

How to Replace a Broken Shear Pin on a Black Jack

Warning: Disconnect all power to the Black Jack before commencing!

About the Shear Pin

The shear pin in the Black Jack is a last stop safety mechanism to stop the Black Jack sustaining internal damage. It is designed to shear when there is too much internal pressure on the Black Jack. Typically, this happens when the EXT \RET switch remains depressed when the jack is fully retracted or fully extended.

The primary safety mechanism is the 30-amp thermal fuse located inside the head of the Black Jack. This fuse will blow when the current exceeds 30 amp and then reset when it cools down (1-2 minutes). This will happen 95% of the time but it does take some time to blow, (about 1.5 seconds) and sometimes the pressure is too great, and the shear pin will shear before the fuse blows. This is a guide on how to replace the shear pin.

Tools Required

Screw Driver: Phillips Head

Screw Driver Flat Head

Number 5 hex

Number 6 hex

Extension for hex to get leverage.

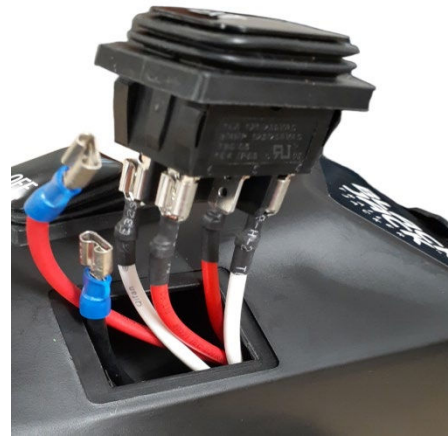
Small Hammer



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Step 1

Remove the RET\EXT switch, use a flat blade screw driver on the top and bottom of the switch to free the switch from the plastic lugs. (See photo)



When the switch is out, carefully remove the 2 middle wires. There are 3 rows of 2 wires, remove the middle 2, these are the positive and negative wires to the motor. By disconnecting them now, you will have free access to the motor and gearbox later.

Step 2

Remove the Black Cover. There a 5 Philip head screws.

Step 3

Use a number 6 Allen key, key to remove the 3 bolts on the underside of the Black Jack. The bolts are tight so you may need some extra leverage on the Allen key.

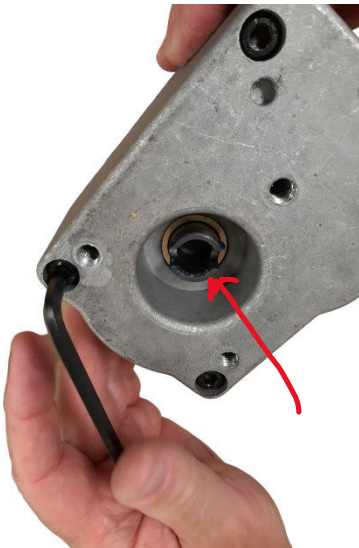
Remove the motor and gear box unit from the housing.

BLACK JACK™ TRAILER JACK



Step 4

Using a number 5 Allen key, unscrew the 4 bolts on the underside of the gear box. These bolts hold the motor and gear box together.



Use a bit of force to separate the gear box from the motor. It is a tight seal, so a bit of force is necessary. The use of a small hammer to tap on the main shaft will help separate the motor and gear box. The main shaft is in the circular recess, give it a gentle tap.

Step 5

Place the gear box on the table and locate the main worm drive shaft as circled below in red. Tap the main worm drive shaft downward with a small hammer until it releases from the main gear drive cog as shown. This will expose the broken shear pin.



Remove all broken pieces as you don't want any metal fragments floating inside the gear box.

Step 6

Insert the new shear pin into the main worm drive shaft and slide the shear pin down into the groove on the main gear drive cog as shown.





Step 7

That's it! You are done, now:

- Reassemble the gear box and motor using the 4 bolts. (Might need the hammer again to gently tap them together).
- Reassemble motor and gearbox unit onto the Black Jack using the 3 hex bolts.
- Re-attach the 2 power wires to the EXT\RET Switch
- Insert the EXT RET switch into the housing.
- Reinstall the Black Jack head cover.
- Test for proper operation.

Well done!!

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