

Hill AFT / AirAFT Table

Owner's Manual




Hill Laboratories
COMPANY

Quality and Innovation Since 1945.

Congratulations!

And welcome to the Hill Laboratories family.

Hill Laboratories Company has been making quality a family business since 1945. Your Hill AFT Table is built in a tradition of innovation and value that Hill Laboratories products have become known for. Our good name rests on the confidence that your Hill Table will provide you with solid, reliable service for many years to come.

At Your Service

The Hill Laboratories Guarantee.

Your Hill Laboratories table has been thoroughly tested and inspected before shipment. All parts are guaranteed against defect in materials for one full year from the date of purchase. Tables damaged by mishandling or accident will be repaired at a reasonable charge. All correspondence should be directed to your local dealer, or when this is not possible, to Hill Laboratories directly.

We appreciate your business and your confidence in our products. Our aim is to provide you with excellent service and satisfaction for many years to come.

A handwritten signature in black ink, reading "Howard A. Hill". The signature is written in a cursive, flowing style.

Howard A. Hill
President, Hill Laboratories

Hill AFT Manual

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Flexion and Lateral Movement

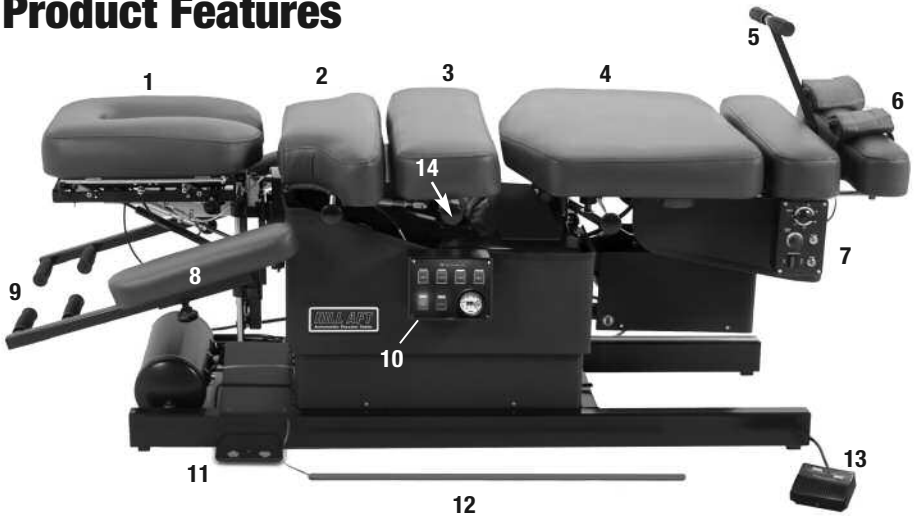
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Product Features



1.1 Basic Table Components & Options

1. Tilting Headpiece. May include several options
2. Thoracic Drop with Thoracic Release/Breakaway.
3. Lumbar Drop
4. Pelvic Drop on Flexion Section
5. Tiller Bar for Lateral Movement
6. Slide-out Ankle Support with Ankle Harnesses
7. Flexion Control Panel
8. Armrest
9. Adjustable Patient Gripper Bars
10. Power and Air-Drop Control Panel (air-models)
11. Rocker Foot Pedal for Height Adjustment
12. Power Foot Strips for activating Air-Drops (optional)
13. Air-Pressure Foot Pedal (air-models)
14. Drop Tension Control Knobs
15. Cocking Handles for Manual Drops



1.2 Specifications

- Electric requirement 115 v~, 60 Hz, 10 A/ AirAFT - 10 A (or 230v~, 50 Hz)
Important: See note about using a voltage regulator on page 12
- Lifting capacity - 450 pounds
- Acrylic thermo-plastic base
- Ultra-Cell® foam for comfort and shape retention
- Height Range - 21 1/2"-29" or 22 1/2"-30"
- Shipping weight approximately 250-300 lbs.
- Length - 5' 5" (extends to 6' 2"), with cervical drop - 5' 7" to 6' 4"
- Standard width 24", optional 27" and 30"

Table Care

2.1 Cleaning your Table

Hill table upholstery may be cleaned with Hill Laboratories' Vinyl and Leather Cleaner or any household dishwashing liquid mixed with water. Hill also offers Protex™ Disinfectant Spray and wipes to protect against pathogens, such as MRSA, HIV, Staph and the H1N1 Swine Flu Virus. Many stubborn stains can be removed by applying 91% rubbing alcohol (isopropyl alcohol) to the stain and wiping with a dry, soft, lint-free cotton cloth, towel or soft bristle brush. Be sure to rinse thoroughly with water.

