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AIRTUG® Assembly & Operating Instructions
MODELS: NFE-4 & NFE-6

Airtug, LLC is not responsible for damage sustained when proper clearance is not maintained by the operator between the tug and the aircraft and its surroundings.

Tug Operation: The combination of the rocker switch and thumb throttle operate the tug in forward and reverse. The operator must select the direction of desired movement, forward or reverse. Pressing the thumb throttle slightly results in a creeper (very slow) tug speed and full pressure results in maximum tug speed. In tight quarters in and around the hangar, the tug can be operated very slowly offering greater safety when moving your aircraft. Always smooth out the transitions and have a little momentum when approaching the hangar door seal or weather edge when returning the aircraft to the hangar. Ramps should be used for any lips greater than 1/4" as the lip acts essentially like a wheel chock. When tugging the aircraft an extended distance, it is easiest and safest to to move in the plane's forward direction with the tug & aircraft behind you while controlling the tug speed with the thumb throttle. The thumb throttle is spring loaded to return to the neutral position. Braking is effected by gradually releasing the thumb throttle, but not any faster than necessary. While moving the aircraft on a downgrade, the tug will only move as fast as the operator allows.

Caution: Braking too abruptly from a higher speed can **seriously damage the differential ring gear**. This is considered abuse and will not be covered by the transaxle warranty.

*The toggle switch at the top of the handle engages the parking brake when it is in the "OFF" position. To move the unit and power the speed control, flip the toggle to the "On" position. Always leave toggle in "Off" position when not in use.

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

General Maintenance

Tire Pressure: The tire pressure can range from 15 psi for lighter aircraft, up to 28 psi for heavier aircraft.

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.

Tools Needed For Assembly: utility knife, 9/16" sockets

Assembly Note: All reference to "right" and "left" orientation is made while standing behind the tug and looking forward from the operator position. The "rear" or "back" of the tug is the end the operator stands.

Battery Maintenance:

1. Keep batteries fully charged.
2. Battery connections should be kept tight at all times. Periodic inspection is recommended.
3. Keep batteries clean from all dirt and corrosion.
4. Batteries should not be discharged to the point of no longer being able to power the tug. Keeping the batteries fully charged will greatly reduce the risk of a dead battery when you need it most.
5. Batteries should be brought up to a full charge at the earliest opportunity using the built in 24V battery charger with reverse polarity protection and float mode. The battery charger should be left on when the tug is parked to maintain proper charging and maintenance of batteries at all times. Keeping the batteries fully charged will reduce the risk of freezing in cold temperatures.
6. Avoid charging the batteries when the ambient temperature exceeds 120^{o}F.
7. Periodic battery testing is an important preventative maintenance procedure. Hydrometer readings of each cell while fully charged gives an indication of balance and the true charge level. Imbalance could mean the need for equalizing, and is also a sign of potentially improper charging or a bad cell. Voltage tests (open circuit, charged or discharged) can identify a bad or weak battery. Load testing will identify a bad battery when other methods fail. A weak battery will cause premature failure of a companion battery.
8. Extreme temperatures can substantially affect battery performance and charging. Cold temperatures reduce battery capacity and retard charging. Heat increases water usage resulting in overcharging.

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Assembly Instructions

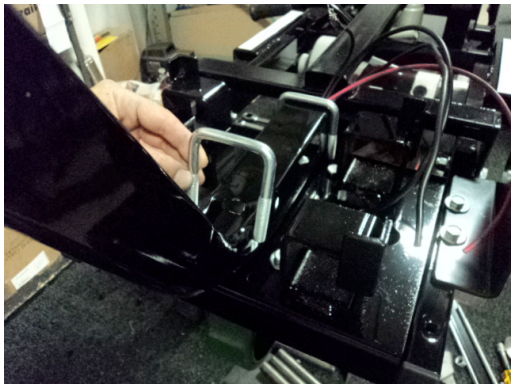
Note: It is recommended to have two people available for installing the handle to the frame. Following that, it is easy for one person to complete the assembly in a short period of time.

In addition to the tug and the handle, the following parts are included in the box with the necessary fasteners:

1. One (1) Aircraft Nose-Wheel Attachment
2. Zip Ties

Step 1: HANDLE Slide the handle through the “U” bolts (take care while sliding the wires through as well). Leave the nuts loose for now to allow the handle to slide into the “U” bolt.

Tighten the four (4) “U” bolt nuts securely under the tug frame (with a 9/16” socket).



