E7000 Service Manual

Service manual

2004/08/29 Ver-1

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SECTION 1

LIMITED WARRANTY

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Limited Warranty

Johnson Health Technology Company and its employees are committed to providing our customers with the state-of-art designed and manufactured fitness equipment. This Limited Warranty and Service Procedure states JHT's warranty policy and warranty procedures.

Comments and Questions

We welcome comments and questions regarding our products. Please contact us at

Customer Service
Johnson Health Technology Company
P.O.BOX 22-100
Taichung, Taiwan, R.O.C
Telephone: 886-4-25667100
Facsimile: 886-4-25683456
E-mail: service@johnsonfitness.com

Scope of Warranty

All JHT products are warranted against defects in workmanship and materials. Any repairs to the parts itself, especially the electronics parts, will then void the warranty unless the rework is authorized in a written format by JHT in advance. This warranty will also not cover any damage, failure or loss caused by accident, misuse, neglect, abuse, improper assembly, or failure to follow instructions or warning in the owner's manual.

Intended Use

JHT products may be warranted for just home use only, all distributors are advised to consult the owner's manual for the limitations of the application.

Warranty Period

Generally, if not otherwise specified, JHT provides one and a half year warranty for all JHT products starting from the date of production. Warranty coverage for each product will be detailed in the respective product owner's manual.

Defects Replacement

The distributor should send out the replacement parts without charge within 24 hours for any customer's warranty claim due to defects of JHT workmanship or materials and the defects occurs during the warranty period. The distributor should also send out the replacement with charge within 24 hours for the service claims due to accident, abuse, neglect, or for the claims with the warranty expired.

Safety Stock of Warranty Parts

All the importers and distributors are required to keep an inventory of spare parts especially for those of which are recommended by JHT to service their customers in time. Distributors are advised to purchase the spare parts at 2%~3% of the total value of each shipment along with the shipment order or to always keep in their stock at least 2 to 5 pieces of each spare parts, especially the electronics parts, of the different model. If there is any importer or distributor failed to do so and wish that JHT send the replacement parts by express, it will be within JHT's discretion how to charge the distributor for both the replacement parts and shipment cost. A list of recommended spare parts could be provided with the shipment sales confirmation as long as the request is made to your JHT sales representative and is contained in the service manual as well. Please refer to the parts list to fill out the Parts Order Form and send it to your sales representative to order the parts as required.

Warranty Procedure

Defective electronics: To receive a credit accordingly, the distributor must collect the defective electronics, attach a label or tag on the defective part to identify the following information as a minimum requirements which contain the production serial number, symptom of failure and the warranty claim number. Send the

defective electronics back to JHT in a routine basis (monthly is preferred). Fill out the warranty claim form and send it to JHT.

Defective motors: The distributor may choose by himself the disposition of the failed motors under warranty. You can either send the motors to your local motor manufacturer's authorized dealer for repair or you can remove the name plate, attaching a label on it to identify the failure symptom and send it back to JHT on a routine basis (monthly is preferred).

Defective Mechanical Components/Accessories: To receive a credit or the free replacement parts for the defective mechanical component under warranty, simply fill out a warranty claim form attached with the photo, graph or other media that could show us the outlook of the failure. Send all the information to JHT for approval.

Defect Return: After finishing the above processes with each kind of component, the distributors are then required to contact JHT for a returned authorization and shipping arrangement (This may not be required for the mechanical defects). Once it is authorized by JHT, the distributor should pack the parts in the most appropriate way and send the package by the way as advised by JHT.

Issuing Credit: It is within JHT's discretion to issue a credit or send parts with no charge to the distributors after the returned parts have been verified to be really defective. If the parts returned has been verified to be non defective and is good enough to be used, it will be sent back to the distributor. The distributor will be responsible for all the shipping cost incurred. No credits will be issued on the defective returns that can be proved to fail due to misuse, neglect or abuse.

