Be Strong.™

Model: T912

Model: T914

Model: T916

NAUTILUS® Service Manual

Commerical Series Treadmill

P/N: 001-6976 Rev A (07/27/2006)

Model: T912, T914, T916

The information contained in this service manual is current as of the date of print.

ATTENTION!

THIS MANUAL IS INTENDED FOR AUTHORIZED NAUTILUS OR NAUTILUS CERTIFIED SERVICE PERSONNEL AND NOT FOR THE CONSUMER. THERE ARE NO USER SERVICEABLE PARTS. SERVICING OF THE NAUTILUS COMMERCIAL SERIES TREADMILL BY OTHER THAN AUTHORIZED NAUTILUS OR NAUTILUS CERTIFIED SERVICE PERSONNEL MAY RESULT IN VOIDING OF THE WARRANTY.

FOR DETAILED INSTRUCTIONS AND INFORMATION ON ASSEMBLY AND USE FOR THE NAUTILUS® COMMERICAL SERIES TREADMILL, MODELS T912, T914 AND T916, REFER TO THE ASSEMBLY AND OWNER'S MANUALS.

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Section 1

Maintenance

Contents

Viewing Maintenance Information

Model T912

The total time and distance the treadmill has been in use can be viewed using the Maintenance Screens. This information can help you schedule treadmill maintenance and check treadmill usage.

To view the treadmill's total Run-time and total Distance information:

1. Press and hold ENTER and STOP keys on the console for at least 3 seconds.
2. Use the INCLINE UP/DOWN keys to scroll to ConF selection.
3. Press the QUICKSTART key.
4. Use the INCLINE UP/DOWN keys to scroll to view TOTAL HOURS and TOTAL MILES.

Model T914 & T916

In addition to the total time, the distance the T914 or T916 treadmill has been in use can be viewed using the Machine Status console codes.

To view the treadmill's run-time information:

1. Press the **SPEED UP** key on Ergo Bar, then **4**, **ENTER** on the console.
2. The words "Machine Status" will be displayed.
3. Press the **SPEED UP** key on Ergo Bar, and scroll to "Run Hours".
4. The current Run Hours will be displayed.
5. Press the **CLEAR** key to exit.

To view the total distance the treadmill has been used:

1. Press the **SPEED UP** key on Ergo Bar, then **4**, **ENTER** on the console.
2. The words "Machine Status" will be displayed.
3. Press the **SPEED UP** key on Ergo Bar and scroll to "Distance".
4. The current Distance in the current machine units (Miles/KM) will be displayed.
5. Press **CLEAR** to exit.

Routine Maintenance Schedules

Performing routine maintenance will help prevent unnecessary wear to the treadmill and/or injury to the user. The maintenance schedules are meant only to serve as a guide. Depending on where and how the treadmill is being used, more frequent routine maintenance may be required.

Daily

- Inspect the power cord and walking belt for wear.
- Check the position of the walking belt. Verify it is not rubbing against the frame. The belt should be evenly spaced on the deck within 0.25 inches of each side rail. Adjust the belt if necessary.
- Check the optional side handrails to ensure they are fastened securely.
- Remove potential hazards from the treadmill area.

Cleaning

Keeping the Nautilus® Commercial series T9 treadmill clean on a regular basis will help to improve operation and increase the lifespan of the components.

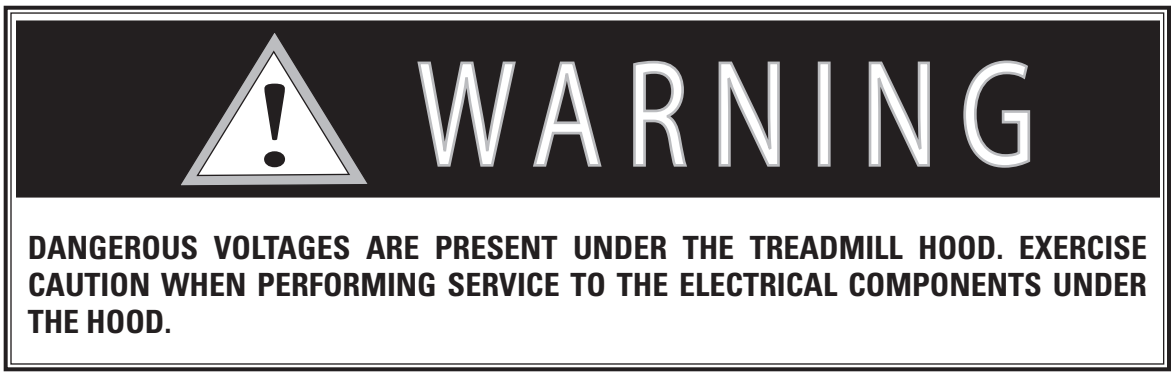
Daily

- Keep the treadmill and controller free of dust and debris. Use a damp sponge to wipe the exteriors and walking belt; do not soak surfaces. Dry all surfaces thoroughly.

Weekly

- Elevate the treadmill to maximum incline and vacuum the floor under it to prevent excess dust and dirt from interfering with operation.
- If the magnetic key is being used, check it for rust. If you detect rust, replace the magnet. Rust on the magnetic key will cause power-up problems.

Treadmill Interior



Depending upon the treadmill environment, dust and or lint can accumulate under the hood. Clean the interior of the treadmill following the procedure below:

1. Turn the treadmill circuit breaker off, and unplug the treadmill power cord.
2. Remove the two (2) screws on the treadmill hood.
3. Lift off the hood.
4. Clean inside the unit.
5. Reinstall the hood and the two (2) screws.
6. Plug in the treadmill power cord, and switch on the treadmill circuit breaker.

Adjusting Belt Tension

Adjust the belt tension whenever the belt slips or moves unsteadily during operation by following the steps below:

1. Start by loosening the two (2) adjustment bolts (see Figure 1).

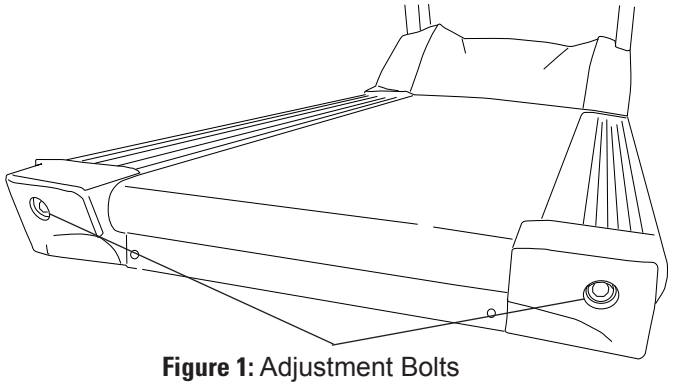


Figure 1: Adjustment Bolts

2. With the walking belt loose, place two marks 35 inches (89 cm) apart on each side of the belt near the edge. The belt must be loose enough for you to move it from side-to-side on the front or rear roller (see Figure 2).

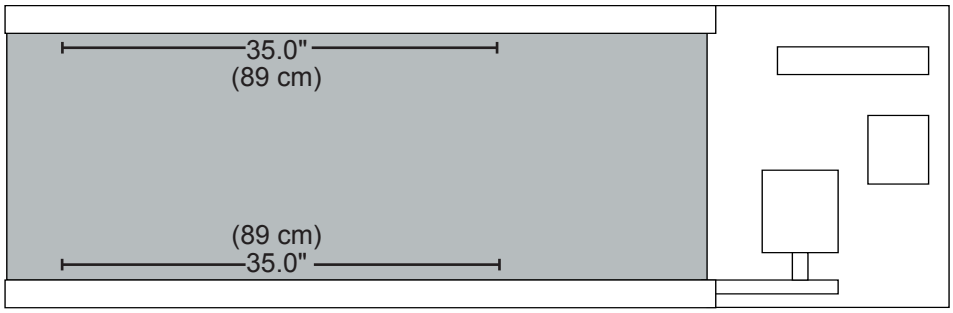


Figure 2

3. Turn the adjusting bolts clockwise by equal amounts until the marks are between 35-3/16 inches and 35-5/16 inches apart. Proper tension for the walking belt is between .5%–.6%. This should be about six full turns of each adjustment bolt from the point where the belt begins to stretch. **Important:** Do not exceed 35-5/16 inches.

CAUTION

DO NOT OVERTIGHTEN THE WALKING BELT. DO NOT TORQUE ADJUSTMENT SCREWS BEYOND 80 IN-LBS (9 N-M) MAXIMUM. OVERTIGHTENING THE BELT WILL REDUCE BELT LIFE AND DAMAGE THE ROLLER BEARINGS.

4. Test the belt by running on the belt at about four (4) mph. Hold the handrail lightly and resist the belt movement with your feet.

5. If you feel the belt slip on the front roller, increase the tension of each adjustment bolt by 1/2 turn and re-test. If you feel the belt slip again, check the tensioner adjustment.

Adjusting Belt Tracking

Perform this procedure whenever the belt moves to one side or the other. Stay off the belt when adjusting the tracking.

1. Start the treadmill at minimum speed and grade.
2. Increase speed to six (6) mph, and make the following adjustment:
   2.1. If the belt moves to the right, turn the right adjustment bolt 1/4-turn clockwise.
   2.2. If the belt moves to the left, turn the left adjustment bolt 1/4-turn clockwise.
3. After making an initial adjustment, run the treadmill for five (5) minutes and observe how the belt tracks. If the belt continues to move away from the center, adjust the appropriate side until properly centered.

Replacing the Walk Belt

Perform this procedure whenever the walk belt is still too loose after adjusting the tension or when the belt is worn or frayed.

1. Remove the Treadmill Hood

1.1 Turn the treadmill circuit breaker off, and unplug the power.

1.2 Remove the Front Trim, Right Lower Cover, Left Lower Cover, and Top Motor Covers.

2. Remove the Rollers

2.1 Remove the left and right end caps (see Figure 2.1 and 2.2).

2.2 Carefully slide the roller out from the machine (see Figure 2.3).

2.3 Remove the Kick Plate and four (4) screws (see Figure 2.4).

2.4 Remove the Pivot Bolt on the left and right side of the Upright Weldment (see Figure 2.5).

2.5 Remove the screw from the Front Roller Retaining Bracket on the left and right side, then remove the brackets (see Figure 2.6).

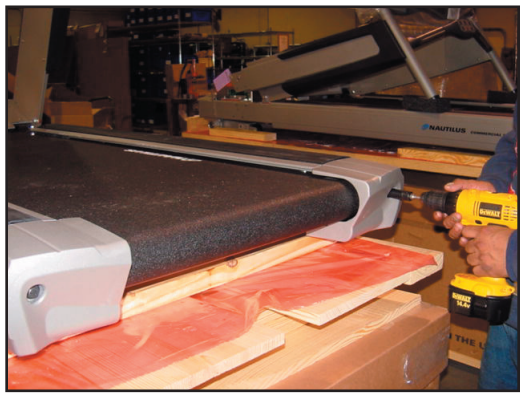


Figure 2.1

2.6 Remove the Bolt and Tensioner assembly from the frame (see Figure 2.7 and 2.8).

2.7 Slide the Front Roller over to the left, then use the belt to lift and slide out the roller from the machine (see Figure 2.9).

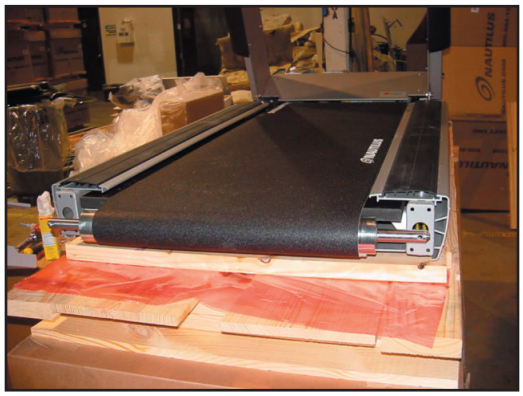


Figure 2.2

Figure 2.3

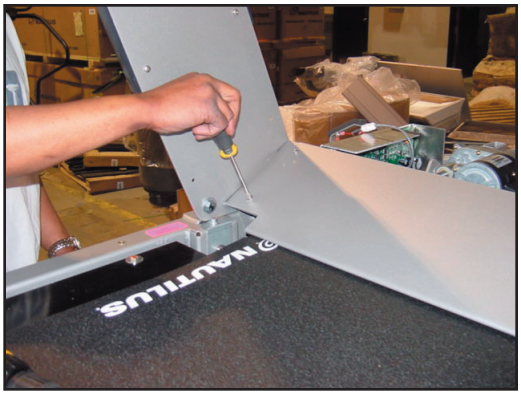


Figure 2.4

Figure 2.5

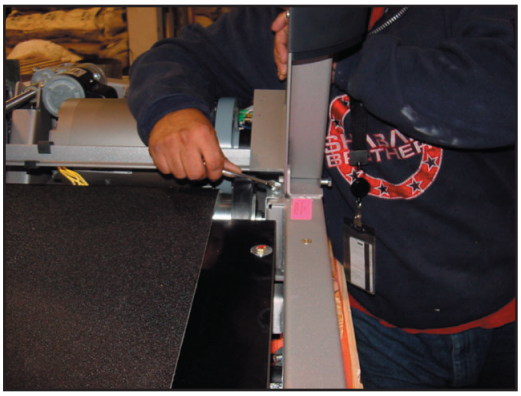


Figure 2.6

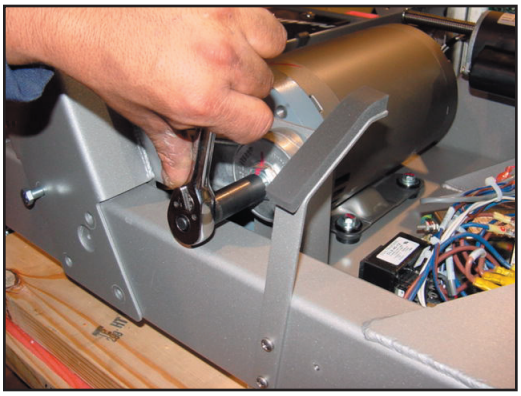


Figure 2.7

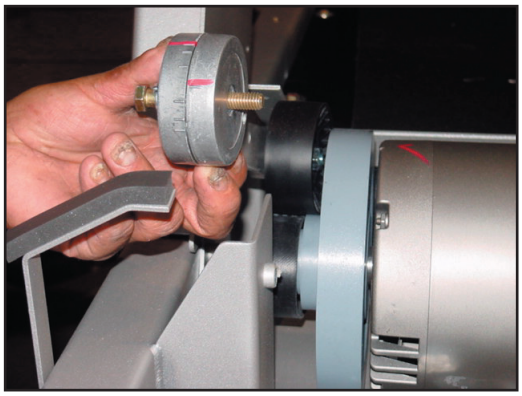


Figure 2.8

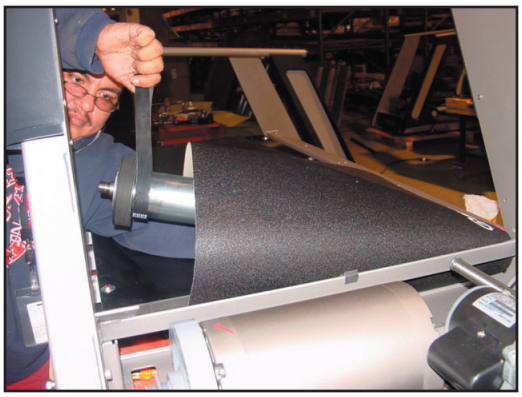


Figure 2.9

3. Removing the Deck

3.1 Remove the right and left Rubber Side Extrusion exposing the Side Rail Bolts (see Figure 3.1).

3.2 Remove the right Side Rail Bolts and Side Rail exposing the Deck Bolts, then repeat for the left side (see Figure 3.2).

3.3 Remove the left side Deck Bolts, then repeat for the right side (see Figure 3.3).

3.4 Lift and slide the Walk Deck out and replace if needed (see Figure 3.4).

3.5 Reverse steps when re-installing the Walk Deck.

IMPORTANT: When reattaching the Walk Deck with the Deck Bolts, apply a small amount of Loctite #243 on the threads and torque to 15 in. lbs.

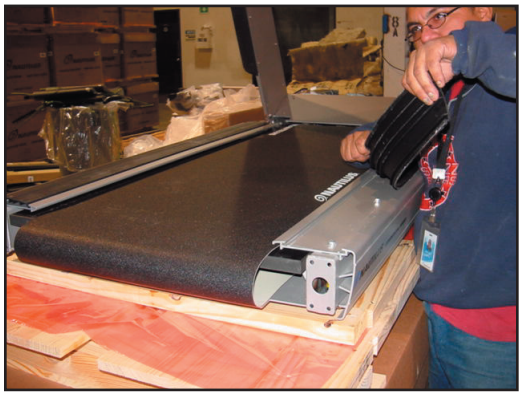


Figure 3.1

Figure 3.2

Figure 3.3

Figure 3.4

4. Inspection and Cleaning

4.1 Check the compression mounts for any wear and cracking. Make sure they are tight.

4.2 Check the deck for signs of wear.

Important: Do not apply any cleaners or petroleum products to the deck surfaces.

4.3 Inspect the motor drive belt for wear and cracking. Cracking is prevalent between the grooves on the belt.

4.4 Vacuum the deck and inside the motor housing.

5. Installing the New Walk Belt

5.1 Slip the new belt over the deck. Make sure the arrow on the inside surface of the walk belt points in the proper direction of belt travel (see Figure 5.1) toward the rear of the machine.

5.2 Lift the deck with the installed new walk belt and place it on the compression mounts.

5.3 Lift and slide the belt until the arrow is visible on top of the deck. Verify that it points toward the back of the treadmill.

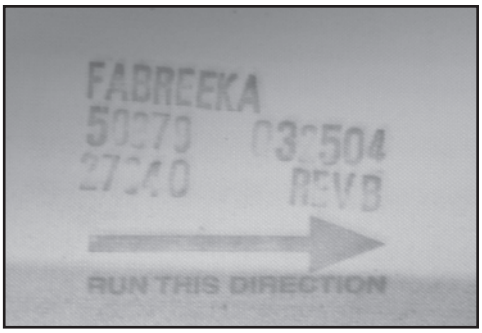


Figure 5.1: Belt direction arrow

6. Attaching the Deck

6.1 Align the deck mounting holes with the compression mounts.

6.2 Install all eight (8) deck screws and hand tighten.

6.3 Use Loctite 243 and a 10 mm socket to tighten all the screws to 15 in.lbs. (1.7Nm).

CAUTION

DO NOT OVER-TIGHTEN THE DECK SCREWS. OVER-TIGHTENING THE DECK SCREWS WILL DAMAGE THE COMPRESSION MOUNTS.

7. Reinstalling the Front Roller

7.1 Slide the front roller inside the walking belt.

7.2 Insert the end of the roller opposite the pulley into the cut-out on the side rail (see Figure 7.1).

7.3 With your free hand, slip the motor drive belt onto the Front roller pulley and the motor flywheel.

7.4 Align front roller pulley with motor flywheel, than install the retainer plates in the grooves on the roller. Tighten all the screws on the retainer plates. (see figure 7.2).

7.5 Place Tensioner assembly onto the tensioner bracket and screw in bolt finger tight.

7.6 With a 15/16 wrench. Place on the large nut of the assembly and push forward until the adjustment knotch is even with the top knotch on the left side of the wheel and hold. (See Figure 7.3 and 7.4.)

7.7 Place a 9/16 wrench on bolt and tighten (counter clockwise).

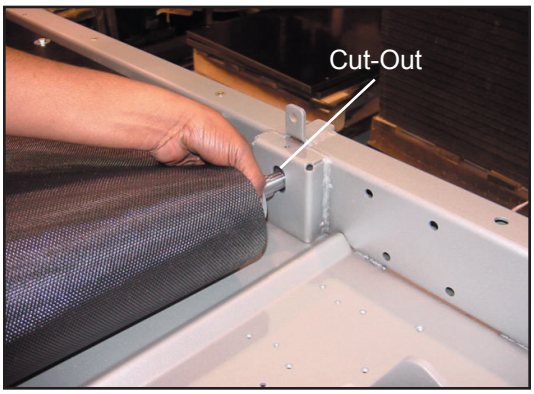


Figure 7.1: Reinstalling front roller

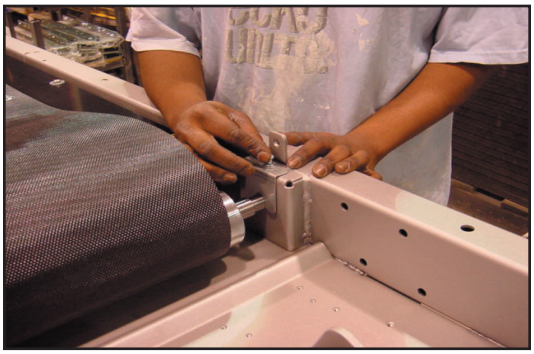


Figure 7.2: Roller groove

Figure 7.3

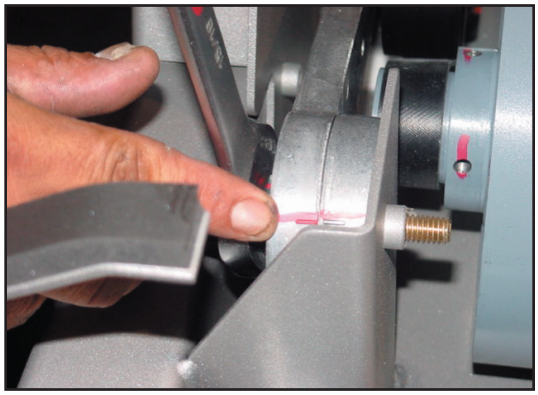


Figure 7.4

8. Reinstalling the Rear Roller

8.1 Slide the rear roller inside the belt and let it hang loose.

8.2 Install the alignment bolts through their holes in the end cap and into the holes on the roller (see Figure 8.3).

8.3 Install the end cap onto the rear of the treadmill, making sure the alignment pins go into the holes on the ends of the side rails.

8.4 Hand tighten the adjustment bolts.

8.5 Align the walk belt so that the edges of the belt are equal distance from the side rails.

Figure 8.3: Installing alignment bolts

8.6 Tighten the adjustment bolts to take the slack out of the walk belt.

8.7 Perform the belt tension and belt tracking procedures outlined on pages 7-8.

9. Reinstall the Treadmill Hood

9.1 Install all treadmill covers previously removed in step 1.2.

9.2 Plug the AC power cord into the treadmill, and turn on the treadmill circuit breaker switch.

Replacing the Contact Heart Rate (CHR) Sensors

1. Starting on right side, remove the three screws attaching the covers together with a 7/64 Allen bit (see Figure 1).
2. Lift the top cover with CHR plates attached and unplug the attaching CHR cable wires (see Figure 2 and 3).
3. Reattach the CHR cables to the new top cover with CHR plates and secure to the bottom cover with the three screws.

Note: Connect the color coded CHR wires in the same order that they were removed.

Figure 1

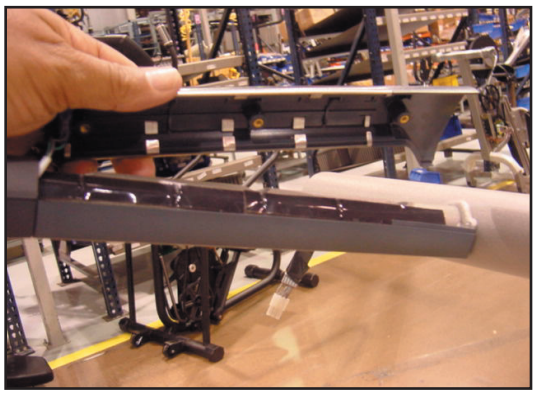


Figure 2

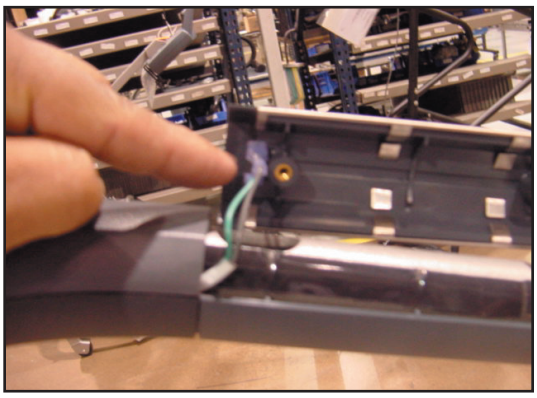


Figure 3

Updating the Console Firmware

Model T912

The firmware can only be updated at the factory, the console must be exchanged.

Model T914 & T916

WARNING

PLUG P7 AND CONNECTOR J7 ARE KEYED. DO NOT CONNECT P7 TO J7 BACKWARDS; OTHERWISE, THE PCBA/PROCESSOR ASSEMBLY CAN BE DAMAGED.

1. Turn the power off.
2. Remove the six (6) screws attaching the metal access panel on the rear of the console to expose the internal PC board.
3. Plug the FISP into J15 in the lower right corner of the board (see Figure 1).
4. Turn the power back on:
    - The LED on the FISP will flash orange as data is downloaded to the console.
    - When the download is complete, the LED will turn to solid green.
    - The download takes one minute. If the LED is solid orange, inspect the connection, the plug may be forced incorrectly in the socket.
5. Turn the power off.
6. Unplug the FISP ribbon cable from J15.
7. Reattach the access panel with the screws removed on step 2.
8. Turn the power on and reconfigure the console using code “Speed Up” key, “8”, “Enter”, and then “Enter" again at this point using the Speed or Grade Up or Down arrows will allow the appropriate selection to be seen. Press “Enter” to select.

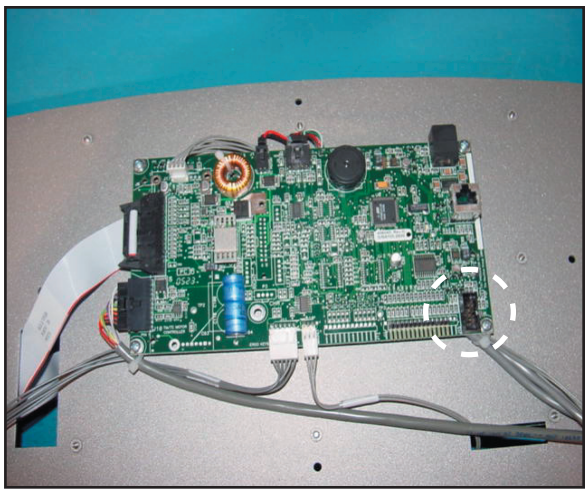


Figure 1

Section 2

Console Codes

Contents

Overview

Model T912

There are 5 Menu groupings for the T912. All modes are initiated while in Dormant mode (screens blank).

Initialize NVRAM - Deletes all setup information from the Console.

IMPORTANT! All parameters will require resetting before treadmill is used again.

Table 2–1. NVRAM

Step No.	Press Keys on Console	Display (What you will see)
1	**ENTER and STOP for 3 secs**	CAL
2	**INCLINE UP OR INCLINE DOWN**	Scroll to "Init" selection displayed
3	**START**	CLr
4		Automatic Speed Calibration is performed
5	**STOP**	Exits selection and stops automatic speed calibration

Speed Cal Menu - Sets Speed calibration curve.

Table 2–2. Speed Cal Menu

Step No.	Press Keys on Console	Display (What you will see)
1	**ENTER and STOP for 3 secs**	CAL
2	**START**	Select UNITS - E for English, N for Metric
3	**START OR INCLINE UP OR INCLINE DOWN**	Toggles between English (E) or Metric (N) selection
4	**ENTER**	Continues into Speed Calibration Belt Motor Run proceedure
5	**STOP**	Exits Automatic Calibration and enters CAL sleep mode *

* While in the “Sleep” mode, pressing START will continue the Automatic Cal mode or pressing ENTER will go into MANUAL calibration mode. This mode is not needed for speed calibration, Grade motor adjustments will be done while in this mode. Press STOP to exit the Manual Mode.

Parameter Menu / Configure System - Sets the device limits.

Table 2–3. Setting Device Limits

Step No.	Press Keys on Console	Display (What you will see)
1	**ENTER and STOP for 3 secs**	CAL
2	**INCLINE UP OR INCLINE DOWN**	Scroll to ConF selection
3	**QUICKSTART**	Enters ConF selection setup
4	**INCLINE UP OR INCLINE DOWN**	Scrolls between parameters: Maximum Speed, Maximum Incline, Maximum User Weight, Units: English or Metric, Roller Diameter (leave default value in place).
5	**SPEED UP OR SPEED DOWN**	Selects desired value
6	**QUICKSTART**	Enters value

Reset Total Hours and Miles to Zero - Initiate only when Total Hours or Total Distance is displayed.

Table 2–4. Reset to Zero

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP**	
2	**SPEED UP**	
3	**QUICKSTART**	
4	**QUICKSTART**	
5	**SPEED UP**	
6	**SPEED UP**	Units reset to "0"

Production Test Menu -

Table 2–5. Production Test Menu

Step No.	Press Keys on Console	Display (What you will see)
1	**ENTER and STOP for 3 secs**	CAL
2	**INCLINE UP or DOWN**	Scroll to Prod selection
3	**QUICKSTART**	Enters Prod selection setup
4		Begins automatic testing on: RAM Test, ROM Test, and NVRAM Test. Displays results of PASS, Err1 (RAM Failure), Err2 (ROM Failure) or Err4 (NVRAM failure). Software Version in Dist/Cal display window and security data (Checksum) in Time/Pace display window. Display Test

Management and Setup Menu -

Table 2–6. Management and Setup Menu

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP AND SPEED DOWN for 3 secs**	Total Hours
2	**ENTER**	Moves into next selection (Maximum Speed, Maximum Workout Time, Mag Key Limited Access Control, Units: English or Metric, Language Selection)
3	**SPEED UP OR SPEED DOWN**	Scrolls between values
4	**ENTER**	Enters value
5	**STOP**	Exits setup

Model T914 & T916

There are seven groups of console codes for Models T914 and T916 as follows:

- Cardio (codes starting with 2),
- Owner-Defined Custom (codes starting with 3),
- Machine Status (codes starting with 4),
- R and D (codes starting with 5) FACTORY TEST only,
- Diagnostic (codes starting with 6),
- Maintenance Logs (codes starting with 7), and
- Change Machine (codes starting with 8).

Each group of codes is defined below by quick reference guides (Console Cardio Codes and T914/T916 Service Screen Overview) and detailed instruction sections. To access these console codes and the options within each group, follow the instructions for each section.

Console Cardio Codes - Model T914 & T916

General Information:

- Enter console codes mode by pressing the UP Speed key [▲], then the numeric [#] key, and then press the [ENTER] key once to enter this mode.
- Once in console codes mode, pressing [▲] [▼] forwards or backs up through the selection, pressing [ENTER] then selects that item. Enter values then press the [ENTER] key again to store the value. Pressing [CLEAR] exits any of the special access modes.
- Pressing [CLEAR] twice will exit the Console Service Mode.

Workout Default Console Codes:

[▲] **[2] [ENTER] "DEFAULTS"** (Defined as: Data Entry Defaults.)

[▲] [ENTER] "ENTER WT XXX"
[▲] [ENTER] "ENTER LEVEL 1 TO 20"
[▲] [ENTER] "ENTER TIME 5 TO 99"
[▲] [ENTER] "ENTER AGE 10 TO 99"
[▲] [ENTER] "CHR PERCENT XX"
[▲] [ENTER] "ENTER SPEED XX.X"
[▲] [ENTER] "QUICK START XX.X"

[▲] **[3] [ENTER] "CUSTOMIZE"** (Defined as: Club selectable settings for workouts.)

[▲] [ENTER] "MAX TIME"
[▲] [ENTER] "COOL DOWN"
[▲] [ENTER] "CHANGE UNITS"
[▲] [ENTER] "HR INPUTS"
[▲] [ENTER] "SELECT STATS"
[▲] [ENTER] "LANGUAGE"
[▲] [ENTER] "UPPER CONTRAST ADJ"
[▲] [ENTER] "LOWER CONTRAST ADJ"
[▲] [ENTER] "MAX SPEED"
[▲] [ENTER] "ENABLE MAG KEY"
[▲] [ENTER] "AUTO STOP"
[▲] [ENTER] "SET DEFAULTS"

[▲] **[4] [ENTER] "MACHINE STATUS"** (Defined as: Machine Information.)

[▲] [ENTER] " RUN HOURS"
[▲] [ENTER] " WORKOUTS"
[▲] [ENTER] " DISTANCE"
[▲] [ENTER] " CONSOLE VERSION" "Displays Console Version #"
[▲] [ENTER] "DEVICE TYPE" "Displays Machine Type"
[▲] [ENTER] " TM DRIVE VER" "Displays VSD Version #"
[▲] [ENTER] " MAINT HOURS"

Workout Default Console Codes Continued…

[▲] **[5] [ENTER] " R AND D"** (Defined as: Factory test options.)

[▲] [ENTER] " PROGRAM LOOP"
[▲] [ENTER] " COM TIMEOUT"

[▲] **[6] [ENTER] " DIAGNOSTIC "** (Defined as: Service information and Device status.)

[▲] [ENTER] "DISPLAY TEST"
[▲] [ENTER] "KEY TEST"
[▲] [ENTER] "SERIAL PORTS"
[▲] [ENTER] "A SENSOR B"
[▲] [ENTER] "I/O TEST"
[▲] [ENTER] "BUS VOLTS"
[▲] [ENTER] "AUTO STOP"
[▲] [ENTER] "GRADE ACT"

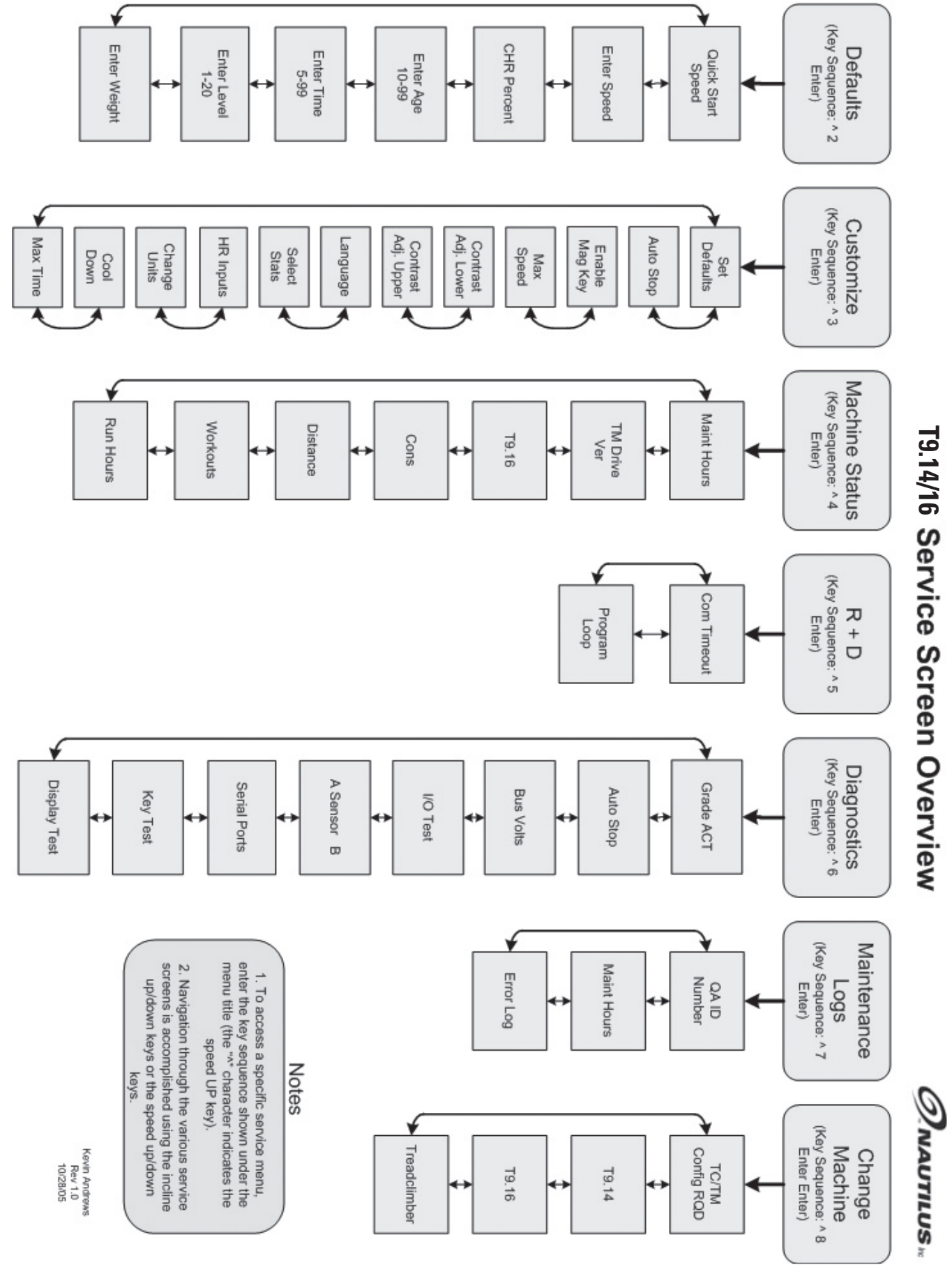
[▲] **[7] [ENTER] " MAINTENANCE LOGS "** (Defined as: Device History.)

[▲] [ENTER] "ERROR LOG"
[▲] [ENTER] "MAINT HOURS"
[▲] [ENTER] "QA ID"

[▲] **[8] [ENTER] " CHANGE MACHINE" [ENTER]** (Defined as: Hardware Dependant Setup.)

For Treadmill Devices, the selections are:

[▲] [ENTER] "TREADCLIMBER"
[▲] [ENTER] "T916"
[▲] [ENTER] "T914"
[▲] [ENTER] "TC/TM CONFIG RQD"


T9.14/16 Service Screen Overview
Defaults
(Key Sequence: ^ 2 Enter)
Quick Start Speed
Enter Speed
CHR Percent
Enter Age 10-99
Enter Time 5-99
Enter Level 1-20
Enter Weight
Customize
(Key Sequence: ^ 3 Enter)
Set Defaults
Auto Stop
Enable Mag Key
Max Speed
Contrast Adj. Lower
Contrast Adj. Upper
Language
Select Stats
HR Inputs
Change Units
Cool Down
Max Time
Machine Status
(Key Sequence: ^ 4 Enter)
Maint Hours
TM Drive Ver
T9.16
Cons
Distance
Workouts
Run Hours
R + D
(Key Sequence: ^ 5 Enter)
Com Timeout
Program Loop
Diagnostics
(Key Sequence: ^ 6 Enter)
Grade ACT
Auto Stop
Bus Volts
I/O Test
A Sensor B
Serial Ports
Key Test
Display Test
Maintenance Logs
(Key Sequence: ^ 7 Enter)
QA ID Number
Maint Hours
Error Log
Change Machine
(Key Sequence: ^ 8 Enter Enter)
TC/TM Config RQD
T9.14
T9.16
Treadclimber
Notes
1. To access a specific service menu, enter the key sequence shown under the menu title (the "^" character indicates the speed UP key).
2. Navigation through the various service screens is accomplished using the incline up/down keys or the speed up/down keys.
Kevin Andrews
Rev 1.0
10/28/05
NAUTILUS INC

Cardio

You can customize several default settings on the Nautilus® Commerical Series Models T914 and T916 treadmills to conform to your individual requirements, including changing the:

- weight,
- Level (Fat and Calorie Burn workouts),
- workout time,
- user age,
- percentage of Maxmum Heart Rate for Target HR in HR Zone Trainer,
- treadmill speed, and
- initial speed for Quick Start.

