

REV.  
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AS157

SUBMITTED FOR RECOGNITION AS AN AMERICAN NATIONAL STANDARD

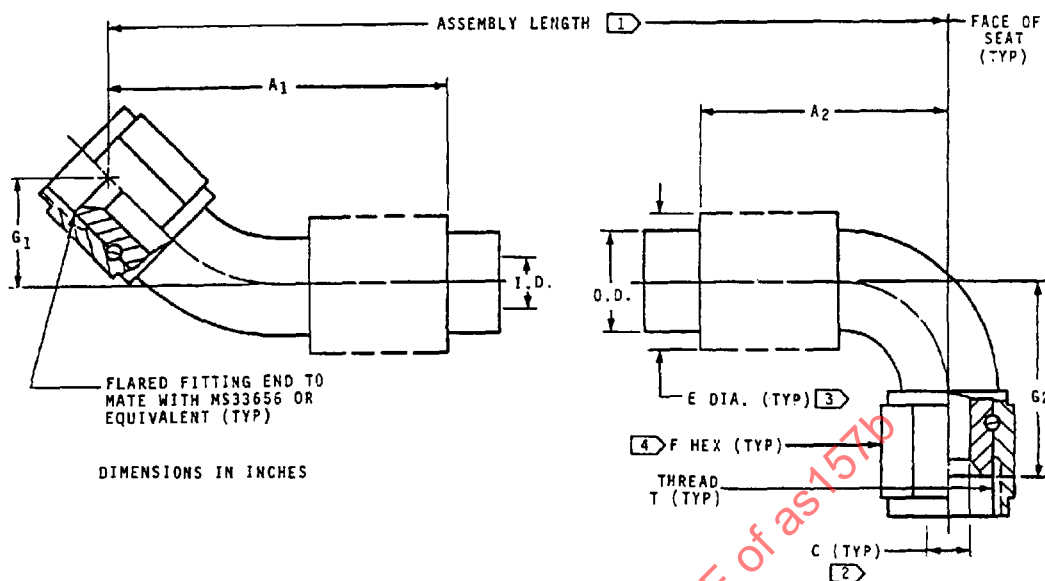
FEDERAL SUPPLY CLASS  
4720

FIGURE 1

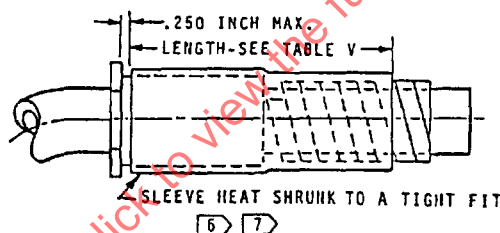


FIGURE 2

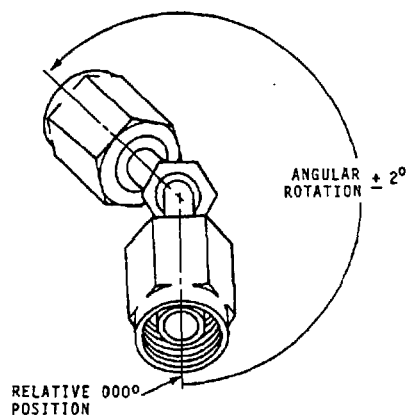


FIGURE 3

CUSTODIAN: SAE G-3/G-3D

PROCUREMENT SPECIFICATION: NONE

**SAE** The Engineering Society  
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Land Sea Air and Space  
**INTERNATIONAL**  
400 Commonwealth Drive, Warrendale, PA 15096-0001

