

# TAPER GRID COUPLINGS



## Characteristic

We can get more favorable convenience and cost down by using Taper Grid Steel Flexible Coupling.

### PARALLEL

The movement of the grid in the lubricated grooves accommodates parallel misalignment and steel permits full functioning of the grid-groove action in damping out shock and vibration.

### ANGULAR

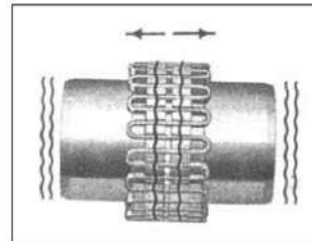
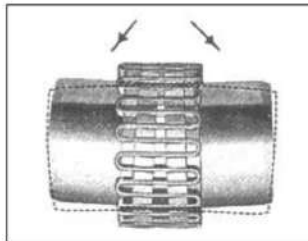
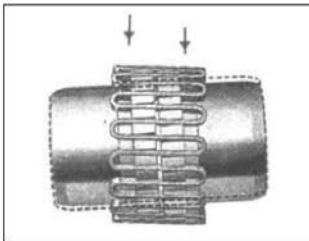
Under angular misalignment, the grid-groove design permits a locking and sliding action of the lubricated grid and hubs without any loss of power through the resilient grid.

### END FLOAT

Limited end out of driving and driven members is permitted because the grid slides freely in the lubricated grooves.

### TORSIONAL FLEXIBILITY

Torsional exibility is the advantage of Taper Grid Couplings, providing exible accommodation to changing load conditions.



### 1. Light Load

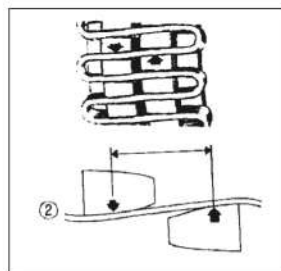
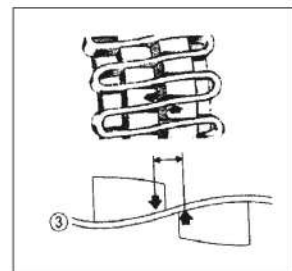
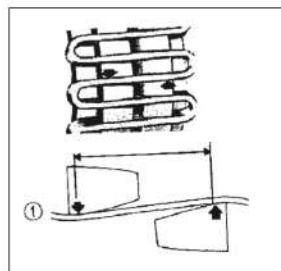
The grid bears near the outer edges of the hub teeth. The long span between the points of contact remains free to ex under load.

### 2. Normal Load

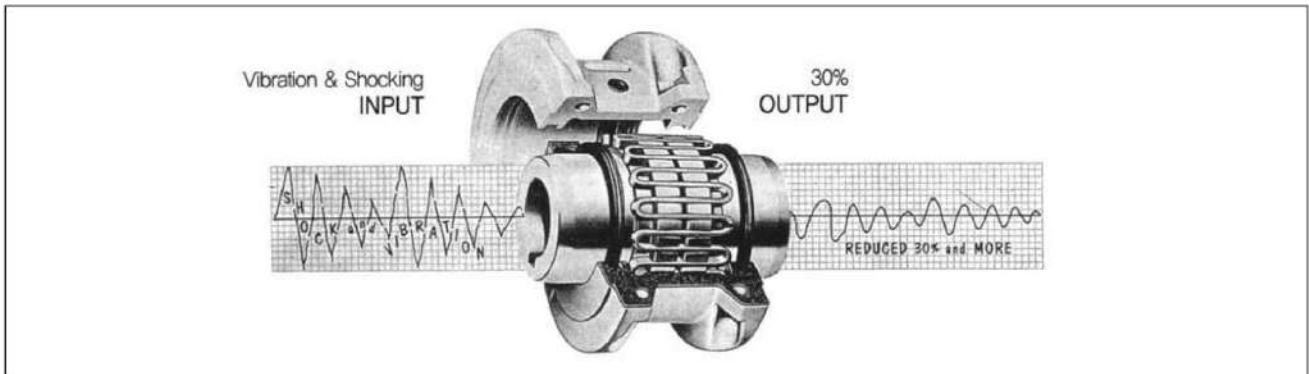
As the load increase, the distance between the contact points on the hub teeth is shortened, but a free span still remains to cushion shock load.

### 3. Shock Load

The coupling is exible within its rated power capacity. Under extreme overloads, the grid bears fully on the hub teeth and transmits full load directly.



