

# Barrier-Free<sup>®</sup> Examination Table



## Service and Parts Manual

*Model Numbers:*

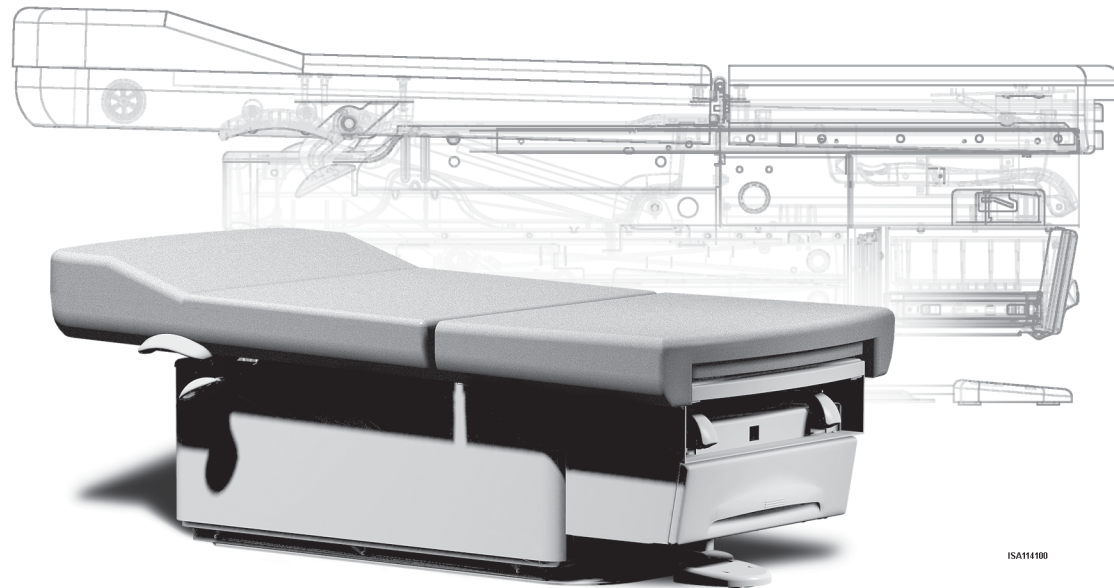
**222** -015 /-016 /-017

**223** -015 /-016

**622** -007 /-008

**623** -007 thru -011

*Some Models NO LONGER IN PRODUCTION  
Some service parts may not be available for this product!*



ISA11400

FOR USE BY MIDMARK TRAINED TECHNICIANS ONLY

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### GENERAL INFORMATION

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## Section A

### OPERATION & TROUBLESHOOTING

#### **Attention!**

If table has no power, refer to Base Up / Down Function to troubleshoot (*No Up or Down*).

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\* Indicates multiple pages due to model / serial number break(s)



## Symbols



### Caution

Indicates a potentially hazardous situation which could result in injury if not avoided.



### Equipment Alert

Indicates a potentially hazardous situation which could result in equipment damage if not avoided.

### Note

Amplifies a procedure, practice, or condition.



In Section A, test the components in the order indicated. (ex. **1st** ✓ then, **2nd** ✓)

Refer to Section B for component testing procedures.

These symbols are used throughout this manual to represent the operational status of table functions and components.



Indicates the function / component is working properly. No action required.



Indicates the function / component is working, but a problem exists.



Indicates the function / component is not working at all.

## Ordering Parts

The following information is required when ordering parts:

- Serial number & model number
- Part number for desired part.

[Refer to Exploded Views / Parts Lists section]

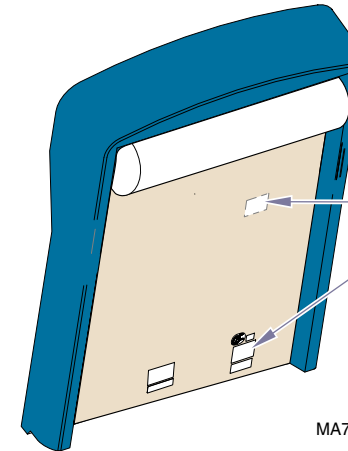
**Non-warranty part orders may be faxed to Midmark using the Fax Order Form in the back of this manual.**

**For warranty part orders, call Midmark's Technical Service Department with the required information.**

Hours: 8:00 am until 5:00 pm EST [Monday - Friday]

Phone: 1-(800)-Midmark

## Serial Number Location



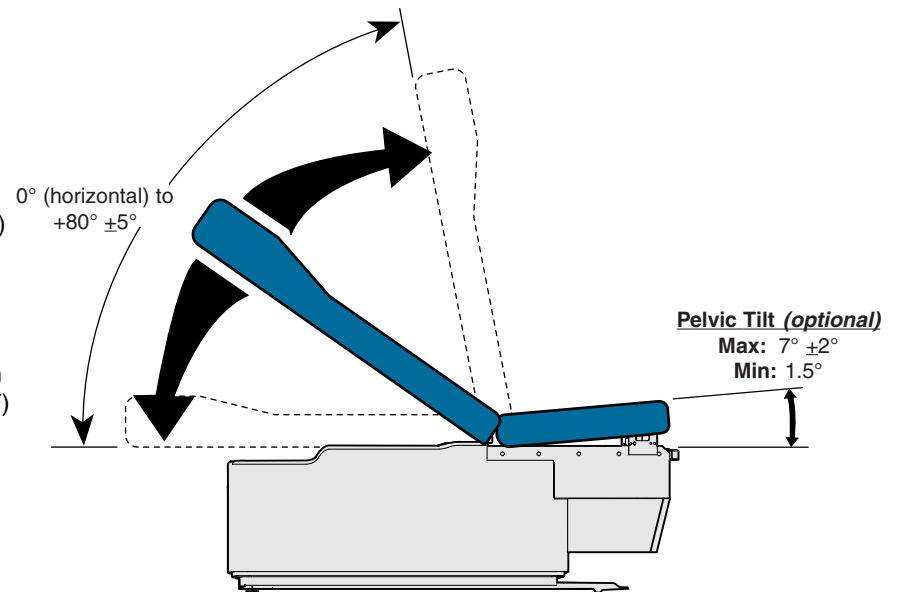
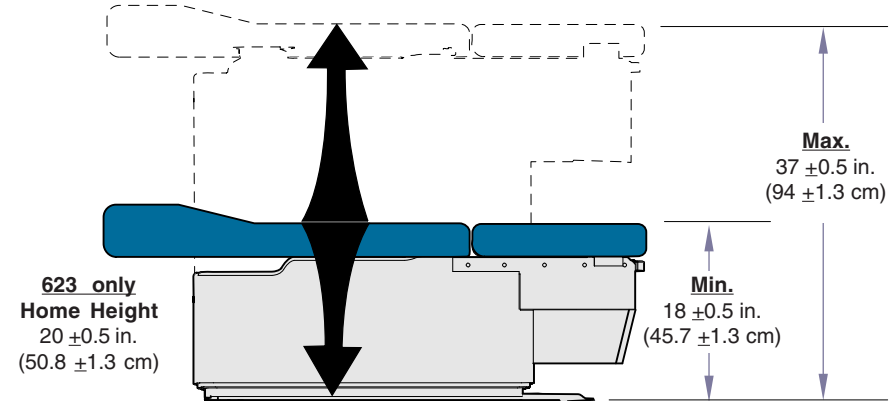
**Serial / Model  
Number Label**  
(exact location may vary)

MA731100i

# General Information

## Specifications

<b>Patient Weight (maximum)</b> .....	400 lbs (181.4 kgs)
<b>Paper Roll (maximum size):</b> .....	21 in. long x 3.5 in. diameter (53.3 x 8.9 cm)
Export models .....	19.7 in. long x 4.7 in. diameter (50 cm x 12 cm)
<b>Range of Motion</b> .....	See illustration on this page
<b>Dimensions</b> .....	See illustration on next page
<b>Weight of Table:</b>	
<i>[230 VAC models only: 230 V transformer adds 14.5 lbs (6.5 kg)]</i>	
w/ upholstery .....	325 lbs (147.4 kg)
w/packaging & skid (no upholstery) .....	375 lbs (192.7 kg)
<b>Weight of Upholstery:</b>	
w/packaging (shipped separately) .....	40 lbs (18.1 kg)
<b>Power Cord(s)</b> <i>[115V models have two cords]:</i> .....	8 ft. (243.8 cm) long
<b>Electrical Rating:</b> .....	See Compliance Charts
<b>Foot Control Voltage:</b> .....	14 VAC, SELV (Safety Extra Low Voltage)
<b>Duplex Receptacle</b>	
<b>maximum load:</b> .....	115 VAC, 5A
<b>Fuses:</b> .....	Refer to: Section E - Fuses
<b>Duty Cycle:</b>	
<b>Actuator motor run time:</b> .....	Intermittent Operation (Domestic: 30 seconds ON / 5 minutes OFF) (Export: 25 seconds ON / 7 minutes OFF)
<b>Receptacle / Drawer Heater / Uph. Htr:</b> .....	Continuous Operation
<b>Classifications:</b> .....	Class I, Type B Applied Part, Ordinary Equipment, Intermittent Operation (Domestic: 30 seconds ON / 5 minutes OFF) (Export: 25 seconds ON / 7 minutes OFF)
<b>Protection against ingress of fluids:</b> .....	IPX0 <i>[Foot Control only: IPX1]</i>
<b>Regulatory Compliance:</b> .....	See <b>Regulatory Compliance Charts</b>
<b>Table Speeds (by function):</b>	
Base .....	14 - 26 seconds
Back (models w/power back) .....	15 - 20 seconds



MA5998011

# General Information

## Model Identification / Compliance Chart - 222

### Fire Code Ratings:

All upholstery complies with California Bureau of Home Furnishing [Technical Bulletin 117](#).

Optional upholstery is available that complies with California Bureau of Home Furnishing [Technical Bulletin 133](#).

Model	Description	Serial Number Prefix	Complies To:						Electrical Ratings:		
			UL 60601-1	CAN/CSA 22.2, #601.1-M90	UL 544	EN 60601-1	EN 60601-1-2 (EMC)	CE	VAC +/-10%	Amps	Cycles (Hz)
222-015	Ritter Basic Table w/ Receptacle	V	X	X		X	X	X	115	10.5	50 / 60
222-016	Ritter Basic Table w/ Receptacle, Pelvic Tilt, Drawer Heater	V	X	X		X	X		115	11	50 / 60
222-017	Ritter Basic Table - Export w/ Pelvic Tilt	V	X	X		X	X	X	230	2.75	50 / 60

# General Information

## Model Identification / Compliance Chart - 223

### Fire Code Ratings:

All upholstery complies with California Bureau of Home Furnishing [Technical Bulletin 117](#).

Optional upholstery is available that complies with California Bureau of Home Furnishing [Technical Bulletin 133](#).

Model	Description	Serial Number Prefix	Complies To:						Electrical Ratings:		
			UL 60601-1	CAN/CSA 22.2, #601.1-M90	UL 544	EN 60601-1	EN 60601-1-2 (EMC)	CE	VAC +/-10%	Amps	Cycles (Hz)
223-015	Ritter Power Back Table w/ Receptacle	V	X	X		X	X	X	115	12	50 / 60
223-016	Ritter Power Back Table w/ Receptacle, Pelvic Tilt, Drawer Heater	V	X	X		X	X		115	12.5	50 / 60

# General Information

## Model Identification / Compliance Chart - 622 / 623

### Fire Code Ratings:

All upholstery complies with California Bureau of Home Furnishing Technical Bulletin 117.

Optional upholstery is available that complies with California Bureau of Home Furnishing Technical Bulletin 133.

Model	Description	Serial Number Prefix	Complies To:						Electrical Ratings:		
			UL 60601-1	CAN/CSA 22.2, #601.1-M90	UL 544	EN 60601-1	EN 60601-1-2 (EMC)	CE	VAC +/-10%	Amps	Cycles (Hz)
622-007	Midmark Manual Back Table w/ Receptacle	V	X	X		X	X	X	115	10.5	50 / 60
622-008	Midmark Manual Back Table w/ Receptacle, Drawer Heater, Pelvic Tilt, & Heated Upholstery	V	X	X		X	X	X	115	11.5	50 / 60
623-007	Midmark Power Back Table w/ Receptacle	V	X	X		X	X	X	115	12.5	50 / 60
623-008	Midmark Power Back Table w/ Receptacle, Drawer Heater, Pelvic Tilt, & Heated Upholstery	V	X	X		X	X		115	13.5	50 / 60
623-009	Midmark Power Back Table - Export w/ Pelvic Tilt	V	X	X		X	X	X	230	3.75	50 / 60
623-010	Midmark Power Back Table - Export w/ Drawer Heater, Pelvic Tilt, & Heated Upholstery	V	X	X		X	X		230	4.25	50 / 60
623-011	Midmark Power Back Table - Export w/ Drawer Heater & Pelvic Tilt	V	X	X		X	X	X	230	4	50 / 60

# General Information

Scheduled Maintenance / Barrier-Free® Examination Table										
Interval	Inspection or Service	Service, Adjust , Repair and / or Replace as Required (Refer to appropriate S&P or Quick Reference Guide)	222	223	622	623				
Weekly	Cleaning	Clean upholstery with diluted bleach solution. 10:1 (water:bleach)	X	X	X	X				
		Wipe painted metal & plastic surfaces with a clean soft cloth and mild cleaner.	X	X	X	X				
	Obvious Damage	Visually inspect components for damage that could cause problems during operation or unsafe operation.	X	X	X	X				
Semi-Annually	Mechanical Operation	Check all mechanical functions using the foot control. Repeat using the hand control when present.	X	X		X				
		Check manual back release mechanism for proper operation.	X	X	X	X				
		Table shrouds should move smoothly & quietly when base is raised & lowered. (NOTE: There are plastic glides on the shroud tabs. Missing glides may result in noisy operation.)	X	X	X	X				
	Labels / Decals	Replace any missing or illegible labels.	X	X	X	X				
	Lubricate	Lubricate back hinge with light machine oil.	X	X	X	X				
		Lubricate footrest slide with household furniture wax.	X	X	X	X				
	Hardware	All fasteners must be present and fastened securely.								
Electrical System	Inspect power cord and all wiring for damage.	X	X	X	X					
	Be sure all electrical connections are tight.	X	X	X	X					
	Stirrups	Check that stirrups extend easily, and lock securely into each lateral position.	X	X	X	X				
Date of Service: ____/____/____			Model:							
Location: Service Technician:							Serial Number:			

# Section A

## *Troubleshooting*



<u>Table Function</u>	<u>Page</u>
Base Up / Down .....	A-2
Back Up / Down .....	A-11
Drawer Heater .....	A-23
Table Receptacle .....	A-27
Auto Return .....	A-29
Upholstery Heater System .....	A-32

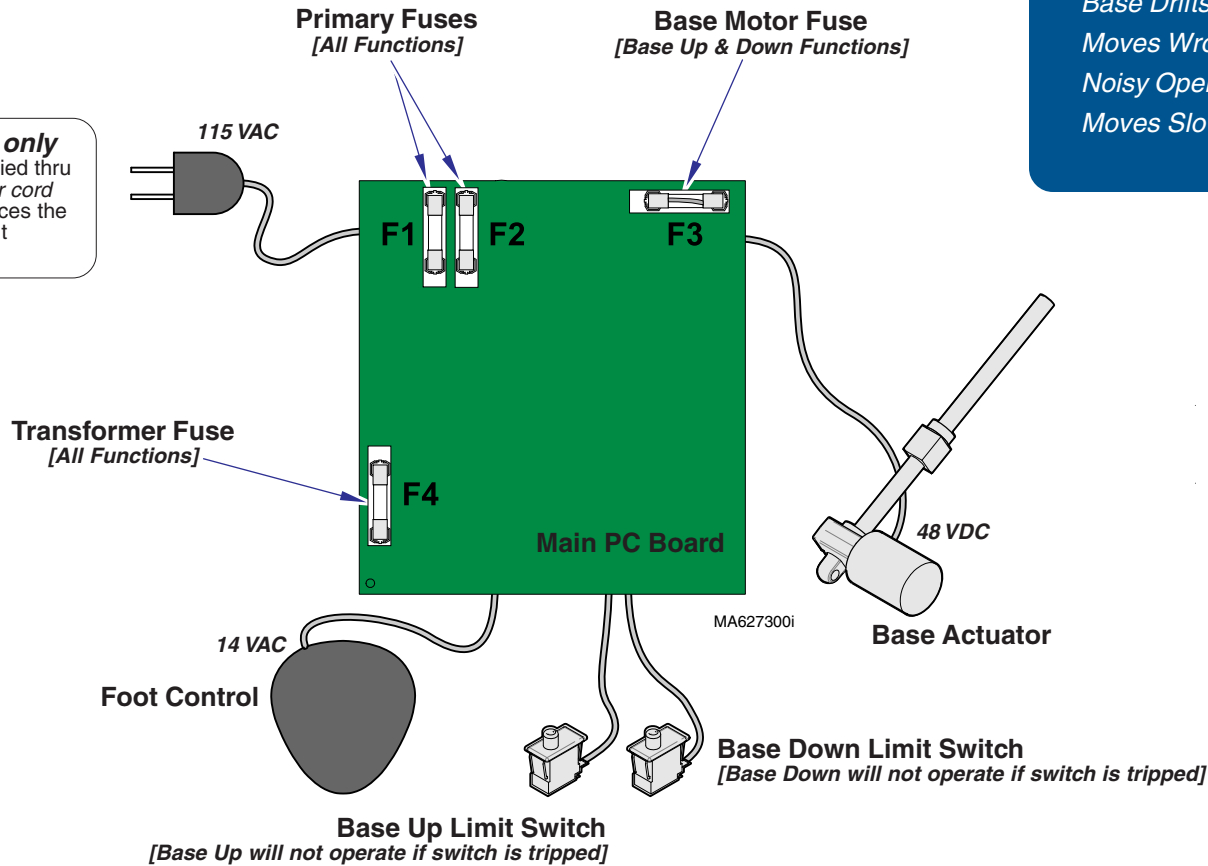


# Troubleshooting

## Base UP / DOWN Function

This illustration shows only the components that affect the Base UP / DOWN function. Refer to the following page for a detailed description of current flow during this function.

**NOTE: 230 VAC models only**  
Line voltage (230 VAC) is supplied thru two fuses (located by the power cord inlet) to a transformer that reduces the line voltage to 115 VAC before it reaches the PC Board.



Troubleshooting	
[Base Up / Down Function]	
Problem	Page
No UP or DOWN Functions .....	A-4
No UP Function (DOWN - OK) .....	A-5
No DOWN Function (UP - OK) .....	A-6
Base Drifts Down .....	A-7
Moves Wrong Direction .....	A-8
Noisy Operation .....	A-9
Moves Slowly .....	A-10

## Base UP / DOWN Function

### NOTE

On 230 VAC models, line voltage (230 VAC) is supplied thru two fuses (located by IEC inlet) to a transformer that reduces the line voltage to 115 VAC before it gets to the PC board.

### Power To Foot Control

115 VAC is supplied thru the two primary fuses (F1 & F2) to the transformer on the PC board. [F4 fuse protects the transformer].

The transformer reduces the line voltage and supplies 14 VAC to the foot control.

## Base Up Operation

### NOTE

If the Base Up limit switch is tripped (open), the Base Up function will not operate.

When the Base Up function is activated, current (14 VAC) flows thru the Up function foot switch (N.O), then back to the PC board. Circuitry on the PC Board energizes the base relay. [F3 fuse protects the base motor].

### NOTE

The Base Up/Down relay has four contacts:  
**(2) Normally Open: Base Up function**  
**(2) Normally Closed: Base Down function**

When the base relay is energized, the (2) Normally Open contacts of the relay close. When these contacts close, current (48 VDC) flows to the actuator motor.

When current flows to the actuator thru the Normally Open contacts of the relay, the actuator motor runs and raises the table.

### Actuator Motor runs until:

1. Foot control pedal is released.
2. Base Up limit switch is tripped.
3. 26 second software time limit is reached.
4. Fuse(s) opens (blows).

[Primary, Base Motor, Transformer fuse]

## Base Down Operation

### NOTE

If the Base Down limit switch is tripped (open), the Base Down function will not operate.

When the Base Down function is activated, current (14 VAC) flows thru the Down function foot switch (N.O.), then back to the PC Board.

### NOTE

The Base Up/Down relay has four contacts:  
**(2) Normally Open: Base Up function**  
**(2) Normally Closed: Base Down function**

When this voltage is applied, current (48 VDC) flows to the actuator motor thru the (2) Normally Closed contacts of the Base Up/Down relay. [The relay does not energize].

When voltage flows to the actuator thru the Normally Closed contacts of the relay, the actuator motor runs and lowers the table.

### Actuator Motor runs until:

1. Foot control pedal is released.
2. Base Down limit switch is tripped.
3. 26 second software time limit is reached.
4. Fuse(s) opens (blows).

[Primary, Base Motor, Transformer fuse]



### Equipment Alert



If an overload condition\* is detected the PC board will "beep" and all power functions will be disabled. Release the function button, remove load, then retry function.

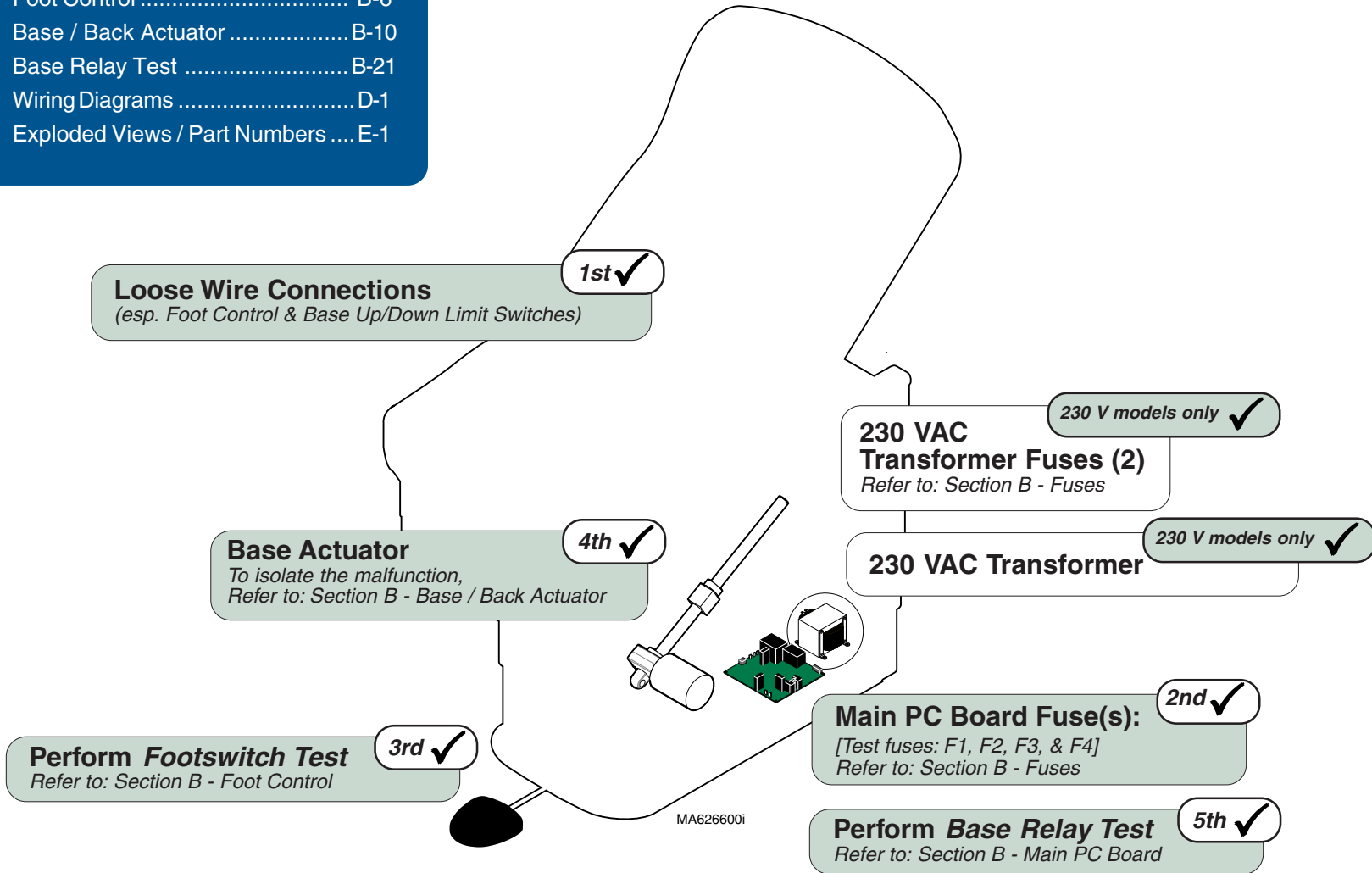
\*(weight limit exceeded, mechanical binding, etc),

# Troubleshooting



**Refer To:** Page

- Fuses ..... B-2
- Limit Switches ..... B-4
- Foot Control ..... B-6
- Base / Back Actuator ..... B-10
- Base Relay Test ..... B-21
- Wiring Diagrams ..... D-1
- Exploded Views / Part Numbers .... E-1

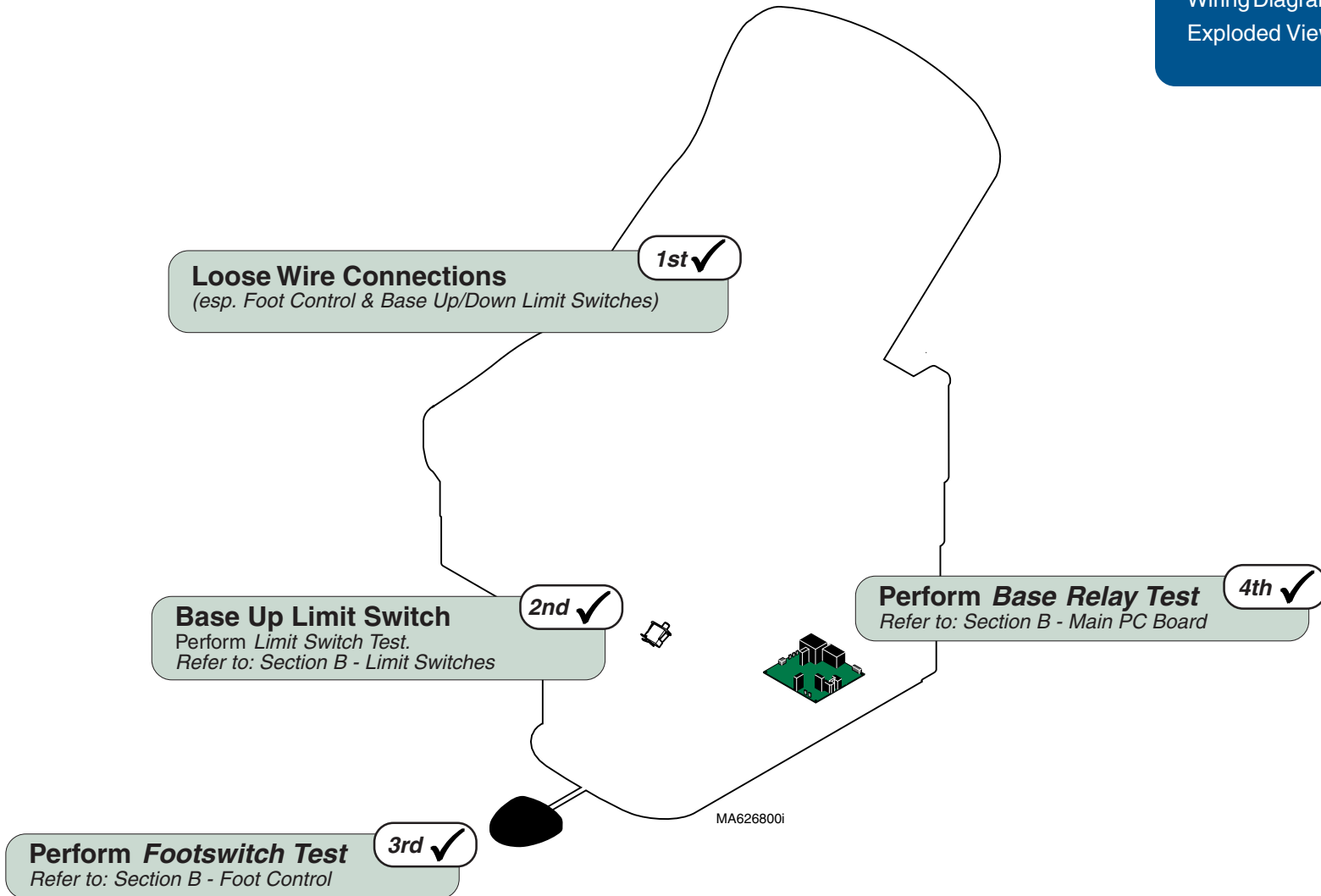
Function	Status	Problem
Base Up		No movement
Base Down		No movement



# Troubleshooting

Function	Status	Problem
Base Up		No movement
Base Down		OK

Refer To:	Page
Limit Switches .....	B-4
Footswitch Test .....	B-6
Base Relay Test .....	B-21
Wiring Diagrams .....	D-1
Exploded Views / Part Numbers ....	E-1





**Models:** All  
**Serial Numbers:** All

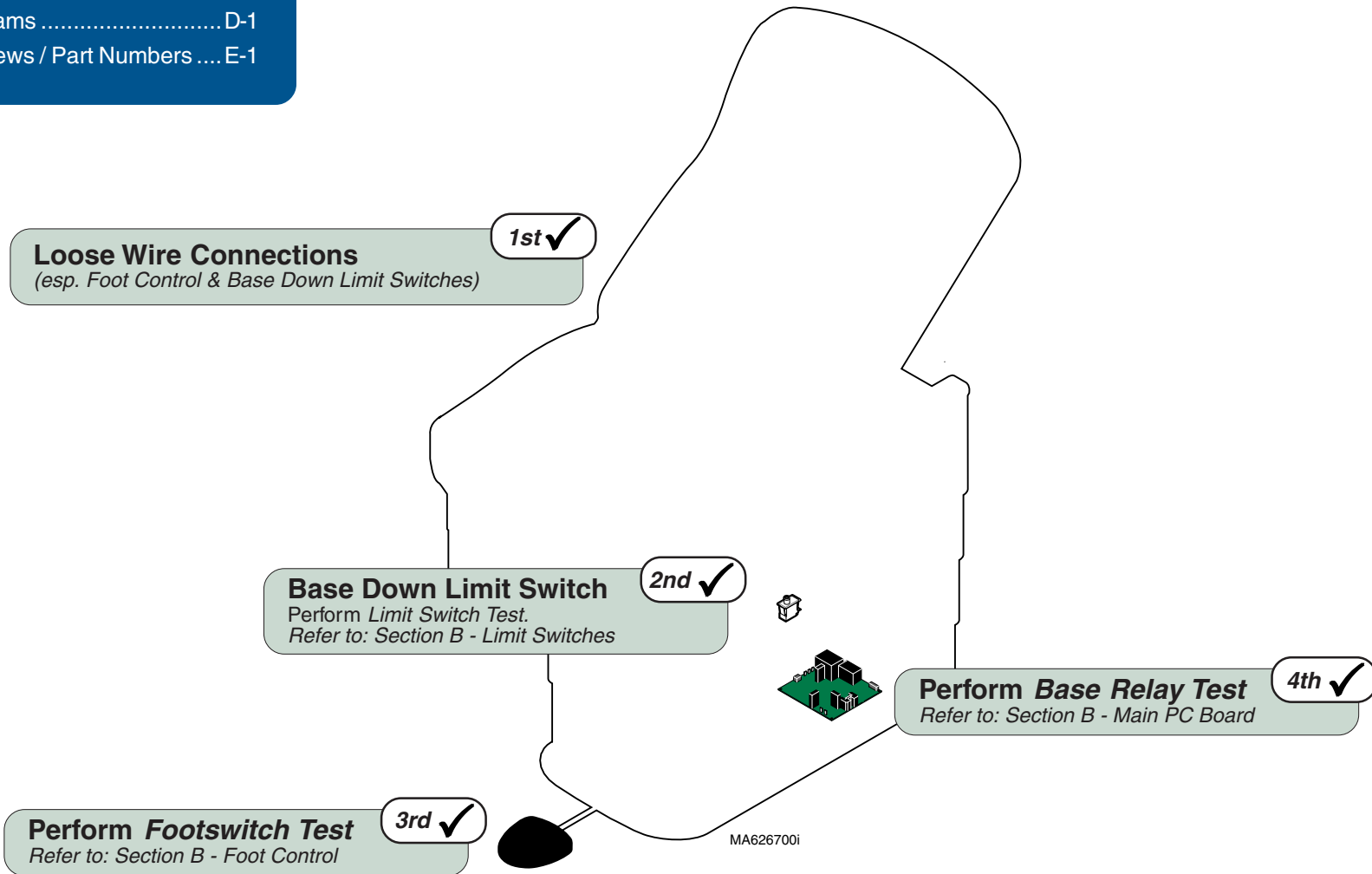
**Base Up / Down**

# Troubleshooting



**Refer To:** **Page**

- Limit Switches ..... B-4
- Foot Control ..... B-6
- Base Relay Test ..... B-21
- Wiring Diagrams ..... D-1
- Exploded Views / Part Numbers .... E-1

Function	Status	Problem
Base Up		OK
Base Down		No movement

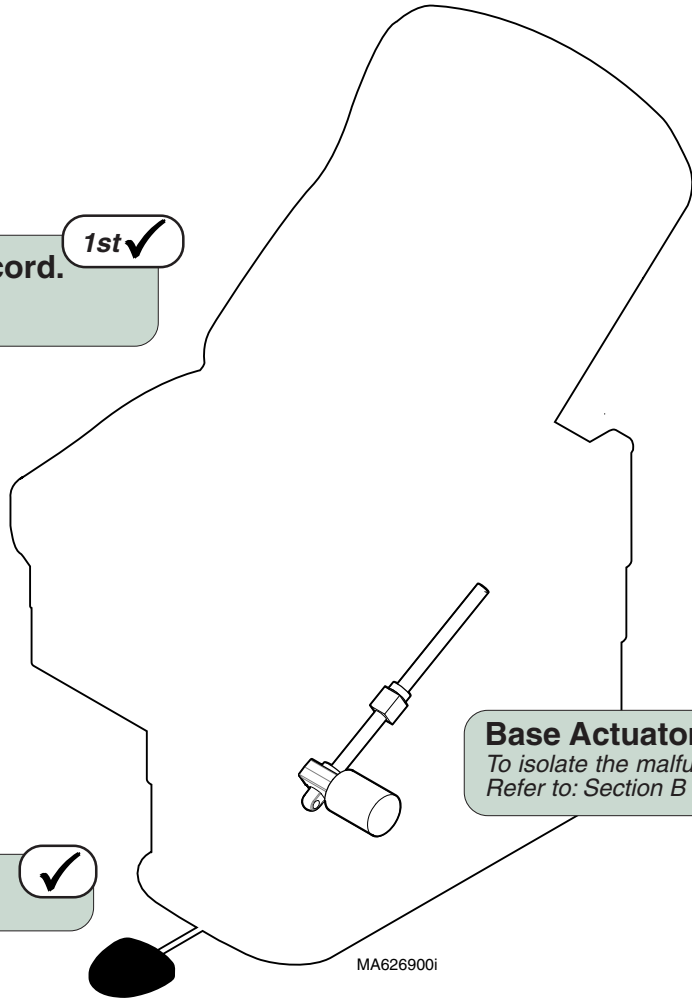


# Troubleshooting

Function	Status	Problem
Base Up		Table drifts down.
Base Down		Table drifts down.

Refer To:	Page
Foot Control .....	B-6
Base / Back Actuator .....	B-10
Wiring Diagrams .....	D-1
Exploded Views / Part Numbers ....	E-1

**Run table up, then unplug power cord.** 1st ✓  
 If drifting stops, perform *Footswitch Test*.  
 If drifting continues, check Base Actuator.



**Perform Footswitch Test** ✓  
 Refer to: Section B - Foot Control

**Base Actuator** ✓  
 To isolate the malfunction,  
 Refer to: Section B - Base / Back Actuator

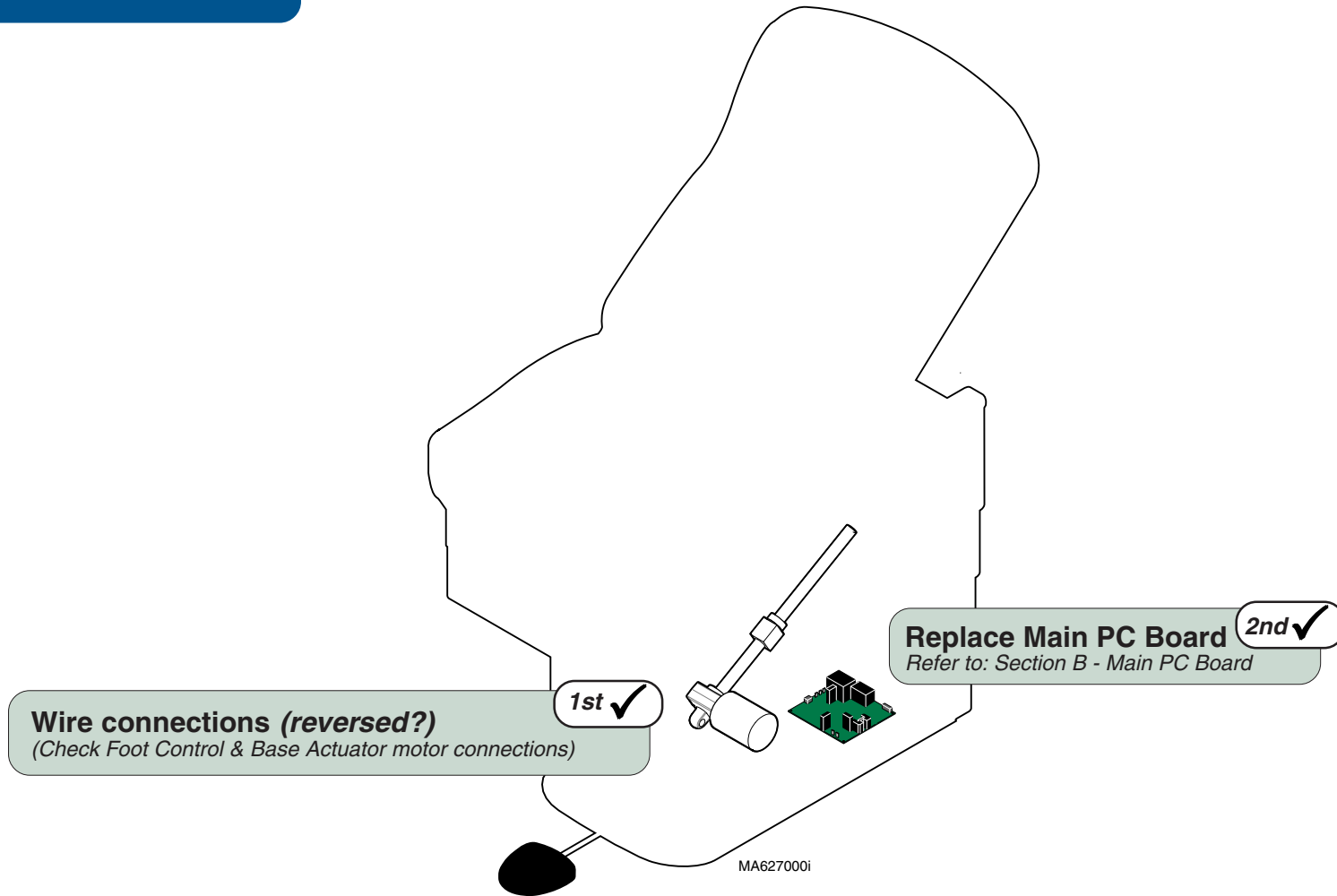
**Models:** All  
**Serial Numbers:** All

**Base Up / Down**

# Troubleshooting



**Refer To:** Page  
 Main PC Board Replacement ..... B-23  
 Wiring Diagrams ..... D-1  
 Exploded Views / Part Numbers .... E-1

Function	Status	Problem
Base Up		Press Base UP pedal, table moves DOWN.
Base Down		Press Base DOWN pedal, table moves UP.

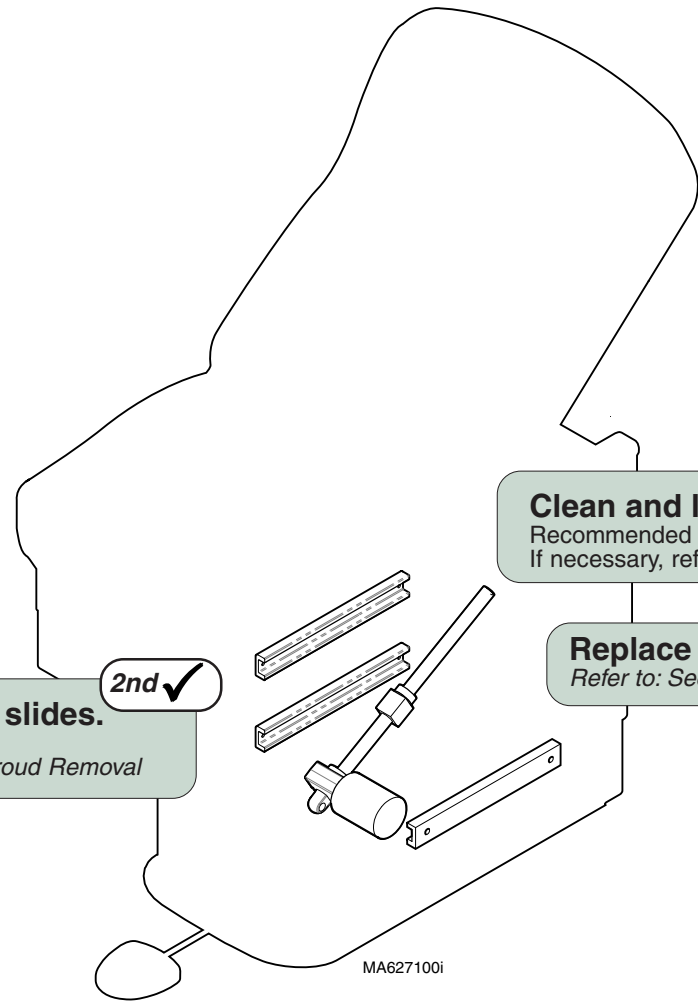




# Troubleshooting

Function	Status	Problem
Base Up		Noisy / grinding / squeaking
Base Down		Noisy / grinding / squeaking

Refer To:	Page
Base Actuator Replacement .....	B-12
Table Shroud Removal .....	C-2
Wiring Diagrams .....	D-1
Exploded Views / Part Numbers ....	E-1



**2nd ✓**  
**Remove any debris from base slides.**  
 Do not lubricate base slides.  
 If necessary, refer to: *Section C - Table Shroud Removal*

**1st ✓**  
**Clean and lubricate base actuator threads.**  
 Recommended lubricant: Lithium grease  
 If necessary, refer to: *Section C - Table Shroud Removal*

**3rd ✓**  
**Replace Base Actuator**  
 Refer to: *Section B - Base / Back Actuator*

**Models:** | **All**  
**Serial Numbers:** | **All**

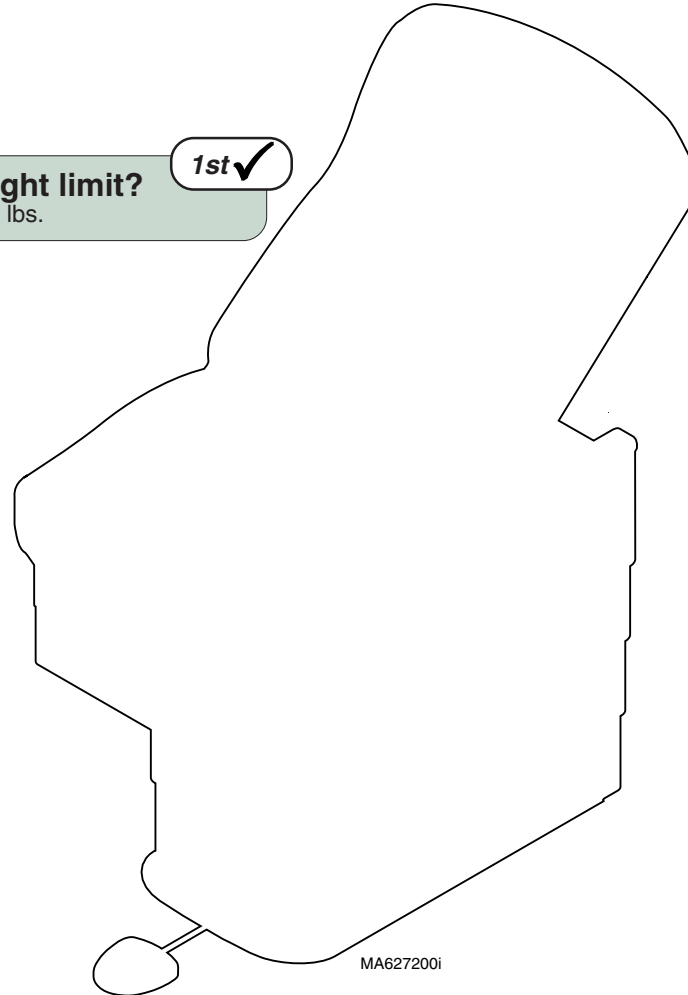
**Base Up / Down**

# Troubleshooting

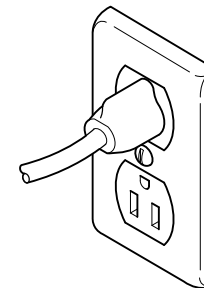
Refer To:	Page
Wiring Diagrams .....	D-1
Exploded Views / Part Numbers ..	E-1

Function	Status	Problem
Base Up		Moves slowly
Base Down		Moves slowly

**1st ✓**  
**Did patient exceed 400 lb. weight limit?**  
 Inform staff that max. patient weight is 400 lbs.



**2nd ✓**  
**Low voltage to table**  
 Required voltage:  
 115 VAC models ..... 115 ±10% VAC  
 230 VAC models ..... 230 ±10% VAC



## Back UP / DOWN Function (Manual)

This illustration shows only the components that affect the Back UP / DOWN function.

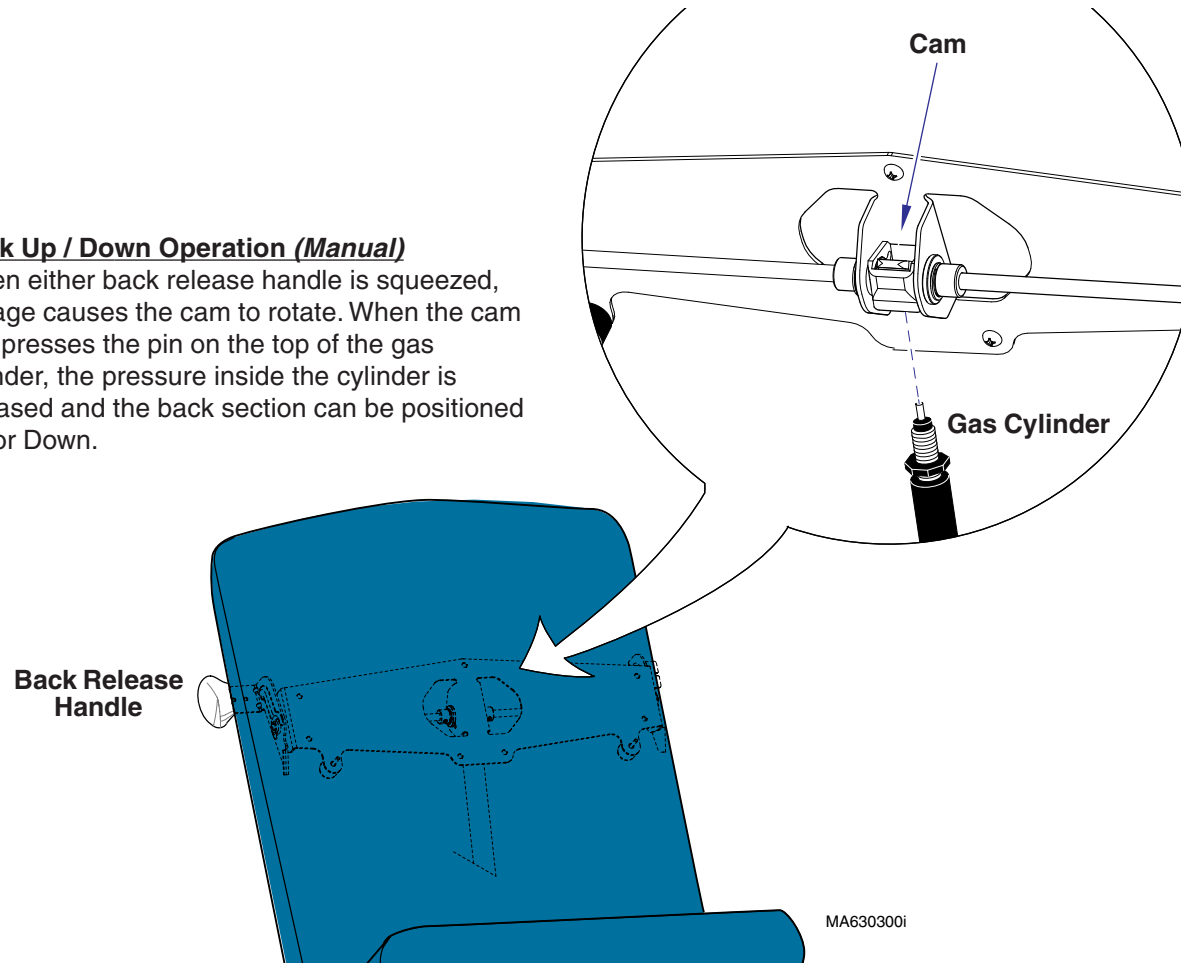
### Troubleshooting

[Back Up / Down Function (Manual)]

<u>Problem</u>	<u>Page</u>
Back Drifts Up or Down .....	A-12
No Movement .....	A-13
Difficult To Position .....	A-13

### Back Up / Down Operation (Manual)

When either back release handle is squeezed, linkage causes the cam to rotate. When the cam compresses the pin on the top of the gas cylinder, the pressure inside the cylinder is released and the back section can be positioned Up or Down.




**Models:**  
Serial Numbers:

**222 (all)**  
All

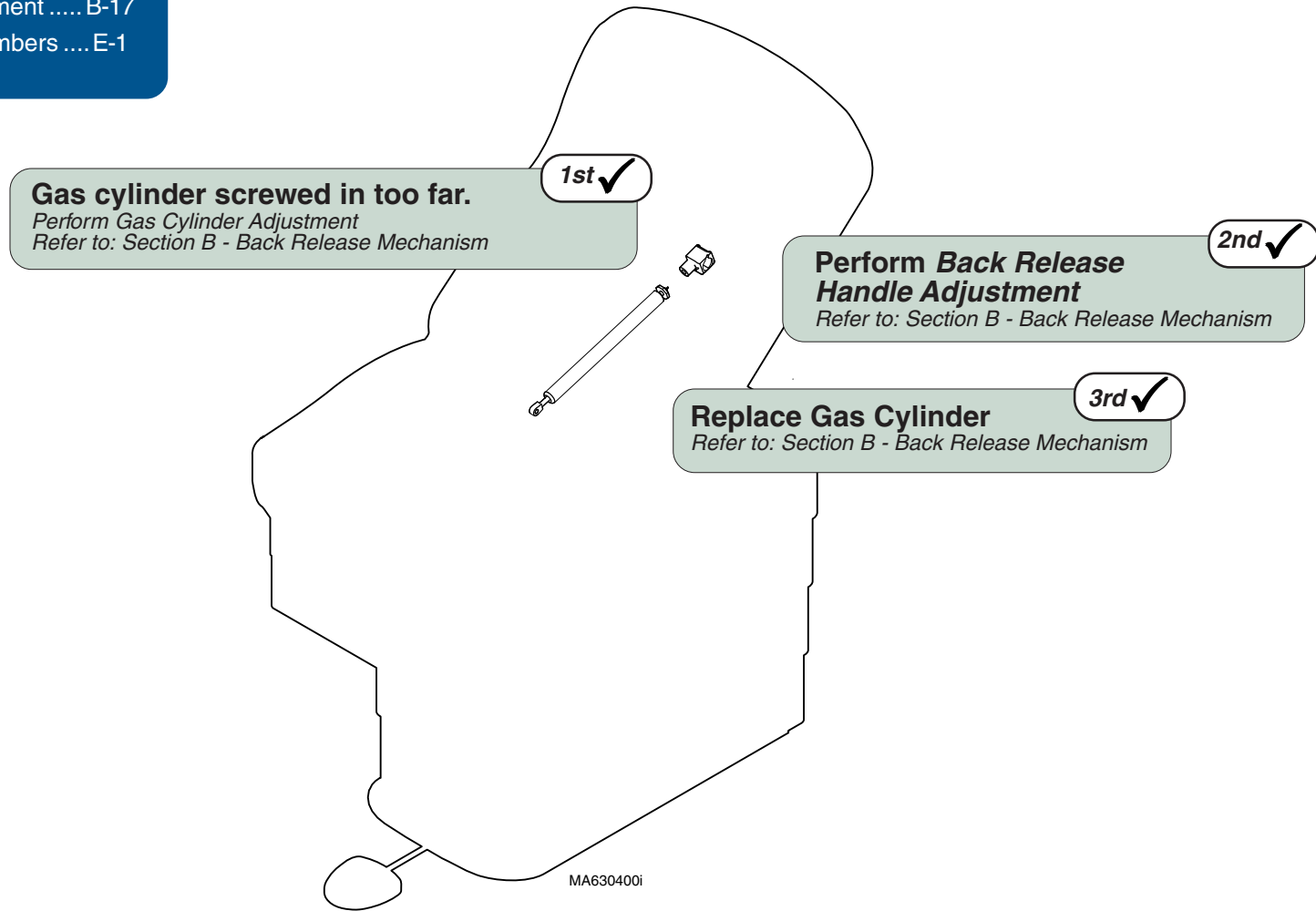
**622 (all)**  
All

**Back Up / Down**  
**Manual**



# Troubleshooting

Function	Status	Problem
Back Up/Down		Back section drifts

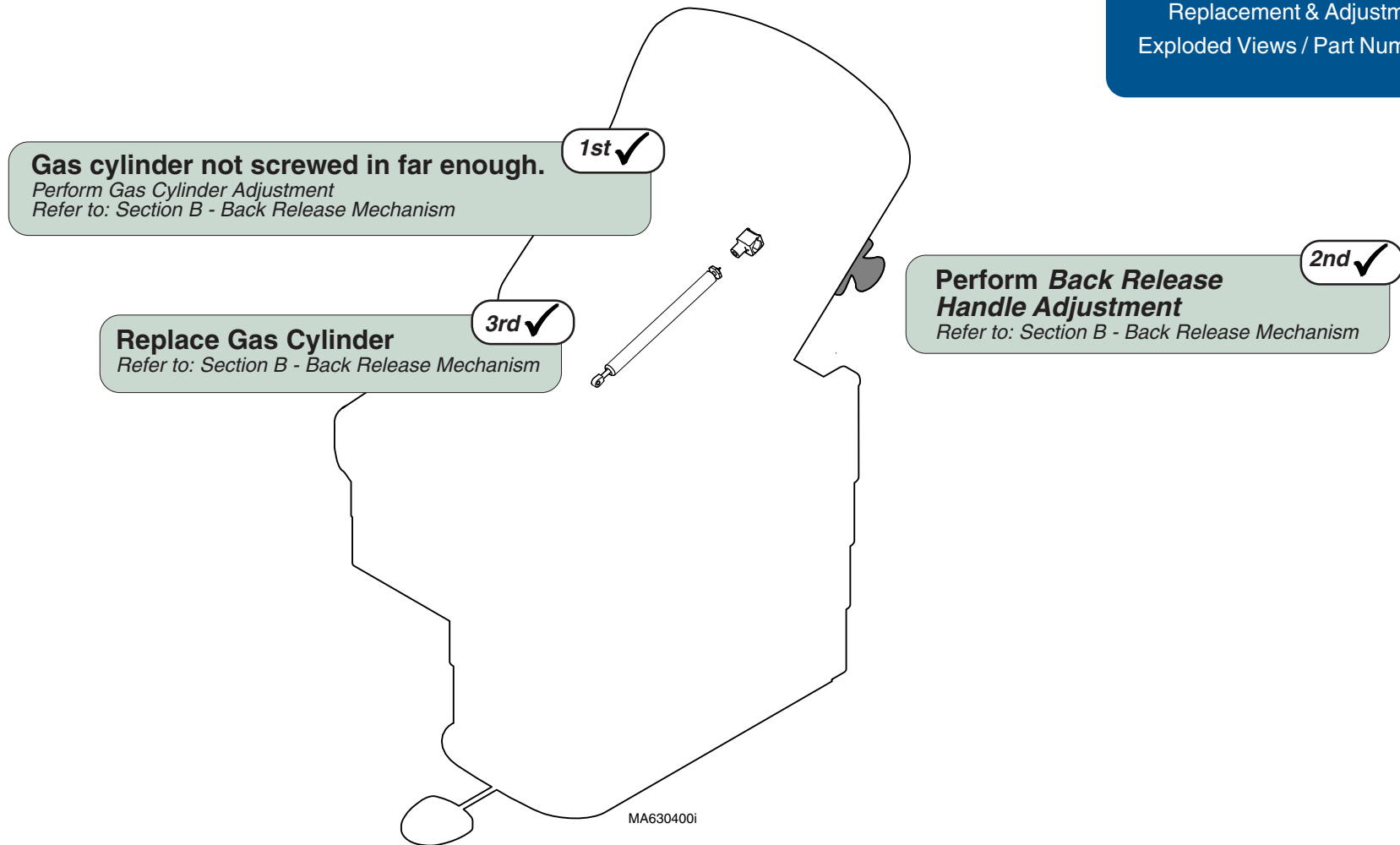
Refer To:	Page
Back Release Handle Adjustment .....	B-16
Gas Cylinder Replacement & Adjustment .....	B-17
Exploded Views / Part Numbers .....	E-1



# Troubleshooting

Function	Status	Problem
Back Up/Down		No movement
		Difficult to position

Refer To:	Page
Back Release Handle	
Adjustment .....	B-16
Gas Cylinder	
Replacement & Adjustment .....	B-17
Exploded Views / Part Numbers ....	E-1



<b>Models:</b>	<b>222 (all)</b>	<b>622 (all)</b>
Serial Numbers:	All	All

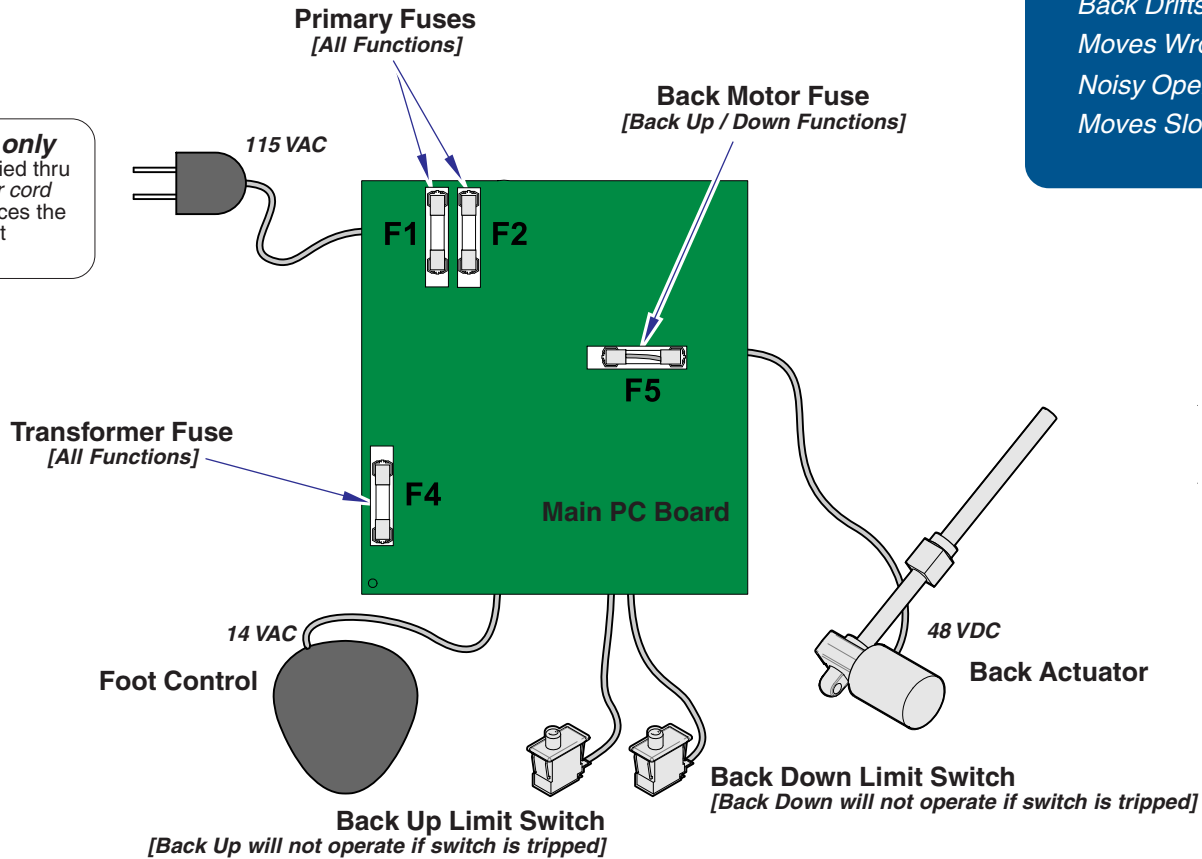
**Back Up / Down  
Manual**

# Troubleshooting

## Back UP / DOWN Function (Power)

This illustration shows only the components that affect the Back UP / DOWN function. Refer to the following page for a detailed description of current flow during this function.

**NOTE: 230 VAC models only**  
Line voltage (230 VAC) is supplied thru two fuses (located by the power cord inlet) to a transformer that reduces the line voltage to 115 VAC before it reaches the PC Board.



Troubleshooting [Back Up / Down Function (Power)]	
Problem	Page
No UP or DOWN Functions .....	A-16
No DOWN Function (UP - OK) .....	A-17
No UP Function (DOWN - OK) .....	A-18
Back Drifts Down .....	A-19
Moves Wrong Direction .....	A-20
Noisy Operation .....	A-21
Moves Slowly .....	A-22

## Back UP / DOWN Function (Power)

### NOTE

On 230 VAC models, line voltage (230 VAC) is supplied thru two fuses (located by IEC inlet) to a transformer that reduces the line voltage to 115 VAC before it gets to the PC board.

### Power To Foot Control

115 VAC is supplied thru the two primary fuses (F1 & F2) to the transformer on the PC board. [F4 fuse protects the transformer].

The transformer reduces the line voltage and supplies 14 VAC to the foot control.

## Back Up Operation

### NOTE

If the Back Up limit switch is tripped (open), the Back Up function will not operate.

When the Back Up function is activated, current (14 VAC) flows thru the Up function foot switch (N.O), then back to the PC board. Circuitry on the PC Board energizes the back relay. [F5 fuse protects the back motor].

### NOTE

The Back Up/Down relay has four contacts:  
**(2) Normally Open: Back Up function**  
**(2) Normally Closed: Back Down function**

When the back relay is energized, the (2) Normally Open contacts of the relay close. When these contacts close, current (48 VDC) flows to the actuator motor.

When current flows to the actuator thru the Normally Open contacts of the relay, the actuator motor runs and raises the back section.

### Actuator Motor runs until:

1. Foot control pedal is released.
2. Back Up limit switch is tripped.
3. 26 second software time limit is reached.
4. Fuse(s) opens (blows).  
[Primary, Back Motor, Transformer fuse]

## Back Down Operation

### NOTE

If the Back Down limit switch is tripped (open), the Back Down function will not operate.

When the Back Down function is activated, current (14 VAC) flows thru the Down function foot switch (N.O.), then back to the PC Board.

### NOTE

The Back Up/Down relay has four contacts:  
**(2) Normally Open: Back Up function**  
**(2) Normally Closed: Back Down function**

When this voltage is applied, current (48 VDC) flows to the actuator motor thru the (2) Normally Closed contacts of the Back Up/Down relay. [The relay does not energize].

When voltage flows to the actuator thru the Normally Closed contacts of the relay, the actuator motor runs and lowers the back section.

### Actuator Motor runs until:

1. Foot control pedal is released.
2. Back Down limit switch is tripped.
3. 26 second software time limit is reached.
4. Fuse(s) opens (blows).  
[Primary, Back Motor, Transformer fuse]



### Equipment Alert



If an overload condition\* is detected the PC board will "beep" and all power functions will be disabled. Release the function button, remove load, then retry function.

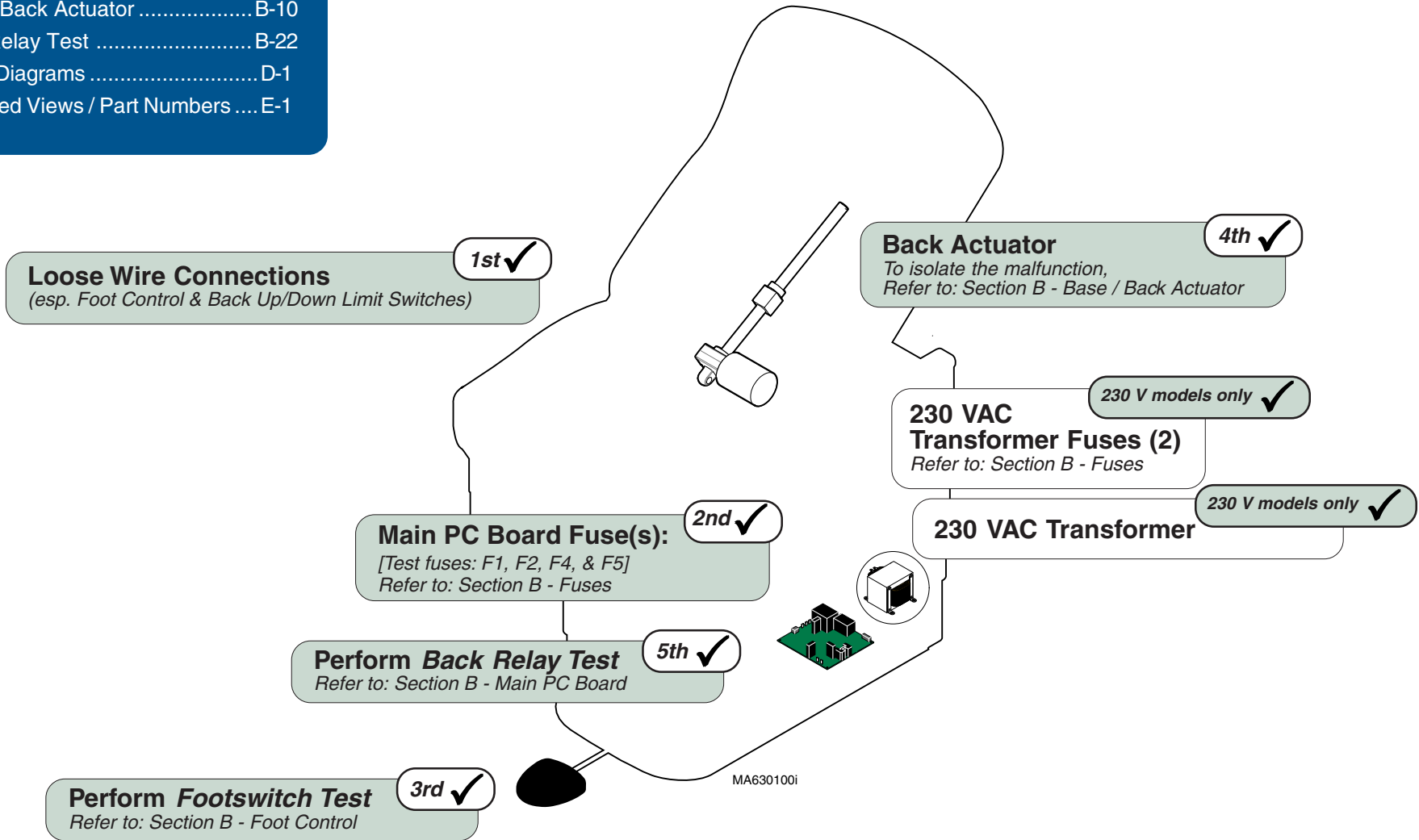
\*(weight limit exceeded, mechanical binding, etc),





# Troubleshooting

Refer To:	Page
Fuses .....	B-2
Limit Switches .....	B-4
Foot Control .....	B-6
Base / Back Actuator .....	B-10
Back Relay Test .....	B-22
Wiring Diagrams .....	D-1
Exploded Views / Part Numbers ....	E-1

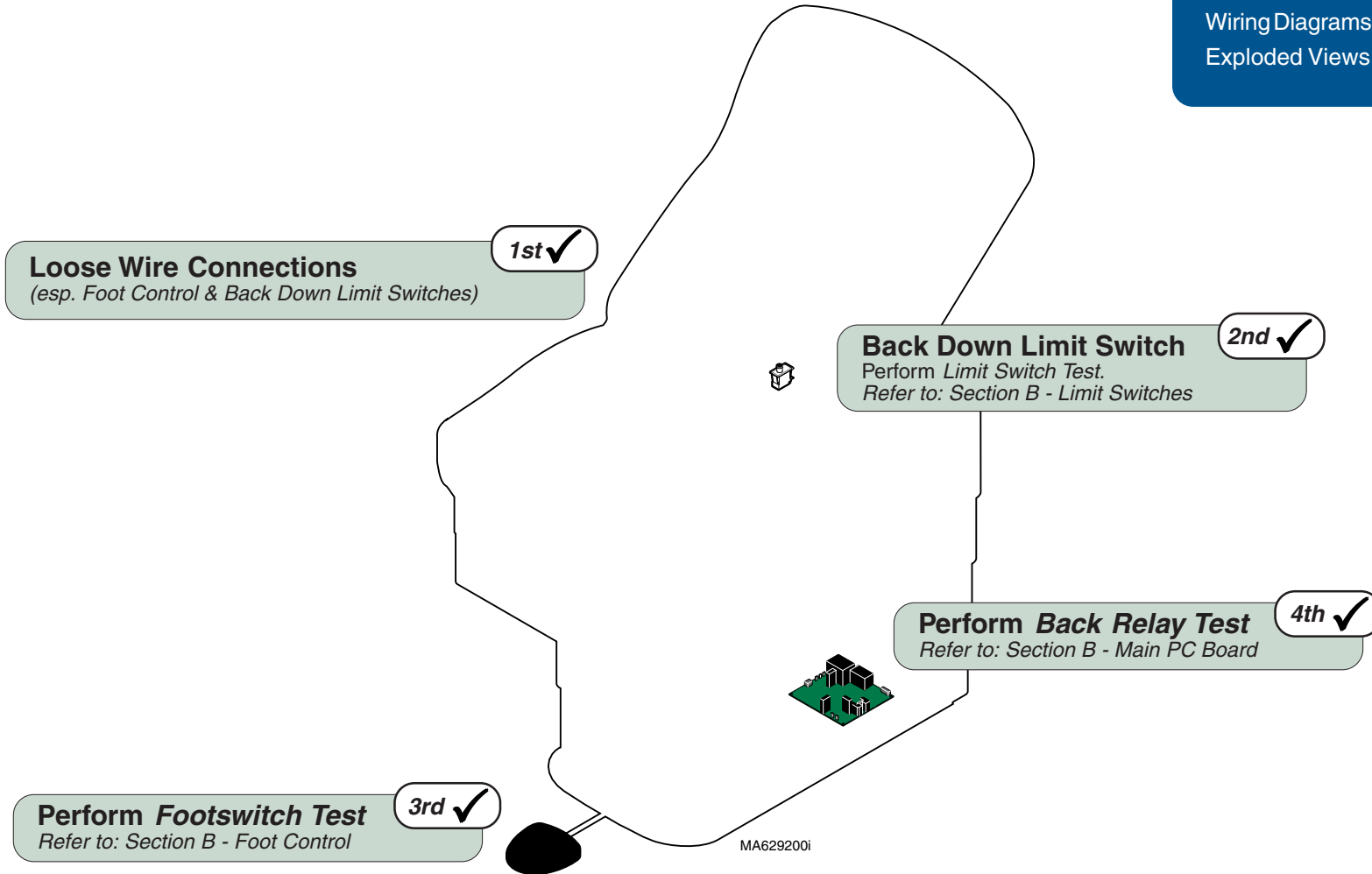
Function	Status	Problem
Back Up		No movement
Back Down		No movement



# Troubleshooting

Function	Status	Problem
Back Up		OK
Back Down		No movement

Refer To:	Page
Limit Switches .....	B-4
Foot Control .....	B-6
Back Relay Test .....	B-22
Wiring Diagrams .....	D-1
Exploded Views / Part Numbers ....	E-1





<b>Models:</b>	<b>223 (all)</b>	<b>623 (all)</b>
Serial Numbers:	All	All

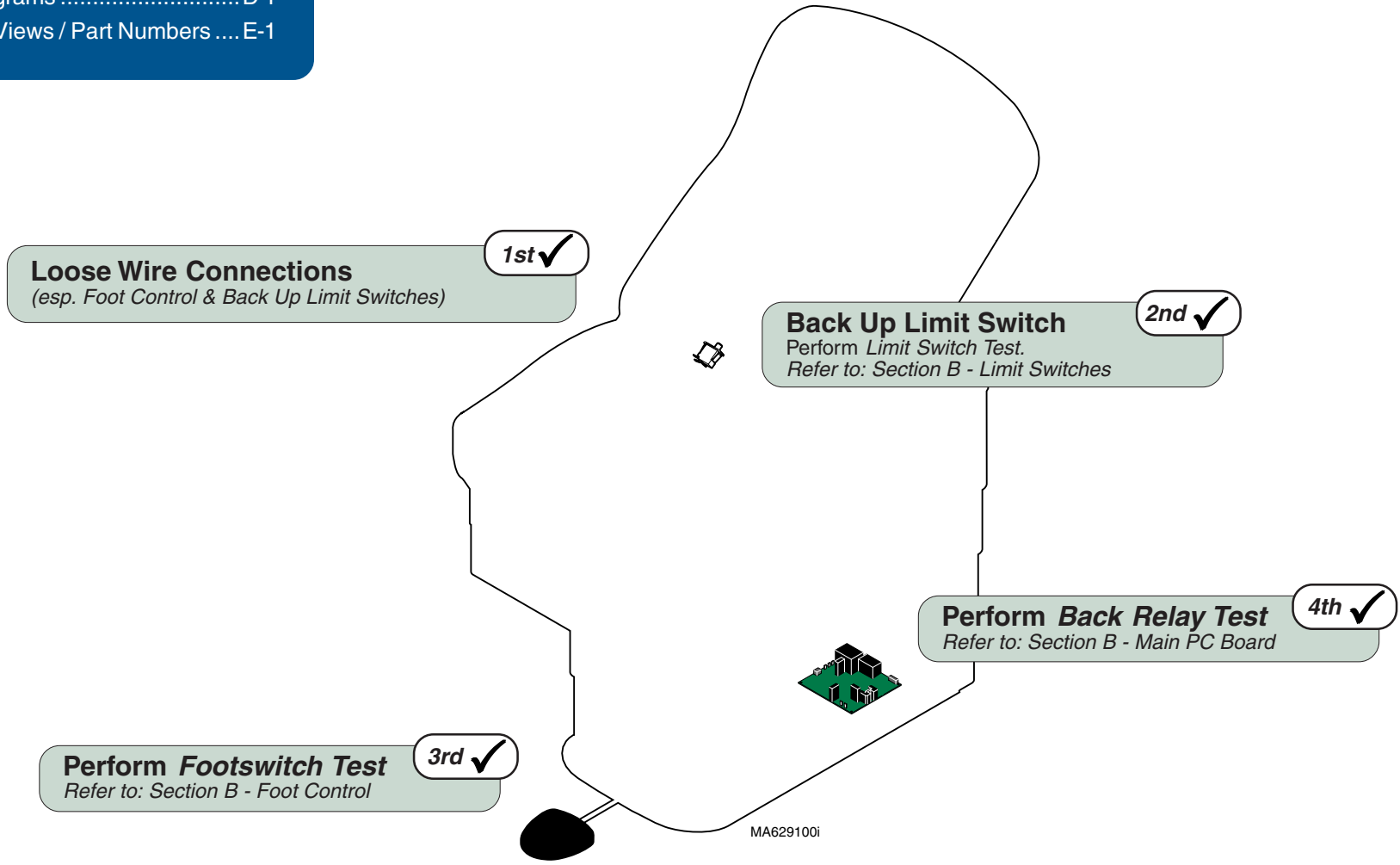
**Back Up / Down  
Power**

# Troubleshooting



**Refer To:** **Page**

Limit Switches .....	B-4
Foot Control .....	B-6
Back Relay Test .....	B-22
Wiring Diagrams .....	D-1
Exploded Views / Part Numbers ....	E-1

Function	Status	Problem
Back Up		No movement
Back Down		OK

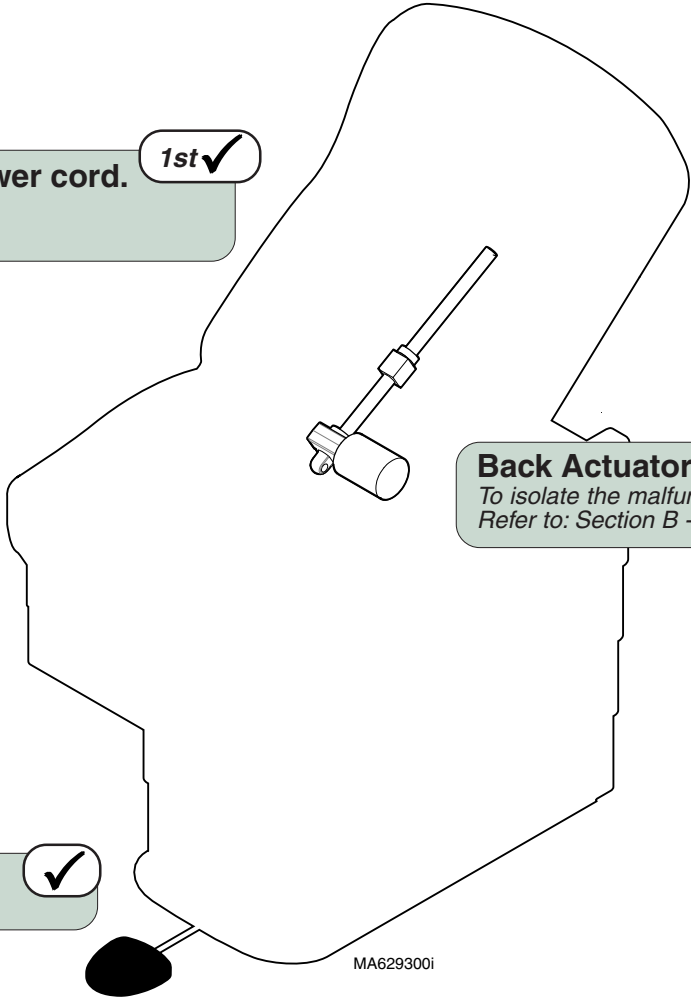


# Troubleshooting

Function	Status	Problem
Back Up		Back drifts down.
Back Down		Back drifts down.

Refer To:	Page
Foot Control .....	B-6
Base / Back Actuator .....	B-10
Wiring Diagrams .....	D-1
Exploded Views / Part Numbers ....	E-1

**Run back section up, then unplug power cord.** 1st ✓  
 If drifting stops, perform *Footswitch Test*.  
 If drifting continues, check Back Actuator.



**Back Actuator** ✓  
 To isolate the malfunction,  
 Refer to: Section B - Base / Back Actuator



**Perform Footswitch Test** ✓  
 Refer to: Section B - Foot Control

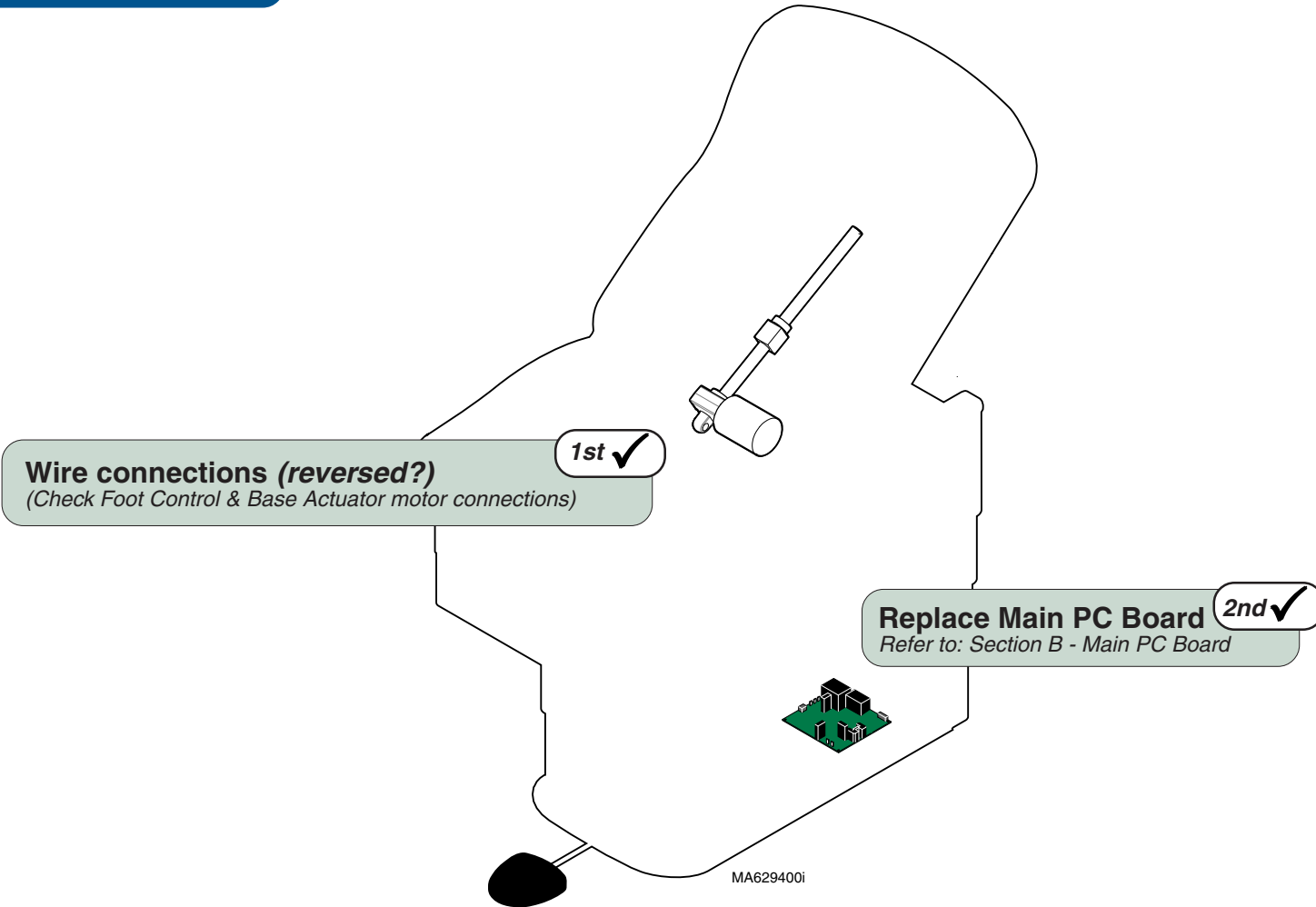
<b>Models:</b>	<b>223 (all)</b>	<b>623 (all)</b>
Serial Numbers:	All	All

**Back Up / Down  
Power**



# Troubleshooting

**Refer To:** **Page**  
 Main PC Board Replacement ..... B-23  
 Wiring Diagrams ..... D-1  
 Exploded Views / Part Numbers .... E-1

Function	Status	Problem
Back Up		Press Back UP pedal, back section moves DOWN.
Back Down		Press Back DOWN pedal, back section moves UP.



