

# Heavy-Duty TechTips

**TIMKEN**  
Where You Turn

Volume 1 • Issue 2 Promoting safe, proper bearing handling practices for the heavy-duty market

## REPLACING CUPS AND CONES TOGETHER



When specifying replacement parts, Timken recommends that the mating of components, the cup and cone, be from the same manufacturer. It is also recommended to change both components at the same time. Because the old component has a distinct pattern worn into its raceway, mixing it with a new mating component may set up edge stresses along the races.

Following are the technical reasons that parts from various bearing manufacturers should not be mixed:

- Incompatible internal bearing profile.
- Overall bearing width difference due to tolerance differences.
- Bearing rating differences.
- Surface finish variations due to different manufacturing processes and technology.
- Steel quality and cleanliness variations.

- Steel processing and steel type variations.
- Variances in worldwide bearing manufacturing quality.

To make it easier to replace cones and cups together, Timken has 44 MileMate® matched wheel bearing sets available for the heavy-duty truck industry. (See chart on the back page for the Timken part number and corresponding set number.) Here are frequently asked questions about this product.

### What is a MileMate® set?

A MileMate set is a Timken matched cup and cone in a convenient single box. Timken began the set concept with smaller, automotive bearings. Sets are now available for the most popular heavy-duty truck sizes of tapered roller bearings.

### Why should you buy MileMate sets instead of individual cups and cones?

**Convenient:** The bearing components are in one box. Also, matched sets mean less inventory.

**Longer Bearing Life:** Timken® bearings have specifically contoured profiles on the contact surfaces, which allow the bearings to evenly distribute the load. By evenly distributing the load, Timken bearings help optimize performance and life.

### Matched Cups and Cones:

Mixing components from multiple manufacturers may seem insignificant, but it can make a big difference when it comes to correctly fitting parts together. International standards only mandate that the same part numbers have the same basic outside diameter, bore, width and cup angle. This means that internal

