2773630
Cable Tensioner Installation

Caution: Always wear safety glasses and gloves. Disconnect all power to the trolling motor before beginning any work or maintenance. Johnson Outdoors Inc. is not responsible for any damage due to improper rigging or installation. If you do not have the skills, experience and tools to perform the following maintenance and repairs, we recommend you seek the help of a Minn Kota Authorized Service Center. A list of Authorized Service Centers can be found at www.minnkotamotors.com/Authorized-Service-Providers. Or contact our Technical Service Department by email at service@minnkotamotors.com or, by dialing 800-227-6433.

This procedure is considered an automatic update for any 10' or 12' Talons that do not already have a lower cable tensioner. Installation of the spring loaded tensioning pulley improves Talon function and reliability by helping to maintain consistent cable tension during stow and deploy cycles.

Tools Required:

(1) #2 Phillips Screwdriver
(2) #3 Phillips Screwdriver
Assorted Blade Screwdrivers
(1) Small Visegrip Pliers
(1) Needlenose Pliers
(1) 9/16 Combination Wrench
(1) Pop Rivet Tool
(1) ½" dia x 5" Bolt/Dowel
(1) 1/8" dia drill bit
(1) 3/8" electric drill
(1) Ball Peen Hammer
(1) Long Shank 1/8" Punch
(1) A200 Rotoclip Tool
Clearcoat Paint Pen
Wrap Drum Clip From 6'/8' Tool Kit
2888891 Tool Kit, which includes:
2378889 Installation Tool
82° Countersink
Drill Template
13/64" Drill Bit
Transfer Punch

Figure 1: Required Tools

Operation Instructions:

Prep:

With the Talon off the boat and properly supported on the work bench in the support fixture (template to make support fixture included in Talon Tool Kit) and with power disconnected you are ready to begin disassembly of the Talon for installation of the cable Tensioner.

Figure 2: Talon Ready to Begin

Step 1:

Start by removing the black plastic plug from the end of the shaft that extends out the right side cover. Then remove the top cover, and right and left motor housings. Be sure to note the type and length of the screws and their proper locations for reassembly (four (4) #8-18 x 1" screws secure the top cover to the main extrusion, two (2) #8-32 x 5/8" machine screws secure the left motor housing to the main extrusion, two (2) #8-32 x 1" machine screws secure the right motor housing to the main extrusion, and four (4) #8-18 x 1 ½" Screws secure the right motor housing to the left motor housing) [See Figure 4 for a close-up of the screws used on the motor covers]. With the motor housings removed the switch bezel can be lifted straight up off of the control board. Use care to not lose the three switch buttons on the control board.

Figure 3: Remove Black Plastic Plug


Figure 4: Screws from Motor Covers


Figure 5: Carefully remove control Bezel

Step 2:

Remove the outer/external E-ring from the end of the wrap drum shaft (side opposite of the motor), then remove the black plastic spacer from between the wrap drum and wrap drum mounting bracket.


Figure 6: Remove the external e-ring

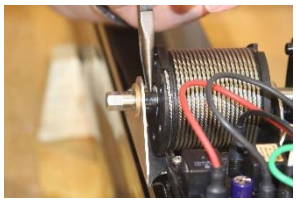
Figure 7: Remove the spacer clip


Figure 8: Spacer Clip Removed

Step 3:

With the wrap drum spacer removed slide the wrap drum to the right (away from the motor) to expose the wrap drum drive shaft pin. Use a needlenose pliers to remove the pin (use care to not lose/drop the pin through the round opening in the wrap drum mounting bracket into the body of the Talon).

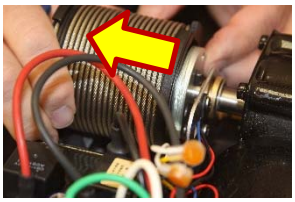
Figure 9: Slide Hub/Wrap Drum away from motor

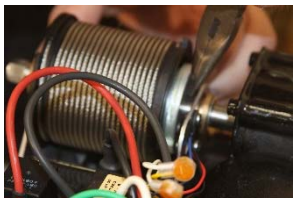
Figure 10: Retrieve the Drive Pin with a pliers


Figure 11: Close up of Drive Pin

Step 4:

Use a 9/16” open end wrench to remove the two (2) nyloc nuts that attach the motor assembly to the left side of the Talon main extrusion. With the two (2) nuts removed the motor assembly and shaft can be slid away from the main extrusion and wrap drum/wrap drum mount. (Note: the motor wires do not need to be disconnected for this procedure). The two oilite bushings are slip fits in the wrap drum mounting bracket, they can be removed and set aside until reassembly or left in place. A ½” dia. X 5” long bolt or dowel should be inserted through the wrap drum mounting bracket and wrap drum assembly to temporarily hold the wrap drum in place. The wrap drum cable clip from the 6/8’ Talon tool kit can also be used to hold the retraction cable in place on the wrap drum.