# Troubleshooting

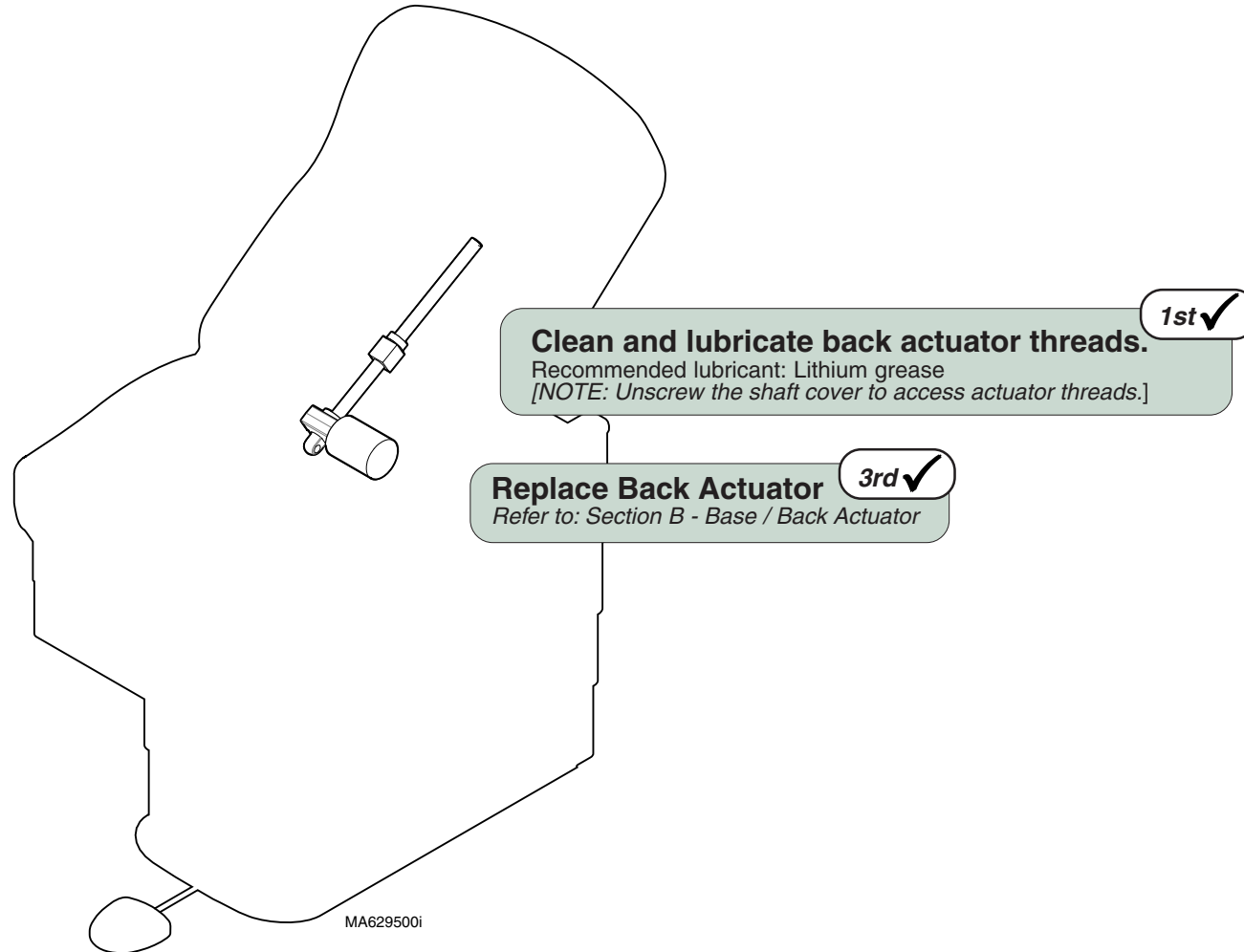
Function	Status	Problem
Back Up		Noisy / grinding / squeaking
Back Down		Noisy / grinding / squeaking

**Refer To:**

Back Actuator Replacement ..... B-14

Wiring Diagrams ..... D-1

Exploded Views / Part Numbers .... E-1





<b>Models:</b>	<b>223 (all)</b>	<b>623 (all)</b>
Serial Numbers:	All	All

**Back Up / Down  
Power**

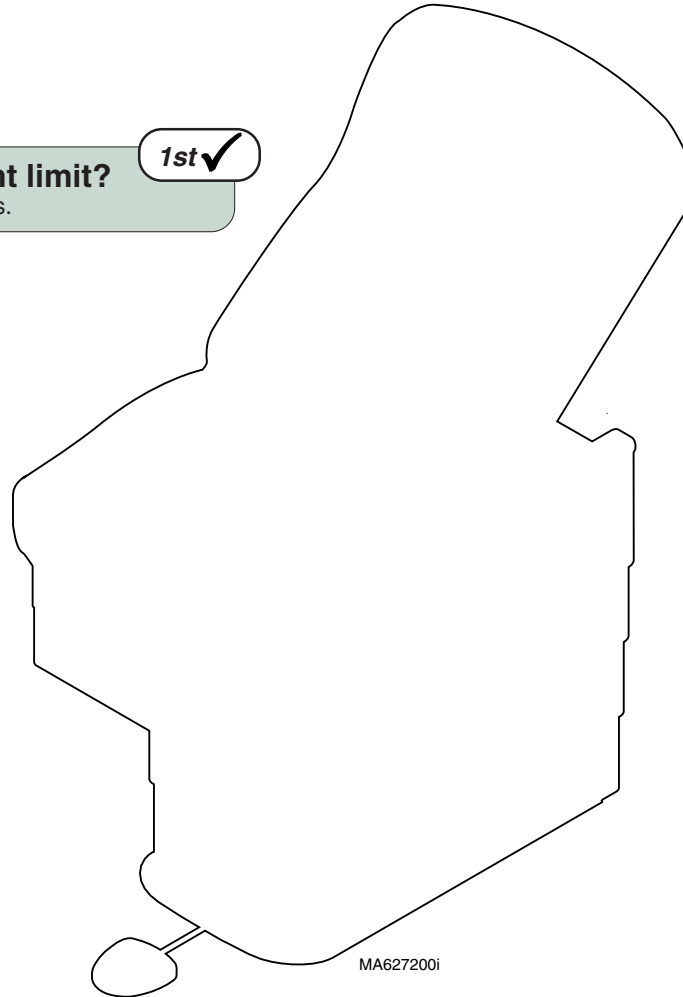
# Troubleshooting

**Refer To:** **Page**  
 Wiring Diagrams ..... D-1  
 Exploded Views / Part Numbers .. E-1

Function	Status	Problem
Back Up		Moves slowly
Back Down		Moves slowly

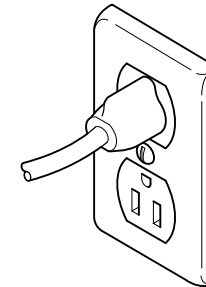
## Did patient exceed 400 lb. weight limit? 1st ✓

Inform staff that max. patient weight is 400 lbs.



## Low voltage to table 2nd ✓

Required voltage:  
 115 VAC models ..... 115 ±10% VAC  
 230 VAC models ..... 230 ±10% VAC





## Drawer Heater System (optional)

This illustration shows only the components that affect the drawer heater system. A detailed description of current flow during this function also appears below.

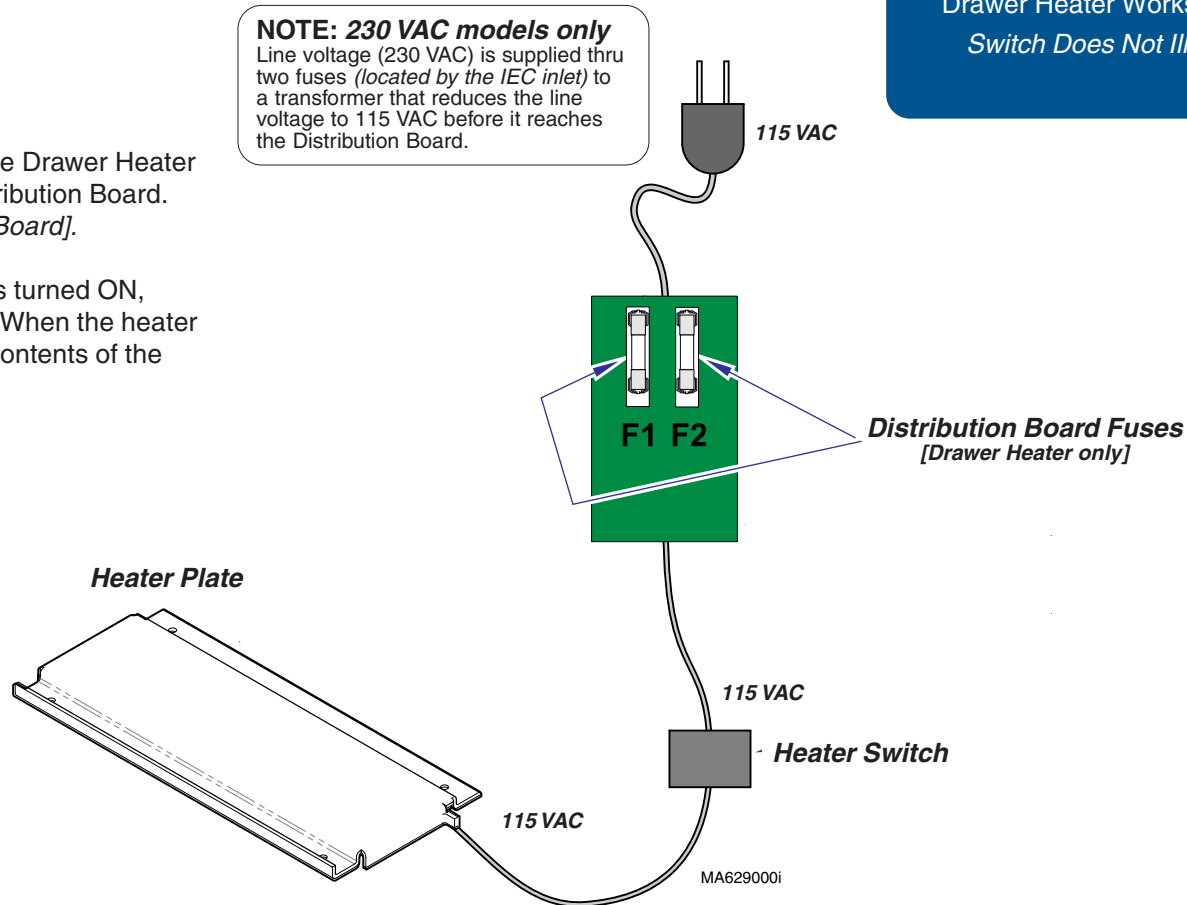
### Troubleshooting [Drawer Heater System]

Problem	Page
Drawer Heater Does <u>Not</u> Warm Up:	
Switch Does <u>Not</u> Illuminate .....	A-24
Switch Illuminates .....	A-25
Drawer Heater Works Properly:	
Switch Does <u>Not</u> Illuminate .....	A-26

### Drawer Heater Operation

115 VAC is supplied directly to the Drawer Heater switch thru two fuses on the Distribution Board. [Voltage bypasses the Main PC Board].

When the drawer heater switch is turned ON, current flows to the heater plate. When the heater plate is energized, it warms the contents of the drawer.



**Models:**  
Serial Numbers:

222 (-016)  
All

223 (-016)  
All

622 (-008)  
All



623 (-008 / -010 / -011)  
All

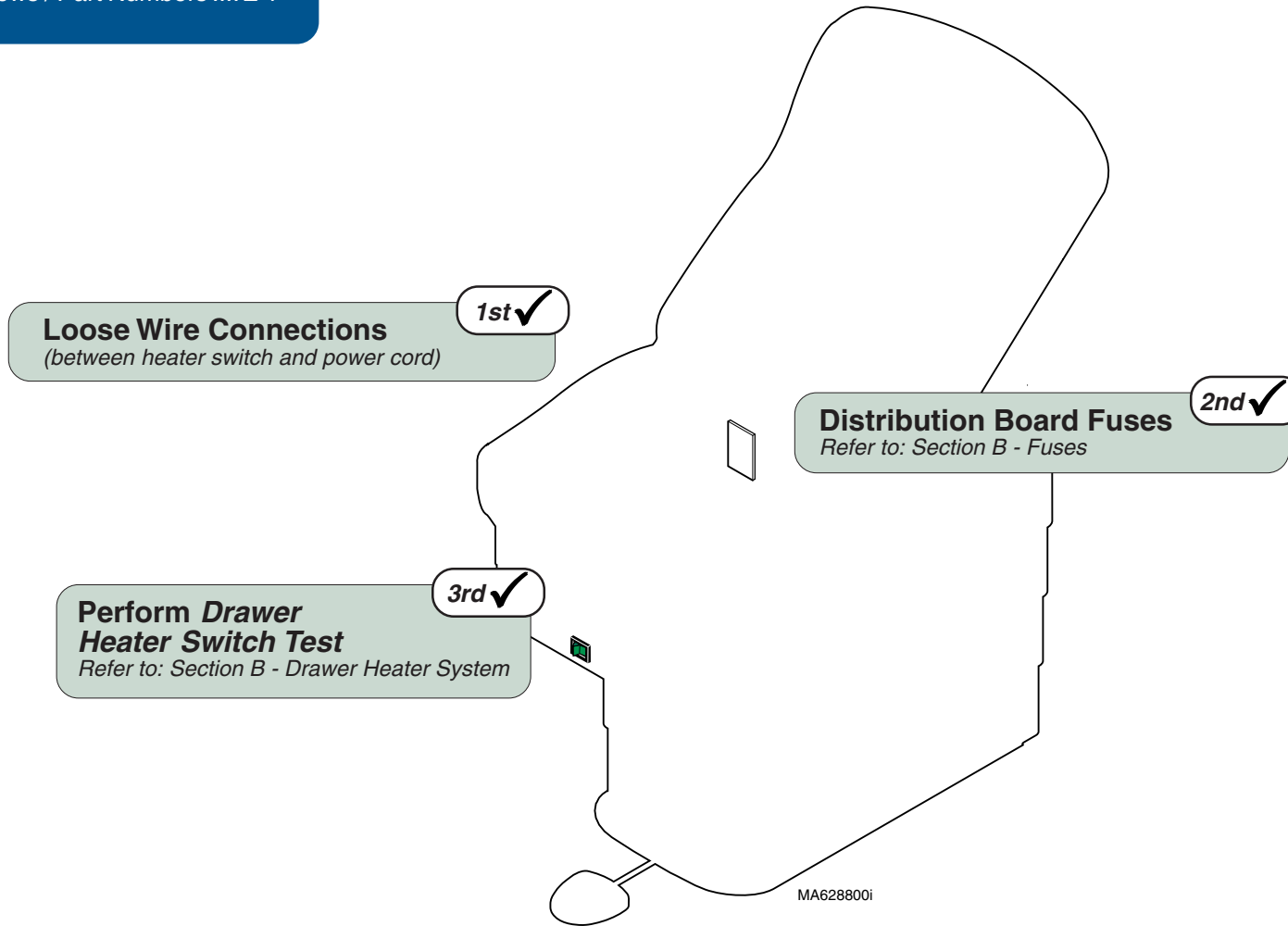
**Drawer Heater System**

**A-23**



# Troubleshooting

Refer To:	Page
Fuses .....	B-2
Drawer Heater System .....	B-24
Wiring Diagrams .....	D-1
Exploded Views / Part Numbers .....	E-1

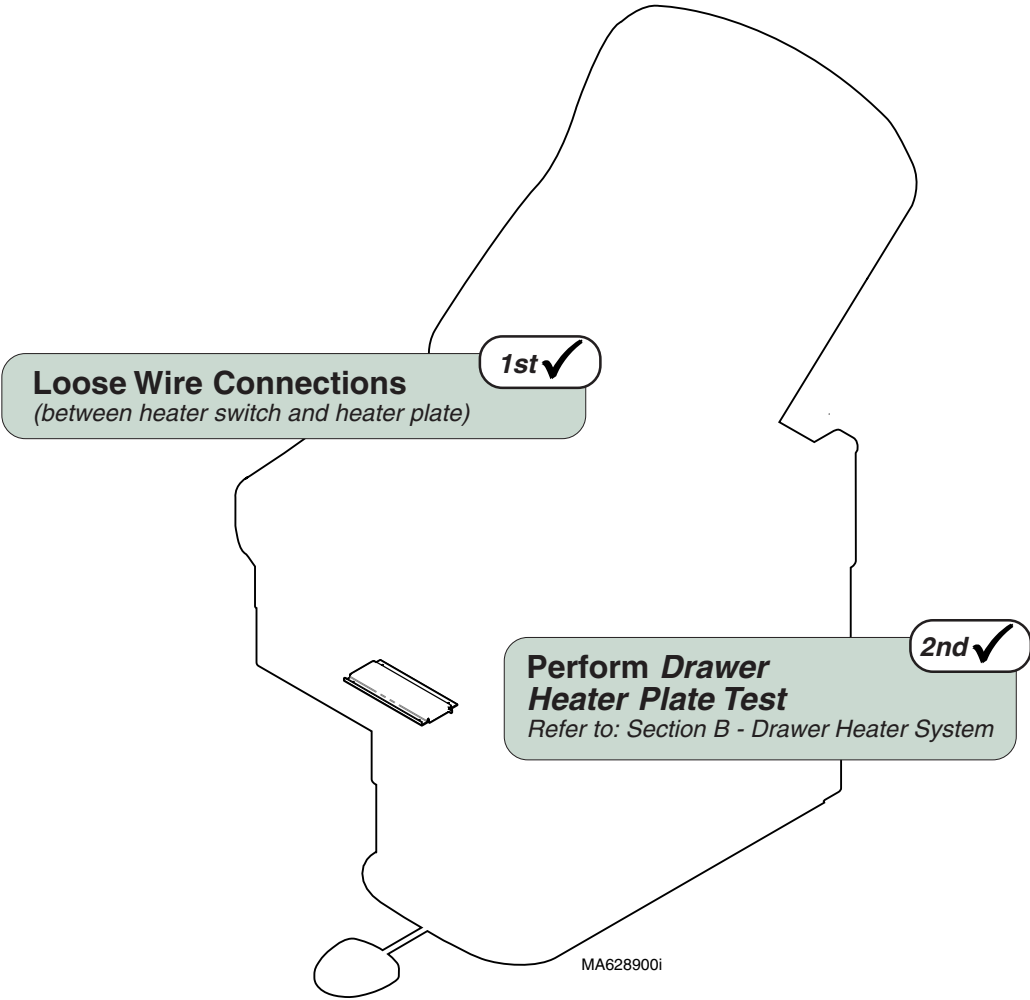
Function	Status	Problem
Drawer Heater		Does not heat up.
Heater Switch		Does <u>not</u> illuminate



# Troubleshooting

Function	Status	Problem
Drawer Heater		Does not heat up.
Heater Switch		OK ( <i>Illuminates</i> )

Refer To:	Page
Fuses .....	B-2
Drawer Heater System .....	B-24
Wiring Diagrams .....	D-1
Exploded Views / Part Numbers ....	E-1





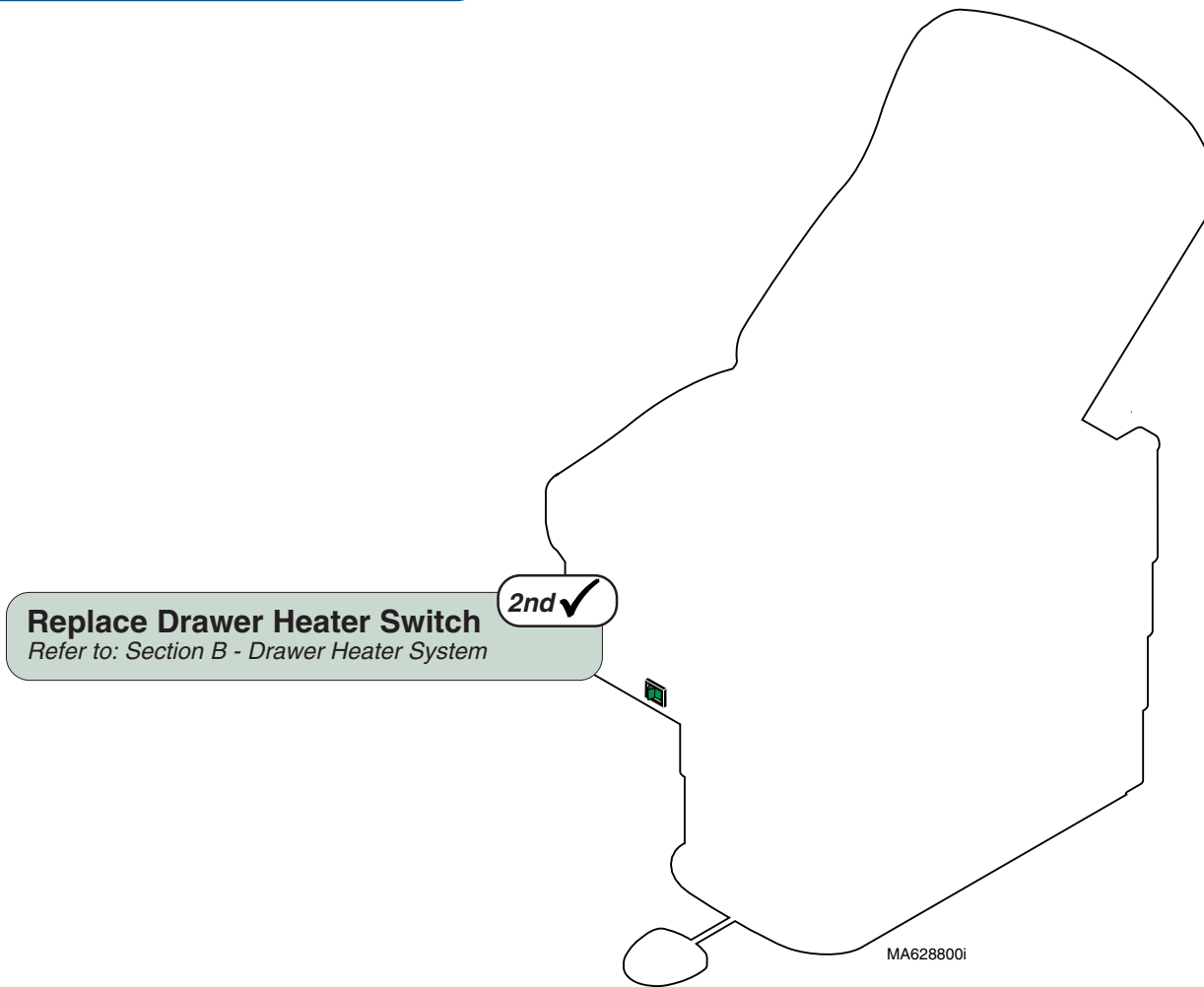
<b>Models:</b>	<b>222 (-016)</b>	<b>223 (-016)</b>	<b>622 (-008)</b>	<b>623 (-008 /-010 /-011)</b>
Serial Numbers:	All	All	All	All

## Drawer Heater System

# Troubleshooting

Refer To:	Page
Drawer Heater System .....	B-24
Wiring Diagrams .....	D-1
Exploded Views / Part Numbers ....	E-1

Function	Status	Problem
Drawer Heater		OK
Heater Switch		Does <u>not</u> illuminate



## Table Receptacle (optional)

This illustration shows only the components that affect the table receptacle. A detailed description of current flow also appears below.

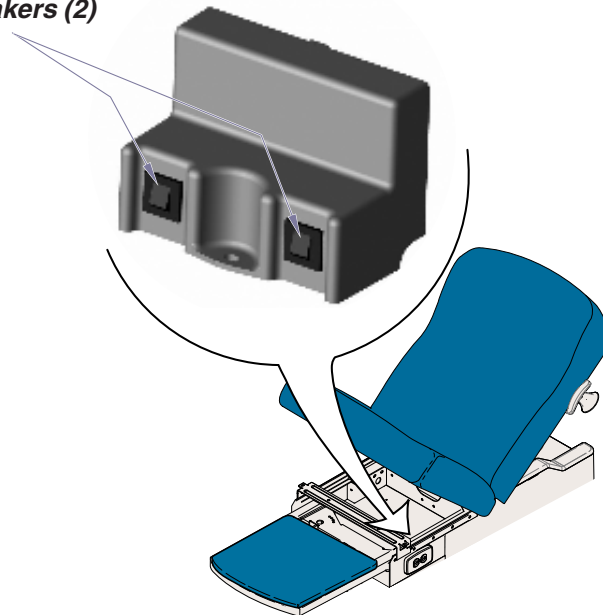
### Table Receptacle

115 VAC is supplied directly to the table receptacle thru the circuit breakers.  
*[Voltage bypasses the Main PC Board].*

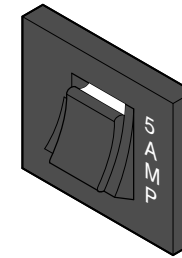
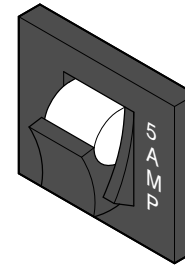
**NOTE: Models w/drawer heater only**

There is a connection point for the receptacle wiring harness at the distribution board.  
 Current does not flow thru the distribution board fuses.

Circuit Breakers (2)



(Tripped = no power)



(Reset = power)

MA603406i



## Troubleshooting [Table Receptacle]

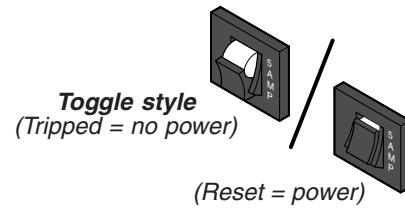
Problem	Page
No Power At Receptacle .....	A-28

<b>Models:</b>	<b>222</b> (-015 /-016)	<b>223</b> (-015 /-016)	<b>622</b> (-007 /-008)	<b>623</b> (-007 /-008)
Serial Numbers:	All	All	All	All

# Troubleshooting

**Refer To:** **Page**  
 Wiring Diagrams ..... D-1  
 Exploded Views / Part Numbers .. E-1

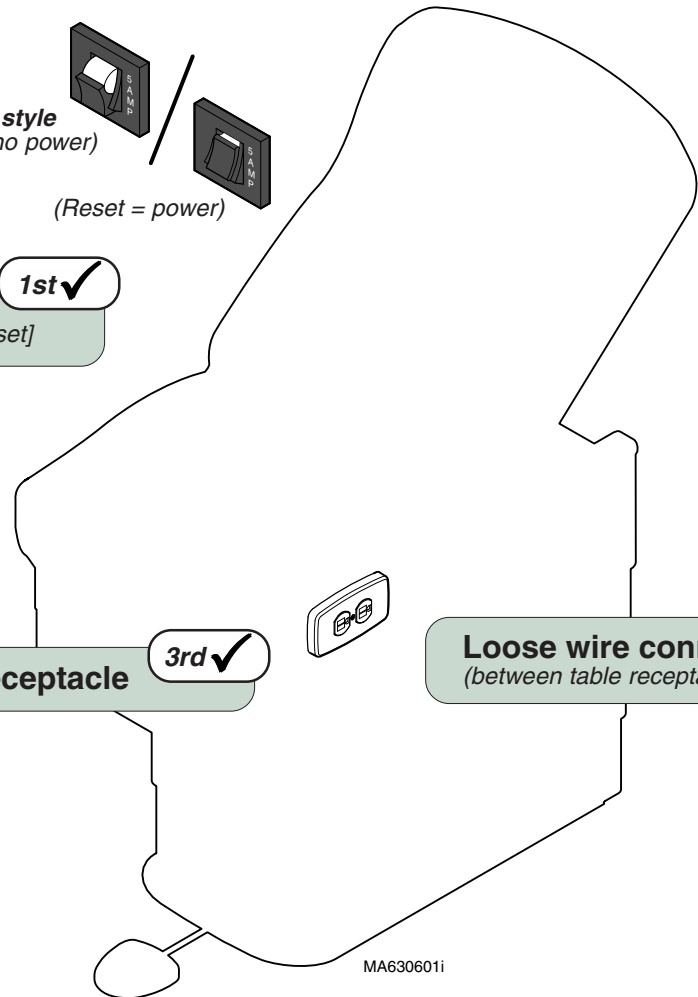
Function	Status	Problem
Table Receptacle		No power.
All other functions		OK



**1st ✓**  
**Is circuit breaker tripped?**  
*[Lift seat section to access circuit breaker(s) - press to reset]*

**3rd ✓**  
**Replace receptacle**

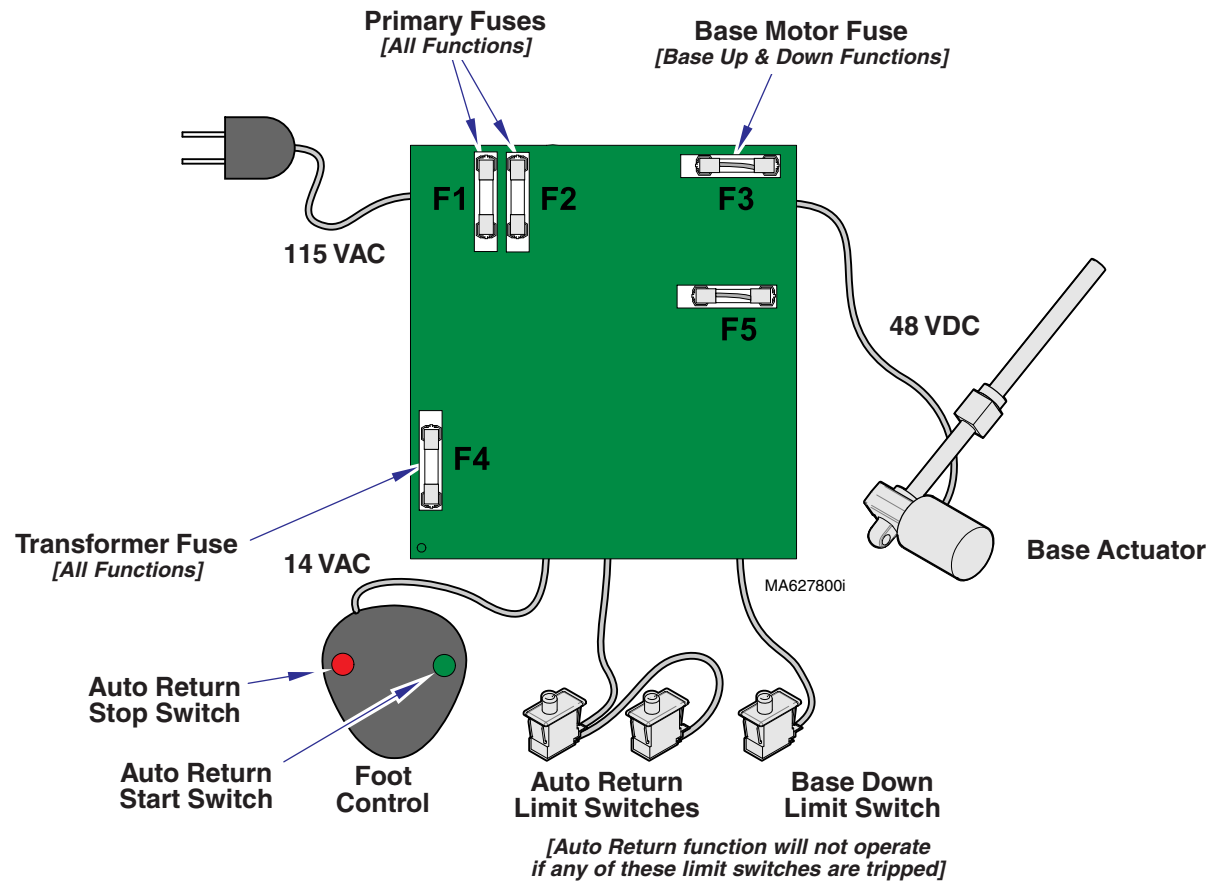
**2nd ✓**  
**Loose wire connections**  
*(between table receptacle and power cord)*



## Auto Return Function

This illustration shows only the components that affect the Auto Return function.

Refer to the following page for a detailed description of current flow during this function.



## Troubleshooting [Auto Return Function]

Problem	Page
Auto Return Function Does Not Work / Base Down Function:	
Malfunctioning .....	A-2
Works Properly .....	A-31

# Troubleshooting

## Auto Return Function

### Power To Foot Control

115 VAC is supplied thru the two primary fuses (*F1 & F2*) to the transformer on the PC board. [*F4 fuse protects the transformer*].

The transformer reduces the line voltage and supplies 14 VAC to the foot control.

### Auto Return Operation

#### NOTE

If either of the Auto Return limit switches or the Base Down limit switch are tripped (open), the Auto Return function will not operate.

When the Auto Return Switch is depressed (closed), current (*14 VAC*) flows thru the switch, to the PC Board.

#### NOTE

The Base Up / Down relay, located on the PC Board, has four contacts (DPDT):  
(2) *Normally Open: Base Up function*  
(2) **Normally Closed: Base Down function**

When this voltage is applied, current (*48 VDC*) flows to the actuator motor thru the (2) Normally Closed contacts of the Base Up / Down relay. [*The relay does not energize*].

When voltage flows to the actuator thru the Normally Closed contacts of the relay, the actuator motor runs lowering the table.



#### **Actuator Motor runs until:**

1. Stop button is depressed.
2. Auto Return limit switch(es) is tripped.
3. 18 second software time limit is reached.
4. Base Down limit switch is tripped.
5. Fuse(s) opens (blows).

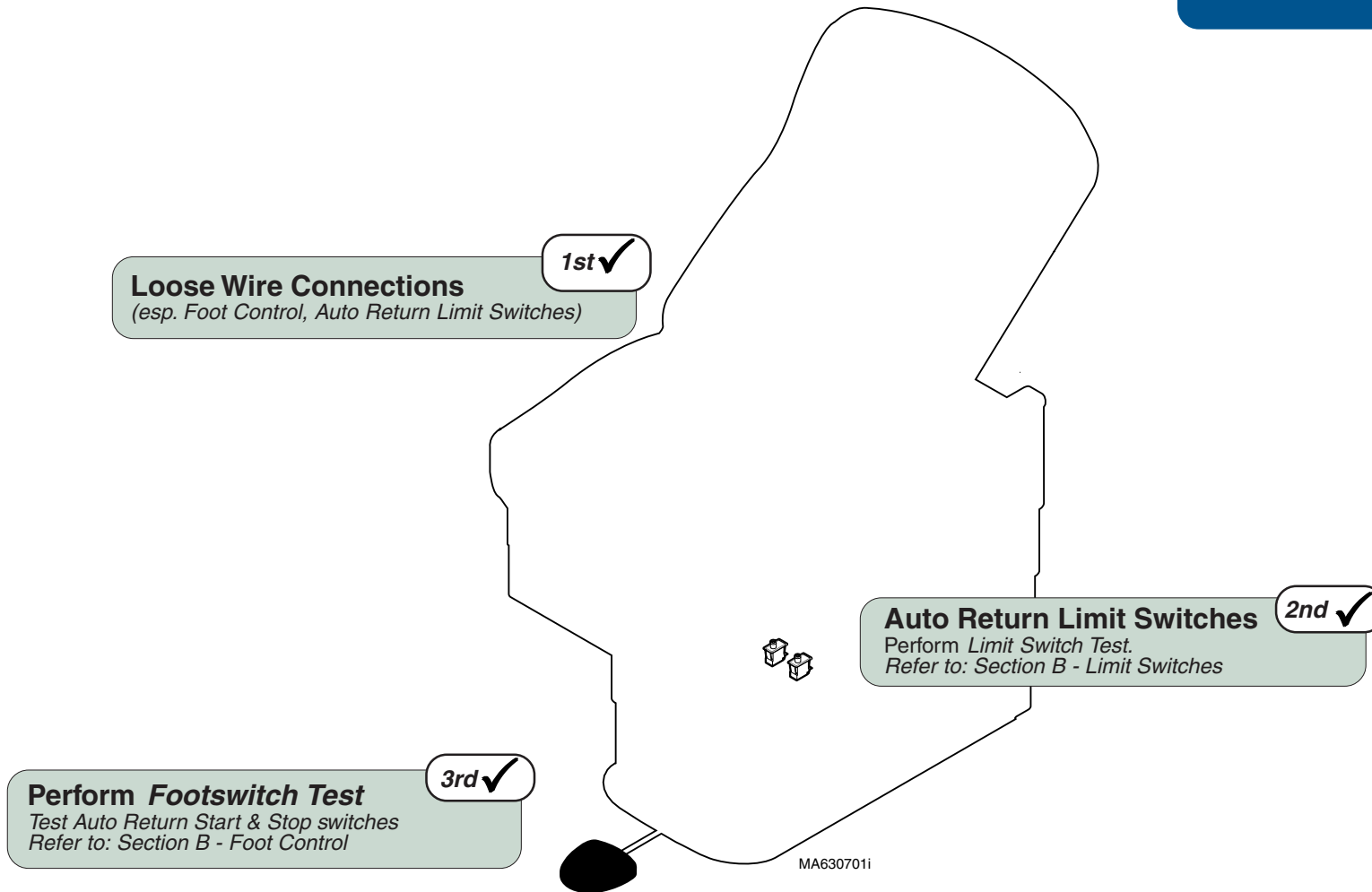
[*Primary, Base Motor, Transformer fuse*]



# Troubleshooting

Function	Status	Problem
Auto Return		No movement
Base Down		OK

Refer To:	Page
Limit Switches .....	B-4
Foot Control .....	B-6
Wiring Diagrams .....	D-1
Exploded Views / Part Numbers ..	E-1



**Models:** 623 (all)  
**Serial Numbers:** All

**Auto Return  
Function**

# Troubleshooting

## Upholstery Heater System (optional)

This illustration shows only the components that affect the Upholstery Heater System. A detailed description of current flow during this function also appears below.

### Upholstery Heater Operation

115 VAC is supplied thru the IEC inlet to the Distribution PC board and then to the Upholstery Heater PC board at J2 & J3. Fuses F1 and F2 protect the circuit. Circuitry on PC board converts 115 VAC to 12 VAC.

Depressing and releasing the momentary On/Off Switch supplies approximately 12 VAC to the Upholstery Heater. A timer on the PC board (*initiated when the On/Off Switch is depressed*) keeps the heater activated for an 8 hour period unless the Switch is depressed Off.

*(Temperature knob not present on later models)*  
The upholstery heater temperature can be regulated by the operator. Turning the temperature knob will increase or decrease the voltage to the heater. The temperature can be varied to a maximum of 105° F (41° C).

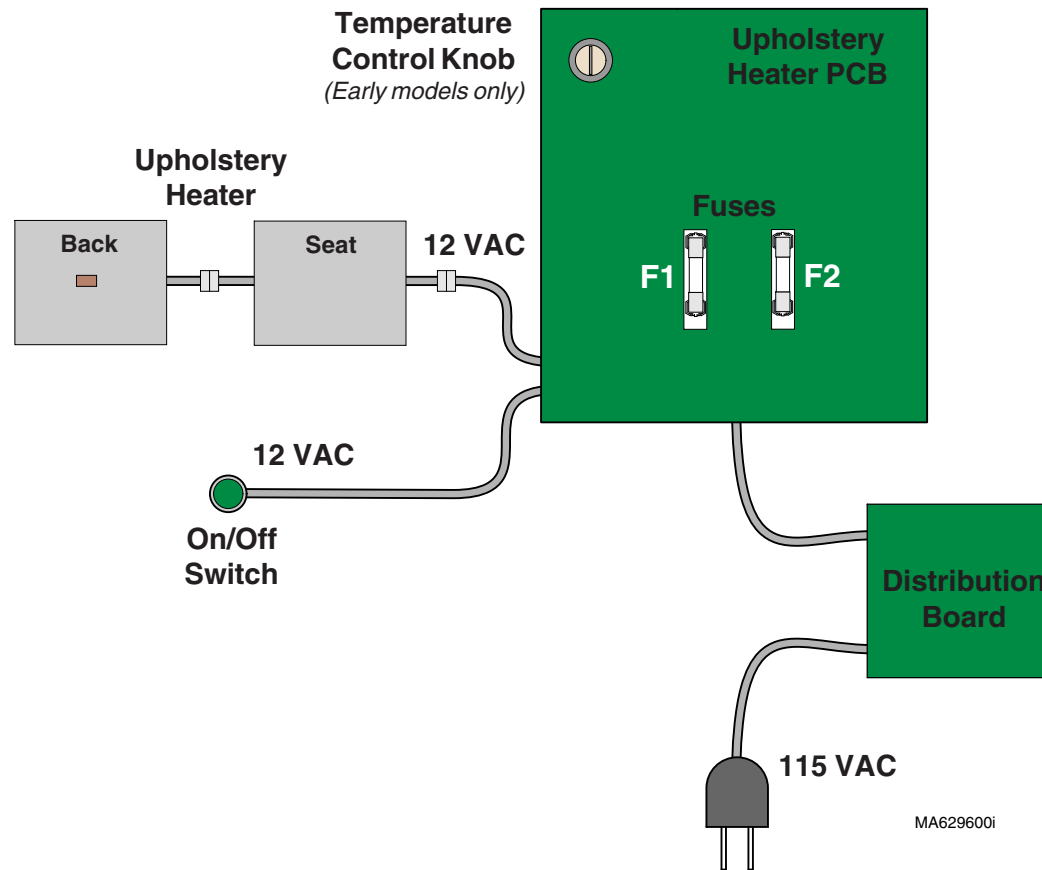
A thermostat, located in Back Heating Pad, opens at 131° F (55°C) +/- 10% removing power from both Back and Seat heating elements.

### Upholstery Heater runs until:



1. Stop button is depressed.
2. 8 hour time limit is reached.
3. Fuse(s) on Upholstery Heater PCB opens (blows).

## Troubleshooting [Upholstery Heater System]

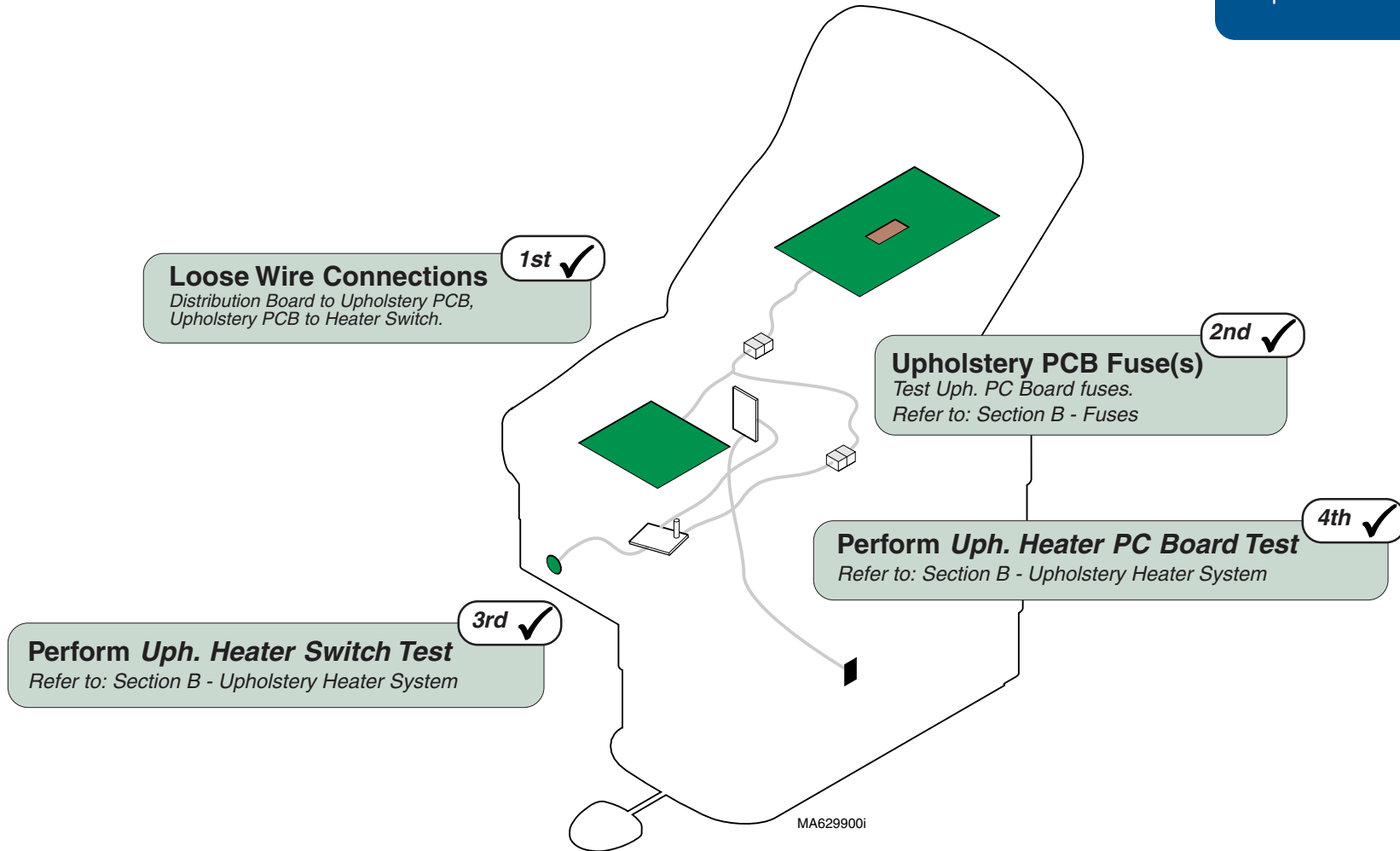
Problem	Page
Heater Does <u>Not</u> Warm Up:	
Switch Does <u>Not</u> Illuminate .....	A-33
Switch Illuminates .....	A-34
Heater Works Properly:	
Switch Does <u>Not</u> Illuminate .....	A-35



# Troubleshooting

Function	Status	Problem
Upholstery Heater		Does <u>not</u> heat up.
Heater Switch		Does <u>not</u> illuminate

Refer To:	Page
Fuses .....	B-2
Uph. Heater PC Board Test .....	B-30
Uph. Heater Switch Test .....	B-34
Wiring Diagrams .....	D-1
Exploded Views / Part Numbers ....	E-1





<b>Models:</b>	<b>622 (-008)</b>	<b>623(-008 / -010)</b>
Serial Numbers:	All	All

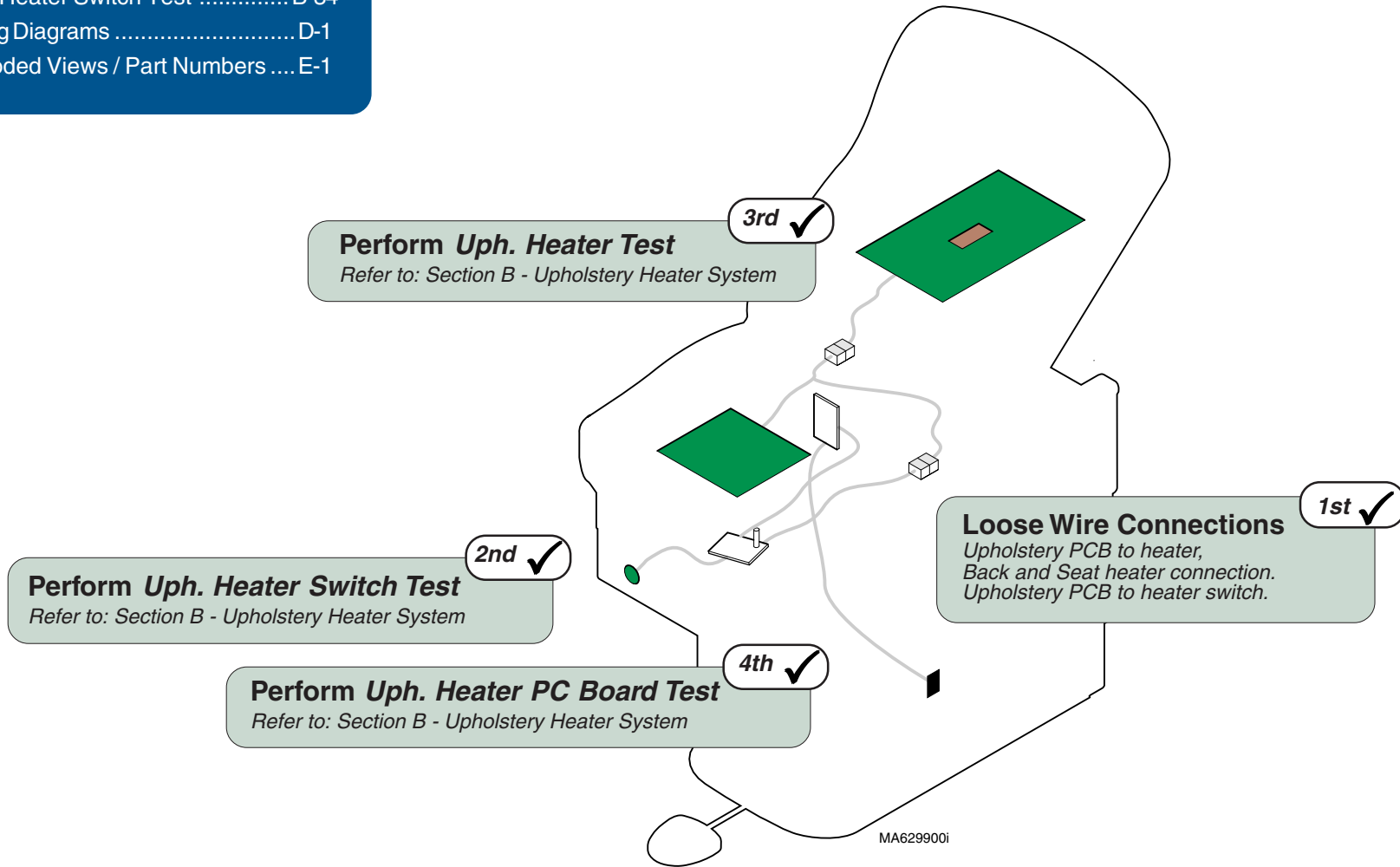
**Upholstery Heater**

# Troubleshooting



**Refer To:** [Page](#)

Fuses .....	B-2
Uph. Heater PC Board Test .....	B-30
Uph. Heater Test .....	B-33
Uph. Heater Switch Test .....	B-34
Wiring Diagrams .....	D-1
Exploded Views / Part Numbers .....	E-1

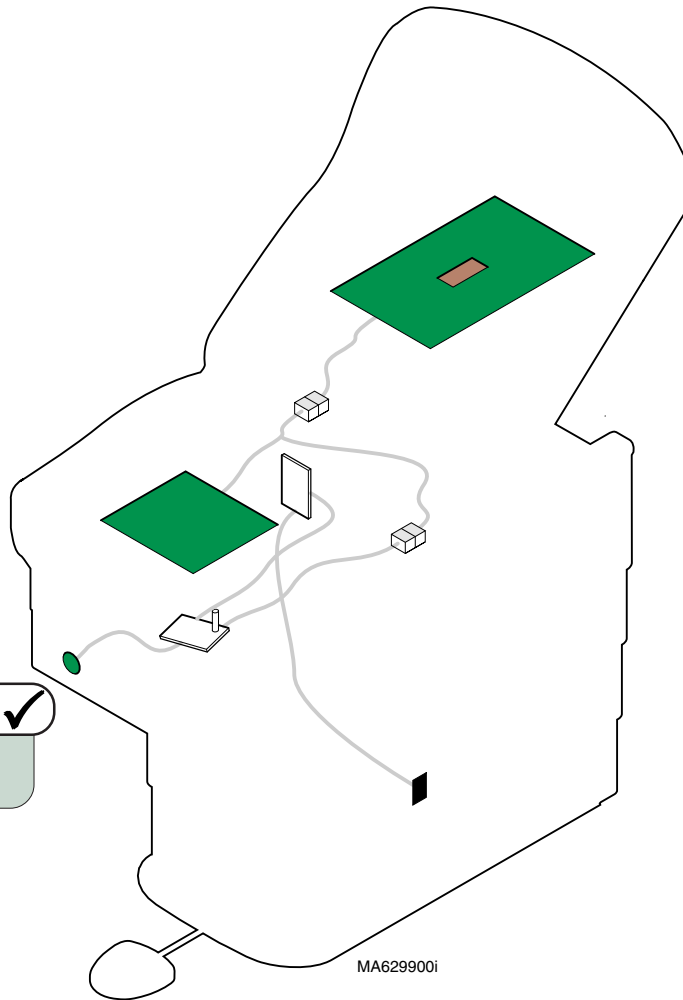
Function	Status	Problem
Upholstery Heater		Does <u>not</u> heat up.
Heater Switch		Illuminates.



# Troubleshooting

Function	Status	Problem
Upholstery Heater		OK
Heater Switch		Does <u>not</u> illuminate

Refer To:	Page
Upholstery Heater Switch Replacement .....	B-34
Wiring Diagrams .....	D-1
Exploded Views / Part Numbers ....	E-1



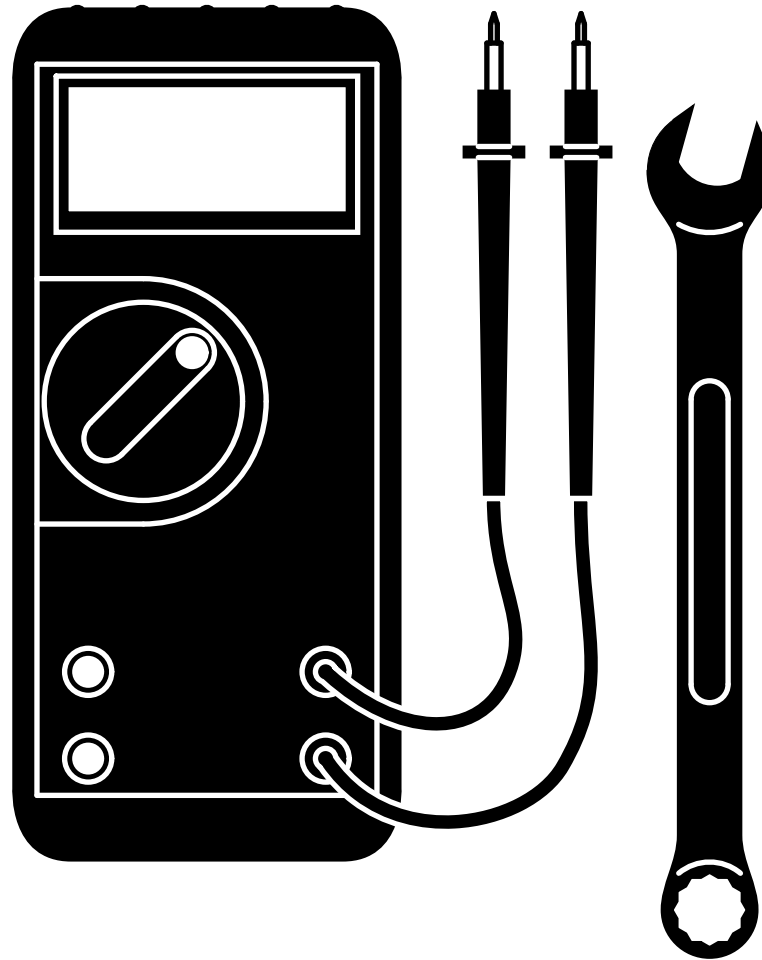
**1st ✓**  
**Replace Uph. Heater Switch**  
*Refer to: Section B - Upholstery Heater System*

<b>Models:</b>	<b>622 (-008)</b>	<b>623(-008 / -010)</b>
Serial Numbers:	All	All

**Upholstery Heater**

# Section B

## Component Testing & Repair



<u>Components</u>	<u>Page</u>
Fuses .....	B-2
Limit Switches .....	B-4
Foot / Hand Control .....	B-6
Base Actuator .....	B-10
Back Actuator ( <i>power</i> ) .....	B-10
Back Release Mechanism ( <i>manual</i> ) .....	B-16
Main PC Board .....	B-20
Drawer Heater System .....	B-24
Upholstery Heater System .....	B-30

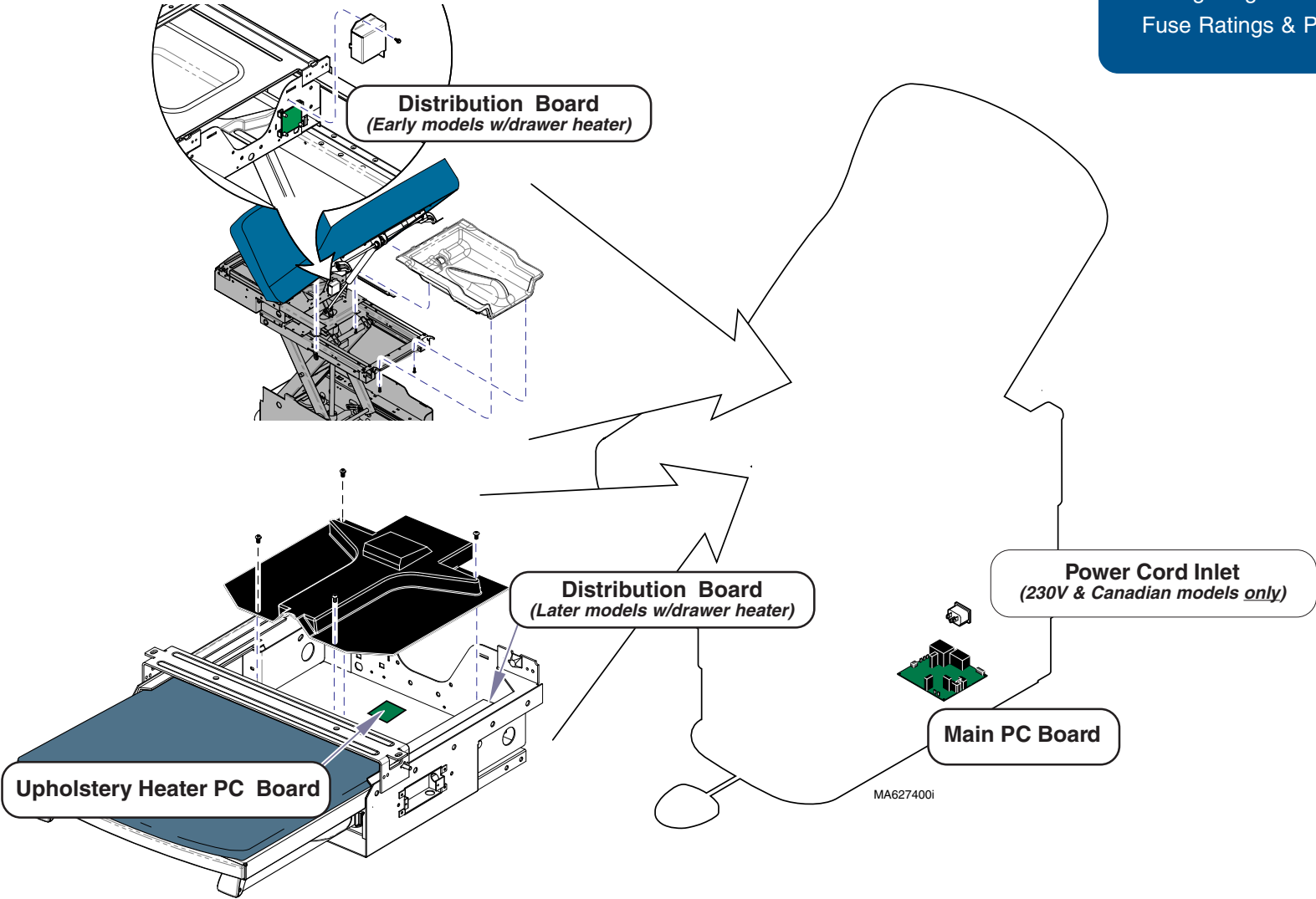
Click on the Go To Page button and enter the desired page number. (Note: Letters are case sensitive, ex. B-2)

# Component Testing & Repair

## Fuses

### Location

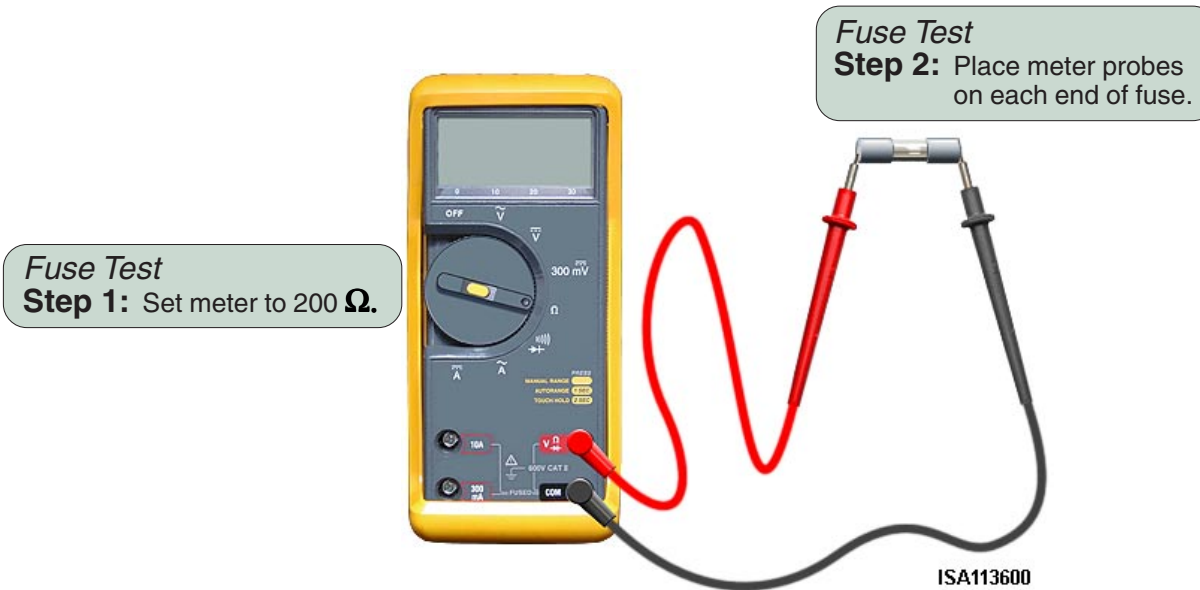
Fuses	Page
Location .....	B-2
Fuse Test .....	B-3
Access Procedures .....	C-1
Wiring Diagrams .....	D-1
Fuse Ratings & Part Numbers .....	E-25





# Component Testing & Repair

## Fuses - continued

### Fuse Test



**Meter Reading**      **Status**      **Required Action**

<b>OL</b>		Replace fuse.
Any resistance reading		Fuse is good.

**Models:**  
Serial Numbers:

**All**  
All

**Fuses**

**B-3**



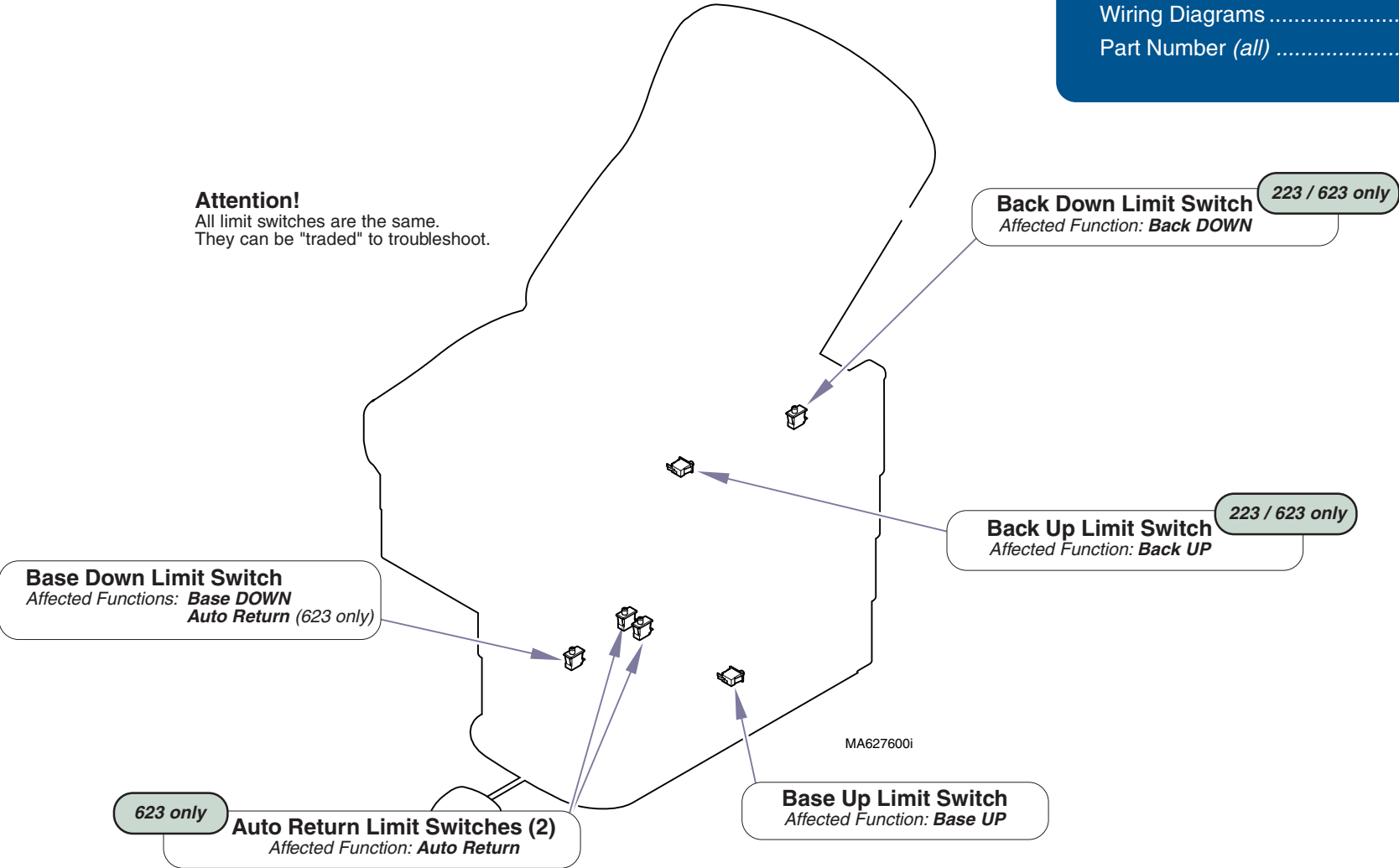
# Component Testing & Repair

## Limit Switches

### Location

Limit Switches	Page
Location .....	B-4
Limit Switch Test .....	B-5
Access Procedures .....	C-1
Wiring Diagrams .....	D-1
Part Number ( <i>all</i> ) .....	<b>015-1055-00</b>

**Attention!**  
All limit switches are the same.  
They can be "traded" to troubleshoot.



# Component Testing & Repair

## Limit Switches - continued

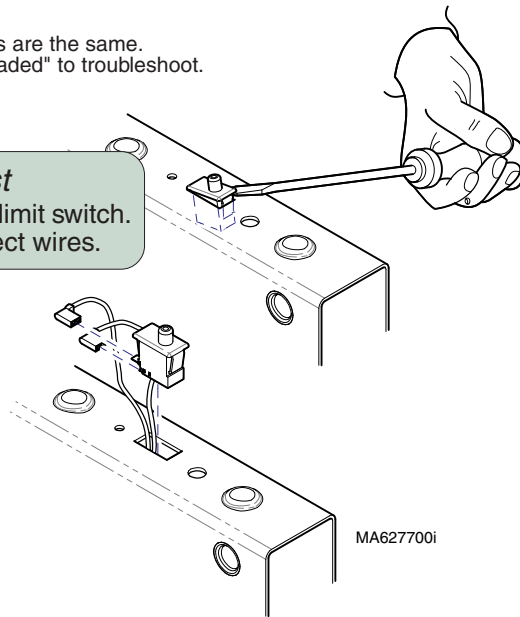
### Limit Switch Test

#### Attention!

All limit switches are the same. They can be "traded" to troubleshoot.

#### Limit Switch Test

**Step 1:** Remove limit switch. Disconnect wires.



#### Limit Switch Test

**Step 3:** Place meter probes on **COM** and **NC** terminals.

**Note:** Check switch 'tripped' and 'untripped'.

#### Limit Switch Test

**Step 2:** Set meter to 200  $\Omega$ .



#### With switch 'tripped'...

Meter Reading	Status	Required Action
<b>OL</b>		Switch is good. Perform next check.
less than or = to 5 ohms		Replace switch

#### With switch 'untripped'...

Meter Reading	Status	Required Action
<b>OL</b>		Replace switch
Any resistance reading		Switch is good. Perform next check.

**Models:**  
Serial Numbers:

**All**  
All

**Limit Switches**

**B-5**

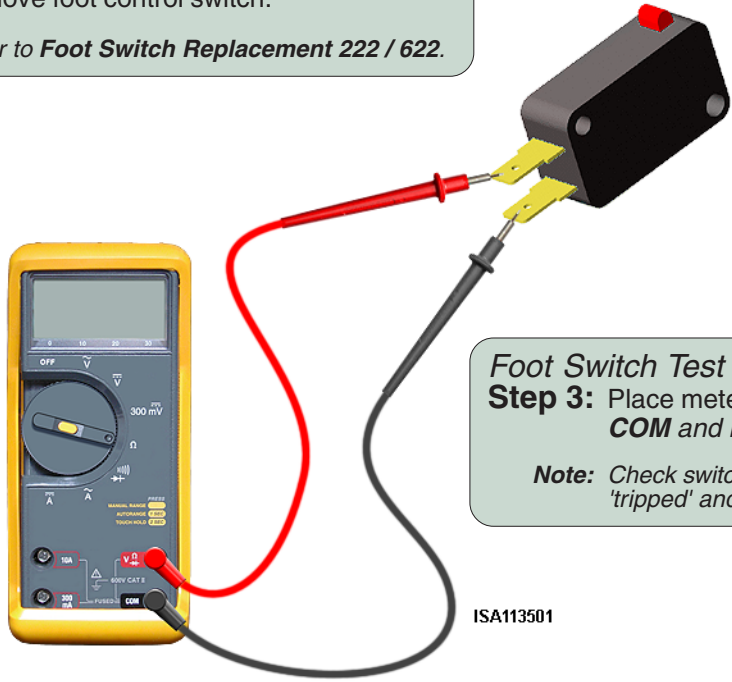
# Component Testing & Repair

## Foot / Hand Control

### Foot Switch Test - 222 / 622

**Foot Switch Test**  
**Step 1:** Remove foot control switch.  
*Note:* Refer to **Foot Switch Replacement 222 / 622**.

**Foot Switch Test**  
**Step 2:** Set meter to  $\Omega$ .



**Foot Switch Test**  
**Step 3:** Place meter probes on **COM** and **NO** terminals.  
*Note:* Check switch 'tripped' and 'untripped'.

<u>Foot / Hand Control</u>	<u>Page</u>
Foot Switch Test - 222 / 622 .....	B-6
Foot / Hand Control Test - 223 / 623 ....	B-7
Foot Switch Replacement:	
222 / 622 .....	B-8
Switch Membrane Replacement:	
223 / 623 .....	B-9
623 Hand Control .....	B-9
Wiring Diagrams .....	D-1
Exploded View / Part Numbers:	
Foot Control - 222 / 622 .....	E-27
Foot Control - 223 .....	E-28
Foot Control - 623 .....	E-29
Hand Control - 623 .....	E-30

### With switch 'tripped'...

Meter Reading	Status	Required Action
less than or = to <b>5 ohms</b>		Switch is good. Perform next check.
<b>OL</b>		Replace switch

### With switch 'untripped'...

Meter Reading	Status	Required Action
Any resistance reading		Replace switch.
<b>OL</b>		Switch is good. Perform next check.

# Component Testing & Repair

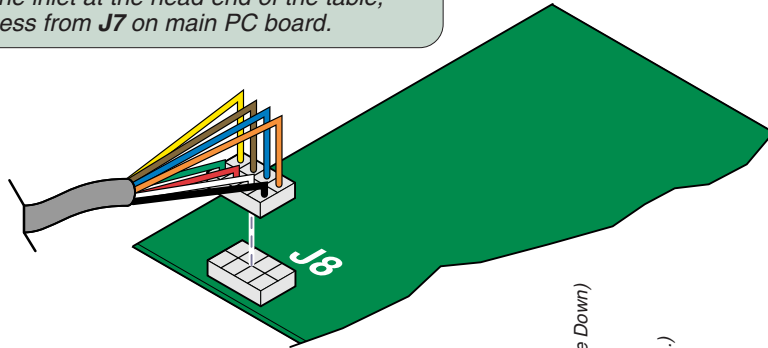
## Foot / Hand Control - continued

### Foot / Hand Control Test - 223 / 623

#### Foot / Hand Control Test

**Step 1:** Disconnect wire harness from J8\* on main PC board.

*\* Note: Model 623 only: If the foot or hand control to be tested is plugged into the inlet at the head end of the table, disconnect harness from J7 on main PC board.*



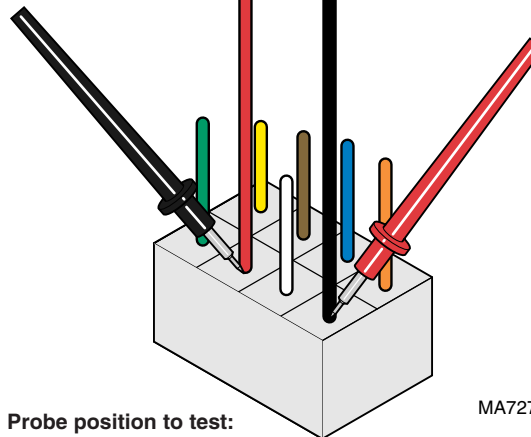
**Foot / Hand Control Test**  
**Step 2:** Set meter to  $\Omega$ .

#### Foot / Hand Control Test

**Step 3:** Place one meter probe on black wire (*common*) of foot / hand control harness.

Place other meter probe on the wire that corresponds to the switch to be tested:

<u>Switch</u>	<u>Wire Color</u>
Base Up .....	white
Base Down .....	red
Back Up .....	green
Back Down .....	orange
Auto Return .....	blue
Stop .....	brown



Probe position to test:  
Base Down switch

MA727300i

#### With switch 'untripped'...

Meter Reading	Status	Required Action
Any resistance reading		Replace switch / switch membrane.
<b>OL</b>		Switch is good. Perform next check.

#### With switch 'tripped'...

Meter Reading	Status	Required Action
less than or = to <b>5 ohms</b>		Switch is good. Perform next check.
<b>OL</b>		Replace switch / switch membrane.

**Models:**  
Serial Numbers:

**223 (all)**  
All

**623 (all)**  
All

Foot / Hand Control

B-7

# Component Testing & Repair

## Foot / Hand Control - continued

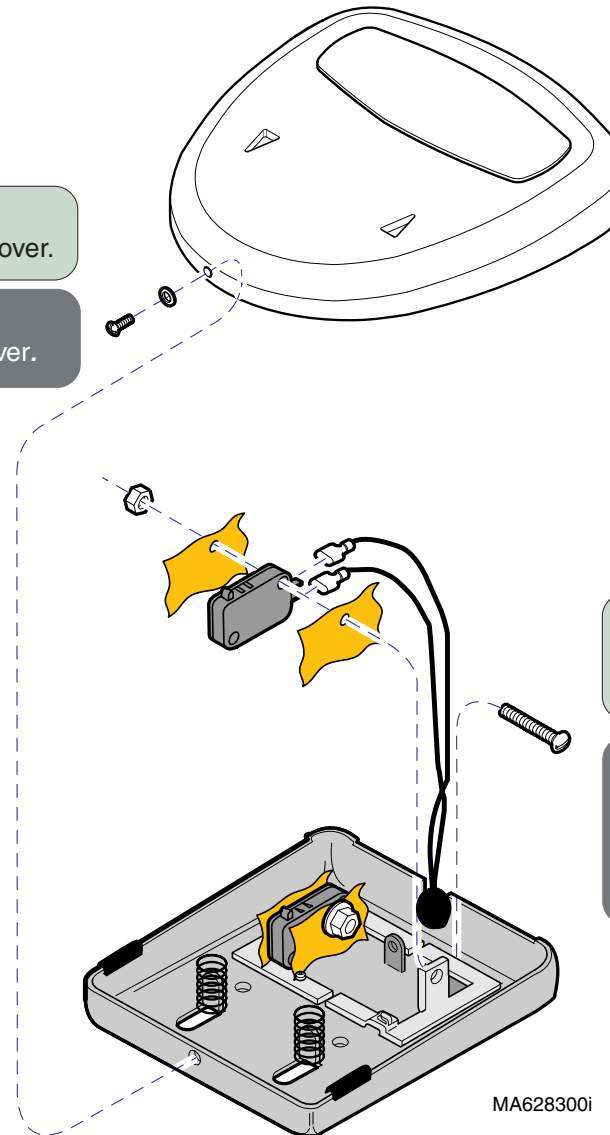
### Foot Switch Replacement - 222 / 622

#### Removal

**Step 1:** Remove cover.

#### Installation

**Step 2:** Install cover.



#### Removal

**Step 2:** Remove switch.  
Disconnect wires.

#### Installation

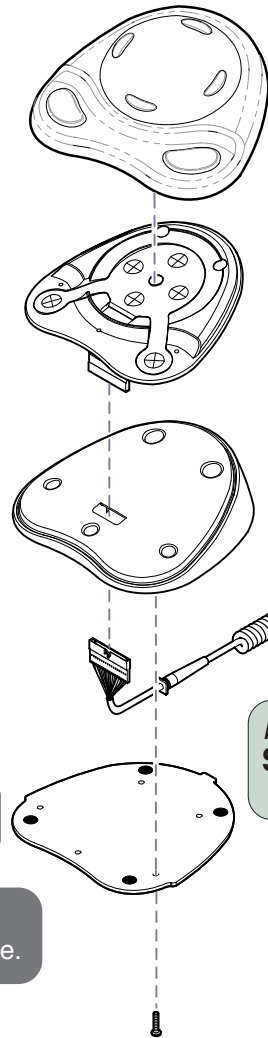
**Step 1:** Install switch.  
Connect wires.

**Note:** Be sure insulating material is in place.

# Component Testing & Repair

## Foot / Hand Control - continued

### Switch Membrane Replacement - 223 / 623



#### Installation

**Step 1:** Install touch pad onto switch panel.

#### Removal

**Step 3:** Peel touch pad off of switch panel.

#### Installation

**Step 2:** Insert control cord thru hole in base.  
Connect to membrane connector.

*Note:* Slide strain relief block (on cord) into slot on base.

#### Removal

**Step 2:** Disconnect control cord  
from membrane connector.

#### Removal

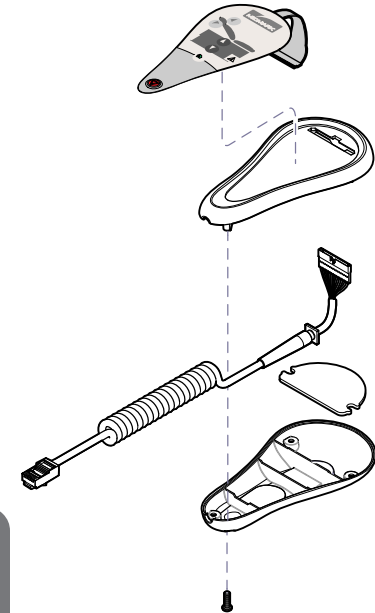
**Step 1:** Remove base plate.

#### Installation

**Step 3:** Install base plate.

MA727600i

### Hand Control - 623 only



**Models:** 223 (all)  
**Serial Numbers:** V3303 thru present

**Models:** 623 (all)  
**Serial Numbers:** V3303 thru present

Foot / Hand Control

B-9

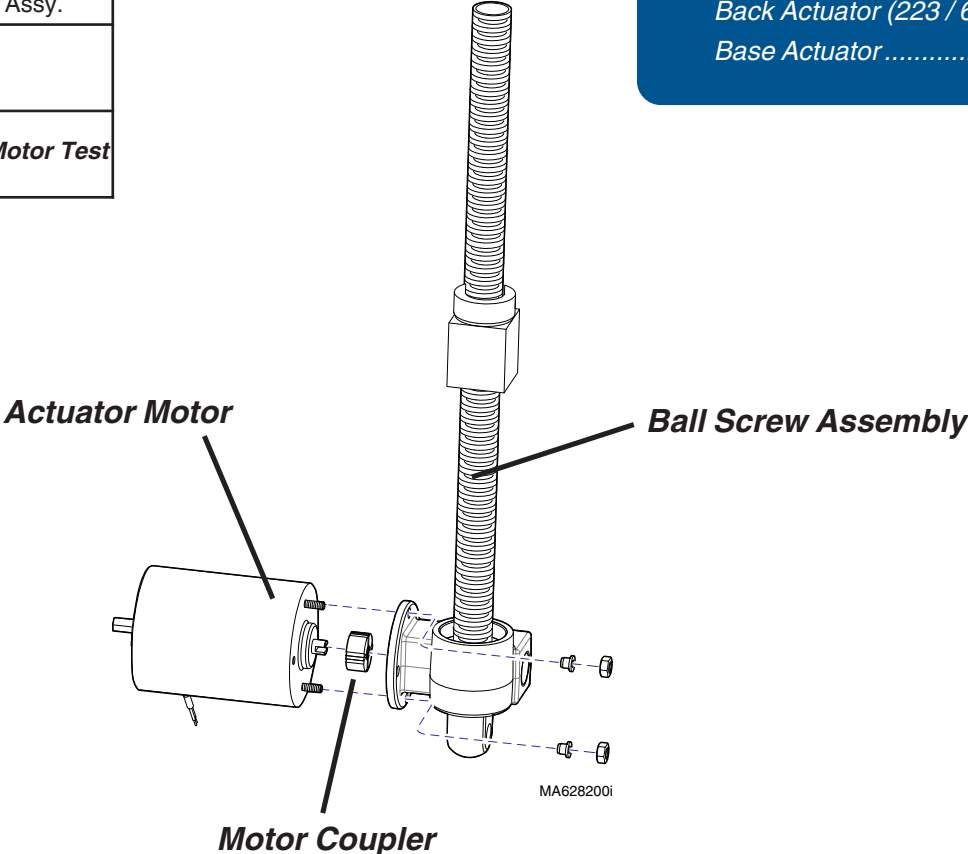
# Component Testing & Repair

## Base / Back Actuator

This illustration shows the three serviceable components of the actuator. Use the table below to isolate the malfunctioning part.

<i>Problem</i>	<i>Required Action</i>
Motor runs, but makes grinding noise.	Clean Ball Screw threads. <b>-or</b> Replace Ball Screw Assy.
Motor runs, but table does not move.	Inspect / replace Motor Coupler.
Motor does not run.	Perform <b>Actuator Motor Test</b>

<u>Base / Back Actuator</u>	<u>Page</u>
Actuator Motor Test .....	B-11
Replacement:	
<i>Base Actuator</i> .....	B-12
<i>Back Actuator (223 / 623)</i> .....	B-14
Wiring Diagrams .....	D-1
Exploded View / Part Numbers:	
<i>Back Actuator (223 / 623)</i> .....	E-13
<i>Base Actuator</i> .....	E-22



# Component Testing & Repair

## Base / Back Actuator - continued

### Actuator Motor Test



**Caution**  
Unplug power cord before removing PC Board cover.

#### Actuator Motor Test

**Step 1:** Disconnect actuator wires from PC Board.  
[Base Actuator: J2 & J3]  
[Back Actuator: J4 & J5 (223 / 623 only)]

**Note:** Refer to next page to access PC Board.

#### Actuator Motor Test

**Step 2:** Set meter to 200  $\Omega$ .



#### Actuator Motor Test

**Step 3:** Place meter probes on actuator wires.

ISA113700

Meter Reading	Status	Required Action
2- 3 $\Omega$		Motor is good. Perform next check.
0 $\Omega$		Replace motor.

