

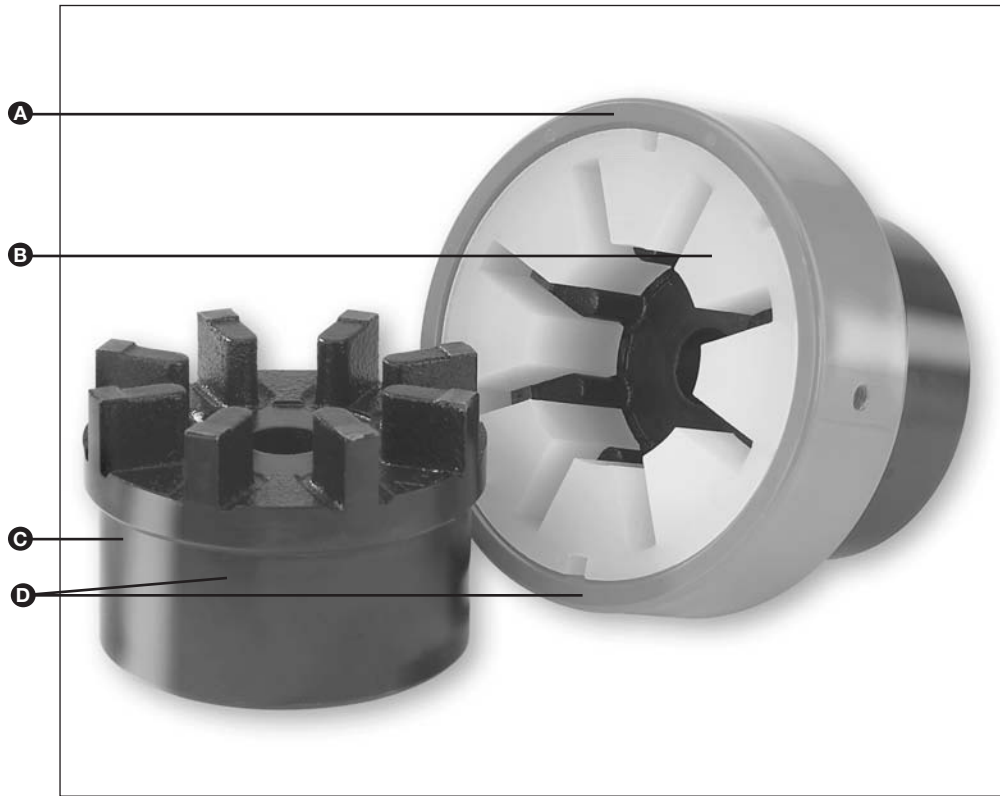


# A-Series

## POWERSTREAM® Elastomer Couplings

A-Series

- A – Retaining Ring with Locking Feature
- B – Wrap-Around Elastic Insert
- C – Hubs (Blank or Bored)
- D – Anti-Corrosion Treatment



### Product Description

**Now there's a new solution to one of the most persistent and troublesome problems facing maintenance personnel - periodic coupling failure and the downtime and expense that goes with it. If a new insert is needed, a low-cost replacement can be installed in minutes, without moving either the prime mover or the driven equipment.**

- There are only four moving parts to Powerstream® couplings. The two identical hubs are made of high strength cast iron, ductile iron or steel, each with six or eight teeth, depending on size. The split insert, which is made of specially compounded Urethane, fits over the hub teeth. The retaining ring is made of Urethane or steel, with two setscrews. The coupling requires no nuts or bolts.
- The overall design is compact and can be supplied as a close-coupled or drop-out design.
- Hubs can be supplied either finish machined or with blank bores.
- Ideally suited for a vast range of applications in a wide variety of industries.

### Design Features

- Easy to install.
- Changeout of coupling insert is faster than any other coupling.
- Custom compounded Urethane inserts can be provided in a variety of durometers. This allows for both high damping and high torque use.
- Urethane insert is resistant to chemicals and oils. Standard Insert: – 40° to 180° F.
- High-Temperature Inserts: up to 300° F.
- No lubrication or maintenance.
- Can rotate hubs independently for motor test.
- No metal-to-metal contact.
- Large bore and torque capacity.
- Horizontal and vertical operations, in either direction, using standard inserts and retaining rings.
- Retaining ring supplied with setscrews (standard).
- Drop-out design interchangeable with grid-type couplings and other style elastomeric drop-outs.
- Excellent power-to-weight ratio.
- High misalignment capability.



