

Stainless Steel & Corrosion Protection Chains



Power Transmission Solutions

NEXT >

Stainless Steel Chains

Cross+Morse SS - Stainless Steel chain has been designed with a higher allowable load than other makes of stainless steel chain and is suitable for use in the most demanding applications. Where WATER, ACIDS, ALKALIS, CHEMICALS, HIGH HUMIDITY AND EXTREMES OF TEMPERATURE are encountered - conditions potentially destructive to ordinary transmission chain, SS chain provides the answer.

SS chain completely overcomes corrosion and wear problems normally encountered with standard chain used in such harsh conditions.

Remaining impervious to even the most severe chemicals required for cleaning and hygiene maintenance within food and pharmaceutical processing, SS chain offers proven high-performance and maintenance-free life time performance.



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- **Impervious to the most severe operational media**
 - **Corrosion resistant**
 - **Retains hygiene compliance in food / pharma applications**
 - **Dimensionally conforms to ISO606, BS228 and ASME B29.1 standards**
 - **Allowable bearing pressure up to 14.7 Mpa**
 - **Special surface treatment offers maximum wear resistance**
 - **Rounded parts all specially treated providing extreme long life**
 - **Highest-quality appearance**
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Cross+Morse SS high-performance stainless steel chain is designed for power transmission applications throughout the processing industries. When hygiene compliance, chemical resistance, strength and maintenance-free operation is a requirement, SS chain provides the solution.

Cross+Morse offer an extensive range of standard attachments supported by a design and production service for custom attachments to suit specific transmission applications.



Stainless Steel and Treated Steel Chains

Stainless Steel Chain is used in a wide variety of applications in the Food, Beverage, Packaging and Pharmaceutical Industries.



For many other applications, plated chains and standard chain with chemical surface treatment provides the corrosion resistance required at a lower cost. Cross+Morse offer alternative chains, as below. Attachment chains can also be supplied.

Aqua Proof

A special coating applied to chain components which offers excellent corrosion resistance without the hydrogen embrittlement problems associated with plating.

The strength and working load values of the base chain are fully retained.

Can be used in outdoor environments, seawater applications etc.

Available in 1/2" to 1 1/2" pitch BS Chains (08B - 24B), and 1/2" to 2" pitch ANSI Chains (40 - 160).



Nickel Plated

Electroless nickel plating is applied to standard carbon steel chain, offering protection to surfaces where mild corrosion is likely. The plated chain retains all the inherent properties of the base chain, and has higher wear resistance.

Available in 1/2" to 1" pitch BS ANSI Chains.

Molycoated Chains

Have a hard coating of dry lubricant, including MOS₂ and Graphite, chemically bonded to the chain surface. Not only does the chain have excellent dry lubrication properties, but it also operates efficiently at elevated temperatures (to 200°C).

The chains above are suitable for many outdoor applications including Car Parking, Car Washes, Agricultural Equipment and Sea Water environments.

Controlled tests carried out to determine the corrosion resistance of transmission chain with different surface treatments produced the results summarised below.

CONTROLLED TEST : CHAIN TYPES / CORROSION RESISTANCE

CONDITIONS	SPRAYED WATER			5% SALT WATER			1% AMMONIA WATER		
	3	9	15	3	9	15	3	9	15
STANDARD	△	▲	×	×	×	×	×	×	×
NICKEL PLATED	○	○	△	○	△	△	○	▲	×
C&Z COATING / PAINTED	●	●	●	●	●	●	●	○	○
C&Z COATING	●	●	●	●	●	●	●	△	▲
DACROTIZED / AQUA-PROOF	●	●	●	●	●	●	●	●	●
304 (SS) Stainless	●	●	●	●	●	●	●	●	●

