Flange Flexible Coupling

Characteristic & Merit

When connecting the line shaft, flexible flange coupling has many advantages with simple assembly / disassembly and extremely lowest price

1) Transmits power smoothly.

2) Absorb shock load and vibration.

3) Easy Replacement of parts.

4) Simple construction.

5) Easy assembly and disassembly

Application

1) To prevent the transmission under vibration and shock

2) To transmit power under parallel misalignment or angular misalignment.

3) To transmit power under end floating.

4) When reverse revolution is required.

5) When smooth starting is required.

** Principal use: Pump, Blower, Compressor, Speed, changer gear, Converyor, Crane, Hoist, Chemical machine, Construction machine, Cement mixer, Tractor, Metal processing machine, Rolling mill, Bending machine, Textile machine, Spinning and Weaving machinery.

Structure and Material

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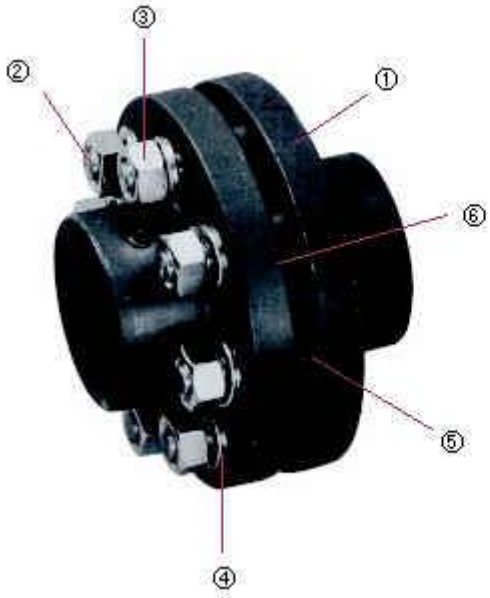
Woo Chang



1. Flange Hub
2. Reamer Bolt
3. Nut
4. Spring Washer
5. Bush
6. Plain Washer

The parts material of WCC Flange Coupling are as follows.

1) Flange Hub : KS D4301의 GC20 또는 KS D3710의 SF45

2) Reamer Bolt : KS D

3) Nut : KS D3503의 SS41

4) Spring Washer :KS D3559의 HSWR62B 또는 HSWR5

5) Bush : KS M6617의 NBR (HS=70)

6) Plain Washer : KS D3503의 SS41

Selection Method of Size

1) Selection method

① From the flowing formula, obtain Design torque required.

$$T = 97{,}400 \frac{H'}{N} \times S \cdot F \quad \text{또는} \quad T = 71{,}620 \frac{H'}{N} \times S \cdot F$$

T = Maximum Torque(Kg · m)　　H' = Power(kg)　　H = Power(HP)
N = Working revolution (rpm)　　S · F = Recommended service factor

② Select the size by comparing with basic torque, which has the same of greater value. And then check it's suitability for application bore dia meter.

③ Special requirements
a. Adopt the minimum N when there are both common transmitting N and also minimum N
b. Be careful that service factor of the reverse revolution and irregular operation must be twice to the normal condition
c. Use the peak power, when there are both common transmitted power and peak power in a system.