**Models:**  
Serial Numbers:

All  
All

Base / Back Actuator

B-11



# Component Testing & Repair

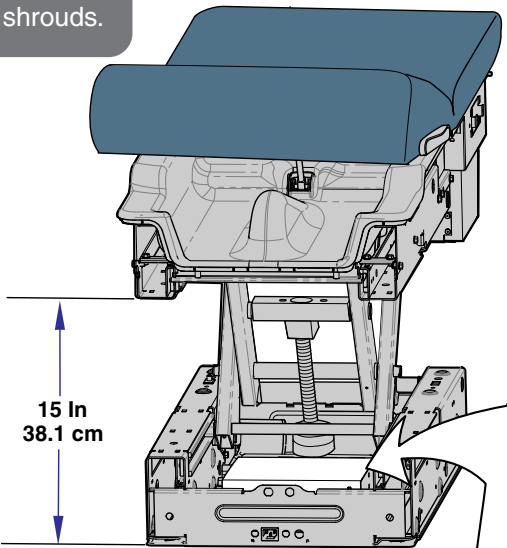
## Base Actuator

### Replacement

Access Procedures	Page
Table Shrouds	
Removal / Installation .....	C-2
Manually Raising / Lowering Table .....	C-5

**Removal** (see Access Procedures)  
**Step 1:** Remove table shrouds.

**Installation** (see Access Procedures)  
**Step 7:** Replace table shrouds.



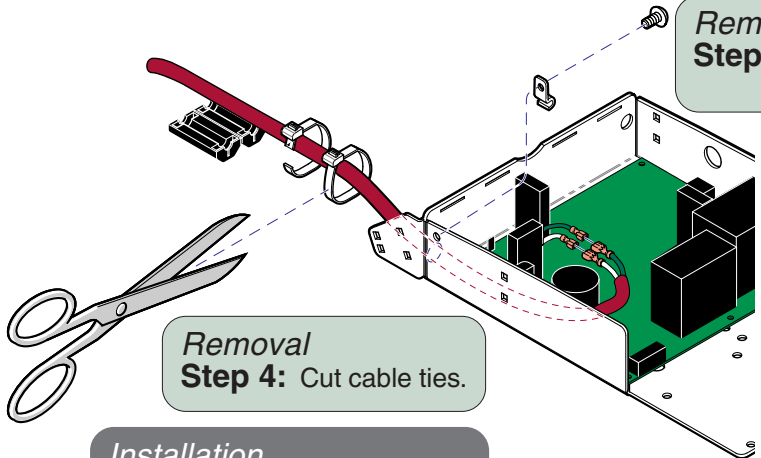
**Caution**  
 Unplug power cord before removing PC Board cover.

**Removal**  
**Step 3:** Remove PC Board cover.

**Installation**  
**Step 6:** Replace PC Board cover.

**Installation**  
**Step 4:** Connect base actuator motor wires.  
**Note:** Clamp must be installed over stripped portion of actuator wire.

**Removal**  
**Step 2:** Position table so that bottom of upperwrap is approx. 15 in. from floor.  
**Note:** If necessary, manually raise / lower table. (see Access Procedures)



**Removal**  
**Step 4:** Cut cable ties.

**Installation**  
**Step 5:** Replace cable ties.

**Removal**  
**Step 5:** Disconnect base actuator motor wires.

MA628000i

# Component Testing & Repair

## Base Actuator - continued

### Replacement - continued



#### Caution

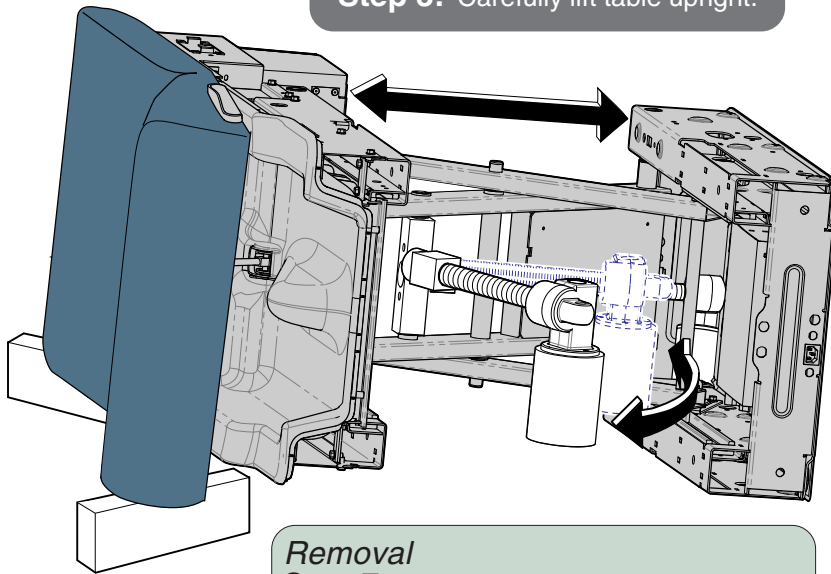
Use an assistant when laying / lifting table.  
Remove all accessories (chair arms, storage pod, etc.)

#### Removal

**Step 6:** Lay table down on LH side.

#### Installation

**Step 3:** Carefully lift table upright.



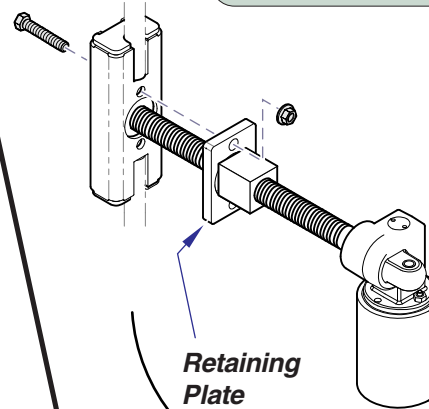
#### Removal

**Step 7:** Remove clevis pin.  
Pull base out to its full extension.  
Pivot actuator toward head end.

#### Installation

**Step 2:** Pivot actuator toward foot end.  
Push base together.  
Install clevis pin & clip ring.

### Newer Models



#### Removal

**Step 8:** Remove two nuts / hex bolts.

Newer models: Remove actuator. Unscrew retaining plate.

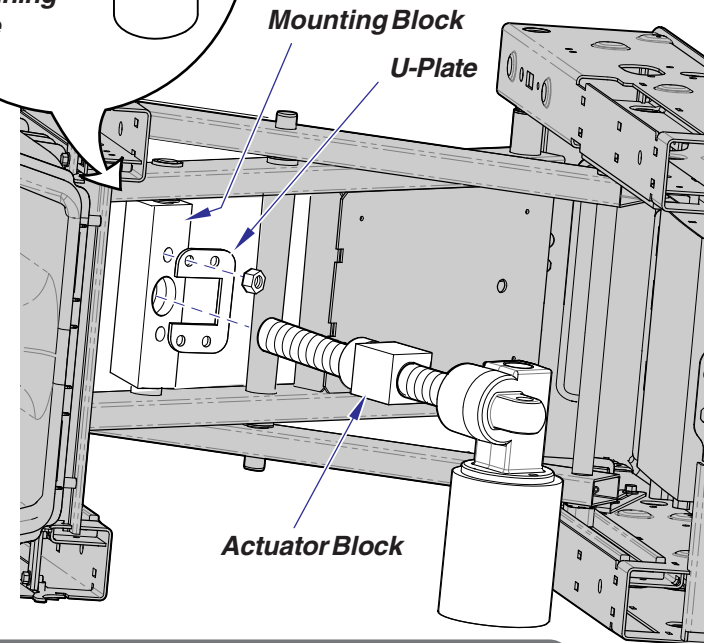
Older models: Remove U-plate.  
Unscrew actuator block from mounting block.

#### Installation (Newer Models)

**Step 1:** Thread retaining plate onto actuator block.  
Insert actuator thru mounting block.  
Secure retaining plate to mounting block.

Retaining Plate

### Older Models



Actuator Block

#### Installation (Older Models)

**Step 1:** Thread actuator block 1/2 way down shaft.  
Thread actuator block into mounting block.  
Install U-plate.

MA628100i

**Models:**  
**Serial Numbers:**

**All**  
**All**

**Base / Back Actuator**

**B-13**

# Component Testing & Repair

## Back Actuator

### Replacement

*Removal* (see Access Procedures)

**Step 1:** Remove outer shrouds.

**Note:** The inner and middle shrouds will drop down. It is not necessary to remove them.

*Installation*

**Step 8:** Replace shrouds.

*Removal*

**Step 4:** Cut all cable ties.

*Installation*

**Step 6:** Replace all cable ties.

*Removal*

**Step 3:** Disconnect back actuator motor wires.

*Installation*

**Step 5:** Connect back actuator motor wires.



**Caution**

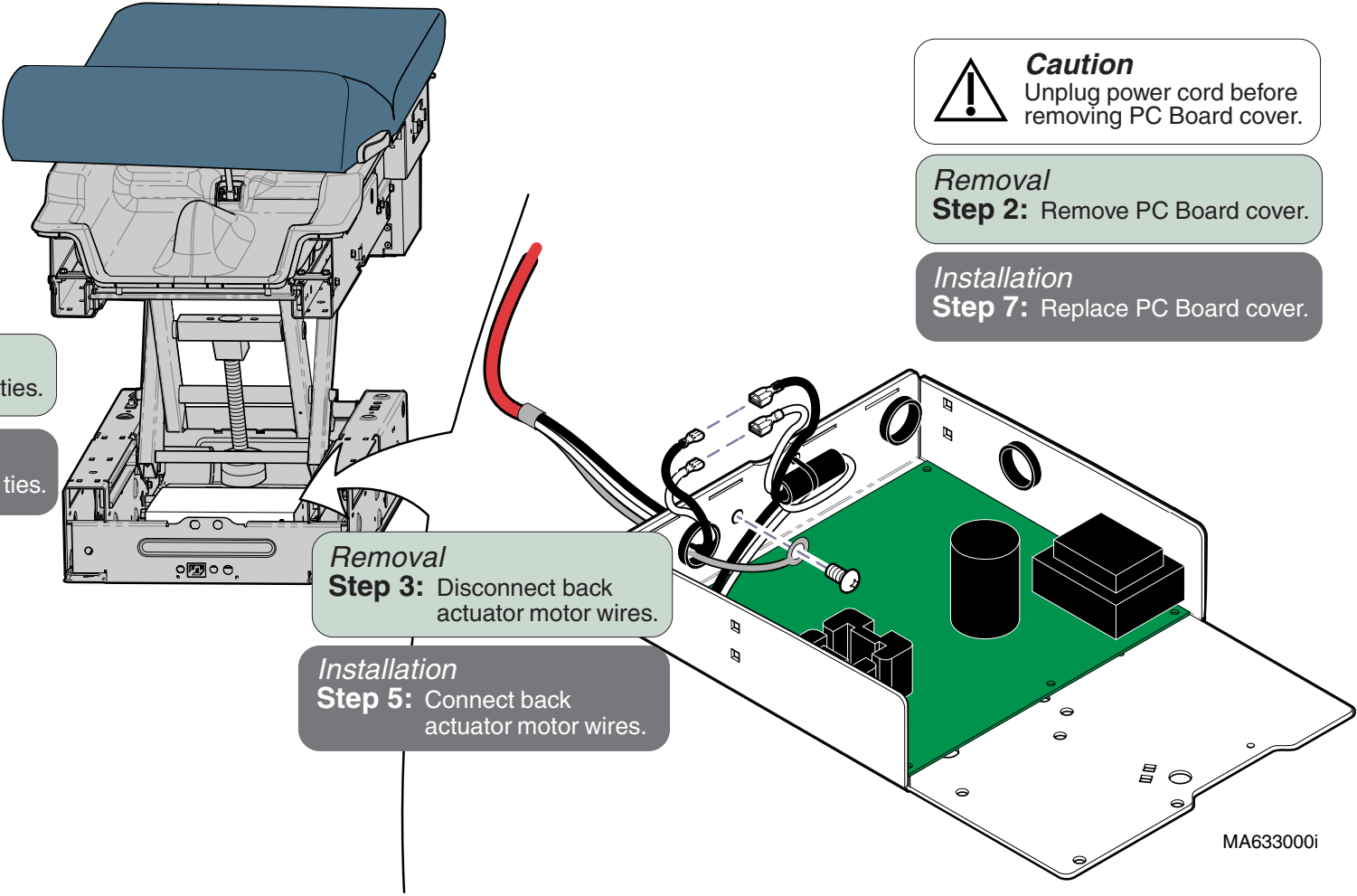
Unplug power cord before removing PC Board cover.

*Removal*

**Step 2:** Remove PC Board cover.

*Installation*

**Step 7:** Replace PC Board cover.



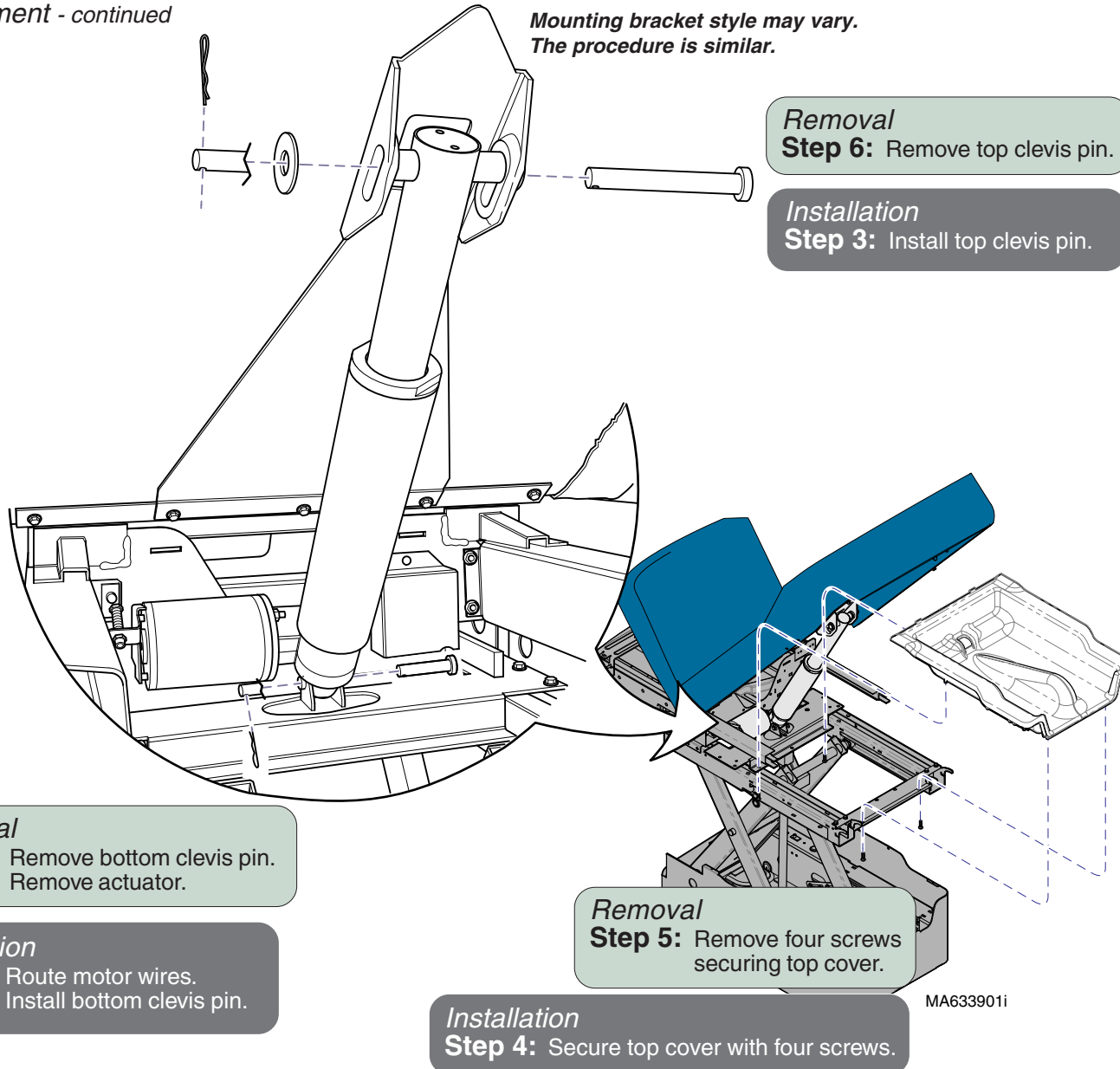
MA633000i

# Component Testing & Repair

## Back Actuator - continued

### Replacement - continued

Mounting bracket style may vary.  
The procedure is similar.



**Removal**  
Step 6: Remove top clevis pin.

**Installation**  
Step 3: Install top clevis pin.

**Removal**  
Step 7: Remove top cover.

**Installation**  
Step 2: Slide top cover over actuator.

**Removal**  
Step 8: Remove bottom clevis pin.  
Remove actuator.

**Installation**  
Step 1: Route motor wires.  
Install bottom clevis pin.

**Removal**  
Step 5: Remove four screws  
securing top cover.

**Installation**  
Step 4: Secure top cover with four screws.

MA6339011

<b>Models:</b>	<b>223 (all)</b>	<b>623 (all)</b>
Serial Numbers:	All	All

**Base/Back Actuator**

# Component Testing & Repair

## Back Release Mechanism

### Back Release Handle Adjustment

#### Handle Adjustment

**Step 1:** Raise back section.

**Note:** If back section will not move, lift seat section then remove clevis pin from bottom of gas cylinder.

#### Handle Adjustment

**Step 3:** Rotate cam until cylinder releases. Rotate cam back until cylinder locks in place. Hold cam in place.

#### Back Release Mechanism

#### Page

Back Release Handle Adjustment ..... B-16

Gas Cylinder

Replacement & Adjustment ..... B-17

Actuator Cap Replacement ..... B-18

Exploded View / Part Numbers ..... E-10\*

\* multiple pages due to model / serial # break

#### Handle Adjustment

**Step 4:** Pivot handles down until they contact back section.

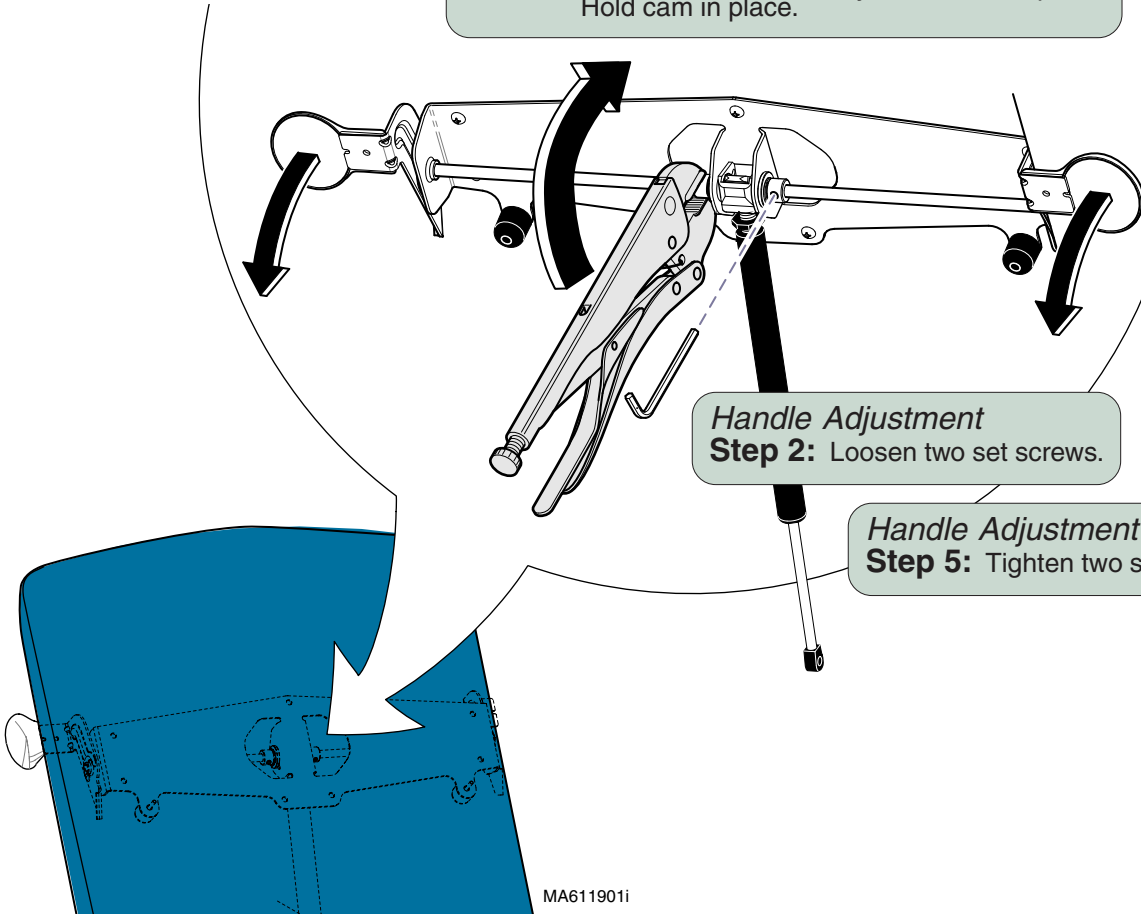
**Note:** Cam should not move.

#### Handle Adjustment

**Step 2:** Loosen two set screws.

#### Handle Adjustment

**Step 5:** Tighten two set screws.



# Component Testing & Repair

## Back Release Mechanism - continued

### Gas Cylinder Replacement & Adjustment

#### Adjustment

**Step 2:** Tighten jam nut.

#### Adjustment

**Step 1:** Screw cylinder in/out one turn.  
Check for proper operation.  
Repeat as necessary.

**Note:** If cylinder drifts, screw *OUT*.  
If cylinder does not release, screw *IN*.

#### Removal

**Step 1:** Lower back section all the way down.

#### Installation

**Step 2:** Hold cylinder shaft.  
Extend shaft 2-3 in.  
(Squeeze release handle gently)

#### Removal

**Step 2:** Remove clevis pin.

**Note:** If clevis pin is inaccessible,  
refer to: *Top Cover Removal* below.

#### Installation

**Step 3:** Install clevis pin.  
Perform *Adjustment*.

#### Removal

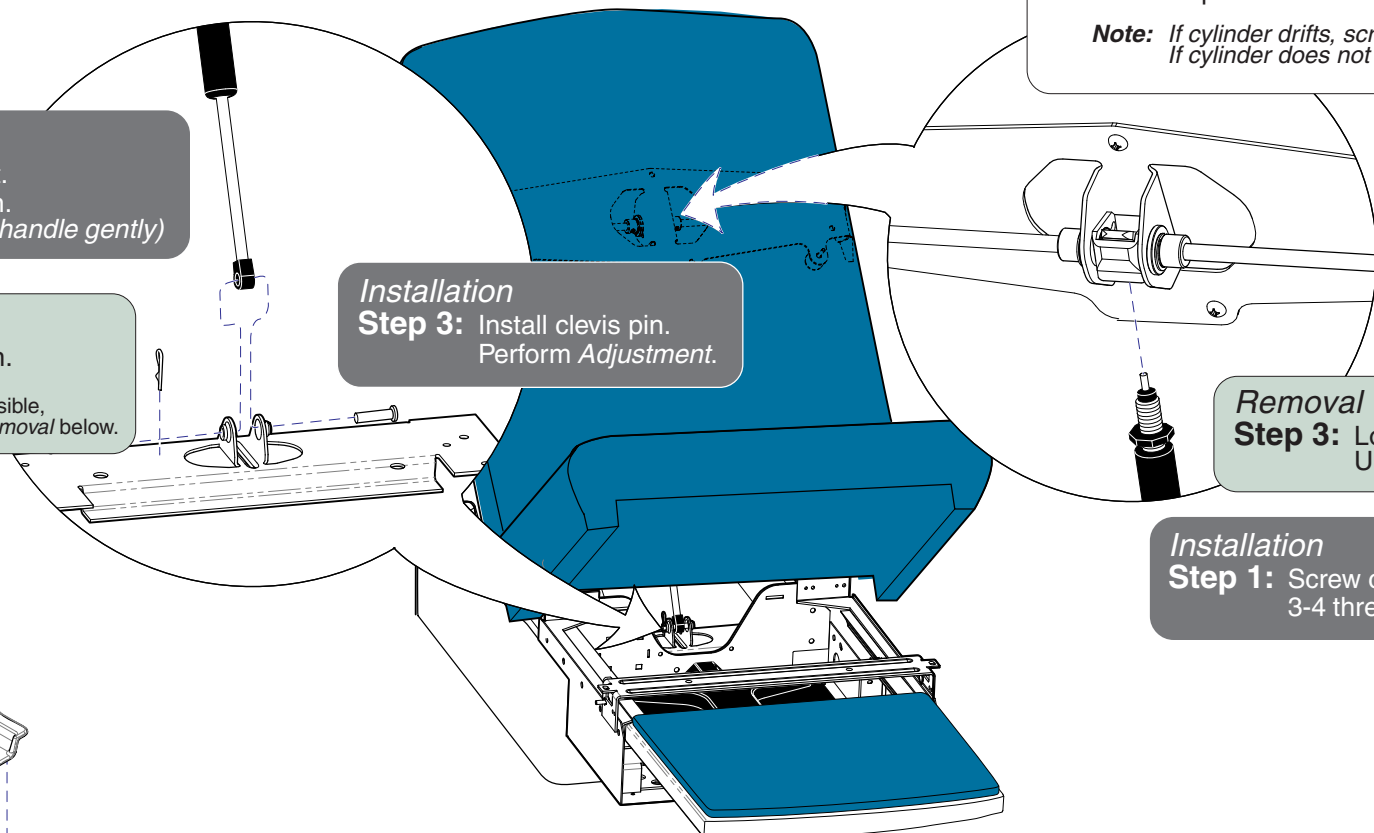
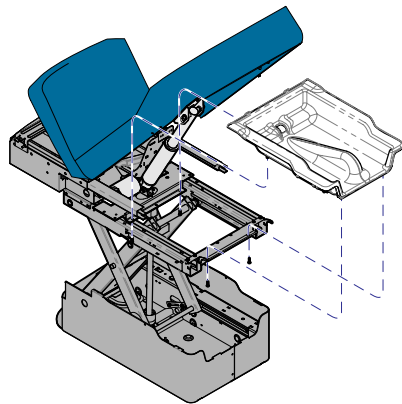
**Step 3:** Loosen jam nut.  
Unscrew cylinder.

#### Installation

**Step 1:** Screw cylinder in until  
3-4 threads are exposed.

#### Top Cover Removal

**Step 1:** Lower table shrouds. (Refer to Section C)  
Remove four screws.  
Raise top cover to access clevis pin.



**Models:**  
Serial Numbers:

**222 (all)**  
All

**622 (all)**  
All

MA607602I

**Back Release  
Mechanism**

**B-17**

# Component Testing & Repair

## Actuator Cap

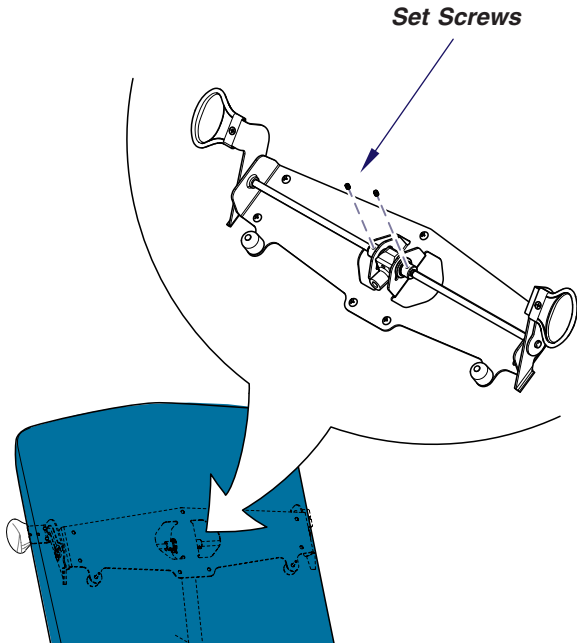
### Replacement (Remove)

#### Removal

**Step 1:** Remove gas cylinder as shown on previous page.

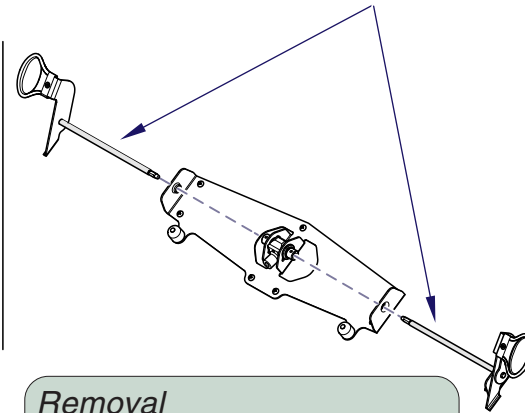
#### Removal

**Step 2:** Remove (2) set screws from cam.



MA91821

#### Back Release Weldments

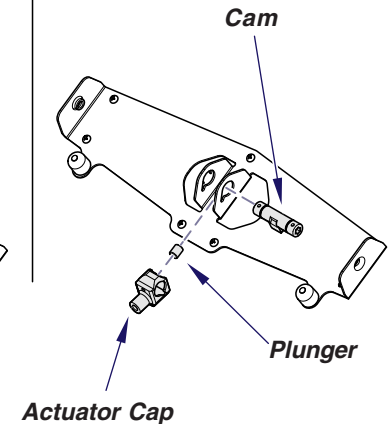
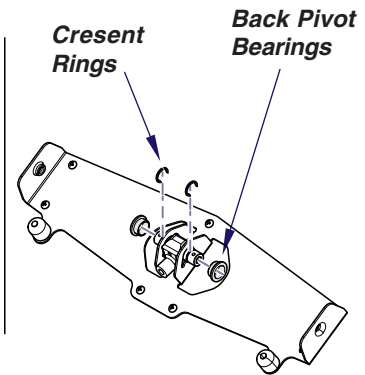


#### Removal

**Step 3:** Slide LH and RH back release weldments out of cam.

#### Removal

**Step 4:** Remove crescent ring from both sides of cam. Remove back pivot bearings from cam.



#### Removal

**Step 5:** Pull cam out of actuator cap. Remove plunger from actuator cap and reinstall in new actuator cap.



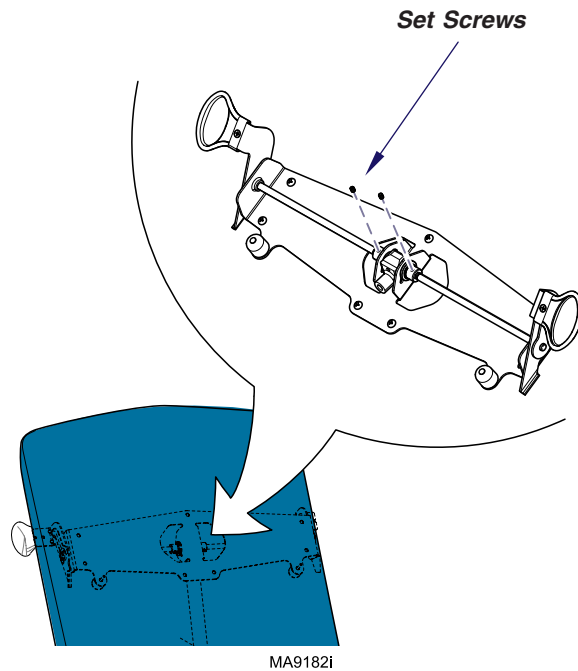
# Component Testing & Repair

## Actuator Cap

Replacement (Install)

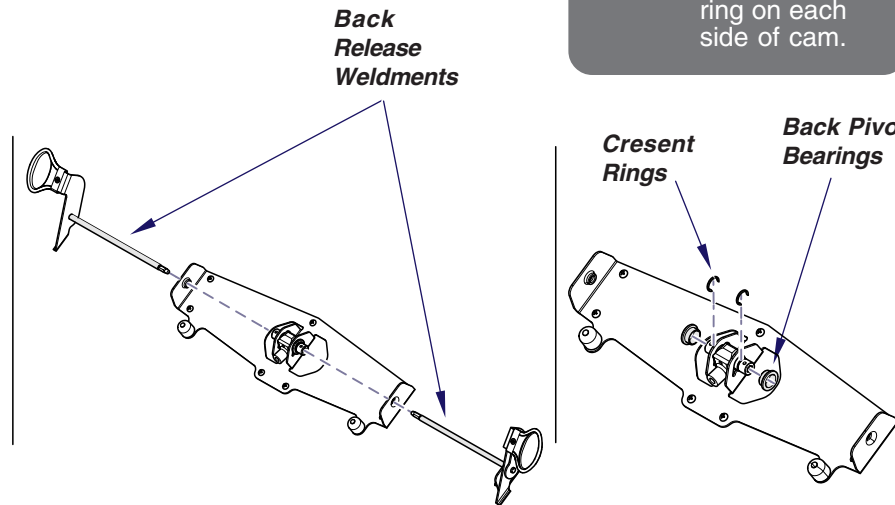
### Installation

**Step 4:** Install (2) set screw in cam.  
Install gas cylinder.



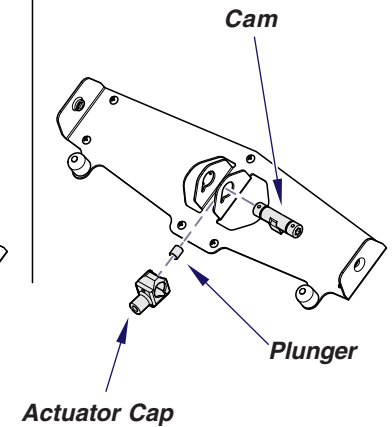
### Installation

**Step 2:** Install back pivot bearings on cam.  
Install crescent ring on each side of cam.



### Installation

**Step 3:** Side LH and RH back release weldments into cam.



### Installation

**Step 1:** Install cam through actuator cap.

**Models:**  
Serial Numbers:

**222 (all)**  
All

**622 (all)**  
All

**Actuator Cap  
Replacement**

**B-19**



# Component Testing & Repair

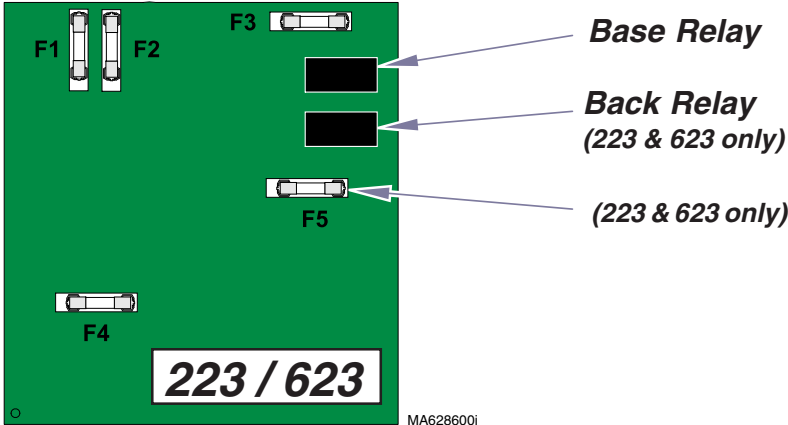
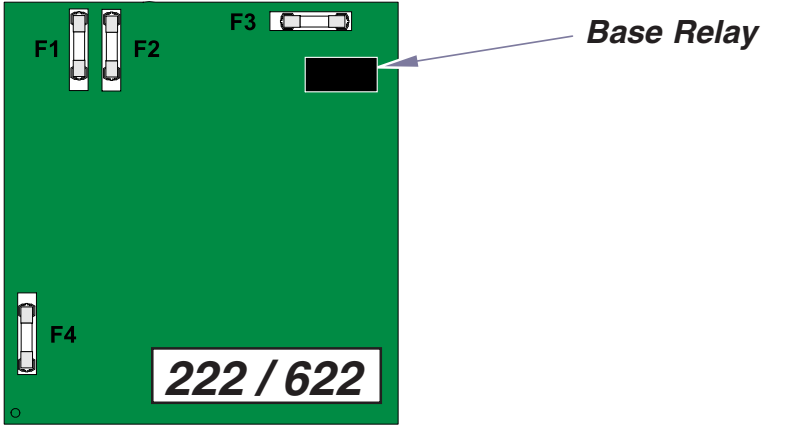
## Main PC Board

This illustration shows the location of the fuses on the Main PC Board. Use the table below to determine the required action.

<i>Problem</i>	<i>Required Action</i>
Base actuator motor does not run.	Check fuses (F1 & F2, F3, F4). Perform <b>Base Relay Test</b>
Back actuator motor does not run.	Check fuses (F1 & F2, F3, F5). Perform <b>Back Relay Test</b>

- 222 / 622** ..... single function / one relay (*Base Relay*)  
Fuses:  
 F1 & F2 ..... Primary Fuses (*affect all functions*)  
 F3 ..... Base Motor Fuse (*affects Base Up / Down*)  
 F4 ..... Transformer Fuse (*affects all functions*)
- 223 / 623** ..... dual function / two relays (*Base Relay & Back Relay*)  
Fuses:  
 F1 & F2 ..... Primary Fuses (*affect all functions*)  
 F3 ..... Base Motor Fuse (*affects Base Up / Down*)  
 F4 ..... Transformer Fuse (*affects all functions*)  
 F5 ..... Back Motor Fuse (*affects Back Up / Down*)

<b>Main PC Board</b>	<b>Page</b>
Base Relay Test .....	B-21
Back Relay Test .....	B-22
Replacement .....	B-23
Wiring Diagrams .....	D-1
Part Numbers	
222 / 622 .....	E-23
223 / 623 .....	E-24

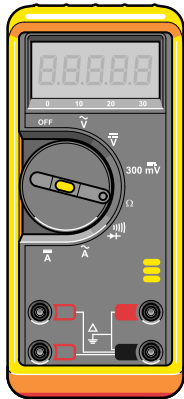


# Component Testing & Repair

## Main PC Board - continued

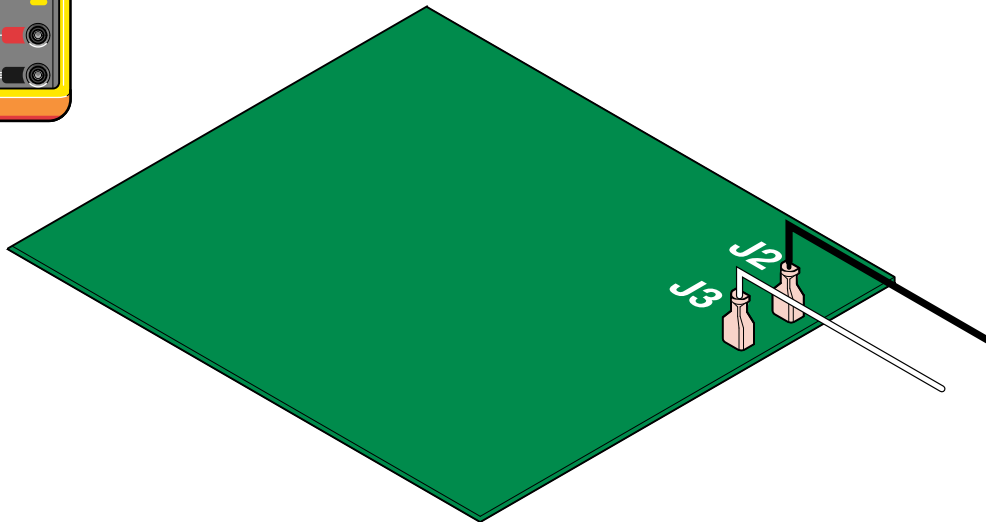
### Base Relay Test

**Base Relay Test**  
**Step 1:** Set meter to VDC.



**Note:** Wires must remain connected to PC Board to perform this test.

**Base Relay Test**  
**Step 2:** Clip meter test hooks on terminals at J2 and J3.



**Base Relay Test**  
**Step 3:** Activate Base Up / Down function using the foot or hand control.

Meter Reading	Status	Required Action
approx. 48 VDC		PC Board is good. Perform next check.
0 VDC		Replace PC Board.

MA718400i

**Models:** All  
**Serial Numbers:** All

Main PC Board

B-21

# Component Testing & Repair

## Main PC Board - continued

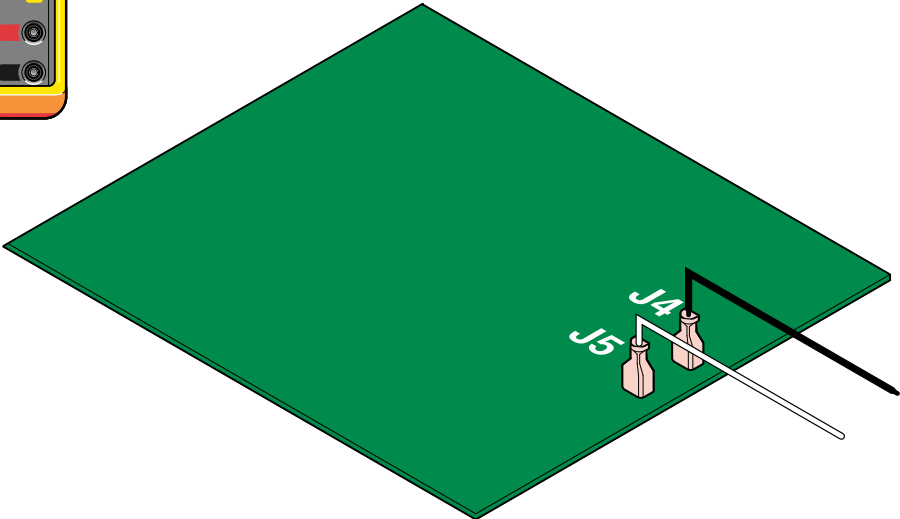
### Back Relay Test

**Back Relay Test**  
**Step 1:** Set meter to VDC.



**Note:** Wires must remain connected to PC Board to perform this test.

**Back Relay Test**  
**Step 2:** Clip meter test hooks on terminals at J4 and J5.



MA718500i

**Back Relay Test**  
**Step 3:** Activate Back Up / Down function using the foot or hand control.

Meter Reading	Status	Required Action
approx. <b>48 VDC</b>		PC Board is good. Perform next check.
<b>0 VDC</b>		Replace PC Board.

# Component Testing & Repair

## Main PC Board - continued

### Replacement

*Removal* (see Access Procedures)

**Step 1:** Remove outer shrouds.

**Note:** The inner and middle shrouds will drop down. It is not necessary to remove them.

*Installation* (see Access Procedures)

**Step 4:** Replace outer shrouds.



### Caution

Unplug power cord before removing PC Board cover.

*Removal*

**Step 2:** Remove PC Board cover.

*Installation*

**Step 3:** Replace PC Board cover.

*Removal*

**Step 3:** Disconnect ground wire.  
Tag and disconnect wiring from PC Board.

*Installation*

**Step 2:** Connect ground wire.  
Connect all wiring.

**Note:** Boards manufactured after 6/05 will beep for approximately three seconds when table is first plugged in.

*Removal*

**Step 4:** Remove PC Board.

**Tip:** Push latches back, then lift off of mounting studs.

*Installation*

**Step 1:** Install PC Board.

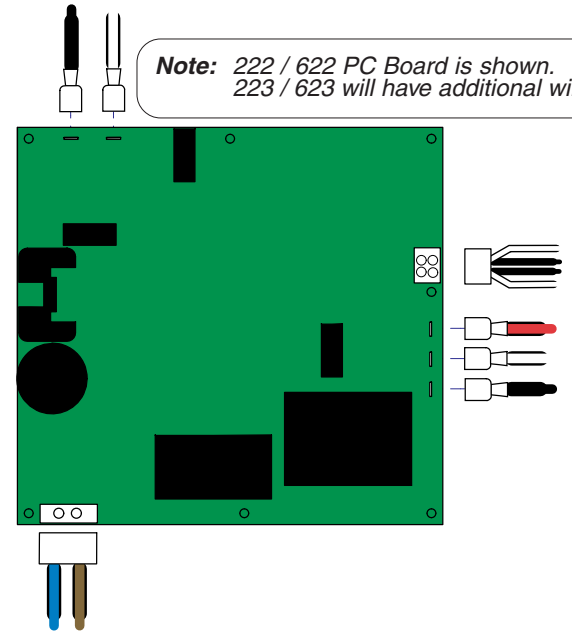
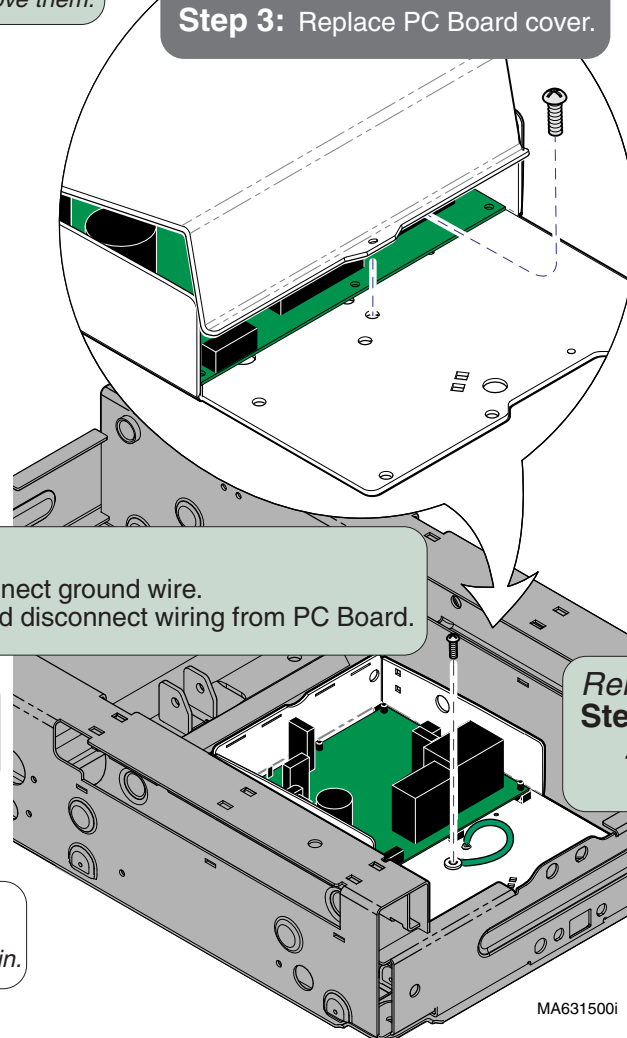
### Access Procedures

### Page

Table Shrouds

Removal / Installation ..... C-2

Manually Raising / Lowering Table ..... C-5



**Note:** 222 / 622 PC Board is shown.  
223 / 623 will have additional wiring.

MA631500i

**Models:**  
Serial Numbers:

**All**  
All

Main PC Board

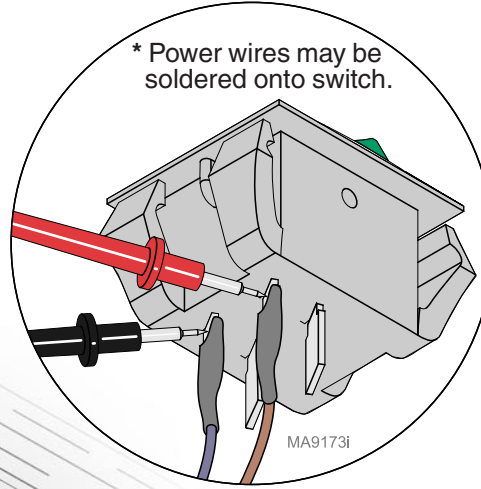
**B-23**

# Component Testing & Repair

## Drawer Heater System

Use the table below to determine the required action.  
 [This table applies to all models (222 / 223 / 622 / 623)]

Problem	Required Action
Drawer heater does not warm up. Heater switch does <u>not</u> illuminate	Perform <b>Heater Switch Test</b>
Drawer heater does not warm up. Heater switch illuminates.	Perform <b>Heater Plate Test</b>
Drawer heater - OK Heater switch does <u>not</u> illuminate	Replace heater switch.

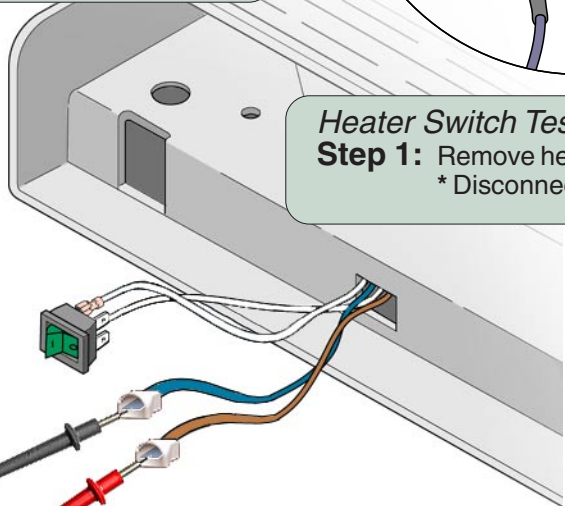


Drawer Heater System	Page
Distribution Board Fuses .....	B-2
Heater Switch Test:	
222 / 223 .....	B-24
622 / 623 .....	B-25
Switch Replacement 622 / 623 .....	B-26
Heater Plate Test:	
222 / 223 .....	B-27
622 / 623 .....	B-28
Heater Plate Replacement .....	B-29
Wiring Diagrams .....	D-1
Part Numbers .....	E-31

### Heater Switch Test - 222 / 223



**Heater Switch Test**  
**Step 2:** Set meter to 200 VAC.



**Heater Switch Test**  
**Step 1:** Remove heater switch.  
 \* Disconnect two incoming power wires.

**Heater Switch Test**  
**Step 3:** Place meter probes on incoming power wires.

Meter Reading	Status	Required Action
approx. 115 VAC		Replace switch.
0 VAC		Switch OK. Check connections & fuses

# Component Testing & Repair

## Drawer Heater System - continued

### Heater Switch Test - 622 / 623

[Access Procedures](#)

[Page](#)

Chair Arm Brace Removal ..... C-8



**Caution**

Unplug power cord before removing stirrup guide.

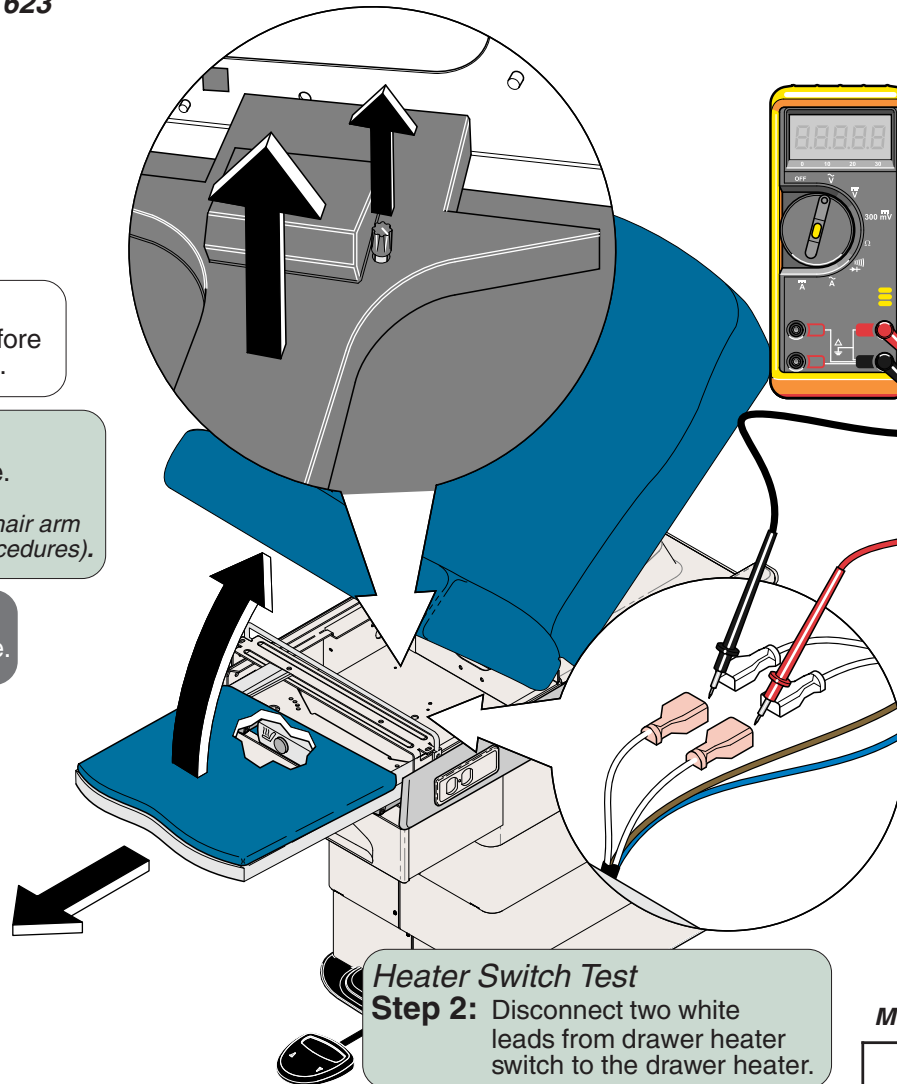
**Removal**

**Step 1:** Remove stirrup guide.

**Note:** If necessary, remove chair arm brace (see Access Procedures).

**Installation**

**Step 2:** Replace stirrup guide.



**Heater Switch Test**

**Step 3:** Set meter to 200 VAC.

**Heater Switch Test**

**Step 4:** Place meter probes on two white leads from switch.

**Heater Switch Test**

**Step 5:** Plug in power cord, then depress switch to ON.



**Caution**

Unplug power cord before re-connecting electrical leads.

**Installation**

**Step 1:** Re-connect electrical leads.

**Heater Switch Test**

**Step 2:** Disconnect two white leads from drawer heater switch to the drawer heater.

**Meter Reading**

**Status**

**Required Action**

0 VAC



Replace switch.

approx.  
115 VAC



Switch OK.  
Check Heater Plate.

**Models:**  
Serial Numbers:

622  
All

623  
All

**Drawer Heater  
System**

**B-25**

# Component Testing & Repair

## Drawer Heater System - continued

### Heater Switch Replacement - 622 / 623

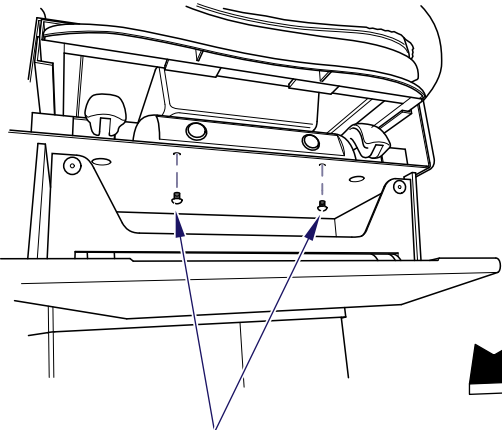
(This procedure also applies to the upholstery heater switch)

<a href="#">Access Procedures</a>	<a href="#">Page</a>
Chair Arm Brace Removal .....	C-8

**Caution**  
Unplug power cord before removing stirrup guide.

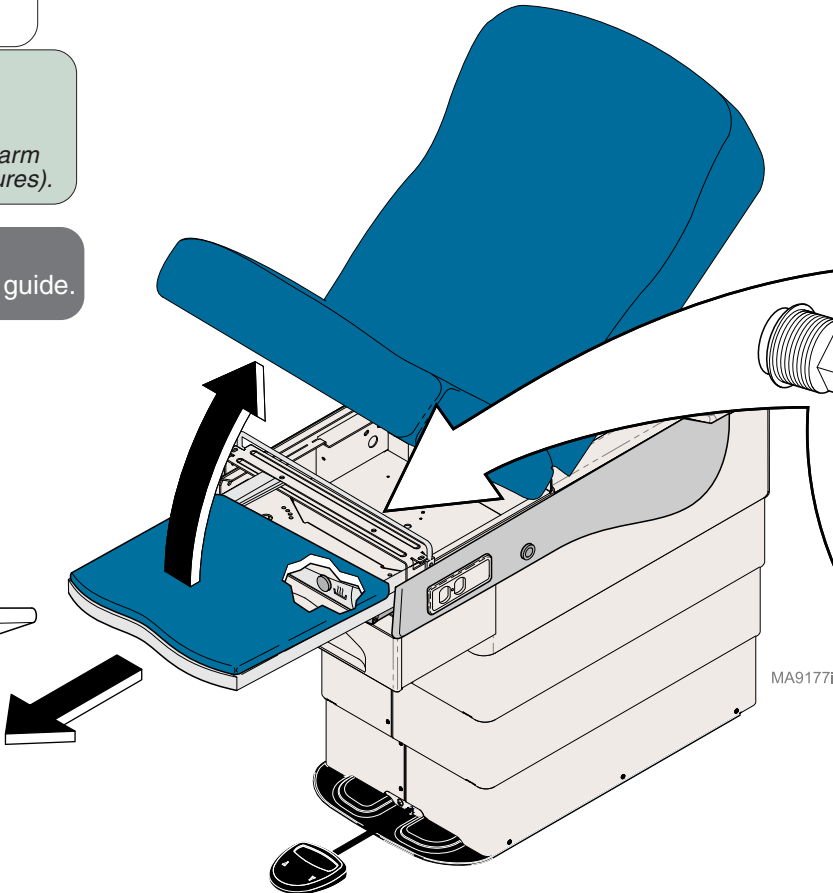
**Removal Step 1:** Remove stirrup guide.  
**Note:** If necessary, remove chair arm brace (see Access Procedures).

**Installation Step 4:** Replace stirrup guide.



**Removal Step 3:** Remove switch housing.

**Installation Step 2:** Install switch housing.



**Removal Step 2:** Tag, then disconnect wires from faulty switch.

**Installation Step 3:** Connect switch electrical wires.

**Removal Step 4:** Remove switch assembly.

**Installation Step 1:** Install switch assembly.



# Component Testing & Repair

## Drawer Heater System - continued

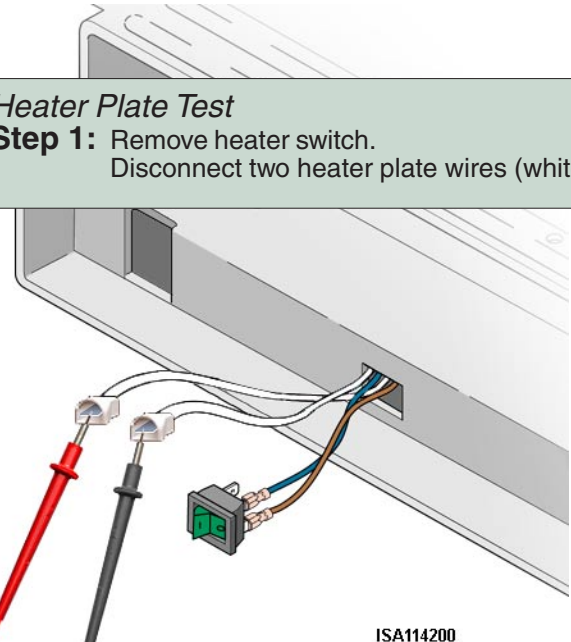
### Heater Plate Test -222 / 223

**Heater Plate Test**  
**Step 2:** Set meter to 2000 (2K)  $\Omega$ .



**Heater Plate Test**  
**Step 3:** Place meter probes on heater plate wires.

**Heater Plate Test**  
**Step 1:** Remove heater switch.  
 Disconnect two heater plate wires (white).



ISA114200

Meter Reading	Status	Required Action
approx. 360 $\Omega$		Heater plate is good.
0 $\Omega$		Replace heater plate.

<b>Models:</b>	<b>222</b>	<b>223</b>
Serial Numbers:	All	All

**Drawer Heater System**



# Component Testing & Repair

## Drawer Heater System - continued

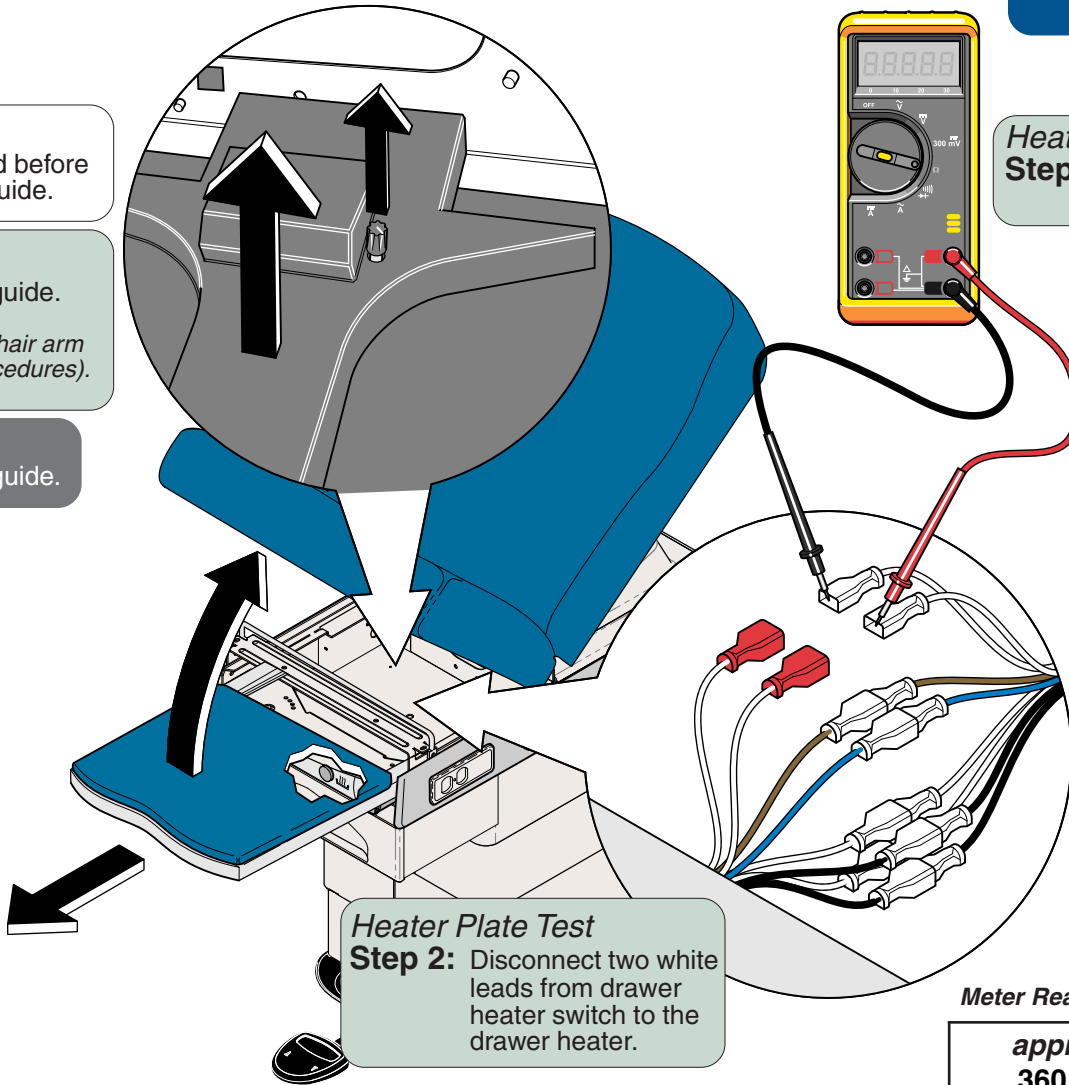
### Heater Plate Test -622 / 623

Access Procedures	Page
Chair Arm Brace Removal .....	C-8

**Caution**  
Unplug power cord before removing stirrup guide.

**Removal**  
**Step 1:** Remove stirrup guide.  
*Note: If necessary, remove chair arm brace (see Access Procedures).*

**Installation**  
**Step 2:** Replace stirrup guide.



**Heater Plate Test**  
**Step 3:** Set meter to 2000 (2K)  $\Omega$ .

**Heater Plate Test**  
**Step 4:** Place meter probes on terminals of heater plate wires.

**Installation**  
**Step 1:** Re-connect electrical leads.

**Heater Plate Test**  
**Step 2:** Disconnect two white leads from drawer heater switch to the drawer heater.

Meter Reading	Status	Required Action
approx. 360 $\Omega$		Heater plate is good. Perform next check.
0 $\Omega$		Replace heater plate.

# Component Testing & Repair

## Drawer Heater System - continued

### Heater Plate Replacement

#### Removal

**Step 1:** Remove screw(s) from drawer slides.

#### Installation

**Step 3:** Install screw.

#### Installation

**Step 3:** Install drawer.

#### Removal

**Step 2:** Push LH slide lever UP and RH lever DOWN. Remove drawer.

**Note:** Slide levers are clear plastic.

#### Attention

If there is not a wire connection here, you must lower table shrouds and remove the top cover in order to disconnect / route heater plate wires.

#### Installation

**Step 2:** Route heater plate wires behind slide. Connect wires.

#### Removal

**Step 3:** Disconnect heater plate wires.

#### Removal

**Step 4:** Remove heater plate.

#### Installation

**Step 1:** Install heater plate.

MA633800i

**Models:**  
**Serial Numbers:**

**All**  
**All**

**Drawer Heater System**

**B-29**

# Component Testing & Repair

## Upholstery Heater System

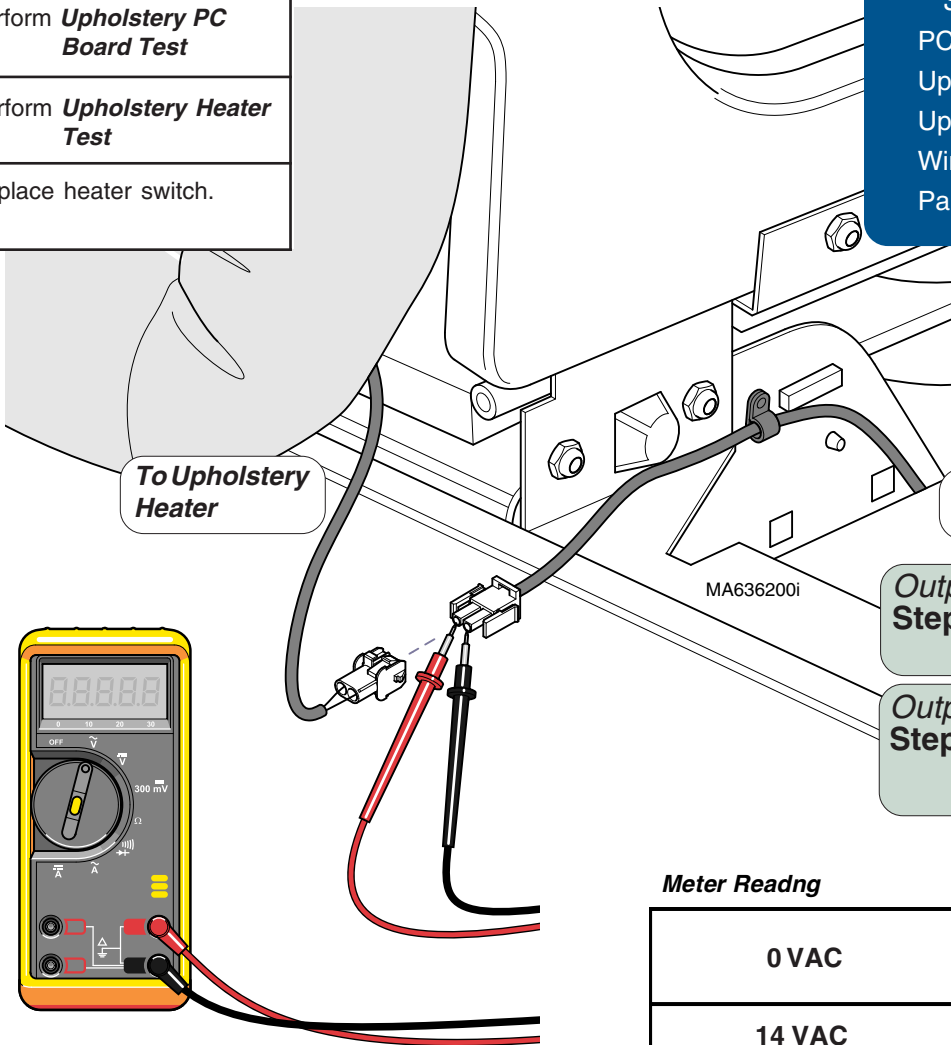
Use the table below to determine the required action.

Problem	Required Action
Upholstery heater does not warm up. Heater switch does <u>not</u> illuminate	Perform <b>Upholstery PC Board Test</b>
Upholstery heater does not warm up. Heater switch illuminates.	Perform <b>Upholstery Heater Test</b>
Upholstery heater - OK Heater switch does <u>not</u> illuminate	Replace heater switch.

Upholstery Heater System	Page
Upholstery Heater PC Board Test:	
Output Voltage Test .....	B-30
Supply Voltage Test .....	B-31
PC Board Replacement .....	B-32
Upholstery Heater Test .....	B-33
Upholstery Heater Switch Test .....	B-34
Wiring Diagrams .....	D-1
Part Numbers .....	E-33

### Upholstery Heater PC Board Test

(Output Voltage Test)



**Output Voltage Test**  
**Step 2:** Set meter to 20 VAC.

**Output Voltage Test**  
**Step 4:** Press Upholstery (Green) Heater switch ON.

**Output Voltage Test**  
**Step 1:** Disconnect leads to upholstery heater.

**Output Voltage Test**  
**Step 3:** Place meter probes on leads from upholstery heater PC Board.

Meter Reading	Status	Required Action
0 VAC		Check supply voltage to heater PC board
14 VAC + / - 3 VAC		Check upholstery heater

# Component Testing & Repair

## Upholstery Heater System - continued

### Upholstery Heater PC Board Test - continued

(Supply Voltage Test)



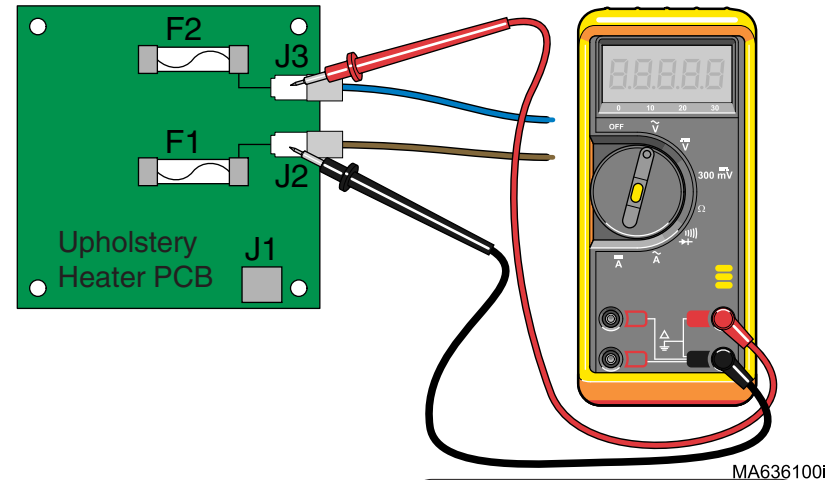
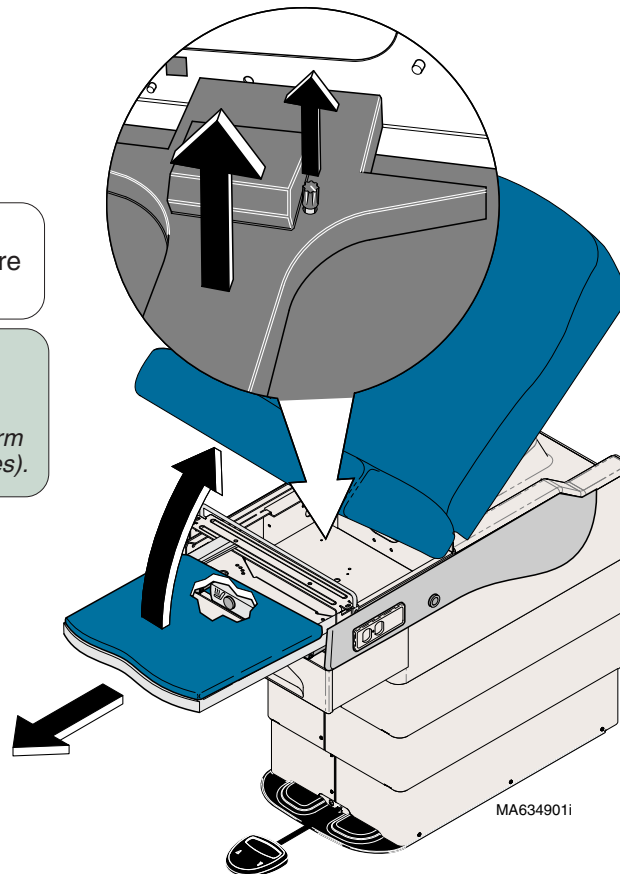
#### Caution

Unplug power cord before removing stirrup guide.

#### Supply Voltage Test

**Step 1:** Remove stirrup guide.

**Note:** If necessary, remove chair arm brace (see Access Procedures).



**Supply Voltage Test**  
**Step 2:** Set meter to 200 VAC.

**Supply Voltage Test**  
**Step 3:** Place meter probes on J2 & J3 of Upholstery Heater PCB and plug table into outlet.

Meter Reading	Status	Required Action
0 VAC		Check incoming power source to table.
115 VAC		Check connections & F1 / F2 fuses on PCB.

<b>Models:</b>	<b>622</b>	<b>623</b>
Serial Numbers:	All	All

**Upholstery Heater System**

# Component Testing & Repair

## Upholstery Heater System - continued

### Upholstery Heater PC Board Replacement

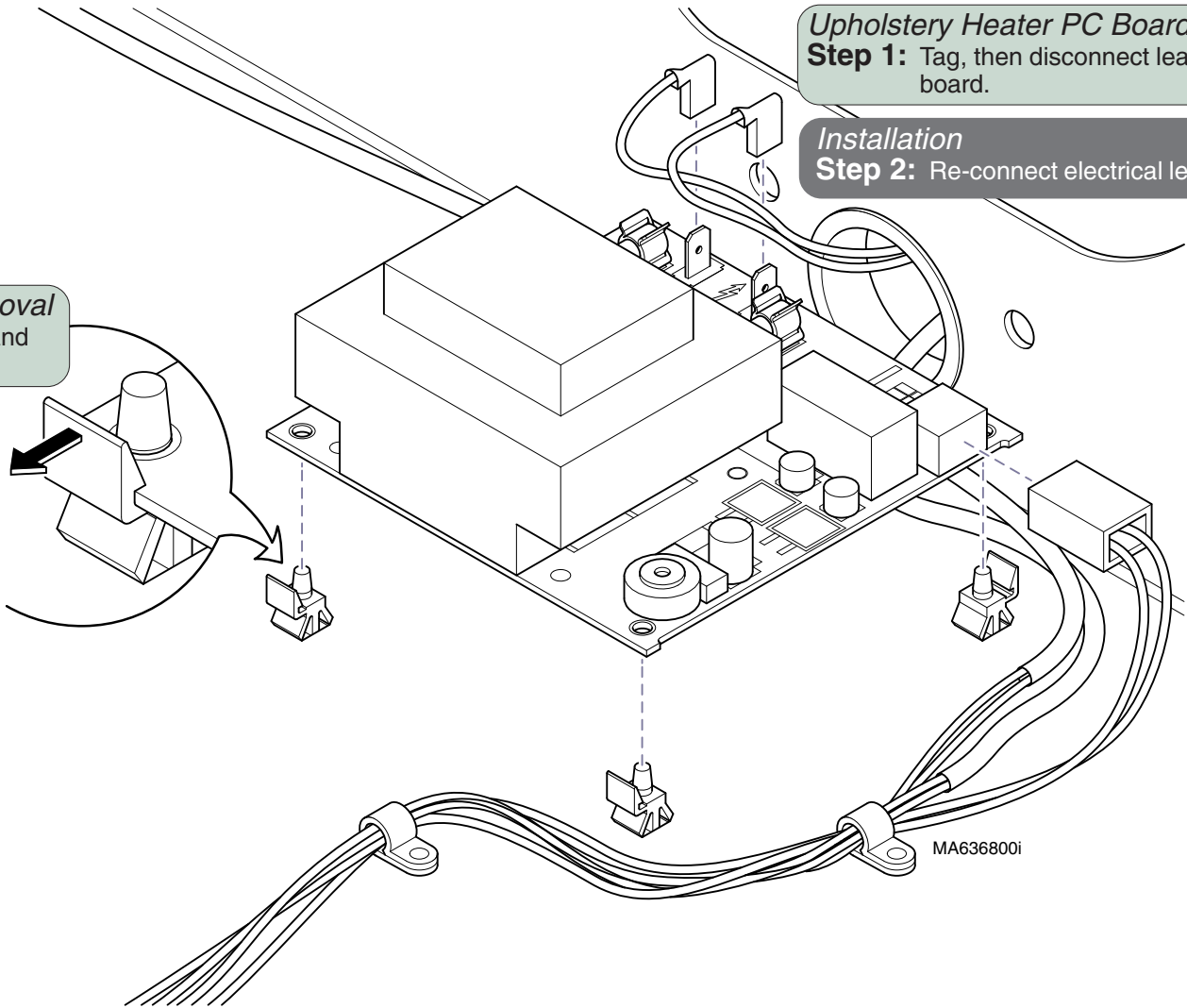
**Caution**  
Unplug power cord before removing PC Board cover.

**Upholstery Heater PC Board Removal Step 2:** Depress release on standoffs and remove PC Board.

**Installation Step 1:** Replace PC Board.

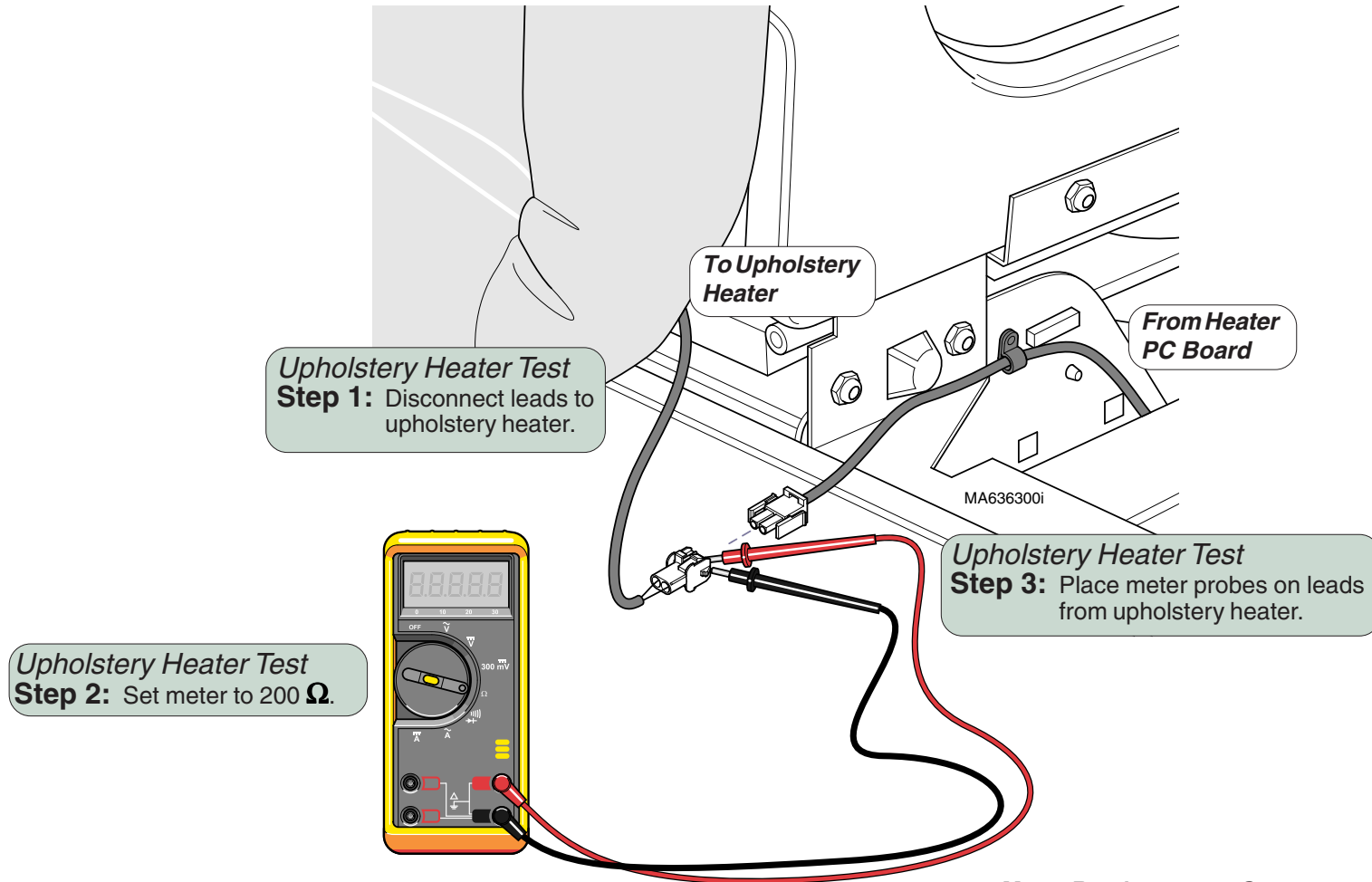
**Upholstery Heater PC Board Removal Step 1:** Tag, then disconnect leads to PC board.

**Installation Step 2:** Re-connect electrical leads.



## Upholstery Heater System - continued

### Upholstery Heater Test



Meter Reading	Status	Required Action
0 $\Omega$		Replace Upholstery
3 - 4 $\Omega$		Check Upholstery Heater Switch.

