

# 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

● **Minimum Maintenance**

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

● **Inexpensive**

Low initial cost per kW Power transmitted, and long service life are obtained through the use of standard components with 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	
LRC 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	
TB 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	
LRC 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	
LRC 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		
TB 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			
LRC 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			
TB 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			
LRC 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			
TB 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				
LRC 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				
TB 8018	1310	6.6	13.7	27.4	54.8	82.3	109.7	137.2	164.6	205.7	246.9	274.0					
LRC 8018	2913	15.2	29.2	52.4	79.3	102.5	134.2	158.0	186.7	219.6	258.1	280.7					
TB 8020	2700	14.1	28.3	56.5	103.0	133.2	174.4	205.4	242.7	285.4	335.5						
LRC 8020	3772	19.7	37.9	68.1	103.0	133.2	174.4	205.4	242.7	285.4	335.5						
LRC 12016	8945	46.8	89.9	161.1	243.5	314.1	412.1	485.3	573.2	674.3	792.3						
LRC 12020	11655	61.0	117.1	209.9	317.3	410.0	537.0	632.4	746.9	878.7							
LRC 12024	14432	75.5	145.0	259.9	392.9	507.8	665.0	783.0	924.9								
LRC 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.

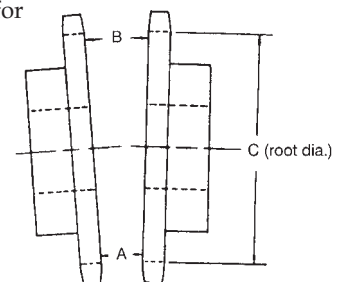
In addition to the standard sizes, Roller chain Couplings can be furnished in a wide range of sizes for special designs with Torque Ratings of up to 2000 Nm.

### Misalignment

Maximum angular misalignment is 1°, but for maximum life angular misalignment should not exceed 1/2°. Refer to sketch on right, where .009mm per mm root dia. is equivalent to 1/2° 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

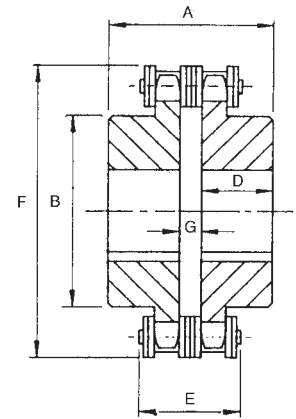


## LRC Plain Bore - Roller Chain Coupling Dimensions

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	
LRC 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.

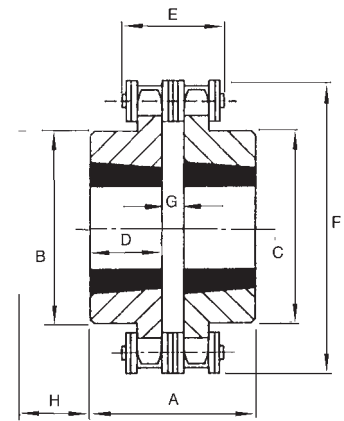
### Stock Coupling Dimensions

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



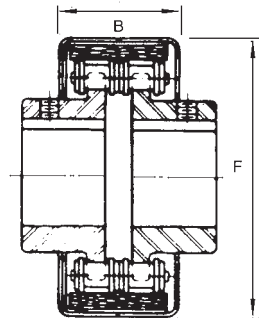
## Coupling Covers

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.

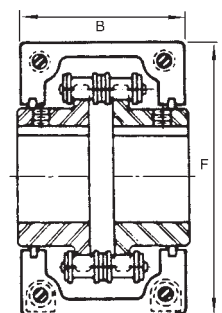
Cover No.	To Suit Couplings			B	F	App. Weight kg
	LRC	TB	LSC	mm	mm	
SA 4012C	4012			38.9	75	0.06
SA 4016C	4016	4016	4-16	38.9	93	0.08
SA 5016C	5016		4-20	47.0	110	0.10
SA 5018C	5018	5018		47.0	121	0.12
SA 6018C	6018	6018	4-28	56.6	142	0.16
SA 6022C	6022	6022		56.6	166	0.22
SA 8018C	8018	8018		79.5	186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

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



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

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

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# Morse LNC Series Delrin<sup>†</sup> Chain Couplings



## 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<sup>†</sup> 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 which avoids the use of oil or grease.

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

● For the safety feature of the smooth outer surface without a cover.

● For centrifugal pumps and steady load applications.