2) Example

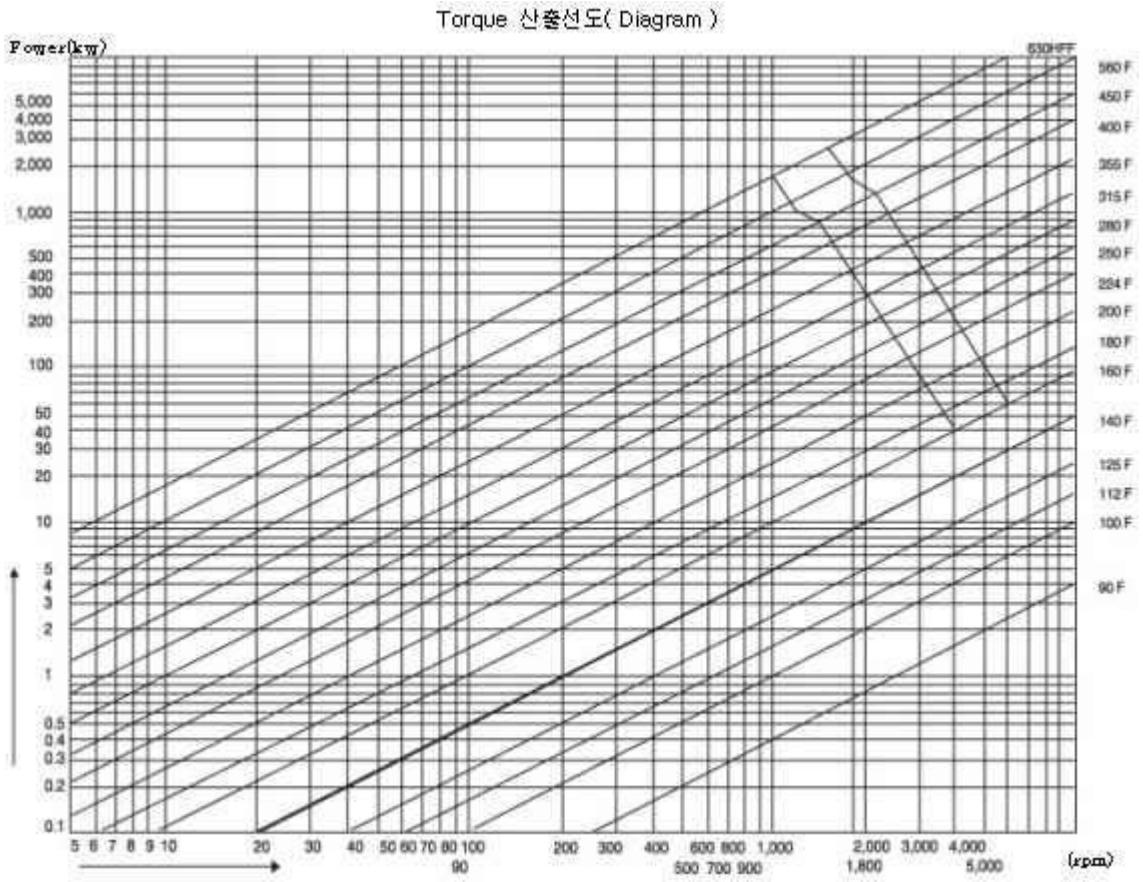
Select a Coupling to connect a 50HP, 1,750rpm Motor and Vane Blower. Motor shaft dia is 42mm And blower's 55mm

① Service factor of Vane Blower is 1.75

② Multiply service factor to normal operating power. This will provide a Design torque

$$\text{Torque}(kg \cdot m) = \frac{30 \times 71{,}620 \times 1.75}{1{,}750} = 3{,}581$$

③ Size 224F is selected according to transmitting Torque 3,581kg.cm. The size 224F allow the Application Shaft Dia. By comparing speed Max Rpm, the size 224F is also O.K.



Designation

WCC — 224 — F

- F: 형식기호(Mark of Type) F: Flange Flexible R: Rigid S: Spacer
- 224: 규 격(Size No.)
- WCC: 회사의 약칭(Woo Chang Coupling)

