/ TYRE COUPLINGS

PROTORQUE®

/ Tyre Coupling

Highly flexible and durable coupling designed to accommodate greater misalignment and absorb vibration.

Protorque PTC Tyre Couplings are engineered for demanding industrial applications requiring high-flexibility, superior misalignment compensation, and excellent vibration absorption.

PTC Tyre Couplings feature a robust, highly elastic tyre elements that allows for significant angular and parallel misalignments, all while delivering smooth, reliable power transmission. Their shock-absorbing properties reduce torsional fluctuations and vibrations, protecting connected machinery and extending equipment life.

With fast, user-friendly installation, minimal maintenance, and wide compatibility across industries, the Protorque Tyre Coupling delivers consistent, reliable performance in even the toughest conditions.

FEATURES

MISALIGNMENT

Accommodates significant angular, parallel, and axial misalignment. Ensures smooth operation even in challenging conditions.

SHOCK AND VIBRATION ABSORPTION

The tyre element absorbs shocks and vibrations. Provides a cushioned effect that protects connected machinery.

EASY INSTALLATION

User-friendly design allows for quick and easy installation.

MINIMAL MAINTENANCE

Durable tyre element resists wear and tear. Low maintenance requirements reduce downtime and costs.

BENEFITS

FLEXIBILITY AND MISALIGNMENT COMPENSATION

The PTC tyre coupling is designed to accommodate significant misalignment, both angular and parallel, without compromising performance. This flexibility ensures smooth operation even in challenging conditions, reducing the risk of equipment damage and downtime.

VERSATILE APPLICATION RANGE

The versatility of the PTC tyre coupling makes it suitable for a wide range of applications across various industries. From manufacturing and processing plants to mining and construction equipment, this coupling can be integrated into different systems with ease. Its adaptability ensures that you can rely on the PTC tyre coupling for consistent performance.

/ Design Features

Phosphate coated for reduced corrosion resistance

Durable tyre resists wear and tear for low maintenance

Designed to accommodate angular and parallel misalignment

Tyre design absorbs shock and vibrations, protecting connected machinery

/ Selection & Service Factor

Selection	
EXAMPLE A tyre coupling is required to transmit 30 kW from an electric motor running at 1440 r/min to a centrifugal pump for 16 hours per day. The diameter of the motor shaft is 30mm. The diameter of the pump shaft is 25mm.	
a) Service Factor Determine appropriate Service Factors from table below.	**a) Service Factor** The appropriate service factor is 1.
b) Design Power Multiply running power of driven machinery by the service factor. This gives the design power which is used as a basis for coupling selection.	**b) Design Power** Design power 30 x 1 = 30 kW.
c) Coupling Size Refer to Power Ratings table below and read across from the appropriate speed until a power equal to or greater than the design power is found. The size of coupling is given at the head of that column.	**c) Coupling Size** Reading across from 1440 rev/min in the speed column of Power Ratings table below, 37.70kW is the first power to exceed the required 30kW (design power). The size of the coupling at the head of this column is 70.
d) Bore Size From dimensions table check that the required bores can be accommodated.	**d) Bore Size** The Dimensions table shows that both shaft diameters are within the bore range available.

Service Torque	TK = 9550x P/n (Nm)
Coupling Torque	TK N ≥Tk x K (Nm) P = effect per kW n = r/m

Service Factor (K)

SPECIAL CASES
For applications where substantial shock, vibration and torque fluctuations occur, and for reciprocating machines (e.g. internal combustion engines, piston pumps and compressors).

CLASS 1
Agitators, brewing machinery, centrifugal compressors and pumps, belts conveyors, dunamometers, lineshafts, fans up to 7.5kW, blowers and exhausters (except positive displacement), generators.

CLASS 2
Clay working machinery, general machine tools, papermill beaters and winders, rotary pumps, rubber extruders, rotary screens, textile machinery, marine propellers and fans over 7.5kW.

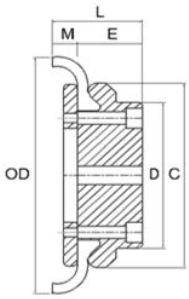
CLASS 3
Bucket elevators, cooling tower fans, piston compressors and pumps, foundry machinery, metal presses, paper mill calenders, hammermills, press and pulp grinders, rubber calendars, pulverisers and positive displacement blowers.

CLASS 4
Reciprocating conveyors, gyratory crushers, mills (ball, pebble and rod), rubber machinery (banbury mixers and mills) and vibratory screens.

