



# SEVERE SERVICE UNMOUNTED RADIAL BEARINGS



## Radial Poly-Round® bearing

Polymer grease-less bearing




## Ball bearings

Variety of products for different environments

## Radial bearings for sanitary, corrosive, and extreme temperature environments

**When environmental conditions prematurely fail conventional unmounted ball bearings, consider EDT radial bearings**

- Physically interchange with industry standard radial bearings
- Available in inch and metric sizes
- Wide range of products to address many conditions
  - Radial Poly-Round® 
  - Stainless ball, greased or solid lubricated
  - Non-corrosive treated steel (NCS) with solid lubrication
  - Steel with high temperature solid lubrication



**For information on  
Radial Poly-Round® bearings,  
turn to page K-7**

### FOR DESIGN ASSISTANCE

Complete a Bearing Design Checklist (BDC).  
See page K-5 or go to [www.edtcorp.com](http://www.edtcorp.com)



# RADIAL BEARING ALTERNATIVES

## For Severe Service Environments



### Radial Poly-Round® (RPR) applications

- Low or moderate speed and load applications
- Incomplete rotation
- Light duty plastic belt or roller conveyors
- Highly corrosive applications (choose bearing material based on environment)
- Submerged locations
- Sanitary requirements where lubrication is problematic or where wash-down is frequent
- High impact locations (choose bearing material based on environment)

### Advantages of Radial Poly-Round® bearings

- Eliminate product contamination from grease or rust
- Extend maintenance cycles for lower cost of ownership
- Reduce production shutdown from bearing failure
- USDA Accepted



### APPLICATIONS where PLANE BEARINGS should be AVOIDED

#### Plane bearings are not recommended for:

- High speed devices (fans, pumps, curved table top conveyors)
- High tension applications (V-belt drives, flat belt conveyors, urethane belts)
- Overhung loads (shaft mounted gear reducers)
- Trunnion applications
- Applications where centerline positioning is critical

**In any of these kinds of applications,  
select a ball bearing**



### Ball Bearing applications

- High tension applications (V-belt drives, flat belt conveyors, urethane belts)
- High speed devices (fans, pumps, curved table top conveyors)
- Overhung loads (shaft mounted gear reducers)
- Trunnion applications
- High-precision installations requiring precise centerline location

### Advantages of ball bearings over plane bearings

- Low friction
- High speed
- Precision centerline maintenance
- Trunnions
- High tension

### APPLICATIONS where ROLLING ELEMENTS should be AVOIDED

#### Ball bearings are not recommended for:

- Intermittent or oscillation motion
- High load with low speed
- Frequent start-stop
- Incomplete rotation
- Applications where the lubrication is compromised\*
- Locations in the presence of salts or chlorine

\*In applications that require ball bearings, and where the integrity of the grease is compromised, consider using solid lubricated ball bearings.

**In any of these kinds of applications,  
select a plane bearing product:  
a Radial Poly-Round®**

# EDT Radial Bearing Part Numbering System

**OE F 6000 \_\_ RPR MATERIAL** 2 Letters: indicator of polymer bearing material (refer to Material Selection Chart, below; additional materials may be applied for unique applications)

ZA Stainless steel ball bearing  
 ZC Non-corrosive treatment over steel ball bearing  
 ZF Steel (industry standard 52100 material) ball bearing

**OE F 6000 \_\_ RPR VARIATION** (when indicated)

F Flange style unit

**OE F 6000 \_\_ RPR RADIAL BEARING** Industry standard nomenclature for radial bearing being interchanged

**OE F 6000 \_\_ RPR Type** 1, 3, 5, 6, 7, 9

**OE F 6000 \_\_ RPR Series** Cross section (18, 19, 0, 1, 2, 3, 4)

**OE F 6000 \_\_ RPR Bore Size**

00 indicates 10 mm ID	05 indicates 25 mm ID
01 indicates 12 mm ID	06 indicates 30 mm ID
02 indicates 15 mm ID	07 indicates 35 mm ID
03 indicates 17 mm ID	08 indicates 40 mm ID
04 indicates 20 mm ID	

R\_ and 16\_\_ series are inch measured units

**OE F 6000 \_\_ RPR MODIFIER**

- X2 indicates RPR width is equal to that of 2 (two) single radial bearings
- 1 indicates width is equal to open ball bearing (refers to R-series radials)
- 2 indicates width is equal to seal/shielded ball bearing (refers to R-series radials)
- J indicates white solid lubricated
- W indicates black solid lubricated, temperature range -250 to +250°F
- WP is same as above with additional moisture resistance
- M indicates black solid lubricated to +450°F
- MP is same as above with additional moisture resistance
- R indicates black solid lubricated to +500°F
- T indicates black solid lubricated to +650°F

**OE F 6000 \_\_ RPR RPR** Suffix indicates EDT's exclusive Poly-Round® bearing



## Radial Poly-Round® Material Selection Chart

Radial Poly-Round® bearings may be made of various high performance polymers to best fit the application. Due to the small length-to-diameter ratios of unmounted bearings, useful PVs are lower in RPRs than in mounted bearings.

Radial Poly-Round® bearing materials	RPR PV Limit	Max Speed V (SFM)	Max Loading P (PSI)	Continuous Operating Temp.	Performance in Moisture		Δ T Dimensional Stability with Temp Change	Chemical Resistance	Abrasion Resistance	Impact Resistance	USDA/FDA Contact Acceptance
					Washdown	Submerged					
QF black	15,000	400	1,500	500°F	Excellent	Excellent	Excellent	Excellent	Abrasion applications are unpredictable. Each application must be tested for abrasion resistance.	Fair	Incidental
OE brown or black	1,500	350	250	160°F	Excellent	Good	Good	Fair		Fair	Incidental
NA grey	1,500	350	500	200°F	Excellent	Good	Good	Fair		Excellent	Incidental
FA white	1,500	350	250	500°F	Excellent	Excellent	Poor	Excellent		Excellent	Direct

**EDT has the widest choice of radial bearing alternatives;  
something for almost all hostile environments**



Stainless ball bearing with standard (food grade) grease  
 Stainless ball bearing with white (polymer-based) solid lubricant  
 Non-corrosive treated steel (NCS) ball bearing with black (graphite based) solid lubricant  
 Stainless (or steel) ball bearing with black (graphite-based) solid lubricant

**Radial Poly-Round® bearing**

316 stainless + high performance polymer Greaseless!

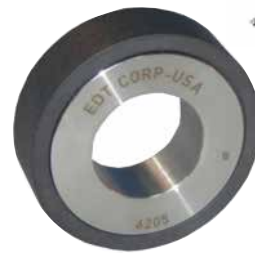
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**Successful EDT Radial Poly-Round® (RPR) applications include:**

- Guides and wheels
- Oven and freezer idler rolls
- Wash-down duty machinery
- Poultry rehanger
- Ice rakes
- Rollers (low- and medium-speed)
- Dancer bars on packaging machines
- Parts washers
- Robotic linkages



**Successful EDT radial ball bearing applications include:**

- Exhaust fans
- High speed idler rolls in ovens and freezers
- Refrigeration fans
- High-temperature, high-torque chain tensioners
- Urethane belt food processing equipment





# ENGINEERING NOTES