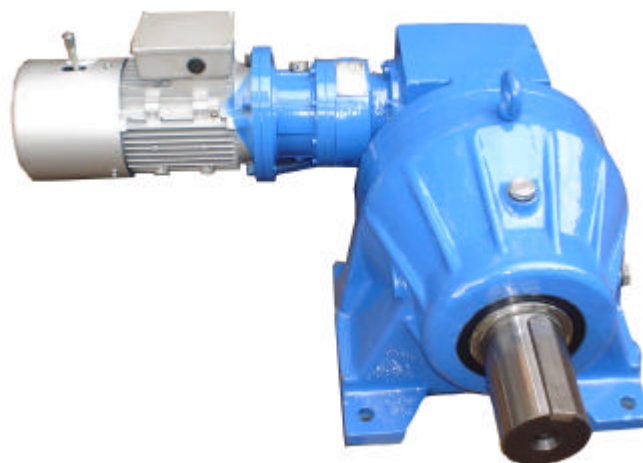
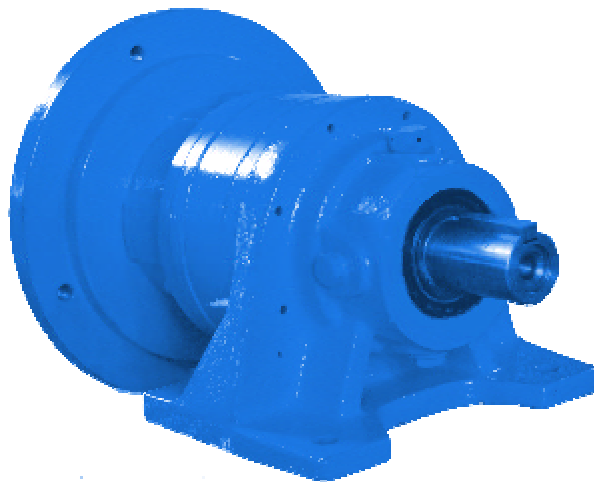




SERIES B





AGNEE Series B Planetary Gear Boxes & Drives



AGNEE manufactures primarily Industrial gears , Mechanical Engineering Power Transmissions Equipments like Planetary gear boxes, Helical and Bevel Helical gear Boxes, Shaft Mounted helical gear boxes, Worm gear boxes, Geared motors, racks & pinions gears, Worm Shaft and worm wheels, Spur , helical and bevel gears etc.

Our manufacturing unit is situated at Kota, 480 Kilometers southwest of New Delhi. We have qualified well trained manpower and in house facilities for complete manufacturing to provide reliable and efficient products and services.

We are focused to provide a complete gear service : from design engineering and product development to complete manufacturing and sales of Gears, gear boxes and related power transmissions mechanisms.

Significant technical skill and machine capability is the heart of AGNEE, providing industry with a qualified and reputable source for specification, design, manufacturing of variety of individual gear items and complete gear assemblies.

We are presently catering to almost every industry like Stone Processing, Mining & Quarrying including Coal Handling Plants, Energy including Nuclear, Thermal , Hydro electric Power plants, Agriculture, Automotive, Cement, Chemical, Construction, Defence, Food & Beverage, Forestry, Metals & Machine Tools, Pulp & Paper, Rubber & Plastics, Textiles, Transportation, Water, Dredging & Sugar Mills and host of other industries.

We received the ISO 9001: 2000 quality certificate from UKAS- URS in May 2003 and have received ISO 9001: 2008 in 2009.

Honest, fair, Reliable- these three words we keep in mind while dealing with any person or organization. Please feel free to contact us for your requirement.

We are currently exporting to the countries mentioned below:



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1. General Information

AGNEE has developed Planetary Gearboxes for various Industrial applications operated by Electric motor & Hydraulic motor. AGNEE provides customers with High Quality, Cost Effective, Power saving, planetary gear boxes with wide range of power transmissions.

1b. Applications:

- 1 Wind turbines
- 2 Robotics machinery
- 3 Medical equipment
- 4 Aviation equipment
- 5 Power Industry
- 6 Steel Plants.
- 7 Sugar Plants.
- 8 Machine tools.
- 9 Plastic Machinery
- 0 Goods & Personnel lifts
- 1 Derrick & Dockyard Cranes
- 2 Material handling equipments
- 3 Truck mounted mobile cranes etc.
- 4 Dredging Equipments
- 5 Road Making Machinery
- 6 Construction equipment and spares
- 7 Sugar Crystallizers and mill drives
- 8 Stone Processing plants

1 c. Salient Features:

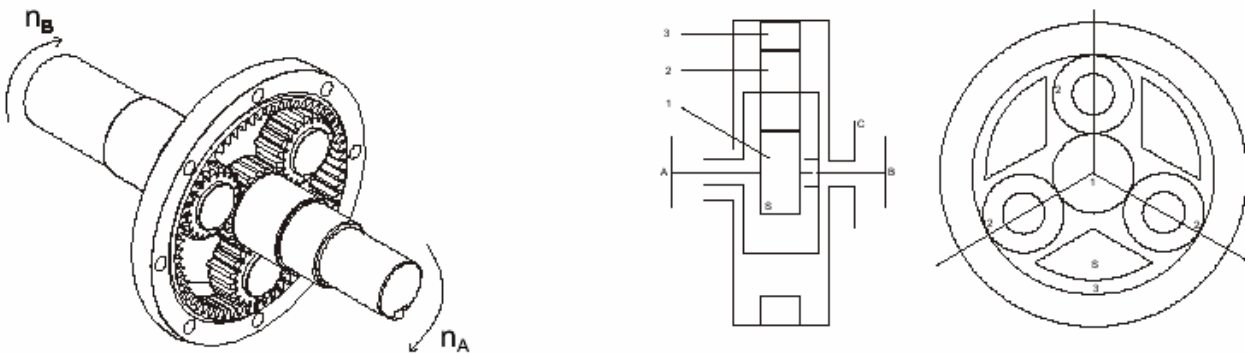
- ❖ High Reduction Ratios,
- ❖ Power Saving,
- ❖ High Efficiency,
- ❖ Higher Overload Capacity,
- ❖ Reliable and Trouble-Free Service,
- ❖ Compact in size hence space saving,
- ❖ Co-Axial input and output,
- ❖ Sturdy,
- ❖ No-Self Locking Property hence reversible drive,
- ❖ Installation in any position,
- ❖ Suitable for continuous cyclic Loads,
- ❖ Input and output rotation in same direction.

1 d. Technical Specifications:

Reduction Ratio	3.6 to 7000:1
Output Torque	10 Nm to 14,50,000 Nm
Mounting Type	Flange, Foot and agitator type
Prime Mover	Electric Motor, Hydraulic Motor
Input Speed	1440 rpm
Input Type	Male Shaft, Hollow Input
Output Type	Male Shaft, Hollow Input, Spline Shaft
Input Power	0.25 HP to 300 HP (0.18 Kw to 224 Kw)

1 e. Working Principle:

- ❖ Planetary gear box manufactured by AGNEE primarily have sun gear, planet gears, planet carrier assembly and ring gear.
- ❖ Coaxial sun gear and planet carrier assembly (which comprises of carrier and 3 planet gears) rotates at constant centers along with the planet carrier
- ❖ The input is from sun gear and the drive motion is through the planet carrier via planet gears and ring gears. The ring gear is generally stationary.
- ❖ The rolling contact of the planet gears with the ring gear provides the appropriate reduction ratio.
- ❖ The output shaft is connected to the planet gear assembly. Output shaft maintains the same direction of rotation as Input.
- ❖ By varying the number of teeth of sun gear and planet gears it is possible to achieve various different ratios per stage.
- ❖ Multi-stage gear boxes are manufactured by connecting the individual stages in sequence.




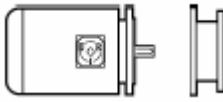

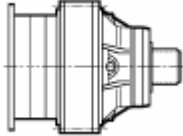
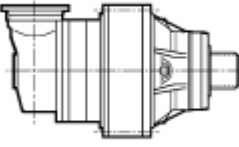
- ❖ When the input shaft that is n_a is rotated with n_1 rotation it actually rotates sun gear (1). The sun gear simultaneously engages with planet gears (2) and also planet gears are in simultaneous engagement with Ring gear (3) which is stationary.
- ❖ The input motion from sun gear is transmitted to coaxial planet carrier (5) through planet gears. The ring gear (3) fixed to the frame functions as reacting gear component. Hence the planet carrier is rotated at lower rpm than the sun gear rpm. As the output shaft is connected to the planet carrier the output rpm n_2 received at output shaft n_b is lower than input shaft n_a .
- ❖ The input rotation n_1 applied to the sun gear is reduced to output rotation n_2 .
- ❖ The planetary gear boxes are designed with the help of modern computer software using FEA method for weight and strength optimization.



1 f. Material Construction

Ring Gear	:	Manufactured from high alloy steel and are hardened to absorb impact loads and increase wear resistance
		Manufactured from high tensile alloy steel and are case hardened or nitrated to achieve optimum strength and wear resistance.
Planet Gears	:	Bores of planet gears are ground. To increase load carrying capacity and uniform load distribution, planet gears are ground from and above size 401.
Sun Gear		Manufactured from high tensile alloy steel and are case hardened or nitrated to achieve optimum strength and wear resistance. Sun gears are mounted on input shaft or carrier with the help of splined and in small models with keyways to achieve desired power transmission.
Planet Carriers	:	Planet carriers are manufactured from high alloy casting or forging or bars machined with CNC machining centers to achieve desired accuracy of planet pin holes run out and parallelism.
Shafts	:	Made from high tensile alloy steel & toughened to achieve maximum strength to transmit power and absorb impact load.
Casings	:	Made from close grained cast iron or cast steel to absorb vibration and support reaction loads and are designed using FEA.
Bought out Parts	:	All standard parts such as bearings, seals hardware are procured directly from reputed manufacturers for genuineness & cost effectiveness

1 g. Model Identification

1	Mounting Type	:	H	:	Horizontal
			V	:	Vertical shaft down
			W	:	Vertical shaft Upward
2	Input Type	:	F	:	Free
					
			J	:	Hollow
					
			M	:	Geared Motor
					
3	Mounting Method	:	H	:	Foot
			F	:	Flange
			A	:	Agitator
4	Model No.	:	BXXXS	:	Standard no. with no. of stages as shown in next row
					
			B	:	With bevel input
					
			W	:	With Worm Input
			H	:	With Helical input
5	Stages	:	1	:	Single
			2	:	Double
			3	:	Triple
			4	:	Four
6	Reduction Ratio	:	XXXX	:	
7	Special Type	:	X	:	X indicates model to which specialized or modified specifications are adopted

Example - 1	Example- 2	Example -3
H : Horizontal	V : Vertical down	W : Vertical Up
F : Input Free	J : Input Hollow	F : Input Free
H : Foot Mounting	A : Agitator Mounting	F : Flange Mounting
B403 : Standard model is 4 and stage is 03	B1002 : Model no. 4 and stage 2	B602B : Standard model is 2, stage 2 and B shows that input is bevel type
HFH B403	VJA B1002	WFF B602B



2. Selection Procedure

2 a. Technical Information

Symbols used :

- f_s = Service factor
- n_1 = Input speed (rpm)
- n_2 = Output speed (rpm)
- h = Gearbox efficiency
- Mt_{con} = Continuous Torque (Nm)
- Mt_{peak} = Peak Torque (Nm)
- Mt_{eq} = Equivalent Torque when gearbox is subjected to varying loads (Nm)
- h = Number of working hours
- i = Actual Reduction ratio
- P_t = Thermal power of gearbox (kW)
- HP = Horsepower
- L_f = Load location factor
- PD = Pitch Diameter (mm)
- F_c = Load connection factor
- T_o = Required output Torque (Nm)
- T_{eq} = Equivalent Torque (Nm)
- P = Required Mechanical Rating (kW)
- K_f = Load correction factor on shaft
- n_{1max} = Maximum Input speed (rpm)

Service Factor (f_s) :

This is the factor depending on the application type table 2 . It takes into consideration load variation, which the gearbox may undergo for the specific type of duty. It also takes into consideration the selected type of drive unit e.g. electric, hydraulic motor and so on and to be selected from table 1 .

Speed :

InputSpeed (n_1) : It represents the actual input speed of the gearbox.

OutputSpeed (n_2): It represents the actual out speed of the gearbox.

Maximum input Speed (n_{max}) : It represents the maximum input speed of the gearbox for the continuous operation that the gearbox can run for the specified life index.

Reduction Ratio (i):

It is the ratio of Actual input rpm to actual output rpm $i = n_1/n_2$

Torque Ratings:

Continuous Torque (Mt_{con}) : It represents the maximum input speed of the gearbox for the continuous operation that the gearbox can run for the specified life index.

Peak Torque (Mt_{peak}) : This is the maximum torque that the gearbox can transmit for short periods of time.

Equivalent Torque (Mt_{eq}): It represents the value of the constant torque, which determines the same duration in hours of the torque induced by the work cycle. If $T_{21}... T_{2n}$ are the torque transmitted by the gearbox at the output velocity $n_{21}...n_{2n}$ for the time duration in hours of $h_1.....h_n$, the equivalent torque is:

$$Mt_{eq} = [((n_{21} * h_1)/(n_2 * h)) * T_{21}^{6.61} + + ((n_{2n} * h_n)/(n_2 * h)) * T_{2n}^{6.61}]^{1/6.61}$$

Where

$$n_2 * h = (n_{21} * h_1) + (n_{22} * h_2) + + (n_{2n} * h_n)$$



2. Selection Procedure

2 a. Technical Information

Lifetime ($n_2 \times h$) :

It is the product of output speed and the duration in hours. It represents a number proportional to the stress applied to the element, which limits the life of the gearbox. To correlate the speed and the duration, the torque is expressed as a function of the product $n_2 \times h$. With the speed n_2 and the torque $M_{t_{con}}$ required the duration in hours can be calculated, or alternatively, if the speed and the duration in hours required are known then the $M_{t_{con}}$ that the gearbox can transmit can be calculated.

Expected Life in hours = 25000

Output speed of the gearbox = 20 rpm

Example :

$$25000[h] * 20[n_2] = 5\ 000\ 00[n_2 \times h]$$

Thermal Power (Pt) :

Maximum mechanical power transmitted by the gearbox while operating continuously, with splash lubrication, without exceeding the thermal limit of gear box (50°C above the ambient temperature). Greater powers can be transmitted by using an appropriate cooling system. The value refers to a continuous operation with input speed of 1440 rpm at ambient temperature 30 °C.

2. Selection Procedure

2 b. Selection Procedure

General Point to be kept in mind for making selection of Gear Box

- ❖ Before a reducer can be selected for any application, the equivalent output torque or horse power must be computed by multiplying the actual or specified torque or horsepower by the service factor (SF) for the particular load classification for which the unit is to be used. It is necessary that the unit selected should have a capacity equal to or in excess of the equivalent output torque in Normal horsepower.
- ❖ Reducer can be selected by service factor or load classification. Both service factors and load classification are a means of classifying different equipment and applications into a uniform guideline useful for reducer selection. Due to variations in application, service factors are used to adjust equipment ratings to accommodate differing load conditions.
- ❖ Applications involving unusual or severe load condition should be carefully reviewed before a service factor is applied.
- ❖ Care must be taken by the customer to isolate the reducer from unplanned transient load or vibrating conditions.

Step Wise procedure for selection of Gear Box

Information required for selection of the reduction unit:

- ❖ The specific application
- ❖ Working life in hours
- ❖ Input speed
- ❖ Input Horsepower
- ❖ Desired output speed
- ❖ Over hung load etc.