Caution: Some solvents are highly flammable; do not use near open flame or intense heat. Wear rubber gloves during all cleaning activities. When cleaning other parts of your table (besides upholstery) use only nonabrasive household detergents and water.

2.2 Caution and Symbol Explanation

Caution: Children should never be left alone in a room with the table but should always be accompanied by an adult.

Caution: Always unplug the table before performing any maintenance.

Caution: Check table once a year to make sure all internal and external bolts are secure.

Caution: The power cord should be located to avoid risk of tripping or having objects rolled over or placed on top of it. Damaged cords should be replaced with another of hospital grade.

Caution: Grounding reliability can only be achieved when connected to an equivalent receptacle marked hospital only or hospital grade.

Caution: To avoid any potential pinching hazard, patients should not grasp the thoracic cushion as shown when the table is equipped with a thoracic release or a thoracic breakaway.



Caution: Do not use a GFCI receptacle (Ground Fault Circuit Interrupter) to power the unit.



Attention Symbol
consult accompanying
documents



Dangerous Voltage
Symbol



Type BF Applied
Part Symbol



Ground
Symbol



Alternating
Current
Symbol



Don't Touch
Symbol

Basic Table Operation

3.1 Preparing the AFT for your patient

Plug your table into any 115 volt grounded outlet (or 230 volt - international). The Power Switch is located where the power cord exits the table (photo 1). It ships in the “OFF” position. **After** the table is plugged in, press the button in to turn the power on.

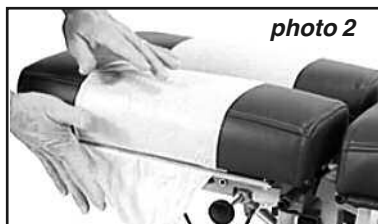
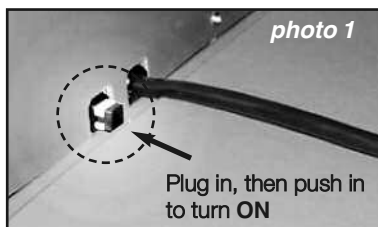
Paper Roll - Feed the paper through the face cutout, around the paper bar (just below the cutout) and over the headpiece as shown. Close the paper cutter located on the side of the headpiece (photo 2) and tear off the excess.

Preparing the Air System (option)

For air models, press the Power button of the main Control Panel (photo 3). Each of the function buttons will light consecutively and then turn off. The table’s air-compressor may also turn on to replenish the air supply. The compressor will stop when the pressure reaches 90 lbs.* See 4.2, “Using Air-Drops” for air-feature instructions.

**If the air-compressor runs for more than 2-3 minutes, call for service (see page 11).*

Note: The AFT is equipped with an Auto Shutdown mode which will power down the main control board if the table is inactive for 2 hours. Press the green power button to power the board back up.



3.2 Height Pedal

The basic AFT is equipped with a dual Rocker Foot Pedal (#11 under “Product Features”) which controls the table height from either side of the base. Press the right side of the pedal to elevate; the left side to lower.

Auto-Touch Foot Pedal (option)

The Auto-Touch Foot Pedal option maintains upward or downward motion even after releasing the pedal. **To operate:**

- When the table is at minimum height, double-touch the “UP” arrow and release. The table will continue upward until you tap either side of the pedal again.
- When the table is at maximum height, double-touch the “DOWN” arrow and release. The table will continue downward until you tap either side of the pedal again.
- When the table is at any starting height in between, a single-touch up or down will start and stop the motion.

3.3 Function Control Panel

For AFTs equipped with air functions, the control panel (photo 3) has a power button, drop-selector buttons and a thoracic-breakaway button. After power, press in any order to activate the corresponding function.

3.4 Thoracic Release / Thoracic Breakaway

Caution:

To avoid any potential pinching hazard, patients should not grasp the thoracic cushion as shown when the table is equipped with a thoracic release or a thoracic breakaway.



Thoracic Release

To operate the Thoracic Release, pull the lever towards you while holding the cushion; adjust to the desired depth. Release the lever to lock the cushion.

Thoracic Spring-Breakaway (Option)

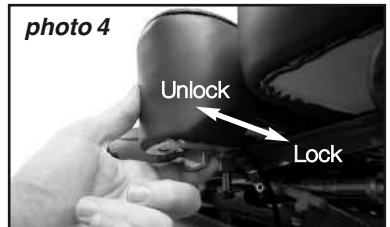
The manual Thoracic Breakaway (non-air) uses a fixed-tension gas shock to create a recoil movement when the thoracic cushion is unlocked (see photo 4).



