DODGE
AN RBC COMPANY

ELASTOMERIC COUPLINGS

SIDEWINDER™

Wrap coupling reliability reimagined

New!

Your trusted partner

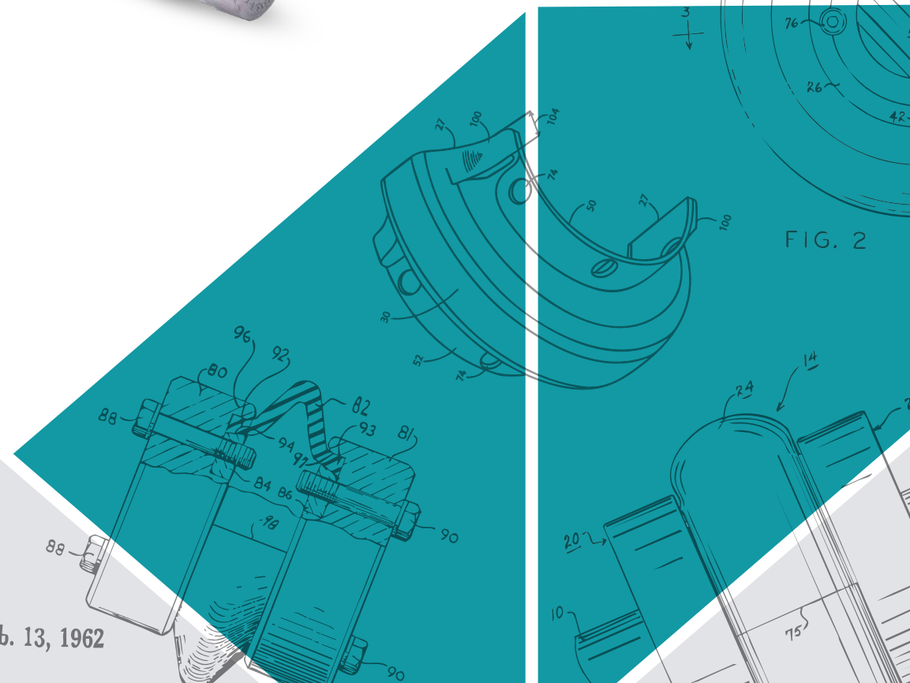
For over 145 years, Dodge® Industrial has delivered power transmission solutions that continuously perform in the world's most demanding environments. Built on a foundation of engineering excellence and hands-on industry experience, our products are trusted to perform under pressure, day in and day out.

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.



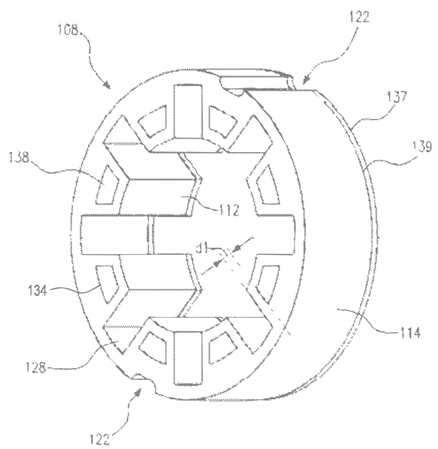
We build solutions for the problems others miss

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

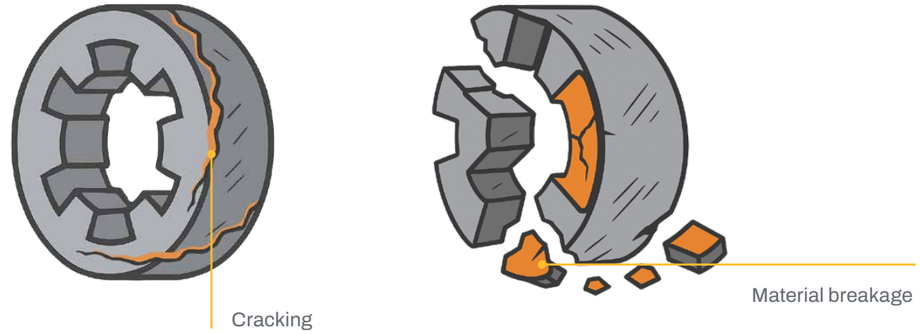
Applying that same engineering mindset, we set out to rethink the traditional wrap coupling. Sidewinder is specifically engineered for industrial environments where reliability, flexibility, and long-term performance are critical.