Selection of reducer is based solely on the required output torque capacity of the application at specified life duration. The Service factor method is used to apply specific industry application standards based on the hours per day of operation. These application standards are given in table 2 and have been developed based on practical application experience.

Step 1

Determine Service Factor (f_s) :

Selection of the Service factor is done as follows :

- ❖ Depending upon driven machine or application decide the load classification (i.e. Uniform/Moderate/Heavy shock) from table 2.
- ❖ Decide the prime mover and number of working hours per day
- ❖ By knowing above factors we can select service factor from table 1

Step 2

Calculate the desired reducer ratio :

Reducer ratio = Input speed (RPM)/Output speed (RPM)

Select Reduction ratio, that is closest to the desired ratio calculated as above.

Step 3

Calculate the equivalent output torque. :

a. When output torque is known (T_o)

Equivalent Output torque (T_{eq}) = Output Torque(T_o) x service factor(f_s)

b. When input motor horse power is known

Output torque (Nm) = $(7123.77 \times \text{HP} \times f_s \times \text{Eff}) / \text{Output speed}$

Where :

HP = Input Power in horsepower

f_s = Service Factor from above

Eff. = Drive Efficiency

(single = 96%, double = 92%, triple = 87%, four = 84%)



2. Selection Procedure

2 b. Selection Procedure

Step 4

Decide the life index ($n_2 \times h$) of the gearbox

Life index ($n_2 \times h$) = output speed x life required in hours

Example

Output speed (n_2) = 50 rpm

Life required (h) = 20000 hours

Life index ($n_2 \times h$) = $50 \times 20000 = 1000000$

Step 5

Select Reducer :

Locate the reduction ratio determined as above. Locate the smallest model, that offers the output torque (N-m.) rating that is equal to or greater than the equivalent output torque determined as above for the required reduction ratio and for required life index ($n_2 \times h$).

i.e. T_{eq} must be less than or equal to $M_{t_{com}}$ of the gearbox also peak torque requirement of the application must be less than $M_{t_{peak}}$ the of the gearbox.

Step 6

Check thermal capacity (Pt) :

The motor horsepower capacity must be compared to the thermal capacity of the reducer and select the rating, which corresponds to the reducer model. If the motor horsepower is less than or equal to the rating, your application will not be thermally limited with respect to horsepower. If your motor horsepower exceeds this rating, contact the AGNEE to review the possibility of increasing the thermal capacity by use of a heat exchanger. Thermal ratings can be ignored if continuous running time does not exceed idle time on a per hour basis.

Step 7

Check over hung load :

When over hung load exists on either input or output shafts, check that the overhung load exerted on input and output shaft are lower than or equal to values indicated in the chart for selected reducer model.

In case they are greater than indicated value, change gearbox output version, gearbox size or system bearing arrangement. For correct modification according to your requirement contact AGNEE.

For each gearbox the radial loads for duration ($n_1 \times h$) = 1500000 for input shaft and ($n_2 \times h$) = 100000 for the output shaft are shown in the diagram.

For different durations applicable radial loads can be obtained by multiplying the values in the diagram by the correction factor K_f

Axial loads are given for various models along with maximum radial loads. Hence these values must be checked against the axial loads.

Step 8

Check the breaking torque :

When drives are equipped with brakes on the input and the torque rating of the brake exceeds the rating of the motors, the rating of the brake dictates the selection of the reducer

2. Selection Procedure

2 b. Selection Procedure

Step 9

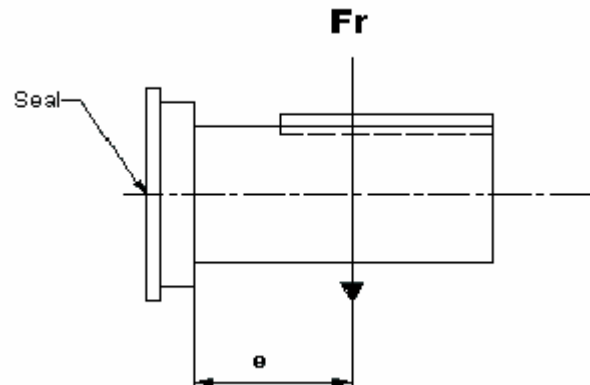
Calculations of the overhung load :

The centerline of the overhung load should be as close as possible to the seal cage to minimize bearing load and improve bearing life. The formula for determining overhung load in N. is as follows:

$$\text{Overhung load (N)} = (14247550.5 \times \text{HP} \times F_c \times L_f) / (\text{PD} \times \text{RPM}(\text{output}))$$

Where:

- HP : Horsepower without service factor.
- Lf : Load location factor –Refer table No.3
- PD : Pitch Diameter in mm
- RPM : Shaft revolutions per minute.
- Fc : Load connection factor



Load connection factor selection table

Load connection factor (Fc)

Sprocket or Timing Belt*	:	1
Machined Pinion or Gear*	:	1.25
V-Belt	:	1.5
Flat belt	:	2.5

* Refer all multiple chain sprocket and pinion mounted

If the actual overhung load exceeds the specified capacity, the following may assist to reduce the overhung load on the shaft bearings.

1. Increase the pitch diameter of gear, Pulley or sprocket.
2. Locate the sprocket or belt closer to the Seal cage.
3. Go to the next larger reducer series.

Step 10

Check dimensions :

Dimensions drawings for reducers are given in the catalogue for free input and hollow input with foot and flange mounting. For your specific requirement contact the AGNEE.

Step 11

Ordering reducers :

Specify the model, Reduction ratio, Mounting, Input type and Specific requirements if any.



2. Selection Procedure

2 b. Selection Examples:

When Output torque is known :

A heavy-duty bucket elevator is operating at 24 hrs/day. The elevator requires a reducer with a 120 rpm output speed (1440 rpm input speed) and 2740 Nm. output torque. Overhung and thrust loads are bit a factor. Reducer will be driven with a 60-hp electric motor. Life index required ($n_2 \times h$) = 500000

Step 1

Select service factor. :

The service factor for a heavy duty bucket elevator 24 hrs/day operation is 1.5.

Step 2

Calculate Required Reduction Ratio. :

Ratio = $1440 \text{ rpm} / 120 \text{ rpm} = 12$.

Step 3

Select closest Reduction ratio i.e.12.96. :

Output Speed = $1440 / 12.96 = 111.11 \text{ rpm}$.

Step 4

Calculate equivalent output torque :

Since output torque is known : $T_{eq} = 2740 \text{ Nm} \times 1.5 \text{ (SF)} = 4110 \text{ Nm}$.

Step 5

Select Reducer. :

Reducer selection for Nominal ratio 12.96. The smallest series listed for the design output torque as calculated as above is model B 602 having rating of 5821 Nm. For the life index ($n_2 \times h$) 500000

Step 6

Check thermal capacity. :

Thermal capacity of Model B 602, ratio-12.96 is maximum 20 hp without any cooling arrangement and it can be increased up to 75 hp with cooling arrangement. Thus the application for 60 HP requires cooling arrangement.

Step 7

Check for overhung and thrust Loads. :

Overhung and thrust loads are not a factor in this example.

Step 8

Check dimensions. :

Dimensions for the model B 602.

Order Planetary gear reducer.

Model Name – B 602

Nominal Ratio - 12.96

Output torque rating - 5821 Nm.

Input motor horsepower - 10 hp.

Service Factor - 1.5

Input Speed - 1440 rpm.

Desired Accessories - with heat exchanger.



2. Selection Procedure

2 b. Selection Examples:

When Motor Horse Power is known :

Example :

10 hp 1400-rpm electric motor is used to drive a heavy-duty horizontal apron conveyor working 24 hrs/day. The conveyor requires a reducer output speed of 50 rpm. A roller chain drive having a 240 B 25 tooth roller chain sprocket having 600 mm Pitch Diameter which is mounted at the shaft center. Ambient temperature is 26° C.

Step 1

Select service factor. :

The service factor for an apron conveyor. 24-hrs / day operation is 1.5.

Step 2

Calculate Actual reduction ratio. :

Reduction Ratio = $1440 / 50 = 28.5$

Step 3

Select closest Reduction ratio

Which is 27.5 OutputSpeed = $1440/27.5 = 52.36$ rpm.

Step 4

Calculate equivalent output torque. :

Equivalent output torque (Teq) = $(7123.77 \times 10 \text{ hp} \times 1.5 \text{ SF} \times 0.92) / 52.36 \text{ rpm}$

Step 5

Select reducer :

Reduction ratio is 27.5. The smallest series listed for the Output torque calculated as above model is a B 502 having rating of 2528 Nm. For life index (n2 x h) 500000

Step 6

Check thermal capacity :

Compare the motor horsepower to the thermal ratings of the selected reducers. Since the motor horsepower is less than the thermal rating, the reducer 's thermal capacity exceeds the motor capacity.

Step 7

Overhung and thrust Loads. :

Overhung and thrust loads are not a factor in this example.

Step 8

Check dimensions

Order Planetary gear reducer.

Model Name	- B 502
Nominal Ratio	- 27.5
Output torque rating	- 2528 Nm.
Input motor horsepower	- 10 hp.
Service Factor	- 1.5
Input Speed	- 1440 rpm.
Desired Accessories	- none.



2. Selection Procedure

2 b. Selection Examples: Customer to fit the motor

Electric motor

1. Determine the required torque at the output of gearbox (T_o) and output speed n_2
2. Now depending upon the application determine the load classification from table 2 and depending upon the number of working hours decide the service factor(f_s).
3. We have efficiency of the gearbox (h)
4. Calculate the input power as follows
 Input power = $(T_o \times f_s \times n_2) / (9550 \times h)$ -----(kW) or
 Input power = $(T_o \times f_s \times n_2) / (7124.3 \times h)$ ----- (HP)

For efficiency of gearbox refer

Stage No	1	2	3	4
Efficiency(h)	0.96	0.92	0.87	0.84

Lookup the motor selection charts and select a size with such rated power to satisfy this condition

Motor power \geq Input power calculated above

Example

Motor unit is to be fitted by the customer with a 75 Nm output torque. The output shaft is to rotate at 50 rev / min. and is to be coupled to an industrial fan that operates 8 hours per day.

Life index ($n_2 \times h = 500000$)

Selection Procedure:

Following the procedure specified as above.

1. The load classification for this application is moderate shock.
2. The drive requires a minimum mechanical service factor of 1.25.
3. Required unit ratio $1440 / 50$ i.e. $28.8 : 1$ Check motor supplier 's data for actual speed.
4. Referring to exact ratio table we have reduction ratio $27.50 : 1$ which is closer to required one.

As gearbox is two stage hence efficiency (h) = 0.92

$$\begin{aligned}
 P \text{ (mech.)} &= \text{Output torque} \times \text{service factor} \times \text{output speed} / (9550 \times 0.92) \\
 &= 75 \times 1.25 \times (1440 / 27.5) / (9550 \times 0.92) \\
 &= 0.55874 \text{ kW or } 0.7489 \text{ HP}
 \end{aligned}$$

5. Thus select a motor which has horse power rating greater than or equal to 0.7489

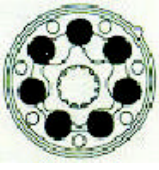


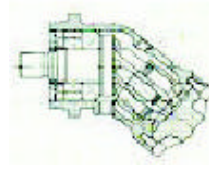


2. Selection Procedure

2 b. Selection Examples:

Hydraulic Motor :

- Determine the hydraulic motor type according to the application, choosing from the options given in guidance table (H1)

Hydraulic Motor Selection Table (H1)

Duty Pressure p (bar)	Light <175		Medium 175-200		Heavy 200-450	
	Orbital	Gear motor	Radial piston	Axial piston	Cam motor	Axial piston
Motor Design						
Speed	Mean <=700	High <=3000	Mean <=500	High <=4000	Low <=200	Mean <=4000
h''	0.80	0.85	0.95	0.93	0.93	0.93
h'	0.90	0.87	0.95	0.95	0.95	0.95

- Depending upon the specification of the gearbox
 Output torque : Output torque (M_{con}) and Velocity ratio (i)
 Input torque = Output torque (M_{con}) / velocity ratio(i)

Now depending upon allowed pressure p (bar) for the hydraulic circuit, calculate the displacement of the hydraulic motor by formula:

$$V_c = (20 \times \text{Input torque} / (p \times h_{mh})) \text{ cm}^3$$

Where h_{mh} is the hydraulic mechanical efficiency of the motor (refer table H1)

Select the motor size with displacement V that satisfies the condition $V_c \leq V$

Calculate the flow required for the hydraulic motor

$$Q_1 = (V \times n_1) / (h_v \times 1000) \text{ (l/min)}$$

Where h_v is volumetric efficiency

Thrust Loads :

Thrust loads applied to reducer shafts through coupling connections often are combined with radial shaft loads. Since this combined loading affects bearing thrust capacities, these values may be obtained by contacting the factory.



3. REFERENCE TABLES

3. a. MECHANICAL SERVICE FACTOR

Table 1

Power Source	Duration of working in Hours per day	Load Classification		
		Uniform Shock	Moderate shock	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



