DODGE
AN RBC COMPANY

ELASTOMERIC COUPLINGS

SIDEWINDER™

Wrap coupling reliability reimagined

New!

Your trusted partner

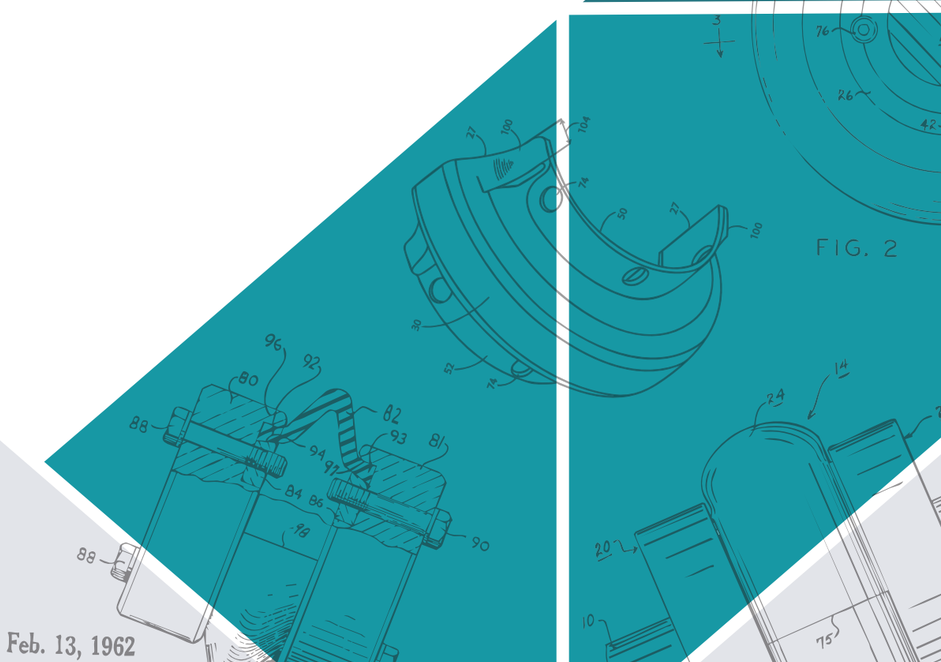
For over 145 years, Dodge® Industrial has delivered power transmission solutions that continuously perform in the world's most demanding environments. Built on a foundation of engineering excellence and hands-on industry experience, our products are trusted to perform under pressure, day in and day out.

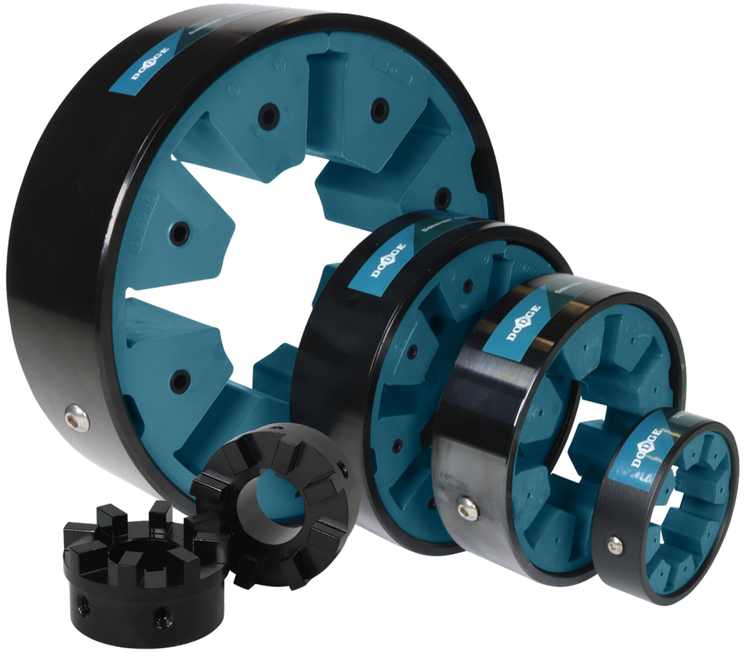
From grain and mining to forest products and food processing, our solutions are designed to reduce downtime, extend equipment life, and boost long-term productivity. With a legacy defined by reliability and a future driven by innovation, we remain the partner operations rely on when performance matters most.

