Aero Twin, Inc. External Oxygen Service Port Kit No. QX-100
for
Quest Kodiak 100 Aircraft

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

Document No. QX-100-ICA

Installation Instructions
Maintenance Manual
FAA Approved Airworthiness Limitations
Illustrated Parts List

Aero Twin Approved: _____

President
Aero Twin, Inc.
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LOG OF REVISIONS

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1.0 Installation Instructions

Reference Section 4.0 for all item numbers.

1.1 General Information

Aero Twin, Inc.'s External Oxygen Service Port, P/N QX-100, provides maintenance personnel with a port on the left side of the aircraft to service the oxygen system from outside the aircraft. Access to the service port is through a small latched door aft of the rear cabin bulkhead. A manifold is accessed by the door that has a capped filler port and a pressure gauge installed. A high pressure oxygen line runs from the manifold to the bottle. A placard is installed on the inner side of the door.

1.2 Original Installation

1.2.1 Prior to installing oxygen service port, review Quest Maintenance Manual Chapter 35. During installation comply with all maintenance procedures with regard to using clean tools, gloves, thread sealant, and fitting torques when working with the oxygen line, fittings, regulator, and bottle.

1.2.2 Review Chapter 6 of AC 43.13-2B for general information regarding oxygen system installations in nonpressurized aircraft.

1.2.3 Remove aft bulkhead in the tailcone.

1.2.4 Locate provided cutting template on interior side of skin on left hand side of the aircraft between the bulkheads at FS 222 and FS 236. The top edge of the template is located 0.125 below and parallel to the lower edge of the stringer approximately 26 inches above the cabin floor. The top, forward corner of the template is located 0.25 inches aft of the aft flange of the bulkhead at FS 222.

1.2.5 With cutting template in place, match drill eight rivet holes into skin using a #30 bit. Cleco template in place and mark and cutout hole in skin for the door using a rotary tool or similar.

1.2.6 With item -1 in place, match drill remaining 50 rivet holes in skin using a #30 bit. Deburr all holes.

1.2.7 Optionally, paint the door on item -1 to match the aircraft prior to installation, or wait to paint once installed.

1.2.8 Rivet item -1 in place using item -4 and -5 rivets and the 17 item -3 rivets that do not pass through item -2. Paint exposed rivet tails using epoxy primer.

1.2.9 Rivet item -2 in place using the remaining 26 item -3 rivets. Paint exposed rivet tails using epoxy primer.

1.2.10 Paint door if not done previously, and exposed rivet heads on outside of aircraft to match aircraft paint.

1.2.11 Place placard, item -14, on inside face of the service port door.

1.2.12 Using a #7 bit, drill flange of bulkhead at FS 222 at two points at a height that allows good routing of item -6 between item -2 and the oxygen bottle. Deburr holes and install clamps, item -8, with hardware, items -9 through -11. See Figure 4.3.

1.2.13 Empty oxygen bottle using procedures in Quest Maintenance Manual Paragraph 3500.5.2(A). Remove filling valve, P/N MS22066-3, from the bottle and replace with item -7. Apply three wraps of A-A-58092 or MIL-T-27730 Anti-Seize Tape to pipe thread of item -7 prior to installing it in the bottle, without applying tape to the first thread. Torque item -7 to 40-150 in-lbs.

1.2.14 Install Manifold, item -13, inside item -2, using hardware, items -10 through -12. Ensure chain to the service port cap is captured by the lower bolt, item -12 holding item -13 in place. Install clamp, item -8, on end of the upper bolt, item -12. See figure 4.3.

1.2.15 Install high pressure line, item -6, between the manifold and the bottle, routed through the three clamps as shown in figure 4.3. Ensure a minimum of 1.0 inch radius for all bends. If possible, include a maintenance pigtail on either end of item -6. Torque fittings on item -6 to 70-140 in-lbs.

1.2.16 Pressure test connections as outlined in the pressure test procedures in Quest's Maintenance Manual Chapter 35, paying careful attention to the newly installed manifold, high pressure hose, and item -7 fitting.

1.2.17 Purge system as outlined in the purge and fill procedures in Quest's Maintenance Manual Chapter 35, using the new service port to fill the oxygen system.

1.2.18 Perform a function test of the oxygen system as described in Quest's Maintenance Manual Chapter 35.

1.2.19 Update Empty Weight and Balance of aircraft by adding 2.0 pounds at FS 229.

2.0 Maintenance Manual

2.1 Servicing

An external service port has been installed on the left hand side of the fuselage at approximately FS 229. The majority of the Quest Maintenance Manual Chapter 35 Oxygen System, including Description and Operation; Tools, Equipment, and Materials; Servicing; Inspection; Maintenance Practices; and Troubleshooting are unchanged by this modification. The exception is that instead of accessing the oxygen bottle for servicing by removing the aft bulkhead, the bottle should be serviced by adding oxygen at the external service port and monitoring pressure during servicing on the pressure gauge next to the external service port. The external service port and gauge and the high pressure line running from the external service port to the bottle are part of the oxygen system and maintained using the procedures in Quest's Maintenance Manual Chapter 35.

