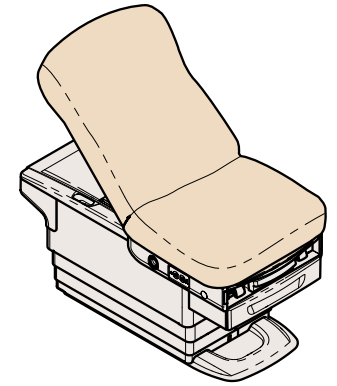


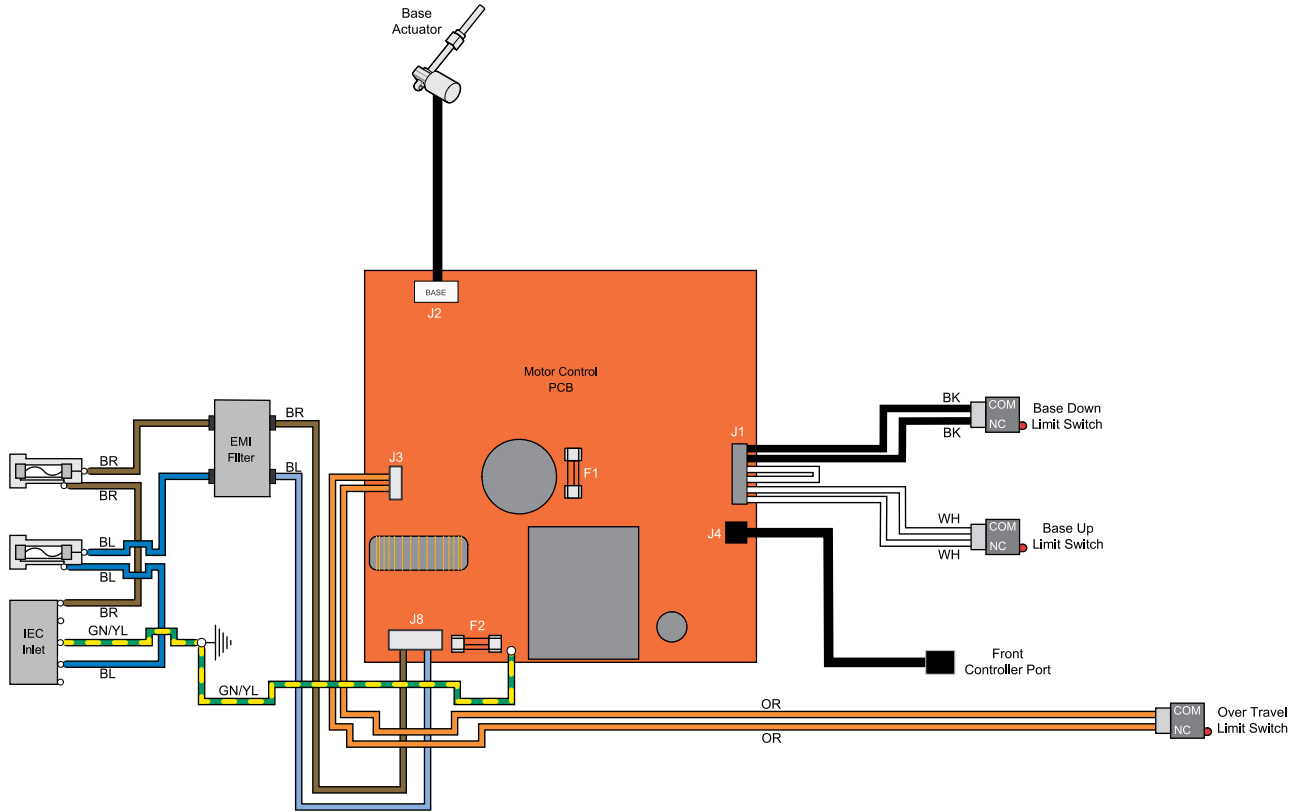
**Theory of Operation:
Barrier-Free[®] Exam Chair
224 (-001 /-002 /-003 /-011) 225 (-002 /-003)**



