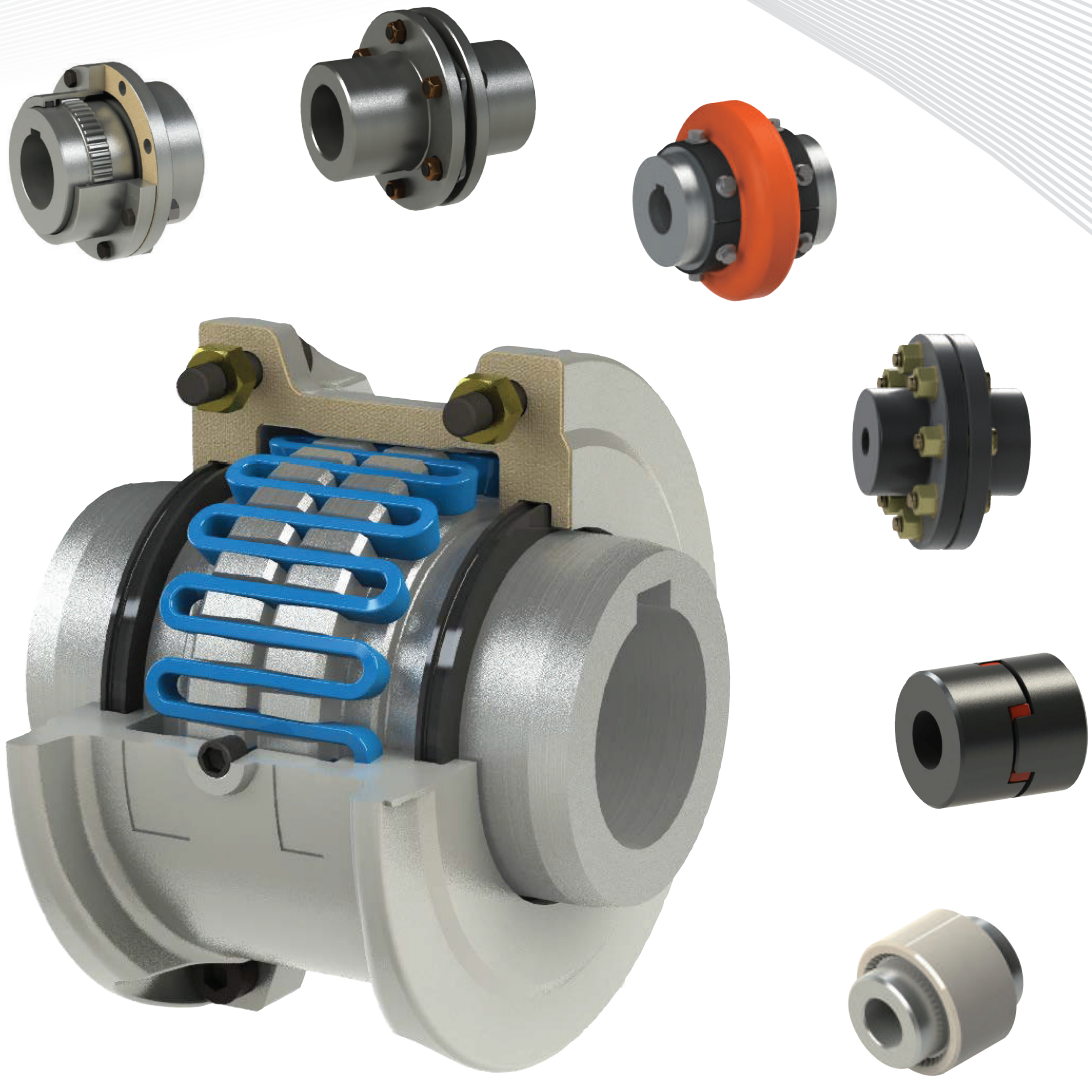
Woo Chang Coupling Co., Ltd

Mechanical Power Transmission Systems



Introduction

We would like to express our sincere gratitude to everyone who is actively contributing to global business development with a competitive edge.

At the Woo Chang Coupling Company, we aim to be a leader in the couplings industry. We would like to develop a long-term business relationship with your company for mutual benefit in the future.

We hope you have every possible success in your business ambitions.

CreBIZ
Certificate No. QE120164

CERTIFICATE OF REGISTRATION

Quality Management System

WOO CHANG COUPLING CO., LTD.

224, Oksan-ro, Bucheon-si, Gyeonggi-do, Korea

CREBIZQM hereby certifies that the Management System of the above organization conforms with the requirement of the following standard :

Standard of Certification

KS Q ISO 9001:2015 / ISO 9001:2015

Scope of Certification

Design, development, production and balance test of coupling(grid, gear, disk, flange, jaw, nylon, rubber, universal joint)

Valid until : 21, November, 2018 / Date : 22, November, 2015
Issue Date : 10, November, 2017

Approved by : President CreBizQM

CreBIZ
Certificate No. QE120164

CERTIFICATE OF REGISTRATION

Environmental Management System

WOO CHANG COUPLING CO., LTD.

224, Oksan-ro, Bucheon-si, Gyeonggi-do, Korea

CREBIZQM hereby certifies that the Management System of the above organization conforms with the requirement of the following standard :

Standard of Certification

KS I ISO 14001:2015 / ISO 14001:2015

Scope of Certification

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Valid until : 21, November, 2018 / Date : 22, November, 2015
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Taper Grid Coupling - TH

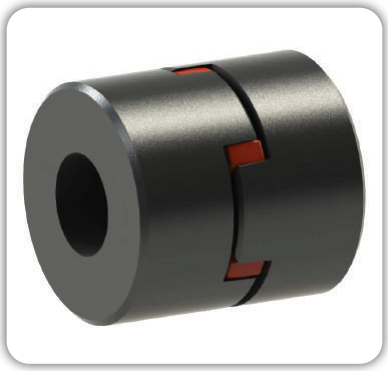
Gear Coupling - GDE

Flexible Disc Coupling - 6S

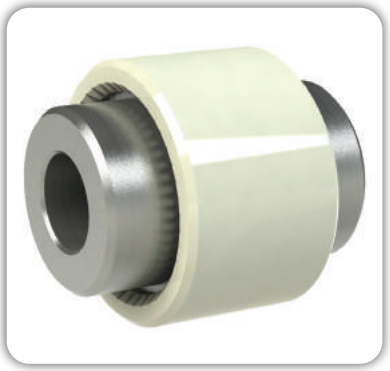
U-flex Coupling

Flexible Flange Coupling

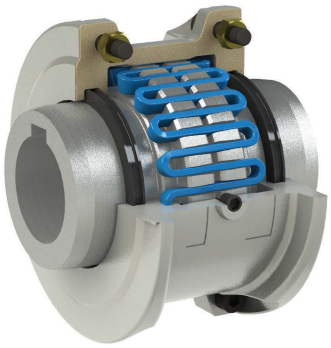
Jaw Coupling

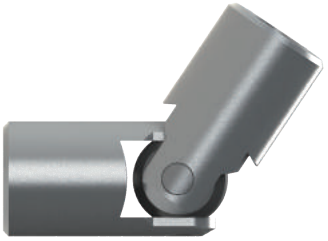


Nylon Coupling



Contents





Woo Chang Coupling Co.,Ltd
Mechanical Power Transmission Systems

Mechanical Power Transmission Systems

TAPER GRID COUPLING

TH TYPE

TV TYPE

TFS TYPE

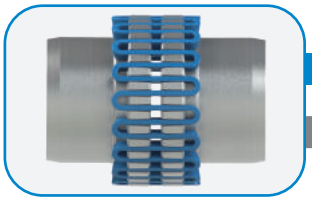
THS TYPE

TBW TYPE

TFLS TYPE

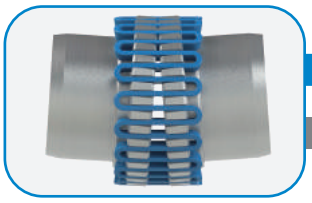
01 TAPER GRID COUPLING

Characteristic & Advantages



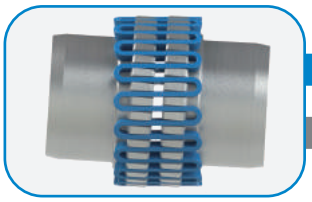
1) Parallel Misalignment

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



2) Angular Misalignment

Under angular misalignment, the lubricated grid and hubs, along with the resilient grid-groove design, allow for consistent rocking and sliding motions with no power loss.

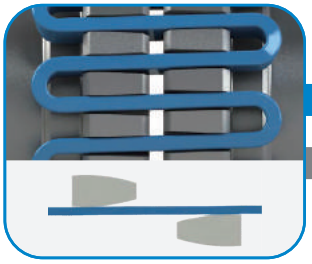


3) Axial Misalignment

End floats for both driving and driven members is permitted because the grid slides freely in the lubricated grooves.

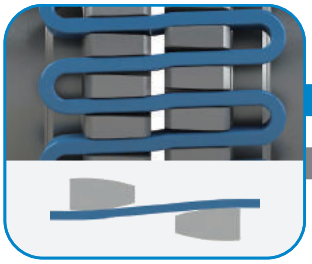
Torsional Flexibility

The great advantage of the WCC Taper Grid Coupling is that the grid will absorb the shock, vibration, and overload that occur when the machine starts. Due to the flexibility of the grid, the focus of the force is spread across the surface of the tooth, reducing vibration and shock loads.



Light Load

The grid, powered by the exterior hub teeth, operates in a straight line. When a load is generated, the curved surface of the tooth and the elastic action of the grid eliminate vibration and shock.



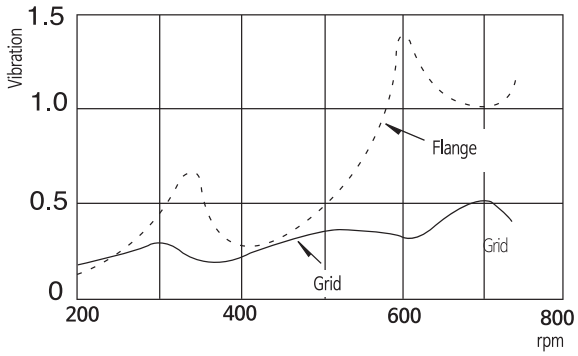
Normal Load

When a load is generated, the force is applied to the middle of the tooth of the hub. Due to the elastic bending of the grid, the impact load is mitigated and the engine operates freely.

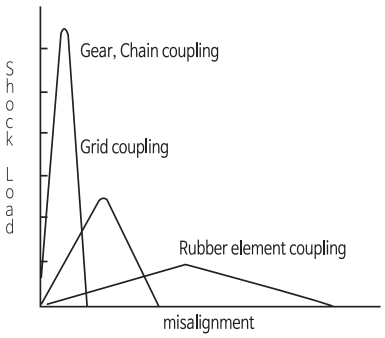
Shock Load

If a momentary overload occurs, the force jam moves to the inside of the hub teeth. Then the grid works by flexibly mitigating the extreme impact within its range of elasticity.

The graphs below demonstrate the excellent performance of the grid coupling:

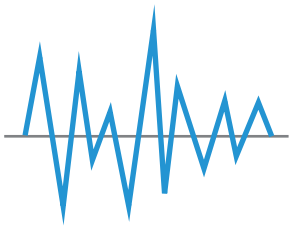


Vibration absorption



Shock load absorption

Grid Coupling Shock & Vibration



Input : Shock load and vibration

Output : Dampened vibration and shock absorption

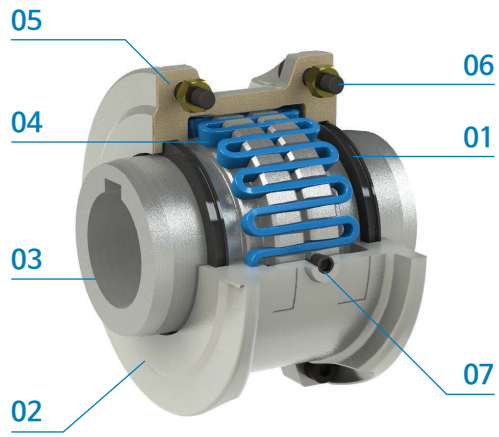
1) When an overload occurs during use, the grid breaks and acts as a safety device to prevent damage to the entire shaft and machine.
2) When serious misalignment occurs due to machinery damage during use, the grid or hub breaks away, halting action and preventing the spread of damage.
3) Vibration reduction more than doubles the service life of mechanical seals, bearings, and other parts.
4) Installation, assembly and repair work are all easily achieved without the need for repair inspections.
5) The grid is manufactured according to international standards, making it compatible with all machinery.
6) The coupling produces excellent power transmission performance with low noise.
7) Operating costs are kept low since it's possible to replace individual parts.

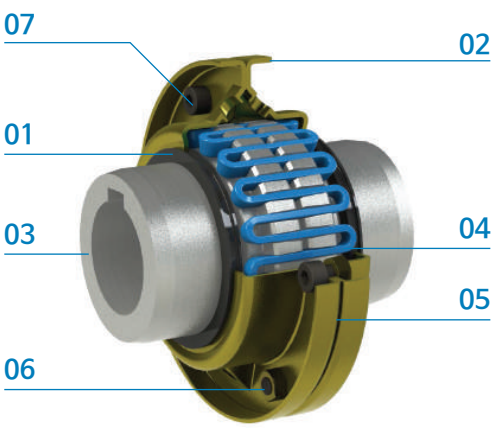
Application

In the past, flange or chain couplings were used for shaft connections, but now you can benefit by using the grid coupling in the following situations:

1) When it is necessary to prevent the transmission of vibration and shock.
2) When power must be transmitted normally, even when parallel, angular, or axial misalignment occurs.
3) To protect associated machinery where periodic overloads occur.
4) When forward/reverse rotation is required.
5) To reduce shock load.

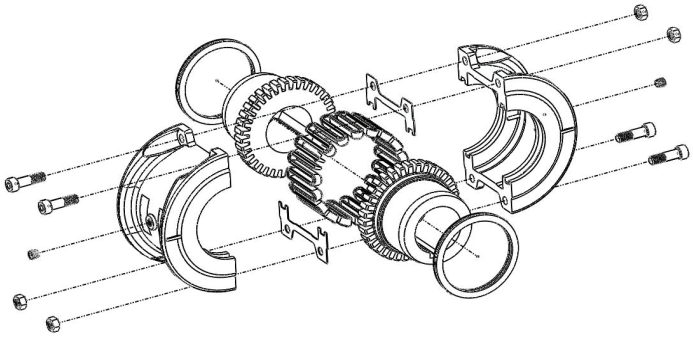
Structure



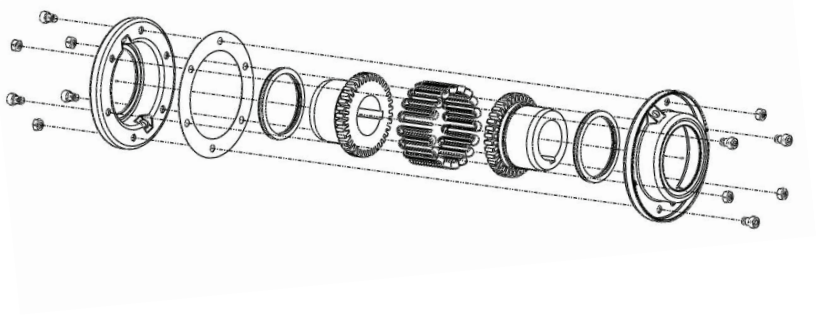


PART 01 Oil Seal 02 Cover 03 Hub 04 Grid 05 Gasket 06 Bolt 07 Lube Plug

Design features of TH Grid Coupling



Design features of TV Grid Coupling

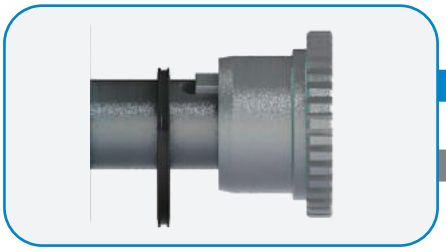


Instruction for Installation

The operation and effective life of the coupling are highly dependent on how it is installed and used. For best operation and trouble-free use, it must be installed and used according to the instructions. Installation requires only standard tools such as a wrench, a straightener and a feeler gauge (or dial gauge).

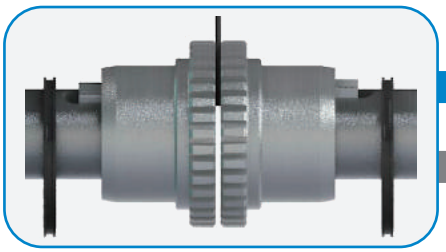
※ The TH Type is designed to operate in a horizontal or vertical position without partial modification.

TH Type



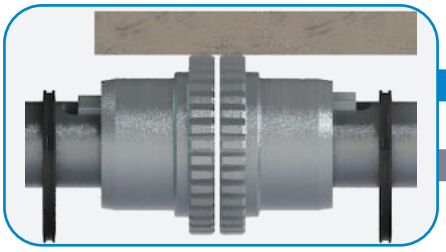
STEP 01

Wash all components with cleaning oil. Grease the oil seal and insert it into the shaft, then mount the hub on to the shaft.



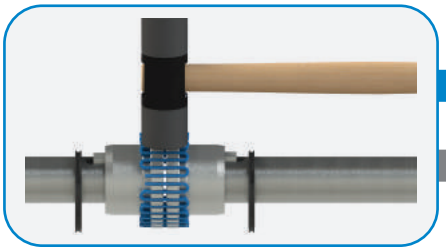
STEP 02

Adjust the gaps and angular misalignments at four points on the circumference by inserting a gap gauge.



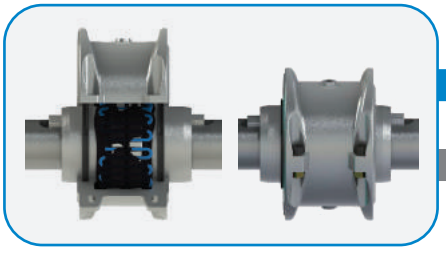
STEP 03

Adjust any parallel misalignment every 90˚of circumference by using a straight-edge ruler. Use a dial gauge to precisely adjust the axis misalignment and keep within limits.



STEP 04

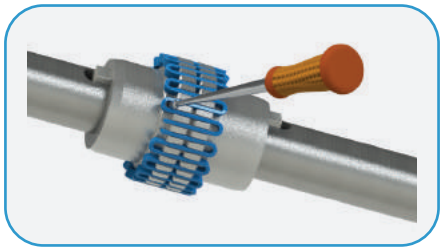
Fill the teeth with grease. If there are two or more grids, make sure that the end of each section is facing the same direction, then tap with a hammer.



STEP 05

Apply enough grease to the grid. Place the oil seal in position so it fits well into the groove of the cover and then insert the gasket. Assemble the cover so that the match marks on the inside of the cover are always on the same side.

Coupling disassembly

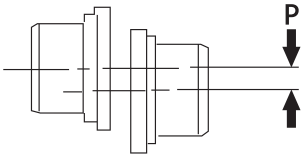


*Coupling disassembly and grid removal.

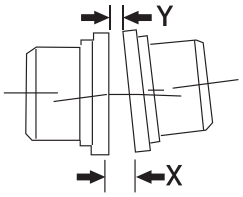
When disassembling the coupling, insert a screwdriver into the loop of the grid, alternating between the two sides of the grid as shown in the figure. Proper lubrication is an absolute necessity for the operation and life of the coupling.

Misalignment Capacity

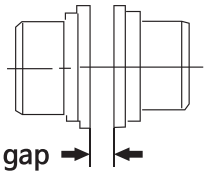
Parallel Misalignment



Angular Misalignment



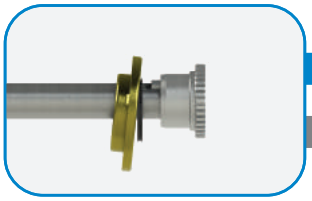
Normal Gap



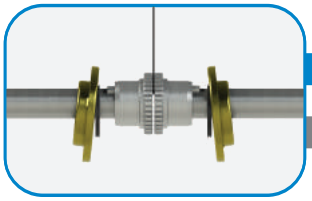
SIZE	RECOMMENDED INSTALLATION		OPERATING		Normal Gap ± 10%
	Parallel offset P	Angular (1/16 °) X – Y	Parallel offset P	Angular (1/4 °) X – Y	
1020	0.15	0.06	0.3	0.24	3
1030	0.15	0.07	0.3	0.29	3
1040	0.15	0.08	0.3	0.32	3
1050	0.20	0.10	0.4	0.39	3
1060	0.20	0.11	0.4	0.45	3
1070	0.20	0.12	0.4	0.50	3
1080	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

(Unit:mm)

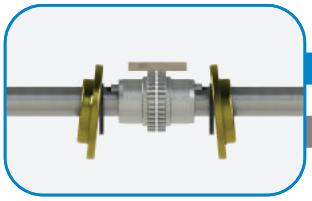
TV Type



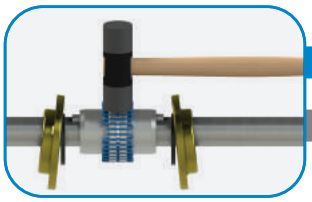
STEP 01
Wash all components with cleaning oil. Grease the oil seal and insert it into the shaft, then first mount the cover to the shaft before mounting the hub.



STEP 02
Adjust the gaps and angular misalignment at four points on the circumference by inserting a gap gauge.



STEP 03
Adjust any parallel misalignment every 90° of circumference using a straight-edge ruler. Use a dial gauge to precisely adjust the axis and keep within limits.



STEP 04
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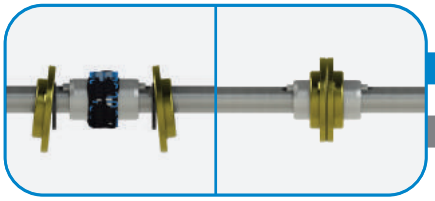
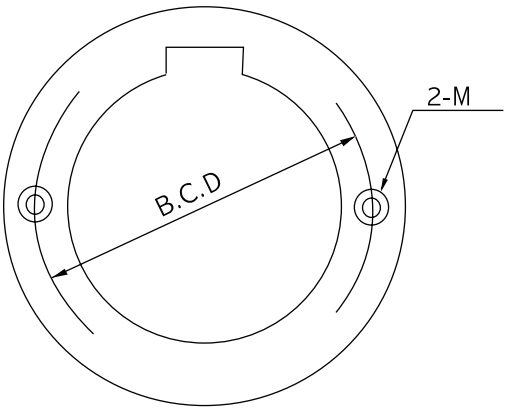


STEP 05
Apply enough grease to the grid and insert the gasket, ensuring that the grease inlet of both covers is at the 180-degree position. (For model 1150T and larger, make sure that the injection port position is at 90°.)

Selection of Puller holes

Size	B.C.D. (㎜)	Bolt Size (in)
1100	133	3/8
1110	149	7/16
1120	168	7/16
1130	197	5/8
1140	236	5/8
1150	263	3/4
1160	298	7/8
1170	338	1 1/8
1180	378	1 1/4
1190	413	1 1/2
1200	456	1 1/2
1210	497	1 1/2
1220	541	1 1/2
1230	586	1 1/2



Selection of Puller Holes

Selection Method

Selection process

a. Use the following formula to determine the torque

$$T = 974 \frac{H'}{N} \times S \cdot F \text{ or } T = 716.2 \frac{H}{N} \times S \cdot F$$

T = Design torque (kg·m) H' = Power (kw) H = Power (HP) N = Working revolution (rpm) S·F = Recommended service factor

b. Compare the calculated torque with the torque rating for each model and select the one with the same or larger rating.
c. Compare the maximum inner diameter of the shaft and coupling of the machine to be used and select the appropriate model.

Precaution for selection

a. When there is a commercial N and a minimum N, use the lowest N for the calculation.
b. Loads with frequent reverse rotation, repeated overload, or discontinuous operation should be twice that for normal operation.
c. Calculate the maximum horsepower when there are both peak horsepower and commercial horsepower in the system.

Example

I want to connect a 30-horsepower, 1,750rpm motor to a rotary type pump. The shaft diameter of the motor is 48 mm and of the pump it is 52 mm.

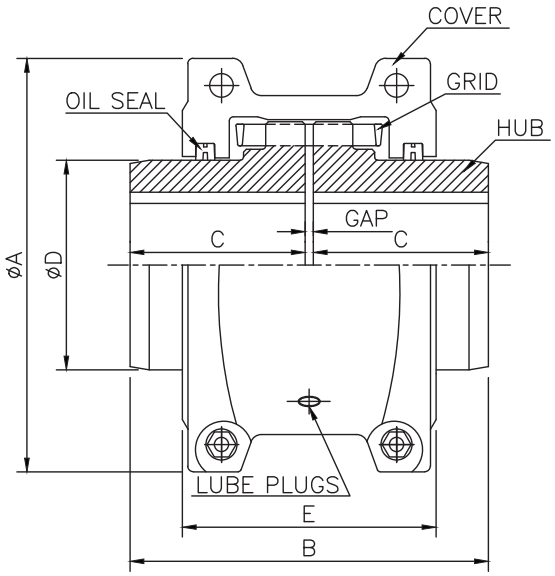
a. On page 60, the safety factor of the pump is listed as 1.75.
b. The commercial horsepower is 30HP.

$$\text{Torque}(kg \cdot m) = \frac{30 \times 716.2 \times 1.75}{1{,}750} = 21.49$$

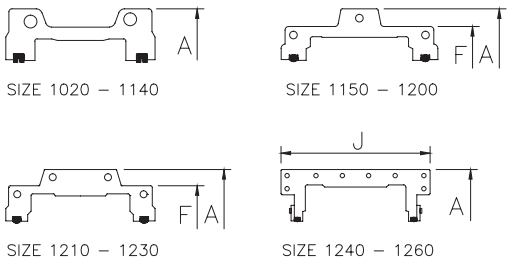
c. Since the transmission torque is 21.49 kg·m, select model 1040T.
d. The maximum inner diameter of model 1040T is 43 mm, so it is too small for the required 48mm of the motor shaft.
e. Select model 1060T with a maximum inner diameter of 56mm.
f. Verify that the rpm of model 1060T is sufficient to meet the needs of the required 1,750 rpm.
g. Since all criteria are met by the 1060T, it is the final selection.

