

[INCH-POUND]
A-A-59997
14 May 2019

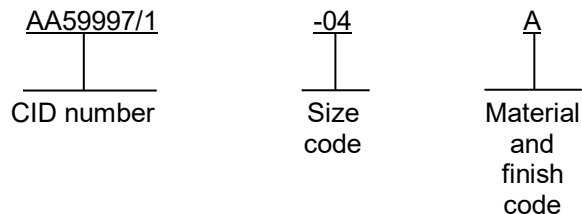
COMMERCIAL ITEM DESCRIPTION

CONICAL SEAL, CRUSH, 24 DEGREE FLARED TUBE FITTING, GENERAL REQUIREMENTS FOR

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 the general requirements for 24 degree flared crush seal. Requirements for conical seal, crush, 24 degree flared tube fitting are covered in the individual CID specification sheets. Conical seal, crush, 24 degree flared tube fitting covered by this CID are intended for commercial/industrial applications.

2. **CLASSIFICATION/PART OR IDENTIFICATION NUMBER (PIN).** This CID uses a classification system which is included in the PIN as shown in the following example (see 7.1).



3. SALIENT CHARACTERISTICS.

3.1 Interface and physical dimensions. Crush seals supplied to this CID shall be as specified on the applicable CID specification sheet.

3.2 CID specification sheet. The family of crush seals shall be in accordance with the requirements specified herein and the applicable CID specification sheet. In the event of a conflict between this general CID and the applicable CID specification sheet, the latter shall govern.

3.3 Design and construction. 24 Degree Flared Crush Seal supplied to this CID are for use with AN, MS, and JIC 24° flared fittings, they are designed to be used when small nicks or defects in the fitting do not allow for proper sealing. They can also be used on first assembly to enhance mechanical sealing and to extend joint life. These crush seals are an inexpensive throw away item.

3.4 Materials. Materials products shall be made of the highest quality metal foils or sheets .010 inches thick.

Beneficial comments, recommendations, additions, deletions, clarifications, etc., and any data that may improve this document should be sent to: DLA Land and Maritime, ATTN: VAI, P.O. Box 3990, Columbus OH 43218-3990, or fluidflow@dla.mil. Since contact information can change you may want to verify the currency of the address information using the ASSIST Online database at <https://assist.dla.mil>.

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3.5 Usage. The crush seal shall be used one time, multiple uses after disassembly is not allowed.

3.6 Damaged connectors. Do not use seal if connector is creased, nicked or damaged.

3.7 Cleaning. Hydraulic, and other general purpose applications shall be cleaned in accordance with SAE-AS611, class O.

3.8 Marking. Conical seal, crush, 24 degree flared tube fitting supplied to this CID shall be marked with the manufacturer's (MFR's) standard commercial PIN. (NOTE: The part number marked on the unit pack shall be the CID PIN.)

3.9 Recycled, recovered, environmentally preferable, or biobased materials. Recycled, recovered, environmentally preferable, or biobased materials should be used to the maximum extent possible, provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs.

3.10 Workmanship. Crush seals shall be processed in such a manner as to be uniform in quality and shall be free from other defects that will affect life, serviceability, or appearance.

4. **REGULATORY REQUIREMENTS**. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with 23.403 of the Federal Acquisition Regulation (FAR).

5. **PRODUCT CONFORMANCE PROVISIONS**.

5.1 Product conformance. 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 market. The Government reserves the right to require proof of such conformance.

5.2 Certification. Certification must be done with the procuring activity approval. The contractor shall certify that the product offered meets the salient characteristics of the description and conforms to the producer's own drawings, specifications, standards, and quality assurance practices, and is the same as the product offered for sale in the commercial marketplace. The government reserves the right to require proof of such conformance prior to first delivery and thereafter as may be otherwise provided for under the provisions of the contract.

6. PACKAGING. Preservation, packing, and marking shall be as specified in the contract or order.

7. **NOTES**.

7.1 PIN. The PIN should be used for Government purposes to buy commercial products to this CID. See section 2 for PIN format example.

