

# Piper (wheel pants) Aircraft Tug Assembly Instructions



1. Carefully unpack contents of shipping carton and locate the charger and battery. The battery may or may not be installed in the drill. Plug in the charger and charge the battery for at least one hour. You will need a 1/2" and two 7/16" boxed in wrenches, two large adjustable wrenches and a 1/8" Allen wrench (For Milwaukee drill only) to assemble your tug.
2. **DEWALT DRILL:** Locate the 1/2" drive shaft and chuck the end with three flats into the Dewalt drill. Be sure the machined flats align with the jaws in the chuck and are seated on the jaw tips. Tighten by hand as hard as you can with the drill in the **drill bit image** position, and in speed selector switch setting **1**.
3. **MILWAUKEE DRILL:** Locate the 1/2" drive shaft and insert the end with one machined flat 1" into the hub of the drill. Be sure the flat aligns with threaded set screw holes. **Apply supplied blue thread lock to both set screws** and install **tightening securely** with a 1/8" Allen wrench being sure that they are centered on the machined flat of the drive shaft. Allow one-hour dry time before use. Install side handle into drill right or left side. Failure to follow this procedure exactly will cause damage to the drive shaft and will not be covered under our warranty.
4. Visually check to see the foam drive shaft alignment insert installed 8" inside the handle tube end which inserts into the tug receiver. With the drive shaft installed in the drill, insert it into the expanded handle tube end and see that it slips through the center of the foam alignment insert (A light source at the end of handle tube is helpful.) and push the drill into the handle as far as it will go noting that it fits squarely to the drill collar and that drive shaft is centered in foam alignment insert. Rotate drill per image above and tighten compression clamp to prevent drill from rotating in handle tube.
5. Install wheels onto axles with 1/4" x 2" bolts and lock nuts. The wheels are designed to be somewhat "loose" on the drive axel to protect the drive train gears and also aid in turning your tug. Air tug tires to **22-25 PSI** and maintain this air pressure at all times.
6. Install riser column [Fig.1] with 4- 5/16" X 3/4" bolts and lock nuts. **Position with arrow on bottom of riser column pointing forward toward aircraft.** Install attach assembly onto the riser aligning the swivel holes and insert the 3/4" x 3-1/2" bolt, (Lubricate with 20-30 weight oil) with threaded end toward aircraft. Install lock washer and nut and tighten that the assembly is somewhat stiff to swivel. Install red locking knob [Fig.2] into threaded hole on top of attach bar and tighten. Note that the assembly has been bench assembled and adjusted by our technicians. There may be minor scratches in the paint as such.
7. Be sure the stainless steel compression clamp is fit onto the tug handle receiver approx. 1/8" from the top. Install the battery into the drill and note that it "snaps" into place. Install the handle tube into the tug receiver fully to black depth mark rotating as necessary or lightly "bumping" the drill trigger to engage the square drive socket. Tighten compression clamp snugly with drill in the position shown. It is critical that this connection is always tight while the tug is in use.
8. Familiarize yourself with the drill operation and assure that the drive wheels rotate in both directions and that the trigger rheostat and speed selector switch (Dewalt drill only) function properly.
9. Loosen red locking knob on attach bar. Pull the round locking knob [Fig.2] rearward fully. Position tug and lower tow pins into aircraft tow plate completely and push round locking knob forward to fully engage locking pins. Re-tighten red locking knob. Push down on the tug handle and slowly pull the drill trigger all the way in to move your plane. When stopping, slowly let off on the drill trigger until plane stops. You can control towing speed with the trigger rheostat or speed changer switch.
10. To remove tug from aircraft, loosen red locking knob on attach bar. Pull round locking knob [Fig.2] rearward fully. Push down on tug handle to clear tow pins from aircraft tow plate. Power drill in reverse to back tug away from aircraft. Avoid sudden under-load starts and stops as this can damage the transmission gears in your tug. Maintain tug per ["Use and Care Guide"](#)

**NEVER LEAVE TUG ATTACHED TO AIRCRAFT WHILE NOT IN USE!**

**Practice makes perfect! Thank you for buying a Minimax Aircraft Tug!**

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