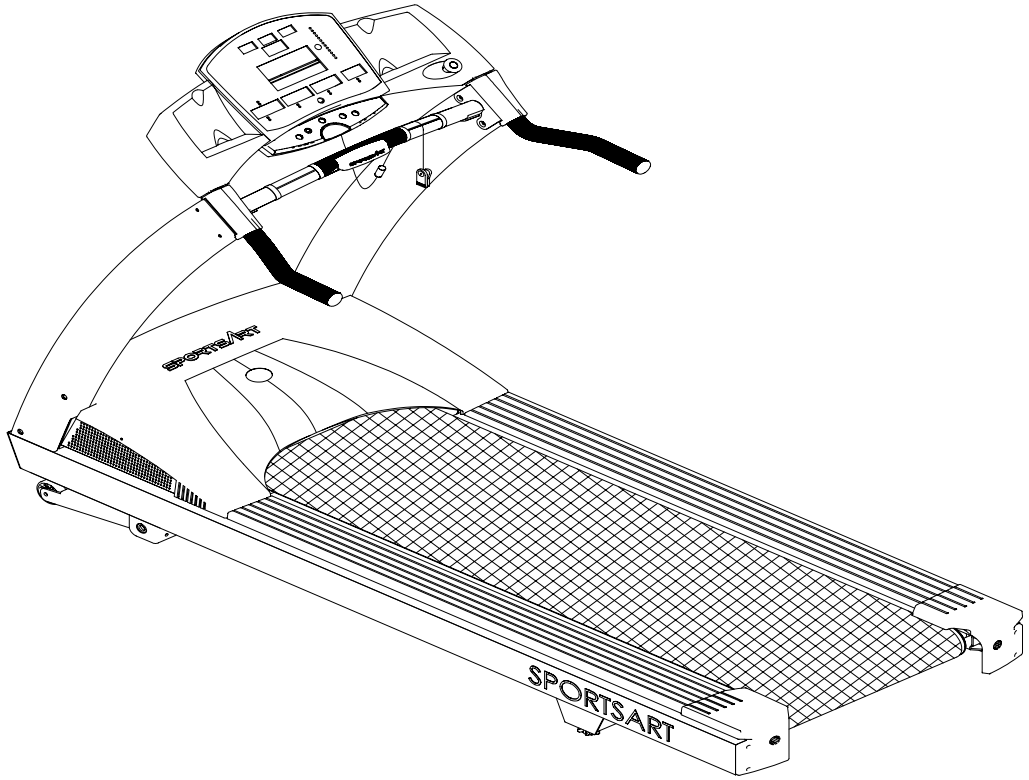
SPORTSART

6300/6310 Treadmill Mechanical Maintenance and Repair Guide



Version: 2.1; Date: 03-18-05

SportsArt 6300/6310 Mechanical Maintenance and Repair Guide

SportsArt 6300/6310 Treadmill Mechanical Maintenance and Repair Guide was designed to help technicians in the field. It includes maintenance and repair tips associated with mechanical issues. For electronic issues, please see 6300/6310 Treadmill Repair Guide – Electronics.

Our goal is to make manuals easy to use and helpful. If you have suggestions or comments, we want to hear them. Please send your ideas to bob@sportsartamerica.com.
Thank you.

Notes: Part numbers shown here are not the part numbers used at SportsArt America.
For up-to-date part numbers and diagrams, please see our web site: www.sportsartamerica.com.

Version 1: Date: 05-01-03
Version 2: Date: 11-04-04
Version 2.1: Date: 03-18-05 – Blowup diagrams and part lists were removed. Please see our website for updates.

Table of Contents

I. 6300/6310 Treadmill Diagrams and Part Lists

1-1-1. CONTENTS REMOVED 03-18-05. Please see updated blowup diagrams and part lists on our website.

2. Treadmill Maintenance

2-1-1. Front Roller Maintenance (Continued on 2-1-2)
2-2-1. Rear Roller Maintenance (Continued through 2-2-3)
2-3-1. Cleaning Under the Motor Cover
2-4-1. Guide Roller Maintenance
2-5-1. Walk Belt and Deck Maintenance

3. Inspections

3-1-1. Inspection to Prevent Noise

Table of Contents

4. Adjustments

4-1-1. Adjusting the Drive Belt (Continued through 4-1-3)
4-2-1. Centering the Walk Belt (Continued through 4-2-2)
4-3-1. Adjusting the Walk Belt

5. Components

5-1-1. Incline Motor Set (Continued through 5-1-2)
5-2-1. Direct Current (DC) Motor
5-3-1. 6300 Handlebar – No HTR
5-3-2. 6300 Handlebar – HTR
5-4-1. 6310 Handlebar – No HTR
5-4-2. 6310 Handlebar – HTR and HRC
5-4-3. 6310 Handlebar – HTR+HRC

6. Part Installation

6-1-1. Replacing the VR Set (Continued through 6-1-5)
6-2-1. Removing the Motor Cover on 6300 Treadmills
6-2-2. Installing the Motor Cover on 6300 Treadmills
6-3-1. Removing the Motor Cover on 6310 Treadmills
6-3-2. Installing the Motor Cover on 6310 Treadmills
6-4-1.Procedure for Replacing the Emergency Stop Knob (Cont. through 6-4-4)

Table of Contents

7. Troubleshooting

7-1-1. Problem: Abnormal Noise – Installation Issues (Cont. through 7-1-3)
7-2-1. Problem: Abnormal Noise – Wear Issues (Cont. through 7-2-4)

I. 6300/6310 Treadmill Diagrams and Part Lists

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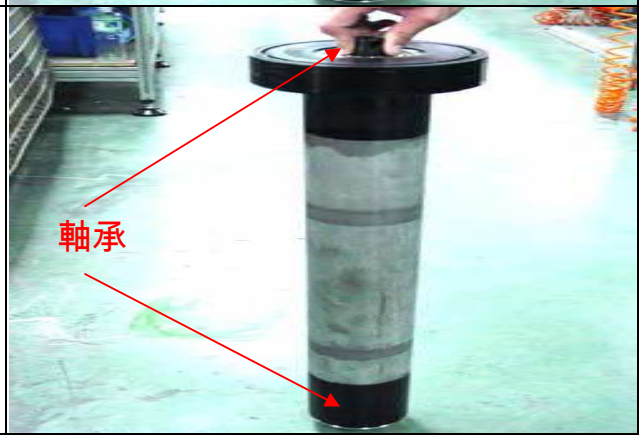
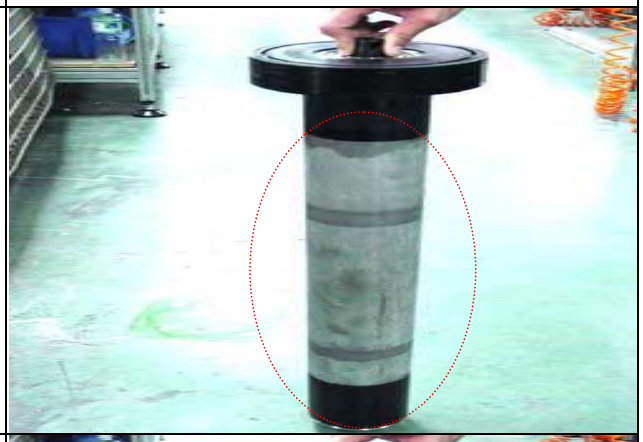
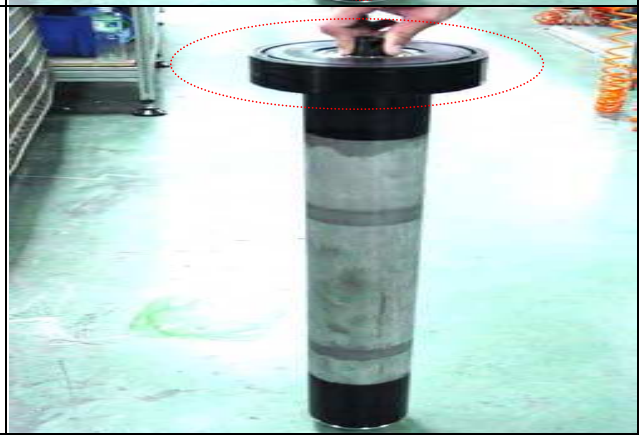
2. Treadmill Maintenance

2-1-1. Front Roller Maintenance (Continued on 2-1-2)
2-2-1. Rear Roller Maintenance (Continued through 2-2-3)
2-3-1. Cleaning Under the Motor Cover
2-4-1. Guide Roller Maintenance
2-5-1. Walk Belt and Deck Maintenance

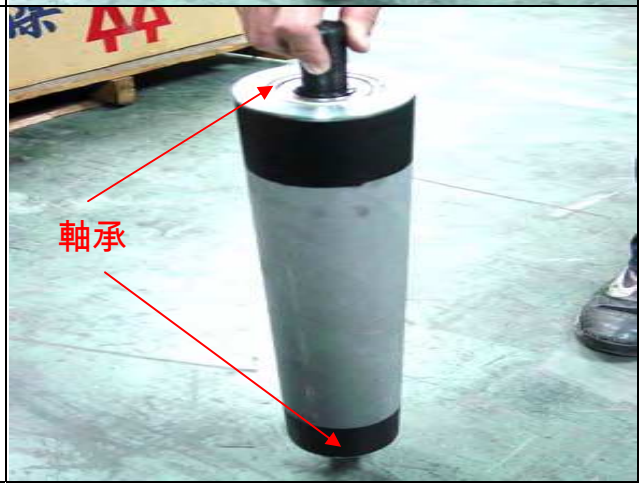
Front Roller Maintenance

Step	Procedure	Goal	Illustration
1	Rotate the roller.	Inspect for unusual bearing noise.	
2	Clean bearing area.	Eliminate dust bunnies and debris.	

Front Roller Maintenance (Cont.)

Step	Procedure	Goal	Illustration
3	Clean roller surface.	Eliminate debris from the area shown in the circle on right.	
4	Clean the belt pulley.	Eliminate debris from area shown in the circle on right.	

Rear Roller Maintenance

Step	Procedure	Goal	Illustration
1	Rotate the roller	Inspect for unusual bearing noise.	
2	Clean roller bearing area.	Eliminate dust bunnies and debris.	

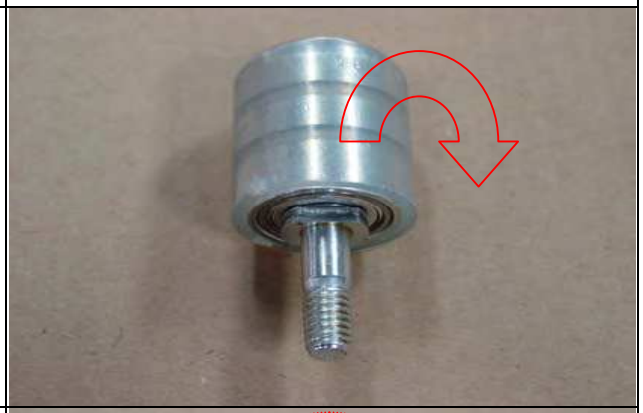
Rear Roller Maintenance (Cont.)

Step	Procedure	Goal	Illustration
3	Clean roller surface.	Eliminate debris from area circled on the right.	

Cleaning Under the Motor Cover

Step	Procedure	Goal	Illustration
1	Use a vacuum and a small, soft brush to clean components under the motor cover.	Clean dust bunnies and debris from under the motor cover as needed. (Need depends on the use and the environment. Clean once every few months at least.)	

Guide Roller Maintenance

Step	Procedure	Goal	Illustration
1	Rotate the guide roller.	Inspect bearings for damage.	
2	Clean guide roller surface. Suggested cleaner: Diluted Simple Green.	Eliminate dust from roller surface.	

Walk Belt and Deck Maintenance

Step	Procedure	Goal	Illustration
1	Turn off unit power. Rub a clean towel between the walk belt and the deck. Clean the whole length of the deck.	Clean the deck and belt, eliminating debris that causes friction.	
2	Rotate the walk belt to access the whole surface of the belt and repeat steps above.	Clean the whole surface of the belt, top and bottom.	

3. Inspections

3-1-1. Inspection to Prevent Noise

Inspection to Prevent Noise

Item	Inspect (Illustration)	Key Points
1	Screw tightness (Fig. 1)	Screws cannot be loose. Keep screws tight.
2	Walk belt tightness	Maintain proper walk belt tightness.
3	Drive belt tightness	Maintain proper drive belt tightness.
4	Back leg leveler nut (Fig. 2)	Keep back leg leveler adjust up tightly to prevent noise (Fig. 2).

