

# Rubber Hose, Fittings & Assemblies for Aerospace Applications

- Lightweight and Flexible
- Qualified to Industry Standards



*Powering Business Worldwide*

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# 306 Low Pressure Hose, Fittings and Assemblies

## Construction:

- **Inner Tube:** seamless synthetic rubber compound
- **Reinforcement:** single cotton braid
- **Outer Cover:** synthetic rubber cover

## Operating Temperatures:

-65°F to +160°F  
(-53°C to +71°C)

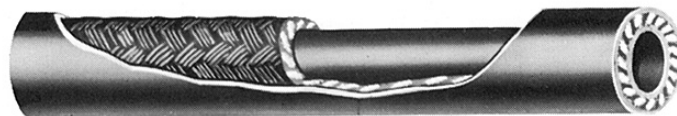
## Identification:

Black cover with linear yellow indicator stripe interspersed with symbol "LP"; hose manufacturer's code, size and date of manufacture (quarter year/year). Spaced 180° from this is "Aeroquip 306" in a white stipe. Markings repeated six inches apart.

## Application:

Air or vacuum instrument systems, automatic pilots and lines to pressure gauges used with these systems as specified in MS33620. Hose assemblies conform to AN6270. Hose conforms to MIL-DTL-5593. Fittings conform to MIL-DTL-38726 and MS27404.\*

\* Supersedes AN773



306 Hose / MIL-DTL-5593

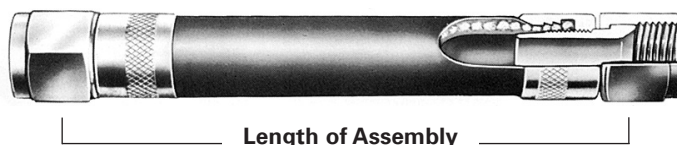
## ASSEMBLY SAMPLE PART NUMBER

359 — 4D 0123  
Base No. \_\_\_\_\_ Length in Eights (3/8")  
Size \_\_\_\_\_ Length in Inches (12")  
Material Code

| COMPLETE ASSEMBLY Including 471 Fittings |                |                         | HOSE                      |                |                |                   |                   |                   |                 |                        |
|------------------------------------------|----------------|-------------------------|---------------------------|----------------|----------------|-------------------|-------------------|-------------------|-----------------|------------------------|
| Part No.                                 | Tube Size O.D. | Weight 12" Ass'y (lbs.) | Part No.                  | Hose Size I.D. | Hose Size O.D. | Max. Oper. P.S.I. | Min. Proof P.S.I. | Min. Burst P.S.I. | Min. Bend radii | Weight per inch (lbs.) |
| 359-2DL<br>AN6270-2-L                    | 1/8            | .061                    | 306-2<br>MIL-DTL-5593-2   | .125           | .344           | 300               | 600               | 2000              | 2.00            | .004                   |
| 359-3DL<br>AN6270-3-L                    | 3/16           | .080                    | 306-3<br>MIL-DTL-5593-3   | .188           | .406           | 250               | 500               | 1700              | 2.00            | .005                   |
| 359-4L<br>AN6270-4-L                     | 1/4            | .106                    | 306-4<br>MIL-DTL-5593-4   | .250           | .469           | 200               | 400               | 1250              | 4.00            | .006                   |
| 359-6DL<br>AN6270-6-L                    | 3/8            | .145                    | 306-6<br>MIL-DTL-5593-6   | .375           | .594           | 150               | 300               | 1000              | 4.00            | .008                   |
| 359-8DL<br>AN6270-8-L                    | 1/2            | .236                    | 306-8<br>MIL-DTL-5593-8   | .500           | .750           | 150               | 250               | 750               | 6.00            | .012                   |
| 359-10DL<br>AN6270-10-L                  | 5/8            | .292                    | 306-10<br>MIL-DTL-5593-10 | .625           | .875           | 150               | 250               | 700               | 6.00            | .014                   |

## Flared AN818 Swivel Nut

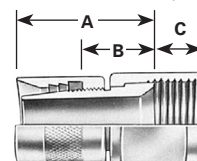
- 359 Assembly AN6270
- To mate with MS33656, MS33657, AS4395, AS4396



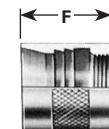
Length of Assembly

## Material & Finish:

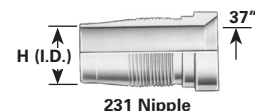
Nut, nipple and socket are anodized aluminum. All materials and finishes conform to applicable specifications for end fittings used in aircraft fluid systems.



