Aeroquip

AEROSPACE ENGINEERING BULLETIN

SLEEVES

AEB 250

Supersedes AEB-193A

PROTECTIVE SLEEVING

for Rubber and Teflon* Hose Assemblies

Aeroquip hose assemblies were designed to provide quality performance and a long virtually trouble-free service life. In normal operating conditions, they will function effectively without additional protection. However, when the hose assemblies are used in unusual conditions or applications, additional protection in the form of abrasion or fire-resistant sleeves is recommended.

Abrasion and fire potential are the most frequent conditions which call for additional hose protection. Several types of protective sleeving are available for use with Aeroquip rubber and Teflon hose assemblies. The sleeves can be ordered in bulk quantities for use when fabricating your own assemblies.

In addition to protective sleeving, this bulletin provides information on Aeroquip hose assemblies available with chafe guards or fire-resistant sleeves, shop equipment and compatible products.

Abrasion-Resistant Sleeves

AE501 (AE701 hose), AE546 (AE246 hose), AE566 (666/667 hose)

Braided Polyester Chafe Guard

Aeroquip hose assemblies with Braided Polyester Chafe Guard are manufactured by braiding polyester yarn onto wire braid covered hose styles. The tough polyester braid withstood 1,000,000 abrasion test cycles without exposing the wire braid. This cover adds minimal weight and does not impair hose flexibility. It has a temperature range of -65°F to +300°F. Aeroquip Braided Polyester Chafe Guard provides superior performance and is highly recommended for most sleeve applications. However, another type of sleeve should be used when environmental conditions (such as temperature) prohibit the use of Braided Polyester Chafe Guard.

AE138 (646)

AE138 has a tough synthetic rubber scuff cover which is fuel, oil and ozone resistant. It protects against abrasion and scuffing in ground-servicing or airborne applications through a temperature range of -65°F to +250°F.

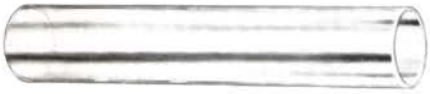
AE208 (900005)

The AE208 lightweight nylon protective coil resists abrasion at temperatures from -65°F to +200°F, and will retain its shape when flexed through a temperature range of -65°F to +250°F. The coil is wound, or spirally-wrapped, around the hose.

The natural gaps between coils reduce the possibility of entrapping moisture. This sleeve is recommended where hose assemblies are exposed to moisture, as well as abrasion.

AE251 (900961)

This heat-shrinkable Polyolefin tubing is recommended where a skin-tight fit is desired. The sleeve is positioned between the end fittings and shrunk onto the hose by controlled heat. It has a recommended operating temperature range of -65°F to +275°F.



AE506 (900179)

An extruded, translucent, seamless FEP Teflon tube; this sleeve is unaffected by fuels, lube oils, coolants or solvents used in aircraft service. It is recommended for abrasion protection in high temperature applications. Its temperature range is -65°F to +400°F.

* *Teflon is a DuPont trademark.*

PROTECTIVE SLEEVING

Fire-Resistant Sleeves

AE401 (AE701 hose), AE402 (601 hose), AE446 (AE246 hose), AE466 (666/667 hose)

Integral Silicone Covered Hose

Aeroquip silicone covered hose has an asbestos free cover which adheres directly to the wire braid to form a smooth, tight bond. The cover's integral design provides excellent chafe resistance, prevents "internal" sleeve chafing when band clamped and prevents fluid wicking. This hose/cover combination meets fire test requirements of TSO-C53a and TSO-C75 (specific types vary with each hose style). The silicone cover has a temperature range of -65°F. to +450°F. Contact Aeroquip for detailed information.

AE102

AE102 firesleeve is used to meet the fire resistance requirements of FAA TSO-C53a and TSO-C75. This firesleeve can be identified by its orange colored outer surface. It functions effectively within a continuous operating temperature range of -65°F to +450°F.

AE272

A field replaceable firesleeve; this Flexwrap sleeving has a silicone impregnated fiberglass cloth construction. It also has a split sleeve design which makes it easier to install over hose assemblies regardless of end fitting configuration. AE272 Flexwrap meets TSO requirements for medium and high pressure Teflon hose assemblies. It has a recommended operating temperature range -65°F to +450°F.

