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*Photo 001*

SECTION 1 PRE-COVER LANDING GEAR PREP

SECTION 1 Step 1. BRAKE LINE SHEATH PRE FITTING

Trim one end of the brake line tubing sheath 5173K96 to true up (or cut square) the end as shown in Photo 001. Install the freshly cut end of the tubing into the landing gear as shown in the Photo 002 and Photo 003.

*Photo 002**Photo 003*

SECTION 1**Step 2. TEMPORARILY SECURING BRAKE
LINE SHEATH**

Run the sheath through the bottom bracket and tape the sheath to the gear leg tube just above the bottom bracket as shown in the Photo 005. Run the sheath through the remaining two brackets and add a second band of tape between the middle and upper bracket.

*Photo 004**Photo 005**Photo 006*

*Photo 007**Photo 008**Photo 009*

SECTION 1

Step 3. ATTACHING THE BRAKE LINE SHEATH TO THE BRACKETS

Using channel lock pliers bend the two sides of the bottom bracket together enough to touch the sheath. Then bend the long side of the bracket up to touch the short side. Repeat this step on the remaining two brackets.

SECTION 1**Step 4. FINISHING THE BRAKE LINE SHEATH BRACKETS**

Using a small ball peen hammer gently tap the long side of the bracket around the top of the short side of the bracket as shown in the Photo 010, Photo 011, and Photo 012.

*Photo 010**Photo 011**Photo 012*

*Photo 013**Photo 014*

SECTION 1

Step 5. TRIMMING THE BRAKE LINE SHEATH

Cut the remaining sheathing 1/8" to 1/4" above the 1/2" square tubing between the upper two gear legs as shown in Photo 013, and Photo 014. When this job is completed on both landing gear, they will be ready to cover.

SECTION 2 FLAP HANDLE ASSEMBLY**Step 1. GATHERING PARTS**

Gather parts required for flap handle assembly per Figure AM1, Figure AM2, and Figure AM3. Use Photo 015 for part familiarization.

Insert bushings SC32215-001 into the flap handle weldment, one on each side of flap handle cross tube. Use a plastic mallet to install these bushings. Alignment is critical then starting the bushings.