Figure 12: Remove nuts that hold the motor in place


Figure 13: Slide motor out and replace with ½” bolt

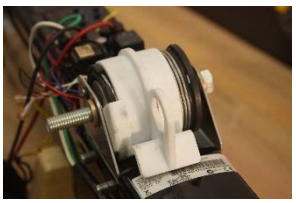
Figure 14: Use wrap drum clip to keep hub in place

Step 5:

For the next step the Talon third stage must be extended 2 or 3 inches out of the main extrusion. To do this locate the small rectangular window on the lower left side of the main extrusion. The latch that retains the third stage is located in this window. To release the third stage the black plastic 3rd stage latch must be pushed in with a small blade screwdriver while using a larger blade screwdriver to pry the 3rd stage assembly out the bottom of the main extrusion. This will expose the four (4) rivets that hold the second stage wiper assembly in place. Use the 1/8" drill bit and portable drill to remove the heads of these four (4) rivets. Use a 1/8" punch or a pliers to remove the rivet shanks. Note: Be sure to locate and remove all of the rivet shanks; if they fall out and drop into the main extrusion, 3rd stage, or 2nd stages they could cause damage during testing or use.

Figure 15: Pry out 3rd stage

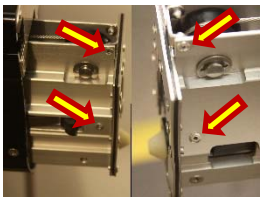

Figure 16: Rivet locations indicated by arrows

Figure 17: Drill off rivet heads

Figure 18: Retrieve rivet shanks

Special Note: If the second stage wiper you just removed does not have thirteen (13) rivets holding the wiper assembly together it should be replaced with the current p/n 2884618 wiper assembly (this is an automatic upgrade). The left example in Figure 19 is the current wiper assembly.

Figure 19: Wiper Assembly examples

Step 6:

At the bottom of the Talon main extrusion, use a 1/8" drill bit and portable drill to "spin" off/ remove the heads of the four rivets that hold the main extrusion water guard in place. After removing the heads of the four rivets the water guard can be removed. The pulled shanks of the rivets (the part of the rivet left in the main extrusion) must then be driven up into the rivet channels of the main extrusion by using a long shank 1/8" diameter pin punch and hammer. Doing this will move the rivet shanks out of the way for reassembly using four new 1/8" diameter stainless steel rivets available from Minn Koat (part number 2378601).

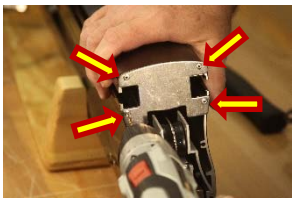

Figure 20: Remove the four rivet heads

Figure 21: Drive the shanks into the body of the Talon

Figure 22: Water guard removed, ready for next step

Step 7:

At this point the large idler pulley located at the bottom of the main extrusion must be removed. Use a small visegrip pliers clamped to the pulley flange or some other means to hold the pulley so that it can't roll up into the main extrusion when the pulley pin is removed. Next use two (2) #3 Phillips screwdrivers, one in each of the two ¼-20 x ¾" flathead countersunk screws at each end of the pulley pin. Remove at least one of the screws and while holding the visegrip pliers use one of the #3 screwdrivers to push the pulley pin out of the pulley and the main extrusion. With the pulley pin removed relax the tension on the visegrip and allow the pulley to move a short distance up into the main extrusion to release tension on the extension cables.


Figure 23: Grip flange of lower pulley


Figure 24: Use #3 Phillips drivers to remove a screw


Figure 25: Push pin out then relieve cable tension

Step 8:

Remove the dowel or bolt that was used to temporarily hold the wrap drum in the wrap drum mounting bracket. Lift the wrap drum up just clear of the bracket in order to unwrap, disconnect and remove the extension cable from the right side of the wrap drum assembly.


Figure 26: Remove cable closest to motor

Note: this is the cable that has roughly one turn on the drum.