× 100% Rust Development

▲ 70 - 90% Rust Development

△ 20 - 30% Rust Development

○ 5 - 10% Rust Development

● Zero Rust Development

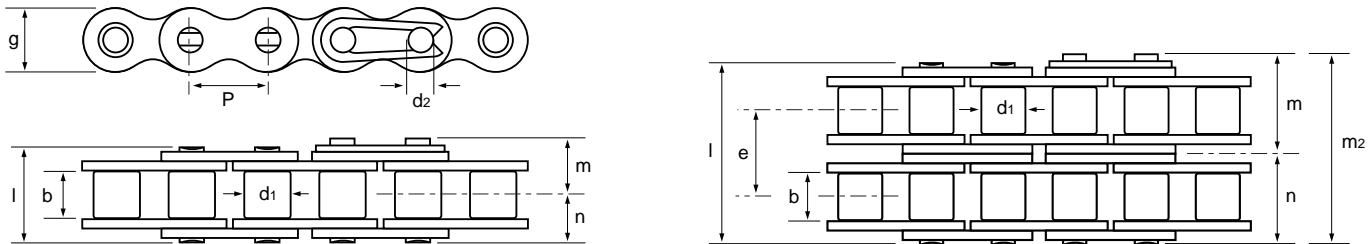
For the best chain selection for your application we recommend you contact your local Cross+Morse Sales Engineer.

Stainless Steel Chains

The standard series of Stainless Steel Chains are manufactured in 304 (18 - 8) Nickel Chrome Steels. The chains are suitable for use in corrosive environments up to 500°C. They are well suited to the high moisture, elevated temperature conditions found in many food preparations, and equally the sub-zero temperatures encountered in packaging.

Standard attachments are available from stock for British Standard Chains, and can be provided to order for the American Standard (ANSI) Chains.