Technical support

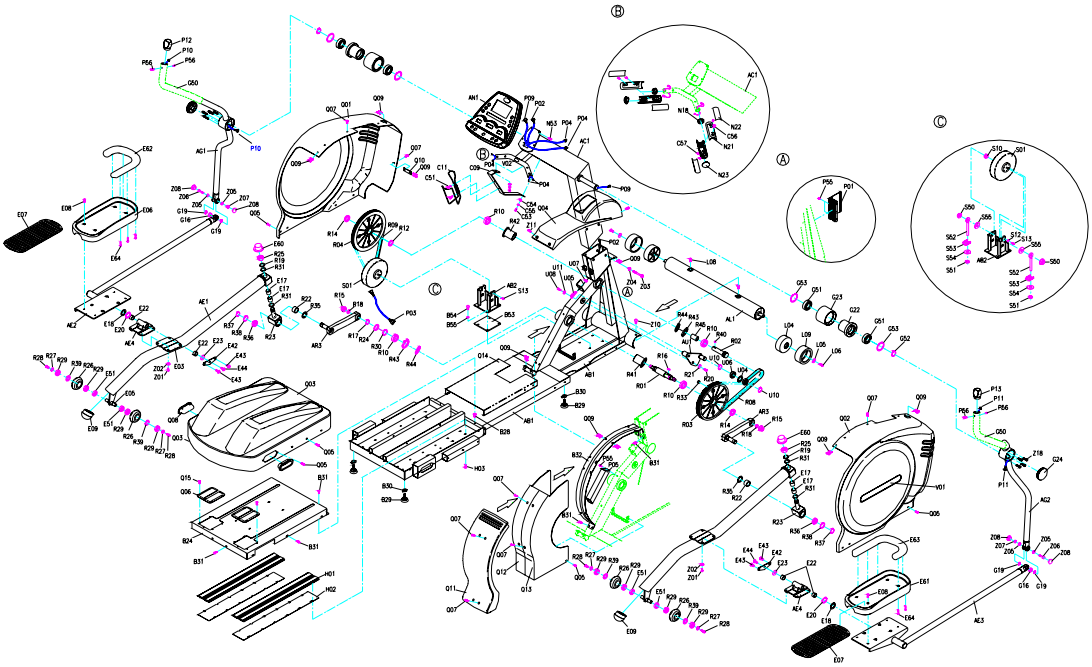
If you have any trouble in troubleshooting the failures or if you wish to complain for a mass failure to JHT, you can fill out the *Field Failure Report* to JHT. JHT will respond to your report within one day. You may call JHT customer service department directly as well if you wish, but before doing this it is preferred for you to send out the forms in advance.

SECTION 2

EXPLODED DIAGRAM

CONTENTS

■ **EXPLODED DIAGRAM…….....…….....2-2**



SECTION 3

WIRING DIAGRAM

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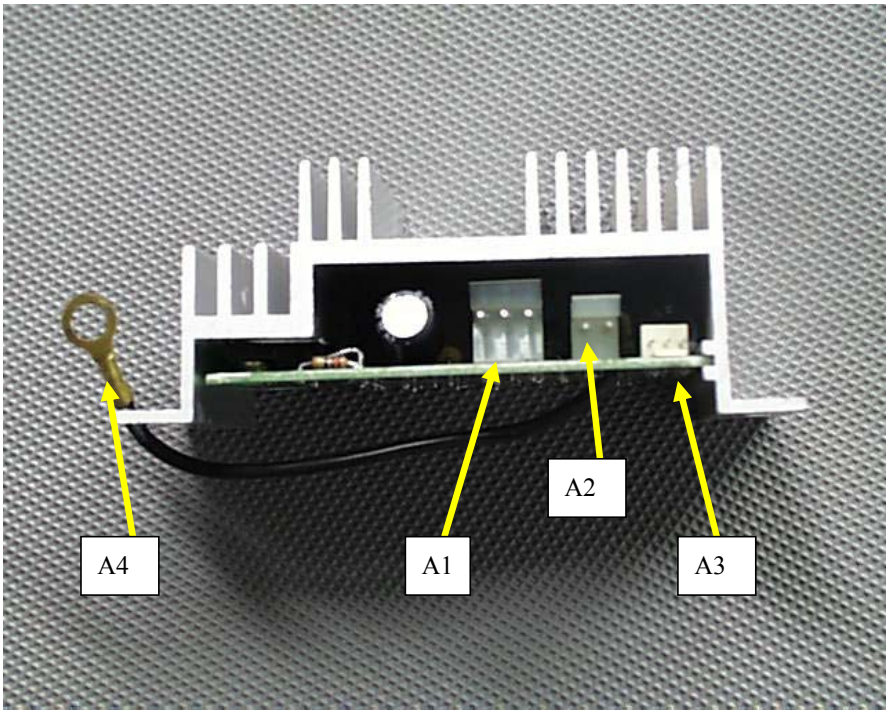
E 7000 CONTROL BOARD WIRING DIAGRAM



