[INCH-POUND]
A-A-59439
30 December 1999
SUPERSEDING
MIL-C-4109F
31 October 1986

COMMERCIAL ITEM DESCRIPTION

COUPLING HALVES, QUICK-DISCONNECT

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

1. SCOPE. Coupling halves covered by this CID are intended where quick-disconnect connections are required for all hose and portable pneumatic tools. These coupling halves are not to be used with water use and other fluids. The maximum working pressure is 232 psi (16 bar). Brass coupling halves are intended where corrosion or sparking is of prime consideration. Engagement without sleeve actuation is intended to facilitate connection under difficult or awkward conditions.

2. CLASSIFICATION. The coupling halves shall conform to the following types, classes and styles.

2.1 Types.

Type I	-	Female quick-disconnect half
Type II	-	Male quick-disconnect half

2.2 Classes.

Class A	-	Low capacity (0.250-inch size)
Class C	-	High capacity (0.500-inch size)

2.3 Styles.

Style 1	-	Male threaded end
Style 2	-	Female threaded end
Style 3	-	Standard hose end
Style 4	-	Reusable hose end with hose locking sleeve

3. SALIENT CHARACTERISTICS.

3.1 Materials. Material code B halves shall have actuating sleeves and bodies (including end fittings) made of brass. Material code C halves shall have actuating sleeves and bodies (including end fittings) made of steel. Coupling springs shall be made of corrosion resistant steel. Coupling valves and locking mechanism components shall be made of corrosion-resistant materials.

3.1.1 Metal surface. Wherever steel other than corrosion resistant steel is used in the coupling half, all surfaces shall be plated with nickel or zinc.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any pertinent data which may be of use in improving this document should be sent letter to: Commander, Defense Supply Center, Columbus, DSCC-VAI, 3990 East Broad Street, Columbus, OH 43216-5000.

FSC 4730

3.2 Design. Engagement of the coupling halves shall be accomplished by manually pushing the type II half into the type I socket until secure. Such engagement shall be done without tools and without manually rotating or manually retracting the type I actuating sleeve. It shall not be necessary to rotate the coupling halves with respect to each other in order to engage or disengage them. When engaged, the coupling halves shall be free to rotate with respect to each other under rated working air pressure.

3.2.1 Type I Half Design. Halves shall be designed to properly engage type II halves of the same class and size. Styles 1 and 2 shall be similar to figures 1 and 2, respectively. Styles 3 and 4 shall be similar to figures 3 and 4, respectively; and shall be suitable for the ID hose specified. The style 4 locking sleeve shall be suitable for the OD hose specified.

3.2.2 Type II Half Design. Halves shall comply with the dimensions specified in ANSI/(NFPA) T3.20.14-1990, Class A to meet 0.250-inch size and Class C to meet 0.500-inch size. Styles 1 and 2 shall be similar to figures 5 and 6, respectively. Styles 3 and 4 shall be similar to figures 7 and 8, respectively; and shall be suitable for the ID hose specified. The style 4 locking sleeve shall be suitable for the OD hose specified.

3.3 Construction. Coupling halves shall consist of a body (including end fittings), actuating sleeve, shut-off valve, and locking mechanism. Threads for styles 1 and 2 shall be American Standard Pipe threads.

3.4 Performance. The coupling halves shall meet the performance requirements of this document. Type I halves must conform to Table I at 100 psi and 70°F (21°C) ambient temperature.

TABLE I. Performance.

Class	Minimum flow CFM	Maximum pressure drop at specified minimum flow (psi)
A	10	2-1/2
C	35	2-1/2

3.4.1 Leakage. Type I halves shall not leak while engaged with or while disengaged from type II halves of the same class.

3.4.2 Structural Rigidity.

Type I halves. While engaged with a type II half of the same class, the type I half shall withstand a crush load of 500 pounds applied uniformly to an area of the actuating sleeve surface not exceeding one square inch without permanent deformation or failure. It shall be capable of functioning after removal of the load. It shall not leak after removal of load.

