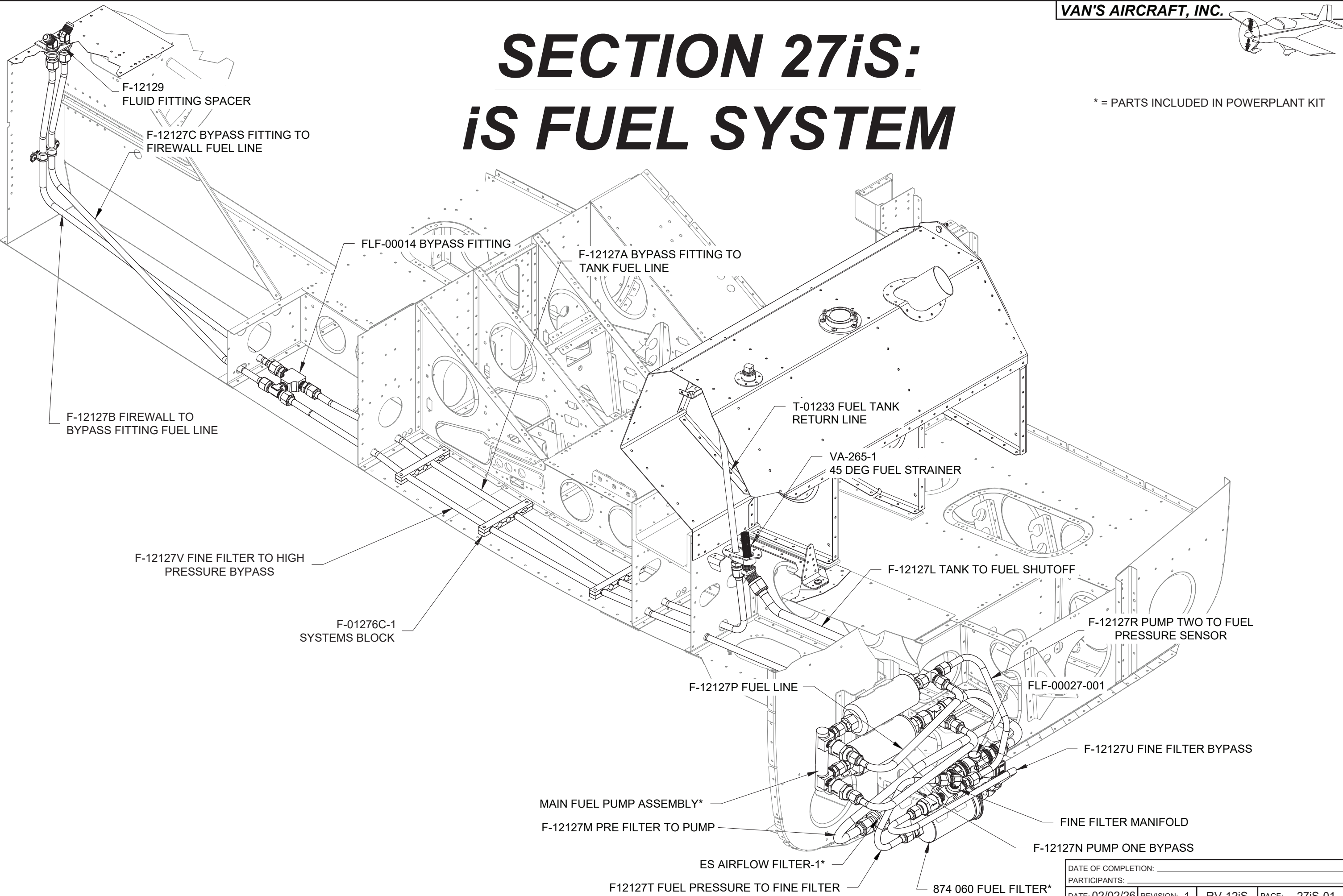


SECTION 27iS: iS FUEL SYSTEM

* = PARTS INCLUDED IN POWERPLANT KIT



NOTE: Several components specific to the Rotax 912iS Sport engine fuel system are supplied with the engine and therefore included in the RV-12iS Powerplant Kit. These components are noted throughout this section by (*). Assembly and installation of these components is included in this section, however the components are not included in the fuselage kit.

All fuel lines can be fabricated from templates in this section, however final installation of fuel lines that connect to these components must be performed after receiving the powerplant kit.

NOTE: It is good practice to cap or cover open fuel lines to keep out debris and prevent fuel system contamination.

NOTE: See Section 5.27 for detailed fluid fitting assembly instructions.

Step 1: Install the fluid fittings into the FLF-00014 as shown in Figure 1.

Clock fittings in the orientation shown.

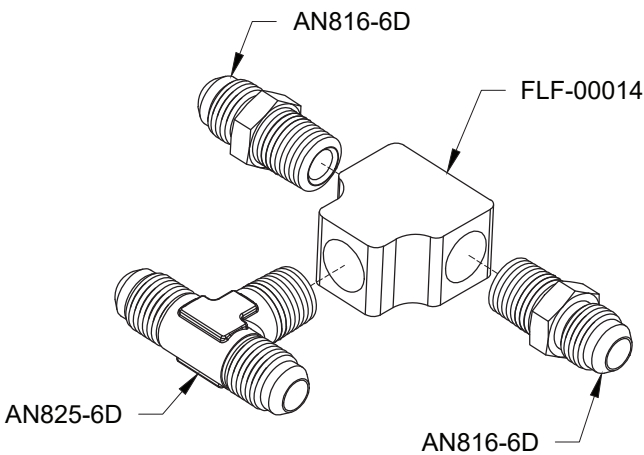
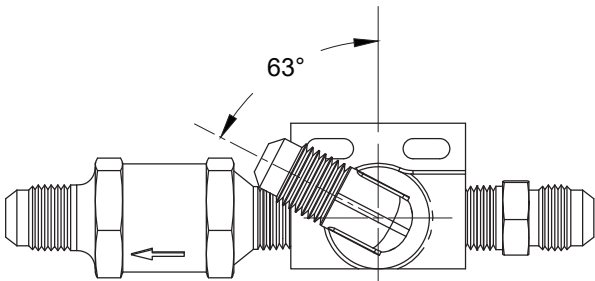
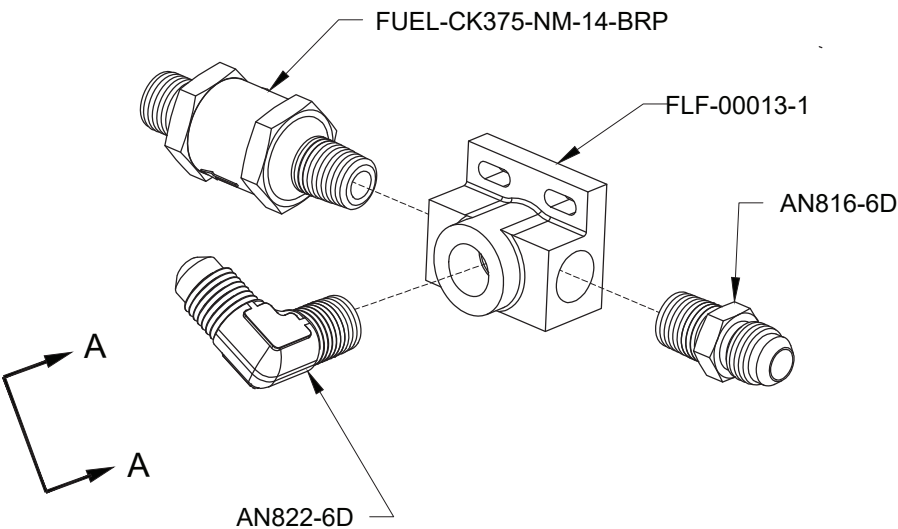


FIGURE 1: BYPASS FITTING ASSEMBLY

Step 2: Install the fluid fittings, FUEL-CK375-NM-14-BRP, AN816-6D, and AN822-6D into the FLF-00013-1 as shown in Figure 2 and View A-A.

Clock fittings in the orientation shown.



VIEW A-A

FIGURE 2: FINE FILTER MANIFOLD

Step 3: Install the fluid fittings, F-12129, and hardware onto the F-01201B-1 as shown in Figure 3. Apply sealant between the AN837 Union Bulkhead Fittings and the Firewall.

Clock fittings in the orientation shown.

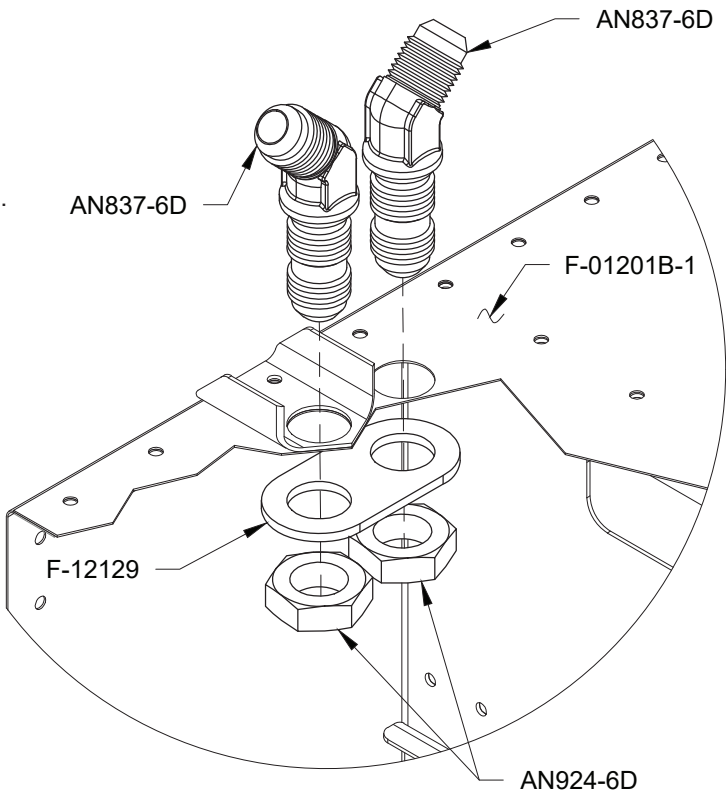


FIGURE 3: INSTALLING THE FIREWALL FLUID FITTINGS

Step 4: Install CAV-160 into the fuel valve as shown in Figure 4.

Step 5: Install HW-0029 into the F-12337, and then the fluid fittings FLF-C1852-4 and ES-AN816-1/2-8D through the F-12337 and into the fuel valve as shown in Figure 4.

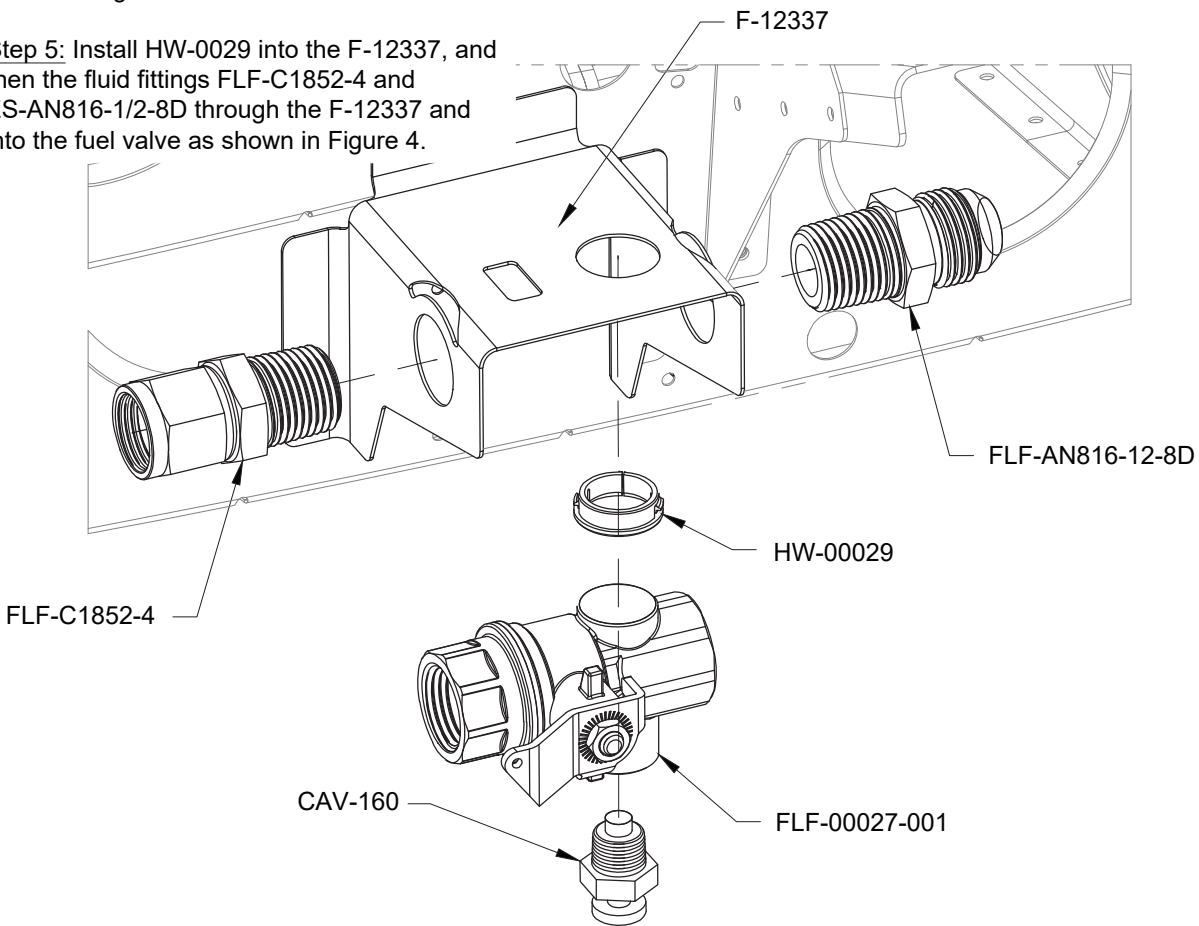


FIGURE 4: FLF-00027-001 ASSEMBLY

NOTE: This page refers to components provided in the powerplant kit, denoted by (*)

NOTE: Do not apply thread sealant to the FLF-00020* Banjo Bolt.

Step 1: Assemble the Main Fuel Pump Assembly* as shown in Figure 1 and 2.

Clock Pumps as shown before tightening. Clock fittings in the orientation shown.

Step 2: Assemble the 874 060 Fuel Filter Assembly* as shown in Figure 3, Do not tighten the FLF-00020* at this time. It will be tightened in a subsequent step, after connecting to fuel lines.

NOTE: See Section 5.27 for detailed fluid fitting assembly instructions.
NOTE: Refer to Section 3.2.1 of SI-PAC-026 R2 11 July 2024 for torque specifications.