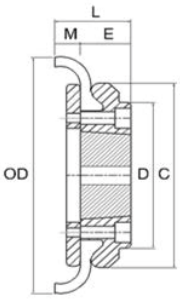
Class	Type of driving unit					
	Electric motors steam turbines			Internal combustion engines Steam engines Water turbines		
Hours per day duty	≤ 10	> 10 ≤ 16	>16	≤ 10	> 10 ≤ 16	>16
Class 1	0.8	0.9	1.0	1.3	1.4	1.5
Class 2	1.3	1.4	1.5	1.8	1.9	2.0
Class 3	1.8	1.9	2.0	2.3	2.4	2.5
Class 4	2.3	2.4	2.5	2.8	2.9	3.0

/ Service Factor

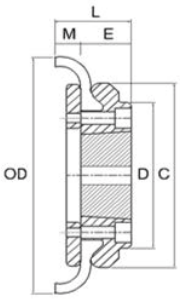
SIZES:F40-F60



Pilot Bore
(B)

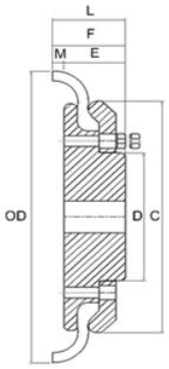


Taper Flange
(F)

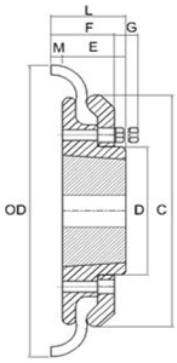


Taper Flange
(H)

SIZES:F70-F250



Pilot Bore
(B)



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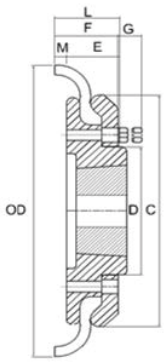

Taper Flange
(H)

Power Ratings															
Speed	**Coupling size**														
	40	**50**	**60**	**70**	**80**	**90**	**100**	**110**	**120**	**140**	**160**	**180**	**200**	**220**	**250**
r/min	**kW**														
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	111.1	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	1160	14675
Max. torque Nm	64	160	318	487	759	1096	1517	2137	3547	5642	9339	16455	23508	33125	42740

/ Dimensions

Size	Type	Min Bore (mm)	Max bore (mm)	Type B		Type F&H		Dimensions						Inertia (kg/m2)	Materi-als	Approx weight
				L	E	L	E	OD	C	D	F	G	M			
40	B	-	32	33	22	-	-	104	82	-	-	-	11	0.00074	Steel	0.8
40	F	9	25	-	-	33	22	104	82	-	-	-	11	0.00074	Steel	0.8
40	H	9	25	-	-	33	22	104	82	-	-	-	11	0.00074	Steel	0.8
50	B	-	38	45	32	-	-	133	100	79	-	-	12.5	0.00115	Steel	1.2
50	F	11	32	-	-	38	25	133	100	79	-	-	12.5	0.00115	Steel	1.2
50	H	11	32	-	-	38	25	133	100	79	-	-	12.5	0.00115	Steel	1.2
60	B	-	45	55	38	-	-	165	125	70	-	-	16.5	0.0052	Steel	2
60	F	14	42	-	-	42	25	165	125	103	-	-	16.5	0.0052	Steel	2
60	H	14	42	-	-	42	25	165	125	103	-	-	16.5	0.0052	Steel	2
70	B	-	50	47	35	-	-	187	144	80	50	13	11.5	0.009	Steel	3.1
70	F	14	50	-	-	44	32	187	144	80	50	13	11.5	0.009	Steel	3.1
70	H	14	42	-	-	42	30.5	187	144	80	50	13	11.5	0.009	Steel	3
80	B	-	60	55	42	-	-	211	167	98	54	16	12.5	0.018	Steel	4.9
80	F	16	60	-	-	58	45	211	167	97	54	16	12.5	0.018	Steel	4.9
80	H	14	50	-	-	45	32	211	167	98	54	16	12.5	0.017	Steel	4.6
90	B	-	70	64	49	-	-	235	188	112	60	16	13.5	0.032	Steel	7.1
90	F	16	60	-	-	59.5	45	235	188	108	60	16	13.5	0.031	Steel	7
90	H	16	60	-	-	59.5	45	235	188	108	60	16	13.5	0.031	Steel	7
100	B	-	80	71	56	-	-	254	216	125	62	16	13.5	0.055	Steel	9.9
100	F	25	75	-	-	65.5	51	254	216	120	62	16	13.5	0.055	Steel	9.9
100	H	16	60	-	-	59.5	45	254	216	113	62	16	13.5	0.054	Steel	9.4
110	B	-	90	76	63	-	-	279	233	128	62	16	12.5	0.081	Steel	12.5
110	F	25	75	-	-	63.5	51	279	233	134	62	16	12.5	0.078	Steel	11.7
110	H	25	75	-	-	63.5	51	279	233	134	62	16	12.5	0.078	Steel	11.7
120	B	-	100	85	70	-	-	314	264	143	67	16	14.5	0.137	Steel	16.9
120	F	35	100	-	-	79.5	65	314	264	140	67	16	14.5	0.137	Steel	16.5
120	H	25	75	-	-	65.5	51	314	264	140	67	16	14.5	0.13	Steel	15.9
140	B	-	130	111	94	-	-	359	311	178	73	17	16	0.254	Steel	22.2
140	F	35	100	-	-	81.5	65	359	311	178	73	17	16	0.255	Steel	22.3
140	H	35	100	-	-	81.5	65	359	311	178	73	17	16	0.255	Steel	22.3
160	B	40	140	117	102	-	-	402	345	187	78	19	15	0.469	Steel	35.8
160	F	-	115	-	-	92	76	402	345	197	78	19	15	0.38	Steel	32.5
160	H	-	115	-	-	92	76	402	345	197	78	19	15	0.38	Steel	32.5
180	B	-	150	137	114	-	-	470	398	200	94	19	23	0.871	Steel	49.1
180	F	-	125	-	-	112	89	470	398	205	94	19	23	0.847	Steel	42.2
180	H	-	125	-	-	112	89	470	398	205	94	19	23	0.847	Steel	42.2
200	B	-	150	138	114	-	-	508	429	200	103	19	24	1.301	Cast Iron	58.2
200	F	-	125	-	-	113	89	508	429	205	103	19	24	1.281	Cast Iron	53.6
200	H	-	125	-	-	113	89	508	429	205	103	19	24	1.281	Cast Iron	53.6
220	B	-	160	155	127	-	-	562	474	218	118	20	27.5	2.142	Cast Iron	79.6
220	F	-	125	-	-	130	102	562	474	223	118	20	27.5	2.104	Cast Iron	72
220	H	-	125	-	-	130	102	562	474	223	118	20	27.5	2.104	Cast Iron	72
250	B	-	190	162	132	-	-	628	532	254	125	25	29.5	3.505	Cast Iron	104
250	F	-	125	-	-	132	102	628	448	254	132	25	29.5	3.468	Cast Iron	92
250	H	-	125	-	-	132	102	628	448	254	132	25	29.5	3.468	Cast Iron	92

