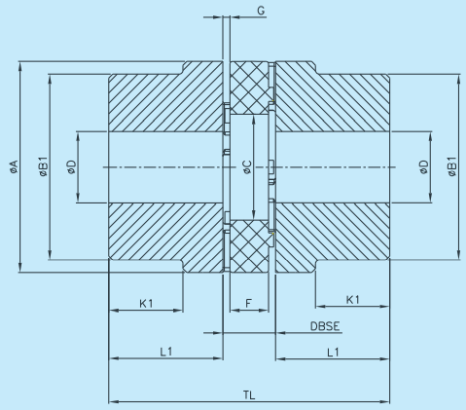
RRJ Coupling

- Allover machining - Inherently balanced
- No Lubrication, Maintenance free - Long life
- Compact design, High power to weight ratio
- Fail safe - Will perform even if spider fails
- Vibrations Damping, torsionally flexible
- Axial plug-in, easy to assemble

HUB TYPE I



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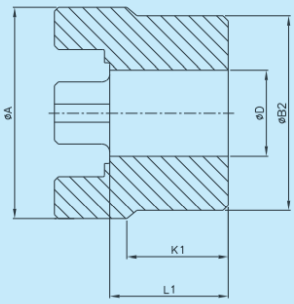
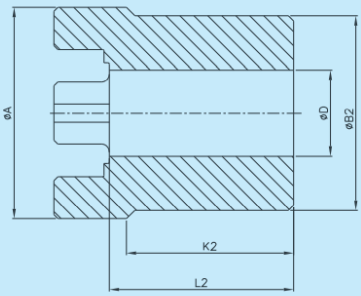


HUB TYPE III



TECHNICAL DATA

RRJ - ALUMINIMUM (AL)*

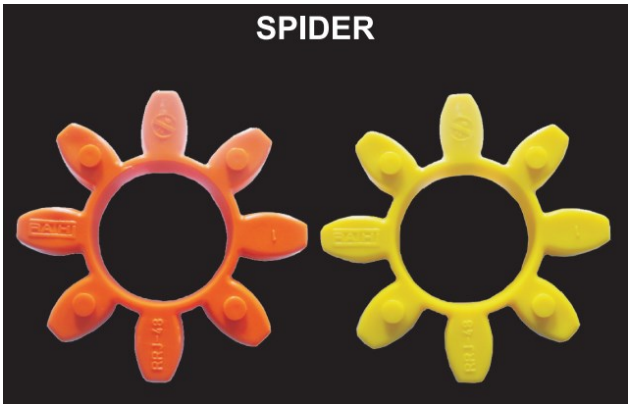
Coupling Size	Coupling Type	kW @ 100 rpm Red	kW @ 100 rpm Yellow	Torque Nm Red	Max. Speed RPM	Bore - Ø D PB	Bore - Ø D Min.	Bore - Ø D Max.	DIMENSIONS (mm) ØA	ØB1	ØB2	ØC	DBSE min.	F	L1	L2	G	TL	K1	K2	# Assembly Weight (Kg.)	# Assembly M.I. (Kg.m²)
19	I	0.18	0.1	18	14000	0	6	19	41	32	-	18	16	12	25	-	2	66	20	-	0.11	2.3 X 10^{-5}
	II						19	24		-	41										0.14	4.3 X 10^{-5}
24	I	0.65	0.35	62	10600		9		56	40	-	27	18	14	30	-	2	78	24	-	0.24	9 X 10^{-5}
	II						22	28		-	56										0.34	19 X 10^{-5}
28	I	1.75	0.95	167	8500		10		66	48	-	30	20	15	35	-	2.5	90	28	-	0.39	20X 10^{-5}
	II						28	38		-	66										0.54	42 X 10^{-5}

