



AVL Looms, Inc.

INSTALL AND OPERATE AN E-LIFT II SYSTEM WITH SPRING LEVER FOR THE A-SERIES, PDL, TDL and UDL LOOMS

The E-Lift II replicates the action of treadling. When you activate the Foot Switch, the motor turns, and selected harnesses rise or fall. The motion is smooth, quick, and precise and does not jar the harnesses.

Review Contents and Hardware – Please check that you were shipped all parts and hardware listed here, as well as the tools and drill bits that will be required.

Package Contents

- E-Lift II Motor-Controller (1)
- Mounting blocks (2)
- Foot switch & attached cord (1)
- Power cord (1)
- Spring Lever Assembly
- Spring Lever cable (1)
- E-Lift Cam-Pulley assembly, cable, cord
- Hardware pack (1)

Required Tools

- 7/16" & 1/2" wrench
- Socket wrench
- 1/2" & 7/16" socket
- 5/32" allen wrench
- Pliers
- Drill with 11/32 & 25/64 bits

Installing the E-Lift-II Motor-Controller Assembly

1.) Remove the Front and Rear Treadle Pulley Support Cross Members and all items connected with the Treadle Assemblies, including Pulleys, Rods, Treadles and Treadle mounting hardware. It is recommended to mark each cross member for correct positioning, with reference to front/back and up/down, before removing them from the loom.

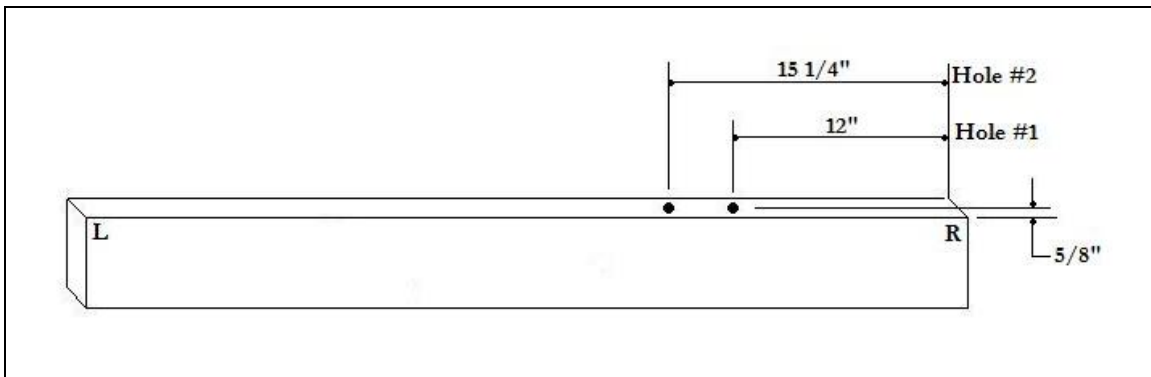


Fig. 1 – Front Treadle Pulley Support Crossmember Holes

HOLE NO.	HOLE ORIENTATION	HOLE SIZE	DISTANCE FROM EDGE	PURPOSE
1	Vertical	11/32"	12"	Mount Motor Box
2	Vertical	11/32"	15 1/4"	Mount Motor Box

Fig. 1a - Front Crossmember Information



**INSTALL AND OPERATE AN E-LIFT II SYSTEM
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2.) Prior to reinstalling the Cross Members, drill the holes required, as shown in Figures 1 and 2. As they are not all the same size, please refer to the accompanying charts for the correct bit size to use for each hole.

