

AS4573

FEDERAL SUPPLY CLASS

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.

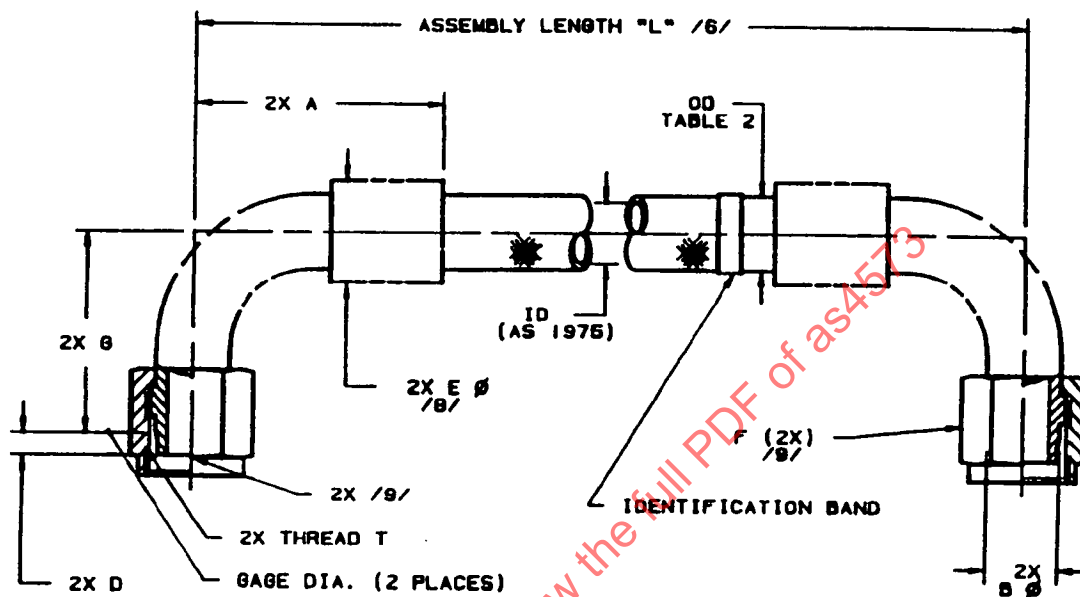


FIGURE 1 - HOSE ASSEMBLY, 90° ELBOW TO 90° ELBOW

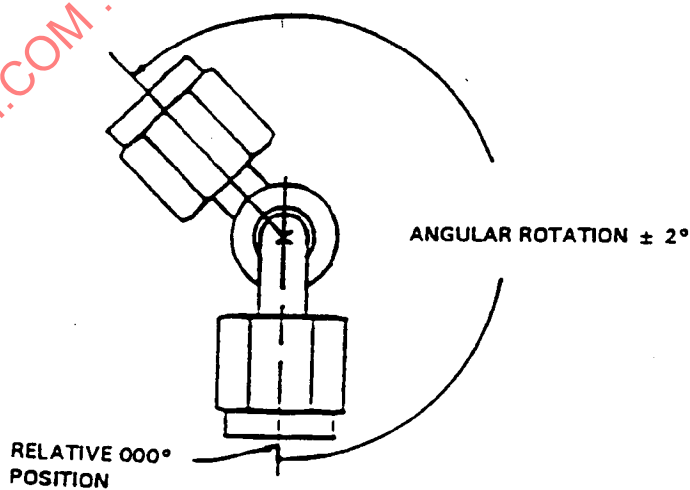


FIGURE 2

CUSTODIAN: SAE G-3/G-3D

PROCUREMENT SPECIFICATION: AS1975 /2/

SAE The Engineering Society
For Advancing Mobility
Land Sea Air and Space
INTERNATIONAL

