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AS4588

FEDERAL SUPPLY CLASS
4720

RATIONALE

AS4588 HAS BEEN REAFFIRMED TO COMPLY WITH THE SAE FIVE-YEAR REVIEW POLICY.

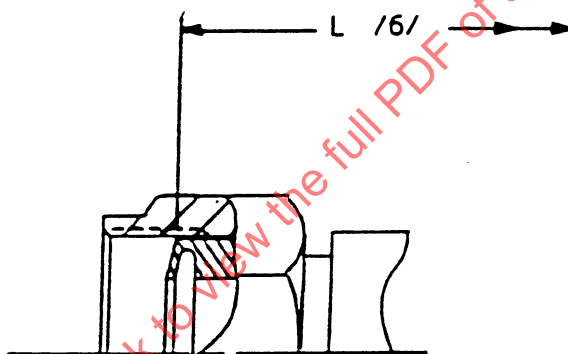
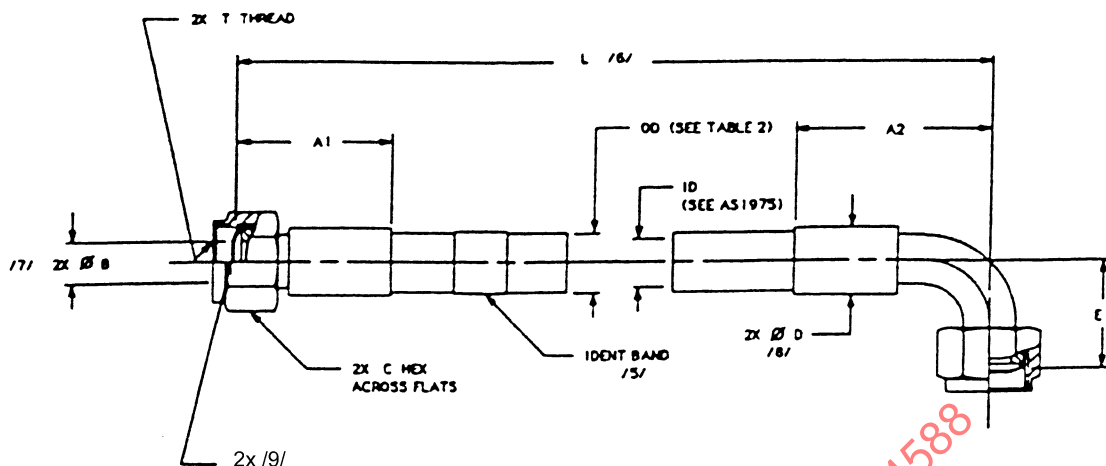


FIGURE 1 - ENLARGED VIEW - STR END FITTING

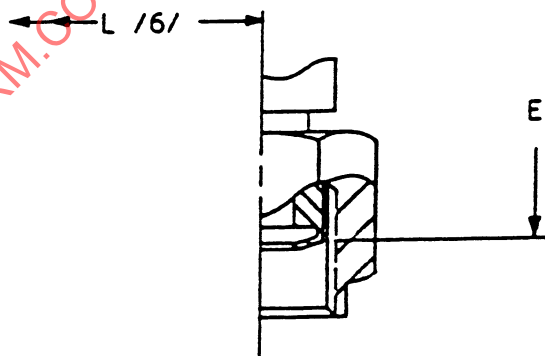
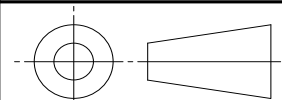


FIGURE 2 - ENLARGED VIEW - 90° END FITTING

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on this Technical Report, please visit
<http://www.sae.org/technical/standards/AS4588>

THIRD ANGLE PROJECTION



CUSTODIAN: G-3/G-3D

PROCUREMENT SPECIFICATION: AS1975 /2/



AEROSPACE STANDARD

HOSE ASSEMBLY, PTFE, PARA-ARAMID REINFORCED,
STANDARD DUTY, 4000 PSI, 275 °F, TITANIUM
FITTINGS, BEAM SEAL, STRAIGHT TO 90°

