

PTFE Hose / "super gem" Fittings and Assembly Instructions

Medium Pressure Hose Assemblies 666, 667 PTFE Hose

Hose • MIL-DTL-27267
Fittings • MIL-DTL-27272
Hose assemblies • MIL-DTL-25579



Application
Eaton's Aeroquip® Brand 666, 667 PTFE hose is unaffected by fuels, lube oils, coolants or solvents commonly used in aircraft service. It is also chemically inert to most missile fuels and oxidizers. Superior vibration resistance, low volumetric expansion and high temperature resistance make Eaton's Aeroquip Brand 666, 667 PTFE hose ideal for hydraulic, ballistic and steam application and most pneumatic applications.

Operating temperature
-65°F to +450°F (-54°C to +232°C) fluid and ambient.
Temperature range of -100°F to +500°F (-73°C to +260°C) may be allowable depending on fitting materials, fluid/ambient temperature differential and pressure characteristics.

Construction
(in accordance with AMS3380)
INNER TUBE
• Seamless extrusion of virgin Polytetrafluoroethylene (PTFE) resin.
REINFORCEMENT
• 666-full coverage corrosion resistant steel wire braid.
• 667-two full coverage corrosion resistant steel wire braids.

High Pressure Hose Assemblies AE246 PTFE Hose with "super gem" Reusable Fittings

Hose, MIL-H-38360A Amendment 1
Assemblies, in accordance with AS1339.



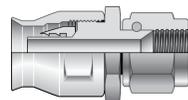
Application
High pressure and high temperature service. Eaton's Aeroquip Brand AE246 PTFE Hose is unaffected by fuels, lube oils, coolants or solvents commonly used in aircraft applications. Superior vibration resistance, low volumetric expansion, and high temperature resistance make it ideal for hydraulic systems. It is lightweight and has a 50% tighter bend radius.

Operating temperature
-65°F to +450°F (-54°C to +232°C) fluid and ambient.
Construction
Single wire braid through size -10, two wire-braids for size -12. Hose has a thin wall PTFE inner tube and a Hi-Pac stainless steel braid consisting of densely packed small diameter wires braided in a uniform pattern. The chemically inert

extruded tube has a tough, smooth, wax-like texture which is anti-adhesive, has essentially zero moisture absorption, and resists erosion.
NOTE: AE246 Hose meets or exceeds the performance requirements of AS1339.

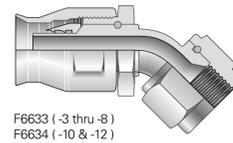
Standard End Fittings

STRAIGHT



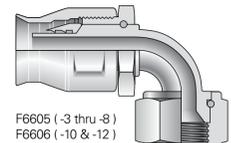
Flared
F66000 (-3 thru -12)
F66057 (-16 thru -24)

45°

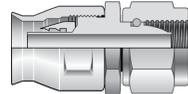


F6633 (-3 thru -8)
F6634 (-10 & -12)
F6679 (-16 thru -24)

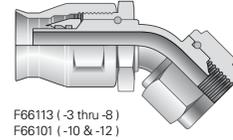
90°



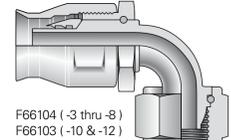
F6605 (-3 thru -8)
F6606 (-10 & -12)
F6677 (-16 thru -24)



Globeseal™ Flareless
F66018 (-3 thru -12)
F66023 (-16 thru -24)

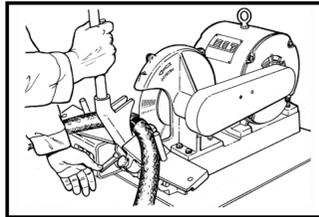


F66113 (-3 thru -8)
F66101 (-10 & -12)
F66421 (-16 thru -24)

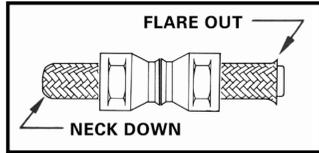


F66104 (-3 thru -8)
F66103 (-10 & -12)
F66422 (-16 thru -24)

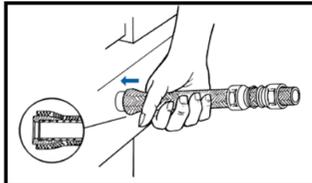
Assembly Instructions These assembly instructions cover gap-type fittings for all 666, 667 Medium Pressure and AE246 High Pressure Hose in -4 thru -12.



