

INCH-POUND

A-A-59658B  
8 September 2011  
SUPERSEDING  
A-A-59658A  
22 May 2006

## COMMERCIAL ITEM DESCRIPTION

BEARINGS, ROLLER, TAPERED, DOUBLE ROW, STRAIGHT BORE, TWO SINGLE CONES WITH CONTACTING FRONT FACES SLOTTED AND CHAMFERED FOR LUBRICATION, ONE DOUBLE CUP WITH LUBRICATION HOLES AND GROOVE (TYPE TNASW)

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 with contacting front faces slotted and chamfered for lubrication, one double cup with lubrication holes and groove (type TNASW) 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 (TNASW) and classified by the size codes listed in [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: [STDZNMGT@dla.mil](mailto:STDZNMGT@dla.mil) 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 <https://assist.daps.dla.mil/>.

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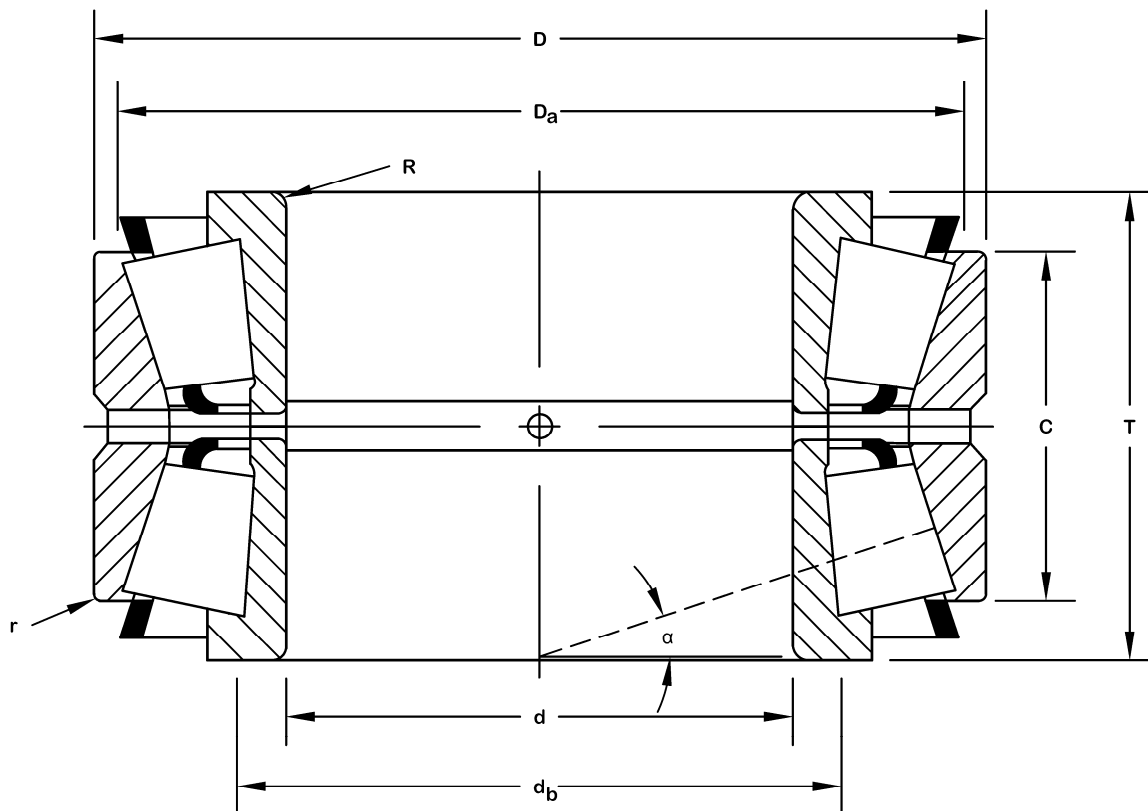


FIGURE 1. Bearing characteristics.

TABLE I. Size codes and dimensions.

Size code	Part number <sup>1</sup>	d	D	T	B	R <sup>2</sup>	r <sup>2</sup>	d <sub>a</sub>	D <sub>a</sub>	K factor	Basic dynamic load ratings (lb.)
		Bore	Outside diameter	Overall width	Overall cup width	Max. shaft fillet radius	Max. housing fillet radius	Recommended shoulder diameter			Two row radial
	Shaft							Housing			
001	NA26118-SW - 26284D	1.1806	2.8338	1.6835	1.4375	0.06	0.03	1.56	2.56	1.62	16300
002	NA3780-SW - 3729D	2.0000	3.6718	2.5625	2.0625	0.14	0.03	2.52	3.46	1.73	33700
003	NA455-SW - 452D	2.0000	4.2500	2.5625	2.1250	0.14	0.03	2.56	3.94	1.74	37400
004	NA558-SW - 552D	2.3750	4.8750	3.1250	2.5000	0.14	0.06	2.99	4.53	1.69	52600
005	NA643-SW - 632D	2.7500	5.3750	3.7500	3.0000	0.14	0.06	3.39	4.92	1.61	64200
006	NA484-SW - 472D	2.7559	4.7244	2.5626	2.1250	0.14	0.03	3.27	4.49	1.52	39600
007	NA759-SW - 752D	3.5000	6.3750	4.1250	3.3750	0.14	0.06	4.17	5.91	1.71	89800
008	NA691-SW - 672D	4.0000	6.6250	3.6250	2.7500	0.14	0.03	4.65	6.30	1.24	68200
009	NA67791-SW - 67720CD	7.0000	9.7500	4.0625	3.3125	0.14	0.03	7.64	9.95	1.33	66800

<sup>1</sup> 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.

<sup>2</sup> These maximum fillet radii shall be cleared by the bearing corners.

<sup>3</sup> Minus value indicates load center inside cone backface.

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## 3. SALIENT CHARACTERISTICS

3.1 Dimensions. 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 Cage. 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 Tolerance class. 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	Inclusive	Plus	Minus
0.0000	3.0000	5	0
3.0000	6.0000	10	0

Note: Allowable tolerances are in 0.0001 inch.

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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 size 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 diameter (D)		Tolerance
Over	Inclusive	
0.0000	24.0000	20

Note: Allowable tolerances are in 0.0001 inch.

3.4 Dynamic load rating. 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 Lubrication. The bearings shall be furnished without lubrication.

3.6 Contact angle. 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.



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7.2 Sources of documents.

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

7.2.2 Military specifications. 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 <https://assist.daps.dla.mil/>.

7.2.3 ABMA standards. 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 <http://www.abma-dc.org/>.

7.2.4 ASTM standards. 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 <http://www.astm.org/>.

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 Cross-reference information. [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

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7.5 Subject term (key word) listing.

Bore  
Cone  
Cup  
Load  
Width

MILITARY INTERESTS:

Custodians:

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

Review Activities:

Navy - OS  
Air Force - 84

CIVIL AGENCY  
COORDINATING ACTIVITY:

GSA - FAS

Preparing Activity:

DLA - GS4

(Project 3110-2011-027)

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 <https://assist.daps.dla.mil/>.