PRECOR®

Service Manual

Experience™ Series
Elliptical Fitness Crosstrainer
EFX800-16/18 Base

Fixed and Moving Arms

Contents

Introduction **1**

Service manual contents 2

Additional Service Documentation and Videos 2

Service Safety Guidelines 4

Safety guideline you need to know and follow: 4

General Information **6**

Features 6

Model and Serial Numbers 7

Model Numbers 7

Serial Numbers 8

About 8

Serial Number Label Location 8

9

Orientation 9

Covers and Panels 9

Tools and Supplies 11

Specifications 11

Fastener Torque Specification 11

Belt Tension Specification 12

Bolt Grade Identification 12

Bolt Grade Markings Chart 13

Parts 13

Lubricants 14

Cleaning Procedure 14

Approved Cleaning Products 14

Cleaning Procedure 15

Power Requirements 15

Equipment Power 15
Console & PVS Display Power Requirements 15
LED consoles (P10, P30, P30i and P31) 15
Touchscreen consoles (P62, P80, and P82) 16
PVS Display 16
Cable TV RF Power Requirements 17
Touchscreen consoles (P62, P80, and P82) 17
MYE - PVS displays 17
RF cable TV wall outlet power requirements 18
Ethernet (LAN) Input Signal Requirements 18
Equipment Spacing Requirements 18
Operation Verification 21
Operation Verification Tests 21
Standard Service Menus 24
About 24
Service Menu Access Codes 24
LED Consoles: P10, P30, P30i and P31 25
Touchscreen Consoles: P62, P80, and P82 25
How to Access the Standard Service Menus 26
P10, P30, P30i and P31 LED consoles 26
P80 touchscreen console 27
P62 and P82 touchscreen consoles 28
Diagnostics menu access 28
Touchscreen Display Calibration shortcut 28
Debug Information Report shortcut 29
Navigating the Service Menus 31
P10, P30, P30i and P31 LED consoles 31
P10, P30 and P31 consoles 31
P30i consoles 32

P80 and P82 touchscreen consoles 32
P62 touchscreen consoles 33
LED Console Standard Service Menus 34
Hardware Validation Diagnostics Tests Menu (51765761) 34
Club Settings Menu (5651565) 35
Information Display (65) 37
Touchscreen Console Standard Service Menus 40
Service Settings Menu ((51765761) 40
About menu 42
44
Equipment Usage menu 44
Maintenance menu(1) 44
System Settings menu 46
System Tests menu 50
Club Settings (5651565) 52
Information Display (65) 53
Adjustment Procedures **54**
Available Adjustment Procedures 54
First Stage Drive Belt Tension Adjustment 55
About 55
Videos 56
Procedure 56
Second Stage Drive Belt Tension Adjustment 59
About 59
Videos 60
Procedure 60
Lift Motor Calibration 63
About 63
Videos 63

Procedure 64
Replacement Procedures **68**
Available Replacement Procedures 68
Covers and Panels Replacement 69
About 69
Videos 70
Cover Replacement Procedures 71
Front Lift Cover Replacement 71
Lift Interface Plate Cover Replacement 74
Accessory Tray Cover Replacement 76
Rear Lift Cover Replacement 78
Forward Frame Cover Replacement 80
Side Covers Replacement 82
Drive Ramp Transition Cover Replacement 86
Ramp Cover Replacement 88
Drive Access Panel Replacement 92
Videos 92
Procedure 92
Drive Disk Covers Replacement 94
Videos 94
Procedure 94
Drive Housing Covers Replacement 98
Videos 99
Procedure 99
Battery Replacement 107
About 107
Determining the battery condition 107
Battery Fuse 107
Replacement Procedure 108

First Stage Drive Belt Replacement 110
About 110
Videos 110
Procedure 111
Second Stage Drive Belt Replacement 114
About 114
Videos 114
Procedure 115
Generator/Eddy Brake assembly Replacement 120
About 120
Procedure 120
Step-up Pulley/Tensioner Assembly Replacement 128
About 128
Step-up Pulley/Tensioner Assembly Exploded View 129
Procedure 129
Drive Components assembly Replacement 133
About 133
Procedure 133
Input Drive Assembly Replacement 141
About 141
Procedure 141
Lift Motor Replacement 148
About 148
Specifications 148
Lift motor power 149
Procedure 149
LPCA (Lower PCA) Board Replacement 157
About 157
LPCA System Block Diagram 158

LPCA Interface Connections 159
LPCA Fuse Locations 160
Procedure 161
Fixed Arms Replacement 165
About 165
Procedure 165
Moving Arms Replacement 168
About 168
Procedure 168
Linkarm Replacement 173
About 173
Procedure 173
Stairarm Replacement 178
About 178
Procedure 179
Stairarm Replacement - Machines with updated Input Drive Assembly 179
Stairarm Replacement - Machines with original Input Drive Assembly 183
Stairarm Wheel Truck Assy Replacement 188
About 188
Procedure 188
Ramp Replacement 195
About 195
Specifications 195
Procedure 195
Troubleshooting 205
About 205
Introduction to Troubleshooting 205
Troubleshooting Steps 205
Validate the customer reported issue 206

Verify Input Power 206
Verify (reproduce) the customer issue 207
Verify the Club Settings 207
Verify service bulletin and software update incorporation 208
Verify console operation 208
Verify that there are no current active error codes 209
Verify hardware validation diagnostic tests 210
Verify that there are no new error codes 210
Standard Error Codes 211
About 211
Viewing Error Codes (Error Log & CPA Event Log) 213
Error Code and Troubleshooting Guide 213
Troubleshooting with Error Codes 214
Error Log & CPA Event Log 215
About 215
Error Log 216
Error Log 216
CPA Event Log 218
CPA Event Log 218
Active Status Light "ASL" 221
About 221
ASL Light Equipment Location 221
ASL Overview 221
ASL States 223
ASL Settings and Functions 223
System Troubleshooting Procedures 227
Available Troubleshooting Procedures 227
Blown Battery Fuse Troubleshooting 228
Preventive Maintenance (PM) 230

About 230
PM Guides and Videos 230
Product PM Guides 230
PM Service Videos 231
Theory of Operation 232
About 232
What's New? 232
Operating Summary Information 232
Power-up Initialization State 232
Banner Default State 232
System Component Overview 233
System Wiring Diagram 237
Parts 238
About 238
Exploded View Diagrams and Parts List 241
Optional PDF version 241
Exploded View Diagram - Fixed Arm Models 242
Exploded View - Moving Arm Models 247
Parts List - Fixed Arm Models 252
Parts List - Moving Arm Models 256
Product Literature & Videos 261
Service & Maintenance Documentation 261
Precor Websites 261
Service Videos 262
Appendix A : Edition Information i
Edition i
Additional Documentation i
Copyright i
Appendix B : Notices and Safety ii

Trademarks ii
Intellectual Property ii
Warranty ii
Safety Notices iii
Service Safety Guidelines iii

Introduction

Only Precor certified technicians are authorized to service Precor equipment. If you are not a Precor certified servicer, you must not attempt to service any Precor product. Call your dealer for service information

WARNING: This service documentation is for use by Precor certified servicer providers only. Personal injury can result from electrical shock and/or mechanical moving parts.

This service manual applies to the Experience™ Series 800 Line **EFX**[1]® models with the EFX800-16/18 bases.

EFX800 Base - Moving Arm

EFX800 Base - Fixed Arm

Model	EFX800-16 Base Configuration
EFX833	Fixed Arms, Moving CrossRamp, ASL[2] light, with P30 console
EFX835	Moving Arms, Moving CrossRamp, ASL light, with P30 console

[1]Elliptical Fitness Crosstrainer

[2]Active Status Light: Service and maintenance status light.

Model	EFX800-16 Base Configuration
EFX863	Fixed Arms, Moving CrossRamp, ASL light, with P62 console
EFX865	Moving Arms, Moving CrossRamp, ASL light, with P62 console
EFX883	Fixed Arms, Moving CrossRamp, ASL light, with P82 console
EFX885	Moving Arms, Moving CrossRamp, ASL light, with P82 console

Service manual contents

The service manual contains information to service, repair, troubleshoot, and maintain the machine base.

This manual does not include console service and repair information, for console service and repair information, refer to the console service manual.

However, the service manual does include information about how to use the console standard service menus, diagnostic tests and error code log to help troubleshoot and repair machine issues.

Additional Service Documentation and Videos

There are additional literature and video resources available that can help you to use, service, troubleshoot, and repair the machine. Refer to *Product Literature & Videos* topic:

- "Product Literature & Videos" on page 261

See Also

"General Information" on page 6

"Operation Verification" on page 21

"Standard Service Menus" on page 24

"Adjustment Procedures" on page 54

"Replacement Procedures" on page 68

"Troubleshooting" on page 205

"Preventive Maintenance (PM)" on page 230

"Theory of Operation" on page 232

"Parts" on page 238

"Edition Information" on page i

Service Safety Guidelines

WARNING: Only Precor certified servicers and technicians are permitted to service Precor products. Personal injury can result from electrical shock and/or mechanical moving parts.

Review the following safety information prior to servicing the equipment. This safety information will help to prevent personal injury or damage to the equipment while servicing the equipment.

Safety guideline you need to know and follow:

- Read and follow all **Warning** notices to protect yourself from personal injury.
- Read and follow all **Caution** notices to prevent damage to the equipment.
- Read the owner's manual and follow all operating instructions.
- Operate the equipment on a solid, level surface.
- Visually check the equipment before beginning service or maintenance operations. If it is not completely assembled or is damaged in anyway, do not attempt to operate the equipment.
- Never place liquids on any part of the equipment while performing service.
- To prevent electrical shock, keep all electrical components away from water and other liquids.
- Do not use accessory attachments that are not recommended by the manufacturer. Non-OEM accessories can cause injuries.
- Do not stand or climb on the handlebars, display enclosure or cover.
- On a self-powered unit, it will either be necessary to either equip the unit with the optional external power supply or have an assistant pedal on the unit while voltage measurements are being taken. Because of the danger of working on the unit while it is in motion using the optional external power supply is strongly recommended.
- On **AMT**[1] units when the stairarms are in motion; the generator will operate and produce potentially hazardous voltages even when the battery is disconnected.
- On AMT units with Cardio Theater **PVS**[2] units will have external power supply and coaxial cable routed through the bottom of the unit to the top of the display console. Cord management must be maintained
- On AMT units, a pinching hazard exists when the unit is operated. It is possible to seriously pinch a finger. The AMT can be mechanically locked by inserting a screwdriver through the primary sheave and frame.

[1]Adaptive Motion Trainer

[2]Personal Viewing System display.

- On treadmills, removing the hood exposes high voltage components and potentially dangerous machinery. Exercise extreme caution when you perform maintenance procedures with the hood removed.

When servicing the equipment:

- During service operations you will be very close to moving machinery and voltage bearing components:
  - Remove jewelry (especially from ears and neck).
  - Tie up long hair.
  - Remove neck ties.
  - Do not wear loose clothing.

See Also

"Notices and Safety" on page ii

"Safety Notices" on page iii

General Information

The following information provides general equipment and service information that will help you to use this manual to properly repair and maintain the elliptical .

Features

The equipment operating specifications.

Consoles	**LED**[1] consoles: P30, P31 Touchscreen consoles: P62 and P82
Converging Adjustable CrossRamp®	levels 1 - 20 range: 10° - 35° incline Stairarm wheel: Single polyurethane wheel with over-sized axle and sealed bearings.
Upper Arms	EFXxx5: Moving arms EFXxx3: Fixed arms
Resistance	Dual stage 3-phase hybrid generator / eddy brake current system to control the applied resistance levels. Levels: 1 - 20 Resistance min/max specification: • min 18 W (level 1 at 40 **SPM**[2]) • max 720 W (level 20 at 200 SPM)
Heart Rate	• Touch Handheld handlebar mounted heart rate sensors. • Telemetry Equipped for wireless heart rate monitoring using a chest strap.
Max User Weight	Maximum exerciser weight: 350 lbs (159 kgs)
Dimension/Weight	Length 85 in / 216 cm Width 30.75 in / 78 cm Height 72 in / 183 cm Weight 396 lbs / 180 kgs
Power	Machine: Self-powered (* LED consoles require external power)

[1]light-emitting diodes.

[2]steps per minute

Model and Serial Numbers

Model and Serial Numbers

Model Numbers

The product model number is a six digit alphanumeric code "AAAXXX" containing the product type, product line, console type, and feature level designator:

- "AAA" - three alpha character PRODUCT TYPE designator
- "X" – 1 digit numeric PRODUCT LINE designator
- "X" – one digit numeric CONSOLE type designator
- "X" – one digit numeric FEATURE LEVEL designator

Example

Product model number: TRM[1]833

- TRM – Treadmill
- 8 – Experience Line
- 3 – P30 console
- 3 – Fixed ramp

Product Model Number Designator Definitions

PRODUCT TYPE	PRODUCT LINE	CONSOLE	FEATURE LEVEL	
TRM: treadmill **EFX**[2]: elliptical **AMT**[3]: AMT **UBK**[4]: Upright **RBK**[5]: Recumbent **SCL**[6] StairClimber	**8**-Experience Premium **7**-Experience *Standard* **6**-Experience *Good* **6**-Assurance *Standard* **4**-Precision, *Consumer* **2**-Energy, *Consumer*	**8**-P80, P82 **6**-P62 **4**-R40 **3**-P30, P31 **2**-P20/R20 **1**-P10	**7**	EFX: Mov Ramp/Cnvrt Arms
			5	TRM: High Speed/Decline AMT: Moving Step Height EFX: Mov Ramp/Mov Arms RBK: Standard features UBK: Standard features **SBK**[7] Standard features

[1]Treadmill
[2]Elliptical Fitness Crosstrainer
[3]Adaptive Motion Trainer
[4]Upright Bike
[5]Recumbent Bike
[6]StairClimber
[7]Spinner Indoor Cycle

PRODUCT TYPE	PRODUCT LINE	CONSOLE	FEATURE LEVEL	
			3	TRM: Fixed Ramp AMT: Fixed Step Height EFX: Moving Ramp/Fixed Arms
			2	EFX: Man Ramp/Mov Arms
			1	EFX: Fixed Ramp/Moving Arms

Serial Numbers

About

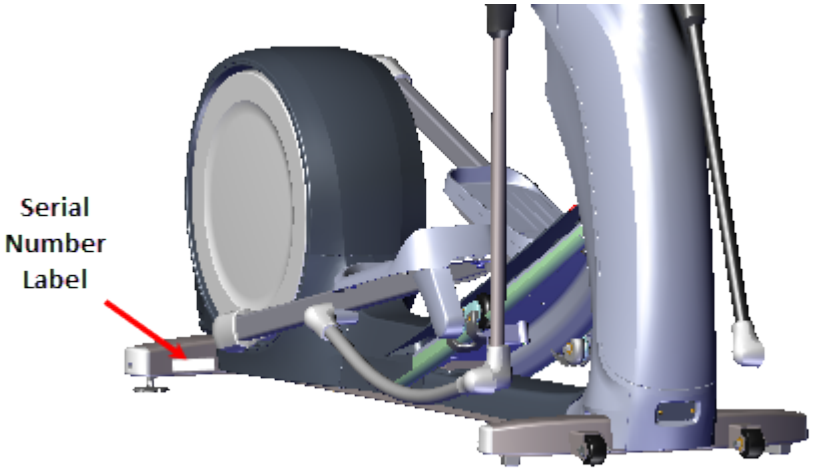
The serial number uniquely identifies each machine. The serial number is an alphanumeric code comprised of a four character model designator, a 1 letter build month code, a 2 digit day built, a 2 digit year built and a four digit consecutive daily build number.

PART	MEANING
AGNB	Model
F	Month built
17	Day built
14	Last 2 digits of year built
0021	Consecutive daily build number

A	January
B	February
C	March
D	April
E	May
F	June
G	July
H	August
I	September
J	October
K	November
L	December

Serial Number Label Location

The serial number label is located on the front right side of the rear stabilizer.



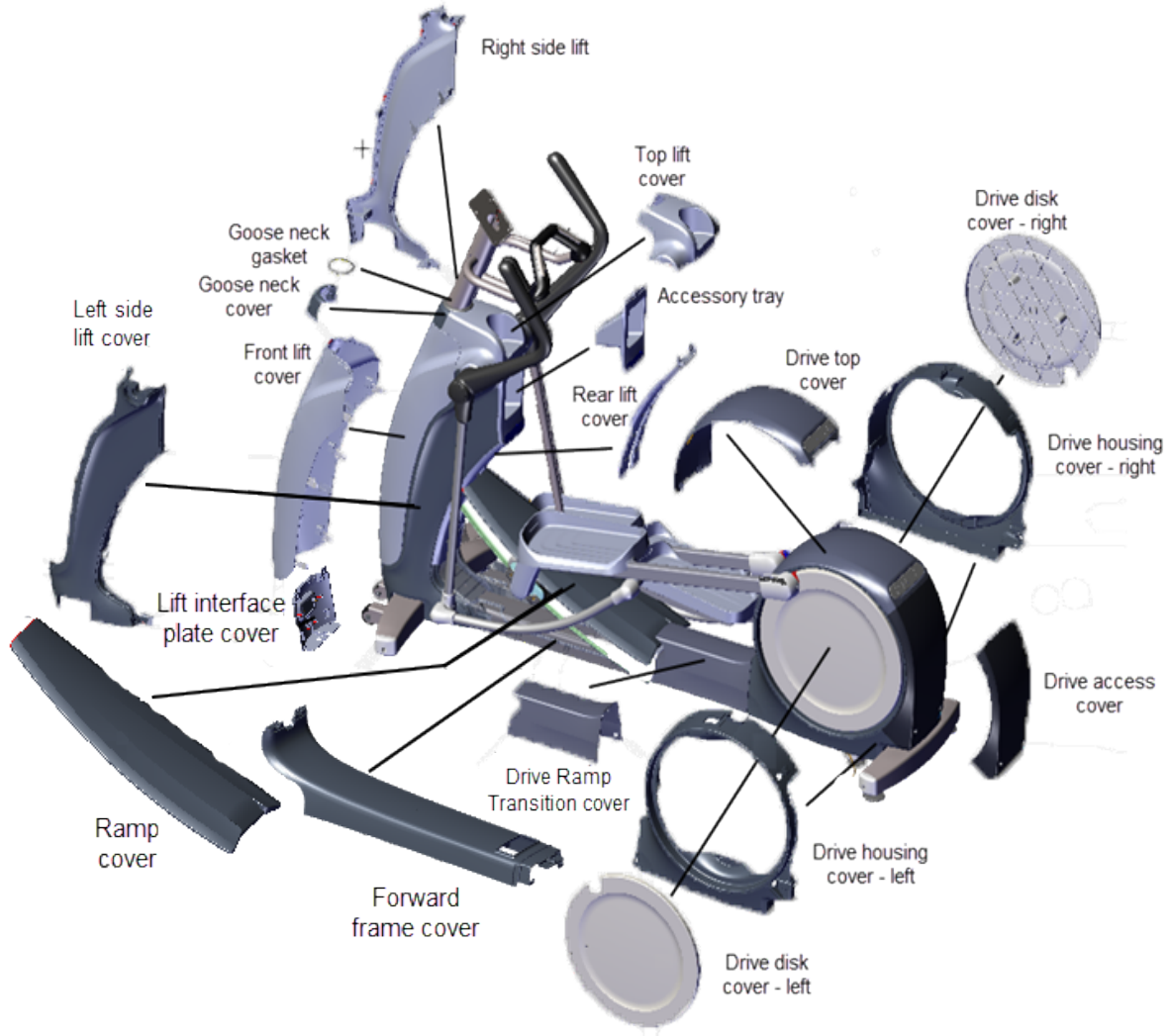
Orientation

The equipment orientation (front, right, left, back) used in manual is referenced to a user standing on the equipment facing the console.

EFX800-16 Base

Covers and Panels

Equipment cover and access panel locations.



For cover removal and installation, see "Covers and Panels Replacement" on page 69.

Tools and Supplies

Tools and supplies required to complete the machine service and repair.

Tools

US and Metric Hex Key set	Standard and Phillips screw driver set
US SAE and Metric Wrench set	External 0.047" Retaining Ring Pliers
Torque[1] wrench	**DVM**[2] Multimeter
US SAE and Metric socket set	Belt Tension Gauge (recommended Kent-Moore BT-33-73-F)
US SAE and Metric Hex Key Socket Bit set	

Supplies

Super Lube Gel with Teflon by Permatex	Cleaning rags
Mobil 1, NLGI 2 Teflon Synthetic Grease	Cleaner Degreaser (Simple Green)
Loctite 243 Blue Medium Strength Thread-locker	Cable ties (1- 3/4", 3", 4" lengths)

Specifications

Fastener Torque Specification

System component fastener torque specification:

System Component	Specification
RF[3] coax connector	2.4 in-lbs (0.271 Nm)
Display fasteners	180 in-lbs (20 Nm

[1]Torque is a measure of the force that can cause an object to rotate about an axis. Bolt/nut example: 5 NM torque is equivalent to 5 newton's of force applied one meter from the center of the bolt, 6 ft-lb is equivalent to 6 lbs of force applied 1 foot away from the center of the bolt.

[2]digital volt meter

[3]Radio Frequency: Identifies electromagnetic signals with frequency spectrum between the 3 kHz (3,000 hertz) to 300 GHz (300 billion hertz) range.

System Component	Specification
Set screws	300 in-lbs (34 Nm)
Plastite screw fasteners	20 in-lbs (2.3 Nm)
Flathead screws	25 in-lbs (2.8 Nm)
Input Drive Assembly fastener	180 in-lbs (20.3 Nm)
Step-up Pulley/Tensioner and Tension Assy fasteners	180 in-lbs +/- 54 (20.3 +/_ 4.5 Nm)
Generator/Eddy Brake Assy fasteners	180 in-lbs +/- 54 (20.3 +/_ 4.5 Nm)
Linkarm fasteners	300 +/- 90 in-lbs (34 +/- 10 Nm)
Crank Retention Plate Fastener	30 +/- 9 in-lbs (3.4 +/- 1 Nm)
Yoke Ramp bolts	330 in-lbs (27.5 ft-lbs or 37.2 Nm)

Belt Tension Specification

.Drive belt tension specification:

System Component	Specification
First Stage Drive Belt Tension - New Belt(1)	140-150 lbs (63.5 - 68 kgs)
First Stage Drive Belt Tension - Used Belt(1)	125 - 135 lbs (56.7 - 61 Kgs)
Second Stage Drive Belt Tension - New Belt(1)	110-120 lbs (50- 54.4 kgs)
Second Stage Drive Belt Tension - Used Belt(1)	92 - 105 lbs (43 - 47.6 kgs)
(1) New belt tension applies to new belt first time installations. Used belt tension applies to reinstalling an existing belt or re-tensioning an existing used belt.	

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Bolt Grade Identification

Bolt grade markings are used to categorize bolts according to the bolt material, manufacturing process, and mechanical properties. The grade of the bolt is stamped on the head of the bolt.

US SAE bolts: The bolt grade markings are determined by the number of the lines stamped on the head of the bolt. The number of lines is always two less than the grade of the bolt. Count the lines, add two, and you can determine the grade of the bolt.

Metric bolts: On metric bolts, the bolt grade is identified by a bolt grade number stamped on the head of the bolt.

CAUTION: Always replace bolts with the same grade bolt. If you don't know the grade of the replacement bolt – DO NOT USE THE BOLT.

Bolt Grade Markings Chart

Example bolt grades used on Precor equipment (may not represent all bolt grades). Always match the replacement bolt grade marking to the removed bolt grade marking.

GRADE	SAE BOLT LINES	BOLT MARKINGS Metric	SAE
Grade 2 Metric 5.8	No Radial Lines		
Grade 5 Metric 8.8	3 Radial lines		
Grade 8 Metric 10.9	6 Radial Lines		

Parts

IMPORTANT: Always purchase OEM replacement parts and hardware from Precor. If you use parts not approved by Precor, you could void the Precor Limited Warranty. Use of parts not approved by Precor may cause injury.

There is a copy of the parts *Exploded View Diagram* and *Parts Identification List* included in the Parts chapter (see Parts)that you can use as a quick reference. It is recommended that you go to the servicer partners Precor Connect (or Precor Connection) website to view the most current parts information including the *Exploded View Diagram* and *Parts Identification List*.

Online parts information using Precor Connect

- Precor Connect Partner website

Local hard copies

- Exploded View Diagram and Parts List, see "Parts" on page 238.

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Lubricants

Only use products from the following list of approved lubricants:

Lubricant	Description
Grease	Use only NLGI class 2 PTFE synthetic grade grease. Use of unapproved lubricants may void the product warranty. Recommended brands (or equivalent): • Mobil 1® synthetic grease • Super Lube® with Teflon

CAUTION: Do not use petroleum based lubricants on mechanical components such as the lift, as this may result in degradation of nylon gearing mechanisms. Use only synthetic lubricants such as "Super Lube with Teflon" or "Mobile One Synthetic" grease (RED).

CAUTION: Do not apply any lubricants or wax to the deck and belt. Do not use Wax Blast, silicon sprays, or other applied lubricants. The use of these lubricants will quickly degrade the low-friction surface of the deck.

Cleaning Procedure

Only use the following approved cleaning products and procedures to safely clean and prevent damage to the machine surfaces.

Approved Cleaning Products

Approved equipment and console cleaning products:

- **General Equipment Surfaces**:
  - 1 part mild soap to 30 parts water (recommend Simple Green® cleaner or equivalent).
  - Athletic equipment cleaner, 9x7 pre-saturated wipes (ATHLETIX PRODUCTS).
  - Enivir O Safe oxygen enhanced cleaner or Enviro Safe glass and multitask cleaner concentrate.

- **Consoles and PVS[1] displays**: a diluted solution of one part 91% Isopropyl alcohol to one part water.

Cleaning Procedure

Generic cleaning procedure applicable to all Precor equipment:

TIP: There are many product specific **PREVENTATIVE MAINTENANCE** cleaning videos available on the Precor Connect **SERVICE VIDEOS** web page. Log in to your Precor Connect servicer account and select SERVICE VIDEOS, see SERVICE VIDEOS.

1. Wipe down equipment using a soft lint-free cloth using only the recommended cleaning solution. Always spray cleaning solution directly onto the cleaning cloth and not directly onto the equipment surface to avoid equipment damage due to excessive moisture.

CAUTION: Do not use acidic cleaners and do not spray directly onto the equipment surfaces.

2. Rinse surfaces using a clean lint-free cloth dampened with water only.
3. Then completely dry with another clean lint-free cloth.

Power Requirements

Equipment Power

This is a self-powered machine that does not require an external power source to operate. Starting a workout spins the generator which generates the power necessary to operate the machine electrical components including: the system electronics, the eddy brake resistance current, battery charging, and LED (P10, P30, P30i and P31) console power.

The battery is used to supply power to operate the lift motor and to maintain system and LED console power for approximately 90 seconds after the workout has stopped.

Console & PVS Display Power Requirements

LED consoles (P10, P30, P30i and P31)

LED console power is supplied by the machine. An external power supply is not required.

[1]Personal Viewing System display.

- Self-powered machines: The machine generator and/or battery is used to power the console. The machine must be continuously operated to power ON and use the console functions.
- Powered machines: The machines internal power supply is used to power the console. The machine power cord must be plugged in and switched ON to power up and use the console. The console power is independent of the machine workout operation.

Touchscreen consoles (P62, P80, and P82)

Touchscreen consoles use an **AC**[1]/**DC**[2] power adapter to supply the console input power.

- Self-power machines: the AC/DC adapter input power cord is plugged into the facility wall outlet. Up to ten consoles can be connected to the same 20 amp individual branch circuit. Only touchscreen consoles can share the same individual branch circuit, no other devices can be connected to this circuit.
- Powered machines: the AC/DC adapter is powered by the machines internal power supply which is hardwired to the machine input power circuit.

AC/DC adapter specification:

AC/DC Adaptor	Specification
input voltage	100v-240v
output power rating	60W/12Vdc/5A

PVS Display

PVS displays use an AC/DC power adapter to power the display.

- On treadmills, the PVS display can be plugged into the same individual branch circuit outlet as the treadmill.
- On self-powered equipment, up to 10 PVS displays can be connected to the same 20A branch circuit. No other devices except PVS displays can be connected to this circuit.

PVS display specification:

PVS Display	Specification
input power	43 W max

AC/DC adapter specification:

[1]Alternating Current: electric current which periodically reverses direction between positive and negative polarity.
[2]Direct Current: electrical current that only flows in one direction.

AC/DC Adaptor	Specification
input voltage	100v-240v
output power rating	60W/12Vdc/5A

Cable TV RF Power Requirements

There is a minimum Cable TV "**CATV**[1]" RF signal input power level requirement for the touchscreen (P62, P80, and P82) consoles and PVS displays. There are also RF signal power requirements at the facility RF cable wall outlet coax connector:

Touchscreen consoles (P62, P80, and P82)

Touchscreen console RF Input Power specification

Touchscreen	RF Input Power
Analog video power	- 30 **dB**[2] to +20 dB RF power with a (+40 dB **C/N**[3] (Channel to Noise ratio)
Digital RF power	-5 dB to 0 dB

MYE - PVS displays

MYE display RF Input Power specification

PVS	RF Input Power
Analog video power	+5 dB to +10 dB RF power with a +40 dB minimum channel to noise ratio (*at each console)
Digital RF power	-5 dB to 0 dB (*at each console)

[1]Cable Television (aka Community Access Television) is a system of transmitting television programming to consumers via radio frequency (RF) signals transmitted through coaxial cables

[2]1) Dynaamic Brake or 2) Decibel (dB): In electronic systems, the decibel (dB) is a of measurement used to express the system power gain (+dB) or loss (-dB) in decibels (dB). dB (power) = 10Log Pout/Pin) or, in terms of voltage, dB (power) = 20Log (Vout/Vin).

[3]carrier-to-noise ratio: The ratio of power in an RF carrier to the noise power in the channel. CNR is defined as the ratio of the received modulated carrier signal power C to the received noise power N after the receiver filters: in terms of power: CNR = C/N, in terms of decibels CNR (dB) = 10Log(C/N) = C (dBm) – N (dBm).

RF cable TV wall outlet power requirements

When a RF cable TV wall outlet is used to power several equipment consoles in series, there is a minimum RF power requirement of +35 dB at +40 dB minimum channel to noise ratio for analog video and a +25 dB for Digital video.

An RF signal strength of +35 dB can power 17 to 19 consoles connected in series using properly connected splitters tapped to each individual console.

Ethernet (LAN) Input Signal Requirements

Precor recommends a dedicated CAT6 Ethernet feed to each equipment location.

Communication Requirements:

Ethernet (LAN[1])	Specification
upload bit rate	512 Kbps min upload
download bit rate	5-10 Mbps min download
switch ports	80, 123, 443

*Touchscreen (*P62, P80, and P82*) console Preva **PBS**[2] communication protocol*

The touchscreen consoles P62, P80, and P82) use a security token for communication to the Precor servers. The security token is a hash string that is sent with every API call from the FE's to the Amazon Cloud. The security token originates after the equipment is registered at the location. The console issues a 'Call' which returns the registration token and the fitness equipment URL. Every event after that uses the URL and the token to validate/authenticate communication with the Amazon servers and Preva Business Suite (PBS).

All communication with Precor servers is currently done via outgoing (originating from the console) HTTPS sessions. The console utilizes **NTP**[3] to set its clock and for synchronization. At no time is Precor connecting to the customers facility network to "push" any data. The console initiates all data requests.

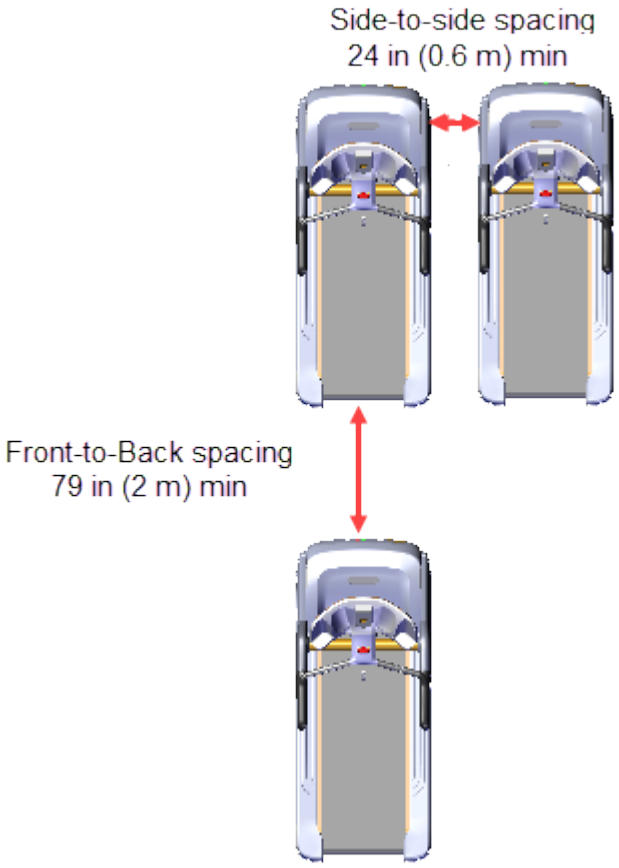
Equipment Spacing Requirements

Equipment Spacing Requirements

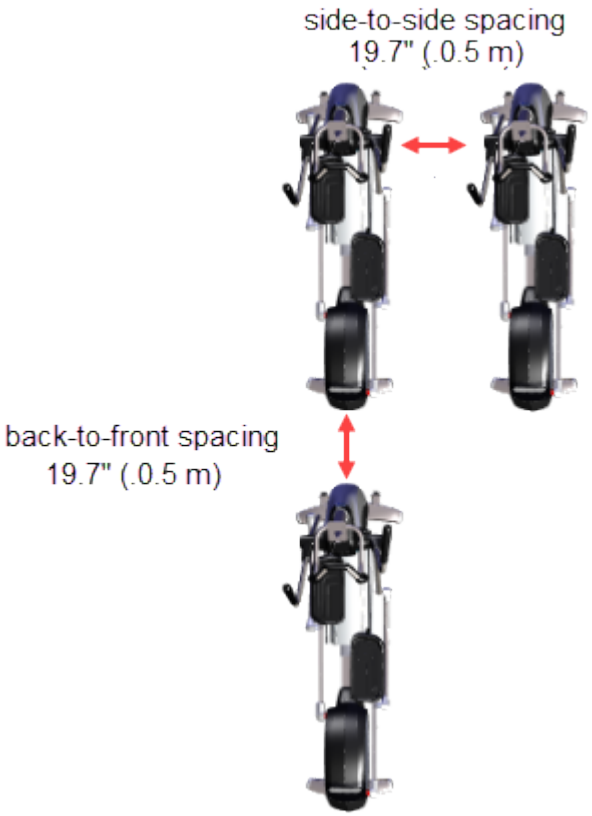
[2]Preva Business Suite

[3]Network Time Protocol (NTP) is a networking protocol for clock synchronization between computer systems over packet-switched, variable-latency data networks.

The minimum side to side spacing between treadmills is 23.6 in (0.6 m) and the minimum front to back spacing is 79 in (2 m).



The minimum side to side spacing between elliptical trainers is 19.7 in (0.5 m) and the minimum front to back spacing is 19.7 in (0.5 m).


side-to-side spacing
19.7" (.0.5 m)
back-to-front spacing
19.7" (.0.5 m)

Operation Verification

The Operation Verification tests verify that the machine is operating correctly and, upon successful completion of each test, can be returned to service. Do these operation verification tests at the end of a maintenance procedure or whenever it is necessary to ensure that the machine is operating properly.

Operation Verification Tests

☐ **Error Code Verification Test**
Verify that there are no current active logged error codes:

1. Access either the Error Log (**LED**[1] consoles) or **CPA**[2] Event Log (touchscreen consoles) and record any current active logged error codes:
   - On P10, P30, P30i and P31 LED consoles, Press & hold down the **PAUSE** key for 6 seconds minimum to access the Error Log.
   - On P62, P80, and P82 touchscreen consoles, access **Service menu (51765761)**, select **About** > **CPA Event Log**.
2. Resolve any current active logged error code issues.
3. Delete resolved error codes:
   - On P10, P30, P30i and P31 LED consoles, access the **Information Display (65)** > scroll to **Error Log**.> select **OK** hardkey to view the Error Log. To remove an error code, press/hold down the **QUICK START** key until the "NO ERRORS" message shows.
   - . On P62, P80, and P82 touchscreen consoles, access the **CPA Event Log** (access the **Service menu (51765761)** > select **About** > **CPA Event Log**). Then select the **CLEAR** softkey to remove all error codes.

☐ **Console Verification Tests**
Verify the LED console or touchscreen console operation.
LED consoles (P10, P30, P30i and P31) only

1. Access the Hardware Validation Diagnostic Test menu (51765761) and run the following tests:
   - **KEYPAD or KEYBOARD TEST**: Select KEYPAD TEST and follow prompts to run test.
   - **DISPLAY TEST**: Select DISPLAY TEST and follow prompts to run test.
2. Exit the Diagnostic Test menu, press the **STOP** key.

Touchscreen consoles (P62, P80, and P82) only

[1]light-emitting diodes.

[2]Touchscreen console Control Processing Assembly.

1. Access the Service menu (51765761) and perform the following console System Tests (**Settings** > **System Settings** > **System Tests**):
    - **Touchscreen Calibration**: Follow screen prompts to complete test. When the test is completed the console will automatically exit and return to the System Tests menu.
    - **Touchscreen Test**: Verify that there is a trace created that follows your finger movement across the touchscreen surface. Select **Finish** to exit. move your finger and verify that a trace follows
    - **Backlight Test**: Tests the display backlight brightness. Follow prompts to complete test.
    - **RGB Test**: Touch the screen to cycle through the test colors: Red, Green, Blue, White, & Black. Returns to the System Tests menu when completed.
    - **Numeric Backlight Test**: Tests the controls numeric display brightness. Returns to the System Tests menu when completed.
    - **Numeric Display Test**: Tests the controls numeric display. Returns to the System Tests menu.
2. Exit the Diagnostic Test menu. (press **Back** to exit & return to the banner screen)

☐ **Machine Operation Test**

This test verifies the console motion controls, metric indicators and machine operation:

1. Select **QUICKSTART** to begin a manual workout. Do this test while pedaling and the **INCLINE** set to 0% incline:
2. Operate the **RESISTANCE** motion control from minimum to maximum range while verifying the machine operation:
    - During the operation of this test, make sure that the pedal stairarms, moving arms (moving arm models only) an input drive are operating smoothly and that there are no unusual noises.
    - Make sure that the console **RESISTANCE** paddle control operation is smooth and working correctly.
    - Vary the RESISTANCE from minimum to maximum and back to minimum while pedaling, verify that the pedal resistance increases and decreases as expected.
    - Verify that there were no unusual noises during this test.
    - Verify that the console RESISTANCE indicators and workout displays are showing correct information.
3. On machines with the adjustable CrossRamp, While pedaling operate the **INCLINE** motion control from minimum to maximum levels. Verify the following machine operation criteria.
    - During the operation of this test, make sure that the pedal stairarms, moving arms (moving arm models only) an input drive are operating smoothly and that there are no unusual noises.
    - Make sure that the console **INCLINE** paddle control operation is smooth and working correctly.

- Vary the INCLINE from minimum to maximum and back to minimum, Verify that the crossramp raises smoothly to the maximum level and returns smoothly to the minimum level.
- Verify that the console INCLINE indicators and workout displays are showing correct information.

☐ **Heart Rate Monitor Test**

Verify both the Handheld Handlebar Heart Rate (**HHHR**[1]) and wireless **HR**[2] monitor operation.

1. **Handheld Handlebar Heart Rate (HHHR) monitor verification**

   LED consoles (P10, P30, P30i and P31) only: Access the Diagnostic menu (51765761) > select **HEART RATE TEST** and follow prompts to run the test:

   Touchscreen consoles (P62, P80, and P82) only: Access the Service menu (51765761), select **System Settings** > **System Tests** > **HEART RATE TEST** and follow prompts to run the test.

2. **Wireless Heart Rate monitor verification**.

   Use a wireless heart rate monitor chest strap (pn PPP000000038819103 or **ANT+**[3] wireless compatible HR chest strap) and verify that the console heart rate icon is flashing, and the HR indicator is showing the heart rate beats per minute (bpm).

☐ **Return to service**

1. Make sure that the machine is setting level and stable.

   
   MACHINE LEVELING PROCEDURE

2. Make sure that any external power cords or interface cables are properly routed, connected, and safe from being damaged.
3. On successful completion of all verification tests, return to service.

[1]Handheld Handlebar Heart Rate

[2]Heart Rate

[3]ANT+ (pronounced ant plus) is a wireless protocol for monitoring sensor data such as a person's heart rate or a bicycle's tire pressure

Standard Service Menus

About

There is a set of equipment Standard Service Menus that are supported across Precor cardio product lines designed to allow servicers and clubs to manage, configure/setup, and maintain/test the equipment: The service menus are grouped into functional service categories depending on the console type as follows:

On **LED**[1] consoles (P30, P30i and P31), there are three service menus:

- **Hardware Validation (51765761)** menu provides a set of automated diagnostic tests used to troubleshoot, calibrate, and verify machine operation.
- **Club Settings (5651565)** menu is used to configure the equipment workout settings.
- **Information Display (65)** menu provides information about the equipment hardware, software, usage, and error log data.

On touchscreen consoles (P62, P80, and P82), there are two service menus:

- **Service Settings (51765761)** menu intended for service technicians. The Service Settings menu provides access to all available equipment service menus used by service technicians to service and maintain the equipment.
- **Club Settings (5651565)** intended for club operators. The Club Settings menu is a subset of service menus used by club operators to manage, configure, and maintain the equipment.

Steps to access the Standard Service Menus:

On LED consoles you first press a specific sequence of console hardkeys and then quickly type in the Service Menu Access code. The access code will show on the console display as you type. The console hardkey sequence varies between console models, see (see "How to Access the Standard Service Menus" on page 26).

On Touchscreen consoles you press a specific sequence of console hardkeys which opens the Service Access Code login screen. Then type in the Service Menu Access Code to open the service menu (see "How to Access the Standard Service Menus" on page 26).

Service Menu Access Codes

Service Menu Access Codes

[1] light-emitting diodes.

LED Consoles: P10, P30, P30i and P31

SERVICE MENU ACCESS CODE	SERVICE MENU	FUNCTION
51765761	**Hardware Validation**	Set of automated diagnostic tests used to troubleshoot, calibrate, and verify machine operation.
5651565	**Club Settings**	Used to customize the equipment user interface localization, Workouts configuration, and maintenance default settings.
65	**Information Display**	Used to access the equipment usage, hardware, software, error code, and maintenance information.

Touchscreen Consoles: P62, P80, and P82

SERVICE ACCESS CODE	SERVICE MENU	FUNCTION
51765761	**Service Settings**	Service Menu access code provide access to all available equipment service menus used to service, configure, test, and maintain the equipment including the legacy Information Display, Club Settings, and Hardware Validation Diagnostic Tests menus.
5651565	**Club Settings**	Club Settings access code is a subset of service menus directed toward club operation, used by club operators to manage, configure, and maintain the equipment.
Note: Service access code 65 "Information Display" is not used on touchscreen consoles. The Information Display menus are integrated into the Service Settings menus.		

How to Access the Standard Service Menus

P10, P30, P30i and P31 LED consoles

CONSOLE		HARDKEY	
 P10 Console	Press & Release	 PAUSE	Type in the Access Code
 P30 Console	Press & Release	 PAUSE	Type in the Access Code
 P30i Console	Press & Release	 PAUSE	Type in the Access Code
 P31 Console (*except StairClimber)	Press & Release	 PAUSE	Type in the Access Code
 P31 "StairClimber" Console	Press & Release	 STOP	Type in the Access Code

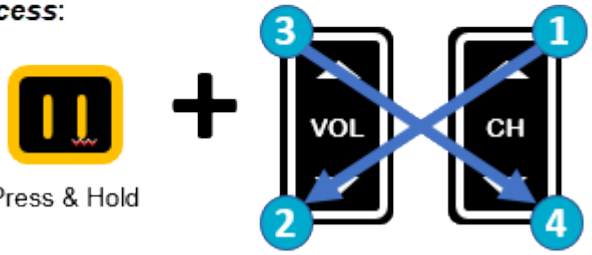
CONSOLE	STEPS
P10/P30/P31 consoles*	1. Press (2-3 sec) and release the **PAUSE** hardkey. 2. Immediately type in the access code.
P30i consoles:	1. Press (2-3 sec) and release the **PAUSE** hardkey. 2. Immediately use the **INCLINE** number keys to type in the access code.
P31 StairClimber consoles**	1. Press (2-3 sec) and release the console **STOP** hardkey. 2. Immediately type in the access code.
Notes: *Except for P31 StairClimber machines. **On SCL800 StairClimber P31 consoles, the console PAUSE key is replaced with a STOP key.	

P80 touchscreen console

Have the service access code ready and then use the following instructions to access the

P80 console

Menu access:



standard service menu:

Steps

1. Make sure the P80 is set to the Welcome home page.
2. Press and hold the **Pause** key while pressing **CH up >VOL down > VOL up > CH down**:
3. Use the touch keypad to type in the service access code.

P62 and P82 touchscreen consoles

Diagnostics menu access

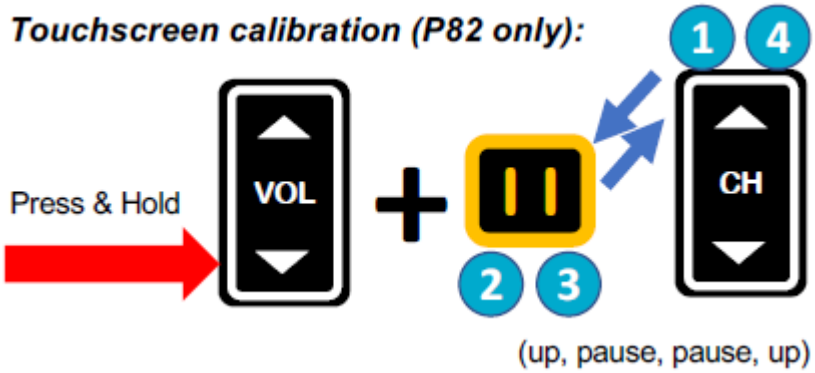
Have the service access code ready and then use the following instructions to access the standard service menu:

Steps

1. Make sure the console is set to the Welcome banner.
2. Press and hold the **VOL down** key while pressing **CH up >CH down > CH down > CH up**:
3. At the Sign-In screen, type in the service access code.

Touchscreen Display Calibration shortcut

Console shortcut to access the **Touchscreen Calibration** test.

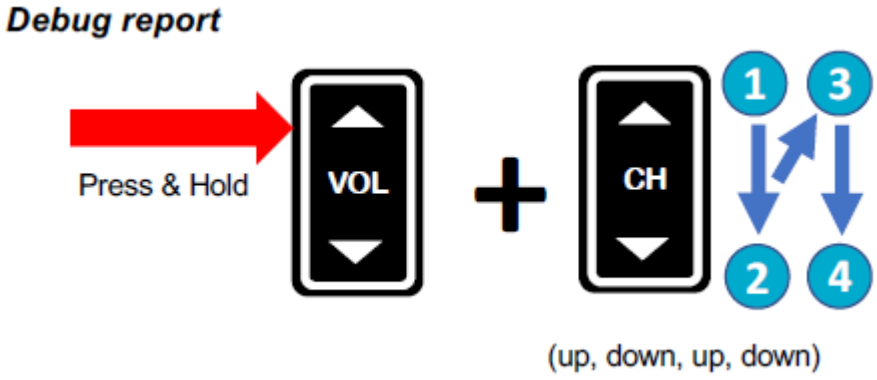


Steps

1. Make sure the console is set to the Welcome banner.
2. Press and hold the **VOL down** hardkey while pressing **CH up > Pause > Pause > CH up**:
3. Touch the designated display positions and follow prompts to complete the touch-screen calibration.

Debug Information Report shortcut

Console shortcut to download an event log debug information report.



Steps

1. Make sure the console is set to the Welcome banner.
2. Insert a **USB**[1] flash drive into the Chin USB port.
3. Press and hold the **VOL up** hardkey while pressing **CH up > CH down > CH down > CH up**:
4. Wait for the download to finish and then remove the USB drive.

[1]Short for Universal Serial Bus, is an industry standard developed in the mid-1990s that defines the cables, connectors and communications protocols used in a bus for connection, communication, and power supply between computers and electronic devices.

IMPORTANT: Do not remove the USB drive until the "Report was successful" message is shown, (approx. 1 min).

Navigating the Service Menus

P10, P30, P30i and P31 LED consoles

LED console service menus are organized in a sequential top-menu to sub-menu item architecture. Select the top level menu and sequentially navigate through the sub-menus until the particular operation is found. Then return to the top-level menu to select a different menu item. Refer to the following tables for console hardkey and keypad functions.

P10, P30 and P31 consoles

CONSOLE KEY	FUNCTION/DESCRIPTION
Up/Down	Scrolls up and down through the current menu.
OK	Selects the current menu item or confirms settings.
BACK/CLEAR	• Returns to the previous menu level without saving changes. • Hold **BACK** to exit the **DISPLAY** test.
PAUSE (STOP[3])	• Press **PAUSE** once to pause a workout session. • (SCL800 StairClimber*) Press **STOP** once to pause a workout and stop the stairs, except for the fitness tests WFI and CPAT, where pressing **STOP** terminates the workout. • Access Service menus: Press/Release **PAUSE** (**STOP** for StairClimber*) and type in the access code • Press and hold **PAUSE** (**STOP** for StairClimber*) for greater than 6 sec will open the Error Log or show the "Stuck Key" message when there are no logged errors.
Numeric Keypad[1]	Use to type in numeric inputs (e.g. access codes).
INCLINE Keypad[2]	On P3oi consoles, use the INCLINE keys to type in numeric inputs (e.g. access codes).

1. On all consoles, except the P30i console, use the Numeric keypad to enter numeric inputs.
2. On P30i console, use the INLINE keys to enter numeric inputs.
3. On P31 SCL800 StairClimber consoles, the PAUSE key is replaced with the STOP key. There is also an additional handlebar grip Remote STOP key that performs the same functions.

P30i consoles

Available exclusively on the 700 Line Treadmill, the P30i Interval Console is an easy-to-use console that facilitates interval training with one-touch speed and incline keys.

CONSOLE KEY	FUNCTION/DESCRIPTION
SPEED 1/2 - DWN/UP (US std) **SPEED 2/4 - DWN/UP (metric)**	Use the SPEED numeric 1 & 2 keys to scroll up and down through the current menu.
OK or **INCLINE 0**	Selects the current menu item or confirms settings.
INCLINE 0	Returns to the previous menu level without saving changes.
PAUSE	• Exits service mode • Press and hold PAUSE for greater than 6 sec will open the Error Log or show the "Stuck Key" message when there are no logged errors.
INCLINE numeric keys	Use as the numeric keypad to type in numeric inputs (access codes etc.).

P80 and P82 touchscreen consoles

The P80 and P82 consoles use the touch sensitive touchscreen controls to select items and navigate the service menus. Only one hardkey "Pause" is used to stop a running diagnostic test.

Follow the on-screen prompts to run the diagnostic tests.

CONSOLE KEY	FUNCTION/DESCRIPTION
Touchscreen controls	There is various touch sensitive softkey controls (OK. START, STOP, BACK, etc.) and icon controls (image boxes, buttons, etc.) used to control and operate the console. Make selection by touching the softkey control or icon.
Scroll Up/Dwn	Use your finger to swipe the touchscreen up or down to scroll through menu items. Some menus provide a vertical scroll bar on the screen right side to scroll Up/Dwn.
BACK softkey	• Use the touchscreen **BACK** softkey to return to the previous menu display. • Continue selecting the **BACK** softkey to exit the service software.
PAUSE hardkey	Stop a running diagnostic test.

P62 touchscreen consoles

The P62 console uses a combination of touchscreen softkeys/icons and keypad hardkeys to select and navigate thru the service and diagnostics menus. The P62 uses the **BACK** keypad button to return to the previous menu and the **PAUSE** hardkey to stop a running diagnostic test.

Follow the on-screen prompts run the diagnostic tests.

CONSOLE KEY	FUNCTION/DESCRIPTION
Touchscreen controls	There is various touch sensitive softkey controls (OK. START, STOP, BACK, etc.) and icon controls (image boxes, buttons, etc.) used to control and operate the console. Make selection by touching the softkey control or icon.
Scroll Up/Dwn	Use your finger to select while swiping your finger Up/Dwn to scroll through menu lists. Some menus provide an on-screen scroll bar to scroll Up/Dwn.
BACK	• On P62 consoles, use the control keypad **BACK** button to go back or return to the previous menu. • Continue selecting the **BACK** hardkey to exit the service software.  P62 Console
PAUSE hardkey	Stop a running diagnostic test.

LED Console Standard Service Menus

Standard service menus for LED consoles (P10, P30, P30i and P31).

Hardware Validation Diagnostics Tests Menu (51765761)

Service Access Code: 51765761 (see "Service Menu Access Codes" on page 24)

menu: **Access code (51765761) > Hardware Validation Tests**.

The Hardware Validation menu provides a set of automated hardware diagnostic tests and calibration procedures used to troubleshoot, calibrate, and verify machine operation. The diagnostic tests are customized for the particular equipment type and console configuration.

DIAGNOSTIC TEST	TEST DESCRIPTION
DISPLAY TEST	Tests the console LEDs. Successively press the **OK** key to verify each group of LEDs and verify that all LEDs illuminate. Press **Back** to exit the test.
KEYBOARD TEST	An illuminated LED map of the function keys will be shown. Press each individual key and verify that the corresponding LED extinguishes. Press and hold **BACK** to exit the test.
HEART RATE	Tests the Unfiltered and Filtered pulse heart rate. Grasp the grips to test the handheld heart rate. Use a Polar heart rate simulator to test the wireless heart rate. Press the **BACK** button to exit this test. Results: F xxx U xxx (F-filtered, U-unfiltered)
ACTIVE STATUS LIGHT (1)(2)(3)	(Located in the Information Display on some models) The current **ASL**[1] light state (blue. pulsing blue, yellow, pulsing yellow) or switched OFF on some models.
AS LIGHT BRIGHTNESS (1)(2)(4)	(Located in Club Settings > SET ASL BRIGHTNESS on some models) Sets the ASL light brightness level and ON/OFF state: HIGH. MED, LOW, and OFF on selected models.
RPM TEST	(**EFX**[2] only) menu: **MACHINE TEST** > **RPM TEST** The current RPM (revolutions per Minute) value. The **SPM**[3] (strides per minute) is equal to 2 X RPM.
CROSSRAMP TEST	menu: **MACHINE TEST** > **CROSSRAMP TEST**

[1]Active Status Light: Service and maintenance status light.

[2]Elliptical Fitness Crosstrainer

[3]steps per minute

DIAGNOSTIC TEST	TEST DESCRIPTION
	(EFX, **AMT**[1] Only) Allows lift command operation during an active lift error condition (E40, E42, E45, E46) even if the lift is out of range, jammed, or otherwise disabled due to an error condition. **CAUTION**: DO NOT jam the crossramp while operating in error mode - There are no software position limit stops in this mode.
BATTERY TEST	menu: **MACHINE TEST** > **BATTERY TEST** (EFX 800 only) Shows the current battery voltage level as "XX.X VDC Y". Where: XX.X is the measured **DC**[2] battery voltage (nominal 12.6 - 14.6 Vdc). Y suffix definitions: "C" an external **AC**[3] charger is connected. "L" the battery is low (less than 11.5 Vdc). "CL" charger is connected and the battery is low.
(1) Only included on products that have the ASL feature. (2) Not included on the EFX600 series or TRM600 series products. (3) Moved to the Information Display on some models. (4) Moved to the Club Settings on SCL800 StairClimber.	

Club Settings Menu (5651565)

Service Access Code: 5651565 (see "Service Menu Access Codes" on page 24)

Used to customize the equipment user interface localization, Workouts configuration, and maintenance default settings.

menu: **Club Settings (51765761) > DIAGS - CLUB SETTINGS**

CLUB SETTINGS	DESCRIPTION
SAFETY CODE	Enabled or disabled. When enabled, a user password (xxxx) is required to use the machine. Factory default: Disabled.

[1]Adaptive Motion Trainer

[2]Direct Current: electrical current that only flows in one direction.

[3]Alternating Current: electric current which periodically reverses direction between positive and negative polarity.

CLUB SETTINGS	DESCRIPTION
	Default safety code: 1234 When the equipment is shipped from the factory, the safety code feature is disabled. An enabled safety code requires users to enter the code 1 2 3 4 to use the equipment.
SELECT LANGUAGE	Sets the default language for all workouts on this machine. Language for single use workouts can also be set by the user from the workout options. Default: English
SET UNITS **or** **SELECT UNITS**	Sets the measurement units to U.S. Standard or Metric. Default: U.S.
SET MAX WORKOUT TIME	Specifies the maximum workout time per session. Range: 1 to 240 minutes (or NO LIMIT) Default: 60 minutes
SET MAX PAUSE TIME	Limits how long equipment remains paused during a workout before it resets to the Welcome banner. Range: 1 to 60 seconds (1 to 120 seconds for treadmills). Default 120 seconds for treadmills and 60 seconds for all other equipment.
SET COOL DOWN TIME	Sets the amount of time that a cool down period will occur at the end of every workout. Range: 0 to 5 minutes in 1 minute increments. Default: 5 min
SET METRICS DEFAULT	Sets a metric that may be of specific importance to the specific facility or fitness trainer. The selected metric will scroll across the screen at regular intervals during the workout. Default: OFF
SET CROSSRAMP AUTO-LEVEL	Sets the crossramp default "Home" incline auto-level. The crossramp will moive to the default incline level after 60 sec of non-use. Range: 0 - 20 Default: 1 **WARNING**: The crossramp will automatically drive to the default incline level after 90 sec of non-use.
SET CUSTOM PROGRAM 1/2 **or** **SET CUSTOM WORKOUTS 1 AND 2**	You can create and save two custom workouts on your treadmill and one custom workout on your other Precor equipment. Range: ON/OFF Default: OFF

CLUB SETTINGS	DESCRIPTION
	Note: The Total Body Workout can only be turned on in this Club Settings menu.
MAINT CONFIG or MAINTENANCE CONFIGURE or MANINTENANCE COUNTER	(ASL equipped machines only) Switch ON or OFF the ASL pulsing blue light maintenance counter reminder function: Range: ON - Enable, OFF - Disable Default: ON
SET DISPLAY BRIGHTNESS	(not available on all models) Sets the display light brightness level. Settings: Low, Medium, High Default: HIGH
SET ASL BRIGHTNESS	(Located in Hardware Validation > AS LIGHT BRIGHTNESS on some models) Sets the ASL light brightness level. Settings: Low, Medium, High, (EFX includes OFF) Default: Medium
(1) Only used on products that have the ASL feature. (2) Not included on all equipment models.	

Information Display (65)

Service Access Code: 65 (see "Service Menu Access Codes" on page 24)

Provides the equipment usage, hardware, software, error code, and maintenance information.

INFORMATION DISPLAY	DESCRIPTION
ODOMETER	The odometer provides the accumulated machine usage to date in units applicable to the type of equipment being used. • **TRM**[1] / AMT: Cumulative units logged to date. AMT also displays vertical strides. • EFX: Strides logged to date • Bike: Revolutions logged to date

[1]Treadmill

INFORMATION DISPLAY	DESCRIPTION
	• Climber/**SCL**[1]: Floors climbed
HOUR METER	The total number of hours that the unit took to accumulate unit miles (Steps on SCL800 StairClimbers) . This value is stored in the upper **PCA**[2] in the console so if that PCA is replaced the hours of use would start again from "0".
U-BOOT SW **or** **BOOT LOADER SW***	The console upper boot software version information. *P31 console only.
U-BASE SW **or** **MAIN CONSOLE SW***	The console upper base software version information. *P31 console only.
L-MAJOR SW	The **LPCA**[3] Major processor software version information.
L-MINOR SW	The LPCA Minor processor software version information. Note: The Minor software versions can only be viewed while doing a workout. If the user is NOT pedaling, then the software will be displayed as "----------".
L-ASL SW **or** **ASL SW(1)**	The LPCA Active Status Light processor software version information.
SER NUMBER **or** **SERIAL NUMBER**	Shows the serial number of the machine if input. The base serial number can be set using the WinCSAFE computer software. Factory default: NONE.
USAGE LOG	Provides the total number of times a particular workout has been used and the total elapsed Time used for the workout. Use the up/down arrows to scroll thru the avail-

[1]StairClimber

[2]Printed circuit assembly, generally referred to as either an upper PCA or lower PCA.

[3]Lower Printed Circuit Assembly board; also refered to as the Lower PCA or simply as the lower board. On treadmills, it is the console to base function interface and the motor controller unit (MCU). On self-powered units, it is the lower PCA console to base function interface.

INFORMATION DISPLAY	DESCRIPTION
	able workouts.
Error Log	Table of stored error event codes, see "Error Log & CPA Event Log" on page 215. **TIP**: You can quickly access the Error log by holding down the **PAUSE** key. Will show the **STUCK KEY** message when there are no logged error codes.
MODEL	Machine detected model. Result: SCL800
ACTIVE STATUS LIGHT	(Located in the Hardware Validation menu on some models) Showa the current ASL state color (blue. pulsing blue, yellow, pulsing yellow) or switched OFF on some models:
(1) ASL equipped machines only. (2) TRM600 series treadmills only. (3) SCL800 StairClimber only. (4) Not used on SCL800 models.	

Touchscreen Console Standard Service Menus

Standard service menus for Touchscreen consoles (P62, P80, and P82).

Touchscreen Console Standard Service Menus

Service Settings Menu ((51765761)

Service Access Code: 51765761

Service Settings menu access code (51765761) opens to the Settings menu which is the top level service menu providing access to all the equipment service submenus.

menu: **Service Access code (51765761) > Settings**

The Settings menu is the top level service menu providing access to all available equipment service information, diagnostic tests, and maintenance submenus.

SETTINGS MENU	DESCRIPTION
"About menu" on page 42	menu: **Settings > About** General information about the machine (serial number, name, type, location, software versions, internet & **Wi-Fi**[1] connectivity, and the error codes (Event Log or CPA Event Log)
Safety Code menu:	menu: **Settings > Safety Code** (SW version 8.2 and later) A 4-Digit PIN safety code that must be entered to use the equipment. Settings: • OFF (default): Does NOT require safety code PIN to use the machine • ON: Does require safety PIN code to use the machine. Default PIN: 1234 The default PIN can be changed and user specified. If the PIN is forgotten, you can go to the Safety Code menu and switch OFF the feature or create a new PIN without knowing the current PIN.
"" on page 44	menu: **Settings > Equipment Usage**

[1]Wireless Fidelity - a term defined and Trademarked by the Wi-Fi Open Alliance. Wireless LAN equipment carrying the Wi-Fi logo have been interoperability tested for compatibility with one (or more) 802.11 standards, and certified by the Wi-Fi Alliance to be sold under the Wi-Fi brand.

SETTINGS MENU	DESCRIPTION
	Machine workout usage information (total workout time & distance, last work start/stop times).
"" on page 44 (1)	menu: **Settings > Maintenance** (ASL equipped products only) Provides the machine maintenance and operating ASL status information.
"" on page 46	menu: **Settings > System Settings** Provides settings to configure the console and machine. Also includes the service diagnostic tests.
Software Downloads	menu: **Settings > Software Downloads** Settings: ON, OFF Enables automatic operating system software downloads: • ON: Enables automatic operating system software downloads. • OFF: Disables automatic operating system software downloads. Note: Must be connected to the internet and register with **PBS**[1] (Preva® Business Suite).
Partition Configuration	menu: **Settings > Partition Configuration** OEM use only, contact Precor Customer Service for information.

[1]Preva Business Suite

SETTINGS MENU	DESCRIPTION
(No) Available Updates	menu: **Settings > No Available Updates** or **Available Updates** • **No Available Updates**: No available software updates can be read from the USB flash drive. • **Available Updates**: List of available software updates read from the USB flash drive. Used to update the operating system software. The console reads a software update USB flash drive and then changes the menu from **No Available Updates** to **Available Updates**. Select **Available Updates** to view, select, and upload the software, see How to Update the console operating system software.
(1) Not included on elliptical or treadmill products that do not have the maintenance and ASL features. Not included on the EFX600 series, the TRM600 series, or the **TRM800-10**[1] (**TRM10**[2]/GEN06) series products.	

About menu

About menu

menu: **Service Setting menu (51765761) > Settings > About**

General information about the machine (serial number, name, type, location, software versions, internet & Wi-Fi connectivity, and the event and error codes (Event Log or CPA Event Log).

ABOUT MENU	DESCRIPTION
Event Log	menu: **About > Event Log** The Event Log contains all connectivity errors and service maintenance error codes. .Note: For maintenance service and troubleshooting, use the CPA Event Log and not the Event Log to find the machine maintenance error event codes.
CPA Event Log	menu: **About > CPA Event Log** The CPA Event Log only contains the machine maintenance and troubleshooting error event codes that are described in the "*Error Code Troubleshooting Guide*", see Error Code Troubleshooting

[1]TRM800 version 1 treadmills mfg. dates 2010 thru 2014.
[2]TRM800 version 1 treadmills mfg. dates 2010 thru 2014.

ABOUT MENU	DESCRIPTION
	Guide. .Note: Use the CPA Event Log and not the Event Log to find the machine maintenance and troubleshooting error event codes.
Console Serial Number	menu: **About > Serial Number** Console serial number.
Lower Serial Number	menu: **About > Serial Number** Base serial number.
Friendly Name	menu: **About > Friendly Name** Friendly name assigned to the equipment by the facility.
Location	menu: **About > Location** Facility location code.
Release Bundle Version	menu: **About > Release Bundle Version** Console System Operating software version. Select to show the component system software versions including: the CPA Software, LPCA, Qt App, Boot Kernel, and File System software versions.
Heartbeat Interval	menu: **About > Heartbeat Interval** OEM use only.
Wired MAC Address	menu: **About > Wired MAC Address** Wired **LAN**[1] MAC address
WI-FI MAC Address	menu: **About > Wi-Fi MAC Address** Wireless Wi-Fi MAC address
Network Time Server1	menu: **About > Network Time Server1** **NTP**[2] server address
Machine Type	menu: **About > Machine Type** Specifies the detected machine type: TRED, AMT, EFX, **UBK**[3], **RBK**[4].
Legal Notices	menu: **About > Legal Notices** Specifies the trademarks. trade names, etc.

[1]Local Area Network: A communications network that serves users within a local geographical area, typically over distances of around 100m. Wireless LANs use wireless communications to network devices so there is no need for data cabling.
[2]Network Time Protocol (NTP) is a networking protocol for clock synchronization between computer systems over packet-switched, variable-latency data networks.
[3]Upright Bike
[4]Recumbent Bike

Equipment Usage menu

menu: **Service menu (51765761) > Settings > Equipment Usage**.

Machine workout usage information: cumulative hours & distance, number of workout sessions, & last work start/stop times.

EQUIPMENT USAGE MENU	DESCRIPTION
Cumulative Workout Hours	menu: **Equipment Usage > Cumulative Workout Distance** Machine total workout hours.
Cumulative Workout Distance	menu: **Equipment Usage > Cumulative Workout Distance** Machine total workout distance.
Cumulative Workout Sessions	menu: **Equipment Usage > Cumulative Workout Sessions** Machine total number of workout sessions.
Last Workout Start Timestamp	menu: **Equipment Usage > Last Workout Start Timestamp** The most recent workout start time.
Last Workout End Timestamp	menu: **Equipment Usage > Last Workout End Timestamp** The most recent workout end time.

Maintenance menu(1)

Menu: **Service menu (51765761) > Settings > Maintenance(1)**

Provides machine maintenance related information including: routine maintenance due status, machine operating condition, and ASL state.

MAINTENANCE MENU(1)	DESCRIPTION
Recommended Action menu(1)	menu: **Maintenance > Recommended Action** Range: None, Inspect • None: No maintenance required. • Inspect: Maintenance action required. Used to report that there is a maintenance issue that requires attention; it could indicate routine maintenance is due or that a machine failure (error code) has occurred that required attention.

MAINTENANCE MENU(1)	DESCRIPTION
» Operating Condition(1)	menu: **Maintenance > Operating Condition** Range: Normal, Inspect • Normal: No maintenance required. • Inspect: There is a routine maintenance issue or failure condition (error code) that requires immediate attention. .***Important***: Reset the ASL light state and Motor Controller (**MC**[1]) status light after repairs a completed.
» Belt Rating(1)	(Treadmills only, not supported on TRM600) menu: **Maintenance > Belt Rating** Range: 10 - 0 (10 - New condition, ≤ 1 - Replace running belt) (ASL equipped products only) A belt rating of 0 or 1 will cause a blue pulsing ASL light indicating that there is a problem with the running belt/deck and requires servicing or replacement. ***Important***: Reset the Belt Rating after replacing with a new running belt and deck (select **Replace**).
» Next Maintenance Due(1)	menu: **Maintenance > Next Maintenance Due** Provides machine next maintenance due remaining mileage or hours. Perform preventative maintenance when the maintenance counter reaches 0. ***Important***: Reset the maintenance interval after completing routine maintenance service, (select **Reset**). Treadmills reset to 1000 miles, ellipticals reset to 250 Hrs.
Active Status Light (ASL menu)(1)	menu: **Maintenance > Active Status Light** Indicates the machine operating and maintenance status. **Blue Solid**: Normal operation Indicates that the ASL has not detected any logged error codes. **Blue Pulsing**: Preventative maintenance reminder. • Treadmills: A belt rating of 0 or 1 will cause a blue pulsing ASL light indicating that there is a problem with the running belt/deck and is in need of servicing or replacement. • ALL: The maintenance counter starts at 1000 hours counting down to active use hours to 0 indicating preventative maintenance is due. **Yellow Solid**: Indicates an error has occurred, was self-corrected and the machine can be used. The fault can be cleared. **Yellow Pulsing** There is a current non-recoverable fault con-

[1]Motor controller, motor controller unit, or motor controller module: used on treadmills, contains the LPCA and motor controller functionality.

MAINTENANCE MENU(1)	DESCRIPTION
	dition, there is a loss of a major function and the machine id out-of-service. Machine service is required.
» AS light Brightness (1)	menu: **Maintenance > AS Light Brightness** Range: Low, Medium, High Set the ASL brightness level.
» Maintenance Reminder(1)	menu: **Maintenance > Maintenance Reminder** Range: OFF, ON (default) Switch the maintenance reminder function ON or OFF.
(1) Not included on elliptical or treadmill products that do not have the maintenance and ASL features. Not included on the EFX600 series, the TRM600 series, or the TRM800-10 (TRM10/GEN06) series products.	

System Settings menu

menu: **Service menu (51765761) > Settings > System Settings**.

Provides settings to configure the console and machine. Also includes the service diagnostic tests.

SYSTEM SETTINGS MENU	DESCRIPTION
System Tests menu	menu: **System Settings > System Tests** Machine diagnostics tests to verify system hardware operation, see "System Tests menu" on page 50.
Connectivity menu	menu: **System Settings >Connectivity** Connectivity includes Internet network and Preva® Server setup and configuration.
» Network Type	menu: **System Settings > Connectivity > Network Type** Settings: Wired, Wi-Fi Default: Wired To connect to a network: 1. Select **Network Type** > **Wired** (or Wi-Fi) > **Go**. 2. Select **Configure** > **Configuration** > select a network from the list and enter your credentials to access that network. 3. Select **Back** to save settings and return to the Connectivity screen.

SYSTEM SETTINGS MENU	DESCRIPTION
» Configuration	menu: **System Settings > Connectivity> Configuration** Settings: Automatic (recommended), Manual Default: Automatic Specifies internet connection mode.
» Status	menu: **System Settings > Connectivity > Status** Range: Connected, Not Connected Specifies internet connection status.
» IP Address	menu: **System Settings > Connectivity> IP Address** Specifies console internet IP address.
» Preva® Server	menu: **System Settings > Connectivity> Preva® Server** Specifies Precor Preva server URL (na.preva.com).
Display menu	menu: **System Settings > Display** Console default display configuration settings: language, units, standby delay, .browser and news reader on/off.
» Default Language	menu: **System Settings > Display > Default Language** Default: English Specifies the default language.
» Measurement Units	menu: **System Settings > Display > Measurement Units** Range: US Standard, Metric Default: US Standard Specifies the default measurement units.
» Standby Mode Delay	menu: **System Settings > Display > Standby Mode Delay** Range: 5, 10, 15. 30, 60 minutes Default: 15 minutes Specifies the idle wait time before entering standby mode.
» Browser	menu: **System Settings > Display > Browser** Range: ON/OFF Default: ON Show (enable) the Browser app.
» News Reader	menu: **System Settings > Display > News Reader** Range: ON/OFF Default: ON Show (enable) the News Reader app.
TV Settings menu	menu: **System Settings > TV Settings** Configuration TV settings and channel guide.
» Channel Guide	menu: **System Settings > TV Settings > Channel Guide** TV channel configuration.

SYSTEM SETTINGS MENU	DESCRIPTION
» TV Source	menu: **System Settings > TV Settings > TV Source** Default: Internal Tuner TV input signal source
» Region	menu: **System Settings > TV Settings > Region** Specifies the TV input signal modulation format for a particular geographical region.
» Default Channel	menu: **System Settings > TV Settings > Default Channel** Default: Not set TV default channel.
» Skip Unnamed Channel	menu: **System Settings > TV Settings > Skip Unnamed Channels** Default: ON Skips over unnamed channels.
» Skip Encrypted Channel	menu: **System Settings > TV Settings > Skip Encrypted Channels** Default: ON Skips over encrypted channels.
» Analog Channels Aspect Ratio	menu: **System Settings > TV Settings > Analog Channels Aspect Ratio** Range: 4:3, 16:9 Select the analog channel aspect ratio.
» Extensive Scan	menu: **System Settings > TV Settings > Extensive Scan** Default: OFF Searches all available channel sources.
» Closed Captioning	menu: **System Settings > TV Settings > Closed Captioning** Default: On Switches close caption feature ON/OFF.
» Export/Import Channels	menu: **TV Settings > Export/Import Channels** Export/Import channel mapping using a USB .flash drive.
Audio Settings menu	menu: **System Settings > Audio Settings** Specify the workout duration and equipment Limits for your facility.
» Default Wired Headphone Volume	menu: **System Settings > Audio Settings > Default Wired Headphone Volume** Range: 1 to 15 Default: 6

SYSTEM SETTINGS MENU	DESCRIPTION
	Sets the default wired headphone jack volume level.
» Default Bluetooth[1] Headphone Volume	menu: **System Settings > Audio Settings > Default Bluetooth Headphone Volume** Range: 1 to 15 Default: 11 Sets the default bluetooth headphone jack volume level.
Workout Limits menu	menu: **System Settings > Workout Limits** Specify the workout duration and equipment Limits for your facility.
» Maximum Workout Duration	menu: **System Settings > Workout Limits > Maximum Workout Duration** Range: 1 to 240 min, NO LIMIT Default: 60 min Sets the maximum allowable user workout time per session.
» Maximum Pause	menu: **System Settings > Workout Limits > Maximum Pause** Range: 1 to 300 sec Default: 30 sec Sets how long the equipment remains in a paused banner during a workout before resetting.
» Summary Time Out	menu: **System Settings > Workout Limits > Summary Time Out** Sets the time to view the Workout Summary data. Range: 1 to 120 sec Default: 60 sec
» CrossRamp Auto-Level	menu: **System Settings > Workout Limits > CrossRamp Auto-Level** Range: 1 - 20 Default: 1 Sets the ramp default incline level:
GEM Settings menu	menu: **System Settings > GEM Settings** Enable/Disable Apple® Gymkit™ Smart Watch connectivity.
» GEM Module	menu: **System Settings > GEM Settings > Gem Module**

[1]Bluetooth is a wireless technology standard for exchanging data over short distances (using short-wavelength UHF radio waves in the ISM band from 2.4 to 2.485 GHz from fixed and mobile devices, and building personal area networks (PANs).

SYSTEM SETTINGS MENU	DESCRIPTION
	Range: ON/OFF Default: OFF ON: Enables the GEM module and Smart Watch connectivity for the Apple Watch®.
» Enable Developer	menu: **System Settings > GEM Settings > Enable Developer** OEM use only.
Register Equipment menu	menu: **System Settings > Register Equipment** Register console and equipment with Precor Preva® Business Suite "PBS". Required information to register the equipment: • Location code • Precor technician account name and password • Serial number from the base • Friendly name assigned to the equipment by the facility (Example: Equipment Type-Floor-Row-Number) To complete registration for Preva-networked facilities: 1. Enter the Preva server name (na.preva.com for all sites). 2. Enter the assigned account name and password. 3. Follow the onscreen instructions to register the product.
Manage Settings	menu: **System Settings > Manage Settings** Save and restore the Connectivity, Display, Media, and Workout Limits settings.

System Tests menu

System Tests menu

menu: **Service menu (51765761) > System Settings > System Tests**.

Machine diagnostics tests to verify system hardware operation.

SYSTEM TESTS MENU	TEST DESCRIPTION
Brake Test	menu: **System Tests > Brake Test** If the brake is operational, provides the following operating

SYSTEM TESTS MENU	TEST DESCRIPTION
	information: • PWRB XXX: The current power bits. • RPM: Brake generator RPM. • VBUS XX: Bus Voltage used to drive the brake. • M-AMPS XX: DC brake current.
Battery Test	menu: **System Tests > Battery Test** Shows the current battery voltage level as "XX.X VDC Y". Where: XX.X is the measured DC battery voltage (nominal 12.6 - 14.6 Vdc). There can be an additional "Y" suffix indicating the following condition: "C" an external AC charger is connected. "L" the battery is low (less than 11.5 Vdc). "CL" charger is connected and the battery is low.
SPM Test	(EFX, AMT only) menu: **System Tests > SPM Test** SPM "Strides per Minute" test metrics: • Pulse: current pulse count. • Minimum: minimum pulse count. • Maximum: maximum pulse count.
CrossRamp Test	(EFX, AMT only) menu: **System Tests > CrossRamp Test** Manually run the lift motor to raise/lower the crossramp through full range, levels 1 to 20. • **A/D**[1]: Lift potentiometer analog to digital voltage value. • Glitches: number of sticking lift motion. • Volts (DC): lift motor voltage.
USB Test	menu: **System Tests** > **USB Test** List the active USB ports.
Touchscreen Test	menu: **System Tests** > **Touchscreen Test** Verify touchscreen display.
Touchscreen Calibration	menu: **System Tests** > **Touchscreen Calibration** Calibrates touchscreen finger press operation.

[1]analog to digital converter

SYSTEM TESTS MENU	TEST DESCRIPTION
Backlight Test	menu: **System Tests** > **Backlight Test** Tests the display backlight performance.
RGB Test	menu: **System Tests** > **RGB Test** Tests the display color performance.
Numeric Backlight Test	menu: **System Tests** > **Numeric Backlight Test** Tests the movement controls **LCD**[1] numeric displays backlight brightness level.
Numeric Display Test	menu: **System Tests** > **Numeric Display Test** Tests the movement controls LCD numeric displays.
Heart Rate Test	menu: **System Tests** > **Heart Rate Test** Tests the handlebar unfiltered and filtered pulse heart rate. Grasp the grips to test the handheld heart rate. Use a Polar heart rate simulator to test the wireless heart rate. Press the back button to exit this test.

(1) Not included on elliptical or treadmill products that do not have the maintenance and ASL features. Not included on the EFX600 series, the TRM600 series, or the TRM800-10 (TRM10/GEN06) series products.

Club Settings (5651565)

Service Access Code: 5651565

On P62, P80, and P82 touchscreen consoles, Club Settings menu is used localize the console user interface (language, measurement units, etc.), customize the equipment workout parameters (workout times and limits), and to help manage equipment service.

Club Settings Menus

- **About menu**, see "About menu" on page 42.
- **Equipment Usage menu**, see "" on page 44.
- **Maintenance menu**(1), see "" on page 44.
- **System Settings menu**, see "" on page 46.
- **(No) Available Updates**, see "(No) Available Updates" on page 42.

(1) Not supported on EFX600 or TRM600 product lines.

[1]liquid crystal display.

Information Display (65)

Information Display (65): Not supported

The Information Display (65) service menu found on LED consoles (P10, P30, P30i and P31) is **NOT** supported on touchscreen consoles (P62, P80, and P82).

Refer to the following touchscreen console service menus for similar equipment information:

- **About** menu, see "About menu" on page 42.
- **Equipment Usage**, menu see "" on page 44.
- **Maintenance** menu, see "" on page 44.

Adjustment Procedures

Adjustment procedures provide you with the step-by-step adjustment instructions to bring systems and components into specification. Perform the adjustment procedures whenever a trouble symptom points to a particular component and after a major component is removed/replaced.

Available Adjustment Procedures

"First Stage Drive Belt Tension Adjustment" on the facing page

"Second Stage Drive Belt Tension Adjustment" on page 59

"Lift Motor Calibration" on page 63

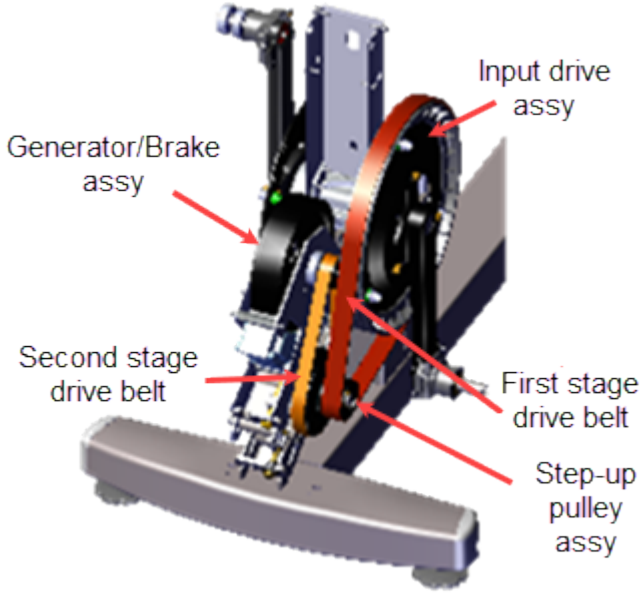
First Stage Drive Belt Tension Adjustment

About

This procedure provides instruction to adjust the First Stage Drive Belt tension.

A Two-Stage Input Drive system utilizes a first-stage drive belt and second-stage drive belt system to connect the input drive assembly pulley to the generator/brake assembly pulley. Always adjust the first stage drive belt first and then the second stage drive belt.

IMPORTANT: Adjust the first stage drive belt tension prior to adjusting the second stage drive belt tension.