RRJ- CAST IRON (CI)*

38	I	3.47	1.9	332	7100	10	12	40	80	66	-	38	24	18	45	-	3	114	37	-	2.00	1.85 X 10^{-3}
	II							48		-	78										2.40	2.45 X 10^{-3}
	III														-	70		164	-	62	3.60	3.72 X 10^{-3}
42	I	4.99	2.65	477	6000	12	14	45	95	75	-	46	26	20	50	-	3	126	40	-	3.20	4.1 X 10^{-3}
	II							55		-	94										3.80	5.9 X 10^{-3}
	III														-	75		176	-	65	5.50	8.54 X 10^{-3}
48	I	5.49	3.1	524	5600	13	15	52	105	85	-	51	28	21	56	-	3.5	140	45	-	4.96	7.4 X 10^{-3}
	II							62		-	104										5.45	9.9 X 10^{-3}
	III														-	80		188	-	69	7.51	13.6 X 10^{-3}
55	I	7.27	4.1	694	4750	18	20	60	120	98	-	60	30	22	65	-	4	160	52	-	6.60	12.3 X 10^{-3}
	II							74		-	118										7.50	17.3 X 10^{-3}
	III														-	90		210	-	77	10.20	23.7X 10^{-3}
65	I	10.19	6.25	973	4250	20	22	70	135	115	-	68	35	26	75	-	4.5	185	61	-	10.10	24.5 X 10^{-3}
	II							80		-	133										11.50	27.8 X 10^{-3}
	III														-	100		235	-	86	15.00	36.3 X 10^{-3}
75	I	20.73	12.8	1980	3550	28	30		160	135	-	80	40	30	85	-	5	210	69	-	16.00	54 X 10^{-3}
	II							95		-	158										18.20	61.4 X 10^{-3}
	III														-	110		260	-	84	21.20	71.5 X 10^{-3}
90	I	36.89	24	3523	2800	38	40	97	200	160	-	100	45	34	100	-	5.5	245	81	-	27.50	138 X 10^{-3}
	II							110		-	198										36.30	182 X 10^{-3}
	III														-	125		295	-	106	44.80	225 X 10^{-3}

Weight & Moment of Inertia (M.I.) of coupling assembly refer to maximum finish bore without keyway.

* Alternative hub material available on request - Steel (Sizes 19 to 90) , S. G. Iron (Sizes 38 to 90).



TECHNICAL DATA - Polyurethane Spiders

Spider Size	Red (Std.)		Yellow	
	T_{nom} (Nm)	T_{max} (Nm)	T_{nom} (Nm)	T_{max} (Nm)
19	17	34	10	20
24	60	120	35	70
28	160	320	95	190
38	325	650	190	380
42	450	900	265	530
48	525	1050	310	620
55	685	1370	410	820
65	940	1880	625	1250
75	1920	3840	1280	2560
90	3600	7200	2400	4800
Hardness	95 Shore A		92 Shore A	
Temperature	- 40°C to 90°C			

Selection Procedure:

1. Determine Application Nominal Torque (Nm)
   Tnom (Nm) = (kw x 9550/rpm)

2. Calculate application service factor using following charts - Total service factor (SF) will be
SF = SF1 x SF2 x SF3

3. Calculate Application Maximum Torque (Tmax)
Tmax = Tnom X SF (Nm)

4. Select the proper spider showing Tnom greater than application nominal torque. Then select spider showing Tmax greater than application maximum torque. Select the higher of two.

5. Ensure that application rpm and max. bore requirements are less than or equal to selected coupling max. rpm and max. bore size otherwise select next size coupling.

For SF1, SF2, SF3 refer chart.

SF1 - Application Service Factor

Driven Machine / Example	Electric Motors	Prime Motor	
		4 Cylinder or more	Less than 4 Cylinder
a. Uniform operation, no shocks.	1.5	2.0	2.5
b. Irregular operation, light shocks.	2.0	2.5	3.0
C. Irregular operation, medium shocks.	2.5	3.0	3.5
D. Irregular operation, heavy shocks.	3.0	3.5	4.0

