

MOSTUF NW

High Performance
Composite
Bearing



MOSTUF NW

*High Performance
Composite
Bearing*

Maintenance-free / Wear-resistant / Environmentally-friendly

E and J Trading Pty Ltd

www.ejtrading.com.au

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MOSTUF NW

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1. Introduction

There has been a gradual increase in demand for an environmentally-friendly sliding bearing material which is maintenance-free and operates under harsh conditions. This is in response to contamination caused by grease and oil required by existing materials.

MOSTUF NW Bearing is a self-lubricating sliding material, with high load-carrying capacity, and is ideal for operating under slow speed rotating, oscillating and reciprocating movements.

MOSTUF NW Bearings have excellent sliding performance in applications where lubrication is not possible/not permitted as they maintain good wear resistance and low coefficient of friction.

1.1 Characteristics and Advantages

- No need for lubrication
- Maintenance-free in dry operation
- Self-lubricating design
- Low coefficient of friction and wear-resistant
- High load-carrying capacity
- High PV capacity
- Negligible stick-slip
- Corrosion-resistant
- Non-metallic material

1.2 Applications



1.3 Technical Data of MOSTUF NW Composite Bearing

Bearing properties			Value
Permissible load	static	MPa	210
	dynamic	MPa	140
Maximum sliding speed	dry	m/s	0.10
Maximum PV value	dry	MPa.m/s	2.80
Coefficient of friction ¹⁾	dry		0.03~0.20
Temperature range	max	℃	+160
	min	℃	-100
Thermal expansion	hoop	/K	13x10 ⁻⁶
	axial	/K	29x10 ⁻⁶
Thermal conductivity		W/MK	0.40
Density		g/cm ³	2.03
Water absorption (24h immersion)		%	0.11

Type of maintenance	maintenance-free
Shaft tolerance	h7 (h8)
Housing tolerance	H7
Shaft roughness Ra, μm	0.15 ~ 0.40
Shaft hardness, min. HRC ²⁾	35

Operating life :

Dry running	++
Grease and oil lubrication	+
Low friction	++

excellent (++) , good (+)

Table 1. Technical data of MOSTUF NW Bearing

- 1) The stated friction coefficients are based on our test rigs under test conditions. Actual operating environments may vary the properties of our products. We can offer customer-specific friction and wear tests on request.
- 2) For optimum conditions, the shaft should be hardened. To increase loads, the hardness of the shaft should be at least 55 HRC.

2. Material

2.1 Structure

MOSTUF NW Bearing has a twin layer structure. The inner layer is composed of special woven synthetic fiber and PTFE. The outer layer has high strength continuous glass fibers which are impregnated with epoxy resin in special filament winding at specific angles to provide strength.

The inner layer (bearing layer) has very low coefficient of friction and excellent wear-resist performance.

The outer layer (backing layer) is capable of supporting high-load and shock loading generated by the shaft.

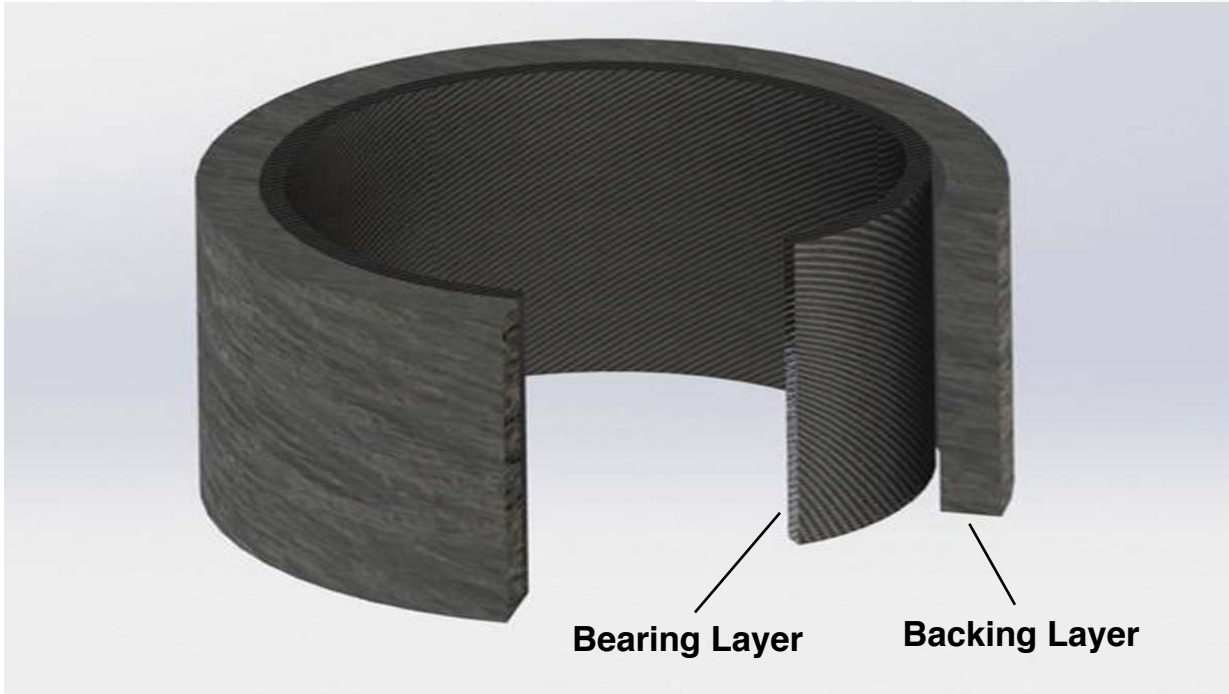


Fig 1. Structure of MOSTUF NW



2.2 Chemical Resistance

MOSTUF Bearings are highly resistant to corrosive environments. Table 2 shows its resistance to various media at room temperature.

Solvents		Salts	
Acetone	○	Ammonium chloride	○
Toluene	○	Ammonium nitride	○
Methyl ethyl ketone	○	Ammonium sulphate	○
Trichloroethane	X	Iron chloride	○
Benzene	X	Magnesium sulphate	○
Alcohols		Sodium acetate	○
Methyl alcohol	○	Sodium carbonate	○
Ethyl alcohol	○	Acids 10%	
Propyl alcohol	○	Acetic acid	○
Isopropyl alcohol	○	Boric acid	○
Hydroxy acetone	○	Hydrochloric acid	○
Allyl alcohol	X	Sulphuric acid	○
Butyl alcohol	X	Citric acid	○
Oils		Carbonic acid	X
Gear oil	○	Nitric acid	X
Motor oil	○	Hydrofluoric acid	X
Hydraulic oil	○	Bases	
Linseed oil	○	Sodium hydroxide	○
Cotton seed oil	○	Calcium hydroxide	○
Fuels		Ammonium hydroxide	○
Kerosene	○	Magnesium hydroxide	○
Diesel	○	Others	
Petrol	○	Freon	○
Gases		Formaldehyde	○
Butane	○	Sodium nitride	○
Ozone	○	Ethyl glycol	○
Nitrogen	○	Water 20℃	○
Hydrogen	○	Zinc sulphate	○
Acetylene	○	Ammonia	X
Natural gas	○	Water 100℃	X
Carbon dioxide	○		
Fluorine	X		
Chlorine	X		

○ : resistant X : not resistant

Table 2. Chemical resistance properties of MOSTUF NW Bearing

3. Performance

3.1 Friction and Wear Characteristics

Friction and wear characteristics of the bearing is subjected to the influences of various factors such as:

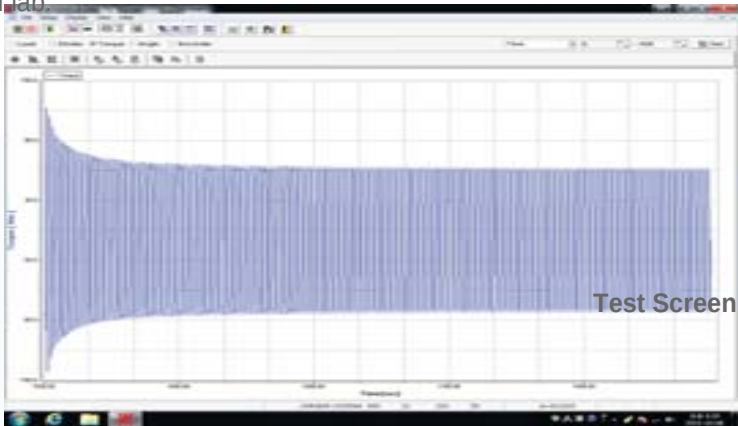
- Specific load
- PV factor
- Shaft material
- Surface roughness of shaft
- Temperature
- Other environmental factors (e.g. dust, lubrication)



Fig 2. Friction and wear test rig at SOLTRI lab.