Couplings that keep the industry moving

For more than seven decades, we have delivered coupling solutions that combine strength, flexibility, and reliability. Our Para-Flex® coupling offers exceptional misalignment handling and vibration damping, and our Raptor coupling, featuring a patented WingLock design, simplifies installation and provides enhanced performance.

Trusted in demanding operations like mining, chemical processing, and steel production, our couplings are engineered to reduce downtime, extend equipment life, and keep operations running smoothly.



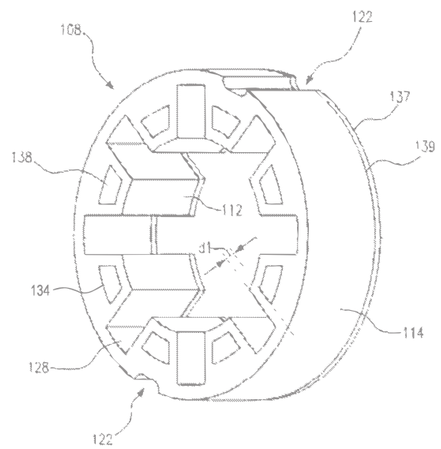


We build solutions for the problems others miss

When split-tire elastomeric couplings began falling short in the field, we saw an opportunity to take a different approach. We focused on solving the problem through better engineering—a methodology that led to the development of the Raptor coupling and its patented WingLock design, built for durability and performance in demanding conditions.

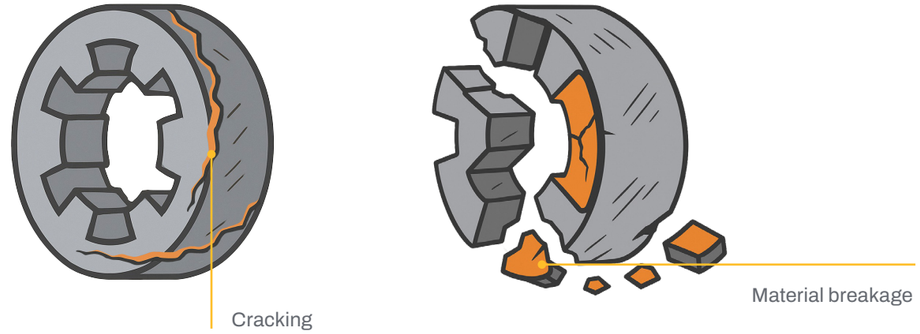
Sidewinder wrap couplings

Applying that same engineering mindset, we set out to rethink the traditional wrap coupling. Sidewinder is specifically engineered for industrial environments where reliability, flexibility, and long-term performance are critical to successful operations—overcoming the common failure points that existing wrap couplings on the market experience to be the new benchmark for wrap couplings.



Common application challenges

In industrial environments couplings can fail for several different reasons. Factors such as misalignment, shock loading, excessive vibration, frequent cycling, and elevated operating temperatures degrade coupling performance over time. When wrap-style couplings experience these conditions under load, they develop uneven tooth wear and cracking, which results in irregular force distribution, material fatigue, and stress concentrations—accelerating wear and leading to premature failure.



Over time, these stresses create microcracks that grow and cause a coupling to break down faster.

Impact to uptime

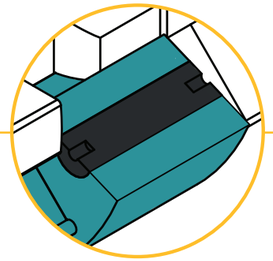
Product failures impact overall productivity by halting operations, disrupting production schedules, and ultimately leading to loss of revenue.

Breakdowns require additional labor hours for maintenance to repair or replace equipment.

Emergency repairs increase safety risks, exposing workers to hazardous conditions.