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## Elastomer Couplings

### A-Series Technical Data

Couplings Size	Standard Insert Max.		High Torque Insert Max.		Max. rpm-Unbal	Max. rpm-Balanced	Weight lb	Inertia (lb-in <sup>2</sup> )	Misalignment Radial/Axial			
	Rating HP/100 rpm	Continuous Torque lb-in.	Rating HP/100 rpm	Continuous Torque lb-in.					Axial Inch	Parallel Inch	Angular Degrees	Angular TIR Inch
A00#	0.8	504	1.1	690	9600	16000	2.6	1.5	0.02	0.02	2.0	0.071
A01#	1.5	945	2.0	1260	7800	13000	5.0	4.5	0.04	0.04	2.0	0.089
A02#	4.0	2525	5.3	3340	5900	9900	9.2	13.2	0.04	0.04	2.0	0.118
A03#	8.0	5040	10.4	6550	4400	7400	20.4	49.2	0.06	0.04	2.0	0.159
A04#	16.0	10080	21.7	13680	3400	5700	38.1	144	0.06	0.06	1.3	0.134
A05#	40.4	25460	53.0	33400	2700	4500	75.5	446	0.08	0.06	1.3	0.169
A06#	64.6	40700	87.7	55300	2200	3600	128	1080	0.08	0.06	1.3	0.208
A07#	129	81300	156	98300	1900	3200	207	2373	0.08	0.06	1.0	0.183
A08#	242	152500	294	185300	1600	2600	340	5508	0.08	0.06	1.0	0.223

**Notes:**

- # is 0 for close-coupled and a number for half or full drop-out couplings.
- Standard insert with Urethane ring will be supplied unless specified.
- Weight and inertia information for close-coupled design and solid hubs.
- Hubs will be supplied unbored unless specified. Consult your local sales office regarding standard bore and keyway tolerances.
- Steel ring must be used with high-temperature inserts.
- Maximum speeds are based on steel or ductile iron hubs. For cast iron hubs maximum speed is 63% of speed listed.

### Close-Coupled Dimensional Data (Inch)

Coupling Size	C-DBSE										Steel Max. Bore	Max. Bore*	Cast Max. Bore
	A	B	Std.	Min.*	D	E	F	G	H	I			
A00#	1.12	2.60	0.65	0.06	2.07	0.63	1.26	2.07	—	—	1.375	0.938	1.312
A01#	1.38	3.27	0.85	0.06	2.56	0.83	1.73	2.56	—	—	1.750	1.375	1.750
A02#	1.69	4.37	1.25	0.06	3.00	1.22	2.13	3.39	1.63	1.50	2.125	1.688	1.812
A03#	2.19	5.63	1.65	0.12	3.88	1.61	2.44	4.59	2.15	1.94	2.875	1.875	2.500
A04#	2.81	7.21	2.05	0.12	4.76	2.01	3.35	5.93	2.67	2.50	3.750	2.688	3.000
A05#	3.62	9.09	2.37	0.12	6.07	2.32	4.37	7.48	3.25	3.18	4.500	3.438	3.689
A06#	4.31	10.67	2.69	0.12	7.31	2.64	5.28	9.17	3.69	3.81	5.375	4.250	4.500
A07#	5.12	12.28	3.01	0.12	8.75	2.95	6.46	10.51	4.25	4.50	6.375	5.188	5.312
A08#	6.00	14.53	3.40	0.12	10.35	3.35	7.64	12.84	4.90	5.25	7.500	6.125	5.625

**Notes:**

\* Maximum bore for DBSE less than standard.

- # is 0 for closed coupled and a number for half or full drop-out couplings.
- Maximum bores shown are based on standard AGMA square dimensions.
- Standard DBSE based on the shafts mating flush with the end of the hub face.