Fig. 3 shows the friction characteristics under 140 MPa, 0.0199m/s and non-lubricated condition with 1,000,000 cycle. The Initial static coefficient of friction is 0.10, the dynamic coefficient of friction in steady state is between 0.038 to 0.047.

The coefficient of friction on Mostuf NW Bearing is 0.03 ~ 0.20, tested in a number of conditions. It showed a tendency of coefficient of friction decreasing as the load is increased.



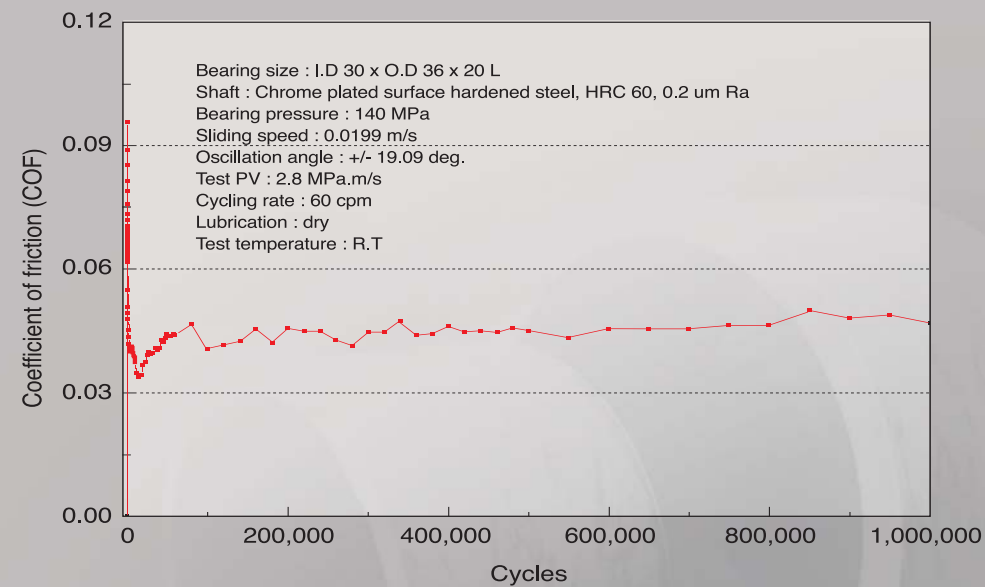


Fig 3. Coefficient of friction on MOSTUF NW bearing as a function of oscillation cycles

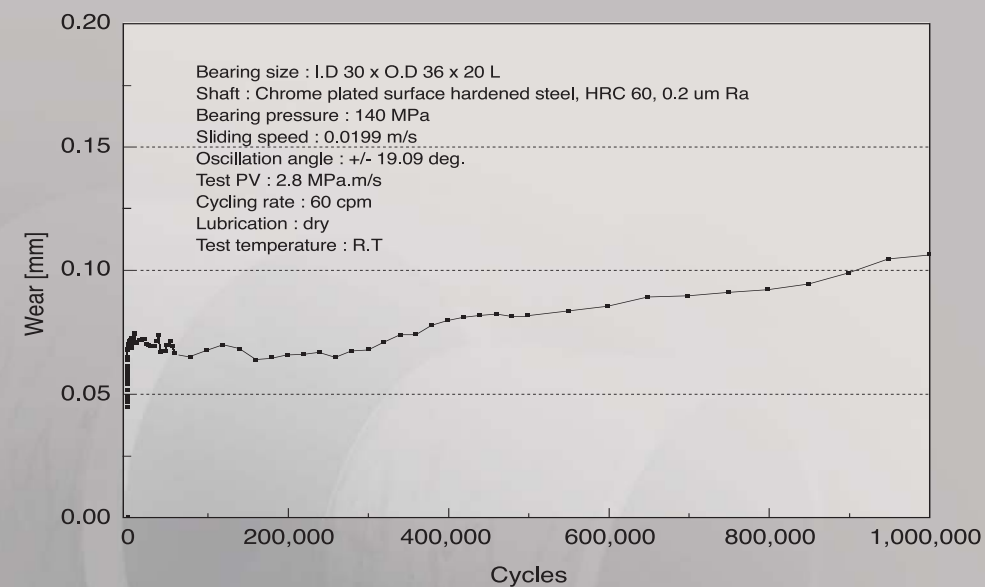


Fig.4 Wear of MOSTUF NW bearing as a function of oscillation cycles

Fig.4 shows that the wear resistance with 1,000,000 cycles under the same condition. The initial wear in the start-up stage show relatively rapid increase as the self-lubricating boundary layer is created. Once transfer film is formed on the test shaft, the coefficient of friction rapidly decreased and reached a stable state, as did the wear rate maintaining a steady state until the test was completed.

3.2 Bearing Pressure

Bearing surface pressure is defined as the maximum load applied to the projected bearing area. Load capacity will decline as temperature rises ; this is influenced by type of the applied load.

Best operating load is obtained under uniform load conditions. Performance will decline when the condition generates a fatigue stress, such as dynamic load and oscillating movement.

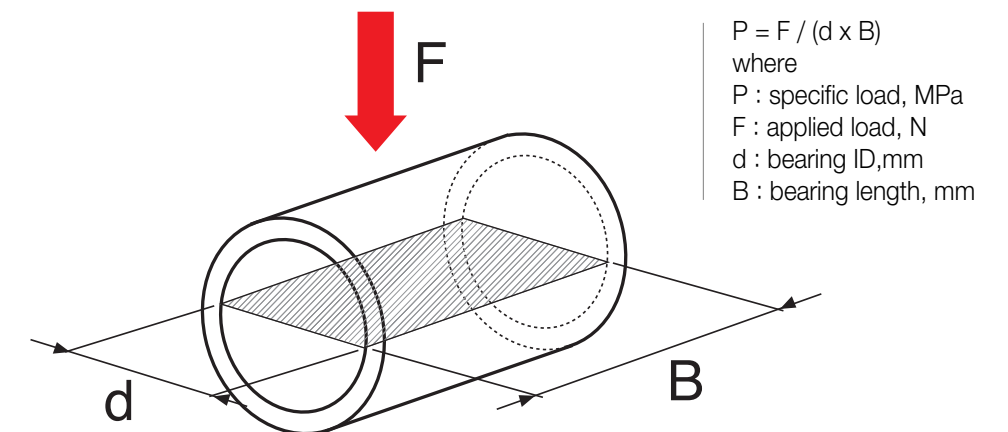


Fig.5 Projected area of bearing

3.3 Sliding Velocity

Maximum permitted sliding velocity of MOSTUF NW bearing is 0.1m/s. Best performance is obtained when operating at low speed in high load applications. High bearing speed, and resulting frictional heat, decreases bearing pressure, and lowers the maximum allowable bearing pressure.

