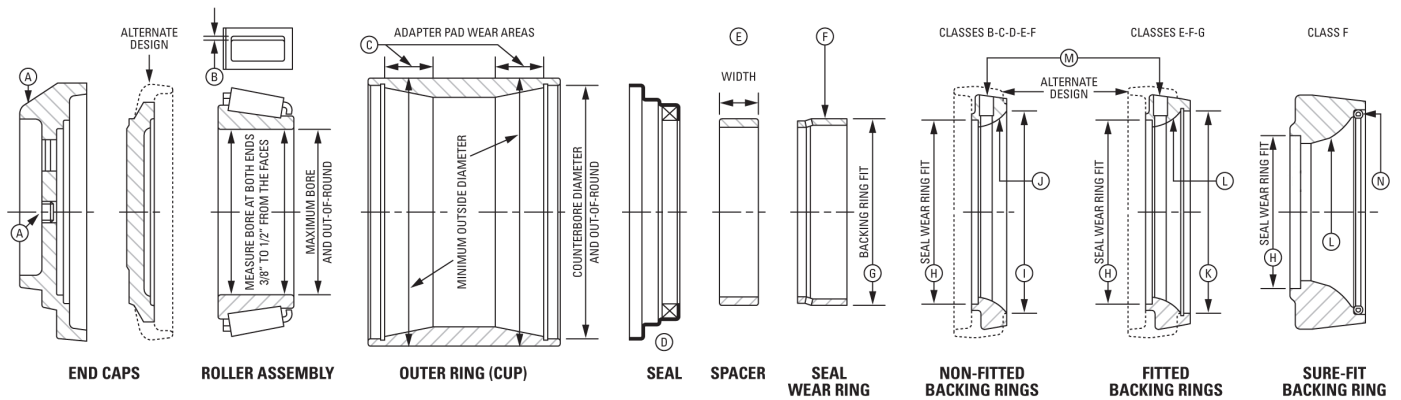


# AP™ ROLLER BEARINGS SERVICE LIMITS

## AAR Approval Numbers 1 and 1A

### Steel/Polymer Cage with NT Seal (No Field Lubrication)

# TIMKEN



Class and size	Diameters are averages						Amount of grease (ounces)					
	Roller assembly		Outer ring				Fitted backing ring		Non-fitted backing ring	Each roller assembly	Around spacer	Total quantity
	+Maximum bore	Out-of-round	Minimum OD	Maximum C'bore	Minimum C'bore	Out-of-round	Used as fitted backing ring	Used as non-fit backing ring				
B (4 1/4 x 8)	4.0010"	0.003"	6.4900"	6.067"	6.0600"	0.005"	-	-	5.035"	2	4	8
C (5 x 9)	4.6885"	0.003"	7.6775"	7.192"	7.1850"	0.005"	-	-	5.910"	3	6	12
D (5 1/2 x 10)	5.1880"	0.003"	8.1750"	7.755"	7.7450"	0.005"	-	-	6.410"	4	4	12
E (6 x 11)	5.6880"	0.003"	8.6750"	8.255"	8.2450"	0.005"	7.028"	7.060"	7.035"	4	6	14
F (6 1/2 x 12)	6.1880"	0.003"	9.9250"	9.380"	9.3700"	0.005"	7.528"	7.560"	7.535"	6	10	22
G (7 x 12)	7.0005"	0.003"	10.8630"	10.280"	10.2700"	0.005"	7.998"	8.030"	-	8	10	26

+Applies to inboard position and plated cones only. Outboard cone bores may be up to 0.0005" larger.

- A. End cap.** Inspect for cracks, breakage, wear or distortion. If end cap is equipped with lubricant fitting, remove and replace with a non-removable plug (K523685 or K523653 as appropriate).
- B. Roller assembly - Cage Inspection**

**WARNING**

*Failure to observe the following warnings could create risk of death or serious injury.*

Never spin a cone assembly.  
The rollers may be forcefully expelled, creating a risk of bodily harm.

Do not install on the inboard side (adjacent to the backing ring) of any bearing assembly, any Timken Axle Saver™ Seal Wear Ring's P/N K151590 or P/N K153392 with date code before 08 03. Installation at this position may result in galling of the axle when the bearing is pressed onto the journal, which can cause fracture of the axle in service.

#### Steel cage inspection

Place roller assembly on back face (large diameter face) when checking clearances. If the roller pocket of the cage is worn to the extent that a 0.060" feeler gage can be inserted between the roller and the cage bridge, the roller assembly should not be returned to service.

#### Polymer cage inspection

It is recommended that cone assemblies be returned to Timken for reconditioning. Wash using only water and detergent solutions, not exceeding 190° F. Visually inspect for damage. Only remove rollers from the marked "inspection" pocket (if cage is provided with this feature). Check and ensure proper roller orientation when reapplying these rollers. Separable roller should only be reassembled into the cone from which it was removed. DO NOT mix rollers. DO NOT disassemble or attempt to reapply other rollers. DO NOT stress relieve cone assemblies and DO NOT plate cone bores of cone assemblies with cages applied. Failure to follow these guidelines could lead to unsatisfactory bearing performance and equipment damage.

