



Assembly Guide

EX SERIES ELLIPTICALS
MODELS: 420 and 440

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Getting Started

Thank you for choosing Vectra. For proper installation, please read this guide thoroughly and follow the assembly instructions. If you do not assemble the EX according to these guidelines, you can void the Vectra Limited Warranty.

Obtaining Service

Do not service the EX except for maintenance tasks as described in the owner's manual. For more information regarding customer support numbers or a list of Vectra authorized service dealers, visit the Vectra web site at VectraFitness.net.

Installation Requirements

CAUTION: You will need assistance to assemble this unit. DO NOT attempt assembly by yourself.

Follow these installation requirements when assembling the unit:

- Assemble the EX near the location where you plan to use it and provide ample space around the unit.
Important: Consult your owner's manual for proper placement of your equipment.
- Assemble the EX on a solid, flat surface. A smooth, flat surface under the EX helps keep it level, and a level EX will have fewer malfunctions.
- Open the box and assemble the components in the sequence presented in this guide. If you plan to move the unit, obtain help and use proper lifting techniques.
- Do not grasp any plastic part while lifting or moving the unit. The plastic parts are not reinforced and they may break.
- Obtain assistance. Ask another capable adult for assistance during the assembly process.
- Use your fingers or the appropriate tools to insert fasteners. Proper alignment helps alleviate crossthreading. Do not fully wrench tighten fasteners until instructed to do so.

Unpacking the Equipment

The EX is carefully tested and inspected before shipment. The unit is shipped in two boxes. Ask for help from one or more people to unpack and assemble the elliptical. If any items are missing, contact your dealer.

WARNING Do not attempt to move the equipment by yourself. Have at least one other person help you and use proper lifting techniques.

To unpack the equipment:

1. Carefully cut and remove all plastic straps that secure the cover on the cardboard box.
2. Lift the cover upward and set it aside.
3. Pull the cardboard or foam spacers away from the equipment and set them aside.
4. Cut all plastic ties securing the equipment in place.
5. Remove and set aside the enclosed box and loose accessories.
6. Remove the base frame assembly from the container and set it on the floor where you plan to assemble and use the equipment.

Required Tools

- 1/2-inch socket wrench with extension
- Adjustable wrench
- Wire cutter
- 9/16-inch socket wrench
- 1/2-inch open-end wrench

Hardware Kit (not to scale)

The hardware kit shipped with this equipment contains the fasteners and other hardware components shown in the following table. Before you begin assembly, make sure that your hardware kit is complete. If not, please contact Vectra Customer Support.

Table 1. Hardware Kit Contents

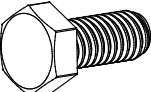
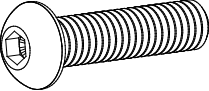
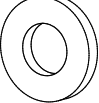
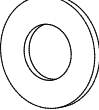
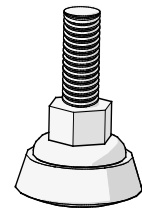
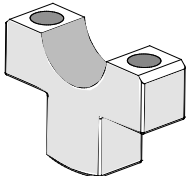
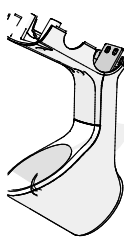
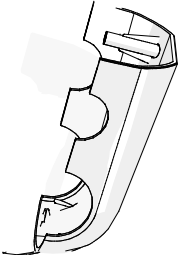
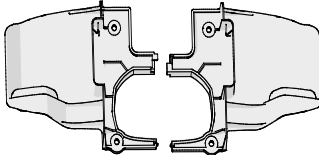
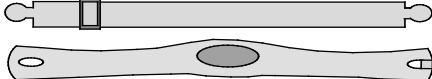
Fasteners		Quantity
	7/32-inch hex wrench	1
	5/32-inch hex wrench	1
	Hex head cap screw (5/16-inch x 3/4-inch)	18
	Lock nut (3/8-inch)	2
	Phillips head screw (#10 x 1/2-inch)	4
	Buttonhead cap screw (3/8-inch x 2 3/4-inch)	2
	Flat washer (5/16-inch)	18
	Flat washer (3/8-inch)	2

Table 2. Additional Parts and Accessories

			
Two adjustable feet	Two clamps	Bottle holder	Top cover
			
Two device holders	Heart rate chest strap: Standard feature for EX-440 Optional feature for EX-420		

Assembling the Equipment

Proper alignment and adjustment of the equipment is critical. When you install fasteners, leave room for adjustments. *Do not fully tighten the fasteners until you are instructed to do so.*

The following figure identifies the major components of the equipment referred to in this manual.