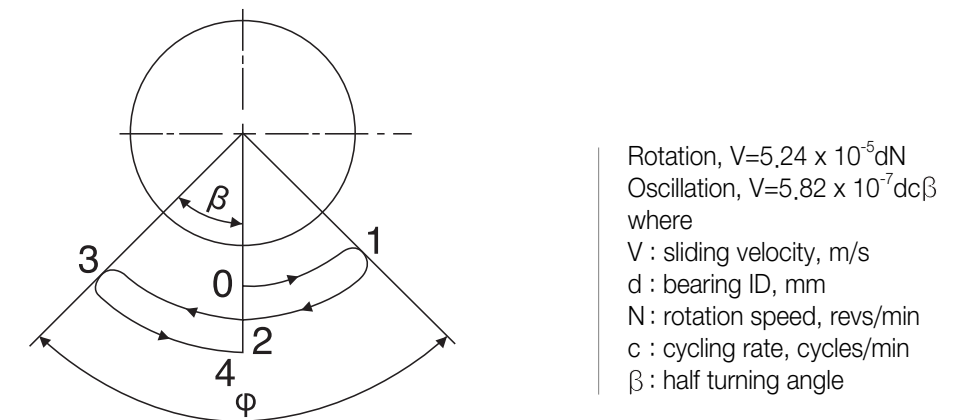


Fig.6 Angle of oscillation

3.4 *Bearing PV*

PV is a measure of performance of the bearing. PV value is obtained by multiplying the bearing surface pressure and speed, and is used to determine the life of the bearing. It also represents frictional heat generated in the bearing contact zone. Maximum allowable PV limit of MOSTUF NW bearing is 2.8 MPa.m/s. If PV limit is exceeded, frictional heat and wear rate will increase at a more rapid rate.

3.5 *Bearing Design Proportions*

In designing the bearing, the ideal Length to inside diameter (L/d) ratio to maximize the performance of the bearing is in the range of 0.5 to 2.0. Ratio within this range allow wear debris to be easily ejected out of the bearing, and the bearing is still able to accommodate shaft deflection and misalignment.

It is not recommended to have L/d values greater than 2.0. If necessary, it is advisable to consider installing two bearings with a small gap between them. If the value of the L/d is less than 0.5, there is a possibility for some cracking on the edge of bearing due to stress concentrations.

3.6 *Shaft Material and Surface Finish*

Since the shaft is a highly significant part of the bearing assembly, the importance of optimized shaft material cannot be overemphasized. Surface hardness and roughness of the shaft has a significant influence on the performance of the bearing.

The hardness of shaft should be minimum 35 HRC and roughness should be minimum 0.2~0.4 μmRa in order to minimize wear rate while maintaining low coefficient of friction.

In order to ensure optimal operating conditions, it would be ideal to use heat treated shaft. To use in a high load operating condition, it is recommended to choose a shaft with a hardness greater than HRC 55.

Mostuf NW bearing does not require any lubrication, so there is no need to worry about lubrication and shaft seizure. We recommend chrome plated steel or stainless steel shafts. The best way to increase durability of equipment is to use nitride-hardened shaft.

3.7 *Lubrication, sealing and contamination*

MOSTUF NW bearings are recommended for use in dry conditions without lubrication.

During the bearing running-in process, PTFE particles are transferred from the sliding layer to the mating surface. The bearings can achieve a long operating life after successful running-in process.

Any lubrication of MOSTUF NW bearings after running-in will impair the transferred layer of bearing and considerably reduce the operating life of the bearings.

Generally, Mostuf NW Bush can be used without sealing. But proper sealing is required in case of contamination inside of bush (ingress of contaminant).

During handling or assembly process, bush has to be handled carefully not to be contaminated by hydraulic oil or any kinds of oils because it caused the possibility of stick-slip by changing the friction characteristic of bush.

4. Installation

Mostuf NW bearing should be press-fitted into housing by utilizing a mandrel (see Fig.7). The chamfer of the mandrel must be rounded.

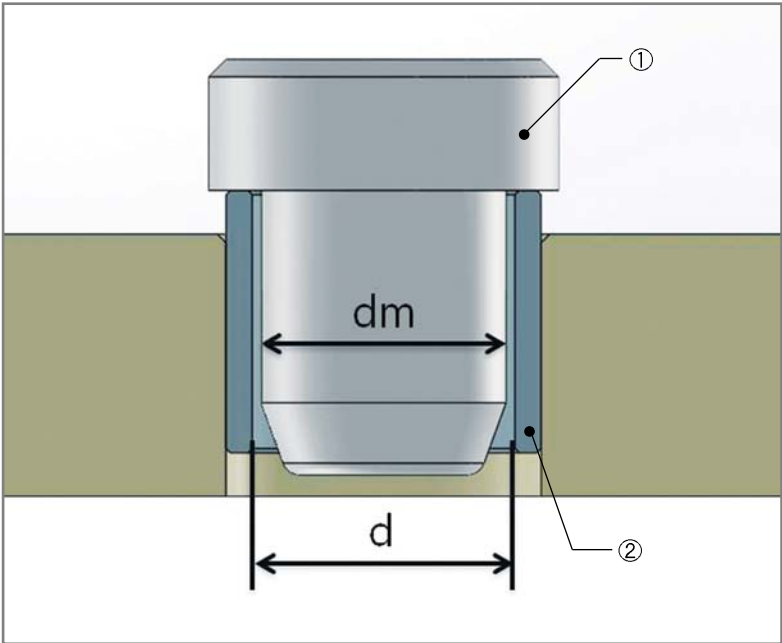
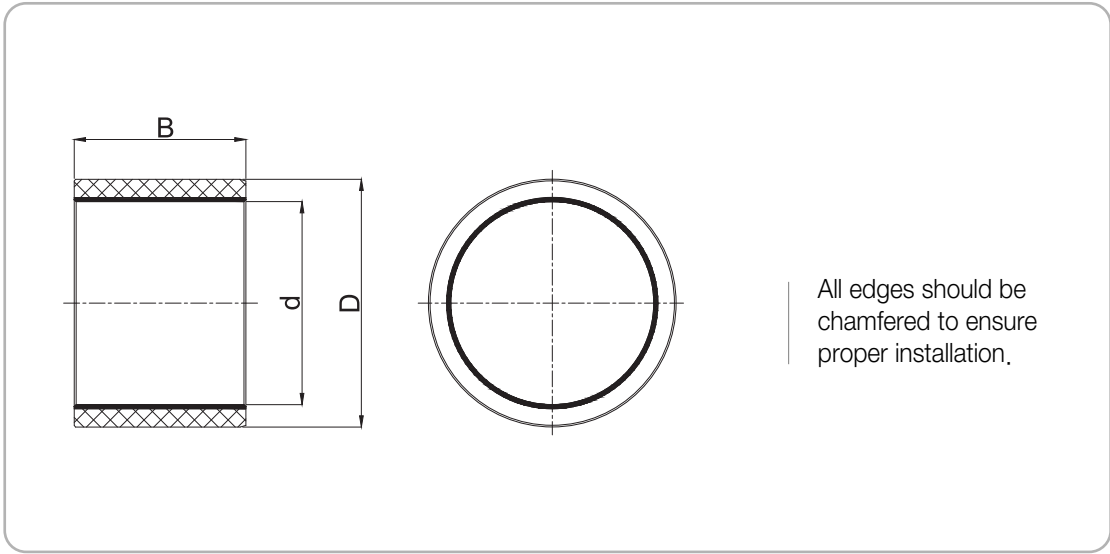


Fig.7 Installation by fitting mandrel

- ① Fitting mandrel
 $d_m = d - 0.3 \text{ mm to } -0.5 \text{ mm}$
- ② Composite bearing

5. Part Numbering



1. Metric size

NWM 303620
MOSTUF NW bearing standard product, $d=30$ $D=36$ $B=20 \text{ mm}$

2. Inch size

NWI 3236 - 016
MOSTUF NW bearing standard product, $d=2''$ $D=2.25''$ $B=1''$

NWG 2428 - 024, NWP 2428 - 024
MOSTUF NW bearing option product, $d=1.5''$ $D=1.75''$ $B=1.5''$