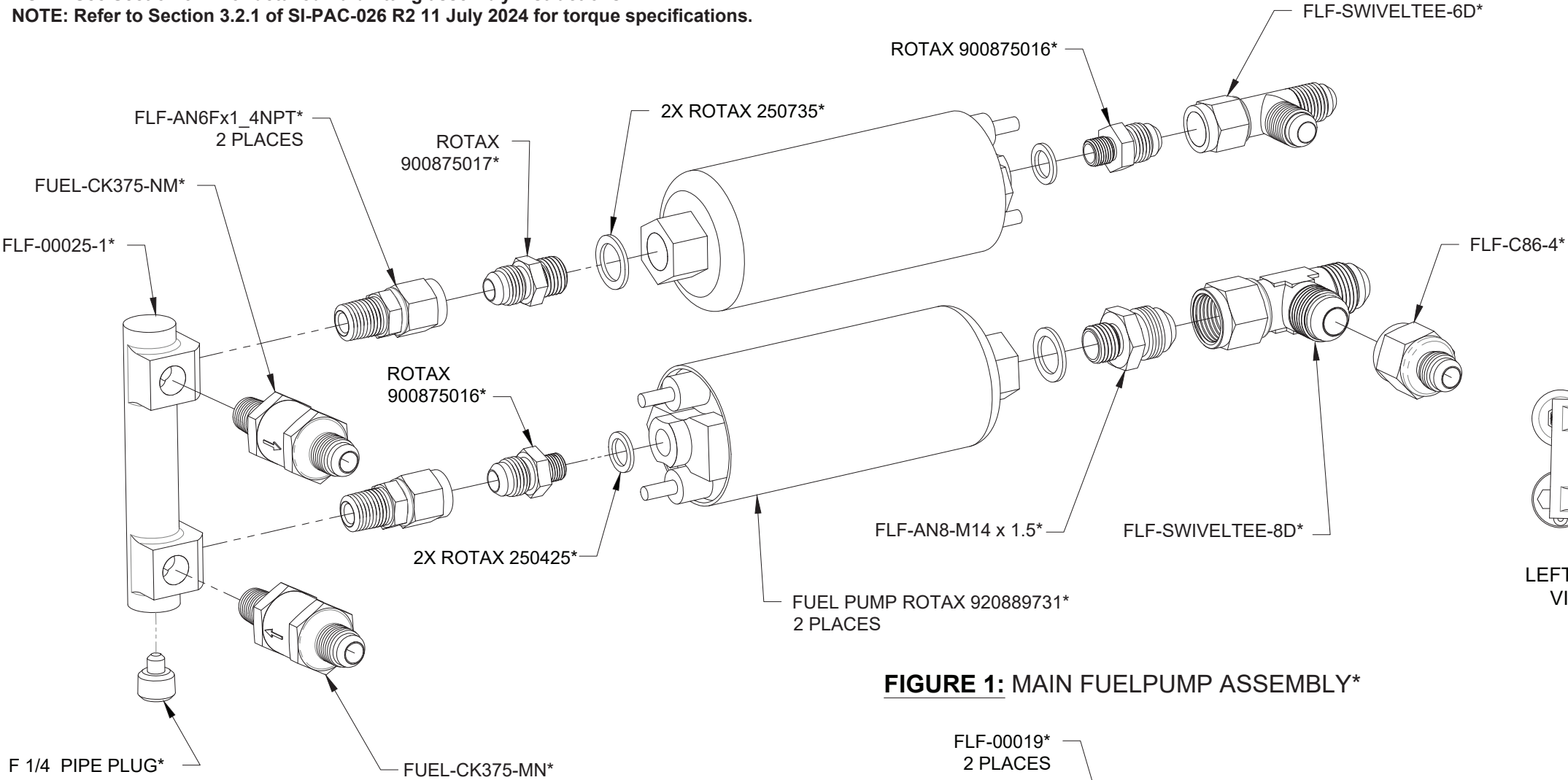


FIGURE 1: MAIN FUELPUMP ASSEMBLY*

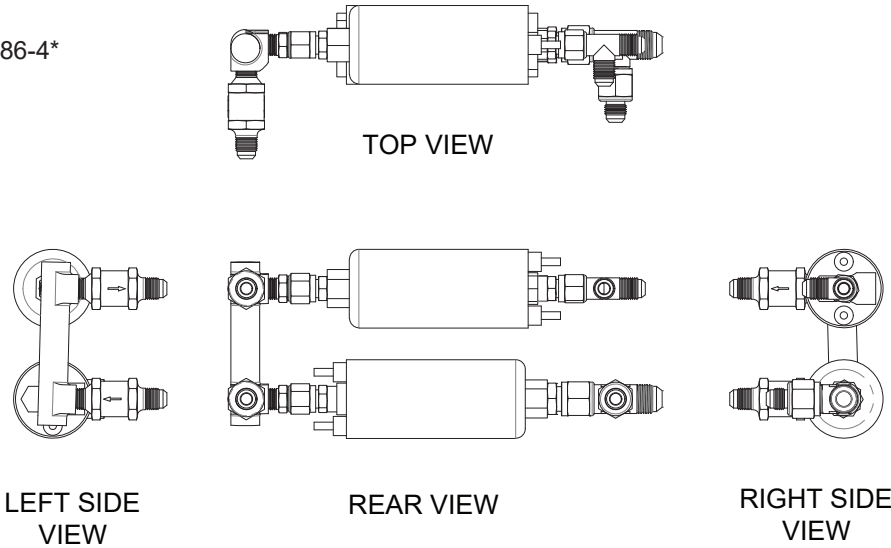


FIGURE 2: MAIN FUELPUMP ASSEMBLY*

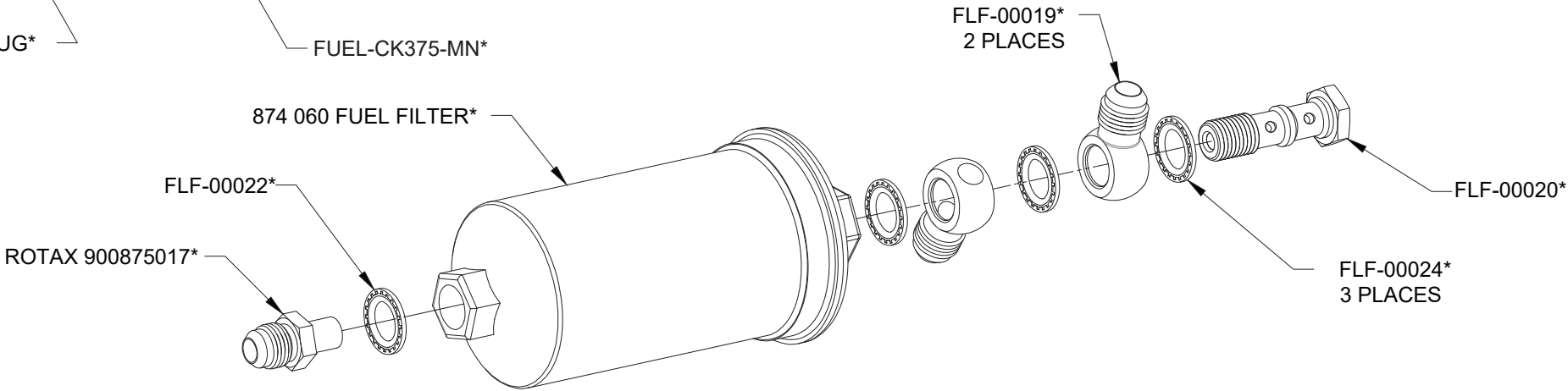
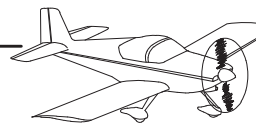


FIGURE 3: 874 060 FUEL FILTER ASSEMBLY*



NOTE: The tubing dimensions given in this section include a 0.100 in. [2.5 mm] extension for each flare and assume a 1 in. radius to the centerline of the bend. See Figure 1.

NOTE: See Section 5.14 for important information on the process to fabricate fluid lines.

Step 1 (Builder Assembled Fuel Tank): The VA-265-1 and the T-01233, shown in Figure 3, are installed in Section 26iS/U.

Step 1 (Prefabricated Fuel Tank): Install the VA-265-1 and the T-01233, shown in Figure 3, as described in Section 26iS/U.

Step 2: To fabricate the F-12127L, straighten and cut off 27 9/16 in. [649.0 mm] of ATO-035X1/2 tubing (unrolling against a flat surface works well).

Step 3: Make the 90° bend going to the valve by referencing Figure 2. P

Step 4: Measure 20 in. [31.75 mm] from the end of Bend 1. M

Make the 40° bend by referencing Figure 2.

Step 5: Trim the Excess off of bend 2. Place the Nuts, and then the sleeves on the tube and flare the ends. Ensure that both nut are on and all nuts and sleeves are in the correct orientation.

Step 5: Install the F-12127L as shown in Figure 3. A small amount of bending/adjustment by hand is acceptable.

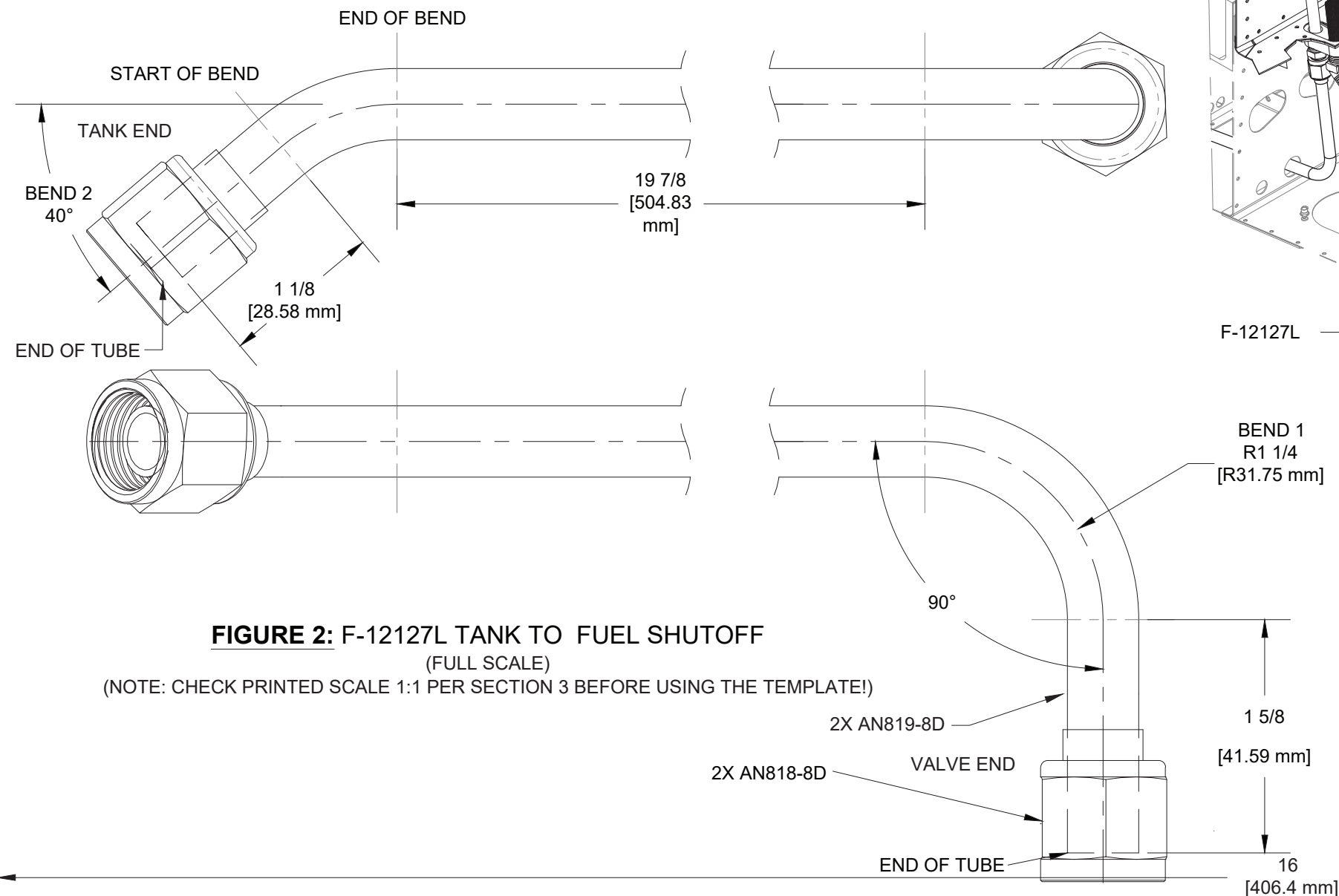


FIGURE 2: F-12127L TANK TO FUEL SHUTOFF
(FULL SCALE)

(NOTE: CHECK PRINTED SCALE 1:1 PER SECTION 3 BEFORE USING THE TEMPLATE!)

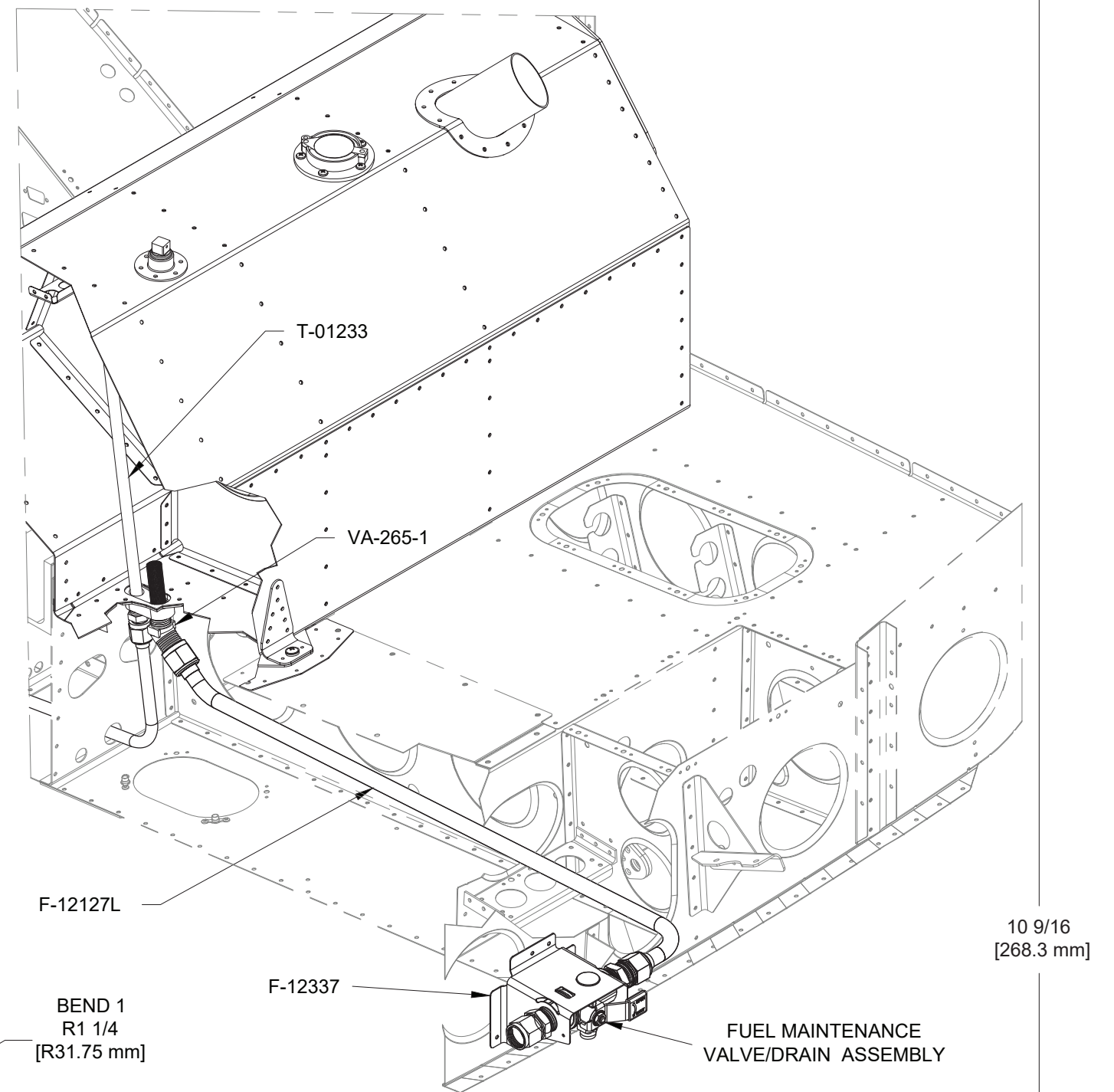


FIGURE 3: F-12127L TANK TO FUEL SHUT OFF INSTALLATION

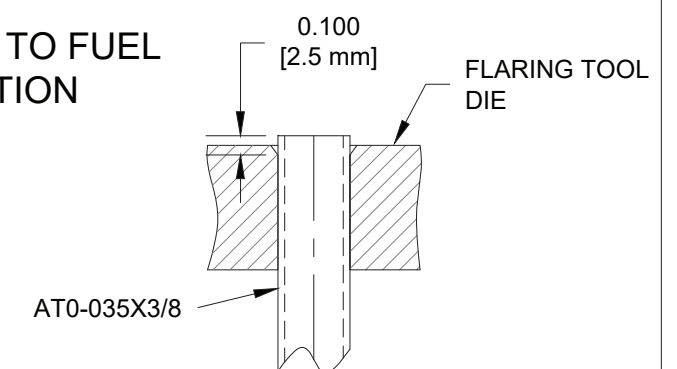


FIGURE 1: FLARING TOOL INSERTION

NOTE: See Section 5.14 for important information on the process to fabricate fluid lines.

NOTE: When installing fuel lines it is acceptable to bend a large radius curve by hand to ease installation, then restraighten afterwards.

NOTE: Check the installed fitting depth of the marked AN816-6D against the nominal dimension as shown in Figure 3. If the installed fitting depth is more than .063 in. [1.6 mm] different than the nominal dimension shown, adjust the length in Step 1 accordingly. Temporarily mark the fitting that was measured for installation reference.

- Step 1: Straighten 30 9/32in. [769.1 mm] of ATO-035X3/8 tubing. Fabricate the F-12127B by starting at the firewall end. Make the two shallow bends and the 82° bend by referencing Figure 2.
- Step 2: Place the nut then the sleeve called out in Figure 2 over the firewall end of the tubing. Flare the end of the tube. Slide the sleeve up against the flare.
- Step 3: Feed the bypass end of the tube through the snap bushing shown in Figure 1 and slide the tube aft. Place the nut and sleeve over the bypass end of the tube (Check that the other nut and sleeve have not fallen off the tube). Flare the bypass end of the tube.
- Step 4: Attach the fuel line to the bulkhead fitting as shown in Figure 1.
- Step 5: Attach the fuel line to the firewall with hardware as called out in Figure 1. A small amount of bending/adjustment by hand is acceptable.

