

SUPERTOW STRIKER

OWNERS MANUAL



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OWNERS NOTES:

Date of Purchase: _____

Machine Serial Number: _____

Purchase Date of Batteries: _____

Notes:

Supertow "Striker" Overview

Section 1

Welcome to the world of the Industry's most advanced and innovative Aircraft Tug.

Smooth, quiet, power packed machine with clutchless load and go. This machine is battery powered packed with great features and benefits such as:

Featuring the originally patented aircraft self-loading "Lazy Suzan" which prevents nosegear limits over travel concern.

All Controls at the top of handle allowing one hand operational control featuring,

Power Switch ON / OFF

Forward/ Reverse Switch

Twist Grip Throttle Control Infinite variable speed both forward and reverse.

Ramp Mode, for higher speed for travel around the ramp.

Tow Mode, for moving the aircraft in and around the hanger.

Load Mode (Boost), used in with Speed Mode Switch in the TOW Position for difficult to load aircraft.

The electromagnetic parking brake (which releases when power the main power switch in the ON position and sets when the switch is in the OFF position. If the aircraft is loaded and the main power switch is OFF the aircraft may not be moved. A handy feature when fueling or at the wash rack.

Custom designed 36 VDC Motor/ Transaxle with a high service factor.

Low profile for nose gear door clearance

Onboard anti-collision amber strobe or head light (front and back facing) **OPTIONAL**.

Safety Green Powder Coated Finish for easy identification on ramp and in hangar areas.

Unit uses three heavy duty 4D1000 flooded cell batteries, and features modular wiring harnesses for easy assembly and maintenance.

Control system is set up with two lockout safety features.

1. If the parking brake knob is lifted to release the parking brake for freewheeling the brake interlock prevents the unit from operating until the knob is pushed down into the run/tow mode.
2. If the battery charger is plugged into shore power the charger interlock prevents the unit from energizing until the power is removed.

TOP OF HANDLE SWITCH CONTROLS:

Section 2

It is important to note the **on/off** and direction (**forward/reverse**) Switches are located on the sides of the control box.

The **fast position** (hare) is for moving the unit in and around the hangar and ram areas. Not intended to Load or Tow the aircraft even though it will do so.

The **Tow mode** (tortoise) is for loading the aircraft and has a lower top speed in both directions with a limit of 300% Torque.

The **Boost mode** may only be used in the TOW MODE in the Forward Direction for difficult loading conditions. This Feature operates when the Red Boost button is pushed while opening the throttle, but must be used with care and make sure it is released as soon as the plane begins to load so as not to run the tire too far up unto the carriage.