SF2 - Application Service Factor for Temperature

Temperature Range °C	< 30°C	30°C - 70°C	> 70°C
SF2	1.0	1.5	2.0

SF3 - Application Service Factor for starting frequency

Starting frequency cycles / hour	< 100	100 - 500	> 500
SF3	1.0	1.5	2.0

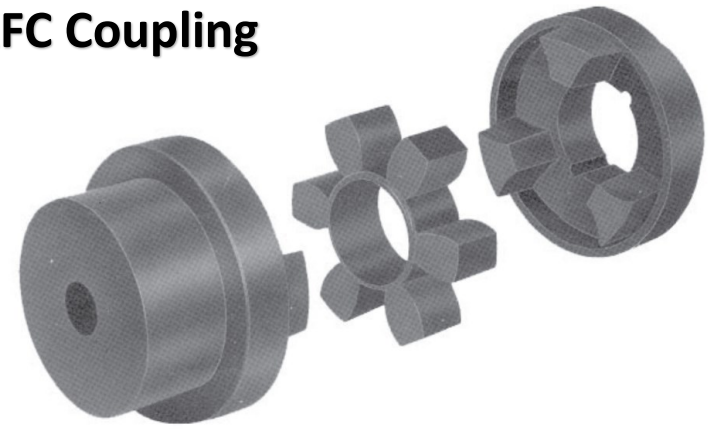
MISALIGNMENT DATA

Size	19	24	28	38	42	48	55	65	75	90
Maximum axial displacement (mm)	1.6	1.8	2.0	2.2	2.3	3.0	3.0	3.5	3.5	4.5
Maximum radial misalignment (mm)	0.15	0.20	0.20	0.25	0.30	0.35	0.35	0.40	0.45	0.50
Maximum angular misalignment (Deg.)	0.80	0.80	0.80	0.90	0.90	1.0	1.0	1.0	1.1	1.1

ORDER SEQUENCE	Coupling Size	Hub Type (Driver / Driven)	Finish Bore (Driver / Driven)	Spider Type	Hub Material
Example	RRJ-55	I / II	40 / 60	Red	CI

- Coupling with std. Spider is supplied if not specified.
- All dimensions are in mm unless otherwise specified.

RFC Coupling



The RFC coupling is a general purpose flexible coupling available in eight different sizes in taper bore, pilot bore or finished bore.

Easy installation
Alignment is quickly achieved by simply placing a straight edge across the outside diameter of the hubs. No special tools are needed, only a hexagon wrench for the locking of the taper bush.

Accommodates Misalignment
The RFC coupling compensates for axial, parallel & angular misalignments.

Extra protection Against Failure
The Inter-linking hubs act as an additional safegaurd, though the flexible element fails, the drive will be maintained by the interaction of the jaws which are an integral part of the coupling hubs. The hubs are made of C. I.. Jaws are unmachined.

Interchangeable
The RFC coupling is compatible with leading makes of couplings.
Elastomeric spider is of Nitrile rubber having shore hardness of 80°, suitable for temperatures from -40° C to + 100° C.

