

# **Compu-Dobby® 5 Classic/Positive Dobby Head Installation Guide**



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# **INTRODUCTORY INFORMATION**

## SAFETY

### Before Getting Started:

Please read the entire manual before using the loom.

### Warnings:

#### WARNING:

EQUIPMENT SHOULD ONLY BE USED FOR TEXTILE MANUFACTURING. IF THE EQUIPMENT IS USED IN A MANNER NOT SPECIFIED BY THE MANUFACTURER, THE PROTECTION PROVIDED BY THE EQUIPMENT MAY BE IMPAIRED.



#### WARNING:

ELECTRICAL SHOCK HAZARD. DO NOT TAMPER WITH ELECTRICAL WIRES OR OPERATE THE LOOM WITH SAFETY PANELS OPENED OR REMOVED.



#### WARNING:

PINCH, CRUSH, AND FINGER CUT-OFF HAZARDS. DO NOT OPERATE THE LOOM WITH SAFETY PANELS OPENED OR REMOVED. DO NOT PLACE HANDS IN MOVING MECHANISMS OR SCISSORS.



**WARNING:**  
EQUIPMENT PANELS ARE AWKWARD AND HEAVY. TO AVOID MUSCLE STRAIN OR INJURY, USE PROPER LIFTING TECHNIQUES AND A HELPER.

**WARNING:**  
DO NOT POSITION EQUIPMENT IN A WAY TO BLOCK OR IMPEDE ACCESS TO DISCONNECTING DEVICES, EMERGENCY STOPS, OR ON/OFF BREAKER SWITCHES

**WARNING:**  
USE OF CONDUCTIVE FIBER OR YARN ON OR AROUND THIS EQUIPMENT WILL VOID WARRANTY AND MAY DAMAGE EQUIPMENT.

**WARNING:**  
THIS EQUIPMENT IS CLASSIFIED FOR LIGHT INDUSTRIAL ENVIRONMENT ONLY. OPERATION OF HIGH-CURRENT DRAW EQUIPMENT (EX. MIG WELDER) ON THE SAME ELECTRICAL CIRCUITS MAY CAUSE EQUIPMENT FAILURE.

### **Safety Features:**

Covers and shielding separate weaver from moving components where pinch hazards exist. Do not reach under a covers and shielding while the loom is operating.





## COMPU-DOBBY 5

A first for handweaving looms, the Compu-Dobby 5 enables computer control of pattern *and* key loom functions, including warp tension and pick spacing.