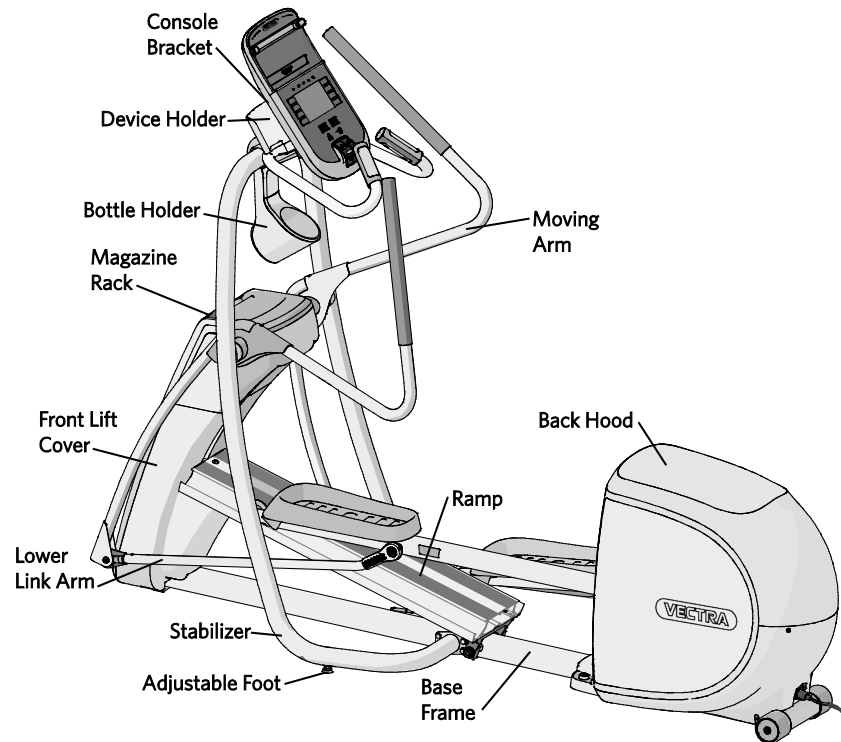


Figure 1: Major components of the EX

Beginning Assembly

Remove the packaging around the lift covers.

To remove the lift cover:

1. Grasp the magazine rack at its base and slide it up and off the front lift cover. Set the magazine rack aside.

Note: You may have to apply strong pressure to remove the magazine rack.

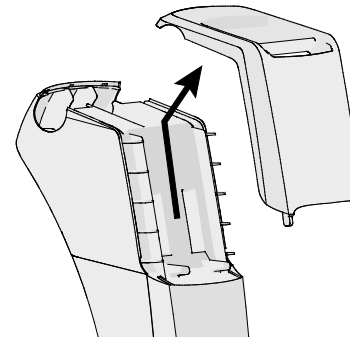


Figure 2: Magazine rack removal

2. Using the $\frac{5}{32}$ -inch hex key, remove the four fasteners that secure the front lift cover and set them aside.

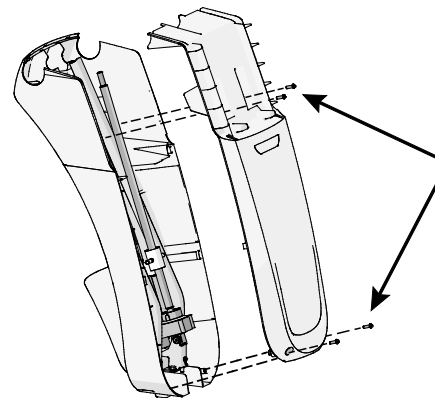


Figure 3: Removing the lift cover fasteners

3. A tab on each side of the front lift cover holds the front and back covers together. Gently squeeze the sides of the back covers to release the tabs and remove the front lift cover.

Important: The lift screw (shaded in figure below) is lubricated before shipping. Grease on the lift screw is required for proper operation, but can stain clothing. Be careful not to get grease on your clothing as you remove the lift cover.