Refer to the following table to scan through and change the cardio settings:

Table 2–7. Defaults

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 2, ENTER**	DEFAULTS
2	**SPEED DOWN or SPEED UP**	ENTER WT, ENTER TIME, ENTER AGE, THR PERCENT, SPEED, COOLDOWN TIME, QUICK START
3	**ENTER**	Selected choice
4	**SPEED + or SPEED -**	Default value changes
5	**ENTER**	DEFAULT
6	**CLEAR**	THE RESULTS YOU WANT

Refer to the following tables to change individual default workout settings without scanning through all the selections:

Table 2–8. User Weight

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 2, ENTER**	DEFAULT
2	**SPEED UP OR SPEED DOWN**	WEIGHT
3	**ENTER**	CURRENT WEIGHT SETTING
4	**SPEED UP OR SPEED DOWN**	WEIGHT CHANGES
5	**ENTER**	DEFAULT
6	**CLEAR**	THE RESULTS YOU WANT

*** Default setting. Setting could be different if the treadmill was customized.**

Table 2–8B. Enter Level 1-20

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 2, ENTER**	DEFAULT
2	**SPEED UP OR SPEED DOWN**	ENTER LEVEL
3	**ENTER**	CURRENT LEVEL SETTING
4	**SPEED UP OR SPEED DOWN**	LEVEL CHANGES
5	**ENTER**	DEFAULT
6	**CLEAR**	THE RESULTS YOU WANT

*** Default setting. Setting could be different if the treadmill was customized.**

Table 2–9. Exercise Time

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 2, ENTER**	DEFAULT
2	**SPEED UP OR SPEED DOWN**	ENTER TIME
3	**ENTER**	CURRENT TIME SETTING
4	**SPEED UP OR SPEED DOWN**	TIME CHANGES
5	**ENTER**	DEFAULT
6	**CLEAR**	THE RESULTS YOU WANT

*** Default setting. Setting could be different if the treadmill was customized.**

Table 2–10. User Age

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 2, ENTER**	DEFAULT
2	**SPEED UP OR SPEED DOWN**	ENTER AGE
3	**ENTER**	CURRENT AGE SETTING
4	**SPEED UP OR SPEED DOWN**	AGE CHANGES
5	**ENTER**	DEFAULT
6	**CLEAR**	THE RESULTS YOU WANT

*** Default setting. Setting could be different if the treadmill was customized.**

Table 2–11. Target Heart Rate

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 2, ENTER**	DEFAULT
2	**SPEED UP OR SPEED DOWN**	THR PERCENTATE
3	**ENTER**	CURRENT THR PERCENTAGE SETTING
4	**SPEED UP OR SPEED DOWN**	THE PERCENTAGE CHANGES
5	**ENTER**	DEFAULT
6	**CLEAR**	THE RESULTS YOU WANT

*** Default setting. Setting could be different if the treadmill was customized.**

Table 2–12. Treadmill Speed

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 2, ENTER**	DEFAULT
2	**SPEED UP OR SPEED DOWN**	SPEED
3	**ENTER**	CURRENT SPEED SETTING
4	**SPEED UP OR SPEED DOWN**	SPEED CHANGES
5	**ENTER**	DEFAULT
6	**CLEAR**	THE RESULTS YOU WANT

*** Default setting. Setting could be different if the treadmill was customized.**

Table 2–13. Quick Start

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 2, ENTER**	DEFAULT
2	**SPEED UP OR SPEED DOWN**	QUICK START
3	**ENTER**	CURRENT QUICK START SETTING
4	**SPEED UP OR SPEED DOWN**	QUICK START SETTING CHANGES
5	**ENTER**	DEFAULT
6	**CLEAR**	THE RESULTS YOU WANT

*** Default setting. Setting could be different if the treadmill was customized.**

Owner-Defined Custom

You can customize several owner-defined parameters to conform to your individual requirements, including:

- changing the workout time limit,
- changing the cool down time,
- changing the units between English and metric,
- choosing the type of heart rate input,
- choosing displayed statistics (T916 only)
- choosing the console language,
- changing the upper LCD contrast,
- changing the lower LCD contrast,
- changing the treadmill's maximum speed,
- enabling the magnetic key,
- enabling Auto Stop Option (if available), and
- resetting the factory defaults.

Table 2–14. Customize

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 3, ENTER**	CUSTOMIZE
2	**SPEED UP OR SPEED DOWN**	MAX TIME, COOL DOWN, CHANGE UNITS, HR INPUTS, STATS (T916 ONLY), LANGUAGE, UP CONTRATS, LOW CONTRAST, MAX SPEED, ENABLE MAG KEY, AUTO STOP, SET DEFAULTS
3	**ENTER**	SELECTED CHOICE
4	**SPEED UP OR SPEED DOWN**	SETTING CHANGES
5	**ENTER**	CUSTOMIZE
6	**CLEAR**	THE RESULTS YOU WANT

To customize the owner-defined parameters without scanning through all the selections, perform the following steps for that listed option:

Table 2–15. Max Time

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 3, ENTER**	CUSTOMIZE
2	**SPEED UP OR SPEED DOWN**	MAX TIME
3	**ENTER**	CURRENT SETTINGS
4	**SPEED UP OR SPEED DOWN**	SETTING CHANGES
5	**ENTER**	CUSTOMIZE
6	**CLEAR**	THE RESULTS YOU WANT

*** Default setting. Setting could be different.**

Table 2–16. Cool-Down Time

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 2, ENTER**	DEFAULT
2	**SPEED UP OR SPEED DOWN**	COOL DOWN TIME
3	**ENTER**	CURRENT COOL DOWN SETTING
4	**SPEED UP OR SPEED DOWN**	COOL DOWN SETTING CHANGES
5	**ENTER**	DEFAULT
6	**CLEAR**	THE RESULTS YOU WANT

*** Default setting. Setting could be different if the treadmill was customized.**

Table 2–17. Change Units

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 3, ENTER**	CUSTOMIZE
2	**SPEED UP OR SPEED DOWN**	CHANGE UNITS
3	**ENTER**	CURRENT SETTINGS
4	**SPEED UP OR SPEED DOWN**	SETTING CHANGES TO METRIC OR USA
5	**ENTER**	CUSTOMIZE
6	**CLEAR**	THE RESULTS YOU WANT

*** Default setting. Setting could be different.**

Table 2–18. HR Inputs

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 3, ENTER**	CUSTOMIZE
2	**SPEED UP OR SPEED DOWN**	HR INPUTS
3	**ENTER**	CURRENT SETTINGS
4	**SPEED UP OR SPEED DOWN**	LOCKED INPUTS, EITHER INPUTS, TELEMETRY ONLY, HAND ONLY, BOTH HR OFF
5	**ENTER**	CUSTOMIZE
6	**CLEAR**	THE RESULTS YOU WANT

*** Default setting. Setting could be different.**

Table 2–19. Select Statistics (Model T916 Only)

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 3, ENTER**	CUSTOMIZE
2	**SPEED UP OR SPEED DOWN**	SELECT STATS
3	**ENTER**	ENTERS CATEGORY SELECTION
4	**SPEED UP OR SPEED DOWN**	SCROLL TO SELECT CATEGORY
5	**ENTER**	CURRENT SETTING "ON' OR "OFF"
6	**SPEED UP OR SPEED DOWN**	TOGGLES BETWEEN "ON" AND "OFF"
7	**ENTER - TWICE**	SELECT STATS
8	**CLEAR - TWICE**	RESULTS YOU WANT

*** Default setting. Setting could be different.**

Table 2–20. Language

Step No.	Press Keys on Console	Display (What you will see)
1	**SPPED UP, 3, ENTER**	CUSTOMIZE
2	**SPEED UP OR SPEED DOWN**	LANGUAGE
3	**ENTER**	CURRENT SETTINGS
4	**SPEED UP OR SPEED DOWN**	ENGLISH, GERMAN, SPANISH, FRENCH, ITALIAN, DUTCH, JAPANESE, PORTUGUESE
5	**ENTER**	CUSTOMIZE
6	**CLEAR**	THE RESULTS YOU WANT

*** Default setting. Setting could be different.**

Table 2–21. Upper LCD Contrast

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 3, ENTER**	CUSTOMIZE
2	**SPEED UP OR SPEED DOWN**	UPPER CONTRAST
3	**ENTER**	CURRENT SETTINGS
4	**SPEED UP OR SPEED DOWN**	CHANGES CONTRAST IN UPPER LCD SCREEN
5	**ENTER**	CUSTOMIZE
6	**CLEAR**	THE RESULTS YOU WANT

*** Default setting. Setting could be different.**

Table 2–22. Lower LCD Contrast

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 3, ENTER**	CUSTOMIZE
2	**SPEED UP OR SPEED DOWN**	LOWER CONTRAST
3	**ENTER**	CURRENT SETTINGS
4	**SPEED UP OR SPEED DOWN**	CHANGES CONTRAST IN LOWER LCD SCREEN
5	**ENTER**	CUSTOMIZE
6	**CLEAR**	THE RESULTS YOU WANT

*** Default setting. Setting could be different.**

Table 2–23. Max Speed

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 3, ENTER**	CUSTOMIZE
2	**SPEED UP OR SPEED DOWN**	MAX SPEED
3	**ENTER**	CURRENT SETTINGS
4	**SPEED UP OR SPEED DOWN**	SET TO MAXIMUM SPEED OF YOUR CHOOSING
5	**ENTER**	CUSTOMIZE
6	**CLEAR**	THE RESULTS YOU WANT

*** Default setting. Setting could be different.**

Table 2–24. Enable Mag Key

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 3, ENTER**	CUSTOMIZE
2	**SPEED UP OR SPEED DOWN**	ENABLE MAG KEY
3	**ENTER**	ENABLE MAG KEY OFF*
4	**SPEED UP OR SPEED DOWN**	TOGGLES BETWEEN OFF AND ON
5	**ENTER**	CUSTOMIZE
6	**CLEAR**	THE RESULTS YOU WANT

*** Default setting. Setting could be different.**

Table 2–24B. Auto Stop

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 3, ENTER**	CUSTOMIZE
2	**SPEED UP OR SPEED DOWN**	AUTOSTOP
3	**ENTER**	N/A (IF NOT AVAILABLE). OFF OR ON WITH CURRENT PRESSURE COUNT IN WINDOW
4	**SPEED UP OR SPEED DOWN**	TOGGLES BETWEEN ON AND OFF
5	**ENTER**	CUSTOMIZE
6	**CLEAR**	THE RESULTS YOU WANT

Table 2–25. Set Defaults

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 3, ENTER**	CUSTOMIZE
2	**SPEED UP OR SPEED DOWN**	SET DEFAULT
3	**ENTER**	DONE
4	**CLEAR TWICE**	THE RESULTS YOU WANT

Machine Status

Use the machine status codes to view maintenance information such as the:

- machine run-time hours,
- number of workouts,
- distance traveled,
- console version,
- configuration setting,
- motor drive version, and
- machine run-time hours since last cleared (for servicing purposes).

To scan through and change the owner-defined codes, perform the following steps:

Table 2–26. Machine Status

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 4, ENTER**	MACHINE STATUS
2	**SPEED UP OR SPEED DOWN**	RUN HOURS, WORKOUTS, DISTANCE -, CONSOLE CONFIGURATION, TM DRIVE VERSION, MAINT HOURS
3	**CLEAR**	THE RESULTS YOU WANT

To view a particular machine status without having to scan through all the choices, perform the following steps for that listed option:

Table 2–27. Run-Time Hours

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 4, ENTER**	MACHINE STATUS
2	**SPEED UP OR SPEED DOWN**	ACCUMULATED RUN HOURS
3	**CLEAR**	THE RESULTS YOU WANT

Table 2–28. Number of Workouts

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 4, ENTER**	MACHINE STATUS
2	**SPEED UP OR SPEED DOWN**	ACCUMULATED NUMBER OF WORKOUTS
3	**CLEAR**	THE RESULTS YOU WANT

Table 2–29. Distance Traveled

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 4, ENTER**	MACHINE STATUS
2	**SPEED UP OR SPEED DOWN**	ACCUMULATED DISTANCE IN CURRENT UNITS (Miles or KM)
3	**CLEAR**	THE RESULTS YOU WANT

Table 2–30. Software Revision

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 4, ENTER**	MACHINE STATUS
2	**SPEED UP OR SPEED DOWN**	CURRENT CONSOLE REVISION
3	**CLEAR**	THE RESULTS YOU WANT

Table 2–31. Configuration

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 4, ENTER**	MACHINE STATUS
2	**SPEED UP OR SPEED DOWN**	CURRENT MACHINE CONFIGURATION
3	**CLEAR**	THE RESULTS YOU WANT

Table 2–32. TM Drive

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 4, ENTER**	MACHINE STATUS
2	**SPEED UP OR SPEED DOWN**	CURRENT TM DRIVE VERSION
3	**CLEAR**	THE RESULTS YOU WANT

Table 2–33. Maintenance Hours

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 4, ENTER**	MACHINE STATUS
2	**SPEED UP OR SPEED DOWN**	CURRENT MAINTENANCE HOURS
3	**CLEAR**	THE RESULTS YOU WANT

Diagnostic

Use the diagnostic codes to test various components of the machine such as the:

- display,
- keyboard,
- serial port,
- CSAFE and TM tests require special factory LoopBack Test Connectors,
- A Sensor B factory only test, and
- I/O Test factory only test.

The diagnostic codes also allow you to get a report on the treadmill's:

- drive bus voltage,
- actual grade setting,
- auto stop calibration / test (if available), and
- adjustment of grade motor by pressing GRADE UP or GRADE DOWN keys.

Table 2–34. Diagnostic

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 6, ENTER**	DIAGNOSTIC
2	**SPEED UP OR SPEED DOWN**	DISPLAY TEST, KEY TEST, SERIAL PORTS, A SENSOR B, I/O TEST, BUS VOLTS*, AUTO STOP, GRADE ACT
3	**ENTER**	SELECTED CHOICE
4	**CLEAR**	DIAGNOSTIC
5	**CLEAR**	THE RESULTS YOU WANT

* Quick Start and STOP can be used to monitor Bus voltage while belt is under load. Also this test turns on a Belt braking resistor so voltage should change while this occurs.

To scan through the list of diagnostic tests and view diagnostic information:

Table 2–35. Display Test

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 6, ENTER**	DIAGNOSTIC
2	**SPEED UP OR SPEED DOWN**	DISPLAY TEST
3	**ENTER**	DISPLAY LCD SEGMENTS ILLUMINATE IN ALTERNATING FASHION
4	**CLEAR**	DIAGNOSTIC
5	**CLEAR**	THE RESULTS YOU WANT

Table 2–36. Key Test

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 6, ENTER**	DIAGNOSTIC
2	**SPEED UP OR SPEED DOWN**	KEY TEST
3	**ENTER**	PRESS KEY
4	**PRESS AND HOLD KEY**	THE NAME OF THE KEY YOU ARE PRESSING
5	**CLEAR**	DIAGNOSTIC
6	**CLEAR**	THE RESULTS YOU WANT

Table 2–37. Serial Tests

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 6, ENTER**	DIAGNOSTIC
2	**SPEED UP OR SPEED DOWN**	SERIAL TEST
3	**ENTER**	CSAFE TEST
4	**SPEED UP OR SPEED DOWN**	TM LOOPBACK
5	**ENTER**	RUNNING, PASS OR FAIL
6	**CLEAR**	DIAGNOSTIC
7	**CLEAR**	THE RESULTS YOU WANT

Table 2–38. Bus Volts

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 6, ENTER**	DIAGNOSTIC
2	**SPEED UP OR SPEED DOWN**	BUS VOLTS
3	**ENTER**	CURRENT BUS VOLTAGE READING
4	**CLEAR**	DIAGNOSTIC
5	**CLEAR**	THE RESULTS YOU WANT

Table 2–39. Grade Act

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 6, ENTER**	DIAGNOSTIC
2	**SPEED UP OR SPEED DOWN**	GRADE ACT
3	**ENTER**	CURRENT POSITION OF ACTUATOR
4	**CLEAR**	DIAGNOSTIC
5	**CLEAR**	THE RESULTS YOU WANT

MAINTENANCE LOGS

The Maintenance / History settings allow you to view the machine's error log history, maintenance time since last service and QA ID Number - Inspector Code if applicable.

To scan through and change the owner-defined codes, perform the following steps:

Table 2–40. Diagnostic 2

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 7, ENTER**	SERVICE
2	**SPEED UP OR SPEED DOWN**	ERROR LOG, MAINT HOURS, QA ID NUMBER
3	**ENTER**	SELECTED CHOICE
4	**SPEED UP OR SPEED DOWN**	ERROR CODES
5	**CLEAR**	SERVICE
6	**CLEAR**	THE RESULTS YOU WANT

To view a particular machine status without having to scan through all the choices, perform the following steps for that listed option:

Table 2–41. Error Log

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 7, ENTER**	SERVICE
2	**SPEED UP OR SPEED DOWN**	ERROR LOG
3	**ENTER**	SELECTED CHOICE
4	**SPEED UP OR SPEED DOWN**	ERROR NAME, POSITION COUNT IN LOG AND HOURS AT OCCURANCE
5	**CLEAR**	MAINTENANCE LOGS
6	**CLEAR**	THE RESULTS YOU WANT

Table 2–42. Maintenance Hours

Step No.	Press Keys on Console	Display (What you will see)
1	**SPEED UP, 7, ENTER**	SERVICE
2	**SPEED UP OR SPEED DOWN**	MAINTENANCE HOURS
3	**ENTER**	CURRENT MAINTENANCE HOURS
4		PRESS "0", THEN "ENTER" TO RESET
5	**CLEAR**	SERVICE
6	**CLEAR**	THE RESULTS YOU WANT

Magnetic Key Limit Access Control

Overview

Limited-access control lets you restrict treadmill use to authorized personnel. It also lets you stop the treadmill in an emergency. The magnetically-activated control is located on the front of the display console just below the STOP key. The limited-access control is deactivated on machines shipped from the factory.

Activation

Activate the limited-access control and restrict access by placing the magnetic key supplied with the treadmill in the designated area below the display console. The magnet will activate the control.

The magnetic key feature for the treadmill is now active. If you remove the key, the treadmill belt will stop, and the controller will not respond to any key presses. The console will display a message "REPLACE MAGNET" when you remove the magnetic key from its designated area. You must replace the key or deactivate the control to start the treadmill belt.

Deactivation T9.12

STEP 1: With the magnet key removed, if "Replace Magnet" is displayed on the console. Press STOP to return machine to dormant mode.

STEP 2: Press and hold SPEED UP and SPEED DOWN keys, and for 3 seconds.

STEP 3: Press ENTER to sequence through selections until MAGKEY is displayed.

STEP 4: Press the SPEED UP or SPEED DOWN keys to toggle mode ON or OFF.

STEP 5: Press ENTER to save setting.

STEP 6: Press STOP to clear the mode.

Deactivation T914/T916

STEP 1: With the magnet key removed, and "Replace Magnet" displayed on the console, press the SPEED UP key, 3, and ENTER.

STEP 2: Press the SPEED UP or SPEED DOWN keys to display "Enable Magkey".

STEP 3: Press ENTER and the console display will show "On".

STEP 4: Press the SPEED UP or SPEED DOWN keys to toggle off.

STEP 5: Press ENTER to save setting.

STEP 6: Press CLEAR to show the results you want on the console display.

Magnetic Key as an Emergency Stop

The magnetic key has a string with a clip that attaches to your clothing during exercise. If you move too far from the front handrail, the cord will pull the key off and stop the treadmill walk belt.

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Section 3

Troubleshooting Electrical Problems - Model T912

Contents

Common Electrical and Electronic Problems

The following tables provide possible causes and solutions to the most common types of electrical and electronic problems. While the information in these tables may not resolve all problems, they should help you isolate the area affected by the problem.

Table 3–1. Electrical Issues

Problem	Possible Causes	Remedy
There is no display.	Circuit breaker on the treadmill hood is off.	• Set the treadmill circuit breaker to **ON**.
	Treadmill power cord is not plugged in.	• Plug in the power cord, then set the treadmill circuit breaker to **ON**.
	There is no power at the wall outlet.	• Check the building circuit breaker.
	There is an internal electrical problem.	• Refer to the wiring schematics located in this section of the manual.
	There is a blown fuse	• Replace F1 or F2 depending on voltage configuration on the lower motor drive board.
Circuit breaker trips during normal operation.	There is a power fault.	• Inspect walk belt for wear.
	There is an insufficient power source.	• Make sure the outlet voltage is 115VAC (USA) or 230VAC (International) + or - 10%
	The treadmill is not on its own dedicated circuit.	• Plug the treadmill into its own 15 or 20-amp dedicated electrical outlet depending on the label rating.
Treadmill will not change grade or grade actuator motor runs, but the grade never changes.	Thermal overload switch has opened from excessive grade changing.	• Allow grade motor to cool and restart system.
	There is an internal problem.	• Cycle the power switch on the treadmill. • Replace the grade actuator motor. See the troubleshooting charts for more specific testing.

Table 3–2. Electronic Issues

Problem	Possible Causes	Remedy
System stops unexpectedly while user is running at moderate to high speeds.	Belt is possibly worn and causing the circuit breaker to open. With the hood off and a similar user weight and speed running observe LED 11 on the Drive Board to see if it's flashing or ON continuously.	• Replace the belt and flip or possibly replace the deck.
	Drive board is bad.	• Replace the drive.
Treadmill will not change grade.	Drive board or connections are bad.	• See the troubleshooting charts for specific steps.
Treadmill will not reach maximum speed.	Speed limit control may be activated. Speed calibration may have been lost in code.	• Refer to Part 2 for adjusting treadmill maximum speed. Rerun the Speed Calibration utility in Section 2.
Treadmill will not reach maximum time.	Time limit control may be activated.	• Refer to Part 2 for adjusting treadmill maximum time.
Walking belt stops, and no error message appears.	User accidently hit the Ergo stop button.	• Press **START** to resume workout.
Unit shuts off and wall or treadmill circuit breaker has opened. After resetting system works fine with no load on belt.	User's weight is higher than recommended speed for that weight, or deck/belt has worn and system is pulling more current than the system is designed for.	• Replace deck/belt.

Error Reporting

The system reports various problems to the user via the display. The format includes the text line reporting the error.

Definitions

Warning—A message display that appears on the console display that informs you of a condition that requires attention but does not stop treadmill operation.

Error—A message display that appears on the console display that informs you of a condition that halts the operation of the treadmill and which requires immediate attention.

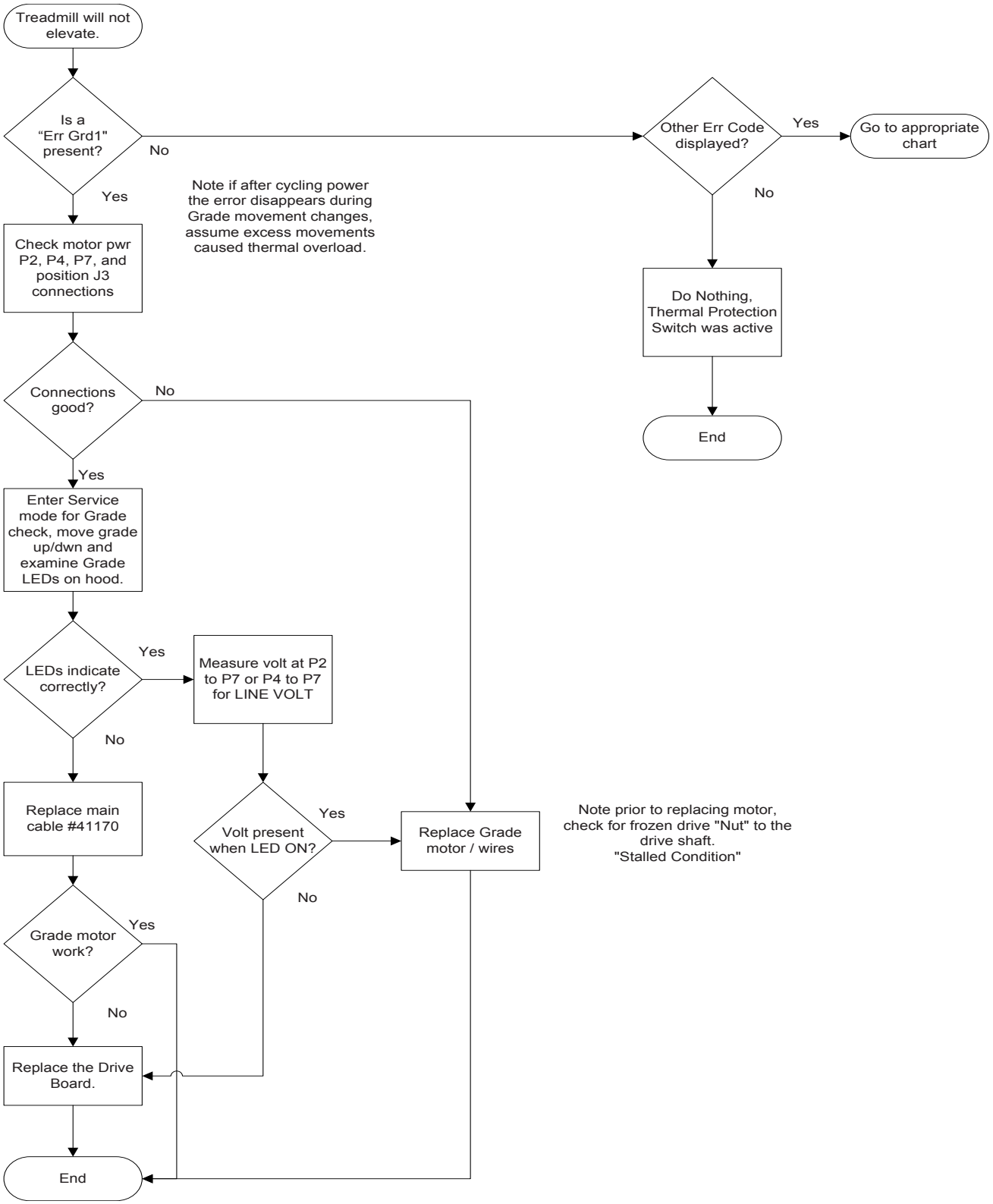
Table 3–3. Error List

Display	Type	Response	Description
Err LS	Error	Stops operation after 3-5 seconds of belt movement.	Loss of tach sensor signal between Console and Magnet on front roller.
Err OS	Error	Stops operation quickly after expected speed signal is NOT detected.	Console/Drive system has lost ability to control speed (Target and Actual Speed > 3mph different).
Err Grd 1	Error	Stops operation anytime grade is commanded to move but doesn't.	Commanded Grade change produces no "detected" motion of elevation system.
Err Grd 2	Error	Stops operation anytime grade motion is "detected" when no movement is commanded.	Opposite of Grd Err 1, grade motion is "detected" when no movement is commanded.
Err Grd 3	Error	Anytime—that the “detected” grade position is outside known sensor range.	Either failure of position sensor, code or excessive vibration has caused the sensor to move out of acceptable grade range. Always re-calibrate this system prior to further troubleshooting.
Stop	Warning	Anytime—System is visibly active, Status can be changed without cycling power based on system set-up.	Displays that status of “Magnetic Key Limit Switch” and code setting is inhibiting operation.
Err1	Error	Starts to power up then stops	Console RAM (Data Memory) failure during self test.
Err2	Error	Starts to power up then stops	Console ROM (Program Memory) failure during self test.
Err3	Error	Starts to power up then stops	Console NVRAM (Saved Parameter Memory) failure during selt test.

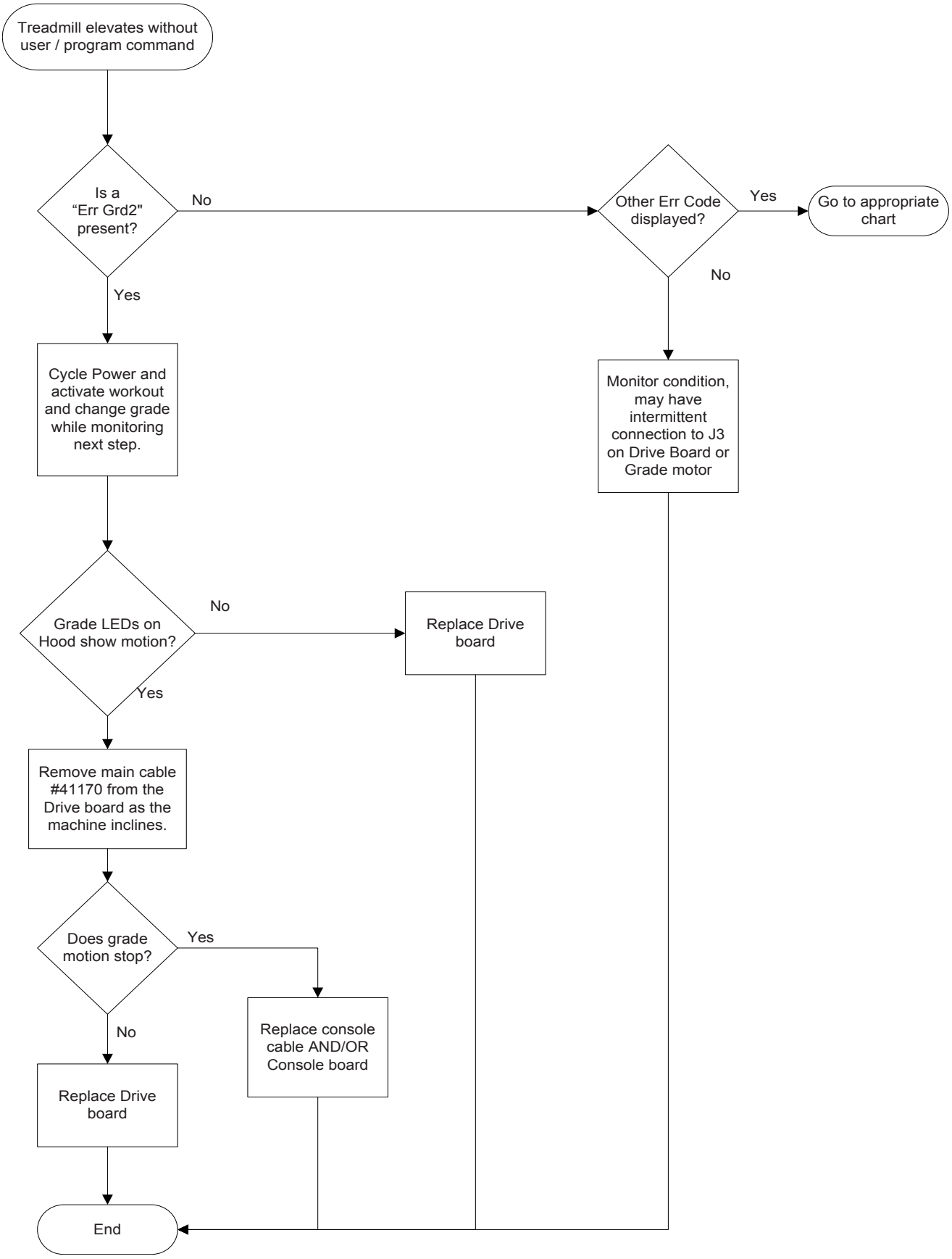
Troubleshooting Flowcharts

Use the flowcharts on the following pages to help you localize and correct electrical and electronic problems.

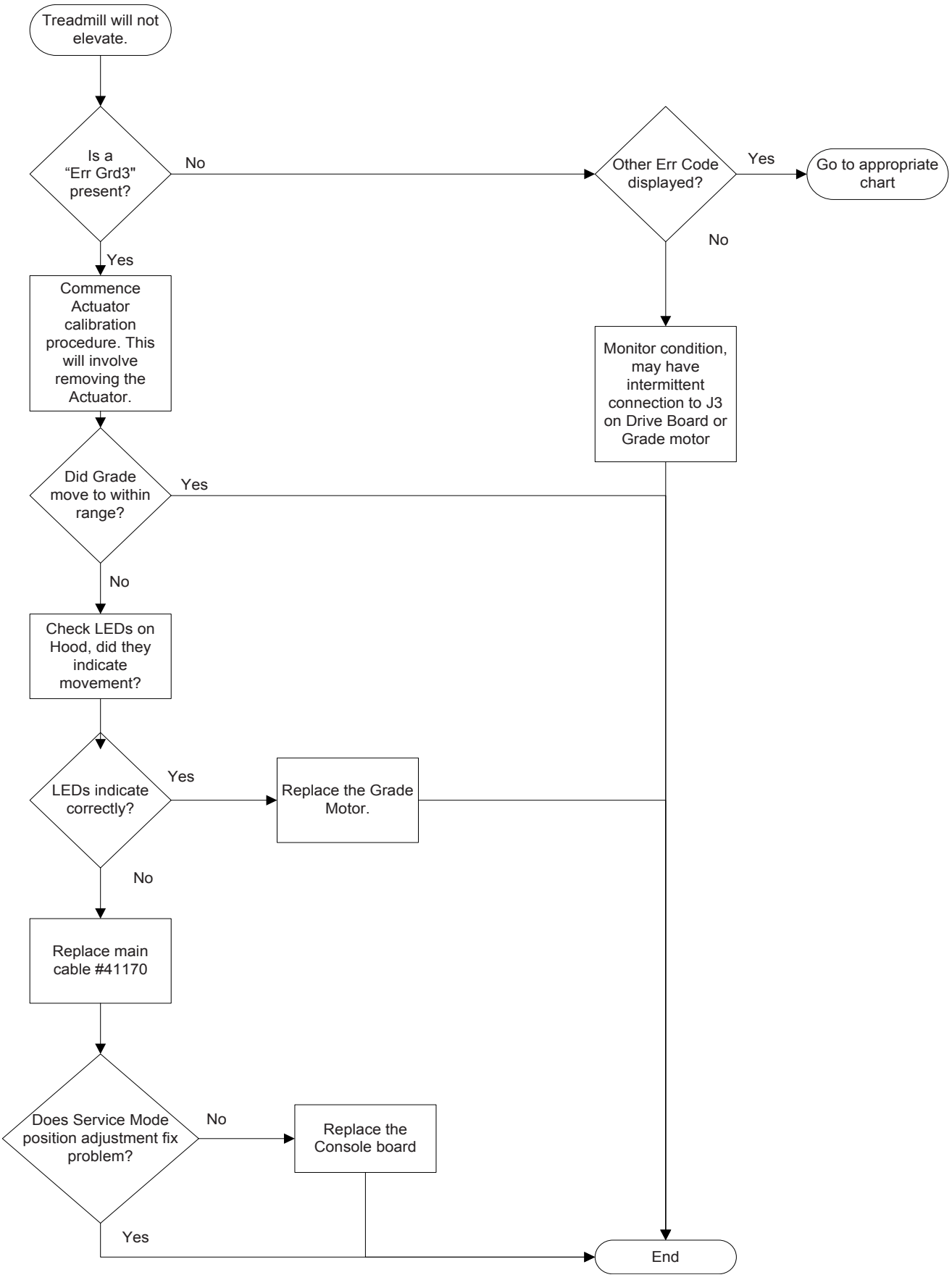
Troubleshooting Flowchart: Motor Stalled / Overheated / No Signal - Error 1



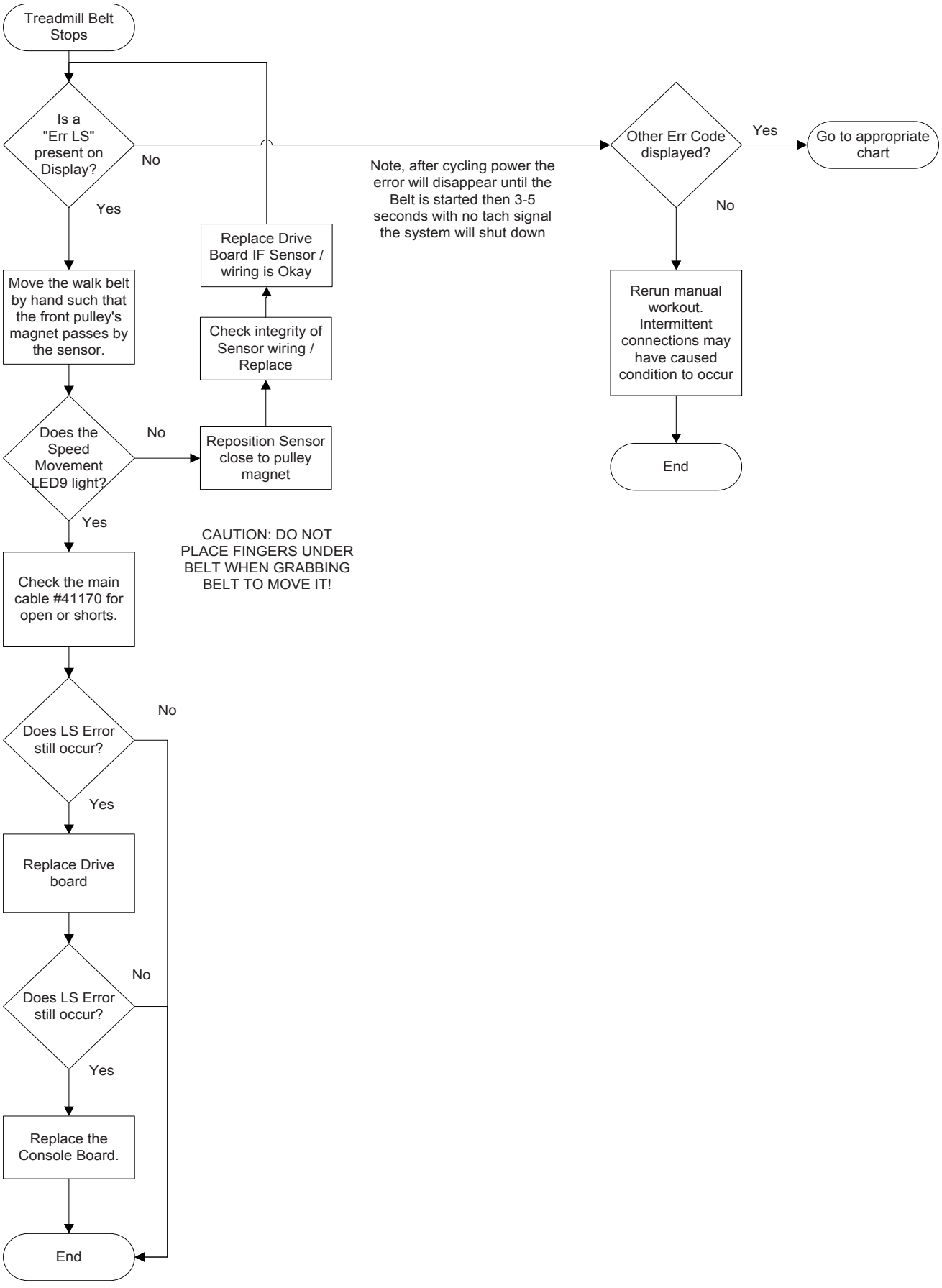
Troubleshooting Flowchart: Motor Movement without Commands - Error 2



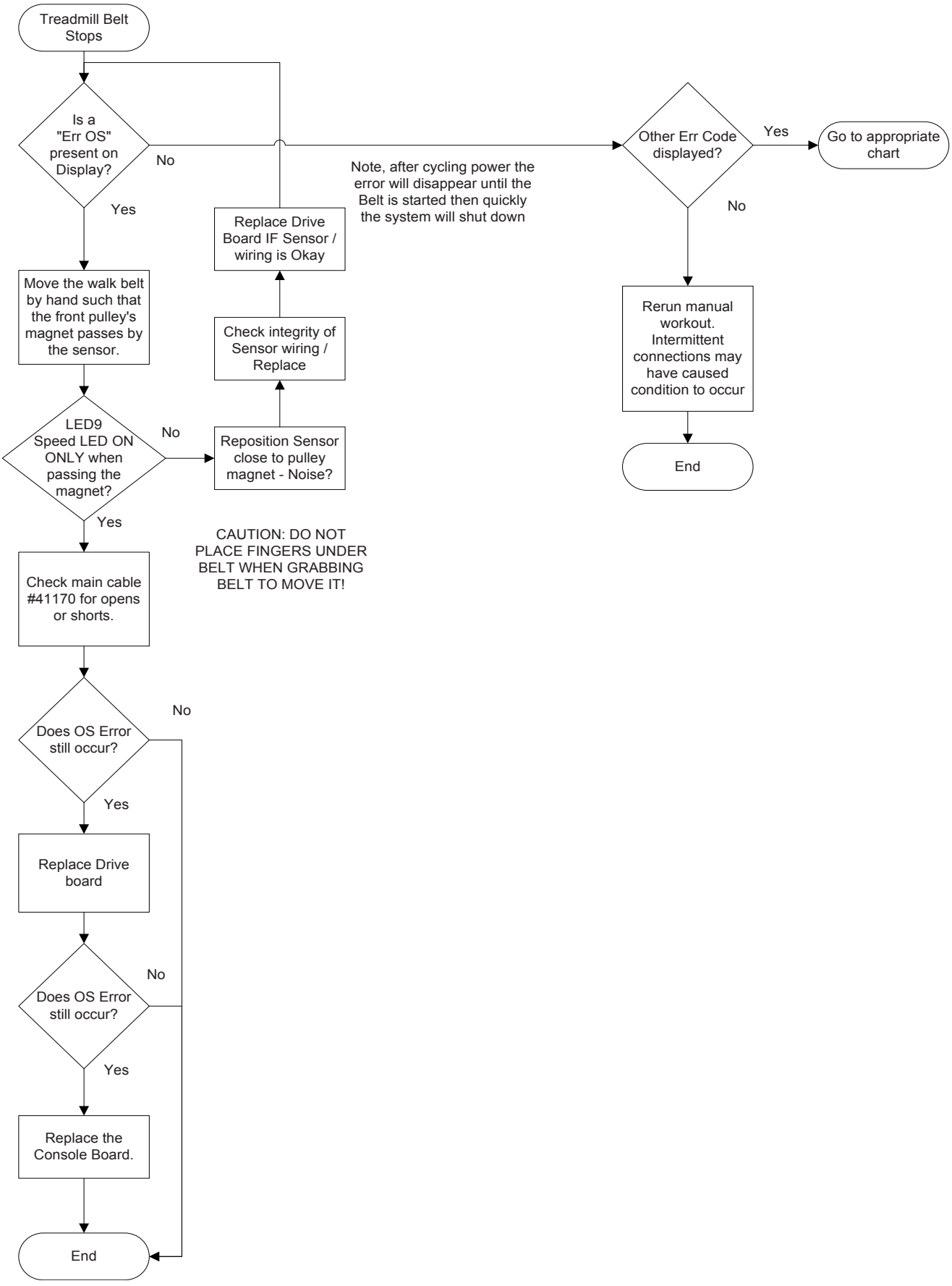
Troubleshooting Flowchart: Grade Position Out of Range - Error 3