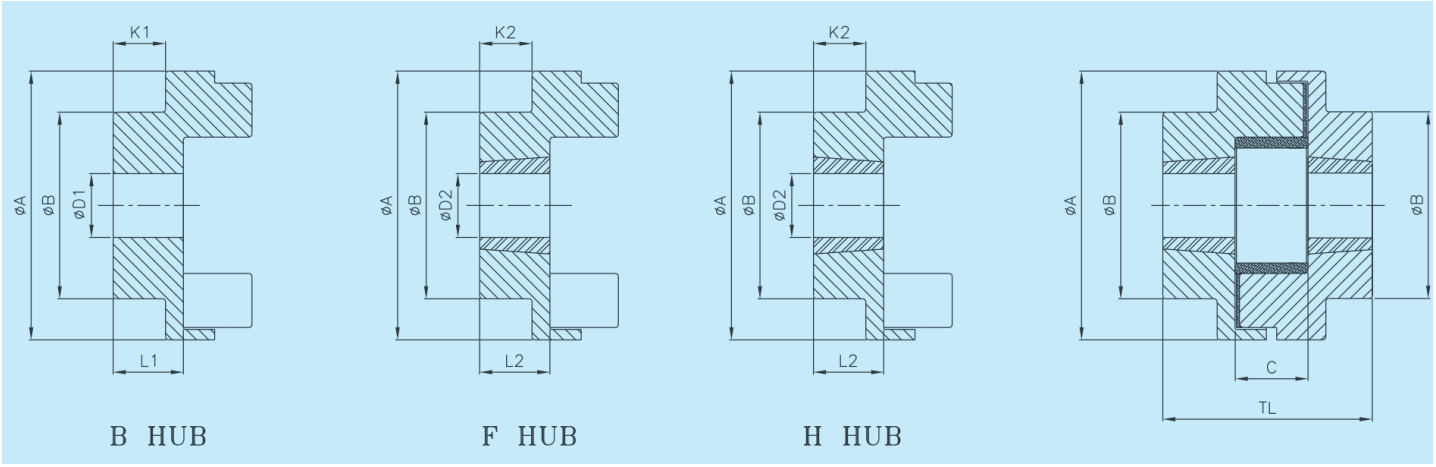
SERVICE FACTORS

Applications with excessive shocks, vibrations and torque fluctuations (compressors, engine, centrifugal pumps blowers, fans, generators, conveyors etc.)	Type of Driving Unit					
	Electric Motors Steam Turbines			Internal Combustion Engines Steam Engines Water Turbines		
	Hours Per Day Duty			Hours Per Day Duty		
CLASS OF DRIVEN MACHINE	Upto 8	8 To 16	Over 16	Upto 8	8 To 16	Over 16
Uniformly Driven Machines	1.00	1.12	1.25	1.25	1.40	1.60
Machines Driven With Moderate Shocks.	1.60	1.80	2.00	2.00	2.24	2.50
Machines Driven With Heavy Shocks.	2.50	2.80	3.12	3.12	3.55	4.00

POWER RATING (kW)

Speed rpm	Coupling Size							
	RFC 7	RFC 9	RFC 11	RFC 13	RFC 15	RFC 18	RFC 23	RFC 28
100	0.33	0.84	1.68	3.30	6.28	9.95	20.90	33.00
1500	4.95	12.55	25.15	49.50	94.00	149.00	313.50	495.00
3000	9.90	25.10	50.30	99.00	188.00	298.00	—	—

Note : Power rating can be increased by using 92° shore hardness spider, please consult manufacturer for the same.



B HUB F HUB H HUB

DIMENSIONS DATA (mm)

Size	B Hub				F / H Hub					ØA	ØB	C	TL		
	Bore ØD1		K1	L1	#Bush Size	Bore ØD2		K2	L2						
	Max.	Min.				Max.	Min.						TL1	TL2	TL3
7	32	10	21	26	1008	25	10	19	24	69	60	17.5	66	68	70.0
9	42	10	26	32	1108	28	10	18	24	85	65	22.5	70.5	78.5	86.5
11	55	10	37	45	1610	42	14	19	27	112	100	29	83	101	119.0
13	60	20	46	55	1610	42	14	17.5	26.5	130	105	36	89	117.5	146.0
15	70	20	50	60	2012	50	14	24	34	150	115	40	108	134	160.0
18	80	30	58	70	2517	60	16	35	47	180	125	49	143	166	189.0
23	100	40	77	90	3020	75	24	39.5	52.5	225	155	58.5	163.5	201	238.5
28	115	50	88.5	105	3535	90	35	74.0	90.5	275	185	74.5	255.5	270	284.5

TECHNICAL DATA

Size	Maximum Speed rpm	Torque Rating (Nm)		Moment of Inertia WR^2 (kgm^2)	Torsional Stiffness (Nm / degree)	Maximum Misalignment		$ Weight (kg)
		Normal	Maximum			Parallel	Axial	
RFC 7	8300	31.5	72	0.0003	10.2	0.3	+0.20	1.1
RFC 9	6740	80	180	0.001	25.5	0.3	+0.49	1.0
RFC 11	5110	160	360	0.003	48.0	0.3	+0.61	5.0
RFC 13	4400	315	720	0.006	84.0	0.4	+0.79	8.0
RFC 15	3820	600	1500	0.010	176.0	0.4	+0.92	11.7
RFC 18	3180	950	2350	0.022	240.0	0.4	+1.09	18.2
RFC 23	2540	2000	5000	0.065	336.0	0.5	+1.32	35.0
RFC 28	2080	3150	7200	0.191	960.0	0.5	+1.70	66.5

\# Available only with taper bore, without taper bush.