### Bushing Options

Coupling Size	Browning Size	Maximum Bore	QD Size	Maximum Bore	Taper Lock Size	Maximum Bore
A00#	G	1.000	—	—	1008*	1.000
A01#	H	1.500	JA	1.188	1108	1.125
A02#	P1	1.750	SH	1.625	1310	1.438
A03#	B	2.438	SD	1.938	2012*	2.125
A04#	Q2	2.625	SK	2.500	2525*	2.500
A05#	R1	3.750	SF	2.938	3030	3.250
A06#	S1	4.250	F	3.938	3535	3.938
A07#	U0	5.500	J	4.500	4545*	4.500
A08#	U1	5.500	M	5.500	5050	5.000

**Notes:**

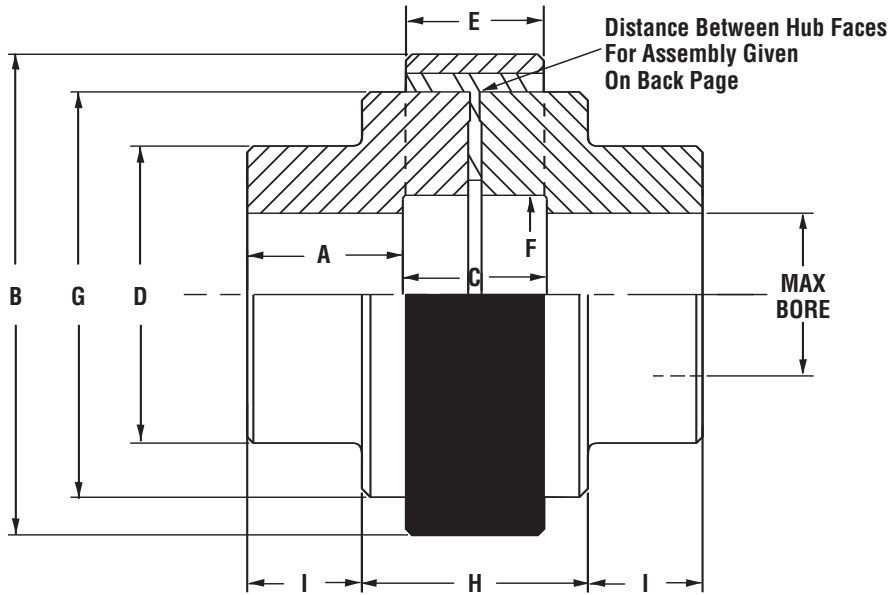
- Taper lock bushings, except for those marked \*, can be installed from the shaft end side of the hub. All other bushings are designed to be installed from the back side of the hub only.
- Bushing sizes are based upon steel hubs.



