

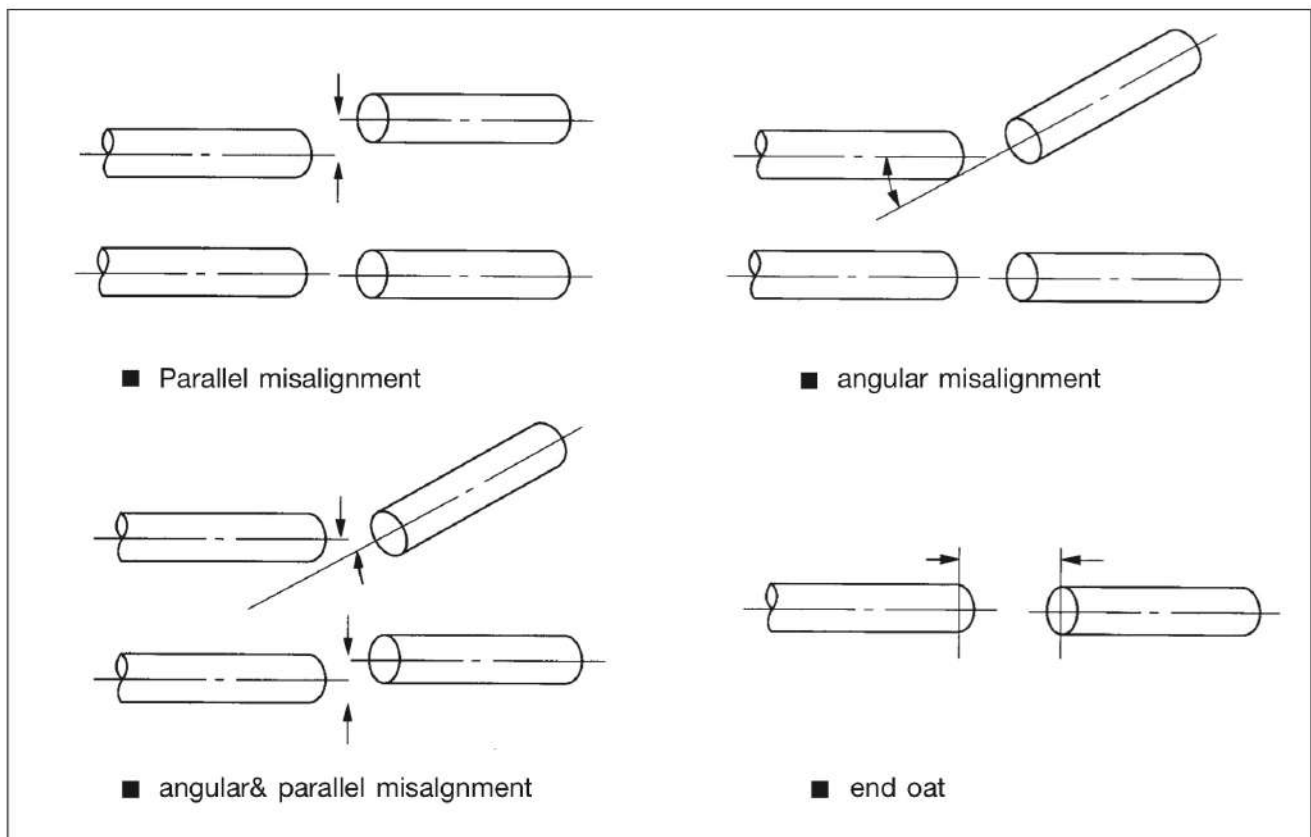


DISC FLEXIBLE COUPLINGS

Characteristic

1. No lubrication
No moving parts in Disc-ex coupling therefore lubrication is not necessary.
2. Maintenance free
All metal construction and no wearing parts need no maintenance.
3. Simple design, light weight and high torque.
Two hubs, one center member, one disc pack and several bolts form the basic coupling Disc-ex couplings are available in wide range of size to meet variable operation conditions.
4. Disc-ex couplings are designed to allow axial, angular and parallel and parallel misalignment.
5. No backlash and high torsional stiffness.
Disc-ex couplings allow no backlash and high torsional stiffness.
6. High performance
High temperature do not effect the all metal construction.
7. Easy to mount and dismount.
Disc-ex couplings have small number of parts and simple constructions which allow quick and easy mounting and dismounting work.
8. Safety measure.
When a severe over load may damage the couplings, the transmitting rotation will be continued through bolts.

