

**DRAGGER TUGS**

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# Nose-Dragger Dragger™ Gas

## ASSEMBLY AND OPERATION

### GENERAL

Thank you for purchasing the Nose-Dragger Dragger™. We hope that this unique powered dolly will help you fly more by allowing easy ground handling. Like all other airplane moving devices, this unit has some limitations. It will not take your airplane over large curbs or craters, but it will perform well on gentle slopes and hard surfaces. The Nose-Dragger Dragger™ will also handle wet surfaces and light snow. It can be fitted with snow chains. It is simple to operate. It takes some practice and planning to use it, but once accustomed to the handling, it is like having a strong buddy along every time you must push your plane back into the hangar. Practice driving forward, neutral and reverse. Next, try moving your airplane in the open, away from the hangar and other obstacles. When you practice moving the unit into the hangar, have a friend watch the wings and tail to help avoid bumping into obstructions. It also pays to have wheel chocks in place to prevent pushing back too far. Lines painted on the hangar floor and ramps will also help 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 unit fully operational.

### SAFETY

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™ is to be used and remove foreign objects. Disengage all clutches and shift into neutral before starting the engine. 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.

**IMPORTANT – WARNING!** There is **NO OIL** IN THIS ENGINE AS SHIPPED. Do not over fill crankcase with oil. Follow instructions in manual for adding oil. Manuals for engines can be found online at the following web addresses (you just need to enter the model number from your engine):

Tecumseh:

<http://www.tecumsehpower.com/frameset.php?page=CustomerService/OperatorManuals/>

Briggs & Stratton:

[http://www.briggsandstratton.com/maint\\_repair/manual\\_and\\_more/doclist.aspx?category=Engines&manual\\_type=Operator%20Manuals&menu=nav3&subMenu=3](http://www.briggsandstratton.com/maint_repair/manual_and_more/doclist.aspx?category=Engines&manual_type=Operator%20Manuals&menu=nav3&subMenu=3)

**Prevent Carbon Monoxide Poison** – Operate only in well ventilated areas.

## **TOOLS NEEDED**

3/8” Box Wrench or crescent wrench	Phillips head screw driver
7/16” Box Wrench or crescent wrench	Channel Locks
½” Box Wrench or crescent wrench	5/32 Allen Wrench
9/16” Box Wrench or crescent wrench	
3/4” Box Wrench or crescent wrench	
1 1/16” box wrench or crescent wrench	

## **ASSEMBLY**

### **HANDLE:**

Install the handle on the Dragger™ using setscrew/bolts provided. Be sure the handle is fully inserted before tightening the bolts. The small moving part at the base of the handle is a “kick stand”. Lower it to stabilize the unit when loading/unloading. This kick stand should be in an up position when moving the airplane.

### **KILL SWITCH:** (in plastic bag with zip ties)

After installing handle, mount kill switch to the handle next to the right grip and attach to spade terminal (wire coiled & zip tied to side of engine).

### **AIRCRAFT WITH WHEEL PANTS:**

Nylon side guides must be in a low inverted position to avoid contact with the wheel pants. If not moving airplanes with fairings just set the nylon guides in the “highest” position. Also, to insure proper fit, the nose-wheel tire must be properly inflated. Also, check Dragger™ wheels for proper inflation. Also, remove the bumper bar (see #3 under adjustments also).

### **SWING GATE:**

For shipping, the swing gate is removed, and will need to be re-installed to the front of the unit. The nut and bolt are ready in the frame

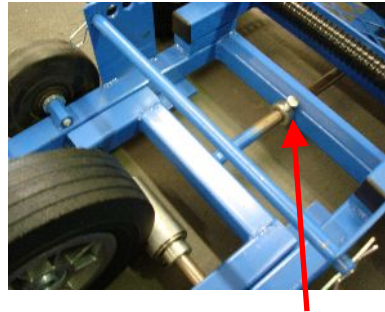
### **CLUTCH:**

Engine runs at constant speed with a belt-tightening pulley acting as a clutch. When handle is relaxed, the idle pulley should still be putting light tension on the belt. After installing the handle into the frame, mount the 'clutch handle' onto the handle next to the grip. The clutch tension may need to be adjusted due to shipping but was set at the factory. Adjust for tight belt tension when clutch handle is squeezed.