## The absorption of mechanical vibration of Taper Grid coupling



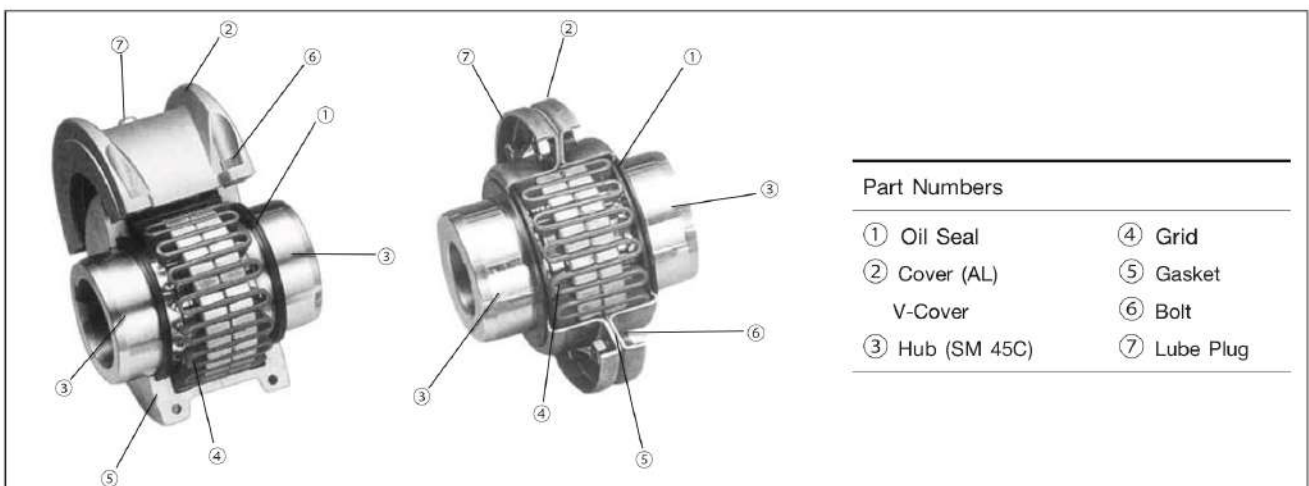
### Merits

1. When OVERLOAD, grid is assigned a part of safety pin and prevents breaking of the shaft or machinery part by cutting of grid.
2. When the centering misalignment is too much, it can protect the relating machine by the virtue of shearing of GRID or COVER or TOOTH.
3. The life of all parts (Mechanical Seal and Bearing. etc.) can be extended as a twice or more.
4. Repair and check is needed scarcely, it costs short repairing time.
5. Establishment, assembly and maintenance are easy by getting rid of center misalignment.

### Application

1. When we need to reduce vibration and shock load.
2. When we need adequate power transmission under line misalignment.
3. When we need adequate power transmission under angular misalignment.
4. When we need adequate power transmission under end oating.
5. When we need to prevent breaking of the machinery parts under over load.
6. When reverse revolution is required.
7. When we need smooth starting.

### Structure



## Designation



## Selection Method of Size

### 1 Selection method of size

- ① From the following formula, obtain Torque required for Selection.

$$T = \frac{P \times 9,550}{n} \times s.f$$

T = Nominal torque (Nm)  
 P = Input power (kw)  
 n = Working revolution (rpm)  
 S.f = Recommended service factor

- ② First select from comparing with basic torque, and nd to adopt the same or greater value. And then conclude it's suitability for application of boring driver.
- ③ Caution for selections
  - a. Adopt the minimum rpm when there are common transmitting rpm and also minimum rpm.
  - b. Be careful that the load where there are reverse revolution and repetition and irregular operation can be twice of normal condition.
  - c. Adopt the peak kw, when there are common transmitted power of peak kw in a system.

- ④ Refer to the factory all applications used to lift or transport people, such as conveyors, cranes, elevators, hoists, lifts or escalators for applications of dual load path type couplings and gear drive selections to meet existing safety codes.

### 2 Example

When you select a COUPLING to connect a 22 kw 1,450 rpm motor and a rotary type pump. Motor shaft dia is 48 mm and pump's 52 mm.

- ① Service factor of pump is 1.8. (Refer to s.f table)
- ② Normal transmitting power is 22 kw

$$\text{Torque (Nm)} = \frac{22 \times 9,550}{1,450} \times 1.8 = 260.81 \text{ Nm}$$

First, select 1040S according to transmitting torque 260.81 and then check the max. bore select 1060H because it's not suitable for 1040H to the bore depending on diameter. After comparing rpm, we can use 1060H. There's no problem to use H or V, they are only of cover.

### 3. Service Factors

Refer to service factor table.

