



DISC-O-FLEX
COUPLINGS



Lovejoy Disc-O-Flex couplings are fully metallic couplings, consisting of two hubs, one centre spacer member, two sets of stainless steel rivetted element blades bolted together with high tensile bolts. Replacement of rivetted discpack is easy, simple and is possible without disturbing drive or driven equipment.

FEATURES

- High power - to - weight ratio.
- No wearing parts, no lubrication required.
- Easy installation with 'Drop Out' spacer.
- Accommodates angular, parallel and axial misalignments.
- Non stainless steel parts coated with a durable anticorrosive coating.
- High temperature application.
- Visual inspection possible without disassembling equipment.
- Inherently balanced.
- High torsional rigidity with low axial stiffness.
- Special options including spacer lengths, modified hubs, special materials are available.
- Floating shaft/cooling tower couplings are available.
- Backlash free.
- High speed capability.
- Dynamic balancing to customer specifications.
- Machined to high precision standards.
- Lightweight couplings.

Lovejoy Disc-O-Flex couplings are available in RLM, REM series.

TYPE - RLM

- Rivetted discpack for better performance
- Suitable for power transmission in drives in hazardous areas.

TYPE - REM / RSK

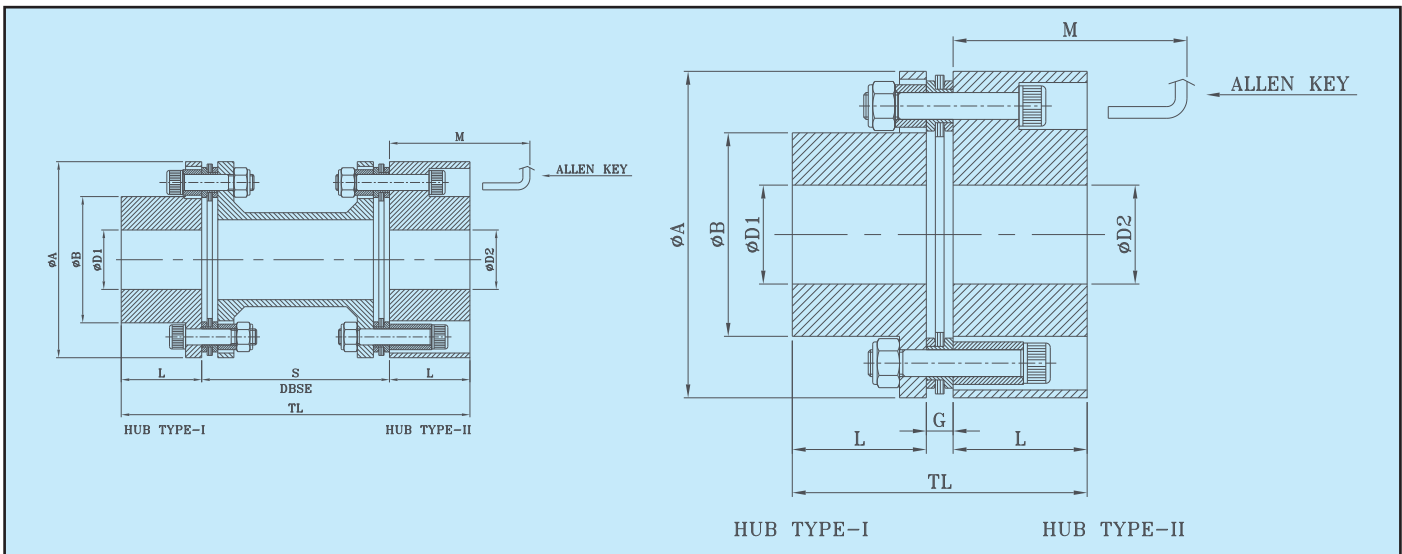
- Rivetted discpack for better performance
- Suitable for power transmission in drives in hazardous areas.
- Specially suitable for petrochemical & fertilizer industries.
- API-610 / API-671 compliance available on request.
- Coupling with antifiy spacer.

SELECTION PROCEDURE

- 1) Select an appropriate SERVICE FACTOR from table given below.
- 2) Multiply the rated running power by the service factor. This gives DESIGN POWER at rated speed (rpm). Now convert this to design power at 100 rpm. This is used as a basis for coupling selection.
- 3) Refer to the rating column and read until the power greater than or equal to the design power at 100 rpm is found. The size of the Disc-O-Flex coupling is given in the corresponding first column.
- 4) Select either standard type I or type II hubs to suit shaft sizes. Select either Type III or Type IV hub in type REM for larger bore sizes.
- 5) Specify the distance between shaft ends (DBSE).

