OXYGEN SYSTEM - MAINTENANCE PRACTICES

1. General

A. Before any maintenance is performed on oxygen system, personnel should read and understand the following. Careful adherence to these instructions will aid in maintaining a trouble-free system.

2. Precautions

WARNING: Do not permit smoking or open flame near airplane while maintenance is being performed on the oxygen system. Ensure all electrical power is disconnected and that airplane is properly grounded. In addition, oils, grease, and solvents may burn or explode spontaneously when contacted by oxygen under pressure.

A. Use extreme care to ensure every port on system is kept thoroughly clean and free of water, oil, grease, and solvent contamination.

B. Cap all openings immediately upon removal of any component. Do not use tape or caps which will induce moisture.

C. Lines and fittings shall be clean and dry. One of the following methods may be used to clean lines.

CAUTION: Most air compressors are oil-lubricated and a minimum amount of oil may be carried by airstream into system. A water-lubricated compressor should be used to blow tubing clean only when nitrogen or argon are not available. The air must be clean, dry, and filtered.

(1) Wash with a vapor-degreasing solution of stabilized trichloroethylene conforming to MIL-T-7003, followed by blowing tubing clean with a jet of nitrogen gas (BB-N- 411) Type 1, Class 1, Grade A or Technical Argon (MIL-A-18455).

(2) Flush with naptha conforming to Specification TT-N-95, then blow clean and dry with clean, dry filtered air.

(3) Flush with anti-icing fluid conforming to MIL-F-5566 or anhydrous ethyl alcohol. Rinse thoroughly with fresh water and dry with a jet of nitrogen gas (BB-N-411) Type 1, Class 1, Grade A or Technical Argon (MIL-A-18455).

(4) Flush with hot inhibited alkaline cleaner until free from oil and grease. Rinse with fresh water and dry with a jet of nitrogen gas (BB-N-411) Type 1, Class 1, Grade A or Technical Argon (MIL-A-18455). Cap all lines immediately after drying.

(5) Fabrication of pressure lines is not recommended. Lines should be replaced with factory parts, by part number.

(6) Use only S1465 Teflon lubricating tape on threads of male fittings. No lubricating tape is used on coupling sleeves or outside of flares.

(7) Maintenance personnel must ensure that their hands are free of dirt and grease prior to installation of oxygen tubing or fittings.

WARNING: Use nonsparking tools.

CAUTION: With oxygen bottle charged, do not place control in the on position with outlet ports (low pressure) open to atmosphere. Damage to regulator metering poppet may occur.

CAUTION: Whenever a component of the oxygen system has been removed, reinstalled, replaced, or system has been disassembled in any way, the oxygen system must be leak-checked and purged.

D. All tools used for installation of oxygen tubes or fittings must be free of dirt, grease and oils.

NOTE: If a cylinder is recharged more than an average of once every other day, an accurate record of the number of recharges must be maintained by the owner or his agent.

3. Oxygen Cylinder-Regulator Removal/Installation

A. Remove Oxygen Cylinder-Regulator (Refer to Figure 201 and Figure 202).

(1) Remove aft baggage partition to gain access to oxygen cylinder assembly.

CAUTION: Ensure that the oxygen shutoff valve arm is still in the off position after removing the cable end (17) from shutoff valve arm.

(2) Straighten cable end (17), remove bolt (21) from nut (20) and slip nut (20) off cable end (17).

(3) Loosen two screws securing control cable assembly (1) to cable housing clamp (16) and then remove cable assembly (1) from cable housing clamp (16) on regulator assembly (19).

(4) Remove and cap high-pressure line (9), and cap regulator port. Do not remove safetywired adapter from regulator.

(5) Remove and cap low-pressure line (10)

(6) Remove nipple (11) from compensated regulator (12) on 208 and regulator (13) on Model 208 Federal Express, and

plug port.

(7) Loosen and remove washers (6) and bolts (7) attaching clamp (8) to mounting bracket (3).

(8) Remove safety-wire from clamp (8), loosen clamps and remove cylinder.