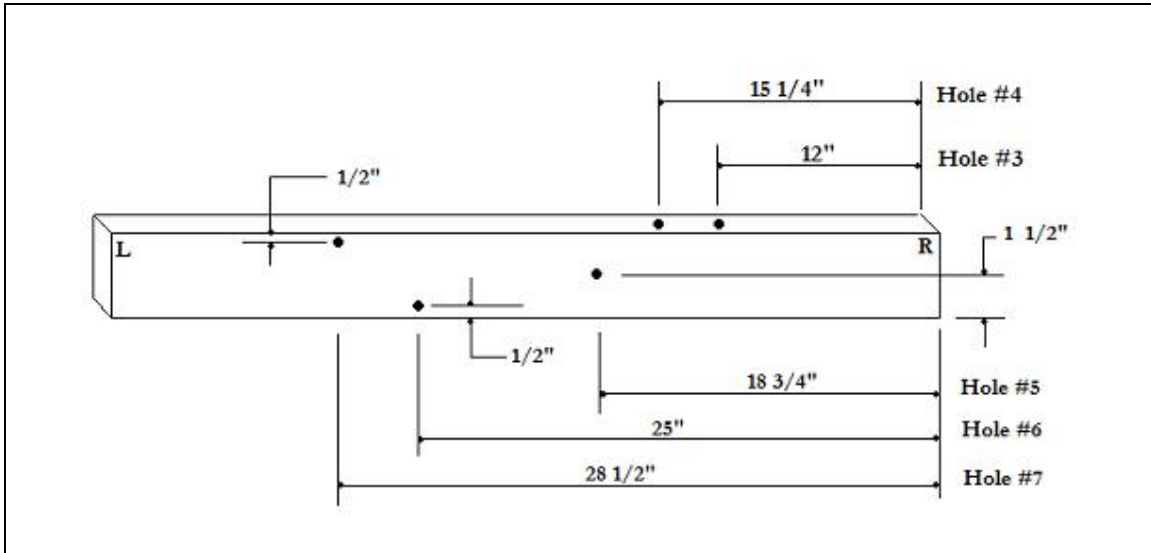


Fig. 2 - Rear Treadle Pulley Support Crossmember Holes

HOLE NO.	HOLE ORIENTATION	HOLE SIZE	DISTANCE FROM EDGE	PURPOSE
3	Vertical	11/32"	12"	Mount Motor Box
4	Vertical	11/32"	15 1/4"	Mount Motor Box
5	Horizontal	11/32"	18 3/4"	J-Bolt for Cord Anchor
6	Horizontal	25/64"	25"	Hex Bolt with Lever
7	Horizontal	11/32"	28 1/2"	J-Bolt for Spring

Fig. 2a - Rear Cross Member Information

3.) Reinstall the Cross Members, remembering to align them as before. Position the E-Lift II under the Treadle Pulley Support Crossmembers to align the holes in the E-Lift II mounting plate with Holes 1, 2, 3, & 4. Ensure that the E-Lift II Power Switch faces to the rear of the loom and the round Foot Switch connector faces the front of the loom. The Motor Box is quite heavy so, if you have a couple of pieces of 2"x4" to slip under the Motor Box, this will help elevate it into position while getting the bolts and Blocks in place.

4.) Place one 5/16" x 6" hex bolt and flat washer, from the top of the Cross Member, into each of the four holes and let them hang with the exposed ends pointing to the floor. Thread a Mounting Block onto each set of bolts, and then engage the bolts in the



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corresponding holes in the E-Lift Mounting Plate. Apply the remaining washers, lock washers and hex nuts and tighten thoroughly.

