

REV.
C

AS120

SUBMITTED FOR RECOGNITION AS AN AMERICAN NATIONAL STANDARD

FEDERAL SUPPLY CLASS
4720

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.

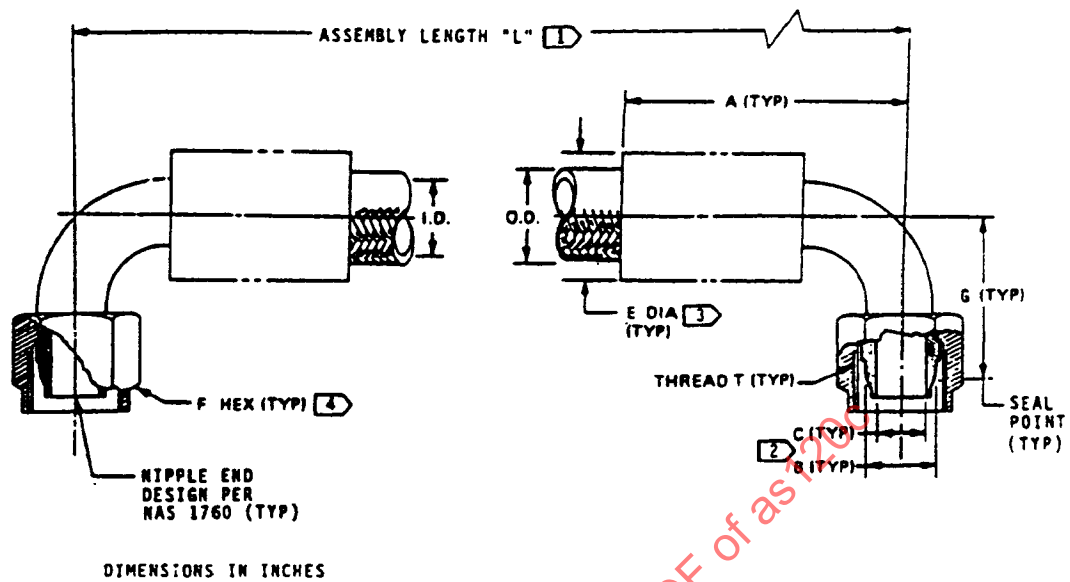


FIGURE 1

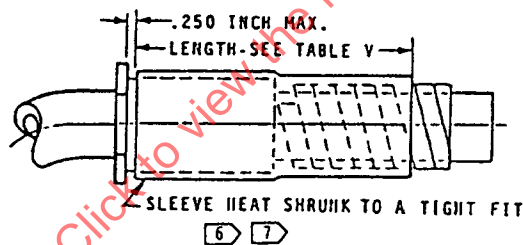


FIGURE 2

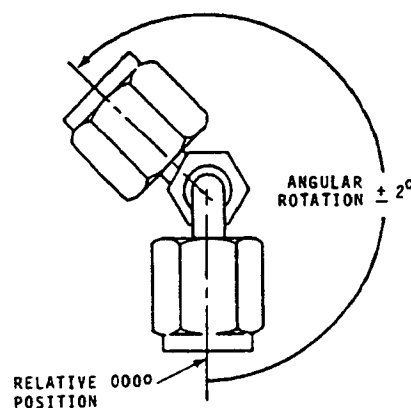


FIGURE 3

CUSTODIAN: SAE G-3/G-3D

PROCUREMENT SPECIFICATION: NONE

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

AEROSPACE STANDARD

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

AS120
SHEET 1 OF 5

REV.
C

Copyright 1998 Society of Automotive Engineers, Inc.
All rights reserved.

Printed in the U.S.A.

QUESTIONS REGARDING THIS DOCUMENT:
TO PLACE A DOCUMENT ORDER:

(724) 772-8510
(724) 776-4970

FAX: (724) 776-0243
FAX: (724) 776-0790

SAE WEB ADDRESS: <http://www.sae.org>

ISSUED 1976-08 REVISED 1998-03

REV.
C

AS120

TABLE 1

HOSE ASSEMBLY NO. AND SIZE CODE	SIZE REF	THREAD T PER MIL-S-8879 REF	ID MIN	A MAX	B SEAL DIA BASIC	C /2/ DRILL DIA MIN	E /3/ DIA MAX WITHOUT SLEEVING	F HEX REF	G MIN	G MAX
AS120E	1/4	.4375-20 UNJF-3B	.212	1.75	.2930	.135	.69	.56	.69	.88
AS120G	3/8	.5625-18 UNJF-3B	.298	2.00	.4120	.240	.80	.69	.88	1.09
AS120H	1/2	.7500-16 UNJF-3B	.391	2.38	.5600	.340	.97	.88	1.00	1.31
AS120J	5/8	.8750-14 UNJF-3B	.485	2.81	.6730	.410	1.11	1.00	1.19	1.50
AS120K	3/4	1.0625-12 UNJ-3B	.602	3.25	.8100	.510	1.38	1.25	1.38	1.75
AS120M	1	1.3125-12 UNJ-3B	.852	4.00	1.0620	.760	1.66	1.50	1.69	2.06

TABLE 2

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

AEROSPACE STANDARD(R) HOSE ASSEMBLY, NONMETALLIC, 3000 psi, TFE,
FLARELESS, 90° TO 90°, LIGHTWEIGHT**AS120**
SHEET 2 OF 5**REV.**
C

REV.
C

AS120

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 OR SLEEVE CODE	HOSE OR TYPE SLEEVE	UNITS	MAXIMUM WEIGHT HOSE SIZE 1/4	MAXIMUM WEIGHT HOSE SIZE 3/8	MAXIMUM WEIGHT HOSE SIZE 1/2	MAXIMUM WEIGHT HOSE SIZE 5/8	MAXIMUM WEIGHT HOSE SIZE 3/4	MAXIMUM WEIGHT HOSE SIZE 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	.020	.020	.025	.026	.026	.033
NONE	FITTING END (HOSE SIZE - 90°)	LB/EA	.078	.126	.218	.327	.615	.945

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	

AEROSPACE STANDARD

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

AS120
SHEET 3 OF 5

REV.
C

REV.
C

AS120

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 "SEAL POINT" TO "SEAL POINT." FOR LENGTH INCREMENTS AND TOLERANCES SEE TABLE 3. "END TO END" LENGTH MEASUREMENT IS THE SAME AS THE "SEAL POINT TO SEAL POINT" MEASUREMENT BECAUSE EACH END FITTING IS A 90° ELBOW.
- /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 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 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 "B" 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.

AEROSPACE STANDARD

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

AS120
SHEET 4 OF 5

REV.
C