

E-14-16

AS622-84

20 June 1986

USE INSTEAD OF

MS27370

## ACCEPTANCE NOTICE

This non-Government document was adopted on 20 June 1986 and is approved for use by the DoD. The indicated industry group has furnished the clearance required by existing regulations. Copies of the document are stocked by DoD Single Stock Point, US Naval Publications and Forms Center, Philadelphia, PA 19120, for issue to DoD activities only. Contractors and industry groups must obtain copies from SAE, 400 Commonwealth Drive, Warrendale, PA 15096.

Title of Document: Hose Assembly, 3000 PSI, TFE, Flareless, Straight to 45°, Heavyweight

Date of Specific Issue Adopted: July 1984

Releasing Industry Group: Society of Automotive Engineers, Inc.

NOTICE: The procurement document for this component is AS604A.

NOTICE: When reaffirmation, amendment, revision, or cancellation of this standard is initially proposed, the industry group responsible for this standard shall inform the military coordinating activity of the proposed change and request their participation.

## Custodians:

Army - ME  
Navy - AS  
Air Force - 11

## Military Coordinating Activity:

Air Force - 11

(Project 4720-0703)

## Review Activities:

Army - AV, MI  
Air Force - 99  
DLA - CS

FSC 4720

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

FED. SUP. CL.  
4720

AS622

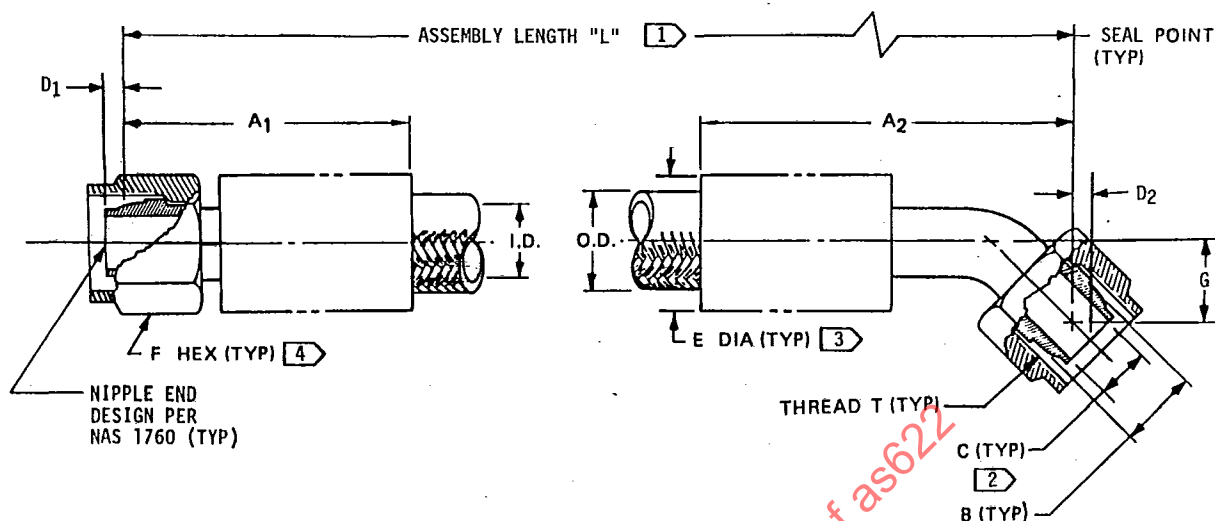


FIGURE 1

DIMENSIONS IN INCHES

TABLE I

| HOSE ASSEMBLY NO. AND SIZE CODE | SIZE REF | THREAD T PER MIL-S-8879 REF | I.D. MIN | A <sub>1</sub> MAX | A <sub>2</sub> MAX | B SEAL DIA BASIC | C (2) DRILL DIA MIN | D <sub>1</sub> REF | D <sub>2</sub> REF | E (3) DIA MAX WITHOUT SLEEVING | F HEX REF |
|---------------------------------|----------|-----------------------------|----------|--------------------|--------------------|------------------|---------------------|--------------------|--------------------|--------------------------------|-----------|
| AS622-04                        | 1/4      | .4375-20 UNJF-3B            | .212     | 1.56               | 2.17               | .2930            | .135                | .16                | .11                | .88                            | .56       |
| AS622-06                        | 3/8      | .5625-18 UNJF-3B            | .298     | 1.80               | 2.68               | .4120            | .240                | .16                | .12                | 1.00                           | .69       |
| AS622-08                        | 1/2      | .7500-16 UNJF-3B            | .391     | 2.06               | 3.11               | .5600            | .340                | .19                | .13                | 1.20                           | .88       |