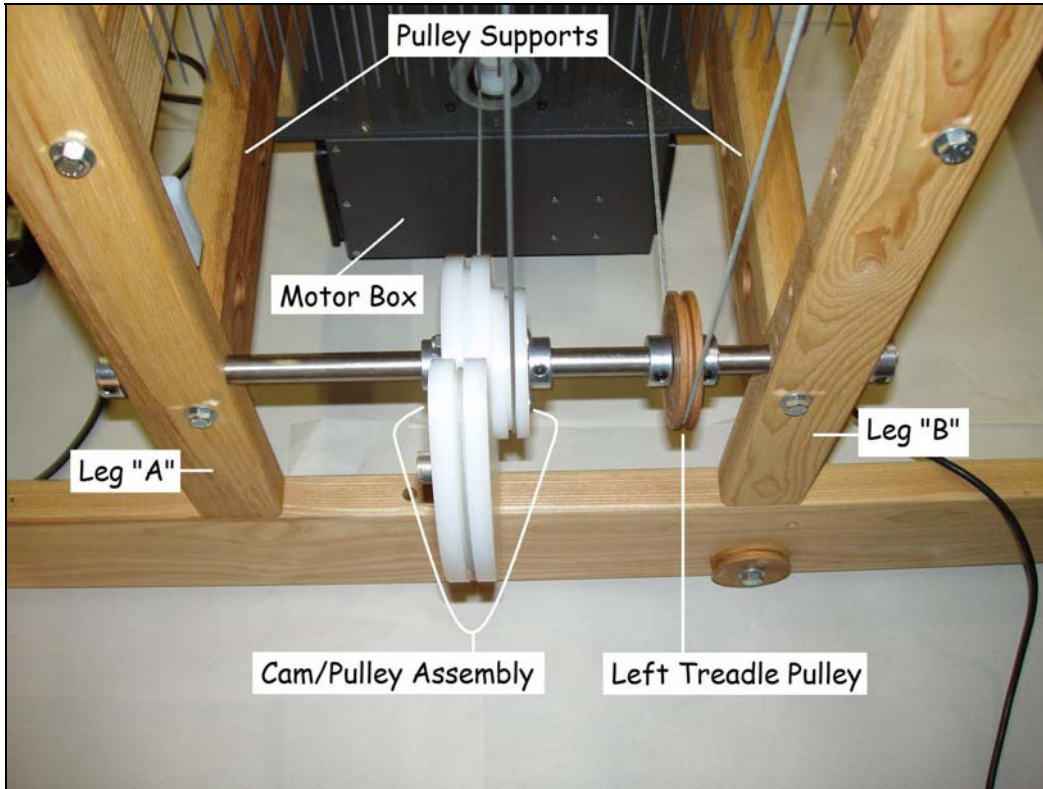


Fig. 3 – Cam and Pulleys (right side view)

Installing the Spring Lever Assembly

1.) Install the J-Bolt for the Spring Lever Cord – (See Figure 2 & 4) From the inside, rear of the loom, into Hole No. 5 of the Rear Crossmember, insert the 5/16 -18 x 3 1/8” J-Bolt, with one (1) 5/16 –18 Jamb Nut and one (1) 5/16 “ Flat Washer. Secure it, on the outside of the Crossmember, with one (1) 5/16” Washer, and one (1) 5/16 –18 Nylock. This entire sub-assembly should be installed as follows:

- | | | |
|----------------------------|-------------------|--|
| 1 | 5/16 -18 x 3 1/8” | J-Bolt |
| 1 | 5/16 -18 | Jamb Nut (as far up on the thread as possible) |
| 1 | 5/16 | Flat Washer |
| Rear Crossmember – Hole #5 | | |
| 1 | 5/16 | Flat Washer |
| 1 | 5/16 -18 | Nylock Nut |



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2.) Mount the Spring Lever Assembly – (See Figures 2 & 4) Load one (1) 3/8 – 16 x 3 1/2” Hex Bolt with one (1) 3/8 Washer, the Spring Lever (with factory inserted Bushing), and black plastic Spacer. Check to see that the hex bolt holding the Pulley, which is mounted on the side of the Lever, is pointing in the same direction as the hex