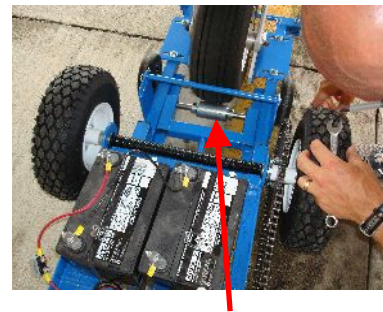
## **ADJUSTMENTS**

### **1. ADJUSTING THE ROLLERS / LOADING:**

The rear roller is mounted on a floating frame. A one-time adjustment must be made when going from a large nose wheel tire to a small one. Place the Nose-Dragger Dragger™ on plane, drop the kickstand and close the swing gate, then slide the collar back to the stop and lock the setscrew until both rear and front rollers are low and snug against the tire of the nose wheel. The Swing-gate should still open and close, and latch with a small effort (push firmly down when swinging and latching the gate).



Collar with set screw

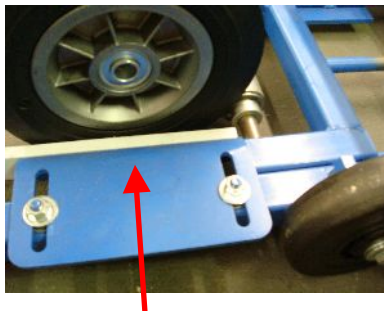


Roller in contact w/ nose-

wheel

### **2. ADJUSTING THE NYLON SIDE GUIDE:**

Side guides should allow light contact with the sidewall of the tire. Keeping the side guide as high as possible will ensure good turning ability (the guide can be flipped so the nylon is up to achieve desired contact on wheel). Washers may be used to shim the side guides up.



## Nylon Side Guide

### **3. RESTRAINT SYSTEM**

The bumper bar prevents the nose wheel from over-riding toward the operator. Place the bumper bar in a position close to the nose wheel. The bumper bar cannot be used on airplanes with wheel pants. Many times the plane can be moved on level surface without using the bumper bar. You be the judge, but remember “better safe than sorry.”



Bumber Bar

### **4. TIRE PRESSURE:**

The tire of both airplane and the Dragger must be properly inflated when moving the aircraft. Use 30-40 P.S.I. for air wheels on the Nose-Dragger Dragger™.

## **OPERATIONS**

### **MOVING THE UNIT WITHOUT POWER:**

Just lift on the handlebar until main wheels are off the surface, and roll the unit around on the small front wheels (casters).

### **TRANSMISSION:**

Gearshift lever is blue and extends above transmission. It has three (3) speeds when towing and one speed when pulling. Never leaving the unit running and unattended. For starters, use low gear only (one notch past neutral) for both forward and reverse.

### **KILL SWITCH:**

Should a quick shut-off be needed, a Kill Switch is installed on the handle (red button). The wire from the Kill Switch should be plugged into a second wire, which leads to the ignition ground near the engine throttle.

### **OPERATING SPEED**

The unit is designed to operate at a slow walking pace for safety. This slow speed will sometimes lead the operator to believe the motor lacks power. Actually, the motor has plenty of power, and the move from hangar to ramp will take only a minute.

### USE CHOCKS

Use chocks when backing into a tight parking space to protect against accidental collision with objects or walls nearby.

### PRACTICE IS HIGHLY RECOMMENDED

Operating your new Nose-Dragger Dragger™ before hooking up to the plane is essential. Get familiar with handling, speed, maneuvering, etc. Then try moving the airplane in the open. Do not attempt to park in a tight space until you are thoroughly familiar with the unit. Always check for clearance around the fuselage and propeller.

