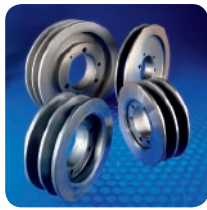
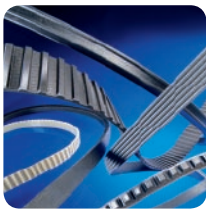


# SKF Power transmission products



# Couplings



# SKF Flex couplings

Selection



SKF Flex combines excellent vibration dampening and shock loading capacity with unrivaled misalignment accommodation to provide a high performance coupling solution.

Easy to install and maintenance free, SKF Flex is available with both bored to size (B) and taper bush mounting. Taper bush mounting includes face (F), hub (H) and a more versatile reversible option (R) that allows for the mounting orientation (F or H) to be decided at installation. SKF Flex flanges are phosphate coated for improved corrosion resistance. A complete coupling consists of 2 flanges and 1 tyre.

## Selection

### Service Factor

- Determine the required service factor from the table below.

### Design Power

- Multiply the normal running power by the service factor. This gives the design power for coupling selection.

### Coupling Size

- Using the Power Ratings table read across from the appropriate speed until a power greater than the design power is found. The required SKF Flex coupling is given at the head of the column.

### Bore Size

- Using the dimensions table check that chosen flanges can accommodate both driving and driven shafts.

The addition of a standard sized spacer flange can be used to accommodate applications where it is advantageous to move either shaft axially without disturbing either driving or driven machines.

SKF Flex tyres are available in natural rubber compounds for use in ambient temperatures between -50 °C and +50 °C. Chloroprene rubber compounds are available for use in adverse operating conditions (e.g. oil or grease contamination) and can be used in temperatures of -15 °C to +70 °C. The Chloroprene component should be used where fire-resistance and anti-static (F.R.A.S.) properties are required.

## Example

A SKF Flex coupling is required to transmit 30 kW from an Electric motor running at 1440 rev/min to a centrifugal pump for 14 hours per day. The motor shaft is 30 mm diameter and the pump shaft is 25 mm diameter. Taper bush is required.

### 1. Service factor

The appropriate service factor is 0,9.

### 2. Design Power

Design Power =  $30 \times 0,9 = 27 \text{ kW}$

### 3. Coupling size

By reading across from the 1440 rev/min in the power ratings table the first power figure to exceed the required 27 kW in step(2) is 37,70 kW. The size of the coupling is 70 SKF Flex.

### 4. Bore Size

By referring to the dimensions table it can be seen that both shaft diameters fall within the bore range available. A note to make is that for this coupling size taper bush sizes differ between face and hub mounting.

## Service Factors

		Type of driving unit					
		Electric motors and steam Turbines			Internal combustion engines, steam engines and water turbines		
		Duty hours per day			Duty hours per day		
		Up to 10	10 to 16	Over 16	Up to 10	10 to 16	Over 16
<b>Light</b>	Agitators/Mixers (liquids), belt conveyors (uniform loading), blowers and exhausters, centrifugal pumps and compressors, fans (below 7,5 kW)	0,8	0,9	1,0	1,3	1,4	1,5
<b>Medium</b>	Agitators/Mixers (non-liquid), Belt and chain conveyors (variable loading), fans (over 7,5 kW), generators, line shafts, machine tools, rotary pumps and compressors (other than centrifugal) Machinery for food processing, laundries and printing industries	1,3	1,4	1,5	1,8	1,9	2,0
<b>Heavy</b>	Heavy duty conveyors (bucket, drag/shovel, screw), hammer mills, presses, punches, shears, piston pumps and compressors Machinery for brick, textile, paper, saw mill industries	1,8	1,9	2,0	2,3	2,4	2,5
<b>Very Heavy</b>	Crushers (gyratory, jaw, roll), Heavy duty mills (ball, rod, tube), Hoists	2,3	2,4	2,5	2,8	2,9	3,0

It is recommended that keys are fitted for applications where load fluctuation is expected



# SKF Flex couplings

Selection

- ▶ ..... Belts
- ▶ ..... Chains
- ▶ ..... Couplings
- ▶ ..... Bushings and Hubs
- ▶ ..... Sprockets
- ▶ ..... Pulleys
- ▶ ..... Smart tools

## Power Ratings (kW)

Speed RPM	Coupling Size															
	40	50	60	70	80	90	100	110	120	140	160	180	200	220	250	
50	0,13	0,35	0,66	1,31	1,96	2,62	3,53	4,58	6,96	12,17	19,74	32,83	48,82	60,73	76,83	
100	0,25	0,69	1,33	2,62	3,93	5,24	7,07	9,16	13,93	24,35	39,48	65,65	97,64	121,47	153,66	
200	0,50	1,38	2,66	5,24	7,85	10,47	14,14	18,32	27,85	48,69	78,95	131,31	195,29	242,93	307,33	
300	0,75	2,07	3,99	7,85	11,78	15,71	21,20	27,49	41,78	73,04	118,43	196,96	292,93	364,40	460,99	
400	1,01	2,76	5,32	10,47	15,71	20,94	28,27	36,65	55,71	97,38	157,91	262,62	390,58	485,86	614,66	
500	1,26	3,46	6,65	13,09	19,63	26,18	35,34	45,81	69,63	121,73	197,38	328,27	488,22	607,33	768,32	
600	1,51	4,15	7,98	15,71	23,56	31,41	42,41	54,97	83,56	146,07	236,86	393,93	585,86	728,80	921,99	
700	1,76	4,84	9,31	18,32	27,49	36,65	49,48	64,14	97,49	170,42	276,34	459,58	683,51	850,26	1075,65	
720	1,81	4,98	9,57	18,85	28,27	37,70	50,89	65,97	100,27	175,29	284,23	472,71	703,04	874,55	1106,39	
800	2,01	5,53	10,64	20,94	31,41	41,88	56,54	73,30	111,41	194,76	315,81	525,24	781,15	971,73	1229,32	
900	2,26	6,22	11,97	23,56	35,34	47,12	63,61	82,46	125,34	219,11	355,29	590,89	878,80	1093,19	1382,98	
960	2,41	6,63	12,77	25,13	37,70	50,26	67,85	87,96	133,70	233,72	378,97	630,28	937,38	1166,07	1475,18	
1000	2,51	6,91	13,30	26,18	39,27	52,36	70,68	91,62	139,27	243,46	394,76	656,54	976,44	1214,66	1536,65	
1200	3,02	8,29	15,96	31,41	47,12	62,83	84,82	109,95	167,12	292,15	473,72	787,85	1171,73	-	-	
1400	3,52	9,68	18,62	36,65	54,97	73,30	98,95	128,27	194,97	340,84	552,67	919,16	-	-	-	
1440	3,62	9,95	19,15	37,70	56,54	75,39	101,78	131,94	200,54	350,58	568,46	945,42	-	-	-	
1600	4,02	11,06	21,28	41,88	62,83	83,77	113,09	146,60	222,83	389,53	631,62	-	-	-	-	
1800	4,52	12,44	23,94	47,12	70,68	94,24	127,23	164,92	250,68	438,22	-	-	-	-	-	
2000	5,03	13,82	26,60	52,36	78,53	104,71	141,36	183,25	278,53	-	-	-	-	-	-	
2200	5,53	15,20	29,26	57,59	86,39	115,18	155,50	201,57	-	-	-	-	-	-	-	
2400	6,03	16,59	31,92	62,83	94,24	125,65	169,63	-	-	-	-	-	-	-	-	
2600	6,53	17,97	34,58	68,06	102,09	136,13	183,77	-	-	-	-	-	-	-	-	
2800	7,04	19,35	37,24	73,30	109,95	146,60	-	-	-	-	-	-	-	-	-	
2880	7,24	19,90	38,30	75,39	113,09	150,79	-	-	-	-	-	-	-	-	-	
3000	7,54	20,73	39,90	78,53	117,80	157,07	-	-	-	-	-	-	-	-	-	
3600	9,05	24,88	47,87	94,24	-	-	-	-	-	-	-	-	-	-	-	
Nominal Torque Nm	24	66	127	250	375	500	675	875	1330	2325	3770	6270	9325	11600	14675	
Max Torque Nm	64	160	318	487	759	1096	1517	2137	3547	5642	9339	16455	23508	33125	42740	

Maximum torque figures should be treated as a short duration overload ratings occurring in circumstances such as direct-on-line starting. For speeds not shown calculate the nominal torque for the design application using the formula below and select coupling according to nominal torque ratings.

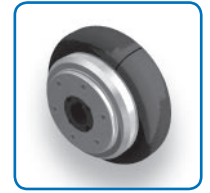
$$\text{Nominal Torque (Nm)} = \frac{\text{Design power (kW)} \times 30000}{\text{RPM} \times \pi}$$

## Physical Characteristics

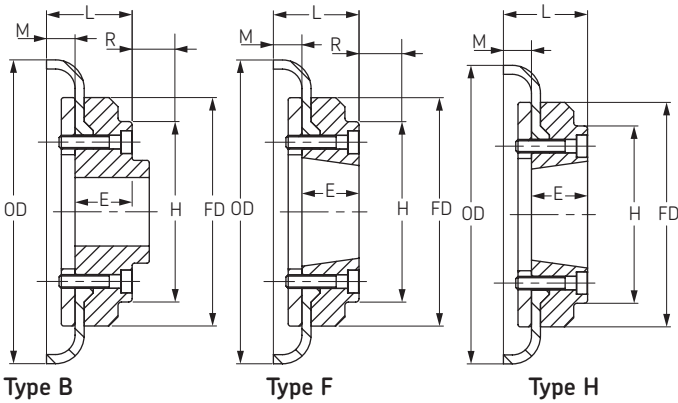
Coupling Size	Maximum Speed	Mass	Inertia	Torsional Stiffness	Misalignment			Nominal Torque	Max Torque	Screw Size	Clamping Screw Torque (NM)	Tyre Designation	
					Angular	Parallel	Axial					Natural	F.R.A.S.
	RPM	kg	kg/m <sup>2</sup>	Nm/°	°	mm	mm	Nm	Nm				
F40	4500	0,1	0,00074	5	4	1,1	1,3	24	64	M6	15	PHE F40NRTYRE	PHE F40FRTYRE
F50	4500	0,3	0,00115	13	4	1,3	1,7	66	160	M6	15	PHE F50NRTYRE	PHE F50FRTYRE
F60	4000	0,5	0,0052	26	4	1,6	2,0	127	318	M6	15	PHE F60NRTYRE	PHE F60FRTYRE
F70	3600	0,7	0,009	41	4	1,9	2,3	250	487	M8	24	PHE F70NRTYRE	PHE F70FRTYRE
F80	3100	1,0	0,017	63	4	2,1	2,6	375	759	M8	24	PHE F80NRTYRE	PHE F80FRTYRE
F90	3000	1,1	0,031	91	4	2,4	3,0	500	1096	M10	40	PHE F90NRTYRE	PHE F90FRTYRE
F100	2600	1,1	0,054	126	4	2,6	3,3	675	1517	M10	40	PHE F100NRTYRE	PHE F100FRTYRE
F110	2300	1,4	0,078	178	4	2,9	3,7	875	2137	M10	40	PHE F110NRTYRE	PHE F110FRTYRE
F120	2050	2,3	0,13	296	4	3,2	4,0	1330	3547	M12	50	PHE F120NRTYRE	PHE F120FRTYRE
F140	1800	2,6	0,255	470	4	3,7	4,6	2325	5642	M12	55	PHE F140NRTYRE	PHE F140FRTYRE
F160	1600	3,4	0,380	778	4	4,2	5,3	3770	9339	M16	80	PHE F160NRTYRE	PHE F160FRTYRE
F180	1500	7,7	0,847	1371	4	4,8	6,0	6270	16455	M16	105	PHE F180NRTYRE	PHE F180FRTYRE
F200	1300	8,0	1,281	1959	4	5,3	6,6	9325	23508	M16	120	PHE F200NRTYRE	PHE F200FRTYRE
F220	1100	10,0	2,104	2760	4	5,8	7,3	11600	33125	M20	165	PHE F220NRTYRE	PHE F220FRTYRE
F250	1000	15,0	3,505	3562	4	6,6	8,2	14675	42740	M20	165	PHE F250NRTYRE	PHE F250FRTYRE