10 9/16
[268.3 mm]

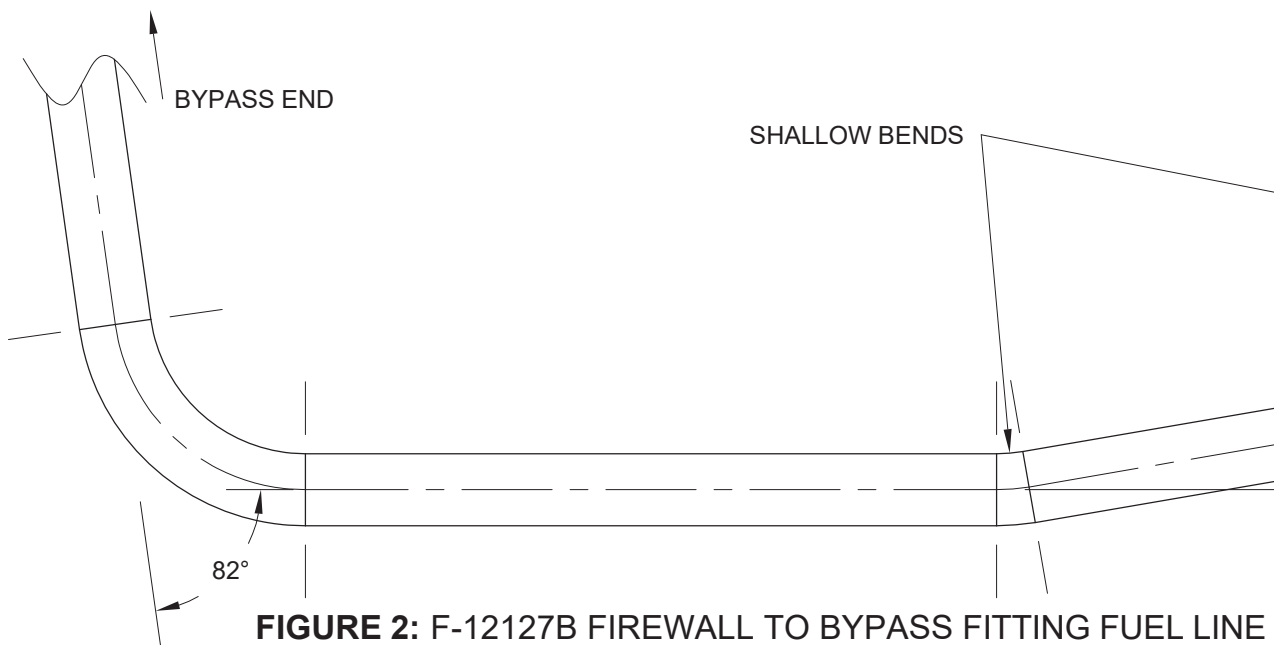
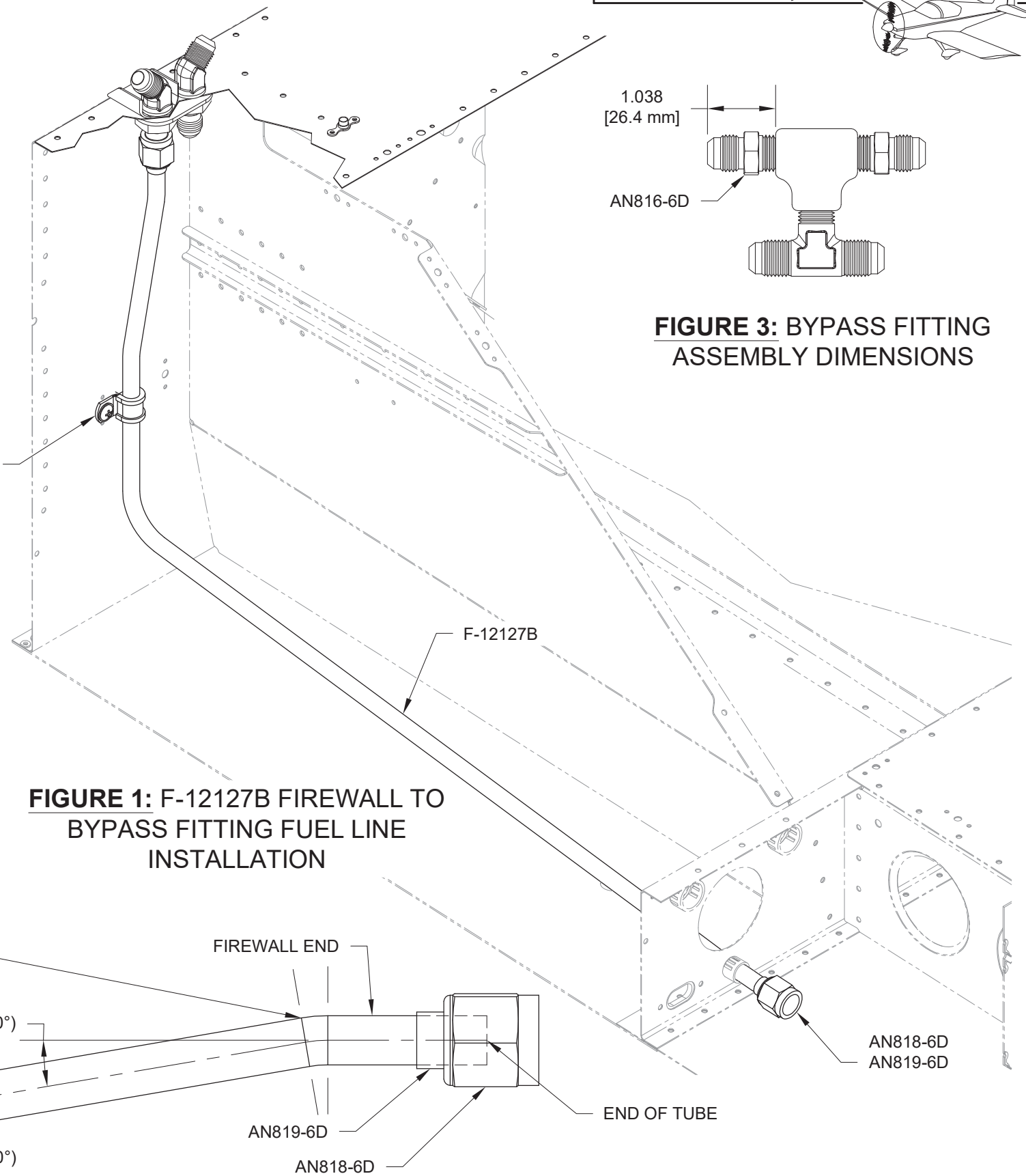


FIGURE 2: F-12127B FIREWALL TO BYPASS FITTING FUEL LINE
(FULL SCALE)
(NOTE: CHECK PRINTED SCALE 1:1 PER SECTION 3 BEFORE USING THE TEMPLATE!)

MS21919DG6
AN525-10R7

FIGURE 1: F-12127B FIREWALL TO BYPASS FITTING FUEL LINE INSTALLATION





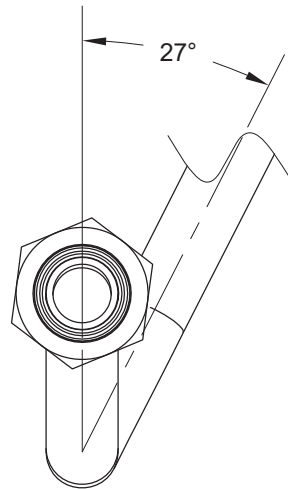
Step 1: Straighten 30 1/4 in. [768.4 mm] of ATO-035X3/8 tubing. Fabricate the F-12127C by starting at the firewall end. Make the two shallow bends and the 78° bend by referencing Figure 2 and View A-A.

Step 2: Place the nut then the sleeve called out in Figure 2 over the firewall end of the tubing. Flare the firewall end of the tube. Slide the sleeve up against the flare.

Step 3: Feed the bypass end of the tube through the HW-00014 and slide the tube aft (check that the other nut and sleeve have not fallen off the tube). Place the nut and sleeve over the bypass end of the tube. Flare the bypass end of the tube.

Step 4: Make a small bend in the F-12127C as necessary at the HW-00014 to align the F-12127C and F-12127B with the Bypass Fitting Assembly as shown in Figure 1. Attach the F-12127C and the F-12127B to Bypass Fitting Assembly as shown in Figure 1. Check to make sure the fitting marked for measurement on Page 27iS-05 is connected to the F-12127B.

Step 5: Attach the F-12127C to the bulkhead fitting as shown in Figure 1, then attach to the firewall with hardware as called out in Figure 1. A small amount of bending/adjustment by hand is acceptable.



VIEW A-A

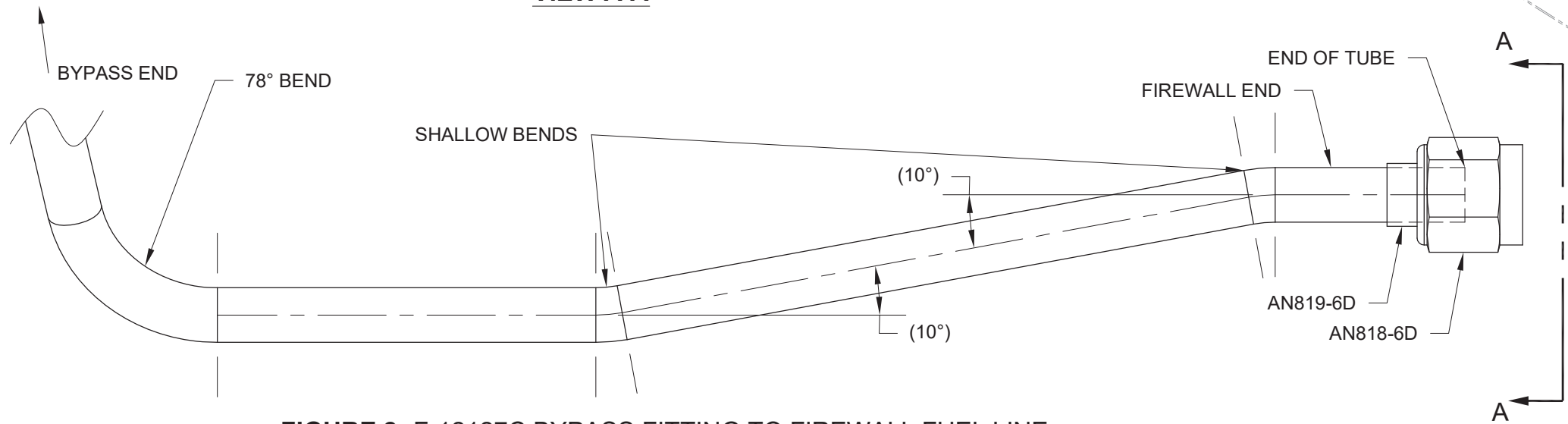


FIGURE 2: F-12127C BYPASS FITTING TO FIREWALL FUEL LINE
(FULL SCALE)

(NOTE: CHECK PRINTED SCALE 1:1 PER SECTION 3 BEFORE USING THE TEMPLATE!)

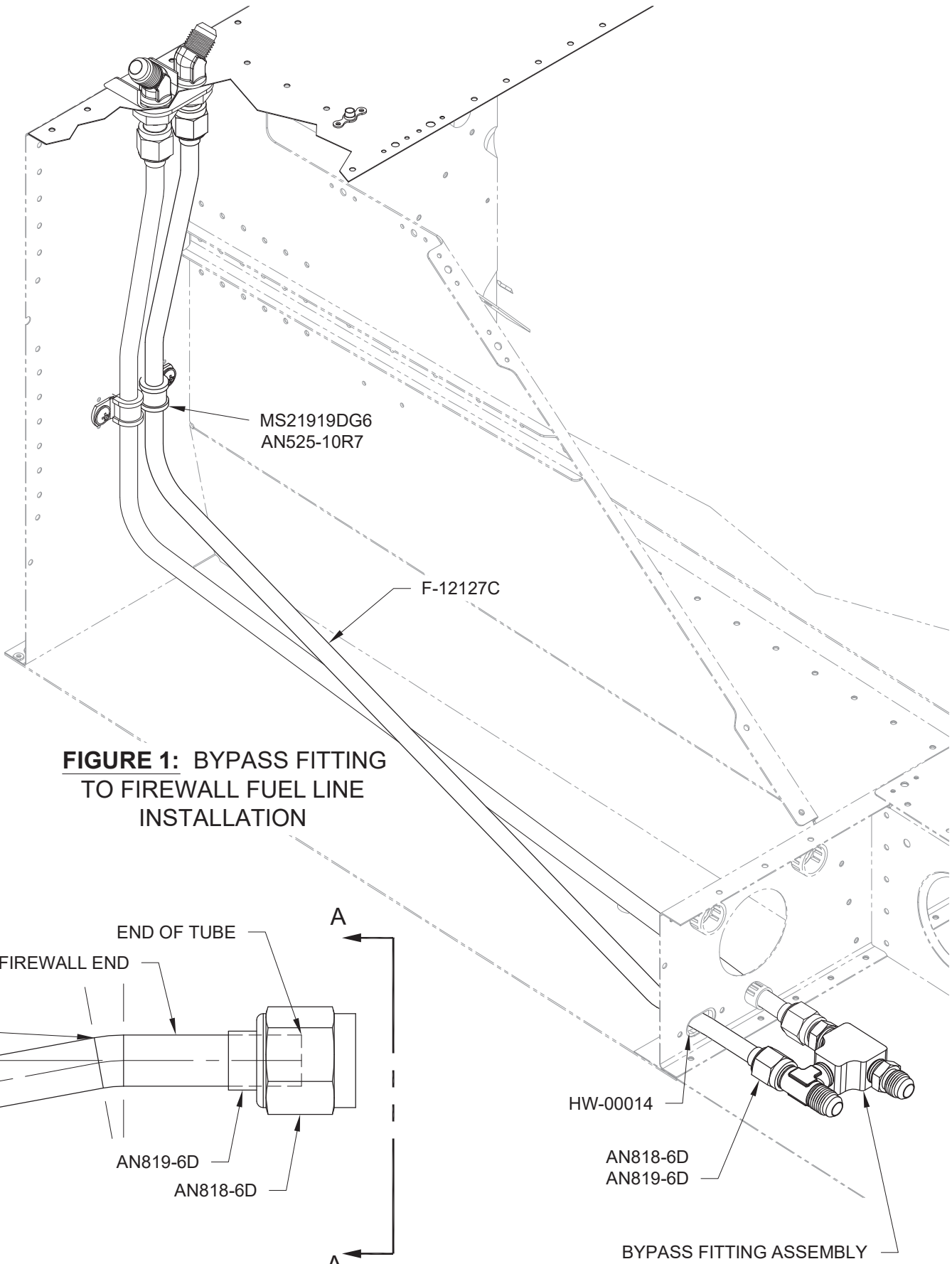
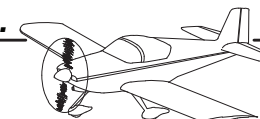


FIGURE 1: BYPASS FITTING TO FIREWALL FUEL LINE INSTALLATION



Step 1: Final-Drill 5/16 in. [7.9 mm] the holes in three of the F-01276C-1. Install the drilled F-01276C-1 with the oval recess on the right side, as shown in Figure 1.

NOTE: Check the installed fitting depth of the FLF-00017 against the nominal dimension as shown in the detail view in Figure 1. If the installed fitting depth is more than .063 in. [1.6 mm] different than the nominal dimension shown, adjust the bend location in Figure 3 accordingly.

Step 2: Straighten 42 1/2 in. [1079.5 mm] of ATO-035X3/8 tubing. Make the F-12127A starting at the tank end by making the 89° bend as shown in Figure 3.

Step 3: Place the nut then the sleeve called out in Figure 3 over the end of the tubing and then flare the end of the tube.

Step 4: Feed the bypass end of the line forward through the snap bushings shown in Figure 1 to the Bypass Fitting Assembly (check that the nut and sleeve have not fallen off the tube).

Step 5: Temporarily attach the F-12127A to the FLF-00017 as shown in the detail view in Figure 1. Add slight bends at bulkhead locations as required to align the fuel line with the snap bushings and the F-01276C-1 Systems Blocks. Lay the tube in the recesses of the F-01276C-1 as shown in Figure 1. Add a slight curve to follow the curvature of the F-01276-1 Bottom Skin.