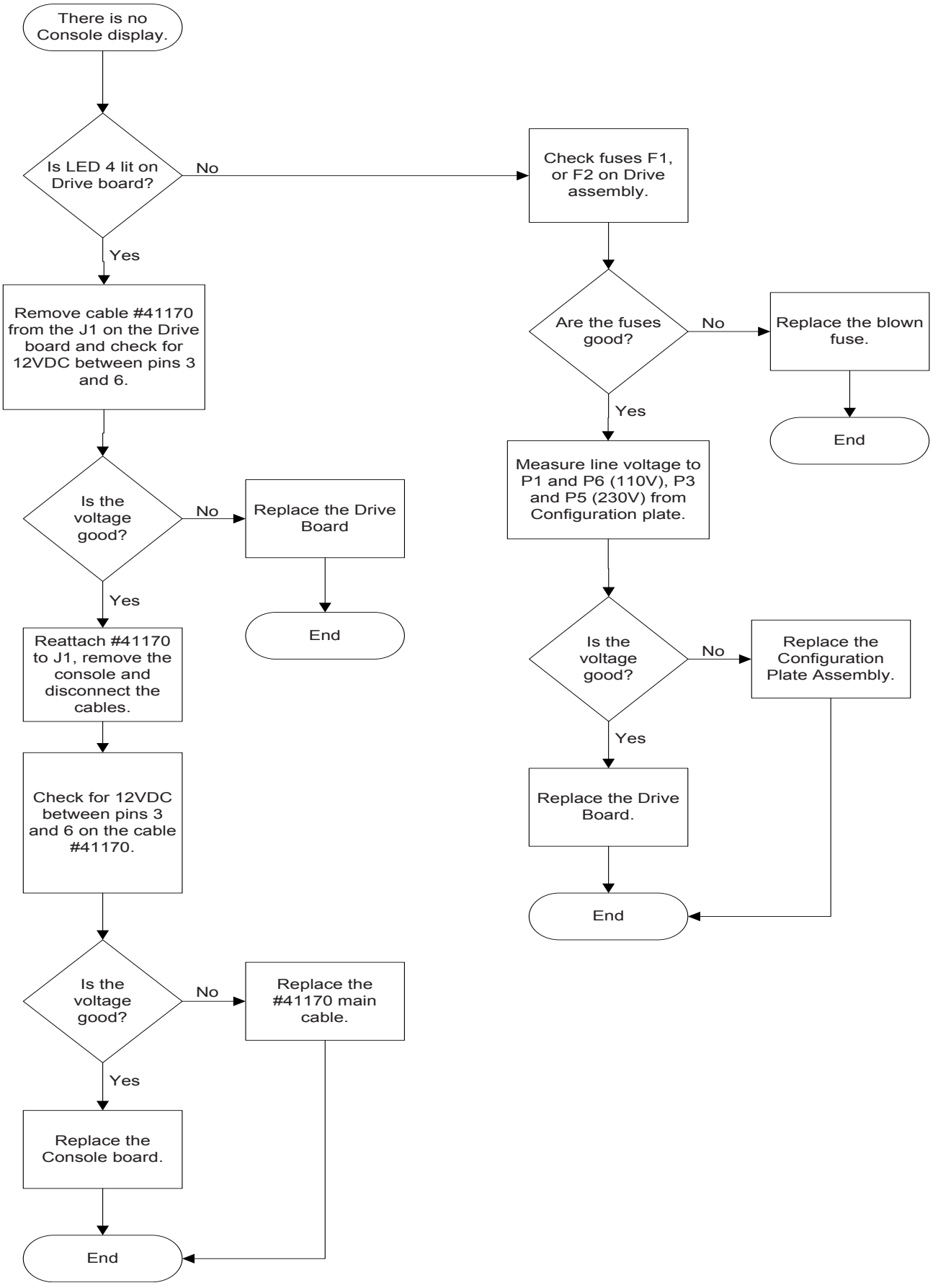
Troubleshooting Flowchart: Belt Speed (Tach) Signal Loss - Error LS



Troubleshooting Flowchart: Belt Over Speed - Error OS

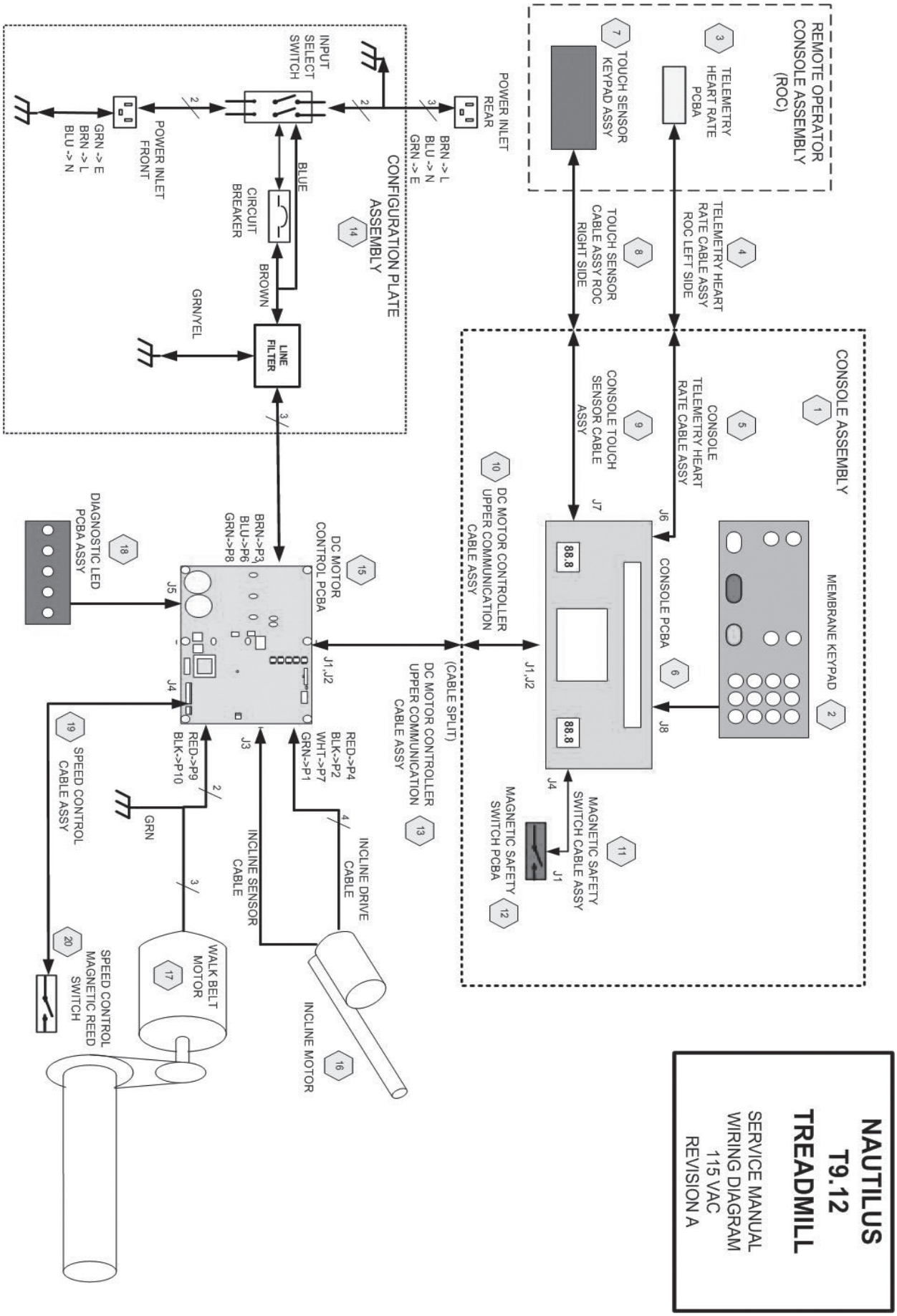


Troubleshooting Flowchart: No Display / No Device Operation



T9.12 115 VAC Reference Table for Drawing

Reference Designator	Part Number	Description
1	41265	CONSOLE ASSEMBLY, T9.12
2	41286	MEMBRANE KEYPAD
3	41187	TELEMETRY HEART RATE RECEIVER PCBA
4	41191	TELEMETRY HEART RATE ROC CABLE ASSEMBLY
5	41174	TELEMETRY HEART RATE CONSOLE CABLE ASSEMBLY
6	41091	CONSOLE PCBA
7	41449	TOUCH SENSOR KEYPAD ASSEMBLY
8	41193	TOUCH SENSOR ROC CABLE ASSEMBLY
9	41173	TOUCH SENSOR CONSOLE CABLE ASSEMBLY
10	41161	DC MOTOR CONTROLLER UPPER COMMUNICATION CABLE ASSEMBLY
11	41194	MAGNETIC SAFETY SWITCH CABLE ASSEMBLY
12	40854	MAGNETIC SAFETY SWITCH PCBA
13	41170	DC MOTOR CONTROLLER LOWER COMMUNICATION CABLE ASSEMBLY
14	41267	CONFIGURATION PLATE ASSEMBLY
15	41094	DC MOTOR CONTROL PCBA
16	41062	INCLINE MOTOR
17	41095	WALK BELT MOTOR
18	41151	DIAGNOSTIC LED PCBA ASSEMBLY
19	41199	SPEED CONTROL CABLE ASSEMBLY
20	41149	SPEED CONTROL MAGNETIC REED SWITCH


REMOTE OPERATOR CONSOLE ASSEMBLY (ROC)
TELEMETRY HEART RATE PCBA
TOUCH SENSOR KEYPAD ASSY
TELEMETRY HEART RATE CABLE ASSY ROC LEFT SIDE
TOUCH SENSOR CABLE ASSY ROC RIGHT SIDE
CONSOLE ASSEMBLY
CONSOLE TELEMETRY HEART RATE CABLE ASSY
CONSOLE TOUCH SENSOR CABLE ASSY
DC MOTOR CONTROLLER UPPER COMMUNICATION CABLE ASSY
MEMBRANE KEYPAD
CONSOLE PCBA
MAGNETIC SAFETY SWITCH CABLE ASSY
MAGNETIC SAFETY SWITCH PCBA
J6
J7
J8
J4
J1
J1,J2
88.8
88.8
POWER INLET REAR
BRN -> L
BLU -> N
GRN -> E
CONFIGURATION PLATE ASSEMBLY
INPUT SELECT SWITCH
CIRCUIT BREAKER
BLUE
BROWN
GRN/YEL
LINE FILTER
POWER INLET FRONT
GRN -> E
BRN -> L
BLU -> N
DIAGNOSTIC LED PCBA ASSY
DC MOTOR CONTROL PCBA
BRN->P3
BLU->P6
GRN->P8
J5
J4
J1,J2
J3
DC MOTOR CONTROLLER UPPER COMMUNICATION CABLE ASSY (CABLE SPLIT)
RED->P4
BLK->P2
WHT->P7
GRN->P1
INCLINE DRIVE CABLE
INCLINE SENSOR CABLE
INCLINE MOTOR
RED->P9
BLK->P10
GRN
SPEED CONTROL CABLE ASSY
WALK BELT MOTOR
SPEED CONTROL MAGNETIC REED SWITCH
NAUTILUS
T9.12
TREADMILL
SERVICE MANUAL
WIRING DIAGRAM
115 VAC
REVISION A

T9.12 230 VAC Reference Table for Drawing

Reference Designator	Part Number	Description
1	41265	CONSOLE ASSEMBLY, T9.12
2	41286	MEMBRANE KEYPAD
3	41187	TELEMETRY HEART RATE RECEIVER PCBA
4	41191	TELEMETRY HEART RATE ROC CABLE ASSEMBLY
5	41174	TELEMETRY HEART RATE CONSOLE CABLE ASSEMBLY
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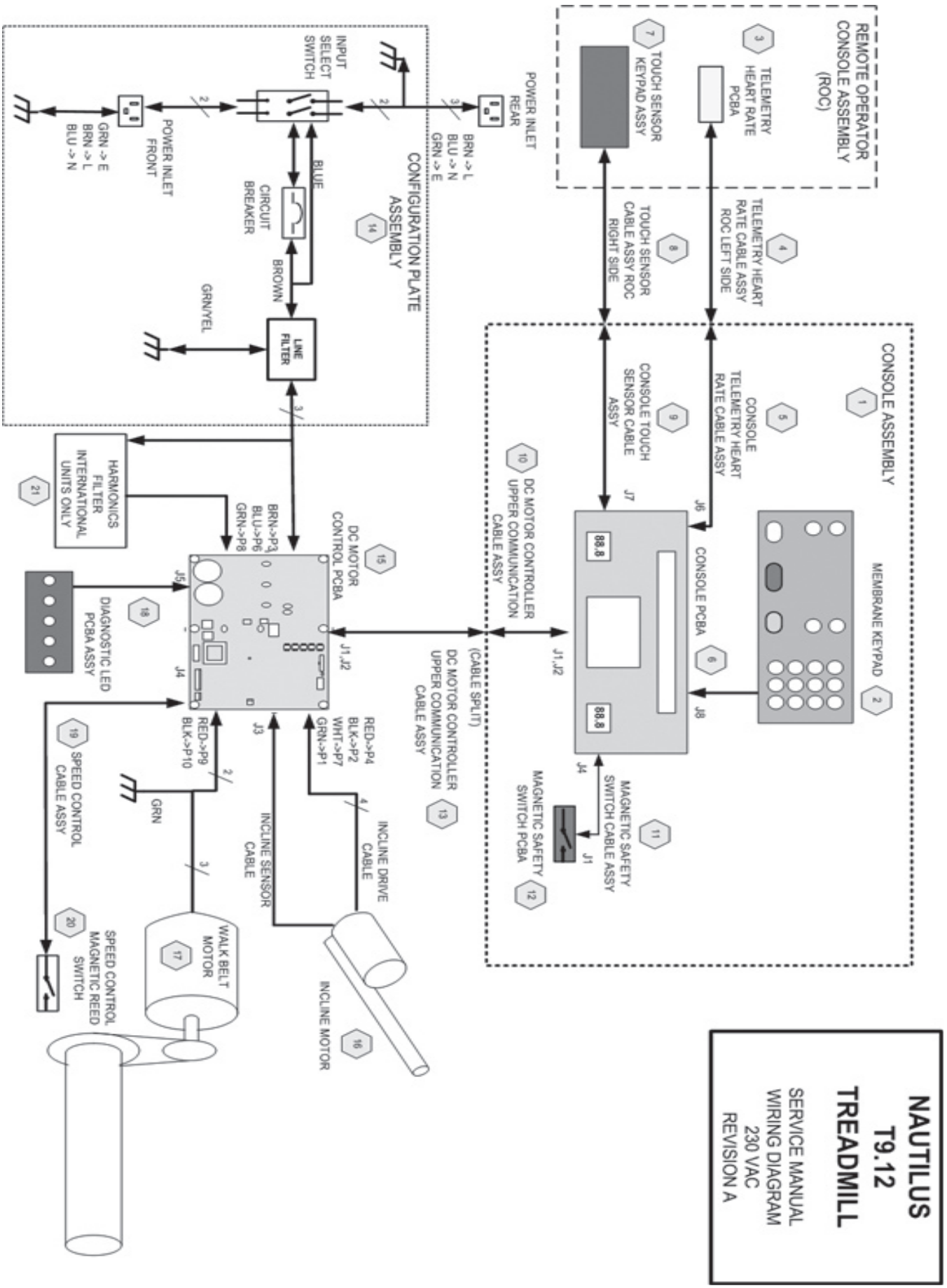
8	41193	TOUCH SENSOR ROC CABLE ASSEMBLY
9	41173	TOUCH SENSOR CONSOLE CABLE ASSEMBLY
10	41161	DC MOTOR CONTROLLER UPPER COMMUNICATION CABLE ASSEMBLY
11	41194	MAGNETIC SAFETY SWITCH CABLE ASSEMBLY
12	40854	MAGNETIC SAFETY SWITCH PCBA
13	41170	DC MOTOR CONTROLLER LOWER COMMUNICATION CABLE ASSEMBLY
14	41390	CONFIGURATION PLATE ASSEMBLY
15	41313	DC MOTOR CONTROL PCBA
16	41289	INCLINE MOTOR
17	41210	WALK BELT MOTOR
18	41151	DIAGNOSTIC LED PCBA ASSEMBLY
19	41199	SPEED CONTROL CABLE ASSEMBLY
20	41149	SPEED CONTROL MAGNETIC REED SWITCH
21	41153	HARMONICS FILTER, INTERNATIONAL UNITS ONLY


NAUTILUS
T9.12
TREADMILL
SERVICE MANUAL
WIRING DIAGRAM
230 VAC
REVISION A
REMOTE OPERATOR CONSOLE ASSEMBLY (ROC)
CONSOLE ASSEMBLY
MEMBRANE KEYPAD
TELEMETRY HEART RATE PCBA
TELEMETRY HEART RATE CABLE ASSY ROC LEFT SIDE
CONSOLE TELEMETRY HEART RATE CABLE ASSY
CONSOLE PCBA
TOUCH SENSOR KEYPAD ASSY
TOUCH SENSOR CABLE ASSY ROC RIGHT SIDE
CONSOLE TOUCH SENSOR CABLE ASSY
DC MOTOR CONTROLLER UPPER COMMUNICATION CABLE ASSY
MAGNETIC SAFETY SWITCH CABLE ASSY
MAGNETIC SAFETY SWITCH PCBA
POWER INLET REAR
BRN -> L
BLU -> N
GRN -> E
CONFIGURATION PLATE ASSEMBLY
INPUT SELECT SWITCH
POWER INLET FRONT
GRN -> E
BRN -> L
BLU -> N
CIRCUIT BREAKER
BLUE
BROWN
GRN/YEL
LINE FILTER
HARMONICS FILTER INTERNATIONAL UNITS ONLY
BRN->P3
BLU->P6
GRN->P8
DC MOTOR CONTROL PCBA
DIAGNOSTIC LED PCBA ASSY
(CABLE SPLIT)
DC MOTOR CONTROLLER UPPER COMMUNICATION CABLE ASSY
RED->P4
BLK->P2
WHT->P7
GRN->P1
INCLINE DRIVE CABLE
INCLINE SENSOR CABLE
INCLINE MOTOR
RED->P9
BLK->P10
GRN
WALK BELT MOTOR
SPEED CONTROL CABLE ASSY
SPEED CONTROL MAGNETIC REED SWITCH

Section 4

Troubleshooting Electrical Problems - Model T914 & T916

Contents

Common Electrical and Electronic Problems

The following tables provide possible causes and solutions to the most common types of electrical and electronic problems. While the information in these tables may not resolve all problems, they should help you isolate the area affected by the problem.

Table 4–1. Electrical Issues

Problem	Possible Causes	Remedy
There is no display.	Circuit breaker on the treadmill hood is off.	• Set the treadmill circuit breaker to **ON**.
	Treadmill power cord is not plugged in.	• Plug in the power cord, then set the treadmill circuit breaker to **ON**.
	There is no power at the wall outlet.	• Check the building circuit breaker.
	There is an internal electrical problem.	• Refer to the wiring schematics located in this section of the manual.
	There is a blown fuse	• Replace F1, F3, or F4 on the Configuration Plate assembly.
Circuit breaker trips during normal operation.	There is a power fault.	• Inspect walk belt for wear.
	There is an insufficient power source.	• Make sure the outlet voltage is 115VAC (USA) or 230VAC (International) + or - 10%.
	The treadmill is not on its own dedicated circuit.	• Plug the treadmill into its own 20-amp dedicated electrical outlet.
Treadmill will not change grade.	Fuse is blown.	• Replace blown fuse F2 on the Configuration Plate assembly.
	There is an internal problem.	• Cycle the circuit breaker switch on the treadmill. • Replace the grade actuator motor.
Grade actuator motor runs, but grade never changes.	Grade actuator motor is bad.	• Replace the grade actuator motor.

Table 4–2. Electronic Issues

Problem	Possible Causes	Remedy
TM COM ERROR appears on the display at power-up.	Main cable is possibly crimped.	• Replace the main cable.
	Upper display board is bad.	• Replace the console.
Treadmill will not change grade.	VSD board is bad.	• Replace the VSD.
	Old firmware is installed.	• Upgrade the firmware.
Treadmill will not reach maximum speed.	Speed limit control may be activated	• Refer to Part 2 for adjusting treadmill maximum speed.
Treadmill will not reach maximum time.	Time limit control may be activated.	• Refer to Part 2 for adjusting treadmill maximum time.

Table 4–2. Electronic Issues continued

Problem	Possible Causes	Remedy
Walking belt stops, and no error message appears.	User hit the Ergo stop button.	• Press **START** to resume workout.
	ERGO cable is pinched or abraded.	• Inspect and/or replace cable to the ERGO Assembly.
CHR does not work.	Contact plates have excessive moisture under them.	• Replace the contact plates if cleaning them first does not resolve the problem. • Replace the CHR PCB.
Unit shuts off and wall or Treadmill circuit breaker has opened. After resetting system works fine with no load on belt.	User's weight is higher than recommended speed for that weight, or deck/belt has worn and system is pulling more current than the system is designed for.	• Replace deck/belt.

Error Reporting

The current lists of errors are for the console firmware version 41375-009 or 41376-009 and Drive version 11 and UP . The system reports various problems to the user via the display. The format includes the text line reporting the error.

Definitions

Warning—A message display that appears on the console display that informs you of a condition that requires attention but does not stop treadmill operation.

Error—A message display that appears on the console display that informs you of a condition that halts the operation of the treadmill and which requires immediate attention.

Table 4–3. Error List

Display	Type	Response	Description
NO ERROR	N/A	Displayed in the Error Log if no events.	Placeholder label.
PROGRAM ERROR	Error	Start-up—Stops operation.	ALL—Microprocessor fails self-test program memory chksum error. Display will be blank and the console will beep twice.
STATIC RAM ERROR	Error	Start-up—Stops operation.	ALL—Microprocessor fails self-test RAM chksum error. Display will be blank, and the console will beep. It will beep three times for an Internal RAM error. It will beep four times for an external RAM error.
EEPROM ERROR	Error	Start-up—Stops operation.	ALL—Microprocessor fails self-test EEPROM chksum error. All of the EPROM values will be loaded with the defaults. No error message appears.

Table 4–3. Error List

Display	Type	Response	Description
TM HW COM ERROR	Error	Anytime—Goes to idle. Treadmill slowly stops.	Treadmill UART hardware link failure.
TM COM ERROR	Error	Anytime—Goes to idle. Treadmill slowly stops.	Treadmill drive communication failure.
DRIVE ERROR	Error	Program operation—Goes to idle. Treadmill stops quickly.	Treadmill drive (VSD) failure, possible output switching fault recycle power and determine if failure is intermittent.
OUT CUR ERROR	Error	Program operation—Goes to idle. Treadmill slowly stops.	Treadmill output current too low.
BELT OVRLD ERROR	Warning	During movement—Displays message until the user presses **CLEAR**.	Treadmill moderate drive overload. Designed to inform the user that the belt or deck will need to be replaced soon.
SYS OVRLD ERROR	Error	Program operation—Goes to idle. Treadmill slowly stops.	Treadmill high drive overload.
DRV MON ERROR	Error	Program operation—Goes to idle. Treadmill slowly stops.	Treadmill current monitoring circuit failure.
CONFIG RQRD	Error	Start-up—Stops operation.	Treadmill configuration not allowed or device needs to be configured.
GRD LIMIT ERROR	Error	During change—Goes to idle. Treadmill slowly stops.	Treadmill grade position outside limits.
GRD MOVE ERROR	Error	During change—Goes to idle. Treadmill slowly stops.	Treadmill grade system detected an non-requested response.
SPD CHANGE ERROR	Error	Program operation—Goes to idle. Treadmill slowly stops.	TM drive is commanded to change speed but doesn't.
STUCK KEY	Error	Start-up—Stops operation.	One of the keypad keys are stuck in an active state. Reports only "Stuck key."

Table 4–4. Production Test Errors (requires special equipment to test console, see factory)

Display	Type	Response	Description
CS HW COM ERROR	Warning	Start-up—Stops CSAFE but continues user selection.	ALL—CSAFE UART hardware link failure.
CS COM ERROR	Warning	Anytime—Stops CSAFE but continues program.	ALL—CSAFE communication failure.

Table 4–5. Error Resolution

Error Code	Action
TM COM ERROR	Verify the cable connections at both ends. Check for bent or broken pins, and replace if required. If error persists, replace the VSD or controller as necessary.
DRIVE ERROR	Replace the VSD.
OUT CVR	1st action: Check that drive motor connections are intact. 2nd action: Replace the VSD. 3rd action: Replace Motor.
OVERLOAD WARNING	Belt or deck is almost worn out or user is too heavy for speed range; otherwise, press **CLEAR**.
SYS OVER LOAD ERROR	High Motor overload caused by one of the following: **1** Runner heavier than weight / speed envelope in conjunction with significant deck wear. Solution: Restrict use to people within the weight/speed specifications, and check deck wear. Replace if necessary. **2** Motor lead disconnected or loose. Solution: Check the motor leads to ensure all leads are connected. One loose or disconnected lead will cause the overload. **3** Electrical failure on the drive electronics. Solution: Replace the VSD. **4** Motor blocked by obstruction. Solution: Remove the obstruction.
DRV MON ERR	Replace the VSD.
CONFIG	Change the configuration by entering **SPEED UP**, **8**, and press ENTER key twice, then scroll to correct device type. If the error persists, replace the Console (or Processor board).
GRD MOV ERROR	Replace the VSD or grade motor.

VSD

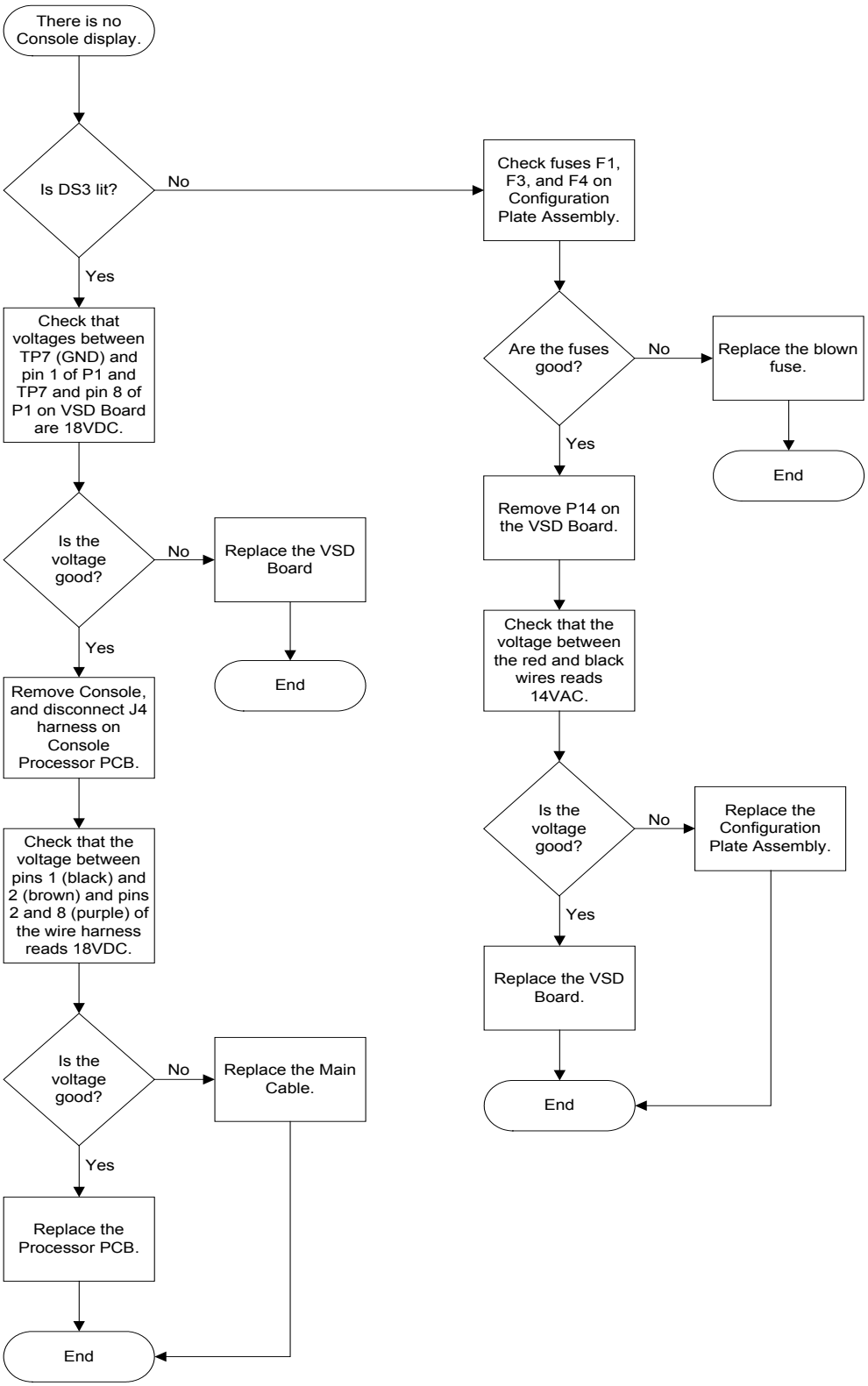
Table 4–6. LED Patterns

LED	Flashing	On	Off
DS1	N/A	Only when belt is running	When belt is stopped
DS2	At 1 second rate: good communications to console. DS1 AND DS2 flashing together at same rate - VSD Failure.	Overload	No Communication to Console, check cable.
DS3	N/A	Power to the console	No power to the console, cable to VSD or VSD problem
DS4	N/A	Power to the VSD Board	Cable to the VSD or VSD problem

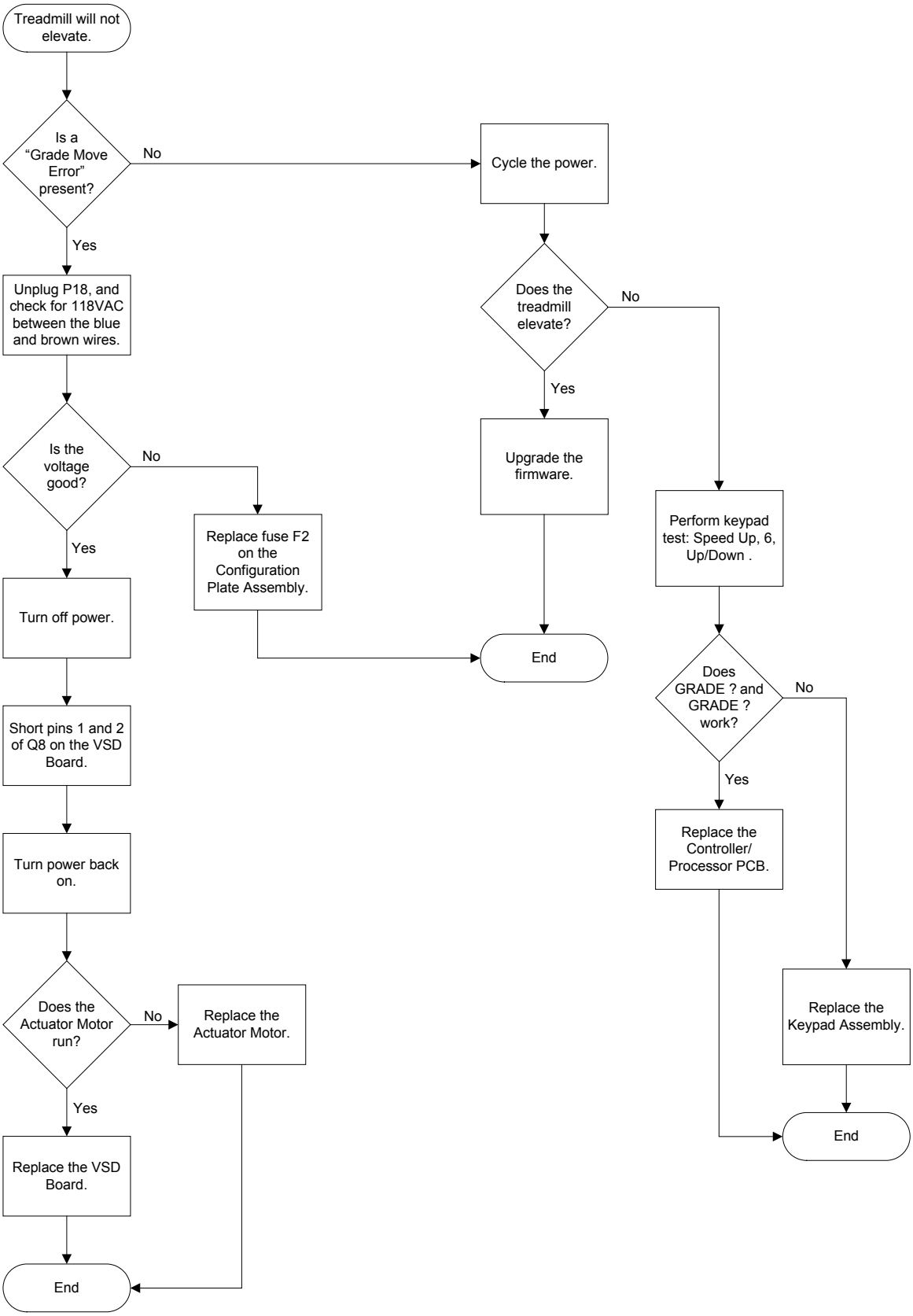
Troubleshooting Flowcharts

Use the flowcharts on the following pages to help you localize and correct electrical and electronic problems.

Troubleshooting Flowchart: No Display

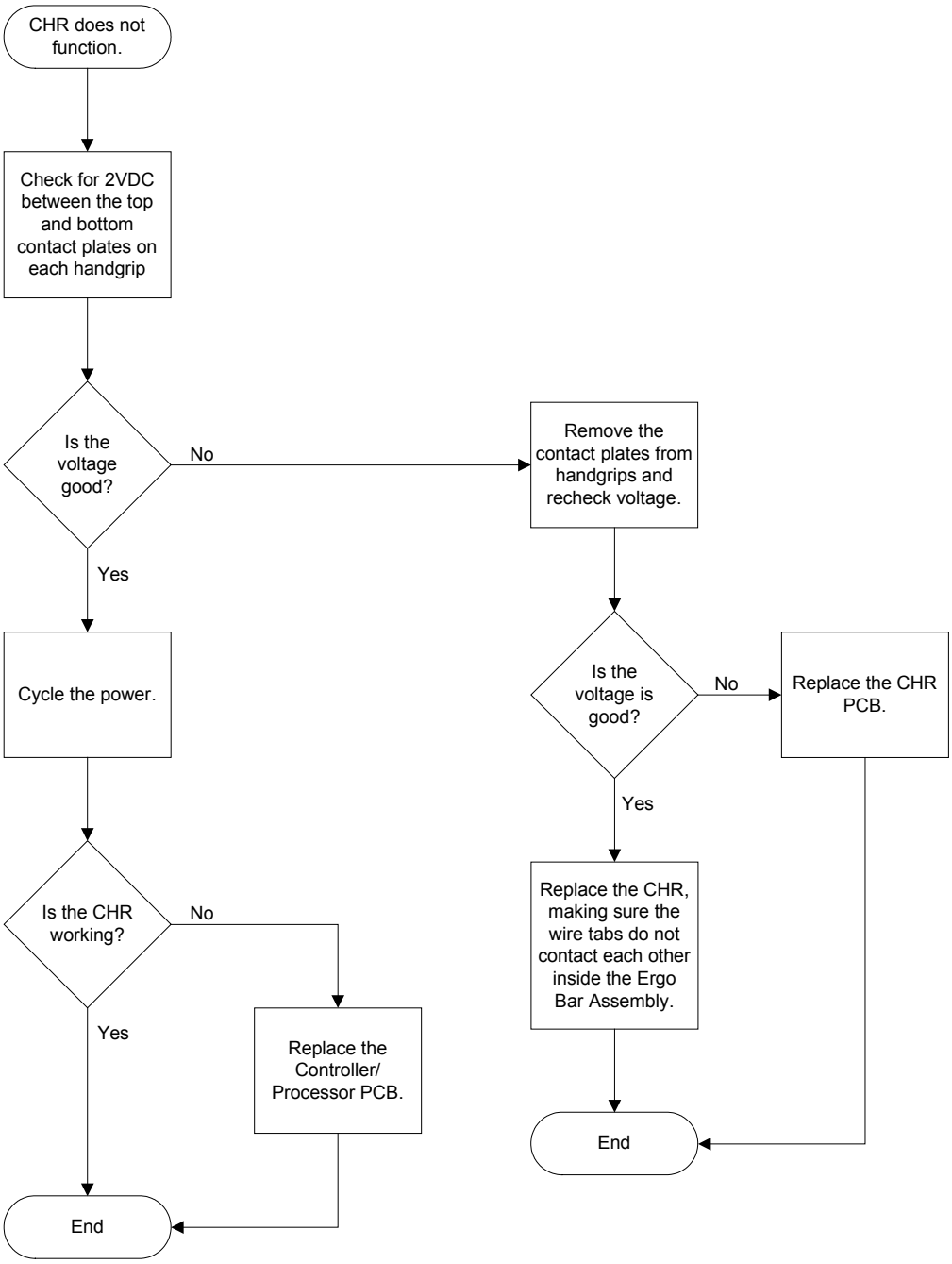


Troubleshooting Flowchart: No Elevation Movement



Troubleshooting Flowchart: Non-Functional CHR

NOTE: Before troubleshooting a non-functional CHR, verify the Contact HR mode is enabled in the CUSTOMIZE Service Menu.



1. LED Operation on PCBAs	What this means	First Action	Second Action	Third Action	Fourth Action
Note about use of Status LEDs: A single LED does not show the complete picture of an error condition. Review the status of all LEDs prior to deciding which assemblies to replace.					
P51 Processor PCBA:					
DS1 Flashing @ 1 Second Rate	Normal Condition.	Normal condition, no action required.			
DS1 Flashing @ Irregular Rate	P51 Processor PCBA Non-operational.	Power off/on treadmill, see if problem self-clears. Check for unplugged or damaged cables. Communication cable from J10 on P51 Processor PCBA is cable most likely to cause problem.	Replace P51 Processor PCBA.		
DS1 Off	Processor is non-operational. No power or P51 Processor PCBA has failed.	Power off/on treadmill, see if problem self-clears. Check for unplugged or damaged cables. Communication cable from J10 on P51 Processor PCBA is cable most likely to cause problem.	Check LEDs on VSD to see if VSD has power.	Replace P51 Processor PCBA.	
DS1 On Continuous	P51 Processor PCBA Non-operational.	Power off/on treadmill, see if problem self-clears.	Replace P51 Processor PCBA.		
VSD PCBA:					
DS1 Flashing @ Any Rate	VSD PCBA is Non-operational.	Power off/on treadmill, see if problem self-clears. Check for unplugged or damaged cables. Communication cable from J10 on P51 Processor PCBA is cable most likely to cause problem.	Replace VSD PCBA.		
DS1 Off	Walkbelt motor is OFF.	Normal condition, no action required.			
DS1 On Continuous	Walkbelt motor is ON.	Normal condition, no action required.			
DS2 Flashing @ 1 Second Rate	Normal condition.	Normal condition, no action required.			
DS2 Flashing @ Irregular Rate	Processor in reset is attempting to re-establish communication.	Power off/on treadmill, see if problem self-clears. Check for unplugged or damaged cables. Communication cable from J10 on P51 Processor PCBA is cable most likely to cause problem.	Replace VSD PCBA.	Replace Configuration Plate.	
DS2 Off	Processor in reset or no communication.	Power off/on treadmill, see if problem self-clears. Check for unplugged or damaged cables. Communication cable from J10 on P51 Processor PCBA is cable most likely to cause problem.	Replace VSD PCBA.	Replace P51 Processor PCBA.	Replace Configuration Plate.