SS ANSI Standard - SS BS Standard



Chain No.	Pitch P inches	Inside Width b min. mm	Roller Diameter d ₁ max. mm	Pin Diameter d ₂ max. mm	Plate Depth g mm	Pin Lengths				Transverse Pitch e mm	Bearing Area cm ²	Ultimate Tensile Strength kN	Maximum Allowable Load kN	Approx. Weight kg/m
						l max. mm	m ₂ max. mm	m mm	n mm					
BS Series Simplex Chains														
05B-1SS	8mm	3.00	5.00	2.31	7.1	8.6	11.7	7.4	4.3	-	0.11	3.5	0.11	0.18
06B-1SS *	3/8"	5.72	6.35	3.28	8.3	12.6	14.2	7.1	6.3	-	0.28	6.2	0.40	0.41
08B-1SS *	1/2"	7.75	8.51	4.45	11.8	16.7	17.8	9.4	8.4	-	0.50	10.3	0.78	0.70
10B-1SS *	5/8"	9.65	10.16	5.08	14.7	19.0	20.6	11.1	9.5	-	0.67	15.7	1.02	0.96
12B-1SS *	3/4"	11.68	12.07	5.72	16.1	22.0	23.6	12.6	11.0	-	0.89	18.1	1.32	1.23
16B-1SS *	1"	17.02	15.88	8.28	21.1	35.1	38.2	20.6	17.6	-	2.10	42.2	3.09	2.60
20B-1SS	1 1/4"	19.56	19.05	10.19	26.3	41.0	44.1	23.6	20.5	-	2.95	64.0	3.05	3.70
24B-1SS	1 1/2"	25.40	25.40	14.63	33.3	53.4	56.9	30.2	26.7	-	5.54	110.0	5.60	6.90
BS Series Duplex Chains														
06B-2SS	3/8"	5.72	6.35	3.28	8.3	22.9	23.6	12.2	11.4	10.24	0.55	12.2	0.57	0.78
08B-2SS	1/2"	7.75	8.51	4.45	11.8	30.7	31.7	16.4	15.4	13.92	1.00	20.4	1.05	1.40
10B-2SS	5/8"	9.65	10.16	5.08	14.7	35.6	37.2	19.4	17.8	16.59	1.34	31.2	1.38	1.80
12B-2SS	3/4"	11.68	12.07	5.72	16.1	41.4	43.1	22.3	20.7	19.46	1.78	36.0	1.82	2.44
16B-2SS	1"	17.02	15.88	8.28	21.1	67.6	70.1	36.5	33.5	31.88	4.21	84.0	4.30	5.30
20B-2SS	1 1/4"	19.56	19.05	10.19	26.3	113.9	117.0	60.1	57.0	36.45	5.90	125.0	6.00	7.45
American Standard Simplex Chains														
ANSI 25 1)	1/4"	3.18	3.30	2.29	5.9	7.8	8.8	4.9	3.9	-	0.11	2.8	0.11	0.13
ANSI 35 1)	3/8"	4.78	5.08	3.58	9.0	12.2	13.7	7.6	6.1	-	0.27	5.7	0.26	0.34
ANSI 40 *	1/2"	7.95	7.92	3.96	11.7	17.0	18.5	10.0	8.5	-	0.44	11.1	0.66	0.62
ANSI 50 *	5/8"	9.53	10.16	5.08	14.6	20.8	22.3	11.9	10.4	-	0.70	17.6	1.02	1.01
ANSI 60 *	3/4"	12.70	11.91	5.95	17.5	26.0	27.9	14.9	13.0	-	1.06	24.5	1.54	1.48
ANSI 80 *	1"	15.88	15.88	7.93	23.4	32.8	35.5	19.1	16.4	-	1.79	42.3	2.65	2.52
ANSI 100 *	1 1/4"	19.05	19.05	9.53	29.3	40.0	43.3	23.3	20.0	-	2.62	51.0	3.82	3.91
ANSI 120 *	1 1/2"	25.40	22.23	11.10	35.1	50.4	54.2	29.0	25.2	-	3.94	68.6	4.66	5.76
ANSI 160	2"	31.75	28.58	14.28	46.7	64.4	68.7	36.5	32.2	-	6.50	109.8	6.37	9.79
American Standard Duplex Chains														
ANSI 35-2 1)	3/8"	4.78	5.08	3.58	9.0	85.1	86.6	44.1	42.6	10.13	0.54	10.4	0.52	0.65
ANSI 40-2	1/2"	7.95	7.92	3.96	11.7	89.9	91.4	46.5	45.0	14.38	0.88	22.2	0.88	1.22
ANSI 50-2	5/8"	9.53	10.16	5.08	14.6	93.7	95.2	48.4	46.9	18.11	1.40	35.2	1.36	2.00
ANSI 60-2	3/4"	12.70	11.91	5.95	17.5	98.9	100.8	51.4	49.5	22.78	2.12	48.8	2.06	2.85
ANSI 80-2	1"	15.88	15.88	7.93	23.4	105.7	108.4	55.6	52.9	29.29	3.58	84.5	3.55	5.00
ANSI 100-2	1 1/4"	19.05	19.05	9.53	29.3	112.9	116.2	59.8	56.5	35.76	5.24	101.8	5.10	7.60

1) Bush Chains, Roller diameter refers to bush diameter

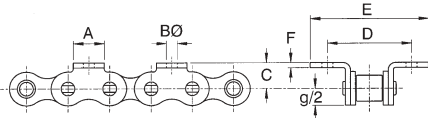
* Chains with enhanced performance pins for higher load capacity and longer life.

Bold Type Chains from Stock, other chains to order.

British Standard Stainless Steel Roller Chain Attachments

The attachments below are available on 72 hour service built into the base roller chain at spacings to suit the application, K & M attachments can be fitted to only one side of the chain or both sides (as illustrated). Attachments of different types can be fitted in one chain assembly. In addition to these standard attachments, specials to suit customers' specific requirements can be supplied. Attachments can be assembled into Duplex and Triplex Chains, as well as standard Simplex. Nickel Plated chains can also be supplied to order. All Standard Attachments are made basically to ISO 606 Standard to ensure full interchangeability.