## Instruction for Installation

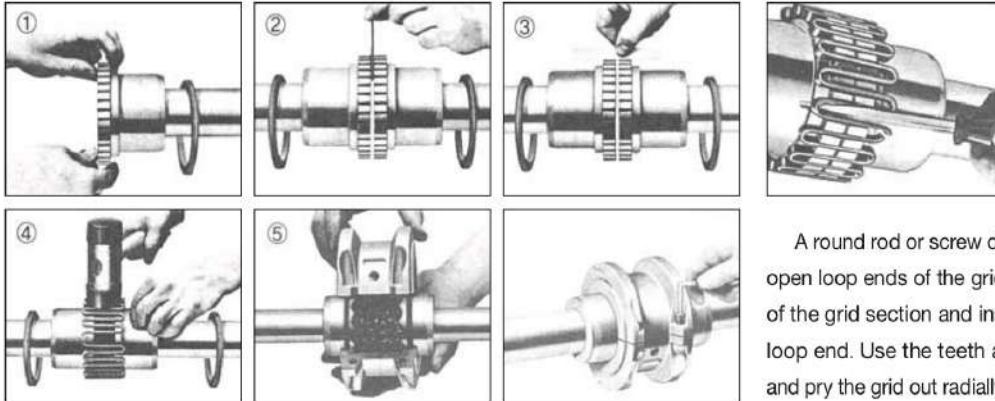
The performance and life of the coupling depend on how you install and service them. This page helps you how to assemble the coupling for the best performance and for the trouble free operation. H Taper Grid Coupling is designed to be operate in either the horizontal or the vertical position without modification.

Simple standard mechanical tools such as wrenches, a straight edge and feeler gauge or dial guage are required to install the Taper Grid coupling.

## 1 In case of H type

- ① Clean all metal parts using non ammable solvent. Lightly coat seals with grease and place on shaft, mount hubs on the shafts.
- ② Using a spacer bar, equal in thickness to the normal gap. The difference in maximum measurements must be not exceed the angular limit.

- ③ Align so that a straight edge rests squarely on both hubs as shown g. And also at 90 ° interval. The clearance with dialgauge must not exceed the limit specied in page 33 table #3.
- ④ After greasing the tooth groove hub, x the GRID in the same direction.
- ⑤ Grease fully upon the grid place oil seals on the hubs, put gaskets and fasten the cover halves correctly by bolts.



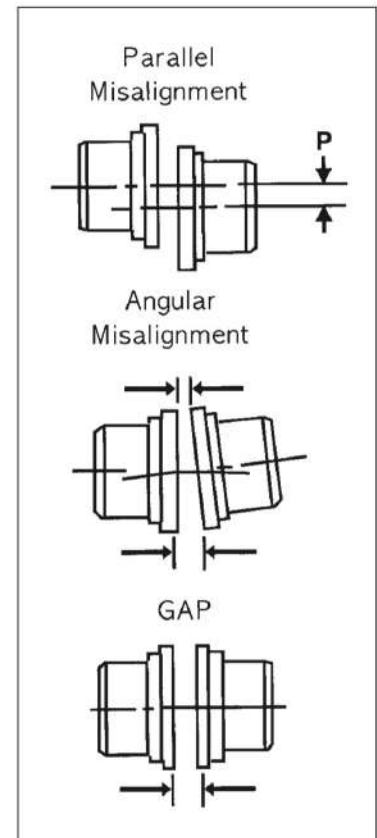
Coupling disassembly and grid removal. Whenever it is necessary to disconnect the coupling, remove the cover half and grid.

A round rod or screw driver that will conveniently fit into the open loop ends of the grid is required. Begin at the open end of the grid section and insert the rod or screw driver into the loop end. Use the teeth adjacent to each loop as a fulcrum and pry the grid out radially in even, gradual stages, proceeding alternately from side to side.

Misalignment Capacity (mm)

(Unit : mm)

Size	Recommended installation		Operating		Normal gap 10%
	Parallel offset p	Angular(1/16 °) X-Y	Parallel offset p	Angular (1/4 °) X-Y	
1020	0.15	0.06	0.3	0.24	3
1030	0.15	0.07	0.3	0.29	3
1040	0.15	0.08	0.3	0.32	3
1050	0.20	0.10	0.4	0.39	3
1060	0.20	0.11	0.4	0.45	3
1070	0.20	0.12	0.4	0.50	3
1080	0.20	0.15	0.4	0.61	3
1090	0.20	0.17	0.4	0.70	3
1100	0.25	0.20	0.5	0.82	4.5
1110	0.25	0.22	0.5	0.90	4.5
1120	0.28	0.25	0.56	1.01	6
1130	0.28	0.30	0.56	1.19	6
1140	0.28	0.33	0.56	1.34	6
1150	0.30	0.39	0.6	1.56	6
1160	0.30	0.44	0.6	1.77	6
1170	0.30	0.50	0.6	2.00	6
1180	0.38	0.56	0.76	2.26	6
1190	0.38	0.61	0.76	2.44	6
1200	0.38	0.68	0.76	2.72	6



※ The life of coupling is reduced by excess of the limit.



