VG 320
AGIP	BLASIA 220	BLASIA 320
	BLASIA S 220	BLASIA S 320
ARAL	DEGOL BG 220	DEGOL BG 320
BP - MACH	ENERGOL GR XP 220	ENERGOL GR XP 320
CASTRO L	ALPHA SP 220	ALPHA SP 320
CHEVRON	EDWN. GEAR COMPOUND 220	N.L. GEAR COMPOUND 320
ELF	REDUCTELF SP 220	REDUCTELF SP 320
ESSO	SPARTAN EP 220	SPARTAN EP 320
	GLYCOLUBE 220	GLYCOLUBE 320
FINA	GIRAN 220	GIRAN 320
I.P.	MELLANA 220	MELLANA 320
	PONTAX HDS	PONTAX HDS
KLUBER	LAMORA 220	LAMORA 320
	SYNTHESO D 220 EP	SYNTHESO D 320 EP
MOBIL	MOBILGEAR 630	MOBILGEAR 631
	SHC 630	SHC 631
SHELL	OMELA EP 220	OMELA EP 320
	TIVELA OIL WA SA	TIVELA OIL WB
TOTAL	CARTER EP 220	CARTER EP 320

MECHANICAL OUTPUT Peak TORQUE RATINGS Nm

KAVITSU

MODEL	KA-01	KA-02	KA-03	KA-04	KA-05	KA-06	KT-07	KT-08	KT-09	KT-10
I STAGE	80	140	450	700	950	1600	2500	3000	5000	8000
II STAGE	80	140	450	950	1550	3000	4500	6000	10000	15000
III STAGE	80	140	450	950	1550	3500	5000	7500	12000	20000
IV STAGE	80	140	450	950	1550	3500	5000	7500	12000	20000
MODEL	KT-11	KT-12	KT-13	KT-135	KT-14	KT-15	KT-155	KT-16	KT-17	KT-18
I STAGE	11000	20000	30000	36000	40000	65000	85000	115000	200000	350000
II STAGE	24000	38000	50000	65000	108000	198000	200000	250000	350000	600000
III STAGE	24500	38000	50000	77000	108000	198000	300000	375000	500000	1000000
IV STAGE	24500	38000	50000	77000	108000	198000	300000	450000	500000	1140000

FOR TORQUE RATING ABOVE 5000000 Nm, PLEASE CONTACT FACTORY.

