

Sancair ES Aircraft Tug Assembly Instructions



[Fig.1]



[Fig.2]



[Fig.3]



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 and a 1/8" Allen wrench to assemble your tug.
2. **MILWAUKEE DRILL:** Locate the 1/2" drive shaft and insert the end with one machined flat fully 1" into the drill hub. Be sure the flat aligns with threaded set screw holes. **Apply blue thread lock to both set screws tightening securely** with a 1/8" Allen wrench being sure that they are centered on the flat of the drive shaft. Allow one-hour dry time before use. Install side handle in drill right or left side. Failure to follow this assembly procedure exactly will cause damage to the drive shaft and will not be covered under our warranty.
3. 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 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. **Visually check inside handle tube end.** Rotate drill per image above and tighten compression clamp to prevent drill from rotating in handle tube.
4. Install wheels onto axels with 1/4" x 2" bolts and lock nuts. The wheel hubs are designed to be somewhat loose on the drive axel to protect the drive train gears and also aid in turning your tug. Air tires to **22-25 PSI** and maintain this air pressure at all times.
5. Install into the lower most holes of your tug the riser assembly [Fig.1] with 4- 5/16" X 3/4" bolts and flange nuts. Note that the assembly has been bench assembled and adjusted by our technicians. There may be minor scratches in the paint as such.
6. Be sure the stainless steel compression clamp is fit onto the tug handle receiver approx. 1/8" from the top. [Fig.2] Install the battery into the drill and note that it "snaps" into place. Install the handle tube into the tug receiver fully 1-7/8" 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 above. It is important that this connection is always tight when the tug is in use.
7. Familiarize yourself with the drill operation and assure that the drive wheels rotate in both directions using the drill forward/reverse switch and that drill rheostat and speed changer (if equipped) function properly.
8. Open right fork [Fig.3] by lifting locking bar. Power tug forward slowly to aircraft and attach to tow pins by fitting left fork hub onto aircraft left tow pin and then closing and **LOCKING** right fork to engage right tow pin. It should not be necessary to adjust the fork assembly. 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.
9. To remove tug from aircraft, lift cross-locking bar just enough to clear locking pin, open right fork, turn tug left to disengage left tow pin. Power drill in reverse to back 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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