## Lubrication and Handing

### 1. Grease Lubrication

Grease on the grid before assembling covers. Fill up grease through the lube plugs of the assembled coupling.

### 2. Supplement and Replacement

Every three month every 240~250 hours operating, you should add grease. Every 3 months, or every 4,000 hours operating you should replace all the deteriorated grease.

### 3. Selection

You can choose grease according to the ambient temperature range in table 5.

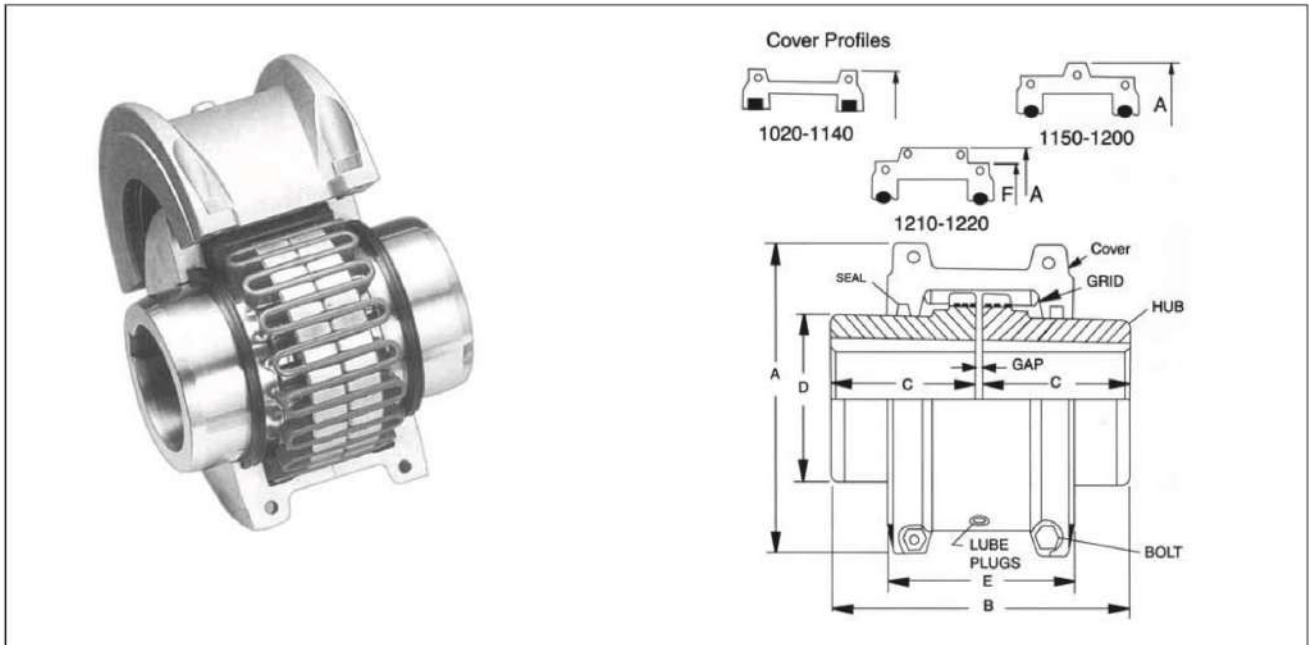
### Common Industrial Lubricants (NYGL Grade #2)

Size	Ambient Temperature Range :	
	0 F to 150...F (-18 C to 66...C)	-30... F to 100...F (-34 ...C to 38...C)
Amoco Oil Co.	Amolith Grease #2	Amolith Grease #2
Atlantic Richeld Co.	Litholene HEP 2	Litholene HEP 2
Chevron U.S.A Inc.	Chevron Dura-Lith EP-2	Chevron Dura-Lith EP-2
Cities Service Co.	Citgo HEP-2	Citgo HEP-2
Conoco Inc.	EP Conolith #2	EP Conolith #2
Exxon Company, USA	Ronex MP	Ronex MP
Gulf Oil Corp.	Gulfcrown Grease #2	Gulfcrown Grease #2
E.F. Houghton & Co.	Cosmolube #2	Cosmolube #1
Imperial Oil Ltd.	Esso MP Grease H	Lotemp EP
Keystone Div. (Pennwalt)	#81 Light	#84 Light
Mobil Oil Corp.	Mobilux EP111	Mobilux #1
Philips Petroleum Co.	IB & RB grease	Philube IB & RB grease
Shell Oil Co.	Alvania Grease #2	Alvania Grease #2
Standard Oil Co. (OH)	Factran #2	Factran #2
Sun Oil Company	Prestige 42	Prestige 42
Texaco Lubricants	Starplex HD 2	Multifac EP2
Union Oil Co. (CA)	Union Undoba #2	Union Undoba #2
Valvoline Oil Co.	Val-Lith #2	Val-Lith #2

