INCH-POUND

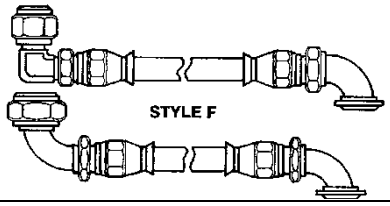
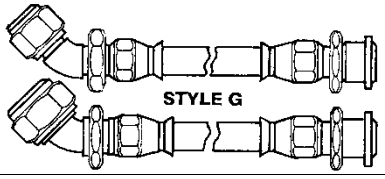
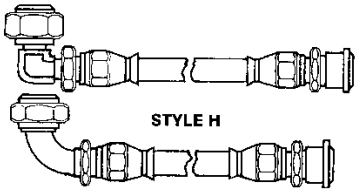
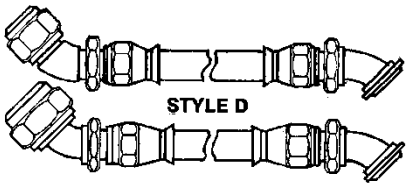
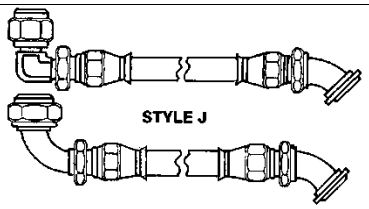
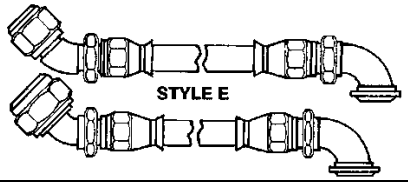
MIL-DTL-32434/3
23 January2013

DETAIL SPECIFICATION SHEET

HOSE ASSEMBLY, POLYTETRAFLUOROETHYLENE, CONVOLUTED, REUSABLE FITTINGS, HIGH TEMPERATURE, MEDIUM PRESSURE, FLARE-TO-FLANGE

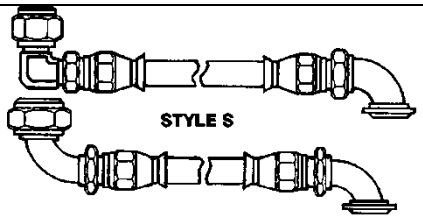
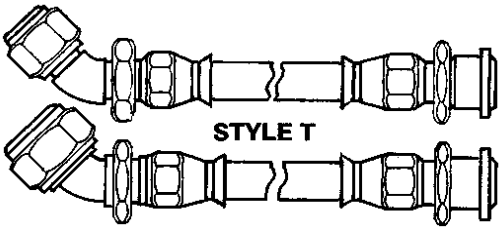
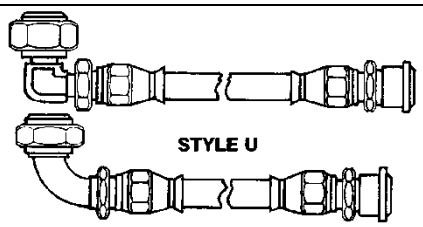
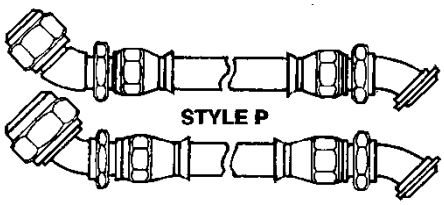
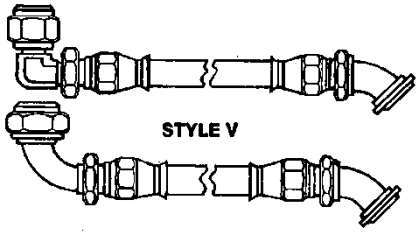
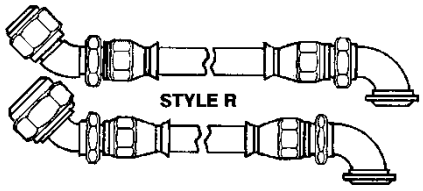
This specification is approved for use by all
Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-32434.