Common failure points found in existing wrap coupling designs are eliminated, creating a new standard for performance.



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

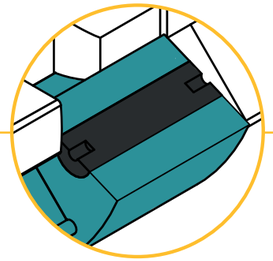
Product failures impact overall productivity by halting operations, disrupting production schedules, and ultimately leading to loss of revenue.

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

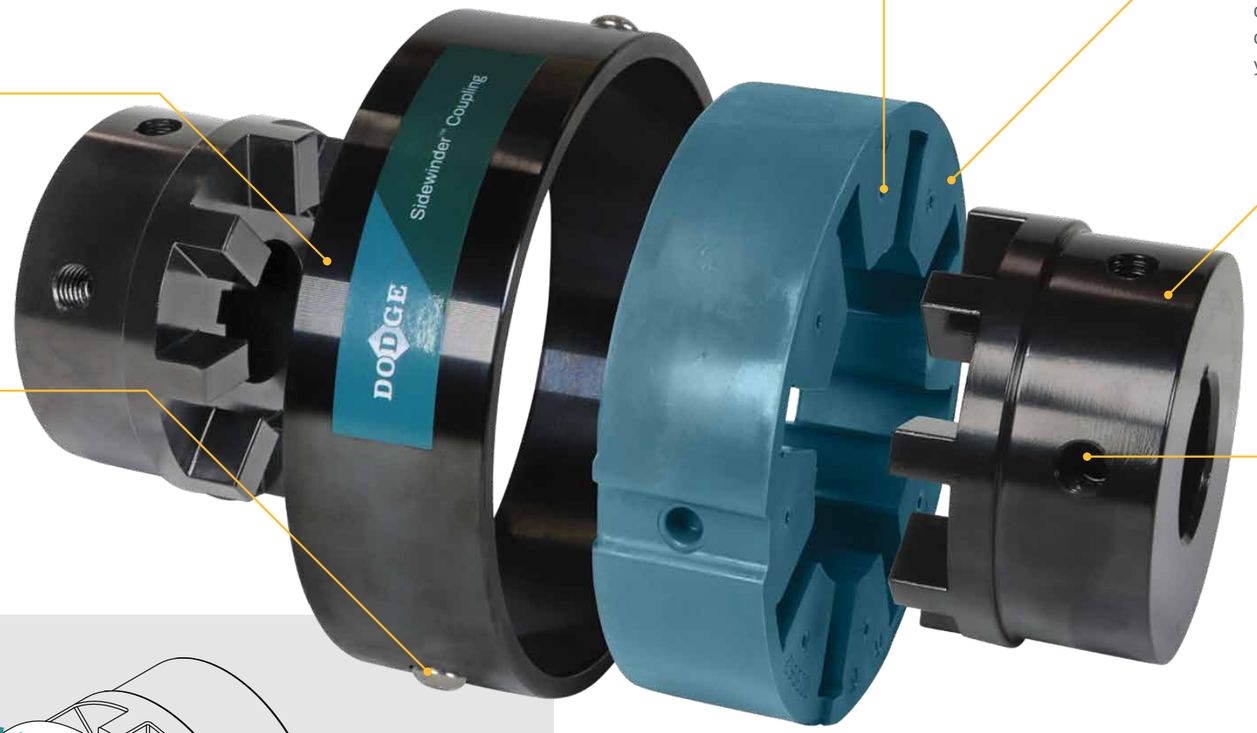
Manufactured in the USA



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

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

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



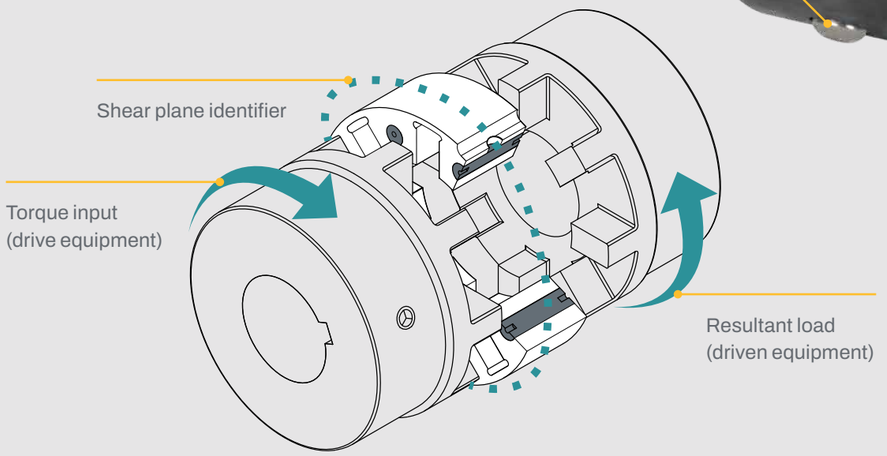