AGNEE Series B Planetary Gear Boxes & Drives



3. REFERENCE TABLES

3. b. Load Classification

Table 2

U=Uniform Load H=Heavy shock load M=Moderate shock load T=Refer to AGNEE

Driven machine	Load Type	Driven Machine	Load Type	Driven Machine	Load Type	Driven Machine	Load Type
Agitators		Dry dock cranes		Merry-go-round conveyor	M	felt whipper	H
Pure liquids	U	main hoist	T	roll cases	H	jordans	M
Liquids & solids	M	auxiliary hoist	T	slab conveyor	H	log haul	H
Liquids-variable density	M	boom, lifting	T	small waste conveyor-belt	U	presses	M
		rotating swing or slew	T	small waste conveyor-chain	M	pulp machine reel	M
		tracking, drive wheels	T	sorting table	M	suction roll	M
Blowers				tipple hoist conveyor	M	washers & thickness	M
Centrifugal	U			tipple hoist drive	M	winders	M
Lobe	M	Elevators		transfer conveyor	M		
Vane	U	bucket-uniform load	U	transfer rolls	M	Printing presses	
		bucket-heavy load	M	tray drive	M	pullers	T
Brewing and distilling		bucket-continuous	U	trimmer feed	M	barge haul	H
Bottling machinery	U	centrifugal discharge	U	waste conveyor	M	pumps centrifugal	U
Brew kettles cont. duty	U	escalators	U			proportioning	M
Cookers cont. Duty	U	freight	M			reciprocating single acting	M
Mash tubs cont. Duty	U	gravity discharge	U	Machine tools		3 or more cylinders	
Scale hopper/re. Starts	M	man lifts	T	bending roll	M	reciprocating double acting	M
		passenger	T	punch press gear-driven	H	2 or more cylinders	
Can filling M/C	U			notching press-belt driven	T	single acting 1 or 2 cylinders	T
Can knives	M	Fans		plate planers	H	double acting, single cylinder	
Car dumpers	H	centrifugal	U	tapping machine	H	rotary-gear type	U
Car pulleys	M	cooling towers				rotary-lobe, vane	U
Clarifiers	U	induced draft	T	Other machine tools			
Classifiers	M	forced draft	T	Main drive	M		
		induced draft	M	Auxiliary Drives	U	Rubber and plastics industries	
Clay working machinery		large, mine, etc.	M			crackers	H
Brick press	H	large, industrial	M	Metal mills		laboratory, equipment	M
Briquette machine	H	light, small diameter	U	Draw bench carriage	M	mixed mills	H
Clay working machinery	M			Main drive	M	refiners	M
Pug mill	M	Feeders		pinch, dryer and scrubber		rubber calendars	M
		apron	M	rolls-reversing	T	rubber mill-2 on line	M
Compressors		belt	M	slitters	M	rubber mill-3 on line	M
Centrifugal	U	disc	U			sheeter	M
Lobe	M	reciprocating	H	Table conveyors		tire building machines	T
Reciprocating-Multi-cyl.	M	screw	M	non reversing group drives	M	tire and tube press openers	T
Single cyl.	H			individual drives	H	tubers and strainers	M
		Food industry				warming mills	M
Conveyor- uniformly loaded		beef slicer	M	Reversing		sand multer	M
Apron	U	cereal cooker	U	wire drawing	M		
Assembly	U	dough mixer	M	flattening machine	M	Sewage disposal equipment	
Belt	U	meat grinders	M	wire winging machine	M	bar screens	U
Bucket	U	Generators-not welding	U	Mill - rotary type ball	H	chemical feeders	U
Chain	U	Hammer mills	H	cement kilns	H	collectors	U
Flight	U			dryers and coolers	H	de watering screws	M
Oven	U	Hoists		kilns, other than-cement	H	scum breakers	M
Screw	U	heavy duty	H	pebble	H	slow or rapid mixers	M
		medium duty	M	rod plain	H	thickeners	M
Conveyor- heavy duty		skip hoist	M	wedge bar	H	vacuum filters	M
Apron	M			tumbling barrels	H		
Assembly	M	Laundry machines				Screens	
Belt	M	Laundry washers reverse	M	Mixers		air washing	U
Bucket	M	Laundry tumblers	M	concrete mixers-cont.	M	rotary-stone or gravel	M
Chain	M			conc rete mixers-int.	M	traveling water intake	U
Flight	M	Line shafts		constant density	U	Slab pushers	M
Live roll	H	processing equipment	M	variable density	M	steering gear stokers	U
Oven	M	light applications	U				
Reciprocating	H	other line shafts	U	Oil industry		Sugar industry	
Screw	M			chillers	M	cane knives	M
Shaker	H	Lumber industry		oil well pumping	T	crushers	M
		barkers-Hydraulic	M	paraffin filler press	M	mills	M
Cranes		barkers-mechanical	M	rotary kilns	M		
Main hoists	U	burner conveyor	M			Textile industry	
Bridge travel	H	chain saw and drag saw	H	Paper mills		batchers	M
Trolley travel	H	chain transfer	H	agitators, (Mixers)	M	calendars	M
		craneway transfer	H	barker-auxiliaries hydraulic	M	cards	M
Crusher		de-barking drum	H	barker-mechanical	H	dry cans	M
Ore	H	edger feeder	M	barking drum	H	dryers	M
Stone	H	gang feeder	M	beater and pulper	M	dyeing machinery	M
Sugar	H	green chain	M	bleacher	U	knitting machines looms	M
		live rolls	H	calendars	M	mangles	M
Dredges		log deck	H	calendars-super	H	nappers	M
Cable reels	M	log haul-incline	H			pads	M
Conveyors	M	log haul-well type	H	Converting machine,		range drives slashers	M
Cutter head drives	H	log turning device	H	except cutters, platers	M	soapers	M
Jig drives	H	main log conveyor	H	conveyors	U	spinners	M
Maneuvering winches	M	off bearing rolls	H	couch	M	tenter frames	M
Pumps	M	planer feed chains	M	cutters-plates	H	washers	M
Screen drive	H	planer floor chains	M	cylinders	M	winders	M
Stackers	M	planer tilting hoist	M	dyers	M		
Utility winches	M			felt stretcher	M		

3. REFERENCE TABLES

3. c. Load Location Factor

Table 3

High Speed Shafts

Distance in mm	B 100	B 200	B 300	B 400	B 500	B 600	B 700	B 800	B 900
10	0.40	0.21	0.21	0.21	0.15	0.15	0.01	0.11	0.11
15	0.60	0.32	0.32	0.32	0.22	0.22	0.02	0.17	0.17
20	0.80	0.43	0.43	0.43	0.29	0.29	0.29	0.23	0.23
25	0.10	0.53	0.53	0.53	0.37	0.37	0.37	0.29	0.29
30	0.12	0.64	0.64	0.64	0.44	0.44	0.44	0.34	0.34
35	0.14	0.74	0.74	0.74	0.51	0.51	0.51	0.40	0.40
40	0.16	0.85	0.85	0.85	0.59	0.58	0.58	0.48	0.46
45	0.18	0.96	0.96	0.96	0.66	0.66	0.66	0.52	0.52
50		1.06	1.06	1.06	0.74	0.74	0.74	0.57	0.57
55		1.17	1.17	1.17	0.81	0.81	0.81	0.63	0.63
60		1.28	1.28	1.28	0.88	0.88	0.88	0.69	0.69
65		1.38	1.38	1.38	0.96	0.96	0.96	0.75	0.75
70		1.49	1.49	1.49	1.03	1.03	1.03	0.80	0.80
75		1.60	1.60	1.60	1.10	1.10	1.10	0.86	0.86
80		1.70	1.70	1.70	1.18	1.18	1.18	0.92	0.92
85				1.81	1.25	1.25	1.25	0.98	0.98
90					1.32	1.32	1.03	1.03	1.03
95					1.40	1.40	1.40	1.09	1.09
100					1.47	1.47	1.47	1.15	1.15

Low Speed Shaft

Distance in mm	B 100	B 200	B 300	B 400	B 500	B 600	B 700	B 800	B 900
10	0.27	0.22	0.21	0.16	0.14	0.12	0.10	0.08	0.08
15	0.41	0.34	0.32	0.24	0.21	0.18	0.15	0.12	0.12
20	0.55	0.45	0.43	0.33	0.28	0.24	0.20	0.16	0.16
25	0.68	0.56	0.53	0.41	0.35	0.30	0.24	0.20	0.20
30	0.82	0.67	0.64	0.49	0.42	0.36	0.29	0.25	0.23
35	0.96	0.79	0.74	0.57	0.49	0.41	0.34	0.29	0.27
40	1.10	0.90	0.85	0.65	0.56	0.47	0.39	0.33	0.31
45	1.23	1.01	0.96	0.73	0.63	0.53	0.44	0.37	0.35
50	1.37	1.12	1.06	0.81	0.69	0.59	0.49	0.41	0.39
55		1.24	1.17	0.89	0.76	0.65	0.54	0.45	0.43
60		1.35	1.00	0.98	0.83	0.71	0.59	0.49	0.47
65		1.46	1.28	1.06	0.90	0.77	0.63	0.53	0.51
70			1.38	1.14	0.97	0.83	0.68	0.57	0.55
75			1.49	1.22	1.04	0.89	0.73	0.61	0.59
80				1.30	1.11	0.95	0.78	0.66	0.63
85				1.38	1.18	1.01	0.83	0.70	0.66
90				1.46	1.25	1.07	0.88	0.74	0.70
95					1.32	1.12	0.93	0.78	0.74
100					1.39	1.18	0.98	0.82	0.78
105						1.24	1.02	0.86	0.82
110						1.30	1.07	0.90	0.86
115						1.36	1.12	0.94	0.90
120						1.42	1.17	0.98	0.94
125						1.48	1.22	1.02	0.98
130						1.54	1.27	1.07	1.02
135							1.32	1.11	1.05
140							1.37	1.15	1.09
145							1.41	1.19	1.13
150								1.23	1.17
155								1.27	1.21
160								1.31	1.25
165								1.35	1.29



AGNEE Series B Planetary Gear Boxes & Drives



4. Mechanical Capacity Rating Chart

Model	Reduction Ratio	Torque Rating (Nm)	Thermal Rating (Kw)	Shaft Dia.	Optional Suitable spline (Solid Output shaft)
B201	3.33-6.25	300	5.5	28	-
B202	11-39	330	2.2	28	-
B203	45-244	340	1.5	28	-
B204	250-1526	350	0.75	28	-
B301	3.6-7.5	500	7.5	38	-
B302	13-45	600	5.5	38	-
B303	51.2-337	700	3	38	-
B304	349-2531	750	2.2	38	-
B401	3.6-7.5	1000	9.4	50	B40X36 DIN5482
B402	13-45	1200	7.5	50	B40X36 DIN5482
B403	51.2-337	1350	5.5	50	B40X36 DIN5482
B404	349-2531	1500	2.2	50	B40X36 DIN5482
B501	3.6-7.5	1800	17.5	65	B58X53 DIN5482
B502	13-45	2100	9.4	65	B58X53 DIN5482
B503	51.2-337	2500	5.5	65	B58X53 DIN5482
B504	349-2531	3000	3	65	B58X53 DIN5482
B601	3.6-7.5	3500	25	80	B70X64 DIN5482
B602	13-45	4000	20	80	B70X64 DIN5482
B603	51.2-337	6000	9.4	80	B70X64 DIN5482
B604	349-2531	6500	7.5	80	B70X64 DIN5482
B651	3.6-7.5	4500	30	80	B70X64 DIN5482
B652	13-45	5500	22	80	B70X64 DIN5482
B653	51.2-337	7500	15	80	B70X64 DIN5482
B654	349-2531	8000	9.4	80	B70X64 DIN5482
B701	3.6-7.5	9000	40	95	B80X74 DIN5482
B702	13-45	9500	25	95	B80X74 DIN5482
B703	51.2-337	10500	15	95	B80X74 DIN5482
B704	349-2531	11000	9.4	95	B80X74 DIN5482
B801	3.6-7.5	15500	50	110	B100X94 DIN5482
B802	13-45	18000	27.5	110	B100X94 DIN5482
B803	51.2-337	19000	17.5	110	B100X94 DIN5482
B804	349-2531	20000	15	110	B100X94 DIN5482
B901	3.6-7.5	25000	55	120	W120X3X30X38X8f DIN5480
B902	13-45	26000	30	120	W120X3X30X38X8f DIN5480
B903	51.2-337	30500	20	120	W120X3X30X38X8f DIN5480
B904	349-2531	31150	15	120	W120X3X30X38X8f DIN5480

Model	Reduction Ratio	Mechanical Torque Rating (Nm.)	Thermal Rating (Kw)
B1002	15.8 - 24.6	60000	50.00
B1003	54.9 - 142	63000	35.00
B1004	208 - 1022	65000	35.00
B1102	15.8 - 24.6	115000	65.00
B1103	54.9 - 142	120000	45.00
B1104	208 - 1022	125000	45.00
B1202	15.8 - 24.6	190000	70.00
B1203	54.9 - 142	200000	50.00
B1204	208 - 1022	210000	50.00
B1302	15.8 - 24.6	410000	85.00
B1303	54.9 - 142	430000	65.00
B1304	208 - 1022	450000	65.00
B1402	15.8 - 24.6	800000	90.00
B1403	54.9 - 142	860000	70.00
B1404	208 - 1022	890000	70.00
B1502	15.8 - 24.6	1350000	95.00
B1503	54.9 - 142	1450000	70.00
B1504	208-1022	1500000	70.00

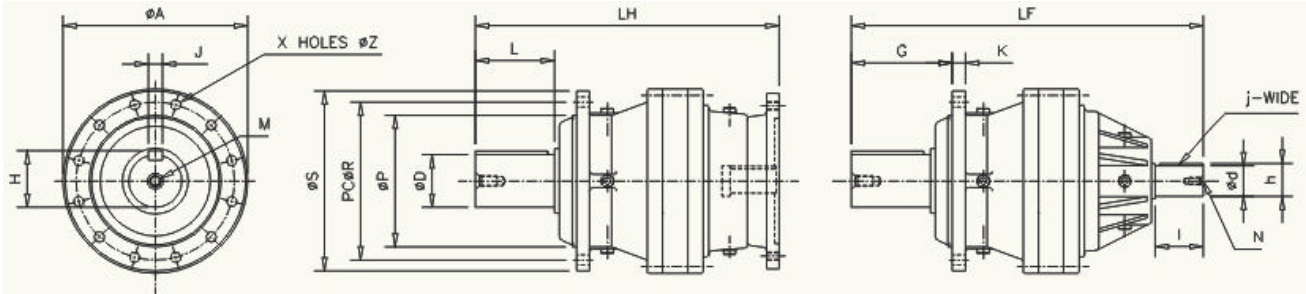
5. Dimension Details

5 a. MOUNTING TYPE-FLANGE

INPUT MALE SHAFT (FREE) d, OUTPUT-MALE SHAFT (FREE) D
SIZE B 201 TO B 904

FLANGE HOLLOW INPUT

FLANGE FREE INPUT



Single Stage

All Dimensions are in mm

Model	Output					Input					Other					Frame Size					
	Dk6	JP9	H	M	L	dj6	jP9	h	N	I	Pk6	R	S	X	Z	G	K	A	LH	LF	ELE. Motor B5
B201	28	8	31	M8	40	28	8	31	M8	40	80	115	130	8	8.5	45	10	130	222	252	63-90
B301	38	10	41	M10	60	28	8	31	M8	40	105	135	150	8	8.5	72	13	158	263	284	80-112
B401	50	14	53.5	M12	80	28	8	31	M8	40	135	165	195	8	14	90	15	206	297	317	90-112
B501	65	16	69	M16	95	50	14	53.5	M12	70	160	190	220	8	14	108	18	246	401	430	100-160
B601	80	22	85.5	M20	110	50	14	53.5	M12	70	200	250	280	8	14	149	22	295	488	518	112-180
B701	95	25	100	M24	135	50	14	53.5	M12	70	230	295	325	12	18	171	25	345	547	576	132-180
B801	110	28	116	M24	170	70	20	74.5	M16	110	230	295	325	12	18	206	25	375	589	695	132-200
B901	120	32	127	M24	180	70	20	74.5	M16	110	345	390	420	12	18	390	127	420	655	744	160-225

Double Stage

Model	Dk6	JP9	H	M	L	dj6	jP9	h	N	I	Pk6	R	S	X	Z	G	K	A	LH	LF	ELE. Motor B5
B202	28	8	31	M8	40	28	8	31	M8	40	80	115	130	8	8.5	45	10	130	271	301	63-90
B302	38	10	41	M10	60	28	8	31	M8	40	105	135	150	8	8.5	72	13	158	313	333	71-112
B402	50	14	53.5	M12	80	28	8	31	M8	40	135	165	195	8	14	90	15	206	347	367	71-112
B502	65	18	69	M16	95	28	8	31	M8	40	160	190	220	8	14	108	18	248	406	415	100-132
B602	80	22	85.5	M20	110	50	14	53.5	M12	70	200	250	280	8	14	149	22	295	562	592	100-160
B702	95	25	100	M24	135	50	14	53.5	M12	70	230	295	325	12	18	171	25	345	621	650	112-160
B802	110	28	116	M24	170	50	14	53.5	M12	70	230	295	325	12	18	206	25	375	672	702	112-180
B902	120	32	127	M24	180	50	14	53.5	M12	70	345	390	420	12	18	390	127	420	735	765	132-180

