

RATIONALE

REVISED PROCUREMENT NOTE /2/, COUPLING NUT NOTE /9/, AND ADDED NOTE /21/ TO CONFORM TO CURRENT REQUIREMENTS.

REV.
A

SAE AS5964

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user." SAE reviews each technical report at least every five years at which time it may be reaffirmed, revised, or cancelled. SAE invites your written comments and suggestions.

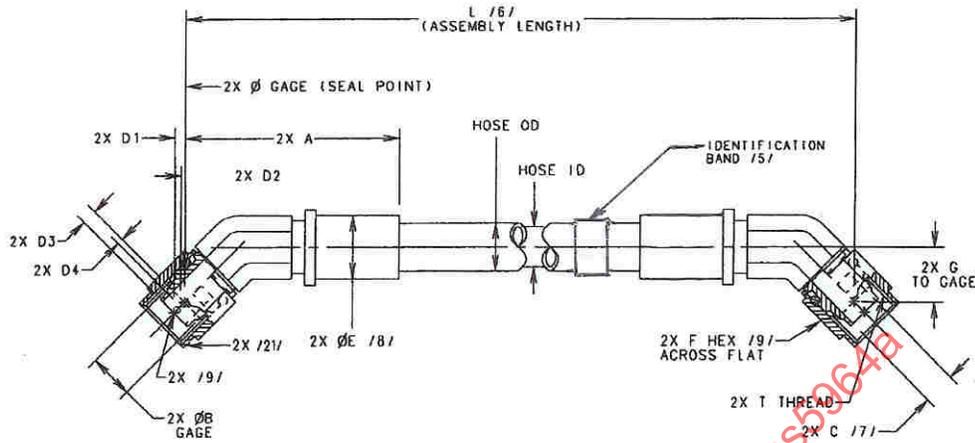


FIGURE 1 - HOSE ASSEMBLY DIMENSIONS

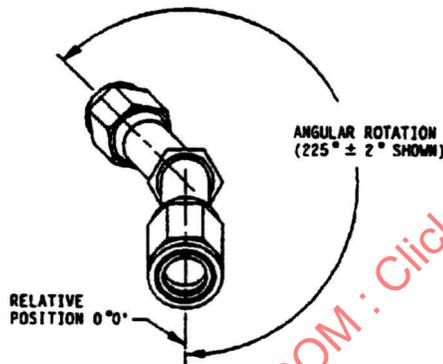


FIGURE 2 - FITTING ORIENTATION /17/

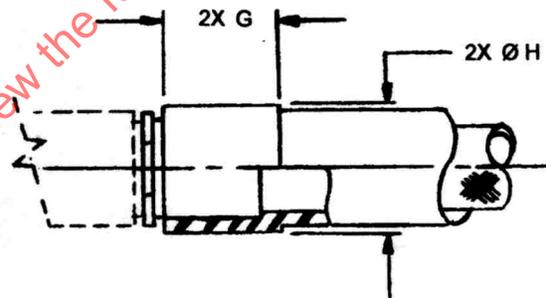
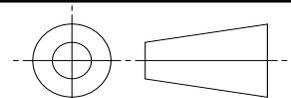


FIGURE 3 - INTEGRAL FIRESLEEVE CUFF /13/

SAE values your input. To provide feedback on this Technical Report, please visit <http://www.sae.org/technical/standards/AS5964>