B. Install Oxygen Cylinder- Regulator (Refer to Figure 201 and Figure 202).

(1) Slip clamps (8) over cylinder end, being certain that orientation is correct for attachment to mounting brackets (3).

(2) Attach brackets (3) to support assemblies (4) using washers (6), bolts (7), and nutplate (5).

(3) Tighten and safety-wire clamp (8).

NOTE: Observe all previously listed cautions and warnings when installing line fittings.

(4) Install nipple (11) in pressure compensated regulator (12) on Model 208, or regulator (13) on Federal Express airplanes.

(5) Attach low-pressure line (10) to nipple (11).

(6) Attach high-pressure line (9) to regulator adaptor.

(7) Insert cable (1) through cable housing clamp (16).

(8) Insert cable end (17) through nut (20) and tighten bolt (21).

(9) Test operation of control system to ensure that control will operate from the overhead console.

(10) Bend cable end (1) 90 degrees.

(11) Reinstall aft baggage partition.

4. Oxygen Cylinder-Regulator Inspection

A. Inspect Oxygen Cylinder-Regulator.

(1) A careful visual inspection of the oxygen cylinder should be performed during routine maintenance and periodic inspections. If the acceptability of the cylinder is questionable, return cylinder to manufacturer. Acceptable damage consists of such items as scratched paint or cuts and abrasions.

(a) Scratches or Cuts. Cuts or scratches less than 0.005 inch deep are acceptable.

(b) Abrasions. Minor abrasions such as scuffs, are acceptable unless the damage is deep enough to expose groups of fibers. Abrasions with isolated groups of fibers exposed or flat spots with depth less than 0.010 inch must be epoxy coated to avoid water entrapment. A group of fibers is defined as 0.010 inch thick and 0.125 inch wide.

(c) Paint Removal. Paint removal is not recommended. In the event that paint removal for inspection or other reasons is required, the suitability of the paint removal procedure must be verified by the cylinder manufacturer. Some chemical paint removers may damage the composite. Abrasive or other mechanical means of paint removal, such as shot blast or wire brush are prohibited.

(2) Regulator shall be checked to see that it functions properly during hydrostatic testing.