$ Weight and M.I. are at max bores with one type-B hub combination.

NOTES : TL1 = Combination of F-F / H-H / F-H hub

TL2 = Combination of B-F / B-H hub

TL3 = Combination of B-B hub

Snap wrap Couplings

Type L Coupling

Spiders - Synthetic Rubber, Polyurethane,Hytrel, Bronze

Type SW Coupling

SW Elements - Synthetic Rubber, Polyurethane, Hytrel

Type RRS Spacer Coupling

6 ways the "Snap Wrap" coupling can help pay for itself:

1. Prebored hubs	Hubs bored and keyed to standard IEC motor shaft sizes.
2. Snap Wrap element	Ease of inspection and replacement within 5 minutes.
3. Modular hub design	Both Models, SW & RRS use the same hubs.
4. Spacer coupling	RRS spacer model is available for pump applications.
5. Fully machined hubs	Balance, ease of alignment and smooth contact surface for elements are assured.
6. Any environment	Water, oil, greases & dust do not affect performance.

With its unique wrap around Nitrile rubber connecting element, the Snap Wrap coupling eliminates the need for dismantling the connected equipment while inspecting or replacing the element.

This is a major benefit when down time on machinery can run into huge amounts.

Combined with a range or prebored hubs, a modular hub design and a spacer option, the Snap Wrap coupling is unsurpassed for quality, flexibility, speed of installation and maintenance.

SELECTION PROCEDURE

(a) Service Factor

Determine appropriate SERVICE FACTOR from table A.

(b) Design Power

Convert application rating at 100 rpm by multiplying service factor. This gives DESIGN POWER which is used as a base for coupling selection.

(c) Coupling Size

Refer respective table for your required coupling type and read from the appropriate speed column until a power equal to or greater than the DESIGN POWER is found.

(d) Bore Size

Refer respective coupling 'TECHNICAL DATA' table to check that the required bores can be accommodated.

EXAMPLE

A coupling is required to transmit 65 kW from an electric motor which runs at 1500 rpm to a centrifugal pump for 12 hours a day. The motor shaft diameter is 60 mm. and the pump shaft diameter is 55 mm.

(a) Service Factor

From Table A the service factor is 1.0

(b) Design Power

Design Power

$$@100rpm = \frac{100}{1500} \times 65kW \times 1(SF) = 4.3\ kW$$

(c) Coupling Size

Refer Table. The first power to exceed Design Power of 4.3kW is 5.6kW. The size of coupling specified in the first column corresponding to 5.6kW is SW - 276.

(d) Bore Size

Max. Bore for coupling size SW-276 is 75 mm. This shows that both the shaft diameters are within the range.

