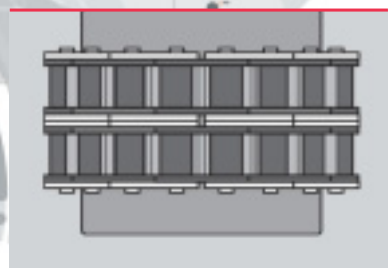
Shaft Couplings



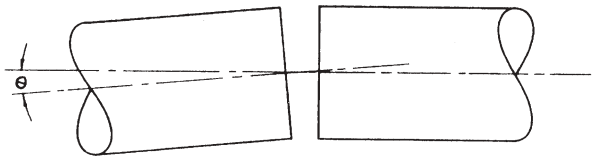
Index

CROSS+MORSE

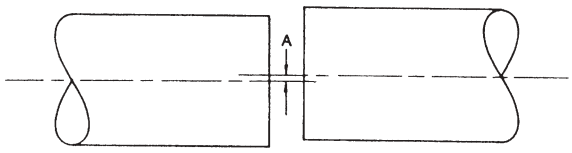
Power Transmission Solutions

Coupling Selection

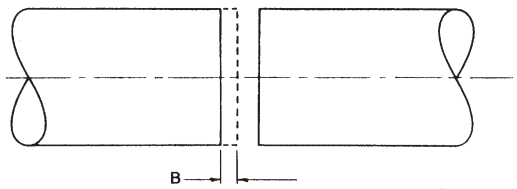
There are four basic functions which a shaft flexible coupling may be required to accommodate, and selection of a coupling should be made considering these.



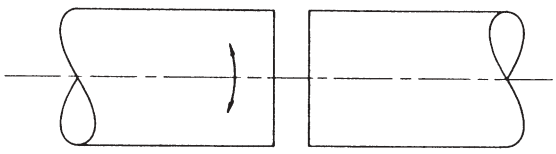
Angular Misalignment
Occurs when shaft axis are inclined to one another.



Parallel Misalignment
Present when axis of shafts are parallel but laterally displaced.



End Float
The ability to accommodate axial displacement of shafts due to thermal expansion or motor end float.



Torsional Stiffness
The ability to absorb torsional impulse loads. Rubber coupling stiffness can be adjusted to damp out vibrations. Metal couplings generally transmit torque without angular displacement.

Generally flexible couplings are required to accommodate a combination of the basic functions, and selection is made on ability to exceed the anticipated types of misalignment. Cross+Morse Couplings have the following basic capacities.

Coupling Type	Power Range kw	Speed Range rpm	Shaft Size mm	Max. Angular Misalignment	Max. Parallel Misalignment mm	Max. End Float mm	Torsional Stiffness
C	45	100- 5000	10- 60	1	0.20	2.0	
C	925	0- 2000	10-150	1	0.76		
	270	500-31000	3- 60	1	0.40	1.0	F x
E	760	50- 7700	8-130	1	0.50	1.7	F x
E	360	100-14000	8- 90	1 1 2	1.80	2.4	F x
M x C	600	100- 6500	10- 80	5	1.25	1.0	F x
m C	170	0-14000	6- 65	2	1.30	2.0	
C	3200	0- 6000	8-175	1	0.80	2.0	

Selection Procedure for Chain and Rubber Couplings (Gear Couplings refer to Page 14).

Selection of correct type and size of coupling is essential to realise a long service life. Outside forces acting on the coupling and its own performance limitations must be taken into consideration in making a selection.

1. **Assemble data required to select coupling.**
   Type of driver and driven equipment.
   Shaft size of driver and driven.
   Load to be transmitted (kW, rpm).
   Space limitations.
   Misalignment - Angular, Parallel, Endfloat.
   Hours of operation/day.
   Lubrication facilities.
   Environment (temp., corrosion, etc.).

2. By consideration of the misalignment, power and speed requirements, select a Coupling Series from the table above. If gear coupling, see also page 14 for selection procedure.

3. **Determine suitable service factor from table below and modify for daily usage time.**
   Less 4 hrs/day -0.1
   16 hrs/day +0.2
   24 hrs/day +0.3

4. **Determine design power kW using factor obtained**
   Pd. kW=kW x S.F. (f1)

5. Using the design kW power value, select the correct coupling from the power rating tables for the respective series. Check coupling chosen will accommodate shafts, if not select larger size to meet shaft requirements. Ensure coupling finally selected can meet speed requirements, and space limitations.

Electric Motor or Steam Turbine	Gasoline or Diesel Engine 6 or more Cylinders	Gasoline or Diesel Engine 6 or less Cylinders	Characteristics	Driven Mechanism Typical
1	1.5	2	E d - 8 . d N - -	A C E E C m F
1.5	2	2.5	d - 8 . d M d N -	C C m E d H M M x d d d M
2.5	2.8	3.2	H - 8 . d d d H	C m C F d H mm M H m T T

'L' Series Jaw Couplings

Simple, economical design - fully interchangeable with industry standards.

Cross has expanded its comprehensive family of quality industrial couplings to include the Type 'C' Jaw...offering a uniquely simple design combined with misalignment capability and maximum economy.

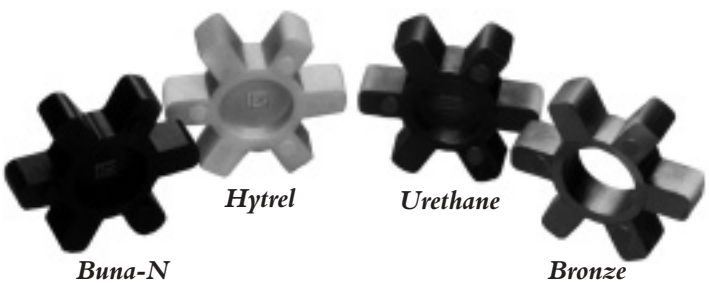
'L' Jaw Couplings contain only three components...two jaws and one 'spider' insert. Power is transmitted between the jaw halves by the insert, which is offered in a choice of four materials to suit all the application characteristics and horsepower requirements. All sizes are dimensionally interchangeable with industry standards, making replacement in existing installations easy and economical.

Type 'L' Jaw Couplings are designed for light to medium duty applications up to 112 Kw at 1500 rpm, and are available for shaft sizes from ⅛" (3.2mm) to 60mm.

'L' Series Couplings offer a choice of 4 insert types for maximum versatility.

Insert Selection

Morse Type 'L' Jaw Couplings are designed for applications in the light-to-medium duty range, with capacities and performance characteristics depending on the type of insert used. For maximum versatility in selection, Morse offers four different insert materials to suit the application.



Buna-N

This is the standard flexible insert material in Type 'L' Jaw Couplings, serving the majority of applications. The materials is an oil resistant rubber compound with excellent flexibility and shock absorption; temperature range is –40°C to +100°C.

Urethane

The urethane insert offers approximately 50% greater torque capacity, than standard Buna-N, and in addition provides good chemical resistance. Temperature is –35°C to 70°C.

Hytrel®

This tough flexible plastic material provides still greater torque capacity, approximately three times that of standard Buna-N, and superior temperature resistance with a range of –50°C to +120°C. Oil and chemical resistance are excellent.

Bronze (Only used in 'L' Series)

This insert is intended exclusively for high torque, low speed applications, up to 250 rpm only. Capacities are three times those of standard Buna-N. The material offers excellent resistance to oils, chemicals and extreme temperatures –40°C to +230°C.

Performance Characteristics of Inserts

Material	Flexibility	Shock Absorption	Oil Resistance	Chemical Resistance	Temperature Range (°C)	Angular Misalignment	Parallel Misalignment
-N	Ex	Ex	d		40 100	1	0.4mm
	d	d	d	d	35 70	1	0.4mm
H	F	F	Ex	Ex	50 120	½	0.4mm
			Ex	Ex	40 230	½	0.25mm

Misalignment Capability - Simplified Installation and Maintenance

Since power is transmitted between the two halves of the Type 'L' Jaw coupling by the resilient insert, it is not necessary to have perfect alignment between shafts. The elastomeric design permits angular misalignments up to 1° (½° for Hytrel and Bronze) and parallel misalignment up to 0.4mm, greatly simplifying installation in all types of industrial applications. Maintenance is minimal; the insert can be visually inspected, never needs lubrication, and in fact, the coupling can continue to transmit power even if the elastomeric insert becomes severely damaged or destroyed - minimising downtime and increasing reliability.

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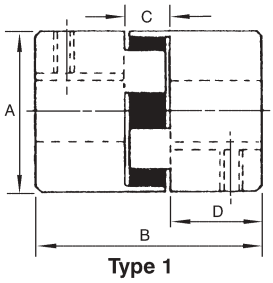
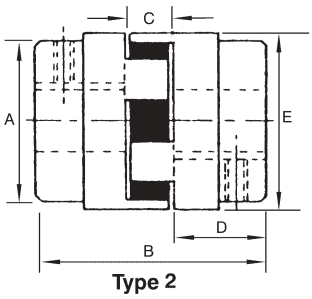
'L' Series Jaw Couplings

'L' Series Couplings use Sintered Iron Jaws for maximum strength & flexibility of bore size.



Type 1



Type 2

Dimensions (mm)

Coupling Size	Type	Coupling Half								Insert Part Nos.					
		Min Bore	Max Bore	A	B	C	D	E	Weight kg	Buna-N	Urethane	Hytrel	Weight kg	Bronze	Weight kg
035	1	3.2	9.5	15.9	20.6	7.2	6.7		.010	035N	N A	N A	.002	N A	
050	1	6.35	15.0	27.4	43.7	11.9	15.9		.065	050N	N A	050H	.007	050	.022
070	1	6.35	19.0	34.5	50.8	12.7	19.1		.135	070N	070	070H	.008	070	.028
075	1	6.35	22.2	44.5	54.0	12.7	20.6		.23	075N	075	075H	.012	075	.065
090	1	6.35	25.4	53.6	54.0	12.7	20.6		.36	090N	090	090H	.015	090	.100
095	1	11.1	28.6	53.6	63.5	12.7	25.4		.40	090N	090	090H	.015	090	.100
099	1	12.7	30.2	64.3	73.0	19.1	27.0		.61	099N	099	099H	.033	099	.150
100	1	12.7	35.0	64.3	89.0	19.1	34.9		.81	099N	099	099H	.033	099	.150
110	1	15.9	41.3	84.2	108.0	22.2	42.9		1.71	110N	110	110H	.065	110	.30
150	1	15.9	47.6	95.0	114.5	25.4	44.5		2.28	150N	150	150H	.095	150	.63
190	2	19.1	54.0	102.0	133.5	25.4	54.0	114.5	3.72	190N	190	190H	.145	190	.90
225	2	19.1	60.0	108.0	152.0	25.4	63.5	127.0	5.20	225N	225	225H	.190	225	1.12

*Min bore coupling halves are supplied without keyway and setscrew except L035 which has setscrews only.
Hytrel is a registered trademark of E.I. Dupont Nermours & Co.

kW Power Ratings 'L' Series Couplings

Refer to page 2 for standard selection procedure.