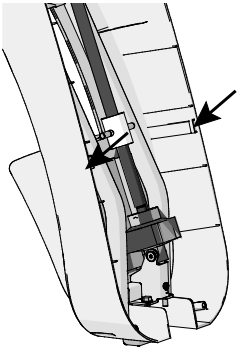


Figure 4: Tab locations

To attach the lift assembly to the equipment frame:

1. Tear a slit in the foam pouch. Ask your assistant to lift and hold the ramp while you position the lift motor assembly and slide the yoke into the ramp.

Note: The foam pouch has been placed over the end of the ramp to prevent scratches to the cover. It will be removed in a later assembly step.

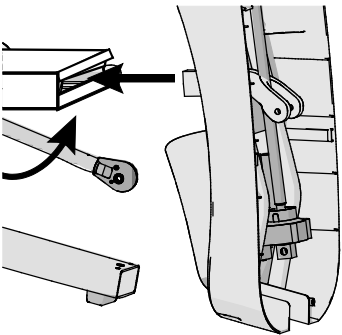


Figure 5: Slide yoke into ramp

2. Attach the base of the lift assembly using two $\frac{5}{16}$ -inch x $\frac{3}{4}$ -inch hex head screws and two $\frac{5}{16}$ -inch flat washers. Partially tighten the fasteners.

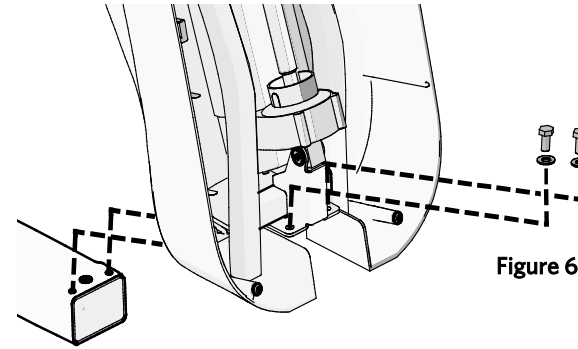


Figure 6: Secure base of lift assembly

3. Tear the foam pouch off the ramp.

4. Attach the ramp to the yoke using two $\frac{3}{8}$ -inch x $2\frac{3}{4}$ -inch buttonhead cap screws, two $\frac{5}{16}$ -inch washers, and two $\frac{3}{8}$ -inch lock nuts. Fully tighten the fasteners using a $\frac{7}{32}$ -inch hex key and a $\frac{9}{16}$ -inch socket wrench.

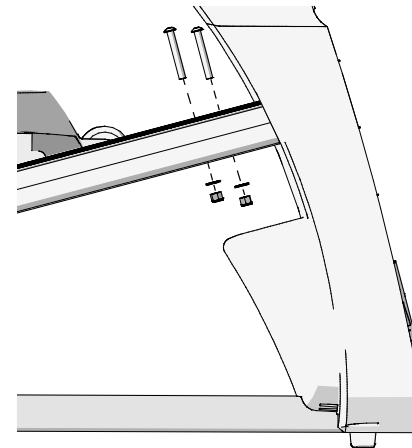


Figure 7: Ramp to yoke attachment

5. Fully tighten the two fasteners at the base of the lift motor assembly using a 1/2-inch socket wrench. Do not use the socket wrench extension in this step.