**AEROSPACE STANDARD**

(R) HOSE ASSEMBLY, NONMETALLIC, 3000 psi, TFE,  
FLARED, 45° TO 90°, LIGHTWEIGHT

**AS157**  
SHEET 1 OF 5

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TABLE 1

| HOSE<br>ASSEMBLY<br>NO. AND<br>SIZE CODE | SIZE<br>REF | THREAD T<br>PER MIL-S-8879<br>REF | ID<br>MIN | A <sub>1</sub><br>MAX | A <sub>2</sub><br>MAX | C /2/<br>DRILL<br>DIA<br>MIN | E /3/<br>DIA MAX<br>WITHOUT<br>SLEEVING | F<br>HEX<br>REF | G <sub>1</sub><br>MIN | G <sub>1</sub><br>MAX | G <sub>2</sub><br>MIN | G <sub>2</sub><br>MAX |
|------------------------------------------|-------------|-----------------------------------|-----------|-----------------------|-----------------------|------------------------------|-----------------------------------------|-----------------|-----------------------|-----------------------|-----------------------|-----------------------|
| AS157E                                   | 1/4         | .4375-20 UNJF-3B                  | .212      | 2.08                  | 1.75                  | .135                         | .69                                     | .56             | .280                  | .450                  | .615                  | .740                  |
| AS157G                                   | 3/8         | .5625-18 UNJF-3B                  | .298      | 2.29                  | 2.00                  | .240                         | .80                                     | .69             | .370                  | .565                  | .830                  | .920                  |
| AS157H                                   | 1/2         | .7500-16 UNJF-3B                  | .391      | 2.61                  | 2.38                  | .340                         | .97                                     | .88             | .430                  | .645                  | .910                  | 1.140                 |
| AS157J                                   | 5/8         | .8750-14 UNJF-3B                  | .485      | 3.09                  | 2.81                  | .410                         | 1.11                                    | 1.00            | .510                  | .675                  | 1.110                 | 1.310                 |
| AS157K                                   | 3/4         | 1.0625-12 UNJ-3B                  | .602      | 3.44                  | 3.25                  | .510                         | 1.38                                    | 1.25            | .590                  | .720                  | 1.340                 | 1.500                 |
| AS157M                                   | 1           | 1.3125-12 UNJ-3B                  | .852      | 3.75                  | 3.30                  | .760                         | 1.66                                    | 1.50            | .760                  | .820                  | 1.805                 | 1.865                 |