Insert Material	Coupling Size	Max Bore	Max rpm	Max Torque Nm	kW Power Capacities								
					50	100	300	600	900	1200	1500	1800	3600
NA-N	035	9.5	31000	0.4	.002	.004	.013	.026	.037	.05	.06	.07	.15
	050	16.0	18000	2.9	.015	.030	.092	.186	.276	.36	.45	.55	1.10
	070	19.0	14000	5.0	.026	.052	.157	.313	.470	.63	.78	.94	1.88
	075	22.2	11000	10.0	.052	.104	.285	.565	.940	1.24	1.56	1.88	3.76
	090	25.4	9000	16.4	.086	.172	.515	1.03	1.54	2.06	2.57	3.09	6.18
	095	28.6	9000	21.4	.112	.224	.670	1.35	2.02	2.68	3.35	4.03	8.05
	099	30.2	7000	35.6	.190	.373	1.12	2.24	3.35	4.50	5.6	6.70	13.4
	100	35.0	7000	47.0	.250	.500	1.48	2.95	4.40	5.90	7.4	8.90	17.7
	110	41.3	5000	89.0	.470	.930	2.80	5.60	8.40	11.2	14.0	16.8	33.6
	150	47.6	5000	142.4	.750	1.45	4.45	8.95	13.4	17.9	22.4	26.9	53.7
	190	54.0	5000	192.3	1.00	2.01	6.05	12.1	18.1	24.2	30.2	36.2	72.5
	225	60.0	4200	263.5	1.38	2.76	8.30	16.5	24.8	33.0	41.3	49.6	99.0
ETHANE	050	16.0	18000	4.8	.03	.06	.16	.31	.48	.61	0.73	0.91	1.9
	070	19.0	14000	7.5	.04	.08	.24	.47	.71	.94	1.17	1.41	2.8
	075	22.2	11000	15.0	.08	.16	.47	.94	1.41	1.88	2.35	2.82	5.6
	090	25.4	9000	24.5	.13	.26	.78	1.55	2.32	3.09	3.86	4.63	9.2
	095	28.6	9000	32.0	.17	.34	1.01	2.01	3.02	4.03	5.03	6.04	12.1
	099	30.2	7000	53.5	.28	.56	1.68	3.36	5.04	6.70	8.35	10.0	20.1
	100	35.0	7000	70.5	.37	.74	2.21	4.42	6.65	8.87	11.1	13.3	26.5
	110	41.3	5000	133.5	.70	1.40	4.20	8.40	12.6	16.8	21.0	25.2	50.0
	150	47.6	5000	214.0	1.12	2.24	6.71	13.4	20.1	26.8	33.5	40.2	80.5
	190	54.0	5000	288.5	1.51	3.02	9.10	18.1	27.2	36.2	45.3	54.4	108.8
	225	60.0	4200	395.0	2.07	4.14	12.40	24.8	37.3	49.7	62.1	74.5	149.0
H T E N E*	050	16.0	18000*	5.7	.03	.06	.18	.36	.54	.72	.90	1.08	2.1
	070	19.0	14000*	12.8	.07	.13	.40	.80	1.32	1.61	2.02	2.42	4.8
	075	22.2	11000*	25.6	.14	.28	.80	1.60	2.40	3.20	4.00	4.80	9.7
	090	25.4	9000*	44.2	.23	.46	1.39	2.77	4.16	5.55	6.95	8.35	16.6
	095	28.6	9000*	64.0	.33	.67	2.00	4.00	6.05	8.05	10.1	12.1	24.1
	099	30.2	7000*	89.0	.47	.93	2.80	5.60	8.40	11.2	14.0	16.8	33.5
	100	35.0	7000*	128.1	.67	1.34	4.03	8.05	12.0	16.1	20.1	24.2	48.3
	110	41.3	5000*	256.0	1.34	2.68	8.05	16.1	24.1	32.2	40.2	48.3	96.6
	150	47.6	5000*	419.0	2.19	4.38	13.10	26.3	39.5	52.6	65.7	78.9	158.0
	190	54.0	5000*	529.0	2.78	5.54	16.60	33.2	49.9	66.5	83.1	99.7	200.0
	225	60.0	4200*	712.0	3.75	7.50	22.50	45.0	67.5	90.0	112.5	135.0	270.0

*Note couplings with bronze inserts are limited to 250 rpm.

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KE Series Elastomeric Couplings

The KE coupling is a general-purpose flexible coupling, fully interchangeable with the standard couplings frequently used throughout the industry. The coupling consists of two machined cast iron hubs connected by an elastomeric gear ring. Available in 8 basic sizes, with torque capacity to 3300 Nm, the KE coupling provides positive power transmission between shafts, combined with the ability to accommodate moderate levels of misalignment. KE couplings are designed to transmit torques equal to the capabilities of sizes of commercial shafting which can be accommodated. Available either with parallel bore or with taper bush, these couplings are quick and easy to assemble with the machined outer flanges enabling simple alignment with just a straight edge. The elastomeric gear ring is moulded in Pebax R Polyether which is oil resistant, has a partial resistance to chemicals, and a low moisture absorption rate. The gear ring cushions transient peak torques, effectively reducing transmission of operational vibrations and shock loads. Standard couplings can be operated in environmental temperatures ranging from –40˚C to +85˚C.

KE Coupling Selection Procedure

Refer to page 2 for standard procedure for coupling selection. The number of starts to which an KE coupling is subjected will affect its life, and it is thus necessary to modify the design power Pd for drives subject to more than 4 starts per day by factor f. in table, to get selection power Ps. Thus

Ps = Pdf

No. starts/day	5-30	31-60	60+
.	1.2	1.3	1.5

kW Power Ratings - Standard KE Couplings

Shaft Speed rpm	Coupling SIze							
	7	9	11	13	15	18	23	28
100* 200	0.35 0.69	0.88 1.75	1.75 3.52	3.44 6.88	6.59 13.18	10.43 20.86	22.00 44.02	34.65 69.30
400 600 800	1.39 2.08 2.78	3.51 5.25 7.00	7.04 10.55 14.07	13.77 20.65 27.53	26.37 39.55 52.73	41.72 62.58 84.44	88.04 132.06 176.08	138.60 207.90 277.20
1000 1200 1400	3.47 4.16 4.86	8.75 10.50 12.25	17.59 21.11 24.62	34.42 41.30 48.18	65.92 79.10 92.28	104.30 125.20 146.02	220.10 264.12 308.13	346.50 415.80 485.10
1600 1800 2000	5.55 6.25 6.94	14.00 15.76 17.51	28.14 31.66 35.18	55.07 61.95 68.83	105.47 118.65 131.83	166.88 187.74 208.60	352.15 396.17 440.19	554.10 623.70 693.00
2200 2400 2600	7.64 8.33 9.02	19.26 21.00 22.76	38.69 42.21 45.73	75.72 82.60 89.48	145.01 158.20 171.38	229.46 250.32 271.18	484.21 528.23 572.25	762.30
2800 3000 3500	9.72 10.41 12.15	24.51 26.26 30.64	49.25 52.76 61.56	96.37 103.25 120.46	184.57 197.75 230.71	292.04 312.90		
4000 4500 5000	13.88 15.62 17.35	35.01 39.39 43.76	70.35 79.14 87.94	137.67				
5500 6000 6500	19.09 20.82 22.56	48.14 52.52			m d d 3600 m			
7000 7500	24.30 26.03							

*For shaft speeds below 100 rpm use nominal torque Tn.
Maximum shaft speeds of coupling controlled by safe max. peripheral speed for cast iron.

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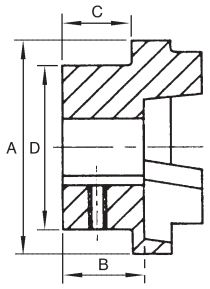
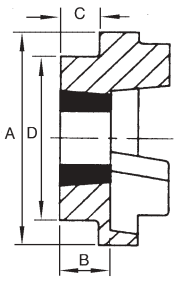
KE Series Couplings

KE Couplings Dimensions and Technical Specification

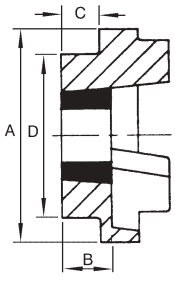
The KE couplings are available with solid hubs for reworking, 'type B'; or taper bored hubs for standard taper bushes. The taper bored hubs can be provided with the bush fitting from the hub end, 'type H', or from the flange end, 'type F', to enable easy fitting to end of motor/gearbox shafts.



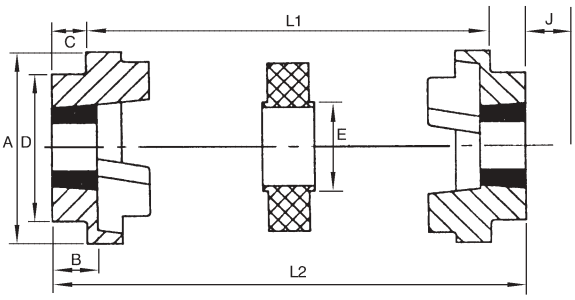
Type B



Type H



Type F



J = Dimension of clearance required to remove hub using Jack screw with shortened hex. key.

Coupling Capacities

Coupling No.	Nominal Torque Tn Nm	Maximum Torque Tn Nm	Max. Shaft Speed* rpm	Maximum Misalignment Angular degrees	Radial mm	Axial mm
E 7	33	73	7700	1.0	0.3	0.2
9	84	185	6300	1.0	0.3	0.5
11	168	370	5000	1.0	0.3	0.6
13	331	725	4100	1.0	0.4	0.8
15	630	1490	3600	1.0	0.4	0.9
18	998	2300	3000	1.0	0.4	1.1
23	2100	4800	2600	1.0	0.5	1.3
28	3300	7000	2200	1.0	0.5	1.7

*It is preferable to dynamically balance couplings operating above 4000 rpm

Taper Bush Coupling Dimensions (Hub types F & H)

Coupling No.	Bush Size	Max Bore mm	Dimensions in mm A	B	C	D	E	J	L1	L2	Inertia (1) kg cm²	Weight (1) kg
E 7	1008	25	69	24	20	60	31	29	25	65	8.5	1.0
9	1108	28	85	24	20	70	32	29	31	70	11.5	1.7
11	1610	42	112	27	19	100	45	38	45	82	40	5.0
13	1610	42	130	27	18	105	50	38	53	89	78	5.5
15	2012	50	150	34	24	115	62	42	60	107	181	7.1
18	2517	65	180	47	35	125	77	48	73	142	434	16.6
23	3020	75	225	53	40	155	99	55	86	165	1207	26.0
28	3525	90	275	67	51	206	119	67	106	208	4465	50.0

(1) Including Taper Bushes mid-bore size.

Solid Hub Coupling Dimensions (Hub types B)

Coupling No.	Max. (2) Bore mm	Dimensions in mm A	B	C	D	E	L1	L2	Inertia (1) kg cm²	Weight (1) kg
E 7	32	69	25	21	55	31	25	68	7.8	1.1
9	38	85	34	30	60	32	31	91	10.8	1.7
11	48	112	44	36	80	45	45	117	34.4	4.2
13	55	130	50	41	90	50	53	136	85	6.3
15	65	150	58	47	104	62	60	155	211	9.5
18	75	180	68	55	120	77	73	184	480	15.0
23	95	225	85	71	150	99	86	229	1405	28.0
28	130	275	106	90	206	119	106	286	5479	63.0

(2) Sizes KE 7 to KE 28 are manufactured with solid hubs.

Ordering Instructions

KE Couplings can be supplied with any combination of hubs, or the hubs and rubber elements can be purchased separately. To indicate hub type required add type reference letter to coupling no., for rubber element add letter 'R' to coupling no. e.g.

KE 11F - is a 'F' type taper bush hub for coupling size KE 11.
KE 11R - is the rubber centre element for coupling size KE 11.

To order complete coupling indicate type of hub required for both hubs as suffix to basic coupling no. e.g.

KE 11FH - is a KE 11 Coupling with one 'F type' hub and one 'H type' hub.
KE 18BB - is a KE 18 Coupling with both hubs 'B type' parallel bore.

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GE Series Elastomeric Couplings

The GE series of flexible couplings consist of two machined metal hubs connected by an elastomeric gear ring. The couplings are equally suited to horizontal or vertical shaft applications, providing positive power transmission and absorbing torsional, vibration and impact loads. The elastomeric gear ring is manufactured from a polyurethane resin of 94 shore A hardness selected for its resistance to wear, oil, chemicals, ozone and hydrolysis, which makes it suitable for tropical climates. Standard couplings can work in environments with temperature range –40˚C to +125˚C and withstand +150˚C for short periods. The teeth of the gear ring are of involute form to prevent high stress concentrations in reduced surfaces, and crowned to avoid edge pressure on the teeth. The circular apertures on each hub are precision-machined to provide positive torque transmission with minimum backlash.

