

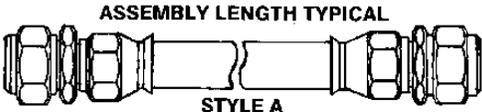
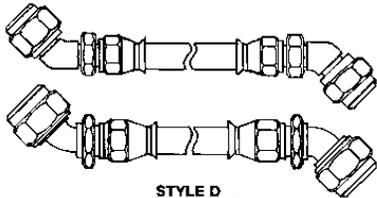
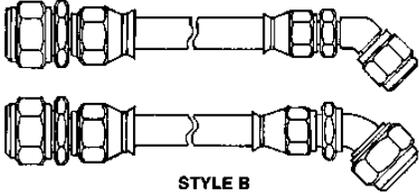
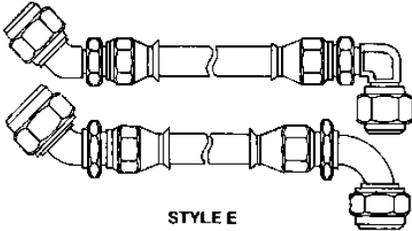
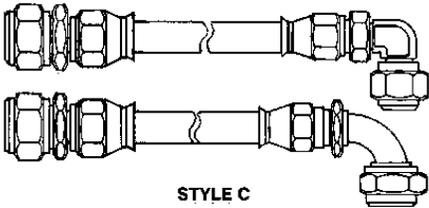
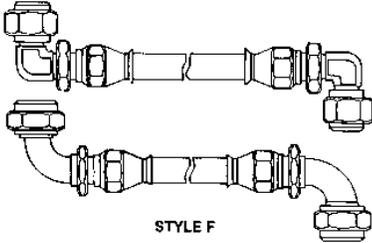
DETAIL SPECIFICATION SHEET

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

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.

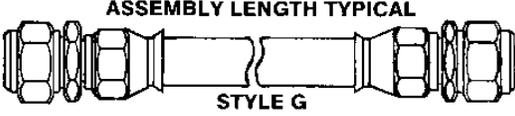
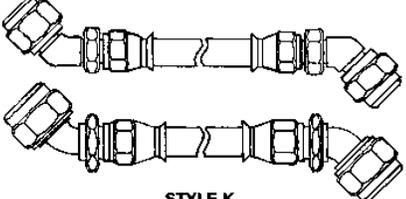
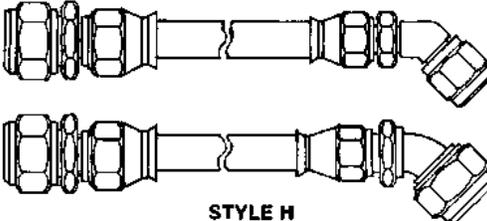
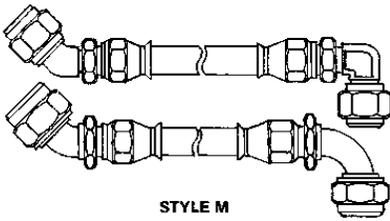
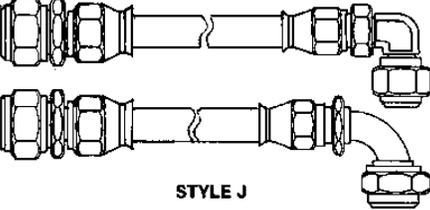
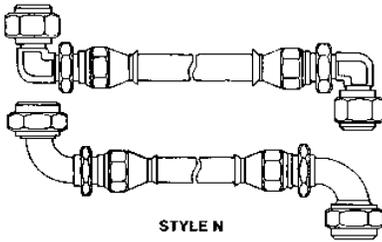
Class 1 (450°) and class 2 (275°) hose assembly styles with flare-to-flare reusable fittings see figures  
1 and 2.