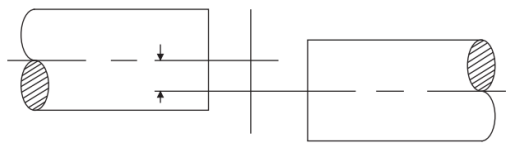
SERVICE FACTORS

SPECIAL CLASSES For applications where substantial shock, vibration and torque fluctuations occur and for reciprocating machines e.g. internal combustion engines, piston pumps and compressors, refer to Rathi Transpower with full machine details	**Type of Driving Unit**					
	Electric Motors			**Internal Combustion Engines Steam Engines Water Turbines**		
	Hours per day duty			**Hours per day duty**		
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 Blowers, Conveyors, Centrifugal Fans and Pumps, Generators, Sewage disposal Equipments.Evaporators, Feeders, Textile machines, Wood working machines.	1.00	1.00	1.00	1.00	1.10	1.10
MODERATE SHOCK* Clay working machinery, Crane Hoists, Laundry machinery, Machine Tools, Rotary Mills, Paper Mill machinery, Non-uniformly loaded centrifugal pumps, Rotary Screens, Centrifugal Compressors.Shredders, Printing presses, Oil industry, Mixers, Food industry, Beaters, Bucket elevators, Gear pumps, Wood working machinery, Textile machinery	1.10	1.10	1.20	1.20	1.25	1.25
HEAVY SHOCK* Reciprocating Conveyors, Crushers, Shakers, Metal Mills, Rubber machinery (Banbury Mixers and Mills) Reciprocating Compressors, Welding Sets, Freight & passenger elevators, Cooling tower fans, Hammer mills, Reciprocating pumps, Vibrating screens, Winches, Wire drawing machines.	1.25	1.40	1.60	1.60	1.80	2.00

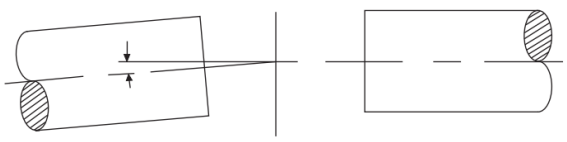
* It is recommended that keys with top clearance are fitted for applications where load fluctuation is expected.

