RBC BEARINGS | Lubron® BEARING SYSTEMS, INC.

High Load Multi Rotational Bearings

Zero Maintenance. Maximum Reliability.

Innovation. Commitment. Quality.

RBC BEARINGS®

RBC Bearings® provides global industrial, aerospace, and defense customers with unique design solutions to complex problems and an unparalleled level of service, quality, and support.

RBC manufactures highly engineered precision plain, roller and ball bearings, shaft collars, rigid couplings and keyless locking devices. While RBC designs and manufactures products in these major product categories, RBC excels at solving the most demanding and difficult applications with solutions that improve customers' products and process performance and deliver the lowest total cost of ownership. This has been achieved by providing products such as maintenance free bearings, components, and bearings designed to withstand environments with extreme temperature, high speed, contamination, corrosion, and severe shock loading.

RBC Bearings® has been providing engineered solutions to customers since 1919. RBC has significantly broadened our end markets, products, customer base and geographic reach through organic growth and acquisitions. These acquisitions fit well with our philosophy of providing high-quality products and solutions to our customer base. They have enhanced our customer solutions and experience, further diversifying our offering to our target markets.

RBC currently has 64 facilities in 11 countries, with manufacturing capabilities in 42 locations.

RBC Bearings®—A Tradition of Excellence

RBC Bearings® has had a long tradition of innovation, commitment, and quality since the company was founded in 1919. Today, RBC Bearings® has grown into a world-class manufacturer of standard and custom-engineered bearings and related products, with a product focus on research, testing, and development of the best product for specific applications.

How We Can Serve You

RBC Bearings® has implemented a total quantity control system that uses statistical quality control at all facilities, and manufactures in high volume to a just-in-time delivery program.

To serve the ongoing needs of customers, RBC Bearings® has a network of over 2,400 distributors and sales engineers throughout North and South America and Europe, with authorized agents worldwide.

Customer Service – 800.390.3300

Warranty

RBC Bearings® products are warranted for material and workmanship for period not to exceed 90 days from shipment and for a value not to exceed purchase price.

Disclaimer and Intellectual Property Statement

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What We Manufacture

RBC Bearings,® with facilities throughout North America and Europe, provides bearings and precision products for applications in the construction, mining, material handling, transportation and off-highway equipment, robotics and automation, farming, machine tool, and semiconductor equipment industries. Through RBC Aerospace Bearings®, the company is a major manufacturer of highly-engineered bearings and precision products for military, defense, and commercial aerospace applications.

RBC's High-Quality Bearings Include:

- **Heavy Duty Needle Roller Bearings** – Pitchlign® caged heavy needle roller bearings, inner rings, type TJ TandemRoller® bearings for long life.
- **Spherical Plain Bearings** – Radial, angular contact, high misalignment, extended inner ring, DuraLube™, maintenance-free spherical plain bearings, QuadLube® long life bearings, ImpactTuff® case carburized bearings, ShimPack® double acting angular-contact bearings, CrossLube® lubrication groove systems, and SpreadLock® Seal.
- **Cam Followers and Yoke Rollers** - Standard stud, heavy stud, yoke type, caged roller followers, RBC Roller® long life came followers, Hexlube® universal cam followers, airframe track rollers. Mastguide rollers and carriage rollers, chain sheaves (for leaf chain), toothless sprockets (for roller chain), and heavy-duty roller bearing construction.
- **Rod End** – Commercial and aerospace, precision, Mil-Spec series, self-lubricationg, inch and metric. Heim®, Unibal®, and Spherco® brands.
- **Self-Lubrication Bearings** – Radial, thrust, rod ends, spherical plain bearings, high temperature, high loads, inch and metric. Fiberglide®.
- **Thin Section Ball Bearings** – Standard cross sections to one inch. Sizes to 40 inches. Stainless steel and other materials available. Seal available on all sizes and standard cross sections.
- **Airframe Control Bearings** – Ball bearing types, self-lubricating types, needle roller track rollers.
- **Ground, Semiground, and Unground Ball Bearings** – Full complement, utilizes design and burnished races for higher loads, long life, and smooth operation
- **Dowel Pins, Loose Needle Rollers, Shafts**
- **Large Bearings** – A full range of high quality, large diameter, Cylindrical Roller and Tapered Roller bearings in standard and custom designs for applications that require increased load capacity. Common uses in oil, mining, paper, steel, gear box, and swivel applications.
- **Tapered Roller Thrust Bearings** – Case-hardened. Sealed and unsealed for truck, tractor, and construction equipment, steer axles, and Class 8 trailer landing gear.
- **Custom Designed Bearings** – RBC produces a wide range of custom bearings in various materials for specific applications.

RBC® Lubron® Structural Bearings Assemblies

Founded in 1988, RBC® Bearings has been a trusted provider of high-performance bearing assemblies for bridges and heavy infrastructure projects worldwide. With decades of experience, we specialize in designing and manufacturing maintenance-free Disc and PTFE Spherical High Load Multi-Rotational Bearings that support large structures while accommodating complex movements and loads.

High Load Multi-Rotational TF Bearings

Lubron® High Load Multi-Rotational TF bearings use a permanently bonded woven PTFE fabric liner, which eliminates the cold flow and compressive creep problems common with PTFE resin sheets. The woven PTFE fibers are fully supported and rigidly bonded to the substrate.

This construction provides:

- High load capacity up to 20 ksi due to PTFE fibers with 25× the tensile strength of PTFE resin
- Minimal friction as low as 0.03 and heat buildup, thanks to complete fiber support and low shear stress
- Long-term stability, preventing creep, distortion, and premature bearing failure
- Superior durability compared to mechanically locked PTFE systems, which lack full fiber support, resulting in longer life

Low shear stresses and 100% supported bearing surfaces are also two important advantages **LUBRON® TF** bearings offer over mechanically locked systems. Our PTFE Spherical and Disc bearings offer the most advanced design and construction available for high load and low coefficient of friction applications.

Quality Certifications

RBC® Lubron® hold a variety of widely recognized industry certifications including:

- ISO9001
- AS9100
- AISC

Gerald Desmond Bridge, Long Beach, CA, Lubron PTFE Spherical Bearings.

I-70 West Vail Pass Auxiliary Lanes High Load Multi-Rotational Disc Bearing Installation.

