

AIRTUG® Assembly & Operations Instructions  
MODELS: 10-S & 10-H

**Airtug, LLC is not responsible for aircraft damage sustained when proper clearance is not maintained between the tug and the aircraft.**

**WARNING:** This tug is shipped WITHOUT gas or oil in the engine. Using the 10W-30 Oil provided, fill to the “Full” mark on the dipstick. Fill the fuel tank with regular unleaded gasoline.

**Engine Operation:** Prior to starting the engine, push the throttle all the way forward to the choke position and press the **starter button by foot located** on the tug frame behind the engine. Warm starts typically do not require the choke setting. Once started, adjust the engine to a low-mid range power setting. For heavier aircraft, increase the power setting accordingly. The engine is stopped by pulling the throttle all the way back towards the operator. Use a low amp battery charger (available at Airtug 216-941-9781) to maintain a fully charged battery between use and especially in colder environments.

**Tug Operation:** The twist grip handle operates the hydrostatic transaxle. Rotating the twist grips forward or aft moves the Airtug accordingly. Rotating the grip slightly in either direction will move the tug very slowly. As you increase the rotation of the handle grips, the tug speed increases. Maximum torque is applied at very slow speeds ensuring excellent maneuverability in the hangar and around other aircraft while rotating the handle grips fully results in maximum tug speed and minimum torque. The hydrostatic transaxle provides smooth variable speed control throughout the entire range of grip motion. The twist grip is spring loaded to “return-to-brake position.” This position locks the power-train. The tug will not move in this position. Nevertheless, it is not recommended to walk away from the tug while the engine is running. While moving the aircraft, braking is effected by gradually returning the grip to the neutral or brake position. Even while moving an aircraft on a downgrade, the tug will only go as fast as you have the twist grip turned. Braking too abruptly with a heavy aircraft or moving too fast can seriously damage the differential ring gear. This is considered abuse and is not covered by the transaxle warranty. When moving an aircraft over the hangar door weather edge or door rail, it’s recommended to have a little momentum. Hangar Ramps can be purchased from Airtug.

**Aircraft Loading:** Position the Airtug up to the the nose wheel with the ramp centered on the wheel and stop. Using the strut strap or optional “J” hook (purchased separately), connect the winch hook and using the winch pull the aircraft onto the tug until the tire hits the backstop or chock accessory for aircraft with a nose wheel fairing. Make sure the winch is in the locked position prior to moving the tug. All Airtug load platforms are designed for retractable gear. All Airtug require adapters to accommodate tail wheelers or nose wheel fairings.

Note: 10-H Models (hydraulic) - Using the lever on the jack, raise the Airtug platform up an inch or two prior to moving the aircraft. Close the valve and pump the jack handle for “up” operation and open the valve to lower the platform.

**Aircraft Unloading:** Chock the aircraft first if necessary. Disconnect the strut strap or “J” hook from the aircraft and secure the winch strap to the tug. Gently pull the tug away from the aircraft.

Note: 10-H Models (hydraulic) Open the jack valve to lower the tug platform prior to unloading the aircraft.

SAVE THIS DOCUMENT AND ENSURE ALL OPERATORS READ IT PRIOR TO MOVING ANY AIRCRAFT

## General Maintenance

**Tire Pressure:** The tire pressure can range from 30psi for lighter aircraft in the 3,000 pound range to 50psi for heavier aircraft up to 16,000 pounds

**Battery:** Keep the battery fully charged. Chargers are available by calling Airtug at 216-941-9781.

**Hydrostatic Transaxle:** This is a sealed unit and should not require maintenance or fluid.

**Drive Wheel Bearings:** Permanently lubricated.

**Caster Zerk Fittings:** Needs to be lubed periodically to ensure ease of caster wheel steering.

**Drive Chains:** Apply chain lube periodically depending on use and environment.

**Tractive Ability:** If the tug seems to be losing tractive ability, it's an indication of a loose drive belt. The engine plate is mounted on slotted holes and can be moved rearward to tighten the drive belt if necessary. Simply loosen the nuts, push the engine plate towards the rear of the tug and tighten the nuts firmly.

## Assembly Instructions

**Note:** The rear frame of the tug is bolted to the skid for shipping. It is recommended to have two people available for installing the handle to the frame. Following that, it is easy for one person to complete the assembly in a short period of time.

**Tools Needed For Assembly:** Wire cutter, utility knife, 5/16" - 1/2" - 9/16" & 11/16" socket or wrench.

**Assembly Note:** All reference to "right" and "left" orientation is made while standing behind the tug and looking forward.

Remove the tug and all of the contents from the box. In addition to the tug and the handle, the following parts are included in the box with the necessary fasteners:

1. One (1) Light Kit,
2. One (1) Quart of Oil,
3. One (1) Battery,
4. One (1) Gear Strut Strap,
5. One (1) Battery Clamp,
6. Two (2) "U" Bolts for handle,
7. One (1) Caster Wheel,
8. Two (2) Zip Ties



**Step 1:** (Easiest with 2 people) Block up (raise) the rear of the tug frame approximately 10".



At the rear center section of the tug frame, attach the caster wheel underneath the tug frame by installing both “U” bolts through the top of the tug frame and fastening with the nuts below. Only turn the nuts one or two times leaving the “U” bolts very loose to receive the handle.

