

RATIONALE

ESTABLISH AS1946 PART SPECIFICATIONS FOR FLARED FITTINGS.

AS641

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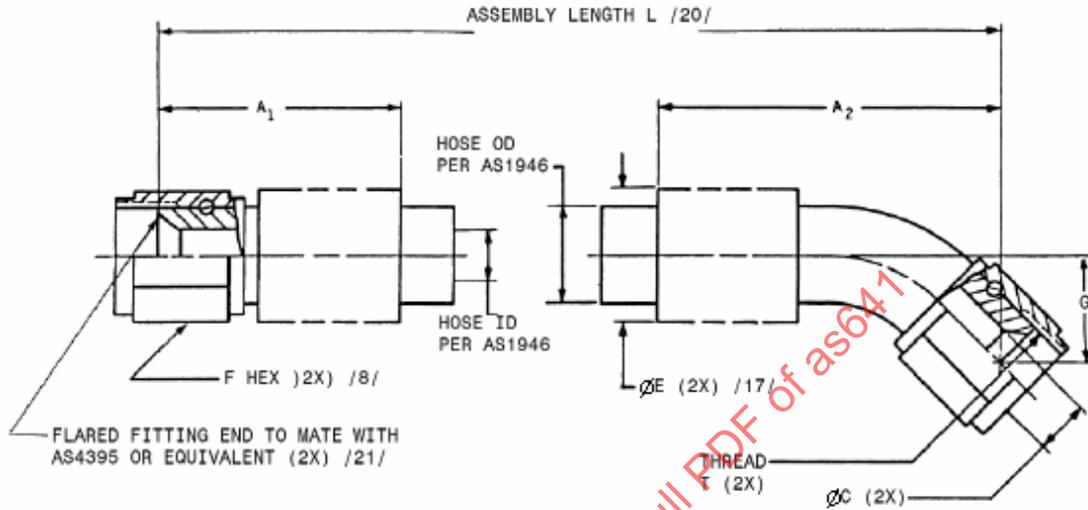


FIGURE 1 - HOSE ASSEMBLY

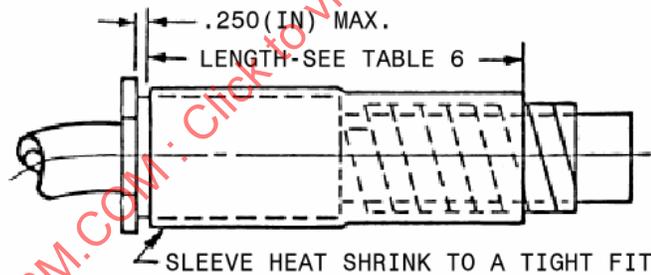
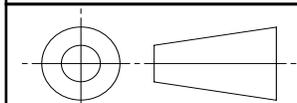


