

A detailed schematic diagram of a cable system, likely for a prosthetic arm. The diagram shows a complex arrangement of pulleys, cables, and weights. Key components labeled include:

- Pulleys:** Labeled with numbers 1 through 14. Specific pulleys are also labeled with letters: L6, L7, L8, L9, L10, L11, R7, R8, R9, R10, R11, R12, R13, R14.
- Cables:** Labeled with part numbers: PN 64810, PN 64820, PN 64830, PN 64800, and PN 64800.
- Weights:** Labeled with numbers 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.
- Other Labels:** "ADJUST CABLE SYSTEM", "WEIGHT STACK", "LEFT ARM", "RIGHT ARM", "LEFT HIGH PULLEY", "RIGHT HIGH PULLEY", "CENTER LOW PULLEY", "BENCH CABLE", "10' EXTENSION CABLE", "PN 47930".

 A large, thick red 'X' is drawn across the entire diagram, indicating that this system is to be discarded or is obsolete.



Vectra Fitness, Inc. warrants, to the original owner only, this Vectra VFT-100 to be free from defects in materials and workmanship for component specific periods as outlined below. Purchaser must retain bill of sale to establish warranty rights. This warranty is valid only if machine is purchased from a Vectra authorized dealer. Defective parts will be repaired or replaced at Vectra's option, when returned to Vectra Fitness, Inc. prepaid with prior authorization. No allowances for labor will be made.

Home Use:	
Structural Frame 10 years	Cables 1 year
Weight Stack 5 years	Bearings 1 year
Guide Rods 5 years	Upholstery 1 year
Pulleys 5 years	Other parts not listed 1 year

Home use is defined as use in a family's home by the members of that family.

Conditions and Exceptions: Failures due to normal wear, damage, misuse, abuse, neglect, alteration, improper assembly, repairs other than by an authorized Vectra Service Center, or lack of maintenance are not covered. Use of a weight stack that is heavier than the heaviest stack that Vectra Fitness sells for use on the machine voids this warranty. This warranty does not cover damages sustained during shipment. Title passes to buyer upon delivery to carrier. If product is damaged in transit, file claim with carrier.

It is our policy to replace components rather than entire machines or assemblies. It is also our policy to repair rather than replace frame components. Such repairs of structural parts will be made using appropriate technology and may be visible. Repaired items will be repainted as needed, but the new paint may not match the old.

Claim Procedure: Please contact the Vectra authorized dealer from whom you purchased your machine should warranty service be required. Items returned to Vectra without prior factory authorization or freight collect will not be accepted. Vectra assigned RMA number MUST be prominently shown on OUTSIDE of carton. Copies of original bill of sale MUST accompany any merchandise returned for warranty service. Also each returned item must be accompanied by the following information: RMA number assigned by Vectra, product serial number, description of problem experienced, and instructions for return of repaired/replaced part. Parts should be shipped to Vectra Fitness in their original carton or equivalent packaging. Vectra Fitness will not be responsible for any loss or damage incurred in shipping.

Consumers Rights: This Limited Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Protected by one or more of the following Patent Numbers: RE34,572; 4,900,018; 4,986,538; 5,336,148; 5,378,216; 5,395,295; 5,462,510; 5,605,523; 5,672,143; 5,779,601; 6,482,135; 6,508,748; 6,582,346; 6,994,660; 0320,246; 0320,247; 0320,248; 0329,563; 0454,186; 0457,581; 0460,508; 0462,731; CN1,309,738; CN2,023,972; 3,117,451

One U.S. and foreign patents pending. Vector and On-Line are registered trademarks of Vectra Fitness, Inc.
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PERFORM THE FOLLOWING CHECKS WEEKLY:

1. **Check for leaks.** Inspect the engine compartment for any leaks of oil, coolant, or other fluids. If a leak is detected, repair it immediately. **Replace any damaged or worn cables.**

2. **Check the engine oil level.** Check the engine oil level at least once a week. If the oil level is low, add oil to the correct level. **Replace any damaged or worn cables.**

3. **Check the battery.** Check the battery voltage and electrolyte level. If the battery is discharged, recharge it. If the electrolyte level is low, add distilled water. **Replace any damaged or worn cables.**

4. **Check the air filter.** Check the air filter for dirt and debris. If the filter is dirty, clean it or replace it. **Replace any damaged or worn cables.**

5. **Check the spark plug.** Check the spark plug for wear and gap. If the plug is worn, replace it. **Replace any damaged or worn cables.**

6. **Check the timing belt.** Check the timing belt for wear and tension. If the belt is worn, replace it. **Replace any damaged or worn cables.**

7. **Check the water pump.** Check the water pump for leaks and operation. If the pump is leaking, repair it. **Replace any damaged or worn cables.**

8. **Check the alternator.** Check the alternator for output and operation. If the alternator is not outputting, repair it. **Replace any damaged or worn cables.**

9. **Check the belts.** Check the belts for wear and tension. If the belts are worn, replace them. **Replace any damaged or worn cables.**

10. **Check the hoses.** Check the hoses for leaks and condition. If the hoses are leaking, replace them. **Replace any damaged or worn cables.**

11. **Check the tires.** Check the tire pressure and tread. If the pressure is low, inflate the tire. If the tread is worn, replace the tire. **Replace any damaged or worn cables.**

12. **Check the brakes.** Check the brake pads and shoes. If the pads or shoes are worn, replace them. **Replace any damaged or worn cables.**

13. **Check the steering.** Check the steering for play and noise. If there is play or noise, repair the steering. **Replace any damaged or worn cables.**

14. **Check the suspension.** Check the suspension for wear and noise. If there is wear or noise, repair the suspension. **Replace any damaged or worn cables.**

15. **Check the exhaust.** Check the exhaust for leaks and noise. If there is a leak or noise, repair the exhaust. **Replace any damaged or worn cables.**

16. **Check the cooling system.** Check the cooling system for leaks and operation. If the system is leaking, repair it. **Replace any damaged or worn cables.**

17. **Check the fuel system.** Check the fuel system for leaks and operation. If the system is leaking, repair it. **Replace any damaged or worn cables.**

18. **Check the electrical system.** Check the electrical system for leaks and operation. If the system is leaking, repair it. **Replace any damaged or worn cables.**

19. **Check the lubrication system.** Check the lubrication system for leaks and operation. If the system is leaking, repair it. **Replace any damaged or worn cables.**

20. **Check the overall condition.** Check the overall condition of the vehicle. If there are any problems, repair them. **Replace any damaged or worn cables.**

* If any bolts seem to loosen periodically, use Loctite 242 for a long-term cure.

