Sprzęgła HRC

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HRC couplings

TABLE 1 - SERVICE FACTORS

SPECIAL CASES	TYPES OF DRIVING UNIT					
For applications where substantial shock, vibration and torque fluctuation occur and for reciprocating machines, e.g. internal combustion engines, piston type pumps and compressors, refer to SATI with full machine details for torsional analysis	Electric Motors Steam Turbines			Internal Combustion Engines Steam Engines Water Turbines		
	OPERATIONAL HOURS PER DAY					
DRIVEN MACHINE CLASS	8 and under	Over 8 to 16 inclusive	Over 16	8 and under	Over 8 to 16 inclusive	Over 16
UNIFORM Agitators, Brewing Machinery, Centrifugal Blower and Compressors, Conveyors, Centrifugal Fans and Pumps, Generators, Sewage Disposal Equipment	1,00	1,12	1,25	1,25	1,40	1,60
MODERATE SHOCK* Clay working machinery, Cranes Hoist, Laundry machinery, Wood working machinery, Machinery Tools, Rotary Mills, Paper Mill machinery, Textile machinery.	1,60	1,80	2,00	2,00	2,24	2,50
HEAVY SHOCK* Reciprocating conveyors, Crushers, Shakers, Metal Mills, Rubber machinery, (Banbury Mixers and Mills), Reciprocating compressors.	2,50	2,80	3,12	3,12	3,55	4,00

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

Selection standard electric motors

Read across the table 2 from the appropr iate motor frame size and find the applicable nominal motor speed column. Read the appropriate coupling selection for either Taper-Lock® H' or F'

TABLE 2 - SERVICE FACTORS NOT LESS THAN 1.6

Motor Frame Size	Shaft Dia. mm	3000 rev/min		1500 rev/min		1000 rev/min		750 rev/min	
		Motor Power kW	Coupling Size	Motor Power kW	Coupling Size	Motor Power kW	Coupling Size	Motor Power kW	Coupling Size
90 S	24	1,5	70	1,1	70	0,75	70	-	-
90 L	24	2,2	70	1,5	70	1,1	70	-	-
112 M	28	4	90	4	90	2,2	90	1,5	90
132 S	38	5,5	110	5,5	110	3	110	2,2	110
		7,5	110						
132 M	38			7,5	110	4	110	3	110
						5,5	110		
160 M	42	11	110	11	110	7,5	110	4	110
		15	110					5,5	110
160 L	42	18,5	110	15	110	11	130	7,5	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
		37	180	30	180	22	180		
225 S	60			37	180			18,5	180
225 M	55*	45	180	45	180	30	180	22	180
	60								
250 M	60*	55	180	55	230	37	230	30	230
	65								
280 S	75			75	230	45	230	37	230
280 M	75			90	230	55	230	37	230

*3000 rev/min 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 until 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 shaft coupling is required to transmit 70kW between a 1440 rev/mm electric motor and a hoist running over 16 hours/day. The motor shaft is 70 mm. and the hoist shaft is 75 mm.

a. Service Factor From Table 1, the Service Factor is 2.
b. Design Power: 70x2 = 140 kW
c. Coupling Size By reading across from 1440 rev/mm in the speed column of Table 3 (Power Rating Table) 143 kW is the first power to exceed the required 140 kW (design power). The size of coupling at the head of this column is 180.
d. Bore Size By referring to the Dimension table 5 it can be seen that for HRC - 180B type both shaft diameters fall within the bore range available.

However in case the coupling selection is required in taper bore then select HRC-230.