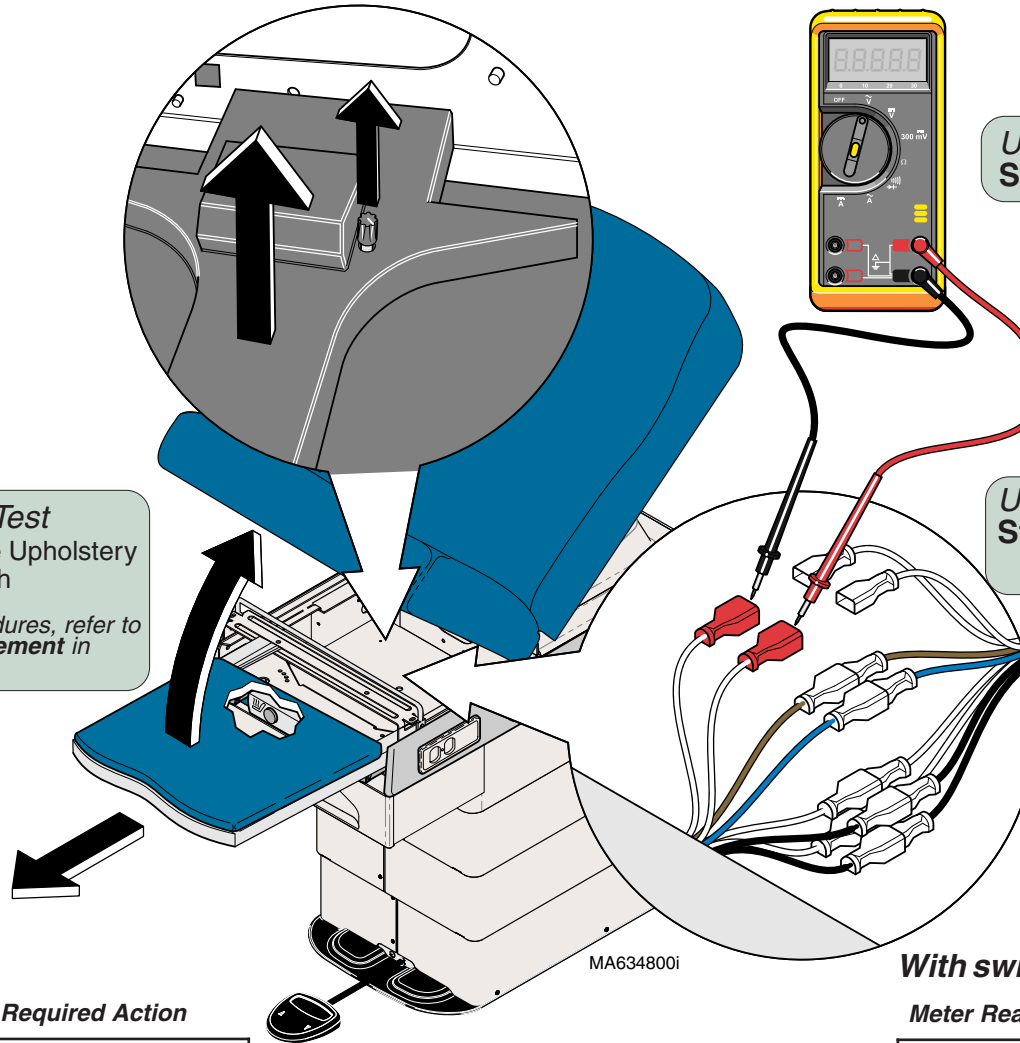
<b>Models:</b>	<b>622</b>	<b>623</b>
Serial Numbers:	All	All

**Upholstery Heater System**

# Component Testing & Repair

## Upholstery Heater System - continued

### Upholstery Heater Switch Test



**Upholstery Heater Switch Test**  
**Step 1:** Set meter to 200  $\Omega$ .

**Upholstery Heater Switch Test**  
**Step 3:** Depress & hold in the Upholstery Heater (Green) Switch  
*Note:* For replacement procedures, refer to **Heater Switch Replacement** in *Drawer Heater System*

**Upholstery Heater Switch Test**  
**Step 2:** Disconnect Black leads from Switch and insert meter probes.

#### With switch 'tripped'...

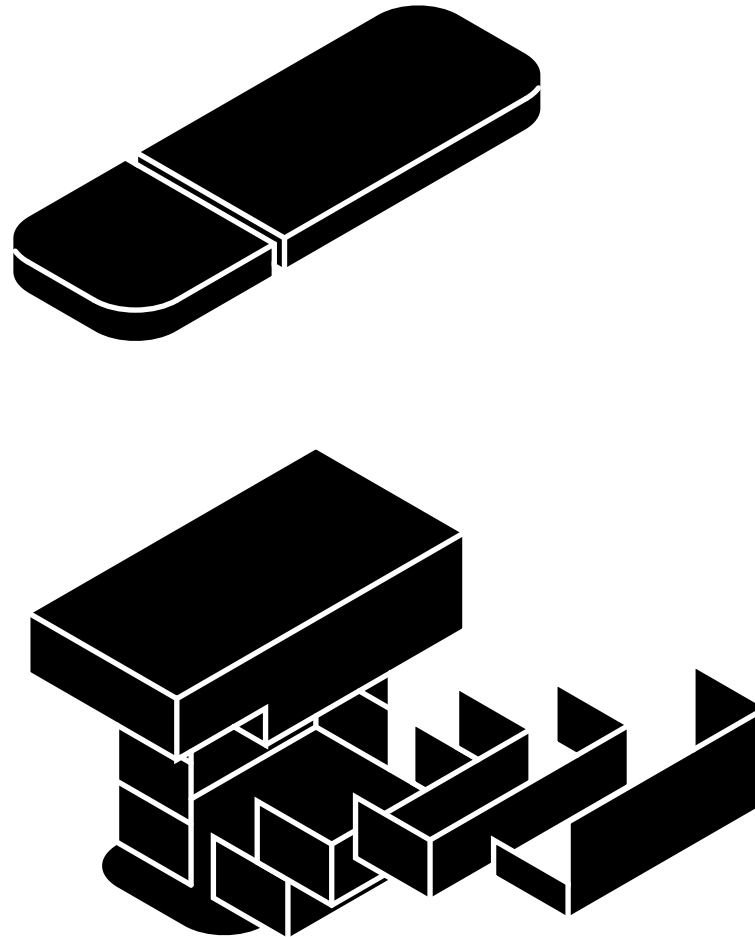
Meter Reading	Status	Required Action
Any resistance reading		Switch is good. Perform next check.
<b>OL</b>		Replace switch

#### With switch 'untripped'...

Meter Reading	Status	Required Action
Any resistance reading		Replace switch.
<b>OL</b>		Switch is good. Perform next check.



## Access Procedures



<u>Procedure</u>	<u>Page</u>
Table Shrouds ( <i>Remove / Install</i> ) .....	C-2
Manually Raising / Lowering Table .....	C-5
Upholstered Top ( <i>Remove / Install</i> ):	
<i>Ritter models</i> .....	C-6
<i>Midmark models</i> .....	C-7
Chair Arm / Brace Removal .....	C-8
Top Cover ( <i>Remove Install</i> ) .....	C-9
Back Limit Switch Access .....	C-9



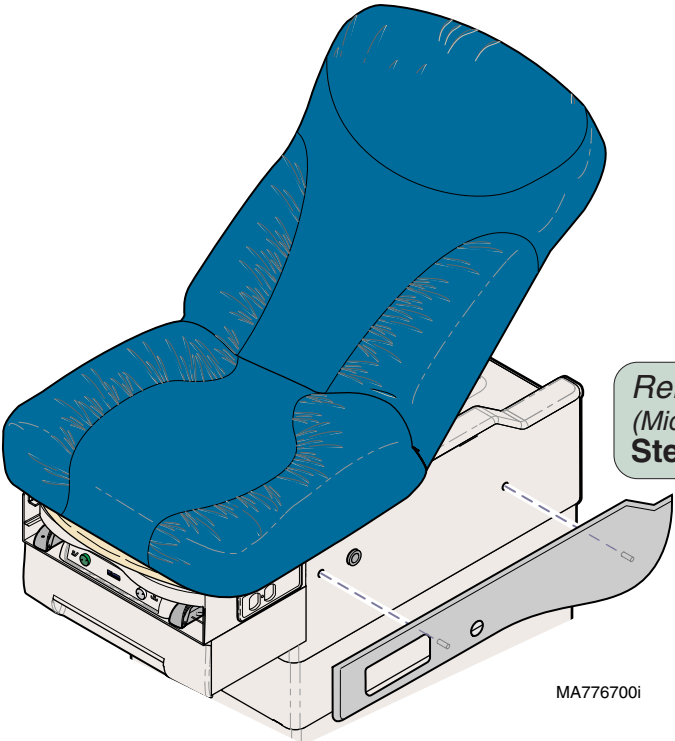
# Component Testing & Repair

## Table Shrouds

### Removal / Installation

**Note**  
Remove all accessories (ex. chair arms) before performing this procedure.

**Refer To:** **Page**  
Exploded Views / Part Numbers:  
Table Shrouds (Ritter models) ..... E-14\*  
Table Shrouds (Midmark models) ..... E-15\*  
*\* multiple pages due to model / serial # break*



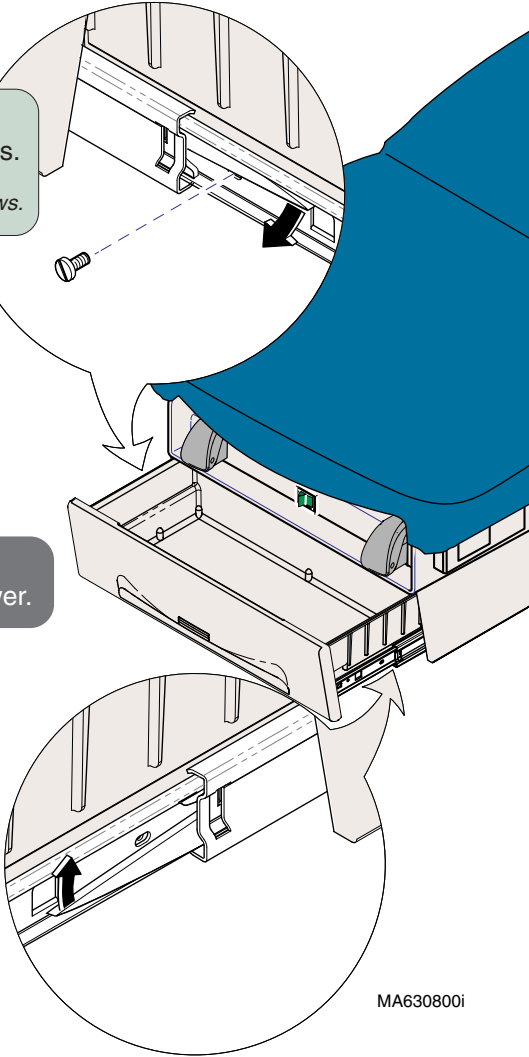
**Removal**  
(Midmark models only)  
**Step 1:** Remove magnetic cladding.

**Removal**  
**Step 2:** Remove screw(s) from drawer slides.  
**Note:** Tables w/o drawer heater do not have screws.

**Installation**  
**Step 7:** Install screw(s) in drawer slides.

**Installation**  
**Step 6:** Install drawer.

**Removal**  
**Step 3:** Push LH slide lever UP and RH lever DOWN. Remove drawer.  
**Note:** Slide levers are clear plastic.



# Component Testing & Repair

## Table Shrouds - continued

### Removal / Installation

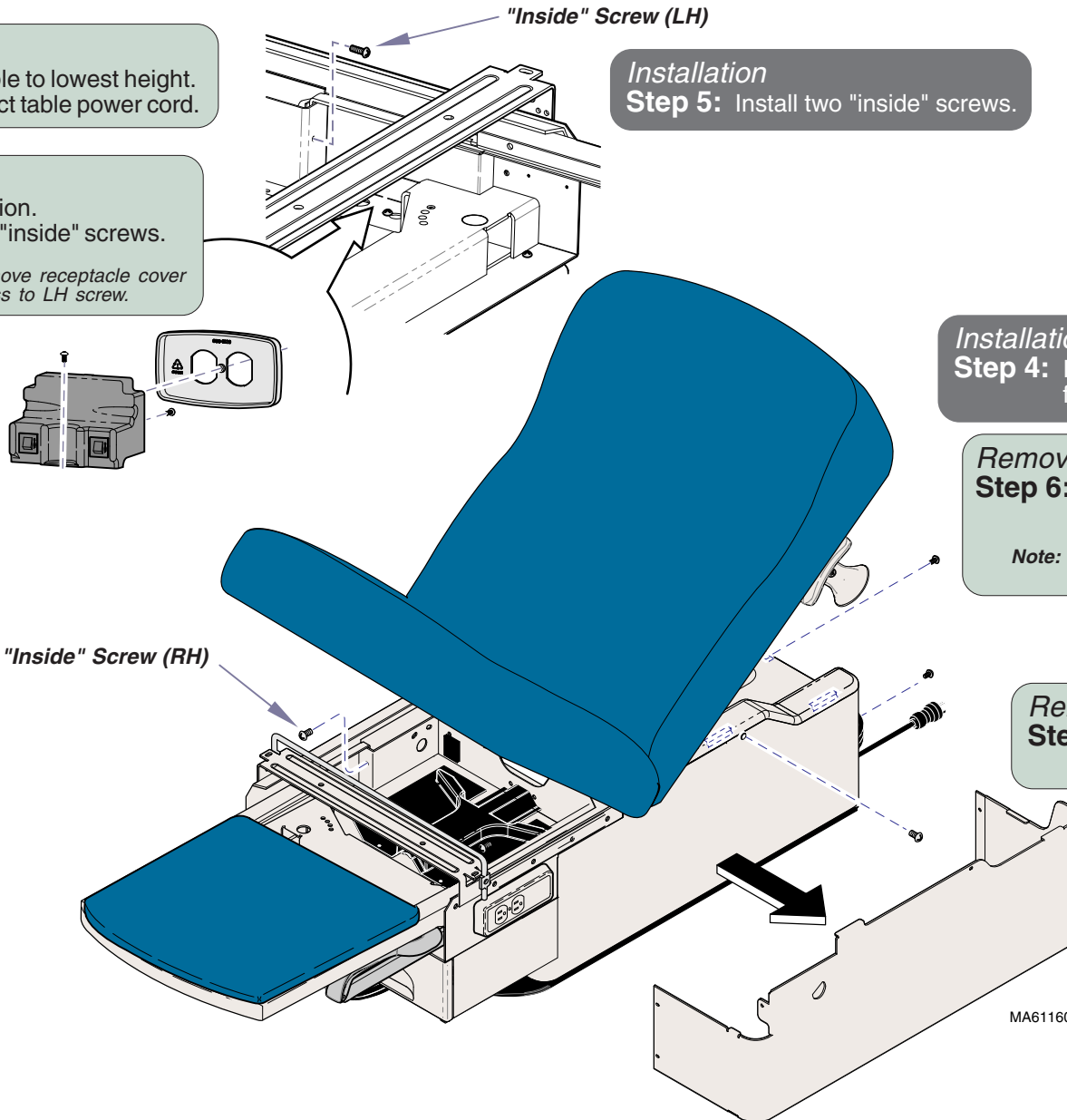
#### Removal

**Step 4:** Lower table to lowest height.  
Disconnect table power cord.

#### Removal

**Step 5:** Lift seat section.  
Remove two "inside" screws.

**Note:** If necessary, move receptacle cover for better access to LH screw.



#### Installation

**Step 5:** Install two "inside" screws.

#### Installation

**Step 4:** Install screws at head-end & foot-end of outer shrouds.

#### Removal

**Step 6:** Remove screws from head-end & foot-end of outer shrouds.

**Note:** Lower the drawer front to access foot-end screws.

#### Removal

**Step 7:** Remove side screw & outer shroud.  
Repeat for other side.

#### Installation

**Step 3:** Position outer shroud.  
Install side screw.  
Repeat on opposite side.

MA6116021

**Models:**  
Serial Numbers:

All  
All

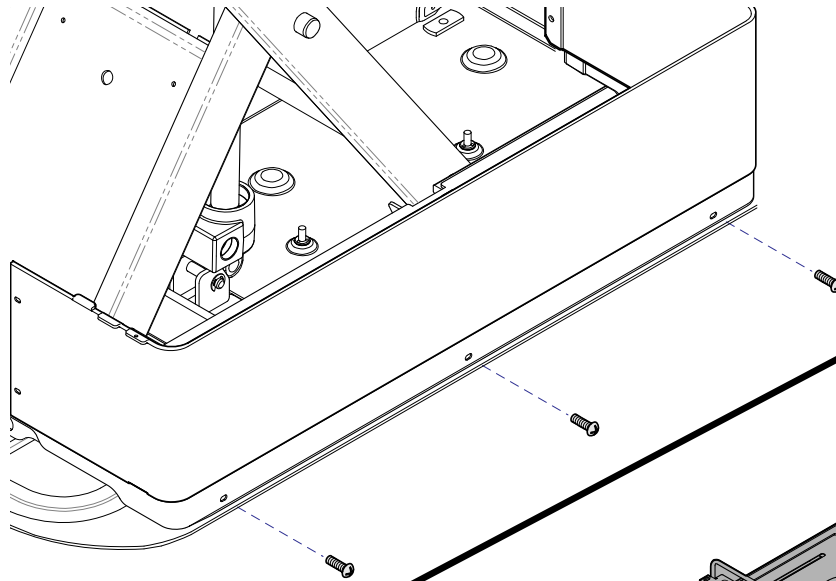
Table Shrouds

C-3

# Component Testing & Repair

## Table Shrouds - continued

### Removal / Installation



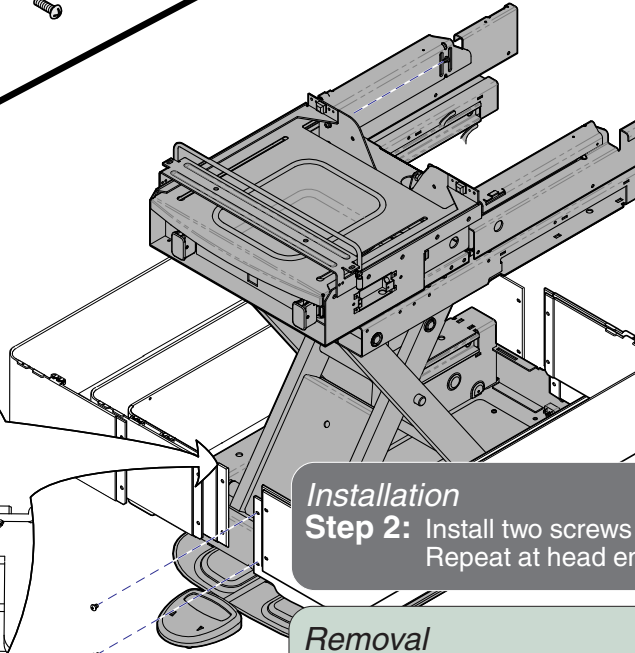
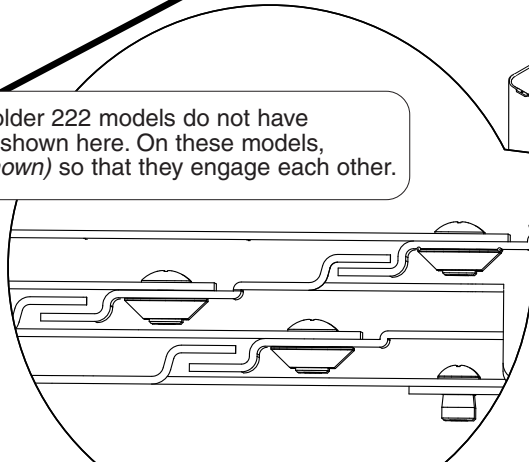
#### Installation

**Step 1:** Install six screws securing bottom of inner shrouds.

#### Removal

**Step 8:** Remove six screws securing bottom of inner shrouds.

**Note:** The shrouds on older 222 models do not have the offset guides shown here. On these models, align tabs (*not shown*) so that they engage each other.



#### Installation

**Step 2:** Install two screws securing each set of shrouds. Repeat at head end of table.

#### Removal

**Step 9:** Remove two screws securing each set of shrouds. Repeat at head end of table.

**Note:** On older 222 models, there is a wire connecting the shrouds. This must remain in place to ensure proper grounding.

## Manually Raising / Lowering Table

### Refer To:

### Page

Exploded Views / Part Numbers:

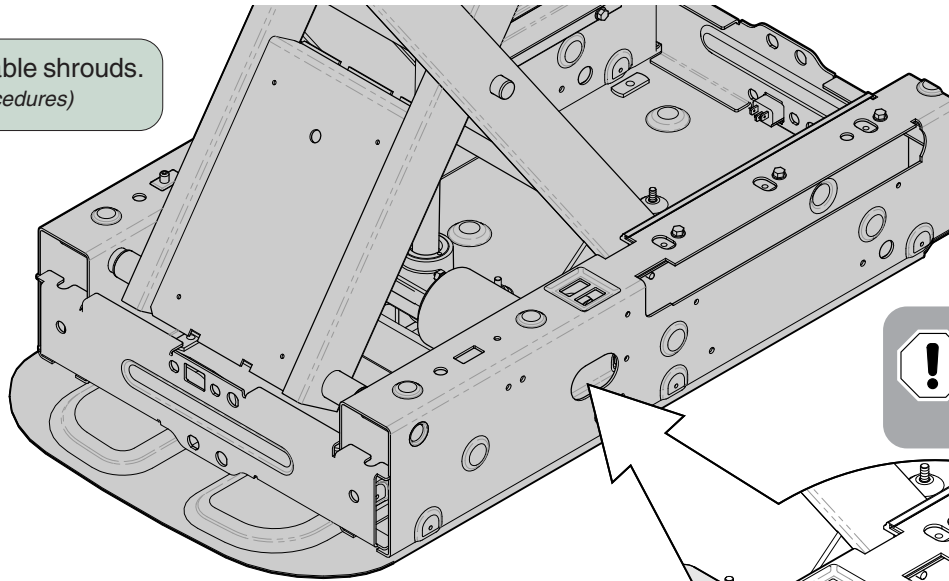
Ritter Base Components ..... E-20\*

Midmark Base Components ..... E-21\*

Base Actuator ..... E-22

\* multiple pages due to model / serial # break

**Step 1:** Remove table shrouds.  
(Access Procedures)



### Equipment Alert

Do not to move table past limit switches  
or equipment could be damage.

**Step 2:** Run drill in reverse to raise table.  
Run drill forward to lower table.

**Note:** Requires 5/16" socket w/ extension.

MA632200i

**Models:**  
Serial Numbers:

**All**  
All

**Manually**  
Raising / Lowering

**C-5**

# Component Testing & Repair

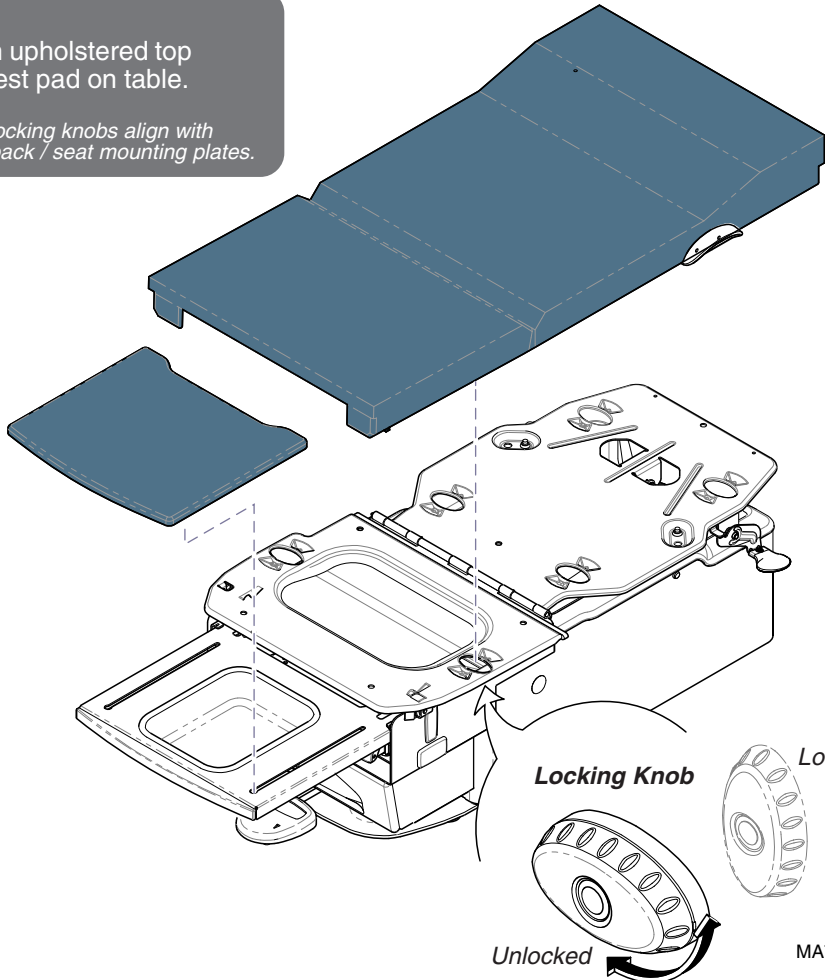
## Upholstered Top (Ritter models)

Removal / Installation  
(Soft Touch Top shown)

**Installation**

**Step 1:** Position upholstered top & footrest pad on table.

**Note:** Be sure locking knobs align with holes in back / seat mounting plates.



**Removal**  
**Step 2:** Remove upholstered top & footrest pad.

**Removal**  
**Step 1:** Rotate all locking knobs to unlocked position.  
**Note:** There are four locking knobs under back section, and two knobs under seat section.

**Installation**  
**Step 2:** Rotate locking knobs to locked position.

Refer To:	Page
Exploded Views / Part Numbers:	
Upholstery - Ritter :	
Soft Touch .....	E-6
Seamless .....	E-7

# Component Testing & Repair

## Upholstered Top (Midmark models)

### Removal / Installation

Step 2 applies only to models with optional upholstery heater.

#### Removal

**Step 2:** Disconnect upholstery heater harness.

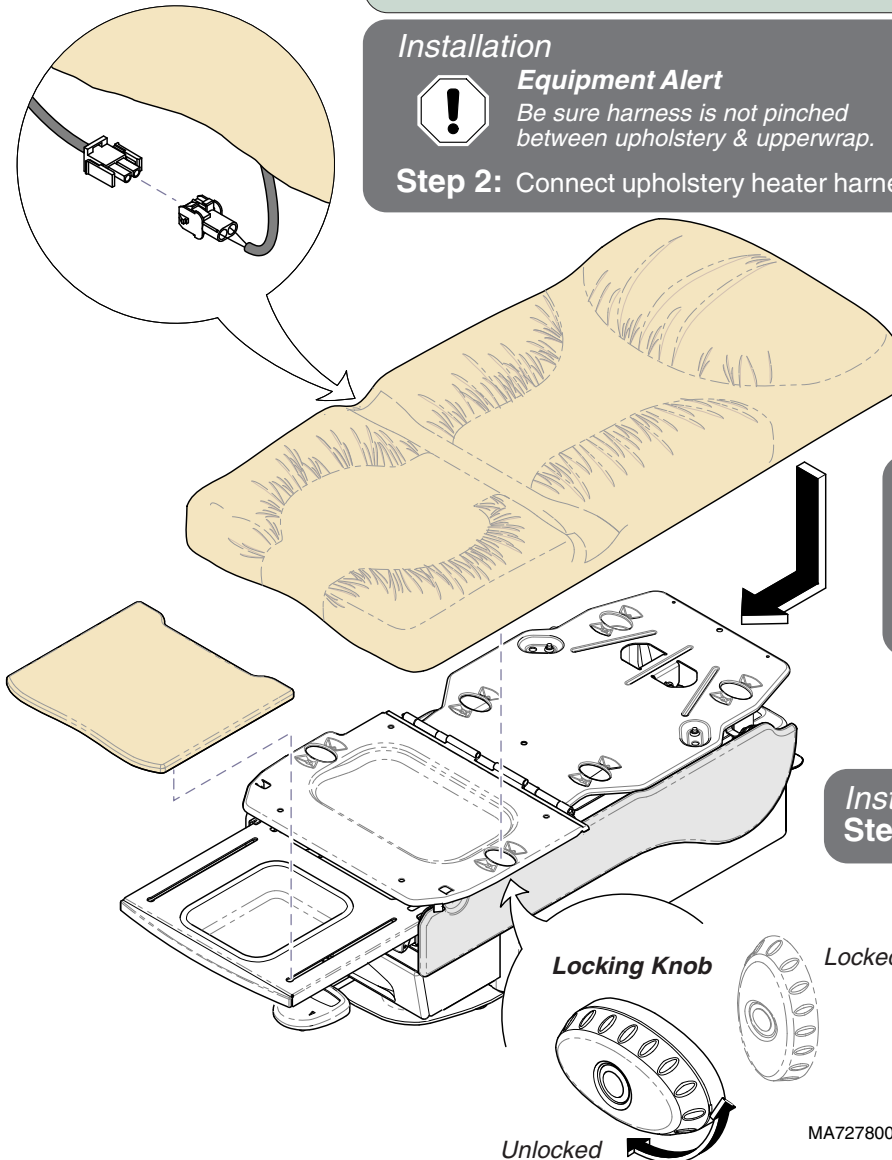
#### Installation



#### Equipment Alert

Be sure harness is not pinched between upholstery & upperwrap.

**Step 2:** Connect upholstery heater harness.



#### Removal

**Step 3:** Remove upholstered top & footrest pad.

**Note:** Slide upholstery up to remove from back support plate.

#### Installation

**Step 1:** Position upholstered top & footrest pad on table.

**Note:** Back support plate must slide under paper roll holder.

Be sure locking knobs align with holes in back / seat mounting plates.

#### Installation

**Step 3:** Rotate locking knobs to locked position.

#### Removal

**Step 1:** Rotate all locking knobs to unlocked position.

**Note:** There are four locking knobs under back section, and two knobs under seat section.

MA727800i

**Models:** 622 (-007 & -008)  
**Serial Numbers:** All

**623 (-007 thru -011)**  
All

**Upholstered Top**  
**(Midmark models)**

**C-7**

## Chair Arms / Brace (optional)

### Removal

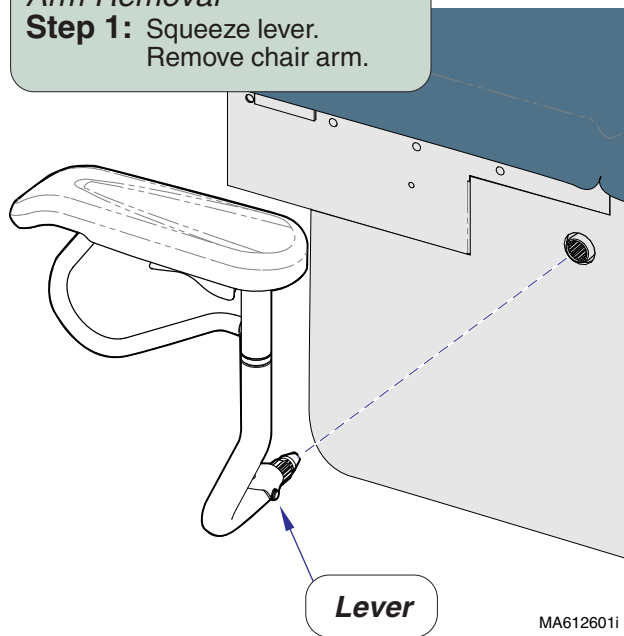
**Refer To:** **Page**

Exploded Views / Part Numbers:

Refer to Midmark Medical Accessory  
Service & Parts Manual (004-0096-00)

#### Arm Removal

**Step 1:** Squeeze lever.  
Remove chair arm.



*It may be necessary to remove the chair arm brace when performing certain procedures.*

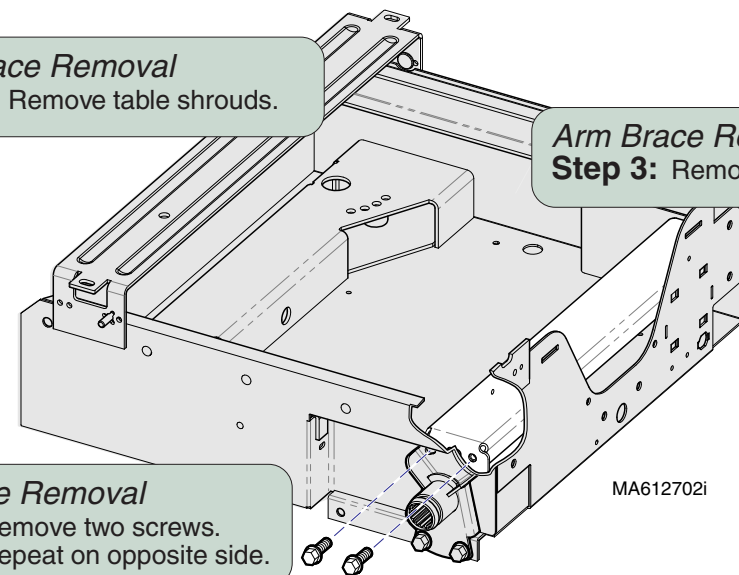
#### Arm Brace Removal

**Step 1:** Remove table shrouds.

**Step 3:** Remove brace.

#### Arm Brace Removal

**Step 2:** Remove two screws.  
Repeat on opposite side.





# Top Cover (Back Limit Switch Access)

Removal / Installation

**Removal**

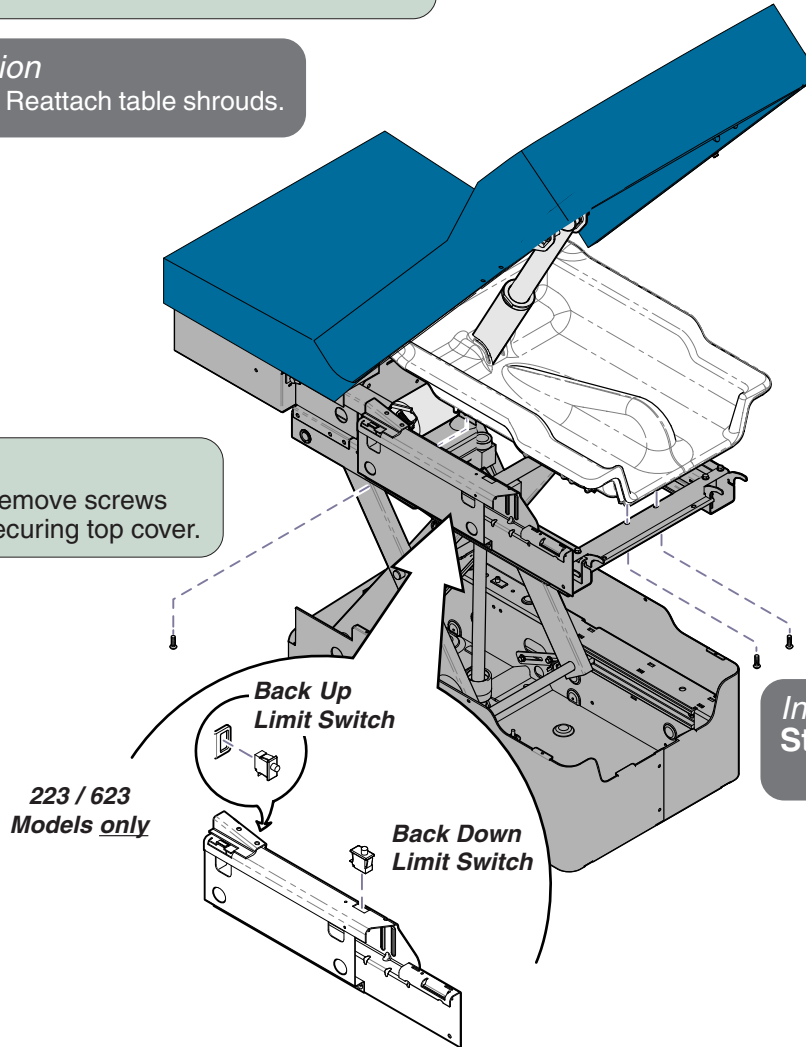
**Step 1:** Lower table shrouds.  
Refer to: Section C - Table Shrouds

**Installation**

**Step 2:** Reattach table shrouds.

**Removal**

**Step 2:** Remove screws securing top cover.



**Refer To:**

**Page**

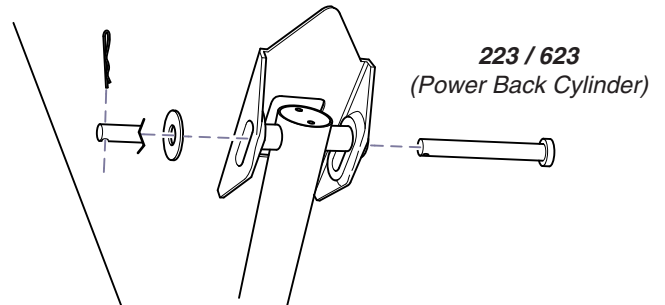
Table Shrouds ..... C-2

**Removal**

**Note**

The back limit switches can be accessed without completely removing the top cover. But if removing the cover is necessary, perform Step 3.

**Step 3:** Partially separate the back lift cylinder as shown. Slide top cover off of cylinder.

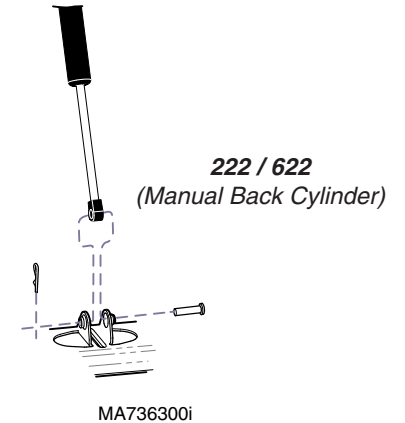


**Installation**

**Step 1:** Slide top cover over back cylinder. Reattach back cylinder.

**Installation**

**Step 2:** Secure top cover with screws removed in Step 2.



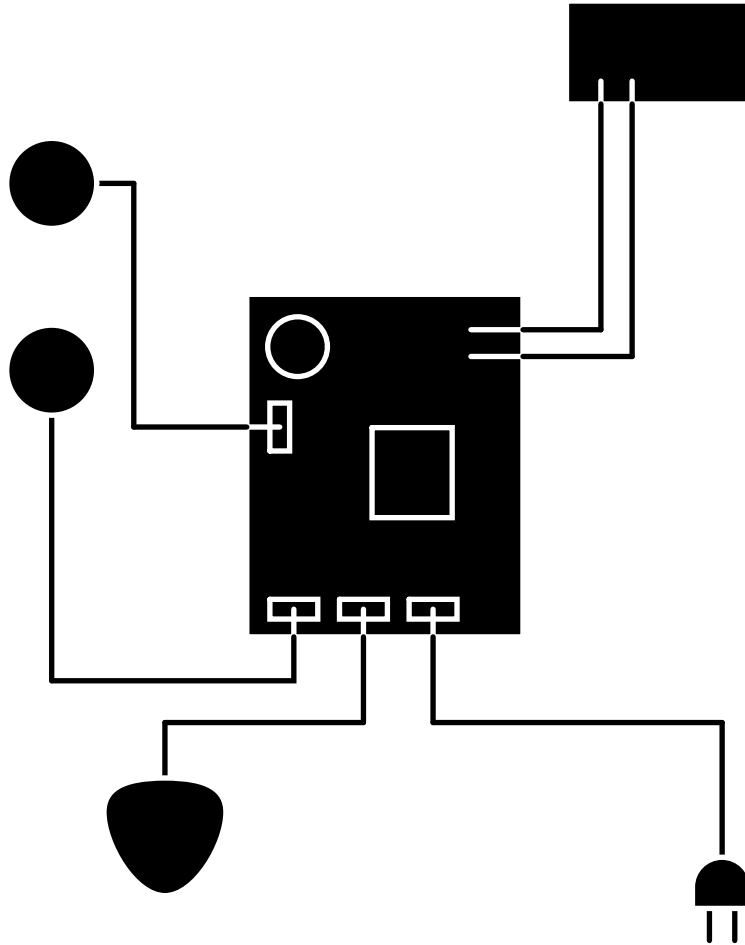
**Models:** All  
**Serial Numbers:** All

**Top Cover**



# Section D

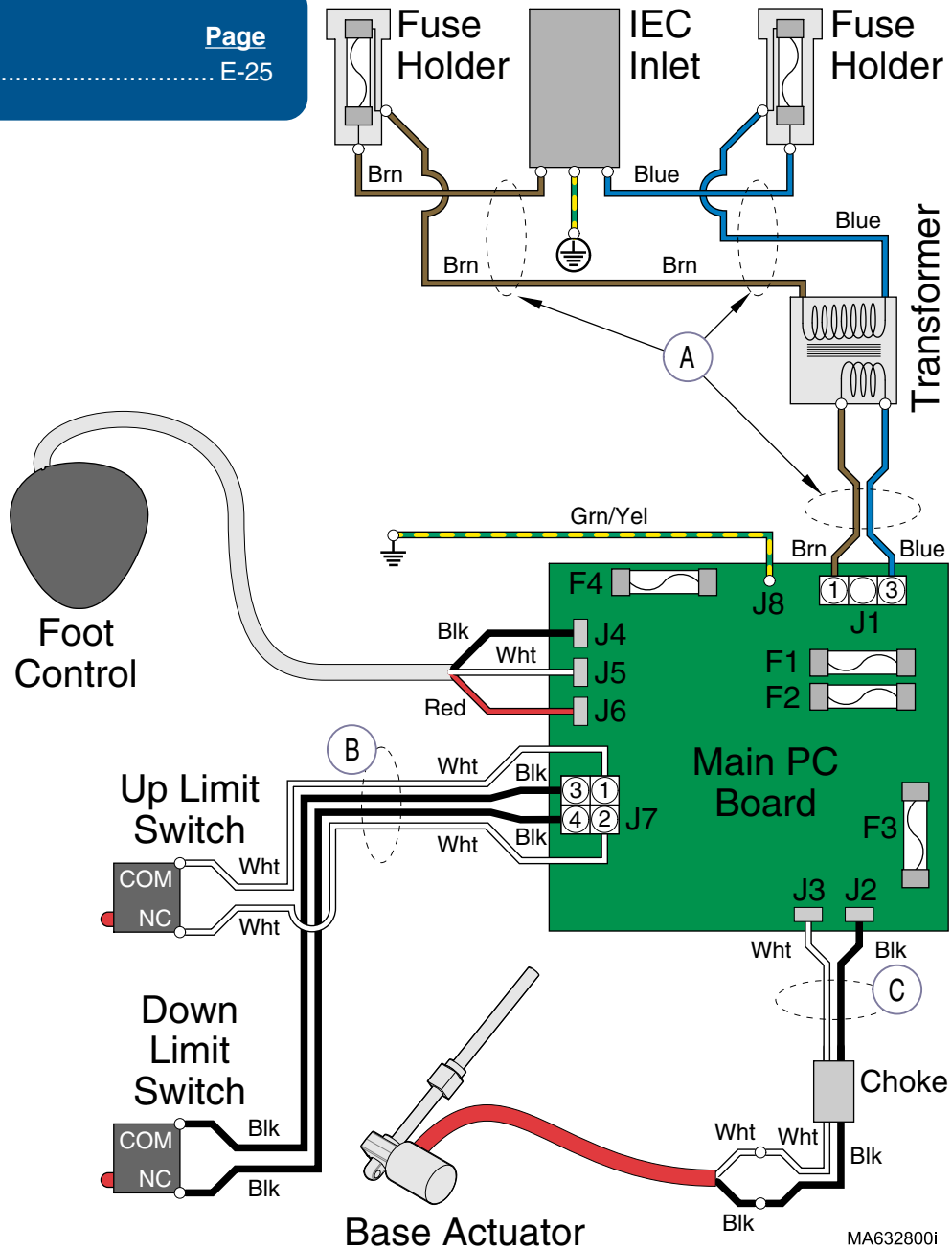
## Wiring Diagrams



<u>Model</u>	<u>Page</u>
<b>222:</b>	
(-017).....	D-2
(-015).....	D-3
(-016).....	D-4
<b>223:</b>	
(-015).....	D-5
(-016).....	D-6
<b>622:</b>	
(-007).....	D-3
(-008).....	D-7
<b>623:</b>	
(-007).....	D-10
(-008).....	D-11
(-009).....	D-8
(-010).....	D-9*
(-011).....	D-12

# Wiring Diagrams

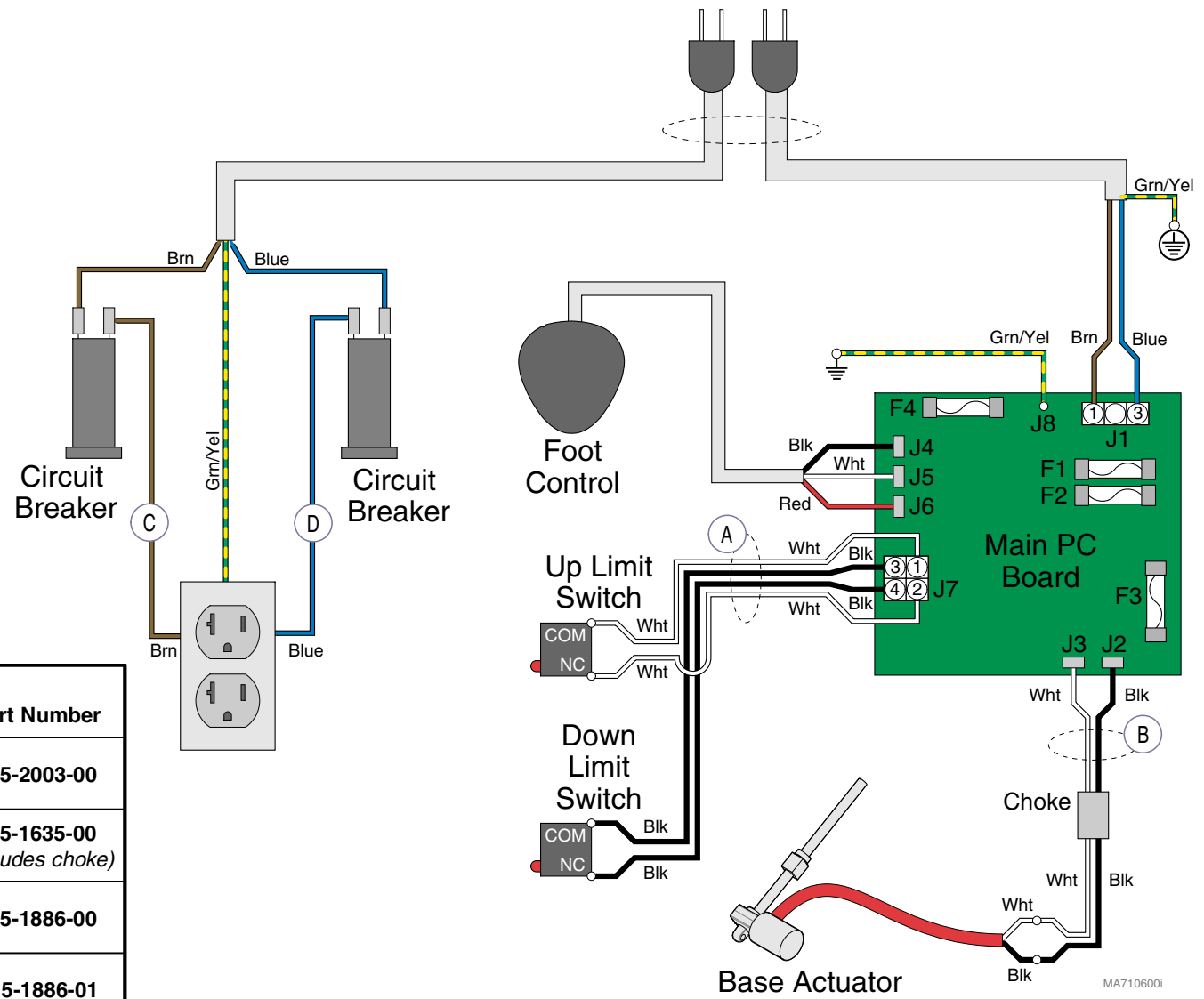
Refer To: Page  
Fuses ..... E-25



Wire Harness	From:	To:	Part Number
A	IEC Inlet / Fuse Holders / Transformer	Main PC Board	<b>015-1580-00</b> <i>(includes Item B)</i>
B	Base Up/Down Limit Switches	Main PC Board	<b>015-1580-00</b> <i>(includes Item A)</i>
C	Base Actuator Wires	Main PC Board	<b>015-1635-00</b> <i>(includes choke)</i>

# Wiring Diagrams

<b>Refer To:</b>	<b>Page</b>
Fuses .....	E-25

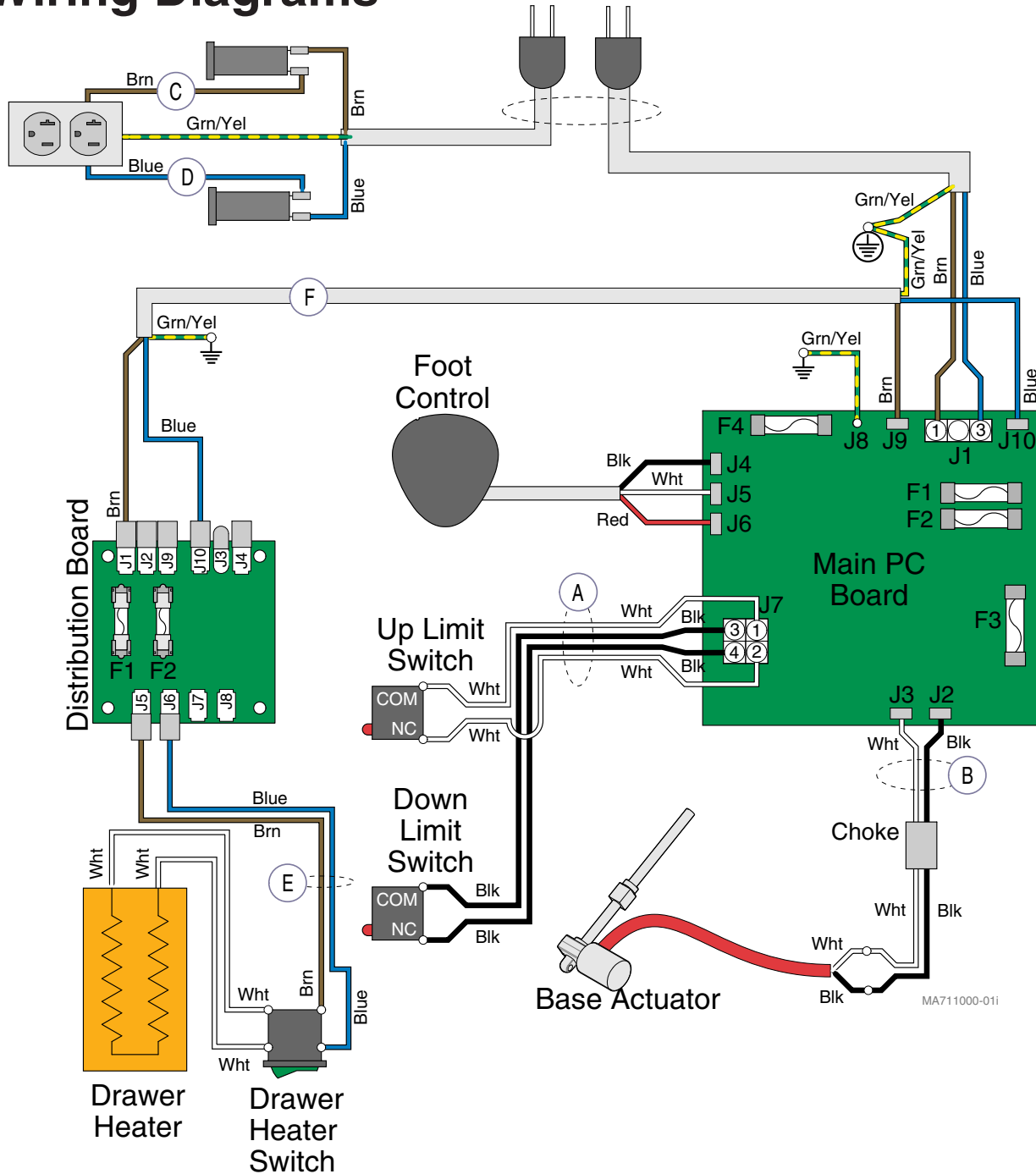


Wire Harness	From:	To:	Part Number
A	BaseUp / Down Limit Switches	Main PC Board	015-2003-00
B	Base Actuator Wires	Main PC Board	015-1635-00 <i>(includes choke)</i>
C	Circuit Breaker <i>(brown wire)</i>	Table Receptacle	015-1886-00
D	Circuit Breaker <i>(blue wire)</i>	Table Receptacle	015-1886-01

<b>Models:</b>	<b>222 (-015)</b>	<b>622 (-007)</b>
<b>Serial Numbers:</b>	all	all

## Wiring Diagrams

# Wiring Diagrams

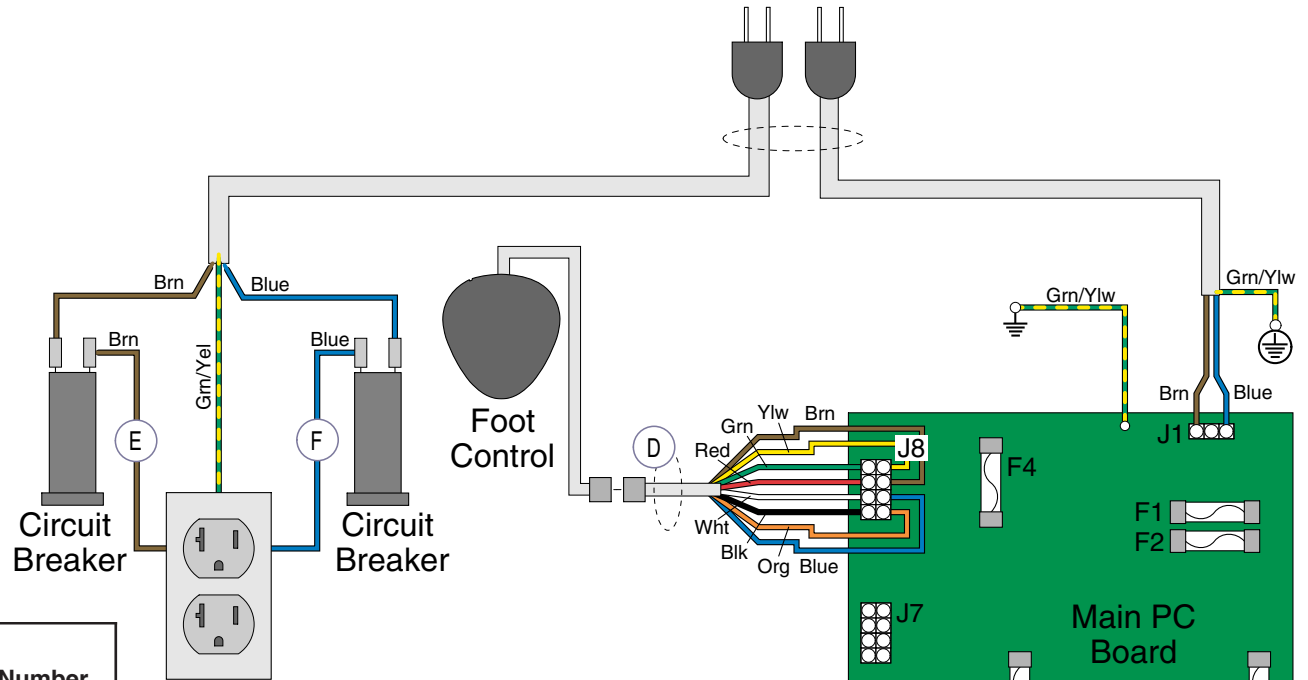


**Refer To:** Page  
Fuses ..... E-25

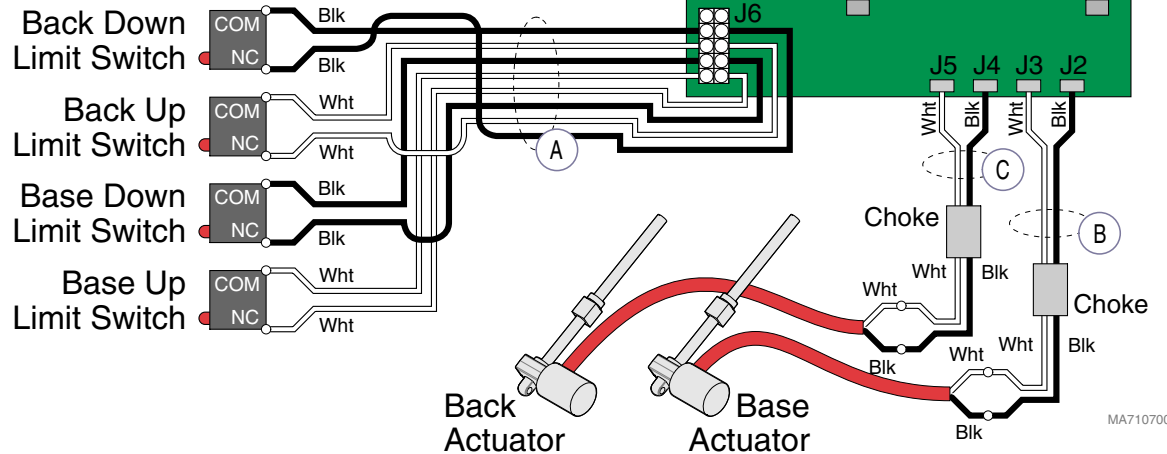
Wire Harness	From:	To:	Part Number
A	BaseUp / Down Limit Switches	Main PC Board	015-2003-00
B	Base Actuator Wires	Main PC Board	015-1635-00 (incl. choke)
C	Circuit Breaker (brown wire)	Table Receptacle	015-1886-00
D	Circuit Breaker (blue wire)	Table Receptacle	015-1886-01
E	Heater Switch with Harness	Distribution Board	015-3326-00
F	Distribution Board	Main PC Board	015-2005-00

# Wiring Diagrams

**Refer To:** **Page**  
**Fuses** ..... **E-25**



Wire Harness	From:	To:	Part Number
A	Base & Back Limit Switches	Main PC Board	015-2007-00
B	Base Actuator Wires	Main PC Board	015-1635-00 <i>(includes choke)</i>
C	Back Actuator Wires	Main PC Board	015-1635-00 <i>(includes choke)</i>
D	Foot Control Inlet Harness	Main PC Board	015-3464-00
E	Circuit Breaker <i>(brown wire)</i>	Table Receptacle	015-1886-00
F	Circuit Breaker <i>(blue wire)</i>	Table Receptacle	015-1886-01

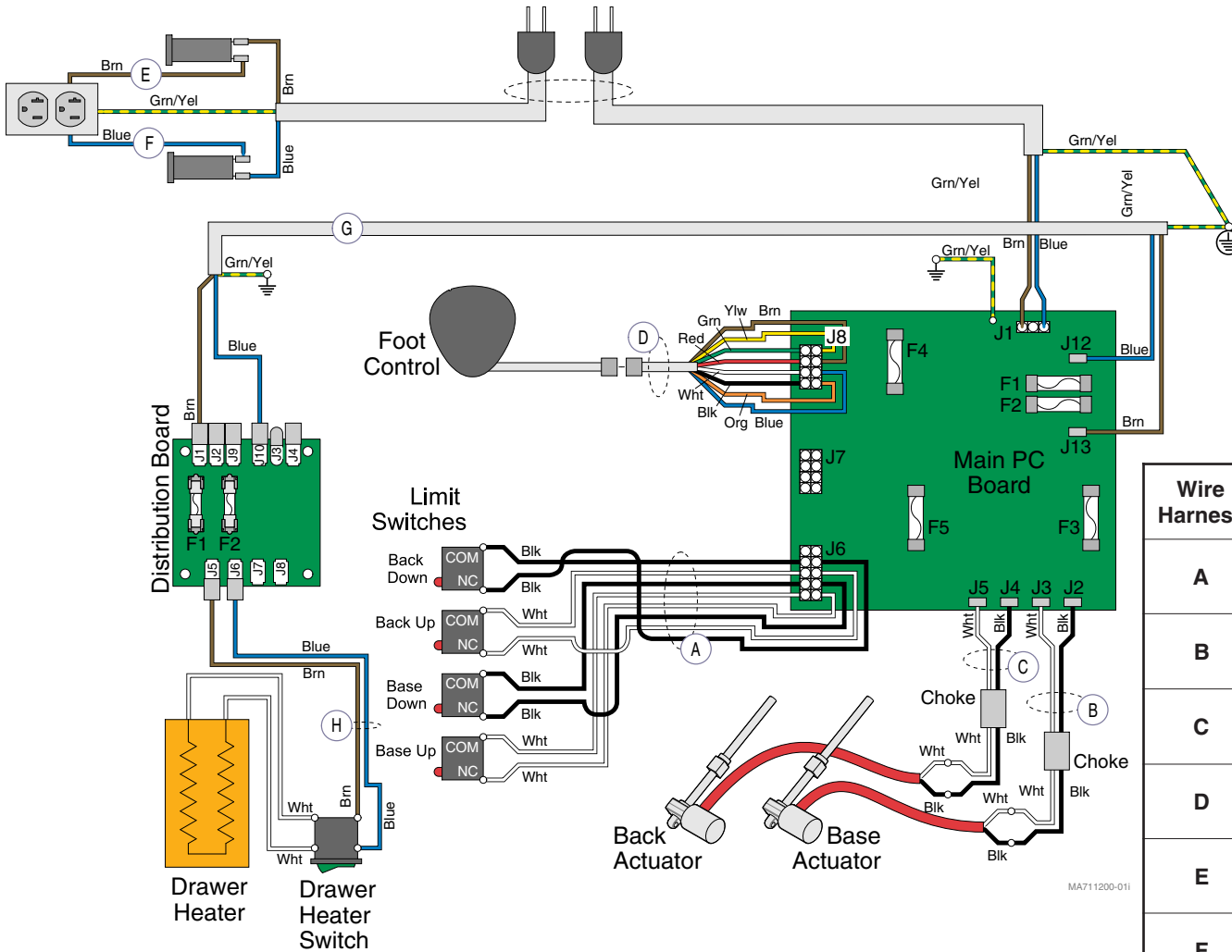


**Models:** 223 (-015)  
**Serial Numbers:** all

**Wiring Diagrams**

# Wiring Diagrams

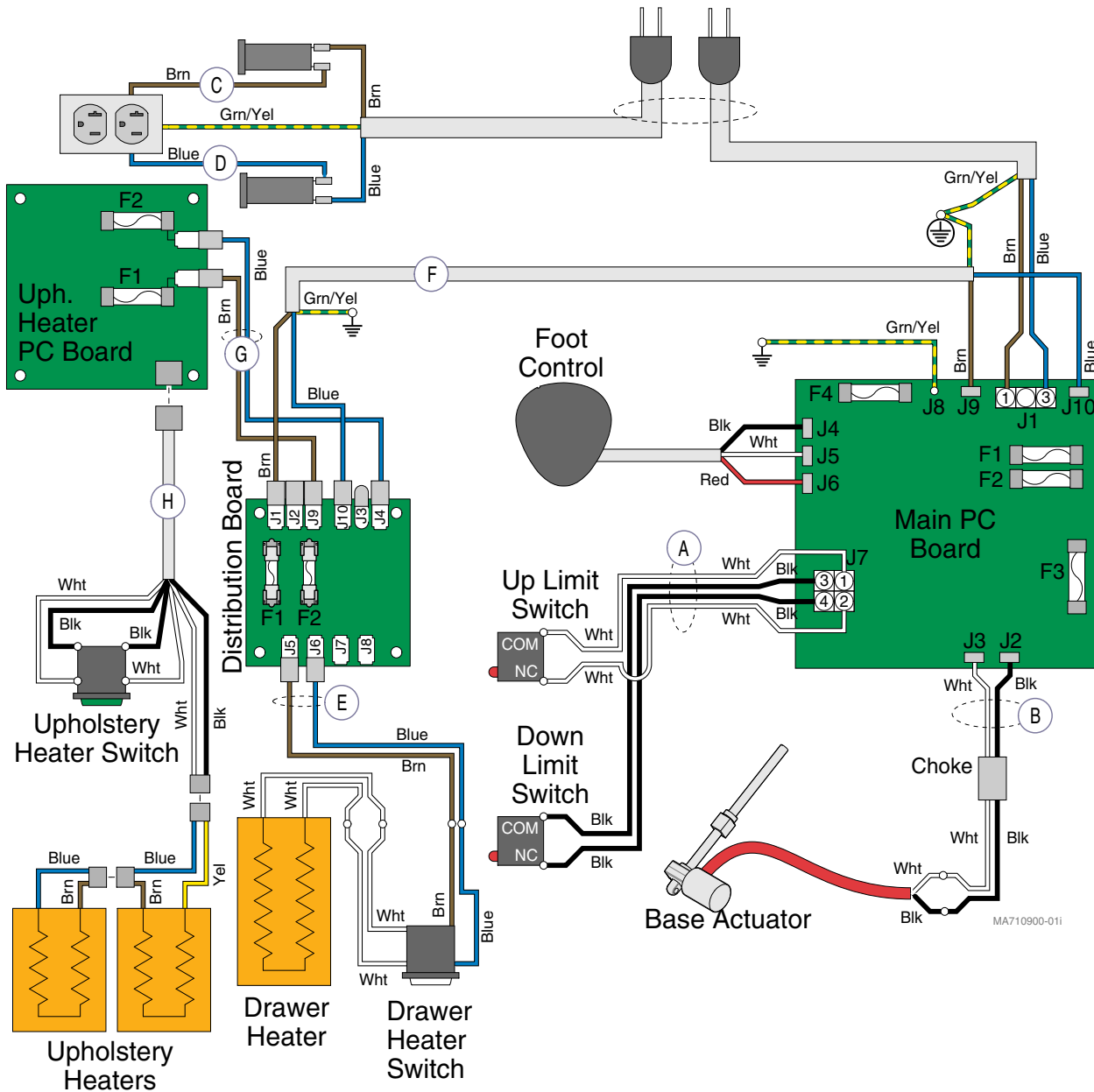
**Refer To:** **Page**  
**Fuses** ..... **E-25**



Wire Harness	From:	To:	Part Number
A	Base & Back Limit Switches	Main PC Board	015-2007-00
B	Base Actuator Wires	Main PC Board	015-1635-00 <i>(includes choke)</i>
C	Back Actuator Wires	Main PC Board	015-1635-00 <i>(includes choke)</i>
D	Foot Control Inlet Harness	Main PC Board	015-3464-00
E	Circuit Breaker <i>(brown wire)</i>	Table Receptacle	015-1886-00
F	Circuit Breaker <i>(blue wire)</i>	Table Receptacle	015-1886-01
G	Distribution Board	Main PC Board	015-2005-00
H	Drawer Heater Switch with Harness	Distribution Board	015-3326-00

# Wiring Diagrams

**Refer To:** **Page**  
 Fuses ..... E-25



Wire Harness	From:	To:	Part Number
A	BaseUp / Down Limit Switches	Main PC Board	015-2003-00
B	Base Actuator Wires	Main PC Board	015-1635-00 <i>(incl. choke)</i>
C	Circuit Breaker (brown wire)	Table Receptacle	015-1886-00
D	Circuit Breaker (blue wire)	Table Receptacle	015-1886-01
E	Drawer Heater Switch with Harness	Distribution Board	015-1759-00
F	Distribution Board	Main PC Board	015-2005-00
G	Distribution Board	Uph. Heater PC Board	015-2006-00
H	Uph. Heater Switch	Uph. Heater PC Board	015-1722-00

**Models:** 622 (-008)  
**Serial Numbers:** all

**Wiring Diagrams**

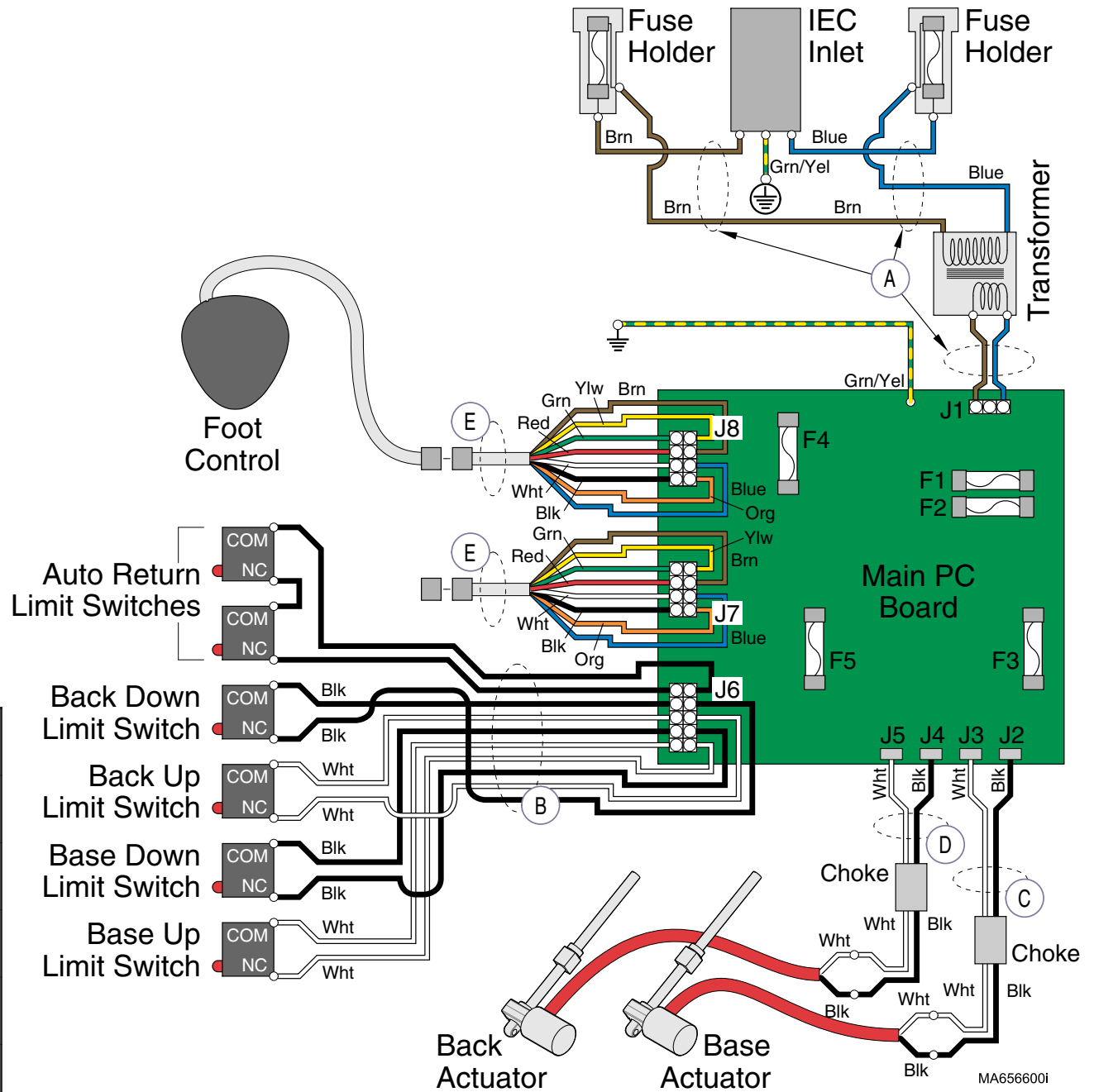
# Wiring Diagrams

Refer To:

Fuses ..... Page E-25

Page

E-25

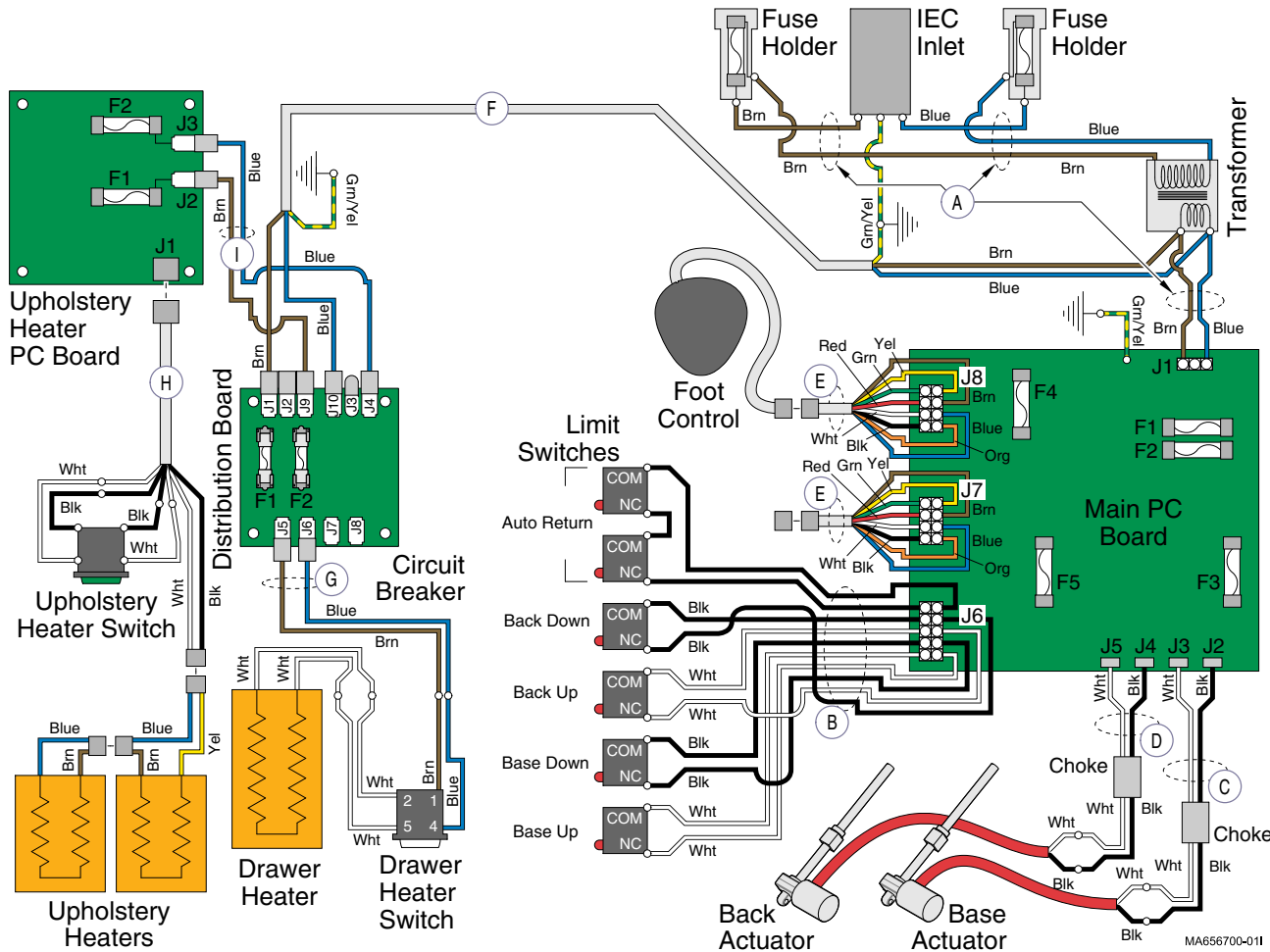


Wire Harness	From:	To:	Part Number
A	IEC Inlet	Main PC Board	015-1809-00 (includes Item B)
B	Base & Back Limit Switches	Main PC Board	015-1809-00 (includes Item A)
C	Base Actuator Wires	Main PC Board	015-1635-00 (includes choke)
D	Back Actuator Wires	Main PC Board	015-1635-00 (includes choke)
E	Foot Control Inlet Harness	Main PC Board	015-3464-00



# Wiring Diagrams

**Refer To:** **Page**  
**Fuses** ..... **E-25**



Wire Harness	From:	To:	Part Number
A	IEC Inlet	Main PC Board <i>(includes Item B)</i>	015-1809-00
B	Limit Switches (all)	Main PC Board <i>(includes Item A)</i>	015-1809-00
C	Base Actuator Wires	Main PC Board <i>(includes choke)</i>	015-1635-00
D	Back Actuator Wires	Main PC Board <i>(includes choke)</i>	015-1635-00
E	Foot Control Inlet Harness	Main PC Board	015-3464-00
F	Distribution Board	IEC Inlet	015-2005-00
G	Drawer Heater Switch with Harness	Distribution Board	015-1759-00
H	Uph. Heater PC Board	Uph. Heater Switch	015-1722-00
I	Distribution Board	Uph. Heater PC Board	015-2006-00

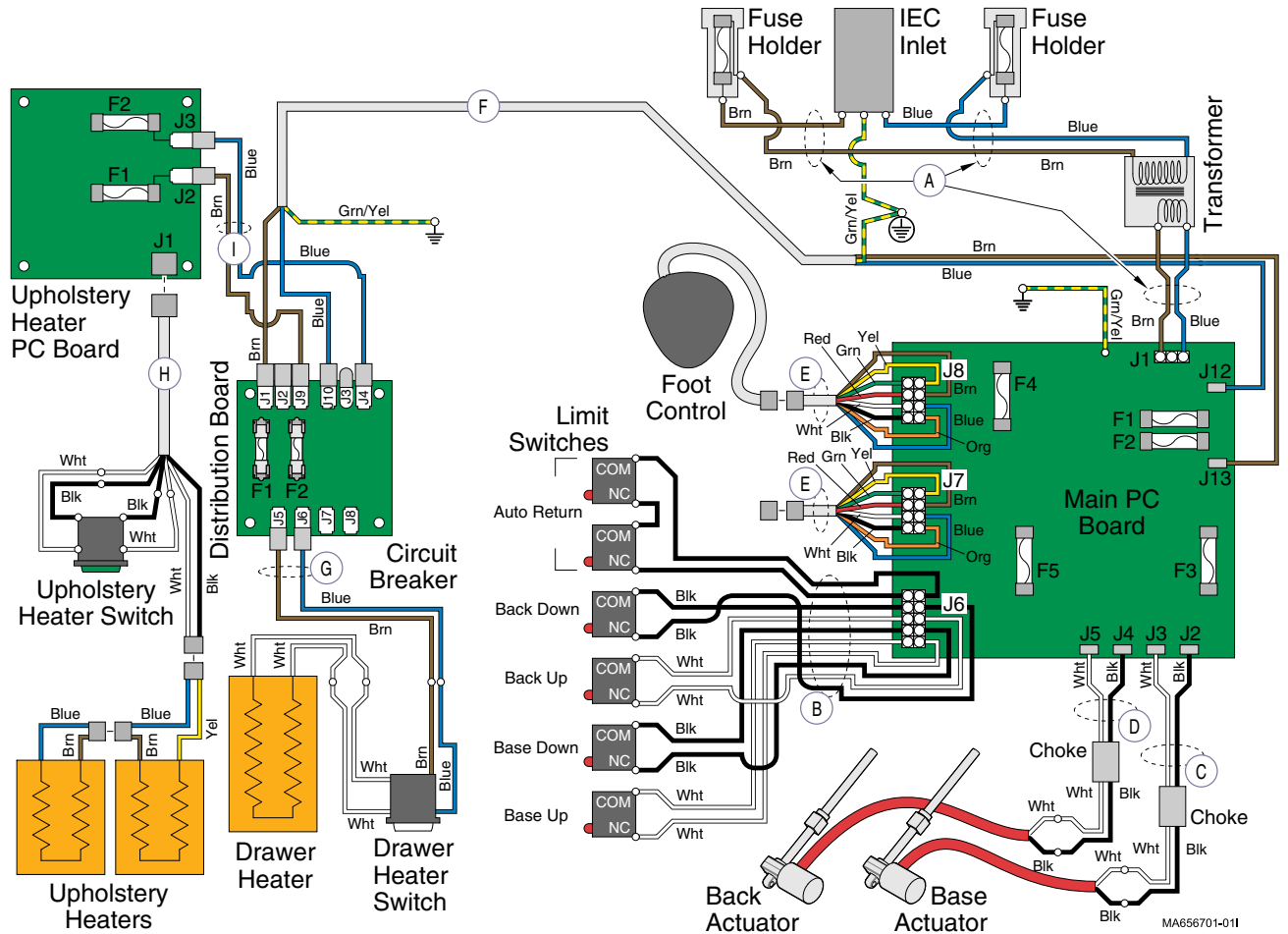
**Models:** 623 (-010)  
**Serial Numbers:** V2200 thru V256516

**Wiring Diagrams**

# Wiring Diagrams

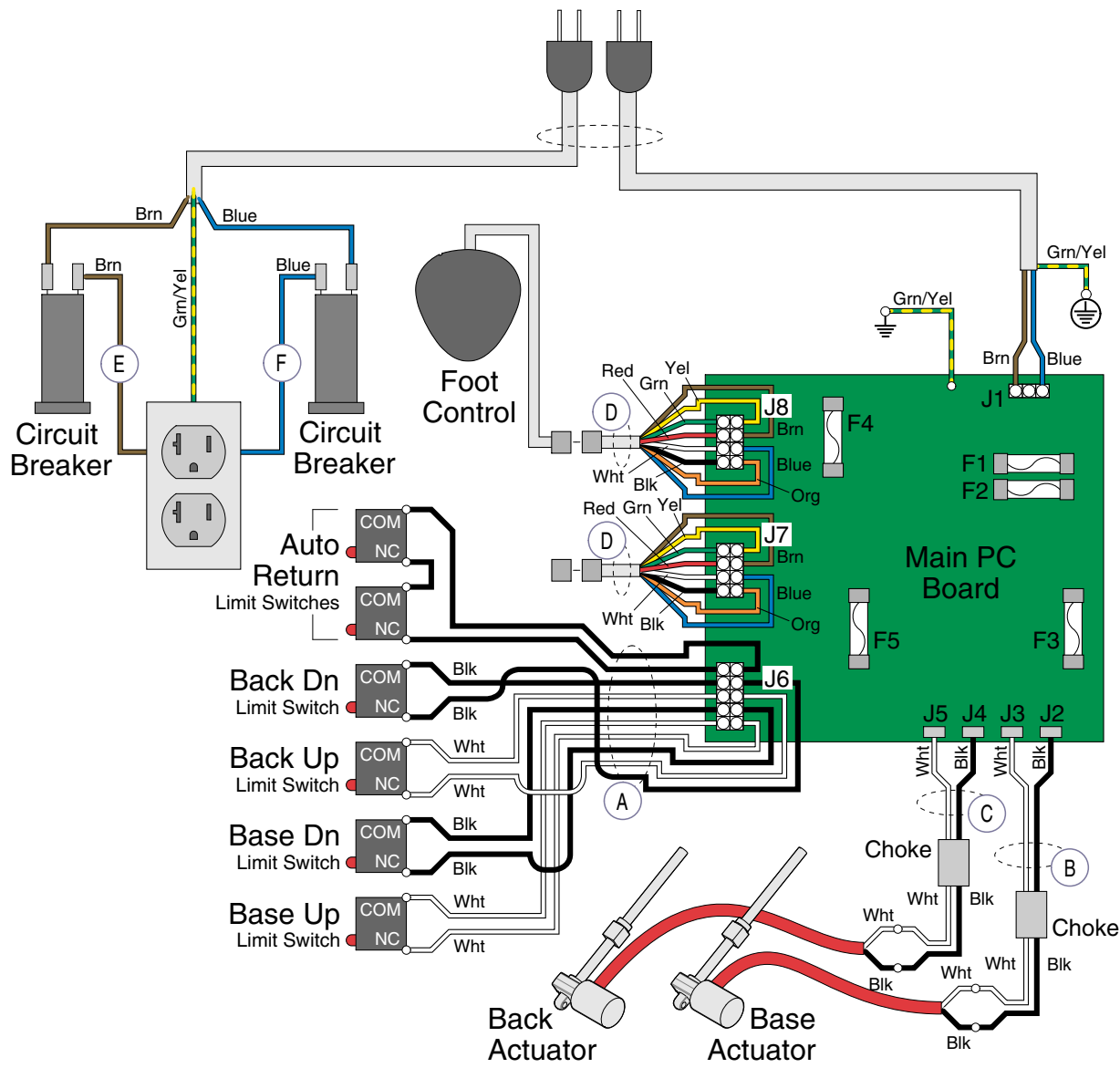
Refer To: \_\_\_\_\_ Page \_\_\_\_\_  
 Fuses ..... E-25

Wire Harness	From:	To:	Part Number
A	IEC Inlet	Main PC Board	015-1809-00 <i>(includes Item B)</i>
B	Limit Switches (all)	Main PC Board	015-1809-00 <i>(includes Item A)</i>
C	Base Actuator Wires	Main PC Board	015-1635-00 <i>(includes choke)</i>
D	Back Actuator Wires	Main PC Board	015-1635-00 <i>(includes choke)</i>
E	Foot Control Inlet Harness	Main PC Board	015-3464-00
F	Distribution Board	IEC Inlet	015-2005-00
G	Drawer Heater Switch with Harness	Distribution Board	015-1759-00
H	Uph. Heater PC Board	Uph. Heater Switch	015-1722-00
I	Distribution Board	Uph. Heater PC Board	015-2006-00



# Wiring Diagrams

**Refer To:** \_\_\_\_\_ **Page** \_\_\_\_\_  
**Fuses** ..... E-25



Wire Harness	From:	To:	Part Number
A	Limit Switches (all)	Main PC Board	015-2008-00
B	Base Actuator Wires	Main PC Board	015-1635-00 (includes choke)
C	Back Actuator Wires	Main PC Board	015-1635-00 (includes choke)
D	Foot / Hand Control Inlet Harness	Main PC Board	015-3464-00
E	Circuit Breaker (brown wire)	Table Receptacle	015-1886-00
F	Circuit Breaker (blue wire)	Table Receptacle	015-1886-01

