

Nose-Dragger Dragger® Assembly & Operations Instructions
MODELS: NDE-24 & NDE-24D (Deluxe)

General

Thank you for purchasing the Electric Nose-Dragger Dragger! Like all other airplane moving devices, this unit has some limitations. It will not take your aircraft over large curbs or craters, but it will perform well on hard smooth surfaces or gentle slopes. The Nose-Dragger Dragger will handle wet surfaces and can be fitted with chains for operation in light snow. It takes a little practice and planning to use, but once accustomed to the handling, it's like having a strong buddy along every time you must push your aircraft back into the hangar. Practice moving the tug forward, in reverse and the neutral setting. Next, try moving your aircraft in an open area, away from the hangar and other obstacles. When you practice moving your aircraft into the hangar for the first time, have a friend watch the wings and tail to help avoid hitting any obstructions. It also pays to have wheel chocks in place to prevent pushing back too far in the hangar. Safety lines painted on the hangar floor and ramp area will also guide you to safe parking.

Your new Nose-Dragger Dragger comes partially pre-assembled from the factory. The procedures listed below are all you need to get your new aircraft tug fully operational.

Safety

Read these instructions carefully. Be thoroughly familiar with the controls and the proper use of the Nose-Dragger-Dragger. Know how to stop it and disengage the controls quickly. Never allow children to operate it and keep them away while it is operating. Never allow adults to operate the Dragger without proper instructions. Keep the area of operation clear of all persons, particularly small children and pets. Exercise caution to avoid slipping or falling, especially when operating in reverse. Thoroughly inspect the area where the Nose-Dragger Dragger will be used and remove all foreign objects from your path. Wear proper footwear that will improve footing on slippery surfaces. Never attempt to make any adjustments while the engine (motor) is running. Always wear safety glasses or shields during operation.

Assembly Instructions

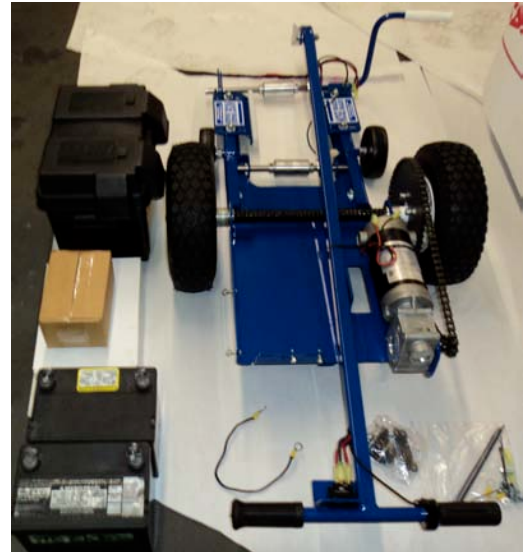
Remove all items from shipping container and spread out on floor or work bench.

Note: All reference to “right” and “left” orientation is made while standing behind the tug and looking forward.

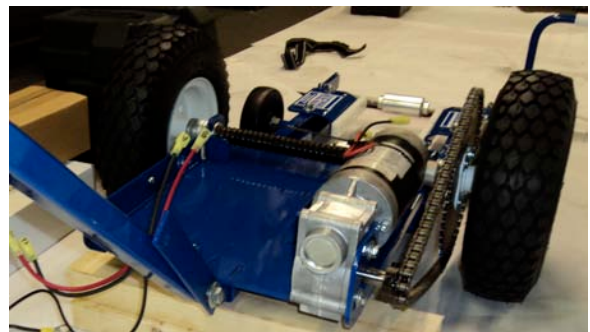
Remove the tug and all of the contents from the box. In addition to the tug and handle, the following parts are included in the box with the necessary fasteners:

Included:

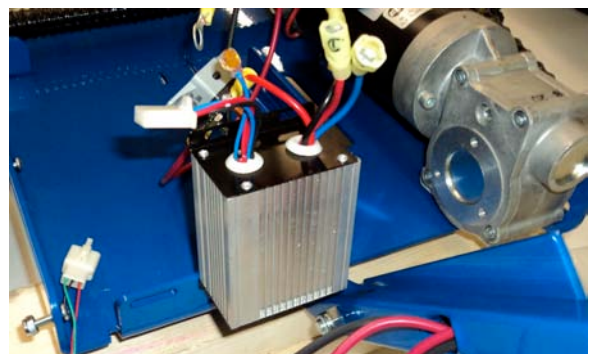
1. Frame with motor and tires assembled
2. Handle
3. 11” jumper wire with ring terminals,
4. battery box and strap,
5. speed control,
6. zip ties and miscellaneous fasteners,
7. two (2) - 12 volt batteries (deluxe model only),
8. battery charger (deluxe model only),



Step 1: Install the tug handle by sliding the bottom section of the handle into the the slot below the rear section of the tug frame. Tighten two (2) bolts underneath the frame to hold the handle securely. Ensure the handle is fully inserted into the sleeve, all the way to the bend in the handle.



