GRID COUPLING

GRKU–N
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Product ǀ Engineering Services
Maintenance

Grid Coupling

The grid coupling is the most advanced shaft connection transmission component in the international mechanical field, and it is also a very general shaft connection transmission component.The main structure of the grid coupling is composed of two hubs, two covers, two sealing rings and grids. It relies on the coiled grid embedded in the tooth groove of the two hubs to transfer torque, to achieve the link between the driving shaft and the driven shaft. In operation, the driven end is driven by the axial force of the teeth of the active end facing the grid to transfer the torque. In this way, the resonance phenomenon is avoided to a large extent. Besides, the elastic variable generated by grid when transferring the torque enables the mechanical system to obtain better vibration damping effect.

Characteristics

Excellent vibration damping performance, effective protection of the drive and drive device, extend the service life of the equipment
Large range of bearing variable load, safe start.
High transmission efficiency, low noise, reliable operation.
The impact force is absorbed through the extension of the grid to compensate for the deviation.
It can allow certain installation deviation.
Simple structure, easy loading and unloading.

Major forms

SH type	Horizontal Split Aluminum	SAS type	Full Space
SV type	Vertical Split Steel Cover	SFS type	Half Space
SBW type	Brake Drum		

Typical application

It is mainly used for driving shaft system with severe impact load, crusher, belt machine, reducer, power plant ball mill, mine winch, gas pump and other crank reciprocating movement, metallurgy, mining and other lifting machinery.

Technical Characteristics

• **PARALLEL**
The movement of the grid in the lubricated grooves accommodates parallel misalignment and permits full fuctioning of the grid–groove action in damping out shock and vibration.

• **ANGULAR**
Under angular misalignment, the grid–groove design permits a rocking and sliding action of the lubricated grid and hubs without any loss of power through the resident grid.

• **END FLOAT**
Unrestrained end float for both driving and driven members is permitted because the grid slides freely in the lubricated grooves. It can also be limited to any required amount.

Torsional Flexibility

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 flex under load variations.

2.Normal Load
As the load increases, the distance between the contact points on the hub teeth is shortened, but a free span still remains to cushion shock loads.

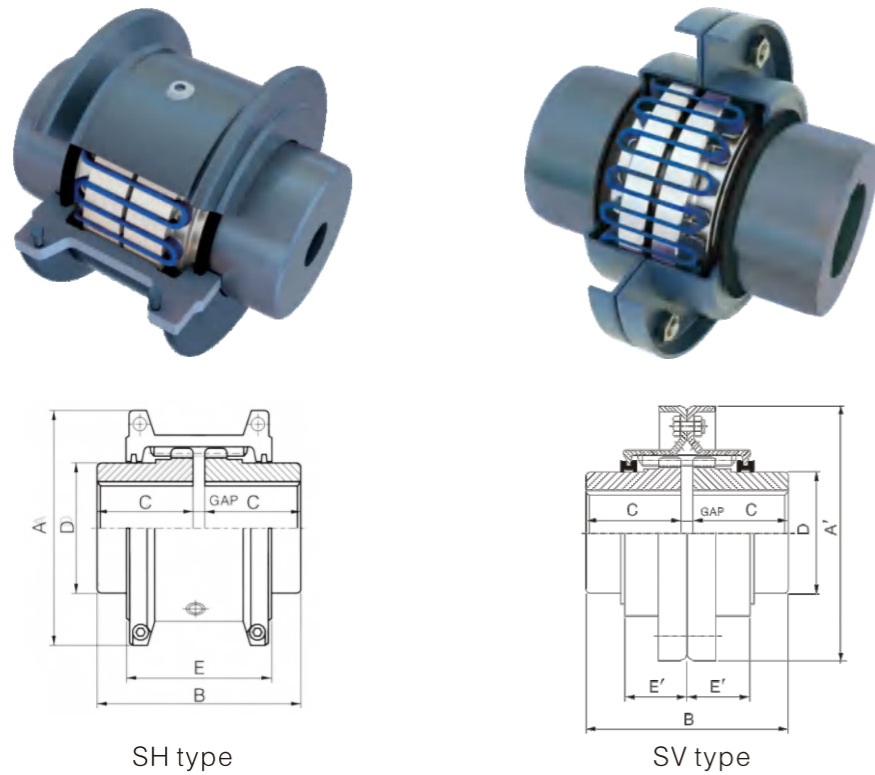**3.Shock Load**
The coupling is flexible within its rated capacity. Under extreme overloads, the grid bears fully on the hub teeth and transmits full load directly.