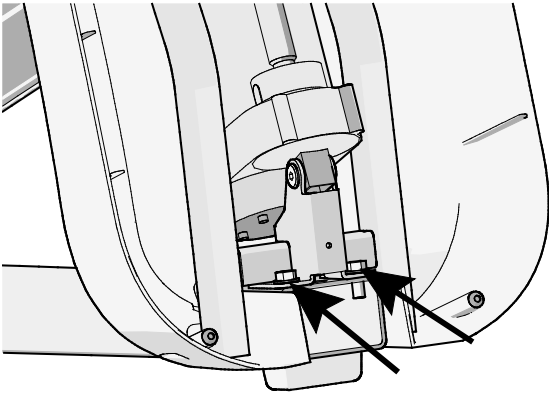


Figure 8: Fastener location at base of lift motor

6. Cut the tie wrap that secures the lift motor.
7. Connect the six-pin connector to its receptacle near the lift motor.

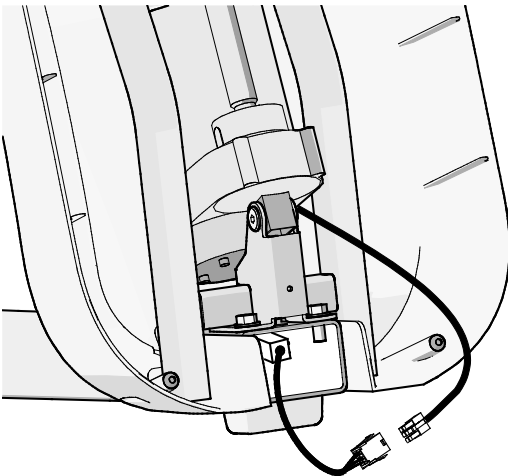


Figure 9: Six-pin connection

Attaching the Moving Arm Assembly

CAUTION: Avoid cross-threading. Make sure the movable arm is well-aligned with the pivot tube before wrench tightening. Any damage caused during installation is not covered by the Vectra Limited Warranty.

Refer to the following figure to position the movable arms for assembly.

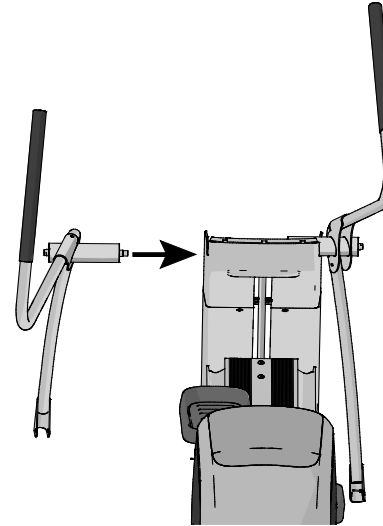


Figure 10: Moving arm attachment

To attach the movable arms:

1. Position the left movable arm carefully onto the pivot tube. Support the weight of the movable arm with one hand, while you turn the joint screw at least four times with your other hand.

Important: If the joint screw is resistant, do not force it. Reposition the movable arm and try again. Forcing the joint screw may cause crossthreading.

To attach the movable arms:

1. Position the left movable arm carefully onto the pivot tube. Support the weight of the movable arm with one hand, while you turn the joint screw at least four times with your other hand.

Important: If the joint screw is resistant, do not force it. Reposition the movable arm and try again. Forcing the joint screw may cause crossthreading.

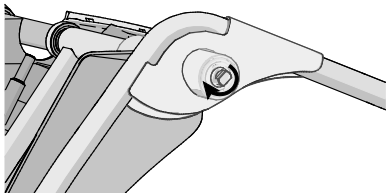


Figure 11: Tighten the joint screw by hand

2. When the joint screw is properly threaded, fully tighten it using a 1/2-inch open-end wrench.
3. Guide the movable arm to its balance point and let it rest there.
4. Repeat this procedure to attach the right movable arm.

To attach the lower link arms to the movable arms:

1. Attach the right lower link arm to the movable arm using one joint connector screw, one star washer, and one joint connector nut. Fully tighten the fasteners using the 5 mm hex wrench.

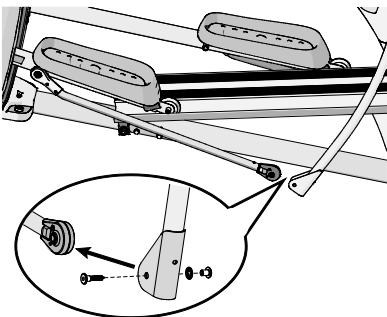


Figure 12: Lower link arm attachment

CAUTION: Guide the handlebar to its balance point and let it rest there. When attaching the lower link arms, have your assistant hold the moving handlebar. Failure to do so could result in injury.

2. Repeat this procedure to attach the left lower link arm to the left movable arm.

Attaching the Lift Cover

To attach the lift cover:

1. To attach the front lift cover, align the mounts and engage the side clips by pressing the front and back covers together. Insert the four fasteners that secure the front lift cover and fully tighten them using the long-handled 5/32-inch hex wrench.

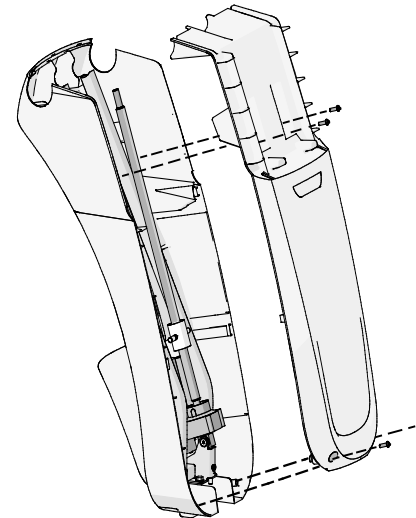


Figure 13: Lift cover attachment

2. Align the tabs and apply downward pressure and press the magazine rack and back cover together. A click is heard when the magazine rack is secured properly.