Sleeve Data

Sleeve	Sleeve Dash Size	Sleeve I.D.	Wall Thickness	Weight lbs./ft.
AE102	-7	.44	.125	.104
	-8	.50	.125	.112
	-9	.56	.125	.122
	-10	.62	.125	.142
	-11	.69	.125	.158
	-12	.75	.125	.166
	-13	.81	.125	.175
	-14	.88	.125	.187
	-16	1.00	.125	.195
	-18	1.12	.125	.240
	-20	1.25	.125	.248
	-22	1.38	.125	.286
	-24	1.50	.125	.307
	-26	1.62	.125	.325
	-28	1.75	.125	.344
	-30	1.88	.125	.366
	-38	2.38	.125	.463
AE138 (646)	-2	.27	.035	.020
	-4	.33	.035	.024
	-6	.39	.035	.029
	-8	.45	.035	.035
	-10	.48	.040	.043
	-12	.56	.040	.047
	-14	.62	.040	.051
	-16	.67	.040	.055
	-18	.72	.050	.070
	-22	.84	.050	.086
	-26	1.03	.050	.102
	-28	1.19	.050	.123
	-30	1.30	.060	.154
	-34	1.47	.070	.200
AE208 (900005)	-4	.20	.023	.008
	-10	.44	.032	.023

Sleeve	Sleeve Dash Size	Sleeve I.D.	Wall Thickness	Weight lbs./ft.
AE251 (900961)	-1	.38	.030	.022
	-2	.38	.030	.022
	-3	.50	.035	.033
	-4	.50	.035	.033
	-5	.75	.040	.056
	-7	1.00	.045	.083
	-8	1.00	.045	.083
	-9	1.50	.050	.137
	-11	2.00	.055	.200
	-13	.25	.025	.012
AE506 (900179)	-7	.29	.018	.014
	-8	.36	.018	.017
	-9	.42	.018	.020
	-10	.48	.018	.023
	-11	.52	.018	.025
	-13	.60	.018	.028
	-14	.70	.018	.033
	-15	.76	.018	.034
	-16	.83	.018	.039
	-17	.94	.018	.044
	-19	1.16	.018	.054
	-20	1.40	.018	.066
	-21	1.73	.018	.080
AE272	-3	4.5	.125	.1512
	-4	5.5	.125	.1920
	-6	7.0	.125	.2412
	-9	9.0	.125	.3096
	-11	10.0	.125	.3516
	-13	12.75	.125	.4044
	-14	16.5	.125	.5233
	-15	21.5	.125	.6819

All dimensions in inches

HOSE-SLEEVE SIZE RELATIONSHIP AND BAND CLAMP SELECTOR CHART

Hose Style	Hose Dash Size	Hose O.D.	AE102/* 624	AE138 (646)	AE208 (900005)	AE251 (900961)	AE506 (900179)	AE272	Band Clamp Size (900591B**)	
303 Medium Pressure Rubber	-3	.453	-8		-4	-2			1C	
	-4	.516	-8		-4	-3			1C	
	-5	.578	-10		-10	-3			2C	
	-6	.672	-12	-14	-10	-3			2C	
	-8	.766	-14	-18	-10	-5			2C	
	-10	.922	-16		-10	-5			3C	
	-12	1.078	-18	-26	-10	-7			3C	
302A Medium Pressure Rubber	-16	1.234	-22		-10	-7			3C	
	-20	1.500	-28		-10	-9			4C	
	-24	1.750	-30		-10	-9			4C	
	-32	2.219	-38		-10	-11			5C	
309 High Pressure Rubber	-4	.625	-12	-14	-10	-3			2C	
	-6	.766	-14	-18	-10	-5			2C	
	-8	.859	-16	-22	-10	-5			2C	
	-10	1.031	-18	-26	-10	-7			3C	
	-12	1.219	-20	-28	-10	-7			3C	
	-16	1.500	-26	-34	-10	-9			4C	
									AE701	601
601 and AE701** Medium Pressure Rubber	-3**	.375	-7	-6	-4	-2			1C	1C
	-4	.438	-8	-8	-4	-2			1C	1C
	-5**	.484	-9	-10	-4	-3			2C	2C
	-6	.547	-10	-12	-4	-3			2C	2C
	-8	.650	-12	-16	-10	-4			2C	2C
	-10	.797	-16	-20	-10	-5			2C	2C
	-12	.938	-18	-24	-10	-5			3C	3C
	-16	1.156	-22	-28	-10	-7			3C	3C
	-20	1.437	-26	-34	-10	-9	-24		4C	4C
	-24**	1.704	-30	-36	-10	-9			4C	4C
	-32**	2.102	-38		-10	-11			5C	5C
666 Medium Pressure Teflon	-3	.252	-8	-2	-4	-13	-7	-3	1C	
	-4	.324	-8	-4	-4	-13	-8	-3	1C	
	-5	.386	-8	-6	-4	-2	-9	-3	1C	
	-6	.450	-11	-6	-4	-1	-10	-4	1C	
	-8	.566	-13	-10	-10	-4	-13	-4	2C	
	-10	.664	-14	-12	-10	-4	-14	-6	2C	
	-12	.789	-16	-18	-10	-5	-16	-6	2C	
667 Medium Pressure Teflon	-16	1.109	-24	-26	-10	-7	-19	-9	3C	
	-20	1.359	-28	-30	-10	-8	-20	-11	4C	
	-24	1.672	-38	-34	-10	-9	-21	-13	5C	
AE246 High Pressure Teflon	-4	.375	-8	-4	-4	-2	-9	-3	1C	
	-6	.460	-11	-8	-4	-1	-10	-4	2C	
	-8	.590	-13	-12	-10	-3	-13	-4	2C	
	-10	.700	-14	-16	-10	-4	-14	-4	2C	