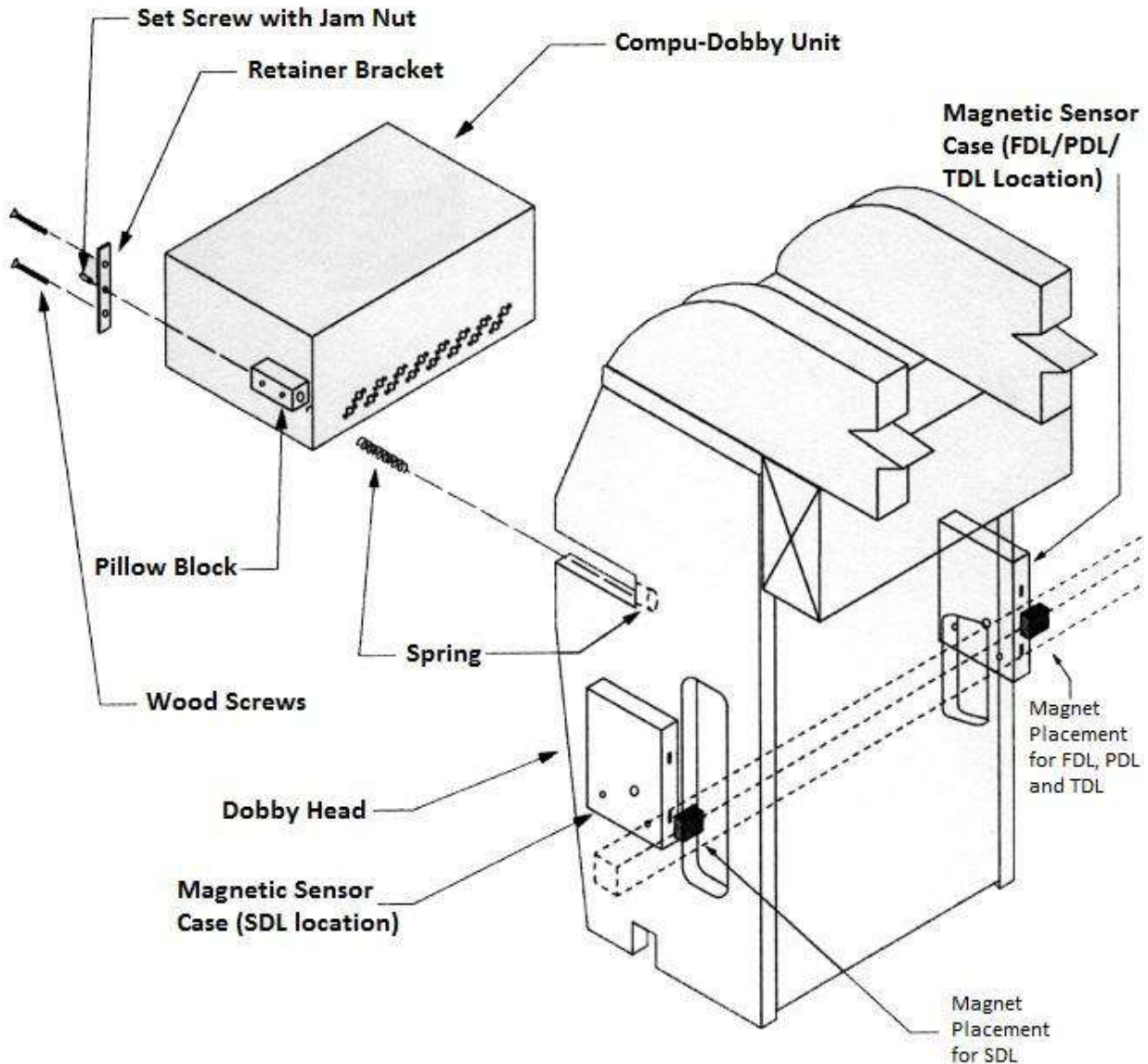
Pattern control is a state of the art system that eliminates the multi-treadle dance of traditional looms and the tedious pegging of mechanical dobby looms. Much like the legacy cartridge systems from the Compu-Dobby I and II, the Compu-Dobby 5 stores entire weaving files (WIFs) onboard with three significant advantages over all other systems:

- a. Ultra-fast pick writing. The system can achieve weaving speeds in excess of 100 picks per minute.
- b. Hundreds of weaving files may be stored for later use.
- c. Eliminates latency timing issues inherent in computer communications systems. Latencies can cause slower weaving and even missed picks.

As a web enabled device, this loom connects to your computer or tablet via WiFi or USB and controls the loom from your favorite browser. AVLDrive version 5 is an easy to use, intuitive interface run from within the Compu-Dobby 5. As a direct result, there is no software to install for the loom, nor limitation on the controlling device, except for a minimum screen resolution (1024 x 768 pixels). AVLDrive is compatible with all major browsers, including Safari, Chrome, Edge, Firefox and Opera. The current version of the browser should be used.

### Compatibility

The Compu-Dobby IV Positive was designed to fit all AVL 16 and 24 harness looms equipped with the classic or positive dobby, which includes all AVL mechanical dobby looms. The compatible loom types are the Folding Dobby Loom (FDL), Industrial Dobby Loom (IDL), Professional Dobby Rug Loom (RL), Production Dobby Loom (PDL), Studio Dobby Loom (SDL), Technical Dobby Loom (TDL), and the A-Series Loom equipped with a classic/positive dobby head.



**Figure 1 - Compu-Dobby and Dobby Head**

## Packaging

The Compu-Dobby 5 is shipped in specially designed packaging to protect it while in transit. Please save the packaging in case there is need to ship the equipment. Failure to use appropriate packaging during shipment will void your warranty and you will be responsible for any damages incurred.