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Introduction



Tools Required:

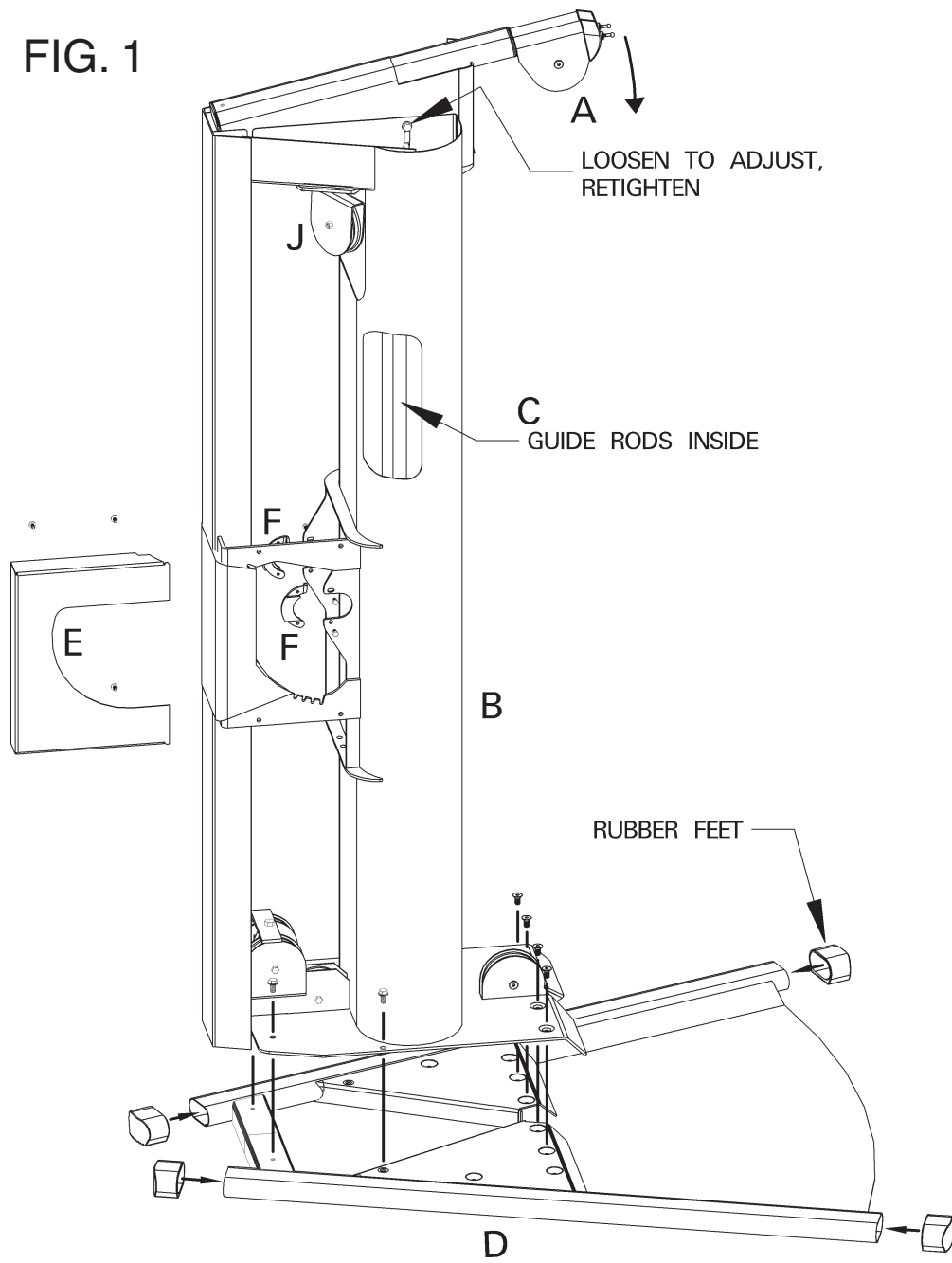
Wrenches: One each (7/16", 1/2", 9/16", 3/4")
Hex Keys: Two 5mm (provided) and one 7/32" (provided)
Phillips screwdriver

1. Select location for your machine. Set machine up in a well-lighted and well-ventilated area where you will enjoy exercising. Use rubber floor matting or carpet remnants to protect your floor, if desired. It is necessary to have access to all sides of the unit during assembly. Once the unit is assembled, it may be moved against a wall or into a corner for use.

2. Unbox entire unit. **NOTE: LEAVE ALL CABLE RETAINERS IN PLACE.** Leave any wrapping labeled "leave in place during setup" on until instructions say to remove it. Some wrapping is intended to assist with the assembly of the pulley arm by holding cables back and by helping protect the paint during assembly. Lay large items, such as the main column down until needed to prevent them from accidentally falling over. To make assembly as easy as possible, many cables are pre-routed at the factory. Route and attach cables when instructions call for it. After routing any cable, resecure it to prevent it from coming unrouted before going on. In general, tighten all bolts very tight at the completion of each step, unless the instructions say otherwise.