FIGURE 2 - ABRASION SLEEVE ATTACHMENT / 7/ / 8/

THIRD ANGLE PROJECTION



CUSTODIAN: SAE G-3/G-3D

PROCUREMENT SPECIFICATION: /15/ AS1946

SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

HOSE ASSEMBLY, POLYTETRAFLUOROETHYLENE,
METAL BRAID, MEDIUM PRESSURE, FLARED,
STRAIGHT TO 45°

AS641
SHEET 1 OF 7

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TABLE 1 - DIMENSIONS

HOSE ASSEMBLY NO. & SIZE /24/	HOSE SIZE (REF)	FITTING TYPE (REF)	FITTING MATL /24/	THREAD T PER AS8879 (REF)	HOSE ID MIN (REF)	A1 MAX	A2 MAX	C MIN BALL DIA ELB/STR /16/	E MAX WITHOUT SLEEVING /17/	F HEX (REF)	G MIN	G MAX
AS641D (-03)	.188	-										
AS641D (-03)	.188	S	CRES	.3750-24UNJF-3B	.110	1.14	1.63	.068/.072	.49	.500	.263	.388
			AL	.3750-24UNJF-3B	.110	1.14	1.63	.068/.072	.49	.500	.263	.388
			TI	.3750-24UNJF-3B	.110	1.14	1.63	.068/.072	.49	.500	.263	.388
AS641D (-03)	.188	E	CRES	.4375-20UNJF-3B	.110	1.14	1.92	.068/.072	.49	.562	.302	.427
			AL	.4375-20UNJF-3B	.110	1.14	1.92	.068/.072	.49	.562	.302	.427
			TI	.4375-20UNJF-3B	.110	1.14	1.92	.068/.072	.49	.562	.302	.427
AS641E (-04)	.250	R	CRES	.3750-24UNJF-3B	.173	1.14	1.92	.068/.072	.55	.500	.302	.427
			AL	.3750-24UNJF-3B	.173	1.14	1.92	.068/.072	.55	.500	.302	.427
			TI	.3750-24UNJF-3B	.173	1.14	1.92	.068/.072	.55	.500	.302	.427
AS641E (-04)	.250	S	CRES	.4375-20UNJF-3B	.173	1.14	1.92	.112/.119	.55	.562	.302	.427
			AL	.4375-20UNJF-3B	.173	1.14	1.92	.112/.119	.55	.562	.302	.427
			TI	.4375-20UNJF-3B	.173	1.14	1.92	.112/.119	.55	.562	.302	.427
AS641E (-04)	.250	E	CRES	.5000-20UNJF-3B	.173	1.26	1.94	.112/.119	.55	.625	.314	.445
			AL	.5000-20UNJF-3B	.173	1.26	1.94	.112/.119	.55	.625	.314	.445
			TI	.5000-20UNJF-3B	.173	1.26	1.94	.112/.119	.55	.625	.314	.445
AS641F (-05)	.313	R	CRES	.4375-20UNJF-3B	.235	1.26	1.94	.112/.119	.63	.562	.314	.445
			AL	.4375-20UNJF-3B	.235	1.26	1.94	.112/.119	.63	.562	.314	.445
			TI	.4375-20UNJF-3B	.235	1.26	1.94	.112/.119	.63	.562	.314	.445
AS641F (-05)	.313	S	CRES	.5000-20UNJF-3B	.235	1.26	1.94	.164/.174	.63	.625	.314	.445
			AL	.5000-20UNJF-3B	.235	1.26	1.94	.164/.174	.63	.625	.314	.445
			TI	.5000-20UNJF-3B	.235	1.26	1.94	.164/.174	.63	.625	.314	.445
AS641F (-05)	.313	E	CRES	.5625-18UNJF-3B	.235	1.38	2.11	.164/.174	.63	.688	.369	.494
			AL	.5625-18UNJF-3B	.235	1.38	2.11	.164/.174	.63	.688	.369	.494
			TI	.5625-18UNJF-3B	.235	1.38	2.11	.164/.174	.63	.688	.369	.494
AS641G (-06)	.375	R	CRES	.5000-20UNJF-3B	.298	1.38	2.11	.164/.174	.70	.625	.369	.494
			AL	.5000-20UNJF-3B	.298	1.38	2.11	.164/.174	.70	.625	.369	.494
			TI	.5000-20UNJF-3B	.298	1.38	2.11	.164/.174	.70	.625	.369	.494
AS641G (-06)	.375	S	CRES	.5625-18UNJF-3B	.298	1.38	2.11	.218/.230	.70	.688	.369	.494
			AL	.5625-18UNJF-3B	.298	1.38	2.11	.218/.230	.70	.688	.369	.494
			TI	.5625-18UNJF-3B	.298	1.38	2.11	.218/.230	.70	.688	.369	.494
AS641G (-06)	.375	E	CRES	.7500-16UNJF-3B	.298	1.61	2.36	.218/.230	.70	.875	.445	.632
			AL	.7500-16UNJF-3B	.298	1.61	2.36	.218/.230	.70	.875	.445	.632
			TI	.7500-16UNJF-3B	.298	1.61	2.36	.218/.230	.70	.875	.445	.632
AS641H (-08)	.500	R	CRES	.5625-18UNJF-3B	.391	1.61	2.36	.218/.230	.83	.688	.445	.632
			AL	.5625-18UNJF-3B	.391	1.61	2.36	.218/.230	.83	.688	.445	.632
			TI	.5625-18UNJF-3B	.391	1.61	2.36	.218/.230	.83	.688	.445	.632
AS641H (-08)	.500	S	CRES	.7500-16UNJF-3B	.391	1.61	2.36	.289/.306	.83	.875	.445	.632
			AL	.7500-16UNJF-3B	.391	1.61	2.36	.289/.306	.83	.875	.445	.632
			TI	.7500-16UNJF-3B	.391	1.61	2.36	.289/.306	.83	.875	.445	.632
AS641H (-08)	.500	E	CRES	.8750-14UNJF-3B	.391	1.80	2.73	.289/.306	.83	1.000	.501	.688
			AL	.8750-14UNJF-3B	.391	1.80	2.73	.289/.306	.83	1.000	.501	.688
			TI	.8750-14UNJF-3B	.391	1.80	2.73	.289/.306	.83	1.000	.501	.688
AS641J (-10)	.625	R	CRES	.7500-16UNJF-3B	.485	1.80	2.73	.289/.306	.97	.875	.501	.688
			AL	.7500-16UNJF-3B	.485	1.80	2.73	.289/.306	.97	.875	.501	.688
			TI	.7500-16UNJF-3B	.485	1.80	2.73	.289/.306	.97	.875	.501	.688
AS641J (-10)	.625	S	CRES	.8750-14UNJF-3B	.485	1.80	2.73	.366/.387	.97	1.000	.501	.688
			AL	.8750-14UNJF-3B	.485	1.80	2.73	.366/.387	.97	1.000	.501	.688
			TI	.8750-14UNJF-3B	.485	1.80	2.73	.366/.387	.97	1.000	.501	.688
AS641J (-10)	.625	E	CRES	1.0625-12UNJ-3B	.485	1.96	3.15	.366/.387	.97	1.250	.588	.775
			AL	1.0625-12UNJ-3B	.485	1.96	3.15	.366/.387	.97	1.250	.588	.775
			TI	1.0625-12UNJ-3B	.485	1.96	3.15	.366/.387	.97	1.250	.588	.775
AS641K (-12)	.750	R	CRES	.8750-14UNJF-3B	.615	1.96	3.15	.366/.387	1.17	1.000	.588	.775
			AL	.8750-14UNJF-3B	.615	1.96	3.15	.366/.387	1.17	1.000	.588	.775
			TI	.8750-14UNJF-3B	.615	1.96	3.15	.366/.387	1.17	1.000	.588	.775
AS641K (-12)	.750	S	CRES	1.0625-12UNJ-3B	.615	1.96	3.15	.466/.493	1.17	1.250	.588	.775
			AL	1.0625-12UNJ-3B	.615	1.96	3.15	.466/.493	1.17	1.250	.588	.775
			TI	1.0625-12UNJ-3B	.615	1.96	3.15	.466/.493	1.17	1.250	.588	.775
AS641K (-12)	.750	E	CRES	1.3125-12UNJ-3B	.615	2.32	3.44	.466/.493	1.17	1.500	.609	.857
			AL	1.3125-12UNJ-3B	.615	2.32	3.44	.466/.493	1.17	1.500	.609	.857
			TI	1.3125-12UNJ-3B	.615	2.32	3.44	.466/.493	1.17	1.500	.609	.857