① Light Load   ② Normal Load   ③ Shock Load
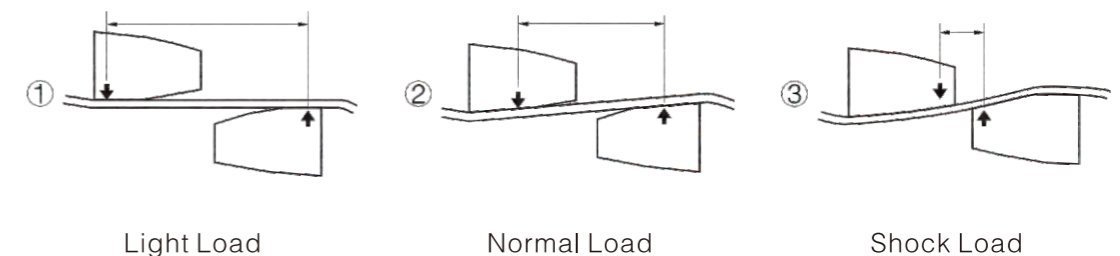
SH and SV Type

SH type   SV type

Size	HP Per 100	Max. Speed	Basic Torque	Bore (mm)		Dimensions (mm)							Gap (mm)			Coupling Weight	Lube Weight
	rpm	(rpm)	(kgf·cm)	Max	Min	A	A'	B	C	D	E	E'	Min.	Normal	Max.	(kg)	(kg)
20S	0.68	4500	486	30	12.7	101.6	111.1	98.0	47.5	39.7	66.5	24.2	1.5	3	4.5	1.9	0.03
30S	1.93	4500	1383	36	12.7	111.0	120.7	98.0	47.5	49.2	68.3	25.0	1.5	3	4.5	2.6	0.03
40S	3.22	4500	2304	44	12.7	117.5	128.5	104.6	50.8	57.1	70.0	25.7	1.5	3	4.5	3.4	0.05
50S	5.63	4500	4033	50	12.7	138.0	147.6	123.6	60.3	66.7	79.5	31.2	1.5	3	4.5	5.4	0.05
60S	8.85	4350	6337	57	19.1	150.5	162.0	130.0	63.5	76.2	92.0	32.2	1.5	3	4.5	7.3	0.09
70S	13	4125	9217	65	19.1	161.9	173.0	155.4	76.2	87.3	95.0	33.7	1.5	3	4.5	10	0.11
80S	27	3600	19010	79	27.0	194.0	200.0	180.8	88.9	104.8	116.0	44.2	1.5	3	6	18	0.17
90S	48	3600	34564	95	27.0	213.0	231.8	199.8	98.4	123.8	122.0	47.7	1.5	3	6	25	0.25
100S	81	2440	58183	107	41.3	250.0	266.7	245.7	120.6	142.0	155.5	60.0	1.5	4.5	9.5	42	0.43
110S	121	2250	86411	117	41.3	270.0	285.8	258.5	127.0	160.3	161.5	64.2	1.5	4.5	9.5	54	0.51
120S	177	2025	126736	136	60.3	308.0	319.0	304.4	149.2	179.4	191.5	73.4	1.5	6	12.5	81	0.73
130S	257	1800	184343	165	66.7	346.0	377.8	329.8	161.9	217.5	195.0	75.1	1.5	6	12.5	121	0.91
140S	370	1650	265993	184	66.7	384.0	416.0	371.6	182.8	254.0	201.0	78.2	1.5	6	12.5	178	1.13
150S	515	1500	368686	203	100.0	453.1	476.3	371.8	182.9	269.2	271.3	106.9	1.5	6	12.5	234	1.95
160S	724	1350	518465	228	120.7	501.4	533.4	403.3	198.1	304.8	278.9	114.3	1.5	6	12.5	317	2.81
170S	965	1225	691286	279	133.4	566.4	584.2	437.8	215.9	355.6	304.3	119.4	1.5	6	12.5	448	3.49
180S	1338	1100	958584	311	152.4	629.9	630.0	483.6	238.8	393.7	321.1	130.0	1.5	6	12.5	619	3.76
190S	1770	1050	1267358	339	152.4	675.5	685.0	524.2	259.1	436.9	325.1	135.0	1.5	6	12.5	776	4.40
200S	2413	900	1728216	361	177.8	756.9	737.0	564.8	279.4	497.8	355.6	145.0	1.5	6	12.5	1057	5.62