SERVICE FACTORS

Duty	Prime Mover		
	Electric Motor Steam or Gas Turbine	Steam Engine or Water Turbine	Gas or Oil Engine
Constant Torque e.g. centrifugal pumps, compressor, light conveyors, alternators & light fans.	1.0	1.5	3.0
Slight Torque Fluctuations e.g. machine tools, screw compressors, screw pumps, liquid ring compressors & rotary dryers.	1.5	2.0	3.0
Substantial Torque Fluctuations e.g. reciprocating pumps, low viscosity mixers, cranes & winches.	2.0	2.5	4.0
Exceptionally High Torque Fluctuations e.g. rotary presses, reciprocating compressors, high viscosity mixers & marine propellers.	3.0	3.5	5.0



TECHNICAL DATA RLM

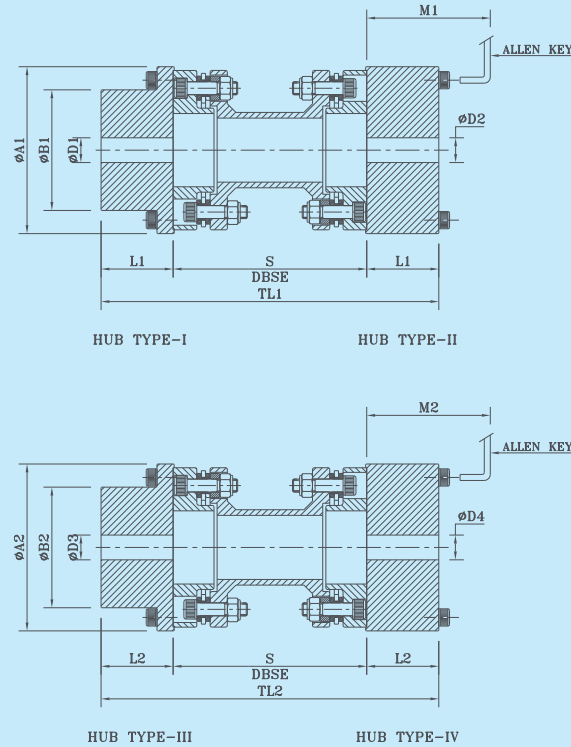
Coup. Size	kW at 100 rpm	Torque Nm	Max. Speed RPM	Bore			Min. DBSE 'S'	ϕA	ϕB	L	STD DBSE 'S'	TL (STD DBSE)	M2	Weight in Kg Approx.		M.I. (MR2) in Kg. m ² Approx		Tors. Stiff. MNm/rad Approx.
				Min. $\phi D1$ & $\phi D2$	Max.									Min. DBSE 'S'	Per Mtr. Extra 'S'	Min. DBSE 'S'	Per Mtr. Extra 'S'	
					$\phi D1$ Type I	$\phi D2$ Type II												
10	1.0	96	7500	10	22	25	54	63	30	100, 140	160, 200	75	1.3	2.3	0.0006	0.0004	0.021	
35	2.4	232	7000	12	30	38	54	82	40	140	180, 220, 260	85	2.3	3.2	0.0021	0.0011	0.047	
95	6.5	618	6000	17	40	50	66	102	45	180,	190, 230, 270	95	4.7	6.0	0.0062	0.0017	0.100	
170	12.6	1204	5200	17	52	70	78	128	55	250	210, 250, 290	110	8.0	7.0	0.0180	0.0047	0.222	
220	20	1912	4800	22	65	80	88	146	60	140,	260, 300	120	11.9	8.4	0.0353	0.0088	0.360	
400	36.3	3463	4400	27	80	100	102	176	70	180	280, 320	140	19.5	13.1	0.0850	0.021	0.708	
520	58.5	5583	4200	32	90	115	114	197	90	180,	360, 430	175	30.2	21.7	0.1700	0.056	1.141	
1000	74.2	7084	4000	42	105	130	132	225	95	250	370, 440	185	43.0	21.7	0.3120	0.056	1.493	
1300	108.7	10383	3800	47	115	140	144	250	105	180,	390, 460, 510	195	61.0	27.1	0.5328	0.067	1.892	
2000	152.2	14536	3700	52	120	155	168	275	115	250	410, 480, 530	215	81.7	42.8	0.8610	0.167	2.454	
2500	196	18714	3600	62	135	165	170	300	130	300	440, 510, 560	235	106.9	42.8	1.3580	0.167	3.783	