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HOSE ASSEMBLY NO. & SIZE /24/	HOSE SIZE (REF)	FITTING TYPE (REF) /25/	FITTING MATL /24/	THREAD T PER AS8879 (REF)	HOSE ID MIN (REF)	A1 MAX	A2 MAX	C MIN BALL DIA ELB/STR /16/	E MAX WITHOUT SLEEVING /17/	F HEX (REF)	G MIN	G MAX
AS641M (-16)	1.000	R	CRES	1.0625-12UNJ-3B	.851	2.32	3.44	.466/.493	1.52	1.250	.609	.857
			AL	1.0625-12UNJ-3B	.851	2.32	3.44	.466/.493	1.52	1.250	.609	.857
			TI	1.0625-12UNJ-3B	.851	2.32	3.44	.466/.493	1.52	1.250	.609	.857
AS641M (-16)	1.000	S	CRES	1.3125-12UNJ-3B	.851	2.32	3.44	.661/.700	1.52	1.500	.609	.857
			AL	1.3125-12UNJ-3B	.851	2.32	3.44	.661/.700	1.52	1.500	.609	.857
			TI	1.3125-12UNJ-3B	.851	2.32	3.44	.661/.700	1.52	1.500	.609	.857
AS641M (-16)	1.000	E	CRES	1.6250-12UNJ-3B	.851	2.37	3.97	.661/.700	1.52	1.812	.697	1.017
			AL	1.6250-12UNJ-3B	.851	2.37	3.97	.661/.700	1.52	1.812	.697	1.017
			TI	1.6250-12UNJ-3B	.851	2.37	3.97	.661/.700	1.52	1.812	.697	1.017
AS641N (-20)	1.250	R	CRES	1.3125-12UNJ-3B	1.101	2.37	3.97	.661/.700	2.00	1.500	.697	1.017
			AL	1.3125-12UNJ-3B	1.101	2.37	3.97	.661/.700	2.00	1.500	.697	1.017
			TI	1.3125-12UNJ-3B	1.101	2.37	3.97	.661/.700	2.00	1.500	.697	1.017
AS641N (-20)	1.250	S	CRES	1.6250-12UNJ-3B	1.101	2.37	3.97	.850/.900	2.00	1.812	.697	1.017
			AL	1.6250-12UNJ-3B	1.101	2.37	3.97	.850/.900	2.00	1.812	.697	1.017
			TI	1.6250-12UNJ-3B	1.101	2.37	3.97	.850/.900	2.00	1.812	.697	1.017
AS641N (-20)	1.250	E	CRES	1.8750-12UNJ-3B	1.101	2.40	4.34	.850/.900	2.00	2.125	.785	1.127
			AL	1.8750-12UNJ-3B	1.101	2.40	4.34	.850/.900	2.00	2.125	.785	1.127
			TI	1.8750-12UNJ-3B	1.101	2.40	4.34	.850/.900	2.00	2.125	.785	1.127
AS641P (-24)	1.500	R	CRES	1.6250-12UNJ-3B	1.344	2.40	4.34	.850/.900	2.28	1.812	.785	1.127
			AL	1.6250-12UNJ-3B	1.344	2.40	4.34	.850/.900	2.28	1.812	.785	1.127
			TI	1.6250-12UNJ-3B	1.344	2.40	4.34	.850/.900	2.28	1.812	.785	1.127
AS641P (-24)	1.500	S	CRES	1.8750-12UNJ-3B	1.344	2.40	4.34	1.063/1.125	2.28	2.125	.785	1.127
			AL	1.8750-12UNJ-3B	1.344	2.40	4.34	1.063/1.125	2.28	2.125	.785	1.127
			TI	1.8750-12UNJ-3B	1.344	2.40	4.34	1.063/1.125	2.28	2.125	.785	1.127
AS641P (-24)	1.500	-	-	-	-	-	-	-	-	-	-	