Innovative features and benefits

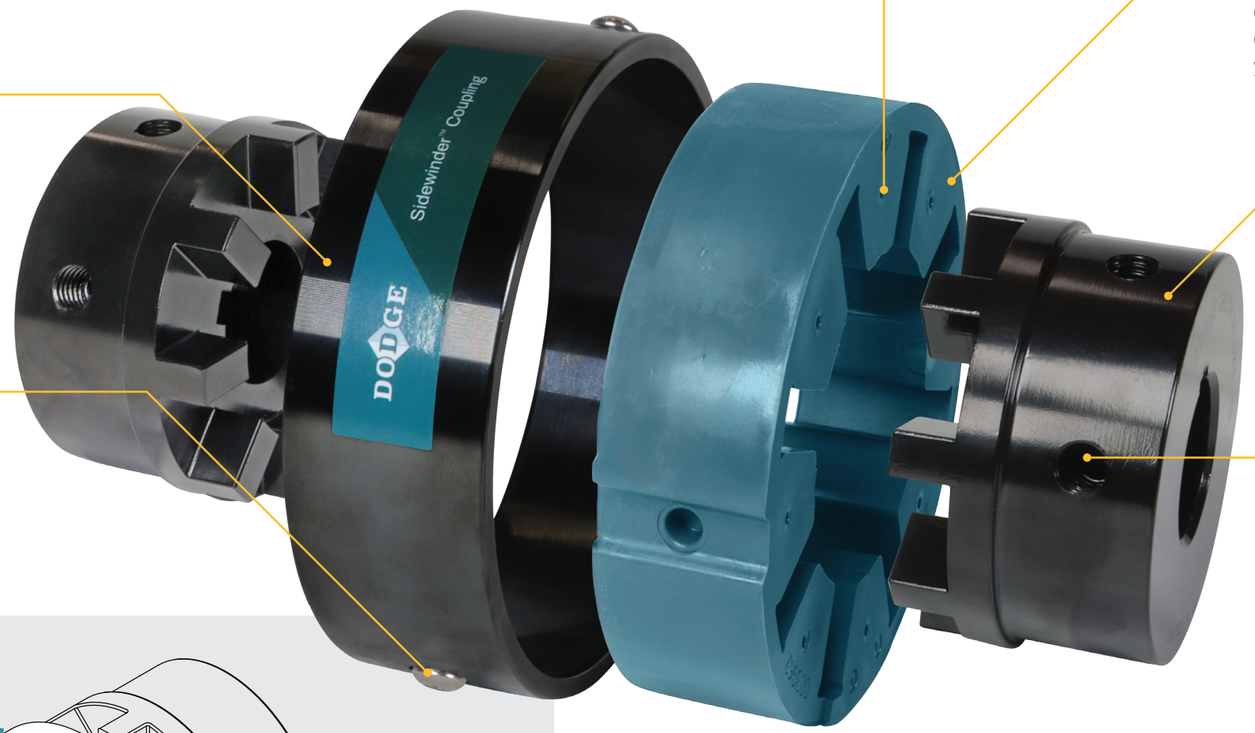
Manufactured in the USA



Patent-pending CoreStrike technology delivers a precise balance of strength and flexibility to maintain performance—resisting degradation where conventional couplings fail, helping extend service life, and reducing unplanned downtime

E-coating (electrocoating) on the cover keeps all surfaces protected to help stop corrosion

Nylon-patched button-head cap screws prevent the cover from loosening in high-vibration applications



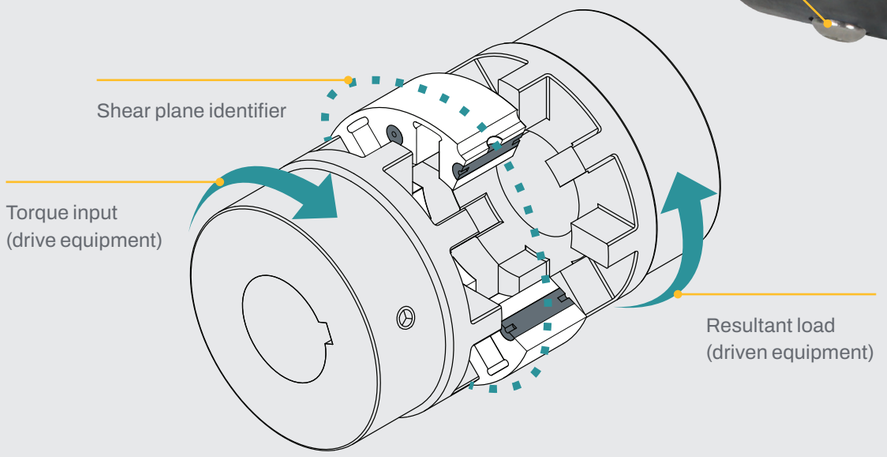
High-performance elastomer is built to handle misalignment by absorbing forces that would otherwise transfer directly to connected equipment—reducing wear, cutting down on maintenance, and keeping your operations running longer