3.0 Airworthiness Limitations

Aero Twin, Inc. External Oxygen Service Port No. QX-100

The Airworthiness Limitations section is FAA approved and specifies maintenance required under paragraphs 43.16 and 91.403(c) of the Federal Aviation Regulations unless an alternative program has been FAA approved.

There are no airworthiness limitations for this modification.

----------End of Section 3.0 Airworthiness Limitations----------

4.0 Illustrated Parts List

Item	Qty	Part No.	Description	Figure
1	1	QX-100-D	Doubler Assembly	4.1
2	1	QX-100-T	Tray Assembly	4.1
3	43	MS20470AD4-4.5	Rivet	4.1
4	8	MS20470AD4-3.5	Rivet	4.1
5	3	MS20470AD4-6	Rivet	4.1
6	1	QX-100-L	High Pressure Line	4.3
7	1	AN780-3	Fitting	4.3
8	3	MS21919WDG3	Clamp	4.3
9	2	AN526-1032R8	Screw	4.1
10	4	NAS1149F0332P	Washer	4.1
11	4	MS21083N3	Nut	4.1
12	2	AN3-13A	Bolt	4.1
13	1	QX-100-M	Manifold	4.1
14	1	QX-100-P	Oxygen Service Port Placard	4.2

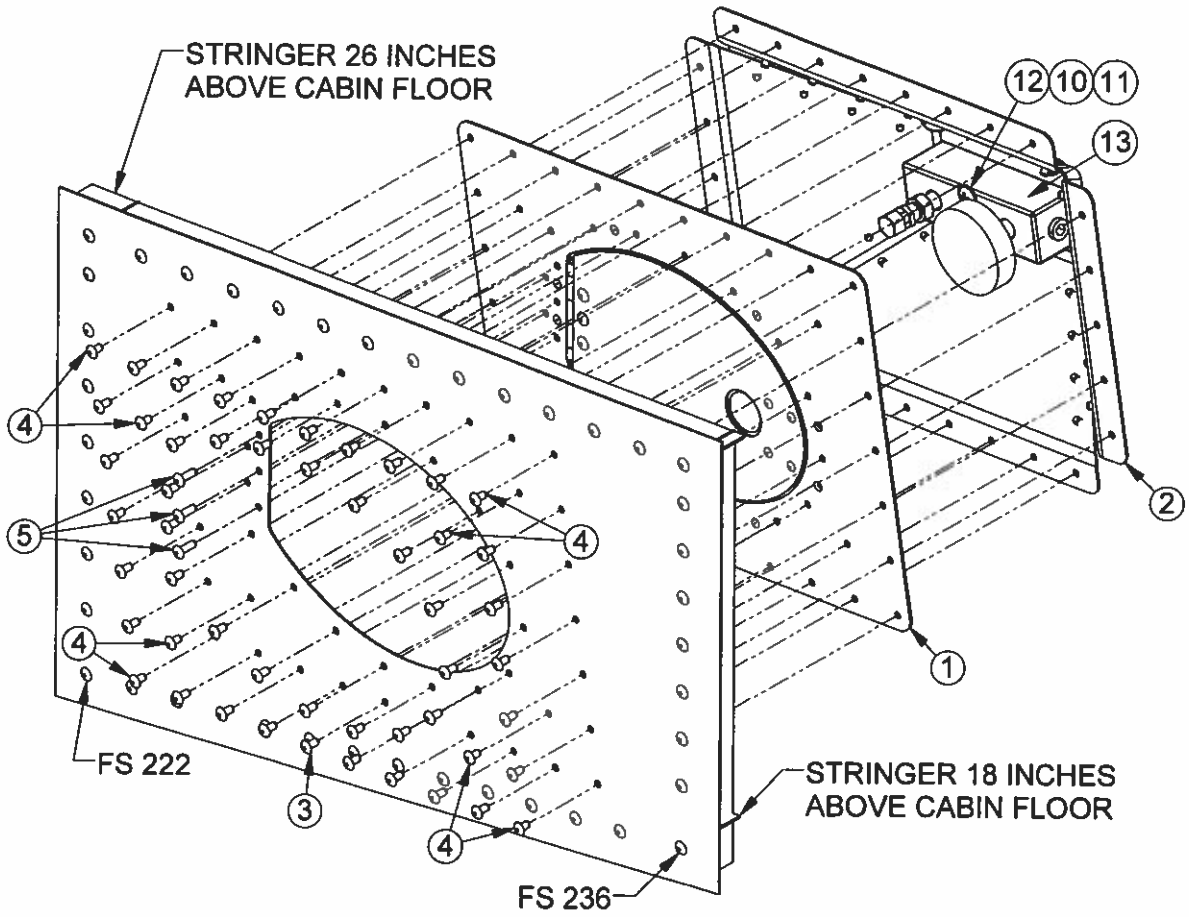

Figure 4.1. External Oxygen Service Port Installation

WARNING: FILL WITH AVIATOR OXYGEN ONLY!
MAXIMUM FILL RATE: 200 psi / min.
MAXIMUM TANK FILL: 2000 psi.
FILL PORT: MS22066-3
KEEP OIL AND GREASE AWAY. USE ONLY EQUIPMENT CLEANED FOR OXYGEN SERVICE AND RATED FOR CYLINDER PRESSURE. REPLACE CAP AFTER FILLING.
QX-100-PQQQQ

Figure 4.2. Item -14, Oxygen Service Port Placard

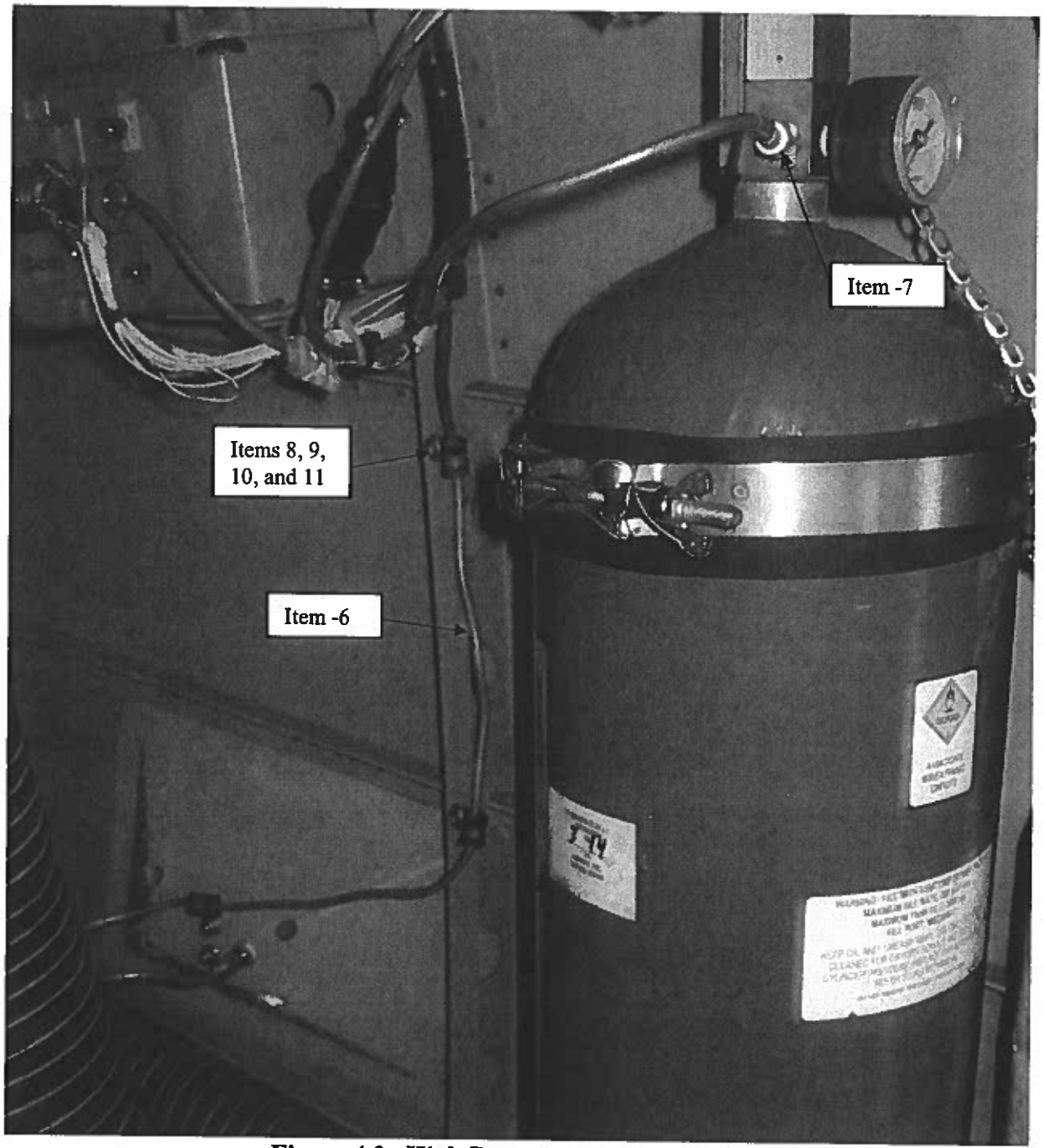

Figure 4.3. High Pressure Line Installation