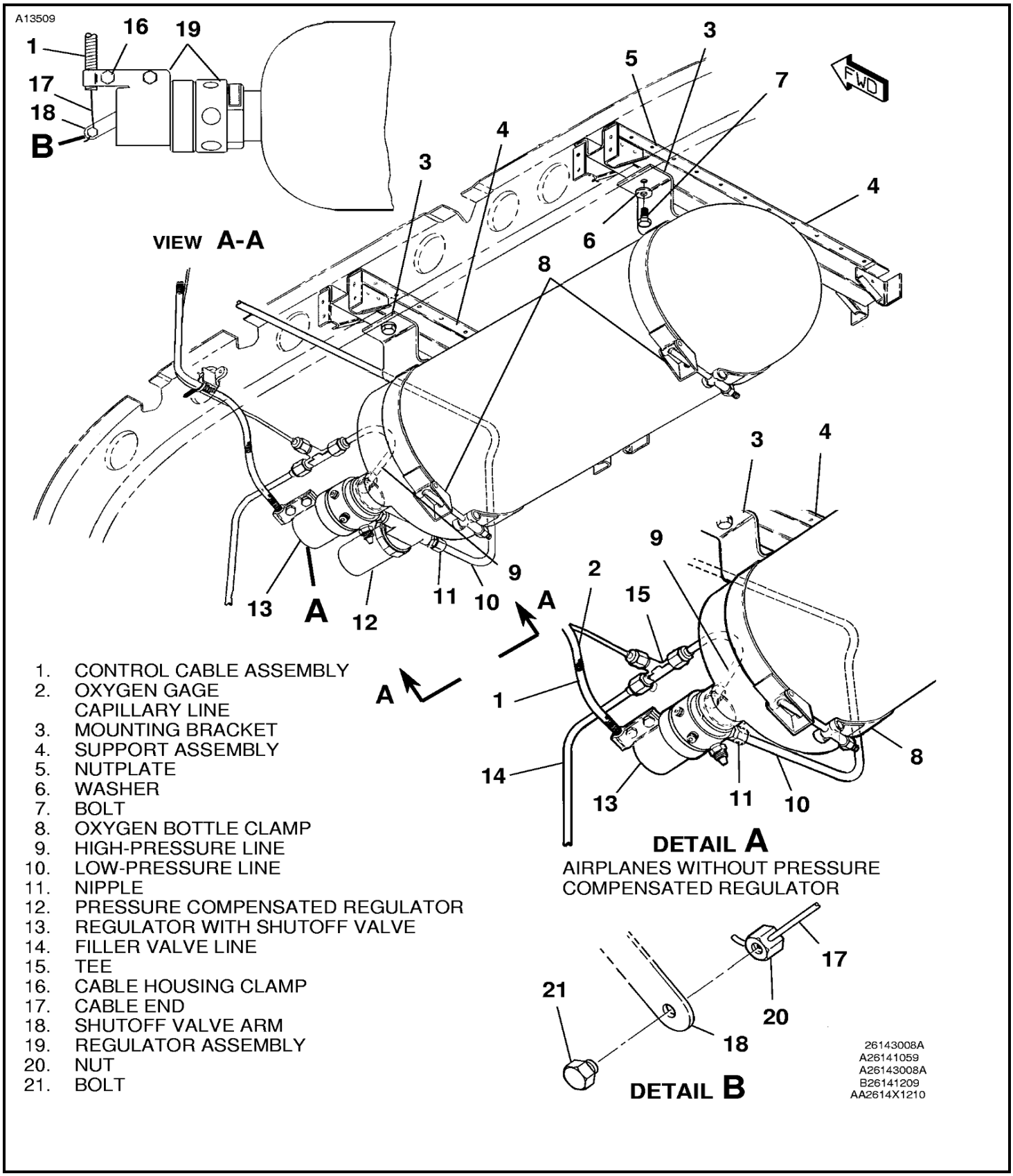
(3) Actuate regulator controls and valve to check for ease of operation.

CAUTION: Damage to regulator will occur if the control of a charged oxygen cylinder is turned on with the low-pressure side of the regulator open to the atmosphere.

(4) Pressurize the system and check for leaks.