Mark the forward end of the F-12127A at the end of the AN816 fitting in the Bypass Fitting Assembly. Add 0.100 in. [2.5 mm] to the measurement from the end of the fitting to account for the flare as shown in Figure 2.

Step 6: Detach the F-12127A from the FLF-00017, slide the tube back, and cut off the excess tube at the mark. Place the nut and sleeve called out in Figure 1 over the bypass end of the tubing and then flare the end of the tube.

Step 7: Attach the F-12127A to the Bypass Fitting Assembly as shown in Figure 1.

Step 8: Reattach the F-12127A to the FLF-00017 as shown in the detail view in Figure 1. A small amount of bending/adjustment by hand is acceptable. Check for clearance at the aft most snap bushing.

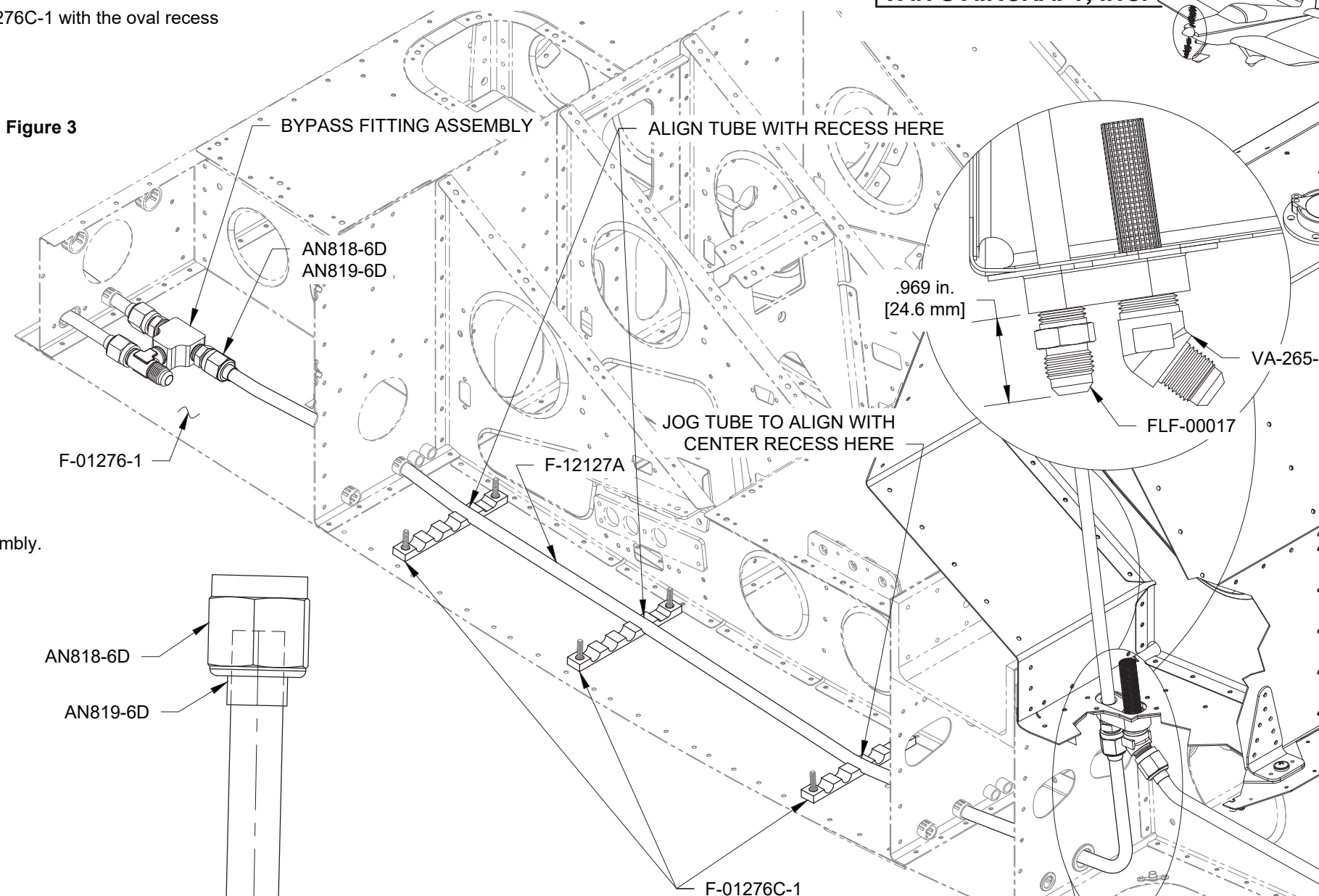


FIGURE 1: F-12127A BYPASS FITTING TO TANK FUEL LINE INSTALLATION

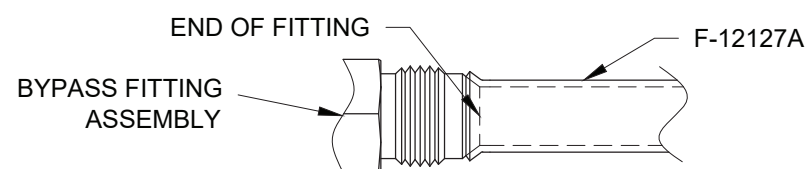


FIGURE 2: EXTRA LENGTH FOR FLARE

10 9/16
[268.3 mm]

← BYPASS END

FIGURE 3: F-12127A BYPASS FITTING TO TANK FUEL LINE AFT BEND
(FULL SCALE)
(NOTE: CHECK PRINTED SCALE 1:1 PER SECTION 3 BEFORE USING THE TEMPLATE!)

16
[406.4 mm]

FLF-00017

F-12127A



NOTE: See KAI page 27iS-09 for context.

Step 1: Straighten 69 in. [1752.6 mm] of ATO-035X3/8 tube. Create F-12127V starting at the filter end by making the first 90° bend as shown in Figure 1. Place the nut and then sleeve over aft end of tubing. Flare the filter end of the tube. Slide the nut and sleeve against the flare.

Step 2: Place the tubing over Figure 1 and mark the start of the second 90° bend. Make the 90° bend as shown in Figure 1 (check that the nut and sleeve have not fallen off the tube).

Step 3: Make the 25° bend as shown in Figure 1.

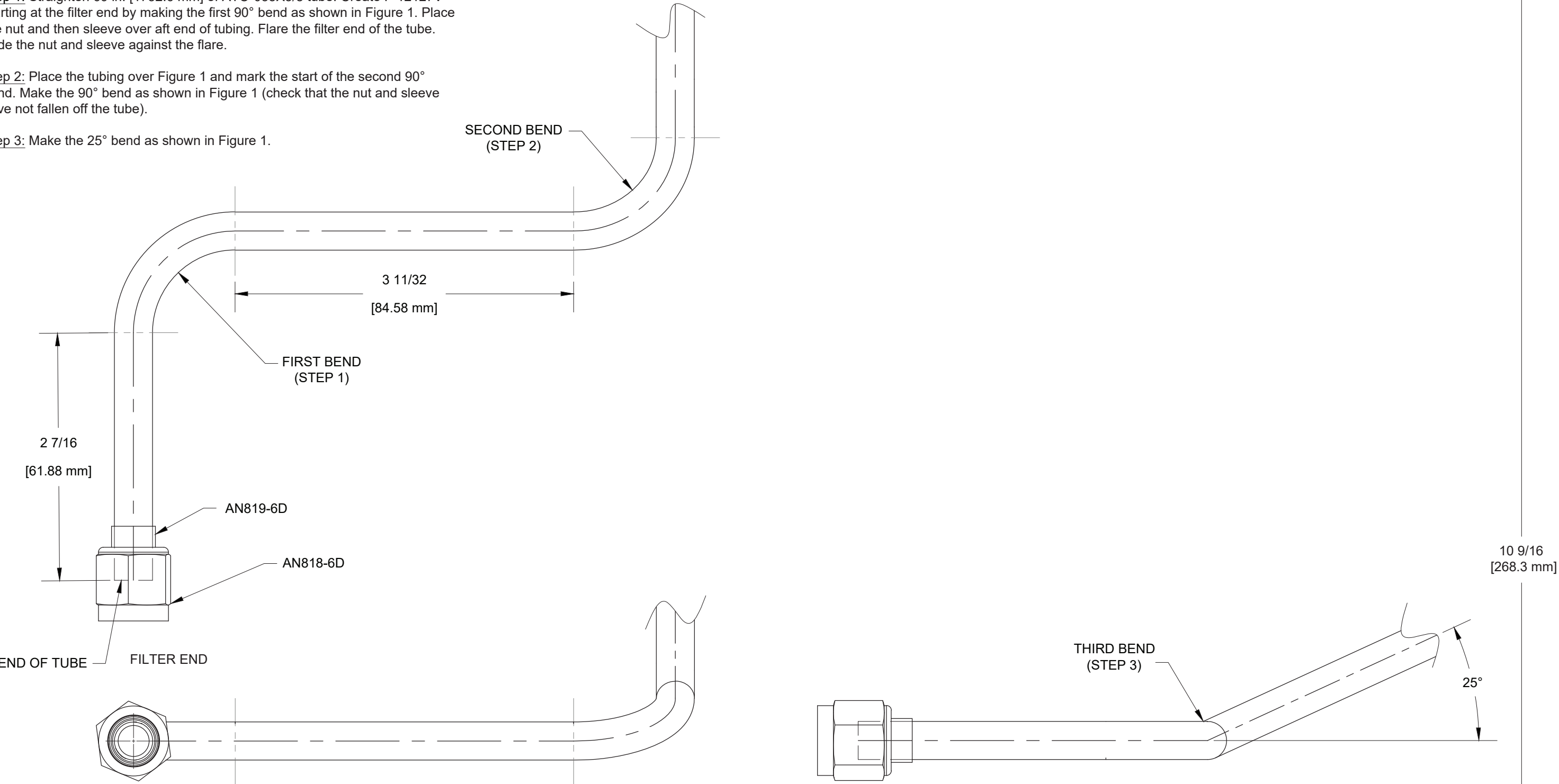
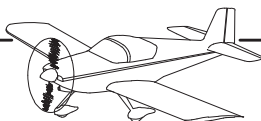


FIGURE 1: F-12127V FINE FILTER TO HIGH PRESSURE BYPASS
(FULL SCALE)

(NOTE: CHECK PRINTED SCALE 1:1 PER SECTION 3 BEFORE USING THE TEMPLATE!)



Step 1: Feed the fuel line forward through the snap bushings to the Bypass Fitting Assembly as shown in Figure 1 and 2. Place the nut and sleeve over the forward end of the tube. Flare the forward end of the tube.

Step 2: Attach the F-12127V to the Bypass Fitting Assembly as shown in Figure 2. A small amount of bending/adjustment by hand is acceptable.

Add slight bends at bulkhead locations as necessary to align the fuel line with the snap bushings and F-01276C-1 Systems Blocks. Lay the tube into the left recess in the F-01276C-1 adding a slight curve to follow the curvature of the F-01276-1. Ensure F-12127V has a minimum of 1/2 in. [12.7 mm] clearance to the FLF-00027-001 seated in the F-12337.

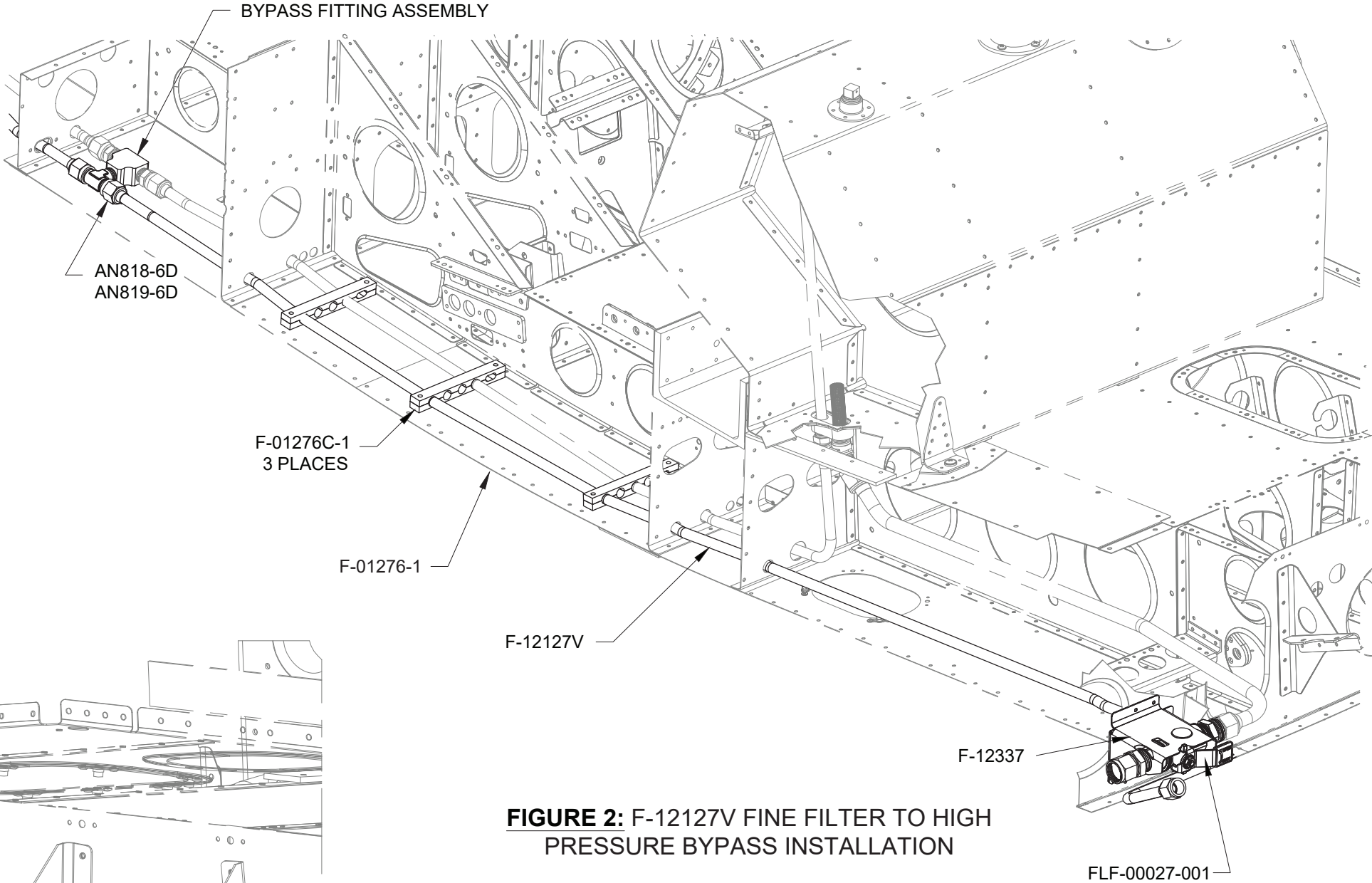


FIGURE 2: F-12127V FINE FILTER TO HIGH PRESSURE BYPASS INSTALLATION

10 9/16
[268.3 mm]

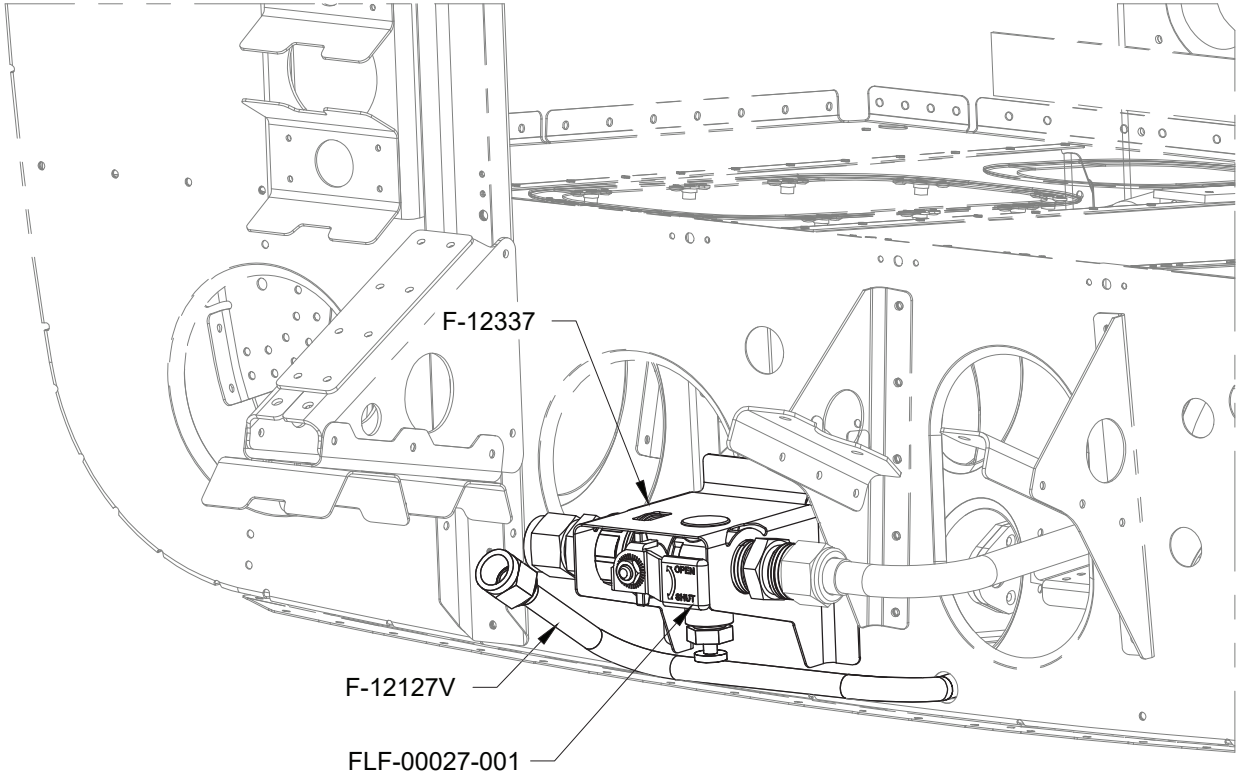
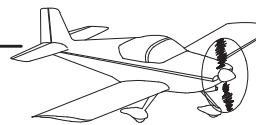


FIGURE 1: F-12127V FINE FILTER TO HIGH PRESSURE BYPASS INSTALLATION

16
[406.4 mm]



NOTE: This page refers to components provided in the powerplant kit, denoted by (*).

