

FEDERAL SUPPLY CLASS  
4720

AS649

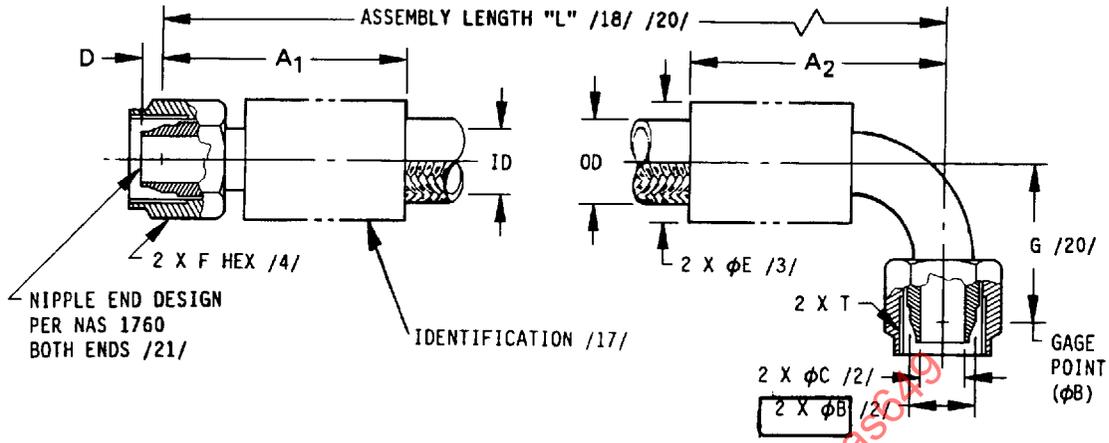


FIGURE 1 - HOSE ASSEMBLY

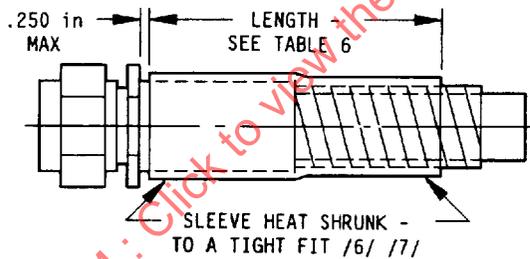


FIGURE 2 - ABRASION SLEEVE ATTACHMENT

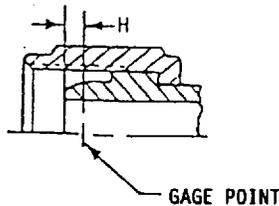
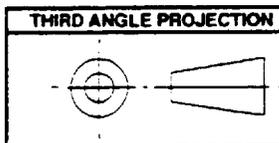


FIGURE 3 - SEE TABLE 7



CUSTODIAN: SAE G-3/G-3D

PROCUREMENT SPECIFICATION: /14/ AS1946

**SAE** The Engineering Society  
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Land Sea Air and Space  
**INTERNATIONAL**

400 Commonwealth Drive, Warrendale, PA 15096-0001

**AEROSPACE STANDARD**

HOSE ASSEMBLY, POLYTETRAFLUOROETHYLENE,  
METAL BRAID, MEDIUM PRESSURE, FLARELESS,  
STRAIGHT TO 90°

**AS649**

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ISSUED 1994-02  
REVISED

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TABLE 1 - DIMENSIONS

BASIC NUMBER AS649 SIZE CODE /25/	(NOMINAL TUBE DIA)	(T) THREAD PER MIL-S-8879	ID		A <sub>1</sub>		A <sub>2</sub>		B BASIC	C		E MAX WITHOUT SLEEVING /3/		(F) HEX ACROSS FLATS	G		BALL SIZE MIN THRU DIA /2/ MS19059 DASH NO.
			MIN	MAX	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		MIN	MAX	
03	.188	.3750-24UNJF-3B	.110	1.25	1.34	1.41	1.41	1.41	.2340	.049	.14	.49	.500	.636	.761	4804	.049
04	.250	.4375-20UNJF-3B	.173	1.21	1.41	1.58	1.58	1.58	.2930	.094	.16	.55	.562	.643	.768	4806	.094
05	.313	.5000-20UNJF-3B	.235	1.35	1.58	1.70	1.70	1.70	.3500	.156	.16	.63	.625	.730	.917	4810	.156
06	.375	.5625-18UNJF-3B	.298	1.45	1.70	1.96	1.96	1.96	.4120	.219	.16	.70	.688	.836	1.023	4813	.219
08	.500	.7500-16UNJF-3B	.391	1.72	1.96	2.37	2.37	2.37	.5600	.281	.19	.83	.875	.968	1.218	4815	.281
10	.625	.8750-14UNJF-3B	.485	1.96	2.37	2.65	2.65	2.65	.6730	.375	.20	.97	1.000	1.279	1.529	4818	.375
12	.750	1.0625-12UNJ-3B	.615	2.17	2.65	3.34	3.34	3.34	.8100	.500	.23	1.17	1.250	1.522	1.772	4822	.500
16	1.000	1.3125-12UNJ-3B	.851	2.55	3.34	4.19	4.19	4.19	1.0620	.750	.30	1.52	1.500	1.541	1.859	4830	.750
20	1.250	1.6250-12UNJ-3B	1.101	2.43	3.67	4.19	4.19	4.19	1.3160	.969	.30	2.00	2.000	1.931	2.306	4837	.969
24	1.500	1.8750-12UNJ-3B	1.344	2.68	4.19	4.19	4.19	4.19	1.5650	1.188	.37	2.28	2.125	2.269	2.644	4841	1.188