GE Plain Bore Couplings are manufactured in two materials, Grade 250 Cast Iron for normal industrial applications, and aluminium where weight and inertias must be kept to a minimum. Two styles of hub are offered: 'A' style with hub diameter reduced below flange diameter to minimise weight; and 'B' style with hub diameter basically the same as the flange diameter to accommodate larger diameter shafts of electric motors and gear units. Different styles of hub can be mixed to accommodate differing shaft requirements. The hubs are identified by the maximum bore which can be accommodated, and hub style, i.e. GE24A is an 'A' type hub capable of max. bore size 24mm. Hubs of different styles can be combined in a coupling, and identified as in examples below.

GE24A-24A - Has two 'A' type hubs. GE24A-32B - Has one 'A' and one 'B' type hub.

For aluminium couplings numbers are the same with addition of a suffix 'A' e.g. GE24AA-32BA

Coupling Capacities and Selection

For **GE Series Couplings** design torque may need correcting for elevated ambient temperature or frequent starting before comparison with the coupling nominal torque rating.

Coupling nominal torque $Tn \geq Td.f1.f2$ $Tn \geq 0.5Ts.f1.f2$

f1 = temperature factor
f2 = start-up factor
Ts = starting/max torque of motor

For applications with frequent torque changes or reversal, check capacity Tr

Reversal Torque $Tr \geq Tv.f1$. Tv = actual torque variation

Factor f1-ambient temperature

Temperature ˚C	-30	31-40	41-60	61-80	81
Factor f1	1.0	1.2	1.4	1.6	1.8

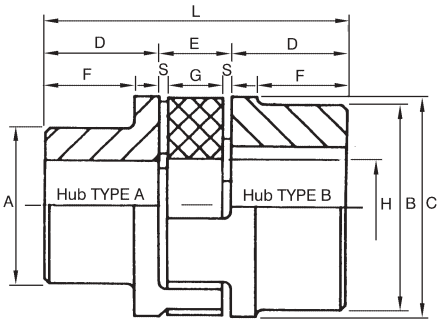
Factor f2-start-up

Start/hr	100	200	400	800
Factor f2	1.0	1.2	1.4	1.6

GE Plain Bore Couplings - Capacities and Dimensions (mm)

Technical Data

Coupling (1) Size	Max. Speed rpm	Nominal(3) Torque Tn Nm	Reversal Torque Tn Nm	Torsional Stiffness kNm/Rad				Maximum Misalignment		
				1.0 Tn	0.75 Tn	0.5 Tn	0.25 Tn	Angular deg.	Radial mm	Axial mm
E19A-24	14000	10	2.6	0.68	0.57	0.44	0.28	1.2	0.2	1.2
E24A-32	10600	35	9	2.19	1.82	1.40	0.90	0.9	0.2	1.4
E28A-38	8500	95	25	5.20	4.31	3.32	2.12	0.9	0.25	1.5
E38A-45	7100	190	49	10.00	8.30	6.39	4.08	1.0	0.28	1.8
E42A-55	6000	265	69	17.00	14.11	10.68	6.94	1.0	0.32	2.0
E48A-60	5600	310	81	20.00	16.59	12.77	8.16	1.1	0.36	2.1
E55A-70	4750	375	98	21.99	18.25	14.05	8.98	1.1	0.38	2.2
E65A-75	4250	425	111	28.20	23.39	18.01	11.51	1.2	0.42	2.6
E75A-90	3550	975	254	67.99	56.41	43.44	27.75	1.2	0.48	3.0
E90A-100	2800	2400	624	110.00	96.26	70.27	44.89	1.2	0.50	3.4



Performance ratings for Aluminium Hubs are identical to equivalent steel size.

Dimensions

Coupling (1) Size	Bore Diameters - mm Hub Type A Min.	Hub Type A Max(2)	Hub Type B Min.	Hub Type B Max(2)	A	B	C	D	E(4)	F	G	H	L	Approx. Coupling Wt. kg(5) Type A-A	Type A-B	Type B-B	Coupling Inertia kg cm(5) Type A-A	Type A-B	Type B-B
E19A-24	-	19	-	24	30	40	40	25	16	19	12	18	66	0.27	0.30	0.33	0.7	0.8	0.8
E24A-32	-	24	-	32	40	55	55	30	18	24	14	27	78	0.61	0.78	0.96	2.5	3.0	3.5
E28A-38	-	28	-	38	48	65	65	35	20	27.5	15	30	90	0.97	1.29	1.61	6	7	8
E38A-45	-	38	-	45	66	78	80	45	24	36.5	18	38	114	2.08	2.37	2.66	17	20	23
E42A-55	-	42	-	55	75	94	95	50	26	40	20	46	126	3.21	3.61	4.01	40	50	60
E48A-60	-	48	-	60	85	104	105	56	28	45	21	51	140	4.41	4.97	5.53	60	80	100
E55A-70	-	55	-	70	98	118	120	65	30	52	22	60	160	6.64	7.37	8.11	120	160	200
E65A-75	-	65	-	75	115	134	135	75	35	61	26	68	185	10.13	10.89	11.65	250	310	370
E75A-90	-	75	-	90	135	158	160	85	40	69	30	80	210	16.03	17.73	19.43	540	680	820
E90A-100	38	90	38	100	160	180	200	100	45	81	34	100	245	28.45	30.25	32.10	1400	1590	1780
E19AA-24 A	-	19	12	24	32	40	40	25	16	19	12	18	66	0.12	0.13	0.14	0.3	0.4	0.4
E24AA-32 A	6	24	14	28	40	55	55	30	18	24	14	27	78	0.24	0.26	0.28	0.8	0.9	1.0
E28AA-38 A	7	28	16	38	48	65	65	35	20	27.5	15	30	90	0.39	0.46	0.53	2.0	2.4	2.8
E38AA-45 A	8	38	20	45	66	78	80	45	24	36.5	18	38	114	0.82	0.89	0.95	7.0	7.5	8.0

(1) Coupling ref is for mixed hubs.
(2) With Standard keyway.
(3) Angular deflection at Nominal Torque Tn is 3˚ and Max Torque Tm is 5˚ Max Torque is double Nominal Torque.
(4) With coupling correctly positioned on shafts.
(5) Weights and Inertias for couplings on max. bore.

All Couplings can be supplied with hubs finished bored, keyseated and with set screws on 48 hour re-work service.
Also sizes 28A- 38B through to GE75A - 90B are available with Taper Bush fitting.

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Morflex Couplings

Accommodate High Angular Misalignment – Cushion Vibration and Shock

The Morflex Coupling is designed for applications where considerable misalignment is expected. It also cushions shock loads and absorbs vibration. The Morflex coupling compensates for misalignment and is torsionally flexible.

All drive and reaction forces are accommodated by displacement of the flexible Neoprene biscuits. Spring rates (Nm/degree) are low, which accounts for the efficient compensation for misalignment and prolonged bearing life of equipment coupled by Morflex. The centre member "floats" between the two flanges, and the two sets of Neoprene biscuits share the misalignment.

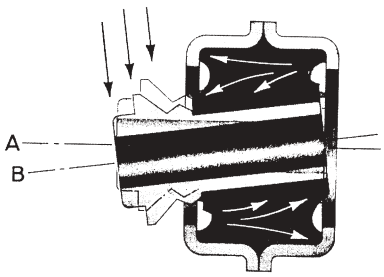
Round steel flanges are normally used, available with a minimum bore from stock. Lining up shaft centres is easier and higher operation speeds permissible with the Morflex Round Flanged Coupling.

The Morflex Principle

Specially developed, resilient, non-cold-flow neoprene biscuits are responsible for the flexibility of the Morflex coupling. Relative movement between shafts is confined to the controlled displacement of the neoprene. Preloading the biscuits in assembly permits them to allow considerable deflection, even with light load. The shape of neoprene biscuit has been carefully designed for uniform stress and deflection - an important operational advantage and one which contributes greatly to the life of the coupling. Morflex couplings can be used in ambient temperatures ranging from -15°C to 95°C.

Angular deflection

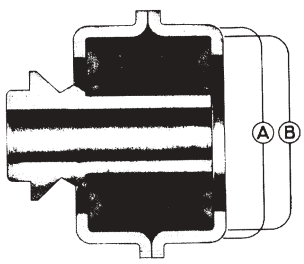
A. Centreline of biscuit before angular deflection.



B. Displacement of the neoprene, as indicated by arrows, compensates for angular misalignment of the connected shafts.

Axial displacement resulting from thrust loads

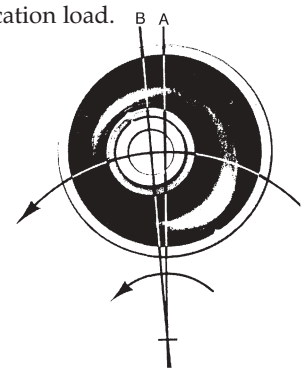
A. Position of biscuits prior to imposition of thrust load.



B. Position of biscuit after thrust load has been imposed. The flow of the neoprene permits controlled end float. Thrust loading is transmitted smoothly and uniformly.

Torsional deflection resulting from torque loads and torsional vibration

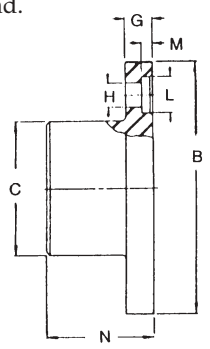
A. Centreline of biscuit before application load.



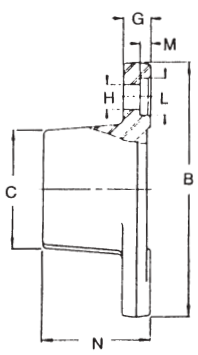
B. Imposition of a torque increases pressure in the direction of the load, and reduces pressure in the opposite direction. Because of its initial preloaded condition the neoprene remains under compression throughout its volume at maximum torque load.

Morflex Coupling Capacities

Cplg No.	Power Ratings		Max. rpm	Max. misalignment capabilities	Parallel Misalignment	Stock Min. Bore mm	Max Bore mm	Approx Wt. kg
	kW per 100 rpm	Torque Nm		Angular	Radial mm			
252-0	0.18	17.5	6500	1.5	0.25	9.53	15	0.35
302-0	0.28	27.0	6000	2	0.25	9.53	18	0.50
352-0	0.50	43.4	5500	3	0.38	9.53	22	0.90
402-	0.75	71.9	5500	4	0.38	12.70	30	1.80
502-	1.19	114.0	5300	5	0.50	12.70	38	3.15
602-	2.42	232.0	5000	5	0.75	19.10	42	5.45
702-	4.00	385.0	4600	5	0.89	22.22	50	9.00
802-	5.50	527.0	4400	5	1.00	25.40	55	13.60
902-	7.50	712.0	4200	4	1.00	25.40	62	21.75
1002-	10.30	983.0	4000	4	1.15	31.25	70	30.40
1202-	15.75	1505.0	3800	2	1.25	50.80	80	48.00



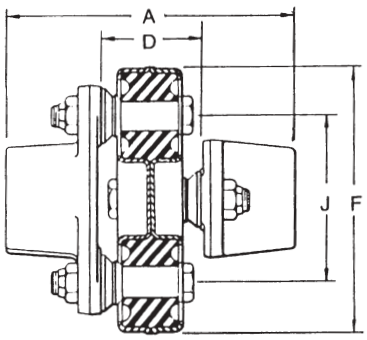
ROUND FLANGE



OVAL FLANGE

Dimensions mm

Cplg No.	A	B	C	D	F	G	H	J	L	M	N
252-0	57	57	24	19	67	4.0	6.4	41	-	-	19
302-0	70	65	30	25	79	4.8	6.4	49	-	-	22
352-0	79	76	35	28	92	6.4	7.9	57	-	-	25
402-	105	91	45	41	105	9.5	9.9	65	15.9	5.6	32
502-	124	107	57	48	128	9.5	11.5	81	19.1	4.8	38
602-	162	129	70	57	154	12.7	13.1	97	19.1	4.8	52
702-	186	148	79	62	178	15.9	14.7	110	22.3	4.8	62
802-	210	167	95	68	203	15.9	14.7	125	22.3	4.8	71
902-	248	193	108	76	229	19.1	16.7	141	28.6	5.6	86
1002-	279	215	120	79	254	23.8	19.8	157	31.8	5.6	100
1202-	317	247	133	92	330	31.8	26.2	187	38.2	7.1	113



Couplings 252-0 to 352-0 have oval flanges, other sizes have round flanges, although to size 1002 can be supplied to special order with oval flanges

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Roller Chain Couplings

Cross+Morse Roller Chain Couplings consist of three high strength components; two special chain sprockets manufactured from high quality medium carbon alloy steels connected by a length of high strength Duplex Roller Chain. The sprockets have precision cut teeth, induction hardened for maximum service life; available either plain bore or machined for taper bores to provide ease of assembly. Size for size an LRC Roller Chain Coupling correctly lubricated is one of the strongest couplings available providing the following design advantages:-

● *Ease of Installation*

The LRC Coupling can be quickly installed and aligned. Connected shafts are easily separated by removing the spring clip connecting link and then the chain from the sprockets.