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High Load Multi-Rotational Bearing Overview

PTFE SPHERICAL BEARINGS

Superior Construction

LUBRON® TF bearings use a woven PTFE fabric liner permanently bonded to the bearing surface, providing superior resistance to cold flow and compressive creep compared to resin-based PTFE sheets. This construction ensures full fiber support with a rigid, durable bond. The high-strength PTFE fibers, reinforced by bonding resins, offer excellent load-carrying capability and help minimize heat generation under operating conditions

High Load Capacity

Engineered to handle loads from 3.5 ksi (24 MPa) to 10 ksi (69 MPa), withstanding up to 60 ksi (414 MPa) without cold flow.

Low Friction

PTFE fibers offer an extremely low coefficient of friction—typically below 0.04—reducing stick-slip and ensuring smooth movement under varying conditions.

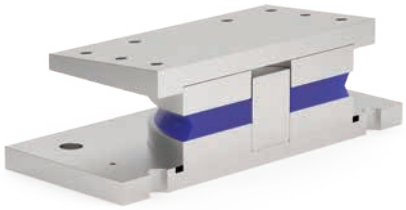
High Shear Resistance

The PTFE fabric is securely bonded to the metal substrate, resisting at least 25% of the allowable vertical load in horizontal shear, per Federal Spec MMM-A-175 Method 1033.

Fixed

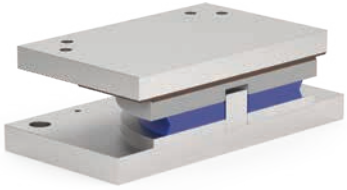
Guided

Unguided



Fixed

Guided



Unguided

DISC BEARINGS

Advanced Design

Engineered for thermal, seismic, and mechanical expansion, Lubron Disc Bearings also accommodate rotational movement. They meet AASHTO LRFD and project-specific standards.

High Load Capacity

Supports loads up to 4000 kips, suitable for heavy bridge applications.

Low Friction

PTFE surfaces slide against polished stainless steel (ASTM A240 304, 8 Ra finish), ensuring smooth movement with minimal resistance.

Shear & Rotation Performance

Polyether urethane discs handle ±0.02 radians of rotation, with higher capacities available. Shear resistance is built into the disc geometry and steel components.

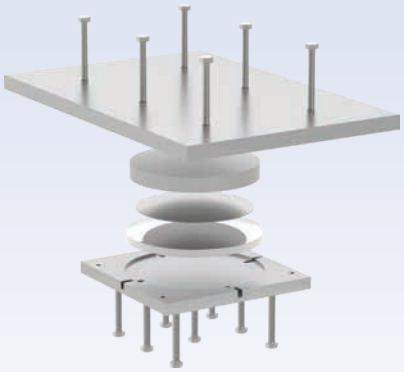
Material Compliance

Steel parts use ASTM A709 Grade 36, 50, or 50W and comply with Buy America provisions.

High Load Multi-Rotational Bearing Overview

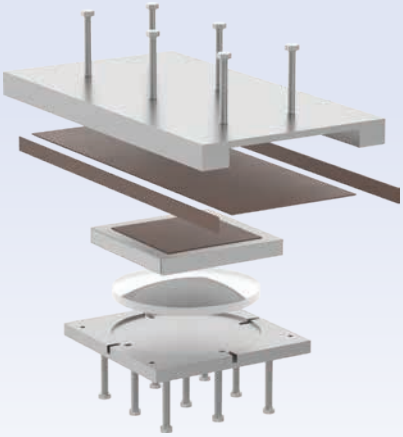
PTFE SPHERICAL BEARINGS

High-performance spherical bearings designed for heavy-load applications, offering exceptional durability and low-friction movement. Ideal for structures requiring precise rotation and long-term reliability under demanding conditions.



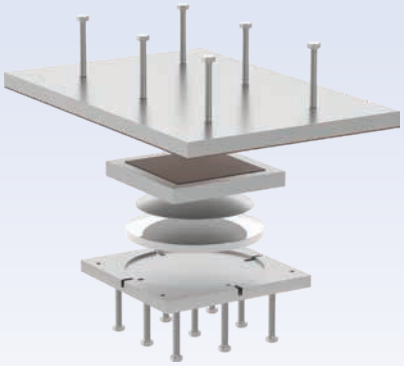
Fixed

Fixed disc bearings allow rotation in any direction but no movement.



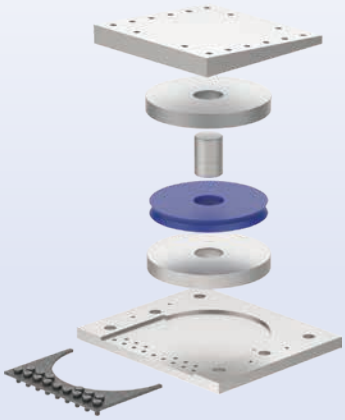
Guided Expansion

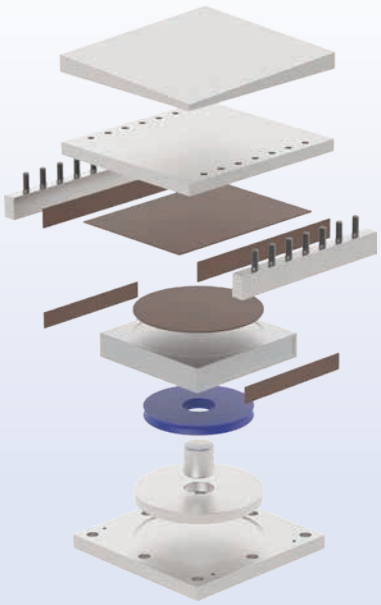
Guided disc bearings allow rotation in any direction and sliding movement in one direction.



Unguided Expansion

Unguided disc bearings allow rotation and sliding displacement in any direction.



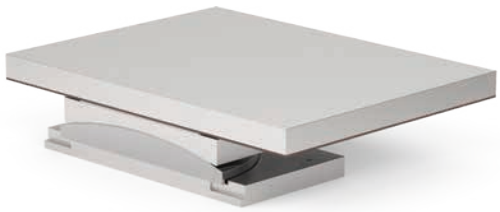


DISC BEARINGS

Engineered for stability and smooth operation, these disc bearings provide superior load distribution and minimal maintenance. Perfect for projects needing consistent performance and resistance to environmental stress.