Figure 1

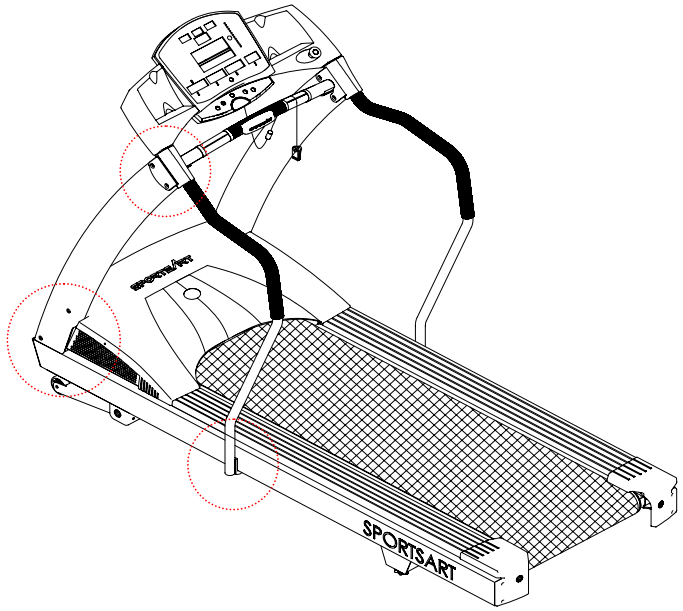
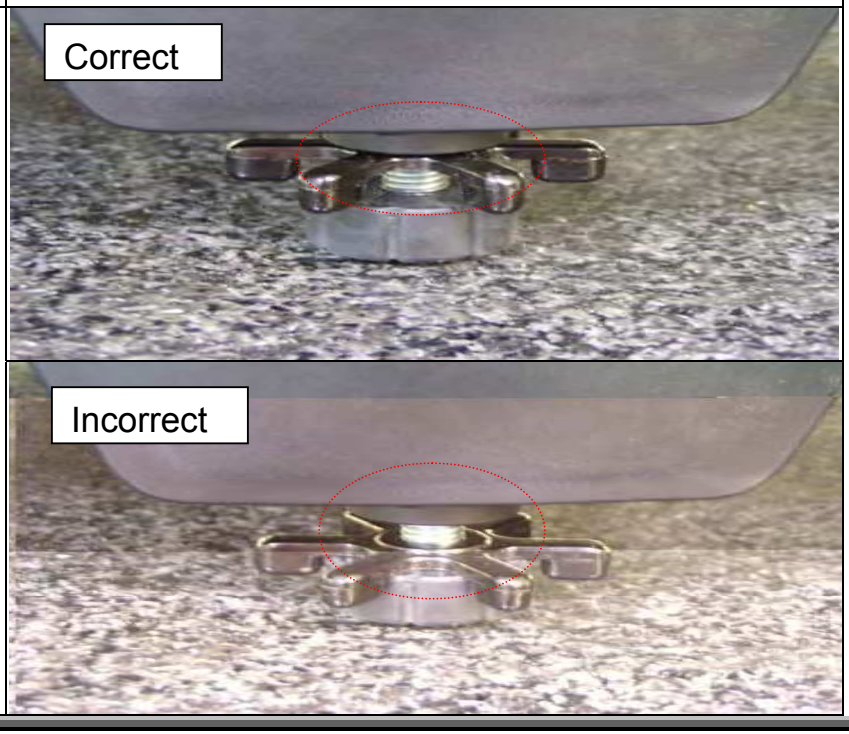


Figure 2

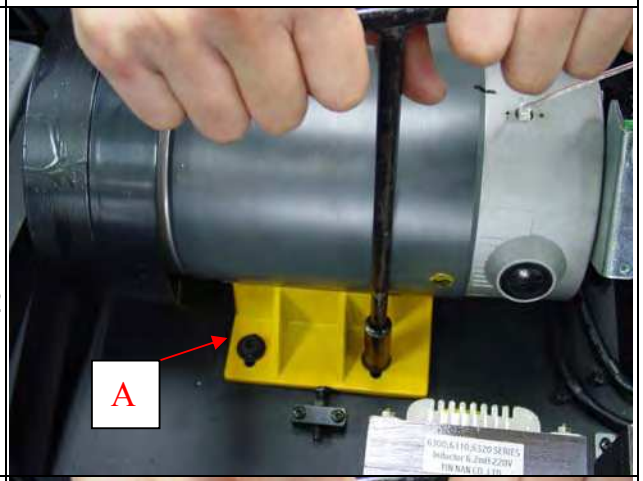
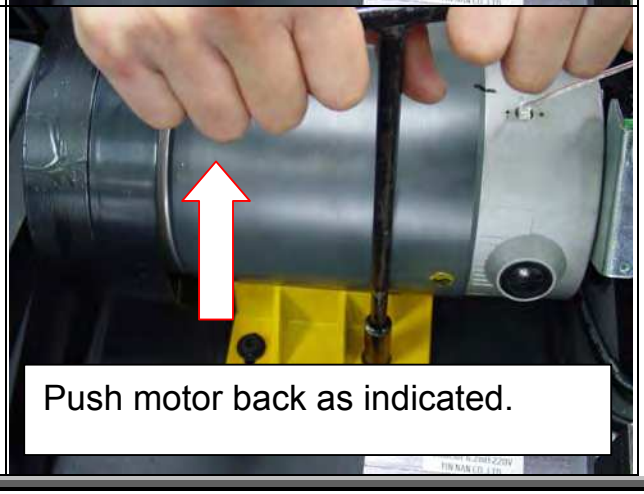


4. Adjustments

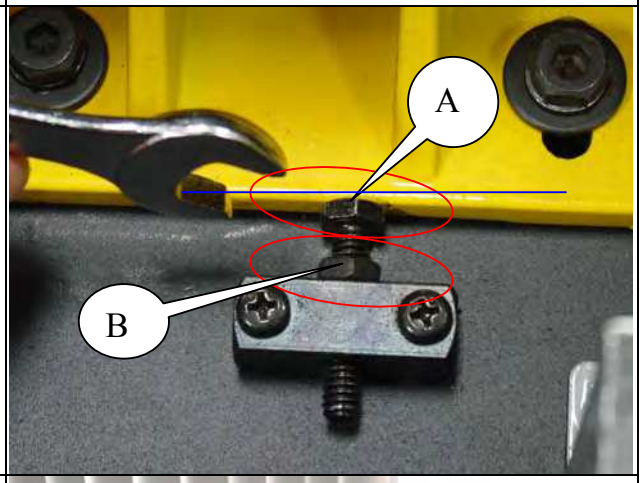
4-1-1. Adjusting the Drive Belt (Continued through 4-1-3)
4-2-1. Centering the Walk Belt (Continued through 4-2-2)
4-3-1. Adjusting the Walk Belt

Adjusting the Drive Belt

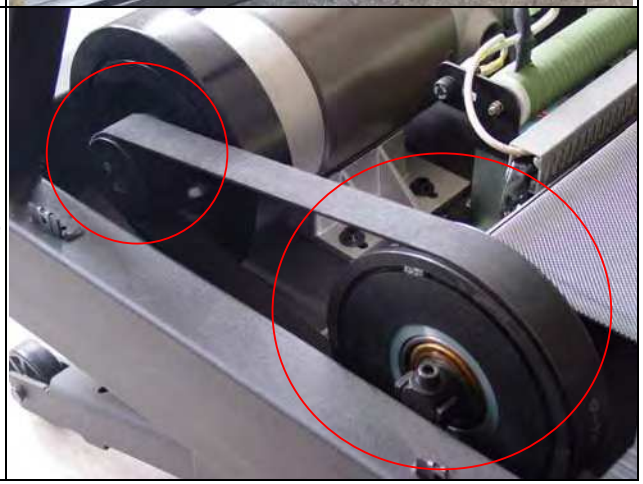
Problem: Drive belt spins without engaging the front roller. (Drive belt is too loose.)
Follow instruction below to adjust the drive belt.

Order	Adjustment Method	Picture
1	First, loosen the motor bolts (marked A in the picture to the right) but leave them in place. Do not loosen all the way. Note: Use a socket wrench or a T-head wrench. Bolt size: 12 mm.	
2	Push the motor back as indicated. This tightens the drive belt. Note: At this stage, do not secure the motor bolts. Leave them in place but do not tighten them down.	

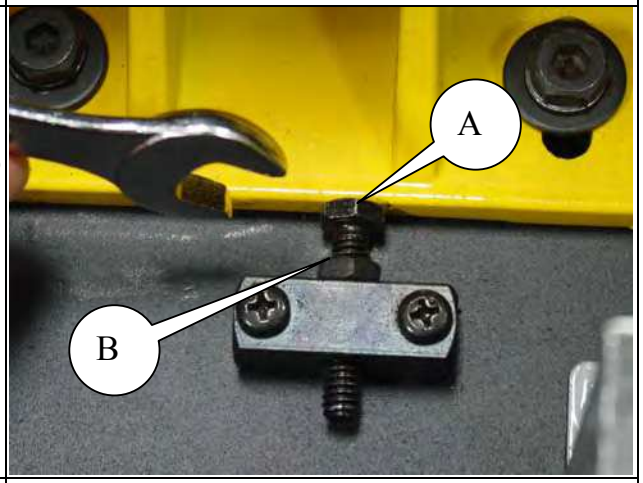
Adjusting the Drive Belt (Cont.)

Order	Adjustment Procedure	Picture
3	Loosen the nut marked B in the picture to the right. Tighten the bolt marked A so the drive belt can be pressed down about one inch and twisted at the side to 90 degrees. Note: (1) Bolt A size: 10 mm. (2) Use 10-mm open wrench. Crescent wrenches tend to strip the bolt head.	
4	Set motor speed to 1.8 MPH~2.1 MPH (2.5 KPH ~ 3.5 KPH) to test belt tightness.	

Adjusting the Drive Belt (Cont.)

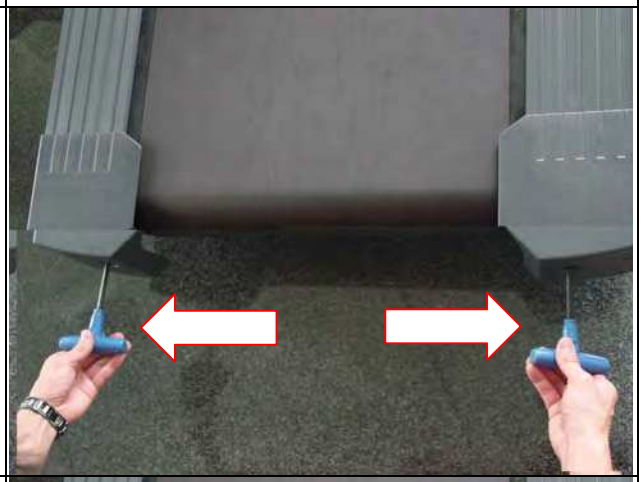
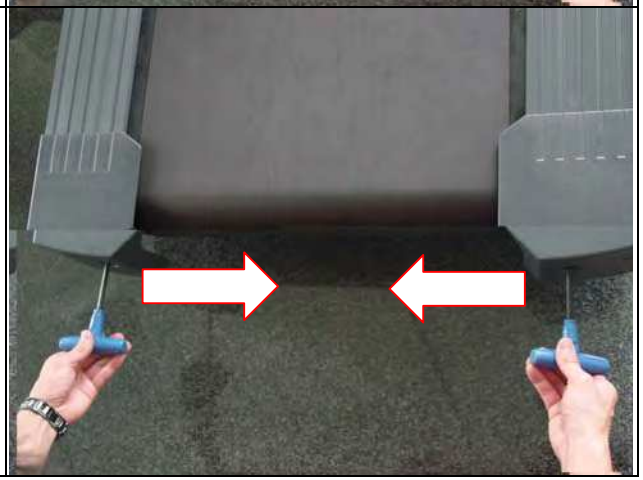
Order	Adjustment Procedure	Picture
5	Use your foot to bear against the treadmill walk belt briefly. Inspect whether the drive belt fails to engage either the front roller or the drive motor pulley. If the walk belt spins freely in either place, it's too loose. See below.	
6	Look here to determine whether the drive belt fails to engage either the motor pulley or the front roller pulley.	

Adjusting the Drive Belt (Cont.)

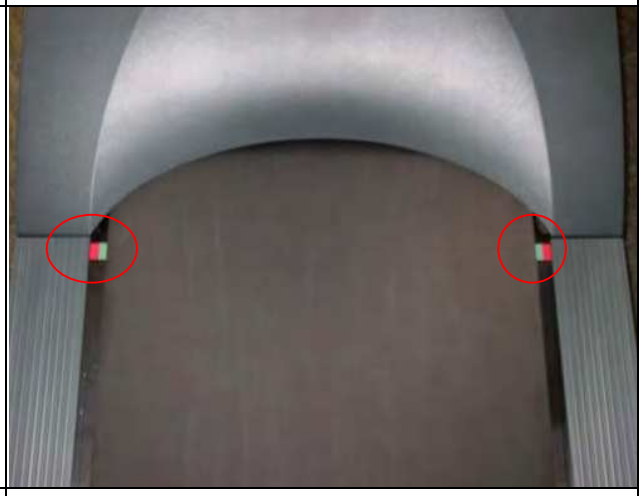
Order	Adjustment Procedure	Picture
7	If the drive belt is too loose, tighten screw A as shown in step 3. Inspect as shown in steps 4~6 until the proper belt tightness is obtained. When finished making adjustments, tighten nut B down against the bracket as shown. Finally, tighten motor bolts securely.	
8	Inspect operation. Sometimes tightening the motor bolts makes the drive belt too tight. If the drive belt is too tight, there will be too much pressure on the motor and roller bearings. Even the motor axle has been reported to break if the belt is tightened too tight. Avoid over-tightening the drive belt.	

Centering the Walk Belt

Problem: The walk belt tends to move to one side. Follow the steps below to center the belt.

Order	Problem	Adjustment Method	Picture
1	The walk belt tracks to right side.	Turn the allen wrench on the right clockwise. Or turn the allen wrench on the left counterclockwise.	
2	The walk belt tracks to left side.	Turn the allen wrench on the left clockwise. Or turn the allen wrench on the right counterclockwise.	

Centering the Walk Belt

Order	Problem	Adjustment Method	Picture
3	The treadmill should run with equal amount of space on both sides of the walk belt. If not, follow steps 1 and 2 until the space on both sides of the belt is equal.	See steps 1 and 2.	

Adjusting the Walk Belt

Problem: The walk belt stops moving if you bear down against it. (Walk belt is too loose.)

Adjustment Procedure

Step	Method
1	Set the walk belt in the middle of the deck. (See Centering the Walk Belt.)
2	Tighten both sides of the walk belt equally (Figure 1). (Turn the T-shaped Allen wrench to the right to tighten or to the left to loosen.) It's better to have the belt too loose, rather than too tight. Inspect after each quarter turn to avoid over-tightening the belt.
3	Turn unit speed to 2.5 KPH~3.0 KPH, 1.5 MPH~2.0 MPH. Walk on the treadmill.
4	Bear down against the belt (Figure 2). Make sure that bearing down against the belt does not make the walk belt stop for more than about 3/4 second. (A loose walk belt will stop rotating when you put your weight against it.) Tighten the belt just to the point where the walk belt free-spins momentarily and quickly regains traction.
5	Inspect walk belt tightness. Lift both sides; the distance from the middle of the belt to the deck should be 1 to 1.5 inches (2.54 to 3.81 cm) (Figure 3). Do not tighten beyond this point.
6	Repeat steps 2~5 if necessary, until the walk belt is adjusted properly.