Hose assembly styles with class 1 fittings (450°F) corrosion resistant steel"		Hose assembly styles with class 1 fittings (450°F) corrosion resistant steel"	
End 1	End 2	End 1	End 2
			
			
			

NOTES:

1. See table I for fitting ends and hose cut off factor (HCOF).
2. Fittings shall mate with parts designed to SAE-AS33514, flared fitting end standard.

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

Hose assembly styles with class 2 fittings (275°F) Combination aluminum and corrosion resistant steel		Class 2 fittings (275°F) Hose assembly styles with combination 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-AS33514, flared fitting end standard.

FIGURE 2. Class 2 fittings styles and designators.

HCOF for assembly with class 1 fittings: See table I.

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

Hose assembly styles with class 1 corrosion resistant (CRES) fittings <u>2/</u>	Fitting ends		HCOF (size vs length) <u>3/</u>									
	1	2	3/4	4	5	6	8	10	12	16	20	24
A	MS27053	MS27053	1.40	1.48	1.54	1.62	1.86	2.10	2.26	2.60	2.88	3.32
B	MS27053	MS27059	1.78	1.92	1.99	2.10	2.72					
	MS27053	MS27055						2.63	3.18	3.44	3.86	4.41
C	MS27053	MS27060	1.56	1.65	1.74	1.84	2.24					
	MS27053	MS27057						2.46	3.05	3.35	3.78	4.34
D	MS27059	MS27059	2.16	2.36	2.44	2.58	3.58					
	MS27055	MS27055						3.16	4.10	4.28	4.84	5.50
E	MS27059	MS27060	1.94	2.09	2.19	2.32	3.10					
	MS27055	MS27057						2.99	3.97	4.19	4.76	5.43
F	MS27060	MS27060	1.72	1.82	1.94	2.06	2.62					
	MS27057	MS27057						2.82	3.84	4.10	4.68	5.36

1/ Class 1 fittings, styles A through F, 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 18.50 inch length assembly of size 4, style D is calculated as follows: 18.50 - 2.36 = 16.14.

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

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

Hose assembly styles with class 2 aluminum and CRES fittings <u>2/</u>	Fitting ends		HCOF (size vs length) <u>3/</u>					
	1	2	8	10	12	16	20	24
G	MS27053	MS27053	1.86	2.10	2.26	2.60	2.88	3.32
H	MS27053	MS27059	2.72					
	MS27053	MS27055		2.63	3.18	3.44	3.86	4.41
J	MS27053	MS27060	2.24					
	MS27053	MS27057		2.46	3.05	3.35	3.78	4.34
K	MS27059	MS27059	3.58					
	MS27055	MS27055		3.16	4.10	4.28	4.84	5.50
M	MS27059	MS27060	3.10					
	MS27055	MS27057		2.99	3.97	4.19	4.76	5.43
N	MS27060	MS27060	2.62					
	MS27057	MS27057		2.82	3.84	4.10	4.68	5.36

1/ Class 2 fittings, styles G through N, are made from combination of aluminum and 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 18.50 inch length assembly of size 10, style K is calculated as follows: 18.50 - 3.16 =15.34.

REQUIREMENTS

Assembly classification: Classes 1 and 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 in accordance with MIL-DTL-27272.

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

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

TABLE III. Size code and elbow fitting drop height.