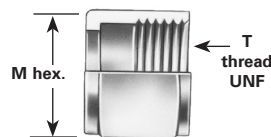
471/MS27404  
Hose Fitting



(K = diameter)  
213 Socket



231 Nipple



290/AN818 Nut

| HOSE FITTING            |             |        |        |               | SOCKET   |        |             | NIPPLE   |             | NUT      |        |             |           |
|-------------------------|-------------|--------|--------|---------------|----------|--------|-------------|----------|-------------|----------|--------|-------------|-----------|
| Part No.                | Max. Dim. A | Dim. B | Dim. C | Weight (lbs.) | Part No. | Dim. F | Max. Dim. K | Part No. | Min. Dim. H | Part No. | Dim. M | Max. Dim. N | Thread T  |
| 471-2D<br>MS27404-2D*   | .88         | .40    | .34    | .008          | 213-2D   | .531   | .453        | 231-2D   | .059        | 290-2D   | .375   | .436        | 5/16 - 24 |
| 471-3D<br>MS27404-3D*   | 1.00        | .44    | .32    | .012          | 213-3D   | .562   | .516        | 231-3D   | .122        | 290-3D   | .438   | .509        | 3/8 -24   |
| 471-4D<br>MS27404-4D*   | 1.04        | .47    | .35    | .020          | 213-4D   | .625   | .578        | 231-4D   | .169        | 290-4D   | .563   | .654        | 7/16 -20  |
| 471-6D<br>MS27404-6D*   | 1.15        | .54    | .38    | .029          | 213-6D   | .650   | .703        | 231-6D   | .294        | 290-6D   | .688   | .798        | 9/16 -18  |
| 471-8D<br>MS27404-8D*   | 1.37        | .67    | .43    | .054          | 213-8D   | .800   | .891        | 231-8D   | .388        | 290-8D   | .875   | 1.014       | 3/4 -16   |
| 471-10D<br>MS27404-10D* | 1.57        | .72    | .51    | .072          | 213-10D  | .950   | .953        | 231-10D  | .481        | 290-10D  | 1.000  | 1.158       | 7/8 -14   |

All dimensions in inches.

\* Supersedes AN773.

# 303, 302A Medium Pressure Hose, Fittings, and Assemblies

## Construction:

- **Inner Tube:** seamless synthetic rubber compound
- **Reinforcement:** synthetic impregnated single-wire braid over single cotton braid
- **Outer Cover:** synthetic impregnated oil-resistant cotton braid

## Operating Temperatures:

- 303 Hose: -65° to +250°F
- 302A Hose: -40° to +250°F

## Identification:

Grey-black braided cover with linear yellow marking consisting of — "MIL-DTL-8794 ,size, date of manufacture (quarter year/year) and hose manufacturer's code." Spaced 90° from this is a yellow indicator stripe interspersed with "Aeroquip 303" or "Aeroquip 302A." Markings repeated nine inches apart.

## Application:

Medium pressure hydraulic, pneumatic, fuel, oil and coolant systems specified in MS33620. Hose assemblies conform to MIL-DTL-8795 and MS28741. Hose conforms to MIL-DTL-8794. Fittings conform to MIL-A-5070 and MS24587.\* Hose may be used in submerged applications.

\* Supersedes MS28740, fittings dimensionally and functionally interchangeable.



303, 302A/ MIL-DTL-8794 Hose

**ASSEMBLY SAMPLE PART NUMBER**

Base No. 350 — 6 — 0123

Size \*

Length in Eights (3/8")  
Length in Inches (12")