Hose assembly with class 1 fittings (450°F) corrosion resistant steel	Hose assembly with class 1 fittings (450°F) corrosion resistant steel
End 1 End 2	End 1 End 2
 STYLE A	 STYLE F
 STYLE B	 STYLE G
 STYLE C	 STYLE H
 STYLE D	 STYLE J
 STYLE E	

NOTES:
1. See tables I and II for fitting ends and HCOF.
2. Fittings shall mate with parts designed to SAE-AS4395 and the mounting pad as shown on MS33786.

FIGURE 1. Class 1 hose assembly styles with flare-to-flange reusable fittings.

Hose assembly styles with class 2 fittings (275°F) combination of aluminum and corrosion resistant steel		Hose assembly styles with class 2 fittings (275°F) combination of aluminum and corrosion resistant steel	
End 1	End 2	End 1	End 2
			
			
			
			
			

NOTES:
1. See tables I and II for fitting ends and HCOF.
2. Fittings shall mate with parts designed to SAE-AS4395 and the mounting pad as shown on MS33786.

FIGURE 2. Class 2 hose assembly styles with flare-to-flange reusable fittings.

Hose cut-off factor (HCOF) for assembly with class 1 fittings: See table I.

TABLE I. HCOF for assembly with class 1 fittings. 1/

Hose assembly style with class 1 corrosion resistant steel (CRES) 2/	Fitting ends		HCOF (size vs length) 3/					
	1	2	8	10	12	16	20	24
A	MS27053	MS27054	2.16	2.47	2.51	2.91	3.13	3.47
B	MS27053	MS27056	2.18	2.47	3.03	3.28	3.66	4.16
C	MS27053	MS27058	2.14	2.46	3.05	3.35	3.78	4.34
D	MS27059	MS27056	3.04					
	MS27055	MS27056		3.00	3.95	4.12	4.64	5.25
E	MS27059	MS27058	3.00					
	MS27055	MS27058		2.99	3.97	4.19	4.76	5.43
F	MS27060	MS27058	2.52					
	MS27057	MS27058		2.82	3.84	4.10	4.68	5.36
G	MS27059	MS27054	3.02					
	MS27055	MS27054		3.00	3.43	3.75	4.11	4.56
H	MS27060	MS27054	2.54					
	MS27057	MS27054		2.83	3.30	3.66	4.03	4.49
J	MS27060	MS27056	2.56					
	MS27057	MS27056		2.83	3.82	4.03	4.56	5.18

1/ Class 1 fittings, styles A through J, are made from CRES.
2/ For depiction of styles see figure 1.
3/ The HCOF is used in the following calculation to determine the hose length required to produce an assembly of a specific size, style and length: Assembly length - HCOF = Hose length. For example, the hose length required to produce an 25.50 inch length assembly of size 10, style J is calculated as follows: 25.50 - 2.83 = 22.67.

HCOF for assembly with class 2 fittings: See table II.

TABLE II. HCOF for assembly with class 2 fittings. 1/

Hose assembly style with class 2 aluminum and CRES fittings 2/	Fitting ends		HCOF (size vs length) 3/					
	1	2	8	10	12	16	20	24
K	MS27053	MS27054	2.16	2.47	2.51	2.91	3.13	3.47
M	MS27053	MS27056	2.18	2.47	3.03	3.28	3.66	4.16
N	MS27053	MS27058	2.14	2.46	3.05	3.35	3.78	4.34
P	MS27059	MS27056	3.04					
	MS27055	MS27056		3.00	3.95	4.12	4.64	5.25
R	MS27059	MS27058	3.00					
	MS27055	MS27058		2.99	3.97	4.19	4.76	5.43
S	MS27060	MS27058	2.52					
	MS27057	MS27058		2.82	3.84	4.10	4.68	5.36
T	MS27059	MS27054	3.02					
	MS27055	MS27054		3.00	3.43	3.75	4.11	4.56
U	MS27060	MS27054	2.54					
	MS27057	MS27054		2.83	3.30	3.66	4.03	4.49
V	MS27060	MS27056	2.56					
	MS27057	MS27056		2.83	3.82	4.03	4.56	5.18

1/ Class 2 fittings, styles K through V, are made from combination of aluminum and CRES.
2/ See figure 1 for depiction of styles.
3/ The HCOF is used in the following calculation to determine the hose length required to produce an assembly of a specific size, style and length: Assembly length - HCOF = Hose length. For example, the hose length required to produce an 25.50 inch length assembly of size 10, style J is calculated as follows: 25.50 - 2.83 = 22.67.