Timken Set Number	Timken Part Number	Common Application Description
SET401	580, 572	Industry Standard R Drive Axle Outer Bearing
SET402	582, 572	Potential R Drive Axle Outer Bearing (Mack Special Radius)
SET403	594A, 592A	Industry Standard R Drive Axle Inner Bearing
SET404	598A, 592A	Potential R Drive Axle Inner Bearing (Mack Special Radius)
SET405	663, 653	Trailer Axle Inner Bearing / Potential Rear (drive or trailer) Axle Outer Bearing
SET406	3782, 3720	Industry Standard FF Steer Axle Outer Bearing
SET407	28682, 28622	Rear Axle Inner Bearing / Front Steer Axle Outer Bearing
SET408	39590, 39520	Industry Standard L Drive Axle Outer Bearing
SET409	45280, 45220	Front Steer Axle Outer Bearing (Mack)
SET410	45284, 45220	Front Steer Axle Inner Bearing
SET411	47686, 47620	Industry Standard L Drive Axle Inner Bearing
SET412	HM212047, HM212011	Potential FF Steer Axle Inner Bearing / Potential N Trailer Axle Outer Bearing (bore and radius change)
SET413	HM212049, HM212011	Industry Standard FF Steer Axle Inner Bearing / Industry Standard N Trailer Axle Outer Bearing
SET414	HM218248, HM218210	Industry Standard N Trailer Axle Inner Bearing
SET415	HM518445, HM518410	Industry Standard P Trailer Axle Inner and Outer Bearing
SET416	45291, 45220	Trailer Axle Bearing
SET417	47890, 47820	Trailer Axle Bearing
SET418	H715334, H715311	Front Steer Axle Inner Bearing
SET419	H715343, H715311	Front Steer Axle Inner Bearing
SET420	H715345, H715311	Front Steer Axle Inner Bearing
SET421	HM516449A, HM516410	Rear Axle Inner Bearing (Mack)
SET422	HM516449C, HM516410	Rear Axle Inner Bearing (Mack)
SET423	6461A, 6420	Industry Standard FL Steer Axle Inner Bearing
SET424	555-S, 552A	Industry Standard FL Steer Axle Outer Bearing
SET425	567, 563	Front Steer Axle Inner Bearing / Trailer Axle Inner Bearing / Rear Axle Outer Bearing (Mack)
SET426	47679, 47620	Rear Axle Outer Bearing (Mack)
SET427*	NP899357, NP026773	Set-Right FF Steer Axle Inner Bearing / Set-Right N Trailer Axle Outer Bearing (ConMet PreSet)
SET428*	NP874005, NP435398	Set-Right FF Steer Axle Outer Bearing (ConMet PreSet)
SET429*	NP034946, NP363298	Set-Right R Drive Axle Inner Bearing (ConMet PreSet)
SET430*	NP840302, NP053874	Set-Right R Drive Axle Outer Bearing (ConMet PreSet)
SET431*	NP965350, NP503727	Set-Right N Trailer Axle Inner Bearing (ConMet PreSet)
SET432*	NP174964, NP593561	Set-Right P Trailer Axle Inner and Outer Bearing (ConMet PreSet)
SET433*	NP431952, NP378092	Set-Right FF Steer Axle Inner Bearing / Set-Right N Trailer Axle Outer Bearing (Dana LMS))
SET434*	NP555065, NP270703	Set-Right FF Steer Axle Outer Bearing (Dana LMS)
SET435*	NP568900, NP107783	Set-Right R Drive Axle Inner Bearing (Dana LMS)
SET436*	NP577914, NP975161	Set-Right R Drive Axle Outer Bearing (Dana LMS)
SET437*	NP022333, NP250023	Set-Right N Trailer Axle Inner Bearing (Dana LMS)
SET438*	NP417549, NP156827	Set-Right P Trailer Axle Inner and Outer Bearing (Dana LMS)
SET439	HM212049X, HM212011	FF Steer Axle Inner Bearing (Volvo Special Radius)
SET440*	NP454049, NP454011	Timken 454-Series FF Steer Axle Inner Bearing / Timken 454-Series N Trailer Axle Outer Bearing
SET441*	NP454248, NP454210	Timken 454-Series N Trailer Axle Inner Bearing
SET442*	NP454580, NP454572	Timken 454-Series R Drive Axle Outer Bearing
SET443*	NP454594, NP454592	Timken 454-Series R Drive Axle Inner Bearing
SET444*	NP454445, NP454410	Timken 454-Series P Trailer Axle Inner and Outer Bearing
SET445*	NP294109, NP039695	Timken Set-Right FL Steer Axle Inner Bearing (ConMet PreSet)
SET446*	NP107091, NP183330	Timken Set-Right FL Steer Axle Outer Bearing (ConMet PreSet)
SET600*	NP454946, NP454298	Timken 454-Series Set-Right R Drive Axle Inner Bearing
SET601*	NP454302, NP454874	Timken 454-Series Set-Right R Drive Axle Outer Bearing
SET602*	NP454350, NP454727	Timken 454-Series Set-Right N Trailer Axle Inner Bearing
SET603*	NP454357, NP454773	Timken 454-Series Set-Right FF Steer Axle Inner Bearing / Timken 454-Series Set-Right N Trailer Axle Outer Bearing
SET604*	NP454964, NP454561	Timken 454-Series Set-Right P Trailer Axle Inner and Outer Bearing

\* Includes proprietary Timken part numbers

geometries and characteristics could vary from manufacturer to manufacturer.

**Lower Maintenance Costs:** The cost of matched parts is relatively small compared to the cost of unscheduled downtime. Trucks do not make money when sitting still in a shop while you incur the cost of teardown labor and additional parts.

**⚠ WARNING**  
*Failure to follow these warnings could create a risk of serious injury.*

Proper maintenance and handling practices are critical. Always follow installation instructions and maintain proper lubrication.

Never spin a bearing with compressed air. The rolling elements may be forcefully expelled.

**⚠ CAUTION**  
*Failure to follow these cautions could create a risk of injury.*

Do not use damaged bearings. The use of a damaged bearing can result in equipment damage.

If a hammer and bar are used for installation or removal of a part, use a mild steel bar (e.g. 1010 or 1020 grade). Mild steel bars are less likely to cause release of high speed fragments from the hammer or bar or the part being removed.

*TechTips is not intended to substitute for the specific recommendations of your equipment suppliers.*

*Every reasonable effort has been made to ensure the accuracy of the information contained in this writing, but no liability is accepted for errors, omissions or for any other reason.*

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