Unguided Spherical Bearing

PTFE Spherical Bearing Assemblies



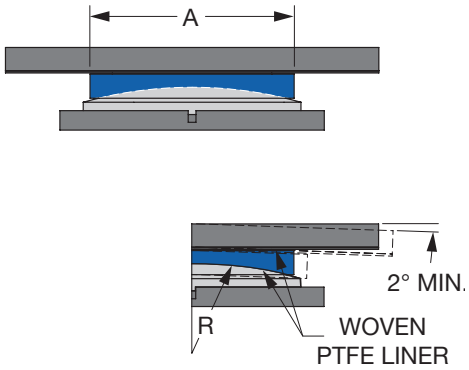
Design Code: AASHTO LRFD Bridge Design Specifications, 17th Edition with Interim Revisions – Section 14
(Can be designed to ASTM D5977 or AREMA Manual for Railway Engineering (MRE) standards)

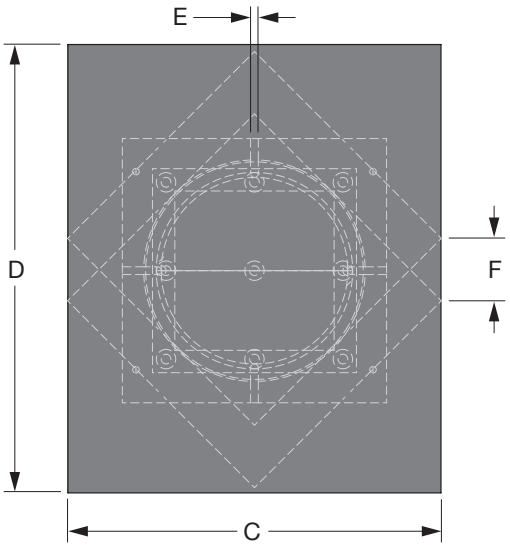
Standard Rotation: ±0.03 to ±0.05 rad typical

Horizontal Load Capacity: 10% of vertical load

Steel Yield Strength (Fy): **50 ksi typical** (ASTM A709 Gr.50)
(Dependent on bearing plan/detailed design)

Dimensions Key:
A - Concave Plate Length
C - Sole Plate Width
D - Sole Plate Length
E - Length of Transverse Movement
F - Length of Longitudinal Movement
R - Spherical Radius of Concave Plate





Imperial Size Chart†

Concave Plate		Vertical Loads (ksi)				Sole Plate	
		STANDARD	MAX. ALLOWABLE	OCCASIONAL OVERLOAD	SHORT DURATION OVERLOAD		
A	PTFE Area	3.5	5.0	7.0	10.0	Width C	Length D
in.	in²	kips	kips	kips	kips	in.	in.
5	14.3	50	71	99	142	8.00+E	8.00+F
6	21.7	76	108	152	216	9.50+E	9.50+F
7	30.6	107	153	215	307	11.00+E	11.00+F
8	41.1	144	206	289	431	12.50+E	12.50+F
9	53.4	187	267	374	535	13.75+E	13.75+F
10	67.1	235	336	470	672	15.25+E	15.25+F
11	82.6	289	413	578	825	16.50+E	16.50+F
12	99.4	348	497	696	994	18.00+E	18.00+F
13	118	413	589	825	1179	19.25+E	19.25+F
14	138	483	689	965	1379	20.75+E	20.75+F
15	154	539	770	1078	1539	22.25+E	22.25+F
16	177	619	884	1237	1767	23.50+E	23.50+F
17	201	704	1005	1407	2011	25.00+E	25.00+F
18	227	794	1135	1589	2270	26.50+E	26.50+F
19	254.5	891	1272	1781	2545	27.75+E	27.25+F
20	283.5	992	1418	1985	2835	29.25+E	29.25+F
22	346.4	1212	1732	2425	3464	32.25+E	32.25+F
24	415.5	1454	2077	2908	4155	35.00+E	35.00+F
26	490.9	1718	2454	3436	4909	37.75+E	37.75+F
28	572.6	2004	2863	4008	5726	40.75+E	40.75+F
30	660.5	2313	3303	4624	6605	43.50+E	43.50+F

Metric Size Chart†

Concave Plate		Vertical Loads (MPa)				Sole Plate	
		STANDARD	MAX. ALLOWABLE	OCCASIONAL OVERLOAD	SHORT DURATION OVERLOAD		
A	PTFE Area	24	35	48	70	Width C	Length D
mm	mm²	kN	kN	kN	kN	mm	mm
127	9226	222	316	440	632	203.2+E	203.2+F
152.4	14000	338	481	676	961	241.3+E	241.3+F
177.8	19742	476	681	957	1366	279.4+E	279.4+F
203.2	26516	641	917	1286	1918	317.5+E	317.5+F
228.6	34452	832	1188	1664	2380	349.25+E	349.25+F
254	43290	1046	1495	2091	2990	387.35+E	387.35+F
279.4	53290	1286	1838	2572	3671	419.1+E	419.1+F
304.8	64129	1548	2211	3097	4423	457.2+E	457.2+F
330.2	76129	1838	2621	3671	5246	488.95+E	488.95+F
355.6	89032	2149	3066	4293	6135	527.05+E	527.05+F
381	99355	2398	3426	4796	6847	565.15+E	565.15+F
406.4	114193	2754	3933	5504	7862	596.9+E	596.9+F
431.8	129677	3132	4471	6260	8947	635+E	635+F
457.2	146451	3533	5050	7070	10100	673.1+E	673.1+F
482.6	164193	3964	5659	7924	11323	692.15+E	704.85+F
508	182903	4414	6309	8832	12614	742.95+E	742.95+F
558.8	223483	5392	7706	10789	15412	819.15+E	819.15+F
609.6	268064	6469	9241	12938	18487	889+E	889+F
660.4	316709	7644	10918	15288	21841	958.85+E	958.85+F
711.2	369419	8916	12738	17832	25476	1035.05+E	1035.05+F
762	426128	10291	14696	20573	29387	1104.9+E	1104.9+F

*Allowable bearing pressures shown in this table are per AASHTO LRFD Section 14 bearing design provisions.
†Overall bearing geometry subject to project plan requirements; catalog values represent nominal sizing only.