## Preparation

Installation of the Compu-Dobby is a relatively simple affair, but it does differ slightly from loom to loom, and from era to era. Therefore, please

review all of the instructions before beginning. Before you start, you'll want to gather a few tools:

- Medium Phillips screwdriver
- Small bladed screwdriver
- Scissors
- Pliers
- Crescent or 7/16" wrench
- Needle nose pliers
- Pencil
- Scotch or masking tape
- Electric drill
- 1/8" drill bit

Open the box, find the packing list and check to be sure everything on the list is in your box. Contact us if anything is missing.

## **INSTALLATION INSTRUCTIONS**

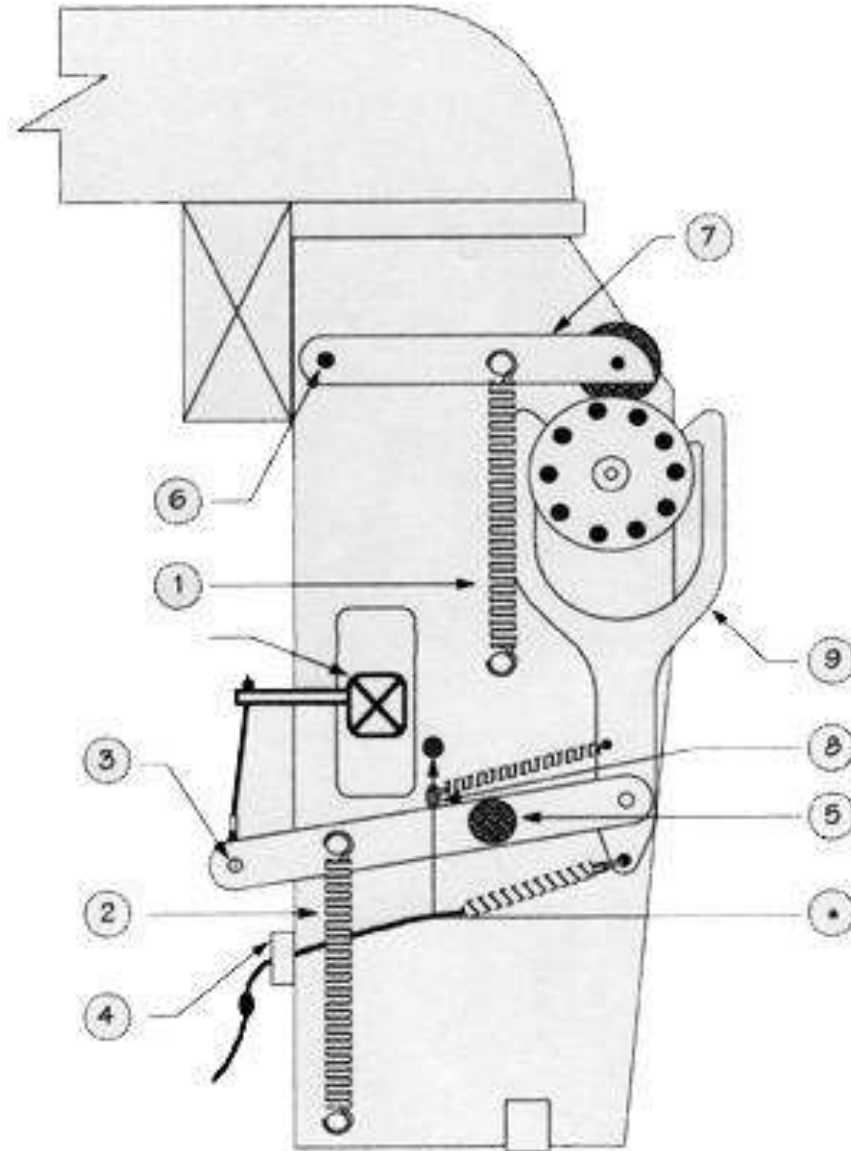
### **Preparing the Mechanical Dobby Head**

The Compu-Dobby will essentially nest in the Dobby head. First, however, a few pieces need to be removed to create the proper clearance.

- 1) From the left side of the Dobby remove the spring labeled #1. Then remove spring #2.

**Note:**

**These springs will be reused with the new Compu-Dobby unit.**



**Figure 2 - Dobby Head**

- 2) With the bladed screwdriver, remove the screw labeled #3. You may need a pair of needle nose pliers to hold the body of the screw post while you loosen the screw.
- 3) Once the screw is removed, push the post back enough that you can disengage the cable loop. Once the cable end is free, replace the screw post and screw.
- 4) Remove Phillips screws that secure the cord retainer (#4) to the back of the Dobby head.