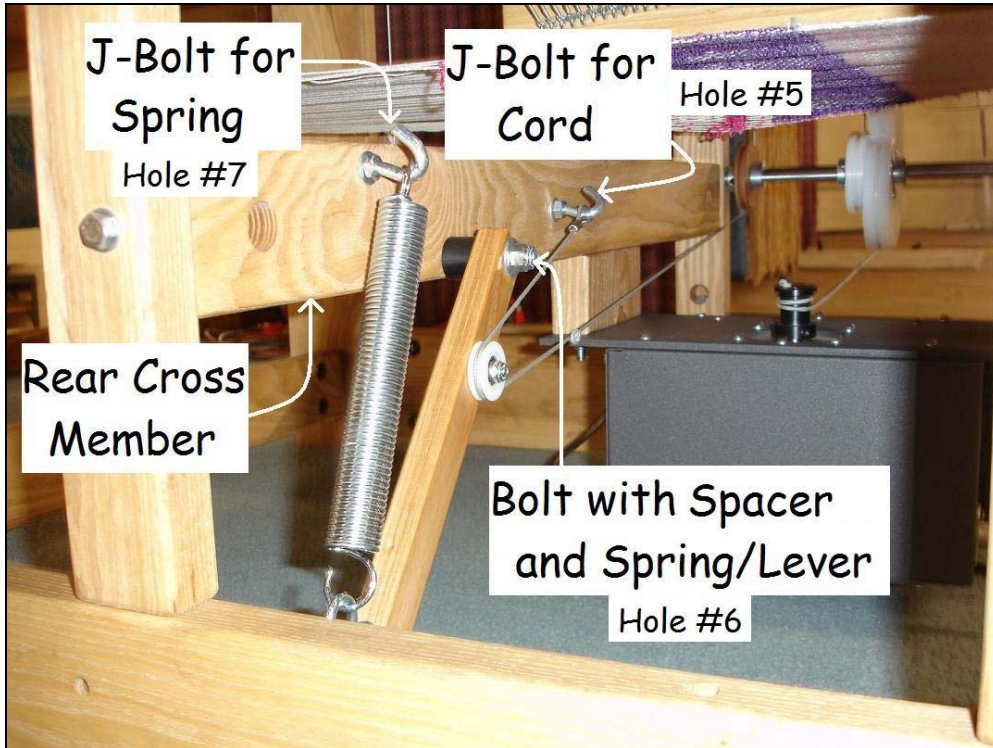


Fig. 4 – Spring Lever and Cords Installed

bolt that holds the Lever assembly. From inside of the Rear Crossmember, insert this Assembly into Hole #6. Secure the bolt on the outside face of the Rear Crossmember with (1) 5/16 Washer and (1) 5/16 – 18 Nylock. This entire sub-assembly should be mounted as follows:

- | | | |
|----------------------------|--------------------|---|
| 1 | 3/8” – 16 x 3 1/2” | Hex Bolt |
| 1 | 3/8” | Flat Washer |
| 1 | - | Spring Lever Assembly (install with eyehook facing to the left) |
| 1 | - | Spacer, black plastic |
| Rear Crossmember – Hole #7 | | |
| 1 | 3/8” | Flat Washer |
| 1 | 3/8” – 16 | Nylock |

3.) Mount the Spring Assembly – (See Figure 2 & 4) From the inside, rear of the loom, into Hole No. 7 of the Rear Crossmember, insert the 5/16 - 18 x 3 1/8” J-Bolt, with one (1) 5/16 – 18 Jamb Nut and one (1) 5/16 “ Washer. Secure it, on the outside of the



INSTALL AND OPERATE AN E-LIFT II SYSTEM WITH SPRING LEVER FOR THE A-SERIES, PDL, TDL and UDL LOOMS

Crossmember, with one (1) 5/16" Washer and one (1) 5/16 – 18 Nylock. This entire sub-assembly should be installed as follows:

- | | | |
|----------------------------|--------------------|--|
| 1 | 5/16 - 18 x 3 1/8" | J-Bolt |
| 1 | 5/16 - 18 | Jamb Nut (as far up on the thread as possible) |
| 1 | 5/16 | Flat Washer |
| Rear Crossmember – Hole #6 | | |
| 1 | 5/16 | Flat Washer |
| 1 | 5/16 - 18 | Nylock Nut |
| 1 | Large | Spring – from J-Bolt to Spring Lever Eye Hook |

Hang the Large Spring from the J-Bolt and hook the other end of the Spring to the Eye Hook located on the facing side of the Spring Lever.