Thoracic Air-Breakaway

For tables with a Thoracic Air-Breakaway, it is necessary to regulate the air-pressure before treating your patient. Follow these steps:

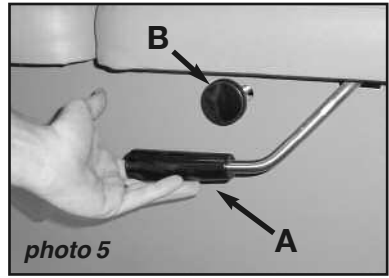
1. Select the 'BRKY' (breakaway) button on the main control panel (photo 3).
2. Unlock the thoracic breakaway switch by pulling toward you until it clicks (photo 4). This will allow the cushion to move freely up and down.
3. Press the right side of the Pressure Pedal (#13, page 2) to increase the air-pressure or left side to decrease in the thoracic section. Push down on the cushion as you add air to test for desired firmness.
4. Lock the cushion at any point by pushing the thoracic lock switch towards the table until it clicks.



Using Drops

4.1 Manual-Drops

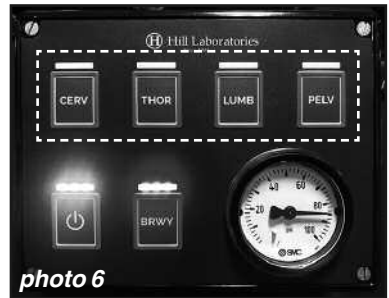
Cocking handles are located on both sides of each drop. Lift the cocking handle up (photo 5, A) to activate the drop. Turn the tension knobs (5, B) clockwise to tighten and counterclockwise to loosen (also see caution, pg. 6).



4.2 Air-Drops

Drop Selector Switches

The Drop Selector Switches (photo 6) activate the table drops. You may choose one or up to four drops simultaneously. Once selected, press the Pressure Pedal (or optional foot strips, #12, pg. 2) to activate the drops. After discharging, press the pedal or foot strip again to immediately reactivate the drops.



Drop Tension Control Knobs

The Drop Tension Knobs are located on the left side of each drop (#14, pg. 2). Turn the knob clockwise to increase the firmness of the drop—counterclockwise to decrease.

Caution: Do not loosen Tension Knobs too far- Adjusting the tension knobs out too far can cause the drops to malfunction. See “Trouble Shooting” section on pg. 10 for more detail.

Headpieces

5.1 Tilting Headpiece

All AFT models are equipped with a tilting headpiece. The lever for tilting is located under the front of the headpiece (photo 7, A). It controls the angle of tilt 30° positive or negative. Pull the lever to unlock; adjust the angle; release to lock.



5.2 Dual-Drop Headpiece

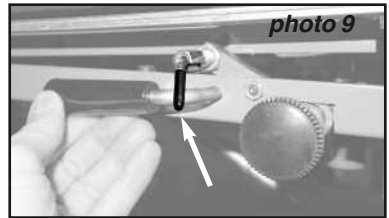
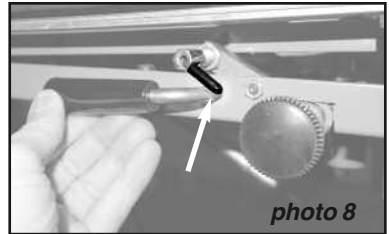
The Dual-Drop headpiece contains two drops—a drop-forward motion and a straight-down drop.

Important Note: Before changing any of the settings described in the following section, be sure the headpiece drop is discharged.

Drop-Forward Motion Headpiece

To use the Drop-Forward Motion of the headpiece, the setting lever should remain in the side channel of the setting mechanism as shown in photo 8. Be sure that the pin locks into the receiver behind it—otherwise, the drop will not work. For a manual drop, push up on the black cocking handle to engage.

For Air-Cervical Drop, see section 4.2.



Straight-Down Drop Headpiece

To use the Straight-Down Drop action of the headpiece, pull the black setting lever out and turn it to the left so that it points straight down (photo 9). For a manual drop, push up on the black cocking handle to engage.

For Air-Cervical Drop, see section 4.2).

5.3 Raised Headpiece

The Raised Headpiece allows the headpiece to rise up to 5" above the surface of the table. It is controlled by a lever in front of the head cushion (photo 7, B). Pull and hold the switch to adjust to the desired height; release to lock. To lower, apply gentle downward pressure to the thoracic end of the headpiece with one hand while pulling the lever to adjust.