Specifications

System Component	Specification
First Stage Belt Drive Tension - New(1)	140-150 lbs (63.5 - 68 kgs)
First Stage Belt Drive Tension - Used(1)	125 - 135 lbs (56.7 - 61 Kgs)
Drive Component Assy Carriage Bolts	180 in-lbs +/- 54 (20.3 +/_ 4.5 Nm)
(1) New belt tension applies to new belt first time installations. Used belt tension applies to reinstalling an existing belt or re-tensioning an existing used belt.	

Videos

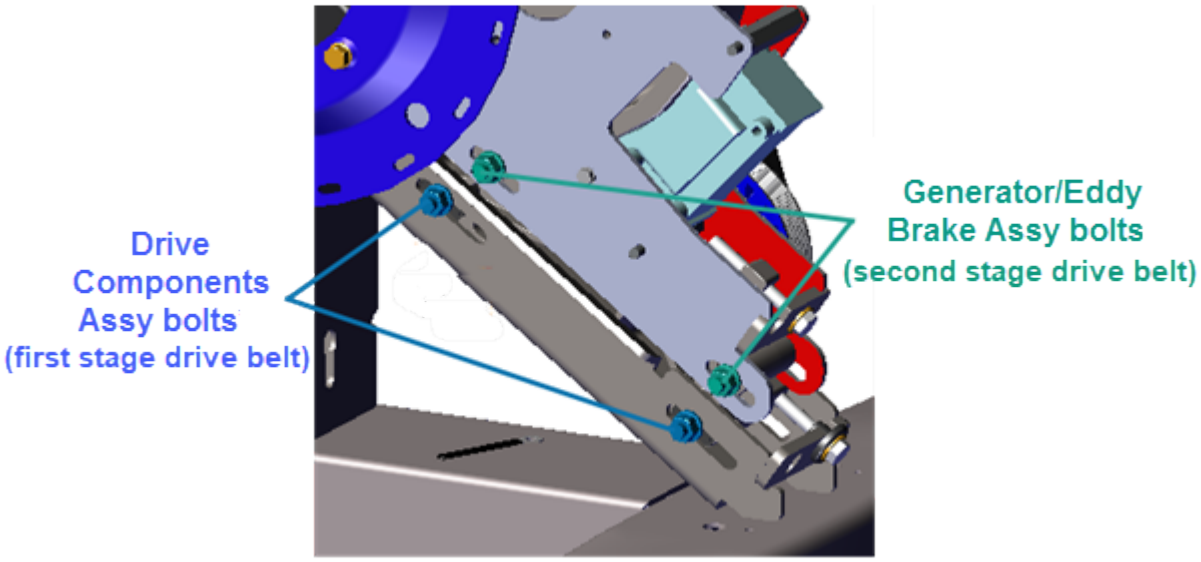
	Service Video	Link
	EFX600/700/800 Dual Stage Input Drive Belt Tension Verification	EFX600/700/800 Dual Stage Input Drive Belt Tension Verification

Procedure

Review entire procedure before starting.

IMPORTANT: Adjust the first stage drive belt tension prior to adjusting the second stage drive belt tension.

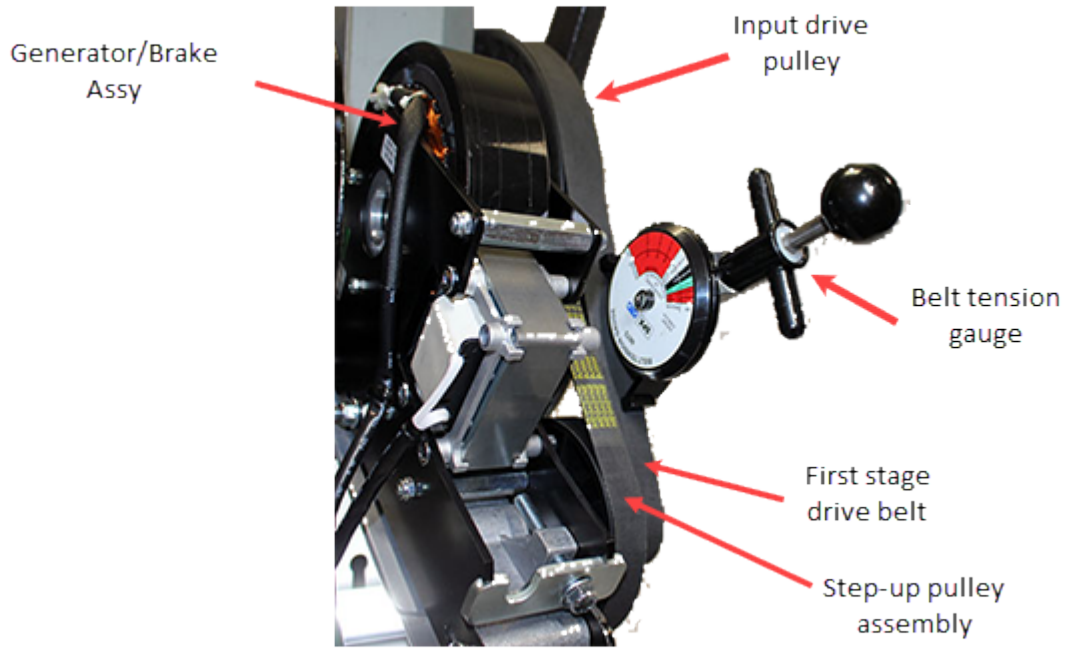
1. Remove the Drive Access Panel, see "" on page 92.
2. Remove the left Drive Disk cove, see " > " on page 94.
3. Use a 1/2" socket to loosen the two first stage Drive Components assembly carriage bolt nuts (left side) just enough to allow assembly movement. Do not remove the carriage bolt nuts.



CAUTION: Make sure that the two Drive Components assembly bolts are loosened before adjusting the first stage belt tensioner. The tensioner hardware can be damaged and the belt cannot be tensioned if the Drive Components assembly bolts are not loosened.

4. Place the belt tension gauge onto the first stage drive belt midway between the Input Drive pulley and smaller Step-up Assembly pulley and measure the tension. Record

the measured belt tension.



5. Compare the measured belt tension to the first stage drive belt tension specification.

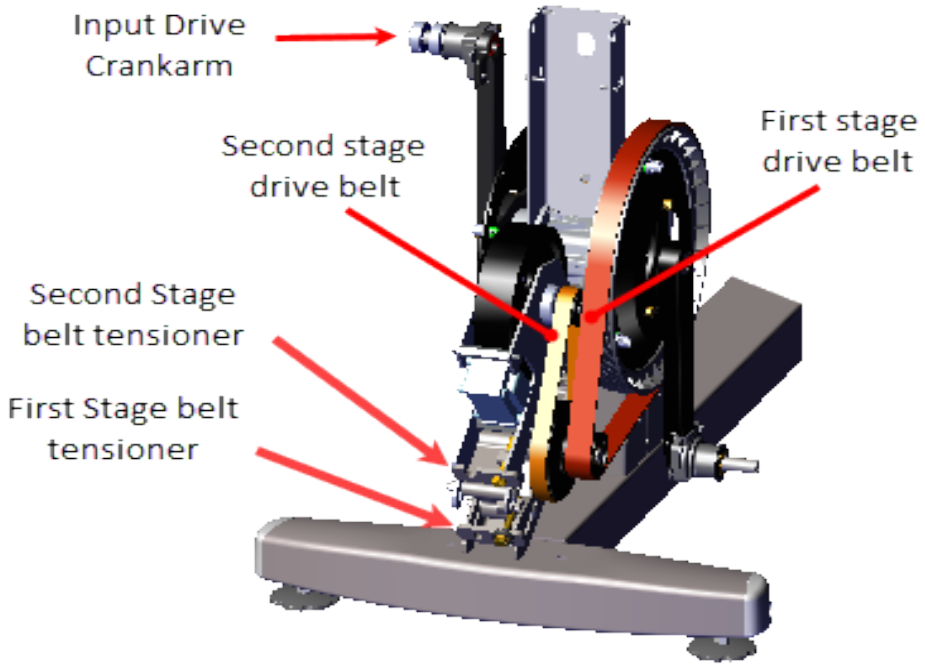
System Component	Specification
First Stage Belt Drive Tension - New(1)	140-150 lbs (63.5 - 68 kgs)
First Stage Belt Drive Tension - Used(1)	125 - 135 lbs (56.7 - 61 Kgs)
(1) New belt tension applies to new belt first time installations. Used belt tension applies to reinstalling an existing belt or when re-tensioning an existing used belt.	

6. If the tension is not within the specified Limits, do the following tension adjustment steps to bring the tension within specification:
   a. Remove the belt tension gauge.

      IMPORTANT: The belt tension gauge must be removed while making tension adjustments or the measurement will be invalid.

   b. Make a small incremental adjustment to the 1/2" hex head First Stage Belt Tensioner bolt as needed (loosen or tighten) to bring the belt tension into specification.

      Note: Belt tension adjustment is an iterative process, only make small tension changes per adjustment. Be careful to NOT over tension the belt, which could result in damaging the belt or pulley hardware.



c. Then use the crank to rotate the input pulley a couple of rotations to seat the belt and remeasure the belt tension.

d. If the belt tension is not within specification, repeat the tension adjustment process until the belt tension is correctly tensioned.

7. Use a 1/2" socket to tighten the two Drive Components assembly carriage bolts (left side), torque bolts to 180 in-lbs +/- 54 (20.3 +/_ 4.5 Nm).
8. Measure and verify that the second-stage drive belt is within specification, retention the belt as needed, see "Second Stage Drive Belt Tension Adjustment" on the facing page.
9. Reinstall the left Drive Disk cove, see " > " on page 94.
10. Reinstall the Drive Access Panel, see "" on page 92.
11. Verify machine operation and return to service, see "Operation Verification" on page 21.

See Also

"Second Stage Drive Belt Tension Adjustment" on the facing page

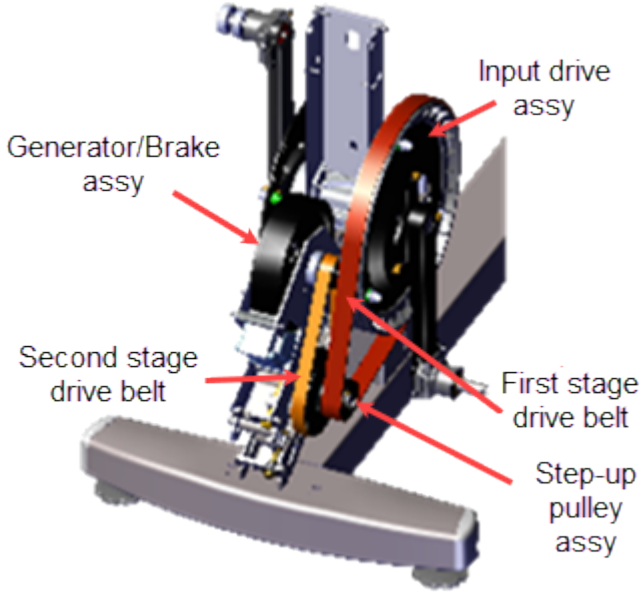
Second Stage Drive Belt Tension Adjustment

About

This procedure provides instruction to adjust the Second Stage Drive Belt tension.

A Two-Stage Input Drive system utilizes a first-stage drive belt and second-stage drive belt system to connect the input drive assembly pulley to the generator/brake assembly pulley. Always adjust the first stage drive belt first and then the second stage drive belt.

IMPORTANT: Adjust the first stage drive belt tension prior to adjusting the second stage drive belt tension.



Specifications

System Component	Specification
Second Stage Belt Drive Tension - New(1)	110-120 lbs (50- 54.4 kgs)
Second Stage Belt Drive Tension - Used(1)	92 - 105 lbs (43 - 47.6 kgs)
Drive Component Assy Carriage Bolts	180 in-lbs (20.3 Nm)
(1) New belt tension applies to new belt first time installations. Used belt tension applies to reinstalling an existing belt or when re-tensioning an existing used belt.	

Videos

	Service Video	Link
	EFX600/700/800 Dual Stage Input Drive Belt Tension Verification	EFX600/700/800 Dual Stage Input Drive Belt Tension Verification

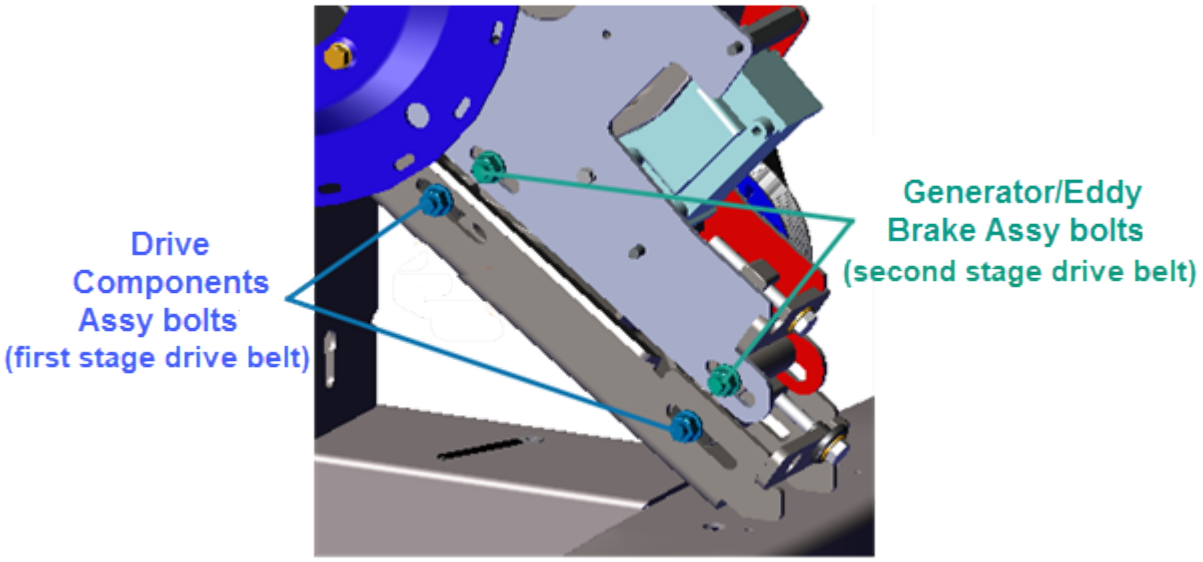
Procedure

Review entire procedure before starting.

1. Remove the drive disk access cover, see "" on page 92.
2. Remove the left Drive Disk cove, see " > " on page 94.
3. Measure and verify that the first stage drive belt tension is within specification, see "First Stage Drive Belt Tension Adjustment" on page 55. If the belt tension is not within specification, retention the belt.

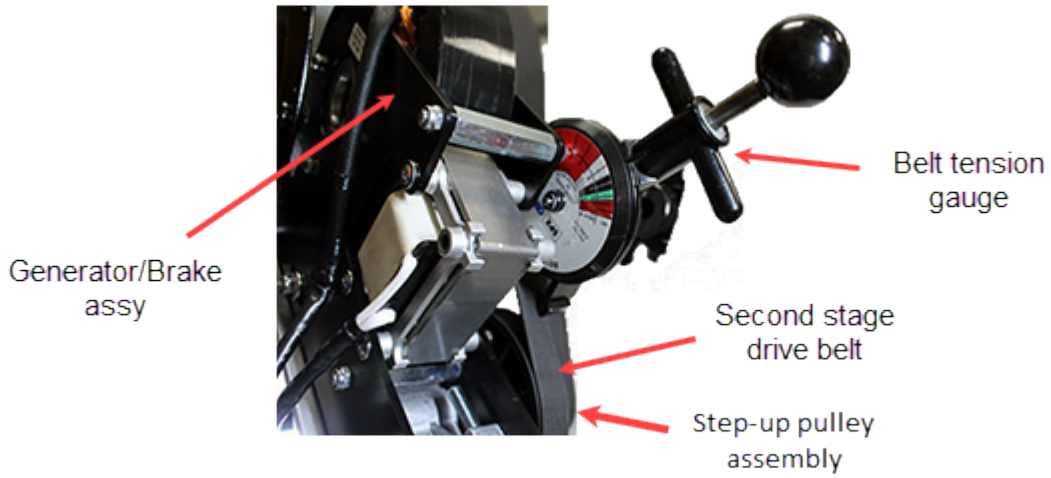
IMPORTANT: Adjust the first stage drive belt tension prior to adjusting the second stage drive belt tension.

4. Use a 1/2" socket to loosen the two Generator/Brake Assembly bolt nuts (left side) just enough to allow assembly movement. Do not remove the carriage bolt nuts.



CAUTION: Make sure that the two Generator/Brake Assembly carriage bolts are loosened before adjusting the second stage belt tensioner. The tensioner hardware can be damaged and the belt cannot be tensioned if the Generator/Brake Assembly are not loosened.

5. Place the belt tension gauge onto the Second Stage Drive Belt midway between the Generator/Brake pulley and larger Step-up Assembly pulley and measure the tension. Record the measured belt tension.



6. Compare the measured belt tension to the second stage drive belt tension specification.

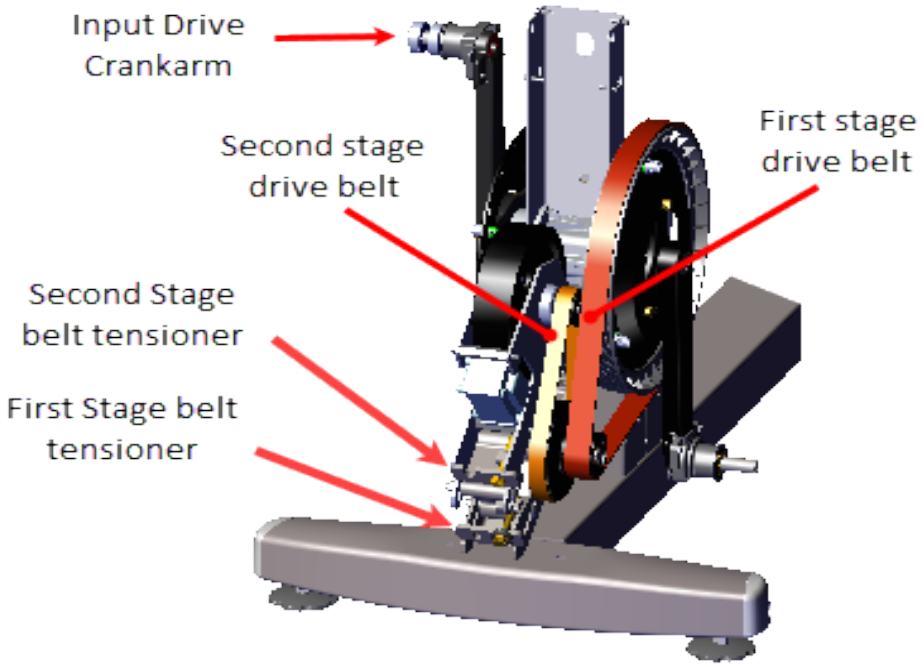
System Component	Specification
Second Stage Belt Drive Tension - New	110-120 lbs (50- 54.4 kgs)
Second Stage Belt Drive Tension - Used	92 - 105 lbs (43 - 47.6 kgs)
Note: New belt tension applies to new belt first time installations. Used belt tension applies to reinstalling an existing belt or re-tensioning an existing used belt.	

7. If the tension is not within the specified Limits, do the following tension adjustment steps to bring the tension within specification:
   a. Remove the belt tension gauge.

      IMPORTANT: The belt tension gauge must be removed while making tension adjustments or the measurement will be invalid.

   b. Make a small incremental adjustment to the 1/2" Second Stage Belt Tensioner bolt as needed (loosen or tighten) to bring the belt tension into specification.

      Note: Belt tension adjustment is an iterative process, only make small tension changes per adjustment. Be careful to NOT over tension the belt, which could result in damaging the belt or pulley hardware.



c. Then use the crank to rotate the input pulley a couple of rotations to seat the belt and remeasure the belt tension.
d. If the belt tension is not within specification, repeat the tension adjustment process until the belt tension is correctly tensioned.

8. Use a 1/2" socket to fully tighten the two Generator/ Eddy Brake Assembly carriage bolts (left side), torque bolts to 180 in-lbs (20.3 Nm).
9. Reinstall the left Drive Disk cove, see " > " on page 94.
10. Reinstall the Drive Access Panel, see "" on page 92.
11. Verify machine operation and return to service.

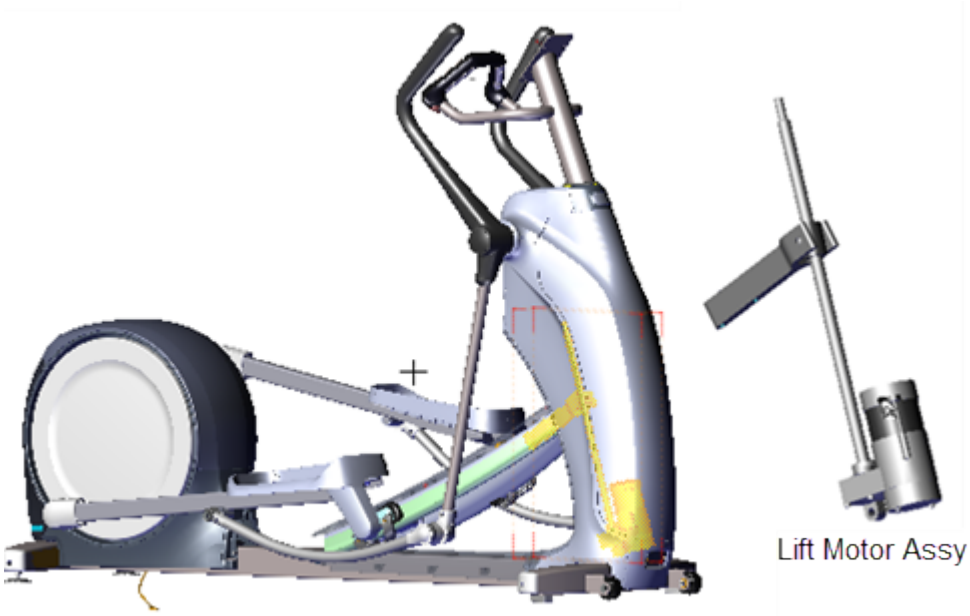
See Also

"First Stage Drive Belt Tension Adjustment" on page 55

Lift Motor Calibration

About

This procedure provides instruction to verify and calibrate the Lift Motor and Incline system. The Lift Motor calibration should be verified anytime the Lift Motor fuse fails or is replaced or any incline system component is replaced.



Specifications

System Component	Specification
Lift Motor Calibration Distance*	9" +/- 1/4" (23 cm +/- 0.6 cm
Yoke/Ramp Fasteners	330 in-lbs (27.5 ft-lbs or 37.2 Nm)
Note: * Calibration distance is set at incline level 10.	

Videos

	Service Video	Link
▶	EFX[1] Lift Motor Jackscew Lubrication maintenance video	EFX Lift Motor Jackscew Lubrication

[1]Elliptical Fitness Crosstrainer

Procedure

Review entire procedure before starting.

TIP: To help keep your hands clean while doing this procedure, it is advised to wear general purpose mechanics gloves. You will be handling the jackscrew which is coated with a thin layer of grease.

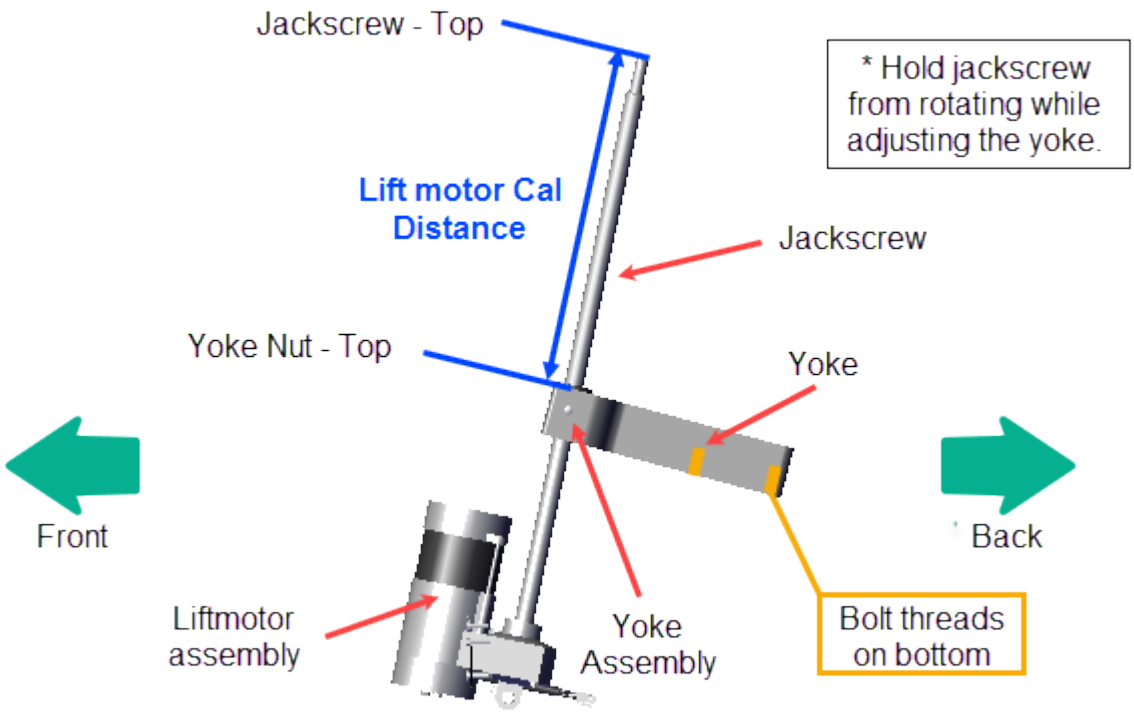
Lift Motor Calibration Verification

1. Remove the Front Lift cover, Lift Interface Plate cover, and Ramp cover, see "" on page 71, "" on page 74, and "" on page 88 procedures.
2. .Access the **CROSSRAMP TEST** diagnostic test and raise the crossramp incline to level 10.
   a. .On **LED**[1] (P10, P30, P30i and P31) consoles: Access diagnostic test menu (51765761) and select **MACHINE TEST** > **CROSSRAMP TEST**.
   b. .On Touchscreen (P62, P80, and P82) consoles: Access the Service menu (51765761) and select **System Settings > Systems Test** > **CrossRamp Test**.
3. Then disconnect the Lift Motor input power cable to prevent accidental ramp incline movement.

WARNING: Make sure to disconnect the Lift Motor input power/control cable or it is possible for the crossramp to automatically lower to level 1 if either the pedals or arms are moved. This unexpected action could cause personal injury.

4. Measure and verify that the distance from the top of the jackscrew to the top of the yoke nut is 9" +/- 1/4" (23 cm +/- 0.6 cm.

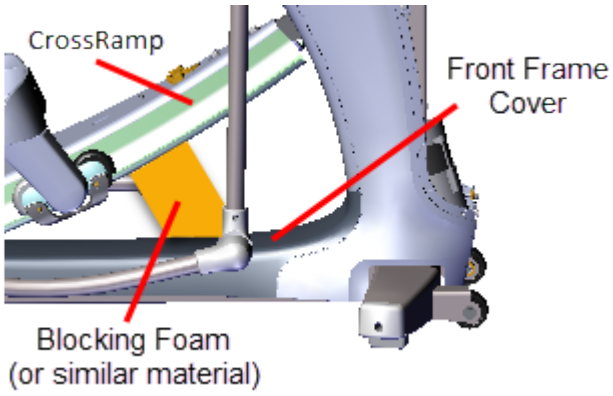
[1]light-emitting diodes.



5. If the calibration distance is not to specification (lift motor calibration distance: 9" +/- 1/4" (23 cm +/- 0.6 cm), continue procedure to adjust the Lift Motor calibration distance

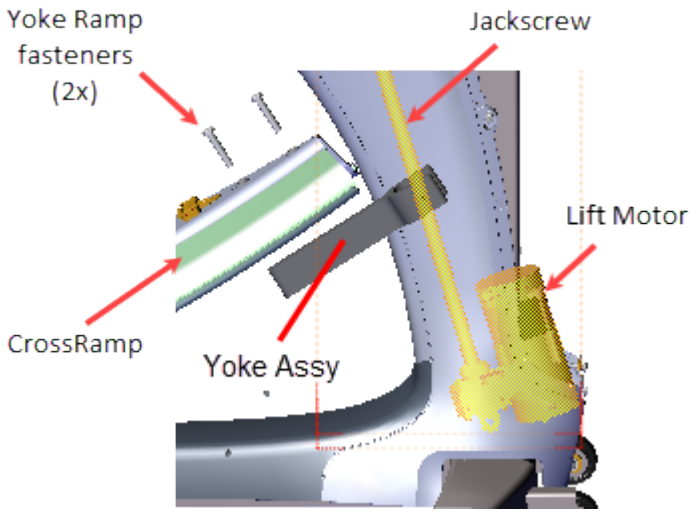
Lift Motor Calibration

6. Place a pad over the top of the Forward Frame cover to protect the surface during the adjustment procedure. Place blocking material (hard foam or similar material) between the underside of the ramp and frame to support and keep the ramp in the raised position.



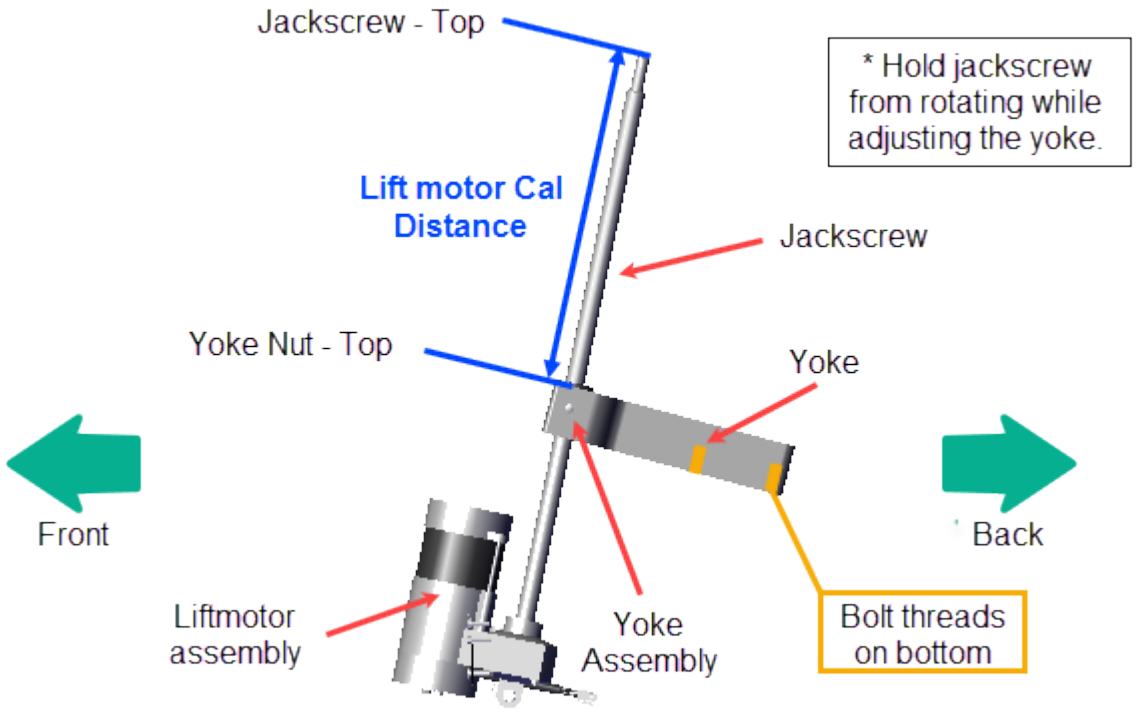
7. Use a 9/16" socket to remove the two yoke ramp fasteners and remove the yoke from the ramp. Note that the ramp will fall when the fasteners are removed. Make sure the

ramp is supported before removing the yoke ramp fasteners. Retain part(s) and/or fastener(s) for installation.



8. Tilt the jackscrew forward out of the front tower weldment. Then use one hand hold the jackscrew fixed and the other hand to rotate the yoke nut around the jackscrew to raise or lower as needed to adjust the calibration distance to 9" +/- 1/4" (23 cm +/- 0.6 cm.

IMPORTANT: It is important to keep the jackscrew fixed (not allowed to rotate) as the yoke nut is being adjusted. If the jackscrew does rotate during the adjustment, the lift motor will need to be reset to level 10 and then the yoke nut recalibrated.



9. Reattach the Yoke to the Ramp using the two yoke ramp fasteners, torque to 330 in-lbs (27.5 ft-lbs or 37.2 Nm).
10. Remove any blocking materials and pad.
11. Reconnect the lift motor input power cable.
12. .Verify the crossramp incline operation through the full range of motion, levels 1 thru 20. Access the **CROSSRAMP TEST** diagnostic test and then lower and raise the crossramp incline several times from the minimum to maximum levels.
    a. .On LED (P10, P30, P30i and P31) consoles: Access diagnostic test menu (51765761) and select **MACHINE TEST** > **CROSSRAMP TEST**.
    b. .On Touchscreen (P62, P80, and P82) consoles: Access the Service menu (51765761) and select **System Settings > Systems Test** > **CrossRamp Test**.
13. Reinstall the Front Lift, Lift Interface Plate, and Ramp covers, see "" on page 71, "" on page 74 and "" on page 88 procedures.
14. Verify elliptical operation and return to service, see "Operation Verification" on page 21.

Replacement Procedures

Replacement procedures provide you with the step-by-step instructions to remove and install system components.

Available Replacement Procedures

"Battery Replacement" on page 107

"Covers and Panels Replacement" on the facing page

"First Stage Drive Belt Replacement" on page 110

"Second Stage Drive Belt Replacement" on page 114

"Generator/Eddy Brake assembly Replacement" on page 120

"Step-up Pulley/Tensioner Assembly Replacement" on page 128

"Drive Components assembly Replacement" on page 133

"Input Drive Assembly Replacement" on page 141

"Lift Motor Replacement" on page 148

"LPCA (Lower PCA) Board Replacement" on page 157

"Fixed Arms Replacement" on page 165

"Moving Arms Replacement" on page 168

"Stairarm Replacement" on page 178

"Linkarm Replacement" on page 173

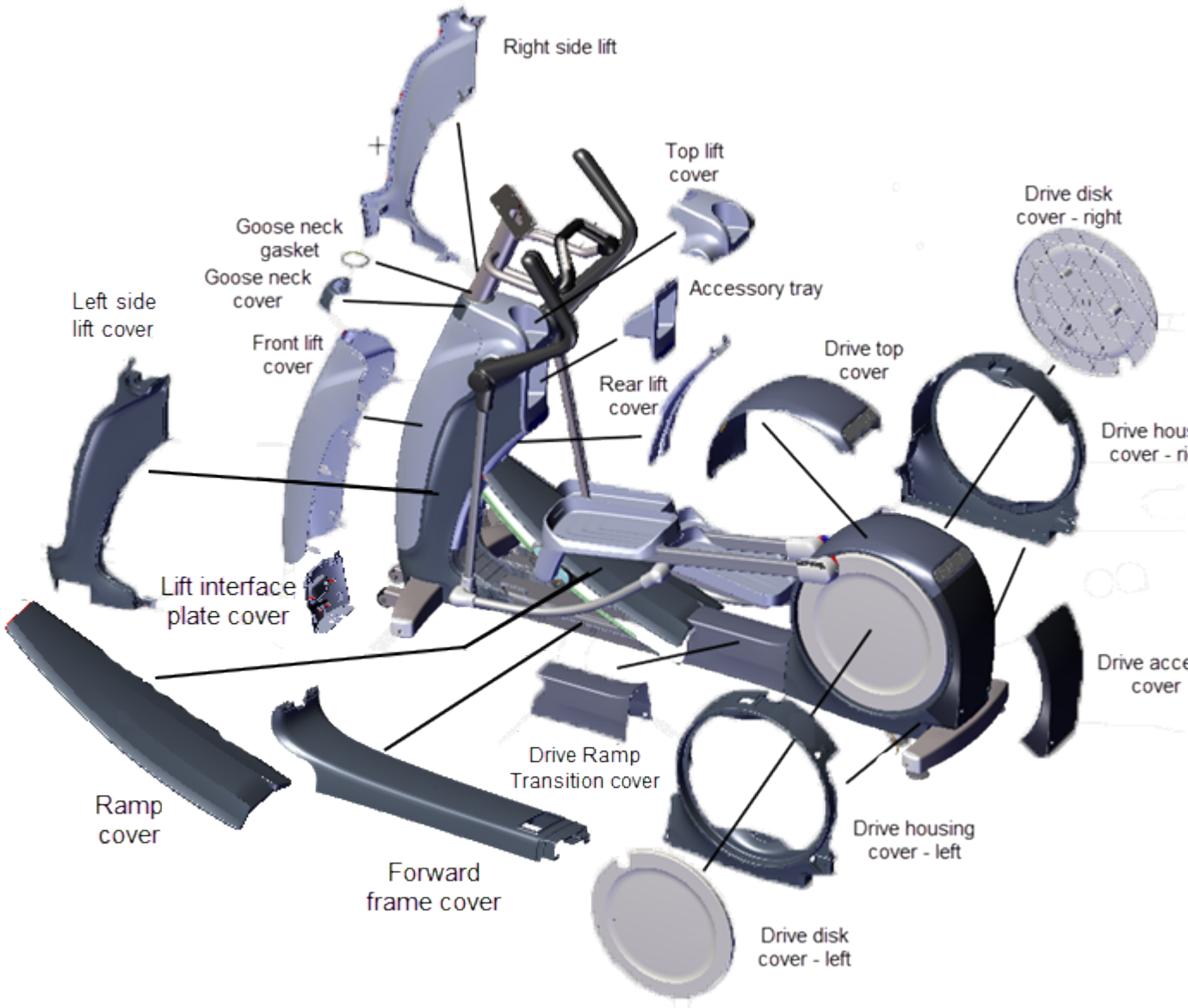
"Stairarm Wheel Truck Assy Replacement" on page 188

"Ramp Replacement" on page 195

Covers and Panels Replacement

About

These procedures provide instructions to remove and install the **EFX**[1] covers and panels.



Cover	Remove/Install Procedure
Goose Neck Cover	"" on page 71

[1]Elliptical Fitness Crosstrainer

Cover	Remove/Install Procedure
Top Lift Cover	"" on the facing page
Front Lift Cover	"" on the facing page
Lift Interface Plate Cover	"" on page 74
Accessory Tray	"" on page 76
Rear Lift cover	"" on page 78
Forward Frame Cover	"" on page 80
Side Covers	"" on page 82
Drive Ramp Transition Cover	"" on page 86
Ramp Cover	"" on page 88
Drive Access Panel	"" on page 92
Drive Disk Covers	" > " on page 94
Drive Top Covers	" > " on page 98
Drive Housing Covers	" > " on page 98

Videos

	Service Video	Link
	EFX600/700/800 Rear Covers Replacement	EFX Rear Drive Covers Removal

Cover Replacement Procedures

Front Lift Cover Replacement

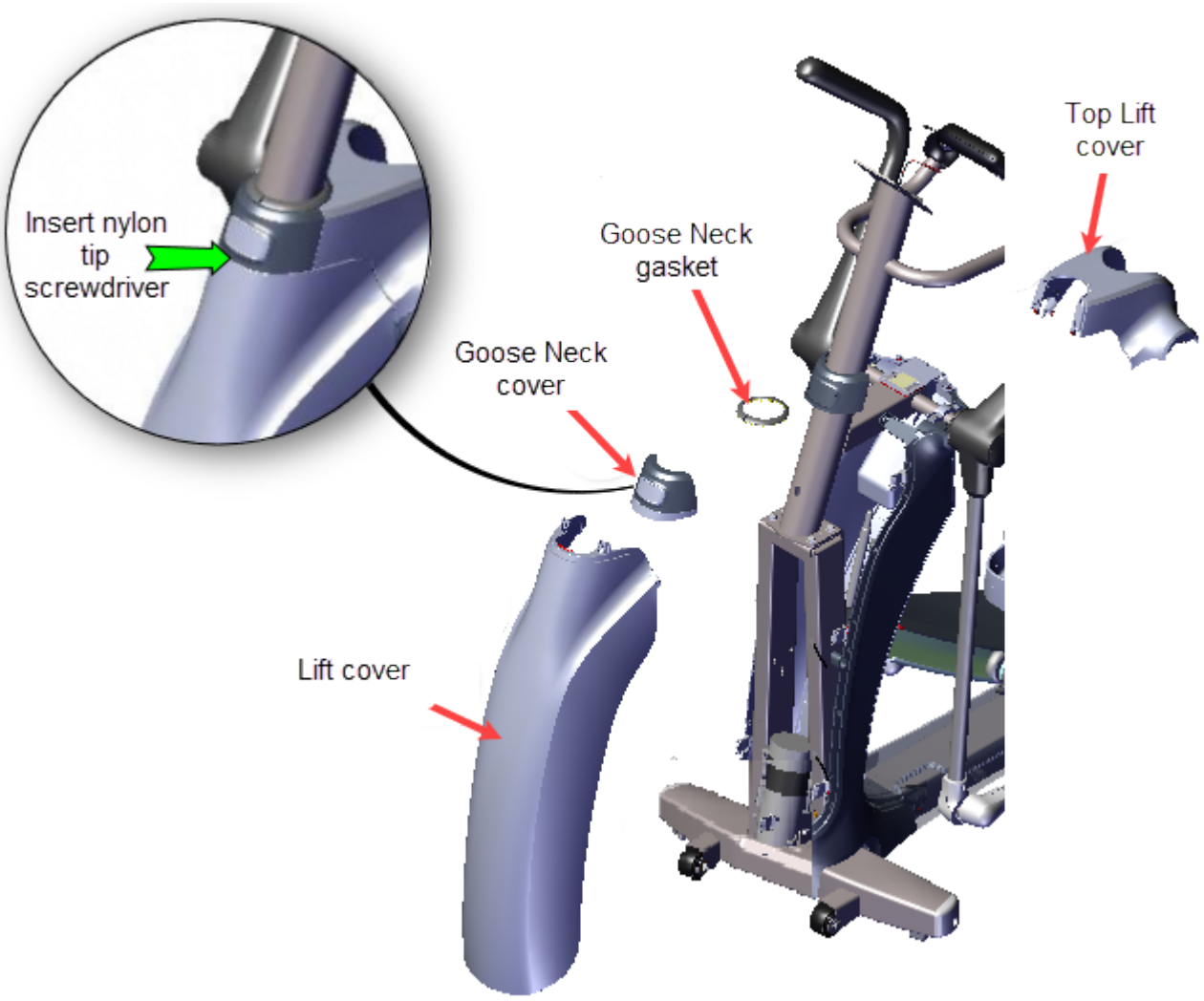
This procedure replaces the **Goose Neck** cover, **Goose Neck Gasket**, **Top Lift** cover, and **Front Lift** cover.

ID	Description
1	Goose Neck Gasket
2	Goose Neck Cover
3	Top Lift Cover

ID	Description
4	Lift Cover

Removal Instructions

Removing the lift cover requires removing the goose neck cover, goose neck gasket and top lift cover.



1. Carefully insert the tip of a nylon tipped screwdriver (or similar tool) at the front center of the goose neck in between the goose neck cover and the lift cover seam. While inserting the nylon tip, apply upward pressure to unsnap the goose neck cover and gasket from the frame weldment. Remove the goose neck gasket and cover.

   Alternative method

You can strike the front of the goose neck cover in an upward motion with the palm of your hand to unsnap the cover from the mounting weldment. Then remove the goose neck gasket and cover.

CAUTION: Only use nylon tipped screwdrivers (or similar device) to pry and unsnap the goose neck cover. Metal tipped devices will scratch the surfaces and damage the covers.

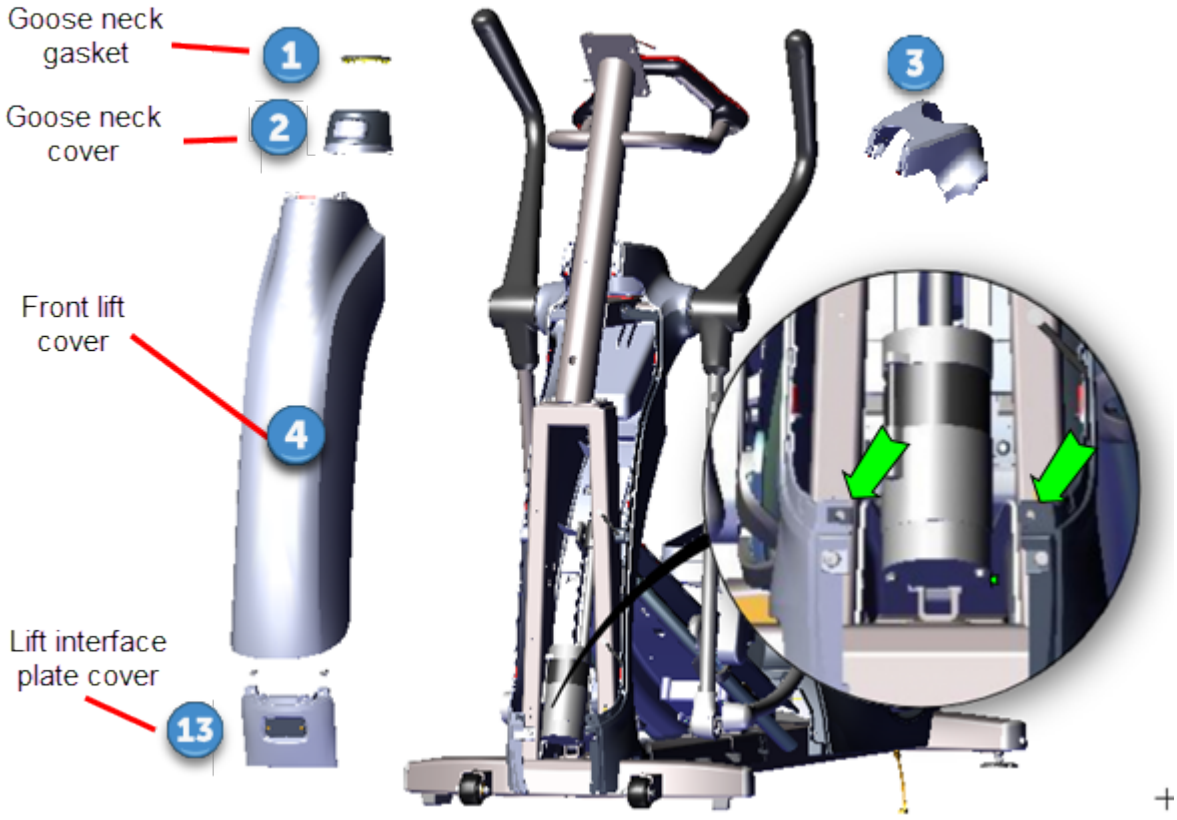
2. Use your fingers to unsnap and lift the top lift cover from the top of the front lift cover and accessory tray cover tabs.
3. Use your fingers to unsnap and lift the front lift cover from the side cover tabs to remove.

Installation Instructions

1. Set the bottom of the front lift cover onto the lift interface plate and right/left side covers making sure the clips fit over the top edge of the covers. Then press the front cover into onto the right and left side covers making sure the cover tabs lock in place.
2. Position the top lift cover into position on top of the accessory tray and press to lock tabs in place.
3. Position the goose neck cover into position on top of the front lift cover and press to lock tabs in place.
4. Reinstall the goose neck gasket around the goose neck weldment and press to snap in place. Start at the front and alternately work your way around the weldment tube finishing at the back.

Lift Interface Plate Cover Replacement

This procedure replaces the Lift Interface Plate cover



ID	Description
1	Goose Neck Gasket
2	Goose Neck Cover
3	Top Lift Cover
4	Front Lift Cover
13	Lift Interface Plate Cover

Removal Instructions

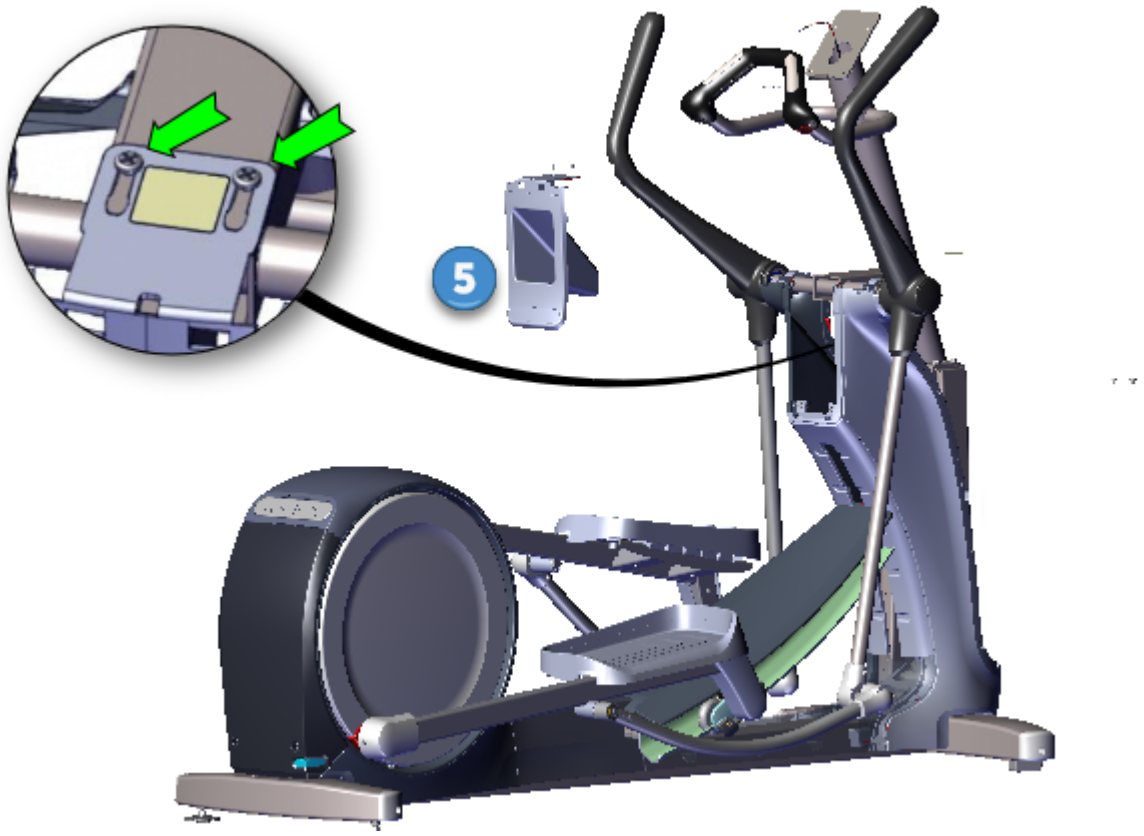
1. Remove the goose neck gasket, goose neck cover, top lift cover, and front lift cover, see "" on page 71.
2. Remove the two #2 Phillips screw fasteners and remove the lift interface plate cover. Retain part(s) and/or fastener(s) for installation.

Installation Instructions

1. Reinstall the lift interface plate cover, snap the lower tabs in place and align the two fastener bolt holes. Secure with two #3 Phillips screws.
2. Reinstall the lift front cover, see "" on page 71.

Accessory Tray Cover Replacement

This procedure replaces the Accessory Tray cover.



ID	Description
5	Accessory Tray cover

Removal Instructions

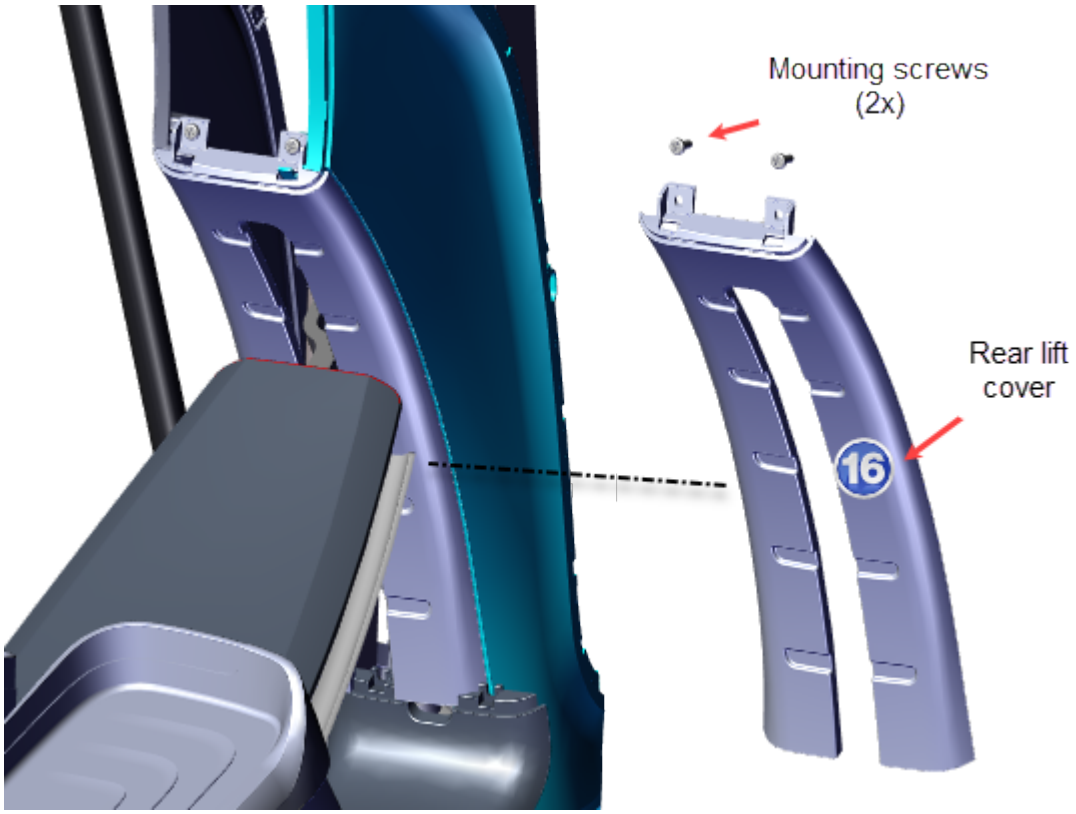
1. Remove the goose neck gasket, goose neck cover, top cover, and front lift cover, see "" on page 71.
2. Remove the two #3 Phillips fasteners, Then lift the two top left and right tabs and remove the accessory tray cover. Retain part(s) and/or fastener(s) for installation.

Installation Instructions

1. Reinstall the accessory tray, press to snap the top two left and right tabs in place and secure with the two #3 Phillips screws.
2. Reinstall the front lift cover, top cover, goose neck cover, and goose neck gasket, see "" on page 71.

Rear Lift Cover Replacement

This procedure replaces the Rear Lift cover.



ID	Description
16	Rear Lift cover

Removal Instructions

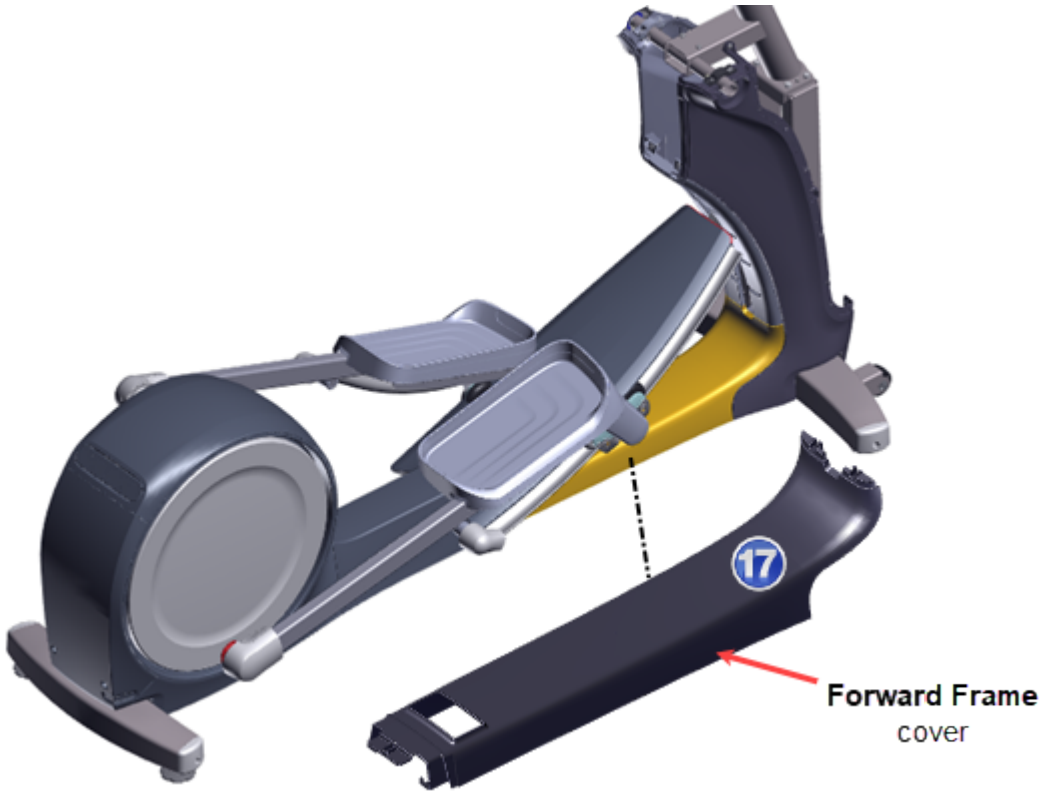
1. Remove the goose neck gasket, goose neck cover, top lift cover, and front lift cover, see "" on page 71.
2. Remove the two #3 Phillips mounting screws, Then lift the Rear Lift cover upward above the lift motor yoke and remove. Retain part(s) and/or fastener(s) for installation.

Installation Instructions

1. Slide the Rear Lift cover downward over lift motor yoke and fit the cover tabs into the top of the front frame cover and left/right side cover clips. Secure the cover using the two #3 Phillips mounting screws.
2. Reinstall the front lift cover, top cover, goose neck cover, and goose neck gasket, see "" on page 71.

Forward Frame Cover Replacement

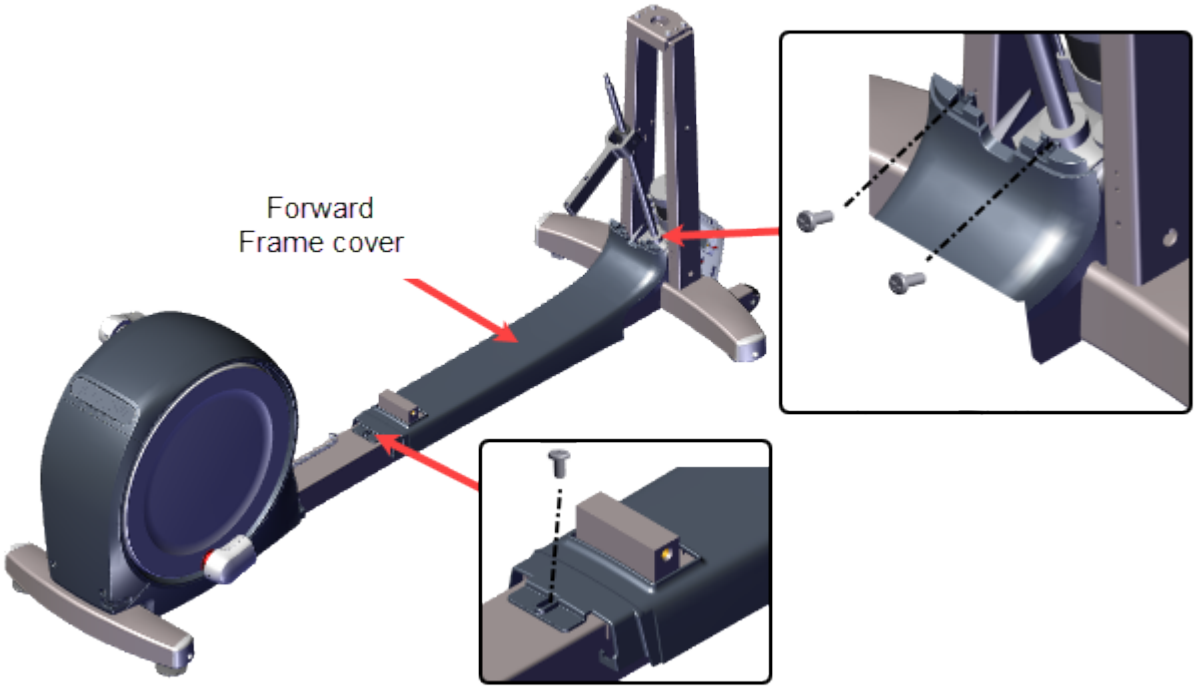
This procedure replaces the Forward Frame cover.



ID	Description
17	Forward Frame cover

Removal Instructions

1. Remove the goose neck gasket, goose neck cover, top cover, and front lift cover, see "" on page 71.
2. Remove the Lift Interface Plate cover, see "" on page 74.
3. Remove the Accessory tray, see "" on page 76.
4. Remove the Rear Lift cover, see "" on page 78.
5. Remove the Drive Ramp Transition cover, see "" on page 86.
6. Remove the Ramp (see "Ramp Replacement" on page 195).
7. Remove the two front and one back #3 Phillips mounting screws and remove the Forward Frame cover. Retain part(s) and/or fastener(s) for installation.

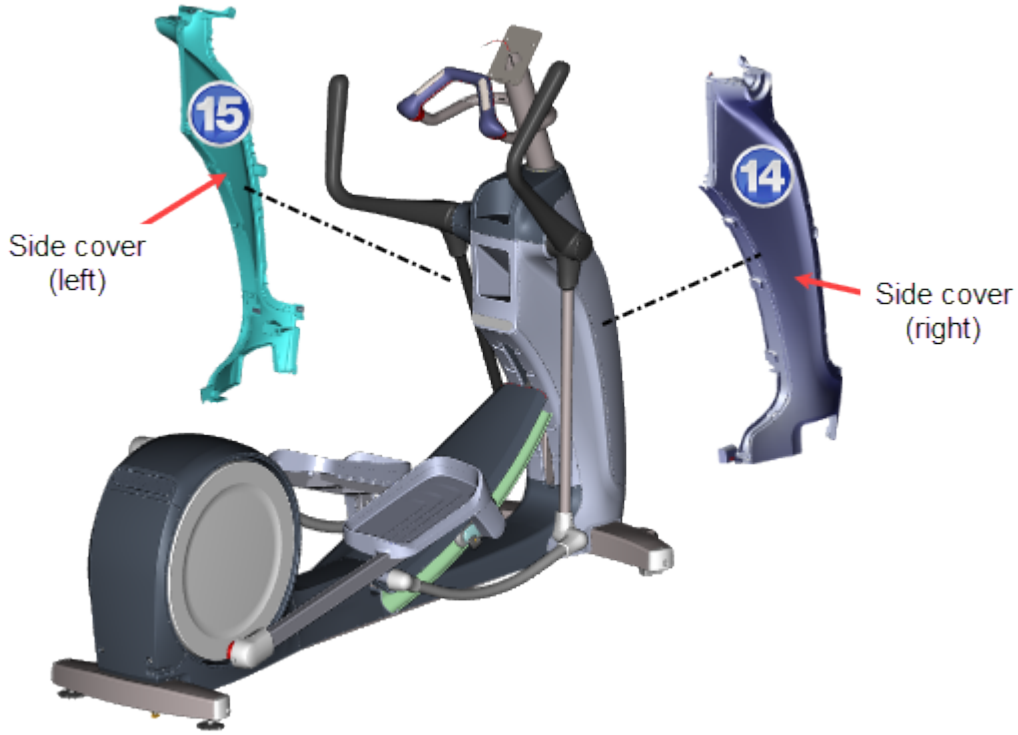


Installation Instructions

1. Position the Forward Frame cover onto the frame rail. Secure using the two front and one back #3 Phillips mounting screws.
2. Reinstall the Ramp (see "Ramp Replacement" on page 195).
3. Reinstall the Drive Ramp Transition cover, see "" on page 86.
4. Reinstall the Rear Lift cover, see "" on page 78.
5. Reinstall the Accessory tray, see "" on page 76.
6. Reinstall the Lift Interface Plate cover, see "" on page 74.
7. Reinstall the front lift cover, top cover, goose neck cover, and goose neck gasket, see "" on page 71.

Side Covers Replacement

This procedure replaces the left and right Side covers.

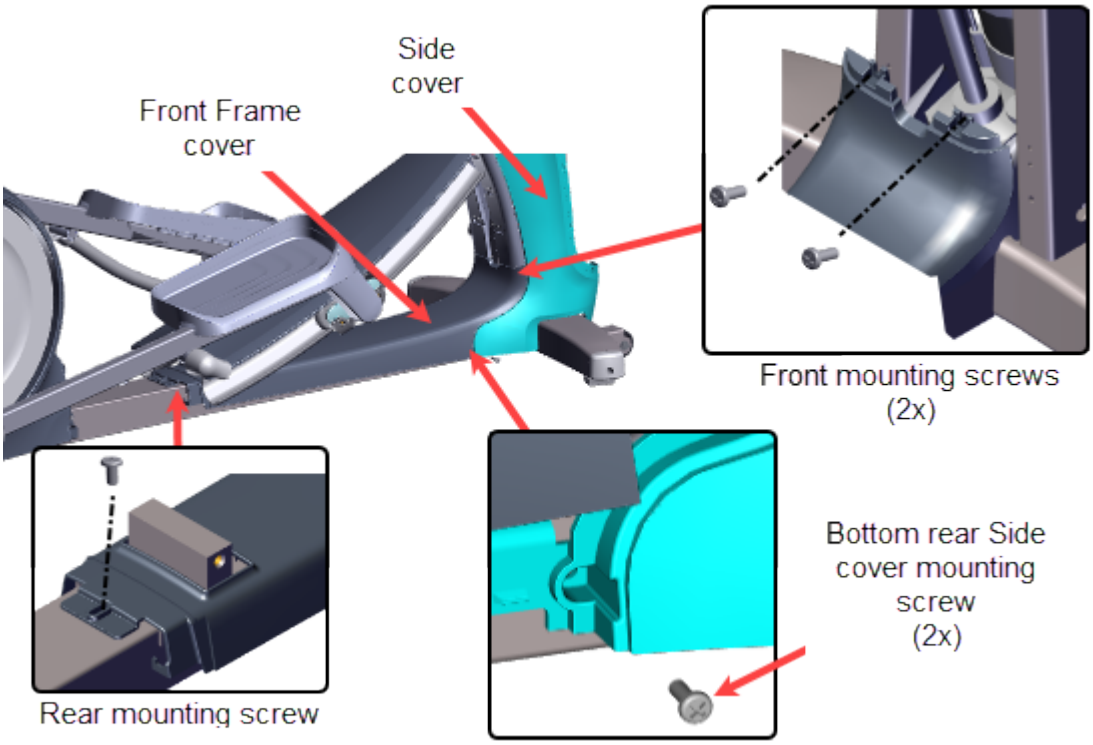


ID	Description
14	Side cover - right
15	Side cover- left

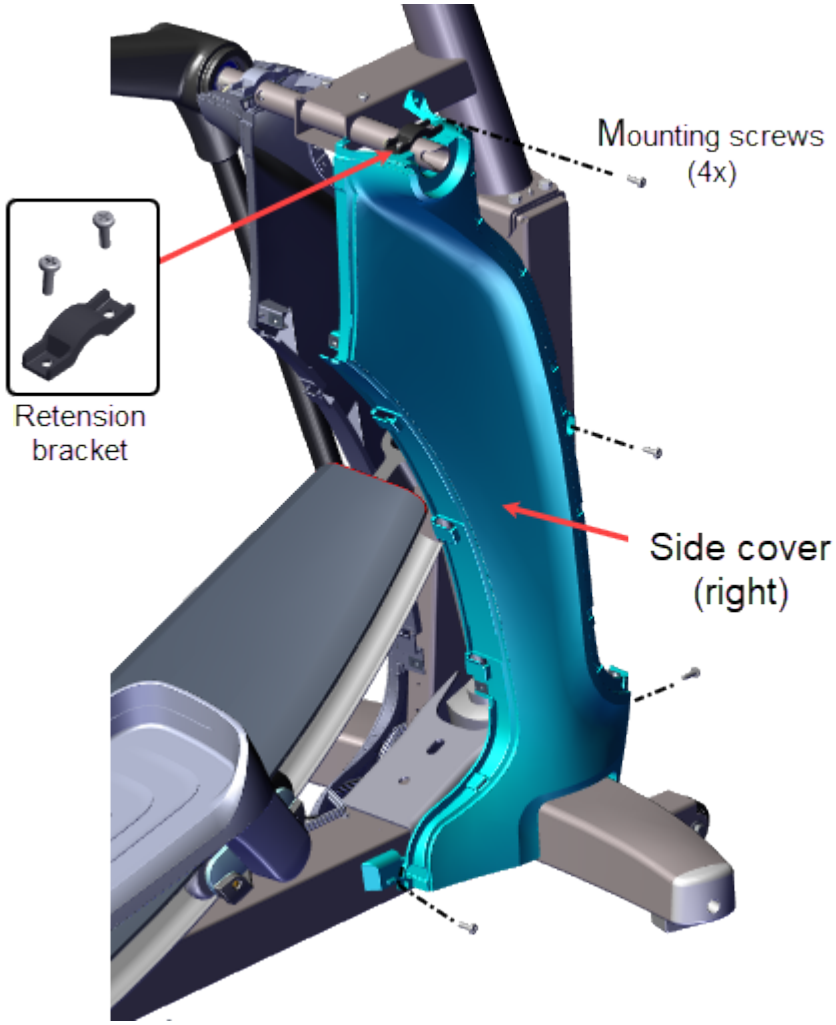
Removal Instructions

Repeat procedure for both the left and right Side covers.

1. Remove the goose neck gasket, goose neck cover, top cover, and front lift cover, see "" on page 71.
2. Remove the Lift Interface Plate cover, see "" on page 74.
3. Remove the Accessory tray, see "" on page 76.
4. Remove the Rear Lift cover, see "" on page 78.
5. Remove the Drive Ramp Transition cover, see "" on page 86.
6. Remove the one rear and two front "Front Frame" cover #3 Phillips mounting screws. Then lift the front of the cover to reveal and remove the bottom rear Side cover mounting screw.



7. Remove the remaining three #3 Phillips Side cover front edge screws.

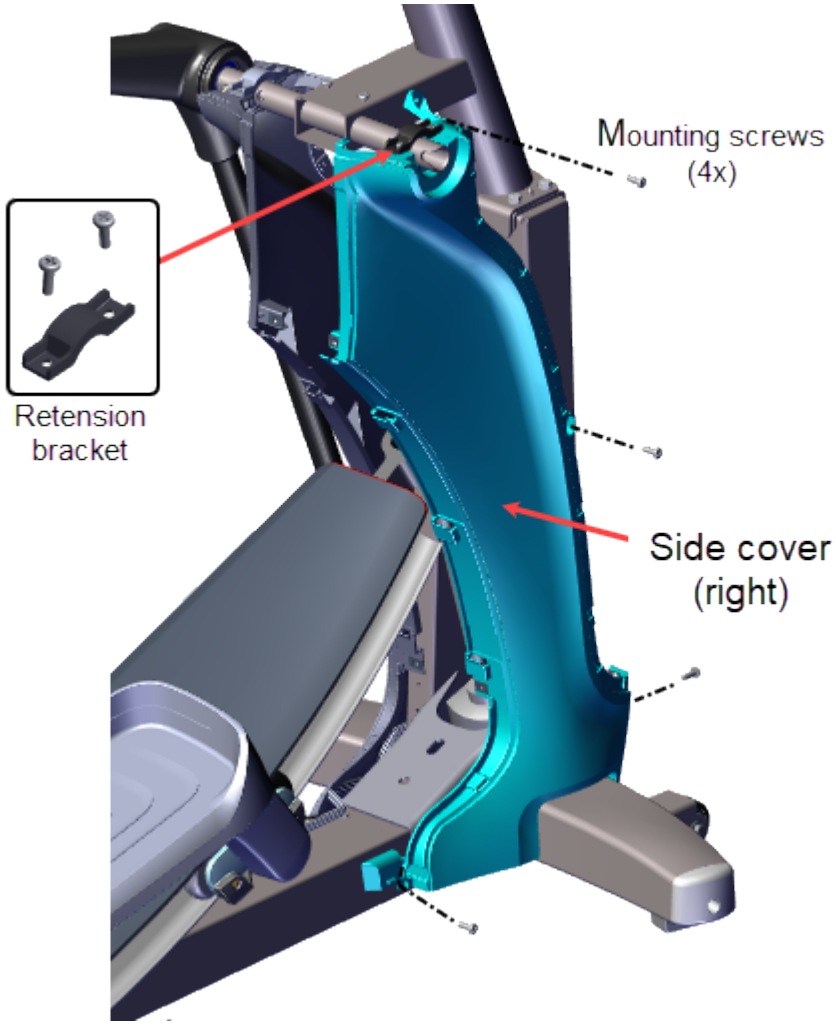


8. Remove the two #3 Phillips Retention Bracket screws and remove the side cover. Retain part(s) and/or fastener(s) for installation.

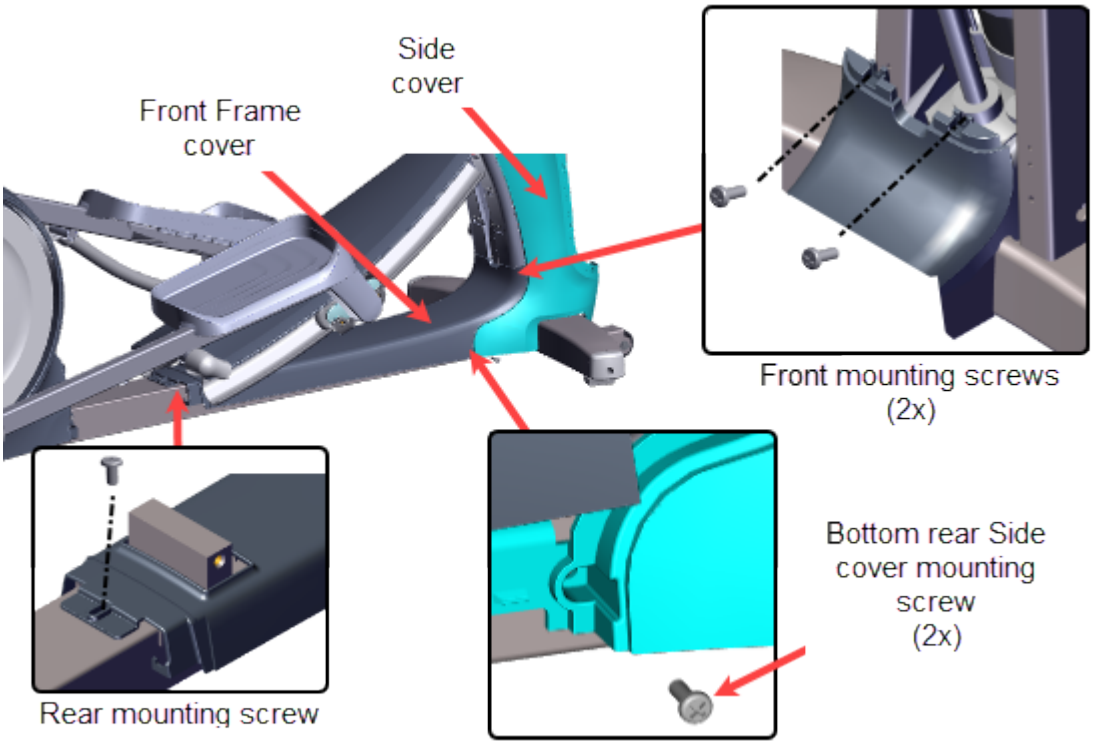
Installation Instructions

Repeat procedure for the left and right Side covers.

1. Position the Side cover onto the frame weldment. Fit the bottom rear mounting tab under the Front Frame cover. Secure using the three front edge Side cover #3 Phillips screws.



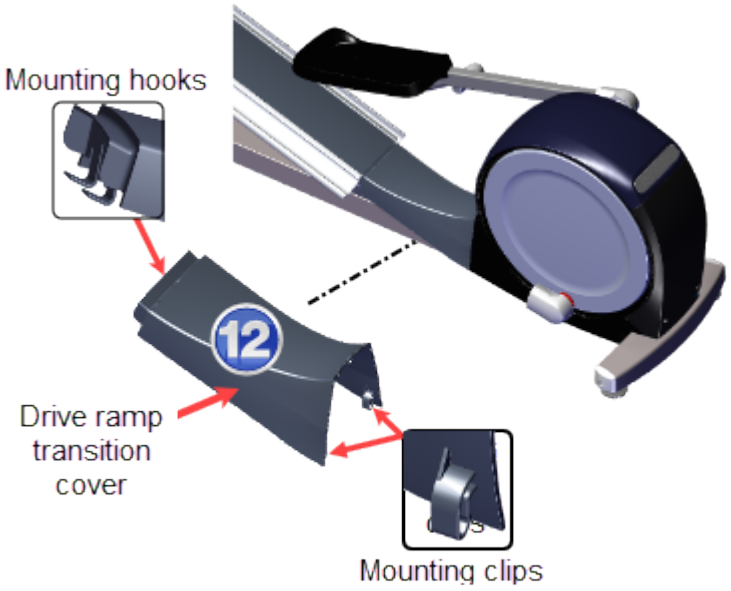
2. Reinstall the Retention Bracket and secure using the two #3 Phillips mounting screws.
3. Lift the front of the Front Frame cover and reinstall the bottom rear side cover #3 Phillips mounting screw. Then position the Front Frame cover onto the frame and secure using the three #3 Phillips mounting screws (one at the rear and two at the front).



4. Reinstall the Drive Ramp Transition cover (see "" below) .
5. Reinstall the Rear Lift cover, see "" on page 78.
6. Reinstall the Accessory tray, see "" on page 76.
7. Reinstall the Lift Interface Plate cover, see "" on page 74.
8. Reinstall the front lift cover, top cover, goose neck cover, and goose neck gasket, see "" on page 71.

Drive Ramp Transition Cover Replacement

This procedure replaces the Drive Ramp Transition cover.



ID	Description
12	Drive Ramp Transition cover

Removal Instructions

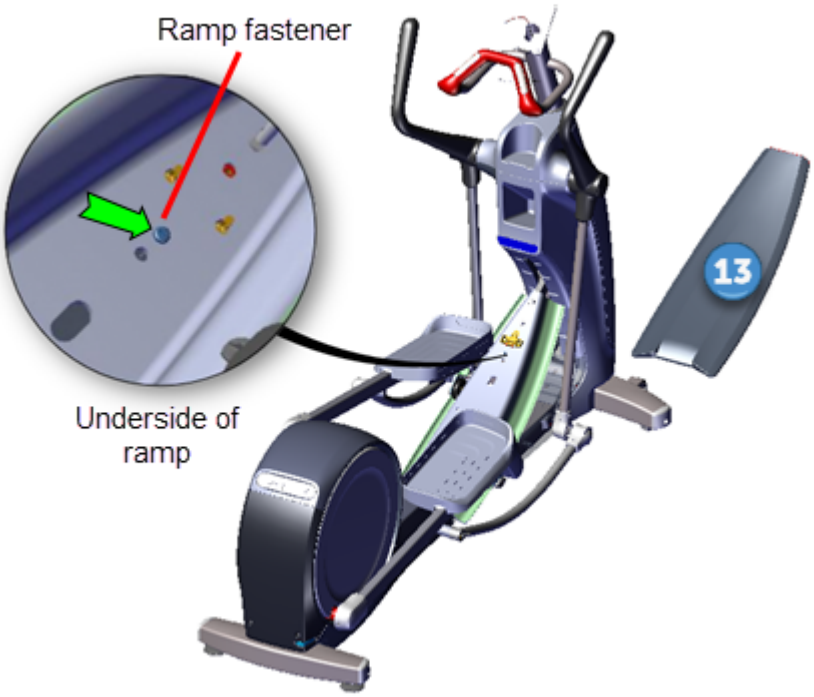
Lift the back of the cover to unsnap the rear mounting clips and then lift rearward to remove the cover mounting hooks from the ramp mounting bracket.

Installation Instructions

Slide the cover front mounting hooks into the ramp mounting bracket slots and then press down on the back of the cover to snap the rear mounting tabs in place.

Ramp Cover Replacement

This procedure replaces the Ramp cover.

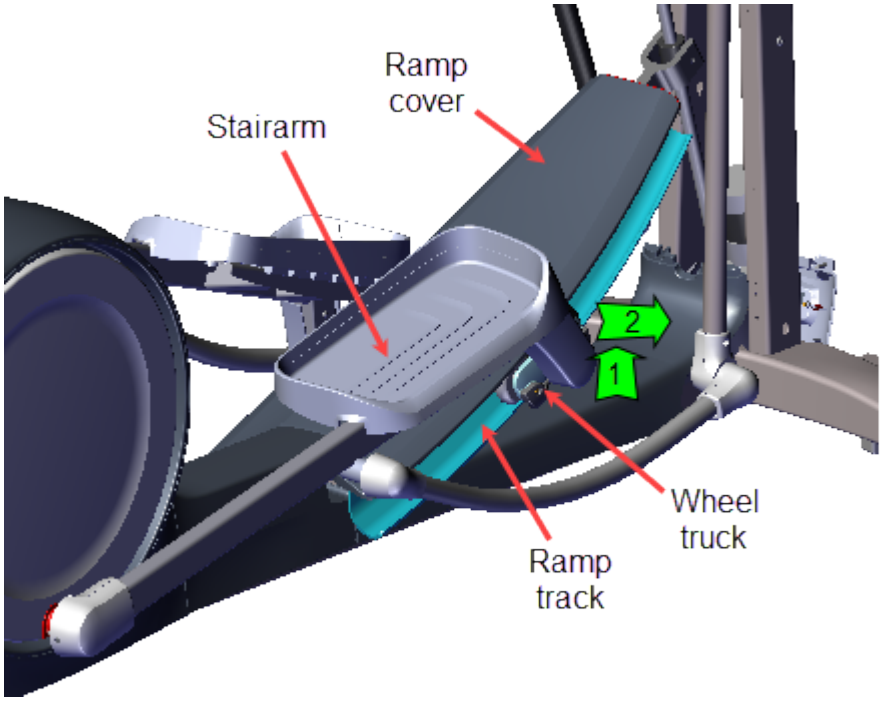


Removal Instructions

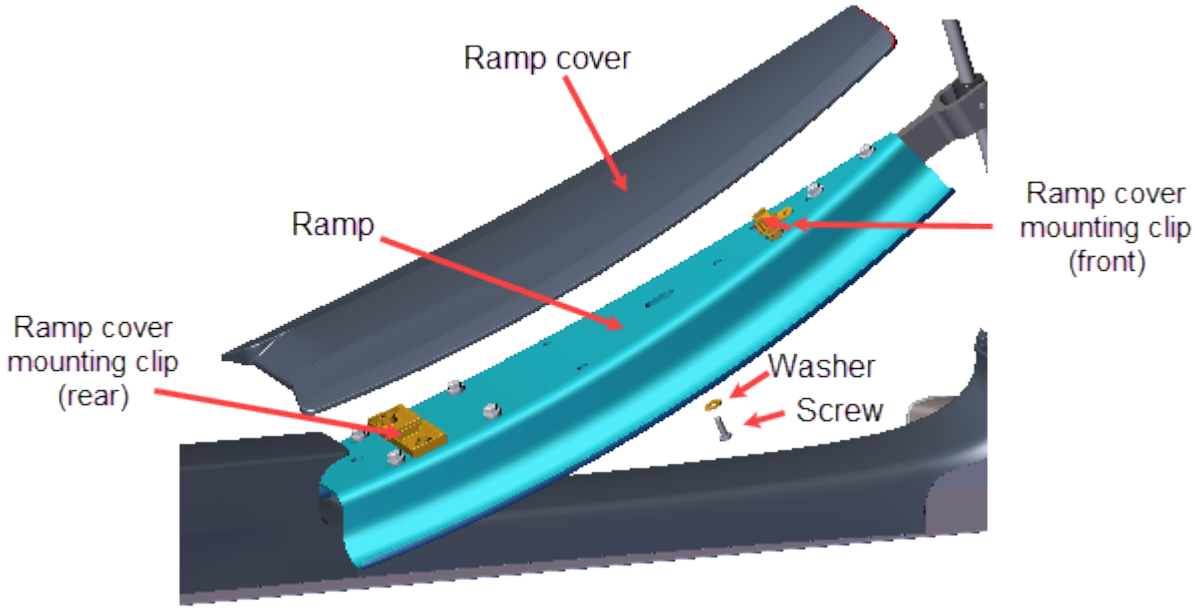
1. Access the service menu diagnostic **CrossRamp Test** and set the incline level to 1 (default level)
   a. P10, P30, P30i and P31: (**Service menu (51765761)** > **MACHINE TEST** > **CROSSRAMP TEST** and raise the **INCLINE LEVEL** to 1).
   b. P62, P80, and P82: (**Service menu (51765761)** > **System Settings** > **System Tests** > **CrossRamp Test** and raise the **INCLINE** level to 1).
2. Disconnect either the battery negative terminal or the Lift Motor input power/control cable.