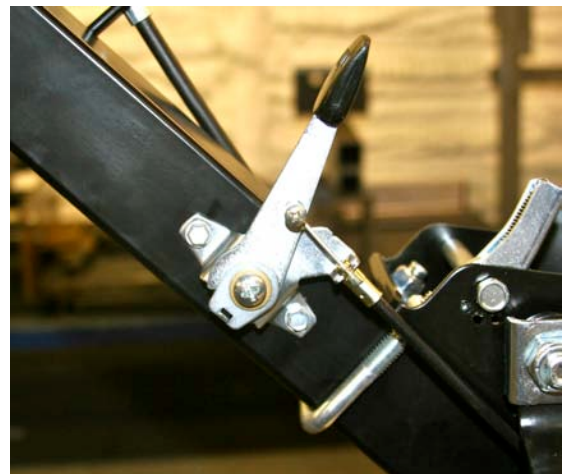


**Step 2:** (Easiest with 2 people) Pull the loose “U” bolts up and install the handle all the way through the second “U” bolt. Push the handle approximately 1 1/2” beyond the second “U” bolt. If it appears the handle will not fit through the “U” bolt, loosen the nuts below. This is a very close tolerance so the bolt will not interfere with the caster wheel. Once the handle is installed, tighten both nuts securely.

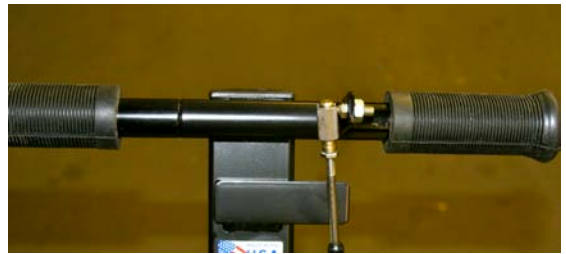


At this point - all subsequent steps can be completed with one person.

**Step 3:** The throttle cable and transmission cable are zip tied to the engine. While holding each cable separately, cut the zip tie and unravel each cable towards the rear of the tug. Attach the throttle cable to the right side of the handle using the fasteners already in the handle with a 5/16” socket.



**Step 4:** Attach the transmission cable end to the left hand grip with the “ball” on it. Then open the nuts located several inches from the hand grip on the cable and slip the cable between the bracket on the left side of the handle and then secure the nuts firmly using an 11/16” wrench.



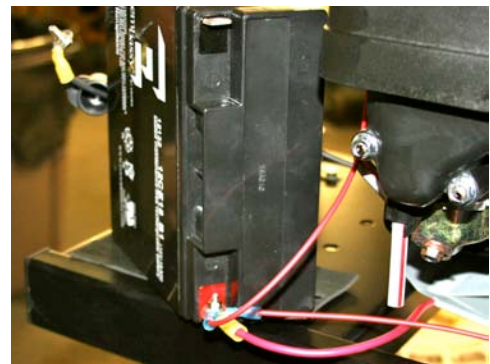
**Note:** Using the zip ties provided, secure both cables to the handle towards the bottom of the handle loosely.



**Step 5:** Install the light kit on the bracket on top of engine near the fuel tank. Connect the black wire with the larger ring terminal on the bolt holding the light and secure firmly with the nut. Lead the black wire in front of and then under the light bracket leading the wire between the engine and the fuel tank. The red wire towards the back of the light can be positioned next to the black wire - however there is no reason to lead the red wire in front of the light bracket. Leave the wires loose and hanging over the rear of the engine for now.



**Step 6:** Battery Installation & Red Wires - This a Sealed Gel Battery and installed on its side on the rubber pad located at the right rear side of the tug frame. It's easiest to position the battery on an angle hanging over the frame while connecting all the wires. The Positive (+) terminal (red) should be positioned on the bottom. There are three (3) ring terminals that are attached to the Positive (+) terminal of the battery: 1st and 2nd are the two (2) RED wires coming from the starter switch and already positioned very close to the Positive terminal of the battery, 3rd is the red wire coming from the light. Follow this assembly - Take the bolt and place 1 washer over it, put bolt through the bottom of the Positive battery terminal so the bolt is pointing up, place 2 RED starter wire ring terminals over bolt, place RED wire ring terminal from light over bolt, place washer over bolt, place lock washer over bolt and secure firmly with nut.





**Step 7: Black Wires (2) Installation** - Take the bolt and place 1 washer over it, put bolt through the bottom of the top Negative battery terminal so the bolt is pointing up, place both black wire ring terminals (one from the starter and the other from the light) over bolt, place 1 washer over bolt, place lock washer over bolt and secure firmly with nut. Place black boot over Negative terminal assembly.



**Step 8:** Install the battery bracket with the nuts on the underside of the tug frame and secure firmly with a 1/2" socket or wrench.



## Winch Operation

1. Ensure the strap is **always** over the top of the winch wheel. If you notice it on the bottom - pull the strap all the way out and wind it back in so the strap is positioned over the top of the winch wheel.
2. When loading an aircraft, press the lock lever towards the handle to the down position and pull the strap out towards the front of the tug. You should hear the winch clicking throughout this action.
3. Bring the winch lever to the neutral position which will leave the strap loose or otherwise unlocked.
4. Using the strut strap around the nose gear or the "J" hook (if purchased as an option) - connect to the hook at the end of the strap. Position the winch lever to the straight up position (locked) and load the aircraft onto the tug by cranking the winch handle clockwise. You are now ready to move the aircraft.