NOTE- ALL ABOVE MENTION TORQUE RATINGS ARE MAXIMUM, PLEASE REFER SELECTION CHART FOR ACTUAL MAXIMUM TORQUE AS PER RATIO

MODEL IDENTIFICATION OR ORDERING CODE NO

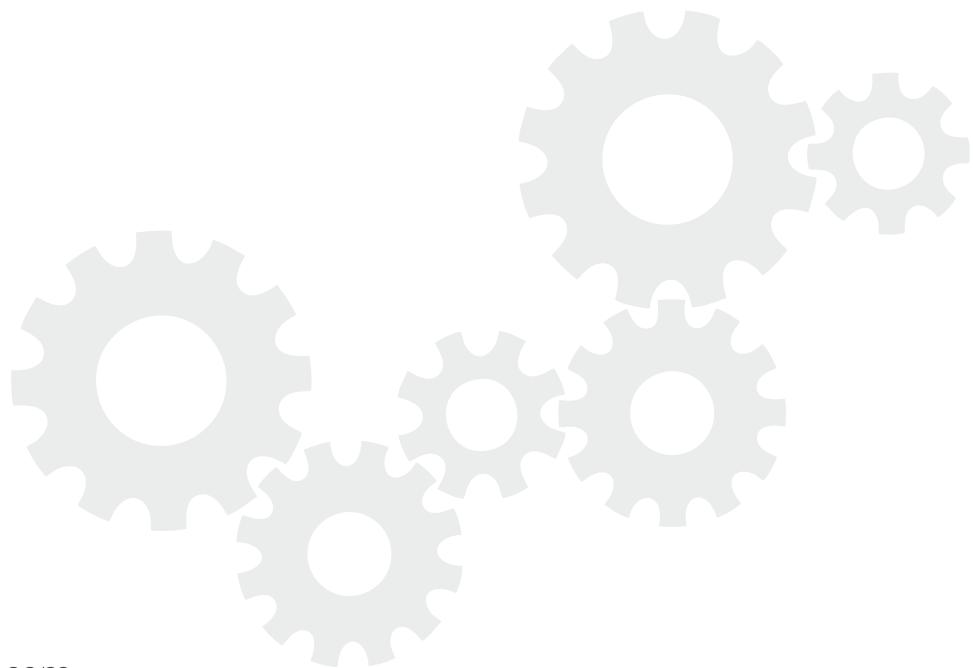
1	KT	09	F	7.2	SM	H080	W	H2	
									<p>ORIENTATION H1= HORIZONTAL H2= AZIMUTH H3= VERTICAL FOOT RIGHT SIDE H4= VERTICAL FOOT LEFT SIDE V1= VERTICAL DOWNWARD V2= VERTICAL UPWARD V3= INCLINE SHAFT DOWNWARD V4= INCLINE SHAFT UPWARD</p> <p>TYPE I= INLINE B= RIGHT ANGLE BEVEL W= RIGHT ANGLE WORM P= PARALLEL INPUT & OUTPUT SHAFT</p> <p>INPUT TYPE H 000= FRAME SIZE e.g. H-80, H-100(For hollow input) M 000= MOTOR POWER KW e.g. 1 Kw, 75 Kw (For geared motor) F= FREE SOLID SHAFT N= NON STANDARD SHAFT HYD = HYDRAULIC MOTOR</p> <p>OUTPUT SHAFT CM= CYLINDRICAL MALE CF= CYLINDRICAL FEMALE SM= SPLINE MALE SF= SPLINE FEMALE SD= SHRINK DISC</p> <p>REDUCTION RATIO AS PER SELECTION TABLE</p> <p>MOUNTING F= FOOT L= FLANGE A= AGITATOR S= SHAFT N= NON STD</p> <p>MODEL</p> <p>TYPE KA= MINI RANGE KT= MEDIUM & HEAVY</p>

NO OF STAGES

- 1= SINGLE
- 2= DOUBLE
- 3= TRIPLE
- 4= QUADRUPLE

KA-01 SELECTION CHART

MODEL	INPUT SPEED	RATIO	PEAK TORQUE IN Nm	M _{n2} (Nm)										MAX INPUT POWER kW	OUTPUT SHAFT OVERHUNG LOAD CAPACITY in Newtons	THERMAL RATING kW	HOLLOW INPUT MAX FRAME SIZE
				n ₂ * h 10 000	n ₂ * h 25 000	n ₂ * h 50 000	n ₂ * h 100 000	n ₂ * h 500 000	n ₂ * h 1 000 000	n ₂ * h 5 000 000	n ₂ * h 10 000 000						
1 KA-01	1500	3.19	80	64	58	53	50	41	38	34	33	1.11					
		3.69	80	64	58	53	50	41	38	34	33	0.96	1400	0.33	71 FS		
		4.50	80	64	58	53	50	41	38	34	33	0.79					
2 KA-01	1500	10.2	80	64	58	53	50	41	38	34	33	0.60					
		11.8	80	64	58	53	50	41	38	34	33	0.52	1800				
		13.6	80	64	58	53	50	41	38	34	33	0.45					
		14.3	80	64	58	53	50	41	38	34	33	0.43	1900	0.33	71 FS		
		16.6	80	64	58	53	50	41	38	34	33	0.37	2000				
		20.2	80	64	58	53	50	41	38	34	33	0.30	2200				
3 KA-01	1500	37.5	80	64	58	53	50	41	38	34	33	0.32					
		43.5	80	64	58	53	50	41	38	34	33	0.27					
		45.8	80	64	58	53	50	41	38	34	33	0.26					
		50.2	80	64	58	53	50	41	38	34	33	0.24	2200	0.33	71 FS		
		61.3	80	64	58	53	50	41	38	34	33	0.19					
		74.7	80	64	58	53	50	41	38	34	33	0.16					
		91.1	80	64	58	53	50	41	38	34	33	0.13					
4 KA-01	1500	103.5	80	64	58	53	50	41	38	34	33	0.12					
		119.8	80	64	58	53	50	41	38	34	33	0.10					
		138.6	80	64	58	53	50	41	38	34	33	0.09					
		160.3	80	64	58	53	50	41	38	34	33	0.08					
		185.4	80	64	58	53	50	41	38	34	33	0.07					
		195.5	80	64	58	53	50	41	38	34	33	0.06	2200	0.33	71 FS		
		226.1	80	64	58	53	50	41	38	34	33	0.05					
		238.4	80	64	58	53	50	41	38	34	33	0.05					
		275.7	80	64	58	53	50	41	38	34	33	0.05					
		290.7	80	64	58	53	50	41	38	34	33	0.04					
		336.2	80	64	58	53	50	41	38	34	33	0.04					
		410.0	80	64	58	53	50	41	38	34	33	0.03					



