



# DOWN AND LOCKED

The Best in R/C Landing Gear

- SILVER SERIES 60 -

ELECTRIC RETRACT INSTRUCTIONS





Thank you for purchasing our high quality retract system! We hope you will soon be experiencing the joy of flicking the retract switch with confidence and then start your landing approach knowing there's a solid undercarriage to land on.

### SPECIFICATIONS:

Operating voltage input: 5V - 12,4V

For use on Aircraft weighing : 3 - 6 Kg  
(6-13 Lbs)

Gear retraction speed: 4,2 Seconds / 90  
Degrees

Note this will remain constant regardless of your input Voltage as our ACE controller includes voltage regulation and will supply constant 6,6V to the retracts at all times. Regular 60 sized units have the same footprint as the E-Flite 60-120 series.

### WARNING:

To experience the joys of reliable retracts fully, this product needs to be properly installed according to the instructions, also using common sense for adjustments to suit your particular model if needed. Failure to do so can result in injury.

Although the worst damage you can get yourself into, while installing a set of retracts or operating it when your plane is stationary, is a pinched/bruised finger it is

important to remember that a model plane can inflict serious damage, injury and death. The larger the plane is, the larger the damage when it goes out of control, which is why you want to do a proper install and also want solid reliable undercarriage to ensure your plane is controllable during take offs and landings.

Our small retracts 30 (Bronze Series) and 60 Size (Silver Series) are supplied with coil struts which needs to be cut to required length.

### INSTALLATION PROCESS:

First familiarize yourself with the electronics and connections before installing the mechanisms.



A. Plug the connector from each gear into the slots marked Gear on the ACE controller. Note correct polarity of the plugs, incorrect connections will not damage the ACE unit but the retract units will not work at all until correctly installed. Install the ACE controller in an area where it will not be exposed to any fuel, oil or moisture.

The ACE Power system incorporates its

own voltage regulation, which secures your receiver from any power surges and protects your receiver.

Please note that the 30 and 60 sized retracts use very little power and during normal use will have enough power available from the regular receiver systems.

When you want to use power from the higher voltage motor battery system, to drive the retracts, the jumper can be removed and used for inserting power direct from another system. This can easily be achieved by inserting a Y-lead into the battery and plug the one end into the Aux port. Also note that should you use the Aux power system both should be on and connected before the gear will operate.

B. Connect the supplied male to male JR type wire from the Receiver retract channel to the Rec port on the ACE controller, making sure the signal wire (Orange) is closest towards the Down and Locked logo.

Note there is an "Aux Battery" port next to the Receiver port with a jumper inserted to bridge the top 2 connectors. The jumper can be removed and the port used for an auxiliary battery if needed.

C. Also note the LED's in the controller will light up as soon as it has power and will be showing you in what mode the controller is in:

1. **Solid Red** Wheels up and locked
2. **Flashing Red** Wheels being retracted
3. **Solid Green** Wheels down and locked
4. **Flashing Green** Wheels being extended

When you switch the plane on, the controller will still be in the position it was switched off last time, however your wheels will not react until you have aligned the gear switch position with the controller position. So if your gear is out, but the switch on the radio is in, you will first need to switch the gear switch to the out position and from there the controller will start to react to the radio signal again.

When the switch retract position is opposite to the indicated action by the controller use the reversing function on your radio to correct it so gear down on the radio switch will activate the green LED's on the controller.

#### TOOLS NEEDED TO INSTALL:

1. Drill or Dremel tool.
2. Cutoff wheel.
3. Screwdriver
4. Sharpie
5. Threadlock
6. Hex wrenches - 1,5mm, 2mm

#### INSTALLING THE MECHANISMS

Note we do not supply Hex wrenches because the grub screws used in our products are stainless steel and it is best to use the high quality hardened steel Hex drivers, available from model shops, to enable you to torque the grub screws

properly and not have stripped heads or drivers.

Do not use ball type hex drivers on the strut screws, only on wheel collars if needed. Apply threadlock to all the retaining screws and fasten them properly.

**TIP:** To determine the correct places where the flats to secure the grub screws need to be made, you can slightly tighten the screws and move/turn the shaft or strut slightly. This action will leave slight markings where the grub screw comes into contact with the strut and can be used as the markings where the flats need to be grinded.

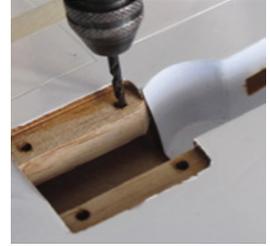
Also note our struts and shafts are made from Stainless Steel and will require more effort to cut than other manufacturer's struts, as stainless steel is much tougher and higher quality.

Note, first install the main wheels ending with the nosegear in order to ensure the correct attitude for the plane on its wheels by adjusting the nosegear strut length as needed.

1. Ensure the retract can go freely into the space provided in the plane and you can have the retract mounting surface matched to a secure mounting area with the ability to handle forces resulting from a hard landing.