Locking mechanism. The locking mechanism contained in the type I half shall withstand a tensile load of 500 pounds applied directly to an engaged type II half of the same class without releasing the type II half, or without deformation or failure of the type I half. The coupling shall not leak after removal of load.

4. REGULATORY REQUIREMENTS. 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).

5. QUALITY ASSURANCE 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.

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

7. NOTES.

7.1 Part Identification Number (PIN). The following part identification numbering procedure is for government purposes and does not constitute a requirement for the contractor.

AA59439	- XX	- XX	- XX	X
Basic number	Type/class/style code number (See table II)	Size code number 1/ (See table III)	Hose size number 2/ (See table IV)	Material B = Brass C = Steel

Notes: 1/ The size code indicates the nominal pipe size for styles 1 and 2 and the hose ID for styles 3 and 4.
2/ For style 4 coupling halves, the hose OD must be identified. All other styles use 00.

Example PIN:
AA59439-05-16-00B is a type I, class C, style 1, Brass half used with a 1/2-inch pipe

TABLE II. Type, class and style code number.

CODE NUMBER	TYPE	CLASS	STYLE
01	I	A	1
02	I	A	2
03	I	A	3
04	I	A	4
05	I	C	1
06	I	C	2
07	I	C	3
08	I	C	4
09	II	A	1
10	II	A	2
11	II	A	3
12	II	A	4
13	II	C	1
14	II	C	2
15	II	C	3
16	II	C	4

TABLE III. Applicable size code number for the different styles.

CODE	STYLE 1	STYLE 2	STYLE 3	STYLE 4	SIZE (inches)	
04	A & C	A & C			1/8	0.125
06			A & C	A & C	3/16	0.187
08	A & C	A & C	A & C	A & C	1/4	0.250
10			A & C	A & C	5/16	0.313
12	A & C	A & C	A & C	A & C	3/8	0.375
16	C	C	C	C	1/2	0.500
20			C	C	5/8	0.625
24	C	C	C	C	3/4	0.750

TABLE IV. Hose OD code number.

CODE	SIZE (inches)		CODE	SIZE (inches)		CODE	SIZE (inches)	
01	1/32	0.031	17	17/32	0.531	33	1-1/32	1.031
02	1/16	0.062	18	9/16	0.562	34	1-1/16	1.062
03	3/32	0.094	19	19/32	0.593	35	1-3/32	1.093
04	1/8	0.125	20	5/8	0.625	36	1-1/8	1.125
05	5/32	0.157	21	21/32	0.656	37	1-5/32	1.156
06	3/16	0.188	22	11/16	0.688	38	1-3/16	1.188
07	7/32	0.218	23	23/32	0.718	39	1-7/32	1.218
08	1/4	0.250	24	3/4	0.750	40	1-1/4	1.250
09	9/32	0.281	25	25/32	0.781	41	1-9/32	1.281
10	5/16	0.313	26	13/16	0.813	42	1-5/16	1.313
11	11/32	0.344	27	27/32	0.843	43	1-11/32	1.343
12	3/8	0.375	28	7/8	0.875	44	1-3/8	1.375
13	13/32	0.406	29	29/32	0.906	45	1-13/32	1.343
14	7/16	0.437	30	15/16	0.937	46	1-7/16	1.437
15	15/32	0.468	31	31/32	0.968	47	1-15/32	1.468
16	1/2	0.500	32	1	1.000	48	1-1/2	1.500

7.2 Sources of Documents.

7.2.1 The FAR may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-0001.

7.2.2 Copies of ASNI/(NFPA) T3.20.14-1990, Pneumatic Quick-Action Couplings – Plug Dimensions, are available from the National Fluid Power Association (NFPA), 3333 N. Mayfair Road, Milwaukee, WI 53222-3219.