KA-04 SELECTION CHART

MODEL	INPUT SPEED	RATIO	PEAK TORQUE IN Nm	M _{n2} (Nm)										MAX INPUT POWER kW	OUTPUT SHAFT OVERHUNG LOAD CAPACITY in Newtons	THERMAL RATING kW	HOLLOW INPUT MAX FRAME SIZE
				n ₂ * h 10 000	n ₂ * h 25 000	n ₂ * h 50 000	n ₂ * h 100 000	n ₂ * h 500 000	n ₂ * h 1 000 000	n ₂ * h 5 000 000	n ₂ * h 10 000 000						
1 KA-04	1500		3.38 3.82 4.44 5.43 7.20	740 710 810 770 610	592 568 585 616 488	534 513 540 556 441	493 473 502 477 407	458 440 418 397 378	382 366 418 388 315	354 340 388 345 292	315 302 368 328 260	304 291 332 316 250	9.68 8.22 8.07 6.27 6.20	6900 7400	3.7	112 FS	
2 KA-04	1500		11.42 12.91 14.59 15.01 16.96 19.71 20.74 24.11 29.48 31.97 39.10	950 950 950 950 950 950 950 950 950 950 950	760 760 760 760 760 760 760 760 760 760 760	686 686 686 686 686 686 686 686 686 686 686	633 633 633 633 633 633 633 633 633 633 633	588 588 588 588 588 588 588 588 588 588 588	490 490 490 490 490 490 490 490 490 490 490	455 455 455 455 455 455 455 455 455 455 455	404 404 404 404 404 404 404 404 404 404 404	390 390 390 390 390 390 390 390 390 390 390	6.33 5.60 5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00	8700 9300	0.75	80 FS	
3 KA-04	1500		45.59 50.34 59.89 70.42 78.17 88.83 104.44 111.16 127.73 137.52 159.84 178.20 195.48	950 950 950 950 950 950 950 950 950 950 950 780 950	760 760 760 760 760 760 760 760 760 760 760 624 760	686 686 686 686 686 686 686 686 686 686 686 563 686	633 633 633 633 633 633 633 633 633 633 633 520 633	588 588 588 588 588 588 588 588 588 588 588 483 588	490 490 490 490 490 490 490 490 490 490 490 403 490	455 455 455 455 455 455 455 455 455 455 455 373 455	404 404 404 404 404 404 404 404 404 404 404 373 404	390 390 390 390 390 390 390 390 390 390 390 320 390	2.16 2.00 2.00 2.00 1.80 1.58 1.35 1.26 1.10 1.02 0.88 0.65 0.72	9800	0.75	80 FS	
4 KA-04	1500		230.26 249.91 283.75 311.64 341.52 370.66 398.90 453.30 506.53 554.37 619.48 651.80 709.59 766.36 806.36 825.12 948.08 959.04 1172.88 1866.24 2239.49	950 950 950 950 950 950 950 950 950 950 950 950 780 950 760 760 760 760 760 760 760 624 624	760 760 760 760 760 760 760 760 760 760 760 760 686 686 686 686 686 686 686 686 563 563	686 686 686 686 686 686 686 686 686 686 686 686 563 686 686 686 686 686 686 563	633 633 633 633 633 633 633 633 633 633 633 633 520 633 633 633 633 633 633 520	588 588 588 588 588 588 588 588 588 588 588 588 483 588 588 588 588 588 588 483	490 490 490 490 490 490 490 490 490 490 490 490 403 490 490 490 490 490 490 403	455 455 455 455 455 455 455 455 455 455 455 455 373 455 455 455 455 455 455 373	404 404 404 404 404 404 404 404 404 404 404 404 390 404 404 404 404 404 404 390	390 390 390 390 390 390 390 390 390 390 390 390 0.24 390 0.23 390 0.21 390 0.19 390 0.18 390 0.18 390 0.16 390 0.15 390 0.13 390 0.06 320 0.05	9800	0.75	80 FS		