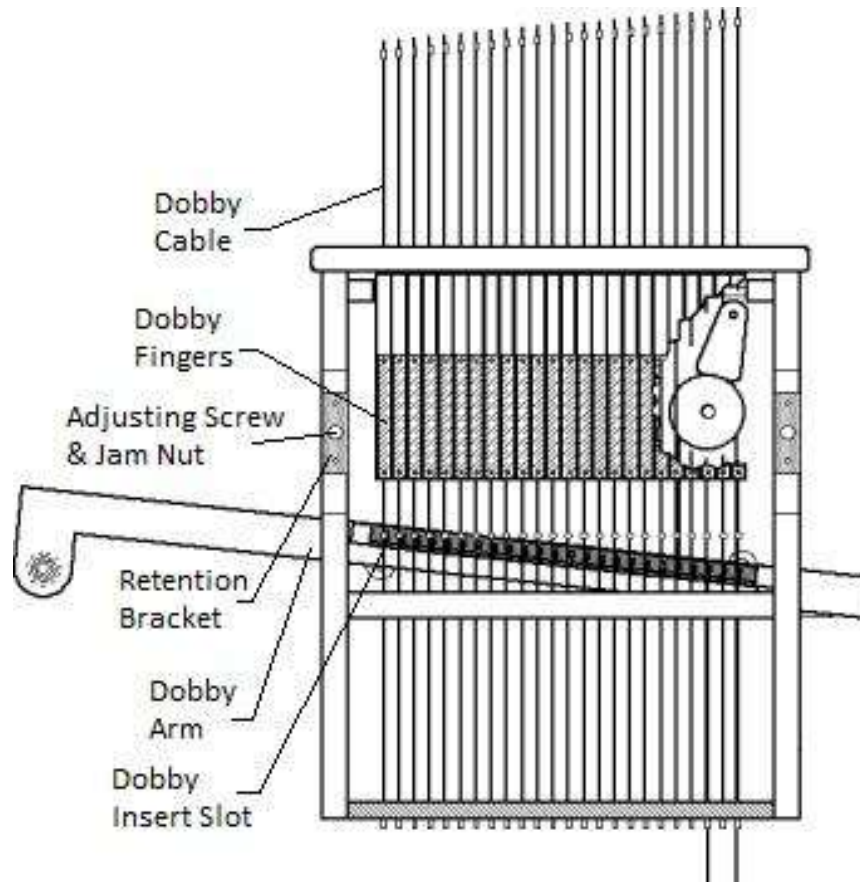
- 5) With pliers, crush and remove the black caps (#5, #6). You may have a stop collar here — if so, use an Allen wrench to loosen and remove it.
- 6) Remove the Detent Arm (#7).
- 7) Disconnect the end of spring #8.
- 8) Remove the Dobby Hook Assembly (#9) with the attached Dobby Index Lever.

**Note:**

**On some older looms, there may be an extra pin here. Please remove it before mounting the Magnetic Sensor Case.**

- 9) From the front of the Dobby Head disconnect the doobby chain and remove it from the doobby head.
- 10) With the Phillips screwdriver, remove the two screws that keep each of the Dobby Cylinder Retention Brackets in place (aluminum pieces with set screws in the middle).
- 11) Carefully pry out the brackets and slide the doobby cylinder free of its slots. A couple of small wooden pillow blocks and springs will come out with the cylinder.
- 12) Once you've removed these brackets, use the 7/16" wrench to loosen the hex jam nuts on the face of the Dobby Cylinder Adjustment Brackets, then use the 1/8" Allen wrench to back each set screw out until it is flush to the back of the bracket. Re-tighten each hex nut until finger tight.
- 13) The two springs that were removed in step one and the Adjustment Brackets will be reused when the new Compu-Dobby Unit is installed. Please place them in a safe place.

- 14) If you decide to convert your Dobby back to the mechanical mode, you will need the parts that were removed in this process. Gather all the loose parts, except the two Adjustment Brackets and springs, including any extra pegs and the wrench and place them in storage for future use.