Instruction for Installation

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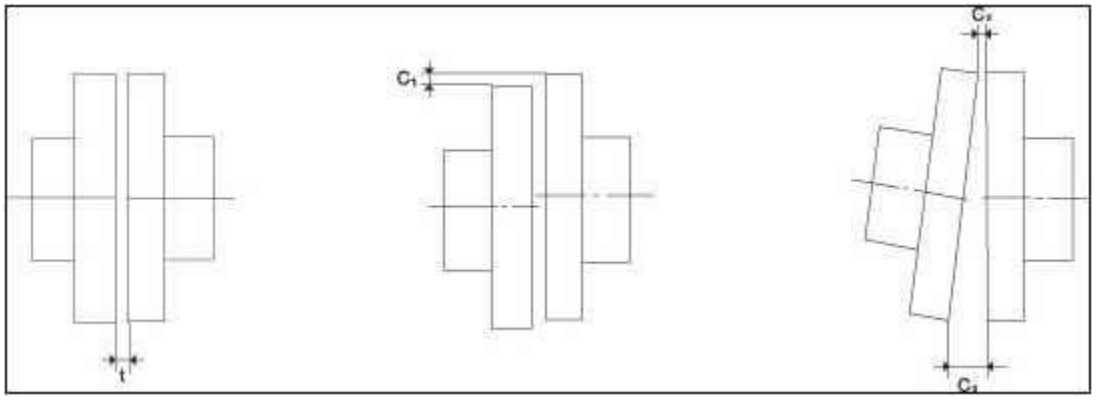
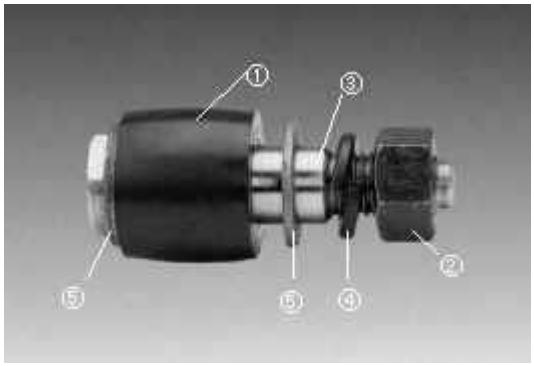
1) When Flange outside diameter fits tighting with-out gap, you must set the center to the driving and the driven shaft precisely

2) To maintain rubber bush for a long time, make C1 C2, C3 within 0.05mm as the following figures.

3) The value of 't' is equivalent to thichness of washer .





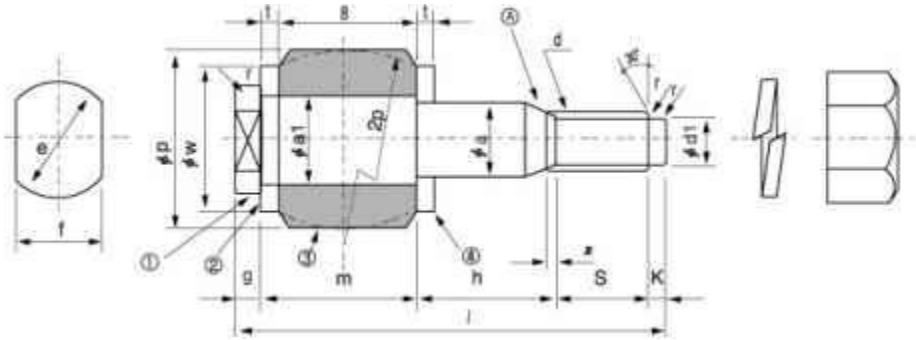
1.Bush

2.Nut

3.Reamer Bolt

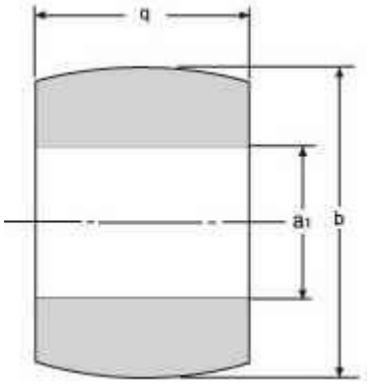
4.Washer

5.Plain Washer



		Reamer Bolt

호칭 α * l	Coupling Size	나사호칭 d	a_1	a	d_1	e	f	g	m	h	s	R	i	R(약)
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	M20	28	25	18	34	30	6	32	39	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	12



호칭 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	22.4	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