*Coupling weight,without bore machining

Space Type
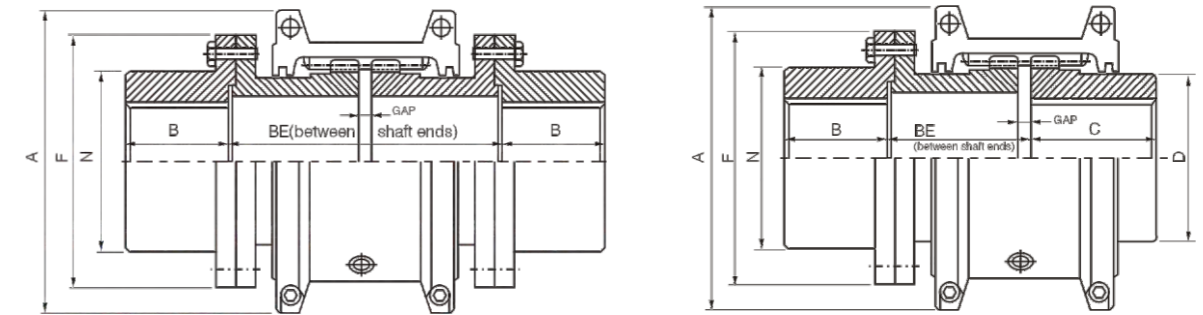
SAS(Full Space)Type   SFS(Half Space)Type

Size	HP Per 100	Max. Speed	Basic Torque	Bore Dia (mm)		Dimensions (mm)									Flange Bolt No.	Lube Weight
	rpm	(rpm)	(kgf·cm)	Max.	Min.	A	B	BE(SAS) Min.	BE(SAS) Max.	BE(SFS) Min.	BE(SFS) Max.	N	F	Gap		(kg)
20S	0.68	3600	486	36	12.7	101.6	35	89	203	45	102	52	86	5	4	0.03
30S	1.93	3600	1383	44	12.7	111.0	41	89	216	45	109	59	94	5	8	0.03
40S	3.22	3600	2304	57	12.7	117.5	54	89	216	45	109	78	113	5	8	0.05
50S	5.63	3600	4033	64	12.7	138.0	60	112	216	57	109	87	126	5	8	0.05
60S	8.85	3600	6337	79	19.1	150.5	73	127	330	64	166	103	145	5	8	0.09
70S	13	3600	9217	83	19.1	161.9	79	127	330	64	166	109	153	5	12	0.11
80S	27	3600	19010	95	27.0	194.0	89	184	406	93	204	122	178	5	12	0.17
90S	48	3600	34564	108	27.0	213.0	102	184	406	93	204	142	210	5	12	0.25
100S	81	440	58183	127	38.1	250.0	90	203	406	103	205	171	251	6.5	12	0.43
110S	121	2250	86411	149	50.8	270.0	104	210	406	106	205	196	277	6.5	12	0.51
120S	177	2025	126736	165	63.5	308.0	119	246	406	125	205	225	319	9.5	12	0.73
130S	257	1800	184343	178	76.2	346.0	135	257	406	130	205	238	346	9.5	12	0.91
140S	370	1650	264993	203	88.9	384.0	152	267	406	135	205	266	386	9.5	12	1.13
150S	515	1500	368686	254	101.6	453.1	173	345	371	175	187	334	425	9.5	14	1.95
160S	724	1350	518465	279	114.3	501.4	186	356	406	180	205	366	457	9.5	14	2.81
170S	965	1225	691286	330	127.0	566.4	220	384	445	194	224	425	527	9.5	16	3.49
180S	1338	1100	958584	330	101.6	629.9	249	400	490	202	247	451	591	9.5	16	3.76
190S	1770	1050	1267358	362	114.3	675.6	276	411	530	207	267	508	660	9.5	18	4.40
200S	2413	900	1728216	381	127.0	756.9	305	445	575	224	289	530	711	9.5	18	5.62