Photo 015

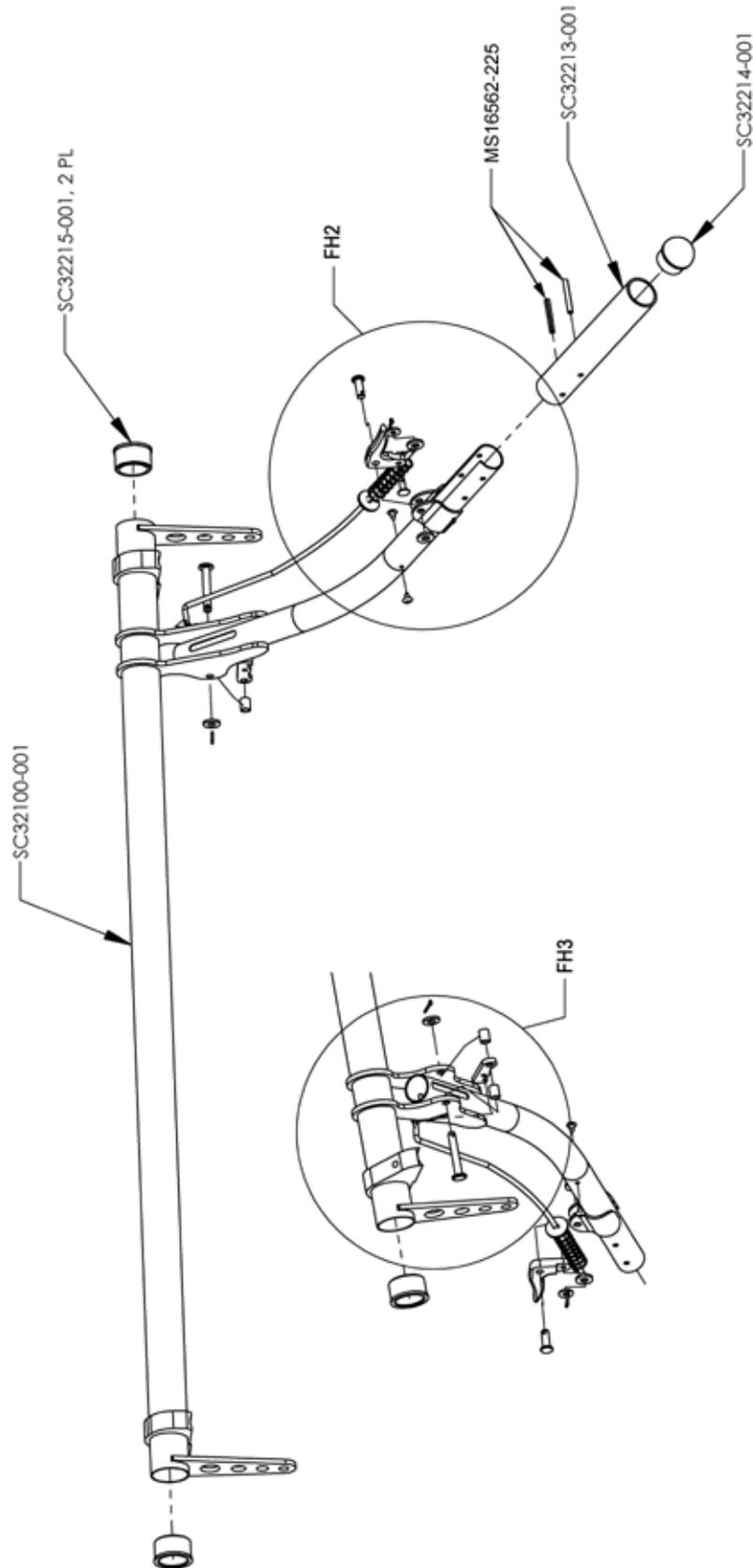


Figure AM1

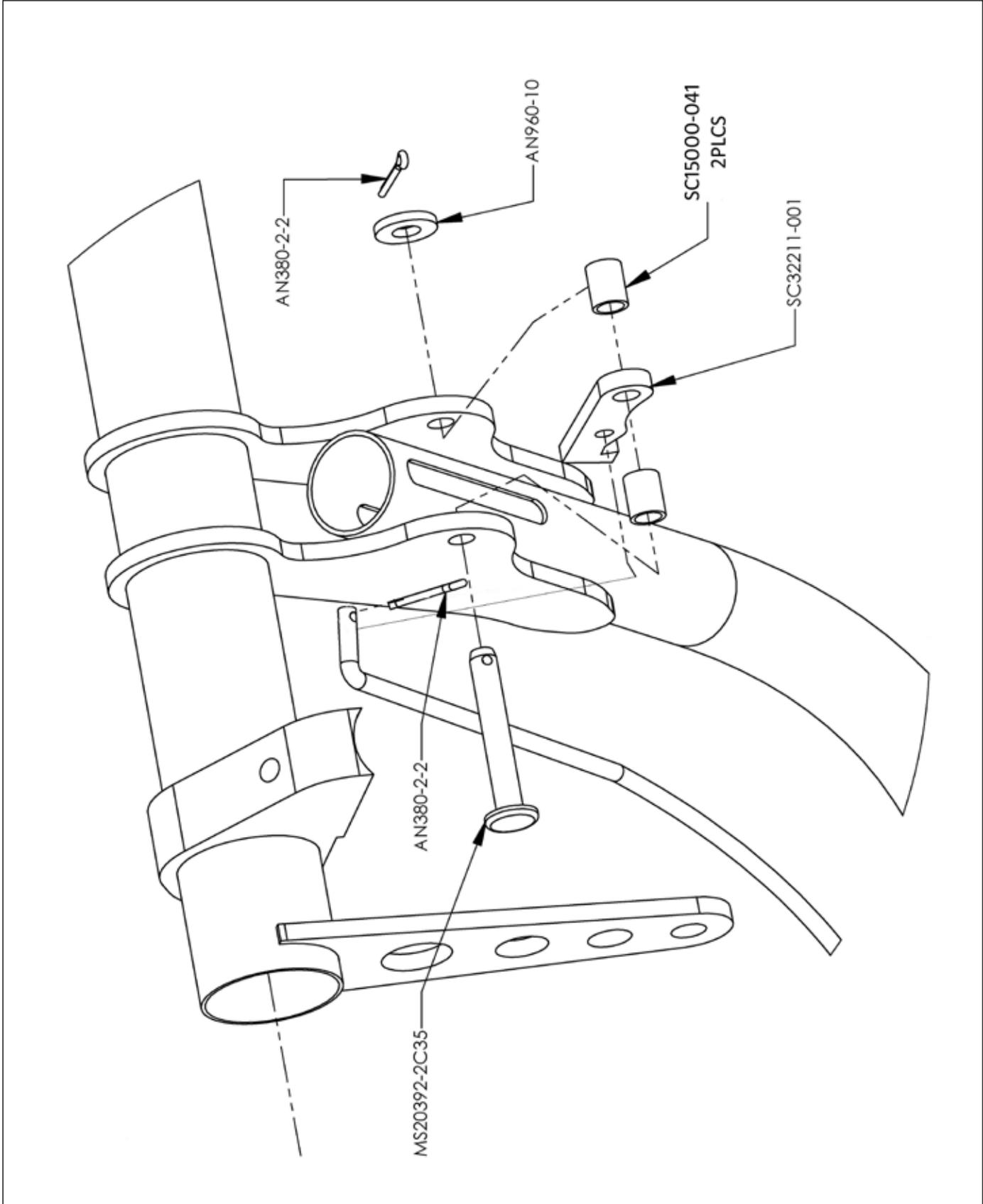


Figure AM2

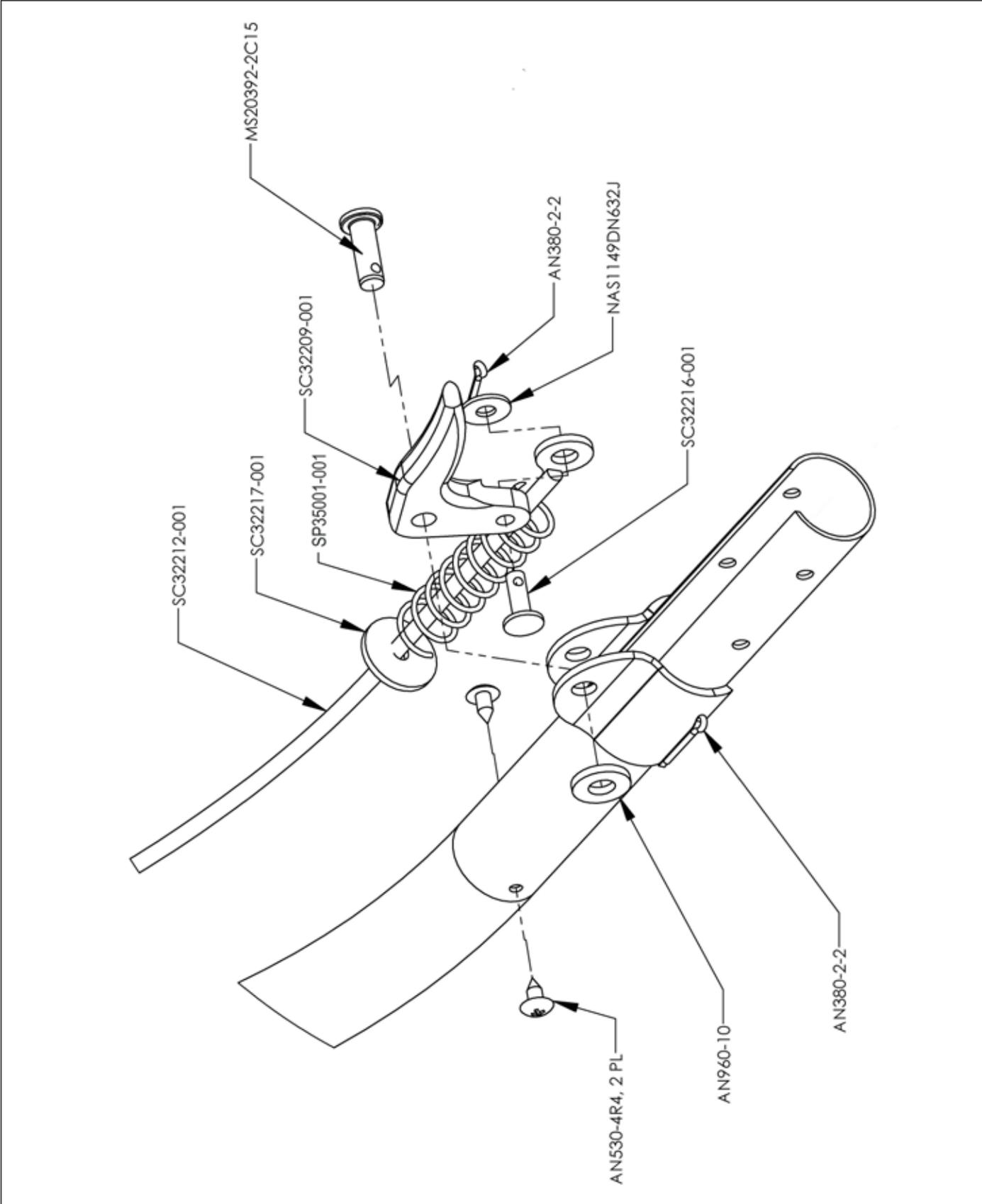


Figure AM3

SECTION 2**Step 2. CABLE BUSHINGS**

Insert bushings SC32215-001 into the flap handle weldment, one on each side of flap handle cross tube. Use a plastic mallet to install these bushings. Alignment is critical when starting the bushings.

*Photo 016**Photo 017*

SECTION 2**Step 3. ACTUATOR ROD**

Using the flap handle weldment as a template, form the actuating rod SC32212-001 to match the weldment handle as shown in pictures above. Ensure the 90 degree bend and the welded washer maintain the alignment that is shown in Photo 019. After forming is complete insert spring 50111-00 and washer SC32217-001 as shown in Photo 021.

*Photo 018**Photo 019**Photo 020**Photo 021*

SECTION 2**Step 4. SPRING STOP SCREWS**

Install AN530-4R4 on each side of flap handle arm as shown in Figure AM3.



Photo 022

SECTION 2**Step 5. TRIGGER ASSEMBLY**

Insert pin SC32216-001 into trigger SC32209-001, it will be a tight fit and will require light tapping to get it seated. Notice the cotter pin hole orientation.



Photo 023

SECTION 2**Step 6. Trigger/Rod Assembly**

Next install operating rod SC32212-001, washer NAS1149DN632J, and cotter pin AN380-2-2. Use Figure AM1 for rod orientation.



Photo 024

SECTION 2**Step 7. PAWL ASSEMBLY**

Install pawl SC32211-001 onto operating rod SC32212-001 and secure with cotter pin AN380-2-2. Use Figure AM2 for pawl orientation.