Hubs are treated with an e-coating that helps prevent rust and wear, making them more durable in tough conditions

65-degree set screw angle maximizes holding power for enhanced shaft retention

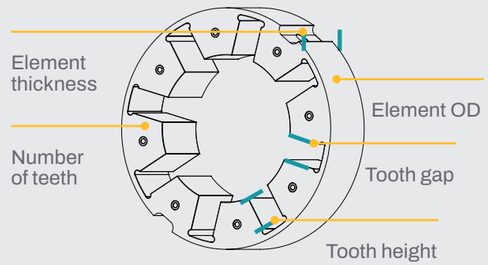
Reinforced design

Jaw-in-shear style couplings transmit torque through the shear plane of the element, the primary failure point for the coupling system. Sidewinder's CoreStrike technology reinforces the shear plane to provide better performance and longer life.



Part-for-part interchangeable

Direct interchangeability with Falk Wrapflex allows Sidewinder elements and hubs to seamlessly integrate into your existing applications without equipment modifications—saving time and money by enabling the replacement of just our element when existing hubs remain functional while offering you an opportunity to upgrade to a more reliable and efficient solution



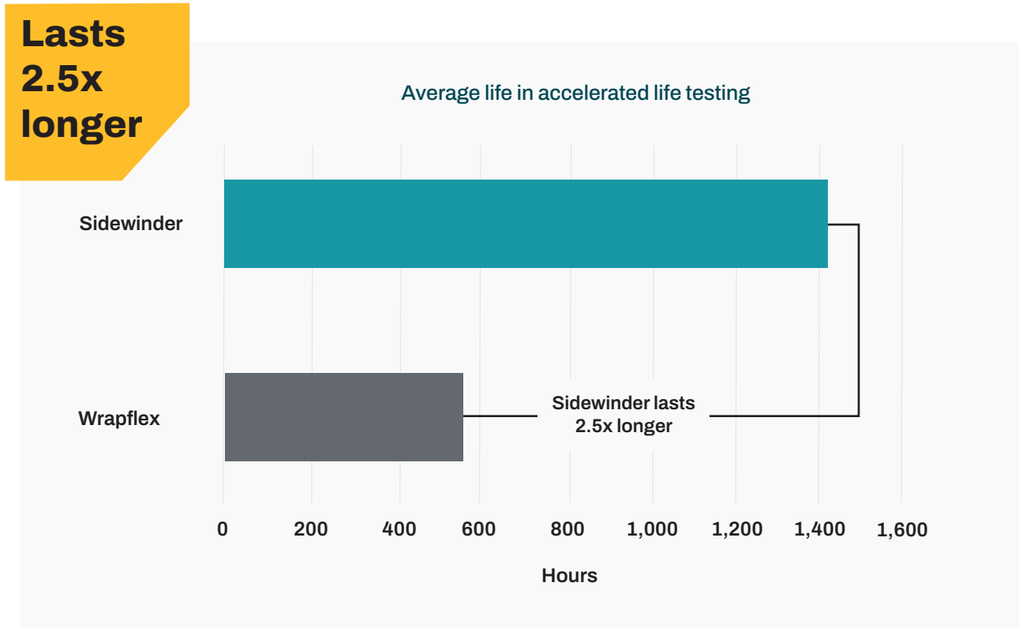
Proven performance

We rigorously tested and analyzed Sidewinder and Falk Wrapflex elements in a controlled environment. Multiple elements from each manufacturer underwent accelerated dynamic life testing to demonstrate performance in challenging operational conditions.