7.2.3 Copies of Federal Specifications may be obtained from the General Services Administration Specifications Section, Suite 8100, 470 L'Enfant Plaza, SW, Washington, DC 20407.

7.2.4 Copies of ASTM Standards may be obtained from the American Society for Testing and Materials, 100 Barr Harbor drive, West Conshohocken, PA 19428-2959.

7.3 Ordering Data. Acquisition documents must specify the following:

A. Title, number and date of this CID.
B. Issue of the DoDISS and industry standards to be cited in the solicitation.
C. PIN and required quantity.
D. If any additional markings are required.
E. Selection of applicable level and packaging requirements.

7.4 National Stock Numbers (NSNs). The following is a list of NSNs that correspond to the superseded document, MIL-C-4109. The list may not be indicative of all possible NSNs associated with the superseded document, MIL-C-4109.

4730-00-203-9461	4730-00-293-7043	4730-00-442-5738	4730-01-038-2350
4730-00-277-5678	4730-00-293-7165	4730-00-489-6303	4730-01-050-5773
4730-00-277-5679	4730-00-293-7167	4730-00-492-6058	4730-01-066-8732
4730-00-005-7353	4730-00-293-7171	4730-00-494-3271	4730-01-086-0595
4730-00-102-6444	4730-00-293-7172	4730-00-494-3272	4730-01-134-8846
4730-00-103-5389	4730-00-293-7180	4730-00-494-3273	4730-01-206-4836
4730-00-176-4293	4730-00-293-7182	4730-00-541-0556	4730-01-233-3434
4730-00-203-0177	4730-00-293-7184	4730-00-580-7457	4730-01-259-2269
4730-00-203-0178	4730-00-293-7845	4730-00-765-4147	4730-01-263-0903
4730-00-203-4846	4730-00-320-1886	4730-00-811-3323	4730-01-283-1911
4730-00-203-4847	4730-00-320-1887	4730-00-813-5893	4730-01-307-3663
4730-00-251-5911	4730-00-330-1368	4730-00-905-9794	4730-01-423-8761
4730-00-289-8192	4730-00-421-1407	4730-01-009-9067	

7.5 Interchangeability. Coupling halves conforming to this CID may be interchanged with or substituted for items conforming to MIL-C-4109F, Coupling Halves, Low Pressure, Air Hose, Quick Disconnect, dated 31 October 1986.

7.5.1 Recommended materials. Interchangeability with MIL-C-4109 coupling halves will be most effective if materials technically similar to those required by MIL-C-4109 are used. MIL-C-4109 required the use of brass conforming to QQ-B-626. MIL-C-4109 required steels conforming to QQ-S-763, ASTM A108, ASTM A575 or ASTM A576.

7.6 Compatibility. To assure success in mating of male and female halves, it is suggested that coupling halves from the same manufacturer be mated whenever practical.

MILITARY INTERESTS:
Military Coordinating Activity
DLA - CC

Custodians
Army - AT
Navy - AS
Air Force - 99
DLA - CC

Review Activity
Air Force - 82
Army - AR

Preparing Activity:

DLA-CC

(Project 4730-0815-001)

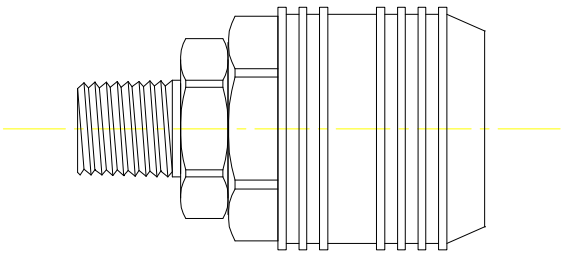

Figure 1. Typical type I, style 1 coupling half.

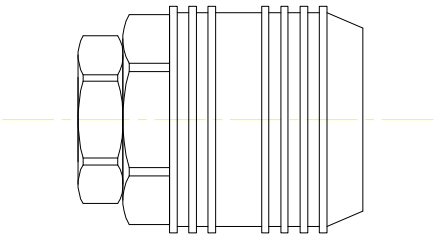

Figure 2. Typical type I, style 2 coupling half.