5.4 Cervical Flexion/Distracton

The Cervical Flexion Headpiece includes the raised headpiece feature, occipital strap and the removable tiller bar.

Note: Cervical Flexion, Distraction and Lateral Motion (described below) can be used separately or in combination.

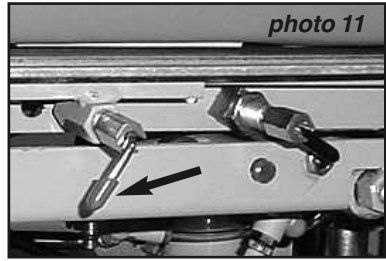
Cervical Flexion

Position the patient as shown in photo 10. Secure the occipital strap using the Velcro® connectors. Use the Tiller Bar to apply flexion.



Cervical Distraction

To use Manual Cervical Distraction you must first unlock the cushion for axial motion by releasing the red lock pin (shown in photo 11). Pull and turn the lever to the left.



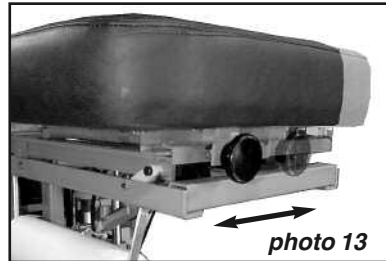
Cervical Lateral Motion

The Cervical Flexion Headpiece includes lateral motion. To use lateral motion, locate the switch as shown in photo 12 (or 7C). Pull the lever toward you to click and unlock. This will allow full-range lateral movement. The headpiece can also be locked at any angle in the lateral range.



5.5 Translation/CBP Headpiece

To use the translation headpiece, loosen the black knob in front of the headpiece by turning it counterclockwise. Push the cushion left or right to the desired position; turn clockwise to tighten the knob.



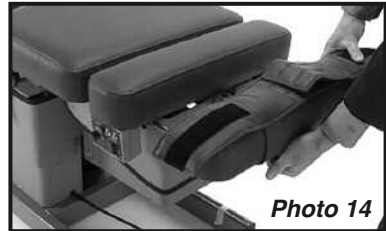
Flexion, Lateral Motion and Distraction

6.1 Preparing for Flexion

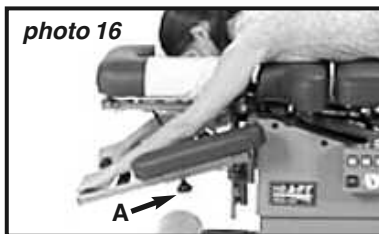
Applying flexion with the Hill AFT is easy. Follow these steps -

Set Up

Position the patient comfortably on the table in the face-down position. Adjust the slide-out ankle support to fit your patient's height using the lever located under the ankle cushion (photo 14). Secure the ankles by firmly fastening the straps with the velcro connectors (photo 15).



Now, have your patient grasp the gripper bars. The Gripper Bars keep the patient from sliding during flexion treatment. Adjust length with knob (photo 16 - "A")



6.2 Using Flexion

Using the Flexion Control Panel

All of the controls for flexion are conveniently located at the foot end of the AFT (see '8', under 'Product Features').

Speed Setting - The Auto Flex has a fixed rate of movement from 1-28 cycles per minute (photo 17). Set to desired speed and press 'Start' (always start with a low speed if there is any concern about a patient's flexibility). Speed can be changed at any time during the cycle.



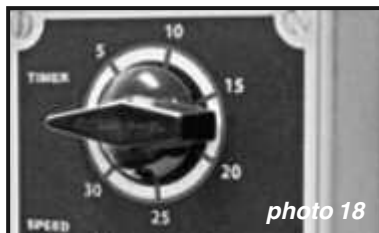
Horizontal Switch - The Horizontal Switch controls how the table behaves when the Stop Button is pushed. If you want the table to cycle back to the horizontal position when the Stop Button is pushed, set the 'Horizontal Switch' to 'ON'. If you want the table to stop immediately at any point in the flexion cycle when the Stop Button is pushed, set the Horizontal Switch to 'OFF'.

Start Button - Push to start the flexion treatment.

Stop Button - Push to stop the flexion treatment.

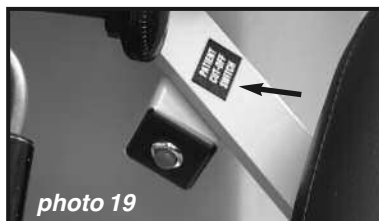
Important: See *Horizontal Switch* (above) for setting *Stop Button* behavior.