KT-18 SELECTION CHART

MODEL	INPUT SPEED	RATIO	PEAK TORQUE IN Nm	M_{n_2} (Nm)										MAX INPUT POWER kW	OUTPUT SHAFT OVERHUNG LOAD CAPACITY in Newtons	THERMAL RATING kW	HOLLOW INPUT MAX FRAME SIZE
				$n_2 * h$ 10 000	$n_2 * h$ 25 000	$n_2 * h$ 50 000	$n_2 * h$ 100 000	$n_2 * h$ 500 000	$n_2 * h$ 1 000 000	$n_2 * h$ 5 000 000	$n_2 * h$ 10 000 000						
1KT-18	500	3.82	350550	280440	253196	233700	217059	180929	167727	149170	143845	4057.1	1000	ONLY SOLID MALE SHAFT	550	ONLY SOLID MALE SHAFT	
		4.44	333370	266696	240787	222247	206421	172062	159507	141860	136795	3319.5					
		5.43	317100	253680	229036	211400	196347	163665	151722	134936	130119	2581.8					
2KT-18	750	14.59	521000	416800	376309	347333	322601	268903	249282	221702	213787	2716.6	ON REQUEST	550	ONLY SOLID MALE SHAFT	355 FS	
		16.96	495460	396368	357862	330307	306786	255721	237062	210834	203307	2222.7					
3KT-18	1000	19.71	600530	480424	433752	400353	371845	309951	287335	255545	246422	2317.9	ON REQUEST	250	355 FS	280 FS	
		20.74	631490	505192	456114	420993	391015	325930	302148	268719	259126	2316.4					
4KT-18	1500	24.11	600530	480424	433752	400353	371845	309951	287335	255545	246422	1895.3	ON REQUEST	110	355 FS	280 FS	
		29.48	714030	571224	515731	476020	442124	368532	341641	303843	292995	1842.6					

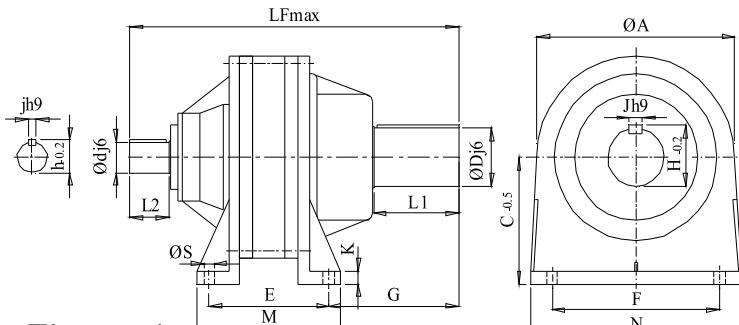


Figure 1

FOOT MOUNTING FREE INPUT (HEAVY SERIES)