Testing parameters

- Testing input torque: 150 percent of catalog rating
- Angular misalignment: 0.25 degrees
- Parallel misalignment: 0.02 inches (sizes 5R—10R) or 0.04 inches (sizes 20R—80R)

Each element tested was run until it could not transmit its full torque capacity anymore.



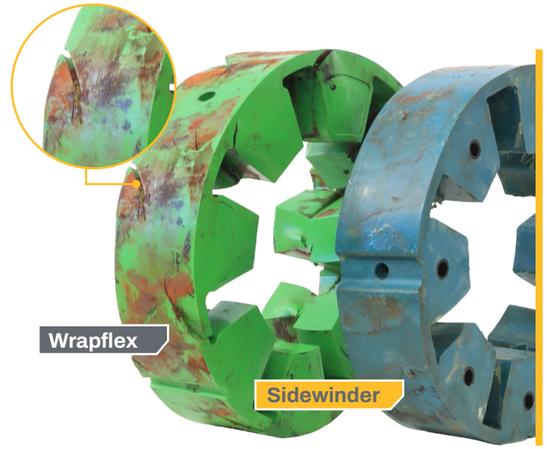
Tested element evaluation

Our testing evaluation focused on visual wear indicators to reveal true performance capability. Sidewinder is specifically designed to address the stress concentrations, material deformation, and progressive cracking observed in the Wrapflex coupling. During head-to-head testing, Sidewinder maintained its structural integrity, while Wrapflex deteriorated.

Material degradation

Cracking in the Wrapflex element starts at microscopic stress points and gradually develops into visible fractures. The deterioration accelerates when common occurrences like misalignment, heavy vibration and shock loads, over-torquing, and excessive cycling introduce hysteresis—internal energy loss caused by material deformation.

As damage progresses, the element can no longer distribute load properly, transmitting significantly less than its rated torque. This leads to unexpected application failures, operational shutdowns, lost production time, and increased maintenance costs.

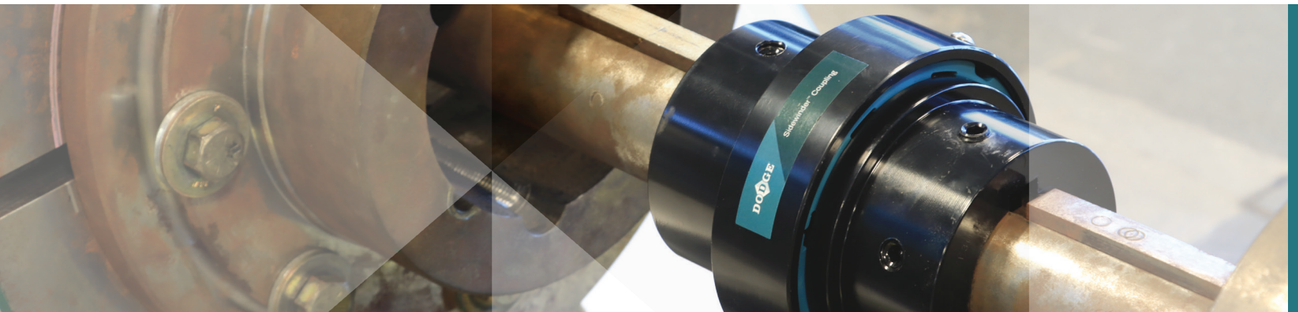


Tooth wear

In addition to structural breakdown, the Wrapflex element also shows visible tooth wear that disrupts torque distribution across contact surfaces. These weak points degrade quickly under normal operating conditions, resulting in frequent replacements.

In contrast, Sidewinder's element maintains its structural integrity under identical test conditions, ensuring consistent performance throughout its service life. Its patent-pending CoreStrike technology reinforces tooth geometry, preserving profile shape and enabling even force distribution in demanding applications.