Figure 1

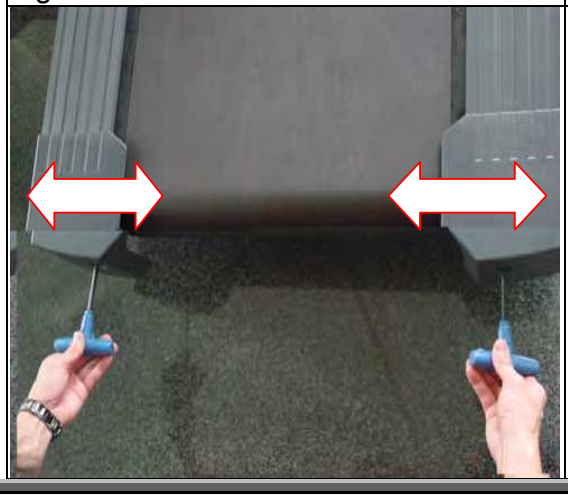


Figure 2

Figure 3

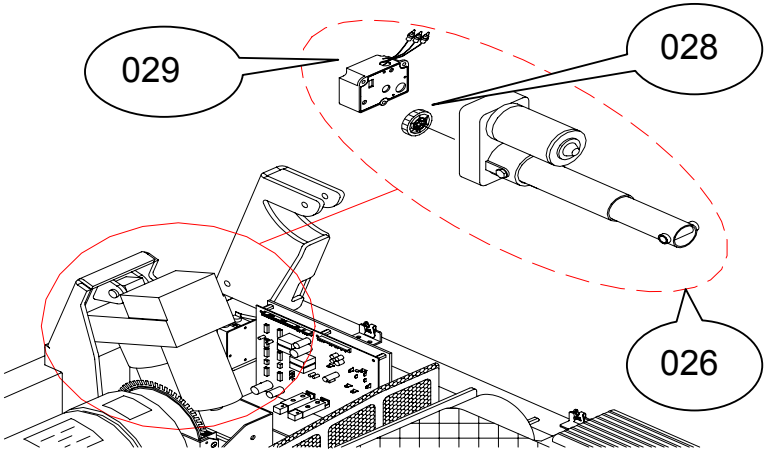
5. Components

5-1-1. Incline Motor Set (Continued through 5-1-2)
5-2-1. Direct Current (DC) Motor
5-3-1. 6300 Handlebar – No HTR
5-3-2. 6300 Handlebar – HTR
5-4-1. 6310 Handlebar – No HTR
5-4-2. 6310 Handlebar – HTR and HRC
5-4-3. 6310 Handlebar – HTR+HRC

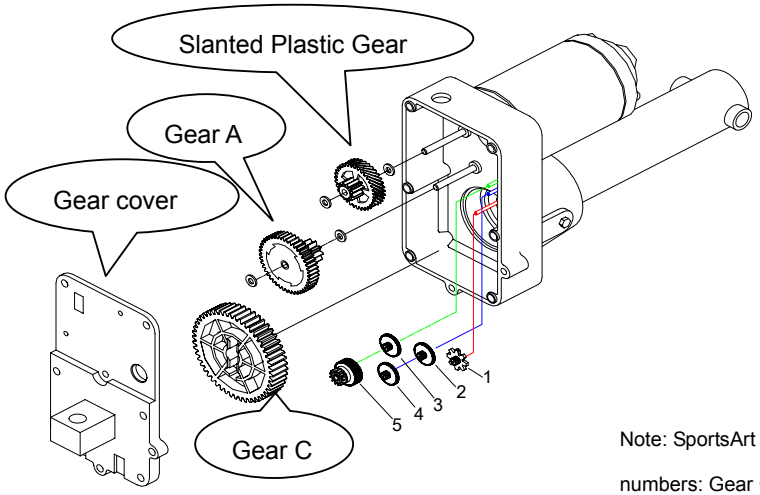
Incline Motor Set (Bubble No. 026 in the 6300 Blowup Diagram; Note: Incline sets in 6300/6310 are the same.)

Part	Diagram Number		Part Number		(PCs per unit)	
		Incline motor set		061670010		1
	029	VR		161591070		1
	028	Gear C		030717020		1
		Gear A		030753023		1
		Gear cover		E30714010		1
		Motor plastic gear		S00000189		1

Component Illustration



Incline Gear Box Blow Up Diagram

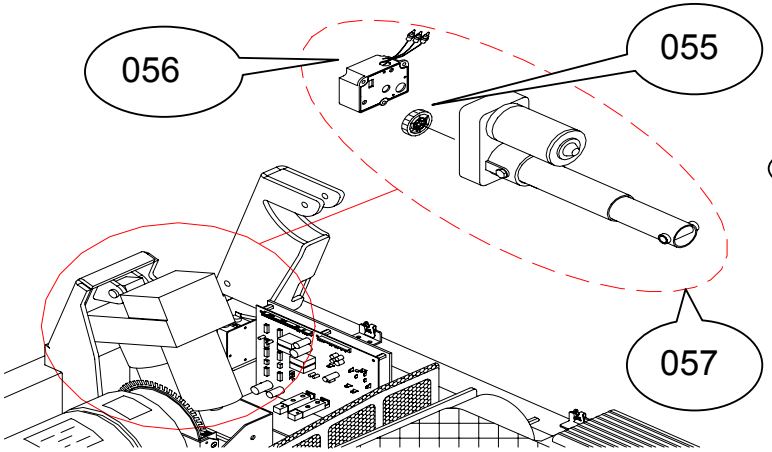


Note: SportsArt America part numbers: Gear C=3100-28; Gear A=3100-28A.

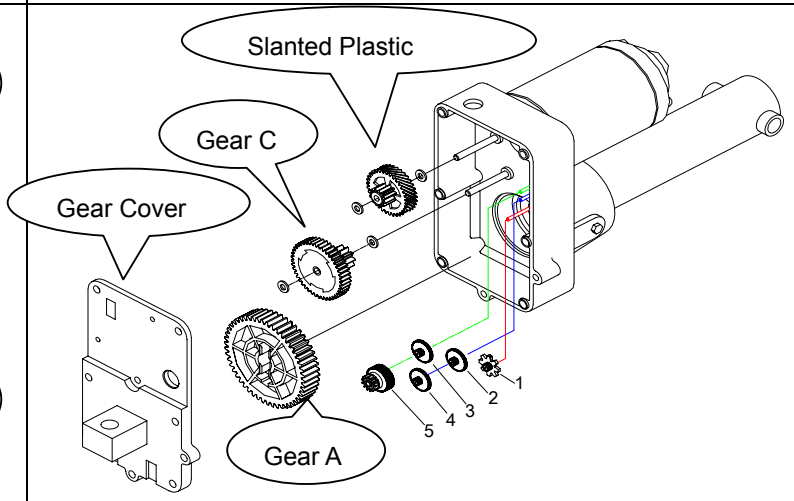
Incline Motor Set (Bubble No. 057 in 6310 Blowup Diagram; Note: Incline sets in 6300/6310 are the same.)

Part	Diagram Part Number		Part Number		(PCs per unit)	
		Incline motor		061670010		1
	056	VR box		161591070		1
	055	Gear C		030717020		1
		Gear A		030753023		1
		Gear cover A		E30714010		1
		Plastic slanted gear		S00000189		1

Component Illustration

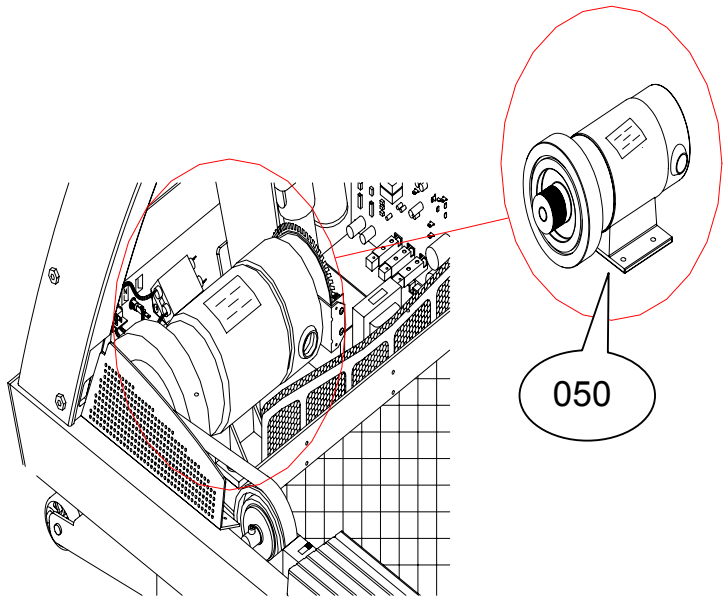
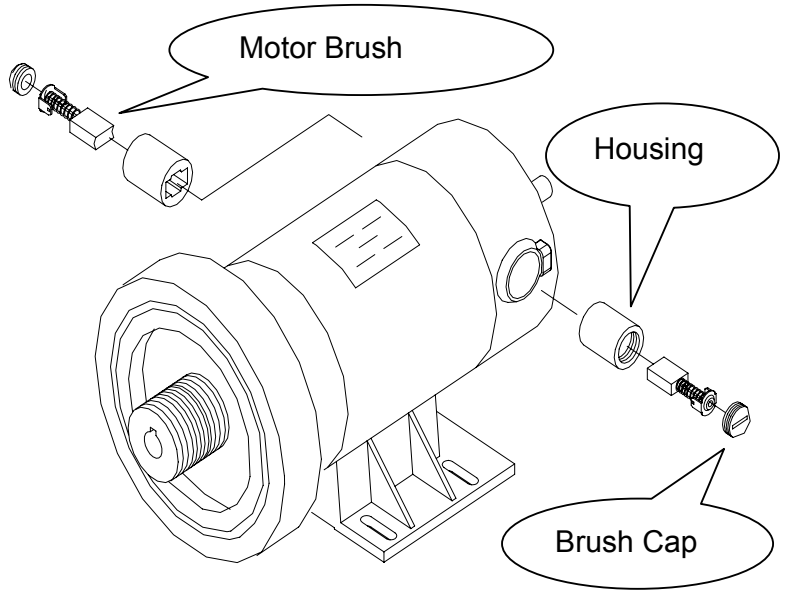


Incline Gear Box Blow Up Diagram



Direct Current (DC) Motor

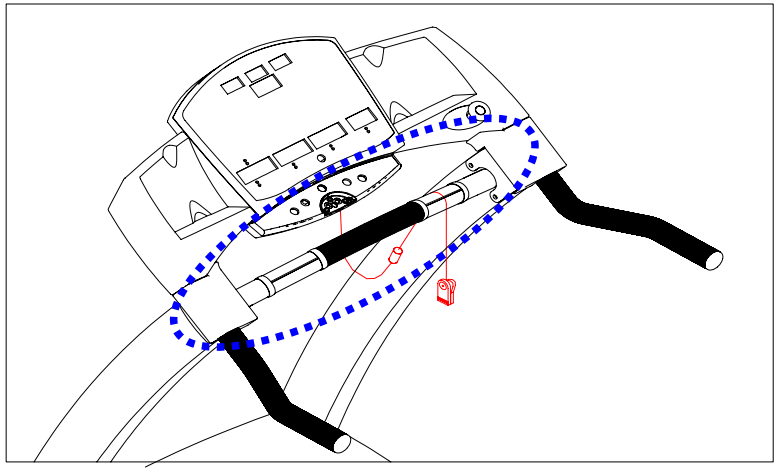
Part	Diagram No.		Part Number		QTY	
		Motor brush housing – with cap		060141010		2
		Motor brush		060173110		2

Part Location	DC Motor Exploded View
	

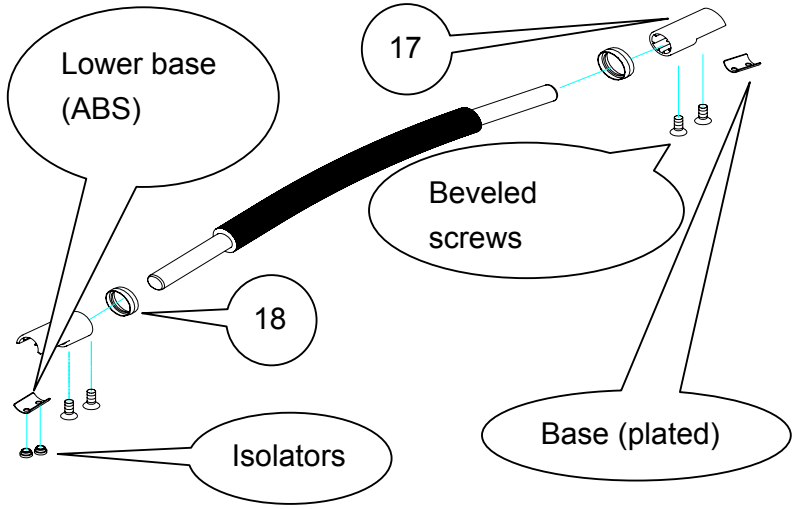
6300 Handrail – No HTR (019)

Part	Diagram No.		Part No.		QTY	
		Isolator		031930180		2
	17	Handrail sleeve		061530040		1
	18	HTR connector		050530013		2
		Handrail base (plated)		061610300		1
		Beveled Phillips screws (M4*L12)		002207056		4
		Handrail base (ABS)		061630190		1