3. In preparation for assembly, remove the Footplate/Lat Hold Downs (L & M on Fig. 7) from the Base Frame (D). They are shipped bolted to the frame differently than they are bolted on to the assembled unit. See figure 1 for a view of how the Base Frame should look after these are removed. Also, if you are assembling the unit under a ceiling that is 7'6" (229 cm) or less, it will be necessary to lower the High Pulley Member (A) before proceeding. To lower this pulley member, locate two bolts, one in each side at the top of the Stack Column (B). These bolt heads are just above the bolts that go into the guide rods. You'll need a 9/16" wrench. Loosen the bolts just one or two turns each. Once the bolts are loose, push the High Pulley Member all the way down. Retighten the two bolts. **FIG. 1**

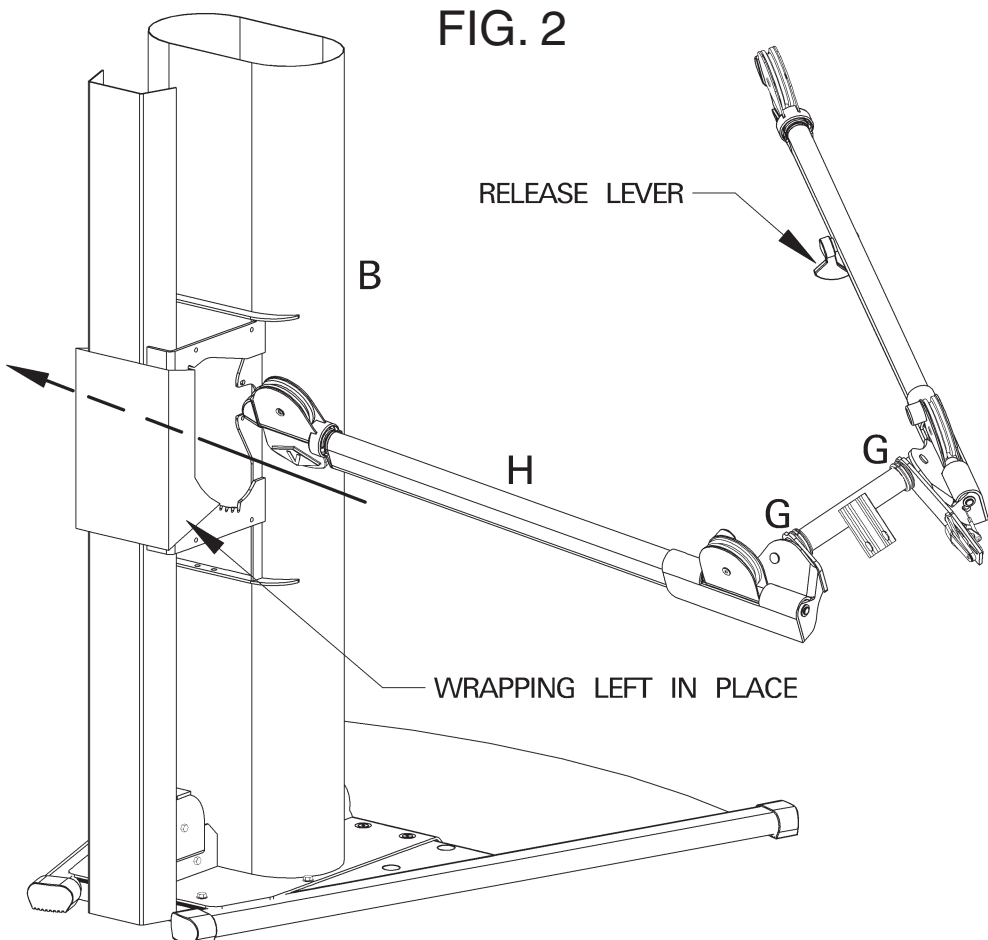
FIG. 1



4. The Guide Rods (C) need to be in Stack Column (B) now because ceiling height might make later insertion difficult or impossible. Install 4 rubber feet on the Base Frame (D). Now carefully assemble the Stack Column (B) to Base Frame (D) (3/8-16 X 3/4 flat head bolts, Qty: 4, holes in front of stack column. 3/8-16 X 3/4 hex bolts, Qty: 4, holes further back). **IMPORTANT:** To prevent scratches to the parts during this step, cover parts of the base frame with discarded wrapping material. **The stack column is heavy and could scratch the base frame if slid into place.** So cover the base frame with wrapping material (foam, cardboard, etc.), get the column into position, and then pull out the wrapping material. This step requires a 7/32" hex key (the largest of those provided) and a 9/16" wrench. Before proceeding, ensure that these bolts are very tight. **FIG. 1**

5. Now remove the Adjustment Rack Shroud (E) but not the wrapping material just under it. Also remove the Bushing Retainers (F) from the back of the Stack Column (B) noting carefully how they fit (left vs. right) and which screws come out of which holes. **FIG. 1** Locate the Black Bushings (G) on the pivot tube of the Adjustable Pulley Arm (H) and make sure they are spread about as far apart as they will go. The Bushing Retainers (F) removed above engage with the grooves in these bushings once the pulley arm is in place on the Stack Column (B). These bushing grooves also engage the brackets on the back of the stack column that the bushing retainers attach to. Familiarizing yourself with these parts is a good idea so that assembly will go easier once you are supporting the weight of the Adjustable Pulley Arm (H) in the next step. **FIG. 2**