Type of misalignment

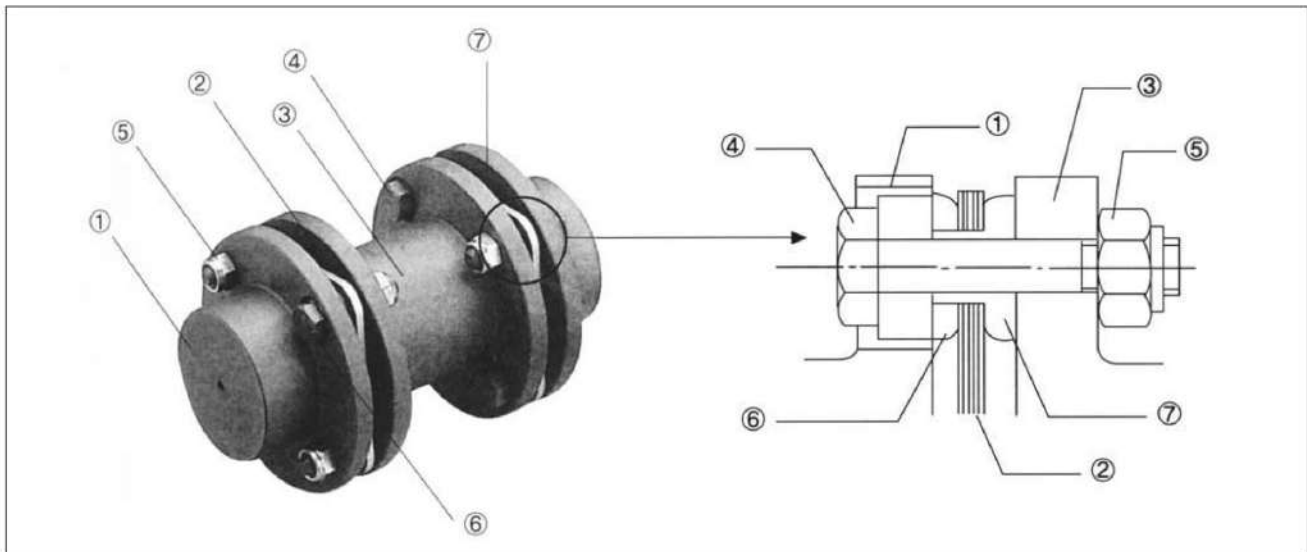


The shafts may be misaligned by various causes, such as heat, vibration and worm bearing etc.

When the initial alignment is not correct and heavy stress is imposed on the coupling life time is shontened.

Any or all of the misalignments shown in the above illustrations are present in all connected drives.

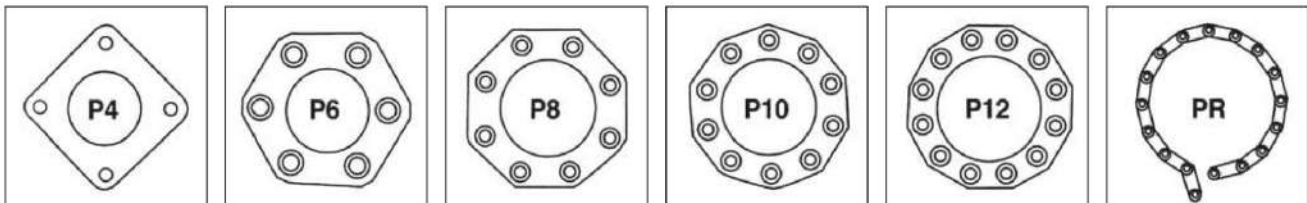
Structure



Part details

- | | |
|----------------------|----------------------|
| ① Flange : SM45C | ⑤ Lock Nut : SM45C-H |
| ② Disc pack : STS304 | ⑥ Over Load Bush |
| ③ Spacer : SM45C | ⑦ Washer |
| ④ Bolt : SM45C-H | |

