PILOT & TAPER BORE
INTERNAL & EXTERNAL FIT
COUPLINGS

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KOBO - HRC COUPLINGS

The KOBO range of elastomeric couplings are fully interchangeable with standard couplings used throughout all industry. The couplings consist of two cast iron hubs which are connected by an elastomeric six leg spider (flexible component). They are available in eight sizes.

The flexible element can accomodate a higher degree of misalignment.
Parallel missalignment upto 0.5mm
Axial misalignment upto 1.7mm

Because of their superior design KOBO - HRC Couplings can accommodate larger shaft sizes which makes them a more economical proposition.

ECONOMY

The design has been optimised so that the power capacities are balanced to the appropriate shaft diameters utilising taper bore fixings.

RESILIENCE

Transient peak loads are reduced by a flexible component, deflection of which is a prime design consideration.

MISALIGNMENT

Incidental parallel, angular and axial displacement of the connected shafts can be accomodated

INSTALLATION

Quick and easy without special tools, only an allen key is required.

MAINTENANCE

Virtually eliminated and no lubrication required.

ENVIRONMENT

The elastomeric component makes the coupling suitable for use in most conditions with a temperature range of -40C TO +100C.

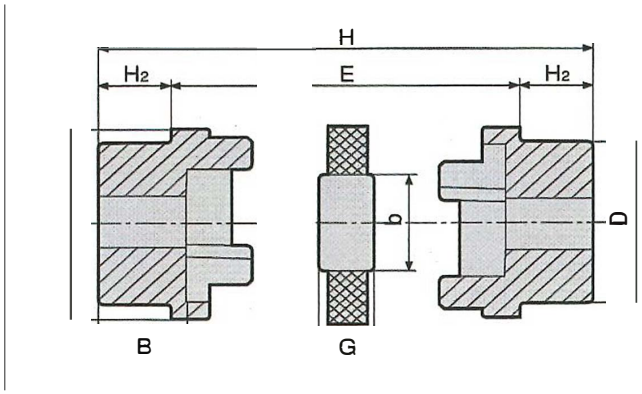
POSITIVE

In the unlikely event of the flexible component being destroyed, the drive will be maintained by the interaction of dogs which are integral with the flanges.

Elastomeric shaft coupling Pilot bore series

Type	Max bore		Dimensions								
	mm	inches	De	D	b	E	G	H²	B	H	Kg/2
HRCP70	32	1¼	69	60	31	25.00	18.00	20.00	23.50	65.00	1.20
HRCP90	42	1⅜	85	70	32	30.50	22.50	26.00	30.00	82.50	2.15
HRCP110	55	2⅛	112	100	45	45.00	29.00	37.00	45.00	119.00	6.10
HRCP130	60	2⅜	130	105	50	53.00	36.00	47.00	55.50	147.00	8.90
HRCP150	70	2¾	150	115	62	60.00	40.00	50.00	60.00	160.00	12.20
HRCP180	80	3⅛	180	125	77	73.00	49.00	58.00	70.00	189.00	18.40
HRCP230	100	4	225	155	99	85.50	59.50	77.00	90.00	239.50	35.50
HRCP280	130	5	275	206	119	105.50	74.50	90.00	105.50	285.50	71.50

Material: Cast iron EN-GJL-250 UNI EN 1561

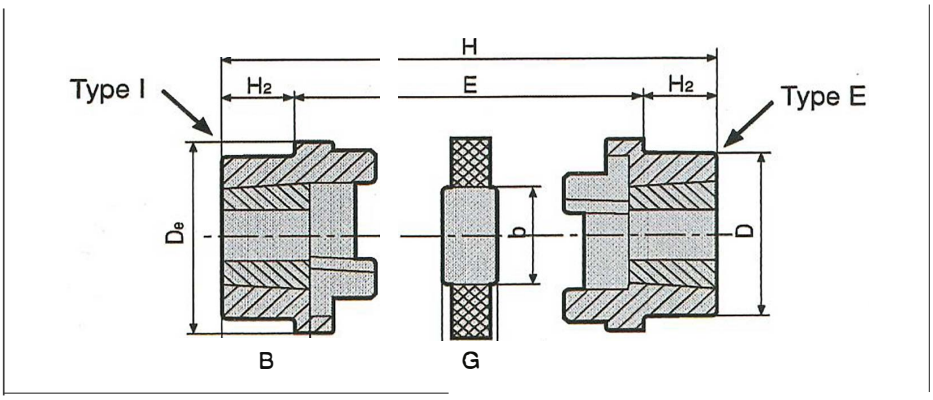


Elastomeric shaft couplings Taper bore series

Type	Bush	Max bore											
		mm	inches	De	D	b	E	G	H²	B	J*	H	Kg/2
HRCI/E 70	1008	25	1	69	60	31	25.00	18.00	20.00	23.50	29.00	65.00	0.88
HRCI/E 90	1108	20	1⅛	85	70	32	30.50	22.50	19.50	23.50	29.00	69.50	1.45
HRCI/E 110	1610	42	1⅝	112	100	45	45.00	29.00	18.50	26.50	38.00	82.00	3.20
HRCI/E 130	1610	42	1⅝	130	105	50	53.00	36.00	18.00	26.50	38.00	89.00	4.54
HRCI/E 150	2012	50	2	150	115	62	60.00	40.00	23.50	33.50	42.00	107.00	6.60
HRCI/E 180	2517	60	2½	180	125	77	73.00	49.00	34.50	46.50	48.00	142.00	10.75
HRCI/E 230	3020	75	3	225	155	99	85.50	59.50	39.50	52.50	55.00	165.00	19.14
HRCI/E 280	3525	100	4	275	206	119	106.00	74.50	51.00	66.50	67.00	208.00	41.00