● *High Capacity*

Obtained through use of hardened tooth sprockets, Morse Precision Roller Chain with hardened rollers, allowing substantial kW Power in a compact size

● *Inexpensive*

Low initial cost per kW Power transmitted, and long service life are obtained through the use of standard components with hardened working surfaces.

● *Minimum Maintenance*

When optional spun covers are used lubrication is retained on the hardened working surfaces.

● *Flexibility*

Good installation practice dictates that coupling be installed with a minimum of misalignment. The LRC Coupling permits moderate angular and parallel shaft misalignment.

kW Power Ratings - Stock Roller Chain Couplings

Coupling No.	Torque Below 50 rpm Nm	Revolutions per minute														
		50	100	200	400	600	800	1000	1200	1500	1800	2000	2500	3000	4000	5000
C 4012	162	0.8	1.6	2.9	4.4	5.9	7.4	8.9	10.4	12.2	14.4	15.6	19.1	22.4	28.6	34.9
T 4016	146	0.7	1.5	3.0	6.1	9.2	12.2	15.3	18.3	22.9	27.5	30.5	38.2	44.9	57.2	69.8
C 4016	325	1.7	3.2	5.8	8.8	11.4	14.9	17.6	20.4	24.5	28.8	31.3	38.3	44.9	57.2	69.8
C 5016	520	2.7	5.2	9.3	14.1	18.3	23.9	28.2	33.3	39.2	46.1	50.1	61.3	71.9	91.5	
T 5018	485	2.5	5.0	10.1	18.8	24.6	32.0	37.8	44.6	52.6	61.9	67.2	82.2	96.5		
C 5018	712	3.6	7.0	12.5	18.8	24.6	32.0	37.8	44.6	52.6	61.9	67.2	82.2	96.5		
T 6018	810	4.2	8.5	17.0	28.7	37.1	48.7	57.2	67.7	76.6	93.6	101.8	124.5	146.1		
C 6018	1056	5.5	10.6	19.0	28.7	37.1	48.7	57.2	67.7	76.6	93.6	101.8	124.5	146.1		
T 6022	1310	6.6	13.7	27.4	42.8	55.4	72.6	85.2	101.0	114.0	139.2	151.5	185.0			
C 6022	1570	8.2	15.8	28.4	42.8	55.4	72.6	85.2	101.0	114.0	139.2	151.5	185.0			
T 8018	1310	6.6	13.7	27.4	54.8	82.3	109.7	137.2	164.6	205.7	246.9	274.0				
C 8018	2913	15.2	29.2	52.4	79.3	102.5	134.2	158.0	186.7	219.6	258.1	280.7				
T 8020	2700	14.1	28.3	56.5	103.0	133.2	174.4	205.4	242.7	285.4	335.5					
C 8020	3772	19.7	37.9	68.1	103.0	133.2	174.4	205.4	242.7	285.4	335.5					
C 12016	8945	46.8	89.9	161.1	243.5	314.1	412.1	485.3	573.2	674.3	792.3					
C 12020	11655	61.0	117.1	209.9	317.3	410.0	537.0	632.4	746.9	878.7						
C 12024	14432	75.5	145.0	259.9	392.9	507.8	665.0	783.0	924.9							
C 12030	18040	94.0	180.0	324.0	490.0	630.0	830.0	995.0								

For maximum service life, couplings selected with ratings to the right of the heavy line in table must be lubricated with a cover. Maximum speeds are indicated by heavy broken lines.

Torque and power capacities at slow speeds for TB series couplings are governed by taper bush limitations.

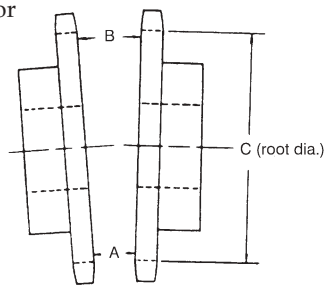
In addition to the standard sizes, Roller chain Couplings can be furnished in a wide range of sizes for special designs with Torque Ratings of up to 2000 Nm.

Misalignment

Maximum angular misalignment is 1°, but for maximum life angular misalignment should not exceed ½°. Refer to sketch on right, where .009mm per mm root dia. is equivalent to ½° angular misalignment.

B – A = .009 x C.

Offset or Parallel misalignment should not exceed 2% of chain pitch.



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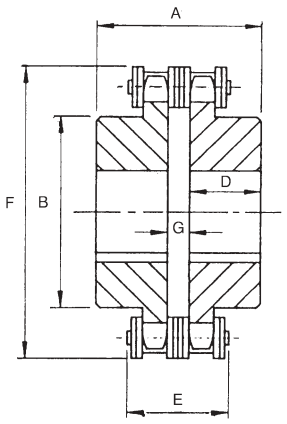
Roller Chain Couplings

LRC Plain Bore - Roller Chain Coupling Dimensions

Available from stock with pilot bore, or can be quickly modified to customers shaft requirements; standard finished bores being to H8 tolerance.

Stock Coupling Dimensions

Coupling No.	Min Bore mm	Max. Bore mm	Dimensions mm						Approx. Weight kg
			A	B	D	E	F	G	
C 4012	10.0	22	63	33	28	33	61	7	0.6
4016	12.0	34	63	50	28	33	77	7	1.2
5016	15.9	45	81	64	37	38	96	7	2.2
5018	19.0	50	91	75	42	38	106	7	2.7
6018	19.1	57	106	87	49	44	126	8	5.1
6022	24.0	68	108	102	50	44	150	8	7.4
8018	25.4	80	136	117	60	71	167	16	11.4
8020	35.0	90	148	136	66	71	183	16	17.6
12016	38.1	105	186	156	81	105	230	24	29.0
12020	50.8	120	178	175	77	105	278	24	53.0
12024	50.8	150	231	232	103	105	326	24	76.0
12030	50.8	200	231	302	103	105	398	24	137.0

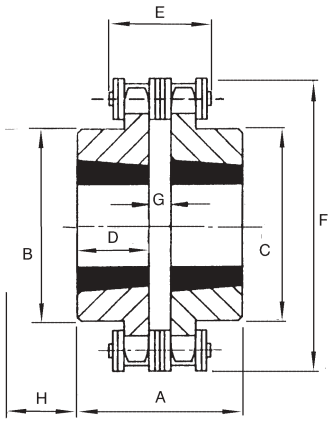


TB Taper Bore - Roller Chain Coupling Dimensions

Two types of sprockets are available; standard TBH with bushes mounted from the hub end, and type TBF where bushes are mounted from the flange (tooth) end of the sprocket.

Stock Coupling Dimensions

Coupling No.	Bush Size	Max. Bore mm	Dimensions in mm								Approx.(2) Weight kg
			A	B	C	D	E	F	G	H(1)	
T 4016	1108	28	51	52	50	22	33	77	7	20	0.8
T 5018	1610	42	57	75	75	25	38	106	7	27	2.6
T 6018	2012	51	72	90	87	32	44	126	8	35	2.9
T 6022	2517	63	98	102	102	45	44	150	8	42	4.1
T 8018	2517	63	106	108	100	45	71	167	16	42	6.8
T 8020	3020	76	116	136	136	50	71	183	16	53	8.4



(1) Space required to remove hub using jack screw with shortened hex. key.
(2) For coupling using 2 off TBH Sprockets - less taper bushes.
Note: To order TB coupling, hub type must be specified by suffix after coupling.
ie:- TB 6018 FH is coupling with one TBF and one TBH hub.

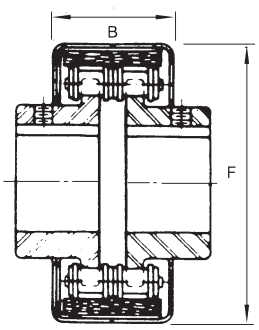
Coupling Covers

Chain Coupling Covers are used to provide protection for both the duplex roller chain and sprocket teeth on applications where couplings are exposed to corrosive or abrasive atmosphere, or to retain lubrication in the chain with high shaft speeds. Two types of cover are offered; a low cost spun aluminium cover for general use, or a fully sealed split cast aluminium cover on more demanding applications.

Stock Spun Aluminium Covers

Their light weight and cost make spun aluminium covers the ideal choice for protection of roller chain couplings. The two spun halves simply clip together to provide a protective cover for the chain. A felt pad located between chain and cover retains grease lubrication. Rounded exterior of the cover combines safety with neat appearance. Covers are also suited to the LSC inverted tooth couplings. For applications where aluminium is not permitted, spun steel covers of same dimensions can be supplied to order.

Cover No.	To Suit Couplings			B	F	App. Weight
	LRC	TB	LSC	mm	mm	kg
A 4012C	4012			38.9	75	0.06
A 4016C	4016	4016	4-16	38.9	93	0.08
A 5016C	5016		4-20	47.0	110	0.10
A 5018C	5018	5018		47.0	121	0.12
A 6018C	6018	6018	4-28	56.6	142	0.16
A 6022C	6022	6022		56.6	166	0.22
A 8018C	8018	8018		79.5	186	0.35
A 8020C	8020	8020		79.5	203	0.40
A 12016C	12016			117.6	246	0.53



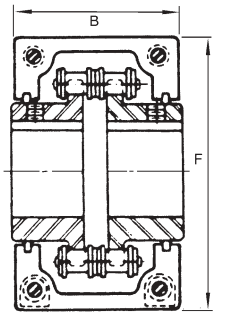
Cast Aluminium Covers

For more demanding applications, cast aluminium covers extend life of couplings by providing continuous lubrication and full protection from abrasive elements. The two halves fit around the coupling and connect by 'Nyloc' cap-head bolts. Neoprene seals are fitted to seal between sprocket hub and cover. These covers are fitted after coupling is fully installed on shafts.

Caution:- Never operate at rim speeds above 25 m/s.

Base Cover No.	Adaptor Kit No.*	To suit all couplings		B mm	F mm	Approx. Weight kg
A 40	A 4016	C 4016		51	102	0.45
A 50	A 5016	C 5016		60	130	0.70
A 50	A 5018	C 5018	T 5018	60	130	0.70
A 60	A 6018	C 6018		75	162	1.25
A 80	A 8018	C 8018		102	208	2.40
A 80	A 8020	C 8020	T 8020	102	208	2.35

*Accessory Kit includes two seals for specific hub size, two gaskets and hardwear necessary to install cover.