Timer - For tables equipped with a timer, flexion can be set to run automatically for up to 30 minutes (photo 18).



Patient Cut-Off Switch

The patient can stop treatment immediately at anytime using the 'Patient Cut-Off Switch'. The PCO switch is located on the left armrest support (photo 19). Instruct the patient as to the location and function of the switch. To resume treatment after stopping, press the green Start Button on the flexion control panel.



6.3 Using Lateral Motion

To use Lateral Motion with flexion, insert the flexion handle (tiller) into the receptacle, just above the ankle cushion (photo 20). Locate the black Lateral Lock Switch under the pelvic cushion and pull the switch out to unlock (photo 21). This will allow the lower part of the table to move freely from side-to-side. You can also lock the cushion laterally at any point on either side by pushing the switch handle back in to the lock position. Be sure the Lateral Lock Switch is locked before your patient exits the table.



6.4 Using Axial Distraction

The Air-Drop AFT comes with an available option for air-powered Axial Distraction using the pressure foot pedal. To operate, simply push the DIST button on the control panel and then use the PRESSURE foot pedal to distract the patient. Axial Distraction can be used simultaneously with lumbar flexion.



Maintenance

Regular Maintenance

Your Hill AFT is practically maintenance free. There is no lubrication of parts needed.

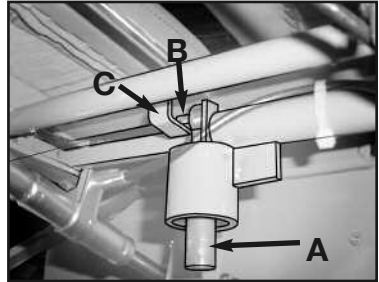
Trouble Shooting

Problem

The Cervical Cushion cocks up but does not stay up. The drop pin has come out of its L-bracket.

To Fix:

1. Loosen the Cervical Drop Tension Knob enough to rotate the drop pin (see "A" in photo) so that the spring pin (B) faces and engages the bracket (C) as shown in the photo. Once the pin is turned into the bracket, retighten the Tension Knob.



Problem

The main power board is turning off on its own. This is likely the Auto-Shutdown mode operating normally.

When the AFT is left inactive for 2 hours, the Auto-Shutdown mode will power the main control board down automatically.

To Fix:

Simply press the green power button.



Problem

The compressor runs more than 2 or more minutes at a time to replenish the table's air supply.

To Fix:

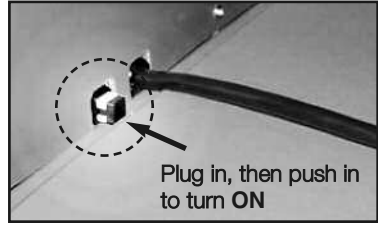
Please call your local dealer or contact Hill Support directly (see below).

Problem

Power Outage: Due to lightning or some other reason, your facility may lose electrical power from time to time. When this happens, your table's power switch will need to be reset.

To Fix:

Unplug the table from the wall outlet and wait approximately 30 seconds. Plug the table back in to the outlet and then press the power switch in, (see photo), to the "ON" position



Problem

The table is not responding to the Control Box properly.

The problem may be indicated by the LEDs on the internal electronic drive which controls the flexion motor. The chart below explains the LED indications.

Inside Control Panel - KBVF Status Indicators

To view the internal drive showing the LEDs, adjust the table height to the lowest setting and then look under the thoracic section into the table base interior. The electronic drive is mounted to the internal frame scissors.

LED Ref.	Function	State ⁽¹⁾	LED Color
"ST" (Status)	Normal Control Operation	Slow Flash	Green
	CL (current limit)	Steady	Red
	$I^2 t$	Quick Flash	Red
	Short Circuit	slow Flash	Red
	Undervoltage	Quick Flash	Red/Yellow
	Overvoltage	Slow Flash	Red/Yellow
	Stop	Steady	Yellow
"PWR" (Power)	Bus & Power Supply	Steady	Green

Important: Surge Protection Recommended

Air functions on this table are controlled by a circuit board and low voltage valves (see diagrams on the following pages). Since electrical spikes, surges and undervoltage can be detrimental to electronic components, we recommend protecting your table with an automatic voltage regulator. While a voltage regulator will not guarantee parts against failure, it could save you the cost of parts as well as table downtime.

The APC LE1200 voltage regulator is one example of a device that provides a minimum level of protection.



Additional service needed?