Photo 025

SECTION 2**Step 8. TRIGGER ASSEMBLY INSTALLATION**

Insert trigger rod assembly into flap lever handle. The two screws installed into flap handle will stop the spring and washer and will give the trigger it's spring back.

*Photo 026**Photo 027*

Insert trigger pin MS20392-2C15 and secure with AN960-10 washer and AN380-2-2 cotter pin.

*Photo 028**Photo 029*

SECTION 2**Step 9. PAWL SPACING**

Test fit pawl pivot pin MS20392-2C35 and bushings SC15000-037. The bushings may need to be filed to fit, the fit should be a tight slip fit. It is important when filing the bushings to keep the pawl in the center of the pawl opening in the flap handle weldment.

*Photo 030**Photo 031*

SECTION 2**Step 10. PAWL INSTALLATION**

Secure pawl pivot pin MS20392-2C35 using AN960-10 washer and AN380-2-2 cotter pin. Check trigger operation and lube all pivot points with a light spray lubricant (LPS #2 is used at the factory).

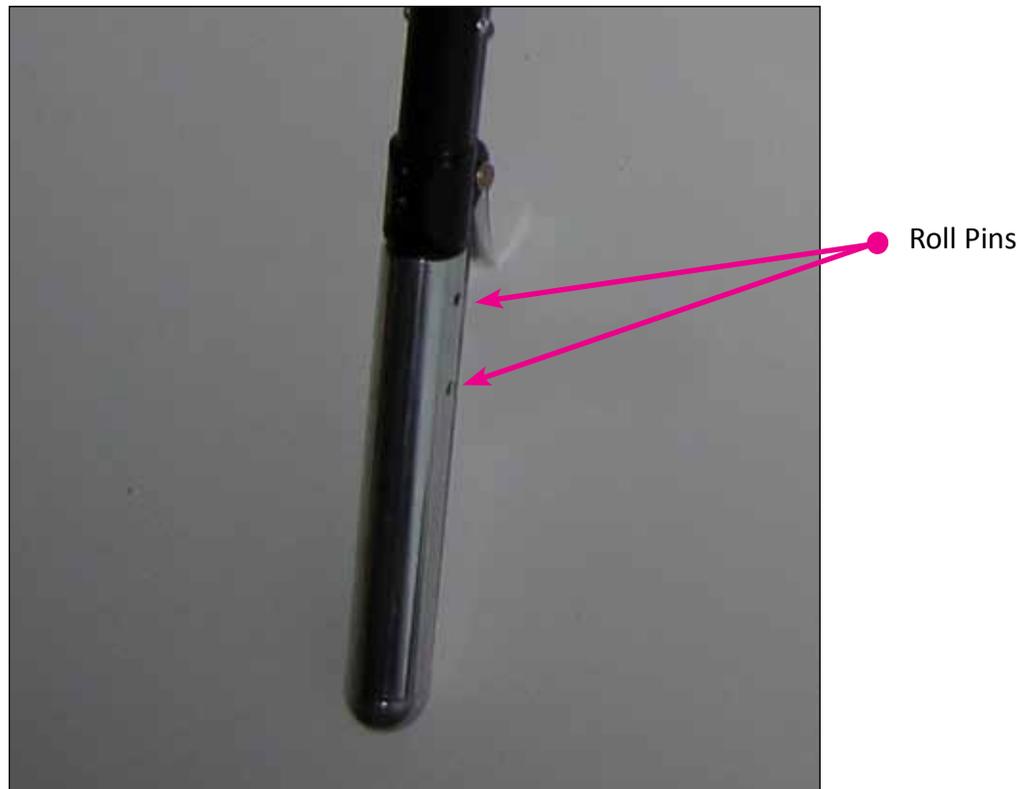
*Photo 032***SECTION 2****Step 11. HANDLE ASSEMBLY**

Insert flap handle knob SC32214-001 into the end of flap handle SC32213-001. Add Loctite #271 to the lower end of flap handle knob and use a rubber mallet to insert it into the flap handle. This is an interference fit and will go in hard. You MUST keep the knob vertical with the handle to get a good fit without deforming the handle. This step will take patience and perseverance to accomplish.