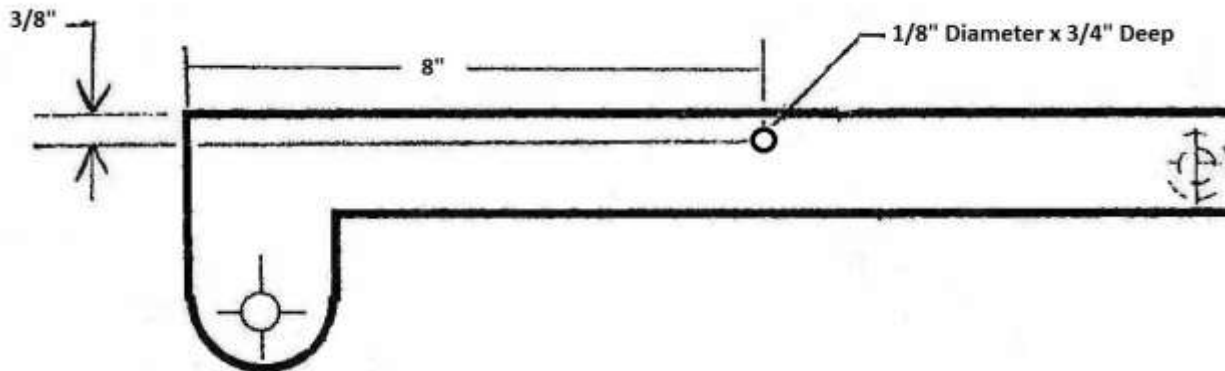


**Figure 3 - Dobby Head Face**

### Installing the Magnet for a FDL/PDL/TDL or A-Series

The magnetic sensor case contains sensors which responds to a magnetic field. This field is produced by a magnet, which you'll need to affix to the Dobby Arm.

- 1) Place the Dobby Arm in its uppermost position. Measure and drill a 1/8" diameter hole to 3/4" deep at the location identified in Figure 4.



**Figure 4 - Magnet/Bracket Location**

**Note:**

This measurement applies to looms built after 1997. Variation in the dobbie head may require this different procedure. Align the magnet/bracket assembly as per Image 2, then mark the hole with a pencil. Drill a 1/8" hole to 3/4" deep.

- 2) Install the Magnet/Bracket assembly on to the Dobby Arm with the supplied screw. The right edge of the magnet should be aligned with the left side of the Dobby Head. In this position, the magnet will be immediately opposite the magnetic sensor case.



**Figure 5 - Magnet Assembly Mounted on Dobby Arm**

## Installing the Magnetic Sensor Case

The Magnetic Dobby Arm Sensor is the unit that sends signals to the Compu-Dobby and tells it whether the harnesses (dobby arm) are up or down. It has two slots. One slides over the bottom pin of Spring #1. The other slot is held in place by a screw that replaces the center brace screw of the dobby.

- 1) Install the Magnetic Sensor Case with the supplied #8 x 2 1/2" screw and flat washer.
- 2) Make sure the magnet on the Dobby Arm can be seen by both sensors in the Magnetic Sensor Case. The magnet should pass both sensors on the Magnetic Sensor Case as the arm moves in its arc. The center of the magnet should pass the upper sensor in the Magnet Sensor Case approximately 1/16" below the upper dobby arm rubber bumper. On the way down, the magnet will pass the lower sensor by a fair amount before the arm reaches the lower



rubber bumper. Make adjustments with the slotted Magnet Bracket Assembly.