# SKF Flex couplings

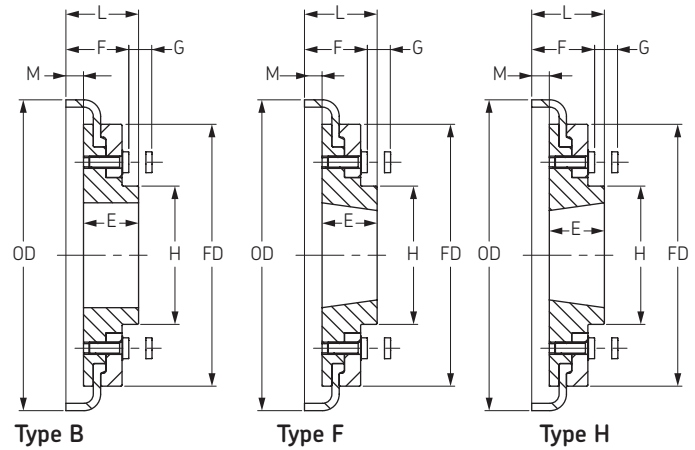
Dimensions



## Sizes 40-60



## Sizes 70-250



## Dimensions of SKF Flex flanges types B, F & H

Size	Type	Bush No.	Bore		Types F & H		Type B		Key Screw	O.D.	FD	H	F	R*	G+	M	Mass→	Inertia→	Designation
			Min	Max	L	E	L	E											
			mm	mm															
40	B	-	-	30	-	-	33,0	22	M5	104	82	-	-	29	-	11,0	0,80	0,00074	PHE F40RSBFLG
40	F	1008	9	25	33,0	22	-	-	-	104	82	-	-	29	-	11,0	0,80	0,00074	PHE F40FTBFLG
40	H	1008	9	25	33,0	22	-	-	-	104	82	-	-	29	-	11,0	0,80	0,00074	PHE F40HTBFLG
50	B	-	-	38	-	-	45,0	32	M5	133	100	79	-	38	-	12,5	1,20	0,00115	PHE F50RSBFLG
50	F	1210	11	32	37,5	25	-	-	-	133	100	79	-	38	-	12,5	1,20	0,00115	PHE F50FTBFLG
50	H	1210	11	32	37,5	25	-	-	-	133	100	79	-	38	-	12,5	1,20	0,00115	PHE F50HTBFLG
60	B	-	-	45	-	-	55,0	38	M6	165	125	70	-	38	-	16,5	2,00	0,0052	PHE F60RSBFLG
60	F	1610	14	42	41,5	25	-	-	-	165	125	103	-	38	-	16,5	2,00	0,0052	PHE F60FTBFLG
60	H	1610	14	42	41,5	25	-	-	-	165	125	103	-	38	-	16,5	2,00	0,0052	PHE F60HTBFLG
70	B	-	-	60	-	-	47,0	35	M10	187	142	80	50	-	13	11,5	3,10	0,009	PHE F70RSBFLG
70	F	2012	14	50	43,5	32	-	-	-	187	142	80	50	42	13	11,5	3,10	0,009	PHE F70FTBFLG
70	H	1610	14	42	36,5	25	-	-	-	187	142	80	50	38	13	11,5	3,00	0,009	PHE F70HTBFLG
80	B	-	-	63	-	-	55,0	42	M10	211	165	98	54	-	16	12,5	4,90	0,018	PHE F80RSBFLG
80	F	2517	16	60	57,5	45	-	-	-	211	165	97	54	48	16	12,5	4,90	0,018	PHE F80FTBFLG
80	H	2012	14	50	44,5	32	-	-	-	211	165	98	54	32	16	12,5	4,60	0,017	PHE F80HTBFLG
90	B	-	-	75	-	-	62,5	49	M12	235	187	112	60	-	16	13,5	7,10	0,032	PHE F90RSBFLG
90	F	2517	16	60	58,5	45	-	-	-	235	187	108	60	48	16	13,5	7,00	0,031	PHE F90FTBFLG
90	H	2517	16	60	58,5	45	-	-	-	235	187	108	60	48	16	13,5	7,00	0,031	PHE F90HTBFLG
100	B	-	-	80	-	-	69,5	56	M12	254	214	125	62	-	16	13,5	9,90	0,055	PHE F100RSBFLG
100	F	3020	25	75	64,5	51	-	-	-	254	214	120	62	55	16	13,5	9,90	0,055	PHE F100FTBFLG
100	H	2517	16	60	58,5	45	-	-	-	254	214	113	62	48	16	13,5	9,40	0,054	PHE F100HTBFLG
110	B	-	-	90	-	-	75,5	63	M12	279	232	128	62	-	16	12,5	12,50	0,081	PHE F110RSBFLG
110	F	3020	25	75	63,5	51	-	-	-	279	232	134	62	55	16	12,5	11,70	0,078	PHE F110FTBFLG
110	H	3020	25	75	63,5	51	-	-	-	279	232	134	62	55	16	12,5	11,70	0,078	PHE F110HTBFLG
120	B	-	-	100	-	-	84,5	70	M16	314	262	143	67	-	16	14,5	16,90	0,137	PHE F120RSBFLG
120	F	3525	35	100	79,5	65	-	-	-	314	262	140	67	67	16	14,5	16,50	0,137	PHE F120FTBFLG
120	H	3020	25	75	65,5	51	-	-	-	314	262	140	67	55	16	14,5	15,90	0,130	PHE F120HTBFLG
140	B	-	-	125	-	-	110,5	94	M20	359	312,5	180	73	-	17	16,0	22,20	0,254	PHE F140RSBFLG
140	F	3525	35	100	81,0	65	-	-	-	359	312,5	180	73	67	17	16,0	22,30	0,255	PHE F140FTBFLG
140	H	3525	35	100	81,0	65	-	-	-	359	312,5	180	73	67	17	16,0	22,30	0,255	PHE F140HTBFLG
160	B	-	-	140	-	-	117,0	102	M20	402	348	197	78	-	19	15,0	35,80	0,469	PHE F160RSBFLG
160	F	4030	40	115	91,0	76	-	-	-	402	348	197	78	80	19	15,0	32,50	0,380	PHE F160FTBFLG
160	H	4030	40	115	91,0	76	-	-	-	402	348	197	78	80	19	15,0	32,50	0,380	PHE F160HTBFLG
180	B	-	-	150	-	-	137,0	114	M20	470	396	205	94	-	19	23,0	49,10	0,871	PHE F180RSBFLG
180	F	4535	55	125	112,0	89	-	-	-	470	396	205	94	89	19	23,0	42,20	0,847	PHE F180FTBFLG
180	H	4535	55	125	112,0	89	-	-	-	470	396	205	94	89	19	23,0	42,20	0,847	PHE F180HTBFLG
200	B	-	-	150	-	-	138,0	114	M20	508	432	205	103	-	19	24,0	58,20	1,301	PHE F200RSBFLG
200	F	4535	55	125	113,0	89	-	-	-	508	432	205	103	89	19	24,0	53,60	1,281	PHE F200FTBFLG
200	H	4535	55	125	113,0	89	-	-	-	508	432	205	103	89	19	24,0	53,60	1,281	PHE F200HTBFLG
220	B	-	-	160	-	-	154,5	127	M20	562	472	224	118	-	20	27,5	79,60	2,142	PHE F220RSBFLG
220	F	5040	70	125	129,5	102	-	-	-	562	472	224	118	92	20	27,5	72,00	2,104	PHE F220FTBFLG
220	H	5040	70	125	129,5	102	-	-	-	562	472	224	118	92	20	27,5	72,00	2,104	PHE F220HTBFLG
250	B	-	-	190	-	-	161,5	132	M20	628	532	254	125	-	25	29,5	104,00	3,505	PHE F250RSBFLG

All dimensions in mm unless otherwise specified

For coupling sizes 70, 80, 100 and 120 "F" flanges require a larger bush than "H" flanges.

\* Is the clearance required to allow tightening/loosening of the clamping screws, and the taper bushing. Use of a shortened wrench will reduce this dimension.

+ The amount by which the clamping screws need to be withdrawn to release the tyre.

→ Mass and Inertia figures are for a single flange with midrange bore and include clamping ring, screws, washers and half tyre.

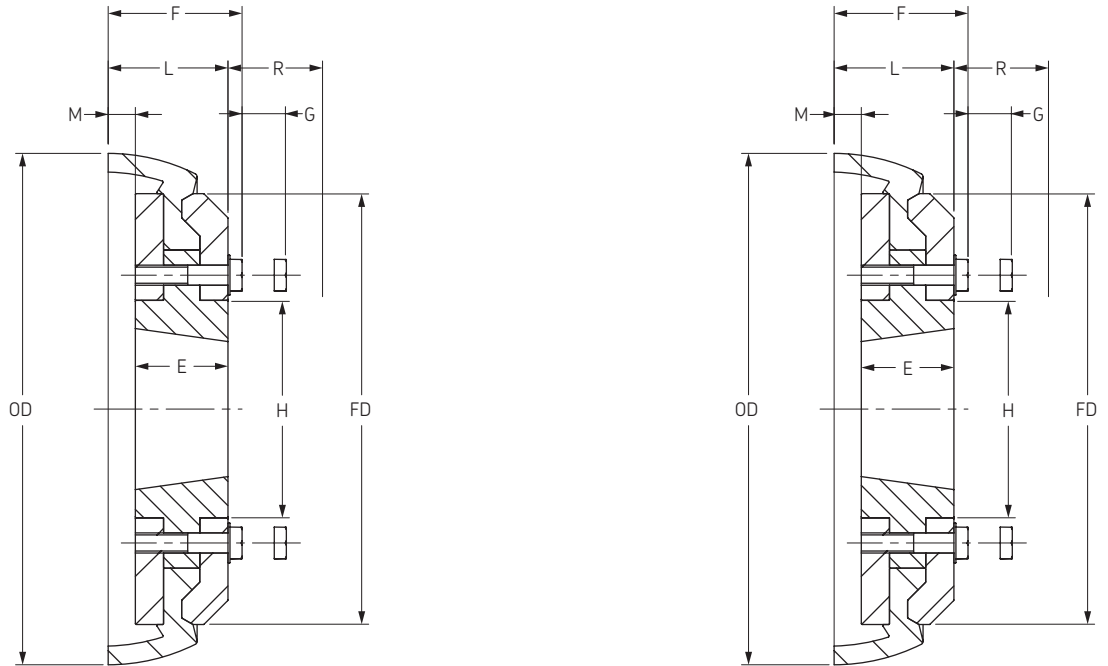


# SKF Flex couplings

Reversible

- ▶ ..... Belts
- ▶ ..... Chains
- ▶ ..... Couplings
- ▶ ..... Bushings and Hubs
- ▶ ..... Sprockets
- ▶ ..... Pulleys
- ▶ ..... Smart tools

Sizes 70-120



## Dimensions of SKF Flex flanges type R

Size	Bush No.	Bore		Type R			Screw over Key	O.D.	FD	H	F	G+	M	Mass→	Inertia→	Designation
		Min	Max	L	E	R*										
		mm	mm	mm	mm	mm										
F70	1610	14	42	37	25	42	M8	187	142	80	44,25	13	11,5	3	0,009	PHE F70RTBFLG
F80	2012	14	50	45,5	32	48	M8	211	165	98	52,75	16	12,5	4,6	0,017	PHE F80RTBFLG
F90	2517	16	60	58,5	45	48	M10	235	187	112	67,86	16	13,5	7	0,031	PHE F90RTBFLG
F100	2517	16	60	59,5	45	55	M10	254	214	125	68,86	16	13,5	9,4	0,054	PHE F100RTBFLG
F110	3020	25	75	64,5	51	55	M10	279	232	134	73,68	16	12,5	11,7	0,078	PHE F110RTBFLG
F120	3020	25	75	66,5	51	67	M12	314	262	140	77,18	16	14,5	15,9	0,13	PHE F120RTBFLG

All dimensions in mm unless otherwise specified

Bush sizes F70, 80, 100 and 120 differ between F and H

\* The clearance required to allow tightening/loosening of the clamping screws.