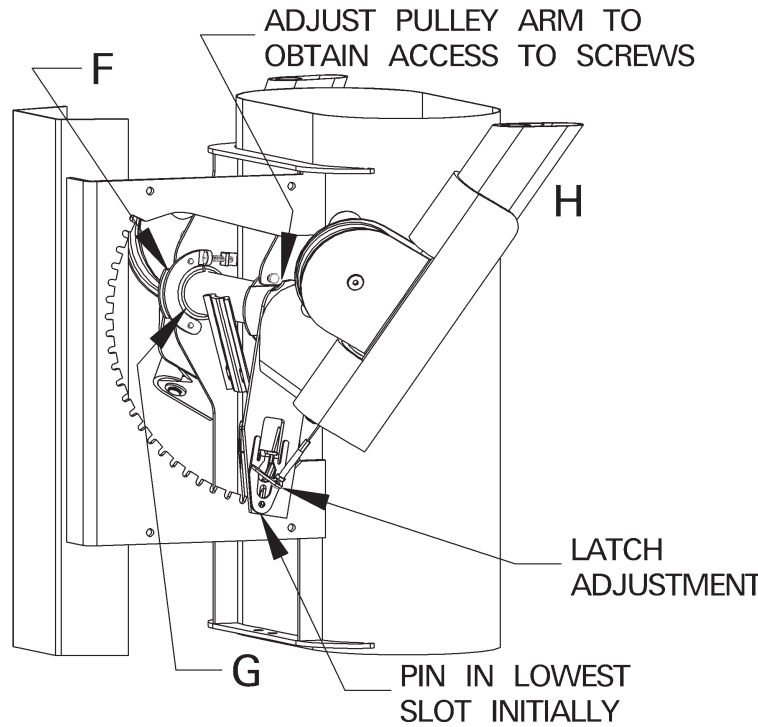
FIG. 2



6. Now insert the Adjustable Pulley Arm (H) through the toothed adjustment rack of the stack column (the near side of Fig. 2). Insert the end of the pulley arm that does NOT have the "Release Lever" into the side of the stack column that has the toothed rack on it. The Release Lever points down. The wrapping material should be holding all cables back out of the way as they all belong rearward in the machine from the arm. **IMPORTANT:** This step is best done with two people. **Go slow and use great care to prevent scratches to the adjustable pulley arm and stack column.** Once the arm is centered relative to the stack column, raise the ends to about six feet off the floor and place the "latch pin" into the lowest slot in the

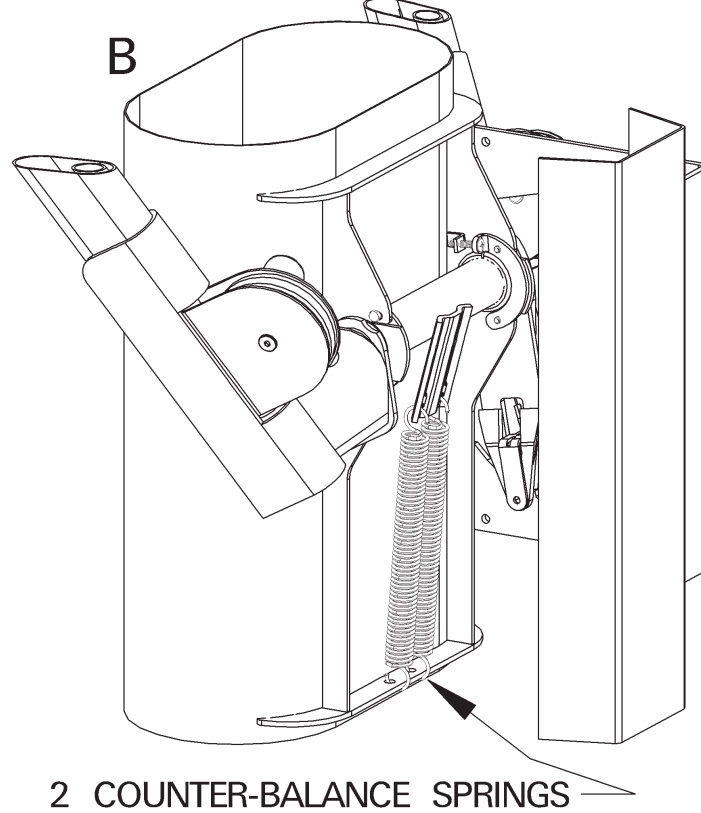
Assembly Instructions

FIG. 3



"toothed rack". Now line up the grooves in the Black Bushings (G) with the brackets on the back of the Stack Column (B). Rock the arm (pivoting on the "latch pin") such that the grooves in the two Black Bushings (G) engage the two brackets on the back of the stack column. Now reinstall the two Bushing Retainers (F) removed earlier. First put in the long screws that go in from the back, but don't tighten them. Next remove the wrapping material that passes through the rack and holds the cables back. Now put in the screws that go in from the sides. Adjusting the pulley arm to various heights is required to get these screws in. Bolt head access for each bolt is provided at a certain pulley arm position. Once the side screws are snug, tighten the screws that go in from the back to remove any play in the pulley arm. Now tighten the screws that go in from the sides. **FIG. 3**