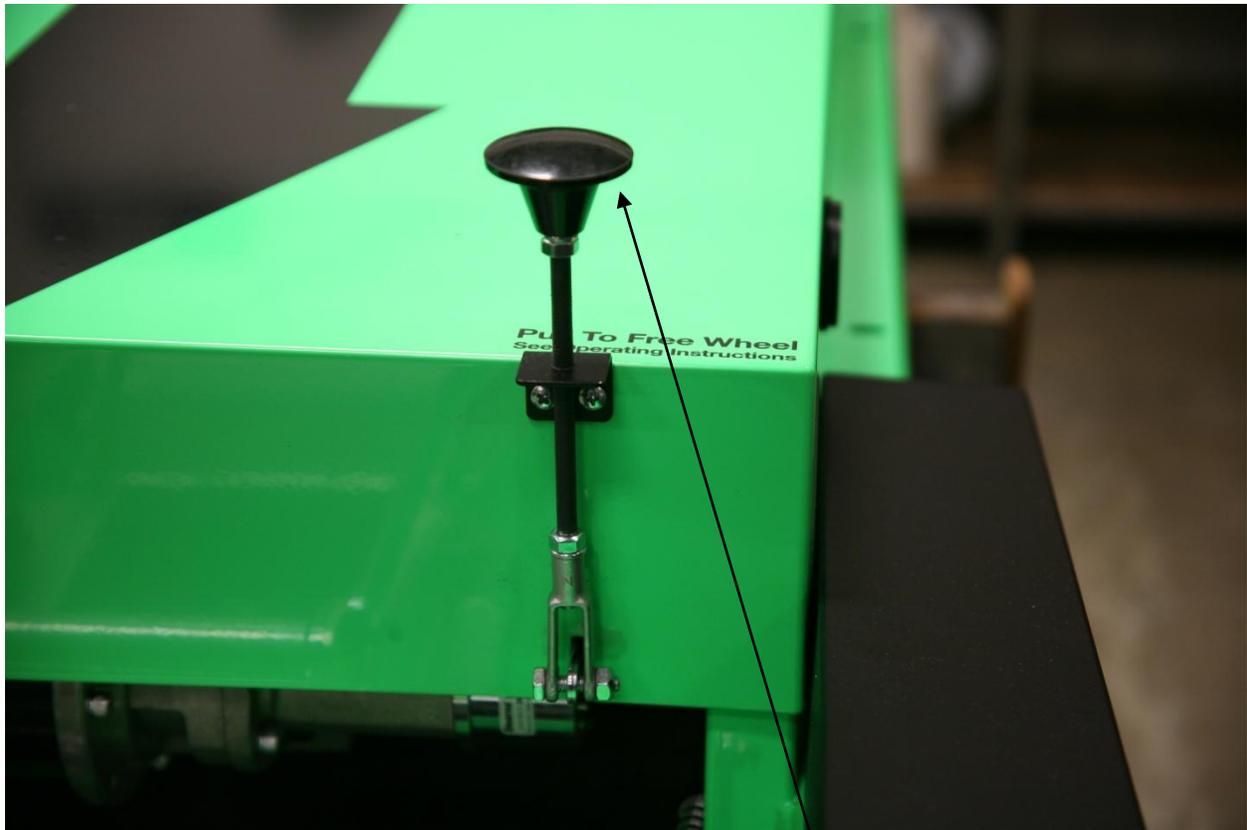
The **Twist Grip Throttle** is similar to a motorcycle. The speed ration is 60:1 so the unit may creep with a very small amount of movement and acceleration based on the weight of the load.



Top of handle control counsel

Section 3

ELECTRO-MECHANICAL PARKING BRAKE: When the "Power Switch" is in the "On" position and the mainline contactor pulls in the Parking Brake is released. It stays released until the power switch is in the "Off" position.



Parking Brake Release Handle

This feature allows the plane to be left stationary and not requiring chocking while fueling or washing as the brake does not allow the unit to move until the power switch is turned back on.

When the tug needs to be moved without power; the brake may be mechanically released by raising the parking brake knob. Handy if the batteries are low or towed out of the way if inoperable due to a safety fault.

Section 4

BATTERY CHARGING SYSTEM: The Onboard Charger will either onetime charge or left on to automatically float the batteries. The charger automatically adjust for Voltages of 110 to 250VAC, 50/60 Hertz.

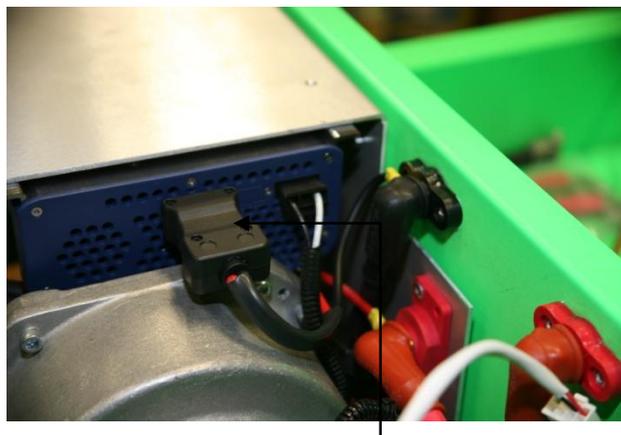
Charger power input on the right side of the Machine's Battery Cover the receptacle takes a NEMA Standard Extension Cord Connector. *See Photograph below*

The charger has internal Dip Switches to adjust for Lead Acid Flooded, AGM, or Gel Cell Batteries. unit is shipped for Flooded cells.