Material: Cast iron EN-GJL-250 UNI EN 1561

* J = Clearance required for the allen key for tightening and loosening the bush onto the shaft.



Elastomeric inserts

Type	Kg
HRCN70	0.016
HRCN90	0.05
HRCN110	0.08
HRCN130	0.15
HRCN150	0.22
HRCN180	0.38
HRCN230	0.8
HRCN280	1.53

Material: Rubber

TABLE 1 SERVICE FACTORS

TYPE OF DRIVE	
Electric Motors Steam Turbines	Internal combustion engines Steam Engines Water Turbines

Type of Machine	OPERATIONAL HOURS PER DAY					
Uniform load	8 and under	8 to 16 inclusive	over 16	8 and under	8 to 16 inclusive	over 16
Agitators, Brewing Machinery,Centrifugal Blowers and compressors, Conveyors, Centrifugal fans and pumps, Generators, sewage disposal equipment	1	1.12	1.25	1.25	1.4	1.6
Moderate shock load *						
Clay machinery, Cranes and hoists, Laundry Wood working, Machine tools, Rotary mills, Paper and Textile machinery.	1.6	1.8	2	2	2.24	2.5
Heavy shock load *						
Reciprocating conveyors, Crushers,Shakers, Metal mills, Rubber machinery, Reciprocating compressors	2.5	2.8	3.12	3.12	3.55	4

* It is recommended that keys (with top clearance if in Taper Bushes) are fitted for applications where load fluctuation is expected.

SELECTION STANDARD ELECTRIC MOTORS

Read across Table 2 from the motor frame size and find the applicable nominal motor speed column. Read the appropriate coupling selection for either taper or pilot bore.

Table 2 (service factor not less than 1.6).

Motor frame	Shaft Dia in	3,000 rpm		1,500 rpm		1,000 rpm		750 rpm	
		Motor power	Coupling size	Motor power	Coupling size	Motor power	Coupling size	Motor power	Coupling size
size	mm	kW		kW		kW		kW	
90 S	24	1.5	70	1.1	70	0.75	70		
90 L	24	2.2	70	1.5	70	1.1	70		
132 S	38	5.5	110	5.5	110	3	110	2.2	110
132 S	7.5	110							
132 M	38			7.5	110	4	110	3	110
132 M	38					5.5	110	3	110
160 M	42	11	110	11	110	7.5	110	4	110
160 M	42	15	110	11	110	7.5	110	5.5	110
180 M	48	22	150	18.5	150				
180 L	48			22	150	15	150	11	150
200 L	55	30	180			18.5	180	15	180
200 L	55	37	180	30	180	22	180	15	180
225 S	60			37	180			18.5	180
225 M	55*	45	180	45	180	30	180	22	180
225 M	60	45	180	45	180	30	180	22	180
250 M	60*	55	180	55	230	37	230	30	230
250 M	65	55	180	55	230	37	230	30	230
280 S	75			75	230	45	230	37	230
280 M	75			90	230	55	230	37	230

*3,000 RPM only

A) Service Factor — Determine the required service factor from Table 1

B) Design Power — Multiply the normal running power by the service factor. This gives the design power which is used as a basis for coupling selection.

C) Coupling size — Refer to table 3 and from the appropriate speed in the speed column, read across untill a power equal to or greater than the design power required is found.

D) Bore Size — From the dimension Table 5 check that the chosen hubs can accommodate the required bores

Example: A coupling is required to transmit 70kW between a 1440 rpm electric motor ans a hoist running over 16 hours per day. The motor shaft is 70mm and the hoist shaft is 75mm.

A) Service factor from table 1 is 2
B) Design power: 70 x 2 = 140kW
C) Coupling size: by reading across from 1440 rpm in the speed column of Table 3. 143kW is the first power to exceed the required 140kW (design power). The size of coupling at the head of this column is 180
D) Bore size: By refering to Table 5 it can be seen that type 180B can accommodate both shaft sizes. However if the coupling needs to be Taper bore then type 230 is required.