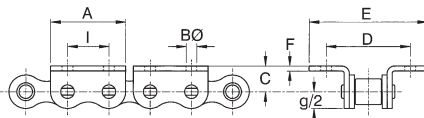
Bent Attachments



K1 - Single Hole Bent Attachment

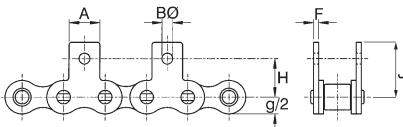
Base Chain Ref.	Pitch P	Attach. Width A	Hole Dia. B	Plate Height C	Transverse Pitch D	Overall Width E	Plate Thick. F	
08B-1	1/2"	11.5	4.2	8.9	25.4	36	1.5	
10B-1	5/8"	12.8	5.0	10.3	31.8	45	1.5	
12B-1	3/4"	16.6	7.1	13.5	38.1	57	1.8	

K2 - Two Hole Bent Attachment



Base Chain Ref.	Pitch P	Attach. Width A ₁	Hole Dia. B	Plate Height C	Transverse Pitch D	Overall Width E	Plate Thick. F	Hole Pitch I
08B-1	1/2"	23.4	4.9	8.9	25.4	40	1.5	12.7
10B-1	5/8"	28.6	5.3	10.2	31.8	48	1.5	15.9
12B-1	3/4"	34.0	5.6	11.4	34.9	52	1.8	19.1

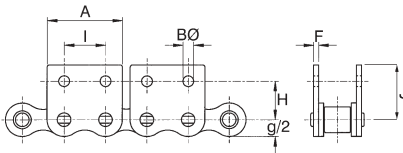
Straight Attachments



M1 - Single Hole Straight Attachment

Base Chain Ref.	Pitch P	Attach. Width A	Hole Dia. B	Hole Height H	Plate Height J	Plate Thick. F
08B-1	1/2"	11.5	4.2	12.7	19.0	1.5
10B-1	5/8"	12.8	5.3	15.9	22.9	1.5
12B-1	3/4"	16.6	7.1	22.2	31.9	1.8

M2 - Two Hole Straight Attachment

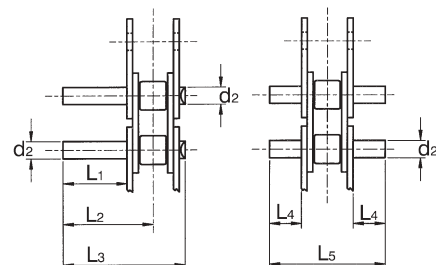


Base Chain Ref.	Pitch P	Attach. Width A	Hole Dia. B	Hole Height H	Hole Pitch I	Plate Height J	Plate Thick. F
08B-1	1/2"	23.4	4.3	13.0	12.7	20.8	1.5
10B-1	5/8"	28.6	5.3	16.5	15.9	24.9	1.5
12B-1	3/4"	34.0	6.6	21.0	19.1	28.2	1.8

Extended Pin Attachments

The extended pins can be assembled into the chain at positions to suit customers applications, or supplied loose as rivetting outers or connecting links. Normally used in pairs to support transverse tubes (when chain should be ordered as matched pairs) or sometimes in single strands to support or attach other attachments.

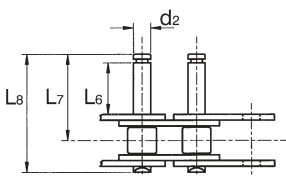
Straight Parallel Pins extended one side only E1, or equally extended both sides of chain E2. Attachments available with short or long pins.