TECHNICAL DATA - RLMK

Coup. Size	kW at 100 rpm	Torque Nm	Max. Speed RPM	Bore			ϕA	ϕB	L	DBSE 'G'	TL (STD DBSE)	M	Weight in Kg Approx.	M.I. (MR2) in Kg. m ² Approx	Tors. Stiff. MNm/rad Approx.	Max. Mis-alignment	
				Min. $\phi D1$ & $\phi D2$	Max.											Axial (mm)	Angular / disc pack (Deg)
					$\phi D1$ Type I	$\phi D2$ Type II											
10	1.00	96	7500	10	22	25	63	35	30	6.5	66.5	75	0.9	0.00047	0.041	±1	0.75°
35	2.40	232	7000	12	30	38	82	45	40	6.5	86.5	85	1.8	0.0017	0.093		
95	6.5	618	6000	17	40	50	102	57	45	8	98	95	3.2	0.0082	0.248		
170	12.6	1204	5200	17	52	70	128	77	55	9.5	119.5	110	5.8	0.0143	0.529		
220	20	1912	4800	22	65	80	146	94	60	12	132	120	8.5	0.0263	0.895		
400	36.3	3463	4400	27	80	100	176	115	70	13	153	140	14.0	0.0640	1.665		
520	58.5	5583	4200	32	90	115	197	132	90	14.4	194.5	175	22.2	0.1320	2.393		
1000	74.2	7084	4000	42	105	130	225	147	95	16.2	206.1	185	30.5	0.2311	3.490	±2	REQUEST
1300	108.7	10383	3800	47	115	140	250	162	105	19.5	229.4	195	42.7	0.3945			
2000	152.2	14536	3700	52	120	155	275	178	115	21.5	251.5	215	57.3	0.6350			
2500	196	18714	3600	62	135	165	300	190	130	23.5	283.6	235	76.1	1.0050			

Notes

- All dimensions are in mm, unless otherwise specified.
- For vertical installation contact RATHI.
- Special DBSE available on request.
- Please specify type of hubs (I/I, I/II, II/II)
- Weight, M.I. & stiffness are at max. bores with min. std DBSE & with I/II hub combination.
- Available for non-sparking applications on request.
- Coupling with sizes higher than 2500 available on request.
- 'M' is for hub type II only.
- MAX. MIS-ALIGNMENTS ARE AS FOLLOWS. For RLM couplings.
 AXIAL : FOR SIZE 10 TO 400 : ±1MM & FOR SIZE 520 TO 2500 : ±2MM
 ANGULAR / DISC PACK : 0.75°
 RADIAL / PARALLEL : 0.013 MM
- For RLMK series, hub combinations of I/I & I/II are only available.
- For RLMK couplings, parallel misalignment is zero.