- **A1 : 3-pin terminal to the electromagnet brake set**
- **A2 : 2-pin terminal to the adapter**
- **A3 : 3-pin terminal to the console**
- **A4: grounding wire to frame**

SECTION 4

TROUBLE SHOOTING

Pedal speed has to be over 30 rpm

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- No display on the console or the display is dim…….....…….....…....4-2
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No pulse is displayed on the console (Handle pulse type)..……..…...4-7

Console diagnostics mode……..……..4-8

註解:

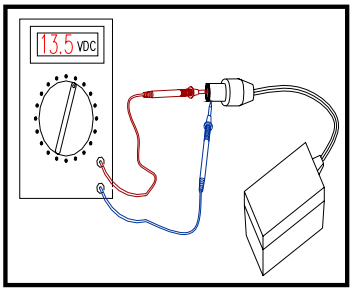
No display on the console or the display is dim

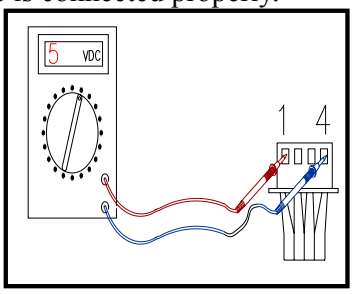
Possible causes:

1. Console is damaged or the console cable is not connected properly.
2. Poor connection to all the terminals on the control board.
3. Control board is damaged.
4. Generator is damaged.

Fix:

1. First, Check if the adapter is connected properly for both input & output ends. Remove the console, then check if the console cable is connected properly.





Unplug the console cable and use a multi-meter to check if the voltage on the 1'st and 4'th pin of the console cable is greater than 5V DC.

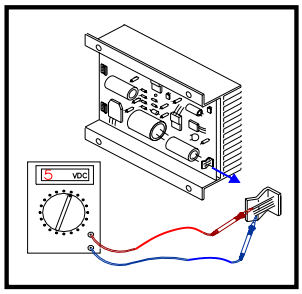
◆ If it is, replace the console and check again.

2. Open the side covers of the bike and check if all the wire harnesses are connected properly to the terminals of the control board.

3. Unplug the console cable from the control board and check if the voltage on the 1'st and 4'th pin of control board is greater than 5V DC

◆ If it is, replace console cable with a new one.

◆ If it is not, next step.



4. Unplug the generator cable from the control board and check if the voltage is variable.

◆ If it is, replace the control board with a new one.

◆ If it is not, replace the generator with a new one.

註解:

No RPM is displayed during the exercise

Possible causes:

1. Console cable is damaged or the console cable is not connected properly.
2. Console is damaged.
3. Speed sensor is misaligned
4. Poor connection of the sensor.
5. Sensor is damaged

Fix:

1. Remove the console and check if the terminal of console cable is connected properly to the console.
   - ◆ If it is not connected well.
     - ➢ Connect the terminal properly.
     - ➢ If cable is damaged, replace it with a new one.
2. Console is damaged, replace it with a new one.
3. Open the side covers of the fitness then replaces the control board with a new one.
4. Check if the sensor is misaligned. If it is, place the sensor in the correct position.
5. Open the side covers of the stepper and check if the connection of the sensor is connected properly.
   - ◆ If it is not connected well.
     - ➢ Connect the terminal properly.
   - ◆ If cable is damaged, replace this with a new one
6. Sensor is damaged, replace it with a new one

feel slipping while pedaling

Possible causes:

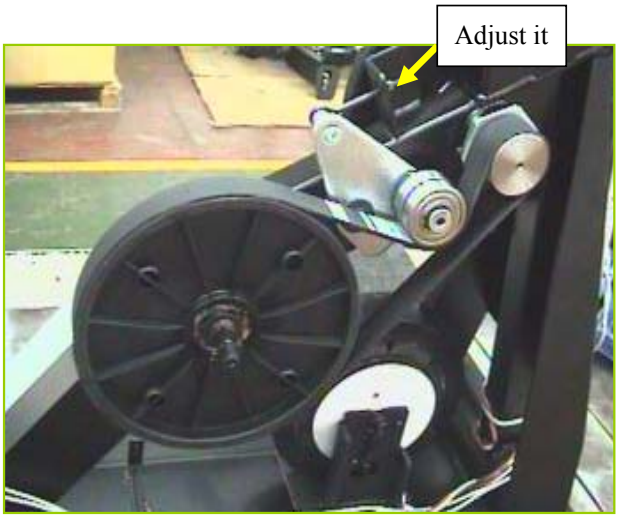
1 Belt tension is not enough

2 Poly v Belt is damaged

Fix:

1 Re-adjust the belt tension.

2 Replace poly v belt with a new one.



Knocking or creaking noise

Possible causes:	Fix:
1 Pedal is on crank arm too loose	1 Re-tighten it.
2 Crank or axle is wear out	2 Replace it with a new one
3 Belt tension is too loose or poly v belt is too dirty	3 Re-adjust the belt tension and clean the poly v belt
4 Rail or roller is too dirty	4 Clean the rail and roller.

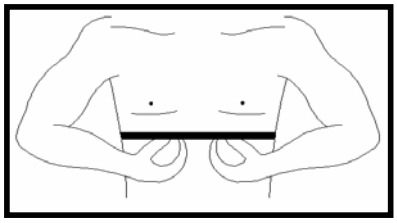
No pulse display on console (Chest belt type)

Possible causes:

1. Chest belt is not placed properly.
2. Chest belt is damaged.
3. Console is damaged.

Procedure:

1. Place the chest belt in the correct position. **<Remark 1>**
2. Replace the chest belt with a new one.
3. Replace the console with a new one.



<Remark 1> The correct operation of a Chest Belt.

1. Moisten the electrodes that are located on both ends of the belt.
2. The belt functions will most effective when placed close to the heart and to the skin.

No pulse display on the console (Hand pulse type)

Possible causes:

1. Connection of hand pulse cable.
2. Hand pulse cable is damaged.
3. Console is damaged.

Procedure:

1. Remove the console to check if the terminal of hand pulse cable has been connected to PCB well.

OR

2. Replace the hand pulse cable with a new one.

OR

3. Replace the console with a new one

Console Diagnostics Mode

STEP 1	1. **Sit on your bike, Press and hold down the "RESET" key then start pedaling to reach a pedal speed of approximately 30rpm.** Dot Matrix Display will be scanned slowly starting from LEDs of the bottom row to the top; each segment of the 7-segments will be scanned simultaneously
STEP 2	◆ If one of LEDS is not lit, replace the PCB. 1. Press the ENTER key. 2. Dot Matrix Display will be scanned slowly starting from LEDs at the leftmost column to the right. 3. Each 7-segments display will be scanned one by one.
STEP 3	◆ If one of LEDS is not lit, replace the PCB. 1. Press the ENTER key. 2. Dot Matrix and 7-segments will display lighted up ◆ If one of LEDS is not lit, replace the PCB.
STEP 4	1. Press the ENTER key. 2. Dot Matrix Display will show “RPM”. 3. “RPM” window will show current RPM 4. “TIME” window will show total accumulated minutes and seconds. 5. “AGE” window will show total accumulated hour. 6. Hold down the ”RESET” key first then press “PAUSE” key to clear the record.

Console Diagnostics Mode

SETP 5	1. Press the ENTER key. 2. In the Dot Matrix Display there will be two hearts on it, which will light up completely in turn 3. “STEPS/MINS” windows will show the current heart rate while you are wearing a HAND PULSE SENSOR or POLAR CHEST BELT. ◆ If the heart rate is not shown or not stable in the display, please refer to section 4-8 ~ section 4-10
STEP 6	1. Press the ENTER key. 2. Dot Matrix Display will show “D/A”. 3. Press “+/-“ key to increase or decrease resistance. ◆ If there is no resistance, please refer to section 4-4~ section 4-5.
STEP 7	1. Press the ENTER key. 2. Dot Matrix Display will show “KEY” on it. 3. Ready for you to enter any key of all 18 keys other than “RESET” now to verify the function of the key.. 4. The RPM window will show you a reference number accordingly while pressing a number or function key. 5. “TIME” window will show you the programming year of the software. 6. “WORK LEVEL” windows will show you the programming month and day. 7. “PULSE “ window will show you the software version. ◆ If any of the keys does not work, please refer to section 4-3
STEP 8	1. **Press the ENTER key. This completes the procedure.**

SECTION 5

Spare Parts Replacement

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POLY-V BELT 430J12.....5-9

PULLEY AXLE.....5-10

AXLE.....5-11

RPLLER.....5-12

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CONSOLE REPLACEMENT PROCEDURE

Tools required:

- Philips screwdriver

Procedure:

1. Loosen the screws (arrow) from the console using the screwdriver.

2. Disconnect the console cables from the console connectors.

3. Replace the console with a new one and reconnect the console cable to the connector.

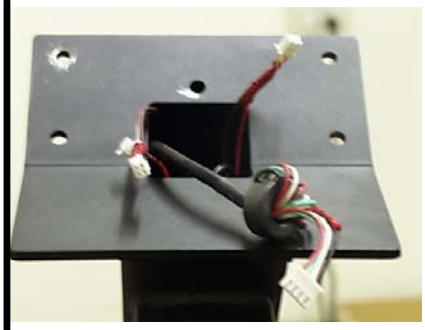
4. Tighten the screws that hold the console to the bracket.

CONSOLE CABLE REPLACEMENT PROCEDURE

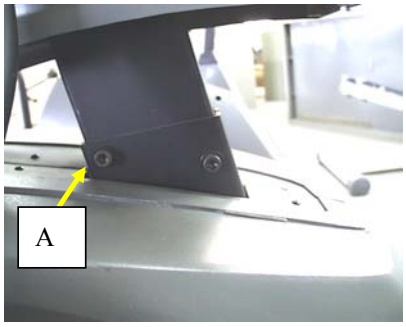
Tools required:

- Philips screwdriver
- Adjustable wrench
- hex key(8mm)
- crank extractor
- coin

Procedure:



1. Loosen the screws that hold the console to the console holding bracket.
2. Unplug the console cable from the console connectors.

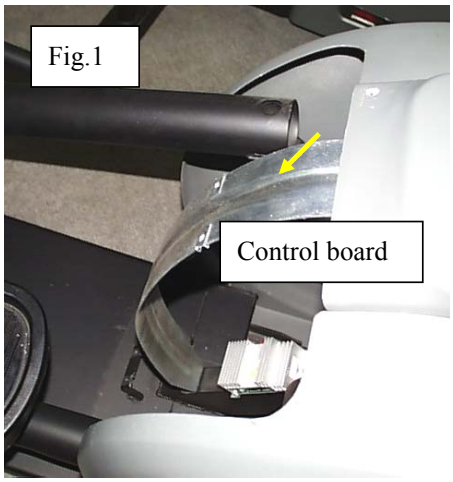


3. Remove the upper cover, screw
4. Remove the screw (A) and take bracket out (for JPE). Remove the crank and side cover(for JPC/B/S).
5. Disconnect the console cable from the connectors, and then tie the old cable to the new one with a rigid string.
6. Pull the old cable from the top end until the new cable threads all the way through the support.
7. Reconnect the console cables to both the console and control board.
8. Tighten the screws that hold the console to the console bracket.
9. Install the parts.

CONTROL BOARD REPLACEMENT PROCEDURE

Tools required:

- Philips screwdriver
- Crank extractor
- Coin
- Adjustable wrench



Procedure:

1. Remove the rear (see fig. 1) or side cover, then the crank (for JPC/B/S)
2. Disconnect all the cables from the control board.
3. Replace it with a new one.
4. Reconnect all the cables.
5. Reverse step 1-3 to install the side cover.

GENERATOR OR ELECTROMAGNET BRAKE SET

REPLACEMENT PROCEDURE

Tools required:

- Philips screwdriver
- Hex key (5mm)
- Ratchet Box Wrench (11mm)

Procedure:

1. Remove all covers.
2. Remove the POLY-V BELT and disconnect the cable from the control board.

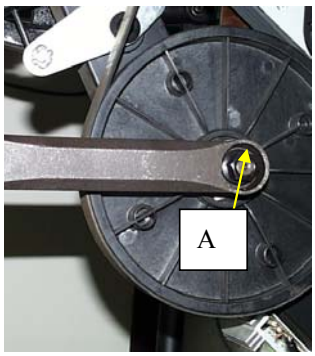
3. Loosen the tension screws and screw from the generator (electromagnet brake set.)
4. Replace it with a new one.
5. Secure the tension screw and the screws holding the generator (electromagnet brake set) to the frame (not too tight at this time so that the tension adjustment can be made).
6. Install the POLY V BELT on the front and rear pulley.
7. Use the wrench (11mm) to adjust the belt tension by adjusting the tension screw until you can only press with your thumb the POLY V BELT down about 1~1.5cm, then tighten all the screws.
8. Reconnect the generator (electromagnet brake set) cable to the control board and then install the side covers and the parts.