FOOT MOUNTING HOLLOW INPUT (HEAVY SERIES)

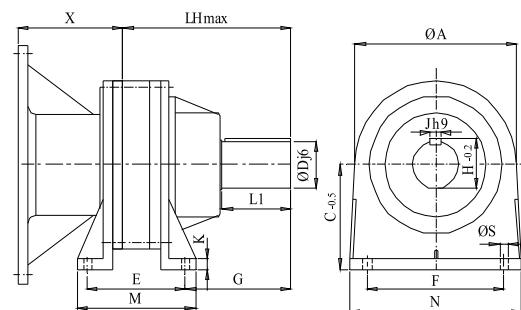


Figure 2

STAGE	MODEL	OUTPUT						MOUNTING						INPUT						
		FOR FIGURE 1 & 2												FOR FIGURE 1						
1	KT-13	ØD j6	L1	J h9	H-0.2	C-0.5	E	M	F	N	G	ØS	K	ØA	Ød j6	L2	j h9	h-0.2	LF max	LH max
	KT-135	120	175	32	127.0	250	310	362	400	460	252	26	30	405	90	120	25	95	735	450
	KT-14	120	175	32	127.0	250	340	392	400	460	252	26	30	405	90	120	25	95	765	480
	KT-15	160	240	38	169.0	350	340	410	475	600	369	30	35	560	110	225	28	116.4	1120	585
	KT-155	200	240	45	210.0	385	370	450	570	700	353	30	40	640	125	250	32	132.0	1118	607
	KT-16	200	240	45	210.0	385	382	462	570	700	353	30	40	640	125	250	32	132.0	1130	620
	KT-17	250	315	56	262.0	500	475	575	675	850	417	45	48	750	125	250	32	132.0	1268	740
	KT-18	260	350	63	272.0	550	600	765	900	1100	475	50	50	980	140	280	36	148.0	1357	860
2	KT-13	350	550	80	365.0	700	655	905	1050	1300	745.5	50	50	1080	140	280	36	148.0	1756	1200
	KT-135	120	175	32	127.0	250	310	362	400	460	252	26	30	405	60	80	18	64	843.5	617.5
	KT-14	120	175	32	127.0	250	340	392	400	460	252	26	30	405	80	110	22	85	950	680
	KT-15	160	240	38	169.0	350	340	410	475	600	369	30	35	560	80	110	22	85	1139	869
	KT-155	200	240	45	210.0	385	370	450	570	700	353	30	40	640	90	120	25	95	1203	916
	KT-16	200	240	45	210.0	385	382	462	570	700	353	30	40	640	90	120	25	95	1245	958
	KT-17	250	315	56	262.0	500	475	575	675	850	417	45	48	750	110	225	28	116.0	1570	1100
	KT-18	260	350	63	272.0	550	600	765	900	1100	475	50	50	980	125	250	32	132.0	1590	1335
3	KT-13	350	550	80	365.0	700	655	905	1050	1300	745.5	50	50	1080	125	250	32	132.0	2070	1665
	KT-135	120	175	32	127.0	250	310	362	400	460	252	26	30	405	55	75	16	59	874	696
	KT-14	120	175	32	127.0	250	340	392	400	460	252	26	30	405	60	80	18	64	997	772
	KT-15	160	240	38	169.0	350	340	410	475	600	369	30	35	560	60	80	18	64	1186	960
	KT-155	200	240	45	210.0	385	370	450	570	700	353	30	40	640	60	80	18	64	1298	1113
	KT-16	200	240	45	210.0	385	382	462	570	700	353	30	40	640	80	110	22	85	1430	1160
	KT-17	250	315	56	262.0	500	475	575	675	850	417	45	48	750	80	110	22	85	1654	1385
	KT-18	260	350	63	272.0	550	600	765	900	1100	475	50	50	980	90	120	25	95	1857	1652
4	KT-13	350	550	80	365.0	700	655	905	1050	1300	745.5	50	50	1080	139	225	28	116.0	2410	2025
	KT-135	120	175	32	127.0	250	310	362	400	460	252	26	30	405	42	60	12	45	920	753.5
	KT-14	120	175	32	127.0	250	340	392	400	460	252	26	30	405	48	75	14	51.5	1021	845
	KT-15	160	240	38	169.0	350	340	410	475	600	369	30	35	560	48	75	14	51.5	1210	1038.5
	KT-155	200	240	45	210.0	385	370	450	570	700	353	30	40	640	55	75	16	51.5	1342	1164
	KT-16	200	240	45	210.0	385	382	462	570	700	353	30	40	640	60	80	18	64	1477	1251
	KT-17	250	315	56	262.0	500	475	575	675	850	417	45	48	750	60	80	18	64	1702	1475
	KT-18	260	350	63	272.0	550	600	765	900	1100	475	50	50	980	60	80	18	64	2070	1825