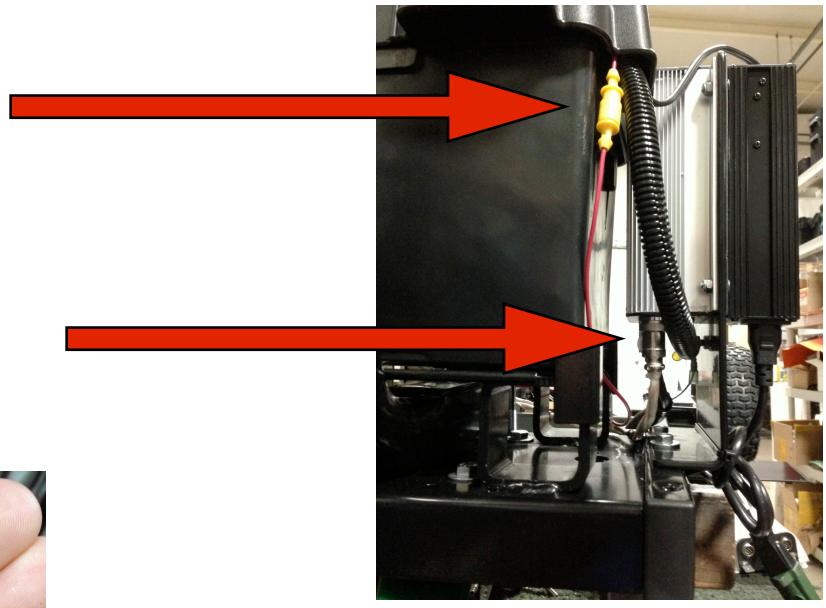
Step 2: WIRING The wires from the handle are designed to only be attached the correct way:

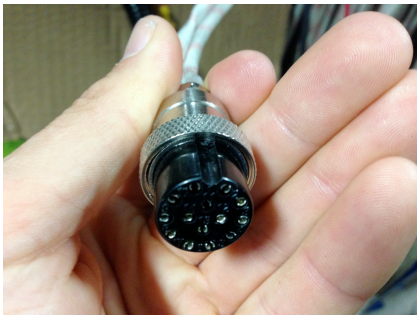
The wires from the handle need to be connected to the following wires:

a. The Blue Bullet needs to be mated with the Bullet coming from the brake on the transmission (Orange tag on side of frame.)

b. Connect the yellow Fuse Holder with its mate coming from the battery box

c. Connect the Plug to the controller - note the position of the notch in the plug





Plug goes to J2 position

** Note: There is a bolt covering the incorrect position (JI) So the cannon plug can only be inserted into opening closest to handle.

Step 3: Prior to the first use, plug the charger cable into a 110V outlet or extension cord and charge the batteries fully as indicated by the green light at the top of the charger. The orange light indicates batteries are charging. Keep the battery charger plugged in between use. See the battery charger manual for more information.

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 and frame 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. Connect 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 cranking the winch handle clockwise. You are now ready to move the aircraft.

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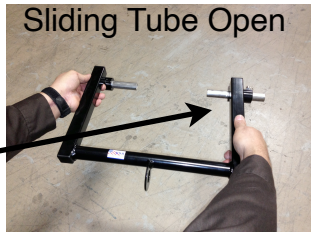
ATTACHING THE NFE TO THE AIRCRAFT

1. Hold the NFE Attachment so the tubes are on the bottom and the sliding tube is on the right side. Carefully, place around cowling.



2a. Line up the left side of the attachment first (or the non-sliding side) and gently move attachment to the right so the left side is fully engaged.

2b. Now push the right side moveable tube IN until it clicks into place.

3. Gently lay the attachment on the ground.

4a. Position the NFE Airtug® up to the the aircraft nose wheel with the ramp centered on the wheel and stop.

4b. Lower the ramp onto its white rollers. (Close the valve and pump the jack handle for “up” operation and open the valve to lower the platform)

5. Connect the winch hook to the NFE Attachment.

6. Make sure the winch is in the locked position and winch the aircraft onto the tug platform - ensure the nose-wheel / cowling is aligned with the tug. (see the Note below regarding adjusting the height of the upright receiver posts on certain models)

7. Tighten the winch until the NFE attachment is secured into the backstop.

8a. Raise the ramp so it is an inch or two off the ground (Close the valve and pump the jack handle for “up” operation and open the valve to lower the platform)

8b. **Important:** Re-tighten the winch again after the ramp has been raised.

Valve & Jack Handles

The tug is now ready to move the aircraft!

NOTE: On certain models such as the Cessna or Piper, it may be necessary to raise the moveable upright receiver posts so that the winch strap and attachment point on the aircraft, make a straight line between the winch and attachment point on the aircraft. Adjust the uprights accordingly.

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DETACHING THE NFE FROM THE AIRCRAFT

1a. Chock the aircraft wheels for safety.

1b. Lower the ramp onto the white rollers. (Open the valve to lower the platform)

Valve & Jack Handles

2. Disengage the winch and slowly back the tug away from the aircraft. The nose wheel should gently roll off the platform onto the ground.

3. Continue moving the tug backwards to allow enough room to detach the NFE Attachment from the nose-wheel.

4. Pull the plunger pin on the right side of the attachment to allow the tube to slide open.

5. Carefully remove the NFE Attachment.

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AIRTUG®, LLC,
1350 CHESTER INDUSTRIAL PKWY,
AVON, OH 44011
1-216-941-9781
Airtug@gmail.com
WWW.AIRTUG.COM