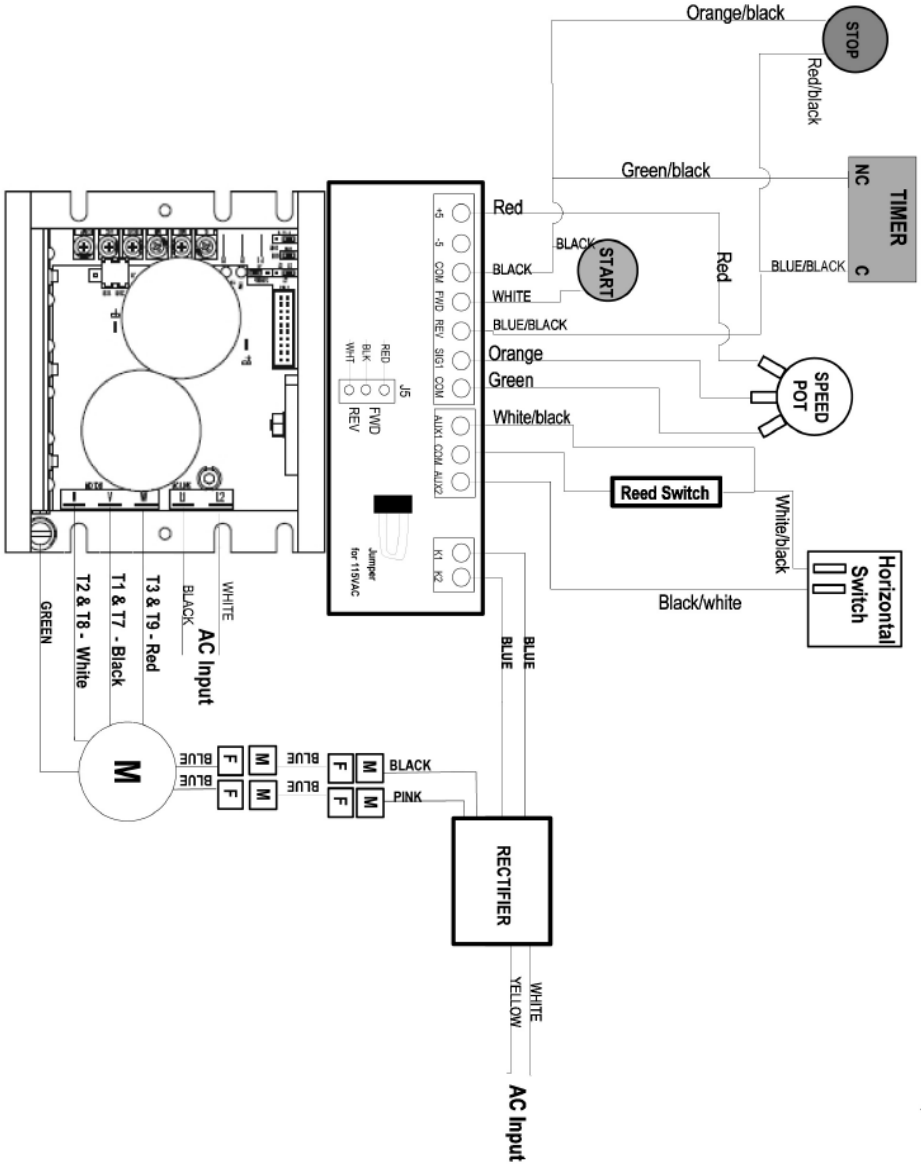
Contact your local dealer or reach us directly:

Phone: 1-877-445-5020 • Fax: 610-647-6297 • Email: Support@HillLabs.com

Technicians are available 9 am - 4 pm E.S.T., Monday - Friday.