+ The amount by which the clamping screws need to be withdrawn to release the tyre.

→ Mass and Inertia figures are for a single flange with midrange bore and include clamping ring, screws, washers and half tyre.



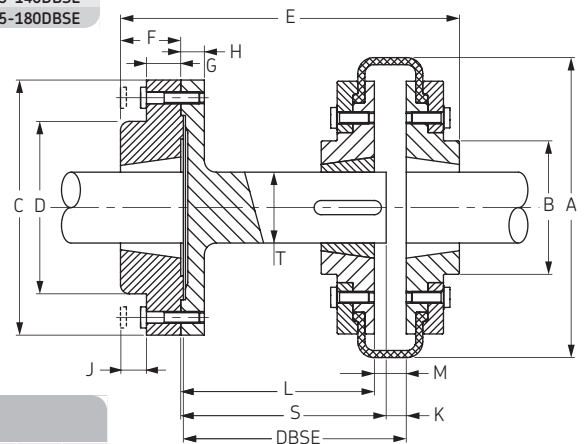
# SKF Flex spacer couplings



## Distance Between Shaft Ends (DBSE)

Spacer	Distance Between Shaft Ends (DBSE)		Coupling Size	Spacer Bush Size	Bore		Coupling Bush Size	Bore		Designation
	Nominal (min)	Max			Min	Max		Min	Max	
	mm	mm			mm	mm		mm	mm	
SM12	80	90	40	1210	11	32	1008	9	25	PHE SM12-80DBSE
SM12	100	110	40	1210	11	32	1008	9	25	PHE SM12-100DBSE
SM16	100	113	40	1615	14	42	1008	9	25	PHE SM16-100DBSE
SM16	140	150	40	1615	14	42	1008	9	25	PHE SM16-140DBSE
SM16	100	116	50	1615	14	42	1210	11	32	PHE SM16-100DBSE
SM16	140	156	50	1615	14	42	1210	11	32	PHE SM16-140DBSE
SM16	100	124	60	1615	14	42	1610	14	42	PHE SM16-100DBSE
SM16	140	164	60	1615	14	42	1610	14	42	PHE SM16-140DBSE
SM25	100	114	70	2517	16	60	2012	14	50	PHE SM25-100DBSE
SM25	140	154	70	2517	16	60	2012	14	50	PHE SM25-140DBSE
SM25	180	194	70	2517	16	60	2012	14	50	PHE SM25-180DBSE
SM25	100	117	80	2517	16	60	2517	16	60	PHE SM25-100DBSE
SM25	140	157	80	2517	16	60	2517	16	60	PHE SM25-140DBSE
SM25	180	197	80	2517	16	60	2517	16	60	PHE SM25-180DBSE
SM25	140	158	90	2517	16	60	2517	16	60	PHE SM25-140DBSE
SM25	180	198	90	2517	16	60	2517	16	60	PHE SM25-180DBSE
SM30	140	158	100	3020	25	75	3020	25	75	PHE SM30-140DBSE
SM30	180	198	100	3020	25	75	3020	25	75	PHE SM30-180DBSE
SM30	140	156	110	3020	25	75	3020	25	75	PHE SM30-140DBSE
SM30	180	196	110	3020	25	75	3020	25	75	PHE SM30-180DBSE
SM35	140	160	120	3525	35	100	3525	35	100	PHE SM35-140DBSE
SM35	180	200	120	3525	35	100	3525	35	100	PHE SM35-180DBSE
SM35	140	163	140	3525	35	100	3525	35	100	PHE SM35-140DBSE
SM35	180	203	140	3525	35	100	3525	35	100	PHE SM35-180DBSE

The SKF Flex coupling spacer is used to join two shaft ends that cannot be positioned close enough to just use a coupling alone. The spacer also allows removal of a shaft without needing to move either the driving or the driven machine. For example, this allows easy and fast replacement of impellers in pump applications.



## Spacer Coupling Dimensions

Spacer	Distance Between Shaft Ends (DBSE)		Coupling Size	Dimensions (mm)															
	Nominal (min)	Max		A	B	C	D	E	F	G	H	J	K	L	M	S	T		
SM12	80	90	40	104	82	118	83	134	25	14	15	14	6	65	22	77	25		
SM12	100	110	40	104	82	118	83	140	25	14	15	14	22	77	22	77	25		
SM16	100	113	40*	104	82	127	80	157	38	18	15	14	9	88	22	94	32		
SM16	140	150	40*	104	82	127	80	187	38	18	15	14	9	128	22	134	32		
SM16	100	116	50	133	79	127	80	160	38	18	15	14	9	85	25	94	32		
SM16	140	156	50	133	79	127	80	200	38	18	15	14	9	125	25	134	32		
SM16	100	124	60	165	103	127	80	161	38	18	15	14	9	78	33	94	32		
SM16	140	164	60	165	103	127	80	201	38	18	15	14	9	118	33	134	32		
SM25	100	114	70+	187	80	178	123	180	45	22	16	14	9	80	23	94	48		
SM25	140	154	70+	187	80	178	123	220	45	22	16	14	9	120	23	174	48		
SM25	180	194	70+	187	80	178	123	260	45	22	16	14	9	160	23	174	48		
SM25	100	117	80	211	95	178	123	193	45	22	16	14	9	78	25	94	48		
SM25	140	157	80	211	95	178	123	233	45	22	16	14	9	118	25	134	48		
SM25	180	197	80	211	95	178	123	273	45	22	16	14	9	158	25	174	48		
SM25	140	158	90	235	108	178	123	233	45	22	16	14	9	116	27	134	48		
SM25	180	198	90	235	108	178	123	273	45	22	16	14	9	156	27	174	48		
SM30	140	158	100	254	120	216	146	245	51	29	20	17	9	116	27	134	60		
SM30	180	198	100	254	120	216	146	285	51	29	20	17	9	156	27	174	60		
SM30	140	156	110	279	134	216	146	245	51	29	20	17	9	118	25	134	60		
SM30	180	196	110	279	134	216	146	285	51	29	20	17	9	158	25	174	60		
SM35	140	160	120	314	140	248	178	272	63	34	20	17	9	114	29	134	80		
SM35	180	200	120	314	140	248	178	312	63	34	20	17	9	154	29	174	80		
SM35	140	163	140	359	178	248	178	271	63	34	20	17	9	111	27	134	80		
SM35	180	203	140	359	178	248	178	312	63	34	20	17	9	151	27	174	80		

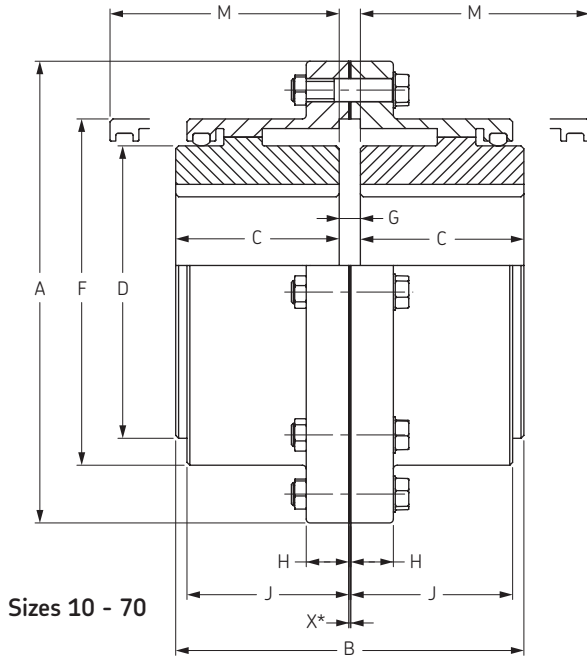
\* F40 'B' Flange must be used to fit spacer shaft  
+ 'F' Flange must be used to fit spacer shaft.



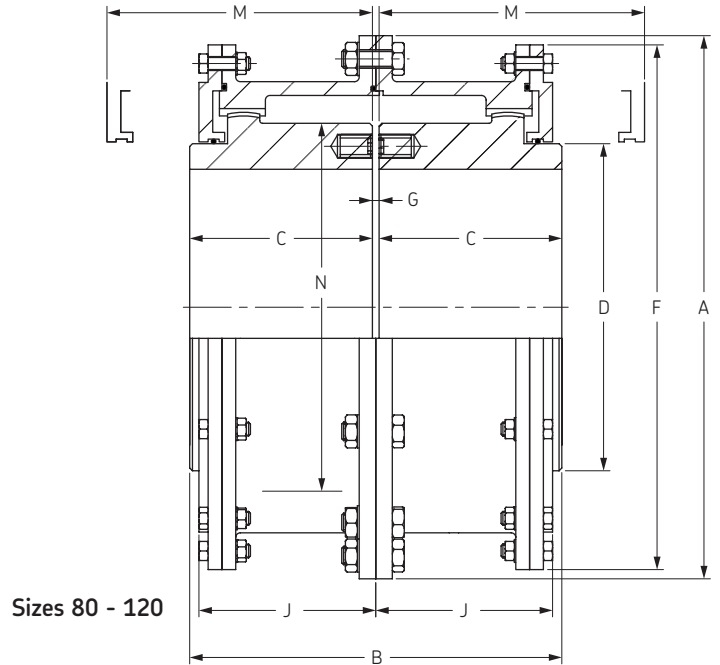
# Gear coupling

Double engagement

- ▶ ..... Belts
- ▶ ..... Chains
- ▶ ..... Couplings
- ▶ ..... Bushings and Hubs
- ▶ ..... Sprockets
- ▶ ..... Pulleys
- ▶ ..... Smart tools



Sizes 10 - 70



Sizes 80 - 120

## Designations

Size	Hub Designations	Cover Designations	Assembly kit
10	PHE 10GCRSB	PHE 10GCCOVER	PHE 10GCKIT
15	PHE 15GCRSB	PHE 15GCCOVER	PHE 15GCKIT
20	PHE 20GCRSB	PHE 20GCCOVER	PHE 20GCKIT
25	PHE 25GCRSB	PHE 25GCCOVER	PHE 25GCKIT
30	PHE 30GCRSB	PHE 30GCCOVER	PHE 30GCKIT
35	PHE 35GCRSB	PHE 35GCCOVER	PHE 35GCKIT
40	PHE 40GCRSB	PHE 40GCCOVER	PHE 40GCKIT
45	PHE 45GCRSB	PHE 45GCCOVER	PHE 45GCKIT
50	PHE 50GCRSB	PHE 50GCCOVER	PHE 50GCKIT
55	PHE 55GCRSB	PHE 55GCCOVER	PHE 55GCKIT
60	PHE 60GCRSB	PHE 60GCCOVER	PHE 60GCKIT
70	PHE 70GCRSB	PHE 70GCCOVER	PHE 70GCKIT
80	PHE 80GCRSB	PHE 80GCCOVER	PHE 80GCKIT
90	PHE 90GCRSB	PHE 90GCCOVER	PHE 90GCKIT
100	PHE 100GCRSB	PHE 100GCCOVER	PHE 100GCKIT
110	PHE 110GCRSB	PHE 110GCCOVER	PHE 110GCKIT
120	PHE 120GCRSB	PHE 120GCCOVER	PHE 120GCKIT

The assembly kit includes oil seals, gasket, bolts and lock-nuts.