FIG. 4

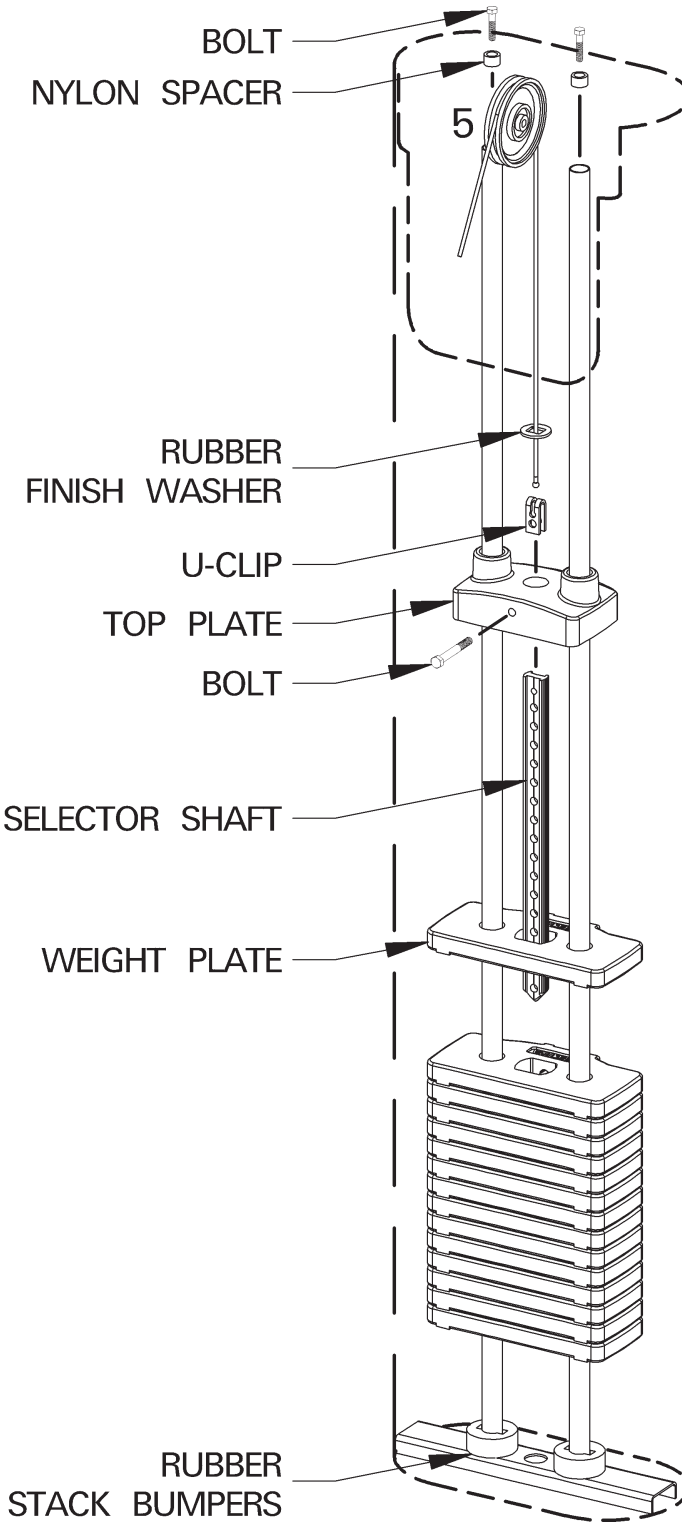


7. Install the two Counter-Balance Springs on the back of the Adjustable Pulley Arm (H). In preparation for this, adjust the pulley arm to its highest position. Doing so minimizes the amount that the springs must be stretched. Now (using gloves and care to prevent injury) stretch each spring and hook the lower end into a hole in a bracket on the Stack Column (B). **FIG. 4**

8. Remove the pulley bracket (J) from the stack column (B) to make more room for loading the weight stack. Note how it fits for reassembly later. Don't take out the pulley itself, just remove the two bolts that go up into the frame and remove the entire bracket leaving it threaded on the cable. Carefully place it on the floor out of the way. **FIG. 1**

9. Now install the weight stack inside the Stack Column (B) from the top. Ensure that the guide rods are in place as mentioned in step 4 above. Unbolt the top of the guide rods and lift them up a few inches one at a time and position the rubber stack bumper on the bottom of each guide rod. Do this by reaching in the weight pin slot on the front of the column. Replace lower end of the guide rods through holes in the base of the stack column and push them down as far as they will go to make room at the top for loading the weight stack. Load the 15 weight plates for a 160 lb. stack (20 for the optional 210 lb. stack) one at a time by placing them on the guide rods at the top of the column with selector groove in the bottom facing out. **IMPORTANT:** To safely keep plates from banging together the following procedure is suggested: after releasing each plate, pull the guide rods apart to slow the fall of the plate. **DO NOT** try to catch plates with hands or feet. **USE EXTREME CAUTION. FIG. 5**

FIG. 5



in the weight pin slot on the front of the column. Replace lower end of the guide rods through holes in the base of the stack column and push them down as far as they will go to make room at the top for loading the weight stack. Load the 15 weight plates for a 160 lb. stack (20 for the optional 210 lb. stack) one at a time by placing them on the guide rods at the top of the column with selector groove in the bottom facing out. **IMPORTANT:** To safely keep plates from banging together the following procedure is suggested: after releasing each plate, pull the guide rods apart to slow the fall of the plate. **DO NOT** try to catch plates with hands or feet. **USE EXTREME CAUTION. FIG. 5**

10. After all plates are in the column, assemble the top plate, selector shaft, rubber finish washer and U-clip to the end of the "stack cable", securing with 3/8-16 X 3 hex bolt. To do this first slide the rubber finish washer onto the cable. Next, insert the cable end into the keyhole in the U-clip. Insert the blunt end of the selector shaft from below into the center hole of the top plate until it is approximately flush on top. Now insert the U-clip ends down into the top plate around the selector shaft end. Secure with the cross bolt, and make sure it is very tight. Now slide the rubber finish washer down onto the top of the U-clip. **FIG. 5**

11. Now lower the top plate assembly down the guide rods making sure the cable is not tangled around anything. Replace and tighten the guide rod bolts making sure that there is a nylon spacer in the top of each guide rod. Using the cable, lift the top plate to the top and make sure the guide rod spacing is such that the top plate does not bind. If it does, loosen a guide rod bolt and adjust the guide rod spacing, then retighten the bolt. Make sure that the cable feeds straight down to the stack and doesn't go around a guide rod. **FIG. 5**

12. Install weight plate number labels per instructions with labels. Attach the weight pin lanyard ring around the stack cable just above the rubber finish washer. This is most easily done through the access slot in the front of the Stack Column (B).