Step 1: Attach the Main Fuel Pump Assembly* to the F-12340 with HW-00018 hose clamps as shown. Make sure the pumps and fittings are oriented as shown, do not fully tighten the clamp at this time.

Step 2: Attach the Fine Filter Manifold to the F-12348 L/R brackets with AN525-832R10, NAS1149FN832P, and MS21042-08 as shown in Figure 1.

Step 3: Attach the ES AIRFLOW FILTER ASSEMBLY* to the F-12341 with a HW-00018 hose clamp, make sure the fuel flow arrow is pointed outboard as shown. Do not fully tighten the clamp at this time.

Step 4: Attach the ES AIRFLOW FILTER ASSEMBLY* to the Fuel Maintenance Valve/Drain Assembly as shown in Figure 1. Tighten the nut, then tighten the HW-00018 clamp until filter cannot move.

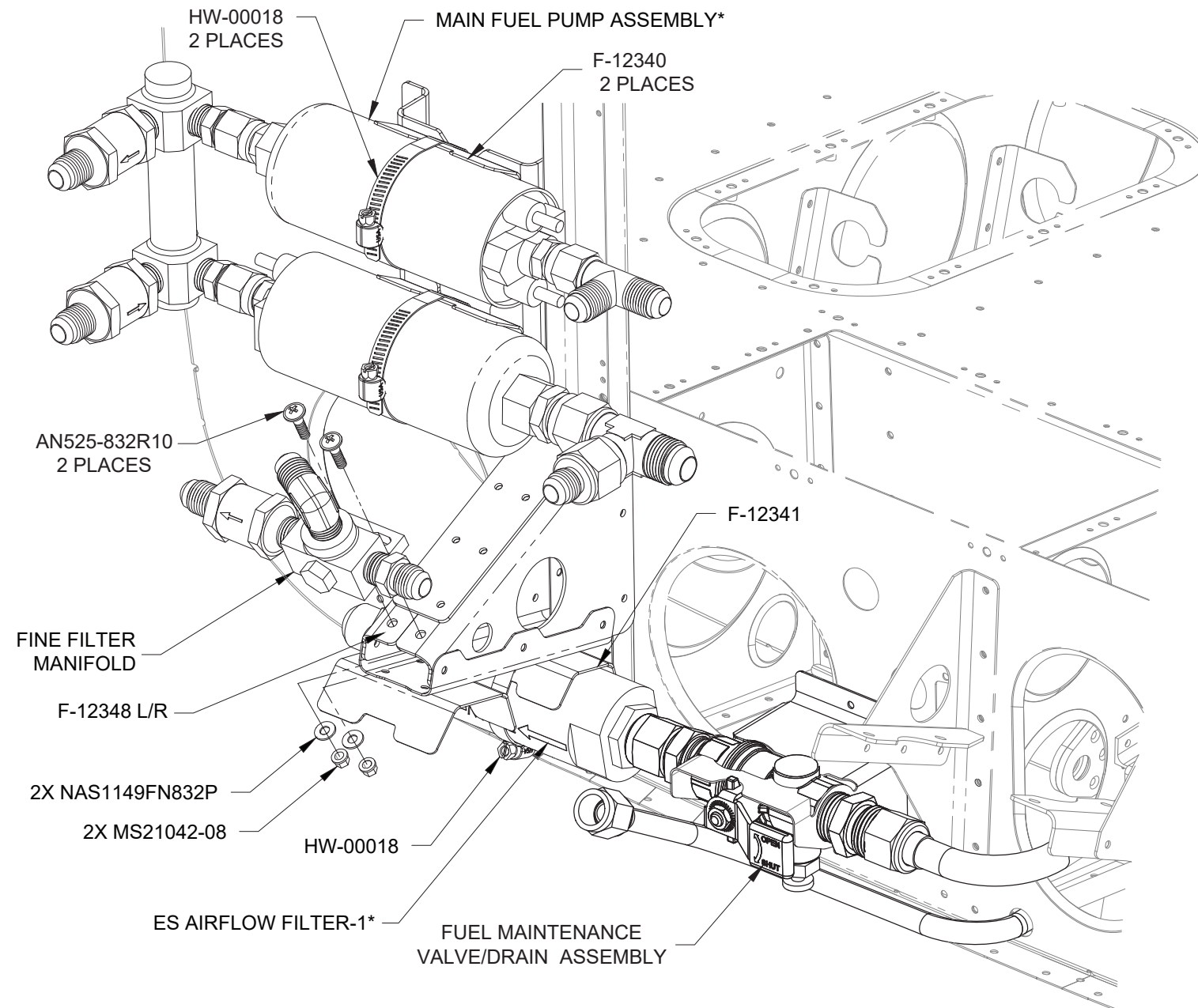


FIGURE 1: FUEL DRAIN, PUMP AND FILTER INSTALLATION

Step 5: Attach the 874 060 Fuel Filter Assembly* to the F-12111B-1 with a HW-00018 hose clamp as shown. Do not fully tighten the clamp at this time.

Step 6: Attach the F-12127V fuel line to the banjo fitting closest to the fuel filter as shown in the detail view in Figure 2.

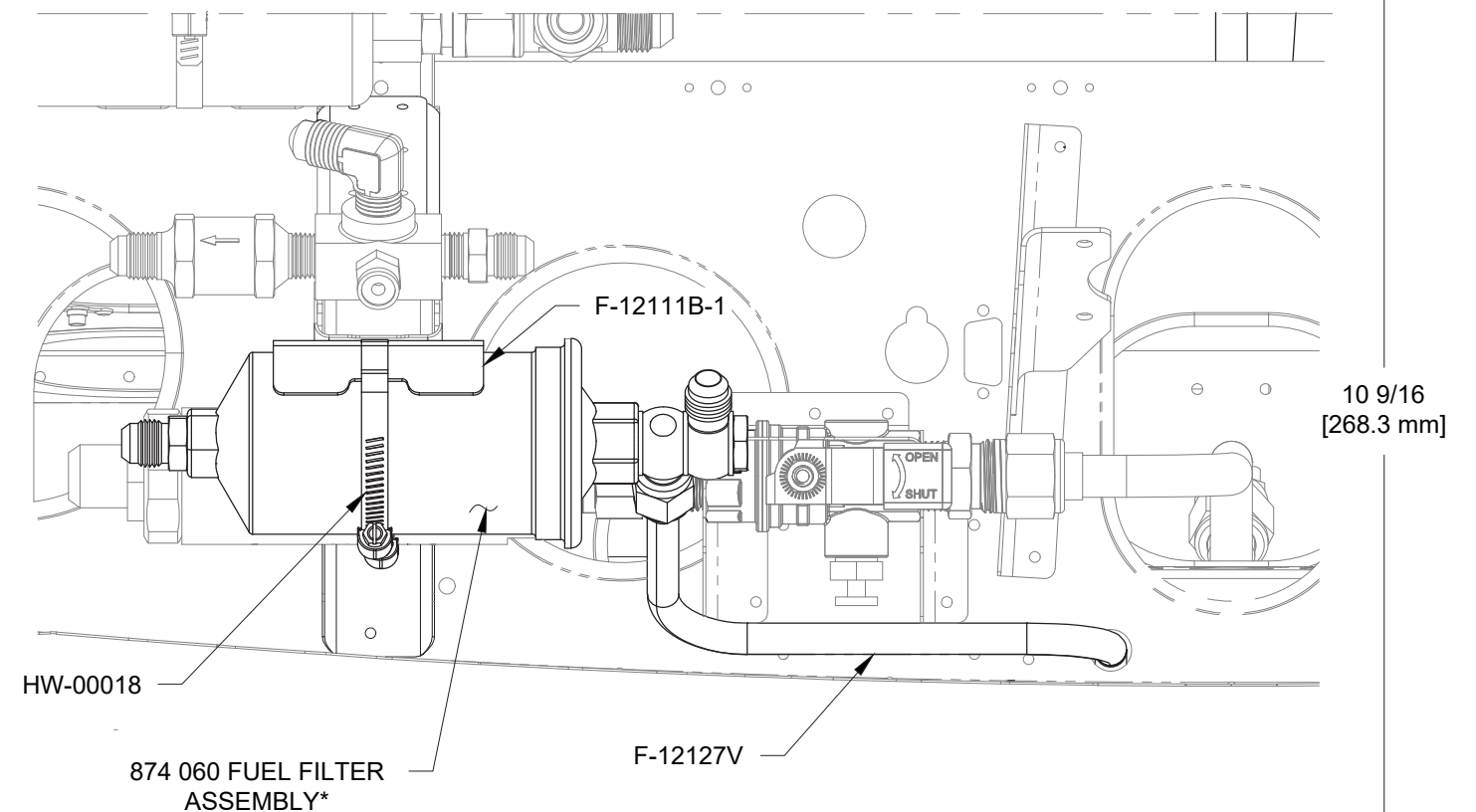


FIGURE 2: 874 060 FUEL FILTER ASSEMBLY* INSTALLATION

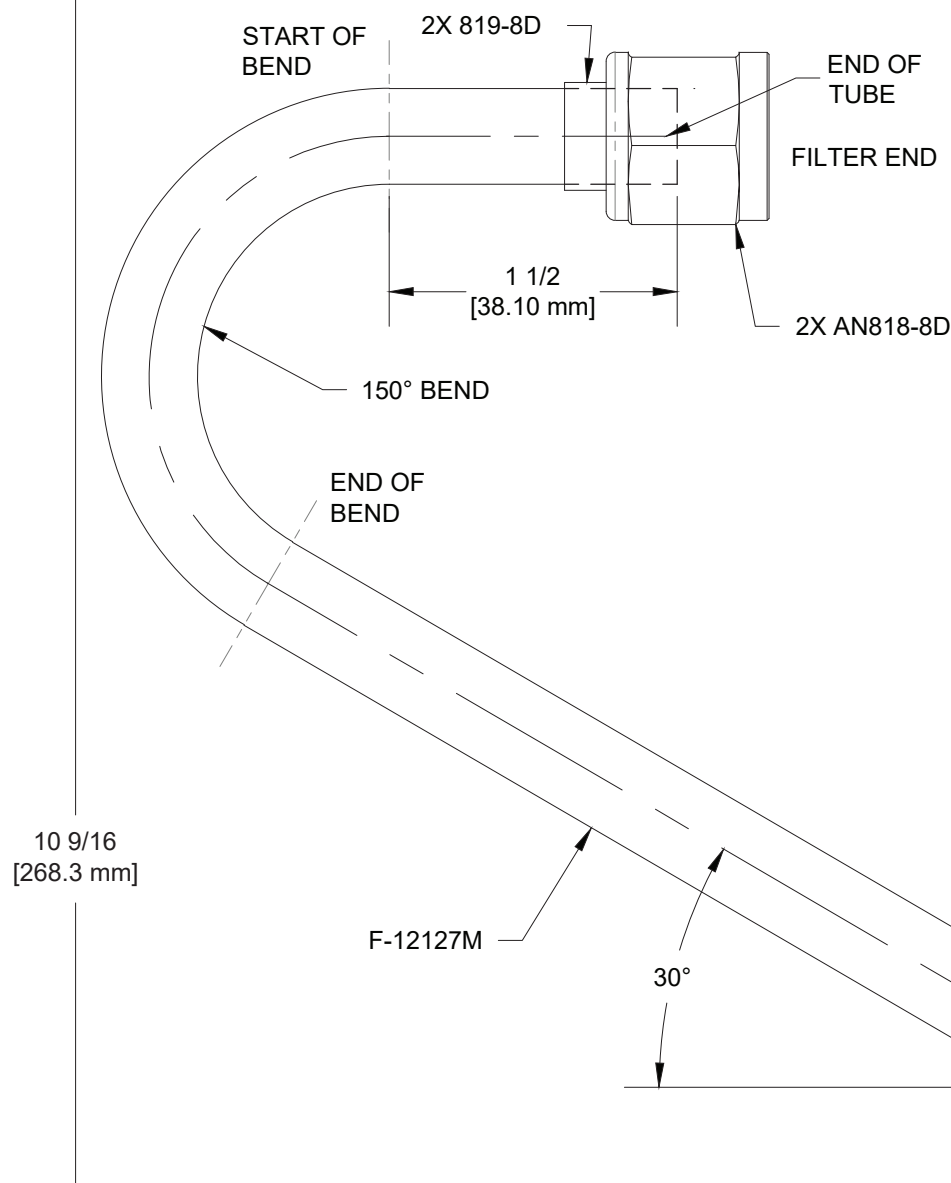
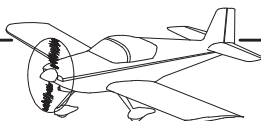


FIGURE 1: F-12127M PREFILTER TO PUMP
(NOTE: CHECK PRINTED SCALE 1:1 PER SECTION 3 BEFORE USING THE TEMPLATE!)

NOTE: This page refers to components provided in the powerplant kit, denoted by (*).

Step 1: Straighten 23 9/16 in. [547.5 mm] of ATO-035X1/2 tubing. Fabricate the F-12127M by making the bends shown in Figure 1. The clocking and position of the ends are critical, but minor deviations along the length are acceptable. Trim tube ends to match Figure 1.

Step 2: Place the nut then the sleeve called out in Figure 1 over the Filter end of the tubing. Flare the end of the tube.

Step 3: Place the nut then the sleeve called out in Figure 1 over the Fuel Pump end of the tubing. Flare the end of the tube.

Step 4: Attach the F-12127M to Main fuel Pump Assembly* and the ES-Airflow Filter-1* as shown in Figure 2. A small amount of bending/adjustment by hand is acceptable.