Hubs are treated with an e-coating that helps prevent rust and wear, making them more durable in tough conditions

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

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

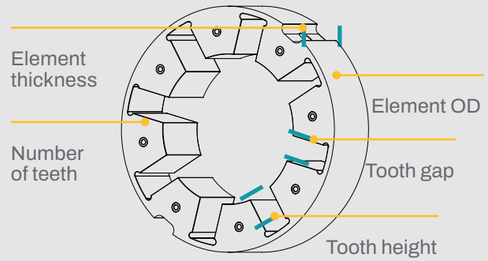
Reinforced design

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 reliable performance and long 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



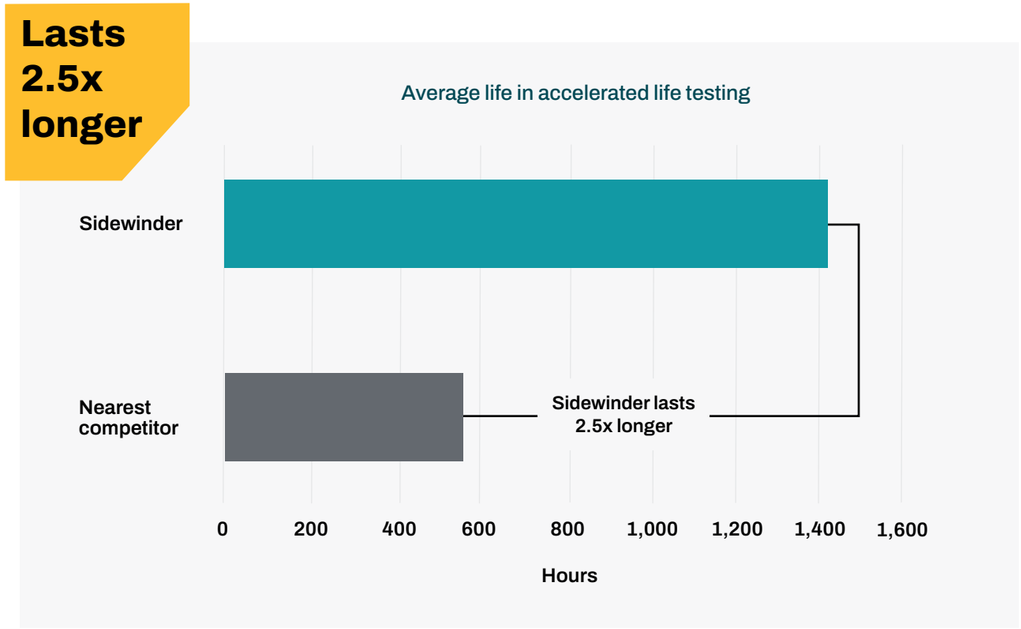
Proven performance

We rigorously tested and analyzed Sidewinder and the nearest competitor's 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: 1 degree
- Parallel misalignment: 0.04 inches (sizes 5R—10R) or 0.08 inches (sizes 20R—80R)