WARNING: Make sure to disconnect either the negative battery terminal or the Lift Motor input power/control cable to prevent accidental ramp movement. This unexpected action could cause personal injury.

3. Remove the Stairarm wheel truck assemble from the ramp track and lay the Stairarm on the floor. To remove, grasp the bottom of the wheel truck assembly and lift up and outward to remove from the track. No tools or fastener removal is required. It may help to lift the outer edge of the CrossRamp cover while removing.



4. Use a short stub #3 screwdriver to remove the one screw and washer located on the underside front of the ramp platform. Lift the front of the ramp cover and slide forward to remove from retaining clips. Retain part(s) and/or fastener(s) for installation.

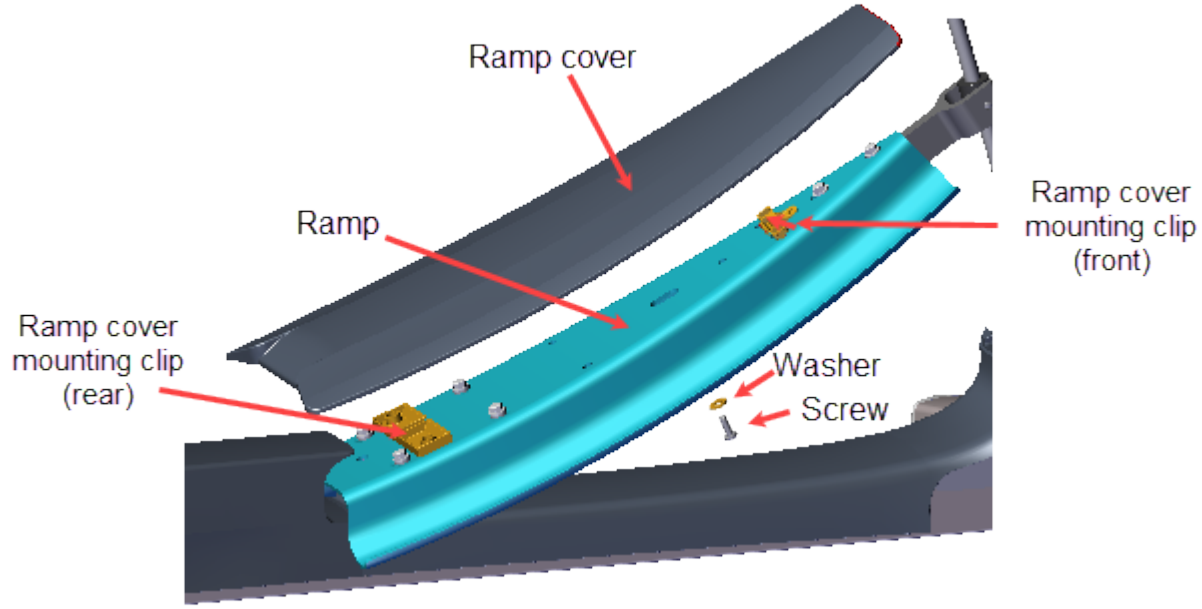


Installation Instructions

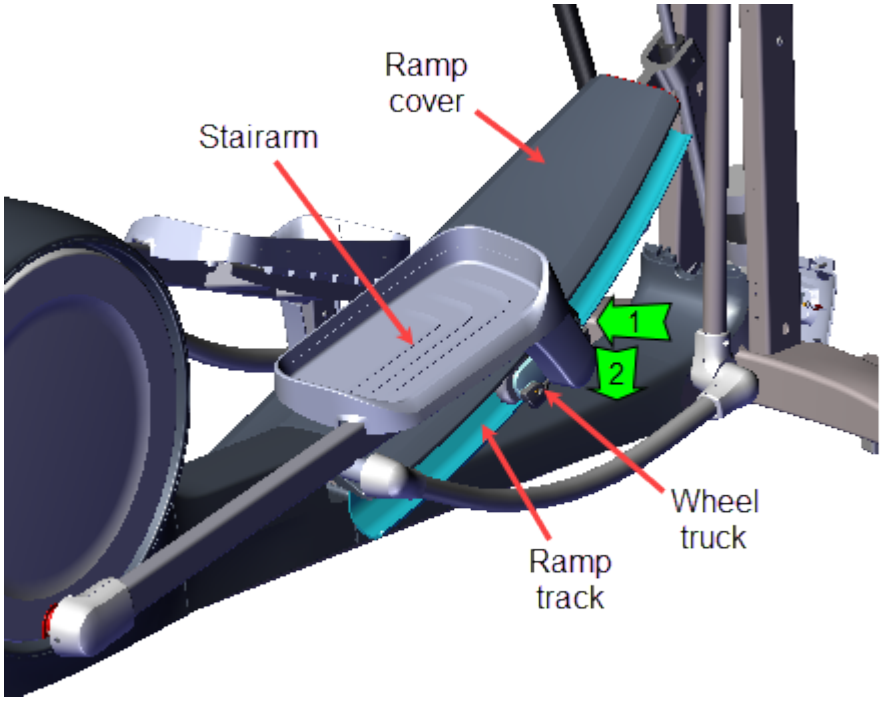
1. Use an approved cleaner (see " " on page 14) to clean the left and right Stairarm wheels and ramp tracks. Dry with a clean cloth. Clean any hard-to-remove grime

using a Scotch-Bright pad (or fine steel wool). Dry ramp track surfaces with a clean rag.

2. Reinstall ramp cover by inserting the rear tabs into the rear ramp platform mounting clips and then pressing down (and/or using the palm of your hand to lightly strike the top of the ramp) on the top front of the ramp to snap into the front bracket clip. Verify that the ramp clips are correctly engaged by grabbing the ramp sides and gently attempting to move and lift the ramp off the platform.
3. Secure ramp by reinstalling the #3 Phillips screw fastener and fully tighten.



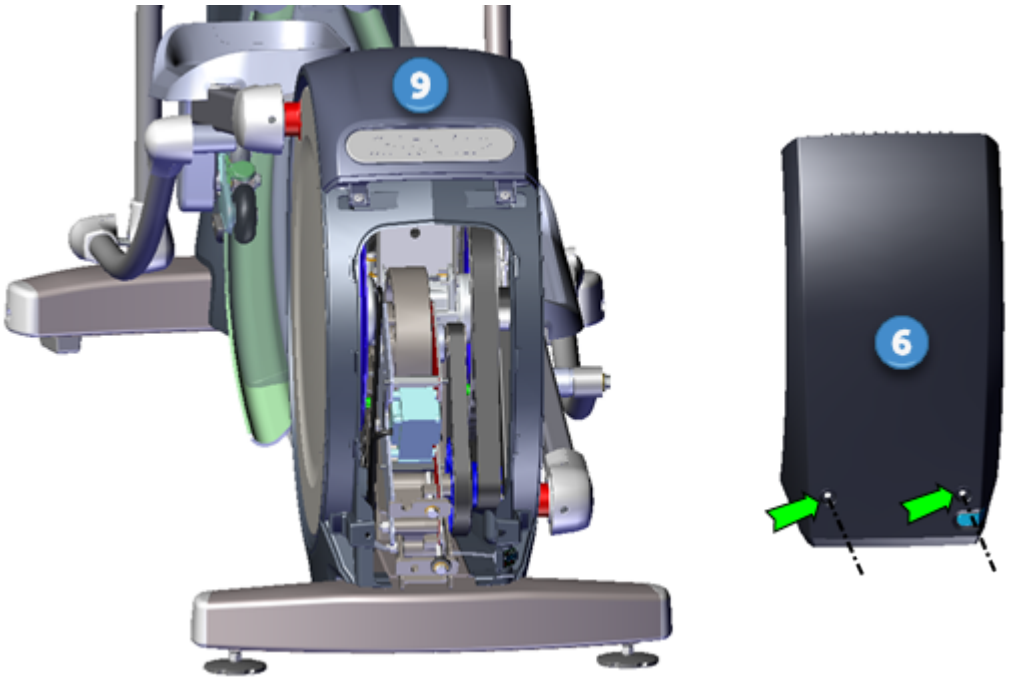
4. Reinstall the left and right Stairarm wheel trucks onto the Ramp tracks. To install, slip the top of the wheels underneath the CrossRamp cover while lifting the bottom of the wheels over and into the CrossRamp track. You may need to slightly lift up the edge of the CrossRamp cover while inserting the wheels into the CrossRamp track.



5. Reconnect either the disconnected battery negative terminal or the Lift Motor input power/control cable.
6. Select **QUICKSTART** and operate the elliptical at **INCLINE** level 1 and **RESISTANCE** level 1 at 130 strides per minute for two minutes, or longer, while listening for wheel/track squeaking or other unusual noises.
    a. If there are wheel/ramp squeaking noises, apply a thin coat of Swix UR10 Yellow Bio Racing ski wax (or equivalent) to the wheel contact area of the ramp tracks. Rub the wax back and forth across the track several times. .
    b. Repeat the prior QUICKSTART workout conditions to break-in the new wax application and verify operation.
    c. At the completion of the wax break-in, gently wipe away any excess wax with a clean rag.
7. Verify operation and return to service, see "Operation Verification" on page 21.

Drive Access Panel Replacement

This procedure replaces the Drive Access Panel.



ID	Description
6	Drive Access Panel
9	Drive Top Cover

Videos

	Service Video	Link
	EFX600/700/800 Rear Drive Covers Replacement	Rear Drive Covers Removal

Procedure

Removal Instructions

1. Use a #3 Phillips screwdriver to remove the two fasteners located at the bottom of the Drive Access pane. Slide the access panel downward and away from the drive top cover to remove. Retain part(s) and/or fastener(s) for installation.

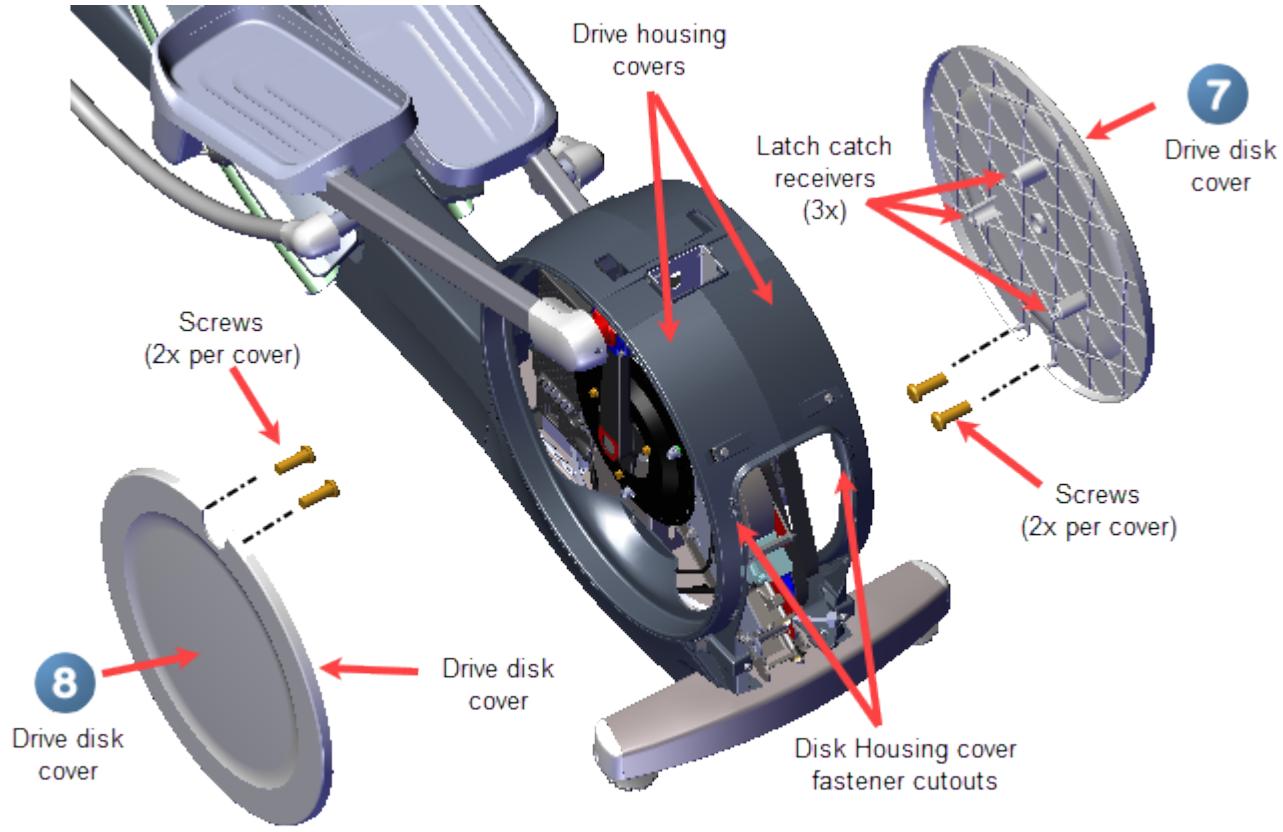
Installation Instructions

1. Slide the top of the Drive Access panel under the lip of the drive top cover and then press the cover into position over the access cover opening.
2. Secure cover with the two # 3 Phillips screw fasteners.

Drive Disk Covers Replacement

>

This procedure replaces the left and right Drive Disk covers.



ID	Description
7	Drive Disk Cover - right
8	Drive Disk Cover - left

Videos

	Service Video	Link
▶	EFX600/700/800 Rear Drive Covers Replacement	Rear Drive Covers Removal

Procedure

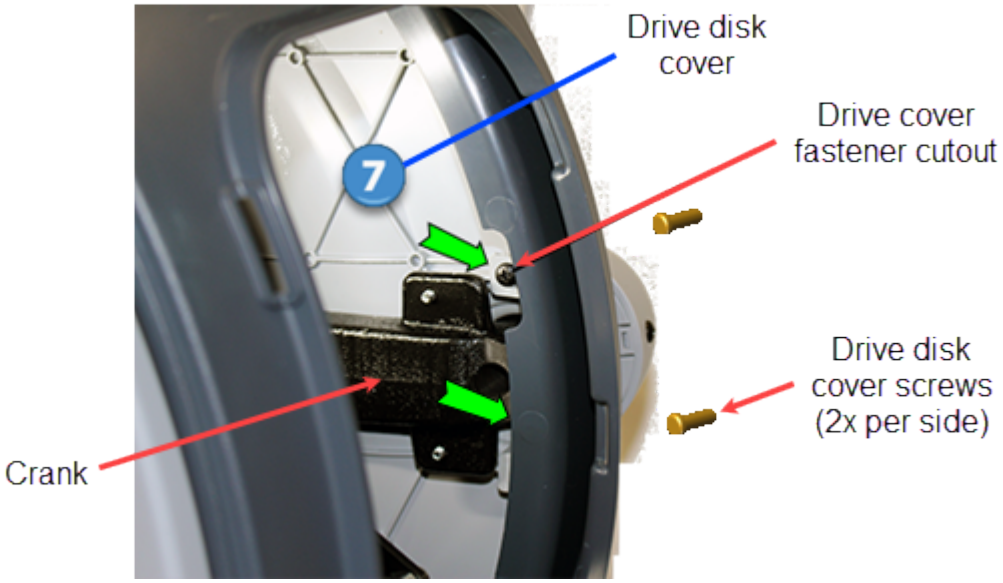
Removal Instructions

Repeat this procedure for both the right and left Drive Disk coves.

1. Remove the Drive Access panel, see "" on page 92.
2. Rotate the crank until the upper Drive Disk cover attachment screws can be seen through the drive cover fastener cutout. Then use a #2 Phillips screwdriver to remove the screw. Then slowly move the Input Crank upward until the second screw can be seen and remove if installed (there may only be one Drive Disk cover attachment screw installed. However, two screws are required for installation, order any missing screws.). Retain part(s) and/or fastener(s) for installation.

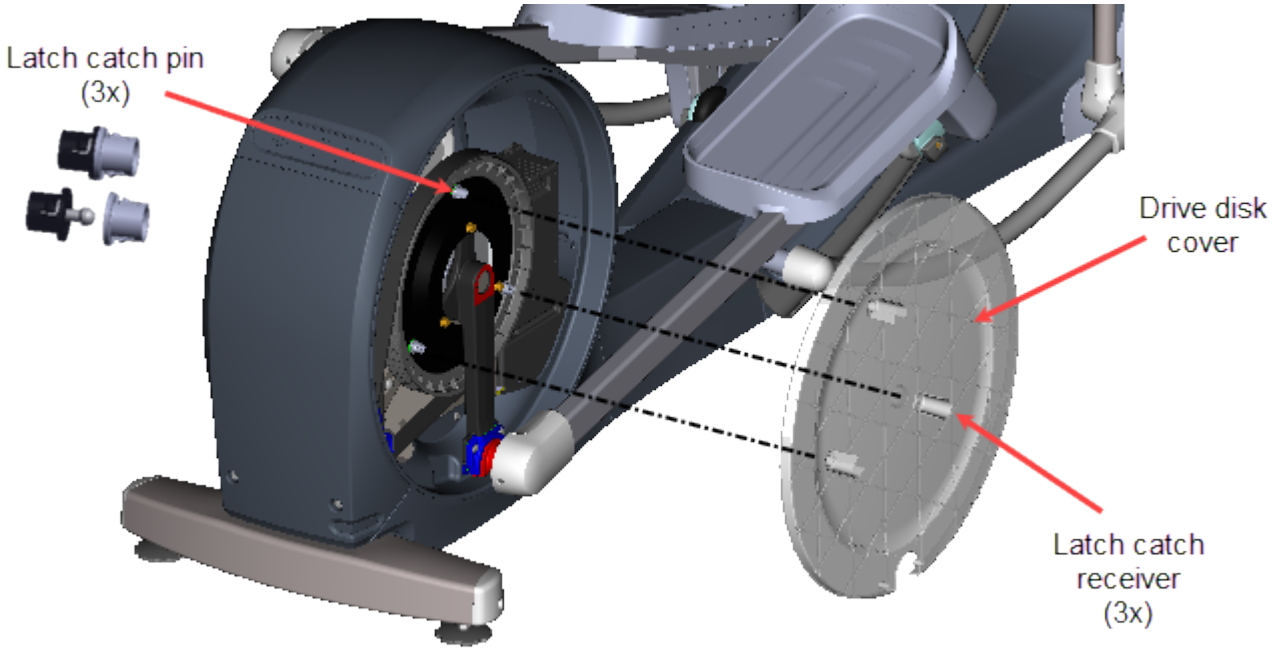
Note: Some early production units were shipped with only one disk cover crank attachment screw. When reinstalling the disk cover, order two additional screws and use two crank attachment crews per disk cover, see "Parts" on page 238, bubble # 155.

IMPORTANT: Take your time when removing the drive disk mounting screws. The access area is small and it is very easy to accidentally drop the screws down into the drive housing area. If this happens, the drive covers will need to be removed to retrieve the screw.



3. Use your hand to lightly strike the inside of the drive disk to unsnap the disk from the three latch catch pins and remove. Rotate the drive disk to position one of the three latch catch pins at the rear of the housing and then use your hand to strike the inside of the drive disk to unsnap the disk from the latch catch pin, Repeat for the two remain-

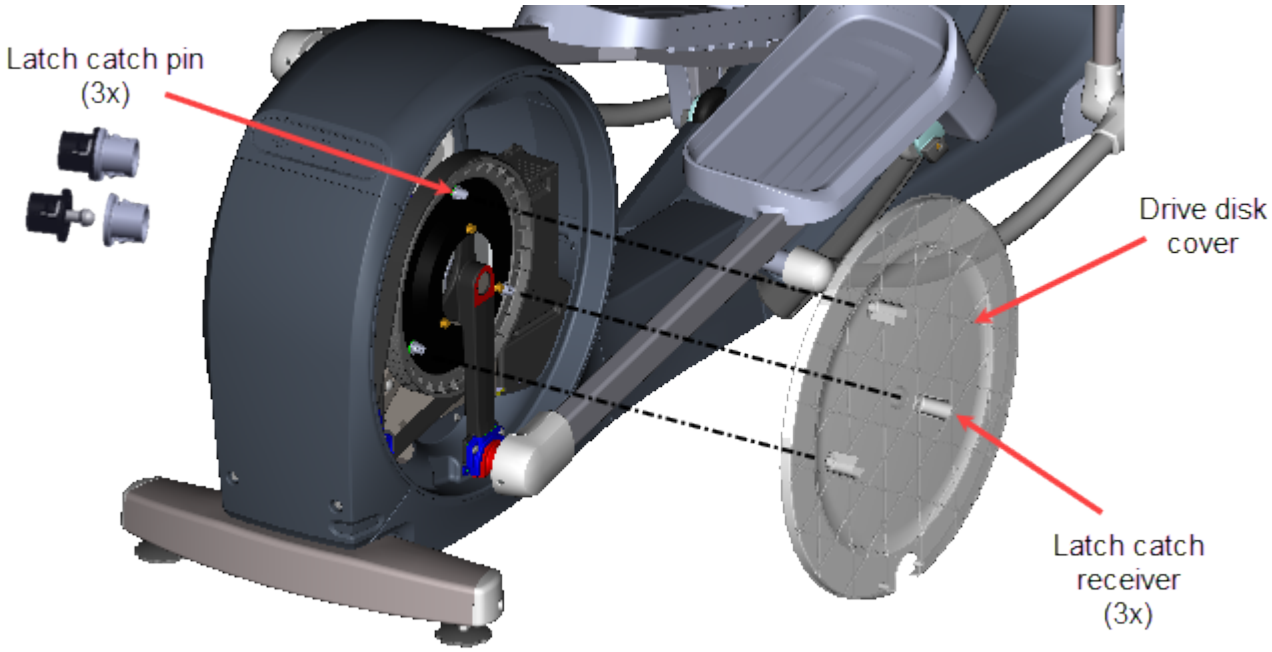
ing latch catch pins and remove the cover.



Installation Instructions

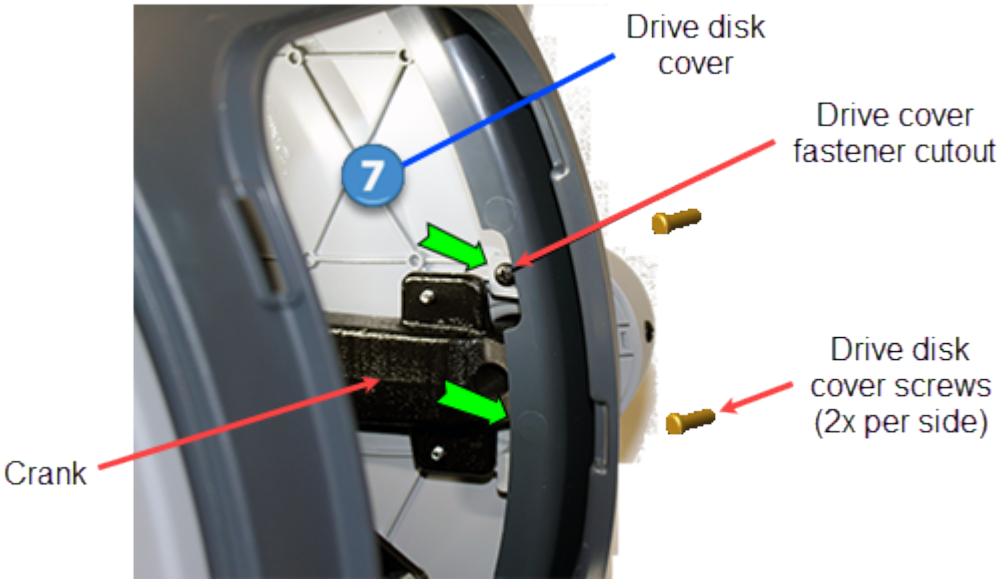
Repeat this procedure for both the right and left Drive Disk coves.

1. Position the Drive Disk cove over the crank aligning the three latch catch receivers over the latch catch pins. Then lightly strike the Drive Disk cove at each latch catch pin location to snap in place. Make sure all three latch catch pins are secure.



2. Rotate the crank until one of the two Drive Disk cove attachment screw holes can be seen through the drive cover fastener cutout. Then install the #2 Phillips screw and fully tighten. Move the crank to the second attachment screw hole and install the second screw. If the second screw is missing, order a new screw and install (two fastener screws (two per side are required), see "Parts" on page 238, bubble #155.

Note: Some early production units were shipped with only one disk cover attachment screw. Two cover crank fasteners are now required. If missing screws, order additional screw, see "Parts" on page 238, bubble #155.

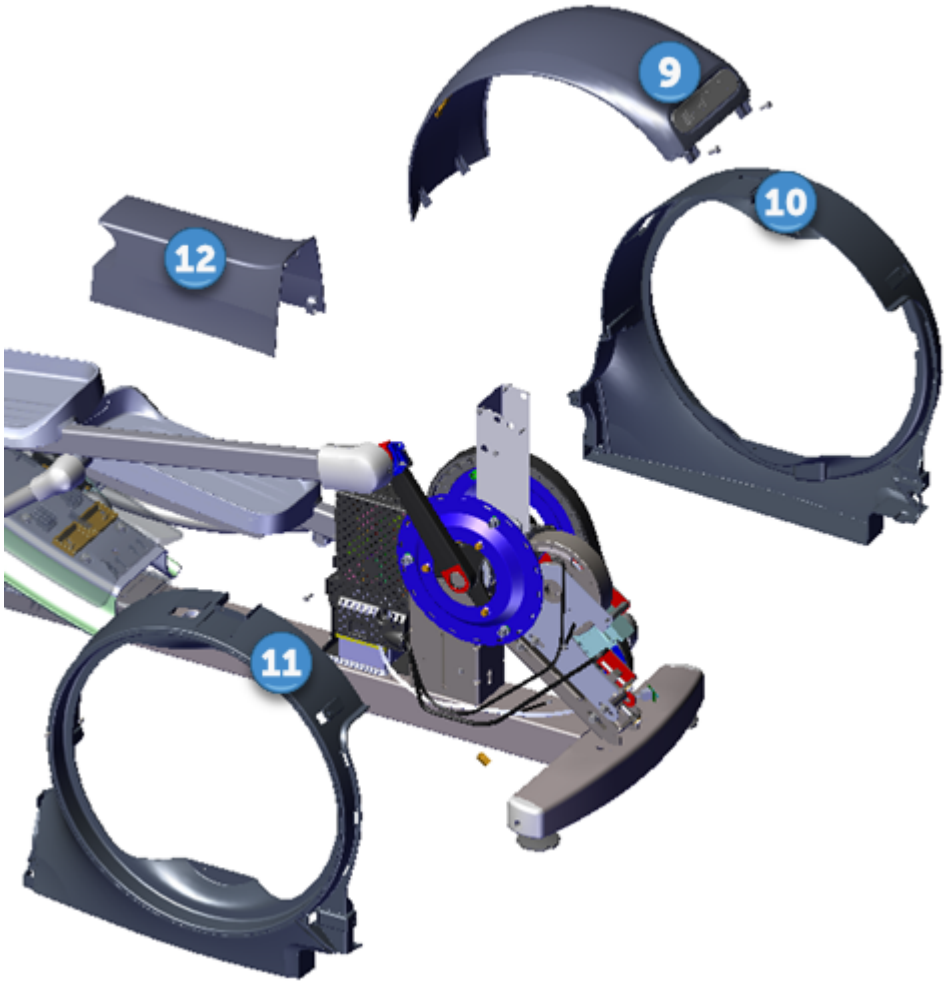


1. Reinstall the Drive Access panel, see "" on page 92.

Drive Housing Covers Replacement

>

This procedure replaces the Drive Top cover and left/right Drive Housing covers.



ID	Description
9	Drive Top Cover
10	Drive Housing Cover - Right
11	Drive Housing Cover - Left
12	Drive Ramp Transition Cover

Videos

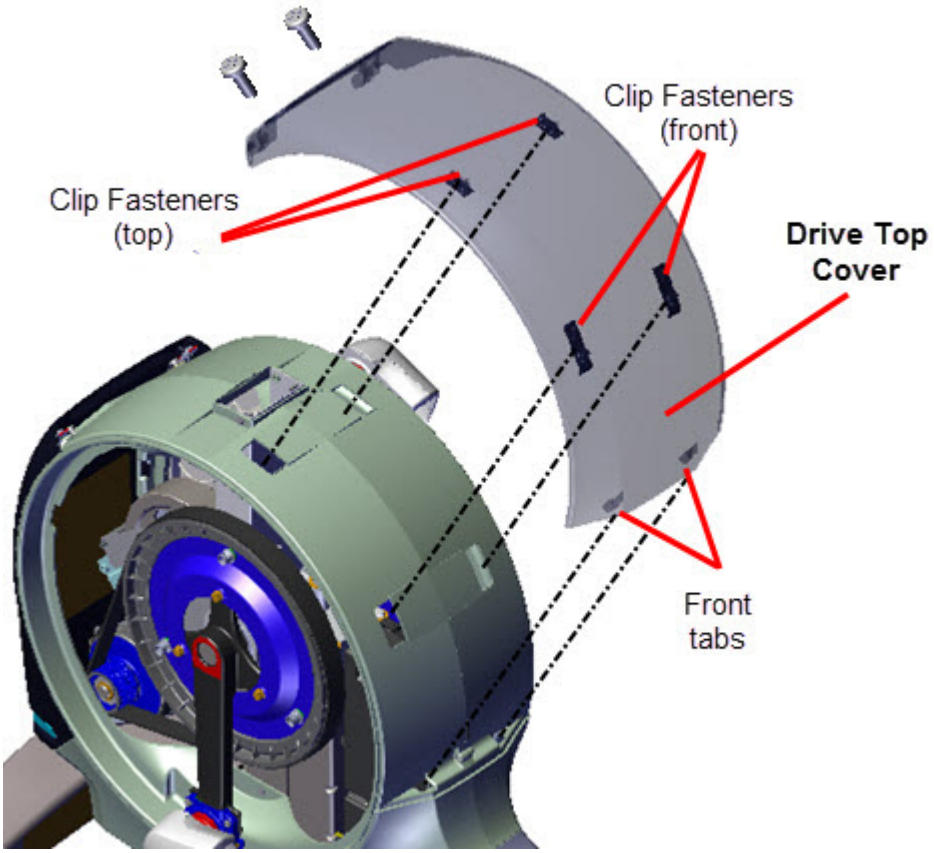
	Service Video	Link
	EFX600/700/800 Rear Drive Covers Replacement	Rear Drive Covers Removal

Procedure

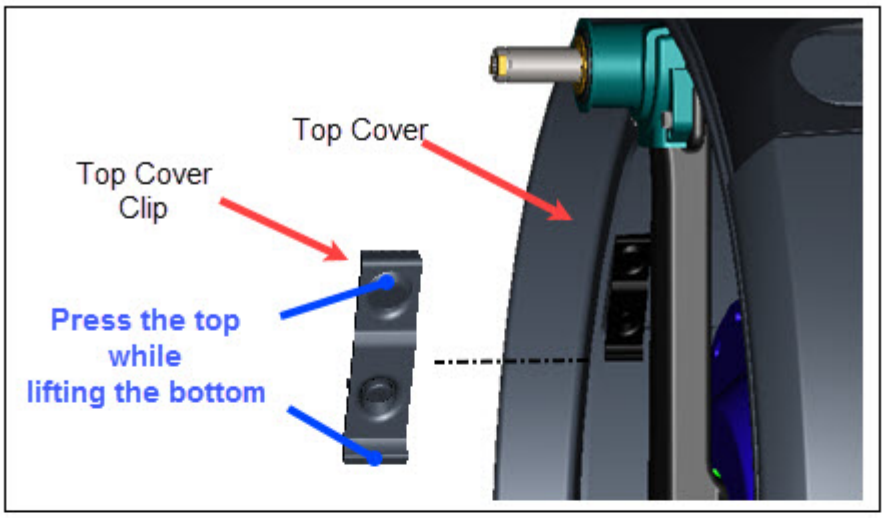
Removal Instructions

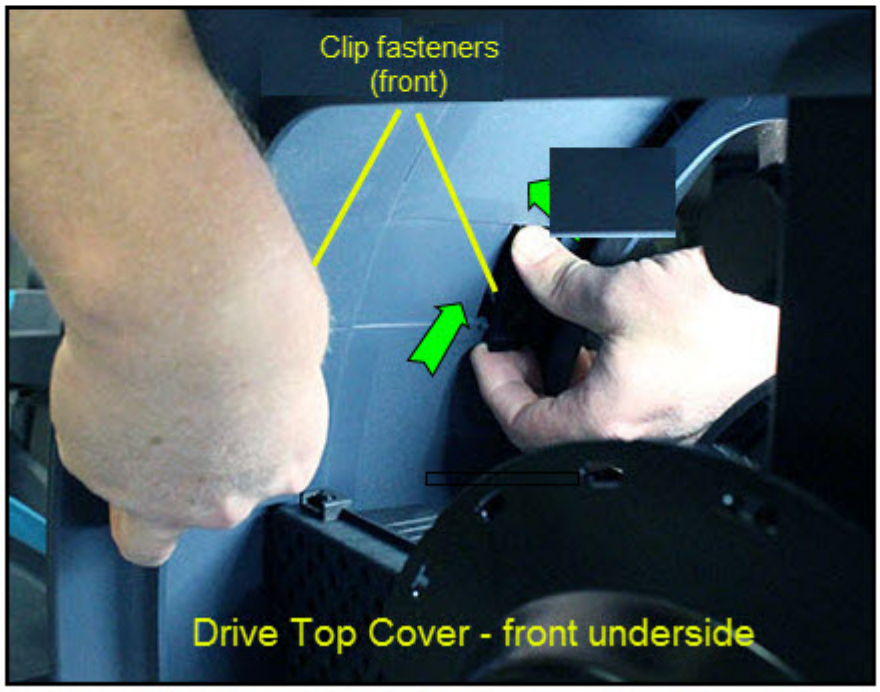
Repeat this procedure for both the right and left drive housing covers.

1. Remove the Drive Access panel, see "" on page 92.
2. Remove the left and right Drive Disk coves, see " > " on page 94.
3. Remove the left and right Stairarms off the Input Drive Cranks, see "Stairarm Replacement" on page 178.
4. Remove the drive ramp transition cover by pulling the bottom edges slightly apart and lifting upward to remove.
5. Remove the drive top cover:
    a. Remove the two top cover #3 Phillips screw fasteners. Retain part(s) and/or fastener(s) for installation.



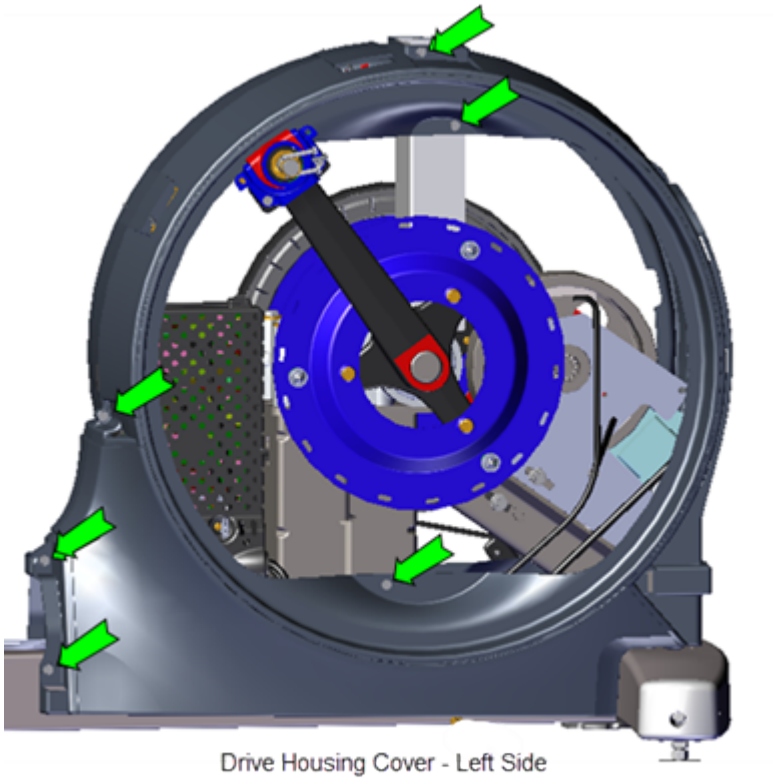
b. Straddle the rear housing and reach into the underside of the top cover to unsnap the left and right front clip fasteners. Simultaneously use your thumbs to press down on the top of the clips while using your forefingers to grab and lift upward on the bottom of the clips to release. Continue to slide the top cover forward and lift up to remove.





6. Use a 5/16" socket to remove the six screw fasteners from the left drive housing cover. Carefully slide the cover over the crank and remove. Retain part(s) and/or fastener(s) for installation.

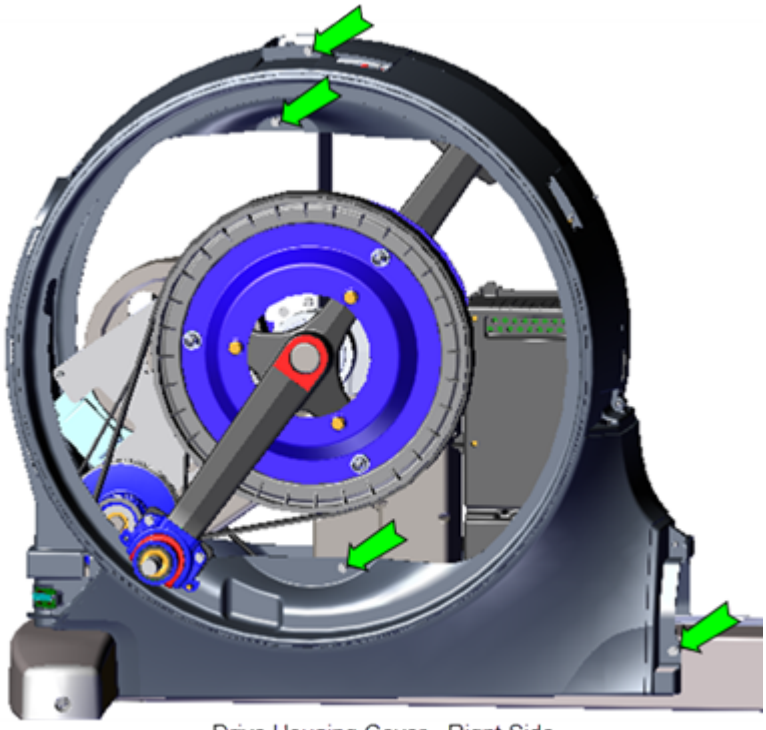
Note: The left drive housing cover must be removed prior to removing the right cover.



Drive Housing Cover - Left Side

7. Use a 5/16" socket to remove the four screw fasteners from the right drive housing cover. Unplug the **ASL**[1] light input cable. Carefully slide the cover over the crank and remove. Retain part(s) and/or fastener(s) for installation.

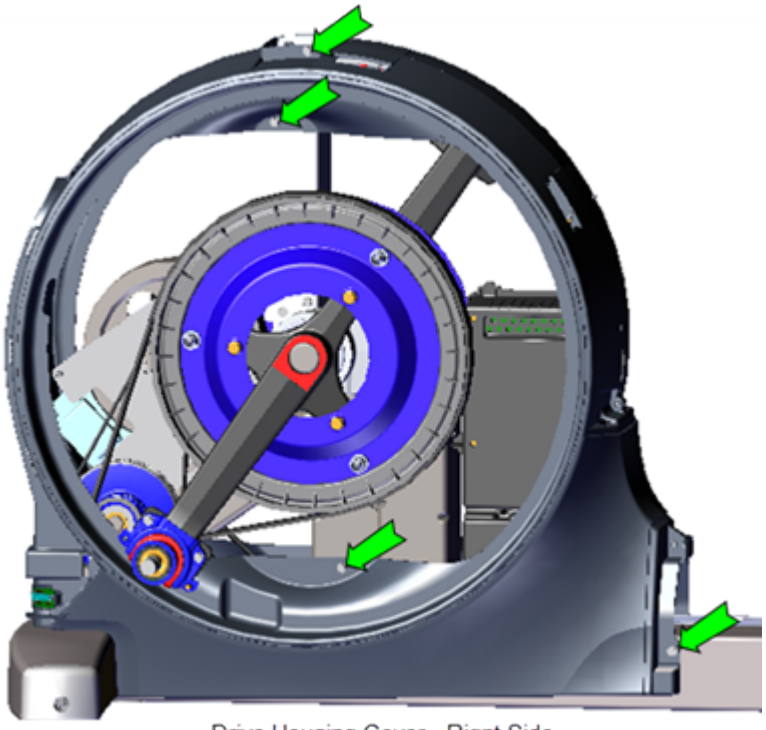
[1]Active Status Light: Service and maintenance status light.



Drive Housing Cover - Rignt Side

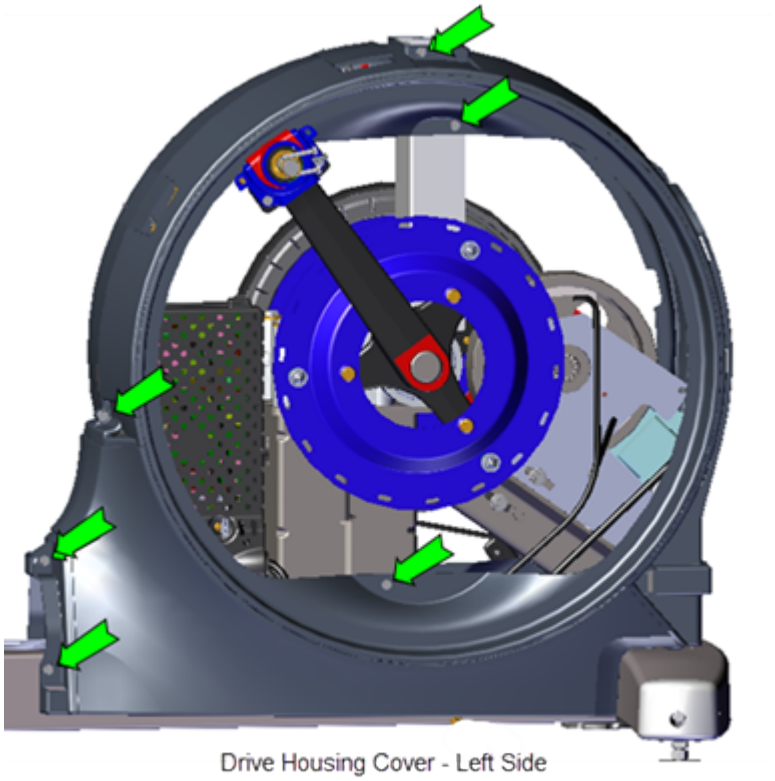
Installation Instructions

1. Carefully slide the right drive housing cover over the crank. Reconnect the ASL light input cable. Place the cover into position and use a 5/16" socket to reinstall the four screw fasteners.



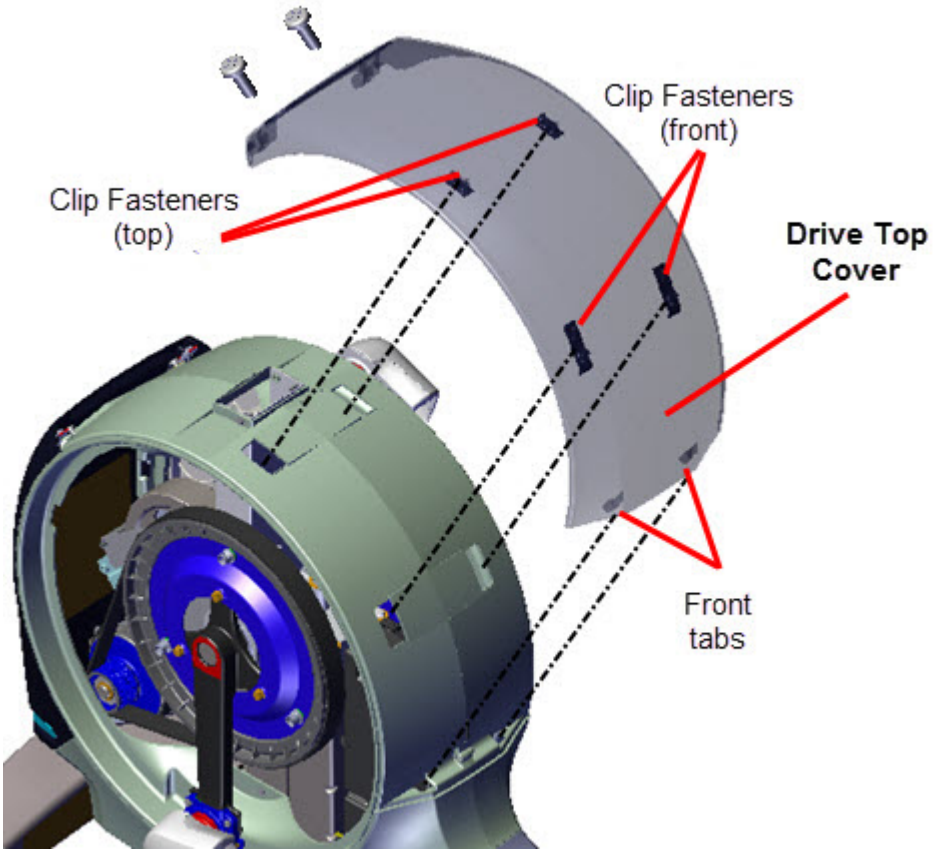
Drive Housing Cover - Rignt Side

2. Carefully slide the left drive housing cover over the crank. Place the cover into position and use a 5/16" socket to reinstall the five screw fasteners.



Drive Housing Cover - Left Side

3. Reinstall the drive top cover . Position the top cover onto the housing and while applying light pressure first insert the top housing clips and then simultaneously inserting the top cover front tabs into the front housing mounts and inserting the front clips into the front housing brackets. Make sure the top cover clips are secure and install the two #3 Phillips screw fasteners.

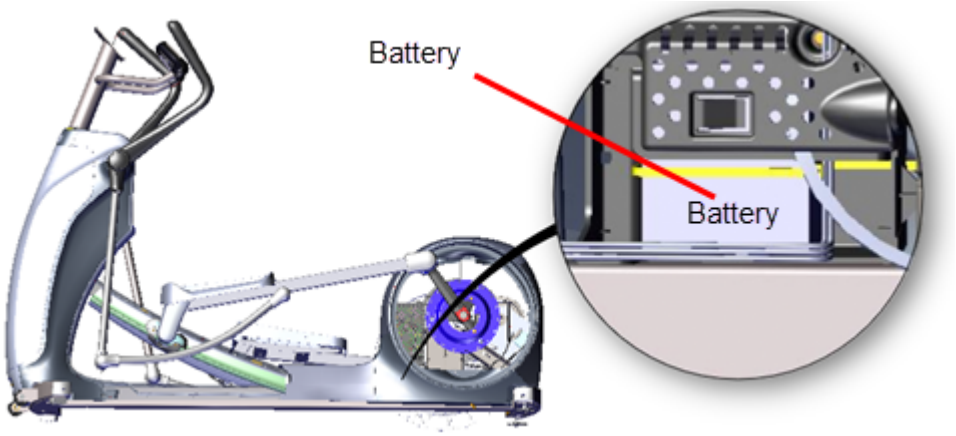


4. Reinstall the drive ramp transition cover . Press on cover to securely lock tabs in place, see "" on page 86.
5. Reinstall the left and right Stairarms onto the Input Drive Cranks, see "Stairarm Replacement" on page 178.
6. Reinstall the left and right Drive Disk coves, see " > " on page 94.
7. Reinstall the Drive Access panel, see "" on page 92.
8. Verify the machine operation and return to service.

Battery Replacement

About

This procedure provides instruction to determine the condition of the battery to remove and install the Battery.



Determining the battery condition

Use the System Tests menu **BATTERY TEST** to measure the battery voltage and determine the battery condition.

BATTERY TEST

Format	XX.X VDC YY
where	XX.X is the measured battery voltage in VDC (nominal 12.6 - 14.6 Vdc). VDC: **DC**[1] volts Y is the information suffix: C: external **AC**[2] charger connected. L: Battery is low (less than 11.4 volts). CL: Charger is connected and battery is low.

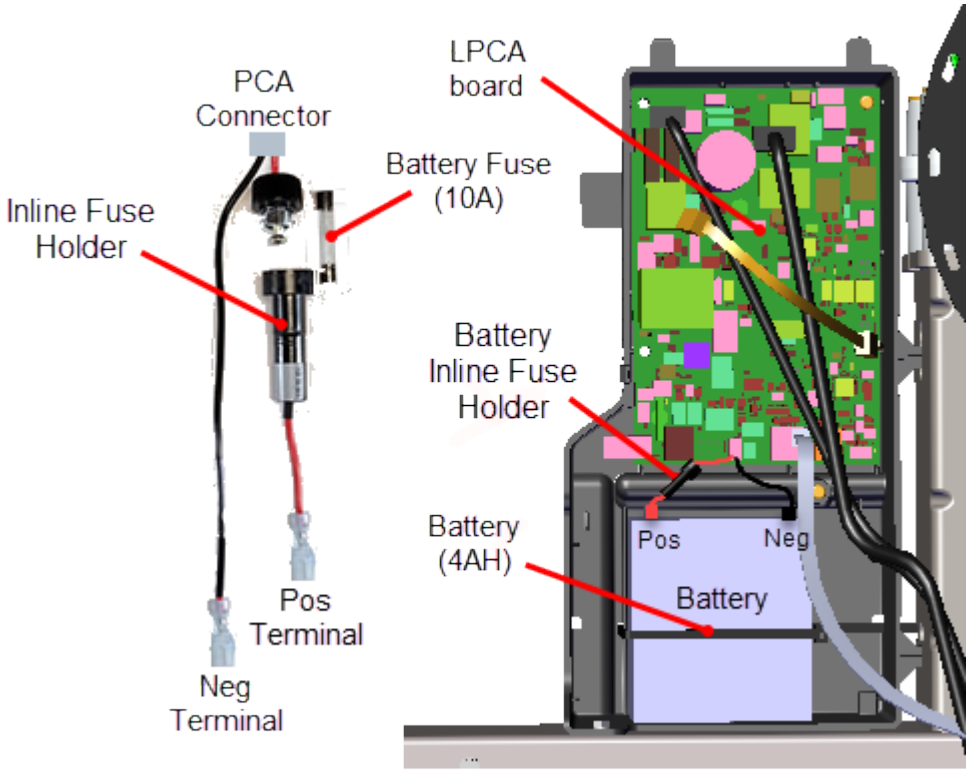
Battery Fuse

The battery inline fuse holder is part of the battery assembly cable attached to the battery positive terminal. To remove the fuse, twist the fuse holder top cap and remove.

Fuse Type: Inline 10 Amp slow blow fuse, .25" diameter

[1]Direct Current: electrical current that only flows in one direction.

[2]Alternating Current: electric current which periodically reverses direction between positive and negative polarity.



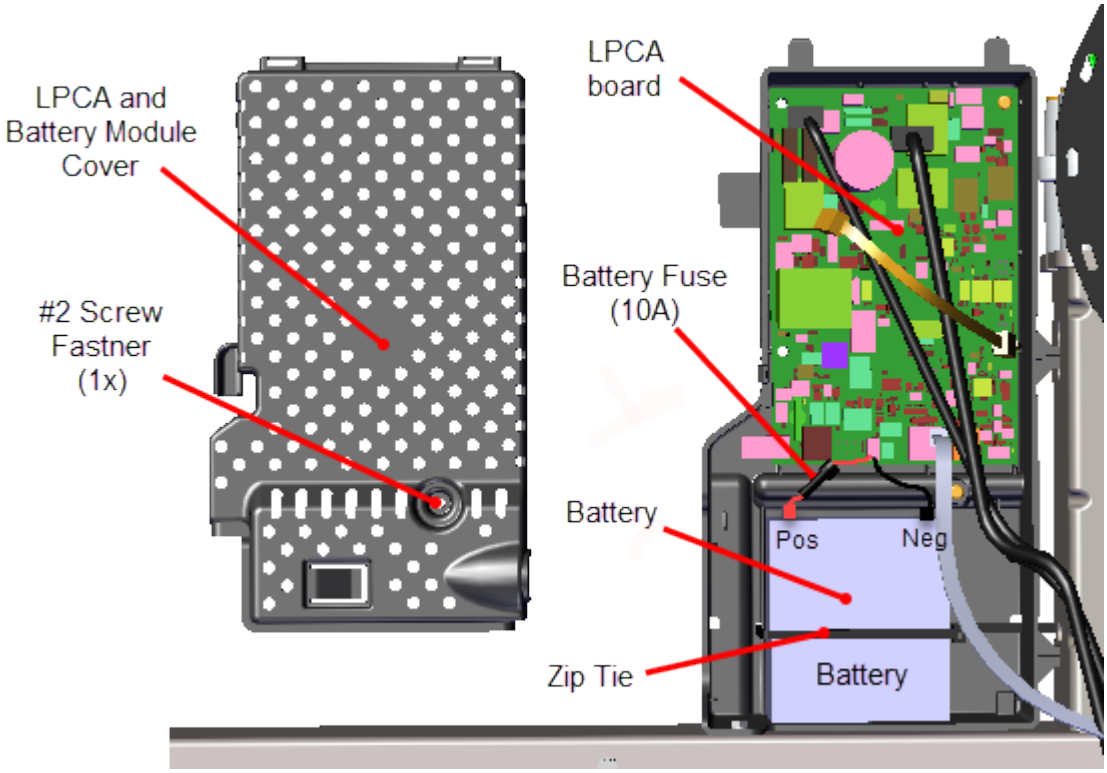
Replacement Procedure

Removal Instructions

Review entire procedure before starting.

1. Remove the left Drive Disk cove, see " > " on page 94.
2. Remove the one #2 Phillips screw fastener and **LPCA**[1]/Battery Module cover. Retain part(s) and/or fastener(s) for installation.

[1]Lower Printed Circuit Assembly board; also refered to as the Lower PCA or simply as the lower board. On treadmills, it is the console to base function interface and the motor controller unit (MCU). On self-powered units, it is the lower PCA console to base function interface.



3. Disconnect the negative battery cable (black terminal) and then the positive battery cable (red terminal).
4. If installed, cut the zip tie.
5. Remove the battery.

Installation Instructions

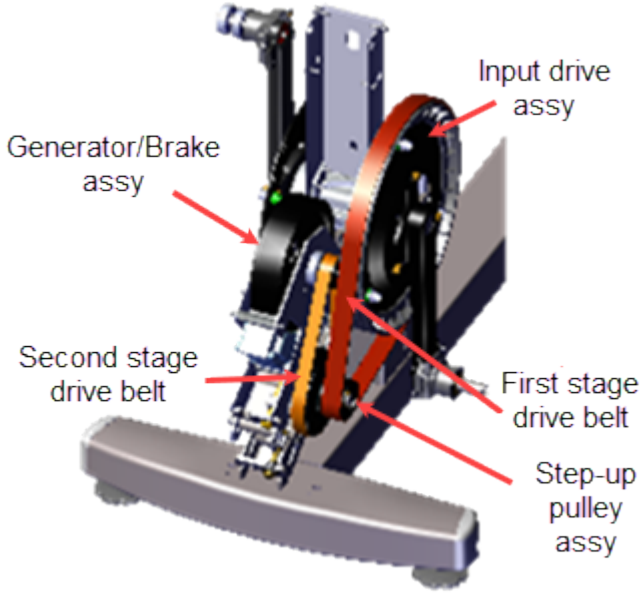
1. Reconnect the positive cable to the positive terminal (red) and then the negative battery cable to the negative terminal (black).
2. Reinstall the battery and secure with a cable zip tie.
3. Connect the positive cable to the battery red terminal. Make sure the positive cable remains securely connected thru the inline fuse to the LPCA board.
4. Connect the negative cable to the battery black terminal. Make sure the negative wire remains securely connected to the frame weldment.
5. Reinstall the LPCA/Battery module cover using the one #2 Phillips screw.
6. Reinstall the left Drive Disk cove, see " > " on page 94.
7. Verify machine operation and return to service, see Operation Verification.

First Stage Drive Belt Replacement

About

This procedure provides instruction to remove and install the First Stage Drive Belt.

A Two Stage Input Drive system utilize a two stage drive belt system, a first stage drive belt and second stage drive belt, that uses a Step-up Pulley/Tensioner assembly to connect the input drive assembly to the generator/brake assembly. Always adjust the first stage drive belt first and then the second stage drive belt.



Specifications

System Component	Specification
First Stage Belt Drive Tension - New(1)	140-150 lbs (63.5 - 68 kgs)
First Stage Belt Drive Tension - Used(1)	125 - 135 lbs (56.7 - 61 Kgs)
Drive Component Assy Carriage Bolts	110-120 lbs (50- 54.4 kgs)
(1) New belt tension applies to new belt first time installations. Used belt tension applies to reinstalling an existing belt or when re-tensioning an existing used belt.	

Videos

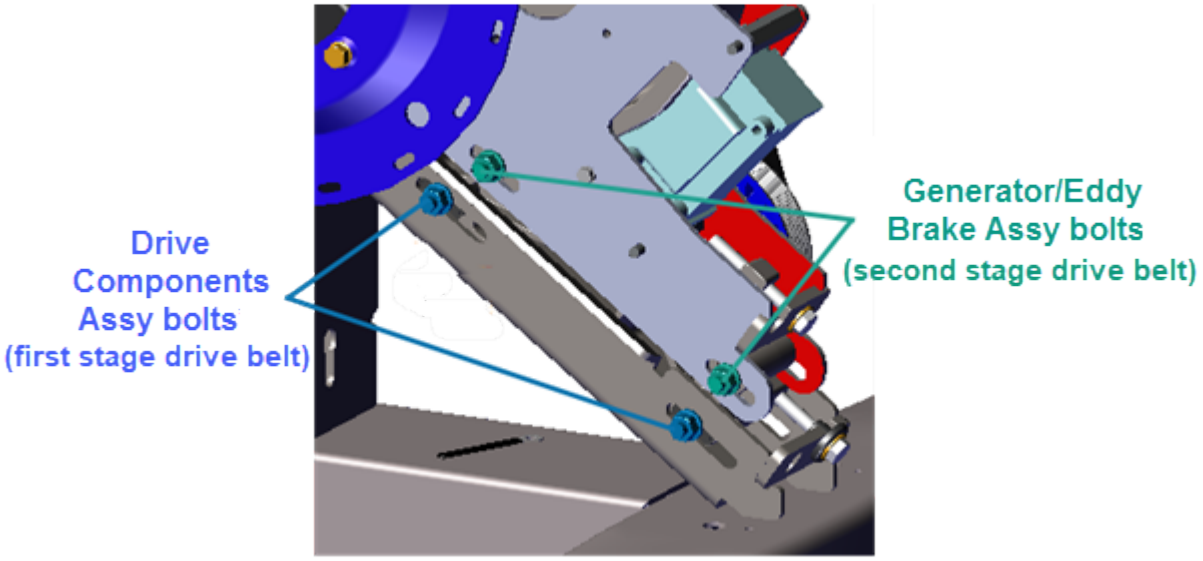
	Service Video	Link
	EFX600/700/800 Dual Stage Input Drive Belt Tension Verification	EFX600/700/800 Dual Stage Input Drive Belt Tension Verification

Procedure

Review entire procedure before starting.

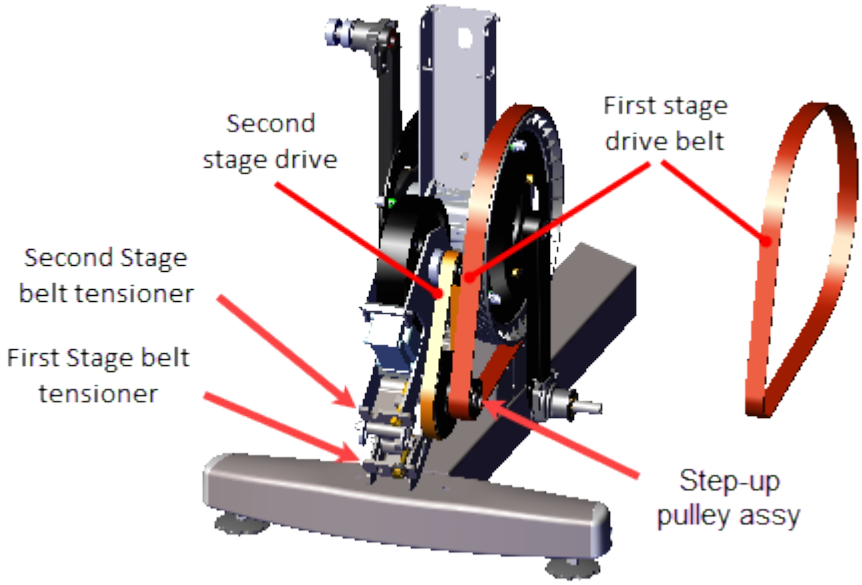
Removal Instructions

1. Remove the Drive Access panel, see "" on page 92.
2. Remove the right and left Drive Disk coves, see " > " on page 94.
3. Remove the right Stairarm, see "Stairarm Replacement" on page 178.
4. Use a 1/2" socket to loosen the two Drive Components assembly carriage bolt nuts (left side) just enough to allow movement. Do not remove the fastener nuts.



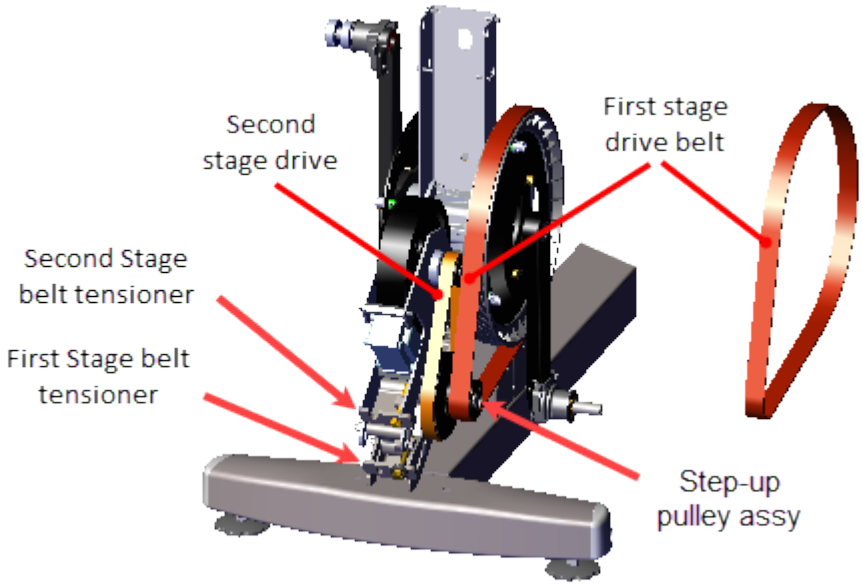
5. Use a 1/2" socket to loosen first stage belt tensioner and walk the first stage drive belt off the input drive and smaller Step-up Pulley/Tensioner assembly pulleys. Remove

the first stage drive belt.



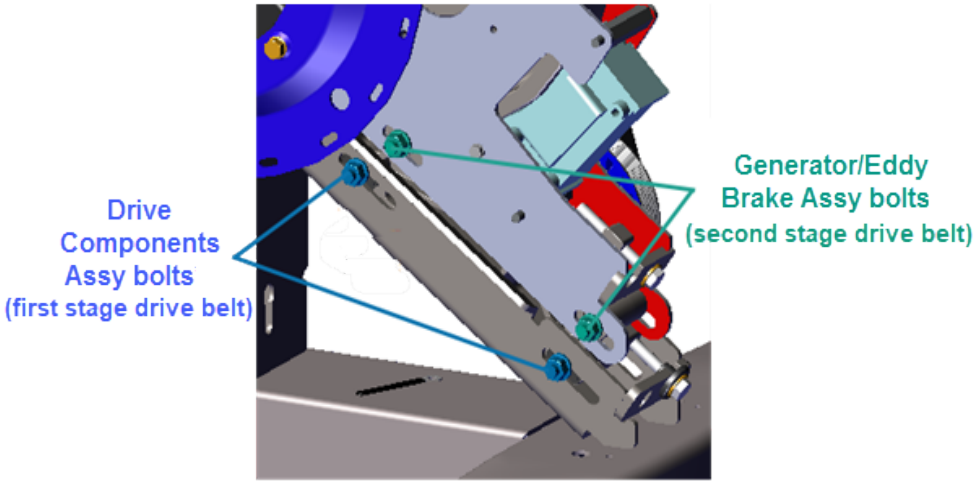
Installation Instructions

1. Install the first stage drive belt by walking the belt onto the Input drive and the smaller first stage Step-up Pulley/Tensioner assembly pulleys. Adjust the First Stage Tensioner enough to hold the tensioner and belt in place. Rotate the crank and make sure that the belt is properly aligned and seated in the pulley grooves.



2. Adjust the first stage drive belt tension to specification, see "First Stage Drive Belt Tension Adjustment" on page 55.

3. Use a 1/2" socket to fully tighten the two Drive Components assembly bolts. **Torque**[1] bolts to 180 in-lbs +/- 54 (20.3 +/_ 4.5 Nm).



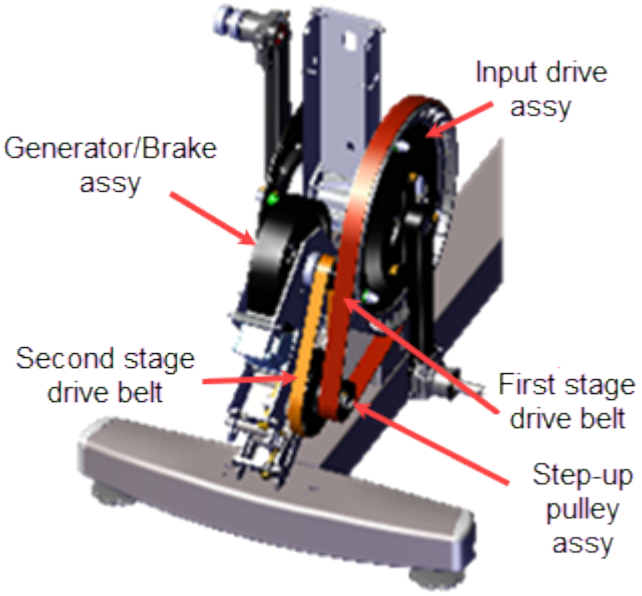
4. Verify that the second stage drive belt is within the specified tension, see "Second Stage Drive Belt Tension Adjustment" on page 59. Retention the belt if not within specification.
5. Reinstall the right Stairarm, see "Stairarm Replacement" on page 178.
6. Reinstall the right and left Drive Disk coves, see " > " on page 94.
7. Reinstall the Drive Access panel, see "" on page 92.
8. Verify machine operation and return to service, see Operation Verification.

[1]Torque is a measure of the force that can cause an object to rotate about an axis. Bolt/nut example: 5 NM torque is equivalent to 5 newton's of force applied one meter from the center of the bolt, 6 ft-lb is equivalent to 6 lbs of force applied 1 foot away from the center of the bolt.

Second Stage Drive Belt Replacement

About

This procedure provides instruction to remove and install the Second Stage Drive Belt for a Dual Stage Input Drive Assembly.



Specifications

System Component	Specification
Second Stage Belt Drive Tension - New (1)	110-120 lbs (50- 54.4 kgs)
Second Stage Belt Drive Tension - Used(1)	92 - 105 lbs (43 - 47.6 kgs)
Drive Component Assy Carriage Bolts	180 in-lbs (20.3 Nm)
(1) New belt tension applies to new belt first time installations. Used belt tension applies to reinstalling an existing belt or re-tensioning an existing used belt.	

Videos

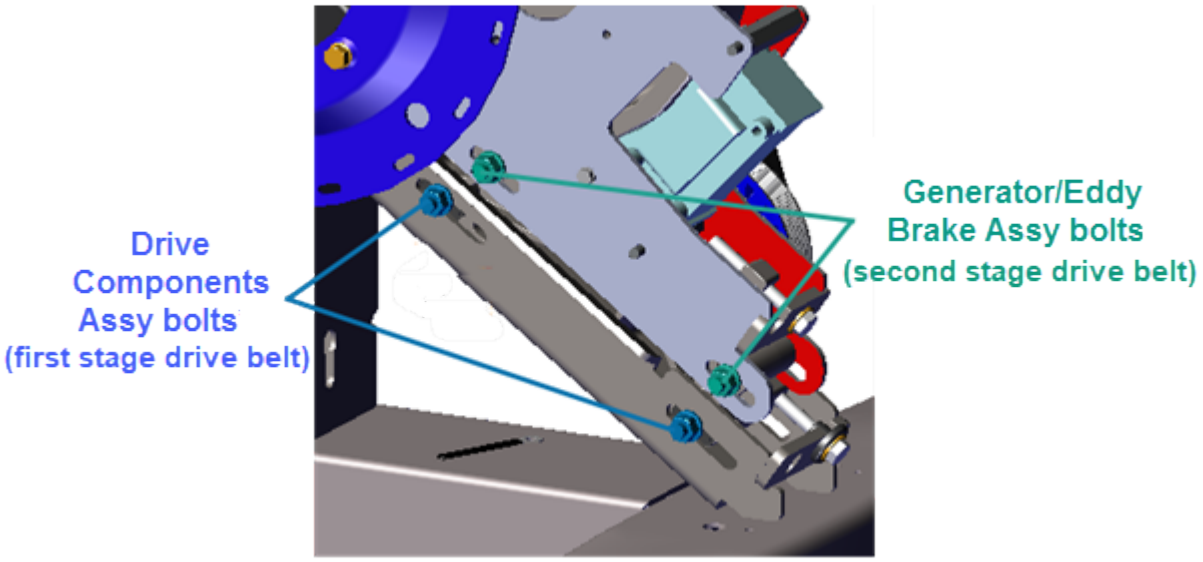
	Service Video	Link
	EFX600/700/800 Dual Stage Input Drive Belt Tension Verification	EFX600/700/800 Dual Stage Input Drive Belt Tension Verification

Procedure

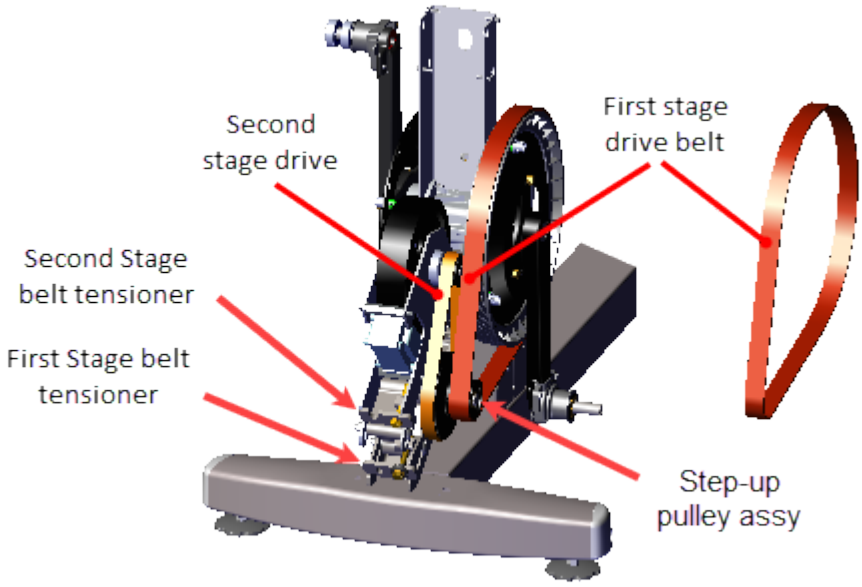
Review entire procedure before starting.

Removal Instructions

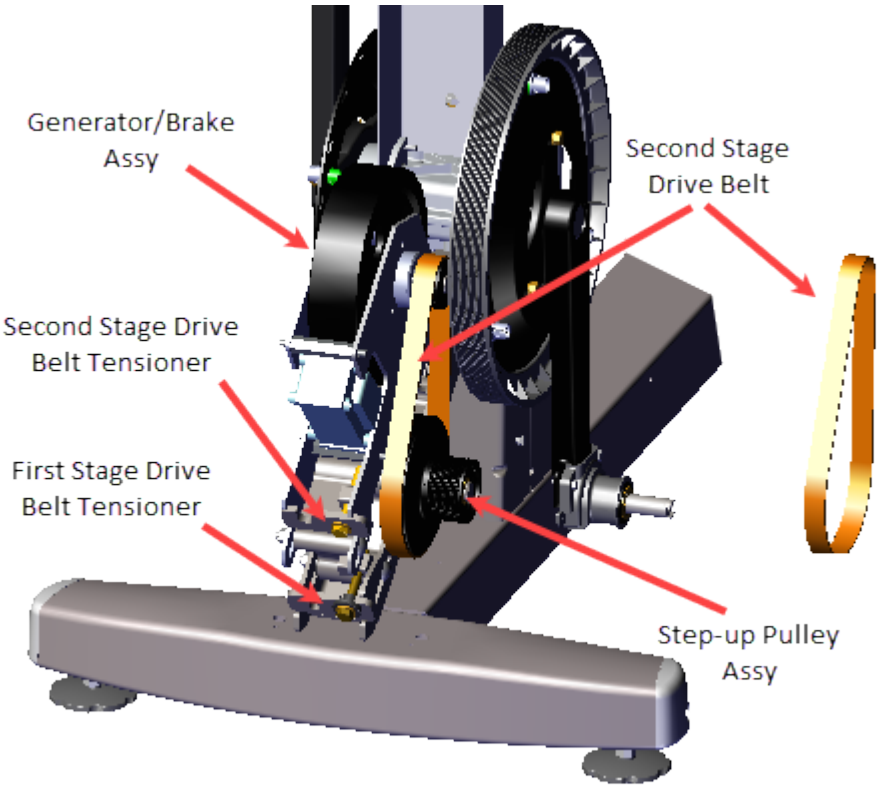
1. Remove the Drive Access panel, see "" on page 92.
2. Remove the right and left Drive Disk coves, see " > " on page 94.
3. Remove the right Stairarm, see "Stairarm Replacement" on page 178.
4. Use a 1/2" socket to loosen the two Generator/Eddy Brake assembly and the two Drive Components assembly carriage bolt nuts (left side). Loosen the nuts just enough to allow movement but keep the carriage bolt heads inserted into the adjustment slots. Do not remove the fastener nuts.



5. Use a 1/2" socket to loosen the first stage belt tensioner and walk the first stage drive belt off the input drive and smaller Step-up Pulley/Tensioner assembly pulleys. Remove the first stage drive belt.

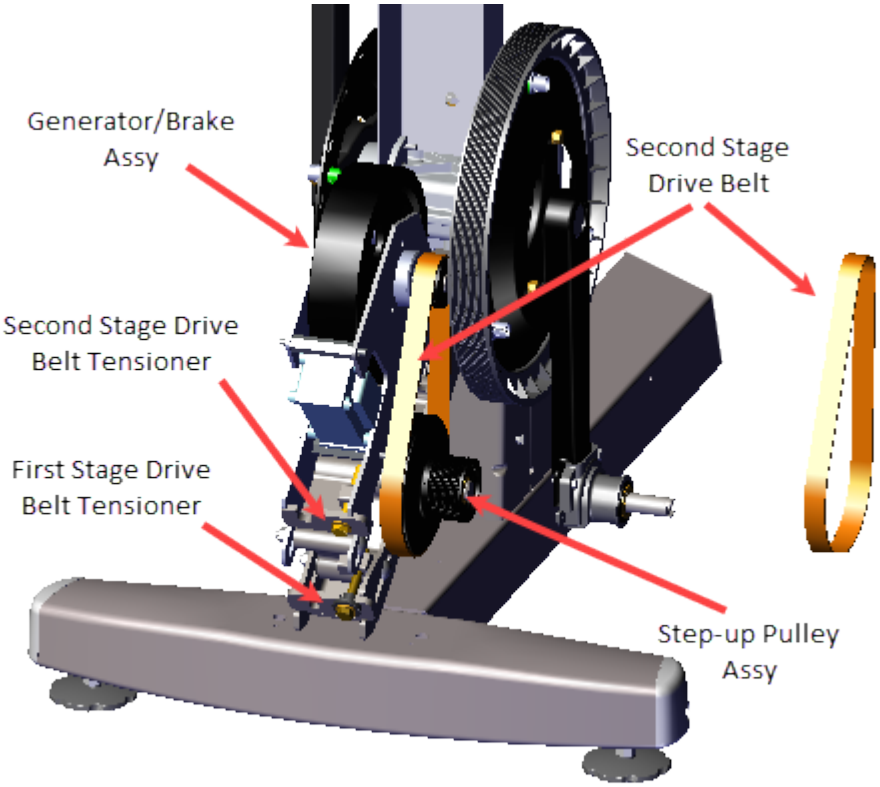


6. Use a 1/2" socket to loosen the second stage belt tensioner and walk the second stage drive belt off the Generator/Eddy Brake and larger Step-up Pulley/Tensioner assembly pulleys. Remove the second stage drive belt.

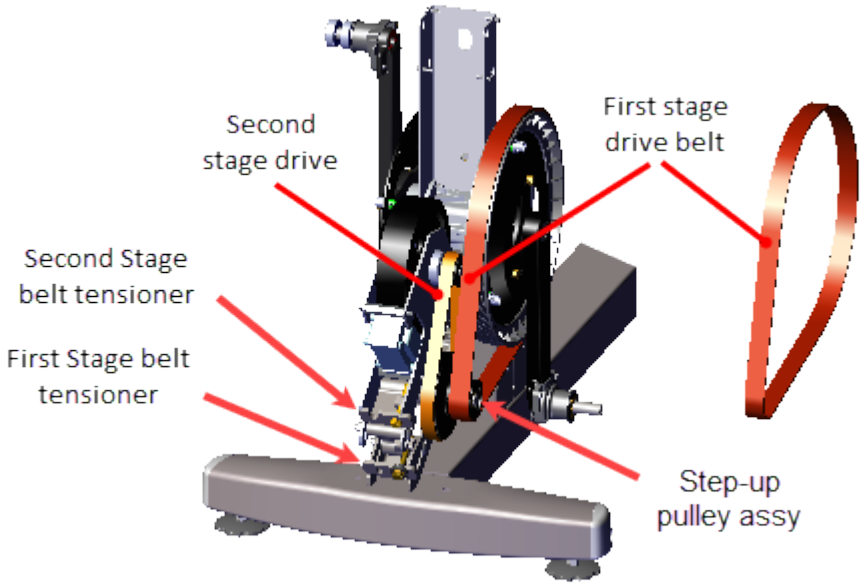


Installation Instructions

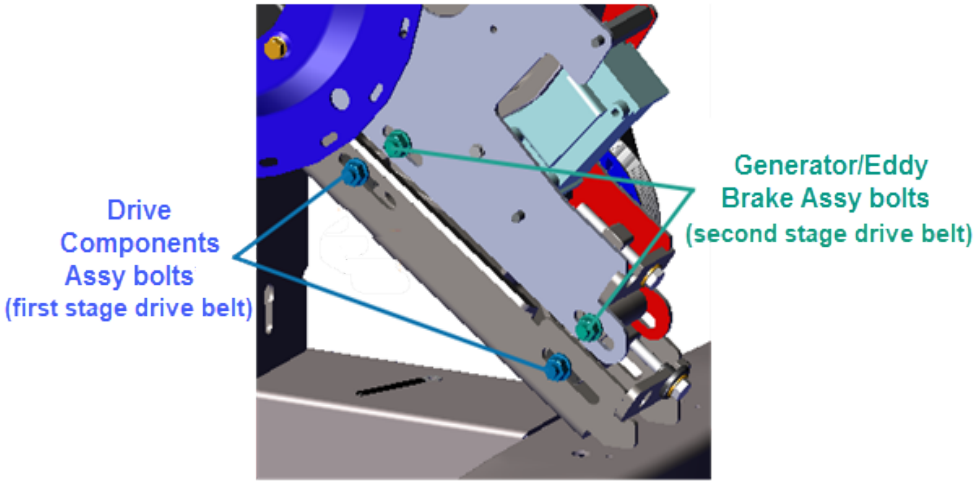
1. Install the second stage drive belt by walking the belt onto the Generator/Brake assembly and larger second stage Step-up Pulley/Tensioner assembly pulleys. Rotate the crank and make sure that the belt is properly aligned and seated on both pulley grooves. Adjust the second stage tensioner just enough to hold the tensioner mechanism and belt in place.



2. Install the first stage drive belt by walking the belt onto the input drive and smaller first stage step-up pulleys. Rotate the crank and make sure that the belt is properly aligned and seated in the pulley grooves. Adjust the first stage tensioner just enough to hold the tensioner mechanism and belt in place.