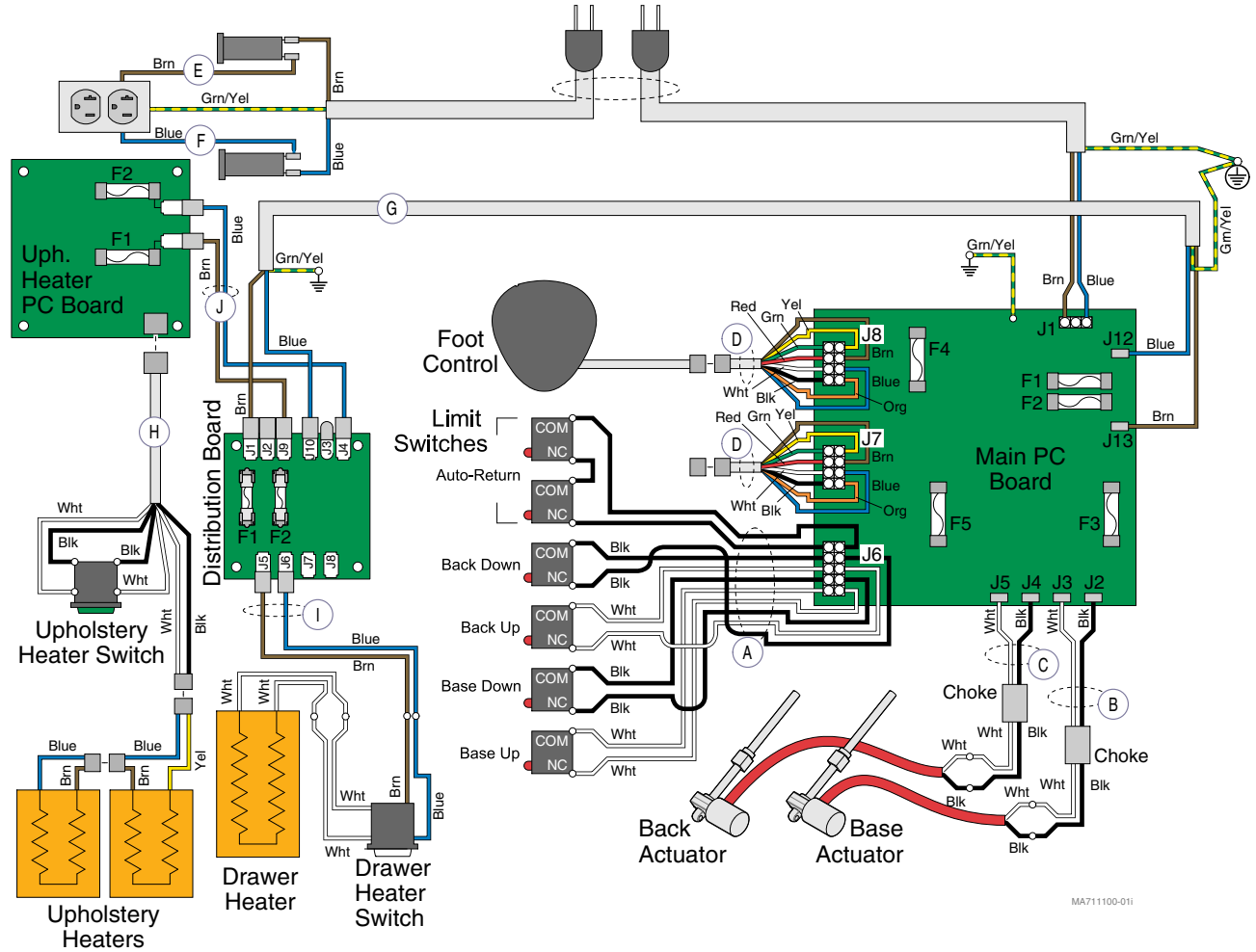
**Models:** 623 (-007)  
**Serial Numbers:** all

**Wiring Diagrams**

# Wiring Diagrams

Refer To: Page  
Fuses ..... E-25

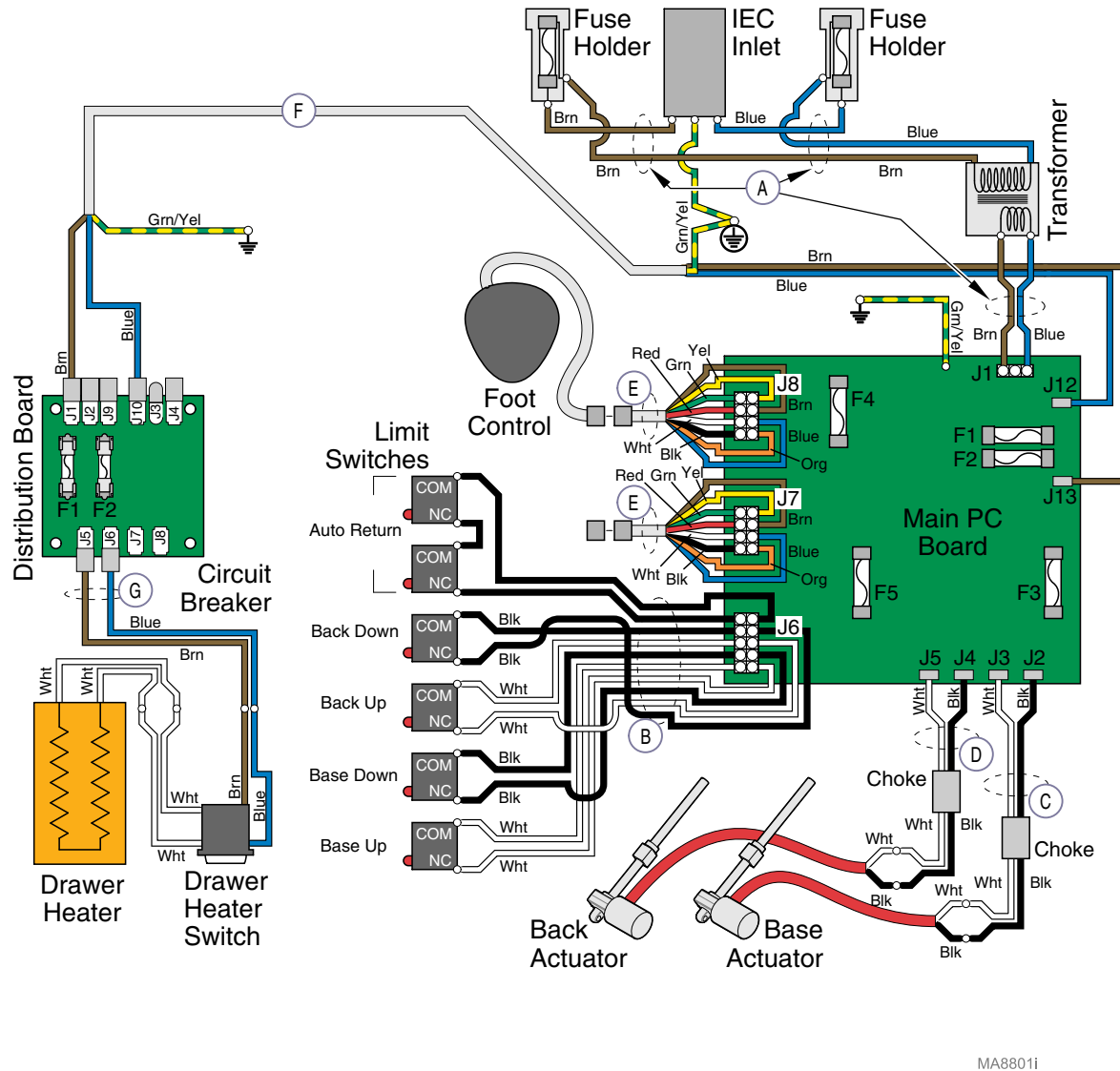
Wire Harness	From:	To:	Part Number
A	Limit Switches (all)	Main PC Board	015-2008-00
B	Base Actuator Wires	Main PC Board	015-1635-00 <i>(includes choke)</i>
C	Back Actuator Wires	Main PC Board	015-1635-00 <i>(includes choke)</i>
D	Foot Control Inlet Harness	Main PC Board	015-3464-00
E	Circuit Breaker <i>(brown wire)</i>	Table Receptacle	015-1886-00
F	Circuit Breaker <i>(blue wire)</i>	Table Receptacle	015-1886-01
G	Distribution Board	Main PC Board	015-2005-00
H	Uph. Heater PC Board	Upholstery Heater Switch	015-1722-00
I	Drawer Heater Switch with Harness	Distribution Board	015-1759-00
J	Distribution Board	Uph. Heater PC Board	015-2006-00



MA711100-01

# Wiring Diagrams

Refer To: Page  
 Fuses ..... E-25



Wire Harness	From:	To:	Part Number
A	IEC Inlet	Main PC Board	<b>015-1809-00</b> <i>(includes Item B)</i>
B	Limit Switches (all)	Main PC Board	<b>015-1809-00</b> <i>(includes Item A)</i>
C	Base Actuator Wires	Main PC Board	<b>015-1635-00</b> <i>(includes choke)</i>
D	Back Actuator Wires	Main PC Board	<b>015-1635-00</b> <i>(includes choke)</i>
E	Foot Control Inlet Harness	Main PC Board	<b>015-3464-00</b>
F	Distribution Board	IEC Inlet	<b>015-2005-00</b>
G	Drawer Heater Switch with Harness	Distribution Board	<b>015-1759-00</b>

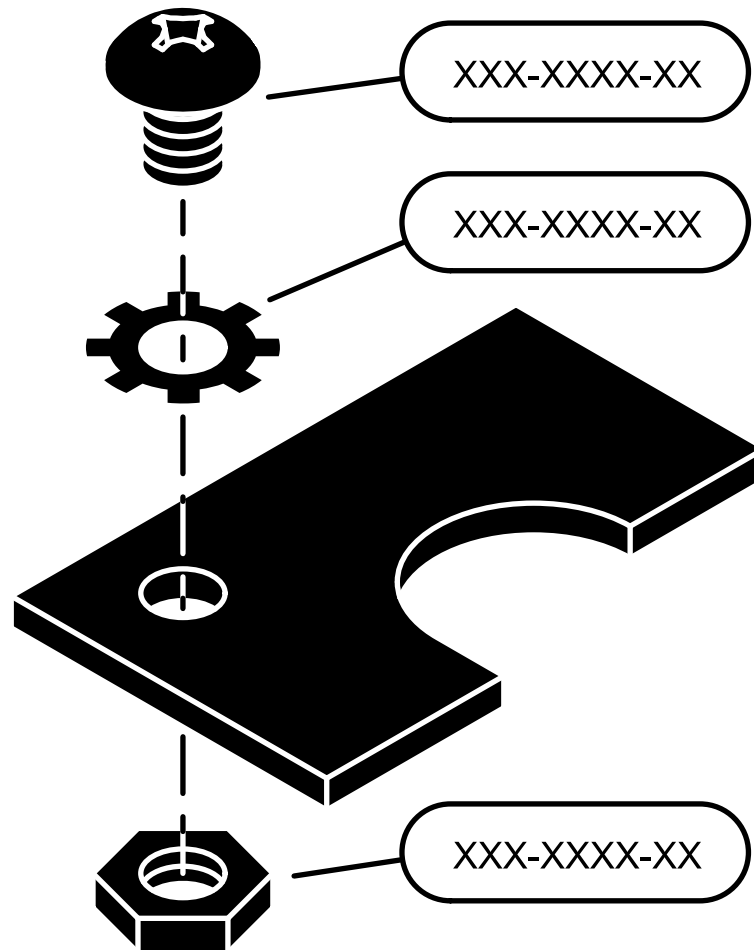
MA88011

**Models:** 623 (-011)  
**Serial Numbers:** all

**Wiring Diagrams**

# Section E

## *Exploded Views & Parts Lists*



Model	Page
222 .....	E-2
223 .....	E-3
622 .....	E-4
623 .....	E-5

**Upholstery - Ritter:**

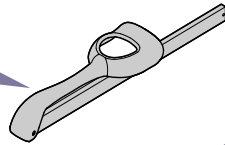
- Soft Touch ..... E-6
- Seamless ..... E-7

*includes:  
footrest pad, paper roll holder,*

**Ritter Upperwrap & Footrest Shelf ..... E-16\***

*includes:  
footrest shelf, stirrup guide,  
treatment pan, etc.*

**Stirrups ..... E-18**



**Exam Assistant  
Drawer Assy. .... E-26\***

**Foot Control:  
222 / 622 ..... E-27**



**Base  
Actuator. .... E-22**

**Fuses (all) ..... E-25**

**PC Board Enclosure:  
Manual Back Models .... E-23**

*includes:  
PC Board, cover, mtg hardware*

**Optional Features**

- Drawer Heater ..... E-31
- Pelvic Tilt ..... E-32
- Table Receptacle ..... E-34
- Transformer / Fuses:**
- 230 VAC Models ..... E-35

**Manual Back  
Components ..... E-10\*  
Handle Kit ..... E-11**

*includes:  
gas spring, top cover, handles,  
release mechanism, etc.*

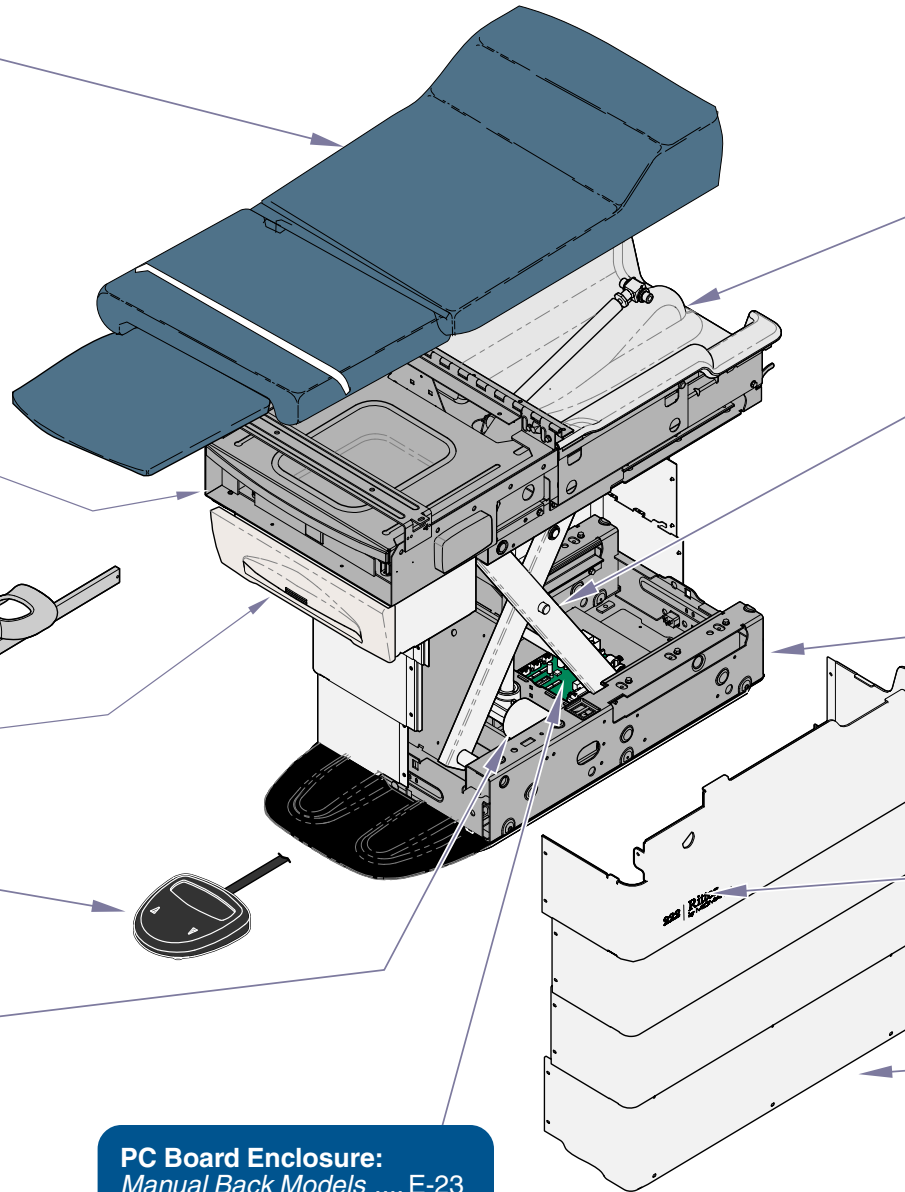
**Base Scissor /  
Slide Mechanism ..... E-19\***

**Ritter Base  
Components ..... E-20\***

*includes:  
power cord, base slides  
base limit switches, etc.*

**Label  
Location ..... E-37**

**Table Shrouds:  
Ritter Models ..... E-14\***



MA715300i

**Optional Features**  
**Drawer Heater** ..... E-31  
**Pelvic Tilt** ..... E-32  
**Transformer / Fuses:**  
*230 VAC Models* ..... E-35

**Upholstery - Ritter:**  
*Soft Touch* ..... E-6  
*Seamless* ..... E-7  
*includes:*  
*footrest pad, paper roll holder,*  
*handles, etc.*

**Ritter Upperwrap  
& Footrest Shelf** ..... E-16\*  
*includes:*  
*footrest shelf, stirrup guide,*  
*treatment pan, etc.*

**Stirrups** ..... E-18

**Exam Assistant  
Drawer Assy.** ..... E-26\*

**Table Receptacle  
System** ..... E-34

**Foot Control:**  
 223 ..... E-28\*

**Base Actuator** ..... E-22

**Hand Control** ..... E-30  
 (Optional)

**PC Board Enclosure:**  
*Power Back Models* ..... E-24  
*includes:*  
*PC Board, cover, mtg hardware*

**Power Back  
Components** ..... E-12  
*includes:*  
*limit switches, top cover, etc.*

**Back Actuator** ..... E-13

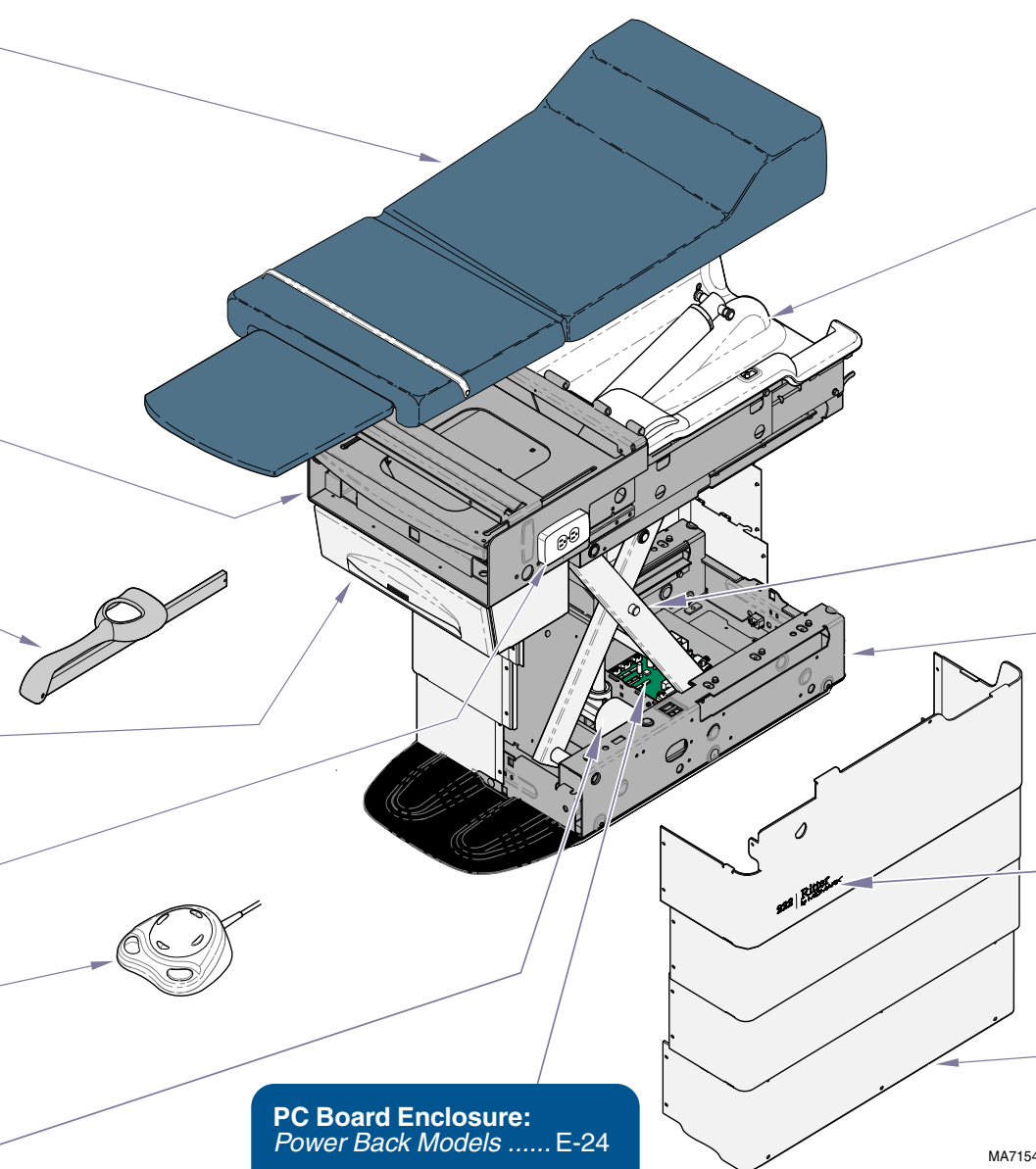
**Base Scissor /  
Slide Mechanism** ..... E-19\*

**Ritter Base  
Components** ..... E-20.2\*  
*includes:*  
*power cord, base slides*  
*base limit switches, etc.*

**Label  
Location** ..... E-37

**Table Shrouds:**  
*Ritter Models* ..... E-14\*

**Fuses (all)** ..... E-25

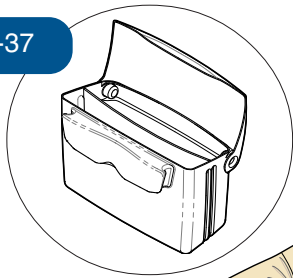


MA715400i

\* Indicates multiple pages due to a model / serial number break for the parts illustration



**Storage Pod** ..... E-37



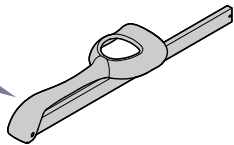
**Upholstery - Midmark:**  
 Premium ..... E-8  
 Ultra-Premium ..... E-9

*includes:*  
 footrest pad, paper roll holder,  
 handles, etc.

**Midmark Upperwrap  
 & Footrest Shelf** ..... E-17\*

*includes:*  
 footrest shelf, stirrup guide,  
 treatment pan, etc.

**Stirrups** ..... E-18



**Exam Assistant  
 Drawer Assy.** ..... E-26\*

**Foot Control:**  
 222 / 622 ..... E-27



**Table Receptacle  
 System** ..... E-34

**Base  
 Actuator** ..... E-22

**PC Board Enclosure:**  
 Manual Back Models .... E-23

*includes:*  
 PC Board, cover, mtg hardware

**Optional Features**

**Drawer Heater** ..... E-31  
**Pelvic Tilt** ..... E-32  
**Upholstery Heater** ..... E-33\*  
**Transformer / Fuses:**  
 230 VAC Models ..... E-35

**Manual Back  
 Components** ..... E-10\*  
 Handle Kit ..... E-11

*includes:*  
 gas spring, top cover, handles,  
 release mechanism, etc.

**Base Scissor /  
 Slide Mechanism** .... E-19\*

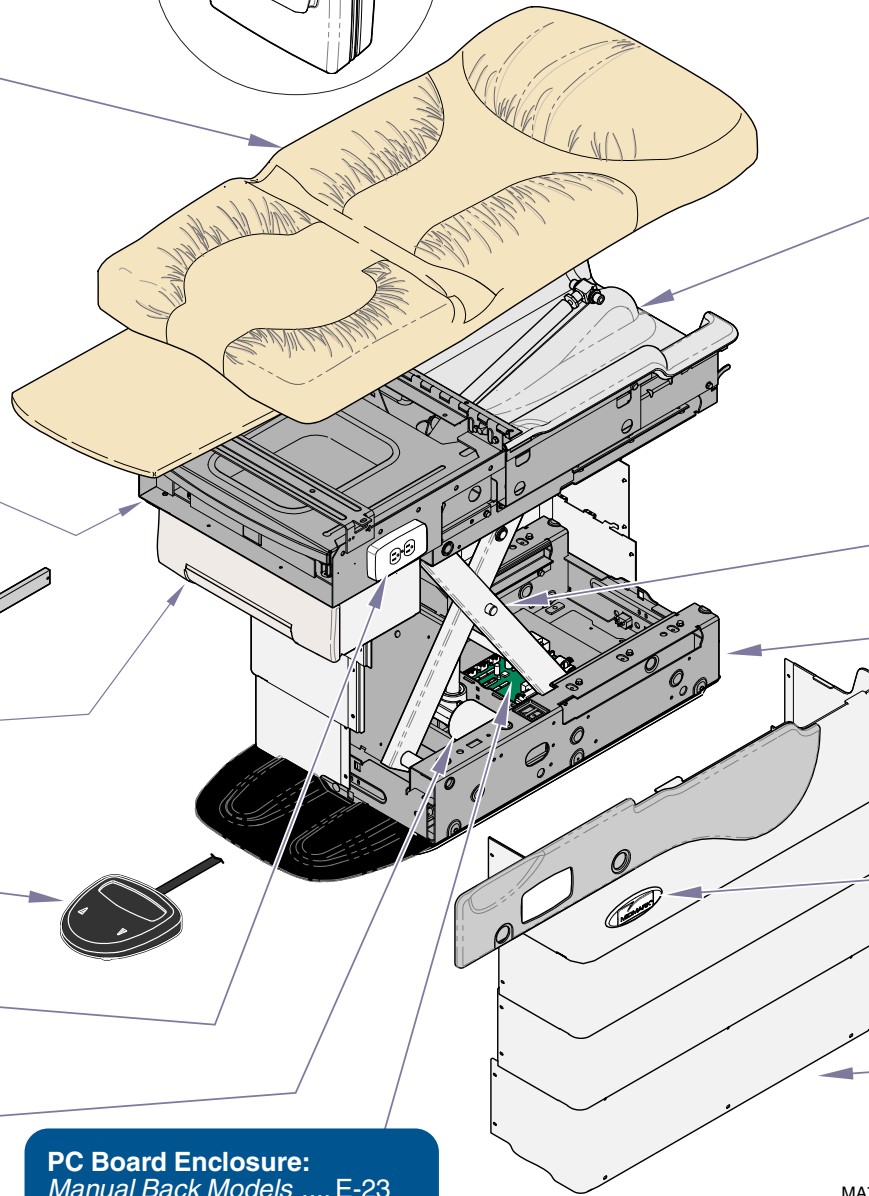
**Midmark Base  
 Components** ..... E-21.2\*

*includes:*  
 power cord, base slides  
 base limit switches, etc.

**Label  
 Location** ..... E-37

**Table Shrouds:**  
 Midmark Models ..... E-15\*

**Fuses (all)** ..... E-25



MA71550i

Storage Pod ..... E-37

Hand Control ..... E-30

**Upholstery - Midmark:**  
 Premium ..... E-8  
 Ultra-Premium ..... E-9  
*includes:*  
 footrest pad, paper roll holder,  
 handles, etc.

**Midmark Upperwrap  
 & Footrest Shelf ..... E-17\***  
*includes:*  
 footrest shelf, stirrup guide,  
 treatment pan, etc.

Stirrups. .... E-18

Exam Assistant  
 Drawer Assy. .... E-26\*

Foot Control:  
 623 ..... E-29

Base  
 Actuator. .... E-22

Fuses (all) ..... E-25

**PC Board Enclosure:**  
 Power Back Models ..... E-24  
*includes:*  
 PC Board, cover, mtg hardware

**Optional Features**  
 Drawer Heater ..... E-31  
 Pelvic Tilt ..... E-32  
 Table Receptacle ..... E-34  
 Upholstery Heater ..... E-33\*  
**Transformer / Fuses:**  
 230 VAC Models ..... E-35

**Power Back  
 Components ..... E-12**  
*includes:*  
 limit switches, top cover, etc.

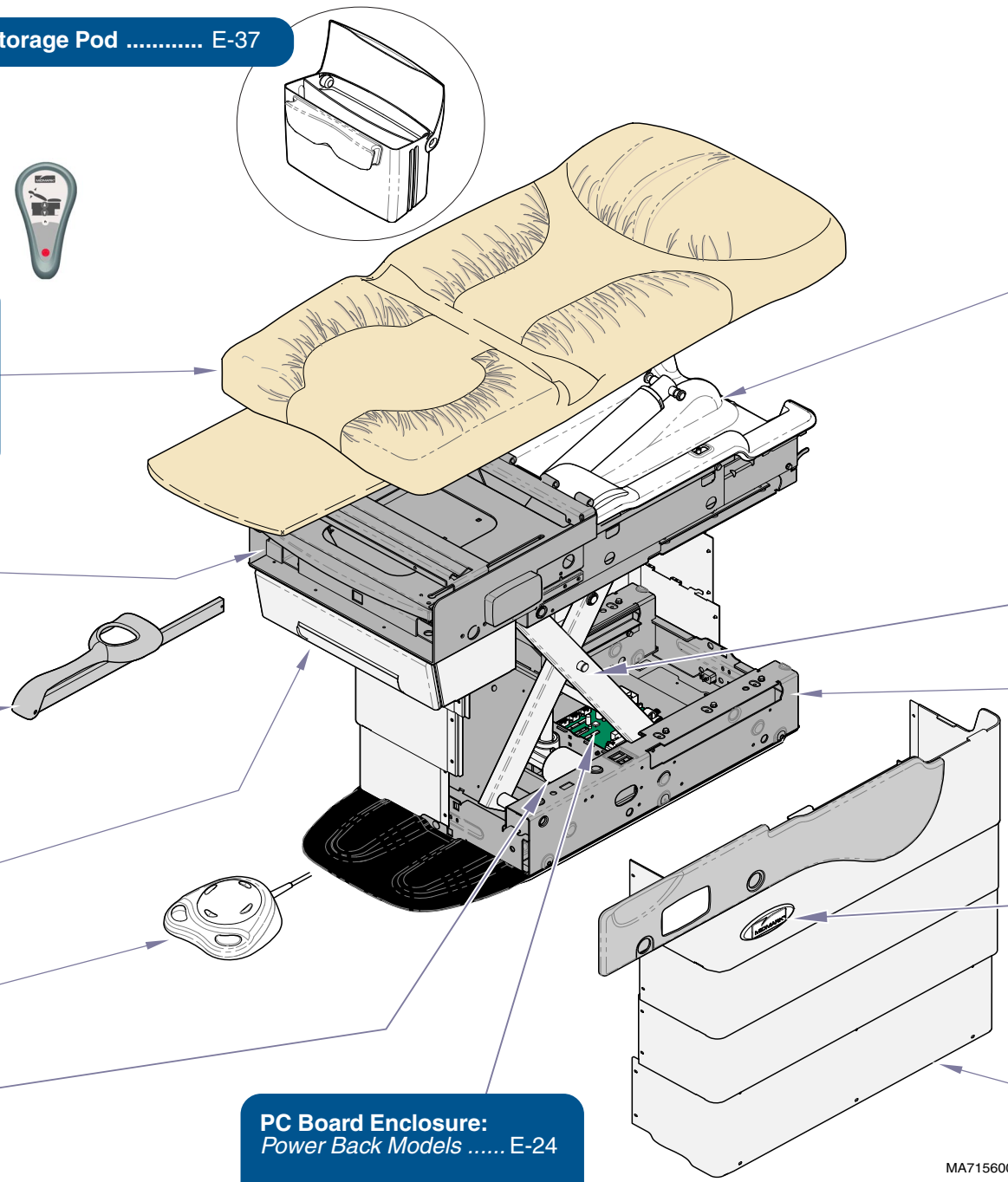
Back Actuator ..... E-13

Base Scissor /  
 Slide Mechanism ..... E-19\*

**Midmark Base  
 Components ..... E-21\***  
*includes:*  
 power cord, base slides  
 base limit switches, etc.

Label  
 Location ..... E-37

**Table Shrouds:**  
 Midmark Models ..... E-15\*

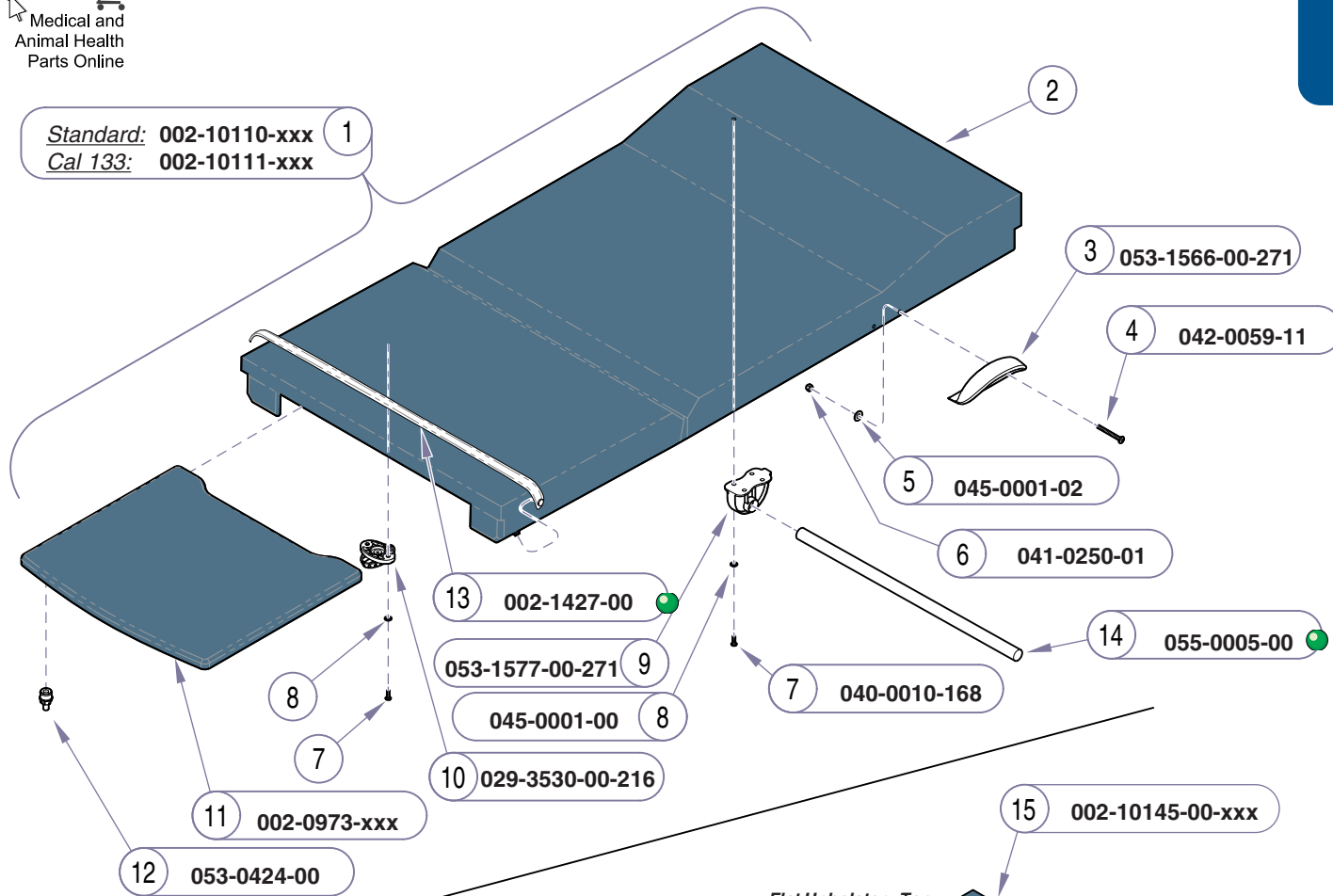


MA715600i

\* Indicates multiple pages due to a model / serial number break for the parts illustration

**Refer To:**

Color Selector ..... [www.midmark.com](http://www.midmark.com)



**Standard:** 002-10110-xxx  
**Cal 133:** 002-10111-xxx

3 053-1566-00-271

4 042-0059-11

5 045-0001-02

6 041-0250-01

14 055-0005-00

13 002-1427-00

053-1577-00-271

045-0001-00

10 029-3530-00-216

11 002-0973-xxx

12 053-0424-00

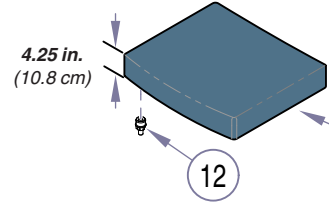
7 040-0010-168

15 002-10145-00-xxx

Flat Upholstery Top  
(no pillow)

**Items #15 & 16 are special order options.**

**Note:** The footrest shelf will not slide into the stowed position with item #16 installed.



16 002-10217-00-xxx

**ATTENTION:** Refer to *Color Selector* link for appropriate numbers to replace -xxx.

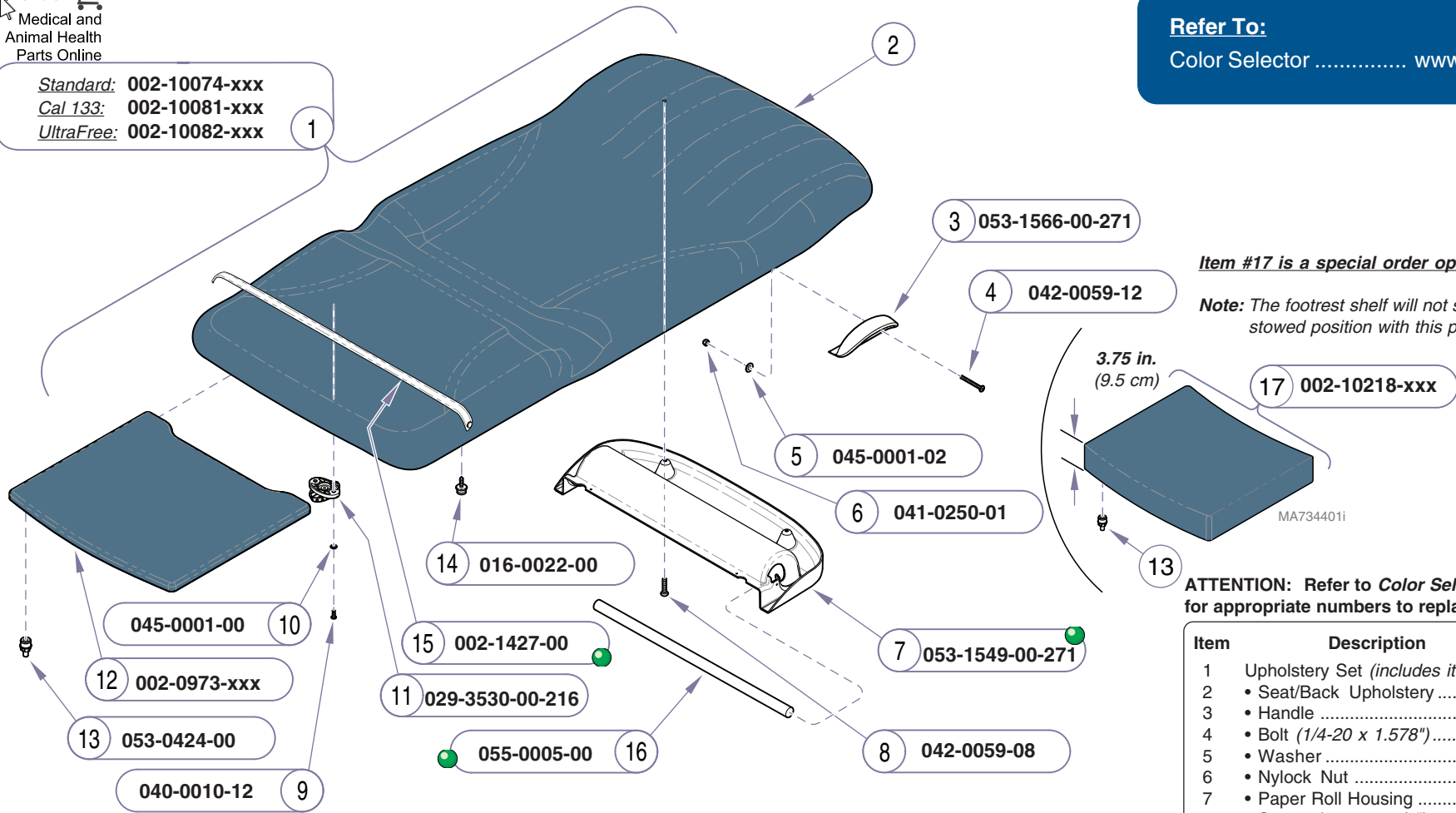
Item	Description	Qty.
1	Upholstery Set (includes items 2 thru 12) ...	1
2	• Seat/Back Upholstery .....	1
3	• Handle .....	2
4	• Screw .....	4
5	• Washer .....	4
6	• Nylock Nut .....	4
7	• Screw (10-24 x 5/8") .....	16
8	• Washer (early models only) .....	16
9	• Paper Roll Bracket .....	2
10	• Locking Knob .....	6
11	• Footrest Pad [includes four glides (item #12)] .....	1
12	• Footrest Glide .....	4
13	Tear Strap .....	1
14	Dowel Rod .....	1
15	Flat Upholstery Top (includes items 3 thru 10) .....	1
16	Footrest Pad - special (4.25 in. thick) [includes four glides (item #12)] .....	1
17	Kit, Upholstery Packaging (002-1907-00) (not shown) .....	1

**Always Specify Model & Serial Number**

MA705501i

*Standard:* 002-10074-xxx  
*Cal 133:* 002-10081-xxx  
*UltraFree:* 002-10082-xxx

**Refer To:**  
 Color Selector ..... [www.midmark.com](http://www.midmark.com)



*Item #17 is a special order option.*  
**Note:** The footrest shelf will not slide into the stowed position with this pad installed.

**ATTENTION:** Refer to *Color Selector* link for appropriate numbers to replace -xxx.

Item	Description	Qty.
1	Upholstery Set (includes items 2 thru 14) ..	1
2	• Seat/Back Upholstery .....	1
3	• Handle .....	2
4	• Bolt (1/4-20 x 1.578") .....	4
5	• Washer .....	4
6	• Nylock Nut .....	4
7	• Paper Roll Housing .....	1
8	• Screw (10-24 x 5/8") .....	4
9	• Screw .....	12
10	• Washer .....	12
11	• Locking Knob .....	6
12	• Footrest Pad - standard [includes four glides (item #13)] .....	1
13	• Footrest Glide .....	4
14	• Snap / Stud .....	2
15	Tear Strap .....	1
16	Dowel Rod .....	1
17	Footrest Pad - special (4.25 in. thick) [includes four glides (item #13)] .....	1
18	Kit, Upholstery Packaging (002-1907-00) (not shown) .....	1

**Always Specify Model & Serial Number**

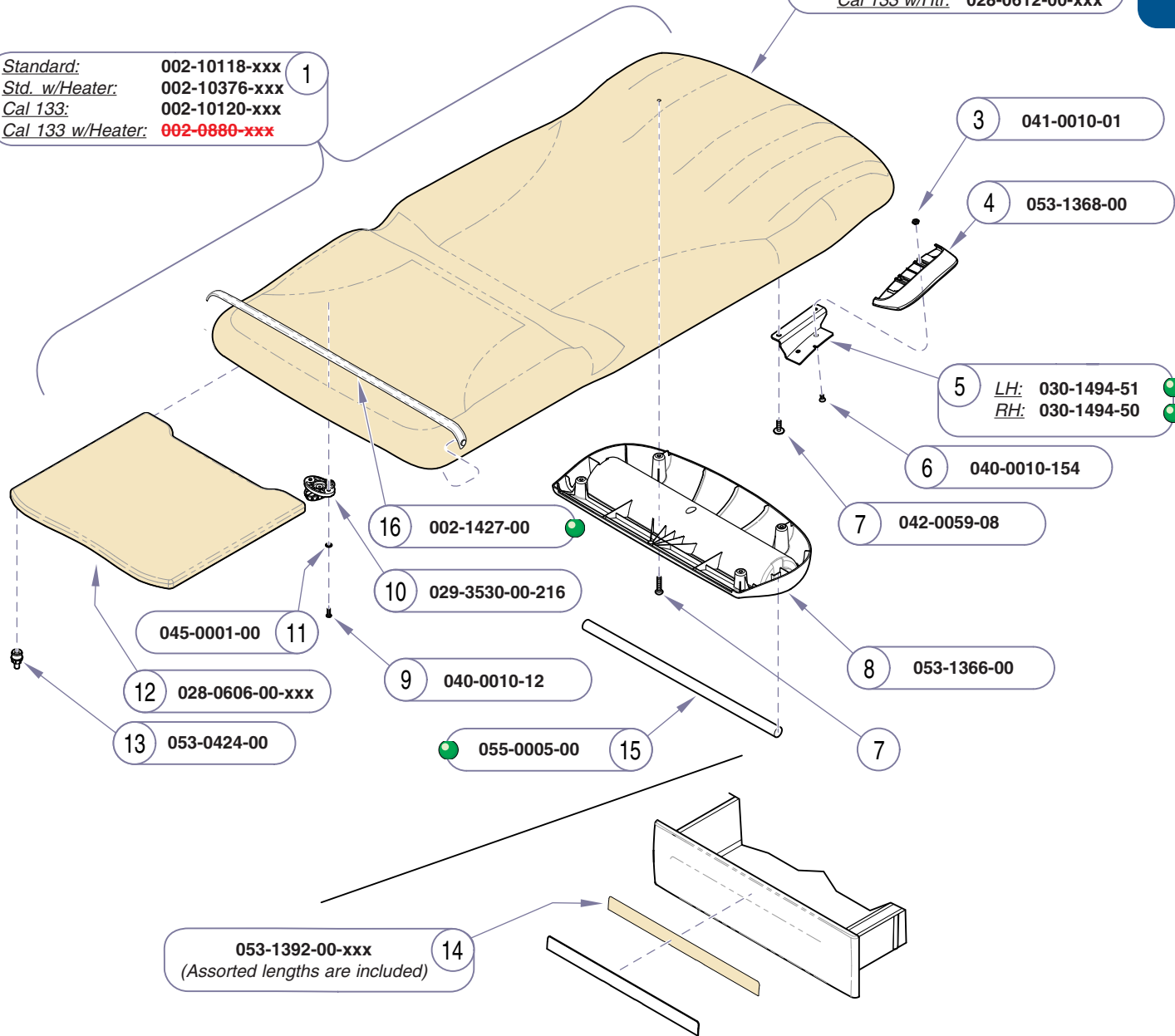
**Models:** 222 (-015 thru -017) | 223 (-015 & -016)  
*Serial Numbers:* All | All

**Upholstery - Ritter**  
 (Seamless) **E-7**

**Refer To:**  
 Color Selector ..... [www.midmark.com](http://www.midmark.com)

**Standard:** 002-10118-xxx 1  
**Std. w/Heater:** 002-10376-xxx  
**Cal 133:** 002-10120-xxx  
**Cal 133 w/Heater:** 002-0880-xxx

2 **Standard:** 028-10023-00-xxx  
**Std. w/Htr:** 028-0603-00-xxx  
**Cal 133:** 028-10025-00-xxx  
**Cal 133 w/Htr:** 028-0612-00-xxx

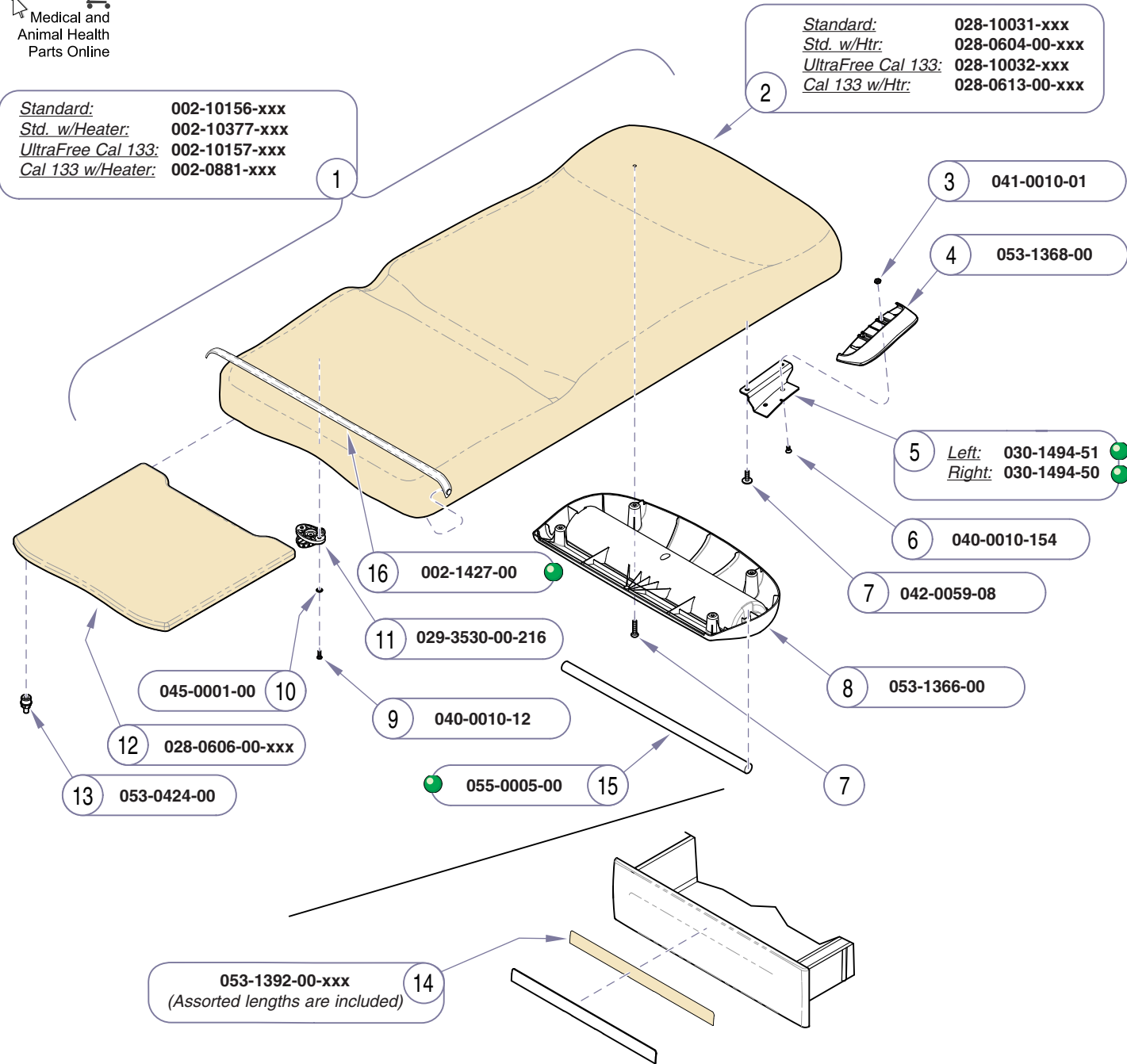


**ATTENTION:** Refer to *Color Selector* link for appropriate numbers to replace -xxx.

Item	Description	Qty.
1	Upholstery Set (includes items 2 thru 14) ...	1
2	• Seat/Back Upholstery .....	1
3	• Nut .....	4
4	• Handle .....	2
5	• Handle Bracket .....	2
6	• Screw .....	4
7	• Screw (10-24 x 5/8) .....	8
8	• Paper Roll Housing .....	1
9	• Screw .....	12
10	• Locking Knob .....	6
11	• Washer .....	12
12	• Footrest Pad [includes four glides (item #13)] .....	1
13	• • Footrest Glide .....	4
14	• Vinyl Drawer Insert .....	6
15	Dowel Rod .....	1
16	Tear Strap .....	1
17	Kit, Upholstery Packaging (002-1907-00) (not shown) .....	1

**Always Specify Model & Serial Number**

MA705700i



*Standard:* 028-10031-xxx  
*Std. w/Htr:* 028-0604-00-xxx  
*UltraFree Cal 133:* 028-10032-xxx  
*Cal 133 w/Htr:* 028-0613-00-xxx

*Standard:* 002-10156-xxx  
*Std. w/Heater:* 002-10377-xxx  
*UltraFree Cal 133:* 002-10157-xxx  
*Cal 133 w/Heater:* 002-0881-xxx

**ATTENTION:** Refer to *Color Selector* link for appropriate numbers to replace -xxx.

Item	Description	Qty.
1	Upholstery Set (includes items 2 thru 14) ...	1
2	• Seat/Back Upholstery .....	1
3	• Nut .....	4
4	• Handle .....	2
5	• Handle Bracket .....	2
6	• Screw .....	4
7	• Screw (10-24 x 5/8) .....	8
8	• Paper Roll Housing .....	1
9	• Screw .....	12
10	• Washer .....	12
11	• Locking Knob .....	6
12	• Footrest Pad [includes four glides (item #13)] .....	1
13	• • Footrest Glide .....	4
14	• Vinyl Drawer Insert .....	6
15	Dowel Rod .....	1
16	Tear Strap .....	1
17	Kit, Upholstery Packaging (002-1907-00) (not shown) .....	1

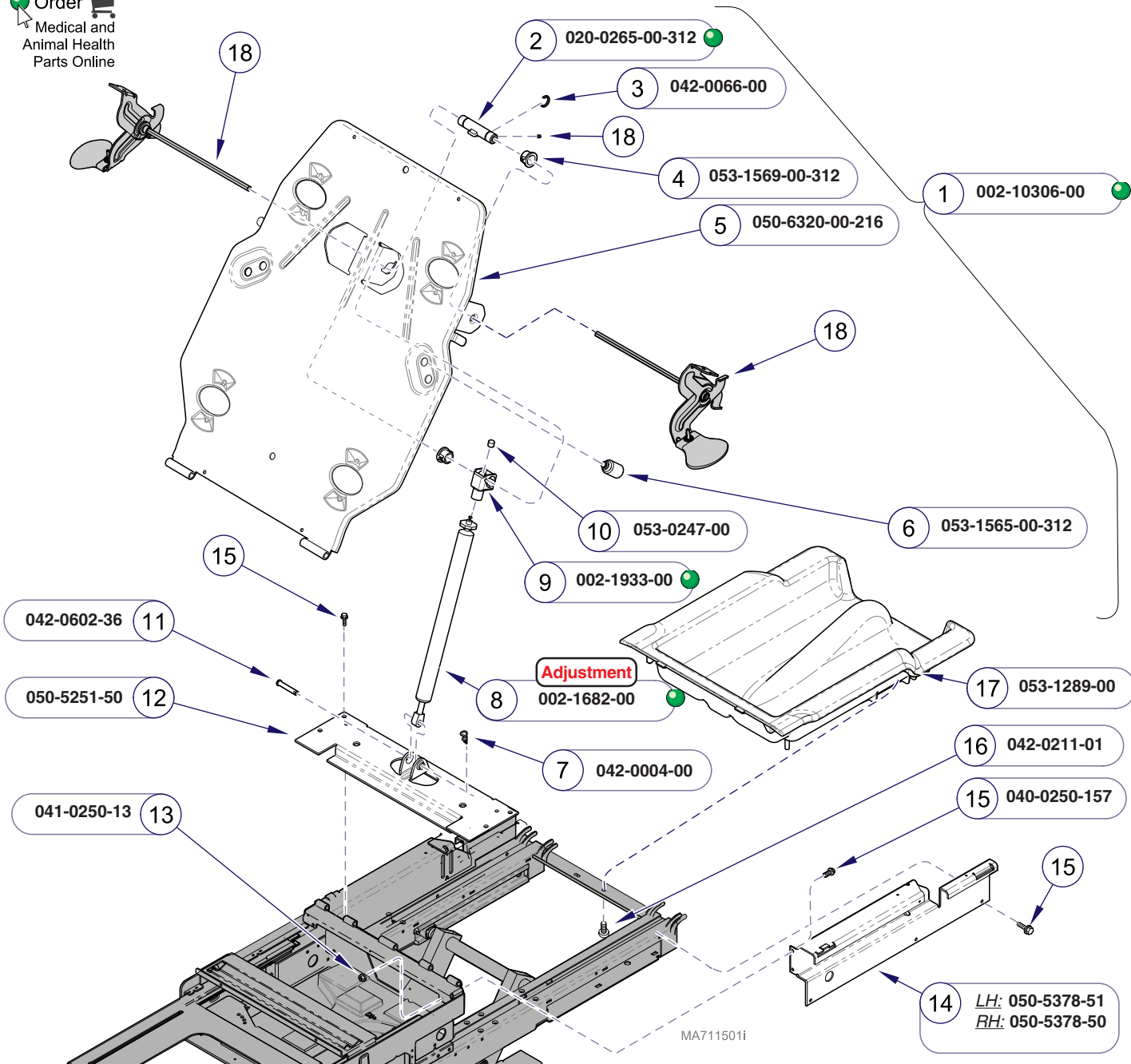
**Always Specify Model & Serial Number**

MA705801i

**Models:** 622 (-007 & -008) | 623 (-007 thru -011)  
**Serial Numbers:** All | All

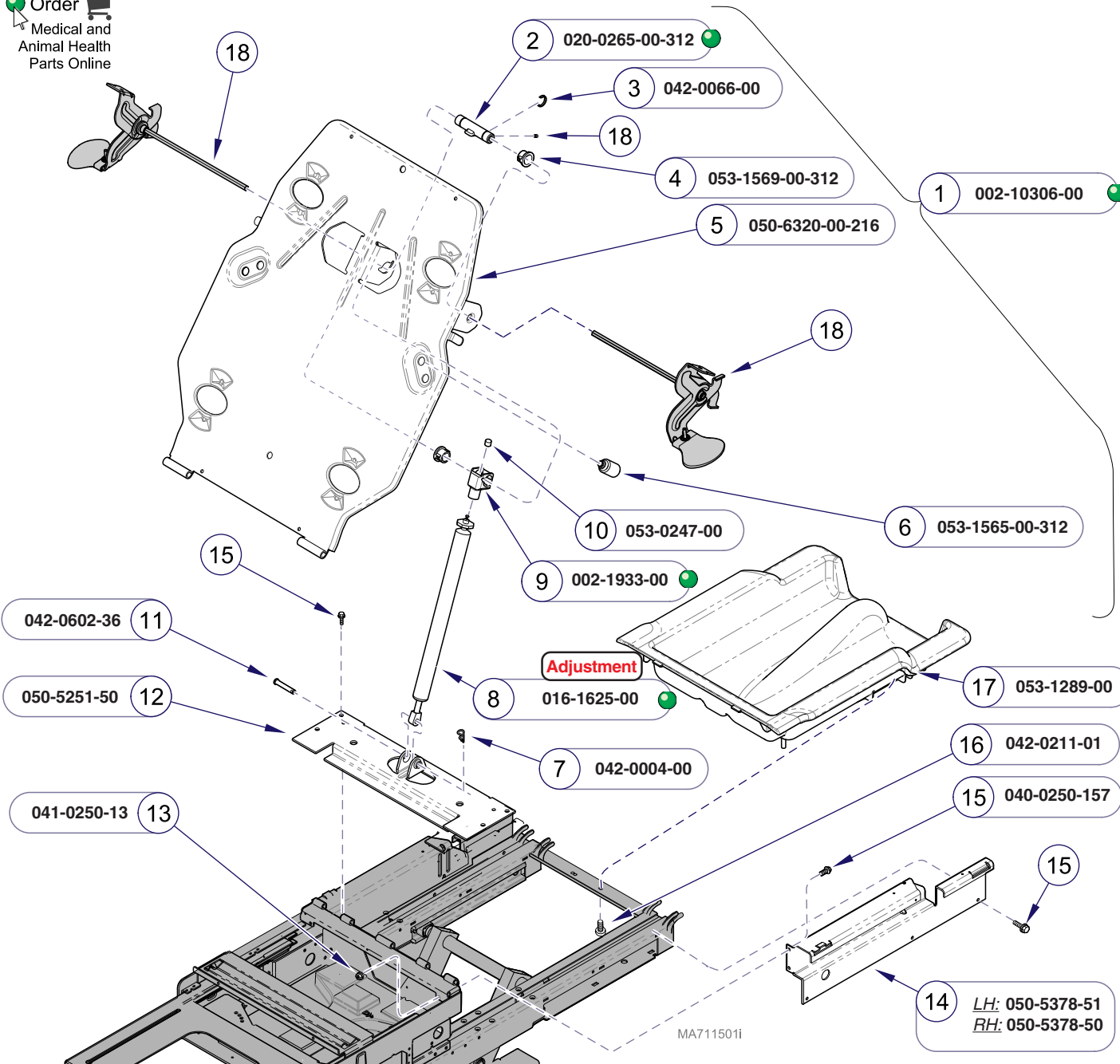
**Upholstery - Midmark**  
 (Ultra-Premium)





Item	Description	Qty.
1	Manual Back Assembly (incl. items 2 thru 12) .....	1
2	• Cam .....	1
3	• Crescent Ring .....	2
4	• Back Pivot Bearing .....	2
5	• Back Mounting Frame .....	1
6	• Back Rest Bumper .....	2
7	• Hitch Pin .....	1
8	• Gas Spring (incl. items 16 & 17) .....	1
9	• Hi-lo Actuator Cap Kit (incl. item 10) .....	1
10	• Plunger .....	1
11	• Clevis Pin .....	1
12	• Release Support Yoke .....	1
13	Lock Nut .....	4
14	Side Support (LH shown) .....	2
15	Screw (1/4-20 x Type F) .....	16
16	Screw (5mm x 20mm) .....	3
17	Top Cover .....	1
18	Refer to: "Backrest Handles" .....	Ref

**Always Specify Model & Serial Number**



**Refer To:** **Page**  
 Gas Cylinder / **Adjustment** ..... B-17  
 Backrest Handles ..... E-11

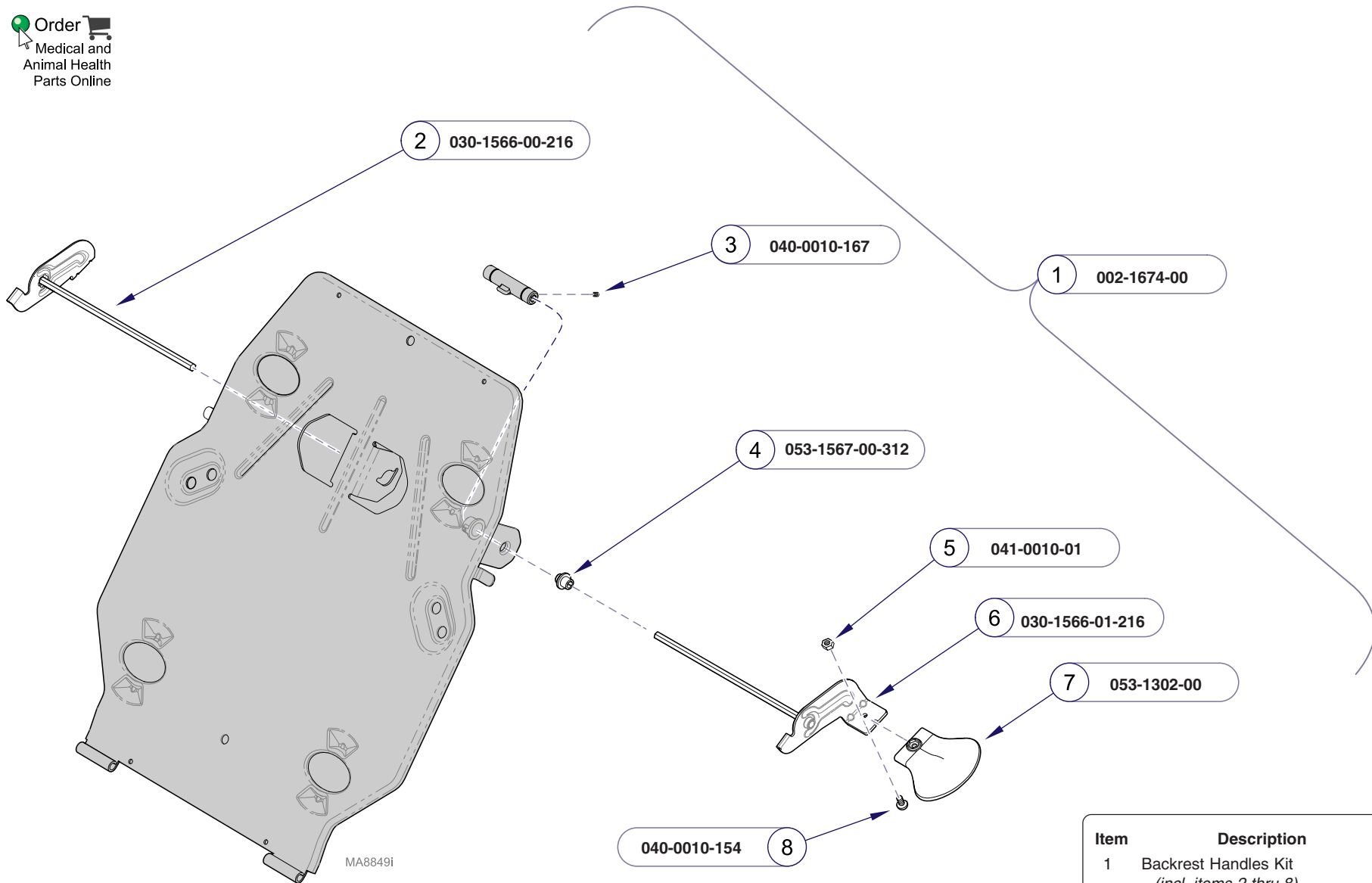
Item	Description	Qty.
1	Manual Back Assembly (incl. items 2 thru 12) .....	1
2	• Cam .....	1
3	• Crescent Ring .....	2
4	• Back Pivot Bearing .....	2
5	• Back Mounting Frame .....	1
6	• Back Rest Bumper .....	2
7	• Hitch Pin .....	1
8	• Gas Spring .....	1
9	• Hi-lo Actuator Cap Kit (incl. item 10) .....	1
10	• Plunger .....	1
11	• Clevis Pin .....	1
12	• Release Support Yoke .....	1
13	Lock Nut .....	4
14	Side Support (LH shown) .....	2
15	Screw (1/4-20 x Type F) .....	16
16	Screw (5mm x 20mm) .....	3
17	Top Cover .....	1
18	Refer to: "Backrest Handles" .....	Ref

**Always Specify Model & Serial Number**

**Models:** **222 (-015 thru -017)** | **622 (-007 & -008)**  
**Serial Numbers:** V1401741 thru present | V1401741 thru present

**Manual Back Components** **E-10.1**

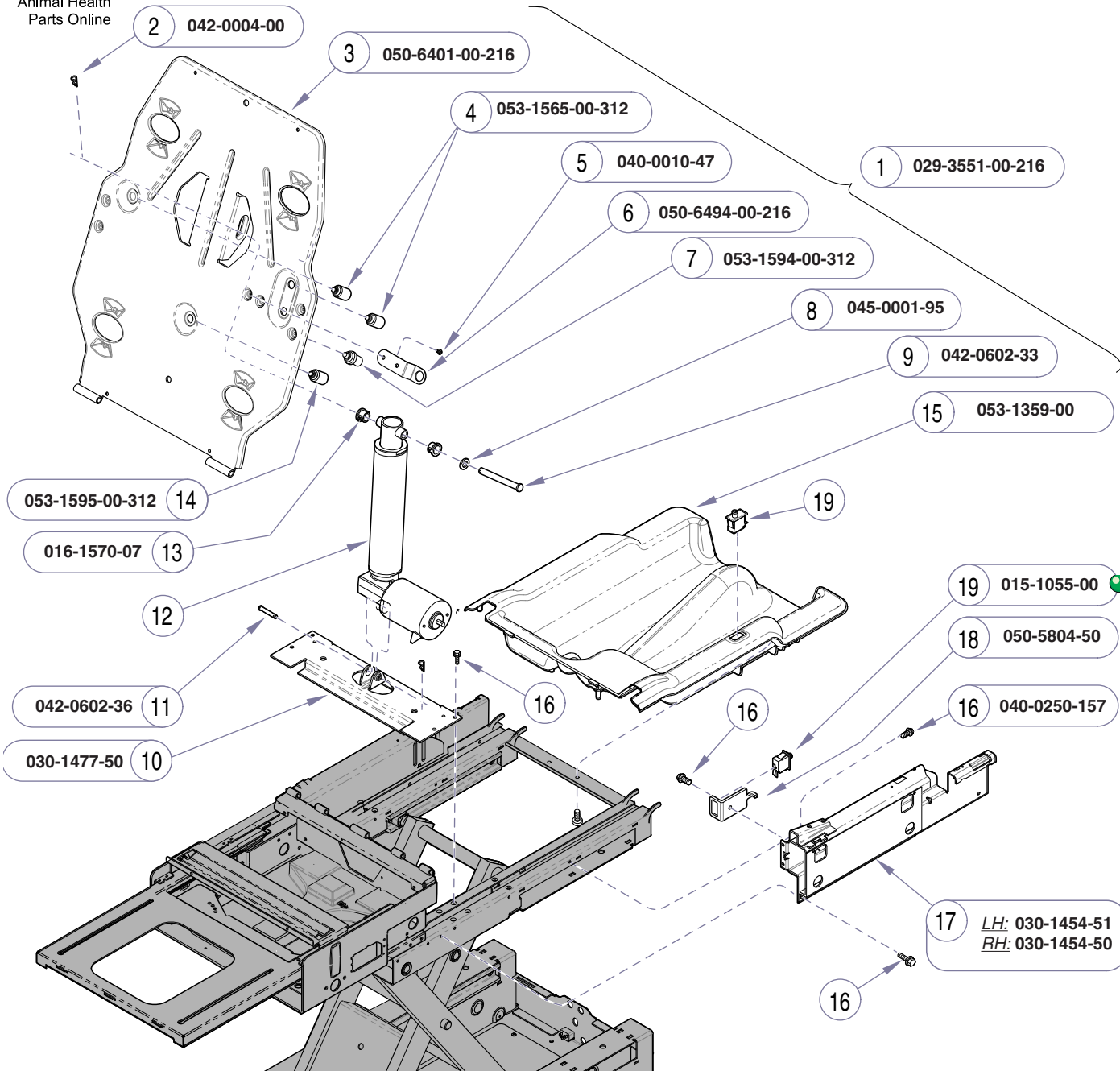




MA8849I

Item	Description	Qty.
1	Backrest Handles Kit (incl. items 2 thru 8) .....	1
2	• R.H. Back Release Weldment .....	1
3	• Set Screw .....	2
4	• Release Rod Bushing .....	2
5	• Nut (#10-32) .....	2
6	• L.H. Back Release Weldment .....	1
7	• Actuator Release Handle .....	2
8	• Screw (#10-32 X 7/16 flat head phillips) ...	2

**Always Specify Model & Serial Number**



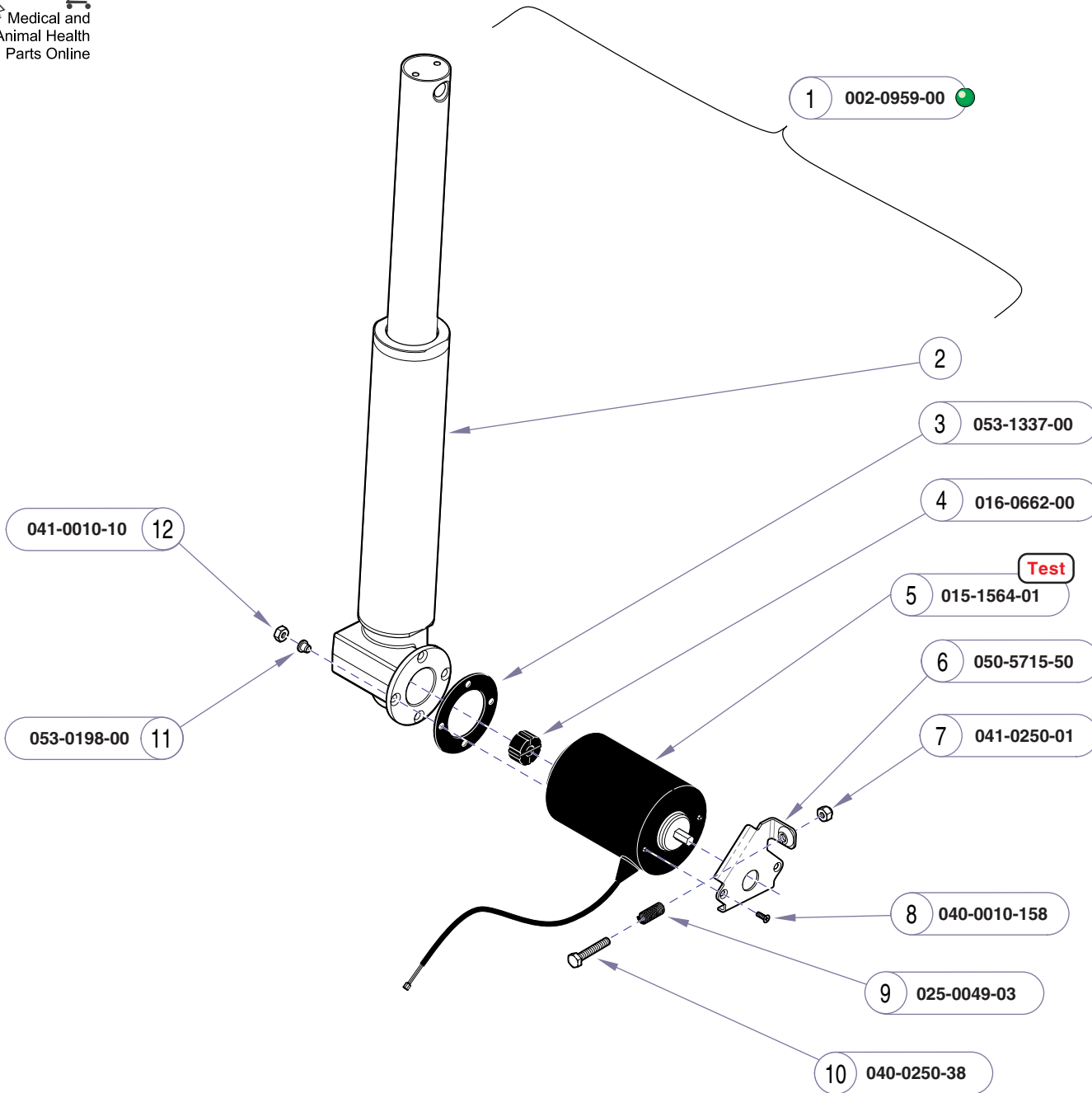
Item	Description	Qty.
1	Power Back Assembly (includes items 2 thru 13) .....	1
2	• Hitch Pin Clip .....	1
3	• Back Mounting Frame .....	1
4	• Back Rest Bumper .....	2
5	• Screw (#10-24 x 3/8") .....	2
6	• Limit Bumper Bracket (leftside only) .....	1
7	• Limit Switch Bumper .....	1
8	• Washer (1/2") .....	2
9	• Clevis Pin .....	1
10	• Back Actuator Support .....	1
11	• Clevis Pin .....	1
12	• Refer to: "Back Actuator" .....	Ref
13	• DP4 Bearing .....	2
14	• Actuator Stop Bumper .....	1
15	Top Cover .....	1
16	Screw (1/4"-20 x .5") .....	19
17	Side Support (LH shown) .....	2
18	Limit Switch Bracket .....	1
19	Limit Switch .....	2

**Always Specify Model & Serial Number**

MA712900i

**Models:** 223 (-015 thru -016) | 623 (-007 thru -011)  
**Serial Numbers:** All | All

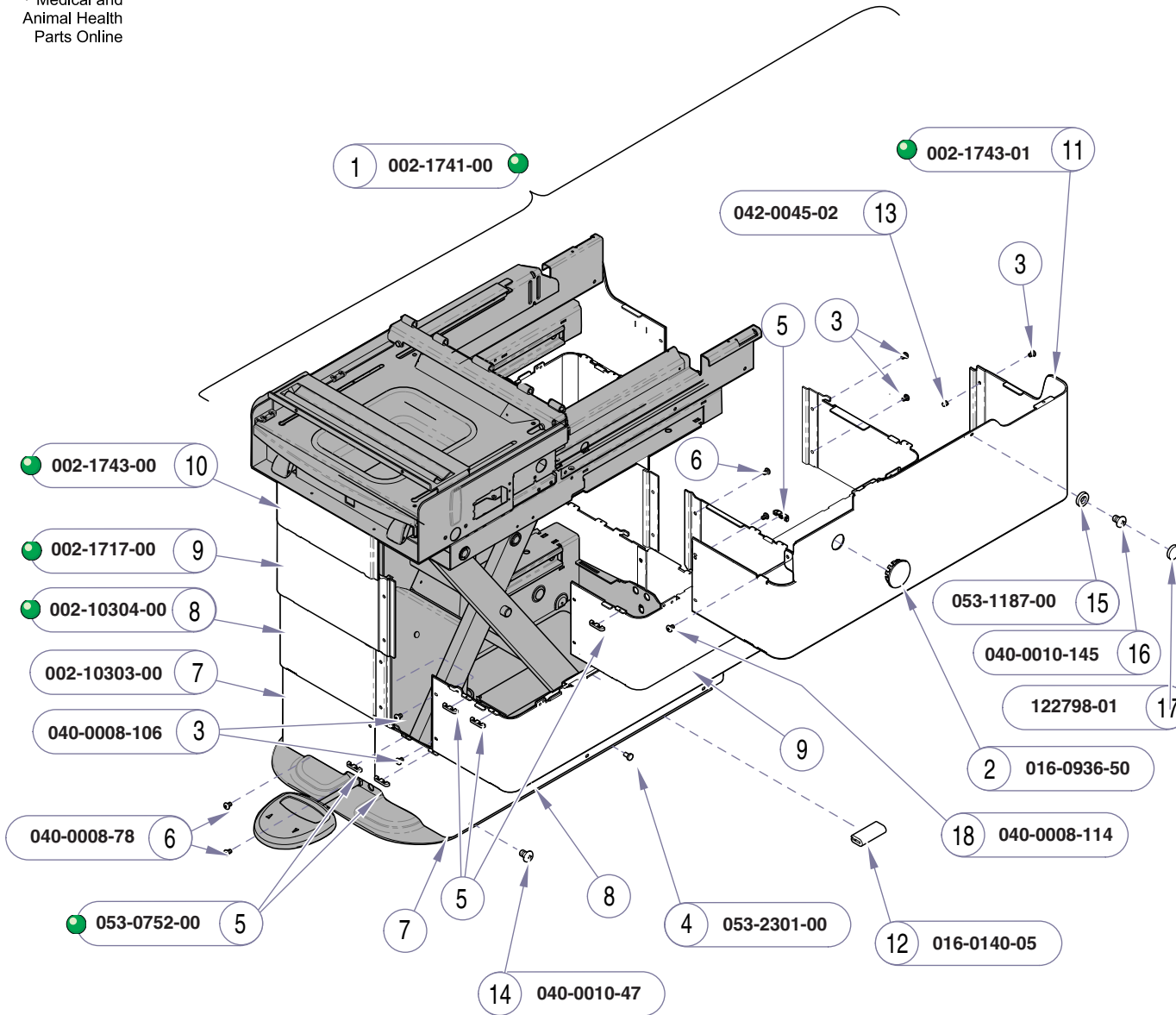
**Power Back  
 Components**



Item	Description	Qty.
1	Back Actuator Assembly Kit (includes items 1 thru 12) .....	1
2	• Actuator (not available seperately) .....	Ref.
3	• Motor Insulator .....	1
4	• Motor Coupler .....	1
5	• Actuator Motor .....	1
6	• Motor Bracket .....	1
7	• Nut (1/4"-20) .....	1
8	• Screw (#10 x 32 x .25") .....	2
9	• Compression Spring .....	1
10	• Screw (1/4" -20 x .5") .....	1
11	• Shoulder Washer .....	2
12	• Nut (#10-32) .....	2

**Always Specify Model & Serial Number**

MA6242011



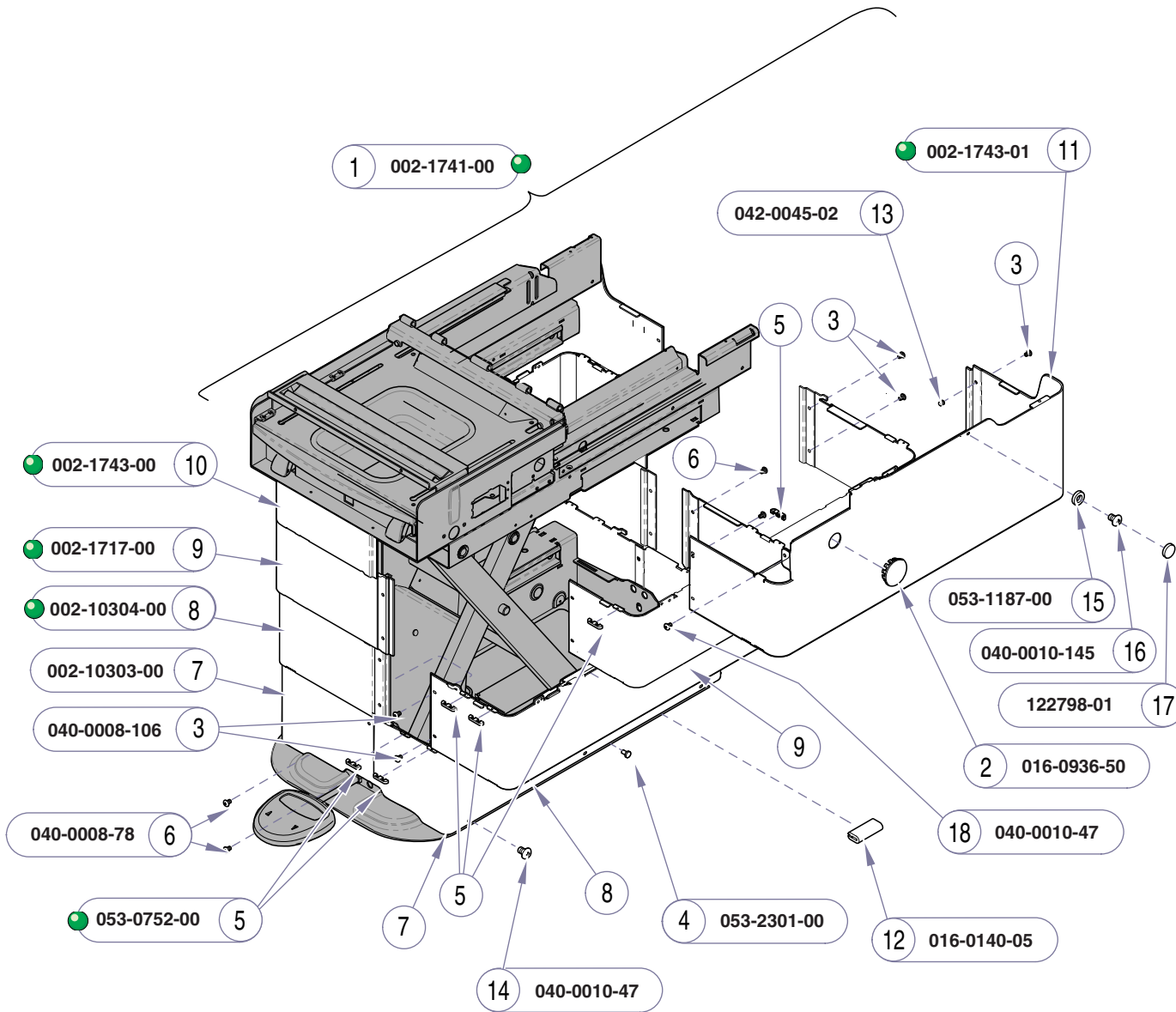
Item	Description	Qty.
1	Table Shroud Assembly Set .....	1
	<i>(includes items 2 through 14)</i>	
2	• Hole Plug .....	2
3	• Screw (#8-32 x .25") .....	12
4	• Stem Bumper .....	14
5	• Snap-on Guide .....	32
6	• Screw (#8 -32 x .25") .....	4
7	• Inner Shroud Assembly .....	2
	<i>(includes items 4, 5, &amp; 13)</i>	
8	• Mid Inner Shroud Assembly .....	2
	<i>(includes items 4, 5, 12, &amp; 13)</i>	
9	• Mid Outer Shroud Assembly .....	2
	<i>(includes items 4, 5, &amp; 13)</i>	
10	• R.H. Outer Shroud Assembly .....	1
	<i>(includes items 5, 13, &amp; 18)</i>	
11	• L.H. Outer Shroud Assembly .....	1
	<i>(includes items 5, 13, &amp; 18)</i>	
12	• Trim Lock .....	4
13	• Nutsert .....	18
14	• Screw (10-24 x 3/8") .....	6
15	Screw Cover Base .....	2
16	Screw (10-24 x 3/8") .....	2
17	Screw Cover .....	2
18	Screw (#8-32 x 3/8") .....	2

**Always Specify Model & Serial Number**

MA715700i

<p><b>Models:</b>          Serial Numbers:</p>	<p><b>222 (all)</b>          V2200 through V761999</p>	<p><b>223 (all)</b>          V2200 through V761999</p>
--	--	--