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



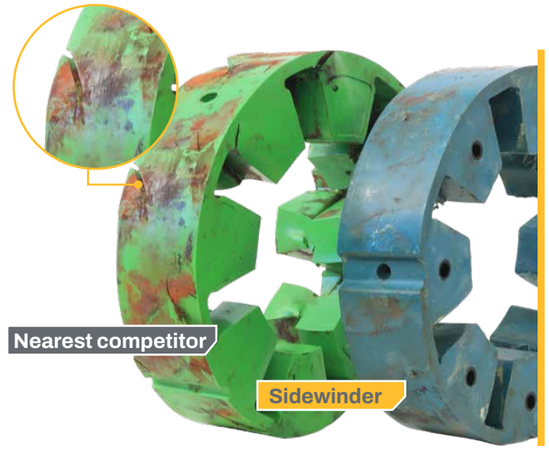
Tested element evaluation

Our testing evaluation focused on visual wear indicators to reveal true performance capability. Sidewinder is specifically designed to address the stress concentrations and material deformation that can occur in elastomeric coupling elements during operation. Throughout head-to-head testing, Sidewinder maintained its structural integrity across the full test cycle.

Material degradation

In an element, microscopic stress points can gradually develop into visible fractures. Material deterioration can further be accelerated when operating factors—from misalignment to vibration, shock load, over-torquing, and excessive cycling—can introduce hysteresis, the internal energy loss caused by material deformation.

As material degradation progresses, an element may no longer distribute load properly, transmitting significantly less torque than its catalog rating—potentially leading to unexpected application failures, operational shutdowns, lost production time, and increased maintenance costs.

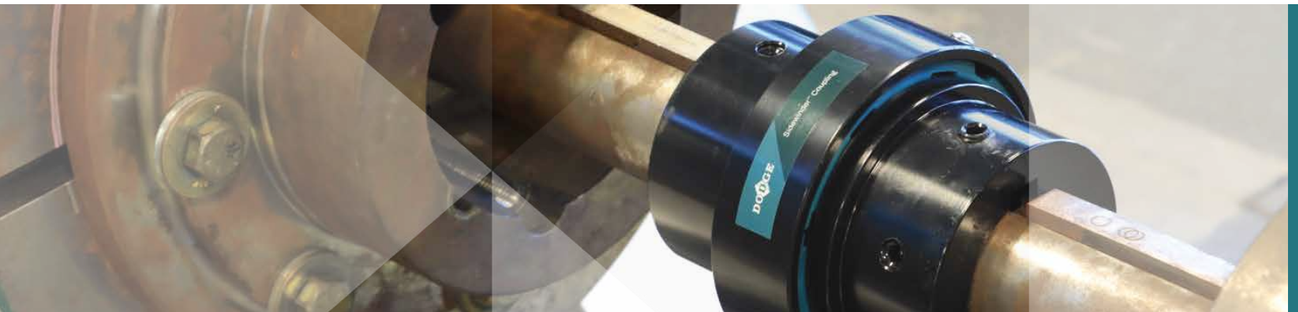


Tooth wear

In addition to structural breakdown, visible tooth wear can be an indicator of disrupted torque distribution across contact surfaces over time. These weak points degrade quickly under normal operating conditions, which can result in requiring frequent element replacements.

Under identical test conditions, Sidewinder's element maintained its structural integrity—showcasing consistent performance through its service life. Its patent-pending CoreStrike technology reinforces Sidewinder's element tooth geometry to preserve profile shape and promote even force distribution in demanding applications.

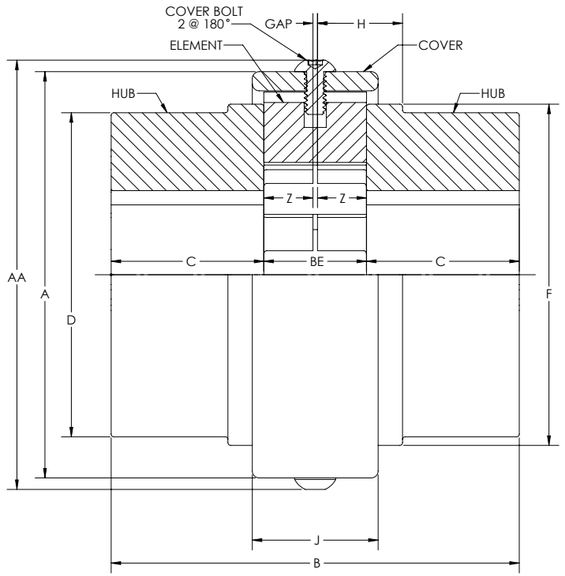
Post-test evaluations confirmed Sidewinder's performance with its element showing minimal wear, exhibiting its ability to resist material degradation and kept consistent tooth engagement under the same conditions.