Types TH and TV differ only in their covers, so either would be suitable.

Type TH (Horizontal Split Aluminum Cover)



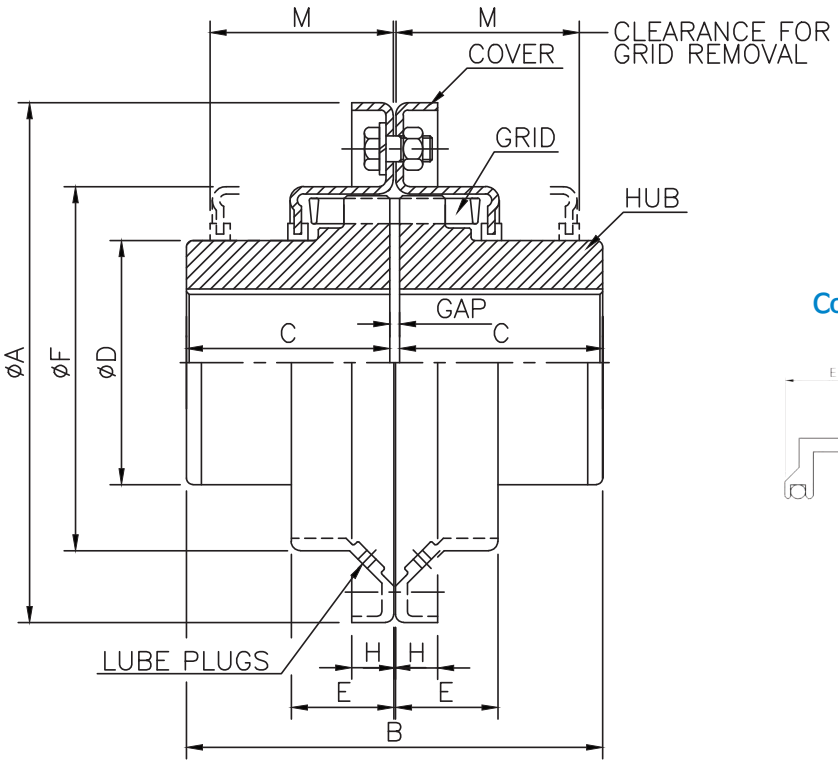
Cover Profiles



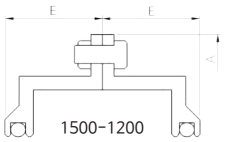
Size	Max. Speed RPM	Torque Rating		Bore Dia (㎜)		Dimensions(㎜)					Gap (㎜)	Cplg wt(kg)	Lube wt (kg)
		kg·m	Nm	Max.	Min.	A	B	C	D	E			
1020T	4,500	5.3	52	28	13	101.6	98.0	47.5	39.7	66.5	3	1.9	0.03
1030T	4,500	15.2	149	35	13	110.0	98.0	47.5	49.2	71.8	3	2.6	0.03
1040T	4,500	25	249	43	13	116.9	104.6	50.8	57.1	70.0	3	3.4	0.05
1050T	4,500	44	435	50	13	138.0	123.6	60.3	66.7	79.5	3	5.4	0.05
1060T	4,350	69	684	56	20	150.0	130.0	63.5	76.2	92.0	3	7.3	0.09
1070T	4,125	101	994	67	20	162.0	155.4	76.2	87.3	96.0	3	10	0.11
1080T	3,600	209	2,050	80	27	194.0	180.8	88.9	104.8	116.0	3	18	0.17
1090T	3,600	380	3,730	95	27	213.0	199.8	98.4	123.8	122.0	3	25	0.25
1100T	2,440	640	6,280	110	42	250.0	245.7	120.6	142.0	155.5	4.5	42	0.43
1110T	2,250	950	9,320	120	42	270.0	258.5	127.0	160.3	161.5	4.5	55	0.51
1120T	2,025	1,397	13,700	140	61	308.0	304.4	149.2	179.4	191.5	6	75	0.73
1130T	1,800	2,029	19,900	170	67	346.0	329.8	161.9	217.5	195.0	6	116	0.91
1140T	1,650	2,916	28,600	200	67	384.0	374.2	184.1	254.0	201.0	6	171	1.13
1150T	1,500	4,058	39,800	215	108	454.0	372.0	183.0	269.0	273.0	6	216	1.95
1160T	1,350	5,700	55,900	240	121	501.0	402.0	198.0	305.0	279.0	6	304	2.81
1170T	1,225	7,607	74,600	280	134	569.0	438.0	216.0	356.0	309.0	6	423	3.49
1180T	1,100	10,503	103,000	300	153	630.0	484.0	239.0	394.0	321.0	6	594	3.76
1190T	1,050	13,970	137,000	335	153	676.0	524.0	259.0	437.0	325.0	6	764	4.40
1200T	900	18,966	186,000	360	178	757.0	564.0	279.0	498.0	356.0	6	1,042	5.62
1210T	820	25,390	249,000	390	178	845.0	622.3	304.8	533.4	432.0	12.7	1,424	10.5
1220T	730	34,262	336,000	420	203	921.0	662.7	325.0	572.0	490.0	12.7	1,785	16.1
1230T	680	44,357	435,000	450	203	1,003.0	703.8	345.0	610.0	546.0	13	2,267	24.0
1240T	630	57,002	559,000	480	254	1,087.0	749.0	368.0	648.0	648.0	13	2,950	33.8
1250T	580	76,070	746,000	-	254	1,181.0	815.0	401.0	711.0	699.0	13	3,833	50.1
1260T	540	95,037	932,000	-	254	1,261.0	877.0	432.0	762.0	762.0	13	4,682	67.2

※ Coupling weight, without bore machining
※ Please contact us for the parts that do not have specifications in chart

Type TV (Vertical Split Steel Cover)



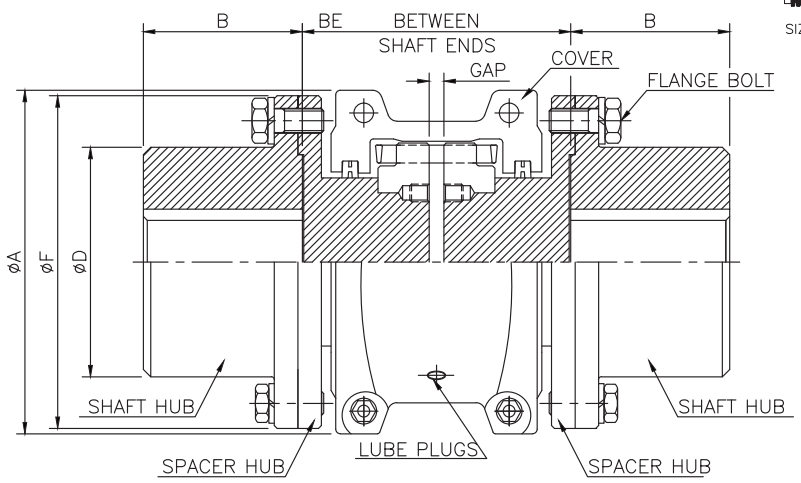
Cover Profile



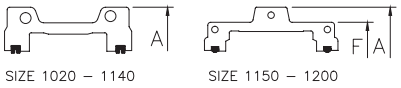
Size	Max. Speed RPM	Torque Rating		Bore Dia (㎜)		Dimensions (㎜)							Gap (㎜)	Cplg wt (kg)	Lube wt (kg)
		kg·m	Nm	Max.	Min.	A	B	C	D	F	H	E			
1020T	6,000	5.3	52	28	13	111.1	98.0	47.5	39.7	62.5	9.5	24.2	3	1.9	0.03
1030T	6,000	15.2	149	35	13	120.7	98.0	47.5	49.2	72.2	9.5	25.0	3	2.6	0.03
1040T	6,000	25	249	43	13	128.5	104.6	50.8	57.1	80.0	9.5	25.7	3	3.4	0.05
1050T	6,000	44	435	50	13	147.6	123.6	60.3	66.7	96.7	13	31.2	3	5.4	0.05
1060T	6,000	69	684	56	20	162.0	130.0	63.5	76.2	109.8	13	32.2	3	7.3	0.09
1070T	5,500	101	994	67	20	173.0	155.4	76.2	87.3	120.7	13	33.7	3	10.0	0.11
1080T	4,750	209	2,050	80	27	200.0	180.8	88.9	104.8	147.4	13	44.2	3	18.0	0.17
1090T	4,000	380	3,730	95	27	231.8	199.8	98.4	123.8	165.7	13	47.7	3	25.0	0.25
1100T	3,250	640	6,280	110	42	266.7	245.7	120.6	142.0	196.8	16	60.2	4.5	42.0	0.43
1110T	3,000	950	9,320	120	42	285.8	258.5	127.0	160.3	285.8	16	63.3	4.5	54.0	0.51
1120T	2,700	1,397	13,700	140	61	319.0	304.4	149.2	179.4	319.0	16	73.4	6	73.0	0.73
1130T	2,400	2,029	19,900	170	67	377.8	329.8	161.9	217.5	377.8	22	75.4	6	114.0	0.91
1140T	2,200	2,916	28,600	200	67	416.0	374.2	184.1	254.0	416.0	22	78.5	6	171.0	1.13
1150T	2,000	4,058	39,800	215	108	476.3	372.0	183.0	269.0	379.0	-	106.0	6	228.0	1.95
1160T	1,750	5,700	55,900	240	121	533.4	402.0	198.0	305.0	427.0	-	114.0	6	319.0	2.81
1170T	1,600	7,607	74,600	280	134	584.2	438.0	216.0	356.0	480.0	-	119.0	6	435.0	3.49
1180T	1,400	10,503	103,000	300	153	630.0	484.0	239.0	394.0	545.0	-	129.0	6	584.0	3.76
1190T	1,300	13,970	137,000	335	153	685.0	524.0	259.0	437.0	585.0	-	144.0	6	772.0	4.40
1200T	1,100	18,966	186,000	360	178	737.0	564.0	279.0	498.0	645.0	-	145.0	6	1,045.0	5.62

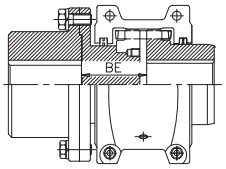
※ Coupling weight, without bore machining
※ Please contact us for the parts that do not have specifications in chart

Type TFS(FullSpacer) THS (HalfSpacer)

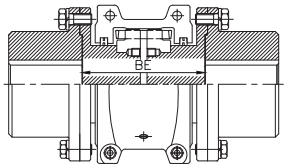


Cover Profiles





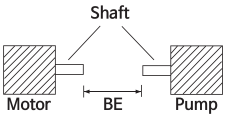
(HALF SPACER)



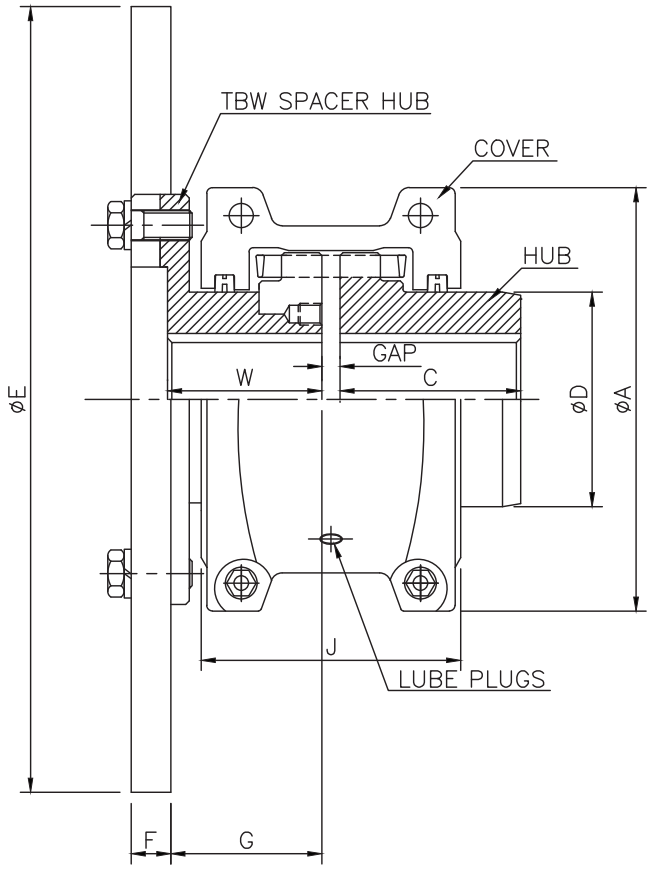
(FULL SPACER)

Size	Max. Speed RPM	Torque Rating		Bore Dia (㎜)		Dimensions(㎜)								Gap (㎜)	Flange Bolt No.	Lube wt (kg)
		kg·m	Nm	Max.	Min.	A	B	BE(TFS) Min.	BE(TFS) Max.	BE(THS) Min.	BE(THS) Max.	D	F			
1020T	3,600	5.3	52	35	13	101.6	35	89	203	45	102	52	86	5	4	0.03
1030T	3,600	15.2	149	43	13	111.0	41	89	216	45	109	59	94	5	8	0.03
1040T	3,600	25	249	56	13	116.9	54	89	216	45	109	78	113	5	8	0.05
1050T	3,600	44	435	67	13	138.0	60	112	216	57	109	87	126	5	8	0.05
1060T	3,600	69	684	80	20	150.0	73	127	330	64	166	103	145	5	8	0.09
1070T	3,600	101	994	85	20	162.0	79	127	330	64	166	109	153	5	12	0.11
1080T	3,600	209	2,050	95	27	194.0	89	184	406	93	204	122	178	5	12	0.17
1090T	3,600	380	3,730	110	27	213.0	102	184	406	93	204	142	210	5	12	0.25
1100T	2,400	640	6,280	130	39	250.0	90	203	406	103	205	171	251	6.5	12	0.43
1110T	2,250	950	9,320	150	51	270.0	104	210	406	106	205	196	277	6.5	12	0.51
1120T	2,025	1,397	13,700	170	64	308.0	119	246	406	125	205	225	319	9.5	12	0.73
1130T	1,800	2,029	19,900	190	77	346.0	135	257	406	130	205	238	346	9.5	12	0.91
1140T	1,650	2,916	28,600	210	89	384.0	152	267	406	135	205	266	386	9.5	12	1.13
1150T	1,500	4,058	39,800	270	102	454.0	173	345	371	175	187	334	425	9.5	14	1.95
1160T	1,350	5,700	55,900	290	115	501.0	186	356	406	180	205	366	457	9.5	14	2.81
1170T	1,225	7,607	74,600	340	127	569.0	220	384	445	194	224	425	527	9.5	16	3.49
1180T	1,100	10,503	103,000	340	102	630.0	249	400	490	202	247	451	591	9.5	16	3.76
1190T	1,050	13,970	137,000	380	115	676.0	276	411	530	207	267	508	660	9.5	18	4.40
1200T	900	18,966	186,000	400	127	757.0	305	445	575	224	289	530	711	9.5	18	5.62

※ 'BE' is the distance between the shaft ends.
State the exact 'BE' number when you order.



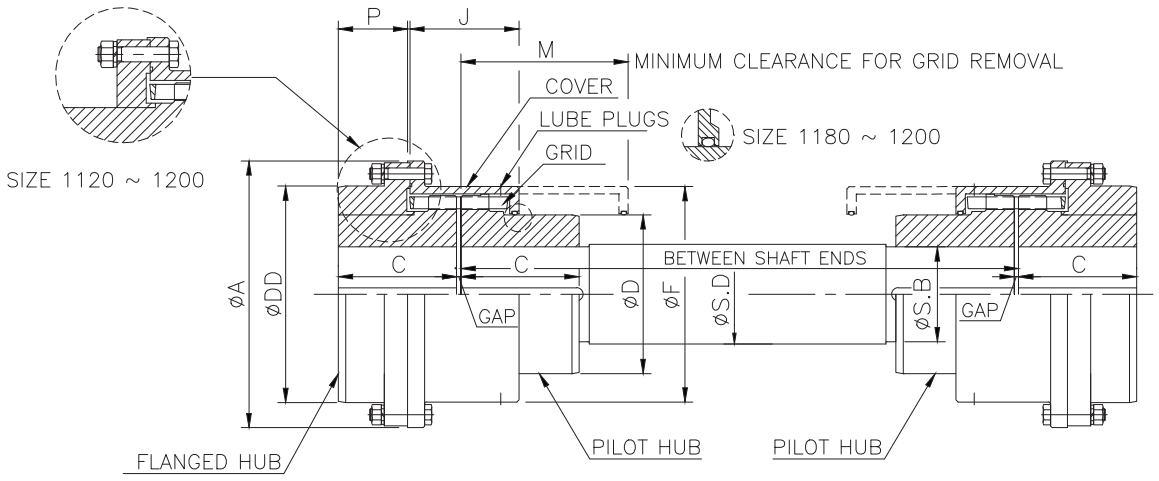
Type TBW (Disc Brake Wheel)



Size	Torque Rating		Brake Disc Size (㎜)	Bore(㎜)		Dimensions(㎜)							Lube wt (kg)
	kg·m	Nm		Max.	Min.	A	C	D	G	J	W	GAP	
1020T	1.1	11	203x6.4	28	13	101.6	47.5	39.7	59.9	66.5	60.5	3	0.03
1030T	3.5	35	254x6.4	35	13	110.0	47.5	49.2	59.9	71.8	60.5	3	0.04
1040T	6.6	65	254x6.4	43	13	116.9	50.8	57.1	59.9	70.0	60.5	3	0.05
1050T	12	118	254x6.4	50	13	138.0	60.3	66.7	59.9	79.5	60.5	3	0.07
1060T	21	209	305x6.4	56	20	150.0	63.5	76.2	88.6	92.0	88.1	3	0.09
1070T	33	331	305x6.4	67	20	162.0	76.2	87.3	88.6	96.0	88.1	3	0.11
1080T	64	637	305x6.4	80	27	194.0	88.9	104.8	88.6	116.0	88.1	3	0.17
1090T	110	1,084	407x12.7	95	27	213.0	98.4	123.8	87.9	122.0	88.1	3	0.25
1100T	193	1,897	407x12.7	110	42	250.0	120.6	142.0	119.1	155.5	119.1	4.5	0.43
1110T	290	2,846	458x12.7	120	42	270.0	127.0	160.3	146.0	161.5	146.0	4.5	0.51
1120T	442	4,336	509x12.7	140	61	308.0	149.2	179.4	150.1	191.5	149.4	6	0.73
1130T	622	6,098	559x12.7	170	67	346.0	161.9	217.5	153.4	195.0	152.4	6	0.91
1140T	898	8,808	610x12.7	200	67	384.0	184.1	254.0	159.8	201.0	158.8	6	1.13
1150T	1,243	12,195	763x12.7	215	108	454.0	183.0	269.0	179.8	273.0	182.9	6	1.91
1160T	1,727	16,938	915x12.7	240	121	501.0	198.0	305.0	195.1	279.0	198.1	6	2.81

※ When manufacturing the TBW type, determine the size of the brake disc to be used and set 'E' and 'F' according to the above chart. Please contact us for the parts that do not have specifications in chart

Type TFLS (Floating Shaft)



Size	Torque Rating		Bore(㎜)		Pilot HUB Bore	Dimensions(㎜)												Lube wt (kg)
	kg·m	Nm	Max.	Min.		A	BE Min.	C	D	DD	F	J	M	P	SB	SD	GAP	
1030T	15.2	149	35	13	27	115.9	162.0	47.5	49.2	83.7	80.8	50.3	77.7	26.8	27.0	28.6	3.0	0.05
1050T	44	435	50	13	37	157.5	195.0	60.3	66.7	105.2	104.8	59.2	94.0	36.2	36.5	38.1	3.0	0.07
1070T	101	994	67	20	49	182.9	213.0	76.2	87.3	126.5	129.0	65.9	103.1	49.8	49.2	50.8	3.0	0.12
1080T	209	2,050	80	27	62	218.4	275.0	88.9	104.8	154.9	156.2	85.9	134.1	52.1	61.9	63.5	3.0	0.18
1090T	380	3,730	95	27	75	244.9	294.0	98.4	123.8	180.3	175.8	92.2	143.8	58.5	74.6	76.2	3.0	0.26
1100T	640	6,280	110	42	92	286.0	372.0	120.6	142.0	211.3	208.3	117.3	181.4	69.3	92.1	95.2	5.0	0.43
1110T	950	9,320	120	42	102	324.1	391.0	127.0	160.3	245.4	228.6	122.2	190.5	73.9	101.6	104.8	5.0	0.51
1120T	1,397	13,700	140	61	118	327.2	453.0	149.2	179.4	179.4	257.0	146.3	220.0	83.6	117.5	120.6	6.0	0.74
1130T	2,029	19,900	170	67	133	365.3	463.0	161.9	217.5	217.5	295.1	149.5	225.0	94.8	133.4	136.5	6.0	0.91
1140T	2,916	28,600	200	67	143	419.1	482.0	184.1	254.0	254.0	335.8	155.8	234.7	113.8	142.9	146.0	6.0	1.13
1150T	4,058	39,800	215	108	162	477.5	549.0	183.0	269.0	269.0	391.2	177.4	268.2	101.7	161.9	165.1	6.0	1.95
1160T	5,700	55,900	240	121	200	548.6	587.0	198.0	305.0	305.0	442.0	189.4	287.0	111.9	200.0	203.2	6.0	2.81
1170T	7,607	74,600	280	134	200	604.5	622.0	216.0	356.0	356.0	494.3	201.0	304.8	124.6	200.0	203.2	6.0	3.49
1180T	10,503	103,000	300	153	225	665.5	673.0	239.0	394.0	394.0	556.3	226.9	330.2	141.4	225.4	228.6	6.0	3.76
1190T	13,970	137,000	335	153	251	708.7	711.0	259.0	437.0	437.0	599.4	241.7	349.5	157.6	250.8	254.0	6.0	4.40
1200T	18,966	186,000	360	178	276	782.3	744.0	279.0	498.0	498.0	622.9	251.8	365.8	172.8	276.2	279.4	6.0	5.62

Woo Chang Coupling Co.,Ltd
Mechanical Power Transmission Systems

Mechanical Power Transmission Systems

GEAR COUPLING

GDE TYPE

GDEL TYPE

GSCD TYPE

GSE TYPE

GSEL TYPE

GDBW TYPE

GHD TYPE

GHS TYPE

GFS-R TYPE

GFS-O TYPE

SS TYPE

CC TYPE

02 GEAR COUPLING

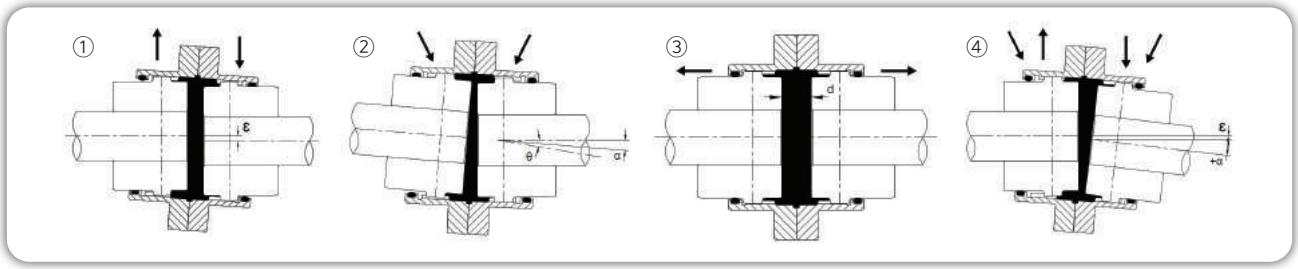
Characteristic & Advantages

The WCC Gear Coupling is a shaft coupling powered by sleeves and hubs(crowned tooth gear). It conforms to the AGMA standard of the USA and the JIS standard of Japan and is produced in South Korea.

I. The coupling has been reduced in size and weight to prolong its service life and loss of transmission power is minimized.
II . A gasket is used at the joint to prevent lubricant leakage.
III. The teeth of the hub are machined into crown gears with three equal sides allowing the coupling to tolerate parallel, angular, and axial misalignment by transmitting power through contact points along a curve (instead of constant surface contact).

Misalignment

① Parallel misalignment : The drive shaft and the driven shaft are parallel to each other, but their centers are offset.
② Angular misalignment : The drive shaft and the driven shaft are at an angle to each other.
③ Axial misalignment : The drive shaft and the driven shaft move in their respective axial direction.
④ Composite misalignment : In the actual operating state, the above three misalignments are mixed.



Allowable Misalignment(S)

Size / S	10G	15G	20G	25G	30G	35G	40G	45G	50G	55G	60G	70G	80G	90G	100G	110G	120G
ε(mm)	1.2	1.3	1.7	2.1	2.4	2.9	3.2	3.6	4.1	4.5	5.0	5.9	6.7	7.4	8.2	12.7	12.7
θ。(α)	3(1.5)	3(1.5)	3(1.5)	3(1.5)	3(1.5)	3(1.5)	3(1.5)	3(1.5)	3(1.5)	3(1.5)	3(1.5)	2(1)	2(1)	2(1)	2(1)	2(1)	2(1)

※ Allowable misalignment for double gear
- The coupling incorporates SM45C steel to maximize durability during high speed rotation and high load operation.
- Custom couplings can be produced to meet client specifications.