3. Length tolerance (B)

metric		B		
		$\leq 75 \text{ mm}$	$> 75 \text{ to } < 150 \text{ mm}$	$\geq 150 \text{ mm}$
d	$\leq 75 \text{ mm}$	-0.50 mm	-1.00 mm	-1.50 mm
	$> 75 \text{ to } \leq 150 \text{ mm}$	-1.00 mm	-1.00 mm	-1.50 mm

inch		B		
		$< 3 \text{ inch}$	$\geq 3 \text{ to } < 6 \text{ inch}$	$\geq 6 \text{ inch}$
d	$< 3 \text{ inch}$	$\pm 0.010 \text{ inch}$	$\pm 0.020 \text{ inch}$	$\pm 0.030 \text{ inch}$
	$\geq 3 \text{ to } < 6 \text{ inch}$	$\pm 0.020 \text{ inch}$	$\pm 0.020 \text{ inch}$	$\pm 0.030 \text{ inch}$



MOSTUF NW Bearing (metric size) - standard products, NWM XXXXXX

Bearing part number	d	D	B	Shaft (h7)	Housing (H7)	Inside Diameter after pressing-in		Running clearance	
						min	max	min	max
NWM 2024-XXX	20 ^{+0.194 +0.110}	24 ^{+0.068 +0.035}	15,20,30	20 ^{0 -0.021}	24 ^{+0.021 0}	20.042	20.18	0.042	0.201
NWM 2530-XXX	25 ^{+0.194 +0.110}	30 ^{+0.068 +0.035}	20,30,40	25 ^{0 -0.021}	30 ^{+0.021 0}	25.042	25.18	0.042	0.201
NWM 2834-XXX	28 ^{+0.194 +0.110}	34 ^{+0.082 +0.043}	20,30,40	28 ^{0 -0.021}	34 ^{+0.025 0}	28.028	28.176	0.028	0.197
NWM 3036-XXX	30 ^{+0.194 +0.110}	36 ^{+0.082 +0.043}	20,30,40	30 ^{0 -0.021}	36 ^{+0.025 0}	30.028	30.176	0.028	0.197
NWM 3541-XXX	35 ^{+0.220 +0.120}	41 ^{+0.082 +0.043}	30,40,50	35 ^{0 -0.025}	41 ^{+0.025 0}	35.038	35.202	0.038	0.227
NWM 4048-XXX	40 ^{+0.220 +0.120}	48 ^{+0.082 +0.043}	30,40,60	40 ^{0 -0.025}	48 ^{+0.025 0}	40.038	40.202	0.038	0.227
NWM 4553-XXX	45 ^{+0.230 +0.130}	53 ^{+0.099 +0.053}	30,40,60	45 ^{0 -0.025}	53 ^{+0.030 0}	45.031	45.207	0.031	0.232
NWM 5058-XXX	50 ^{+0.230 +0.130}	58 ^{+0.099 +0.053}	40,50,60	50 ^{0 -0.025}	58 ^{+0.030 0}	50.031	50.207	0.031	0.232
NWM 5563-XXX	55 ^{+0.260 +0.140}	63 ^{+0.099 +0.053}	40,50,70	55 ^{0 -0.030}	63 ^{+0.030 0}	55.041	55.237	0.041	0.267
NWM 6070-XXX	60 ^{+0.260 +0.140}	70 ^{+0.105 +0.059}	40,60,80	60 ^{0 -0.030}	70 ^{+0.030 0}	60.035	60.231	0.035	0.261
NWM 6575-XXX	65 ^{+0.260 +0.140}	75 ^{+0.105 +0.059}	50,60,80	65 ^{0 -0.030}	75 ^{+0.030 0}	65.035	65.231	0.035	0.261
NWM 7080-XXX	70 ^{+0.270 +0.150}	80 ^{+0.105 +0.059}	50,70,90	70 ^{0 -0.030}	80 ^{+0.030 0}	70.045	70.241	0.045	0.271
NWM 7585-XXX	75 ^{+0.270 +0.150}	85 ^{+0.125 +0.071}	50,70,90	75 ^{0 -0.030}	85 ^{+0.035 0}	75.025	75.234	0.025	0.264
NWM 8090-XXX	80 ^{+0.270 +0.150}	90 ^{+0.125 +0.071}	60,80,100	80 ^{0 -0.030}	90 ^{+0.035 0}	80.025	80.234	0.025	0.264
NWM 8595-XXX	85 ^{+0.310 +0.170}	95 ^{+0.125 +0.071}	60,80,100	85 ^{0 -0.035}	95 ^{+0.035 0}	85.045	85.274	0.045	0.309
NWM 90105-XXX	90 ^{+0.310 +0.170}	105 ^{+0.133 +0.079}	60,80,120	90 ^{0 -0.035}	105 ^{+0.035 0}	90.037	90.266	0.037	0.301
NWM 95110-XXX	95 ^{+0.310 +0.170}	110 ^{+0.133 +0.079}	60,100,120	95 ^{0 -0.035}	110 ^{+0.035 0}	95.037	95.266	0.037	0.301
NWM 100115-XXX	100 ^{+0.310 +0.170}	115 ^{+0.133 +0.079}	80,100,120	100 ^{0 -0.035}	115 ^{+0.035 0}	100.037	100.266	0.037	0.301
NWM 105120-XXX	105 ^{+0.320 +0.180}	120 ^{+0.133 +0.079}	80,100,120	105 ^{0 -0.035}	120 ^{+0.035 0}	105.047	105.276	0.047	0.311
NWM 110125-XXX	110 ^{+0.320 +0.180}	125 ^{+0.155 +0.092}	80,100,120	110 ^{0 -0.035}	125 ^{+0.040 0}	110.025	110.268	0.025	0.303
NWM 120135-XXX	120 ^{+0.320 +0.180}	135 ^{+0.155 +0.092}	100,120,150	120 ^{0 -0.035}	135 ^{+0.040 0}	120.025	120.268	0.025	0.303
NWM 130145-XXX	130 ^{+0.360 +0.200}	145 ^{+0.163 +0.100}	100,120,150	130 ^{0 -0.040}	145 ^{+0.040 0}	130.037	130.300	0.037	0.340
NWM 140155-XXX	140 ^{+0.360 +0.200}	155 ^{+0.163 +0.100}	100,150,180	140 ^{0 -0.040}	155 ^{+0.040 0}	140.037	140.300	0.037	0.340
NWM 150165-XXX	150 ^{+0.370 +0.210}	165 ^{+0.171 +0.108}	120,150,180	150 ^{0 -0.040}	165 ^{+0.040 0}	150.039	150.302	0.039	0.342

NWI Series - 1/8"

1/8" wall series - MOSTUF NW Bearing (inch sizes) - standard products, NWI XXXX-XXX