TABLE 2 - TOLERANCES

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

TABLE 3 - HOSE AND SLEEVE CODES

HOSE OR SLEEVE CODE	SLEEVE MATERIAL	TEMP. LIMIT °F
-	(-) INDICATES HOSE ONLY, NO SLEEVE (AS1946)	450
A	ABRASION SLEEVE TUBULAR (PTFE - AS1291 - CODE B) /7/	450
B	ABRASION SLEEVE COIL (NYLON AS1294) /8/	275
C	FIRE SLEEVE (AS1072 SIL-FG) (15 MIN) /9/ /10/ /14/	450
E	ABRASION SLEEVE SHRINK-ON (FEP) /12/	350
F	ABRASION SLEEVE SHRINK-ON (POLYOLEFIN AS1073 - CODE B) /12/	275
G	FIRE SLEEVE (AS1072 SIL-FG) (5 MIN) /9/ /10/ /13/	450
H	FIRE SLEEVE INTEGRAL SILICONE (AS1723) (15 MIN) /14/	450
J	FIRE SLEEVE INTEGRAL SILICONE (5 MIN) /13/	450
K	INTEGRAL ABRASION SLEEVE (BRAIDED) POLYESTER /11/	300
L	ABRASION SLEEVE COIL (PTFE - AS1293) /8/	450

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TABLE 4 - HOSE AND SLEEVE OUTSIDE DIAMETERS

