

[INCH-POUND]
A-A-59935
2 October 2013

COMMERCIAL ITEM DESCRIPTION

CONICAL SEAL, CRUSH, 37 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 conical seal, crush, 37 degree flared tube fitting. Requirements for conical seal, crush, 37 degree flared tube fitting are covered in the individual CID specification sheets. conical seal, crush, 37 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).

AA59935/1	-04	A
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CID number	Size code	Material code

3. SALIENT CHARACTERISTICS.

- 3.1 **Interface and physical dimensions.** Sleeves 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.** Conical seal, crush, 37 degree flared tube fitting supplied to this CID are for use with AN, MS and JIC 37° 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 between .002 and .015 inches thick.
- 3.5 **Usage.** The crush seal shall be used one time, multiple uses after disassembly is not allowed.

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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3.6 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, 37 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, or environmentally preferable materials. Recycled, recovered, or environmentally preferable 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 Environmentally preferable material. Environmentally preferable materials should be used to the maximum extent possible to meet the requirements of this specification. As of the dating of this document, the U.S. Environmental Protection Agency (EPA) is focusing efforts on reducing 31 priority chemicals. The list of chemicals and additional information is available on their website <http://www.epa.gov/osw/hazard/wastemin/priority.htm>. Included in the EPA list of 31 priority chemicals are cadmium, lead, and mercury. Use of these materials should be minimized or eliminated unless needed to meet the requirements specified herein (see section 3).

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7.3 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.

7.4 Source of documents.

Commercial Item Descriptions

A-A-59935/1	-	Conical Seals, Crush, 37 Degree Flared Tube Fitting, Aluminum Alloy
A-A-59935/2	-	Conical Seals, Crush, 37 Degree Flared Tube Fitting, Copper
A-A-59935/3	-	Conical Seals, Crush, 37 Degree Flared Tube Fitting, Nickel
A-A-59935/4	-	Conical Seals, Crush, 37 Degree Flared Tube Fitting, Corrosion Resistant Steel
A-A-59935/5	-	Conical Seals, Crush, 37 Degree Flared Tube Fitting, Gold
A-A-59935/6	-	Conical SealS, Crush, 37 Degree Flared Tube Fitting, Serrated

(Copies of these documents are available online at <http://quicksearch.dla.mil/> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094).

FEDERAL REGULATIONS

FAR – Federal Acquisition Regulations (FAR)

(Copies of these documents are available online at www.acquisition.gov/comp/far/index.html or from the U.S. Government Printing Office, 732 North Capital Street, NW, Washington D.C. 20401.)

SAE INTERNATIONAL

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

(Copies of these documents are available on line at www.sae.org from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, and Tel: 877-606-7323 [inside USA and Canada] or 724-776-4970 [outside USA], email at CustomerService@sae.org.)

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

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

7.6 Government users. To acquire information on obtaining these 37 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, 37 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, 37 degree flared tube fitting, aluminum alloy. Conical seals, crush, 37 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 37° flared tube fitting ends in accordance with SAE-AS4395 or SAE-AS4396.

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

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

A.1.5 Torqueing 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 AI, AII, AIII or manufacturers recommended torque. Allow compression yielding of the crush seal for 15 seconds then re-torque to the values in tables AI, AII, AIII, 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 table I to avoid damaging the crush seals.
5. Do not loosen tube nut after initial torque application without replacing crush seal.

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TABLE AI. Suggested torque values for flared tube fittings. 1/ 2/

SAE dash size	Tubing OD	Thread T in accordance with SAE-AS8879	All aluminum fitting torque 3/		All steel fitting torque 4/	
			lbf-in	Nm	lbf-in	Nm
-02	.125 (3.18)	.3125-24UNF-3B	22-30	2-3	35-50	4-6
-03	.188 (4.78)	.3750-24UNJF-3B	30-45	3-5	75-100	8-11
-04	.250 (6.35)	.4375-20UNJF-3B	40-60	5-7	115-150	13-17
-05	.313 (7.95)	.5000-20UNJF-3B	55-75	6-8	150-200	20-23
-06	.375 (9.53)	.5625-18UNJF-3B	75-115	8-13	250-300	28-34
-08	.500 (12.70)	.7500-16UNJF-3B	150-225	17-25	450-500	51-56
-10	.625 (15.88)	.8750-14UNJF-3B	200-315	23-36	650-700	73-79
-12	.750 (19.05)	1.0625-12UNJ-3B	300-450	34-51	900-1000	102-113
-16	1.000 (25.40)	1.3125-12UNJ-3B	500-630	56-71	1200-1400	136-158
-20	1.250 (31.75)	1.500-12UNJF-3B	600-810	68-92	1500-1800	169-203
-24	1.500 (38.10)	1.8750-12UNJ-3B	700-1000	70-113	1900-2200	215-249
-28	1.750 (44.45)	2.2500-12UNJ-3B	800-1150	90-130	2200-2700	249-305
-32	2.000 (50.80)	2.5000-12UNJ-3B	850-1300	96-147	2500-3000	282-339
-40	2.500 (63.50)	3.0000-12UNJ-3B	900-1450	102-164	2800-3300	316-373
-44	2.750 (69.85)	3.2500-12UNJ-3B	950-1500	107-169	3100-3600	316-373
-48	3.000 (76.20)	3.5000-12UNJ-3B	1000-1650	113-186	3400-3900	384-441

1/ Metric equivalents are given for information only.

2/ Torque values shown are for dry nuts lubricated in accordance with table AIV.

3/ These torque values apply when the flared tube, connector or nut are aluminum with A-A-59935/1 aluminum crush seal.

4/ These torque values apply when the flared tube, connector or nut are steel with A-A-59935/2 copper or A-A59935/3 nickel crush seal.