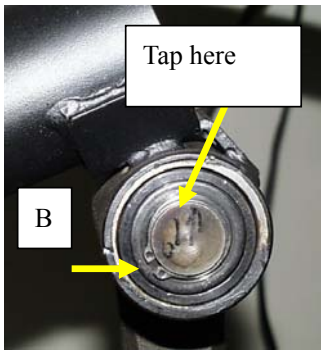
CRANK REPLACEMENT PROCEDURE

Tools required:

- Puller
- Wooden hammer
- Hexagonal socket wrench (19&13mm)
- Philips screwdriver
- Hex key (6mm)
- C-clip pliers
- Adjustable wrench

Procedure:





1 Remove the joint screw between handlebar and handrail links.

2 Remove all of the covers.

3 Remove the nut(A) then pull the crank and pedal set out

4 Remove the c-clip (B) then with wooden hammer tap the crank out.

5 Replace the crank with a new one

6 Reverse step 1-4 to install the parts

PEDAL REPLACEMENT PROCEDURE

Tools required:

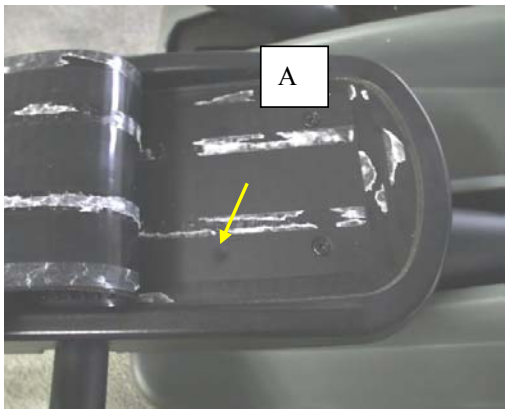
- Philips screwdriver
- Two-faced masking tape

Procedure:

1 Tear down the rubber footpad and clean it

2 Remove screw (A) then replace pedal with a new one.

3 Attach the rubber footpad.



POLY V BELT 430J6 REPLACEMENT PROCEDURE

Tools required:

- Philips screwdriver
- hex key (6 mm)
- Hexagonal socket wrench (13mm)

Procedure:

1 Remove all covers. (Except the right cover).

2. Loosen the 430J6 belts then replace it with a new one.

Install the side covers and the parts

POLY V BELT 430 J12 REPLACEMENT PROCEDURE

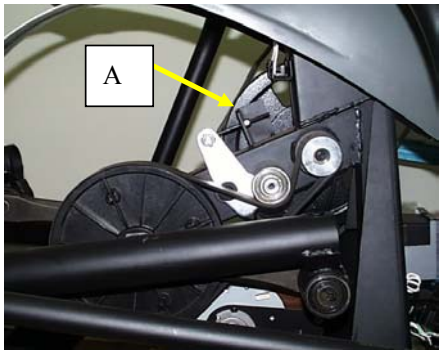
Tools required:

- Philips screwdriver
- Hex key (6mm)
- Hexagonal socket wrench (19&13mm)
- Puller
- Adjustable wrench

Procedure:

1 Remove all of the covers. (except the left cover).

2 Remove the pedal arm and crank



3 Loosen the screws then remove poly v belt and replace it with a new one

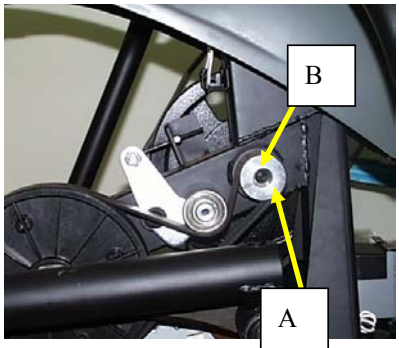
4 Reverse step 1-3 to install the parts.

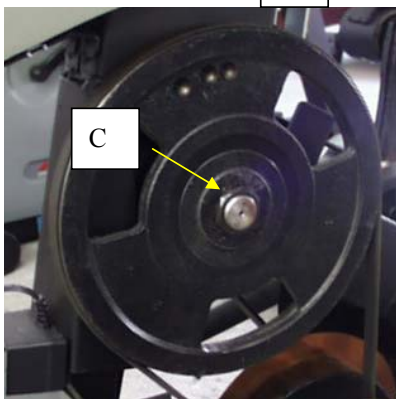
PULLEY AXLE REPLACEMENT PROCEDURE

Tools required:

- Philips screwdriver
- Hex key (6mm)
- C-Clip Pliers
- Wooden hammer
- Adjustable wrench

Procedure:





1 Remove all of the covers and poly v belts.

2 Remove the screw (A) and washer

3 Pull pulley (B) out then knock axle set out with the wooden hammer.

4 Remove the nut (C), then tap the axle out

5 Replace the axle with a new one, then install the c-clip by using c-clip pliers.

6 Reverse the step 1-4 to install the parts.

Note: To clean the bearing housing and apply adhesive on the outer race of bearing is necessary.