Bearing part number	Nominal Size	d	D	Recommended Housing Bore	Press Fit	Recommended Shaft Size
NWI 0812-XXX	1/2 x 3/4	0.5040 0.5020	0.7515 0.7505	0.7500 0.7495	0.0020 0.0005	0.4990 0.4985
NWI 1014-XXX	5/8 x 7/8	0.6290 0.6270	0.8765 0.8755	0.8750 0.8745	0.0020 0.0005	0.6240 0.6235
NWI 1216-XXX	3/4 x 1	0.7555 0.7525	1.0025 1.0005	1.0000 0.9995	0.0030 0.0005	0.7490 0.7485
NWI 1418-XXX	7/8 x 1-1/8	0.8805 0.8775	1.1275 1.1255	1.1250 1.1245	0.0030 0.0005	0.8745 0.8740
NWI 1620-XXX	1 x 1-1/4	1.0055 1.0025	1.2525 1.2505	1.2500 1.2495	0.0030 0.0005	0.9990 0.9985
NWI 1822-XXX	1-1/8 x 1-3/8	1.1335 1.1305	1.3785 1.3765	1.3750 1.3745	0.0040 0.0015	1.1250 1.1245
NWI 2024-XXX	1-1/4 x 1-1/2	1.2555 1.2525	1.5025 1.5005	1.5000 1.4995	0.0030 0.0005	1.2490 1.2485
NWI 2226-XXX	1-3/8 x 1-5/8	1.3830 1.3790	1.6285 1.6265	1.6250 1.6245	0.0040 0.0015	1.3745 1.3735
NWI 2428-XXX	1-1/2 x 1-3/4	1.5080 1.5040	1.7535 1.7515	1.7500 1.7495	0.0040 0.0015	1.4995 1.4990
NWI 2630-XXX	1-5/8 x 1-7/8	1.6330 1.6290	1.8785 1.8765	1.8750 1.8745	0.0040 0.0015	1.6245 1.6240
NWI 2832-XXX	1-3/4 x 2	1.7580 1.7540	2.0035 2.0015	2.0000 1.9995	0.0040 0.0015	1.7495 1.7490
NWI 3236-XXX	2 x 2-1/4	2.0080 2.0040	2.2535 2.2515	2.2505 2.2495	0.0040 0.0010	1.9995 1.9985
NWI 3640-XXX	2-1/4 x 2-1/2	2.2580 2.2540	2.5040 2.5020	2.5005 2.4995	0.0045 0.0015	2.2490 2.2485
NWI 3842-XXX	2-3/8 x 2-5/8	2.3850 2.3810	2.6290 2.6270	2.6255 2.6245	0.0045 0.0015	2.3750 2.3740
NWI 4044-XXX	2-1/2 x 2-3/4	2.5100 2.5060	2.7540 2.7520	2.7505 2.7495	0.0045 0.0015	2.4995 2.4985
NWI 4246-XXX	2-5/8 x 2-7/8	2.6370 2.6330	2.8790 2.8770	2.8755 2.8745	0.0045 0.0015	2.6245 2.6235
NWI 4448-XXX	2-3/4 x 3	2.7620 2.7580	3.0040 3.0020	3.0005 2.9990	0.0050 0.0015	2.7495 2.7485
NWI 4852-XXX	3 x 3-1/4	3.0140 3.0100	3.2540 3.2520	3.2505 3.2490	0.0050 0.0015	2.9995 2.9985
NWI 5256-XXX	3-1/4 x 3-1/2	3.2640 3.2600	3.5040 3.5020	3.5010 3.4990	0.0050 0.0010	3.2495 3.2485
NWI 5660-XXX	3-1/2 x 3-3/4	3.5140 3.5100	3.7540 3.7520	3.7510 3.7490	0.0050 0.0010	3.4995 3.4985
NWI 6064-XXX	3-3/4 x 4	3.7640 3.7600	4.0040 4.0020	4.0010 3.9990	0.0050 0.0010	3.7495 3.7485
NWI 6468-XXX	4 x 4-1/4	4.0140 4.0100	4.2540 4.2520	4.2510 4.2490	0.0050 0.0010	3.9995 3.9985
NWI 6872-XXX	4-1/4 x 4-1/2	4.2640 4.2600	4.5040 4.5020	4.5010 4.4990	0.0050 0.0015	4.2495 4.2485
NWI 7276-XXX	4-1/2 x 4-3/4	4.5140 4.5100	4.7540 4.7520	4.7510 4.7490	0.0050 0.0010	4.4995 4.4985
NWI 7680-XXX	4-3/4 x 5	4.7640 4.7600	5.0040 5.0020	5.0010 4.9990	0.0050 0.0010	4.7495 4.7485
NWI 8084-XXX	5 x 5-1/4	5.0140 5.0100	5.2540 5.2520	5.2510 5.2490	0.0050 0.0010	4.9995 4.9985

NWG Series - 1/8"

1/8" wall series - MOSTUF NW Bearing (inch sizes) - option products, NWG XXXX-XXX

Bearing part number	Nominal Size	d	D	Recommended Housing Bore	Recommended Shaft Size	Running Clearance
NWG 0812-XXX	1/2 x 3/4	0.5070	0.7535	0.7505	0.5000	0.0065
		0.5040	0.7515	0.7500	0.4995	0.0005
NWG 1014-XXX	5/8 x 7/8	0.6320	0.8785	0.8755	0.6250	0.0065
		0.6290	0.8765	0.8750	0.6245	0.0005
NWG 1216-XXX	3/4 x 1	0.7570	1.0035	1.0005	0.7500	0.0065
		0.7540	1.0015	1.0000	0.7495	0.0005
NWG 1418-XXX	7/8 x 1-1/8	0.8820	1.1285	1.1255	0.8750	0.0065
		0.8790	1.1265	1.1250	0.8745	0.0005
NWG 1620-XXX	1 x 1-1/4	1.0070	1.2535	1.2505	1.0000	0.0065
		1.0040	1.2515	1.2500	0.9995	0.0005
NWG 1822-XXX	1-1/8 x 1-3/8	1.1320	1.3785	1.3755	1.1250	0.0065
		1.1290	1.3765	1.3750	1.1245	0.0005
NWG 2024-XXX	1-1/4 x 1-1/2	1.2570	1.5035	1.5005	1.2500	0.0065
		1.2540	1.5015	1.5000	1.2495	0.0005
NWG 2226-XXX	1-3/8 x 1-5/8	1.3820	1.6285	1.6255	1.3750	0.0065
		1.3790	1.6265	1.6250	1.3745	0.0005
NWG 2428-XXX	1-1/2 x 1-3/4	1.5070	1.7535	1.7505	1.5000	0.0065
		1.5040	1.7515	1.7500	1.4995	0.0005
NWG 2630-XXX	1-5/8 x 1-7/8	1.6320	1.8785	1.8755	1.6250	0.0065
		1.6290	1.8765	1.8750	1.6245	0.0005
NWG 2832-XXX	1-3/4 x 2	1.7580	2.0035	2.0005	1.7500	0.0075
		1.7550	2.0015	2.0000	1.7495	0.0015
NWG 3034-XXX	1-7/8 x 2-1/8	1.8830	2.1285	2.1255	1.8750	0.0075
		1.8800	2.1265	2.1250	1.8745	0.0015
NWG 3236-XXX	2 x 2-1/4	2.0095	2.2545	2.2510	2.0000	0.0085
		2.0055	2.2525	2.2500	1.9995	0.0010
NWG 3438-XXX	2-1/8 x 2-3/8	2.1345	2.3795	2.3760	2.1250	0.0085
		2.1305	2.3775	2.3750	2.1245	0.0010
NWG 3640-XXX	2-1/4 x 2-1/2	2.2595	2.5045	2.5010	2.2500	0.0085
		2.2555	2.5025	2.5000	2.2495	0.0010
NWG 3842-XXX	2-3/8 x 2-5/8	2.3845	2.6295	2.6260	2.3750	0.0090
		2.3805	2.6275	2.6250	2.3740	0.0010
NWG 4044-XXX	2-1/2 x 2-3/4	2.5100	2.7545	2.7510	2.5000	0.0095
		2.5060	2.7525	2.7500	2.4990	0.0015
NWG 4448-XXX	2-3/4 x 3	2.7600	3.0050	3.0015	2.7500	0.0095
		2.7560	3.0030	3.0000	2.7490	0.0010
NWG 4852-XXX	3 x 3-1/4	3.0105	3.2550	3.2515	3.0000	0.0100
		3.0065	3.2530	3.2500	2.9990	0.0015
NWG 5256-XXX	3-1/4 x 3-1/2	3.2605	3.5055	3.5020	3.2500	0.0100
		3.2565	3.5035	3.5000	3.2490	0.0010
NWG 5660-XXX	3-1/2 x 3-3/4	3.5105	3.7555	3.7520	3.5000	0.0100
		3.5065	3.7535	3.7500	3.4990	0.0010
NWG 6064-XXX	3-3/4 x 4	3.7605	4.0055	4.0020	3.7500	0.0100
		3.7565	4.0035	4.0000	3.7490	0.0010
NWG 6468-XXX	4 x 4-1/4	4.0140	4.2570	4.2520	4.0000	0.0130
		4.0090	4.2540	4.2500	3.9990	0.0020
NWG 6872-XXX	4-1/4 x 4-1/2	4.2640	4.5070	4.5020	4.2500	0.0130
		4.2590	4.5040	4.5000	4.2490	0.0020
NWG 7276-XXX	4-1/2 x 4-3/4	4.5140	4.7570	4.7520	4.5000	0.0130
		4.5090	4.7540	4.7500	4.4990	0.0020
NWG 7680-XXX	4-3/4 x 5	4.7640	5.0070	5.0020	4.7500	0.0130
		4.7590	5.0040	5.0000	4.7490	0.0020
NWG 8084-XXX	5 x 5-1/4	5.0140	5.2570	5.2520	5.0000	0.0130
		5.0090	5.2540	5.2500	4.9990	0.0020