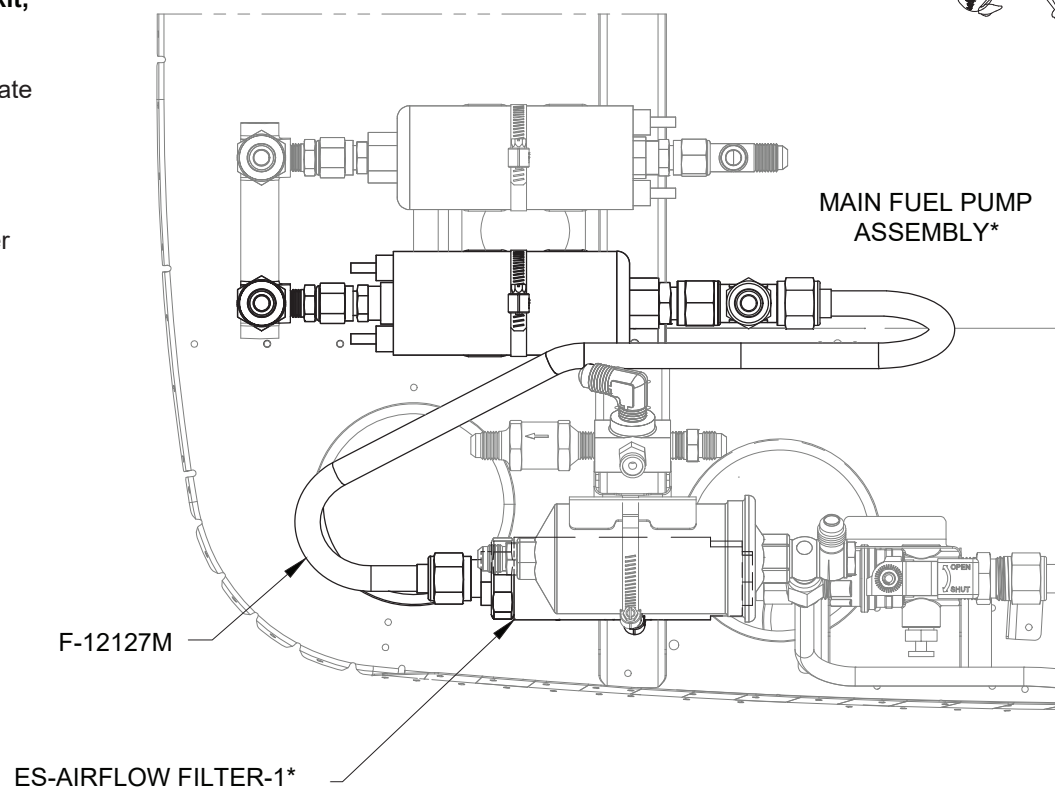
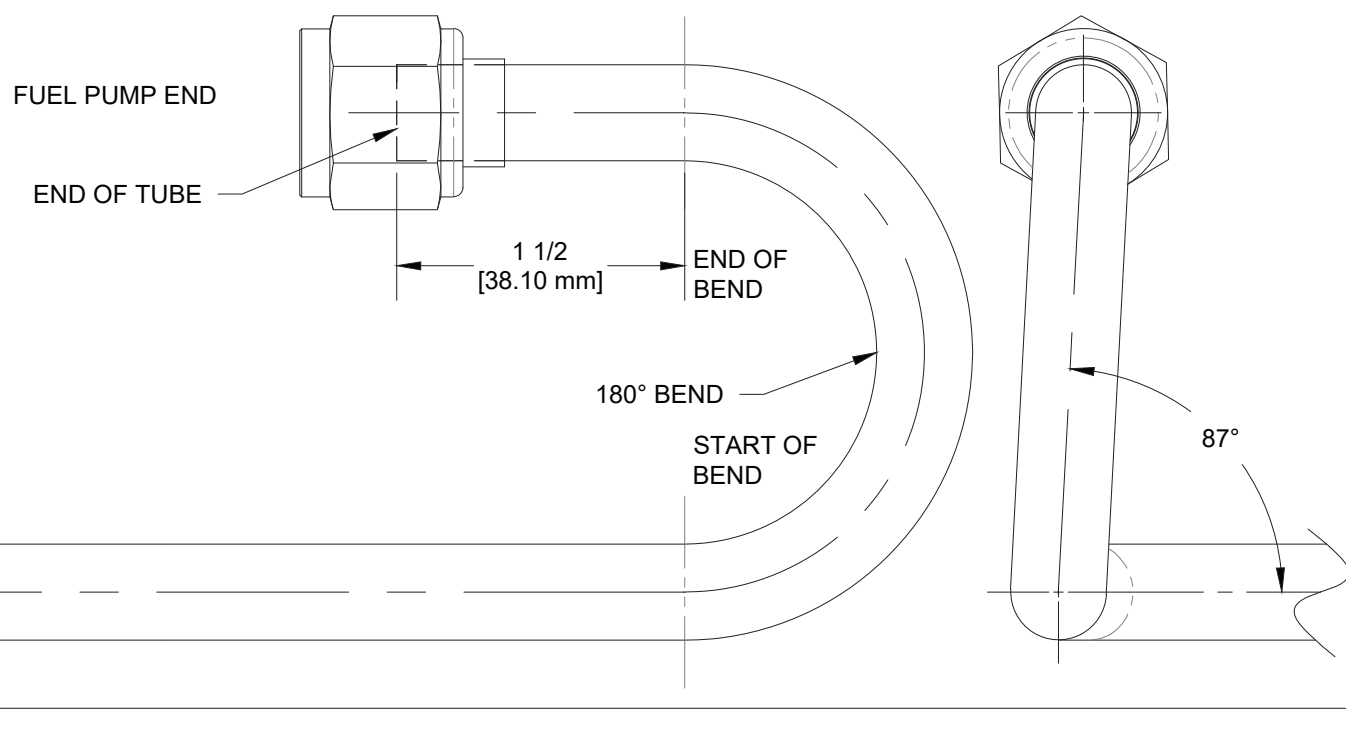


FIGURE 2: F-12127M PREFILTER TO PUMP INSTALLATION



16
[406.4 mm]



NOTE: This page refers to components provided in the powerplant kit, denoted by (*).

Step 1: Straighten 9 1/8 in. [231.77mm] of ATO-035X3/8 tubing. Make the F-12127T by starting at the filter end.

Measure 1 3/8 in. [34.9 mm] from the filter end of the tube and mark the start of bend line.

Measure 3 11/16 in. [93.66 mm] from the filter end of the tube and mark the end of bend line.

Make the 130° bend going to the Filter by referencing Figure 1. The clocking and position of the ends are critical, but minor deviations along the length of the fuel line are acceptable.

Step 2: Measure 2 19/32 in. [65.5 mm] from the fine filter manifold end bend and mark the start of bend line.

Make the 63° bend going to the Fine Filter Manifold by referencing Figure 1. Use Figure to align the bend offset of 27°

Step 3: Place the nut then the sleeve called out in Figure 1 over the filter end of the tubing. Flare the filter end of the tube.

Place the nut, then sleeve, called out in Figure 1 over the fine filter manifold end of the tubing. Flare the end of the tube.

Step 4: Attach the F-12127T to the 874 060 Fuel Filter Assembly* and the Fine Filter Manifold as shown in Figure 2. A small amount of bending/adjustment by hand is acceptable.

Step 5: Check all fuel lines for clearance and chaffing on surrounding structure and components. Check that all fittings and connections are tightened.

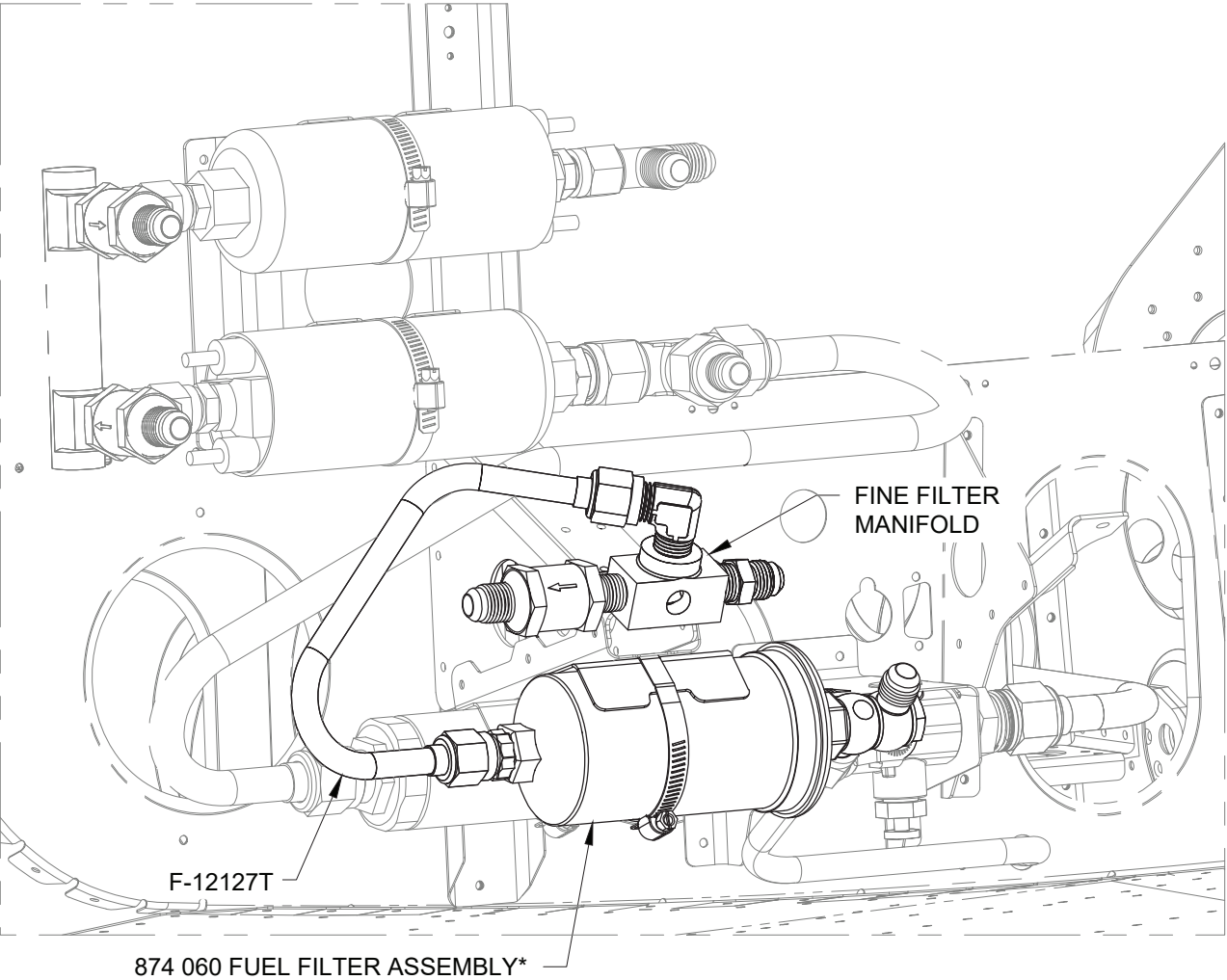


FIGURE 2: F-12127T FUEL PRESSURE TO FINE FILTER INSTALLATION

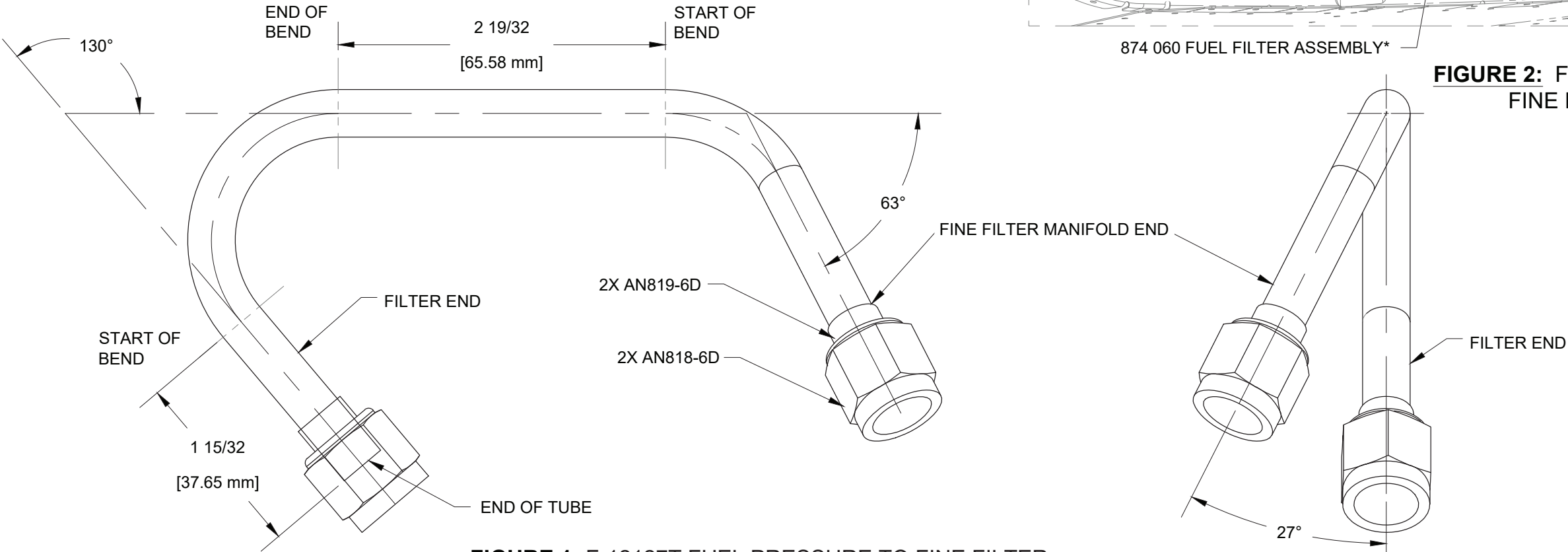


FIGURE 1: F-12127T FUEL PRESSURE TO FINE FILTER
(NOTE: CHECK PRINTED SCALE 1:1 PER SECTION 3 BEFORE USING THE TEMPLATE!)

NOTE: This page refers to components provided in the powerplant kit, denoted by (*).

Step 1: Straighten 11 5/8 in. [295.27mm] of ATO-035X3/8 tubing. Make the F-12127R by starting at the pump end.

Measure 1 1/2 in. [38.1 mm] from the pump end of the tube and mark the start of bend line.

Make the 101° bend going to the manifold by referencing Figure 1. The clocking and position of the ends are critical, but minor deviations along the length of the fuel line are acceptable.

Step 2: Measure 3 1/4in. [82.21 mm] from the end of the first bend and mark the start of the second bend line.

Make the 48° bend going to the manifold by referencing Figure 2 and View A-A. The clocking and position of the ends are critical, but minor deviations along the length of the fuel line are acceptable.

NOTE: Bends continue on next page.

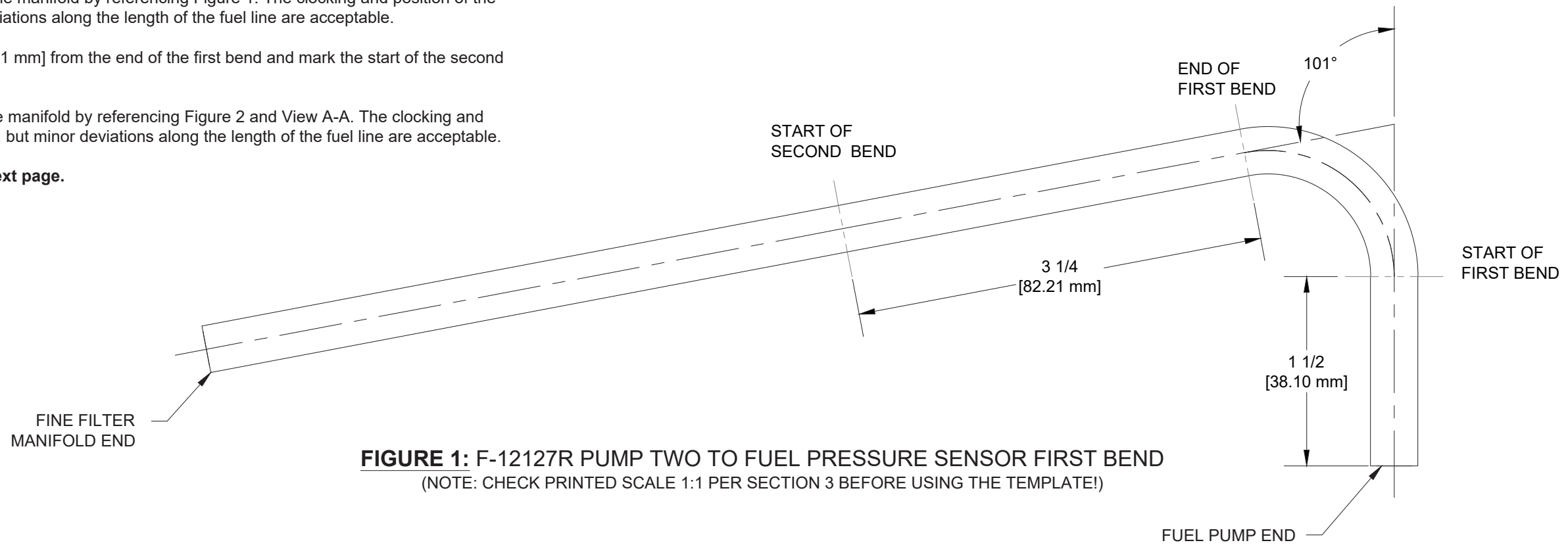
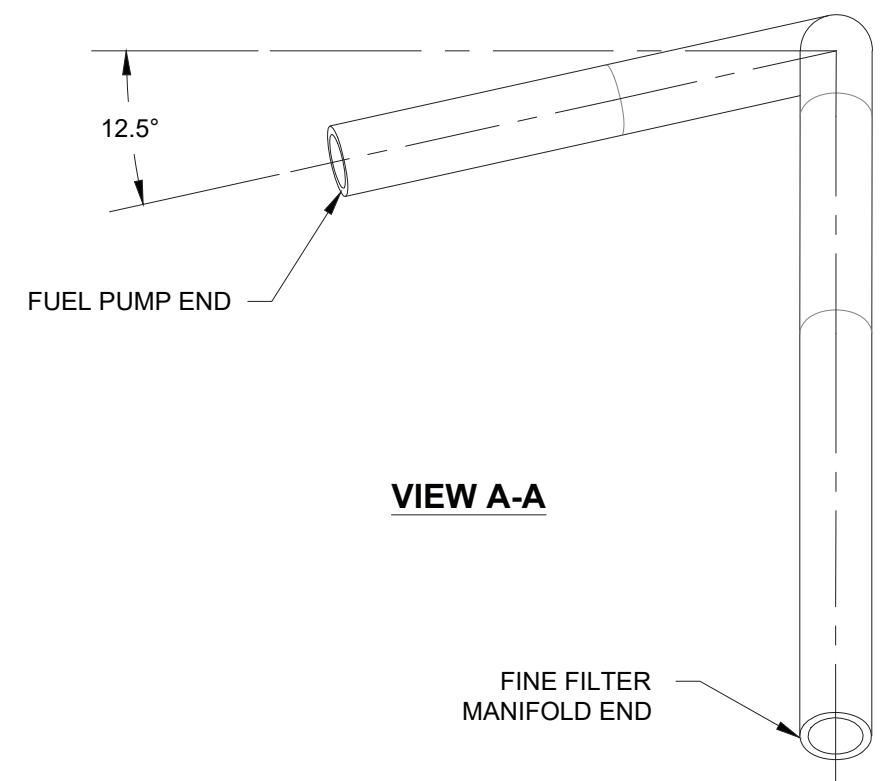


FIGURE 1: F-12127R PUMP TWO TO FUEL PRESSURE SENSOR FIRST BEND
(NOTE: CHECK PRINTED SCALE 1:1 PER SECTION 3 BEFORE USING THE TEMPLATE!)