A complete coupling consists of:

2 hubs, 2 covers and 1 assembly kit.

## Physical characteristics

Size	KW per 100 rpm	Rated torque	Max speed	Bore Diameter		Dimensions (mm)								Coupling weight kg	Lubricant weight kg
		Nm	rpm	Min	Max	A	B	C	D	F	J	G	M		
10	9	844	8000	13	48	116	89	43	69	84	39	3	51	5	0,04
15	20	1893	6500	19	60	152	101	49	86	105	48	3	61	9	0,07
20	37	3512	5600	25	73	178	127	62	105	126	59	3	76	16	0,12
25	67	6318	5000	32	92	213	159	77	131	155	72	5	91	29	0,23
30	112	10536	4400	38	105	240	187	91	152	180	84	5	107	43	0,36
35	172	16157	3900	51	124	279	218	106	178	211	98	6	130	68	0,54
40	261	24594	3600	64	146	318	248	121	210	245	111	6	145	97	0,91
45	358	33717	3200	76	165	346	278	135	235	274	123	8	165	136	1,04
50	485	45666	2900	89	178	389	314	153	254	306	141	8	183	190	1,77
55	634	59723	2650	102	197	425	344	168	279	334	158	8	203	249	2,22
60	821	77283	2450	114	222	457	384	188	305	366	169	8	229	306	3,18
70	1194	112413	2150	89	254	527	452	221	343	425	196	10	267	485	4,35
80	1567	147542	1750	102	279	591	508	249	356	572	243	10	300	703	9,53
90	2126	200242	1550	114	305	660	565	276	394	641	265	13	327	984	12,25
100	2984	281037	1450	127	343	711	623	305	445	699	294	13	356	1302	14,97
110	4103	386426	1330	140	387	775	679	333	495	749	322	13	384	1678	17,69
120	5222	491815	1200	152	425	838	719	353	546	826	341	13	403	2114	20,87

X\* represents space taken by the gasket





# Grid coupling

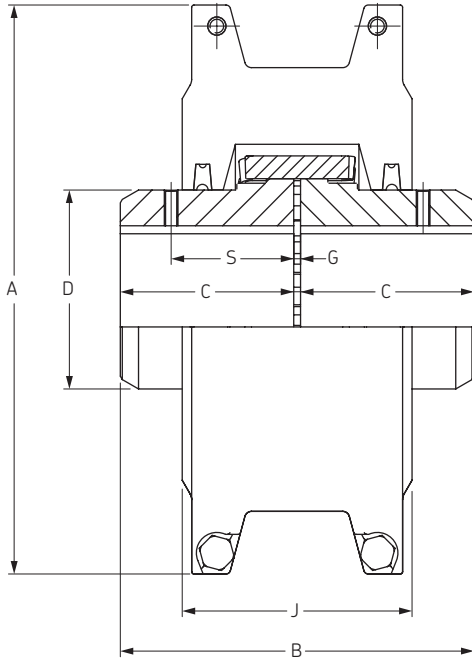
Horizontal split cover



## Designations

Size	Hub Designations	Grid Designations	Cover Designation	Assembly Kit
1020	PHE 1020TGRSB	PHE 1020TGGRID	PHE 1020TGHCOVER	PHE 1020TGHKIT
1030	PHE 1030TGRSB	PHE 1030TGGRID	PHE 1030TGHCOVER	PHE 1030TGHKIT
1040	PHE 1040TGRSB	PHE 1040TGGRID	PHE 1040TGHCOVER	PHE 1040TGHKIT
1050	PHE 1050TGRSB	PHE 1050TGGRID	PHE 1050TGHCOVER	PHE 1050TGHKIT
1060	PHE 1060TGRSB	PHE 1060TGGRID	PHE 1060TGHCOVER	PHE 1060TGHKIT
1070	PHE 1070TGRSB	PHE 1070TGGRID	PHE 1070TGHCOVER	PHE 1070TGHKIT
1080	PHE 1080TGRSB	PHE 1080TGGRID	PHE 1080TGHCOVER	PHE 1080TGHKIT
1090	PHE 1090TGRSB	PHE 1090TGGRID	PHE 1090TGHCOVER	PHE 1090TGHKIT
1100	PHE 1100TGRSB	PHE 1100TGGRID	PHE 1100TGHCOVER	PHE 1100TGHKIT
1110	PHE 1110TGRSB	PHE 1110TGGRID	PHE 1110TGHCOVER	PHE 1110TGHKIT
1120	PHE 1120TGRSB	PHE 1120TGGRID	PHE 1120TGHCOVER	PHE 1120TGHKIT
1130	PHE 1130TGRSB	PHE 1130TGGRID	PHE 1130TGHCOVER	PHE 1130TGHKIT
1140	PHE 1140TGRSB	PHE 1140TGGRID	PHE 1140TGHCOVER	PHE 1140TGHKIT
1150	PHE 1150TGRSB	PHE 1150TGGRID	PHE 1150TGHCOVER	PHE 1150TGHKIT
1160	PHE 1160TGRSB	PHE 1160TGGRID	PHE 1160TGHCOVER	PHE 1160TGHKIT
1170	PHE 1170TGRSB	PHE 1170TGGRID	PHE 1170TGHCOVER	PHE 1170TGHKIT
1180	PHE 1180TGRSB	PHE 1180TGGRID	PHE 1180TGHCOVER	PHE 1180TGHKIT
1190	PHE 1190TGRSB	PHE 1190TGGRID	PHE 1190TGHCOVER	PHE 1190TGHKIT
1200	PHE 1200TGRSB	PHE 1200TGGRID	PHE 1200TGHCOVER	PHE 1200TGHKIT

A complete coupling consists of 2 hubs, 1 grid and 1 cover.



## Physical characteristics

Size	KW per 100 rpm	Rated torque Nm	Max speed rpm	Bore diameter		Dimensions (mm)						G (mm)			Coupling weight kg	Lubricant weight kg
				Min	Max	A	B	C	D	J	S	Min	Normal	Max		
1020	0,51	48	4500	12	30	101	98,0	47,5	39,7	66	39	1,5	3,0	4,5	1,9	0,03
1030	1,44	135	4500	12	36	111	98,0	47,5	49,2	68	39	1,5	3,0	4,5	2,6	0,04
1040	2,40	226	4500	12	44	117	104,6	50,8	57,1	70	40	1,5	3,0	4,5	3,4	0,05
1050	4,20	395	4500	12	50	138	123,6	60,3	66,7	79	45	1,5	3,0	4,5	5,4	0,05
1060	6,60	622	4350	19	57	150	130,0	63,5	76,2	92	52	1,5	3,0	4,5	7,3	0,09
1070	9,69	904	4125	19	65	162	155,4	76,2	87,3	95	54	1,5	3,0	4,5	10	0,12
1080	20,13	1865	3600	27	79	194	180,8	88,9	104,8	116	65	1,5	3,0	6,0	18	0,17
1090	35,79	3390	3600	27	95	213	199,8	98,4	123,8	122	72	1,5	3,0	6,0	25	0,25
1100	60,40	5707	2440	41	107	250	245,7	120,6	142,0	155	-	1,5	4,5	9,5	42	0,43
1110	90,23	8477	2250	41	117	270	258,5	127,0	160,3	161	-	1,5	4,5	9,5	54	0,51
1120	131,99	12433	2025	60	136	308	304,4	149,2	179,4	191	-	1,5	6,0	12,5	81	0,73
1130	191,64	18084	1800	66	165	346	329,8	161,9	217,5	195	-	1,5	6,0	12,5	121	0,91
1140	275,91	25996	1650	66	184	384	371,6	182,8	254,0	201	-	1,5	6,0	12,5	178	1,13
1150	384,04	36168	1500	108	203	453	371,8	182,9	269,2	271	-	1,5	6,0	12,5	234	1,95
1160	539,89	50862	1350	120	228	501	402,2	198,1	304,8	279	-	1,5	6,0	12,5	317	2,81
1170	719,60	67816	1225	133	279	566	437,8	215,9	355,6	304	-	1,5	6,0	12,5	448	3,49
1180	997,75	94037	1100	152	311	623	483,6	238,8	393,7	321	-	1,5	6,0	12,5	619	3,76
1190	1319,89	124328	1050	152	339	675	524,2	259,1	436,9	325	-	1,5	6,0	12,5	776	4,4
1200	1799,37	169538	900	177	361	757	564,8	279,4	497,8	356	-	1,5	6,0	12,5	1057	5,62



# Grid coupling

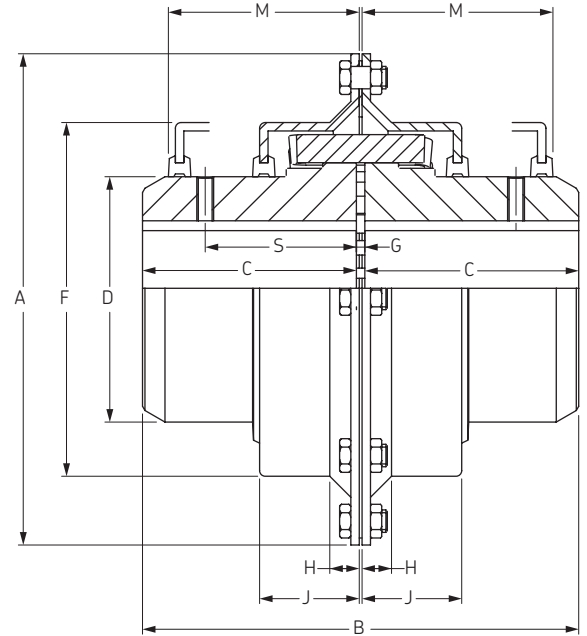
Vertical split cover

- ▶ ..... Belts
- ▶ ..... Chains
- ▶ ..... Couplings
- ▶ ..... Bushings and Hubs
- ▶ ..... Sprockets
- ▶ ..... Pulleys
- ▶ ..... Smart tools