\* Use D instead of (-) after size for -8 and larger

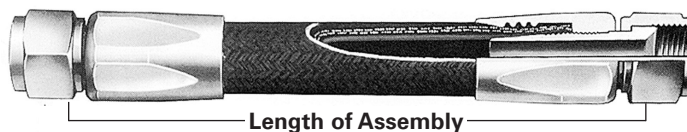
| COMPLETE ASSEMBLY Including 491 Fittings |                |                         | HOSE                      |                |                |                   |                   |                   |                   |                        |
|------------------------------------------|----------------|-------------------------|---------------------------|----------------|----------------|-------------------|-------------------|-------------------|-------------------|------------------------|
| Part No.                                 | Tube Size O.D. | Weight 12" Ass'y (lbs.) | Part No.                  | Hose Size I.D. | Hose Size O.D. | Max. Oper. P.S.I. | Min. Proof P.S.I. | Min. Burst P.S.I. | Min. Bend radii** | Weight per inch (lbs.) |
| 350-3-L †<br>MS28741-3-L                 | 3/16           | .175                    | 303-3<br>MIL-DTL-8794-3   | .125           | .453           | 3000              | 6000              | 12000             | 3.00              | .010                   |
| 350-4-L ††<br>MS28741-4-L                | 1/4            | .228                    | 303-4<br>MIL-DTL-8794-4   | .188           | .516           | 3000              | 6000              | 12000             | 3.00              | .011                   |
| 350-5-L<br>MS28741-5-L                   | 5/16           | .279                    | 303-5<br>MIL-DTL-8794-5   | .250           | .578           | 3000              | 5000              | 10000             | 3.38              | .013                   |
| 350-6-L<br>MS28741-6-L                   | 3/8            | .391                    | 303-6<br>MIL-DTL-8794-6   | .313           | .672           | 2000              | 4500              | 9000              | 4.00              | .019                   |
| 360-8-DL<br>MS28741-8-L                  | 1/2            | .417                    | 303-8<br>MIL-DTL-8794-8   | .406           | .766           | 2000              | 4000              | 8000              | 4.62              | .022                   |
| 360-10-DL<br>MS28741-10-L                | 5/8            | .580                    | 303-10<br>MIL-DTL-8794-10 | .500           | .922           | 1750              | 3500              | 7000              | 5.50              | .031                   |
| 360-12-DL<br>MS28741-12-L                | 3/4            | .750                    | 303-12<br>MIL-DTL-8794-12 | .625           | 1.078          | 1500              | 3000              | 6000              | 6.50              | .038                   |
| 390A16DL<br>MS28741-16-L                 | 1              | .824                    | 302A16<br>MIL-DTL-8794-16 | .875           | 1.234          | 800               | 1600              | 3200              | 7.38              | .037                   |
| 390A20DL<br>MS28741-20-L                 | 1 1/4          | 1.274                   | 302A20<br>MIL-DTL-8794-20 | 1.125          | 1.500          | 600               | 1250              | 2500              | 9.00              | .043                   |
| 390A24DL<br>MS28741-24-L                 | 1 1/2          | 1.558                   | 302A24<br>MIL-DTL-8794-24 | 1.375          | 1.750          | 500               | 1000              | 2000              | 11.00             | .056                   |
| 390A32DL<br>MS28741-32-L                 | 2              | 2.453                   | 302A32<br>MIL-DTL-8794-32 | 1.812          | 2.219          | 350               | 700               | 1400              | 13.25             | .078                   |

\*\* At maximum operating pressure.  
† Not to be used in hydraulic systems.

†† May be used where dynamic impulse does not exceed 3750 psi. If dynamic impulses of 4500 psi are required MIL-H-8790 hose assemblies shall be used.

## Flared AN818 Swivel Nut

- 350, 360, 390A Assembly MS28741
- To mate with MS33656, MS33657, AS4395, AS4396