1. LED Operation on PCBAs	What this means	First Action	Second Action	Third Action	Fourth Action
DS2 On Continuous	Walkbelt Over current Condition.	This error is usually caused by excessive drag or friction on the deck. Closely inspect the deck and look for signs of excessive wear. If needed replace the belt and deck.	Power off/on treadmill, see if problem self-clears. Check for unplugged or damaged cables.	Replace VSD PCBA.	Replace Drive Motor.
DS3 On Continuous	5V VCC Power Supply is Operational.	Normal condition, no action required.			
DS3 Off	5V VCC Power Supply is Non-operational.	Check for unplugged or damaged cables. Cable going to P14 on VSD PCBA is most likely to cause problem.	Use an ohmmeter to verify Config PCBA fuses F3 and F4.	Replace VSD PCBA.	Replace Configuration Plate.
DS4 On Continuous	15V Predrive Power Supply is Operational.	Normal condition, no action required.			
DS4 Off	15V Predrive Power Supply is Non-operational.	Check for unplugged or damaged cables. Cable going to P20 on VSD PCBA is most likely to cause problem.	Use an ohmmeter to verify Config PCBA fuses F3 and F4.	Replace VSD PCBA.	Replace Configuration Plate.
DS5 On Very Bright	Danger! High Voltage Drive Bus Voltage Present.	Normal powered up condition. Do not handle VSD PCBA until LEDs go out after about 2 minutes.			
DS5 Off	High Voltage Drive Bus Capacitors have Discharged.	High Voltage Drive Bus is discharged and VSD PCBA is safe to handle.			
DS6 On Very Bright	Danger! High Voltage Drive Bus Voltage Present.	Normal powered up condition. Do not handle VSD PCBA until LEDs go out after about 2 minutes.			
DS6 Off	High Voltage Drive Bus Capacitors have Discharged.	High Voltage Drive Bus is discharged and VSD PCBA is safe to handle.			
2. Self-Test Error Codes	**What this means**	**First Action**	**Second Action**	**Third Action**	**Fourth Action**
ALU Error Program Error Static RAM Error Timer Error	Internally generated processor error.	Power off/on treadmill, see if problem self-clears.	Replace P51 Processor PCBA.		
EEPROM Error	Stored data such as user preferences, total time, and mileage has been corrupted.	Power off/on treadmill, see if problem self-clears. Defaults and configuration data will need to be entered again.	Replace P51 Processor PCBA.		

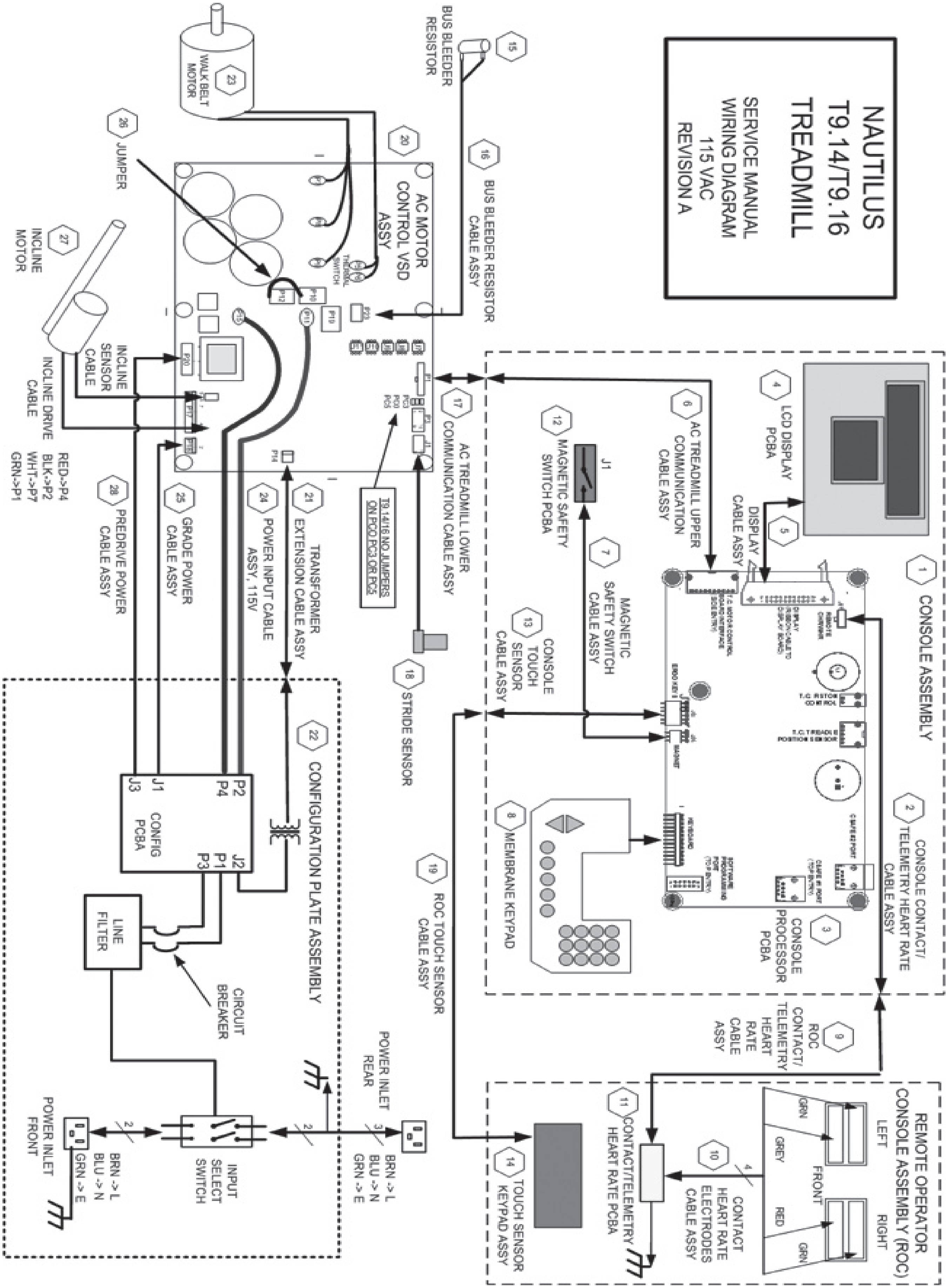
3. Operational Error Codes	What this means	First Action	Second Action	Third Action	Fourth Action
DRIVE ERROR	Occurs when the VSD PCBA detects too low or too high of a voltage on the DC drive bus.	Verify input line voltage is within specifications. Error indicates voltage is too low or high.	Ensure all cables from the configuration plate to the VSD PCBA are connected. Cable going to P20 on VSD PCBA is most likely to cause problem.	Replace VSD PCBA.	Replace Configuration Plate.
DRIVE PWR ERROR Early versions of software displayed this error as “ABS ERROR” or “POWER LOSS ERROR”	Can occur during program operation. Treadmill goes to idle and stops quickly. This Error can denote any of the following: 1 - The DC bus that powers the walkbelt is too low or high. 2 - The thermal switch on the walkbelt motor is open due to the motor overheating. 3 - The circuitry that measures the walkbelt motor current has failed.	Verify input line voltage is within specifications. Error indicates voltage is too low or high.	Let walkbelt motor cool down and cycle power. Motor thermal switch may open due to worn belt and deck.	Ensure all cables from the configuration plate to the VSD PCBA are connected. Cable going to P20 on VSD PCBA is most likely to cause problem.	Replace VSD PCBA. If problem persists replace Configuration Plate.
DRV RESET	The processor on the VSD PCBA cannot communicate with the motor control IC on the VSD PCBA.	Ensure all cables from the configuration plate to the VSD PCBA are connected. Cable going to P20 on VSD PCBA is most likely to cause problem.	Replace VSD PCBA.		
GRD LIMIT ERROR	Grade motor beyond its lower (05) or upper (15%) limits.	Press [CLEAR]. Go to Diagnostic Mode (Speed Increase, 6, ENTER), then scroll to "GRADE ACT" using the Speed Increase and Speed Decrease keys. If the grade is reading over 15% or less than 0%, attempt to adjust grade up or down using the Grade Increase and Grade Decrease keys.	If "GRADE ACT" is over 15%, check to see if grade pot (sensor cable) is unplugged from AC Drive Board. Otherwise, mechanically disconnect grade motor from frame, & manually rotate grade shaft clockwise (for up) and counterclockwise (for down), while in diagnostic mode to view current grade position and turn the shaft in the correct direction. Then reassemble.	Replace grade motor.	Replace VSD PCBA. If problem persists replace Configuration Plate.

3. Operational Error Codes	What this means	First Action	Second Action	Third Action	Fourth Action
GRD MOVE ERROR	Grade failed to move when commanded by software.	Check to see that grade wires (red, black, and white quick disconnects) are properly connected. The cable going to P18 on the VSD PCBA will also cause this error.	Use an ohmmeter to verify Config PCB fuses F1 and F2.	Replace grade motor.	Replace VSD PCBA.
MULTIPLE KEY	Message appears during the Service Test KEY TEST, if two keys are held down simultaneously or if a key is pressed while another key is stuck closed.	If possible, press [CLEAR], then go to Diagnostic Mode (Speed Increase, 6, ENTER), then scroll to "Key Test" using the Speed Increase and Speed Decrease keys. Press each key to identify which key is stuck.	If problem persists, open rear console access panel. Disconnect main keyboard cable from Processor board, and connect an alternate known-good key panel. Determine whether keys are now operable. If the alternate key panel works, replace the key panel.	Disconnect ROC key panel cable, determine whether problem persists. If problem goes away with ROC (Ergo) key panel disconnected, check Ergo cable. Plug alternate Touchsensor key panel and check operation. Replace either ROC cable or key panel as required.	Replace P51 Processor PCBA.
NOT DEFINED, then DRIVE POWER ERROR	Message appears when Pin 10 of the communication cable between the P51 Processor and VSD PCBAs are open.	Replace Communication cable which connects J10 on P51 Processor PCBA on VSD PCBA.	Replace VSD PCBA.	Replace P51 Processor PCBA.	
NTM CONFIG RQRD	This error indicates that the P51 Processor PCBA was manufactured for a non-Treadmill product such as an elliptical, stepper or bike.	Replace P51 Processor with one manufactured for use in Treadmills or TreadClimbers.			
OUT CUR ERROR	Walkbelt motor current is too low.	Ensure motor is connected to VSD PCBA. Cycle power and see if problem self-clears.	Replace VSD PCBA.	Replace Drive Motor.	
SYS OVRLD ERROR	Walkbelt motor current is too high or walkbelt motor thermal switch has opened due to a motor overload.	This error is usually caused by excessive drag or friction on the deck. Closely inspect the deck and look for signs of excessive wear. If needed replace the belt and deck.	Let walkbelt motor cool down and cycle power. Motor thermal switch may open due to worn belt and deck.	Replace VSD PCBA.	Replace Drive Motor.

3. Operational Error Codes	What this means	First Action	Second Action	Third Action	Fourth Action
TC/TM CONFIG RQRD	Unit must be reconfigured as either a Treadmill or TreadClimber or VSD PCBA has wrong jumper configuration.	Press [CLEAR]. Go to Change Machine Mode (Speed Increase, 8, Enter, Enter), then scroll to appropriate configuration using the Speed Increase and Speed Decrease keys, then press ENTER.	Ensure jumpers on VSD are correct. TreadClimbers should have all three jumpers in place on PC0, PC3 and PC5.		
TM COM ERROR	Treadmill or TreadClimber communications error. Means P51 Processor PCBA can't talk serially to VSD PCBA.	Cycle power and see if problem self-clears.	Replace communication cable between P51 Processor PCBA and VSD PCBA.	Replace VSD PCBA.	Replace P51 Processor PCBA.

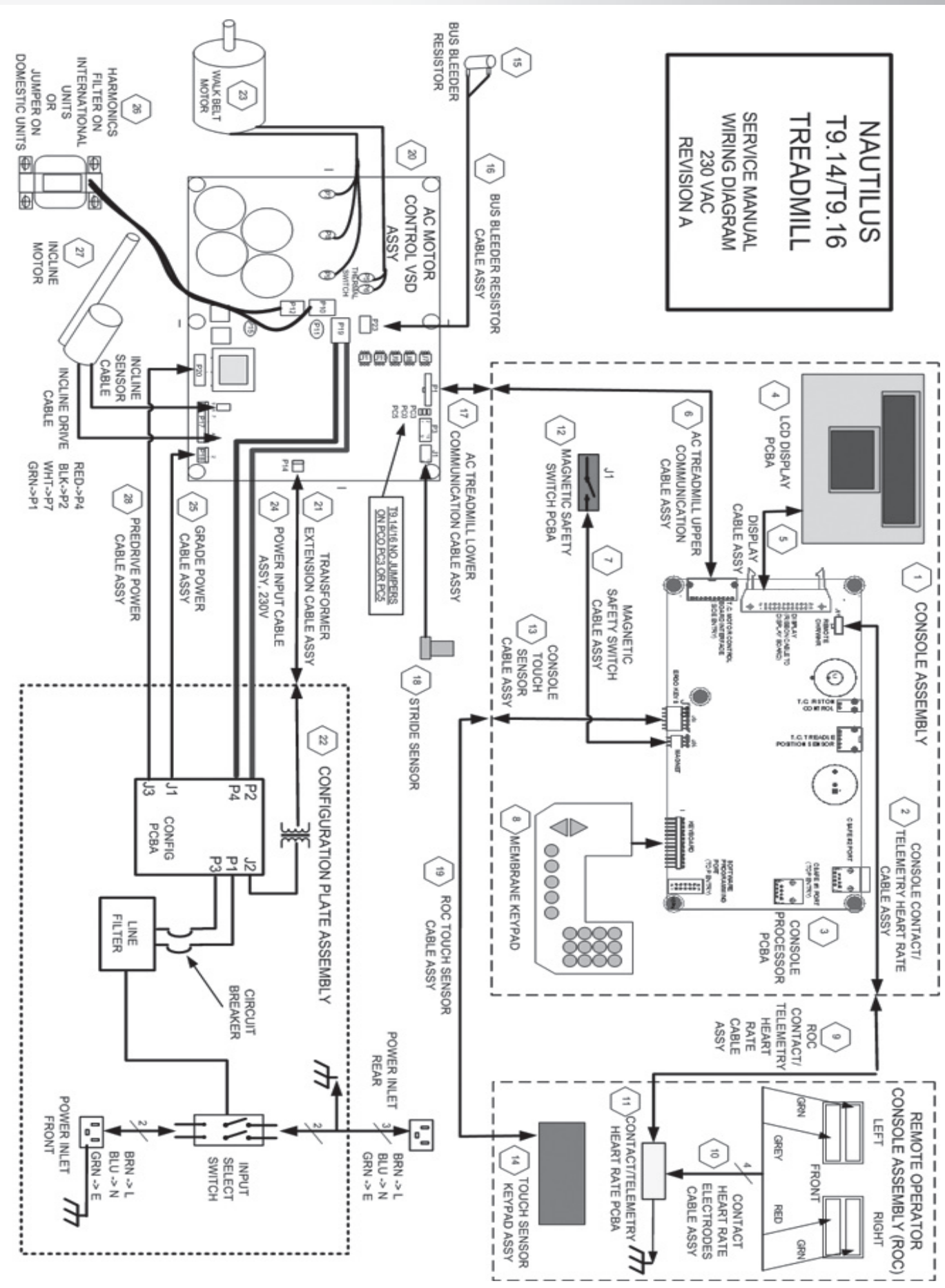
T9.14/T9.16 115 VAC Reference Table Drawing

Reference Designator	Part Number	Description
1	41321	CONSOLE ASSEMBLY, T9.14
1	41332	CONSOLE ASSEMBLY, T9.16
2	41442	CONTACT/TELEMETRY HEART RATE CONSOLE CABLE ASSEMBLY
3	40824	CONSOLE PROCESSOR PCBA
4	40826	LCD DISPLAY PCBA, T9.14
4	40865	LCD DISPLAY PCBA, T9.16
5	41175	DISPLAY CABLE ASSEMBLY
6	27952	AC TREADMILL UPPER COMMUNICATION CABLE ASSEMBLY
7	41194	MAGNETIC SAFETY SWITCH CABLE ASSEMBLY
8	41280	MEMBRANE KEYPAD, T9.14
8	41460	MEMBRANE KEYPAD, T9.16
9	41443	CONTACT/TELEMETRY HEART RATE ROC CABLE ASSEMBLY
10	41169	CONTACT HEART RATE ELECTRODES CABLE ASSEMBLY
11	41180	CONTACT/TELEMETRY HEART RATE RECEIVER PCBA
12	40854	MAGNETIC SAFETY SWITCH PCBA
13	41173	CONSOLE TOUCH SENSOR CABLE ASSEMBLY
14	41449	TOUCH SENSOR KEYPAD ASSEMBLY
15	41300	BUS BLEEDER RESISTOR
16	41392	BUS BLEEDER RESISTOR CABLE ASSEMBLY
17	27951	AC TREADMILL LOWER COMMUNICATION CABLE ASSEMBLY
18	41335	STRIDE SENSOR
19	41193	ROC TOUCH SENSOR CABLE ASSEMBLY
20	41646	AC MOTOR CONTROL VSD ASSEMBLY
21	27356	TRANSFORMER EXTENSION CABLE ASSEMBLY
22	41322	CONFIGURATION PLATE ASSEMBLY
23	27487	WALK BELT MOTOR
24	35382-002	POWER INPUT CABLE, 230V
25	35986-001	GRADE POWER CABLE ASSEMBLY
26	27122	JUMPER
27	41062	INCLINE MOTOR
28	27959	PREDRIVE POWER CABLE ASSEMBLY


NAUTILUS
T9.14/T9.16
TREADMILL
SERVICE MANUAL
WIRING DIAGRAM
115 VAC
REVISION A
1 CONSOLE ASSEMBLY
2 CONSOLE CONTACT/ TELEMETRY HEART RATE CABLE ASSY
3 CONSOLE PROCESSOR PCBA
4 LCD DISPLAY PCBA
5 DISPLAY CABLE ASSY
6 AC TREADMILL UPPER COMMUNICATION CABLE ASSY
7 MAGNETIC SAFETY SWITCH CABLE ASSY
8 MEMBRANE KEYPAD
9 ROC CONTACT/ TELEMETRY HEART RATE CABLE ASSY
10 CONTACT HEART RATE ELECTRODES CABLE ASSY
11 CONTACT/TELEMETRY HEART RATE PCBA
12 MAGNETIC SAFETY SWITCH PCBA
13 CONSOLE TOUCH SENSOR CABLE ASSY
14 TOUCH SENSOR KEYPAD ASSY
15 BUS BLEEDER RESISTOR
16 BUS BLEEDER RESISTOR CABLE ASSY
17 AC TREADMILL LOWER COMMUNICATION CABLE ASSY
18 STRIDE SENSOR
19 ROC TOUCH SENSOR CABLE ASSY
20 AC MOTOR CONTROL VSD ASSY
21 TRANSFORMER EXTENSION CABLE ASSY
22 CONFIGURATION PLATE ASSEMBLY
23 WALK BELT MOTOR
24 POWER INPUT CABLE ASSY, 115V
25 GRADE POWER CABLE ASSY
26 JUMPER
27 INCLINE MOTOR
28 PREDRIVE POWER CABLE ASSY
J1
THERMAL SWITCH
T9.14/16 NO JUMPERS ON PC0 PC3 OR PC5
INCLINE SENSOR CABLE
INCLINE DRIVE CABLE
RED->P4
BLK->P2
WHT->P7
GRN->P1
P2 P4 J1 J3 CONFIG PCBA J2 P1 P3
LINE FILTER
CIRCUIT BREAKER
INPUT SELECT SWITCH
POWER INLET REAR
POWER INLET FRONT
BRN -> L
BLU -> N
GRN -> E
REMOTE OPERATOR CONSOLE ASSEMBLY (ROC)
LEFT
RIGHT
FRONT
GRN
GREY
RED
T.C. MOTOR CONTROL
T.C. TREADMILL POSITION SENSOR

T9.14/T9.16 230 VAC Reference Table Drawing for Domestic and International

Reference Designator	Part Number	Description
1	41321	CONSOLE ASSEMBLY, T9.14
1	41332	CONSOLE ASSEMBLY, T9.16
2	41442	CONTACT/TELEMETRY HEART RATE CONSOLE CABLE ASSEMBLY
3	40824	CONSOLE PROCESSOR PCBA
4	40826	LCD DISPLAY PCBA, T9.14
4	40865	LCD DISPLAY PCBA, T9.16
5	41175	DISPLAY CABLE ASSEMBLY
6	27952	AC TREADMILL UPPER COMMUNICATION CABLE ASSEMBLY
7	41194	MAGNETIC SAFETY SWITCH CABLE ASSEMBLY
8	41280	MEMBRANE KEYPAD, T9.14
8	41460	MEMBRANE KEYPAD, T9.16
9	41443	CONTACT/TELEMETRY HEART RATE ROC CABLE ASSEMBLY
10	41169	CONTACT HEART RATE ELECTRODES CABLE ASSEMBLY
11	41180	CONTACT/TELEMETRY HEART RATE RECEIVER PCBA
12	40854	MAGNETIC SAFETY SWITCH PCBA
13	41173	CONSOLE TOUCH SENSOR CABLE ASSEMBLY
14	41449	TOUCH SENSOR KEYPAD ASSEMBLY
15	41300	BUS BLEEDER RESISTOR
16	41392	BUS BLEEDER RESISTOR CABLE ASSEMBLY
17	27951	AC TREADMILL LOWER COMMUNICATION CABLE ASSEMBLY
18	41335	STRIDE SENSOR
19	41193	ROC TOUCH SENSOR CABLE ASSEMBLY
20	41646	AC MOTOR CONTROL VSD ASSEMBLY
21	27356	TRANSFORMER EXTENSION CABLE ASSEMBLY
22	41407	CONFIGURATION PLATE ASSEMBLY
23	27487	WALK BELT MOTOR
24	27073	POWER INPUT CABLE, 230V
25	35986-001	GRADE POWER CABLE ASSEMBLY
26	41404	HARMONICS FILTER, INTERNATIONAL UNITS ONLY
26	27122	JUMPER TO REPLACE HARMONICS FILTER ON DOMESTIC UNITS ONLY
27	41289	INCLINE MOTOR
28	27959	PREDRIVE POWER CABLE ASSEMBLY


NAUTILUS
T9.14/T9.16
TREADMILL
SERVICE MANUAL
WIRING DIAGRAM
230 VAC
REVISION A
CONSOLE ASSEMBLY
LCD DISPLAY PCBA
DISPLAY CABLE ASSY
CONSOLE CONTACT/ TELEMETRY HEART RATE CABLE ASSY
CONSOLE PROCESSOR PCBA
AC TREADMILL UPPER COMMUNICATION CABLE ASSY
MAGNETIC SAFETY SWITCH PCBA
MAGNETIC SAFETY SWITCH CABLE ASSY
CONSOLE TOUCH SENSOR CABLE ASSY
MEMBRANE KEYPAD
ROC TOUCH SENSOR CABLE ASSY
ROC CONTACT/ TELEMETRY HEART RATE CABLE ASSY
REMOTE OPERATOR CONSOLE ASSEMBLY (ROC)
LEFT
RIGHT
FRONT
GRN
GREY
RED
CONTACT HEART RATE ELECTRODES CABLE ASSY
CONTACT/TELEMETRY HEART RATE PCBA
TOUCH SENSOR KEYPAD ASSY
AC MOTOR CONTROL VSD ASSY
BUS BLEEDER RESISTOR
BUS BLEEDER RESISTOR CABLE ASSY
WALK BELT MOTOR
HARMONICS FILTER ON INTERNATIONAL UNITS OR JUMPER ON DOMESTIC UNITS
INCLINE MOTOR
INCLINE SENSOR CABLE
INCLINE DRIVE CABLE
RED->P4
BLK->P2
WHT->P7
GRN->P1
PREDRIVE POWER CABLE ASSY
GRADE POWER CABLE ASSY
POWER INPUT CABLE ASSY, 230V
TRANSFORMER EXTENSION CABLE ASSY
AC TREADMILL LOWER COMMUNICATION CABLE ASSY
T9.14/16 NO JUMPERS ON PC0 PC1 OR PC2
STRIDE SENSOR
CONFIGURATION PLATE ASSEMBLY
CONFIG PCBA
LINE FILTER
CIRCUIT BREAKER
INPUT SELECT SWITCH
POWER INLET REAR
POWER INLET FRONT
BRN -> L
BLU -> N
GRN -> E

Section 5

Troubleshooting Mechanical Problems

Contents

Common Mechanical Problems and Solutions

Table 5–1. Walking Belt

	Problem	Potential Causes	Solutions
1	Walking belt is too far to the left or right.	• The belt is tracking improperly.	• Adjust the tracking. (Refer to Part 1 to correct the problem.)
2	Walking belt slips, but the front roller turns.	• The walk belt tension is improperly set.	• Adjust the belt tension. (Refer to Part 1 to correct the problem.)
3	Walking belt hesitates. Adjusting the walking belt tension is ineffective.	• The motor drive belt is slipping.	• Replace the motor drive belt. • Adjust the motor drive belt tension.
		• The VSD is bad.	• Replace the VSD.

Table 5–2. Noises

	Problem	Potential Causes	Solutions
1	There is a grinding sound.	• There is a bad roller bearing.	• Replace the roller.
		• The motor has a bad bearing.	• Replace the motor.
2	Banging noise when the person is running.	• One or more compression mounts are worn (normally the ones in the front).	• Replace the compression mounts.
3	There is a squeaking noise when you walk on the deck.	• The unit may not be level.	• Check the leveling feet.
		• The deck is contacting the side rails.	• Replace the deck.
4	There is a squeaking noise all the time when the belt is running.	• The motor drive belt is worn.	• Relace the motor drive belt.
		• The motor drive belt is misaligned.	• Make sure the grooves on the belt are seated correctly in the grooves on the front roller pulley and the motor flywheel.
		• The motor flywheel is misaligned.	• Realign the motor flywheel with respect to the front roller pulley.

Note: Remove the motor drive belt to isolate if the problem to a roller or the drive motor.

Replacing the Grade Actuator Motor

WARNING

DANGEROUS VOLTAGES ARE PRESENT UNDER THE TREADMILL HOOD. EXERCISE CAUTION WHEN PERFORMING SERVICE TO THE ELECTRICAL COMPONENTS UNDER THE HOOD.

CAUTION

BEFORE REMOVING THE GRADE ACTUATOR MOTOR, PLACE TWO 5-INCH BLOCKS UNDER THE FRONT OF THE TREADMILL TO PREVENT IT FROM DROPPING WHEN YOU REMOVE THE MOTOR.

1. Remove the Treadmill Hood

1.1 Place two (2) 5-inch (13 cm) blocks securely under the treadmill headframe and lower the treadmill onto the blocks to un-weight from the grade mechanism.

1.2 Turn the treadmill circuit breaker off, and unplug the treadmill power cord.

1.3 Remove the two (2) screws on the treadmill hood.

1.4 Lift off the hood.

2. Remove the Grade Actuator Motor

2.1 Unplug the Actuator cables from the VSD board. See Figure 1 for T912 and Figure 2 for T914/916.

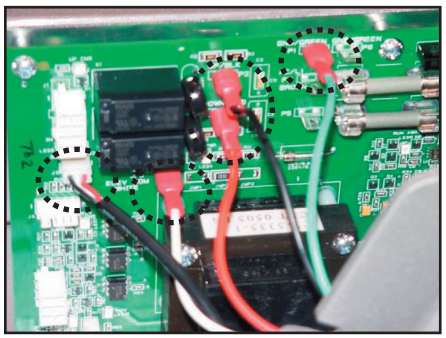


Figure 1: T912 Cables to unplug.

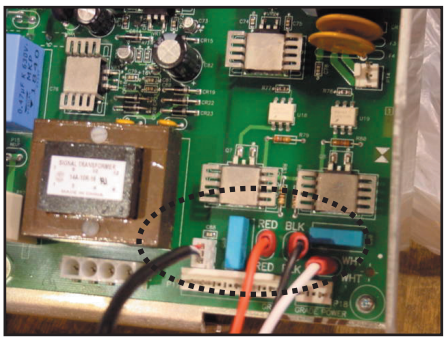


Figure 2: T914/T916 Cables to unplug.

2.2 Remove the the grade actuator ground wire from the frame. (T914/916 only).

2.3 Remove both E-Ring retainers from the right and left Elevation nuts.

2.4 Remove the right Elevation nut (see Figure 3).

2.5 Remove the Hardware attaching the Rear of the actuator to the frame (see Figure 4).

NOTE: The grade mechanism will pull the motor forward as the mechanism hardware is removed.

2.6 Grab the body of the Actuator and flip over allowing access to the left Elevation nut to remove (see Figure 5).

2.7 Remove the Actuator and disregard.

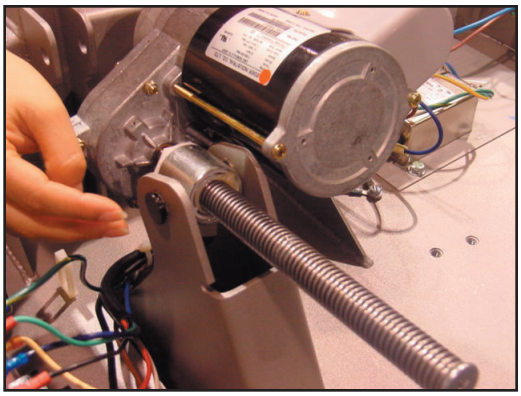


Figure 3

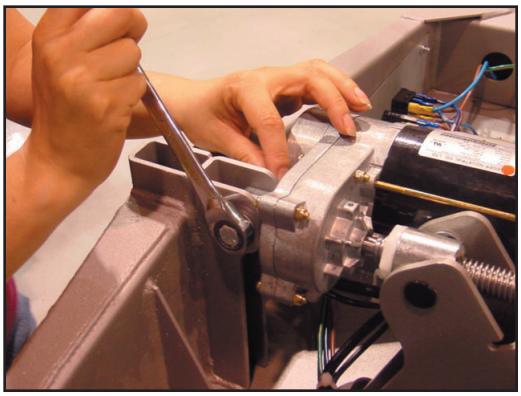


Figure 4

3. Install the Replacement Grade Actuator Motor

3.1 Plug the Actuator cables to the VSD board and the ground wire to the frame. (On models T914/916 connect the ground wire only). See Figure 1 for T912, and Figure 2 for T914/T916.

3.2 Position the Actuator with the shaft pointing upward (see Figure 6).

3.3 Proceed with the appropriate calibration procedure for the actuator below.

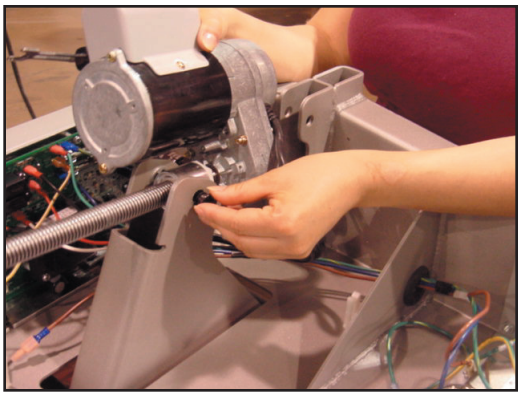


Figure 5

T912 Actuator Calibration:

Step 1: Apply power to the machine.

Step 2: Face the console and straddle the machine.

Step 3: While the treadmill is dormant (display not lit), press and hold the STOP and ENTER keys until the word CAL is displayed.

Step 4: Press QUICK START on the ergo bar.

Step 5: Press ENTER.

Step 6: Press QUICK START on the ergo bar.

Step 7: Press QUICK START again to pause auto calibration.

Step 8: Press ENTER to begin manual calibration.

Step 9: Press QUICK START on the ergo bar.

Step 10: Press QUICK START on the ergo bar.

Step 11: Press QUICK START on the ergo bar to access the incline low setting.

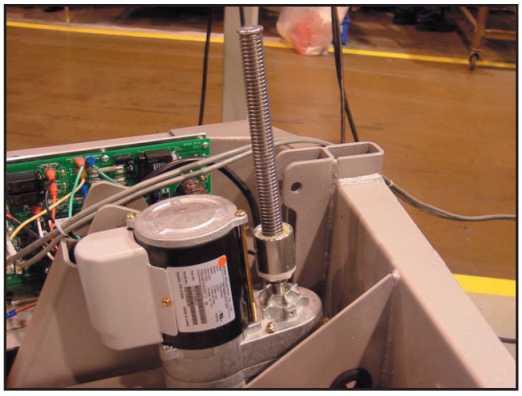


Figure 6

Step 12: The unit must read, 194 counts (+or- 1 count). To adjust the number displayed to 194, use the up or down incline keys on the ergo keypard.

Step 13: Press QUICK START to exit calibration.

Step 14: Power down the machine.

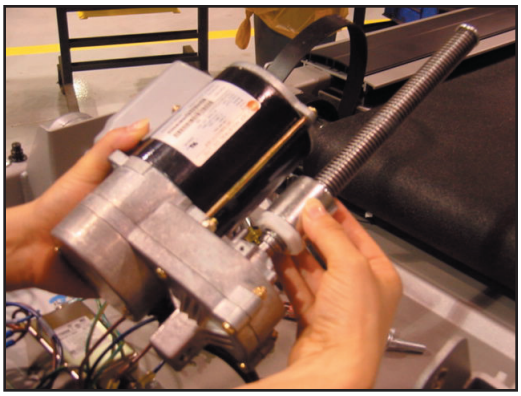


Figure 7

T914/T916 Actuator Calibration:

Step 1: Plug the machine into the outlet and turn power back on.

Step 2: On the Ergo Bar keypad, press the INCLINE key (up arrow) to 4% incline. The shaft on the actuator will rotate for a short amount of time.

NOTE: Wait for the shaft to stop rotating before proceeding.

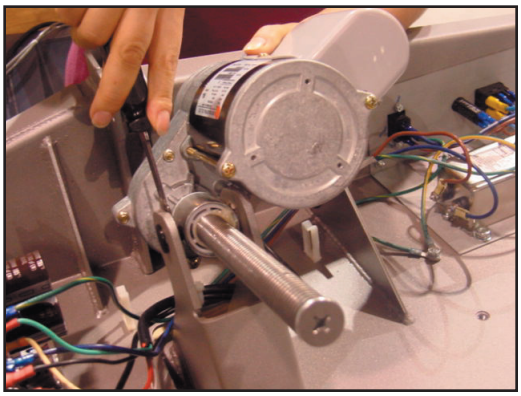


Figure 8

Step 3: On the Ergo Bar keypad, press DECLINE key (down arrow) to 0% incline. The shaft on the actuator will rotate in the opposite direction.

NOTE: Wait for the shaft to stop rotating before proceeding.

THE ACTUATOR IS NOW CONSIDERED "Zero-Out".

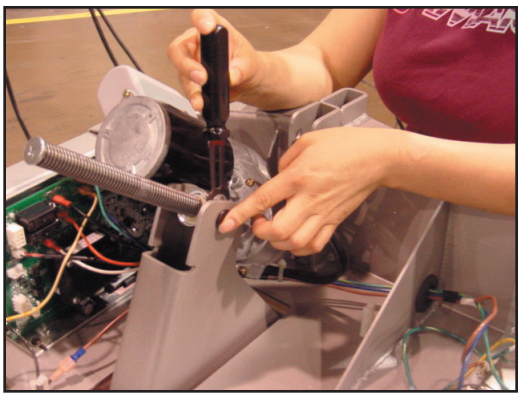


Figure 9

3.4 When calibration is complete. Adjust the Grade nut to show 2-3 threads on the bottom of the shaft (see Figure 7).

Note: Do not allow the shaft to move as the nut is manually turned.

3.5 Align the Grade nut in the Grade weldment, than attach the Elevation nut and E-Ring clip. See Figure 3 and Figure 8.

3.6 Flip the Actuator over to access the left side, than attach the Elevation nut and E-Ring clip. See Figure 5 and Figure 9.

3.7 Pull the Actuator back and align with bracket on the frame, Than attach with the mounting hardware. See Figure 4 and Figure 10.

3.8 Remove the blocks and retest the unit.

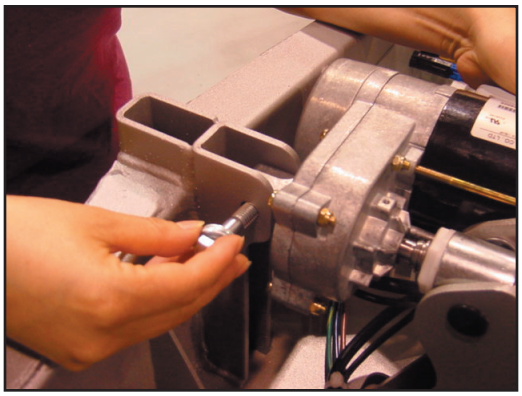


Figure 10

5. Reinstall the Treadmill Hood

5.1 Install the treadmill hood over the motor compartment.

5.2 Install the two (2) screws in the treadmill hood and tighten.

Replacing the Drive Motor

WARNING

DANGEROUS VOLTAGES ARE PRESENT UNDER THE TREADMILL HOOD.

EXERCISE CAUTION WHEN PERFORMING SERVICE TO THE ELECTRICAL COMPONENTS UNDER THE HOOD.

1.0 Remove the Treadmill Hood

1.1 Turn the treadmill circuit breaker off, and unplug the treadmill power cord.

1.2 Remove the Top motor cover, Front trim cover, Right side lower cover, and Kick plate.

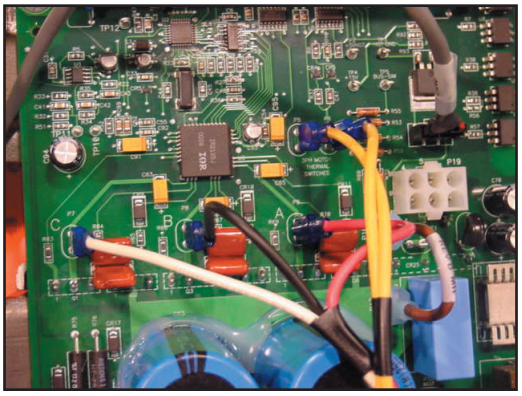


Figure 11

2.0 Remove the Motor

2.1 ***FOR ONLY T914/T916 UNITS:***

Disconnect the P5 wire (white or yellow), P6 (black or yellow), P7 (white), P8 (black), and P9 (red).

Note: Some machines might have black / white or yellow/yellow wires at locations P5 and P6. Reconnect wire at location where it was removed. See Figure 11.

FOR ONLY T912 UNITS:

Remove the Black and Red wires from points A1 and A2 on the Motor controller board (see Figure 11B). Remove the Ground wire from the machine.

Note: Some machines have the Ground wire attached to the frame and some have it attached to the "Line input side" of the Line filter on the Configuration plate. Make sure the machine is unplugged from the wall, before removing the wire from this location!

2.2 Loosen the mounting bolt attaching the tension wheel to the bracket and remove the tension wheel assembly, than remove the drive belt from the motor flywheel pulley. See Figure 12.

