INCH-POUND

A-A-59659B <u>8 September 2011</u> SUPERSEDING A-A-59659A 22 May 2006

# COMMERCIAL ITEM DESCRIPTION

BEARINGS, ROLLER, TAPERED, DOUBLE ROW, STRAIGHT BORE, TWO SINGLE CONES, CONE BACK FACE RIB GROUND ON THE OUTER DIAMETER FOR SEALING PURPOSES, ONE DOUBLE CUP WITH LUBRICATION HOLES AND GROOVE (TYPE TNASWE)

The General Services Administration has authorized the use of this commercial item description for all federal agencies.

- 1. SCOPE. This commercial item description (CID) covers government acquisition requirements for complete (cone with rollers and cup) double row, tapered, roller bearings with straight bore, two single cones, cone back face rib ground on the outer diameter for sealing purposes, one double cup with lubrication holes and groove (type TNASWE) for general purpose use. These bearings are not intended for use in special precision applications such as on aircraft, precision ordnance, or submarine equipment.
- 2. CLASSIFICATION. The roller bearings shall be of one type (TNASWE) and classified by the size codes listed table I. The column headings in table I refer to bearing characteristics defined in figure 1.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to: <a href="mailto:STDZNMGT@dla.mil">STDZNMGT@dla.mil</a> or DLA Aviation VEB, 8000 Jefferson Davis Highway, Richmond, VA 23297-5616. Since contact information can change, you may want to verify the currency of this address information using the ASSIST database at <a href="https://assist.daps.dla.mil">https://assist.daps.dla.mil</a>/.

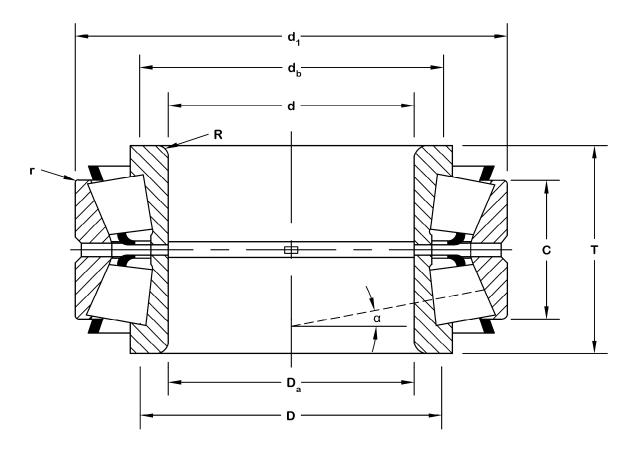


FIGURE 1. Bearing characteristics.

	ъ.,	d	D	T	С	R <sup>2</sup>	r <sup>2</sup>	d <sub>b</sub>	D <sub>a</sub>		Basic
Size code	Part number <sup>1</sup>	Bore	Outside	Overall	Overall	Max. shaft fillet	Max. housing fillet		nmended er diameter	K factor	dynamic load ratings
	Cone-Cup		diameter	width	cup width	radius	radius	Shaft	Housing		(lb.)
001	NA05076-SW - 05185D	0.7500	1.8504	1.3750	0.9926	0.03	0.03	0.94	1.67	1.64	7500
002	NA15117-SW - 15251D	1.1813	2.5000	2.0001	1.4375	0.03	0.03	1.40	2.32	1.67	14000
003	NA24776-SW - 24720D	1.5000	3.5000	2.3125	1.5625	0.03	0.03	1.77	2.83	1.49	2100
004	NA439-SW - 432D	1.7500	3.7500	2.6250	2.0000	0.03	0.03	2.05	3.43	2.05	35200
005	NA435-SW - 432D	1.7500	3.7500	2.8126	2.0000	0.14	0.03	2.24	3.43	2.05	35200
006	NA456-SW - 452D	2.0000	4.2500	2.9376	2.1250	0.14	0.03	2.56	3.94	1.74	37400
007	NA483-SW - 472D	2.7559	4.7244	2.9376	2.1250	0.14	0.03	3.27	4.49	1.52	39600
008	NA580-SW - 572D	3.2500	5.5115	3.6250	2.6250	0.14	0.03	3.86	5.24	1.45	51100
009	NA497-SW - 493D	3.3750	5.3750	2.8750	2.1250	0.14	0.03	3.90	5.12	1.31	42800
010	NA596-SW - 592D	3.5000	6.0000	3.6250	2.5000	0.14	0.03	4.09	5.67	1.32	59700
011	NA56425-SW - 56650D	4.2500	6.5000	3.5000	2.5000	0.14	0.03	4.84	6.26	1.18	62700
012	NA48290-SW - 48220D	5.0000	7.1875	3.6874	2.8750	0.14	0.03	5.55	6.93	1.91	74100
013	NA48685-SW - 48620D	5.6250	7.8750	3.6876	2.8750	0.14	0.03	6.22	7.60	1.74	74600
014	NA46790-SW - 46720D	6.5000	8.8750	3.7500	2.7500	0.14	0.03	7.13	8.58	1.52	78200
015	NA87700-SW - 87112D	7.0000	11.1250	4.2500	3.1250	0.14	0.06	7.87	10.50	1.41	119700
016	LM637349-NW - LM637310D	7.2500	9.5625	3.7500	2.7500	0.14	0.06	7.83	9.29	1.39	86500
017	NA67885-SW - 67820CD	7.5000	10.5000	4.3125	3.3125	0.14	0.06	8.23	10.20	1.22	115900
018	LM241149-NW - LM241110D	8.0000	10.8750	3.7500	2.8750	0.14	0.06	8.66	10.51	1.83	112100
019	LM446349-NW - LM446310D	9.2500	12.2500	4.0000	2.8750	0.14	0.06	9.92	11.85	1.61	130200
020	NA8575-SW - 8520CD	9.2500	12.8750	4.6250	3.2500	0.25	0.06	10.20	12.32	1.44	149200
021	LM249747-NW - LM249710D	9.9990	13.6875	4.0000	2.7500	0.14	0.06	10.71	13.11	1.20	105400
022	LM251649-NW - LM251610D	10.500	13.8750	4.2500	3.2500	0.25	0.06	11.46	13.39	1.83	154800
023	L3577049-MW - L357010CD	12.000	15.5000	4.2500	3.2500	0.25	0.06	12.95	14.96	1.63	172900