| AS622-10                        | 5/8      | .8750-14 UNJF-3B            | .485     | 2.30               | 3.59               | .6730            | .410                | .20                | .14                | 1.41                           | 1.00      |
| AS622-12                        | 3/4      | 1.0625-12 UNJ -3B           | .602     | 2.50               | 3.25               | .8100            | .510                | .23                | .16                | 1.69                           | 1.25      |
| AS622-16                        | 1        | 1.3125-12 UNJ -3B           | .852     | 3.00               | 3.72               | 1.0620           | .760                | .30                | .21                | 2.00                           | 1.50      |
| AS622-20                        | 1-1/4    | 1.6250-12 UNJ -3B           | 1.101    | 3.00               | 4.65               | 1.3160           | .925                | .30                | .21                | 2.13                           | 2.00      |

TABLE I (Cont'd)

| HOSE ASSEMBLY NO. AND SIZE CODE | SIZE REF | G    |      | BALL SIZE MIN THRU DIA (2) |         |
|---------------------------------|----------|------|------|----------------------------|---------|
|                                 |          | MIN  | MAX  | MS19059 DASH NO.           | DIA IN. |
| AS622-04                        | 1/4      | .31  | .50  | 4807                       | .109    |
| AS622-06                        | 3/8      | .44  | .62  | 4812                       | .188    |
| AS622-08                        | 1/2      | .50  | .75  | 4816                       | .313    |
| AS622-10                        | 5/8      | .56  | .81  | 4818                       | .375    |
| AS622-12                        | 3/4      | .62  | .88  | 4821                       | .469    |
| AS622-16                        | 1        | .81  | 1.09 | 4829                       | .719    |
| AS622-20                        | 1-1/4    | 1.24 | 1.31 | 4834                       | .875    |

UPON ADOPTION OF THIS DOCUMENT BY THE MILITARY SERVICES FOR LISTING IN THE DODISS, THE DOCUMENT WILL NOT BE REVISED WITHOUT COORDINATION WITH THE ADOPTING MILITARY AGENCY.

|   |     |   |     |   |     |   |     |
|---|-----|---|-----|---|-----|---|-----|
| 1 | --- | 2 | --- | 3 | --- | 4 | --- |
|---|-----|---|-----|---|-----|---|-----|

LIST OF ACTIVE SHEETS

CUSTODIAN: SAE G-3/G-3D

E 6

PROCUREMENT: AS 604

**SAE** The Engineering Resource For Advancing Mobility  
400 COMMONWEALTH DRIVE, WARRENDALE, PA 15096

**AEROSPACE STANDARD**  
HOSE ASSEMBLY, 3000 PSI, TFE, FLARELESS,  
STRAIGHT Distributed under license from the IHS Archive