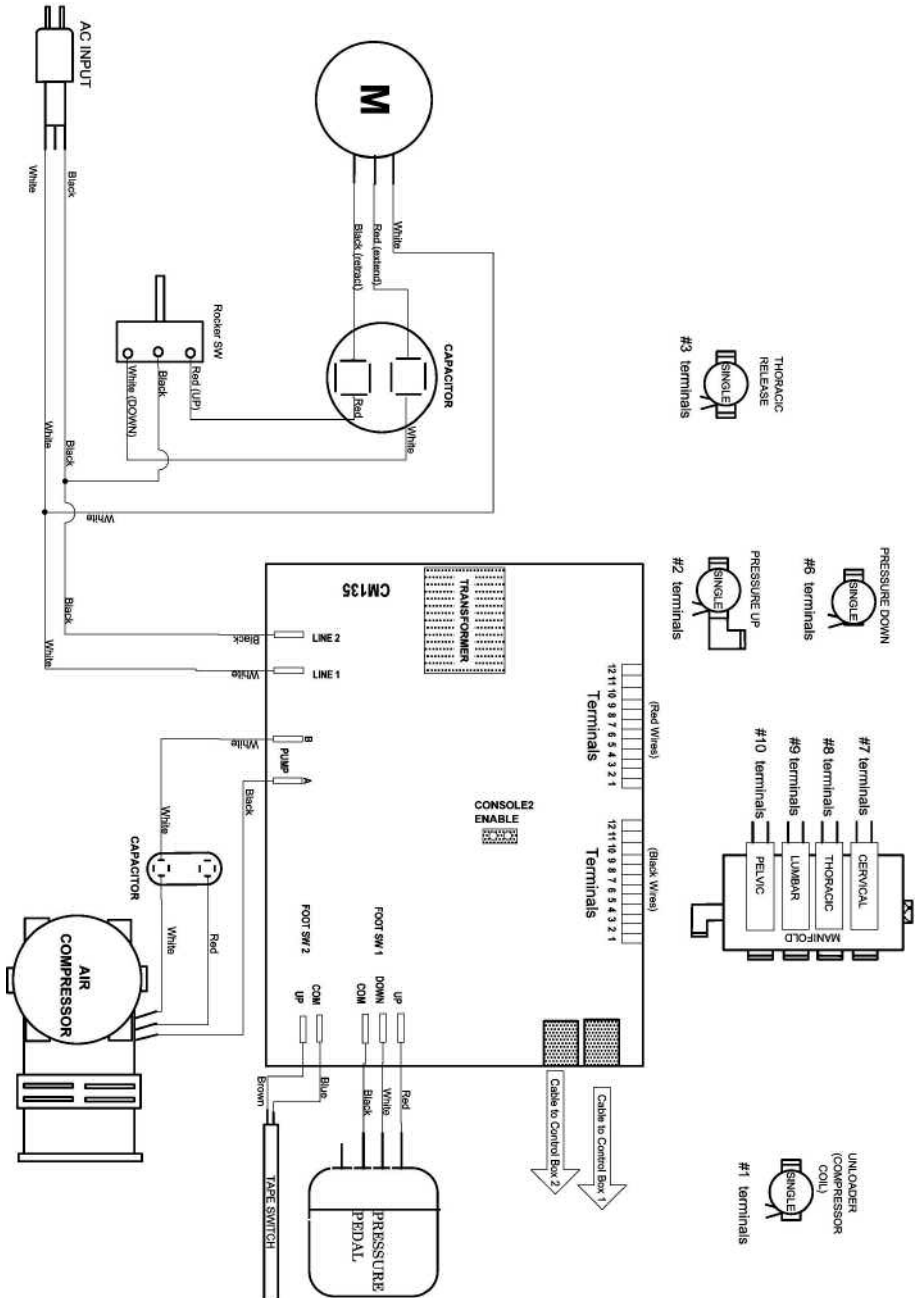
Wiring Diagram - AFT, 24VDC

Flexion System for all AFT Models.



