

*PIPER CHEROKEE SIX SERVICE MANUAL

2-61. TORQUE REQUIREMENTS. The torque values given in Table II-VIII are derived from oil-free cadmium-plated threads and are recommended for all airframe installation procedures where torquing is required, unless otherwise noted in sections where other values are stipulated. Engine torque values are found in the latest revision Lycoming SSP-1776 and propeller torque values are found in Section VIII or VIIIA of this manual. Table II-VIII lists the torque values for flared fittings of various sizes and material.

CAUTION

Do not overtorque fittings.

NOTE

When flared fittings are being installed, ascertain that the male threads are properly lubricated. Torque the fittings in accordance with Table II-VIII.

TABLE II-VIII. FLARE FITTING TORQUES

TORQUE - INCH-POUND					
TUBING OD INCHES	ALUMINUM - ALLOY TUBING FLARE - AND 10061 OR AND 10078		STEEL TUBING FLARE AND 10061		HOSE END FITTING AND HOSE ASSEMBLIES
	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM MAXIMUM
1/8	---	---	---	---	---
3/16	---	---	90	100	70 100
1/4	40	65	135	150	70 120
5/16	60	80	180	200	85 180
3/8	75	125	270	300	100 250
1/2	150	250	450	500	210 420
5/8	200	350	650	700	300 480
3/4	300	500	900	1000	500 850
1	500	700	1200	1400	700 1150
1-1/4	600	900	---	---	---
1-1/2	600	900	---	---	---
1-3/4	---	---	---	---	---
2	---	---	---	---	---

124F001-6CR 0110

11 inches long.

3/8 INTERNAL SUPPORT COLL

.375 O.D. 1500 PSI FIRE SLEEVE.

Revised: 11/4/

D SERVICING

TABLE II-IX. MAXIMUM DISTANCE BETWEEN SUPPORTS FOR FLUID TUBING

TUBE OD (IN.)	DISTANCE BETWEEN SUPPORTS (IN.)	
	ALUMINUM ALLOY	STEEL
1/8	9-1/2	11-1/2
3/16	12	14
1/4	13-1/2	16
5/16	15	18
3/8	16-1/2	20
1/2	19	23
5/8	22	25-1/2
3/4	24	27-1/2
1	26-1/2	30

TABLE II-X. THREAD LUBRICANTS

TYPE OF LINE	TYPE OF LUBRICANT
Brakes	MIL-H-5606
Freon	TT-A-580 or MIL-T-5544, Anti-Seize Compound
Fuel	MIL-T-5544, Anti-Seize, Graphite Petroleum
Landing Gear (Air Valve)	6PB Parker
Oil	MIL-G-6032, Lubricating Grease (Gasoline and Oil Resistant)
Pitot and Static	TT-A-580 (JAN-A-669), Anti-Seize Compound (White Lead Base)
— NOTE — <i>Lubricate engine fittings only with the fluid contained in the particular lines.</i>	

Morgan, Donald F (FAA)

From: Joffrey Holloway <[REDACTED]>
Sent: Wednesday, January 31, 2018 1:27 PM
To: Morgan, Donald F (FAA)
Cc: David Howerton; Chad Beemer
Subject: Torque and Lubrication Information

Donald,

Per our conversation pertaining to the assembled failure of product number 124F001-6CR0110 there in Reno, we have found that per SAE document ARP 908 that the product mentioned should be torqued between 135 - 190 lb./in. Subsequently, pertaining to the lubrication required for the part, per AS1946 this part only requires passivation as this is a metal to metal mating product and no lubrication is required to initiate the threading or torquing procedure. I have copied my Sustaining Engineering Team Lead on this correspondence as well as Plant Quality manager. If you have any further questions or concerns, please feel free to contact us at your earliest convenience. Thanks.

Joffrey B. Holloway
Quality Operations Team Leader
Parker-Hannifin

[REDACTED]

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AQP Hose Fittings

Torque Specifications

Torque Specifications for Aluminum Fittings

One of the most frequently asked questions is how tight should the connection between the fitting and the adapter be? The correct answer is to follow the specification guidelines listed below. This will give the proper tightness to allow for a good seal, but prevents damage to the fitting by over torque.

Torque Specification Guidelines

Nut Size	Minimum Torque ¹	Maximum Torque ¹
-02	50	80
-03	70	105
-04	100	140
-05	130	180
-06	150	195
-08	270	350
-10	360	430
-12	460	550
-16	700	840
-20	850	1020
-24	900	1080
-32	1800	2000

¹ Torque values are shown in inch pounds for aluminum fittings.

There may be times when the correct torque wrench may not be available. In these cases you can follow one of the alternate tightening methods listed at right.

Please note that these methods are for aluminum performance fittings and adapters.

Remember, over-tightening will result in possible damage to the fitting, resulting in possible leaks.

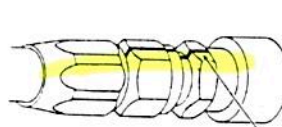
Alternate Tightening Method One

Flats Method

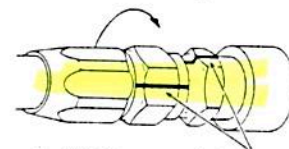
Here are the steps for an excellent method of tightening. Anyone can tell if the joint was tightened and how much.

1. Tighten the nut by hand until it bottoms the seats.
2. Using a marker, draw a line lengthwise on the nut and extend it onto the adapter.
3. Using a wrench, rotate the nut to tighten. Turn the nut the amount shown on the chart.

Size	Number of Hex Flats Rotations
-04	1 1/2 to 1 3/4
-06	1 to 1 1/2
-08	1 1/4 to 1 3/4
-10	1 1/4 to 1 3/4
-12	1 to 1 1/2
-16	3/4 to 1
-20	1/2 to 3/4
-24	1/2 to 3/4



Mark a line on the nut and adapter before torquing.



Misalignment of the mark shows the amount which the nut was tightened.

Alternate Tightening Method Two

The second alternate method of tightening is very simple and easy to remember. Bring the nut to hand tight and then rotate a quarter of a turn. This applies to all sizes. Mark the fitting as indicated in the flat method to confirm the quarter turn.



INSTALLATION AND CARE OF HOSE AND HOSE ASSEMBLIES

Continued from page 3

Chafe Protection:

Chafe guards of PTFE, vinyl, polyester, or other suitable material should be used anytime there is a possibility of chafing. Chafing should be avoided by routing of the hose assembly or by clamping.

Tips for Proper Installation:

1. Attach the hose to the most inaccessible end of its routing first. Finger tighten only, so the hose is free to turn during initial installation. Hose should not be twisted on final installation.
2. Attach the other end of the hose in the same manner.
3. Properly orient the hose along its routing and install the required line support clamps.
4. Use proper torque and remember to always lubricate! Use established installation torque values or consult ARP908 for limits. Also, the Flats From Finger Tight (F.F.F.T) method is simple to use and more consistent than measuring input force. Dissimilar materials or metals require different values (e.g. aluminum to stainless steel).

Continued on page 5