| HOSE FITTING           |             |        |        |               | SOCKET                |        |             | NIPPLE                |             | NUT      |        |             |             |
|------------------------|-------------|--------|--------|---------------|-----------------------|--------|-------------|-----------------------|-------------|----------|--------|-------------|-------------|
| Part No.               | Max. Dim. A | Dim. B | Dim. C | Weight (lbs.) | Part No.              | Dim. F | Max. Dim. K | Part No.              | Min. Dim. H | Part No. | Dim. M | Max. Dim. N | Thread T    |
| 491-3<br>*MS24587-3    | 1.43        | .65    | .32    | .034          | 210-3D<br>MS24590-3   | 1.000  | .630        | 251-3<br>MS24588-3    | .123        | 290-3    | .438   | .51         | 3/8 - 24    |
| 491-4<br>*MS24587-4    | 1.51        | .65    | .35    | .055          | 210-4D<br>MS24590-4   | 1.100  | .693        | 251-4<br>MS24588-4    | .170        | 290-4    | .563   | .65         | 7/16 - 20   |
| 491-5<br>*MS24587-5    | 1.64        | .74    | .38    | .071          | 210-5D<br>MS24590-5   | 1.200  | .755        | 251-5<br>MS24588-5    | .232        | 290-5    | .625   | .72         | 1/2 - 20    |
| 491-6<br>*MS24587-6    | 1.79        | .77    | .38    | .096          | 210-6D<br>MS24590-6   | 1.300  | .880        | 251-6<br>MS24588-6    | .295        | 290-6    | .688   | .80         | 9/16 - 18   |
| 491-8D<br>*MS24587-8   | 2.22        | .94    | .43    | .097          | 215-8D<br>MS24590-8   | 1.650  | 1.005       | 251-8D<br>MS24588-8   | .390        | 290-8D   | .875   | 1.01        | 3/4 - 16    |
| 491-10D<br>*MS24587-10 | 2.42        | 1.00   | .51    | .135          | 215-10D<br>MS24590-10 | 1.800  | 1.234       | 251-10D<br>MS24588-10 | .484        | 290-10D  | 1.000  | 1.16        | 7/8 - 14    |
| 491-12D<br>*MS24587-12 | 2.70        | 1.00   | .57    | .185          | 215-12D<br>MS24590-12 | 2.100  | 1.359       | 251-12D<br>MS24588-12 | .608        | 290-12D  | 1.250  | 1.45        | 1 1/16 - 12 |
| 491-16D<br>*MS24587-16 | 2.34        | .94    | .60    | .220          | 212-16D<br>MS24591-16 | 1.661  | 1.546       | 251-16D<br>MS24589-16 | .810        | 290-16D  | 1.500  | 1.74        | 1 5/16 - 12 |
| 491-20D<br>*MS24587-20 | 2.48        | 1.00   | .64    | .422          | 212-20D<br>MS24591-20 | 1.750  | 1.921       | 251-20D<br>MS24589-20 | 1.042       | 290-20D  | 2.000  | 2.33        | 1 5/8 - 12  |
| 491-24D<br>*MS24587-24 | 2.67        | 1.09   | .74    | .504          | 212-24D<br>MS24591-24 | 1.845  | 2.124       | 251-24D<br>MS24589-24 | 1.276       | 290-24D  | 2.250  | 2.62        | 1 7/8 - 12  |
| 491-32D<br>*MS24587-32 | 3.21        | 1.24   | .93    | .850          | 212-32D<br>MS24591-32 | 2.250  | 2.640       | 251-32D<br>MS24589-32 | 1.745       | 290-32D  | 2.875  | 3.34        | 2 1/2 - 12  |

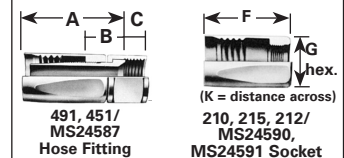
All dimensions in inches.

\* Supersedes MS28740, fittings dimensionally and functionally interchangeable.

## Material & Finish:

Nut and nipple, sizes 3 through 6, cadmium-plated steel. Nut and nipple sizes 8 and up, and socket, anodized aluminum. All materials and finishes conform to applicable specifications for end fittings used in aircraft fluid systems.

Elbow fittings are available for 303, 302A hose.

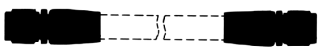
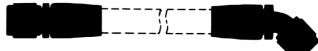
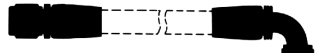
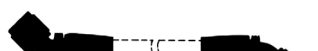
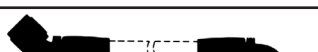
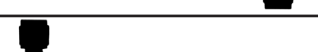


## 303, 302A Medium Pressure, Flared Hose Assemblies

-4 through -10 and -12 through -32

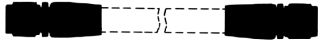
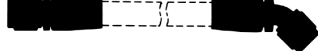
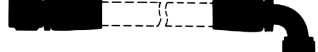
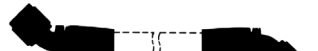
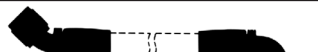
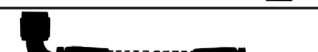
-4 through -10