## Designations

Size	Hub Designations	Grid Designations	Cover Designation	Assembly Kit
1020	PHE 1020GRSB	PHE 1020GGRID	PHE 1020TGVCOVER	PHE 1020TGVKIT
1030	PHE 1030GRSB	PHE 1030TGGGRID	PHE 1030TGVCOVER	PHE 1030TGVKIT
1040	PHE 1040GRSB	PHE 1040TGGGRID	PHE 1040TGVCOVER	PHE 1040TGVKIT
1050	PHE 1050GRSB	PHE 1050TGGGRID	PHE 1050TGVCOVER	PHE 1050TGVKIT
1060	PHE 1060GRSB	PHE 1060TGGGRID	PHE 1060TGVCOVER	PHE 1060TGVKIT
1070	PHE 1070GRSB	PHE 1070TGGGRID	PHE 1070TGVCOVER	PHE 1070TGVKIT
1080	PHE 1080GRSB	PHE 1080TGGGRID	PHE 1080TGVCOVER	PHE 1080TGVKIT
1090	PHE 1090GRSB	PHE 1090TGGGRID	PHE 1090TGVCOVER	PHE 1090TGVKIT
1100	PHE 1100GRSB	PHE 1100TGGGRID	PHE 1100TGVCOVER	PHE 1100TGVKIT
1110	PHE 1110GRSB	PHE 1110TGGGRID	PHE 1110TGVCOVER	PHE 1110TGVKIT
1120	PHE 1120GRSB	PHE 1120TGGGRID	PHE 1120TGVCOVER	PHE 1120TGVKIT
1130	PHE 1130GRSB	PHE 1130TGGGRID	PHE 1130TGVCOVER	PHE 1130TGVKIT
1140	PHE 1140GRSB	PHE 1140TGGGRID	PHE 1140TGVCOVER	PHE 1140TGVKIT
1150	PHE 1150GRSB	PHE 1150TGGGRID	PHE 1150TGVCOVER	PHE 1150TGVKIT
1160	PHE 1160GRSB	PHE 1160TGGGRID	PHE 1160TGVCOVER	PHE 1160TGVKIT
1170	PHE 1170GRSB	PHE 1170TGGGRID	PHE 1170TGVCOVER	PHE 1170TGVKIT
1180	PHE 1180GRSB	PHE 1180TGGGRID	PHE 1180TGVCOVER	PHE 1180TGVKIT
1190	PHE 1190GRSB	PHE 1190TGGGRID	PHE 1190TGVCOVER	PHE 1190TGVKIT
1200	PHE 1200GRSB	PHE 1200TGGGRID	PHE 1200TGVCOVER	PHE 1200TGVKIT

A complete coupling consists of 2 hubs, 1 grid and 1 cover.



## Physical characteristics

Size	KW per 100 rpm	Rated torque Nm	Max speed rpm	Bore diameter		Dimensions (mm)								G (mm)			Coupling weight kg	Lubricant weight kg	
				Min	Max	A	B	C	D	J	F	H	M	S	Min	Normal			Max
1020	0.51	48	6000	12	30	111	98.0	47.5	39.7	24	64	10	48	39	1.5	3.0	4.5	2	0.03
1030	1.44	135	6000	12	36	121	98.0	47.5	49.2	25	73	10	48	39	1.5	3.0	4.5	2.6	0.04
1040	2.40	226	6000	12	44	128	104.6	50.8	57.1	26	83	10	51	40	1.5	3.0	4.5	3.4	0.05
1050	4.20	395	6000	12	50	148	123.6	60.3	66.7	31	99	12	60	45	1.5	3.0	4.5	5.4	0.05
1060	6.60	622	6000	19	57	162	130.0	63.5	76.2	32	111	13	64	52	1.5	3.0	4.5	7.3	0.09
1070	9.69	904	5500	19	65	173	155.4	76.2	87.3	34	124	13	67	54	1.5	3.0	4.5	10	0.12
1080	20.13	1865	4750	27	79	200	180.8	88.9	104.8	44	149	13	89	65	1.5	3.0	6.0	18	0.17
1090	35.79	3390	4000	27	95	232	199.8	98.4	123.8	48	168	13	95	72	1.5	3.0	6.0	25	0.25
1100	60.40	5707	3250	41	107	267	245.7	120.6	142.0	60	197	16	121	-	1.5	4.5	9.5	42	0.43
1110	90.23	8477	3000	41	117	286	258.5	127.0	160.3	64	216	16	124	-	1.5	4.5	9.5	54	0.51
1120	131.99	12433	2700	60	136	319	304.4	149.2	179.4	73	244	17	143	-	1.5	6.0	12.5	81	0.73
1130	191.64	18084	2400	66	165	378	329.8	161.9	217.5	75	282	21	146	-	1.5	6.0	12.5	122	0.91
1140	275.91	25996	2200	66	184	416	371.6	182.8	254.0	78	321	21	155	-	1.5	6.0	12.5	180	1.13
1150	384.04	36168	2000	108	203	476	371.8	182.9	269.2	107	374	19	203	-	1.5	6.0	12.5	230	1.95
1160	539.89	50862	1750	120	228	533	402.2	198.1	304.8	114	424	30	216	-	1.5	6.0	12.5	321	2.81
1170	719.60	67816	1600	133	279	584	437.8	215.9	355.6	119	474	30	226	-	1.5	6.0	12.5	448	3.49
1180	997.75	94037	1400	152	311	630	483.6	238.8	393.7	130	-	-	-	-	1.5	6.0	12.5	591	3.76
1190	1319.89	124328	1300	152	339	685	524.2	259.1	436.9	135	-	-	-	-	1.5	6.0	12.5	761	4.40
1200	1799.37	169538	1100	177	361	737	564.8	279.4	497.8	145	-	-	-	-	1.5	6.0	12.5	1021	5.62



# Chain couplings



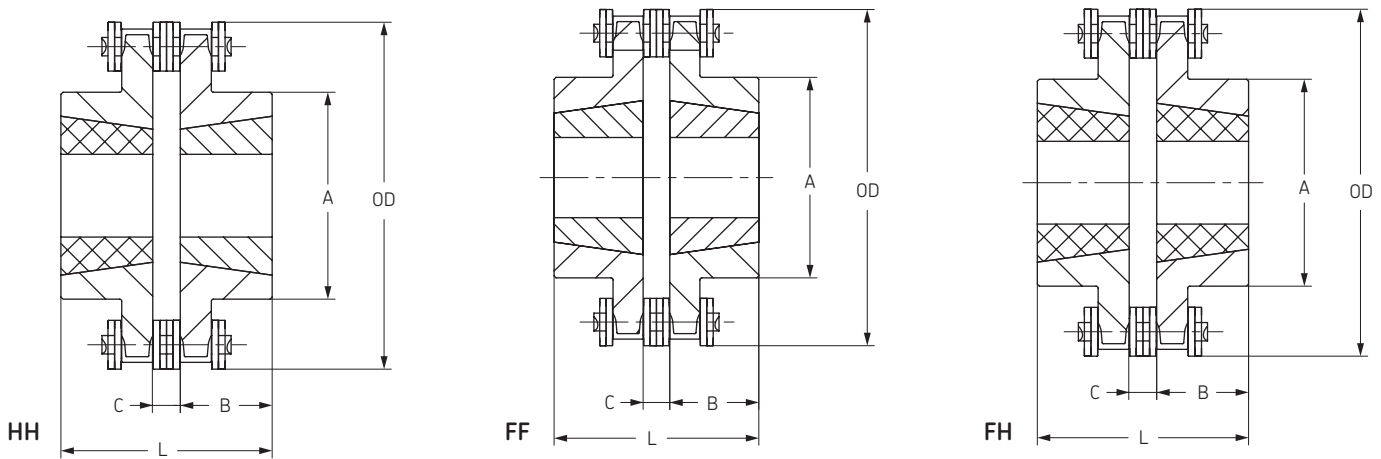
## Selection

Chain couplings are able to transmit greater torques than the shafts that carry them making them ideal for high torque applications. Available with pilot bore, finished bore or taper bush (face or hub), flanges are linked together with duplex roller chain accommodating misalignments up to 2°.

To ensure maximum service life and reliability, particularly for high speed applications, it is recommended that all chain couplings are fitted with a cover and are properly lubricated.

Where the chain coupling is subject to reversing operations, shock or pulsating loads, or other severe operating conditions, a coupling one size larger should be selected.

## Taper Bushed Couplings Assembly Configurations



## Bored to Size Couplings

Coupling Size	Bore		A	B	C	L	OD	Weight	Recommended Maximum RPM	Chain Weight
	Min (Pilot)	Max								
	mm	mm						kg		kg
IS0816	15,9	23,8	50,0	28,96	7,1	65,0	77,0	0,45	5000	0,23
IS1016	15,9	42,9	63,5	36,88	9,5	83,3	96,0	1,00	4000	0,54
IS1018	19,1	50,8	75,4	43,26	9,5	87,1	106,4	1,59	3600	0,59
IS1218	25,4	61,9	88,9	47,60	11,1	106,3	127,0	2,27	3000	1,00
IS1220	28,6	69,9	98,4	50,80	11,1	112,7	139,7	2,95	2500	1,18
IS1222	28,6	76,2	114,3	54,00	11,1	119,1	151,2	4,31	2500	1,23
IS1618	28,6	79,4	115,9	60,70	14,7	136,1	169,1	4,99	2000	2,40
IS1620	38,1	90,5	136,5	66,10	14,7	146,9	185,3	7,40	2000	2,68
IS2018	38,1	98,4	144,5	70,90	18,3	160,1	211,5	9,21	1800	4,45
IS2020	38,1	117,5	170,7	79,80	18,3	177,9	231,8	14,43	1800	4,95
IS2418	50,8	119,1	171,5	88,30	21,8	198,4	254,0	16,70	1500	7,85
IS2422	50,8	155,6	222,3	102,10	21,8	226,0	302,0	31,76	1200	9,62

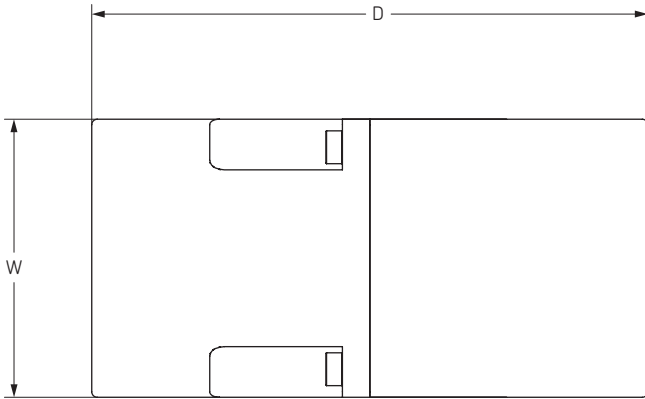
## Taper Bushed Couplings Type "FTB" and "HTB"

Coupling Number	Bushing Data			A	B	C	L	OD	Weight
	No.	Min Bore	Max Bore						
		mm	mm						
IS0816	1108	12,7	28,6	50,0	22,2	7,1	51,6	77,0	0,41
IS1018	1610	12,7	41,3	75,4	25,4	9,5	60,3	106,4	0,50
IS1220	2012	12,7	50,8	98,4	31,8	11,1	74,6	139,7	1,23
IS1620	3020	23,8	76,2	136,5	50,0	14,7	116,3	185,3	2,77
IS2020	3535	30,2	88,9	170,7	88,9	18,3	196,1	231,8	8,62



# Chain couplings

- ▶ ..... Belts
- ▶ ..... Chains
- ▶ ..... Couplings
- ▶ ..... Bushings and Hubs
- ▶ ..... Sprockets
- ▶ ..... Pulleys
- ▶ ..... Smart tools