NOTE: AE102/624 fire-resistant sleeve sizes for use on assemblies with a straight reusable fitting on one end. Fire-sleeving to be installed after proof test. Double elbow assemblies require larger sizes.

* AE10187 End Dip for AE102/624 Firesleeve available in quart cans P/N AE13702001

**AE701 hose is not available in -3, -5, -24 and -32 sizes.

Shop Equipment

for use with Aeroquip Protective Sleeving

The shop equipment shown on this page was designed for easy and efficient assembly or removal of Aeroquip Protective Sleeving.

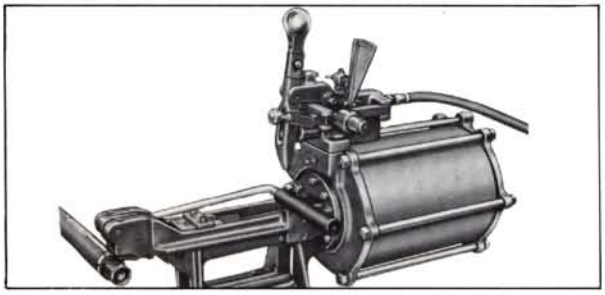
Aeroquip tools are available for making hose assemblies at a rapid high production rate or one at a time as you need them. The vise or bench mounted hand tool and F2637 band clamp air tool are assembly tools for use on a high production basis. The F2636 Pok-Kit Tool is compact and handy for making a small amount of assemblies.

Aeroquip shop equipment is also available that will make skiving or stripping hose assemblies a lot simpler. The S1372 machine assures fast and accurate skiving of silicone covered hose assemblies before end fitting attachment. The S1364 tool skives integral polyester braided hose without damaging the hose wire braid. The S1364 tool also seals the hose braid ends during chafe guard removal to prevent fraying.

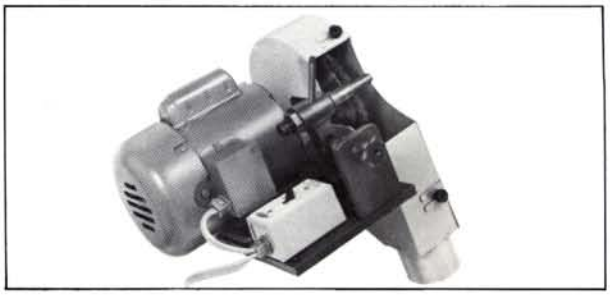
For additional information on Aeroquip shop equipment, write for the bulletin(s) listed below.

Vise or Bench Mounted Hand Tool
For detailed information on assembly procedures, ask for ASB-69.

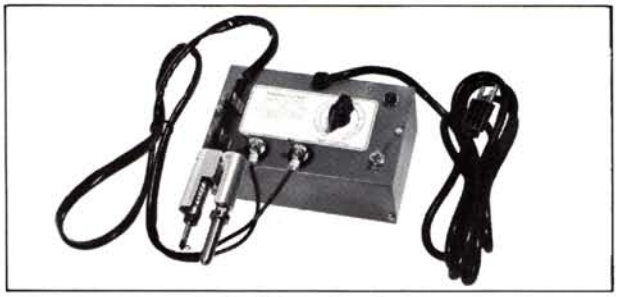
F2636 Pok-Kit Tool
For detailed information on assembly procedures, ask for ASB-69.



F2637 Band Clamp Air Tool
For detailed information on assembly procedures, ask for ASB-69.



S1372 Skiving Machine
For detailed information on assembly procedures, ask for AEB-245.



S1364 Stripping Tool
For detailed information on assembly procedures, ask for ASB-120.

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