Step 2: Install the speed control at the rear section of the battery box platform on the left side of the tug handle using the fasteners provided. **Important:** The slotted connecting points at the bottom of the speed control have been increased at the factory to accept larger fasteners. Fasten the nuts to the bolts so that the nuts are on the outside of the battery box platform.



Step 3: Deluxe Model Only - Install the battery charger on the left rear section of the battery box platform using the fasteners provided with the velcro strips towards the top of the charger. Fasten the nuts to the bolts so that the nuts are on the outside of the battery box platform.



Step 4: Insert the battery box safety strap through the slotted sections of the battery box platform and leave loose for now.



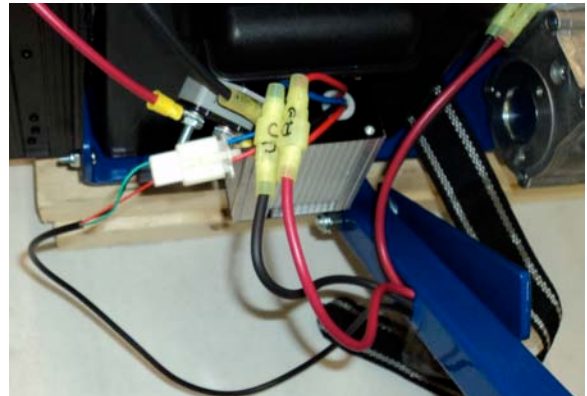
Step 5: Place the batteries on the floor and to the left side of the battery box platform. With the battery terminals positioned to the front of the battery box platform, install the bolts provided through the terminals with the head of the bolt on the front side of the terminal and leaving the nuts loose on the back side. Note: It is easiest to install the fasteners now before placing the batteries in the battery box.



Step 6: Motor Wire Connections - Connect the black "A" wire from the motor to the black "A" wire coming from the bottom of the tug handle (the connectors are marked A, B, etc). Connect the red "B" wire from the motor to the red "B" wire coming from the bottom of the tug handle. Make sure the connections are secure.



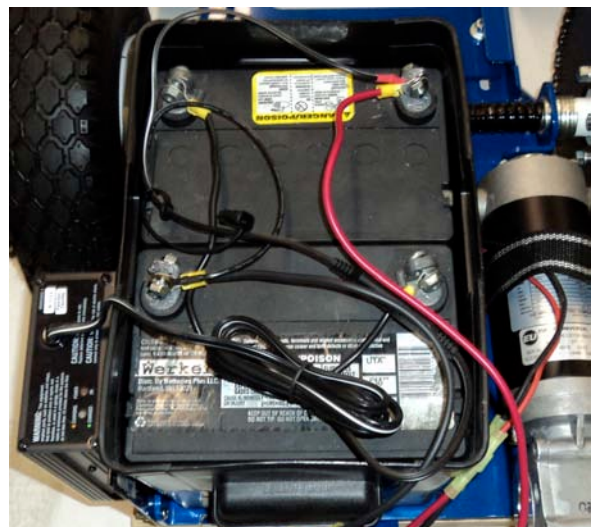
Step 7: Speed Control - Connect the “C” wire from the speed control to the “C” wire coming from the bottom of the tug handle. Connect the “D” wire from the speed control to the “D” wire coming from the bottom of the tug handle. Connect the “3 pin” connector from the speed control to the “3 pin” connector coming from the bottom of the tug handle.



Step 8: Remove the velcro sticky backing from the back of the charger (deluxe model only). Place the battery box on the battery box platform. With one hand against the left inside of the battery box and the other hand against the outside of the charger - firmly push together to seat the velcro strips. The velcro holds the battery charger firmly against the battery box. Place both batteries inside the battery box with the terminals positioned to the front of the battery box. Once the second battery is equally positioned to the first battery - place your hands on both batteries and push down with a little force to firmly seat the batteries at the the bottom of the battery box. The fit is snug by design.

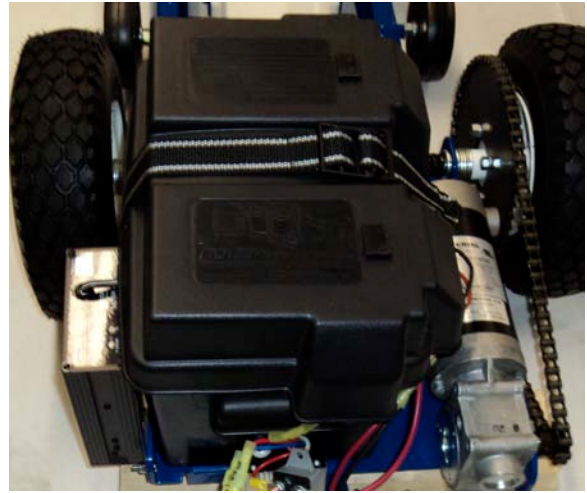


Step 9: Battery Connections - Speed Control - Using the nuts already on the battery terminals, install the 11” black jumper wire with the ring terminals at each end to the negative battery terminal on the front battery (left side) and the other end of the jumper wire to the positive battery terminal of the rear battery (right side). Leave nuts loose on the bolts for now. Note: Take care not to drop the nuts into the battery box. Connect the long red wire from the speed control to the “positive” terminal on the front battery (right side) using the fasteners provided. Connect the short black wire from the speed control to the “negative” terminal of the rear battery (left side) using the fasteners provided.