## Coupling Covers

Cover Size	Aluminum		Plastic		Weight kg
	D	W	D	W	
IS0816**	101,6	50,8	101,6	58,7	0,42
IS1016**	130,2	60,3	130,2	66,7	0,59
IS1018**	130,2	60,3	130,2	66,7	0,59
IS1218**	161,9	74,6	161,9	77,8	1,11
IS1220**	161,9	74,6	161,9	77,8	1,11
IS1222*	208,0	101,6	208,0	101,6	2,21
IS1618	208,0	101,6	208,0	101,6	2,21
IS1620	208,0	101,6	208,0	101,6	2,21
IS2018	238,1	150,8	238,1	150,8	3,97
IS2020	257,2	133,4	257,2	133,4	5,74
IS2418	288,9	187,3	288,9	187,3	7,47
IS2422	336,6	201,6	336,6	201,6	8,85

\* Use IS1618 cover – special seals available

\*\* Will be supplied in plastic unless otherwise specified

## Designations

Size	Hub				Chain	Covers
	Plain Bore	FTB	HTB	Bored to Size*		
IS0816	PHE IS0816RSB	PHE IS0816FTB	PHE IS0816HTB	PHE IS0816X...	PHE IS0816CHN	PHE IS0816COVER
IS1016	PHE IS1016RSB	-	-	PHE IS1016X...	PHE IS1016CHN	PHE IS1016COVER
IS1018	PHE IS1018RSB	PHE IS1018FTB	PHE IS1018HTB	PHE IS1018X...	PHE IS1018CHN	PHE IS1018COVER
IS1218	PHE IS1218RSB	-	-	PHE IS1218X...	PHE IS1218CHN	PHE IS1218COVER
IS1220	PHE IS1220RSB	PHE IS1220FTB	PHE IS1220HTB	PHE IS1220X...	PHE IS1220CHN	PHE IS1220COVER
IS1222	PHE IS1222RSB	-	-	PHE IS1222X...	PHE IS1222CHN	PHE IS1222COVER
IS1618	PHE IS1618RSB	-	-	PHE IS1618X...	PHE IS1618CHN	PHE IS1618COVER
IS1620	PHE IS1620RSB	PHE IS1620FTB	PHE IS1620HTB	PHE IS1620X...	PHE IS1620CHN	PHE IS1620COVER
IS2018	PHE IS2018RSB	-	-	PHE IS2018X...	PHE IS2018CHN	PHE IS2018COVER
IS2020	PHE IS2020RSB	PHE IS2020FTB	PHE IS2020HTB	PHE IS2020X...	PHE IS2020CHN	PHE IS2020COVER
IS2418	PHE IS2418RSB	-	-	PHE IS2418X...	PHE IS2418CHN	PHE IS2418COVER
IS2422	PHE IS2422RSB	-	-	PHE IS2422X...	PHE IS2422CHN	PHE IS2422COVER

\* To complete bored to size designation, add bore size. For example:  
PHE IS1016X22MM designates hub size IS1016 with a 22mm bore



# FRC couplings

Selection



With a higher load capacity than Jaw couplings and maintenance free operation FRC couplings are designed as a general purpose coupling cushioning moderate shock loads, dampening small vibrations and accommodating incidental misalignments. Phosphate coated for improved corrosion resistance and available with fire-resistant and anti-static elements (F.R.A.S.) FRC couplings are offered in pilot bore, finished bore and taper bushed (face or hub), facilitating quick and simple installation.

Fully machined outside diameters allow alignment by simple straight edge methods. Shaft connection is "fail safe" due to interlocking jaw design.

## Selection

- **Service Factor**

Determine the required service factor from the table below.

- **Design Power**

Multiply the normal running power by the service factor. This gives the design power for coupling selection.

- **Coupling Size**

Using the Power Ratings table read across from the appropriate speed until a power greater than the design power is found. The required FRC coupling is given at the head of the column.

- **Bore Size**

Using the dimensions table check that chosen flanges can accommodate both driving and driven shafts.

## Example

A FRC coupling is required to transmit 15 kW from an Electric motor running at 500 rev/min to a rotary pump for 15 hours per day. The motor shaft is 25 mm diameter and the pump shaft is 20 mm diameter.

1. **Service factor**

The appropriate service factor is 1,8.

2. **Design Power**

Design power = 15 x 1,8 = 27 kW

3. **Coupling size**

By reading across from the 500 rev/min in the power ratings table the first power figure to exceed the required 27 kW in step(2) is 31,41 kW. The size of the coupling is 150 FRC.

4. **Bore Size**

By referring to the dimensions table it can be seen that both shaft diameters fall within the bore range available.

## Service Factors

		Type of driving unit					
		Electric motors and steam Turbines			Internal combustion engines, steam engines and water turbines		
		Duty hours per day			Duty hours per day		
		Up to 10	10 to 16	Over 16	Up to 10	10 to 16	Over 16
<b>Light</b>	Agitators/Mixers (liquids), belt conveyors (uniform loading), blowers and exhausters, centrifugal pumps and compressors, fans (below 7,5 kW)	1,0	1,1	1,2	1,3	1,4	1,6
<b>Medium</b>	Agitators/Mixers (non-liquid), Belt and chain conveyors (variable loading), fans (over 7,5 kW), generators, line shafts, machine tools, rotary pumps and compressors (other than centrifugal) Machinery for food processing, laundries and printing industries	1,6	1,8	2,0	2,0	2,2	2,5
<b>Heavy</b>	Heavy duty conveyors (bucket, drag/shovel, screw), hammer mills, presses, punches, shears, piston pumps and compressors Machinery for brick, textile, paper, saw mill industries	2,0	2,2	2,3	2,5	2,6	2,8
<b>Very Heavy</b>	Crushers (gyratory, jaw, roll), Heavy duty mills (ball, rod, tube), Hoists	2,5	2,8	3,1	3,2	3,6	4,0

It is recommended that keys are fitted for applications where load fluctuation is expected



# FRC couplings

## Selection

- ▶ ..... Belts
- ▶ ..... Chains
- ▶ ..... Couplings
- ▶ ..... Bushings and Hubs
- ▶ ..... Sprockets
- ▶ ..... Pulleys
- ▶ ..... Smart tools

## Power Ratings (kW)

Speed RPM	Coupling Size							
	70	90	110	130	150	180	230	280
50	0,16	0,42	0,84	1,65	3,14	4,97	10,47	16,49
100	0,33	0,84	1,68	3,30	6,28	9,95	20,94	32,98
200	0,66	1,68	3,35	6,60	12,57	19,90	41,88	65,97
300	0,99	2,51	5,03	9,90	18,85	29,84	62,83	98,95
400	1,32	3,35	6,70	13,19	25,13	39,79	83,77	131,94
500	1,65	4,19	8,38	16,49	31,41	49,74	104,71	164,92
600	1,98	5,03	10,05	19,79	37,70	59,69	125,65	197,91
700	2,31	5,86	11,73	23,09	43,98	69,63	146,60	230,89
720	2,37	6,03	12,06	23,75	45,24	71,62	150,79	237,49
800	2,64	6,70	13,40	26,39	50,26	79,58	167,54	263,87
900	2,97	7,54	15,08	29,69	56,54	89,53	188,48	296,86
960	3,17	8,04	16,08	31,66	60,31	95,50	201,05	316,65
1000	3,30	8,38	16,75	32,98	62,83	99,48	209,42	329,84
1200	3,96	10,05	20,10	39,58	75,39	119,37	251,31	395,81
1400	4,62	11,73	23,46	46,18	87,96	139,27	293,19	461,78
1440	4,75	12,06	24,13	47,50	90,47	143,25	301,57	474,97
1600	5,28	13,40	26,81	52,77	100,52	159,16	335,08	527,75
1800	5,94	15,08	30,16	59,37	113,09	179,06	376,96	593,72
2000	6,60	16,75	33,51	65,97	125,65	198,95	418,85	659,69
2200	7,26	18,43	36,86	72,57	138,22	218,85	460,73	725,65
2400	7,92	20,10	40,21	79,16	150,79	238,74	502,62	-
2600	8,58	21,78	43,56	85,76	163,35	258,64	544,50	-
2800	9,24	23,46	46,91	92,36	175,92	278,53	-	-
2880	9,50	24,13	48,25	94,99	180,94	286,49	-	-
3000	9,90	25,13	50,26	98,95	188,48	298,43	-	-
3600	11,87	30,16	60,31	118,74	226,18	-	-	-
Nominal Torque (Nm)	31,5	80	160	315	600	950	2000	3150
Max Torque (Nm)	72	180	360	720	1500	2350	5000	7200

Maximum torque figures should be treated as a short duration overload ratings occurring in circumstances such as direct-on-line starting.

For speeds not shown calculate the nominal torque for the design application using the formula below and select coupling according to nominal torque ratings.

$$\text{Nominal Torque (Nm)} = \frac{\text{Design power (kW)} \times 30000}{\text{RPM} \times \pi}$$

## Designations

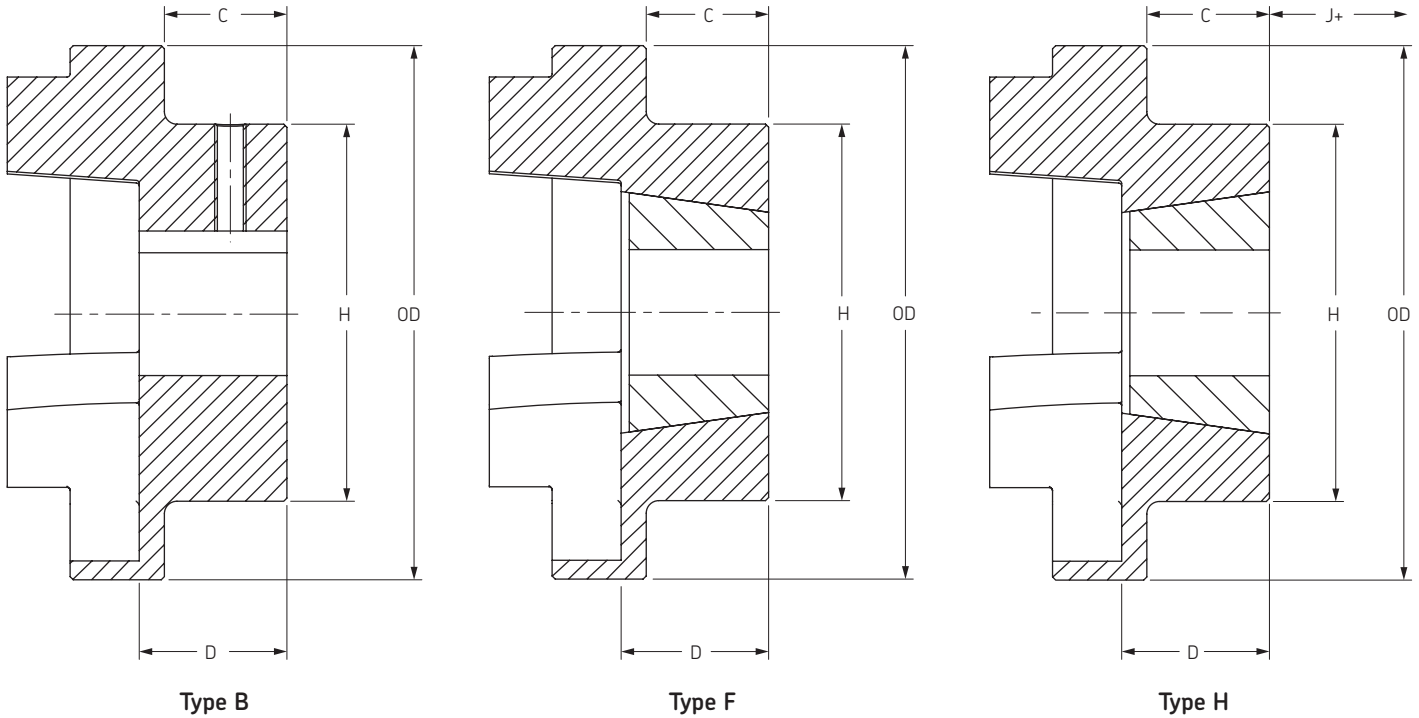
Size	Type F	Type H	Type B Pilot bored	Standard Element -40 °C /+100 °C	FRAS Element -20 °C /+80 °C
70	PHE FRC70FTB	PHE FRC70HTB	PHE FRC70RSB	PHE FRC70NR	PHE FRC70FR
90	PHE FRC90FTB	PHE FRC90HTB	PHE FRC90RSB	PHE FRC90NR	PHE FRC90FR
110	PHE FRC110FTB	PHE FRC110HTB	PHE FRC110RSB	PHE FRC110NR	PHE FRC110FR
130	PHE FRC130FTB	PHE FRC130HTB	PHE FRC130RSB	PHE FRC130NR	PHE FRC130FR
150	PHE FRC150FTB	PHE FRC150HTB	PHE FRC150RSB	PHE FRC150NR	PHE FRC150FR
180	PHE FRC180FTB	PHE FRC180HTB	PHE FRC180RSB	PHE FRC180NR	PHE FRC180FR
230	PHE FRC230FTB	PHE FRC230HTB	PHE FRC230RSB	PHE FRC230NR	PHE FRC230FR
280	PHE FRC280FTB	PHE FRC280HTB	PHE FRC280RSB	PHE FRC280NR	PHE FRC280FR