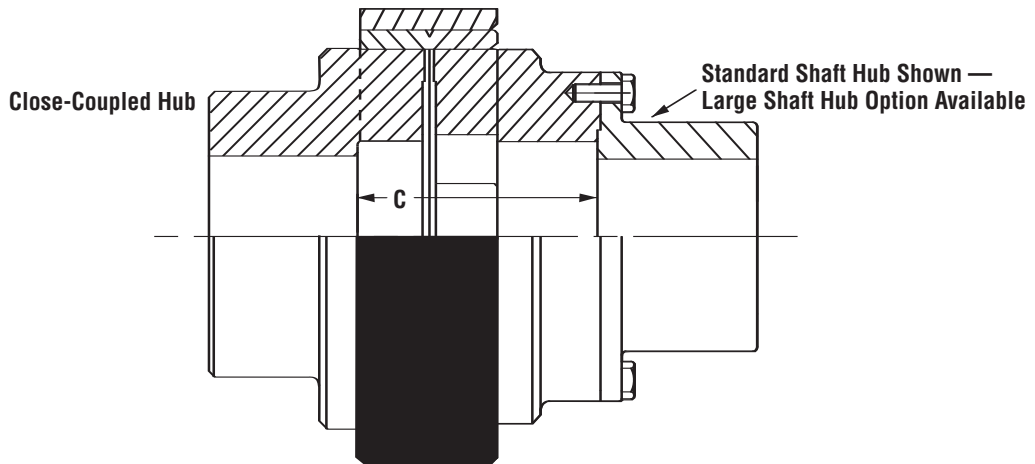
# A-Series

**POWERSTREAM®** Elastomer Couplings

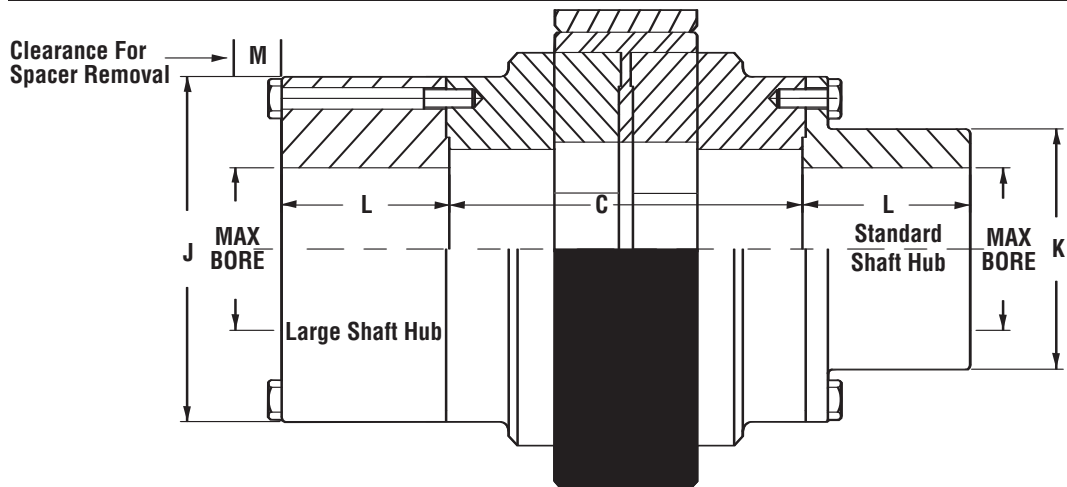
## Close-Coupled Coupling



## Half Drop-Out Coupling



## Full Drop-Out Coupling





# A-Series

## POWERSTREAM® Elastomer Couplings

### Full and Half Drop-Out Dimensional Data (inch)

Coupling Size	MAX BORE Standard Hub	MAX BORE Large Hub	MAX BORE For Min. DBSE	J	K	L	M	FULL DROP-OUT C-DBSE			HALF DROP-OUT C-DBSE		
								Std.	Min.	Max.	Std.	Min.	Max.
A021	1.000	1.813	1.438	3.12	1.88	1.12	0.55	3.50	2.96	3.75	2.38	1.77	2.84
A021	1.000	1.813	1.438	3.12	1.88	1.12	0.55	4.25	3.71	4.50	—	—	—
A021	1.000	1.813	1.438	3.12	1.88	1.12	0.55	5.00	4.46	5.25	3.13	2.52	3.59
A022	1.375	1.875	1.500	3.37	2.11	1.25	0.67	3.50	2.96	3.75	2.38	1.77	2.84
A022	1.375	1.875	1.500	3.37	2.11	1.25	0.67	4.25	3.71	4.50	—	—	—
A022	1.375	1.875	1.500	3.37	2.11	1.25	0.67	5.00	4.46	5.25	3.13	2.52	3.59
A023	1.625	2.125	1.750	3.68	2.34	1.50	0.67	3.50	2.96	3.88	2.38	1.77	2.90
A023	1.625	2.125	1.750	3.68	2.34	1.50	0.67	4.25	3.71	4.62	—	—	—
A023	1.625	2.125	1.750	3.68	2.34	1.50	0.67	5.00	4.46	5.38	3.13	2.52	3.65
A034	2.250	2.813	2.250	4.43	3.09	2.00	0.67	3.50	2.25	4.00	2.58	1.77	3.64
A034	2.250	2.813	2.250	4.43	3.09	2.00	0.67	4.25	3.50	4.75	—	—	—
A034	2.250	2.813	2.250	4.43	3.09	2.00	0.67	5.00	4.25	5.50	3.33	2.52	4.39
A035	2.500	3.188	2.563	4.93	3.44	2.25	0.72	3.50	2.25	4.00	2.58	1.77	3.64
A035	2.500	3.188	2.563	4.93	3.44	2.25	0.72	4.25	3.50	4.75	—	—	—
A035	2.500	3.188	2.563	4.93	3.44	2.25	0.72	5.00	4.25	5.50	3.33	2.52	4.39
A035	2.500	3.188	2.562	4.93	3.44	2.25	0.72	6.25	5.50	6.75	—	—	—
A035	2.500	3.188	2.562	4.93	3.44	2.25	0.72	7.50	6.75	8.00	—	—	—
A035	2.500	3.188	2.562	4.93	3.44	2.25	0.72	10.00	9.25	10.50	5.83	5.01	6.89
A046	2.875	3.750	3.000	5.68	4.06	2.50	0.76	5.00	4.08	5.75	3.51	2.52	4.55
A046	2.875	3.750	3.000	5.68	4.06	2.50	0.76	6.12	5.20	6.88	—	—	—
A046	2.875	3.750	3.000	5.68	4.06	2.50	0.76	7.25	6.31	8.00	4.63	3.64	5.67
A046	2.875	3.750	3.000	5.68	4.06	2.50	0.76	7.50	6.58	8.25	—	—	—
A046	2.875	3.750	3.000	5.68	4.06	2.50	0.76	8.62	7.70	9.38	—	—	—
A046	2.875	3.750	3.000	5.68	4.06	2.50	0.76	10.00	9.08	10.75	6.01	5.01	7.05
A047	3.250	4.063	3.250	6.00	4.31	3.00	0.76	5.00	4.08	5.75	3.51	2.52	4.55
A047	3.250	4.063	3.250	6.00	4.31	3.00	0.76	7.50	6.58	8.25	—	—	—
A047	3.250	4.063	3.250	6.00	4.31	3.00	0.76	10.00	9.08	10.75	6.01	5.01	7.05
A058	3.438	4.563	3.688	7.00	4.88	3.50	1.34	7.25	6.19	8.25	4.77	3.64	6.27
A058	3.438	4.563	3.688	7.00	4.88	3.50	1.34	9.75	8.69	10.75	—	—	—
A058	3.438	4.563	3.688	7.00	4.88	3.50	1.34	12.25	11.19	13.25	7.27	6.14	8.77
A069	4.000	5.188	4.188	8.25	5.69	4.00	1.41	7.25	6.05	8.50	4.92	3.64	6.58
A069	4.000	5.188	4.188	8.25	5.69	4.00	1.41	9.75	8.55	11.00	—	—	—
A069	4.000	5.188	4.188	8.25	5.69	4.00	1.41	12.25	11.05	13.50	7.42	6.14	9.08