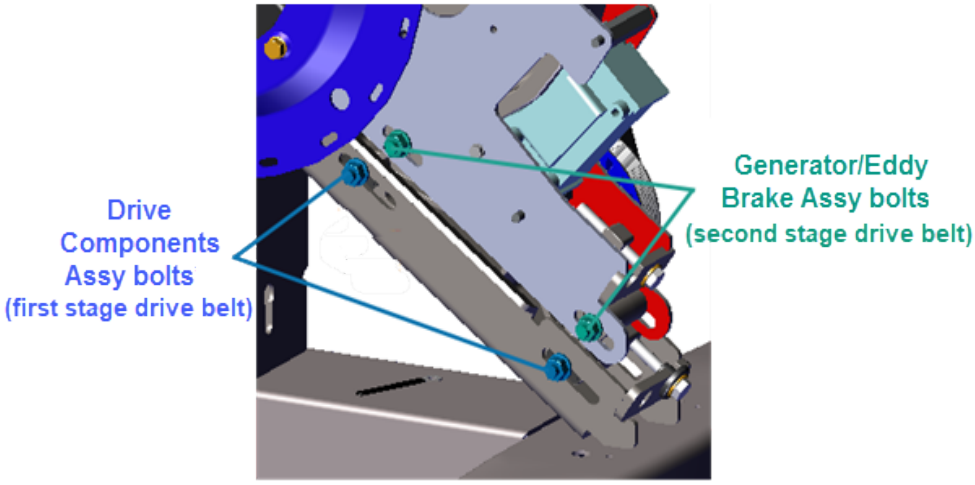
3. Adjust the first stage drive belt tension to specification, see "First Stage Drive Belt Tension Adjustment" on page 55 .
4. Use a 1/2" socket to fully tighten the two Drive Components assembly bolts. **Torque**[1] bolts to 180 in-lbs +/- 54 (20.3 +/_ 4.5 Nm).



5. Adjust the second stage drive belt tension to specification, see "Second Stage Drive Belt Tension Adjustment" on page 59.

[1]Torque is a measure of the force that can cause an object to rotate about an axis. Bolt/nut example: 5 NM torque is equivalent to 5 newton's of force applied one meter from the center of the bolt, 6 ft-lb is equivalent to 6 lbs of force applied 1 foot away from the center of the bolt.

6. Use a 1/2" socket to tighten the two Generator/Eddy Brake assembly and the two Drive Components assembly carriage bolts. Torque both bolts to 180 in-lbs +/- 54 (20.3 +/_ 4.5 Nm).

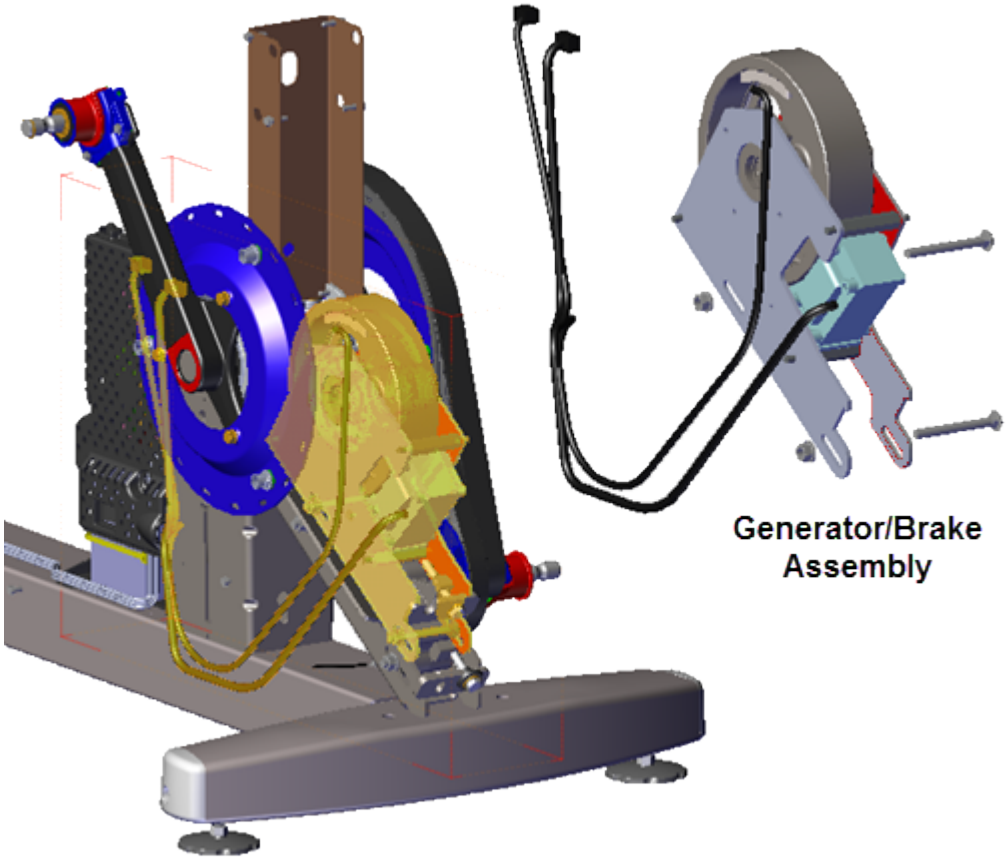


7. Reinstall the right Stairarm, see "Stairarm Replacement" on page 178.
8. Reinstall the right and left Drive Disk coves, see " > " on page 94.
9. Reinstall the Drive Access panel, see "" on page 92,
10. Verify machine operation and return to service, see Operation Verification.

Generator/Eddy Brake assembly Replacement

About

This procedure provides instruction to remove and install the Generator/Eddy Brake assembly.



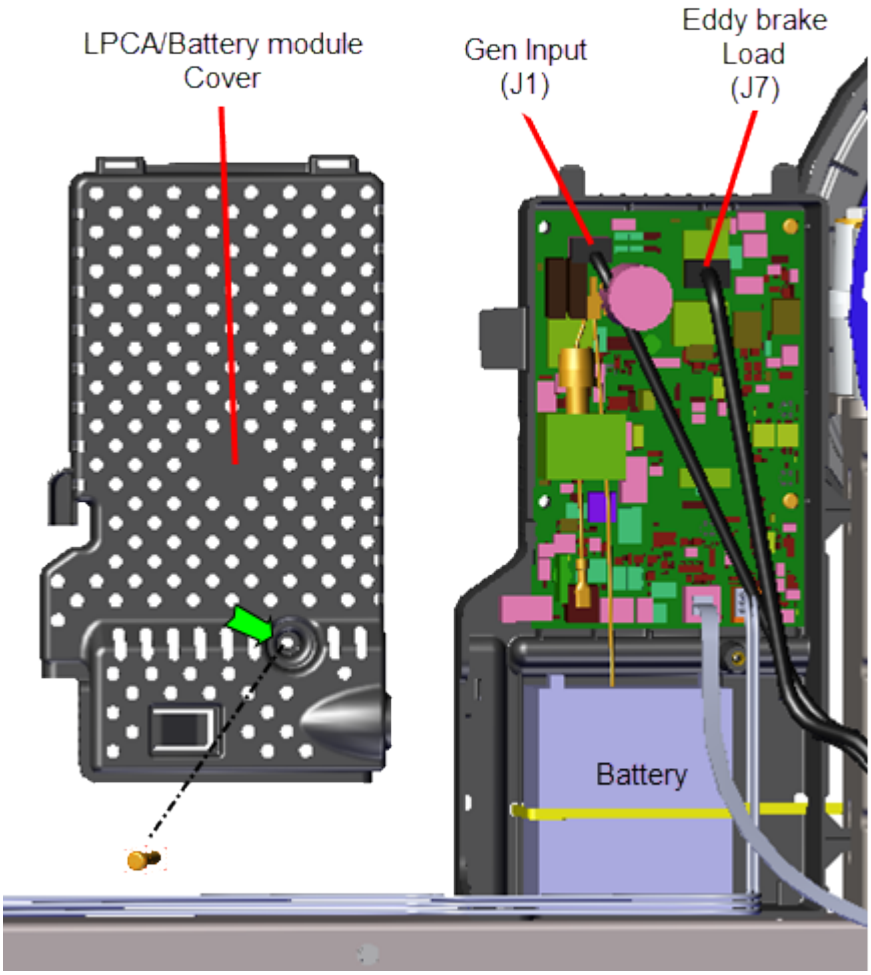
Procedure

Review entire procedure before starting.

Removal Instructions

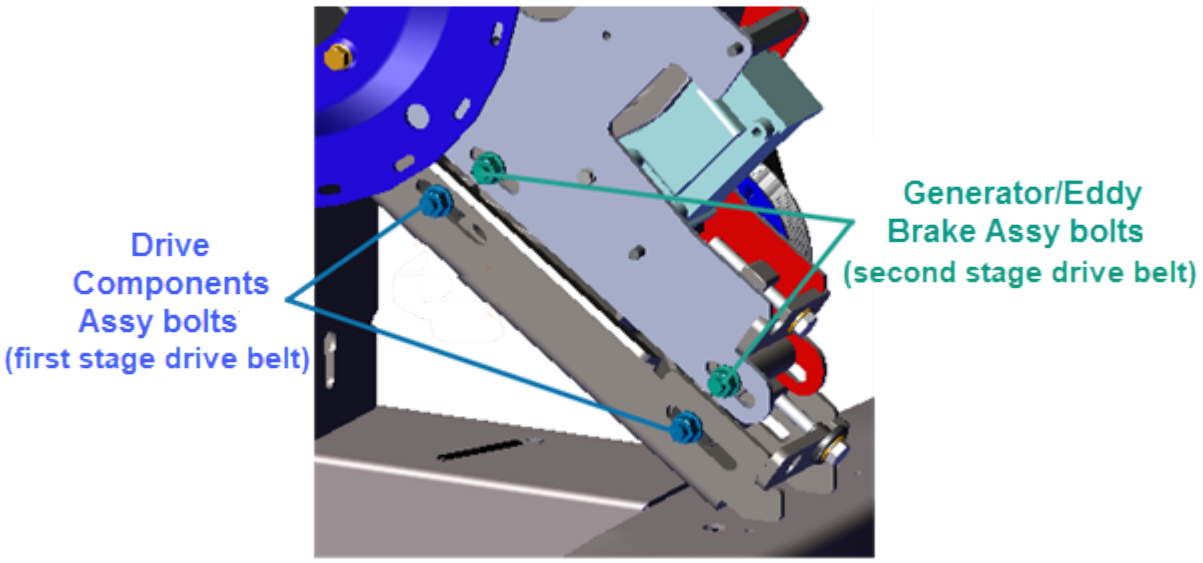
1. Remove the Drive Access cover, see "" on page 92.
2. Remove the left and right Drive Disk covers, see " > " on page 94.
3. Remove the left and right Stairarms from the Input Crank, see "Removing the Stair-arm from the Input Drive Crank" on page 180.
4. Remove the Drive Top and left/right Drive Housing covers see " > " on page 98.

5. Remove the one #2 Phillips screw fastener and **LPCA**[1]/Battery module cover. Disconnect the Generator input cable (J1) and Eddy/Brake load cable (J7) from the LPCA board. Retain part(s) and/or fastener(s) for installation.

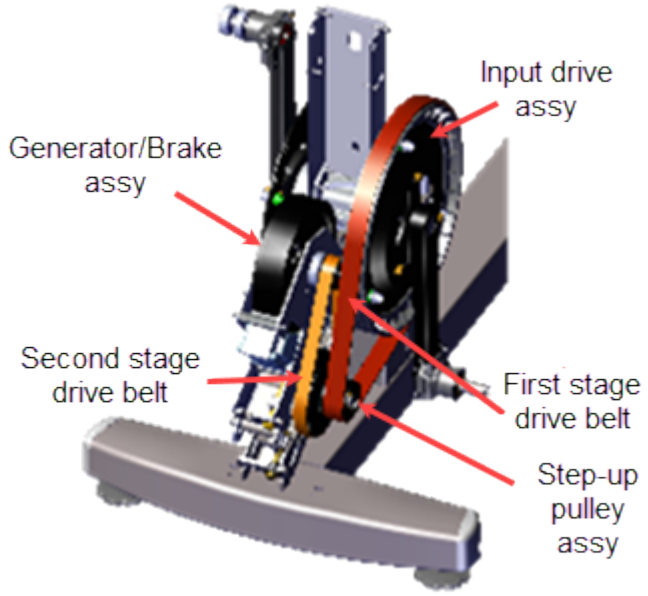


6. Use a 1/2" socket to loosen the two Generator/Eddy Brake assembly carriage bolt nuts and the two Drive Components assembly carriage bolt nuts (left side). Do not remove the fastener nuts.

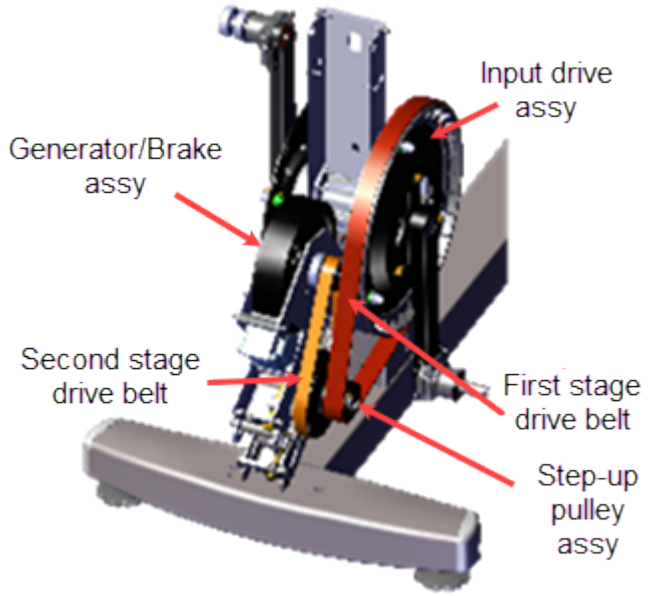
[1]Lower Printed Circuit Assembly board; also refered to as the Lower PCA or simply as the lower board. On treadmills, it is the console to base function interface and the motor controller unit (MCU). On self-powered units, it is the lower PCA console to base function interface.



7. Use a 1/2" socket to loosen the first stage belt tensioner and walk the first stage drive belt off the smaller first stage Step-up Pulley. Rest the belt on the input drive pulley, it is not necessary to remove the belt from the input drive.

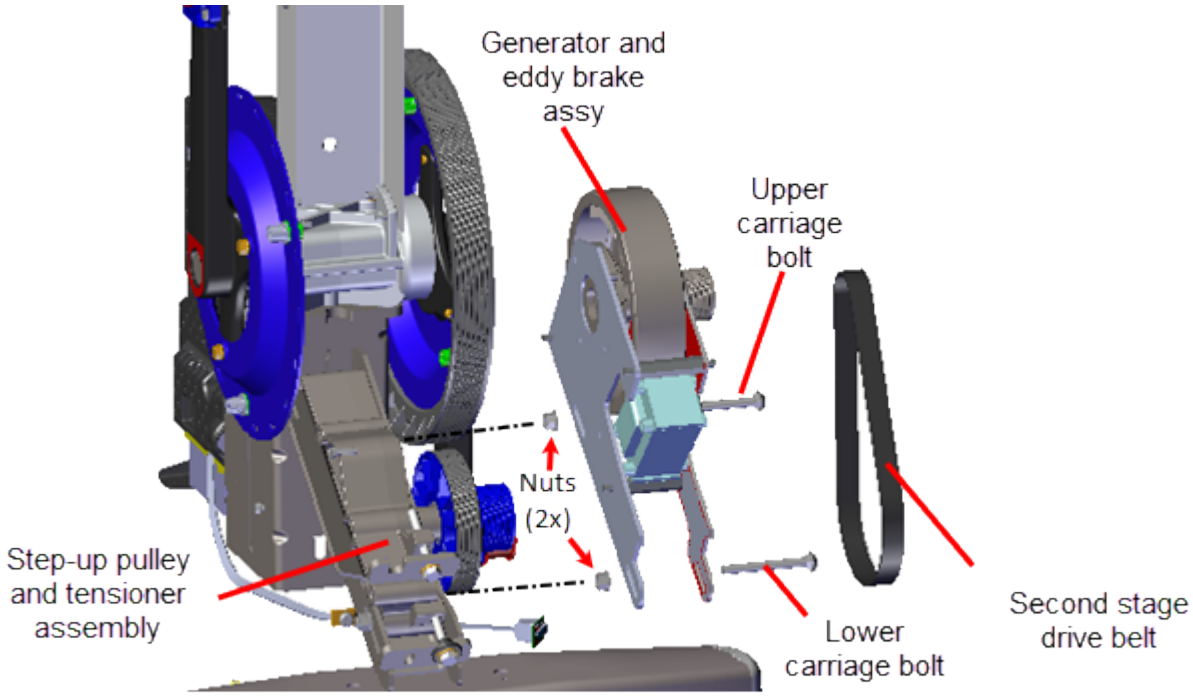


8. Use a 1/2" socket to loosen the second stage belt tensioner and walk the second stage drive belt off the Generator/Eddy Brake assembly pulley and larger second stage Step-up Pulley/Tensioner assembly pulley. Remove the second stage drive belt. Retain belt for installation.



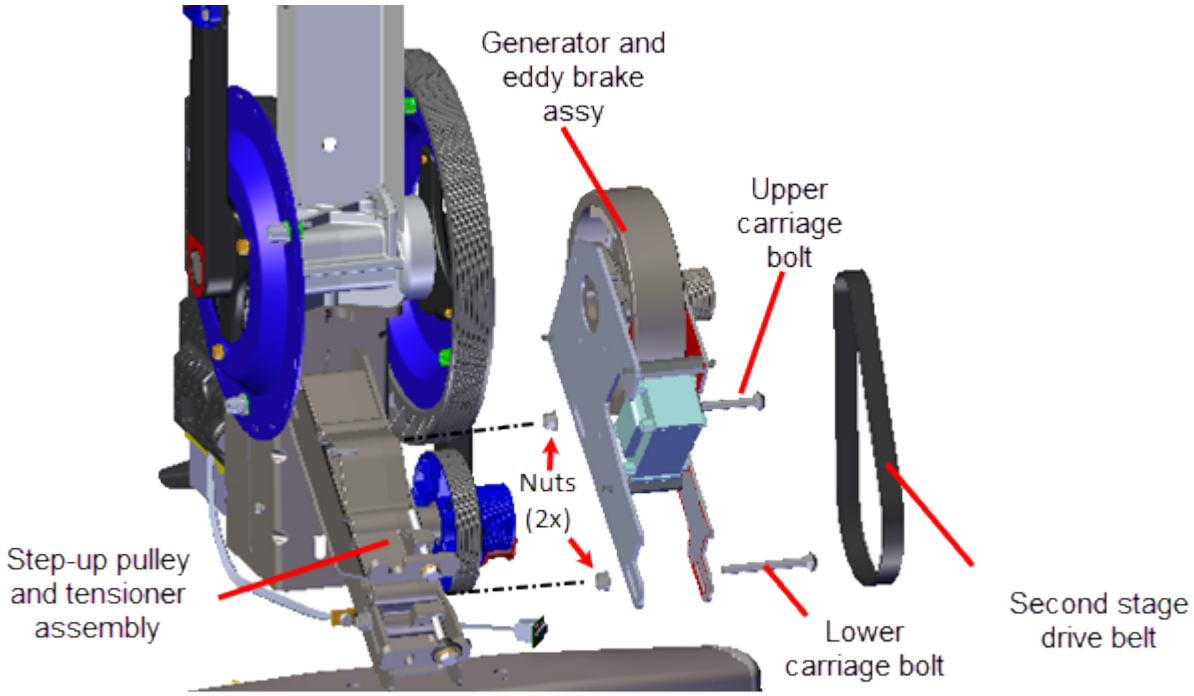
9. Use a 1/2" socket to remove the Generator/Eddy Brake assembly lower carriage bolt. Then slide the Generator/Eddy Brake assembly downward and remove the upper carriage bolt. Remove the Generator/Eddy Brake assembly from the Step-up Pulley/Tensioner assembly. Retain part(s) and/or fastener(s) for installation.

TIP: Remove the lower carriage bolt fastener first and then the upper. The upper bolt cannot be removed while the lower bolt is installed.



Installation Instructions

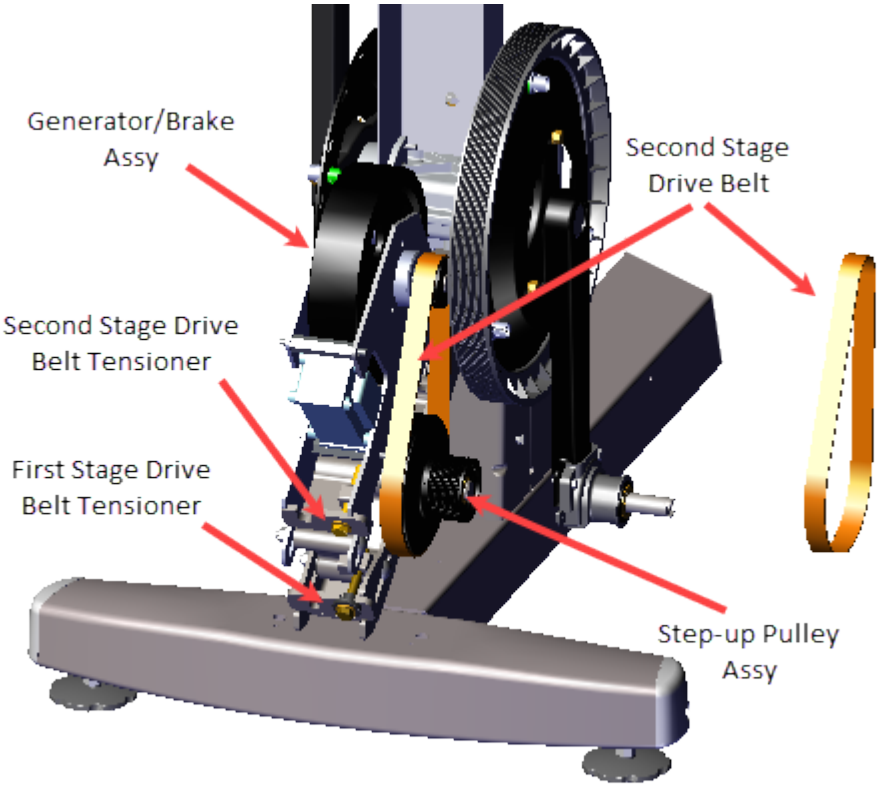
1. Position the Generator/Eddy Brake assembly onto the Step-up Pulley/Tensioner assembly.



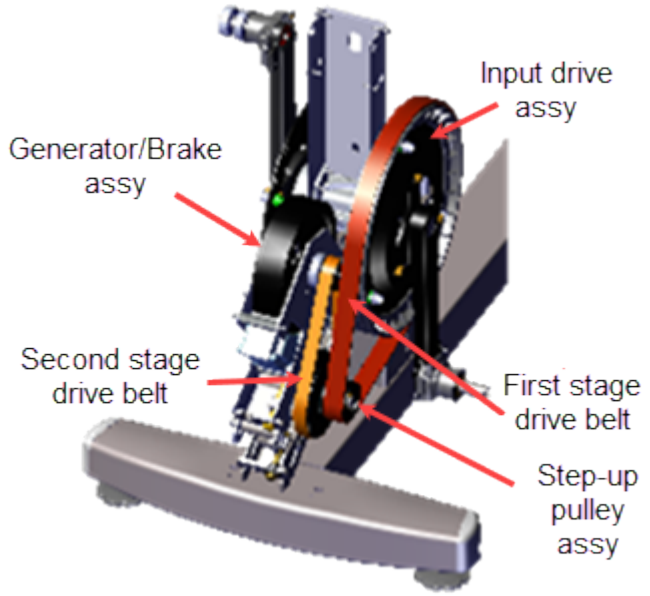
2. Slide the Generator/Eddy Brake assembly downward and install the upper carriage bolt. Tighten the bolt just enough to keep the carriage bolt head inserted into the mounting slot but do not fully tighten. Then slide the assembly upward and install the lower carriage bolt. Tighten the bolt just enough to keep the carriage bolt head inserted into the mounting slot but do not fully tighten.

TIP: Install the upper carriage bolt fastener first and then the lower. The upper bolt cannot be installed when the lower bolt is installed.

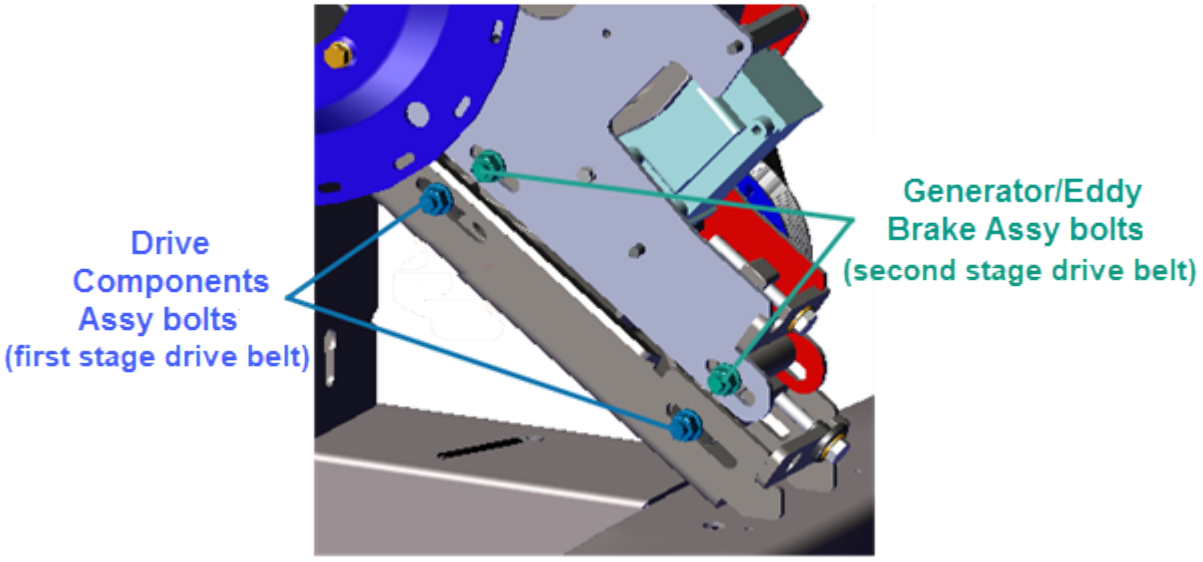
3. Walk the second stage drive belt onto the Generator/Eddy Brake assembly pulley and larger second stage Step-up Pulley/Tensioner assembly pulley.



4. Walk the first stage drive belt onto the smaller first stage Step-up Pulley assembly and Input Drive assembly pulleys and tension the belt to 140-150 lbs (63.5 - 68 kgs), see "First Stage Drive Belt Tension Adjustment" on page 55.

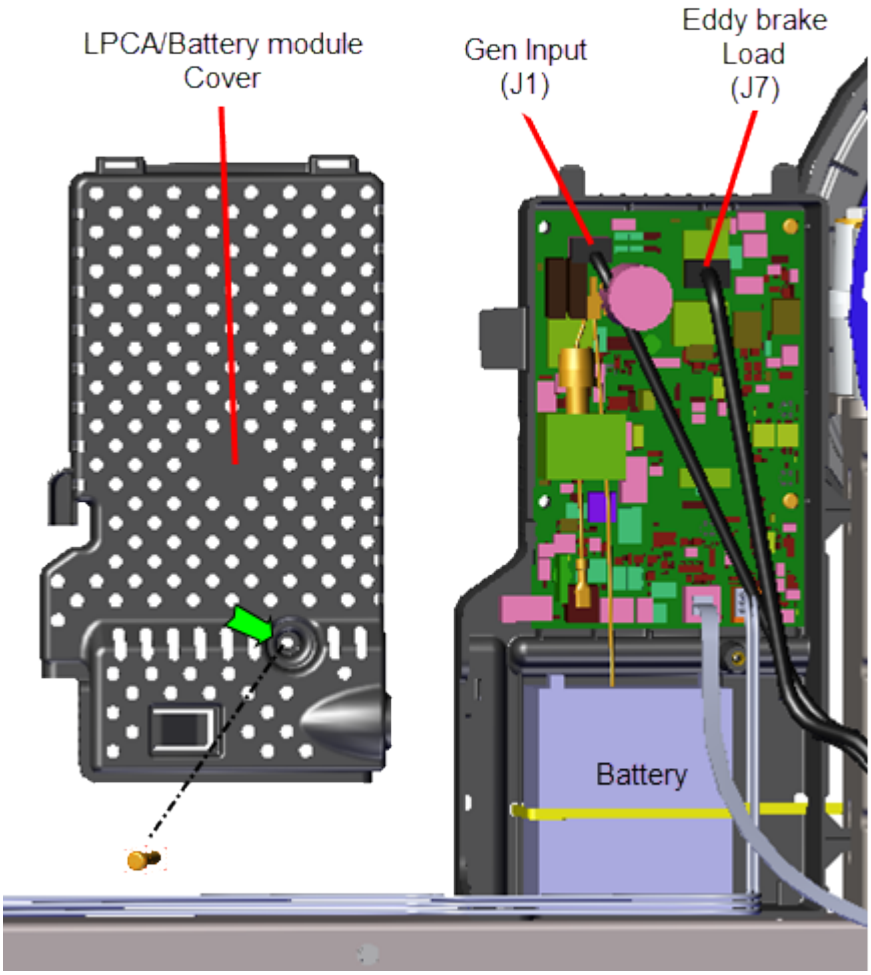


5. Tension the second stage drive belt to 110-120 lbs (50- 54.4 kgs), see "Second Stage Drive Belt Tension Adjustment" on page 59.
6. Fully tighten the two Generator/Eddy Brake assembly and two Drive Components assembly carriage bolts, torque to 180 in-lbs (20.3 Nm).



7. Route and reconnect the Generator cable and Eddy/Brake cable to the LPCA Generator input (J1) and Eddy/Brake load (J7) **I/O**[1] connectors. Reinstall the LPCA/Battery module cover and secure with the #2 Phillips screw fastener.

[1]Input and Output Interface.



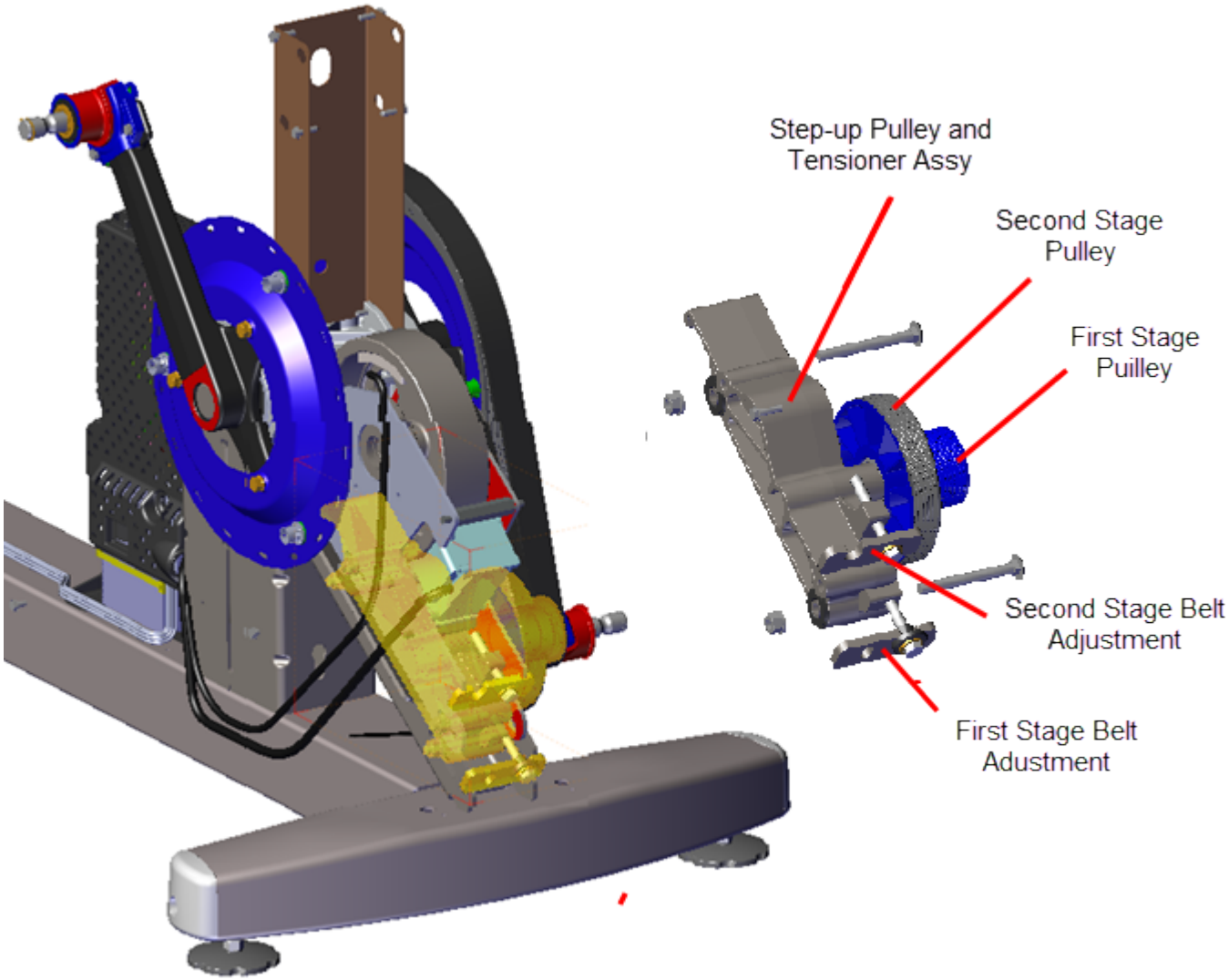
8. Reinstall the right and left Drive Housing and Drive Top covers, see " > " on page 98.
9. Reinstall the left and right Stairarms onto the Input Drive Crank, see "Stairarm Replacement" on page 178.
10. Reinstall the left and right Drive Disk covers, " > " on page 94.
11. Reinstall the Drive Access cover, see "" on page 92.
12. Verify machine operation and return to service, see Operation Verification.

Step-up Pulley/Tensioner Assembly Replacement

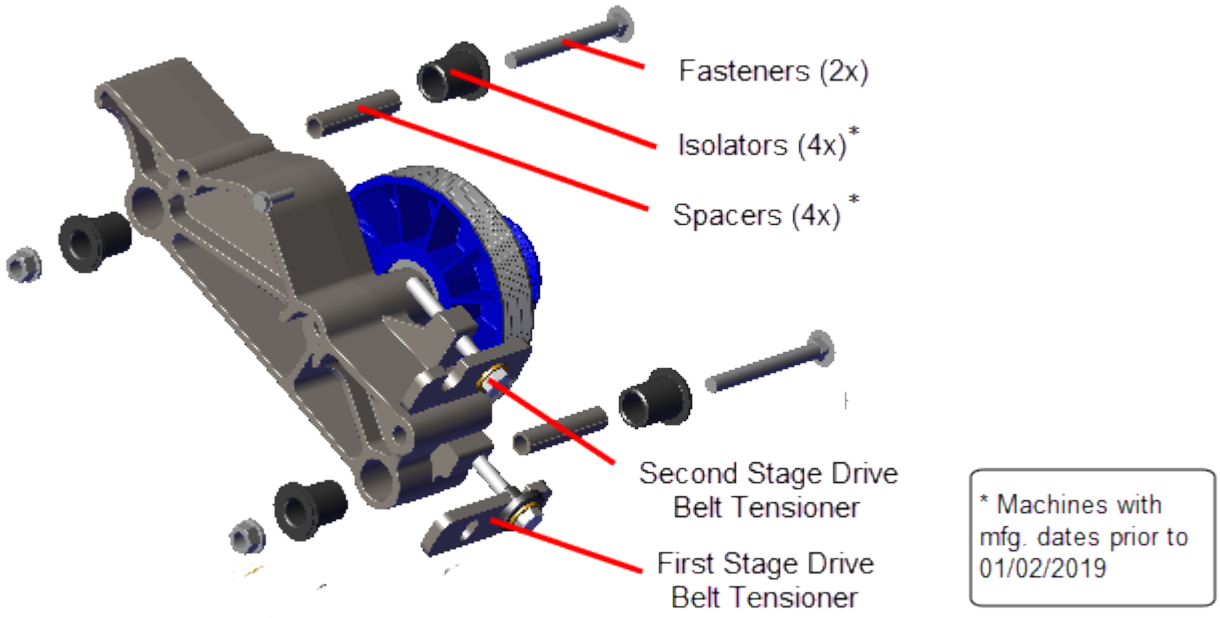
About

This procedure provides instruction to remove and install the Step-up Pulley/Tensioner Assembly.

The Step-up Pulley/Tensioner Assembly contain the step-up pulleys and the first and second stage drive belt tensioners



Step-up Pulley/Tensioner Assembly Exploded View



Step-up Pulley and Tensioner Assembly

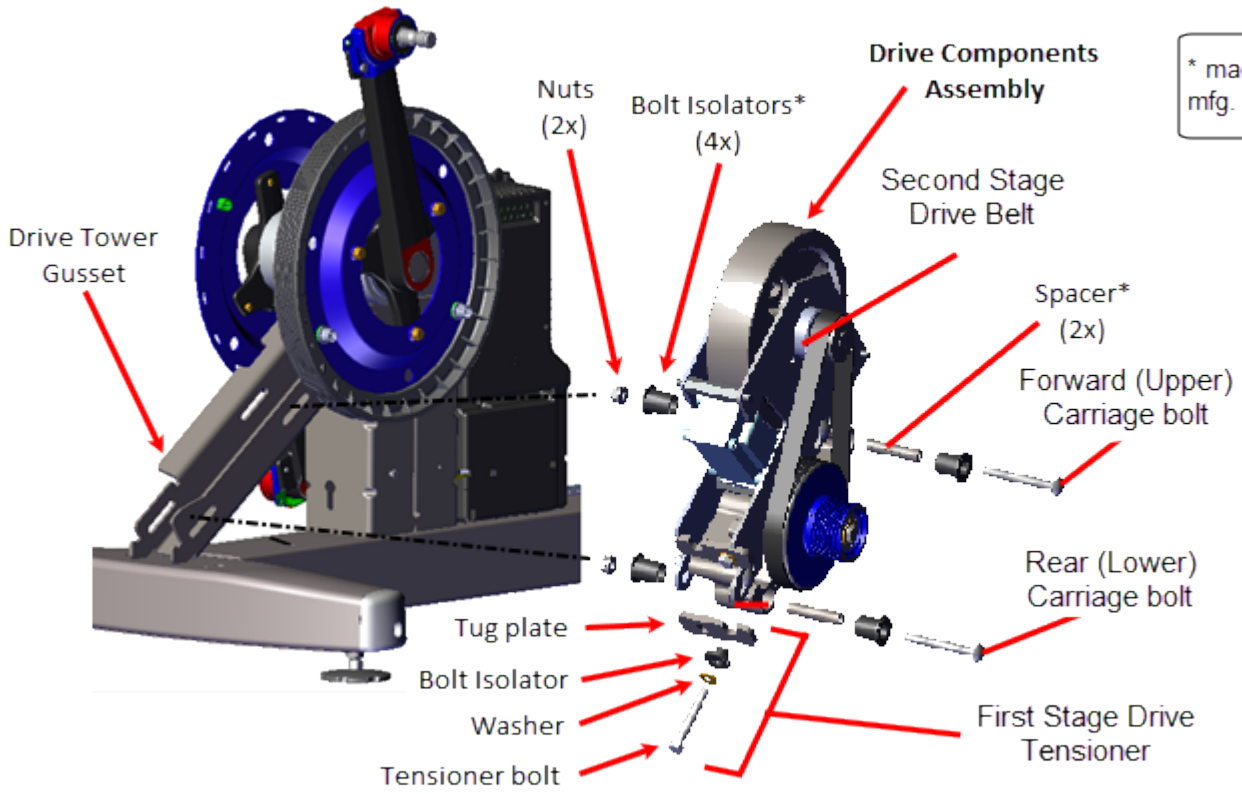
Procedure

Review entire procedure before starting.

Removal Instructions

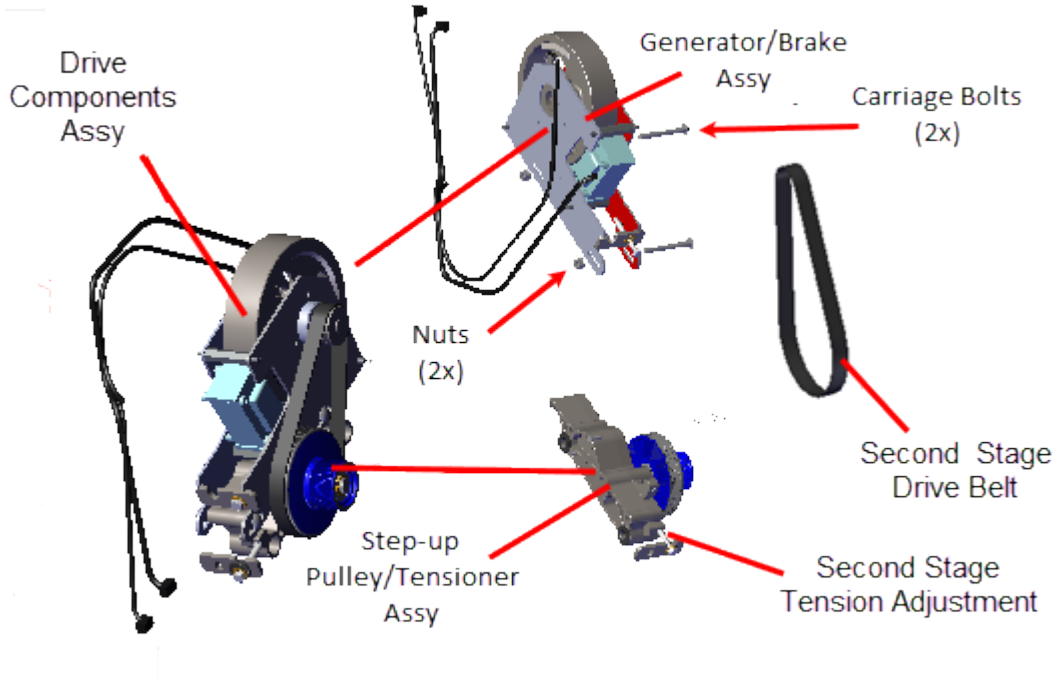
1. Remove the Drive Access cover, see "" on page 92.
2. Remove the left and right Drive Disk covers, see " > " on page 94.
3. Remove the left and right Stairarms from the Input Crank, see "Removing the Stairarm from the Input Drive Crank" on page 180.
4. Remove the Drive Top and left/right Drive Housing covers see " > " on page 98.
5. Remove the Drive Components assembly, see "Drive Components assembly Replacement" on page 133.

TIP: For machines with mfg. dates prior to 01/02/2019, the Step-up Pulley/Tensioner assembly spacers (2x) and bolt isolators (4x) can easily fall out of the mounting holes. Take care to keep track of these components for installation, see "Step-up Pulley/Tensioner Assembly Exploded View" above.



* machines prio
mfg. date 1/02/2

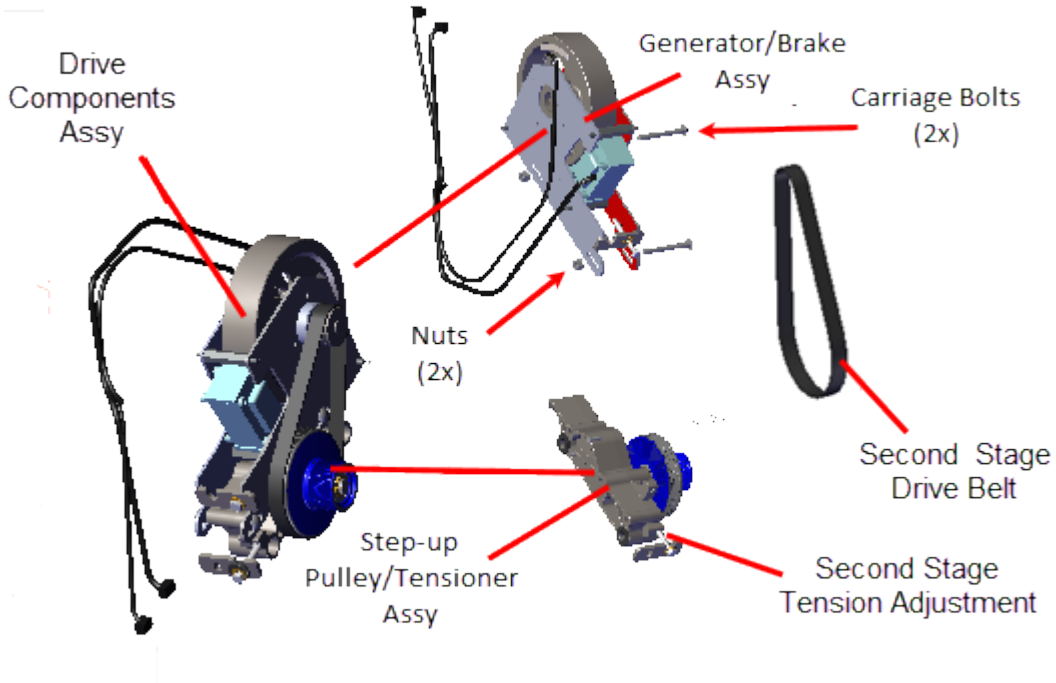
6. Use a 1/2" socket to loosen the second stage belt tension and walk the second stage drive belt off the pulleys. Remove the second stage drive belt.



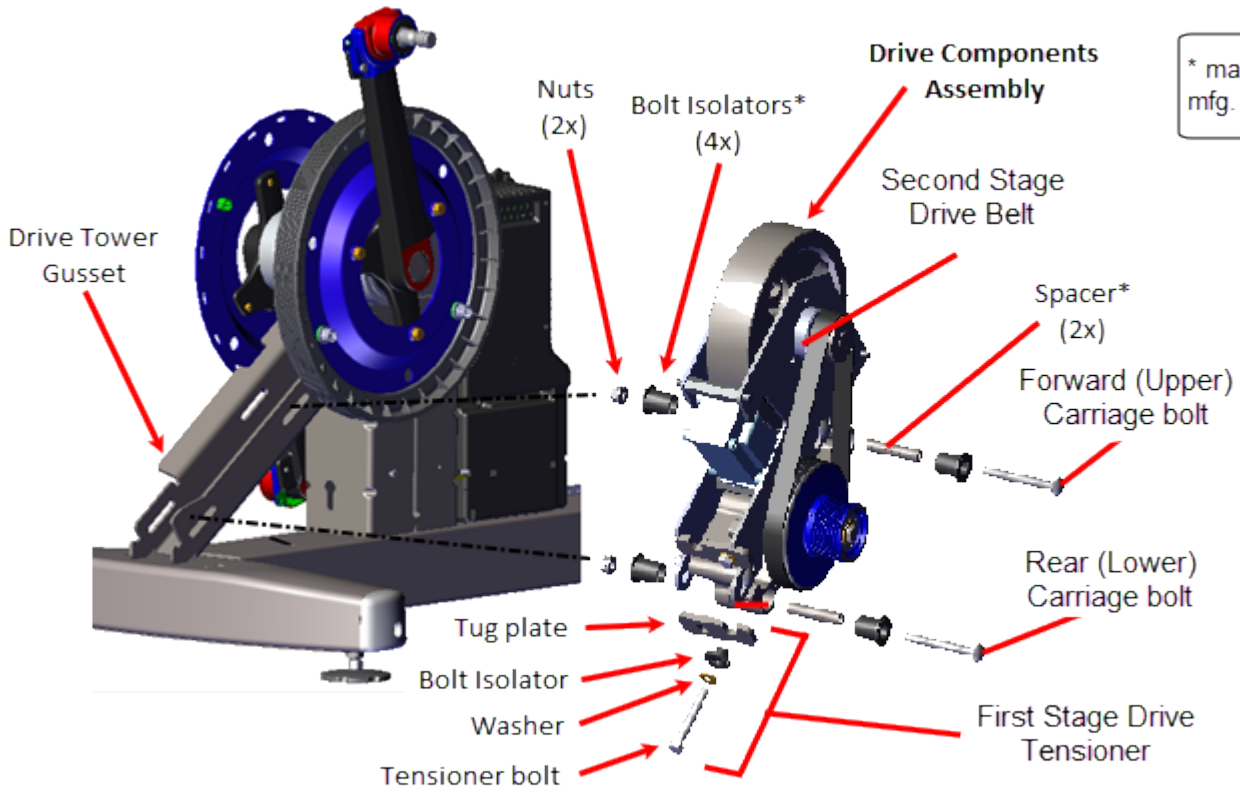
7. Use a 1/2" socket to remove the two carriage bolt fasteners to separate the Generator/Eddy Brake assembly from the Step-up Pulley/Tensioner Assembly.

Installation Instructions

1. Place the Generator/Brake assembly onto the Step-up pulley/Tensioner assembly. Secure using the two carriage bolts and nuts. Tighten the bolts just enough to keep the carriage bolt heads inserted into the bolt belt adjustment slots to allow movement. Do not fully tighten.



2. Use a 1/2" socket to install the second stage belt tension hardware: the tensioner adjustment bolt, washer, and tug plate. Tighten the tensioner bolt just enough to keep the tensioner hardware in place.
3. Reinstall the second stage drive belt by walking the belt onto the larger Step-up Pulley/Tensioner pulley and Generator/Brake assembly pulley. Tighten the tensioner bolts just enough to keep the belt on the pulleys and tensioner hardware in place. Do not fully tension or over tension the belt.
4. Reinstall the Drive Components assembly, see "Drive Components assembly Replacement" on page 133.



5. Adjust the first stage drive belt tension, see "First Stage Drive Belt Tension Adjustment" on page 55.
6. Adjust the second stage drive belt tension, see "Second Stage Drive Belt Tension Adjustment" on page 59.
7. Reinstall the right and left Drive Housing and Drive Top covers, see " > " on page 98.
8. Reinstall the left and right Stairarms onto the Input Drive Crank, see "Stairarm Replacement" on page 178.
9. Reinstall the left and right Drive Disk covers, " > " on page 94.
10. Reinstall the Drive Access cover, see "" on page 92.
11. Verify machine operation and return to service, see "Operation Verification" on page 21.

.See Also

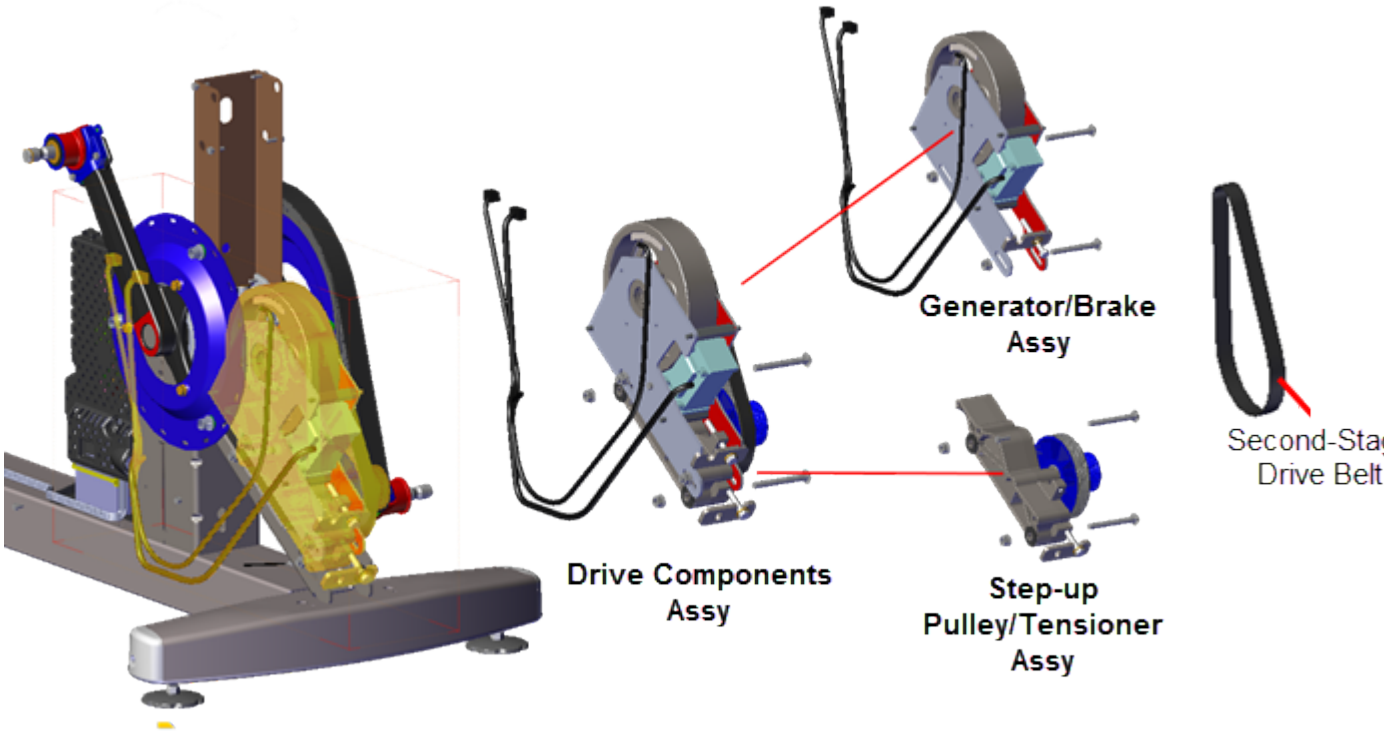
"Drive Components assembly Replacement" on the facing page

Drive Components assembly Replacement

About

This procedure provides instruction to remove and install the Drive Components assembly.

The Drive Components assembly consists of the Step-up Pulley/Tensioner assembly and Generator Eddy Brake assembly.



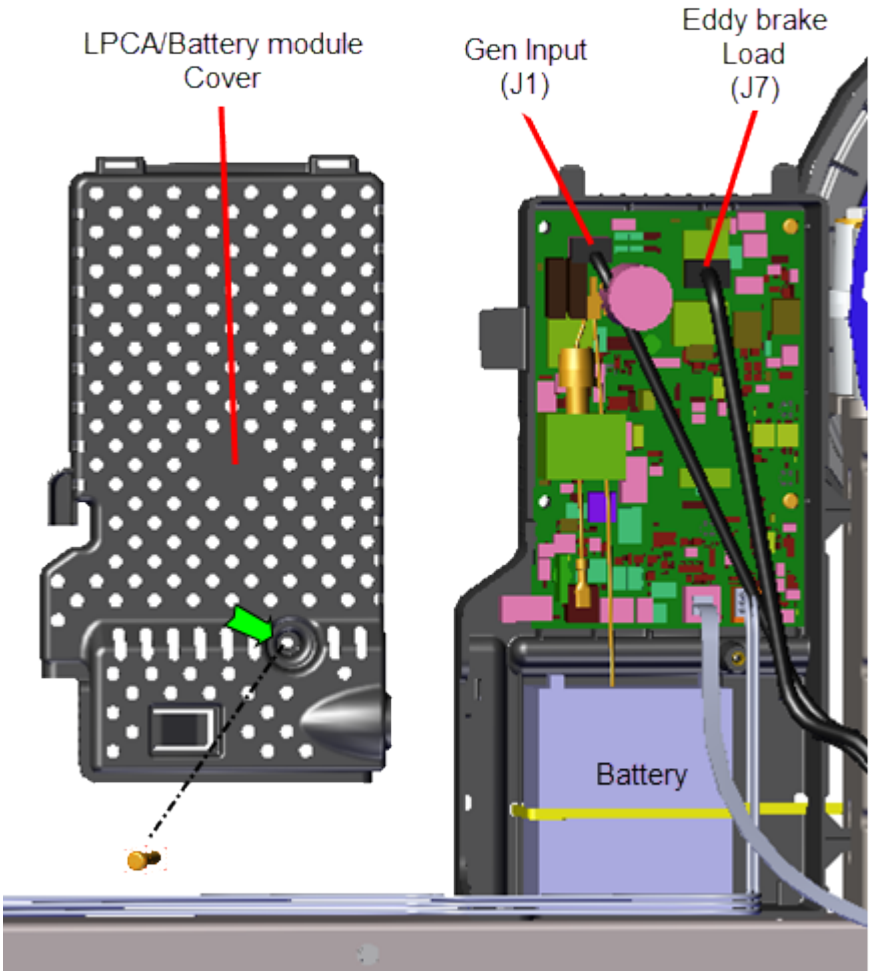
Procedure

Review entire procedure before starting.

Removal Instructions

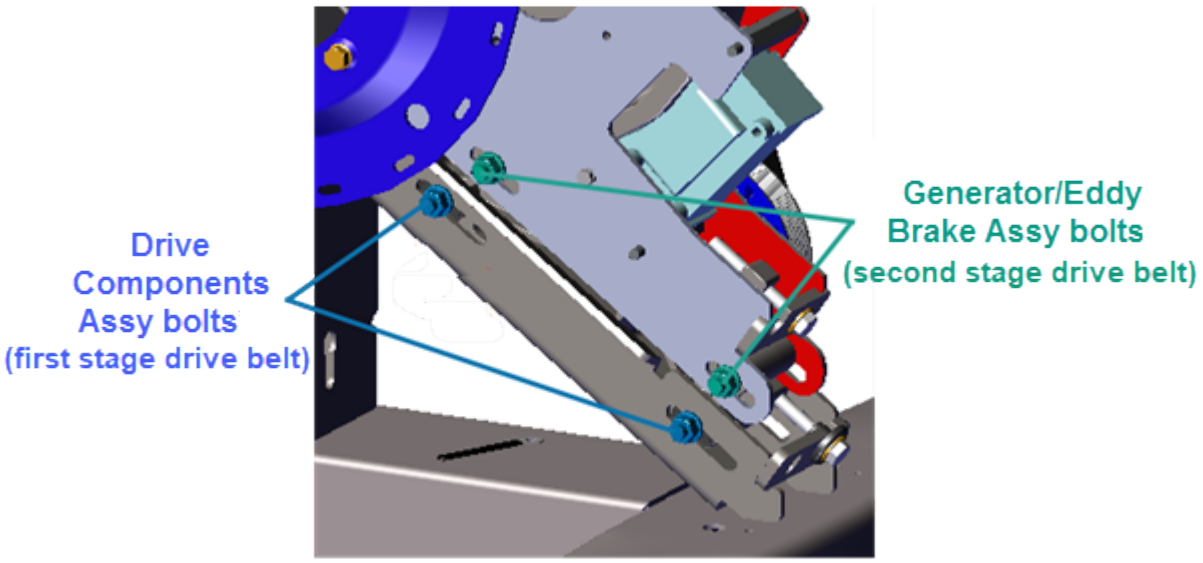
1. Remove the Drive Access cover, see "" on page 92.
2. Remove the left and right Drive Disk covers, see " > " on page 94.
3. Remove the left and right Stairarms from the Input Crank, see "Removing the Stair-arm from the Input Drive Crank" on page 180.
4. Remove the Drive Top and left/right Drive Housing covers see " > " on page 98.

5. Remove the one #2 Phillips screw fastener and **LPCA**[1]/Battery module cover. Disconnect the Generator input cable (J1) and Eddy/Brake load cable (J7) from the LPCA board. Retain part(s) and/or fastener(s) for installation.

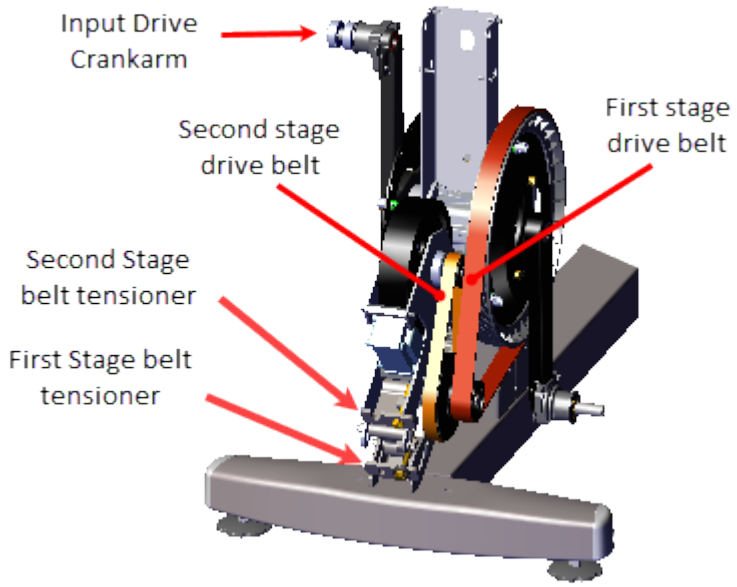


6. Use a 1/2" socket to loosen the two Generator/Brake assembly and the two Drive Components assembly carriage bolt nuts (left side). Do not remove the carriage bolt nuts.

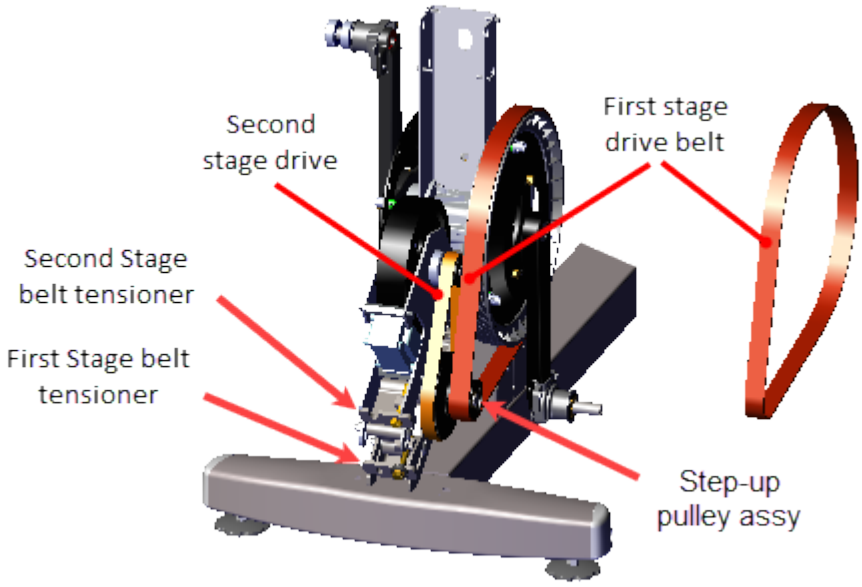
[1]Lower Printed Circuit Assembly board; also refered to as the Lower PCA or simply as the lower board. On treadmills, it is the console to base function interface and the motor controller unit (MCU). On self-powered units, it is the lower PCA console to base function interface.



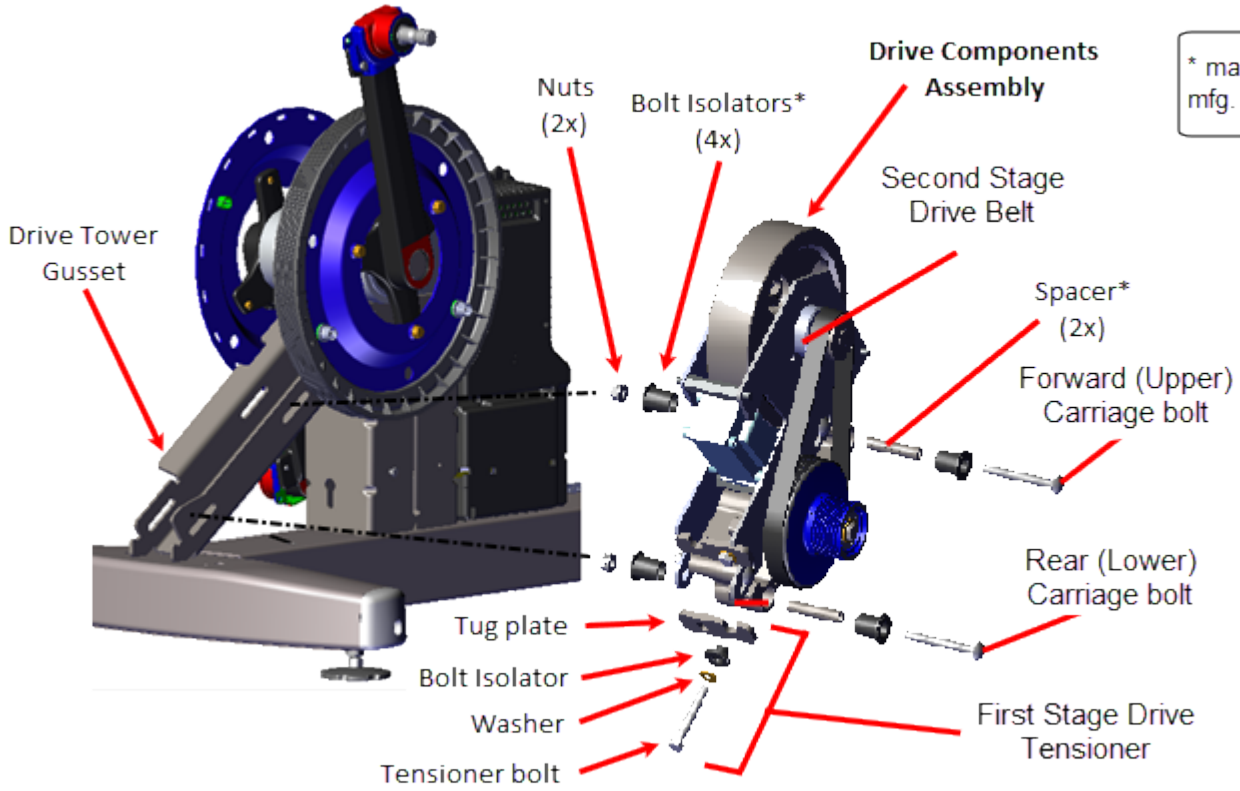
7. Remove the second stage belt tension.by loosening the 1/2" hex head second stage drive belt tensioner bolt.



8. Use a 1/2" socket to loosen the first stage belt tensioner and walk the first stage drive belt off the Input Drive pulley and smaller first stage Step-up Pulley assembly pulley. Remove the first stage drive belt. Retain belt for installation.



9. Use a 1/2" socket to remove the First Stage Tensioner hardware: the adjustment bolt (1x), washer (1x), bolt isolator (1x), and tug plate (1x). Retain part(s) and/or fastener (s) for installation.

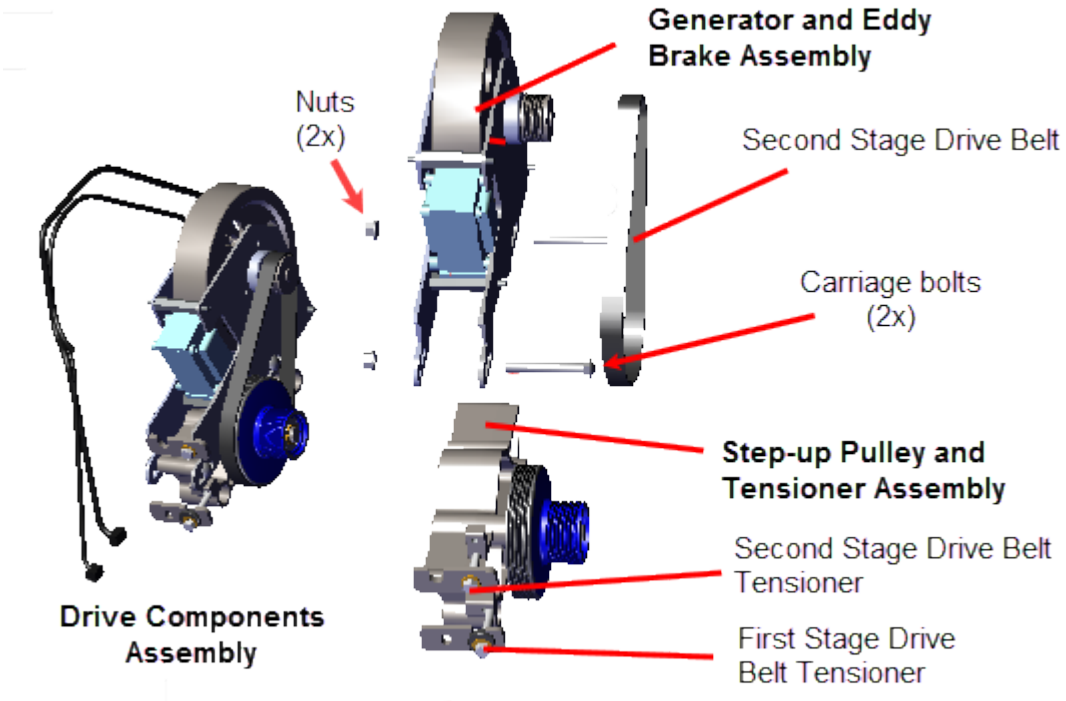


10. Use a 1/2" socket to remove the two Drive Components assembly carriage bolts (2x) and nuts (2x). Remove the rear (lower) bolt first and then slide the Drive Components assembly downward to create room to remove the forward (upper) carriage bolt. Remove the Drive Components assembly. For machines with mfg. dates prior to 01/02/201, remove the bolt isolators (4x) and spacers (2x). Retain part(s) and/or fastener(s) for installation.

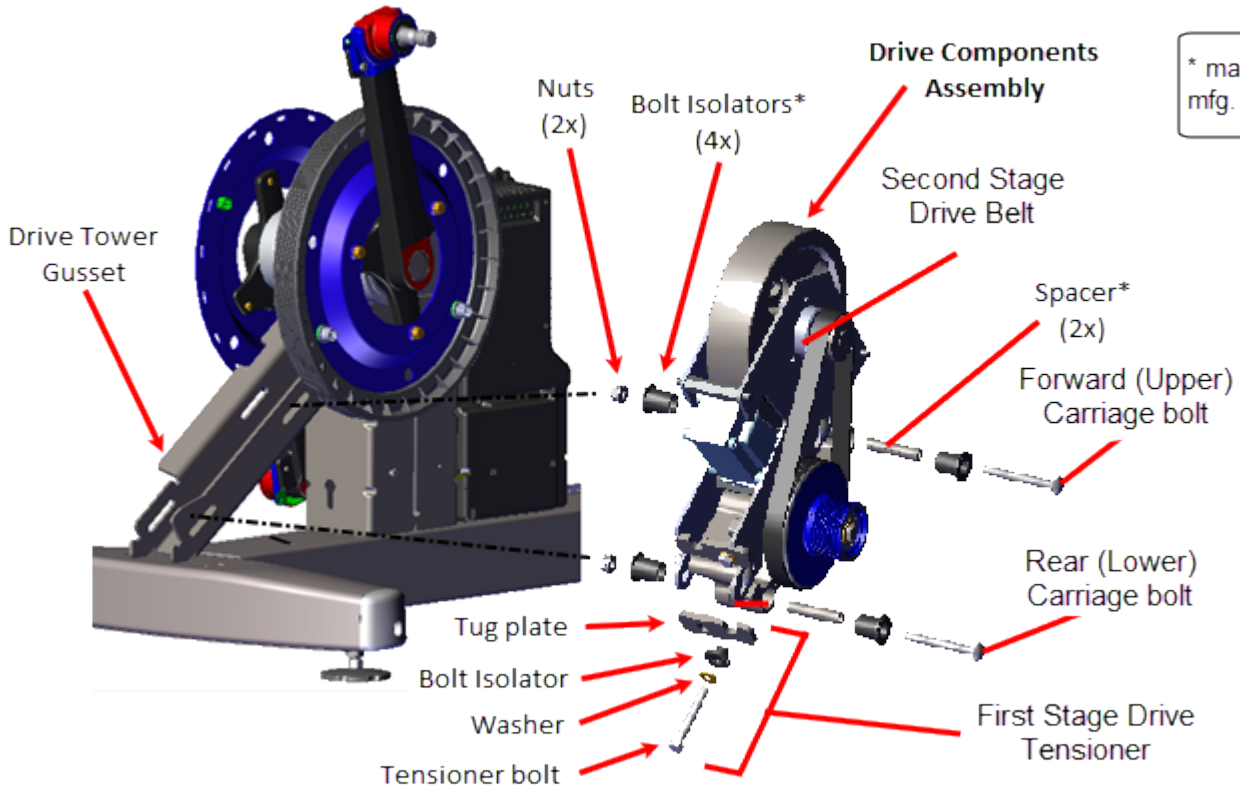
TIP: Machines with mfg. dates prior to 01/02/2019, the Step-up Pulley/Tensioner spacers (2x) and bolt isolators (4x) can easily fall out of the mounting bolt holes. Take care to keep track of these parts for installation.

Installation Instructions

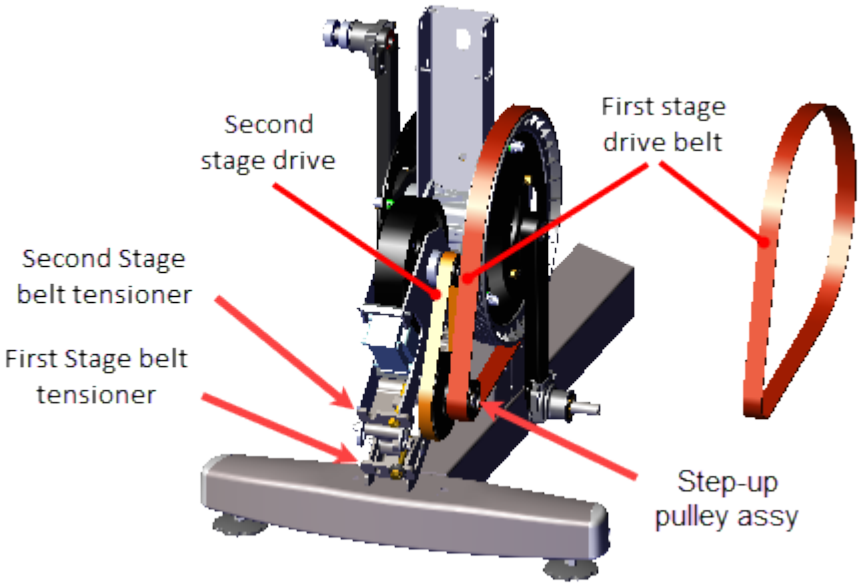
1. If the Drive Components assembly is disassembled, reassemble as follows:
   a. Install the Generator/Brake assembly onto the Step-up Pulley/Tensioner assembly and secure using the two 1/2" hex head Carriage bolts and nuts.
   b. Tighten the carriage bolts just enough to keep the carriage bolt heads inserted into the mounting slot but do not fully tighten.
   c. Walk the second stage drive belt onto the Generator/Brake assembly pulley and the larger second stage Step-up Pulley/Tensioner assembly pulley. Tighten the second stage tensioner just enough to hold the tensioner hardware and belt in position. The belt will be properly tensioned after the Drive Components assembly is installed.



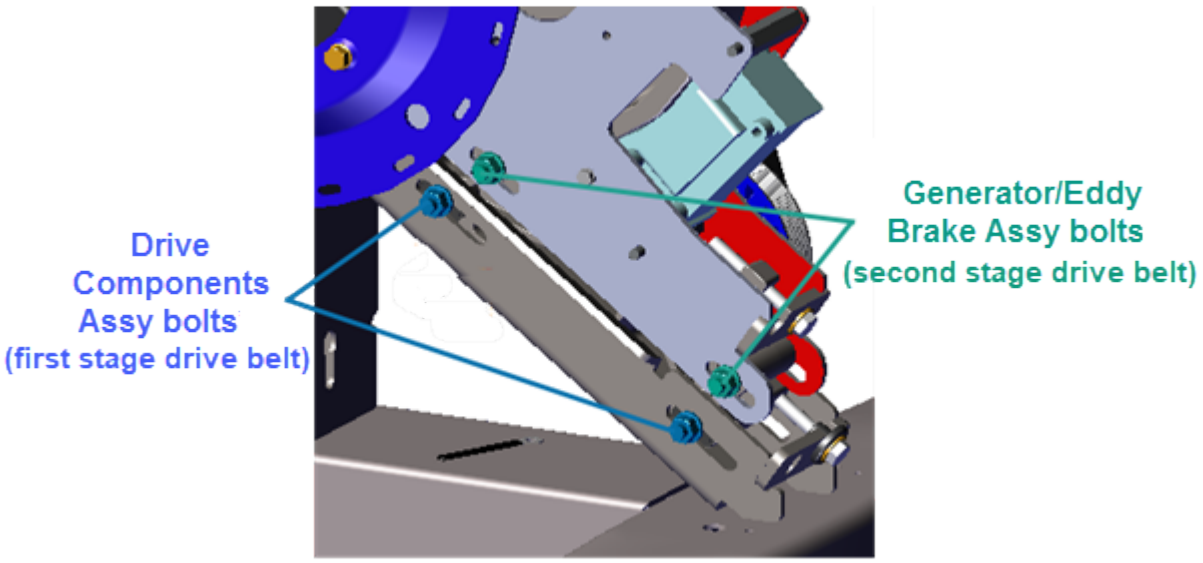
2. Position the Drive Components assembly onto the Drive Tower Gusset. For machines with mfg. dates prior to 01/02/2019, install the bolt isolators (4x) and spacers (2x) prior to installing Drive Components assembly.



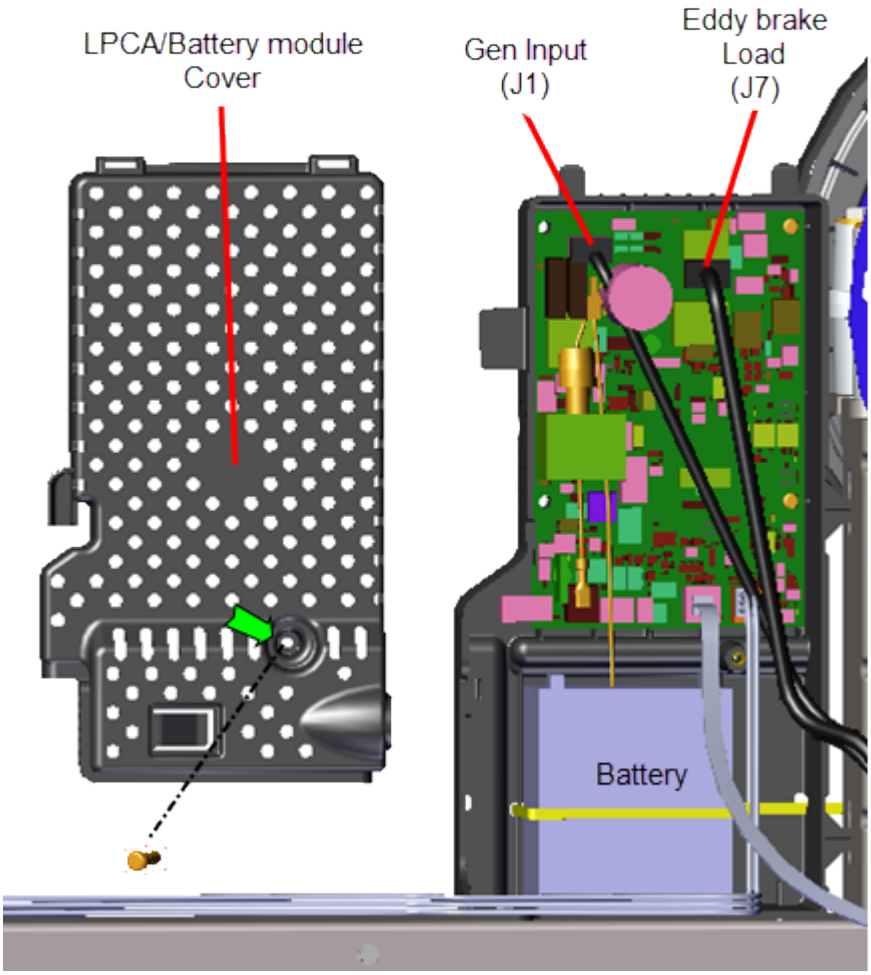
3. Slide the Drive Components assembly downward and install the upper (forward) carriage bolt and then slide the Drive Components assembly upward and install the lower (rear) carriage bolt. Tighten the carriage bolt nuts just enough to keep the carriage bolt heads inserted into the mounting slot but do not fully tighten.
4. Use a 1/2" socket to install the First Stage Tensioner hardware: the adjustment bolt (1x), washer (1x), bolt isolator (1x), and tug plate (1x). Tighten the tensioner bolt enough to hold the hardware in place.
5. Install the first stage drive belt by walking the belt onto the Input Drive pulley and the smaller first stage Step-up Pulley/Tensioner assembly pulley Rotate the crank and make sure that the belt is properly centered and seated in the pulley grooves.



6. Tension the first stage drive belt, see "First Stage Drive Belt Tension Adjustment" on page 55.
7. Tension the second stage drive belt, see "Second Stage Drive Belt Tension Adjustment" on page 59.
8. Tighten the two Generator/Eddy Brake assembly and two Drive Components assembly carriage bolt fasteners, torque to 180 in-lbs (20.3 Nm).



9. Reconnect the Generator input cable (J1) and Eddy/Brake load cable (J7) on the LPCA board. Reinstall the LPCA/Battery module cover and secure with the #2 Phillips screw fastener.



10. Reinstall the right and left Drive Housing and Drive Top covers, see " > " on page 98.
11. Reinstall the left and right Stairarms onto the Input Drive Crank, see "Stairarm Replacement" on page 178.
12. Reinstall the left and right Drive Disk covers, " > " on page 94.
13. Reinstall the Drive Access cover, see "" on page 92.
14. Verify machine operation and return to service, see Operation Verification.