※ Note : Check with lube manufacture for approved lubricants to use in the food processing industry

## Dimensions

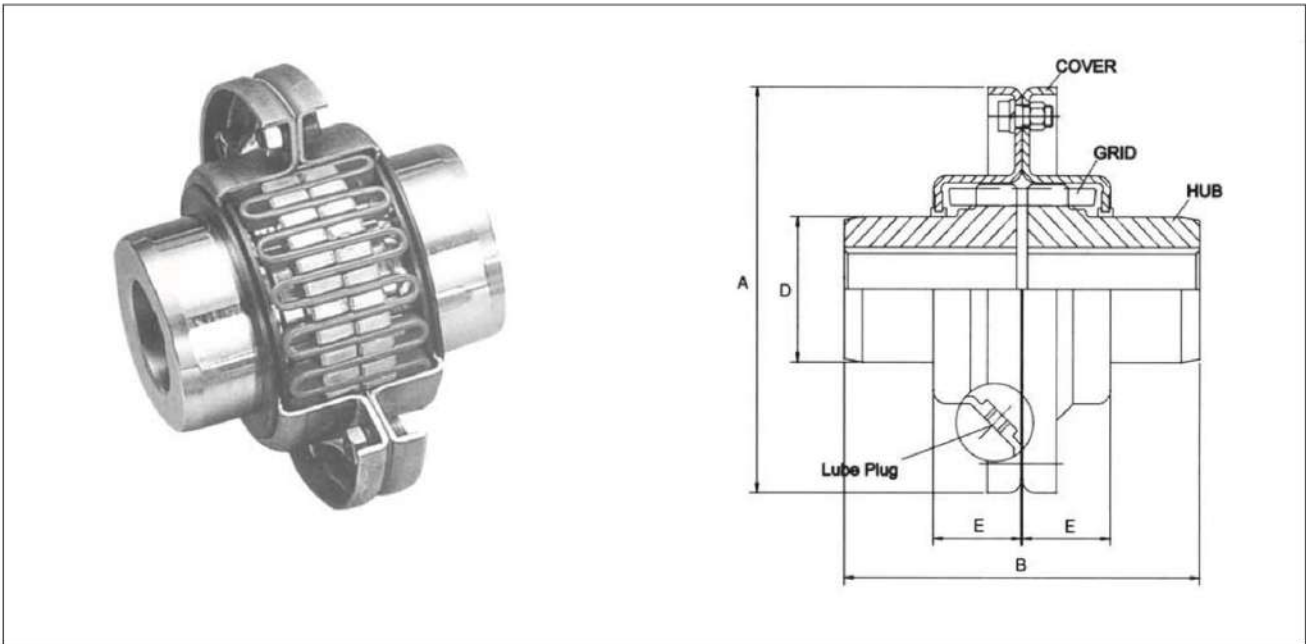
Type H (Horizontal Split Aluminum Cover)



Size	Max. Speed (rpm)	Basic Torque (Nm.)	bore Dia (mm)		Dimensions (mm)					Gap			Weight (kg)	Lube wt (kg)	Size
			Max.	Min.	A	B	C	D	E	Min	Normal	Max			
1020H	4,500	52	30	12.7	101.6	98.0	47.5	39.7	66.5	1.5	3	4.5	1.9	0.03	1020H
1030H	4,500	149	36	12.7	110.0	98.0	47.5	49.2	68.3	1.5	3	4.5	2.6	0.03	1030H
1040H	4,500	249	44	12.7	117.5	104.6	50.8	57.1	70.0	1.5	3	4.5	3.4	0.05	1040H
1050H	4,500	435	50	12.7	138.0	123.6	60.3	66.7	79.5	1.5	3	4.5	5.4	0.05	1050H
1060H	4,350	684	57	19.1	150.5	130.0	63.5	76.2	92.0	1.5	3	4.5	7.3	0.09	1060H
1070H	4,125	994	65	19.1	161.9	155.4	76.2	87.3	95.0	1.5	3	4.5	10	0.11	1070H
1080H	3,600	2,050	79	27.0	194.0	180.8	88.9	104.8	116.0	1.5	3	4.5	18	0.17	1080H
1090H	3,600	3,730	95	27.0	213.0	199.8	98.4	123.8	122.0	1.5	3	6	25	0.25	1090H
1100H	2,400	6,280	107	41.3	250.0	245.7	120.6	142.0	155.5	1.5	4.5	9.5	42	0.43	1100H
1110H	2,250	9,320	117	41.3	270.0	258.5	127.0	160.3	161.5	1.5	4.5	9.5	54	0.51	1110H
1120H	2,025	13,700	136	60.3	308.0	304.4	149.2	179.4	191.5	1.5	6	12.5	81	0.73	1120H
1130H	1,800	19,900	165	66.7	346.0	329.8	161.9	217.5	195.0	1.5	6	12.5	121	0.91	1130H
1140H	1,650	28,600	184	66.7	346.0	329.8	161.9	217.5	195.0	1.5	6	12.5	121	0.91	1140H
1150H	1,500	39,800	203	108.0	384.0	371.6	182.8	254.0	201.0	1.5	6	12.5	178	1.13	1150H
1160H	1,350	55,900	228	120.7	453.1	371.8	182.9	269.2	271.3	1.5	6	12.5	234	1.95	1160H
1170H	1,225	74,600	279	133.4	501.4	402.2	198.1	304.8	278.9	1.5	6	12.5	317	2.81	1170H
1180H	1,100	103,000	311	152.4	566.4	437.8	215.9	355.6	304.3	1.5	6	12.5	448	3.49	1180H
1190H	1,050	137,000	339	152.4	629.9	483.6	238.8	393.7	321.1	1.5	6	12.5	619	3.76	1190H
1200H	900	186,000	361	177.8	675.6	524.2	259.1	436.9	325.1	1.5	6	12.5	776	4.40	1200H