Model Numbers	Description	Serial Numbers:	Refer To:
224-001	Base Up / Down Function	all	<u>Base Up / Down Function</u>
224 (-002 /-003)	Base Up / Down Function	all	<u>Base Up / Down Function</u>
224-011	Base Up / Down Function	all	<u>Base Up / Down Function</u>
224 (-001 /-002 /-003 -011)	Back Up / Down Function	all	<u>Back Up / Down Function</u>
225 (-002 /-003)	Base Up / Down Function	all	<u>Base Up / Down Function</u>
225 (-002 /-003)	Back Up / Down Function	all	<u>Back Up / Down Function</u>
224 (-002 /-003) 225 (-002 /-003)	Table Receptacles	all	<u>Table Receptacles</u>
224 (-002 /-003) 225 (-002 /-003)	Drawer Heater	all	<u>Drawer Heater</u>

Base UP / DOWN Function / 224 (-001)

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



MA10414i

Base UP / DOWN Function 224 (-001)

Power to Foot / Hand Control

Line voltage (115 VAC) is supplied thru two primary fuses located at the table base.

The 115 VAC is sent to the Motor Control PC board. The Motor Control PC board reduces the voltage to 3.3 VDC which is supplied to the foot control.

Fuse F2 on the Motor Control PC board protects the transformer on the board and the electronics supplied by the transformer.

Base Up Operation

When the Base Up function is activated, the foot control sends a command to the Motor Control PC board.

The Motor Control PC board supplies the correct voltage to the Base actuator motor.

Fuse F1 on the Motor Control PC board protects the Base actuator motor.

The actuator motor runs and raises the table.

Actuator motor runs until:

1. Foot control button is released.
2. Base Up limit switch is tripped.
3. Overtravel limit switch is tripped.
4. Overcurrent protection tripped.

Base Down Operation

When the Base Down function is activated, the foot control sends a command to the Motor Control PC board.

The Motor Control PC board supplies the correct voltage to the Base actuator motor.

Fuse F1 on the Motor Control PC board protects the Base actuator motor.

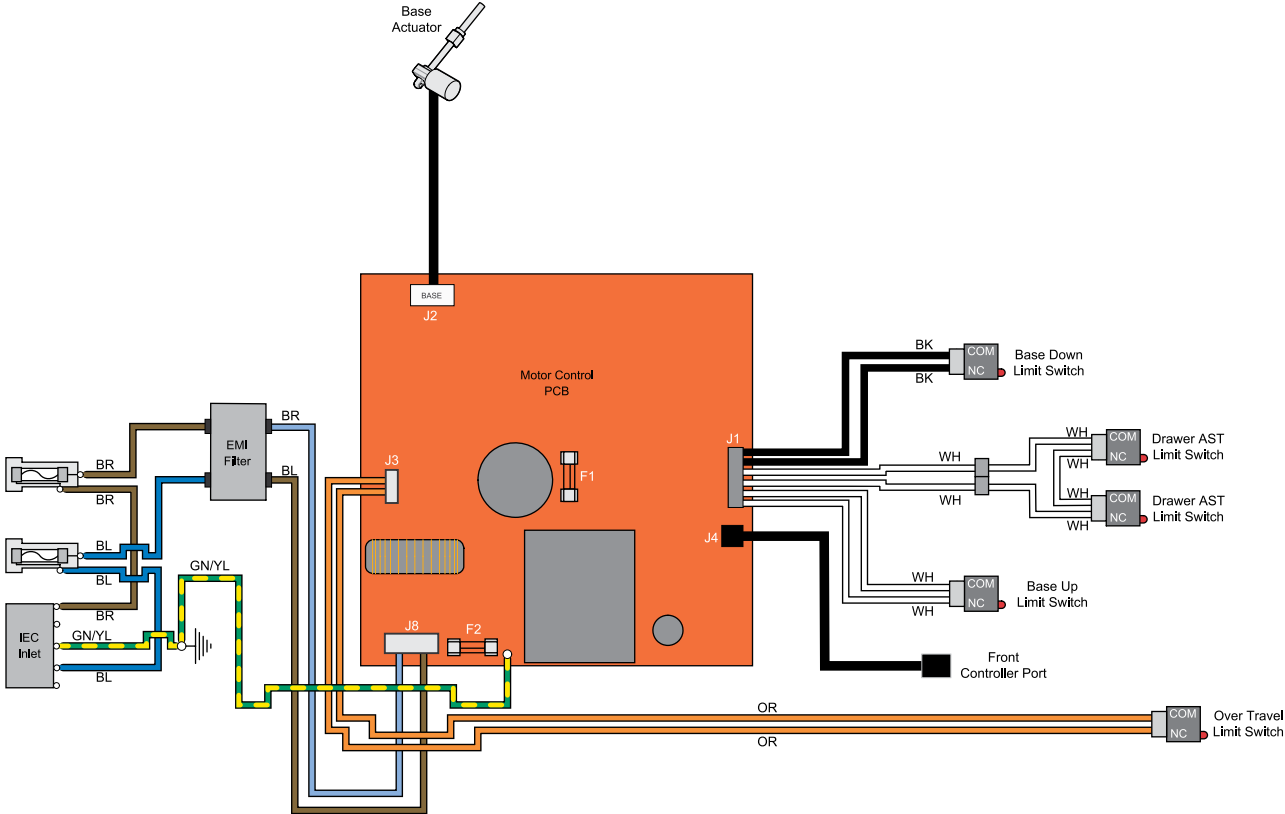
The actuator motor runs and lowers the table.