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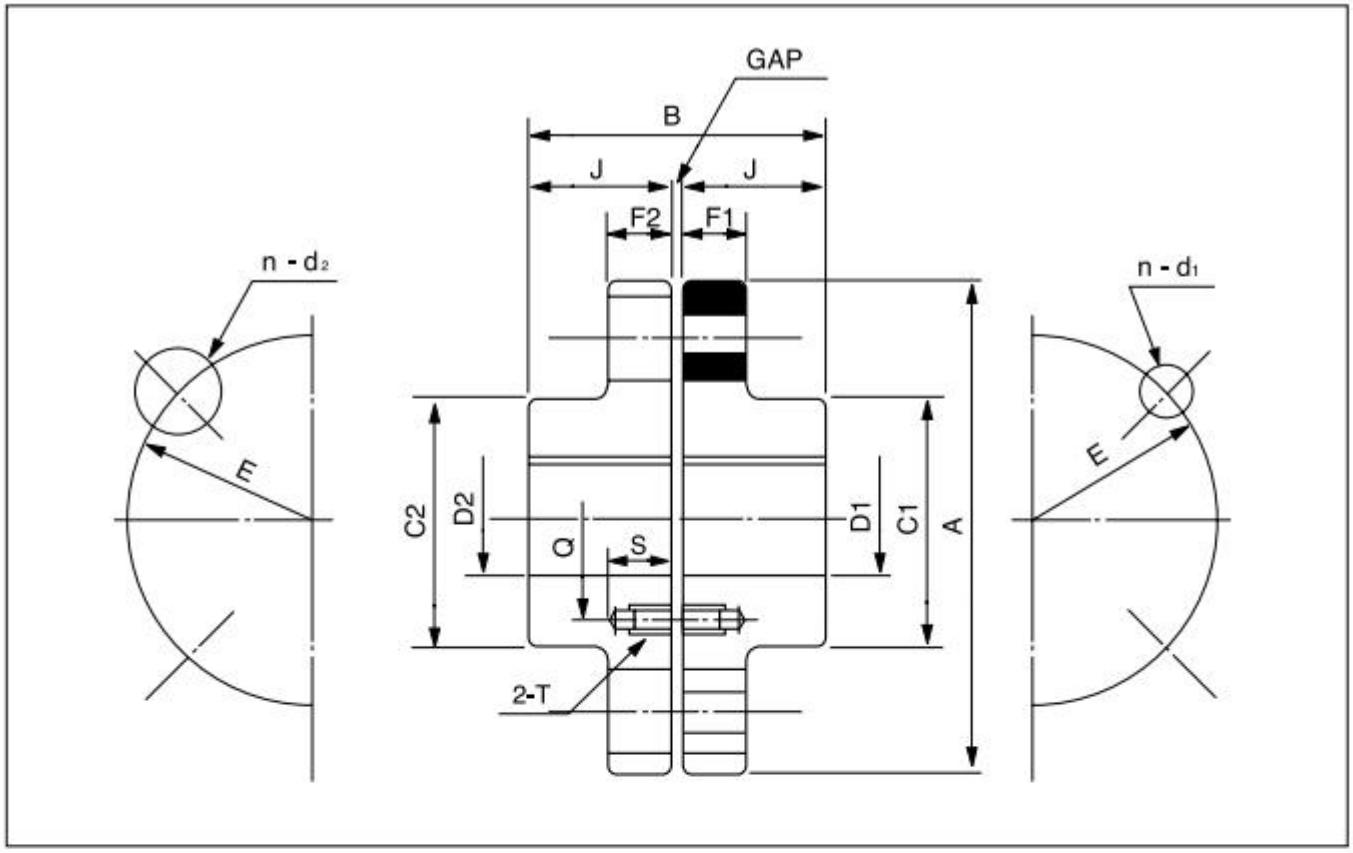
Dimensions