Guided Spherical Bearings

PTFE Spherical Bearing Assemblies

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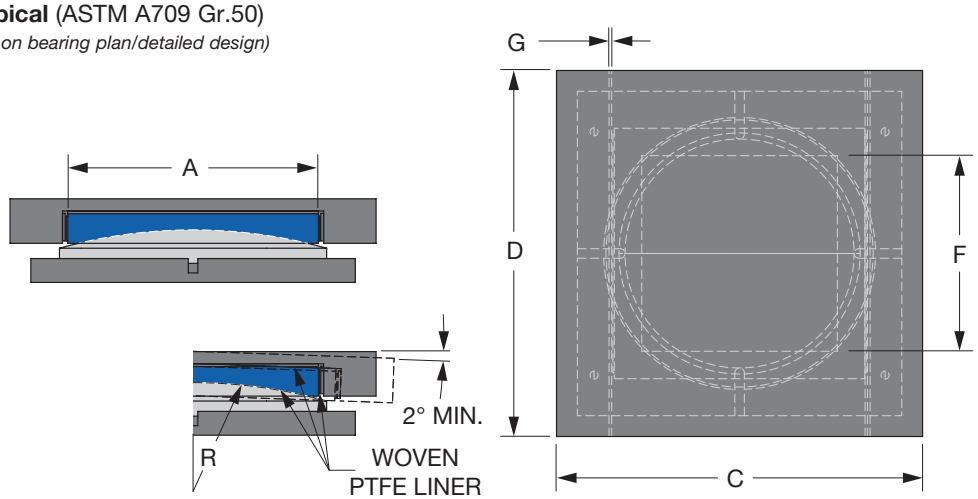
(Can be designed to ASTM D5977 or AREMA Manual for Railway Engineering (MRE) standards)

Standard Rotation: ±0.03 to ±0.05 rad typical

Horizontal Load Capacity: 10% of vertical load

Steel Yield Strength (Fy): **50 ksi typical** (ASTM A709 Gr.50)
(Dependent on bearing plan/detailed design)

Dimensions Key:
A - Concave Plate Length
C - Sole Plate Width
D - Sole Plate Length
F - Length of Longitudinal Movement
G - Max Transverse in One Direction
R - Spherical Radius of Concave Plate



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6	21.7	76	108	152	216	7.00+G	7.00+2F
7	30.6	107	153	215	307	8.00+G	8.00+2F
8	41.1	144	206	289	431	9.00+G	9.00+2F
9	53.4	187	267	374	535	10.00+G	10.00+2F
10	67.1	235	336	470	672	11.00+G	11.00+2F
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482.6	164193	3964	5659	7924	11323	508+G	508+2F
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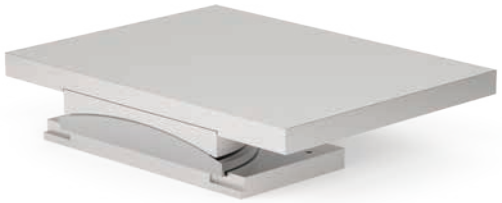
Fixed Spherical Bearings

PTFE Spherical Bearings Assemblies



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Standard Rotation: ±0.03 to ±0.05 rad typical

Horizontal Load Capacity: 10% of vertical load

Movement: X-Direction X = 0 inches
Y-Direction Y = 0 inches

Steel Yield Strength (Fy): **50 ksi typical** (ASTM A709 Gr.50)
(Dependent on bearing plan/detailed design)

Dimensions Key:
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C - Sole Plate Width
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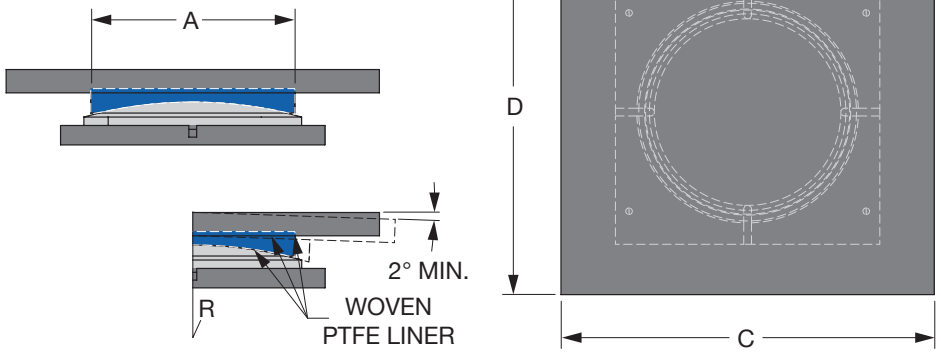

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6	21.7	76	108	152	216	8	8
7	30.6	107	153	215	307	9	9
8	41.1	144	206	289	431	10	10
9	53.4	187	267	374	535	11	11
10	67.1	235	336	470	672	12	12
11	82.6	289	413	578	825	13	13
12	99.4	348	497	696	994	14	14
13	118	413	589	825	1179	15	15
14	138	483	689	965	1379	16	16
15	154	539	770	1078	1539	18	18
16	177	619	884	1237	1767	19	19
17	201	704	1005	1407	2011	20	20
18	227	794	1135	1589	2270	21	21
19	254.5	891	1272	1781	2545	22	22
20	283.5	992	1418	1985	2835	23	23
22	346.4	1212	1732	2425	3464	25	25
24	415.5	1454	2077	2908	4155	27	27
26	490.9	1718	2454	3436	4909	29	29
28	572.6	2004	2863	4008	5726	31	31
30	660.5	2313	3303	4624	6605	33	33

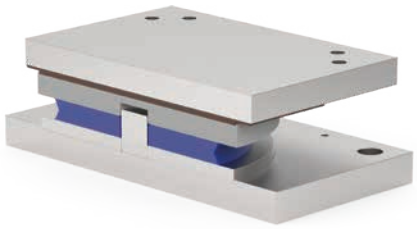
Metric Size Chart†

Concave Plate		Vertical Loads (MPa)				Sole Plate	
		STANDARD	MAX. ALLOWABLE	OCCASIONAL OVERLOAD	SHORT DURATION OVERLOAD		
A	PTFE Area	24	35	48	70	Width C	Length D
mm	mm²	kN	kN	kN	kN	mm	mm
127	9226	222	316	440	632	177.8	177.8
152.4	14000	338	481	676	961	203.2	203.2
177.8	19742	476	681	957	1366	228.6	228.6
203.2	26516	641	917	1286	1918	254	254
228.6	34452	832	1188	1664	2380	279.4	279.4
254	43290	1046	1495	2091	2990	304.8	304.8
279.4	53290	1286	1838	2572	3671	330.2	330.2
304.8	64129	1548	2211	3097	4423	355.6	355.6
330.2	76129	1838	2621	3671	5246	381	381
355.6	89032	2149	3066	4293	6135	406.4	406.4
381	99355	2398	3426	4796	6847	457.2	457.2
406.4	114193	2754	3933	5504	7862	482.6	482.6
431.8	129677	3132	4471	6260	8947	508	508
457.2	146451	3533	5050	7070	10100	533.4	533.4
482.6	164193	3964	5659	7924	11323	558.8	558.8
508	182903	4414	6309	8832	12614	584.2	584.2
558.8	223483	5392	7706	10789	15412	635	635
609.6	268064	6469	9241	12938	18487	685.8	685.8
660.4	316709	7644	10918	15288	21841	736.6	736.6
711.2	369419	8916	12738	17832	25476	787.4	787.4
762	426128	10291	14696	20573	29387	838.2	838.2

*Allowable bearing pressures shown in this table are per AASHTO LRFD Section 14 bearing design provisions.
†Overall bearing geometry subject to project plan requirements; catalog values represent nominal sizing only.