AS4588
SHEET 1 OF 5

TABLE 1 - ASSEMBLY DIMENSIONS

HOSE ASSEMBLY NO. & SIZE CODE /22/	HOSE SIZE (REF)	/20/ FITTING TYPE (REF)	THREAD T PER AS8879 (REF)	HOSE		B /7/		C HEX (REF)	D /8/ DIA MAX WITHOUT SLEEVING	SPHERICAL BALL SIZE FOR DETERMINING MINIMUM HOSE ASSEMBLY ID /7/		SPHERICAL BALL SIZE FOR DETERMINING MINIMUM HOSE ASSEMBLY ID /7/	
				ID MIN	A ₁ MAX	A ₂ MAX	MIN FTG BORE DIA AFTER ASSEMBLY			E MIN	E MAX	STRAIGHT IN FITTING	ELBOW IN FITTING
AS4588E	.250	-											
AS4588E	.250	S	.4375-24UNJS-3B	.212	1.630	1.880	.135	.56	.69	.576	.701	.122	.115
AS4588E	.250	E	.5625-20UNJS-3B	.212	1.695	1.925	.135	.69	.69	.608	.733	.122	.115
AS4588G	.375	R	.4375-24UNJS-3B	.298	1.770	2.180	.135	.56	.80	.576	.701	.122	.115
AS4588G	.375	S	.5625-20UNJS-3B	.298	1.880	2.180	.240	.69	.80	.610	.735	.216	.204
AS4588G	.375	E	.7188-20UNJS-3B	.298	1.960	2.265	.240	.88	.80	.693	.818	.216	.204
AS4588H	.500	R	.5625-20UNJS-3B	.391	2.100	2.530	.240	.69	.97	.610	.735	.216	.204
AS4588H	.500	S	.7188-20UNJS-3B	.391	2.100	2.530	.340	.88	.97	.693	.818	.306	.289
AS4588H	.500	E	.8438-18UNJS-3B	.391	2.620	2.780	.340	1.00	.97	.834	.959	.306	.289
AS4588J	.625	R	.7188-20UNJS-3B	.485	2.690	3.375	.340	.88	1.15	.776	.901	.306	.289
AS4588J	.625	S	.8438-18UNJS-3B	.485	2.690	3.375	.410	1.00	1.15	.834	.959	.369	.349
AS4588J	.625	E	1.000-16UNJ-3B	.485	2.750	3.515	.410	1.13	1.15	.988	1.113	.369	.349
AS4588K	.750	R	.8438-18UNJS-3B	.602	3.240	3.940	.410	1.00	1.38	.939	1.064	.369	.349
AS4588K	.750	S	1.000-16UNJ-3B	.602	3.240	3.940	.510	1.13	1.38	.988	1.113	.459	.434
AS4588K	.750	E	1.250-14UNJS-3B	.602	3.320	4.000	.510	1.50	1.38	1.167	1.292	.459	.434
AS4588M	1.000	R	1.000-16UNJ-3B	.852	3.810	4.485	.510	1.13	1.66	1.129	1.254	.459	.434
AS4588M	1.000	S	1.250-14UNJS-3B	.852	3.810	4.485	.760	1.50	1.66	1.167	1.292	.684	.646



AEROSPACE STANDARD

HOSE ASSEMBLY, PTFE, PARA-ARAMID REINFORCED,
STANDARD DUTY, 4000 PSI, 275 °F, TITANIUM
FITTINGS, BEAM SEAL, STRAIGHT TO 90°

AS4588
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TABLE 2 - HOSE OR SLEEVE OUTSIDE DIAMETER

SLEEVE CODE /22/	SLEEVE MATERIAL	TEMP LIMIT °F	TOLERANCE	HOSE SIZE /10/ .250	HOSE SIZE /10/ .375	HOSE SIZE /10/ .500	HOSE SIZE /10/ .625	HOSE SIZE /10/ .750	HOSE SIZE /10/ 1.000
-	(-) INDICATES BRAIDED HOSE ONLY PER AS1975	275	MAX MIN	.465 .405	.555 .495	.710 .650	.920 .850	1.075 .995	1.365 1.285
A	FIRESLEEVE (AS1072 SIL - FG) (5 min) /11/ /12/	275	MAX MIN	.840 .658	.970 .788	1.150 .968	1.380 1.198	1.590 1.318	1.750 1.568
B	FIRESLEEVE INTEGRAL SILICONE (5 min) /13/	275	MAX MIN						
C	PROTECTIVE SLEEVE SHRINK-ON (POLYOLEFIN AS1073 CODE B)	275	MAX MIN	.520 .450	.620 .550	.795 .725	1.000 .920	1.170 1.060	1.460 1.350

TABLE 3 - ASSEMBLY LENGTH TOLERANCES

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 - HOSE AND FITTING WEIGHTS

HOSE OR SLEEVE CODE /22/	HOSE OR TYPE SLEEVE	UNITS	HOSE SIZE .250	HOSE SIZE .375	HOSE SIZE .500	HOSE SIZE .625	HOSE SIZE .750	HOSE SIZE 1.000
-	BRAIDED HOSE ONLY PER AS1975	LB/IN (MAX)	.006	.008	.012	.020	.025	.040
A	FIRESLEEVE AS1072 (5 min PER AS1055) /15/	LB/IN	.012	.017	.018	.028	.030	.037
B	FIRESLEEVE INTEGRAL WITH HOSE (5 min PER AS1055) /15/	LB/IN						
C	PROTECTIVE SLEEVE SHRINK-ON (POLYOLEFIN AS1073, CODE B)	LB/IN	.001	.001	.001	.002	.002	.003
NONE	FIRESLEEVE CLAMP	LB/EA (REF)	.020	.020	.021	.021	.025	.025
NONE	FITTING END (STRAIGHT) TITANIUM /16/	R LB/EA (REF)	-	.081	.170	.210	.361	.452
		S	.044	.085	.194	.226	.369	.471
		E	.062	.121	.277	.309	.426	-
NONE	FITTING END (90°) TITANIUM /16/	R LB/EA (REF)	-	.110	.167	.277	.485	.535
		S	.067	.121	.206	.290	.490	.627
		E	.086	.154	.283	.381	.608	-