TABLE 2

| SLEEVE<br>CODE | SLEEVE MATERIAL                                                   | TEMP.<br>LIMIT<br>°F | TOLE-<br>RANCE | HOSE OR<br>SLEEVE<br>OUTSIDE<br>DIAMETER<br>/5/<br>HOSE<br>SIZE<br>1/4 | HOSE OR<br>SLEEVE<br>OUTSIDE<br>DIAMETER<br>/5/<br>HOSE<br>SIZE<br>3/8 | HOSE OR<br>SLEEVE<br>OUTSIDE<br>DIAMETER<br>/5/<br>HOSE<br>SIZE<br>1/2 | HOSE OR<br>SLEEVE<br>OUTSIDE<br>DIAMETER<br>/5/<br>HOSE<br>SIZE<br>5/8 | HOSE OR<br>SLEEVE<br>OUTSIDE<br>DIAMETER<br>/5/<br>HOSE<br>SIZE<br>3/4 | HOSE OR<br>SLEEVE<br>OUTSIDE<br>DIAMETER<br>/5/<br>HOSE<br>SIZE<br>1 |
|----------------|-------------------------------------------------------------------|----------------------|----------------|------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------------|
| -              | (-) INDICATES HOSE ONLY,<br>NO SLEEVE (AS1624)                    | 400                  | MAX<br>MIN     | .390<br>.360                                                           | .490<br>.455                                                           | .615<br>.585                                                           | .730<br>.690                                                           | .990<br>.950                                                           | 1.270<br>1.230                                                       |
| A              | ABRASION SLEEVE TUBULAR<br>(TFE-AS1291-CODE B) /6/                | 400                  | MAX<br>MIN     | .500<br>.440                                                           | .600<br>.540                                                           | .730<br>.670                                                           | .840<br>.780                                                           | 1.110<br>1.050                                                         | 1.400<br>1.340                                                       |
| B              | ABRASION SLEEVE COIL<br>(NYLON AS1294) /7/                        | 275                  | MAX<br>MIN     | .450<br>.390                                                           | .550<br>.490                                                           | .695<br>.635                                                           | .810<br>.750                                                           | 1.080<br>1.020                                                         | 1.360<br>1.300                                                       |
| C              | FIRE SLEEVE (AS1072 SIL-FG)<br>(15 min) /8/ /9/ /13/              | 400                  | MAX<br>MIN     | .625<br>.500                                                           | .750<br>.625                                                           | .875<br>.750                                                           | 1.000<br>.875                                                          | 1.250<br>1.125                                                         | 1.500<br>1.375                                                       |
| D              | ABRASION SLEEVE INTEGRAL<br>SILICONE COMPOSITE<br>/10/ /14/       | 350                  | MAX<br>MIN     | .500<br>.460                                                           | .600<br>.560                                                           | .700<br>.660                                                           | .830<br>.790                                                           | 1.120<br>1.070                                                         | 1.400<br>1.350                                                       |
| E              | ABRASION SLEEVE SHRINK-ON<br>(FEP) /11/                           | 350                  | MAX<br>MIN     | .424<br>.374                                                           | .540<br>.480                                                           | .665<br>.615                                                           | .790<br>.730                                                           | 1.070<br>1.010                                                         | 1.350<br>1.290                                                       |
| F              | ABRASION SLEEVE SHRINK-ON<br>(POLYOLEFIN AS1073 - CODE B)<br>/11/ | 275                  | MAX<br>MIN     | .450<br>.400                                                           | .560<br>.505                                                           | .695<br>.645                                                           | .810<br>.750                                                           | 1.080<br>1.020                                                         | 1.360<br>1.300                                                       |
| G              | FIRE SLEEVE (AS1072 SIL-FG)<br>(5 min) /8/ /9/ /12/               | 400                  | MAX<br>MIN     | .625<br>.500                                                           | .750<br>.625                                                           | .875<br>.750                                                           | 1.000<br>.875                                                          | 1.250<br>1.125                                                         | 1.500<br>1.375                                                       |
| H              | FIRE SLEEVE INTEGRAL SILICONE<br>(15 min) (AS1722) /13/           | 400                  | MAX<br>MIN     | .660<br>.600                                                           | .745<br>.685                                                           | .895<br>.835                                                           | 1.005<br>.945                                                          | 1.220<br>1.160                                                         | 1.515<br>1.455                                                       |
| J              | FIRE SLEEVE INTEGRAL SILICONE<br>(5 min) /12/                     | 400                  | MAX<br>MIN     | .660<br>.600                                                           | .745<br>.685                                                           | .895<br>.835                                                           | 1.005<br>.945                                                          | 1.220<br>1.160                                                         | 1.515<br>1.455                                                       |
| K              | INTEGRAL ABRASION SLEEVE<br>(BRAIDED) POLYESTER /10/              | 300                  | MAX<br>MIN     | .490<br>.444                                                           | .570<br>.535                                                           | .695<br>.650                                                           | .800<br>.760                                                           | 1.070<br>1.030                                                         | 1.350<br>1.310                                                       |
| L              | ABRASION SLEEVE COIL<br>(PTFE-AS1293) /7/                         | 400                  | MAX<br>MIN     | .500<br>.440                                                           | .600<br>.540                                                           | .730<br>.670                                                           | .862<br>.802                                                           | 1.110<br>1.050                                                         | 1.400<br>1.340                                                       |

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**AEROSPACE STANDARD**(R) HOSE ASSEMBLY, NONMETALLIC, 3000 psi, TFE,  
FLARED, 45° TO 90°, LIGHTWEIGHT**AS157**  
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TABLE 3

| HOSE ASSEMBLY LENGTH   | AVAILABLE INCREMENTS     | TOLERANCE |
|------------------------|--------------------------|-----------|
| UNDER 18 in, EXCLUSIVE | (NOT LESS THAN) .125 in  | ±.125 in  |
| 18 TO 36 in, EXCLUSIVE | (NOT LESS THAN) .250 in  | ±.250 in  |
| 36 TO 50 in, EXCLUSIVE | (NOT LESS THAN) .500 in  | ±.500 in  |
| OVER 50 in, EXCLUSIVE  | (NOT LESS THAN) 1.000 in | ±1%       |