Note For ease of assembly, refer to the following figure and apply pressure straight down in the direction of the three arrows.

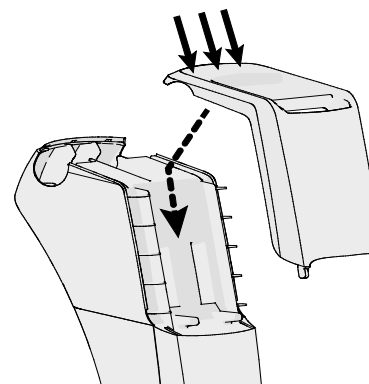


Figure 14: Magazine rack attachment

Attaching the Stabilizers

To attach the stabilizers:

1. Insert a clamp into each stabilizer and secure it loosely with two buttonhead screws.

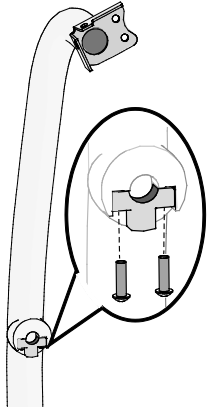


Figure 15: Location of clamp in stabilizer

2. Screw an adjustable foot into each stabilizer.

Note: Make sure the nut rests against the stabilizer.

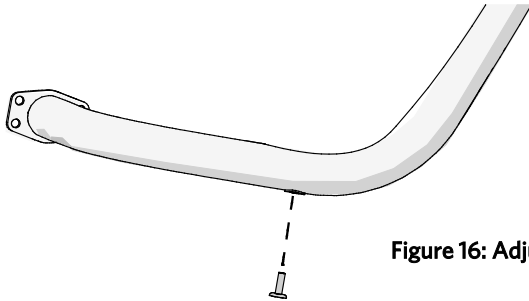


Figure 16: Adjustable foot attachment

3. For easier access to the base mounts, lift the front of the EX off the floor and place a wedge of packaging cardboard beneath its base.

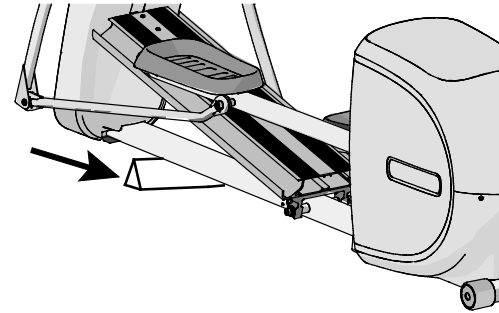


Figure 17: Wedge packaging beneath base frame

4. Have your assistant hold the stabilizer (with a cable protruding from both ends) next to the movable arm assembly and base frame while you connect the base cable. You will hear a click when the cable is properly attached. Store excess cable in the stabilizer frame.

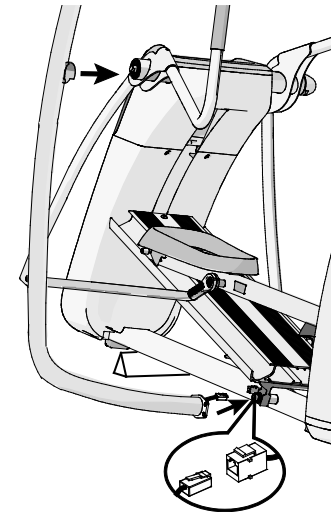


Figure 18: Base cable connection

5. Secure the stabilizer to the base frame using four $\frac{5}{16}$ -inch x $\frac{3}{4}$ -inch hex head screws and four $\frac{5}{16}$ -inch washers.

Note: If you encounter difficulty aligning the base mounts, loosen the clamp screws and realign the stabilizer. Tighten the clamp screws once you have attached the stabilizer to the base frame.