Onboard Charger input receptacle

Warning: NEVER attempt to unplug the Charger to Battery Connector when the charger is connected to a power outlet. Doing so will damage charger fail safe contact driver and void all warrantee's on both charge and controller.



Charger to Battery Connector

Section 5

Principals of the Lazy Suzan Cradle

The Lazy Suzan Carriage is a highly refined loading and capture device which in most all cases allows the Aircraft to be loaded without chalking the Main Gears.

Loading and moving Aircraft

The Principal of operation employs a front roller which allows the unit to roll under the main gear tire by allowing it to rotate on its bearings until the tire rolls unto the flat plate behind the front roller then up on the carriage. The tire rolls against the carriage back roller causing the carriage to raise and lock into position via the carriage side latches.

If a difficult loading condition arises the machine is provided with a boost button which must be used with caution. Approach the aircraft nose wheel and just when the roller is about to contact the tire push the boost button and the unit will develop a torque surge allowing the unit to roll under the tire. As soon as the unit begins to load release the boost button as to not force the tire out of the back of the carriage.

When the Aircraft is being moved the tug turns around the carriage center axis allowing the unit to turn under the aircraft and the nose wheel to face forward eliminating concern about nose wheel over travel.

In tight hangaring situations the tug may be turned 90 degrees from the fuselage which will turn the aircraft in its own wheel radius. Note: The geometry of the unit allows the outboard tire to turn in a sweeping arc and the inside tire to continue to turn in a slow manor which eliminates tire scrubbing or creating flat spots on the tire as does other machines in the industry.

Unloading Aircraft

To unload the Aircraft simply pull back on the carriage release handle (located 2/3 up the machine handle shaft) then put the unit in reverse and back out from under the plane.

In typical situations the aircraft tug is left on the aircraft while hangared for two reasons:

1. Not being necessary to load and unload aircraft needlessly.
2. In the event of an emergency the aircraft can be evacuated with little attention on the operators part.

Uncrating and Assembly of Unit

Section 6

Your machine has been completely assembled and tested prior to crating. The assembly process is simple if the instructions are followed in the sequence written. Just don't get ahead you yourself!

Since you have this manual it can be assumed the crate has been opened at the machine handle end (non-drive tire end) so we are not ready to proceed.

There are two cables to be installed one being the Carriage Dump Cable (Large Black with two 15/16" Jamb Nuts), and the Electrical Control Cable so let's first gather the needed tools. You'll need:

1. Number 2 Phillips Screw Driver or Drill with Apex Bit.
2. Two 7/16" Combination Box/ Open End Wrench or Socket and Ratchet
3. Two 1/2" Combination Box/ Open End Wrench or Socket and Ratchet
4. Two 9/16" Combination Box/ Open End Wrench or Socket and Ratchet
5. Adjustable Spanner (Crescent Wrench) or 15/16" Open End Wrench



To open crate remove all screws where you see the "Red Angle Kisses" as shown above. Take off the top cover and lift off the side wall frame, and remove handle assembly and follow instructions below.

Note the Crate is reusable and may be reassembled and used as a storage cabinet. Keep your crate for either moving the unit to a new location or returning it for any reason. A replacement crate is \$520.00 "well worth hanging on to."