A complete coupling consists of 2 hubs and 1 element.



# FRC Couplings

Dimensions



## Dimensions

Size	Common Dimensions		Type F&H						Type B				
	OD	H	Bush size	Bore		C	D	J+	Bore Diameter		Key Screw	C	D
				Min	Max				Max	Pilot			
70	69	60	1008	9	25	20	23,5	29	32	10	M6	20	25,8
90	85	70	1108	9	28	19,5	23,5	29	38	10	M6	26	30,0
110	112	100	1610	14	42	18,5	26,5	38	55	10	M10	37	45,3
130	130	105	1610	14	42	18	26,5	38	60	20	M10	39	47,5
150	150	115	2012	14	50	23,5	33,5	42	70	28	M10	46	60,0
180	180	125	2517	16	60	34,5	46,5	48	80	28	M10	58	70,0
230	225	155	3020	25	75	39,5	52,5	55	100	45	M12	77	90,0
280	275	206	3525	35	100	51	66,5	67	115	55	M16	90	105,5

+ The clearance required for tightening/loosening the bush on the shaft

## Assembled Dimensions and Characteristics

Size	Assembled Length Comprising Flange Types			Mass	Inertia	Torsional Stiffness	Misalignment			Nominal Torque	Max Torque
	FF, FH, HH		BB				Angular	Parallel	Axial		
	kg	kg/m <sup>2</sup>	Nm/°	°	mm	mm	Nm	Nm			
70	65,0	65,0	65,0	1,00	0,00085	-	1	0,3	0,2	31,5	72
90	69,5	76,0	82,5	1,17	0,00115	-	1	0,3	0,5	80	180
110	82,0	100,5	119,0	5,00	0,0040	65	1	0,3	0,6	160	360
130	89,0	110,0	131,0	5,46	0,0078	130	1	0,4	0,8	315	720
150	107,0	129,5	152,0	7,11	0,0181	175	1	0,4	0,9	600	1500
180	142,0	165,5	189,0	16,60	0,0434	229	1	0,4	1,1	950	2350
230	164,5	202,0	239,5	26,00	0,1207	587	1	0,5	1,3	2000	5000
280	207,5	246,5	285,5	50,00	0,4465	1025	1	0,5	1,7	3150	7200

Mass is for an FF, FH or HH coupling with mid range taper bushes.



# Jaw couplings

## Selection

- ▶ ..... Belts
- ▶ ..... Chains
- ▶ ..... Couplings
- ▶ ..... Bushings and Hubs
- ▶ ..... Sprockets
- ▶ ..... Pulleys
- ▶ ..... Smart tools

Jaw couplings provide a cost effective solution for standard power applications, cushioning moderate shock loads and dampening small vibrations.

Maintenance free and easy to install jaw couplings are available with a “snap wrap” element allowing element replacement in situ.

Urethane and Hytrel elements have a greater power rating than that of Nitrile and are recommended for applications where it is required to transmit high power or minimise coupling size.

## Selection

### Service Factor

- Determine the required service factor from the table below.

### Design Power

- Multiply the normal running power by the service factor. This gives the design power for selecting a coupling with a Nitrile element.

### Alternative Elements

- To allow coupling selection to take place on one power rating table (Nitrile) an element correction is required to give a new reference design power. This is found by dividing the design power calculated for a Nitrile element by the alternative element power factor.

### Coupling Size

- Using the Power Ratings table read across from the appropriate speed until a power greater than the design power is found. The required Jaw coupling is given at the head of the column.

### Bore Size

- Using the dimensions table check that chosen flanges can accommodate both driving and driven shafts.

## Example

A Jaw coupling is required to transmit 4 kW from an Electric motor running at 300 rev/min to a centrifugal fan for 12 hours per day. The motor shaft is 20 mm diameter and the pump shaft is 18 mm diameter.

### 1. Service factor

The appropriate service factor is 1,1.

### 2. Design Power

Design Power =  $4 \times 1,1 = 4,4 \text{ kW}$

### 3. Coupling size

By reading across from the 300 rev/min in the power ratings table the first power figure to exceed the required 4,4 kW in step(2) is 4,7 kW. In this case a Nitrile element can be used with a 150 Jaw coupling.

### 4. Bore Size

By referring to the standard bore and keyway table it can be seen that both shaft diameters fall within the bore range available.

## Service Factors

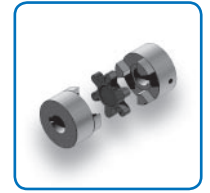
		Type of driving unit					
		Electric motors and steam Turbines			Internal combustion engines, steam engines and water turbines		
		Duty hours per day					
		Up to 10	10 to 16	Over 16	Up to 10	10 to 16	Over 16
Light	Agitators/Mixers (liquids), belt conveyors (uniform loading), blowers and exhausters, centrifugal pumps and compressors, fans (below 7,5 kW)	1,0	1,1	1,2	1,5	1,6	1,7
Medium	Agitators/Mixers (non-liquid), Belt and chain conveyors (variable loading), fans (over 7,5 kW), generators, line shafts, machine tools, rotary pumps and compressors (other than centrifugal) Machinery for food processing, laundries and printing industries	1,5	1,6	1,7	2,0	2,1	2,3
Heavy	Heavy duty conveyors (bucket, drag/shovel, screw), hammer mills, presses, punches, shears, piston pumps and compressors Machinery for brick, textile, paper, saw mill industries	2,0	2,1	2,3	2,5	2,6	2,8
Very Heavy	Crushers (gyratory, jaw, roll), Heavy duty mills (ball, rod, tube), Hoists	2,5	2,8	3,0	3,2	3,5	4,0





# Jaw couplings

Selection



## Elements

Type	Temperature Range (°C)	Misalignment		Power Factor
		Angular °	Parallel mm	
Nitrile	-40 to 100	1	0,38	1
Urethane	-35 to 70	1	0,38	1,5
Hytrel®	-50 to 120	0,5	0,38	3

## Power Ratings (kW) – Nitrile Elements

Speed RPM	Coupling Size									
	50	70	75	90	95	100	110	150	190	225
50	0,018	0,030	0,06	0,10	0,14	0,3	0,5	0,8	1,1	1,5
100	0,037	0,060	0,12	0,20	0,27	0,6	1,1	1,6	2,1	2,9
200	0,074	0,121	0,25	0,40	0,54	1,2	2,2	3,1	4,2	5,9
300	0,110	0,181	0,37	0,60	0,81	1,7	3,3	4,7	6,3	8,8
400	0,147	0,242	0,50	0,80	1,08	2,3	4,4	6,3	8,4	11,7
500	0,184	0,302	0,62	1,01	1,35	2,9	5,5	7,9	10,5	14,7
600	0,221	0,363	0,75	1,21	1,62	3,5	6,6	9,4	12,6	17,6
700	0,257	0,423	0,87	1,41	1,89	4,1	7,7	11,0	14,7	20,5
720	0,265	0,435	0,90	1,45	1,95	4,2	7,9	11,3	15,1	21,1
800	0,294	0,483	1,00	1,61	2,16	4,6	8,8	12,6	16,8	23,5
900	0,331	0,544	1,12	1,81	2,43	5,2	9,9	14,1	18,8	26,4
960	0,353	0,580	1,20	1,93	2,59	5,6	10,6	15,1	20,1	28,1
1000	0,368	0,604	1,25	2,01	2,70	5,8	11,0	15,7	20,9	29,3
1200	0,441	0,725	1,50	2,41	3,24	7,0	13,2	18,8	25,1	35,2
1400	0,515	0,846	1,74	2,81	3,78	8,1	15,4	22,0	29,3	41,1
1440	0,529	0,870	1,79	2,90	3,89	8,4	15,8	22,6	30,2	42,2
1600	0,588	0,967	1,99	3,22	4,32	9,3	17,6	25,1	33,5	46,9
1800	0,662	1,088	2,24	3,62	4,86	10,4	19,8	28,3	37,7	52,8
2000	0,735	1,208	2,49	4,02	5,40	11,6	22,0	31,4	41,9	58,6
2200	0,809	1,329	2,74	4,42	5,94	12,8	24,2	34,6	46,1	64,5
2400	0,882	1,450	2,99	4,83	6,48	13,9	26,4	37,7	50,3	70,4
2600	0,956	1,571	3,24	5,23	7,02	15,1	28,6	40,8	54,5	76,2
2800	1,029	1,692	3,49	5,63	7,56	16,2	30,8	44,0	58,6	82,1
2880	1,059	1,740	3,59	5,79	7,78	16,7	31,7	45,2	60,3	84,4
3000	1,103	1,813	3,74	6,03	8,10	17,4	33,0	47,1	62,8	88,0
3600	1,323	2,175	4,49	7,24	9,73	20,9	39,6	56,5	75,4	105,5
Nominal Torque Nm	3,51	5,77	11,9	19,2	25,8	55,4	105	150	200	280

Data is for standard Nitrile element. For both nominal torque of Urethane and Hytrel multiply nominal torques of Nitrile by element power factors.