7.2 Commercial and Government Entity (CAGE) code. For ordering purposes, inventory control, and submission of these sleeves to DLA Land and Maritime under the Parts Management Advisory Team (PMAT) evaluation program, CAGE code 58536 should be used.

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7.3 Source of documents.

Commercial Item Descriptions

A-A-59997/1 - Conical Seals, Crush, 24 Degree Flared Tube Fitting, Aluminum Alloy
A-A-59997/2 - Conical Seals, Crush, 24 Degree Flared Tube Fitting, Nickel

(Copies of these documents are available online at <https://quicksearch.dla.mil>.)

FEDERAL REGULATIONS

FAR - Federal Acquisition Regulations (FAR)

(Copies of these documents are available online at <https://www.acquisition.gov/comp/far/index.html>.)

SAE INTERNATIONAL

SAE-AS611 - Hose Assembly and Tubing, Polytetrafluoroethylene, Cleaning Methods for

(Copies of these documents are available online at <https://www.sae.org>.)

7.4 Ordering data. The contract or order should specify the following:

- a. CID document number, revision, and CID PIN
- b. Product conformance provisions.
- c. Packaging requirements.

7.5 Government users. To acquire information on obtaining these 24 degree flared crush seal from the Government inventory system, contact DLA Land and Maritime, ATTN: DLA Land and Maritime Call Center (-NAB), PO BOX 3990, Columbus, OH 43218-3990, or telephone (614) 692-2271 or (614) 692-3191.

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APPENDIX A

CONICAL SEALS, CRUSH, 24 DEGREE FLARED TUBE FITTING,
INSTALLATION PROCEDURE

A.1 SCOPE.

A.1.1 Scope. This commercial item description (CID) covers the general requirements for conical seals, crush, 24 degree flared tube fitting, aluminum alloy. Conical seals, crush, 24 degree flared tube fitting, installation procedure covered by this CID are intended for commercial/industrial applications. This appendix is not a mandatory part of the commercial item description (CID).

A.1.2 Intended use. Crush seals are intended for use with 24° flared tube fitting ends in accordance with SAE-AS33514, SAE-AS4375, or SAE-AS4377.

A.1.3 Characteristics. Crush seals are subject to compression; therefore, a double torquing procedure is used.

A.1.4 Torque technique. Torque technique. In order to assure a seal a drop of oil or compatible lubricant may be added, see table AI, to the threads of the connector and a drop to the conical seal prior to assembly.

TABLE AI. Installation lubricant.

Application	Installation lubricant
Hydraulic	MIL-PRF-5606 MIL-PRF-83282 MIL-PRF-87257
Engine oil	MIL-PRF-7808 or applicable engine oil
Fuel	Applicable fuel or Petrolatum in accordance with VV-P-236
Pneumatic	Lubricating grease in accordance with SAE-AMS-G-4343 or Petrolatum in accordance with VV-P-236
Water	Petrolatum in accordance with VV-P-236

A.1.5 Torquing procedure.

1. Thread tube nut onto male connector several turns with fingers until connection is snug.

NOTE: If tube nut cannot be tightened snugly with fingers, disassemble and correct problem to prevent assembly damage to crush seal.

2. Torque to suggested torque values in tables All, AIII, or manufacturers recommended torque. Allow compression yielding of the crush seal for 15 seconds then re-torque to the values in tables AI, All, or manufacturers recommended torque.
3. If for any reason after hand tightening, after the initial torque, or yielding torque the assembly has to be unassembled a new crush seal shall be used upon reassembly.
4. Do not tighten tube nuts more than specified in tables All or AIII to avoid damaging the crush seals.
5. Do not loosen tube nut after initial torque application without replacing crush seal.