**Table Shrouds**  
*(Ritter models)*



Item	Description	Qty.
1	Table Shroud Assembly Set .....	1
	<i>(includes items 2 through 14)</i>	
2	• Hole Plug .....	2
3	• Screw (#8-32 x .25") .....	12
4	• Stem Bumper .....	14
5	• Snap-on Guide .....	32
6	• Screw (#8-32 x .25") .....	4
7	• Inner Shroud Assembly .....	2
	<i>(includes items 4, 5, &amp; 13)</i>	
8	• Mid Inner Shroud Assembly .....	2
	<i>(includes items 4, 5, 12, &amp; 13)</i>	
9	• Mid Outer Shroud Assembly .....	2
	<i>(includes items 4, 5, &amp; 13)</i>	
10	• R.H. Outer Shroud Assembly .....	1
	<i>(includes items 5, 13, &amp; 18)</i>	
11	• L.H. Outer Shroud Assembly .....	1
	<i>(includes items 5, 13, &amp; 18)</i>	
12	• Trim Lock .....	4
13	• Nutsert .....	18
14	• Screw (10-24 x 3/8") .....	6
15	Screw Cover Base .....	2
16	Screw (10-24 x 3/8") .....	2
17	Screw Cover .....	2
18	Screw (#10-24 x 3/8") .....	2

**Always Specify Model & Serial Number**

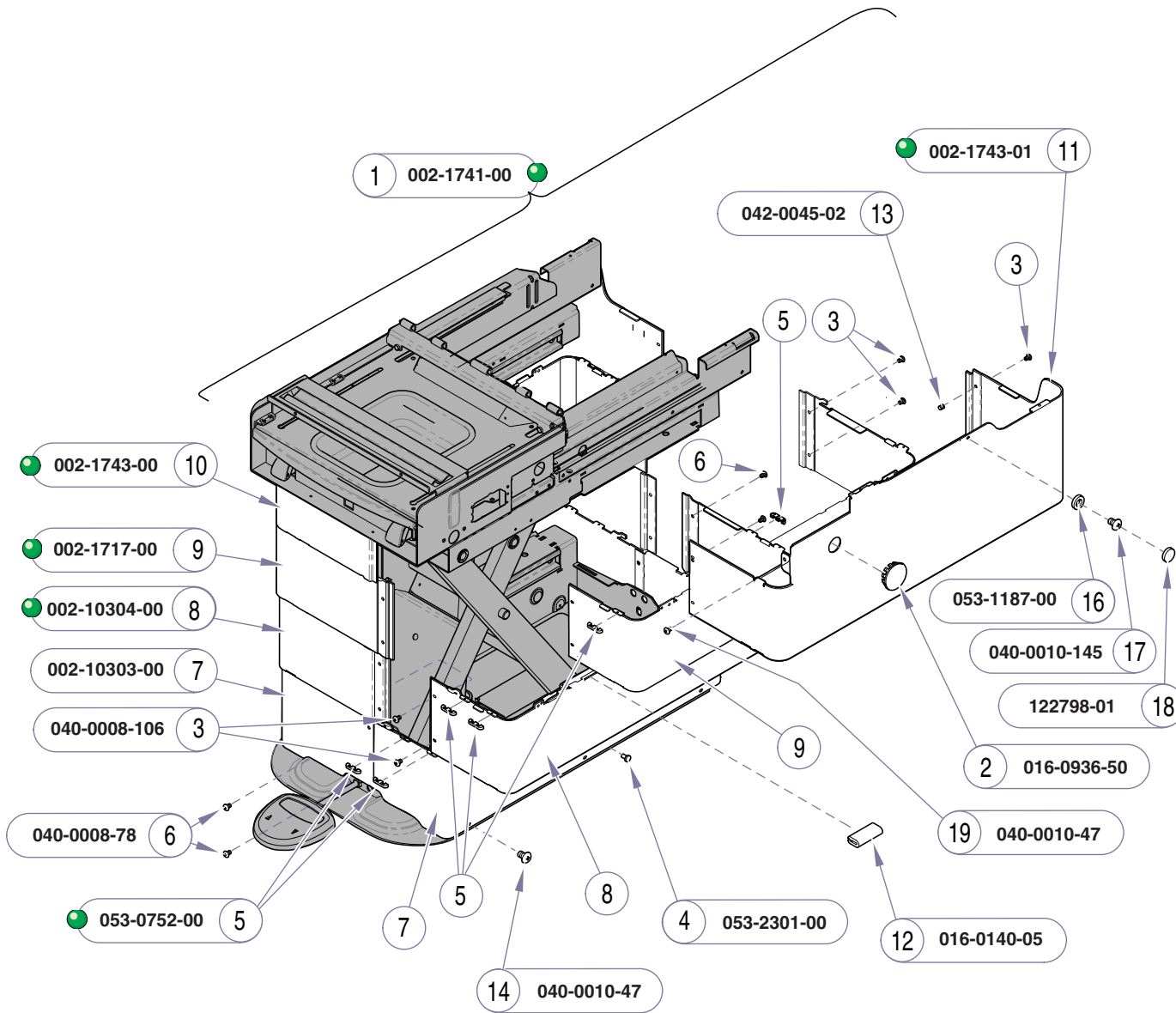
MA715700i

**E-14.1**

**Table Shrouds**  
*(Ritter models)*

**Models:** **222 (all)**  
 Serial Numbers: V762688 thru V1077078

**223 (all)**  
 Serial Numbers: V762688 thru V1077078



MA715701i

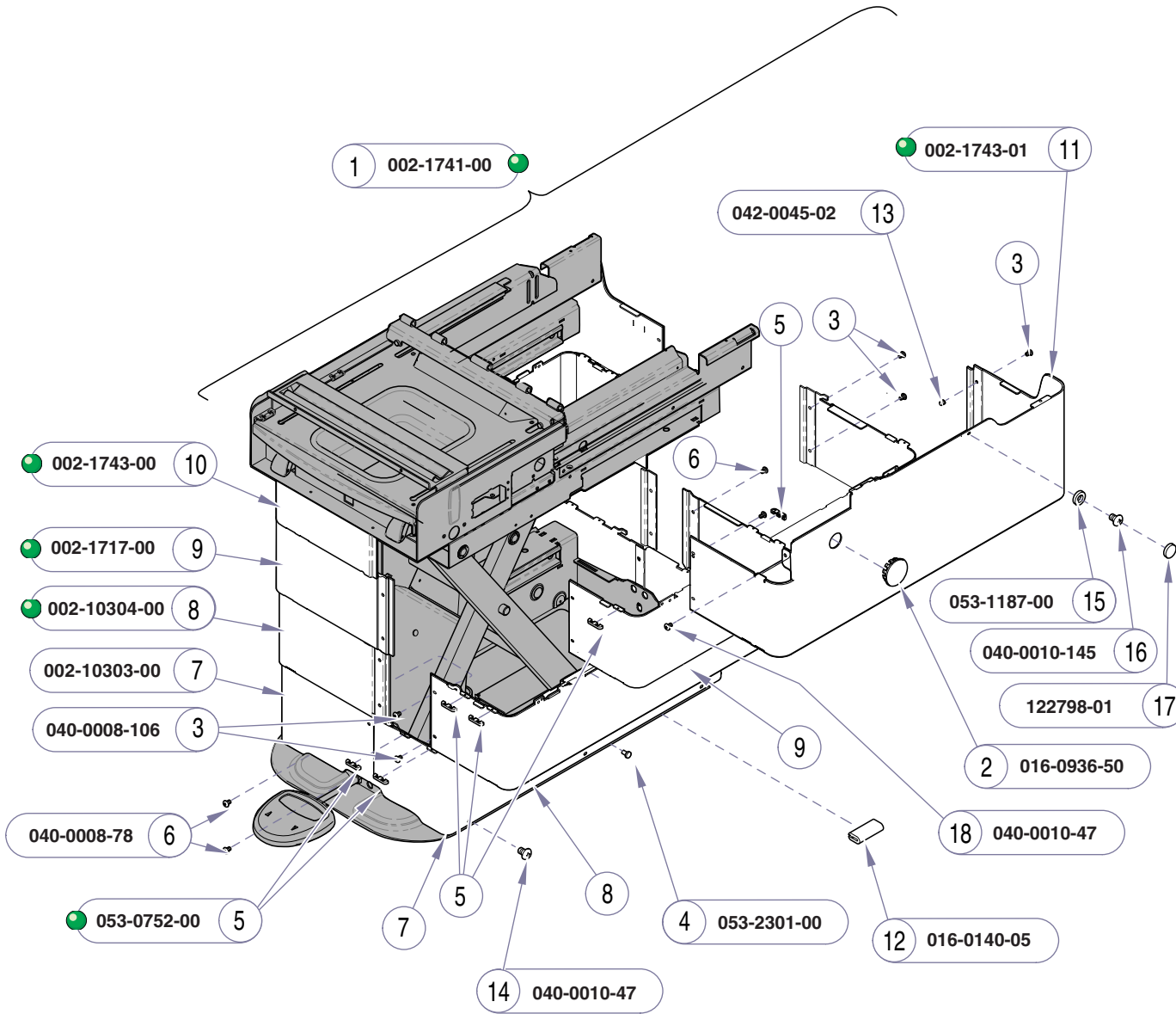
Item	Description	Qty.
1	Table Shroud Assembly Set .....	1
	<i>(includes items 2 through 15)</i>	
2	• Hole Plug .....	2
3	• Screw (#8-32 x .25") .....	12
4	• Stem Bumper .....	14
5	• Snap-on Guide .....	32
6	• Screw (#8-32 x .25") .....	4
7	• Inner Shroud Assembly .....	2
	<i>(includes items 4, 5, &amp; 13)</i>	
8	• Mid Inner Shroud Assembly .....	2
	<i>(includes items 4, 5, 12, 13, &amp; 15)</i>	
9	• Mid Outer Shroud Assembly .....	2
	<i>(includes items 4, 5, 13, &amp; 15)</i>	
10	• R.H. Outer Shroud Assembly .....	1
	<i>(includes items 5, 13, &amp; 18)</i>	
11	• L.H. Outer Shroud Assembly .....	1
	<i>(includes items 5, 13, &amp; 18)</i>	
12	• Trim Lock .....	4
13	• Nutsert .....	18
14	• Screw (10-24 x 3/8") .....	6
15	• Shroud Isolator .....	4
16	Screw Cover Base .....	2
17	Screw (10-24 x 3/8") .....	2
18	Screw Cover .....	2
19	Screw (#10-24 x 3/8") .....	2

**Always Specify Model & Serial Number**

<b>Models:</b>	<b>222 (all)</b>	<b>223 (all)</b>
Serial Numbers:	V1077079 thru V1089389	V1077079 thru V1089389

**Table Shrouds**  
*(Ritter models)*





Item	Description	Qty.
1	Table Shroud Assembly Set ..... 1 (includes items 2 through 14)	1
2	• Hole Plug ..... 2	2
3	• Screw (#8-32 x .25") ..... 12	12
4	• Stem Bumper ..... 14	14
5	• Snap-on Guide ..... 32	32
6	• Screw (#8-32 x .25") ..... 4	4
7	• Inner Shroud Assembly ..... 2 (includes items 4, 5, & 13)	2
8	• Mid Inner Shroud Assembly ..... 2 (includes items 4, 5, 12, & 13)	2
9	• Mid Outer Shroud Assembly ..... 2 (includes items 4, 5, & 13)	2
10	• R.H. Outer Shroud Assembly ..... 1 (includes items 5, 13, & 18)	1
11	• L.H. Outer Shroud Assembly ..... 1 (includes items 5, 13, & 18)	1
12	• Trim Lock ..... 4	4
13	• Nutsert ..... 18	18
14	• Screw (10-24 x 3/8") ..... 6	6
15	Screw Cover Base ..... 2	2
16	Screw (10-24 x 3/8") ..... 2	2
17	Screw Cover ..... 2	2
18	Screw (#10-24 x 3/8") ..... 2	2

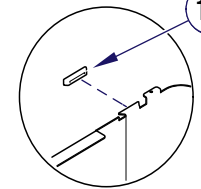
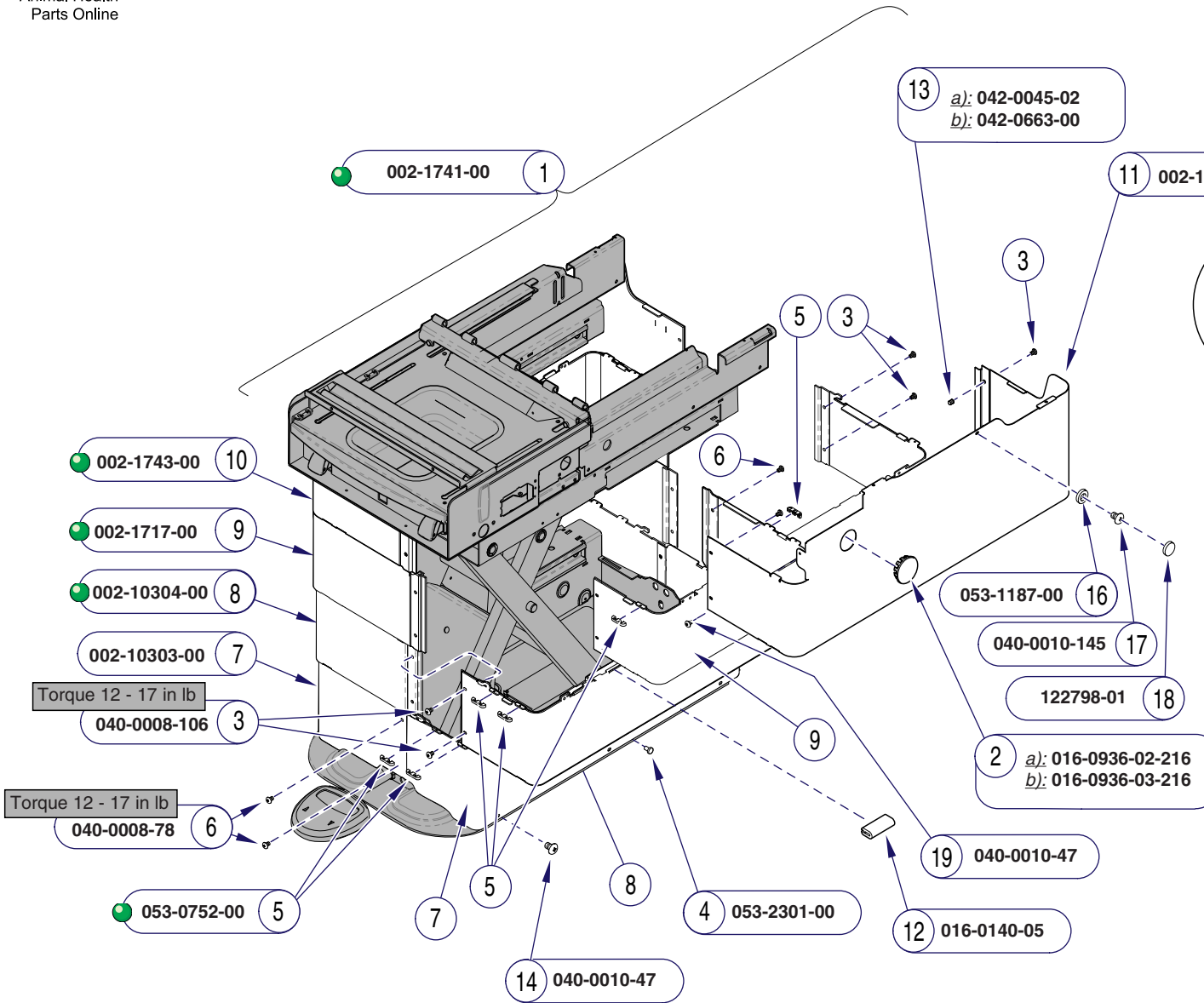
Always Specify Model & Serial Number

MA715702

**E-14.3**

**Table Shrouds**  
(Ritter models)

<b>Models:</b>	<b>222 (all)</b>	<b>223 (all)</b>
<b>Serial Numbers:</b>	V1089390 - V1531182	V1089390 - V1531182



Item	Description	Qty.
1	Table Shroud Assembly Set .....	1
	(includes items 2 through 15)	
2	• a) Hole Plug w/o hole .....	2
	• b) Hole Plug w/ hole .....	2
3	• Screw (#8-32 x .25") .....	12
4	• Stem Bumper .....	14
5	• Snap-on Guide .....	32
6	• Screw (#8 -32 x .25") .....	4
7	• Inner Shroud Assembly .....	2
	(includes items 4, 5, & 13)	
8	• Mid Inner Shroud Assembly .....	2
	(includes items 4, 5, 12, 13, & 15)	
9	• Mid Outer Shroud Assembly .....	2
	(includes items 4, 5, 13, & 15)	
10	• R.H. Outer Shroud Assembly .....	1
	(includes items 2a, 5, 13, & 18)	
11	• L.H. Outer Shroud Assembly .....	1
	(includes items 2a, 5, 13, & 18)	
12	• Trim Lock .....	4
13	• a) Nutsert (Round) .....	18
	• b) Nutsert (Hex) .....	18
14	• Screw (10-24 x 3/8") .....	6
15	• Shroud Isolator .....	8
16	Screw Cover Base .....	2
17	Screw (10-24 x 3/8") .....	2
18	Screw Cover .....	2
19	Screw (#10-24 x 3/8") .....	2

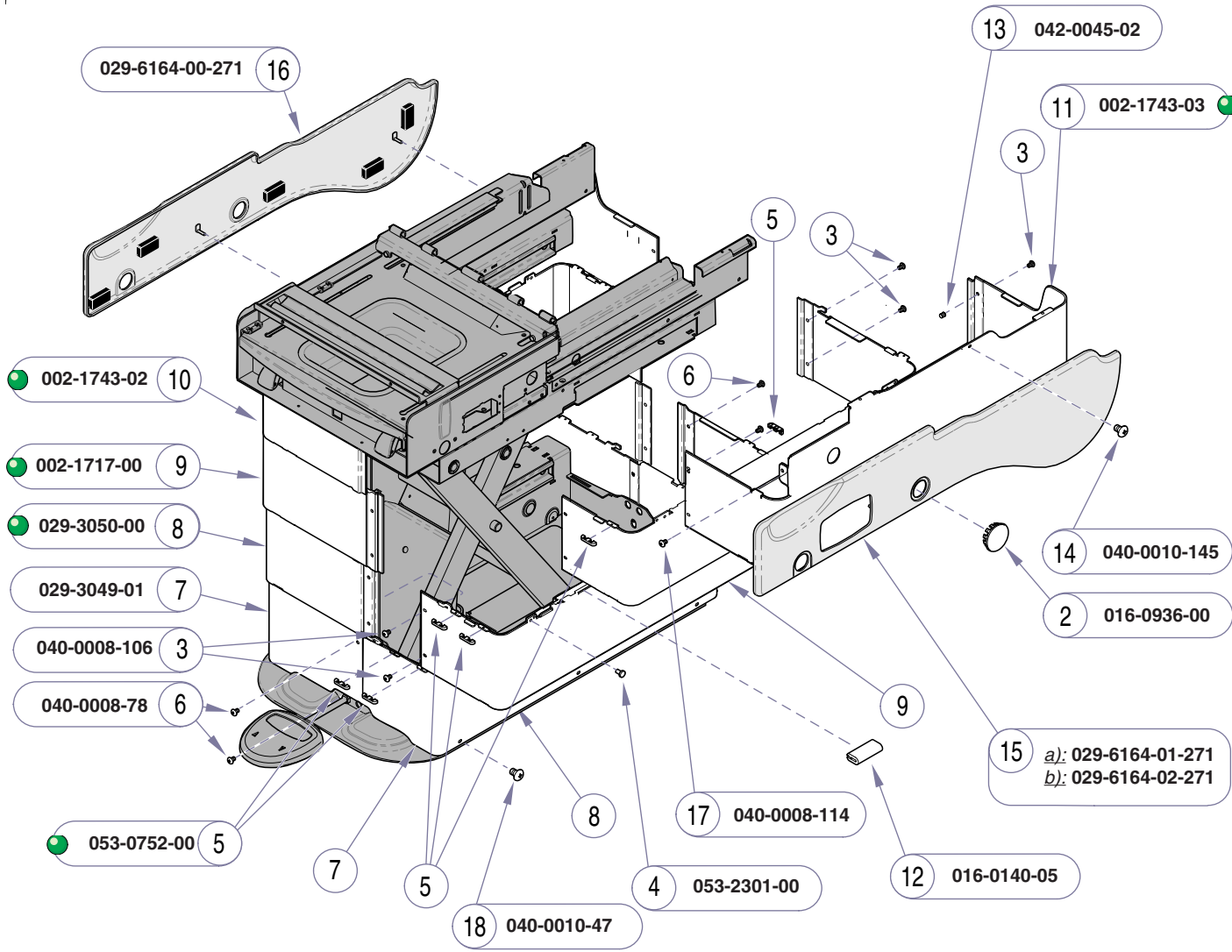
Always Specify Model & Serial Number

<b>Models:</b>	<b>222 (all)</b>	<b>223 (all)</b>
Serial Numbers:	V1531183 - present	V1531183 - present

**Table Shrouds**  
 (Ritter models) **E-14.4**



1 002-1742-00

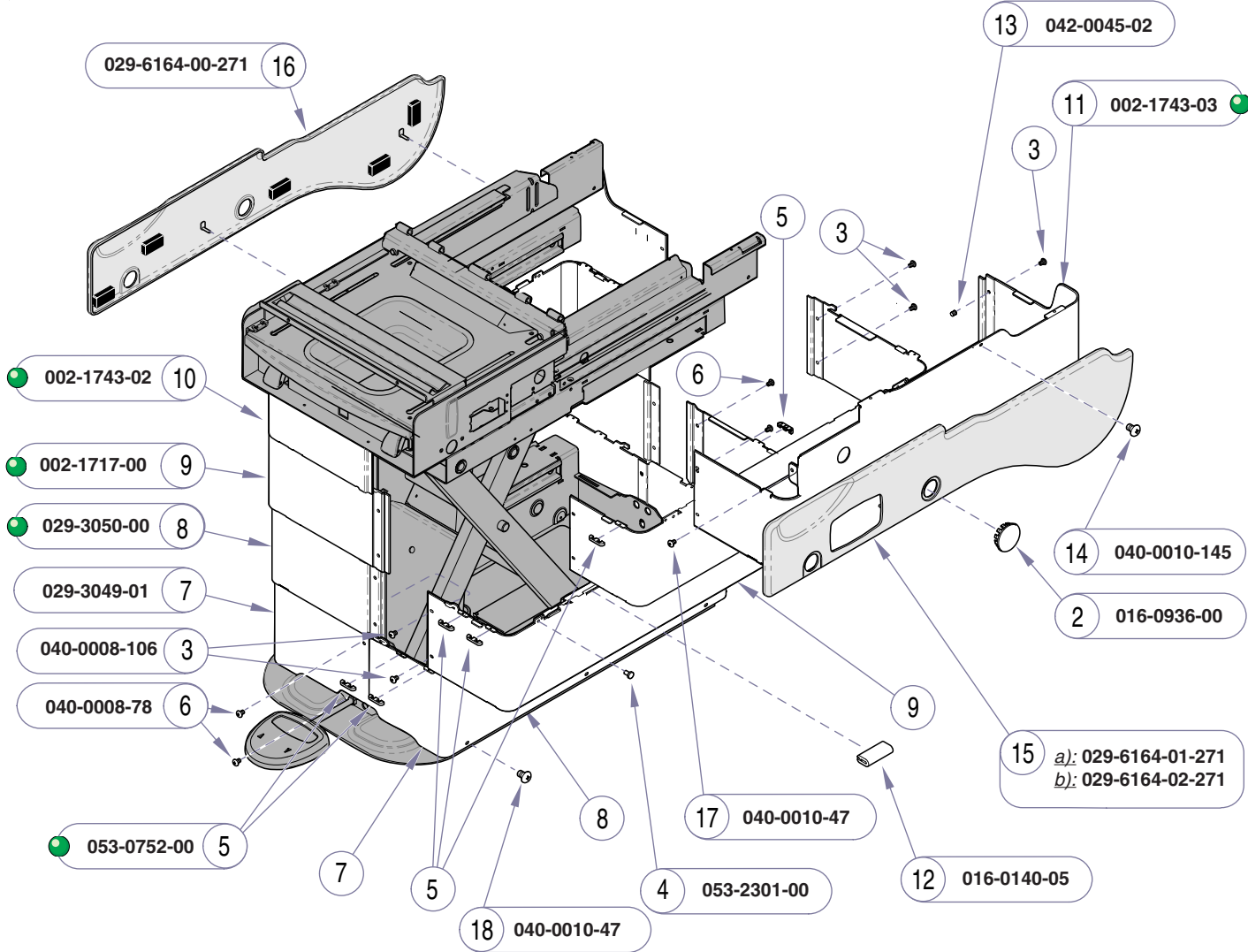


Item	Description	Qty.
1	Table Shroud Assembly Set .....	1
	(includes items 2 thru 14)	
2	• Hole Plug .....	4
3	• Screw (#8 -32 x .25") .....	12
4	• Stem Bumper .....	14
5	• Snap-on Guide .....	32
6	• Screw (#8 -32 x .25") .....	4
7	• Inner Shroud Assembly .....	2
	(includes items 4, 5, & 13)	
8	• Mid Inner Shroud Assembly .....	2
	(includes items 4, 5, 12 & 13)	
9	• Mid Outer Shroud Assembly .....	2
	(includes items 4, 5, & 13)	
10	• R.H. Outer Shroud Assembly .....	1
	(includes items 3, 13, 14, & 17)	
11	• L.H. Outer Shroud Assembly .....	1
	(includes items 3, 13, 14, & 17)	
12	• Trim Lock .....	4
13	• Nutsert .....	18
14	• Screw (10-24 x 1/2") .....	2
15	LH Cladding Assembly:	
	a) w/ receptacle cutout .....	1
	b) w/o receptacle cutout .....	1
16	R.H. Cladding Assembly .....	1
17	Screw (#8-32 x 3/8") .....	2
18	Screw .....	6

**Always Specify Model & Serial Number**

MA715800i

1 002-1742-00



Item	Description	Qty.
1	Table Shroud Assembly Set .....	1
	(includes items 2 thru 14)	
2	• Hole Plug .....	4
3	• Screw (#8 -32 x .25") .....	12
4	• Stem Bumper .....	14
5	• Snap-on Guide .....	32
6	• Screw (#8 -32 x .25") .....	4
7	• Inner Shroud Assembly .....	2
	(includes items 4, 5, & 13)	
8	• Mid Inner Shroud Assembly .....	2
	(includes items 4, 5, 12 & 13)	
9	• Mid Outer Shroud Assembly .....	2
	(includes items 4, 5, & 13)	
10	• R.H. Outer Shroud Assembly .....	1
	(includes items 3, 13, 14, & 17)	
11	• L.H. Outer Shroud Assembly .....	1
	(includes items 3, 13, 14, & 17)	
12	• Trim Lock .....	4
13	• Nutsert .....	18
14	• Screw (10-24 x 1/2") .....	2
15	LH Cladding Assembly:	
	a) w/ receptacle cutout .....	1
	b) w/o receptacle cutout .....	1
16	R.H. Cladding Assembly .....	1
17	Screw (#10-24 x 3/8") .....	2
18	Screw .....	6

MA715800i

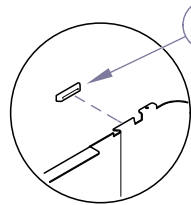
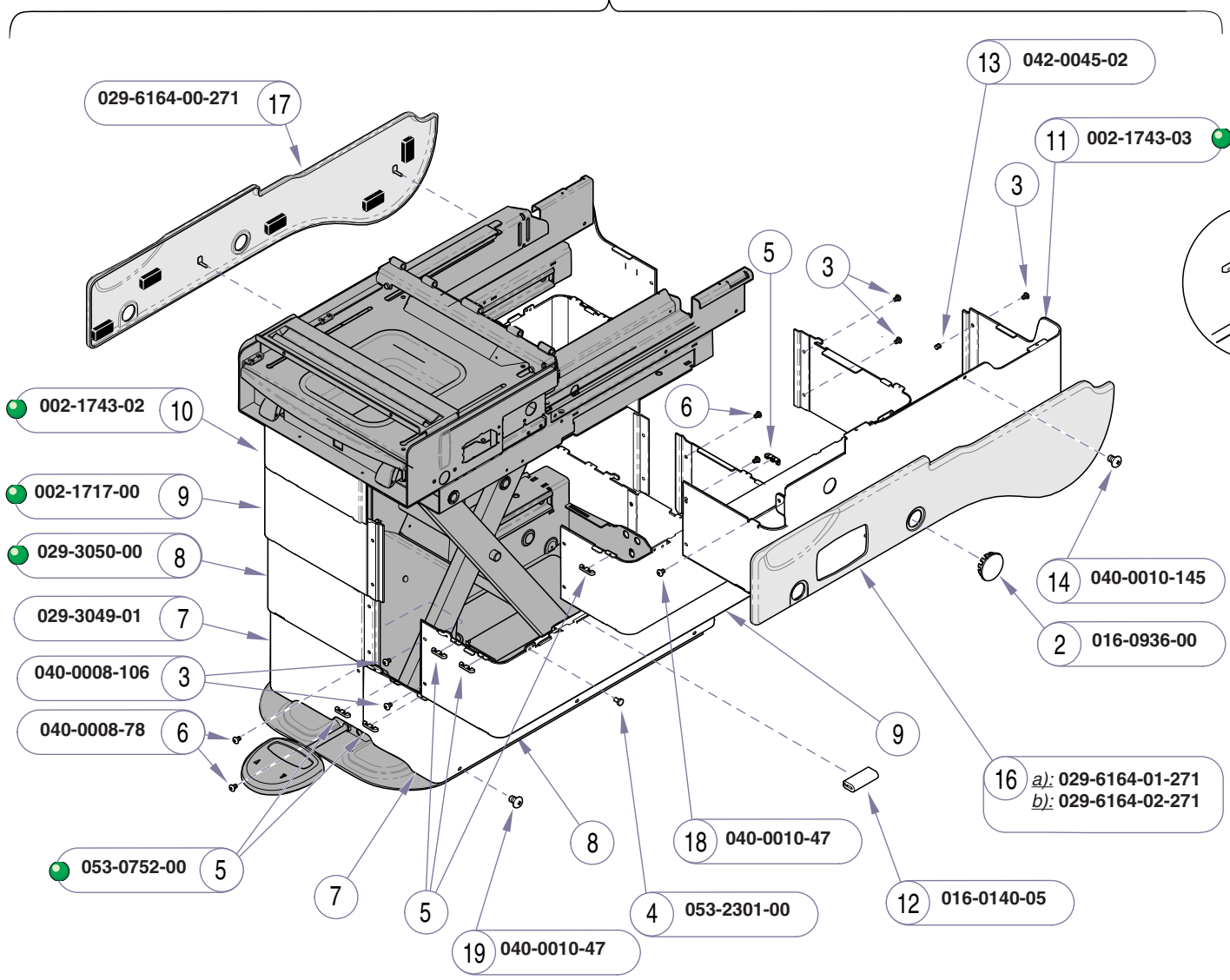
Always Specify Model & Serial Number

**Models:** 622 (-007 & -008) | 623 (-007 thru -010)  
**Serial Numbers:** V762688 thru V1077078 | V762688 thru V1077078

**Table Shrouds**  
 (Midmark models)

**E-15.1**

1 002-1742-00



Item	Description	Qty.
1	Table Shroud Assembly Set .....	1
	(includes items 2 thru 15)	
2	• Hole Plug .....	4
3	• Screw (#8 -32 x .25") .....	12
4	• Stem Bumper .....	14
5	• Snap-on Guide .....	32
6	• Screw (#8 -32 x .25") .....	4
7	• Inner Shroud Assembly .....	2
	(includes items 4, 5, & 13)	
8	• Mid Inner Shroud Assembly .....	2
	(includes items 4, 5, 12, 13, & 15)	
9	• Mid Outer Shroud Assembly .....	2
	(includes items 4, 5, 13, & 15)	
10	• R.H. Outer Shroud Assembly .....	1
	(includes items 3, 13, 14, & 18)	
11	• L.H. Outer Shroud Assembly .....	1
	(includes items 3, 13, 14, & 18)	
12	• Trim Lock .....	4
13	• Nutsert .....	18
14	• Screw (10-24 x 1/2") .....	2
15	• Shroud Isolator .....	4
16	LH Cladding Assembly:	
	a) w/ receptacle cutout .....	1
	b) w/o receptacle cutout .....	1
17	R.H. Cladding Assembly .....	1
18	Screw (#10-24 x 3/8") .....	2
19	Screw .....	6

Always Specify Model & Serial Number

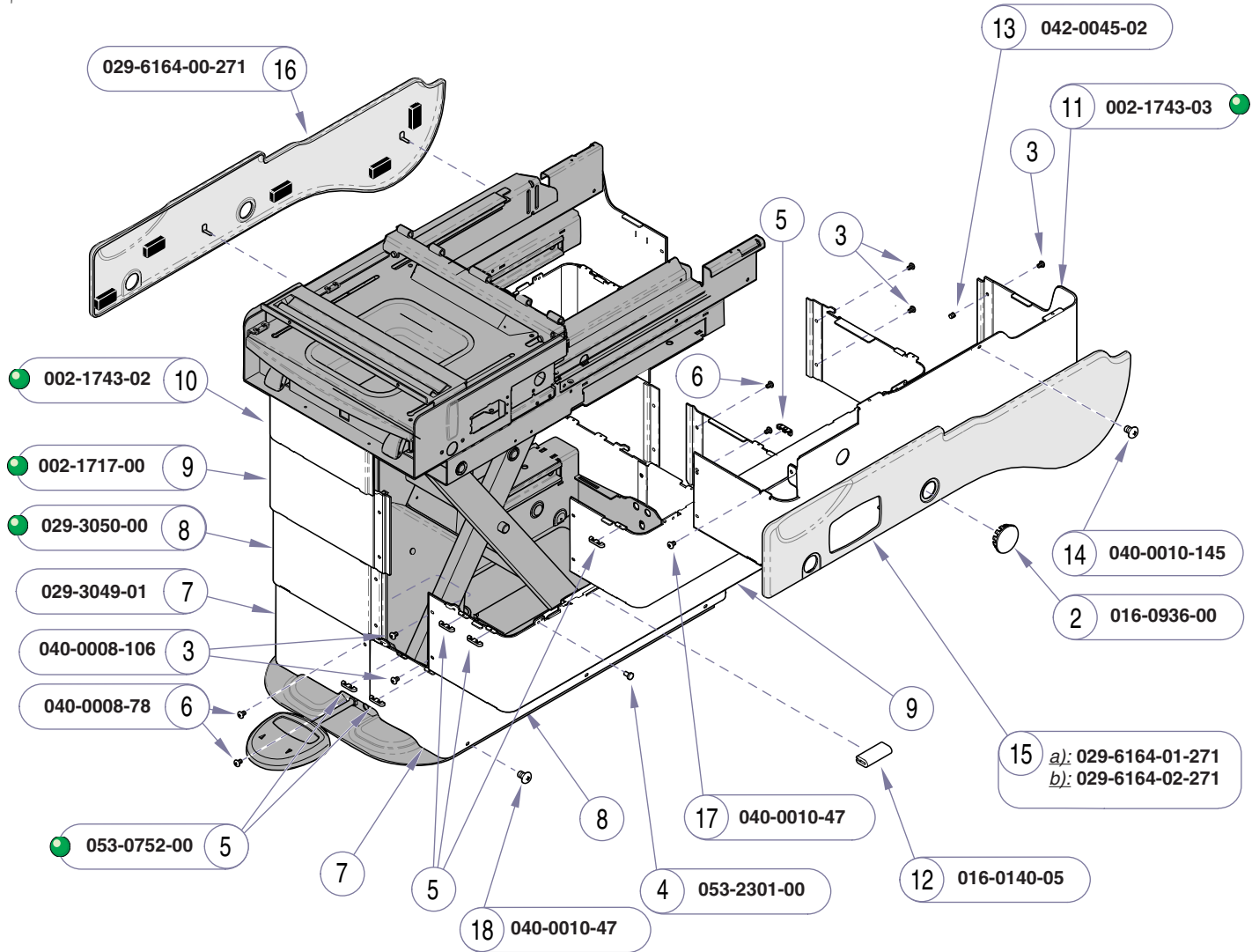
MA715801i

**E-15.2**

**Table Shrouds**  
 (Midmark models)

**Models:** 622 (-007 & -008) | 623 (-007 thru -010)  
**Serial Numbers:** V1077079 thru V1089389 | V1077079 thru V1089389

1 002-1742-00



Item	Description	Qty.
1	Table Shroud Assembly Set .....	1
	<i>(includes items 2 thru 14)</i>	
2	• Hole Plug .....	4
3	• Screw (#8 -32 x .25") .....	12
4	• Stem Bumper .....	14
5	• Snap-on Guide .....	32
6	• Screw (#8 -32 x .25") .....	4
7	• Inner Shroud Assembly .....	2
	<i>(includes items 4, 5, &amp; 13)</i>	
8	• Mid Inner Shroud Assembly .....	2
	<i>(includes items 4, 5, 12 &amp; 13)</i>	
9	• Mid Outer Shroud Assembly .....	2
	<i>(includes items 4, 5, &amp; 13)</i>	
10	• R.H. Outer Shroud Assembly .....	1
	<i>(includes items 3, 13, 14, &amp; 17)</i>	
11	• L.H. Outer Shroud Assembly .....	1
	<i>(includes items 3, 13, 14, &amp; 17)</i>	
12	• Trim Lock .....	4
13	• Nutsert .....	18
14	• Screw (10-24 x 1/2") .....	2
15	LH Cladding Assembly:	
	a) w/ receptacle cutout .....	1
	b) w/o receptacle cutout .....	1
16	R.H. Cladding Assembly .....	1
17	Screw (#10-24 x 3/8") .....	2
18	Screw .....	6

**Always Specify Model & Serial Number**

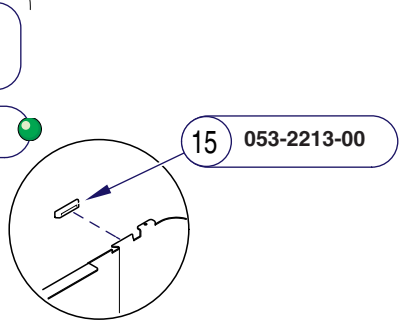
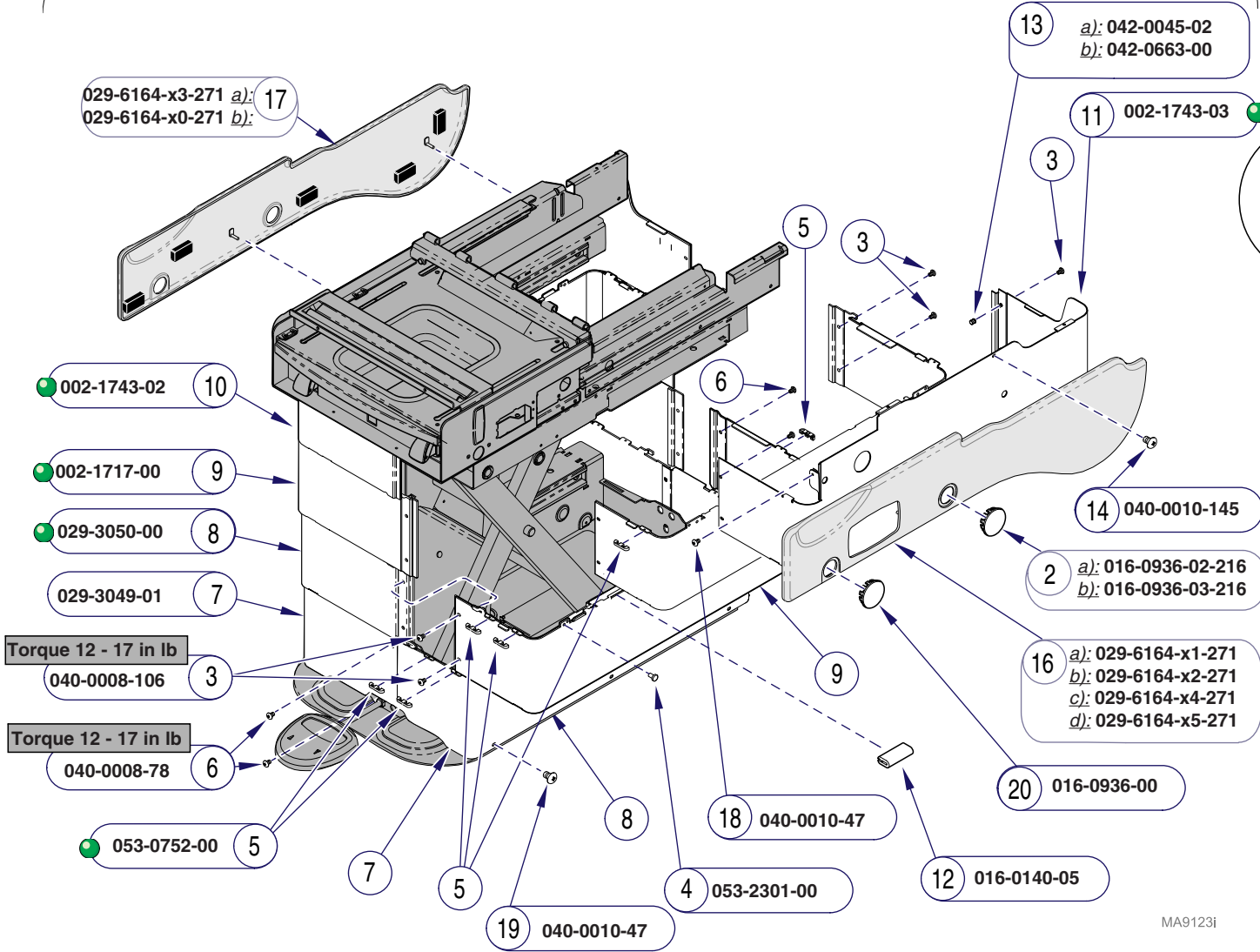
MA715802i

**Models:** 622 (-007 & -008) | 623 (-007 thru -010)  
**Serial Numbers:** V1089390 thru V1545232 | V1089390 thru V1545232

**Table Shrouds**  
 (Midmark models)

**E-15.3**

1 002-1742-00



Item	Description	Qty.
1	Table Shroud Assy Set (incl Items 2-15).....	1
2	• a) Hole Plug w/o hole .....	2
	• b) Hole Plug w/ hole .....	2
3	• Screw (#8 -32 x .25") .....	12
4	• Stem Bumper .....	14
5	• Snap-on Guide .....	32
6	• Screw (#8 -32 x .25") .....	4
7	• Inner Shroud Assembly .....	2
	(includes items 4, 5, & 13)	
8	• Mid Inner Shroud Assembly .....	2
	(includes items 4, 5, 12, 13, & 15)	
9	• Mid Outer Shroud Assembly .....	2
	(includes items 4, 5, 13, & 15)	
10	• R.H. Outer Shroud Assembly .....	1
	(includes items 3, 13, 14, & 18)	
11	• L.H. Outer Shroud Assembly .....	1
	(includes items 3, 13, 14, & 18)	
12	• Trim Lock .....	4
13	• a) Nutsert (Round) .....	18
	• b) Nutsert (Hex) .....	18
14	• Screw (10-24 x 1/2") .....	2
15	• Shroud Isolator .....	8
16	LH Cladding Assembly:	
	a) w/ receptacle cutout .....	1
	b) w/o receptacle cutout (not shown) .....	1
	c) w/ recept cutout/cer mag (not shown) ...	1
	d) w/o recept cutout/cer mag (not shown) .	1
17	RH Cladding Assembly:	
	a) w/ ceramic magnet .....	1
	b) w/o ceramic magnet (not shown) .....	1
18	Screw (#10-24 x 3/8") .....	2
19	Screw .....	6
20	Hole Plug .....	2

**Always Specify Model & Serial Number**

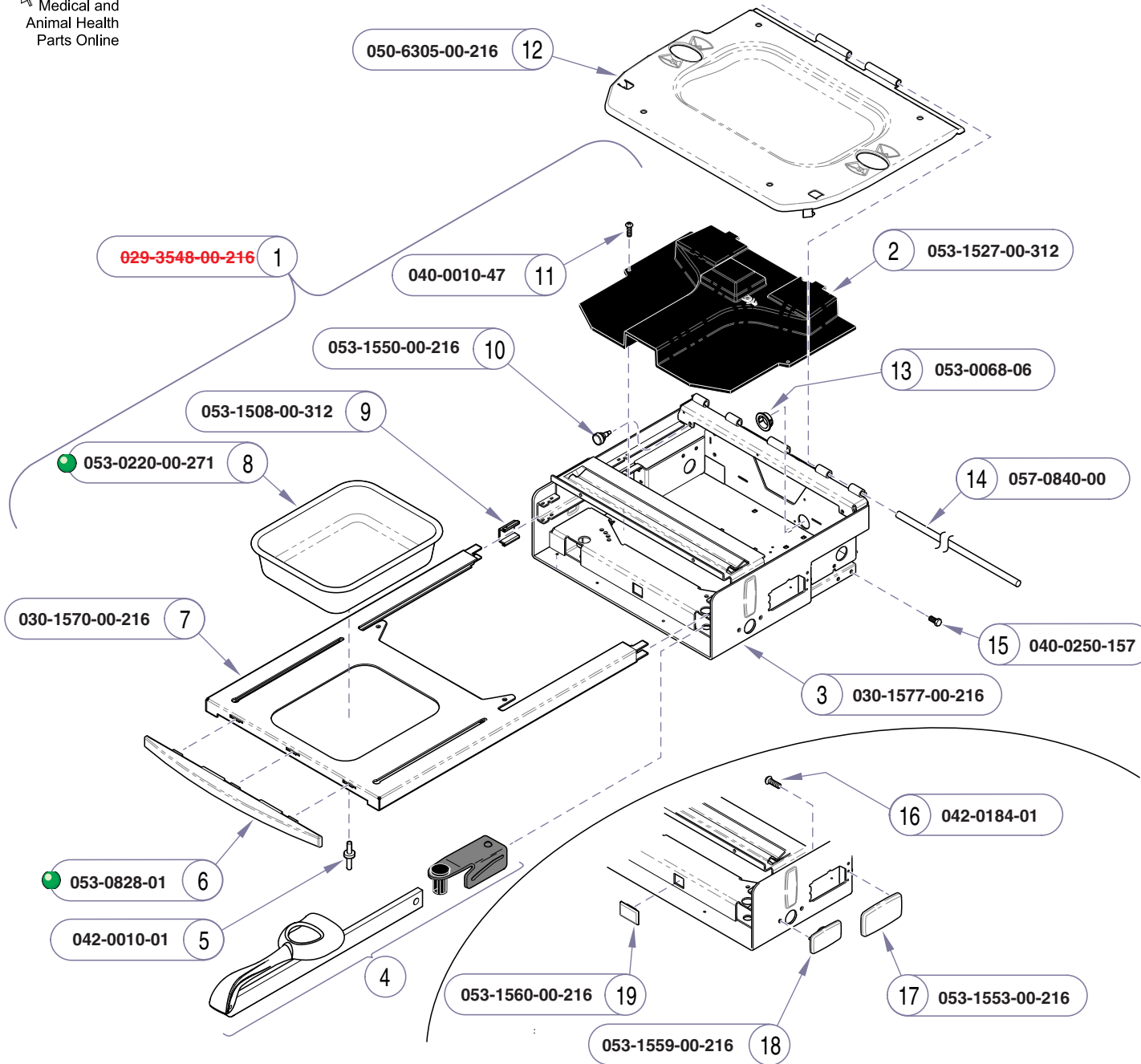
**E-15.4**

**Table Shrouds**  
 (Midmark models)

**Models:** 622 (-007 & -008)  
 Serial Numbers: V1545233 - present

**623 (-007 thru -011)**  
 Serial Numbers: V1545233 - present





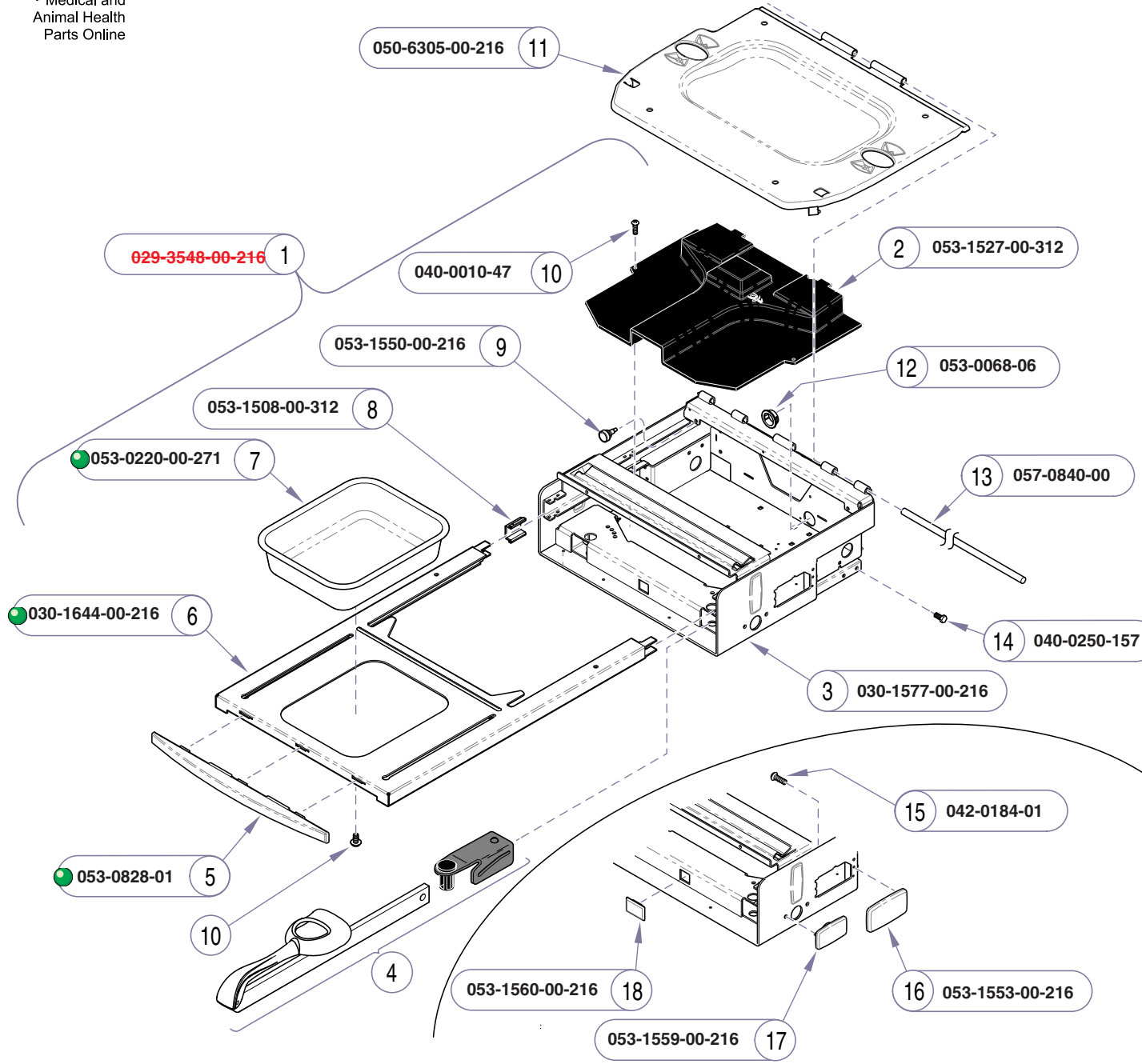
Item	Description	Qty.
1	Upperwrap Assembly (includes items 2 thru 11) .....	1
2	• Stirrup Guide .....	1
3	• Upper Wrap Weldment .....	1
4	• Refer to: "Stirrup Assembly" .....	2
5	• Pop Rivot .....	2
6	• Foot Rest Trim .....	1
7	• Foot Rest Shelf .....	1
8	• Plastic Treatment Pan .....	1
9	• Runner Glide .....	4
10	• Stem Bumper .....	4
11	• Screw (#10-24 x 3/8") .....	2
12	Seat Mtg. Frame .....	1
13	Snap Bushing .....	3
14	Pivot Rod .....	1
15	Screw (1/4"-20 x 1/2") .....	4
<b>Items 16 thru 19 are optional, depending on the table's features:</b>		
16	Screw (10-24 x 3/8") .....	1
17	Cover (receptacle) .....	1
18	Cover (accessory socket hole) .....	1
19	Cover (drawer heater switch) .....	1

**Always Specify Model & Serial Number**

**Models:** 222 (-015 thru -017) | 223 (-015 thru -016)  
**Serial Numbers:** prior to V323419 | prior to V323419

**Ritter Upperwrap &  
 Footrest Shelf**

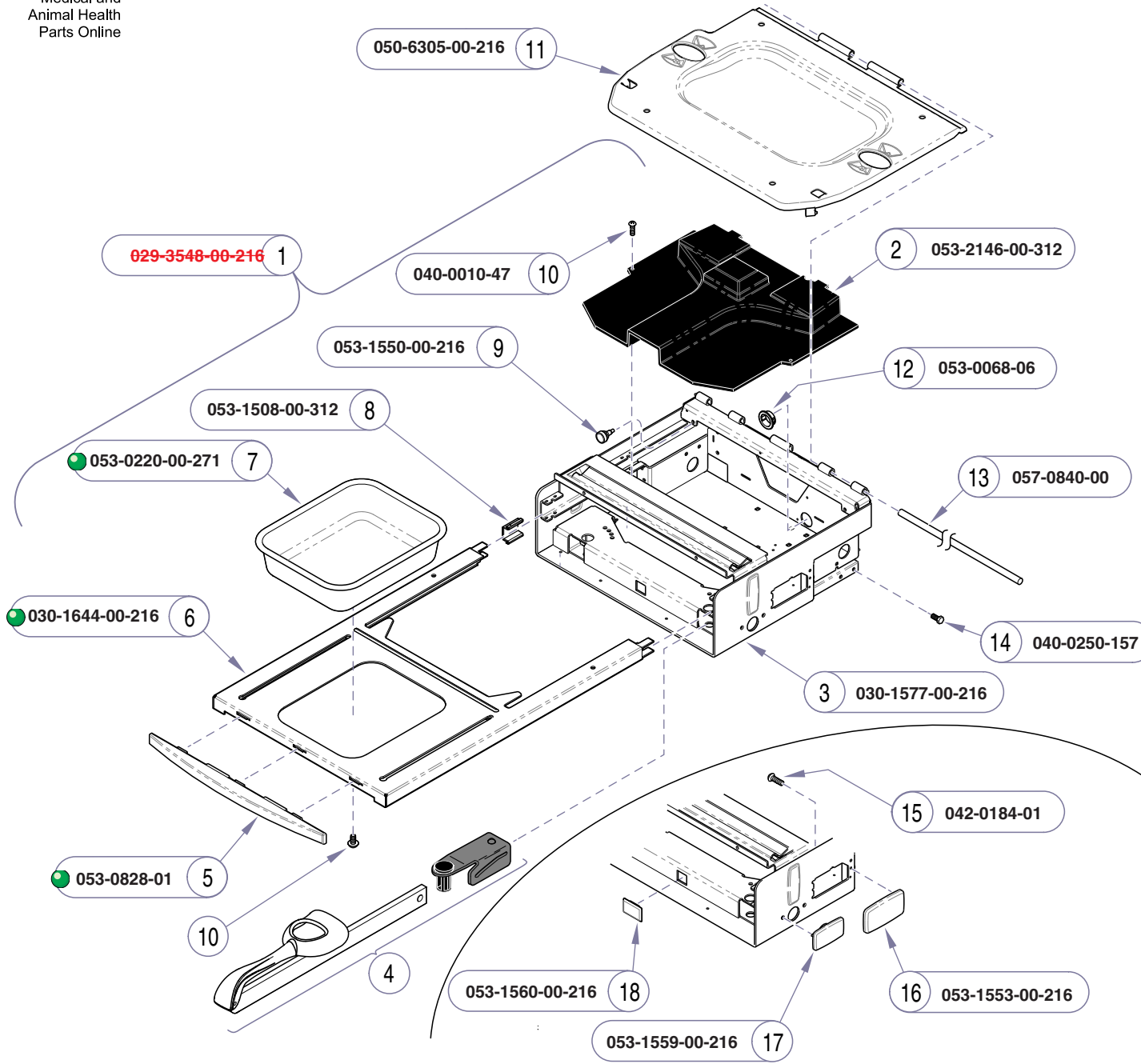
**E-16**



Item	Description	Qty.
1	Upperwrap Assembly (includes items 2 thru 10)	1
2	• Stirrup Guide	1
3	• Upper Wrap Weldment	1
4	• Refer to: "Stirrup Assembly"	2
5	• Foot Rest Trim	1
6	• Foot Rest Shelf	1
7	• Plastic Treatment Pan	1
8	• Runner Glide	4
9	• Stem Bumper	4
10	• Screw (#10-24 x 3/8")	4
11	Seat Mtg. Frame	1
12	Snap Bushing	3
13	Pivot Rod	1
14	Screw (1/4"-20 x 1/2")	4
<b>Items 15 thru 18 are optional, depending on the table's features:</b>		
15	Screw (10-24 x 3/8")	1
16	Cover (receptacle)	1
17	Cover (accessory socket hole)	1
18	Cover (drawer heater switch)	1

**Always Specify Model & Serial Number**

MA7118021



Item	Description	Qty.
1	Upperwrap Assembly <i>(includes items 2 thru 10)</i>	1
2	• Stirrup Guide	1
3	• Upper Wrap Weldment	1
4	• Refer to: "Stirrup Assembly"	2
5	• Foot Rest Trim	1
6	• Foot Rest Shelf	1
7	• Plastic Treatment Pan	1
8	• Runner Glide	4
9	• Stem Bumper	4
10	• Screw (#10-24 x 3/8")	4
11	Seat Mtg. Frame	1
12	Snap Bushing	3
13	Pivot Rod	1
14	Screw (1/4"-20 x 1/2")	4
<b><i>Items 15 thru 18 are optional, depending on the table's features:</i></b>		
15	Screw (10-24 x 3/8")	1
16	Cover (receptacle)	1
17	Cover (accessory socket hole)	1
18	Cover (drawer heater switch)	1

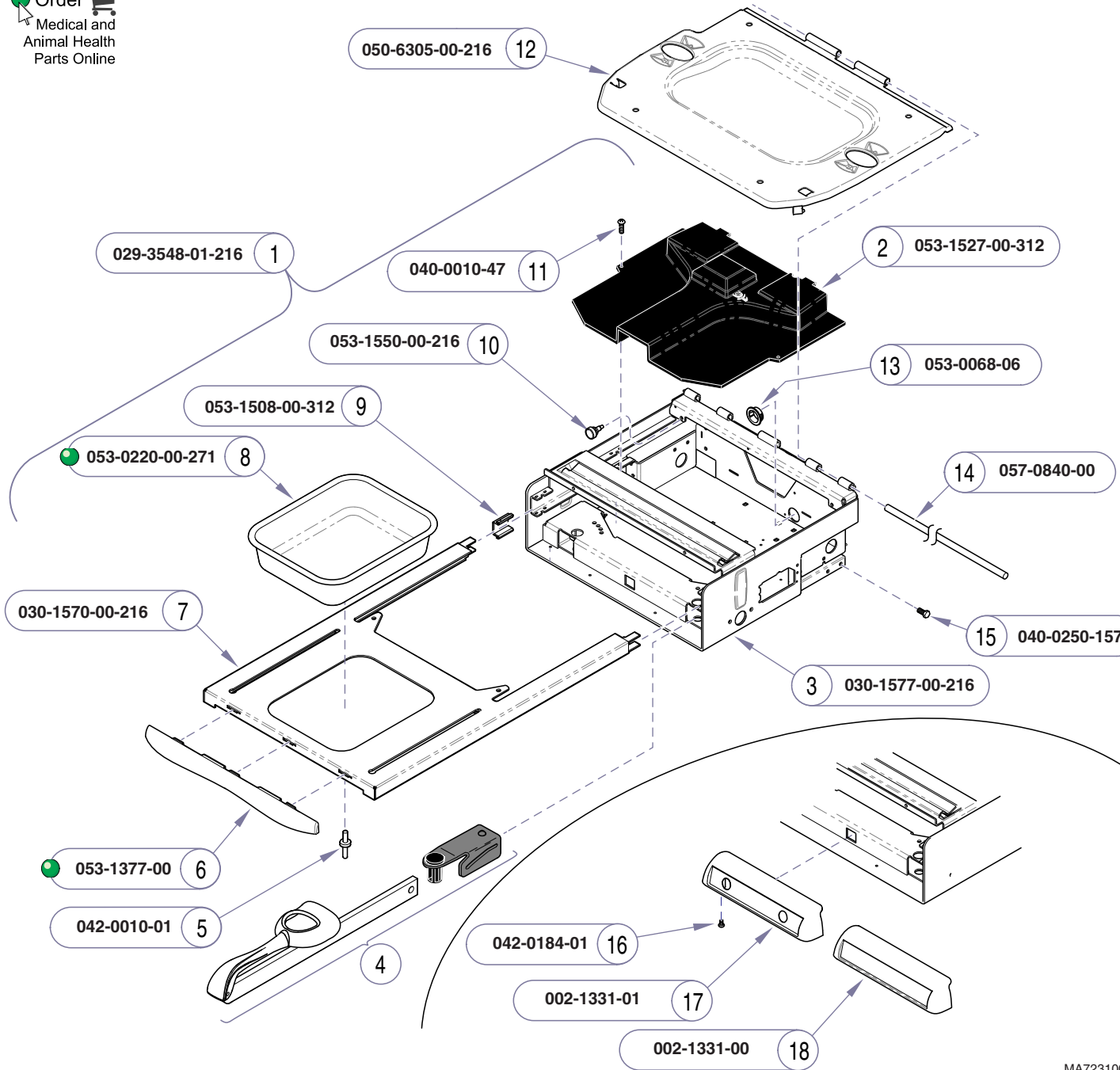
**Always Specify Model & Serial Number**

MA711803i

<b>Models:</b>	<b>222 (-015 thru -017)</b>	<b>223 (-015 thru -016)</b>
<b>Serial Numbers:</b>	V816455 thru present	V816455 thru present

**Ritter Upperwrap &  
Footrest Shelf**

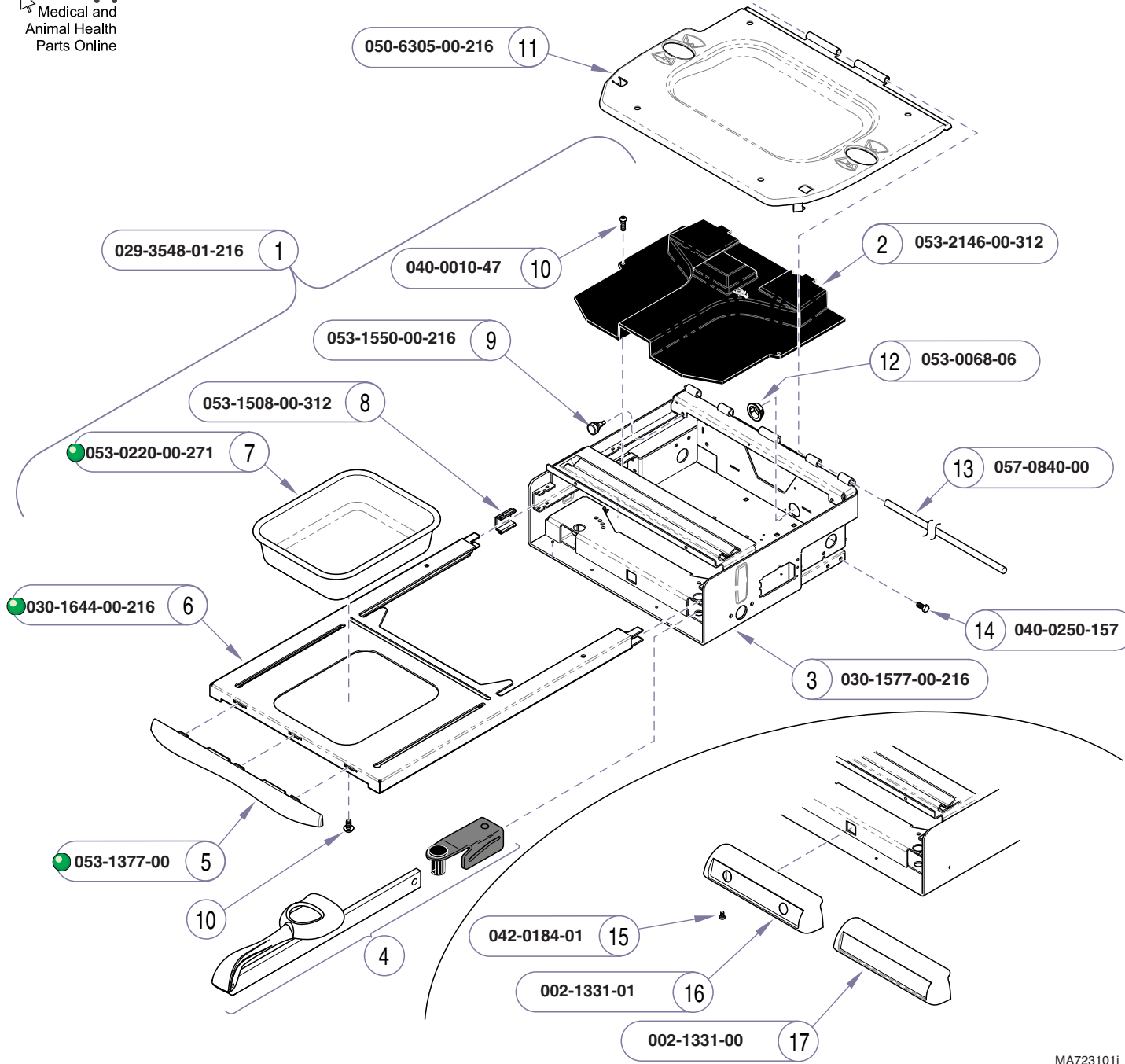




MA7231001

Item	Description	Qty.
1	Upperwrap Assembly (includes items 2 thru 11) .....	1
2	• Stirrup Guide .....	1
3	• Upper Wrap Weldment .....	1
4	• Refer to: "Stirrup Assembly" .....	2
5	• Pop Rivot .....	2
6	• Foot Rest Trim .....	1
7	• Foot Rest Shelf .....	1
8	• Plastic Treatment Pan .....	1
9	• Runner Glide .....	4
10	• Stem Bumper .....	4
11	• Screw (#10-24 x 3/8") .....	2
12	Seat Mtg. Frame .....	1
13	Snap Bushing .....	3
14	Pivot Rod .....	1
15	Screw (1/4"-20 x 1/2") .....	4
16	Screw .....	2
17	Switch Housing and Label Kit (without switch holes [includes label]) .....	1
18	Switch Housing and Label Kit (with two switch holes [includes label]) .....	1

**Always Specify Model & Serial Number**



Item	Description	Qty.
1	Upperwrap Assembly (includes items 2 thru 10)	1
2	• Stirrup Guide	1
3	• Upper Wrap Weldment	1
4	• Refer to: "Stirrup Assembly"	2
5	• Foot Rest Trim	1
6	• Foot Rest Shelf	1
7	• Plastic Treatment Pan	1
8	• Runner Glide	4
9	• Stem Bumper	4
10	• Screw (#10-24 x 3/8")	4
11	Seat Mtg. Frame	1
12	Snap Bushing	3
13	Pivot Rod	1
14	Screw (1/4"-20 x 1/2")	4
15	Screw	2
16	Switch Housing and Label Kit (without switch holes [includes label])	1
17	Switch Housing and Label Kit (with two switch holes [includes label])	1

**Always Specify Model & Serial Number**

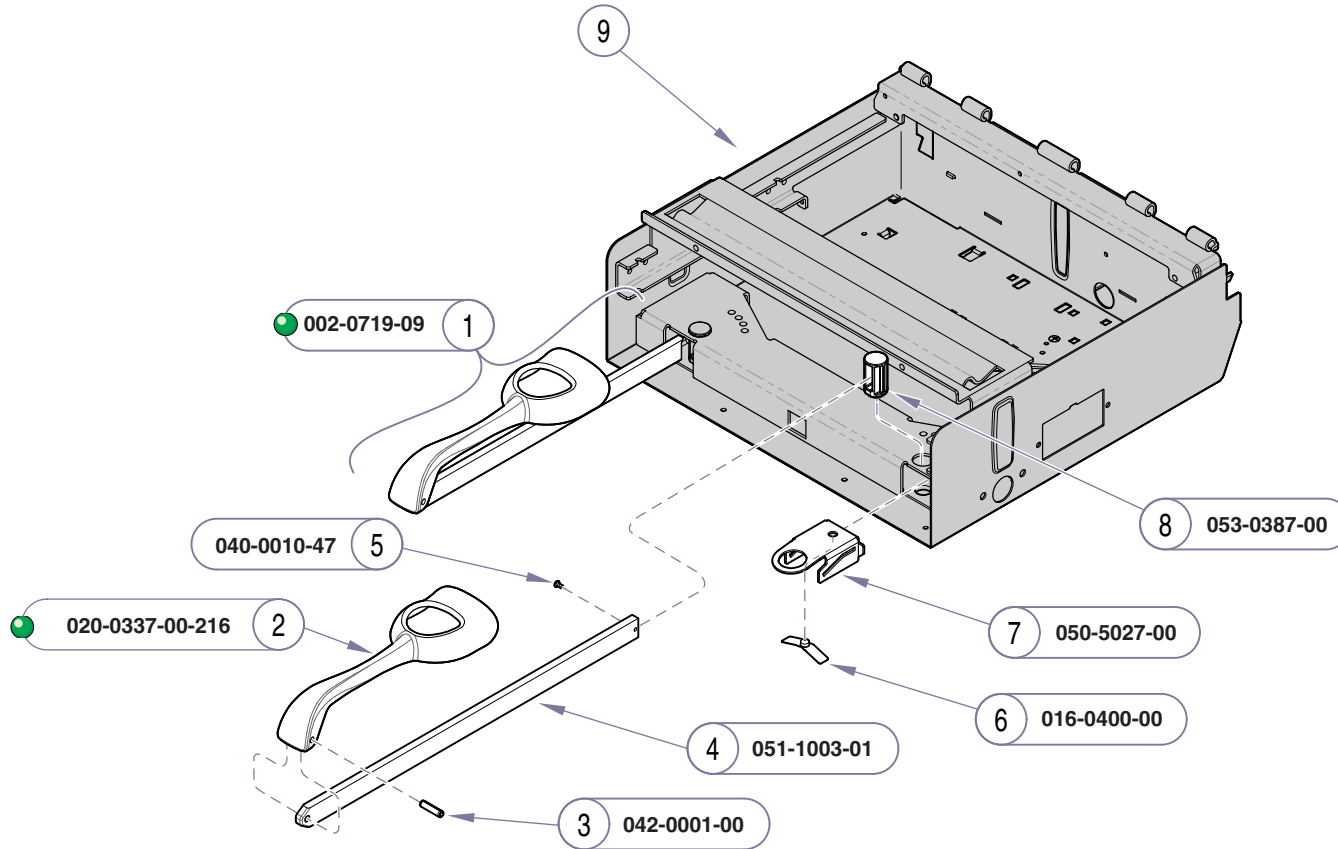
MA723101i

**Models:** 622 (-007 & -008) | 623 (-007 thru -011)  
**Serial Numbers:** V323419 thru present | V323419 thru present

**Midmark Upperwrap &  
Footrest Shelf**

**E-17.1**

**Refer To:** **Page**  
 Upperwrap & Footrest Shelf:  
*Ritter models* ..... E-16\*  
*Midmark models* ..... E-17\*  
 \* multiple pages due to model / serial # break



MA7039001

MA7039001

Item	Description	Qty.
1	Stirrup Assembly Set (incl. two assemblies) (includes items 2 thru 4) .....	1
2	• Stirrup .....	1
3	• Roll Pin .....	1
4	• Stirrup Bar .....	1
5	Screw (#10-24 x 3/8") .....	2
6	Guide Bracket Spring .....	2
7	Guide Bracket .....	2
8	Pivot Boss .....	2
9	Refer to: "Upperwrap & Footrest Shelf"... Ref	

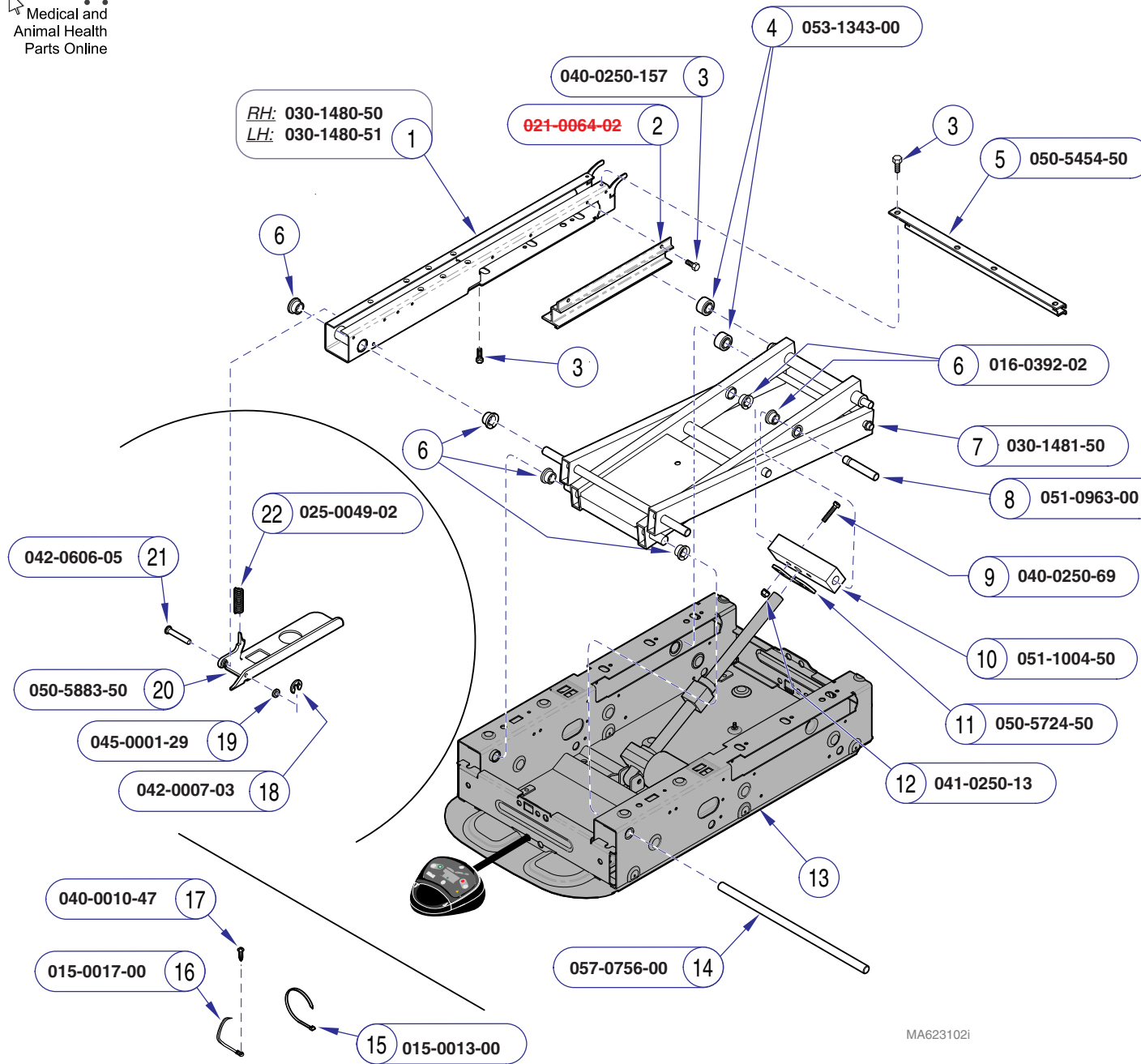
**Always Specify Model & Serial Number**

**Base Components:**

*Ritter models* ..... E-20\*

*Midmark models* ..... E-21\*

\* multiple pages due to model / serial # break

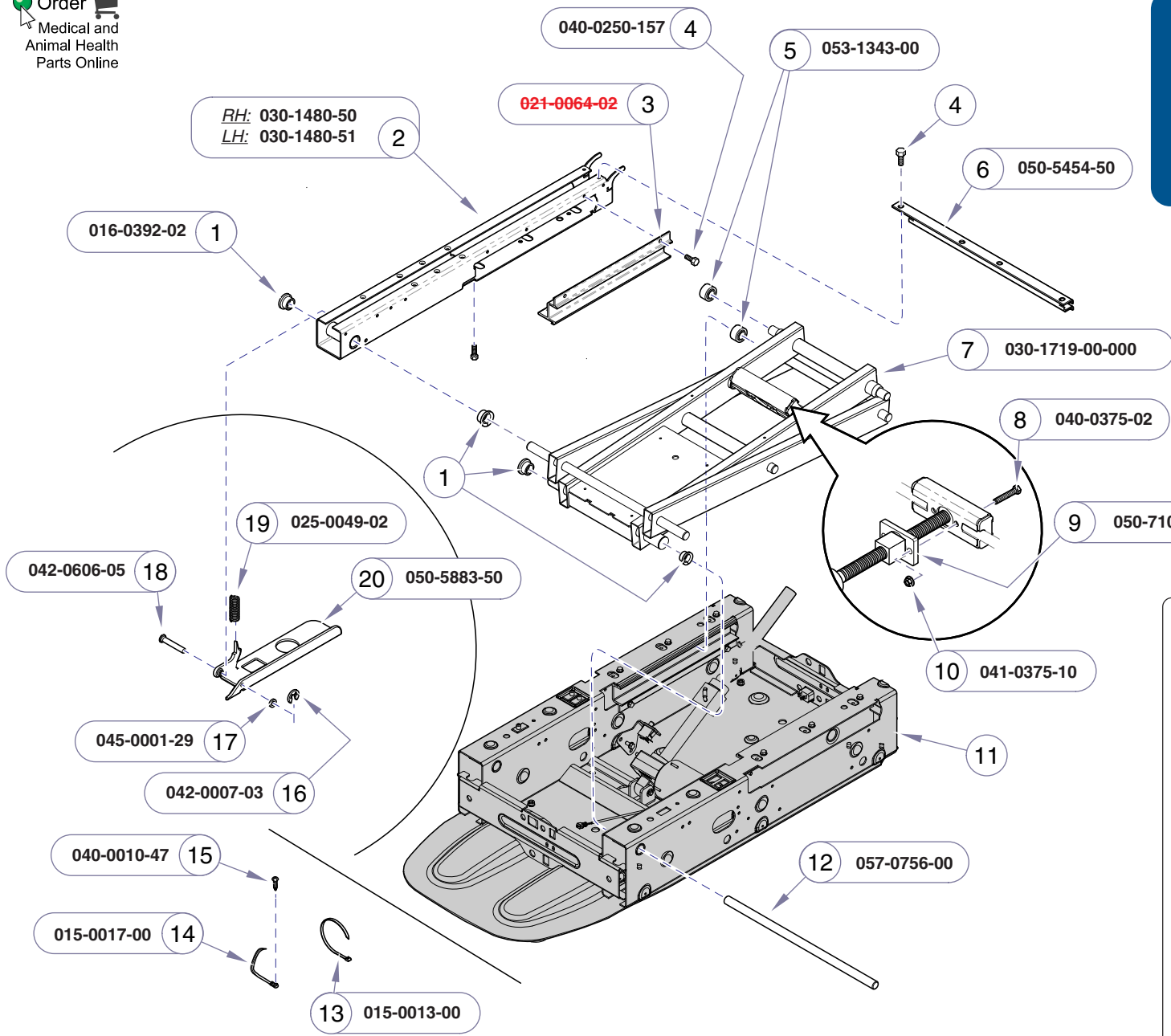


Item	Description	Qty.
1	Scissor Channel Weldment (RH shown) .....	2
2	Extrusion Slide .....	2
3	Flat Head Screw (1/4"-20 x 1/2") .....	4
4	Bearing Guide .....	4
5	Top Cover Support Channel .....	1
6	Flange Bearing .....	6
7	Scissor Arm Weldment Kit .....	1
8	Stub Shaft .....	2
9	Screw (1/4"-20 x 2.25") .....	2
10	Thru Block .....	1
11	Thru Block Bracket .....	1
12	Lock Nut (1/4"-20) .....	2
13	Refer to "Base Components" .....	Ref
14	Pivot Shaft .....	1
15	Cable Tie .....	1
16	Cable Tie w/screw hole .....	3
17	Screw (10-24 x .37") .....	3
<i>Items 18 thru 22 apply only to 623 models</i>		
18	E-clip .....	1
19	Washer .....	1
20	Auto-return Switch Strike .....	1
21	Clevis Pin .....	1
22	Spring .....	1

**Always Specify Model & Serial Number**

Models:	222 (all)	223 (all)	622 (all)	623 (all)
Serial Numbers:	V2200 through V489138	V2200 through V489138	V2200 through V489138	V2200 through V489138

**Base Scissor / Slide  
 Mechanism**



**Refer To:** Page

Base Components:

Ritter models ..... E-20\*

Midmark models ..... E-21\*

\* multiple pages due to model / serial # break

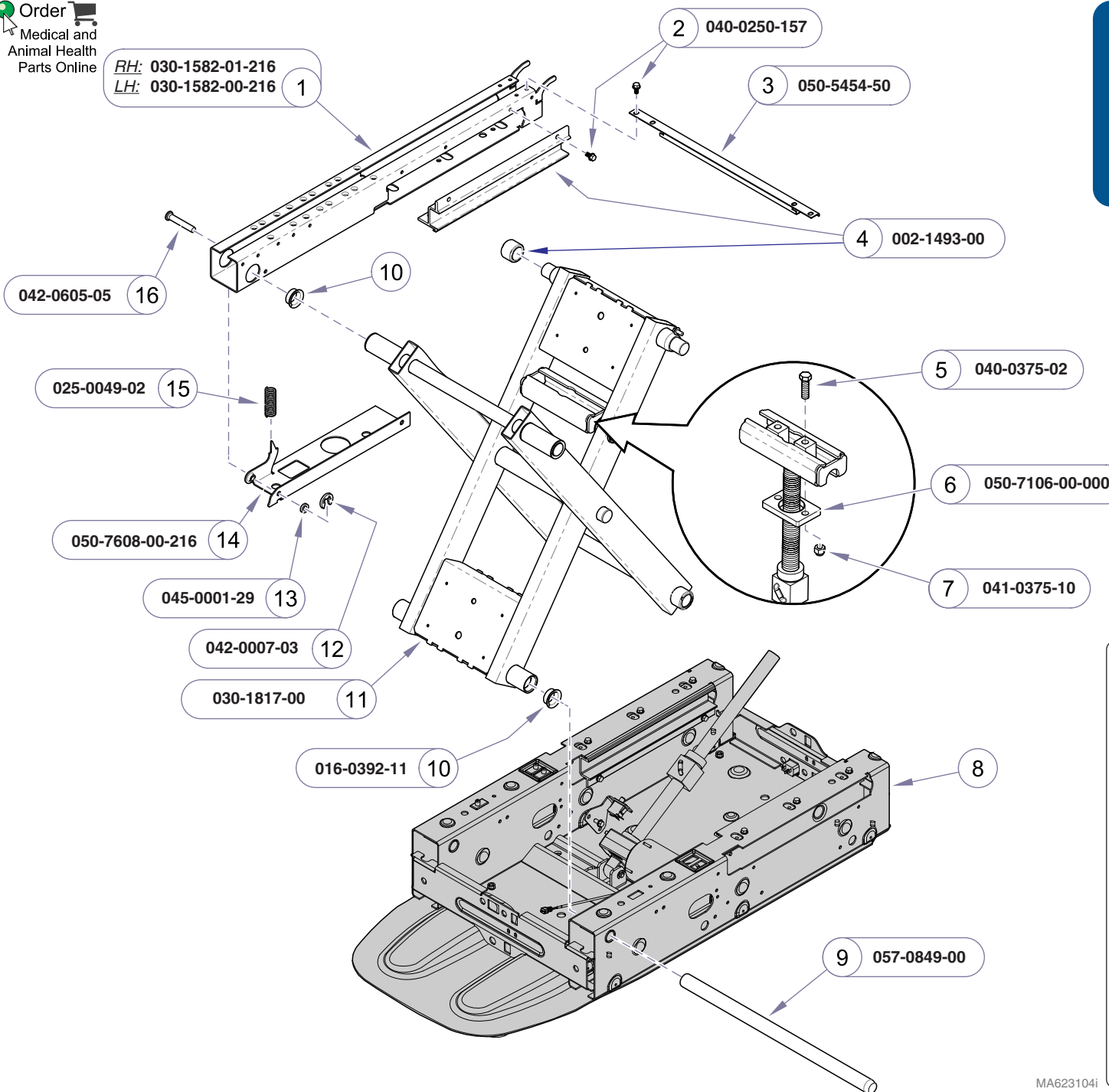
Item	Description	Qty.
1	Flange Bearing .....	6?
2	Scissor Channel Weldment (RH shown) .....	2
3	Extrusion Slide .....	2
4	Flat Head Screw (1/4-20 x 1/2") .....	4
5	Bearing Guide .....	4
6	Top Cover Support Channel .....	1
7	Scissor Arm Weldment Kit .....	1
8	Hex Bolt (3/8"-16 x 1 1/4") .....	2
9	Retaining Plate .....	1
10	Nut .....	2
11	Refer to "Base Components" .....	Ref
12	Pivot Shaft .....	1
13	Cable Tie .....	1
14	Cable Tie w/screw hole .....	3
15	Screw (10-24 x .37") .....	3
<i>Items 16 thru 20 apply only to 623 models</i>		
16	E-clip .....	1
17	Washer .....	1
18	Auto-return Switch Strike .....	1
19	Clevis Pin .....	1
20	Spring .....	1