See Also

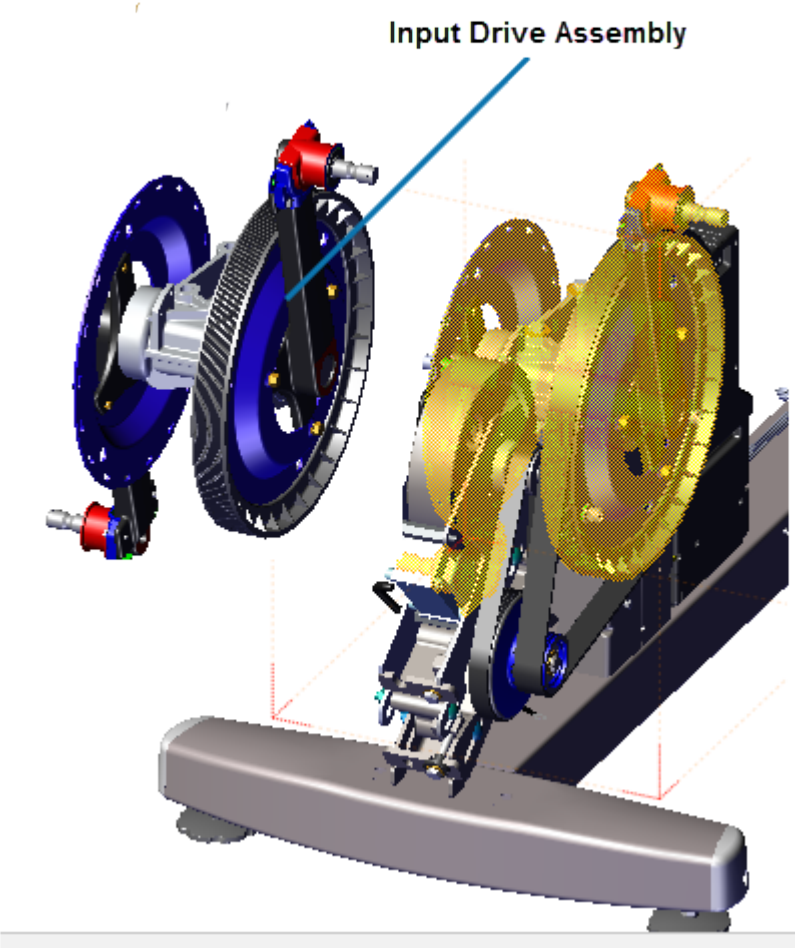
"Second Stage Drive Belt Tension Adjustment" on page 59

"First Stage Drive Belt Tension Adjustment" on page 55

Input Drive Assembly Replacement

About

This procedure provides instruction to remove and install the Input Drive Assembly.



Specifications

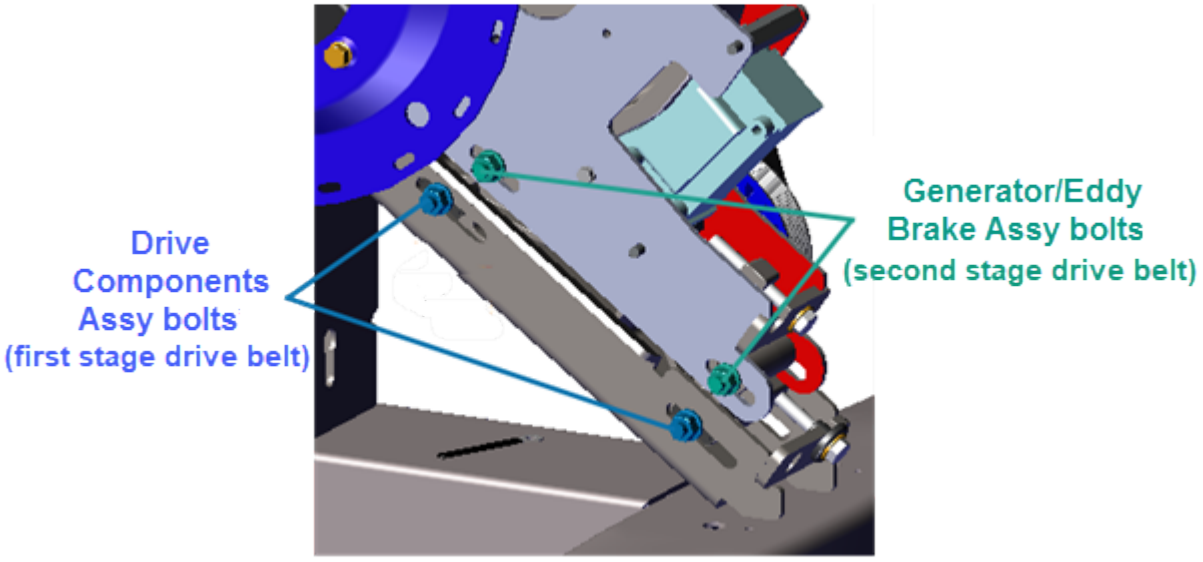
System Component	Specification
Input Drive Assembly Nylock Bolts	300 +/- 90 in-lbs (34 +/- 10 Nm)

Procedure

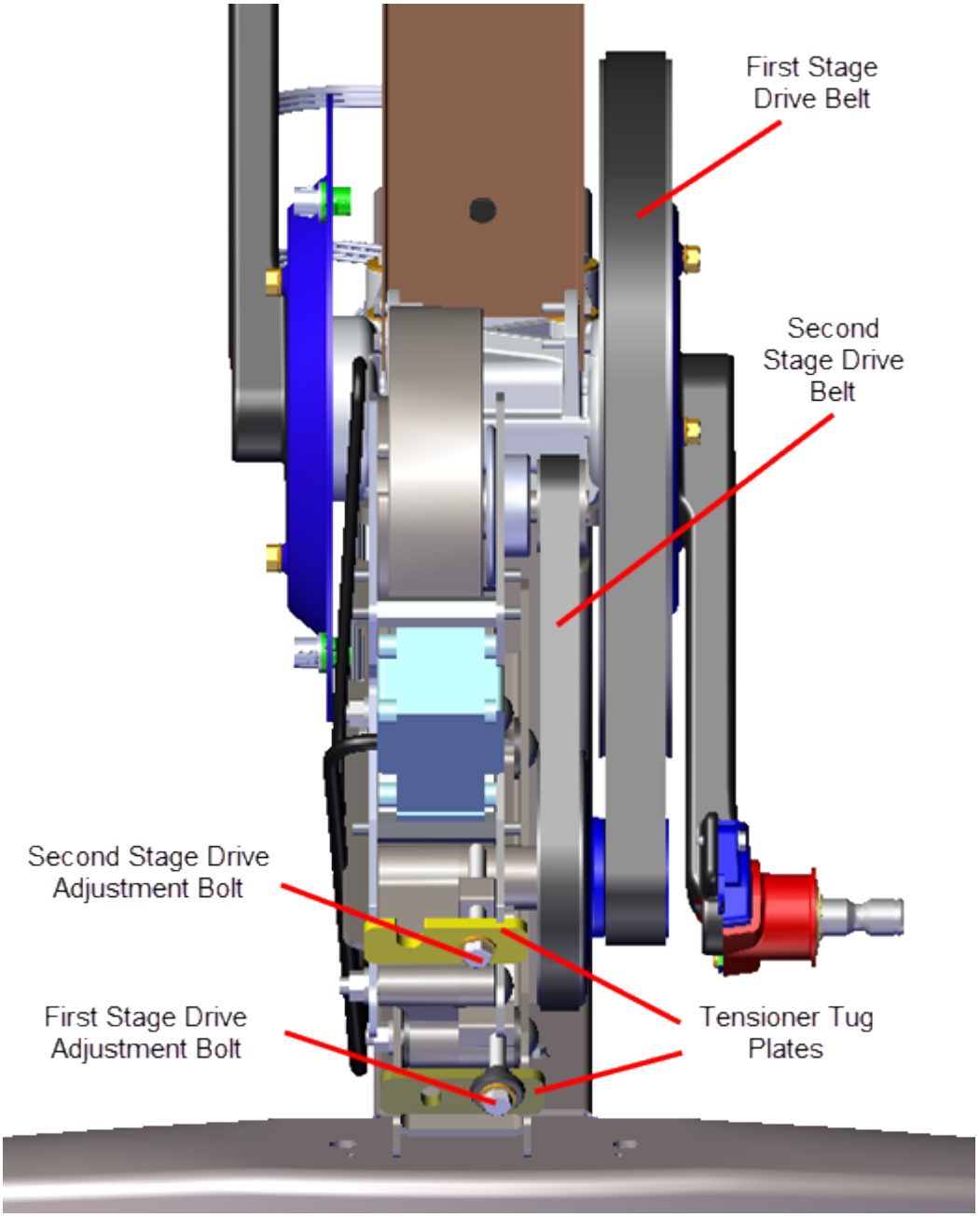
Review entire procedure before starting.

Removal Instructions

1. Remove the Drive Access cover see "" on page 92.
2. Remove the left and right drive disk and Drive Top covers, see " > " on page 94.
3. Remove the left and right Stairarms from the Input Crank, see "Stairarm Replacement" on page 178
4. Remove the Drive Housing covers see " > " on page 98.
5. Use a 1/2" socket to loosen the two Drive Components assembly fastener nuts (left side). Do not remove the fastener nuts.

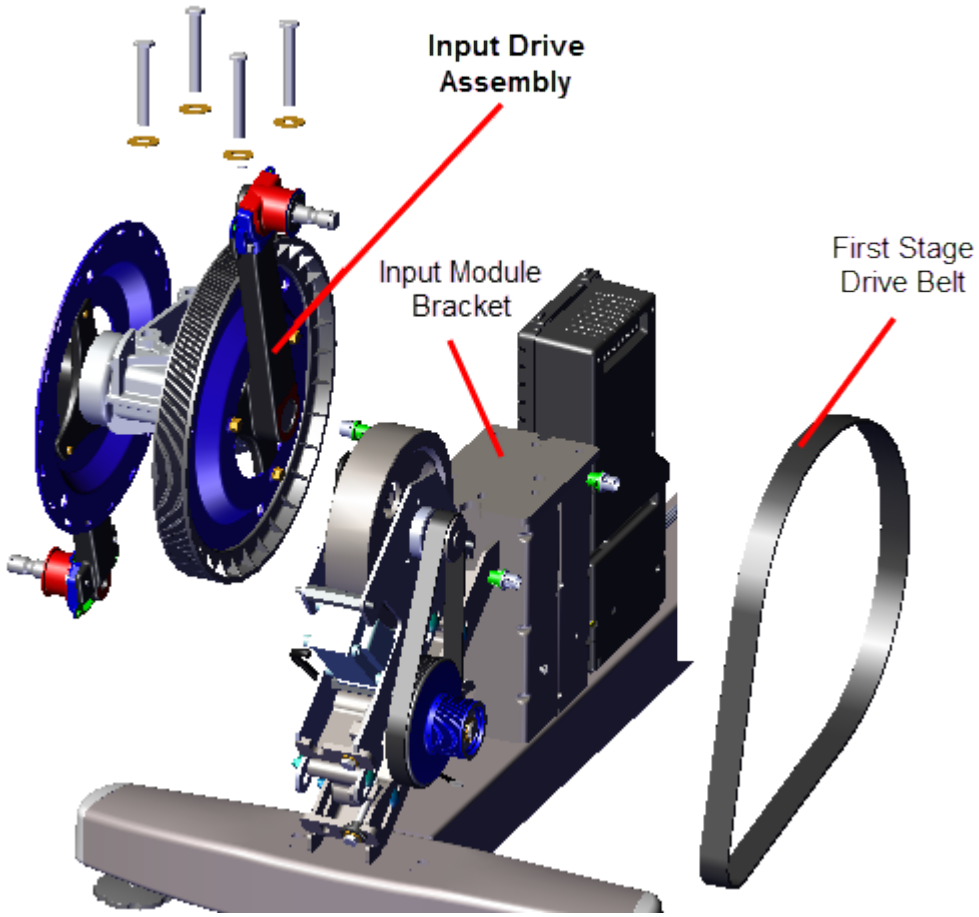


6. Use a 1/2" socket to loosen first stage belt tensioner and walk the first stage drive belt off the pulleys. Remove the first stage drive belt. Retain belt for installation.



7. Use a 9/16" socket to remove the four fasteners (bolts and washers) and remove the Input Drive Assembly. Discard the four Nylock bolt fasteners (these bolts cannot be reused for installation). Retain washers for installation.

CAUTION: Do not reuse the Input Assy Nylock patch bolt fasteners for installation. Discard the used bolts and order new bolts for installation (see "Parts" on page 238, bubble # 296).

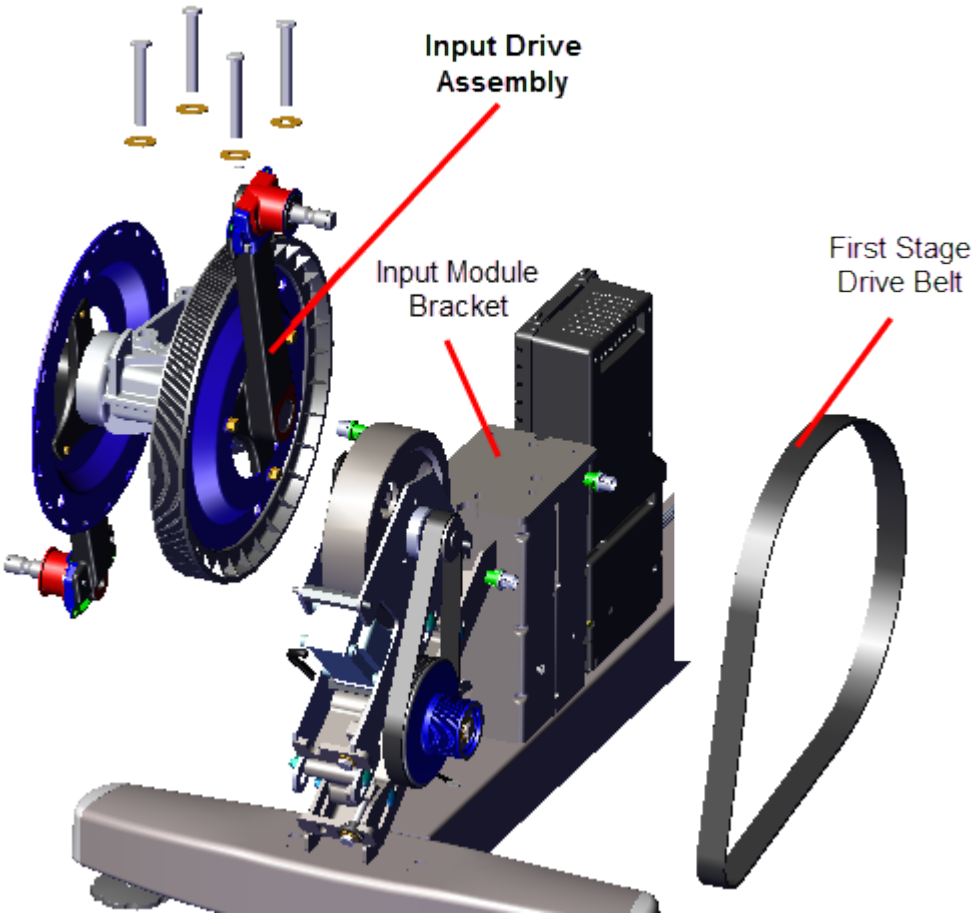


Installation Instructions

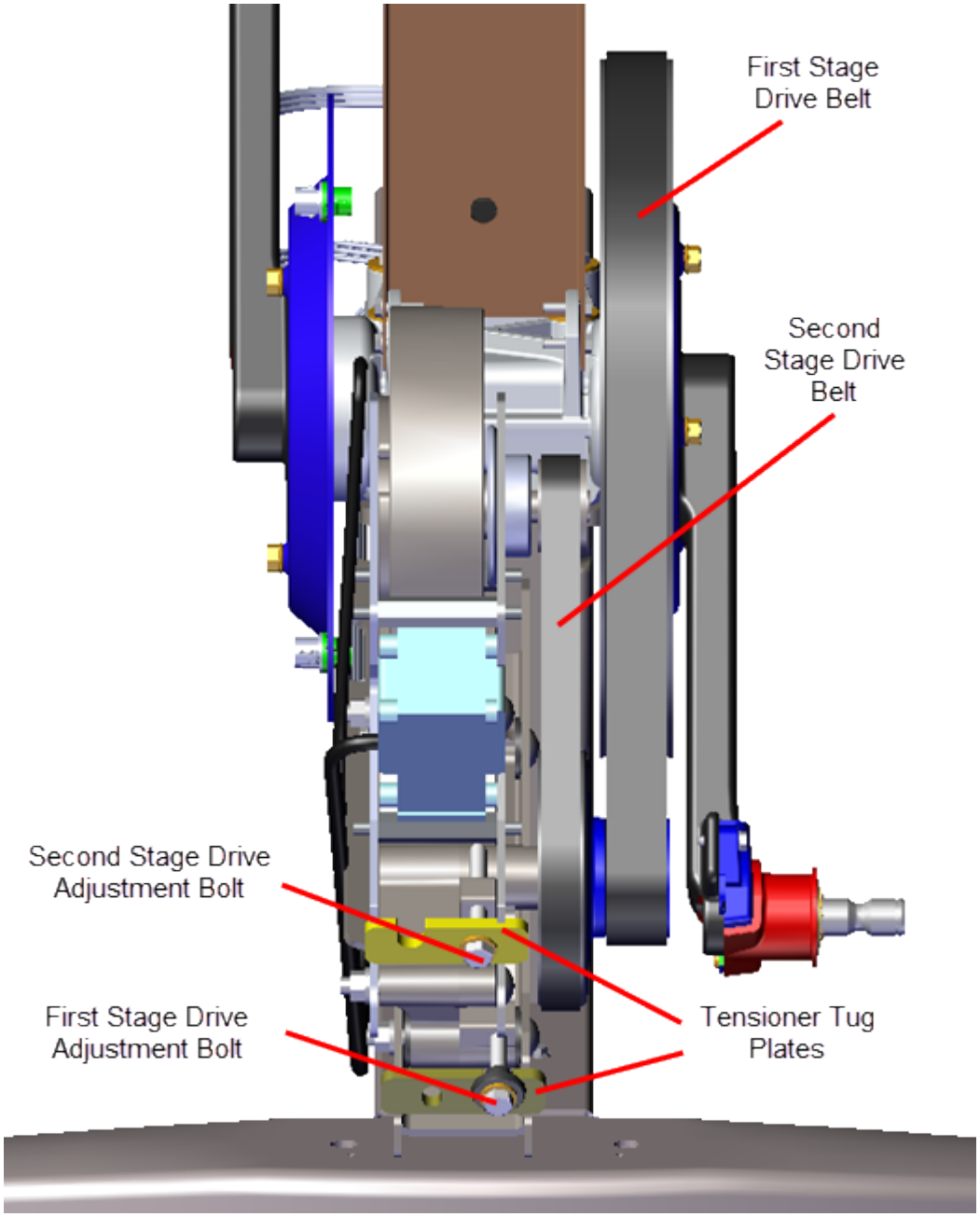
1. Reinstall the Input Drive Assembly onto the weldment input module mounting bracket and secure using four NEW Nylock patch bolt fasteners (see "Parts" on page 238, bubble # 296). The removed washers can be reused for installation. **Torque**[1] to 300 +/- 90 in-lbs (34 +/- 10 Nm).

CAUTION: Do not reuse the Crank and Input Bearing Assy Nylock patch bolt fasteners for installation. Discard the bolts and order new bolts for installation (see "Parts" on page 238, bubble # 296).

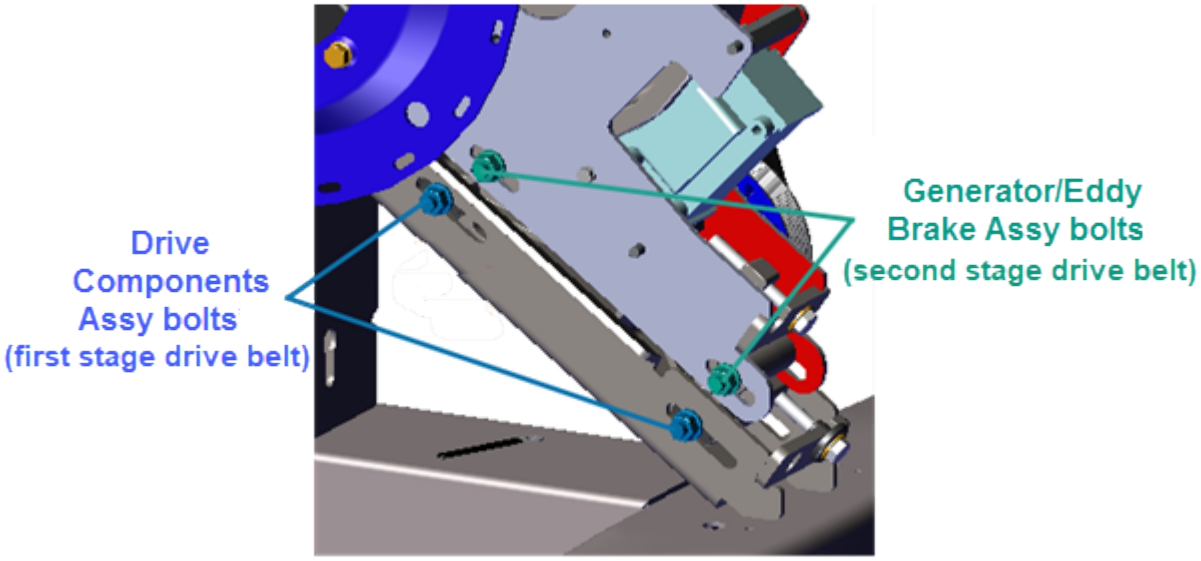
[1]Torque is a measure of the force that can cause an object to rotate about an axis. Bolt/nut example: 5 NM torque is equivalent to 5 newton's of force applied one meter from the center of the bolt, 6 ft-lb is equivalent to 6 lbs of force applied 1 foot away from the center of the bolt.



2. Adjust the first stage tensioner as necessary to walk the first stage drive belt onto the Input drive and smaller first stage drive pulleys. Rotate the crank and make sure that the belt is properly aligned and seated in the pulley grooves.



3. Tension the first stage drive belt to 140-150 lbs (63.5 - 68 kgs), see "First Stage Drive Belt Tension Adjustment" on page 55.
4. Verify that the second stage drive belt is within the specified tension 110-120 lbs (50-54.4 kgs), see "Second Stage Drive Belt Tension Adjustment" on page 59. Retention belt if not within specification.
5. Tighten the two Drive Components assembly carriage bolt fasteners, torque to 180 in-lbs (20.3 Nm).

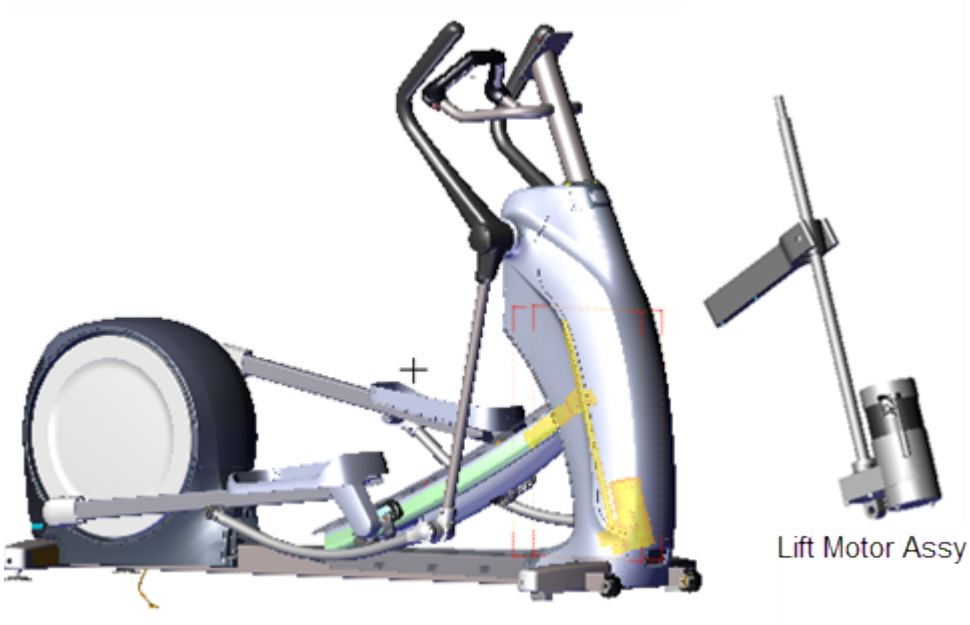


6. Reinstall the right and left Drive Housing and Drive Top covers (includes reinstalling the Stairarms), see " > " on page 98.
7. If the Stairarms are not installed, reinstall the left and right Stairarms onto the Input Drive Crank, see "Stairarm Replacement" on page 178.
8. Reinstall the left and right Drive Disk covers, " > " on page 94.
9. Reinstall the Drive Access cover, "" on page 92.
10. Verify machine operation and return to service, see Operation Verification.

Lift Motor Replacement

About

This procedure provides instruction to remove and install the Lift Motor.



	Service Video	Link
▶	EFX[1] Lift Motor Jackscew Lubrication maintenance video	EFX Lift Motor Jackscew Lubrication

Specifications

System Component	Specification
Lift Motor Calibration Distance*	9" +/- 1/4" (23 cm +/- 0.6 cm
Yoke/Ramp Fasteners	330 in-lbs (27.5 ft-lbs or 37.2 Nm)
Note: * Calibration distance is set at incline level 10.	

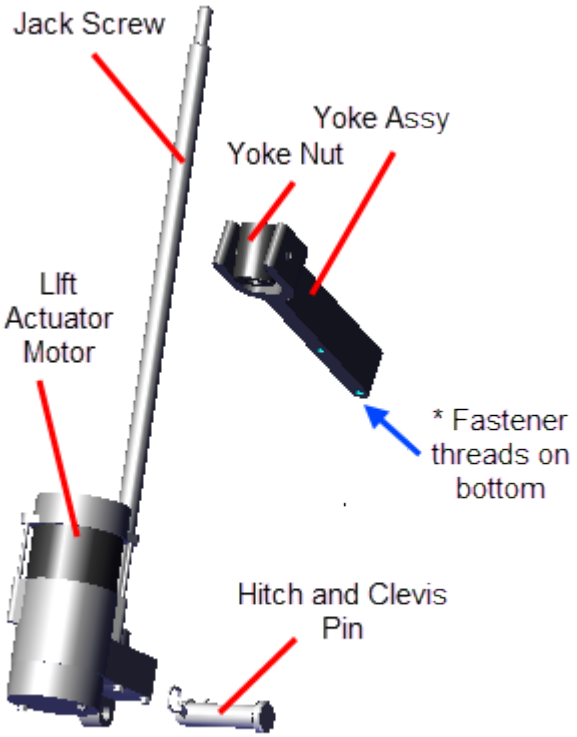
[1]Elliptical Fitness Crosstrainer

Lift motor power

Lift motor power is supplied by the battery thru the lift motor fuse located on the **LPCA**[1] board, see "LPCA Fuse Locations" on page 160.

Procedure

Review entire procedure before starting.



Lift Motor Assembly

Removal Instructions

1. Remove the Front Lift cover, Lift Interface Plate cover, and Ramp cover, see "" on page 71, "" on page 74, and "" on page 88.
2. Place a protective pad over the top of the Front Frame Cover underneath the Ramp to protect the cover surface while doing this procedure.
3. If the lift motor is working, access the **CrossRamp Test** diagnostic test and raise the incline level to 10

[1]Lower Printed Circuit Assembly board; also refered to as the Lower PCA or simply as the lower board. On treadmills, it is the console to base function interface and the motor controller unit (MCU). On self-powered units, it is the lower PCA console to base function interface.

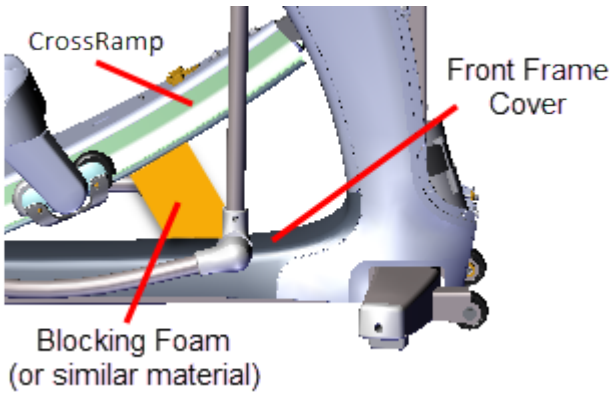
- P10, P30, P30i and P31: **Service menu (51765761)** > **MACHINE TEST** > **CROSSRAMP** > the **INCLINE** Level to 10.
- P62, P80, and P82: **Service menu (51765761)** > **System Settings** > **System Tests** > **CrossRamp Test** > raise the **INCLINE** level to 10.

CAUTION: Be careful to NOT jam the ramp when operating the incline level in **CROSSRAMP TEST** mode and there is an active lift error code (E40, E42, E45, or E46). There are no software position min/max limit stops in this mode of operation to prevent over extending the ramp beyond the upper and lower Limits.

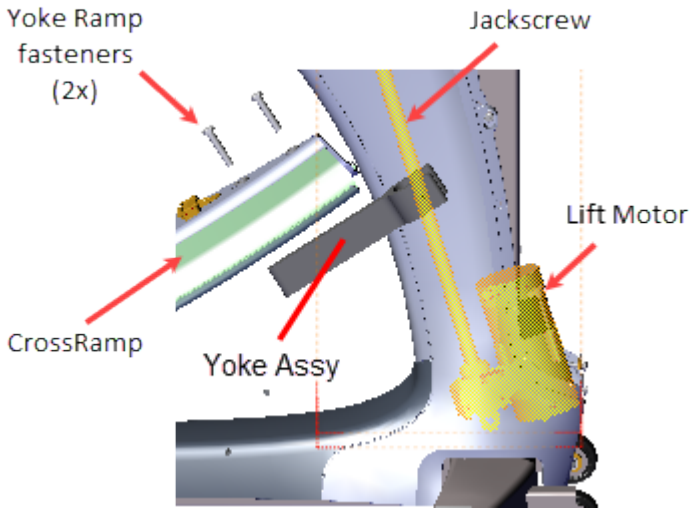
4. Disconnect the Lift Motor input power/control cable.

WARNING: Make sure to disconnect the Lift Motor input power/control cable or it is possible for the ramp to automatically lower to level 1 under certain circumstances, such as, if the CrossRamp Test is exited or the console powers down and then the pedals are moved. This unexpected action could cause personal injury.

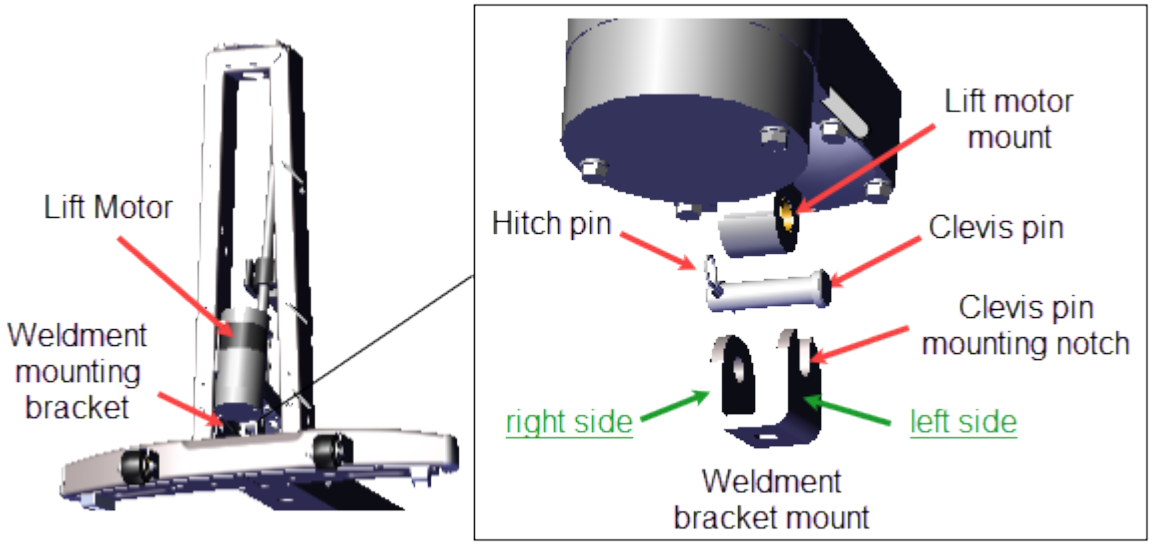
5. Place blocking material (hard foam or similar material) between the underside of the ramp and front frame cover to support and keep the ramp in the raised position while doing the replacement procedure.



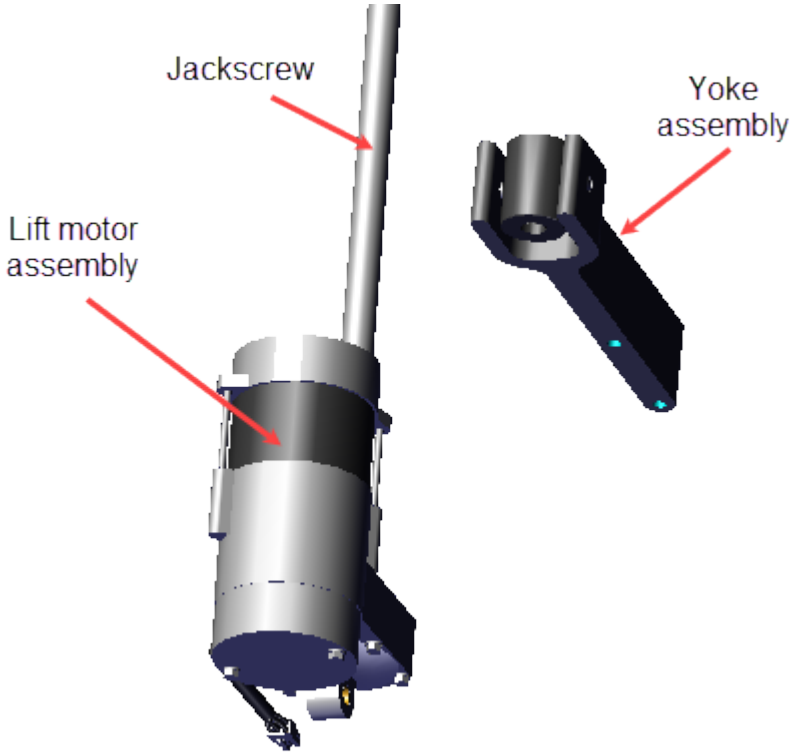
6. Use a 9/16" socket to remove the two ramp-yoke fasteners and remove the yoke from the ramp. Take Note that the ramp will fall when the fasteners are removed. Make sure the ramp is supported before removing the fasteners. Retain part(s) and/or fastener(s) for installation.



7. Remove the hitch pin from the Lift Motor clevis pin. Then, while holding the lift motor assembly, slide the clevis pin to the left just enough to clear the bracket right side bolt hole. Then tilt the lift motor assembly forward enough for the jackscrew to clear the inside of the frame tower weldment and then lift to remove. Do not fully remove the clevis pin to remove the Lift Motor Assembly. Retain part(s) and/or fastener(s) for installation.



8. Unscrew the Yoke Assembly from the jackscrew and remove. Retain the Yoke Assembly for installation



.

Installation Instructions

1. If this is a used lift motor replacement, clean and apply a thin layer of synthetic lubricant to the jackscrew.

   LUBRICATE THE LIFT MOTOR JACKSCREW

2. Lay the replacement Lift Motor on the floor in front of the elliptical and connect the input power/control cable.
3. .If the lift motor is working, access the **CROSSRAMP TEST** diagnostic test and raise the crossramp incline to level 10.
   a. .On **LED**[1] (P10, P30, P30i and P31) consoles: Access diagnostic test menu (51765761) and select **MACHINE TEST** > **CROSSRAMP TEST**.
   b. .On touchscreen (P62, P80, and P82) consoles: Access the Service menu (51765761) and select **System Settings > Systems Test** > **CrossRamp Test**.
4. Disconnect the input power/control cable.
5. Install and calibrate the lift motor.

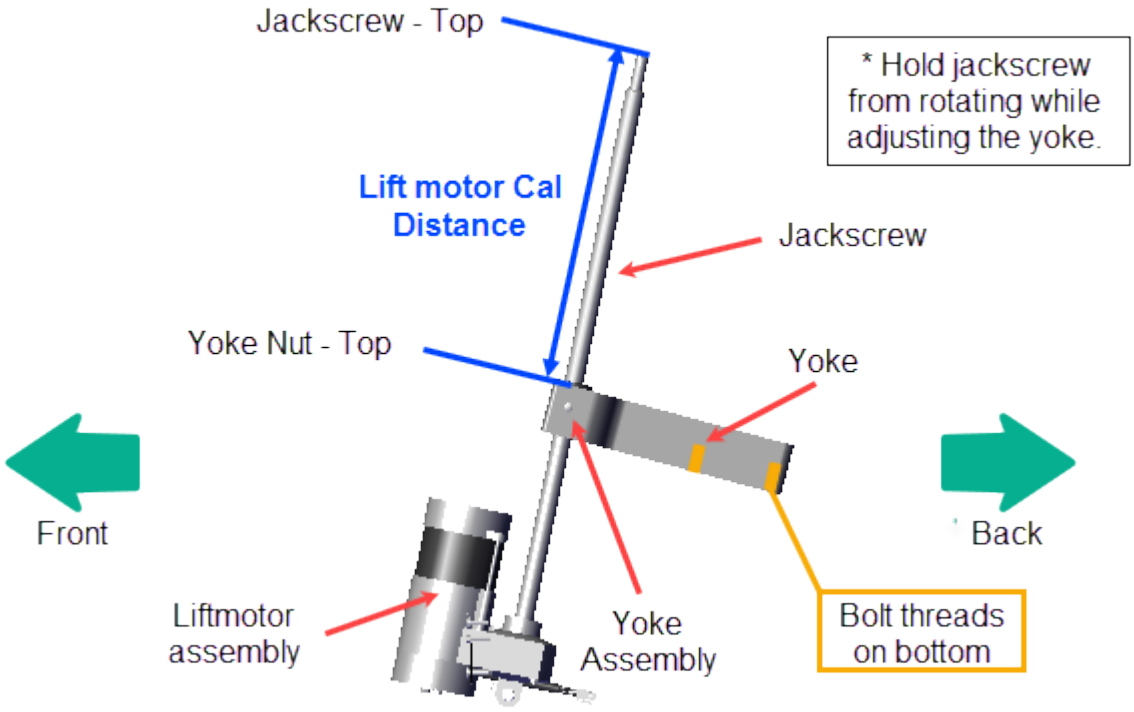
[1]light-emitting diodes.

a. While installing and/or adjusting the Yoke assembly on the jackscrew, do not allow the jackscrew to rotate invalidating the lift motor level 10 jackscrew calibration position. If the jackscrew does rotate, reconnect the lift motor power cable, reset the lift motor incline level to 10 and repeat the Lift Motor Yoke calibration.

b. Install the Yoke assembly onto the jackscrew with the yoke ramp mounting bolt threads positioned on the bottom side of the yoke. Use one hand to hold the jackscrew from rotating and the other hand to screw the Yoke Assembly onto the jackscrew.

c. Adjust the Yoke so the distance from the top of the jackscrew to the top of the Yoke Nut is as close to the 9" +/- 1/4" (23 cm +/- 0.6 cm calibration distance as possible with the yoke direction pointing to the back (opposite the lift motor).

Note: Make sure to install the Yoke Assy with the ramp mounting bolt threads on the bottom of the yoke.



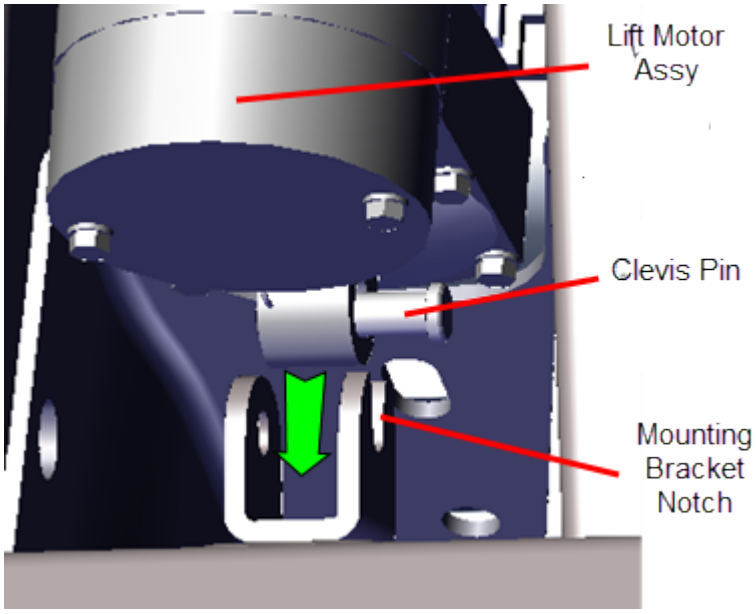
6. Install the lift motor:

a. Insert the clevis pin from the left side of the lift motor mount until it is flush with the right side of the mount (do not allow the clevis pin to exit the right side of the lift motor mount bolt hole).

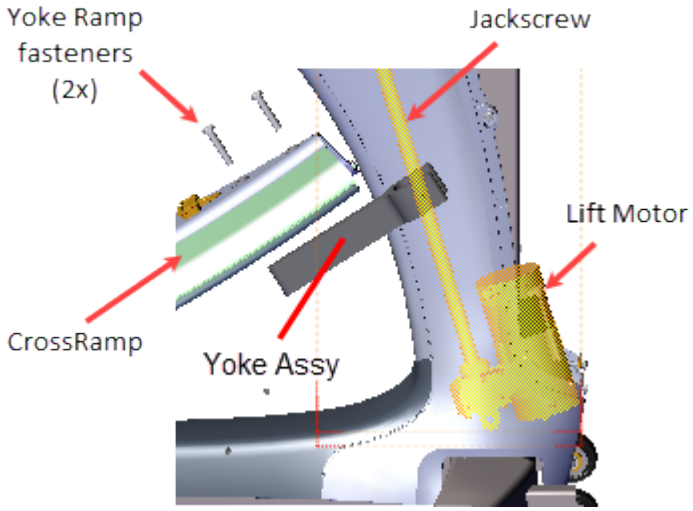
b. Then install the lift motor assembly onto the lift motor weldment bracket so that the clevis pin rests in the left side mounting bracket notch.

c. Tilt the lift motor assembly into the front tower weldment while carefully guiding the Yoke and jackscrew into mounting position.

d. Next push the clevis pin completely through the right side of the weldment mounting bracket and secure with the hitch pin.



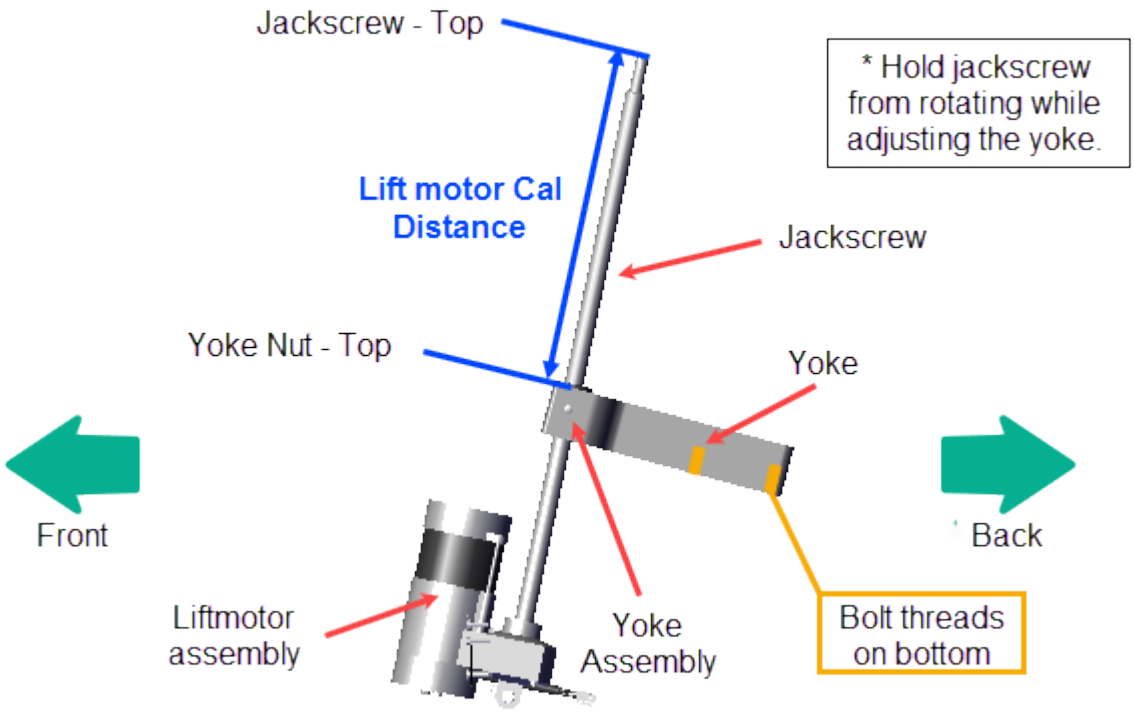
7. Reattach the Yoke to the Ramp using the two fasteners, torque to 330 in-lbs (27.5 ft-lbs or 37.2 Nm).



8. Remove any blocking materials and/or pads.
9. Reconnect the Lift Motor input power/control cable.
10. Access the service menu diagnostic **CrossRamp Test** and operate the ramp incline level through the full range of motion from minimum to maximum levels and verify operation:
    - P10, P30, P30i and P31: (**Service menu (51765761)** > **MACHINE TEST** > **CROSSRAMP TEST**.

- P62, P80, and P82: (**Service menu (51765761)** > **System Settings** > **System Tests** > **CrossRamp Test**.

11. Verify the lift motor calibration distance:
    a. Access the diagnostic **CROSSRAMP TEST** and set the incline level to 10.
    b. Measure and verify the Lift Motor calibration distance remains 9" +/- 1/4" (23 cm +/- 0.6 cm.



12. Select **QUICKSTART** and start a manual workout. Operate the machine at the following conditions to verify the Stairarm and ramp incline operation. Make sure that the Stairarms and ramp movement is smooth and that there are no unusual noises:
    - . Set the **INCLINE** to 1 and operate the machine from 50 to > 150 **SPM**[1].
    - Repeat this test at incline levels 10 and 20.
13. Reinstall the Ramp cover, the Lift Interface Plate cover, and the Front Lift cover, see "" on page 71, "" on page 74, and "" on page 88.
14. Verify machine operation and return to service, see Operation Verification.

Note: This procedure may have generated lift motor related error codes. Check the error log and resolve any active error codes, clear the error log on LED consoles.

See Also

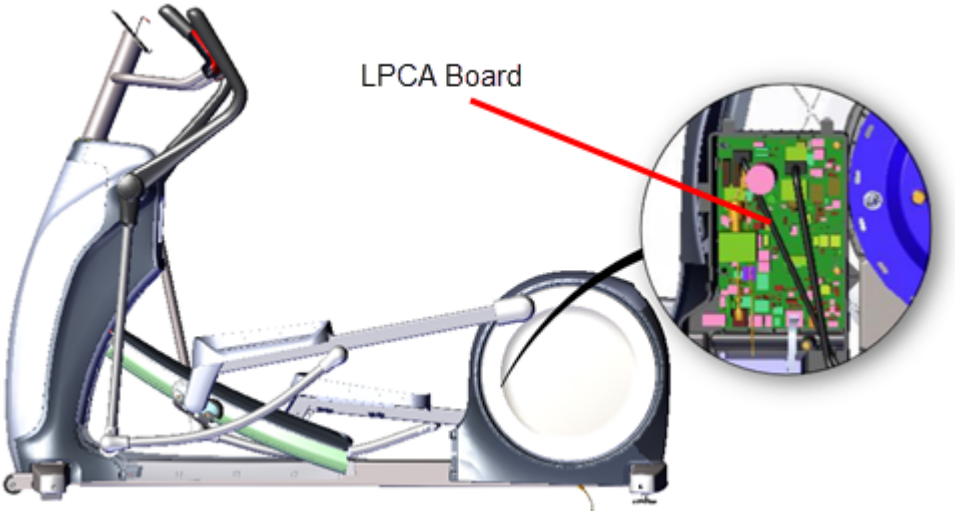
[1]steps per minute

"Lift Motor Calibration" on page 63

LPCA (Lower PCA) Board Replacement

About

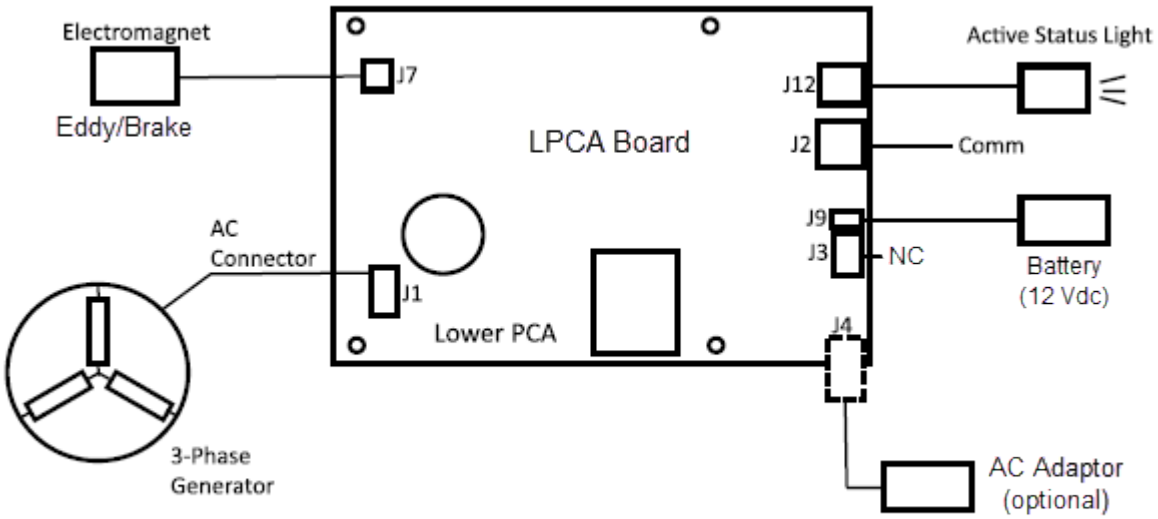
This procedure provides instruction to remove and install the **LPCA**[1] (**Lower PCA**[2]) board.



[1]Lower Printed Circuit Assembly board; also refered to as the Lower PCA or simply as the lower board. On treadmills, it is the console to base function interface and the motor controller unit (MCU). On self-powered units, it is the lower PCA console to base function interface.

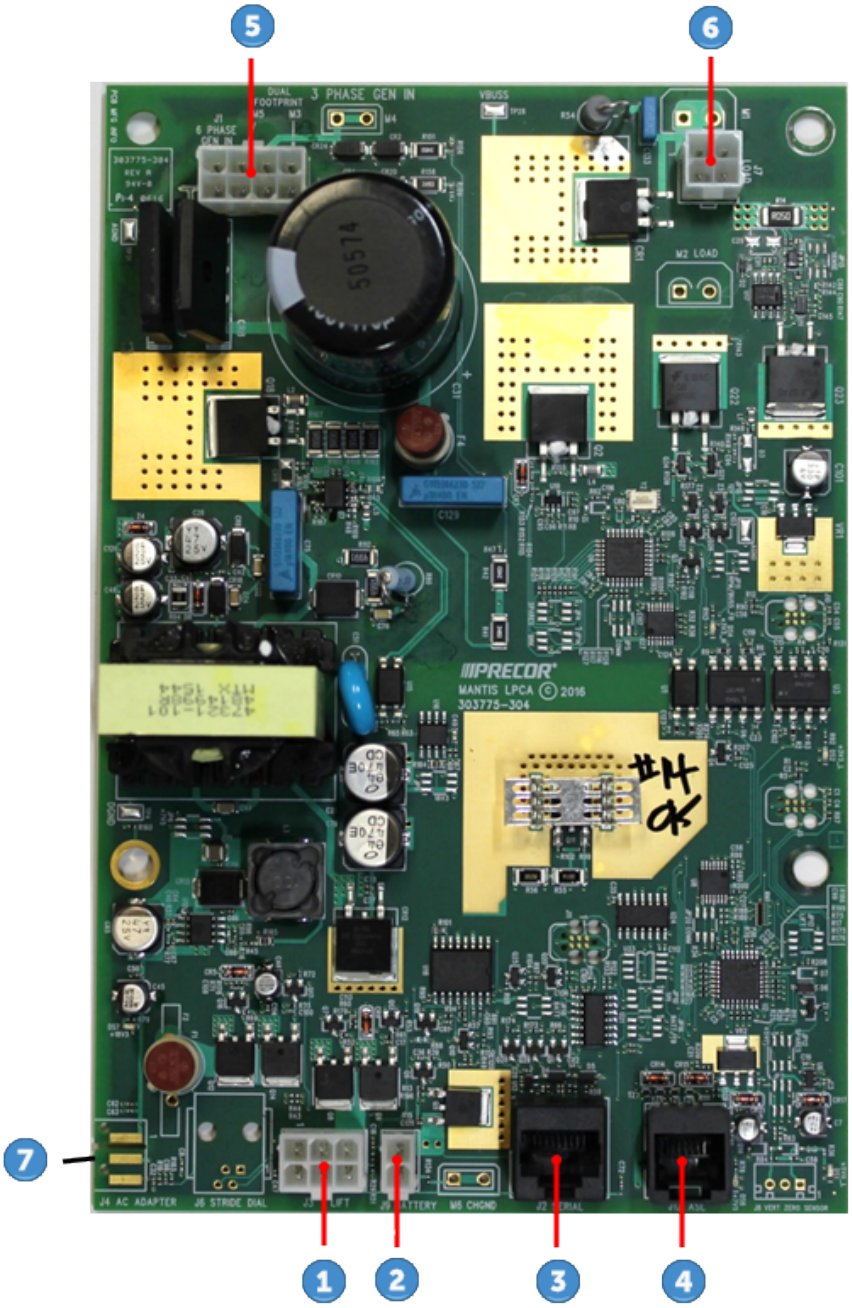
[2]Lower Printed Circuit Assembly board; also refered to as the Lower PCA or simply as the lower board. On treadmills, it is the console to base function interface and the motor controller unit (MCU). On self-powered units, it is the lower PCA console to base function interface.

LPCA System Block Diagram



LPCA System Block Diagram

LPCA Interface Connections



ID	Interface
1	Lift (J3)
2	Battery (J9)

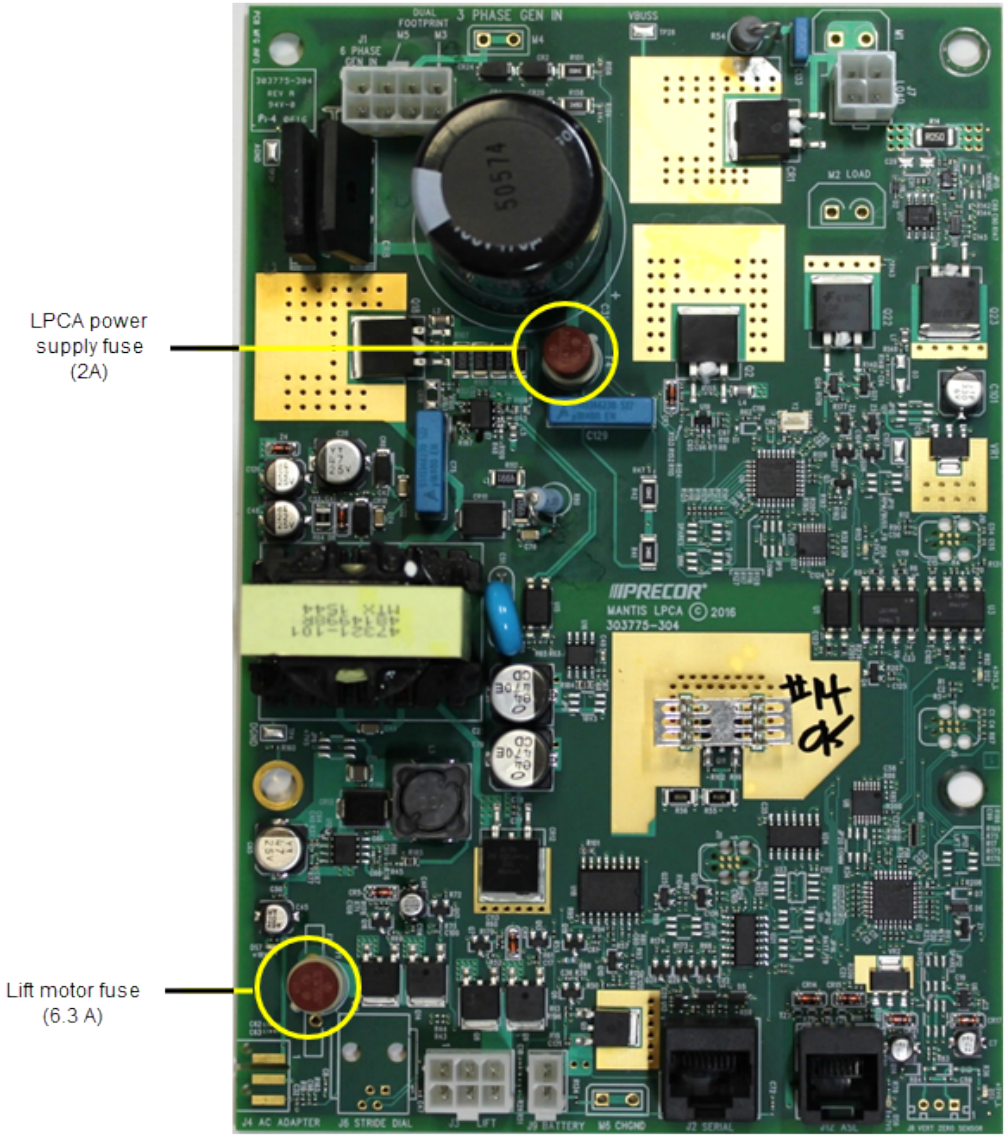
ID	Interface
3	Comm Serial (J2)
4	Active Status Light (J12)
5	Generator (J1)
6	Eddy/Brake (J7)
7	AC[1] Adapter (J4)

LPCA Fuse Locations

There are two replaceable fuses located on the LPCA board:

- 2 Amp LPCA power supply
- 6.3 Amp lift motor fuse.

[1]Alternating Current: electric current which periodically reverses direction between positive and negative polarity.

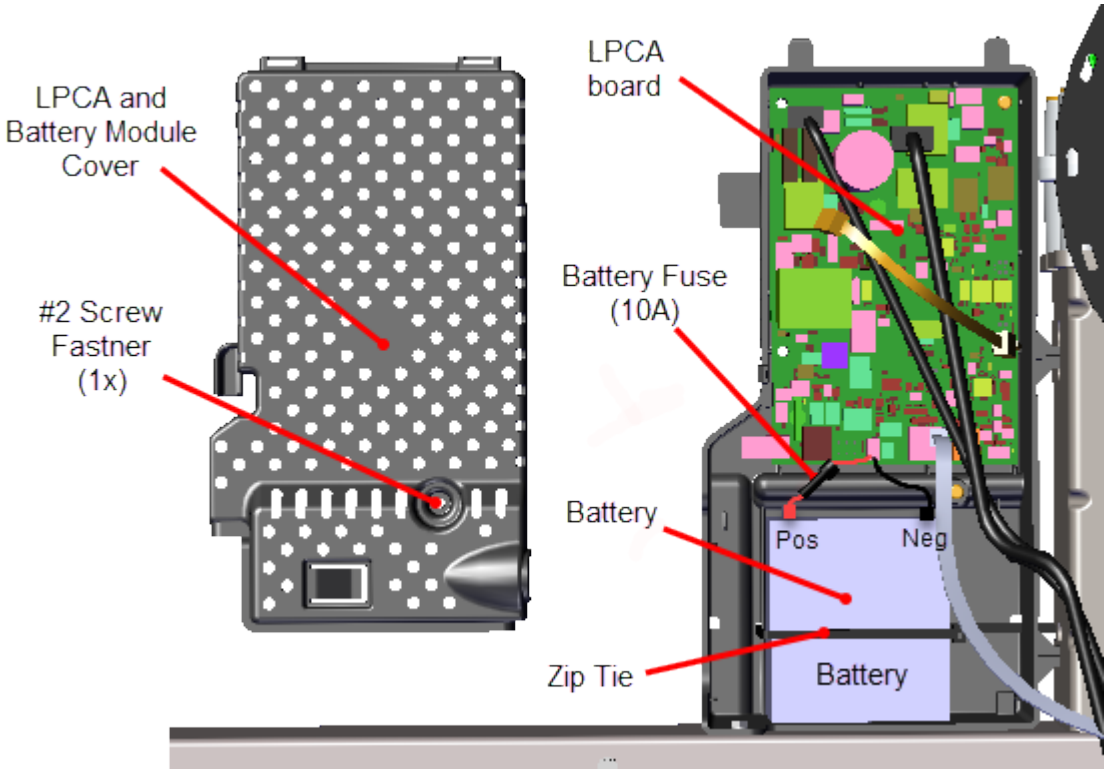


Procedure

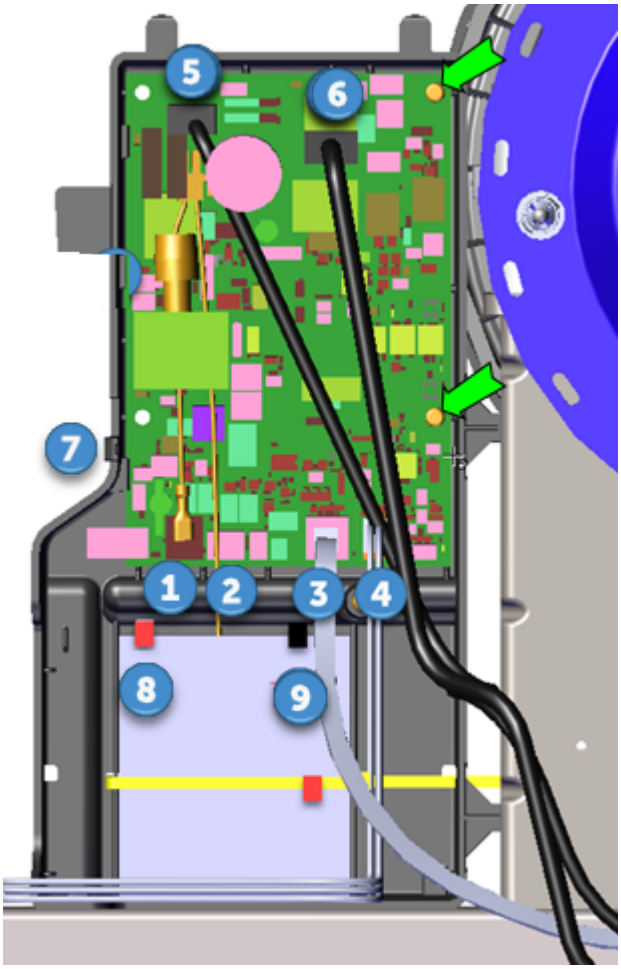
Review entire procedure before starting.

Removal Instructions

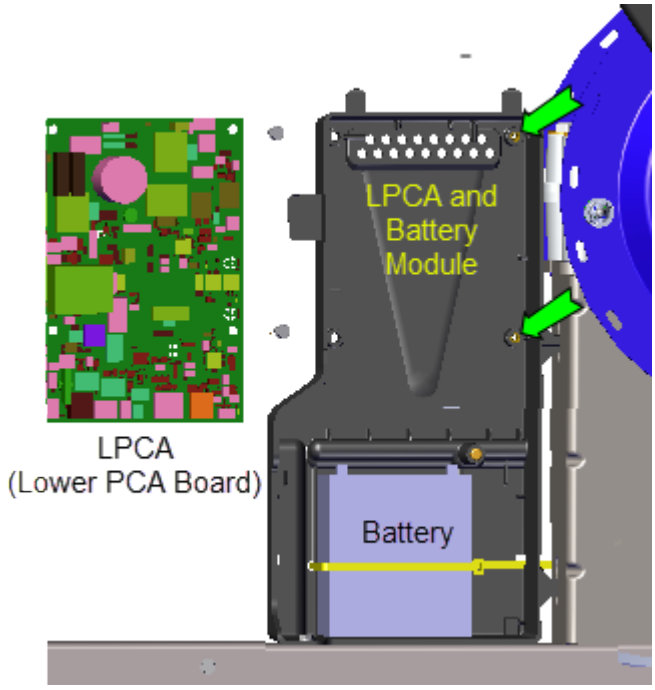
1. Remove the Left Drive Disk Cover, see " > " on page 94.
2. Remove the one #2 Phillips screw fastener and remove the LPCA/Battery Module cover. Retain part(s) and/or fastener(s) for installation.



3. Disconnect the Positive (Red) and Negative (Black) battery terminal cables.
4. Remove the following LPCA interface cables:
    a. Disconnect the Generator (J1) cable (5).
    b. Disconnect the Eddy/Brake (J7) cable (6).
    c. Disconnect the Lift (J3) cable (1).
    d. Disconnect the Battery (J9) cable (2).
    e. Disconnect the Comm Serial (J2) cable (3).
    f. Disconnect the Active Status Light (J12) cable (4).



5. Remove the two #2 Phillips screw fastener and remove the LPCA board. Retain part (s) and/or fastener(s) for installation.
6. If attached, disconnect the AC Adapter (J4) cable 7.



Installation Instructions

1. If removed, reinstall the AC Adapter (J4) cable 7.
2. Reinstall the LPCA board using the two #2 Phillips screw fasteners.
3. Reconnect the following LPCA interface cables:
    a. Reconnect the Lift (J3) cable 1.
    b. Reconnect the Battery (J9) cable 2.
    c. Reconnect the Comm Serial (J2) cable 3.
    d. Reconnect the Active Status Light (J12) cable 4.
    e. Reconnect the Generator (J1) cable 5.
    f. Reconnect the Eddy/Brake (J7) cable 6.
4. Reconnect the Positive (Red) and Negative (Black) battery terminal cables.
5. Reinstall the LPCA/Battery module cover using the one #2 Phillips screw fastener.
6. Reinstall the Left Drive Disk cover, see " > " on page 94.
7. Verify machine operation and return to service, see Operation Verification.

Fixed Arms Replacement

Applies To: Fixed arm models only.

About

This procedure provides instruction to remove and install the Fixed Arms.

Specifications

System Component	Specification
Fixed Arm Mounting Bar Nylock Set Screw	300 in-lbs (34 Nm)
Handlebar Mount Clamp Fastener	144 in-lbs (16.3 Nm)

Procedure

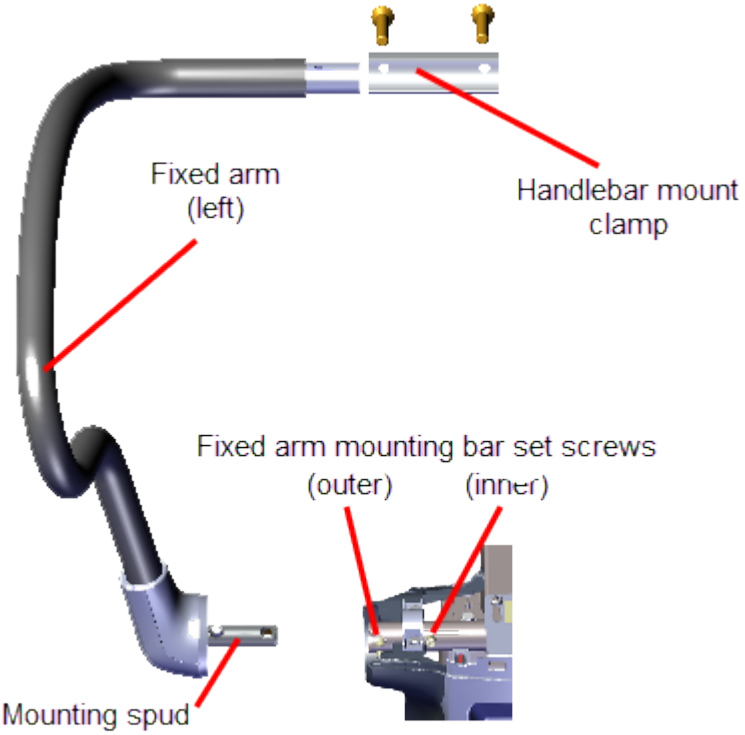
Review entire procedure before starting.

Removal Instructions

Repeat this procedure for both the right and left Fixed Arms.

1. Remove the Top Lift cover, see "" on page 71.
2. Use a 3/16" hex key to remove the Fixed Arm Mounting Bar - **inner** and **outer** Nylock set screws. Do not loosen and then retighten the Nylock set screw, this will damage the Nylock patch. Discard and do not reuse the Nylock set screws.

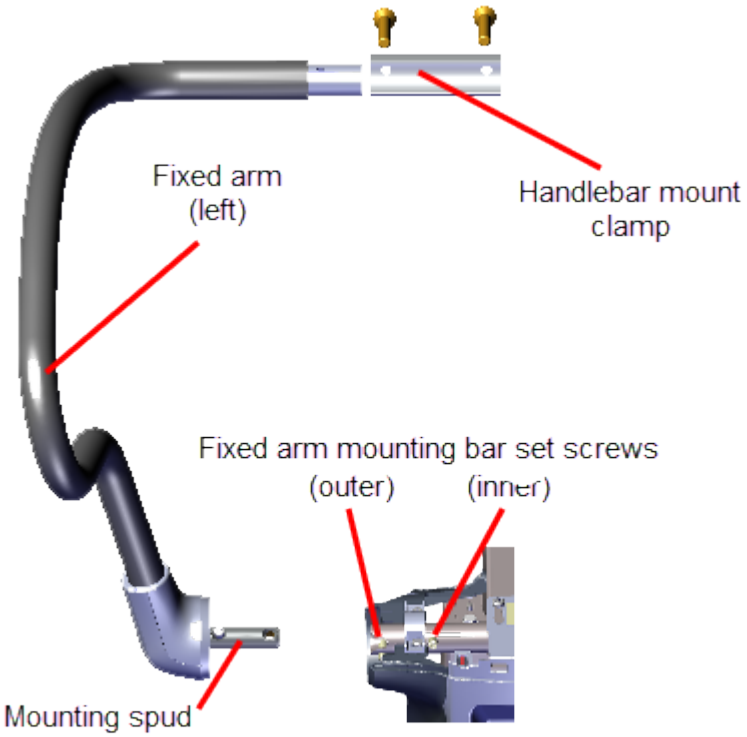
CAUTION: Do not reuse the **inner** or **outer** Nylock patch set screws for installation. Either removing or loosening the Nylock set screw will compromise the integrity of the Nylock patch. Discard and order new set screws for installation (see "Parts" on page 238, bubble # 252).



1. Remove the two 5/32" hex key Handlebar Mounting Clamp fasteners located at the front top of the console mount weldment. Hold arm while removing clamp.
2. Carefully remove the fixed arm mounting spud from the mounting bar.
3. Repeat procedure for both left and right Fixed Arms.

Installation Instructions

1. Reinstall the Fixed Arm onto Fixed Arm Mounting Bar and the Handlebar mounting bracket.



2. Position the Fixed arm into the Handlebar Mounting Bracket. Secure using the Handlebar Mount Clamp and two 5/32" hex key fasteners. Fully tighten and torque fasteners to 144 in-lbs (16.3 Nm).
3. Reinstall the **Inner** and **Outer** 3/16" hex key Nylock set screws, torque fasteners to 300 in-lbs (34 Nm)

CAUTION: Do not reuse the **inner** or **outer** Nylock patch set screws for installation. Either removing or loosening the Nylock set screw will compromise the integrity of the Nylock patch. Discard and order new set screws for installation (see "Parts" on page 238, bubble # 252).

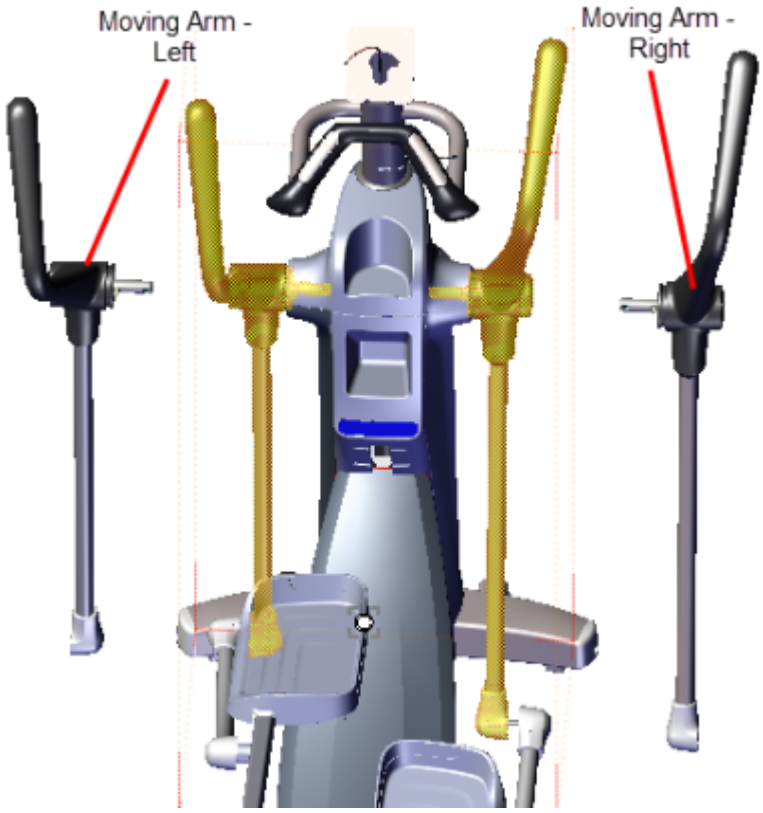
4. Repeat procedure for both left and right handle bars.
5. Verify machine operation and return to service, see Operation Verification.

Moving Arms Replacement

Applies To: Moving arm models only.

About

This procedure provides instruction to remove and install the Moving Arms.



Specifications

System Component	Specification
Moving Arm/Link Arm Bolt	300 +/- 90 in-lbs (34 +/- 10 Nm)
Inner/Outer pivot shaft set screws	300 +/- 90 in-lbs (34 +/- 10 Nm)

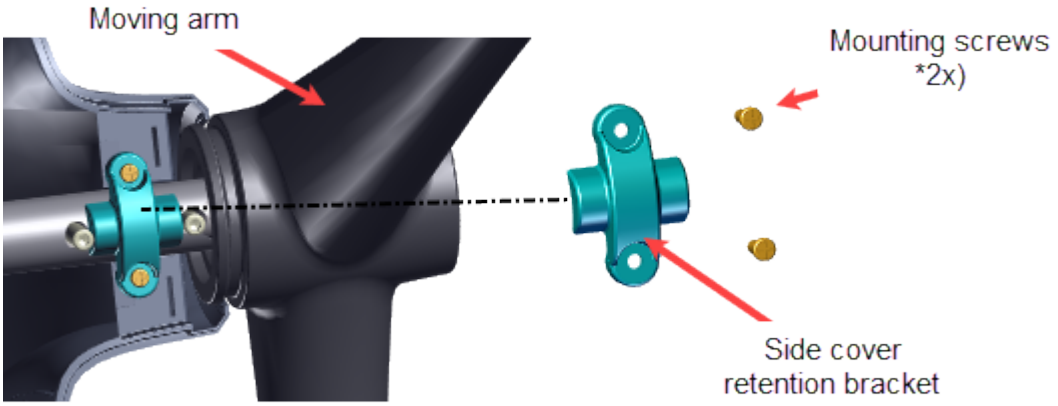
Procedure

Review entire procedure before starting.

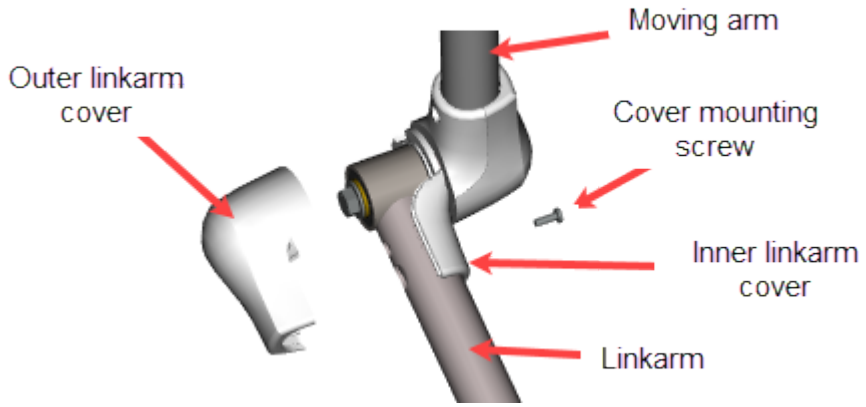
Removal Instructions

Repeat this procedure for both the right and left Moving Arms.

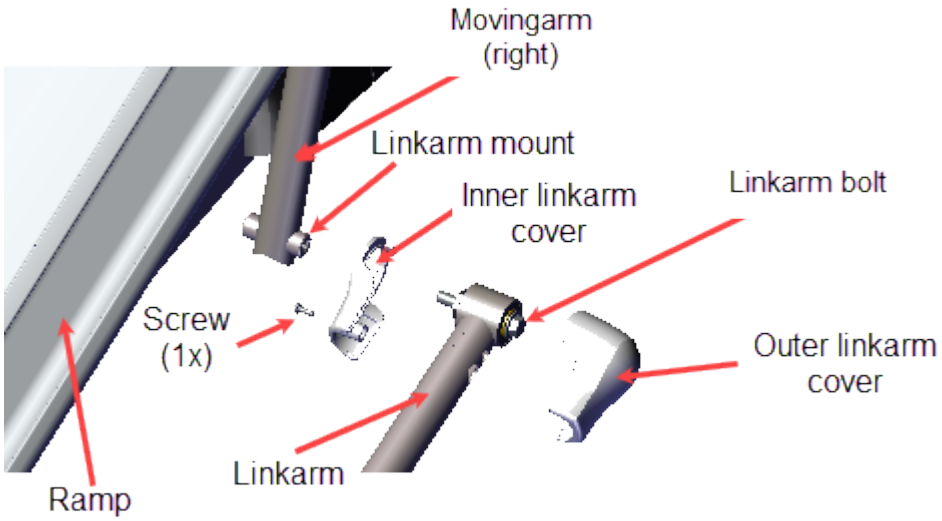
1. Remove the Top Lift cover, see "" on page 71.
2. Remove the two #3 Phillips side cover Retention Bracket screws and remove.



1. Disconnect the Linkarm from the Moving Arm:
   a. Remove the #2 Phillips Outer Linkarm cover mounting screw and remove. Retain part(s) and/or fastener(s) for installation.

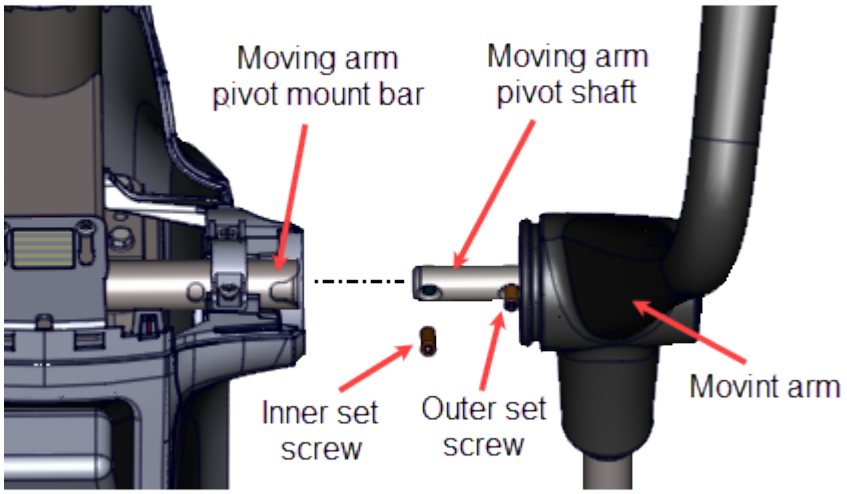


   b. Loosen the 9/16" Linkarm hex bolt and remove the Linkarm from the Moving Arm. Retain part(s) and/or fastener(s) for installation.
   c. Remove the Inner Linkarm cover from the Moving Arm. Retain part(s) and/or fastener(s) for installation.



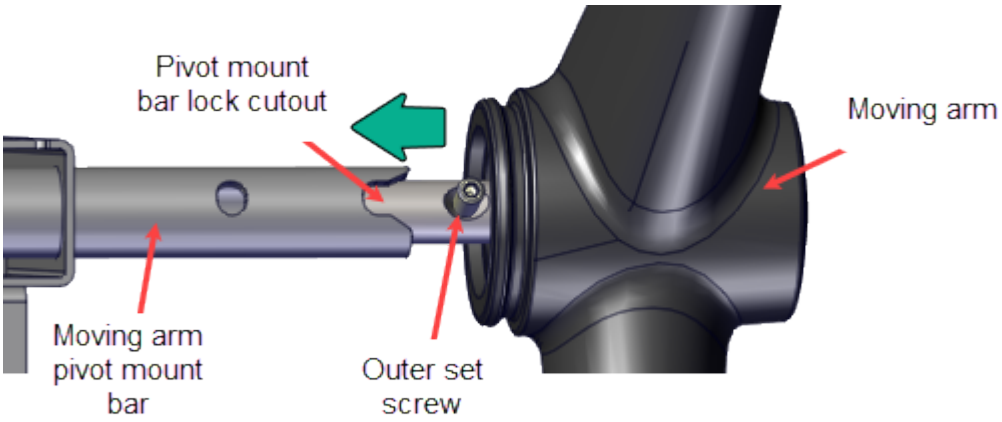
2. Remove the Moving Arm:
   a. **Outer pivot shaft set screw**: Do not remove, loosen or tighten the set screw, this will damage the Nylock patch. The outer set screw does not need to be removed or loosened to remove the moving arm.
   b. **Inner pivot shaft set screw:** Remove the 3/16" hex key pivot shaft inner set screw and gently pull the Moving Arm outward to remove. Discard the Nylock set screw.

CAUTION: Do not reuse the **inner** or **outer** Nylock patch set screws for installation. Either removing or loosening the Nylock set screw will compromise the integrity of the Nylock patch. Discard and order new set screws for installation (see "Parts" on page 238, bubble # 252).

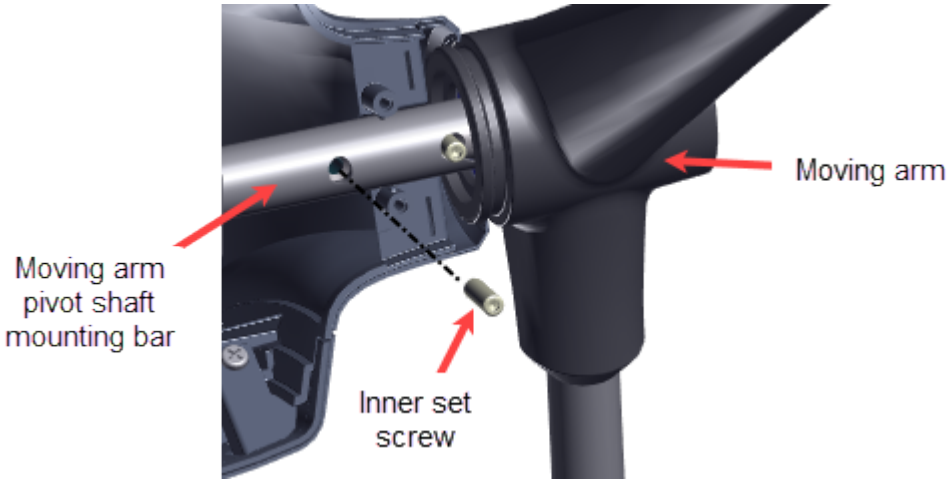


Installation Instructions

1. If the **Outer** pivot shaft set screw was removed, reinstall a new Outer Nylock set screw. **Torque**[1] to 300 in-lbs (34 Nm).
2. Reinstall the Moving Arm Pivot Shaft into the pivot shaft mounting bar. Make sure the Outer set screw fits into the pivot shaft locking cutout.