Component Location



Handrail (No HTR) – Exploded View

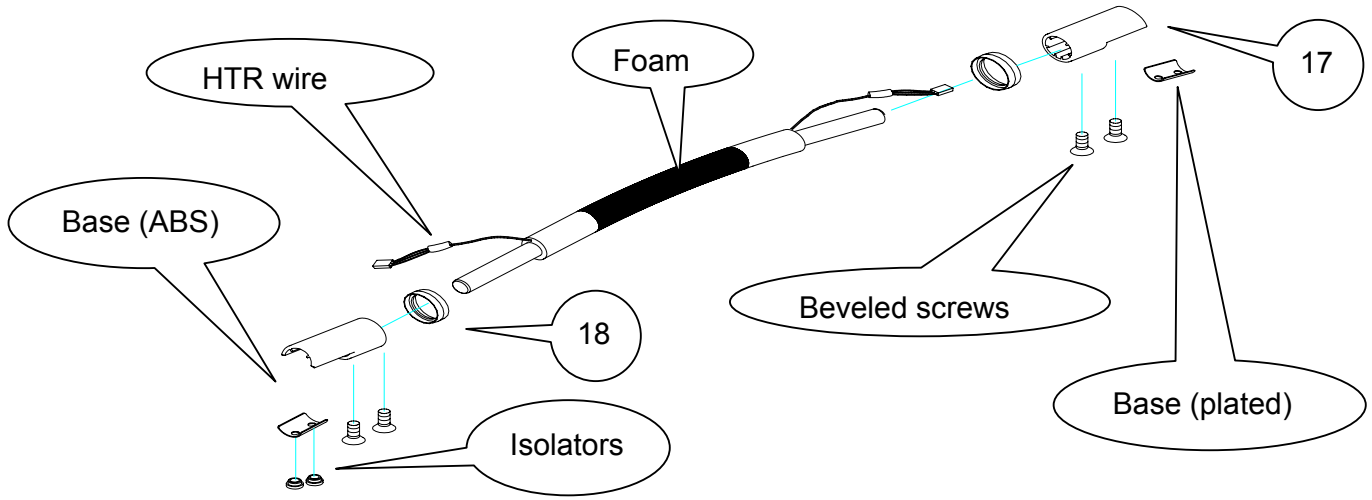


※Base (plated and ABS) use fast-drying adhesive to attach to the front handrail end.

6300 Handlebar — HTR (077)

Part	Diagram No.		Part No.		QTY	
		Isolator		031930180		2
	17	Handrail sleeve		061630070		1
	18	HTR connector		050530010		2
		Handrail base (plated)		061610300		1
		Beveled Phillips screws (M4*L12)		002207056		4
		Handrail lower base (ABS)		061630190		1

HTR Handlebar Exploded View Diagram

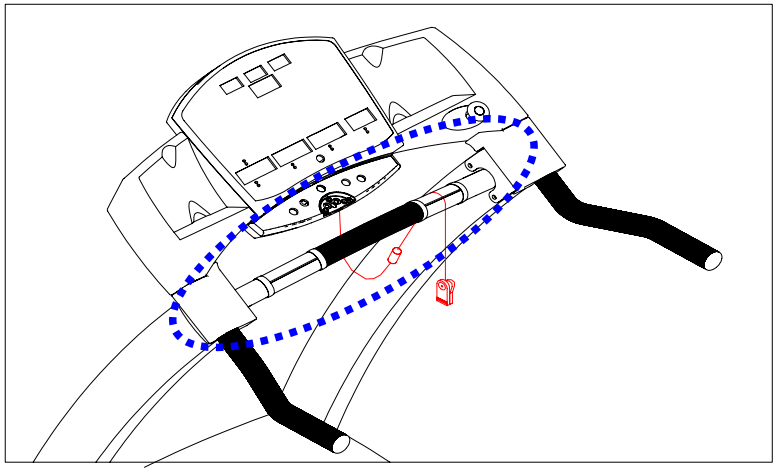


※(A) Base (plated and ABS) use fast-drying adhesive to attach to handrail. The foam on the HTR handrail is shorter than the other.

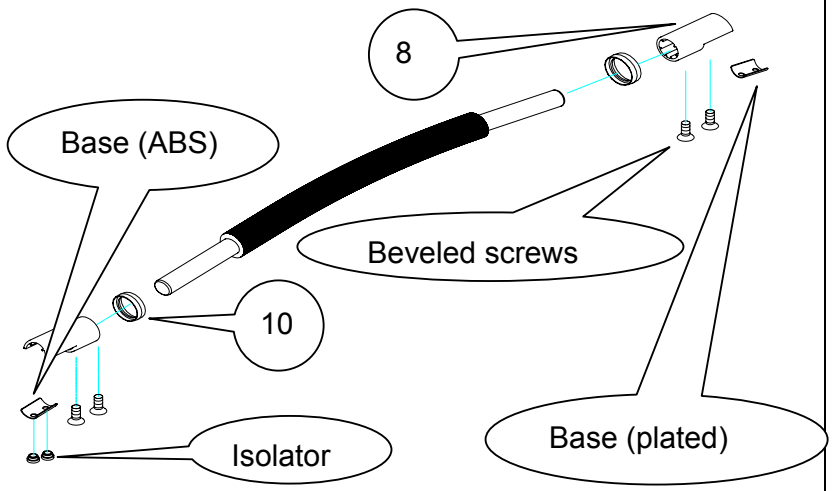
6310 Handlebar — No Heart Rate (011)

Part	Diagram No.		Part No.		QTY	
		Isolator		031930180		2
	8	Handrail sleeve		061630070		1
	10	HTR connector		050530013		2
		Handrail base (plated)		061610300		1
		Beveled screws (M4*L12)		002207056		4
		Handrail base (ABS)		061630190		1

Component Location



Exploded View of Handlebar with No Heart Rate Function

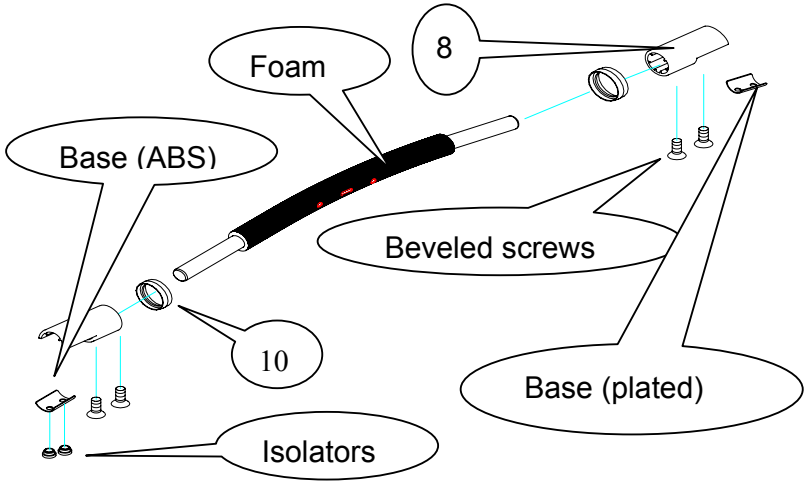


※Use fast-drying adhesive to attach the handrail to base (plated and ABS).

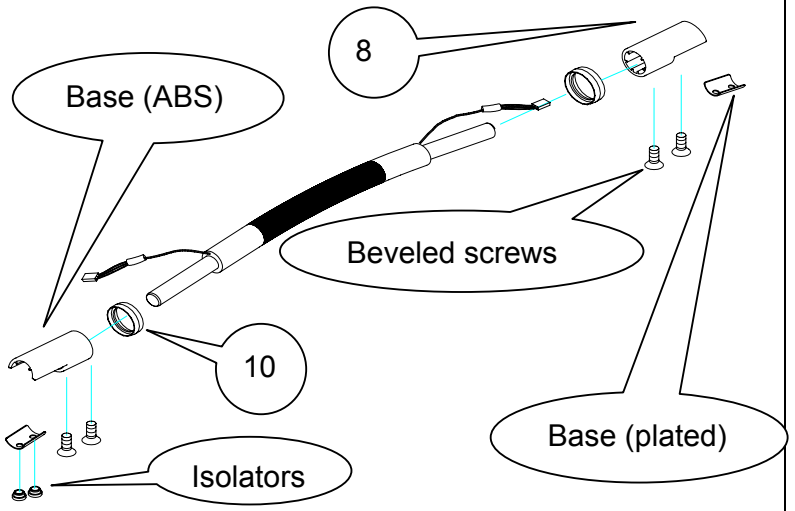
6310 Handlebar — HTR (077) and HRC (085)

Part	Diagram No.		Part No.		QTY	
		Isolator		031930180		2
	8	Handrail sleeve		061630070		1
	10	HTR connector		050530013		2
		Base (plated)		061610300		1
		Beveled screws (M4*L12)		002207056		4
		Base (ABS)		061630190		1

HRC Handlebar Exploded View Diagram



Heart Touch Rate Handlebar

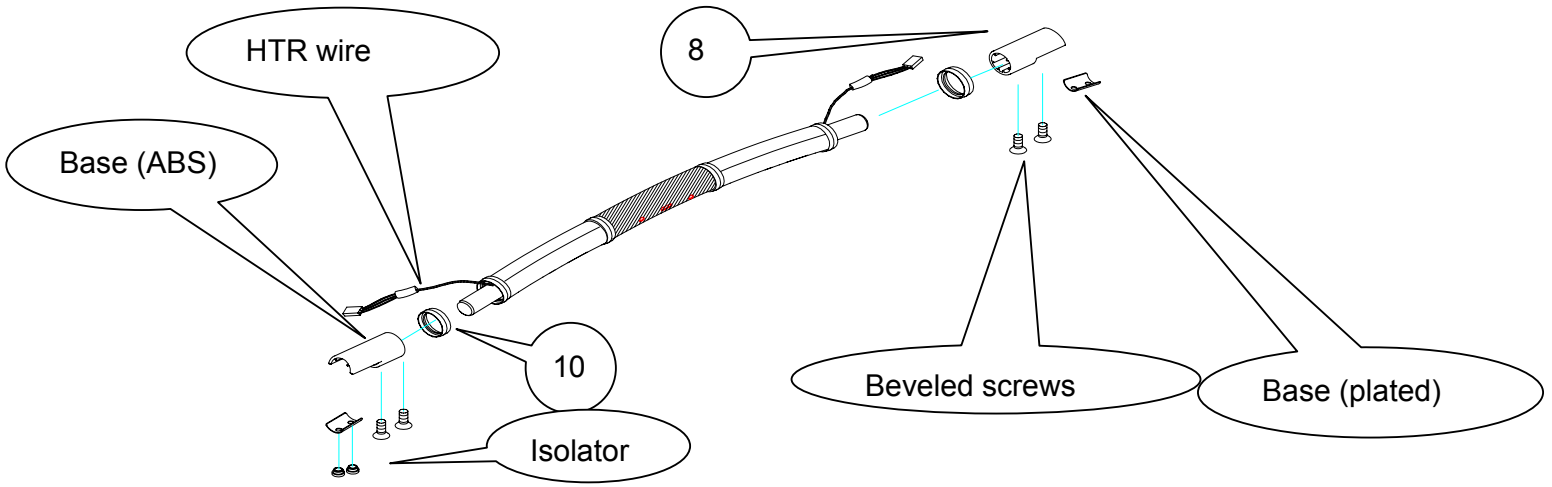


※ (A) Base (plated and ABS) use fast-drying adhesive to attach handrail; (B) HRC foam is longer than HTR foam and has three screw holes for installation of HRC.

6310 Handlebar — HTR+HRC (092)

Part	Diagram No.		Part No.		QTY	
		Isolator		031930180		2
	8	Handrail sleeve		061630070		1
	10	HTR connector		050530013		2
		Handrail base (plated)		061610300		1
		Beveled Phillips screws (M4*L12)		002207056		4
		Handrail base (ABS)		061630190		1

HRC+HTR Handlebar Exploded View Diagram



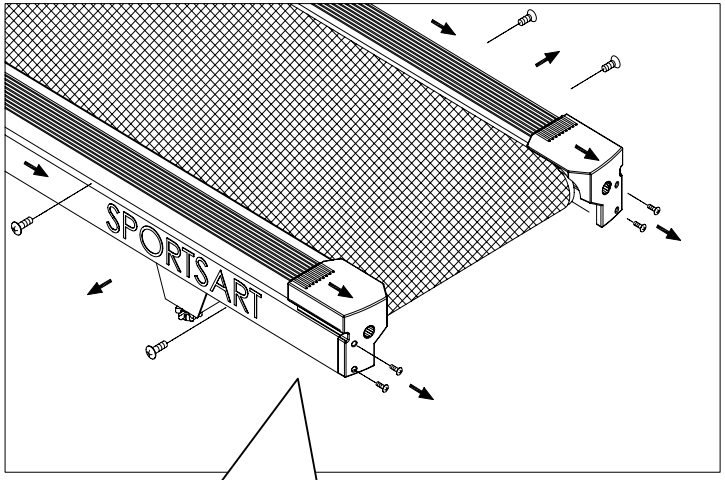
※(A) Base (plated and ABS) use fast-drying adhesive to attach to handlebar; (B)Foam has three holes and HTR wires.

6. Part Installation

6-1-1. Replacing the VR Set (Continued through 6-1-5)
6-2-1. Removing the Motor Cover on 6300 Treadmills
6-2-2. Installing the Motor Cover on 6300 Treadmills
6-3-1. Removing the Motor Cover on 6310 Treadmills
6-3-2. Installing the Motor Cover on 6310 Treadmills
6-4-1.Procedure for Replacing the Emergency Stop Knob (Cont. through 6-4-4)

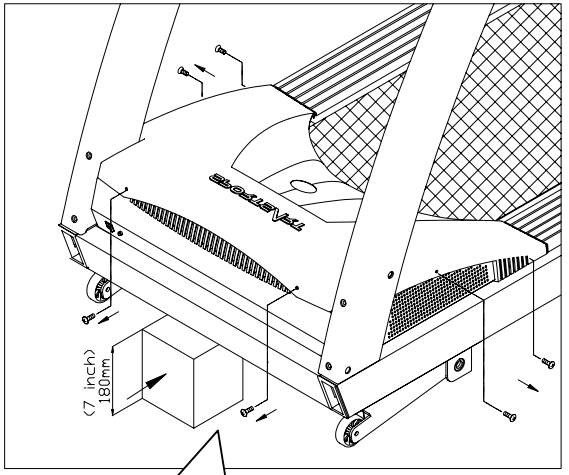
Replacing the VR Set

Figure 1



Remove end cover and landing strip screws. Pull off end covers and landing strips toward the back. (On the 6300, this step must be completed before the motor cover can be removed.)