Attachment Ref.	E1 Short			E1 Long		E2 Short		E2 Long			
Chain Ref.	Pitch P	Pin to Ø d ₂	Extension L ₁	Pin Ø L ₂	Pin Lgth. L ₃	Extension L ₁	Pin Lgth. L ₃	Extension L ₄	Pin Lgth. L ₅	Extension L ₄	Pin Lgth. L ₅
08B-1	1/2"	4.45	14.8	21.8	30.0	28.8	44.0	7.9	30.0	14.9	44.0
10B-1	5/8"	5.08	17.8	26.1	35.4	34.4	52.0	9.4	35.4	17.8	52.0
12B-1	3/4"	5.72	20.7	30.4	41.4	40.1	60.8	10.9	41.4	20.7	60.8
16B-1	1"	8.28	33.8	49.7	67.5	65.6	99.4	17.9	67.5	33.8	99.4

Single pin extensions can be assembled projecting on alternate sides of chain.
Special length pins available on short delivery time.

Parallel Pins with grooves for circlip fixture location. Available short pins E3 attachment, or long pins - E4 attachment



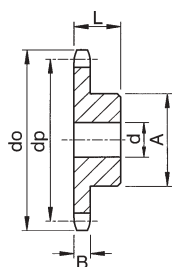
Attachment Ref.	E3 Short Groove Pin					E4 Long Groove Pin		
Chain Ref.	Pitch P	Pin to Ø d ₂	Attach. Lgth. L ₆	Pin Ø L ₇	Pin Lgth. L ₈	Attach. Lgth. L ₆	Pin Ø L ₇	Pin Lgth. L ₈
08B-1	1/2"	4.45	7.2	17.0	25.1	14.2	23.1	31.3
10B-1	5/8"	5.08	9.5	21.2	30.5	17.0	27.3	36.6
12B-1	3/4"	5.72	11.8	25.3	36.3	19.5	32.0	43.0
16B-1	1"	8.28	15.8	36.9	54.7	32.2	51.9	69.1

Standard Stainless Steel Sprockets for 3/8" to 1" Pitch British Standard Chains Types 06B-1 to 16B-1

Conforming to ISO Std 606

A standard stock range of sprockets manufactured from Stainless Steel type ANSI 304L for maximum corrosion resistance. These sprockets are suitable for corrosive environments, including the high temperature and moisture conditions found in many food processing and packaging operations, and will also withstand many alkaline and acidic fluids at elevated temperatures.

The sprockets are suitable to use with either stainless steel chains or plated chain.



Sprocket Data

Chain No.	Tooth Width
06B-1	5.3
08B-1	7.2
10B-1	9.2
ANSI 50	9.2
12B-1	11.2
16B-1	16.2