**AS622** SH 1 OF 4

AS622

TABLE II

| SLEEVE CODE | SLEEVE MATERIAL                                             | TEMP. LIMIT OF | HOSE OR SLEEVE OUTSIDE DIAMETER (MAX-MIN) [5] |              |               |                |                |                |                |
|-------------|-------------------------------------------------------------|----------------|-----------------------------------------------|--------------|---------------|----------------|----------------|----------------|----------------|
|             |                                                             |                | HOSE SIZE                                     |              |               |                |                |                |                |
|             |                                                             |                | 1/4                                           | 3/8          | 1/2           | 5/8            | 3/4            | 1              | 1-1/4          |
| -           | (-) INDICATES HOSE ONLY, NO SLEEVE                          | 400            | .455<br>.395                                  | .595<br>.535 | .735<br>.675  | .935<br>.875   | 1.090<br>1.030 | 1.410<br>1.350 | 1.650<br>1.590 |
| A           | ABRASION SLEEVE TUBULAR (TFE-AS1291-CODE B) [6]             | 400            | .540<br>.468                                  | .715<br>.635 | .855<br>.770  | 1.025<br>.960  | 1.195<br>1.125 | 1.515<br>1.445 | 1.825<br>1.755 |
| B           | ABRASION SLEEVE COIL (NYLON AS1294) [7]                     | 275            | .509<br>.413                                  | .684<br>.584 | .809<br>.733  | 1.005<br>.923  | 1.170<br>1.088 | 1.492<br>1.408 | 1.750<br>1.690 |
| C           | FIRESLLEEVE (AS1072 SIL-FG) (15 MIN) [8] [9] [13]           | 400            | .688<br>.562                                  | .875<br>.750 | 1.000<br>.875 | 1.250<br>1.125 | 1.375<br>1.250 | 1.750<br>1.625 | 2.000<br>1.875 |
| E           | ABRASION SLEEVE SHRINK-ON (FEP) [11]                        | 350            | .458<br>.417                                  | .638<br>.592 | .773<br>.727  | .973<br>.927   | 1.148<br>1.102 | 1.438<br>1.392 | 1.688<br>1.632 |
| F           | ABRASION SLEEVE SHRINK-ON (POLYOLEFIN AS1073 - CODE B) [11] | 275            | .490<br>.440                                  | .670<br>.610 | .795<br>.745  | .997<br>.937   | 1.174<br>1.112 | 1.482<br>1.428 | 1.740<br>1.680 |
| G           | FIRESLLEEVE (AS1072 SIL FG) (5 MIN) [8] [9] [12]            | 400            | .688<br>.562                                  | .875<br>.750 | 1.000<br>.875 | 1.250<br>1.125 | 1.375<br>1.250 | 1.750<br>1.625 | 2.000<br>1.875 |
| H           | FIRESLLEEVE INTEGRAL SILICONE (15 MIN) [13]                 | 400            | .700<br>.640                                  | .880<br>.820 | 1.000<br>.940 | 1.203<br>1.143 | 1.343<br>1.283 | 1.656<br>1.596 | 1.906<br>1.846 |
| J           | FIRESLLEEVE INTEGRAL SILICONE (5 MIN) [12]                  | 400            | .705<br>.645                                  | .880<br>.820 | 1.005<br>.945 | 1.217<br>1.143 | 1.382<br>1.280 | 1.748<br>1.593 | 1.906<br>1.846 |
| K           | INTEGRAL ABRASION SLEEVE (BRAIDED) POLYESTER [10]           | 300            | .505<br>.480                                  | .675<br>.645 | .795<br>.765  | .985<br>.955   | 1.150<br>1.120 | 1.470<br>1.440 | 1.720<br>1.680 |
| L           | ABRASION SLEEVE COIL (PTFE-AS1293) [7]                      | 400            | .522<br>.449                                  | .692<br>.622 | .817<br>.747  | 1.007<br>.937  | 1.172<br>1.102 | 1.492<br>1.422 | 1.750<br>1.690 |

TABLE III

| HOSE ASSEMBLY LENGTH | AVAILABLE INCREMENTS       | TOLERANCE                 |
|----------------------|----------------------------|---------------------------|
| UNDER 18 INCHES      | (NOT LESS THAN) .125 INCH  | (PLUS OR MINUS) .125 INCH |
| 18 TO 36 INCHES      | (NOT LESS THAN) .250 INCH  | (PLUS OR MINUS) .250 INCH |
| 36 TO 50 INCHES      | (NOT LESS THAN) .500 INCH  | (PLUS OR MINUS) .500 INCH |
| OVER 50 INCHES       | (NOT LESS THAN) 1.000 INCH | (PLUS OR MINUS) 1 PERCENT |