TABLE 4

| HOSE<br>OR<br>SLEEVE<br>CODE | HOSE OR TYPE SLEEVE                     | UNITS | MAXIMUM<br>WEIGHT<br>HOSE<br>SIZE<br>1/4 | MAXIMUM<br>WEIGHT<br>HOSE<br>SIZE<br>3/8 | MAXIMUM<br>WEIGHT<br>HOSE<br>SIZE<br>1/2 | MAXIMUM<br>WEIGHT<br>HOSE<br>SIZE<br>5/8 | MAXIMUM<br>WEIGHT<br>HOSE<br>SIZE<br>3/4 | MAXIMUM<br>WEIGHT<br>HOSE<br>SIZE<br>1 |
|------------------------------|-----------------------------------------|-------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|----------------------------------------|
| -                            | HOSE ONLY                               | LB/IN | .009                                     | .015                                     | .020                                     | .027                                     | .055                                     | .085                                   |
| A                            | ABRASION SLEEVE (TFE-AS1291-B)          | LB/IN | .003                                     | .004                                     | .004                                     | .005                                     | .007                                     | .009                                   |
| B                            | ABRASION SLEEVE (NYLON AS1294)          | LB/IN | .001                                     | .002                                     | .003                                     | .003                                     | .004                                     | .005                                   |
| C                            | FIRE SLEEVE (15 min) AS1072             | LB/IN | .007                                     | .009                                     | .011                                     | .012                                     | .017                                     | .021                                   |
| D                            | ABRASION SLEEVE INTEGRAL WITH HOSE      | LB/IN | .012                                     | .016                                     | .024                                     | .034                                     | .067                                     | .110                                   |
| E                            | ABRASION SLEEVE (FEP)                   | LB/IN | .002                                     | .003                                     | .003                                     | .005                                     | .006                                     | .007                                   |
| F                            | ABRASION SLEEVE (AS1073B)               | LB/IN | .002                                     | .003                                     | .003                                     | .004                                     | .005                                     | .006                                   |
| G                            | FIRE SLEEVE (5 min) AS1072              | LB/IN | .007                                     | .009                                     | .011                                     | .012                                     | .017                                     | .021                                   |
| H                            | FIRE SLEEVE INTEGRAL (15 min) WITH HOSE | LB/IN | .019                                     | .027                                     | .035                                     | .047                                     | .099                                     | .117                                   |
| J                            | FIRE SLEEVE INTEGRAL (5 min) WITH HOSE  | LB/IN | .019                                     | .027                                     | .035                                     | .047                                     | .099                                     | .117                                   |
| K                            | ABRASION SLEEVE POLYESTER WITH HOSE     | LB/IN | .012                                     | .016                                     | .022                                     | .030                                     | .060                                     | .090                                   |
| L                            | ABRASION SLEEVE (PTFE-AS1293)           | LB/IN | .003                                     | .004                                     | .005                                     | .005                                     | .006                                     | .007                                   |
| NONE                         | FIRE SLEEVE CLAMP                       | LB/EA | .025                                     | .025                                     | .025                                     | .026                                     | .026                                     | .026                                   |
| NONE                         | FITTING END (HOSE SIZE - 45°)           | LB/EA | .075                                     | .121                                     | .207                                     | .306                                     | .566                                     | .780                                   |
| NONE                         | FITTING END (HOSE SIZE - 90°)           | LB/EA | .075                                     | .121                                     | .207                                     | .306                                     | .584                                     | .840                                   |

TABLE 5

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

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## NOTES:

- /1/ LENGTH "L" IS A THREE DIGIT NUMBER OF WHICH THE FIRST TWO DIGITS DESCRIBE THE HOSE ASSEMBLY LENGTH IN WHOLE INCHES, AND THE THIRD DIGIT, THE FRACTION OF AN INCH IN EIGHTHS. LENGTH "L" IS MEASURED FROM "FACE OF SEAT" TO "FACE OF SEAT." FOR LENGTH INCREMENTS AND TOLERANCES SEE TABLE 3.
- /2/ A TRUE CIRCULAR CROSS SECTION IS NOT REQUIRED THROUGH THE FITTING ID. HOWEVER, A SPHERICAL BALL EQUIVALENT TO 85% OF THE MINIMUM DRILL DIAMETER 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 MS33656 FLARED 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 AS1339.
- /5/ DIAMETERS ARE LISTED FOR CLAMP SELECTION. TUBULAR SLEEVES MAY NOT BE A PERFECT ROUND AND SHALL BE MEASURED WITH A DIAMETER TAPE RULE (OFTEN REFERRED TO AS A PI-TAPE).
- /6/ TUBULAR ABRASION (TFE) SLEEVES SHALL HAVE AN ID NO GREATER THAN HOSE OD + .05 in. AXIAL MOVEMENT OF THE SLEEVE INSTALLED ON THE HOSE SHALL NOT EXCEED .05 in. 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 5 FIGURE 2.
- /7/ COIL ABRASION SLEEVES, WHEN ASSEMBLED ON A STRAIGHT HOSE, SHALL HAVE AN AVERAGE GAP BETWEEN COILS NOT EXCEEDING .05 in. 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 5 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).
- /8/ THE TABLE 2 SLEEVE DIAMETERS FOR AS1072 SLEEVES APPLY WHEN THE SLEEVE IS COMPRESSED, OR CLAMPED, TO CONTACT THE HOSE. IN THIS CASE A WRINKLE MAY OCCUR OVER APPROXIMATELY 10% OF THE SLEEVE CIRCUMFERENCE.
- /9/ THE CUT ENDS OF THE FIRESLEEVE SHALL BE COATED WITH RTV SILICONE RUBBER, PRIOR TO INSTALLATION, TO PREVENT WICKING OF FLUIDS. THE FIRESLEEVE ENDS SHALL BE SECURED TO THE HOSE ASSEMBLY END FITTINGS WITH CORROSION RESISTANT STEEL BANDS. AFTER INSTALLATION, CRACKS OR VOIDS IN THE FIRESLEEVE, WHICH EXPOSE THE FIBERGLASS, SHALL BE COATED WITH RTV SILICONE RUBBER.
- /10/ INTEGRAL ABRASION SLEEVE SHALL FORM AN INTEGRAL, PERMANENT PART OF THE HOSE AND SHALL TERMINATE A MAXIMUM OF .200 in FROM THE END OF THE COLLAR.
- /11/ FEP AND POLYOLEFIN SHRINK ABRASION SLEEVES SHALL BE SHRUNK TO A SNUG FIT OVER THE HOSE AND END FITTING COLLARS.
- /12/ ADD "AS1055 TYPE IIb CLASS A-S/P" TO IDENTIFICATION MARKING TO SHOW LEVEL OF COMPLIANCE, "FIRE RESISTANT" (5 min), WITH AS1055.
- /13/ ADD "AS1055 TYPE IIb CLASS B-S/P" TO IDENTIFICATION MARKING TO SHOW LEVEL OF COMPLIANCE, "FIRE PROOF" (15 min), WITH AS1055.
- /14/ SLEEVES CODED "D" ARE INACTIVE FOR FUTURE DESIGN AND SUPERSEDED BY CODE "K", AS OF THE RELEASE DATE OF REVISION "A" OF THIS STANDARD.
15. CONSTRUCTION AND PERFORMANCE: AS1339. FITTINGS SHALL BE PERMANENTLY ATTACHED TO THE HOSE.
16. OPERATING CHARACTERISTICS: SEE AS1339.
17. MATERIALS:
  - a. HOSE AND FITTINGS: PER AS1339.
  - b. SLEEVES: SEE APPLICABLE STANDARD, TABLE 2.
18. MARKING: MARKING SHALL BE PER AS1339 ON A STAINLESS STEEL BAND NOT OVER 1.0 in WIDE, OR ON THE COLLAR. THE CHARACTERS SHALL BE A MINIMUM OF 1/16 in 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 FIRESLEEVE CLAMP.

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