Section 7

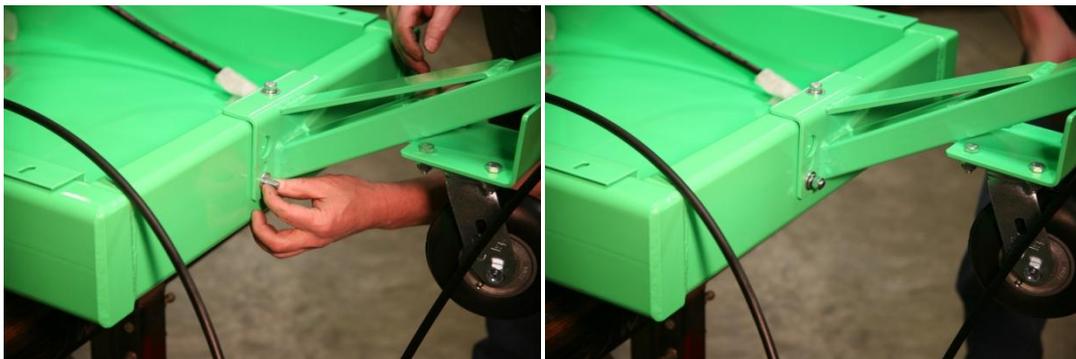
1. Using a #2 Phillips Screw Driver remove the Brake Release bracket and retaining screw from front of Machine Top Cover, and the four 7/16" Bolts on side flanges. Remove aside for now.
2. Feed the Electrical Control Cable through the back of the Large Slot on the back of the frame into battery box tray as shown below:



3. Now bring the handle assembly forward and attach the top bolt while feeding cable forward as not be caught between Frame and Handle Flange Bracket See next figures:

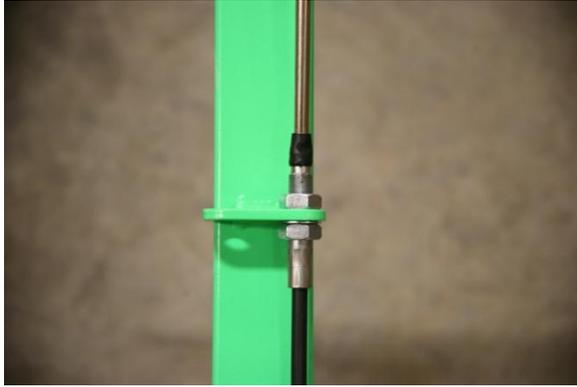


4. Install the two 5/16" Flat Washer, Lock Washer and Nut on each side of Handle Mounting Flange and tighten until Lock Washer's are crushed flat.

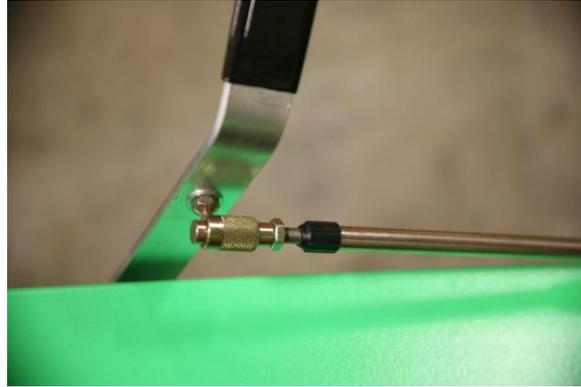


Section 8

5. Remove Carriage Release Cable from Battery Pan and remove silver 15/16" nut and lock washer. Feed cable through bracket up 2/3 way on handle and reinstall washer, nut, tighten with 15/16" Wrench. Extend cable until Ball Socket fitting reaches the ball fitting on Release Handle. Pull sleeve back and install on ball fitting:



Carriage Release Cable



Carriage Release Handle and Fitting

6. Feed Electrical Control Through hole on left inside of Battery Tray and Connect with fitting as shown below:



Control Cable Routing



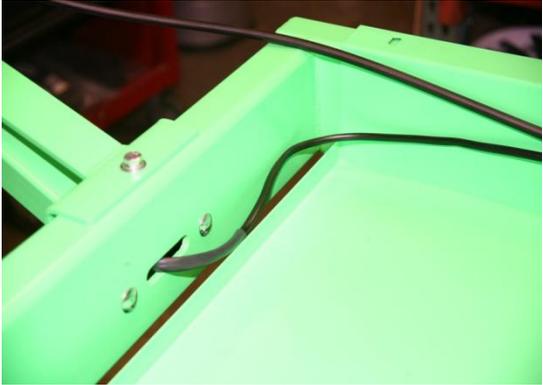
Cable Connection

Section 9

7. The Batteries now can be installed and connected. It is important not to become part of this circuit so follow the instructions and all should work well.