*Photo 033**Photo 034*

SECTION 2**Step 12. HANDLE INSTALLATION**

Slide handle onto flap handle arm and install roll pins MS16562-225. The handle will fit tight and will need to be pushed into place with some force. A hammer is not recommended for this step. Align the holes in the flap handle with the holes in the flap lever arm, use a hammer to drive the roll pins into place. You may need to insert a pin that will fit into the roll pin to help guide it into the hole on the opposite side of where it started. Use Figure AM1 to help orientate parts and assemblies.

*Photo 035*

LOG & INSPECTION SHEET# 1**Inspection point**

	INSPECTION ITEMS	BUILDER	ALTERNATE
1.2	Trigger motion is smooth and unobstructed.		
1.2	Pawl moves smoothly thru slot.		
1.3	All pins are safetied with cotter pins.		
1.4	Handle is polished without scratches.		
1.5	Handle blocks are lubricated and move freely.		
1.6	Ensure flap handle bushings SC32215-001 are inserted into both sides of the cross bar.		

SECTION 3

Step 1. HYDRASORB PARTS

Gather the parts required for this step per Figure AM4.



Photo 036

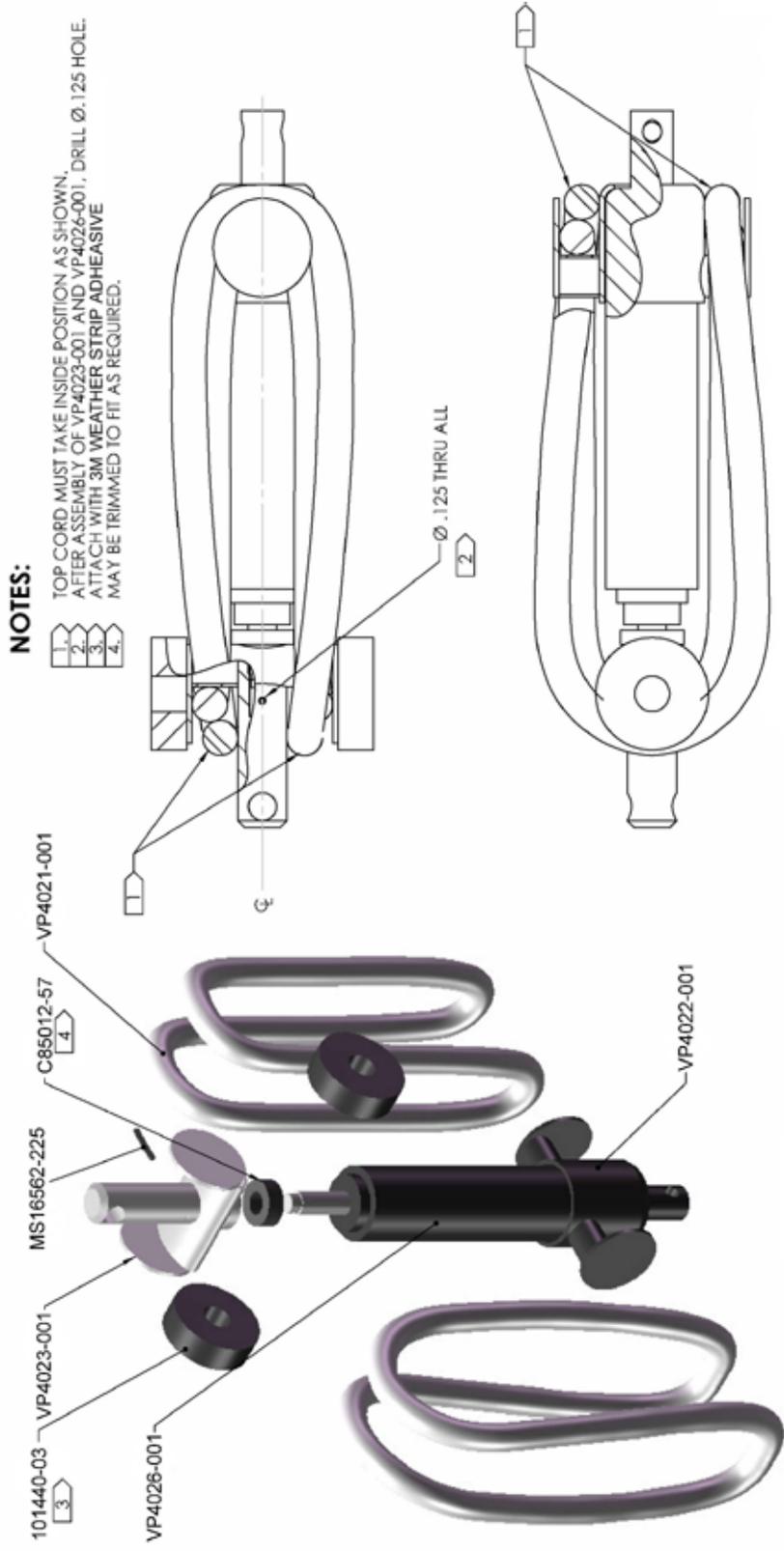


Figure AM4

SECTION 3**Step 2. HYDRASORB ASSEMBLY**

Install Rubber bumper C85012-57 per Figure AM4.



Photo 037

Screw upper bungee fitting VP4023-001 onto the hydrasorb VP4026-001 until it bottoms out.



Photo 038

*Photo 039*

Tap the upper bungee fitting lightly with a rubber or plastic mallet to tighten the fitting to the hydrasorb.

*Photo 040*

Next you will have to drill the hydrasorb shaft with a #30 drill bit to allow for the 1/8" roll pin MS16562-225 to be inserted. At the factory we use a new drill bit and cutting oil, use the predrilled hole in the fitting as a guide. Drill the hole as straight as possible. **BE VERY CAREFUL WHEN DRILLING NOT TO BREAK THE DRILL BIT OFF IN THE FITTING.** If this does happen it will destroy the hydrasorb and the fitting.



Install roll pin MS16562-225 into the hole that was drilled on the previous page. Tap the roll pin into position. If there is any roll pin protrusion, make sure it is equal on each side.

