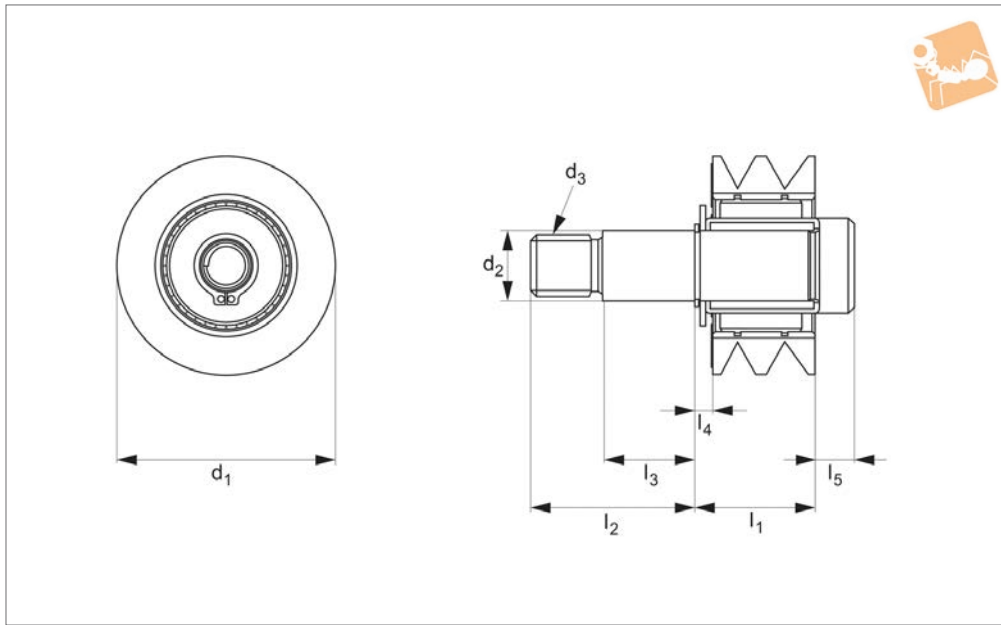




Finned Roller clutch bearing



P2778

MATERIAL HANDLING

Material

Nitrile, urethane or neoprene bonded to a steel insert. Hardness from 20-60 durometer (Shore A).

Technical Notes

A clutch bearing allows the roller to turn in only one direction. Available in left or right hand rotation (with the stud pointed

upwards, a right hand rotation turns clockwise.

Type R = right hand clutch bearing.

Type L = left hand clutch bearing.

Supplied with type I bearings, please see technical page for more information on bearings.

Tips

Finned rollers have grooves on the surface, creating less surface contact with the workpiece, and allowing dirt, debris and liquid to pass.

No. of fins:

$l_1 = 23,37$ 3 fins

$l_1 = 49,28$ 6 fins

Order No.	Material	Duro.	Type	d ₁	l ₁	d ₂ +0.05	d ₃	l ₂	l ₃	l ₄	l ₅
P2778.20A-20NI-R	Nitrile	20	R	50.80	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.41
P2778.20A-35NI-R	Nitrile	35	R	50.80	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.41
P2778.20A-60NI-R	Nitrile	60	R	50.80	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.41
P2778.20A-20NI-L	Nitrile	20	L	50.80	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.41
P2778.20A-35NI-L	Nitrile	35	L	50.80	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.41
P2778.20A-60NI-L	Nitrile	60	L	50.80	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.41
P2778.20B-20NI-R	Nitrile	20	R	50.80	49.28	15.77	1/2-13"	31.75	23.62	10.42	-
P2778.20B-35NI-R	Nitrile	35	R	50.80	49.28	15.77	1/2-13"	31.75	23.62	10.42	-
P2778.20B-60NI-R	Nitrile	60	R	50.80	49.28	15.77	1/2-13"	31.75	23.62	10.42	-
P2778.20B-20NI-L	Nitrile	20	L	50.80	49.28	15.77	1/2-13"	31.75	23.62	10.42	-
P2778.20B-35NI-L	Nitrile	35	L	50.80	49.28	15.77	1/2-13"	31.75	23.62	10.42	-
P2778.20B-60NI-L	Nitrile	60	L	50.80	49.28	15.77	1/2-13"	31.75	23.62	10.42	-
P2778.25A-20NI-R	Nitrile	20	R	63.50	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.42
P2778.25A-35NI-R	Nitrile	35	R	63.50	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.42
P2778.25A-60NI-R	Nitrile	60	R	63.50	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.42
P2778.25A-20NI-L	Nitrile	20	L	63.50	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.42
P2778.25A-35NI-L	Nitrile	35	L	63.50	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.42
P2778.25A-60NI-L	Nitrile	60	L	63,50 (2,5")	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.42
P2778.20A-35UR-R	Urethane	35	R	50.80	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.41
P2778.20A-60NP-R	Urethane	60	R	50.80	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.41
P2778.20A-35UR-L	Urethane	35	L	50.80	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.41
P2778.20A-60NP-L	Urethane	60	L	50.80	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.41
P2778.20B-35UR-R	Urethane	35	R	50.80	49.28	15.77	1/2-13"	31.75	23.62	10.42	-
P2778.20B-60UR-R	Urethane	60	R	50.80	49.28	15.77	1/2-13"	31.75	23.62	10.42	-
P2778.20B-35UR-L	Urethane	35	L	50.80	49.28	15.77	1/2-13"	31.75	23.62	10.42	-
P2778.20B-60UR-L	Urethane	60	L	50.80	49.28	15.77	1/2-13"	31.75	23.62	10.42	-
P2778.25A-35UR-R	Urethane	35	R	63.50	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.42
P2778.25A-60UR-R	Urethane	60	R	63.50	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.42
P2778.25A-35UR-L	Urethane	35	L	63.50	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.42



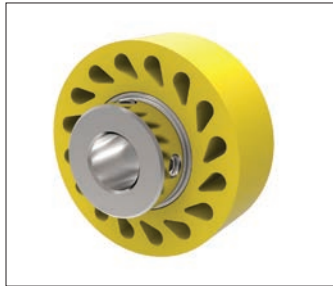
Order No.	Material	Duro.	Type	d ₁	l ₁	d ₂ +0.05	d ₃	l ₂	l ₃	l ₄	l ₅
P2778.25A-60UR-L	Urethane	60	L	63,50 (2,5")	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.42
P2778.20A-20NP-R	Neoprene	20	R	50.80	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.41
P2778.20A-35NP-R	Neoprene	35	R	50.80	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.41
P2778.20A-60NP-R	Neoprene	60	R	50.80	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.41
P2778.20A-20NP-L	Neoprene	20	L	50.80	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.41
P2778.20A-35NP-L	Neoprene	35	L	50.80	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.41
P2778.20A-60NP-L	Neoprene	60	L	50.80	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.41
P2778.20B-20NP-R	Neoprene	20	R	50.80	49.28	15.77	1/2-13"	31.75	23.62	10.42	-
P2778.20B-35NP-R	Neoprene	35	R	50.80	49.28	15.77	1/2-13"	31.75	23.62	10.42	-
P2778.20B-60NP-R	Neoprene	60	R	50.80	49.28	15.77	1/2-13"	31.75	23.62	10.42	-
P2778.20B-20NP-L	Neoprene	20	L	50.80	49.28	15.77	1/2-13"	31.75	23.62	10.42	-
P2778.20B-35NP-L	Neoprene	35	L	50.80	49.28	15.77	1/2-13"	31.75	23.62	10.42	-
P2778.20B-60NP-L	Neoprene	60	L	50.80	49.28	15.77	1/2-13"	31.75	23.62	10.42	-
P2778.25A-20NP-R	Neoprene	20	R	63.50	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.42
P2778.25A-35NP-R	Neoprene	35	R	63.50	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.42
P2778.25A-60NP-R	Neoprene	60	R	63.50	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.42
P2778.25A-20NP-L	Neoprene	20	L	63.50	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.42
P2778.25A-35NP-L	Neoprene	35	L	63.50	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.42
P2778.25A-60NP-L	Neoprene	60	L	63.50	23.37	15.77	1/2-13"	45.47	26.42	3.05	10.42



Product overview



Solid rollers - have a smooth surface and a solid body



Durossoft rollers - have a smooth contact surface with teardrop holes to allow greater roller compression under load.