NOTE :- FOR DIMENSTION "X" & MOTOR MOUNTING DIMENSIONS PLEASE REFER MOTOR MOUNTING CHART ON PAGE NO-39
FOR MAXIMUM FRAME SIZE PLEASE REFER SELECTION CHARTS

FLANGE MOUNTING FREE INPUT (HEAVY SERIES)

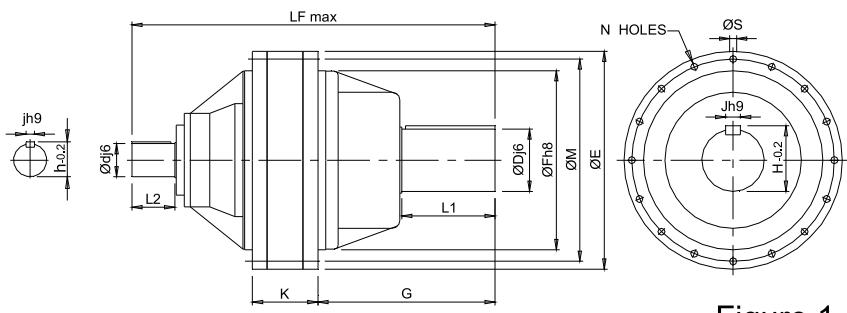
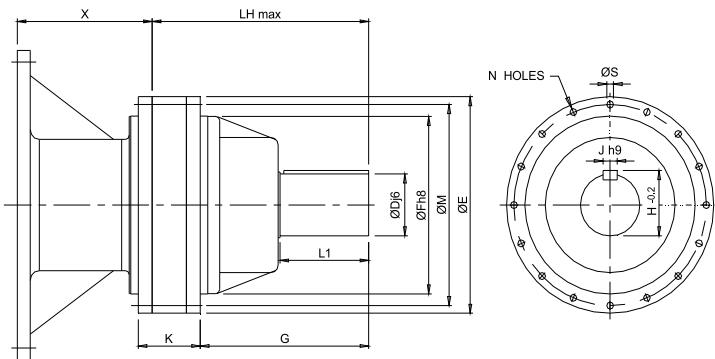


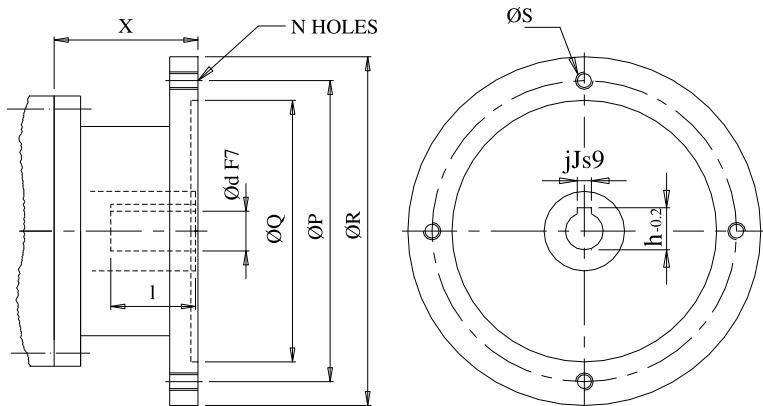
Figure 1



FLANGE MOUNTING HOLLOW INPUT (HEAVY SERIES)