No. Teeth	Z	12	13	15	16	17	18	19	20	21	23	25	30	
Chain Size	Dimension													
06B-1 3/8"	Cat. No.		06B1-13SS	06B1-15SS	06B1-16SS	06B1-17SS	06B1-18SS	06B1-19SS	06B1-20SS	06B1-21SS	06B1-23SS	06B1-25SS	06B1-30SS	
	Pitch Ø	dp	39.79	45.81	48.82	51.83	54.85	57.87	60.89	63.91	69.95	76.00	91.12	
	Outside Ø	do	43.0	49.3	52.3	55.3	58.3	61.3	64.3	68.0	73.5	80.0	94.7	
	Hub Ø	A	28.0	34.0	37.0	40.0	43.0	45.0	46.0	48.0	52.0	57.0	60.0	
	Min bore	d	10.0	10.0	10.0	10.0	10.0	10.0	10.0	12.0	12.0	12.0	12.0	
	Max bore	d	19.0	23.0	25.0	27.0	29.0	30.0	31.0	32.0	35.0	38.0	40.0	
	LTB	L	25.0	25.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	30.0
	Weight	kg		0.13	0.19	0.24	0.29	0.33	0.37	0.39	0.42	0.50	0.61	0.92
08B-1 1/2"	Cat. No.		08B1-12SS	08B1-13SS	08B1-15SS	08B1-16SS	08B1-17SS	08B1-18SS	08B1-19SS	08B1-20SS	08B1-21SS	08B1-23SS	08B1-25SS	08B1-30SS
	Pitch Ø	dp	49.07	53.6	61.09	65.10	69.11	73.14	77.16	81.19	85.22	93.27	101.33	121.50
	Outside Ø	do	53.0	57.9	65.9	69.9	74.0	78.0	82.0	86.0	90.1	106.2	126.3	
	Hub Ø	A	33.0	37.0	45.0	50.0	52.0	56.0	60.0	64.0	68.0	70.0	80.0	80.0
	Min bore	d	10.0	10.0	10.0	12.0	12.0	12.0	12.0	12.0	14.0	14.0	14.0	16.0
	Max bore	d	22.0	25.0	30.0	34.0	35.0	37.0	40.0	43.0	45.0	46.0	54.0	54.0
	LTB	L	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	30.0
	Weight	kg	0.21	0.26	0.39	0.46	0.51	0.59	0.67	0.76	0.84	0.94	1.10	1.45
10B-1 5/8"	Cat. No.		10B1-13SS	10B1-15SS	10B1-16SS	10B1-17SS	10B1-18SS	10B1-19SS	10B1-20SS	10B1-21SS	10B1-23SS	10B1-25SS	10B1-30SS	
	Pitch Ø	dp	66.32	76.36	81.37	86.39	91.42	96.45	101.49	106.52	116.58	126.66	151.87	
	Outside Ø	do	73.0	83.0	88.0	93.0	98.3	103.3	108.4	113.4	123.4	134.0	158.8	
	Hub Ø	A	47.0	57.0	60.0	60.0	70.0	75.0	75.0	80.0	80.0	80.0	90.0	
	Min bore	d	12.0	12.0	12.0	12.0	12.0	14.0	14.0	16.0	16.0	16.0	20.0	
	Max bore	d	31.0	38.0	40.0	40.0	46.0	50.0	50.0	54.0	54.0	54.0	60.0	
	LTB	L	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	35.0
	Weight	kg	0.47	0.67	0.76	0.80	1.02	1.15	1.21	1.35	1.46	1.59	2.39	
12B-1 3/4"	Cat. No.		12B1-13SS	12B1-15SS	12B1-16SS	12B1-17SS	12B1-18SS	12B1-19SS	12B1-20SS	12B1-21SS	12B1-23SS	12B1-25SS		
	Pitch Ø	dp	79.59	91.63	97.65	103.67	109.71	115.75	121.78	127.82	139.90	152.0		
	Outside Ø	do	87.5	99.8	105.0	115.5	118.0	124.2	129.7	136.0	149.0	160.0		
	Hub Ø	A	58.0	70.0	75.0	80.0	80.0	80.0	80.0	90.0	90.0	90.0		
	Min bore	d	16.0	16.0	16.0	16.0	16.0	16.0	16.0	20.0	20.0	20.0		
	Max bore	d	38.0	46.0	50.0	54.0	54.0	54.0	54.0	60.0	60.0	60.0		
	LTB	L	35.0	35.0	35.0	35.0	35.0	35.0	35.0	40.0	40.0	40.0		
	Weight	kg	0.80	1.16	1.34	1.53	1.61	1.70	1.79	2.34	2.55	2.77		
16B-1 1"	Cat. No.		16B1-13SS	16B1-15SS	16B1-16SS	16B1-17SS	16B1-18SS	16B1-19SS	16B1-20SS	16B1-21SS				
	Pitch Ø	dp	106.12	122.17	130.20	138.22	146.28	154.33	162.38	170.43				
	Outside Ø	do	117.0	133.0	141.0	149.0	157.0	165.2	173.0	181.2				
	Hub Ø	A	78.0	92.0	100.0	100.0	100.0	100.0	100.0	100.0				
	Min bore	d	16.0	16.0	19.0	20.0	20.0	20.0	20.0	20.0				
	Max bore	d	52.0	61.0	67.0	67.0	67.0	67.0	67.0	74.0				
	LTB	L	40.0	40.0	45.0	45.0	45.0	45.0	45.0	50.0				
	Weight	kg	1.68	2.41	3.12	3.31	3.52	3.74	3.97	4.89				

All dimensions in mm.