Photo 041**Photo 042**

**Photo 043****Photo 044**

Install the bungees according to Figure AM4. Make sure the bungees are fully on the hydrasorb ears. **BE CAREFUL NOT TO RIP THE OUTSIDE OF THE BUNGEE CORDS, AND BE VERY CAREFUL WHEN INSTALLING THE BUNGEE CORDS.** There are several inexpensive tools to accomplish this task. You will need to search the internet for bungee tools to install bungees on a Piper PA18. These tools will install the bungees for you. You may also check around your local airport to see if anyone owns one of these tools. **SINCE THIS IS A HAZARDOUS STEP YOU MAY CONSIDER HAVING A MECHANIC WITH PROPER TOOLING INSTALL THE BUNGEE'S FOR YOU.**



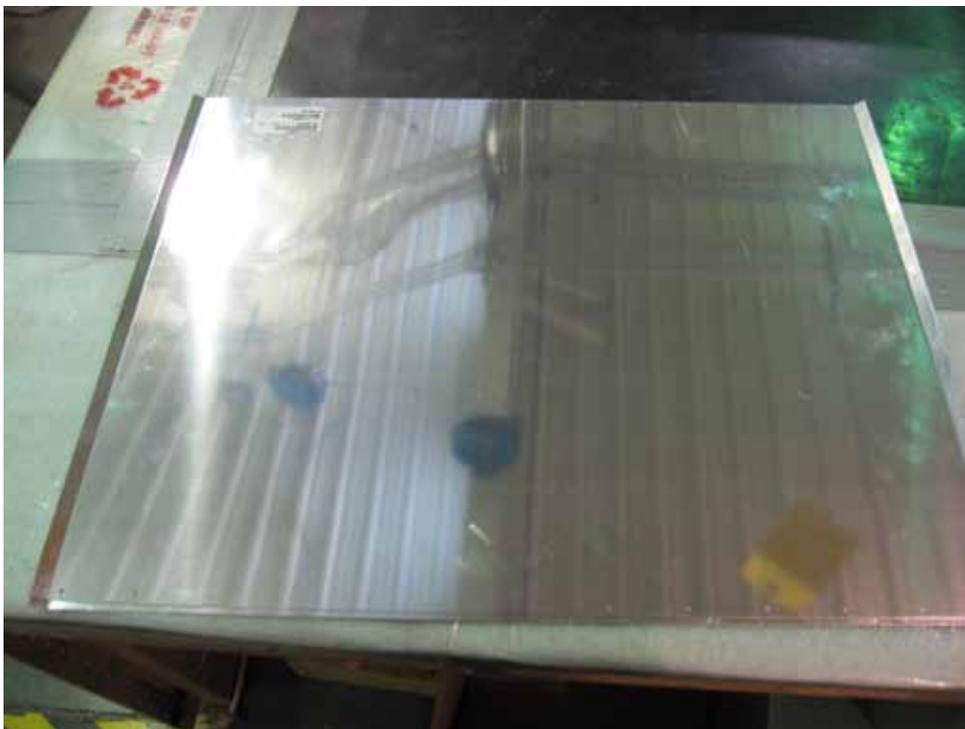
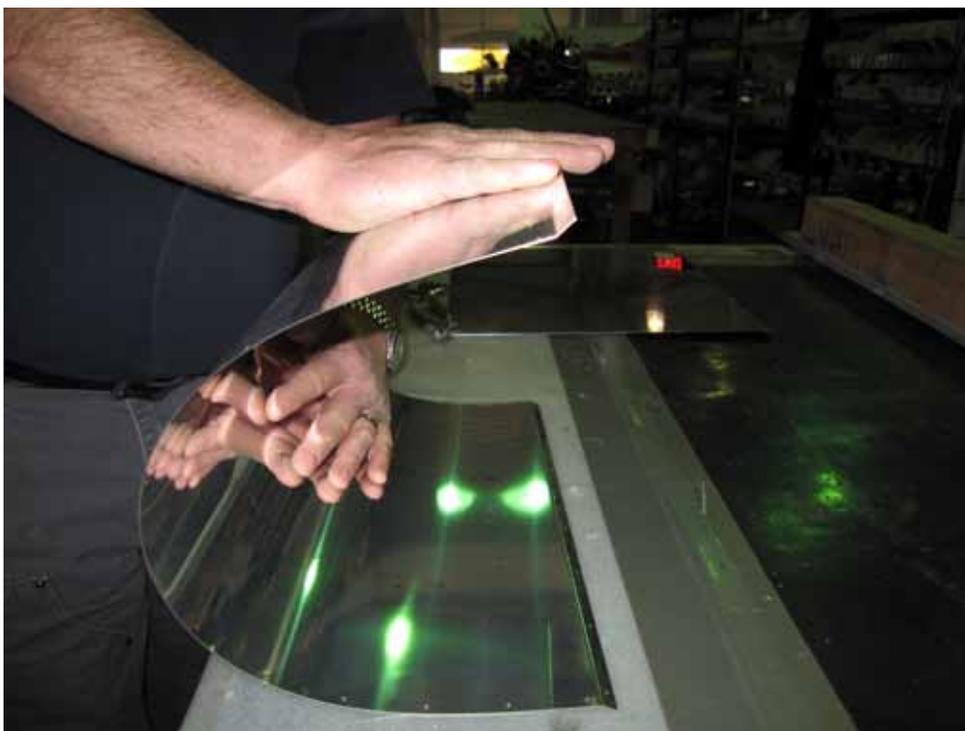
Photo 045



Photo 046



Photo 047

SECTION 4 BUNGEE COVER ASSEMBLY**Photo 048****Photo 049**

Gather the parts required for this step per Figure AM5. Bring the two edges of 101436-02 together as shown in Photo 049 and Photo 050, align and cleco the holes as shown in Photo 051.



Ensure the bent flanges are facing out of the teardrop when the forming process is being accomplished.

Photo 050



Photo 051

**Photo 052**

Match drill the holes in the flanges with a #40 drill bit. Install rivet MS20470AD3-3. Remove the remaining clecos and repeat the process above.

**Photo 053**



When you are finished you will have a bungee cover that looks the cover in Photo 055.