TABLE 2 - TOLERANCES

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



**AEROSPACE STANDARD**

HOSE ASSEMBLY, POLYTETRAFLUOROETHYLENE,  
METAL BRAID, MEDIUM PRESSURE, FLARELESS,  
STRAIGHT TO 90°

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TABLE 3 - HOSE AND SLEEVE CODES /1/

HOSE OR SLEEVE CODE	SLEEVE MATERIAL	TEMP. LIMIT °F
-	(-) INDICATES HOSE ONLY, NO SLEEVE (AS639)	450
A	ABRASION SLEEVE TUBULAR (PTFE - AS1291 - CODE B) /6/	450
B	ABRASION SLEEVE COIL (NYLON AS1294) /7/	275
C	FIRESLEEVE (AS1072 SIL-FG) (15 min) /8/ /9/ /13/	450
E	ABRASION SLEEVE SHRINK-ON (FEP) /11/	350
F	ABRASION SLEEVE SHRINK-ON (POLYOLEFIN AS1073 - CODE B) /11/	275
G	FIRESLEEVE (AS1072 SIL-FG) (5 min) /8/ /9/ /12/	450
H	FIRESLEEVE INTEGRAL SILICONE (AS1723) (15 min) /13/	450
J	FIRESLEEVE INTEGRAL SILICONE (5 min) /12/	450
K	INTEGRAL ABRASION SLEEVE (BRAIDED) POLYESTER /10/	300
L	ABRASION SLEEVE COIL (PTFE - AS1293) /7/	450

TABLE 4 - HOSE AND SLEEVE OUTSIDE DIAMETERS

HOSE OR SLEEVE CODE	TOLERANCE	HOSE SIZE /5/ .188	HOSE SIZE /5/ .250	HOSE SIZE /5/ .313	HOSE SIZE /5/ .375	HOSE SIZE /5/ .500	HOSE SIZE /5/ .625	HOSE SIZE /5/ .750	HOSE SIZE /5/ 1.000	HOSE SIZE /5/ 1.250	HOSE SIZE /5/ 1.500
-	MAX	.285	.343	.406	.469	.585	.687	.812	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	.533	.533	.598	.658	.778	.891	1.016	1.288	1.578	1.887
E	MAX	.307	.375	.438	.507	.635	.749	.887	1.228	1.440	1.761
	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	.533	.533	.598	.658	.778	.908	1.038	1.288	1.658	1.898
H	MAX	.641	.641	.704	.766	.891	1.016	1.141	1.454	1.704	2.016
	MIN	.537	.594	.657	.719	.844	.969	1.074	1.394	1.649	1.959
J	MAX	.641	.641	.704	.766	.891	1.016	1.141	1.454	1.704	2.016
	MIN	.532	.594	.657	.719	.844	.969	1.074	1.394	1.649	1.959
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

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TABLE 5 - MAXIMUM WEIGHT

HOSE OR SLEEVE CODE OR FITTING	UNITS	HOSE SIZE .188	HOSE SIZE .250	HOSE SIZE .313	HOSE SIZE .375	HOSE SIZE .500	HOSE SIZE .625	HOSE SIZE .750	HOSE SIZE 1.000	HOSE SIZE 1.250	HOSE SIZE 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	.037
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	.037
H	LB/IN	.018	.018	.023	.024	.032	.038	.045	.079	.100	.124
J	LB/IN	.018	.018	.023	.024	.032	.038	.045	.079	.100	.124
K	LB/IN	.006	.009	.011	.014	.018	.022	.027	.051	.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 STR /25/	LB CLASS I	.040	.055	.075	.085	.155	.235	.330	.535	.995	1.370
	EA CLASS II	--	--	--	.050	.073	.117	.164	.255	.473	.638
FITTING END 90° /25/	LB CLASS I	.050	.065	.080	.099	.231	.328	.425	.659	1.419	1.854
	EA CLASS II	--	--	--	.055	.080	.110	.165	.290	.485	.685

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

TABLE 7 - DIMENSION H (SEE FIGURE 3)

SIZE CODE	H
3	.085
4	.062
5	.058
6	.059
8	.064
10	.078
12	.069
16	.132
20	.090
24	.134