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Morse LNC Series
Delrin† Chain Couplings

CROSS+MORSE

Available in Two Series

- **Corrosion Resistant**
  Where corrosion is a problem - Delrin Couplings are a must.
- **Pollution-Free Couplings**
  A neat way to keep things clean.
- **Economical**
  Cost less to install and maintain.
- **No Lubrication**
  No dirt catching problems with grease.
- **Quiet**
  Runs quieter than metal couplings.
- **Safe**
  Smooth outer surface of Delrin Chain.

Morse Delrin† Chain Couplings for Applications up to 5000 RPM and from Fractional to 45kW

- Where corrosion is normally a problem from atmospheric conditions.
- For food processing, textile and other machinery
- For the safety feature of the smooth outer surface without a cover.
- For centrifugal pumps and steady load applications.

Available with minimum plain bore, finished bore with standard keyway and setscrew, or TL taper bore.

N400 Series
1/2 " pitch
.2 through 21kW

Available from stock with minimum plain bore, TL taper bore or bored to suit.

kW Power Ratings LNC 400 Series 1/2 inch Delrin† Chain

Number of Teeth	Torque below 100 rpm Nm	Revolutions per minute																	
		100	200	300	400	500	600	700	800	900	1200	1500	1800	2000	2500	3000	3600	4000	5000
11	23.9	0.2	0.5	0.7	1.0	1.2	1.3	1.5	1.6	1.7	2.1	2.4	2.7	2.9	3.3	3.8	4.3	4.6	5.4
12	28.6	0.3	0.6	0.8	1.1	1.4	1.6	1.8	1.9	2.1	2.5	2.9	3.2	3.5	4.0	4.5	5.1	5.5	6.5
13	33.3	0.3	0.7	1.0	1.3	1.7	1.9	2.1	2.3	2.4	2.9	3.4	3.8	4.1	4.7	5.3	6.0	6.5	7.6
14	38.6	0.4	0.8	1.2	1.6	2.0	2.2	2.4	2.6	2.8	3.4	3.9	4.4	4.7	5.5	6.2	7.0	7.5	8.8
15	43.9	0.4	0.9	1.3	1.8	2.3	2.5	2.8	3.0	3.3	3.9	4.5	5.0	5.4	6.2	7.2	8.0	8.6	10.1
16	50.3	0.5	1.0	1.5	2.1	2.6	2.9	3.2	3.4	3.7	4.4	5.1	5.8	6.2	7.1	8.1	9.1	9.8	
17	56.7	0.6	1.1	1.7	2.3	2.9	3.3	3.6	3.9	4.2	5.0	5.7	6.5	6.9	8.0	9.0	10.3	11.0	
18	63.6	0.6	1.3	1.9	2.6	3.3	3.7	4.0	4.4	4.7	5.6	6.5	7.3	7.8	9.0	10.2	11.5		
19	70.5	0.7	1.4	2.2	2.9	3.6	4.1	4.5	4.8	5.2	6.2	7.2	8.1	8.7	10.0	11.3	12.8		
20	78.3	0.8	1.6	2.4	3.2	4.1	4.5	5.0	5.5	5.8	6.9	8.0	9.0	9.6	11.1	12.5	14.2		
21	86.1	0.9	1.8	2.7	3.6	4.5	5.0	5.5	6.1	6.4	7.6	8.8	9.9	10.6	12.2	13.8	15.7		
22	94.7	0.9	1.9	2.9	3.9	4.9	5.6	6.0	6.6	7.0	8.4	9.7	10.9	11.6	13.5	15.2			
23	103.3	1.0	2.1	3.2	4.3	5.4	6.2	6.6	7.1	7.6	9.1	10.5	11.8	12.7	14.7	16.7			
24	113.0	1.1	2.3	3.5	4.7	5.9	6.6	7.2	7.8	8.3	10.1	11.5	12.9	13.9	16.0	18.1			
25	122.7	1.2	2.5	3.8	5.1	6.4	7.1	7.7	8.4	9.0	10.8	12.5	14.0	15.0	17.3	19.6			
27	143.0	1.4	2.9	4.4	5.9	7.5	8.3	9.0	9.8	10.5	12.6	14.6	16.3	17.5	20.2				
30	176.0	1.7	3.6	5.5	7.3	9.2	10.2	11.1	12.1	13.0	15.5	18.0	20.1	21.6					

N600 Series
3/4 " pitch
1.1 through 45kW

Available from stock with minimum plain bore, TL taper bore or bored to suit.

kW Power Ratings LNC 600 Series 3/4 inch Delrin† Chain

Number of Teeth	Torque below 100 rpm Nm	Revolutions per minute																	
		100	200	300	400	500	600	700	800	900	1200	1500	1800	2000	2500	3000	3600	4000	5000
11	107.4	1.1	2.2	3.2	4.3	5.3	6.3	7.2	8.2	9.1	11.6	13.9	16.0	17.2	19.8	21.8	23.2		
12	129.6	1.2	2.5	3.7	4.9	6.0	7.1	8.2	9.2	10.2	13.0	15.6	17.8	19.1	21.8	23.6	24.7		
13	137.0	1.4	2.8	4.1	5.5	6.7	8.0	9.1	10.3	11.4	14.5	17.2	19.6	21.0	23.7	25.4	26.2		
14	152.9	1.5	3.1	4.6	6.1	7.5	8.8	10.1	11.4	12.6	15.9	18.9	21.3	22.8	25.4	26.9			
15	168.8	1.7	3.4	5.1	6.7	8.2	9.7	11.1	12.5	13.8	17.4	20.5	23.1	24.5	27.2				
16	184.7	1.9	3.7	5.5	7.3	8.9	10.5	12.1	13.6	15.0	18.8	21.5	24.6	26.0	28.4				
17	200.7	2.1	4.1	6.0	7.9	9.7	11.4	13.1	14.6	16.1	20.1	22.5	26.1	27.5	29.6				
18	217.6	2.2	4.4	6.5	8.5	10.5	12.3	14.1	15.7	17.3	21.5	24.4	27.2	28.8	30.5				
19	234.6	2.4	4.8	7.0	9.2	11.3	13.2	15.1	16.8	18.5	22.9	26.3	28.3	30.1	31.4				
20	252.5	2.6	5.1	7.6	9.9	12.1	14.2	16.1	18.0	19.7	24.3	27.8	30.0	31.4					
21	269.8	2.8	5.5	8.1	10.5	12.9	15.1	17.2	19.1	21.0	25.7	29.3	31.7	32.8					
22	288.8	3.0	5.9	8.6	11.2	13.7	16.0	18.2	20.2	22.1	27.0	30.6	32.2	33.7					
23	307.8	3.2	6.3	9.2	11.9	14.5	17.0	19.2	21.4	23.3	28.2	31.8	34.0	34.6					
24	326.8	3.4	6.6	9.7	12.6	15.4	18.0	20.4	22.6	24.7	29.8	33.4	35.4						
25	345.8	3.6	7.0	10.3	13.4	16.3	19.0	21.1	23.8	26.0	31.3	34.9	36.9						
27	403.0	4.2	8.2	12.0	15.6	19.0	22.1	24.6	27.7	30.3	36.5	40.7							
30	498.0	5.2	10.0	14.8	19.3	23.5	27.3	30.3	34.2	37.4	45.0								

All Delrin Couplings operated below 100 rpm must not be subjected to torque values in excess to those shown in tables above.
Refer to page 2 for service factor and selection procedure.

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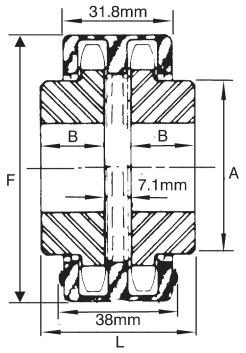
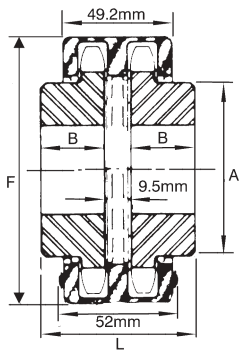
Morse LNC Series
Delrin† Chain Couplings

LNC 400 Series



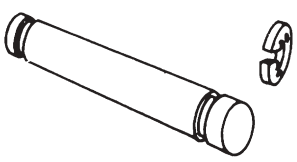
- Temperature range from –30°C to +66°C
- Angular misalignment of 1° (11T-19T), ½° (20T-30T)
- Parallel misalignment of 0.12 mm
- Total end float of 1.5mm

LNC 600 Series



- Temperature range from –30°C to +66°C
- Angular misalignment of 1° (11T-18T), ½° (19T-30T)
- Parallel misalignment of 0.20 mm, (11T-18T) 0.13mm (19T-30T)
- Total end float of 2.0mm

Coupler Pin



A slip-fit coupler pin which provides ease of assembly or dis-assembly can be supplied with all couplings

Dimensions - Plain Bore Couplings

Coupling No.	Bore Sizes Min. mm	Bore Sizes Max. mm	A mm	B mm	F mm	L mm
NC 411	10	19	29	25	57	57
NC 412	10	22	33	28	61	63
NC 413	10	25	37	28	65	63
NC 414	10	28	41	28	69	63
NC 415	10	30	45	28	73	63
NC 416	12	34	50	28	77	63
NC 417	12	35	52	28	81	63
NC 418	12	37	56	28	85	63
NC 419	12	40	60	28	89	63
NC 420	12	42	64	28	93	63
NC 421	14	45	68	28	97	63
NC 422	14	46	70	28	101	63
NC 423	14	46	70	28	105	63
NC 424	14	46	70	28	109	63
NC 425	14	46	70	28	113	63
NC 427	16	46	70	30	121	67
NC 430	16	52	80	30	133	67

Dimensions - Taper Lock Couplings

Coupling No.	Bush Size	Max. Bore mm	A mm	B mm	F mm	L mm
NC 415T	1008	25	46	22	73	52
NC 416T	1108	28	52	22	77	52
NC 417T	1210	32	60	25	81	58
NC 418T	1210	32	60	25	85	58
NC 419T	1210	32	63	25	89	58
NC 420T	1610	42	71	25	93	58
NC 421T	1610	42	71	25	97	58
NC 423T	1610	42	76	25	105	58
NC 425T	1610	42	76	25	113	58
NC 427T	1610	42	76	25	121	58
NC 430T	2012	50	90	32	133	71

Dimensions - Plain Bore Couplings

Coupling No.	Bore Sizes Min. mm	Bore Sizes Max. mm	A mm	B mm	F mm	L mm
NC 611	14	29	46	35	89	80
NC 612	14	35	52	35	95	80
NC 613	14	37	58	35	101	80
NC 614	14	42	64	35	107	80
NC 615	14	46	70	35	113	80
NC 616	16	50	75	35	119	80
NC 617	16	52	80	35	125	80
NC 618	16	52	80	35	131	80
NC 619	16	52	80	35	137	80
NC 620	16	52	80	35	143	80
NC 621	20	58	90	40	149	90
NC 622	20	58	90	40	155	90
NC 623	20	58	90	40	161	90
NC 624	20	58	90	40	169	90
NC 625	20	58	90	40	173	90
NC 627	20	62	95	40	185	90
NC 630	20	62	95	40	204	90

Dimensions - Taper Lock Couplings

Coupling No.	Bush Size	Max. Bore mm	A mm	B mm	F mm	L mm
* NC 613T	1210	32	63	25	101	61
NC 615T	1610	42	71	25	113	61
NC 617T	1610	42	76	25	125	61
NC 619T	2012	50	90	32	137	73
NC 620T	2012	50	90	32	143	73
NC 621T	2517	60	102	45	149	99
NC 623T	2517	60	108	45	161	99
NC 625T	2517	60	108	45	173	99
NC 627T	2517	60	108	45	185	99
NC 630T	2517	60	108	45	204	99

*Hub recessed for chain clearance.

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NOTE: All Bores supplied to B.S. H8 limits and Keyways conform to B.S. Std. unless otherwise specified.