TABLE IV

| HOSE OR SLEEVE CODE | HOSE OR TYPE SLEEVE                   | UNITS  | MAXIMUM WEIGHT LBS/INCH (*) |      |      |      |      |      |       |
|---------------------|---------------------------------------|--------|-----------------------------|------|------|------|------|------|-------|
|                     |                                       |        | HOSE SIZE                   |      |      |      |      |      |       |
|                     |                                       |        | 1/4                         | 3/8  | 1/2  | 5/8  | 3/4  | 1    | 1-1/4 |
| -                   | HOSE ONLY                             | LBS/IN | .012                        | .028 | .040 | .062 | .086 | .140 | .154  |
| A                   | ABRASION SLEEVE (TFE-AS1291-B)        | LBS/IN | .003                        | .004 | .004 | .005 | .007 | .009 | .011  |
| B                   | ABRASION SLEEVE (NYLON AS1294)        | LBS/IN | .001                        | .002 | .003 | .003 | .004 | .005 | .007  |
| C                   | FIRESLLEEVE (15 MIN) AS1072           | LBS/IN | .007                        | .010 | .011 | .015 | .017 | .021 | .025  |
| E                   | ABRASION SLEEVE (FEP)                 | LBS/IN | .002                        | .003 | .003 | .005 | .006 | .007 | .009  |
| F                   | ABRASION SLEEVE (AS1073B)             | LBS/IN | .002                        | .003 | .003 | .004 | .005 | .006 | .008  |
| G                   | FIRESLLEEVE (5 MIN) AS1072            | LBS/IN | .007                        | .010 | .011 | .015 | .017 | .021 | .025  |
| H                   | FIRESLLEEVE INTEGRAL (15 MIN) ON HOSE | LBS/IN | .022                        | .042 | .056 | .081 | .102 | .154 | .190  |
| J                   | FIRESLLEEVE INTEGRAL (5 MIN) ON HOSE  | LBS/IN | .022                        | .042 | .056 | .081 | .102 | .154 | .190  |
| K                   | ABRASION SLEEVE POLYESTER WITH HOSE   | LBS/IN | .013                        | .028 | .039 | .060 | .082 | .130 | .160  |
| L                   | ABRASION SLEEVE (PTFE-AS1293)         | LBS/IN | .003                        | .004 | .005 | .005 | .006 | .007 | .009  |
| NONE                | FIRE SLEEVE CLAMP (*)                 | LBS/EA | .020                        | .020 | .025 | .026 | .026 | .033 | .038  |
| NONE                | FITTING END (STRAIGHT) (*)            | LBS/EA | .070                        | .117 | .172 | .266 | .520 | .713 | 1.400 |
| NONE                | FITTING END (45°) (*)                 | LBS/EA | .078                        | .130 | .221 | .327 | .597 | .860 | 1.581 |

(\*) NOTE: FIRESLLEEVE CLAMP AND FITTING END ARE IN LBS EACH

## AEROSPACE STANDARD

HOSE ASSEMBLY, 3000 PSI, TFE, FLARELESS,  
STRAIGHT TO 45°, HEAVYWEIGHT

AS622

SH 2

Issued JULY 1984 Revised

AS622

CONSTRUCTION AND PERFORMANCE: AS 604. FITTINGS SHALL BE PERMANENTLY ATTACHED TO THE HOSE.

OPERATING CHARACTERISTICS: SEE AS 604.

MATERIALS: HOSE AND FITTINGS - PER AS 604.  
SLEEVES - SEE APPLICABLE STANDARD, TABLE II

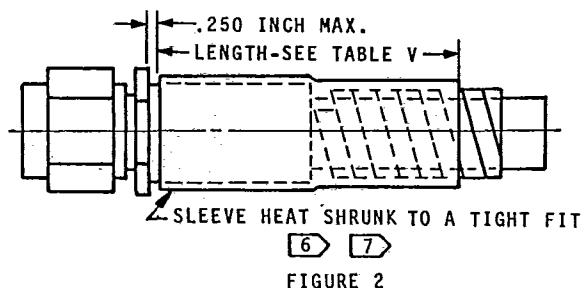
MARKING: MARKING SHALL BE PER AS 604 ON A STAINLESS STEEL BAND NOT OVER 1.0 INCH WIDE, OR ON THE COLLAR. THE CHARACTERS SHALL BE A MINIMUM OF 1/16 INCH HIGH. THE BAND SHALL BE SO DESIGNED AS TO REMAIN TIGHT ON THE HOSE TO PREVENT RELATIVE MOVEMENT AND RESULTANT CHAFING. IT SHALL BE OF SUFFICIENT STRENGTH TO PREVENT REMOVAL BY HAND. HOSE ASSEMBLY DATE AND "PT" SYMBOL SHALL BE ELECTROETCHED ON THE BAND OR ON AN END FITTING OR A FIRE-SLEEVE CLAMP.

