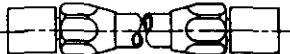
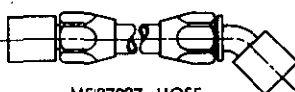

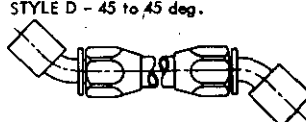
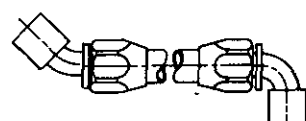
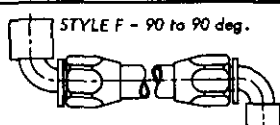
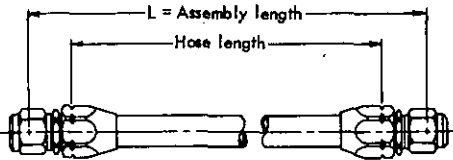


FED. SUP CLASS  
**4720**

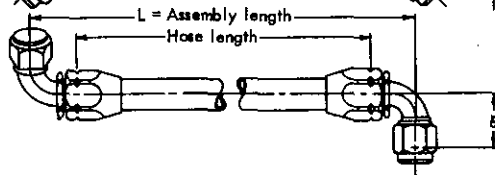
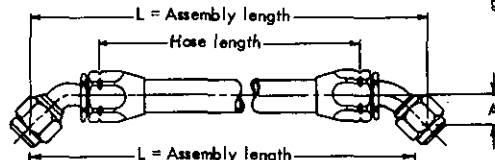
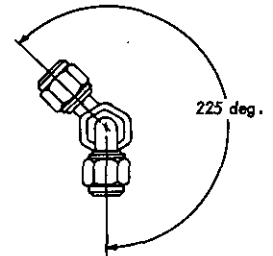
|   |           |   |                    |                        |                        |  |                    |
|---|-----------|---|--------------------|------------------------|------------------------|--|--------------------|
|   |           |   |                    |                        | FED. SUP CLASS<br>4720 |  |                    |
| HOSE ASSEMBLY   |           |   | MS87028            | MS87029                | MS87030                | MS87031  | MS87032            |
| CONFIGURATION   |           | PART NUMBERS OF FITTINGS  |                    |                        |                        |  |                    |
| FTG NO. 1   | FTG NO. 2 | FTG NOS.  | FLARE TO FLARE     | FLARELESS TO FLARELESS | FLARE TO FLANGE        | FLARELESS TO FLANGE                                  | FLANGE TO FLANGE   |
| STYLE A - straight to straight<br><br>MS87027 HOSE |           | 1<br>2  | MS87018<br>MS87018 | MS87021<br>MS87021     | MS87018<br>MS87024     | MS87021<br>MS87024                                   | MS87024<br>MS87024 |
| STYLE B - straight to 45 deg.<br><br>MS87027 HOSE  |           | 1<br>2  | MS87018<br>MS87019 | MS87021<br>MS87022     | MS87018<br>MS87025     | MS87021<br>MS87025                                   | MS87024<br>MS87025 |
| STYLE G - straight to 45 deg.   |           | 1<br>2  |                    |                        | MS87024<br>MS87019     | MS87024<br>MS87022                                   |                    |
|   |           |   |                    |                        |                        |  |                    |
| STYLE C - straight to 90 deg.<br><br>MS87027 HOSE  |           | 1<br>2  | MS87018<br>MS87020 | MS87021<br>MS87023     | MS87018<br>MS87026     | MS87021<br>MS87026                                   | MS87024<br>MS87026 |
| STYLE H - straight to 90 deg.   |           | 1<br>2  |                    |                        | MS87024<br>MS87020     | MS87024<br>MS87023                                   |                    |
|   |           |   |                    |                        |                        |  |                    |
| STYLE D - 45 to 45 deg.<br><br>MS87027 HOSE      |           | 1<br>2  | MS87019<br>MS87019 | MS87022<br>MS87022     | MS87019<br>MS87025     | MS87022<br>MS87025                                   | MS87025<br>MS87025 |
| STYLE E - 45 to 90 deg.<br><br>MS87027 HOSE      |           | 1<br>2  | MS87019<br>MS87020 | MS87022<br>MS87023     | MS87019<br>MS87026     | MS87022<br>MS87026                                   | MS87025<br>MS87026 |
| STYLE J - 45 to 90 deg.   |           | 1<br>2  |                    |                        | MS87025<br>MS87020     | MS87025<br>MS87023                                   |                    |
|   |           |   |                    |                        |                        |  |                    |
| STYLE F - 90 to 90 deg.<br><br>MS87027 HOSE      |           | 1<br>2  | MS87020<br>MS87020 | MS87023<br>MS87023     | MS87020<br>MS87026     | MS87023<br>MS87026                                   | MS87026<br>MS87026 |
| (B) CANCELLED AFTER 15 JUNE 1976 - USE MIL-H-83796/1 THRU / 9 (A) ENTIRE STANDARD REVISED   |           |   |                    |                        |                        |  |                    |
| P.A. ARMY (AV)<br>Other Cust  |           | TITLE HOSE ASSEMBLY, NONMETALLIC, RUBBER, LIGHTWEIGHT, MEDIUM PRESSURE, ATTACHABLE FITTINGS |                    |                        |                        | MILITARY STANDARD<br>MS87028(AV) thru<br>MS87032(AV) |                    |
| PROCUREMENT SPECIFICATION<br>MIL-H- 58089(AV)   |           | SUPERSEDES:   |                    |                        |                        | SHEET 1 OF 2   |                    |