**Always Specify Model & Serial Number**

**E-19.1** **Base Scissor / Slide Mechanism**

<b>Models:</b>	<b>222 (-015 thru -017)</b>	<b>223 (-015 &amp; -016)</b>	<b>622 (-007 &amp; -008)</b>	<b>623 (-007 thru -010)</b>
<b>Serial Numbers:</b>	V489139 thru V798445	V489139 thru V798445	V489139 thru V798445	V489139 thru V798445

RH: 030-1582-01-216  
 LH: 030-1582-00-216



**Refer To:** **Page**

Base Components:

Ritter models ..... E-20\*

Midmark models ..... E-21\*

\* multiple pages due to model / serial # break

Item	Description	Qty.
1	Scissor Channel Weldment (RH shown) ....	2
2	Flat Head Screw (1/4-20 x 1/2") .....	4
3	Top Cover Support Channel .....	1
4	Kit, Scissor Rollers .....	1
5	Hex Bolt (3/8"-16 x 1 1/4") .....	2
6	Retaining Plate .....	1
7	Nut .....	2
8	Refer to "Base Components" .....	Ref
9	Pivot Shaft .....	1
10	Flange Bearing .....	6
11	Scissor Arm Weldment Kit .....	1
<i>Items 12 thru 16 apply only to 623 models</i>		
12	E-clip .....	1
13	Washer .....	1
14	Auto-return Switch Strike .....	1
15	Spring .....	1
16	Clevis Pin .....	1

**Always Specify Model & Serial Number**

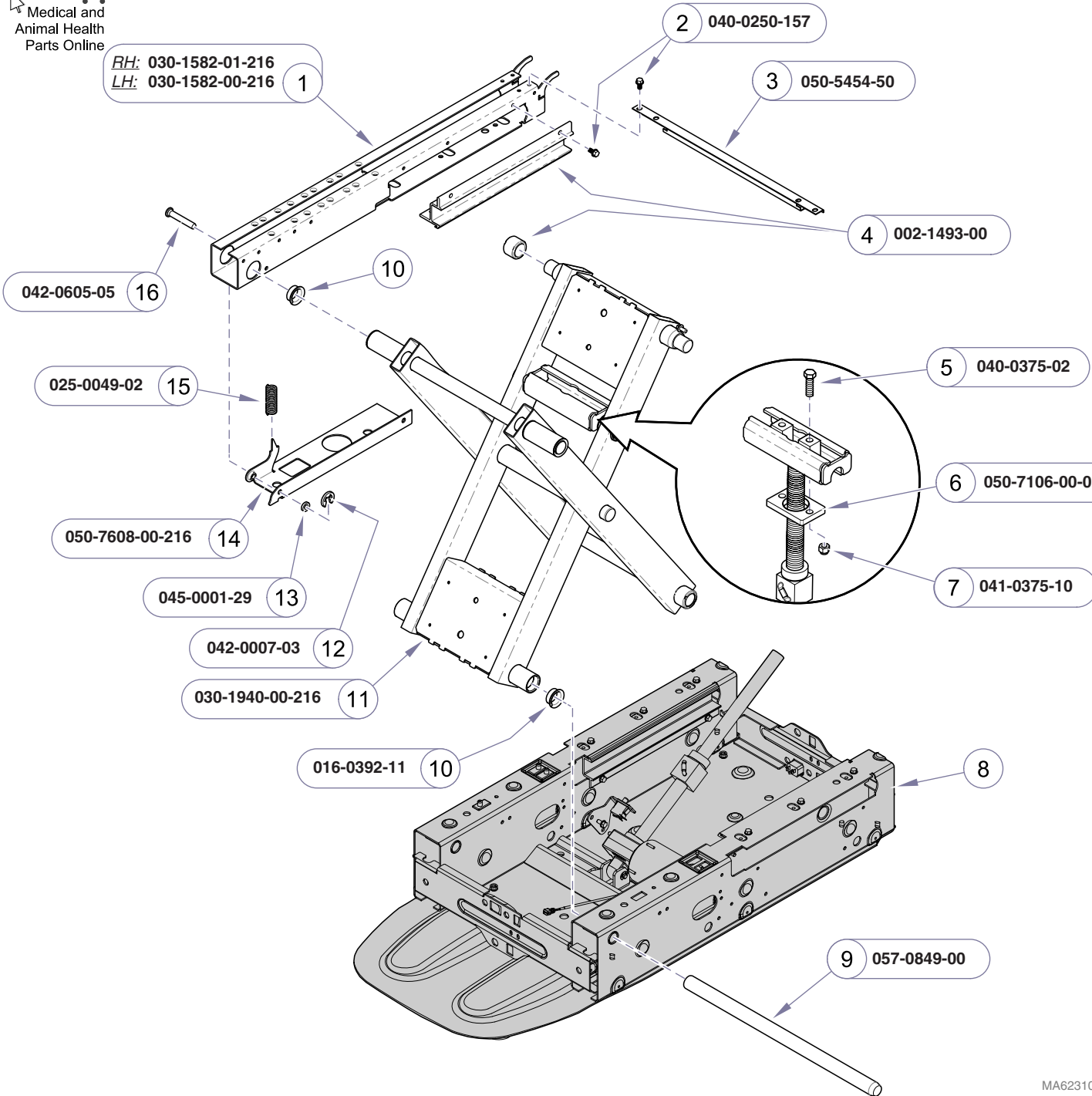
<b>Models:</b> 222 (-015 thru -017)	<b>223 (-015 &amp; -016)</b>	<b>622 (-007 &amp; -008)</b>	<b>623 (-007 thru -010)</b>
<b>Serial Numbers:</b> V798446 thru V897639	V798446 thru V897639	V798446 thru V897639	V798446 thru V897639

**Base Scissor / Slide  
 Mechanism**

**E-19.2**



RH: 030-1582-01-216  
 LH: 030-1582-00-216



**Refer To:** **Page**

**Base Components:**

Ritter models ..... E-20\*

Midmark models ..... E-21\*

\* multiple pages due to model / serial # break

Item	Description	Qty.
1	Scissor Channel Weldment (RH shown) .....	2
2	Flat Head Screw (1/4-20 x 1/2") .....	4
3	Top Cover Support Channel .....	1
4	Kit, Scissor Rollers .....	1
5	Hex Bolt (3/8"-16 x 1 1/4") .....	2
6	Retaining Plate .....	1
7	Nut .....	2
8	Refer to "Base Components" .....	Ref
9	Pivot Shaft .....	1
10	Flange Bearing .....	6
11	Scissor Arm Weldment Kit .....	1
<i>Items 12 thru 16 apply only to 623 models</i>		
12	E-clip .....	1
13	Washer .....	1
14	Auto-return Switch Strike .....	1
15	Spring .....	1
16	Clevis Pin .....	1

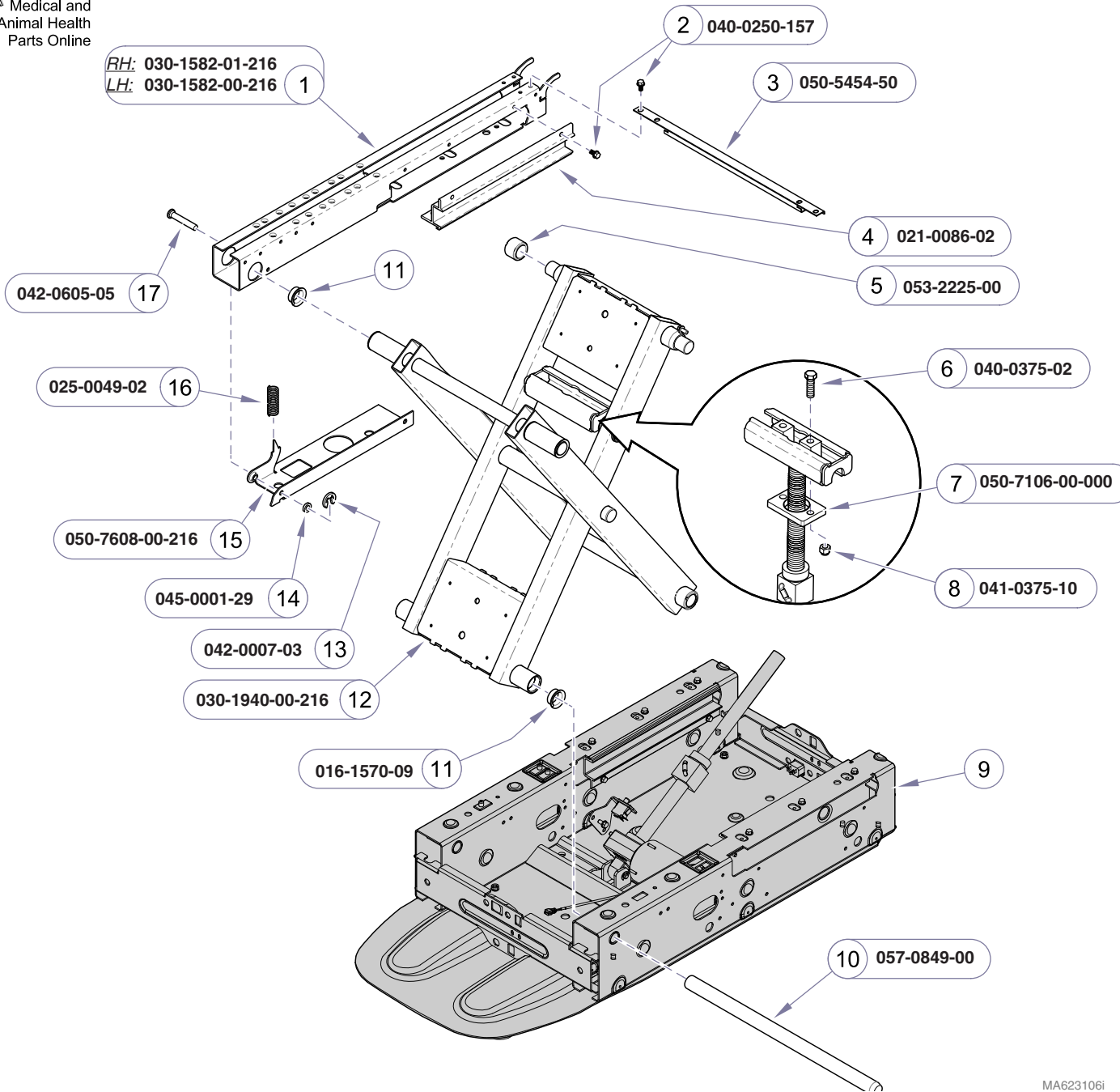
**Always Specify Model & Serial Number**

MA623105i

# E-19.3

## Base Scissor / Slide Mechanism

<b>Models:</b>	<b>222 (-015 thru -017)</b>	<b>223 (-015 &amp; -016)</b>	<b>622 (-007 &amp; -008)</b>	<b>623 (-007 thru -010)</b>
<b>Serial Numbers:</b>	V897640 thru V1158421	V897640 thru V1158421	V897640 thru V1158421	V897640 thru V1158421



**Refer To:** **Page**

Base Components:

Ritter models ..... E-20\*

Midmark models ..... E-21\*

\* multiple pages due to model / serial # break

Item	Description	Qty.
1	Scissor Channel Weldment (RH shown) .....	2
2	Flat Head Screw (1/4-20 x 1/2") .....	4
3	Top Cover Support Channel .....	1
4	Slide Extrusion .....	2
5	Bearing Guide .....	4
6	Hex Bolt (3/8"-16 x 1 1/4") .....	2
7	Retaining Plate .....	1
8	Nut .....	2
9	Refer to "Base Components" .....	Ref
10	Pivot Shaft .....	1
11	Flange Bearing .....	6
12	Scissor Arm Weldment Kit .....	1
<i>Items 13 thru 17 apply only to 623 models</i>		
13	E-clip .....	1
14	Washer .....	1
15	Auto-return Switch Strike .....	1
16	Spring .....	1
17	Clevis Pin .....	1

**Always Specify Model & Serial Number**

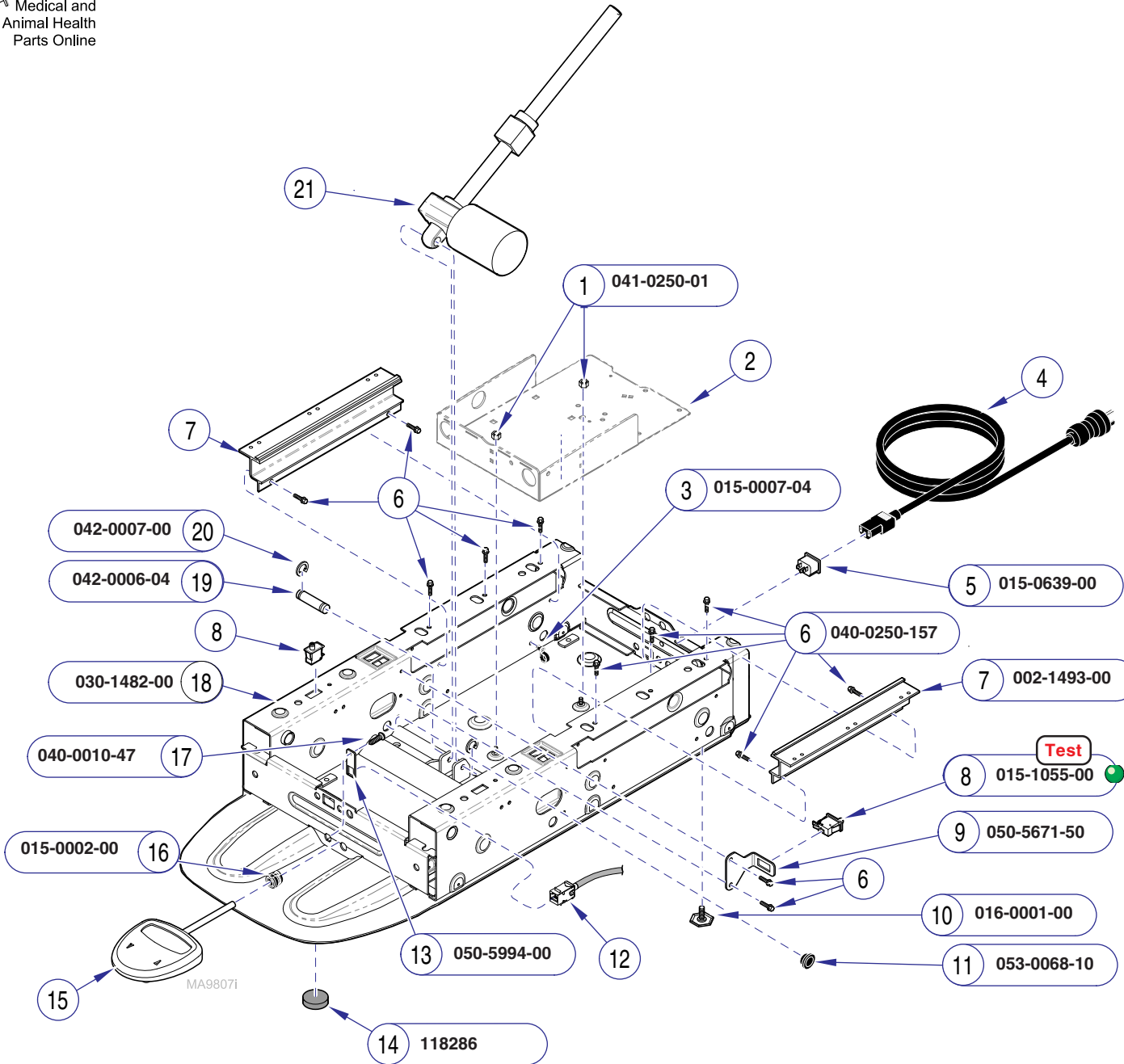
MA623106i

<b>Models:</b> 222 (-015 thru -017)	<b>223 (-015 &amp; -016)</b>	<b>622 (-007 &amp; -008)</b>	<b>623 (-007 thru -011)</b>
<b>Serial Numbers:</b> V1158422 thru Present	V1158422 thru Present	V1158422 thru Present	V1158422 thru Present

**Base Scissor / Slide  
 Mechanism**

**E-19.4**

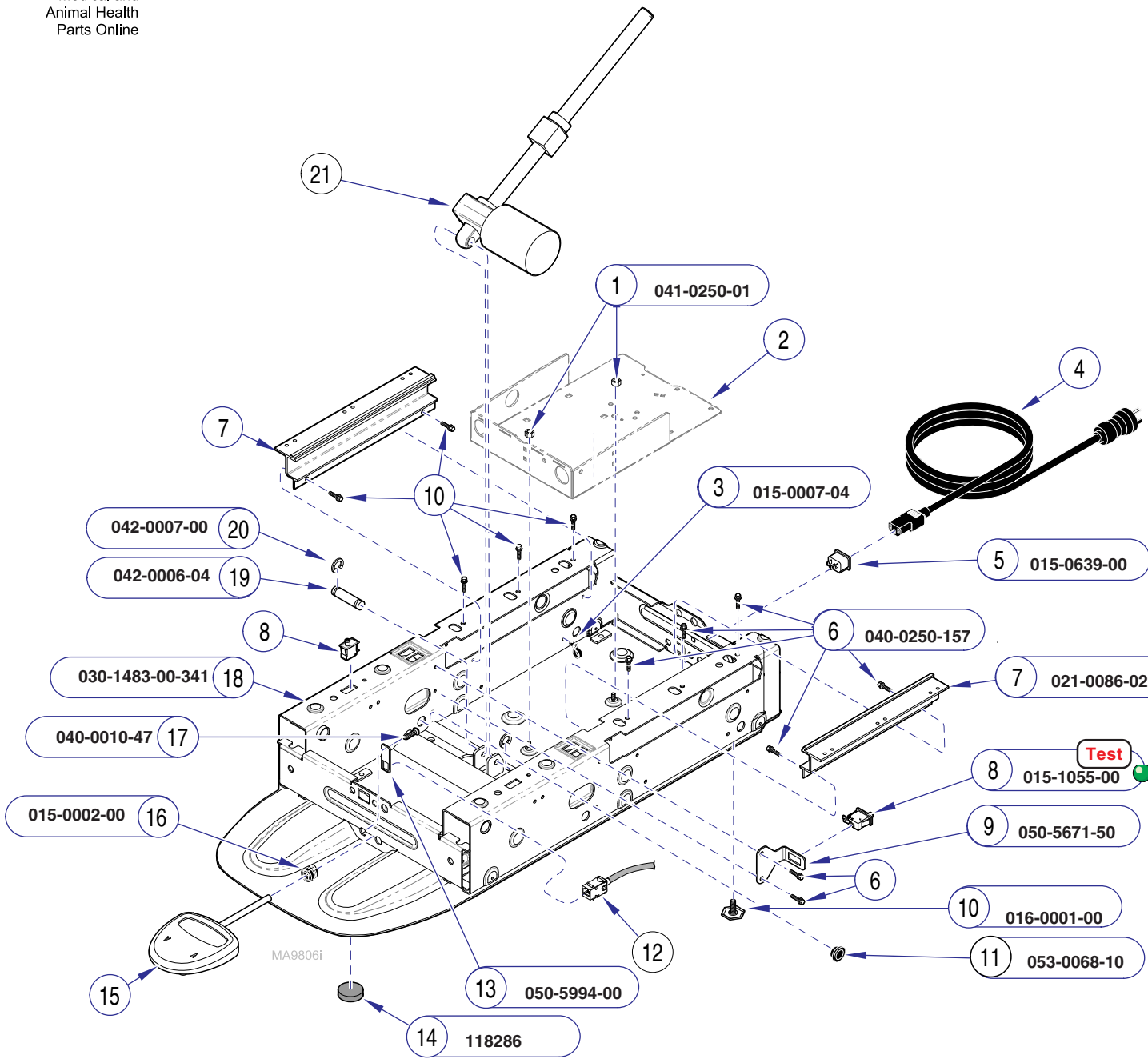




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223 .....	E-28
Base Actuator .....	E-22
PC Board Enclosure:	
Manual Back models .....	E-23
Power Back models .....	E-24
Power Cords .....	E-38

Item	Description	Qty.
1	Nut .....	2
2	Refer to: "PC board Enclosure" .....	Ref
3	Wrap-N-Tap Wire Clamp .....	3
4	Refer to: "Power Cords" .....	1
5	IEC Inlet .....	1
6	Screw .....	12
7	Kit, Scissor Rollers .....	1
8	Limit Switch .....	2
9	Limit Switch Bracket .....	1
10	Leveling Screw .....	2
11	Snap Bushing .....	1
12	Foot Control Inlet Harness (223 only) Ref: Wiring Diagrams for PN .....	Ref
13	Modular Plug Adapter Plate (223 only) .....	1
14	Non-Skid Pad .....	2
15	Refer to: "Foot Control" .....	Ref
16	Strain Relief Bushing (222 only) .....	1
17	Screw (223 only) .....	1
18	Base Weldment .....	1
19	Clevis Pin .....	1
20	E-Ring .....	2
21	Refer to: "Base Actuator" .....	Ref

**Always Specify Model & Serial Number**



Refer To:	Page
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Power Cords .....	E-38

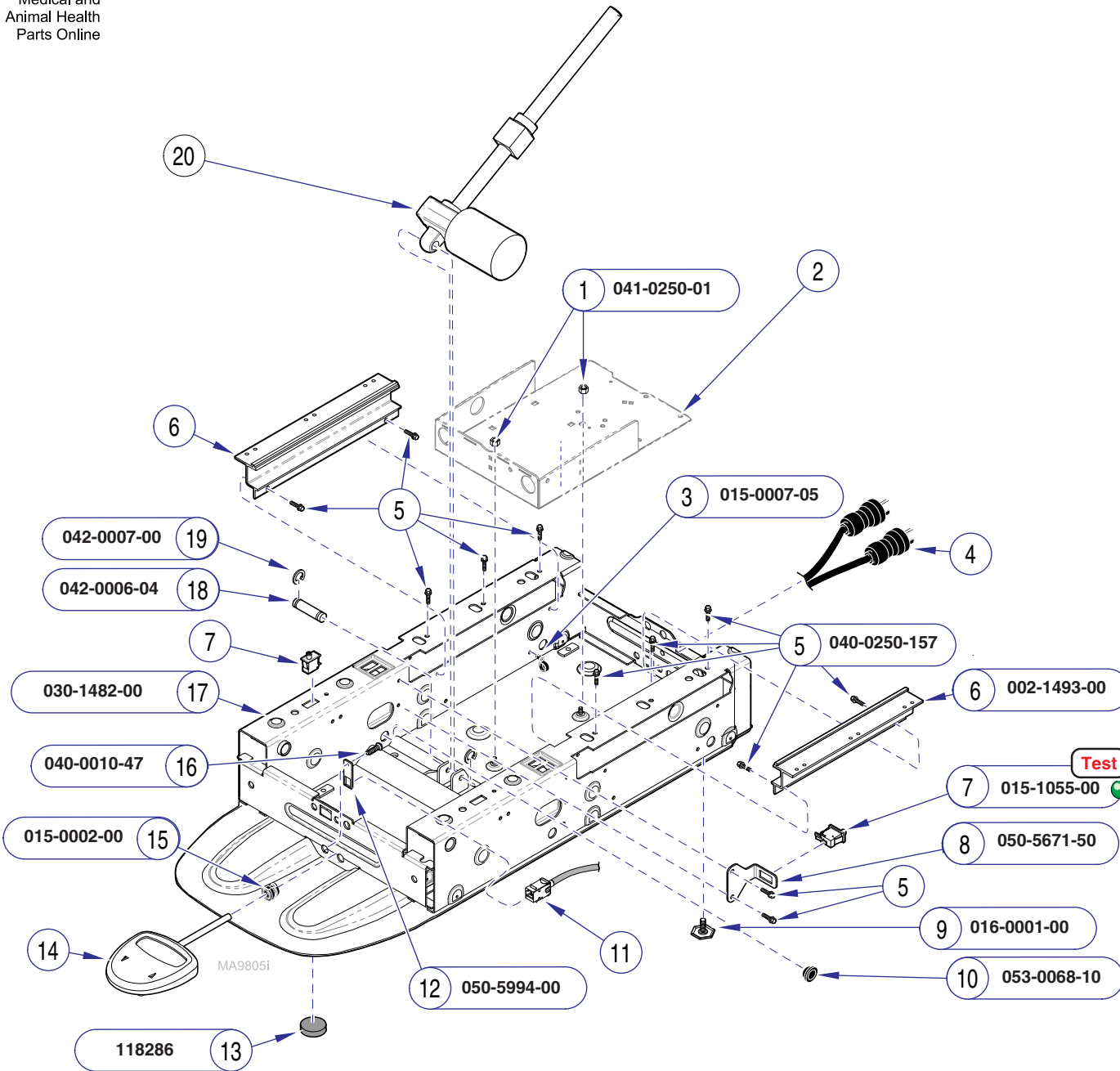
Item	Description	Qty.
1	Nut .....	2
2	Refer to: "PC board Enclosure" .....	Ref
3	Wrap-N-Tap Wire Clamp .....	3
4	Refer to: "Power Cords" .....	1
5	IEC Inlet .....	1
6	Screw .....	12
7	Slide Extrusion .....	2
8	Limit Switch .....	2
9	Limit Switch Bracket .....	1
10	Leveling Screw .....	2
11	Snap Bushing .....	1
12	Foot Control Inlet Harness (223 only) Ref: Wiring Diagrams for PN .....	Ref
13	Modular Plug Adapter Plate (223 only) .....	1
14	Non-Skid Pad .....	2
15	Refer to: "Foot Control" .....	Ref
16	Strain Relief Bushing (222 only) .....	1
17	Screw (223 only) .....	1
18	Base Weldment .....	1
19	Clevis Pin .....	1
20	E-Ring .....	2
21	Refer to: "Base Actuator" .....	Ref

Always Specify Model & Serial Number

**Models:** 222 (-017)  
 Serial Numbers: V1158422 thru V1182653

**Ritter Base  
 Components**

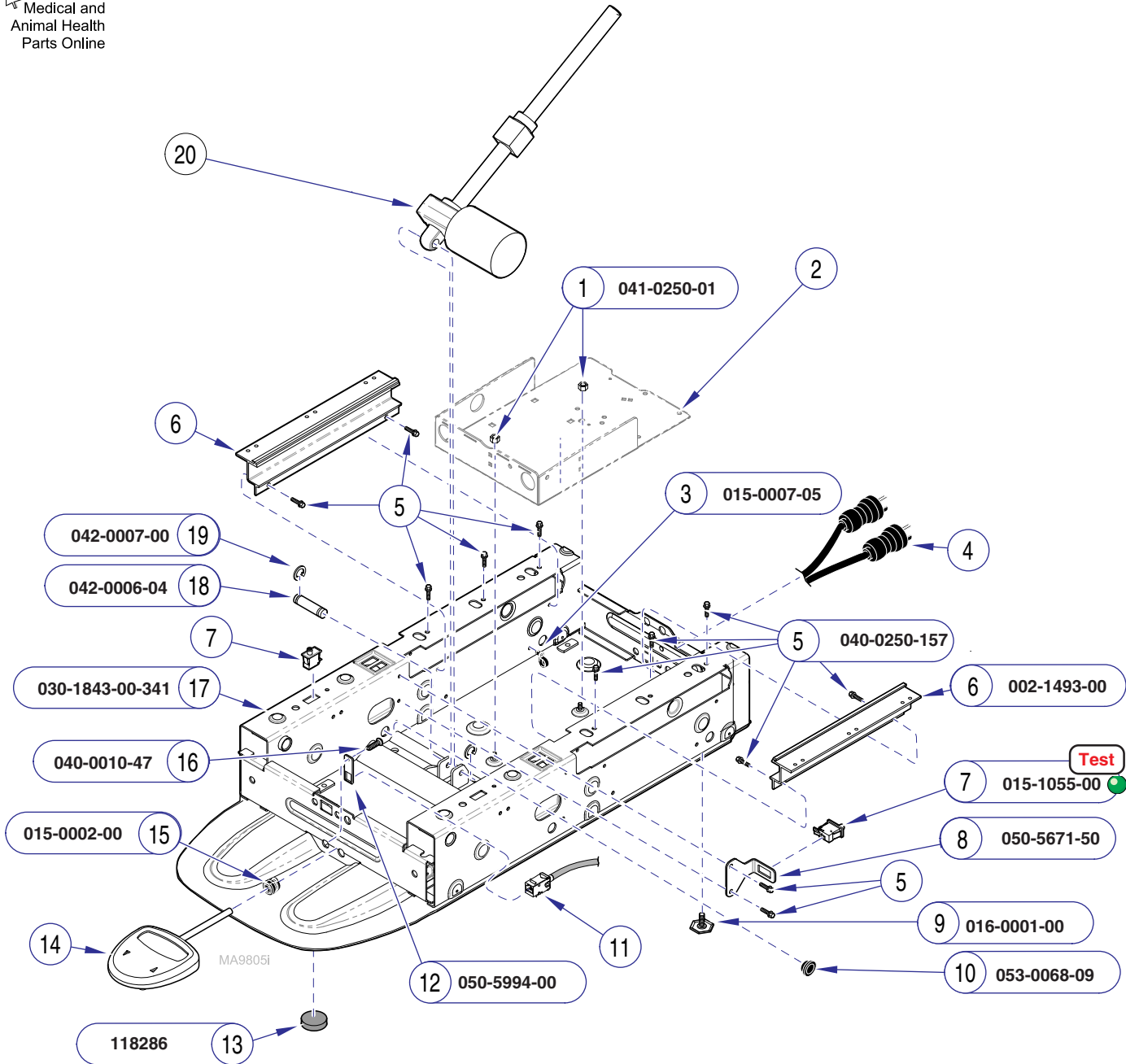
**E-20.1**



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PC Board Enclosure:	
Manual Back models .....	E-23
Power Back models .....	E-24
Power Cords .....	E-38

Item	Description	Qty.
1	Nut .....	2
2	Refer to: "PC board Enclosure" .....	Ref
3	Wrap-N-Tap Wire Clamp .....	3
4	Refer to: "Power Cords" .....	1
5	Screw .....	12
6	Kit, Scissor Roller .....	1
7	Limit Switch .....	2
8	Limit Switch Bracket .....	1
9	Leveling Screw .....	2
10	Snap Bushing .....	1
11	Foot Control Inlet Harness (223 Only) Ref: Wiring Diagrams for PN .....	Ref
12	Modular Plug Adapter Plate (223 only) .....	1
13	Non-Skid Pad .....	2
14	Refer to: "Foot Control" .....	Ref
15	Strain Relief Bushing (222 only) .....	1
16	Screw (223 only) .....	1
17	Base Weldment .....	1
18	Clevis Pin .....	2
19	E-Ring .....	1
20	Refer to: "Base Actuator" .....	Ref

Always Specify Model & Serial Number



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PC Board Enclosure:	
Manual Back models .....	E-23
Power Back models .....	E-24
PowerCords .....	E-38

Item	Description	Qty.
1	Nut .....	2
2	Refer to: "PC board Enclosure" .....	Ref
3	Wrap-N-Tap Wire Clamp .....	3
4	Refer to: "Power Cords" .....	1
5	Screw .....	12
6	Kit, Scissor Rollers .....	1
7	Limit Switch .....	2
8	Limit Switch Bracket .....	1
9	Leveling Screw .....	2
10	Snap Bushing .....	1
11	Foot Control Inlet Harness (223 Only) Ref: Wiring Diagrams for PN .....	Ref
12	Modular Plug Adapter Plate (223 only) .....	1
13	Non-Skid Pad .....	2
14	Refer to: "Foot Control" .....	Ref
15	Strain Relief Bushing (222 only) .....	1
16	Screw (223 only) .....	1
17	Base Weldment .....	1
18	Clevis Pin .....	1
19	E-Ring .....	2
20	Refer to: "Base Actuator" .....	Ref

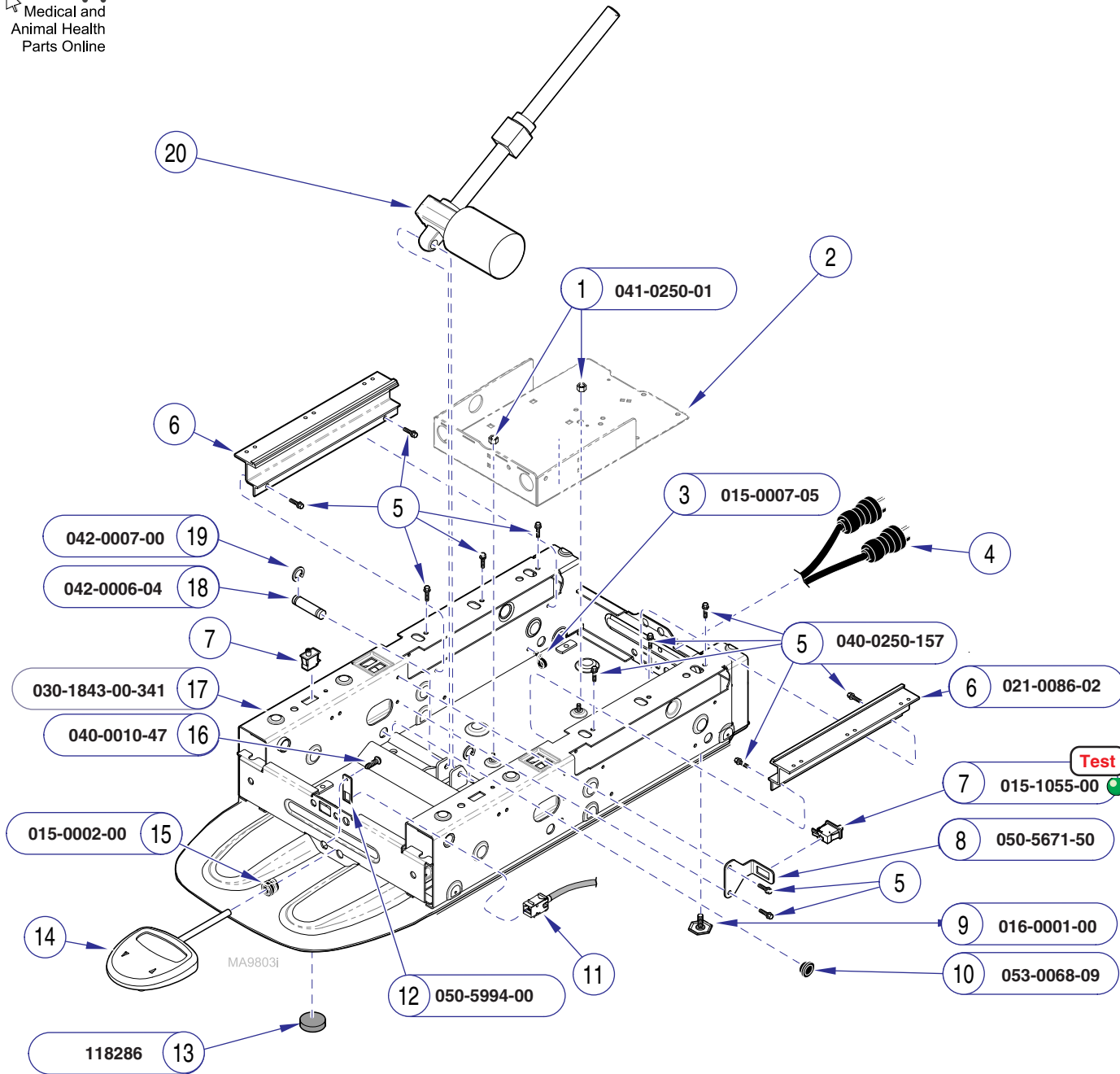
Always Specify Model & Serial Number

**Models:** 222 (-015 & -016)  
 Serial Numbers: V798446 thru V1158421

223 (-015 & -016)  
 V798446 thru V1158421

**Ritter Base  
 Components**

**E-20.3**

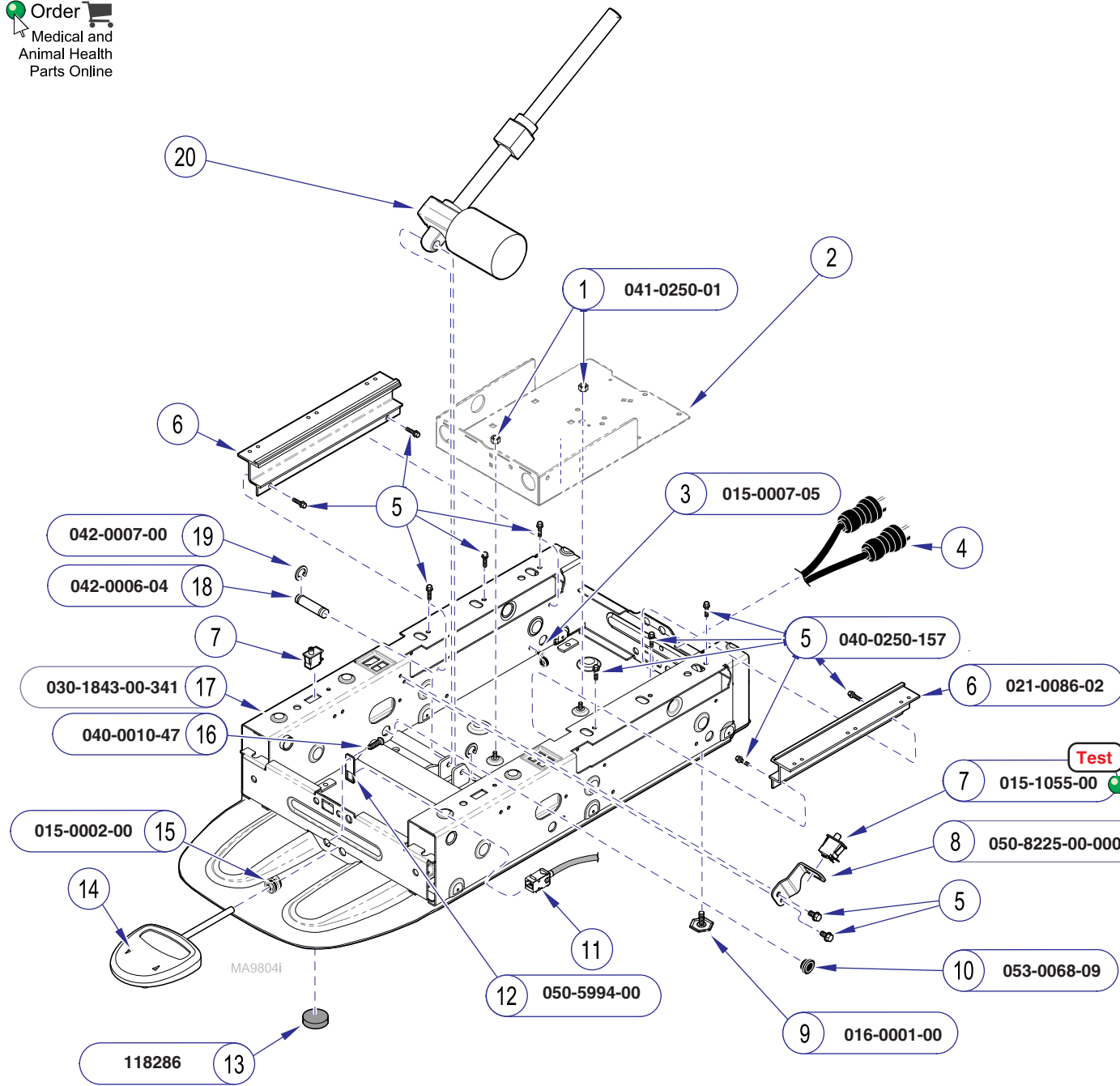


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PC Board Enclosure:	
Manual Back models .....	E-23
Power Back models .....	E-24
PowerCords .....	E-38

Item	Description	Qty.
1	Nut .....	2
2	Refer to: "PC board Enclosure" .....	Ref
3	Wrap-N-Tap Wire Clamp .....	3
4	Refer to: "Power Cords" .....	1
5	Screw .....	12
6	Slide Extrusion .....	2
7	Limit Switch .....	2
8	Limit Switch Bracket .....	1
9	Leveling Screw .....	2
10	Snap Bushing .....	1
11	Foot Control Inlet Harness (223 Only) Ref: Wiring Diagrams for PN .....	Reff
12	Modular Plug Adapter Plate (223 only) .....	1
13	Non-Skid Pad .....	2
14	Refer to: "Foot Control" .....	Ref
15	Strain Relief Bushing (222 only) .....	1
16	Screw (223 only) .....	1
17	Base Weldment .....	1
18	Clevis Pin .....	1
19	E-Ring .....	2
20	Refer to: "Base Actuator" .....	Ref

Always Specify Model & Serial Number





Refer To:	Page
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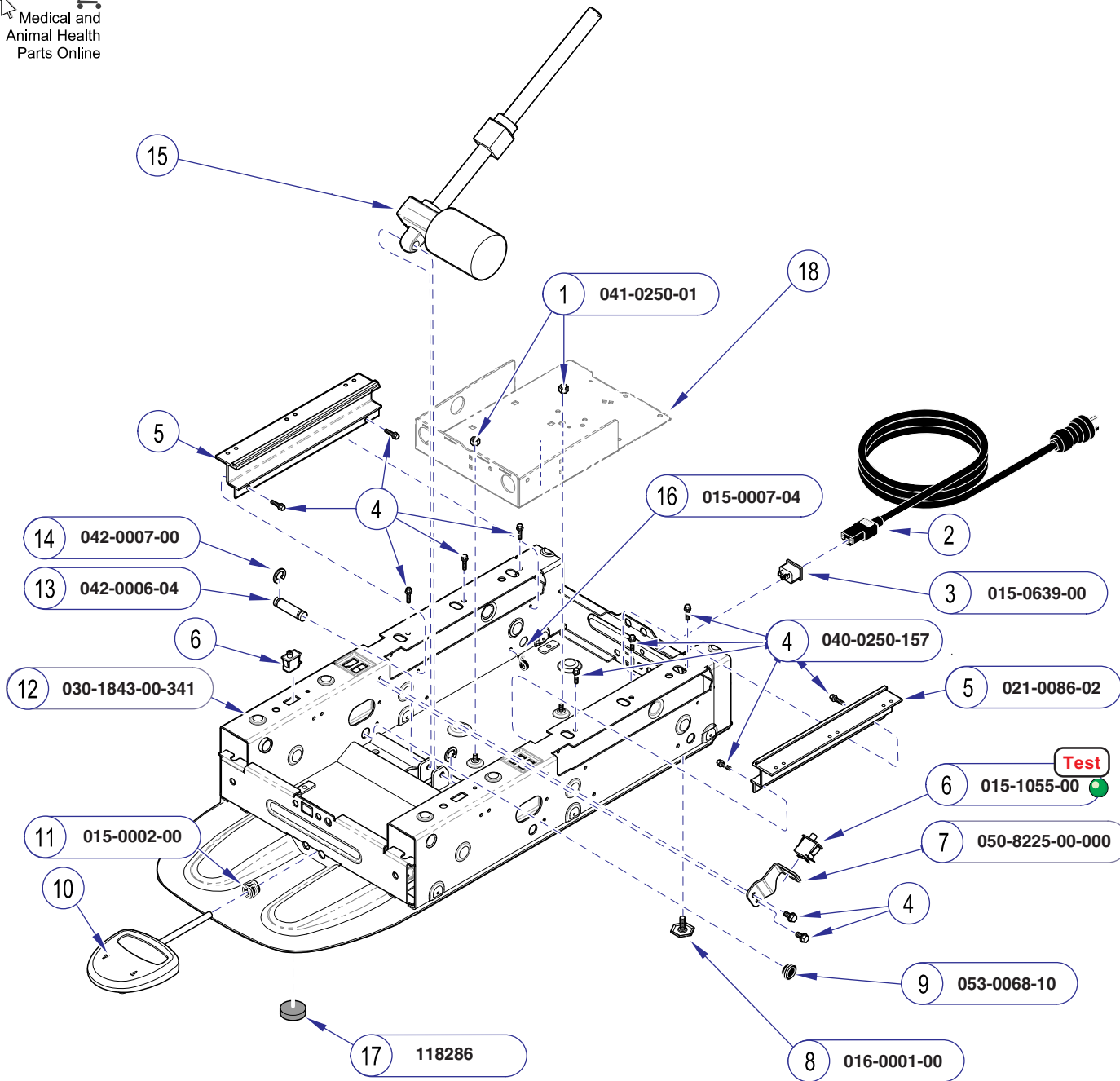
Item	Description	Qty.
1	Nut .....	2
2	Refer to: "PC board Enclosure" .....	Ref
3	Wrap-N-Tap Wire Clamp .....	3
4	Refer to: "Power Cords" .....	1
5	Screw .....	12
6	Slide Extrusion .....	2
7	Limit Switch .....	2
8	Limit Switch Bracket .....	1
9	Leveling Screw .....	2
10	Snap Bushing .....	1
11	Foot Control Inlet Harness (223 Only) Ref: Wiring Diagrams for PN .....	Ref
12	Modular Plug Adapter Plate (223 only) .....	1
13	Non-Skid Pad .....	2
14	Refer to: "Foot Control" .....	Ref
15	Strain Relief Bushing (222 only) .....	1
16	Screw (223 only) .....	1
17	Base Weldment .....	1
18	Clevis Pin .....	1
19	E-Ring .....	2
20	Refer to: "Base Actuator" .....	Ref

Always Specify Model & Serial Number

**Models:**  
 Serial Numbers:    **222 (-016)**    **223 (-016)**  
                           V1182654 thru Present    V1182654 thru Present

**Ritter Base  
 Components**

**E-20.5**



MA8445i

Refer To:	Page
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PowerCords .....	E-38

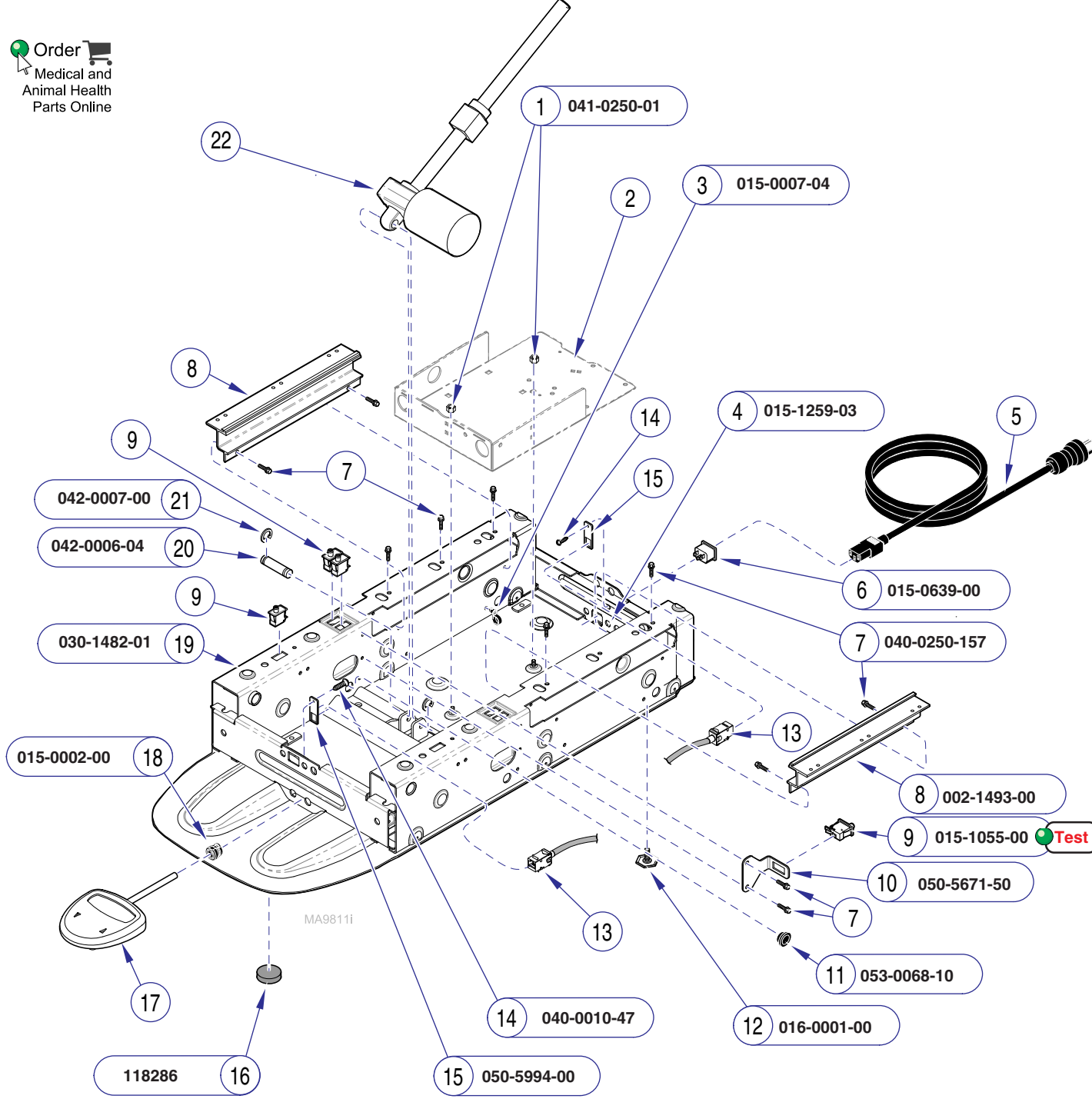
Item	Description	Qty.
1	Nut .....	2
2	Refer to: "Power Cords" .....	1
3	IEC Inlet .....	1
4	Screw .....	12
5	Slide Extrusion .....	2
6	Limit Switch .....	2
7	Limit Switch Bracket .....	1
8	Leveling Screw .....	2
9	Snap Bushing .....	1
10	Refer to: "Foot Control" .....	Ref
11	Strain Relief Bushing .....	1
12	Base Weldment .....	1
13	Clevis Pin .....	1
14	E-Ring .....	2
15	Refer to: "Base Actuator" .....	Ref
16	Wrap-N-Tap Wire Clamp .....	3
17	Non-Skid Pad .....	2
18	Refer to: "PC board Enclosure" .....	Ref

**Always Specify Model & Serial Number**

# E-20.6

## Ritter Base Components

**Models:** 222 (-017)  
**Serial Numbers:** V1182654 thru Present



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Base Actuator .....	E-22
PC Board Enclosure:	
Manual Back models .....	E-23
Power Back models .....	E-24
Power Cords .....	E-38

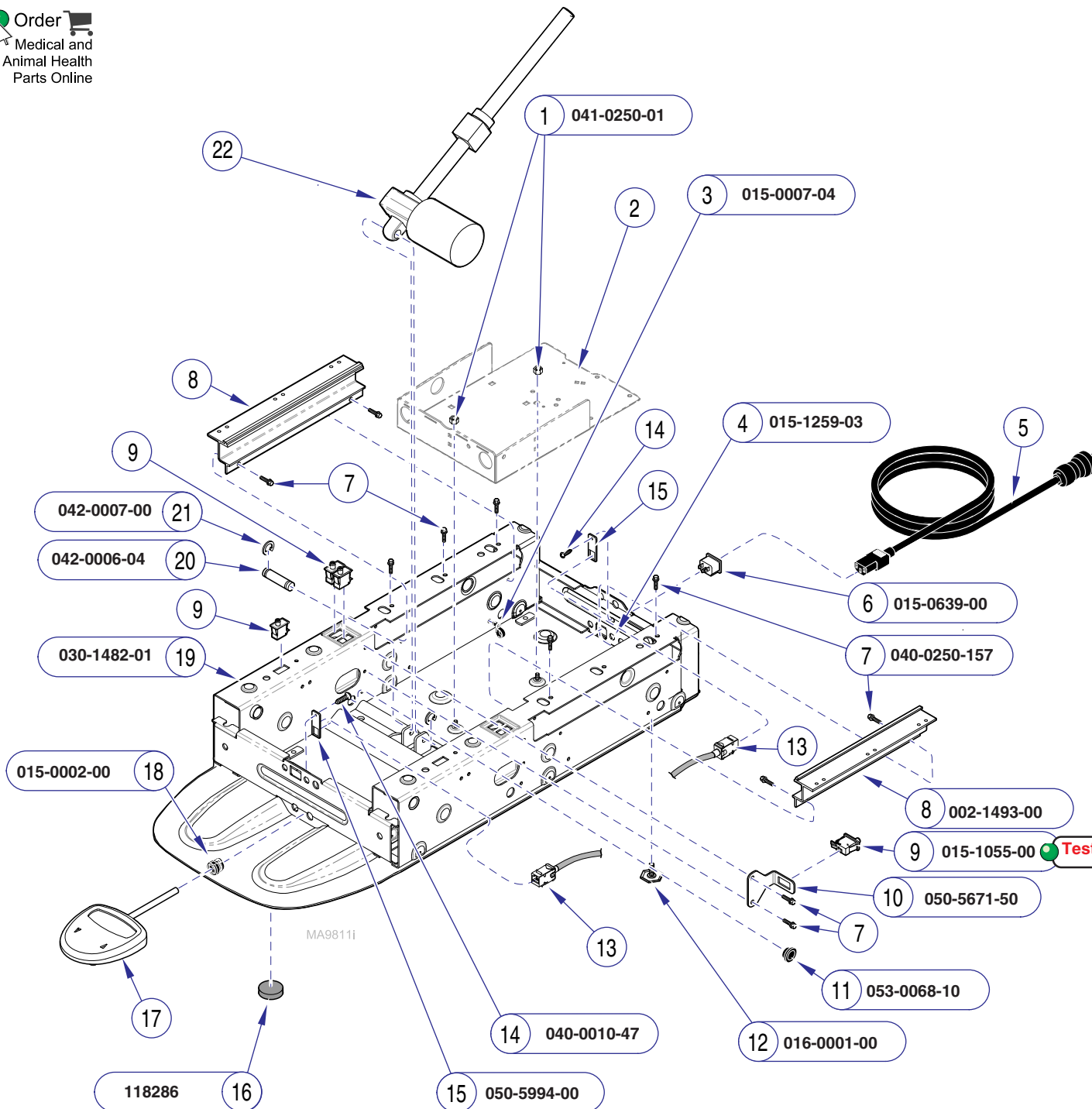
Item	Description	Qty.
1	Nut .....	2
2	Refer to: "PC board Enclosure" .....	Ref
3	Wrap-N-Tap Wire Clamp .....	3
4	Fuseholder (622 & 623-003/-004) .....	2
5	Refer to: "Power Cords" .....	Ref
6	IEC Inlet .....	1
7	Screw .....	12
8	Kit, Scissor Rollers .....	1
9	Limit Switch .....	4
10	Limit Switch Bracket .....	1
11	Snap Bushing .....	1
12	Leveling Screw .....	2
13	Foot Control Inlet Harness (622 & 623) Ref: Wiring Diagrams for PN .....	Ref
14	Screw (622) .....	1
15	Screw (623) .....	2
16	Modular Plug Adapter Plate (622) .....	1
17	Modular Plug Adapter Plate (623) .....	2
18	Non-Skid Pad .....	2
19	Refer to: "Foot Control" .....	Ref
20	Strain Relief Bushing (622 only) .....	1
21	Base Weldment .....	1
22	Clevis Pin .....	1
23	E-Ring .....	2
24	Refer to: "Base Actuator" .....	Ref

Always Specify Model & Serial Number

**Models:** 623 (-009 & -010)  
**Serial Numbers:** V58464 thru V1158421

**Midmark Base  
 Components**





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Manual Back models .....	E-23
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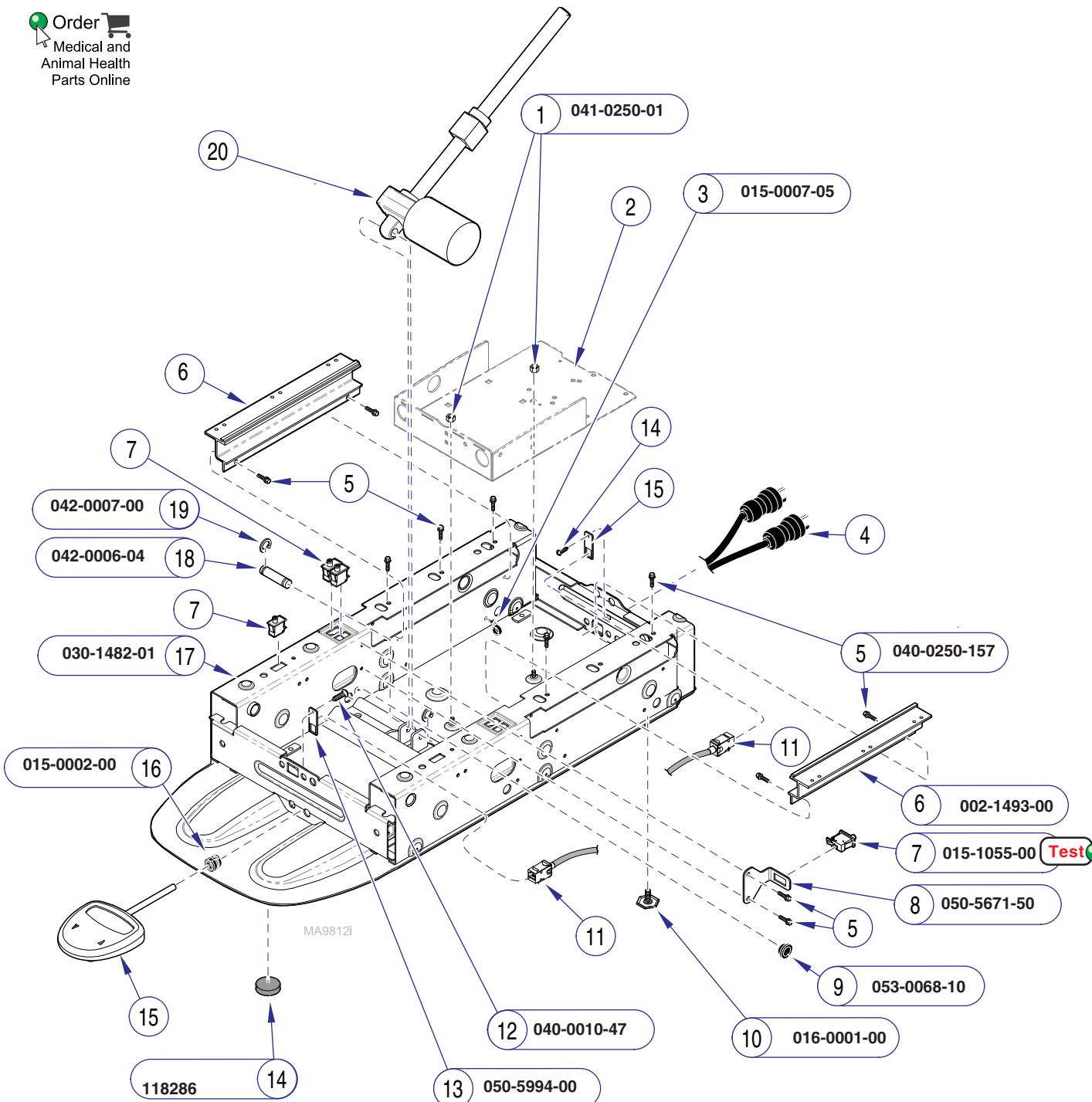
Item	Description	Qty.
1	Nut .....	2
2	Refer to: "PC board Enclosure" .....	Ref
3	Wrap-N-Tap Wire Clamp .....	3
4	Fuseholder (622 & 623-003/-004) .....	2
5	Refer to: "Power Cords" .....	Ref
6	IEC Inlet .....	1
7	Screw .....	12
8	Kit, Scissor Rollers .....	1
9	Limit Switch .....	4
10	Limit Switch Bracket .....	1
11	Snap Bushing .....	1
12	Leveling Screw .....	2
13	Foot Control Inlet Harness Ref: <i>Wiring Diagrams for PN</i> .....	Ref
14	Screw (622) .....	1
	Screw (623) .....	2
15	Modular Plug Adapter Plate (622) .....	1
	Modular Plug Adapter Plate (623) .....	2
16	Non-Skid Pad .....	2
17	Refer to: "Foot Control" .....	Ref
18	Strain Relief Bushing (622 only) .....	1
19	Base Weldment .....	1
20	Clevis Pin .....	1
21	E-Ring .....	2
22	Refer to: "Base Actuator" .....	Ref

Always Specify Model & Serial Number

# E-21.1

## Midmark Base Components

**Models:** 623 (-009 & -010)  
**Serial Numbers:** V1158422 thru V1182653



Refer To:	Page
Limit Switch <b>Test</b> .....	B-5
Wiring Diagrams .....	D-1
Foot Control:	
222 / 622 .....	E-27
623 .....	E-29
Base Actuator .....	E-22
PC Board Enclosure:	
Manual Back models .....	E-23
Power Back models .....	E-24
PowerCords .....	E-38

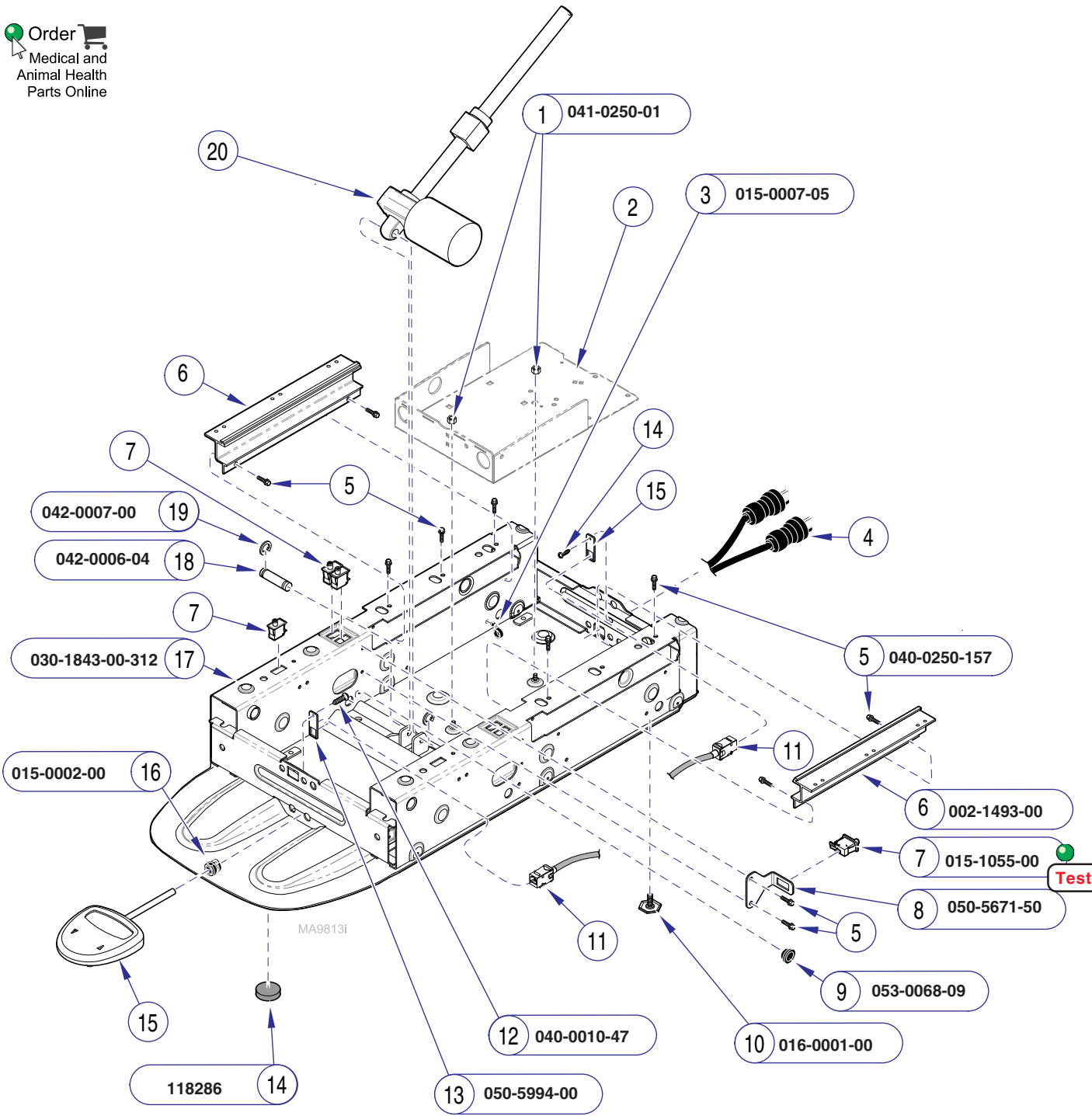
Item	Description	Qty.
1	Nut .....	2
2	Refer to: "PC board Enclosure" .....	Ref
3	Wrap-N-Tap Wire Clamp .....	3
4	Refer to: "Power Cords" .....	Ref
5	Screw .....	12
6	Kit, Scissor Rollers .....	1
7	Limit Switch .....	4
8	Limit Switch Bracket .....	1
9	Snap Bushing .....	1
10	Leveling Screw .....	2
11	Foot Control Inlet Harness (622 & 623) Ref: Wiring Diagrams for PN .....	Ref
12	Screw (622) .....	1
	Screw (623) .....	2
13	Modular Plug Adapter Plate (622) .....	1
	Modular Plug Adapter Plate (623) .....	2
14	Non-Skid Pad .....	2
15	Refer to: "Foot Control" .....	Ref
16	Strain Relief Bushing (622 only) .....	1
17	Base Weldment .....	1
18	Clevis Pin .....	1
19	E-Ring .....	2
20	Refer to: "Base Actuator" .....	Ref

Always Specify Model & Serial Number

**Models:** 622 (-007 & -008) | 623 (-007 & -008)  
**Serial Numbers:** V58464 thru V798445 | V58464 thru V798445

**Midmark Base  
 Components**

**E-21.2**



Refer To:	Page
Limit Switch <b>Test</b> .....	B-5
Wiring Diagrams .....	D-1
Foot Control:	
222 / 622 .....	E-27
623 .....	E-29
Base Actuator .....	E-22
PC Board Enclosure:	
Manual Back models .....	E-23
Power Back models .....	E-24
Power Cords .....	E-38

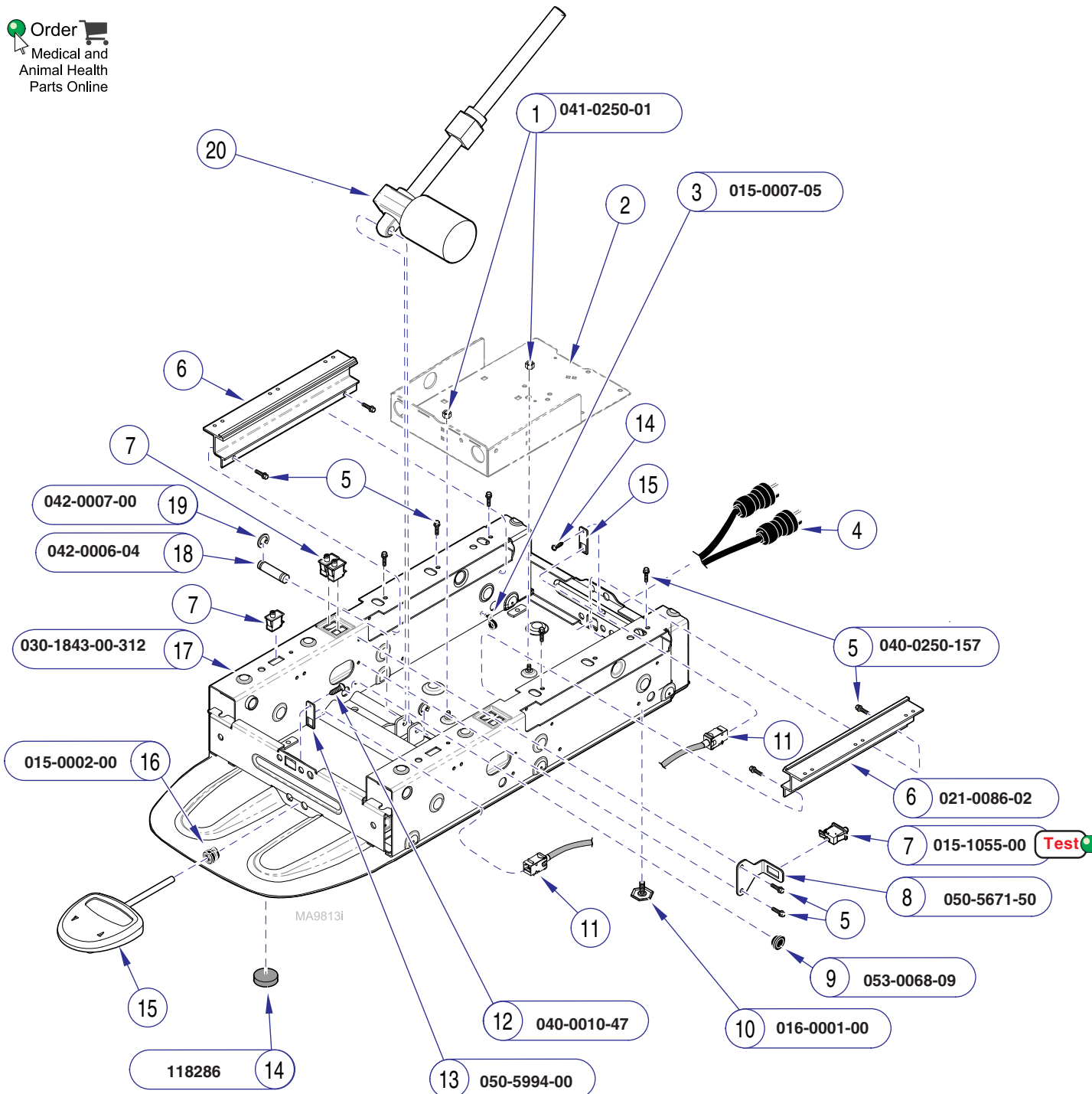
Item	Description	Qty.
1	Nut .....	2
2	Refer to: "PC board Enclosure" .....	Ref
3	Wrap-N-Tap Wire Clamp .....	3
4	Refer to: "Power Cords" .....	Ref
5	Screw .....	12
6	Kit, Scissor Rollers .....	1
7	Limit Switch .....	4
8	Limit Switch Bracket .....	1
9	Snap Bushing .....	1
10	Leveling Screw .....	2
11	Foot Control Inlet Harness	
	Ref: <i>Wiring Diagrams for PN</i> .....	Ref
12	Screw (622) .....	1
	Screw (623) .....	2
13	Modular Plug Adapter Plate (622) .....	1
	Modular Plug Adapter Plate (623) .....	2
14	Non-Skid Pad .....	2
15	Refer to: "Foot Control" .....	Ref
16	Strain Relief Bushing (622 only) .....	1
17	Base Weldment .....	1
18	Clevis Pin .....	1
19	E-Ring .....	2
20	Refer to: "Base Actuator" .....	Ref

**Always Specify Model & Serial Number**

# E-21.3

## Midmark Base Components

**Models:** 622 (-007 & -008) | 623 (-007 & -008)  
**Serial Numbers:** V798446 thru V1158421 | V798446 thru V1158421



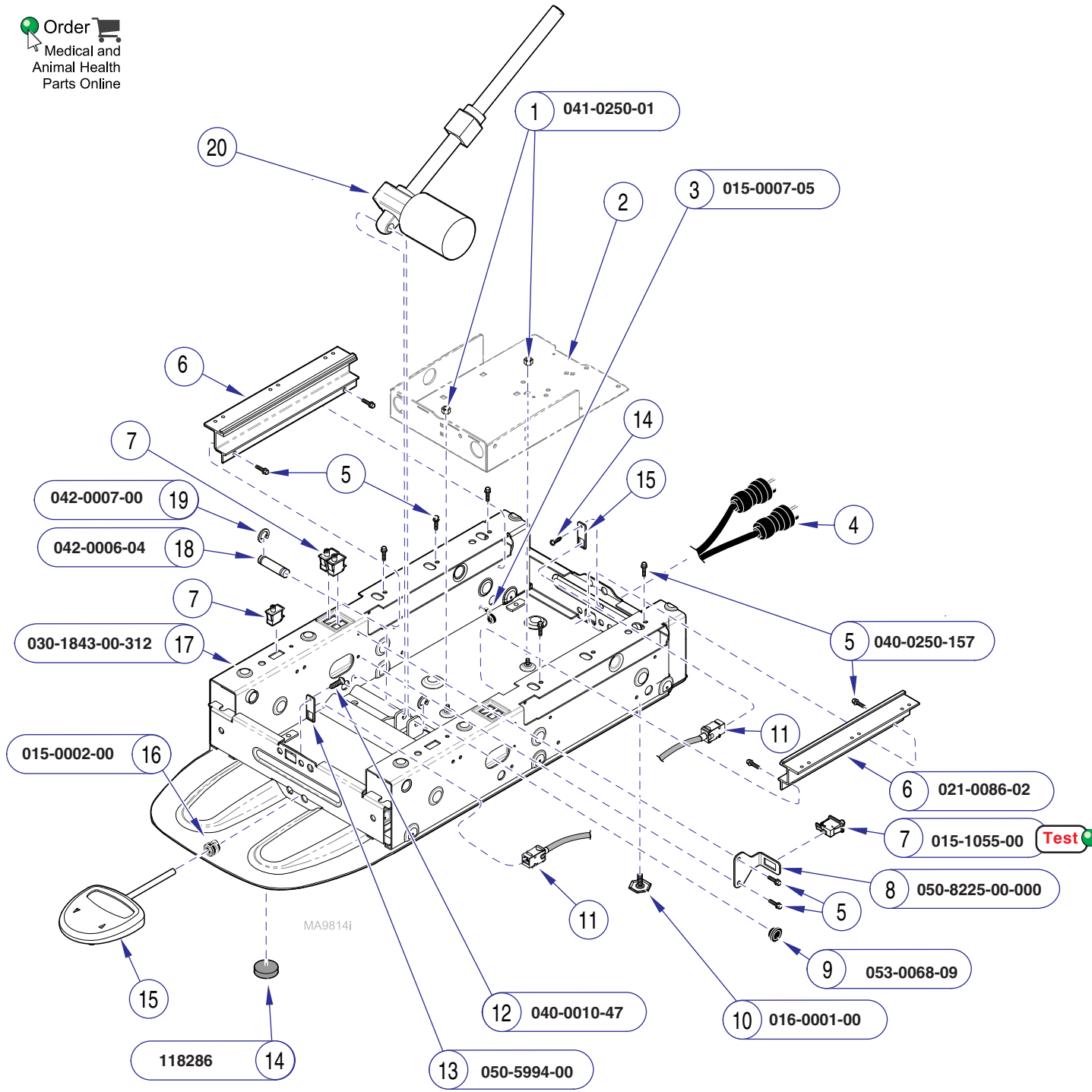
Refer To:	Page
Limit Switch <b>Test</b> .....	B-5
Wiring Diagrams .....	D-1
Foot Control:	
222 / 622 .....	E-27
623 .....	E-29
Base Actuator .....	E-22
PC Board Enclosure:	
Manual Back models .....	E-23
Power Back models .....	E-24
Power Cords .....	E-38

Item	Description	Qty.
1	Nut .....	2
2	Refer to: "PC board Enclosure" .....	Ref
3	Wrap-N-Tap Wire Clamp .....	3
4	Refer to: "Power Cords" .....	Ref
5	Screw .....	12
6	Kit, Scissor Rollers .....	1
7	Limit Switch .....	4
8	Limit Switch Bracket .....	1
9	Snap Bushing .....	1
10	Leveling Screw .....	2
11	Foot Control Inlet Harness (622 & 623) Ref: Wiring Diagrams for PN .....	Ref
12	Screw (622) .....	1
	Screw (623) .....	2
13	Modular Plug Adapter Plate (622) .....	1
	Modular Plug Adapter Plate (623) .....	2
14	Non-Skid Pad .....	2
15	Refer to: "Foot Control" .....	Ref
16	Strain Relief Bushing (622 only) .....	1
17	Base Weldment .....	1
18	Clevis Pin .....	1
19	E-Ring .....	2
20	Refer to: "Base Actuator" .....	Ref

**Always Specify Model & Serial Number**

**Models:**     **622 (-007 & -008)**     **623 (-007 & -008)**  
**Serial Numbers:**     V1158422 thru V1182653     V1158422 thru V1182653

**Midmark Base  
 Components**     **E-21.4**



Refer To:	Page
Limit Switch Test .....	B-5
Wiring Diagrams .....	D-1
Foot Control:	
222 / 622 .....	E-27
623 .....	E-29
Base Actuator .....	E-22
PC Board Enclosure:	
Manual Back models .....	E-23
Power Back models .....	E-24
PowerCords .....	E-38

Item	Description	Qty.
1	Nut .....	2
2	Refer to: "PC board Enclosure" .....	Ref
3	Wrap-N-Tap Wire Clamp .....	3
4	Refer to: "Power Cords" .....	Ref
5	Screw .....	12
6	Kit, Scissor Rollers .....	1
7	Limit Switch .....	4
8	Limit Switch Bracket .....	1
9	Snap Bushing .....	1
10	Leveling Screw .....	2
11	Foot Control Inlet Harness (622 & 623) Ref: Wiring Diagrams for PN .....	Ref
12	Screw (622) .....	1
	Screw (623) .....	2
13	Modular Plug Adapter Plate (622) .....	1
	Modular Plug Adapter Plate (623) .....	2
14	Non-Skid Pad .....	2
15	Refer to: "Foot Control" .....	Ref
16	Strain Relief Bushing (622 only) .....	1
17	Base Weldment .....	1
18	Clevis Pin .....	1
19	E-Ring .....	2
20	Refer to: "Base Actuator" .....	Ref

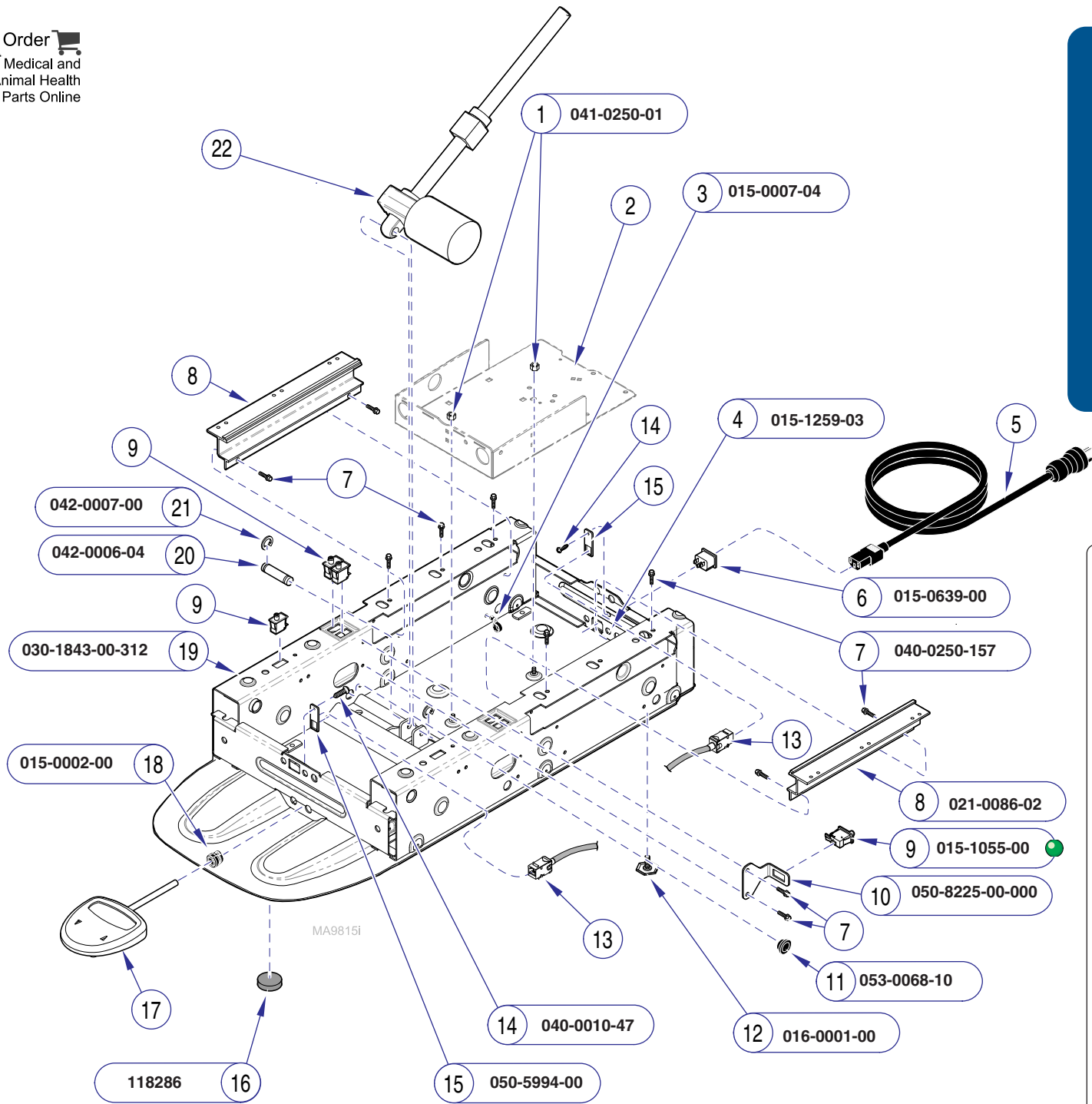
**Always Specify Model & Serial Number**