Installing the Cam-Pulley Assembly and Cables (Fig. 5)

1.) Remove your current Cam/Pulley Assembly by loosening and removing all lock collars, leaving the one at the far left side of the rod (on the front side of Leg "A") in place, withdrawing the rod through Leg "A" toward the front of the loom.

2.) Re-insert the Axle through Leg 'A' so the end extends a few inches into the middle space between Legs 'A&B'. As seen in Fig. 3, and in this order, slide the following components onto the axle:

- a. Stop Collar
- b. Cam-Pulley Assembly
- c. Two Stop Collars
- d. Return Pulley
- e. Stop Collar

3.) Slide the Axle through Leg 'B' and put a Stop Collar on the exposed end of the Axle. Tighten the outside stop collars. For now, leave the others Stop Collars loose.

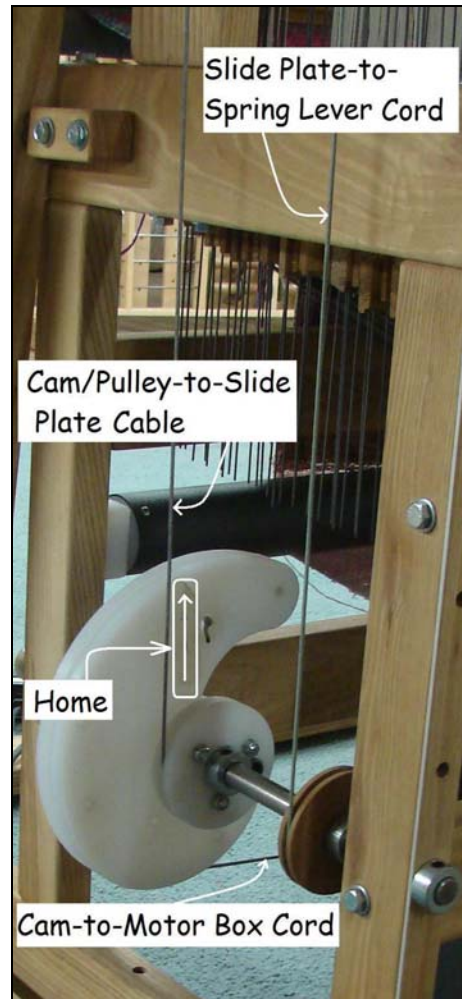


Fig 5 – Cables and Home Position



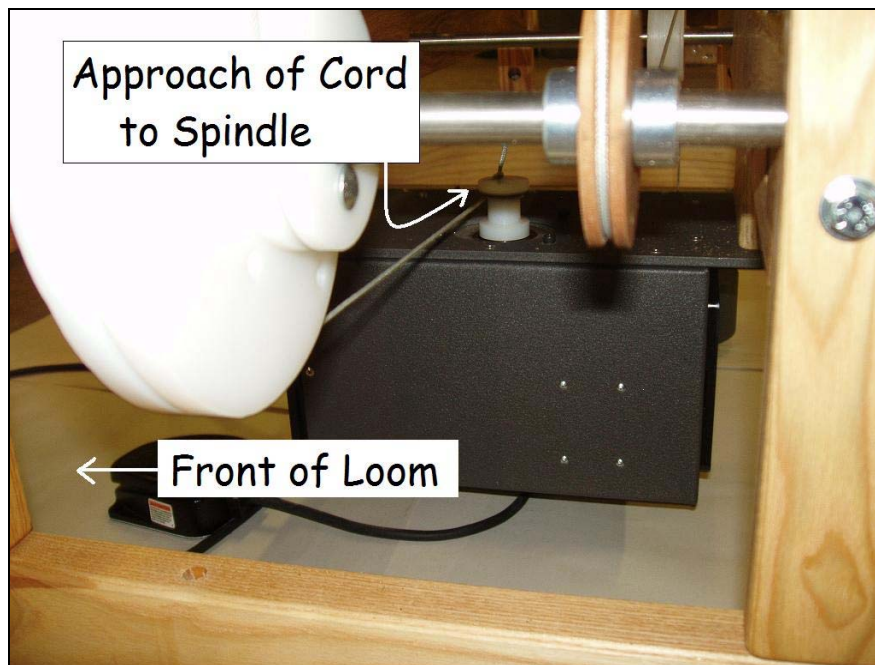
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4.) Route the Cam/Pulley-to-Dobby-Slide-Plate Cable around and under the Pulley, as seen in Figure 5, then up the outside of the loom, to the Dobby Slide Plate (or Dobby Arm). If you have a Slide Plate, slip the Cable end and the quicklink through the hole in the bottom plate and connect the Cable end to the lower eyebolt on the Slide Plate. If you have a Dobby Arm, the Cable end will have a small barrel fitting in place of the quicklink. Connect this as you would the Turnbuckle-Dobby Arm Cable.