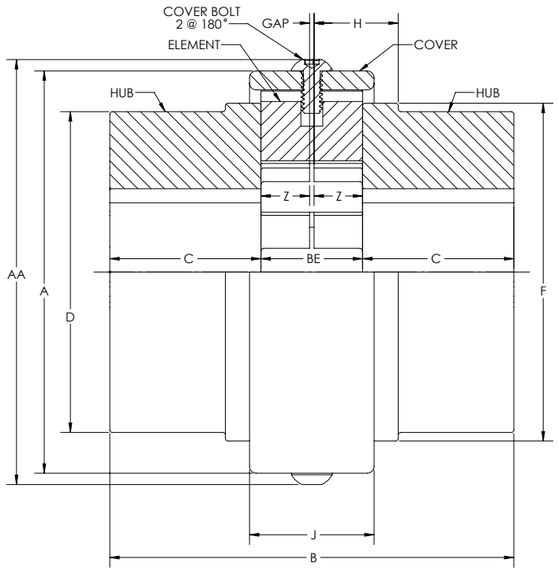
Post-test evaluations confirmed Sidewinder's performance with its element showing minimal wear compared to the Wrapflex element, which exhibited significant tooth degradation and structural breakdown under the same conditions.



Delivering performance that matters

Under the same rigorous testing conditions, Sidewinder delivered measurable performance advantages. Detailed analysis confirmed Wrapflex elements exhibited cracking and tooth wear that compromise torque transmission while Sidewinder maintained its form and function. This proven durability reinforces Sidewinder's role as a dependable solution for high-demand applications where uptime and reliability are crucial.

Dimensions and selection



Ratings and dimensions

Size	Torque (lbs-in)	Speed (rpm)	Bore min.	Bore max.	A	AA	B	BE	C	D	F	H	J	Z	Gap	Cover bolt
5R	550	4,500	0.50	1.63	3.01	3.17	2.83	0.78	1.02	2.36	2.52	0.59	0.91	0.35	0.08	M4
10R	1,150	4,500	0.63	1.88	3.56	3.72	3.62	0.94	1.34	2.84	2.99	0.75	1.10	0.43	0.08	M4
20R	2,800	4,500	0.75	2.38	4.88	5.12	4.80	1.26	1.77	3.62	4.02	0.98	1.46	0.59	0.08	M6
30R	4,600	4,500	1.00	2.88	5.63	5.87	5.98	1.42	2.28	4.13	4.65	1.14	1.65	0.67	0.08	M6
40R	9,100	3,600	1.13	3.38	6.97	7.28	7.13	1.85	2.64	5.12	5.91	1.34	2.15	0.83	0.20	M8
50R	22,200	3,000	1.25	4.13	8.82	9.13	8.46	2.39	3.03	7.01	7.48	1.81	2.74	1.10	0.20	M8
60R	35,500	2,500	2.00	5.25	10.51	10.94	10.84	2.97	3.94	8.25	8.98	2.37	2.64	1.39	0.20	M10
70R	70,900	2,100	2.75	6.13	12.20	12.64	12.76	3.31	4.72	9.88	10.63	2.74	2.95	1.56	0.20	M10
80R	133,000	1,800	3.38	7.25	14.57	15.00	14.84	3.82	5.51	10.63	12.91	3.28	3.35	1.79	0.24	M10

Note: All dimensions are in inches unless otherwise noted
Bore tolerance: 5R—50R standard clearance fit, 60R—80R standard interference fit
Temperature range: -40 °F to 200 °F (-40 °C to 93 °C)

Part numbers

Size	Element	Element and cover assembly	Rough-stock-bore (RSB) hubs		Finished-bore hubs	
				Bore size range (in)		Bore size (in)
5R	003960	147411	147429	1/2—1-5/8	147458	3/4
					147460	11/16
					147463	1-1/16
					147464	1-1/8
					147465	1-3/16
					147468	1-3/8
					147469	1-7/16
10R	003961	147412	147430	5/8—1-7/8	147473	3/4
					147478	1-1/16
					147480	1-3/16
					147483	1-3/8
					147484	1-7/16
					147486	1-5/8
20R	003962	147413	147431	3/4—2-3/8	147495	1-1/16
					147497	1-3/16
					147500	1-3/8
					147506	1-7/8
					147509	2-1/8
30R	003963	147414	147432	1—2-7/8	147528	2-1/8
					147531	2-3/8
40R	003964	147415	147433	1-1/8—3-3/8	—	—
50R	003965	147416	147434	1-1/4—4-1/8	—	—
60R	003966	147417	147435	2—5-1/4	—	—
70R	003967	147418	147436	2-3/4—6-1/8	—	—
80R	003968	147419	147437	3-3/8—7-1/4	—	—