**Figure 6 - Magnetic Sensor Case**

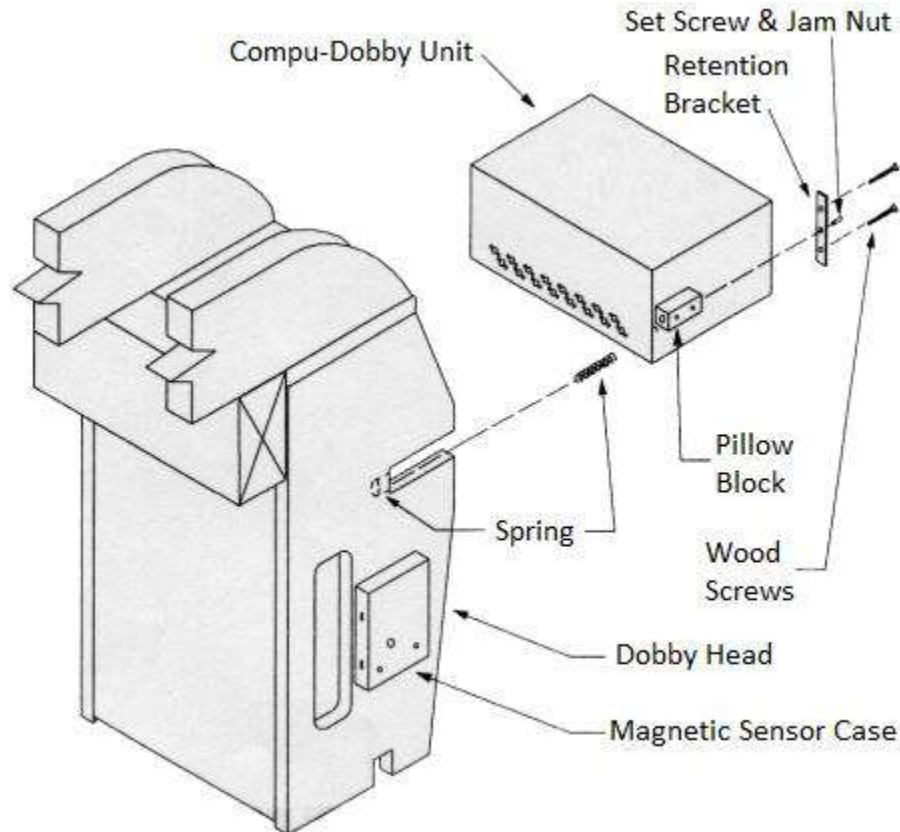
- 3) Loosen the screw securing the Magnetic Sensor Case. Fold a piece of paper in half to create a shape that is 2 sheets thick. With the dobbie arm at the top of its travel insert the folded paper between the magnet and the Magnetic Sensor Case. Slide the Magnetic Sensor Case against the folded paper. Slowly move the dobbie arm to the bottom of its range of motion while holding the folded paper between the magnet and the Magnetic Sensor Case. The Magnetic Sensor Case should now be adjusted at top and bottom sensors. Tighten the screw to secure the Magnetic Sensor Case in place, and remove the folded paper.

## Installing of the Compu-Dobby Unit

- 1) There is a small rectangular plastic block on each side of the Compu-Dobby unit. Place one spring in the hole of each pillow block.
- 2) There are two rows of white tipped rods. These are the solenoid ends which will take the place of dobbie bars and pegs. Orient the Compu-Dobby unit so that the solenoids face the Dobby head and are at the bottom of the box.
- 3) Align the blocks with the slots in the Dobby head and slowly slide the unit into the Dobby head.
- 4) At the end of each slot, there is a hole. Seat the free end of each spring in this hole. The springs will keep the Compu-Dobby unit under tension. This tension helps keep the box in proper adjustment.
- 5) Secure the Compu-Dobby unit with the two aluminum Retention Brackets, and the wood screws.
- 6) Adjust the tension with the set screw. Lock down the adjustment by tightening the jam nut.

### Note:

**The Magnetic Sensor and magnet are located on the front side of the dobbie (nearer the weaver) for the FDL, PDL, TDL and A-Series equipped with the classic/positive dobbie. The sensor and magnet are toward the rear of the loom for the Studio Dobby Loom.**



**Figure 7 - Compu-Dobby – Dobby Head for FDL/PDL/TDL**

### Adjusting the Compu-Dobby Unit in the Dobby Head

The Compu-Dobby will need to be adjusted at the front of the Dobby head in order to work properly. The Compu-Dobby unit needs to be located on the head so that when each solenoid is extended, it pushes the corresponding cable into a slot in the metal bar on the Dobby Arm.

In order to make this adjustment, you must have your solenoids extended. Before you make your actual adjustment, you'll need to move to your computer and create a peg plan that activates the outer two harnesses (1 and 16 or 1 and 24). Then proceed through the steps necessary to begin weaving. Please review the Compu-Dobby 5 Software manual for instructions on connecting to your computer and starting a weaving session.