# E-21.5

## Midmark Base Components

**Models:** 623 (-008)  
**Serial Numbers:** V1182654 thru Present





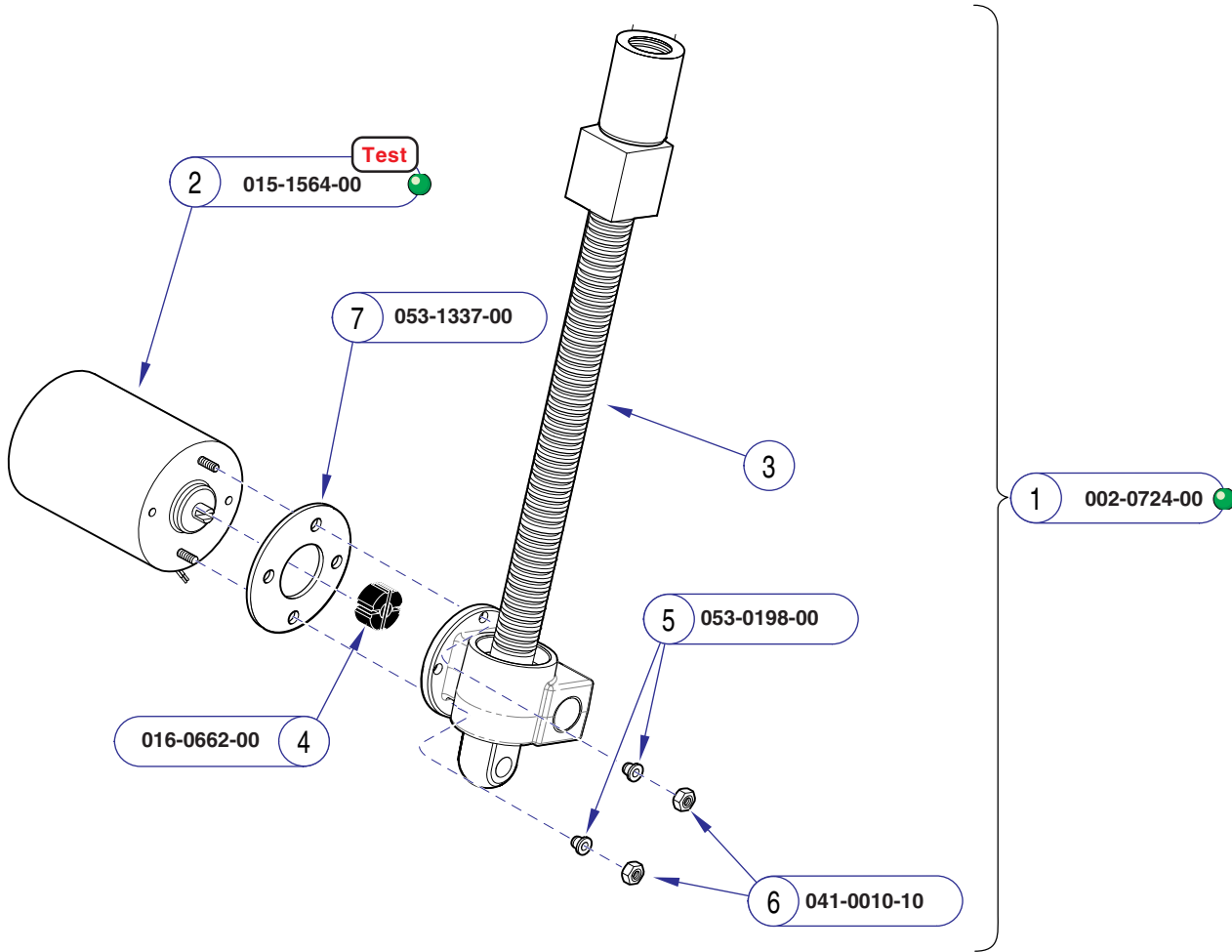
Refer To:	Page
Limit Switch Test .....	B-5
Wiring Diagrams .....	D-1
Foot Control:	
222 / 622 .....	E-27
623 .....	E-29
Base Actuator .....	E-22
PC Board Enclosure:	
Manual Back models .....	E-23
Power Back models .....	E-24
Power Cords .....	E-38

Item	Description	Qty.
1	Nut .....	2
2	Refer to: "PC board Enclosure" .....	Ref
3	Wrap-N-Tap Wire Clamp .....	3
4	Fuseholder (622 & 623-003/-004) .....	2
5	Refer to: "Power Cords" .....	Ref
6	IEC Inlet .....	1
7	Screw .....	12
8	Kit, Scissor Rollers .....	1
9	Limit Switch .....	4
10	Limit Switch Bracket .....	1
11	Snap Bushing .....	1
12	Leveling Screw .....	2
13	Foot Control Inlet Harness (622 & 623) Ref: Wiring Diagrams for PN .....	Ref
14	Screw (622) .....	1
	Screw (623) .....	2
15	Modular Plug Adapter Plate (622) .....	1
	Modular Plug Adapter Plate (623) .....	2
16	Non-Skid Pad .....	2
17	Refer to: "Foot Control" .....	Ref
18	Strain Relief Bushing (622 only) .....	1
19	Base Weldment .....	1
20	Clevis Pin .....	1
21	E-Ring .....	2
22	Refer to: "Base Actuator" .....	Ref

Always Specify Model & Serial Number

**Models:** 623 (-009 thru -011)  
**Serial Numbers:** V1182654 thru Present

**Midmark Base Components**  
**E-21.6**

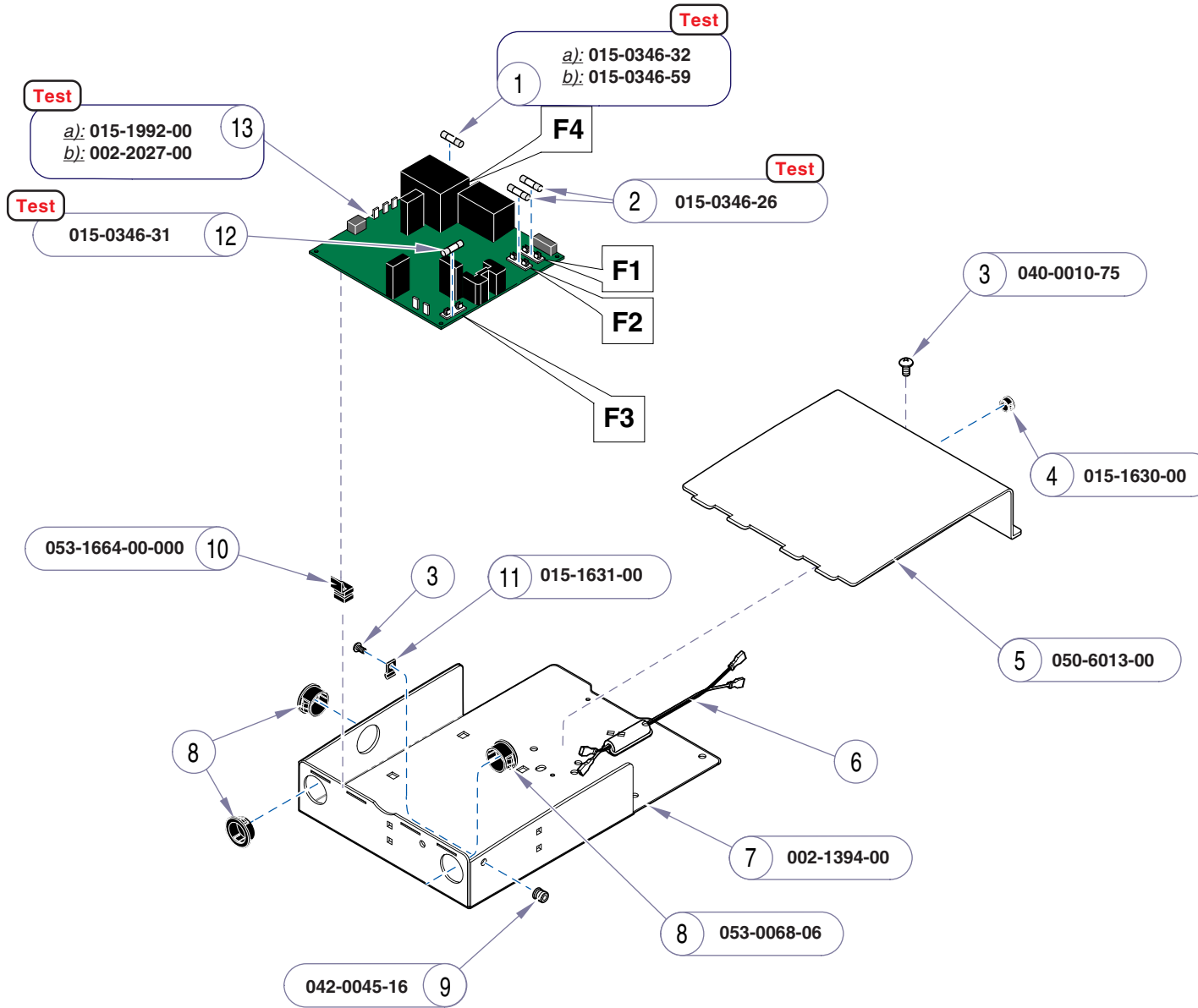


Item	Description	Qty.
1	Actuator Assembly Kit <i>(includes items 2 thru 6)</i> .....	1
2	• Motor .....	1
3	• Ball Screw Asm. <i>(not available separately)</i> .....	1
4	• Coupler .....	1
5	• Shoulder Washer .....	2
6	• Nut .....	2
7	• Isolator .....	1

**Always Specify Model & Serial Number**

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**Refer To:** **Page**  
 Fuse **Test** ..... B-3  
 Main PC Board **Test** ..... B-20  
 Section D - Wiring Diagrams ..... D-1



Item	Description	Qty.
1	a) Slo-blo Fuse (.18 A, 250v, .25" x 1.25") .....	1
	b) Slo-blo Fuse (Export) (.30 A, 250v, .25" x 1.25") .....	1
2	Slo-blo Fuse (10 amp, 250v, .25" x 1.25") .....	2
3	Screw (10-24 x 3/8") .....	2
4	Split Grommet (older models only) .....	1
5	Cover .....	1
6	Refer to: Section D - Wiring Diagrams ....	Ref
7	Control Panel Housing Kit .....	1
8	Bushing .....	3
9	Nutsert .....	2
10	PC Board Standoff .....	7
11	Cable Clamp .....	1
12	Slo-blo Fuse (5 amp, 250v, .25" x 1.25") ...	1
13	a) PC Board (1 function) .....	1
	b) PC Board (1 function) (Export) .....	1
	(export PC Board includes item #10)	

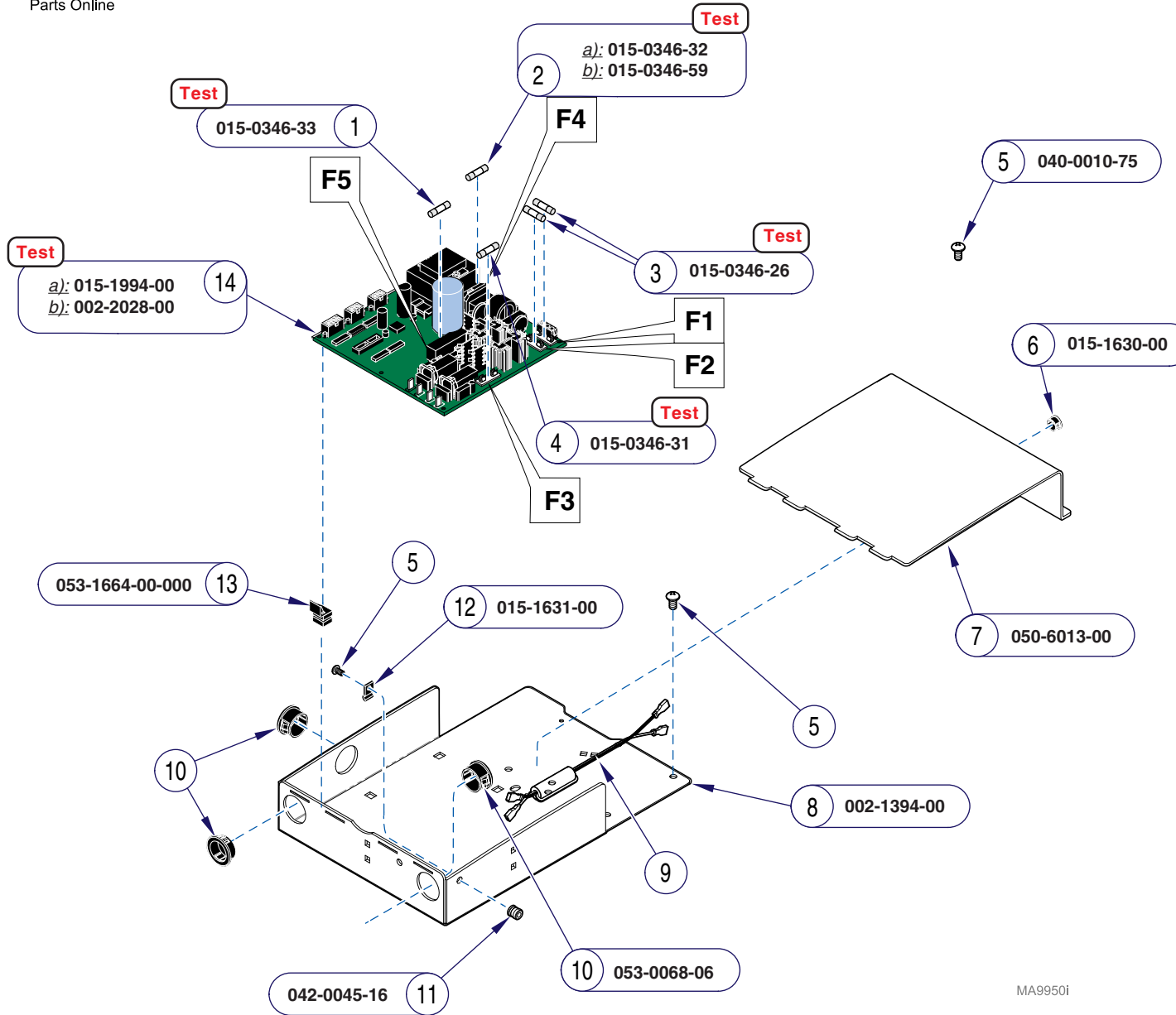
**Always Specify Model & Serial Number**

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**Models:** | **222 (all)** | **622 (all)**  
 Serial Numbers: | All | All

**PC Board Enclosure**  
 (Manual Back Models)

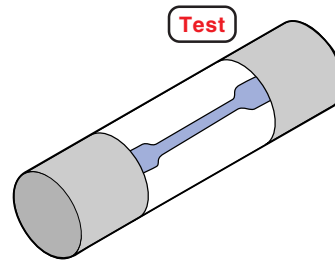




Refer To:	Page
Fuse <b>Test</b> .....	B-3
Main PC Board <b>Test</b> .....	B-20
Section D - Wiring Diagrams .....	D-1

Item	Description	Qty.
1	Slo-blo Fuse (4 amp, 250v, .25" x 1.25") ...	1
2	a) Slo-blo Fuse (.18 A, 250v, .25" x 1.25") .....	1
	b) Slo-blo Fuse (Export) (.30 A, 250v, .25" x 1.25") .....	1
3	Slo-blo Fuse (10 amp, 250v, .25" x 1.25") .	2
4	Slo-blo Fuse (5 amp, 250v, .25" x 1.25") ...	1
5	Screw (10-24 x .37") .....	5
6	Split Grommet (older models only) .....	1
7	Cover (item 6 - not required) .....	1
8	Control Panel Housing Kit .....	1
9	Refer to: Section D - Wiring Diagrams ....	Ref
10	Bushing .....	3
11	Nutsert .....	2
12	Cable Clamp .....	1
13	PC Board Standoff .....	7
14	a) PC Board (2 function) .....	1
	b) PC Board (2 function) (Export) .....	1
	(export PC Board includes item #13)	

**Always Specify Model & Serial Number**



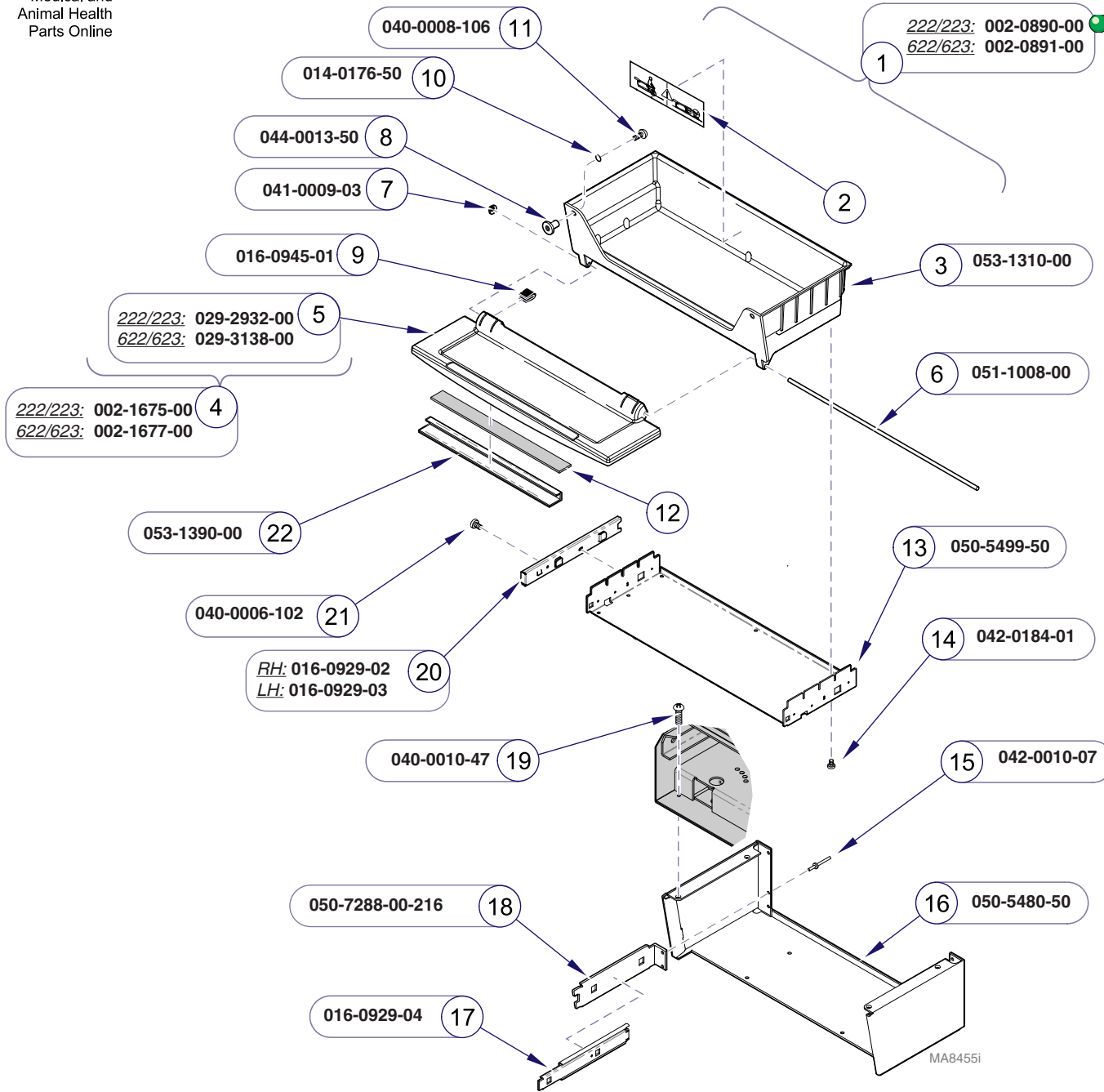
MA6377001

Fuse:	Location:	Functions affected:	Rating:	Midmark Part Number:
Primary Fuses (2)	Main PC Board [F1 & F2]	All	10A, 250V, Slo-Blo, 1/4 x 1-1/4 in.	015-0346-26
Base Motor Fuse	Main PC Board [F3]	Base Up / Base Down	5A, 250V, Slo-Blo, 1/4 x 1-1/4 in.	015-0346-31
Transformer Fuse	Main PC Board [F4]	All	187mA, 250V, Slo-Blo, 1/4 x 1-1/4 in.	015-0346-32
Transformer Fuse (230 Volt)	Main PC Board [F4]	All	300mA, 250V, Slo-Blo, 1/4 x 1-1/4 in.	015-0346-59
Back Motor Fuse <i>(223 / 623 only)</i>	Main PC Board [F5]	Back Up / Back Down	4A, 250V, Slo-Blo, 1/4 x 1-1/4 in.	015-0346-33
Drawer Heater Fuses (2) <i>(optional)</i>	Distribution Board	Drawer Heater	800mA, 250V, Slo-Blo, 5 x 20 mm	015-0346-25
Upholstery Heater Fuses (2) <i>(optional)</i>	Upholstery PC Board	Upholstery Heater	1/2 A, 250V, Slo-Blo, 1/4 x 1-1/4 in.	015-0346-05
230 Volt Transformer Fuses (2) <i>222 (-017) / 623 (-009, -010, -011)</i>	IEC Inlet	All	4A, 250V, Slo-Blo, 5 x 20 mm High Breaking Capacity	015-0346-51

Always Specify Model & Serial Number

**Models:** All  
**Serial Numbers:** All

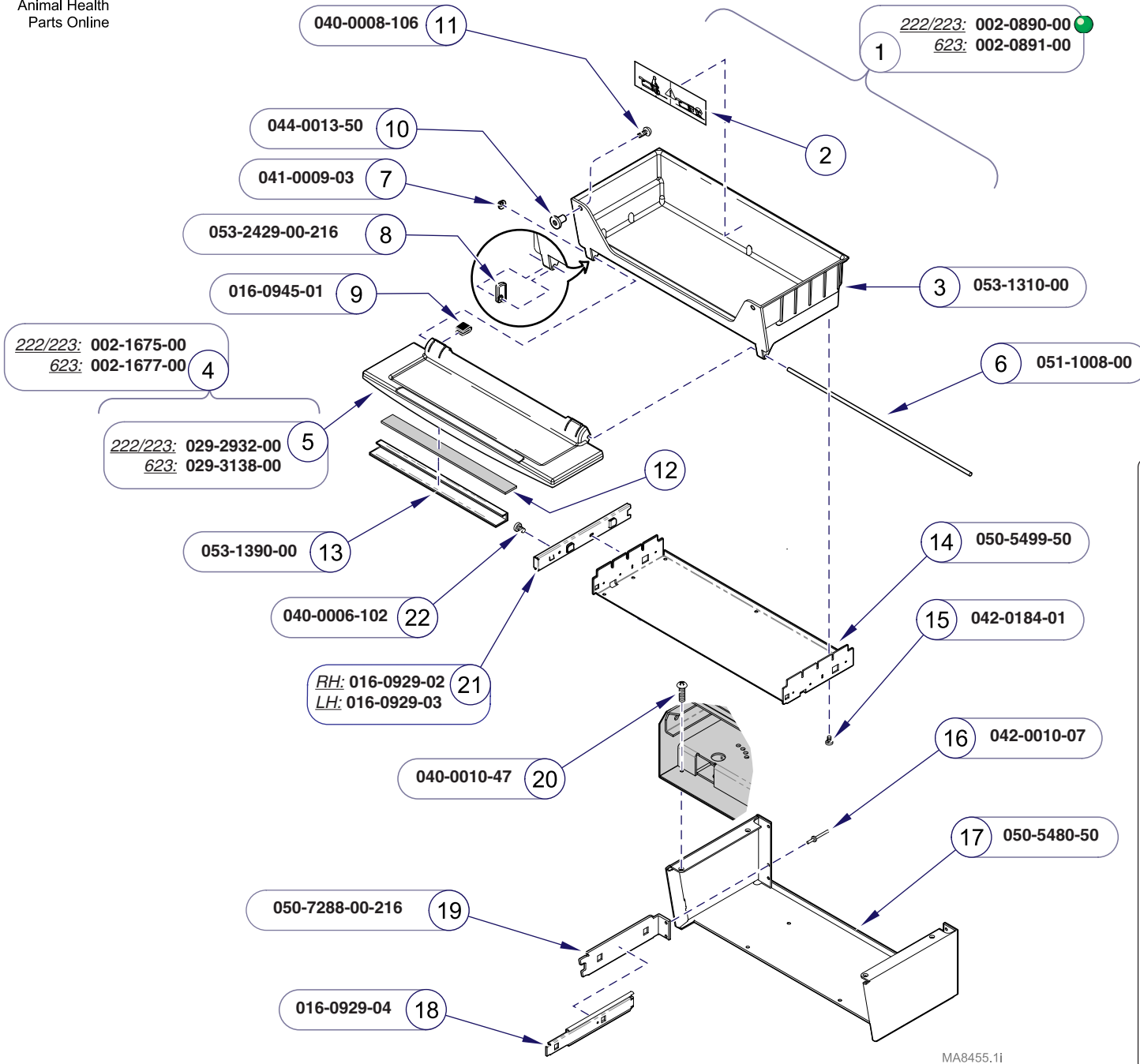
Fuses



Refer To:	Page
Upholstery - Midmark:	
Premium .....	E-8
Ultra Premium .....	E-9
Label Location .....	E-37

Item	Description	Qty.
1	Exam Assistant® Drawer Assembly (includes items 2 thru 11) .....	1
2	• Refer to: "Label Location" .....	Ref
3	• Drawer .....	1
4	• Drawer Front & Hardware Kit (includes items 5 thru 8) .....	1
5	•• Drawer Front Assembly .....	1
6	•• Pivot Rod .....	1
7	•• Push Nut .....	2
8	• Nut .....	2
9	• Edge Trim .....	2
10	• O-ring (early models only - not required) ..	2
11	• Screw (#8 x 32 x 1/4") .....	2
12	Color Insert - 622/623 only Refer to: Upholstery - Midmark .....	Ref
13	Drawer Heat Sink .....	1
14	Screw (M4-1.79 x 12mm) .....	5
15	Pop Rivet .....	4
16	Drawer Housing .....	1
17	Outer and Middle Slide Assy. ....	2
18	Drawer Slide Bracket .....	2
19	Screw .....	4
20	Inner Slide (RH shown) .....	2
21	Screw (#6-32 x 3/16" Phillips) .....	1
22	Clear Drawer Pull - 622/623 only .....	1

Always Specify Model & Serial Number

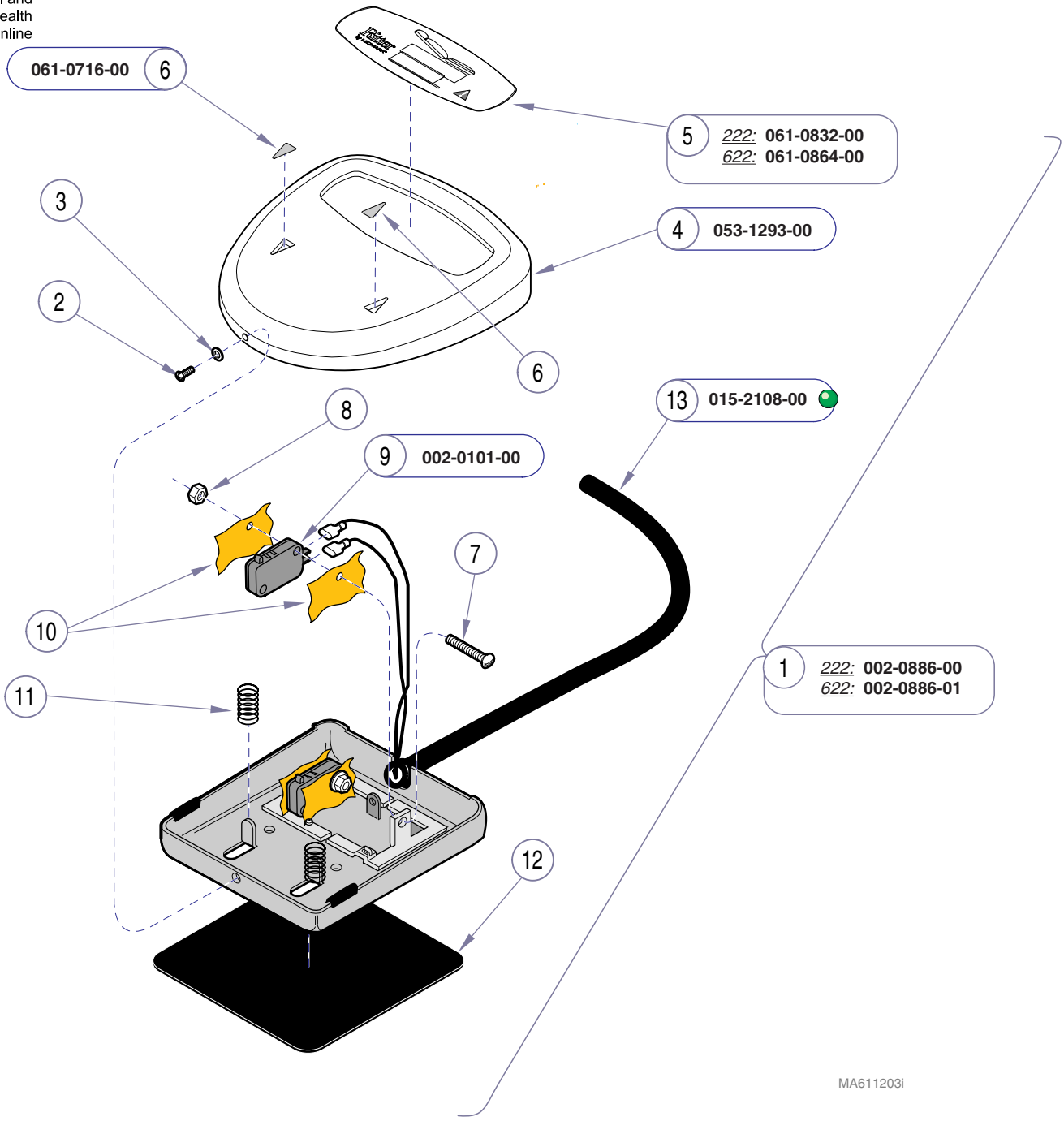


Item	Description	Qty.
1	Exam Assistant® Drawer Assembly (includes items 2 thru 11) .....	1
2	• Refer to: "Label Location" .....	Ref
3	• Drawer .....	1
4	• Drawer Front & Hardware Kit (includes items 5 thru 8) .....	1
5	•• Drawer Front Assembly .....	1
6	•• Pivot Rod .....	1
7	•• Push Nut .....	2
8	•• Fold Down Drawer Stop .....	2
9	• Edge Trim .....	2
10	• Nut .....	2
11	• Screw (#8 x 32 x 1/4") .....	2
12	Color Insert - 622/623 only Refer to: <i>Upholstery - Midmark</i> .....	Ref
13	Clear Drawer Pull - 622/623 only .....	1
14	Drawer Heat Sink .....	1
15	Screw (M4-1.79 x 12mm) .....	5
16	Pop Rivet .....	4
17	Drawer Housing .....	1
18	Inner Slide (RH shown) .....	2
19	Drawer Slide Bracket .....	2
20	Screw .....	4
21	Outer and Middle Slide Assy. .... <i>Item #22 used only on models w/drawer htr.</i>	2
22	Screw (#6-32 x 3/16" Phillips) .....	1

**Always Specify Model & Serial Number**

Models:	222 (all)	223 (all)	623 (all)
Serial Numbers:	V1308219 thru Present	V1308234 thru Present	V1321172 Thru Present


**Exam Assistant®  
 Drawer Assembly** **E-26.1**



1 222: 002-0886-00  
622: 002-0886-01

5 222: 061-0832-00  
622: 061-0864-00

4 053-1293-00

13 015-2108-00 

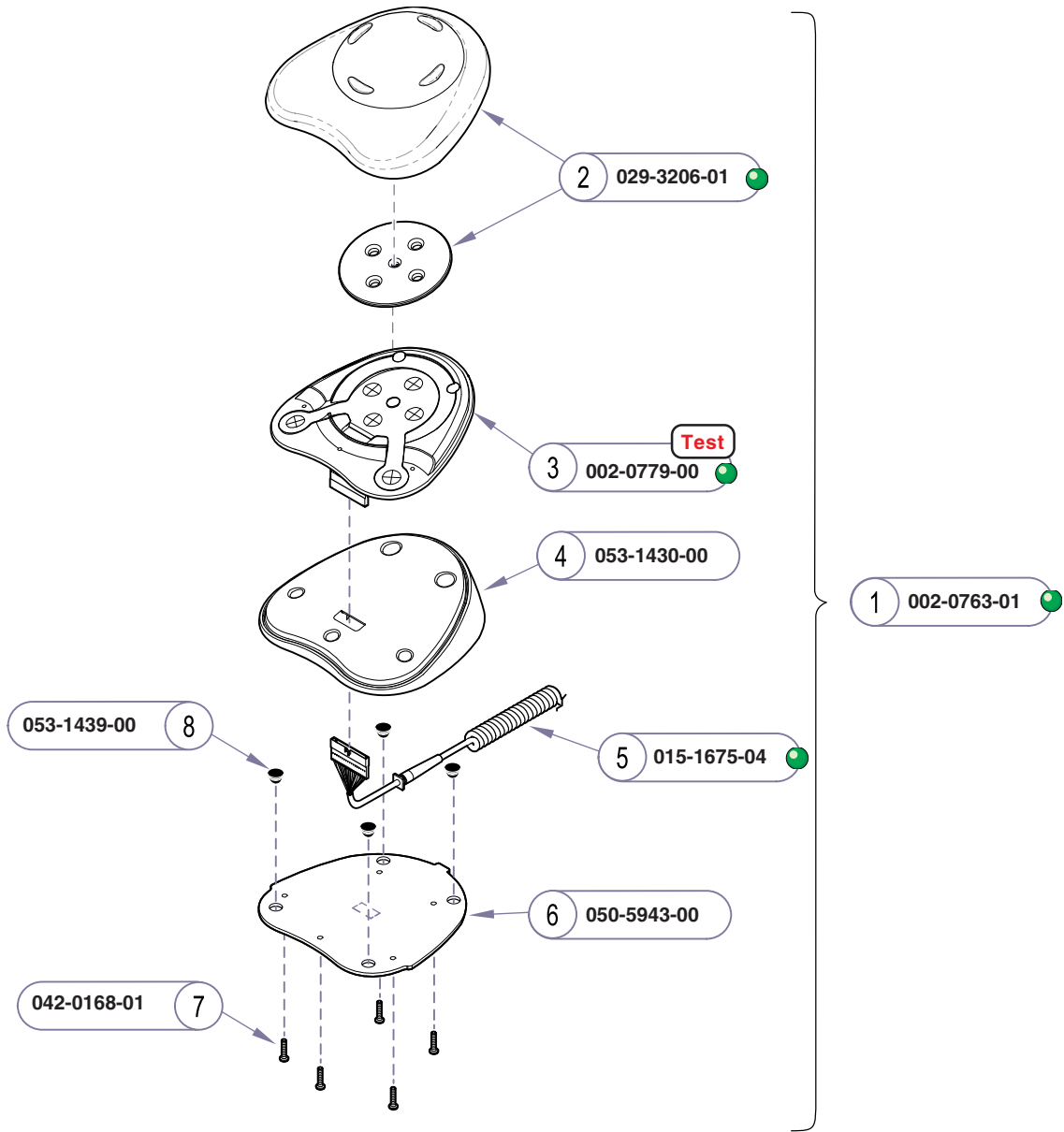
9 002-0101-00

061-0716-00 6

MA611203i

Item	Description	Qty.
1	Single Function Foot Control (incl. items 2 thru 13) .....	1
2	• Screw (not available) .....	1
3	• Washer (not available) .....	1
4	• Footswitch Cover .....	1
5	• Label .....	1
6	• Up / Down Arrow .....	2
7	• Screw (not available) .....	2
8	• Nut (not available) .....	2
9	• Foot Control Switch .....	2
10	• Insulator (not available) .....	2
11	• Spring (not available) .....	2
12	• Rubber Pad (not available) .....	1
13	• Cable .....	1

**Always Specify Model & Serial Number**



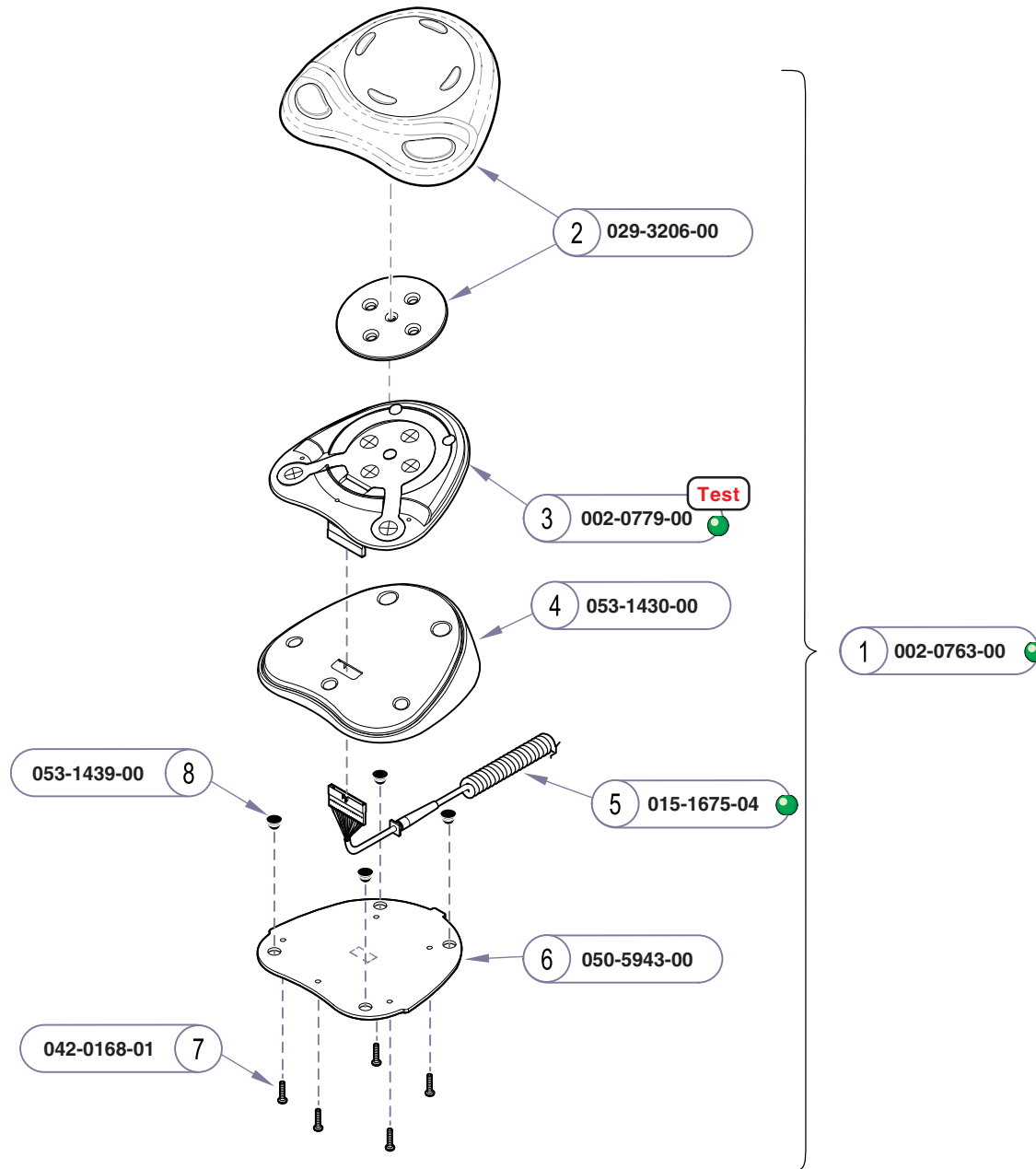
Item	Description	Qty.
1	Two Function Foot Control (incl. items 2 thru 8) .....	1
2	• Keypad .....	1
3	• Switch Membrane Assembly .....	1
4	• Base .....	1
5	• Cord .....	1
6	• Base Plate .....	1
7	• Screw .....	5
8	• Stem Bumper .....	4

**Always Specify Model & Serial Number**

MA659300i

**Models:** **223 (all)**  
**Serial Numbers:** V3303 thru present

**Foot Control**  
 (223)

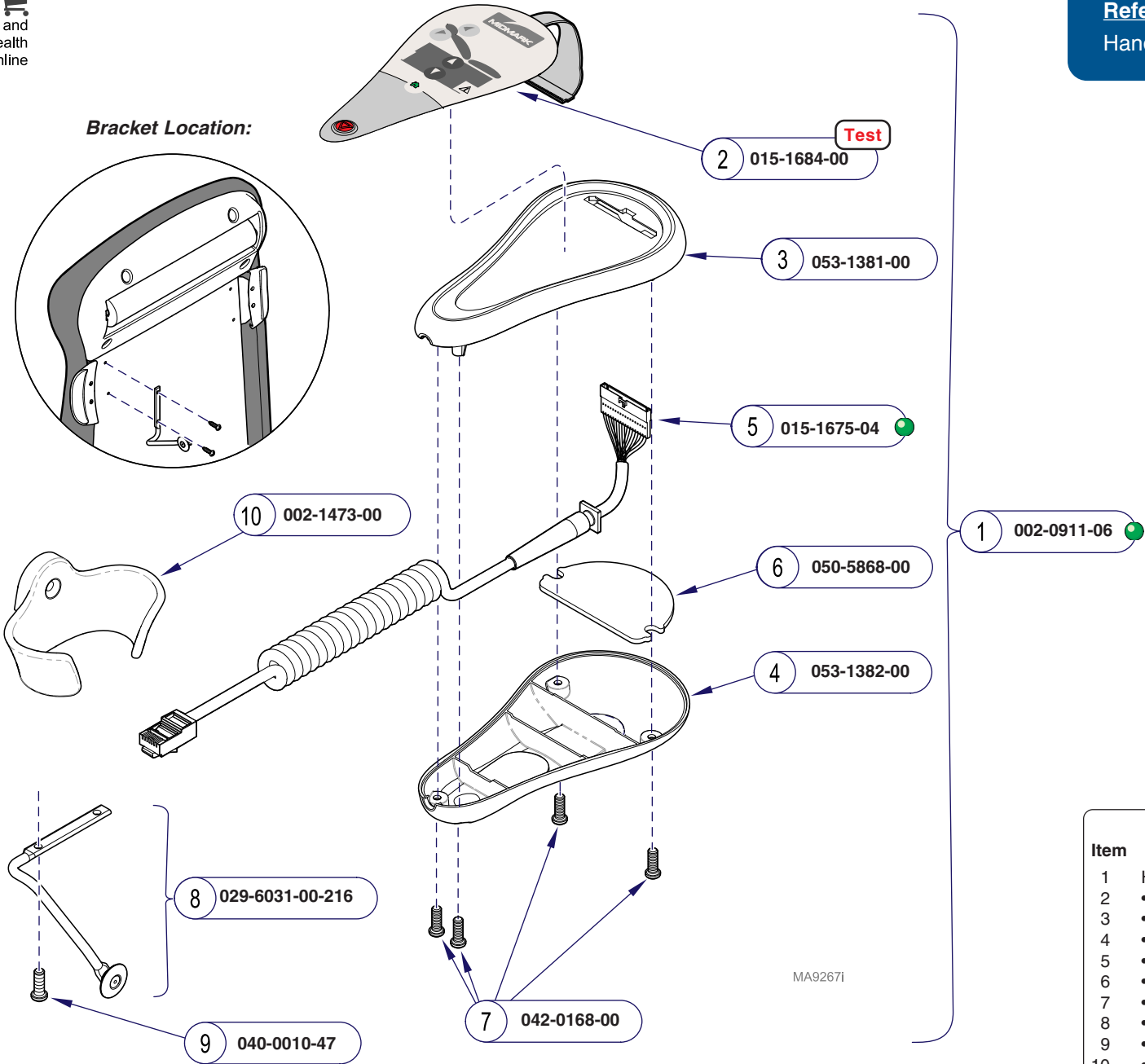


Item	Description	Qty.
1	Foot Control Assembly (incl. items 2 thru 8) .....	1
2	• Keypad .....	1
3	• Switch Membrane Assembly .....	1
4	• Base .....	1
5	• Cord .....	1
6	• Base Plate .....	1
7	• Screw .....	5
8	• Stem Bumper .....	4

**Always Specify Model & Serial Number**

MA676400i



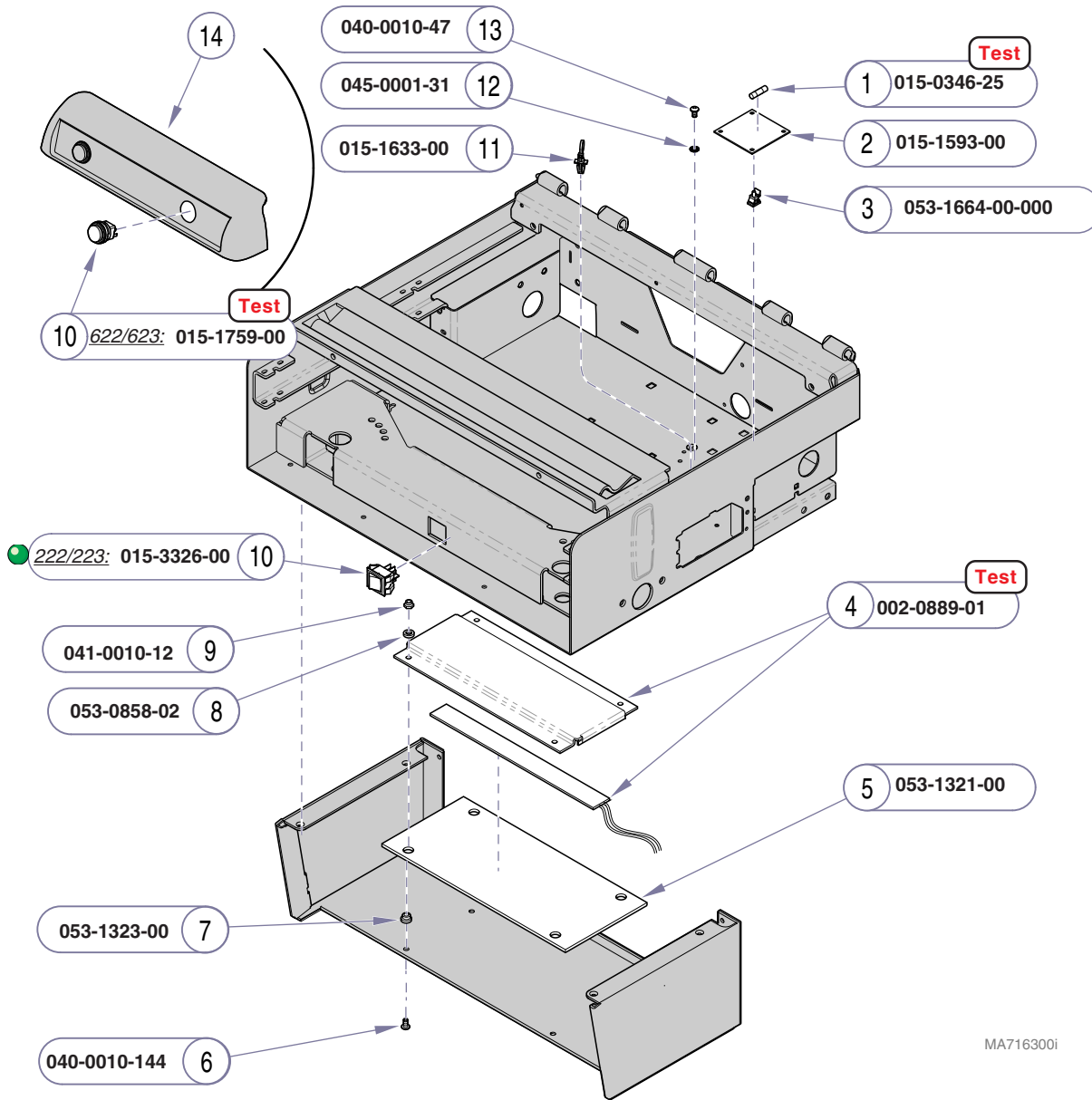


Item	Description	Qty.
1	Hand Control Assy. (incl. items 2 thru 10):	
2	• Touch Pad	
3	• Top Housing .....	1
4	• Bottom Housing .....	1
5	• Retractable Cord Assembly .....	1
6	• Hand Control Weight .....	1
7	• Screw (3.5 x 10) .....	4
8	• Mounting Bracket (incl. item 9) .....	1
9	• Screw .....	2
10	• Hand Control Holster .....	1

**Always Specify Model & Serial Number**

**Models:** 623 (-007 thru -011) | 223 (-015 & -016) [Optional]  
**Serial Numbers:** All | All

**Hand Control &  
 Mounting Bracket**

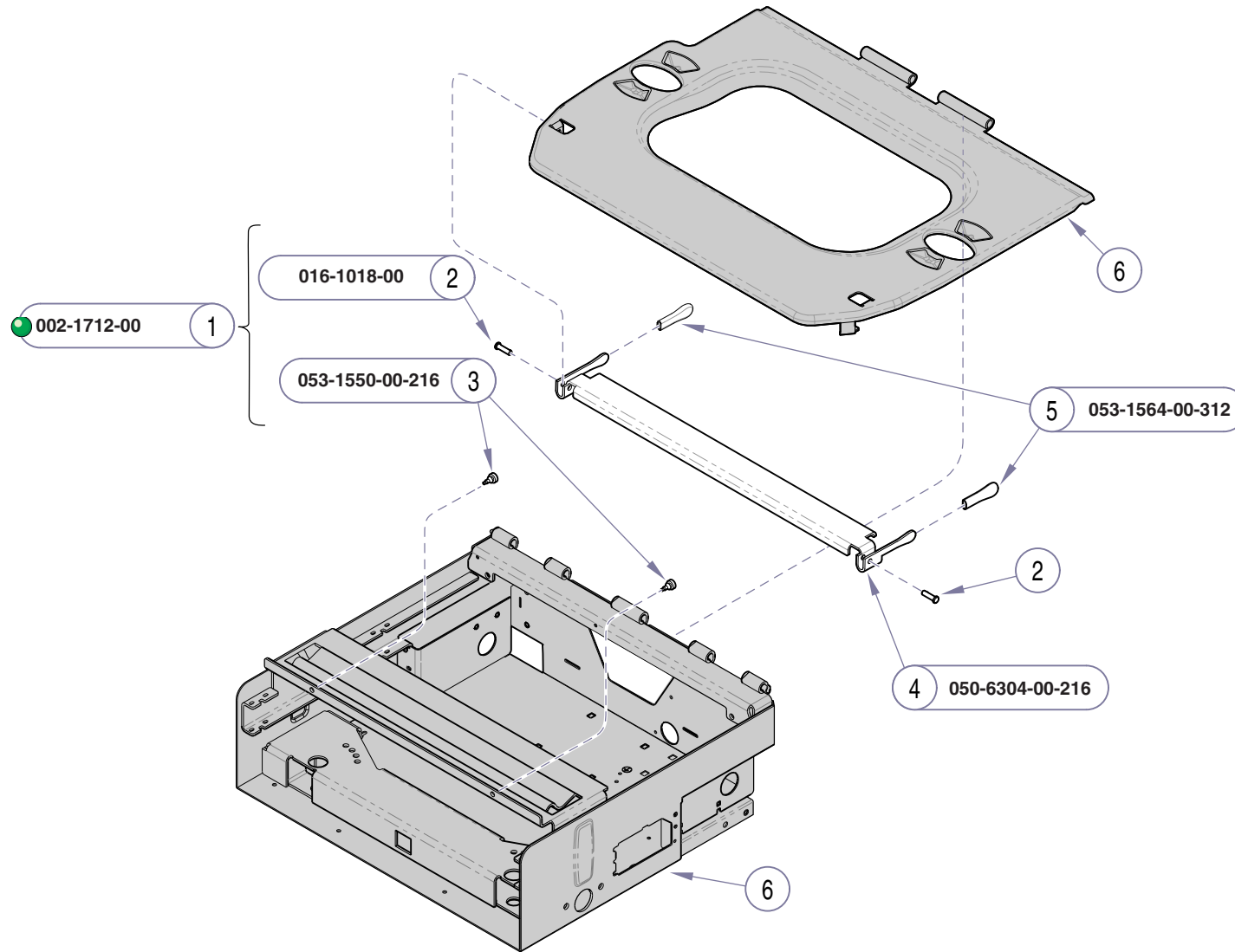


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Refer To:	Page
Fuse <b>Test</b> .....	B-3
Drawer Heater System <b>Test</b> .....	B-24
Section D - Wiring Diagrams .....	D-1
Midmark Upperwrap & Footrest Shelf .....	E-17

Item	Description	Qty.
1	• Fuse .....	2
	(800 mA, 250V, Slo-Blo, 5 x 20mm) .....	
2	• Distribution Board .....	1
3	• PC Board Standoff .....	4
4	• Heater Plate Assembly .....	1
5	• Heater Insulation .....	1
6	• Screw (10-32x 1/2") .....	4
7	• Nylon Shoulder Washer .....	4
8	• Nylon Washer .....	4
9	• Nylon Nut .....	4
10	• Drawer Heater Switch with Harness .....	1
11	• Wrap-N-Tap .....	3
12	• Lockwasher (#10) .....	1
13	• Screw (#10-24 x 3/8") .....	1
14	Refer to: Midmark Upperwrap & Footrest Shelf" .....	Ref

Always Specify Model & Serial Number



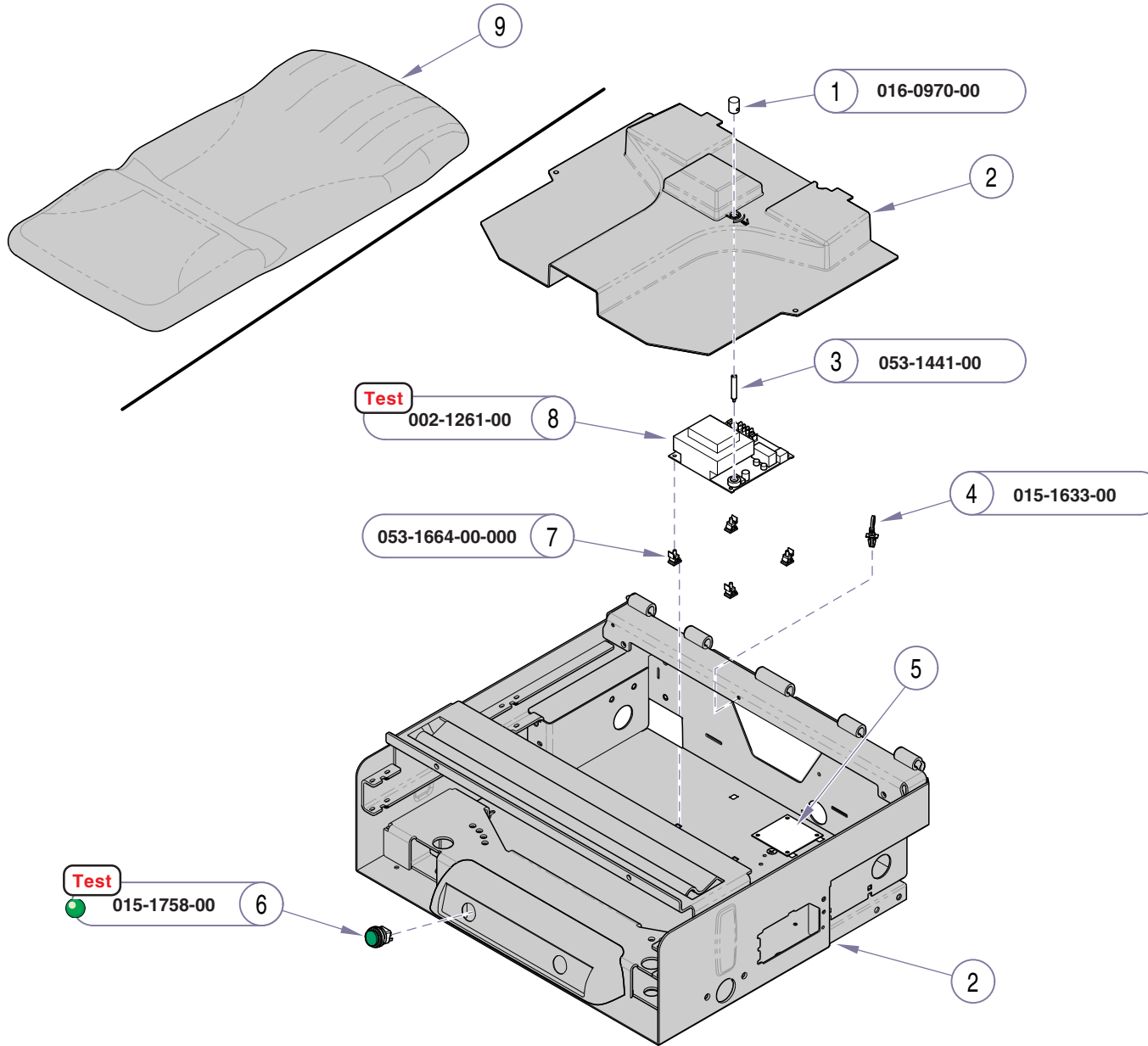
Item	Description	Qty.
1	Pelvic Tilt Assembly (includes items 2 thru 5).....	1
2	• Pivot Pin .....	2
3	• Bumper .....	2
4	• Bracket .....	1
5	• Handle .....	2
6	Refer to: "Upperwrap & Footrest Shelf" ... Ref	

**Always Specify Model & Serial Number**

MA7162001

<b>Models:</b>	<b>222 (-016 &amp; -017)</b>	<b>223 (-016)</b>	<b>622 (-008)</b>	<b>623 (-008 thru -011)</b>
Serial Numbers:	All	All	All	All

**Pelvic Tilt**

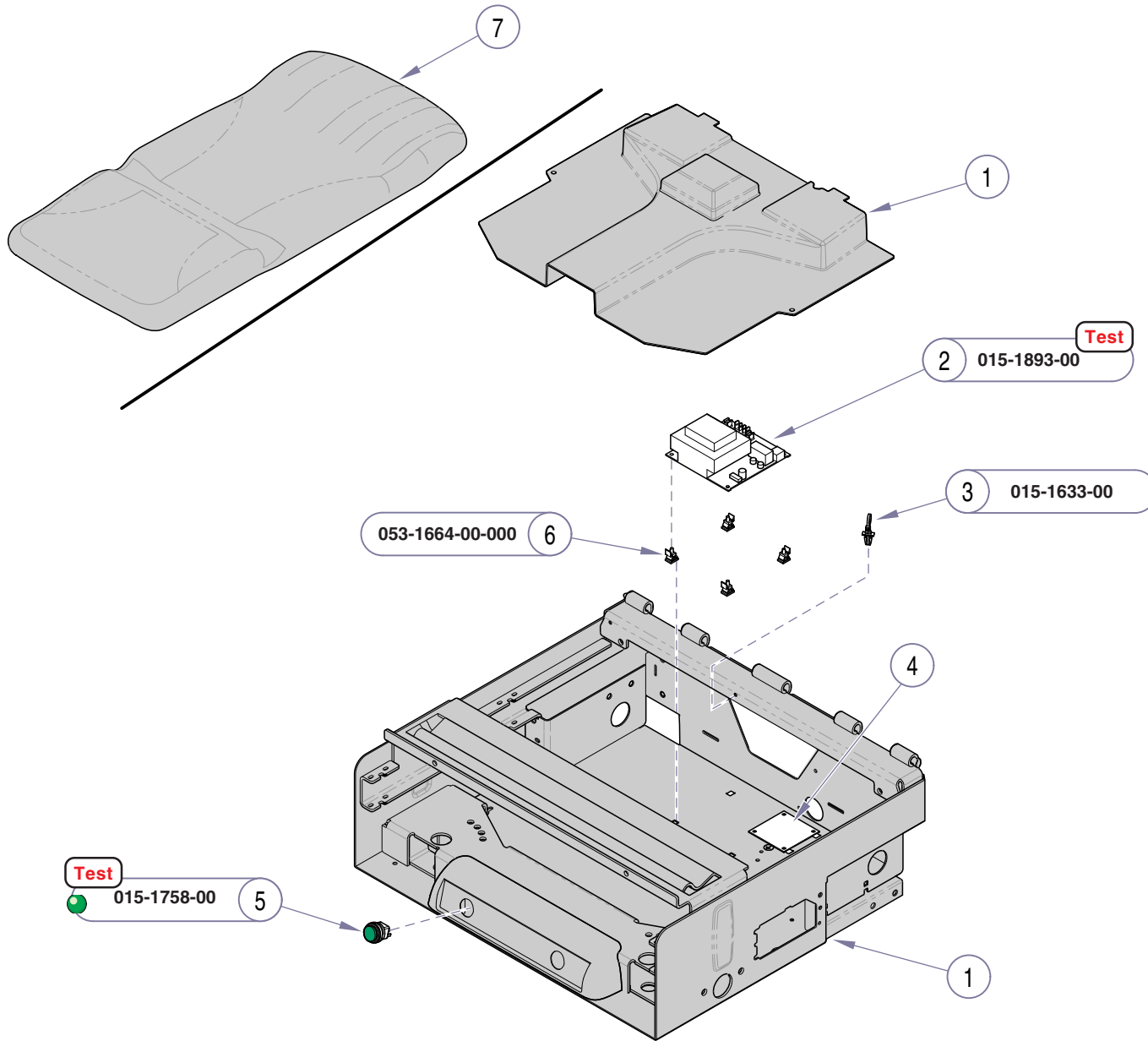


Refer To:	Page
Uph. Heater System <b>Test</b> .....	B-30
Upholstery - Midmark:	
Premium .....	E-8
Ultra-Premium .....	E-9
Midmark Upperwrap & Footrest Shelf .....	E-17*
Drawer Heater System .....	E-31
* multiple pages due to model / serial # break	

Item	Description	Qty.
1	Adjustment Knob .....	1
2	Refer to: "Midmark Upperwrap & Footrest Shelf" .....	Ref
3	Adjustment Shaft .....	1
4	Wrap-n-Tap Wire Tire .....	3
5	Refer to: "Drawer Heater System" .....	Ref.
6	Upholstery Heater Switch (green) .....	1
7	PC Board Standoffs .....	4
8	Upholstery Heater PC Board Kit (includes item 2) .....	1
9	Refer to: "Upholstery - Midmark" .....	Ref

**Always Specify Model & Serial Number**

MA716400i



Refer To:	Page
Uph. Heater System <b>Test</b> .....	B-30
Upholstery - Midmark:	
Premium .....	E-8
Ultra-Premium .....	E-9
Midmark Upperwrap & Footrest Shelf .....	E-17*
Drawer Heater System .....	E-31
* multiple pages due to model / serial # break	

Item	Description	Qty.
1	Refer to: "Midmark Upperwrap & Footrest Shelf" .....	Ref
2	Upholstery Heater PC Board .....	1
3	Wrap-n-Tap Wire Tire .....	3
4	Refer to: "Drawer Heater System" .....	Ref.
5	Upholstery Heater Switch (green) .....	1
6	PC Board Standoffs .....	4
7	Refer to: "Upholstery - Midmark" .....	Ref

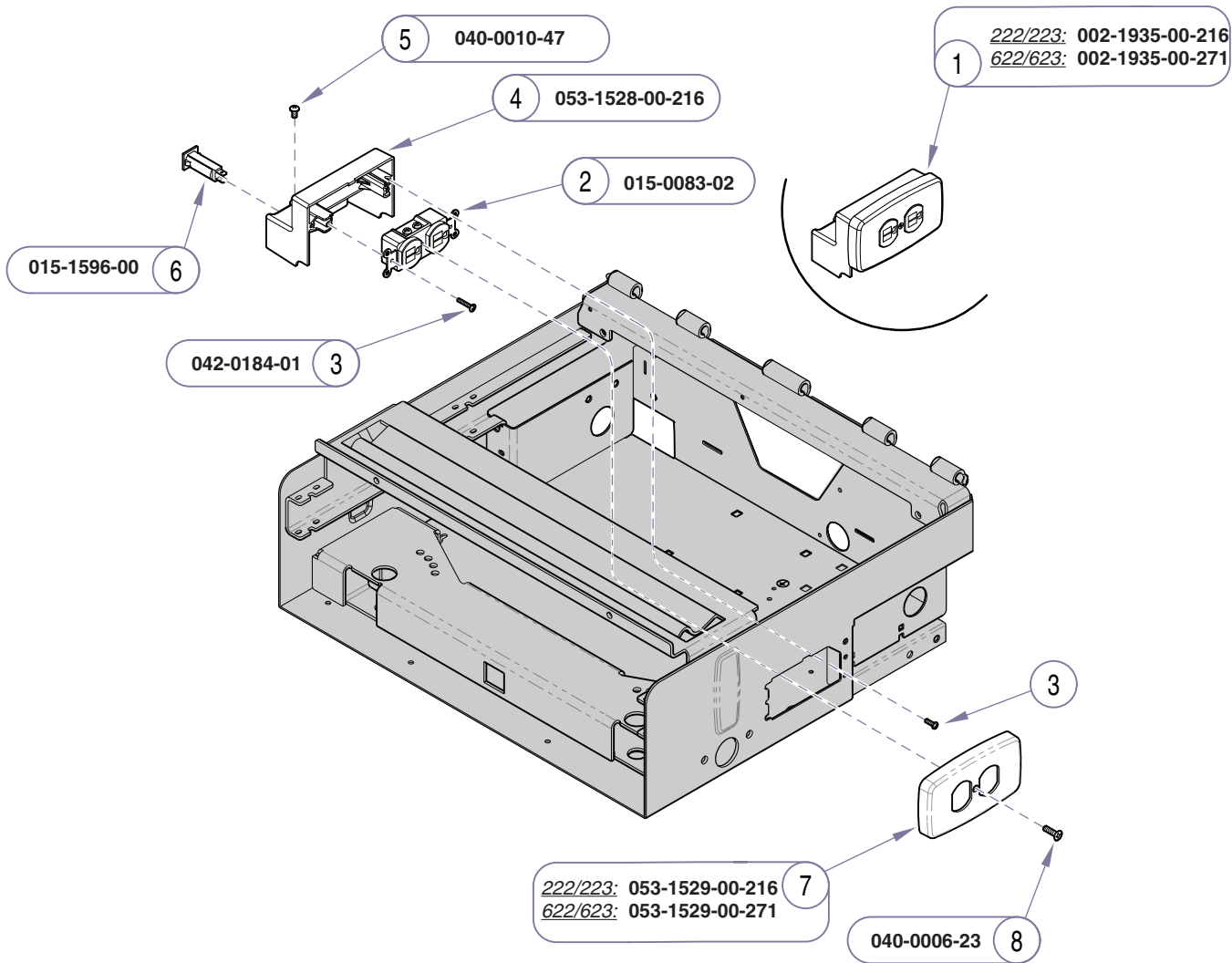
**Always Specify Model & Serial Number**

MA716401i

<b>Models:</b>	<b>622 (-008)</b>	<b>623 (-008 /-010)</b>
Serial Numbers:	V857487 thru present	V857487 thru present

**Upholstery Heater Components**

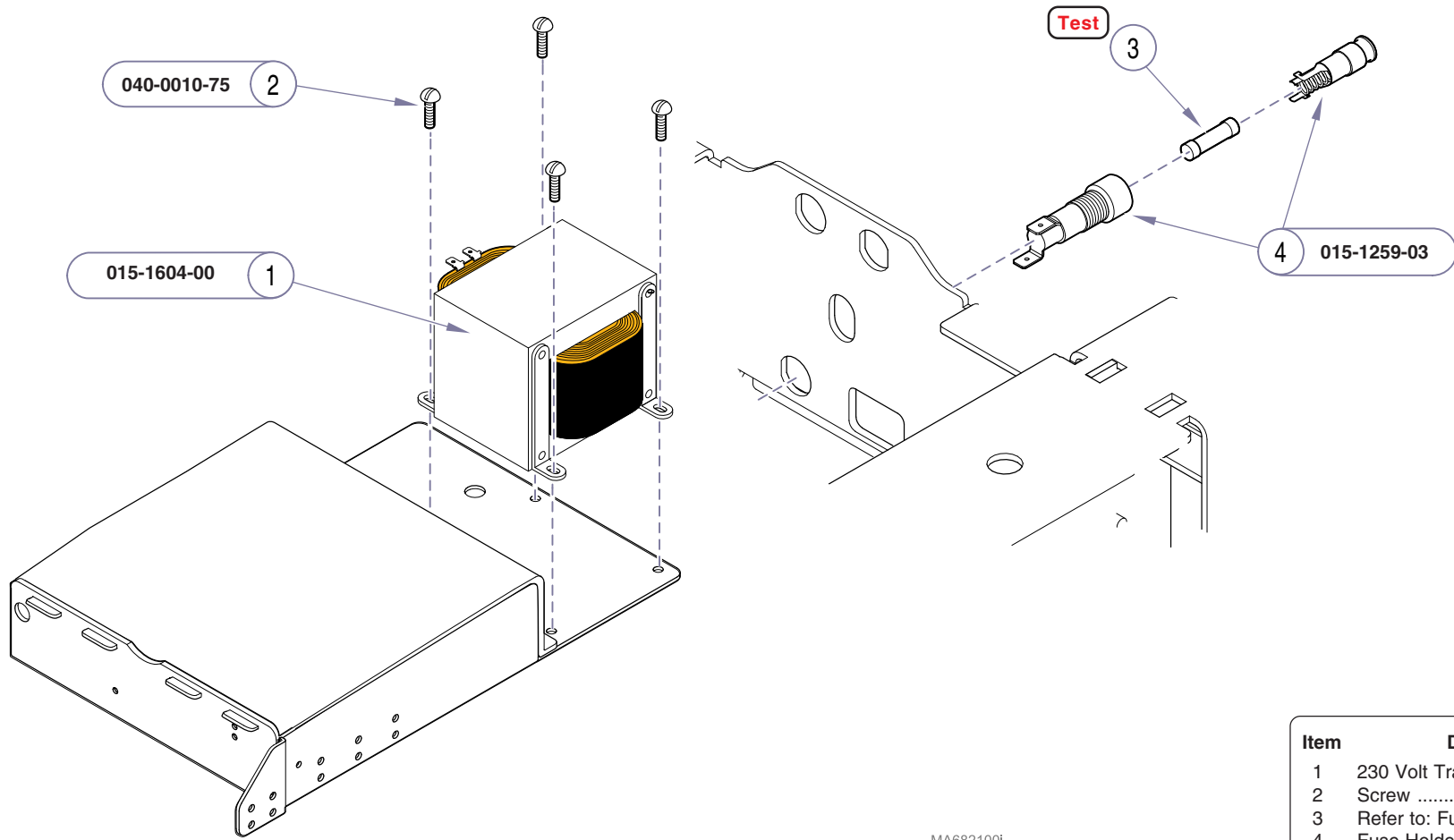
**E-33.1**



MA7161001

Item	Description	Qty.
1	Table Receptacle Assembly (includes items 2 thru 9)	1
2	• Duplex Receptacle	1
3	• Screw (.138-32 x 1/2")	4
4	• Circuit Breaker Housing	1
5	• Screw (#10-24 x 3/8")	1
6	• Circuit Breaker (5 amp)	2
7	• Receptacle Cover	1
8	• Screw (#6-32 x 1/2")	1

**Always Specify Model & Serial Number**



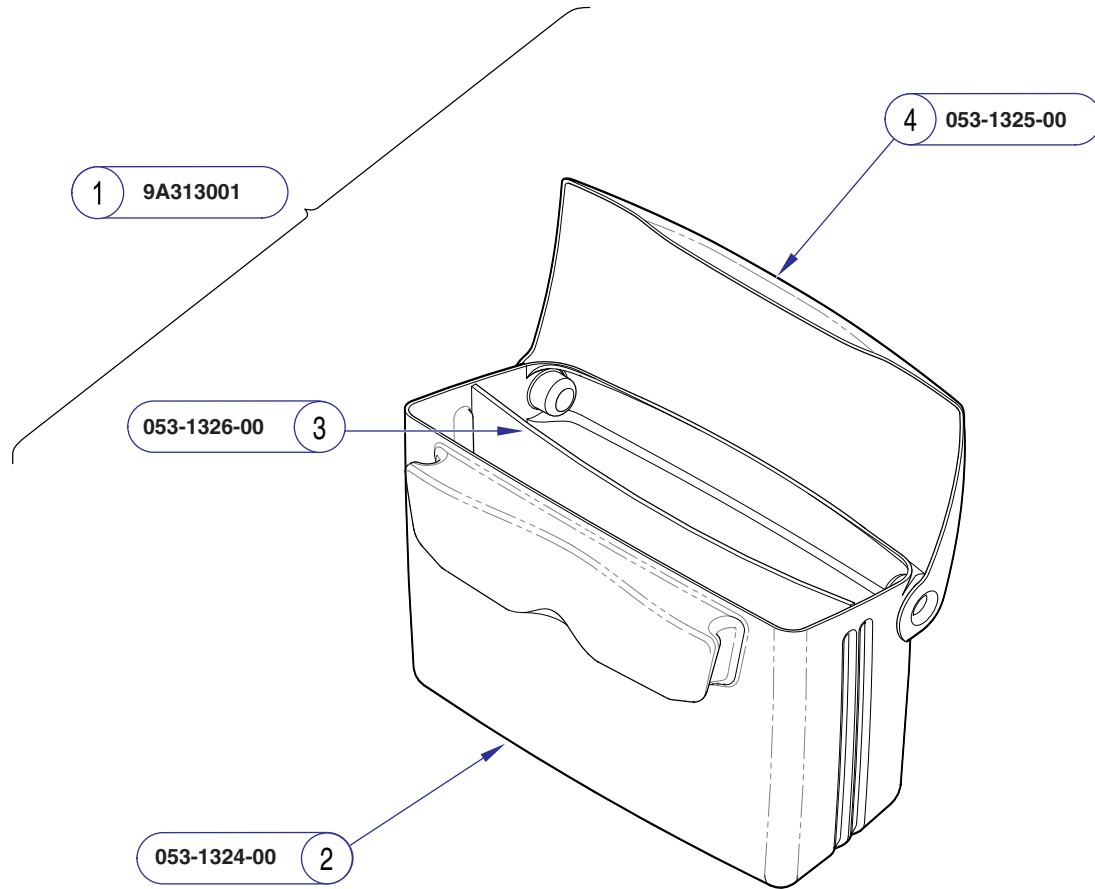
MA6821001

Item	Description	Qty.
1	230 Volt Transformer .....	1
2	Screw .....	4
3	Refer to: Fuses .....	2
4	Fuse Holder .....	2

**Always Specify Model & Serial Number**

**Models:** 222 (-017) | 623 (-009 /-010 /-011)  
*Serial Numbers:* All | All

**230 Volt Electrical System**

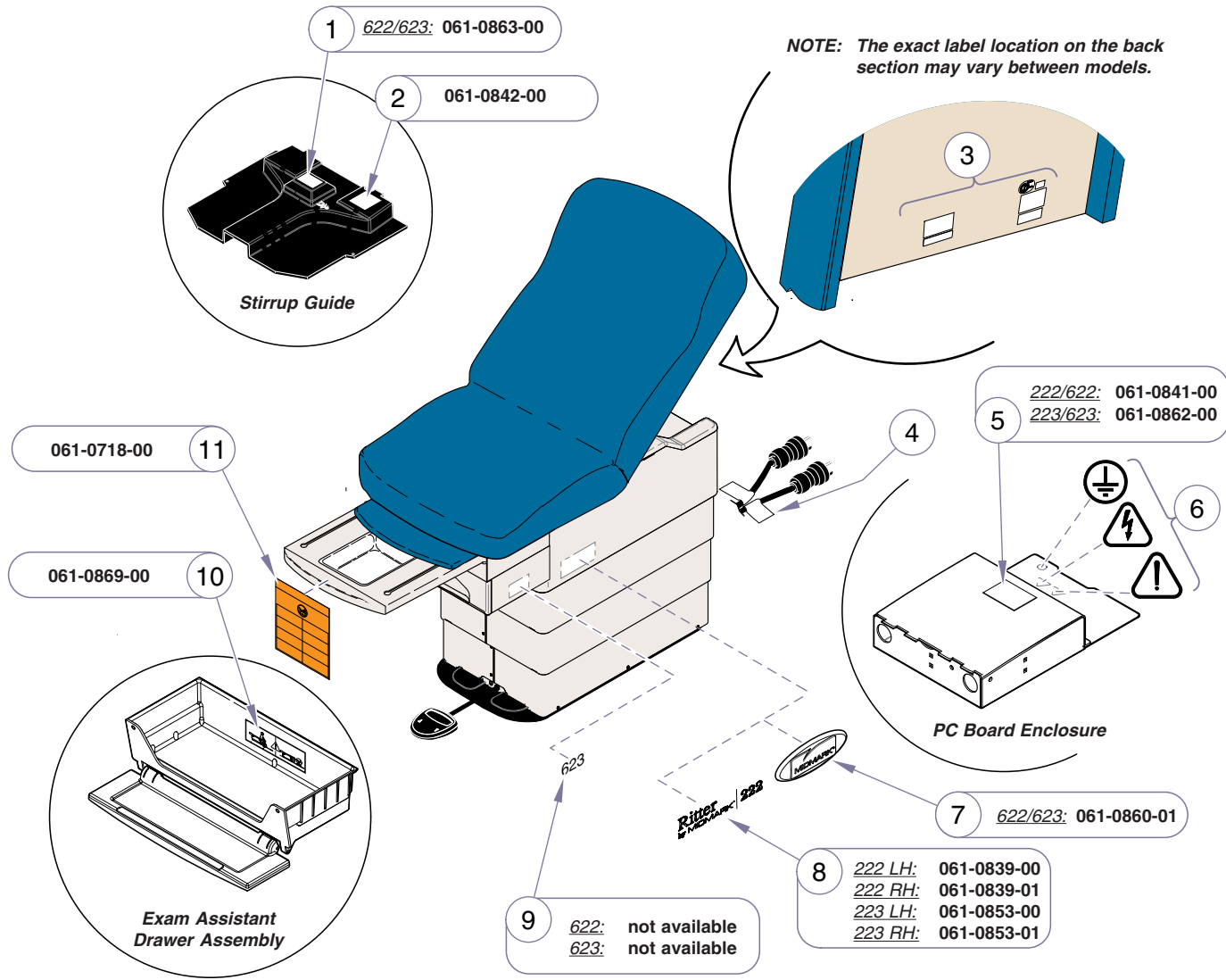


Item	Description	Qty.
1	Storage Pod Assembly .....	1
	<i>(includes items 2 thru 4)</i>	
2	• Storage Container .....	1
3	• Storage Divider .....	1
4	• Storage Container Lid .....	1

**Always Specify Model & Serial Number**

MA612900i





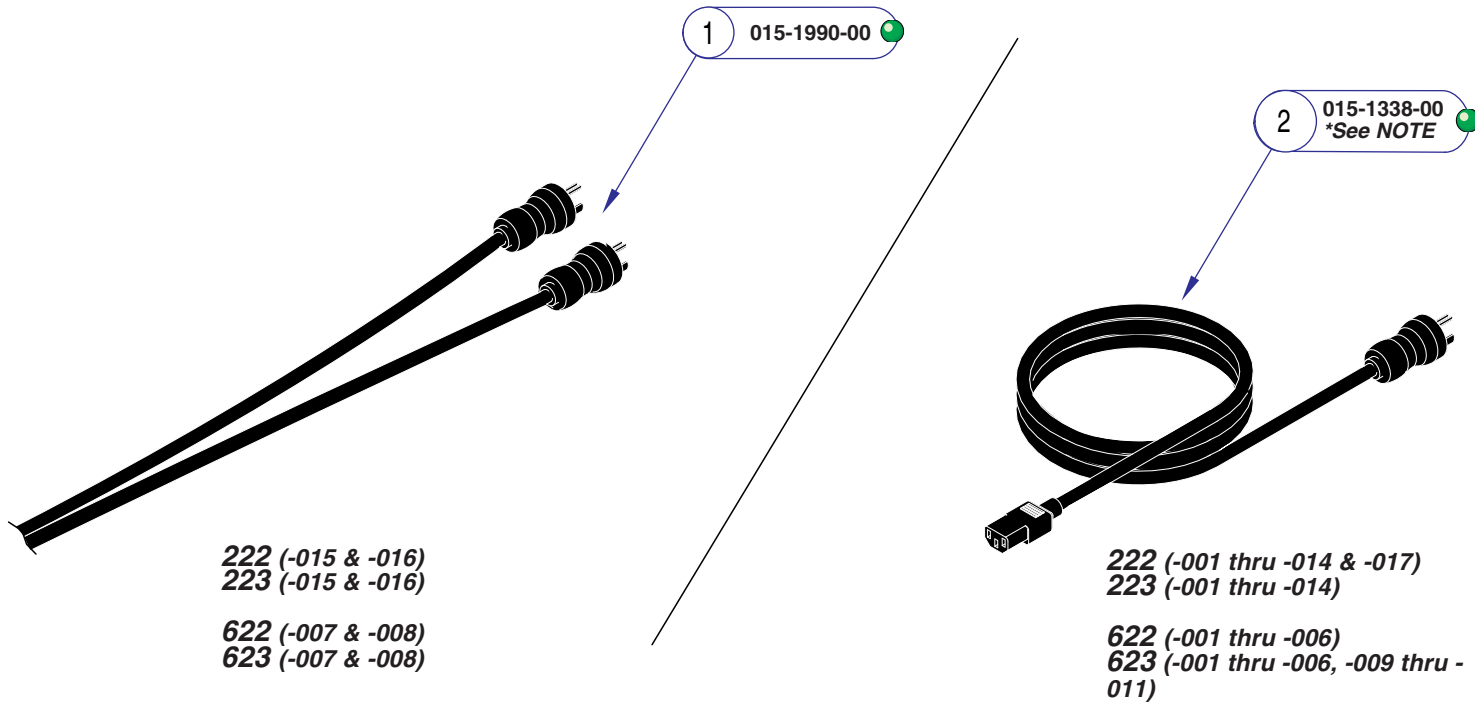
Item	Description	Qty.
1	Fuse Label ( <i>Uph. Htr. PC Board</i> ) .....	1
2	Fuse Label ( <i>Distribution Board</i> ) .....	1
3	Regulatory Certification Label .....	1
	Duty Cycle Label .....	1
	Danger Label ( <i>w/Table Receptacle only</i> ) ....	1
	Patent Pending Label .....	1
	Model / Serial Number Label .....	1
	Patent Number Label .....	1
4	Power Cord Label .....	2
5	Fuse Label ( <i>Main PC Board</i> ) .....	1
6	Ground Label .....	1
	Dangerous Voltage Label .....	1
	Caution Label .....	1
7	Midmark Nameplate .....	2
8	Ritter Model Label ( <i>LH shown</i> ) .....	2
9	Midmark Model Label ( <i>early models only</i> ) ...	2
10	Exam Assistant Drawer Label .....	1
11	Stirrup Lifting Caution Label .....	1

**Always Specify Model & Serial Number**

MA730900i

**Models:** All  
**Serial Numbers:** All

**Label Location**



MA8375i

Item	Description	Qty.
1	Power Cord, Conjoined .....	1
2	Power Cord .....	1
*NOTE: Export models, 622/623 (-003 /-004) require 9A152 International Cordsets.		
<b>Always Specify Model &amp; Serial Number</b>		



# SERVICE PARTS FAX ORDERING FORM

(Do not tear out this page. Photo copy this page for use only.)



**IMPORTANT NOTES:**

- 1) Use this form for all non-warranty orders only. Warranty orders must be telephoned in (1-800-643-6275).
- 2) FAX number to send order to:  
877-249-1793
- 3) All emergency orders must be received @ Midmark by 1:00 pm EST.
- 4) All underlined headings should be filled in prior to submittal.

**DATE:** \_\_\_ / \_\_\_ / \_\_\_      **TIME:** \_\_\_\_\_ <sup>am</sup>/<sub>pm</sub>

**METHOD OF SHIPMENT:** \_\_\_\_\_

**PRIORITY:**     **NON-EMERGENCY ORDER** {to ship within 72 hours if part(s) are in stock.}

**EMERGENCY ORDER** {to ship within 24 hours if part(s) are in stock.} [see note 3]

**DEALER P.O. #:** \_\_\_\_\_

**ACCOUNT #:** \_\_\_\_\_

<b>MODEL #:</b> _____	<b>SERIAL #:</b> _____	<b>SALES ORDER #</b> (if applicable) _____
-----------------------	------------------------	---

<b>NAME:</b> _____ <b>ADDRESS:</b> _____ <b>CITY:</b> _____ <b>STATE:</b> _____ <b>ZIP:</b> _____ <b>CONTACT:</b> _____ <b>PHONE:</b> _____ <b>FAX #:</b> _____	<b>SHIP TO:</b> _____ _____ _____ _____ _____
--	---

LINE #	PART NUMBER	QTY.	DESCRIPTION	COLOR (if applicable)

**CREDIT CARD INFORMATION**

CARD TYPE \_\_\_\_\_      CARD # \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_      EXP. DATE \_\_\_ / \_\_\_ / \_\_\_

NAME ON CARD \_\_\_\_\_      SIGNATURE \_\_\_\_\_

**ATTENTION: CUSTOMER SERVICE DEPARTMENT**

**ADDITIONAL COMMENTS:**

Midmark Corporation  
60 Vista Drive  
P.O. Box 286  
Versailles, OH 45380-0286  
937-526-3662  
Fax 937-526-5542  
[www.midmark.com](http://www.midmark.com)



Because we care.