Note: Stock parts are displayed above, contact your local Field Sales Engineer for additional available options

Service factor

Application	Service factor
Agitators	
Paddle or propeller (vertical or horizontal)	1.00
Screw	1.00
Blowers	
Centrifugal	1.00
Lobe	1.25
Vane	1.25
Brewing and distilling	
Bottling machinery, brew kettle	1.00
Cooker (continuous duty)	1.25
Mash tub	1.25
Scale hopper-frequent starting peaks	1.75
Can filling machine	1.00
Car dumper	2.50
Car puller	1.50
Clarifier	1.00
Classifier	1.00
Clay-working machines	
Brick press, briquette mach., clay working mach., pug mill	1.75
Compressors	
Centrifugal	1.00
Lobe	1.25
Screw	1.00
Lobe, rotary	1.25
Reciprocating	
1 cylinder - single acting	3.00
1 cylinder - double acting	3.00
2 cylinder - single acting	3.00
2 cylinder - double acting	3.00
3 cylinder or more - single acting	3.00
3 cylinder or more - double acting	2.00
Conveyors	
Apron, assembly, belt, chain, flight, oven	1.00
Reciprocating	3.00
Screw	1.00
Cranes and hoists	
Main hoist - medium duty	1.75
Main hoist - heavy duty	2.00
Skip hoist, travel motion, trolley	1.75
Motion, slope	1.50
Crushers	
Cane	2.00
Gyratory	2.50
Dredges	
Cable reel, screen drive, stacker	1.75
Conveyor	1.25
Cutter head drive, jig drive	2.00
Pump, utility winch	1.50
Dynamometer	1.00
Elevators	
Bucket	1.25
Exciter	1.00
Fans	
Centrifugal	1.00
Cooling tower	2.00
Heavy-duty (forced draft)	1.50
Induced draft	2.00
Light	1.00
Propeller indoor	1.50
Food industry	
Beet slicer	1.75
Cereal cooker	1.25
Dough mixer, meat grinder	1.75
Generators	
Even load	1.00
Hoist or railway service	1.50
Welder load	2.00
Grizzly	2.00
Kiln	2.00
Laundry machines	
Tumbler washer	2.00
Line shafts	
Driving processing machinery	1.50
Light	1.50
Lumber industry	
Band resaw	1.50
Circular resaw	1.75
Edger head rig, hog, log haul	2.00
Planer	1.75
Rolls non-reversing	1.25
Rolls reversing	2.00
Sawdust conveyor	1.25
Slab conveyor	1.75
Sorting table	1.50
Machine tools	
Auxiliary	1.00
Main drive	1.50
Notching press, planer (reversing), plate planer, punch press	1.75
Traverse	1.00
Metal forming machines	
Draw bench, carriage, main drive, extruder,	2.00
Wire drawing, flattening machine	1.75
Mills rotary type	
Ball or pebble direct	2.50
On low speed shaft gear reducer	2.50
On high speed shaft gear reducer	2.00
Dryer and cooler	1.50
Rod or tube direct	2.50
On low speed shaft gear reducer	2.50
On high speed shaft gear reducer	2.00
Tumbling barrel	1.50
Mixers	
Concrete (continuous or intermittent)	1.75
Muller-Simpson type	1.50
Oil industry	
Chiller	1.25
Oil well pumping (not over 150 percent peak torque)	2.00
Paraffin filter press	1.50
Paper mills	
Agitator	1.00
Barking drum	2.50
Beater and pulper	1.75
Bleacher	1.00
Calender	1.75
Chipper	2.50
Couch cylinder dryer	1.75
Felt stretcher	1.25
Fourdrinier	1.75
Jordan	2.00
Press	1.75
Pulp grinder	1.75
Stock chest	1.50
Stock pump (reciprocating)	1.50
Suction roll	1.75
Winder	1.50
Paraffin filter press	1.50
Printing press	1.50
Propeller marine	1.50
Pullers	
Barge hall	1.50
Pulverizers	
Hammermill	1.75
Hog	1.75
Roller	1.50
Pumps	
Centrifugal	1.00
Descaling gear type	1.25
Oil well pumping (not over 150 percent peak torque)	2.00
Rotary - other than gear	1.25
Reciprocating	
1 cylinder - single acting	3.00
1 cylinder - double acting	3.00
2 cylinder - single acting	2.00
2 cylinder - double acting	1.75
3 cylinder or more	1.25
Rubber industry	
Banbury mixer	2.50
Calender	2.00
Cracker mixing mill plasticator	2.50
Refiner, sheeter	2.00
Tire-building machine	2.50
Tire and tube press opener (based on peak torque)	1.00
Tuber and strainer	1.75
Warming mill	2.00
Washer	2.50
Screens	
Air washing	1.00
Coal and sand rotary	1.50
Vibrating	2.50
Water	1.00
Sewage disposal equipment	1.00
Shovel	2.00
Shredder	1.50
Steel industry	
Cold mills	
Coiler up or down	1.50
Strip, temper	—
Hot mills	
Coiler up or down	2.00
Edger drive	—
Feed roll blooming	—
Roughing mill delivery	—
Non-reversing, sheet strip	—
Rod mill	—
Soaking pit cover drive lift	1.00
Soaking pit cover drive travel	2.00
Steering gear	1.00
Stoker	1.00
Textile mills	
Batcher	1.25
Calender, card machine, D-can	1.50
Dyeing machine	1.25
Loom	1.50
Mangel, napper, soaper	1.25
Spinner, tenter frame	1.50
Windlass	1.50
Woodworking machines	1.00