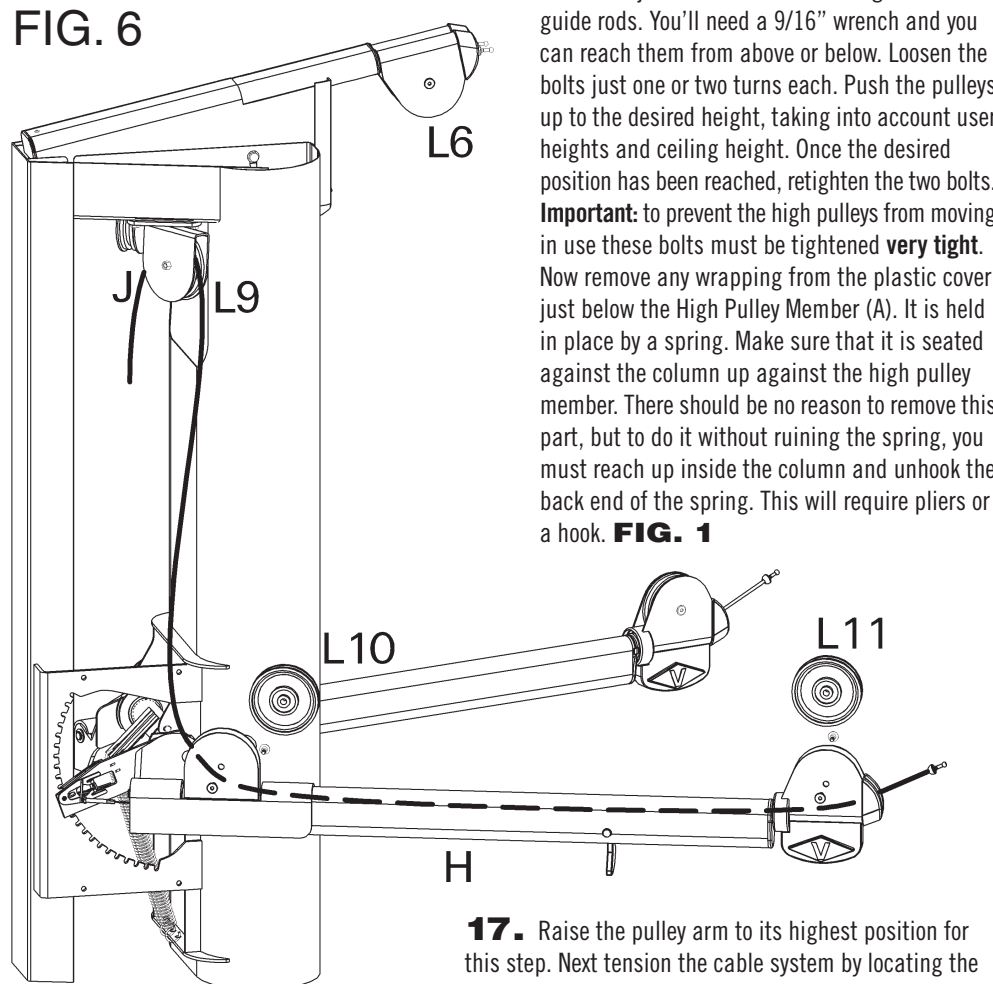
13. Reattach the pulley bracket (J) to the stack column (B) and tighten these bolts very tight. This pulley bracket goes on such that it protrudes as far as possible. Compare to welded on bracket on other side to make sure it is positioned correctly. **FIG. 1**

14. In preparation for cabling the Adjustable Pulley Arm (H), remove the 4 pulleys (R10, R11, L10, & L11) from the arm. Use 5mm hex keys (provided). Refer to the cable diagram on the other side of this manual as needed. Now, on the left side of the column (near side of Fig. 6), take the cable that comes down from pulley (L9) pulley bracket (J), and feed it into the pulley bracket on the arm straight below it. From here it enters a steel tube. Push it through the steel tube until it exits through a pulley bracket at the front end of the arm. Reinstall the 2 pulleys (L10 & L11) in this side of the arm to secure the cable using the screws and tube nuts removed earlier. Repeat this process with the cable coming down from R9 for the other side of the adjustable pulley arm. Tighten these screws very tight. **FIG. 6**

15. Test the adjustable pulley arm to verify that it adjusts to all positions and latches fully (latch pin hitting the back of each slot in the rack). Adjust screw near latch pin if necessary. This is adjusted at the factory and is unlikely to require adjustment. After any adjustment, retighten jam nut against brass cable end to keep adjustment from changing over time. **FIG. 3** Cover this area with Adjustment rack shroud (E) (1/4-20 X 1/2" phillips head screws, Qty: 4) **FIG. 1**

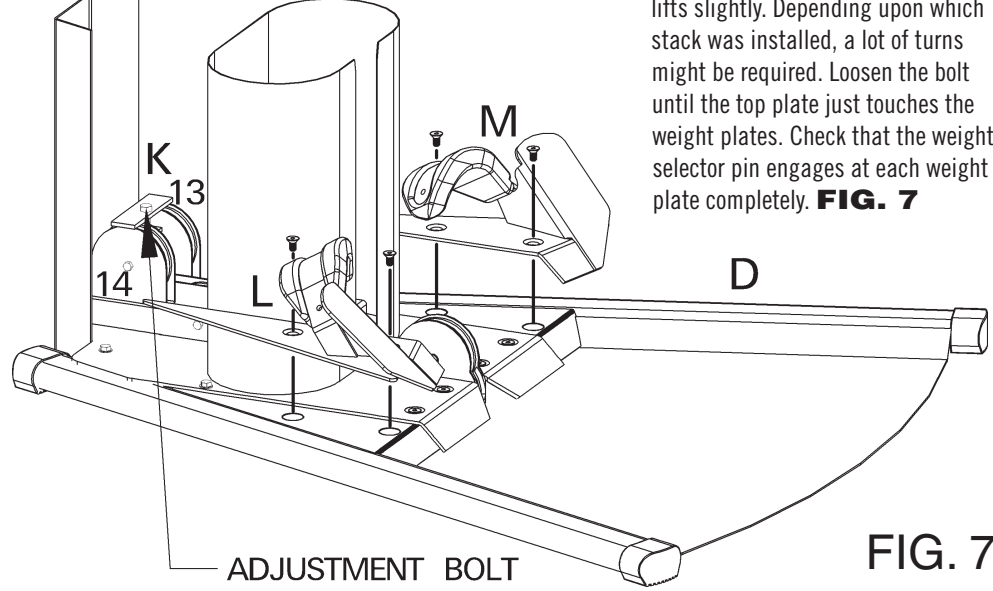
16. Next adjust the height of the two high pulleys (L6 & R6 on cable diagram) in the High Pulley Member (A) to the desired height. If ceiling height does not allow or if you don't wish to raise the height of these pulleys, skip this step. To raise these pulleys, loosen the two bolts, one in each side. These bolt

FIG. 6



heads are just above the bolts that go into the guide rods. You'll need a 9/16" wrench and you can reach them from above or below. Loosen the bolts just one or two turns each. Push the pulleys up to the desired height, taking into account user heights and ceiling height. Once the desired position has been reached, retighten the two bolts. **Important:** to prevent the high pulleys from moving in use these bolts must be tightened **very tight**. Now remove any wrapping from the plastic cover just below the High Pulley Member (A). It is held in place by a spring. Make sure that it is seated against the column up against the high pulley member. There should be no reason to remove this part, but to do it without ruining the spring, you must reach up inside the column and unhook the back end of the spring. This will require pliers or a hook. **FIG. 1**