Actuator motor runs until:

1. Foot control button is released.
2. Base Down limit switch is tripped.
3. Overcurrent protection tripped.

Base UP / DOWN Function / 224 (-002 /-003)

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



MA10415i

Base UP / DOWN Function 224 (-002 /-003)

Power to Foot / Hand Control

Line voltage (115 VAC) is supplied thru two primary fuses located at the table base.

The 115 VAC is sent to the Motor Control PC board. The Motor Control PC board reduces the voltage to 3.3 VDC which is supplied to the foot control

Fuse F2 on the Motor Control PC board protects the transformer on the board and the electronics supplied by the transformer.

Base Up Operation

When the Base Up function is activated, the foot control sends a command to the Motor Control PC board.

The Motor Control PC board supplies the correct voltage to the Base actuator motor.

Fuse F1 on the Motor Control PC board protects the Base actuator motor.

The actuator motor runs and raises the table.

Actuator motor runs until:

1. Foot control button is released.
2. Base Up limit switch is tripped.
3. Overtravel limit switch is tripped.
4. Overcurrent protection tripped.

Base Down Operation

When the Base Down function is activated, the foot control sends a command to the Motor Control PC board.

The Motor Control PC board supplies the correct voltage to the Base actuator motor.

Fuse F1 on the Motor Control PC board protects the Base actuator motor.