Application

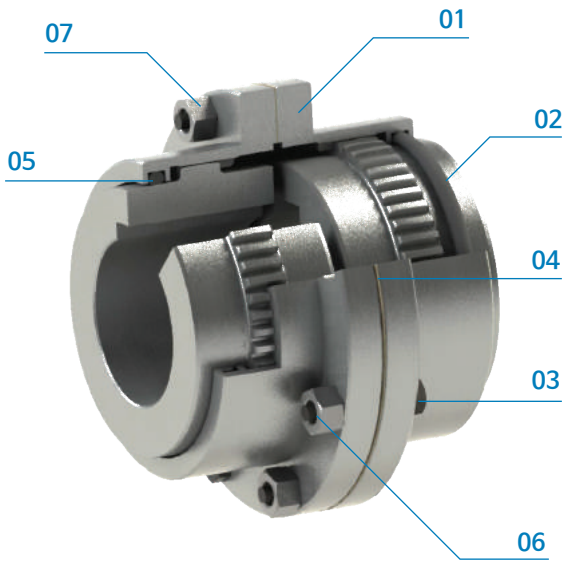
- For heavy loads
- For high speed operation
- For rotation rates below 100rpm and requiring strong torque
- For rotation with sliding operation
- When the distance between shafts is large and connected with a spacer
- Not suitable for low horsepower applications.

Standard Materialt

SLEEVE	CROWN HUB	FLANGE (RIGID)	Bolt	O-Ring
SM45C			SM45C-H	NBR

※ Special materials and/or special treatments are required for unusual applications, such as high speed, high or low temperature, chemically corrosive environments, or extreme load stress.

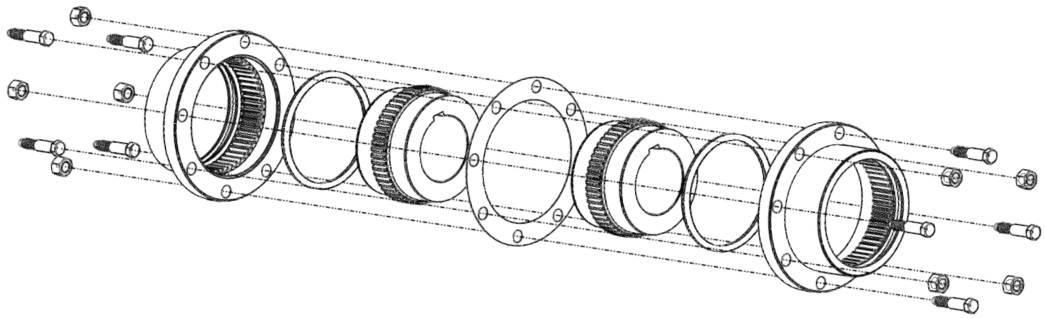
Structure



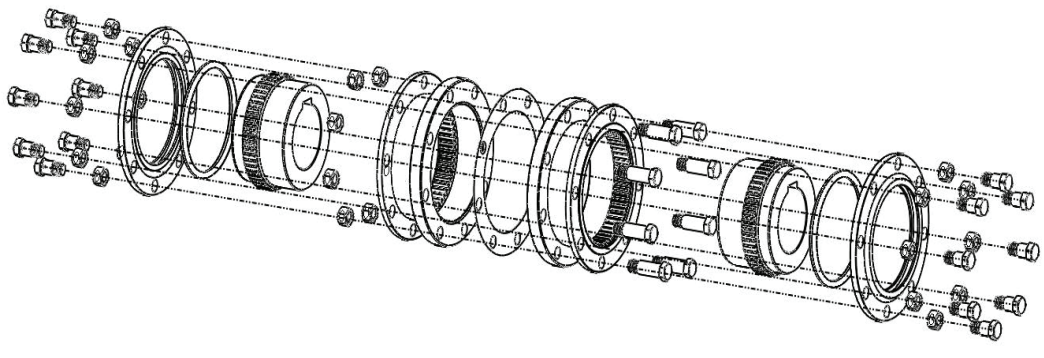
PART

01 Sleeve
02 Hub(crowned tooth gear)
03 Bolt
04 Gasket
05 O-ring
06 Agma Type : Lock Nut
S/D Type : Hex. Nut

Design features of Gear Coupling (GDE)



Design features of Gear Coupling (GDEL)



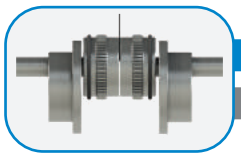
Instruction for Installation

Make sure that the inner diameter of the crown hub is machined correctly, and then select a shrinkage fitting or key fitting. Refer to page 61 for a shrinkage fitting. In the case of key fitting, ensure that there are no lubricant leaks around the keyway.

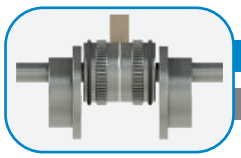
10G - 70G

STEP 01
After cleaning all parts, apply grease to the gear teeth and O-rings and put the O-rings on the shafts.

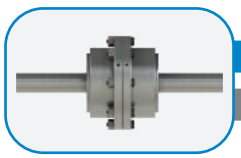
STEP 02
Insert the sleeves on the shafts and assemble the crown hub on both shafts. (Align the standard marks on the exterior of the hubs.)



STEP 03
Adjust the allowable normal gap and angular misalignment using a thickness gauge.



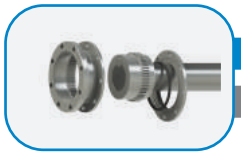
STEP 04
As shown in the figure, adjust for parallel errors every 90° of circumference using a straight-edge ruler to ensure it does not exceed the error limit. Use the dial gauge to align the axis exactly.



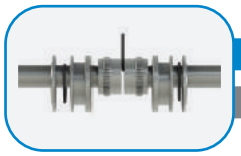
STEP 05
Place the gasket between the sleeves, apply grease to the crown and lock the bolt with the injection port at 90°.

STEP 06
Fill with grease until it overflow from the opposite inlet.

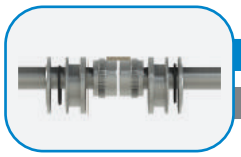
80G - 200G



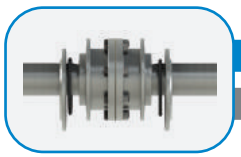
STEP 01
After cleaning all parts, apply grease to the gear teeth and O-rings and put the O-rings on the shaft.



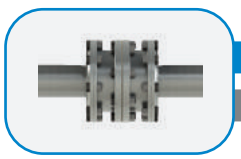
STEP 02
Insert the side cover into the shaft and assemble the crown hub. (Align the standard marks on the exterior of the hubs.). Then assemble the gasket and sleeve.



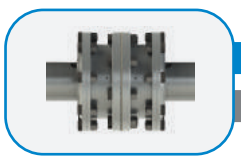
STEP 03
Adjust the spacing and angular misalignment of the four circumferences by using a gap gauge. Do not exceed the angular misalignment limit.



STEP 04
Adjust the parallel misalignment of the four circumferences with a straight-edge ruler so that they do not exceed the limit of misalignment. Use a dial gauge to precisely adjust the axis.



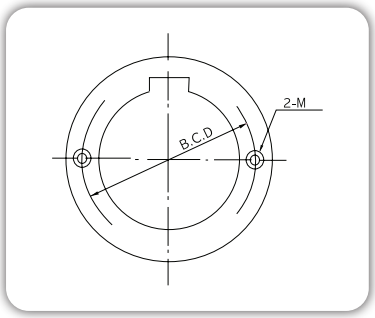
STEP 05
Make sure that the lubrication inlet in the sleeve is at 90°, then tighten the bolt evenly as shown in the figure. When assembling the side cover, make sure that the lubrication inlet of the side cover and the lubrication inlet of the sleeve are at 90°.



STEP 06
After opening the lubrication inlet, use a lubricant injector to inject grease until it overflows, then lock the injection port.

Selection Of Puller Holes

SIZE	10G	15G	20G	25G	30G	35G	40G	45G	50G	55G	60G	70G
BCD(mm)	NONE	NONE	NONE	113	129	152	181	200	216	238	264	311
BOLT SIZE	NONE	NONE	NONE	M12	M12	M12	M16	M16	M20	M20	M20	M24
SIZE	80G	90G	100G	110G	120G	130G	140G	150G	160G	180G	200G	
BCD(mm)	318	356	394	445	495	533	584	635	686	775	864	
BOLT SIZE	M24	M30	M36	M36	M36	M36	M36	M36	M36	M36	M48	



Misalignment Capacity

(Unit:mm)

Size	Double Engagement				Size	Single Engagement Angular Maximum Milimeters	
	Recommended Installation Maximum		Maximum Operating				
	Parallel	Angular (0.0625°)	Parallel	Angular (0.75°)		Recommended Installation (0.125°)	Maximum Operating (0.75°)
10GDE	0.05	0.15	0.66	1.80	10GSE	0.15	0.89
15GDE	0.08	0.18	0.86	2.26	15GSE	0.18	1.14
20GDE	0.08	0.23	1.02	2.74	20GSE	0.23	1.37
25GDE	0.10	0.28	1.27	3.43	25GSE	0.28	1.70
30GDE	0.13	0.33	1.52	3.99	30GSE	0.33	2.01
35GDE	0.15	0.38	1.83	4.65	35GSE	0.38	2.34
40GDE	0.18	0.46	2.13	5.49	40GSE	0.46	2.74
45GDE	0.20	0.51	2.39	6.15	45GSE	0.51	3.07
50GDE	0.23	0.56	2.72	6.65	50GSE	0.56	3.33
55GDE	0.28	0.61	3.12	7.32	55GSE	0.61	3.66
60GDE	0.28	0.66	3.35	7.98	60GSE	0.66	3.99
70GDE	0.33	0.79	3.94	9.32	70GSE	0.79	4.65
80GDEL	0.41	0.81	4.90	9.65	80GSEL	0.81	4.83
90GDEL	0.43	0.91	5.23	10.97	90GSEL	0.91	5.49
100GDEL	0.48	1.02	5.94	12.29	100GSEL	1.02	6.15
110GDEL	0.56	1.14	6.58	13.64	110GSEL	1.14	6.81
120GDEL	0.58	1.24	7.04	14.99	120GSEL	1.24	7.49
130GDEL	0.61	1.32	7.24	15.95	130GSEL	1.32	7.98
140GDEL	0.64	1.45	7.59	17.30	140GSEL	1.45	8.64
150GDEL	0.69	1.55	8.33	18.62	150GSEL	1.55	9.32
160GDEL	0.71	1.60	8.41	19.28	160GSEL	1.60	9.65
180GDEL	0.74	1.83	8.74	21.95	180GSEL	1.83	10.97
200GDEL	0.89	2.03	10.57	24.28	200GSEL	2.03	12.14

※ Do not allow the combined values of the parallel and angular misalignments to exceed 0.75°.
※ Single engagement couplings are not adequate to compensate for parallel offset misalignment.

Operating Alignment Limits

SIZE	10	15	20	25	30	35	40	45	50	55	60	70	80	90	100
GAP(mm) (Exclude vertical)	3	3	3	4.5	4.5	6	6	8	8	8	8	9.5	10	13	13
Flange Bolt Torque (Nm)	12	42	102	203	203	339	339	339	339	339	339	339			

※ If there is more than the maximum misalignment, the life of the coupling will be shortened.

SELECTION METHOD

Selection Process

a. Use the following formula to determine the torque.

$$T = 974 \frac{H'}{N} \times S \cdot F \text{ or } T = 716.2 \frac{H}{N} \times S \cdot F$$

T = Design toque(kg·m) H' = Power(kw) H = Power(HP) N = Working revolutions(rpm) S·F = Recommended Service Factor

b. Compare the calculated torque with the torque rating for each model and select the one with the same or larger rating.
c. Compare the maximum inner diameter of the shaft and coupling of the machine to be used and select the appropriate model.

Precaution for selection

① If end float movement occurs more than five times per hour in the Sliding Gear Coupling, add 0.5 to the safety
② factor.
Select equipment with a maximum torque rating 1.5 times the peak torque (as calculated by the maximum horse-power of the equipment used) if the motor is used in the following ways: continuous reverse rotation, intermittent
③ operation, frequent operation at peak load, repeated magnetic induction, or a high-inertia system.
④ For GFS-R and GFS-O, please contact us for the thickness and maximum length of the intermediate shaft.
Since the torque values for the gear coupling of styles GDBW and GSBW are the same as those of styles GDE and GSE, they are selected by comparing the ratings for the brakes. Brake power should be selected when the power of the brake is greater than the power of the motor.

Example

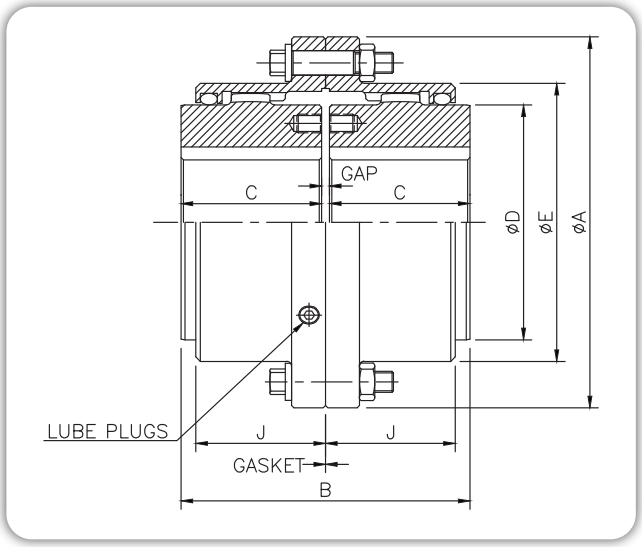
You want to connect a 450HP, 1,170 rpm motor with a shaft diameter of 90 mm to the high-speed shaft of a reducer with a diameter of 80mm. The maximum parallel misalignment of the shaft is 1.5mm.

① Select the GDE style because it allows for the parallel misalignment of 1.5mm.
② The safety factor is 2.0.
③ By formula

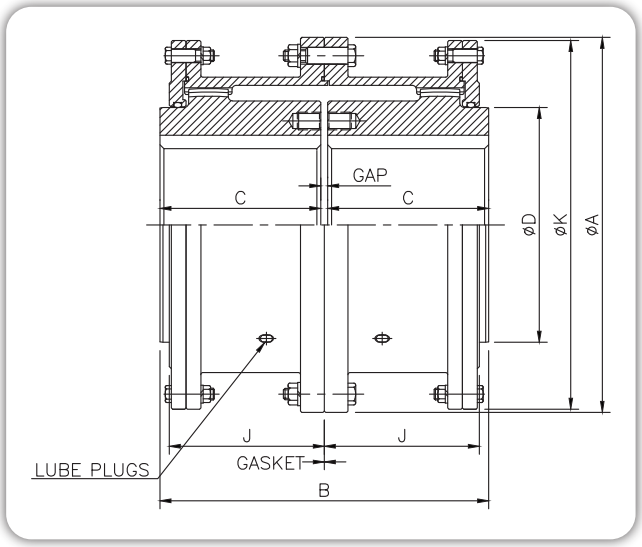
$$\text{Torque(Kg·m)} = \frac{450 \times 716.2 \times 2.0}{1{,}170} = 550.93$$

④ The transmission torque is 550.93 kg·m therefore, select 25GDE with an allowable transmission torque of
644.58kg·m.
⑤ Since the shaft diameter is 90mm, select 25GDE because it has a maximum bore capacity of 92mm.

Type GDE (Double Engagement)



GDEL (Double Engagement Large)

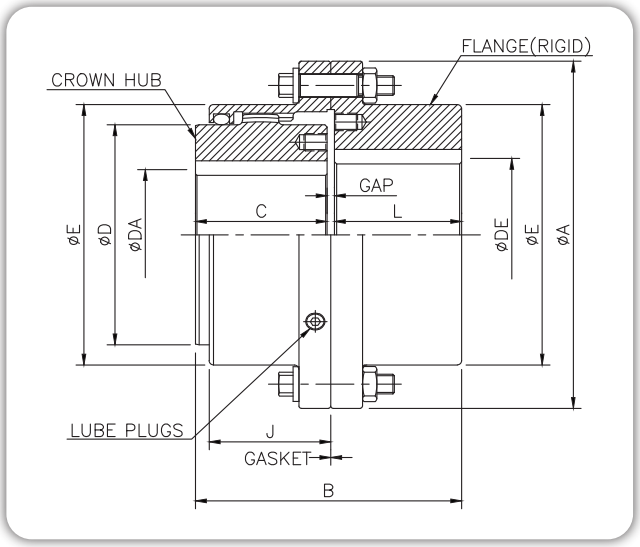


Size	Max. Speed RPM	Torque Rating		Bore Dia (㎜)		Dimensions (㎜)						Gap (㎜)	Cplg wt(kg)	Lube wt (kg)
		kg·m	Nm	Max.	Min.	A	B	C	D	E	J			
10GDE	8,000	116	1,140	50	13	116	89	43	69	84	39	3	5	0.04
15GDE	6,500	239	2,350	65	20	152	101	49	86	105	48	3	9	0.07
20GDE	5,600	435	4,270	78	26	178	127	62	105	126	59	3	16	0.11
25GDE	5,000	761	7,470	98	32	213	159	77	131	155	72	5	27	0.23
30GDE	4,400	1,233	12,100	111	39	240	187	91	152	180	84	5	41	0.36
35GDE	3,900	1,886	18,500	134	51	279	218	106	178	211	98	6	66	0.54
40GDE	3,600	3,120	30,600	160	64	318	248	121	210	245	111	6	97	0.91
45GDE	3,200	4,282	42,000	183	77	346	278	135	235	274	123	8	123	1.04
50GDE	2,900	5,771	56,600	200	89	389	314	153	254	306	141	8	178	1.77
55GDE	2,650	7,545	74,000	220	102	425	344	168	279	334	158	8	233	2.22
60GDE	2,450	9,218	90,400	244	115	457	384	188	305	366	169	8	291	3.18
70GDE	2,150	13,766	135,000	289	127	527	451.5	221	355	425	196	9.5	445	4.35

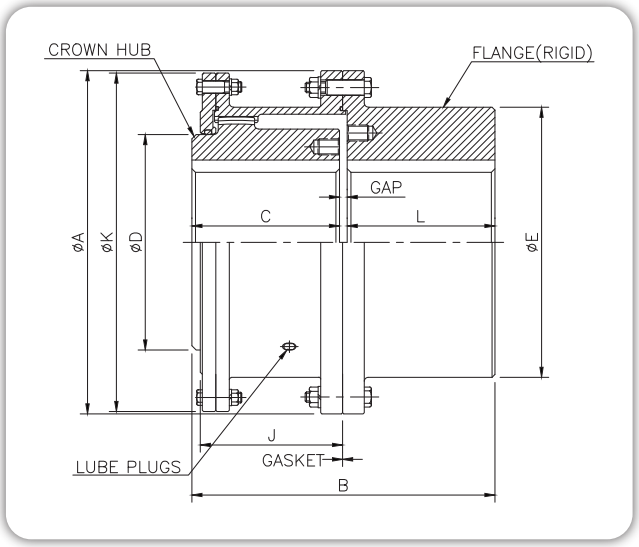
Size	Max. Speed RPM	Torque Rating		Bore Dia (㎜)		Dimensions (㎜)						Gap (㎜)	Cplg wt(kg)	Lube wt (kg)
		kg·m	Nm	Max.	Min.	A	B	C	D	J	K			
80GDEL	1,750	17,335	170,000	266	102	591	507.5	249	356	243	572	9.5	703.1	9.53
90GDEL	1,550	23,045	226,000	290	114	660	565	276	394	265	641	13	984.3	12.25
100GDEL	1,450	31,611	310,000	320	127	711	623	305	445	294	699	13	1,302.0	14.97
110GDEL	1,330	42,114	413,000	373	140	775	679	333	495	322	749	13	1,678.3	17.69
120GDEL	1,200	56,594	555,000	400	152	838	719	353	546	341	826	13	2,113.8	20.87
130GDEL	1,075	73,317	719,000	440	165	911	761	371	584	362	886	19	2,594.5	32.66
140GDEL	920	92,896	911,000	460	178	965	805	393	635	378	940	19	3,107.1	33.11
150GDEL	770	112,168	1,100,000	490	190	1,029	857	419	686	408	1,003	19	3,764.8	40.82
160GDEL	650	133,582	1,310,000	525	254	1,111	907	441	737	419	1,086	25	4,708.3	43.09
180GDEL	480	169,272	1,660,000	600	286	1,219	939	457	838	435	1,194	25	6,259.6	49.90
200GDEL	370	218,219	2,140,000	660	318	1,359	1,099	537	927	514	1,308	25	8,582.0	68.00

※ Coupling weight, without bore machining.

Type GSE (Single Engagement)



GSEL (Single Engagement Large)

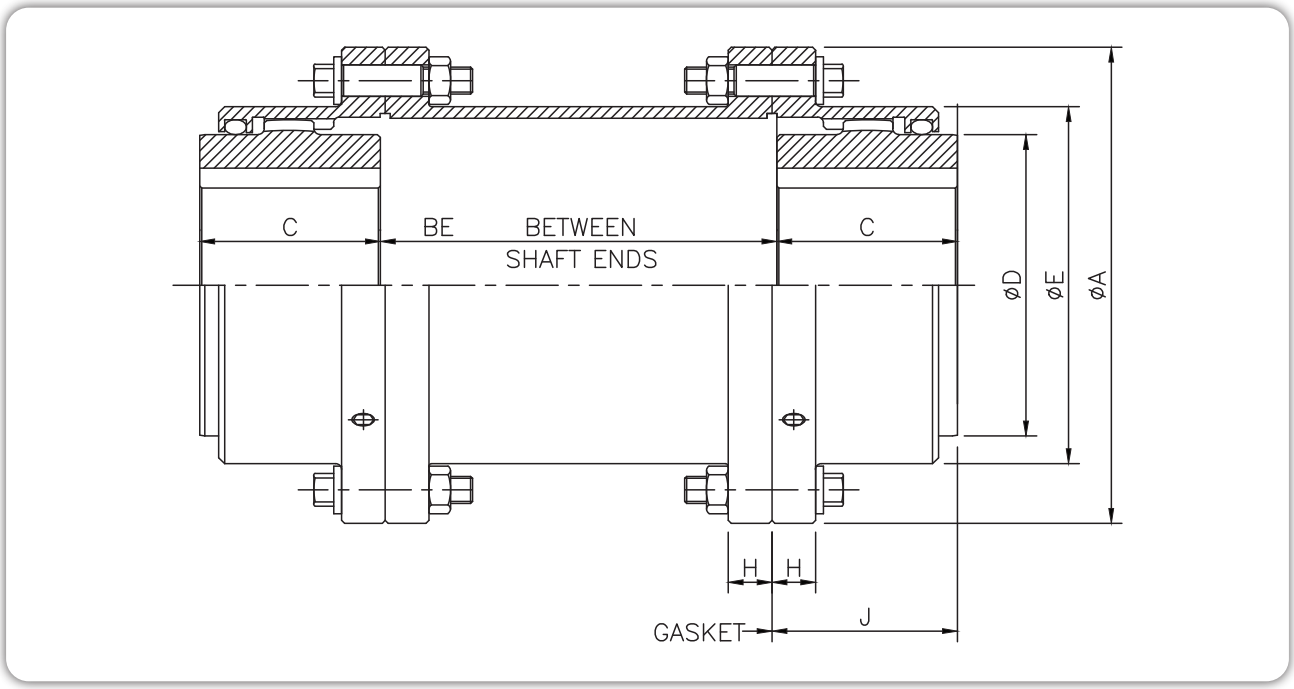


Size	Max. Speed RPM	Torque Rating		Bore Dia (㎜)			Dimensions (㎜)							Gap (㎜)	Cplg wt (kg)	Lube wt (kg)
		kg·m	Nm	Max.		Min.	A	B	C	D	E	J	L			
				CR	FL											
10GSE	8,000	116	1,140	50	65	13	116	87	43	69	84	39	40	4	5	0.02
15GSE	6,500	239	2,350	65	80	20	152	99	49	86	105	48	46	4	10	0.04
20GSE	5,600	435	4,270	78	98	26	178	124	62	105	126	59	58	4	16	0.07
25GSE	5,000	761	7,470	98	118	32	213	156	77	131	155	72	74	5	28	0.12
30GSE	4,400	1,233	12,100	111	140	39	240	184	91	152	180	84	88	5	42	0.18
35GSE	3,900	1,886	18,500	134	163	51	279	213.5	106	178	211	98	102	5.5	69	0.27
40GSE	3,600	3,120	30,600	160	196	64	318	243	121	210	245	111	115	7	99	0.47
45GSE	3,200	4,282	42,000	183	216	77	346	274	135	235	274	123	131	8	129	0.57
50GSE	2,900	5,771	56,600	200	235	89	389	309	153	254	306	141	147	9	189	0.91
55GSE	2,650	7,545	74,000	220	266	102	425	350	168	279	334	158	173	9	254	1.13
60GSE	2,450	9,218	90,400	244	290	115	457	384	188	305	366	169	186	10	312	1.70
70GSE	2,150	13,766	135,000	289	340	127	527	454	221	355	425	196	220	13	488	2.27

Size	Max. Speed RPM	Torque Rating		Bore Dia (㎜)			Dimensions (㎜)							Gap (㎜)	Cplg wt (kg)	Lube wt (kg)
		kg·m	Nm	Max.		Min.	A	B	C	D	J	L	K			
				CR	FL											
80GSEL	1,750	17,335	170,000	266	340	102	591	511	249	356	243	249	572	13	698.5	4.99
90GSEL	1,550	23,045	226,000	290	380	114	660	566	276	394	265	276	641	14	984.3	6.35
100GSEL	1,450	31,611	310,000	320	400	127	711	626	305	445	294	305	699	16	1,251.9	7.71
110GSEL	1,330	42,114	413,000	373	440	140	775	682	333	495	322	333	749	16	1,637.5	9.07
120GSEL	1,200	56,594	555,000	400	483	152	838	722	353	546	341	353	826	16	2,077.5	10.89
130GSEL	1,075	73,317	719,000	440	500	165	911	761	371	584	362	371	886	19	2,571.9	16.78
140GSEL	920	92,896	911,000	460	535	178	965	806	393	635	378	394	940	19	3,061.7	17.24
150GSEL	770	112,168	1,100,000	490	580	190	1,029	857	419	686	408	419	1,003	19	3,751.2	20.87
160GSEL	650	133,582	1,310,000	525	630	254	1,111	907	441	737	419	441	1,086	25	4,631.2	21.77
180GSEL	480	169,272	1,660,000	600	710	286	1,219	939	457	838	435	457	1,194	25	6,069.1	25.40
200GSEL	370	218,219	2,140,000	660	780	318	1,359	1,099	537	927	514	537	1,308	25	8,482.0	34.00

※ Coupling weight, without bore machining.