REQUIREMENTS

Assembly classification: Class 1 and class 2 hose assemblies, as specified in MIL-DTL-32434, have been incorporated into the Part or Identifying Number (PIN) as a part of styles (see tables I and II and figures 1 and 2).

Dimensions: Unless otherwise specified, all dimensions are in inches.

Fittings: All fittings shall be qualified in accordance with MIL-DTL-27272.

Hose: The hose shall be in accordance with MIL-DTL-32435.

Hose size code and elbow fitting drop height: See table III.

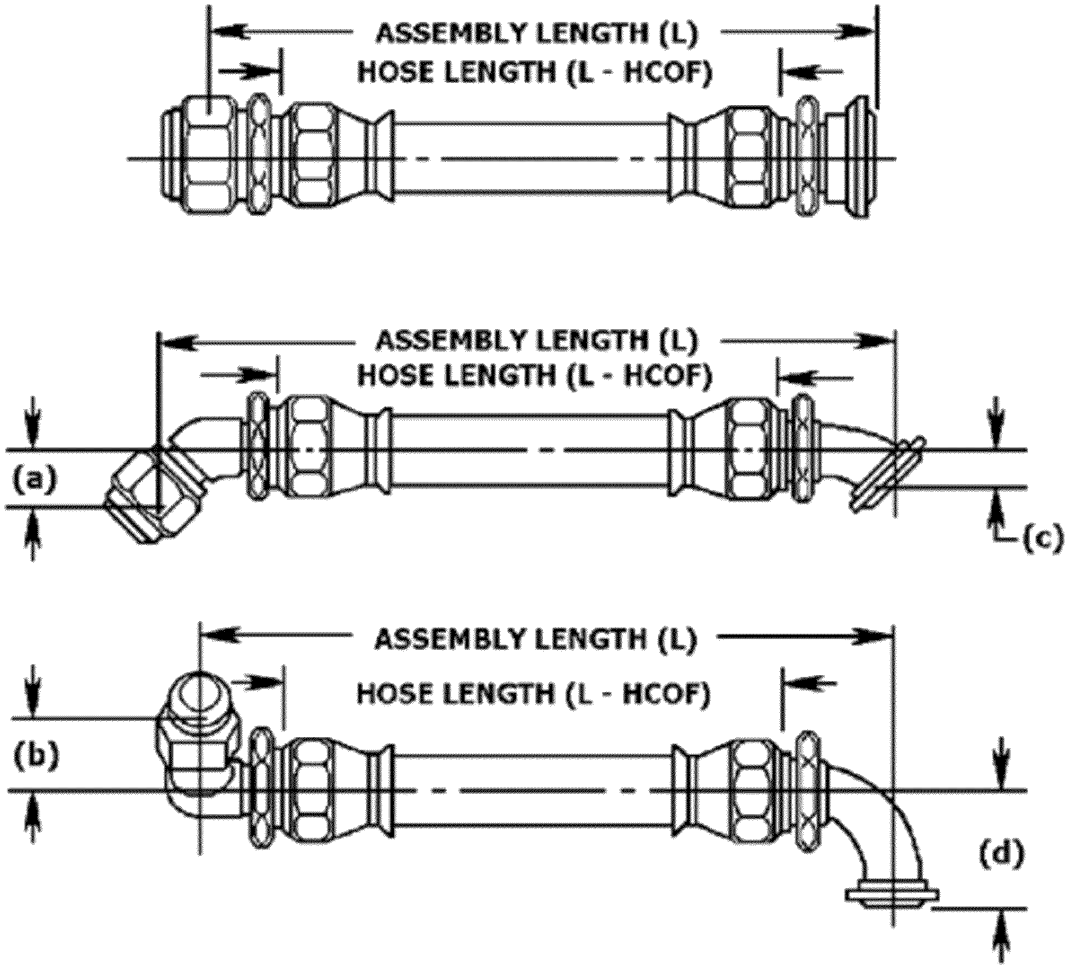
TABLE III. Size code and elbow fitting drop height.