Delivering performance that matters

Under the same rigorous testing conditions, Sidewinder delivered measurable performance advantages. Detailed analysis confirmed Sidewinder maintained its form and function throughout testing, reinforcing its suitability for demanding applications where consistent performance and reliability are critical to maximize uptime.

Dimensions and selection



Ratings and dimensions - inch (in)

Size	Torque (lb-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

Bore tolerance: 5R—50R standard clearance fit hubs, 60R—80R standard interference fit hubs
Temperature range: -40 °F to 200 °F (-40 °C to 93 °C)

Ratings and dimensions - metric (mm)

Size	Torque (Nm)	Speed (rpm)	Bore min.	Bore max.	A	AA	B	BE	C	D	F	H	J	Z	Gap	Cover bolt
5R	62	4,500	13	38	76.50	80.50	71.90	19.80	25.90	59.90	64.00	15.00	23.10	8.90	2	M4
10R	130	4,500	16	48	90.40	94.50	91.90	23.90	34.00	72.10	75.90	19.10	27.90	10.90	2	M4
20R	316	4,500	19	60	124.00	130.00	121.90	32.00	45.00	91.90	102.10	24.90	37.10	15.00	2	M6
30R	520	4,500	25	65	143.00	149.10	151.90	36.10	57.90	104.90	118.10	29.00	41.90	17.00	2	M6
40R	1,028	3,600	29	85	177.00	184.90	181.10	47.00	67.10	130.00	150.10	34.00	54.60	21.10	5	M8
50R	2,508	3,000	32	105	224.00	231.90	214.90	60.70	77.00	178.10	190.00	46.00	69.60	27.90	5	M8
60R	4,011	2,500	51	135	267.00	277.90	275.30	75.40	100.10	209.60	228.10	60.20	67.10	35.30	5	M10
70R	8,010	2,100	70	155	309.90	321.10	324.10	84.10	119.90	251.00	270.00	69.60	74.90	39.60	5	M10
80R	15,026	1,800	86	185	370.10	381.00	376.90	97.00	140.00	270.00	327.90	83.30	85.10	45.50	6	M10

Bore tolerance: 5R—50R standard clearance fit hubs, 60R—80R standard interference fit hubs
Temperature range: -40 °F to 200 °F (-40 °C to 93 °C)

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

Part numbers

Hubs - inch

	Coupling size								
Bore (in)	**5R**	**10R**	**20R**	**30R**	**40R**	**50R**	**60R**	**70R**	**80R**
Rough-stock bore (RSB)	147429	147430	147431	147432	147433	147434	147435	147436	147437
Finished bore									
1/2	147456	—	—	—	—	—	—	—	—
5/8	147457	147472	—	—	—	—	—	—	—
11/16	147458	147473	147490	—	—	—	—	—	—
3/4	147459	147474	147491	—	—	—	—	—	—
7/8	147460	147475	147492	—	—	—	—	—	—
15/16	147461	147476	147493	—	—	—	—	—	—
1	147462	147477	147494	147513	—	—	—	—	—
1-1/16	147463	147478	147495	147514	—	—	—	—	—
1-1/8	147464	147479	147496	147515	147538	—	—	—	—
1-3/16	147465	147480	147497	147516	147539	—	—	—	—
1-1/4	147466	147481	147498	147517	147540	147567	—	—	—
1-5/16	147467	147482	147499	147518	147541	147568	—	—	—
1-3/8	147468	147483	147500	147519	147542	147569	—	—	—
1-7/16	147469	147484	147501	147520	147543	147570	—	—	—
1-1/2	147470	147485	147502	147521	147544	147571	—	—	—
1-5/8	147471	147486	147503	147522	147545	147572	—	—	—
1-11/16	—	147487	147504	147523	147546	147573	—	—	—
1-3/4	—	147488	147505	147524	147547	147574	—	—	—
1-7/8	—	147489	147506	147525	147548	147575	—	—	—
1-15/16	—	—	147507	147526	147549	147576	—	—	—
2	—	—	147508	147527	147550	147577	147602	—	—
2-1/8	—	—	147509	147528	147551	147578	147603	—	—
2-3/16	—	—	147510	147529	147552	147579	147604	—	—
2-1/4	—	—	147511	147530	147553	147580	147605	—	—
2-3/8	—	—	147512	147531	147554	147581	147606	—	—
2-7/16	—	—	—	147532	147555	147582	147607	—	—
2-1/2	—	—	—	147533	147556	147583	147608	—	—
2-5/8	—	—	—	147534	147557	147584	147609	—	—
2-11/16	—	—	—	147535	147558	147585	147610	—	—
2-3/4	—	—	—	147536	147559	147586	147611	147627	—
2-7/8	—	—	—	147537	147560	147587	147612	147628	—
2-15/16	—	—	—	—	147561	147588	147613	147629	—
3	—	—	—	—	147562	147589	147614	147630	—
3-1/8	—	—	—	—	147563	147590	147615	147631	—
3-1/4	—	—	—	—	147564	147591	147616	147632	—
3-5/16	—	—	—	—	147565	147592	147617	147633	—
3-3/8	—	—	—	—	147566	147593	147618	147634	—
3-7/16	—	—	—	—	—	147594	147619	147635	—
3-1/2	—	—	—	—	—	147595	147620	147636	—
3-5/8	—	—	—	—	—	147596	147621	147637	—
3-11/16	—	—	—	—	—	147597	147622	147638	—
3-3/4	—	—	—	—	—	147598	147623	147639	—
3-7/8	—	—	—	—	—	147599	147624	147640	—
3-15/16	—	—	—	—	—	147600	147625	147641	—
4	—	—	—	—	—	147601	147626	147642	—