Triple Stage

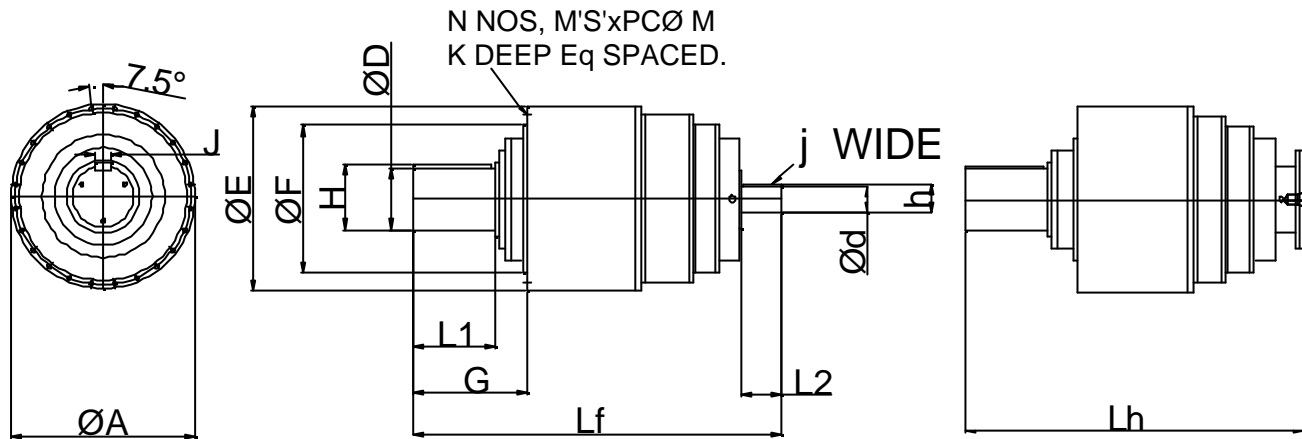
Model	Dk6	JP9	H	M	L	dj6	jP9	h	N	I	Pk6	R	S	X	Z	G	K	A	LH	LF	ELE. Motor B5
B203	28	6	31	M8	40	28	8	31	M8	40	80	115	130	8	8.5	45	10	130	320	350	63-90
B303	38	10	41	M10	60	28	8	31	M8	40	105	135	150	8	8.5	72	13	158	352	382	63-90
B403	50	14	53.5	M12	80	28	8	31	M8	40	135	165	195	8	14	90	15	206	397	417	63-112
B503	65	18	69	M16	95	28	8	31	M8	40	160	190	220	8	14	108	18	248	445	465	71-112
B603	80	22	85.5	M20	110	50	14	53.5	M12	70	200	250	280	8	14	149	22	295	632	662	71-160
B703	95	25	100	M24	135	50	14	53.5	M12	70	230	295	325	12	18	171	25	345	691	720	80-160
B803	110	28	116	M24	170	50	14	53.5	M12	70	230	295	325	12	18	206	25	375	747	776	90-160
B903	120	32	127	M24	180	50	14	53.5	M12	70	345	390	420	12	18	300	127	420	810	839	100-160

Four Stage

Model	Dk6	JP9	H	M	L	dj6	jP9	h	N	I	Pk6	R	S	X	Z	G	K	A	LH	LF	ELE. Motor B5
B204	28	8	31	M8	40	28	8	31	M8	40	80	115	130	8	8.5	45	10	130	369	399	63-71
B304	38	10	41	M10	60	28	8	31	M8	40	105	135	150	8	8.5	72	13	158	401	431	63-90
B404	50	14	53.5	M12	80	28	8	31	M8	40	135	165	195	8	14	90	15	206	436	466	63-90
B504	65	18	69	M16	95	28	8	31	M8	40	160	190	220	8	14	108	18	248	484	514	71-112
B604	80	22	85.5	M20	110	28	8	31	M8	40	200	250	280	8	14	149	22	295	626	647	71-112
B704	95	25	100	M24	135	28	8	31	M8	40	230	295	325	12	18	171	25	345	685	705	80-112
B804	110	28	116	M24	170	50	14	53.5	M12	70	230	295	325	12	18	206	25	375	817	846	90-160
B904	120	32	127	M24	180	50	14	53.5	M12	70	345	390	420	12	18	390	127	420	880	909	100-160

5. Dimension Details

5. b. MOUNTING TYPE-FLANGE INPUT SHAFT- SOLID AND HOLLOW SIZE B 1002 TO B 1504



WITH SOLID INPUT SHAFT (Dimension in mm)

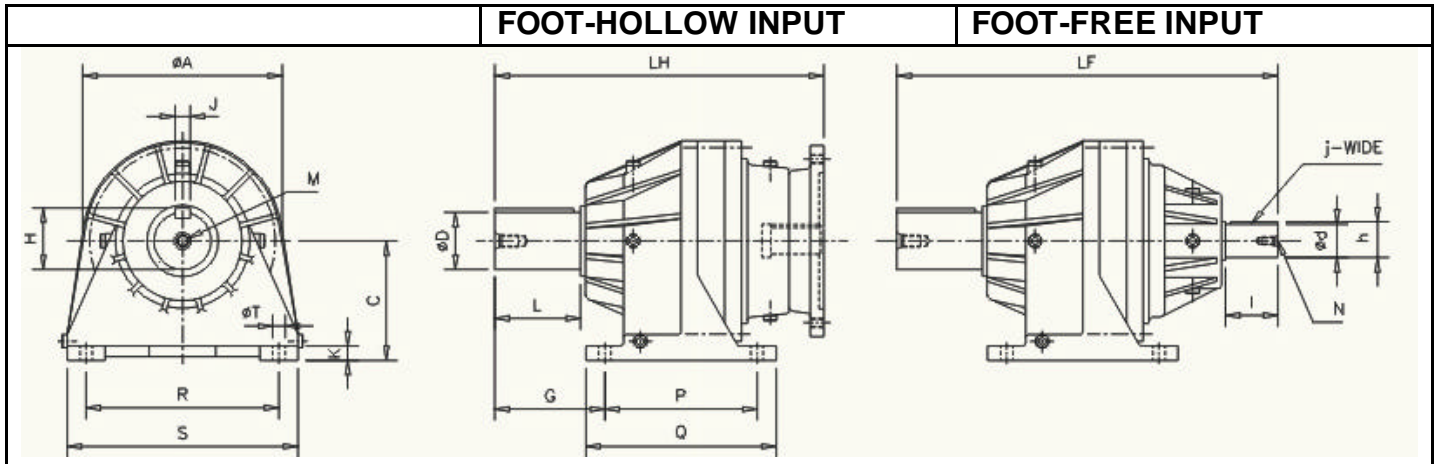
Planetary Gear Box Type	Lf (Total length in mm)			ø A	ø D	ø d	G	ø F	M	E	L1	L2	ø S	N
	Stage 2	Stage 3	Stage 4											
B1002, B1003, B1004	900	990	1010	450	150	70	330	390	420	450	200	100	16	24
B1102, B1103, B1104	1150	1140	1180	550	180	80	385	485	520	550	240	150	16	24
B1202, B1203, B1204	1270	1410	1400	650	220	80	478	590	620	650	300	150	16	24
B1302, B1303, B1304	1520	1690	1765	850	260	100	560	770	810	850	350	170	20	24
B1402, B1403, B1404	1790	1980	2140	1050	300	120	680	960	1010	1050	400	180	20	24
B1502, B1503, B1504	2000	2250	2425	1270	350	150	750	1150	1210	1270	450	200	20	24

WITH HOLLOW INPUT SHAFT (Dimension in mm)

Planetary Gear Box Type	Lh (Total length in mm)			ø A	ø D	ø d	G	ø F	M	E	L1	ø S	N
	Stage 2	Stage 3	Stage 4										
B1002, B1003, B1004	830	920	970	450	150	70	330	390	420	450	200	16	24
B1102, B1103, B1104	1000	1070	1140	550	180	80	385	485	520	550	240	16	24
B1202, B1203, B1204	1115	1260	1330	650	220	80	478	590	620	650	300	16	24
B1302, B1303, B1304	1356	1530	1610	850	260	100	560	770	810	850	350	20	24
B1402, B1403, B1404	1610	1810	1978	1050	300	120	680	960	1010	1050	400	20	24
B1502, B1503, B1504	1830	2050	2250	1270	350	150	750	1150	1210	1270	450	20	24

5. Dimension Details:

5. c. MOUNTING TYPE – FOOT ,
INPUT - MALE SHAFT (FREE) d, OUTPUT – MALE SHAFT (FREE) D,
SIZE B 201 TO B 904



Single Stage

Model	Output					Input					Other										Frame Size	
	Dk6	JP9	H	M	L	dj6	jP9	h	N	I	C	P	Q	R	S	K	T	G	A	LH	LF	ELE Motor B5
B201	28	8	31	M8	40	28	8	31	M8	40	100	90	120	120	150	12	14	57	130	222	252	63-90
B301	38	10	41	M10	60	28	8	31	M8	40	100	120	155	165	205	15	14	75	158	263	284	80-112
B401	50	14	53.5	M12	80	28	8	31	M8	40	132	138	182	216	256	15	14	104	206	297	317	90-112
B501	65	16	69	M16	95	50	14	53.5	M12	70	160	169	240	254	310	22	18	134	246	401	430	100-160
B601	80	22	85.5	M20	110	50	14	53.5	M12	70	160	200	250	300	350	25	18	149	295	488	518	112-180
B651	80	22	85.5	M20	110	50	14	53.5	M12	70	180	200	260	300	350	25	18	149	295	490	519	112-180
B701	95	25	100	M24	135	50	14	53.5	M12	70	200	250	305	350	400	25	22	165	345	547	576	132-180
B801	110	28	116	M24	170	70	20	74.5	M16	110	225	300	350	360	430	25	22	198	375	589	695	132-200
B901	120	32	127	M24	180	70	20	74.5	M16	110	250	320	400	405	465	30	26	225	420	655	744	160-225

Double Stage

Model	Output					Input					Other										Frame Size	
	Dk6	JP9	H	M	L	dj6	jP9	h	N	I	C	P	Q	R	S	K	T	G	A	LH	LF	ELE Motor B5
B202	28	8	31	M8	40	28	8	31	M8	40	100	90	120	120	150	12	14	57	130	271	301	63-90
B302	38	10	41	M10	60	28	8	31	M8	40	100	120	155	165	205	15	14	75	158	313	333	71-112
B402	50	14	53.5	M12	80	28	8	31	M8	40	132	138	182	216	256	15	14	104	206	347	367	71-112
B502	65	18	69	M16	95	50	14	53.5	M12	70	160	169	240	254	310	22	18	134	248	406	415	100-132
B602	80	22	85.5	M20	110	50	14	53.5	M12	70	160	200	250	300	350	25	18	149	295	562	592	100-160
B652	80	22	85.5	M20	110	50	14	53.5	M12	70	180	200	260	300	350	25	18	149	295	564	593	100-160
B702	95	25	100	M24	135	50	14	53.5	M12	70	200	250	305	350	400	25	22	165	345	621	650	112-160
B802	110	28	116	M24	170	70	20	74.5	M16	110	225	300	350	360	430	25	22	198	375	672	702	112-180
B902	120	32	127	M24	180	70	20	74.5	M16	110	250	320	400	405	485	30	26	225	420	735	765	132-180

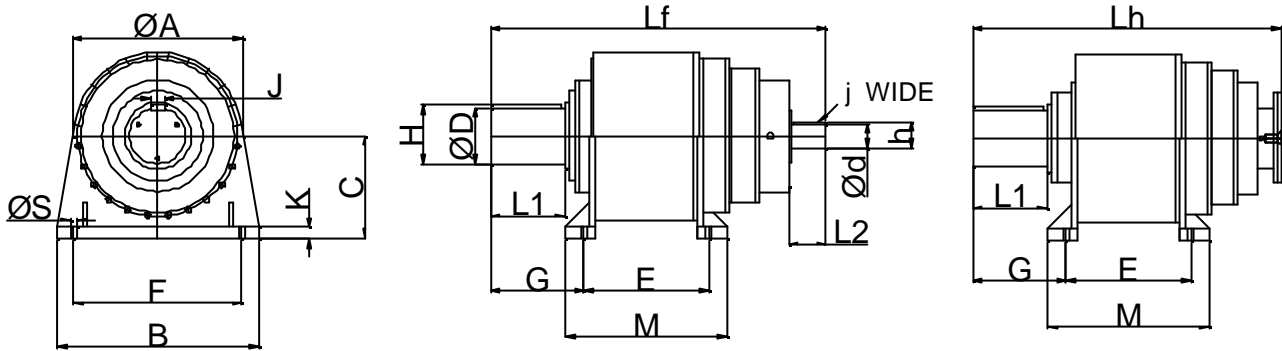
Triple Stage

Model	Output					Input					Other										Frame Size	
	Dk6	JP9	H	M	L	dj6	jP9	h	N	I	C	P	Q	R	S	K	T	G	A	LH	LF	ELE Motor B5
B203	28	6	31	M8	40	28	6	31	M6	40	100	90	120	120	150	12	14	57	130	320	350	63-90
B303	38	10	41	M10	60	28	8	31	M8	40	100	120	155	165	205	15	14	75	158	352	382	63-90
B403	50	14	53.5	M12	80	28	8	31	M8	40	132	138	182	216	256	15	14	104	206	397	417	63-112
B503	65	18	69	M16	95	50	14	53.5	M12	70	160	169	240	254	310	22	18	134	248	445	465	71-112
B603	80	22	85.5	M20	110	50	14	53.5	M12	70	160	200	250	300	350	25	18	149	295	632	662	71-160
B653	80	22	85.5	M20	110	50	14	53.5	M12	70	160	200	260	300	350	25	18	149	295	634	663	71-160
B703	95	25	100	M24	135	50	14	53.5	M12	70	200	250	305	350	400	25	22	165	345	691	720	80-160
B803	110	28	116	M24	170	70	20	74.5	M16	110	225	300	350	360	430	25	22	198	375	747	776	90-160
B903	120	32	127	M24	180	70	20	74.5	M16	110	250	320	400	405	485	30	26	225	420	810	839	100-160

Four Stage

Model	Output					Input					Other										Frame Size	
	Dk6	JP9	H	M	L	dj6	jP9	h	N	I	C	P	Q	R	S	K	T	G	A	LH	LF	ELE Motor B5
B204	28	8	31	M8	40	28	8	31	M8	40	100	90	120	120	150	12	14	57	130	369	399	63-71
B304	38	10	41	M10	60	28	8	31	M8	40	100	120	155	165	205	15	14	75	158	401	431	63-90
B404	50	14	53.5	M12	80	28	8	31	M8	40	132	138	182	216	256	15	14	104	206	436	466	63-90
B504	65	18	69	M16	95	50	14	53.5	M12	70	160	169	240	254	310	22	18	134	248	484	514	71-112
B604	80	22	85.5	M20	110	50	14	53.5	M12	70	160	200	250	300	350	25	18	149	295	626	647	71-112
B654	80	22	85.5	M20	110	50	14	53.5	M12	70	180	200	260	300	350	25	18	149	295	628	648	71-112
B704	95	25	100	M24	135	50	14	53.5	M12	70	200	250	305	350	400	25	22	165	345	685	705	80-112
B804	110	28	116	M24	170	70	20	74.5	M16	110	225	300	350	360	430	25	22	198	375	817	846	90-160
B904	120	32	127	M24	180	70	20	74.5	M16	110	250	320	400	405	485	30	26	225	420	880	909	100-160

5. Dimension Details -
5. d. MOUNTING TYPE-FOOT
INPUT SHAFT- SOLID AND HOLLOW



WITH SOLID INPUT SHAFT (Dimension in mm)