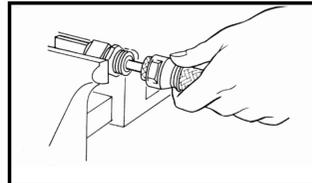
Step 1 • Cut Hose
Determine hose cut-off length by means of the table below or by calculating the length from the information shown on the hose assembly drawing. The cut-off length may also be determined by measuring the used length of hose being replaced.
Cut hose squarely. A hose cut-off wheel such as the S1104-1D saw or the FT1123.7 inch saw is recommended. However, a fine tooth hacksaw may be used. To prevent a flare-out of the wire end during the cut-off operation, wrap tape around the hose at the cut-off point. After the hose is cut, and just prior to installing sockets, the tape must be removed.
Clean hose after cutting to length. Be sure all cutting residue is dislodged.



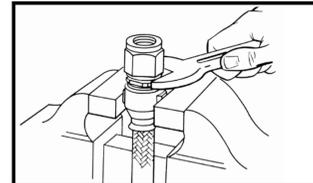
Step 2 • Install sockets
Place two sockets skirt to skirt in vise and work hose through sockets with a twisting, pushing motion. Inserting sockets over "neck-down" end of hose will facilitate assembly.
On extra long assemblies, the sockets are installed on each end of the hose individually.



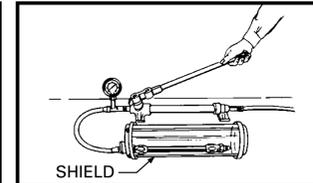
Step 3 • Size tube and flare braid
Place nipple hex in vise. Push one end of hose onto the nipple and work gently in circular motion to aid in separating the wire braid from the tube. Remove hose from nipple.



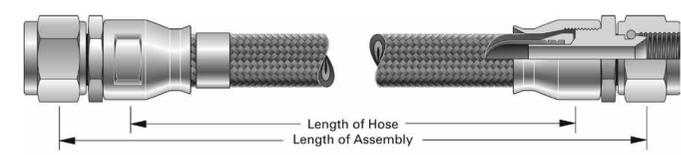
Step 5 • Size tube to sleeve
Size tube to sleeve by pushing hose onto the nipple until the sleeve bottoms against the nipple chamfer. Remove and recheck to be certain that the sleeve is still properly positioned. Again push hose onto the nipple until the sleeve is bottomed against the nipple chamfer.
NOTE: When assembling new fittings no lubrication is needed as component parts are dryfilm lubricated at the time of manufacture. After reuse of the fitting, if undue wearing of the dryfilm or bare metal is observed, the thread area should be lubricated with G N Paste.* (*Product of Dow Corning Corporation.)



Step 6 • Engage socket and tighten
Slide socket forward and thread onto nipple by hand. Remove assembly and place socket hex in vise. Using a wrench on the nipple, tighten the socket to a gap of 1/32 inch nominal for all sizes.
GAP ALL SIZES: $\leftarrow .031'' \begin{matrix} +.015 \\ -.008 \end{matrix} \rightarrow$



Step 7 • Proof Test, Clean and Inspect
PROOF TEST: Test hose assemblies with water in straight, horizontal position and observe for evidence of leakage while maintaining test pressure. Several hose assemblies may be tested at one time by connecting them in series.
CAUTION: Hose samples should be tested in a protective chamber such as Eaton's S1359 Hose Proof Test Stand, or equivalent, to ensure operator safety.
CLEAN: After assembly and proof test, clean each hose assembly internally using clean, dry compressed air.
INSPECT: Examine hose assembly internally for cut or bulged inner tube, obstructions, and cleanliness. Inspect for proper gap between nipple hex and socket. Nuts should swivel freely.