▣▣ Type 00F



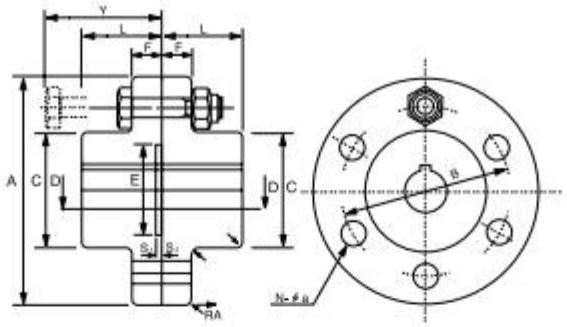
Size	Max. Speed (rpm)	Basic Torque (kg · cm)	Bore Dia (mm) Max.		Bore Dia (mm) Min.		Dimensions (mm)										Gap (mm)	Bolt Hole			Cplg wt (kg)	Size
			D_1	D_2	D_1	D_2	A	B	C_1	C_2	E	F_1	F_2	J	Q	T	S		n	d_1	d_2	
90F	4,000	50	20	–	90	59	35.5		60		14		28					4	8	19	1.4	90F
100F	4,000	100	25	–	100	74	42.5		67		16		35.5					4	10	23	2.1	100F
112F	4,000	161	28	16	112	83	50		75		16		40					4	10	23	2.7	112F
125F	4,000	250	32	28	18	125	93	56	50	85		18		45				3	4	14	32	3.5	125F
140F	4,000	501	38	35	20	140	103	71	63	100		18		50					6	14	32	4.9	140F
160F	4,000	1,120	45		25	160	115	80		115		18		56	–	–	–		8	14	32	6.8	160F
180F	3,500	1,607	50		28	180	129	90		132		18		63					8	14	32	9.6	180F
200F	3,200	2,503	56		32	200	146	100		145		22.4		71					8	20	41	13.2	200F
224F	2,850	4,003	63		35	224	164	112		170		22.4		80					8	20	41	18.4	224F
250F	2,550	6,302	71		40	250	184	125		180		28		90				4	8	25	51	26	250F
280F	2,300	10,032	80		50	280	204	140		200	28		40	100					8	28	57	36.5	280F
315F	2,050	16,071	90		63	315	228	160		236	28		40	112	140				10	28	57	49.1	315F
355F	1,800	25,032	100		71	355	255	180		260	35.5		56	125	140	M20	51		8	35.5	72	74.9	355F
400F	1,600	40,031	110		80	400	255	200		300	35.5		56	125	160				10	35.5	72	94.3	400F
450F	1,400	63,018	125		90	450	285	224		355	35.5		56	140	180			5	12	35.5	72	127.8	450F
560F	1,150	100,030	140		100	560	325	250		450	35.5		56	160	200	M22	54		14	35.5	72	206.3	560F
630F	1,000	160,028	160		110	630	365	280		530	35.5		56	180	220				18	35.5	72	277.0	630F

※ Coupling 중량은 내경 가공이 없는 상태의 수치임.

※Coupling weight, without bore machining

▣▣ Type 00R / Type 00S

〈Type OO R〉



Size A×F	Max. Speed (rpm)	Basic Torque (kg · m)	Bore Dia (mm)		Dimensions (mm)										Cplg wt (kg)	GD² (kgf-m²)
					A	L	C	B	F	N-a	Spigot and Socket			Y		
			Max.	Min.							E	S²	S'			
112R	4,000	6.3	28	16	112	40	50	75	16	4-10	40	2	3	70	2.78	0.0163
125R	4,000	9.0	32	18	125	45	56	85	18	4-14	45	2	3	81	3.76	0.0276
140R	4,000	18.0	38	20	140	50	71	100	18	6-14	56	2	3	81	5.06	0.0449
160R	4,000	35.0	45	25	160	56	80	115	18	8-14	71	2	3	81	6.98	0.0788
180R	3,500	50.0	50	28	180	63	90	132	18	8-14	80	2	3	81	9.23	0.129
200R	3,200	71.0	56	32	200	71	100	145	22.4	8-16	100	3	4	103	14.4	0.255
224R	2,850	100.0	63	35	224	80	112	170	22.4	8-16	100	3	4	103	18.4	0.405
250R	2,550	140.0	71	40	250	90	125	180	28	8-20	112	3	4	126	27.8	0.763
280R	2,300	200.0	80	50	280	100	140	200	28	8-20	125	3	4	126	38.9	1.37
315R	2,050	280.0	90	63	315	112	160	236	28	10-20	140	3	4	126	51.2	2.23
355R	1,800	400.0	100	71	355	125	180	260	35.5	8-25	160	3	4	157	81.4	4.67