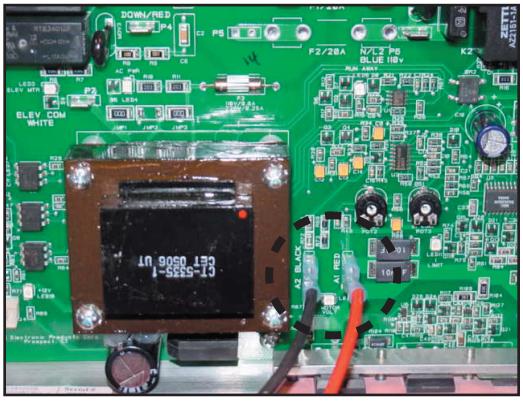


Figure 11B

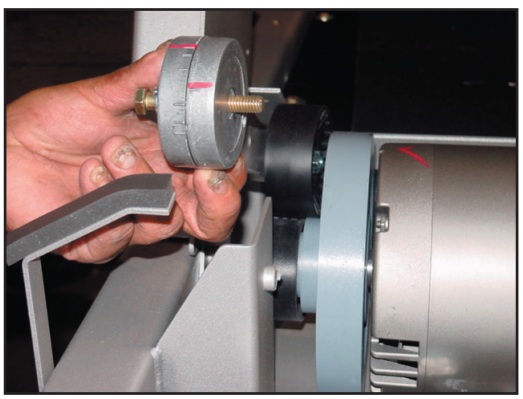


Figure 12

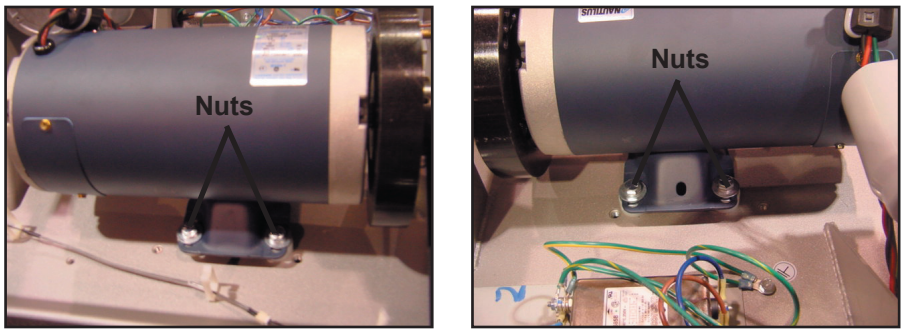


Figure 13: Model T912

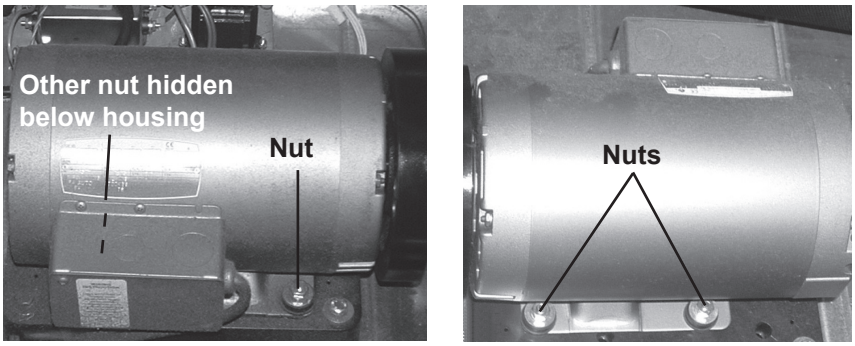


Figure 14: Models T914 and T916

2.3 Use a 13-millimeter open-end or socket wrench to remove the four (4) bolts securing the motor to the headframe, and pull the motor off of the headframe.

NOTE: Use care when removing motor, it is heavy and if dropped may cause damage to the machine.

See Figure 13 for T912 motor.

See Figure 14 for T914 and T916 motor.

NOTE: Machines possibly have one of two motor versions, (with or without a conduit box,similar to figure 14).

2.4 Remove the four (4) washers and rubber. Note the arrangement of the isolator mounts.

2.5 Loosen the two (2) set screws fastening the flywheel/drive pulley to the motor shaft, and then remove the flywheel/drive pulley.

3.0 Install Motor

3.1 Install the new flywheel on the new motor shaft. Do not tighten the set screws at this time.

3.2 Inspect the rubber isolators for wear. If they are bad, replace them.

3.3 Slide the replacement motor onto the headframe.

3.4 Install the rubber isolators and washers.

3.6 Install the bolts and tighten. **Important:** Tighten the bolts until the lock washers flatten, then turn the bolts 1/2 turn further. **Do not** over-tighten the bolts.

FOR ONLY T912 UNITS: The unit has oblong cut mounting holes. The bolts MUST BE CENTERED in those holes. If the bolts are too far forward or backward, this will cause issues with the Tension wheel hitting the frame.

CAUTION

BEFORE CONNECTING WIRES FROM THE MOTOR THE TO VSD BOARD, WAIT FOR THE MOTOR POWER RED LEDS TO NOT BE GLOWING.

3.7 Connect the five (5) wires from the motor to P5, P6, P7, P8, and P9 on the VSD board as shown in Step 2.1.

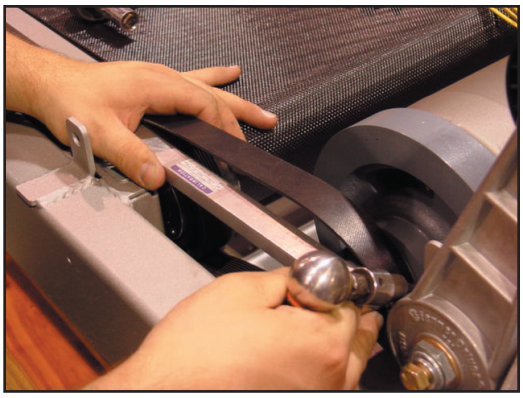


Figure 15

4.0 Align the Drive Belt

The new motor and flywheel must be aligned with the front roller pulley.

4.1 Use a straight-edged ruler placed on the outside of the front roller pulley to align the outside face of the motor drive pulley to within 0.020 inches (Yzmm) of the straight-edged ruler (see Figure 15).

4.2 Tighten the two (2) set screws on the flywheel/drive pulley.

4.3 Replace the poly-V drive belt back onto the flywheel/drive pulley.

4.4 Place the tension wheel back onto the tension bracket and loosely tighten with the mounting bolt.

4.5 Place a 15/16 open end wrench on the large nut of tension wheel, than turn counterclockwise to adjust the tension notch evenly with first notch on the left side of the wheel and hold (see Figure 16).

4.6 Place a 9/16 socket on the mounting bolt and turn clockwise to tighten the bolt (see Figure 17).

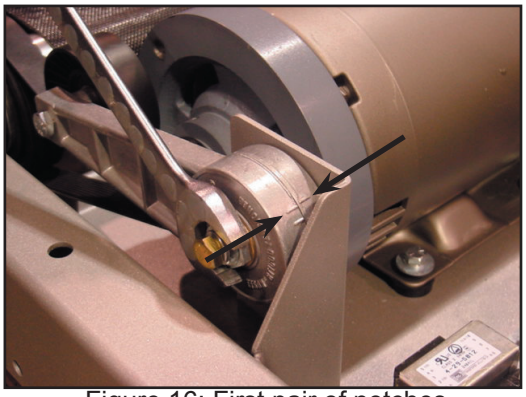


Figure 16: First pair of notches

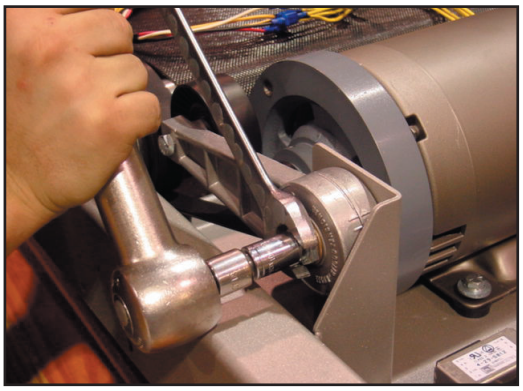


Figure 17

5.0 Reinstall the Treadmill Hood

5.1 Install Kick plate and all covers previously removed in Step 1.2.

5.2 Plug the AC power cord into the treadmill, and turn on the treadmill circuit breaker switch.

Electrical Troubleshooting Table and Wiring Schematics

Use the electrical troubleshooting table and wiring schematics in Sections Three and Four to assist you in isolating and correcting electrical and electronic problems.

Section 6

Parts List and Exploded Views

Contents

Parts List: Model T9.12

Warranty Terms: Please note that warranty terms may differ outside the U.S.A. Contact your local dealer or distributor in your country to receive the warranty terms for your area.

Code "1" - 3 Year standard coverage on parts.

Code "2" - 1 Year standard coverage on wearable parts.

Code "3" - 15 Year standard coverage on frame and motor.

T912, 110V, WARRANTY B.O.M, SKU #00060-001

PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SM22139	1	22139	SCREW,.250 X .50,SELF TAPPING
SM26414	1	26414	KIT,CONFIG PLATE HARDWARE
SM26429	2	26429	KIT,COVER,MOTOR FRONT,SV
SM21774	1	21774	PIN, HITCH
SM22016	1	22016	SCREW, .375 -16 X 2.50, HEX HD CAP
SM22030	1	22030	WASHER, 3/8 USS FLAT
SM22074	1	22074	EDGE TRIM, RUBBER
SM22076	1	22076	EDGE TRIM, RUBBER, 3/4 X 15/32
SM22077	1	22077	NUT, 3/8 -16 NC FINISH HEX
SM22246	1	22246	SCREW, .375 -16 X 1.00, HEX HD CAP
SM23729	1	23729	WASHER, 3/8 SPLIT LOCK
SM24162	1	24162	SCREW, 1/4 - 20 X 3/8 INCH BUTTON HD SO
SM26401	3	S26401	KIT, GRADE WELDMENT ASSY, SV
SM26402	2	S26402	KIT, WHEEL ASSY, SV
SM26403	1	S26403	KIT, BEARING ASSY, IGUS, SV
SM26404	1	S26404	KIT, COMPRESSION MOUNT SET, SV
SM26405	1	S26405	KIT, DECK HARDWARE, SV
SM26406	1	S26406	KIT, BRACKET, FRONT ROLLER, SV
SM26407	3	S26407	KIT, SPEED SENSOR, SV
SM26408	1	S26408	KIT, HARDWARE, EXTRUSION SET, SV
SM26415	1	S26415	KIT, MOTOR CNTRLR HARDWARE, SV
SM26416	1	S26416	KIT, FLYWHEEL, CAST, NTR, SV
SM26417	1	S26417	KIT, MOTOR MOUNT HARDWARE, SV
SM26418	1	S26418	KIT, ELEVATION MOTOR, SV
SM26423	2	S26423	KIT, COVER, UPRIGHT, TOP, R, SV
SM26424	2	S26424	KIT, COVER, UPRIGHT, TOP
SM26427	1	S26427	KIT, KICK PLATE, SV
SM26428	1	S26428	KIT, HARDWARE, KICK PLATE, SV
SM26431	2	S26431	KIT, MOTOR COVER, T912
SM26432	2	S26432	KIT, LED MODULE, MOTOR, SV
SM27000	1	27000	FAST TAB, .250
SM27283	1	27283	KIT, CONNECTOR, LOCK, T7/T912
SM27317	1	27317	FILTER, NOISE, RFI

PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SM35918-005	1	35918-005	WASHER,EXTR STAR,ZINC,METRIC
SM27458	1	27458	POLY-V DRIVE BELT, 280J10
SM27551	2	27551	510/612 POLYOLEFIN WHEEL
SM27552	1	27552	ROTARY TENSIONER
SM27583	1	27583	GUIDE WIRE .500
SM27585	1	27585	WASHER, .406 X .812 X .065 FLAT
SM27764	1	27764	SCREW, SELF TAPPING, #6 X 3/8
SM35920-004	1	35920-004	WASHER, FLAT, ZINC, METRIC
SM36271-001	1	36271-001	FOAM, PAD
SM40456	1	40456	SCREW, 6-32 X .38 PAN HD W/LK WASH
SM40639	1	40639	SCREW, 6-32 X .438 LG SHC
SM40670	1	40670	SCREW, 1/4 - 20 X .75 PAN HD W/LOCK
SM41001-00	3	41001-00	WELDMENT, FRAME, 57 INCH DECK
SM41009	1	41009	ASSEMBLY, DRIVE ROLLER
SM41057	2	41057	BED, SLIDER, NTR 57 INCH
SM41078	2	41078	EXTRUSION, RUBBER, SIDE RAIL TOP
SM41086	2	41086	HOUSING, CONSOLE REAR
SM41091	1	41091	PCB ASSEMBLY, CONSOLE, NTR 4000
SM41094	1	41094	MOTOR CONTROLLER, AC, 115V
SM41095	1	41095	MOTOR, 3.0 HP, 90VDC
SM41098	2	41098	HOUSING, ERGO, BOTTOM LEFT
SM41099	2	41099	COVER, MOTOR, LOWER LEFT
SM41101	2	41101	HOUSING, CONSOLE FRONT
SM41103	2	41103	HOUSING, ERGO, BOTTOM RIGHT
SM41108	2	41108	COVER, MOTOR, LOWER RIGHT
SM41112	2	41112	HOUSING, ERGO BOTTOM CENTER
SM41124	1	41124	PIVOT SHAFT, ELEVATION NUT
SM41128	1	41128	CIRCUIT BREAKER, THERMAL, 15 AMP
SM41129-05	1	41129-05	BUSHING, SPANNER, NTR
SM41132	3	41132	WELDMENT, UPRIGHT, NTR 4000/5000
SM41134	2	41134	HOUSING, ERGO, TOP LEFT, NON-CHR
SM41136	2	41136	HOUSING, ERGO, TOP RIGHT, NON-CHR
SM41141	1	41141	E-RING, EXTERNAL RETAINING
SM41154	2	41154	ASSY, MAGNETIC SWITCH
SM41157	2	41157	HSING, CONSOLE BEZEL, NTR 4000
SM41158	2	41158	END CAP, HANDLE BAR, MOLDED
SM41161	1	41161	CABLE ASSY, DC MOTOR COM CONSO
SM41170	1	41170	CABLE ASSY, DC MOTOR COM UPRIGHT
SM41173	1	41173	CABLE ASSY, ROC KEYS CONSOLE
SM41174	1	41174	CABLE ASSY, COMBINED HR CONSOLE
SM41187	1	41187	CONNECTOR HOUSING, CAP, 9-PIN
SM41190	1	41190	ASSY, CABLE, REAR POWER

PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SM41267	1	41267	ASSY,CONFIGURATION PLATE,SV
SM41191	1	41191	ASSY, CABLE, COMBINED LONG HR
SM41193	1	41193	ASSY, CABLE ROC KEYS
SM41197	1	41197	POWER CORD, RIGHT ANGLE, N.A. 14
SM41199	1	41199	CABLE ASSY, TACH EXTENSION
SM41232	2	41232	LEVELING PAD, NTR
SM41259	1	412591	PIN, CLEVIS, 3/8 INCH DIA X 2 INCH LG
SM41261	3	41261	BRACKET, COVER SUPPORT
SM41262	1	41262	BRACKET, POWER INLET COVER
SM41264	2	41264	OVERLAY, KEYPAD, ERGO, T912
SM41265	1	41265	ASSEMBLY, CONSOLE, T912
SM41268	1	41268	SCREW, 6 - 32 X .3125, SHCS
SM41269	1	41269	GROMMET, 2870, 7/8 INCH ID
SM41271	1	41271	SCREW, #10 - 32 X .50, PAN HD, W/L
SM41281	N/A	41281	MANUAL, CD, T9 SERIES
SM41282	N/A	41282	INSTRUCTIONS, ASSY, T9 SERIES TM
SM41286	2	41286	KEYPAD, CONSOLE, T912
SM41315	1	41315	KIT, HARDWARE, T7/T9 SERIES
SM41449	2	41449	ASSY, ERGO BAR, TOUCH SENSOR
SM41472	1	41472	ASSY, REAR ROLLER, V2
SM41474-00	3	41474-00	ENDCAP, SIDERAIL, RIGHT
SM41475-00	3	41475-00	ENDCAP, SIDERAIL, LEFT
SM41477	1	41477	ASSY, PWR INLET REAR, 120/240V
SM41478-57	3	41487-57	ASSY, KIT, HANDRAIL, T9/T7, 57 INCH
SM41513	2	41513	COVER, MOTOR FRONT
SM41516	3	41516	KIT, SIDERAIL, T912 LEFT
SM41517	3	41517	KIT, SIDERRAIL, T912 RIGHT
SM41532	1	41532	SCREW, 3/8 - 16 X 5, HH G2
SM41588	1	41588	ASSY, SWITCH PLATE, T7'S, T912
SM41589	1	41589	ASSY, PWR INPUT, T7'S, T912, 120V
SM41591	1	41591	BELT, WALKING, 57 INCH
SM41604	3	S41604	ASY, RETRO KIT, HANDRAIL, T912, 57
SM41615	1	41615	PLUG, HOLE, .312, FINISHING BLK, L
SM41616	1	41616	PLUG, HOLE, .375, FINISHING, BLK, L
SM41623	1	41623	ASSY, HARNESS, CB, T7
SM42600	1	S42600	KIT, HARDWARE, T7/T9, UPRIGHT, SV

Parts List: Model T9.12 ADDITIONAL COMPONENTS

T912, 110V, DOMESTIC, TV, WARRANTY, SKU #00060-004

PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SM41588	1	41588	ASSY,SWITCH PLATE,T7'S,T9.12
SM41128	1	41128	CIRCUIT BREAKER,THERMAL,20 AMP
SM17787	1	17787	CONNECTOR, RF, 3MM, F
SM17847	1	17847	ASSY, HARNESS, TV/PWR, T914/T916
SM41627	1	41627	ASSY, CONSOLE, T912, TV OPTION

T912, 220V, DOMESTIC, WARRANTY, SKU #00060-002

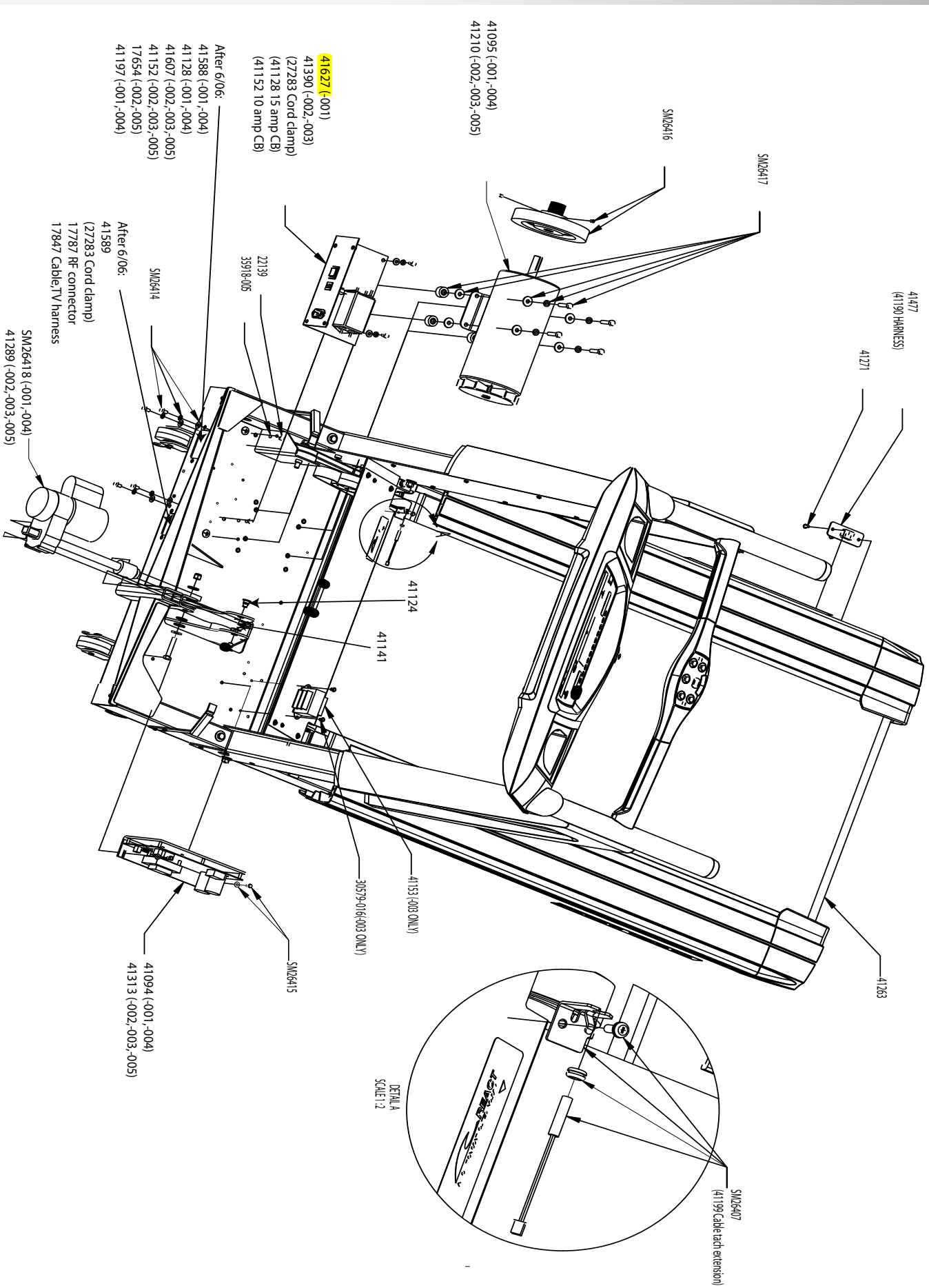
PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SM41390	1	41390	ASSY,CONFIG PLATE, 230V INT'L
SM17564	1	17564	CORDSET, PWR, ANGLE, 8 FT, C13TO6-15
SM27283	1	27283	KIT, CONNECTOR, LOCK, T7/T912
SM41152	1	41152	CIRCUIT BREAKER, THERMAL, 10AMP
SM41210	1	41210	MOTOR, 3.0 HP, 180 VDC
SM41289	1	41289	ACTUATOR, LINEAR, 230V, NTR TM
SM41313	1	41313	MOTOR CONTROLLER, AC, 230 VAC
SM41607	1	41607	ASSY, SWITCH PLATE, T7, T912, 220V

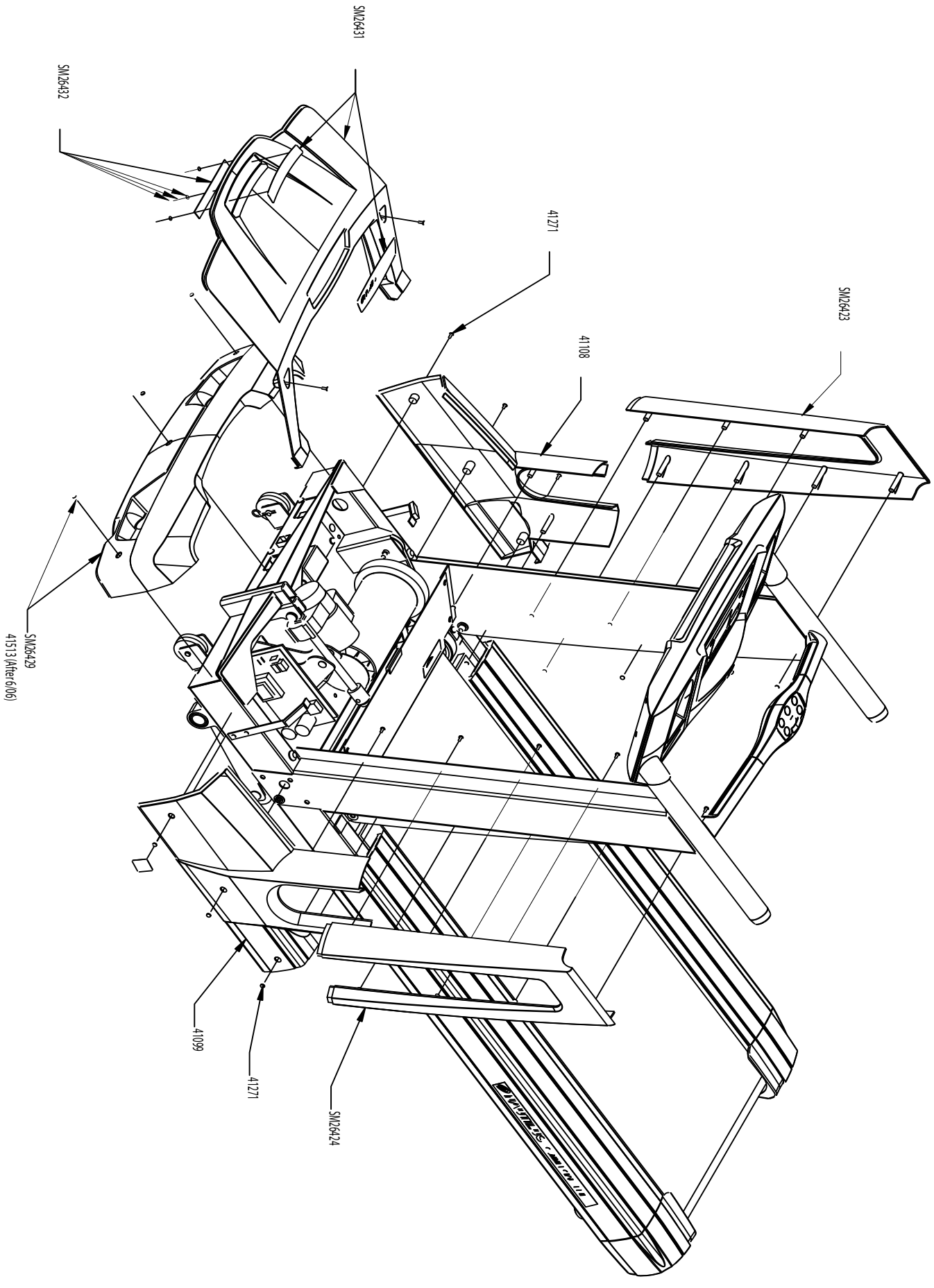
T912, 220V, DOMESTIC, TV, WARRANTY, SKU #00060-005

PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SM17564	1	17564	CORDSET, PWR, ANGLE, 8 FT, C13TO6-15
SM17787	1	17787	CONNECTOR, RF, 3MM, F
SM17847	1	17847	ASSY, HARNESS, TV/PWR, T914/T916
SM27283	1	27283	KIT, CONNECTOR, LOCK, T7/T912
SM41152	1	41152	CIRCUIT BREAKER, THERMAL, 10AMP
SM41210	1	41210	MOTOR, 3.0 HP, 180 VDC
SM41289	1	41289	ACTUATOR, LINEAR, 230V, NTR TM
SM41313	1	41313	MOTOR CONTROLLER, AC, 230 VAC
SM41607	1	41607	ASSY, SWITCH PLATE, T7, T912, 220V
SM41627	1	41627	ASSY, CONSOLE, T912, TV OPTION

T912, 230V, INTERNATIONAL, TV, WARRANTY, SKU #00060-003

PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SM41390	1	41390	ASSY,CONFIG PLATE, 230V INT'L
SM17787	1	17787	CONNECTOR, RF, 3MM, F
SM17847	1	17847	ASSY, HARNESS, TV/PWR, T914/T916
SM27283	1	27283	KIT, CONNECTOR, LOCK, T7/T912
SM30579-016	1	30579-016	SCREW, SEMS, 10/32 X .375
SM41152	1	41152	CIRCUIT BREAKER, THERMAL, 10AMP
SM41153	1	41153	CHOKE, EMI
SM41210	1	41210	MOTOR, 3.0 HP, 180 VDC
SM41289	1	41289	ACTUATOR, LINEAR, 230V, NTR TM
SM41313	1	41313	MOTOR CONTROLLER, AC, 230 VAC
SM41607	1	41607	ASSY, SWITCH PLATE, T7, T912, 220V
SM41612	1	41612	ASSY, CONSOLE, T912, INTERNATION


41095 (-001,-004)
41210 (-002,-003,-005)
SM26416
SM26417
41477
(41190 HARNESS)
41271
41627 (-001)
41390 (-002,-003)
(27283 Cord clamp)
(41128 15 amp CB)
(41152 10 amp CB)
22139
35918-005
SM26414
After 6/06:
41588 (-001,-004)
41128 (-001,-004)
41607 (-002,-003-,005)
41152 (-002,-003,-005)
17654 (-002,-005)
41197 (-001,-004)
After 6/06:
41589
(27283 Cord clamp)
17787 RF connector
17847 Cable,TV harness
SM26418 (-001,-004)
41289 (-002,-003,-005)
41124
41141
41153 (-003 ONLY)
30579-016(-003 ONLY)
SM26415
41094 (-001,-004)
41313 (-002,-003,-005)
41263
SM26407
(41199 Cable tach extension)
DETAIL A
SCALE 1:2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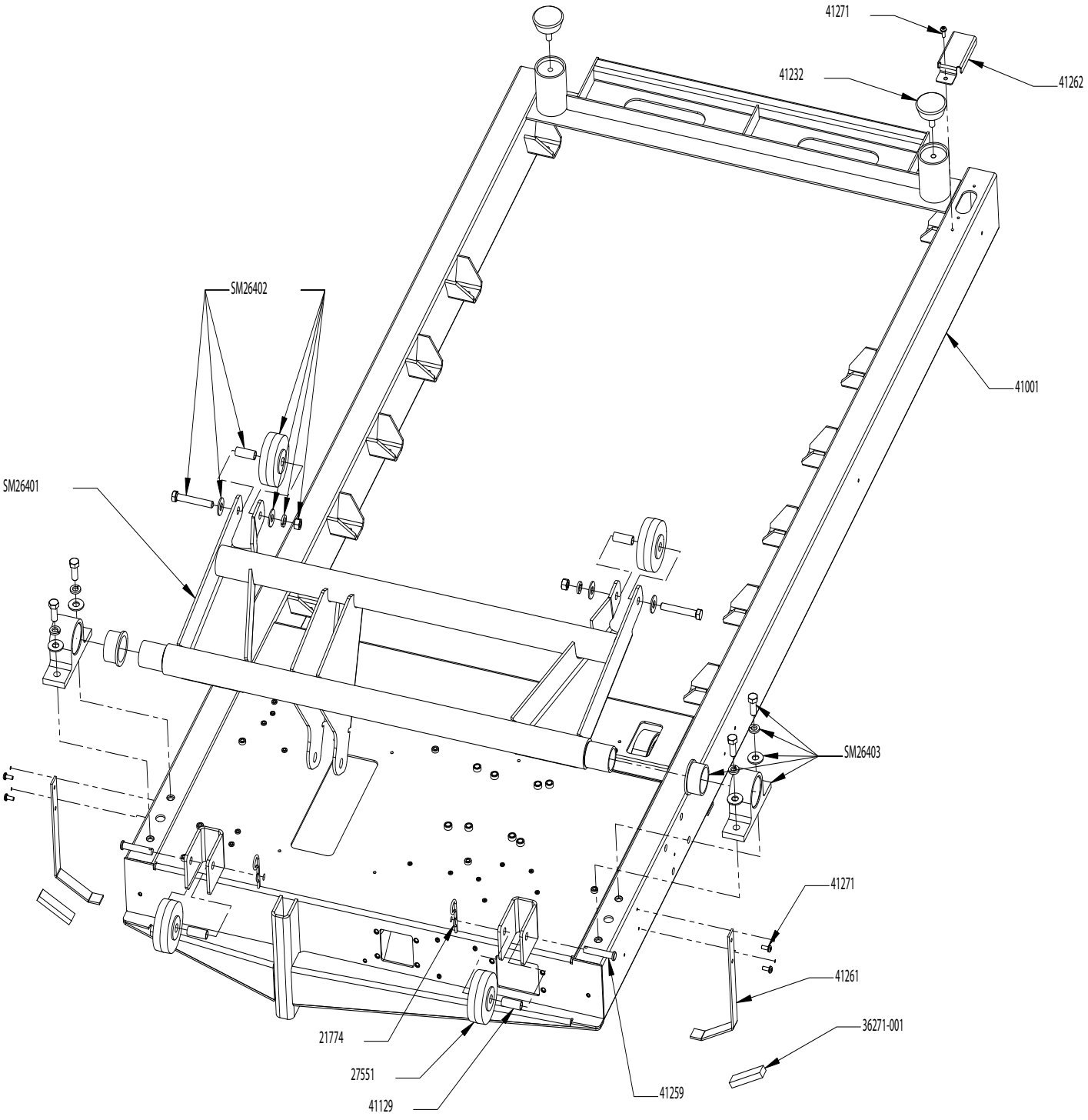
SM26432
41271
SM26423
41108
SM26429
41513 (After 6/06)
41099
41271
SM26424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41001
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41271
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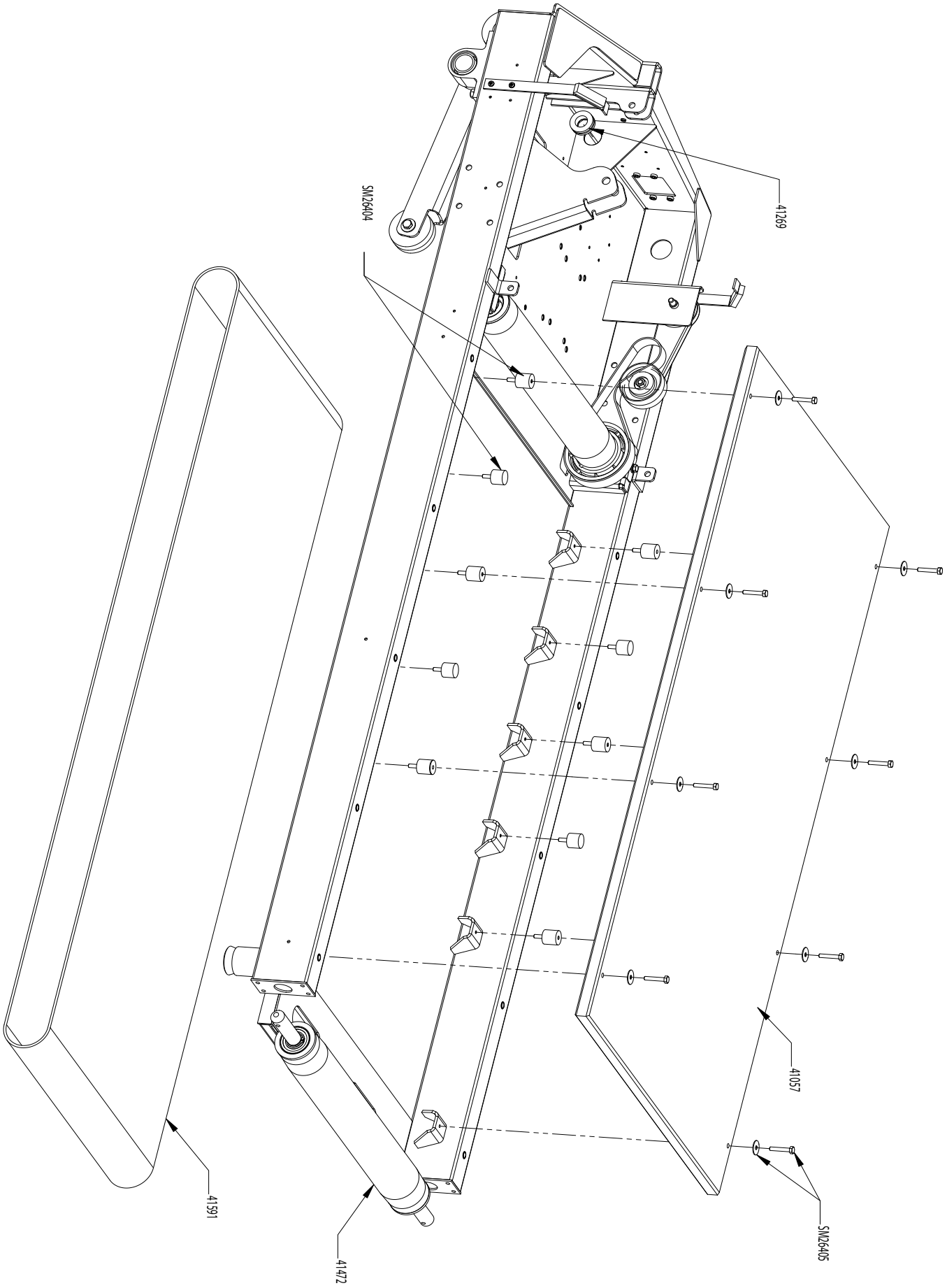
21774
27551
41129
41259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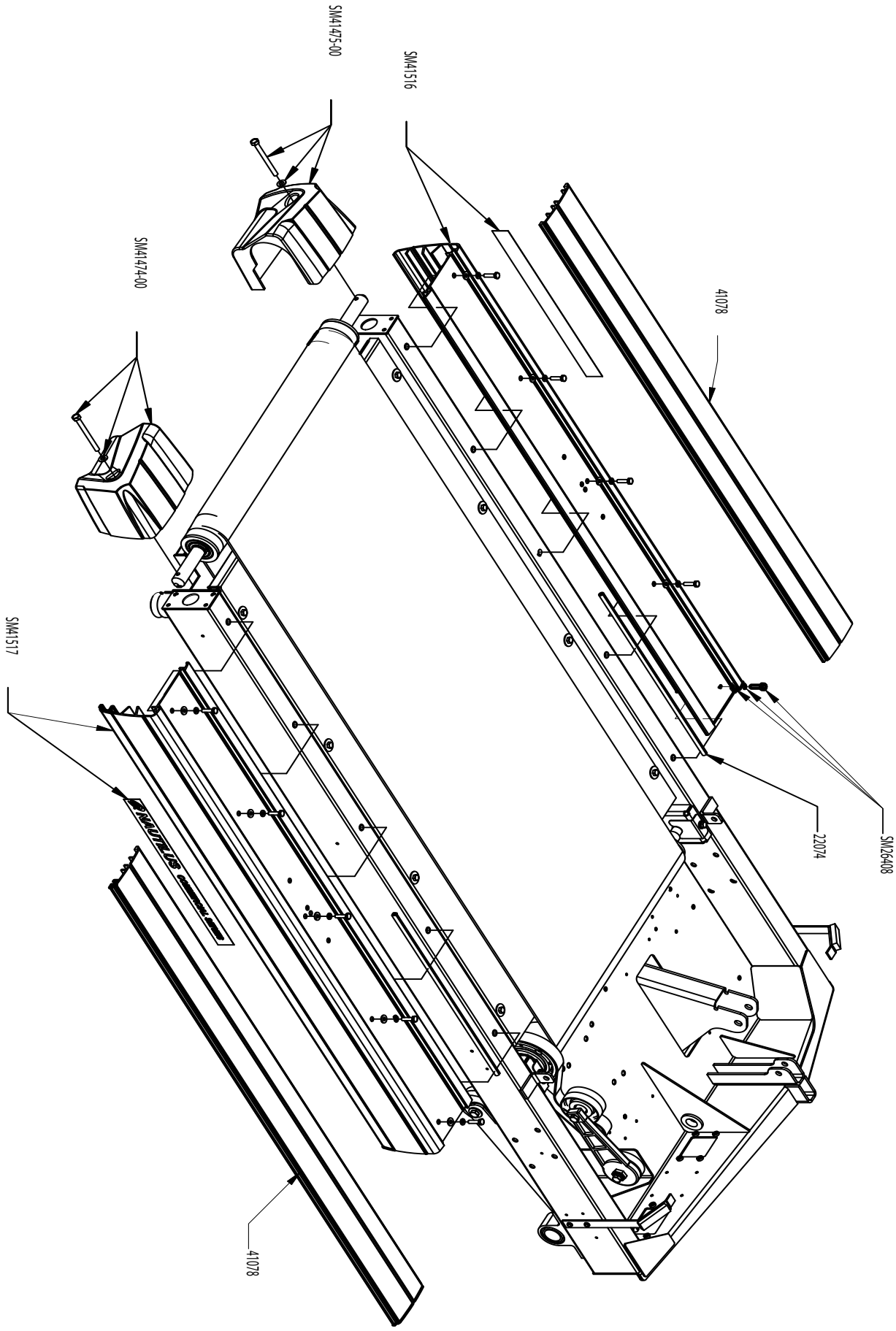
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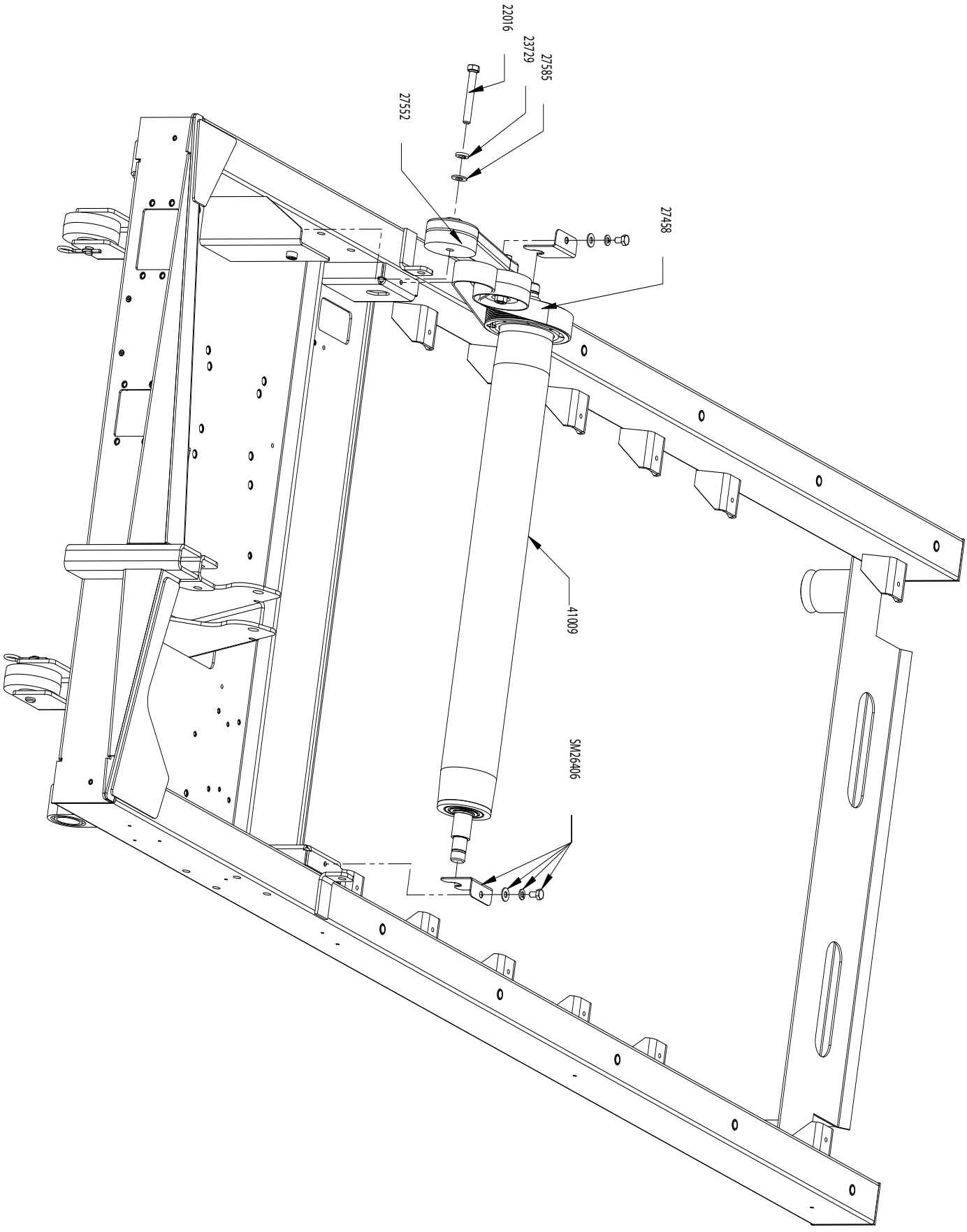
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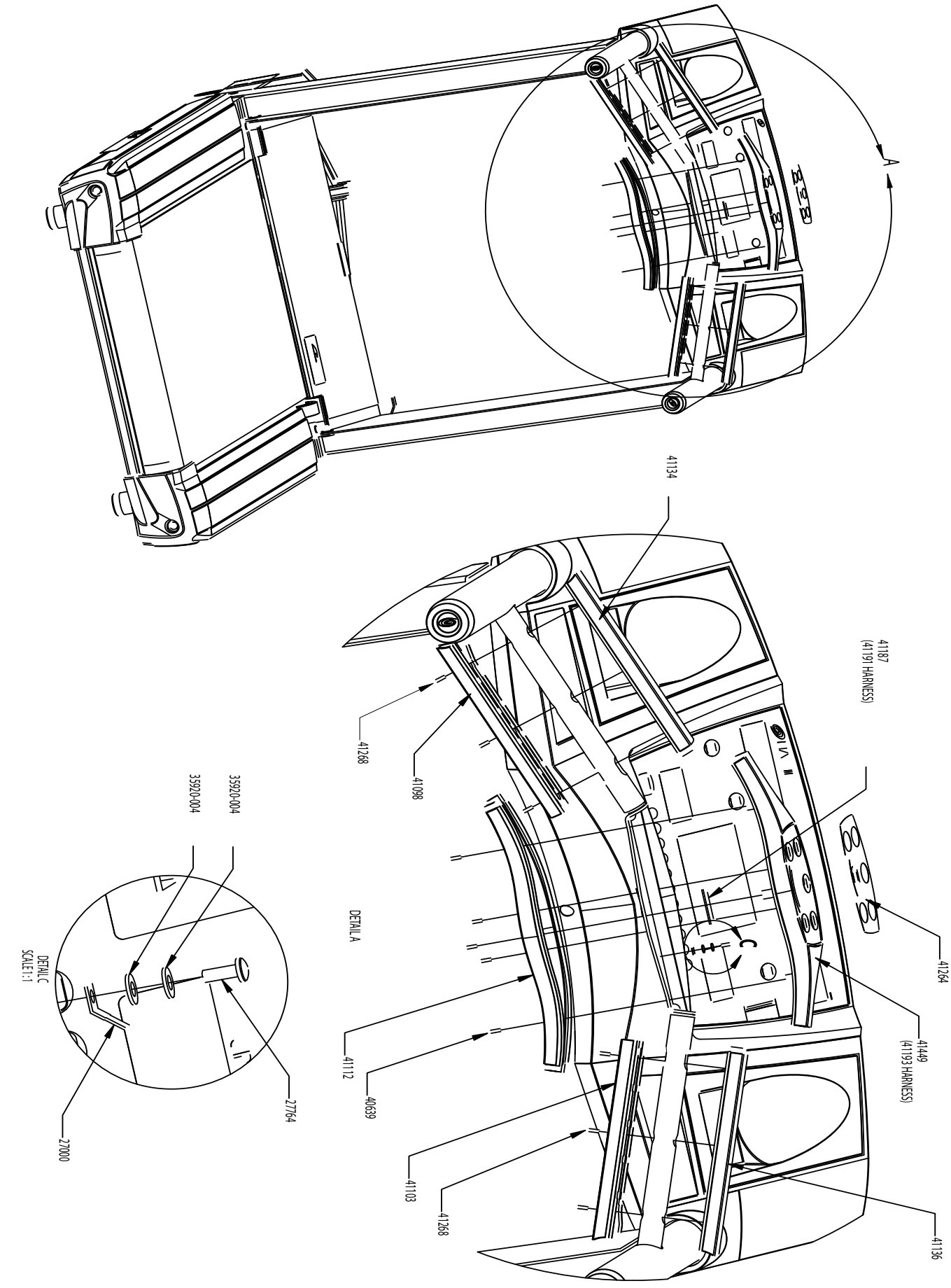
27552
27458
41009
SM26406