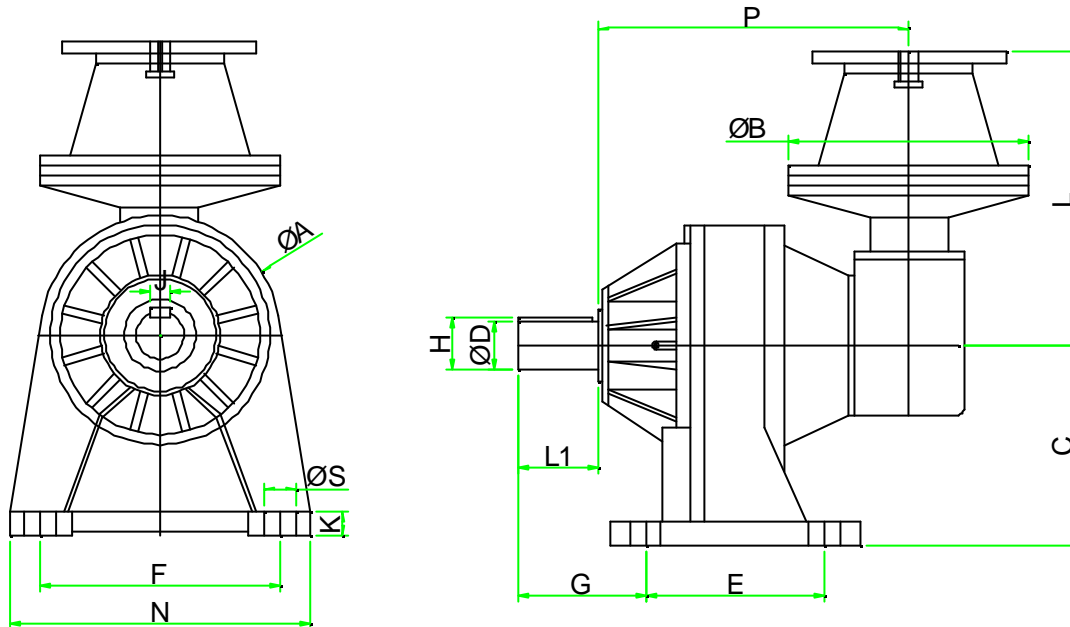
Planetary Gear Box Type	Lf (Total length in mm)			ø A	ø D	ø d	C	E	F	L1	L2	G	ø S
	Stage 2	Stage 3	Stage 4										
B1002, B1003, B1004	900	990	1015	450	150	70	275	335	450	200	100	250	33
B1102, B1103, B1104	1150	1140	1180	550	180	80	350	395	550	240	150	290	33
B1202, B1203, B1204	1270	1410	1400	650	220	80	400	465	650	300	150	350	33
B1302, B1303, B1304	1520	1700	1765	850	260	100	500	575	850	350	170	410	45
B1402, B1403, B1404	1790	1980	2145	1050	300	120	600	1000	900	400	180	530	45
B1502, B1503, B1504	2000	2250	2425	1270	350	150	700	1100	1100	450	200	620	45

WITH HOLLOW INPUT SHAFT(Dimension in mm)

Planetary Gear Box Type	Lh (Total length in mm)			ø A	ø D	C	E	F	L1	G	ø S
	Stage 2	Stage 3	Stage 4								
B1002, B1003, B1004	830	920	970	450	150	275	335	450	200	250	33
B1102, B1103, B1104	1000	1070	1140	550	180	350	395	550	240	290	33
B1202, B1203, B1204	1115	1260	1330	650	220	400	465	650	300	350	33
B1302, B1303, B1304	1356	1530	1610	850	260	500	575	850	350	410	45
B1402, B1403, B1404	1610	1810	1978	1050	300	600	1000	900	400	530	45
B1502, B1503, B1504	1830	2050	2250	1270	350	700	1100	1100	450	620	45

5. Dimension Details

5. e. BEVEL PLANETARY GEAR BOX MOUNTING TYPE- FOOT INPUT HOLLOW SHAFT, OUTPUT-MALE SHAFT (FREE) D SIZES FROM B201B TO B504B



Single Stage

Model	Output				Mounting								Others				Motor Frame
	Dj6	H	JP9	L ₁	C	E	F	M	N	G	S	K	A	P	L	B	
B 201B	28	31	8	40	100	90	120	120	150	64	14	12	135	164	147	120	63-71
B 301B	38	41	10	55	100	90	140	120	170	71	14	15	155	211	238	135	63-90
B 401B	50	53.5	14	75	120	110	180	150	220	97	14	15	205	225	238	135	80-112
B 501B	65	69	18	90	140	150	210	200	260	117	18	20	250	306	326	155	100-160

Double Stage

Model	Output				Mounting								Others				Motor Frame
	Dj6	H	JP9	L ₁	C	E	F	M	N	G	S	K	A	P	L	B	
B 202B	28	31	8	40	100	90	120	120	150	64	14	12	135	164	147	120	63-71
B 302B	38	41	10	55	100	90	140	120	170	71	14	15	155	211	238	135	63-90
B 402B	50	53.5	14	75	120	110	180	150	220	97	14	15	205	225	238	135	63-90
B 502B	65	69	18	90	140	150	210	200	260	117	18	20	250	306	326	155	80-112

Triple Stage

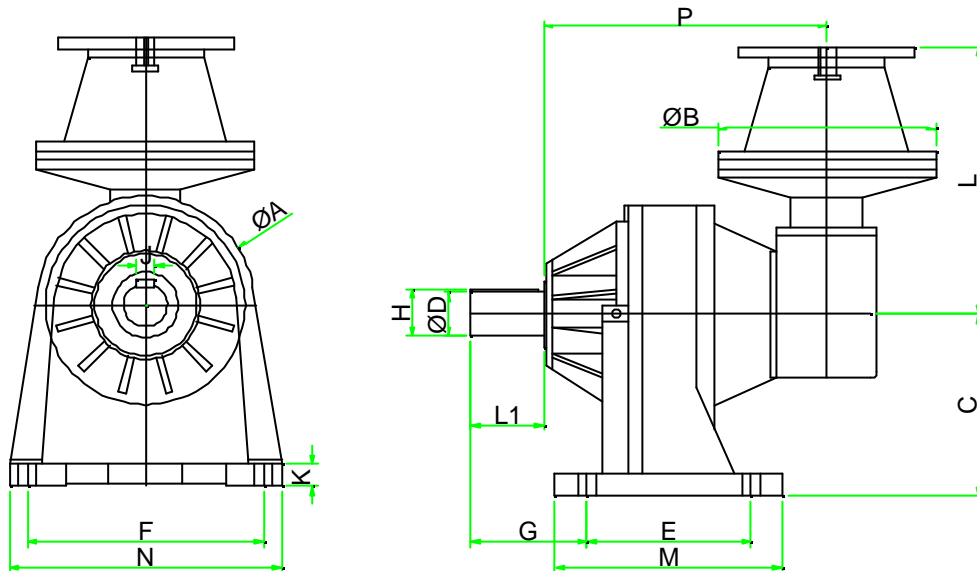
Model	Output				Mounting								Others				Motor Frame
	Dj6	H	JP9	L ₁	C	E	F	M	N	G	S	K	A	P	L	B	
B 203B	28	31	8	40	100	90	120	120	150	64	14	12	135	212	147	120	63-71
B 303B	38	41	10	55	100	90	140	120	170	71	14	15	155	259	238	135	63-90
B 403B	50	53.5	14	75	120	110	180	150	220	97	14	15	205	272	238	135	63-90
B 503B	65	69	18	90	140	150	210	200	260	117	18	20	250	312	238	135	63-90

Four Stage

Model	Output				Mounting								Others				Motor Frame
	Dj6	H	JP9	L ₁	C	E	F	M	N	G	S	K	A	P	L	B	
B 204B	28	31	8	40	100	90	120	120	150	64	14	12	135	260	147	120	63-71
B 304B	38	41	10	55	100	90	140	120	170	71	14	15	155	266	147	120	63-71
B 404B	50	53.5	14	75	120	110	180	150	220	97	14	15	205	320	238	135	63-90
B 504B	65	69	18	90	140	150	210	200	260	117	18	20	250	360	238	135	63-90

5. Dimension Details

5. f. BEVEL PLANETARY GEAR BOX MOUNTING TYPE- FOOT INPUT HOLLOW SHAFT, OUTPUT-MALE SHAFT (FREE) D SIZES FROM B 601B TO B904B



Single Stage

Model	Output				Mounting								Others				Motor
	Dj6	H	JP9	L 1	C	E	F	M	N	G	S	K	A	P	L	B	Frame
B 601B	80	85.5	22	110	160	200	300	250	350	137	18	25	290	367	329	205	100-160
B 701B	95	100	25	135	200	250	350	300	400	162	22	25	330	424	438	250	100-160
B 801B	110	116	28	170	200	250	350	300	400	197	22	25	355	454	449	290	132-200
B 901B	120	127	32	180	250	300	400	360	460	213	26	30	400	510	487	330	132-225

Double Stage

Model	Output				Mounting								Others				Motor
	Dj6	H	JP9	L 1	C	E	F	M	N	G	S	K	A	P	L	B	Frame
B 602B	80	85.5	22	110	160	200	300	250	350	137	18	25	290	367	329	208	80-112
B 702B	95	100	25	135	200	250	350	300	400	162	22	25	330	424	438	250	100-160
B 802B	110	116	28	170	200	250	350	300	400	197	22	25	355	454	449	290	100-180
B 902B	120	127	32	180	250	300	400	360	460	213	26	30	400	510	487	330	100-180

Triple Stage

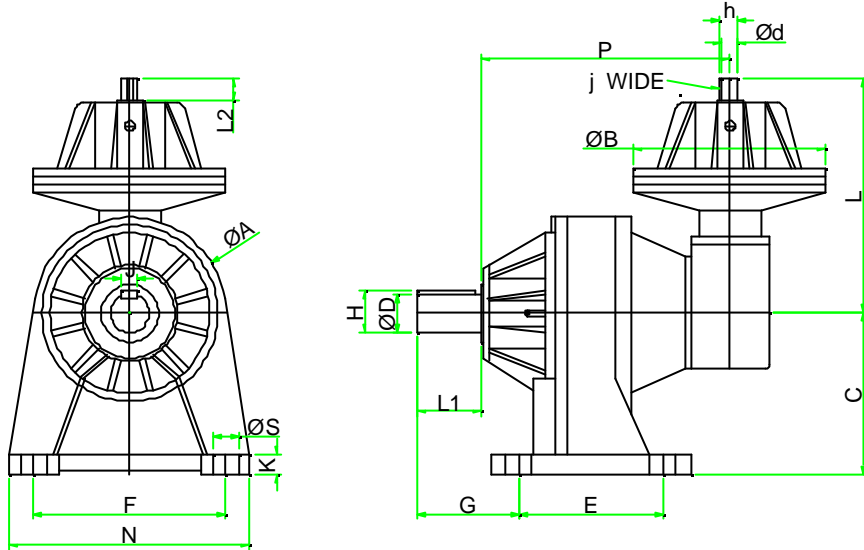
Model	Output				Mounting								Others				Motor
	Dj6	H	JP9	L 1	C	E	F	M	N	G	S	K	A	P	L	B	Frame
B 603B	80	85.5	22	110	160	200	300	250	350	137	18	25	290	441	326	155	63-112
B 703B	95	100	25	135	200	250	350	300	400	162	22	25	330	471	326	155	80-112
B 803B	110	116	28	170	200	250	350	300	400	197	22	25	355	508	329	205	80-112
B 903B	120	127	32	180	250	300	400	360	460	213	26	30	400	570	438	250	100-160

Four Stage

Model	Output				Mounting								Others				Motor
	Dj6	H	JP9	L 1	C	E	F	M	N	G	S	K	A	P	L	B	Frame
B 604B	80	85.5	22	110	160	200	300	250	350	137	18	25	290	441	238	135	63-112
B 704B	95	100	25	135	200	250	350	300	400	162	22	25	330	545	326	155	71-112
B 804B	110	116	28	170	200	250	350	300	400	197	22	25	355	567	326	155	80-112
B 904B	120	127	32	180	250	300	400	360	460	213	26	30	400	617	326	155	80-112

5. Dimension Details

5. g. BEVEL PLANETARY GEAR BOX
MOUNTING TYPE- FOOT
SOLID INPUT SHAFT, OUTPUT-MALE SHAFT (FREE) D
SIZES FROM B 201B TO B 504B



Single Stage

Model	Output				Input				Mounting									Others			
	Dj6	H	J P9	L1	d j6	h	j P9	L2	C	E	F	M	N	G	S	K	A	P	L	B	
B 201B	28	31	8	40	14	16	5	20	100	90	120	120	150	64	14	12	135	164	167	120	
B 301B	38	41	10	55	28	31	8	40	100	90	140	120	170	71	14	15	155	211	283	135	
B 401B	50	53	14	75	28	31	8	40	120	110	180	150	220	97	14	15	205	225	283	135	
B 501B	65	69	18	90	28	31	8	40	140	150	210	200	260	117	18	20	250	306	346	155	

Double Stage

Model	Output				Input				Mounting									Others			
	Dj6	H	J P9	L1	d j6	h	j P9	L2	C	E	F	M	N	G	S	K	A	P	L	B	
B 202B	28	31	8	40	14	16	5	20	100	90	120	120	150	64	14	12	135	164	167	120	
B 302B	38	41	10	55	28	31	8	40	100	90	140	120	170	71	14	15	155	211	283	135	
B 402B	50	53.5	14	75	28	31	8	40	120	110	180	150	220	97	14	15	205	225	283	135	
B 502B	65	69	18	90	28	31	8	40	140	150	210	200	260	117	18	20	250	306	346	155	

Triple Stage

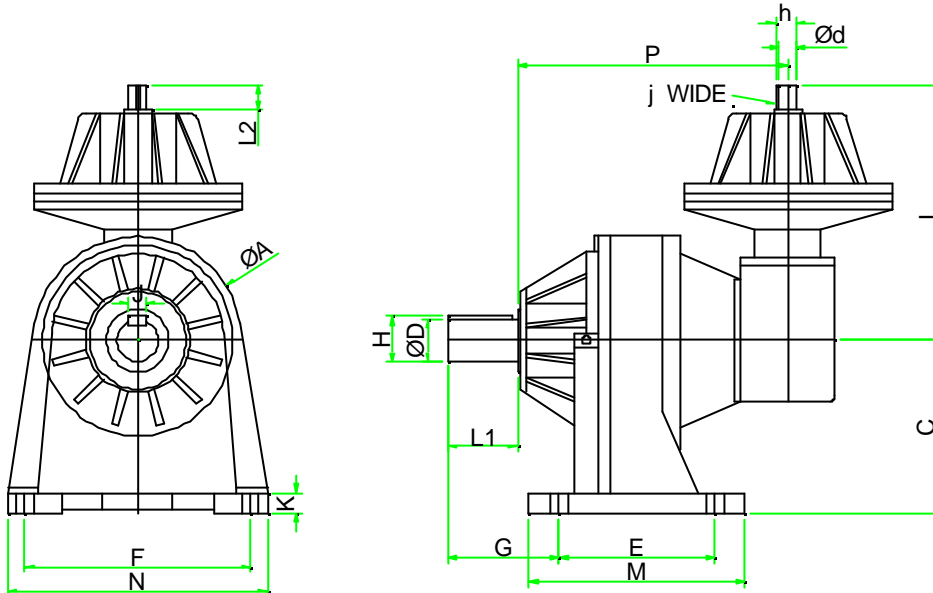
Model	Output				Input				Mounting									Others			
	Dj6	H	J P9	L1	d j6	h	j P9	L2	C	E	F	M	N	G	S	K	A	P	L	B	
B 203B	28	31	8	40	14	16	5	20	100	90	120	120	150	64	14	12	135	212	167	120	
B 303B	38	41	10	55	28	31	8	40	100	90	140	120	170	71	14	15	155	259	283	135	
B 403B	50	53.5	14	75	28	31	8	40	120	110	180	150	220	97	14	15	205	272	283	135	
B 503B	65	69	18	90	28	31	8	40	140	150	210	200	260	117	18	20	250	312	283	135	