Finned rollers - are grooved and provide self-cleaning as dirt, debris and liquid pass under the contact surface of the roller.

Durability levels



20 durometer:
Stiff foam rubber



35 durometer:
Pencil rubber top



60 durometer:
Car tyre

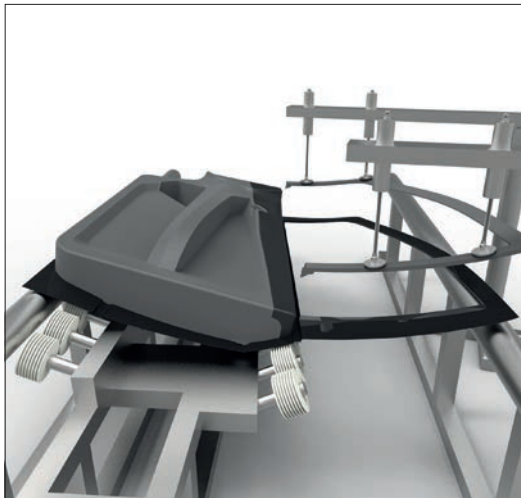


80 durometer:
Skateboard wheel



90 durometer:
Hockey puck

Applications



Rollers are used in car manufacturing to guide and align doors during bonding and curing applications



Bumpers have found their way into commercial exercise equipment to provide protection and stability during use.



Materials colour guide and properties

Nitrile and neoprene



Nitrile - one colour



Neoprene - one colour

Urethane



35 Durometer (Yellow)



60 Durometer (Blue)



80 Durometer (Red)



95 Durometer (Orange)

Material properties

Base Elastomer	Chemical Name	Advantages	Disadvantages	Max. Temp	Min. Temp
Nitrile	Nitrile Butadiene	Resistant to petroleum, oil, alcohol & abrasion.	Affected by degreaser solvents.	Continuous 79°C Intermittent 107°C	-51°C
Neoprene	Chloroprene	Flame and weather resistant. Resistant to Petroleum, oil, ozone & high temp.	Affected by phosphate hydraulic fluids, aromatic hydrocarbons.	Continuous 93°C Intermittent 121°C	-40°C
Urethane	Di-Isocyanate Polyurethane	Highest abrasion resistance, strength & load bearing. High elongation, hardness. Resistance to Ozone & Oxygen.	Affected by ether, esters, acid, aromatics, alkalis.	Continuous 93°C Intermittent 121°C	-54°C