※ Coupling weight, with unbored hub assembly.

Type V (Vertical Steel Cover)

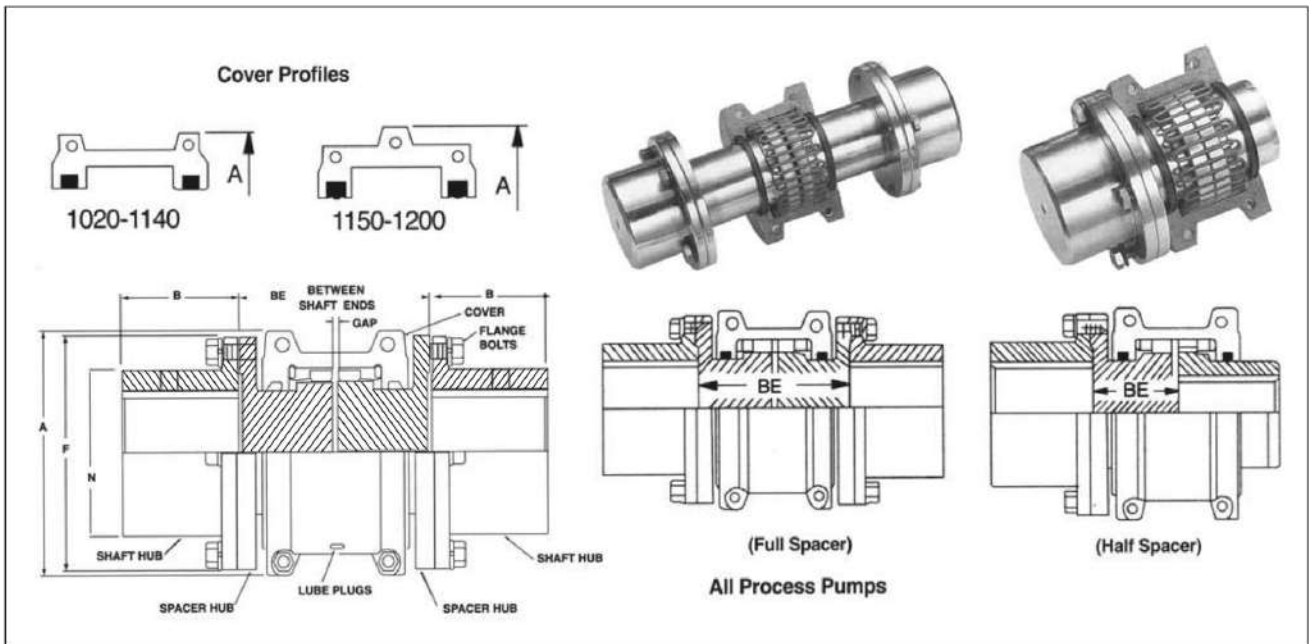


Size	Max. Speed (rpm)	Basic Torque (Nm.)	bore Dia (mm)		Dimensions (mm)					Gap			Cplg wt (kg)	Lube wt (kg)	Size
			Max.	Min.	A	B	C	D	E	Min	Normal	Max			
1020V	6,000	52	30	12.7	111.1	98.0	47.5	39.7	24.2	1.5	3	4.5	2.0	0.03	1020V
1030V	6,000	149	36	12.7	120.7	98.0	47.5	49.2	25.0	1.5	3	4.5	2.6	0.03	1030V
1040V	6,000	249	44	12.7	128.5	104.6	50.8	57.1	25.7	1.5	3	4.5	3.4	0.05	1040V
1050V	6,000	435	50	12.7	147.6	123.6	60.3	66.7	31.2	1.5	3	4.5	5.4	0.05	1050V
1060V	6,000	684	57	19.1	162.0	130.0	63.5	76.2	32.2	1.5	3	4.5	7.3	0.09	1060V
1070V	5,500	994	65	19.1	173.0	155.4	76.2	87.3	33.7	1.5	3	4.5	10.4	0.11	1070V
1080V	4,750	2,050	79	27.0	200.0	180.8	88.9	104.8	44.2	1.5	3	4.5	17.7	0.17	1080V
1090V	4,000	3,730	95	27.0	213.8	199.8	98.4	123.8	47.7	1.5	3	6	25.4	0.25	1090V
1100V	3,250	6,280	107	41.3	266.7	245.7	120.6	142.0	60.0	1.5	4.5	9.5	42.2	0.43	1100V
1110V	3,000	9,320	117	41.3	285.8	258.5	127.0	160.3	64.2	1.5	4.5	9.5	54.4	0.51	1110V
1120V	2,700	13,700	136	60.3	319.0	304.4	149.2	179.4	73.4	1.5	6	12.5	81.6	0.73	1120V
1130V	2,400	19,900	165	66.7	377.8	329.8	161.9	217.5	75.1	1.5	6	12.5	122.5	0.91	1130V
1140V	2,200	28,600	184	66.7	416.0	371.6	182.8	254.0	78.2	1.5	6	12.5	180.1	1.13	1140V
1150V	2,000	39,800	203	108.0	476.3	371.6	182.9	269.2	106.9	1.5	6	12.5	230.0	1.95	1150V
1160V	1,750	55,900	228	120.7	533.4	371.8	198.1	304.8	114.3	1.5	6	12.5	321.1	2.81	1160V
1170V	1,600	74,600	279	133.4	584.2	402.2	215.9	355.6	119.4	1.5	6	12.5	448.2	3.49	1170V
1180V	1,400	103,000	311	152.4	630.0	437.8	238.8	393.7	130.0	1.5	6	12.5	591.0	3.76	1180V
1190V	1,300	137,000	339	152.4	685.0	483.6	259.1	436.9	135.0	1.5	6	12.5	761.0	4.40	1190V
1200V	1,100	186,000	361	177.8	737.0	524.2	279.4	497.8	145.0	1.5	6	12.5	1,021.0	5.62	1200V

※ Coupling weight, with unbored hub assembly.

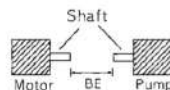


Type H (Horizontal Split Aluminum Cover)