Four Stage

Model	Output				Input				Mounting									Others			
	Dj6	H	J P9	L1	d j6	h	j P9	L2	C	E	F	M	N	G	S	K	A	P	L	B	
B 204B	28	31	8	40	14	16	5	20	100	90	120	120	150	64	14	12	135	260	167	120	
B 304B	38	41	10	55	28	31	8	40	100	90	140	120	170	71	14	15	155	266	167	135	
B 404B	50	53.5	14	75	28	31	8	40	120	110	180	150	220	97	14	15	205	320	283	135	
B 504B	65	69	18	90	28	31	8	40	140	150	210	200	260	117	18	20	250	360	283	135	

5. Dimension Details

5. h. BEVEL PLANETARY GEAR BOX MOUNTING TYPE- FOOT SOLID INPUT SHAFT, OUTPUT-MALE SHAFT (FREE) D SIZES FROM B 601B TO B 904B



Single Stage

Model	Output				Input				Mounting								Others			
	Dj6	H	J P9	L1	d j6	h	j P9	L2	C	E	F	M	N	G	S	K	A	P	L	B
601B	80	85.5	22	110	28	31	8	40	160	200	300	250	350	137	18	25	290	367	349	205
701B	95	100	25	135	50	53.5	14	70	200	250	350	300	400	162	22	25	330	424	481	250
801B	110	116	28	170	50	53.5	14	70	200	250	350	300	400	197	22	25	355	454	490	290
901B	120	127	32	180	50	53.5	14	70	250	300	400	360	460	213	26	30	400	510	528	330

Double Stage

Model	Output				Input				Mounting								Others			
	Dj6	H	J P9	L1	d j6	h	j P9	L2	C	E	F	M	N	G	S	K	A	P	L	B
602B	80	85.5	22	110	28	31	8	40	160	200	300	250	350	137	18	25	290	367	349	205
702B	95	100	25	135	50	53.5	14	70	200	250	350	300	400	162	22	25	330	424	481	250
802B	110	116	28	170	50	53.5	14	70	200	250	350	300	400	197	22	25	355	454	490	290
902B	120	127	32	180	50	53.5	14	70	250	300	400	360	460	213	26	30	400	510	528	330

Triple Stage

Model	Output				Input				Mounting								Others			
	Dj6	H	J P9	L1	d j6	h	j P9	L2	C	E	F	M	N	G	S	K	A	P	L	B
603B	80	85.5	22	110	28	31	8	40	160	200	300	250	350	137	18	25	290	440	283	135
703B	95	100	25	135	28	31	8	40	200	250	350	300	400	162	22	25	330	471	346	155
803B	110	116	28	170	28	31	8	40	200	250	350	300	400	197	22	25	355	508	349	205
903B	120	127	32	180	50	53.5	14	70	250	300	400	360	460	213	26	30	400	570	481	250

Four Stage

Model	Output				Input				Mounting								Others			
	Dj6	H	J P9	L1	d j6	h	j P9	L2	C	E	F	M	N	G	S	K	A	P	L	B
604B	80	85.5	22	110	28	31	8	40	160	200	300	250	350	137	18	25	290	441	283	135
704B	95	100	25	135	28	31	8	40	200	250	350	300	400	162	22	25	330	486	283	135
804B	110	116	28	170	28	31	8	40	200	250	350	300	400	197	22	25	355	511	283	135
904B	120	127	32	180	28	31	8	40	250	300	400	360	460	213	26	30	400	617	346	155

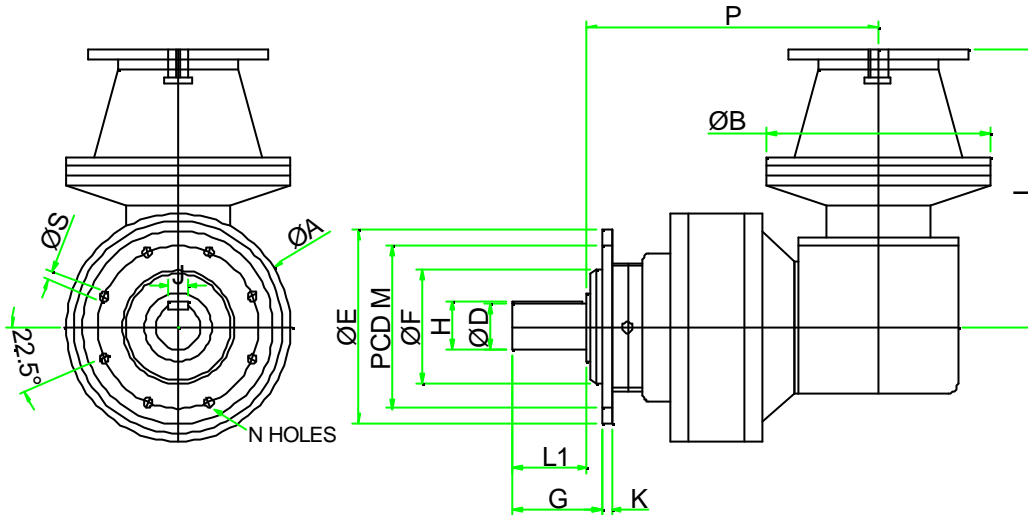
5. Dimension Details

5. i. BEVEL PLANETARY GEAR BOX

MOUNTING TYPE- FLANGE

HOLLOW INPUT SHAFT, OUTPUT-MALE SHAFT (FREE) D

SIZES FROM B 201B TO B 504B



Single Stage

Model	Output				Mounting							Others				Motor
	Dj6	H	JP9	L1	E	M	Fh8	N	S	K	G	A	P	L	B	Frame
B 201B	28	31	8	40	135	115	80	8	8.5	10	45	135	159	147	120	63-71
B 301B	38	41	10	55	150	135	100	8	8.5	12	68	155	198	238	135	63-90
B 401B	50	53.5	14	75	200	165	130	8	13	18	90	205	210	238	135	80-112
B 501B	65	69.0	18	90	220	190	160	8	13	15	106	250	290	326	155	100-160

Double Stage

Model	Output				Mounting							Others				Motor
	Dj6	H	JP9	L1	E	M	Fh8	N	S	K	G	A	P	L	B	Frame
B 202B	28	31	8	40	135	115	80	8	8.5	10	45	135	159	147	120	63-71
B 302B	38	41	10	55	150	135	100	8	8.5	12	68	155	198	238	135	63-90
B 402B	50	53.5	14	75	200	165	130	8	13	18	90	205	210	238	135	63-90
B 502B	65	69.0	18	90	220	190	160	8	13	15	106	250	290	326	155	80-112

Triple Stage

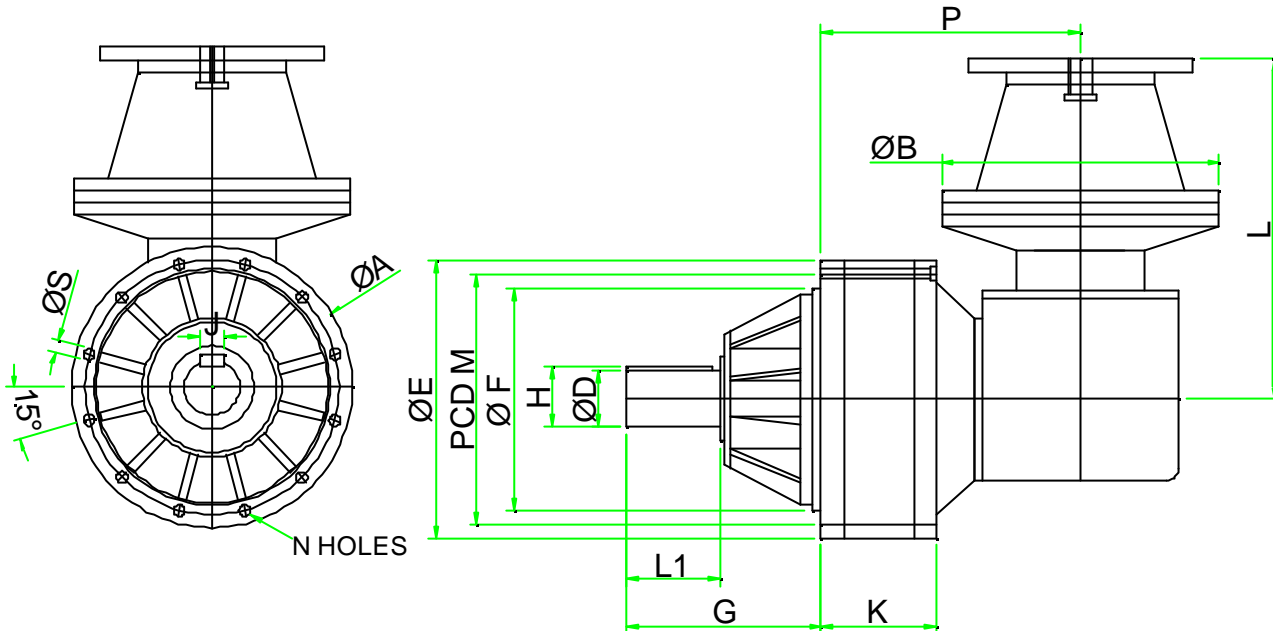
Model	Output				Mounting							Others				Motor
	Dj6	H	JP9	L1	E	M	Fh8	N	S	K	G	A	P	L	B	Frame
B 203B	28	31	8	40	135	115	80	8	8.5	10	45	135	207	147	120	63-71
B 303B	38	41	10	55	150	135	100	8	8.5	12	68	155	246	238	135	63-90
B 403B	50	53.5	14	75	200	165	130	8	13	18	90	205	257	238	135	63-90
B 503B	65	69.0	18	90	220	190	160	8	13	15	106	250	296	238	135	63-90

Four Stage

Model	Output				Mounting							Others				Motor
	Dj6	H	JP9	L1	E	M	Fh8	N	S	K	G	A	P	L	B	Frame
B 204B	28	31	8	40	135	115	80	8	8.5	10	45	135	207	147	120	63-71
B 304B	38	41	10	55	150	135	100	8	8.5	12	68	155	246	238	135	63-90
B 404B	50	53.5	14	75	200	165	130	8	13	18	90	205	257	238	135	63-90
B 504B	65	69.0	18	90	220	190	160	8	13	15	106	250	296	238	135	63-90

5. Dimension Details

5. j. BEVEL PLANETARY GEAR BOX MOUNTING TYPE- FLANGE HOLLOW INPUT SHAFT, OUTPUT-MALE SHAFT (FREE) D SIZES FROM B 601B TO B 904B



Single Stage

Model	Output				Mounting							Others			Motor
	Dj6	H	JP9	L1	E	M	Fh8	N	S	K	G	P	L	B	Frame
B 601	80	85.5	22	110	290	265	240	12	13	85	262	215	329	205	100-160
B 701	95	100	25	135	330	300	270	12	17	95	310	249	438	250	100-160
B 801	110	116	28	170	355	325	290	12	17	110	360	264	449	290	132-200
B 901	120	127	32	180	400	360	335	12	17	120	385	305	487	330	132-225

Double Stage

Model	Output				Mounting							Others			Motor
	Dj6	H	JP9	L1	E	M	Fh8	N	S	K	G	P	L	B	Frame
B 602	80	85.5	22	110	290	265	240	12	13	85	262	215	329	205	80-112
B 702	95	100	25	135	330	300	270	12	17	95	310	249	438	250	100-160
B 802	110	116	28	170	355	325	290	12	17	110	360	264	449	290	100-180
B 902	120	127	32	180	400	360	335	12	17	120	385	305	487	330	100-180

Triple Stage

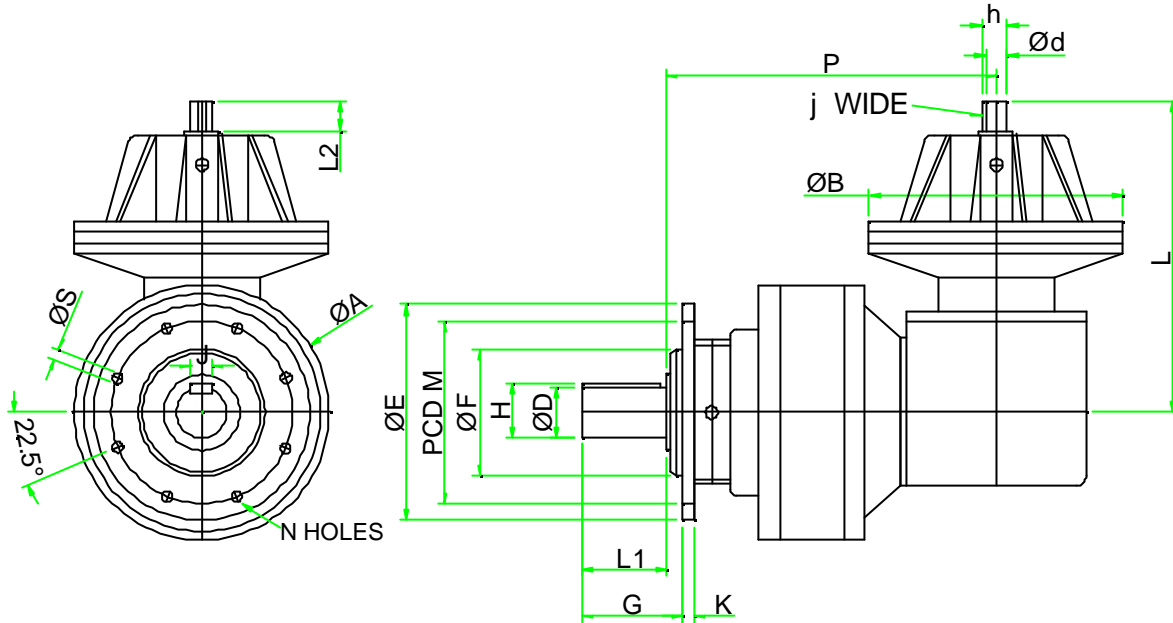
Model	Output				Mounting							Others			Motor
	Dj6	H	JP9	L1	E	M	Fh8	N	S	K	G	P	L	B	Frame
B 603	80	85.5	22	110	290	265	240	12	13	85	262	289	326	155	63-112
B 703	95	100	25	135	330	300	270	12	17	95	310	296	326	155	80-1120
B 803	110	116	28	170	355	325	290	12	17	110	360	318	329	205	80-112
B 903	120	127	32	180	400	360	335	12	17	120	385	365	438	250	100-160

Four Stage

Model	Output				Mounting							Others			Motor
	Dj6	H	JP9	L1	E	M	Fh8	N	S	K	G	P	L	B	Frame
B 604	80	85.5	22	110	290	265	240	12	13	85	262	289	238	135	63-90
B 704	95	100	25	135	330	300	270	12	17	95	310	370	326	155	71-112
B 804	110	116	28	170	355	325	290	12	17	110	360	377	326	155	80-112
B 904	120	127	32	180	400	360	335	12	17	120	385	412	326	155	80-112

5. Dimension Details

5. k. BEVEL PLANETARY GEAR BOX MOUNTING TYPE- FLANGE SOLID INPUT SHAFT, OUTPUT-MALE SHAFT (FREE) D SIZES FROM B 201B TO B 504B