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GFA and GFAS Gear Couplings

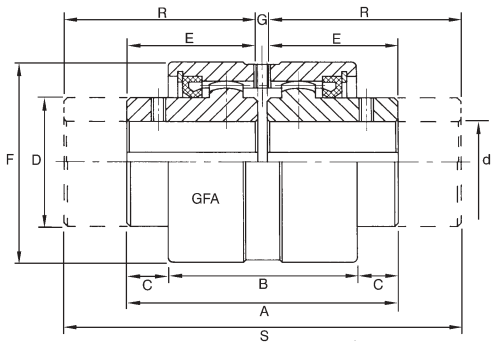
Coupling types GFA and GFAS are designed for heavy industrial applications, providing a torsionally stiff connection of shafts which can accommodate angular and parallel misalignment and axial movement.
The GFA coupling consists of two hardened steel hubs with external crowned and barrelled gear teeth, connected by a hardened steel sleeve with matching gear teeth. The hub teeth are positioned a maximum distance apart to minimise angular and parallel misalignment. The double articulation in the GFA series permits high misalignment.
The GFAS coupling has only one hub with external teeth, which connects to a sleeve with integral hub, to reduce weight and inertia. This series provides a stiffer connection, particularly suited to cardan shaft applications.
Hubs and sleeves are produced from high strength steel (800N/mm² tensile strength) with chemical surface-hardening to enhance wear and corrosion resistance, and avoid seizure. All teeth are to DIN 3992 Class 7 accuracy, with surface finish 1.4µm Ra. Lubrication is retained by sprung loaded seals which also prevent ingress of contaminants to ensure long operating life.
Re-lubrication is via two grub screws positioned on the sleeve.

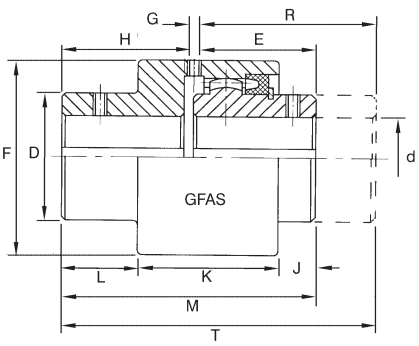
GFA Series

GFAS Series

Couplings are offered with two hub lengths; standard hub suitable for most applications, and long hub for shafts of standard series motors. Hubs of different lengths can be combined in one coupling (GFA type) with refs. modified as below:-

GFA - Has two std. hubs.
GFAL - Has one long and std. hub.
GFALL - Has two long hubs.
GFAS - Has std. length hub.
GFASL - Has long length hub.





GFA and GFAS Series Couplings - Power Capacities and Technical Data

For coupling selection procedure refer page 15. Max. motor torque must never exceed max. torque rating of coupling.

Coupling Size		Power Capacity kW/rpm Normal	Torque Nm		Power Capacity in kW at selected shaft speeds				Shaft speed(2)		Radial Misalign Max. mm GFA only	Inertia kg-cm² GFA (1)	Inertia kg-cm² GFAS (1)	Weights kg(3)			
			Rated	Max.	500	1000	1500	3000	Normal Running Max-rpm	Absolute Max-rpm				GFA Sleeve	GFAS Sleeve	Standard Hub	Long Hub
FA-25	FA -25	0.063	600	1524	31	63	94	189	5000	6000	0.20	8.7	7.3	0.72	1.03	0.48	0.69
FA-32	FA -32	0.104	1000	2520	52	104	156	312	4000	5000	0.26	25.1	19.2	1.14	1.75	0.99	1.58
FA-40	FA -40	0.130	1250	3125	65	130	195	370	3000	4200	0.32	44.8	34.1	1.68	2.71	1.49	2.10
FA-56	FA -56	0.261	2500	6200	130	261	391	-	2200	3500	0.37	132.6	95.6	2.86	4.43	2.96	4.22
FA-63	FA -63	0.419	4000	9260	209	419	628	-	1600	3000	0.40	278.2	207.3	3.75	6.62	4.90	7.67
FA-80	FA -80	0.785	7500	18000	392	785	-	-	1200	2600	0.48	558.6	492.6	5.58	10.50	8.72	14.26
FA-100	FA -100	1.236	12000	28500	618	1236	-	-	700	1400	0.65	1044.5	1064.5	6.63	28.20	15.76	25.40
FA-125	-	2.431	23600	56250	1215	2431	-	-	460	950	0.70	3650.0	-	17.70	-	32.60	49.50
FA-155	-	4.121	40000	90000	2060	-	-	-	350	700	0.80	9982.0	-	28.30	-	65.50	91.40

(1) Moments of inertia refer to standard couplings bored to maximum bore size.
(2) For operating speeds in excess of 3,600 rpm couplings should be balanced in accordance with ISO 1940 to class G2.5.
(3) Weights are for unbored coupling hubs - total weight is the addition of two hubs plus sleeve (GFA), or sleeve plus hub (GFAS).

GFA and GFAS Series Couplings - Dimensions in mm

Coupling Size		Finished Bore Sizes d(1)		Standard Length Hubs												Long Hubs		
GFA	GFAS	Normal Max.	Max.	A(2)	B	C	D	E	F	G(2)	H	J	K	L	M(2)	R	S(2)	T(2)
FA-25	FA -25	25	28	85	61	12.0	42*	41.0	68*	3	41	13	43	29	85	60	123	104
FA-32	FA -32	32	38	100	73	13.5	55	48.5	85	3	48.5	16	49	35	100	80	163	131.5
FA-40	FA -40	40	48	115	82	16.5	64	56.0	95	3	56	18.5	54.5	42	115	80	163	139
FA-56	FA -56	56	60	140	97	21.5	80	68.0	120	4	60	27	60	45	132	100	204	164
FA-63	FA -63	63	75	153	108	22.5	100	74.5	140	4	61.5	31	63	46	140	119.5	243	185
FA-80	FA -80	80	90	170	125	22.5	125	82.5	175	5	65.5	26	76	51	153	140	285	210.5
FA-100	FA -100	100	110	216	148	34	150	105	198	6	90	38	92	71	201	174.5	355	270.5
FA-125	-	125	140	288	214	39	190	140	245	8	-	-	-	-	-	207.5	423	-
FA-155	-	155	175	370	240	64	240	180	300	10	-	-	-	-	-	245	498	-

(1) Stock hubs are all unbored, but can be modified to customer's bore and keyway requirements, up to maximum bores indicated.
(2) Dimensions G, M, S, and T relate to couplings correctly positioned on shafts.
* For GFAS 25 dimension D on hub only is 40mm, and dimension F is 70mm.

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Type GF Gear Couplings

Low cost, gear couplings for lower power applications, available in 10 sizes with torque capacity to 410Nm and shaft speeds up to 14,000 rpm. The GF Coupling consists of two steel hubs with external crowned and barrelled gear teeth, phosphated for corrosion protection, connected by a synthetic resin sleeve. The sleeve is manufactured from high molecular weight polyamide, thermally conditioned and impregnated with solid lubricant to provide a long maintenance-free life. This sleeve has high resistance to atmospheric humidity and an operating temperature range of –20°C to +80°C with ability to withstand 120°C for short durations.

The GF Series Couplings are made with two hub lengths; a standard hub suitable for most applications, and a longer hub (ref GFL) designed to fit full length of shaft on standard motors. Hubs of different lengths can be combined in coupling, being identified by coupling reference as following examples:

GF - Has two standard hubs - e.g. GF 14
GFL - Has one long hub - e.g. GFL 28
GFLL - Has both long hubs - e.g. GFLL 42

Gear Coupling Selection Procedure

Using factors from page 2 and below determine selection parameters by:-

a) Determine design power in kW from transmitted power by formula:- Design Power Pd = P, f1, f2, f3 kW
Divide design power Pd by shaft speed, rpm to give kW/rpm and use to select suitable coupling giving consideration also to shaft speed and misalignment.

b) Alternatively, if only shaft torque is know, design torque can be determined:- Design Torque Td = T, f1, f2, f3, Nm

Service Life Factor f2

Gear Couplings are designed for a working life of 3,800 hours under normal conditions of torque, misalignment and speed. Where a longer life is required use factor f2 when selecting coupling.

Life in hours	3800	4000	6000	8000	12000	20000
F 2	1.0	1.6	1.17	1.26	1.39	1.58

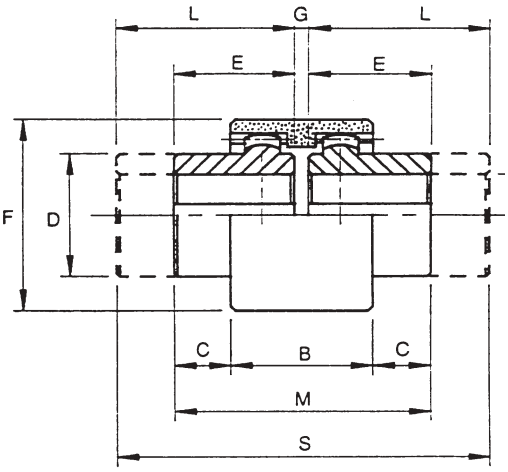
Misalignment Factor f3

The maximum operating speed indicated in the tables for each coupling is based on applications where the angular misalignment does not exceed 5 minutes angle. Where values on angular misalignment exist, both the catalogue torque capacity and the maximum speeds will have to be reduced. Where angles of misalignment and operating speeds are close to catalogue values, the selecting service factor should be increased by misalignment factor f3 of 1.12.

GF Series Couplings - Capacities and Dimensions (mm)

Couplings should be selected to requirements of motor power, shaft sizes and type of load. Under no circumstances should maximum motor torque exceed twice coupling rated torque.

Coupling Size	Torque Nm (3)	Power Cap kW/1000 rpm	Power Capacity in kW at selected shaft speeds			Max. Speed rpm	Inertia kg-cm² (1)	Maximum misalignment (2) capabilities		
			1000	1500	3000			Angular	Radial	Axial mm
F-14	11.0	1.1	1.1	1.7	3.4	14 000	0.27	2	0.7	1
F-19	18.5	1.9	1.9	2.9	5.8	12 000	0.64	2	0.8	1
F-24	22.0	2.3	2.3	3.4	6.9	10 000	0.92	2	0.8	1
F-28	51.5	5.4	5.3	8.1	16.1	8 000	3.45	2	1.0	1
F-32	69.0	7.2	7.2	10.8	21.6	7 100	5.03	2	1.0	1
F-38	88.0	9.2	9.2	13.8	27.6	6 300	9.59	2	0.9	1
F-42	108.0	11.3	11.3	16.9	33.9	6 000	13.06	2	0.9	1
F-48	154.0	16.1	16.1	24.0	48.3	5 600	18.15	2	0.9	1
F-55	285.0	29.8	29.8	44.7	89.5	4 800	49.44	2	1.2	1
F-65	410.0	42.9	42.9	64.3	128.7	4 000	106.34	2	1.3	1