Unguided Disc Bearings

Disc Bearings Assemblies



Design Code: AASHTO LRFD Service Limit, 17th Edition

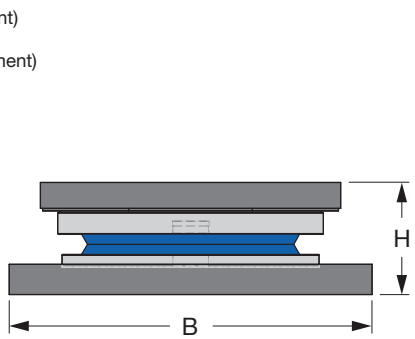
Standard Rotation: ±0.02 radians

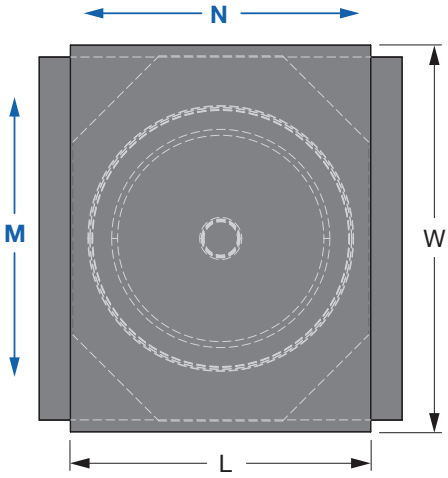
Horizontal Load Capacity: 10% of vertical load

Steel Yield Strength (Fy): **50 ksi typical** (ASTM A709 Gr.50)
(Dependent on bearing plan/detailed design)

Dimensions Key:

L - Sole Plate Length
W - Sole Plate Width
B - Width of Assembly Base
H - Height of Assembly
M - Movement capacity in the vertical direction (displacement)
N - Movement capacity in the horizontal direction (displacement)





Imperial Size Chart†

Load Capacity		Length	Width	Base	Height	Displacement	
Vert.	Horz.	L	W	B	H	M	N
Kips	Kips	in.	in.	in.	in.	in.	in.
100	10	11.13	8.13	6.5	2.82	4	1
200	20	13.75	10.75	8.38	3.08	4	1
300	30	15.75	12.75	10.38	3.7	4	1
400	40	17.5	14.5	11.88	3.95	4	1
500	50	19.13	16.13	13.13	4.08	4	1
600	60	20.38	17.38	14.25	4.2	4	1
700	70	21.75	18.75	15.5	4.7	4	1
800	80	22.88	19.88	16.5	4.95	4	1
900	90	24	21	17.63	5.2	4	1
1000	100	25.25	22.25	18.38	5.2	4	1
1100	110	26.13	23.13	19.25	5.7	4	1
1200	120	27	24	20.25	5.95	4	1
1300	130	28.13	25.13	20.88	5.95	4	1
1400	140	29.13	26.13	22	6.36	4	1
1500	150	29.63	26.63	22.5	6.49	4	1
1600	160	30.75	27.75	23.25	6.99	4	1
1700	170	31.38	28.38	24	7.11	4	1
1800	180	32.38	29.38	24.75	7.11	4	1
1900	190	33	30	25.38	7.74	4	1
2000	200	34	31	26.13	7.74	4	1
2500	250	37.25	34.25	29.13	8.73	4	1
3000	300	40.38	37.38	31.75	8.86	4	1
3500	350	43.38	40.38	34.38	9.73	4	1
4000	400	45.88	42.88	36.63	9.98	4	1
4500	450	48.38	45.38	38.88	10.61	4	1
5000	500	51	48	40.75	10.86	4	1

Metric Size Chart†

Load Capacity		Length	Width	Base	Height	Displacement	
Vert.	Horz.	L	W	B	H	M	N
kN	kN	mm	mm	mm	mm	mm	mm
444.82	44.48	282.70	206.50	165.10	71.63	101.60	25.40
889.64	88.96	349.25	273.05	212.85	78.23	101.60	25.40
1334.47	133.45	400.05	323.85	263.65	93.98	101.60	25.40
1779.29	177.93	444.50	368.30	301.75	100.33	101.60	25.40
2224.11	222.41	485.90	409.70	333.50	103.63	101.60	25.40
2668.93	266.89	517.65	441.45	361.95	106.68	101.60	25.40
3113.76	311.38	552.45	476.25	393.70	119.38	101.60	25.40
3558.58	355.86	581.15	504.95	419.10	125.73	101.60	25.40
4003.40	400.34	609.60	533.40	447.80	132.08	101.60	25.40
4448.22	444.82	641.35	565.15	466.85	132.08	101.60	25.40
4893.04	489.30	663.70	587.50	488.95	144.78	101.60	25.40
5337.87	533.79	685.80	609.60	514.35	151.13	101.60	25.40
5782.69	578.27	714.50	638.30	530.35	151.13	101.60	25.40
6227.51	622.75	739.90	663.70	558.80	161.54	101.60	25.40
6672.33	667.23	752.60	676.40	571.50	164.85	101.60	25.40
7117.15	711.72	781.05	704.85	590.55	177.55	101.60	25.40
7561.98	756.20	797.05	720.85	609.60	180.59	101.60	25.40
8006.80	800.68	822.45	746.25	628.65	180.59	101.60	25.40
8451.62	845.16	838.20	762.00	644.65	196.60	101.60	25.40
8896.44	889.64	863.60	787.40	663.70	196.60	101.60	25.40
11120.55	1112.06	946.15	869.95	739.90	221.74	101.60	25.40
13344.66	1334.47	1025.65	949.45	806.45	225.04	101.60	25.40
15568.78	1556.88	1101.85	1025.65	873.25	247.14	101.60	25.40
17792.89	1779.29	1165.35	1089.15	930.40	253.49	101.60	25.40
20017.00	2001.70	1228.85	1152.65	987.55	269.49	101.60	25.40
22241.11	2224.11	1295.40	1219.20	1035.05	275.84	101.60	25.40

†Overall bearing geometry subject to project plan requirements; catalog values represent nominal sizing only.