Single Stage

Model	Output				Input				Mounting						Others				
	Dj6	H	J P9	L1	d j6	h	j P9	L2	E	M	Fh8	N	S	K	G	A	P	L	B
B 201B	28	31	8	40	14	16	5	20	135	115	80	8	8.5	10	45	135	159	167	120
B 301B	38	41	10	55	28	31	8	40	150	135	100	8	8.5	12	68	155	198	283	135
B 401B	50	53.5	14	75	28	31	8	40	200	165	130	8	13	18	90	205	210	283	135
B 501B	65	69	18	90	28	31	8	40	220	190	160	8	13	15	106	250	290	346	155

Double Stage

Model	Output				Input				Mounting						Others				
	Dj6	H	J P9	L1	d j6	h	j P9	L2	E	M	Fh8	N	S	K	G	A	P	L	B
B 202B	28	31	8	40	14	16	5	20	135	115	80	8	8.5	10	45	135	159	167	120
B 302B	38	41	10	55	28	31	8	40	150	135	100	8	8.5	12	68	155	198	283	135
B 402B	50	53.5	14	75	28	31	8	40	200	165	130	8	13	18	90	205	210	283	135
B 502B	65	69	18	90	28	31	8	40	220	190	160	8	13	15	106	250	290	346	155

Triple Stage

Model	Output				Input				Mounting						Others				
	Dj6	H	J P9	L1	d j6	h	j P9	L2	E	M	Fh8	N	S	K	G	A	P	L	B
B 203B	28	31	8	40	14	16	5	20	135	115	80	8	8.5	10	45	135	207	167	120
B 303B	38	41	10	55	28	31	8	40	150	135	100	8	8.5	12	68	155	246	283	135
B 403B	50	53.5	14	75	28	31	8	40	200	165	130	8	13	18	90	205	257	283	135
B 503B	65	69	18	90	28	31	8	40	220	190	160	8	13	15	106	250	296	283	135

Four Stage

Model	Output				Input				Mounting						Others				
	Dj6	H	J P9	L1	d j6	h	j P9	L2	E	M	Fh8	N	S	K	G	A	P	L	B
B 204B	28	31	8	40	14	16	5	20	135	115	80	8	8.5	10	45	135	255	167	120
B 304B	38	41	10	55	14	16	5	20	150	135	100	8	8.5	12	68	155	253	167	120
B 404B	50	53	14	75	28	31	8	40	200	165	130	8	13	18	90	205	305	283	135
B 504B	65	69	18	90	28	31	8	40	220	190	160	8	13	15	106	250	344	283	135

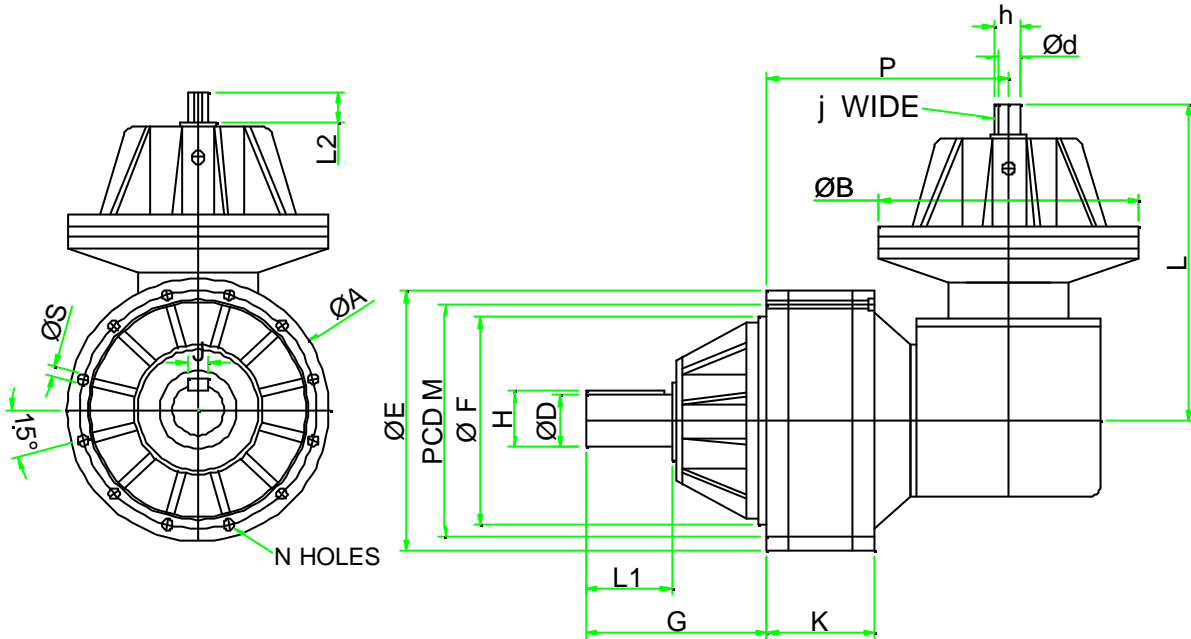
5. Dimension Details

5. I. BEVEL PLANETARY GEAR BOX

MOUNTING TYPE- FLANGE

SOLID INPUT SHAFT, OUTPUT-MALE SHAFT (FREE) D

SIZES FROM B 601B TO B 904B



Single Stage

Model	Output				Input				Mounting							Others		
	Dj6	H	J P9	L1	d j6	h	j P9	L2	E	M	Fh8	N	S	K	G	P	L	B
B 601B	80	85.5	22	110	28	31	8	40	290	265	240	12	13	85	265	215	349	205
B 701B	95	100	25	135	50	53.5	14	70	330	300	270	12	17	95	310	249	481	250
B 801B	110	116	28	170	50	53.5	14	70	355	325	290	12	17	110	360	264	490	290
B 901B	120	127	32	180	50	53.5	14	70	400	360	335	12	17	120	385	305	528	330

Double Stage

Model	Output				Input				Mounting							Others		
	Dj6	H	J P9	L1	d j6	h	j P9	L2	E	M	Fh8	N	S	K	G	P	L	B
B 602B	80	85.5	22	110	28	31	8	40	290	265	240	12	13	85	265	215	349	205
B 702B	95	100	25	135	50	53.5	14	70	330	300	270	12	17	95	310	249	481	250
B 802B	110	116	28	170	50	53.5	14	70	355	325	290	12	17	110	360	264	490	290
B 902B	120	127	32	180	50	53.5	14	70	400	360	335	12	17	120	385	305	528	330

Triple Stage

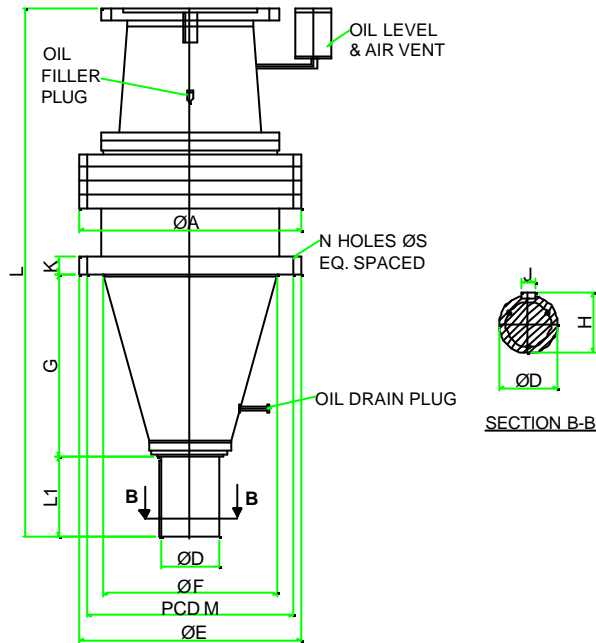
Model	Output				Input				Mounting							Others		
	Dj6	H	J P9	L1	d j6	h	j P9	L2	E	M	Fh8	N	S	K	G	P	L	B
B 603B	80	85.5	22	110	28	31	8	40	290	265	240	12	13	85	265	288	283	135
B 703B	95	100	25	135	28	31	8	40	330	300	270	12	17	95	310	296	346	155
B 803B	110	116	28	170	28	31	8	40	355	325	290	12	17	110	360	318	349	205
B 903B	120	127	32	180	50	53.5	14	70	400	360	335	12	17	120	385	365	481	250

Four Stage

Model	Output				Input				Mounting							Others		
	Dj6	H	J P9	L1	d j6	h	j P9	L2	E	M	Fh8	N	S	K	G	P	L	B
B 604B	80	85.5	22	110	28	31	8	40	290	265	240	12	13	85	265	289	283	135
B 704B	95	100	25	135	28	31	8	40	330	300	270	12	17	95	310	311	283	135
B 804B	110	116	28	170	28	31	8	40	355	325	290	12	17	110	360	321	283	135
B 904B	120	127	32	180	28	31	8	40	400	360	335	12	17	120	385	412	346	135

5. Dimension Details

5. m. PLANETARY GEAR BOX FOR AGITATOR APPLICATION MOUNTING TYPE- FLANGE HOLLOW INPUT SHAFT, OUTPUT-MALE SHAFT (FREE) D SIZES FROM B 501 TO B 904



Single Stage

Model	Output				Mounting						Others			Motor
	Dj6	H	JP9	L1	E	M	Fh8	N	S	K	G	A	Lmax	Frame
B 501	65	69.0	18	90	250	225	200	8	13	18	205	250	591	100-160
B 601	80	85.5	22	110	300	270	250	12	13	18	240	290	668	100-180
B 701	95	100	25	135	385	350	280	16	18	18	255	330	742	100-180
B 801	110	116	28	170	385	350	280	16	18	18	255	355	804	132-200
B 901	120	127	32	180	490	440	400	16	18	22	400	400	968	132-225

Double Stage

Model	Output				Mounting						Others			Motor
	Dj6	H	JP9	L1	E	M	Fh8	N	S	K	G	A	Lmax	Frame
B 502	65	69.0	18	90	250	225	200	8	13	18	205	250	656	80-160
B 602	80	85.5	22	110	300	270	250	12	13	18	240	290	737	80-160
B 702	95	100	25	135	385	350	280	16	18	18	255	330	811	100-160
B 802	110	116	28	170	385	350	280	16	18	18	255	355	867	100-180
B 902	120	127	32	180	490	440	400	16	18	22	400	400	1043	100-180

Triple Stage

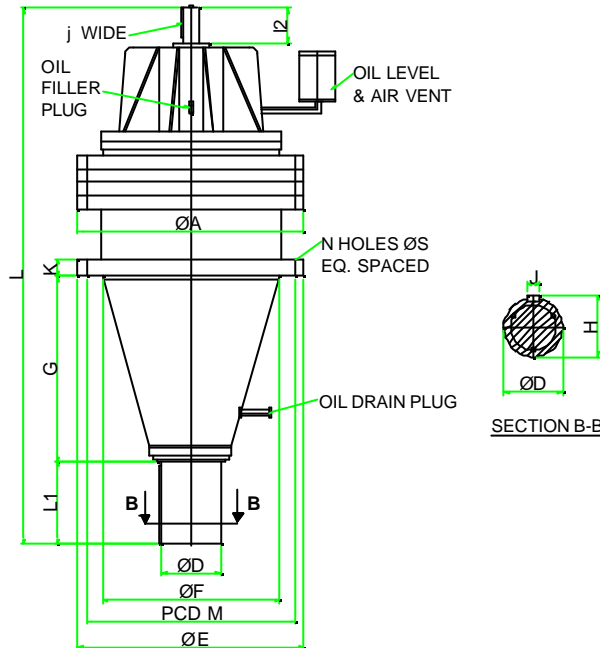
Model	Output				Mounting						Others			Motor
	Dj6	H	JP9	L1	E	M	Fh8	N	S	K	G	A	Lmax	Frame
B 503	65	69.0	18	90	250	225	200	8	13	18	205	250	637	63-112
B 603	80	85.5	22	110	300	270	250	12	13	18	240	290	811	63-160
B 703	95	100	25	135	385	350	280	16	18	18	255	330	885	90-160
B 803	110	116	28	170	385	350	280	16	18	18	255	355	936	90-160
B 903	120	127	32	180	490	440	400	16	18	22	400	400	1112	100-160

Four Stage

Model	Output				Mounting						Others			Motor
	Dj6	H	JP9	L1	E	M	Fh8	N	S	K	G	A	Lmax	Frame
B 504	65	69.0	18	90	250	225	200	8	13	18	205	250	685	63-90
B 604	80	85.5	22	110	300	270	250	12	13	18	240	290	769	63-112
B 704	95	100	25	135	385	350	280	16	18	18	255	330	857	71-112
B 804	110	116	28	170	385	350	280	16	18	18	255	355	934	71-160
B 904	120	127	32	180	490	440	400	16	18	22	400	400	1156	90-160

5. Dimension Details

5. n. PLANETARY GEAR BOX FOR AGITATOR APPLICATION MOUNTING TYPE- FLANGE SOLID INPUT SHAFT, OUTPUT-MALE SHAFT (FREE) D SIZES FROM B 501 TO B 904



Single Stage

Model	Output				Input				Mounting						Others		
	Dj6	H	J P9	L1	d j6	h	j P9	L2	E	M	Fh8	N	S	K	G	A	Lmax
B 501	65	69	18	90	50	53.5	14	70	250	225	200	8	13	18	205	250	634
B 601	80	85.5	22	110	50	53.5	14	70	300	270	250	12	13	18	240	290	709
B 701	95	100	25	135	50	53.5	14	70	385	350	280	16	18	18	255	330	783
B 801	110	116	28	170	70	74.5	20	100	385	350	280	16	18	18	255	355	875
B 901	120	127	32	180	70	74.5	20	100	490	440	400	16	18	22	400	400	1039

Double Stage

Model	Output				Input				Mounting						Others		
	Dj6	H	J P9	L1	d j6	h	j P9	L2	E	M	Fh8	N	S	K	G	A	Lmax
B 502	65	69	18	90	28	31	8	40	250	225	200	8	13	18	205	250	609
B 602	80	85.5	22	110	28	31	8	40	300	270	250	12	13	18	240	290	693
B 702	95	100	25	135	50	53.5	14	70	385	350	280	16	18	18	255	330	854
B 802	110	116	28	170	50	53.5	14	70	385	350	280	16	18	18	255	355	908
B 902	120	127	32	180	50	53.5	14	70	490	440	400	16	18	22	400	400	1084

Triple Stage

Model	Output				Input				Mounting						Others		
	Dj6	H	J P9	L1	d j6	h	j P9	L2	E	M	Fh8	N	S	K	G	A	Lmax
B 503	65	69	18	90	28	31	8	40	250	225	200	8	13	18	205	250	657
B 603	80	85.5	22	110	28	31	8	40	300	270	250	12	13	18	240	290	741
B 703	95	100	25	135	28	31	8	40	385	350	280	16	18	18	255	330	839
B 803	110	116	28	170	28	31	8	40	385	350	280	16	18	18	255	355	892
B 903	120	127	32	180	50	53.5	14	70	490	440	400	16	18	22	400	400	1155

Four Stage

Model	Output				Input				Mounting						Others		
	Dj6	H	J P9	L1	d j6	h	j P9	L2	E	M	Fh8	N	S	K	G	A	Lmax
B 504	65	69	18	90	28	31	8	40	250	225	200	8	13	18	205	250	705
B 604	80	85.5	22	110	28	31	8	40	300	270	250	12	13	18	240	290	789
B 704	95	100	25	135	28	31	8	40	385	350	280	16	18	18	255	330	877
B 804	110	116	28	170	28	31	8	40	385	350	280	16	18	18	255	355	940
B 904	120	127	32	180	28	31	8	40	490	440	400	16	18	22	400	400	1130



6. Technical Information

Momentary Overloads :

The maximum momentary or starting load applied to a reducer must not exceed 200% of rated load (100% overload). Rated load is defined as the reducer rating at a service factor of 1.0. Applications with high torque and for intermittent operations refer to the factory. Also applications where extreme repetitive shock occurs or when high-energy loads are required to be absorbed, require special considerations and should be referred to the factory.