Notes:

1. Refer to page 2, 'Close Coupled Dimensional Data (inch)' for additional dimensional information.
2. John Crane will make the appropriate coupling selection based on DBSE and shaft sizes specified.

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# A-Series

**POWERSTREAM®**

## Elastomer Couplings

### Assembly and Disassembly

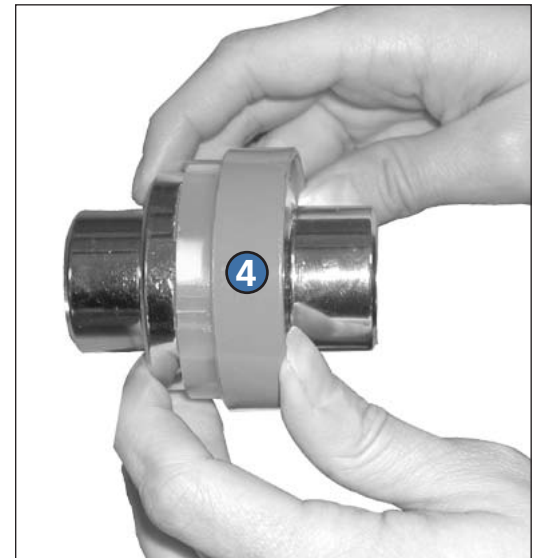
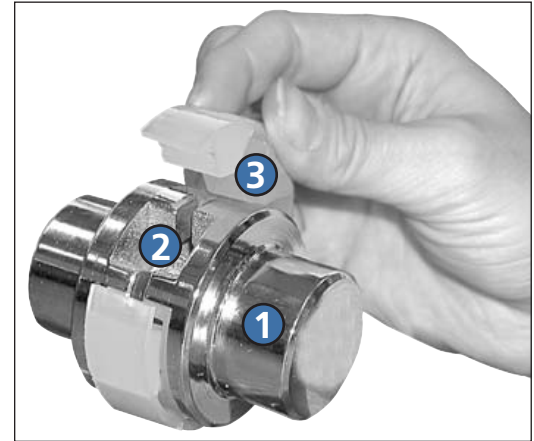
After hubs (1) and (2) and retaining ring (4) are installed on shafts, the teeth are aligned parallel to each other, spaced apart according to the table below.

Once installed, the hubs never need to be moved again. The Urethane insert (3) can then be installed in the slots formed by the parallel teeth.