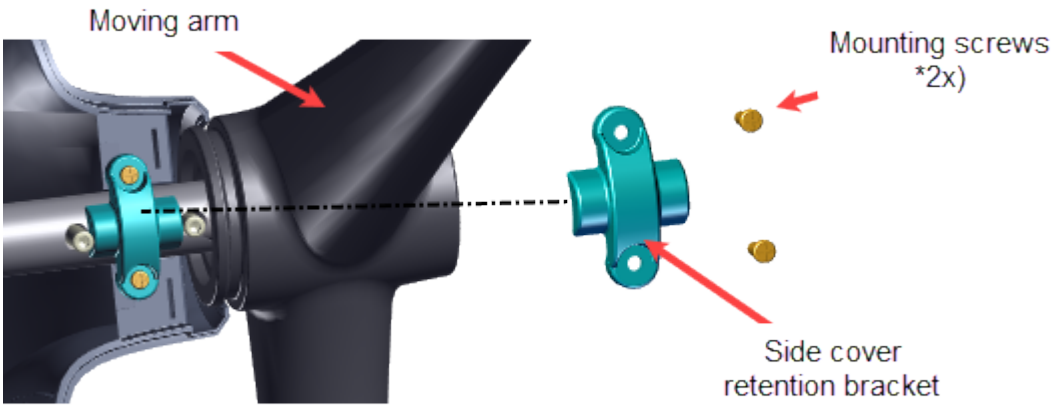
3. Reinstall the 3/16" hex key pivot shaft **Inner** pivot shaft set screw. Fully tighten and torque to 300 in-lbs (34 Nm).



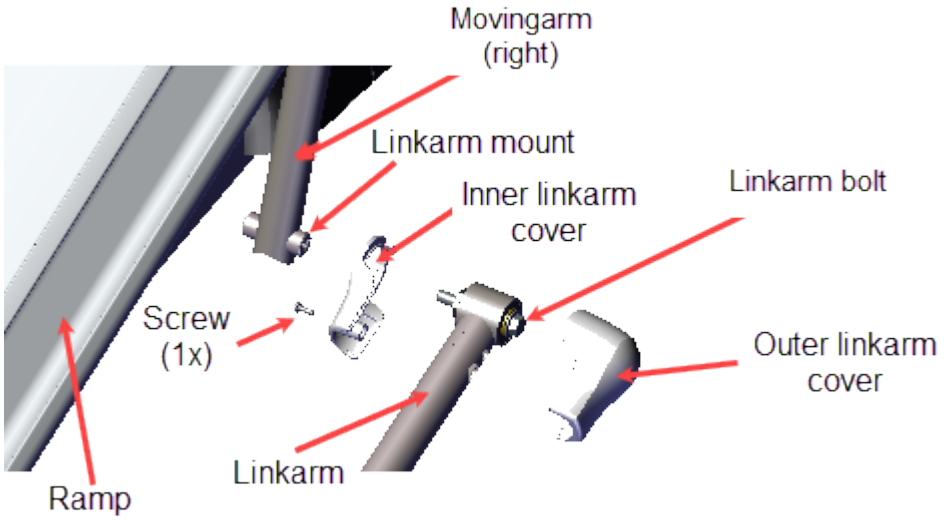
CAUTION: Do not reuse the **inner** or **outer** Nylock patch set screws for installation. Either removing or loosening the Nylock set screw will compromise the integrity of the Nylock patch. Discard and order new set screws for installation (see "Parts" on page 238, bubble # 252).

4. Reinstall the side cover Retention Block and secure using the two #3 Phillips screws.

[1]Torque is a measure of the force that can cause an object to rotate about an axis. Bolt/nut example: 5 NM torque is equivalent to 5 newton's of force applied one meter from the center of the bolt, 6 ft-lb is equivalent to 6 lbs of force applied 1 foot away from the center of the bolt.



5. Reattach the Linkarm to the Moving Arm:
   a. Reinstall the Inner Linkarm cover onto the Moving Arm - Linkarm mount.
   b. Then attach the Linkarm to the Moving Arm and secure using the 9/16" bolt, torque to 300 +/- 90 in-lbs (34 +/- 10 Nm).
   c. Reinstall the Outer Linkarm cover and secure using the #2 Phillips screw.



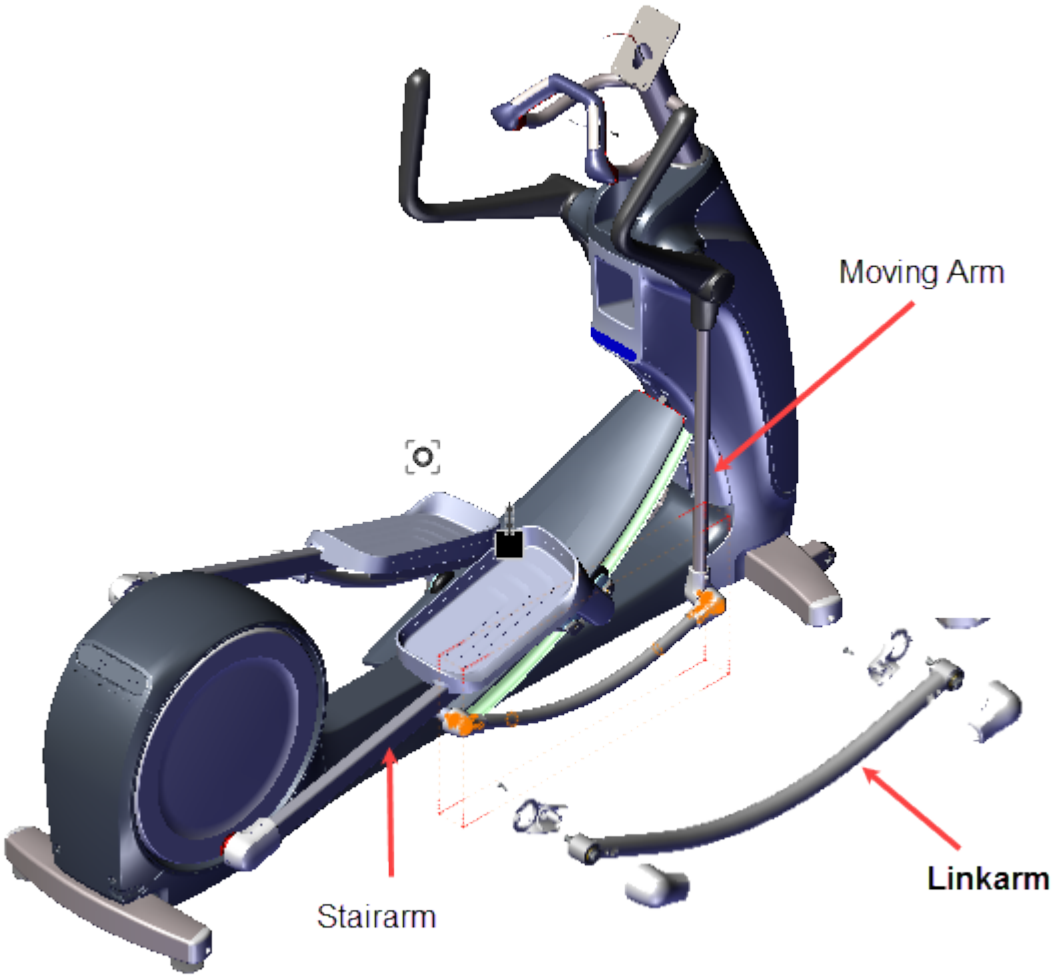
6. Reinstall the Top and Front Lift covers, see "" on page 71 and "" on page 71.
7. Verify machine operation and return to service, see Operation Verification.

Linkarm Replacement

Applies To: Moving arm models only.

About

This procedure provides instruction to replace the Linkarms.



Specifications

System Component	Specification
Linkarm mounting bolt	300 +/- 90 in-lbs (34 +/- 10 Nm)

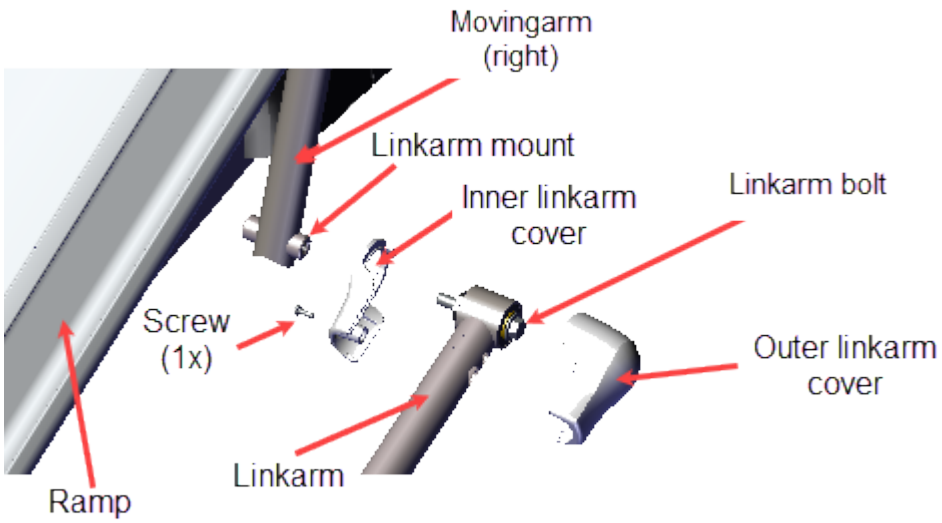
Procedure

Review entire procedure before starting.

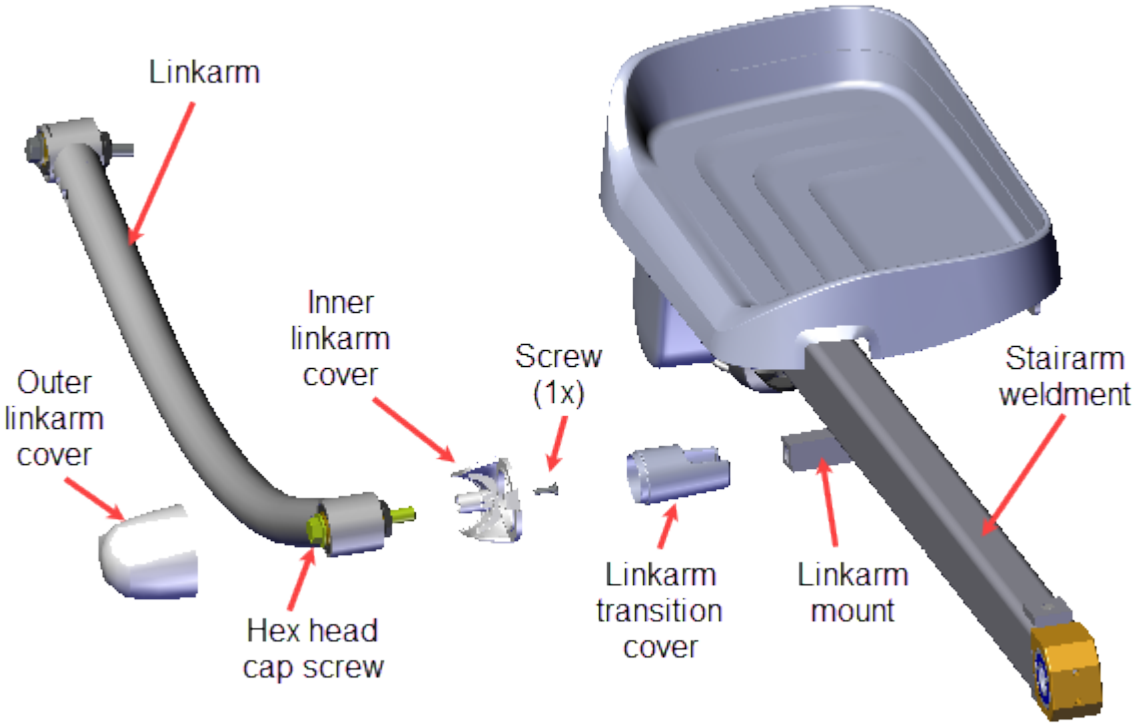
Removal

Repeat this procedure for both the right and left Linkarm removal.

1. Disconnect the Linkarm from the Moving Arm:
   a. Remove the #2 Phillips screw and the Outer Linkarm cover. Retain part(s) and/or fastener(s) for installation.
   b. Loosen the 9/16" Linkarm hex mounting bolt and remove the Linkarm from the Moving Arm. Retain part(s) and/or fastener(s) for installation.
   c. Remove the Inner Linkarm cover from the Moving Arm. Retain part(s) and/or fastener(s) for installation.



2. Moving Arm models: Disconnect the Linkarm from the Stairarm.
   a. Remove the #2 Phillips screw and remove the Outer Linkarm cover. Retain part (s) and/or fastener(s) for installation.

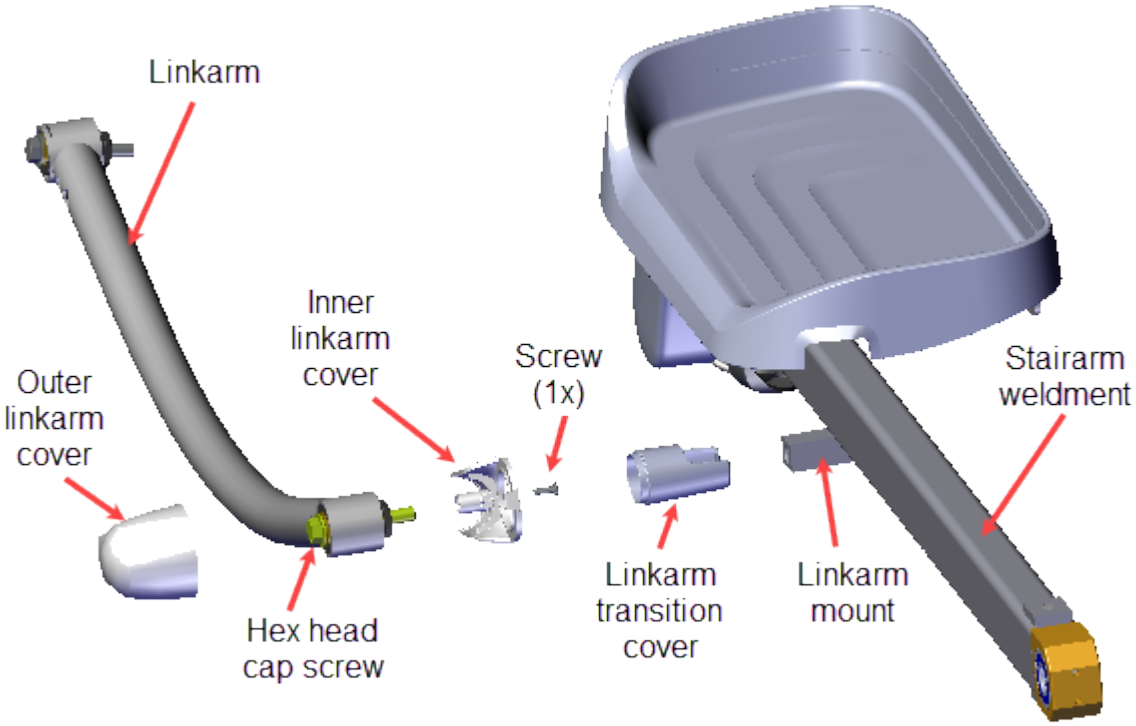


b. Remove the 9/16" hex head cap mounting bolt and remove the Linkarm from the Stairarm Linkarm mount. Retain part(s) and/or fastener(s) for installation.
c. Remove the Inner Linkarm cover and Linkarm Transition cover from the Stairarm linkarm mount. Retain part(s) and/or fastener(s) for installation.

Installation

Repeat procedure for the left and right linkarm.

1. Attach the Linkarm to the Stairarm:
   a. Reinstall the Linkarm Transition cover and then the Inner Linkarm cover onto the Stairarm linkarm mount.

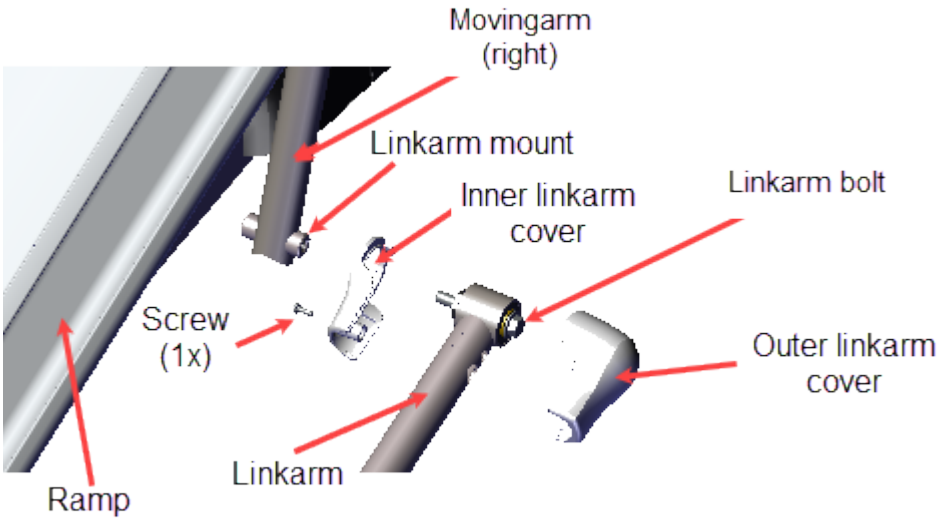


b. Reinstall the Linkarm onto the Stairarm weldment mount and secure using the linkarm 9/16" hex head cap mounting bolt. **Torque**[1] to 300 +/- 90 in-lbs (34 +/- 10 Nm).

c. Reinstall the Outer Linkarm cover and secure using the #2 Phillips screw.

[1]Torque is a measure of the force that can cause an object to rotate about an axis. Bolt/nut example: 5 NM torque is equivalent to 5 newton's of force applied one meter from the center of the bolt, 6 ft-lb is equivalent to 6 lbs of force applied 1 foot away from the center of the bolt.

2. Reattach the Linkarm to the Moving Arm:
    a. Reinstall the Inner Linkarm cover onto the Moving Arm Linkarm mount.

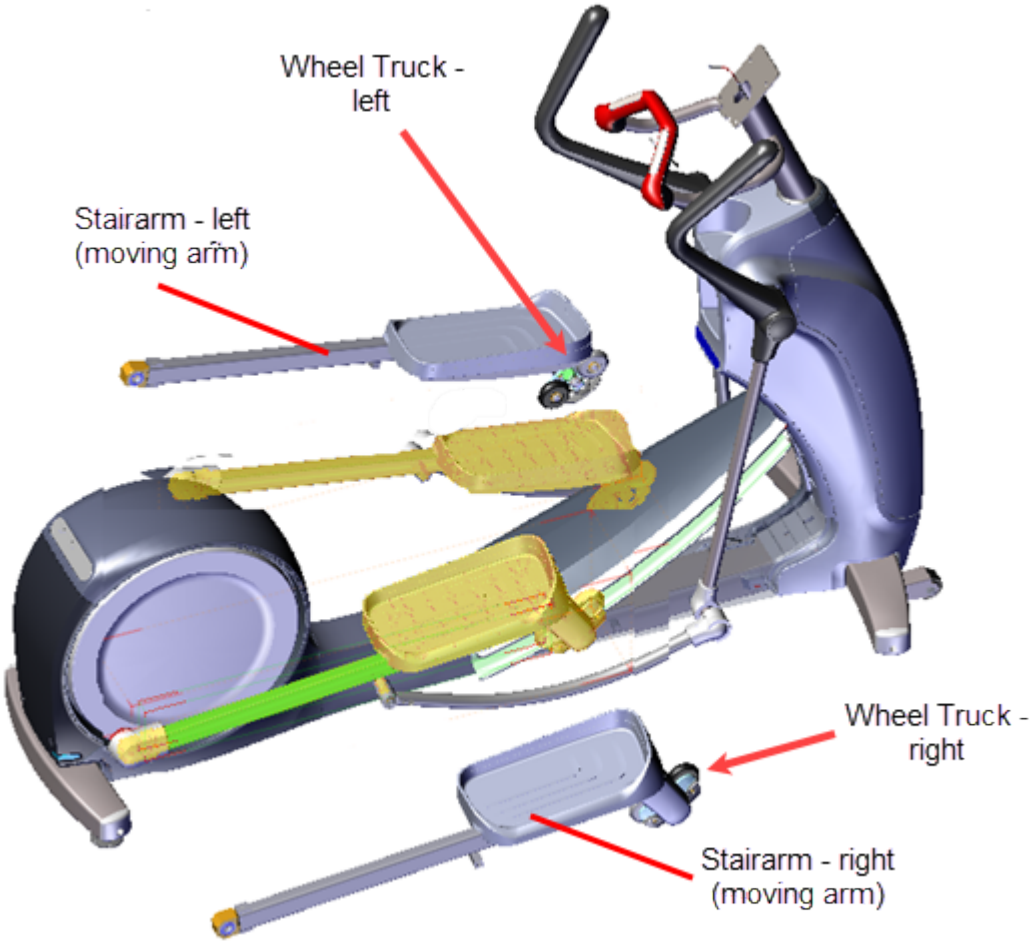


    b. Then place the Linkarm onto the Moving Arm linkarm mount and secure using the 9/16" mounting bolt. Torque to 300 +/- 90 in-lbs (34 +/- 10 Nm).
    c. Reinstall the Outer Linkarm cover and secure using the #2 Phillips screw.
3. Verify machine operation and return to service, see "Operation Verification" on page 21.

Stairarm Replacement

About

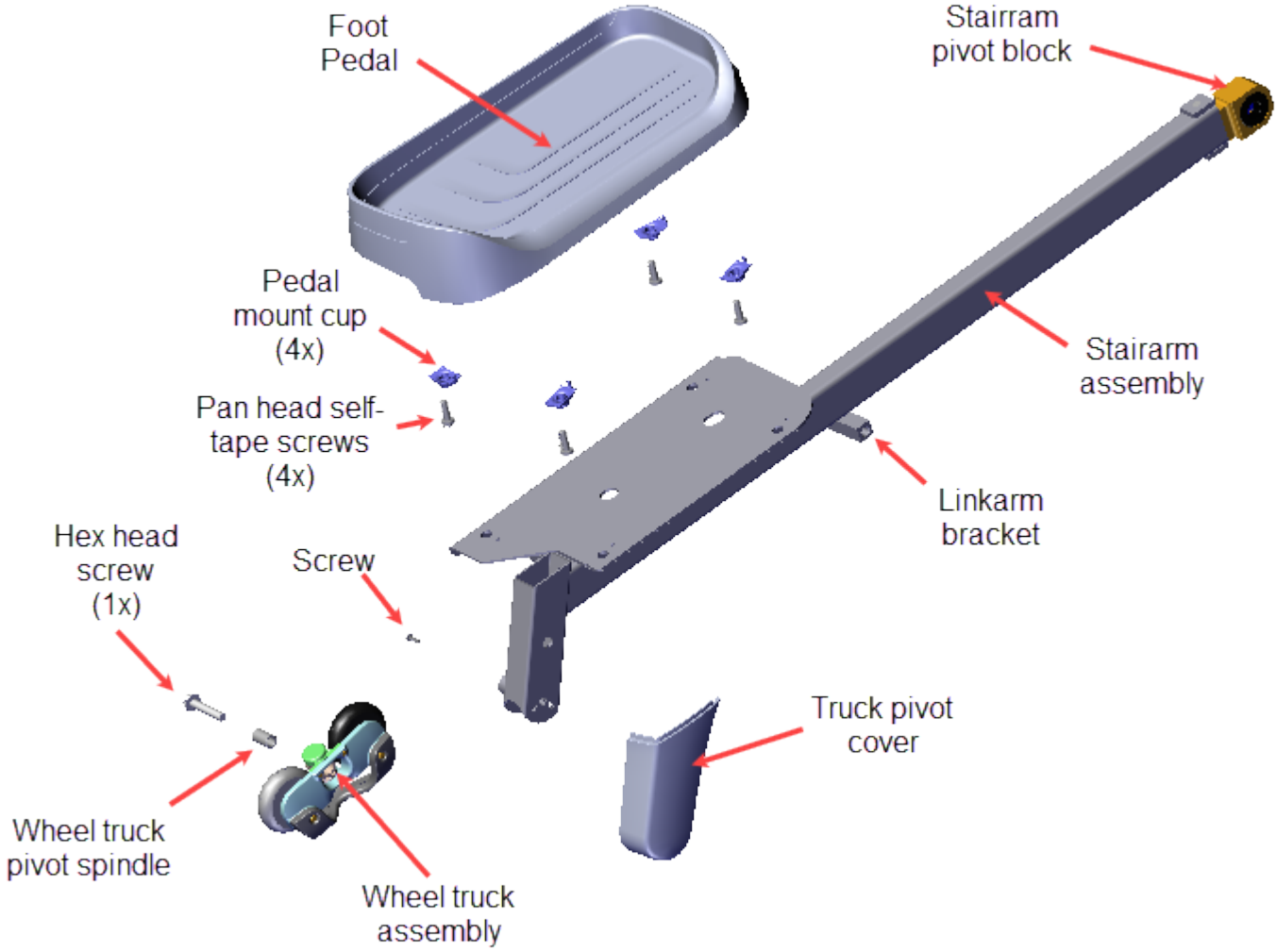
This procedure provides instruction to remove and install the Moving and Fixed Arm model Stairarms.



Specifications

System Component	Specification
Link Arm Fastener	300 +/- 90 in-lbs (34 +/- 10 Nm)
Crank Retention Plate Screw	30 +/- 9 in-lbs (3.4 +/- 1 Nm)

Procedure



Stairarm Replacement - Machines with updated Input Drive Assembly

Use this procedure for machines with the updated Input Drive assembly modified to better secure the stairarm onto the Input Drive Crank. The crank spindle was modified to accept additional stairarm fastener hardware including a Crank Pin Retention Plate to secure the stairarm to the crank.

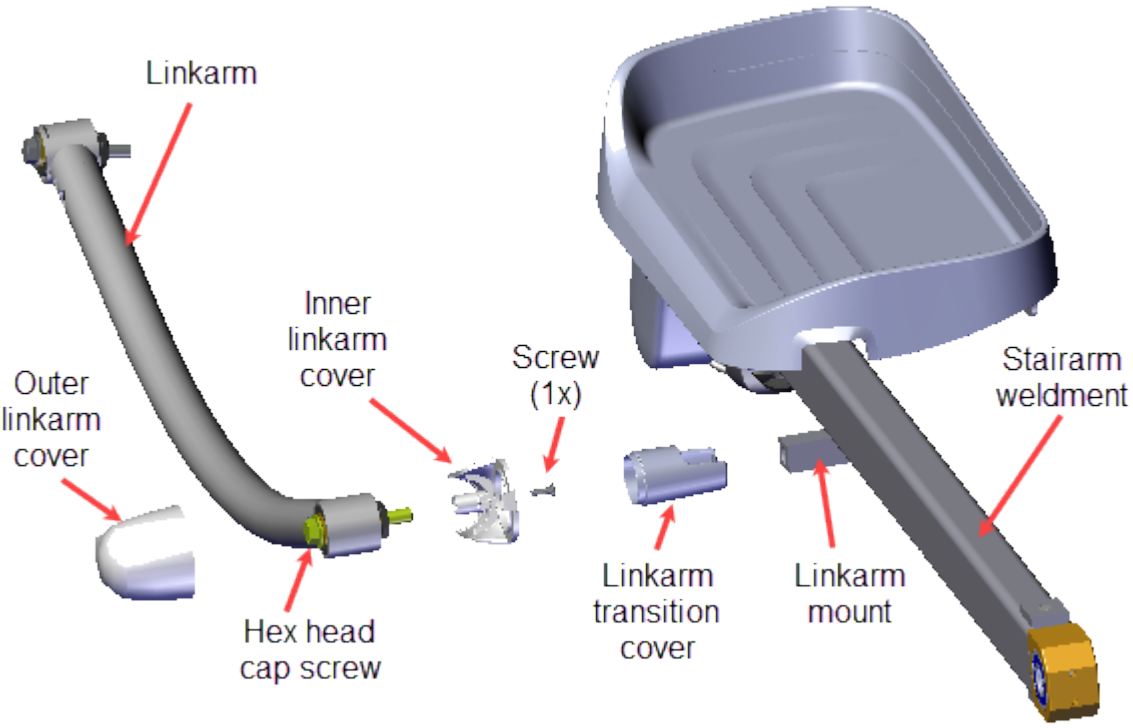
Review entire procedure before starting.

Removal

Repeat this procedure for both the left and right Stairarm removal.

Removing the Linkarm from the Stairarm

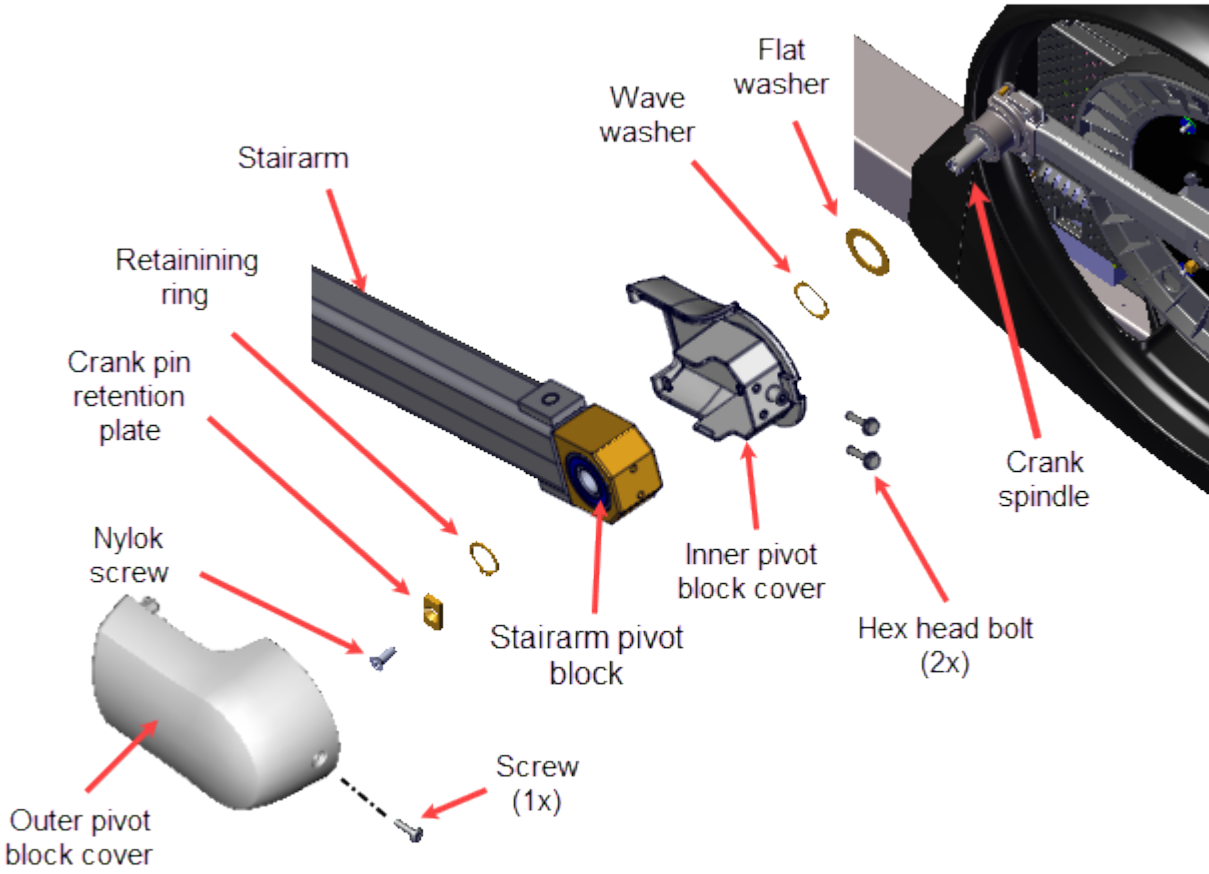
1. Moving Arm models only:
   Remove the Linkarm from the Stairarm.
   a. Remove the #2 Phillips screw fastener and remove the Outer Linkarm Cover. Retain part(s) and/or fastener(s) for installation.



   b. Remove the 9/16" hex head cap screw and remove the Linkarm from the Stairarm weldment Linkarm mount and carefully lay onto the floor.
   c. Remove the Inner Linkarm cover from the Stairarm weldment Linkarm mount. Retain hardware and fastener for installation.

Removing the Stairarm from the Input Drive Crank

2. Remove the Stairarm from the Input Drive Crank:
   a. Remove the #2 Phillips screw fastener and slide the Outer Pivot Block cover rearward and away from the frame to remove. Retain part(s) and/or fastener(s) for installation.



Machines with Crank Pin Retention Plate

b. Remove the #3 Phillips Nylock screw and the Crank Retention Plate. Discard the Nylock screw and retain the Crank Retention Plate for installation.

CAUTION: Do not reuse the removed Retention Plate Nylock patch screw fastener for installation. Discard the removed bolts and order new bolts for installation, see Parts Exploded View Diagrams, bubble # 283.

c. Use external 0.047" retaining ring pliers to remove the Stairarm Pivot Block retaining ring. Retain part(s) and/or fastener(s) for installation.

d. Remove the Stairarm off the Crank Spindle and carefully lay on the floor.

e. Remove the Pivot Block inner wave washer and flat washer off the Crank Spindle. Note that the flat washer sets against the crank. Retain part(s) and/or fastener(s) for installation.

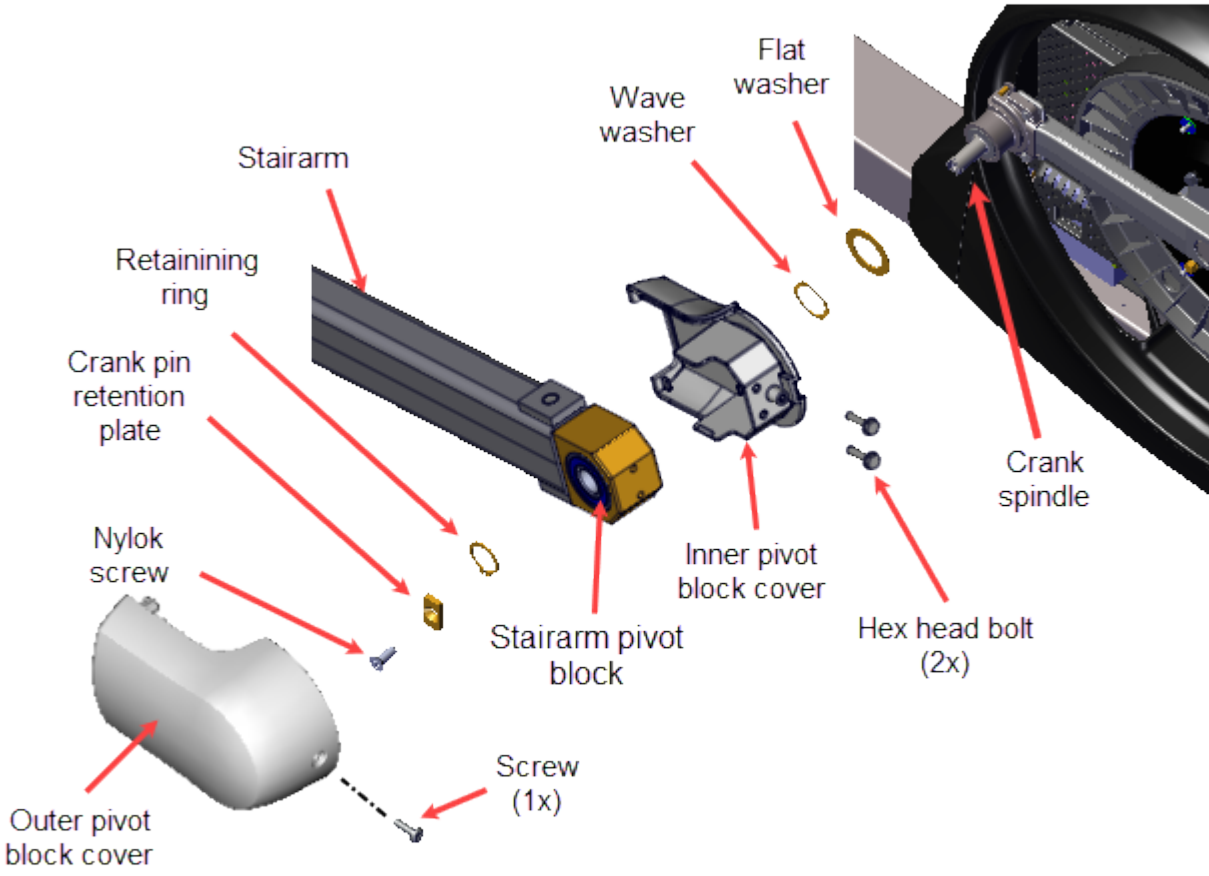
f. Remove the two 5/16" hex head bolts and remove the Inner Pivot Block cover. Retain part(s) and/or fastener(s) for installation.

3. Remove the Stairarm from the ramp. Roll the wheels down the ramp and off the back of the ramp.

Installation

Installing the stairarm onto the Input Drive Crank

1. Reinstall the Stairarm wheels onto the ramp. Carefully place the wheels onto the back of the ramp track and then roll the wheels up the ramp.
2. Reinstall the Stairarm onto the input drive Crank Spindle as follows:
   a. Reinstall the Inner Pivot Block cover onto the Stairarm Pivot Block and secure using two 5/16" hex head bolts.



Machines with Crank Pin Retention Plate

   b. Install the flat washer and then the wave washer onto the Crank Spindle. Note that the flat washer sets against the crank.
   c. Then slide the Stairarm Pivot Block onto the Crank Spindle. Secure using the retaining ring and external 0.047" retaining ring pliers.

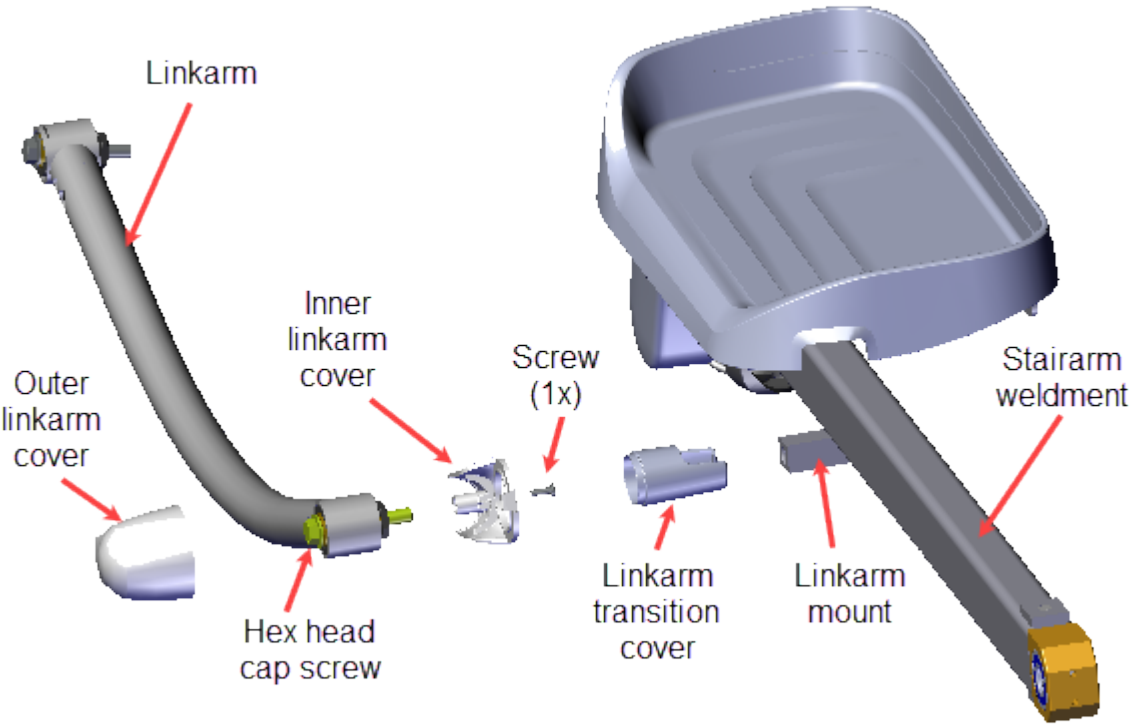
d. Reinstall the Crank Retention Plate and secure using a NEW #3 Phillips Nylock screw (see Parts Exploded View Diagrams, bubble # 283).

CAUTION: Do not reuse the removed Retention Plate Nylock patch screw fastener for installation. Discard the removed bolts and order new bolts for installation, see Parts Exploded View Diagrams, bubble # 283.

e. Reinstall the Outer Pivot Block cover and secure using the #2 Phillips screw.

Installing the Linkarm onto the Stairarm

3. Moving Arm models only:
   Reinstall the Linkarm onto the Stairarm.
   a. Reinstall the Linkarm Transition cover onto the Stairarm weldment Linkarm Mount.



   b. nstall the Inner Linkarm cover and Linkarm onto the Stairarm weldment Linkarm mount. Secure using 9/16" hex head cap screw and torque to 300 +/- 90 in-lbs (34 +/- 10 Nm).
   c. Reinstall the Outer Linkarm Cover and secure using the #2 Phillips screw.
4. Verify machine operation and return to service, see Operation Verification.

Stairarm Replacement - Machines with original Input Drive Assembly

Use this procedure for machines with the original Input Drive assembly (original Input Drive assembly does not include the modified crank and additional stairarm fastener hardware).

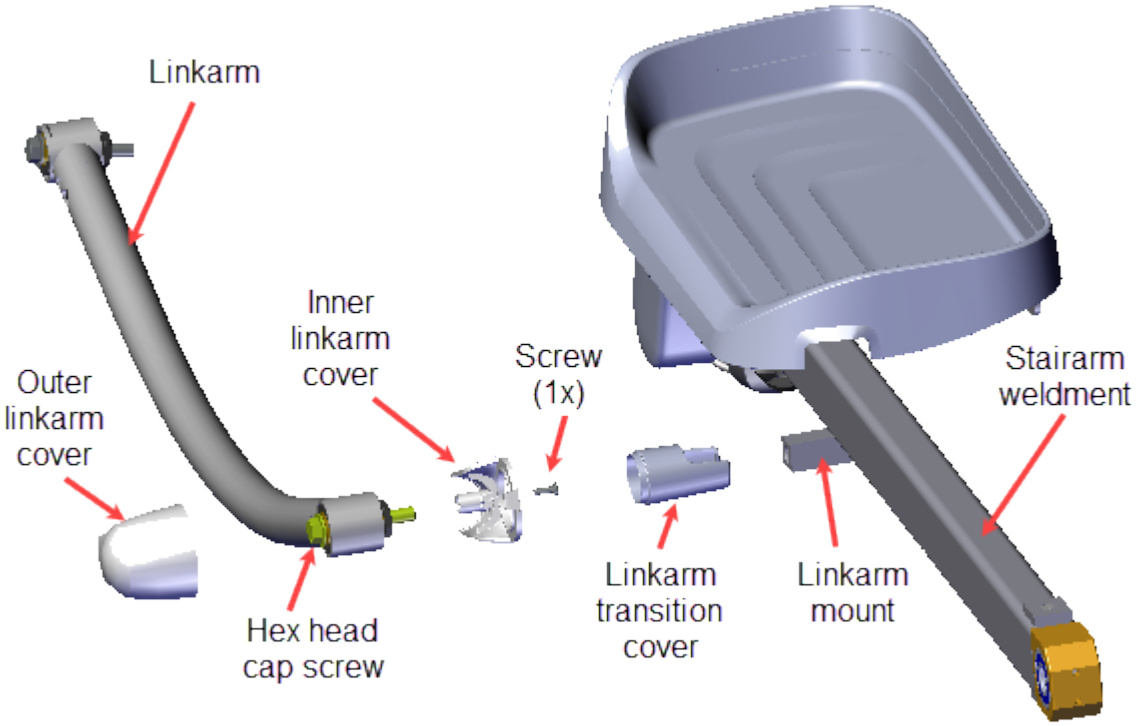
Review entire procedure before starting.

Removal

Repeat this procedure for both the left and right Stairarm removal.

Removing the Linkarm from the Stairarm

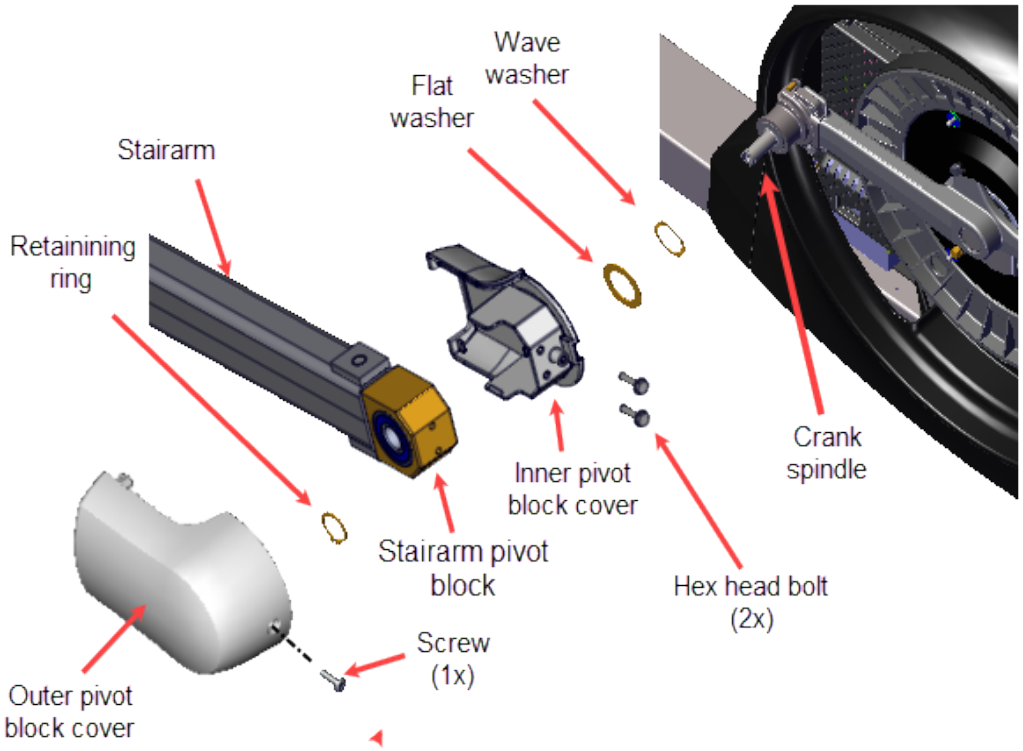
1. Moving Arm models only:
   Remove the Linkarm from the Stairarm.
   a. Remove the #2 Phillips screw fastener and remove the Outer Linkarm Cover. Retain part(s) and/or fastener(s) for installation.



   b. Remove the 9/16" hex head cap screw and remove the Linkarm from the Stairarm weldment Linkarm mount and carefully lay onto the floor.
   c. Remove the Inner Linkarm cover and Linkarm Transition cover from the Stairarm weldment Linkarm mount. Retain part(s) and/or fastener(s) for installation.

Removing the Stairarm from the Input Drive Crank

2. Remove the Stairarm from the Input Drive Crank:
   a. Remove the #2 Phillips screw fastener and slide the Outer Pivot Block cover rearward and away from the frame to remove. Retain part(s) and/or fastener(s) for installation.



Machines without Crank Pin Retention Plate

b. Remove the two 5/16" hex head pivot block bolts. Retain part(s) and/or fastener(s) for installation.

c. Use external 0.047" retaining ring pliers to remove the Stairarm Pivot Block retaining ring. Retain part(s) and/or fastener(s) for installation.

d. Remove the Stairarm off the Crank Spindle and carefully lay on the floor.

e. Remove the Inner Pivot Block cover

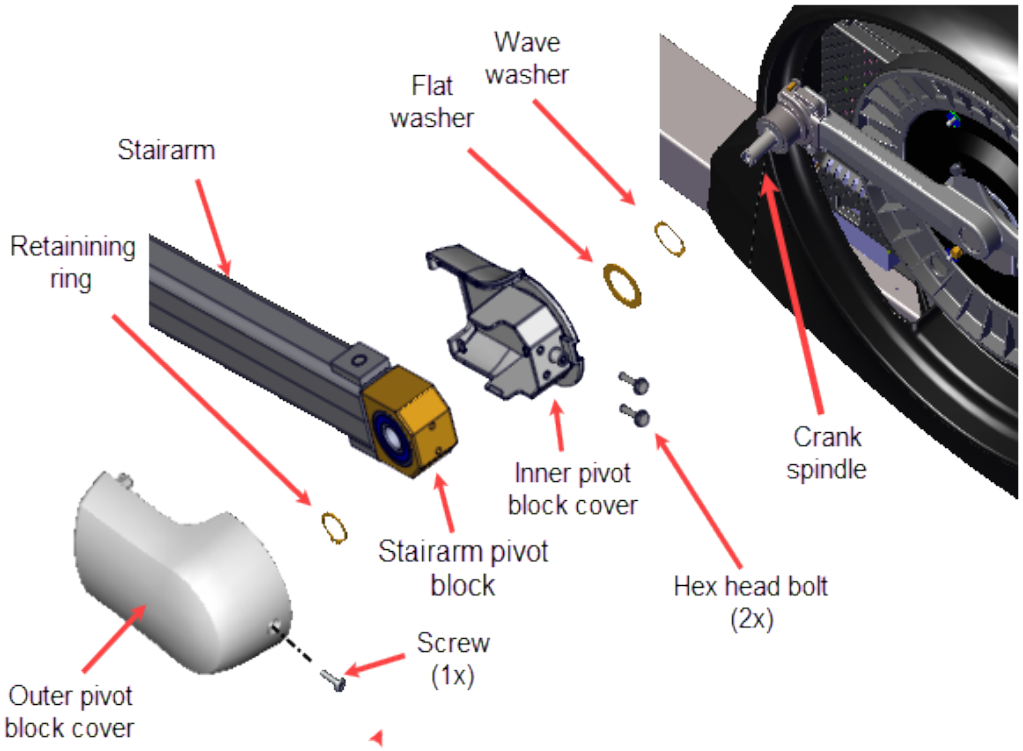
f. Remove the Pivot Block flat washer and wave washer off the Crank Spindle. Note that the wave washer sets against the Crank. Retain part(s) and/or fastener(s) for installation.

3. Remove the Stairarm from the ramp. Roll the wheels down the track and off the back of the ramp.

Installation

Installing the Stairarm onto the Input Crank

1. Reinstall the Stairarm wheels onto the ramp. Carefully place the wheels onto the back of the ramp track and then roll the wheels up the ramp.
2. Reinstall the Stairarm Pivot Block onto the input Drive Crank Spindle:



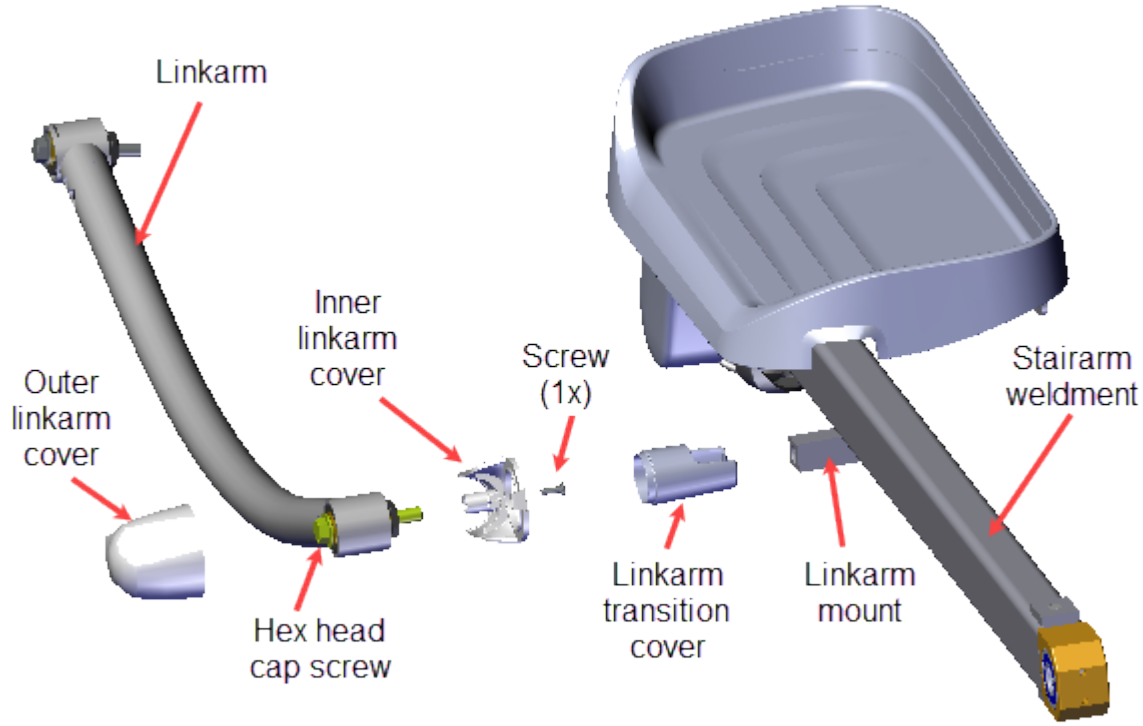
Machines without Crank Pin Retention Plate

a. Install the wave washer and flat washer onto the Crank Spindle. Note that the wave washer sets against the crank.
b. Reinstall the Inner Pivot Block cover onto the Stairarm Pivot Block. Thread the two 5/16" hex head bolts just enough to hold the cover in place. Do not fully tighten the bolts which will not allow the stairarm to slide onto the Crank Spindle.
c. Then slide the Stairarm Pivot Block onto the Crank Spindle. Use the external 0.047" retaining ring pliers to reinstall the Stairarm Retaining Ring onto the Crank Spindle.
d. Fully tighten the two 5/16" Inner Pivot Block cover hex head bolts.
e. Reinstall the Outer Pivot Block cover and secure using the #2 Phillips screw.

Installing the Linkarm onto the Stairarm

3. Moving Arm models only:
   Reinstall the Linkarm onto the Stairarm (moving arm models only):

a. Reinstall the Linkarm Transition cover onto the Stairarm Linkarm mount.



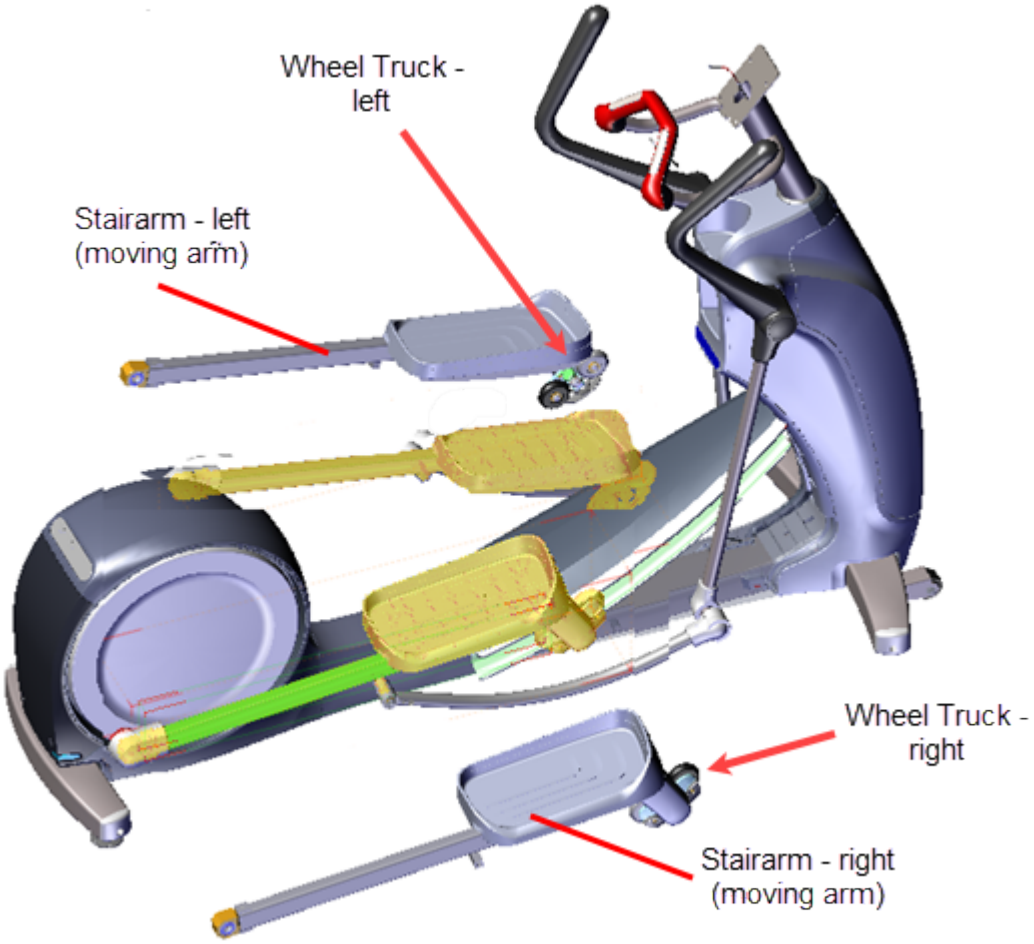
b. Install the Inner Linkarm cover onto the Stairarm Linkarm mount
c. Then install the Linkarm onto the Stairarm weldment Linkarm mount. Secure using 9/16" hex head screw and torque to 300 +/- 90 in-lbs (34 +/- 10 Nm).
d. Reinstall the Outer Linkarm Cover and secure using the #2 Phillips screw.

4. Verify machine operation and return to service, see Operation Verification.

Stairarm Wheel Truck Assy Replacement

About

This procedure provides instruction to remove and install the stairarm wheel truck assembly and wheels.



Specifications

System Component	Specification
Wheel Truck Assy Fastener	300 +/- 90 in-lbs (34 +/- 10 Nm)
Wheel Truck Assy - Wheel Fastener	300 +/- 90 in-lbs (34 +/- 10 Nm)

Procedure

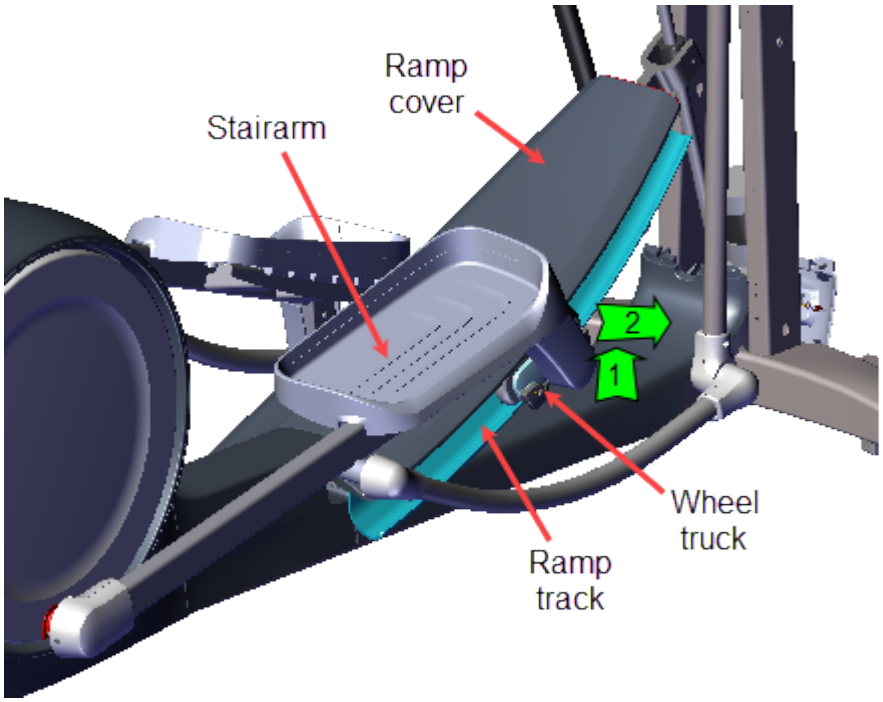
Removal Instructions

Repeat this procedure for both the right and left wheel truck replacement.

1. Access the service menu diagnostic **CrossRamp Test** and set the incline level to 1 (default level)
   a. P10, P30, P30i and P31: (**Service menu (51765761)** > **MACHINE TEST** > **CROSSRAMP TEST** and raise the **INCLINE LEVEL** to 1).
   b. P62, P80, and P82: (**Service menu (51765761)** > **System Settings** > **System Tests** > **CrossRamp Test** and raise the **INCLINE** level to 1).
2. Disconnect either the battery negative terminal or the Lift Motor input power/control cable.

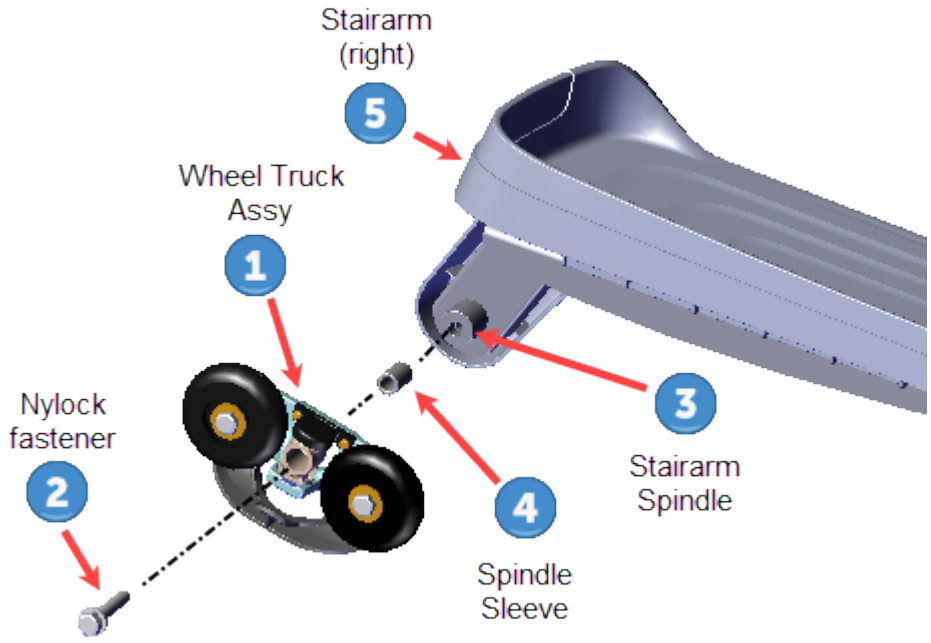
WARNING: Make sure to disconnect either the negative battery terminal or the Lift Motor input power/control cable to prevent accidental ramp movement. This unexpected action could cause personal injury.

3. Remove the Stairarm wheel truck assemble from the ramp track and lay the Stairarm on the floor. To remove, grasp the bottom of the wheel truck assembly and lift up and outward to remove from the track. No tools or fastener removal is required. It may help to lift the outer edge of the CrossRamp cover while removing.



4. Then position the Stairarm wheel truck at approximately the 10 o'clock position behind the input drive housing by lifting the Stairarm wheel truck upward and rearward until it rests behind the input drive housing. This positioning of the Stairarm will provide access to the wheel truck assembly fasteners.

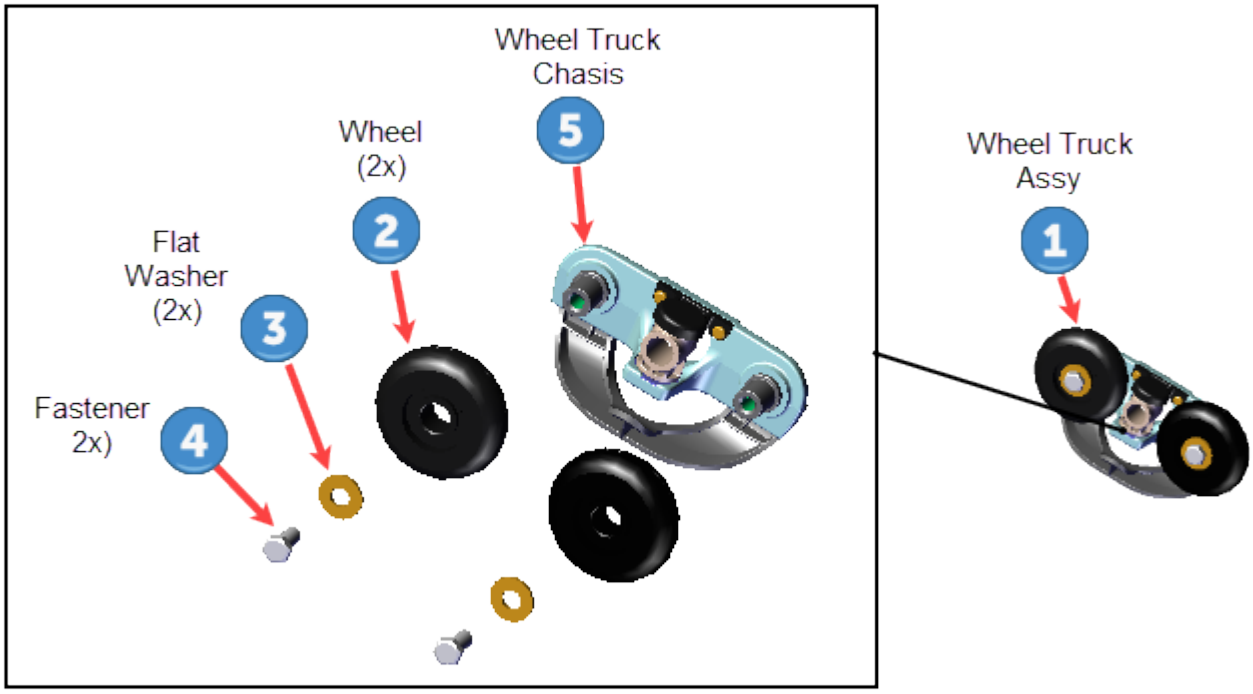
5. Remove the 9/16” Nylock mounting bolt (2), the wheel truck assembly (1), and spindle sleeve (4) from the Stairarm Spindle (3). Discard the 9/16” Nylock mounting bolt (2). Retain the spindle sleeve (4) for installation.



Wheel Removal

Do this step only if you need to remove the wheels from the wheel truck assembly.

6. Remove the 9/16” bolt (4), flat washer (3), and wheel truck - wheel (2). Repeat step for each wheel.

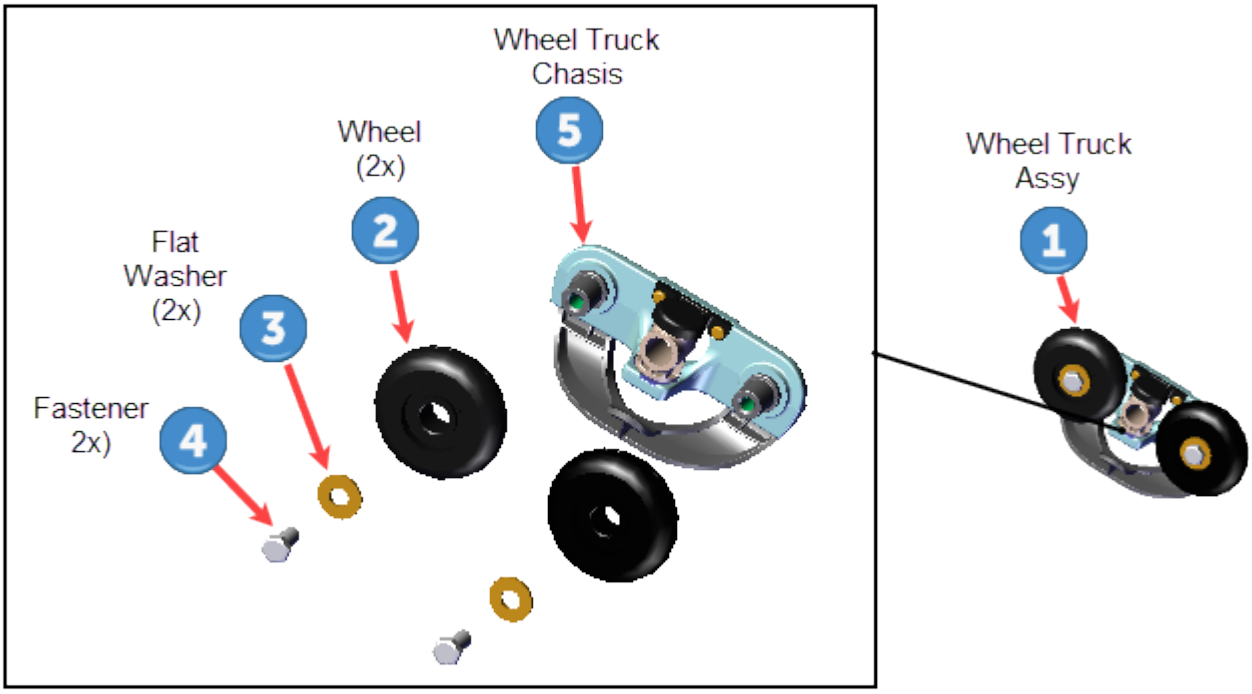


Installation Instructions

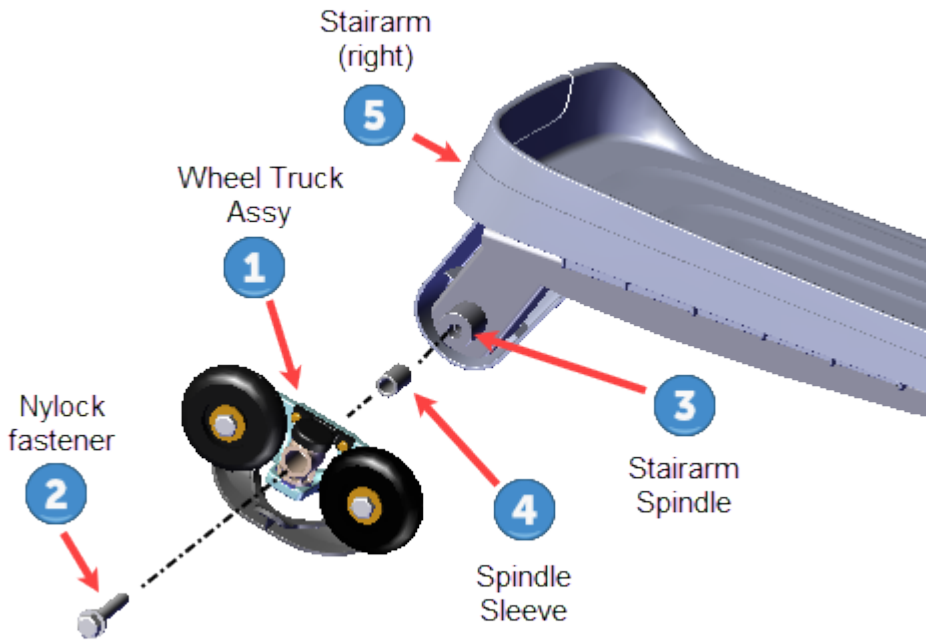
Repeat this procedure for both the right and left wheel truck replacement.

1. If the wheels were removed, reinstall the wheels (2x) onto the wheel truck assembly 1.
    a. Reinstall the wheel 2 onto the wheel truck chassis 5 and secure using the 9/16" bolt 4 and flat washer 3. **Torque**[1] fastener to 300 +/- 90 in-lbs (34 +/- 10 Nm) 2. Repeat step for each wheel.

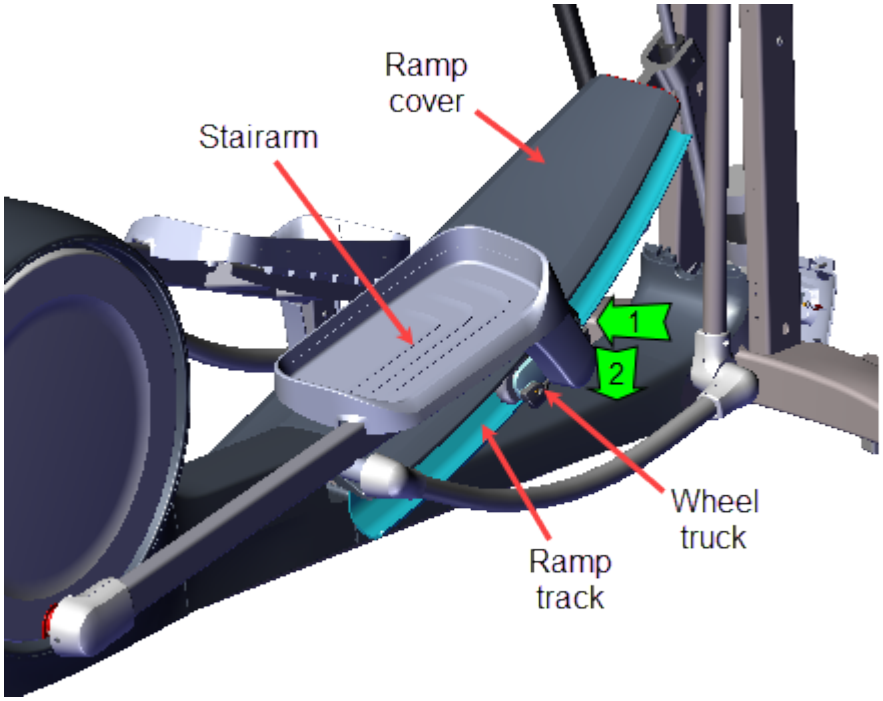
[1]Torque is a measure of the force that can cause an object to rotate about an axis. Bolt/nut example: 5 NM torque is equivalent to 5 newton's of force applied one meter from the center of the bolt, 6 ft-lb is equivalent to 6 lbs of force applied 1 foot away from the center of the bolt.



2. Reinstall the wheel truck onto the Stairarm Spindle:
   a. Clean the Stairarm mounting hardware including: the wheel truck assy (1) - spindle sleeve mounting hole, the spindle sleeve (4) (inside & outside), and the Stairarm spindle (3) mount of all grease and dirt.
   b. Then apply a thin coat of Super Lube® with Teflon® grease to the inside and outside of the spindle sleeve (4) and install onto the Stairarm spindle (3).
   c. Reinstall the wheel truck assembly (1) over the spindle sleeve (4) onto the Stairarm spindle (3). Secure using a new 9/16” Nylock set screw mounting bolt (2) and torque to 300 +/- 90 in-lbs (34 +/- 10 Nm). Only use a new 9/16” Nylock set screw mounting bolt (2), do not reuse the removed bolt.



3. Use an approved cleaner (see " " on page 14) to clean the left and right Stairarm wheels and ramp tracks. Dry with a clean cloth. Clean any hard-to-remove grime using a Scotch-Bright pad (or fine steel wool). Dry ramp track surfaces with a clean rag.
4. Reinstall the left and right Stairarm wheel trucks onto the CrossRamp tracks. To install, insert the top of the wheels underneath the Ramp cover while lifting the bottom of the wheels over and into the Ramp track. You may need to slightly lift up the edge of the CrossRamp cover while inserting the wheels into the CrossRamp track.



5. Reconnect either the disconnected battery negative terminal or the Lift Motor input power/control cable.
6. Select **QUICKSTART** and operate the elliptical at **INCLINE** level 1 and **RESISTANCE** level 1 at 130 strides per minute for two minutes, or longer, while listening for wheel squeak or other unusual noises.
    a. If there are wheel squeaking noises, remove the wheel truck and apply a thin coat of Swix UR10 Yellow Bio Racing ski wax (or equivalent) to the wheel contact area of the Ramp tracks. Rub the wax back and forth across the track several times.
    b. Operate the elliptical at **INCLINE** level 1 and **RESISTANCE** level 1 at 130 strides per minute for two minutes or more to break in the wax.
    c. Verify that there were no wheel noises during the wax break-in period. If there were noises, visually inspect the Ramp tracks to confirm wax coverage across the entire wheel contact path and repeat the wax application if needed.
    d. Gently wipe away any excess wax with a clean rag.
7. Verify operation and return to service, see "Operation Verification" on page 21.

Ramp Replacement

About

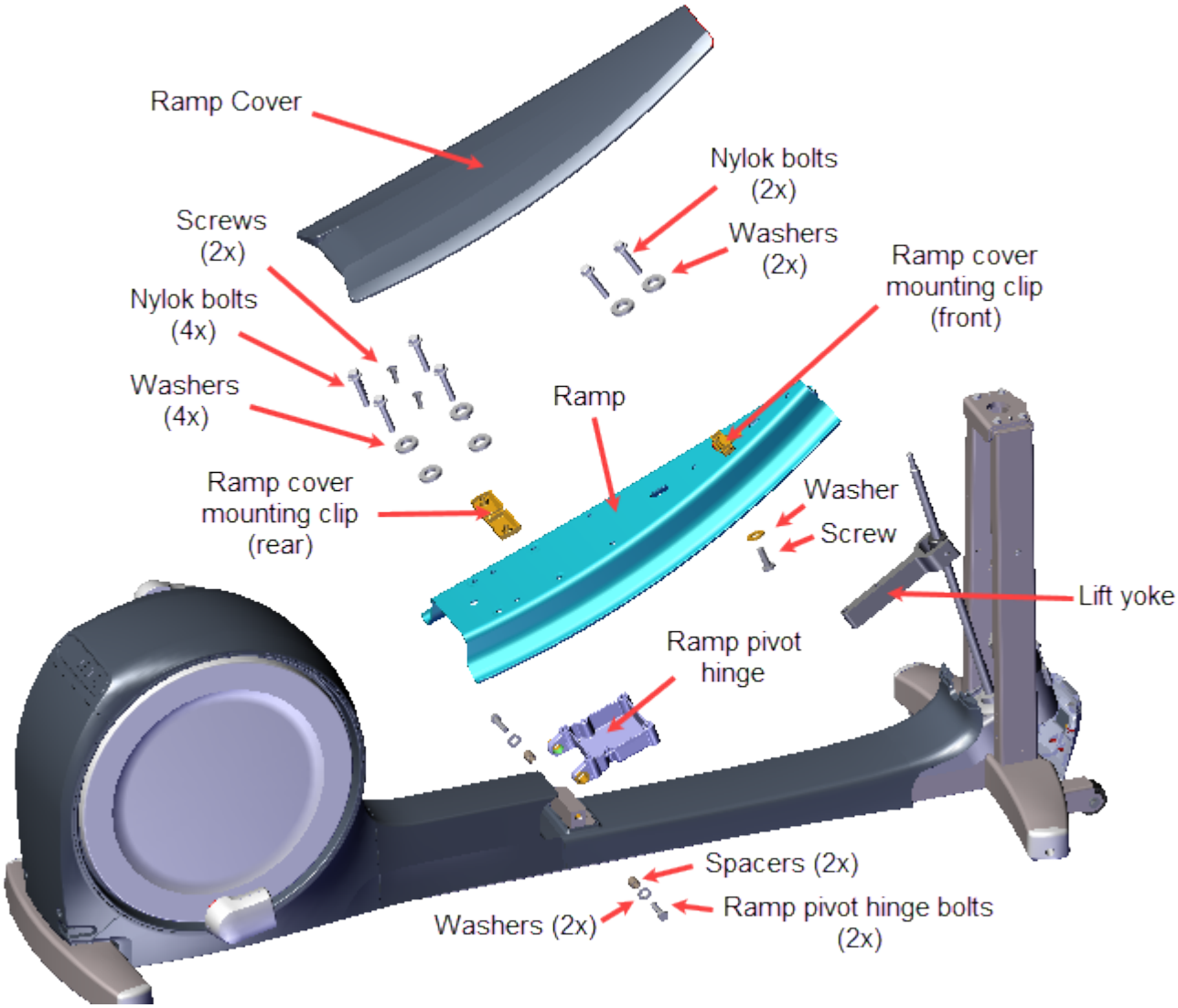
This procedure provides instruction to remove and install the Ramp Assembly.

Specifications

System Component	Specification
Ramp Pivot Hinge Bolts	1080 in-lbs (90 ft-lbs or 122 Nm)
Ramp-Yoke Fasteners	330 in-lbs (27.5 ft-lbs or 37.2 Nm)
Ramp Cover Mounting Clip Screws	30 in-lbs (3.4 Nm)

Procedure

Review entire procedure before starting.



Removal Instructions

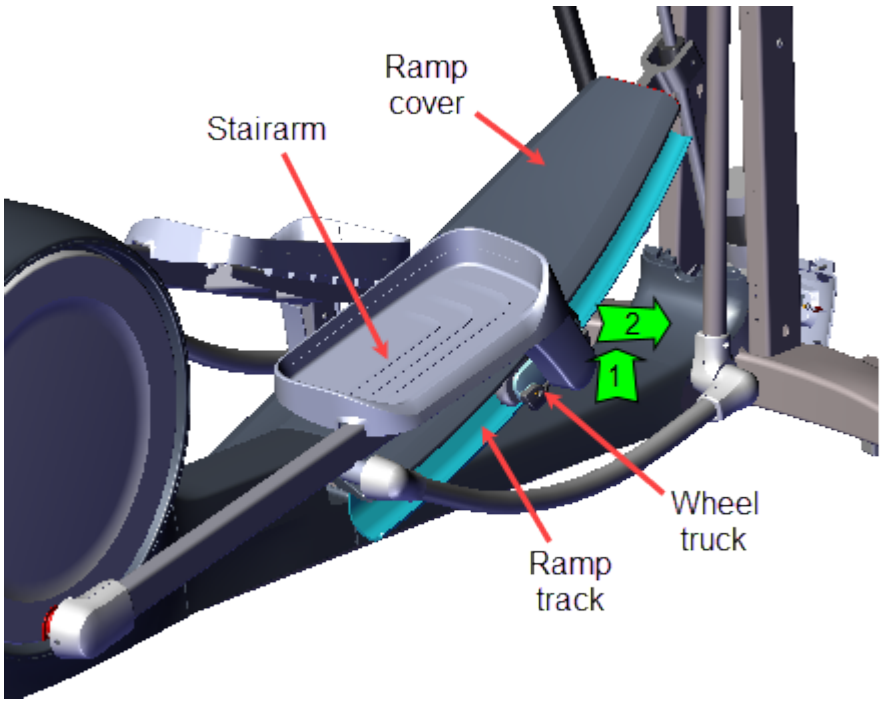
1. Access the service menu diagnostic **CrossRamp Test** and set the incline level to 15
   a. P10, P30, P30i and P31: (**Service menu (51765761)** > **MACHINE TEST** > **CROSSRAMP TEST** and raise the **INCLINE LEVEL** to 15).
   b. P62, P80, and P82: (**Service menu (51765761)** > **System Settings** > **System Tests** > **CrossRamp Test** and raise the **INCLINE** level to 15).