Hose cut-off factors / Reference chart

Cut-off factors shown below indicate difference in mm (in) between length of assembly and length of hose illustrated on sample hose assembly. Dimensions shown are for adjustable elbows only. All dimensions in inches (mm).

	Hose	Assembly	Hose Dash Size									
			-3	-4	-5	-6	-8	-10	-12	-16	-20	-24
			Letter Code (for non AE prefix part numbers)									
Medium Pressure	666, 667 Reusable Flared Fittings	Straight Swivel to Straight Swivel	1.40 (35.6)	1.48 (37.6)	1.54 (39.1)	1.62 (41.1)	1.86 (47.2)	2.10 (53.3)	2.26 (57.4)	2.60 (66.0)	2.88 (73.2)	3.32 (84.3)
		Straight Swivel to 45° Swivel	1.78 (45.2)	1.92 (48.8)	1.99 (50.5)	2.10 (53.3)	2.72 (69.1)	2.63 (66.8)	3.18 (80.8)	3.44 (87.4)	3.86 (98.0)	4.41 (112.0)
		Straight Swivel to 90° Swivel	1.56 (39.6)	1.65 (41.9)	1.74 (44.2)	1.84 (46.7)	2.24 (56.9)	2.46 (62.5)	3.05 (77.5)	3.35 (85.1)	3.78 (96.0)	4.34 (110.2)
		45° Swivel to 45° Swivel	2.16 (54.9)	2.36 (59.9)	2.44 (62.0)	2.58 (65.5)	3.58 (90.9)	3.16 (80.3)	4.10 (104.1)	4.28 (108.7)	4.84 (122.9)	5.50 (139.7)
		45° Swivel to 90° Swivel	1.94 (49.3)	2.09 (53.1)	2.19 (55.6)	2.32 (58.9)	3.10 (78.7)	2.99 (75.9)	3.97 (100.8)	4.19 (106.4)	4.76 (120.9)	5.43 (137.9)
		90° Swivel to 90° Swivel	1.72 (43.7)	1.82 (46.2)	1.94 (49.3)	2.06 (52.3)	2.62 (66.5)	2.82 (71.6)	3.84 (97.5)	4.10 (104.1)	4.68 (118.9)	5.36 (136.1)
	666, 667 Reusable Globeseal Fittings	Straight Swivel to Straight Swivel	1.84 (46.7)	1.78 (45.2)	1.86 (47.2)	2.04 (51.8)	2.32 (58.9)	2.64 (67.1)	2.80 (71.1)	3.16 (80.3)	3.44 (87.4)	4.14 (105.2)
		Straight Swivel to 45° Swivel	2.15 (54.6)	2.18 (55.4)	2.25 (57.2)	2.45 (62.2)	3.11 (79.0)	3.09 (78.5)	3.63 (92.2)	3.91 (99.3)	4.33 (110.0)	5.10 (129.5)
		Straight Swivel to 90° Swivel	1.78 (45.2)	1.80 (45.7)	1.90 (48.3)	2.05 (52.1)	2.47 (62.7)	2.73 (68.3)	3.32 (84.3)	3.63 (92.2)	4.06 (103.1)	4.75 (120.7)
		45° Swivel to 45° Swivel	2.46 (62.5)	2.58 (65.5)	2.64 (67.1)	2.86 (72.6)	3.90 (99.0)	3.54 (89.9)	4.46 (113.3)	4.66 (118.4)	5.22 (132.6)	6.06 (153.9)
		45° Swivel to 90° Swivel	2.09 (53.1)	2.20 (55.9)	2.29 (58.2)	2.46 (62.5)	3.26 (82.8)	3.18 (80.8)	4.15 (105.4)	4.38 (111.3)	4.95 (125.7)	5.71 (145.0)
		90° Swivel to 90° Swivel	1.72 (43.7)	1.82 (46.2)	1.94 (49.3)	2.06 (52.3)	2.62 (66.5)	2.82 (71.6)	3.84 (97.5)	4.10 (104.1)	4.68 (118.9)	5.36 (136.1)
High Pressure	AE246 Reusable Flared Fittings	Straight Swivel to Straight Swivel	-	1.84 (46.7)	-	2.08 (52.8)	2.32 (58.9)	2.42 (61.5)	2.54 (64.5)	-	-	-
		Straight Swivel to 45° Swivel	-	2.98 (75.7)	-	3.39 (86.1)	3.77 (95.8)	3.95 (100.3)	4.33 (110.0)	-	-	-
		Straight Swivel to 90° Swivel	-	2.61 (66.3)	-	2.96 (75.2)	3.26 (82.8)	3.27 (83.1)	3.67 (93.2)	-	-	-
		45° Swivel to 45° Swivel	-	4.12 (104.6)	-	4.70 (119.4)	5.22 (132.6)	5.48 (139.2)	6.12 (155.4)	-	-	-
		45° Swivel to 90° Swivel	-	3.75 (95.2)	-	4.27 (108.5)	4.71 (119.6)	4.80 (121.9)	5.46 (138.7)	-	-	-
		90° Swivel to 90° Swivel	-	3.38 (85.9)	-	3.84 (97.5)	4.20 (106.7)	4.12 (104.6)	4.80 (121.9)	-	-	-
	AE246 Reusable Globeseal Fittings	Straight Swivel to Straight Swivel	-	2.30 (58.4)	-	2.52 (64.0)	2.92 (74.2)	3.00 (76.2)	3.42 (86.9)	-	-	-
		Straight Swivel to 45° Swivel	-	3.34 (84.8)	-	3.76 (95.5)	4.27 (108.5)	4.44 (112.8)	5.06 (128.5)	-	-	-
		Straight Swivel to 90° Swivel	-	2.84 (72.1)	-	3.18 (80.8)	3.56 (90.4)	3.56 (90.4)	4.11 (104.4)	-	-	-
		45° Swivel to 45° Swivel	-	4.38 (111.3)	-	5.00 (127.0)	5.62 (142.7)	5.88 (149.3)	6.70 (170.2)	-	-	-
		45° Swivel to 90° Swivel	-	3.88 (98.6)	-	4.42 (112.3)	4.91 (124.7)	5.00 (127.0)	5.75 (146.1)	-	-	-
		90° Swivel to 90° Swivel	-	3.38 (85.9)	-	3.84 (97.5)	4.20 (106.7)	4.12 (104.6)	4.80 (121.9)	-	-	-