MISALIGNMENT CAPABILITY

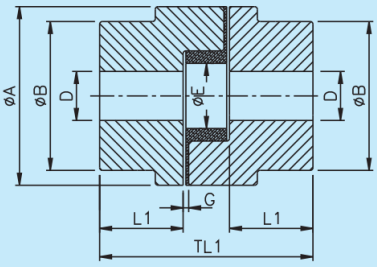
PARALLEL 0.4 mm



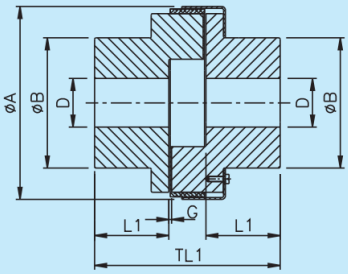
ANGULAR - 1°



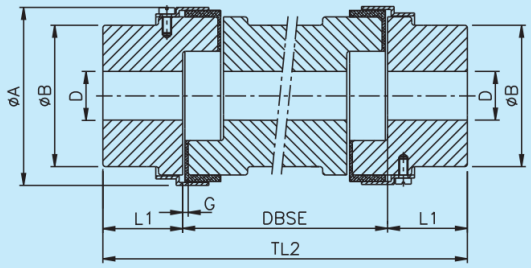
JAW - FLEX COUPLINGS
TYPE - L/SW/RRS



TYPE L



TYPE SW



TYPE RRS

TECHNICAL DATA

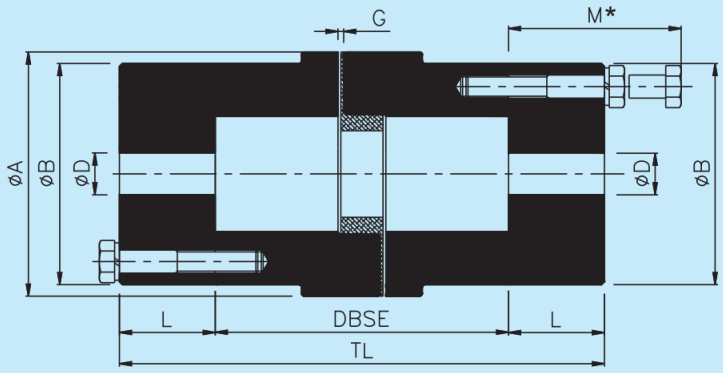
Coupling		Power Rating						Pilot Drill Size	Max. Bore D	ØA		ØB	ØE	Gap G	Length thru' Bore L1	DBSE	# Overall Length TL1
		Synthetic Rubber		Polyurethane		HTrans											
Type	Size	Rated Torque (Nm)	kW@ 100 rpm	Rated Torque (Nm)	kW@ 100 rpm	Rated Torque (Nm)	kW@ 100 rpm			L	SW/ RRS						
L	35	0.38	0.004	-	-	-	-	-	10	16	-	16	-	1	6.5	-	21
	50	2.80	0.03	4.2	0.04	7.0	0.07	-	16	27	-	27	-	1	15	-	42
	70	4.90	0.05	7.4	0.08	12.3	0.13	-	20	35	-	35	-	2	19	-	51
	● 75	9.80	0.1	14.7	0.15	24.5	0.26	-	22	45	-	45	-	2	21	-	55
	■ 75	9.80	0.1	14.7	0.15	24.5	0.26	-	22	45	-	39	-	2	21	-	55
L SW RRS	95	21.10	0.22	31.7	0.33	52.8	0.55	-	28	54	65	49	19	2	25	90,100,140	63
	► 99	46.40	0.49	69.6	0.73	116	1.2	-	30	65	78	51	27	2	27		72
	100	46.40	0.49	69.6	0.73	116	1.2	-	35	65	78	57	27	2	35		88
	110	89	0.93	133.5	1.4	222.5	2.3	-	42	85	96	76	35	3	43	90	108
	150	141	1.5	211.5	2.2	352.5	3.7	-	48	96	111	80	35	3	45	100	115
	190	190	2.0	285	3.0	475	5.0	-	60	115	129	102	45	3	54	140	133
	225	265	2.8	397.5	4.2	662.5	6.9	-	65	127	142	111	45	3	64	180	153
	226	327	3.4	490.5	5.1	817.5	8.6	25	70	137	153	119	51	3	70		178
L SW	276	532	5.6	798	8.4	1330	13.9	25	75	157	173	127	60	3	80	-	200
	280	782	8.2	1173	12.3	1955	20.5	30	80	192	208	140	70	3	80	-	200
	295	1279	13.4	1918.5	20.1	3197.5	33.5	30	95	237	253	162	80	3	95	-	238
	2955	2132	22.3	* 3198	* 33.5	* 5330	* 55.8	30	105	237	253	180	80	3	108	-	264
SW	300	3047	31.9	4570.5	47.9	7617.5	79.8	30	105	-	272	180	-	3	115	-	283
	350	4308	45.1	6462	67.7	10770	112.8	30	115	-	323	200	-	3	128	-	309

All dimensions are in mm.
For RRS/SW maintain gap 'G' at the time of assembly.
FOR RRS, TL2=DBSE + 2L1
For vertical installation contact RATHI.
Maximum bores can be increased in case of steel hubs. Consult manufacturer
* Only SW version available, L version not available.
► RRS 99 not available

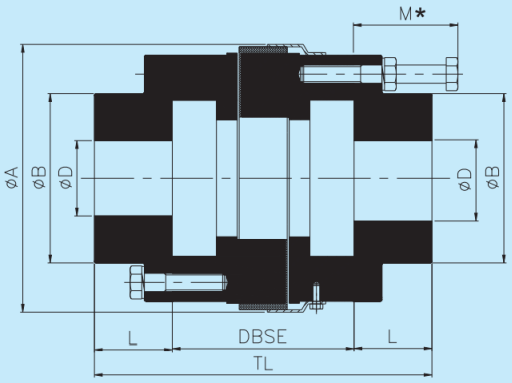
Material : Sintered iron for sizes 035 to 075
Aluminum for sizes 050 to 110 & for all RRS spacers.
Cast Iron for sizes 095 to 350.

■ 075 -- Aluminium
● 075 -- Sintered Iron

JAW - FLEX COUPLINGS
TYPE - RRL/SWQ



TYPE RRL



TYPE SWQ

Special Features:
Provides quick, easy disconnection from driving unit without disturbing drive shaft or piping, permits removal of equipment from line in three simple steps. Only two sets of bolts need to be removed.

Applications:
For pumps in chemical industry, ideal for reciprocating pumps, diesel or gas engines, multiple generator sets and other drives where rapid disconnection without disturbing the drive or driven unit is required.