- 1) The set screws in the middle of the retention brackets allow you to adjust the Compu-Dobby. Make sure the screws are backed out so they are properly located for the start of the adjustment. Slightly loosen the hex nuts through which each screw is threaded.

- 2) Each solenoid pushes against a wooden lever (like a piano key), and each lever in turn moves a cable into position against a multi-slotted black metal bar (the Dobby Arm Insert).
- 3) Check to see:
  - a. That each cable is centered side-to-side in the corresponding slot in the black metal bar (Dobby Arm Insert). If the cables fall to the left or right of the slots, you'll need to adjust your Dobby Arm as directed in your loom manual.
  - b. That each solenoid tip is approximately centered side-to-side on its corresponding Dobby Finger strip.
- 4) Adjust the Compu-Dobby unit in or out until the cables are each deposited just to the rear of each slot. If the cables are pushed too far back or not back far enough, the harnesses will not lift properly.
- 5) Having sent your adjusting peg plan to the Compu-Dobby, return to your loom and treadle once. You should hear the solenoids activate (they make an abrupt snapping sound). If this doesn't happen, repeat your treading.
- 6) Return to the Compu-Dobby unit and, peering in from the bottom; verify that the two solenoids are extended.
  - a. Loosen each hex nut.
  - b. Pull back on the Compu-Dobby unit so that it rests against the adjustment brackets.
- 7) Now use the 1/8" Allen wrench to turn the left set screw clockwise. This will cause the Compu-Dobby unit to move forward. Continue to turn the screw until the left-most extended solenoid just pushes its steel cable to the rear of the slot in the Dobby Arm Index Lever.

**REMEMBER:**

**The cable should just touch the rear of its slot. If it is pushed too far back, it will cause problems later with your harness lifts.**

- 8) Hold the set screw stationary with the Allen wrench and use your wrench to snug down the hex nut. This will lock the adjustment. Repeat this procedure on the right side.

**NOTE:**

**The key point is that the solenoids won't work properly unless they are fully**

**extended. So, WHEN IN DOUBT, BACK IT OUT! In other words, better to have solenoids away from the doobby fingers than too close. This is a bit counter-intuitive, but it is critical. If 1 and 16 (or 24) work, then all the rest will follow.**

- 9) If your harnesses are either not lifting or are dropping, the Compu-Dobby unit requires further adjustment. Check the position of the cables relative to their slots. Again, each should just touch the rear of the slot where the solenoid is extended -- too far in or out and it won't behave properly.
- 10) Once you've established that you're getting good lifts, you may assume that the Compu-Dobby unit is adjusted. Please make sure you've tightened the hex nuts on the adjustment brackets.
- 11) Next, create a peg plan that fires two solenoids at a time. Set up either a 2/4 twill or a 2/2 twill so you can treadle through and see each shaft lift.
- 12) Adjust the Compu-Dobby as needed until all shafts are lifting correctly.





# THE FINE PRINT



## AVL CUSTOMER SERVICE

AVL offers free technical support to the original owner of all our looms. This means if you ever have a problem, you can call, fax, or e-mail us and we'll help you find a solution. Please take advantage of this service; your satisfaction is extremely important to us.

**Customer Service Phone: (530 893-4915)**

**Fax: (530) 893-1372**

**E-Mail: [sales@avlusa.com](mailto:sales@avlusa.com)**

## AVL WARRANTIES

Limited Warranty: The benefits of this warranty accrue solely to the original purchaser of AVL Looms, Inc. products, as defined below.

Your warranty covers:

New Looms: AVL Looms, Inc., a California corporation ("AVL") warrants to the original purchaser of any AVL loom (each, a "Product") that the Product will be free from defects in materials and workmanship during the limited warranty period described herein. The limited warranty coverage begins (a) the day the Product is installed if installed by a professional from AVL, or (b) on the date of shipment from AVL to the original purchaser if the Product is not installed by AVL (the "Effective Date"). Except as set forth under the section entitled "What is Excluded?" below, AVL will, for a period of two (2) years from the Effective Date (the "Original Warranty Period"), repair or replace the defective part(s) of the Product with a repaired, renewed, or comparable part (whichever is deemed necessary or proper by AVL) if it becomes defective or inoperative or fails to perform according to AVL's specifications. Any repair during the Original Warranty Period will be carried out without charge to you for parts (except applicable taxes, if any). You will be responsible for all labor in connection with installation of the parts and service upon the Product, as well as the cost of shipping involved.