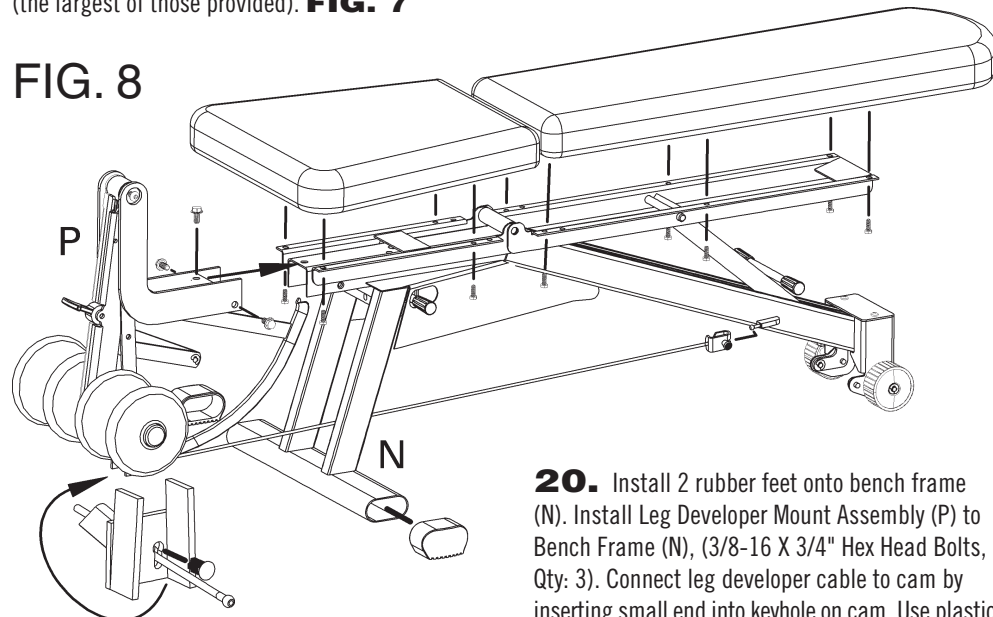
17. Raise the pulley arm to its highest position for this step. Next tension the cable system by locating the adjustment bolt between the two pulleys (#13 and #14 on cable diagram) of the adjustable pulleys bracket (K). A 3/4" wrench is required. Tighten this bolt until the top plate lifts slightly. Depending upon which stack was installed, a lot of turns might be required. Loosen the bolt until the top plate just touches the weight plates. Check that the weight selector pin engages at each weight plate completely. **FIG. 7**



18. Make sure that all cables move freely when all cable ends are pulled. Immediately fix any cable rubbing problems. If a pulley is rubbing or otherwise making a noise while turning, the problem can usually be cured by tightening its bolt.

19. Attach left Footplate/Lat Hold Down (L) and right Footplate/Lat Hold Down (M) to Base Frame (D) (3/8-16 X 3/4 flat head bolts, Qty: 2 per side). This step requires a 7/32" hex key (the largest of those provided). **FIG. 7**

FIG. 8



20. Install 2 rubber feet onto bench frame (N). Install Leg Developer Mount Assembly (P) to Bench Frame (N), (3/8-16 X 3/4" Hex Head Bolts, Qty: 3). Connect leg developer cable to cam by inserting small end into keyhole on cam. Use plastic hole plug in keyhole to prevent disconnection. Attach the other end of this cable to the storage location at the other end of the bench frame. **FIG. 8**

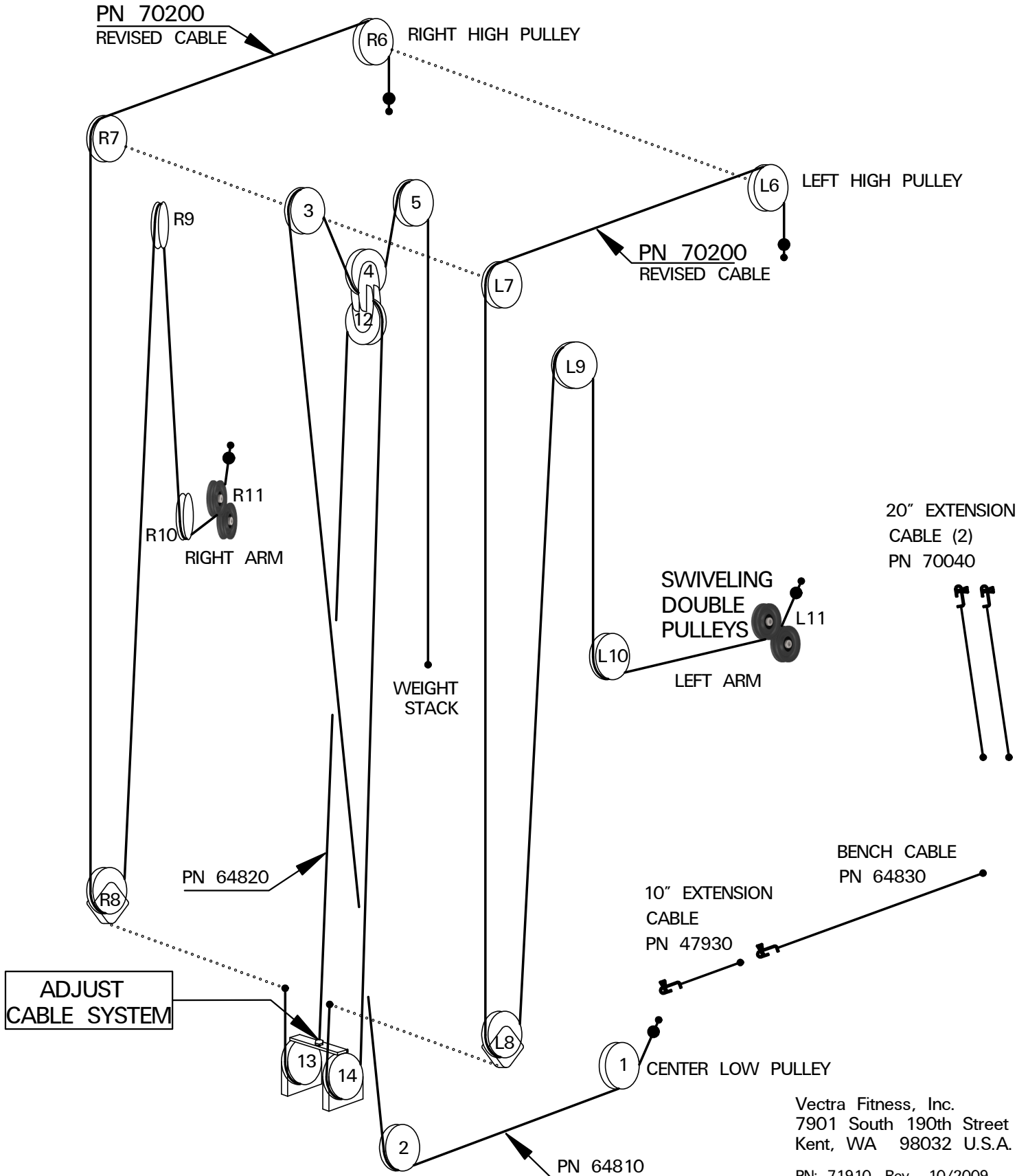
21. Attach the cushions to the bench (1/4-20 X 3/4 hex screws, Qty: 10). Tighten mounting screws firmly. **FIG. 8**