*Coupling weight,without bore machining
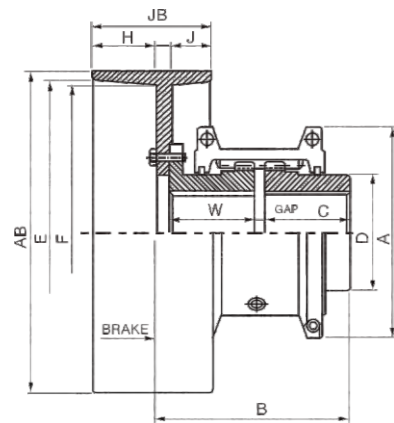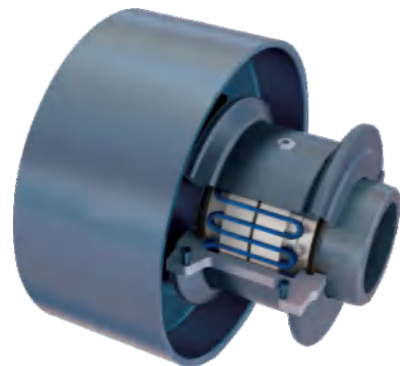
Cplg Size	Standard Brake Wheel	
	Moter Power (40% ED KW)	Brake Torque (kg，m)
2020S		
2030S		
2040S	2.2	5
2050S	5.5	10
2060S	5.5 7.5 11	10 14 21.2
2070S	15	30
2080S	30	53
2090S	37 45	63 80
2100S	45	132
2110S	75 90	180
2120S	110 132	335
2130S	160 200	400 475
2140S	160 200	400 475

*Based on crane motor

Brake drum Size (mm)		Size	Max.Brake Rating of CPLG	Bore Dia. (mm)		Dimension (mm)										Lube Weight
AB	JB		(kgf.cm)	Max.	Min.	A	C	D	E	F	H	I	J	Gap		(kg)
		20S	110	30	12.7	102	48	39.6						3		0.03
		30S	359	36	12.7	111	48	49						3		0.03
160	80	40S	663	44	12.7	117	51	57	145	140	40	12	28	3		0.05
200	100	50S	1202	50	12.7	138	60	66	184	178	50	17	33	3		0.05
200	100	60S	2129	57	19.1	151	63	76	184	178	50	17	33	3		0.09
250	125	70S	3373	68	19.1	162	76	87	230	224	62.5	22	40.5	3		0.11
315	160	80S	6497	82	27.0	194	89	105	292	285	80	23	57	3		0.17
355	180	90S	11060	95	27.0	213	98	124	330	320	90	26	64	3		0.25
400	200	100S	19355	107	41.3	251	121	142	374	362	100	28	72	5		0.43
450	224	110S	29032	117	41.3	270	127	160	422	410	112	32	80	5		0.51
500	250	120S	44240	136	60.3	308	149	179	462	445	125	35	90	6		0.73
560	280	130S	66212	165	66.7	346	162	218	516	495	140	45	95	6		0.91
560	280	140S	89862	184	66.7	384	184	253	516	495	140	45	95	6		1.13

*If you need SBW type
First,detemine the size of brake of your coupling and then the "B" and "W" according to above dimension.