APPROVED 10 Mar 69  
REVISED (A) 7 JUNE 71 (B) 15 JUNE 1976

This standard has been approved by the AVIATION SYSTEMS COMMAND, Department of the ARMY and is mandatory for use by that activity. All other military activities are required to employ this standard where suitable.

FED. SUP CLASS  
4720

For drop height A and B, see applicable fitting MS. The hose length to produce a desired assembly length is determined by measuring distance from socket groove to point shown in sketches.



Angle between elbow fittings, when projected on a plane perpendicular to the hose axis, shall be specified. Sighting along the axis of the hose, the angle specified will be the angle that the furthest fitting should be rotated counterclockwise. Tolerance on angular alignment,  $\pm 5$  deg. on hose lengths up to 36 inches and  $\pm 10$  deg. on hose lengths over 36 inches.

Length L to be measured between centers of nipple ends along a straight line parallel to hose.

Hose with hose laid out horizontally and straight.

Hose assembly length to be specified in inches and eighths of an inch, and in the following increments only:

Under 12 inches, 1/8-inch increments (Tolerance  $\pm 1/8$ ).

12 to 18 inches, 1/4-inch increments (Tolerance  $\pm 1/8$ ).

Over 18 inches, 1/2-inch increments (Tolerance for lengths from

18 to 36 inches  $\pm 1/4$ ) (Tolerance for lengths from 36 to 50

inches  $\pm 1/2$ ) (Tolerance for lengths over 50 inches  $\pm 1$ ).

The part no. shall be formulated to reflect the hose assembly tube OD, length, style, and angle between elbows (as applicable).

#### EXAMPLES OF PART NO.

MS87028 H 18 O F 030

HOSE ASSEMBLY FLARE TO FLARE,  
FOR 1/2-INCH TUBE OD 18  
INCHES LONG, 30 DEG. BETWEEN  
ELBOWS

ANGLE BETWEEN ELBOWS IN DEGREES.

STYLE OF FITTING (SEE SHEET 1).

LENGTH IN EIGHTHS (1/8- OF AN INCH).

LENGTH IN INCHES, FOR LENGTHS UNDER 10 INCHES USE 09, 08, 07, etc.

| DASH NO.       | -3   | -4  | -5   | -6  | -8  | -10 | -12 | -16 | -20   | -24   | -32 |
|----------------|------|-----|------|-----|-----|-----|-----|-----|-------|-------|-----|
| TUBING OD REF. | 3/16 | 1/4 | 5/16 | 3/8 | 1/2 | 5/8 | 3/4 | 1   | 1-1/4 | 1-1/2 | 2   |
| SIZE CODE      | B    | E   | F    | G   | H   | J   | K   | M   | N     | P     | R   |

| FLARE TO FLARE | FLARELESS TO FLARELESS | FLARE TO FLANGE | FLARELESS TO FLANGE | FLANGE TO FLANGE |
|----------------|------------------------|-----------------|---------------------|------------------|
| MS87028        | MS87029                | MS87030         | MS87031             | MS87032          |

INTERCHANGEABILITY INFORMATION: REVISION "A" CHANGES PART NO. FORMULATION AS FOLLOWS:

- PROVISION FOR LOCKWIRE HOLE DELETED (CODE "L")
- HOSE ASSY. LENGTH NOW SPECIFIED IN THREE CHARACTERS INSTEAD OF FOUR CALLED OUT BASIC ISSUE. FIRST CHARACTER DELETED.

#### NOTES

- Fittings shall mate with MS33514, MS33656, or MS33786 end fittings, as applicable.
- For design and size of fittings, see corresponding dash number on applicable MS standard.
- Identification: See procurement specification.
- Dimensions in inches.
- Referenced documents shall be of the issue in effect on date of invitation for bids.
- For design feature purposes, this standard takes precedence over procurement documents referenced herein.

P.A. ARMY (AV)  
Other Cust

TITLE **HOSE ASSEMBLY, NONMETALLIC,  
RUBBER, LIGHTWEIGHT, MEDIUM  
PRESSURE, ATTACHABLE FITTINGS**

**MILITARY STANDARD  
MS 87028(AV) thru  
MS 87032(AV)**

PROCUREMENT SPECIFICATION  
MIL-H-58089(AV)

SUPERSEDES:

SHEET **2** OF