Guided Disc Bearings

Disc Bearing Assemblies

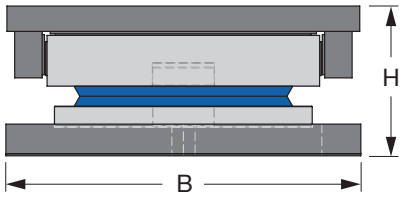
Design Code: AASHTO LRFD Service Limit, 17th Edition

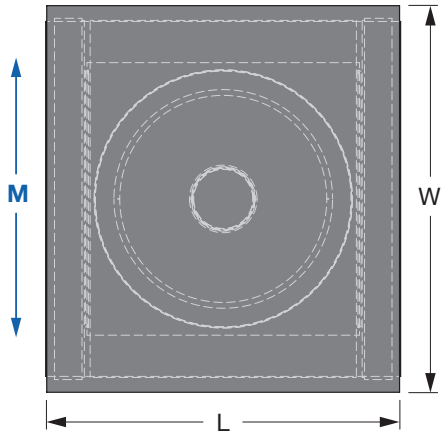
Standard Rotation: ±0.02 radians

Horizontal Load Capacity: 10% of vertical load

Steel Yield Strength (Fy): **50 ksi typical** (ASTM A709 Gr.50)
(Dependent on bearing plan/detailed design)

Dimensions Key:
L - Sole Plate Length
W - Sole Plate Width
B - Width of Assembly Base
H - Height of Assembly
M - Movement capacity in the vertical direction (displacement)





Imperial Size Chart†

Load Capacity		Length	Width	Base	Height	Displacement
Vert.	Horz.	L	W	B	H	M
Kips	Kips	in.	in.	in.	in.	in.
100	10	11.63	10.88	6.5	3.2	4
200	20	14.25	13.5	8.38	3.45	4
300	30	16.25	15.5	10.3	3.95	4
400	40	18	17.5	11.88	4.2	4
500	50	19.63	19.38	13.13	4.45	4
600	60	20.88	20.88	14.25	4.57	4
700	70	22.25	22.5	15.5	4.83	4
800	80	23.38	24.13	16.5	5.2	4
900	90	24.5	25.5	17.63	5.45	4
1000	100	25.75	27	18.38	5.45	4
1100	110	26.63	28.38	19.25	5.7	4
1200	120	27.5	29.25	20.25	6.07	4
1300	130	28.63	30.38	20.88	6.07	4
1400	140	29.63	31.5	22	6.48	4
1500	150	30.13	32	22.5	6.61	4
1600	160	31.25	33.13	23.25	7.11	4
1700	170	31.88	33.75	24	7.23	4
1800	180	32.88	34.75	24.75	7.23	4
1900	190	33.5	35.88	25.38	7.61	4
2000	200	34.5	36.88	26.13	7.61	4
2500	250	37.75	40.13	29.13	8.61	4
3000	300	40.88	43.25	31.75	8.86	4
3500	350	43.88	47.25	34.38	9.61	4
4000	400	46.39	50.75	36.63	9.86	4
4500	450	48.88	52.25	38.88	10.61	4
5000	500	51.5	58.38	40.75	11.11	4

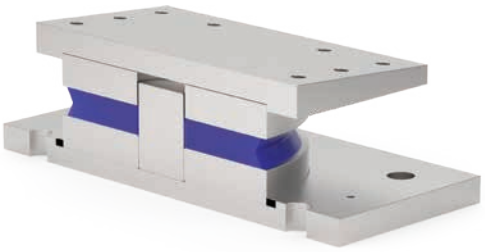
Metric Size Chart†

Load Capacity		Length	Width	Base	Height	Displacement
Vert.	Horz.	L	W	B	H	M
kN	kN	mm	mm	mm	mm	mm
444.82	44.48	295.40	276.35	165.10	81.28	101.60
889.64	88.96	361.95	342.90	212.85	87.63	101.60
1334.47	133.45	412.75	393.70	261.62	100.33	101.60
1779.29	177.93	457.20	444.50	301.75	106.68	101.60
2224.11	222.41	498.60	492.25	333.50	113.03	101.60
2668.93	266.89	530.35	530.35	361.95	116.08	101.60
3113.76	311.38	565.15	571.50	393.70	122.68	101.60
3558.58	355.86	593.85	612.90	419.10	132.08	101.60
4003.40	400.34	622.30	647.70	447.80	138.43	101.60
4448.22	444.82	654.05	685.80	466.85	138.43	101.60
4893.04	489.30	676.40	720.85	488.95	144.78	101.60
5337.87	533.79	698.50	742.95	514.35	154.18	101.60
5782.69	578.27	727.20	771.65	530.35	154.18	101.60
6227.51	622.75	752.60	800.10	558.80	164.59	101.60
6672.33	667.23	765.30	812.80	571.50	167.89	101.60
7117.15	711.72	793.75	841.50	590.55	180.59	101.60
7561.98	756.20	809.75	857.25	609.60	183.64	101.60
8006.80	800.68	835.15	882.65	628.65	183.64	101.60
8451.62	845.16	850.90	911.35	644.65	193.29	101.60
8896.44	889.64	876.30	936.75	663.70	193.29	101.60
11120.55	1112.06	958.85	1019.30	739.90	218.69	101.60
13344.66	1334.47	1038.35	1098.55	806.45	225.04	101.60
15568.78	1556.88	1114.55	1200.15	873.25	244.09	101.60
17792.89	1779.29	1178.31	1289.05	930.40	250.44	101.60
20017.00	2001.70	1241.55	1327.15	987.55	269.49	101.60
22241.11	2224.11	1308.10	1482.85	1035.05	282.19	101.60

†Overall bearing geometry subject to project plan requirements; catalog values represent nominal sizing only.