TABLE AII. Suggested torque values for AN818 nut. 1/ 2/

SAE dash size	Tubing OD	Thread T in accordance with SAE-AS8879	All aluminum fitting 3/		Steel fitting, copper seal 4/	
			lbf-in	Nm	lbf-in	Nm
-02	.125 (3.18)	.3125-24UNF-3B	30-50	3-6	80-90	9-101
-03	.188 (4.78)	.3750-24UNJF-3B	35-80	4-9	100-110	11-12
-04	.250 (6.35)	.4375-20UNJF-3B	40-85	5-10	150-165	17-19
-05	.313 (7.95)	.5000-20UNJF-3B	50-90	6-10	200-220	23-25
-06	.375 (9.53)	.5625-18UNJF-3B	75-125	8-14	300-330	34-37
-08	.500 (12.70)	.7500-16UNJF-3B	150-250	17-28	500-550	56-62
-10	.625 (15.88)	.8750-14UNJF-3B	200-350	23-40	710-770	80-87
-12	.750 (19.05)	1.0625-12UNJ-3B	300-500	34-56	990-1100	112-124
-16	1.00 (25.40)	1.3125-12UNJ-3B	500-700	56-79	1330-1550	150-175
-20	1.250 (31.75)	1.500-12UNJF-3B	500-900	56-102	1650-1850	186-209
-24	1.500 (38.10)	1.8750-12UNJ-3B	800-900	90-102	2200-2500	249-282
-28	1.750 (44.45)	2.2500-12UNJ-3B	700-1000	79-113	2800-3150	3166-356
-32	2.000 (50.80)	2.5000-12UNJ-3B	800-1100	90-124	3500-3950	395.45-446
-40	2.500 (63.50)	3.000-12UNJ-3B	---	---	---	---
-48	3.000 (76.20)	3.500-12UNJ-3B	---	---	---	---

1/ Metric equivalents are given for information only.

2/ Torque values shown are for dry nuts lubricated in accordance with table AIV.

3/ These torque values apply when the flared tube, connector and nut are aluminum with A-A-59935/1 aluminum crush seal.

4/ These torque values apply when the flared tube, connector and nut are steel with A-A-59935/2 copper crush seal.

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TABLE AIII. Suggested torque values for AN818 nut - Continued. 1/ 2/

SAE dash size	Tubing OD	Thread T in accordance with SAE-AS8879	Steel fitting, nickel seal <u>3/</u>		Aluminum fitting steel sleeve tin plated copper seal <u>4/</u>	
			lbf-in	Nm	lbf-in	Nm
-02	.125 (3.18)	.3125-24UNF-3B	80-100	9-11	70-80	8-9
-03	.188 (4.78)	.3750-24UNJF-3B	110-125	12-14	90-100	10-11
-04	.250 (6.35)	.4375-20UNJF-3B	165-190	19-21	135-150	15-17
-05	.313 (7.95)	.5000-20UNJF-3B	225-250	25-28	180-200	20-23
-06	.375 (9.53)	.5625-18UNJF-3B	335-375	38-42	270-300	31-34
-08	.500 (12.70)	.7500-16UNJF-3B	575-625	65-71	450-500	51-56
-10	.625 (15.88)	.8750-14UNJF-3B	810-875	92-99	650-700	73-79
-12	.750 (19.05)	1.0625-12UNJ-3B	1125-1250	127-141	800-1000	90-113
-16	1.000 (25.40)	1.3125-12UNJ-3B	1500-1750	169-198	1200-1400	136-158
-20	1.250 (31.75)	1.500-12UNJF-3B	1875-2250	212-254	1500-1800	169-204
-24	1.500 (38.10)	1.8750-12UNJ-3B	2500-2850	282-322	2000-2300	226-260
-28	1.750 (44.45)	2.2500-12UNJ-3B	3250-3500	367-395	2600-2800	294-317
-32	2.000 (50.80)	2.5000-12UNJ-3B	4000-4500	452-508	3200-3500	362-395
-40	2.500 (63.50)	3.0000-12UNJ-3B	---	---	---	---
-48	3.000 (76.20)	3.5000-12UNJ-3B	---	---	---	---

1/ Metric equivalents are given for information only.

2/ Torque values shown are for dry nuts lubricated in accordance with table AIV.

3/ These torque values apply when the flared tube, connector and nut are steel with A-A-59935/3 nickel crush seal.

4/ These torque values apply when the flared tube, connector and nut are aluminum with steel sleeve using A-A-59935/2 tin plated copper crush seal.

TABLE AIV. 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

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A.2 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 |
| AN818 | - | Nut, Tube Coupling, Short |
| VV-P-236 | - | Petrolatum Technical |

(Copies of these documents are available online at <https://quicksearch.dla.mil/> or from the DLA Document Services Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094).

Other Publications.

SAE INTERNATIONAL

- | | | |
|----------------|---|--|
| SAE-AMS-G-4343 | - | Grease, Pneumatic System |
| SAE-AS4395 | - | Fitting End, Flared, Tube Connection, Design Standard |
| SAE-AS4396 | - | Fitting End, Bulkhead, Flared, Tube Connection, Design Standard |
| SAE-AS8879 | - | Screw Threads - UNJ Profile, Inch Controlled Radius Root with Increased Minor Diameter |

(Copies of these documents are available on line at www.sae.org from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, and Tel: 877-606-7323 [inside USA and Canada] or 724-776-4970 [outside USA], email at CustomerService@sae.org.)

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MILITARY INTERESTS:

Custodians:

Army - AV
Navy - AS
Air Force - 99
DLA - CC

Review activities:

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

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FAS

Preparing Activity:

DLA - CC

Project 4730-2013-075

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