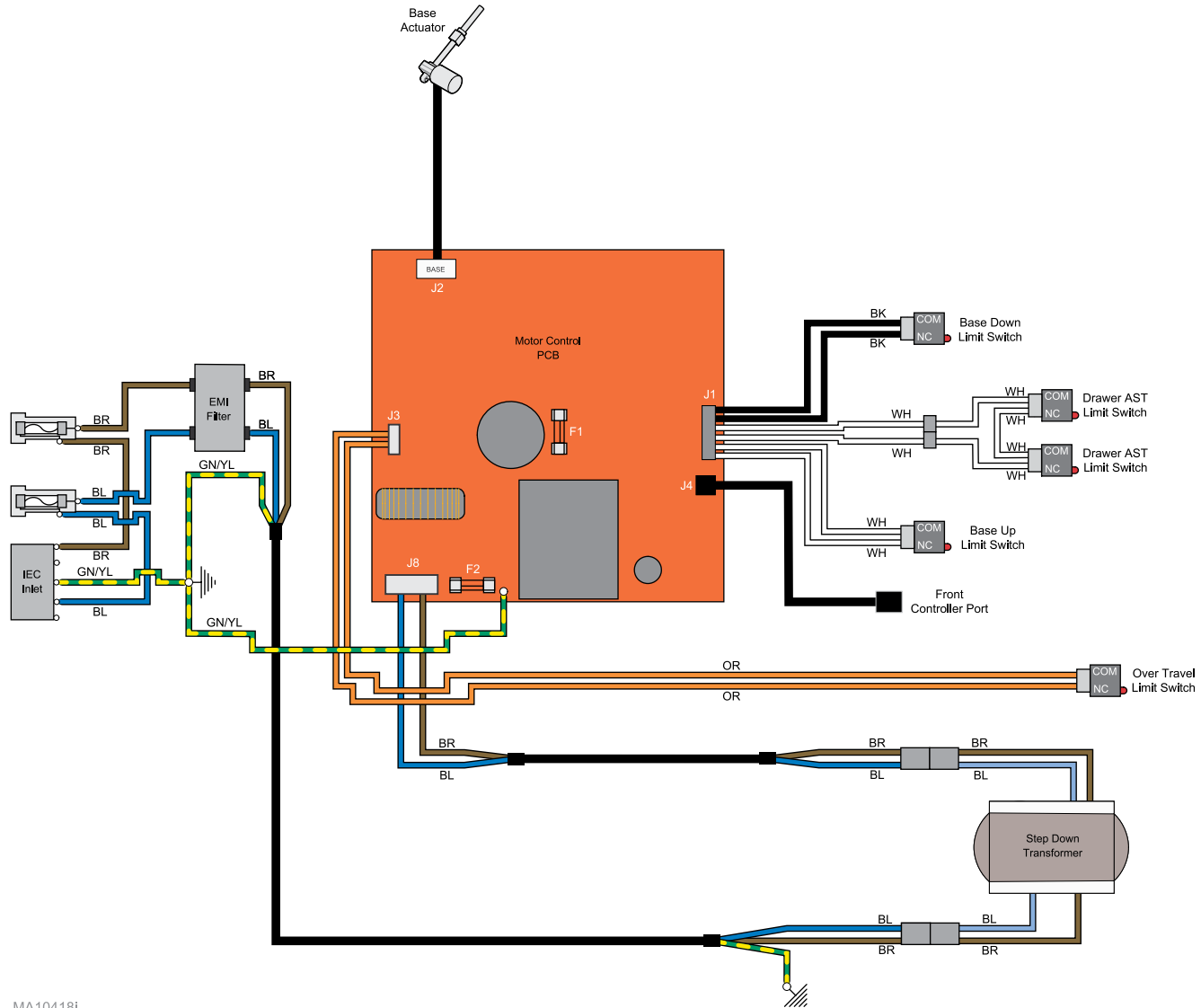
The actuator motor runs and lowers the table.

Actuator motor runs until:

1. Foot control button is released.
2. Base Down limit switch is tripped.
3. Active Sensing Technology™ activated.
4. Overcurrent protection tripped.

Base UP / DOWN Function / 224 (-011)

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



MA10418i

Base UP / DOWN Function 224 (-011)

Power to Foot / Hand Control

Line voltage (230 VAC) is supplied thru two primary fuses located at the table base to a Step Down transformer that reduces the line voltage to 115 VAC before it reaches to Motor Control PC board.

The 115 VAC is sent to the Motor Control PC board. The Motor Control PC board reduces the voltage to 3.3 VDC which is supplied to the foot control

Fuse F2 on the Motor Control PC board protects the transformer on the board and the electronics supplied by the transformer.

Base Up Operation

When the Base Up function is activated, the foot control sends a command to the Motor Control PC board.

The Motor Control PC board supplies the correct voltage to the Base actuator motor.

Fuse F1 on the Motor Control PC board protects the Base actuator motor.

The actuator motor runs and raises the table.

Actuator motor runs until:

1. Foot control button is released.
2. Base Up limit switch is tripped.
3. Overtravel limit switch is tripped.
4. Overcurrent protection tripped.

Base Down Operation

When the Base Down function is activated, the foot control sends a command to the Motor Control PC board.

The Motor Control PC board supplies the correct voltage to the Base actuator motor.

Fuse F1 on the Motor Control PC board protects the Base actuator motor.

The actuator motor runs and lowers the table.

Actuator motor runs until:

1. Foot control button is released.
2. Base Down limit switch is tripped.
3. Active Sensing Technology™ activated.
4. Overcurrent protection tripped.