THIRD ANGLE PROJECTION



CUSTODIAN: SAE G-3/G-3D

PROCUREMENT SPECIFICATION: AS5960 /2/

SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

HOSE ASSEMBLY, POLYTETRAFLUOROETHYLENE
CRES BRAID REINFORCED, 400 °F, 5080 PSI
FLARELESS, 45° ELBOW TO 45° ELBOW

SAE AS5964
SHEET 1 OF 5

**REV.
A**

TABLE 1 - HOSE ASSEMBLY DIMENSIONS

| HOSE ASSEMBLY AS5964 SIZE CODE | SIZE | THREAD T PER AS8879 | A MAX | Ø B GAGE BASIC | C HEX | (D1) /9/ | (D2) /9/ | (D3) /9/ | (D4) /9/ |
|--------------------------------|-------|---------------------|-------|----------------|-------|----------|----------|----------|----------|
| E | .250 | .4375-28UNJEF-3B | 3.05 | .2930 | .56 | .11 | .039 | .16 | .055 |
| G | .375 | .5625-24UNJEF-3B | 3.16 | .4120 | .69 | .11 | .039 | .16 | .055 |
| H | .500 | .7500-20UNJEF-3B | 3.73 | .5600 | .88 | .13 | .047 | .19 | .066 |
| J | .625 | .8750-20UNJEF-3B | 4.06 | .6730 | 1.00 | .14 | .047 | .20 | .066 |
| K | .750 | 1.0625-18UNJEF-3B | 4.49 | .8100 | 1.25 | .16 | .047 | .23 | .066 |
| M | 1.000 | 1.3125-16UNJ-3B | 5.39 | 1.0620 | 1.50 | .21 | .047 | .30 | .066 |
| N | 1.250 | 1.6250-16UNJ-3B | 6.83 | 1.3160 | 1.81 | .21 | -- | .30 | -- |

TABLE 1 - HOSE ASSEMBLY DIMENSIONS (CONTINUED)

| HOSE ASSEMBLY AS5964 - SIZE CODE | SIZE | E MIN | E MAX | Ø F MAX /8/ | BALL SIZE MIN THRU IN /7/ |
|----------------------------------|-------|-------|-------|-------------|---------------------------|
| E | .250 | .328 | .458 | .88 | .113 |
| G | .375 | .368 | .498 | 1.00 | .192 |
| H | .500 | .487 | .617 | 1.20 | .281 |
| J | .625 | .500 | .630 | 1.41 | .349 |
| K | .750 | .586 | .786 | 1.69 | .434 |
| M | 1.000 | .631 | .831 | 2.00 | .638 |
| N | 1.250 | .750 | .950 | 2.25 | .786 |

TABLE 2 - HOSE AND SLEEVE OUTSIDE DIAMETER /10/

| SLEEVE CODE | SLEEVE MATERIAL | TEMP LIMIT °F | TOLERANCE | SIZE .250 | SIZE .375 | SIZE .500 | SIZE .625 | SIZE .750 | SIZE 1.000 | SIZE 1.250 |
|-------------|--|---------------|------------|--------------|----------------|----------------|----------------|----------------|----------------|----------------|
| - | (-) INDICATES HOSE ONLY NO SLEEVE (SEE AS5960) REF | 400 °F | MAX MIN | .510 .450 | .620 .560 | .760 .700 | .960 .835 | 1.120 .995 | 1.430 1.305 | 1.685 1.560 |
| C | FIRESLEEVE (AS1072 SIL-FG) (15 MIN) /11/ /12/ /14/ | 400 °F | MAX MIN | .970 .810 | 1.090 1.000 | 1.220 1.060 | 1.500 1.260 | 1.590 1.470 | 1.950 1.780 | 2.190 1.940 |
| F | ABRASION SLEEVE SHRINK-ON (POLYOLEFIN AS1073-CODE B) /16/ | 275 °F | MAX MIN | .560 .480 | .700 .590 | .910 .760 | 1.045 .895 | 1.205 1.080 | 1.530 1.370 | 1.785 1.660 |
| H | FIRESLEEVE, INTEGRAL SILICONE (15 MIN) /14/ | 400 °F | MAX MIN | .815 .755 | .940 .880 | 1.060 1.000 | 1.200 1.075 | 1.420 1.295 | 1.740 1.615 | 2.000 1.875 |
| K | INTEGRAL ABRASION SLEEVE (BRAIDED POLYESTER) /15/ | 300 °F | MAX MIN | .590 .530 | .710 .650 | .860 .735 | 1.065 .885 | 1.205 1.130 | 1.530 1.405 | 1.815 1.690 |