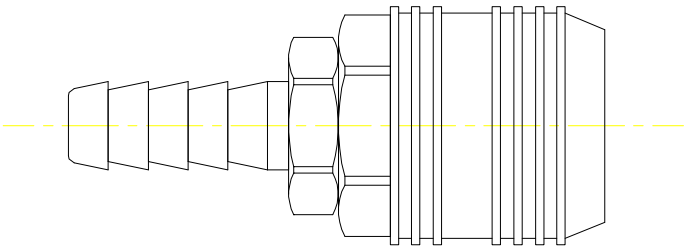

Figure 3. Typical type I, style 3 coupling half.

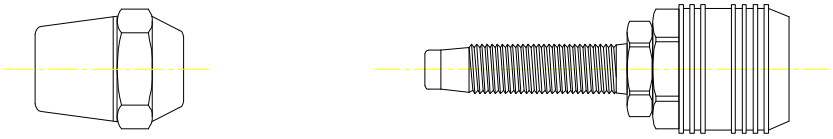

Figure 4. Typical type I, style 4 coupling half with hose locking sleeve.

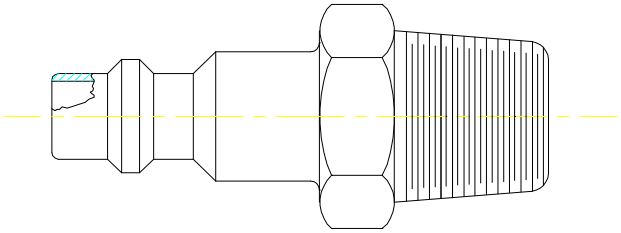

Figure 5. Typical type II, style 1 coupling half.

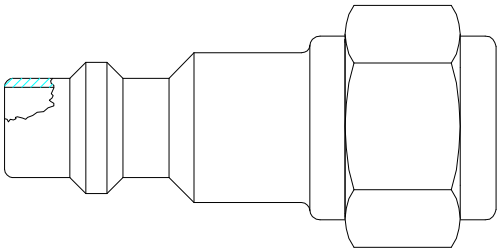

Figure 6. Typical type II, style 2 coupling half.

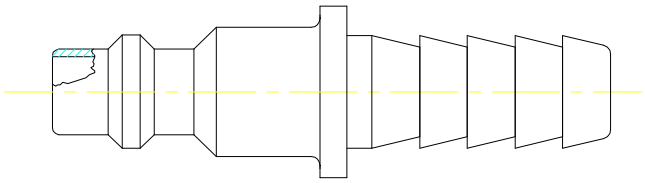

Figure 7. Typical type II, style 3 coupling half.

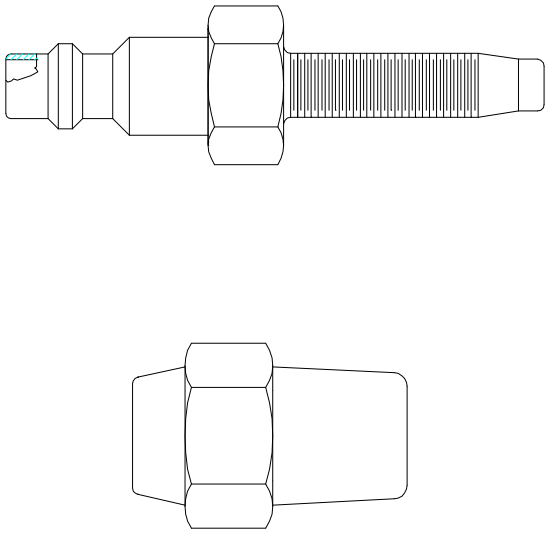

Figure 8. Typical type II, style 4 coupling half with hose locking sleeve.