### kW Power Ratings LNC 400 Series 1/2 inch Delrin<sup>†</sup> Chain

#### N400 Series

1/2" pitch  
.2 through 21kW

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



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					

### kW Power Ratings LNC 600 Series 3/4 inch Delrin<sup>†</sup> Chain

#### N600 Series

3/4" pitch  
1.1 through 45kW

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



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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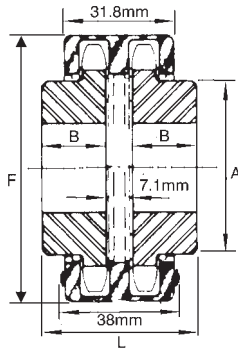
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# Morse LNC Series Delrin<sup>+</sup> Chain Couplings

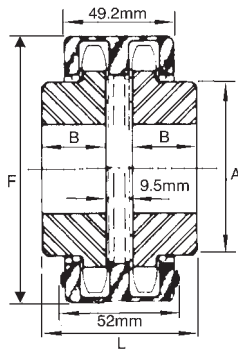


## LNC 400 Series



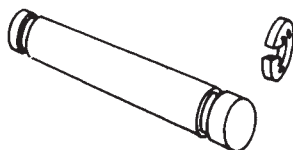
- Temperature range from -30°C to +66°C
- Angular misalignment of 1° (11T-19T), 1/2° (20T-30T)
- Parallel misalignment of 0.12 mm
- Total end float of 1.5mm

## LNC 600 Series



- Temperature range from -30°C to +66°C
- Angular misalignment of 1° (11T-18T), 1/2° (19T-30T)
- Parallel misalignment of 0.20 mm, (11T-18T) 0.13mm (19T-30T)

## 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		A mm	B mm	F mm	L mm
	Min. mm	Max. mm				
LNC 411	10	19	29	25	57	57
LNC 412	10	22	33	28	61	63
LNC 413	10	25	37	28	65	63
LNC 414	10	28	41	28	69	63
LNC 415	10	30	45	28	73	63
LNC 416	12	34	50	28	77	63
LNC 417	12	35	52	28	81	63
LNC 418	12	37	56	28	85	63
LNC 419	12	40	60	28	89	63
LNC 420	12	42	64	28	93	63
LNC 421	14	45	68	28	97	63
LNC 422	14	46	70	28	101	63
LNC 423	14	46	70	28	105	63
LNC 424	14	46	70	28	109	63
LNC 425	14	46	70	28	113	63
LNC 427	16	46	70	30	121	67
LNC 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
LNC 415TL	1008	25	46	22	73	52
LNC 416TL	1108	28	52	22	77	52
LNC 417TL	1210	32	60	25	81	58
LNC 418TL	1210	32	60	25	85	58
LNC 419TL	1210	32	63	25	89	58
LNC 420TL	1610	42	71	25	93	58
LNC 421TL	1610	42	71	25	97	58
LNC 423TL	1610	42	76	25	105	58
LNC 425TL	1610	42	76	25	113	58
LNC 427TL	1610	42	76	25	121	58
LNC 430TL	2012	50	90	32	133	71

## Dimensions - Plain Bore Couplings

Coupling No.	Bore Sizes		A mm	B mm	F mm	L mm
	Min. mm	Max. mm				
LNC 611	14	29	46	35	89	80
LNC 612	14	35	52	35	95	80
LNC 613	14	37	58	35	101	80
LNC 614	14	42	64	35	107	80
LNC 615	14	46	70	35	113	80
LNC 616	16	50	75	35	119	80
LNC 617	16	52	80	35	125	80
LNC 618	16	52	80	35	131	80
LNC 619	16	52	80	35	137	80
LNC 620	16	52	80	35	143	80
LNC 621	20	58	90	40	149	90
LNC 622	20	58	90	40	155	90
LNC 623	20	58	90	40	161	90
LNC 624	20	58	90	40	169	90
LNC 625	20	58	90	40	173	90
LNC 627	20	62	95	40	185	90
LNC 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
*LNC 613TL	1210	32	63	25	101	61
LNC 615TL	1610	42	71	25	113	61
LNC 617TL	1610	42	76	25	125	61
LNC 619TL	2012	50	90	32	137	73
LNC 620TL	2012	50	90	32	143	73
LNC 621TL	2517	60	102	45	149	99
LNC 623TL	2517	60	108	45	161	99
LNC 625TL	2517	60	108	45	173	99
LNC 627TL	2517	60	108	45	185	99
LNC 630TL	2517	60	108	45	204	99

\*Hub recessed for chain clearance.

+DuPont Registered Trademark.

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

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