### Flared AN818 Swivel Nut Fittings and Assemblies

| Fitting A                                                                          | Fitting B  | Type  | Material | Fitting A Part No. | Assembly Base No. | Fitting B Part No. |
|------------------------------------------------------------------------------------|------------|-------|----------|--------------------|-------------------|--------------------|
|   | Un sleeved | Alum. |          | 491                | 360               | 491                |
|                                                                                    |            | Alum. |          | 451                | 390A              | 451                |
|                                                                                    |            | Steel |          | 491                | 350               | 491                |
|                                                                                    | Firesleeve | Alum. |          | 491 or 451         | 624000            | 491 or 451         |
|                                                                                    |            | Steel |          | 491 or 451         | 624000            | 491 or 451         |
|   | Un sleeved | Alum. |          | 491 or 451         | 950012            | 980006             |
|                                                                                    |            | Steel |          | 491 or 451         | 950012            | 980006             |
|                                                                                    | Firesleeve | Alum. |          | 491 or 451         | 624040            | 980006             |
|                                                                                    |            | Steel |          | 491 or 451         | 624040            | 980006             |
|   | Un sleeved | Alum. |          | 491 or 451         | 950004            | 980005             |
|                                                                                    |            | Steel |          | 491 or 451         | 950004            | 980005             |
|                                                                                    | Firesleeve | Alum. |          | 491 or 451         | 624023            | 980005             |
|                                                                                    |            | Steel |          | 491 or 451         | 624023            | 980005             |
|   | Un sleeved | Alum. |          | 980006             | 950010            | 980006             |
|                                                                                    |            | Steel |          | 980006             | 950816            | 980006             |
|                                                                                    | Firesleeve | Alum. |          | 980006             | 630907            | 980006             |
|                                                                                    |            | Steel |          | 980006             | 624071            | 980006             |
|   | Un sleeved | Alum. |          | 980006             | 950003            | 980005             |
|                                                                                    |            | Steel |          | 980006             | 950668            | 980005             |
|                                                                                    | Firesleeve | Alum. |          | 980006             | 630908            | 980005             |
|                                                                                    |            | Steel |          | 980006             | 624055            | 980005             |
|  | Un sleeved | Alum. |          | 980005             | 950002            | 980005             |
|                                                                                    |            | Steel |          | 980005             | 950680            | 980005             |
|                                                                                    | Firesleeve | Alum. |          | 980005             | 630909            | 980005             |
|                                                                                    |            | Steel |          | 980005             | 624036            | 980005             |

-12 through -32

### Flared AN818 Swivel Nut Fittings and Assemblies

| Fitting A                                                                           | Fitting B  | Type  | Material | Fitting A Part No. | Assembly Base No. | Fitting B Part No. |
|-------------------------------------------------------------------------------------|------------|-------|----------|--------------------|-------------------|--------------------|
|  | Un sleeved | Alum. |          | 91                 | 360               | 491                |
|                                                                                     |            | Alum. |          | 451                | 390A              | 451                |
|                                                                                     |            | Steel |          | 491                | 350               | 491                |
|                                                                                     | Firesleeve | Alum. |          | 491 or 451         | 624000            | 491 or 451         |
|                                                                                     |            | Steel |          | 491 or 451         | 624000            | 491 or 451         |
|  | Un sleeved | Alum. |          | 491 or 451         | 950234            | 980136             |
|                                                                                     |            | Steel |          | 491 or 451         | 950234            | 980136             |
|                                                                                     | Firesleeve | Alum. |          | 491 or 451         | 624037            | 980136             |
|                                                                                     |            | Steel |          | 491 or 451         | 624037            | 980136             |
|  | Un sleeved | Alum. |          | 491 or 451         | 950192            | 980137             |
|                                                                                     |            | Steel |          | 491 or 451         | 950192            | 980137             |
|                                                                                     | Firesleeve | Alum. |          | 491 or 451         | 624066            | 980137             |
|                                                                                     |            | Steel |          | 491 or 451         | 624066            | 980137             |
|  | Un sleeved | Alum. |          | 980136             | 950247            | 980136             |
|                                                                                     |            | Steel |          | 980136             | 950817            | 980136             |
|                                                                                     | Firesleeve | Alum. |          | 980136             | 624089            | 980136             |
|                                                                                     |            | Steel |          | 980136             | 630910            | 980136             |
|  | Un sleeved | Alum. |          | 980136             | 950233            | 980137             |
|                                                                                     |            | Steel |          | 980136             | 950818            | 980137             |
|                                                                                     | Firesleeve | Alum. |          | 980136             | 630911            | 980137             |
|                                                                                     |            | Steel |          | 980136             | 624912            | 980137             |
|  | Un sleeved | Alum. |          | 980137             | 950248            | 980137             |
|                                                                                     |            | Steel |          | 980137             | 950819            | 980137             |
|                                                                                     | Firesleeve | Alum. |          | 980137             | 630905            | 980137             |
|                                                                                     |            | Steel |          | 980137             | 630913            | 980137             |