A
41134
41187
(41191 HARNESS)
41268
41098
41264
41449
(41193 HARNESS)
DETAIL A
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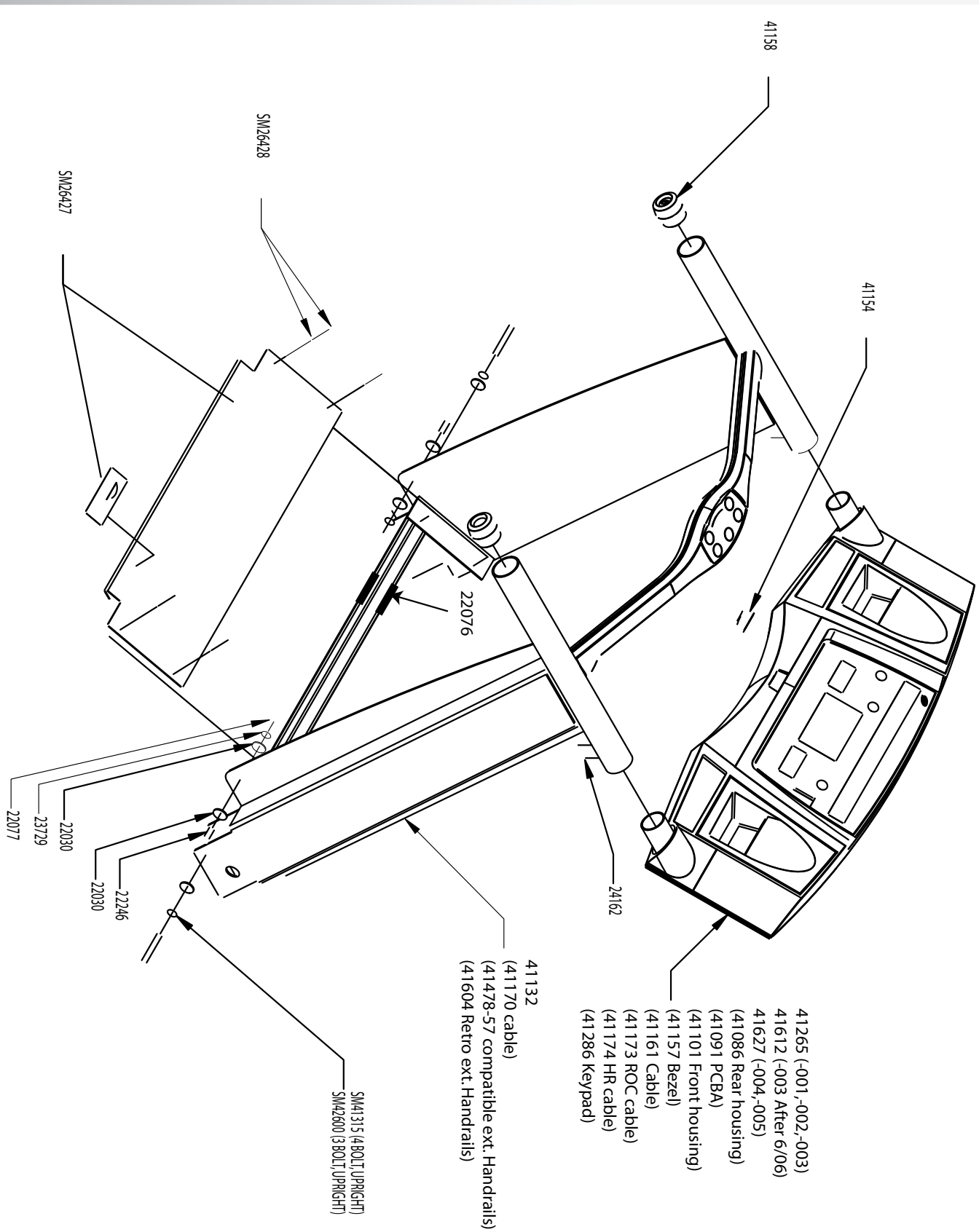
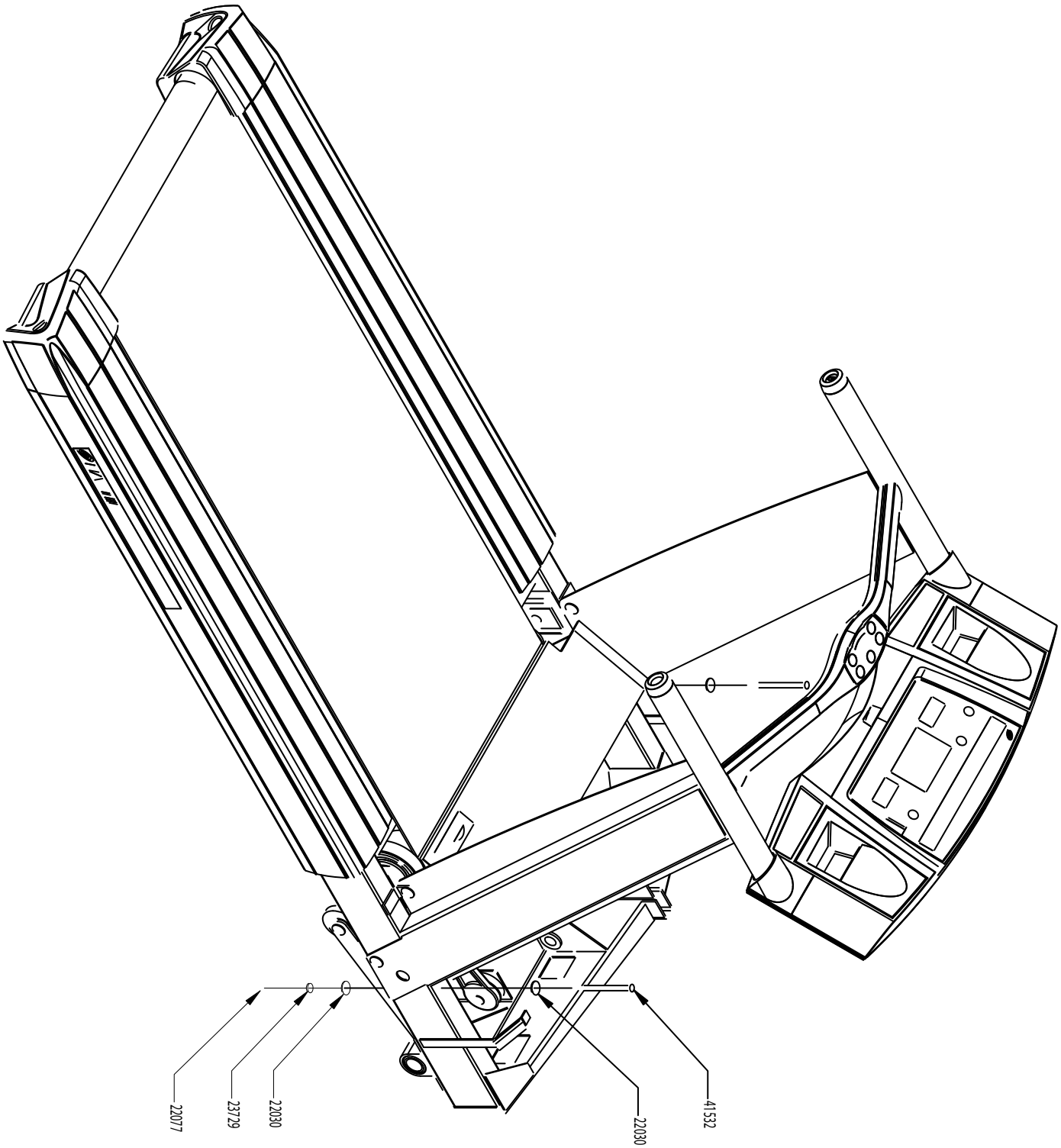
40639
41103
41268
41136
35920-004
35920-004
DETAIL C
SCALE 1:1
27764
27000


41158
41154
SM26428
SM26427
22076
24162
22077
23729
22030
22246
22030
41265 (-001,-002,-003)
41612 (-003 After 6/06)
41627 (-004,-005)
(41086 Rear housing)
(41091 PCBA)
(41101 Front housing)
(41157 Bezel)
(41161 Cable)
(41173 ROC cable)
(41174 HR cable)
(41286 Keypad)
41132
(41170 cable)
(41478-57 compatible ext. Handrails)
(41604 Retro ext. Handrails)
SM41315 (4 BOLT, UPRIGHT)
SM42600 (3 BOLT, UPRIGHT)


22077
23729
22030
22030
41532

Parts List: Model T9.14

Warranty Terms: Please note that warranty terms may differ outside the U.S.A. Contact your local dealer or distributor in your country to receive the warranty terms for your area.

Code "1" - 3 Year standard coverage on parts.

Code "2" - 1 Year standard coverage on wearable parts.

Code "3" - 15 Year standard coverage on frame and motor.

T914, 110V, WARRANTY B.O.M, SKU #00070-001

PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SM26414	1	26414	KIT,CONFIG PLATE HARDWARE
SM22077	1	22077	NUT, 3/8-16 NC FINISH HEX
SM26429	2	26429	KIT,COVER,MOTOR FRONT,SV
SM17550	1	17550	EXTENSION, HARNESS, MOTOR/THERMO
SM21774	1	21774	PIN, HITCH
SM22016	1	22016	SCREW, .375 - 16 X 2.50, HEX HD CAP
SM22027	1	22027	WASHER, .250 SPLIT LOCK
SM22029	1	22029	NUT, .375 -16, NYLON INSERT
SM22030	1	22030	WASHER, 3/8 USS FLAT
SM22047	1	22047	WASHER, FLAT, 1/4 ID X 58 OD
SM22074	2	22074	EDGE TRIM, RUBBER
SM22076	2	22076	EDGE TRIM, RUBBER, 3/4 X 1532
SM22101	1	22101	SCREW, .250 -20 X HEX HD CAP
SM22139	1	22139	SCREW, .250 X .50 SELF TAPPING
SM22246	1	22246	SCREW, .375 - 16 X 1.00 HEX HD CAP
SM22258	1	22258	SCREW, .375 -16 X 2.00, HEX HD CAP
SM22878	1	22878	SCREW, SET, SOCKET, .250 - 28 X .38
SM23729	1	23729	WASHER, 38 SPLIT LOCK
SM24162	1	24162	SCREW, 1/4 - 20 X 3/8 INCH, BUTTON HD SO
SM26401	3	26401	KIT, GRADE WELDMENT ASSY, SV
SM26402	1	26402	KIT, WHEEL ASSY, SV
SM26403	3	26403	KIT, BEARING ASSY, IGUS, SV
SM26404	1	26404	KIT, COMPRESSION MOUNT SET, SV
SM26405	1	26405	KIT, DECK HARDWARE, SV
SM26406	1	26406	KIT, BRACKET, FRONT ROLLER, SV
SM26408	1	26408	KIT, HARDWARE, EXTRUSION SET, SV
SM26418	1	26418	KIT, ELEVATION MOTOR, SV
SM26419	2	26419	KIT, CONTACT PLATE, L, NTR
SM26420	2	26420	KIT, CONTACT PLATE, R, NTR
SM26423	2	26423	KIT, COVER UPRIGHT, TOP R, SV
SM26424	2	26424	KIT, COVER, UPRIGHT TOP
SM26427	3	26427	KIT, KICK PLATE, SV
SM26428	1	26428	KIT, HARDWARE, KICK PLATE, SV

PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SM35918-005	1	35918-005	WASHER,EXTR STAR,ZINC,METRIC
SM27000	1	27000	FAST TAB .250
SM27306	1	27306	KIT, CONNECTOR, LOCK, T914/T916
SM27319	1	27319	CIRCUIT BREAKER, ME
SM27441	1	27441	WASHER, SHOULDER, ISOLATION
SM27458	1	27458	POLY-V DRIVE BELT, 280J10
SM27487	3	27487	DRIVE MOTOR, AC VARIABLE
SM27551	2	27551	510/612 POLYOLEFIN WHEEL
SM27552	1	27552	ROTARY TENSIONER
SM27562	1	27562	WASHER, NEOPRENE, .490 X 1.063 X .09
SM27564	1	27564	WASHER, M8, FLAT, FENDER
SM27583	1	27583	GUIDE WIRE .500
SM27585	1	27585	WASHER, .406 X .812 X .065, FLAT
SM27586	1	27586	SPACER, NYLON, .125 X .500 X 1.120
SM27592	1	27592	WASHER, M8, SPLIT LOCK
SM27764	1	27764	SCREW, SELF TAPPING, #6 X 3/8
SM27951	1	27951	ASSY, CABLE, LOWER C50 TM COM
SM27952	1	27952	ASSY, CABLE UPPER C50 TM COM
SM27962	1	27962	ASSY, TRANSFORMER, 2100 TRDMLL
SM35774-002	1	35774-002	PCBA, CONFIG PLATE, 510/612
SM35920-004	1	35920-004	WASHER, FLAT, ZINC, METRIC
SM36271-001	1	36271-001	FOAM, PAD
SM40639	1	40639	SCREW, 6 - 32 X .438 LG SHC
SM40670	1	40670	SCREW, 14 - 20 X .75, PAN HD, W/ LOCK
SM40824-1	1	S40824-1	KIT, PCBA, DISPLAY, T 914
SM40826	1	40826	PCB ASSY, C51 LCD DISPLAY
SM41002	3	41002	WELDMENT, FRAME, 60 INCH DECK
SM41009	1	41009	ASSEMBLY, DRIVE ROLLER
SM41056	1	41056	BED, SLIDER, NTR, 60 INCH
SM41059	1	41059	FLYWHEEL, CAST, NTR, 6000/7000
SM41060	1	41060	SCREW, .312 - 18 X 1.50, HEX HD CAP
SM41080	2	S41080	KIT, COVER, MOTOR, MAIN T914/T916
SM41086	2	41086	HOUSING, CONSOLE REAR
SM41099	2	41099	COVER, MOTOR, LOWER LEFT
SM41101	2	41101	HOUSING, CONSOLE FRONT
SM41108	2	41108	COVER, MOTOR, LOWER RIGHT
SM41112	2	41112	HOUSING, ERGO, BOTTOM CENTER
SM41124	1	41124	PIVOT SHAFT, ELEVATION NUT
SM41129-05	1	41129-05	BUSHING, SPANNER, NTR
SM41132	3	41132	WELDMENT, UPRIGHT, NTR 4000/50000
SM41141	1	41141	E-RING, EXTERNAL RETAINING
SM41146	2	41146	HSING, CONSOLE BEZEL, NTR5000/60

PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SM41322	1	41322	ASSEMBLY, CONFIG.PLATE,T9-AC
SM41147	2	41147	LENS, CONSOLE, NTR 5000/6000
SM41154	2	41154	ASSY, MAGNETIC SWITCH
SM41158	2	41158	END CAP, HANDLE BAR, MOLDED
SM41169	1	41169	CABLE ASSY, CONTACT HR PADS
SM41173	1	41173	CABLE ASSY, ROC KEYS CONSOLE
SM41180	1	41180	HEART RATE DETECTION MODULE
SM41190	1	41190	ASSY, CABLE, REAR POWER
SM41193	1	41193	ASSY, CABLE, ROC KEYS
SM41206-1	3	41206-1	KIT, SIDERAIL, T914, LH
SM41206-2	3	41206-2	KIT, SIDERAIL, T914, RH
SM41208	2	41208	EXTRUS, RUBBR, SIDE RAIL TOP, 60 INCH
SM41232	2	41232	LEVELING PAD, NTR
SM41259	1	41259	PIN, CLEVIS, 3/8 INCH DIA X 2 INCH LG
SM41261	3	41261	BRACKET, COVER SUPPORT
SM41262	1	41262	BRACKET, POWER INLET COVER
SM41264	2	41264	OVERLAY, KEYPAD, ERGO, T912
SM41271	1	41271	SCREW, #10 - 32 X .50, PAN HD, W/L
SM41280	n/a	41280	KEYPAD, CONSOLE, T914
SM41281	n/a	41281	MANUAL, CD, T9 SERIES
SM41282	2	41282	INSTRUCTIONS, ASSY, T9 SERIES TM
SM41315	1	41315	KIT, HARDWARE, T7/T9 SERIES
SM41319	2	41319	CORDSET, PWR, ANGLE, C19LA 5-20P
SM41321	1	41321	ASSEMBLY, CONSOLE, T914
SM41442	1	41442	CABLE, ASSY, T9, HR PROCESS SIDE
SM41443	1	41443	CABLE, ASSY, T9, HR, MODULE SIDE
SM41449	2	41449	ASSY, ERGO BAR, TOUCH SENSOR
SM41646	1	41646	ASSY,VSD,T9.14,T9.16
SM41472	1	41472	ASSY, REAR ROLLER, V2
SM41474-00	3	41474-00	KIT, ENDCAP, SIDERAIL, RIGHT
SM41475-00	3	41475-00	KIT, ENDCAP, SIDERAIL, LEFT
SM41476	1	41476	ASSY, PWR INLET REAR, C19, 240V
SM41478-60	3	41478-60	ASSY, KIT, HANDRAIL, T9/T7 60 INCH
SM41513	2	41513	COVER, MOTOR, FRONT
SM41532	1	41532	SCREW, 3/8 - 16 X 5, HH G2
SM41579	2	41579	BELT, WALKING, 60 INCH
SM41581	1	41581	ASSY, SWITCH PLATE, T914, T916
SM41583	1	41583	ASSY, POWER INPUT, T914, T916, 120
SM41593	1	S41593	KIT, T7/T9, COMPRESSION MT/DECK
SM41594	1	S41594	KIT, T914, MOUNTS, BOLTS, 60 INCH BELT
SM41605	3	41605	ASY, RETRO KIT, HANDRAIL, T914, 60
SM42600	1	S42600	KIT, HARDWARE, T7/T9 UPRIGHT SV

Parts List: Model T9.14 ADDITIONAL COMPONENTS

T914, 110V, DOMESTIC, TV, WARRANTY, SKU #00070-004

PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SM41319	2	41319	CORDSET,PWR,ANGLE,C19LA 5-20P
SM17787	1	17787	CONNECTOR, RF, 3MM, F
SM17847	1	17847	ASSY, HARNESS, TV/PWR, T914/T916
SM41628	1	41628	ASSY, CONSOLE, T914, TV OPTION

T914, 220V, DOMESTIC, WARRANTY, SKU #00070-002

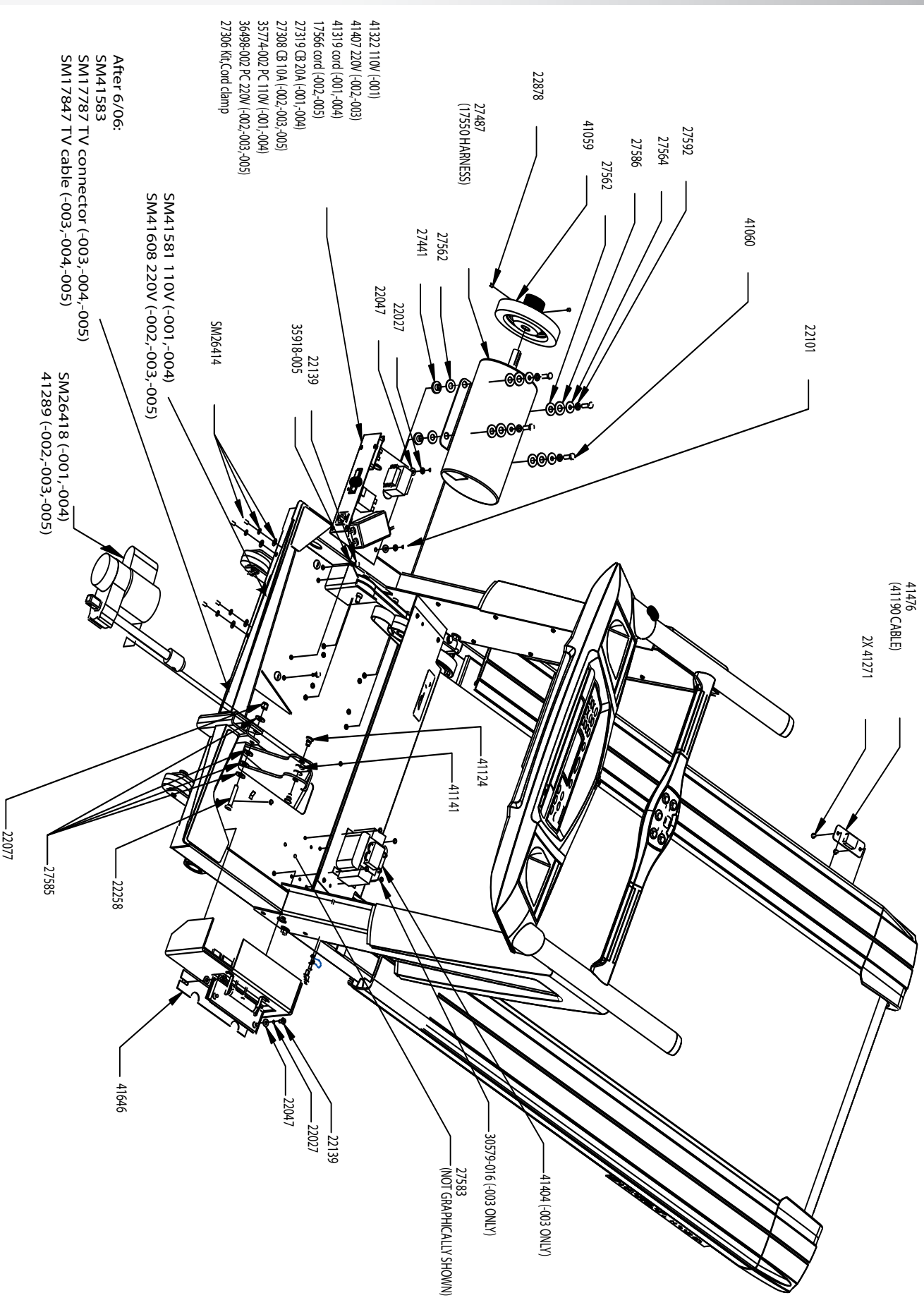
PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SM41407	1	41407	ASSY,CONFIG PLATE,T914/916,230
SM17566	2	17566	CORDSET, PWR, ANGLE, 8 FT, STRAIGHT
SM27308	1	27308	CIRCUIT BREAKER, ME
SM41289	1	41289	ACTUATOR, LINEAR, 230V, NTR, TM
SM41608	1	41608	ASSY, SWITCH PLATE, T914/T916, 220
SMQ36498-002	1	36498-002	PCBA, TM VOLT CONFIG 230V 15%

T914, 220V, DOMESTIC, TV, WARRANTY, SKU #00070-005

PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SM17566	2	17566	CORDSET, PWR, ANGLE, 8 FT, STRAIGHT
SM17787	1	17787	CONNECTOR, RF, 3MM, F
SM17847	1	17847	ASSY, HARNESS, TV/PWR, T914/T916
SM27308	1	27308	CIRCUIT BREAKER, ME
SM41289	1	41289	ACTUATOR, LINEAR, 230V, NTR TM
SM41608	1	41608	ASSY, SWITCH PLATE, T914/T916, 220
SM41628	1	41628	ASSY, CONSOLE, T914, TV OPTION
SMQ36498-002	1	36498-002	PCBA, TM VOLT CONFIG 230V 15%

