

Excitron WS70 Wire Slider Assembly Instructions

Design and operational intent is that the spring mechanism applies 2-5 pound constant pull on the stainless steel wire rope. The wire rope has a construction giving the longest life and strength possible for its size. It has 7 bundles of 19 wires, for a total of 133 strands. The Excitron pulleys are larger diameter than the minimum, so that the expected life is much longer, perhaps 25 years of use.

The wire itself has an extremely high yield strength of 280,000 psi, higher strength than music wire. The wire rope diameter of .047" And the 133 strands is chosen to minimize rope stretch, keeping the stretch to about .10" for a 12 foot total length with a 15 pound load. Breaking load is 275 pounds, giving you a huge 20:1 safety factor. The stainless steel material resists corrosion better than almost any steel.

The strong coil spring is chosen to provide the tension so that there is never any slack around the drive pulley. Here are the basic instructions for correct wire rope assembly:

1. Position spring so that it rests firmly against the brass spring stop.
2. Insert the middle of the wire rope through the slot in the slider from the top.
3. Position the end of the spring opposite the brass spring stop against the flat end of the slot.
4. Feed the brass tensioner through the end of the slider (must remove delrin end caps to insert brass tensioner) and position the wire so that it is aligned against the steel guide.
5. Holding the slider assembly in place, attach it onto the rail from the motor end with the motor unmounted. Be sure to keep the wires separated and on their respective sides of the rail (should have a loop of wire on either end of the slider and in the opposite grooves of the rail).
6. Attach motor and all end caps and hardware.
7. With the brass tensioner loose, slip wire over both the motor pulley and tensioner pulley. Get wire as tight as possible without stretching the spring and note the position of the tensioner.
8. Take the wire off the pulleys and move the tensioner back the distance corresponding to the force desired tension of the system (the coil spring rate is 40 lbs per inch). When you have .12" to .25" of spring compression, that translates into 2-5 pound tension.
9. Adjust the screws on the side rail keepers to set play and drag of the system.