Size	Reference tube OD	Size code	Maximum drop height of elbow fitting			
			(a) 1/	(b) 1/	(c) 1/	(d) 1/
8	.500	H	.485	.850	.458	.927
10	.625	J	.571	1.161	.410	.931
12	.750	K	.658	1.411	.503	1.191
16Z	1.000	M	.695	1.535	.540	1.317
20Z	1.250	N	.803	1.817	.604	1.535
24Z	1.500	P	.902	2.067	.659	1.723

1/ Dimensions (a), (b), (c) and (d) are shown on figure 3.

Assembly length and tolerance: Hose assembly shall be furnished in lengths as specified in the contract or purchase order (see figure 3); however, tolerances on the length of each hose assembly shall be as follows:

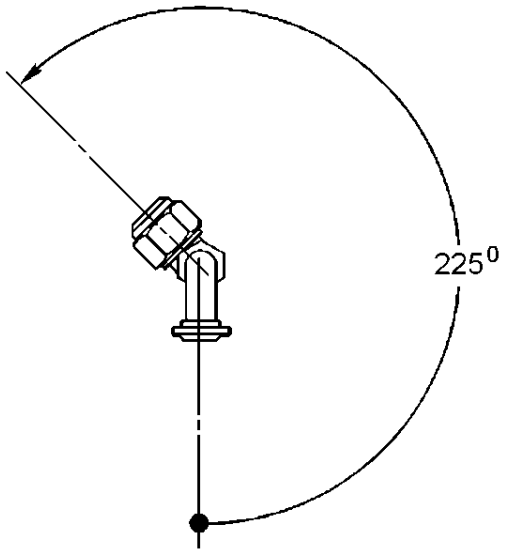
a. ±1/8 inch for lengths under 18 inches.
b. ±1/4 inch for lengths from 18 inches to 36 inches.
c. ±1/2 inch for lengths from 36 inches to 50 inches.
d. ±1% for lengths over 50 inches.



NOTES:
1. Hose assembly length “L” shall be measured, with the hose laid out horizontally and straight between the center of the nipple end and the center of the flange sealing surface, along a straight line parallel to the hose length.
2. See table III for dimensions of (a), (b), (c) and (d).

FIGURE 3. Elbow fitting drop height, dimensions (a), (b), (c) and (d).

Angular alignment: Hose assemblies with elbow fittings on each end shall have the angular orientation between the elbows measured counter-clockwise from the centerline of the nearest fitting, positioned at six-o'clock, to the centerline of the other fitting (see figure 3). The elbow fitting drop height shall be as shown on figure 3 and table III. When applicable, the angular alignment shall be expressed in three digits and specified in the PIN.



NOTE: Angular alignment shall be measured in degrees with a tolerance of ±2°.

FIGURE 4. Measurement of angular alignment between elbow fittings.