For speeds not shown calculate the nominal torque for the design application using the formula below and select coupling according to nominal torque ratings.

$$\text{Nominal Torque (Nm)} = \frac{\text{Design power (kW)} \times 30000}{\text{RPM} \times \pi}$$



# Jaw couplings

## Selection

- ▶ ..... Belts
- ▶ ..... Chains
- ▶ ..... Couplings
- ▶ ..... Bushings and Hubs
- ▶ ..... Sprockets
- ▶ ..... Pulleys
- ▶ ..... Smart tools

## Standard Bore and Keyway Chart

Bore mm	Keyway mm	Coupling Size									
		050	070	075	090	095	100	110	150	190	225
9	3 × 1,4	X	X	X	X	-	-	-	-	-	-
10	3 × 1,4	X	X	X	X	-	-	-	-	-	-
11	4 × 1,8	X	X	X	X	-	-	-	-	-	-
12	4 × 1,8	X	X	X	X	X	-	-	-	-	-
14	5 × 2,3	X	X	X	X	X	X	-	-	-	-
15	5 × 2,3	-	X	X	X	X	X	-	-	-	-
16	5 × 2,3	-	X	X	X	X	X	X	X	-	-
17	5 × 2,3	-	X	X	X	X	X	X	X	-	-
18	6 × 2,8	-	X	X	X	X	X	X	X	-	-
19	6 × 2,8	-	X	X	X	X	X	X	X	X	-
20	6 × 2,8	-	-	X	X	X	X	X	X	X	-
22	6 × 2,8	-	-	X	X	X	X	X	X	X	-
24	8 × 3,3	-	-	-	X	X	X	X	X	X	X
25	8 × 3,3	-	-	-	-	X	X	X	X	X	X
28	8 × 3,3	-	-	-	-	X	X	X	X	X	X
30	8 × 3,3	-	-	-	-	-	X	X	X	X	X
32	10 × 3,3	-	-	-	-	-	X	X	X	X	X
35	10 × 3,3	-	-	-	-	-	X	X	X	X	X
38	10 × 3,3	-	-	-	-	-	X	X	X	X	X
40	12 × 3,3	-	-	-	-	-	-	X	X	X	X
42	12 × 3,3	-	-	-	-	-	-	X	X	X	X
45	14 × 3,8	-	-	-	-	-	-	-	X	X	X
48	14 × 3,8	-	-	-	-	-	-	-	X	X	X
50	14 × 3,8	-	-	-	-	-	-	-	-	X	X
55	16 × 4,3	-	-	-	-	-	-	-	-	X	X
60	18 × 4,4	-	-	-	-	-	-	-	-	-	X

## Designations

Size	Hub Type L	Element				Ring Kit	Spacer	
		Nitrile Standard	Nitrile Wrap	Urethane	Hytrel®		100 mm	140 mm
035	PHE L035HUB	PHE L035NR	-	PHE L035UR	PHE L035HL	-	-	-
050	PHE L050HUB	PHE L050NR	-	PHE L050UR	PHE L050HL	-	-	-
070	PHE L070HUB	PHE L070NR	-	PHE L070UR	PHE L070HL	-	-	-
075	PHE L075HUB	PHE L075NR	-	PHE L075UR	PHE L075HL	-	-	-
090	PHE L090HUB	PHE L090/095NR	PHE L090NRWRAP	PHE L090/095UR	PHE L090/095HL	PHE L090RINGKIT	PHE L090X100SPACER	PHE L090X140SPACER
095	PHE L095HUB	PHE L090/095NR	PHE L095NRWRAP	PHE L090/095UR	PHE L090/095HL	PHE L095RINGKIT	PHE L095X100SPACER	PHE L095X140SPACER
100	PHE L100HUB	PHE L100NR	PHE L100NRWRAP	PHE L100UR	PHE L100HL	PHE L100RINGKIT	PHE L100X100SPACER	PHE L100X140SPACER
110	PHE L110HUB	PHE L110NR	PHE L110NRWRAP	PHE L110UR	PHE L110HL	PHE L110RINGKIT	PHE L110X100SPACER	PHE L110X140SPACER
150	PHE L150HUB	PHE L150NR	PHE L150NRWRAP	PHE L150UR	PHE L150HL	PHE L150RINGKIT	PHE L150X100SPACER	PHE L150X140SPACER
190	PHE L190HUB	PHE L190NR	PHE L190NRWRAP	PHE L190UR	PHE L190HL	PHE L190RINGKIT	PHE L190X100SPACER	PHE L190X140SPACER
225	PHE L225HUB	PHE L225NR	PHE L225NRWRAP	PHE L225UR	L225HL	PHE L225RINGKIT	PHE L225X100SPACER	PHE L225X140SPACER

When ordering bored to size and keywayed hubs it is required that the bore diameter is added to the designation found in the table above. Where a keyway is NOT required the designation should be suffixed with a P.

PHE L150-18MM = Hub Size 150 with 18 mm bore and keyway

PHE L070-16MMP = Hub Size 070 with 16 mm bore (no keyway)

A complete coupling consists of 2 hubs and 1 element.

A complete coupling with spacer consists of 2 hubs, 2 nitrile wrap elements, 2 ring kits and 1 spacer.

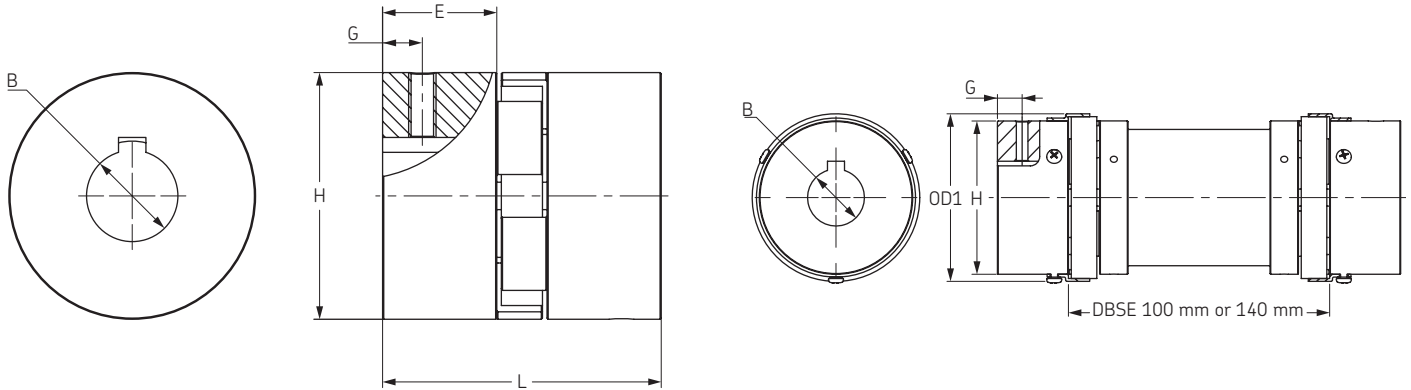


# Jaw couplings

Dimensions



## Hubs & Spacers



Jaw coupling spacers are available in 100 mm or 140 mm lengths for sizes 090 to 225. Jaw couplings are used with “snap wrap” Nitrile elements to allow spacer removal and axial shaft movement without disturbing either driving or driven machines.

## Dimensions

Size	Dimensions								Set Screw	Approx + mass kg	Max Speed RPM
	B		OD mm	OD1* mm	L mm	E mm	H mm	G mm			
	Pilot	Max									
035	3,20	9,5	15,9	-	20,6	6,7	15,9	-	-	0,03	31000
050	6,35	14,0	27,5	-	44,0	16,0	27,5	6,5	M6	0,05	18000
070	6,35	19,0	35,0	-	51,0	19,0	35,0	9,5	M6	0,12	14000
075	6,35	24,0	44,5	-	54,0	21,0	44,5	9,0	M6	0,22	11000
090	6,35	24,0	54,0	-	54,0	21,0	54,0	8,7	M6	0,28	9000
095	11,11	28,0	54,0	64	64,0	25,0	54,0	11,0	M8	0,31	9000
100	12,70	35,0	65,0	77	89,0	35,0	65,0	11,0	M8	0,75	7000
110	15,87	42,0	84,0	97	108,0	43,0	84,0	19,0	M10	1,50	5000
150	15,87	48,0	96,0	112	115,0	45,0	96,0	22,0	M10	2,40	4000
190	19,05	55,0	115,0	130	133,0	54,0	102,0	22,0	M12	3,50	3600
225	19,05	60,0	127,0	143	153,0	64,0	108,0	29,0	M12	4,50	3600

\* Outer diameter of ring kit

+ Mass of hub with pilot bores

DBSE = Distance between shaft ends

Hub material is high grade cast iron. Spacer material is aluminium.

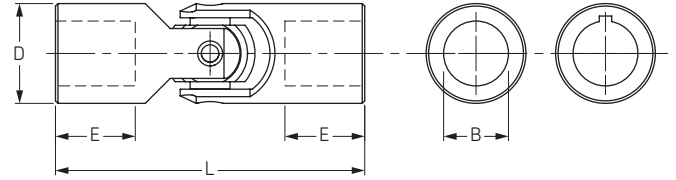


# Universal joints

- ▶ ..... Belts
- ▶ ..... Chains
- ▶ ..... Couplings
- ▶ ..... Bushings and Hubs
- ▶ ..... Sprockets
- ▶ ..... Pulleys
- ▶ ..... Smart tools

## Single Universal Joints

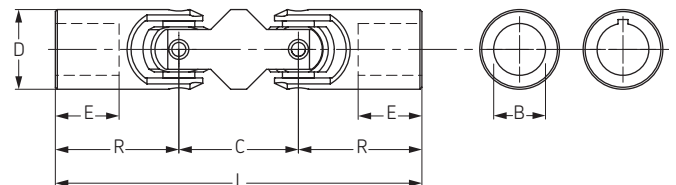
For use on shafts up to 1800 rev/min and working angles up to 25° (powered) or 35° (hand operated).



Size	L	E	D	Standard Bore	B Max		Static Breaking Torque	Designation
		Min			Bore	With Keyway		
	mm	mm	mm	mm	mm	mm	Nm	
UJMA10	38	12	10	6	6	-	13,5	PHE UJMA10
UJMA13	45	13	13	8	8	-	26,0	PHE UJMA13
UJMA16	52	15	16	8	10	8	45,0	PHE UJMA16
UJMA20	62	18	20	10	13	11	88,0	PHE UJMA20
UJMA25	74	20	25	12	16	14	180,0	PHE UJMA25
UJMA32	86	23	32	16	22	18	405,0	PHE UJMA32
UJMA40	108	30	40	20	25	22	860,0	PHE UJMA40
UJMA45	120	33	45	20	30	25	1250,0	PHE UJMA45
UJMA50	132	37	50	25	35	30	1730,0	PHE UJMA50
UJMA63	166	46	63	32	45	35	3400,0	PHE UJMA63
UJMA75	190	53	75	40	55	45	5300,0	PHE UJMA75

## Double Universal Joints

For use on constant velocity driven shafts or where parallel misalignment is required. Working angles up to 25° (powered) or 35° (hand operated)



Size	L	R	E	D	C	Standard Bore	B Max		Static Breaking Torque	Designation
			Min				Bore	With Keyway		
	mm	mm	mm	mm	mm	mm	mm	mm	Nm	
UJMB13	68	22,5	13	13	23	8	8	-	26	PHE UJMB13
UJMB16	77	26,0	15	16	25	8	10	8	45	PHE UJMB16
UJMB20	92	31,0	18	20	30	10	13	11	88	PHE UJMB20
UJMB25	110	37,0	20	25	36	12	16	14	180	PHE UJMB25
UJMB32	133	43,0	23	32	47	16	22	18	405	PHE UJMB32
UJMB40	164	54,0	30	40	56	20	25	22	860	PHE UJMB40
UJMB45	183	60,0	33	45	63	20	30	25	1250	PHE UJMB45
UJMB50	202	66,0	37	50	70	25	35	30	1730	PHE UJMB50
UJMB63	250	83,0	46	63	84	32	45	35	3400	PHE UJMB63
UJMB75	290	95,0	53	75	100	40	55	45	5300	PHE UJMB75