TEST DATA

Hose Dash Size	Fluid Operating Pressure psi (bar)	Proof Pressure psi (bar)	Minimum Burst Pressure psi (bar) (Room Temp.)
AE240*/666/667 Hose			
-3	1500 (103)	3000 (207)	12000 (827)
-4	1500 (103)	3000 (207)	12000 (827)
-5	1500 (103)	3000 (207)	10000 (690)
-6	1500 (103)	3000 (207)	9000 (621)
-8	1500 (103)	3000 (207)	8000 (552)
-10	1500 (103)	3000 (207)	7000 (483)
-12	1000 (69)	2000 (138)	5000 (345)
-16	1250 (86)	2500 (172)	5000 (345)
-20	1000 (69)	2000 (138)	4000 (276)
-24	1000 (69)	2000 (138)	4000 (276)
AE246 Hose			
-3	-	-	-
-4	3000 (207)	6000 (414)	16000 (1100)
-5	-	-	-
-6	3000 (207)	6000 (414)	14000 (965)
-8	3000 (207)	6000 (414)	14000 (965)
-10	3000 (207)	6000 (414)	12000 (827)
-12	3000 (207)	6000 (414)	12000 (827)
-16	-	-	-
-20	-	-	-
-24	-	-	-

*AE240 is -3 size only.