TECHNICAL DATA

Coup. Size	kW at 100 rpm	Torque Nm	Max. Speed RPM	Bore												STD DBSE	TL1 (STD DBSE)	TL2 (STD DBSE)	M1	M2	Weight in Kg Approx.		M.I. (MR2) in Kg. m ² Approx		Tors. Stiff. MNm/rad Approx.			
				Min.				Max.				Min. DBSE 'S'	A1	A2	B1						B2	L1	L2	Min. DBSE 'S'		Per Mtr. Extra 'S'	Min. DBSE 'S'	Per Mtr. Extra 'S'
				D1 & D2 (Type I/II)	D3 & D4 (Type I/II)	D1 (Type I)	D2 (Type II)	D3 (Type III)	D4 (Type IV)																			
8	1.00	96	7500	8	10	24	42	38	48	80	69	90	40	55	30	40	100	160, 200, 240	180, 220, 260	80	90	2	1.32	0.0012	0.0002	0.018		
25	2.40	232	7000	10	15	38	48	48	72	89	90	108	55	70	40	45	140, 180	180, 220, 260	190, 230, 270	90	105	4	2.29	0.0039	0.0006	0.043		
65	6.5	618	6000	15	20	48	72	65	92	103	108	135	70	86	45	55	140	230, 270, 340	250, 290, 360	105	120	9	3.19	0.0094	0.0011	0.100		
125	12.6	1204	5200	20	25	65	92	80	102	128	135	152	86	108	55	60	180, 250	250, 290, 360	260, 300, 370	120	125	16	4.74	0.0283	0.0034	0.232		
165	20.0	1912	4800	25	30	80	102	90	120	148	152	182	108	130	60	70	180	300, 370	320, 390	125	135	22	8.38	0.0604	0.0088	0.395		
370	36.3	3463	4400	30	45	90	120	108	140	161	182	197	130	158	70	90		250	320, 390	360, 430	135	155	33	13.08	0.1410	0.0213	0.749	
390	58.5	5583	4200	45	55	108	140	127	155	175	197	225	158	181	90	95	250	360, 430	370, 440	155	160	49	21.72	0.3650	0.0561	1.239		
790	74.2	7084	4000	55	65	127	155	140	178	180	225	250	181	206	95	105		370, 440	390, 460	160	170	61	21.72	0.4181	0.0561	1.649		
1025	108.7	10383	3800	65	70	140	178	155	192	194	250	275	206	223	105	115	250	460	480	170	190	83	27.06	0.7067	0.0670	2.179		
1425	152.2	14536	3700	70	75	155	192	170	212	213	275	300	223	248	115	130		480	510	190	215	105	42.79	1.1340	0.1666	3.350		
1880	196.0	18714	3600	75	80	170	212	190	255	225	300	375	248	280	130	145		510	540	215	245	136	42.79	1.7740	0.1666	4.271		

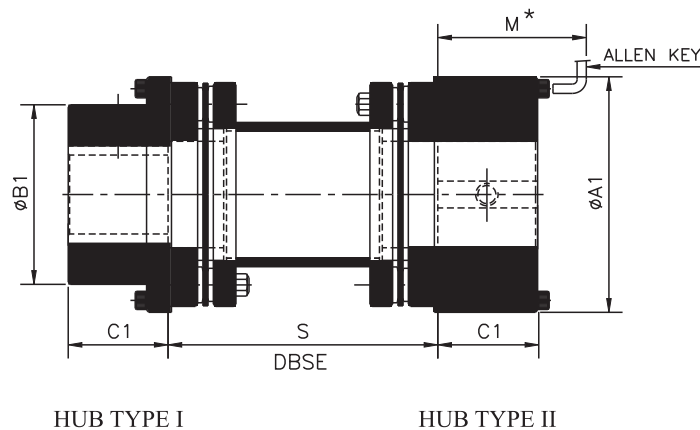
Notes

- * All dimensions are in mm, Unless otherwise specified.
- * For vertical installation contact RATHI.
- * Non Standard DBSE available on request.
- * Please specify type of hubs (I/I, I/II, II/II, III/III, III/IV, IV/IV)
- * Weight, M.I. & stiffness are at max. bores with min. std DBSE with one I/II hub combination.
- * Available for non-sparking applications on request.
- * Min. Bores specified are for hub type I/II, for hub type III/IV consult manufacturer.
- * Coupling with taper bush also available on request.
- * Coupling with sizes higher than 1880 available on request.
- * M1 is applicable for hub type II. M2 is applicable for hub type IV.
- * MAX. MIS-ALIGNMENTS ARE AS FOLLOWS
 AXIAL : FOR SIZE 8 TO 370 : ±1MM & FOR SIZE 390 TO 1880 : ±2MM
 ANGULAR / DISC PACK : 0.75°
 RADIAL / PARALLEL : 0.013 MM

RSK TECHNICAL DATA

Coupling Size	Rating kW at 1000 rpm	Max. Continuous Torque Nm	Peak Overload Torque Nm	Max. rpm	Weight Transmission Unit		Weight Unbored Hubs - Kg	
					Std.	Extra DBSE kg/m	Hub I	Hub II
13	13	124	310	25500	1.5	3.1	1.0	1.9
33	33	315	790	20000	3.0	5.0	1.4	3.1
75	75	716	1790	16500	5.6	6.5	3.6	5.8
135	135	1289	3220	14400	9.3	10.5	5.9	8.7
230	230	2196	5490	12000	14.0	13.0	9.0	14.0
350	350	3342	8360	10500	18.7	22.0	16.4	-
500	500	4775	11940	9500	25.6	22.0	21.0	-
740	740	7066	17670	8000	34.2	27.5	30.0	-
930	930	8881	22200	7000	44.0	40.0	38.0	-
1400	1400	13369	33400	6000	54.0	40.0	52.1	-

- Note that for the complete coupling, weights of two appropriate hubs plus a transmission unit are required.