STAGE	MODEL	OUTPUT				MOUNTING						INPUT						
		FOR FIGURE 1 & 2				FOR FIGURE 1						FOR FIGURE 1						
		ØDj6	L1	Jh9	H-0.2	ØE	ØM	ØFh8	ØS	N	G	K	Ød16	L2	jh9	H-0.2	LF max	LH max.
1	KT-13	120	175	32	127.0	405	370	340	18	16	336	142	90	120	25	95	735	450
	KT-135	120	175	32	127.0	405	370	340	18	16	336	172	90	120	25	95	765	480
	KT-14	160	240	38	169.0	560	520	460	18	16	455	168	110	225	28	116.4	1120	585
	KT-15	200	240	45	210.0	640	600	530	22	16	443	192	125	250	32	132.0	1118	607
	KT-155	200	240	45	210.0	640	600	530	22	16	455	202	125	250	32	132.0	1130	620
	KT-16	250	315	56	262.0	750	700	625	26	16	547	224	125	250	32	132.0	1268	740
	KT-17	260	350	63	272.0	980	900	800	26	24	642	265	140	280	36	148.0	1357	860
	KT-18	350	550	80	365.0	1100	1020	920	26	32	920	305	140	280	36	148.0	1756	1200
2	KT-13	120	175	32	127.0	405	370	340	18	16	336	142	60	80	18	64	843.5	617.5
	KT-135	120	175	32	127.0	405	370	340	18	16	336	172	80	110	22	85	950	680
	KT-14	160	240	38	169.0	560	520	460	18	16	455	168	80	110	22	85	1139	869
	KT-15	200	240	45	210.0	640	600	530	22	16	443	192	90	120	25	95	1203	916
	KT-155	200	240	45	210.0	640	600	530	22	16	455	202	90	120	25	95	1245	958
	KT-16	250	315	56	262.0	750	700	625	26	16	547	224	110	225	28	116.0	1570	1100
	KT-17	260	350	63	272.0	980	900	800	26	24	642	265	125	250	32	132.0	1590	1335
	KT-18	350	550	80	365.0	1100	1020	920	26	32	920	305	125	250	32	132.0	2070	1665
3	KT-13	120	175	32	127.0	405	370	340	18	16	336	142	55	75	16	59	874	696
	KT-135	120	175	32	127.0	405	370	340	18	16	336	172	60	80	18	64	997	772
	KT-14	160	240	38	169.0	560	520	460	18	16	455	168	60	80	18	64	1186	960
	KT-15	200	240	45	210.0	640	600	530	22	16	443	192	60	80	18	64	1298	1113
	KT-155	200	240	45	210.0	640	600	530	22	16	455	202	80	110	22	85	1430	1160
	KT-16	250	315	56	262.0	750	700	625	26	16	547	224	80	110	22	85	1654	1385
	KT-17	260	350	63	272.0	980	900	800	26	24	642	265	90	120	139	95	1857	1652
	KT-18	350	550	80	365.0	1100	1020	920	26	32	920	305	110	225	28	116.0	2410	2025
4	KT-13	120	175	32	127.0	405	370	340	18	16	336	142	42	60	12	45	920	753.5
	KT-135	120	175	32	127.0	405	370	340	18	16	336	172	48	75	14	51.5	1021	845
	KT-14	160	240	38	169.0	560	520	460	18	16	455	168	48	75	14	51.5	1210	1038.5
	KT-15	200	240	45	210.0	640	600	530	22	16	443	192	55	75	16	51.5	1342	1164
	KT-155	200	240	45	210.0	640	600	530	22	16	455	202	60	80	18	64	1477	1251
	KT-16	250	315	56	262.0	750	700	625	26	16	547	224	60	80	18	64	1702	1475
	KT-17	260	350	63	272.0	980	900	800	26	24	642	265	60	80	18	64	2070	1825
	KT-18	350	550	80	365.0	1100	1020	920	26	32	920	305	65	85	18	64	2530	2310