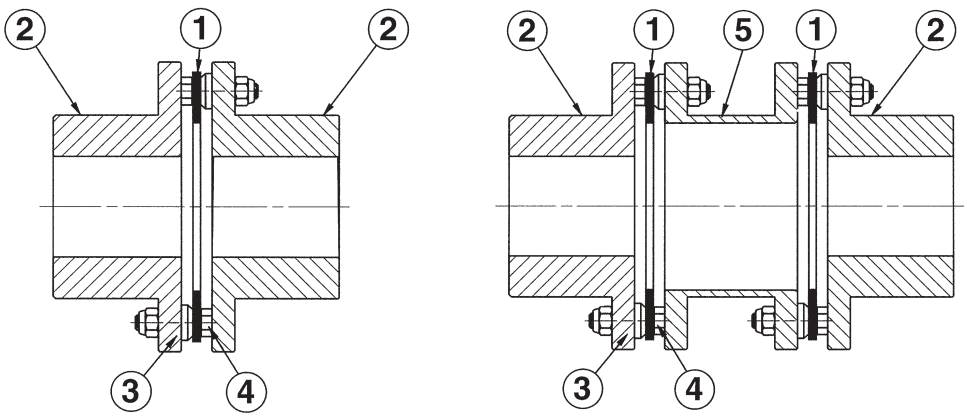


Coupling Size	Finished Bore Size		Standard Length Hubs							Long Hubs			Weights kg(6)	
	d(5) Min.	d(5) Max.	B	C	D	E	F	G(3)	M(3)	L	S(3)	Sleeve	Standard Hub	Long Hub
F-14	6	14	38	6.5	25	23	40	4	51	30	64	0.022	0.10	0.13
F-19	8	19	38	8.5	32	25	48	4	55	40	84	0.028	0.18	0.28
F-24	10	24	42	7.	36	26	52	4	57	50	104	0.037	0.23	0.42
F-28	10	28	48	19	45	41	68	4	86	60	124	0.086	0.54	0.79
F-32	12	32	48	18	50	40	75	4	84	60	124	0.104	0.66	0.97
F-38	14	38	50	17	60	40	85	4	84	80	164	0.131	0.93	1.83
F-42	20	42	50	19	63	42	95	4	88	110	224	0.187	1.10	2.76
F-48	20	48	50	27	68	50	100	4	104	110	224	0.198	1.50	3.21
F-55	25	55	65	29.5	82	60	120	4	124	110	224	0.357	2.63	5.12
F-65	25	65	72	36	95	70	140	4	144	140	284	0.595	4.02	7.92

(1) Inertia refers to standard couplings bored to maximum bore size.
(2) Angular misalignment relates to total angle between shafts.
(3) Dimensions G, M & S relate to couplings correctly positioned on shafts.
(4) Max. Torque = 2 x Rated Torque.
(5) Stock hubs are all unbored.
(6) Weights are for unbored coupling hubs.

Crossflex Disc Couplings

Crossflex Disc flexible shaft couplings provide reliable and accurate transmission of mechanical power for applications requiring low maintenance and no lubrication.
The couplings are particularly suited for drives to pumps, compressors, generators, and paper making machinery operating in poor environmental conditions, as well as the accurate drives on assembly equipment, printing machines and servomotors.
The well balanced all steel construction enables transmission of high torques at high shaft speeds, as encountered on turbine drives.
Three hub designs, and option of spacer provides numerous design possibilities to accommodate space limitations and shafting dimensions.



1. *Disc Pack*
2. *Hub*
3. *Precision Bush*
4. *High Tensile Bolts*
5. *Spacer Hub*

Crossflex Couplings Construction

Crossflex couplings use disc packs (1) manufactured from stainless spring steel, as the driving flexible element.
Steel hubs (2) are connected to the disc packs by a system of precision bushes (3) and high tensile bolts (4). This design provides a backlash free, torsionally stiff, all steel construction, which is maintenance free.
The Crossflex coupling has modular components to enable adaption to a wide range of applications.
Series 1 uses two hubs with a single disc pack. This series provides maximum torsional stiffness, but cannot compensate for radial misalignment.
Series 2 incorporates a spacer (5) between two disc packs and two hubs. These compensate for radial as well as axial and angular misalignments.
To reduce overall length, reversed hubs are available which fit inside of the central spacer.
Both series can be supplied with shaft clamping elements to provide a totally backlash free drive.

Crossflex Couplings Performance Characteristics

1) Backlash Free: ensures accuracy of control on all positioning applications, particularly essential for drives with frequent stop and starts, and reversing drives. The use of Shaft Clamping Elements with the couplings ensure a totally positive drive.

2) Torsionally stiff: the disc pack design ensures high torsional stiffness, essential for applications with servomotors, machine tools, assembly machinery, packaging machines and printing presses.

3) High Temperature: the Crossflex Couplings are manufactured entirely from steel, enabling operating temperatures up to 240 °C in difficult environmental conditions.

4) High Operating Speeds: close tolerances, and precision machining provide accurate concentricity enabling high speed operation.

5) Long maintenance free life: The design of the Crossflex coupling ensures there is almost no wear enabling a very long service life. As there are no moving parts within the system no lubrication or maintenance are required.

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Crossflex Disc Couplings Selection

Crossflex Coupling Selection

To correctly select a Crossflex Coupling it is necessary to determine the correct service factor (f_s) and then multiply the actual maximum torque transmitted by this factor to give a Design torque (T_d). This design torque must be no higher than the nominal torque of the coupling selected. The service factor (f_s) accounts for shaft misalignment (f_1), the type of operating machinery (f_2), and the temperature (f_3).

$$f_s = f_1 \times f_2 \times f_3$$

Misalignment Factor f1

The maximum misalignment shown in the technical data table cannot be accommodated together ; therefore, the presence of axial misalignment Δ_{ax} reduces the amount misalignment Δ_{rad} and angular misalignment Δ_{ang} which can be accommodated. These can be seen in fig. 1.
The effective total angular misalignment Δ_{TOT} is a function of the combined effects of the combined effects of the angular misalignment Δ_{ang} and misalignment Δ_{rad} of the two shafts, and can be determined as below:

$$\Delta TOT° = \frac{\Delta ang}{2} + \frac{\text{arcs in } \Delta rad}{(H - B)}$$

Values for H and B are in the dimensions table.
The misalignment factor f_1 is a function of Δ_{TOT}, and can be found from fig. 2.

Operating Machinery Load Factor f2

The load factor f_2 can be obtained from the following table which gives values for machines using a soft drive system such as electric motor, hydraulic motor, or steam/gas turbines. For other power units refer to the correction factors at base of the table. If the drive is subject to continuous reversing of direction or toque load, or subject to more than 60 starts per hour the factor obtained must be increased by 25%.

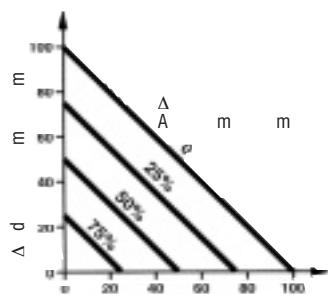
Operating Machinery	Factor f2	Operating Machinery	Factor f2
A d C d	1.00	M T m d	1.75
A d C m - d	1.75	M T x d	1.00
-	1.00	M	2.50
-	2.00	M M . C	3.00
C C m	1.50	d M	1.50
C m d	1.00	M	2.00
C m m - d	1.75		3.00
C m m	2.50	C m	2.50
C C m	2.50	m	2.50
C	1.50	M d M	1.75
E d C	2.00		2.00
Ex d d m x m	1.75	T x M	2.00
m	1.50	d	1.75
	1.00	d M	1.50

Modify load factor f_2 for the following:-
1 to 3 cylinder internal combustion engines f_2 + 0.9
4 plus cylinder internal combustion engines f_2 + 0.4

Temperature Factor f3

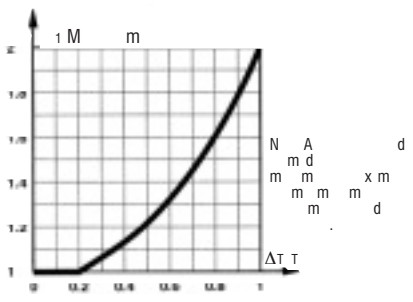
For temperature above 160°C use factor from diagram 3