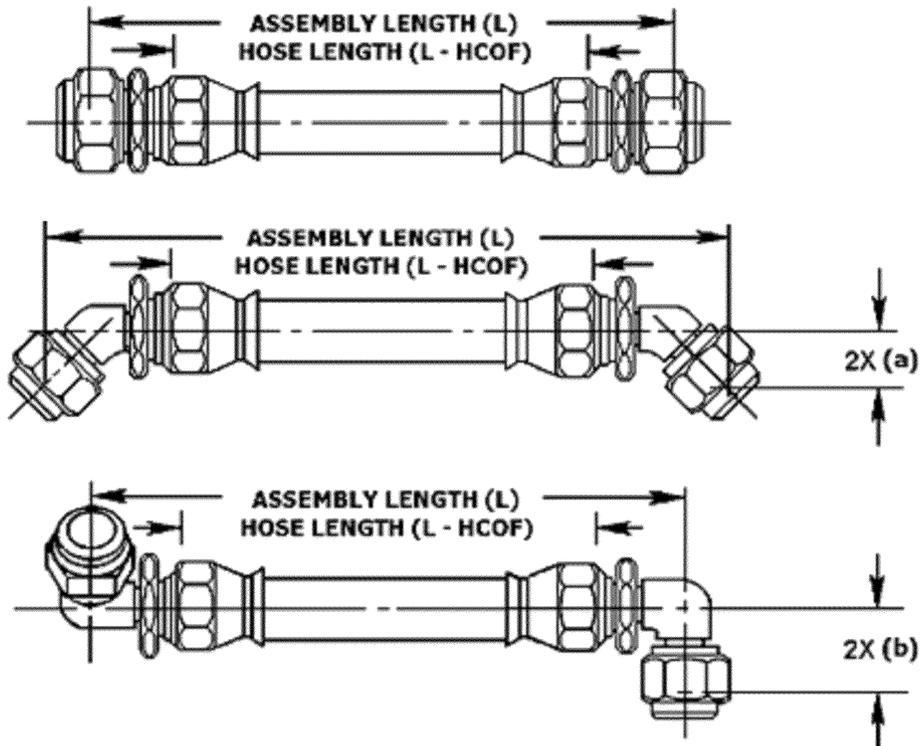
Size	Reference tube OD	Size code	Maximum drop height of elbow fitting	
			(a) <u>1/</u>	(b) <u>1/</u>
3/4	.250 <u>2/</u>	B	.303	.550
4	.250	E	.342	.600
5	.313	F	.360	.675
6	.375	G	.409	.740
8	.500	H	.485	.850
10	.625	J	.571	1.161
12	.750	K	.658	1.411
16Z	1.000	M	.695	1.535
20Z	1.250	N	.803	1.817
24Z	1.500	P	.902	2.067

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

2/ Size 3/4 hose assembly consists of a size 4 tube OD hose assembled with size 3 tube OD fittings.

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.  $\pm 1/8$  inch for lengths under 18 inches.
- b.  $\pm 1/4$  inch for lengths from 18 inches to 36 inches.
- c.  $\pm 1/2$  inch for lengths from 36 inches to 50 inches.
- d.  $\pm 1\%$  for lengths over 50 inches.

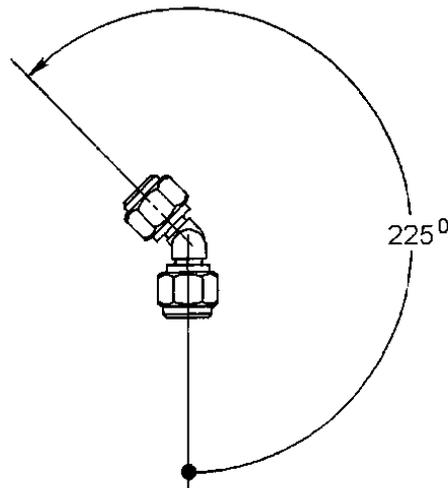


NOTES:

1. Hose assembly length "L" shall be measured, with the hose laid out horizontally and straight between the centers of the nipple ends, along a straight line parallel to the hose length.
2. See table III for dimensions of (a) and (b).

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

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 4). 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  $\pm 2^\circ$ .

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.