Fixed Disc Bearings

Disc Bearing Assemblies



Design Code: AASHTO LRFD Service Limit, 17th Edition

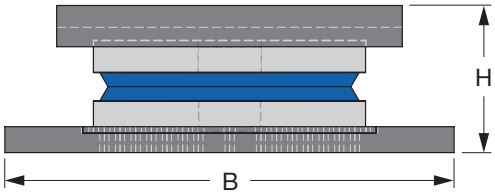
Standard Rotation: ±0.02 radians

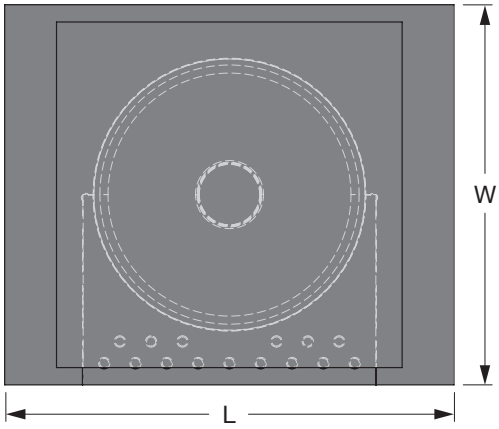
Horizontal Load Capacity: 10% of vertical load

Movement: X-Direction X = 0 inches
Y-Direction Y = 0 inches

Steel Yield Strength (Fy): **50 ksi typical** (ASTM A709 Gr.50)
(Dependent on bearing plan/detailed design)

Dimensions Key:
L - Sole Plate Length
W - Sole Plate Width
B - Width of Assembly Base
H - Height of Assembly





Imperial Size Chart†

Load Capacity		Length	Width	Base	Height
Vert.	Horz.	L	W	B	H
Kips	Kips	in.	in.	in.	in.
100	10	6.5	6.5	6.5	1.88
200	20	8.38	8.38	8.38	2.13
300	30	10.38	10.38	10.38	2.63
400	40	11.88	11.88	11.88	2.88
500	50	13.13	13.13	13.13	3.01
600	60	14.25	14.25	14.25	3.25
700	70	15.5	15.5	15.5	3.51
800	80	16.5	16.5	16.5	3.88
900	90	17.63	17.63	17.63	4.13
1000	100	18.38	18.38	18.38	4.13
1100	110	19.25	19.25	19.25	4.38
1200	120	20.25	20.25	20.25	4.75
1300	130	20.88	20.88	20.88	4.75
1400	140	22	22	22	5
1500	150	22.5	22.5	22.5	5.13
1600	160	23.25	23.25	23.25	5.63
1700	170	24	24	24	5.75
1800	180	24.75	24.75	24.75	5.75
1900	190	25.38	25.38	25.38	6.13
2000	200	26.13	26.13	26.13	6.13
2500	250	29.13	29.13	29.13	7
3000	300	31.75	31.75	31.75	7.13
3500	350	34.38	34.38	34.38	7.75
4000	400	36.63	36.63	36.63	8
4500	450	38.88	38.88	38.88	8.63
5000	500	40.75	40.75	40.75	8.76

Metric Size Chart†

Load Capacity		Length	Width	Base	Height
Vert.	Horz.	L	W	B	H
kN	kN	mm	mm	mm	mm
444.82	44.48	165.10	165.10	165.10	47.75
889.64	88.96	212.85	212.85	212.85	54.10
1334.47	133.45	263.65	263.65	263.65	66.80
1779.29	177.93	301.75	301.75	301.75	73.15
2224.11	222.41	333.50	333.50	333.50	76.45
2668.93	266.89	361.95	361.95	361.95	82.55
3113.76	311.38	393.70	393.70	393.70	89.15
3558.58	355.86	419.10	419.10	419.10	98.55
4003.40	400.34	447.80	447.80	447.80	104.90
4448.22	444.82	466.85	466.85	466.85	104.90
4893.04	489.30	488.95	488.95	488.95	111.25
5337.87	533.79	514.35	514.35	514.35	120.65
5782.69	578.27	530.35	530.35	530.35	120.65
6227.51	622.75	558.80	558.80	558.80	127.00
6672.33	667.23	571.50	571.50	571.50	130.30
7117.15	711.72	590.55	590.55	590.55	143.00
7561.98	756.20	609.60	609.60	609.60	146.05
8006.80	800.68	628.65	628.65	628.65	146.05
8451.62	845.16	644.65	644.65	644.65	155.70
8896.44	889.64	663.70	663.70	663.70	155.70
11120.55	1112.06	739.90	739.90	739.90	177.80
13344.66	1334.47	806.45	806.45	806.45	181.10
15568.78	1556.88	873.25	873.25	873.25	196.85
17792.89	1779.29	930.40	930.40	930.40	203.20
20017.00	2001.70	987.55	987.55	987.55	219.20
22241.11	2224.11	1035.05	1035.05	1035.05	222.50

†Overall bearing geometry subject to project plan requirements; catalog values represent nominal sizing only.

Lubron® TF Performance Properties

High Compressive Strength

LUBRON® TF bearing materials provide exceptional compressive strength, typically ranging from 3 to 10 ksi (21–69 MPa), and are capable of sustaining loads exceeding 60 ksi (414 MPa) without cold flow or permanent deformation.

Low Friction

PTFE fibers offer the lowest known coefficient of friction among engineering fibers. The static value is only slightly higher than the dynamic value, minimizing stick-slip behavior. **LUBRON® TF** spherical bearings typically exhibit a coefficient of friction below 0.04, depending on bearing load, temperature, sliding velocity, surface finish, and the hardness of the mating surface.

High Shear Resistance

The woven PTFE fabric used in **LUBRON® TF** bearings is permanently bonded to the metallic substrate. This bond resists a minimum of 25% of the allowable vertical load when subjected to horizontal shear, as tested in accordance with Federal Specification MMM-A-175, Method 1033.

Low Wear Rate

LUBRON® TF bearings provide extremely low wear, measured as volumetric material loss over time. Wear is proportional to unit pressure and sliding distance and is typically expressed as:

$$W = K \times P \times V \times T$$

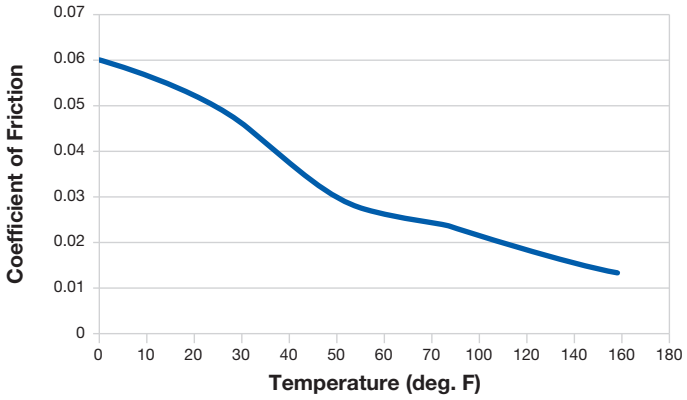
Where:

- **W** = wear depth (in or cm)
- **K** = proportionality constant (in^3-min/ft-lb-hr or cm^3-min/m-kg-hr)
- **P** = bearing pressure (psi or kg/cm^2)
- **V** = surface velocity (ft/min or m/min)
- **T** = time (hr)