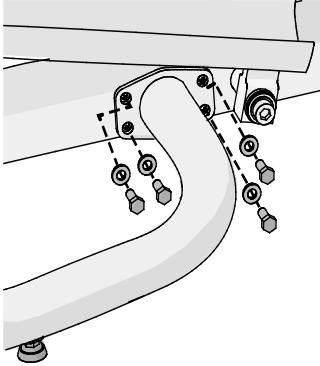


Figure 19: Base frame attachment

6. Secure the stabilizer to the moving arm assembly by fully tightening the clamp screws.

7. The other stabilizer does not have a data cable. Repeat the remaining steps in this procedure to attach the other stabilizer.

Attaching the Console Bracket

Pull the cables out of the bracket and remove any kinks.

To attach the console bracket:

1. Feed the cable through the console bracket as shown in the following figure.

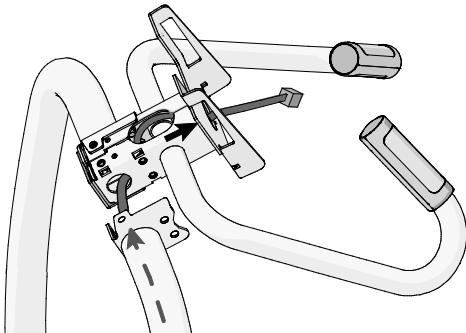


Figure 20: Feed cable through console bracket

2. Raise the console bracket onto the upper portion of the stabilizers.
3. Insert the two top $\frac{5}{16}$ -inch x $\frac{3}{4}$ -inch hex head screws and $\frac{5}{16}$ -inch washers.

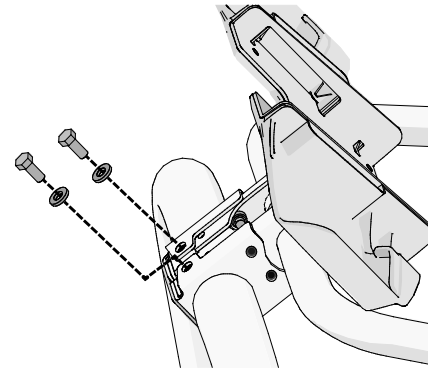


Figure 21: Tightening the fasteners

4. Insert the four $\frac{5}{16}$ -inch x $\frac{3}{4}$ -inch hex head screws and four $\frac{5}{16}$ -inch washers into the side mounts and partially tighten them.

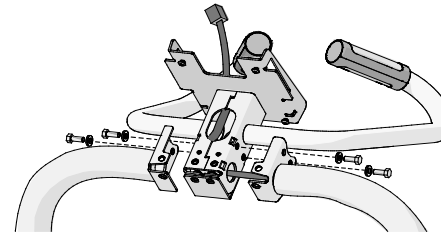


Figure 22: Console bracket attachment

5. Insert the two rear $\frac{5}{16}$ -inch x $\frac{3}{4}$ -inch hex head screws and four $\frac{5}{16}$ -inch washers and fully tighten the fasteners.

Note: Perform this step to properly align the other screws in the console bracket.

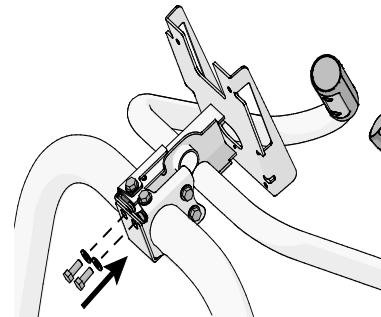


Figure 23: Rear screw location

5. Insert the two rear $\frac{5}{16}$ -inch x $\frac{3}{4}$ -inch hex head screws and four $\frac{5}{16}$ -inch washers and fully tighten the fasteners.

Note: Perform this step to properly align the other screws in the console bracket.

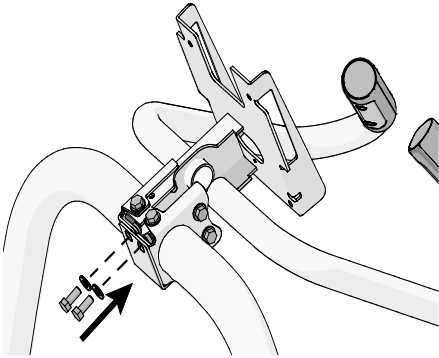


Figure 24: Rear screw location

6. Fully tighten the other six fasteners using a $\frac{1}{2}$ -inch socket wrench.
7. Remove the two rear hex head screws and washers.