Part numbers are for reference only. Part numbers reflect the cup and cone numbers used by industry and the ABMA. Some cones and cups may be used in multiple configurations and are not limited to one bearing assembly.
 These maximum fillet radii shall be cleared by the bearing corners.
 Minus value indicates load center inside cone backface.

#### 3. SALIENT CHARACTERISTICS

3.1 <u>Dimensions</u>. Bearing dimensions (and dynamic load ratings, see 3.4) shall conform to the requirements specified in table I for each of the bearing part numbers. The listed dimensions conform to the requirements specified in American Bearing Manufacturers Association (ABMA) Standard 19.2, "Tapered Roller Bearings - Radial Inch Design". The bearing size shall be specified in the acquisition order (see 7.3(b)). For any unlisted bearing size codes, the associated dimensional and dynamic load rating requirements should also be specified in the acquisition order.

# 3.2 Materials.

- 3.2.1 Cones (inner rings), cups (outer rings), and rollers. The bearing cones, cups, and rollers shall be made of case carburized or through-hardened steel produced in accordance with the ASTM International (ASTM) A295/A295M, "Standard Specification for High-Carbon Anti-Friction Bearing Steel", or ASTM A534, "Standard Specification for Carburizing Steels for Anti-Friction Bearings". The steel shall show a fine fracture grain size in accordance with ASTM E112, "Standard Test Methods for Determining Average Grain Size". Material hardness shall be no less than Rockwell hardness number of 58 on Rockwell C scale (HRC) and no more than 64 HRC as defined in ASTM E18, "Standard Test Methods for Rockwell Hardness of Metallic Materials".
- 3.2.2 <u>Cage</u>. The bearing cage material shall be impervious to deterioration from any lubricant, preservative, solvent, or other chemical substance expected to contact the bearing during normal use or storage. Similarly, the material shall not cause any chemical deterioration of any other bearing component. The cages shall be made from carbon steel (one piece stamped). Materials shall operate from -65 to 230 °F (-53.9 to 110 °C).
- 3.3 <u>Tolerance class</u>. The tolerance limits for bearings shall conform to tolerance class 4 as tabulated in ABMA Standard 19.2. Allowable tolerances for bearing components and assembled bearings are listed in tables II through V.

TABLE II. Cone bore tolerance.

Cone bore (d)					
Size	range	Tolerance			
Over	Over Inclusive		Minus		
0.0000	3.0000	5	0		
3.0000	6.0000	10	0		

Note: Allowable tolerances are in 0.0001 inch.

TABLE III. Cup diameter tolerance.

Cup diameter (D)						
Size	range	Tolerance				
Over	Inclusive	Plus	Minus			
0.0000	12.0000	10	0			
12.0000	24.0000	20	0			

Note: Allowable tolerances are in 0.0001 inch.

TABLE IV. Bearing width tolerance.

Bearing width (T)						
Bore siz	ze range	Tolerance				
Over	Inclusive	Plus	Minus			
0.0000	5.0000	100	0			
5.0000	12.0000	300	0			

Note: Allowable tolerances are in 0.0001 inch.

TABLE V. Assembled bearing tolerance.

Assembled bearing maximum radial runout				
Cup outside	Tolerance			
Over	Inclusive	Tolerance		
0.0000	24.0000	20		

Note: Allowable tolerances are in 0.0001 inch.