T914, 220V, INTERNATIONAL, TV, WARRANTY, SKU #00070-003

PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SM41407	1	41407	ASSY,CONFIG PLATE,T914/916,230
SM17787	1	17787	CONNECTOR, RF, 3MM, F
SM17847	1	17847	ASSY, HARNESS, TV/PWR, T914/T916
SM30579-016	1	30579-016	SCREW, SEMS, 10/32 X .375
SM41289	1	41289	ACTUATOR, LINEAR, 230V, NTR TM
SM41404	1	41404	ASSY, CHOKE 6 MH, INTERNATIONAL
SM41608	1	41608	ASSY, SWITCH PLATE, T914/T916, 220
SM41613	1	41613	ASSY, CONSOLE, T914, INTERNATIONAL
SMQ36498-002	1	36498-002	PCBA, TM VOLT CONFIG, 230V 15%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(41190 CABLE)
2X 41271
22101
41060
27592
27564
27586
27562
41059
22878
27487
(17550 HARNESS)
27562
27441
22047
22027
22047
41322 110V (-001)
41407 220V (-002,-003)
41319 cord (-001,-004)
17566 cord (-002,-005)
27319 CB 20A (-001,-004)
27308 CB 10A (-002,-003,-005)
35774-002 PC 110V (-001,-004)
36498-002 PC 220V (-002,-003,-005)
27306 Kit,Cord clamp
SM26414
22139
35918-005
SM41581 110V (-001,-004)
SM41608 220V (-002,-003,-005)
SM26418 (-001,-004)
41289 (-002,-003,-005)
After 6/06:
SM41583
SM17787 TV connector (-003,-004,-005)
SM17847 TV cable (-003,-004,-005)
41124
41141
22077
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22258
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22047
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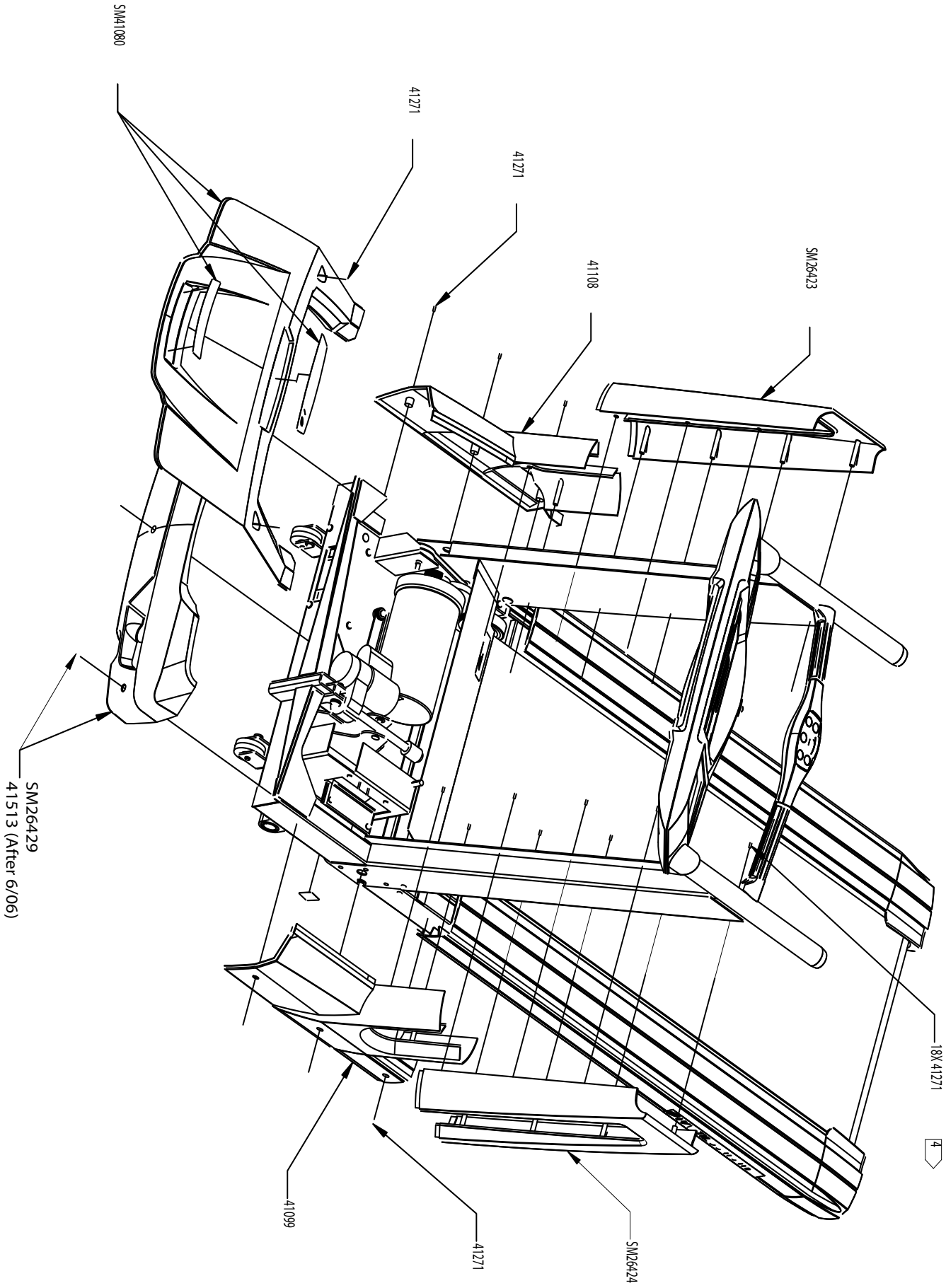
30579-016 (-003 ONLY)
27583
(NOT GRAPHICALLY SHOWN)
41404 (-003 ONLY)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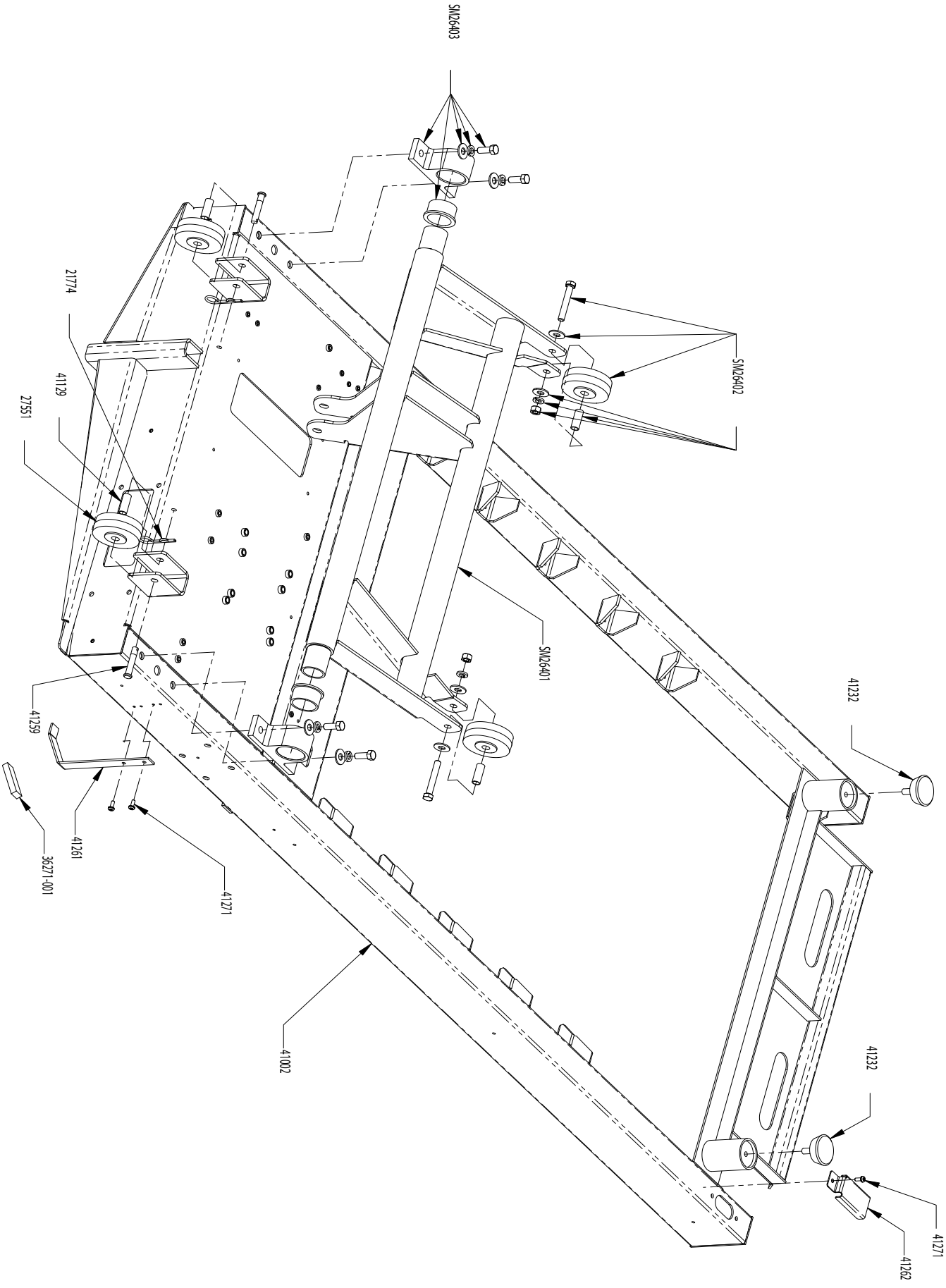
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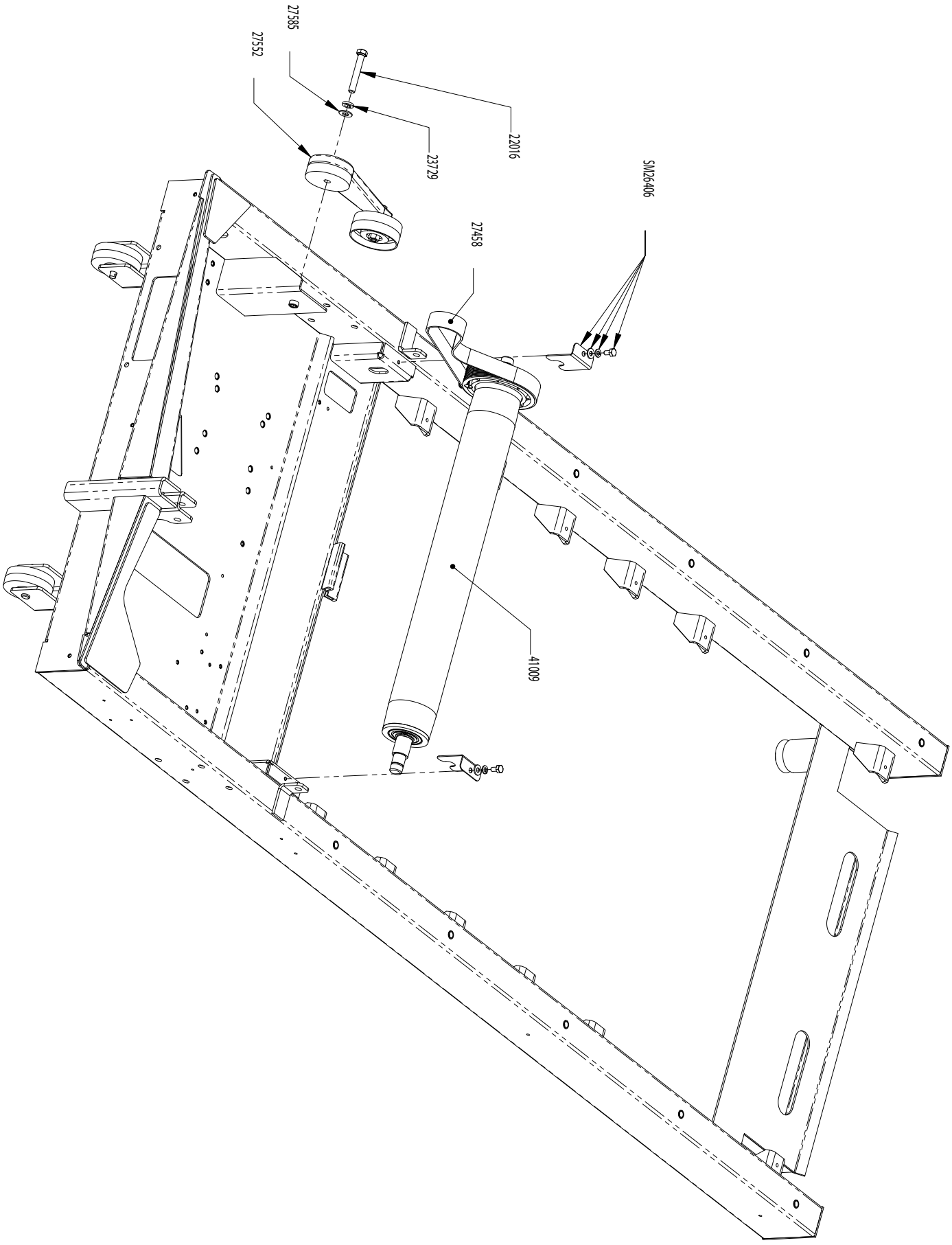
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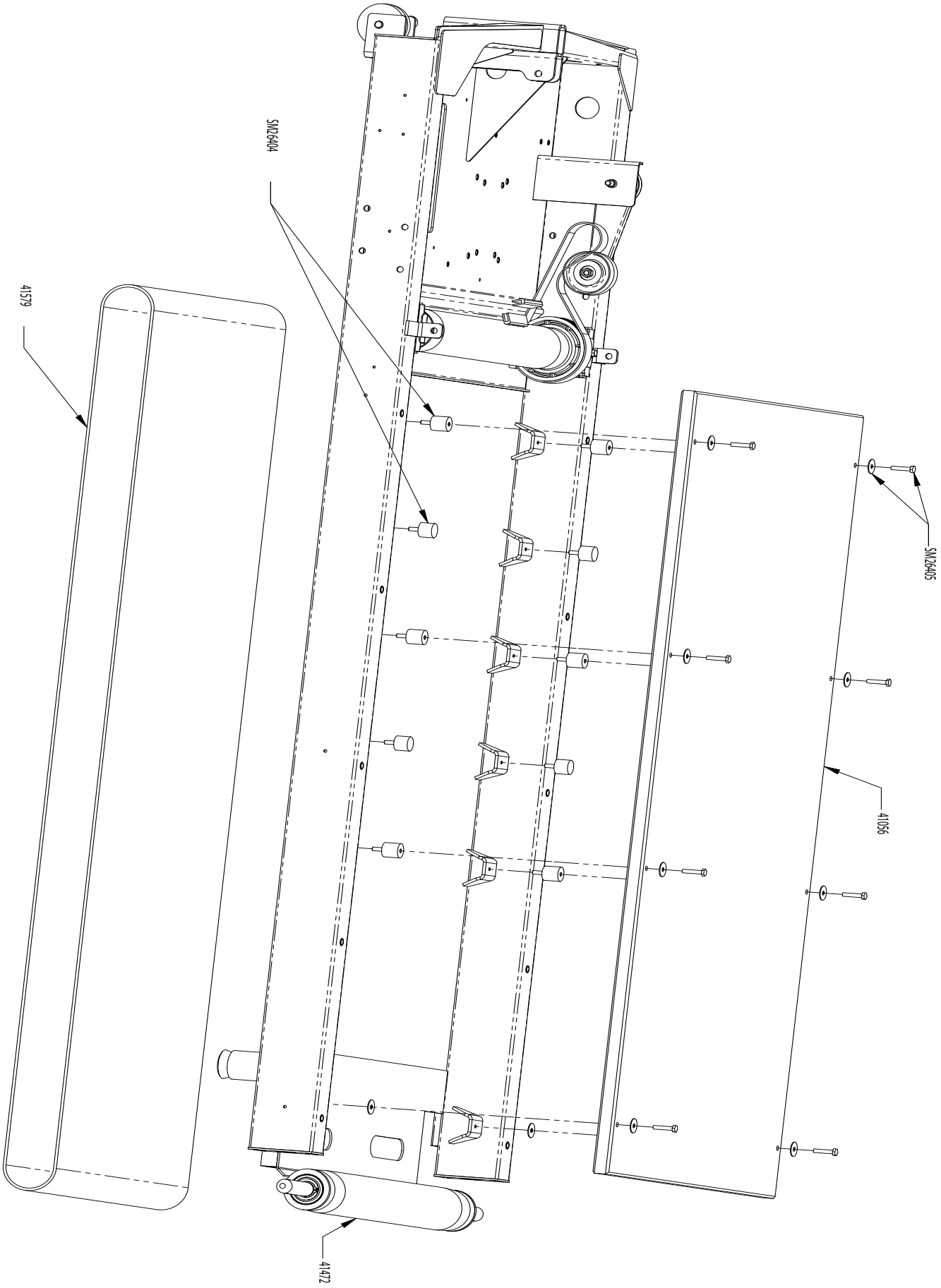
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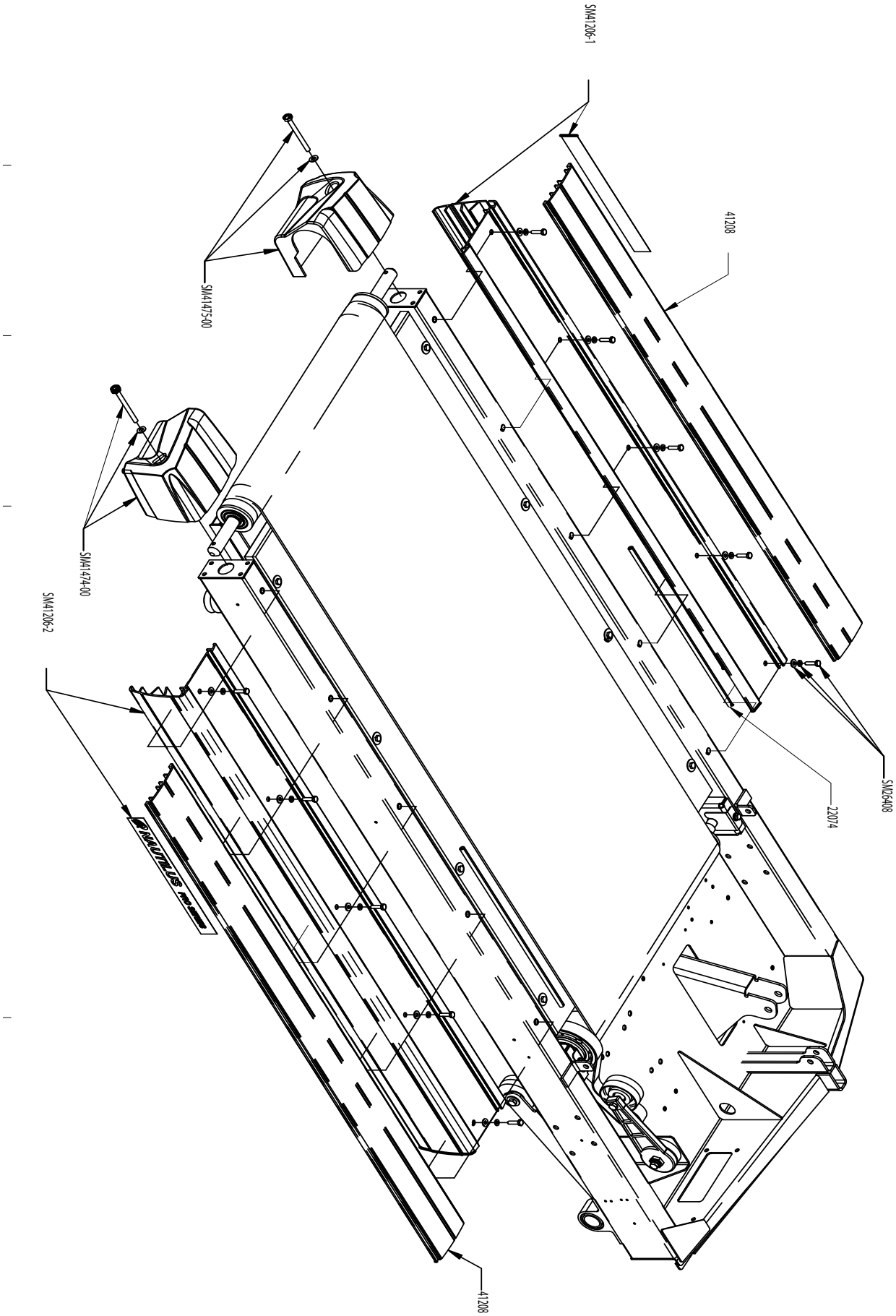
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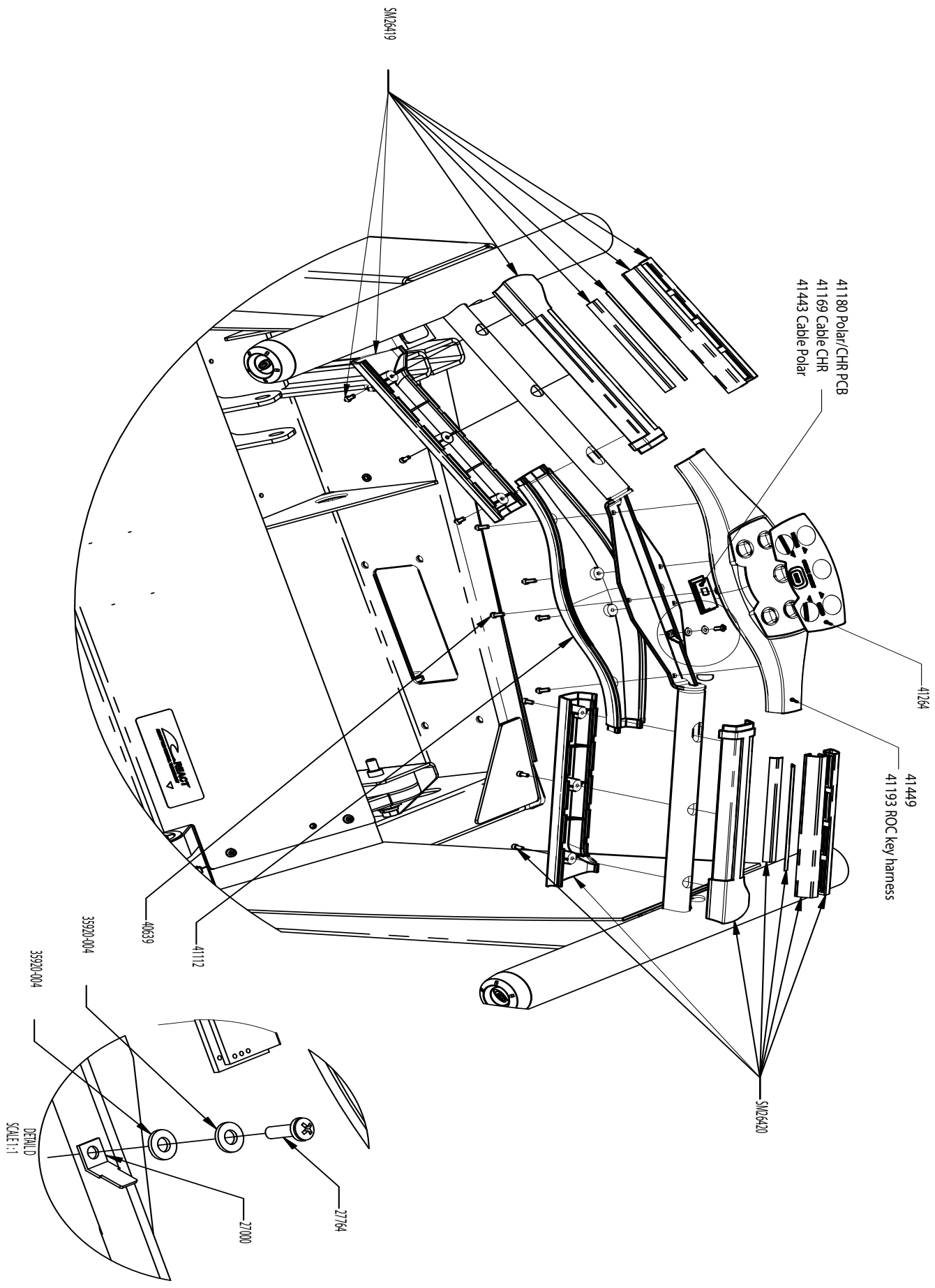
SM41475-00
SM41474-00
SM41206-2
SM26408
22074
41208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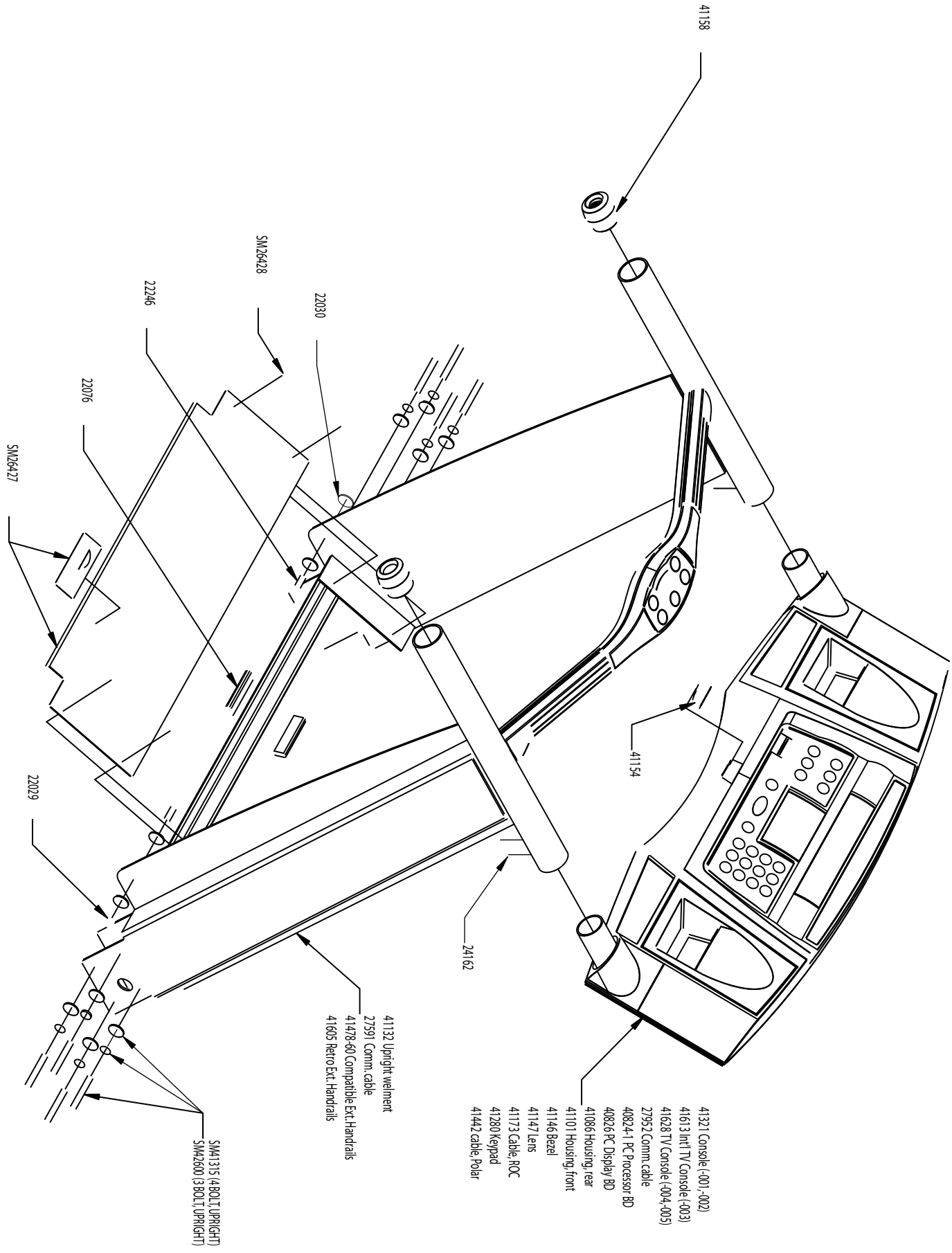
41169 Cable CHR
41443 Cable Polar
41264
41449
41193 ROC key harness
SM26420
40639
41112
35920-004
35920-004
DETAIL D
SCALE 1:1
27000
27764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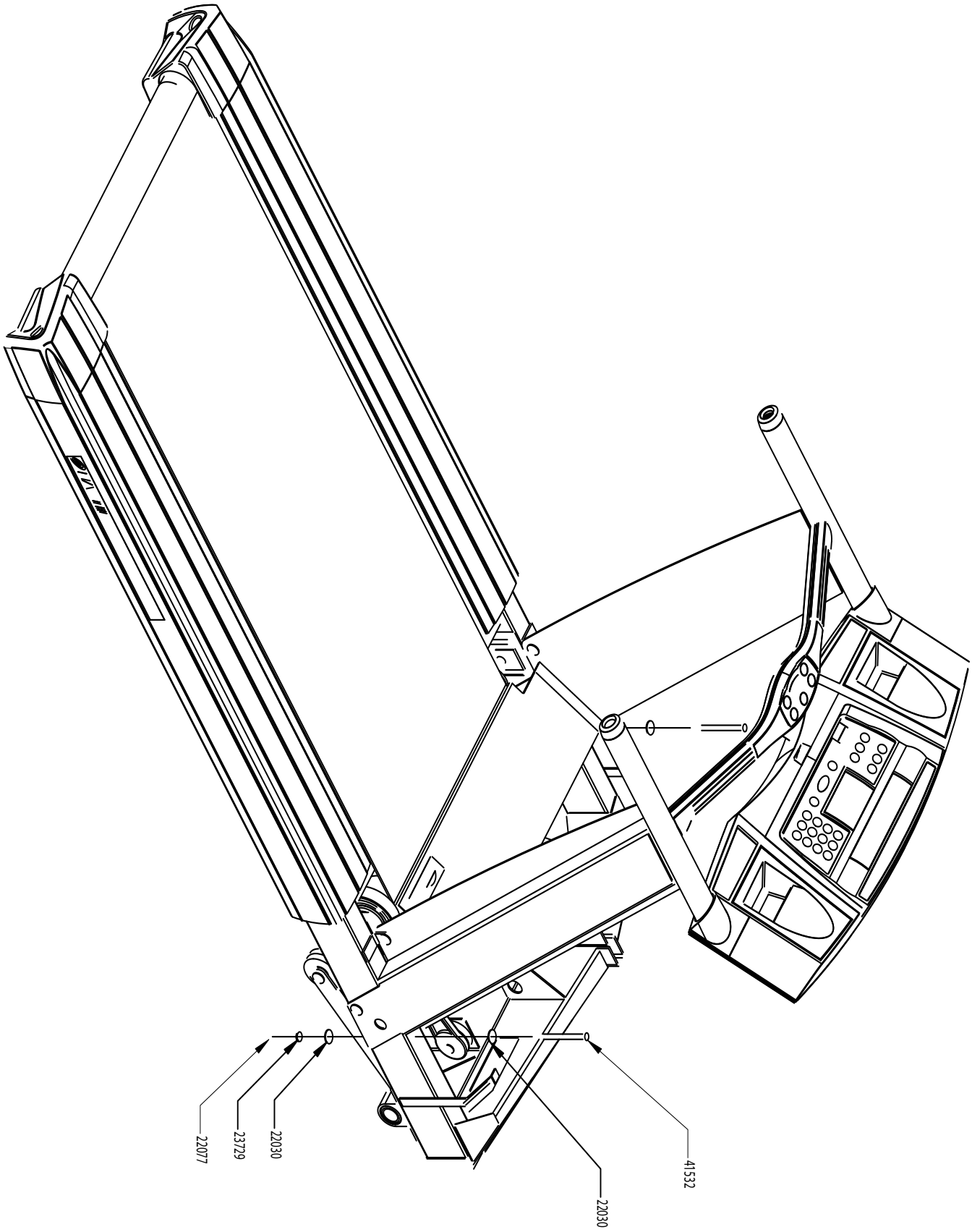
22246
22030
22076
SM26427
22029
41154
24162
41321 Console (-001,-002)
41613 Int'l TV Console (-003)
41628 TV Console (-004,-005)
27952 Comm. cable
40824-1 PC Processor BD
40826 PC Display BD
41086 Housing, rear
41101 Housing, front
41146 Bezel
41147 Lens
41173 Cable, ROC
41280 Keypad
41442 cable, Polar
41132 Upright welment
27591 Comm. cable
41478-60 Compatible Ext. Handrails
41605 Retro Ext. Handrails
SM41315 (4 BOLT, UPRIGHT)
SM42600 (3 BOLT, UPRIGHT)


22077
23729
22030
22030
41532

Parts List: All Models T9.16

Warranty Terms: Please note that warranty terms may differ outside the U.S.A. Contact your local dealer or distributor in your country to receive the warranty terms for your area.

Code "1" - 3 Year standard coverage on parts.

Code "2" - 1 Year standard coverage on wearable parts.

Code "3" - 15 Year standard coverage on frame and motor.

T916, 110V, WARRANTY B.O.M, SKU #00080-001

PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SM26414	1	26414	KIT,CONFIG PLATE HARDWARE
SM22077	1	22077	NUT, 3/8-16 NC FINISH HEX
SM17550	1	17550	EXTENSION, HARNESS, MOTOR/THERMO
SM17714	2	17714	HOUSING,CONSOLE BEZEL
SM17715	2	17715	LENS, CONSOLE
SM21774	1	21774	PIN, HITCH
SM22016	1	22016	SCREW, .375 - 16 X 2.50, HEX HD CAP
SM22027	1	22027	WASHER, .250 SPLIT LOCK
SM22029	1	22029	NUT, .375 -16, NYLON INSERT
SM22030	1	22030	WASHER, 3/8 USS FLAT
SM22047	1	22047	WASHER, FLAT, 1/4 ID X 58 OD
SM22074	2	22074	EDGE TRIM, RUBBER
SM22076	2	22076	EDGE TRIM, RUBBER, 3/4 X 1532
SM22101	1	22101	SCREW, .250 -20 X HEX HD CAP
SM22139	1	22139	SCREW, .250 X .50 SELF TAPPING
SM22246	1	22246	SCREW, .375 - 16 X 1.00 HEX HD CAP
SM22258	1	22258	SCREW, .375 -16 X 2.00, HEX HD CAP
SM22878	1	22878	SCREW, SET, SOCKET, .250 - 28 X .38
SM23729	1	23729	WASHER, 38 SPLIT LOCK
SM24162	1	24162	SCREW, 1/4 - 20 X 3/8 INCH, BUTTON HD SO
SM26401	3	26401	KIT, GRADE WELDMENT ASSY, SV
SM26402	1	26402	KIT, WHEEL ASSY, SV
SM26403	3	26403	KIT, BEARING ASSY, IGUS, SV
SM26404	1	26404	KIT, COMPRESSION MOUNT SET, SV
SM26405	1	26405	KIT, DECK HARDWARE, SV
SM26406	1	26406	KIT, BRACKET, FRONT ROLLER, SV
SM26408	1	26408	KIT, HARDWARE, EXTRUSION SET, SV
SM26418	1	26418	KIT, ELEVATION MOTOR, SV
SM26419	2	26419	KIT, CONTACT PLATE, L, NTR
SM26420	2	26420	KIT, CONTACT PLATE, R, NTR
SM26423	2	26423	KIT, COVER UPRIGHT, TOP R, SV
SM26424	2	26424	KIT, COVER, UPRIGHT TOP
SM26427	3	26427	KIT, KICK PLATE, SV

PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SMQ35918-005	1	35918-005	WASHER,EXTR STAR,ZINC,METRIC
SM26429	2	26429	KIT,COVER,MOTOR FRONT,SV
SM26428	1	26428	KIT, HARDWARE, KICK PLATE, SV
SM27000	1	27000	FAST TAB .250
SM27306	1	27306	KIT, CONNECTOR, LOCK, T914/T916
SM27319	1	27319	CIRCUIT BREAKER, ME
SM27441	1	27441	WASHER, SHOULDER, ISOLATION
SM27458	1	27458	POLY-V DRIVE BELT, 280J10
SM27487	3	27487	DRIVE MOTOR, AC VARIABLE
SM27551	2	27551	510/612 POLYOLEFIN WHEEL
SM27552	1	27552	ROTARY TENSIONER
SM27562	1	27562	WASHER, NEOPRENE, .490 X 1.063 X .09
SM27564	1	27564	WASHER, M8, FLAT, FENDER
SM27583	1	27583	GUIDE WIRE .500
SM27585	1	27585	WASHER, .406 X .812 X .065, FLAT
SM27586	1	27586	SPACER, NYLON, .125 X .500 X 1.120
SM27592	1	27592	WASHER, M8, SPLIT LOCK
SM27764	1	27764	SCREW, SELF TAPPING, #6 X 3/8
SM27951	1	27951	ASSY, CABLE, LOWER C50 TM COM
SM27952	1	27952	ASSY, CABLE UPPER C50 TM COM
SM35774-002	1	35774-002	PCBA, CONFIG PLATE, 510/612
SM35920-004	1	35920-004	WASHER, FLAT, ZINC, METRIC
SM36271-001	1	36271-001	FOAM, PAD
SM40639	1	40639	SCREW, 6 - 32 X .438 LG SHC
SM40824-2	1	S40824-2	KIT, PCBA, DISPLAY, T 916
SM40865	1	40865	PCB ASSY, C52 DISPLAY
SM41009	1	41009	ASSEMBLY, DRIVE ROLLER
SM41059	1	41059	FLYWHEEL, CAST, NTR, 6000/7000
SM41060	1	41060	SCREW, .312 - 18 X 1.50, HEX HD CAP
SM41080	2	S41080	KIT, COVER, MOTOR, MAIN T914/T916
SM41086	2	41086	HOUSING, CONSOLE REAR
SM41099	2	41099	COVER, MOTOR, LOWER LEFT
SM41101	2	41101	HOUSING, CONSOLE FRONT
SM41108	2	41108	COVER, MOTOR, LOWER RIGHT
SM41112	2	41112	HOUSING, ERGO, BOTTOM CENTER
SM41124	1	41124	PIVOT SHAFT, ELEVATION NUT
SM41129-05	1	41129-05	BUSHING, SPANNER, NTR
SM41132	3	41132	WELDMENT, UPRIGHT, NTR 4000/50000
SM41141	1	41141	E-RING, EXTERNAL RETAINING
SM41154	2	41154	ASSY, MAGNETIC SWITCH
SM41158	2	41158	END CAP, HANDLE BAR, MOLDED
SM41169	1	41169	CABLE ASSY, CONTACT HR PADS

PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SM41646	1	41646	ASSY,VSD,T9.14,T9.16
SM41322	1	41322	ASSEMBLY, CONFIG.PLATE,T9-AC
SM41173	1	41173	CABLE ASSY, ROC KEYS CONSOLE
SM41180	1	41180	HEART RATE DETECTION MODULE
SM41190	1	41190	ASSY, CABLE, REAR POWER
SM41193	1	41193	ASSY, CABLE, ROC KEYS
SM41232	2	41232	LEVELING PAD, NTR
SM41259	1	41259	PIN, CLEVIS, 3/8 INCH DIA X 2 INCH LG
SM41261	3	41261	BRACKET, COVER SUPPORT
SM41262	1	41262	BRACKET, POWER INLET COVER
SM41264	2	41264	OVERLAY, KEYPAD, ERGO, T912
SM41269	1	41269	GROMMET, 2870, 7/8 INCH ID
SM41271	1	41271	SCREW, #10 - 32 X .50, PAN HD, W/L
SM41281	n/a	41281	MANUAL, CD, T9 SERIES
SM41282	n/a	41282	INSTRUCTIONS, ASSY, T9 SERIES TM
SM41315	1	41315	KIT, HARDWARE, T7/T9 SERIES
SM41319	2	41319	CORDSET, PWR, ANGLE, C19LA 5-20P
SM41326	3	41326	WELDMENT,FRAME 63” DECK
SM41330	2	41330	DECK,22 INCH, 63”
SM41331	2	41331	BELT,WALK,63”
SM41332	1	41332	ASSEMBLY,CONSOLE,T9.16
SM41334	2	41334	EXTRUS,RUBBER,SIDE RAIL TOP,63
SM41442	1	41442	CABLE, ASSY, T9, HR PROCESS SIDE
SM41443	1	41443	CABLE, ASSY, T9, HR, MODULE SIDE
SM41449	2	41449	ASSY, ERGO BAR, TOUCH SENSOR
SM41460	2	41460	ASSEMBLY,CONSOLE,T9.16
SM41472	1	41472	ASSY, REAR ROLLER, V2
SM41474-00	3	41474-00	KIT, ENDCAP, SIDERAIL, RIGHT
SM41475-00	3	41475-00	KIT, ENDCAP, SIDERAIL, LEFT
SM41476	1	41476	ASSY, PWR INLET REAR, C19, 240V
SM41478-63	3	41478-63	ASSY, KIT, HANDRAIL, T9 63 INCH
SM41513	2	41513	COVER, MOTOR, FRONT
SM41532	1	41532	SCREW, 3/8 - 16 X 5, HH G2
SM41571	3	41571	KIT,SIDERAIL,T916,LEFT
SM41572	3	41572	KIT,SIDERAIL,T916,RIGHT
SM41581	1	41581	ASSY, SWITCH PLATE, T914, T916
SM41583	1	41583	ASSY, POWER INPUT, T914, T916, 120
SM41593	1	S41593	KIT, T7/T9, COMPRESSION MT/DECK
SM41601	3	41601	ASY,RETRO KIT,HANDRAIL,T916,63
SM42600	1	S42600	KIT, HARDWARE, T7/T9 UPRIGHT SV

Parts List: Model T9.16 ADDITIONAL COMPONENTS

T916, 110V, DOMESTIC, TV, WARRANTY, SKU #00080-004

PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SM17787	1	17787	CONNECTOR, RF, 3MM, F
SM17847	1	17847	ASSY, HARNESS, TV/PWR, T914/T916
SM41606	1	41606	ASSY,CONSOLE,T9.16,TV OPTION

T916, 220V, DOMESTIC, WARRANTY, SKU #00080-002

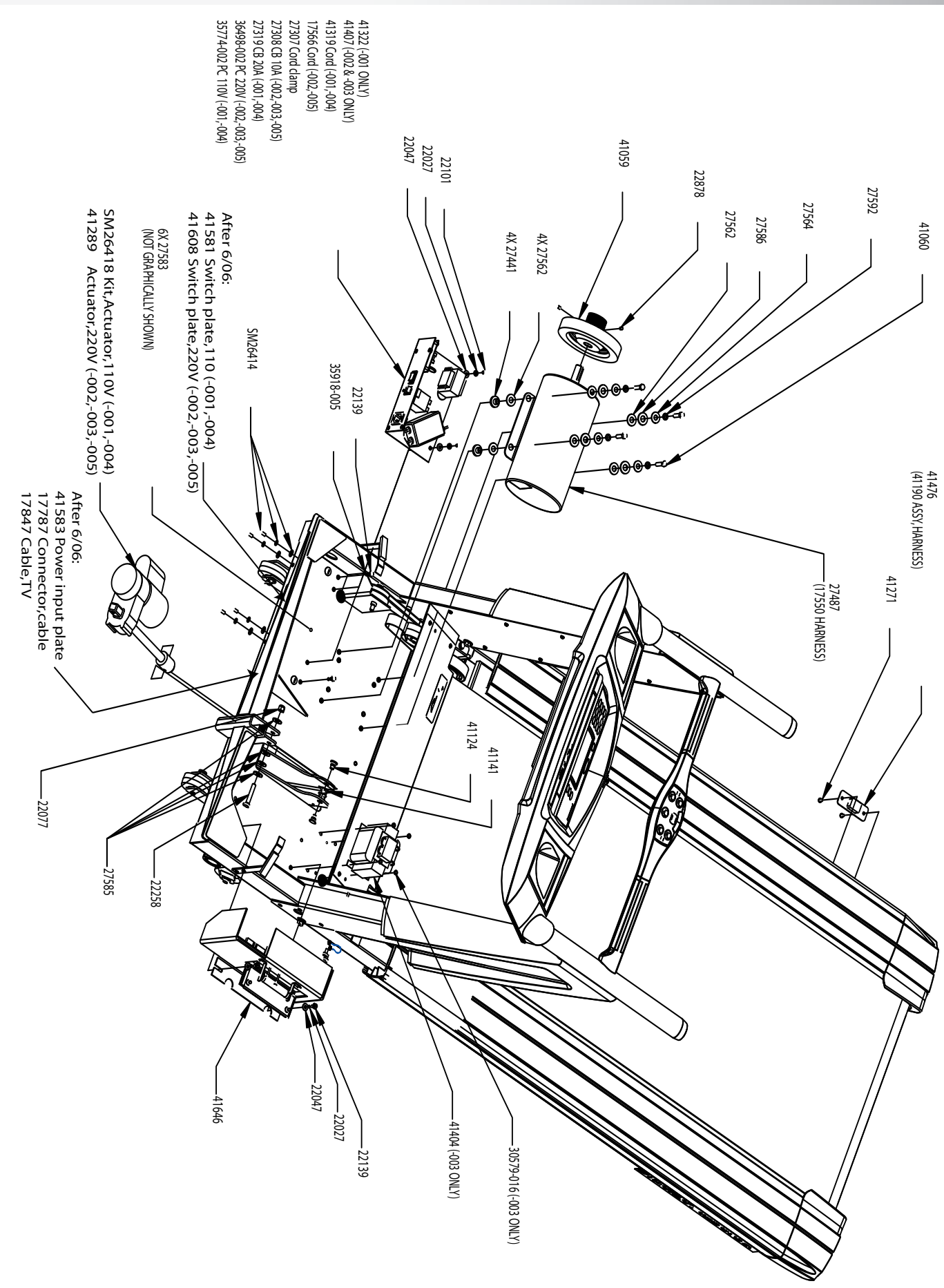
PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SM41407	1	41407	ASSY,CONFIG PLATE,T914/916,230
SM17566	2	17566	CORDSET, PWR, ANGLE, 8 FT, STRAIGHT
SM27308	1	27308	CIRCUIT BREAKER, ME
SM41289	1	41289	ACTUATOR, LINEAR, 230V, NTR, TM
SM41608	1	41608	ASSY, SWITCH PLATE, T914/T916, 220
SMQ36498-002	1	36498-002	PCBA, TM VOLT CONFIG 230V 15%

T916, 220V, DOMESTIC, TV, WARRANTY, SKU #00080-005

PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SM17566	2	17566	CORDSET, PWR, ANGLE, 8 FT, STRAIGHT
SM17787	1	17787	CONNECTOR, RF, 3MM, F
SM17847	1	17847	ASSY, HARNESS, TV/PWR, T914/T916
SM27308	1	27308	CIRCUIT BREAKER, ME
SM41289	1	41289	ACTUATOR, LINEAR, 230V, NTR TM
SM41606	1	41606	ASSY,CONSOLE,T9.16,TV OPTION
SM41608	1	41608	ASSY, SWITCH PLATE, T914/T916, 220
SMQ36498-002	1	36498-002	PCBA, TM VOLT CONFIG 230V 15%

T916, 220V, INTERNATIONAL, TV, WARRANTY, SKU #00080-003

PART NUMBER:	WARRANTY CODE:	MFG PART NUMBER:	DESCRIPTION:
SM27308	1	27308	CIRCUIT BREAKER,ME
SM17787	1	17787	CONNECTOR, RF, 3MM, F
SM17847	1	17847	ASSY, HARNESS, TV/PWR, T914/T916
SM30579-016	1	30579-016	SCREW, SEMS, 10/32 X .375
SM41289	1	41289	ACTUATOR, LINEAR, 230V, NTR TM
SM41404	1	41404	ASSY, CHOKE 6 MH, INTERNATIONAL
SM41608	1	41608	ASSY, SWITCH PLATE, T914/T916, 220
SM41614	1	41614	ASSY,CONSOLE,T9.16,INTERNATIONAL
SMQ36498-002	1	36498-002	PCBA, TM VOLT CONFIG, 230V 15%