400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE STANDARD

HOSE ASSEMBLY, PTFE, ARAMID REINFORCED,
STANDARD DUTY, 4000/3000 ps1, 275 °F, TITANIUM
FITTINGS, FLARELESS, 90° TO 90°

AS4573

SHEET 1 OF 5

TABLE 1 - ASSEMBLY DIMENSIONS

HOSE ASSEMBLY NO. & SIZE CODE	HOSE SIZE (REF)	THREAD T PER MIL-S-8879 (REF)	IO MIN (REF)	B		E /B/			F HEX REF	G MIN	G MAX	BALL SIZE MIN THRU ϕ /7/	BALL SIZE MIN THRU ϕ /7/
				A MAX	GAGE ϕ	O (REF)	WITHOUT SLEEVING	MAX ϕ					
AS4573E	.250	.4375-20UNJF-38	.212	1.880	.2930	.16	.69	.56	.645	.790	4807	.109	
AS4573G	.375	.5625-18UNJF-38	.298	2.180	.4120	.16	.80	.69	.715	.840	4812	.188	
AS4573H	.500	.7500-16UNJF-38	.391	2.530	.5600	.19	.97	.88	.845	.970	4816	.313	
AS4573J	.625	.8750-14UNJF-38	.485	3.375	.6730	.20	1.15	1.00	1.085	1.210	4818	.375	
AS4573K	.750	1.0625-12UNJ-38	.602	3.940	.8100	.23	1.38	1.25	1.275	1.400	4821	.469	
AS4573M	1.000	1.3125-12UNJ-38	.852	4.485	1.0620	.30	1.66	1.50	1.500	1.625	4829	.719	
AS4573N	1.250	1.5625-12UNJ-38	1.100	5.225	1.3160	.04	2.33	1.81	1.700	1.825	4834	.875	
AS4573P	1.500	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	

TABLE 2 - HOSE OR SLEEVE OUTSIDE DIAMETER

SLEEVE CODE	SLEEVE MATERIAL	TEMP LIMIT °F	TOLERANCE		HOSE SIZE /10/		HOSE SIZE /10/		HOSE SIZE /10/		HOSE SIZE /10/	
			MAX	MIN	.465	.405	.555	.715	.920	1.075	1.365	1.660
-	BRAIDED HOSE ONLY PER AS1975	275										
			MAX	MIN								
					.465	.405	.555	.715	.920	1.075	1.365	1.660
			MIN									
					.405	.405	.655	.655	.850	.995	1.285	1.580
			MAX		.840	.658	.970	1.150	1.380	1.590	1.750	1.950
			MIN				.788	.968	1.198	1.318	1.568	1.768
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MAX		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			MIN									
					TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

TABLE 3 - ASSEMBLY PROCUREMENT LENGTHS

HOSE ASSEMBLY LENGTH	AVAILABLE INCREMENTS	TOLERANCE
UNDER 18 in	(NOT LESS THAN) .125 in	$\pm .125$ in
18 THRU 36 in	(NOT LESS THAN) .250 in	$\pm .250$ in
OVER 36 THRU 50 in	(NOT LESS THAN) .500 in	$\pm .500$ in
OVER 50 in	(NOT LESS THAN) 1.000 in	$\pm 1\%$

TABLE 4 - MAXIMUM HOSE AND FITTING WEIGHTS

HOSE OR SLEEVE CODE	HOSE OR TYPE OR PART	UNITS	HOSE SIZE	HOSE SIZE	HOSE SIZE	HOSE SIZE	HOSE SIZE	HOSE SIZE	HOSE SIZE
-	BRAIDED HOSE ONLY PER AS1975	LB/IN	.006	.008	.012	.020	.025	.040	.050
A	FIRESLLEEVE AS1072 (5 min PER AS1055) /15/	LB/IN							
B	FIRESLLEEVE INTEGRAL WITH HOSE (5 min PER AS1055) /15/	LB/IN							
C	PROTECTIVE SLEEVE SHRINK-ON (POLYOLEFIN AS1073, CODE B) /21/	LB/IN							
NONE	FIRESLLEEVE CLAMP	LB/EA	.020	.020	.021	.021	.025	.025	.032
NONE	FITTING END (90°) TITANIUM /16/	LB/EA	.077	.121	.176	.297	.560	.820	1.260
									TBD /9/