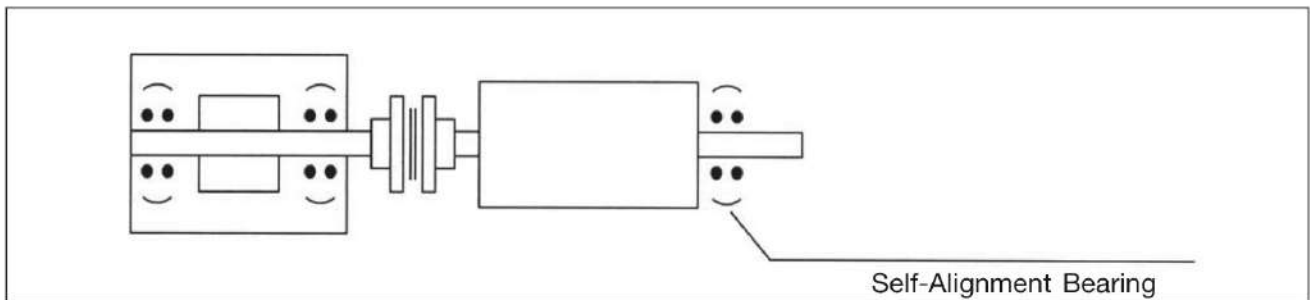
Kinds of disc-pack



Characteristic

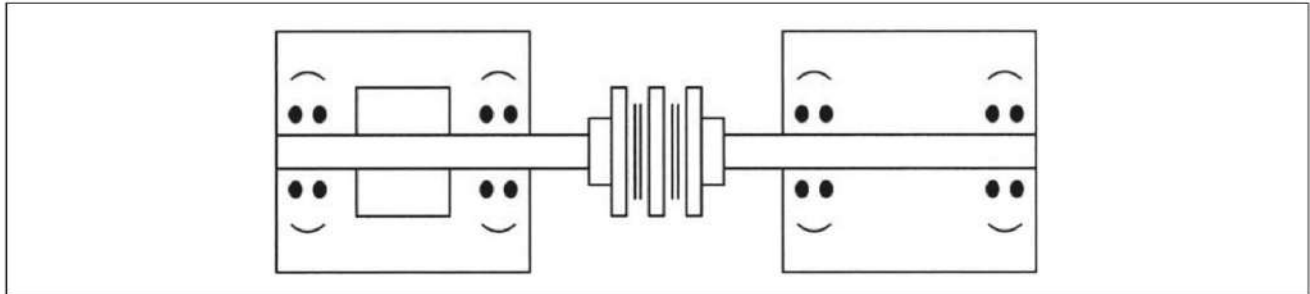
1. Single DISC-FLEX coupling

Is used where shafts are supported by three bearings.
The coupling allow large radial load, angular and axial misalignment.



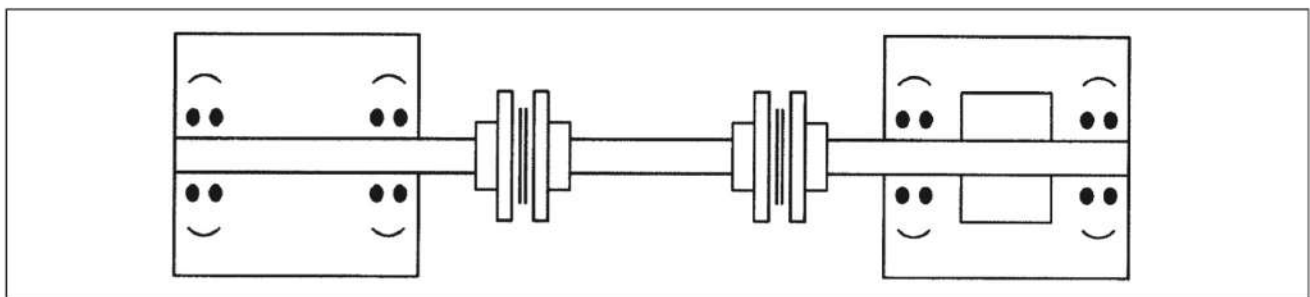
2. Double DISC-FLEX coupling

In case both shafts are supported by two bearings double DISC-FLEX coupling must be used. The coupling allow angular, axial and parallel misalignment. The bearings should be placed reasonably.



3. Floating shaft DISC-FLEX coupling

Are used to connect two equipment remotely aligned. In addition to above types other types are available on customers order.



Characteristic

1. Selection method of size

Obtain maximum torque

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

T_{max} = maximum torque

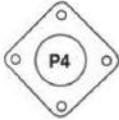
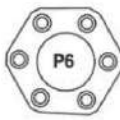
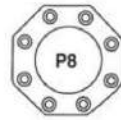
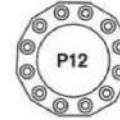
P = Input power (kw)

n = Working revolution (rpm)

$S.f$ = Recommended service factor

2. Selection procedure

- ① Determine spacer length and select type.
- ② By using above formula, calculate torque.
- ③ Select coupling size equal to or larger than the design torque.
- ④ Check limiting conditions :
 - Maximum bore
 - Space limitation
 - End oat
 - Maximum speed
 - Necessity of dynamic balance

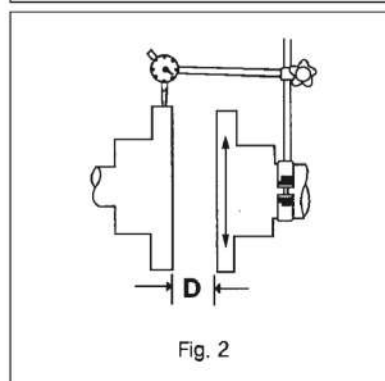
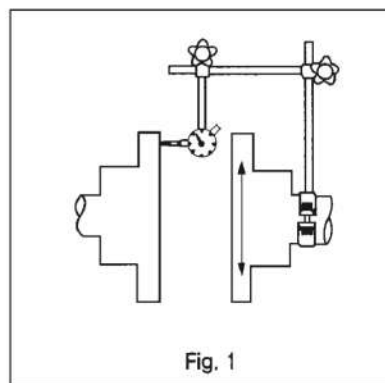
Type of disc-plate							
Usage		P4	P6	P8	-	-	-
Single disc-ex		P4	P6	P8	-	-	-
Double disc-ex	short space	P4-sD	-	-	-	-	-
	standard space	P4-D	P6-D	P8-D	(P10)	(P12)	(R4)
Floating disc-ex	custom space	P4-F	P6-F	P8-F	(P10-F)	(P12-F)	(RB)
	horizontal	P4-FH	P6-FH	P8-FH	(P10-FH)	(P12-FH)	(RH)
Floating disc-ex	vertical	P4-FV	P6-FV	P8-FV	(P10-FV)	(P12-FV)	(RV)
(Torque range (Nm.))		3.4~650	58~13,070	382~18,150	1,379~26,130	1,669~31,936	MAX~100X10

General Instruction for Installation

Correct installation and alignment will assure longer life and smooth, trouble free service.