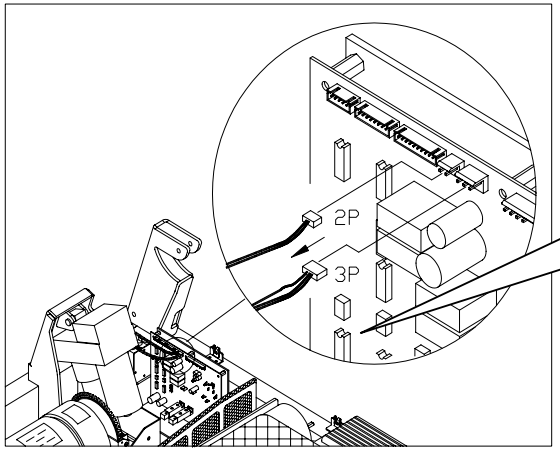
Figure 2



Prop up the frame with a block of wood about 7 inches (80 mm) to take weight off the incline set.

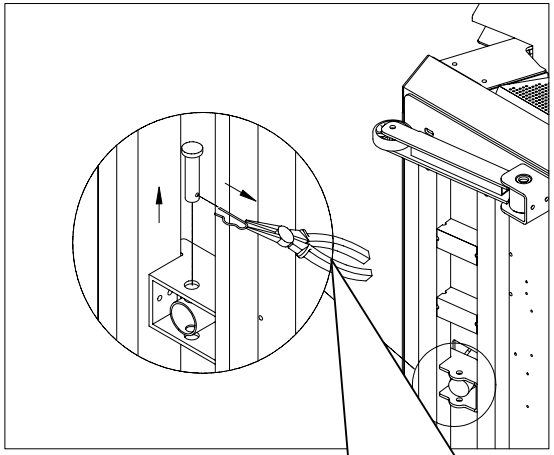
Replacing the VR Set (Cont.)

Figure 3



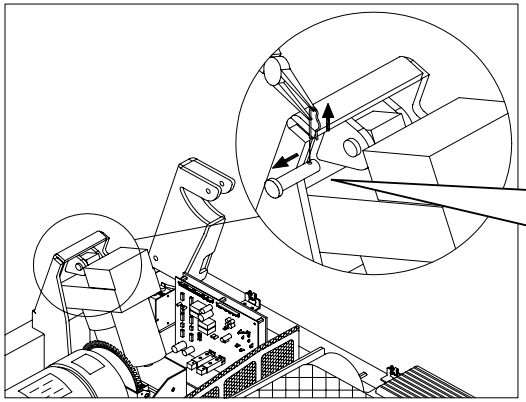
Disconnect the incline motor 2- and 3-pin wires.

Figure 4



Use needle-nose pliers to remove the kotter pin and pull out the lower incline pin.

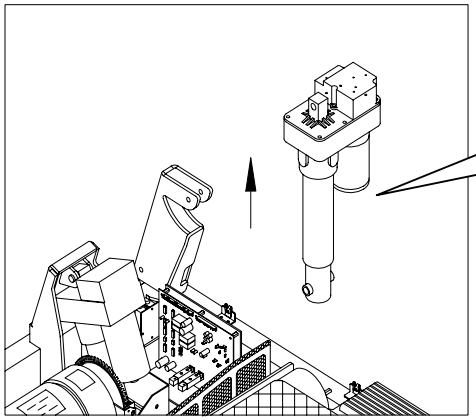
Figure 5



Use needle-nose pliers to remove the kotter pin and pull out the upper incline pin.

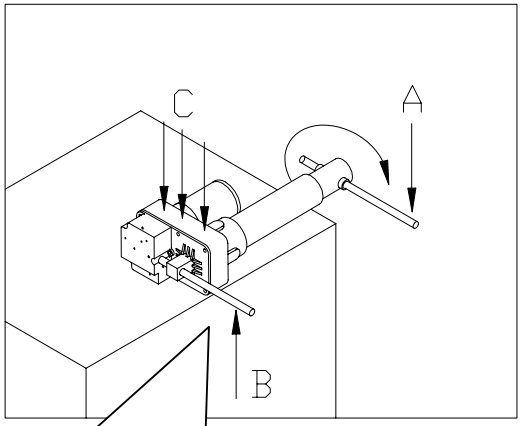
Replacing the VR Set (Cont.)

Figure 6



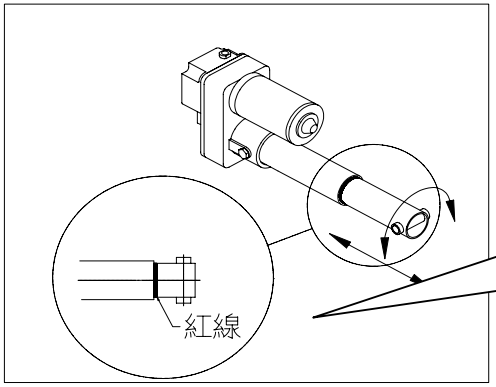
Remove the incline motor set.

Figure 7



Place the incline motor set on a table. Hold the place marked C securely. To free a bound incline set, insert ϕ9~9.5 mm rods into the securing holes and rotate as shown.

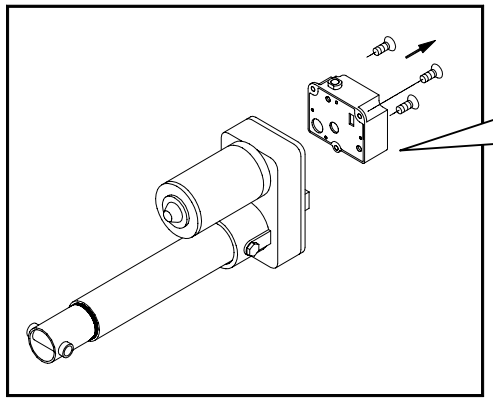
Figure 8



Once the incline motor pipe turns freely, rotate it so that the red line on the thin pipe is visible just above the end of the thick pipe.

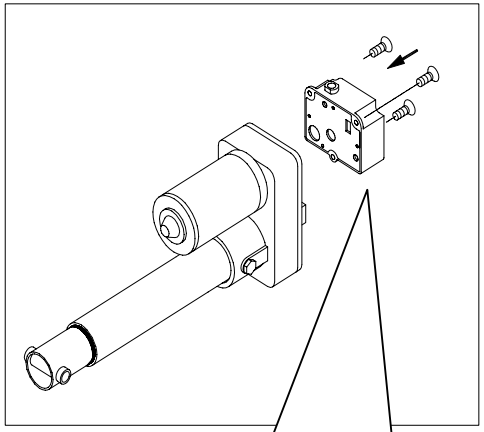
Replacing the VR Set (Cont.)

Figure 9



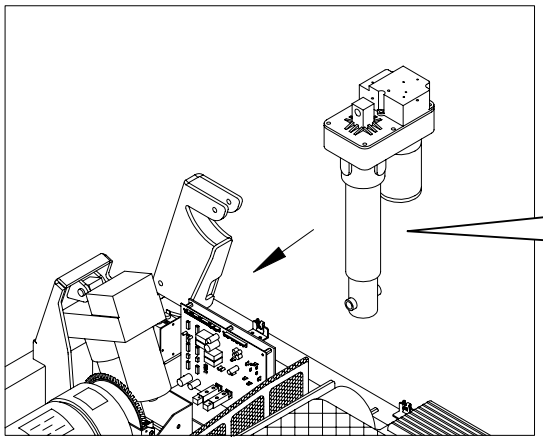
Take the screws out and remove the VR set.

Figure 10



Put new VR set in place. Tighten the screws.

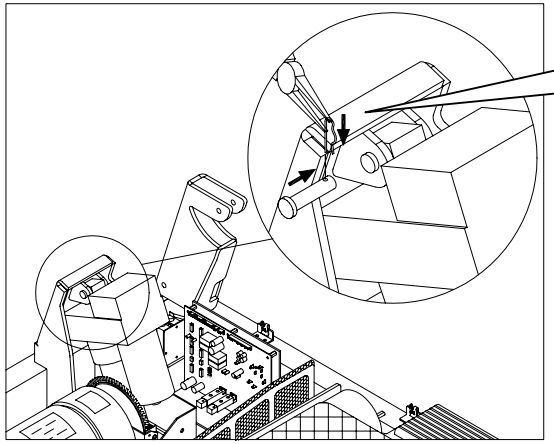
Figure 11



Place the incline motor set back in place.

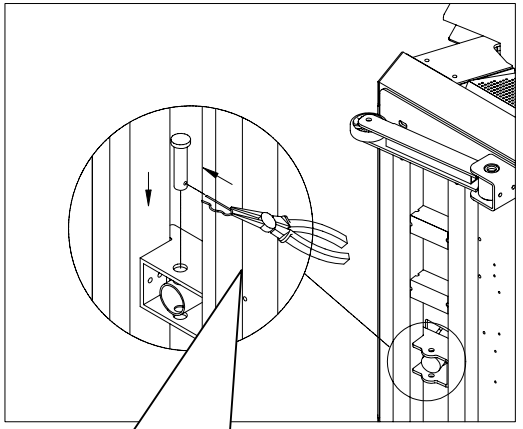
Replacing the VR Set (Cont.)

Figure 12



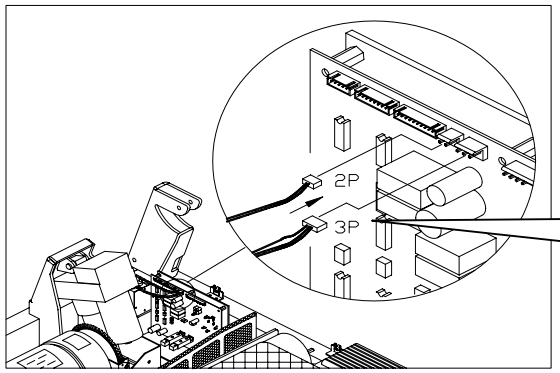
Insert the upper incline pin.
Insert the kotter pin.

Figure 13



Insert the lower incline pin.
Insert the kotter pin.

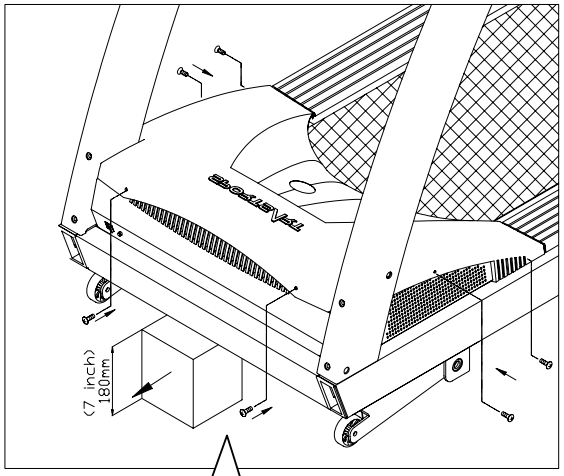
Figure 14



Attach the two- and three-pin wires to the drive board.

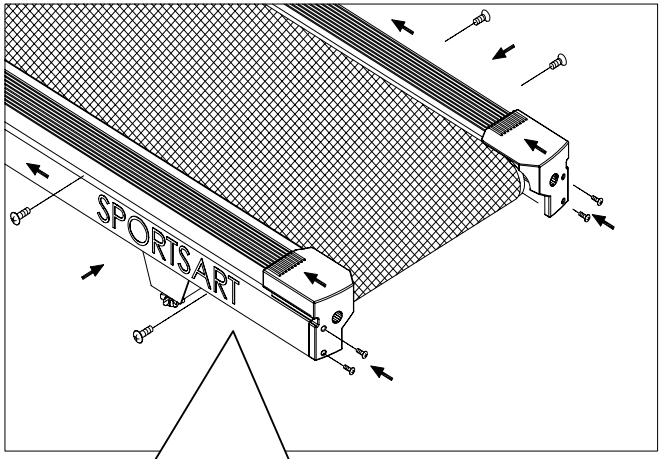
Replacing the VR Set (Cont.)

Figure 15



Remove the block, put the motor cover in place, and tighten the motor cover screws.

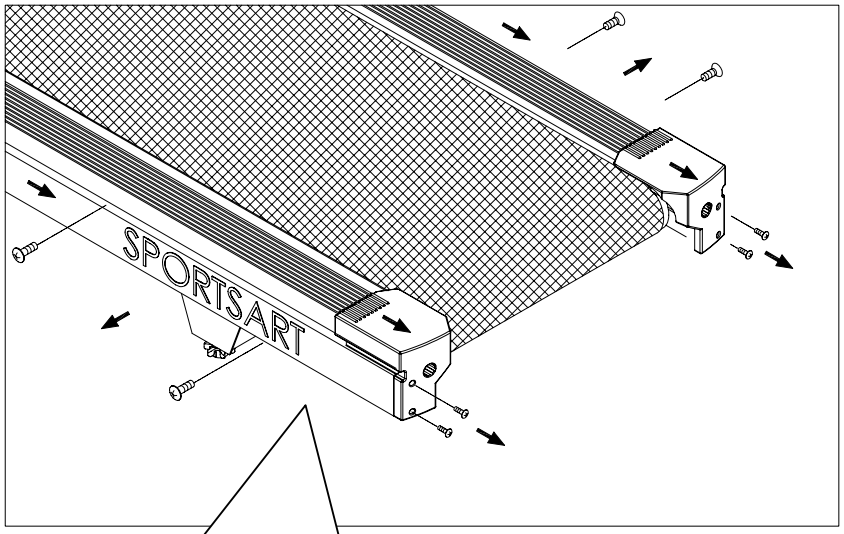
Figure 16



Put landing strips and end caps into place and tighten the screws.