When the insert is in position, align the pin in the retaining ring with the slot in the insert, slide the retaining ring (4) onto the Urethane insert and tighten the setscrews into the counterbores in the insert.

Centrifugal force will expand the elastic insert to fit tightly to the inside of the retaining ring, improving system integrity.

To disassemble, loosen the setscrews in the retaining ring and remove the ring. The insert can then be quickly and easily removed and replaced. No special tools, screws, bolts or other fasteners are needed.



<b>Coupling Size</b>	<b>Gap Between Teeth</b>
A000-A02#	0.016 in.
A03#-A080	0.12 in.

### Selection Procedure

#### METHOD

1. Select appropriate load factor from table SF1.
2. Select appropriate service factor from table SF2.
3. Calculate coupling rating from:  

$$R = \frac{HP \times 100 \times SF2}{N}$$

Where:  
 HP = Driver rated power (horsepower)  
 N = speed (rpm).
4. Select a coupling with the same or higher rating.
5. Confirm that the hub bore capacity is suitable.
6. Confirm that the peak torque capability is suitable for the application.
7. Check speed capability.

8. Ensure that the ambient temperature is between -40° to + 180°F.
9. Specify distance between shaft ends (DBSE).

#### EXAMPLE

50 HP electric motor connected to a centrifugal pump at 1800 rpm. (less than 25 starts/hour).

$$R = \frac{50 \times 100 \times 1.00}{1800}$$

$$R = 2.8 \text{ HP/100 RPM}$$

Selection: A020

Maximum bore capacity: 2.125"

Coupling is capable of operating up to 5900 rpm, unbalanced.

Ambient temperature is acceptable. DBSE is close-coupled.