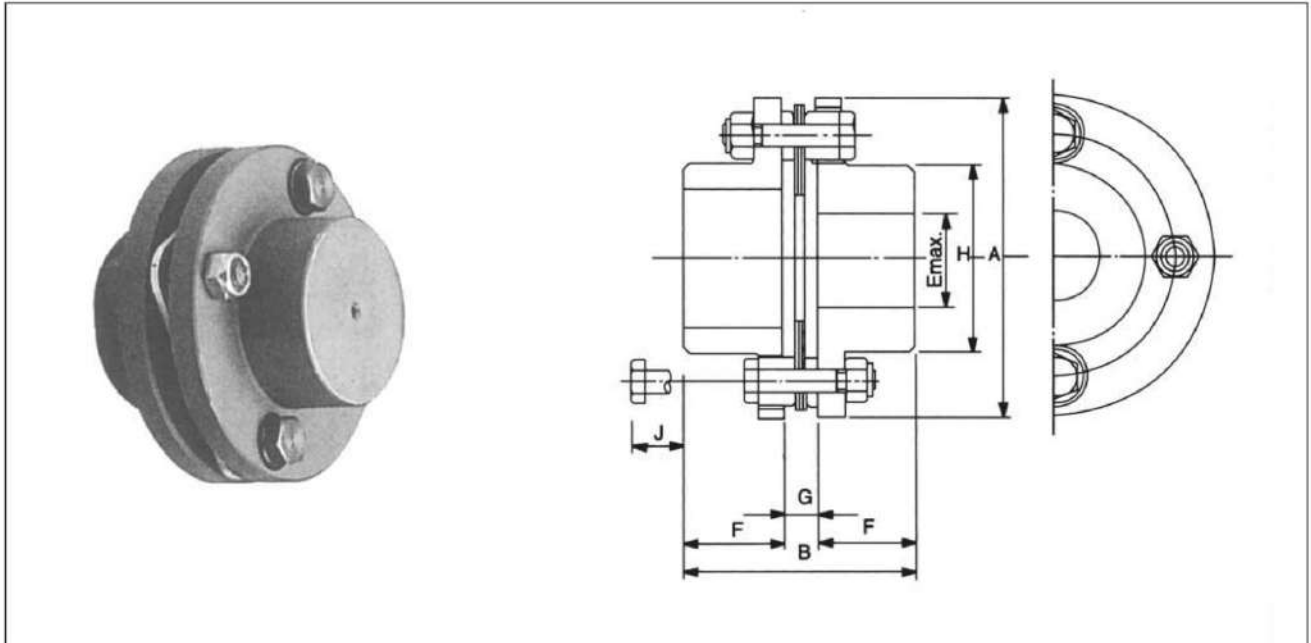
1. Check that shaft, hub bore and keyway have been cleaned completely.
2. Check Angular misalignment (g.1)
 - ① Install dial indicator to hub and rotate the hub to locate point of minimum. Reading the number set dial to zero.
 - ② Rotate coupling 360°, read indicator for misalignment value. Driver and driven should be lined up when dial indicator comes within maximum allowable gures.
3. Parallel misalignment (g.2)
 - ① Install dial indicator to driving hub, rotate driven hub and read indicator number.
 - ② Move of shim units so that parallel misalignment is brought within the maximum allowable variations.
4. Referring to diagrams on page 45 assemble the coupling.

For longer service life, recheck the coupling for angular and parallel misalignment after 12 hours operation and fasten the bolts/nuts by rated torque.



Dimensions

P4-00S (Single Disc Flex)