Instruction for Installation
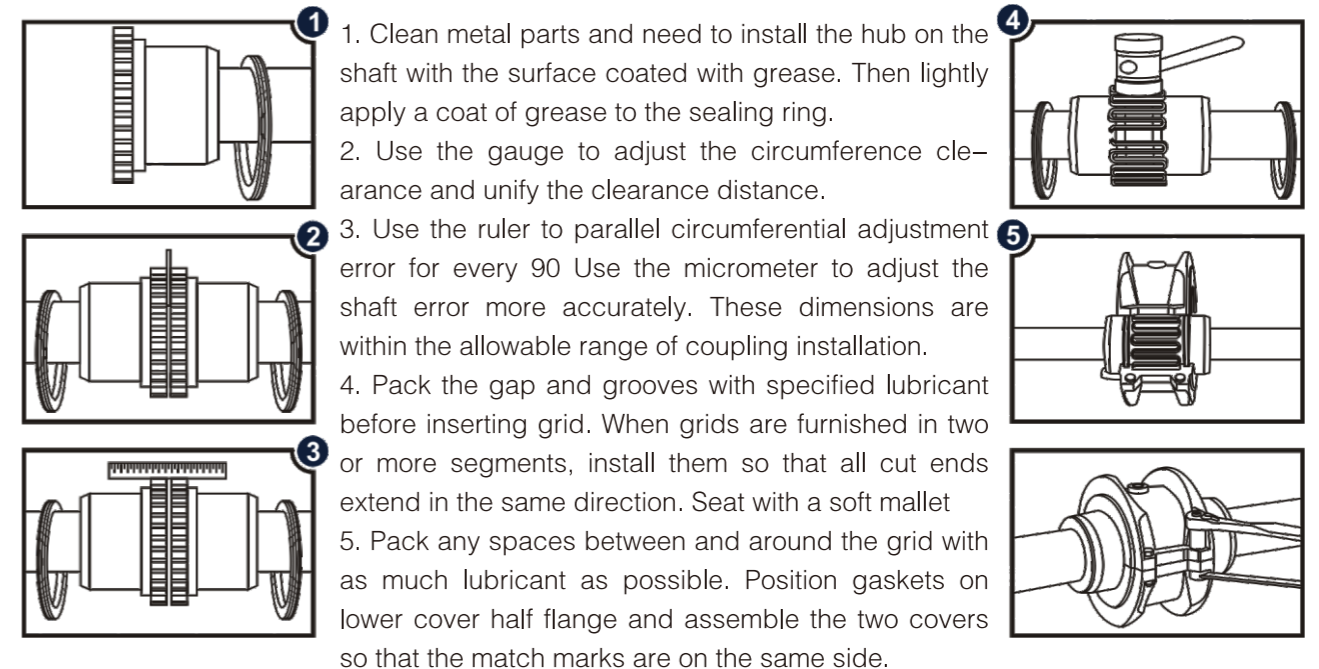
1. Clean metal parts and need to install the hub on the shaft with the surface coated with grease. Then lightly apply a coat of grease to the sealing ring.

2. Use the gauge to adjust the circumference clearance and unify the clearance distance.

3. Use the ruler to parallel circumferential adjustment error for every 90 Use the micrometer to adjust the shaft error more accurately. These dimensions are within the allowable range of coupling installation.

4. Pack the gap and grooves with specified lubricant before inserting grid. When grids are furnished in two or more segments, install them so that all cut ends extend in the same direction. Seat with a soft mallet

5. Pack any spaces between and around the grid with as much lubricant as possible. Position gaskets on lower cover half flange and assemble the two covers so that the match marks are on the same side.

Lubrication and Treatment

Grease Lubrication

After assembling the grid and hub, apply grease, and then assemble the cover and add grease through the oil inlet Grease Supplement and Replacement.

Add grease once a month or after 240–250 hours of operation; Remove the coupling completely every 3 months or after 4000 hours of use, replace the deteriorated grease.

Choice of Grease

The service temperature of grease is –17 ~70° C, so it is necessary to choose the grease that meets the operation conditions and working environment.

Grease Recommendation

Maker	Grease
GULF	Gulf Crown Grease #2
SHELL	Alvania Grease #2
TEXACO	Marfak Heavy Duty #2
MOBIL	Mpbilux #2

Parameters Required for Type Selection

· The rated power, maximum power, speed or torque of the motor.

· Drive end and driven end axle diameter, keyway size, fit type.

· Type of equipment and operating conditions.

· Distance between shaft ends.

· Installation space limitation.