Misalignment diagram



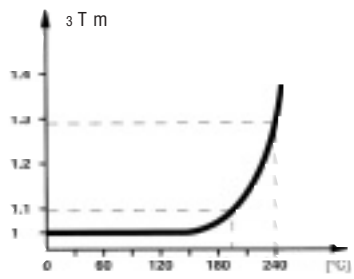
F . 1 Δ x Ax m m

Misalignment factor f1



F . 2

Temperature factor f3

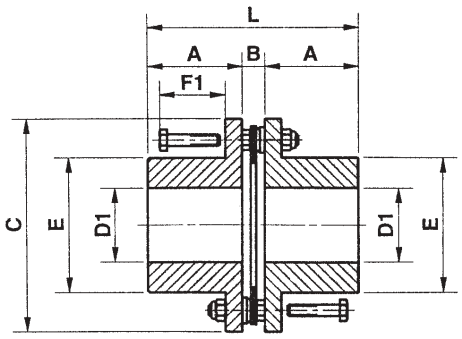


F . 3 m

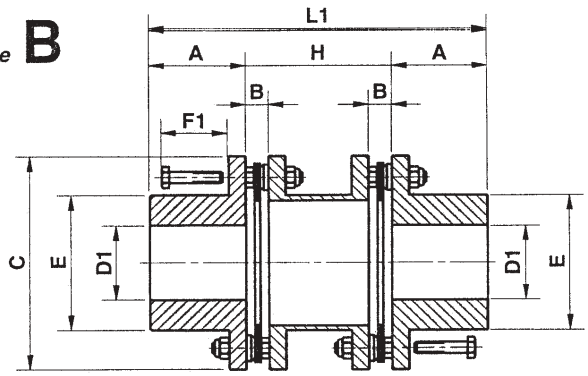
Crossflex Disc Couplings

CROSS+MORSE

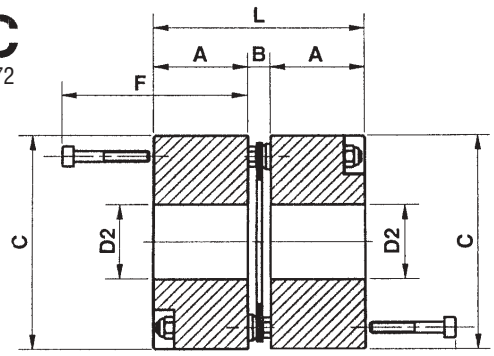
Type A



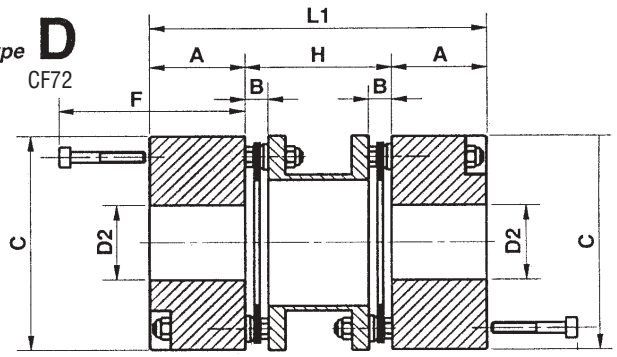
Type B



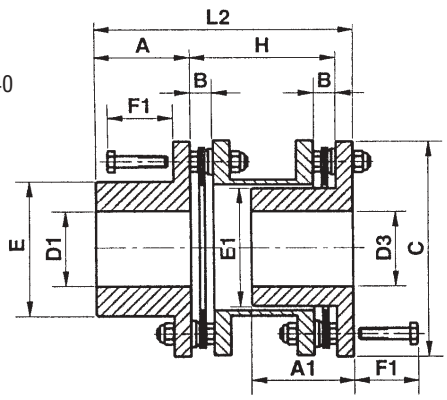
Type C
CF72



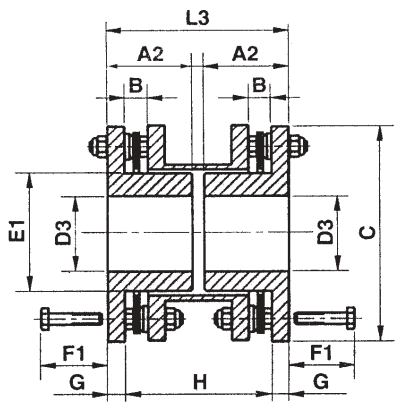
Type D
CF72



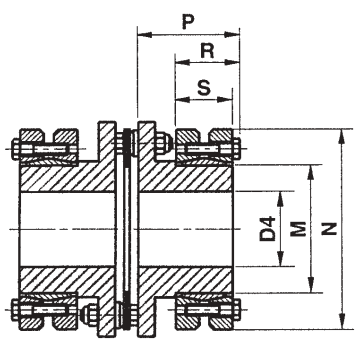
Type E
N CF40



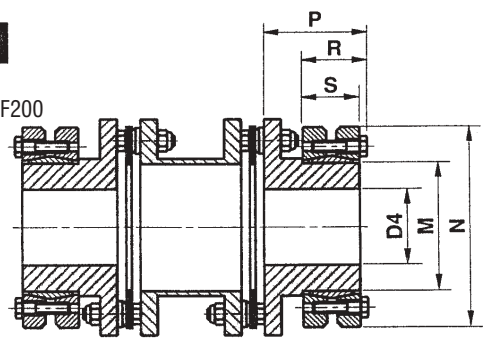
Type F
N CF40



Type G
CF118 - CF200



Type H
CF118 - CF200



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Crossflex Disc Couplings

Capacities and Technical Specifications

Coupling Size	Nom.* Torque T Nm	Max Speed V Rpm	Bolt Torque T_B Nm	Crossflex Series 1						Crossflex Series 2				
				Max. misalignment			Inertia I $kgcm^2$	Torsional Stiffness Ts kNm/rad	Spacer Width H mm	Max. misalignment			Inertia I $kgcm^2$	Torsional Stiffness Ts kNm/rad
				Δ rad mm	Δ ax ± mm	Δ ang [°]				Δ rad mm	Δ ax ± mm	Δ ang [°]		
CF40	12	10000	2.5	0	0.25	1	0.67	1.9	16 26	0.15 0.25	0.5	2	0.70 1.21	0.95 0.95
CF 53	70	10000	6	0	0.4	1	0.94	51	30 39	0.3 0.4	0.8	2	1.84 3.12	26.7 26.5
CF 72	180	8400	8	0	0.5	1	4.8	64	30 60 100 140	0.3 0.5 0.8 1.2	1.0	2	7.86 15.18 19.15 23.13	32.8 32.5 32 31.6
CF 89	360	6800	14	0	0.6	1	16.3	248	37 70 80 100 140	0.3 0.5 0.7 0.8 1.2	1.2	2	30.1 55.4 57.8 62.7 72.5	132 129 128 127 124
CF118	790	5400	31	0	0.8	1	60.8	451	46 100 140 180	0.4 0.8 1.2 1.6	1.6	2	126 200 230.0 260	235 232 229 227
CF142	1450	4600	62	0	1.0	1	137.5	940	55 100 140 180	0.5 0.9 1.3 1.7	2.0	2	292 467 530 594	494 494 488 483
CF168	2600	3800	110	0	1.2	1	351	1820	62 100 140 180	0.6 1.0 1.3 1.8	2.4	2	679 1076 1204 1333	955 953 945 937
CF200	4200	3400	180	0	1.4	1	839	4042	71 140 180	0.7 1.3 1.9	2.8	2	1635 2627 2878	2152 2151 2132

*Can be exceeded to 2 x for brief periods. Angle of Torsional Deflection [°] = $\frac{0.18}{Ts} \cdot T_A$ T_A = Actual Torque Nm

Dimensions

Coupling Size	A mm	A1 mm	A2 mm	B mm	C mm	Bore D mm	Maximum Bores				E mm	E_1 mm	F mm	F_1 mm	G mm	Spacer H mm	L mm	L_1 mm	L_2 mm	L_3 mm
							D_1 mm	D_2 mm	D_3 mm	D_4 mm										
CF40	17			2.9	40	6	18*				26			16		16 26	37	50 60		
CF 53	24.5	- 24.5	- 23	6.9	53	6	25*		- 18*		32.5	24.5		23	5	30 39	55.9	79 90	- 68.5	- 49
CF 72	39.5	- 39.5	- 35 39.5 39.5	7.2	72	10	35	40	28*		47	37	43	25	5.5	30 60 100 140	86.2	109 139 179 219	- 105 145 185	- 72 112 152
CF 89	45	- 45 45 45 45	- 40 45 45 45	8.5	89	14	50*	50	35		62.5	48	53	31	8	37 70 80 100 140	98.5	127 160 170 190 230	- 123 133 153 193	- 86 96 116 156
CF118	55	- 55 55 55	- 55 - -	10.1	118	15	65	70	50		82	64	67	40	10	46 100 140 180	120.1	156 210 250 290	- 165 205 245	- 120 160 200
CF142	60	- 60 60 60	- 58 60 60	11.7	142	19	75	85	60	75	98	77	82	47	11	55 100 140 180	131.7	175 220 260 300	- 171 211 251	- 122 162 202
CF168	75	- 75 75 75	- 60 75 75	12.7	168	25	90	105	70	90	118	90.5	94	55	14	62 100 140 180	162.7	212 250 290 330	- 189 229 269	- 128 168 208
CF200	90	- 90 90	- 83 90	14.6	200	30	110	120	90*	100	141	114	108	64	16	71 140 180	194.6	251 320 360	- 246 286	- 172 212

*D1 max Size 40: keyway according to DIN-6885/3

Additional Dimensions Types G&H

Coupling Size	Clamping Element Size	Bore Min/ Max	M	N	P	R	S	Max Torque T	Axial Thrust F	Size of Bolt	Bolt Torque
	RCK 19	mm	mm	mm	mm	mm	mm	Nm	KN		Nm
CF142	90x155	65 75	90	155	69.5	45	39	1450	146 193	M8	30
CF168	90x155	65 75	90	155	76.0	45	39	2600	146 193	M8	30
CF168	115x188	80 90	115	188	87.5	57	50	2600	212 266	M10	59
CF200	90x155	65 75	90	155	82.5	45	39	4200	146 193	M8	30
CF200	115x188	80 90	115	188	97.0	57	50	4200	212 266	M10	59
CF200	130x215	90 100	130	215	97.0	59	52	4200	304 364	M10	59

Crossflex Coupling Part No.

The full Crossflex Coupling part no. indicates Coupling size, type (with spacer dimension 'H' if applicable), and minor diameter of Clamping Disc on types 'G' and 'H'. Finish bore size, keyway and setscrew requirements for each hub should be indicated after with on type 'E' the external hub being shown first. e.g. Coupling size CF79, type E with 60mm spacer, external hub bored 28mm H7, with standard Js9 tolerance keyway and 2 setscrews @ 120°, internal hub 25mm H7, with standard key and 1 setscrew at 90° to key.
Part No. is CF79E60:- 28H7, Key J9, 255 120 - 25H7, KeyJ9, 1ss90.
Coupling size CF173, type H, one half finish bore 65mm, other 80mm. Part No. is CF173H/90-100:- 65H7 - 80H7.

For basic dimensions of G & H types refer to types A & B respectively, G & H Hubs being modified from these units.

Note: both weight and inertia are increased on this series of units. See next page for Crossflex Couplings with Avante Brushes, Types L & M.

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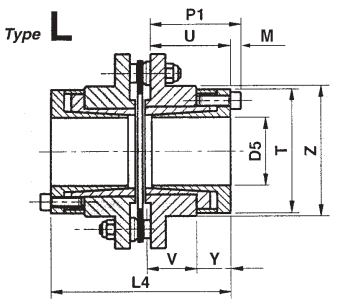
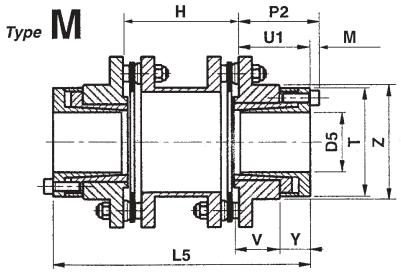
Crossflex Disc Couplings L & M With Avante Clamping Elements

This series of Disc Couplings provides a totally zero backlash connection between shafts, with decrease in weight and inertia over standard Disc Couplings. A selection of bore sizes for each bush size gives great design flexibility.
The combination eliminates the need for keys and set screws to locate the coupling,and provides an easy method for timing in a multi-function machine, either at initial build or at later during production. The total lack of rotary free play makes the system well suited to torque reversal and timing applications, robotics, and servo drives.



Single Disc Coupling



Twin Disc Coupling with Spacer

Dimensions

Coupling Size	Avante Bush Size	Torque Max Nm	Bore Size D5*1 min mm	Bore Size D5*1 max mm	Dimensions M mm	P1 mm	P2 mm	T mm	U mm	U1 mm	V mm	Y mm	Z mm	L4 mm	H mm	L5 mm
CF 53	ACE81-x26	140 *2	11	20	4	29.5	29.5	40.5	25.5	25.5	14.0	13.5	42	57.9	30 39	81 90
CF 72	ACE81-x26	145 *2	11	20	4	29.0	29.0	40.5	25.0	25.0	14.0	13.5	42	57.2	30 60 100 140	80 110 150 190
CF 72	ACE81-x38	331 *2	19	30	6	39.0	39.0	57.0	33.0	33.0	14.0	19.0	58	73.2	30 60 100 140	96 126 166 206
CF 89	ACE81-x38H	497 *2	19	30	6	50.5	50.5	57.0	44.5	44.5	27.0	19.0	58	97.5	37 70 80 100 140	126 159 169 189 229
CF 89	ACE81-x52	720 *2	24	42	6	50.5	50.5	70.5	44.5	44.5	26.5	19.0	72	97.5	37 70 80 100 140	126 159 169 189 229
CF118	ACE81-x56	1140 *2	32	50	6	41.0	41.0	74.0	35.0	35.0	16.0	19.0	79	80.1	46 100 140 180	116 170 210 250
CF118	ACE81-x70	1368 *2	55	60	6	50.0	50.0	89.5	44.0	44.0	27.0	19.0	92	98.1	46 100 140 180	134 188 228 268
CF142	ACE81-x52	926 *2	24	42	6	51.5	36.0	70.5	45.5	30.0	26.5	19.0	72	102.7	55 100 140 180	115 160 200 240
CF142	ACE81-x72	2900 *2	28	60	8	67.5	67.5	96.5	59.5	59.5	36.5	23.0	98	130.7	55 100 140 180	174 219 259 299
CF168	ACE81-x72	3133 *2	28	60	8	67.5	45.0	96.5	59.5	37.0	36.5	23.0	98	131.7	62 100 140 180	136 174 214 254
CF200	ACE81-x72	3133 *2	28	60	8	67.5	47.0	96.5	59.5	39.0	36.5	23.0	98	133.6	71 140 180	149 218 258

*1 See table below for bore sizes available for bush *2 Torque restricted by Clamping Bush capacity, check torque in table below.

Avante Clamping Element standard bore sizes with transmittable torques 'T'

Clamping Element		Bore sizes available with respective Torque capacity												Locking Size	Screws Torque	Weight kg
ACE81-x26	d mm T Nm	11 50	12 55	14 90	15 95	16 115	18 130	19 140	20 145					M4	5	0.22
ACE81-x38	d mm T Nm	19 195	20 200	22 240	24 265	25 275	28 310	30 330						M6	17	0.32
ACE81-x38H	d mm T Nm	19 310	20 330	22 360	24 400	25 410	28 460	30 500						M6	17	0.40
ACE81-x52	d mm T Nm	24 470	25 490	28 550	30 590	32 700	35 770	38 840	40 880	42 920				M6	17	0.60
ACE81-x56	d mm T Nm	32 540	35 710	38 780	40 820	42 950	45 1020	48 1090	50 1140					M6	17	0.80
ACE81-x70	d mm T Nm	55 1250	60 1370											M6	17	1.20
ACE81-x72	d mm T Nm	28 1240	30 1330	32 1420	35 1550	38 1780	40 1880	42 1970	45 2110	48 2250	50 2350	55 2590	60 2820	M8	41	1.50

Clamping Element Part No

The Part. No. combines the unit size with the bore size replacing the dash; e.g. a 24mm bore size 38H unit has the part no. ACE81-24x38H, and this will fit all Coupling Hubs with bush refACE81-x38H.

END

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