TABLE 3 - POWER RATINGS (kW)

Speed rev/min	COUPLING SIZE							
	70,00	90,00	110,00	130,00	150,00	180,00	230,00	280,00
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	12,60	19,90	41,90	66,00
400	1,32	3,35	6,70	13,20	25,10	39,80	83,80	132,00
600	1,98	5,03	10,10	19,80	37,70	59,70	126,00	198,00
720	2,37	6,03	12,10	23,80	45,20	71,60	151,00	238,00
800	2,64	6,70	13,40	26,40	50,30	79,60	168,00	264,00
960	3,17	8,40	16,10	31,70	60,30	95,50	210,00	317,00
1200	3,96	10,10	20,10	39,60	75,40	119,00	251,00	396,00
1440	4,75	12,10	24,10	47,50	90,50	143,00	302,00	475,00
1600	5,28	13,40	26,80	52,80	101,00	159,00	335,00	528,00
1800	5,94	15,10	30,20	59,40	113,00	179,00	377,00	594,00
2000	6,60	16,80	33,50	66,00	126,00	199,00	419,00	660,00
2200	7,26	18,40	36,90	72,60	138,00	219,00	461,00	726,00
2400	7,92	20,10	40,20	79,20	151,00	239,00	503,00	
2600	8,58	21,80	43,60	85,80	163,00	259,00	545,00	
2880	9,50	24,10	48,30	95,00	181,00	286,00		
3000	9,90	25,10	50,30	99,00	188,00	298,00		
3600	11,90	30,10	60,30	118,00	226,00			
Nominal Torque (Nm)	31,5	80	160	315	600	950	2000	3150
Max Torque (Nm)	72	180	360	720	1500	2350	5000	7200

TABLE 4 - PHYSICAL CHARACTERISTICS

Characteristic	COUPLING SIZE							
	70	90	110	130	150	180	230	280
Maximum Speed* rev/min	8300	6740	5110	4400	3800	3180	2540	2080
Nominal Torque (Nm)	31,5	80	160	315	600	950	2000	3150
Maximum Torque (Nm)	72	180	360	720	1500	2350	5000	7200
Maximum Parallel Misalignment (mm)	0,3	0,3	0,3	0,4	0,4	0,4	0,5	0,5
Maximum 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.

TABLE 5 - DIMENSIONS

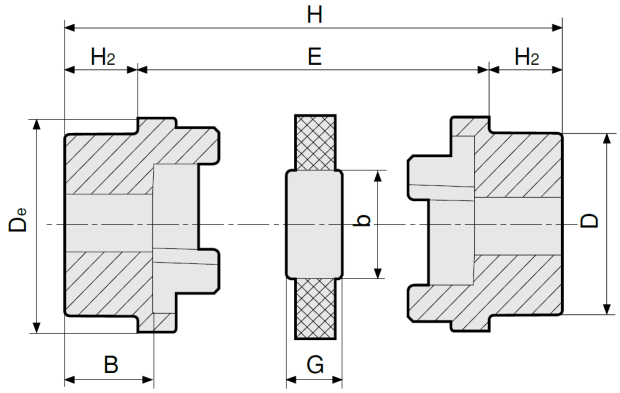
TYPE	Power	Bush	Min bore	Max. bore	H_2	B	E	H	J*	Maximum misalignment		Maximum revolution n(rpm)	Moment of inertia (kg/cm^3)	De	D	b	G
										Parallel	Axial						
70	0,33	1008	9	25	20	23,5	25	65	29	0,3	+0,2	9100	8,5	69	60	31	18
90	8,84	1108	9	28	19,5	23,5	30,5	69,5	29	0,3	+0,5	7400	11,5	85	70	32	22,5
110	1,68	1610	14	42	18,5	26,5	45	82	38	0,3	+0,6	5630	40	112	100	45	29
130	3,30	1610	14	42	18	26,5	53	89	38	0,4	+0,8	4850	78	130	105	50	36
150	6,28	2012	14	50	23,5	33,5	60	107	42	0,4	+0,9	4200	181	150	115	62	40
180	9,95	2517	16	60	34,5	46,5	73	142	48	0,4	+1,1	3500	434	180	125	77	49
230	20,90	3020	25	75	39,5	52,5	85,5	165	55	0,5	+1,3	2800	1207	225	155	99	59,5
280	33	3525	35	100	51	66,5	106	208	67	0,5	+1,7	2300	4465	275	206	119	74,5

*J = The wrench clerance required for tightening and losening the bush on the shaft.