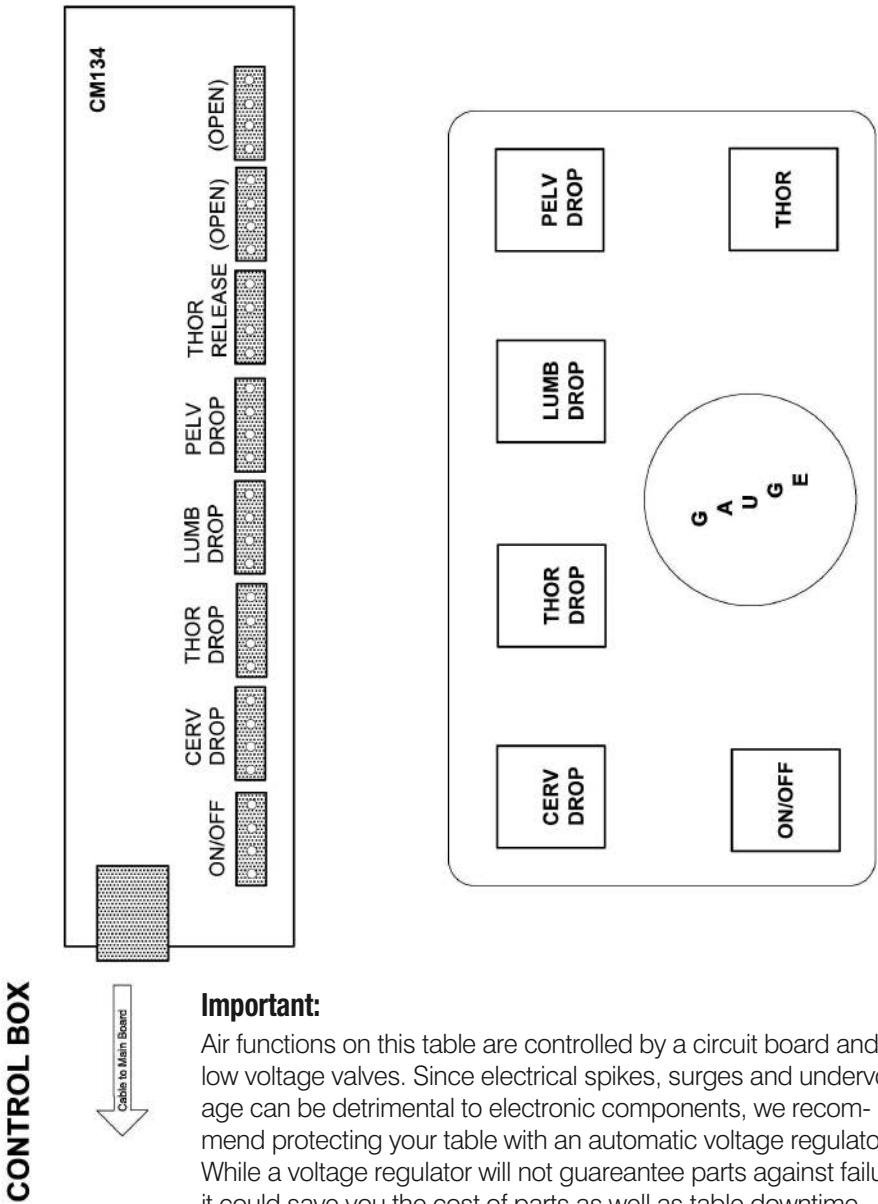
Wiring Diagram - AFT, 24VDC, Part 1

Air System for all AFT Models.



Wiring Diagram - AFT, 24VDC, Part 2

Air System for all AFT Models.



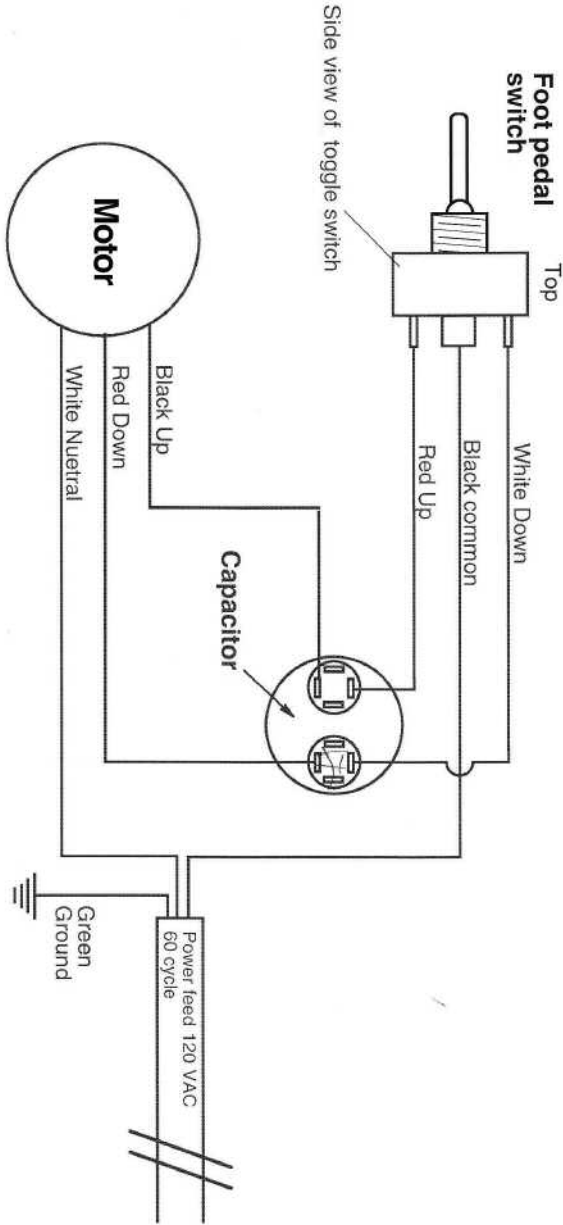
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Wiring Diagram - 90C, 24VDC, Part 3

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