NWP Series - 1/8"

1/8" wall series - MOSTUF NW Bearing (inch sizes) - option products, NWP XXXX-XXX

Bearing part number	Nominal Size	d	D	Recommended Housing Bore	Press Fit	Recommended Shaft Size	Running Clearance
NWP 0812-XXX	1/2 x 3/4	0.5088	0.7545	0.7520	0.0045	0.5000	0.0103
		0.5058	0.7525	0.7500	0.0005	0.4980	0.0013
NWP 1014-XXX	5/8 x 7/8	0.6339	0.8796	0.8770	0.0046	0.6230	0.0104
		0.6309	0.8776	0.8750	0.0005	0.6250	0.0013
NWP 1216-XXX	3/4 x 1	0.7590	1.0046	1.0020	0.0046	0.7500	0.0104
		0.7560	1.0026	1.0000	0.0006	0.7480	0.0014
NWP 1418-XXX	7/8 x 1-1/8	0.8841	1.1297	1.1270	0.0047	0.8750	0.0105
		0.8811	1.1277	1.1250	0.0006	0.8730	0.0014
NWP 1620-XXX	1 x 1-1/4	1.0092	1.2547	1.2520	0.0047	1.0000	0.0105
		1.0062	1.2527	1.2500	0.0007	0.9980	0.0015
NWP 1822-XXX	1-1/8 x 1-3/8	1.1344	1.3798	1.3770	0.0048	1.1250	0.0107
		1.1314	1.3778	1.3750	0.0007	1.1230	0.0016
NWP 2024-XXX	1-1/4 x 1-1/2	1.2594	1.5048	1.5020	0.0048	1.2500	0.0106
		1.2564	1.5028	1.5000	0.0008	1.2480	0.0016
NWP 2226-XXX	1-3/8 x 1-5/8	1.3856	1.6299	1.6270	0.0049	1.3750	0.0117
		1.3816	1.6279	1.6250	0.0008	1.3730	0.0017
NWP 2428-XXX	1-1/2 x 1-3/4	1.5107	1.7549	1.7520	0.0049	1.5000	0.0118
		1.5067	1.7529	1.7500	0.0009	1.4980	0.0018
NWP 2630-XXX	1-5/8 x 1-7/8	1.6358	1.8800	1.8770	0.0050	1.6250	0.0118
		1.6318	1.8780	1.8750	0.0009	1.6230	0.0018
NWP 2832-XXX	1-3/4 x 2	1.7609	2.0050	2.0020	0.0050	1.7500	0.0119
		1.7569	2.0030	2.0000	0.0010	1.7480	0.0019
NWP 3034-XXX	1-7/8 x 2-1/8	1.8860	2.1301	2.1270	0.0051	1.8750	0.0119
		1.8820	2.1281	2.1250	0.0011	1.8730	0.0019
NWP 3236-XXX	2 x 2-1/4	2.0111	2.2551	2.2520	0.0051	2.0000	0.0120
		2.0071	2.2531	2.2500	0.0011	1.9980	0.0020
NWP 3438-XXX	2-1/8 x 2-3/8	2.1373	2.3812	2.3780	0.0062	2.1250	0.0132
		2.1333	2.3792	2.3750	0.0012	2.1230	0.0021
NWP 3640-XXX	2-1/4 x 2-1/2	2.2623	2.5062	2.5030	0.0062	2.2500	0.0131
		2.2583	2.5042	2.5000	0.0012	2.2480	0.0021
NWP 3842-XXX	2-3/8 x 2-5/8	2.3875	2.6313	2.6280	0.0063	2.3750	0.0132
		2.3835	2.6293	2.6250	0.0013	2.3730	0.0022
NWP 4044-XXX	2-1/2 x 2-3/4	2.5126	2.7563	2.7530	0.0063	2.5000	0.0133
		2.5086	2.7543	2.7500	0.0013	2.4980	0.0023
NWP 4448-XXX	2-3/4 x 3	2.7628	3.0064	3.0030	0.0064	2.7500	0.0144
		2.7588	3.0044	3.0000	0.0014	2.7470	0.0024
NWP 4852-XXX	3 x 3-1/4	3.0130	3.2565	3.2530	0.0065	3.0000	0.0145
		3.0090	3.2545	3.2500	0.0015	2.9970	0.0025
NWP 5256-XXX	3-1/4 x 3-1/2	3.2632	3.5066	3.5030	0.0066	3.2500	0.0146
		3.2592	3.5046	3.5000	0.0016	3.2470	0.0026
NWP 5660-XXX	3-1/2 x 3-3/4	3.5135	3.7567	3.7530	0.0067	3.5000	0.0148
		3.5095	3.7547	3.7500	0.0017	3.4970	0.0028
NWP 6064-XXX	3-3/4 x 4	3.7637	4.0068	4.0030	0.0068	3.7500	0.0149
		3.7597	4.0048	4.0000	0.0018	3.7470	0.0029
NWP 6468-XXX	4 x 4-1/4	4.0139	4.2569	4.2530	0.0069	4.0000	0.0150
		4.0099	4.2549	4.2500	0.0019	3.9970	0.0030
NWP 6872-XXX	4-1/4 x 4-1/2	4.2641	4.5070	4.5030	0.0070	4.2500	0.0151
		4.2601	4.5050	4.5000	0.0020	4.2470	0.0031
NWP 7276-XXX	4-1/2 x 4-3/4	4.5144	4.7571	4.7530	0.0071	4.5000	0.0153
		4.5104	4.7551	4.7500	0.0021	4.4970	0.0033
NWP 7680-XXX	4-3/4 x 5	4.7646	5.0072	5.0030	0.0072	4.7500	0.0154
		4.7606	5.0052	5.0000	0.0022	4.7470	0.0034
NWP 8084-XXX	5 x 5-1/4	5.0148	5.2573	5.2530	0.0073	5.0000	0.0155
		5.0108	5.2553	5.2500	0.0023	4.9970	0.0035

NWI Series - 1/4"

1/4" wall series - MOSTUF NW Bearing (inch sizes) - standard products, NWI XXXX-XXX