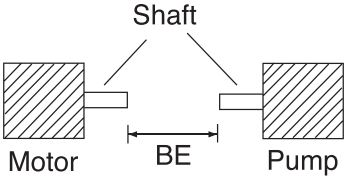
Type GSCD (Spacer Double Engagement)



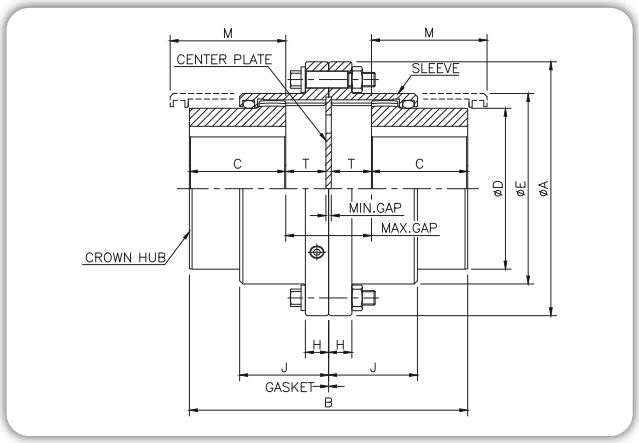
Size	Max. Speed RPM	Torque Rating		Bore Dia (㎜)		Dimensions (mm)								Lube wt (kg)
						A	BE		C	D	E	H	J	
		kg·m	Nm	Max.	Min.		Min.	Max.						
10GSCD	7,000	116	1,140	50	13	116	83	311	43	69	84	14	39	0.04
15GSCD	5,500	239	2,350	65	20	152	83	311	49	86	105	19	48	0.07
20GSCD	4,600	435	4,270	78	26	178	83	311	62	105	126	19	59	0.11
25GSCD	4,000	761	7,470	98	32	213	95	311	77	131	155	22	72	0.23
30GSCD	3,600	1,233	12,100	111	39	240	95	311	91	152	180	22	84	0.36
35GSCD	3,100	1,886	18,500	134	51	279	120	311	106	178	211	28	98	0.54
40GSCD	2,800	3,120	30,600	160	64	318	120	311	121	210	245	28	111	0.91
45GSCD	2,600	4,282	42,000	183	77	346	120	311	135	235	274	28	123	1.04
50GSCD	2,400	5,771	56,600	200	89	389	146	311	153	254	306	38	141	1.77
55GSCD	2,200	7,545	74,000	220	102	425	146	311	168	279	334	38	158	2.22
60GSCD	2,100	9,218	90,400	244	115	457	146	311	188	305	366	25	169	3.18
70GSCD	1,800	13,766	135,000	289	127	527	146	311	221	355	425	28	196	4.35

※ Application of spacer
① When it is impossible to connect the hubs due to the distance of a wide gap between shaft ends.
② When it is necessary to prevent transmitting heat and electric current.

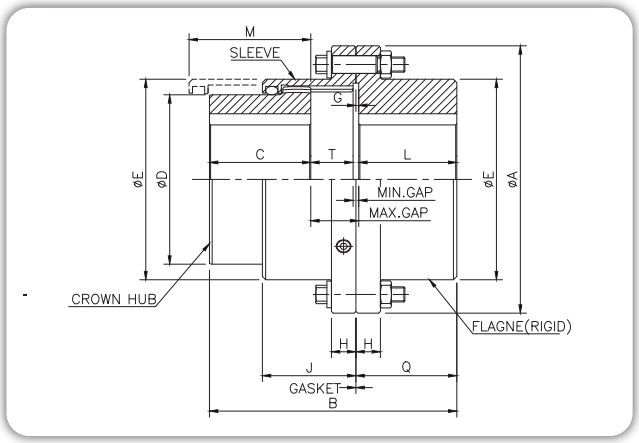
※ 'BE' is the distance between the shaft ends. State the exact 'BE' number when you order.



Type GHD (Double Slide Engagement)



GHS (Single Slide Engagement)



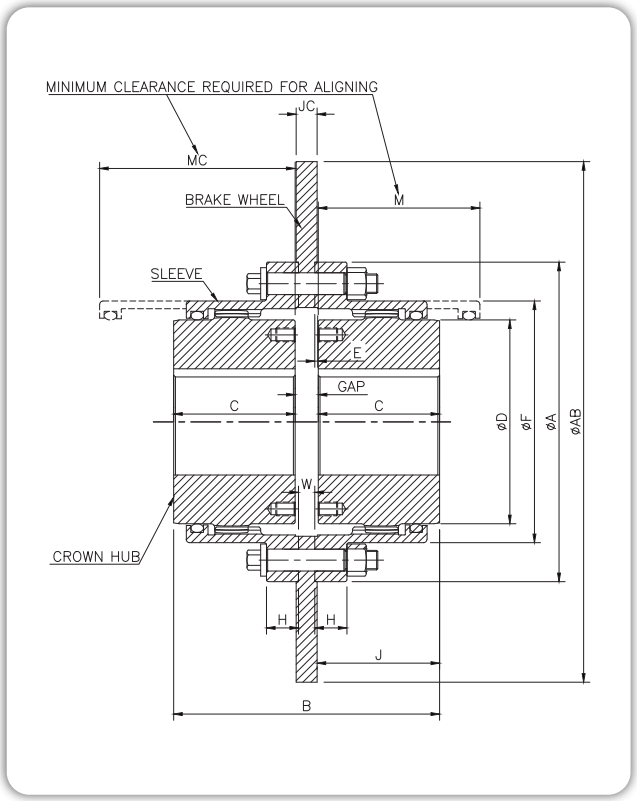
Size	Max. Speed RPM	Torque Rating		Bore Dia (㎜)			Dimensions (mm)									
				Max.		Min										
		kg·m	Nm	CR	FL		A	C	D	G	E	H	J	L	Q	M
10GH	5,300	116	1,140	50	65	13	116	43	69	2.5	84	14	39	40	42	53
15GH	4,300	239	2,350	65	80	20	152	49	86	2.5	105	19	48	46	49	69
20GH	3,700	435	4,270	78	98	26	178	62	105	2.5	126	19	59	58	61	84
25GH	3,300	761	7,470	98	118	32	213	77	131	2.5	155	22	72	74	76	102
30GH	2,900	1,233	12,100	111	140	39	240	91	152	2.5	180	22	84	88	90	118
35GH	2,600	1,886	18,500	134	163	51	279	106	178	2.5	211	28	98	102	105	135
40GH	2,400	3,120	30,600	160	196	64	318	121	210	4	245	28	111	115	119	155
45GH	2,100	4,282	42,000	183	216	77	346	135	235	4	274	28	123	131	135	163
50GH	1,900	5,771	56,600	200	235	89	389	153	254	5	306	38	141	147	152	189
55GH	1,800	7,545	74,000	220	266	102	425	168	279	5	334	38	158	173	178	221
60GH	1,600	9,218	90,400	244	290	115	457	188	305	6.6	366	25	169	186	193	227
70GH	1,400	13,766	135,000	289	340	127	527	221	355	8.4	425	28	196	220	229	235

※'M' is variable according to the sliding distance

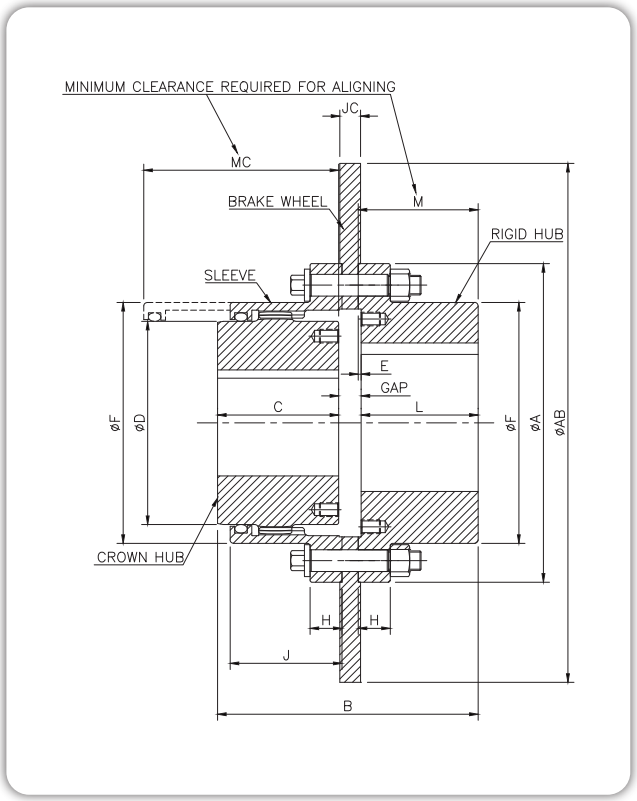
Size	GHD (Double Engagement)							GHS (Single Engagement)						Size
	B. Max.	T Max.		Gap		Cplg wt (kg)	Lube wt (kg)	B Max.	T Max.	GAP		Cplg wt (kg)	Lube wt (kg)	
		Half	Total	Max.	Min.					Min.	Max.			
10GH	126	16	32	40	8	5	0.02	106	19	23	4	5	0.01	10GH
15GH	152	23	46	54	8	9	0.04	124	25	29	4	10	0.02	15GH
20GH	186	27	54	62	8	17	0.06	153	29	33	4	16	0.04	20GH
25GH	231	34	68	77	9	28	0.11	192	36	41	5	28	0.06	25GH
30GH	263	36	72	81	9	42	0.18	222	38	43	5	42	0.11	30GH
35GH	313	45	90	101	11	68	0.27	262	48	54	6	69	0.18	35GH
40GH	364	54	108	122	14	100	0.45	300	57	64	7	99	0.27	40GH
45GH	406	60	120	136	16	127	0.51	338	64	72	8	129	0.34	45GH
50GH	460	68	136	154	18	183	0.91	382	73	82	9	189	0.54	50GH
55GH	510	78	156	174	18	239	1.13	433	83	91	9	254	0.73	55GH
60GH	563	83	166	187	21	300	1.19	473	89	99	10	312	0.96	60GH
70GH	669	99	198	224	26	461	2.18	561	107	120	13	488	1.36	70GH

※ Coupling weight, without bore machining.

TYPE GDBW
(Disc Brake Wheel Double Engagemet)

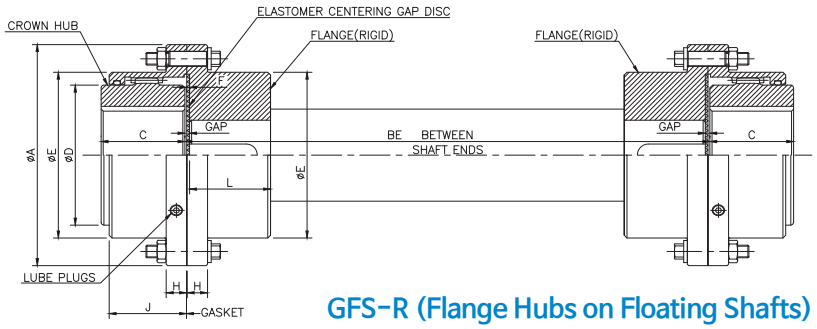


GSBW
(Disc Brake Wheel Single Engagemet)

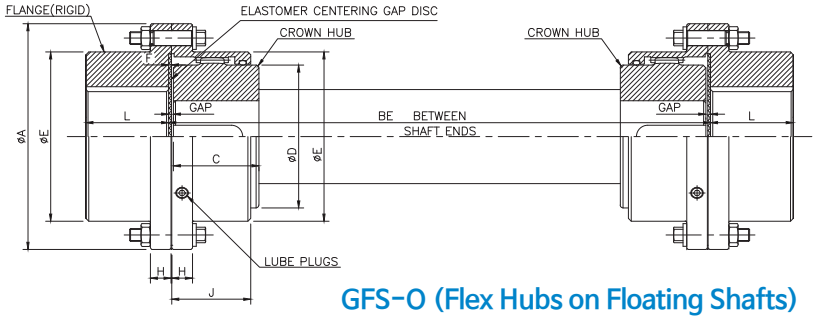


Size	Max.Brake Rating of Cplg		Brake DiscSize Dia. (Min) AB(mm)	Bore(mm)			Dimensions(mm)												GAP		LUBE wt (kg)	
				Max.		Min	A	B		C	D	E	F	H	J	L	M	W				
	kg·m	Nm		CR	FL			GD	GS										GD	GS	GD	GS
10GDBW	25	251	178	50	65	13	116	99	97	43	69	2.5	84	14	39	40	51	10	13	14	0.04	0.02
15GDBW	58	569	203	65	80	20	152	114	112	49	86	2.5	105	19	48	46	61	13	16	17	0.07	0.04
20GDBW	107	1,050	244	78	98	26	178	140	137	62	105	2.5	126	19	59	58	76	13	16	17	0.11	0.07
25GDBW	193	1,897	289	98	118	32	213	173	170	77	131	2.5	155	22	72	74	91	14	19	19	0.23	0.12
30GDBW	317	3,117	320	111	140	39	240	201	198	91	152	2.5	180	22	84	88	107	14	19	19	0.36	0.18
35GDBW	490	4,810	371	134	163	51	279	237	233	106	178	2.5	211	28	98	102	130	19	25	25	0.54	0.27
40GDBW	746	7,317	429	160	196	64	318	267	262	121	210	4.1	245	28	111	115	145	19	25	26	0.91	0.47
45GDBW	1,022	10,027	457	183	216	77	346	297	293	135	235	4.1	274	28	123	131	165	19	27	27	1.04	0.57
50GDBW	1,382	13,550	492	200	235	89	389	339	334	153	254	5.1	306	38	141	147	183	25	33	34	1.77	0.91
55GDBW	1,813	17,784	430	220	266	102	425	369	375	168	279	5.1	334	38	158	173	203	25	33	34	2.22	1.13
60GDBW	2,349	23,035	584	244	290	115	457	409	410	188	305	6.6	366	25	169	186	229	25	33	36	3.18	1.70
70GDBW	3,413	33,469	660	289	340	127	527	447	479	221	355	8.4	425	28	196	220	267	25	35	38	4.35	2.27

Type GFS (Single Engagement with Floating Shafts)



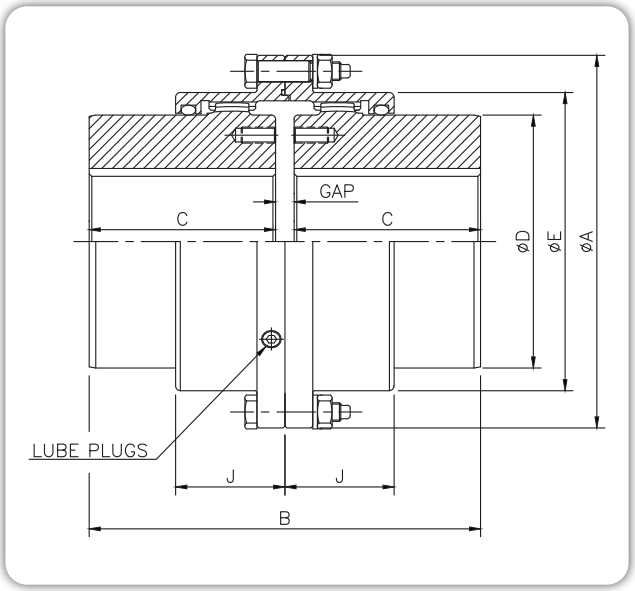
GFS-R (Flange Hubs on Floating Shafts)



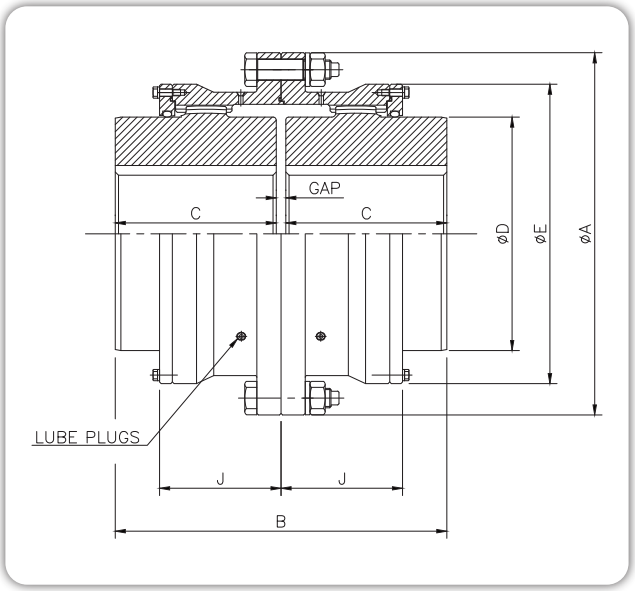
GFS-O (Flex Hubs on Floating Shafts)

Size	Torque Rating		Bore Dia (㎜)			Dimensions (㎜)										Gap (㎜)	Lube wt (kg)
			Max.		Min	A	BE Min.		C	D	F	E	H	J	L		
	kg·m	Nm	CR	FL			GFS-R	GFS-O									
10GFS	116	1,140	50	65	13	116	92	133	43	69	2.5	84	14	39	40	4	0.02
15GFS	239	2,350	65	80	20	152	105	159	49	86	2.5	105	19	48	46	4	0.04
20GFS	435	4,270	78	98	26	178	129	197	62	105	2.5	126	19	59	58	4	0.07
25GFS	761	7,470	98	118	32	213	162	241	77	131	2.5	155	22	72	74	5	0.12
30GFS	1,233	12,100	111	140	39	240	189	279	91	152	2.5	180	22	84	88	5	0.18
35GFS	1,886	18,500	134	163	51	279	219	324	106	178	2.5	211	28	98	102	5.5	0.27
40GFS	3,120	30,600	160	196	64	318	248	419	121	210	4.1	245	28	111	115	7	0.47
45GFS	4,282	42,000	183	216	77	346	281	508	135	235	4.1	274	28	123	131	8	0.57
50GFS	5,771	56,600	200	235	89	389	316	533	153	254	5.1	306	38	141	147	9	0.91
55GFS	7,545	74,000	220	266	102	425	367	572	168	279	5.1	334	38	158	173	9	1.13
60GFS	9,218	90,400	244	290	115	457	397	597	188	305	6.6	366	25	169	186	10	1.70
70GFS	13,766	135,000	289	340	127	527	470	673	221	355	8.4	425	28	196	220	13	2.27

Type SS (Double Engagement)



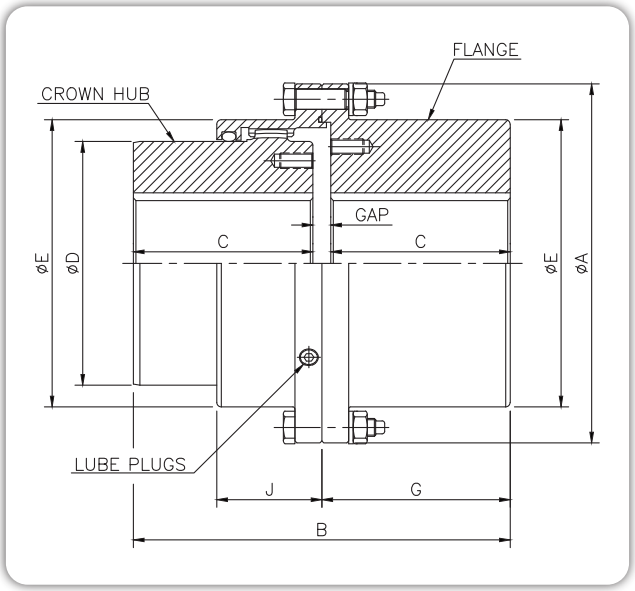
CC (Double Engagement Large)



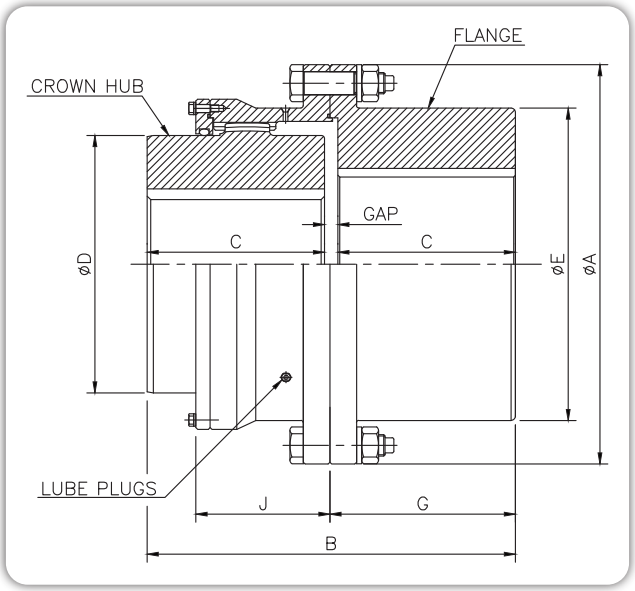
Size	Max. Speed RPM	Torque Rating		Bore Dia (㎜)		Dimensions (㎜)						Gap (㎜)	Clpg wt (kg)	Lube wt (kg)
		kg·m	Nm	Max.	Min.	A	B	C	D	E	J			
SS100	3,600	42	421	32	17	100	88	40	46	67	34	8	3	0.03
SS112	3,600	80	788	40	17	112	108	50	58	79	39	8	5	0.04
SS125	3,600	142	1,400	50	22	125	134	63	70	92	44	8	7	0.05
SS140	3,600	204	2,010	56	22	140	150	71	80	107	47	8	9	0.07
SS160	3,600	314	3,080	65	22	160	170	80	95	120	52	10	14	0.09
SS180	3,600	482	4,730	75	32	180	190	90	105	134	56	10	19	0.12
SS200	3,600	688	6,750	85	32	200	210	100	120	149	61	10	26	0.15
SS224	3,080	1,000	9,810	100	42	224	236	112	145	174	65	12	38	0.25
SS250	2,650	1,468	14,400	115	42	250	262	125	165	200	74	12	56	0.35
SS280	2,340	2,335	22,900	135	42	280	294	140	190	224	82	14	83	0.48
SS315	1,980	3,681	36,100	160	100	315	356	170	225	260	98	16	135	0.77
SS355	1,800	5,547	54,400	180	125	355	396	190	250	288	108	16	184	0.94
SS400	1,570	7,790	76,400	200	140	400	418	200	285	329	114	18	261	1.36
CC450	1,540	9,483	93,000	205	140	450	418	200	290	372	151	18	304	1.79
CC500	1,320	12,950	127,000	236	170	500	494	236	335	425	168	22	453	2.64
CC560	1,170	20,802	204,000	275	190	560	552	265	385	475	187	22	664	3.23
CC630	990	31,509	390,000	325	224	630	658	315	455	548	213	28	1,020	4.93
CC710	970	45,887	450,000	360	250	710	738	355	510	622	242	28	1,460	6.63
CC800	780	65,567	643,000	405	280	800	832	400	570	690	267	32	2,090	9.35

※ Coupling weight, without bore machining

Type SE (Single Engagement)



CE (Single Engagement Large)



Size	Max. Speed RPM	Torque Rating		Bore Dia (㎜)			Dimensions (㎜)							Gap (㎜)	Clpg wt (kg)	Lube wt (kg)
		kg·m	Nm	Max. CR	Max. FL	Min.	A	B	C	D	E	G	J			
SE100	3,600	42	421	32	40	17	100	88	40	46	67	44	34	8	3	0.03
SE112	3,600	80	788	40	50	17	112	108	50	58	79	54	39	8	5	0.04
SE125	3,600	142	1,400	50	56	22	125	134	63	70	92	67	44	8	7	0.05
SE140	3,600	204	2,010	56	63	22	140	150	71	80	107	75	47	8	9	0.07
SE160	3,600	314	3,080	65	75	22	160	170	80	95	120	85	52	10	14	0.09
SE180	3,600	482	4,730	75	80	32	180	190	90	105	134	95	56	10	19	0.12
SE200	3,600	688	6,750	85	95	32	200	210	100	120	149	105	61	10	26	0.15
SE224	3,080	1,000	9,810	100	105	42	224	236	112	145	174	118	65	12	38	0.25
SE250	2,650	1,468	14,400	115	125	42	250	262	125	165	200	131	74	12	56	0.35
SE280	2,340	2,335	22,900	135	150	42	280	294	140	190	224	147	82	14	83	0.48
SE315	1,980	3,681	36,100	160	180	100	315	356	170	225	260	178	98	16	135	0.77
SE355	1,800	5,547	54,400	180	200	125	355	396	190	250	288	198	108	16	184	0.94
SE400	1,570	7,790	76,400	200	236	140	400	418	200	285	329	209	114	18	261	1.36
CE450	1,540	9,483	93,000	205	225	140	450	418	200	290	372	209	151	18	304	1.79
CE500	1,320	12,950	127,000	236	270	170	500	494	236	335	425	247	168	22	453	2.64
CE560	1,170	20,802	204,000	275	305	190	560	552	265	385	475	276	187	22	664	3.23
CE630	990	31,509	309,000	325	355	224	630	658	315	455	548	329	213	28	1,020	4.93
CE710	970	45,887	450,000	360	400	250	710	738	355	510	622	369	242	28	1,460	6.63
CE800	780	65,567	643,000	405	450	280	800	832	400	570	690	416	267	32	2,090	9.35

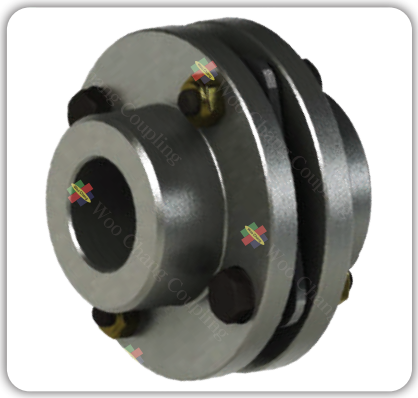
※ Coupling weight, without bore machining

Woo Chang Coupling Co.,Ltd
Mechanical Power Transmission Systems

Mechanical Power Transmission Systems

FLEXIBLE DISC COUPLING

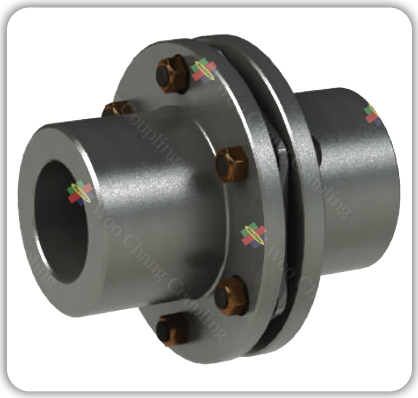
W4-00S



W4-00D

W4-00F

W6-00S



W6-00D

W6-00F

W8-00S

W8-00D

W8-00F

03 FLEXIBLE DISC COUPLING

Characteristic & Advantages

1) No lubricant is required
because there is no friction; Flexible Disc Couplings are clean and there are no electric parts, so there is no noise or wear.