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Table 3 Power Rating Kw

	Coupling Size							
RPM	70	90	110	130	150	180	230	280
100	0.33	0.84	1.68	3.30	6.28	9.95	20.90	33.00
200	0.66	1.68	3.35	6.60	12.6	19.90	41.90	66.00
400	1.32	3.35	6.70	13.20	25.1	39.80	83.80	132.00
600	1.98	5.03	10.10	19.80	37.7	59.70	126.00	198.00
720	2.37	6.03	12.10	23.80	45.2	71.60	151.00	238.00
800	2.64	6.70	13.40	26.40	50.3	79.60	168.00	264.00
960	3.17	8.40	16.10	31.70	60.3	95.50	210.00	317.00
1200	3.96	10.10	20.10	39.60	75.4	119.00	251.00	396.00
1440	4.75	12.10	24.10	47.50	90.5	143.00	302.00	475.00
1600	5.28	13.40	26.80	52.80	101	159.00	335.00	528.00
1800	5.94	15.10	30.20	59.40	113	179.00	377.00	594.00
2000	6.60	16.80	33.50	66.00	126	199.00	419.00	660.00
2200	7.26	18.40	36.90	72.60	138	219.00	461.00	726.00
2400	7.92	20.10	40.20	79.20	151	239.00	503.00	
2600	8.58	21.80	43.60	85.80	163	259.00	545.00	
2880	9.50	24.10	48.20	95.00	181	286.00		
3000	9.90	25.10	50.30	99.00	188	298.00		
3600	11.90	30.10	60.30	118.00	226			
Nominal torque	31.5	80	160	315	600	950	2000	3150
Max torque	72	180	360	720	1500	2350	5000	7200

Table 4 Physical Characteristics

	Coupling Size							
	70	90	110	130	150	180	230	280
Max RPM*	8300	6740	5110	4400	3800	3180	2540	2080
Nominal Torque	31.5	80	160	315	600	950	2000	3150
Max torque	72	180	360	720	1500	2350	5000	7200

Max Parallel misalignment mm	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5
Max Axial misalignment mm	0.2	0.5	0.6	0.8	0.9	1.1	1.3	1.7

* Maximum coupling speeds are calculated using an allowable peripheral speed for the hub material.
For selection of small sizes abov 3600rpm. For selection of small sizes abov 3600rpm consult KOBO

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Table 5: Shaft coupling for Taper Bore

Type	Power Potential at 100 rpm Kw	Bush	Min Bore	Max Bore	H^2	B	E	H	J*	Misalignment		Max RPM	Moment of Inertia kg/cm3	De	D	b	G
										Parallel	Axial						
70	0.33	1008	9	25	20.00	23.50	25.00	65.00	29.00	0.30	0.20	9100	8.50	69.00	60.00	31.00	18.00
90	8.84	1108	9	28	19.50	23.50	30.50	69.50	29.00	0.30	0.50	7400	11.50	85.00	70.00	32.00	22.50
110	1.68	1610	14	42	18.50	26.50	45.00	82.00	38.00	0.30	0.60	5630	40.00	112.00	100.00	45.00	29.00
130	3.30	1610	14	42	18.00	26.50	53.00	89.00	38.00	0.40	0.80	4850	78.00	130.00	105.00	50.00	36.00
150	6.28	2012	14	50	23.50	33.50	60.00	107.00	42.00	0.40	0.90	4200	181.00	150.00	115.00	62.00	40.00
180	9.95	2517	16	60	34.50	46.50	73.00	142.00	48.00	0.40	1.10	3500	434.00	180.00	125.00	77.00	49.00
230	20.90	3020	25	75	39.50	52.50	85.50	165.00	55.00	0.50	1.30	2800	1207.00	225.00	155.00	99.00	59.50
280	33.00	3525	35	100	51.00	66.50	106.00	208.00	67.00	0.50	1.70	2300	4465.00	275.00	206.00	119.00	74.50

Shaft Coupling for Pilot Bore

Type	Power Potential at 100 rpm Kw		Min Bore	Max Bore	H^2	B	E	H		Misalignment		Max RPM	Moment of Inertia kg/cm3	De	D	b	G
										Parallel	Axial						
70	0.33		10	32	20.00	23.50	25.00	65.00		0.3	0.2	9100	8.50	69.00	60.00	31.00	18.00
90	8.84		10	42	26.00	30.00	30.50	82.50		0.3	0.5	7400	11.50	85.00	70.00	32.00	22.50
110	1.68		10	55	37.00	45.00	45.00	119.00		0.3	0.6	5630	40.00	112.00	100.00	45.00	29.00
130	3.3		14	60	47.00	55.50	53.00	147.00		0.4	0.8	4850	78.00	130.00	105.00	50.00	36.00
150	6.28		19	70	50.00	60.00	60.00	160.00		0.4	0.9	4200	181.00	150.00	115.00	62.00	40.00
180	9.95		35	80	58.00	70.00	73.00	189.00		0.4	1.1	3500	434.00	180.00	125.00	77.00	49.00
230	20.9		38	100	77.00	90.00	85.50	239.50		0.5	1.3	2800	1207.00	225.00	155.00	99.00	59.50
280	33		48	130	90.00	105.50	105.50	285.50		0.5	1.7	2300	4465.00	275.00	206.00	119.00	74.50

HRCI & E Taper Bore

Hub and Elastomeric Inserts

Elastomeric Inserts