SLEEVE BEARINGS

HOW TO ORDER SLEEVE BEARINGS

There are two ways to specify DODGE Sleeve Bearings. Most of the product offering have part numbers with listings shown throughout this catalog. Use of part numbers ensures accurate order processing.

When part numbers are not shown, the product may be specified by description or part name. This method is used when ordering units that include modifications or options. To order by description, use the nomenclature key shown on page 5 and add any special instructions to the end of the description for options not covered by the nomenclature.

SOLIDLUBE

Statically self-aligning, non-galling, solid-film lubricating for temperature extremes.

- 700 Series: -40° to 700°F
- 1,000 Series: -200° to -40°F; 250°F to 1,000°F
- 800 Series: -40° to 800°F

Also suitable for submerged and limited movement applications.

BABBITTED

Grease lubricated for moderate speeds and loads,ambient temperature to 130°F, babbitt accurately bored to insure even load distribution for conveyor shafts, heavy gear, and chain drives use.

BRONZE–BUSHED

Grease lubricated for moderate speeds, ambient temperature to 300°F and heavy loads or shock loads make the advantage of a precision replaceable bronze bushing desirable. Other liner material is available on a special order basis, such as bronze with graphite plugs, or phenolic resin on nylon.

BRONZOIL

Economical, statically self-aligning, and self-lubricating pillow blocks and four-bolt flange units for fans, light machinery, and other general use.

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NOMENCLATURE

Sleeve Bearings

SLEEVE BEARING NOMENCLATURE

P2B - PSEZ - 108 - W

HOUSINGS:

P2B	PILLOW BLOCK, 2 BOLT BASE
P4B	PILLOW BLOCK, 4 BOLT BASE
F2B	FLANGE, 2 BOLT
F4B	FLANGE, 4 BOLT
HNG	HANGER BEARING
NSTU	NARROW SLOT TAKE-UP
SCHB	SCREW CONVEYOR HANGER BEARING
WSTU	WIDE SLOT TAKE-UP
TB	TAPE BASE
FB	FLANGE BRACKET

STYLE:

BO	BRONZOIL
BASO	BABBITTED SOLID
BASP	BABBITTED SPLIT
BAR	BABBITTED RIGID
BAA	BABBITTED ANGLE
BAP	BABBITTED PLATE
BZSP	BRONZE BUSHED SPLIT
BZR	BRONZE BUSHED RIGID
BZA	BRONZE BUSHED ANGLE
LT7	SOLIDLUBE LT700 SERIES
LT10	SOLIDLUBE LT1000 SERIES
LTB7	SOLIDLUBE LOWER BACKING HEIGHT ON PILLOW BLOCKS FOR LT700 SERIES
LTB10	SOLIDLUBE LOWER BACKING HEIGHT ON PILLOW BLOCKS FOR LT1000 SERIES
LT7NP	SOLIDLUBE LT700 SERIES NICKEL PLATE
MM7	SOLIDLUBE MM700 SERIES
MM10	SOLIDLUBE MM1000 SERIES
PSEZ	POLYMER SLEEVE E-Z KLEEN
PSBEZ	POLYMER SLEEVE E-Z KLEEN LOW BACKING HEIGHT
PSUEZ	POLYMER SLEEVE E-Z KLEEN HIGH BACKING HEIGHT
LM8	SOLIDLUBE LM800 SERIES

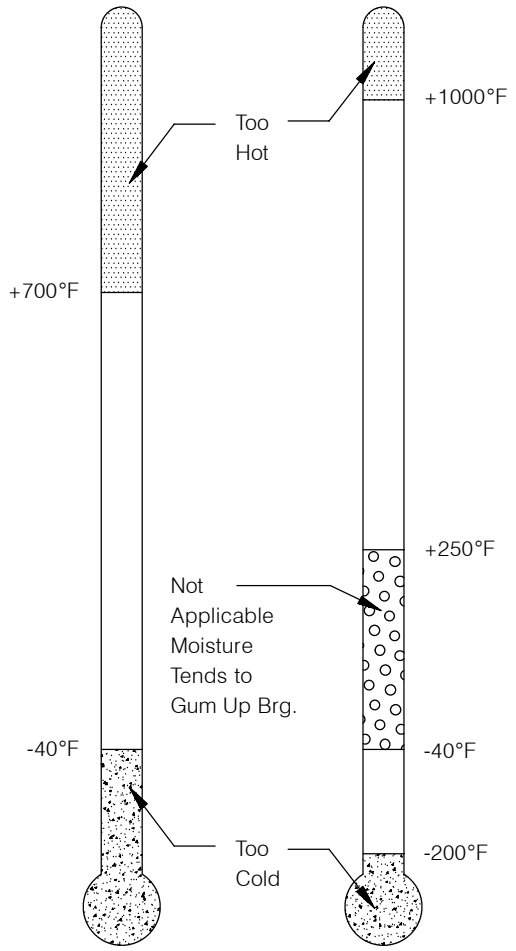
SHAFT SIZE:

115	FIRST DIGIT: NUMBER OF INCHES SECOND & THIRD DIGIT: SIXTEENTHS OF AN INCH 115 INDICATES 1 15/16
50M	FIRST TWO DIGITS: BORE IN MILLIMETERS M INDICATES METRIC

MODIFICATIONS/FEATURES:

P	WHITE POLYMER HOUSING

Sleeve Bearings—SOLIDLUBE – Inch



SOLIDLUBE Bearing Operating Temperature

Bearing Size

Select a bearing from tables for normal loads or loads in limited shaft movement applications having a radial load equal to or greater than the actual load. This simple method is all that is required for the majority of general machine applications using commercial steel shafting and operating in a dry atmosphere. (For more favorable conditions, ratings may be increased somewhat; consult factory). Shaft collars may be used for slight amounts of thrust. Generally the rule of 10% of the radial load applies. Dirty environments will reduce bearing life and should be avoided.

Shafting

Commercial steel shafting is good in applications where temperatures do not exceed 700°F. However, for extended bearing life, at any temperature, the shaft should be hardened to 35 Rockwell “C” or better. Shaft finish should be 10 to 20 micro-inches. A finish rougher than .50 will lessen bearing life. A finish smoother than 10 will not allow the optimum lubricant film to develop. Shaft tolerance should be +.000/-.002 for commercial steel shafting. If using other shaft materials, consult DODGE for the shaft tolerance and thermal expansion.

When commercial shafting is exposed to a corrosive media, it will oxidize. A rusty shaft will grow in the bearing, thus eliminating clearances. In this case stainless steel shafting may be used and/or provide for regularly scheduled movement of shaft. In elevated temperatures stainless grades such as 17-4, 15-5, or 13-8 are hardenable. Shafts can be spray coated with ceramic or hard chrome. This is good up to about 800°F. Check with your supplier, since these coatings can flake off when the coefficient of thermal expansion of the base material differs greatly from that of the coating.

High grade specialty shafting may be used in excess of 1000°F. It may be less expensive to use sleeves of this material on more economical shafting.

Noise or High Pitched Squeal

Carbon-graphite bushings can develop a high frequency vibration in resonance with the operating system to cause noise. Dampening or change of resonant frequency of the shaft is required to eliminate noise.

Specials

SOLIDLUBE bearings or bearings made from alternate bushing materials such as polymers, fibers, bronze, etc. for unusual operating and load conditions are available on a specially engineered basis by supplying the following:

- Shaft size, material and rpm.
- Normal load, shock load and frequency.
- Direction of load.
- Ambient temperature and atmospheric conditions (water, dirt, corrosive, etc.)
- Type of bearing: pillow block, flange bearing, etc.
- Housing material desired.
- Quantity.

End Closures

Ball Bearing end Closures are available.

Note: SOLIDLUBE bearings are not designed for rotating housing applications

Sleeve Bearings—SOLIDLUBE – Inch

SOLIDLUBE 700,1000 and 800 Series

SOLIDLUBE Bearing 700 and 1000 Radial Load Ratings in Pounds (Normal Loads)

Shaft Size	Radial Load Ratings in Pounds at various Revolutions per Minute Shaft Size											
	Up to 10	25	50	75	100	150	200	250	300	350	400	450
3/4	560	560	560	560	560	380	285	230	190	165	145	125
7/8, 15/16, 1	750	750	750	750	610	405	315	245	205	175	155	130
1-1/8, 1-3/16	1050	1050	1050	908	680	450	340	270	225	190	170	150
1-1/4, 1-3/8, 1-7/16, 1-1/2	1610	1610	1610	1140	855	570	430	340	280	245	215	190
1-11/16, 1-3/4	1980	1980	1790	1190	895	595	440	390	295	255	220	200
1-15/16, 2	2360	2360	1860	1240	930	620	465	370	310	265	235	205
2-3/16	2870	2870	2010	1340	1000	670	500	400	335	285	250	225
2-7/16, 2-1/2	3760	3760	2360	1580	1180	795	590	475	390	340	295	265
2-15/16, 3	5970	5970	3120	2070	1560	1040	780	625	515	445	390	345
3-7/16, 3-1/2	9100	8010	4000	2670	2000	1340	1000	800	670	570	500	445
3-15/16, 4	11800	9160	4590	3060	2290	1530	1150	930	765	665	575	510
4-7/16, 4-1/2	15200	10300	5150	3440	2580	1720	1290	1030	860	740	645	...
4-15/16, 5	18400	11400	5710	3810	2860	1910	1430	1140	955	815	...	...