NOTE :- FOR DIMENSTION "X" & MOTOR MOUNTING DIMENSIONS PLEASE REFER MOTOR MOUNTING CHART ON PAGE NO-39
FOR MAXIMUM FRAME SIZE PLEASE REFER SELECTION CHARTS



**MOTOR
MOUNTING
DETAILS AS
PER FRAME
SIZE
ISI STANDARD**

FRAME SIZE	HOLLOW SHAFT				MOUNTING					AVAILABLE B-5 TYPE MOTORS WITH RPM & POWER				
	Ød F7	h-0.2	j Js9	I min	ØR	ØP	ØQ H8	N	ØS	X	3000 RPM	1500 RPM	1000 RPM	750 RPM
63	11	12.8	4	25	140	115	95	4	M-8	76	0.125 / 0.25	0.125 / 0.25	-	-
71	14	16.3	5	32	160	130	110	4	M-8	76	0.33 / 0.5	0.33 / 0.5	0.33 / 0.50	0.1 / 0.12
80	19	21.8	6	42	200	165	130	4	M-10	81	0.75 / 1.5	0.75 / 1.0	0.5 / 0.75	0.25 / 0.33
90	24	27.3	8	52	200	165	130	4	M-10	81	1.5 / 2.0	1.5 / 2.0	1.0 / 1.5	0.5 / 0.75
100	28	31.3	8	62	250	215	180	4	M-12	96	3.0 / 4.0	3.0 / 4.0	2.0	1.0 / 1.5
112	28	31.3	8	62	250	215	180	4	M-12	96	5.0 / 5.5	5.0	3.0	2.0
132	38	41.3	10	82	300	265	230	4	M-12	141	7.5 / 10	7.5 / 10	5.0 / 7.5	3.0 / 4.0
160	42	45.3	12	112	350	300	250	4	M-16	180.5	12.5 / 15 / 20	12.5 / 15 / 20	10 / 12.5 / 15	5 / 7.5 / 10
180	48	51.8	14	112	350	300	250	4	M-16	180.5	25 / 30	25 / 30	20	12.5 / 15
200	55	59.3	16	112	400	350	300	4	M-16	209	40 / 50	40	25 / 30	20
225	60	64.4	18	145	450	400	350	8	M-16	238	50 / 60	50 / 60	40	25 / 30
250	65	69.4	18	145	550	500	450	8	M-16	247	75	75/100	50 / 60	40 / 50
280	75	79.9	20	145	550	500	450	8	M-16	272.5	100 / 125	100 / 125 / 150	60 / 75	50 / 60
315	80	85.4	22	175	660	600	550	8	M-20	307.5	150 TO 220	150 TO 220	100 TO 170	75 TO 150
355	100	106.4	28	215	800	740	680	8	M-20	307.5	245 TO 380	245 TO 380	220 TO 300	170 TO 245

Notes

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Screw Jack

Planetary Crystalliser drive



Power : 10 HP To 75 HP
Torque : 2000 Nm to 200000 Nm
Ratio : 3.17 to 100000

- Rigid in construction
- High overhang capacity.
- Compact Design.



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Power : 0.1 Kw To 15 Kw

- Used in mechanical lifting application



Power : 1 HP to 40 HP
Torque : Up to 500000 Nm
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- Higher efficiency
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- Concrete mixing application in construction industry.
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