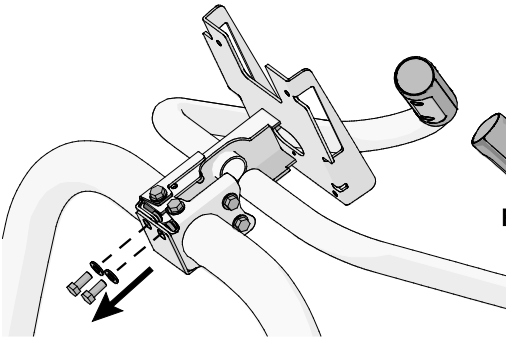


Figure 25: Removing the rear screws

Attaching the Accessories

Locate the device holders, bottle holder, and top cover.

To attach the accessories:

1. Place the device holders around the console bracket and slide them together.

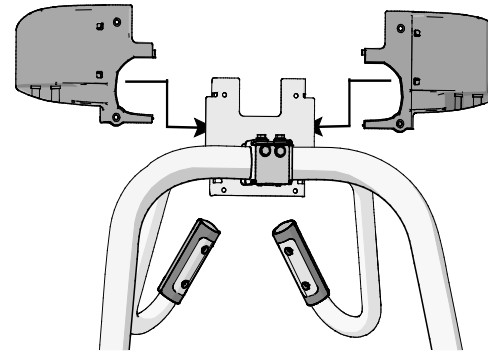


Figure 26: Device holder attachment

2. Press them together until they snap into place over the console bracket.

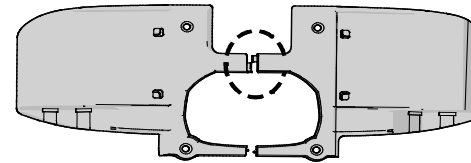


Figure 27: Fit device holder together

3. Secure the back of the bottle holder using two $\frac{5}{16}$ -inch x $\frac{3}{4}$ -inch hex head screws and two $\frac{5}{16}$ -inch washers. Partially tighten the fasteners.

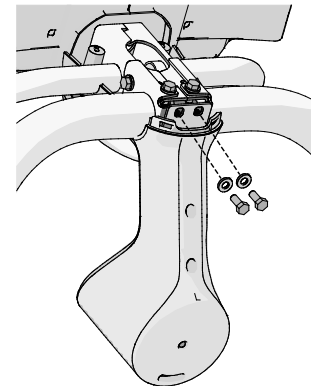


Figure 28: Back bottle holder attachment

- Secure the bottle holder around the console bracket and attach it using two #10 Phillips head screws. Fully tighten the fasteners.

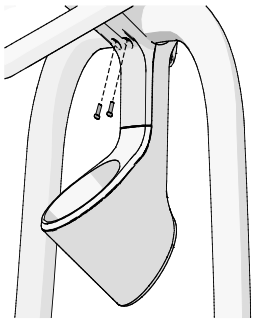


Figure 29: Bottle holder placement

- Fully tighten the fasteners on the back of the bottle holder.
- Place the top cover over the console bracket by hooking it in the back and rotating it forward. Attach using two #10 Phillips head screws. Fully tighten the fasteners. **Note:** For proper fit, make sure the tabs are lined up on the inside of the top cover.

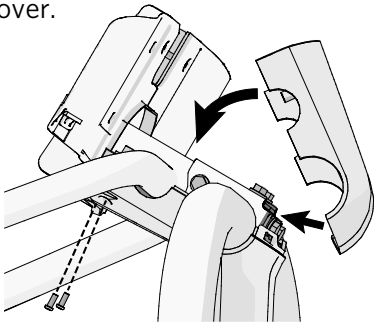


Figure 30: Top cover attachment

Attaching the Console

Three cables attach to the console.

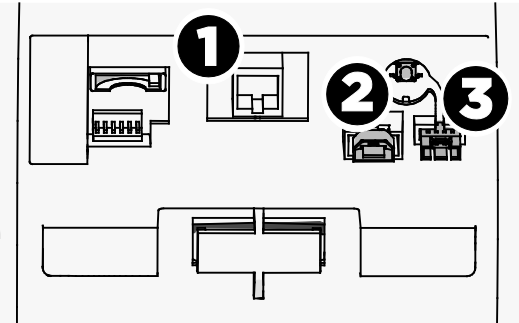


Figure 31: Cable attachments on back of console

Number	Cable or feature
1	Base unit data cable
2	Console ground cable
3	Touch heart rate cable

To attach the cables to the console:

- Have your assistant hold the console over the console bracket while you carefully route the following console cables:
 - Insert the base unit data cable.
 - Insert the console ground cable.
 - Insert the touch heart rate cable with the tabs pointing down.