AXLE ASSEMBLY REPLACEMENT PROCEDURE

Tools required:

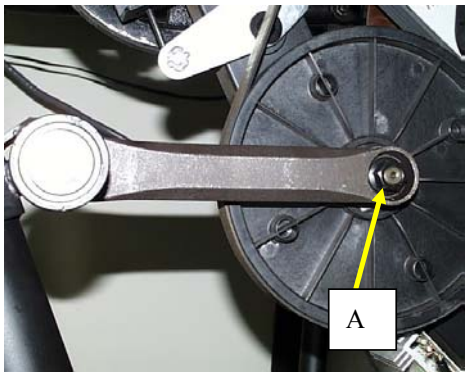
- Philips screwdriver
- C-clip pliers
- puller
- Hex key (6mm)
- Hexagonal socket wrench (19&13mm)
- Adjustable wrench

Procedure:

1 Remove all of the covers.

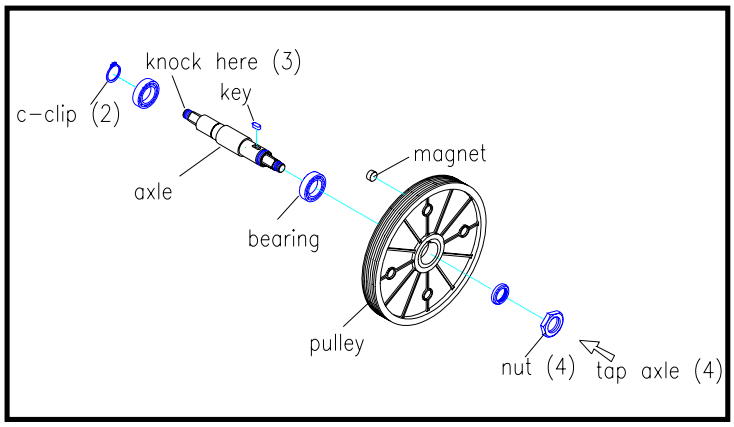
2 Loosen the nut (A) and remove it ,another side is same

3 Loosen the tension adjustment screw of idler pulley, then remove the poly v belt



4 Follow the procedures below to install the axle.

Step1: pull crank out
Step2: remove the c-clip.
Step3: tap axle assy out
Step4: remove the nut then tap axle out
Step5: replace the axle with a new one
Step6: reverse all of the steps to install the parts

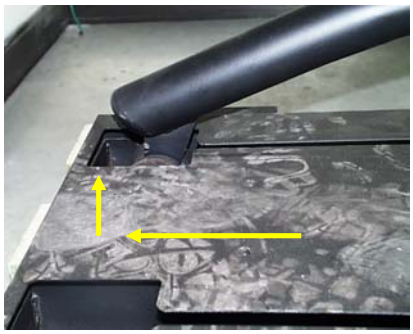


ROLLER REPLACEMENT PROCEDURE

Tools required:

- Philips screwdriver
- Hex key (4mm)

Procedure:



1. Remove the all of cover.
2. Move the pedal arm back then pick up it.
3. Loosen the screw (A) holding the wheel to the frame with the hex key (4mm), and then replace it with a new one.
4. Reverse the steps to install the side cover.

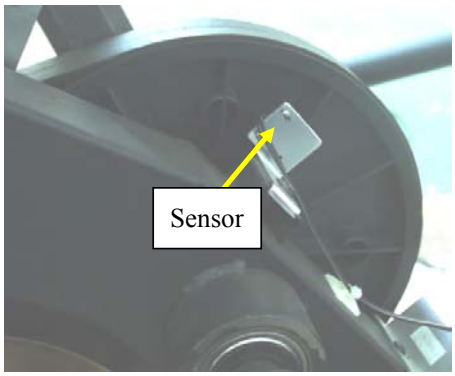
SENSOR REPLACEMENT PROCEDURE

Tools required:

- Philips screwdriver
- Hex key (5mm)
- Ratchet Box Wrench (11mm)

Procedure:

1. Remove the rear cover.
2. Disconnect the sensor cable from the control board.
3. Loosen the screws that hold the sensor to the frame.