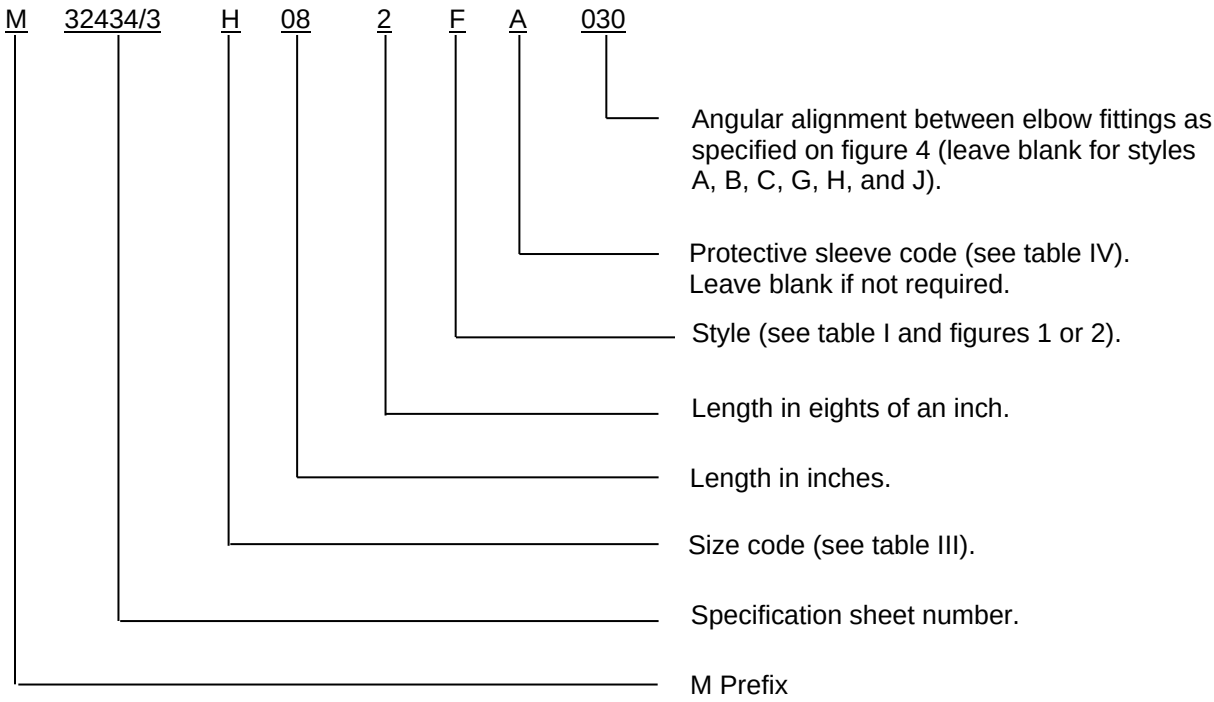
Protective sleeve: If required, the hose assembly shall include a protective sleeve (see table IV) and its code shall be included in the PIN. Fire protective sleeve shall be subjected to testing in accordance with MIL-DTL-32434.

TABLE IV. Protective sleeve code.

Code	Type
Blank	None
A	SAE-AS1072 sleeve, fire protection, silicone covered, temperature ranging from -65°F to 450°F and intermittently to 500°F, secured with CRES bands as required. 1/
B	SAE-AS1073 - code B sleeve, abrasion protection, heat shrinkable, black polyolefin, temperature ranging from -65°F to 250 °F.
C	SAE-AS1291 - code A sleeve, chafe guard, extruded seamless white PTFE, temperature ranging from -65°F to 450°F, secured with CRES bands as required.
D	SAE-AS1291 - code C sleeve, chafe guard, extruded seamless transparent FEP, temperature ranging from -65°F to 350°F, secured with CRES bands as required.
E	SAE-AS1298 sleeve, heavy wall chafe guard, extruded seamless black PTFE, temperature ranging from -65°F to 450°F, secured with CRES bands as required.
L	Lock-wire hole
F	Code A + L
G	Code B + L
H	Code C + L
J	Code D + L
K	Code E + L

1/ To prevent wicking of fluids, the cut end of the fire protective sleeve (code A) shall be coated with room temperature vulcanized (RTV) silicone rubber prior to installation. After installation, cracks and voids in the fire protective sleeve shall be coated with RTV rubber to prevent exposure of fiberglass.

PIN: The PIN consists of letter M, specification sheet number, hose size code, hose length in inches and an eighths of an inch, hose assembly style, sleeve code, and angular alignment in degree between elbow fittings.



PIN example: M32434/3H082FA030 represents ½ inch OD PTFE convoluted hose assembly, 8.25 inches long, flare-to-flange reusable fitting with fire protective sleeve and 30° angular alignment between elbows.

Referenced documents. In addition to MIL-DTL-32434, this document references the following:

MIL-DTL-27272	MS27060
MIL-DTL-32435	MS27055
MS27057	MS33786
MS27056	SAE-AS1072
MS27058	SAE-AS1073
MS27053	SAE-AS1291
MS27059	SAE-AS1298
MS27054	SAE-AS4395

CONCLUDING MATERIAL

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

Preparing activity:
DLA - CC

(Project 4720-2012-021)

Review activities:
Army - AR, AT, EA, MI
Navy - MC, SA, SH
Air Force - 70

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