2) No maintenance is required
if the coupling is mounted within error limits and there is no change to the initial state when in use; with proper usage this product has a long lifespan.

3) A wide range of options
is available, including the ability to choose an aluminum alloy body to reduce weight for certain operating conditions.

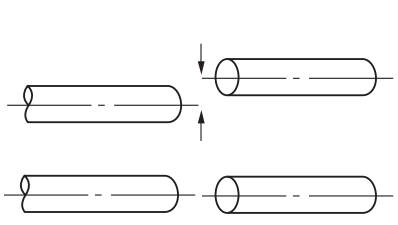
4) A high tolerance for misalignment
allows the Flexible Disc Coupling to be applied to various systems; custom designs are possible to allow for even larger mounting misalignments.

5) High torsional rigidity is possible
because Flexible Disc Couplings have no backlash which makes them perfect for machine tools and presses that require accurate shaft rotation and position control.

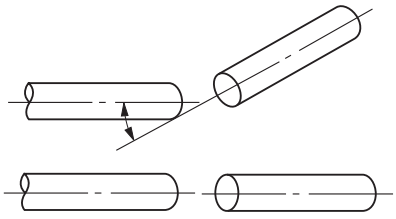
6) Tolerates unfavorable conditions
because it is not lubricated and it can be used in high temperatures with standard materials.

7) Easy to use
with few parts and reduced size and weight which makes fast and reliable assembly and disassembly possible.

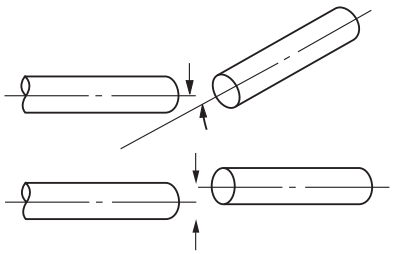
Misalignment



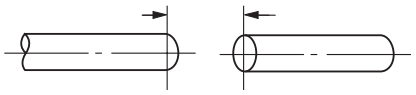
Parallel misalignment



Angular misalignment



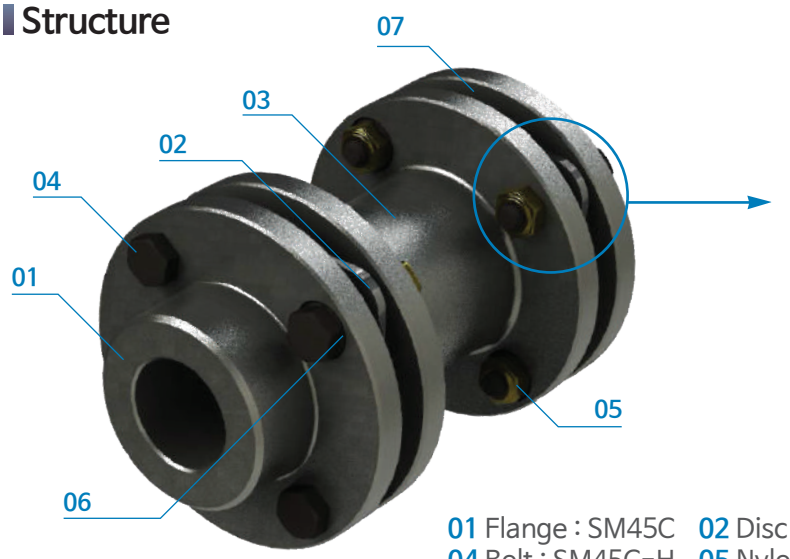
Angular & parallel misalignment

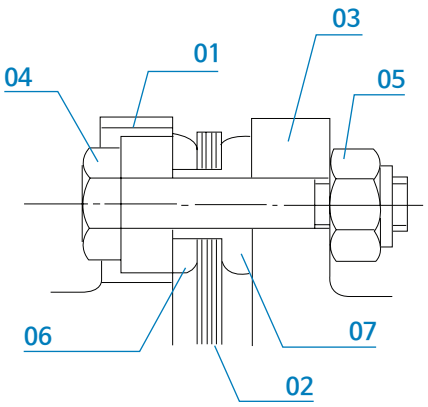


End float

Parallel and angular misalignment of the shaft occur due to various factors such as thermal fluctuation, bearing wear, vibration, and settling of foundation work. If the first shaft alignment is inaccurate and the couplings are overloaded, there is no capacity to absorb the eccentric stress and the coupling will not have the expected operating life. The figure above shows parallel, angular, and axial misalignment. In practice, these errors occur in combination.

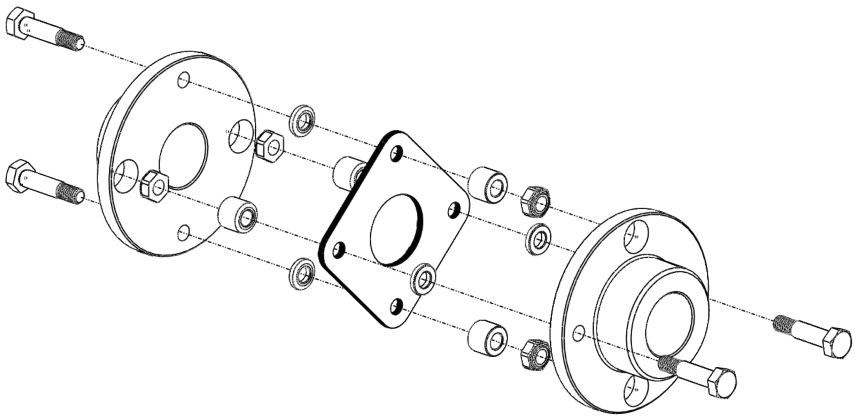
Structure



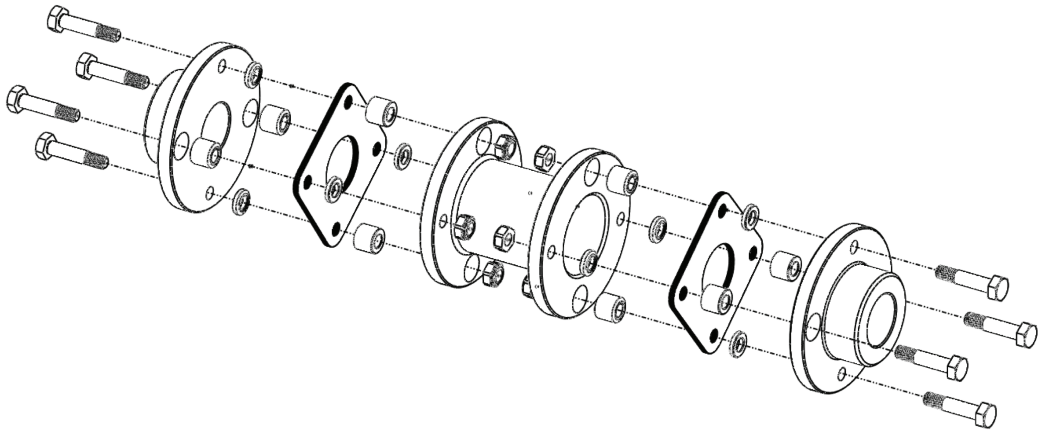


01 Flange : SM45C **02** Disc pack : STS304 **03** Spacer : SM45C
04 Bolt : SM45C-H **05** Nylon Nut **06** Over Load Bush **07** Washer

Design features of W4- 00S Coupling



Design features of W4- 00D Coupling



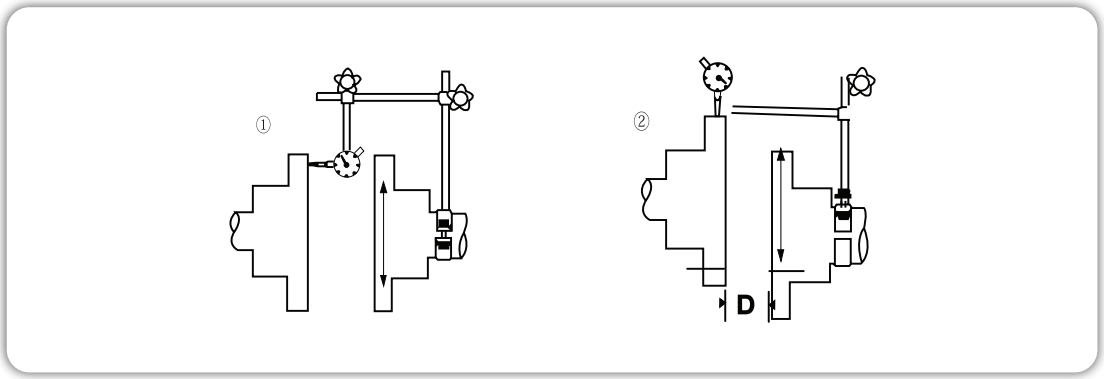
Instructions For Installation

When assembling, the shafts should be accurately aligned to prevent misalignments and to ensure that the optimal performance for the coupling. Correct any misalignments to ensure the long life of the Flexible Disc Coupling.

1) Check for angular misalignment (①)
   a. Fix the dial gauge to one side. Rotate the hub to check the minimum value on the dial gauge and set it to zero.
   b. Rotate the dial gauge side coupling 360° and check the dial gauge again. Adjust until angular misalignment is minimized.

2) Check for parallel misalignment (②)
   a. To measure any parallel misalignment of the shafts, fix the dial gauge to the drive shaft hub. While rotating the drive shaft, check the outer diameter gauge value of the driven hub.
   b. By moving the equipment or using the base plate, adjust the eccentricity to a minimum.

3) Refer to the structural drawing and assemble the remaining parts
   To ensure a long life of the Flexible Disc Coupling, angular and parallel misalignment should be minimized within 12 hours of commissioning. At this time, tighten the bolt nuts using the specified torque.



Selection Method

1) Selection method

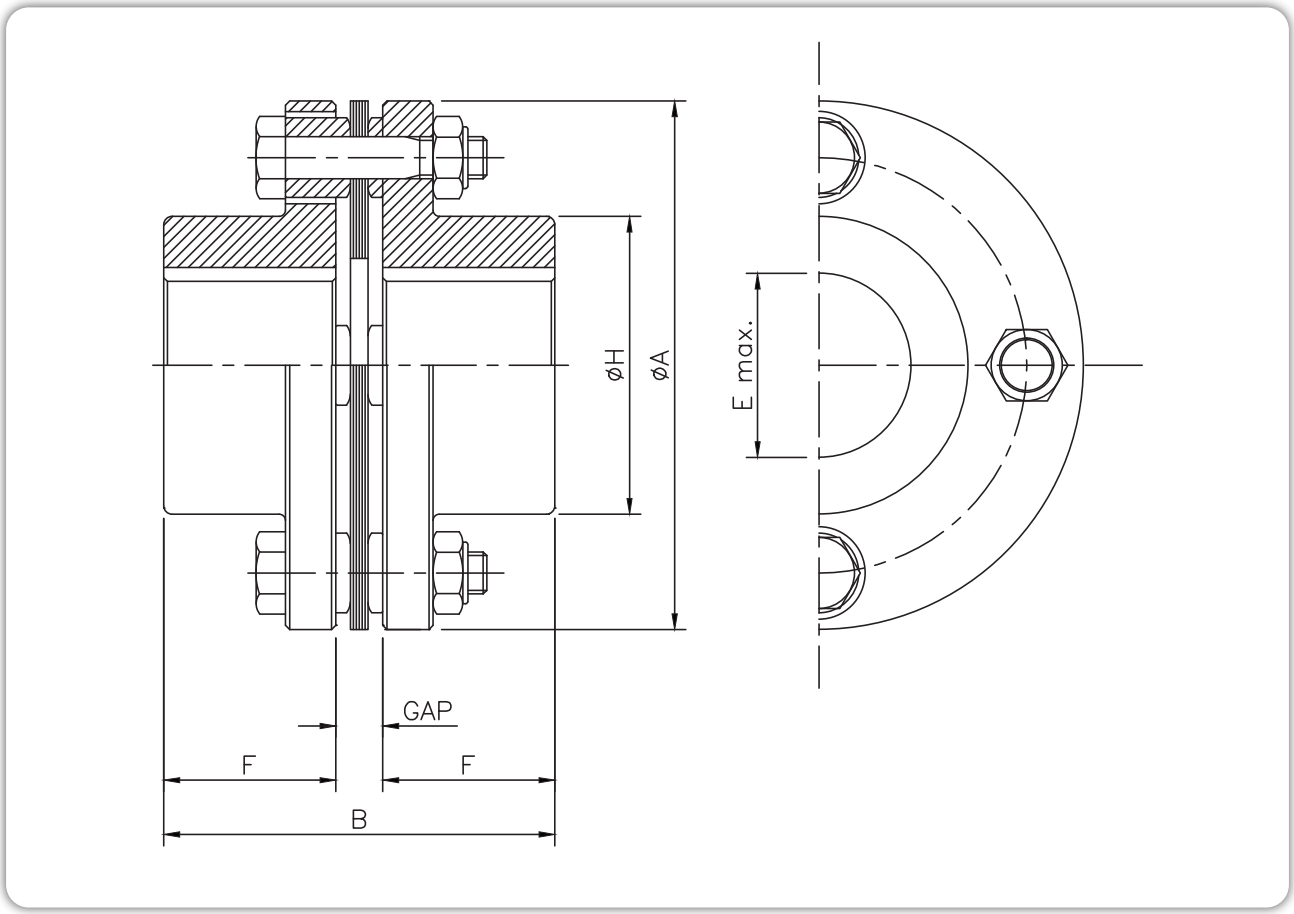
$$T = \frac{974 \times KW}{N \times 100} \times S{\cdot}F \text{ or } T = \frac{716.2 \times HP}{N \times 100} \times S{\cdot}F$$

T = Design torque(kg.m) / kw = power / HP = power / N = Working revolution / S.F = Recommended Service Factor

2) Size Selection Method
   a. After determining the spacer length, select the most suitable type.
   b. Calculate the torque required using the equation above.
   c. Select a coupling with a torque rating one size greater than the calculated torque.
   d. Make sure that the bore diameter will accommodate the maximum shaft size.
   e. Confirm space constraints.
   f. Check end float.

3) Check if balancing is required.

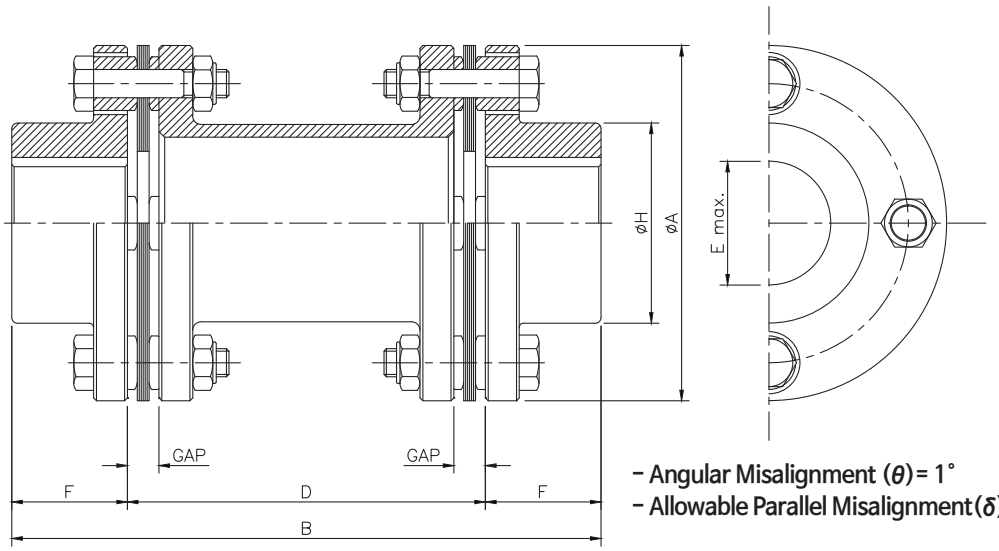
W4-00S (Single Disc Flex)



Size	Max. Speed RPM	Torque Rating		Bore dia. (㎜)	Dimensions (mm)				Gap (㎜)	Cplg wt (kg)	GD² (kg.㎠)	Bolt Tighten Torque (kg.m)
		kg.m	Nm	Emax.	A	B	F	H				
05S	10,000	3.4	33	23	67	55.8	25	33	5.8	0.6	8	0.9
10S	10,000	9.2	90	32	81	57.1	25	46	7.1	1.1	24	0.9
15S	10,000	18	177	35	93	66.4	29	51	8.4	1.7	48	2.2
20S	10,000	25	245	42	104	79.0	34	61	11.0	2.5	80	2.2
25S	8,300	43	422	50	126	93.2	41	71	11.2	4.3	224	4.2
30S	7,300	79	775	58	143	108.5	48	84	12.5	6.9	440	7.3
35S	6,200	130	1,275	74	168	130.0	57	106	16.0	11.3	1,080	7.3
40S	5,400	210	2,059	83	194	145.0	64	118	17.0	16.7	2,080	15.9
45S	4,900	340	3,334	95	214	174.8	76	137	22.8	22.7	3,520	15.9
50S	4,200	500	4,903	109	246	202.0	89	156	24.0	35.4	7,200	22.1
55S	3,800	650	6,374	118	276	230.0	102	169	26.0	52.0	12,800	55.3

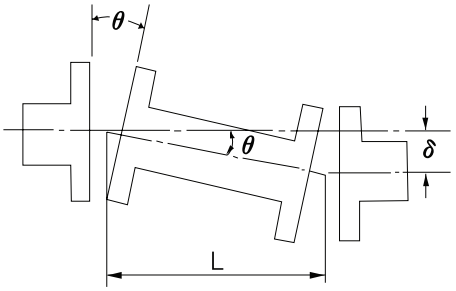
※ Coupling weight, without bore machining

W4-00D (Double Standard) / W4-OOSD (Double Short)

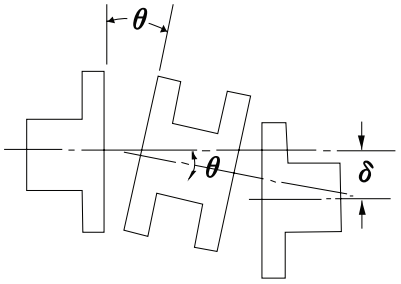


- Angular Misalignment (θ) = 1°
- Allowable Parallel Misalignment (δ) = L.tan θ

Angular Misalignment θ



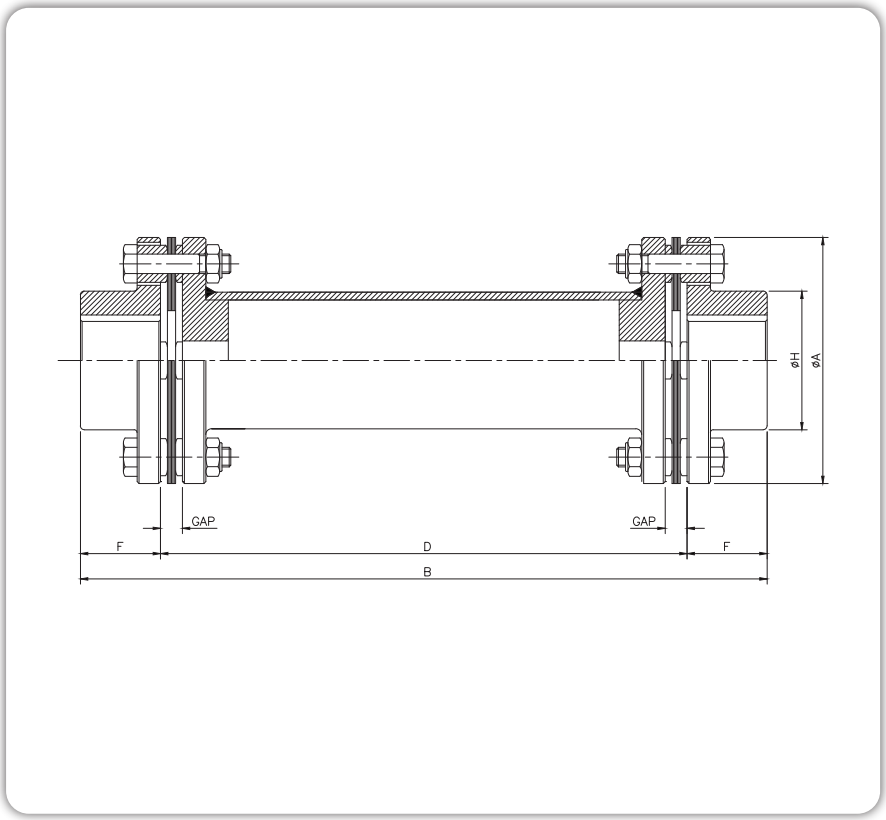
Parallel Misalignment δ



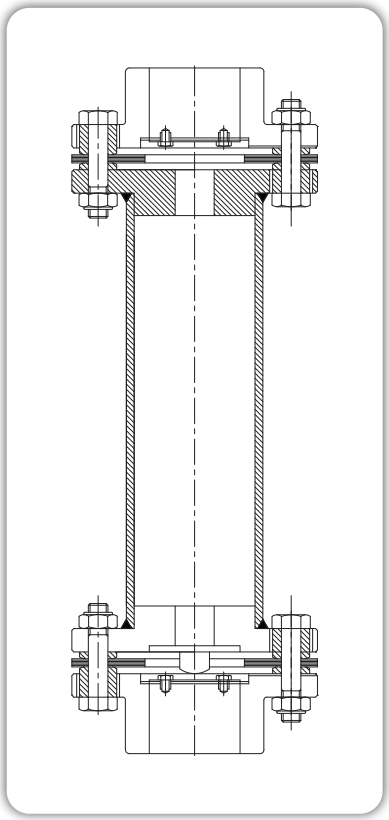
Common				W4-00D (Standard)			W4-00SD (Short)			W4-00F (Custom)		
Size	Max. Speed RPM	Torque Rating		D (㎜)	Cplg wt (kg)	GD² (kg·㎠)	D (㎜)	Cplg wt (kg)	GD² (kg·㎠)	B (㎜)	D (㎜)	D Max. (㎜)
		kg·m	Nm									
05D	10,000	3.4	33	88.9	1.2	18	38	1.1	17.8			200
10D	10,000	9.2	90	88.9	1.9	44	39	1.7	41			200
15D	10,000	18	177	101.6	2.9	84	48	2.7	79			250
20D	10,000	25	245	127.0	7.1	396	55	6.6	136			250
25D	8,300	43	422	127.0	7.1	386	62	6.6	337			300
30D	7,300	79	775	127.0	10.8	800	69	10.3	775	2F+D	Desired distance betwwen shaft ends	300
35D	6,200	130	1,275	127.0	16.3	1,680	78	15.6	1,628			300
40D	5,400	210	2,059	139.7	24.7	3,400	89	24.0	3,317			350
45D	4,900	340	3,334	152.4	32.5	5,600	107	31.5	5,428			350
50D	4,200	500	4,903	177.8	50.0	11,200	113	48.4	10,865			350
55D	3,800	650	6,374	177.8	75.0	20,400	134	63.4	20,127			400

※ Refer to the previous page for dimensions

W4-OOFH (Horizontal)



W4-OOFV (Vertical)