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APPENDIX A

TABLE AII. Suggested torque values for bite type sleeve. 1/

Dash size	Nominal tube OD	Tube wall thickness	Aluminum fitting aluminum tube 2/		Steel fitting annealed CRES tube		Steel or titanium fitting CRES 1/8 hard tube 3/	
	Inch	Inch	lbf-in	Nm	lbf-in	Nm	lbf-in	Nm
-4	.250	.020	---	---	140	16	140	16
-4	.250	.028	110	12	140	16	---	---
-5	.312	.020	---	---	190	21	190	21
-5	.312	.028	140	16	190	21	---	---
-6	.375	.028	170	19	---	---	275	31
-6	.375	.035	---	---	270	30	---	---
-8	.500	.028	280	32	---	---	500	56
-8	.500	.035	360	41	---	---	---	---
-8	.500	.042	---	---	500	56	---	---
-10	.625	.028	360	41	---	---	---	---
-10	.625	.035	415	47	---	---	---	---
-10	.625	.042	---	---	---	---	700	79
-10	.625	.058	---	---	700	79	---	---
-12	.750	.028	450	51	---	---	---	---
-12	.750	.049	450	51	---	---	---	---
-12	.759	.058	---	---	---	---	900	102
-12	.750	.065	---	---	900	102	---	---
-16	1.000	.035	750	85	---	---	---	---
-16	1.000	.049	800	90	---	---	---	---
-16	1.000	.065	1200	136	---	---	1200	136
-16	1.000	.083	---	---	1200	---	---	---

1/ Metric equivalents are given for information only.

2/ These are suggested torque values for the aluminum seal A-A-59997/1.

3/ These are suggested torque values for the nickel seal A-A-59997/2.

TABLE AIII. Suggested torque values for NAS1760 fitting ends. 1/ 2/

SAE dash size	Nominal tube OD	All aluminum fitting 2/		Steel fitting, nickel seal 3/	
		lbf-in	Nm	lbf-in	Nm
-4	.250	110	12	140	16
-5	.312	140	16	190	21
-6	.375	170	19	275	31
-8	.500	280	32	500	56
-10	.625	360	41	700	79
-12	.750	450	51	900	102
-16	1.000	750	85	1200	136
-20	1.250	900	102	1600	181
-24	1.500	900	102	2000	226
-32	2.000	---	---	2000	226

1/ Metric equivalents are given for information only.

2/ These torque values apply when the flared tube, connector and nut are aluminum with A-A-59997/1 aluminum crush seal.

3/ These torque values apply when the flared tube, connector and nut are steel with A-A-59997/2 nickel crush seal.

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APPLICABLE DOCUMENTS

DEPARTMENT OF DEFENSE SPECIFICATIONS

- MIL-PRF-5606 - Hydraulic Fluid, Petroleum Base; Aircraft, Missile, and Ordnance
- MIL-PRF-7808 - Lubricating Oil, Aircraft Turbine Engine, Synthetic Base
- MIL-PRF-83282 - Hydraulic Fluid, Fire Resistant, Synthetic Hydrocarbon Base, Metric, NATO Code Number H-537
- MIL-PRF-87257 - Hydraulic Fluid, Fire Resistant; Low Temperature, Synthetic Hydrocarbon Base, Aircraft and Missile
- VV-P-236 - Petrolatum Technical

(Copies of these documents are available online at <https://quicksearch.dla.mil>.)

Other Publications.

AEROSPACE INDUSTRIES ASSOCIATION (AIA)

- AIA/NAS1760 - Fitting End, Flareless Acorn, Standard Dimensions For

(Copies of these documents are available online at <https://www.aia-aerospace.org>.)

SAE INTERNATIONAL

- SAE-AS4375 - Fitting End, Flareless, Design Standard
- SAE-AS4377 - Fitting End, Bulkhead, Flareless, Design Standard
- SAE-AS33514 - Fitting End, Standard Dimensions for Flareless Tube Connection and Gasket Seal
- SAE-AMS-G-4343 - Grease, Pneumatic System

(Copies of these documents are available online at <https://www.sae.org>.)

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MILITARY INTERESTS:

Custodians:

Army - AV
Navy - AS
Air Force - 11
DLA - CC

Review activities:

Army - AT, MI
Navy - MC, SH
Air Force - 71

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FAS

Preparing Activity:

DLA - CC

Project 4730-2019-010

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 Online database at <https://assist.dla.mil>.