HOSE OR SLEEVE CODE	TOLERANCE	HOSE SIZE /6/ .188	HOSE SIZE /6/ .250	HOSE SIZE /6/ .313	HOSE SIZE /6/ .375	HOSE SIZE /6/ .500	HOSE SIZE /6/ .625	HOSE SIZE /6/ .750	HOSE SIZE /6/ 1.000	HOSE SIZE /6/ 1.250	HOSE SIZE /6/ 1.500
-	MAX	.285	.347	.417	.500	.614	.799	.906	1.140	1.390	1.707
	MIN	.234	.304	.367	.430	.546	.641	.766	1.078	1.328	1.637
A	MAX	.390	.473	.524	.620	.715	.818	.955	1.295	1.550	1.841
	MIN	.320	.393	.454	.515	.645	.748	.870	1.210	1.450	1.771
B	MAX	.339	.409	.472	.535	.669	.767	.896	1.224	1.474	1.807
	MIN	.260	.330	.393	.456	.590	.681	.810	1.122	1.372	1.681
C	MAX	.692	.692	.780	.840	.970	1.090	1.220	1.590	1.900	2.190
	MIN	.487	.533	.598	.658	.778	.891	1.016	1.288	1.578	1.887
E	MAX	.301	.375	.438	.507	.635	.749	.887	1.288	1.460	1.777
	MIN	.248	.320	.383	.452	.578	.679	.811	1.146	1.358	1.667
F	MAX	.341	.411	.474	.547	.663	.769	.904	1.244	1.482	1.823
	MIN	.278	.348	.411	.484	.600	.699	.834	1.158	1.396	1.729
G	MAX	.692	.692	.780	.840	.970	1.090	1.220	1.590	1.900	2.190
	MIN	.487	.533	.598	.658	.778	.891	1.016	1.288	1.578	1.887
H	MAX	.641	.641	.704	.766	.891	1.016	1.141	1.454	1.704	2.016
	MIN	.537	.594	.657	.719	.844	.949	1.074	1.394	1.649	1.957
J	MAX	.641	.641	.704	.766	.891	1.016	1.141	1.454	1.704	2.016
	MIN	.450	.550	.595	.670	.775	.875	.995	1.310	1.508	1.815
K	MAX	.378	.430	.499	.559	.665	.772	.887	1.210	1.460	1.782
	MIN	.320	.390	.450	.510	.625	.726	.841	1.148	1.398	1.712
L	MAX	.375	.445	.508	.571	.687	.789	.914	1.242	1.492	1.809
	MIN	.267	.333	.407	.470	.586	.681	.828	1.138	1.388	1.697

TABLE 5 - HOSE WEIGHT MAX. ALL OTHERS REF

HOSE OR SLEEVE CODE OR FITTING	FITTING TYPE /25/ UNITS	HOSE SIZE											
		.188	.250	.313	.375	.500	.625	.750	1.000	1.250	1.500		
-	LB/IN	.005	.007	.008	.010	.012	.016	.020	.045	.058	.074		
A	LB/IN	.003	.004	.004	.006	.007	.008	.010	.014	.020	.045		
B	LB/IN	.001	.001	.002	.002	.003	.004	.004	.005	.006	.009		
C	LB/IN	.009	.009	.011	.012	.017	.018	.028	.030	.040	.047		
E	LB/IN	.001	.002	.002	.002	.003	.004	.006	.007	.007	.008		
F	LB/IN	.002	.002	.002	.002	.003	.003	.005	.006	.006	.007		
G	LB/IN	.009	.009	.011	.012	.017	.018	.028	.030	.040	.047		
H	LB/IN	.016	.018	.020	.023	.030	.037	.045	.085	.107	.132		
J	LB/IN	.016	.017	.018	.021	.027	.035	.042	.079	.100	.123		
K	LB/IN	.006	.008	.009	.011	.015	.018	.023	.050	.063	.081		
L	LB/IN	.003	.004	.004	.005	.008	.009	.011	.018	.022	.028		
FIRESLEEVE CLAMP	LB/EA	.015	.016	.018	.019	.021	.023	.025	.029	.033	.037		
FITTING END													
A/D - CRES	R, S, E LB/EA	.040	.055	.075	.085	.155	.235	.330	.535	.995	1.370		
B/E - AL	R, S, E LB/EA	---	.019	.026	.029	.053	.080	.112	.182	.338	.466		
C/F - TI	R, S, E LB/EA	.024	.033	.045	.051	.093	.141	.198	.321	.597	.822		

TABLE 6 - SLEEVE LENGTH

HOSE SIZE	LENGTH
.188, .250, .313, .375	2.00 ± .25
.500, .625	2.50 ± .25
.750, 1.000	3.00 ± .25
1.250, 1.500	4.00 ± .25

NOTES:

1. CONSTRUCTION AND PERFORMANCE: AS1946, FITTINGS SHALL BE PERMANENTLY ATTACHED TO THE HOSE.
2. OPERATING CHARACTERISTICS: SEE AS1946.
3. MATERIALS:
 - a. HOSE AND FITTINGS - PER AS1946 /5/
 - b. SLEEVES - SEE APPLICABLE STANDARDS, TABLE 3
- /4/ STANDARD COUPLING NUTS SHALL BE IN ACCORDANCE WITH AN818, AS1790, OR AS4370 (AS1791 WIRE AS APPLICABLE) AND MATE WITH AS4395 OR AS5309 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 AS1946.