NOTES:

1. MATERIALS:
 - a. HOSE AND FITTINGS PER AS1975
 - b. SLEEVES - SEE APPLICABLE STANDARDS, TABLE 2
- /2/ THIS HOSE ASSEMBLY SHALL BE QUALIFIED IN ACCORDANCE WITH PROCUREMENT SPECIFICATION AS1975. USERS OF THIS STANDARD ARE ADVISED TO CONTROL SOURCE APPROVAL(S) BY STANDARD PAGE SUPPLEMENT SHEET OR SIMILAR MEANS.
3. CONSTRUCTION AND PERFORMANCE PER AS1975. FITTINGS SHALL BE PERMANENTLY ATTACHED TO THE HOSE.
4. OPERATING CHARACTERISTICS PER AS1975.
5. MARKING: MARKING SHALL BE PER AS1975 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 ELECTROETCHED ON THE BAND OR ON AN END FITTING OR A FIRESLEEVE CLAMP. MARKING BAND SHALL BE COVERED WITH TRANSPARENT POLYOLEFIN SHRINK SLEEVE PER AS1073 CODE A.
- /6/ LENGTH "L" IS A THREE DIGIT NUMBER OF WHICH THE FIRST TWO 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 "GAGE DIAMETER" TO "GAGE DIAMETER". FOR LENGTH INCREMENTS AND TOLERANCES SEE TABLE 3. "END TO END" LENGTH MEASUREMENTS IS THE SAME AS THE "GAGE DIAMETER" TO "GAGE DIAMETER" BECAUSE BOTH ENDS ARE 90° ELBOWS.
- /7/ A TRUE CIRCULAR CROSS SECTION IS NOT REQUIRED THROUGH THE FITTING ID. HOWEVER, THE APPLICABLE BALL DIAMETER LISTED IN TABLE 1 MUST BE CAPABLE OF PASSING THROUGH THE HOSE ASSEMBLY.
- /8/ DISTANCE ACROSS CORNERS OF THE HEX MAY EXCEED THIS DIMENSION.
- /9/ FITTING ENDS SIZE -4 THRU -16 MUST COMPLY TO NAS1760; FITTINGS FOR HOSE SIZE -20 AND LARGER TO COMPLY WITH AS4703. FITTINGS SHALL MATE WITH MS33514 FOR SIZES THRU -16 AND WITH AS4658 OR AS4659 IN SIZES -20 AND LARGER. -20 AND LARGER NUTS SHALL CONFORM TO AS4660 OR AS4702. STANDARD COUPLING NUTS SHALL BE IN ACCORDANCE WITH OR EQUIVALENT TO MS21921 OR MS27073. NUTS SHALL MEET TORQUE REQUIREMENTS PER AS1975.
- /10/ 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).
- /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 END OF THE INTEGRAL FIRESLEEVE SHALL BE COVERED WITH SILICONE EXTENDING OVER THE END FITTING COLLAR.
- /14/ ADD "AS1055 TYPE 1b CLASS A-S/P" TO IDENTIFICATION MARKING TO SHOW LEVEL OF COMPLIANCE, "FIRE RESISTANT 275 °F (5 min), WITH AS1055".
- /15/ WHEN FIRESLEEVES ARE REQUIRED, WEIGHT LIMITS SHALL BE DEFINED BY THE PROCURING AUTHORITY.
- /16/ TITANIUM PARTS MAY BE REPLACED WITH STAINLESS STEEL IF MAXIMUM WEIGHT FOR FITTING IS NOT EXCEEDED.
17. DIMENSIONING AND TOLERANCING: ANSI Y14.5M.
- /18/ THE FITTING'S 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, THIS DASH NUMBER SHALL BE 000.
19. LOCKWIRE HOLES LOCATION AND DIAMETER PER AS1043 CODED AS FOLLOWS:
 - a. U = TWO HOLES 180° APART
 - b. W = THREE HOLES 120° APART
20. THIS PART STANDARD TAKES PRECEDENCE IN CASES OF CONFLICT.