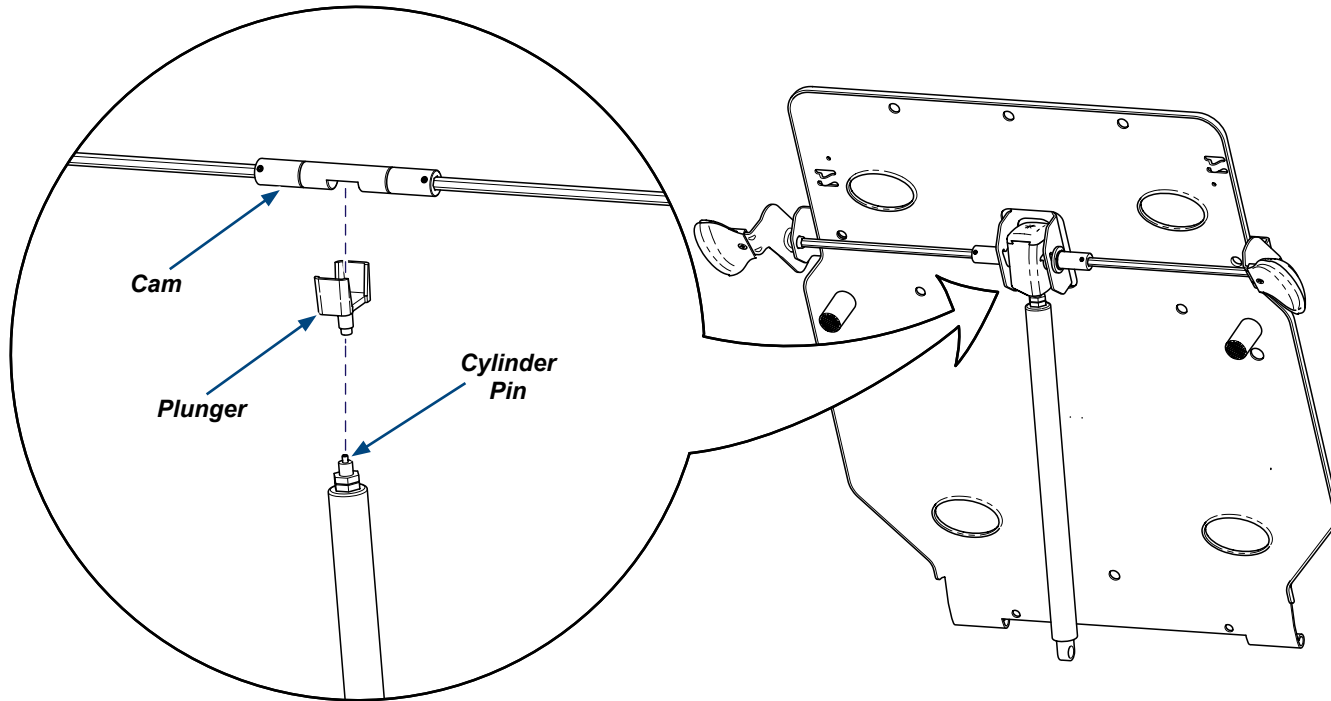
Back UP / DOWN Function / 224 (-001 /-002 /-003 /-011)

Back Section Release Mechanism

When either Back release handle is squeezed, the linkage rotates the cam. The rotating cam pushes the plunger down, compressing the cylinder pin. When the cylinder pin is compressed, the pressure inside the cylinder is released, allowing the Back section to be repositioned.

When the Back handle is released, the cam and plunger return to their normal position. This removes pressure from the cylinder pin allowing the cylinder to pressurize and lock the Back section in place.