### SWING GATE ROLLER

The latch can be released with your foot. The swing gate roller assembly swings open to allow the Nose-Dragger Dragger™ to be pushed on to the nose-wheel. Next, lower the kickstand. To close, push down firmly on the swing gate handle to stabilize the Nose-Dragger Dragger™ against the ground and close the swing gate. Rollers should now be pressing against the nose wheel. Be sure the gate is latched before moving the airplane. Use of the kickstand, at rear of unit helps the hook up procedure.



Kick stand

Latch

### TRACTION

When accelerating, push down on the handle. This will give immediate traction. Operator must continue using “down pressure” on handle while moving the plane with the exception of turning.

### STEERING / TURNING

Steering is accomplished by lifting on the handlebar. The nylon side guides direct the nose-wheel as they press against the tire sidewall. It is sometimes helpful to stop the motion and then lift and turn to desired direction.

### CASTERING NOSE WHEELS SUCH AS CIRRUS, DIAMOND, GRUMMAN, V-“A”

- Caster wheels must be in forward location. This will help steering.
- Front and rear rollers must be adjusted for firm contact with nose wheel (low and snug) to prevent dolly parts from contacting the wheel fairings.
- For proper steering, the nylon side guides must be close to but not touching the nose wheel sidewall. Use flat washers as shims for fine-tuning this fit. An occasional spray of ArmorAll will help keep this area friction-free.

- The most troubling problem in using the Nose-Dragger Dragger™ on a caster nose wheel is that the nose wheel constantly tries to swivel when pushing back. It will usually go straight for a few feet, but eventually it will try to turn. When this happens, the operator must stop, lift on the handle, move the handle laterally to correct, and then restart. This maneuver sounds difficult but it will get easier as the operator gains experience.

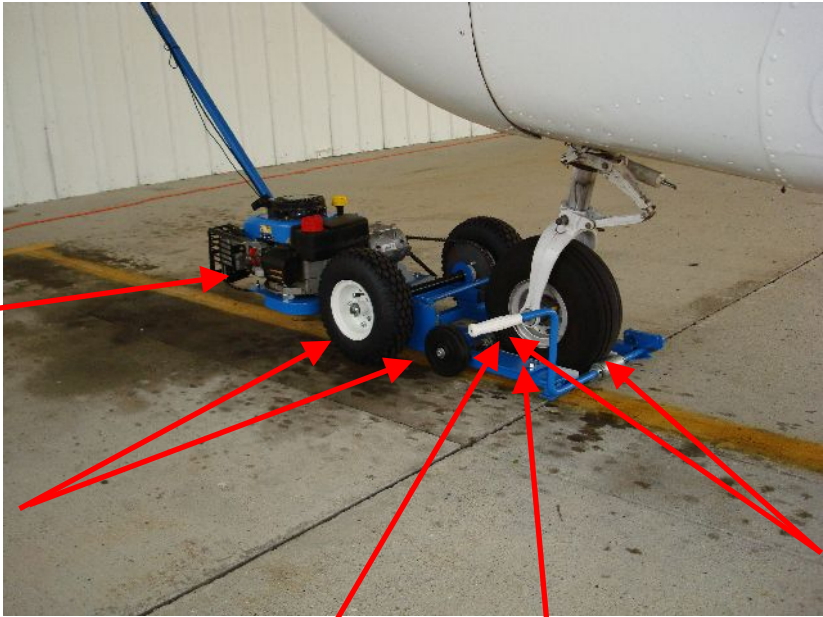
**\*\*\*CAUTION\*\*\***

Do not attempt to steer the nose wheel of the airplane beyond manufacturer's limits, as damage may occur.

First time on plane, you must make sure all four (4) Dragger wheels make contact with the ground and both rollers make positive contact with the nose-wheel tire as shown below.

Kick stand must be in down position to help install Dragger on plane. Once the Dragger is ready to go, then rotate the kick stand up and out of the way.

Dragger Wheels



Rollers

The rear roller must be locked in place using the collar & set screw/bolt against the frame member. This will keep the rollers low on your tire.

Adjust the side guides up to the tire so that it lightly contacts the tire.

Take your time and get to know your **Nose-Dragger Dragger™**. It will serve you well. For problems or questions? Please call Dragger at 800-535-8640 (9am - 4pm EST)