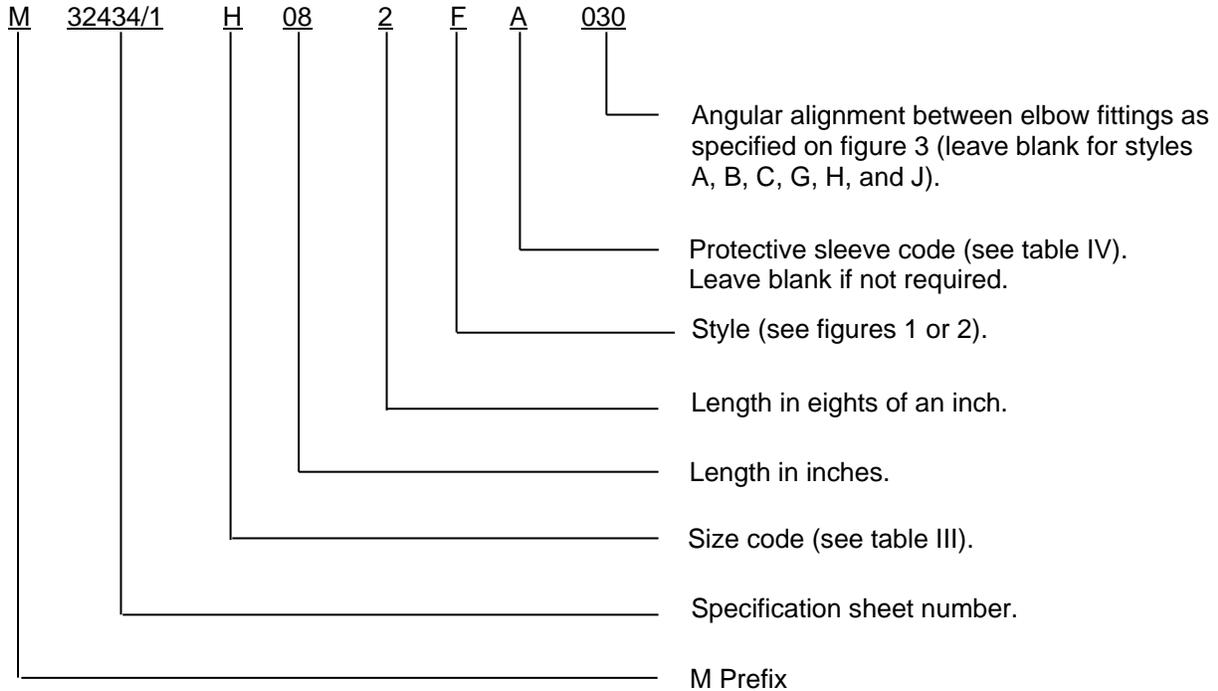
TABLE IV. Protective sleeve code.

Code	Type
Blank	None
A	SAE-AS1072 sleeve, fire protection, silicone covered, temperature ranging from $-65^\circ\text{F}$ to $450^\circ\text{F}$ and intermittently to $500^\circ\text{F}$ , secured with CRES bands as required. <sup>1/</sup>
B	SAE-AS1073 - code B sleeve, abrasion protection, heat shrinkable, black polyolefin, temperature ranging from $-65^\circ\text{F}$ to $250^\circ\text{F}$ .
C	SAE-AS1291 - code A sleeve, chafe guard, extruded seamless white PTFE, temperature ranging from $-65^\circ\text{F}$ to $450^\circ\text{F}$ , secured with CRES bands as required.
D	SAE-AS1291 - code C sleeve, chafe guard, extruded seamless transparent FEP, temperature ranging from $-65^\circ\text{F}$ to $350^\circ\text{F}$ , secured with CRES bands as required.
E	SAE-AS1298 sleeve, heavy wall chafe guard, extruded seamless black PTFE, temperature ranging from $-65^\circ\text{F}$ to $450^\circ\text{F}$ , 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

<sup>1/</sup> 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.

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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.



Example: M32434/1H082FA030 represents 1/2 inch OD PTFE convoluted hose assembly, 8.25 inches long, flare-to-flare reusable fittings 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	SAE-AS1072
MS27055	SAE-AS1073
MS27057	SAE-AS1291
MS27059	SAE-AS1298
MS27053	SAE-AS33514

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CONCLUDING MATERIAL

Custodians:

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

Preparing activity:  
DLA - CC

(Project 4720-2012-019)

Review activities:

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

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