Photo 054



Photo 055

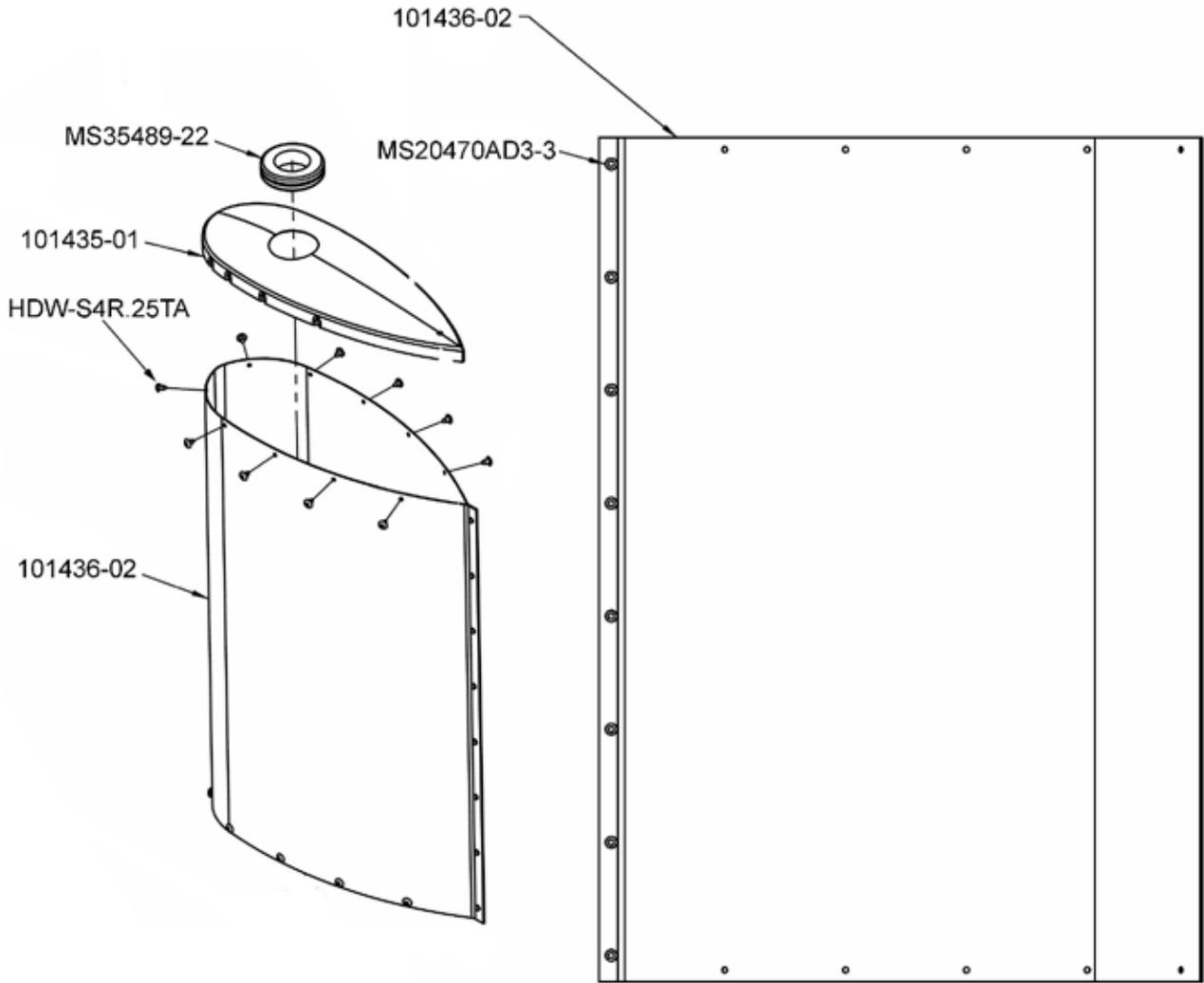


Figure AM5

After the final painting is done and you install the grommet per Figure AM5. Install the teardrop covers into the bungee cover until the start of the edge radius is equal to the edge of the bungee cover. The best way to accomplish this is by installing the rear of the teardrop into the bungee cover and inserting the front while using your hand to help form the cover to with side pressure. Match drill the teardrop using a #43 drill bit.