Competitor interchange

Element

Size	Dodge Sidewinder	Falk Wrapflex
5R	003960	0789006
10R	003961	0789007
20R	003962	0789008
30R	003963	0789009
40R	003964	0789010
50R	003965	0789011
60R	003966	3700220
70R	003967	3700221
80R	003968	3700222

Element and cover assembly

	Dodge Sidewinder	Falk Wrapflex	
Size	Steel cover	Nylon cover	Steel cover
5R	147411	3701475	3701481
10R	147412	3701476	3701482
20R	147413	3701477	3701483
30R	147414	3701478	3701484
40R	147415	3701479	3701485
50R	147416	3701480	3701486
60R	147417	—	3701487
70R	147418	—	3701488
80R	147419	—	3701489

Misalignment

Alignment limits

	Parallel	Angular	
Size	Max (in)	Max (degrees)	Max (in)
5R	0.040	1	0.044
10R	0.040	1	0.052
20R	0.080	1	0.070
30R	0.080	1	0.081
40R	0.080	1	0.103
50R	0.080	1	0.131
60R	0.080	1	0.157
70R	0.080	1	0.188
80R	0.080	1	0.225

Elastomer chemical compatibility

Substance	Rating
Acetic acids	3
Acetic anhydride	3
Alcohols, monohydric	1
Ammonia anhydrous	2
ASTM A oils	1
Animal fats	2
Benzene	3
Carbonic acid	2
Calcium bisulfite	2
Chloracetone	2
Chloroacetic acid	3
Copper sulphate	2
Corn oil	2
Diesel oil	2
Fuel oil	2
Gasoline	3
Hydrobromic acid (40 percent)	2
Kerosene	3
Lacquers	3
Lead sufamate	2
Mineral oil	1
Naphtha	2
Nickel chloride	3
Nitric acid (10 percent)	3
Ozone	1
Petroleum (<250 °F)	2
Potassium dichromate	2
Salt water	2
Silicone oils	1
Sulfuric acid	3
Vinegar	1
Zinc sulfate	2

Ratings:
1 = Minor effect
2 = Moderate effect
3 = Severe effect

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