41322 (-001 ONLY)
41407 (-002 & -003 ONLY)
41319 Cord (-001,-004)
17566 Cord (-002-005)
27307 Cord clamp
27308 CB 10A (-002,-003,-005)
27319 CB 20A (-001,-004)
36498-002 PC 220V (-002,-003,-005)
35774-002 PC 110V (-001,-004)
22101
22027
22047
41059
22878
27592
27564
27562
27586
41060
4X 27441
4X 27562
41476
(41190 ASSY, HARNESS)
41271
27487
(17550 HARNESS)
SM26414
35918-005
22139
After 6/06:
41581 Switch plate,110 (-001,-004)
41608 Switch plate,220V (-002,-003,-005)
6X 27583
(NOT GRAPHICALLY SHOWN)
SM26418 Kit,Actuator,110V (-001,-004)
41289 Actuator,220V (-002,-003,-005)
After 6/06:
41583 Power input plate
17787 Connector,cable
17847 Cable,TV
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41141
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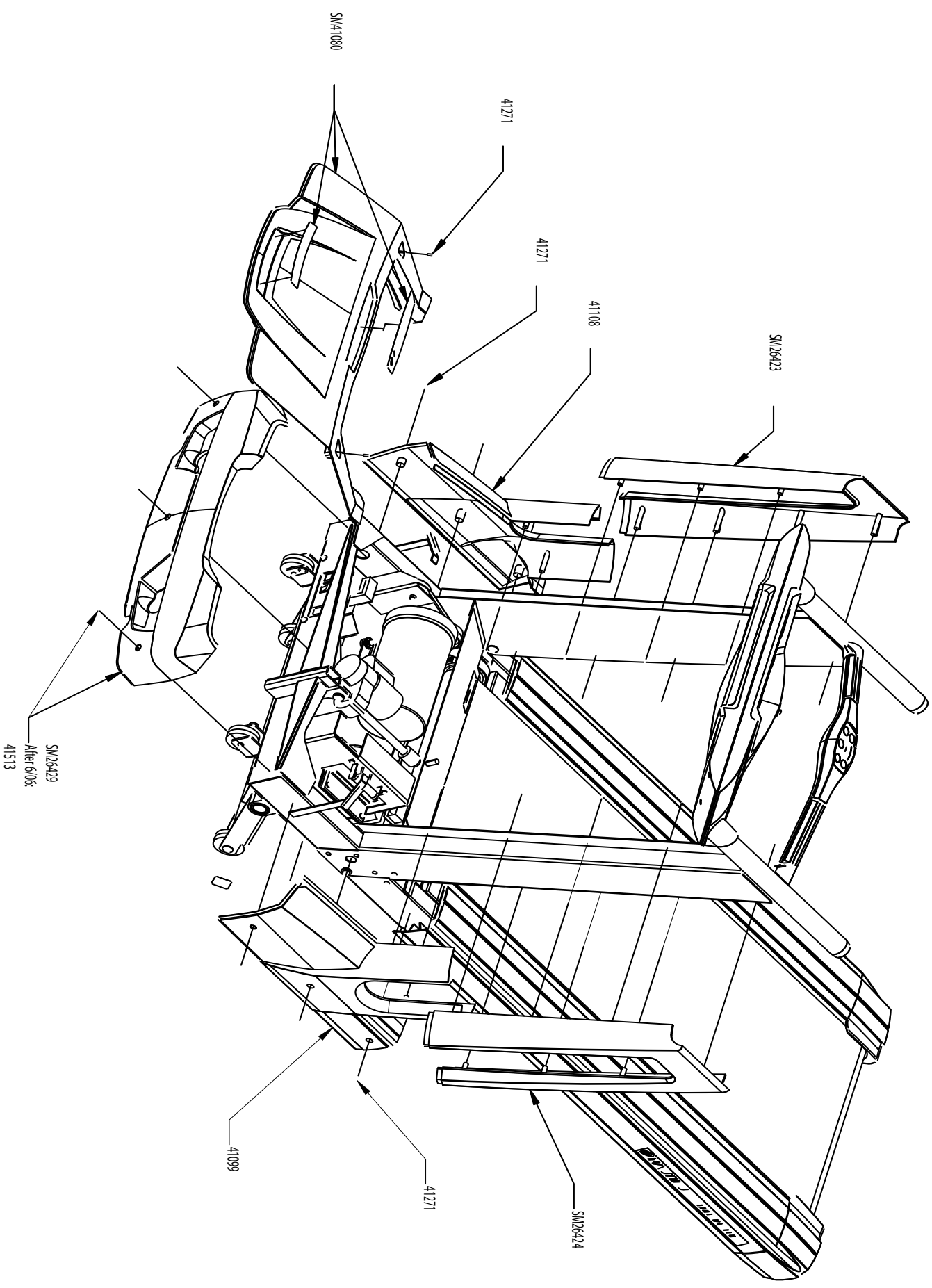
22027
22139
41404 (-003 ONLY)
30579-016 (-003 ONLY)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After 6/06:
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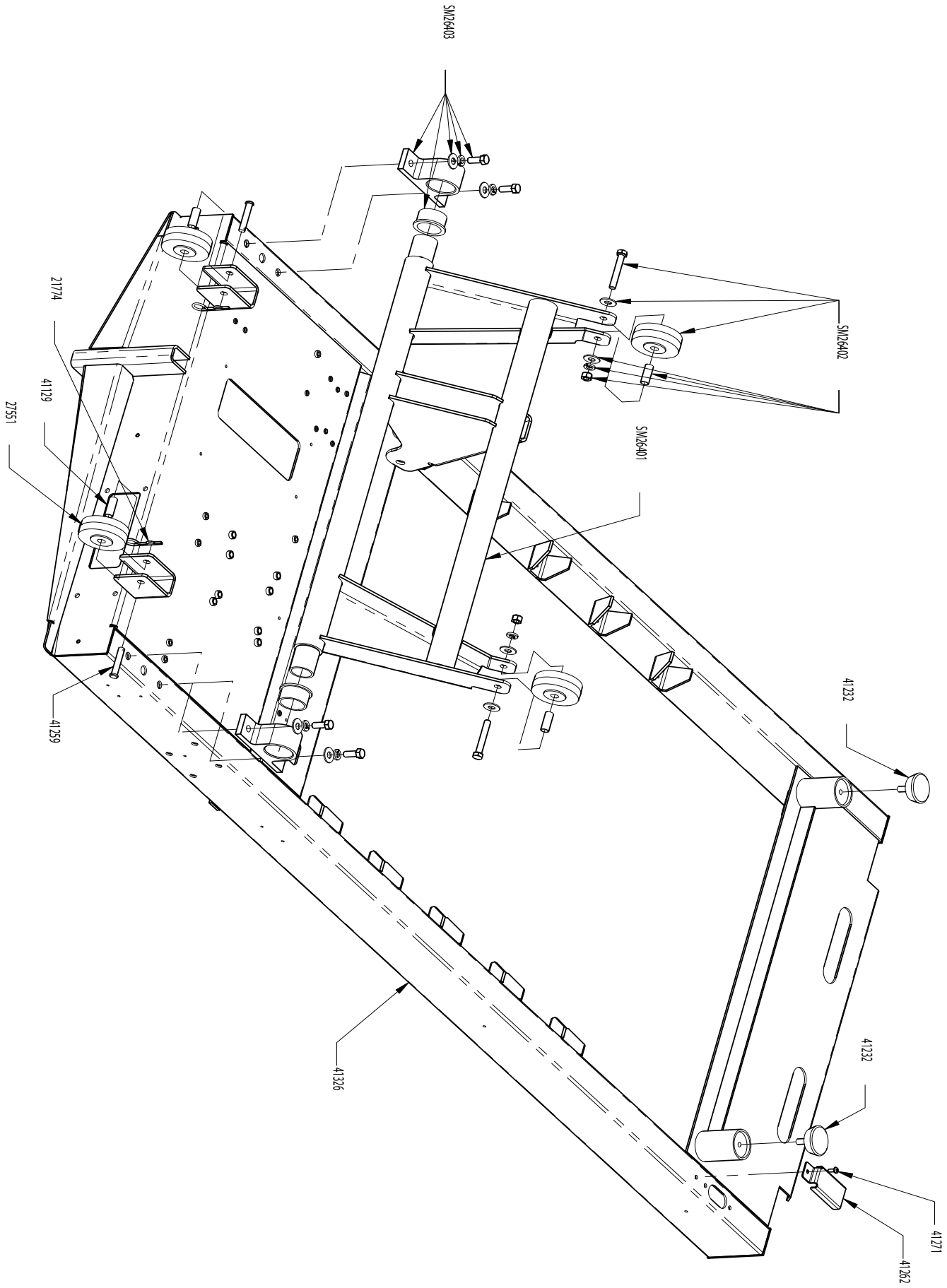
SM26424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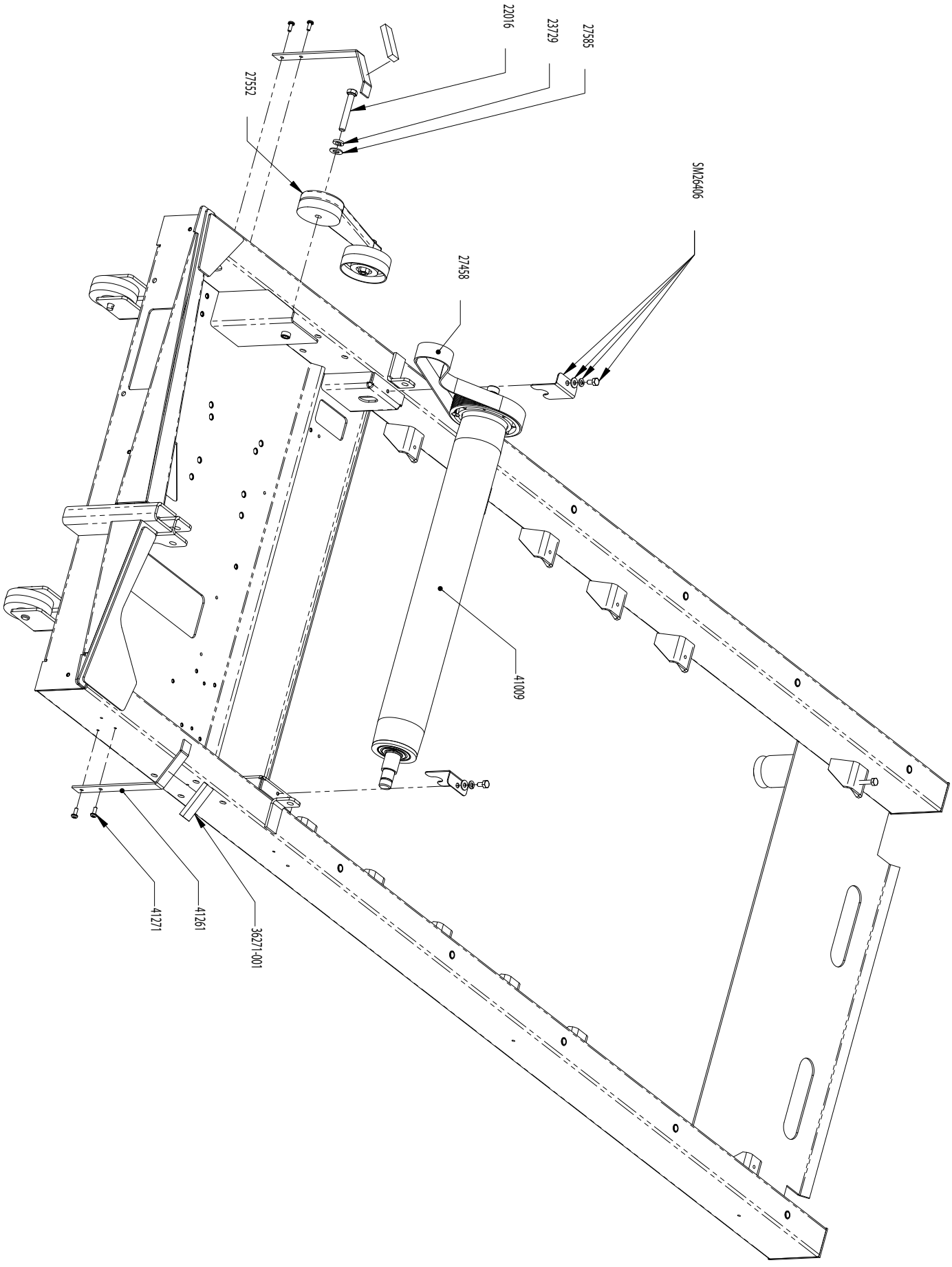
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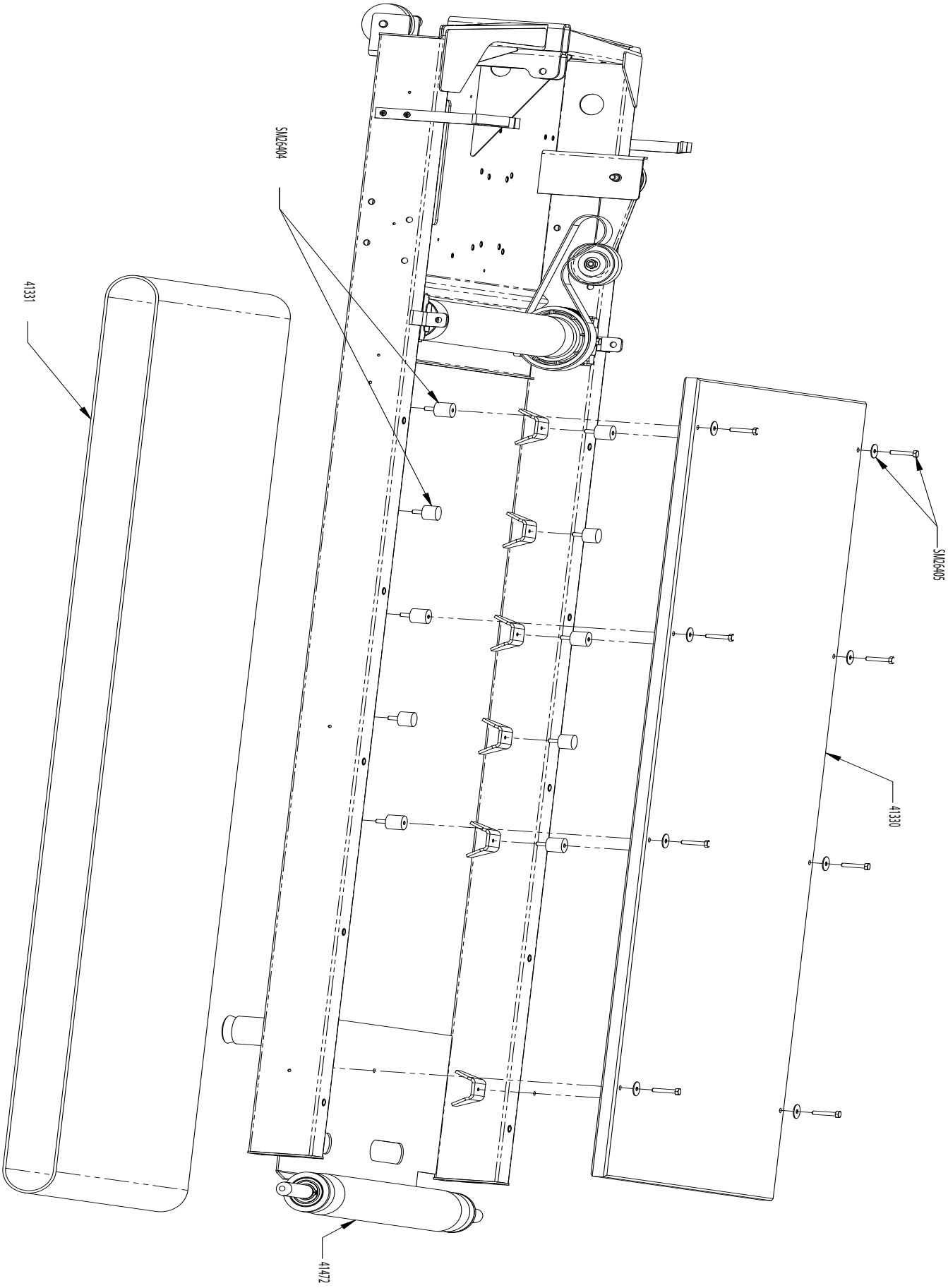
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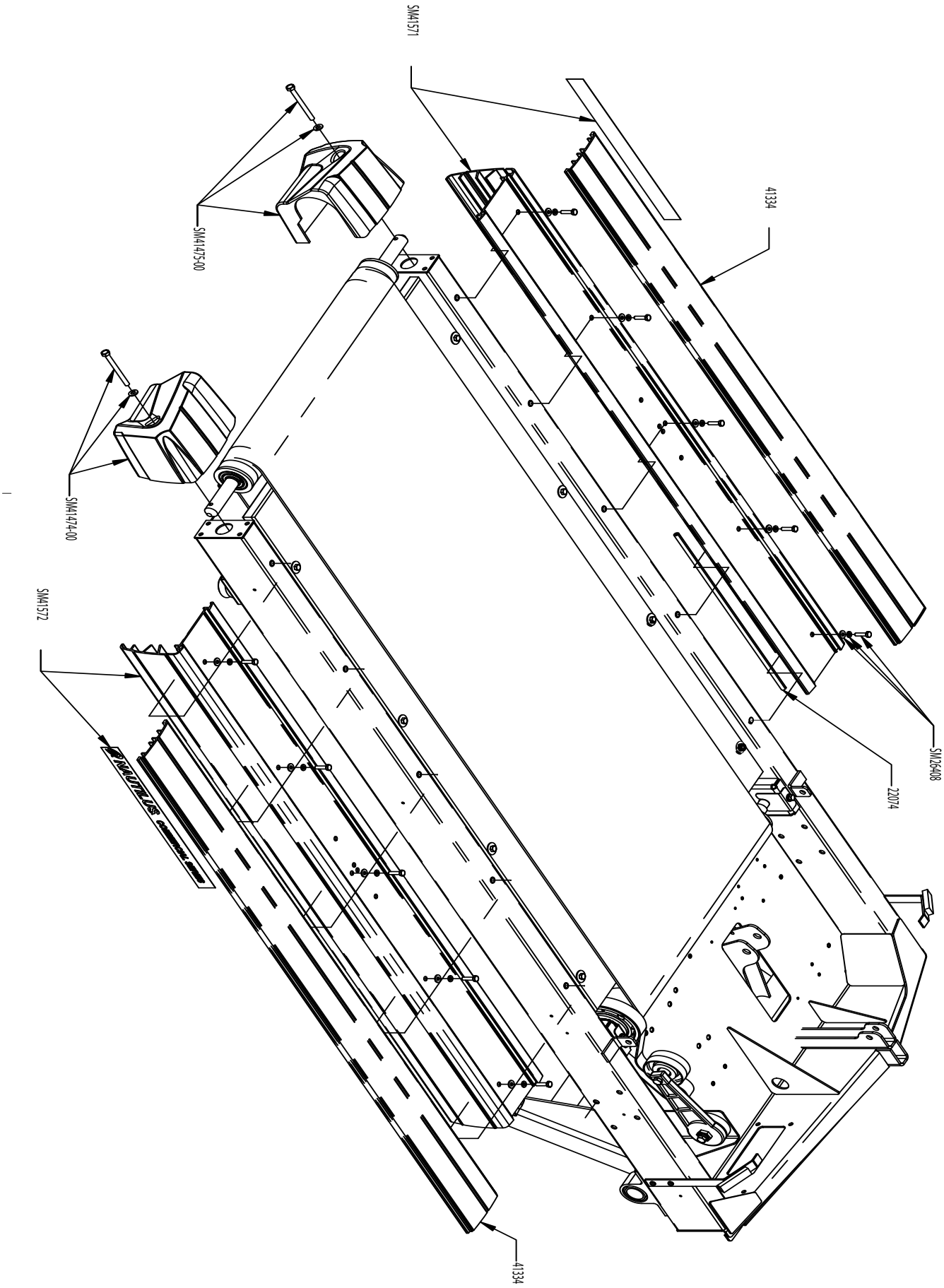
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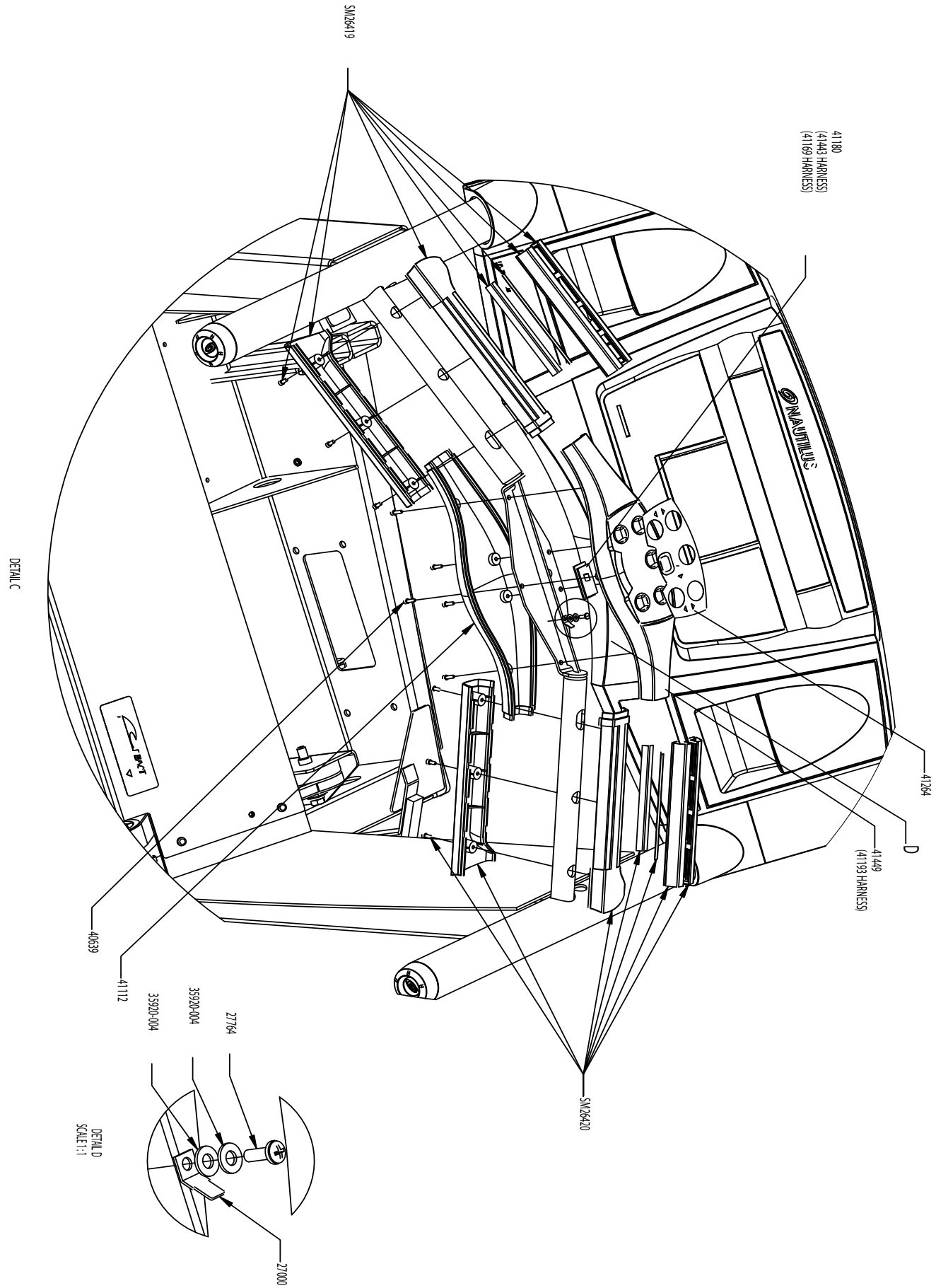
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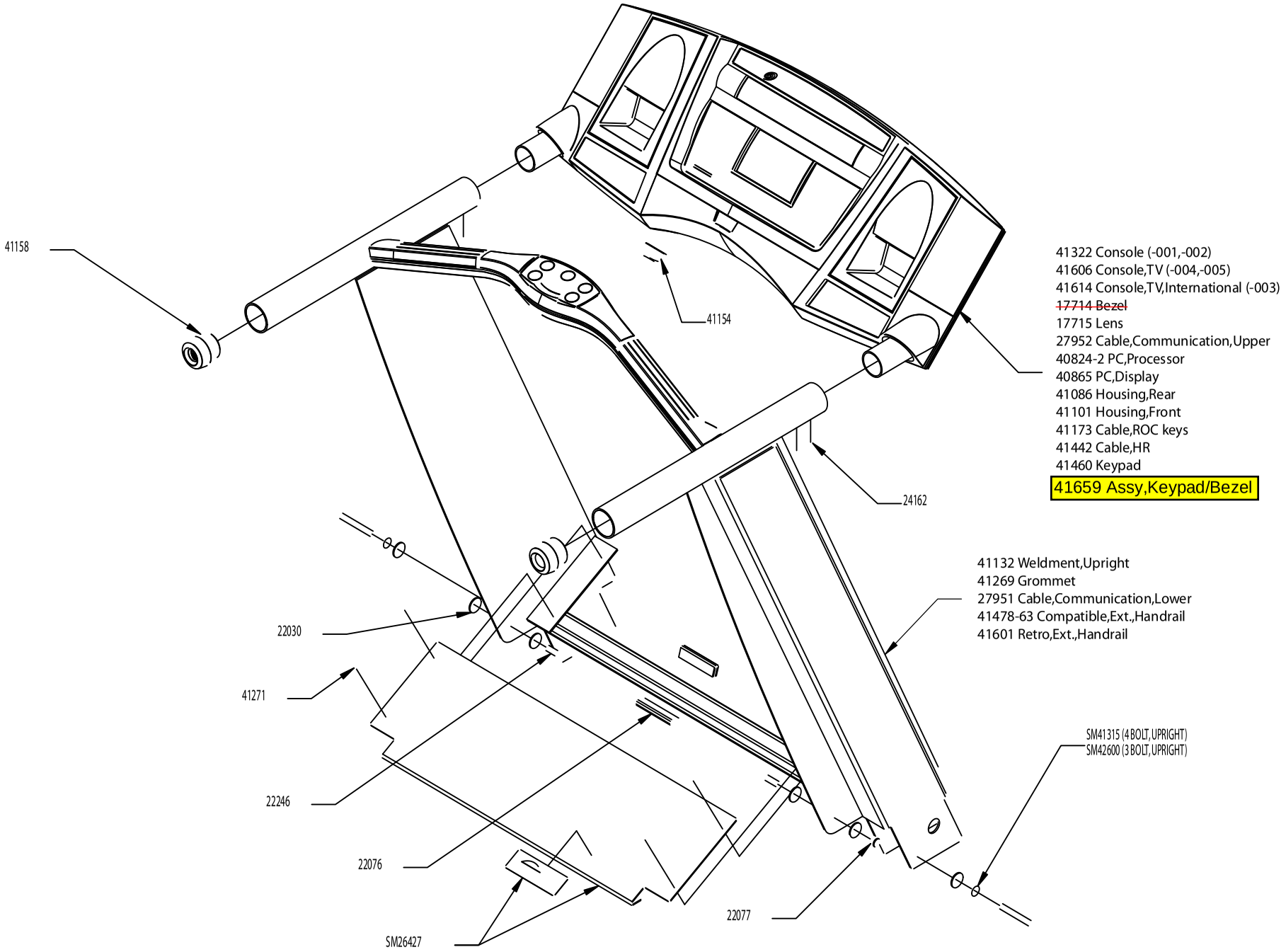
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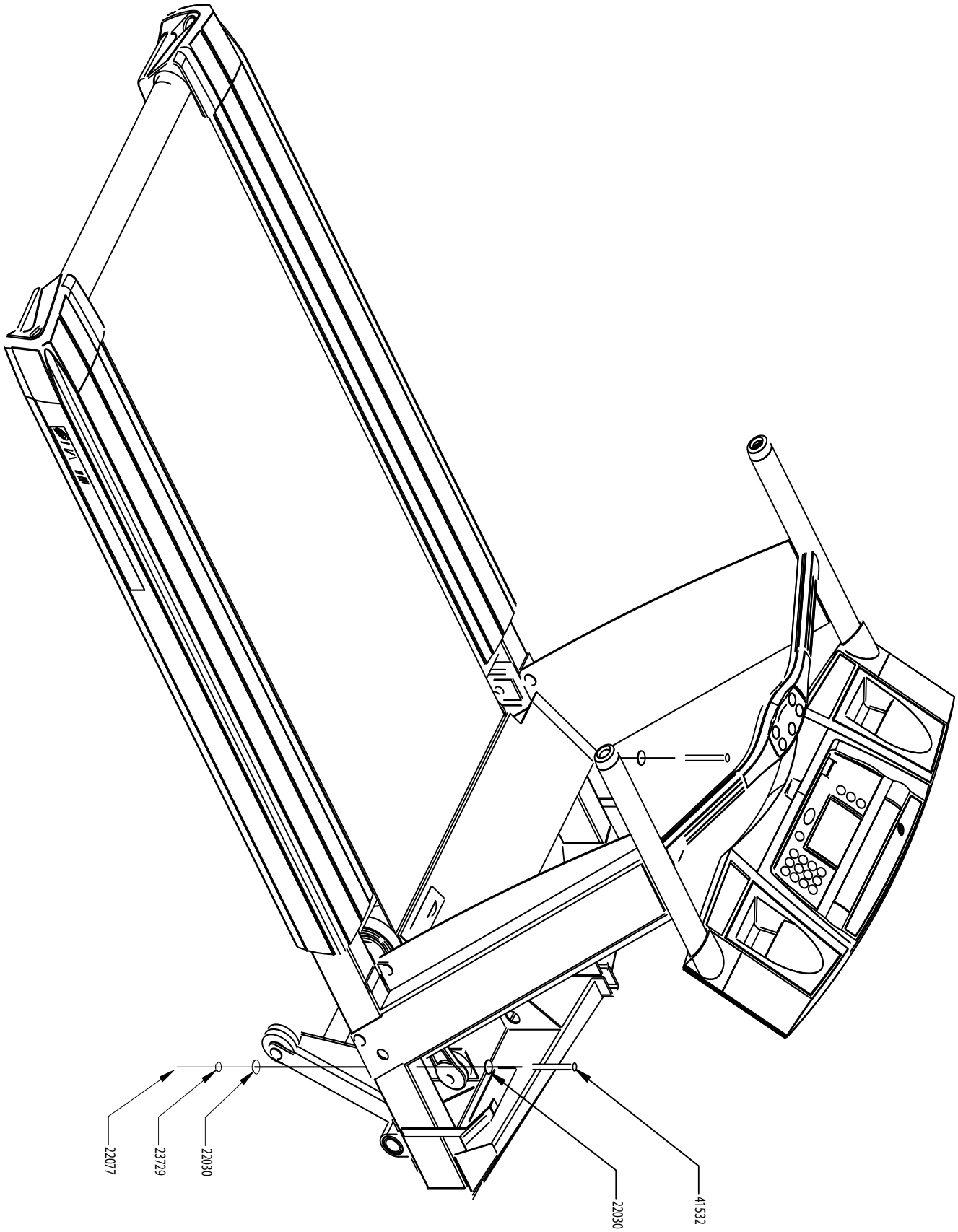
SM41315 (4 BOLT, UPRIGHT)
SM42600 (3 BOLT, UPRIGHT)
41322 Console (-001,-002)
41606 Console,TV (-004,-005)
41614 Console,TV,International (-003)
~~17714 Bezel~~
17715 Lens
27952 Cable,Communication,Upper
40824-2 PC,Processor
40865 PC,Display
41086 Housing,Rear
41101 Housing,Front
41173 Cable,ROC keys
41442 Cable,HR
41460 Keypad
41659 Assy,Keypad/Bezel
41132 Weldment,Upright
41269 Grommet
27951 Cable,Communication,Lower
41478-63 Compatible,Ext.,Handrail
41601 Retro,Ext.,Handrail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Section 7

Appendixes

Contents

Appendix A

Required Tools

This is a list of the most common tools you will need to service the treadmill.

Table 7–1. Required Tools and Uses

Tool	Purposes
Socket wrench	General
13-mm socket	Removing and installing tracking bolts, front roller retainers, motor hardware, and grade block hardware
10-mm socket	Removing and installing deck screws, VSD mounts, configuration mounts, and grounding screws
9/16" socket	Removing and installing upper grade actuator mount; adjusting motor drive belt tension
9/16" open-end box wrench	Removing and installing upper grade actuator mount
3/4" wrench	Adjusting feet
15/16" open-end box wrench	Adjusting motor drive belt tension
5-mm Allen wrench	Removing and installing console and uprights
M-4 Allen wrench	Removing and installing hood screws
M-4 Allen wrench	Front cosmetic cover
T-10 Torx screwdriver	Ergo PCB
T-15 Torx screwdriver	Removing and installing three (3) screws underneath the console
#1 Philips screwdriver	Removing and installing Ergo and CHR housings
Tape Measure	Adjusting belt tension
Pliers	General
Diagonal cutters	General
Multimeter	Electrical troubleshooting
Vacuum	Cleaning the motor housing and side rails
#000 Steel Wool or Scotch-Brite™ pad	Cleaning the wax from front and rear rollers
Lubricants	Uses
Waylube Oil, Lightweight Oils, Petroleum-based Grease, 3-in-1 Oils, Mobile 28 Grease	Lubricating Igus Bushings to reduce friction. Bushings located on T9 treadmill grade pivot shafts.

Appendix B

Using a Multimeter

How to Use a Multimeter

This is a basic overview of mutlimeters. For in depth directions, please use the manual provided with your multimeter.

Whats Does a Multimeter Do?

A multimeter combines the functions of three instruments: ammeter (measures current), voltmeter (measures voltage), and ohmmeter (measures resistance).

Electronic signals are usually thought of in terms of voltage. For that reason, and because it is an easier measurement to take, we will use the volts setting. We will not want to use the ammeter setting to troubleshoot fitness equipment.

The ohmmeter setting is used to determine whether there is an open circuit (a bad connection or break in the wires) or a short circuit (two wires that normally would not come in contact with each other have been pinched together or crossed in some way).

Ohmmeters work by passing a small current through the wire or component and measuring the voltage produced.

Type of Multimeters

Multimeters are available in digital and analog models. Digital meters give an output in numbers usually on a LCD. Analog meters move a needle along a scale.

We recommend using a digital meter. While analog meters can be very cheap, they are difficult for beginner to read accurately, especially on resistance scales. Also, the components are delicate and easily damaged.

Settings

For the beginner the multimeter can be intimidating because of the range of settings available. The diagrams on page 75 show what settings to use when checking voltage and resistance on the fitness equipment. Perhaps more importantly, it shows which settings are not needed.

There are two types of digital multimeters commonly available:

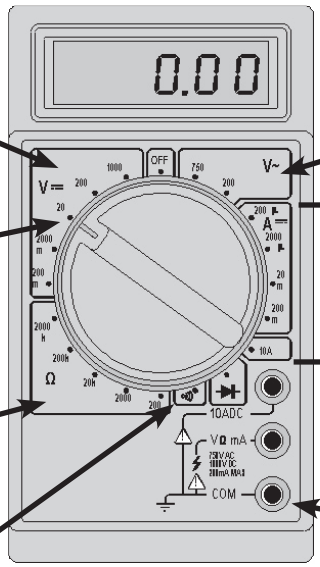
- switched range and
- autoranging.

Switched range meters require you to choose the appropriate position from the many choices available on the dial. For example, if the dial is switched to 20VDC, 20 volts is the maximum voltage that can be measured. This is important when you want to read small increments in voltage accurately. For example, if the required voltage is 13.5 volts and the meter is set too high, you may only see 13 volts on the readout. Setting the meter to a lower maximum will show 13.5 volts.

Autoranging meters automatically adjust the range to give an accurate reading. This type of meter is more expensive but much easier to use.

Appendix B

Switched Range Meter



Set here to check DC voltage

20 will be the most used setting for measuring DC voltage output

Set here to check resistance (ohms)

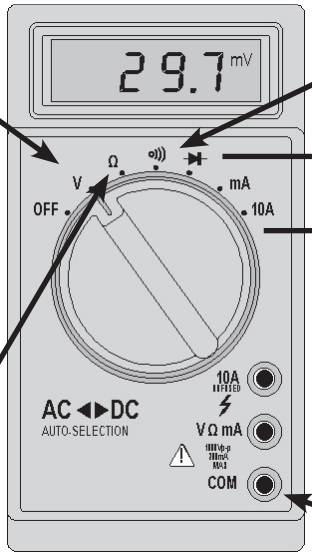
Or here to listen for an audible response (useful when testing a sensor)

Set here to check AC voltage

These are for checking amps and are not needed for our purposes

Black (negative) lead always goes here

Autoranging Meter



Set here to check AC or DC voltage

Set here to check resistance (ohms)

Set here for an audible response

The remaining three are for amps settings

Black (negative) lead always goes here

Appendix B

Checking Resistance

Use this procedure to check for broken wires:

1. Set the multimeter to the lowest OHMs (resistance) range.
2. Attach the test leads on both ends of the wire being tested.
3. Observe the reading.

- A *short* circuit will read less than approximately 3 ohms. This is the correct reading for an undamaged wire.
- An *open* circuit will usually read infinite; on a digital meter it will have an error code. This signals a broken or cut wire.

Use this procedure to test for crossed wires. In most circumstances all indivudual wires in a cable will be insulated from each other. When a wire is pinched, it becomes short circuited to an adjacent wire. This can cause problems resulting in blown fuses or *fried* components.

1. Set the multimeter to the lowest OHMs (resistance) range.
2. Attach one test lead of the multimeter to one wire and check all adjacent wires. This can all be done at one end of the cable. However, the other end of the cable must be disconnected from the circuit board. All wires should be insulated from each other and therefore test open.
3. Observe the reading.

Checking Voltage

Use this procedure to check voltage output:

1. Determine whether the voltage is AC or DC voltage, and choose the appropriate setting on the multimeter.
2. Set the multitmeter to the lowest setting that is still higher than the highest output of the component being tested.
3. Place the black and red leads or probes on the appropriate corresponding wires, pins, or connectors.
4. Observe the reading, and proceed according to the troubleshooting sections in this manual.

Appendix C

International Power Plug Configurations

Table 7–2. International Power Plugs

Power Cords	System	Country
	G	UK
	C, E, F	Europe
	J	Swiss
	K	Australia
	L	

Appendix D: Model T912 Specifications

Electrical	Voltage	115VAC (220VAC)*
	Amperage	15 A (10 A)*
	Motor	3.0 hp, 90 VDC (180VDC) Brushed Permanent Magnet
	Display	16 Digit - 14 Segment LED Data line, 2 fields of 3 Numeral - 7 Segment LEDs, 1 LED matrix 15 dot tall, 24 dot wide, All LEDs amber in color.
Physical	Length	82 in.
	Width	35 in.
	Height	48 in.
	Max User Weight Supported	400 lbs. (181 kg)
	Belt	22 in.(W) x 57 in. (L) - (.56 m (W) x 1.4 m (L))
	Belt/Deck Lubrication	Low-friction belt and deck that requires no waxing or lubrication
	Belt Tracking Method	Crowned front and rear rollers center the belt automatically
Functionality	Speed Range	0.5 to 12 mph (.8 km/h to 19.3 km/h)
	Elevation Range	0 to 15%
	Number of Functions	Twelve: Speed, Incline, Elapsed Time, Pace, Watts, METs, Strides Per Minute, Calories Per Minute, Heart Rate, Percentage of Max Heart Rate, Distance and Calories.
	Heart Rate Monitoring	Polar-compatible wireless
	Language Options	English, German, Spanish, French
Environmental	Operating Temperature	50–90 °F (10–32 °C)
	Storage Temperature	-13–122 °F (-25–50 °C)
	Operating Humidity (non-condensing)	3–95% relative (Limited to 90 °F/32 °C maximum dew point)
	Storage Humidity (non-condensing)	3–95% relative (Limited to 90 °F/32 °C maximum dew point)
	Atmospheric Pressure (Operating)	8.60–15.0 psia, 445–775 mm Hg absolute
	Atmospheric Pressure (Shipping and Storage)	8.22–15.0 psia, 425–775 mm Hg absolute

* Domestic/international 220VAC model

Appendix D: Model T914/T916 Specifications

Electrical	Voltage	115VAC (220VAC)*
	Amperage	20A (10A)*
	Motor	4.8 hp, 230VAC, 60 Hz, 3 Phase
	Display	Two Line Text/Data and 1 Matrix 20Hx31W Back-lit LCD
Physical	Length	85 in./2m (T9.14), 88 in./2.25m (T9.16)
	Width	35 in./89cm (T914), 35 in./89cm (T916)
	Height	48 in./1.2m (T914), 48 in./1.2m (T916)
	Max User Weight Supported	400 lbs. (181 kg)
	Belt	22 in. (W) x 60 in. (L) T9.14 - (.56 m (W) x 1.5 m (L)) 22 in. (W) x 63 in. (L) T9.16 - (.56 m (W) x 1.6 m (L))
	Belt/Deck Lubrication	low-friction belt and deck that requires no waxing or lubrication
	Belt Tracking Method	Crowned front and rear rollers center the belt automatically
Functionality	Speed Range	0.5 to 12 mph (.8 km/h to 19.3 km/h)
	Elevation Range	0 to 15%
	Number of Functions	Fourteen: Speed, Incline, Interval (stage) Time, Percent of Max HR, Pace, Vertical Distance, Heart rate, elapsed time, calories burned, caloreis burned per hour, watts, METS, distance, and workout profile
	Heart Rate Monitoring	Polar-compatible wireless and contact heart rate
	Workout Programs	Quick Start, Manual, Fat Burner, Calorie Burner, Speed Intervals, HR Zone Trainer, HR Interval, Custom Intervals, Distance Goal, Calorie Goal, Random Play, Fit Test, and Firefighter Fit Test, Military Fit tests may be provided. (T9.16) 5 minute Demo and 20 Standard Workout.
	Language Options	English, German, Spanish, French, Italian, Dutch, Portuguese
Environmental	Operating Temperature	50–90 °F (10–32 °C)
	Storage Temperature	-13–122 °F (-25–50 °C)
	Operating Humidity (non-condensing)	3–95% relative (Limited to 90 °F/32 °C maximum dew point)
	Storage Humidity (non-condensing)	3–95% relative (Limited to 90 °F/32 °C maximum dew point)
	Atmospheric Pressure (Operating)	8.60–15.0 psia, 445–775 mm Hg absolute
	Atmospheric Pressure (Shipping and Storage)	8.22–15.0 psia, 425–775 mm Hg absolute

* Domestic/international 220VAC model

If you need assistance, please have both the serial number of your machine and the date of purchase available when you contact the appropriate Nautilus office listed below.

OFFICES IN THE UNITED STATES:

- TECHNICAL/CUSTOMER SERVICE
  Nautilus, Inc.
  World Headquarters
  16400 SE Nautilus Drive
  Vancouver, Washington, USA 98683
  Phone: 800-NAUTILUS (800-628-8458)
  Email: customerservice@nautilus.com
  Fax: 800-523-1049

- CORPORATE HEADQUARTERS
  Nautilus, Inc.
  World Headquarters
  16400 SE Nautilus Drive
  Vancouver, Washington, USA 98683
  Phone: 800-NAUTILUS (800-628-8458)

For technical assistance and a list of distributors in your area, please call or fax one of the following numbers.

INTERNATIONAL CUSTOMER SERVICE:

- INTERNATIONAL OFFICE
  Nautilus International S.A.
  Rue Jean Prouvé 6
  1762 Givisiez / Switzerland
  Tel: + 41-26-460-77-77
  Fax: + 41-26-460-77-70
  Email: technics@nautilus.com

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Model: T912

Model: T914

Model: T916

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