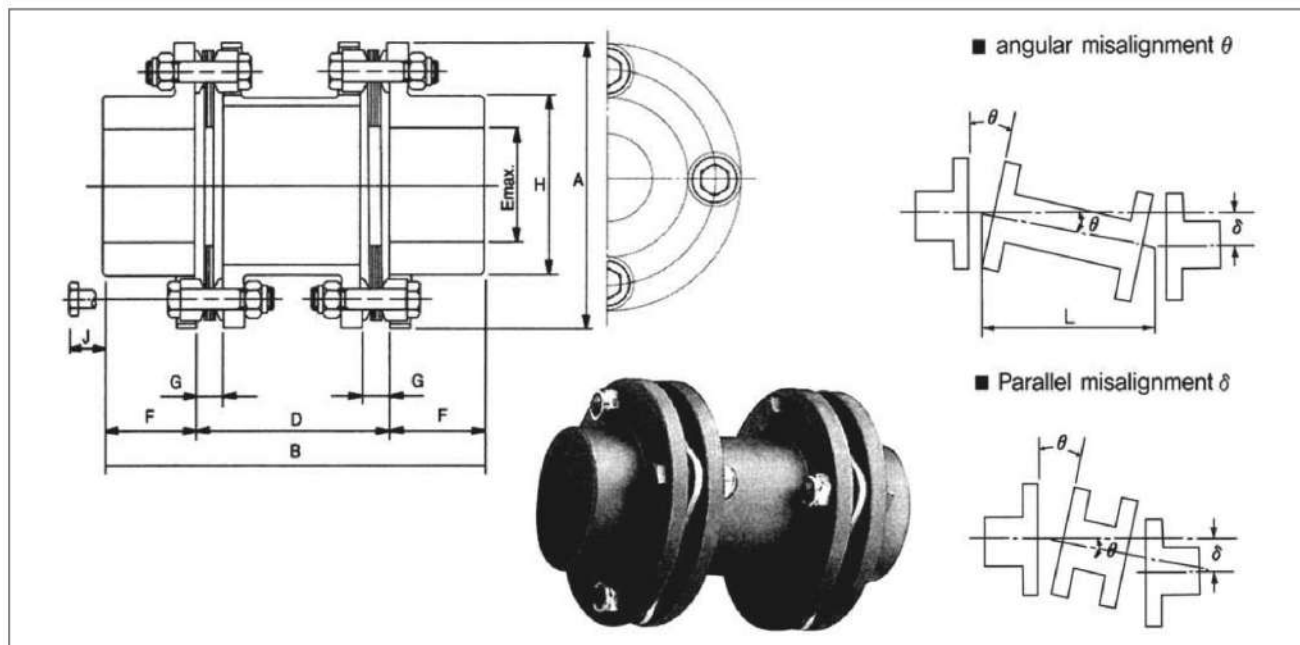


Size	Torque (Nm.)				Radial Load	Max. Speed (rpm)	Max. Bore (mm)	Dimensions (mm)						Weight (kgs)	GD ² 1kg (m ²)
	Max (Nm.)	1/3 Load	2/3 Load	Max. Radial Load				Emax.	A	B	F	G	H		
05S	34	15	12	0.8	15	47,000	23	67	55.8	25	5.8	33	16	0.6	8
10S	92	41	32	2.3	25	39,000	32	81	57.1	25	7.1	46	16	1.1	24
15S	180	81	63	4.5	56	34,000	35	93	66.4	29	8.4	51	24	1.7	48
20S	250	113	87	6.0	83	30,000	42	104	79	34	11	61	30	2.5	80
25S	430	193	160	11.0	120	25,000	50	126	93.2	41	11.2	71	27	4.3	224
30S	790	355	276	20.0	180	22,000	58	143	108.5	48	12.5	84	28	6.9	440
35S	1,300	585	455	32.5	270	19,000	74	168	130	57	16	106	26	11.3	1,080
40S	2,100	945	734	52.5	380	16,000	83	194	145	64	17	118	30	16.7	2,080
45S	3,400	1,530	1,190	85	450	15,000	95	214	174.8	76	22.8	137	34	22.7	3,520
50S	5,000	2,250	1,710	125	610	13,000	109	246	202	89	24	156	26	35.4	7,200
55S	6,000	2,920	2,270	163	770	11,000	118	276	230	102	26.1	69	42	52.0	12,800

P4-00D (Double Disc Flex)