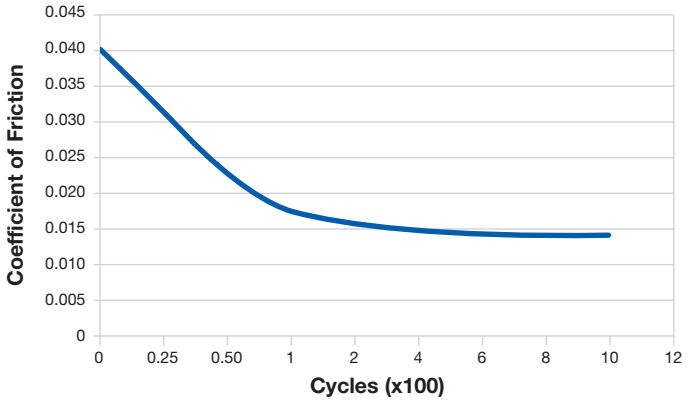
Independent testing has established **K = 9.1 × 10-10 in^3-min/ft-lb-hr** for most applications.

This corresponds to approximately 0.00045 in. of wear after **100,000 in. of travel** at a pressure of **3.5 ksi (24 MPa)**.

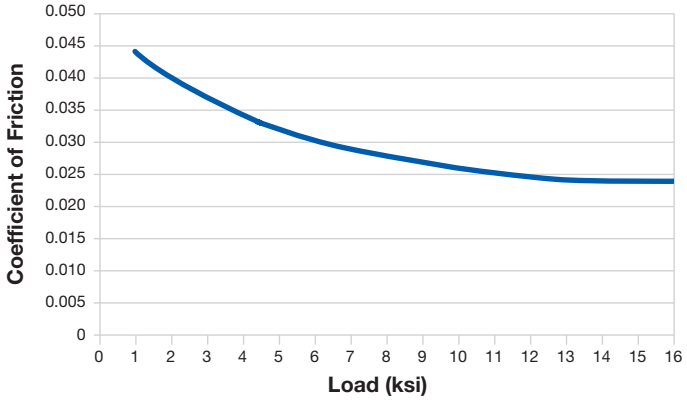
LUBRON® TF (17-4 PH Counter-face)
Coefficient of Friction vs Temperature @ 6000 psi



LUBRON® TF (304 SS Counter-face)
Coefficient of Frictionvv vs Cycles @ 6000 psi



LUBRON® TF (304 SS Counter-face)
Coefficient of Friction vs Load



Notes

Innovation. Commitment. Quality.

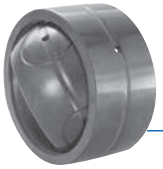
RBC Bearings® has been producing bearings in the USA since 1919. In addition to unique custom bearings, RBC Bearings® offers a full line of standard industrial and aerospace bearings, including:

Tapered Roller Thrust Bearings

Case-hardened tapered roller thrust bearings for oilfield top drives and swivels. Available in full complement, maximum capacity versions.

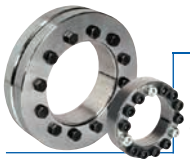
Cylindrical Roller Bearings

Cylindrical roller bearings designed for mud pump pinion and eccentric positions. Fully interchangeable to industry standards.



Spherical Plain Bearings

Radial, angular contact, extended inner ring, high misalignment. **QuadLube®, ImpactTuff®, SpreadLock® Seal, CrossLube®, DuraLube™,** and self-lubricating bearings. Available in inch and metric sizes.



Keyless Locking Devices

Mechanical bushings used to connect power transmission components onto rotating shafts. Without the use of keyways, KLDs eliminate the problems associated with backlash including fretting, corroding, and wallowing.

Self-Lubricating Bearings

Radial, thrust, rod ends, spherical bearings, high temperature, high loads. Available in inch and metric sizes. **Fiberglide®** self-lubricating bearings.

Ball Bearings

Precision ground, semiground, unground. High loads, long life, smooth operation. **Nice®** branded products are offered in caged and full complement configurations.

Thin Section Ball Bearings

Standard cross sections to one inch. Bore sizes to 40 inches. Stainless steel and other materials are available. Seals are available on all sizes and standard cross sections. Super duplex configurations.

Needle Roller Bearings

Pitchlign® caged heavy duty needle roller bearings ideal for cross head bearings applications. These double row bearings are available in single row and TandemRoller® versions.

Tapered Roller Bearings

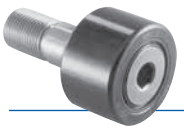
Single, double, & multi row versions available for main bearing positions in mud pumps, gear boxes, etc. Bearings are constructed of case hardened steel washers and rollers with bore size of 11” or greater.

Lubron® Bearings

Lubron® self-lubricating bearings designed and custom manufactured in most any size, material and bearing configuration. Applications include hydro power and water control, nuclear power generation, infrastructure, architecture, offshore marine, industrial, machinery and heavy equipment.

Rigid Couplings

Shaft couplings serve as components to time, join, or align shafts at lower speeds and torque, especially when zero backlash is desired. Made from mild steel with a black oxide finish type 303 stainless steel, or aluminum. Available in inch and metric sizes.



Cam Followers

Standard stud, heavy stud, yoke type, caged roller followers. Patented RBC Roller® cylindrical roller cam followers, HexLube® universal cam followers, airframe track rollers.

Commercial Rod Ends

Commercial and industrial, precision, Mil-Spec series, self-lubricating, and aircraft. Sold under the Heim®, Unibal®, and Spherco® names. Available in inch and metric sizes.

TP Series Bearings

RBC Bearings® TP Series cylindrical roller thrust bearings ideal for crane hooks, oil well swivels, winch systems, and gear boxes. Fully interchangeable with industry standard offering.

Shaft Collars

Used to position or locate a component on a shaft. Made from mild steel, type 303 or 316 stainless steel, aluminum, or acetal. Available in inch and metric sizes.

Specials

RBC Bearings® manufactures many specialty bearings for the aerospace, oil and energy, semiconductor equipment, packaging, transportation, and other industries.

PIC Design®

Complete line of precision gears, precision hardware, timing belts, pulleys, and linear motion systems. Industries served include industrial, aerospace, defense, medical, robotics and automation, material handling, and assembly. Custom design support for unique applications.

DODGE® NICE® CLIMAX™ METAL PRODUCTS COMPANY HE°M® BEARINGS RBC® BEARINGS PIC® DESIGN Lubron® SPHERCO® SCHAUBLIN®

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