Bearing part number	Nominal Size	d	D	Recommended Housing Bore	Press Fit	Recommended Shaft Size
NWI 0816-XXX	1/2 x 1	0.5040	1.0025	1.0000	0.0030	0.4990
		0.5020	1.0005	0.9995	0.0005	0.4985
NWI 1018-XXX	5/8 x 1-1/8	0.6290	1.1275	1.1250	0.0030	0.6240
		0.6270	1.1255	1.1245	0.0005	0.6235
NWI 1220-XXX	3/4 x 1-1/4	0.7555	1.2525	1.2500	0.0030	0.7490
		0.7525	1.2505	1.2495	0.0005	0.7485
NWI 1422-XXX	7/8 x 1-3/8	0.8805	1.3785	1.3750	0.0040	0.8745
		0.8775	1.3765	1.3745	0.0015	0.8740
NWI 1624-XXX	1 x 1-1/2	1.0055	1.5025	1.5000	0.0030	0.9990
		1.0025	1.5005	1.4995	0.0005	0.9985
NWI 1826-XXX	1-1/8 x 1-5/8	1.1335	1.6285	1.6250	0.0040	1.1250
		1.1305	1.6265	1.6245	0.0015	1.1245
NWI 2028-XXX	1-1/4 x 1-3/4	1.2555	1.7535	1.7500	0.0040	1.2490
		1.2525	1.7515	1.7495	0.0015	1.2485
NWI 2230-XXX	1-3/8 x 1-7/8	1.3830	1.8785	1.8750	0.0040	1.3745
		1.3790	1.8765	1.8745	0.0015	1.3740
NWI 2432-XXX	1-1/2 x 2	1.5080	2.0035	2.0000	0.0040	1.4995
		1.5040	2.0015	1.9995	0.0015	1.4990
NWI 2634-XXX	1-5/8 x 2-1/8	1.6330	2.1285	2.1255	0.0040	1.6246
		1.6290	2.1265	2.1245	0.0015	1.6240
NWI 2836-XXX	1-3/4 x 2-1/4	1.7580	2.2535	2.2505	0.0040	1.7495
		1.7540	2.2515	2.2495	0.0010	1.7490
NWI 3240-XXX	2 x 2-1/2	2.0080	2.5040	2.5005	0.0045	1.9995
		2.0040	2.5020	2.4995	0.0015	1.9985
NWI 3644-XXX	2-1/4 x 2-3/4	2.2580	2.7540	2.7505	0.0045	2.2490
		2.2540	2.7520	2.7495	0.0015	2.2480
NWI 3846-XXX	2-3/8 x 2-7/8	2.3850	2.8790	2.8755	0.0045	2.3750
		2.3810	2.8770	2.8745	0.0015	2.3740
NWI 4048-XXX	2-1/2 x 3	2.5100	3.0040	3.0005	0.0050	2.4995
		2.5060	3.0020	2.9990	0.0015	2.4990
NWI 4250-XXX	2-5/8 x 3-1/8	2.6370	3.1290	3.1255	0.0050	2.6245
		2.6330	3.1270	3.1240	0.0015	2.6240
NWI 4452-XXX	2-3/4 x 3-1/4	2.7620	3.2540	3.2505	0.0050	2.7495
		2.7580	3.2520	3.2490	0.0015	2.7485
NWI 4856-XXX	3 x 3-1/2	3.0140	3.5040	3.5010	0.0050	2.9995
		3.0100	3.5020	3.4990	0.0010	2.9985
NWI 5260-XXX	3-1/4 x 3-3/4	3.2640	3.7540	3.7510	0.0050	3.2495
		3.2600	3.7520	3.7490	0.0010	3.2485
NWI 5664-XXX	3-1/2 x 4	3.5140	4.0040	4.0010	0.0050	3.4995
		3.5100	4.0020	3.9990	0.0010	3.4985
NWI 6068-XXX	3-3/4 x 4-1/4	3.7640	4.2540	4.2510	0.0050	3.7495
		3.7600	4.2520	4.2490	0.0010	3.7485
NWI 6472-XXX	4 x 4-1/2	4.0140	4.5040	4.5010	0.0050	3.9995
		4.0100	4.5020	4.4990	0.0010	3.9985
NWI 6876-XXX	4-1/4 x 4-3/4	4.2640	4.7540	4.7510	0.0050	4.2495
		4.2600	4.7520	4.7490	0.0010	4.2485
NWI 7280-XXX	4-1/2 x 5	4.5140	5.0040	5.0010	0.0050	4.4995
		4.5100	5.0020	4.9990	0.0010	4.4985
NWI 7684-XXX	4-3/4 x 5-1/4	4.7640	5.2540	5.2510	0.0050	4.7495
		4.7600	5.2520	5.2490	0.0010	4.7485
NWI 8088-XXX	5 x 5-1/2	5.0140	5.5040	5.5010	0.0050	4.9995
		5.0100	5.5020	5.4990	0.0010	4.9985

NWG Series - 1/4"

1/4" wall series - MOSTUF NW Bearing (inch sizes) - option products, NWG XXXX-XXX

Bearing part number	Nominal Size	d	D	Recommended Housing Bore	Recommended Shaft Size	Running Clearance
NWG 0816-XXX	1/2 x 1	0.5070	1.0035	1.0005	0.5000	0.0065
		0.5040	1.0015	1.0000	0.4995	0.0005
NWG 1018-XXX	5/8 x 1-1/8	0.6320	1.1285	1.1255	0.6250	0.0065
		0.6290	1.1265	1.1250	0.6245	0.0005
NWG 1220-XXX	3/4 x 1-1/4	0.7570	1.2535	1.2505	0.7500	0.0065
		0.7540	1.2515	1.2500	0.7495	0.0005
NWG 1422-XXX	7/8 x 1-3/8	0.8820	1.3785	1.3755	0.8750	0.0065
		0.8790	1.3765	1.3750	0.8745	0.0005
NWG 1624-XXX	1 x 1-1/2	1.0070	1.5035	1.5005	1.0000	0.0065
		1.0040	1.5015	1.5000	0.9995	0.0005
NWG 1826-XXX	1-1/8 x 1-5/8	1.1320	1.6285	1.6255	1.1250	0.0065
		1.1290	1.6265	1.6250	1.1245	0.0005
NWG 2028-XXX	1-1/4 x 1-3/4	1.2570	1.7535	1.7505	1.2500	0.0065
		1.2540	1.7515	1.7500	1.2495	0.0005
NWG 2230-XXX	1-3/8 x 1-7/8	1.3820	1.8785	1.8755	1.3750	0.0065
		1.3790	1.8765	1.8750	1.3745	0.0005
NWG 2432-XXX	1-1/2 x 2	1.5070	2.0035	2.0005	1.5000	0.0065
		1.5040	2.0015	2.0000	1.4995	0.0005
NWG 2634-XXX	1-5/8 x 2-1/8	1.6320	2.1285	2.1255	1.6250	0.0065
		1.6290	2.1265	2.1250	1.6245	0.0005
NWG 2836-XXX	1-3/4 x 2-1/4	1.7580	2.2545	2.2510	1.7500	0.0070
		1.7550	2.2525	2.2500	1.7495	0.0005
NWG 3038-XXX	1-7/8 x 2-3/8	1.8830	2.3795	2.3760	1.8750	0.0070
		1.8800	2.3775	2.3750	1.8745	0.0005
NWG 3240-XXX	2 x 2-1/2	2.0095	2.5045	2.5010	2.0000	0.0085
		2.0055	2.5025	2.5000	1.9995	0.0010
NWG 3442-XXX	2-1/8 x 2-5/8	2.1345	2.6295	2.6260	2.1250	0.0085
		2.1305	2.6275	2.6250	2.1245	0.0010
NWG 3644-XXX	2-1/4 x 2-3/4	2.2595	2.7545	2.7510	2.2500	0.0085
		2.2555	2.7525	2.7500	2.2495	0.0010
NWG 3846-XXX	2-3/8 x 2-7/8	2.3845	2.8795	2.8760	2.3750	0.0090
		2.3805	2.8775	2.8750	2.3740	0.0010
NWG 4048-XXX	2-1/2 x 3	2.5100	3.0050	3.0015	2.5000	0.0095
		2.5060	3.0030	3.0000	2.4990	0.0010
NWG 4452-XXX	2-3/4 x 3-1/4	2.7600	3.2550	3.2515	2.7500	0.0095
		2.7560	3.2530	3.2500	2.7490	0.0010
NWG 4856-XXX	3 x 3-1/2	3.0105	3.5055	3.5020	3.0000	0.0100
		3.0065	3.5035	3.5000	2.9990	0.0010
NWG 5260-XXX	3-1/4 x 3-3/4	3.2605	3.7555	3.7520	3.2500	0.0100
		3.2565	3.7535	3.7500	3.2490	0.0010
NWG 5664-XXX	3-1/2 x 4	3.5105	4.0055	4.0020	3.5000	0.0100
		3.5065	4.0035	4.0000	3.4990	0.0010
NWG 6068-XXX	3-3/4 x 4-1/4	3.7605	4.2555	4.2520	3.7500	0.0100
		3.7565	4.2535	4.2500	3.7490	0.0010
NWG 6472-XXX	4 x 4-1/2	4.0140	4.5070	4.5020	4.0000	0.0130
		4.0090	4.5040	4.5000	3.9990	0.0020
NWG 6876-XXX	4-1/4 x 4-3/4	4.2640	4.7570	4.7520	4.2500	0.0130
		4.2590	4.7540	4.7500	4.2490	0.0020
NWG 7280-XXX	4-1/2 x 5	4.5140	5.0070	5.0020	4.5000	0.0130
		4.5090	5.0040	5.0000	4.4990	0.0020
NWG 7684-XXX	4-3/4 x 5-1/4	4.7640	5.2570	5.2520	4.7500	0.0130
		4.7590	5.2540	5.2500	4.7490	0.0020
NWG 8088-XXX	5 x 5-1/2	5.0140	5.5070	5.5020	5.0000	0.0130
		5.0090	5.5040	5.5000	4.9990	0.0020