The Cable should be vertically aligned between the Pulley and the Slide Plate (or Dobby Arm) above. Adjust the Cam-Pulley Axle Stop Collars to position the Cam-Pulley to achieve this alignment. Tighten the stop collars.

5.) The Dobby Slide Plate-to-Spring Lever Cord will attach to the Slide Plate with a quicklink in the eyebolt located on the back right corner of the Slide Plate. Route the Cord over the small white plastic pulley located on the Dobby Back, directly above the eyebolt. The Cord needs to be in the slot of the Pulley and under the Retainer mounted with this Pulley. Please check to see that the Pulley and Retainer are secured by the hex bolt. Now, the Cord will go down the right side of the Dobby Back. Guide the Cord around the Return Pulley on the Cam-Pulley Axle, then into the center of the loom.

Bring this Cord over to the Spring Lever and loop it around the Pulley on the side of the Lever. The Return Pulley has remained unfixed in its location. Be sure it is now aligned with the Pulley on the Lever and tighten the two lock nuts at either side, securing it in place. Now, you will need to pull against the Spring in order to bring the looped end of the Cord around the Pulley on the Lever and back toward the right side of the loom, to anchor it at the J-Bolt waiting at hole #5.





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Fig. 6 – Path of Motor-to-Cam Cord

6.) Un-tape the E-Lift II Motor-to-Cam Cord, which is wound around the Cam. One end of the Cord is secured to the Cam in such a way that it is angled toward the floor. Continue this path, guiding the free end of the Cord down and out of the loom and around the bottom of the nautilus lobe, and across to the Motor Box. Run the Cord across the front of the Spindle and up through the small hole located in the top of the Spindle. Tie a knot in the Cord at the red line marked on the Cord. See Fig. 6, above. Rotate the E-Lift II Pulley clockwise to take the slack out of the Cord. Ensure that the cable does not overlap itself. When you have finished the tip of the Cam should point to the two o'clock position, as viewed from the rear of the loom.

7.) Turn off the E-Lift II Power Switch. Connect the Foot Switch cord to the front of the E-Lift II Motor Box. Connect the female end of the Power Cord at the back of the housing (be sure it's completely inserted). Plug the male end of the power cord into a surge-protected power strip, preferably the same one as used for your Compu-Dobby as this will allow you to turn on the loom more easily.

This completes your installation. You now need to make one adjustment, setting the home position, and you will be ready to weave!

OPERATION

SETTING HOME POSITION (See Fig. 5) - Before you use the E-Lift II you must set the "home", or neutral, position:

- 1) Turn off the E-Lift II Power Switch. Unwind the E-Lift II pulley to allow the Dobby Slide Plate (or Arm) to move to its upper most position.
- 2) With the Slide Plate/Arm in its upper-most position, rewind the Motor-to-Cam Cord, taking up all of the slack in the Cord. You have now set your *home* position and may start to weave!