With the cable end released from the retaining pocket of the drum the cable and idler pulley can be removed out of the bottom of the main extrusion. The ½" dowel or bolt can be reinserted to temporarily hold the wrap drum in place.

Step 9:

In this step you will be using the p/n 2378896 drill template, 13/64" drill bit, transfer punch and 82° countersink (included in 2888891 Talon Tool kit) and a smaller drill bit (probably the 1/8" bit used to remove rivets) to locate, center punch, drill and countersink the four (4) holes that will hold the new p/n 2773630 cable tensioner assembly in place. This tensioner replaces the pulley removed in steps 7 and 8. Insert the drill template into the Talon mounting bracket channel, (this is the channel where the two ¼-20 x ½" Phillips flathead screws were located). The drill template has a small lip at the end opposite of the two holes. When properly positioned in the main extrusion mounting bracket channel the lip will be against the bottom edge of the main extrusion. With the template in position insert the transfer punch in one of the holes in the template and strike the opposite end with a small ball peen hammer to center punch the hole location. Repeat this procedure for the other hole then repeat the procedure on the opposite side of the Talon. Use a 1/8" drill bit and drill to drill four (4) pilot holes at the center punched locations, then use the 13/64" drill bit and drill to drill the holes to the correct size. Use the 82° countersink and drill to countersink the four holes you just drilled. Note: Do not over countersink the four holes. When properly countersunk the heads of the four #8-16 x ½" Phillips flathead screws that will be used to hold the cable tensioner in place will be flush with the surface of the mounting bracket channel. They must not stick up above this surface to allow for the clearance of the mounting bracket strap. Be sure to coat the exposed surfaces of the countersunk holes with a clearcoat pen to prevent corrosion.


Figure 27: Tools for extrusion modification


Figure 28: Position the template in the track

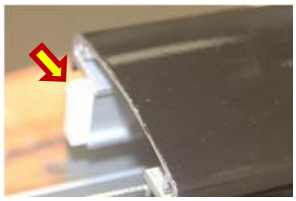
Figure 29: "L" of template against end of Talon

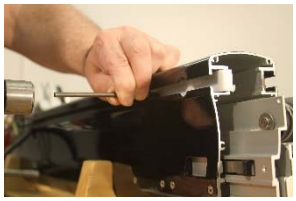
Figure 30: Use transfer punch to mark hole locations

Figure 31: Marked hole locations

Figure 32: Pilot the holes with a small drill bit

Figure 33: Complete hole with 13/64" drill bit

Figure 34: Countersink the holes

Figure 35: Top of Flat head screw from the cable tensioner kit should sit flush with lower surface of track

Step 10:

Figure 36: 2773630 Cable Tensioner Assembly

Insert the p/n 2773630 cable tensioner into the p/n 2378889 installation tool, pulley of the tensioner toward the tool handle. Insert the tensioner and tool into the bottom end of the main extrusion with the sides of the tensioner captured in the channel detail on the inside surface of the main extrusion. Position the tensioner and tool so that the pulley is just past the edge of the main extrusion. Bring the end of the extension cable up between the two arms of the installation tool and over the pulley. Use a stiff wire rod or dowel to push the cable end up the extrusion to exit between the wrap drum mounting bracket and edge of the main extrusion. Note: The cable does not exit the round opening in the mounting bracket.

Figure 37: Tensioner loaded into tool

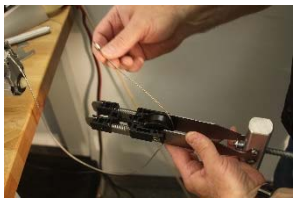

Figure 38: Route cable around tensioner

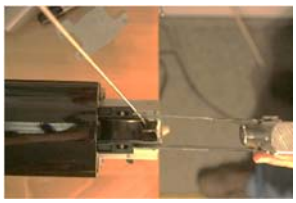

Figure 39: Installation tool arms outside of second stage

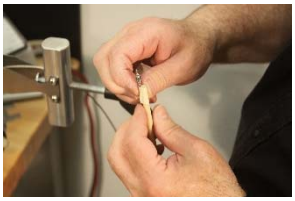

Figure 40: Tape cable end onto long rod or dowel

Figure 41: Cable end between above wrap drum bracket

Figure 42: Cable tucked against wrap drum bracket

Step 11:

Remove the dowel or bolt that has been supporting the wrap drum and with extension cable exiting the main extrusion in the correct location, insert the cable end into the retaining pocket of the wrap drum and wrap about one turn of cable around the drum making sure to seat the cable in the grooves.