CAUTION: If there is an active lift error code (E40, E42, E45, or E46), be careful to not jam the ramp when raising or lowering the ramp in CROSSRAMP TEST. There are no software position limit stops when operating in CROSSRAMP TEST.

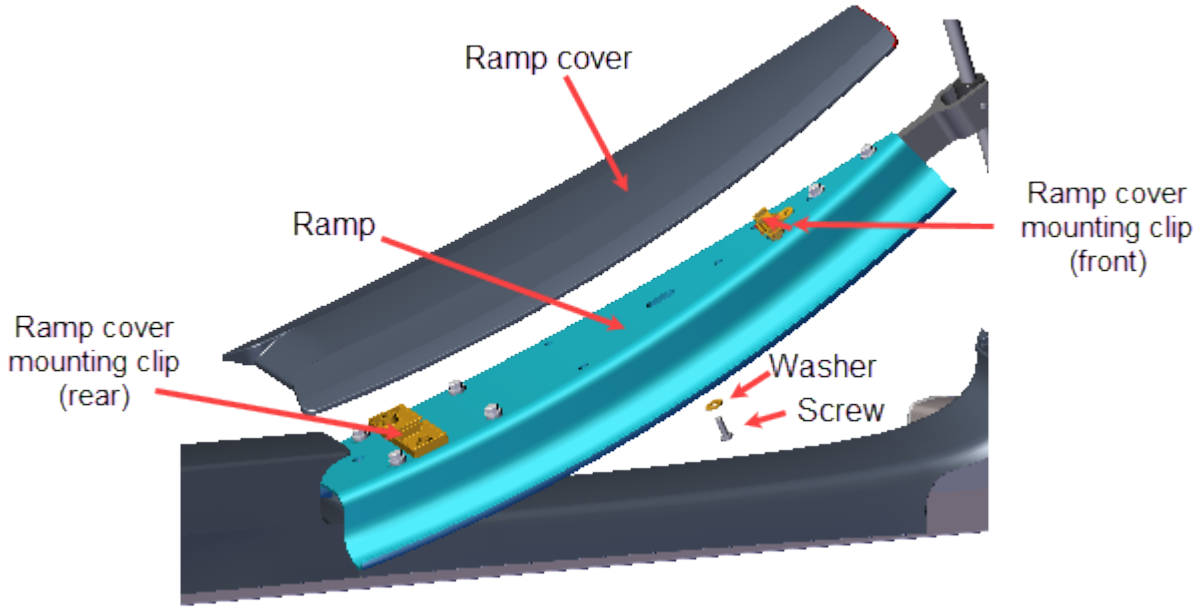
2. Disconnect either the battery negative terminal or the Lift Motor input power/control cable.

WARNING: Make sure to disconnect the Lift Motor input power/control cable or it is possible for the crossramp to automatically lower to the default level 1 if either the pedal arms are moved or the CrossRamp Test is exited. This unexpected action could cause personal injury.

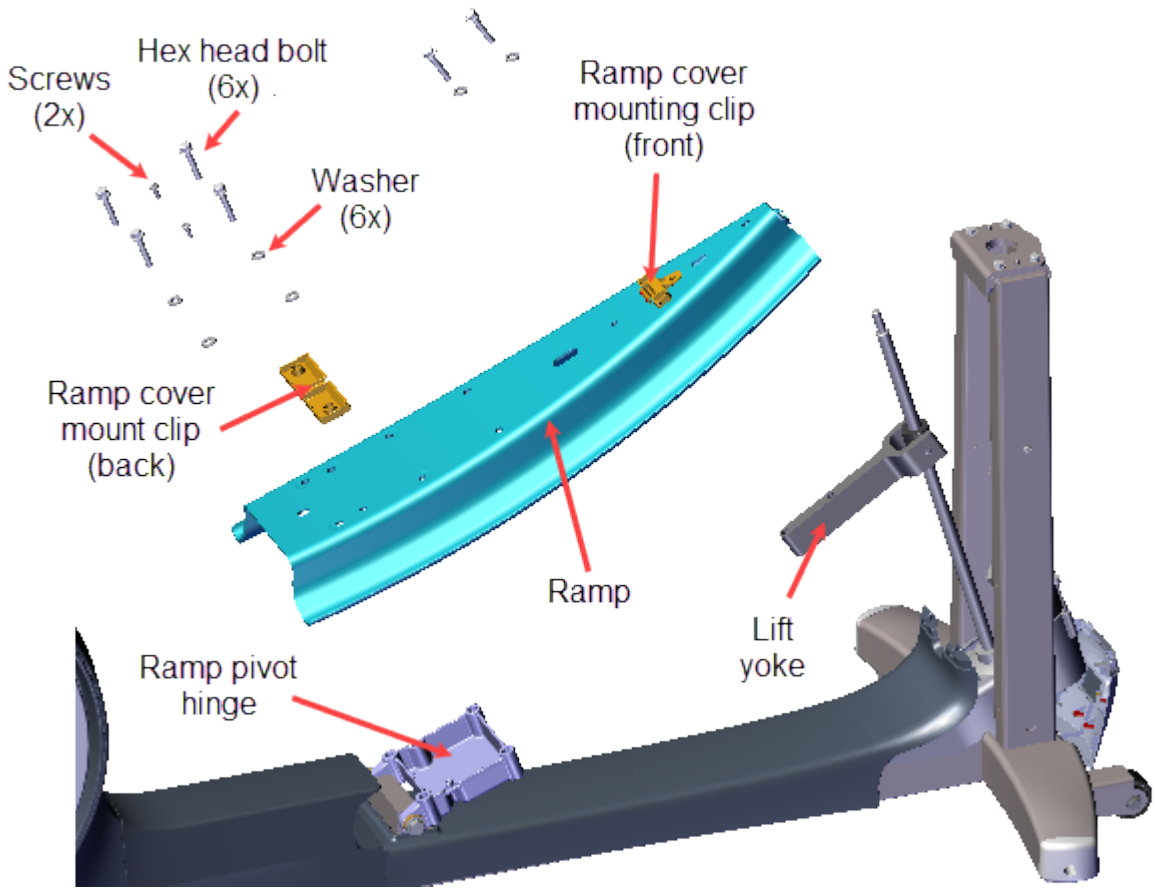
3. Remove the Stairarm wheel truck assemble from the ramp track and lay the Stairarm on the floor. To remove, grasp the bottom of the wheel truck assembly and lift up and outward from the track. No tools or fastener removal is required. It may help to lift the outer edge of the CrossRamp cover while removing.



4. Use a short stub #3 screwdriver to remove the one screw and washer that secures the Ramp cover and remove. Retain part(s) and/or fastener(s) for installation.



5. Remove the ramp hinge fasteners:
    a. Remove the four 9/16" bolts (4x) and washers (4x) that secure the ramp to the ramp pivot hinge. Retain part(s) and/or fastener(s) for installation.
    b. Remove the two #2 Phillips screws that secure the back ramp cover mounting clip to the ramp pivot hinge. Retain part(s) and/or fastener(s) for installation.

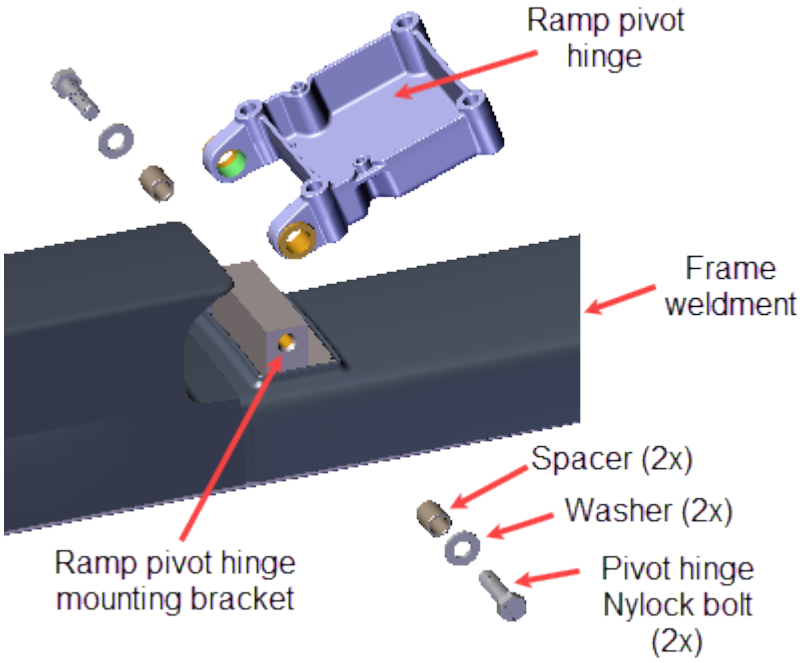


6. Remove the two 9/16" bolts (2x) and washers (2x) that secure the ramp to the lift yoke and remove the ramp. Take care to hold the ramp while removing the fasteners because the ramp will fall from the yoke when the fasteners are removed. Retain part (s) and/or fastener(s) for installation.

Ramp Pivot hinge Removal

7. Remove the left and right 3/4" (19 mm) ramp pivot hinge Nylock bolts (2x), flat washers (2x), spacers (2x) and remove the Ramp Pivot Hinge. Discard the pivot hinge Nylock bolts and retain the flat washers.

CAUTION: Do not reuse the Ramp Pivot Hinge Nylock patch bolts for installation. Discard the used bolts and order new bolts for installation (see "Parts" on page 238, bubble # 361).



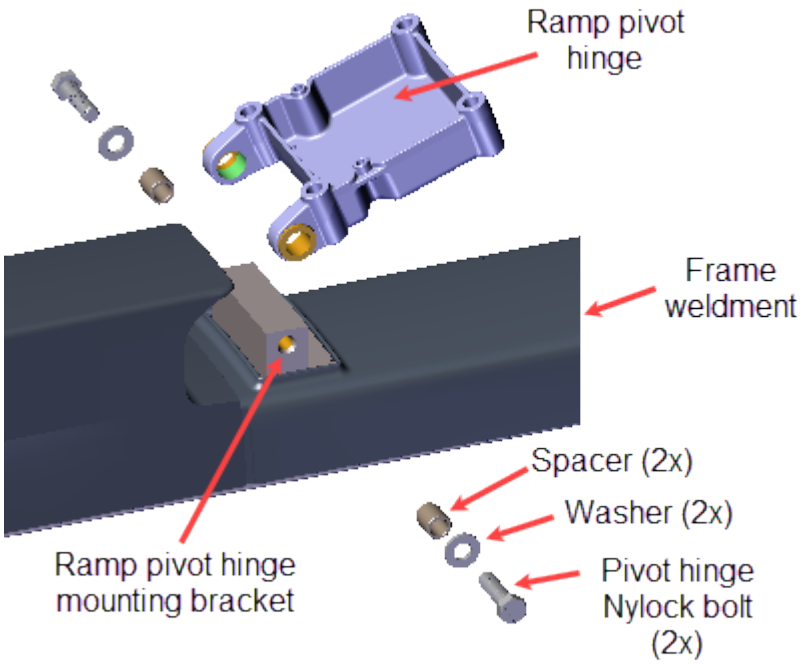
Installation Instructions

Ramp Pivot hinge Installation

1. Position the Ramp Pivot hinge onto the frame weldment ramp pivot hinge mounting bracket and secure using New left and right 3/4" (19 mm) ramp pivot hinge Nylock bolts (2x), flat washers (2x), spacers (2x). **Torque**[1] bolts to 1080 in-lbs (90 ft-lbs or 122 Nm).

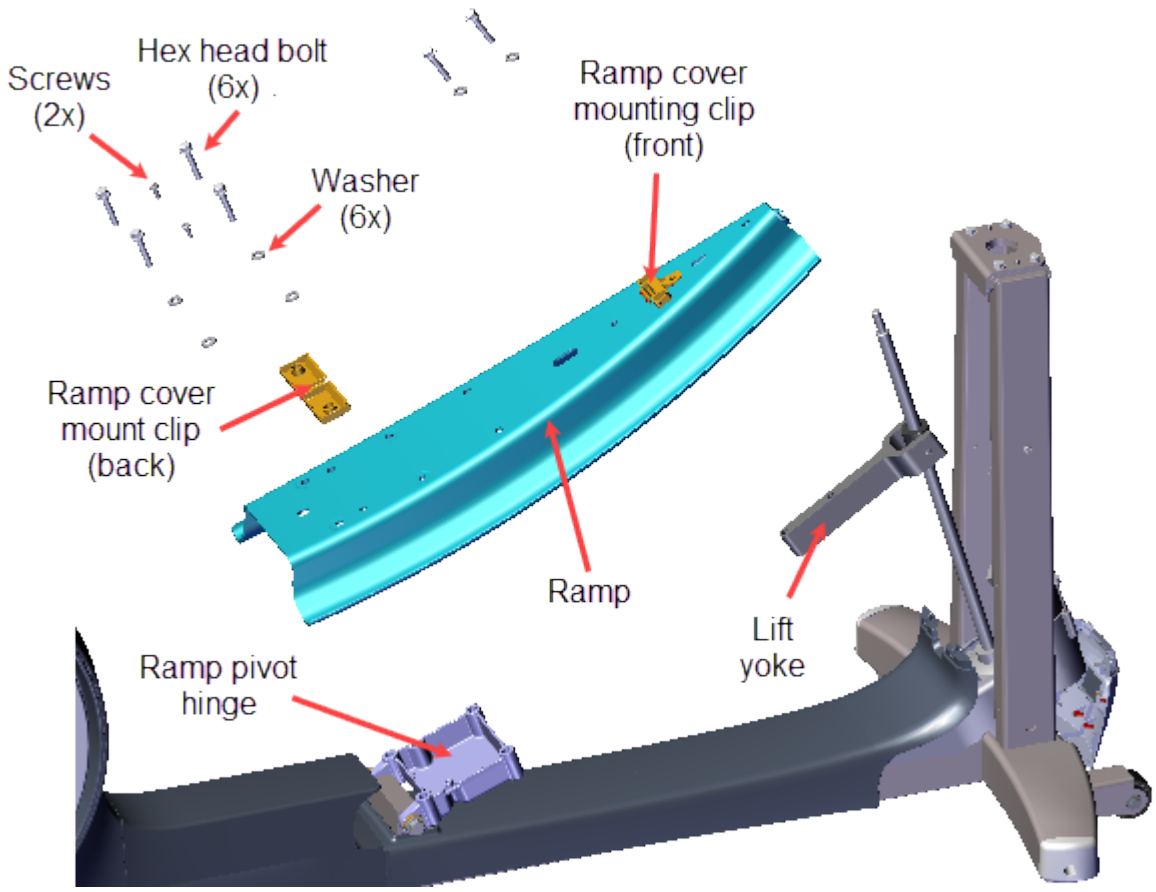
CAUTION: Do not reuse the Ramp Pivot Hinge Nylock patch bolts for installation. Discard the used bolts and order new bolts for installation (see "Parts" on page 238, bubble # 361).

[1]Torque is a measure of the force that can cause an object to rotate about an axis. Bolt/nut example: 5 NM torque is equivalent to 5 newton's of force applied one meter from the center of the bolt, 6 ft-lb is equivalent to 6 lbs of force applied 1 foot away from the center of the bolt.



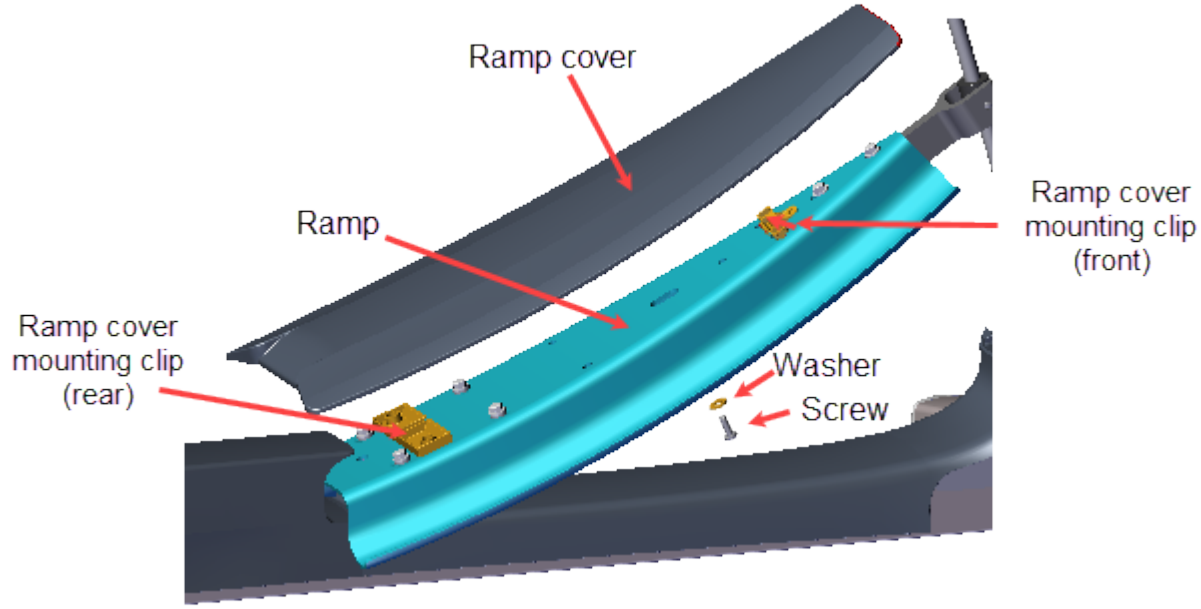
Ramp Installation

1. Position the ramp onto the lift yoke and ramp pivot hinge. Align the two ramp yoke bolt holes and secure using two 9/16" hex head bolts (2x) and washers (2x). Torque bolts to 330 in-lbs (27.5 ft-lbs or 37.2 Nm).

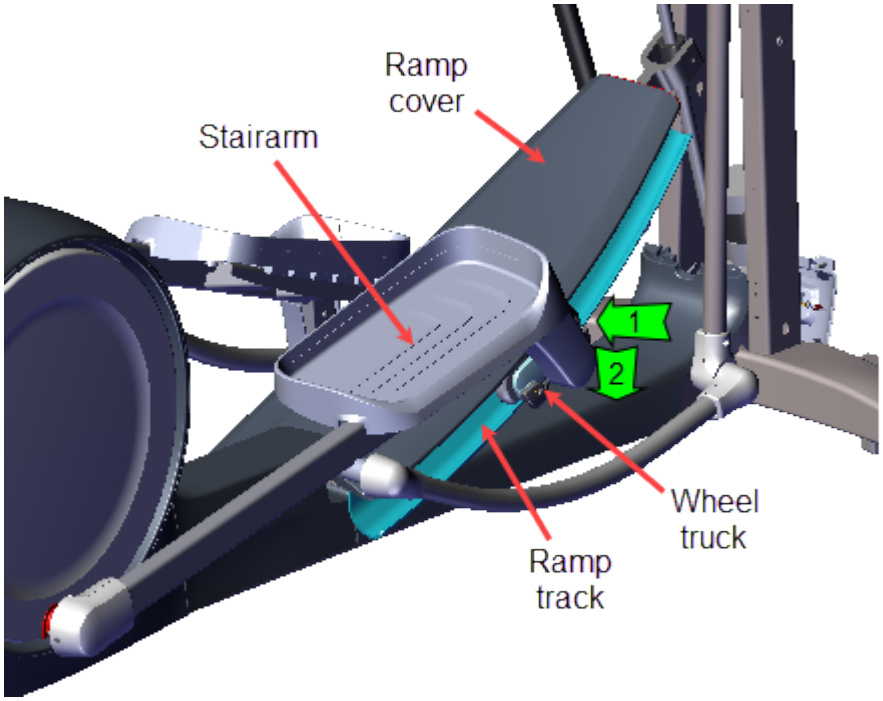


2. Reinstall the ramp onto the ramp pivot hinge.
    a. Place the ramp cover mounting clip onto the ramp. Then set the ramp onto the ramp pivot hinge aligning the two ramp cover mounting clip bolt holes. Secure using the two #2 Phillips screws. Do not over tighten the screws, torque to 30 in-lbs (3.4 Nm).
    b. Finish securing the ramp to the ramp pivot hinge using the four 9/16" bolts (4x) and washers (4x), torque bolts to 1080 in-lbs (90 ft-lbs or 122 Nm).
3. Preparing the Ramp wheel tracks:
    a. Use a clean rag and approved cleaner (see " " on page 14) to clean both wheel tracks. Clean any hard-to-remove grime using a Scotch-Bright pad (or fine steel wool). Dry ramp track surfaces with a clean rag.
    b. Apply a thin coat of Swix UR10 Yellow Bio Racing ski wax (or equivalent) to the wheel contact area of the ramp wheel tracks. Rub the wax back and forth across the length of the track several times. Ski wax is preferred to oil based lubricants because ski wax is less prone to attract dust and dirt.
    c. Gently wipe away any excess wax with a clean rag.

4. Reinstall the Ramp cover and use a short stub #3 screwdriver to secure the screw and washer to the ramp. Do not over tighten the screw, torque to 30 in-lbs (3.4 Nm).



5. Use an approved cleaner (see " " on page 14) to clean the left and right Stairarm wheels. Dry with a clean cloth.
6. Reinstall the left and right Stairarm wheel trucks onto the Ramp tracks. To install, insert the top of the wheels underneath the outer edge of the Ramp cover while lifting the bottom of the wheels into the Ramp track. You may need to slightly lift up the outer edge of the Ramp cover while inserting the wheels into the track.



7. Reconnect the Lift Motor input power/control cable and/or the battery negative/positive terminals if disconnected.
8. Do a **QUICKSTART** workout and operate the elliptical at **INCLINE** level 1 and **RESISTANCE** level 1 at 130 strides per minute for two minutes, or longer, to break-in the wax and verify operation. While operating the machine, listen for wheel squeak or other unusual noises:
    a. If there were wheel squeaking or unusual noises, visually inspect the Ramp tracks to confirm wax coverage across the entire wheel contact path. If not, reapply the wax and repeat the wax break-in operation.
    b. At the completion of the wax break-in, gently wipe away any excess wax with a clean rag.
9. Verify machine operation and return to service, see Operation Verification.

Troubleshooting

About

This section contains troubleshooting information to help you identify, isolate, and resolve component and system issues.

Review the *Introduction To Troubleshooting* section below to learn about the troubleshooting process, troubleshooting best practices, and other pertinent information that will help you efficiently troubleshoot issues and return the equipment to service.

Information that will help you troubleshoot:

- Review the *Introduction To Troubleshooting* section below, see "Introduction to Troubleshooting" below.
- Review the machine diagnostics *Error Log* for any current active error codes, see the "Error Log & CPA Event Log" on page 215 and "Standard Error Codes" on page 211 topics.
- Refer to the *Error Code Troubleshooting Guide* for error code description and troubleshooting repair information, see Error Code Troubleshooting Guide.
- If the machine supports the Active Status Light feature, review the **ASL**[1] topic (see " Active Status Light "ASL"" on page 221).
- Make sure that the machine has incorporated all machine specific service bulletins, tech-tips, and software updates, see "Verify service bulletin and software update incorporation" on page 208.

Introduction to Troubleshooting

Troubleshooting issues is an investigative process best implemented utilizing a systematic approach that efficiently targets the issue cause allowing correct equipment repairs and return to service. The following basic troubleshooting steps will help you to systematically troubleshoot and resolve issues.

Troubleshooting Steps

Always begin troubleshooting using the most common simplest possible solution first and then systematically trying the next more complex solution until the issue is finally resolved. Use the following basic troubleshooting steps to help guide you through a systematic approach to troubleshoot and resolve equipment issues:

[1]Active Status Light: Service and maintenance status light.

- "Validate the customer reported issue" below
- "Verify Input Power" below
- "Verify (reproduce) the customer issue" on the facing page
- "Verify the Club Settings" on the facing page
- "Verify service bulletin and software update incorporation" on page 208
- "Verify console operation" on page 208
- "Verify that there are no current active error codes" on page 209
- "Verify hardware validation diagnostic tests" on page 210
- "Verify that there are no new error codes" on page 210

Validate the customer reported issue

The failure that is reported may differ from your observations as a trained technician. Many reported failure are not true failures and can be fixed without a customer visit.

For example, start the troubleshooting process by asking the customer the following questions:

- Powered units only: Always ask the customer if there is power to the machine (power cord connected, circuit breaker ON) and is the machine switched ON.
- Further question the customer to determine if this is the real issue requiring an on-site visit or possibly a different issue that can be simply resolved over the phone.

Verify Input Power

On powered equipment and consoles, **always** make sure that the customer has the power properly connected and the equipment is switched "ON".

Powered touchscreen consoles (P62, P80, and P82):

Make sure that the powered touchscreen console (P62, P80, and P82) power brick cord is properly connected.

Powered equipment (treadmills):

Verify the customer has input power cord connected and that the equipment power is switched "ON".

If the machine power is connected and switched ON, but the machine does not power up or runs poorly, verify the following conditions:

- Make sure there is power at the outlet receptacle and that the power is within the specified voltage and current limits. If not, review the following possible causes:
    - Outlet voltage to low: Low out-of-spec outlet voltage can be caused by a large voltage drop in the facility circuit panel-to-wall outlet circuit due to an extremely

long circuit wire run. For power requirement information, refer to the *Power Requirements* topic.

- Input current to low: The power outlet circuit wire gauge may be too small to carry the required machine load current (20 amps/machine).

- Make sure that the outlet receptacle power is good quality (the input power is NOT intermittent or has fluctuating voltage levels or frequency). Poor quality input power can cause operational failures in the machine or powered console. For power requirement information, refer to the *Power Requirements* topic.
- Make sure that each Precor treadmill is connected to a separate 20 amp individual branch circuit outlet. No other devices can be connected to the same circuit outlet except for one optional **PVS**[1] (Personal Viewing System) display if installed. For power requirement information, refer to the *Power Requirements* topic.

IMPORTANT: Always make sure the input power is good quality before troubleshooting the machine. A poor quality input power signal may be the cause of the machine issue or operating failure.

Verify (reproduce) the customer issue

If possible, operate the unit in the workout and conditions similar to the customer and attempt to reproduce the reported failure.

- Determine if the error is a repeatable or intermittent type failure.
- Make note of any additional observations (noises, vibrations, etc.) that occur at the time of the failure which may then be used to help resolve the issue.

Note: It is important to keep in mind that some issues are weight (load) related. You may need to test the unit at minimum and maximum load Limits to reproduce the failure.

Verify the Club Settings

Verify that one of the workout limit settings are not causing a failure, see Club Settings (**LED**[2] consoles) or System Settings Workout Limits (Touchscreen consoles). If a failure is observed while using the machine but passes the hardware validation system tests, this could be an indication that one of the club parameters Limits settings is causing the issue.

IMPORTANT: Check the following if a failure is observed during a workout but the machine works perfectly when doing a hardware validation test:
• First check the Club settings. Some parameters might be set to limits that can give the appearance of a failure, such as, the incline limit set to 0, or the parameter Units set to Metric or US Standard.
• Attempt to recreate the issue. Some problems are caused by vibration, to much weight, or may be an intermittent issue etc. Various workout conditions and scen-

[1]Personal Viewing System display.
[2]light-emitting diodes.

arios may be necessary to recreate the issue.

Verify service bulletin and software update incorporation

Make sure that the machine is up to date with all released service bulletins, tech-tips, and software updates before troubleshooting an issue. The list of current service bulletins, tech-tips, and software updates can be viewed and downloaded from the Precor Connect website. Make sure that all released service bulletins/Tech-Tips and software updates have been incorporated.

How to find and download service bulletins and tech-tips:

1. Log in to your Precor Connect Servicer account (Precor Connect Partner's).
2. From the Connect Home page, select the DOCUMENTATION pane > SERVICE BULLETINS link to view the list of the equipment service bulletins and Tech-Tips.

Note: .There may or may not be service bulletins or tech-tips released for this machine.

How to find and download software updates:

1. Log in to your Precor Connect Servicer account (Precor Connect Partner's).
2. From the Connect Home page, select the DOCUMENTATION pane > CONSOLE SOFTWARE to view the list of available equipment console "**UPCA**[1]" and/or **MC**[2] "**LPCA**[3]" software updates.

   Use the following software access login Username and Password:

   Username: software
   Password: D0wnl0ads!

Note: .There may or may not be software updates for this machine.

Verify console operation

1. On LED consoles (P10, P30, P30i and P31) make sure the console powers up and is working correctly, perform the following verification tests:

[1]Upper PCA board

[2]Motor controller, motor controller unit, or motor controller module: used on treadmills, contains the LPCA and motor controller functionality.

[3]Lower Printed Circuit Assembly board; also refered to as the Lower PCA or simply as the lower board. On treadmills, it is the console to base function interface and the motor controller unit (MCU). On self-powered units, it is the lower PCA console to base function interface.

a. If the console does not power up, make sure the Data COMM cable is properly connected at the console and LPCA and in good condition.
b. Run the console Display, and Keypad diagnostic tests (see "Hardware Validation Diagnostics Tests Menu (51765761)" on page 34). Resolve any failures.

2. On Touchscreen consoles (P62, P80, and P82) make sure the console powers up and is working correctly, perform the following verification tests:
   a. If the console does not power up, make sure the external **AC**[1]/**DC**[2] power adapter is plugged in and connected to the console. Also make sure the AC/DC adapter brick is in good condition.
   b. Run the following console System Tests (see System Tests):
      - Touchscreen Test
      - Touchscreen Calibration
      - Backlight Test
      - RGB Test
      - Numeric Backlight Test
      - Numeric Display Test

Note: Keep in mind that if a key on the console keypad does not function, the LPCA will not receive a user initiated request for action. For failed console key problems, the machine failure is not caused by a problem with the LPCA or the machine base, In these types of console failures, no error codes will be triggered and logged.

Verify that there are no current active error codes

Always review the Error Log or CPA Event Log when troubleshooting an issue. The error logs will contain any triggered error code events and related information. You can then refer to the Error Code Troubleshooting Guide for information to help resolve the issue. Also, when calling Precor customer service for assistance, refer to the Error Log or CPA Event Log for additional information to help the representative resolve the issue.

- Refer to Error Code & CPA Error Log, see "Error Log & CPA Event Log" on page 215.
- Refer to Error Code Troubleshooting Guide for error code descriptions and repair information.

IMPORTANT: Error code descriptions and troubleshooting information can be found in the *Error Code Troubleshooting Guide*, see Error Code Guide Troubleshooting Guide.

Note: Not all failures trigger an error event code. Many issues are purely mechanical in nature and therefore cannot trigger an error event code.

[1]Alternating Current: electric current which periodically reverses direction between positive and negative polarity.
[2]Direct Current: electrical current that only flows in one direction.

Verify hardware validation diagnostic tests

Perform the equipment Hardware Validation Tests (LED consoles) or System Tests (Touch-screen consoles) to help isolate the cause of the issue. These tests will help identify failed system components. Resolve any resulting failures.

Verify that there are no new error codes

After correcting the issue, reopen the Error Log and verify that there are no remaining active error codes. This will verify that the original error codes are not recurring and that there are no new error code issues. If the error code is recurring, the issue may be mileage related, review the error code odometer history to verify if the error event is related to mileage intervals.

Clear the Error Log, see "Error Log & CPA Event Log" on page 215.

Note: If there are no logged error codes and the issue persists, you will need to use observable and audible indicators to identify the source of the failure. Also make sure that there are no related service bulletins that may resolve the issue. Browse the list of available Troubleshooting procedures for related Troubleshooting information.

Standard Error Codes

About

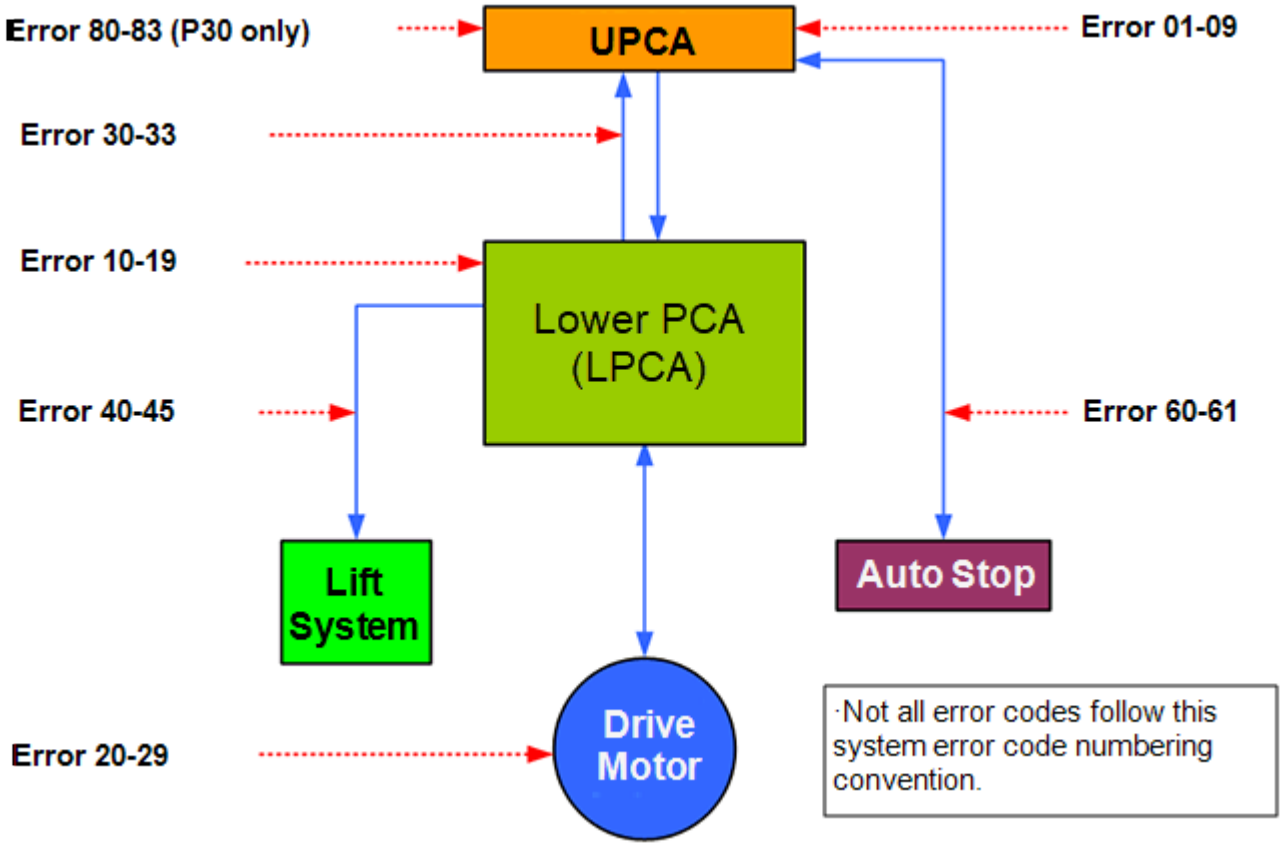
There is a set of standard error codes implemented across Precor cardio exercise equipment. Error codes are system generated codes that identify specific machine fault conditions. The maintenance software monitors error code event conditions, when a fault is detected, the error code is generated and stored in the Error Log (or **CPA**[1] Event Log) along with related machine metrics, such as, the machine mileage (or hours), the time, drive motor current, etc.

On some equipment, error codes have been separated into two categories: Error codes "ERR" and Warning codes "WRN". see Errors and Warnings.

Error code numbers range from 01 to 99. There are also a small number of alpha and alpha-numeric codes. Most, but not all error codes are grouped into numeric ranges to help easily identify common system issues. Refer to the Error Code Troubleshooting Guide for a complete list of error codes and troubleshooting information.

IMPORTANT: Error code descriptions and troubleshooting information can be found in the *Error Code Troubleshooting Guide*, see Error Code Guide Troubleshooting Guide.

[1]Touchscreen console Control Processing Assembly.



How Error Codes Are Generated and Stored

The **Lower PCA**[1] monitors error code event conditions, when a fault is detected, the error code is generated and transmitted to the console **Upper PCA**[2] where it is stored and viewed in the Error Log or CPA Event Log. The error log shows the error code along with related machine metrics, such as, the machine mileage, hours, the time when the event occurred, the date, and other machine specific relevant data.

Error codes are sequentially stored in memory on a "First-In, Last-Out" basis, the newest error code is stored in the number one memory position pushing any currently stored error codes down one position. When the memory is full, the next new code is stored pushing the oldest error code from memory.

[1]Lower Printed Circuit Assembly board; also refered to as the Lower PCA or simply as the lower board. On treadmills, it is the console to base function interface and the motor controller unit (MCU). On self-powered units, it is the lower PCA console to base function interface.
[2]Upper Printed Circuit Assembly board located in the console.

Errors and Warnings

On certain machines, there is a differentiation between errors and warnings. Issues that are noncritical to the operation of the machine have been demoted from Error status to Warning status. Error codes will be formatted with an "ERR" prefix identifier and Warning codes will be formatted with the "WRN" prefix identifier.

- **Error Codes**

  Error codes are system generated codes that identify specific machine fault conditions. The maintenance software monitors error code event conditions, when a fault is detected, the error code is generated and stored in the Error Log or CPA Event Log along with pertinent machine metrics, such as, the machine mileage, hours, event time stamp, etc. Error codes are identified with the "ERR' prefix.

- **Warning Codes**

  Warning codes are system generated codes that identify noncritical machine information that in most cases will not require service action. Depending on the Warning, the information could be used by clubs to better utilize and maintain the equipment etc. or provide additional machine information to help the service technician resolve an issue. Warnings will not disable functionality, display to the exerciser, or change the **ASL**[1] light status.

To differentiate between errors and warnings, error codes will be identified with the "ERR" prefix and warning codes will be identified with the "WRN" prefix.

Viewing Error Codes (Error Log & CPA Event Log)

Error event codes are logged, stored, and viewed in either the **Error Log** on **LED**[2] consoles (P10, P30, P30i and P31) or the **CPA Event Log** on touchscreen consoles (P62, P80, and P82), see Error Log & CPA Event Log.

How to access the Error Log:

- On LED consoles (P10, P30, P30i and P31)**:** access the **Information Display (65)** > select **Error Log**.
- On touchscreen consoles (P62, P80, and P82)**:** access the **Service Settings menu (51765761)** > select **About > CPA Event Log**

Error Code and Troubleshooting Guide

Use the *Error Code Troubleshooting Guide* to learn about the error code and to help troubleshoot and repair the machine. The *Error Code Troubleshooting Guide* provides a complete list of all supported error codes and information about the error code including the

[1]Active Status Light: Service and maintenance status light.
[2]light-emitting diodes.

code description, related issues and symptoms associated with the error, troubleshooting steps, and repair procedures:

Error Code and Troubleshooting Guide: Error Code Troubleshooting Guide.

- The error code description.
- The affected system components.
- The Issues and Symptoms associated with the fault condition.
- Troubleshooting steps and repair instructions.

Troubleshooting with Error Codes

Getting Started

You will need a copy of the "*Error Code Troubleshooting Guide*" to learn Information about the error codes including the code description, related issues/symptoms, troubleshooting and repair information, click Error Code Troubleshooting Guide.

Using Error Codes to troubleshoot

1. Review the equipment Error Log (or CPA Event Log) to identify any current active error codes. Also review the error code history for any past error codes that may provide insight to the current active error code issue.
2. Next go to the error code topic in the *Error Code Troubleshooting Guide* and review the error code troubleshooting and repair information.

Note: Be aware that not all machine failures will cause an error code event. Use physical observation and mechanical troubleshooting skills to resolve non error code issues.

Error Log & CPA Event Log

About

The Error Log and **CPA**[1] Event Log is used to store "log" and view error and warning codes. On **LED**[2] (P10, P30, P30i and P31 consoles) use the "*Error Log*" to view error codes. On touchscreen consoles (P62, P80, and P82) use the "*CPA Event Log*" to view error/warning codes.

- Error Log, see "Error Log " on the next page
- CPA Event Log, see " CPA Event Log" on page 218

IMPORTANT: On touchscreen consoles (P62, P80, and P82), use the **CPA Event Log** and not the **Event Log** to view the maintenance error/warning codes. The touchscreen console Event Log includes additional OEM use only error codes.

more....

How Error Codes Are Generated and Stored

The **Lower PCA**[3] monitors error code event conditions, when a fault is detected, the error code is generated and transmitted to the console **Upper PCA**[4] where it is stored and viewed in the Error Log or CPA Event Log. The error log shows the error code along with related machine metrics, such as, the machine mileage, hours, the time when the event occurred, the date, and other machine specific relevant data.

Error codes are sequentially stored in memory on a "First-In, Last-Out" basis, the newest error code is stored in the number one memory position pushing any currently stored error codes down one position. When the memory is full, the next new code is stored pushing the oldest error code from memory.

Repeating Error Codes

Repeated instances of the same error code will only be logged as a single error code until one of the following conditions occur:

1. Two different errors events occur and are logged
2. There is an "Odometer" and "Hours" change.

[1]Touchscreen console Control Processing Assembly.

[2]light-emitting diodes.

[3]Lower Printed Circuit Assembly board; also refered to as the Lower PCA or simply as the lower board. On treadmills, it is the console to base function interface and the motor controller unit (MCU). On self-powered units, it is the lower PCA console to base function interface.

[4]Upper Printed Circuit Assembly board located in the console.

Errors and Warnings

On certain machines, there is a differentiation between errors and warnings. Issues that are noncritical to the operation of the machine have been demoted from Error status to Warning status. Error codes will be formatted with an "ERR" prefix identifier and Warning codes will be formatted with the "WRN" prefix identifier.

- **Error Codes**

  Error codes are system generated codes that identify specific machine fault conditions. The maintenance software monitors error code event conditions, when a fault is detected, the error code is generated and stored in the Error Log or CPA Event Log along with pertinent machine metrics, such as, the machine mileage, hours, event time stamp, etc. Error codes are identified with the "ERR' prefix.

- **Warning Codes**

  Warning codes are system generated codes that identify noncritical machine information that in most cases will not require service action. Depending on the Warning, the information could be used by clubs to better utilize and maintain the equipment etc. or provide additional machine information to help the service technician resolve an issue. Warnings will not disable functionality, display to the exerciser, or change the **ASL**[1] light status.

To differentiate between errors and warnings, error codes will be identified with the "ERR" prefix and warning codes will be identified with the "WRN" prefix.

Troubleshooting with Error Codes

Always review the Error Log or CPA Event Log when troubleshooting an issue. The error logs will contain all current and past error codes from the last log reset. You can then refer to the *Error Code Troubleshooting Guide* (Error Code Troubleshooting Guide) to for description and troubleshooting information.

Note: Be aware that not all machine failures will trigger an error code event. Use physical observation and mechanical troubleshooting skills to resolve non error code issues.

Error Log

Error Log

Error Log

Applies To: LED (P10, P30, P30i and P31) consoles

About

[1]Active Status Light: Service and maintenance status light.

On LED (P10, P30, P30i and P31) consoles, error codes are stored in the **Error Log**. Error codes are sequentially shown on the console message display one at a time. The individual error code data metrics will scroll across the display. Use the Up/Down keys to scroll thru and view the individual error codes.

LED P31 Console "ERROR LOG"

Event Code Format

The error format will always start with the Error Log entry number, the error type (error "ERR" or warning "WRN"), the Error Number and then additional information specific to the type of fitness equipment, with no commas or other delimiters in between information. Errors will have the identifier ERR and Warnings will have the identifier WRN before the error number.

Example Error Code Format

1	ERR	30	1000 MILES 20 HOURS
2	WRN	70	1000 MILES 20 HOURS

- Error log memory stack number
- Code Type: Error "ERR" or Warning "WRN"
- Error/Warning number
- Description and associated metric values

Typical Error Log data format metrics:

- Error/Warning code entry number: 1 thru "n" (1 is the newest error code and "n" is the oldest)
- Event Type: Error "ERR" or Warning "WRN"

- Error/Warning Code Number
- Error/Warning Code Description
- May include additional pertinent event metric information

How to open the Error Log:

1. Access the **Information Display (65)**
2. Select **Error Log**
3. Select **OK** hardkey

Clearing Error Codes:

To remove an error code from the Error Log, scroll to select the error code to be removed and then press/hold the **QUICK START** key for a minimum of 6 secs until the ."NO ERRORS" message shows.

TIP: **Error code remove shortcut**: Press and hold the **PAUSE** key for a minimum of 6 seconds to open the Error Log and view all logged error codes. If there are no logged error codes, the "Stuck Key" message will show. To remove error codes, select the error code and press/hold the **QUICK START** key until the "NO ERRORS" message shows.

CPA Event Log

CPA Event Log

CPA Event Log

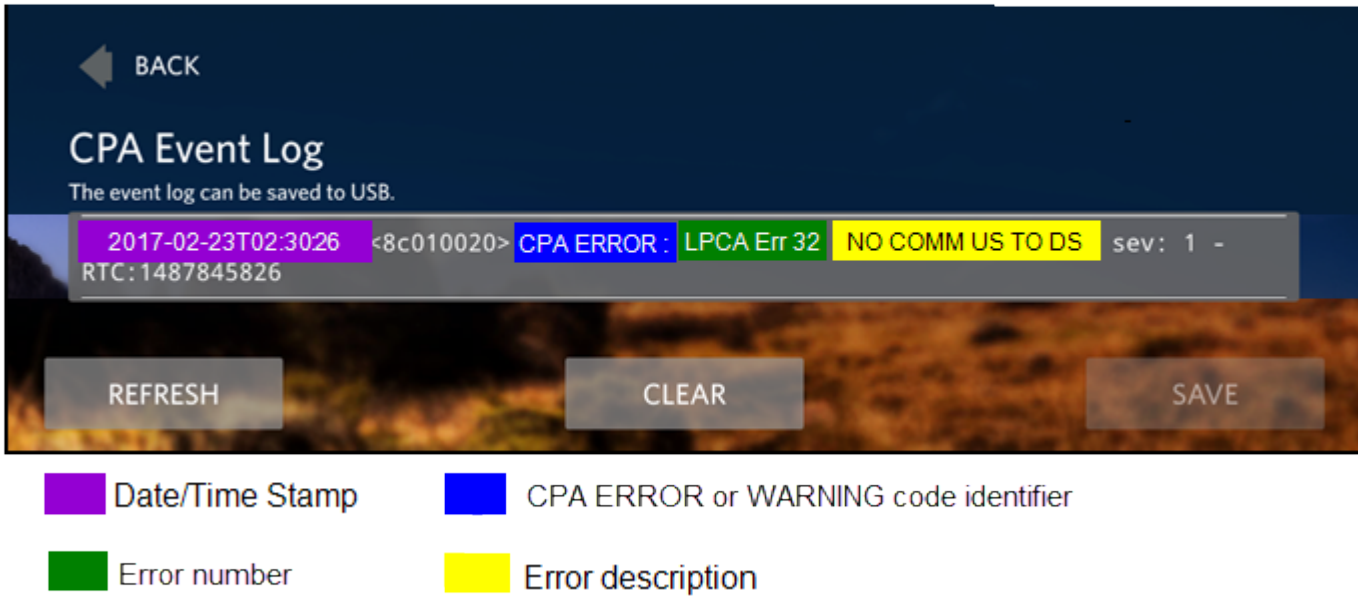
Applies To: Touchscreen (P62, P80, and P82) consoles

About

On touchscreen (P62, P80, and P82) consoles you will use the **CPA Event Log** and not the **Event Log** to view error and warning codes. The **CPA Event Log** only contains service related error and warning codes, whereas the Event Log contains all event code types including additional OEM use only error codes. Maintenance error codes are identified with a "CPA ERROR" tag and warnings are identified with a "CPA WARNING" tag

IMPORTANT: . Make sure to only use the **CPA ERROR** or **CPA WARNING** tagged event codes for service related issues, refer to the Error Code Troubleshooting Guide for description and troubleshooting information.

Touchscreen console "CPA Event Log"



Date/Time Stamp

CPA ERROR or WARNING code identifier

Error number

Error description

Event Code Format

Typical CPA Error and Warning code data format information:

- Date and Time stamp
- Event type: CPA Error or CPA Warning
- Error/Warning Code Number
- Error/Warning Code Description
- May include additional pertinent event metric information

How to open the CPA Event Log:

1. Access the **Service menu (51765761)**
2. Select **About > CPA Event Log**

CPA Event Log Softkeys

The CPA Event Log provides the following function softkeys

Softkey	Description
REFRESH	Refreshes the CPA Event Log with any missing current error codes.
CLEAR	Removes all error codes from the CPA Error Log.

Softkey	Description
SAVE	Typically reserved for Precor use. Saves the CPA Event Log error codes to a **USB**[1] flash drive.

How to Clear CPA Error Codes

1. Access the **Error Event Log**
2. Select the **CLEAR** softkey.

How to Save CPA Error Log Data

The save CPA Event Error Log feature is used by Precor to investigate machine issues. Occasionally, Precor may request you to save the CPA Error Log error code data to a USB flash drive and then send the USB drive to Precor customer service.

1. Access the **CPA Event Log**.
2. Insert a USB flash drive into the USB chin port.
3. Then wait for the **SAVE** softkey to highlight and then select **SAVE**.
4. Follow prompts to complete the save process.
5. Remove the USB flash drive.
6. Insert the USB drive into PC and verify that the error log data file was saved.
7. Return the USB drive as directed by Precor customer service.

[1]Short for Universal Serial Bus, is an industry standard developed in the mid-1990s that defines the cables, connectors and communications protocols used in a bus for connection, communication, and power supply between computers and electronic devices.

Active Status Light "ASL"

(Only applies to machines that support the **ASL**[1] feature)

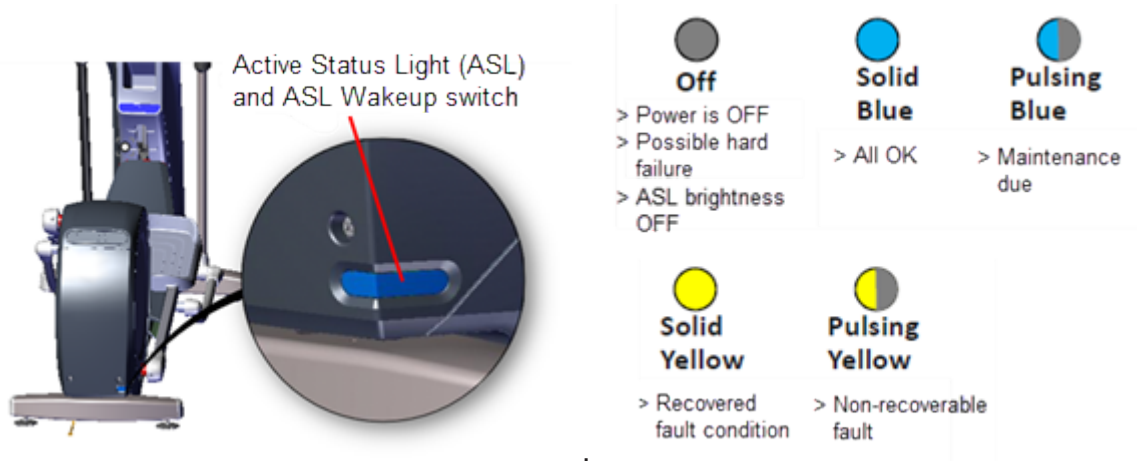
About

The Active Status Light (ASL) is a service and maintenance status light that provides a visual indication of the machine operational status. The current implementation supports four states: 1) Solid blue - indicates normal operation, 2) pulsing blue - indicates pre-ventative maintenance is required; 3) Solid yellow - indicates an error has occurred but the machine is useable; and 4) pulsing yellow - indicates a loss of major function was detected.

The console can be used to control the ASL functions including, settings the light brightness level, viewing the ASL state, resetting the ASL states, enable/disable the maintenance reminder, and viewing the maintenance due remaining mileage (or hours), see "" on page 223.

ASL Light Equipment Location

On Ellipticals, the ASL light is located at the rear of the unit on the lower right side of the right drive housing cover. The ASL also functions as the ASL "Wakeup" switch used to tem-porarily power-on the ASL and as a shortcut method to clear error states. .



ASL Overview

- An externally visible indicator of the current machine operational status. There are four supported states: 1) solid blue - indicates normal operation, 2) pulsing blue - indic-ates preventative maintenance is required; 3) solid yellow - indicates an error has

[1]Active Status Light: Service and maintenance status light.

occurred but the machine is useable; and 4) pulsing yellow - indicates a loss of major function was detected.

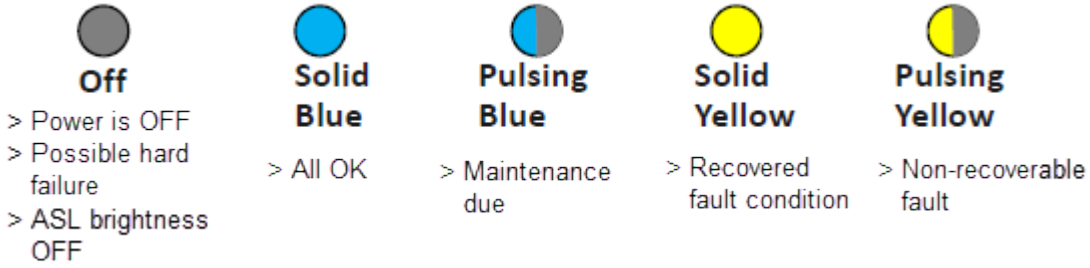
- When either the exerciser starts pedaling or when the ASL Wakeup switch (ASL light cover) is pressed, the ASL light will power-on and start indicating the current machine ASL status. The ASL light will remain ON while the machine is being used (pedaled) and will switch OFF after 90 seconds of non-use (no pedaling).
- Because only one status color and state can be shown at a time, the condition states are prioritized as follows from lowest to highest: Blue Solid (lowest), Blue Pulsing, Yellow Solid, Yellow Pulsing (highest). Higher priority states are always shown before a lower priority state, until cleared.
- The console **UPCA**[1] determines the ASL state using inputs from the error log and maintenance counter. During active operation (workout in progress) or during the pause state, the console transmits the ASL state to the lower control board (**LPCA**[2]).
- Only direct error code and maintenance counter data is used to determine the current machine ASL state. No special algorithms (e.g., user behavior) are utilized to determine the status.
- Similar to other self-powered products, the lower control board (LPCA) powers OFF between workouts. The power-on and power-off of the ASL are under control of the LPCA at all times. The console cannot control power-on or power-off. The LPCA powers ON when the user pedals above the minimum RPM and for one minute after stopping. The LPCA powers ON for 90 seconds when the Wakeup switch is pressed.
- Error code operation: A logged system error code will cause the ASL to begin pulsing yellow. If the error self-corrects, the ASL will change from pulsing to solid yellow. Depending on the error code type, after the end of a workout, the solid yellow light will either revert back to a steady or pulsing blue, or it might require manually resetting the light from the service menu.
- Maintenance counter operation: The counter starts at 250 hours and counts down the hours of active use to 0 hours. When the counter reaches zero, the ASL will begin pulsing blue indicating preventative maintenance is due.
- Viewing the ASL light
    - When in active use with exerciser striding.
    - When the exerciser presses the Wakeup switch located on the rear of the unit.
    - For 90 seconds after the exerciser ceases striding.
    - For 90 seconds after the Wakeup switch is pressed.

[1]Upper PCA board

[2]Lower Printed Circuit Assembly board; also refered to as the Lower PCA or simply as the lower board. On treadmills, it is the console to base function interface and the motor controller unit (MCU). On self-powered units, it is the lower PCA console to base function interface.

ASL States

The ASL utilizes a combination of blue and yellow lights to indicate the current operational machine status.



ASL State	DESCRIPTION
OFF	The unit is powered OFF or there is no power to the LPCA or some other hard failure. On P10, P30, P30i and P31 consoles the ASL brightness is set to OFF.
Blue Solid	Normal operation Indicates that the ASL has not detected any logged error codes.
Blue Pulsing	Preventative maintenance reminder. Treadmills: A belt rating of 0 or 1 will cause a blue pulsing ASL light indicating that there is a problem with the running belt/deck and is in need of servicing or replacement. Ellipticals: The maintenance counter starts at 1000 hours and counts down the active use hours to 0. When the counter reaches zero hours, the ASL will begin pulsing blue indicating preventative maintenance is due.
Yellow Solid	Indicates an error has occurred, was self-corrected and the machine can be used. The fault can be cleared.
Yellow Pulsing	There is a current non-recoverable fault condition, there is a loss of a major function and the machine is out-of-service. Machine service is required.

ASL Settings and Functions

Setting the ASL light brightness level

The ASL Light Brightness level settings are HIGH, MEDIUM, and LOW. On P10, P30, P30i and P31 consoles, the light brightness level can be switched OFF.

- On P10, P30, P30i and P31 consoles, the OFF setting switches the ASL light brightness OFF for all ASL state conditions. Setting the ASL Light Brightness OFF only switches the ASL light brightness OFF and not the ASL active status functionality.
- Regardless of the brightness level setting (including OFF), you can view the current ASL state (blue, yellow, etc.) in the service access menus, see "Viewing the current ASL state" on the facing page.

P10, P30, P30i and P31 consoles:

Access **Hardware Validation (51765761)** > **AS LIGHT BRIGHTNESS** > select **HIGH**, **MED**, **LOW**, or **OFF.**

SCL800 P31 Consoles:

Access **Club Settings (5651565)** > **SET ASL BRIGHTNESS** > select **HIGH**, **MED**, **LOW**, or **OFF.**

P62, P80, and P82 consoles:

Access **Hardware Validation (51765761)** > **Maintenance** menu > **AS LIGHT BRIGHTNESS** > select **HIGH**, **MED**, or **LOW.**

Disabling the ASL Maintenance Reminder

When set to ON, the ASL maintenance reminder - pulsing blue light state is triggered ON when the maintenance counter counts down to zero miles (or zero hours). When set to OFF, the ASL Maintenance Reminder counter is ignored and the ASL state is not changed to pulsing blue.

- The "OFF" setting effectively disables the ASL "blue pulsing" state without affecting the yellow or pulsing yellow fault states.
- When set to OFF, the Maintenance Reminder counter continues counting down the miles (or hours) remaining which can be viewed in the service access menu, see "Viewing the current ASL state" on the facing page.
- Error code events will still affect the ASL state condition even when the Maintenance Reminder is set to OFF.

P10, P30, P30i and P31 consoles:

Access **Club Settings (5651565)** > **MAINT CONFIG** > select **ON** or **OFF**.

P62, P80, and P82 consoles:

Access **Club Settings (5651565**) > **Maintenance** menu > **Maintenance Reminder** > select **ON** or **OFF.**

Viewing the current ASL state

The current ASL state (solid blue, pulsing blue, solid yellow; or pulsing yellow) can be viewed using the service menu **ACTIVE STATUS LIGHT** parameter.

P10, P30, P30i and P31 consoles:

Access **Hardware Validation (51765761)** > **ACTIVE STATUS LIGHT** > current ASL state.

SCL800 P31 Consoles:

Access **Information Display (65)** > **ACTIVE STATUS LIGHT** > current ASL state.

P62, P80, and P82 consoles:

Access **Club Settings** (**5651565)** > **Maintenance** menu > **ACTIVE STATUS LIGHT** > current ASL state.

Viewing the ASL maintenance counter remaining miles, hours or steps

P10, P30, P30i and P31 consoles:

Access **Information Display (65)** > **MAINT COUNTER**:

Shows the remaining miles, hours, or steps to zero (maintenance due). Holding down the **PAUSE, START** (P31i), or **STOP** (SCL800 P31) key will reset the counter.

P62, P80, and P82 consoles:

Access **Service Software (51765761)** > **Maintenance** menu > **Next Maintenance Due**

The maintenance counter shows the remaining miles (or hours) until the machine maintenance is due. Reaching zero triggers the ASL pulsing blue "maintenance due" state.

Clearing the Blue Pulsing ASL State (Maintenance Counter reset)

Resetting the maintenance counter resets the ASL state to solid blue. The maintenance counter is also reset to the default value (treadmills reset to 1000 miles, ellipticals reset to 250 Hrs, SCL800 resets to 1,100,000 steps).

P10, P30, P30i and P31 consoles:

1. Access **Information Display (65).**
2. Scroll to **MAINT COUNTER > OK.**
3. Hold down the **PAUSE, START** (P31i), or **STOP** (SCL800 P31) key for 3 secs or more until the maintenance counter is reset. The "HOLD TO RESET MAINTENANCE

COUNTER" message will show, and the maintenance counter is reset to the default setting. The ASL state is reset to the blue solid state

P62, P80, and P82 consoles:

1. Access **Service Settings (51765761)** > **Maintenance** menu.
2. Select **Next Maintenance Due** > **Reset.**

Clearing the Yellow & Yellow Pulsing ASL states

An ASL pulsing yellow state is triggered when an error code event occurs and is logged. To clear a pulsing yellow state, the error condition causing the ASL pulsing yellow must first be resolved either manually or the machine may resolve and self-clear the issue. A manually or machine self-cleared error code will change the ASL state from pulsing yellow to the solid yellow state.

Clearing the pulsing yellow ASL state

An ASL pulsing yellow state is triggered when an error code event occurs and is logged. To clear a pulsing yellow state, the error condition causing the ASL pulsing yellow must first be resolved either manually or the machine may resolve and self-clear the issue. A manually or machine self-cleared error code will change the ASL state from pulsing yellow to the solid yellow state.

Clearing the solid yellow ASL state

P10, P30, P30i and P31 consoles:

Clearing the error code from the Error Log resets the ASL state from solid yellow to the solid blue state.

P62, P80, and P82 consoles:

1. The **Maintenance** > **Operating Condition** parameter must be reset from the **Inspect** condition to the **Normal** condition. After resetting the Operating Condition to Normal, the ASL state will change from solid yellow to the solid blue state.
2. Then go to the **CPA**[1] **Event Log** and clear the error code by selecting the **Clear** control.

Note: Clearing the CPA Event Log does NOT clear the error codes from the Event Log.

[1]Touchscreen console Control Processing Assembly.

System Troubleshooting Procedures

System Troubleshooting procedures provide information and procedures to help you troubleshoot and repair elliptical issues.

Available Troubleshooting Procedures

- "Blown Battery Fuse Troubleshooting" on the next page

See Also

Troubleshooting

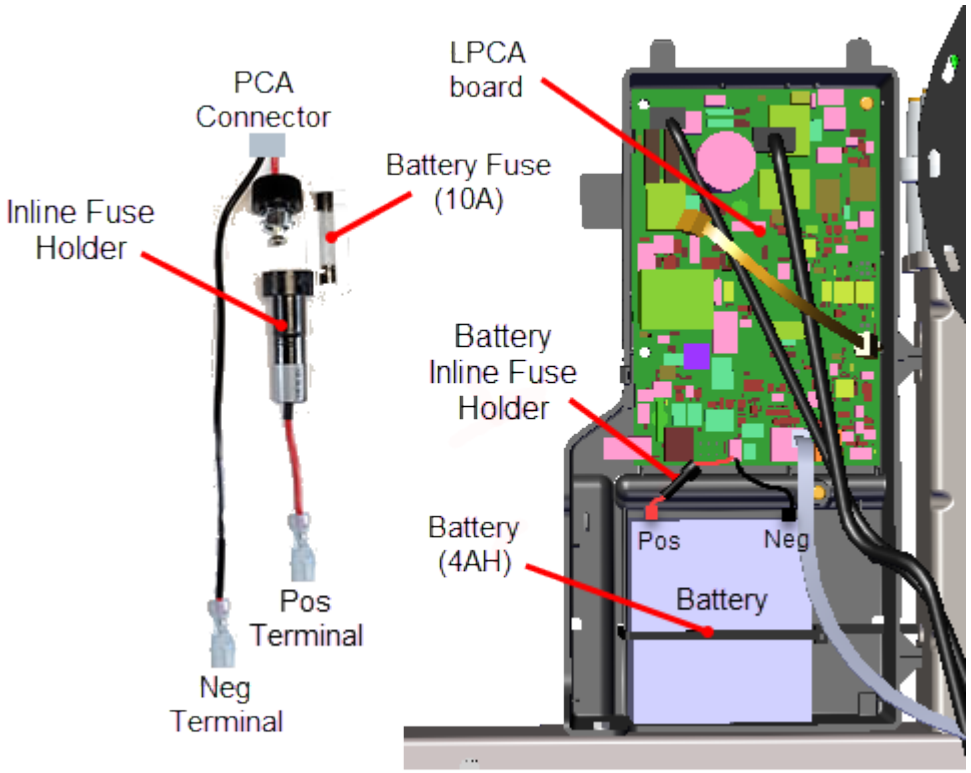
Blown Battery Fuse Troubleshooting

Use this procedure to help troubleshoot a failed "blown" battery fuse.

Main battery fuse failure

An indication that the battery fuse has failed is that the machine will operate as normal except that the incline lift function does not operate,

1. Remove the main battery fuse from the inline fuse inline holder and verify condition. Use an ohm meter to verify that there is continuity (zero ohms) between the two fuse connection pins.
    a. If the fuse is good, replace the removed fuse.
    b. If the fuse is bad, replace the fuse.
2. Make sure the battery is charged and properly connected, see "Battery Replacement" on page 107.
3. Make sure that the battery positive and negative cables are installed correctly and securely connected at both ends of the battery power cable.
4. Switch the power ON. Verify that the machine power has been restored. Wait for a few minutes and make sure the fuse does not fail again.
    a. If the fuse fails after power up, the fuse is not causing the power failure, continue troubleshooting the cause of the electrical power failure.



See Also

"System Troubleshooting Procedures" on page 227

Preventive Maintenance (PM)

About

Preventative maintenance is proven to extend the life of the equipment, improve the user experience, and keep maintenance problems and service calls to a minimum.

IMPORTANT: It is the responsibility of the owner to maintain equipment in accordance with the Precor recommended preventative maintenance schedule. Following the preventative maintenance schedule is required to maintain warranty coverage.

Preventative maintenance (**PM**[1]) tasks are grouped into Daily, Weekly, Monthly, Quarterly, and Semi-annual scheduled maintenance tasks (scheduled maintenance tasks are equipment model specific). Refer to the equipment specific maintenance guide for schedule and maintenance task information. The PM maintenance manuals are available for download from the Precor product web page, see " PM Guides" below. There are also many PM service task instructional videos available to view from the Precor Connect servicer web site, see " PM Service Videos" on the facing page.

Precor Customer PM Plans

Precor also offers PM service plans for customer purchase, see Preventative Maintenance Plans.

PM Guides and Videos

Product PM Guides

PM Guides

The PM maintenance guide provides the required Daily, Weekly, Monthly, Quarterly, and Semi-annual scheduled maintenance tasks needed to satisfy Precor equipment maintenance requirements. The PM guides can be downloaded from the Precor product web page.

- Cardio Equipment PM Guide

How to find equipment and console PM guides

[1]Preventative Maintenance: Daily, Weekly, Monthly, and Quarterly scheduled maintenance.

1. Go to the Precor.com website and select COMMERCIAL FITNESS products (Precor.com/commercial) and navigate to the specific equipment product web page.
2. Then scroll down to the **Brochures and Manuals** section.
3. Click the **Please Select** drop-down box and select the product **Preventative Maintenance Guide** link(s).

TIP: Make sure to review the entire list of manuals. There may be other related product PM guides, such as, console PM guides.

IMPORTANT: If you determine that the equipment needs service, disconnect all power connections (television, Ethernet, and power cables). Then place an OUT OF SERVICE sign on the equipment and make it clear that the machine must not be used.

PM Service Videos

PM Service Videos

There are many products that have product PM service videos. The list of current available product PM videos are located on the **Precor Connect** > **SERVICE VIDEOS** web page. Not all products currently include PM videos, please review the web site for the latest video updates.

- PM Service Videos: SERVICE VIDEOS

How to access PM service videos from Precor Connect:

1. Log in to your Precor Connect Servicer account (Precor Connect Partner's).
2. On the Connect Home page, select DOCUMENTATION > **SERVICE VIDEOS** to view the list of the current available equipment PM and service videos.

Theory of Operation

About

What's New?

The EFX800-16 has incorporated many new updates from previous generation EFXs including:

- New **Lower PCA**[1] board (**LPCA**[2]) design
- Different generator/brake system, changed to a generator/brake system similar to that used on the **AMT**[3] machines
- Smaller battery and improved battery charging/maintenance system
- Faster CrossRamp lift speed (2x)
- Added a service/maintenance Active Status Light (**ASL**[4])

Operating Summary Information

Power-up Initialization State

When the user begins pedaling at speed greater than minimum, 40 strides per minute the lower circuit (LPCA) powers up and delivers power to the console, and all systems initialize.

The LPCA will remain on under battery power until the pedal speed drops below the minimum, at which time the system enters Pending Shutdown state.

Banner Default State

When the user begins pedaling at speed greater than minimum, 40 strides per minute the lower circuit (LPCA) powers up and delivers power to the console, and all systems initialize.

The LPCA will remain on under battery power until the pedal speed drops below the minimum, at which time the system enters Pending Shutdown state.

---

[1]Lower Printed Circuit Assembly board; also refered to as the Lower PCA or simply as the lower board. On treadmills, it is the console to base function interface and the motor controller unit (MCU). On self-powered units, it is the lower PCA console to base function interface.
[2]Lower Printed Circuit Assembly board; also refered to as the Lower PCA or simply as the lower board. On treadmills, it is the console to base function interface and the motor controller unit (MCU). On self-powered units, it is the lower PCA console to base function interface.
[3]Adaptive Motion Trainer
[4]Active Status Light: Service and maintenance status light.

- Exercise program is the manual program.
- Goal type is time.
- Goal value is the club time limit.
- All other exercise program parameters revert to default values appropriate to the specific exercise program.
- Weight is 170 pounds or 77 kilograms.
- Age, gender, target heart rate and fitness score are unknown.
- Units, language, and optional metric are read from **EEPROM**[1], as set by Owner Settings. Factory defaults for these are U.S., English, and no optional metric.

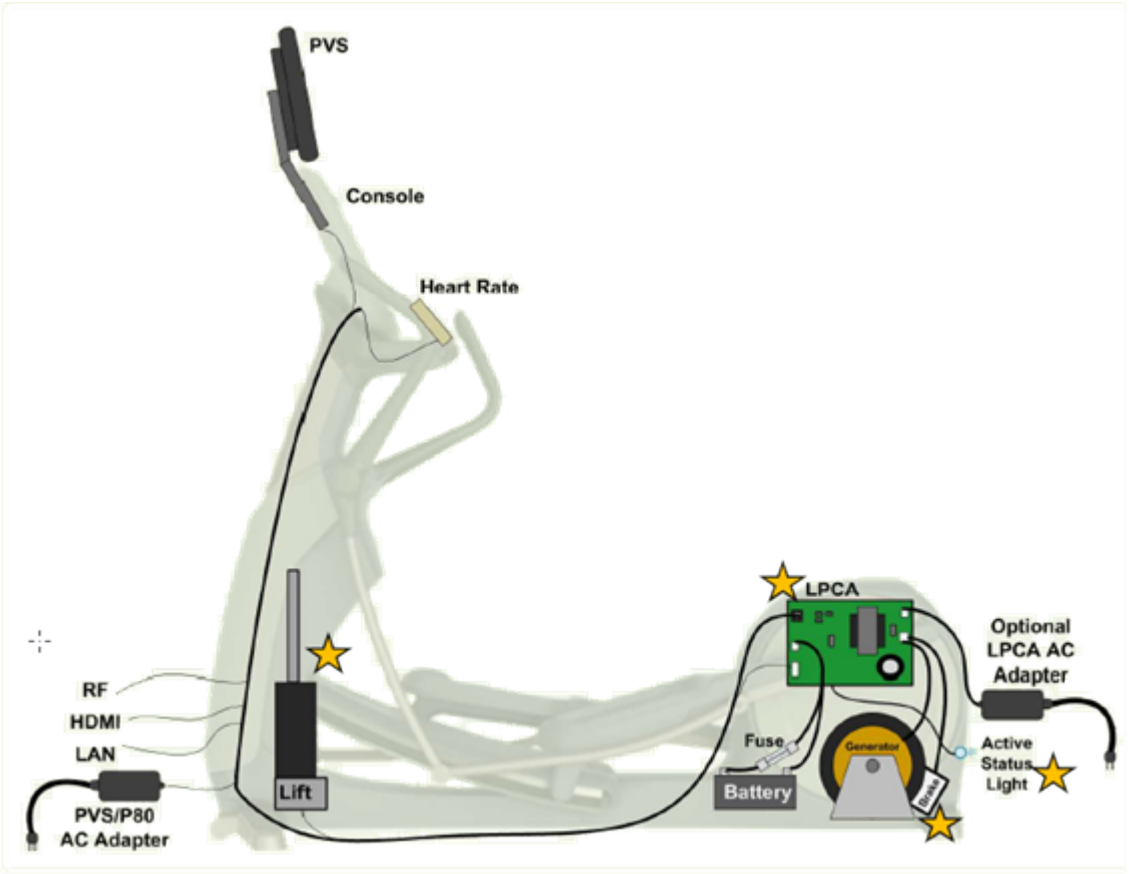
When the machine returns to Banner state after an exercise session ends, the following accumulated session data is stored in memory until the system goes through the Initialization state, or until the next user performs data entry.

- Session program.
- Session total time, including cool-down time.
- Session total distance, including horizontal, vertical, strides, revolutions, equivalent distances, etc.
- Session total calories.
- Average speed.
- Average heart rate, max heart rate, and total time spent in a heart rate zone.
- Weight, age, gender, target heart rate, parameters related to interval course profile, and fitness score.

System Component Overview

The EFX800-16 is comprised of two basic system blocks, the console and the base. The console provides the user input controls, metric indicator displays, and console-to-base communication interfaces. The console also provide the service software menus including maintaining the Error Log menu. The base receives machine operating commands and executes them. The base also monitors error conditions and sends detected error code data to the console.

[1]Electrically erasable programmable read-only memory and is a type of non-volatile memory.



Console

The console provides the user interface operational control inputs, the metric indicator information, and the console-to-base communication interface. The console **Upper PCA**[1] board (**UPCA**[2]) sends the input control commands to the base Lower **PCA**[3] board (LPCA). The console also receives error code data from the base which is used to maintain the Error Log service menu. The console also controls and sends the **ASL**[4] status state (based on the received error codes) to the base.

The LPCA makes use of two main processors: the Master (also referred to interchangeably as “Major”) and Slave (also as “Minor”).

Base

[1]Upper Printed Circuit Assembly board located in the console.

[2]Upper PCA board

[3]Printed circuit assembly, generally referred to as either an upper PCA or lower PCA.

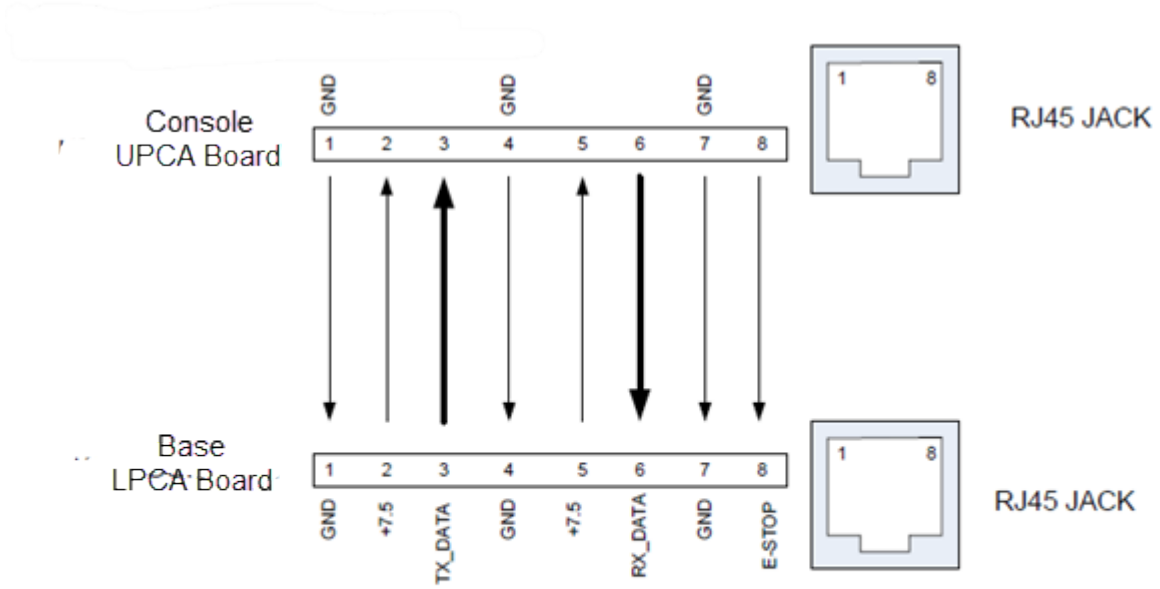
[4]Active Status Light: Service and maintenance status light.

The base Lower PCA (**LPCA**[1]) receives machine control commands from the console and directly executes the commands to control the braking, lift operation, and power ON/OFF. The LPCA also monitors error conditions and sends the detected error event code information to the console.

The LPCA makes use of two main processors: the Master (also referred to interchangeably as “Major”) and Slave (also as “Minor”).

Communication Interface Cable

Console **UPCA**[2] to base LPCA communication interface cable wiring diagram.



- TX and RX ----- 9600 baud, 8 data bits, 1 stop bit, no parity
- TX and RX signals are TTL (5 volt) levels, with 0V (start bit) to 5V (stop bit) range
- Power is provided by the Lower Control Board
  - +7.5 VDC +/- 5%
  - 1.5 amps

Generator/Brake system

The EFX800-16 base generator/brake system has changed from previous generation EFXs and now uses a generator/brake system similar to the AMT machines.

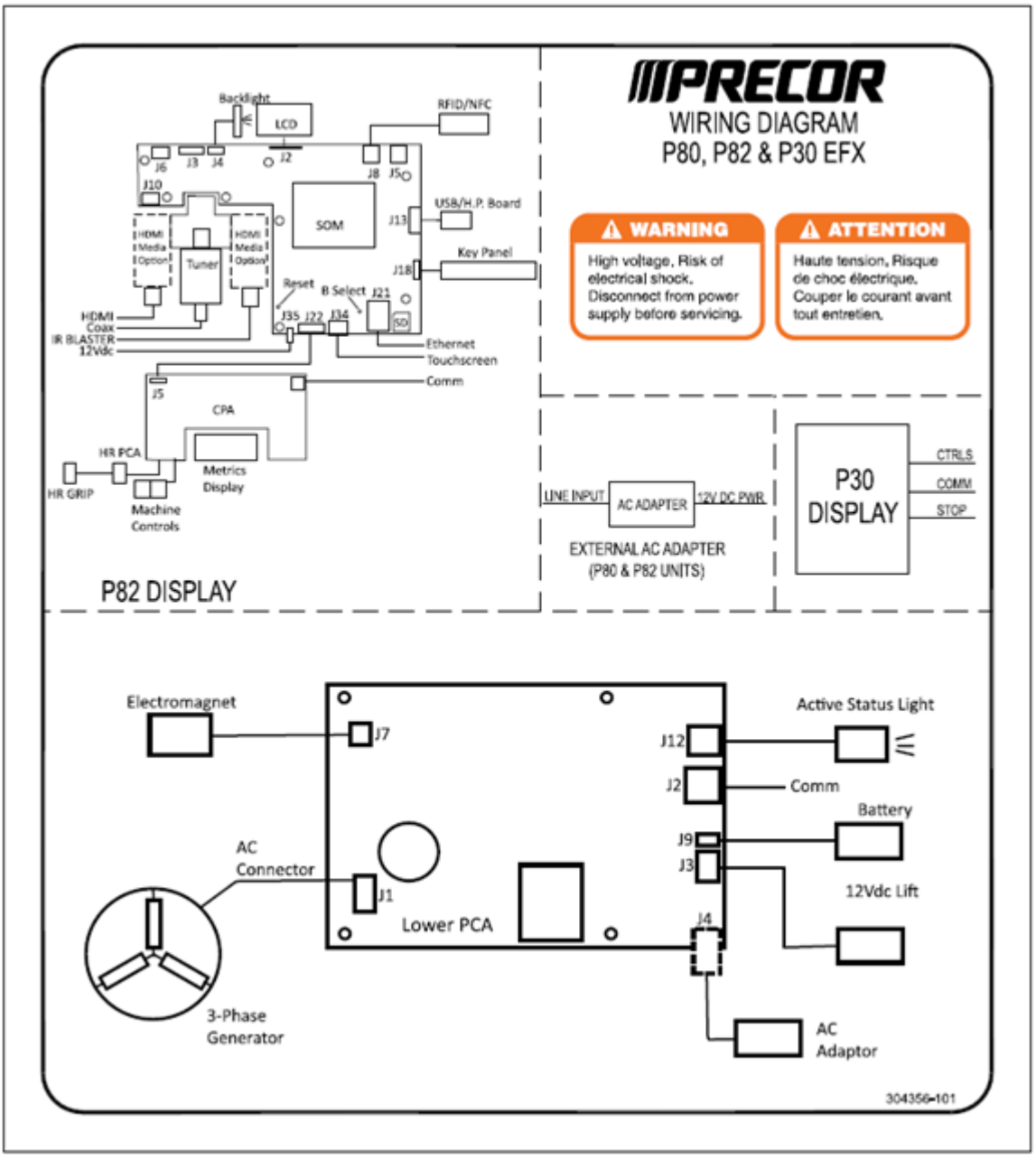
Active Status Light (ASL)

[1]Lower Printed Circuit Assembly board; also refered to as the Lower PCA or simply as the lower board. On treadmills, it is the console to base function interface and the motor controller unit (MCU). On self-powered units, it is the lower PCA console to base function interface.
[2]Upper PCA board

Active Status Light: similar to Treadmill ASL, except that operation has been changed for self-powered machines. A separate microprocessor and software on the LPCA control the color and flashing of the **LED**[1]. A button near the light is used to wake up the entire system temporarily to check its color, and to clear the status color if pressed long enough. Active Status Light processor receives simple commands from the Console, see Active Status Light (ASL).

[1]light-emitting diodes.

System Wiring Diagram



Parts

About

Equipment replacement part numbers are obtained from the *Exploded View Diagram* and *Parts List* documents. The *Exploded View Diagram* shows a picture of the disassembled machine and is used to identify the machine replacement parts and bubble numbers. The *Parts List* is used to obtain the Precor part number using the part bubble number.

1. First use the machine *Exploded View Diagram* to identify a machine replacement part and the associated bubble number.
2. Then go to the *Parts List* and use the part bubble number to obtain the Precor part number.