CUT LINE FOR SHORT PAGE



# A-Series

**POWERSTREAM®**

## Elastomer Couplings

### Load Factor SF1

AGITATORS	Induced Draft without Damper	Ingot Cars	Log Haul
Pure Liquids . . . . . U	Control . . . . . H	Kick-outs . . . . . A	Pulp Grinder . . . . . A
Liquids & Solids . . . . . A	FEEDERS	Manipulators . . . . . H	Press Roll . . . . . H
Liquid - Variable Density . . . . . A	Apron, Belt, Disc, Screw . . . . . U	Merchant Mills . . . . . H	Reel . . . . . A
BLOWERS	Reciprocating . . . . . H	Pusher Rams . . . . . A	Stock Chests . . . . . A
Centrifugal . . . . . U	HAMMER MILLS . . . . . A	Reel Drives . . . . . A	Suction Roll . . . . . A
Lobe . . . . . A	LUMBER INDUSTRY	Reel Drums . . . . . A	Washers & Thickeners . . . . . A
Vane . . . . . U	Barkers - Drum Type . . . . . H	Reelers . . . . . H	Winders . . . . . A
CLAY & STONE WORKING	Edger Feed . . . . . H	Rod and Bar Mills . . . . . H	PUMPS
MACHINERY . . . . . H	Live Rolls . . . . . H	Roughing Mill Delivery Table . . . . . H	Centrifugal . . . . . U
COMPRESSORS	Log Haul - Incline . . . . . H	Runout Tables . . . . . A	Reciprocating Single Acting
Centrifugal . . . . . U	Log Haul - Well Type . . . . . H	Saws, Hot & Cold . . . . . A	1 or 2 Cylinders . . . . . H
Lobe . . . . . A	Off Bearing Rolls . . . . . H	Screwdown Drives . . . . . H	Double Acting . . . . . H
Reciprocating-Multi-Cylinder . . . . . H	Planer Feed Chains . . . . . A	Slitters . . . . . H	Rotary, Gear, Lobe, Vane . . . . . A
CONVEYORS—Light Duty Uniformly Fed	Planer Floor Chains . . . . . A	Slab Mills . . . . . H	ROTARY MILLS
Apron, Bucket, Chain, Flight,	Planer Tilting Hoist . . . . . A	Soaking Pit Cover Drives . . . . . H	Ball . . . . . H
Screw . . . . . U	Slab Conveyor . . . . . U	Straighteners . . . . . A	Dryers & Coolers . . . . . H
Assembly Belt . . . . . U	Sorting Table . . . . . U	Tables, Transfer & Runout . . . . . A	Hammer . . . . . H
Oven . . . . . A	Trimmer Feed . . . . . A	Thrust Block . . . . . H	Kilns . . . . . H
CONVEYORS—Heavy Duty Not Uniformly Fed	METAL MILLS	Traction Drive . . . . . H	Pebble & Rod . . . . . H
Apron, Bucket, Chain, Flight,	Draw Bench - Carriage . . . . . H	Tube Conveyor Rolls . . . . . A	Pug . . . . . H
Oven . . . . . A	Draw Bench - Main Drive . . . . . H	Wire Drawing . . . . . A	Tumbling Barrels . . . . . H
Assembly Belt . . . . . U	Forming Machines . . . . . H	MIXERS	RUBBER INDUSTRY
Reciprocating, Shaker . . . . . H	Slitters . . . . . H	Concrete . . . . . A	Mixer - Banbury . . . . . H
CRANES AND HOISTS (Note)	Table Conveyors	Drum Type . . . . . A	Rubber Calendar . . . . . H
Main Hoists, Reversing . . . . . H	Non-Reversing . . . . . H	PAPER MILLS	Rubber Mill (2 or more) . . . . . H
Skip Hoists, Trolley & Bridge Drives . . . . . A	Reversing . . . . . H	Barker Auxiliaries, Hydraulic . . . . . H	Sheeter . . . . . H
Slope . . . . . A	Wire Drawing & Flattening	Barker, Mechanical . . . . . H	Tire Building Machines . . . . . H
CRUSHERS	Machine . . . . . A	Barking Drum Spur Gear Only H	Tire & Tube Press Openers . . . . . U
Ore Stone . . . . . H	Wire Winding Machine . . . . . A	Beater & Pulper . . . . . A	Tubers & Strainers . . . . . H
ELEVATORS (Note)	METAL ROLLING MILLS	Bleacher . . . . . U	SEWAGE DISPOSAL EQUIPMENT
Bucket . . . . . A	Coilers, Hot Mill . . . . . A	Calenders . . . . . H	Bar Screens . . . . . U
Centrifugal & Gravity Discharge . . . . . U	Coilers, Cold Mill . . . . . U	Chippers . . . . . A	Chemical Feeders . . . . . U
Escalators . . . . . U	Cold Mills . . . . . A	Coaters . . . . . U	Dewatering Screens . . . . . U
Freight . . . . . H	Cooling Beds . . . . . A	Couch Roll . . . . . A	Grit Collectors . . . . . U
FANS	Door Openers . . . . . A	Cutter, Platers . . . . . H	Scum Breakers . . . . . U
Centrifugal . . . . . U	Draw Benches . . . . . H	Cylinders . . . . . A	Slow or Rapid Mixers . . . . . U
Cooling Towers . . . . . A	Edger Drives . . . . . A	Disc Refiners . . . . . A	Sludge Collectors . . . . . U
Forced Draft . . . . . A	Feed Rolls, Reversing Mills . . . . . H	Dryers . . . . . A	Thickeners . . . . . U
	Furnace Pushers . . . . . A	Felt Stretcher . . . . . U	Vacuum Filters . . . . . U
	Hot Mills . . . . . H	Felt Whipper . . . . . H	
		Line Shaft . . . . . U	

**Note:** Consult local safety codes.

### Service Factor SF2

#### PRIME MOVER

ELECTRIC, HYDRAULIC MOTORS & TURBINES
PISTON ENGINES: 4 CYLINDERS & ABOVE
PISTON ENGINES: 1 - 3 CYLINDERS

#### LOAD FACTOR FOR DRIVEN MACHINE

U	A	H
1.00	1.25	1.75
1.50	1.75	2.25
2.00	2.25	2.75

**Note:** If the coupling is subject to more than 25 starts per hour, add 0.75 to SF2.



#### North America

Houston

Tel: 1-713-944-6690  
Fax: 1-713-946-8252

For your nearest John Crane facility, please contact one of the locations above.

If the products featured will be used in a potentially dangerous and/or hazardous process, your John Crane representative should be consulted prior to their selection and use. In the interest of continuous development, John Crane Companies reserve the right to alter designs and specifications without prior notice.

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[www.johncrane.com](http://www.johncrane.com)

ISO 9001, ISO 14001, ISO/TS 16949 Certified. Details available on request.

S-A Series/Eng