Property:	Nitrile	Neoprene	Urethane	
Tensile Strength	✓ ✓	✓ ✓ ✓	✓ ✓ ✓ ✓	
Ozone Resistance	✓	✓ ✓	✓ ✓ ✓ ✓	
Cut Resistance	✓ ✓	✓ ✓ ✓	✓ ✓ ✓ ✓	
Abrasion Resistance	✓ ✓	✓ ✓ ✓	✓ ✓ ✓ ✓	
Resistance To:	Nitrile	Neoprene	Urethane	
Compression Set	✓ ✓	✓ ✓ ✓	✓ ✓ ✓	
ASTM #1 Oil	✓ ✓ ✓ ✓	✓ ✓	✓ ✓ ✓ ✓	
ASTM #2 Oil	✓ ✓ ✓ ✓	✓ ✓	✓ ✓ ✓ ✓	
Reference Fuel B	✓ ✓ ✓	✓ ✓	✓ ✓ ✓ ✓	
Ketones: MEK	✓	✓ ✓	✓	
Aromatics: Toluene	✓ ✓ ✓	✓	✓ ✓ ✓ ✓	
Aliphatics: Hexane	✓ ✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓ ✓	
Ethyl Acetate	✓	✓ ✓ ✓	✓	
Cellosolve	✓ ✓	✓ ✓ ✓ ✓	✓	
Methylene Chloride	✓	✓	✓ ✓ ✓ ✓	
Trichloroethylene	✓	✓	✓ ✓ ✓ ✓	
Diethylene Glycol	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓	
Isopropyl Alcohol	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	
Caustics: 10% NaOH	✓ ✓ ✓	✓ ✓ ✓	✓	
Acids: H2SO4	✓ ✓	✓ ✓ ✓	✓	
Excellent	✓ ✓ ✓ ✓	Good ✓ ✓ ✓	Fair ✓ ✓	Poor ✓



The tables below show the maximum theoretical radius loads that can be applied to the respective bearings. Refer to individual product tables to identify bearing type supplied with roller.

Bearing Type	Inside diameter (inches)	Outside diameter (inches)	Width (inches)	Load (Kg)	Speed (rpm)
A - Standard Double	.313/.317	.870/.875	.498/.502	55	50
				36	100
				24	250
				20	500
B - Standard Single	.500/.505	1.245/1.250	.370/.380	119	50
				79	100
				51	250
				47	500
C - Standard Double	.500/.505	1.245/1.250	.745/.755	192	50
				128	100
				83	250
				70	500

Standard bearings

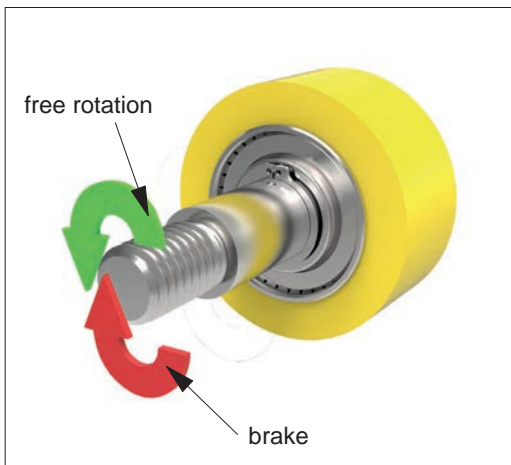
With the calculations above, typical life is approximately 2500 hours.

Bearing Type	Inside diameter (inches)	Outside diameter (inches)	Width (inches)	Load (Kg)	Speed (rpm)
H	.3745/.3750	.6245/.6255	.865/.875	167	33
				146	50
				116	100
				85	250
I	.6245/.6250	.8745/.8755	.990/1.000	277	33
				242	50
				192	100
				142	250

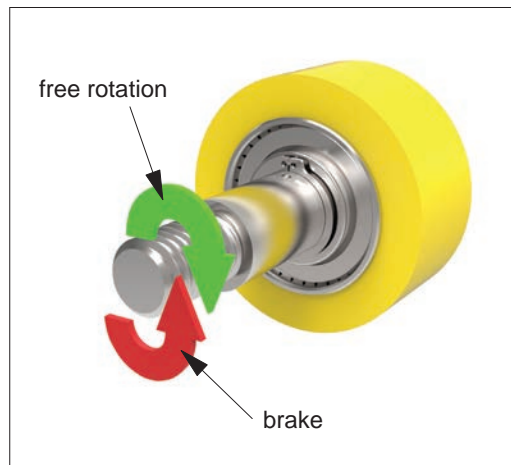
Clutch bearings

With the calculations above, typical life is approximately 1,000,000 revolutions or 500 hours. The bearings are shielded and pre-lubricated for life with grease.

A clutch roller can only be used in one direction, as shown. See data table for clutch direction of particular part.



Left clutch bearing



Right clutch bearing