Shaft Size	500	550	600	700	800	900	1000	1100	1300	1600	1900	2200	2500
3/4	110	105	96	82	72	64	57	52	44	35	30	26	22
7/8, 15/16, 1	120	110	105	90	80	70	60	54	47	38	32		
1-1/8, 1-3/16	135	125	115	97	85	75	68	62	42	42			
1-1/4, 1-3/8, 1-7/16, 1-1/2	170	155	145	120	105	95	86	78	66				
1-11/16, 1-3/4	180	165	150	130	110	99	89	81					
1-15/16, 2	185	170	155	135	115	105							
2-3/16	200	180	165	145	125								
2-7/16, 2-1/2	235	215	195	170									
2-15/16, 3	345	315	290										
3-7/16, 3-1/2	400	365											

NOTE: The above ratings apply to all base loaded pillow blocks, all cylindrical units and flange type bearings (up to 700°F). For flange bearings operating at temperatures above 700°F, cap and side loading of pillow blocks consult Application Engineering. For operation speeds below heavy line, use LT1000 and/or hardened shaft.

SOLIDLUBE Bearing Corrosion (Chemical) Resistance

Type of Chem.	Chemical	Bearing Series	
		LM800 700	1000
Acids and Acidic Solutions	Mineral (Non-Oxidizing)	★	★
	Mineral (Oxidizing)	■	★
	Inorganic Salts (Acid Forming)	★	★
	Organic (Strong)	★	★
	Organic (Weak) pH 3-7	★	★
	Organic Salts (Acid Forming)	★	★
Alkalis (Bases & Alkaline Solutions	Mineral (Non-Oxidizing)	★	★
	Mineral(Oxidizing)	s	★
	Inorganic Salts (Base Forming)	★	★
	Organic (Strong)	★	★
	Weak organic Bases pH 7-11	★	★
Gases	Acid	★	★
	Alkaline (Base)	★	★
	Anhydrous (Dew Point below -30°F.)	s	s
	Cyrogenic(Liquefied)	■	⁘
	Inert	★	★
	Oxidizing	■	⁘
	Reducing	★	★
Salts	Acid Salts	s	s
	Alkaline Salts	s	s
	Metals	★	★
	Neutral Salts	■	⁘
	Neutral Salt Solutions	★	★
Solvents	Aliphatic	★	★
	Aromatic	★	★
	Chlorinated, Fluorinated	★	★
	Oxygenated, Sulfides	★	★

★ Good. No known interaction; compatible.
s Questionable (depends on conditions).
■ Not recommended.

Note: For compatibility of specific chemicals contact Application Engineering.

700 and 1000 Series SOLIDLUBE Bearing Radial Load Rating in Pounds (Limited Shaft Movement Applications) s

Shaft Size	Max. Radial Load		Max. Thrust
	Base Loaded	Cap or Side Loading	
3/4	1100	775	56
7/8, 15/16, 1	1500	795	75
1-1/8, 1-3/16	2100	820	105
1-1/4, 1-3/8, 1-7/16, 1-1/2	3200	1710	161
1-11/16, 1-3/4	4000	1905	198
1-15/16, 2	4700	1920	236
2-3/16	5700	1900	287
2-7/16, 2-1/2	7500	2360	376
2-15/16, 3	12,000	4151	597

s Use only when shaft movement is limited to approx. ±90°. Movement is infrequent as opposed to continuous and maximum bearing temperature is 700°F.

LM800 Radial Load Ratings

Bearing Size	Max. Radial Base Load	Max. Radial Cap Load
3/4	560	560
1	750	600
1-1/4	1610	600
1-1/2	1610	600

Note: These load ratings are to be used only when shaft rotation is less than 10 RPM and temperature does not exceed 800°F. Maximum allowable thrust load is 50 lbs.

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SOLIDLUBE
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