New Accessories, Loom Upgrade Parts, and Replacement Parts: Subject to the limitation contained in subsection (i) under the section entitled "What is Excluded?" below, AVL warrants to the original purchaser of any accessory, loom upgrade parts, or loom replacement parts (the "Additional Part") that are sold by AVL that such Additional Part will be free from defects in materials and workmanship for ninety (90) days from the date of purchase. In the event that any Additional Part is physically damaged or physically defective and if such defective Additional Part is returned to AVL within ninety (90) days of the date of purchase, AVL will provide a replacement Additional Part at no charge. The sole remedy for this warranty shall be limited to the replacement of the defective Additional Part. You are responsible for all shipping charges (including applicable taxes) incurred with returning the defective Additional Part.

All New Products and their components (including replacement Product and its components) are covered only for the Original Warranty Period. When the warranty on the original Product expires, the warranty on any replacement Product, or components also expires. After two (2) years from the Effective Date, you pay for any replacement or repair, including all parts, all labor and shipping charges (including applicable taxes).



Your warranty does not cover:

- 1.Labor charges for installation or set-up of the Product, as well as any labor charges required to install, disassemble, troubleshoot, or reassemble the Product.
- 2.Any taxes imposed on AVL for Product replacement or repair under this warranty.
- 3.Installation, performance of, or repair of: cabling, electrical, or accessory attachments used with the Product.
- 4.Product replacement or repair because of misuse, accident, repair by any party other than AVL, or other cause not within the control of AVL. Please note that removing any parts from the Product for any reason voids the warranty.
- 5.Incidental or consequential damages resulting from the Product.
- 6.A Product that has been modified or adapted to enable it to operate in any country other than the United States or any repair of Products damaged by these modifications.
- 7.Electrical and pneumatic components, each of which carries a one (1) year warranty from the Effective Date.
- 8.Jacquard components function beyond 98%. A Jacquard module is considered to be operating within specification if 98% of all hooks are operating as commanded.
- 9.Computing equipment, such as a Personal Digital Assistant or a Personal Computer, which are manufactured by a third party(ies) and which may be under warranty through the original manufacturer. AVL is not responsible for any warranty coverage that may be offered concerning these products and you must contact those manufacturers directly regarding any available warranty coverage.

The performance or functionality of any software that is sold either together or separate from the Product. The AVL warranty covers only defects in the Software Media, namely the CD-ROM media such as a broken CD-ROM or a defect in the CD-ROM that would prevent the CD-ROM from being read by your personal computer's CD-ROM drive. .

## **AVL Returns Policy**

Any order that has left AVL in transit to the customer is considered fulfilled. Parts and accessories not covered under warranty must be returned to AVL within 60 days from the date of shipment from AVL. The purchase price of the item(s) is refundable less a 15% re-stocking fee based on the total purchase price. No refunds will be given on shipping or handling. The buyer is responsible to return the merchandise in "as new" condition at their expense. Any item received showing wear or damage is not eligible for return and will be promptly returned to the customer COD unless some other arrangement is made. Looms and custom-made items, special order items, parts made for pre-1998 looms, used and reconditioned items are not eligible for return.

## NOTICE TO USERS IN THE EUROPEAN UNION

Products bearing the CE mark are in conformity with the protection requirements of EC Council directives 2004/108/EC, 2006/95/EC, 1999/5/EC, and 2009/125/EC on the approximation and harmonization of the laws of the Member States relating to electromagnetic compatibility, safety of electrical equipment designed for use within certain voltage limits, radio equipment and telecommunications terminal equipment and on the ecodesign of energy-related products.

Compliance is indicated by the CE marking.



The manufacturer of this product is: AVL Looms, Inc., 2360 Park Avenue, Chico, CA 95928 USA. A declaration of conformity to the requirements of the Directives is available upon request from the Authorized Representative. This product satisfies the Class B limits of EN 55022 and safety requirements of EN 60950.