TABLE 3 - HOSE ASSEMBLY LENGTH TOLERANCE

| HOSE ASSEMBLY LENGTH | TOLERANCE |
|-----------------------|-----------|
| UNDER 18 in | ±.125 in |
| 18 TO 36 in EXCLUSIVE | ±.250 in |
| 36 TO 50 in EXCLUSIVE | ±.500 in |
| 50 in AND OVER | ±1% |

TABLE 4 - WEIGHT (MAX)

| HOSE OR SLEEVE CODE | HOSE OR TYPE SLEEVE | UNITS | SIZE | SIZE | SIZE | SIZE | SIZE | SIZE | SIZE |
|---------------------|---|-------|------|------|------|------|------|-------|-------|
| | | | .250 | .375 | .500 | .625 | .750 | 1.000 | 1.250 |
| - | HOSE ONLY (SEE AS5960) REF | LB/IN | .022 | .037 | .046 | .070 | .105 | .170 | .220 |
| C | TUBULAR FIRESLEEVE AS1072 (15 min) | LB/IN | .017 | .020 | .022 | .030 | .035 | .040 | .042 |
| F | ABRASION SLEEVE (AS1073-CODE B) | LB/IN | .003 | .004 | .005 | .006 | .008 | .010 | .015 |
| H | FIRESLEEVE INTEGRAL SILICONE ON HOSE (15 min) | LB/IN | .040 | .060 | .070 | .095 | .140 | .220 | .265 |
| K | ABRASION SLEEVE, POLYESTER ON HOSE | LB/IN | .025 | .040 | .050 | .070 | .110 | .180 | .230 |
| NONE | FIRESLEEVE CLAMP | LB/EA | .020 | .025 | .025 | .025 | .032 | .032 | .035 |
| NONE | FITTING END (45° ELBOW) /17/ /18/ | LB/EA | .063 | .111 | .189 | .266 | .342 | .637 | .955 |

TABLE 5 - INTEGRAL FIRESLEEVE CUFF DIMENSIONS /13/

| HOSE SIZE | G MAX | H Ø MAX |
|-----------|-------|---------|
| 04 | 2.56 | 1.08 |
| 06 | 2.68 | 1.20 |
| 08 | 2.88 | 1.40 |
| 10 | 3.32 | 1.61 |
| 12 | 3.38 | 1.89 |
| 16 | 3.38 | 2.20 |
| 20 | 3.81 | 2.45 |

NOTES:

1. MATERIALS:

- a. HOSE AND FITTINGS - PER AS5960.
- b. THE COLLARS/SOCKETS MAY BE STAINLESS STEEL.
- c. SLEEVES - SEE APPLICABLE STANDARDS, TABLE 2.

/2/ PROCUREMENT SPECIFICATION: AS5960 EXCEPT AS SPECIFIED ON THIS STANDARD. PRODUCT SUPPLIED TO THIS SPECIFICATION SHALL BE MANUFACTURED AND ASSEMBLED BY AN ACCREDITED MANUFACTURER OR ASSEMBLED BY AN ACCREDITED DISTRIBUTOR LISTED IN THE PERFORMANCE REVIEW INSTITUTE (PRI) QUALIFIED PRODUCTS LIST (QPL) PRI-QPL-AS5960 FOR THIS STANDARD. SEE www.eauditnet.com FOR CURRENT QPL ONLINE.

3. CONSTRUCTION AND PERFORMANCE PER AS5960. FITTINGS SHALL BE PERMANENTLY ATTACHED TO HOSE.
4. OPERATING CHARACTERISTICS PER AS5960.

| | | | |
|---|--|-----------------------------------|-------------------------|
|  An SAE International Group | AEROSPACE STANDARD | SAE AS5964 SHEET 3 OF 5 | REV. A |
| | HOSE ASSEMBLY, POLYTETRAFLUOROETHYLENE CRES BRAID REINFORCED, 400 °F, 5080 PSI FLARELESS, 45° ELBOW TO 45° ELBOW | | |