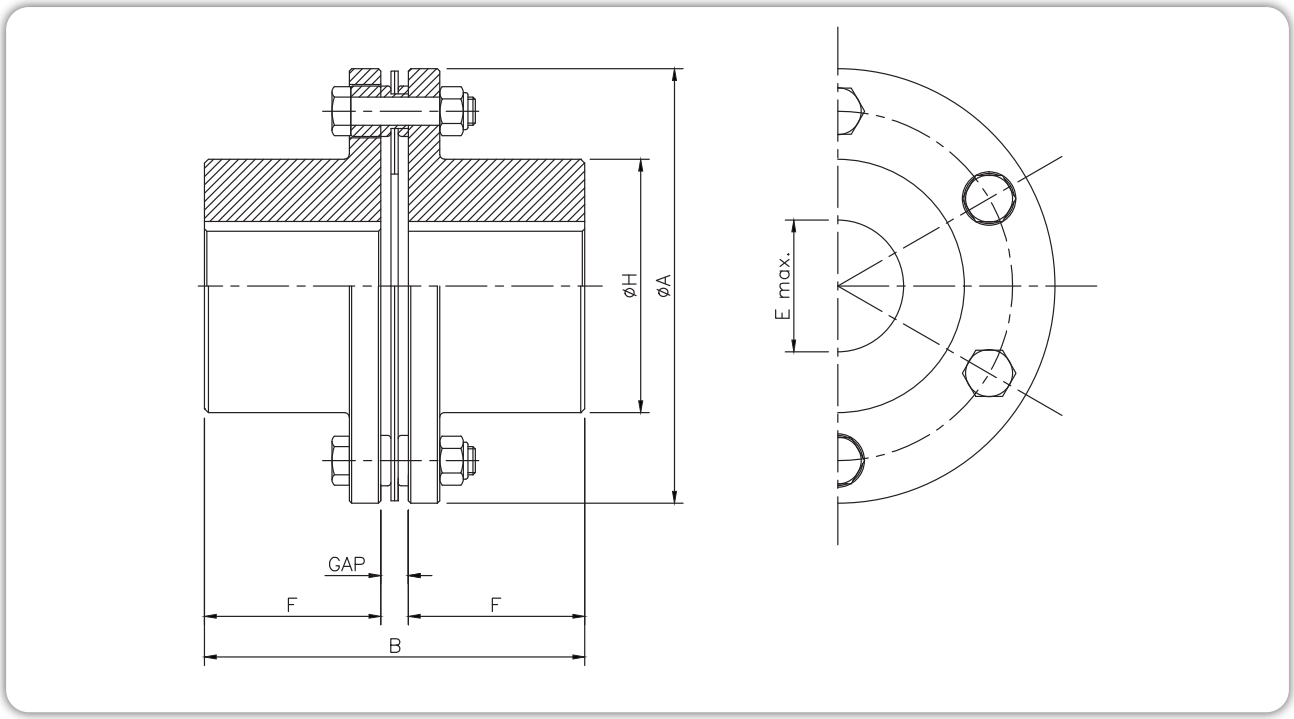
Size	Torque Rating		Dimensions(mm)				Cplg wt(kg)		Moment of Inertia GD(kg·cm²)	
	kg·m	Nm	A	D min	F	H	W1ⓐ D min	W2 Addition	GD1ⓑ D min	GD2 Addition
10F	9.2	90	81	72.2	25	46	1.9	0.029	50	0.44
15F	18	177	93	75.8	29	51	3.0	0.032	98	0.59
20F	25	245	104	88.4	34	61	4.3	0.039	168	1.10
25F	43	422	126	99.4	41	71	7.5	0.075	442	2.82
30F	79	775	143	111.4	48	84	11.7	0.110	922	6.03
35F	130	1,275	168	141.6	57	106	18.7	0.139	2,032	12.33
40F	210	2,059	194	154.0	64	118	28.3	0.161	3,839	19.21
45F	340	3,334	214	183.2	76	137	38.3	0.186	6,857	29.65
50F	500	4,903	246	211.8	89	156	58.2	0.250	13,639	52.73
55F	650	6,374	276	234.4	102	169	73.2	0.310	25,552	76.53

(1) Total weight(kg) should be calculated using the following equation:
W=W1 ⓐ D min+L× (W2 Addition)
L:D - D min(cm)

(2) Total moment of inertia GD(kg • cm2) should be calculated using the following equation:
GD= GD1ⓑ Dmin+L× (GD2 Addition)

※ D= user - specified

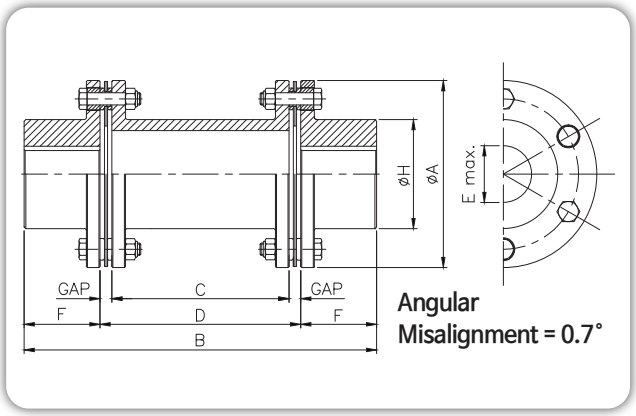
W6 - 00S (Single Disc Flex)



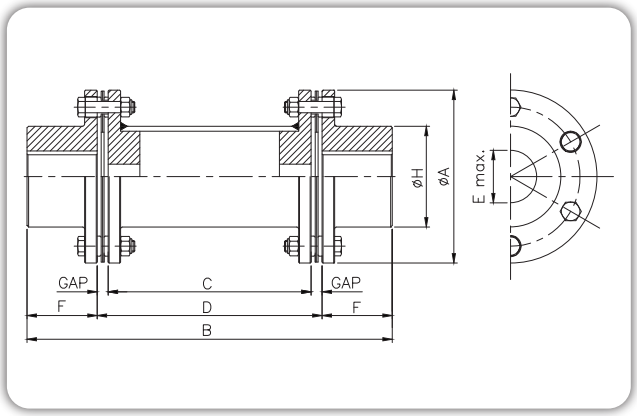
Size	Max. Speed RPM	Torque Rating		Bore (mm) Emax.	Dimensions(mm)				Gap (mm)	Cplg Wt (kg)	Bolt tighten Torque (kg.m)
		kg·m	Nm		A	B	F	H			
00S	8,300	58	570	51	119	118.3	54	74	10.3	6.0	2.2
01S	7,300	94	922	55	137	137.0	63	81	11.0	9.1	4.2
02S	6,200	174	1,710	67	161	160.0	74	97	12.0	16.9	7.3
03S	5,400	341	3,345	72	180	174.0	80	104	14.0	22.6	15.9
04S	4,900	499	4,900	85	212	207.0	95	124	17.0	35.1	22.1
05S	3,800	620	6,080	111	276	241.5	112	161	17.5	65.1	22.1
10S	3,800	840	8,240	111	276	243.0	112	161	19.0	66.1	22.1
15S	3,400	1,090	10,690	133	308	287.0	134	193	19.0	107.8	45
20S	3,000	1,820	17,850	152	346	328.5	153	218	22.5	156.1	58
25S	2,800	2,692	26,400	165	375	358.0	165	240	28.0	211.8	110
30S	2,500	3,410	33,450	178	410	387.0	178	258	31.0	274.5	150
35S	2,300	4,071	39,930	187	445	407.0	188	272	31.0	333.3	170
40S	2,200	4,721	46,300	205	470	446.0	206	297	34.0	399.2	170
45S	2,000	6,101	59,840	231	511	497.5	231	334	35.5	525.3	170
50S	2,000	7,622	74,750	254	556	545.0	256	364	37.0	676.3	310
55S	2,000	9,442	92,600	263	587	565.5	264	382	37.5	803.4	360

※ Coupling weight, without bore machining

W6-00D (Double Standard Spacer)
W6-00F (Double Custom Spacer)



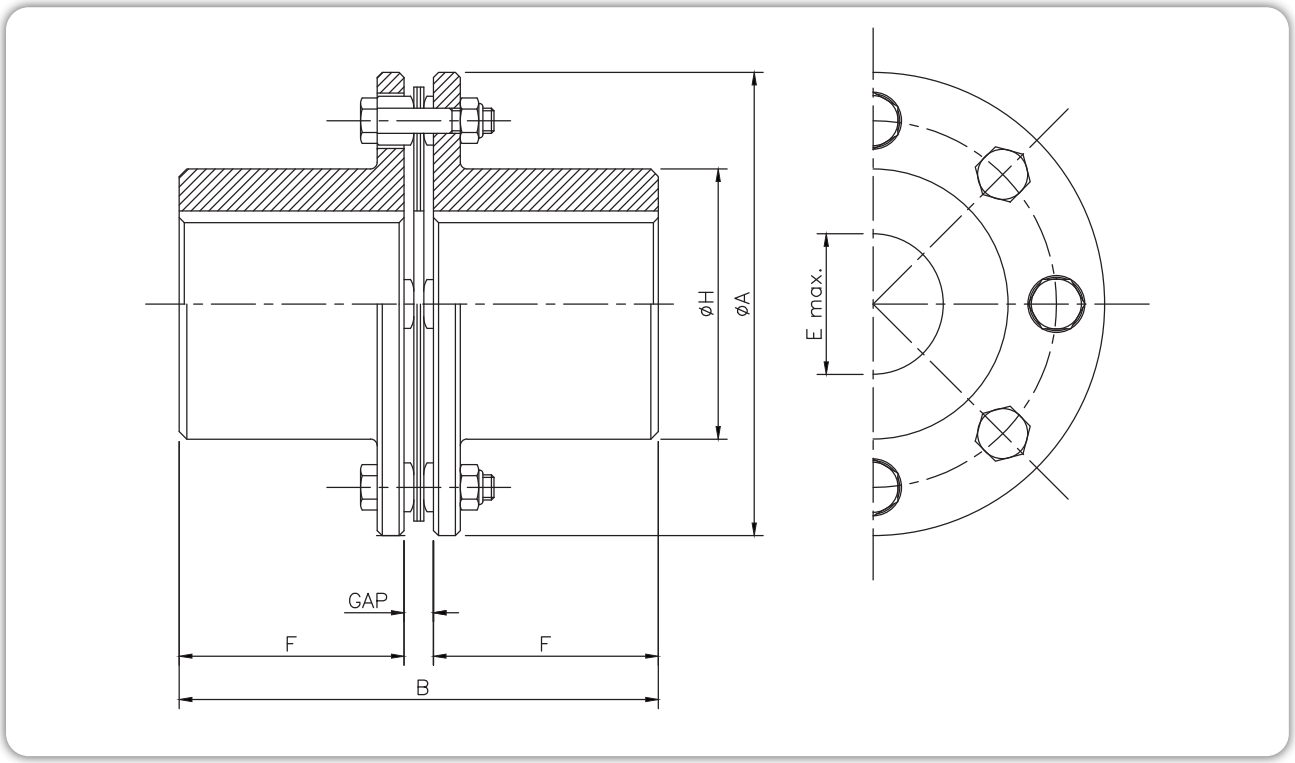
W6-00FH (Floating Horizontal)
W6-00FV (Floating Vertical)



Size	Max. Speed RPM	Torque Rating		Bore Dia (mm) Emax.	Dimensions (mm)							GAP (mm)	Moment of Inertia GD² (kg·m²)	Max. Axial Misalign. (±mm)	Bolt tighten Torque (kg·m)
					A	B	C	D		F	H				
		kg·m	Nm					Max	Min						
00D	8,300	58	570	51	119	168	39.4	97	60	54	74	10.3	0.03	3.0	2.2
01D	7,300	94	922	55	137	198	50.0	110	72	63	81	11.0	0.065	3.4	4.2
02D	6,200	174	1,710	67	161	238	66.0	129	90	74	97	12.0	0.14	3.6	7.3
03D	5,400	341	3,345	72	180	269	81.0	141	109	80	104	14.0	0.26	4.2	15.9
04D	4,900	499	4,900	85	212	308	84.0	150	118	95	124	17.0	0.59	4.5	22.1
05D	3,800	620	6,080	111	276	377	118.0	255	153	112	161	17.5	1.8	3.9	22.1
10D	3,800	840	8,240	111	276	377	115.0	258	153	112	161	19.0	1.9	3.9	22.1
15D	3,400	1,090	10,690	133	308	440	134.0	278	172	134	193	19.0	3.7	4.2	45
20D	3,000	1,820	17,850	152	346	497	146.0	283	191	153	218	22.5	6.7	4.8	58
25D	2,800	2,692	26,400	165	375	553	167.0	308	223	165	240	28.0	10.6	5.2	110
30D	2,500	3,410	33,450	178	410	610	192.0	319	254	178	258	31.0	16.5	5.4	150
35D	2,300	4,071	39,930	187	445	646	208.0	349	270	188	272	31.0	23.9	5.6	170
40D	2,200	4,721	46,300	205	470	686	206.0	342	274	206	297	34.0	30.7	6.3	170
45D	2,000	6,101	59,840	231	511	749	221.0	364	287	231	334	35.5	48.0	6.7	170
50D	2,000	7,622	74,750	254	556	800	218.0	365	292	254	364	37.0	72.9	7.3	310
55D	2,000	9,442	92,600	263	587	839	236.0	408	311	264	382	37.5	100.6	7.8	360

※ Dimension " D" can be adjusted on order.
※ Please consult with us for the distance between shaft ends according to the number of revolutions.

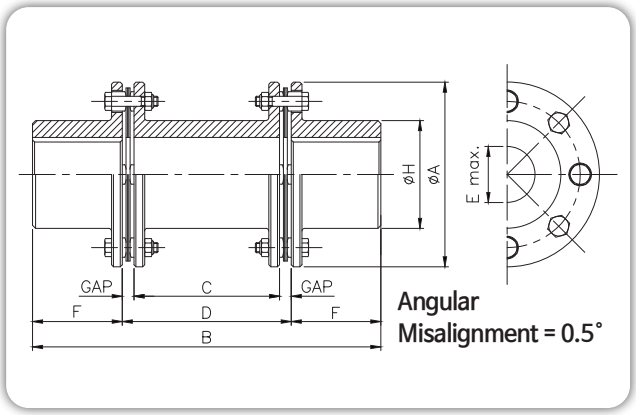
W8-00S (Single Disc Flex)



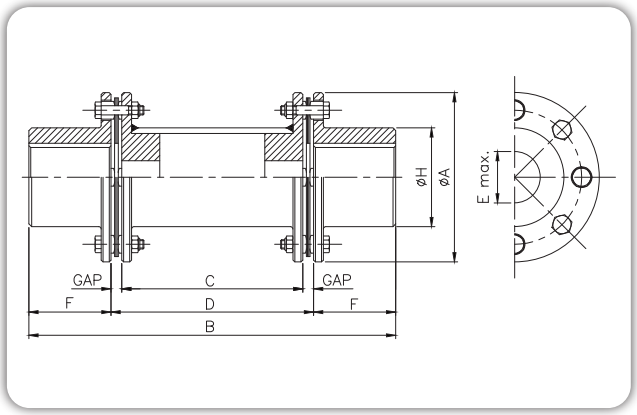
Size	Max. Speed RPM	Torque Rating		Bore (mm) Emax.	Dimensions (mm)				Gap (mm)	Cplg Wt (kg)	Bolt tighten Torque (kg.m)
		kg·m	Nm		A	B	F	H			
01S	4,900	391	3,842	95	214	228.2	108	137	12.2	38.0	7.3
03S	4,200	725	7,115	108	246	255.7	121	156	13.7	55.5	15.9
05S	3,800	914	8,967	111	276	285.5	134	161	17.5	72.2	22.1
10S	3,800	1,099	10,780	111	276	287.0	134	161	19.0	73.3	22.1
15S	3,400	1,568	15,380	133	308	339.0	160	193	19.0	119.7	45
20S	3,000	2,608	25,580	152	346	388.5	183	218	22.5	174.3	58
25S	2,800	3,847	37,730	165	375	424.0	198	240	28.0	233.8	110
30S	2,500	4,806	47,140	178	410	459.0	214	258	31.0	305.3	150
35S	2,300	5,815	57,030	187	445	481.0	225	272	31.0	367.4	170
40S	2,200	6,564	64,380	205	470	528.0	247	297	34.0	447.5	170
45S	2,000	8,523	83,590	231	511	591.5	278	334	35.5	591.6	170
50S	2,000	10,522	103,190	254	556	647.0	305	364	37.0	761.4	310
55S	2,000	13,060	128,080	263	587	671.5	317	382	37.5	901.9	360

※ Coupling weight, without bore machining

W8-00D (Double Standard Spacer)
W8-00F (Double Custom Spacer)



W8-00FH (Floating Horizontal)
W8-00FV (Floating Vertical)



Size	Max. Speed RPM	Torque Rating		Bore Dia (mm) Emax.	Dimensions (mm)							GAP (mm)	Moment of Inertia GD² (kg·m²)	Max. Axial Misalign. (±mm)	Bolt tighten Torque (kg·m)
		kg·m	Nm		A	B	C	D Max	D Min	F	H				
01D	4,900	391	3,842	95	214	333	92.6	240	117	108	137	12.2	0.65	2.1	7.3
03D	4,200	725	7,115	108	246	369	99.6	269	127	121	156	13.7	1.24	2.1	15.9
05D	3,800	914	8,967	111	276	421	118.0	255	153	134	161	17.5	1.80	2.1	22.1
10D	3,800	1,099	10,780	111	276	421	115.0	258	153	134	161	19.0	1.80	2.1	22.1
15D	3,400	1,568	15,380	133	308	492	134.0	278	172	160	193	19.0	3.70	2.4	45
20D	3,000	2,608	25,580	152	346	557	146.0	283	191	183	218	22.5	6.80	2.9	58
25D	2,800	3,847	37,730	165	375	619	167.0	308	223	198	240	28.0	10.8	3.1	110
30D	2,500	4,806	47,140	178	410	682	192.0	319	254	214	258	31.0	16.7	3.3	150
35D	2,300	5,815	57,030	187	445	720	208.0	339	270	225	272	31.0	25.0	3.6	170
40D	2,200	6,564	64,380	205	470	768	206.0	342	274	247	297	34.0	31.1	4.0	170
45D	2,000	8,523	83,590	231	511	843	221.0	364	287	278	334	35.5	48.0	4.5	170
50D	2,000	10,522	103,190	254	556	902	218.0	365	292	305	364	37.0	74.7	5.0	310
55D	2,000	13,060	128,080	263	587	945	236.0	408	311	317	382	37.5	101.6	5.2	360

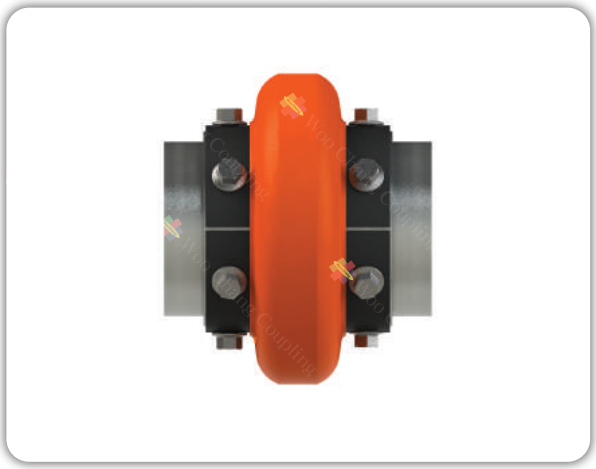
※ Dimension "D" can be adjusted on order.
※ Rotating speed limits shown in above table are based on standard pipe. For rotation speed is over this limits,please contact us.

Woo Chang Coupling Co.,Ltd
Mechanical Power Transmission Systems

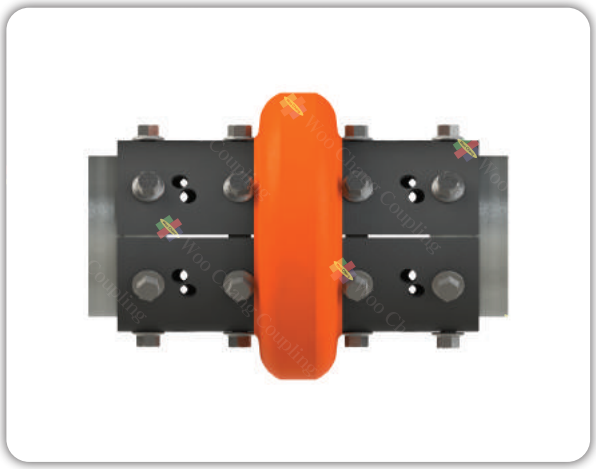
Mechanical Power Transmission Systems

U-FLEX COUPLING

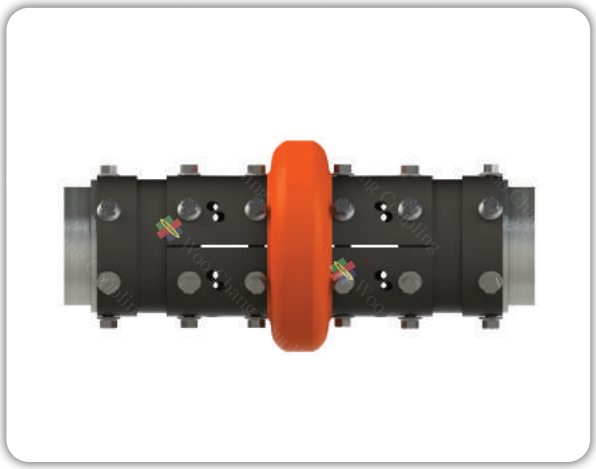
U-FLEX STANDARD



U-FLEX SPACER



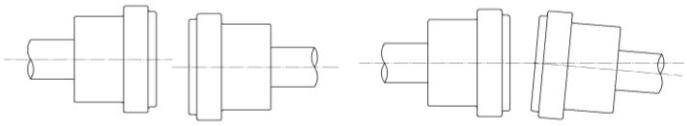
U-FLEX SPACER EXTENDED



04 U-FLEX COUPLING

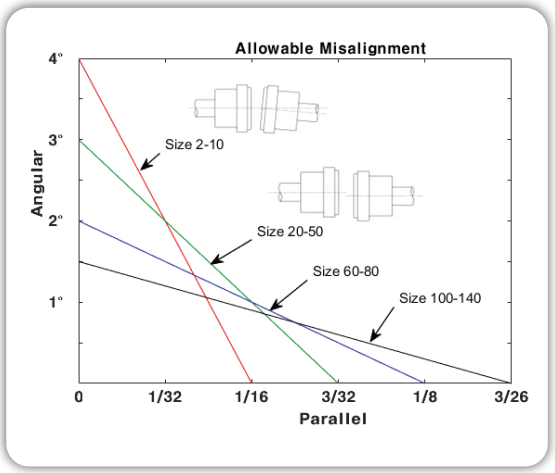
Characteristics & Advantages

U-flex Coupling uses a polyurethane material with excellent elasticity and flexibility. It has no moving parts, does not need lubrication, does not generate pollutants, has high elasticity, has excellent capacity for misalignment, and is easy to maintain. It can be applied to a wide variety of industrial equipment, from small to medium size. The convenience of low maintenance and cost reduction are excellent.



Parallel Misalignment Angular Misalignment

The elastic urethane element can be used in angular misalignment up to 4° and parallel misalignment of up to 4.8mm.



Size	Hub diameter	Parallel misalignment (max.)	Angular Misalignment			
			1°	2°	3°	4°
U02	47.0	1.6	0.8	1.6	2.4	3.3
U03	59.0	1.6	1.0	2.0	3.0	4.1
U04	66.0	1.6	1.2	2.4	3.7	5.0
U05	80.0	1.6	1.4	2.9	4.3	5.7
U10	93.0	1.6	1.6	3.3	4.9	6.5
U20	114.0	2.4	2.0	4.1	6.1	-
U30	138.0	2.4	2.4	4.9	7.3	-
U40	168.0	2.4	3.0	5.9	8.8	-
U50	207.0	2.4	3.7	7.3	11.1	-
U60	222.0	3.2	3.9	7.7	-	-
U70	235.0	3.2	4.3	8.5	-	-
U80	286.0	3.2	5.0	10.0	-	-
U100	359.0	4.8	6.3	-	-	-
U120	448.0	4.8	7.3	-	-	-
U140	530.0	-	-	-	-	-

Characteristics

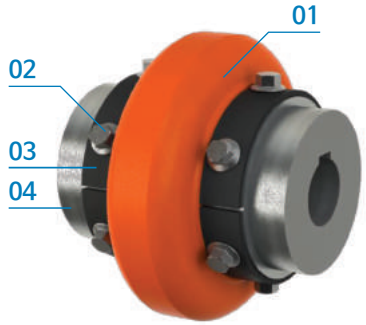
- Disassembly and assembly are easy and quick.
- It can protect the system by buffering well against impacts, such as emergency stops.
- Its light weight and small moment of inertia causes less load on shafts and power sources (motors or engines).
- The structure is simple, and the necessary space is small.
- Excellent flexibility and stability during operation.
- It is safe, has low noise, and has excellent water and chemical resistance.
- The allowable amount of misalignments, such as angular and parallel, are high.
- It is easy to replace parts and maintain without lubrication.

Application

U-flex Coupling can be used in applications such as high impact mines, pumps, etc. as well as in sanitary plants or chemical and food industries where hygiene is required. It can also be used in various industrial fields such as general industry to replace small and medium-sized mechanical couplings. It is ideal for systems involving irregular impact, or that require no lubrication and easy maintenance.

- -Pump
- -Fans and blowers
- -Compressor
- -Electric motor
- -Conveyor
- -Elevator
- -Agitator
- -Cranes and Hoists
- -Brewery distillation unit
- -Pulp and Paper mill
- -Rubber industry
- -Steel industry
- -Fabric factories
- -Aggregate treatment
- -Cement plant
- -Food industry
- -Wood industry

Structure



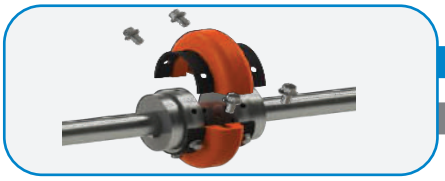
PART

01 Flex Element
02 Cap Screw
03 Sleeve
04 Hub

Design features

Instruction for Installation

STEP 01
Install one hub on the shaft and loosely position the other hub for spacing adjustment.



STEP 02
Place half of the element around the hub and lightly fasten it with the auto-locking cap screw.