Photo 056



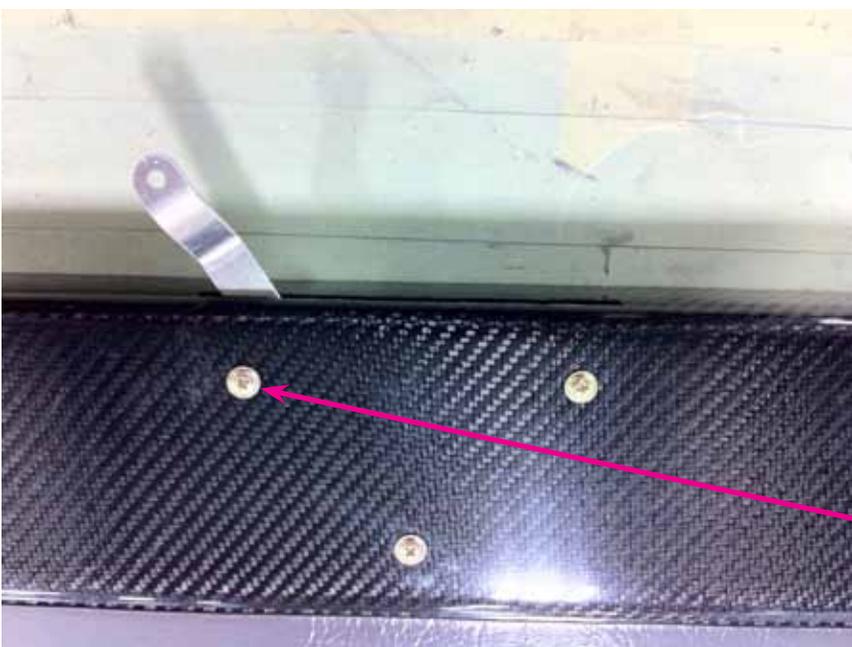
Photo 057

SECTION 5
THROTTLE QUADRANT ASSEMBLY

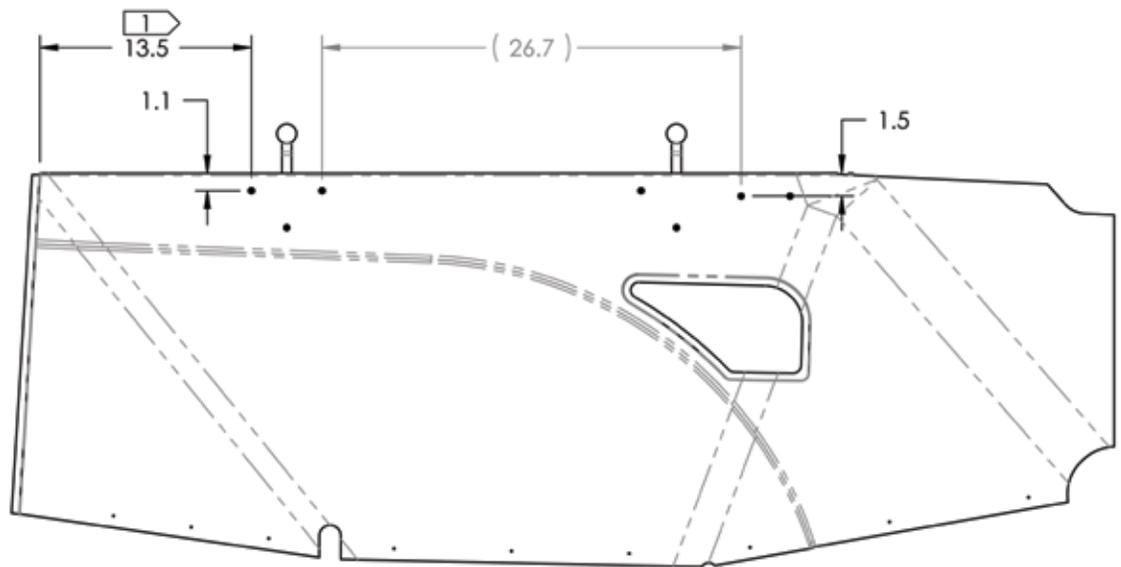
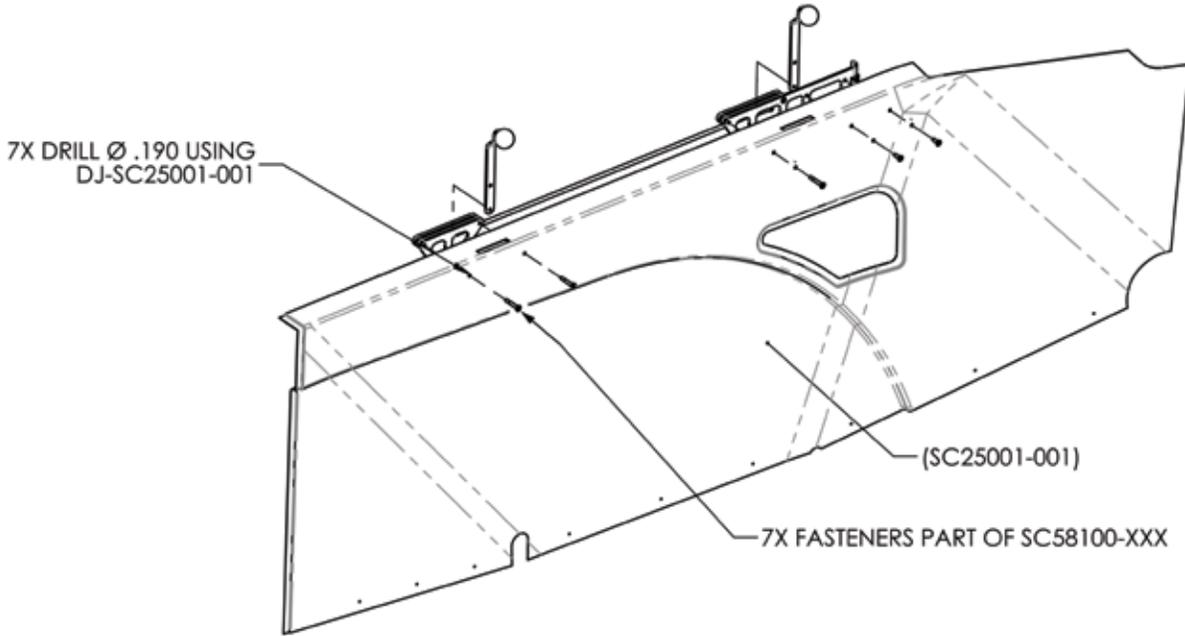
Photo 058

Rear hole in front throttle quadrant

Lay the left interior panel on a soft towel or equivalent, then mark and drill the rear hole in the aft throttle quadrant per Figure AM6. Temporarily fit SC58101-002 to drilled hole. Level SC58101-002 and match drill the remaining two holes. Measure the rear hole in the front throttle quadrant per Figure AM6 and drill with a #11 drill bit. Temporarily fit SC58101-001 to drilled hole. Level SC58101-001 and match drill the remaining three holes.


Photo 059

Rear hole in aft throttle quadrant



PANEL VIEW

NOTE:

- 1. DIMENSION TAKEN FROM AFT MATING EDGE OF PANEL.
- 2. CUT SLOT(S) TO ALLOW FOR FULL THROW OF THROTTLE LEVER.

Figure AM6

**Photo 060**

Assemble the front and rear throttle quadrant per Figure AM7 and Figure AM8, install onto the left side interior panel as shown in Photo 060 and Photo 061. Torque the nuts holding the throttle quadrants to the interior panel to 90inlbs. The throttle lever force should be 1lb. 6oz. Trim the throttle lever opening to ensure maximum throttle lever movement. The throttle lever opening should be a minimum of 1/8" past the throttle lever in the full open and full closed position.

**Photo 061**

SECTION 6 FRONT WHEEL AND BRAKE ASSEMBLY

This section will install the tire wheels and brakes. First you will install the brake backing plate per Figure AM10 and the photos below, you will notice that the brake assembly points to the front of the aircraft. Next you need to install the tires onto the wheels per the manufacturers instruction in Figure AM9. The tires can now be installed over the axle and the axle nut and cotterpin per Figure AM10 and Photo 065. Install the brake caliper per the manufacturers instruction in Figure AM9. Now slide the brake line RM5595-001 into the sheath previously installed in the landing gear leg. Notice the antichafe RM7932-001 between the caliper and the outer sheath shown in Photo 064. You will also notice that the brake line goes into the bottom of the caliper and the bleeder valve goes on the top.



Photo 062



Photo 063



Photo 064



Photo 065

Installation Instructions for Wheels

Tire & Tube Installation — When installing the tire and tube, be sure to: 1) sprinkle talc powder inside the tire to allow the tube to “move” to its seated position easily, 2) install the red dot on the tire (if so marked) adjacent to the valve stem, 3) lubricate the valve stem with a small amount of grease prior to pushing it through the grommet on the wheel, and 4) take care not to “pinch” the tube when assembling the wheel halves.