Removing the Motor Cover on 6300 Treadmills

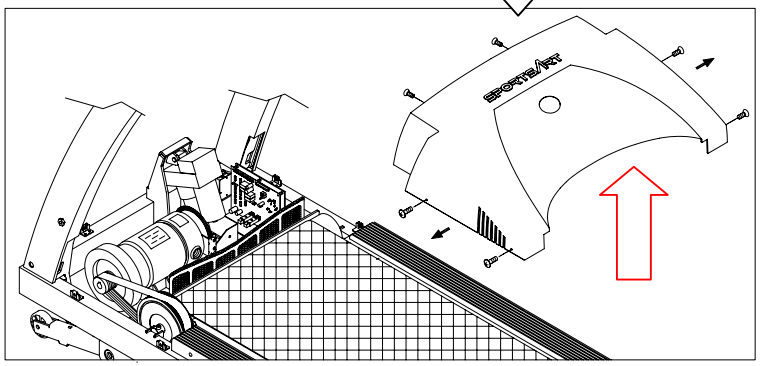
Step 1



Loosen the end cap screws and remove the end caps. Remove the landing strip screws and slide off the landing strips.

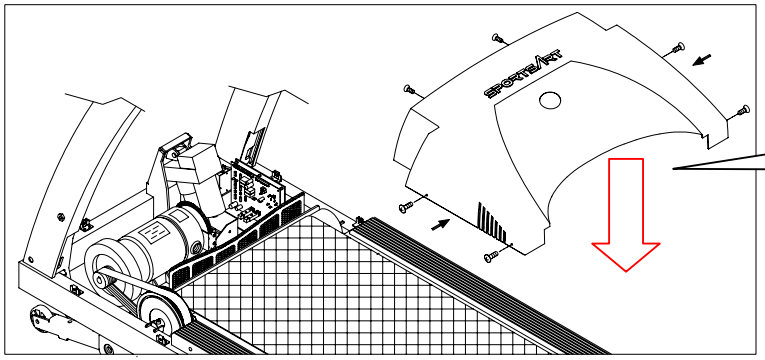
Remove the motor cover screws and lift off the motor cover.

Step 2



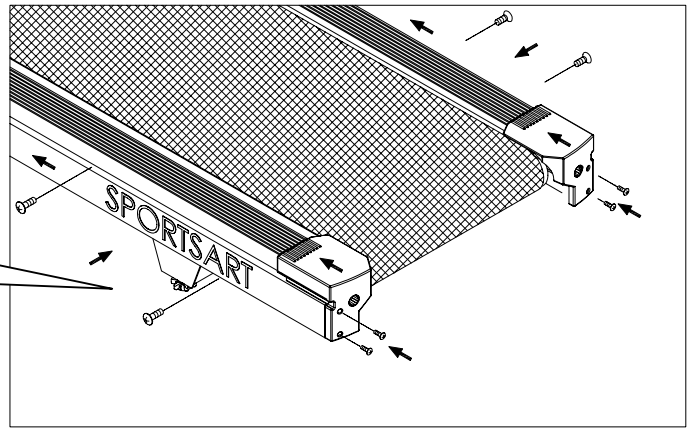
Installing the Motor Cover on 6300 Treadmills

Step 1



Set motor cover in place.
Fasten screws.

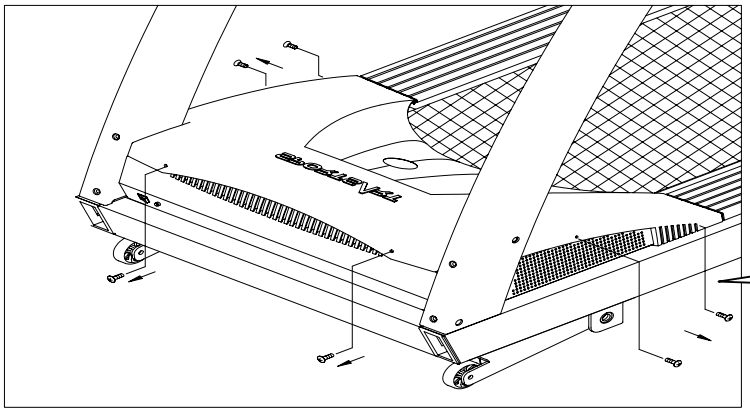
Step 2



Slide landing strip into place. Slide end cap into place. Fasten screws.

Removing the Motor Cover on 6310 Treadmills

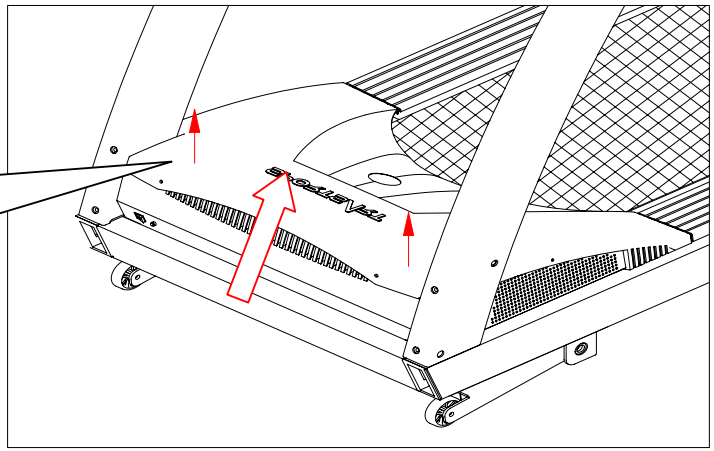
Step 1



Remove motor cover screws.

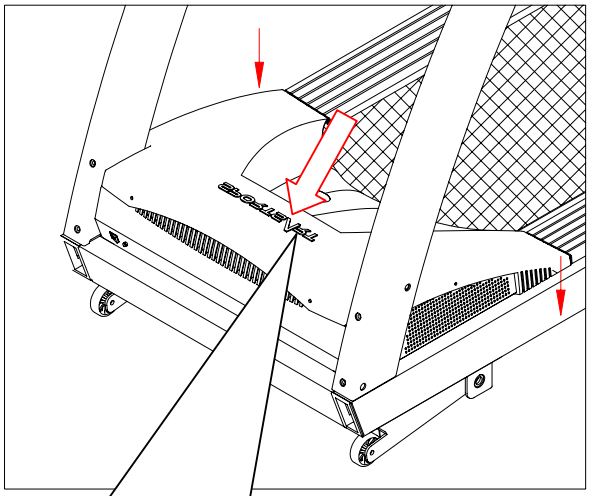
Step 2

Lift off the motor cover from the front, pulling upward and backward.



Installing the Motor Cover on 6310 Treadmills

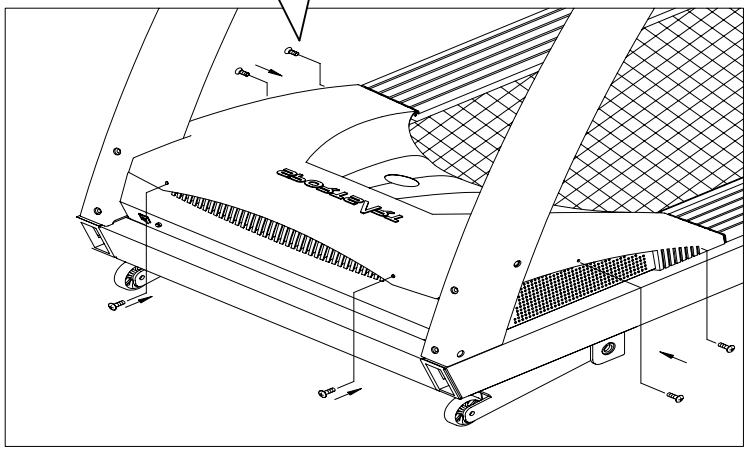
Step 1



Put the new motor cover in place, setting down the side closest to the on/off switch first.

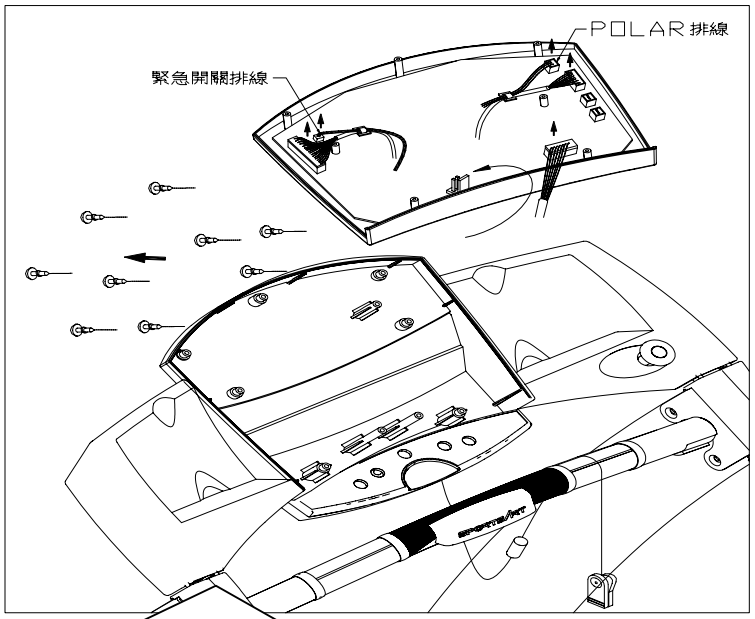
Fasten motor cover screws.

Step 2



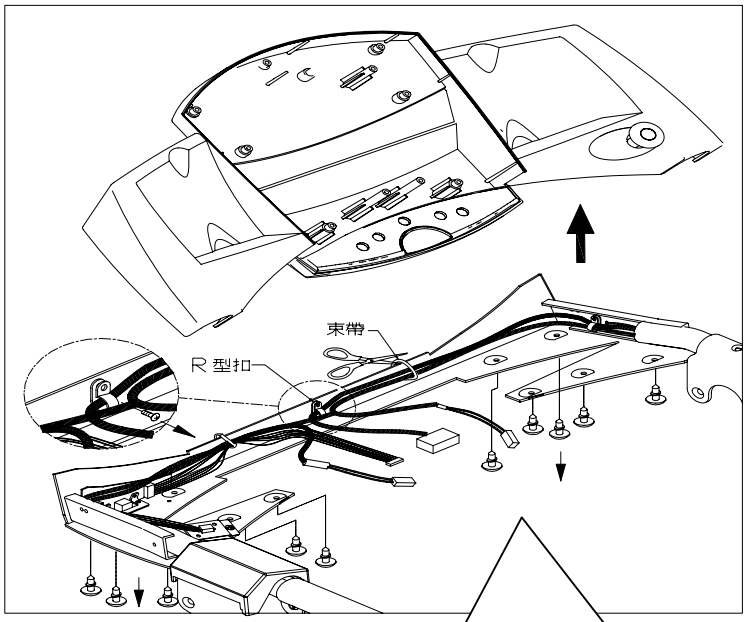
Procedure for Replacing the Emergency Stop Knob

Step 1



Remove screws from the display. Open the display. Disconnect the emergency stop switch wires and other wires. Note how wires connect.

Step 2

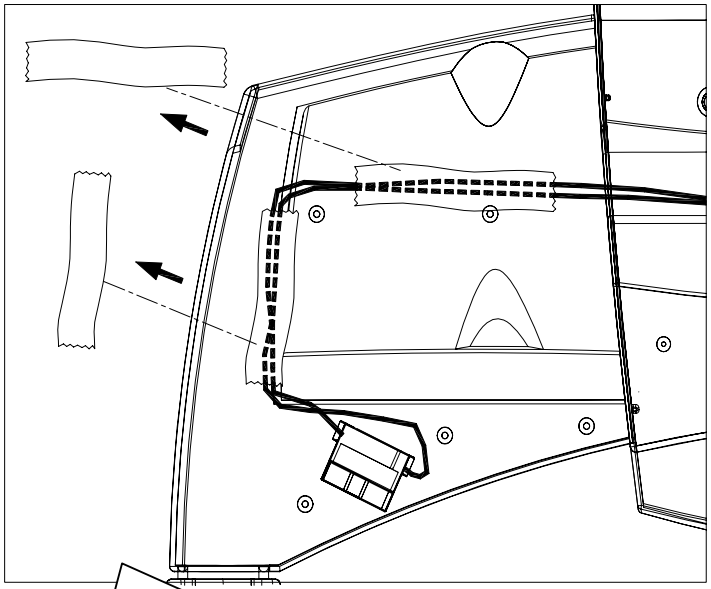


First, loosen the R-shaped clip, cut the zip tie to free the wires. Remove the lower display cover screws. Lift off the lower display cover.

Note: The factory stopped producing treadmills with emergency stop knobs in Autumn 2004. To update old units, remove the emergency stop knob as shown and insert a jumper (available through SportsArt) on its connector on the display.