STEP 03
Fit the other half of the element. Tighten the cap screw that has the recommended torque or less.

STEP 04
Use a torque wrench to mount it with the appropriate torque value for each standard.

Size	Torque				Cap screw	
	in.Lbs	Ft.Lbs	Nm	Kg·m	Consu-mption	Size
U02	204	17	23	2.4	8	M6 x P1.0
U03					8	
U04					8	
U05					8	
U10					12	
U20	360	30	41	4.2	12	M10 x P1.5
U30					12	
U40					16	
U50					16	
U60	816	68	92	9.4	16	M12 x P1.75
U70					16	
U80					16	
U100	3,240	290	393	40.1	20	M20 x P2.5
U120					24	
U140	7,080	590	800	81.6	32	M24 x P3.0

Handling & Precautions

Before using U-flex Coupling, please observe the following guidelines. If you do not follow these instructions, material damage to the machine and serious damage to parts may occur. In addition, personal injury or death may result from damaged parts during operation.

Refer to the catalog when selecting coupling products. The catalog contains installation instructions, and product specifications such as Size, Torque (Nm), and Rated Operating Speed (rpm). Do not exceed the specified range.

Pay attention to the following points when using the product.

- During start-up and operation of the powertrain, excessive shock loads should be avoided.
- Ensure the assembled coupling works quietly.
- If vibration or noise occurs in the coupling assembly, stop operation immediately and check the following items.

The couplings are designed to break before the shaft or system is damaged in response to shocks over the selected torque. Therefore, when selecting a product, it is necessary to calculate an appropriate safety factor. When the coupling breaks, a missile may be caused as parts can be ejected with force. Appropriate anti-scattering measures should be established to prevent personal injury and property damage. We are not responsible for any damage that may occur if emergency measures are not in place.

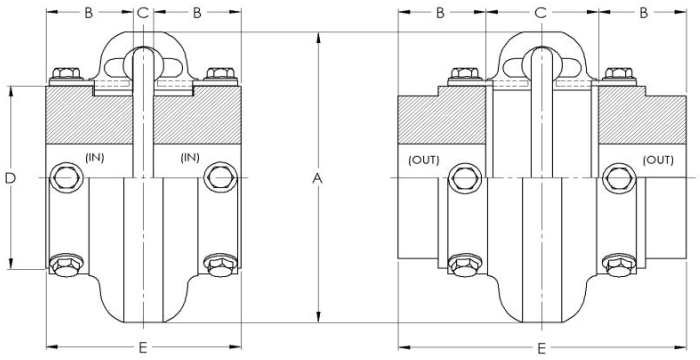
Size selection method

- When there are multiple commercial revolutions (N) and a minimum number of revolutions (N), select a value less than or equal to the rated number of revolutions.
- It should be noted that the load during normal reverse rotation, repeated overloading or discontinuous operation, should be twice as large as in normal cases.

Precaution for selection
- Visual inspection: Check parts for damage and ensure bolts are tightened.
- Alignment: Ensure the alignment is within the allowable range.

Replacement of the coupling is required if the following abnormal conditions are found during the check process:
- Excessive deformation of the contour.
- Damage (tearing) or excessive curing of the elastic part.

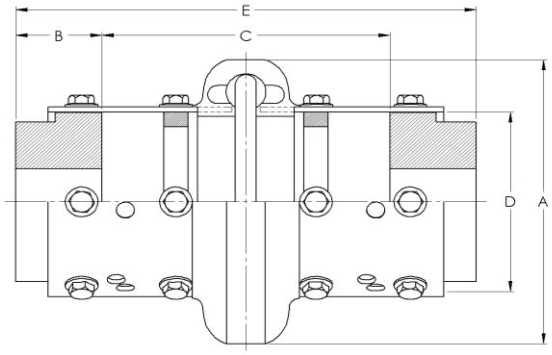
U-flex Standard

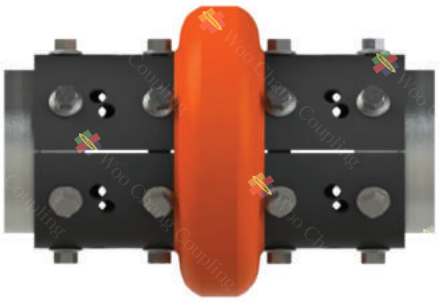


Size	Bore (max.)	RPM (max.)	HP/ 100RPM	Basic Torque		Dimensions (mm)							Weight (Kg)
				Kg·m	Nm	A	B	C		D	E		
								In	Out		In	Out	
U02	28.7	7,500	0.30	2.2	21.5	88.9	24.0	34.0	48.3	47.0	81.8	96.0	1.0
U03	35.1	7,500	0.58	4.2	41.2	101.6	38.0	20.6	33.3	59.0	96.8	109.5	2.1
U04	41.4	7,500	0.88	6.3	62.1	115.8	43.0	11.2	33.3	66.0	96.8	119.1	2.3
U05	47.8	7,500	1.48	10.7	104.5	136.7	44.0	20.6	46.0	80.0	109.5	134.9	3.7
U10	54.1	7,500	2.30	16.7	163.8	162.1	48.0	14.2	46.0	93.0	109.5	141.2	5.2
U20	60.5	6,600	3.65	26.5	259.9	184.2	52.0	12.7	60.5	114.0	117.4	165.1	8.2
U30	73.2	5,800	5.79	42.1	412.4	209.6	58.0	14.2	62.0	138.0	131.8	179.3	13.7
U40	85.9	5,000	8.85	63.4	621.4	241.3	63.0	14.2	68.1	168.0	141.2	195.1	21.6
U50	92.2	4,200	12.14	88.1	864.3	279.4	70.0	16.0	85.9	207.0	155.7	225.6	30.6
U60	101.6	3,800	19.84	144.0	1,412.3	317.5	82.0	17.5	87.4	222.0	182.6	252.5	43.3
U70	114.3	3,600	35.12	254.9	2,499.8	355.6	92.0	19.1	95.3	235.0	203.2	279.4	51.5
U80	152.4	2,000	62.70	455.1	4,462.9	406.4	124.0	19.1	127.0	286.0	266.7	374.7	108.2
U100	171.5	1,900	135.00	979.9	9,609.4	533.4	140.0	44.5	95.3	359.0	323.9	374.7	168.5
U120	190.5	1,800	270.00	1,959.8	19,218.7	635.0	152.0	57.2	124.0	448.0	361.7	428.8	275.3
U140	279.4	1,500	540.00	3,919.5	38,437.4	762.0	178.0	76.2	127.0	530.0	431.8	482.6	475.6

※ Coupling weight, without bore machining

U-flex Spacer

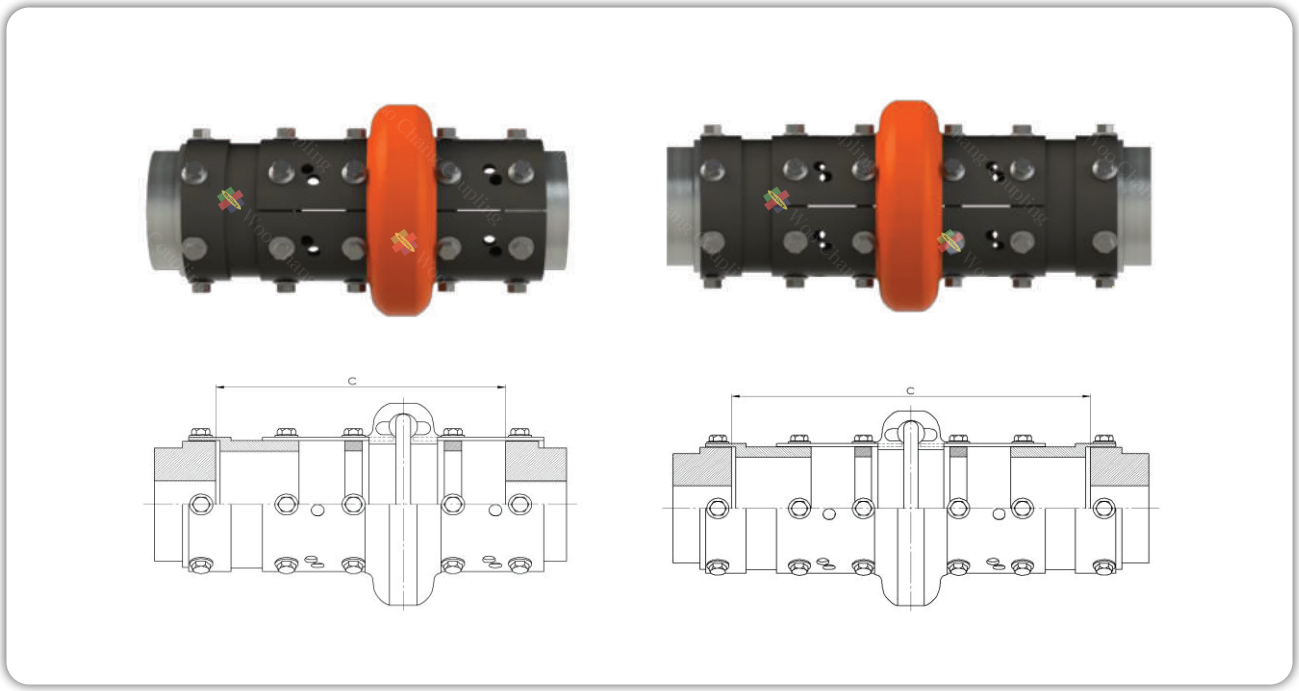




Size	Bore (max.)	RPM (max.)	HP/ 100RPM	Basic Torque		Dimensions (mm)							Weight (Kg)
						A	B	C		D	E		
				Kg·m	Nm			In	Out		In	Out	
US02	28.7	7,500	0.30	2.2	21.5	88.9	24.0	88.9	101.6	47.0	146.1	150.4	1.3
US03	35.1	7,500	0.58	4.2	41.2	101.6	38.0	88.9	127.0	59.0	184.2	203.2	2.5
US04	41.4	7,500	0.88	6.3	62.1	115.8	43.0	88.9	127.0	66.0	184.2	212.9	3.2
US05	47.8	7,500	1.48	10.7	104.5	136.7	44.0	88.9	127.0	80.0	184.2	215.9	4.7
US10	54.1	7,500	2.30	16.7	163.8	162.1	48.0	88.9	127.0	93.0	184.2	222.3	6.4
US20	60.5	4,800	3.65	26.5	259.9	184.2	52.0	64.8	177.8	114.0	238.3	282.5	10.5
US30	73.2	4,200	5.79	42.1	412.4	209.6	58.0	52.1	177.8	138.0	238.3	295.2	16.9
US40	85.9	3,600	8.85	63.4	621.4	241.3	63.0	42.4	177.8	168.0	238.3	304.8	25.7
US50	92.2	3,100	12.14	88.1	864.3	279.4	70.0	29.7	177.8	207.0	238.3	317.5	35.6
US60	101.6	2,800	19.84	144.0	1,412.3	317.5	82.0	67.8	247.7	222.0	317.5	412.8	52.9
US70	114.3	2,600	35.12	254.9	2,499.8	355.6	92.0	50.6	247.7	235.0	317.5	431.8	61.1
US80	152.4	1,800	62.70	455.1	4,462.9	406.4	124.0	55.4	247.7	286.0	317.5	495.3	119.2

※ Coupling weight, without bore machining

U-flex Spacer Extended



Size	Max. RPM Standard	Max. RPM Matched Assembly	Maximum Spacing "C" Dimensions (mm)									Weight (Kg) Straight Hub Two SE
			Straight Hubs			QD Hubs			Taper Lock Hubs			
			Max. Without SE	One SE	Two SE	Max. Without SE	One SE	Two SE	Max. Without SE	One SE	Two SE	
UE03	1,800	3,600	127.00	177.80	228.60	-	-	-	136.65	187.45	238.25	3.8
UE04	1,800	3,600	127.00	177.80	228.60	141.22	192.02	242.82	136.65	187.45	238.25	4.6
UE05	1,800	3,600	127.00	177.80	228.60	128.52	179.32	230.12	136.65	187.45	238.25	6.6
UE10	1,800	3,600	127.00	177.80	228.60	139.45	190.25	241.05	133.35	184.15	234.95	8.6
UE20	1,800	3,600	177.80	247.65	317.50	176.78	246.63	316.48	171.45	241.30	311.15	14.8
UE30	1,800	3,600	177.80	247.65	317.50	163.58	227.84	297.69	165.10	234.95	304.80	21.6
UE40	1,800	3,600	177.80	247.65	317.50	145.80	209.04	278.89	152.40	222.25	292.10	31.7
UE50	1,800	3,100	177.80	247.65	317.50	158.50	221.74	291.59	152.40	222.25	292.10	43.0
UE60	1,800	2,800	247.65	365.25	482.60	195.07	312.67	430.02	222.25	339.85	457.20	67.4
UE70	1,800	2,600	247.65	384.30	520.70	170.69	307.34	443.74	186.44	323.09	459.49	79.3
UE80	1,500	1,800	247.65	390.65	533.40	120.90	263.91	406.65	173.74	314.20	457.20	141.6
UE100	1,500	1,800	95.25	222.25	349.25	44.45	177.80	311.15	152.40	285.75	419.10	201.6
UE120	1,500	1,800	123.95	257.30	390.65	44.20	171.20	298.20	181.10	308.10	435.10	313.9

※ Coupling weight, without bore machining

05 FLEXIBLE FLANGE COUPLING

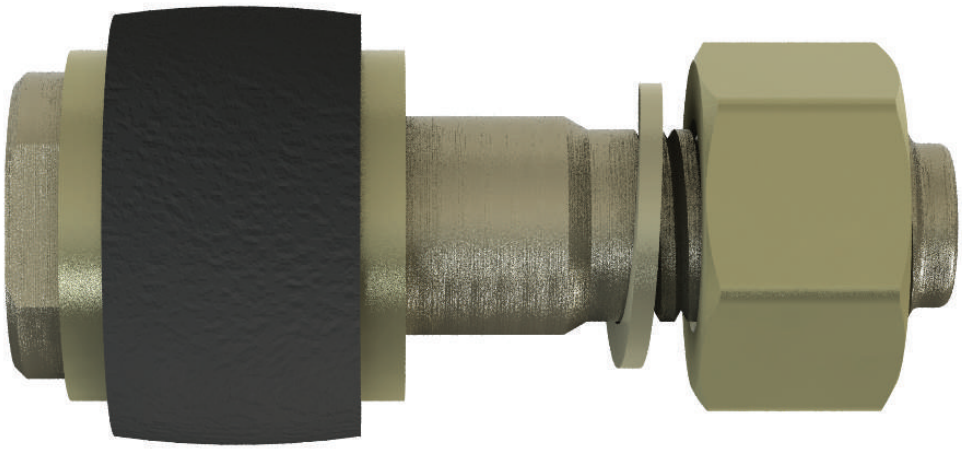
Characteristics & Adventages

The Flange Coupling delivers power smoothly and has excellent vibration absorption capability. It has a simple structure, and is simple to install and maintain. In addition, it can be inspected visually to determine when to repair it.

Structure

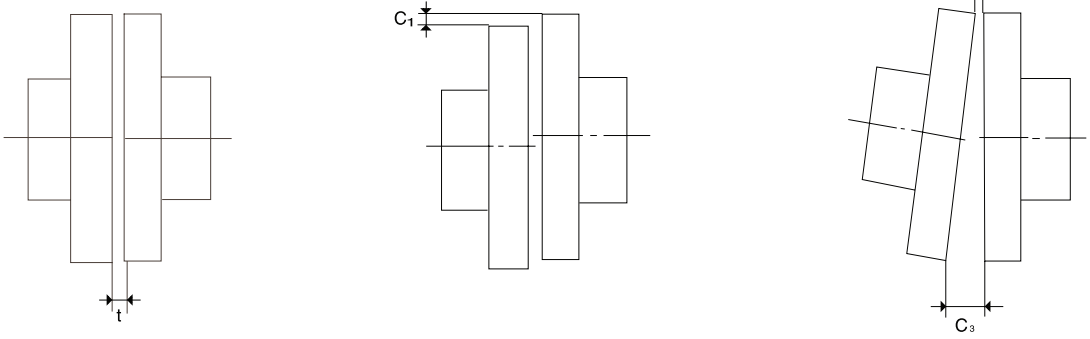
The components of the flange coupling are as follows:

1) Flange Hub: GC20 of KS D4301 or SF45 of KS D 3710
2) Reamer Bolt: KS D
3) Nut: SS41 of KS D 3503
4) Spring Washer: HSWR62B or HSWR5 of KS D 3559
5) Bush: NBR (HS = 70) of KS M6617
6) Plain Washer: SS41 of KS D 3503

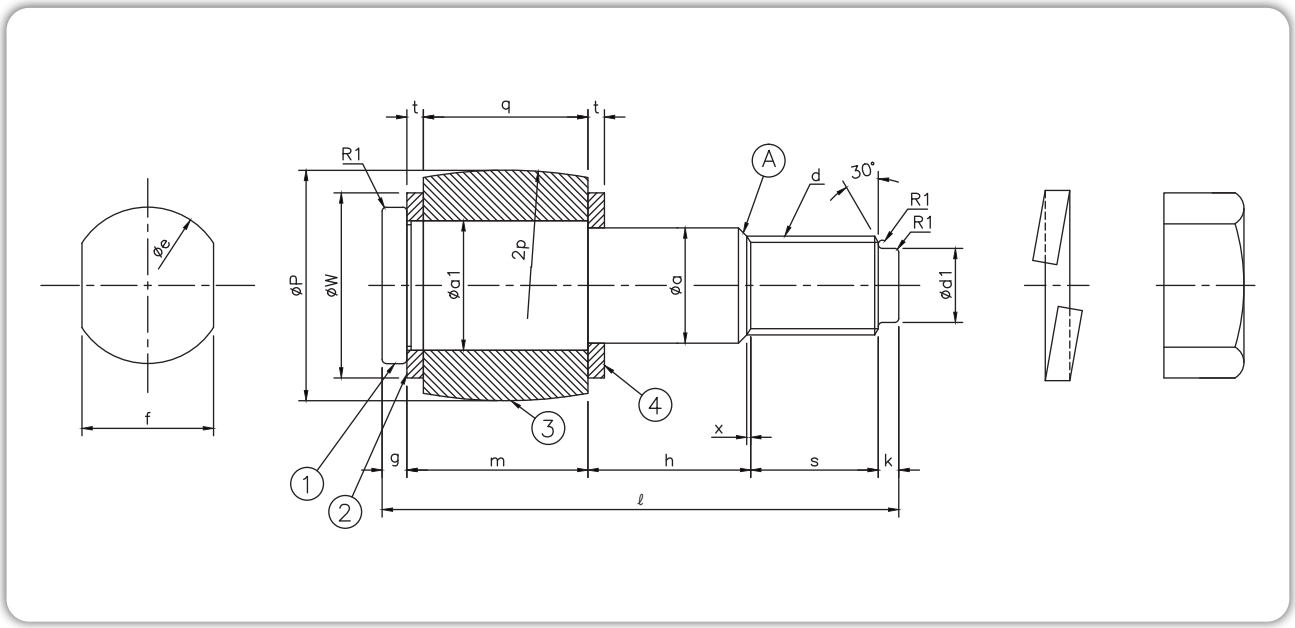


Instruction for Installation

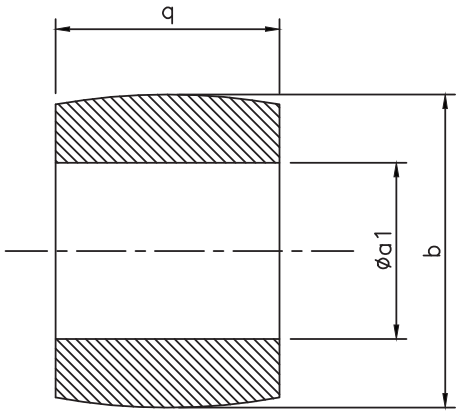
1. The outer diameter of the coupling's upper and lower sides must fit perfectly. If there is no gap, the axis of the drive shaft and the axis of the driven shaft must be exactly aligned.
2. In order to prolong the life of the rubber bush, keep C_1, C_2, and C_3 within 0.05mm as shown in the figure below.
3. 't' is the same thickness as the washer.



Flexible Flange Coupling Bolt

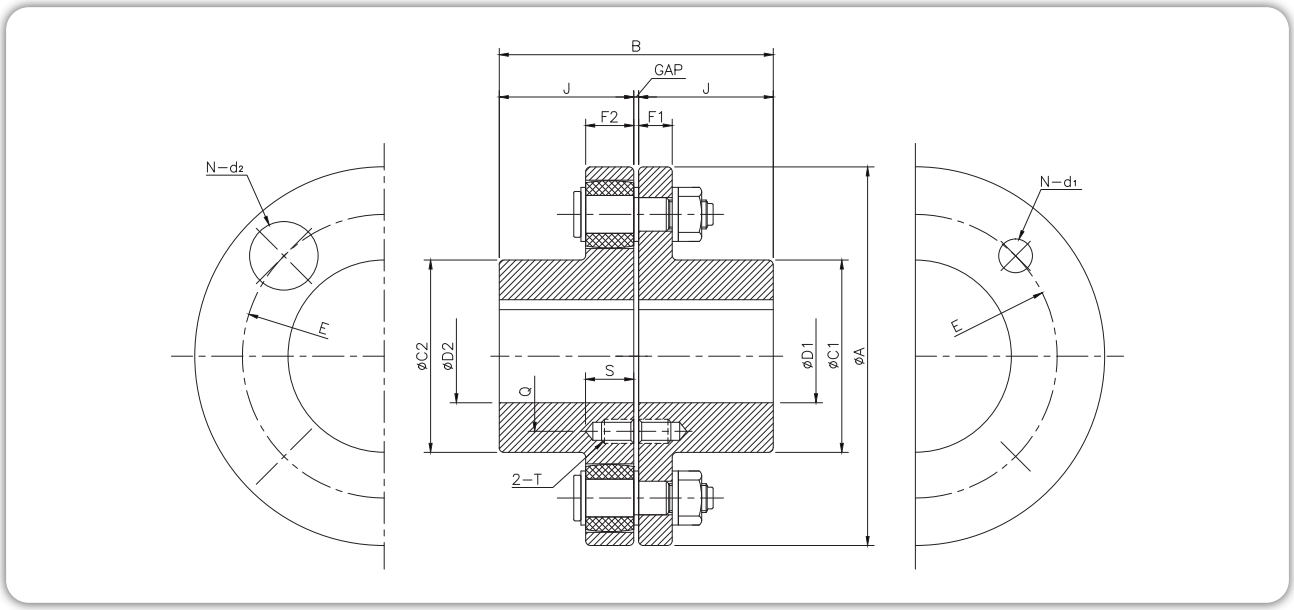


Size α× ℓ	Coupling Size	Reamer Bolt												
		Screw Size d	a_1	a	d_1	e	f	g	m	h	s	k	l	r(about)
8×50	90	M8	9	8	5.5	12	10	4	17	15	12	2	50	0.4
10×56	100~112	M10	12	10	7	16	13	4	19	17	14	2	56	0.5
14×64	125~180	M12	16	14	9	19	17	5	21	19	16	3	64	0.6
20×85	200~224	M20	22.4	20	15	28	24	5	26.4	24.6	25	4	85	1
25×100	250	M24	28	25	18	34	30	6	32	30	27	5	100	1
28×116	280~315	M24	31.5	28	18	38	32	6	44	30	31	5	116	1
35.5×150	355~630	M30	40	35.5	23	48	41	8	61	38.5	36.5	6	150	1.2



Size α× ℓ	Coupling Size	Plain Washer			Bush		
		a_1	w	t	a_1	p	q
8×50	90	9	14	3	9	18	14
10×56	100~112	12	18	3	12	22	16
14×64	125~180	16	25	3	16	31	18
20×85	200~224	12.4	32	4	22.4	40	22.4
25×100	250	28	40	4	28	50	28
28×116	280~315	31.5	45	4	31.5	56	40
35.5×150	355~630	40	56	5	40	71	56

Flexible Flange Coupling



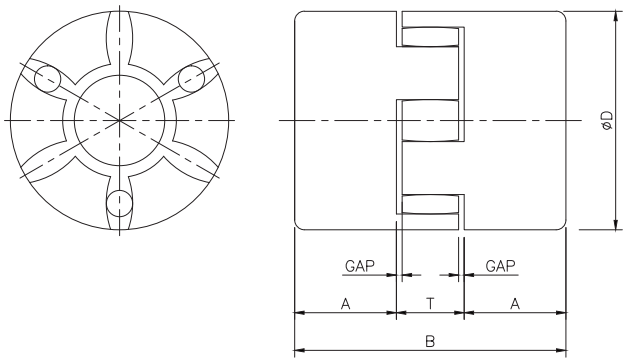
Size	Max. Speed RPM	Torque Rating (kg·m)	Bore Dia (㎜)				Dimensions (㎜)										Gap (㎜)	Bolt Hole			Cplg wt (kg)	Size
			Max.		Min.		A	B	C_1	C_2	E	F_1	F_2	J	Q	T	S		n	d_1	d_2		
			D_1	D_2	D_1	D_2																	
90F	4,000	0.5	20		-		90	59	35.5		60	14		28					4	8	19	1.4	90F
100F	4,000	1.0	25		-		100	74	42.5		67	16		35.5					4	10	23	2.1	100F
112F	4,000	1.6	28		16		112	83	50		75	16		40					4	10	23	2.7	112F
125F	4,000	2.5	32	28	18		125	93	56	50	85	18		45				3	4	14	32	3.5	125F
140F	4,000	5.0	38	35	20		140	103	71	63	100	18		50					6	14	32	4.9	140F
160F	4,000	11	45		25		160	115	80		115	18		56	-		-		8	14	32	6.8	160F
180F	3,500	16	50		28		180	129	90		132	18		63					8	14	32	9.6	180F
200F	3,200	25	56		32		200	146	100		145	22.4		71					8	20	41	13.2	200F
224F	2,850	40	63		35		224	164	112		170	22.4		80					8	20	41	18.4	224F
250F	2,550	63	71		40		250	184	125		180	28		90				4	8	25	51	26.0	250F
280F	2,300	100	80		50		280	204	140		200	28	40	100					8	28	57	36.5	280F
315F	2,050	160	90		63		315	228	160		236	28	40	112	140				10	28	57	49.1	315F
355F	1,800	250	100		71		355	255	180		260	35.5	56	125	140	M20	51		8	35.5	72	74.9	355F
400F	1,600	400	110		80		400	255	200		300	35.5	56	125	160				10	35.5	72	94.3	400F
450F	1,400	630	125		90		450	285	224		355	35.5	56	140	180				12	35.5	72	127.8	450F
560F	1,150	1,000	140		100		560	325	250		450	35.5	56	160	200	M22	54	5	14	35.5	72	206.3	560F
630F	1,000	1,600	160		110		630	365	280		530	35.5	56	180	220				18	35.5	72	277.0	630F

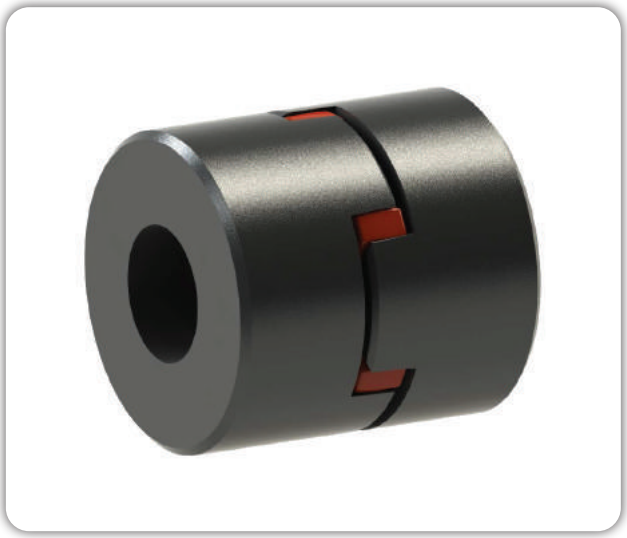
※ Coupling weight, without bore machining

06 JAW COUPLING

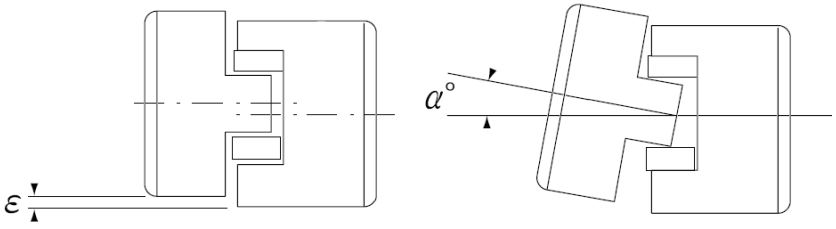
Characteristics & Adventages

The Jaw Coupling has a simple structure and excellent shock absorption. The price is low and maintenance is simple. For many years, this has been one of the most widely used couplings.