Brake Loads :

When drives are equipped with brakes on the input, and the torque rating of the brake exceeds the rating of the motors, the rating of the brake dictates the selection of the reducer.

Thermal Capacity :

It is the maximum Horse Power, that can be transmitted without over heating at maximum oil temperature of 90° C when reducer is operated continuously under standard oil bath lubrication. Heat exchanger can be provided for those applications that are thermally limited. For the specific requirements contact factory.

Lubrication :

Planetary Drives are shipped without oil and must be filled to the specified oil level before start-up. Lubrication and oil capacities are listed in the instruction and maintenance Manual.

Multi-Speed Selections :

Reducers those will be operated at a variety of input speeds must be selected for the speed that yields the highest output torque requirement.

Gear Ratios :

The gear ratios are designed to avoid hunting and hence ratios are not whole numbers, any ratio can be manufactured specially according to requirement.

Service Life :

The load ratings in the data sheets are based on number of output load cycles at a service factor of 1. The required service life must be specified when ordering, to select the speed reducer unit correctly, with a suitable service factor.

Shrink Disc Assembly :

The shrink discs are supplied ready for mounting and well lubricated. However, before re-assembly the shrink discs should be lubricated again. This also applies to the tapered ring surface as well as to the screw threads. For this purpose, a MOS_2 containing paste such as 'OKS-200" should be used. When reassembling, it is important that all screws are within the sealing ring. Damaged sealing rings must be replaced. When putting the shrink discs on to the hub to be braced, the seat for the shrink discs on the hub must also be lubricated to avoid any possibility of corrosion. Contact surface of the shrink disc hub bore and the shaft must be free from grease. the safety of the torque transmission depends upon it to a great extent. Under no circumstances screws should not be tightened if the shrink disc is not mounted; otherwise, the inner ring will be deformed permanently. The same permanent deformation happens to the hub if not mounted on the shaft.

Before putting the shrink disc on to the hub, both discs should be drawn against each other by tightening lightly and carefully by means of a small wrench so that the inner ring can just be turned. Make sure that the faces of both discs are absolutely parallel by checking at various diameters of both disks. The complete shrink disc set is then pushed on the hub. Then all screws be tightened carefully and evenly only so far that the shrink disc set cannot be turned on the hub by hand, even when using possible force. The screws must be tightened evenly and gradually, using a wrench of adequate size, always make sure that the two discs remains parallel.



6. Technical Information

Shrink Disc Dismantling:

Exactly in the same way as in bracing, the screws will be loosened evenly and gradually to avoid tilting of the discs. The steep taper angle of the discs has been chosen to absolutely secure the opening of the shrink disc. Thereby the hub widens again and can easily be pulled off from the shaft, in case if the shaft is not free mounted shaft should be locked and input shaft to be rotated to separate out output shaft of gearbox and mounted shaft. Whilst the shrink disc remains on the hub.

Attention :

Do not remove screws completely as long as the two outer rings are not free from their tapered seats. Remove any corrosion on the shaft in front of the hub. Before any new bracing, the shrink disc set should be lubricated again, the sealing ring should be renewed. Check easy fitting of the screw.

Installation :

All Speed Reducers should be mounted on vibration-free, solid, level foundation. The normal method of mounting is Horizontal. When mounting the gear units, check that the breather, oil level and drain plugs are in the correct position. These will vary according to the mounting position.

Foundation :

When mounting on structural steel, use of a rigid base plate is strongly recommended. The base plate should be designed to minimize bending and twisting. The base plate must be flat to prevent distortion of the unit. The base plate should extend the entire length of the unit. Clamp the unit securely to the structural steel support. When mounting on concrete base grout structural steel mounting pads into the mounting base, the reducer is then installed and shimmed off the structural pads, if shims are used to level or align the unit, they should be distributed evenly under all mounting pads to equalize the support load. Use a feeler gauge to determine thickness of required shims. All pads must be squarely supported to prevent the distortion of the housing when the unit is bolted down. In case of installation with shocks, long duration over loads or frequent stopping, it is necessary to install motor protections, such as hydraulic coupling clutches.

Alignment :

Align reducer with driven equipment by placing broad flat shims under all mounting pads of the reducer. Start at the low speed end and level across the length and width of the reducer. Check with feeler gauge to make certain that all pads are supported to prevent distortion of housing when reducer is bolted down. After reducer is aligned with driven equipment and bolted down, align prime mover to the reducer input shaft. The reliability and long life of the reducer requires careful installation of accessories and accurate alignment of the connecting shafts.

After first week check alignment of the total system and realign if necessary. Also tighten the bolts and plugs as required. Remember to remove the load from the system before attempting to service the reducer. This action reduces the possibility of unexpected motion in the system. Check coupling for alignment to make sure that setting or vibration has not caused excessive misalignment.

Load Connections :

Mount sprocket, pulley and sheave as close as possible to the gear case in order to reduce the cantilever effect of overhang loads on the shaft bearings. Adjust belts or chains to manufacturer specification to prevent over tightening.



6. Technical Information

Lubrication :

Determine minimum and maximum ambient temperatures the unit is to operate in. From the Ambient Temperature Table below, determine the proper AGMA or ISO grade lubricant for those temperature conditions and select appropriate oil. Automotive oils are not recommended.

All reducers are splash lubricated by gear rotation with even distribution to all gear meshes and bearings.

Ambient Temperature	Viscosity	AGMA Grade	ISO Grade
-10° C to 15° C	198 - 242	5	220
10° C to 50° C	288 - 352	6	320

If the speed reducer operates under extreme conditions or exposed to large temperature fluctuations, the use of synthetic oil is recommended.

Note: The synthetic lubrication should conform to the requirements of ANSI/AGMA 9005-D94.

If the speed reducer operates in an environment where the temperature fluctuations are predictable, choose an oil viscosity that is recommended for the given temperature (i.e. for cold weather operation, use an oil that will circulate freely at all times.) The pour point of the oil should be 9° F (-5° C) or less than the minimum external temperature during reducer operation. During hot weather use higher viscosity oil that will not thin out and lose its lubricating qualities.

Special measure should be taken to protect drives operating in direct sunlight at ambient temperature over 100° F (38° C). This protection can consist of a canopy/cover over the drive or reflective paint on the drive. If neither is possible, a heat exchanger no other cooling device may be required to prevent the reducer sump temperature from exceeding the allowable maximum oil temperature of 90°C or 80°C. AGNEE Planetary Speed Reducers can be operated within oil temperatures from 20°C to 80°C.

Lubrication Change

Oil change must be carried out initially after first 100/200 hours of operation, and subsequently after every 2500 hours or at least every 12 months of operation. If operating under abnormal conditions such as high temperature sever duty, moisture or particle contamination, oil may need to be changed more frequently. Do not mix the oil of different types even of the same make. Never mix mineral and synthetic oils.

Note : Oil samples should be taken from the oil level hole, not the drain hole.

Storage :

Preparation for Storage. : If reducer is to be stored or is likely to inactive after installation, drain oil from housing and spray all internal parts with rust preventive oil that is soluble in lubricating oil. Seal the reducer completely, and replace the vent plug with a solid pipe plug to keep rust inhibiting atmosphere inside.

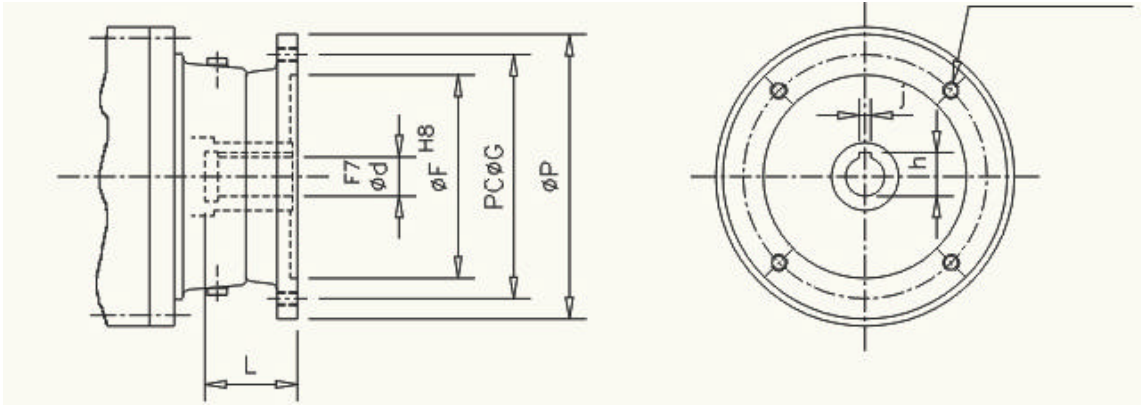
Periodically inspect stored or inactive reducers and add rust inhibitor every six months or more often if necessary. Dry indoor storage it is recommended to rotate shafts every three months to prevent bearings from becoming lacquered.

Preparation for Start-Up :

Fill reducer up to a proper oil level with the recommended lubricant. Remember reducers are supplied from the factory without oil. Rotate the shaft until the bearings move freely. Now the unit is ready to start-up.

7. ELECTRIC MOTOR MOUNTING DIMENSIONS

N Holes T



Motor Hollow Shaft					Mounting					Available Standard B5 type Motors with speed and power			
Frame	dF7	h	j	L	F H8	G	P	N	T	3000 RPM	1440 RPM	960 RPM	720 RPM
63	11	12.8	4	25	95	115	140	4	M8	0.25	0.25	0	0
71	14	16.3	5	32	110	130	160	4	M8	0.33/0.50	0.33/0.50	0.33/0.50	0.1/0.12
80	19	21.8	6	42	130	165	200	4	M10	0.75/1/1.5	0.75/1	0.5/0.75	0.25/0.33
90	24	27.3	8	52	130	165	200	4	M10	2	1.5/2	1.0/1.5	0.5/0.75
100	28	31.3	8	62	180	215	250	4	M12	3.0/4.0	3.0/4.0	2	1.0/1.5
112	28	31.3	8	62	180	215	250	4	M12	5.0/5.5	5	3	2
132	38	41.3	10	82	230	265	300	4	M12	7.5/10	7.5/10	5.0/7.5	3.0/4.0
160	42	45.3	12	112	250	300	350	4	M16	12.5/15/20	12.5/15/20	10/12.5/15	5/7.5/10.0
180	48	51.8	14	112	250	300	350	4	M16	25/30	25/30	20	12.5/15.0
200	55	59.3	16	112	300	350	400	4	M16	40/50	40	25/30	25
225	60	64.4	18	145	350	400	450	8	M16	60	50/60	40	25/30
250	65	69.4	18	145	450	500	550	8	M16	75	75/100	50/60	40/50
280	75	80	20	145	450	500	550	8	M16	100/125	100/125/150	60/75	50/60
315	80	86	22	175	550	600	660	8	M20	150 TO 200	150 TO 200	100 TO 170	75 TO 150
355	100	106.4	28	215	680	740	800	8	M20	245 TO 380	245 TO 3B0	220 TO 300	170 TO 250



AGNEE Series B Planetary Gear Boxes & Drives



Dear User

Kindly furnish the following Technical Data and Information for selection of Planetary Reduction Gear Box.

- 1) Application
- 2) Prime Mover (Electric motor / Hydraulic motor) :
- 3) Input Shaft (rpm)
- 4) Output Speed (rpm)
- 5) Reduction Ratio:
- 6) Input Power (HP/ Kw):
- 7) Output Torque (kg- m or Nm):
- 8) Load Nature Uniform (U)/ Moderate Shock (M) / Heavy shock (H):
- 9) Service Duration (Hrs): (Daily operating hours)
- 10) Operating Cycle (Minutes cycle):
- 11) Operating Position:

For your specific Reduction Ratios, Output speed, Out Torque, Please write to AGNEE

AGNEE TRANSMISSIONS (INDIA) PRIVATE LIMITED

F-557, Road No. 6, Inderprasth Industrial Area,
Kota-324005, Rajasthan, India

Phone: 0744-2490773, 2363799 Fax: 2360835

Mobile No.: 09414187835

Email : info@agneetransmissions.com

Alternative Email : agneetransmissions@hotmail.com

Website : www.agneetransmissions.com

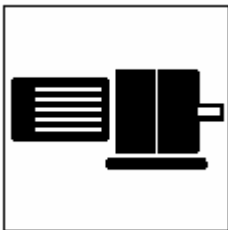
Dealer / Local Representative



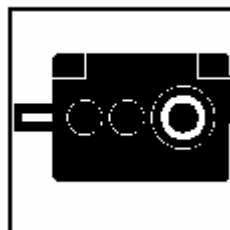
AGNEE Series B
Planetary Gear Boxes & Drives



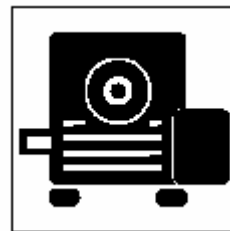
AGRICULTURE	AUTOMOTIVE	CEMENT
CHEMICAL	CONSTRUCTION	DEFENCE
ENERGY	FOOD & BEVERAGE	FORESTRY
MARINE	METALS & MACHINE TOOLS	MINING
PULP & PAPER	QUARRYING	RUBBER & PLASTICS
TEXTILES	TRANSPORTATION	WATER
DREDGING	SUGAR MILLS	STONE PROCESSING



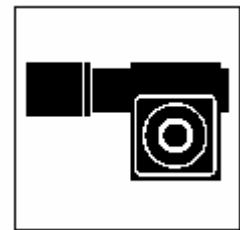
Geared Motors



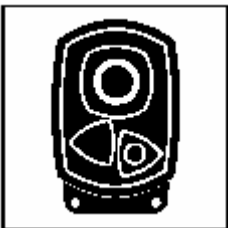
Industrial Reducers



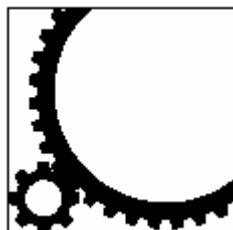
Worm



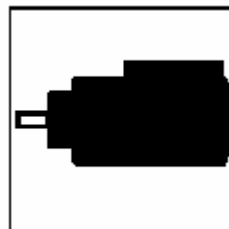
Precision Products



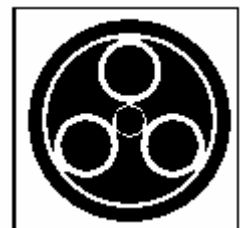
Shaft mount



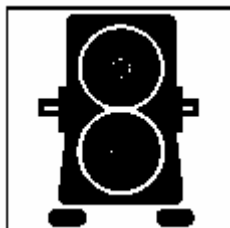
Horizontal Mill Drives



Vertical Mill Drives



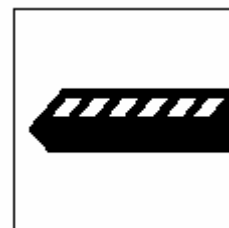
Planetary units



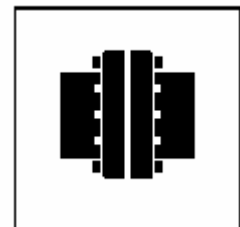
Special Drives



Defence Systems



Rail



Couplings

www.agneetransmissions.com