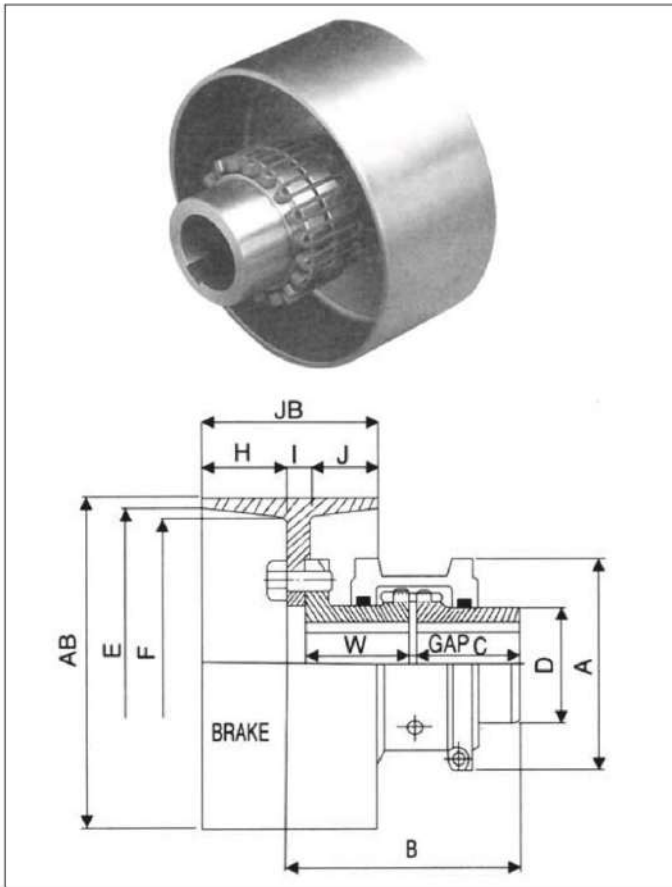


Size	Max. Speed (rpm)	Basic Torque (Nm.)	bore dia (mm)		Dimensions (mm)								Cplg wt (kg)	Lube wt (kg)	Size	
			Max.	Min.	A	B	BE(FS)		BE(HS)		N	F				Gap
							Min.	Max.	Min.	Max.						
1020P	3,600	52	36	12.7	101.6	35	89	203	45	102	52	86	5	4	0.03	1020P
1030P	3,600	149	44	12.7	111.0	41	89	216	45	109	59	94	5	8	0.03	1030P
1040P	3,600	249	57	12.7	117.5	54	89	216	45	109	78	113	5	8	0.05	1040P
1050P	3,600	435	64	12.7	138.0	60	112	216	57	109	87	126	5	8	0.05	1050P
1060P	3,600	684	79	19.1	150.5	73	127	330	64	166	103	145	5	8	0.09	1060P
1070P	3,600	994	83	19.1	161.9	79	127	330	64	166	109	153	5	12	0.11	1070P
1080P	3,600	2,050	95	27.0	194.0	89	184	406	93	204	122	178	5	12	0.17	1080P
1090P	3,600	3,730	108	27.0	213.0	102	184	406	93	204	142	210	5	12	0.25	1090P
1100P	2,400	6,280	127	38.1	250.0	90	203	406	103	205	171	251	6.5	12	0.43	1100P
1110P	2,250	9,320	149	50.8	270.0	104	210	406	106	205	196	277	6.5	12	0.51	1110P
1120P	2,025	13,700	165	63.5	308.0	119	246	406	125	205	225	319	9.5	12	0.73	1120P
1130P	1,800	19,900	178	76.2	364.0	135	257	406	130	205	238	346	9.5	12	0.91	1130P
1140P	1,650	28,600	203	88.9	384.0	152	267	406	135	205	266	386	9.5	12	1.13	1140P
1150P	1,500	39,800	254	101.6	453.1	173	345	371	175	187	334	425	9.5	14	1.95	1150P
1160P	1,350	55,900	279	114.3	501.4	186	356	406	180	205	366	457	9.5	14	2.81	1160P
1170P	1,225	74,600	330	127.0	566.4	220	384	445	194	224	425	527	9.5	16	3.49	1170P
1180P	1,100	103,000	330	101.6	629.9	249	400	490	202	247	451	591	9.5	16	3.76	1180P
1190P	1,050	137,000	362	114.3	675.6	276	411	530	207	267	508	660	9.5	18	4.40	1190P
1200P	900	186,000	381	127.0	756.9	305	445	575	224	289	530	711	9.5	18	5.62	1200P

※ BE means the distance between shaft ends.  