22. Hang the exercise charts on the wall where they can be referred to easily. Read the exercise charts, all product labels, and this manual before beginning an exercise program.

If you have any questions, PLEASE contact the full-service dealer where you purchased this machine.



VFT-100 Owner's Manual Addendum for swiveling double pulley machines manufactured after 11/2009



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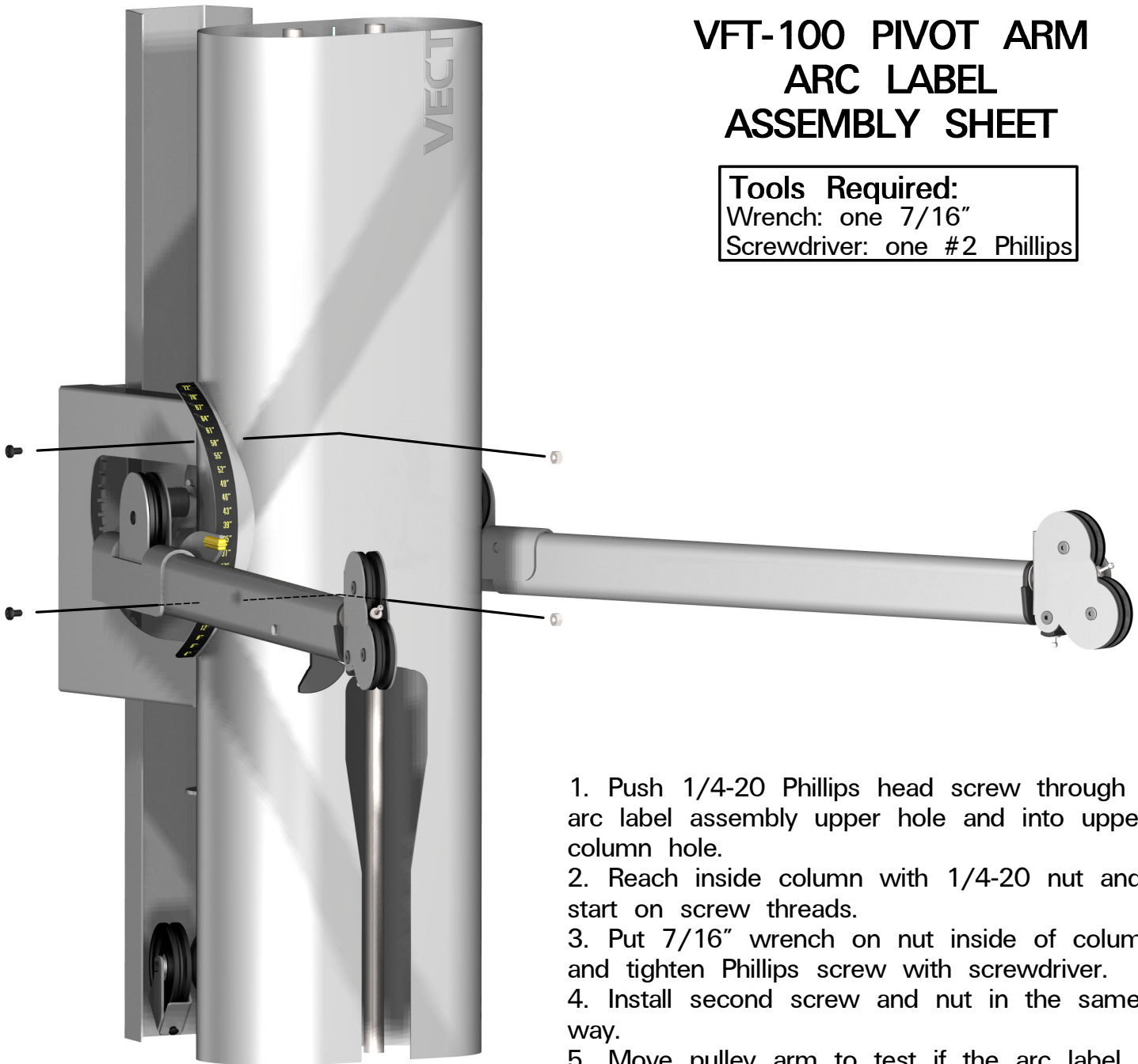


VFT-100 PIVOT ARM ARC LABEL ASSEMBLY SHEET

Tools Required:

Wrench: one 7/16"

Screwdriver: one #2 Phillips



1. Push 1/4-20 Phillips head screw through arc label assembly upper hole and into upper column hole.
2. Reach inside column with 1/4-20 nut and start on screw threads.
3. Put 7/16" wrench on nut inside of column and tighten Phillips screw with screwdriver.
4. Install second screw and nut in the same way.
5. Move pulley arm to test if the arc label assembly is correctly positioned. Adjust arc assembly position as necessary and tighten.

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