4. Replace the sensor with a new one.
5. Reverse the step 1-3 to install the parts.

SECTION 6

MAINTENANCE PROCEDURE

CONTENTS

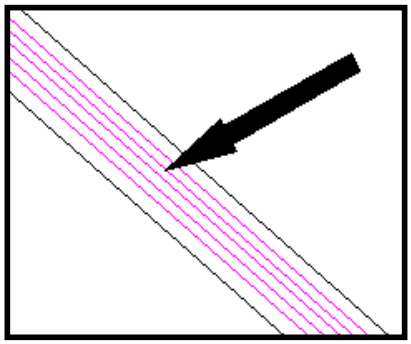
- CLEANING THE GROOVES.....6-2
- CLEANING THE RAIL AND ROOLER.....6-3

CLEANING THE GROOVES

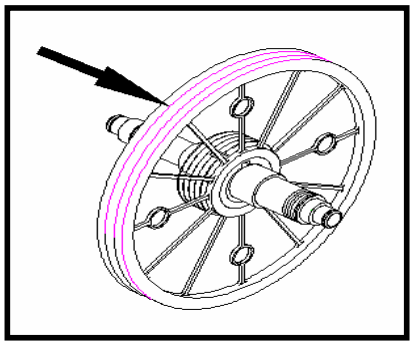
Frequency: Every 3 to 4 months.

If there is any dust in the grooves of the Poly-V belts and pulleys, noises will be generated during operation..

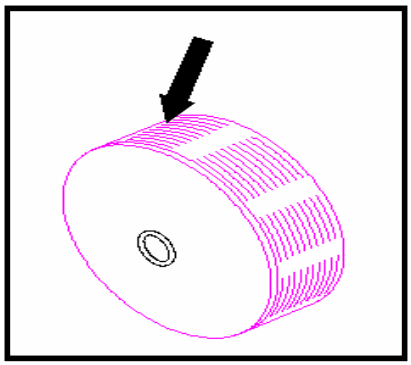
Procedure:



1 Remove the Poly-V belts and check the grooves of the belt for dirt or dust and clean it if any.



2 Check the grooves in the pulley for dirt or dust and clean it if any.



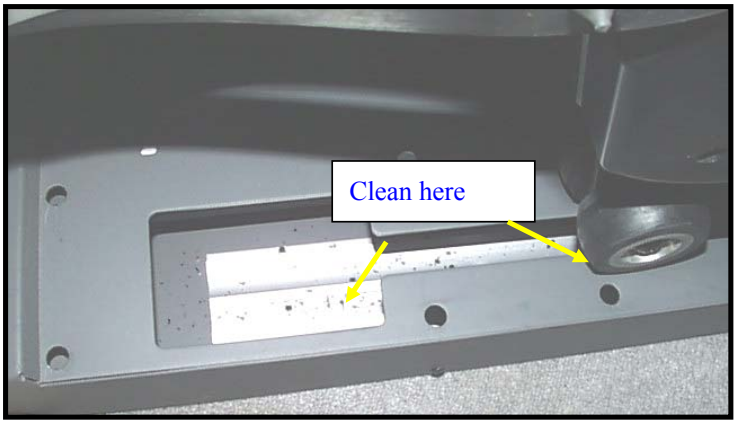
3 Check the grooves in the roller pulley for dirt or dust and clean it if any.

CLEANING THE RAIL AND ROLLER

Frequency:

Every 1-2 months.
(For club)

Every 6 months.
(For home)



Procedure:

1. Remove the roller plate cover.

2. Clean the rail and roller.

APPENDIX

RECOMMENDED TOOLS

A: OPEN-END WRENCH (17mm)
B: OPEN-END WRENCH (14mm)
C: RATCHET BOX WRENCH (11mm)
D: PHILIPS SCREWDRIVER
E: SLOTTED SCREWDRIVER
F: CRANK EXTRACTOR
G: MULTIMETER

HEX KEYS

1.5, 2, 2.5, 3, 4, 5, 5.5, 6, 8, 10 (mm)

1 **WOODEN HAMMER**
2 **BEARING PULLER**
3 **C-CLIP PLIERS**
4. **C-CLIP PLIERS**