- a. Route Control and Carriage Release Cables to left side of Battery Tray to as not to set the batteries on them.
- b. Place the three batteries with terminals facing the Right side of machine see photo.

- c. Connect the Red Positive Cable first then the two Inter Connectors (short Cables).
- d. Lastly "Make sure the power ON/Off Switch is in the OFF Position" and connect the Black Negative Cable to the farthest rear Post.



Cable Routing



Battery Connections

Section 10

Machine Top Cover Installation

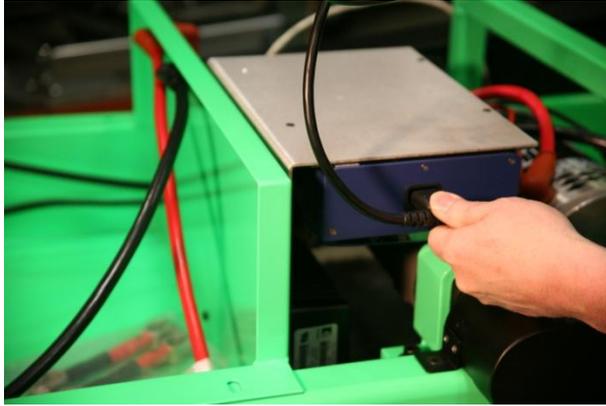
Two things which need to be done before putting the Top Cover on:

1. Install the Battery Monitor Data Cable.
2. Install Battery Charger Power Cord.

See Photo Below:



1. Battery Monitor Data Cable



2. Battery Charger Cord Connection



Battery Charger External 115 VAC Input

Now replace top cover making sure all cables are clear and not in an area where they can be crushed or pinched.

Install the two screws on the Brake Release Flange, #10 Sheetmetal screw adjacent, then the Four 7/16" Cap Screws on the side of Cover.

You are now ready to take the unit out for a test drive (do so before attempting to load or move plane). Put the Power Switch in the "ON" Position, the Mode Selector in "LOAD" and roll the throttle on like a motorcycle and away you go.

Get use to the acceleration to throttle position as it is not necessary to roll the throttle ahead more than need as the unit has a Current Limit feature which controls both the rate of acceleration and current delivered to the motor.

Use the Boost Mode with caution! It is aggressive which is needed for aircraft heavy on the nosegear.

Thank you for selecting our product and enjoy its ease of use features.

POWERTOW - SUPERTOW STRIKER

GENERAL WARRANTY AND CONDITIONS

All equipment manufactured by NORTHWEST MFG., INC, is sold on a satisfaction guaranteed basis. If at any time, within 30 days of sale, you are not satisfied, you can return the unit. The tug must be in original shape and in the original packaging only. Ship freight prepaid only and upon receipt of the unit we will immediately issue a refund in the amount of the full purchase price, excluding freight, providing the unit is received in new original condition. Call for authorization number for return.

Transaxle, control components and battery charger are warranted only by the original manufacturer. All other parts are warranted by NORTHWEST MFG. INC., on a PARTS ONLY basis for a period of 1 year from date of purchase.

NOTE: Adding any unauthorized third party attachments or accessories to any tugs in the POWERTOW line, voids all warranty and claims of responsibility by Powertow or Northwest Mfg., its parent company. Any damage to the tug or aircraft is the responsibility of the aircraft owner and accessory manufacturer.

THANK YOU FOR BUYING POWERTOW!

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