- 3.4 <u>Dynamic load rating</u>. The bearing dynamic load rating shall conform to the requirements specified in table I for each bearing size code. The listed ratings conform to the requirements specified in ABMA Standard 11, "Load Ratings and Fatigue Life for Roller Bearings".
- 3.5 <u>Lubrication</u>. The bearings shall be furnished without lubrication.
- 3.6 <u>Contact angle</u>. All bearings are normal angle bearings having a contact angle between 10 and 19 degrees. The contact angle is the angle between the line of action of the roller load and a plane perpendicular to the bearing axis.

# 4. REGULATORY REQUIREMENTS

- 4.1 <u>Recovered materials</u>. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).
- 4.2 <u>Foreign acquisition restrictions</u>. Unless otherwise indicated in the solicitation and resulting contract, the foreign acquisition restrictions in Section 252.225, Clause 252.225.7016, of the Defense Federal Acquisition Regulation Supplement (DFARS) apply to products described by this CID.

## 5. PRODUCT CONFORMANCE PROVISIONS

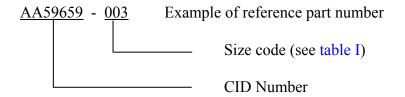
- 5.1 <u>Product conformance</u>. The products provided shall meet the salient characteristics of this CID, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial marketplace. The government reserves the right to require proof of such conformance.
- 5.2 <u>Market acceptability</u>. The products offered must have been previously sold either to the government or on the commercial market.

#### 6. PACKAGING

6.1 <u>Preservation, packing, and marking</u>. Unless otherwise specified in the acquisition order, the bearings shall be preserved, packaged, and marked in accordance with MIL-DTL-197, "Packaging of Bearings, Associated Parts and Subassemblies" (see 7.3(c)).

## 7. NOTES

7.1 <u>Part or identification number (PIN)</u>. The following PIN procedure is for government purposes and does not constitute a requirement for the contractor.



AA59659 - 003 indicates: Bearing bore 1.5000 inches; outside diameter 3.5000 inches; width 2.3125 inches.

# 7.2 Sources of documents.

7.2.1 <u>DFARS and FAR</u>. Copies of DFARS and FAR may be obtained from the Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. Electronic copies of DFARS may

be obtained from <a href="http://www.acq.osd.mil/dpap/dars/dfarspgi/current/index.html">http://www.acq.osd.mil/dpap/dars/dfarspgi/current/index.html</a>. Electronic copies of FAR may be obtained from <a href="https://www.acquisition.gov/far/">https://www.acquisition.gov/far/</a>.

- 7.2.2 <u>Military specifications</u>. Copies of military specifications may be obtained from Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094. Electronic copies may be obtained from <a href="https://assist.daps.dla.mil/">https://assist.daps.dla.mil/</a>.
- 7.2.3 <u>ABMA standards</u>. Copies of ABMA standards may be obtained from the American Bearing Manufacturers Association, 2025 M Street NW, Suite 800, Washington, DC 20036. Electronic copies may be obtained from <a href="http://www.abma-dc.org/">http://www.abma-dc.org/</a>.
- 7.2.4 <u>ASTM standards</u>. Copies of ASTM standards may be obtained from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959. Electronic copies may be obtained from <a href="http://www.astm.org/">http://www.astm.org/</a>.
- 7.3 Ordering data. The acquisition order should specify the following information:
  - a. CID document number, revision, and CID PIN.
  - b. Bearing size (with dimension/load requirements if size is unlisted) (see 3.1).
  - c. Preservation, packaging, and marking requirements (see 6.1).
- 7.4 <u>Cross-reference information</u>. Table VI relates the original specification slant sheets to the replacement CIDs.

TABLE VI. Federal specification to CID cross-reference.

FF-B-187B specification sheets	Replacement CID numbers	ABMA types	
1	A-A-59649	TS	
2	A-A-59650	TSF	
3	A-A-59651	TSS	
4	A-A-59652	TSSF	
5	A-A-59653	TDI and TDIS	
6	A-A-59654	TDO	
7	A-A-59655	TDOS	
8	A-A-59656	TNA (normal angle)	
9	A-A-59657	TNAS (steep angle)	
10	A-A-59658	TNASW	
11	A-A-59659	TNASWE	

# 7.5 Subject term (key word) listing.

Bore

Cone

Cup

Load

Width

CIVIL AGENCY
COORDINATING ACTIVITY:

Custodians: GSA - FAS

Army - AR Navy - MC Air Force - 99 DLA - GS

MILITARY INTERESTS:

Review Activities: Preparing Activity:
Navy - OS
DLA - GS4

Air Force - 84

(Project 3110-2011-028)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST database at <a href="https://assist.daps.dla.mil/">https://assist.daps.dla.mil/</a>.