TECHNICAL DATA

Coupling Size	Max. Bore		DBSE 'S min'	Std. DBSE 'S'	C1	øA1	øB1	M *
	Type I	Type II						
13	36	51	75	100	40	86	54	90
33	46	70	90	140	45	105	69	105
75	65	90	107	180	55	130	90	120
135	80	102	127	250	62	152	112	127
230	90	121	133		70	179	131	135
350	115	-	139		90	197	163	-
500	127	-	141		95	222	181	-
740	140	-	143		107	247	206	-
930	155	-	155		115	272	223	-
1400	172	-	175		130	297	248	-

- Notes:-**
- Non Standard DBSE available on request.
 - Available for non-sparking application on request.
 - Please specify type of Hub.
 - * 'M' is only for hub type II.
 - For vertical installation contact RATHI.

Coupling Alignment

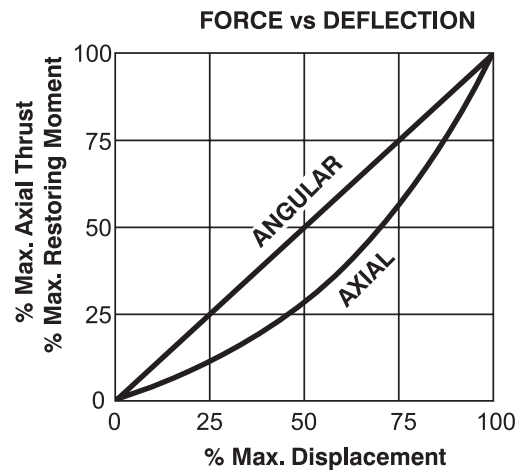
Correct installation and alignment of couplings is essential for reliable machinery performance.

RSK MISALIGNMENT				
Coupling Size	Max. Axial Misalignment *		Max. Parallel Misalignment **	
	+/- mm.	Equivalent Thrust kN	mm	Restoring Moment Nm
13	1.00	210	0.30	4.1
33	1.25	280	0.36	6.1
75	1.50	360	0.45	8.8
135	2.00	560	0.55	11.8
230	2.50	740	0.60	14.7
350	2.75	780	0.64	34.3
500	3.25	1080	0.65	40.7
740	3.75	1270	0.68	47.6
930	4.25	1470	0.72	53.9
1400	5.00	2700	0.83	61.3

NOTES: * Meets NEMA end float specification without modification.

** Values based on angular deflection of $\frac{1}{2}^\circ$ per end and minimum DBSE. Greater misalignment accommodation is possible by increasing dimension S.

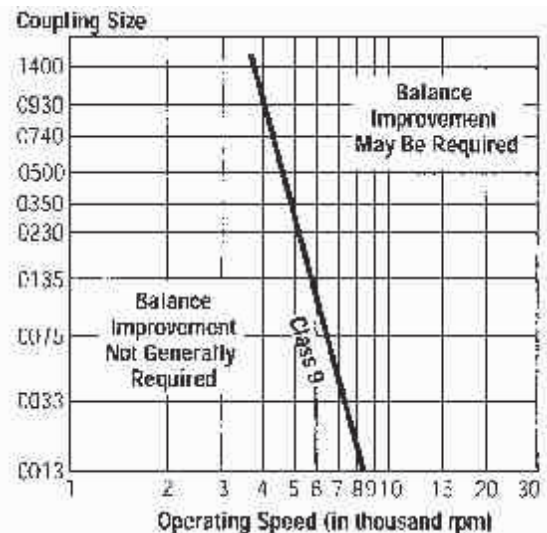
The angular and axial restoring forces in the table below left are given at maximum deflections. The chart can be used to determine forces across the full deflection range. The nonlinear characteristics can detune a system to prevent high amplitude axial vibration.



Balance Recommendations

The inherent balance of the RSK range meets AGMA standard 9000-C90 class 9. The adjacent chart relates the RSK sizes to operating speeds on the basis of this AGMA class 9 characteristic to provide a general guide to determine if dynamic balance improvement is necessary.

When balancing improvement is requested, RATHI will dynamically balance the transmission unit. Hubs may also be dynamically balanced, and this will usually be carried out after machining the bore but before cutting single keyways.



- All dimensions are in mm unless otherwise specified.
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