Mark the 4 mounting holes for each retract

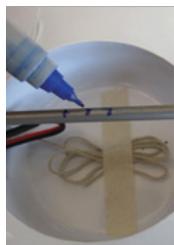
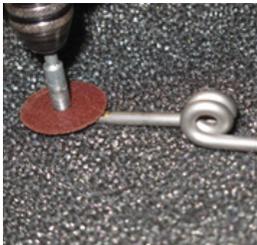
unit and drill the correct sized holes 3/32" (2,2mm) to match the size of your mounting bolts. We suggest you use countersunk screws, which can be either self tapping into the wood or retained by a nut on the backend. Do not fasten the screws yet!



2. Insert the wheel struts into the trunnion and first determine the correct length that will be needed for the axle springcoil to be at the correct place in the wing. Measure 11mm (7/16") from the trunnion end to determine the cutoff point needed and cut the excess piece off if needed.



3. Grind two flat spots on both sides of the strut to enable the grub screws in the trunnion to lock securely. Insert and lock the strut properly into the Trunnion first before bolting the retract unit into the wing.



4. Slide the wheel onto the axle and make sure it has a secure fit. If the wheel hole is too small, drill it out to the correct size. If the wheel hole is too big, you can get a piece of brass tubing that slide over the axle and drill the hole in the wheel(if needed) to secure a good fit with the tubing.

Secure the wheel collars and use threadlock on the setscrews again. If needed cut off any protruding piece of the shaft that might not fit into the depth of the wheel well.



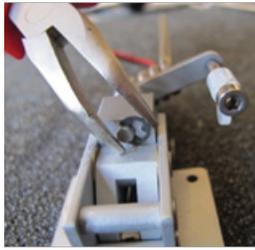
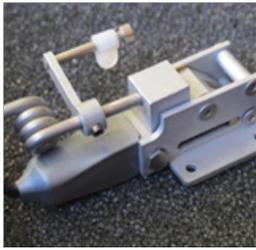
5. Slide the wheel axle onto the strut and determine the correct center point at the center of the wheel well and mark that position. Remove the wheel axle and determine the center of the 2 marks for the axle. Grind two flat spots on the center mark of the strut where the axle needs to be secured to the strut. Cut the remainder of the strut that would not be needed off and install and fasten the wheel axle properly.

6. Insert the retract unit into the wing and fasten the mounting screws ensuring the wheel does not make contact with any of the wheel well sides.



7. Test the units for correct and clear operation, making sure the retract struts or wheels does not come into contact with the plane structure during the retraction cycle and there are no obstructions in the wheel wells. Leave the wheels out and assemble your plane to enable you to determine the appropriate nosewheel strut length.

8. Nosewheel installation: First insert the nosewheel strut into the retract mechanism. Slide the E-Clip into the groove as shown in the pictures. Make sure you engage the groove properly and the clip is properly secured to prevent the nosewheel strut from falling out.



Repeat step 1 again to mount the nose-wheel unit. Repeat Steps 4 & 5 but also determine the correct length for the nose-wheel strut to ensure your plane stands level on the ground. Nose too high and it will be airborne prematurely and nose too low and you will need lots of elevator input to rotate of the ground.

9. Ensure to connect the nosegear steering pushrod clevis to the steering arm on the nosegear and adjust the length so the pushrod is centered and the steering is neutral to ensure your plane will taxi in a straight line.

**ENJOY YOUR FLYING AND YOU WILL SOON BE EXPERIENCING WHAT "LANDING WITH CONFIDENCE" IS ALL ABOUT WHEN YOU FLICK THE RETRACT SWITCH BEFORE LANDING!**

Manufactured and distributed in the USA  
by Down and Locked LLC  
1158 Chesnee road,  
Columbus  
N.C. 28722  
USA

USA +1 (828) 817 0412  
SA +27 (0)12 803 8835

## WARRANTY:

Your retract system is guaranteed for a period of 2 years against any manufacturing defects in materials or workmanship at the date of purchase by the first owner. Repairs or replacement of defective parts will be provided free of charge and returned to the customer. This service can only be provided after the customer has returned the defective product and the proof of purchase for inspection and testing to Down and Locked or it's regional agents in other countries.

This warranty will be extended to 5 years for any unused product returned with a defect in original packaging and which have never been installed in a model before.

Note: This warranty will not cover cosmetic damages and also will not cover any damages due to accidents, misuse, abuse, negligence or modification of any part of the product.

The warranty is also limited to the product only and will not extend to damages resulting from improper installation and use of our product, as we have no control over those once our product leaves the factory. Down and locked will not be liable for indirect or consequential damages or commercial loss in any way that's connected with the product.

For more information about our agents, services and products, please go to [www.downandlocked.com/co.za](http://www.downandlocked.com/co.za)  
[sales@downandlocked.com/co.za](mailto:sales@downandlocked.com/co.za)