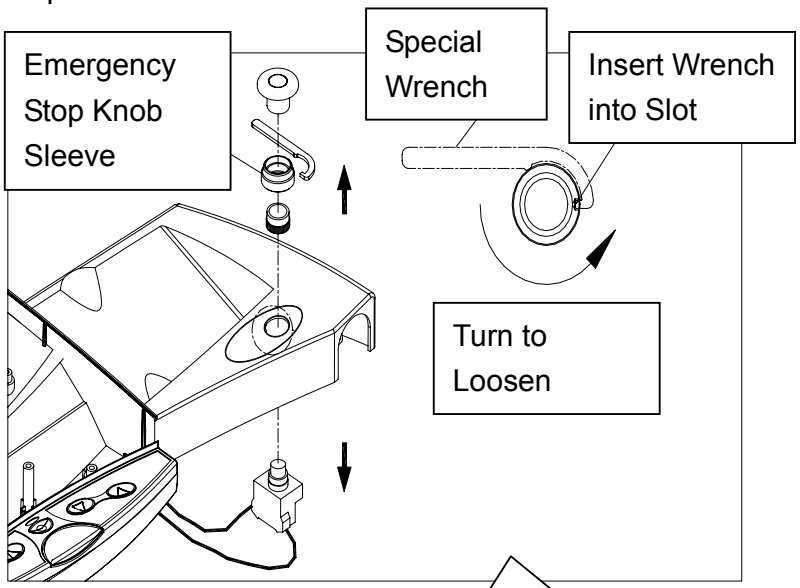
Procedure for Replacing the Emergency Stop Knob (Cont.)

Step 3



Lift the lower part of the display and turn it over. Remove the tape that secures the wire in place. (Note the placement of the tape.)

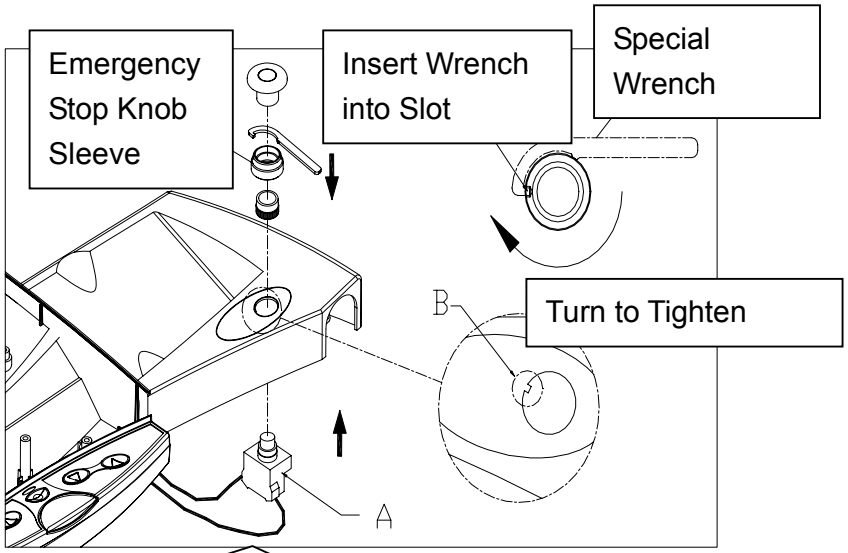
Step 4



Remove parts as shown. Note that the emergency stop knob sleeve must be removed with a special wrench. Note the wrench position and direction of rotation.

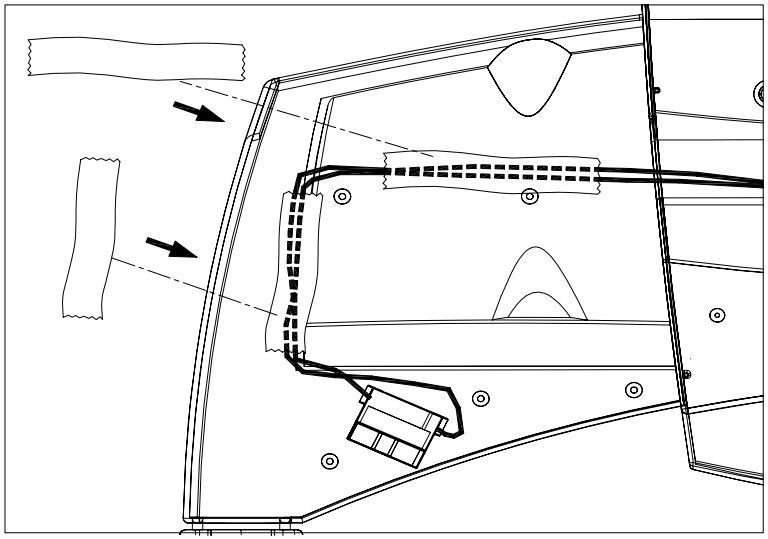
Procedure for Replacing the Emergency Stop Knob (Cont.)

Step 5



Install parts as shown and rotate to tighten. Note that the emergency stop knob sleeve must be installed with a special wrench. Note the wrench position and direction of rotation.

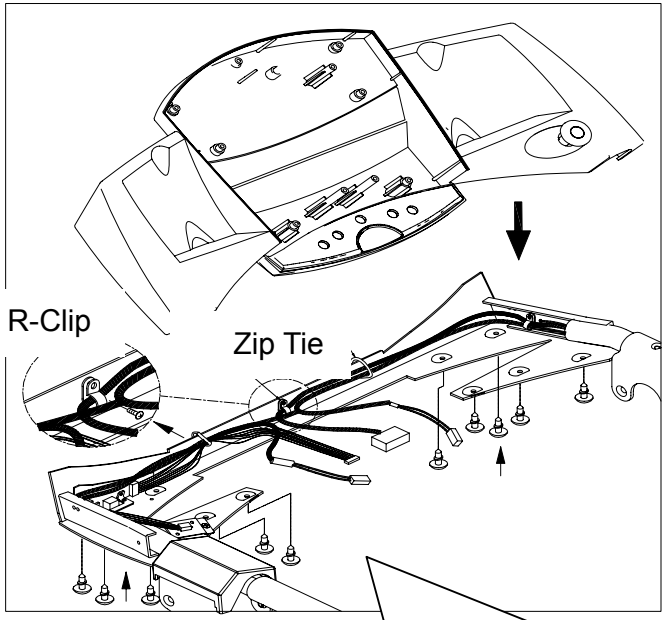
Step 6



Lift the lower part of the display and turn it over. Place tape to secure the wire. (Note the placement of the wire tape.)

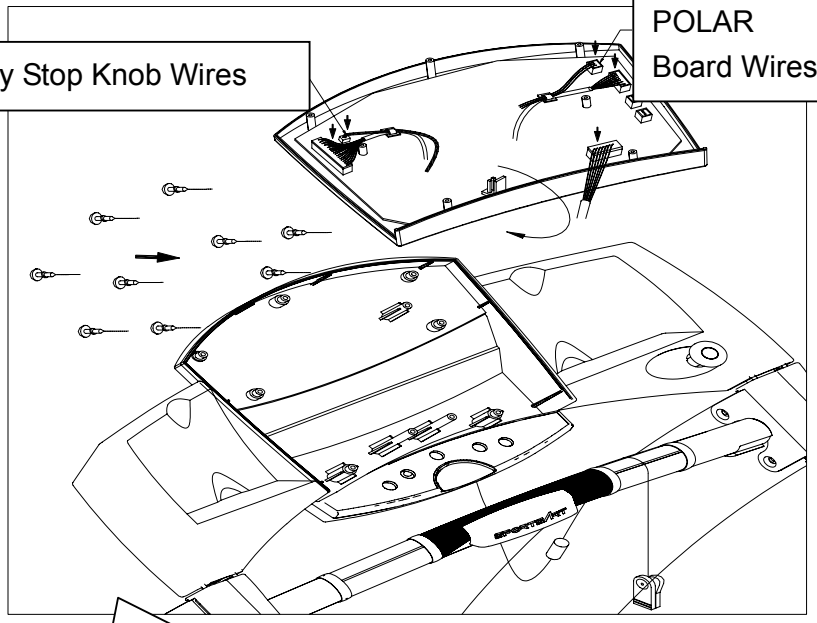
Procedure for Replacing the Emergency Stop Knob (Cont.)

Step 7



Adjust wire positions. Fasten the R-shaped clip and attach zip ties. Lower the display bottom cover into place and tighten screws.

Step 8



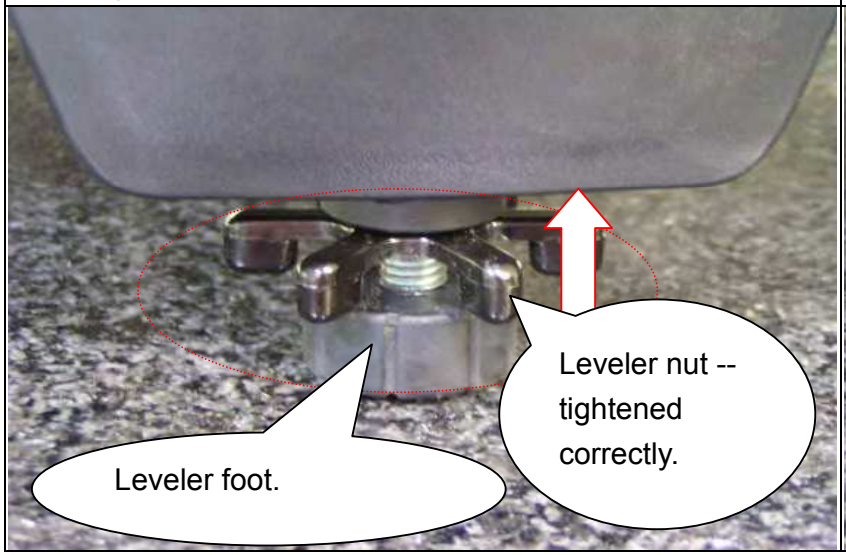
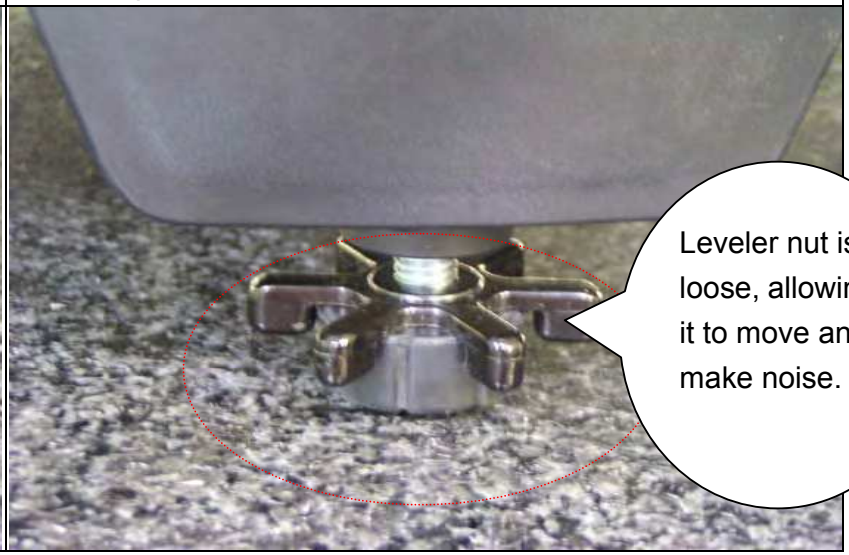
Connect wires to their sockets on the display board and put the display top cover into place. Tighten display screws. Avoid over-tightening.

7. Troubleshooting

7-1-1. Problem: Abnormal Noise – Installation Issues (Cont. through 7-1-3)
7-2-1. Problem: Abnormal Noise – Wear Issues (Cont. through 7-2-4)

Problem: Abnormal Noise – Installation Issues

Step	Inspection Point	Possible Abnormality	Inspection Procedure
1	Is the leveler nut and foot adjusted correctly?	If the leveler nut is not secured properly, the nut vibrates and makes noise.	Inspect whether the leveler nut is screwed up tightly against the unit frame.

Correct position of leveler nut	Incorrect position of leveler nut
	

Resolution: Rotate the leveler nut upward, securing it firmly against the unit.

Problem: Abnormal Noise During Use

Step	Inspection Point	Possible Abnormality	Inspection Procedure
2	Is the drive belt too loose?	If the drive belt is too loose, the belt can jump around. If it is too tight, the drive belt wears out fast.	Inspect drive belt grooves for wear. Adjust drive belt tightness (4-1-1).

Illustration: Drive belt position

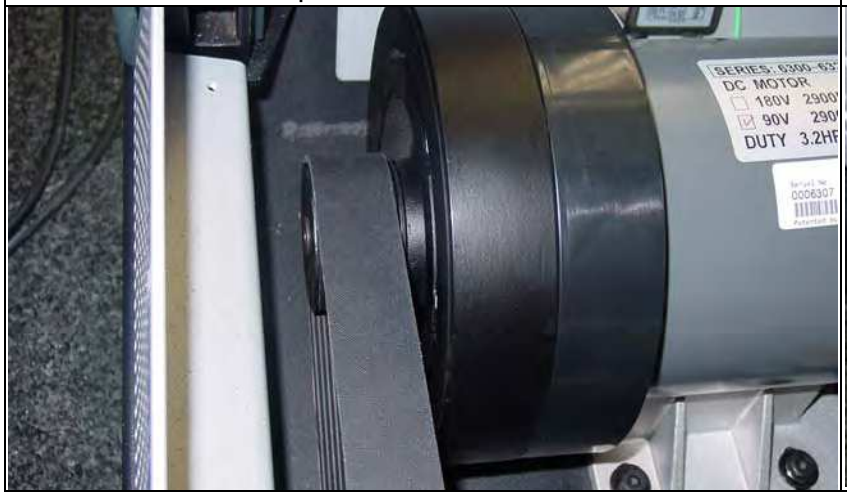
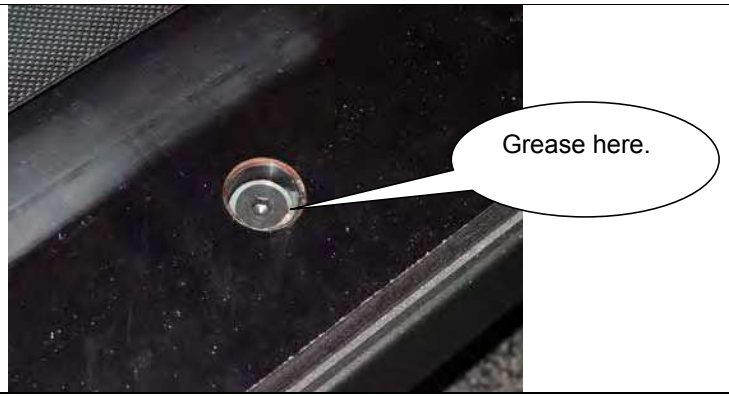


Illustration: Front roller pulley

Resolution: a. Replace worn out drive belts.
b. Adjust tension if drive belt is too tight or too loose.