# 303, 302A Medium Pressure, Flareless Fittings and Assemblies

## Globeseal Flareless

- 950532 Assembly
- To mate with MS33514, MS33515, AS33514, AS33515

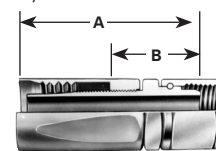


| HOSE FITTING<br>(Globeseal) |             |        |               | SOCKET   |        |        |             | NIPPLE ASSEMBLY<br>(Globeseal) |             |        |             |             |
|-----------------------------|-------------|--------|---------------|----------|--------|--------|-------------|--------------------------------|-------------|--------|-------------|-------------|
| Part No.                    | Max. Dim. A | Dim. B | Weight (lbs.) | Part No. | Dim. F | Dim. G | Max. Dim. K | Part No.                       | Min. Dim. H | Dim. M | Max. Dim. N | Thread T    |
| 440-4                       | 1.78        | .94    | .068          | 210-4D   | 1.100  | .625   | .693        | 440-3-4                        | .170        | .562   | .65         | 7/16 - 20   |
| 440-5                       | 1.92        | 1.05   | .081          | 210-5D   | 1.200  | .688   | .755        | 440-3-5                        | .232        | .625   | .72         | 1/2 - 20    |
| 440-6                       | 2.11        | 1.11   | .122          | 210-6D   | 1.300  | .812   | .880        | 440-3-6                        | .295        | .688   | .80         | 9/16 - 18   |
| 440-8D                      | 2.58        | 1.33   | .117          | 215-8D   | 1.650  | .938   | 1.005       | 440-3-8D                       | .390        | .875   | 1.01        | 3/4 - 16    |
| 440-10D                     | 2.84        | 1.46   | .167          | 215-10D  | 1.800  | 1.125  | 1.234       | 440-3-10D                      | .484        | 1.000  | 1.16        | 7/8 - 14    |
| 440-12D                     | 3.14        | 1.47   | .222          | 215-12D  | 2.100  | 1.250  | 1.359       | 440-3-12D                      | .608        | 1.250  | 1.45        | 1 1/16 - 12 |
| 440-16D                     | 2.97        | 1.60   | .286          | 212-16D  | 1.661  | 1.438  | 1.546       | 440-3-16D                      | .810        | 1.500  | 1.74        | 1 5/16 - 12 |
| 440-20D                     | 3.17        | 1.72   | .503          | 212-20D  | 1.750  | 1.750  | 1.921       | 440-3-20D                      | 10.42       | 2.000  | 2.33        | 1 5/8 - 12  |
| 440-24D                     | 3.49        | 1.94   | .606          | 212-24D  | 1.845  | 1.938  | 2.124       | 440-3-24D                      | 1.276       | 2.250  | 2.62        | 1 7/8 - 12  |

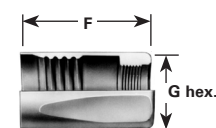
All dimensions in inches.

## Material & Finish:

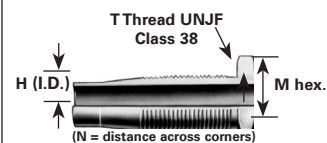
Nut and nipple, sizes 4 through 6, cadmium-plated steel. Nut and nipple sizes 8 and up, and socket, anodized aluminum. All materials and finishes conform to applicable specifications for end fittings used in aircraft fluid systems.



440  
Hose Fitting



(K = distance across corners)  
210, 215, Socket



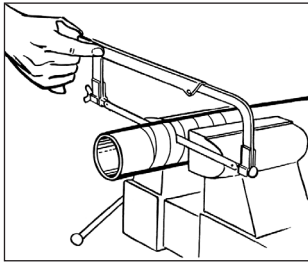
T Thread UNJF  
Class 38  
440-3-Size  
Nipple Assembly

## Globeseal Flareless Assemblies

| Fitting A | Fitting B | Type       | Material | Fitting A Part No. | Assembly Base No. | Fitting B Part No. |
|-----------|-----------|------------|----------|--------------------|-------------------|--------------------|
|           |           | Unsleeved  | Alum.    | 440                | 950532            | 440                |
|           |           | Firesleeve | Steel    | 440                | 950532            | 440                |
|           |           | Unsleeved  | Alum.    | 440                | 950781            | 980688             |
|           |           | Firesleeve | Steel    | 440                | 950781            | 980688             |
|           |           | Unsleeved  | Alum.    | 440                | 950645            | 980569             |
|           |           | Firesleeve | Steel    | 440                | 950645            | 980569             |
|           |           | Unsleeved  | Alum.    | 980688             | 630947            | 980569             |
|           |           | Firesleeve | Steel    | 980688             | 630946            | 980569             |
|           |           | Unsleeved  | Alum.    | 980688             | 950785            | 980688             |
|           |           | Firesleeve | Steel    | 980688             | 950782            | 980688             |
|           |           | Unsleeved  | Alum.    | 980688             | 630949            | 980688             |
|           |           | Firesleeve | Steel    | 980688             | 630949            | 980688             |
|           |           | Unsleeved  | Alum.    | 980688             | 950786            | 980569             |
|           |           | Firesleeve | Steel    | 980688             | 950783            | 980569             |
|           |           | Unsleeved  | Alum.    | 980688             | 630951            | 980569             |
|           |           | Firesleeve | Steel    | 980688             | 630950            | 980569             |
|           |           | Unsleeved  | Alum.    | 980569             | 950787            | 980569             |
|           |           | Firesleeve | Steel    | 980569             | 950784            | 980569             |
|           |           | Unsleeved  | Alum.    | 980569             | 630953            | 980569             |
|           |           | Firesleeve | Steel    | 980569             | 630952            | 980569             |