10 9/16
[268.3 mm]



VIEW A-A

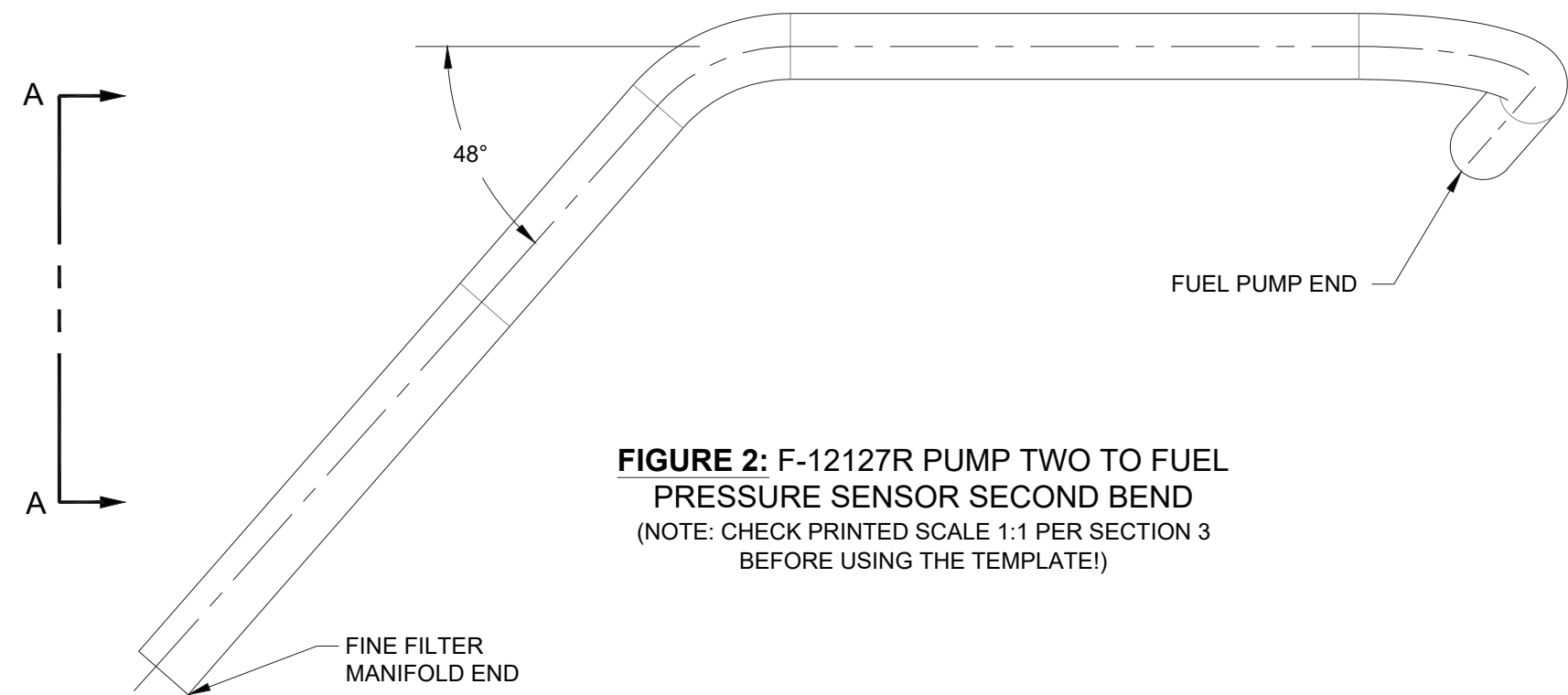
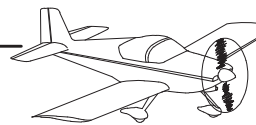


FIGURE 2: F-12127R PUMP TWO TO FUEL PRESSURE SENSOR SECOND BEND
(NOTE: CHECK PRINTED SCALE 1:1 PER SECTION 3 BEFORE USING THE TEMPLATE!)



NOTE: This page refers to components provided in the powerplant kit, denoted by (*).

Step 1: Measure 1 1/2in. [38.12 mm] from the manifold end and mark the start of the third bend line.

Make the 65° bend going to the pump by referencing Figure 1. The clocking and position of the ends are critical, but minor deviations along the length of the fuel line are acceptable. Slide the PT1/2ODx2 to the location shown in Figure 1.

Step 2: Place the nut then the sleeve called out in Figure 2 over the fuel pump end of the tubing. Flare the end of the tube.

Step 3: Place the nut then the sleeve called out in Figure 2 over the fuel drain end of the tubing. Flare the end of the tube.

Step 4: Attach the fuel line to Main Fuel Pump Assembly* and the Fine Filter Manifold as shown in Figure 3. A small amount of bending/adjustment by hand is acceptable.

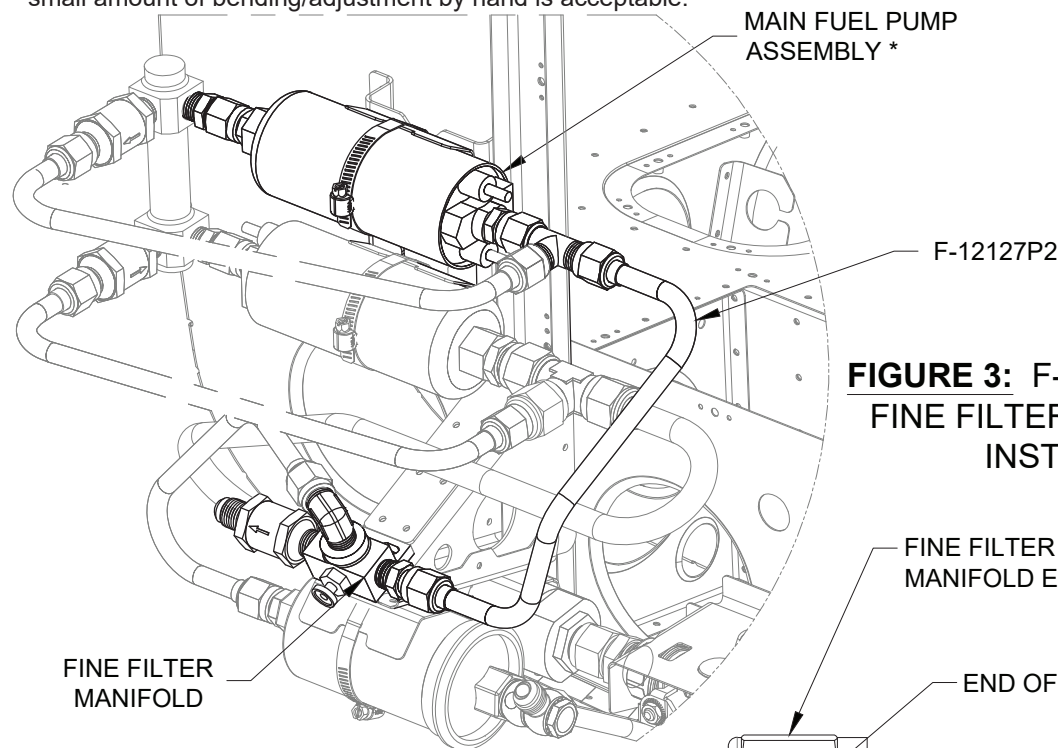


FIGURE 3: F-12127P2 PUMP TO FINE FILTER MANIFOLD LINE INSTALLATION

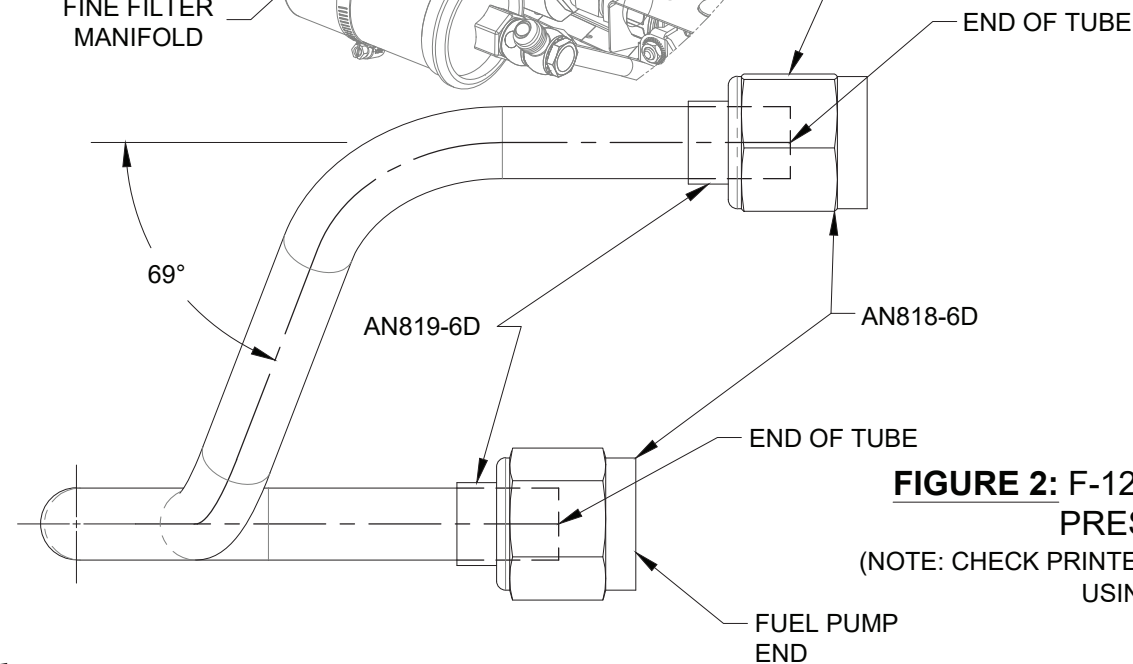
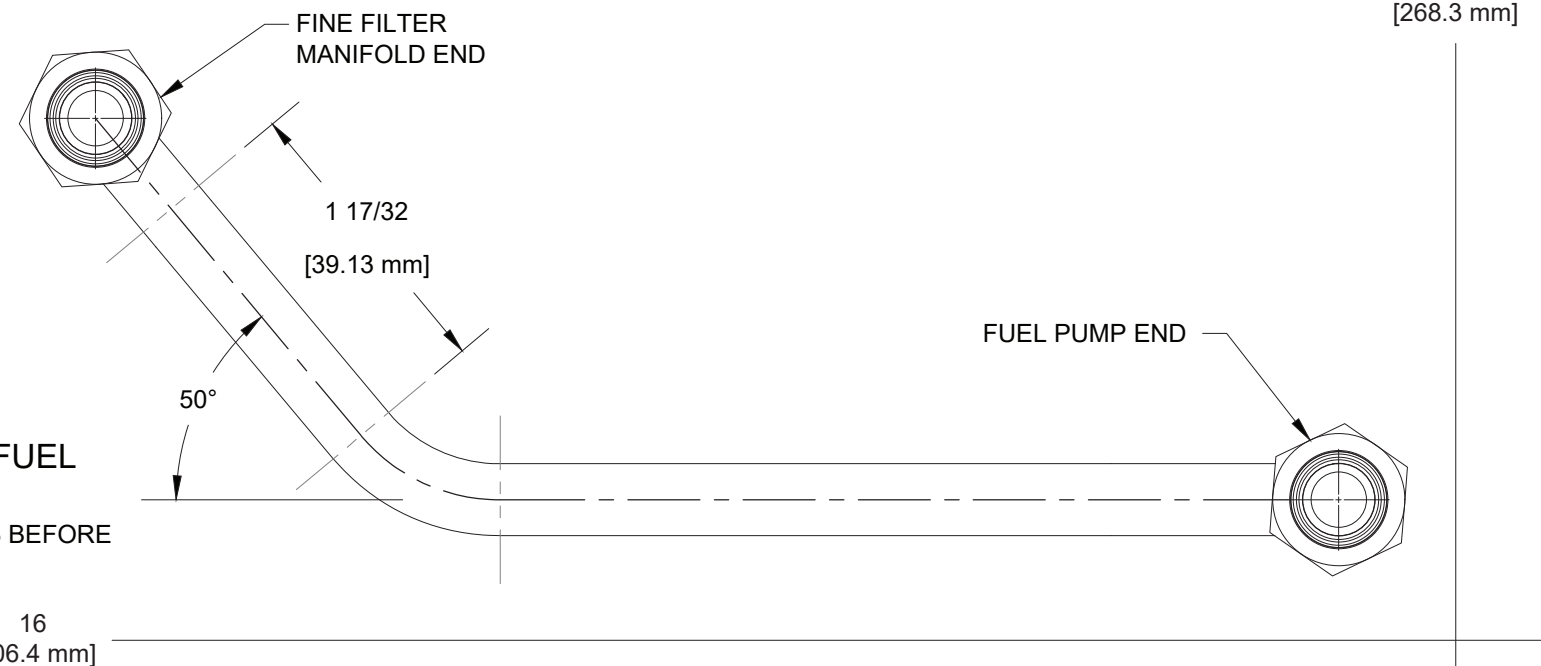
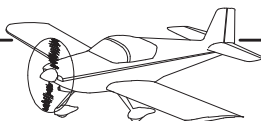


FIGURE 2: F-12127R PUMP TWO TO FUEL PRESSURE SENSOR
(NOTE: CHECK PRINTED SCALE 1:1 PER SECTION 3 BEFORE USING THE TEMPLATE!)



FIGURE 1: F-12127R PUMP TWO TO FUEL PRESSURE SENSOR THIRD BEND
(NOTE: CHECK PRINTED SCALE 1:1 PER SECTION 3 BEFORE USING THE TEMPLATE!)





NOTE: This page refers to components provided in the powerplant kit, denoted by (*).

Step 1: Straighten 15 7/8 in. [403.2mm] of ATO-035X3/8 tubing. Make the F-12127U by starting at the Fine Filter Manifold end.

Measure 1 1/2 in. [38.1 mm] from the Fine Filter Manifold end of the tube and mark the start of bend line.

Measure 4 5/8 in. [117.5 mm] from the Fine Filter Manifold end of the tube and mark the end of bend line.

Make the 180° bend going to the Filter by referencing Figure 1. The clocking and position of the ends are critical, but minor deviations along the length of the fuel line are acceptable.

Step 2: Measure 2 in. [50.8 mm] from the filter end bend and mark the start of bend line.

Make the 90° bend going to the Fine Filter Manifold by referencing Figure 1.

Make the 27° bend going to the Fine Filter Manifold by referencing Figure 1 .

Slide PT 1/2ODx2 into location as shown in Figure 1.