Lubricate Wheel Bearings — Grove Aircraft wheels are shipped with only a light protective coating of Aeroshell-22 grease on the bearings. Prior to use on the aircraft, you must remove and lubricate both tapered roller bearings on each wheel, using Aeroshell-22 grease or equivalent.

Torque Wheel Bolts & Nuts — For 500x5 wheels: 90 inch-pounds; for 600x6 wheels: 150 inch-pounds.

Pre-Load Wheel Bearings — It is important that the axle nut be tightened properly. With the aircraft jacked up, rotate the wheel and tire while hand-tightening the axle nut until it is hand-tight. The wheel and tire should rotate freely with little or no drag. If not, loosen the axle nut just enough so that the wheel and tire are on the “edge” of rotating freely. Install a safety cotter pin through the axle nut and axle. Check to see that the installed cotter pin does not interfere with the valve stem, or any other part of the wheel and tire assembly.

Installation Instructions for Brakes

Use the Proper Brake Fluid — Improper brake fluid will ruin the seals in the brake system. Use only standard aircraft Mil-H-5606 red hydraulic fluid. Never use automotive brake fluid!

Bleed the Brakes — The best method to fill and bleed aircraft brakes is from the bottom up. Loosely connect a 1/8" ID clear hose to the brake caliper bleeder screw from your brake fluid source. An oil can used exclusively for this purpose works well. Pump the oil can until the hose is full of fluid, with no air bubbles. Tightly secure the hose to the bleeder valve, while opening it a quarter turn. Pump fluid into the system until it fills the brake cylinder reservoir. (The reservoir filler or vent cap must be open during this process). Tighten the bleeder valve screw, remove the hose, and reseal the reservoir. Check your work by insuring that the reservoir is full and that you have a “hard pedal.”

If you have a “soft-pedal,” pump the brakes several times. Many times that will fix the problem. If the problem persists, drain the fluid and repeat the above process.

Tighten and Safety Wire the Brake Calipers — Torque the brake caliper bolts to 80 inch-pounds, and then safety wire.

Seat the Brake Pads — These non-asbestos organic composition brake pads require a thin layer of glazed material at the lining friction surface in order to provide maximum braking performance. This glazed layer is produced by the heat generated during normal braking operations, and is maintained during the life of the lining. Since new brake pads do not have this layer, it must be created by the following process:

1. Heat the pads by “dragging the brakes” while taxiing at a slow speed with moderate power. Do not use maximum braking pressure.
2. Allow the brakes to cool for 5 - 10 minutes
3. Test the results at full static run-up. If the brakes hold, break-in is complete. If they fail to hold, repeat steps 1 and 2 until they do.

Figure AM9

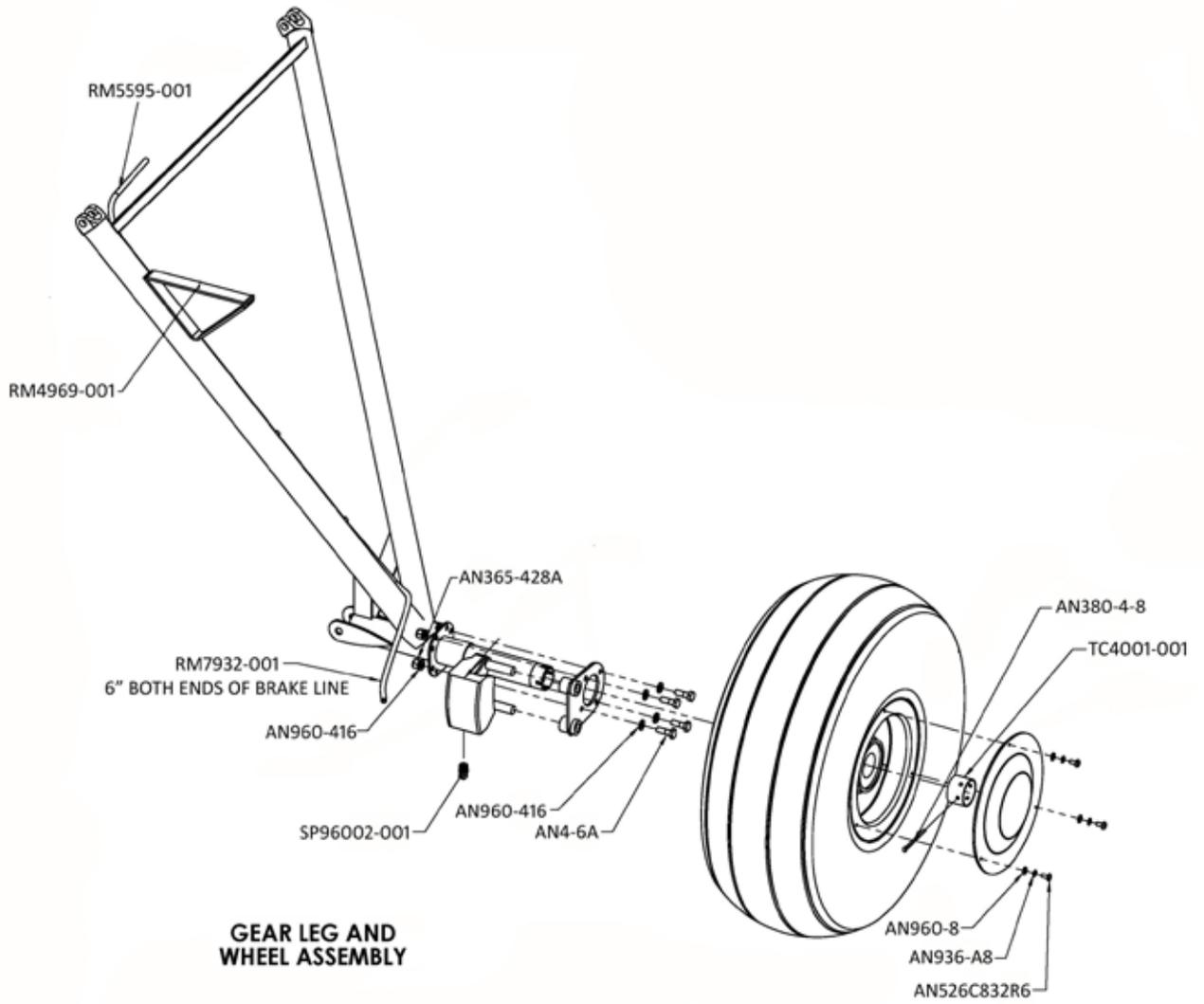


Figure AM10