Size	Torque Rating (kg · m)	Bore Dia (mm)		Torsion angle	Dimensions (mm)				Gap (mm)	Cplg Wt (kg)
		max	min		D	A	T	B		
25	0.4	11	5	3.2°	25	12	11	35	1	0.08
35	1.0	14	7		35	18.5	13	50	1.5	0.3
48	2.5	19	11		48	24	17	65	1.5	0.5
58	3.4	24	14		58	27	18	72	1.5	0.9
68	12	28	19		68	35	20	90	1.5	1.3
78	32	38	19		78	35	22	92	1.5	2.5
98	65	45	28		98	38.5	29	106	2.5	4.4
118	90	60	38		118	45	30	120	3	7.8
135	125	75	42		135	46	33	125	3.5	10.0



Operating temperature: 34° to 90°
Maximum shortterm temperature: 120°

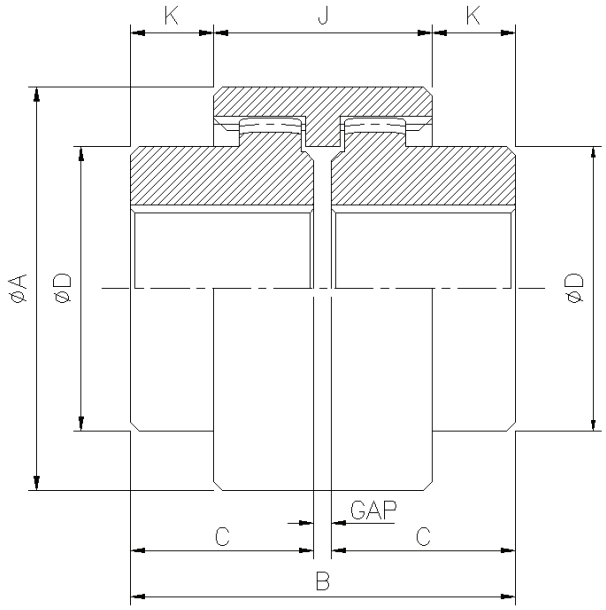
- 90+5A Shore hardness level, standard red color.
- Resistant to oil, grease and many solvents.
- Excellent shock and vibration damping properties,with good chemical resistance.
- Unique concave pocket eliminates edge pressures and allows prolonged wear resistance of the elastomeric spider.

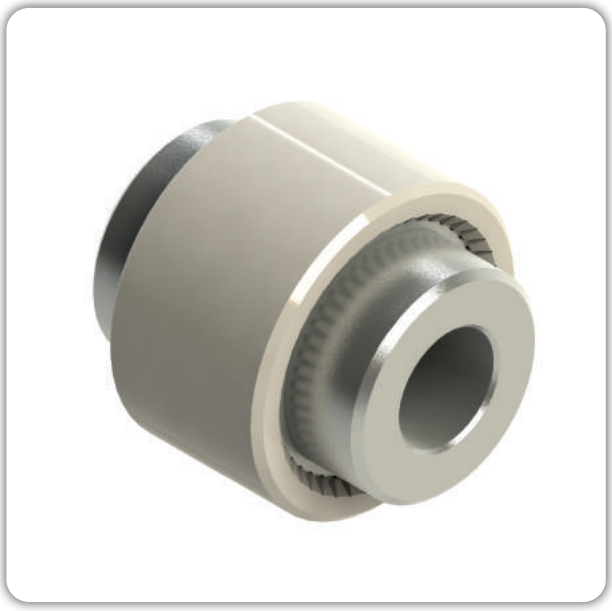
Size No.	25	35	48	58	68	78	98	118	135	160	200
Angular misallgnment(εmm)	0.15	0.2	0.4		0.8	1.0			1.4		
Parallel misallgnment(a°)	1.3										

07 NYLON COUPLING

Characteristic & Advantages

- The twin cardanic method of operation means that there is no periodic wave at angular velocity, and efficiency at constant operation is high.
- It works smoothly against parallel, angular, and complex misalignment with a power transmission efficiency of 99% or more.
- Special nylon materials (internal) prolong its working life. • It is simple to install, maintain, and replace parts.
- No oiling is needed. • Low noise. • Good oil resistance and heat resistance.



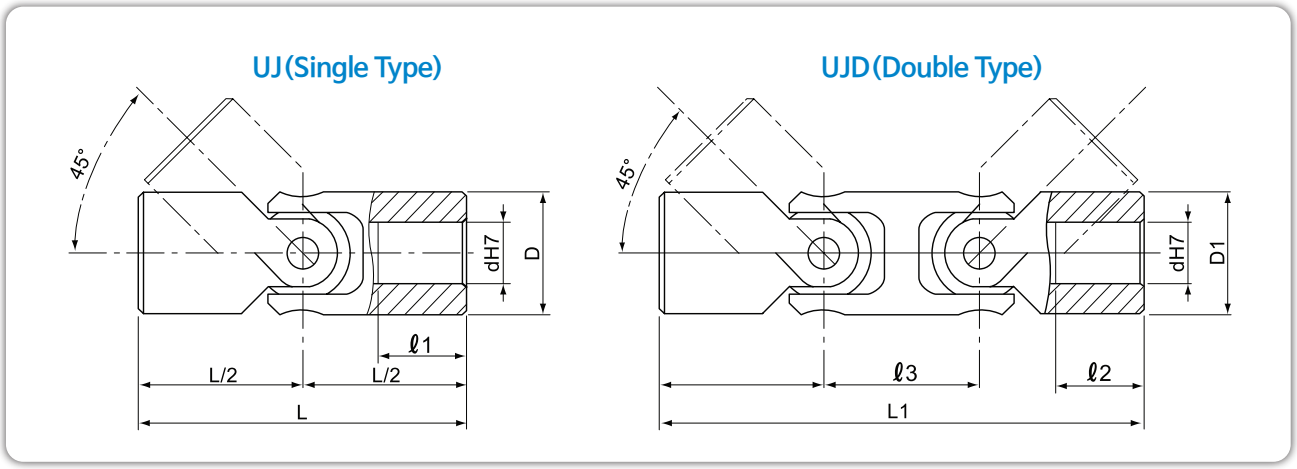


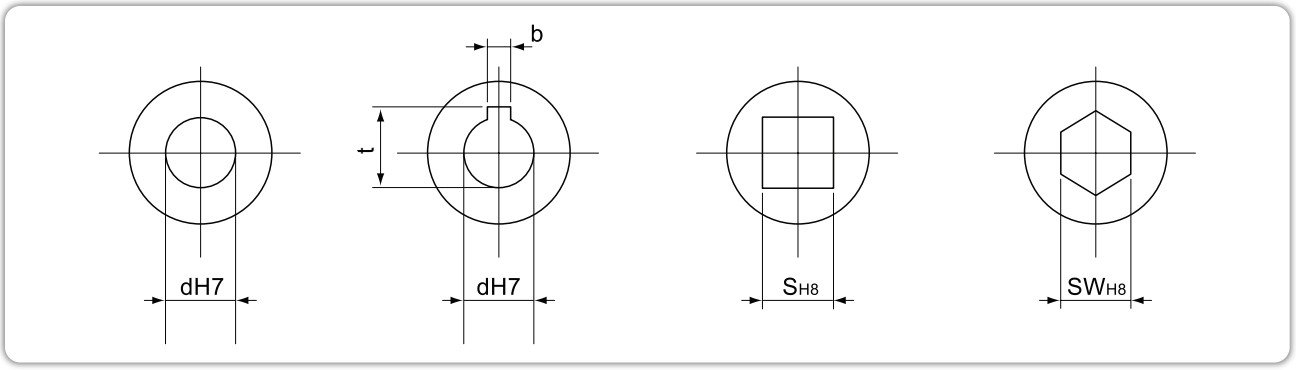
Standard NS FLEX Coupling

Size	Max. Speed RPM	Torque Rating (kg · m)	Bore Dia (mm)		Dimensions (mm)						Gap (mm)	Size
			max	min	A	B	C	D	J	K		
14NS	14,000	1.75	14	6	40	50	23	25	37	6.5	4	14NS
19NS	11,800	3.06	19	8	48	54	25	32	37	8.5	4	19NS
24NS	10,600	3.74	24	10	52	56	26	36	41	7.5	4	24NS
28NS	8,500	7.01	28	10	66	84	40	44	46	19	4	28NS
32NS	7,500	9.16	32	12	76	84	40	50	48	18	4	32NS
38NS	6,700	12	38	14	83	84	40	58	48	18	4	38NS
42NS	6,000	16	42	20	92	88	42	65	50	19	4	42NS
48NS	5,600	20	48	20	100	104	50	68	50	27	4	48NS
65NSL	4,000	44	65	25	140	144	70	96	72	36	4	65NSL
80NSL	3,150	70	80	30	175	186	90	124	93	46.5	6	80NSL
100NSL	3,000	127	100	40	210	228	110	152	102	63	8	100NSL
125NSL	2,120	280	125	50	270	290	140	192	134	78	10	125NSL

08 UNIVERSAL JOINTS

General Light Series Joints



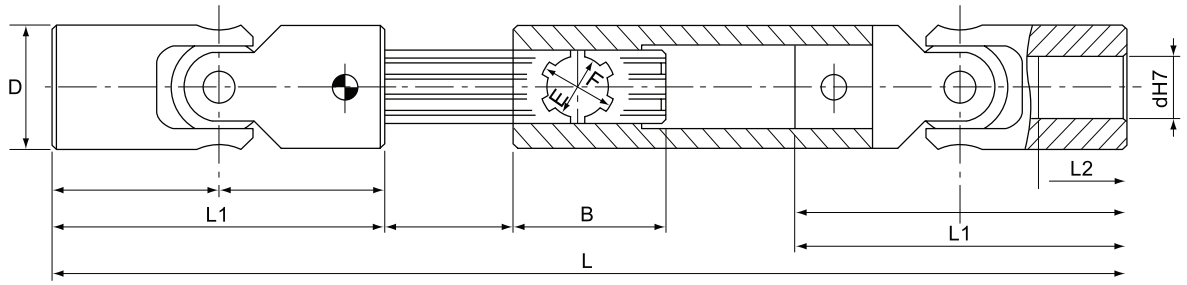


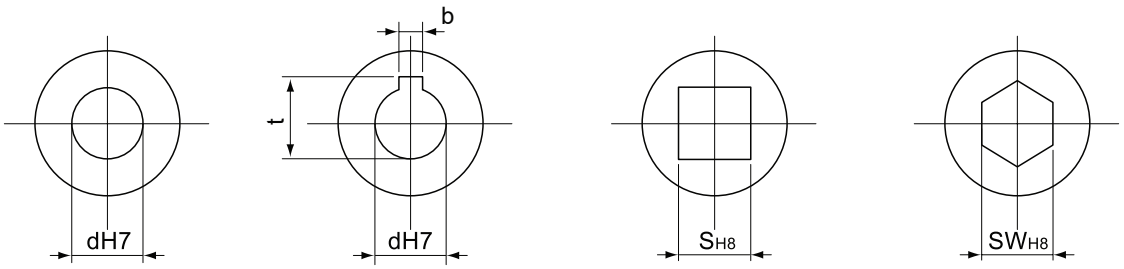
Universal joints are available in circular, key way, square, or hexagon shapes, and production by drawing is also possible.

TYPE		d	D	D1	L	L1	ℓ 1	ℓ 2	ℓ 3	S	SW	bxt
Single	Double											
WCC-UJ 05	-	5	13	-	40	-	13	-	-	-	-	-
WCC-UJ 06	-	6	13	-	40	-	13	-	-	6	-	-
WCC-UJ 08	-	8	16	-	40	-	10	-	-	8	-	2 x 9
WCC-UJ 10	-	10	20	-	62	-	19	-	-	10	10	3 x 11.4
WCC-UJ 12	UJD-12	12	25	25	74	86	23	19	33	12	12	4 x 13.8
WCC-UJ 14	UJD-14	14	29	29	74	95	23	21	33	14	14	5 x 16.3
WCC-UJ 16	UJD-16	16	32	32	86	104	26	21	35	16	16	5 x 18.3
WCC-UJ 18	UJD-18	18	37	37	120	180	41	54	39	18	18	6 x 20.8
WCC-UJ 20	UJD-20	20	40	40	108	128	32	21	46	20	20	6 x 22.8
WCC-UJ 22	UJD-22	22	47	47	130	200	41	54	46	22	-	6 x 24.8
WCC-UJ 25	UJD-25	25	50	50	132	163	41	25	59	25	25	8 x 28.3
WCC-UJ 30	UJD-30	30	58	58	166	182	52	30	66	30	30	8 x 33.8
WCC-UJ 35	UJD-35	35	70	70	140/200	212/310	35/65	30/79	78	AS ON REQUEST		
WCC-UJ 40	UJD-40	40	80	80	160/228	245/350	42/76	38/90	95			
WCC-UJ 50	UJD-50	50	95	95	190/270	290/426	54/94	50/118	120			

Slip Shafts Series Joints

UJS (Slip Shaft Type)





Universal joints are available in circular, key way, square, or hexagon shapes, and production by drawing is also possible. Spline work, heat treatment, polishing work is also possible.

TYPE	d	D	L1	L2	B	E/F	S	SW	bxt
WCC-UJS 10	10	22	45	10	40	11/14	10	10	3 x 11.4
WCC-UJS 12	12	25	50	11	45	13/16	12	12	4 x 13.8
WCC-UJS 14	14	29	56	13	48	13/16	14	14	5 x 16.3
WCC-UJS 16	16	32	65	15	50	16/20	16	16	5 x 18.3
WCC-UJS 18	18	37	72	17	51	16/20	18	18	6 x 20.8
WCC-UJS 20	20	40	82	19	56	18/22	20	20	6 x 22.8
WCC-UJS 22	22	47	95	22	60	21/25	22	22	6 x 24.8
WCC-UJS 25	25	50	108	27	69	23/28	25	25	8 x 28.3
WCC-UJS 30	30	58	122	30	70	26/32	30	30	8 x 33.8
WCC-UJS 35	35	70	140	35	70	28/35	35	35	10 x 38.3
WCC-UJS 40	40	80	160	42	75	33/40	40	40	12 x 43.3
WCC-UJS 50	50	95	190	54	80	43/50	50	50	14 x 53.8

※ Equation to obtain length “L”

min. L=(2 × L1) + B + C
max. L=(2 × L1) + B + (2 × C)
C-max. L-min. L

09 Service Factor and Reference

Service Factor

The service factors listed are the typical values used for normal operation of drive systems.
If the applications use repetitive high peak loads, choose a factor by using the provided instructions or formulas.

Table 1

Aiphabetical listing of applications	
AERATOR	2.5
AGITATORS	
Vertical and Horizontal screw,propeller,Paddle	1.5
BARGE HAUL PULLER	3.0
BLOWERS	
Centrifugal	1.5
Lobe or Vane	1.75
CAR DUMPERS	4.0
CAR PULLERS	2.5
CLARIFIER OR CLASSIFIER	1.5
COMPRESSORS	
Centrifugal	1.1
Rotary,Lobe or Vane	2.0
Rotary,Screw	2.0
Reciprocation	
Direct Connected ★	
With out Flywheels ★	
*With flywheel and Gear between Compressor and Prime Mover	
1 cylinder,single acting	5.0
1 cylinder,double acting	5.0
2 cylinders,single acting	5.0
2 cylinders,double acting	5.0
3 cylinder,single acting	5.0
3 cylinder,double acting	3.0
4 or more cyl.. single act	3.5
4 or more cyl.. double act	3.5
CONVEYORS	
Apron,Assembly,Belt,Chain	
Flight,Screw	1.5
Bucket	2.0
Live Roll,Shaker and Reciprocatio	3.5
▲★CRANES AND HOIST	
Main Hoist	.5
Skip Hoist	2.5
Slope	2.25
Bridge,Travel or Trolley	.5
DYNAMOMETER	1.5
ELEVATORS	
Bucket,Centrifugal Discharge	2.0
Freight or Passenger(Not Approved)	
Gravity discharge	2.0
ESCALATORS(Not Approved)	
EXCITER GENERATOR	1.75
EXTRUDER, PLASTICI	2.25
FANS	
Centrifugal	1.1
Cooling Tower	3.0
Forced Draft-Across the Line start	2.0
Forced Draft Motro Driven thru fluid or electric slip clutch	1.5
Gas Recirculating	2.5
Induced Draft with damper control or blade cleaner	2.0
Induced Draft without controls	3.0
FEEDERS	3.0
Apron,Belt,Disc,Screw	2.0
Reciprocation	3.5
GENERATORS	
Even Load	1.1
Hoist or Railway Service	2.0
Welder Load	3.0
HAMMERMUILL	2.5
LAUNDRY WASHER OR TUMBLER	3.0
LINE SHAFTS	
Any processing Machinery	2.0
MACHINE TOOLS	
Auxiliary and Traverse Drive	1.5
Bending Roll,Notching press. Punch Press, Planer, Plate Reversing	2.5
Main Drive	2.0
MAN LIFTS(Not Approved)	
METAL FORMING MACHINES	
Draw Bench Carriage and Main Drive	3.0
Extrude	3.0
Forming Machine and Forming Mills	3.0
Slitters	1.5
Wire Drawing or Flattening	2.5
Wire Winder	2.25
Coilers and Uncoilers	2.25
MIXERS(see Agitators)	
Concrete	2.5
Muller	2.5
PRESS,PRINTING	2.25
PUG MILL	2.5
PULVERIZERS	
Hammermill and Hog	2.5
Roller	2.0
PUMPS	
Centrifugal Constant Speend 1.1	
Frequent Speed Changes under Load	2.0
Descakling,with accumlators	2.0
Gear,Rotary, or Vane	1.75
Reciprocating	
1 cyl..single or double act.	3.0
2 cyl..single acting	3.0
2 cyl..double acting	2.5
3 or more cyliders	2.0
SCREENS	
Air Washing	1.5
Grizzly	3.0
Rotary Coal or Sand	2.0
Vibrating	3.5
Water	1.5
SKI TOWS & LIFTS(Not Approved)	
STEERING GEAR	1.5
STOKER	1.5
TUMBLING BARREL	1.5
WINCH,MANEUVERING Dredge,Marine	2.5
WINDLASS	2.0
WOODWDORKING	2.0
MACHINERY	1.5
WORK LIFT PLATFORMS(Not approved)	
Aiphabetical listing of industries	
AGGREGATE PROCESSING, CEMENT, MINING KILNS; TUBE,ROD AND BALL MILLS Direct or on L.S. shaft of Reducer, with final drive Machined Spur Gears	3.0
Single Helical or Herringbone Gears	2.25
Conveyors,Feeders,Screens, Elevators,See General Listing	
Crushers,Ore or Stone	3.5
Dryer, Rotary	2.0
Grizzly	3.0
Hammermill or Hog	2.5
Tumbling Mill or Barrel	2.5
BREWING AND DISTILLING	
Bottle and Can Filling Machines	1.5
Brew Kettle	1.5
Cookers,Continuous Duty	1.75
Lauter Tub	2.25
Mash Tub	1.75
Scale Hopper,Frequent Peaks	2.25
CLAY WORKING INDUSTRY	
Brick Press, Briquette Machine, Clay Working Machine, Plug Mill	.25

a. In case of a slide coupling that axial movement occurs more than five times per hour, add 0.5 to the service factor. When electric motors, generators, engines, compressors and other machines are assembled with sleeves or straight roller bearings, axial end float couplings should be used to protect the bearings. When ordering, also order limited end float discs with the coupling.
b. *Contact us for a balanced opposed design.
c. ▲When using in a place with risk to human safety, for safety reasons, consult us before using.
d. ★ Contact us for high peak load applications (such as Metal Rolling Mills)
e. Non-reversing safety factor: The required coupling torque is the same as the peak torque.
f. Reversing safety factor: The required coupling torque is twice the peak torque.

Engine Drive Service Factors

It is necessary to use a service factor for engine drives when the application involves good flywheel regulation to prevent torque fluctuations that are greater than ± 20%. If the torque fluctuation is greater, or if operation is close to serious critical or torsional vibration, a mass elastic study will be required.
To use Table 2, begin by selecting an application service factor from Table 1. Use that service factor to choose the appropriate engine service factor from Table 2. If the service factor from Table 1 is more than 2.5, please submit the complete application details to the factory for an engineering review.

Table 2. Engine Drive Service Factors

Number of cylinders	4 or 5					6 or more				
Service Factor	1.5	1.75	2.0	2.25	2.5	1.5	1.75	2.0	2.25	2.5
Engine Service Factor	2.5	2.75	3.0	3.25	3.5	2.5	2.75	3.0	3.25	3.5

For best results, measure the system characteristics with a torque meter. The service factors provided here are only a guide based on the usual ratio between the coupling catalogue rating and general system characteristics.

Torque Demands Driven Machine	Typical applications for Driven Equipment	Typical Service Factor
	Constant torque such as Centrifugal Pumps, Blowers and Compressors.	1.0
	Continuous duty with some torque variations including Plastic Extruders, Forced Draft Fans.	1.5
	Light shock loads from Metal Extruders, Cooling Towers, Cane Knife, Log Haul.	2.0
	Moderate shock loading as expected from a Car Dumper, Stone Crusher, Vibrating Screen.	2.5
	Heavy shock load with some negative torques from Roughing Mills, Reciprocating Pumps, Compressors, Reversing Runout Talbes.	3.0
	Applications like Reciprocating Compressors with frequent torque reversals, which do not necessarily cause reverse rotations.	Refer to WCC

Shrink Heating

1. Introduction

Heat shrinking is necessary and practical in industries that require more power and precision than is possible with other fitting methods.

2. Interference

1/1,000 to 15/10,000 (mm) of the shaft diameter d

3. Methods and Procedures for Fitting

A) If you use a key, put the key on the shaft first and lubricate it. If there is no key, do not apply lubricant.
B) Before fitting the hub on to the shaft, with the steel flexible coupling insert the tv cover and oil seal first. In case of the gear coupling, insert the sleeve, side cover first.
C) To heat, choose one of the following methods and heat to 135˚C:

① Oxy-acetylene or blow-torch heating	Mark near the surface of the hub with a crayon that melts at 135˚C. Then pass the flame through the inner diameter to heat it. Do not put heat directly on the tooth surface during heating, or heat only one side.
② Heating in a furnace	Set the thermometer to 135˚C and heat for at least three minutes per 1mm thickness. Avoid direct contact with heat sources during heating.
③ Oil bath heating	Put the hub in oil with a boiling point of 177℃ or higher and heat it for six minutes per 1mm thickness. Do not let the surface of the hub touch the bottom of the container during heating.

4. Mount the hub as soon as possible to prevent heat loss.

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