#### FLAG NOTES:

- 1 LENGTH "L" IS A FOUR DIGIT NUMBER OF WHICH THE FIRST THREE DIGITS DESCRIBE THE HOSE ASSEMBLY LENGTH IN WHOLE INCHES, AND THE FOURTH DIGIT, THE FRACTION OF AN INCH IN EIGHTHS. LENGTH "L" IS MEASURED FROM "SEAL POINT" TO "SEAL POINT." FOR LENGTH INCREMENTS AND TOLERANCES SEE TABLE III. TO CONVERT "SEAL POINT" TO "SEAL POINT" TO "END TO END" MEASUREMENT, ADD "D<sub>1</sub>" + "D<sub>2</sub>" TO LENGTH "L".
- 2 A TRUE CIRCULAR CROSS SECTION IS NOT REQUIRED THROUGH THE FITTING I.D. HOWEVER, THE APPLICABLE BALL DIAMETER LISTED IN TABLE I SHALL PASS THROUGH THE END FITTING AFTER IT IS ASSEMBLED TO THE HOSE.
- 3 DISTANCE ACROSS CORNERS OF THE COUPLING NUT MAY EXCEED THIS DIMENSION.
- 4 STANDARD COUPLING NUTS SHALL BE IN ACCORDANCE WITH MS21921 OR MS27073 AND MATE WITH MS33514 FITTING ENDS. NONSTANDARD COUPLING NUTS MAY BE USED, PROVIDED THEY ARE DIMENSIONALLY AND FUNCTIONALLY EQUIVALENT, AND PROVIDED THEY CANNOT BE REMOVED FROM THE FITTING. NUTS SHALL MEET TORQUE TEST REQUIREMENTS PER AS 604.
- 5 DIAMETERS ARE LISTED FOR CLAMP SELECTION. TUBULAR SLEEVES MAY NOT BE A PERFECT ROUND AND SHALL BE MEASURED WITH A DIAMETER TAPE RULER (OFTEN REFERRED TO AS PI-TAPE).
- 6 TUBULAR ABRASION (TFE) SLEEVES SHALL HAVE AN I.D. NO GREATER THAN HOSE O.D. + .05 INCH. AXIAL MOVEMENT OF THE SLEEVE INSTALLED ON THE HOSE SHALL NOT EXCEED .05 INCH. ENDS OF THE TUBULAR SLEEVE SHALL BE TERMINATED WITH A LENGTH OF MIL-I-23053/11 (FEP) CLASS 1 OR 2, COLOR CLEAR, PER TABLE V FIGURE 2.
- 7 COIL ABRASION SLEEVES, WHEN ASSEMBLED ON A STRAIGHT HOSE, SHALL HAVE AN AVERAGE GAP BETWEEN COILS NOT EXCEEDING .05 INCH. DISPLACEMENT OF THE COILS OF THE SLEEVE, CAUSING A GREATER GAP, SHALL NOT BE CAUSE FOR REJECTION IF THE COILS CAN BE REPOSITIONED TO MEET THE GAP REQUIREMENTS. ENDS OF THE COIL SLEEVE SHALL BE TERMINATED WITH A LENGTH OF HEAT SHRINKABLE SLEEVING IN ACCORDANCE WITH TABLE V AND FIGURE 2. CODE "B" (NYLON COIL) ABRASION SLEEVES SHALL BE TERMINATED WITH MIL-I-23053/5, CLASS 1 OR 3, COLOR BLACK. CODE "L" (COIL ABRASION) SLEEVES SHALL BE TERMINATED WITH MIL-I-23053/12A, CLASS 1, COLOR TRANSPARENT, PTFE. (OPTIONAL MIL-I-23053/11 (FEP) CLASS 1 OR 2, COLOR CLEAR).

TABLE V

| HOSE SIZE  | LENGTH (INCHES) |
|------------|-----------------|
| 1/4<br>3/8 | 2.00 ± .25      |
| 1/2<br>5/8 | 2.50 ± .25      |
| 3/4<br>1   | 3.00 ± .25      |
| 1-1/4      | 3.50 ± .25      |



#### AEROSPACE STANDARD

HOSE ASSEMBLY, 3000 PSI, TFE, FLARELESS,  
STRAIGHT TO 450, HEAVYWEIGHT

AS622

SH 3

Revised  
Issued JULY 1984