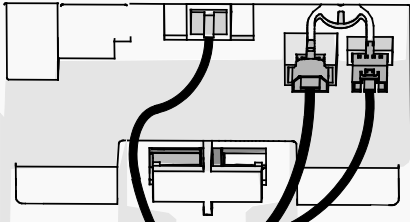


Figure 32: Cable attachment

- Set the console onto the console bracket. It should sit flush on the bracket without gaps. If there is a gap, check to make sure that no wires are being pinched.

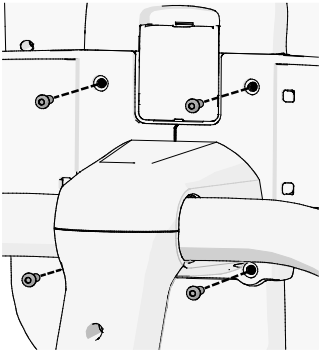


Figure 33: Securing the display console

- Secure the display console using four buttonhead screws. Fully tighten the fasteners.

Fully Tighten the Remaining Fasteners

Return to the fasteners on the equipment frame that have been partially tightened and fully tighten them.

To fully tighten the remaining fasteners:

1. Start at the base of the stabilizers and tighten all eight screws using a ½-inch socket wrench with an extension.
2. If necessary, remove the wedge of packing material placed under the base frame.

Completing the Assembly

CAUTION: The location of the On/Off switch is beneath the cutout on the base frame. Make sure the power switch is in the Off position. Make sure the power cord is disconnected from its power source.

Connecting the Power Cord

CAUTION: Use the supplied power cord. Do not remove or otherwise bypass the 3-prong plug with an adapter in order to use a nongrounded outlet. Do not plug the EX into a power transformer in an attempt to adjust the voltage requirements. Failure to follow these instructions might damage the unit and will void the Vectra Limited Warranty. If an appropriate cord for your location was not included with your EX, please contact your Vectra dealer for the proper Vectra power cord. For more information on authorized Vectra dealers in your area, please contact Customer Support at VectraFitness.net.

To connect the power cord:

1. Insert the power plug connector into its receptacle at the rear of the unit.

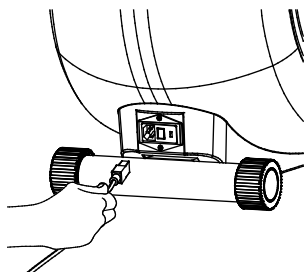


Figure 34: Plug location

2. Plug the other end into a grounded outlet so you can maintain a consistent power source without overloading any other circuitry. Be sure to use the appropriate voltage. Refer to Grounding Instructions in the Owner's Manual.
3. Use the power switch to turn the unit On. Check that the Vectra banner appears on the display. If the display remains blank, recycle the power. If the display continues to remain blank, check the cable connections.

Leveling the EX

Make sure the unit is level before allowing anyone to use it.

CAUTION: To eliminate movement, make sure the adjustable feet are in contact with the floor.

To level the unit:

1. Gently rock the unit. If there is any movement, ask your assistant to tip the unit to one side while you locate the adjustable feet.

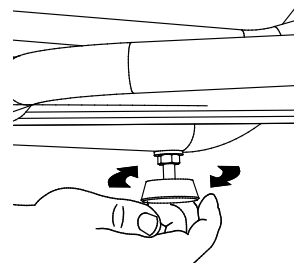


Figure 35: Leveling the EX

2. Correct the height of each adjustable foot as follows.

If you want to ... Then turn the adjustable feet ...

Raise the unit Counterclockwise

Lower the unit Clockwise

Important: Place the unit on a flat surface. Rotating the adjustable feet cannot compensate for extremely uneven surfaces.

3. When the EX is level, tighten the lock nut.
4. When you are finished adjusting the EX, place the unit on the floor and recheck that it sits evenly on the floor.



Vectra Fitness
PO Box 600729
San Diego, CA 92160
1-844-832-8721

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Series EX 400 Elliptical Assembly Guide
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