Note: Try to duplicate the amount of cable that was on the drum when it was disassembled.

Figure 43: Insert cable end in wrap drum pocket

If they were removed, reinstall the oilite bushings in the wrap drum mounting bracket, then insert the motor assembly and shaft into the bushing in the bracket, through the wrap drum assembly, and out the right side of the bracket and bushing.

Note: Prior to inserting the motor and shaft assembly into the wrap drum assembly make certain that the wrap drum drive hub and torsion spring are properly preloaded. When properly preloaded the hard stop on the aluminum drive hub will be on the clockwise side of the wrap drum stop when viewed from the left/motor side of the wrap drum.

Figure 44: Wrap Drum Assembly

Reinstall the two 9/16" nyloc nuts, driveshaft pin, E-rings, and spacer removed in step 2, 3, and 4.

Note: Lift up on the upper end of the motor assembly when tightening the two 9/16" nyloc nuts so that the motor does not hang down and interfere with installation of the left motor housing.

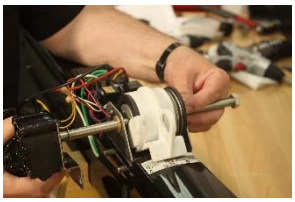
Figure 45: Reinstall the motor assembly

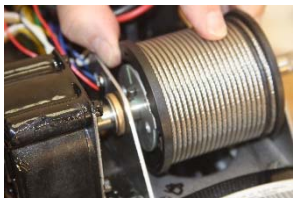
Figure 46: Reinstall the drive pin

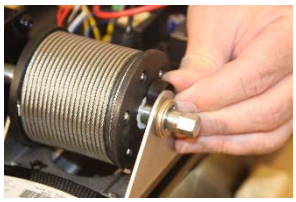
Figure 47: Reinstall the e-Clip then the wrap drum spacer

Step 12:

Look down from the top end of to make sure that the cables visible are properly routed over, around and centered on the pulleys in the 3rd and 2nd stages. Look up from the bottom to check for proper cable routing on that end also. Once all cables are confirmed to be routed properly grasp the handle of the installation tool and with the tensioning tool screw backed out the 3rd stage assembly pushed into the main extrusion, pull the handle out far enough to allow insertion of the tensioning tool spacer block. Note: The block has a hole drilled in one side to allow the end of the tensioning tool screw to be inserted. While turning the screw to pull the p/n 2773630 tensioner into place observe the cables for proper routing and position, if OK continue turning the screw until the four drilled and countersunk holes line up with the four holes in the upper end of the cable tensioner. With the holes aligned insert the four (4) #8-16 x ½" Phillips flathead screws included with the p/n 2773630 kit. With the screws installed the tensioning tool screw handle can be unscrewed, the spacer block removed and then the tensioning tool can be removed. Once again check for proper cable routing, cables on pulleys and that no cables are twisted around each other. Connect power to the unit and test deploy it. When retracting the Talon stop the retraction of the 3rd stage with 2 to 3 inches exposed to allow for installation of the 2nd stage wiper assembly. Four 1/8" Stainless steel rivets are required for this. With the wiper assembly installed fully retract the Talon and install the main extrusion water guard. Extend and retract the Talon a few times to insure proper functionality then install the switch bezel, left and right motor housings and top cover. This completes the service procedure.


Figure 48: Top view cables properly routed

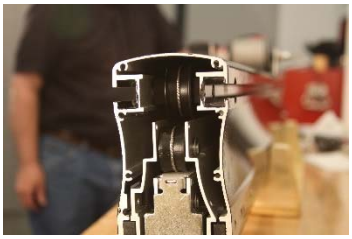
Figure 49: Bottom view cables properly routed

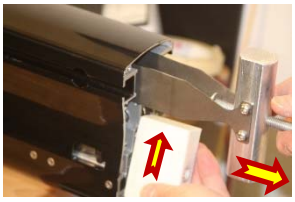
Figure 50: Pull back on the installation tool, insert block

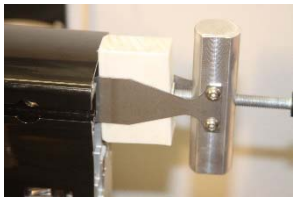
Figure 51: Block Installed


Figure 52: Tensioner alligned. Light passes through top hole.