P4 (Standard) P4-00D

P4 (Short) P4-00SD

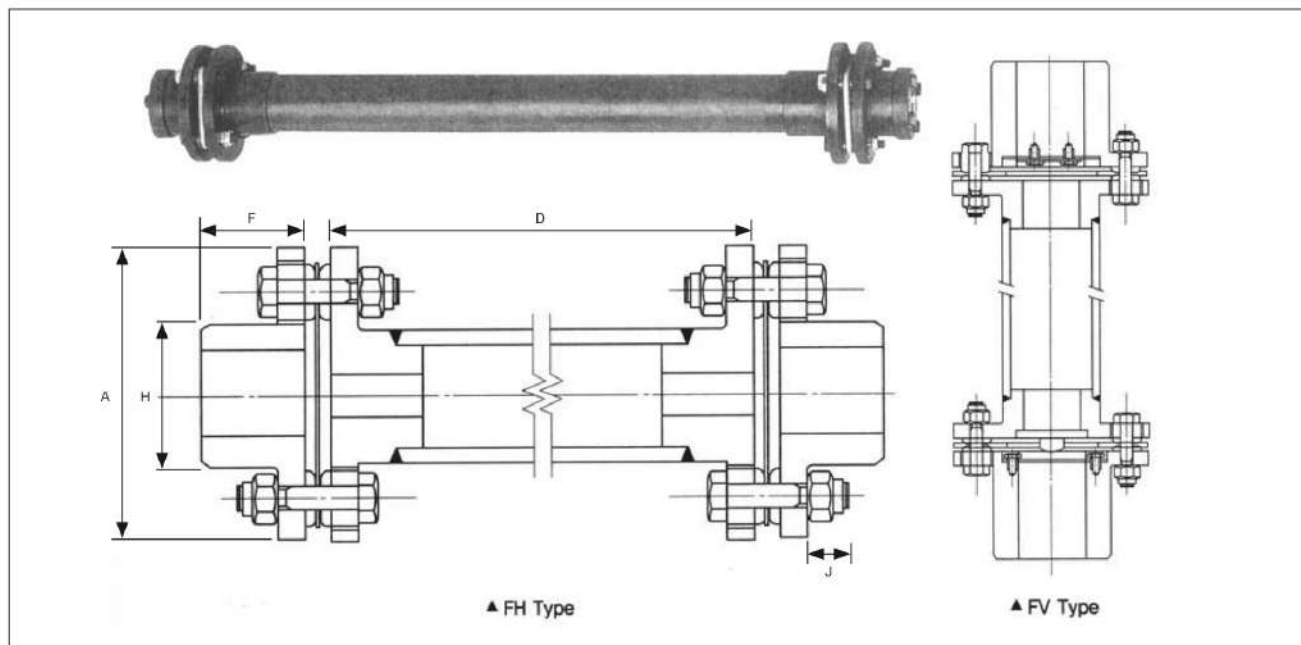


(Common)			W4-00D (Standard)			W4-00SD (Short)			W4-00F(Custom)		
Size	Torque (Nm.)	Max. Speed (rpm)	D (mm)	Cplg wt (kg)	GD ² (kg.cm ²)	D (mm)	Weight (kg)	GD ² (kg.cm ²)	B (mm)	D (mm)	D Max. (mm)
05D	34	47,000	88.9	1.2	18	36	1.1	17.8	2F+D	Cousult Techno Drive	200
10D	92	39,000	88.9	1.9	44	39	1.7	41			200
15D	180	34,000	101.6	2.9	84	47	2.7	79			250
20D	250	30,000	127.0	7.1	396	53	6.6	136			250
25D	430	25,000	127.0	7.1	386	62	6.6	337			350
30D	790	22,000	127.0	10.8	800	69	10.3	775			300
35D	1,300	19,000	127.0	16.3	1,680	78	15.6	1,628			300
40D	2,100	16,000	139.7	24.7	3,400	89	34.0	3,317			350
45D	3,400	15,000	152.4	32.5	5,600	97	31.5	5,428			350
50D	5,000	13,000	177.8	50.0	11,200	109	48.4	10,865			350
55D	6,000	11,000	177.8	75.0	20,400	134	73.9	20,127			400

※ Refer to the previous page for dimensions

(Floating Disc Flex)
(Horizontal) P4-00FH

FV (Vertical) P4-00FV



Size No.	Torque (Nm.)	A (mm)	D min (mm)	F (mm)	H (mm)	J (mm)	(1) (kg)		(2) GD ² (kgf . m)	
							Ⓐ W ₁ D min	W ₂	Ⓑ D min	GD ²
10F	92	81	72.2	25	46	16	1.9	0.029	50	0.44
15F	180	93	75.8	29	51	22	3.0	0.032	98	0.59
20F	250	104	88.4	34	61	20	4.3	0.039	168	1.10
25F	430	126	99.4	41	71	25	7.5	0.075	442	2.82
30F	790	143	111.4	48	84	28	11.7	0.110	922	6.03
35F	1,300	168	141.6	57	106	23	18.7	0.139	2,032	12.33
40F	2,100	194	154.0	64	119	30	28.3	0.161	3,839	19.21
45F	3,400	214	183.2	76	137	22	38.3	0.186	6,857	29.65
50F	5,000	246	211.8	89	157	23	58.2	0.250	13,639	52.73
55F	6,000	276	102	170	40	81.9	0.310	25,552	76.53	202

1. Total weight can be calculated by using following equation.

$$W = W_1 \text{ Ⓐ } D_{min} + L \times W_2 \text{ inertia effect factor}$$

$$L : D - D_{min} \text{ (cm)}$$

2. Total inertia effect can be calculated by using following equation.

$$GD^2 = \text{Ⓑ } D_{min} + L \times GD^2 \text{ inertia effect factor}$$

(Double Disc Flex)

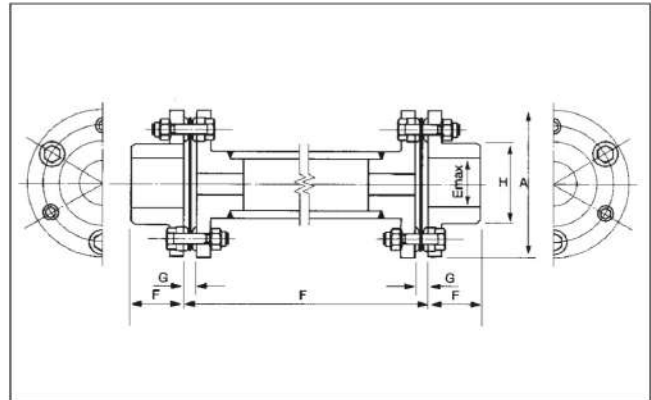
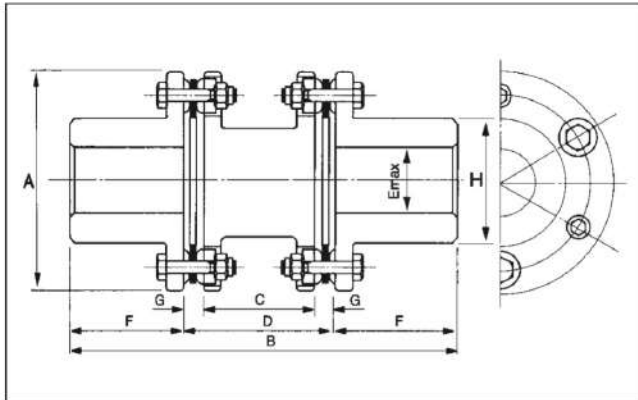
(Floating Disc Flex)