Note: Bore tolerance: 5R—50R standard clearance fit hubs, 60R—80R standard interference fit hubs

Hubs - metric

	Coupling size								
Bore (mm)	**5R**	**10R**	**20R**	**30R**	**40R**	**50R**	**60R**	**70R**	**80R**
Rough-stock bore (RSB)	147429	147430	147431	147432	147433	147434	147435	147436	147437
Finished bore									
14	147643	—	—	—	—	—	—	—	—
16	147644	147657	—	—	—	—	—	—	—
18	147645	147658	—	—	—	—	—	—	—
19	147646	147659	147672	—	—	—	—	—	—
20	147647	147660	147673	—	—	—	—	—	—
22	147648	147661	147674	—	—	—	—	—	—
24	147649	147662	147675	—	—	—	—	—	—
25	147650	147663	147676	147689	—	—	—	—	—
28	147651	147664	147677	147690	147704	—	—	—	—
30	147652	147665	147678	147691	147705	147721	—	—	—
32	147653	147666	147679	147692	147706	147722	—	—	—
35	147654	147667	147680	147693	147707	147723	—	—	—
38	147655	147668	147681	147694	147708	147724	—	—	—
40	147656	147669	147682	147695	147709	147725	—	—	—
42	—	147670	147683	147696	147710	147726	—	—	—
45	—	147671	147684	147697	147711	147727	—	—	—
48	—	—	147685	147698	147712	147728	—	—	—
50	—	—	147686	147699	147713	147729	147740	—	—
55	—	—	147687	147700	147714	147730	147741	—	—
60	—	—	147688	147701	147715	147731	147742	—	—
65	—	—	—	147702	147716	147732	147743	—	—
70	—	—	—	147703	147717	147733	147744	147751	—
75	—	—	—	—	147718	147734	147745	147752	—
80	—	—	—	—	147719	147735	147746	147753	—
85	—	—	—	—	147720	147736	147747	147754	—
90	—	—	—	—	—	147737	147748	147755	—
95	—	—	—	—	—	147738	147749	147756	—
100	—	—	—	—	—	147739	147750	147757	—

Note: Bore tolerance: 5R—50R standard clearance fit hubs, 60R—80R standard interference fit hubs

Elements and covers

Size	Element	Cover	Element and cover assembly
5R	003960	147420	147411
10R	003961	147421	147412
20R	003962	147422	147413
30R	003963	147423	147414
40R	003964	147424	147415
50R	003965	147425	147416
60R	003966	147426	147417
70R	003967	147427	147418
80R	003968	147428	147419

Note: Stock parts are displayed above, contact your local Dodge 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 machine, clay working machine, 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
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

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