Step 10: Charger Wire Connections (deluxe model only) - Connect the black wire with the quick connect on the charger to the loose black wire with the quick connect and two (2) ring terminals at the other end. Connect the black “negative” ring terminal to the rear battery “negative” terminal (left side). Connect the red “positive” ring terminal to the front battery “positive” terminal (right side). Plug the power cord into the bottom of the charger and secure cord while not in use. Note: Alligator clips are included as an alternative to the wire with the ring terminals. (See Step 9 picture above).

Step 11: Tighten the nuts at all battery terminal connections firmly. Install the battery box cover with the long straight side positioned to the left side of the battery box. Position wires coming from battery box through the sections on the battery box top on the right side. Connect the battery box safety strap securely over the top of the battery box cover. Secure the wires to the tug frame using the zip ties provided.

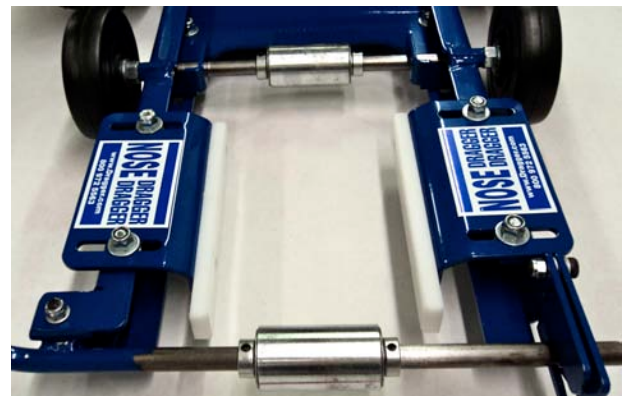


Final Step: Plug the charger (deluxe model only) into a 110V outlet and charge batteries until the “green” indicator light on the charger comes on. Keep the charger plugged in between use. See the charger manual for additional features and instructions. You are now ready for aircraft loading adjustments necessary to fit the aircraft nose wheel to the tug once the batteries are fully charged.

Exhibit A



Exhibit B



Swing Gate - at front of tug

Tug Operation

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

Handle Switch & Variable Speed Control: The directional rocker switch mounted on the tug handle has three (3) positions: forward, neutral and reverse. Twisting the left grip forward will move the tug at the desired speed. **Note: The switch is always hot.** For prolonged battery life, disconnect the battery cable when not in use for extended periods of time.

Aircraft Loading & Unloading: The rear roller is mounted on an adjustable frame. See “Exhibit A” above and notice the nut on each side. A one-time adjustment must be made when using the tug for the first time. Subsequent adjustments will be necessary when using the tug with multiple aircraft. When adjusting the position of the rear roller for the first time, open the swing gate and from the neutral position push the tug so the front of the aircraft nose wheel is positioned tight against the rear roller. Close the swing gate. If the swing gate will not close, adjust the moveable frame holding the rear roller back until the swing gate will close firmly against the rear of the aircraft nose wheel. Secure the two nuts on adjustable frame firmly. Adjust the side nose wheel guide (see “Exhibit B” above) until the white nylon strips are just about (but not) touching the nose wheel. Tighten the bolts firmly to secure the guide in place.

Note: For more information on the loading sequence, please see the following link:
<https://dragger.com/Nose-Dragger-DRAGGER/> or <http://dragger.com/dragger-video-gallery/>

Use Chocks: When returning the aircraft to the hangar, use chocks to prevent hitting the rear of the hangar or other obstructions.

Practice Is Highly Recommended: Operating your new Nose-Dragger Dragger prior to hooking it up to the aircraft is essential. Get familiar with the tug by operating it in forward and reverse and at different speeds. Then try moving the aircraft in an open area. Do not attempt to park the aircraft in a tight space until you are thoroughly familiar with the tug. Always check for clearance around the entire aircraft prior to moving the aircraft.

Wheel Bearings: Should receive light oil a few times annually.

Operating Speed: The electric Nose-Dragger Dragger is designed to operate at a slow walking pace for safety. This slow speed may lead the operator to believe the motor lacks power or that the batteries are low. Actually, the motor has plenty of power, and the move from the hangar to the ramp will take only a minute or so.

24 Volt System: Purchase two (2) - 12V-35AH Model 12CE35 J Batteries

With exception of the Deluxe models - **All Electric Dragger Units Are Shipped Without Batteries Which Must Be Purchased Locally**