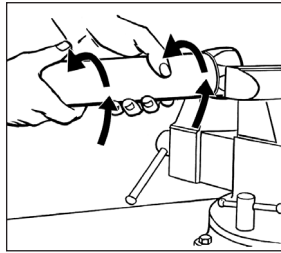
# Aircraft Rubber Hose Assembly Instructions

## 306, 303 and 302A Hose



### Step 1.

Cut hose squarely to length. Use hose cut-off machine or fine tooth hacksaw. Do not remove the cover if using a hacksaw; wrap hose with several layers of tape before cutting.

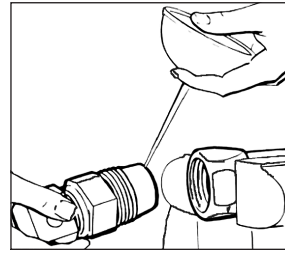


### Step 2.

Place socket in vise. Do not over-tighten vise on thin walled sockets of lightweight fittings. Screw hose counter-clockwise into socket until it bottoms. Back off 1/4 turn.

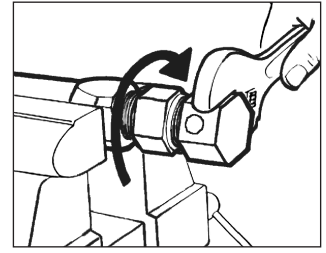
### Step 3.

Tighten nipple and nut on assembly mandrel. The use of Aeroquip S1051 hand assembly tools are recommended to avoid damage to the sealing surface and to properly support the inner tube.



### Step 4.

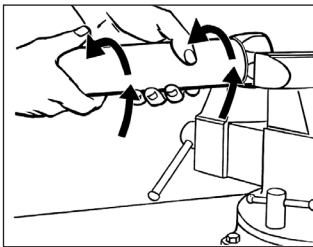
Lubricate inside of hose and nipple threads liberally. Use lubricating oil, petrolatum or light grease.



### Step 5.

Screw nipple into socket and hose using wrench on assembly tool hex. Nut must swivel freely when assembly tool is removed. Maximum allowable gap between nut and socket is 1/16". On -32 screw in until turning becomes difficult, back out nipple, relubricate and reassemble.

## Elbow Hose Assemblies - 303 and 302A

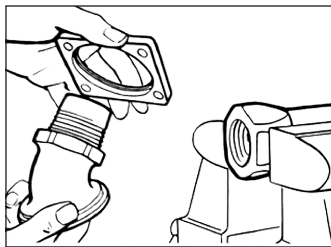


### Step 1.

Cut hose squarely to length. Use hose cut off machine or fine tooth hacksaw. If using a hacksaw, wrap hose with tape before cutting. Do not remove cover.

### Step 2.

Place socket in vises. Do not over-tighten vise on thin walled sockets of lightweight fittings. Screw hose counter-clockwise into socket until it bottoms. Back off 1/4 turn.



### Step 3.

Flange elbow fittings. Drop flange over threaded end of nipple. Nipple shoulder must fit into counter bore of flange.

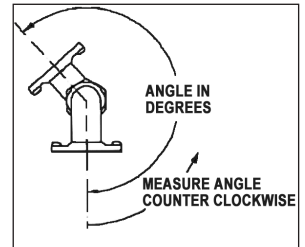
### Step 4.

Lubricate inside of hose and nipple threads liberally. Use lubricating oil, petrolatum or light grease.



### Step 5.

Screw nipple into socket and hose using wrench on elbow hex. Tighten until hex is snug against socket. On -32 and larger sizes, screw in until turning becomes difficult, back out nipple, relubricate and reassemble.



### Step 6.

Adjustments may be necessary to obtain the desired position angle between two elbows. In order to minimize backing off elbows to position, the following procedure should supplement Step 5.