NWP Series - 1/4"

1/4" wall series - MOSTUF NW Bearing (inch sizes) - option products, NWP XXXX-XXX

	Nominal Size	d	D	Recommended Housing Bore	Press Fit	Recommended Shaft Size	Running Clearance
NWP 0816-□	1/2 x 1	0.5088	1.0045	1.0020	0.0045	0.5000	0.0103
		0.5058	1.0025	1.0000	0.0005	0.4980	0.0013
	5/8 x 1-1/8	0.6339	1.1296	1.1270	0.0046	0.6250	0.0104
		0.6309	1.1276	1.1250	0.0005	0.6230	0.0013
	3/4 x 1-1/4	0.7590	1.2546	1.2520	0.0046	0.7500	0.0104
		0.7560	1.2526	1.2500	0.0006	0.7480	0.0014
	7/8 x 1-3/8	0.8841	1.3797	1.3770	0.0047	0.8750	0.0105
		0.8811	1.3777	1.3750	0.0006	0.8730	0.0014
	1 x 1-1/2	1.0092	1.5047	1.5020	0.0047	1.0000	0.0105
		1.0062	1.5027	1.5000	0.0007	0.9980	0.0015
	1-1/8 x 1-5/8	1.1344	1.6298	1.6270	0.0048	1.1250	0.0107
		1.1314	1.6278	1.6250	0.0007	1.1230	0.0016
	1-1/4 x 1-3/4	1.2594	1.7548	1.7520	0.0048	1.2500	0.0106
		1.2564	1.7528	1.7500	0.0008	1.2480	0.0016
	1-3/8 x 1-7/8	1.3856	1.8799	1.8770	0.0049	1.3750	0.0117
		1.3816	1.8779	1.8750	0.0008	1.3730	0.0017
	1-1/2 x 2	1.5107	2.0049	2.0020	0.0049	1.5000	0.0118
		1.5067	2.0029	2.0000	0.0009	1.4980	0.0018
	1-5/8 x 2-1/8	1.6358	2.1300	2.1270	0.0050	1.6250	0.0118
		1.6318	2.1280	2.1250	0.0009	1.6230	0.0018
	1-3/4 x 2-1/4	1.7609	2.2550	2.2520	0.0050	1.7500	0.0119
		1.7569	2.2530	2.2500	0.0010	1.7480	0.0019
	1-7/8 x 2-3/8	1.8860	2.3801	2.3770	0.0051	1.8750	0.0119
		1.8820	2.3781	2.3750	0.0011	1.8730	0.0019
	2 x 2-1/2	2.0111	2.5051	2.5020	0.0051	2.0000	0.0120
		2.0071	2.5031	2.5000	0.0011	1.9980	0.0020
	2-1/8 x 2-5/8	2.1373	2.6312	2.6280	0.0062	2.1250	0.0132
		2.1333	2.6292	2.6250	0.0012	2.1230	0.0021
	2-1/4 x 2-3/4	2.2623	2.7562	2.7530	0.0062	2.2500	0.0131
		2.2583	2.7542	2.7500	0.0012	2.2480	0.0021
	2-3/8 x 2-7/8	2.3875	2.8813	2.8780	0.0063	2.3750	0.0132
		2.3835	2.8793	2.8750	0.0013	2.3730	0.0022
	2-1/2 x 3	2.5126	3.0063	3.0030	0.0063	2.5000	0.0133
		2.5086	3.0043	3.0000	0.0013	2.4980	0.0023
	2-3/4 x 3-1/4	2.7628	3.2564	3.2530	0.0064	2.7500	0.0144
		2.7588	3.2544	3.2500	0.0014	2.7470	0.0024
	3 x 3-1/2	3.0130	3.5065	3.5030	0.0065	3.0000	0.0145
		3.0090	3.5045	3.5000	0.0015	2.9970	0.0025
	3-1/4 x 3-3/4	3.2632	3.7566	3.7530	0.0066	3.2500	0.0146
		3.2592	3.7546	3.7500	0.0016	3.2470	0.0026
	3-1/2 x 4	3.5135	4.0067	4.0030	0.0067	3.5000	0.0148
		3.5095	4.0047	4.0000	0.0017	3.4970	0.0028
	3-3/4 x 4-1/4	3.7637	4.2568	4.2530	0.0068	3.7500	0.0149
		3.7597	4.2548	4.2500	0.0018	3.7470	0.0029
	4 x 4-1/2	4.0139	4.5069	4.5030	0.0069	4.0000	0.0150
		4.0099	4.5049	4.5000	0.0019	3.9970	0.0030
	4-1/4 x 4-3/4	4.2641	4.7570	4.7530	0.0070	4.2500	0.0151
		4.2601	4.7550	4.7500	0.0020	4.2470	0.0031
	4-1/2 x 5	4.5144	5.0071	5.0030	0.0071	4.5000	0.0153
		4.5104	5.0051	5.0000	0.0021	4.4970	0.0033
	4-3/4 x 5-1/4	4.7646	5.2572	5.2530	0.0072	4.7500	0.0154
		4.7606	5.2552	5.2500	0.0022	4.7470	0.0034
	5 x 5-1/2	5.0148	5.5073	5.5030	0.0073	5.0000	0.0155
		5.0108	5.5053	5.5000	0.0023	4.9970	0.0035

(Data for bearing design)

적용 부분에 대한 설명		Description of application		☐	기존설계	Existing design
				☐	신규설계	New design
				Quantity / Month		
☐	요동운동	Oscillating motion	☐	회전운동	Rotational motion	☐
					직선운동	Liner motion

Dimensions [mm or inch]		Operating time	
Inner diameter		Continuous operation	☐
Outer diameter		Intermittent operation	☐
Length (B)		Operating Period (day / year)	
Shaft		Environmental conditions	
Housing		(°C) Ambient Temperature	
		(°C) Max. Temp.	
		(°C) Min. Temp.	
		Lubrication	
		Contamination	
Loading			
Static	☐		
Dynamic	☐		
Alternating	☐		
Impact	☐		
Radial load (kN)			
Mating Material			
Material			
Hardness (HRC)			
Roughness (Ra,um)			
Surface treatment			
Motion			
Rotational speed (rpm)			
Half turning angle (°,)			
Oscillating frequency (cycles/min)			
Length of stroke			
Frequency of stroke (/min)			