Elastomeric shaft coupling standard straight bore series

TYPE	Power 100 rpm (kW)	Min bore	Max. bore	H_2	B	E	H	De	D	b	G
70	0,33	10	32	20	23,5	25,0	65,0	69	60	31	18,0
90	8,84	10	42	26	30,0	30,5	82,5	85	70	32	22,5
110	1,68	10	55	37	45,0	45,0	119,0	112	100	45	29,0
130	3,30	14	60	47	55,5	53,0	147,0	130	105	50	36,0
150	6,28	19	70	50	60,0	60,0	160,0	150	115	62	40,0
180	9,95	35	80	58	70,0	73,0	189,0	180	125	77	49,0
230	20,90	38	100	77	90,0	85,5	239,5	225	155	99	59,5
280	33,00	48	130	90	105,5	105,5	285,5	275	206	119	74,5

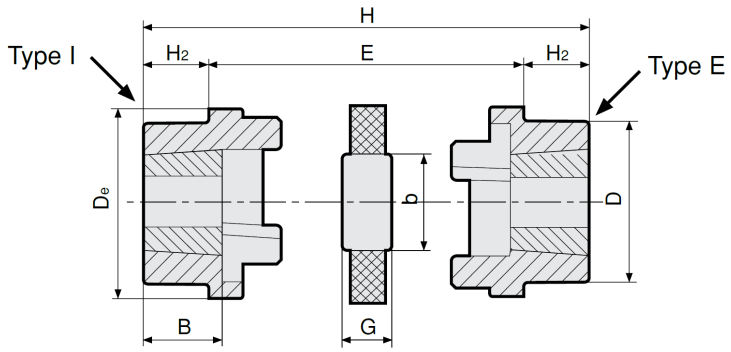
Coupling Material:Cast Iron EN-GJL-250 UNI EN 1561
Spider Material: Rubber



Type	Hubs Max. bore		Dimensions [mm]								Kg
	MM	INS	De	D	b	E	G	H2	B	H	
70	32	1 1/4	69	60	31	25,0	18,0	20,0	23,5	65,0	1,20
90	42	1 5/8	85	70	32	30,5	22,5	26,0	30,0	82,5	2,15
110	55	2 1/8	112	100	45	45,0	29,0	37,0	45,0	119,0	6,10
130	60	2 3/8	130	105	50	53,0	36,0	47,0	55,5	147,0	8,90
150	70	2 3/4	150	115	62	60,0	40,0	50,0	60,0	160,0	12,20
180	80	3 1/8	180	125	77	73,0	49,0	58,0	70,0	189,0	18,40
230	100	4"	225	155	99	85,5	59,5	77,0	90,0	239,5	35,50
280	130	5"	275	206	119	105,5	74,5	90,0	105,5	285,5	71,50

Elastomeric shaft coupling taper bore

Coupling Material: Cast Iron EN-GJL-250 UNI EN 1561
Spider Material: Rubber



Type	Bush	Hubs Max. bore		Dimensions [mm]									Maximum misalignment		Maximum revolution n(rpm)	Moment of inertia (kg/cm³)	Kg
		MM	INS	De	D	b	E	G	H2	B	J	H	Parallel	Axial			
70	1008	25	1	69	60	31	25,0	18,0	20,0	23,5	29	65,0	0,3	+0,2	9100	8,5	0,88
90	1108	20	1 1/8	85	70	32	30,5	22,5	19,5	23,5	29	69,5	0,3	+0,5	7400	11,5	1,45
110	1610	42	1 5/8	112	100	45	45,0	29,0	18,5	26,5	38	82,0	0,3	+0,6	5630	40,0	3,20
130	1610	42	1 5/8	130	105	50	53,0	36,0	18,0	26,5	38	89,0	0,4	+0,8	4850	78,0	4,54
150	2012	50	2	150	115	62	60,0	40,0	23,5	33,5	42	107,0	0,4	+0,9	4200	181,0	6,60
180	2517	60	2 1/2	180	125	77	73,0	49,0	34,5	46,5	48	142,0	0,4	+1,1	3500	434,0	10,75
230	3020	75	3	225	155	99	85,5	59,5	39,5	52,5	55	165,0	0,5	+1,3	2800	1207,0	19,14
280	3525	100	4	275	206	119	106,0	74,5	51,0	66,5	67	208,0	0,5	+1,7	2300	4465,0	41,00