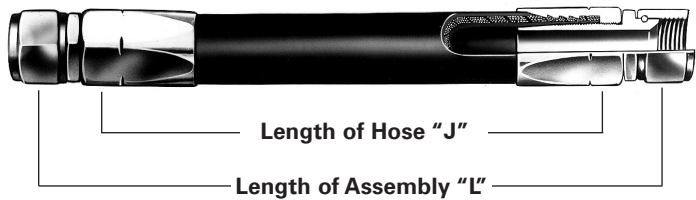
A. Tighten both elbows to maximum allowable gap (reference Step 6C), then start to position for relative angle between the elbows.

B. Finish assembly by adjusting both elbows. Backing-off to position should be avoided and in no case should exceed 1/4 turn.

C. Maximum allowable gap between nipple hex and socket is 1/16" using 303 and 302A hose.

# Hose Cut-off Factors

Cut off factors shown below indicate difference (in inches) between Length "L" and Length "J" illustrated on sample hose assembly.



|                 |          |                              |                                    | HOSE DASH SIZE |      |      |      |      |      |      |      |      |      |      |      |
|-----------------|----------|------------------------------|------------------------------------|----------------|------|------|------|------|------|------|------|------|------|------|------|
|                 |          | HOSE                         | ASSEMBLY                           | -2             | -3   | -4   | -5   | -6   | -8   | -10  | -12  | -16  | -20  | -24  | -32  |
| Low Pressure    | 306      | Flared Fittings              | Straight Swivel to Straight Swivel | .80            | .88  | .94  | —    | 1.08 | 1.34 | 1.44 | —    | —    | —    | —    | —    |
| Medium Pressure | 302A 303 | Flared Fittings              | Straight Swivel to Straight Swivel | —              | 1.32 | 1.30 | 1.50 | 1.54 | 1.90 | 2.02 | 2.02 | 1.90 | 2.00 | 2.18 | 2.50 |
|                 | 302A 303 | Globeseal Flareless Fittings | Straight Swivel to Straight Swivel | —              | —    | 1.88 | 2.10 | 2.22 | 2.66 | 2.92 | 2.94 | 3.20 | 3.44 | 3.88 | 4.74 |

## S1385 Hose Cutoff Saw



Eaton's Aeroquip S1385 Hose Cutoff Saw is compact and easy to operate. The spring arm is designed with an improved stabilizer to insure fast and efficient cutting of hydraulic hoses. The S1385 saw will cut single wire braid hoses through 1.25 inches and 2-wire braid hoses through 1 inch as well as textile hoses through 2 inches.

The S1385 cutoff saw is easily bench-mounted eliminating the need for a special stand. It is also equipped with a safety clutch to prevent motor damage in case of binding. The blade is well guarded and can easily be changed. See brochure AEB-262 for more details.

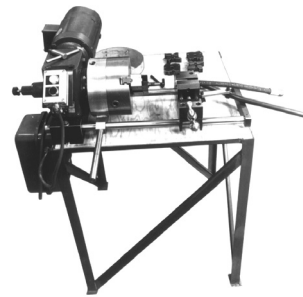
### S1385 Features

- Low Cost
- Compact
- Easy Operation
- Bench-Mounted
- Built-in Safety Features
- U.L. Listed

### Electrical Requirements

2 1/2 horsepower electric motor. 115V, single phase, AC-DC, 5-60 Hz, 5200 rpm.

## S1380 Hose Assembly Machine



Eaton designed the S1380 hose assembly machine to simplify and speed the assembly of hoses with standard screw together reusable fittings.

The machine features a durable 1 H.P., 3-phase, 60 cycle electric brakemotor operating at 1750 R.P.M. The motor is "C" face mounted to a speed reducer which provides a working spindle with 58.3 R.P.M. With the S1380 machine you can quickly assemble straight or elbow-type reusable fittings on medium pressure hoses in sizes -3 (3/16") through -12 (3/4") and high pressure hoses in sizes -4 (1/4") through -12 (3/4").

This hose assembly machine is simple to operate with an easily adjusted spindle lock for changing mandrels or operations and a carriage vise for accurate fitting assembly.

The complete machine comes with two sets of chuck jaws, fire mandrels and operator's manual. See brochure AEB-257 for complete information.

### Electrical Requirements

230/460V, 3 phase, 60 cycle, 120V

### Machine Specifications

*Dimensions:* 12" high x 34" long x 27" wide

*Weight:* 200 lbs. (approx.)

*Hose Range:* -3 (3/16") through -12 (3/4"), medium pressure -4 (1/4") through -12 (3/4"), high pressure

*Motor Power:* 1 horsepower

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