**AEROSPACE STANDARD**

HOSE ASSEMBLY, PTFE, PARA-ARAMID REINFORCED,
STANDARD DUTY, 4000 PSI, 275 °F, TITANIUM
FITTINGS, BEAM SEAL, STRAIGHT TO 90°

AS4588
SHEET 3 OF 5

NOTES:

1. MATERIALS:
 - a. HOSE AND FITTINGS - PER AS1975
 - b. SLEEVES - SEE APPLICABLE STANDARDS, TABLE 2
- /2/ THIS PRODUCT SHALL BE QUALIFIED IN ACCORDANCE WITH PROCUREMENT SPECIFICATION AS1975 CLASS 4000. USERS OF THIS STANDARD SHALL PROCURE THIS PRODUCT FROM ACCREDITED MANUFACTURER(S), OR THEIR ACCREDITED DISTRIBUTOR(S), AS LISTED IN THE PERFORMANCE REVIEW INSTITUTE (PRI) QUALIFIED PRODUCTS LIST PRI-QPL-AS1975 CLASS 4000 FOR THIS STANDARD. CHANGE-OVER FROM USER-QPL TO PRI-QPL SHALL BE IN ACCORDANCE WITH AS1975 REVISION C OR HIGHER AND BE COMPLETED WITHIN SIX MONTHS FROM THE DATE OF ISSUE OF THIS STANDARD.
3. CONSTRUCTION AND PERFORMANCE PER AS1975 CLASS 4000. 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 PERMANENTLY MARKED 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 FOUR DIGIT NUMBER OF WHICH THE FIRST THREE DIGITS DESCRIBE THE HOSE ASSEMBLY LENGTH IN WHOLE INCHES AND THE FOURTH DIGIT THE FRACTIONS OF AN INCH IN EIGHTHS. LENGTH "L" IS MEASURED FROM THE OUTER CORNER OF THE SEALING SURFACE TO OUTER CORNER OF SEALING SURFACE AS SHOWN IN FIGURE 1. FOR LENGTH TOLERANCES SEE TABLE 3.
- /7/ A TRUE CIRCULAR CROSS SECTION IS NOT REQUIRED THROUGH THE FITTING ID. HOWEVER, THE APPLICABLE MINIMUM 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/ STANDARD COUPLING NUTS SHALL MATE WITH MIL-F-85421/1 OR AS4207 FITTING ENDS. NONSTANDARD COUPLING NUTS MAY BE USED PROVIDED THEY ARE FUNCTIONALLY EQUIVALENT AND PROVIDED THEY CANNOT BE REMOVED FROM THE FITTING. NUTS SHALL MEET THE TORQUE TEST 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 FIBERGLASS SHALL BE COATED WITH RTV SILICONE RUBBER.
- /13/ THE ENDS OF THE INTEGRAL FIRESLEEVE SHALL BE COVERED WITH SILICONE EXTENDING OVER THE END FITTING COLLAR.
14. ADD "AS1055 TYPE IIB CLASS A-S/P" OR "AS150 TYPE XIII" TO IDENTIFICATION MARKING TO SHOW LEVEL OF COMPLIANCE, "FIRE RESISTANT" 275 °F (5 min), WITH AS1055 OR AS150.
- /15/ WHEN FIRESLEEVES ARE REQUIRED, WEIGHT LIMITS SHALL BE DEFINED BY THE PROCURING ACTIVITY.
- /16/ TITANIUM PARTS MAY BE REPLACED WITH STAINLESS STEEL IF MAXIMUM WEIGHT FOR FITTING IS NOT EXCEEDED AND THE STAINLESS STEEL COMPONENTS HAVE BEEN PREVIOUSLY QUALIFIED.
17. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
- /18/ SAFETY WIRE HOLES LOCATION AND DIAMETER PER AS1043 CODED AS FOLLOWS:
 - a. U = TWO HOLES 180° APART
 - b. W = THREE HOLES 120° APART
19. THIS PART STANDARD TAKES PRECEDENCE IN CASES OF CONFLICT.

	AEROSPACE STANDARD	AS4588 SHEET 4 OF 5	
	HOSE ASSEMBLY, PTFE, PARA-ARAMID REINFORCED, STANDARD DUTY, 4000 PSI, 275 °F, TITANIUM FITTINGS, BEAM SEAL, STRAIGHT TO 90°		