Step 3: Place the nut then the sleeve called out in Figure 1 over the Fine Filter Manifold end of the tubing. Flare the Fine Filter Manifold end of the tube.

Place the nut then sleeve called out in Figure 1 over the Filter end of the tubing. Flare the end of the tube (check to make sure the other nut and sleeve did not fall off).

Step 4: Attach the F-12127U to the 874 060 Fuel Filter Assembly* and the Fine Filter Manifold as shown in Figure 2. A small amount of bending/adjustment by hand is acceptable.

Step 5: Check all fuel lines for clearance and chaffing on surrounding structure and components. Check that all fittings and connections are tightened.

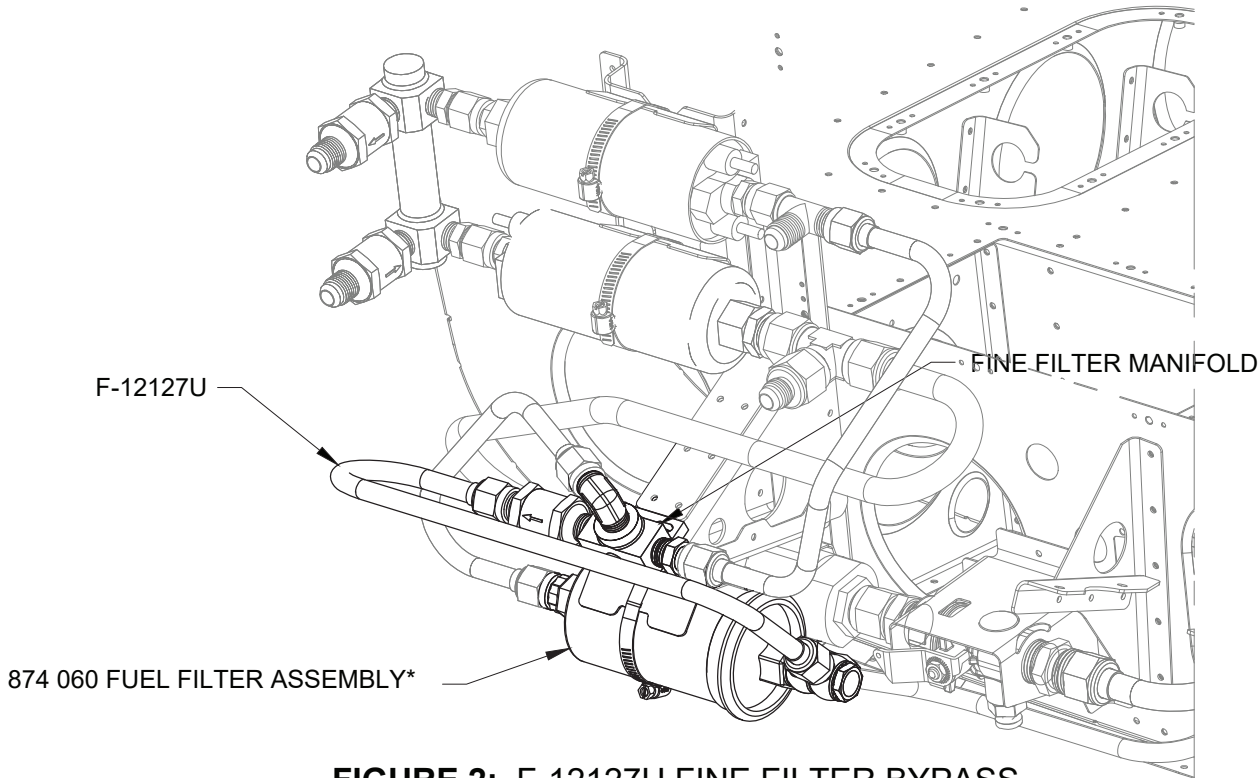


FIGURE 2: F-12127U FINE FILTER BYPASS INSTALLATION

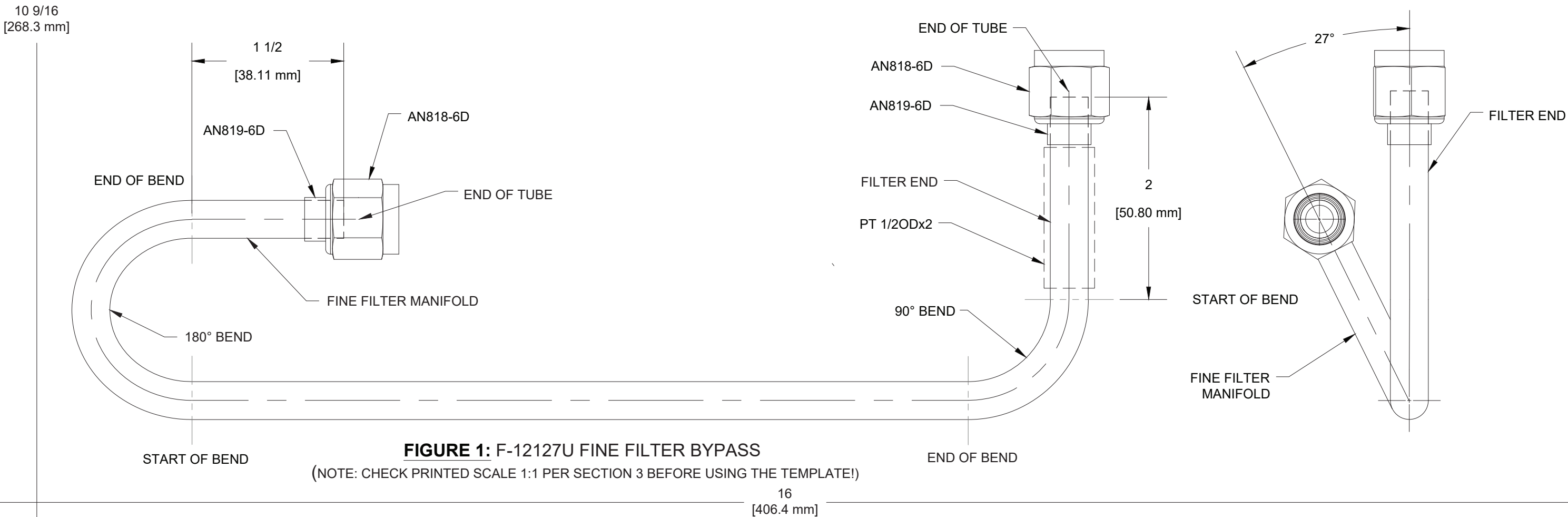


FIGURE 1: F-12127U FINE FILTER BYPASS
(NOTE: CHECK PRINTED SCALE 1:1 PER SECTION 3 BEFORE USING THE TEMPLATE!)



NOTE: This page refers to components provided in the powerplant kit, denoted by (*).

Step 1: Straighten 13 in. [330.2 mm] of ATO-035X3/8 tubing. Make the F-12127P by making bends as shown in Figure 1. The clocking and position of the ends are critical, but minor deviations along the length are acceptable. Trim to fit.

Step 2: Place the nut then the sleeve called out in Figure 1 over the outboard end of the tubing. Flare the outboard end of the tube.

Step 3: Place the nut and sleeve called out in Figure 1 over the inboard end of the tubing (check that the other nut and sleeve have not fallen off the tube). Flare the inboard end of the tube.

Step 4: Attach the F-12127P to the Main Fuel Pump Assembly* as shown in Figure 3.

Step 5: Straighten 13 1/8 in. [333.38 mm] of ATO-035X3/8 tubing. Make the F-12127N by making the bends shown in Figure 2. The clocking and position of the ends are critical, but minor deviations along the length are acceptable. Trim to fit.

Step 6: Place the nut then sleeve called out in Figure 2 over the outboard end of the tubing. Flare the outboard end of the tube.

Step 7: Place the nut and sleeve over the inboard end of the tubing (check that the other nut and sleeve have not fallen off the tube). Flare the inboard end end of the tube.

Step 8: Attach the F-12127N to the Main Fuel Pump Assembly* as shown in Figure 3.

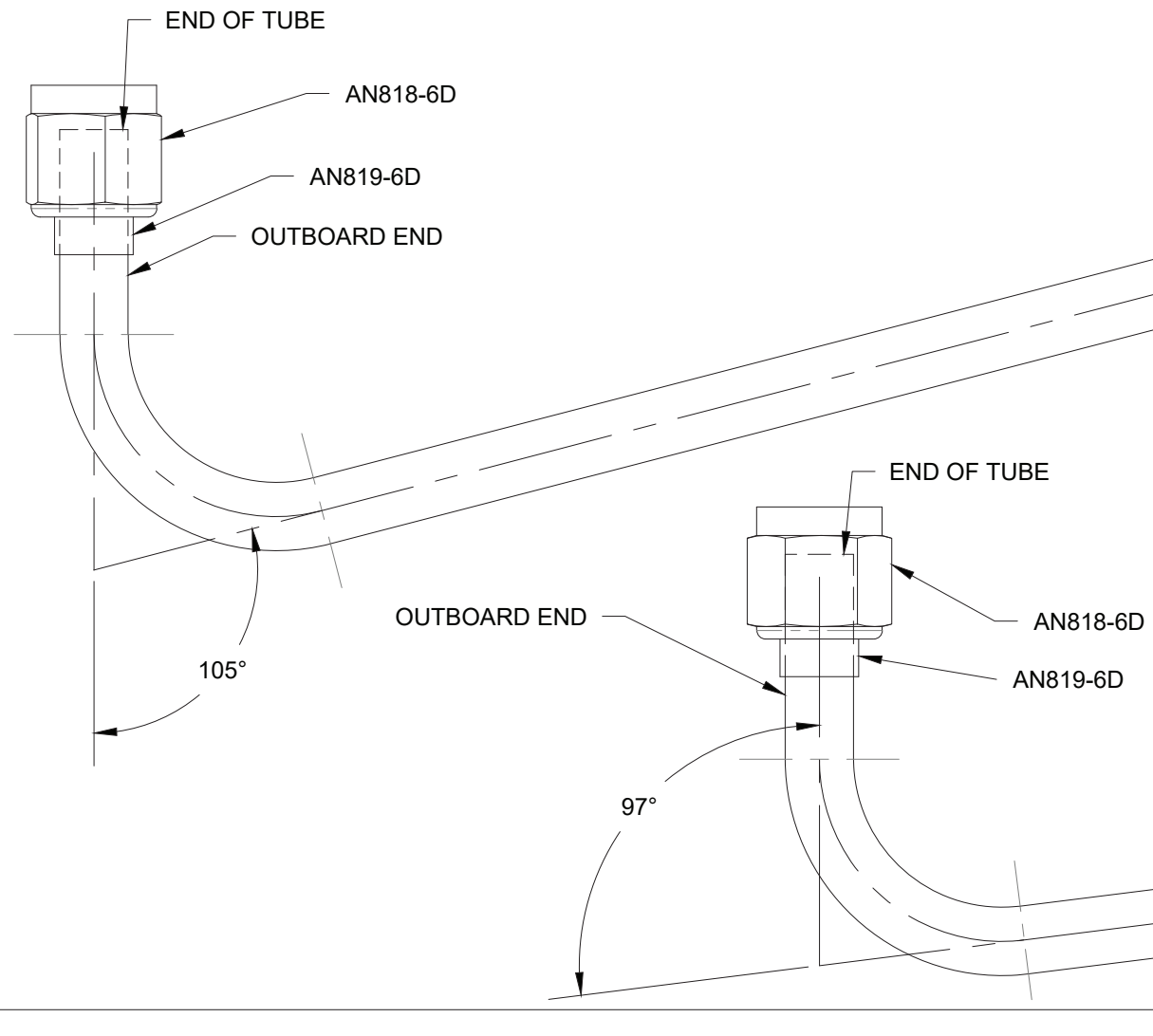


FIGURE 1: F-12127P PUMP TWO BYPASS
(NOTE: CHECK PRINTED SCALE 1:1 PER SECTION 3 BEFORE USING THE TEMPLATE!)

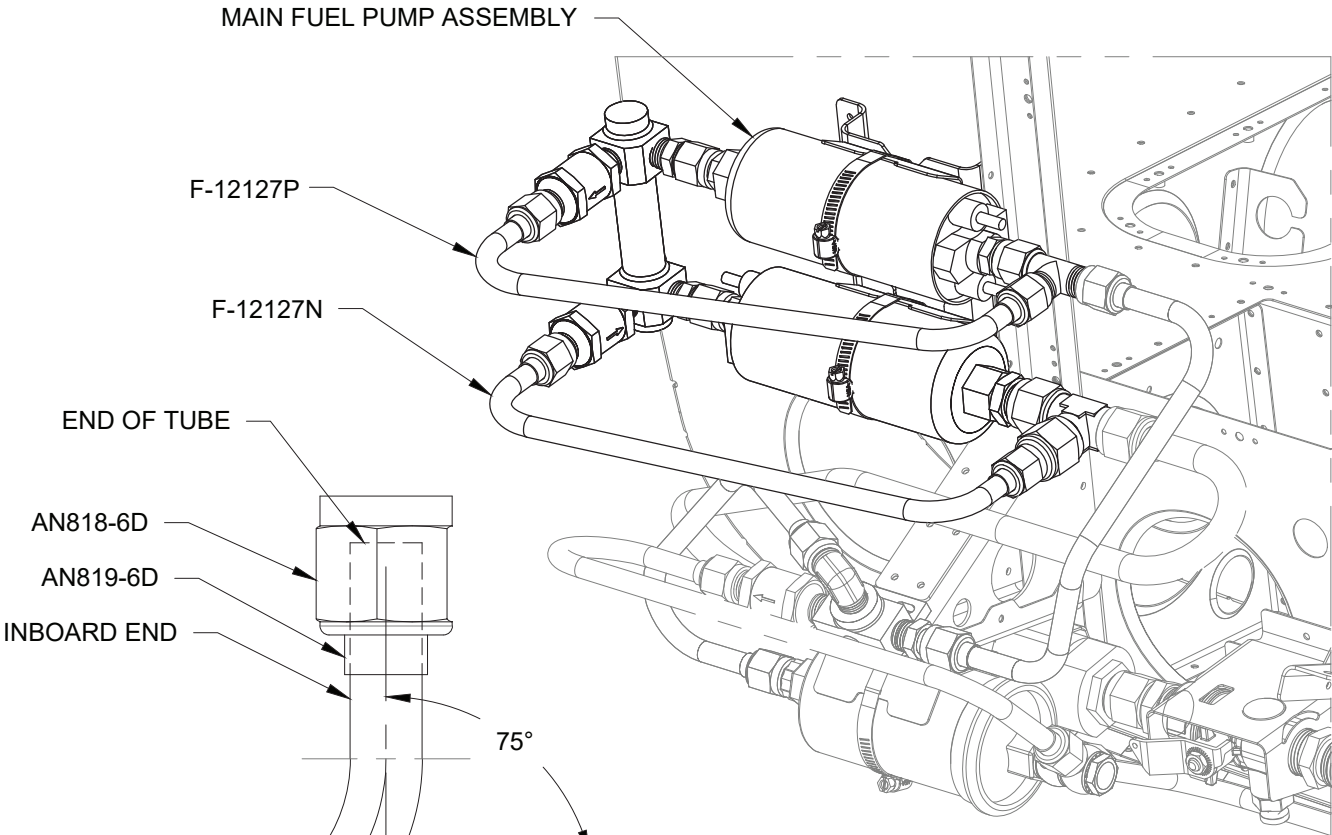


FIGURE 3: F-12127P AND F-12127N INSTALLATION

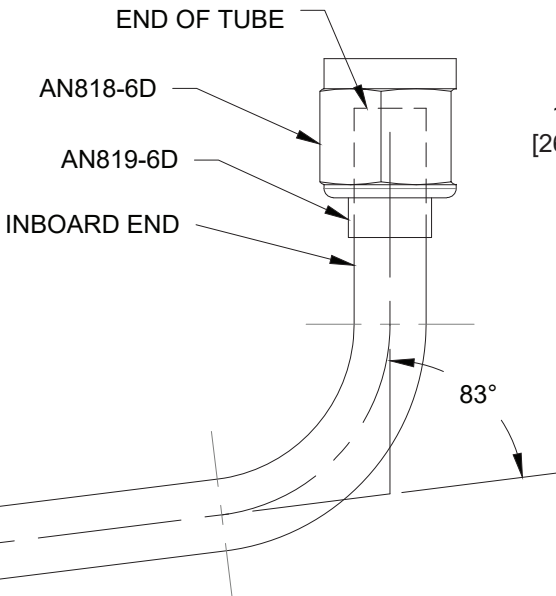


FIGURE 2: F-12127N PUMP ONE BYPASS
(NOTE: CHECK PRINTED SCALE 1:1 PER SECTION 3 BEFORE USING THE TEMPLATE!)