- C. Outer ring (cup).** When outer ring shows wear from adapter, the minimum OD is to be measured in the adapter pad wear areas. If the

outer ring is distorted in the area of the counterbore, a close visual inspection of the inside and outside surfaces is required. Outer rings that have hairline cracks must be scrapped.

- D. Seal – scrap all used seals.**

- E. Spacer width – bench lateral.** A spacer must be selected or the spacer may be ground to provide the bearing bench lateral play specified below for the type of lateral measuring equipment used.

#### Power operated

Classes B-C

Classes D-E-F-G

#### Hand operated

0.021" - 0.027"

0.023" - 0.029"

0.018" - 0.024"

0.020" - 0.026"

Where close coordination is maintained between the bearing repair facility and the bearing mounting facility, the bearing bench lateral may be set to limits necessary to provide satisfactory mounted bearing lateral.

- F. Seal wear ring – outside surface.** If the outside surface of the seal wear ring is scratched or cracked, or if the lip contact path has worn to a depth of 0.005" (0.010" on diameter), the seal wear ring (or backing ring on Class G bearing size) must be scrapped.
- G. Seal wear ring – fit in backing ring.** The seal wear ring must have a tight fit in the backing ring counterbore.
- H. Backing ring – fit on the seal wear ring.** The counterbore of the backing ring must have a tight fit on the seal wear ring. See figure 3.12 of AAR Roller Bearing Manual.
- I. Backing ring – size and radius (nonfitted).**
- J. Backing rings that are bent or distorted must be scrapped.** Backing rings with excessive corrosion must be scrapped. Check the backing ring size and the bore radius for proper axle fillet contact with a gauge as shown in the AAR Roller Bearing Manual.
- K. Backing ring – size (fitted).** Check counterbore.
- L. Backing ring – radius (fitted).** Check bore radius for excessive corrosion. Light pitting and rusting is acceptable. Fillet region must not be galled or pitted. Use fillet gauge as specified in MSRP Section H-II.
- M. Vent fitting.** Backing ring with vent must have vent plugged or removed and hole plugged to provide effective and secure seal.
- N. Sure-Fit™ backing ring – size (fitted).** Scrap all used compression rings. See Sure-Fit assembly service sheet #10479 for additional information.

## Part Numbers – Bearing Components

Class and Size	Roller Assembly (Steel Cage)	Roller Assembly (Polymer Cage)	Outer Ring (Cup)	Spacer	Seal	Seal Wear Ring (without holes)	Seal Wear Ring (with holes)	Non-Fitted Backing Ring**				Fitted Backing Ring**				Old Style* End Cap	New Style End Cap*		Locking Plate	Cap Screws	
								With Shroud-Vented	Without Shroud-Vented	With Shroud-No Vent	Without Shroud-No Vent	With Shroud-Vented	Without Shroud-Vented	With Shroud-No Vent	Without Shroud-No Vent		With Shroud	Without Shroud			
B (4¼ x 8)	HM120848	----	HM120817XD	HM120848XA	K86895	-	K86890	K86874	K127203	-	-	-	-	-	-	K86877	-	K523660	K84326	K53399	
C (5 x 9)	HM124646	----	HM124618XD	HM124646XA	K85600	-	K86002	K85588	K127204	K153512	-	-	-	-	-	K86003	-	K151315	K84325	K44434	
D (5½ x 10)	HM127446***	HM127446F	HM127415XD	HM127446XA	K86860	K157631	K85507	K85525	K127205	K153511	K150048	K524571	-	K153509	-	K85521	-	K523744	K80511	K44434	
E (6 x 11)	HM129848***	HM129848F	HM129814XD	HM129848XA	K86861	K153392	K85508	K85095	K320054	-	-	K529704	K127206	K150049	K150050	K160794	K85510	K529703	K523746	K80596	K84354
F (6½ x 12)	HM133444***	HM133444F	HM133416XD	HM133444XA	K85520	K151590	K85509	K85516	-	K504080	-	K529701	K125685	K151303	K524466	K160685	K85517	K529706	K523748	K84324	K84351
G (7 x 12)	HM136948***	HM136948F	HM136916XD	HM136948XA	K96501	K153391	K147767	-	-	-	-	K147766	K153497	K151304	K150037	-	K95199	K147768	K523750	K84701	K84398

\*End cap styles interchangeable. Replacements are available upon request.

\*\*Backing ring styles interchangeable. Replacements are available upon request.

\*\*\* Polymer cage can be retrofitted at reconditioning.

AAR Approval No. 1 and 1A bearing parts are interchangeable. Do not use AAR Approval 20 bearing parts in AAR Approval 1 or 1A bearing assemblies except where part numbers are the same or as permitted by AAR Roller Bearing Manual Rule 3.7.2.5.1.

NOTE: 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.

# TIMKEN

The Timken team applies their know-how to improve the reliability and performance of machinery in diverse markets worldwide. The company designs, makes and markets high-performance mechanical components, including bearings, belts, chain, gears and related mechanical power transmission products and services.

**Stronger. By Design.**

[www.timken.com](http://www.timken.com)