Do not miss to tell on ordering



Type PGDBW(Brake Wheel Double Engagement), PGSBW(Brake Wheel Single Engagement)



Cplg Size	Standard Brake Wheel					
	Motor Power (40% ED KW)			Brake Torque (Nm.)		
1020						
1030						
1040		2.2		50		
1050		5.5		100		
1060	5.5	7.5	11	100	140	212
1070		15		300		
1080		30		530		
1090	37	45		630	800	
1100		45		1,320		
1110	75		90	1,800		
1120	110		132	3,350		
1130	160		200	4,000	4,750	
1140	160		200	4,000	4,750	

※ Motor Crane  
※ Based on Crane motor

Size	Brake wheel Size (mm)		Max. Brake Rating of CPLG (Nm.)	Bore dia (mm)		Dimensions (mm)								Lube wt (kg)	Size		
	AB	JB		Max.	Min.	A	C	D	E	F	H	I	J			Gap	
1020S			11	30	12.7	102	48	39.6							3	0.03	1020S
1030S			36	36	12.7	111	48	49							3	0.03	1030S
1040S	160	80	66	44	12.7	117	51	57	145	140	40	12	28	3	0.05	1040S	
1050S	200	100	120	50	12.7	138	60	66	184	178	50	17	33	3	0.05	1050S	
1060S	200	100	213	57	19.1	151	63	76	184	178	50	17	33	3	0.09	1060S	
1070S	250	125	338	68	19.1	162	76	87	230	224	62.5	22	40.5	3	0.11	1070S	
1080S	315	160	650	82	27.0	194	89	105	292	285	80	23	57	3	0.17	1080S	
1090S	365	180	1,085	95	27.0	213	98	124	330	320	90	26	64	3	0.25	1090S	
1100S	400	200	1,936	107	41.3	251	121	142	374	362	100	28	72	5	0.43	1100S	
1110S	450	224	2,905	117	41.3	270	127	160	422	410	112	32	80	5	0.51	1110S	
1120S	500	250	4,425	136	60.3	308	149	179	462	445	125	35	90	6	0.73	1120S	
1130S	560	280	6,495	165	66.7	346	162	218	516	495	140	45	95	6	0.91	1130S	
1140S	560	280	8,815	184	66.7	384	184	253	516	495	140	45	95	6	1.13	1140S	

※ If you need PBW type.

First, determine the size of brake of your coupling and the 'B', 'W' according to above dimension. For further information, please contact us.