DIMENSIONS DATA (mm)

Size	Synthetic Rubber		DBSE		Bore Ø D			Outside Dia. Ø A	Adapter Hub Dia. Ø B	Length thru' Bore L		Min. bolt clearance * M		Total Length 'TL'
	kW at 100 rpm	Rated Torque Nm	Min.	Std.	Min.	Max. ▲	Max. Std.			▲	Std.	▲	Std.	
RRL-095	0.22	21.1	75	90,100,140	10	—	28	54	54	—	25	—	45	140, 150, 190
RRL-100	0.49	46.4	75		10	—	38	65	65	—	30	—	50	150, 160, 200
RRL-110	0.93	89.0	75	90,100, 140,180	15	24	42	85	76	35	35	36	60	160, 170, 210, 250
RRL-150	1.48	141.0	75		15	32	48	96	90	40	40	48	70	170, 180, 220, 260
RRL-190	1.99	190.0	75		15	38	55	115	102	45	45	48	75	180, 190, 230, 270
RRL-225	2.78	265.0	90		15	42	65	127	115	50	50	54	90	190, 200, 240, 280

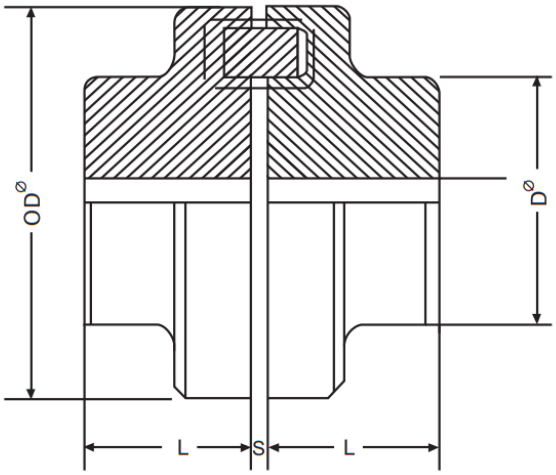
▲ Triangular Adapter Body.

Size	kW at 100 rpm	Rated Torque Nm	DBSE	Bore Ø D		Outside Dia. Ø A	Adapter Hub Dia. Ø B	Length thru' Bore L	Min. bolt clearance * M	Total Length 'TL'
				Min.	Max.					
SWQ-226	3.42	327	140, 180	25	70	153	134	50	92	240, 280
SWQ-276	5.49	524		25	80	173	130	60	107	260, 300
SWQ-280	8.20	783		30	80	208	130	60	70	260, 300
SWQ-295	13.39	1279		30	105	253	160	70	80	280, 320
SWQ-2955	22.40	2139		30	105	253	160	75	80	290, 330
SWQ-300	31.90	3046		30	115	272	180	80	85	300, 340
SWQ-350	45	4297		30	125	323	200	90	85	320, 360

* Loosening & Tightening of bolts is possible within dimension 'M'.

- All dimensions are in mm.
- Maintain gap 2 mm for RRL-095, RRL-100 & 3 mm for all other sizes at the time of assembly.
- Non-standard (NSTD) DBSE available on request.
- For vertical installation contact RATHI.

NM Couplings



Coupling NM Type	Torque Kg / m		Max Speed	Bore Diameter		Boss Dia (D)	Outside diam. (OD)	Distance Through boss (L)	Approx. weight Kgs.
	Normal	Max	RPM.	Min	Max				
50	1.3	2.3	13,500	7	19	33	50	25	0.48
67	2.2	4	10,000	9	28	46	67	30	1.02
82	5.0	9	8,000	10	32	53	82	40	1.88
97	10.5	19	7,000	12	42	69	97	50	3.54
112	16.7	30	6,000	14	48	79	112	60	5.40
128	26.7	48	5,000	18	55	90	128	70	8.10
148	41.7	75	4,500	22	65	107	148	80	13.50
168	69.5	125	4,000	28	75	126	170	90	19.30
194	11	200	3,500	32	85	140	194	100	26.30
214	167	300	3,000	45	95	157	214	110	35.70