MODE SELECTION (See Fig. 7)

The E-Lift II is programmed with two modes: double or single shed selection.

The Double-Shed™ mode begins and ends every lifting cycle with the shed open. For example, assume you've just completed a shot and the shed is still open. You depress the foot switch and the shed closes, the dobbie advances to the next pick, and the shed opens in the next pick—all as a single continuous movement. You'll very quickly develop a rhythm and will find there's ample time to beat while the shed is transitioning between Open-Close-Open. To use the Double-Shed mode, find the selector switch located at the rear of the E-Lift II, and set it to the "On" position. (See Figure 7).

In Single mode, you activate the foot switch once to open the shed; and again to close the shed. In other words, you achieve one action per activation. If you wish to use the single shed mode, ensure that the Double-Shed mode selector switch in the "off" position.



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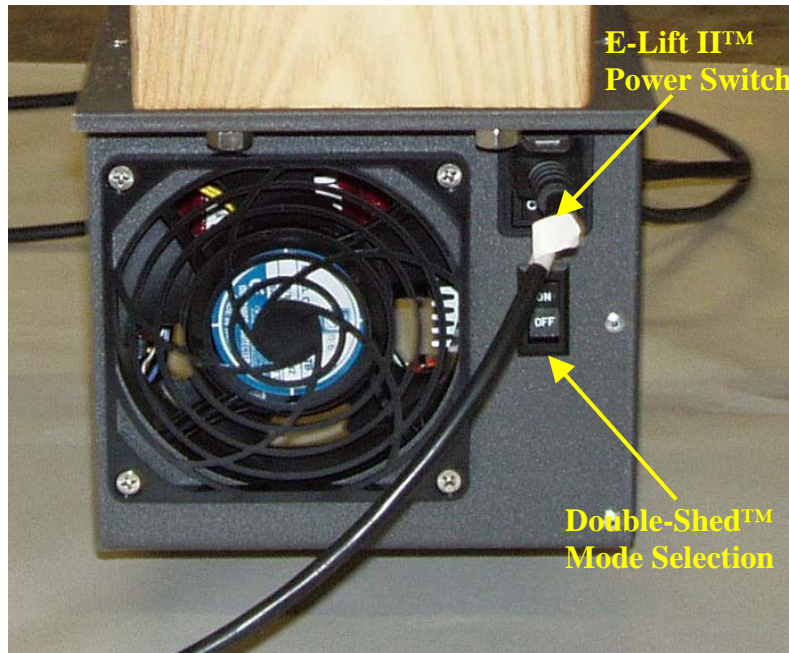


Fig.7 - Selecting E-Lift II Mode

MAINTENANCE AND REPLACEMENTS

Required Maintenance

- You'll need occasionally to clean the air filter, which is located on the front of the E-Lift II housing. To clean, unsnap and remove the plastic baffle. Remove the foam element and carefully wash it in warm soapy water. Be sure the element is completely dry before you replace it.

Suggested Maintenance

- The E-Lift II Motor-to-Cam and Spring Lever Cords may stretch with extensive use. If after setting your home position, you find that the E-Lift is not operating correctly, this may be the cause. To adjust Motor-to-Cam Cord, simply push the cable through the Motor Spindle and retie the knot to a shorter length. For the Spring Lever Cord, tie a knot in the Cord at a location where it won't run over a pulley in normal operation.
- Inspect the Cable and Cords for wear, especially where they move over a pulley. Do this monthly if you weave regularly.
- Check the supporting hardware and re-tighten if loose.

Your E-Lift II is designed to provide years of dependable service. When replacement parts, such as the air filter or cables are needed, AVL is your source. AVL can also rebuild your E-Lift II when it reaches the end of its wear cycle. Please contact us at 530-893-4915 or info@avlusa.com to place your order or to arrange service.