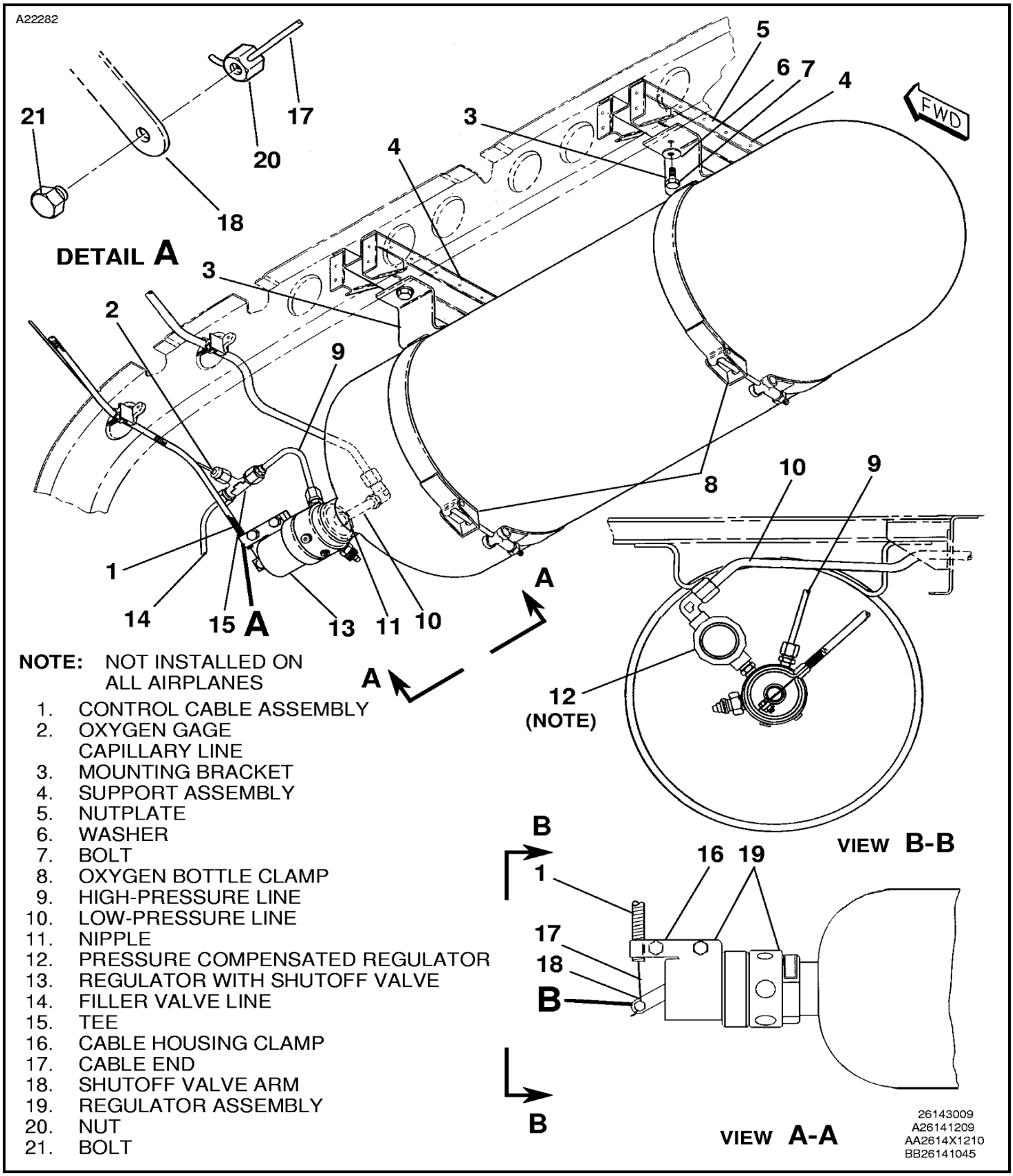
NOTE: For oxygen cylinder inspection, also refer to publication CGA C-612, Compressed Gas Association, Inc., Arlington, VA. 22202.

Figure 201 : Sheet 1 : Two-Port Oxygen Bottle and Regulator Installation



1. CONTROL CABLE ASSEMBLY
2. OXYGEN GAGE CAPILLARY LINE
3. MOUNTING BRACKET
4. SUPPORT ASSEMBLY
5. NUTPLATE
6. WASHER
7. BOLT
8. OXYGEN BOTTLE CLAMP
9. HIGH-PRESSURE LINE
10. LOW-PRESSURE LINE
11. NIPPLE
12. PRESSURE COMPENSATED REGULATOR
13. REGULATOR WITH SHUTOFF VALVE
14. FILLER VALVE LINE
15. TEE
16. CABLE HOUSING CLAMP
17. CABLE END
18. SHUTOFF VALVE ARM
19. REGULATOR ASSEMBLY
20. NUT
21. BOLT

Figure 202 : Sheet 1 : Ten-Port Oxygen Bottle and Regulator Installation



NOTE: NOT INSTALLED ON ALL AIRPLANES

1. CONTROL CABLE ASSEMBLY
2. OXYGEN GAGE CAPILLARY LINE
3. MOUNTING BRACKET
4. SUPPORT ASSEMBLY
5. NUTPLATE
6. WASHER
7. BOLT
8. OXYGEN BOTTLE CLAMP
9. HIGH-PRESSURE LINE
10. LOW-PRESSURE LINE
11. NIPPLE
12. PRESSURE COMPENSATED REGULATOR
13. REGULATOR WITH SHUTOFF VALVE
14. FILLER VALVE LINE
15. TEE
16. CABLE HOUSING CLAMP
17. CABLE END
18. SHUTOFF VALVE ARM
19. REGULATOR ASSEMBLY
20. NUT
21. BOLT