

Cape Cod Community College AMTS

Practical Project Guide for AMT 107 General Curriculum, Subject Item 13

Part 147, Appendix B, Subject D – Fluid Lines and Fittings

Item 13. Fabricate and install rigid and flexible fluid lines and fittings (Level 3)

Project 1A & 1B

Purpose: To acquaint the student with the proper procedures for bending, flaring, recognizing defects and installing tubing.

References:

- (1) 14 CFR Federal Aviation Regulations for Aviation Maintenance Technicians, Aviation Maintenance Technician Handbook – General, Volume 1 (FAA-H-8083-30), Chapter 7
- (2) AC 43.13-1B Acceptable Methods, Techniques, and Practices – Aircraft Inspection and Repair
- (3) AVOTEK H86 Hydraulic System Manual

Equipment and Tools Needed:

- (1) AVOTEK H90 Fluid Lines and Fittings Training Aid
- (2) AVOTEK H86 Hydraulic System Training Aid
- (3) Tubing Cutter
- (4) Deburring Tool
- (5) Tubing Bender
- (6) Imperial Flaring Tool PN: 437-FB

Supplies and Materials Needed:

- (1) Two lengths of 3/8 -inches aluminum steel tubing, 12 -inches long
- (2) Two lengths of 3/8 -inches stainless steel tubing, 12 -inches long
- (3) Four flared fittings
- (4) Four flareless fittings

Procedure:

Complete following procedure on assigned project 1A & 1B

- (1) Fabricate two 90 degree bend rigid fluid lines to be used on the AVOTEK H86 Hydraulic System Training Aid.

- a. The first length of tubing will have a single-flare on one end and a double-flare on the other end, the second length will have flareless fittings on both ends.
- (2) Inspect the fabricated lines to recognize any defects that would prevent the line from being airworthy.
- (3) Install the fabricated lines, pressurize the system, and inspect for leaks.

Project 1A Item 13: Fabricate and install rigid and flexible fluid lines and fittings.

- (1) 14 CFR Federal Aviation Regulations for Aviation Maintenance Technicians, Aviation Maintenance Technician Handbook – General, Volume 1 (FAA-H-8083-30), Chapter 7
- (2) AVOTEK H90 Fluid lines and Fittings Manual
- (3) AVOTEK H86 Hydraulic System Manual
- (4) Two lengths of 3/8 -inches aluminum steel tubing, 12 -inches long
- (5) Two flared fittings
- (6) Two flareless fittings

Project 1B Item 13: Fabricate and install rigid and flexible fluid lines and fittings.

- (1) 14 CFR Federal Aviation Regulations for Aviation Maintenance Technicians, Aviation Maintenance Technician Handbook – General, Volume 1 (FAA-H-8083-30), Chapter 7
- (2) AVOTEK H90 Fluid lines and Fittings Manual
- (3) AVOTEK H86 Hydraulic System Manual
- (4) Two lengths of 3/8 -inches stainless steel tubing, 12 -inches long
- (5) Two flared fittings
- (6) Two flareless fittings

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Item 13. Fabricate and install rigid and flexible fluid lines and fittings (Level 3)

Project 2

Purpose: To acquaint the student with the proper procedures for fabricating, recognizing defects and installation of flexible tubing.

References:

- (1) 14 CFR Federal Aviation Regulations for Aviation Maintenance Technicians, Aviation Maintenance Technician Handbook –General, Volume 1 (FAA-H-8083-30), Chapter 7
- (2) AVOTEK H90 Fluid lines and Fittings Manual
- (3) AVOTEK H86 Hydraulic System Manual

Equipment and Tools Needed:

- (1) AVOTEK H90 Fluid Lines and Fittings Training Aid
- (2) AVOTEK H86 Hydraulic System Training Aid
- (3) Cut-off wheel
- (4) Hacksaw
- (5) Hose Fitting Mandrel Kit

Supplies and Materials Needed:

- (1) One length of flexible metallic braid rubber hose, 12 -inches long
- (2) Two Aeroquip Hose MS Fittings PN: 491-4

Procedure:

Complete following procedure on assigned project 2

- (1) Fabricate one flexible metallic braid rubber hose fluid line to be used on the AVOTEK H86 Hydraulic System Training Aid.
- (2) Inspect the fabricated line to recognize any defects that would prevent the line from being airworthy.
- (3) Install the fabricated line, pressurize the system, and inspect for leaks.

Project 2 Item 13: Fabricate and install rigid and flexible fluid lines and fittings.

- (1) 14 CFR Federal Aviation Regulations for Aviation Maintenance Technicians, Aviation Maintenance Technician Handbook –General, Volume 1 (FAA-H-8083-30), Chapter 7
- (2) AVOTEK H90 Fluid lines and Fittings Manual
- (3) AVOTEK H86 Hydraulic System Manual
- (4) One length of flexible metallic braid rubber hose, 12-inches long
- (5) Two Aeroquip Hose MS Fittings PN: 491-4

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Part 147, Appendix B, Subject D – Fluid Lines and Fittings

Item 13. Fabricate and install rigid and flexible fluid lines and fittings (Level 3)

Project 3

Purpose: To acquaint the student with the proper procedures for fabricating and installing beaded lines.

References:

- (1) 14 CFR Federal Aviation Regulations for Aviation Maintenance Technicians, Aviation Maintenance Technician Handbook – General, Volume 1 (FAA-H-8083-30), Chapter 7
- (2) ATS Pro Beading Tool Kit Instructions
- (3) AVOTEK H90 Fluid lines and Fittings Manual
- (4) AVOTEK H86 Hydraulic System Manual

Equipment and Tools Needed:

- (1) AVOTEK H90 Fluid Lines and Fittings Training Aid
- (2) AVOTEK H86 Hydraulic System Training Aid
- (3) Tubing Cutter
- (4) Deburring Tool
- (5) ATS Pro Beading Tool Kit
- (6) Vise

Supplies and Materials Needed:

- (1) One 90 degree bend length of 3/8 -inches aluminum tubing, 12 -inches long
- (2) One length of 3/8 -inches high pressure synthetic hose, 3.5 -inches long
- (3) Two 1/2 -inches hose clamps

Procedure:

Complete following procedure on assigned project 3

- (1) Fabricate a length of fluid line repair to an aluminum tubing line.
 - a. The 90 degree bend length of aluminum tubing will have the 90 degree bend removed.
 - b. The section removed will be repaired with beaded ends and connected together with the 3/8-inches length of high pressure synthetic hose.

- (2) Inspect the fabricated line repair to recognize any defects that would prevent the line from being airworthy.
- (3) Install the fabricated line.

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