Problem: Abnormal Noise During Use

Step	Inspection Point	Possible Abnormality	Inspection Procedure
3	Is there grease in the deck bolt bushing?	During use, grease dissipates, allowing the deck bolt and bushing to rub together and make noise.	Use your hand to feel whether there is grease at this spot or not.



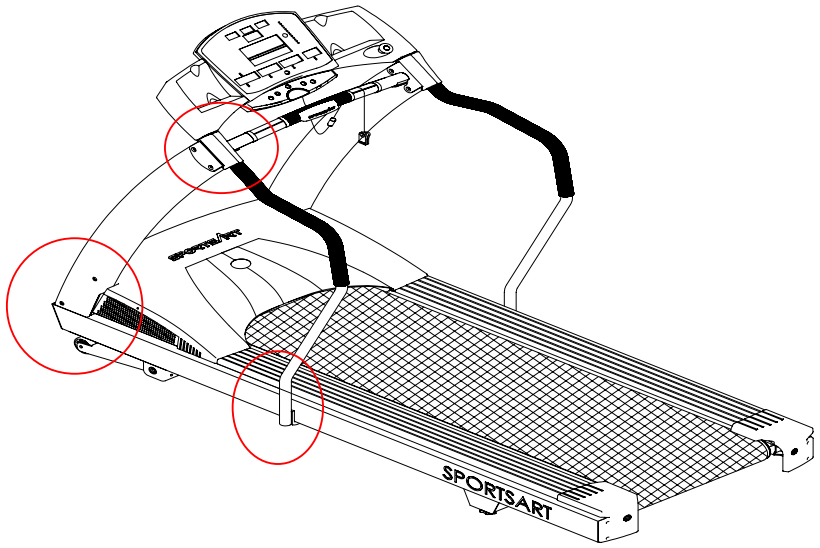
Resolution: Apply yellow grease around the bushing to improve lubrication.

Comment [t1]:

Problem: Abnormal Noise During Use

Step	Inspection Point	Possible Abnormality	Inspection Procedure
4	Are screws tight?	Loose screws allow undesirable movement, which makes noise.	Inspect all screws, especially those that are tightened during assembly.

Illustration



Resolution: Tighten all screws that are used during installation.

Problem: Abnormal Noise – Wear Issues

Step	Inspection Point	Possible Abnormality	Inspection Procedure
1	Are motor brushes worn?	After a long period of use, motor brushes wear down, causing an abnormal noise.	Inspect motor brushes for wear. Inspect whether the motor sparks.

Illustration: Motor brush housing

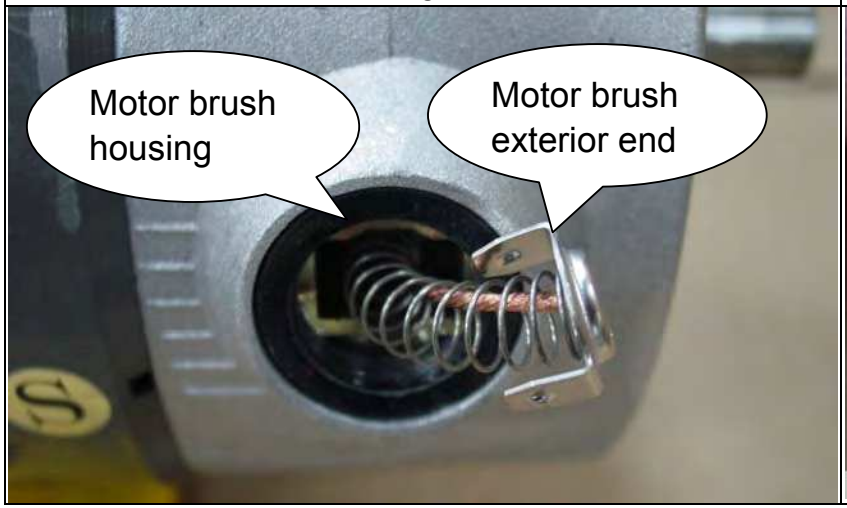


Illustration: Normal brush wear on a good brush

Resolution: a. Before inserting brushes, blow excess carbon out of the brush housing.
b. Replace worn brushes.
c. If motor sparks are unusually large, check amp draw.
(1) If the walk belt is worn, causing high amp draw, replace it.
(2) Replace the motor.

Problem: Abnormal Noise During Use

Step	Inspection Point	Possible Abnormality	Inspection Procedure
2	Are the front roller bearings bad?	If the treadmill walk belt or drive belt is too tight, roller bearing life shortens; bad bearings make noise.	Inspect whether the front roller bearings move smoothly. Inspect whether the drive belt is too tight. Inspect whether the walk belt is too tight.

Illustration: The screwdriver “stethoscope.” (A stethoscope, available at hardware stores, works better.)

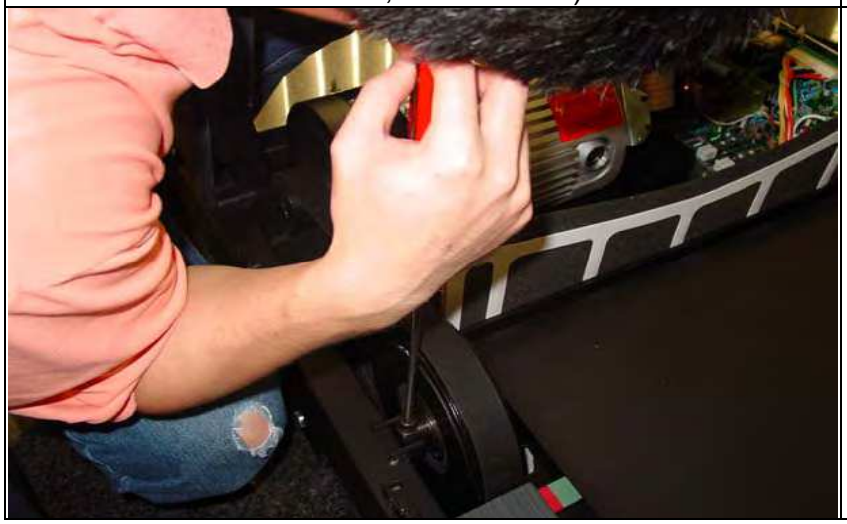


Illustration: Inspecting the front roller

Resolution: a. Replace the front roller.
b. Adjust the walk belt or drive belt.

Problem: Abnormal Noise During Operation

Step	Inspection Point	Possible Abnormality	Inspection Procedure
3	Are the rear roller bearings bad?	If the walk belt is too tight, the rear roller bearing trace gap widens, making the bearings go bad and causing noise.	Inspect whether the rear roller spins smoothly. Inspect whether the drive or walk belt is too tight. Adjust belts if necessary.

Illustration: The screwdriver “stethoscope.” (A real stethoscope, available at hardware stores, works better.)

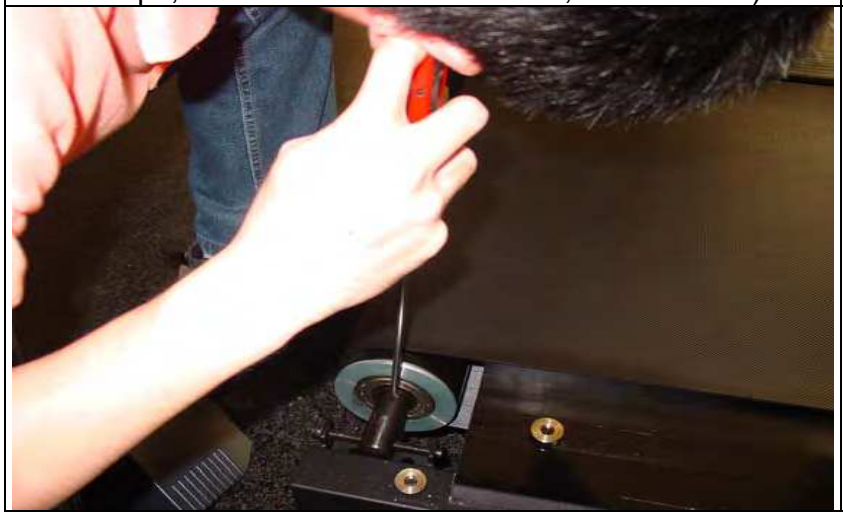
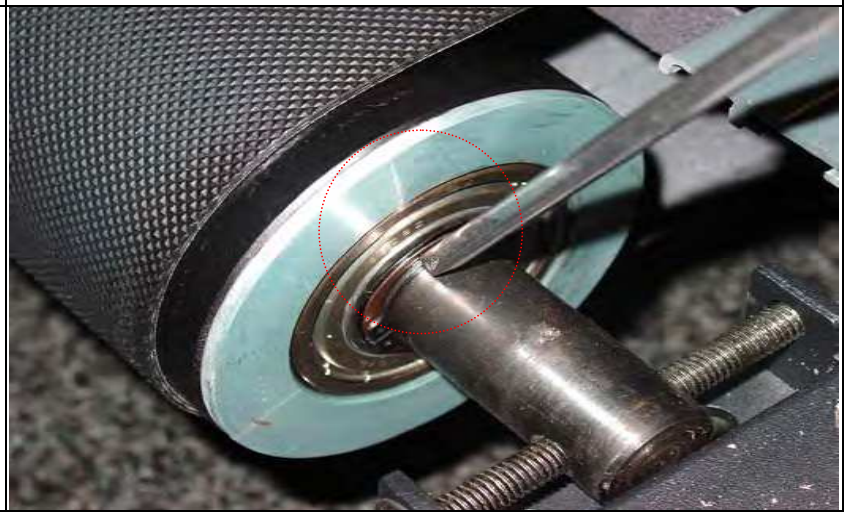


Illustration: Inspecting the rear roller



Resolution: a. Replace the rear roller.
b. Adjust drive or walk belt tightness.

Problem: Abnormal Noise During Operation

Step	Inspection Point	Possible Abnormality	Inspection Procedure
4	Guide roller bearings	Dust damages roller bearings, causing noise.	Inspect whether the guide roller rotates smoothly.

Illustration: The screwdriver “stethoscope.”
(A stethoscope, available at hardware stores, works better.)

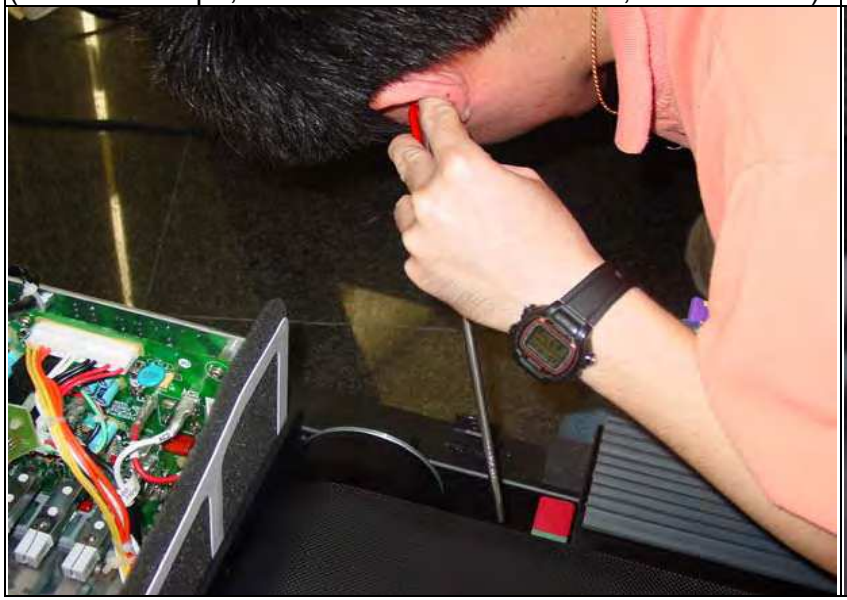
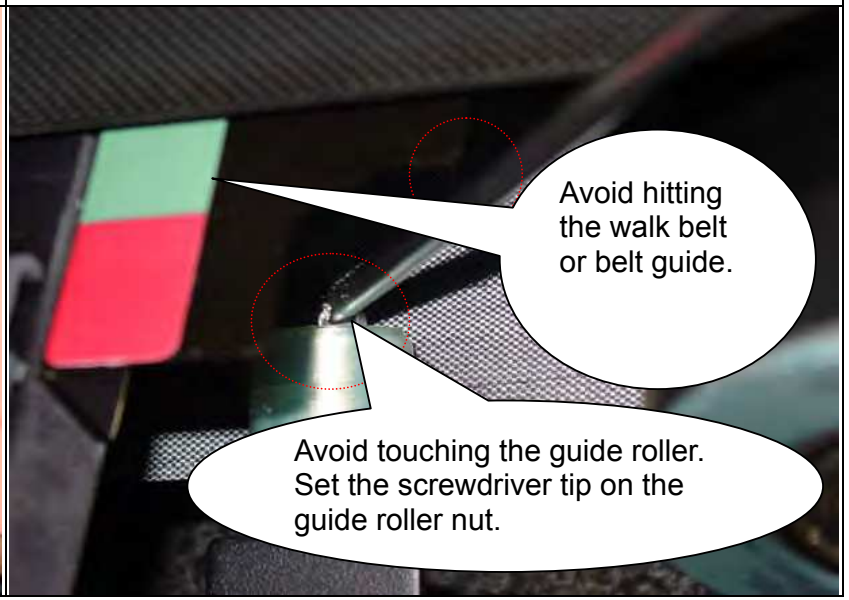


Illustration: Inspecting the guide toller



Resolution: a. Clean the guide roller.
b. Replace the guide roller.