- /5/ MARKING: MARKING SHALL BE PER AS5960 ON A STAINLESS STEEL BAND NOT OVER 1.0 IN WIDE OR ON THE COLLAR. THE CHARACTERS SHALL BE A MINIMUM OF .06 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 PERMANENTLY MARKED ON THE BAND OR ON AN END FITTING OR A FIRESLEEVE CLAMP.
- /6/ 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 "GAGE POINT" TO "GAGE POINT". FOR LENGTH TOLERANCES SEE TABLE 3. TO CONVERT "GAGE POINT" TO "GAGE POINT" TO "END TO END" MEASUREMENT, ADD TWO TIMES "D1" FOR NAS1760 END STYLE, OR TWO TIMES "D2" FOR AS4458 GLOBESEAL END STYLE, TO LENGTH "L".
- /7/ HOSE ASSEMBLY INSIDE DIAMETER SHALL BE VERIFIED BY PASSING THE DESIGNATED, OR LARGER, SPHERICAL BALL PER TABLE 1 THROUGH THE HOSE ASSEMBLY.
- /8/ DISTANCE ACROSS CORNERS OF COUPLING NUT AND NIPPLE OR SOCKET/COLLAR HEX MAY EXCEED THIS DIMENSION.
- /9/ FITTING ENDS MUST COMPLY WITH NAS1760, AS4458, OR BE FUNCTIONALLY EQUIVALENT. DIMENSION D1 AND D3 APPLY TO NAS1760 AND D2 AND D4 APPLY TO AS4458. FITTINGS SHALL MATE WITH EN6123 OR AS5827. COUPLING NUTS SHALL BE FUNCTIONALLY EQUIVALENT TO AS4370 EXCEPT FOR THREAD AND WIRE GROOVE. THREADS AND WIRE GROOVE IN NUT, RETAINER WIRE AND FITTING END WIRE GROOVE SHALL BE COATED WITH AS5272 TYPE 1 SOLID FILM LUBRICANT.
- /10/ DIAMETERS ARE LISTED FOR CLAMP SELECTION.
- /11/ 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.
- /12/ 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.
- /13/ THE ENDS OF THE INTEGRAL FIRESLEEVE AND FITTING SOCKET/COLLAR MAY BE COVERED WITH A SILICONE CUFF OR MOLDED SILICONE AS REQUIRED TO COMPLY WITH /14/
- /14/ IDENTIFICATION MARKING: ADD "AS1055 TYPE IIb CLASS B-S/P" TO IDENTIFICATION MARKING TO SHOW LEVEL OF COMPLIANCE, "FIREPROOF" (15 MIN), WITH AS1055.
- /15/ 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.
- /16/ THE SHRINK-ON POLYOLEFIN SLEEVE SHALL COVER THE ENTIRE HOSE AND A MINIMUM OF 50% OF THE COLLARS ON BOTH ENDS OF THE ASSEMBLY.
- /17/ THE FITTING ORIENTATION DASH NUMBER IS A THREE DIGIT NUMBER DEFINING THE RELATIVE POSITION OF THE END FITTINGS IN 1° INCREMENTS (EXAMPLE: 090 = 90°). FITTING ORIENTATION SHALL BE MEASURED COUNTERCLOCKWISE FROM THE NEAREST END FITTING WHICH SHALL BE IN THE RELATIVE 000° POSITION (SEE FIGURE 2). WHEN END FITTINGS ARE POINTED IN THE SAME DIRECTION, THE DASH NUMBER SHALL BE 000.
- /18/ FITTING WEIGHTS ARE FOR REFERENCE ONLY.
19. DIMENSIONING AND TOLERANCING: ASME Y14.5M-1994.
- /20/ SAFETY WIRE HOLES LOCATION AND DIAMETER PER AS1043:

L = TWO HOLES 180° APART UP TO 1.50 in HEX INCLUSIVE.
THREE HOLES 120° APART FOR 1.625 IN HEX AND LARGER.

| | | | |
|---|--|-----------------------------------|-------------------------|
|  An SAE International Group | AEROSPACE STANDARD | SAE AS5964 SHEET 4 OF 5 | REV. A |
| | HOSE ASSEMBLY, POLYTETRAFLUOROETHYLENE CRES BRAID REINFORCED, 400 °F, 5080 PSI FLARELESS, 45° ELBOW TO 45° ELBOW | | |