Stock sprockets can be reworked to customers bore and keyway requirements, on 48 hour service.

Other sizes of Stainless Steel sprockets can be supplied to order B.S. Std. or ANSI Chains.

*These sprockets can be used with chain to ANSI 50 dimensions also.

**Quality assurance
at all stages of
manufacturing
coupled with
inherent good
design ensures
lifetime service**

CUSTOMER SERVICE

We are committed to providing customers the highest levels of service. In practice .. you receive the product - to schedule - to assured quality - correct quality - at a competitive cost.



QUALITY ASSURANCE

Quality Assurance is central to our organisation with controls encompassing all aspects of design, manufacture, logistics and customer services.

TECHNICAL SUPPORT

Resources include full technical support from our team of engineers, skilled in all aspects of precision manufacture. Our CAD-based design operation will assist in design and help ensure efficiency and economy through specification.

SPECIALIST CAPABILITIES

Subcontract machining services are extended to the manufacture of virtually any CNC turned part, gears and sprockets - whether the engineering requirements are limited, or complex.

Even the most stringent production schedules are met with delivery programs tailored to customer needs.



A commitment to manufacturing and supply chain management



Power Transmission Solutions throughout

- Original Equipment Manufacture
- Food Processing
- Pharmaceutical Processing
- Agricultural Equipment
- Packaging Equipment
- Energy Industries
- General Engineering



APPLICATION EXPERTISE

With a depth of engineering expertise, developed by working in partnership with our customers, we are able to provide specialist support in areas of power transmission critical to your manufacturing, production and workflow.

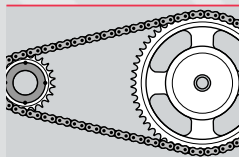
At Cross+Morse, intelligent, customer-focussed support does not carry a premium and is considered an essential element in the Cross+Morse service to industry.

The Cross+Morse promise to customers:

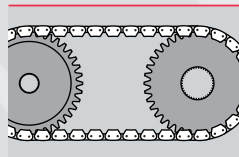
- QUALITY PRODUCT
- RESPONSIVE SERVICE
- TECHNICAL SUPPORT
- COMPETITIVE PRICING



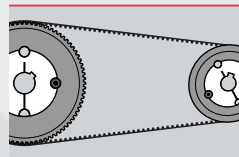
• ROLLER CHAIN DRIVES



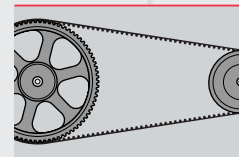
• INVERTED TOOTH DRIVES



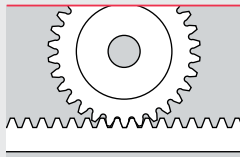
• TIMING BELT DRIVES



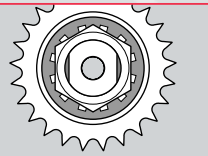
• VEE BELT DRIVES



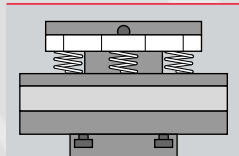
• GEARS & SPROCKETS



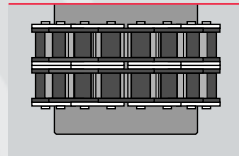
• TORQUE LIMITERS



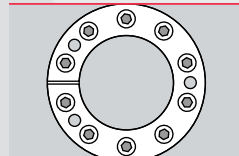
• OVERLOAD CLUTCHES



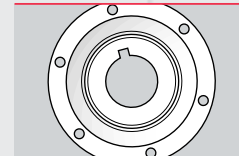
• SHAFT COUPLINGS



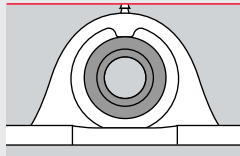
• SHAFT CLAMPING ELEMENTS



• FREEWHEEL CLUTCHES



• SEALMASTER BEARINGS



Power Transmission Solutions

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