P6-00D (Double Standard Spacer)

P6-00F (Double Custom Spacer)

P6-00FH (Floating Horizontal)

P6-00FV (Floating Vertical)



Size No.	Torque (Nm.)	A (mm)	B (mm)	C (mm)	P6	FH FV	Emax (mm)	F (mm)	G (mm)	H (mm)	Max (rpm)	W (kg)	GD ² (kgf . m)	(±mm)
					(1)D (mm)	(1)D (mm)								
00	580	119	168	39.4	60	97	51	54	10.3	74	26,000	6.0	0.03	3.0
01	940	137	198	50.0	72	110	55	63	11.0	81	23,000	9.1	0.065	3.4
02	1,740	161	238	66	90	129	67	74	12	97	19,000	16.9	0.14	3.6
03	3,410	180	269	81	109	141	72	80	14	104	17,000	22.6	0.26	4.2
04	5,000	212	308	84	118	150	85	95	17	124	15,000	35.1	0.59	4.5
05	6,200	276	377	118	153	255	111	112	17.5	161	11,600	65.1	1.8	3.9
10	8,400	276	377	115	153	258	111	112	19.0	161	11,600	66.1	1.9	3.9
15	10,900	308	440	134	172	278	133	134	19.0	193	10,300	107.8	3.7	4.2
20	18,200	346	497	146	191	283	152	153	22.5	218	9,200	156.1	6.7	4.8
25	26,900	375	553	167	223	308	165	165	28	240	8,500	211.8	10.6	5.2
30	34,100	410	610	192	254	319	178	178	31	258	7,800	274.5	16.5	5.4
35	40,700	445	646	208	270	349	187	188	31	272	7,200	333.3	23.9	5.6
40	47,200	470	686	206	274	342	205	206	34	297	6,800	399.2	30.7	6.3
45	61,000	511	749	221	287	364	231	231	35.5	334	6,200	525.3	48.0	6.7
50	76,200	556	800	218	292	365	254	254	37	364	5,700	676.3	72.9	7.3
55	94,400	587	839	236	311	408	263	263	37.5	382	5,400	803.4	100.6	7.8

※ Dimension "D" can be adjusted on order (PD6-00F type). Rotating speed limits shown in above table are based on standard pipe. For rotation speed over this limits, please consult us.

(Double Disc Flex)

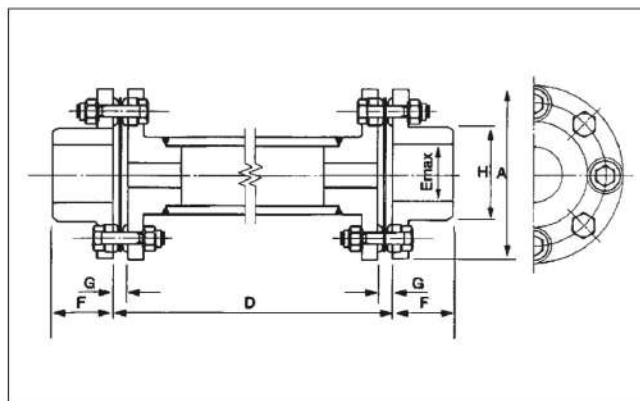
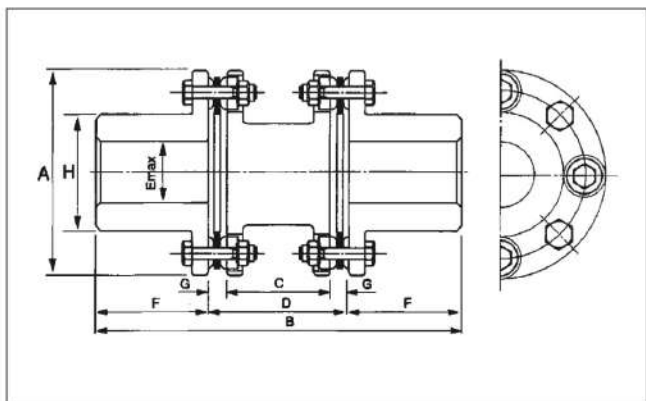
(Floating Disc Flex)

P8-00D (Double Standard Spacer)

P8-00F (Double Custom Spacer)

P8-00FH (Floating Horizontal)

P8-00FV (Floating Vertical)