/ AUTHORISED DISTRIBUTORS

Acorn Industrial Services Ltd

Unit A, Denby Way,
Hellaby Industrial Estate,
Rotherham, S66 8HR, UK.

T: +441709 789 999
E: enquiries@acorn-ind.co.uk
W: www.acorn-ind.co.uk

Arkov, SPOL. S R.O.

Secska 861, 538 21
Slatinany, Czechia.

T: +420 469 364 111
E: arkov@arkov.cz
W: www.arkov.cz

Bell

Ptujska cesta 13, Miklavž na
Dravskem polje, Slovenija.

T: +386 26296920
E: info@bell.si
W: www.bell.si

Industrial CZ, SPOL. S R.O.

K Hutím 1040/4, 198 00
Praha 9, Czechia.

T: +420 283 891 466
E: industrial@industrial.cz
W: www.industrial.cz

Jens S. Tranmissioner A/S

Hørskætten 7, DK-2630
Taastrup, Danmark.

T: +45 70 13 83 33
E: info@jens-s.dk
W: www.jens-s.dk

OY Jens S. AB

Martinkyläntie 52, 01720
Vantaa, Suomi.

T: +3589 867 6730
E: myynti@jens-s.fi
W: www.jens-s.fi

Jens S. Transmisjoner A/S

Enebakkveien 117
0680 Oslo, Norway.

T: +47 23 06 04 00
E: post@jens-s.no
W: www.jens-s.no

Jens S. Transmissioner AB

Säterivägen 27,
605 97 Norrköping, Sweden.

T: +46 11 19 80 00
E: info@jens-s.se
W: www.jens-s.se

Spruit Transmissies BV

Ivoorstraat 4, 1812 RE
Alkmaar, PO Box 85, 1800
AB Alkmaar, Nederland.

T: +31 072 5412000
E: sales@spruit.nl
W: www.spruit.nl

Town & County Engineering Services

Wardentree Lane,
Pinchbeck, Spalding,
PE11 3UG, UK.

T: +441775 725 678
E: sales@tces.co.uk
W: www.tces.co.uk

Axel Johnson International

Protorque

Registered address:
Unit A, Denby Way,
Hellaby Industrial Estate,
Rotherham, S66 8HR, UK.

W: www.protorque.net