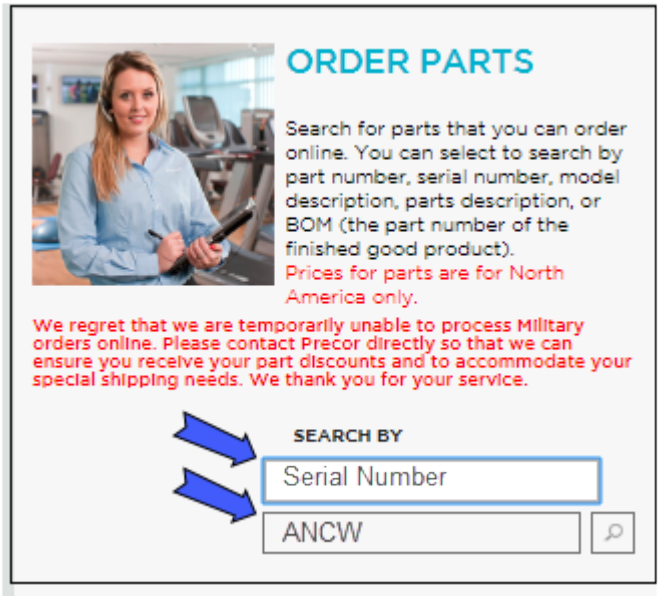
Precor Connect Partner's website

If you have online web access, it is always recommended that you go to the servicer Precor Connect Partner's website to view the equipment's most current *Exploded View Diagram* and *Parts List* information.

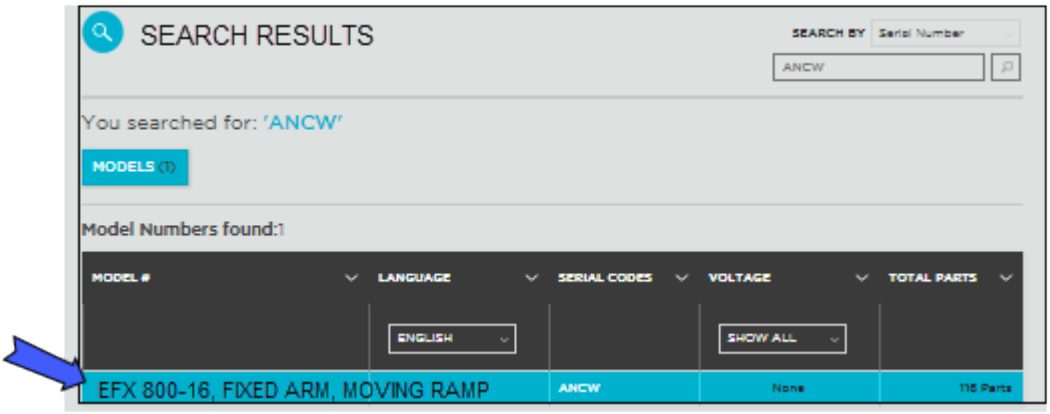
How to use Precor Connect to find part Information

1. Log in to the Precor Connect Partner website.

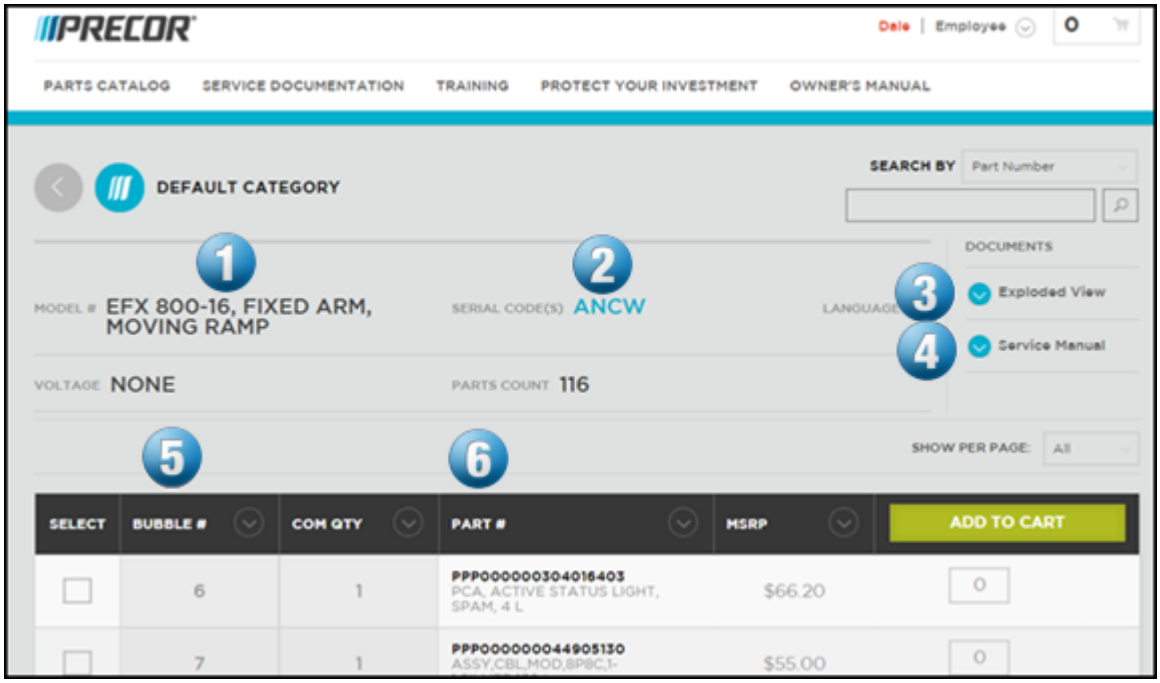
2. Then use the ORDER PARTS "SEARCH BY" function to find the equipment model. You can search by Part Number, Serial Number (first four letters are sufficient), Model Description, or the Parts Description.



3. Select the equipment model from the list of found search results.



4. Finding equipment part numbers:
   a. Verify the MODEL Description (1) and SERIAL CODE (2).
   b. Open the Exploded View Diagram (click the Exploded View link (3)) and find the part bubble number.
   c. Then go to the *Parts Identification Table*, locate the bubble number in the "BUBBLE #" column (5) and the associated part number in the "PART #" column (6).



ID	Description	ID	Description
1	Model Description	4	Service Manual Link
2	Serial Code	5	Bubble Numbers
3	Exploded View Link	6	Part Numbers

Service manual

The service manual include copies of the equipment *Exploded View Diagram* and *Parts List* . These documents are primarily intended to be used as a quick reference when servicing the equipment. However, the service manual may not reflect the latest equipment part updates. So always refer to the equipment *Exploded View Diagram* and *Parts List* on Precor Connect to obtain the latest part information.

Exploded View Diagrams and Parts List

Optional PDF version

If you are viewing the manual on a PC, laptop, etc., then use the following links to open the full PDF version of the *Exploded View Diagram* and *Parts List in Adobe Acrobat* Reader. The PDF version is a better option for viewing and printing.

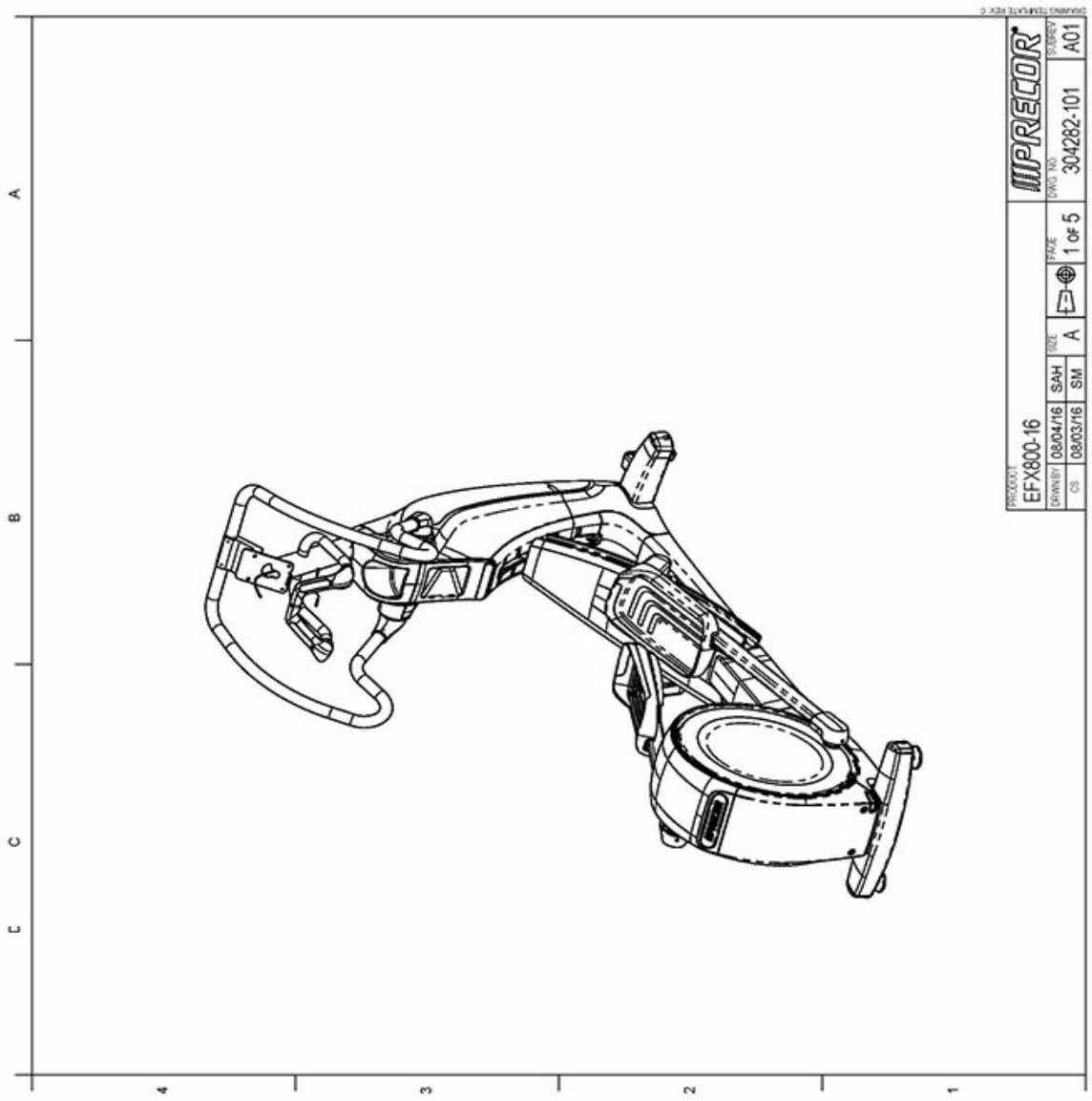
- Exploded View Diagrams(1)
  - Exploded View Diagram - Fixed Arm Models
  - Exploded View Diagram - Moving Arms Option
- Parts Lis(1)
  - Parts List - Fixed Arm Models
  - Parts List - Moving Arm Models

Note: (1) Not supported on all web browsers, the link may not open the pdf file.

TIP: It is recommended that you go to the Precor Connect servicer website to obtain the most current version of the *Exploded View Diagram* and part number information.

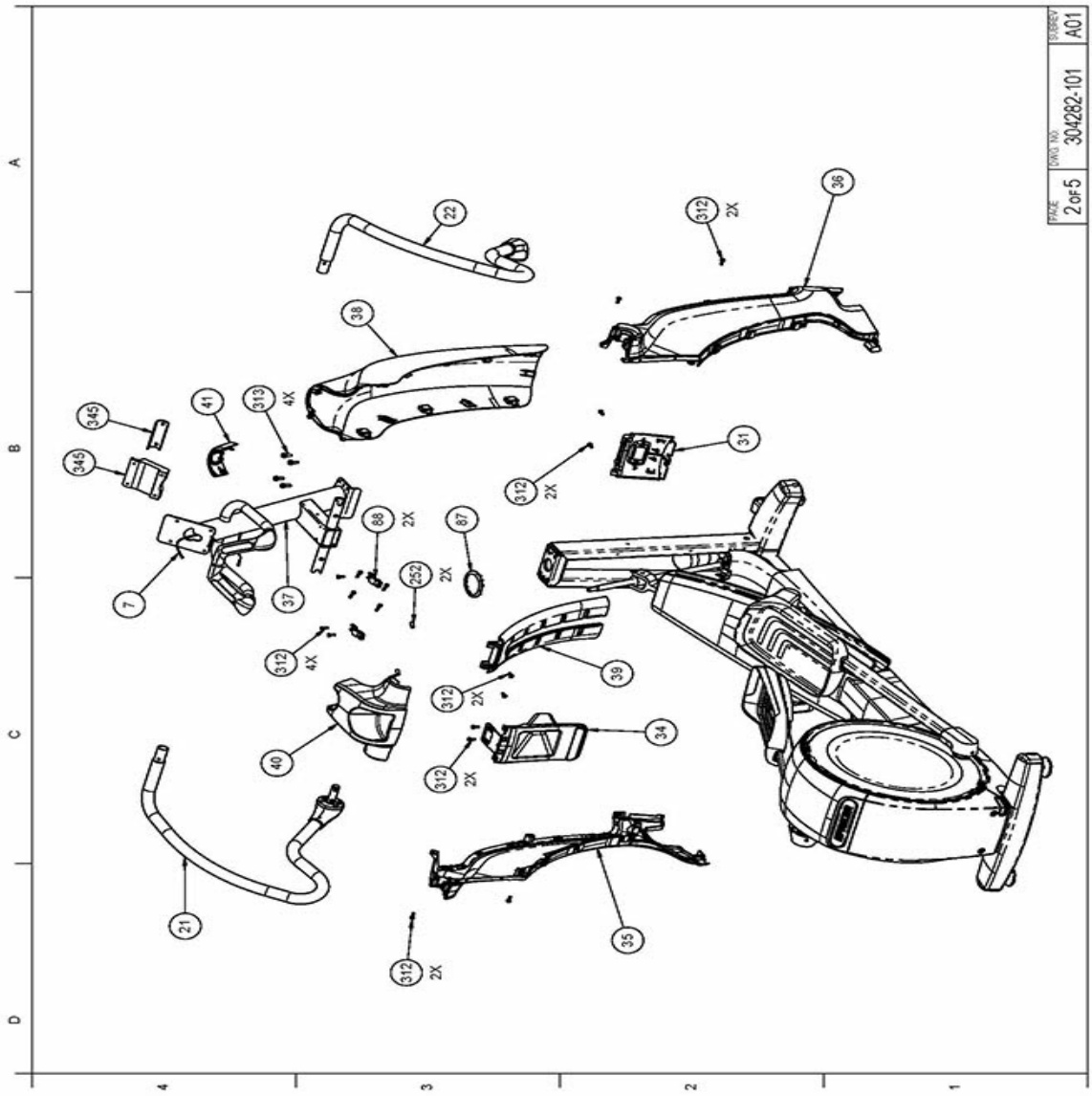
Exploded View Diagram - Fixed Arm Models

Page 1 of 5



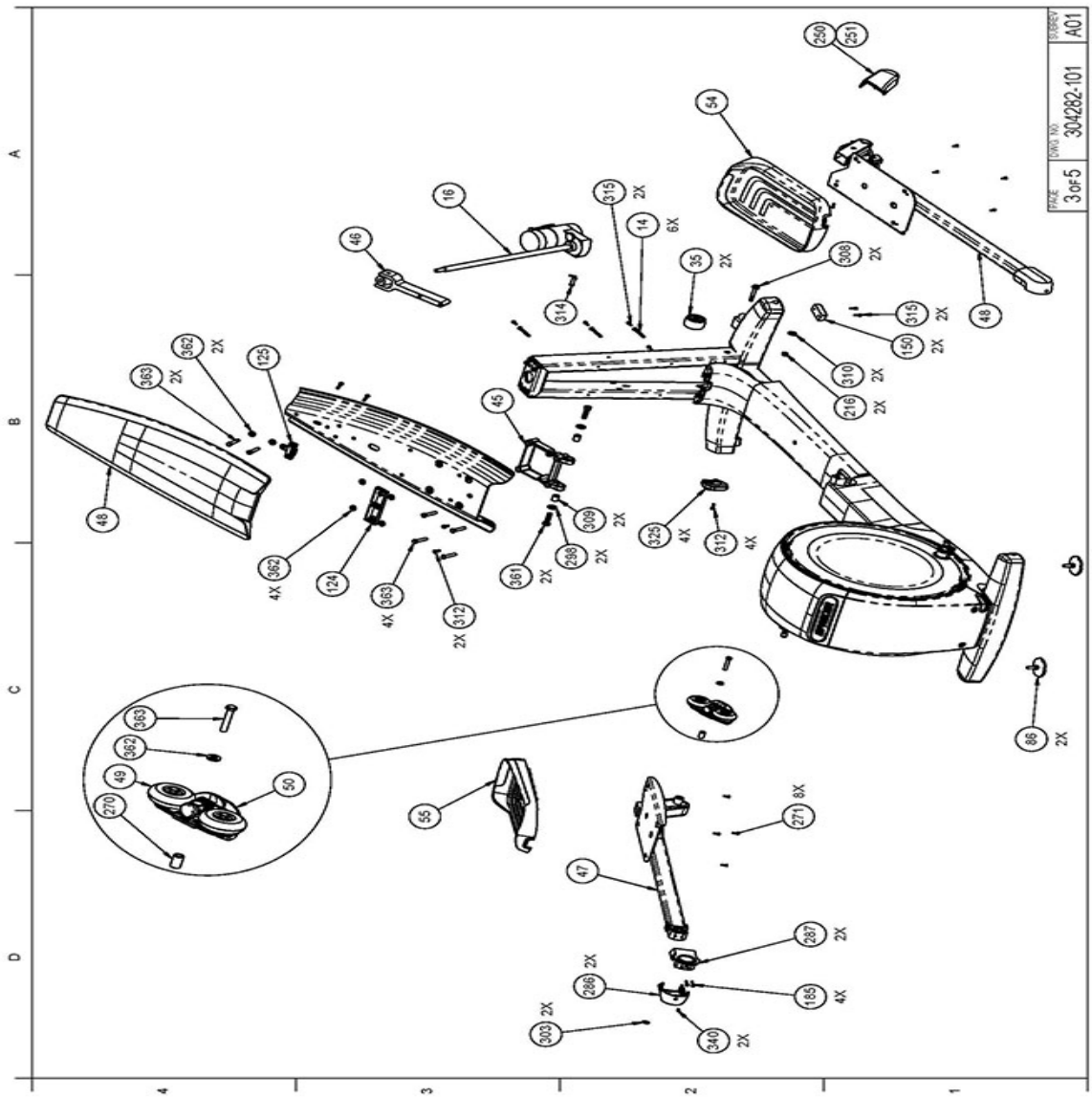
Exploded View Diagram - Fixed Arm Models

Page 2 of 5



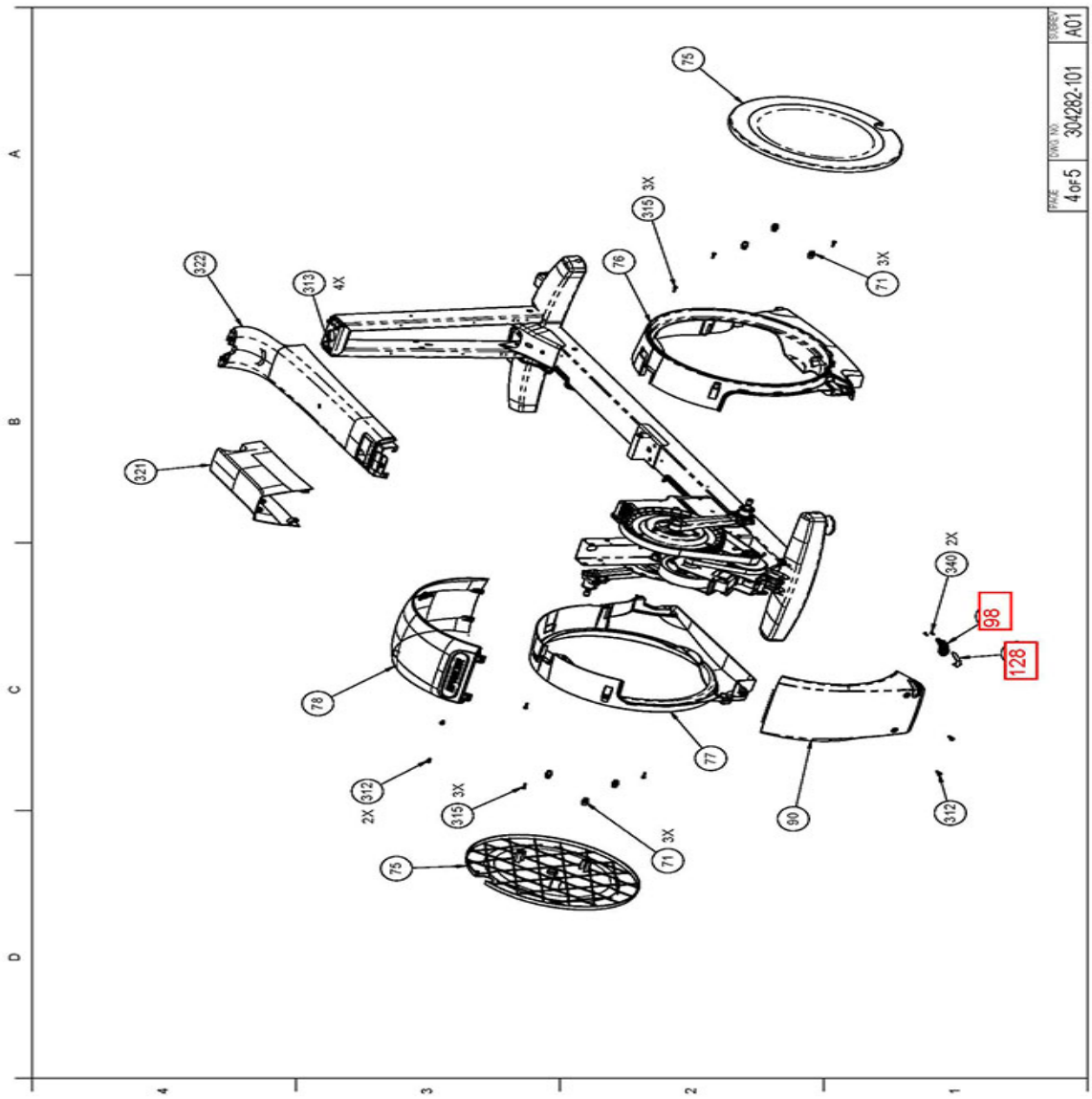
Exploded View Diagram - Fixed Arm Models

Page 3 of 5



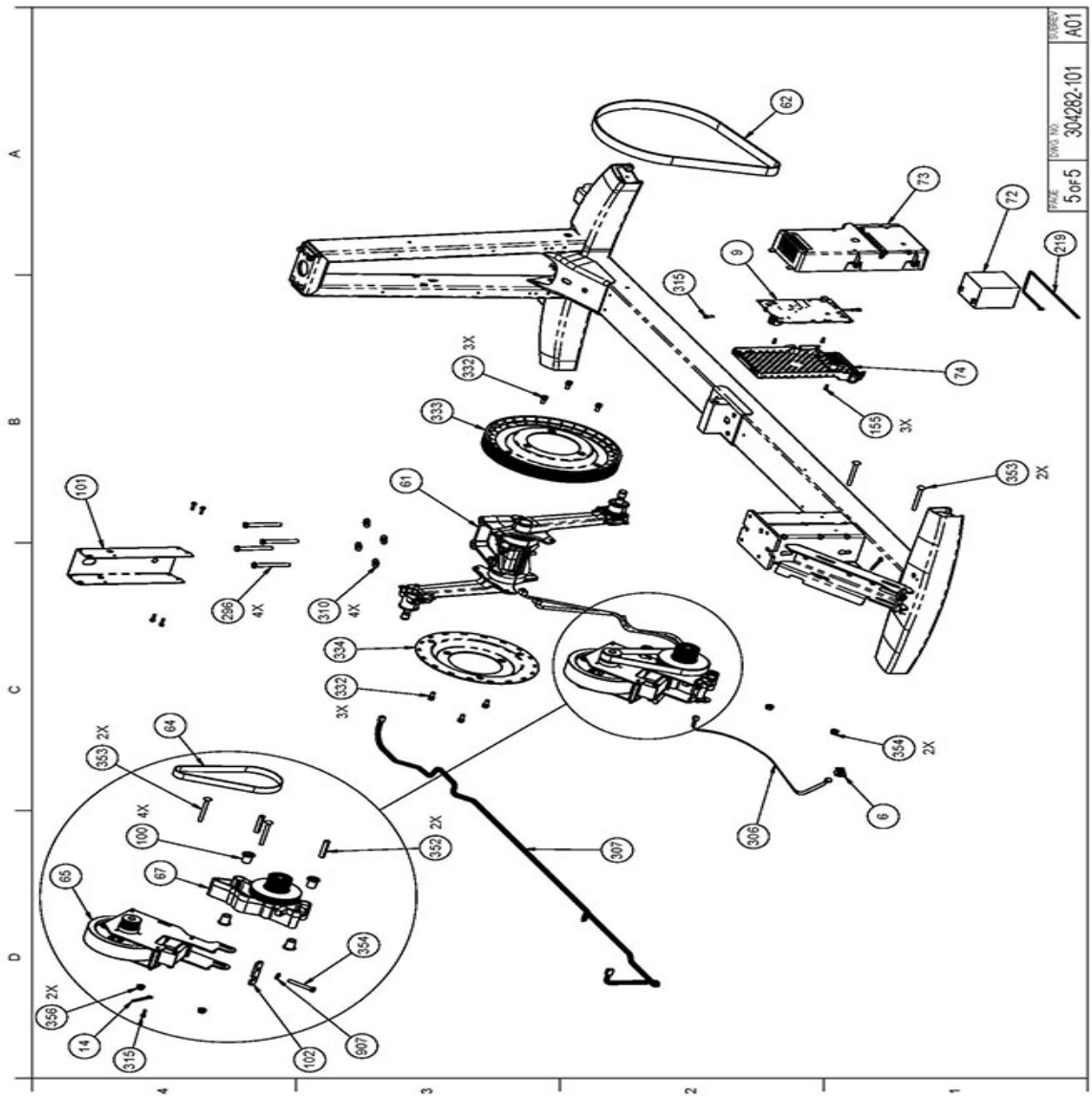
Exploded View Diagram - Fixed Arm Models

Page 4 of 5



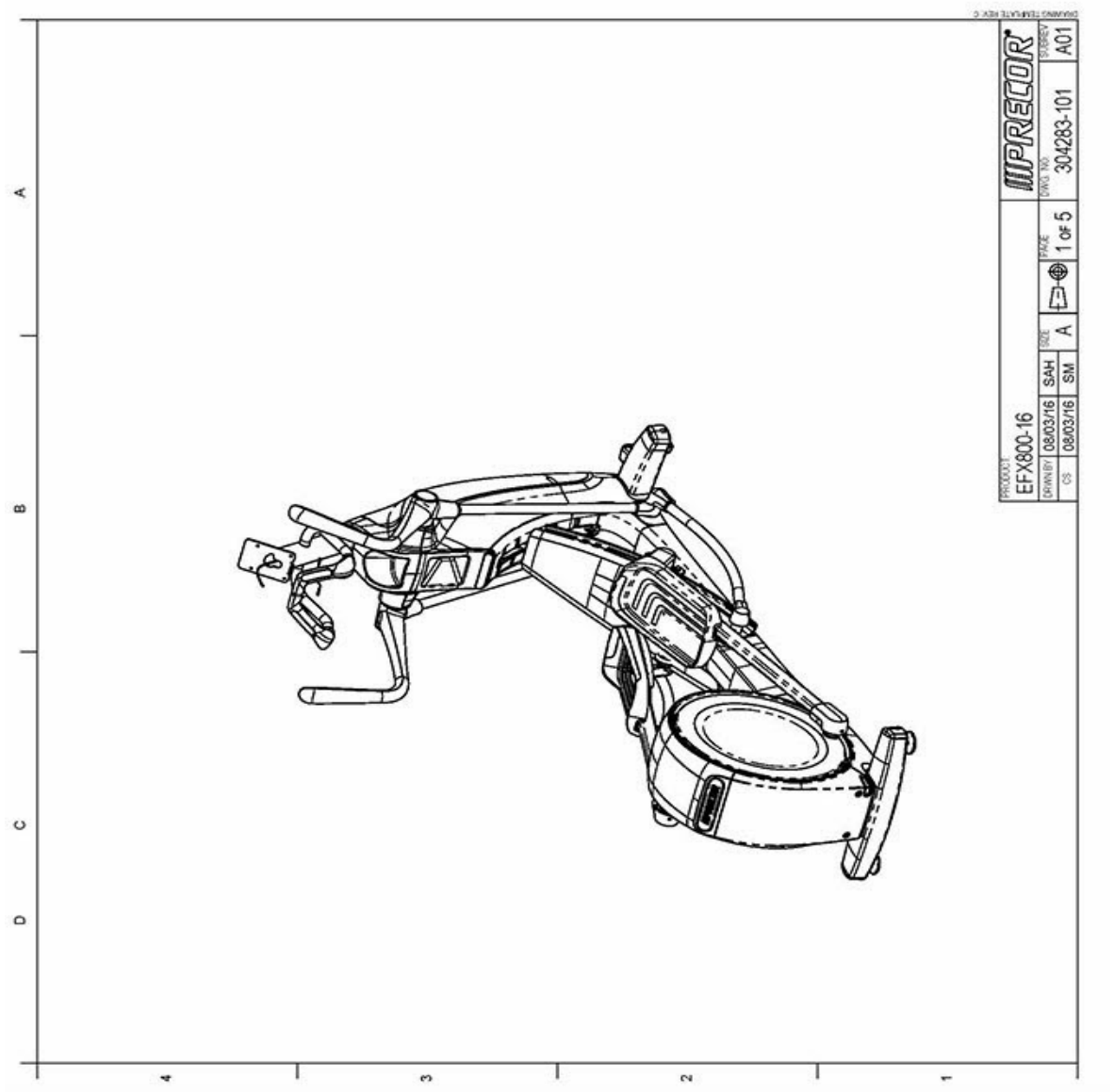
Exploded View Diagram - Fixed Arm Models

Page 5 of 5



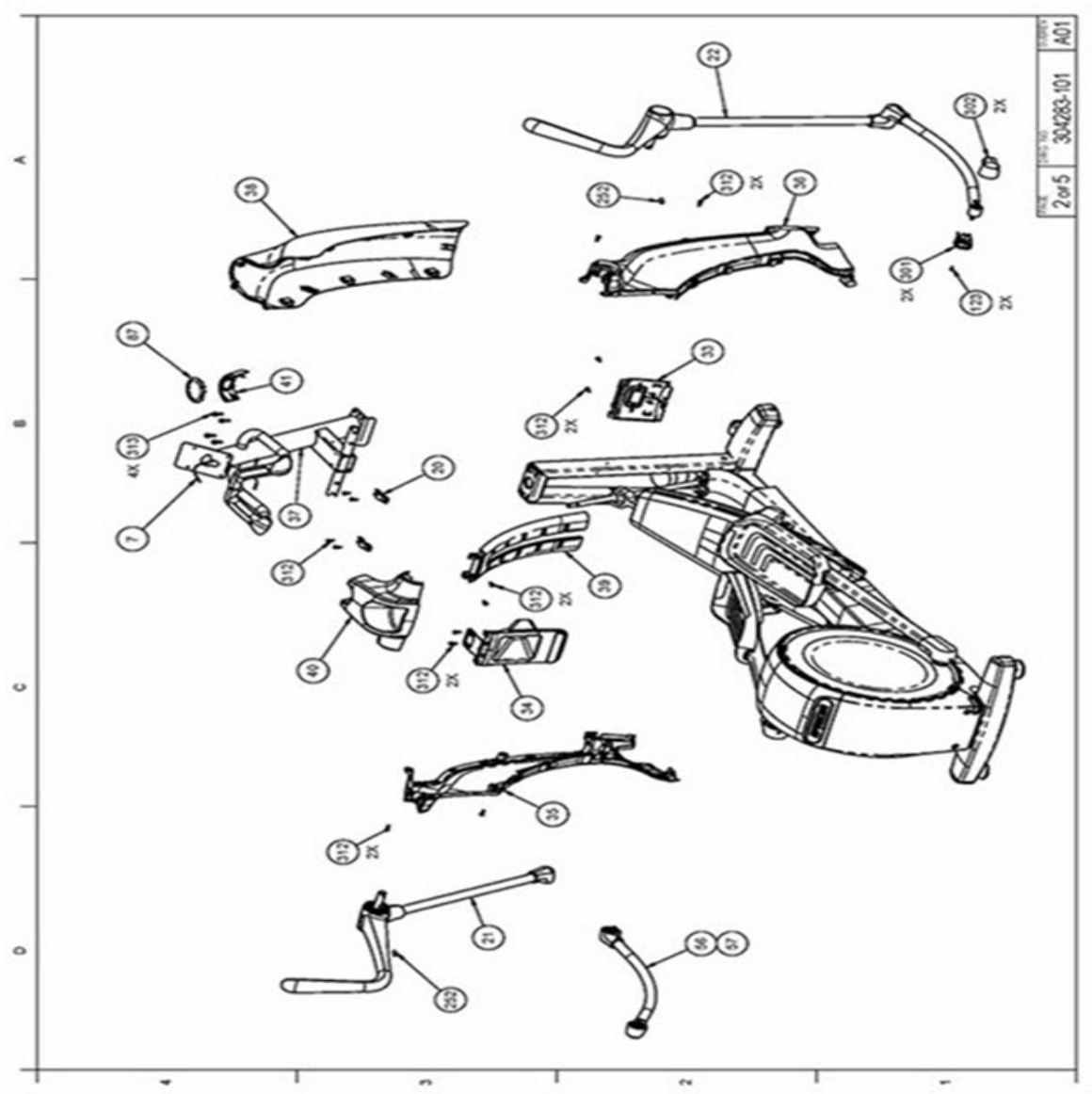
Exploded View - Moving Arm Models

Page 1 of 5



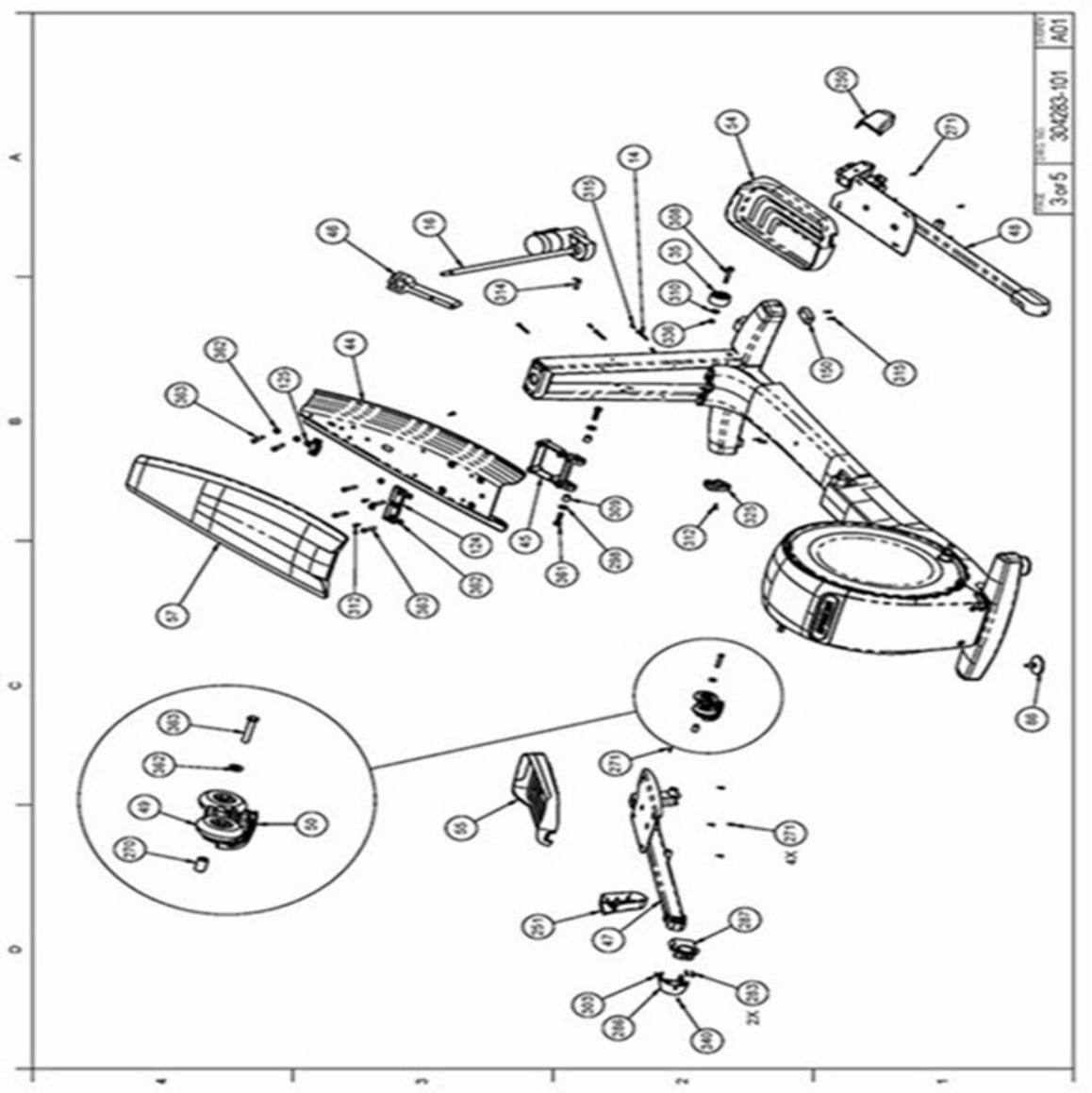
Exploded View - Moving Arm Models

Page 2 of 5



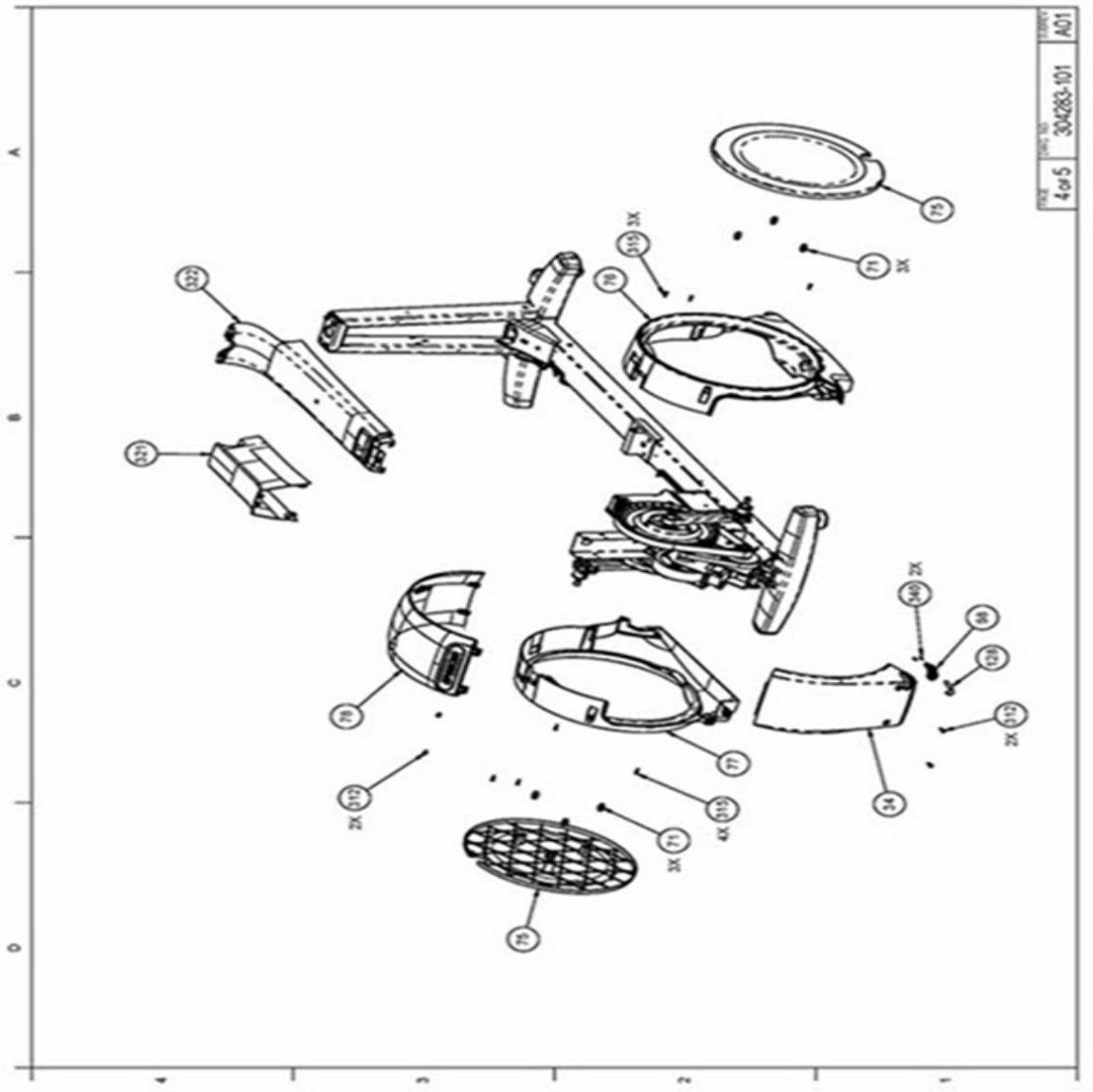
Exploded View - Moving Arm Models

Page 3 of 5



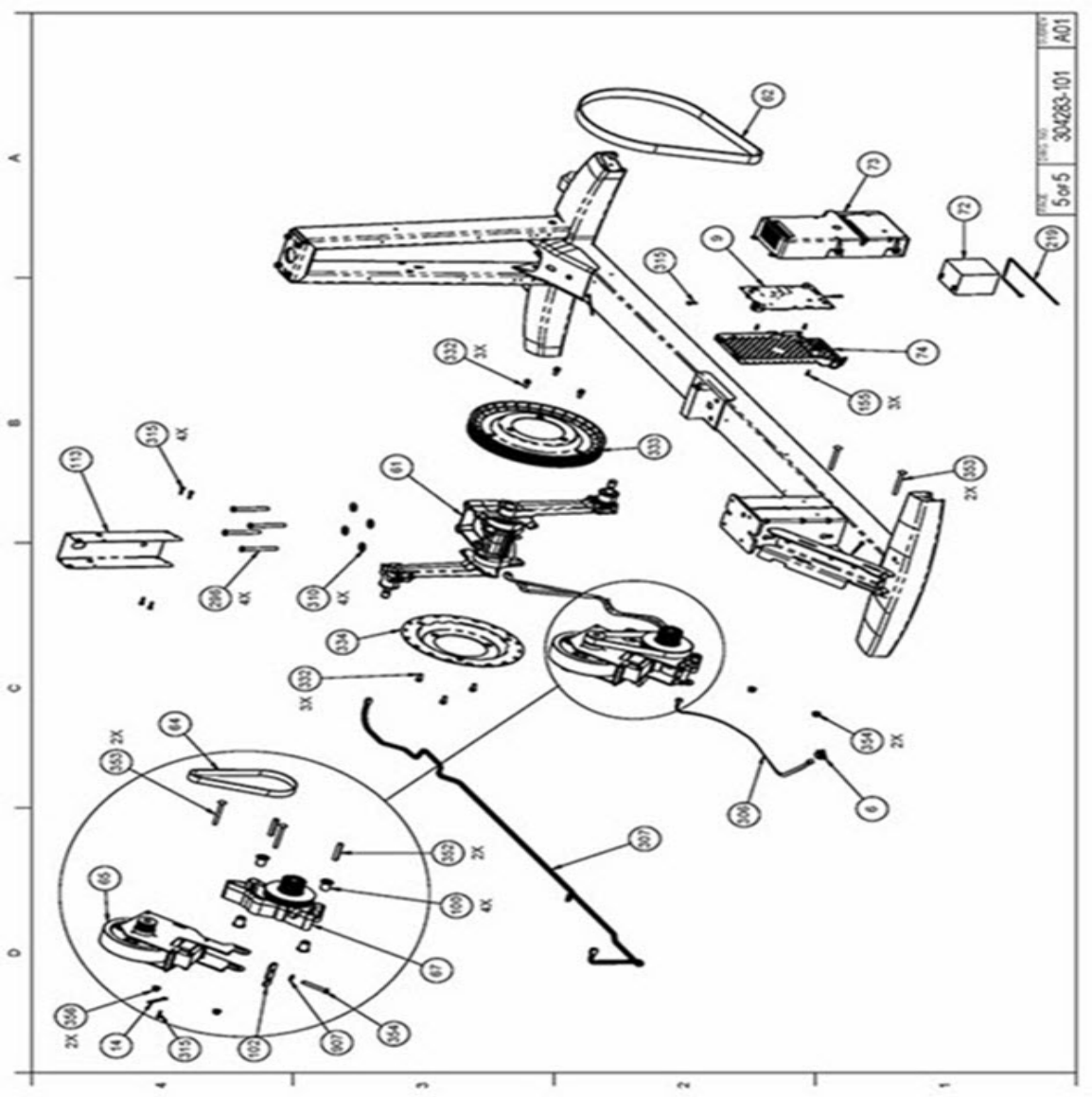
Exploded View - Moving Arm Models

Page 4 of 5



Exploded View - Moving Arm Models

Page 5 of 5



Parts List - Fixed Arm Models

Parts list - EFX800 Fixed Arm Models

Bubble Numbers	Item Description	SAP Material #
6	PCA, ACTIVE STATUS LIGHT, SPAM, 4 LED	PPP000000304016403
7	ASSY,CBL,MOD,8P8C,1-1,SILVER,130"	PPP000000044905130
9	ASSY, LPCA & SW, EFX800-16	PPP000000304079106
14	WIRE CLAMP, .25 INCH FASTENER, METAL WRAP STYLE	PPP000000013217101
16	ACTUATOR, LIFT,SELF POWERED EFX, W/O NUT (ROHS)	PPP000000303324102
20	MANTIS - UPPER PIVOT ANCHOR	PPP000000303456101
21	ASSY, FIXED HANDLEBARS, LH	PPP000000303460101
22	ASSY, FIXED HANDLEBARS, RH	PPP000000303460102
30	ASSEMBLY, UPPER HHHR CONTACT WITH CARRIER	PPP000000303502101
31	CONTACT, HHHR LOWER, STAINLESS	PPP000000302414101
32	ASSY, ACCESSORY TRAY & CROSSRAMP BADGE	PPP000000303523101
34	LIFT COVER, INTERFACE PLATE	PPP000000303416101
35	ASSEMBLY, LIFT COVER, LEFT SIDE	PPP000000303541101
36	ASSEMBLY, LIFT COVER, RIGHT SIDE	PPP000000303542101
37	ASSEMBLY, DISPLAY MOUNT WITH HHHR GRIPS	PPP000000303610101
38	LIFT COVER, FRONT, ASSY	PPP000000303507101
39	LIFT COVER, ASSY, REAR	PPP000000303508101
40	LIFT COVER, TOP	PPP000000303409102
44	RAMP, FORMED	PPP000000303562102
45	ASSY, HINGE, RAMP	PPP000000303570101
46	ASSEMBLY, LIFT NUT AND YOKE	PPP000000303563101
49	WHEEL,OVERMOLDED,BLACK	PPP000000048336101
49	WHEEL,OVERMOLDED,BLACK	PPP000000048336101
50	ASSEMBLY, WHEEL TRUCK	PPP000000303550101
50	ASSEMBLY, WHEEL TRUCK	PPP000000303550101
54	FOOT PEDAL, RIGHT, LED BLUE ACCENT	PPP000000303467102
55	FOOT PEDAL, LEFT, LED BLUE ACCENT	PPP000000303467101
60	GASKET, HHHR CONTACT	PPP000000302418101
62.00	BELT, DRIVE, 470J12 POLY V	PPP000000010217148
64	BELT, DRIVE, 240J8 POLY V	PPP000000010217149
65	ASSY, GENERATOR AND EDDY BRAKE	PPP000000303431101
67	ASSY, STEP UP PULLEY AND TENSIONER	PPP000000303433101
71	ASSY,CATCH LATCH AND RECEIVER	PPP000000304313101
72	BATTERY,SLA,12V,4AH,.187 TABS	PPP000000012258040
73	COVER, REAR LPCA MOUNT	PPP000000303624101
74	COVER, LPCA FINGER GUARD	PPP000000303627101
75	COVER, DRIVE DISK	PPP000000303490101
76	ASSY,COVER, DRIVE HOUSING, RH,W/TINNERMAN CLIPS	PPP000000303497101
77	ASSY,COVER, DRIVE HOUSING, LH, W/TINNERMAN CLIPS	PPP000000303493101
79	FUSE,SLOW,10A,32V,1/4 DIA	PPP000000010427151
86	FOOT,ADJUSTING,NO LOGO,WITH LOCK NUT	PPP000000303093101
87	GASKET, NECK	PPP000000303412101
100	ISOLATOR, 7/16 BOLT, TOP HAT	PPP000000303438101

Parts List - Fixed Arm Models

101	ISOLATOR, 5/16 BOLT, TOP HAT	PPP000000303509101
102	PLATE, TENSIONER TUG	PPP000000303432101
102	PLATE, TENSIONER TUG	PPP000000303432101
103	WHEEL, TRANSPORT W/ STEEL BUSHING	PPP000000303671102
105	MANTIS - HHHR COVER, FRONT	PPP000000303457101
106	HHHR COVER, LOWER RIGHT SIDE	PPP000000303459102
107	HHHR COVER, LOWER LEFT SIDE	PPP000000303459101
108	MANTIS - HHHR COVER, REAR	PPP000000303458101
150	FOOT, FIXED	PPP000000031074104
155	SCREW, MACHINE, 10-24X1/2, PANHD, PHIL,BLK SHARPERIZED	PPP00000MGTN019050
155	SCREW, MACHINE, 10-24X1/2, PANHD, PHIL,BLK SHARPERIZED	PPP00000MGTN019050
155	SCREW, MACHINE, 10-24X1/2, PANHD, PHIL,BLK SHARPERIZED	PPP00000MGTN019050
156	ASSY,CBL,16AWG,MINI FIT,QDK,10A SB,9"	PPP000000302130009
159	CONN,QK DISC,TAB,187X032,45DEG,0.199"STUD MOUNT	PPP000000010622064
200	HARDWARE KIT, FIXED ARM, EFX800-16	PPP000000303498102
212	BEZEL, ACTIVE STATUS	PPP000000303475102
213	ROCKER, ACTIVE STATUS LIGHT	PPP000000303528102
216	NUT,PLAIN,HEX,3/8-16,STL,CLR ZN	PPP00000KMCN038034
216	NUT,PLAIN,HEX,3/8-16,STL,CLR ZN	PPP00000KMCN038034
219	CABLE TIE,17 LONG,WHITE,NYL	PPP000000010123116
250	COVER, TRUCK PIVOT, RIGHT	PPP000000303505102
251	COVER, TRUCK PIVOT, LEFT	PPP000000303505101
252	SCREW,SET,DOG POINT,3/8-16 X 1.25,NYLOCK,STL,BLK SHRP	PPP00000ERTE038125
252	SCREW,SET,DOG POINT,3/8-16 X 1.25,NYLOCK,STL,BLK SHRP	PPP00000ERTE038125
252	SCREW,SET,DOG POINT,3/8-16 X 1.25,NYLOCK,STL,BLK SHRP	PPP00000ERTE038125
252	SCREW,SET,DOG POINT,3/8-16 X 1.25,NYLOCK,STL,BLK SHRP	PPP00000ERTE038125
253	SCREW,FLAT HD SOCKET CAP,1/4-20 X .625,STL,CLR ZN	PPP0000MACCN025062
254	CLIP,U TYPE, TINNERMAN, 1/4-20	PPP000000010136103
254	CLIP,U TYPE, TINNERMAN, 1/4-20	PPP000000010136103
254	CLIP,U TYPE, TINNERMAN, 1/4-20	PPP000000010136103
254	CLIP,U TYPE, TINNERMAN, 1/4-20	PPP000000010136103
270	SPINDLE, PIVOT, WHEEL TRUCK, STAINLESS	PPP000000303511102
270	SPINDLE, PIVOT, WHEEL TRUCK, STAINLESS	PPP000000303511102
271	SCREW,SELF-TAP,TRI,PAN HD PHIL,#10 X 5/8,PLASTITE 48-2,STL,CLR ZN	PPP0000PARCN019063
271	SCREW,SELF-TAP,TRI,PAN HD PHIL,#10 X 5/8,PLASTITE 48-2,STL,CLR ZN	PPP0000PARCN019063
277	CUP, PEDAL MOUNT	PPP000000303521101
277	CUP, PEDAL MOUNT	PPP000000303521101
278	HHCS,3/8-16 X .75,NYLOCK,GR5 STL,CLR ZN	PPP00000HCCE038075
278	HHCS,3/8-16 X .75,NYLOCK,GR5 STL,CLR ZN	PPP00000HCCE038075
278	HHCS,1/2-13 X 1.75,NYLOCK,GR8 STL,CLR ZN	PPP00000HECE050175

Parts List - Fixed Arm Models

279	SCREW, MACHINE, 10-24X1/2, PANHD, PHIL,BLK SHARPERIZED	PPP00000MGTN019050
279	SCREW, MACHINE, 10-24X1/2, PANHD, PHIL,BLK SHARPERIZED	PPP00000MGTN019050
286	COVER, PIVOT BLOCK OUTER	PPP000000303512101
287	INNER PIVOT BLOCK COVER, STAIRARM	PPP000000303513101
296.00	HHCS,3/8-16 X 4.00,NYLOCK,GR5 STL,CLR ZN	PPP000000013460103
297.00	HFS,3/8-16 X 2.00,NYLOCK,GR5 STL,CLR ZN	PPP000000013516102
298	WASHER,FLAT,NARROW,1/2,GR8 STL,CLR ZN	PPP00000WRCN050010
300	HOOK, WHEEL TRUCK	PPP000000303555101
300	HOOK, WHEEL TRUCK	PPP000000303555101
303	RETAINING RING,EXTERNAL,17.1,ROTOR CLIP P/N SH-66ST PA	PPP00000ABHN017001
306	ASSY,CBL,MOD,6P6C,1-1,24"	PPP000000304128024
307	ASSY,CBL,20AWG,6P5C,MINI-FIT,69"	PPP000000304108069
308	HHCS,3/8-16 X 2.50,SEMS .875 WASHER,NYLOCK,GR5 STL,CLR ZN	PPP0000HAECE038250
309	SPACER, RAMP PIVOT	PPP000000303572102
310	WASHER,FLAT,WIDE TYPA,3/8,STL,CLR ZN	PPP00000WCCN038008
310	WASHER,FLAT,WIDE TYPA,3/8,STL,CLR ZN	PPP00000WCCN038008
310	WASHER,FLAT,WIDE TYPA,3/8,STL,CLR ZN	PPP00000WCCN038008
312	SCREW,FLAT HD SOCKET CAP,1/4-20 X 1.75,STL,BLK SHRP	PPP0000MACTN025175
312	SCREW,SELF-TAP,TRI,PAN HD PHIL,1/4-20 X .75,STL,BLK SHRP	PPP0000PANTN025075
315	SCREW,SELF-TAP,TRI,WASHER HD HEX,10-24 X .75,STL,CLR ZN,ERIELUBE	PPP0000PBDCA019075
315	SCREW,SELF-TAP,TRI,WASHER HD HEX,10-24 X .75,STL,CLR ZN,ERIELUBE	PPP0000PBDCA019075
315	SCREW,SELF-TAP,TRI,WASHER HD HEX,10-24 X .75,STL,CLR ZN,ERIELUBE	PPP0000PBDCA019075
316	HHCS,5/16-18 X 1.00,SEMS NARROW WASHER,NYLOCK,GR5 STL,CLR ZN	PPP0000HAECE031100
321	COVER, RAMP TO DRIVE TRANSITION	PPP000000303492101
322	FRAME COVER, FORWARD	PPP000000303454101
325	END CAP, FOOT	PPP000000303417101
328	WASHER,WAVE,OVERLAP,TRIPLE,.620,STL,SMALLEY P/N SSR-0087	PPP0000WAGNN062001
329	WASHER,FLAT,.75 X 1.125 X .031,STL	PPP00000WNNN075003
330	COVER, RAMP	PPP000000303413101
332	BOLT, DRIVE LUG	PPP000000303449101
333	ASSY, HCOM EFX INPUT PULLEY	PPP000000303446101
334	PLATE, INPUT PULLEY SUBSTRATE	PPP000000303447101
340	SCREW,SELF-TAP,TRI,PAN HD PHIL,#8 X .50,PLASTITE,STL,BLK SHRP	PPP0000PARTN016050
340	SCREW,SELF-TAP,TRI,PAN HD PHIL,#8 X .50,PLASTITE,STL,BLK SHRP	PPP0000PARTN016050
340	SCREW,SELF-TAP,TRI,PAN HD PHIL,#8 X .50,PLASTITE,STL,BLK SHRP	PPP0000PARTN016050
340	SCREW,SELF-TAP,TRI,PAN HD PHIL,#8 X .50,PLASTITE,STL,BLK SHRP	PPP0000PARTN016050

Parts List - Fixed Arm Models

340	SCREW,SELF-TAP,TRI,PAN HD PHIL,#8 X .50,PLASTITE,STL,BLK SHRP	PPP0000PARTN016050
345	BRACKET, FIXED HANDLEBAR MOUNT,PT	PPP000000303465101
345.1	CLAMP, FIXED HANDLEBAR MOUNT,PT	PPP000000303466101
352	SPACER, COILED SHEET, 5/16 ID X .462 OD X 2-1/8 LG, #200450134	PPP000000013305101
353	BOLT,CARRIAGE,5/16-18 X 3.00,GR5 STL,CLR ZN	PPP00000BACN031300
353	BOLT,CARRIAGE,5/16-18 X 3.00,GR5 STL,CLR ZN	PPP00000BACN031300
354	HHCS,5/16-18 X 2.50,FULLTHREAD,GR2 STL,CLR ZN	PPP00000HJCN031250
354	NUT,5/16-18,HEX FLANGE,NYLON INSERT,GR5 STL,CLR ZN	PPP0000KBTCN031038
355	HHCS,5/16-18 X 2.50,FULLTHREAD,GR2 STL,CLR ZN	PPP00000HJCN031250
356	NUT,5/16-18,HEX FLANGE,NYLON INSERT,GR5 STL,CLR ZN	PPP0000KBTCN031038
363	HFS,3/8-16 X 2.00,NYLOCK,GR5 STL,CLR ZN	PPP000000013516102
363	HFS,3/8-16 X 2.00,NYLOCK,GR5 STL,CLR ZN	PPP000000013516102
365	WASHER,EXTERNAL TOOTH LOCK,#10,STL,CLR ZN	PPP0000WAMCN019002
370	SCREW,SELF-TAP,TRI,PAN HD PHIL,#8 X 1.25,PLASTITE,STL,BLK SHRP	PPP0000PARTN016125
370	SCREW,SELF-TAP,TRI,PAN HD PHIL,#8 X 1.25,PLASTITE,STL,BLK SHRP	PPP0000PARTN016125
501	SCREW,SELF-TAP,TRI,TORX,#8 X 1.25,PLASTITE,STAINLESS	PPP000000013451125
502	SCREW,SELF-TAP,TRI,TORX,#8 X .688,PLASTITE,STAINLESS,BLK OXID	PPP000000013450068
503	SQUARE PLASTI-GROMMET, #8 FSTNR, .375 SQ X .156 MAX THCK	PPP000000013381101
830	BLANKING PLATE, INTERFACE	PPP000000303538101
904	ARM COVER, FIXED, ANCHOR	PPP000000303514101
904	ARM COVER, FIXED, ANCHOR	PPP000000303514101
905	ARM COVER, FIXED, INNER	PPP000000303519101
905	ARM COVER, FIXED, INNER	PPP000000303519101
906	COVER, OUTER, FIXED ARM	PPP000000303415101
906	COVER, OUTER, FIXED ARM	PPP000000303415101
907	WASHER,FLAT,SAE TYPA,5/16,STL,CLR ZN	PPP00000WBCN031007
907	WASHER,FLAT,SAE TYPA,5/16,STL,CLR ZN	PPP00000WBCN031007
999	LITERATURE KIT, EFX800-16, MULTI-LANGUAGE--CHANGED P/N TO -900	PPP000000303488900

Parts List - Moving Arm Models

Parts list - EFX800 Moving Arm Models

Bubble Numbers	Item Description	Part Number
6	PCA, ACTIVE STATUS LIGHT, SPAM, 4 LED	PPP0000000304016403
7	ASSY,CBL,MOD,8P8C,1-1,SILVER,130"	PPP0000000044905130
9	ASSY, LPCA & SW, EFX800-16	PPP0000000304079106
14	WIRE CLAMP, .25 INCH FASTENER, METAL WRAP STYLE	PPP0000000013217101
16	ACTUATOR, LIFT,SELF POWERED EFX, W/O NUT (ROHS)	PPP0000000303324102
20	MANTIS - UPPER PIVOT ANCHOR	PPP0000000303456101
21	ASSY,MOVING ARM,LH	PPP0000000303486101
22	ASSY,MOVING ARM,RH	PPP0000000303486102
25	TRANSITION COVER, LINK, LEFT	PPP0000000303529101
26	TRANSITION COVER, LINK, RIGHT	PPP0000000303529102
30	ASSEMBLY, UPPER HHHR CONTACT WITH	PPP0000000303502101
31	CONTACT, HHHR LOWER, STAINLESS	PPP0000000302414101
32	ASSY, ACCESSORY TRAY & CROSSRAMP	PPP0000000303523101
34	LIFT COVER, INTERFACE PLATE	PPP0000000303416101
35	ASSEMBLY, LIFT COVER, LEFT SIDE	PPP0000000303541101
36	ASSEMBLY, LIFT COVER, RIGHT SIDE	PPP0000000303542101
37	ASSEMBLY, DISPLAY MOUNT WITH HHHR	PPP0000000303610101
38	LIFT COVER, FRONT, ASSY	PPP0000000303507101
39	LIFT COVER, ASSY, REAR	PPP0000000303508101
40	LIFT COVER, TOP	PPP0000000303409102
41	ASSY, GOOSE NECK & FRONT BADGE	PPP0000000303524101
44	RAMP, FORMED	PPP0000000303562102
45	ASSY, HINGE, RAMP	PPP0000000303570101
46	ASSEMBLY, LIFT NUT AND YOKE	PPP0000000303563101
49	WHEEL,OVERMOLDED,BLACK	PPP0000000048336101
49	WHEEL,OVERMOLDED,BLACK	PPP0000000048336101
50	ASSEMBLY, WHEEL TRUCK	PPP0000000303550101
50	ASSEMBLY, WHEEL TRUCK	PPP0000000303550101
54	FOOT PEDAL, RIGHT, LED BLUE ACCENT	PPP0000000303467102
55	FOOT PEDAL, LEFT, LED BLUE ACCENT	PPP0000000303467101
56	ASSEMBLY, LOWER LINK W/MTG. STUD	PPP0000000303630101
60	GASKET, HHHR CONTACT	PPP0000000302418101
62	BELT, DRIVE, 470J12 POLY V	PPP0000000010217148
64	BELT, DRIVE, 240J8 POLY V	PPP0000000010217149
65	ASSY, GENERATOR AND EDDY BRAKE	PPP0000000303431101
67	ASSY, STEP UP PULLEY AND TENSIONER	PPP0000000303433101
71	ASSY,CATCH LATCH AND RECEIVER	PPP0000000304313101
72	BATTERY,SLA,12V,4AH,.187 TABS	PPP0000000012258040
73	COVER, REAR LPCA MOUNT	PPP0000000303624101
74	COVER, LPCA FINGER GUARD	PPP0000000303627101
75	COVER, DRIVE DISK	PPP0000000303490101
76	ASSY,COVER, DRIVE HOUSING, RH,W/TINNERMAN CLIPS	PPP0000000303497101
77	ASSY,COVER, DRIVE HOUSING, LH, W/TINNERMAN CLIPS	PPP0000000303493101
78	ASSY, DRIVE TOP COVER WITH CLIPS	PPP0000000303527101
79	FUSE,SLOW,10A,32V,1/4 DIA	PPP0000000010427151

Parts List - Moving Arm Models

86	FOOT,ADJUSTING,NO LOGO,WITH LOCK	PPP000000303093101
87	GASKET, NECK	PPP000000303412101
90	COVER, DRIVE ACCESS ASSEMBLY	PPP000000304363102
100	ISOLATOR, 7/16 BOLT, TOP HAT	PPP000000303438101
101	ISOLATOR, 5/16 BOLT, TOP HAT	PPP000000303509101
102	PLATE, TENSIONER TUG	PPP000000303432101
102	PLATE, TENSIONER TUG	PPP000000303432101
103	WHEEL, TRANSPORT W/ STEEL BUSHING	PPP000000303671102
105	MANTIS - HHHR COVER, FRONT	PPP000000303457101
106	HHHR COVER, LOWER RIGHT SIDE	PPP000000303459102
107	HHHR COVER, LOWER LEFT SIDE	PPP000000303459101
108	MANTIS - HHHR COVER, REAR	PPP000000303458101
150	FOOT, FIXED	PPP000000031074104
155	SCREW, MACHINE, 10-24X1/2, PANHD, PHIL,BLK SHARPERIZED	PPP00000MGTN019050
155	SCREW, MACHINE, 10-24X1/2, PANHD, PHIL,BLK SHARPERIZED	PPP00000MGTN019050
156	ASSY,CBL,16AWG,MINI FIT,QDK,10A SB,9"	PPP000000302130009
200	HARDWARE KIT, MOVING ARM, EFX800-16	PPP000000303498101
212	BEZEL, ACTIVE STATUS	PPP000000303475102
213	ROCKER, ACTIVE STATUS LIGHT	PPP000000303528102
216	NUT,PLAIN,HEX,3/8-16,STL,CLR ZN	PPP00000KMCN038034
216	NUT,PLAIN,HEX,3/8-16,STL,CLR ZN	PPP00000KMCN038034
219	CABLE TIE,17 LONG,WHITE,NYL	PPP000000010123116
250	COVER, TRUCK PIVOT, RIGHT	PPP000000303505102
251	COVER, TRUCK PIVOT, LEFT	PPP000000303505101
252	SCREW,SET,DOG POINT,3/8-16 X 1.25,NYLOCK,STL,BLK SHRP	PPP00000ERTE038125
252	SCREW,SET,DOG POINT,3/8-16 X 1.25,NYLOCK,STL,BLK SHRP	PPP00000ERTE038125
252	SCREW,SET,DOG POINT,3/8-16 X 1.25,NYLOCK,STL,BLK SHRP	PPP00000ERTE038125
253	SCREW,FLAT HD SOCKET CAP,1/4-20 X .625,STL,CLR ZN	PPP0000MACCN025062
254	CLIP,U TYPE, TINNERMAN, 1/4-20	PPP000000010136103
254	CLIP,U TYPE, TINNERMAN, 1/4-20	PPP000000010136103
254	CLIP,U TYPE, TINNERMAN, 1/4-20	PPP000000010136103
254	CLIP,U TYPE, TINNERMAN, 1/4-20	PPP000000010136103
270	SPINDLE, PIVOT, WHEEL TRUCK,	PPP000000303511102
270	SPINDLE, PIVOT, WHEEL TRUCK,	PPP000000303511102
271	SCREW,SELF-TAP,TRI,PAN HD PHIL,#10 X 5/8,PLASTITE 48-2,STL,CLR ZN	PPP0000PARCN019063
271	SCREW,SELF-TAP,TRI,PAN HD PHIL,#10 X 5/8,PLASTITE 48-2,STL,CLR ZN	PPP0000PARCN019063
277	CUP, PEDAL MOUNT	PPP000000303521101
277	CUP, PEDAL MOUNT	PPP000000303521101
278	HHCS,3/8-16 X .75,NYLOCK,GR5 STL,CLR	PPP00000HCCE038075
278	HHCS,3/8-16 X .75,NYLOCK,GR5 STL,CLR	PPP00000HCCE038075
279	SCREW, MACHINE, 10-24X1/2, PANHD, PHIL,BLK SHARPERIZED	PPP00000MGTN019050
279	SCREW, MACHINE, 10-24X1/2, PANHD, PHIL,BLK SHARPERIZED	PPP00000MGTN019050

Parts List - Moving Arm Models

86	FOOT,ADJUSTING,NO LOGO,WITH LOCK	PPP0000003030931O1
87	GASKET, NECK	PPP0000003034121O1
90	COVER, DRIVE ACCESS ASSEMBLY	PPP0000003043631O2
100	ISOLATOR, 7/16 BOLT, TOP HAT	PPP0000003034381O1
101	ISOLATOR, 5/16 BOLT, TOP HAT	PPP0000003035091O1
102	PLATE, TENSIONER TUG	PPP0000003034321O1
102	PLATE, TENSIONER TUG	PPP0000003034321O1
103	WHEEL, TRANSPORT W/ STEEL BUSHING	PPP0000003036711O2
105	MANTIS - HHHR COVER, FRONT	PPP0000003034571O1
106	HHHR COVER, LOWER RIGHT SIDE	PPP0000003034591O2
107	HHHR COVER, LOWER LEFT SIDE	PPP0000003034591O1
108	MANTIS - HHHR COVER, REAR	PPP0000003034581O1
150	FOOT, FIXED	PPP0000000310741O4
155	SCREW, MACHINE, 10-24X1/2, PANHD, PHIL,BLK SHARPERIZED	PPP00000MGTN019050
155	SCREW, MACHINE, 10-24X1/2, PANHD, PHIL,BLK SHARPERIZED	PPP00000MGTN019050
156	ASSY,CBL,16AWG,MINI FIT,QDK,10A SB,9"	PPP0000003021300O9
200	HARDWARE KIT, MOVING ARM, EFX800-16	PPP0000003034981O1
212	BEZEL, ACTIVE STATUS	PPP0000003034751O2
213	ROCKER, ACTIVE STATUS LIGHT	PPP0000003035281O2
216	NUT,PLAIN,HEX,3/8-16,STL,CLR ZN	PPP00000KMCN038034
216	NUT,PLAIN,HEX,3/8-16,STL,CLR ZN	PPP00000KMCN038034
219	CABLE TIE,17 LONG,WHITE,NYL	PPP0000000101231l6
250	COVER, TRUCK PIVOT, RIGHT	PPP0000003035051O2
251	COVER, TRUCK PIVOT, LEFT	PPP0000003035051O1
252	SCREW,SET,DOG POINT,3/8-16 X 1.25,NYLOCK,STL,BLK SHRP	PPP00000ERTE038125
252	SCREW,SET,DOG POINT,3/8-16 X 1.25,NYLOCK,STL,BLK SHRP	PPP00000ERTE038125
252	SCREW,SET,DOG POINT,3/8-16 X 1.25,NYLOCK,STL,BLK SHRP	PPP00000ERTE038125
253	SCREW,FLAT HD SOCKET CAP,1/4-20 X .625,STL,CLR ZN	PPP0000MACCN025062
254	CLIP,U TYPE, TINNERMAN, 1/4-20	PPP0000000101361O3
254	CLIP,U TYPE, TINNERMAN, 1/4-20	PPP0000000101361O3
254	CLIP,U TYPE, TINNERMAN, 1/4-20	PPP0000000101361O3
254	CLIP,U TYPE, TINNERMAN, 1/4-20	PPP0000000101361O3
270	SPINDLE, PIVOT, WHEEL TRUCK,	PPP0000003035111O2
270	SPINDLE, PIVOT, WHEEL TRUCK,	PPP0000003035111O2
271	SCREW,SELF-TAP,TRI,PAN HD PHIL,#10 X 5/8,PLASTITE 48-2,STL,CLR ZN	PPP0000PARCN019063
271	SCREW,SELF-TAP,TRI,PAN HD PHIL,#10 X 5/8,PLASTITE 48-2,STL,CLR ZN	PPP0000PARCN019063
277	CUP, PEDAL MOUNT	PPP0000003035211O1
277	CUP, PEDAL MOUNT	PPP0000003035211O1
278	HHCS,3/8-16 X .75,NYLOCK,GR5 STL,CLR	PPP00000HCCE038075
278	HHCS,3/8-16 X .75,NYLOCK,GR5 STL,CLR	PPP00000HCCE038075
279	SCREW, MACHINE, 10-24X1/2, PANHD, PHIL,BLK SHARPERIZED	PPP00000MGTN019050
279	SCREW, MACHINE, 10-24X1/2, PANHD, PHIL,BLK SHARPERIZED	PPP00000MGTN019050

Parts List - Moving Arm Models

279	SCREW, MACHINE, 10-24X1/2, PANHD, PHIL,BLK SHARPERIZED	PPP00000MGTN019050
286	COVER, PIVOT BLOCK OUTER	PPP0000000303512101
287	INNER PIVOT BLOCK COVER, STAIRARM	PPP0000000303513101
296	HHCS,3/8-16 X 4.00,NYLOCK,GR5 STL,CLR	PPP0000000013460103
298	WASHER,FLAT,NARROW,1/2,GR8 STL,CLR	PPP00000WRCN050010
300	HOOK, WHEEL TRUCK	PPP0000000303555101
300	HOOK, WHEEL TRUCK	PPP0000000303555101
301	COVER, INNER LINK	PPP0000000303468101
301	COVER, INNER LINK	PPP0000000303468101
301	COVER, INNER LINK	PPP0000000303468101
301	COVER, INNER LINK	PPP0000000303468101
302	COVER, OUTER LINK	PPP0000000303455101
302	COVER, OUTER LINK	PPP0000000303455101
302	COVER, OUTER LINK	PPP0000000303455101
302	COVER, OUTER LINK	PPP0000000303455101
303	RETAINING RING,EXTERNAL,17.1,ROTOR CLIP P/N SH-66ST PA	PPP00000ABHN017001
305	COVER,PIVOT,MOVING ARM	PPP0000000303479101
305	COVER,PIVOT,MOVING ARM	PPP0000000303479101
306	ASSY,CBL,MOD,6P6C,1-1,24"	PPP0000000304128024
307	ASSY,CBL,20AWG,6P5C,MINI-FIT,69"	PPP0000000304108069
308	HHCS,3/8-16 X 2.50,SEMS .875 WASHER,NYLOCK,GR5 STL,CLR ZN	PPP0000HAECE038250
309	SPACER, RAMP PIVOT	PPP0000000303572102
310	WASHER,FLAT,WIDE TYPA,3/8,STL,CLR ZN	PPP00000WCCN038008
310	WASHER,FLAT,WIDE TYPA,3/8,STL,CLR ZN	PPP00000WCCN038008
310	WASHER,FLAT,WIDE TYPA,3/8,STL,CLR ZN	PPP00000WCCN038008
312	SCREW,SELF-TAP,TRI,PAN HD PHIL,1/4-20 X .75,STL,BLK SHRP	PPP0000PANTN025075
312	SCREW,SELF-TAP,TRI,PAN HD PHIL,1/4-20 X .75,STL,BLK SHRP	PPP0000PANTN025075
315	SCREW,SELF-TAP,TRI,WASHER HD HEX,10-24 X .75,STL,CLR ZN,ERIELUBE	PPP0000PBDCA019075
315	SCREW,SELF-TAP,TRI,WASHER HD HEX,10-24 X .75,STL,CLR ZN,ERIELUBE	PPP0000PBDCA019075
315	SCREW,SELF-TAP,TRI,WASHER HD HEX,10-24 X .75,STL,CLR ZN,ERIELUBE	PPP0000PBDCA019075
316	HHCS,5/16-18 X 1.00,SEMS NARROW WASHER,NYLOCK,GR5 STL,CLR ZN	PPP0000HAECE031100
321	COVER, RAMP TO DRIVE TRANSITION	PPP0000000303492101
322	FRAME COVER, FORWARD	PPP0000000303454101
325	END CAP, FOOT	PPP0000000303417101
328	WASHER,WAVE,OVERLAP,TRIPLE,.620,STL, SMALLEY P/N SSR-0087	PPP0000WAGNN062001
329	WASHER,FLAT,.75 X 1.125 X .031,STL	PPP00000WNNN075003
330	COVER, RAMP	PPP0000000303413101
332	BOLT, DRIVE LUG	PPP0000000303449101
333	ASSY, HCOM EFX INPUT PULLEY	PPP0000000303446101
334	PLATE, INPUT PULLEY SUBSTRATE	PPP0000000303447101
340	SCREW,SELF-TAP,TRI,PAN HD PHIL,#8 X .50,PLASTITE,STL,BLK SHRP	PPP0000PARTN016050

Parts List - Moving Arm Models

Page 5 of 5

340	SCREW,SELF-TAP,TRI,PAN HD PHIL,#8 X .50,PLASTITE,STL,BLK SHRP	PPP0000PARTN016050
340	SCREW,SELF-TAP,TRI,PAN HD PHIL,#8 X .50,PLASTITE,STL,BLK SHRP	PPP0000PARTN016050
340	SCREW,SELF-TAP,TRI,PAN HD PHIL,#8 X .50,PLASTITE,STL,BLK SHRP	PPP0000PARTN016050
340	SCREW,SELF-TAP,TRI,PAN HD PHIL,#8 X .50,PLASTITE,STL,BLK SHRP	PPP0000PARTN016050
340	SCREW,SELF-TAP,TRI,PAN HD PHIL,#8 X .50,PLASTITE,STL,BLK SHRP	PPP0000PARTN016050
352	SPACER, COILED SHEET, 5/16 ID X .462 OD X 2-1/8 LG, #200450134	PPP000000013305101
353	BOLT,CARRIAGE,5/16-18 X 3.00,GR5	PPP00000BACN031300
353	BOLT,CARRIAGE,5/16-18 X 3.00,GR5	PPP00000BACN031300
354	HHCS,5/16-18 X 2.50,FULLTHREAD,GR2	PPP00000HJCN031250
354	NUT,5/16-18,HEX FLANGE,NYLON INSERT,GR5 STL,CLR ZN	PPP0000KBTCN031038
355	HHCS,5/16-18 X 2.50,FULLTHREAD,GR2	PPP00000HJCN031250
356	NUT,5/16-18,HEX FLANGE,NYLON INSERT,GR5 STL,CLR ZN	PPP0000KBTCN031038
361	HHCS,1/2-13 X 1.75,NYLOCK,GR8 STL,CLR	PPP00000HECE050175
363	HFS,3/8-16 X 2.00,NYLOCK,GR5 STL,CLR ZN	PPP000000013516102
363	HFS,3/8-16 X 2.00,NYLOCK,GR5 STL,CLR ZN	PPP000000013516102
363	HFS,3/8-16 X 2.00,NYLOCK,GR5 STL,CLR ZN	PPP000000013516102
365	WASHER,EXTERNAL TOOTH	PPP0000WAMCN019002
501	SCREW,SELF-TAP,TRI,TORX,#8 X 1.25,PLASTITE,STAINLESS	PPP000000013451125
502	SCREW,SELF-TAP,TRI,TORX,#8 X .688,PLASTITE,STAINLESS,BLK OXID	PPP000000013450068
503	SQUARE PLASTI-GROMMET, #8 FSTNR, .375 SQ X .156 MAX THCK	PPP000000013381101
830	BLANKING PLATE, INTERFACE	PPP000000303538101
907	WASHER,FLAT,SAE TYPA,5/16,STL,CLR ZN	PPP00000WBCN031007
907	WASHER,FLAT,SAE TYPA,5/16,STL,CLR ZN	PPP00000WBCN031007
999	LITERATURE KIT, EFX800-16, MULTI-LANGUAGE--CHANGED P/N TO -900	PPP000000303488900

Product Literature & Videos

Additional product literature and videos that will help you to service and maintain the equipment.

- "Service & Maintenance Documentation" below
- "Precor Websites" below
- "Service Videos" on the next page

Service & Maintenance Documentation

	Document	Link
	EFX600-18 Base Service Manual (online version)	Service Manual
	Preventative Maintenance Guides	"Preventive Maintenance (PM)" on page 230

Precor Websites

	Precor Websites	Link
	Precor.com product home page. Available information: • Product Specifications • Assembly Guides • Preventative Maintenance Guides • Console Install & PM Guides	Precor.com
	Precor Connect servicer home page*. Available Product information: • Part Numbers • Exploded View Diagrams • Service Bulletins • Software Updates • Service Videos	Connect Login
	Precor Technician Certification Training	Service & Install Training
	Precor E-Learning Center	E-Learning System
	SalesForce Login	SalesForce Login
* Always log in to Precor connect using your Precor Connect account login information.		

Service Videos

	Service Video	Link
	Preventative Maintenance Videos	
	Preventative Maintenance Videos: (not available for all products) • Login to Precor Connect‡. • select **SERVICE VIDEOS** • Navigate to the product equipment PM videos	available on Precor Connect Connect Login
	EFX[1] Service Videos	
	EFX600/700/800 Rear Drive Covers Removal video	EFX600/700/800 Rear Drive Covers Removal
	EFX Lift Motor Jackscew Lubrication maintenance video	EFX Lift Motor Jackscew Lubrication
	EFX600/700/800 Dual Stage Input Drive Belt Tension Verification	EFX600/700/800 Dual Stage Input Drive Belt Tension Verification
	TRM[2] Service Videos	
	Running Belt & Deck Cleaning procedure	Running Belt & Deck Cleaning
	Running Belt Alignment procedure	Running Belt Alignment
	Hood Cover Removal	Hood Cover Removal
	**ESTOP**[3] Switch & Lanyard Test	TRM ESTOP Test
	Lift Motor Jackscrew Lubrication Maintenance procedure	Lift Motor Jackscrew Lubrication Procedure
	Machine Leveling procedure	Machine Leveling Procedure
‡ Always log in to your Precor connect servicer account. Guest login users do not have access to all features.		

[1]Elliptical Fitness Crosstrainer

[2]Treadmill

[3]Emergency Stop: Safety clip and lanyard attached to the stop switch to immediately turn off power bringing the machine to a stop.

Appendix A : Edition Information

Edition

Title: Experience Series 800 Line **EFX**[1] Service Manual
P/N: 20039-206
Publish Date: Apr 2019

Additional Documentation

You can also view the service manual online at Online Service Manuall

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[1]Elliptical Fitness Crosstrainer

Appendix B : Notices and Safety

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[1]Adaptive Motion Trainer

[2]Elliptical Fitness Crosstrainer

[3]speed

Safety Notices

Warning and Caution notices indicate an activity that could be dangerous and cause personal injury and/or equipment damage if not adhered to. Always follow Warning and Caution instructions.

Warning

A **WARNING** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood.

Caution

A **CAUTION** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood.

Service Safety Guidelines

Prior to doing any machine service, review the Service Safety Guidelines, see "Service Safety Guidelines" on page 4.