Size No.	Torque (Nm.)	A (mm)	B (mm)	C (mm)	P8	FH FV	Emax (mm)	F (mm)	G (mm)	H (mm)	Max (rpm)	W (kg)	GD ² (kgf . m)	(±mm)
					(1)D (mm)	(1)D (mm)								
01	3,920	214	333	92.6	117	240	95	108	12.2	137	15,000	38.0	0.65	2.1
03	7,260	246	369	99.6	127	269	108	121	13.7	156	13,000	55.5	1.24	2.1
05	9,150	276	421	118	153	255	111	134	17.5	161	11,600	72.2	1.8	2.1
10	11,000	276	421	115	153	258	111	134	19.0	161	11,600	73.3	1.8	2.1
15	15,700	308	492	134	172	278	133	160	19.0	193	10,300	119.7	3.7	2.4
20	26,100	346	557	146	191	283	152	183	22.5	218	9,200	174.3	6.8	2.9
25	38,500	375	619	167	223	308	165	198	28.0	240	8,500	233.8	10.8	3.1
30	48,100	410	682	192	254	319	178	214	31.0	258	7,800	305.3	16.7	3.3
35	58,200	445	720	208	270	339	187	225	31.0	272	7,200	367.4	25.0	3.6
40	65,700	470	768	206	274	342	205	247	34.0	297	6,800	447.5	31.1	4.0
45	85,300	511	843	221	287	364	231	278	35.5	334	6,200	591.6	48.0	4.5
50	105,300	556	902	218	292	365	254	305	37.0	364	5,700	761.4	74.7	5.0
55	130,700	587	945	236	311	408	263	317	37.5	382	5,400	901.9	101.6	5.2

※ Dimension "D" can be adjusted on order (PD8-00F type).

Rotating speed limits shown in above table are based on standard pipe.

For rotation speed over this limits, please consult us.

Rotation limitations for standard oating shaft coupling

▼ 4 Bolts Type (P4-TYPE)

Size No.	Maximum Shaft Diameter (mm)		Maximum Span DMax (mm) for Various Speed (rpm)								
	standard Hub	Z(K) Hub	1,800	1,500	1,200	1,000	900	750	720	600	500
10	32	40	1,610	1,760	1,970	2,160	2,280	500	2,550	2,790	3,060
15	35	42	1,690	1,850	2,070	2,270	2,390	2,620	2,670	2,930	3,210
20	42	48	1,880	2,050	2,300	2,520	2,650	2,910	2,970	3,250	3,560
25	50	60	2,010	2,210	2,470	2,700	2,850	3,120	3,190	3,490	3,830
30	58	70	2,220	2,430	2,720	2,980	3,140	3,440	3,510	3,850	4,210
35	74	85	2,500	2,740	3,060	3,350	3,540	3,870	3,950	4,330	4,750
40	83	95	2,690	2,950	3,300	3,610	3,800	4,180	4,250	4,660	5,120
45	95	110	2,890	3,170	3,540	3,880	4,090	4,490	4,570	5,010	5,500
50	109	120	3,100	3,400	3,800	4,160	4,390	4,820	4,910	5,370	5,900
55	118	130	3,230	3,540	3,960	4,330	4,560	5,010	5,100	5,590	

▼ 6 Bolts Type (P6-TYPE)

Maximum distance between shaft end DMax (mm) for Various Speed (rpm)										
Size No.	standard Hub	1,800	1,500	1,200	1,000	900	750	720	600	500
00	51	2,010	2,210	2,470	2,700	2,850	3,120	3,190	3,490	3,830
01	55	2,220	2,430	2,720	2,980	3,140	3,440	3,510	3,850	4,210
02	67	2,500	2,740	3,060	3,350	3,540	3,870	3,950	4,330	4,750
03	72	2,890	3,170	3,540	3,880	4,090	4,490	4,570	5,010	5,500
04	85	3,100	3,400	3,800	4,160	4,390	4,820	4,910	5,370	5,900
05	111	3,100	3,400	3,800	4,160	4,390	4,820	4,910	5,370	5,900
10	111	3,100	3,400	3,800	4,160	4,390	4,820	4,910	5,370	5,900
15	133	3,230	3,540	3,960	4,330	4,560	5,010	5,100	5,590	
20	152	3,720	4,070	4,560	4,990	5,250	5,770	5,880		
25	165	3,720	4,070	4,560	4,990	5,250	5,770	5,880		

▼ 8 Bolts Type (P8-TYPE)

Maximum distance between shaft end DMax (mm) for Various Speed (rpm)										
Size No.	standard Hub	1,800	1,500	1,200	1,000	900	750	720	600	500
01	95	2,890	3,170	3,540	3,880	4,090	4,490	4,570	5,010	5,500
03	108	3,100	3,400	3,800	4,160	4,390	4,820	4,910	5,370	5,900
05	111	3,100	3,400	3,800	4,160	4,390	4,820	4,910	5,370	5,900
10	111	3,100	3,400	3,800	4,160	4,390	4,820	4,910	5,370	5,900
15	133	3,230	3,540	3,960	4,330	4,560	5,010	5,100	5,590	
20	152	3,720	4,070	4,560	4,990	5,250	5,770	5,880		
25	165	3,680	4,030	4,510	4,940	5,200	5,710	5,810		