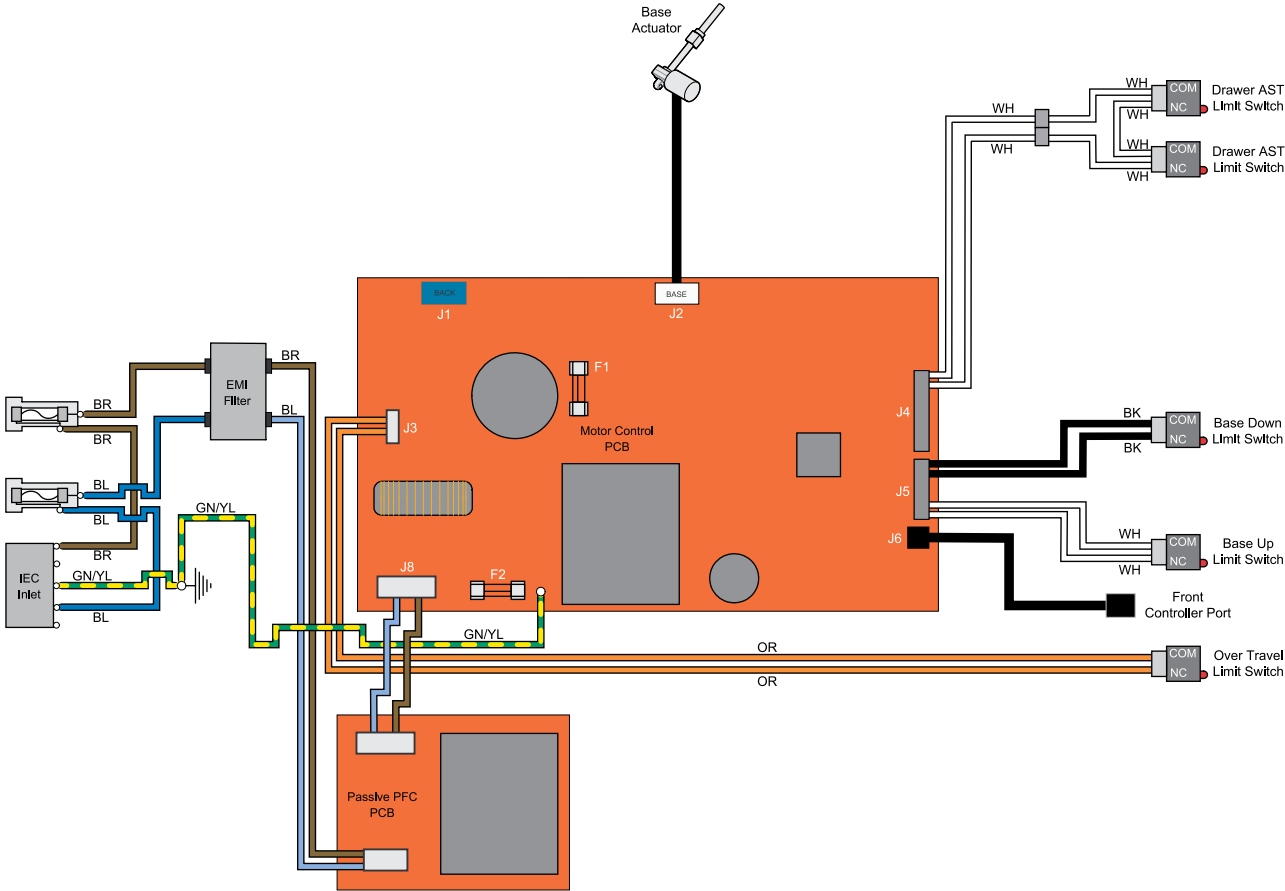
This illustration shows only the components that affect the activation of the Back UP / DOWN function. For a complete parts breakdown, refer to parts exploded views.



MA10413i

Base UP / DOWN Function / 225 (-002 /-003)

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



MA10416i

Base UP / DOWN Function 225 (-002 /-003)

Power to Foot / Hand Control

Line voltage (115 VAC) is supplied thru two primary fuses located at the table base.

The 115 VAC is sent thru the Passive PFC board to the Motor Control PC board.

The Motor Control PC board reduces the voltage to 3.3 VDC which is supplied to the foot control

Fuse F2 on the Motor Control PC board protects the transformer on the board and the electronics supplied by the transformer.

Base Up Operation

When the Base Up function is activated, the foot control sends a command to the Motor Control PC Board.

The Motor Control PC board supplies the correct voltage to the Base actuator motor.

Fuse F1 on the Motor Control PC board protects the Base actuator motor.

The actuator motor runs and raises the table.

Actuator motor runs until:

1. Foot control button is released.
2. Base Up limit switch is tripped.
3. Overtravel limit switch is tripped.
4. Overcurrent protection tripped.

Base Down Operation

When the Base Down function is activated, the foot control sends a command to the Motor Control PC board.

The Motor Control PC board supplies the correct voltage to the Base actuator motor.

Fuse F1 on the Motor Control PC board protects the Base actuator motor.

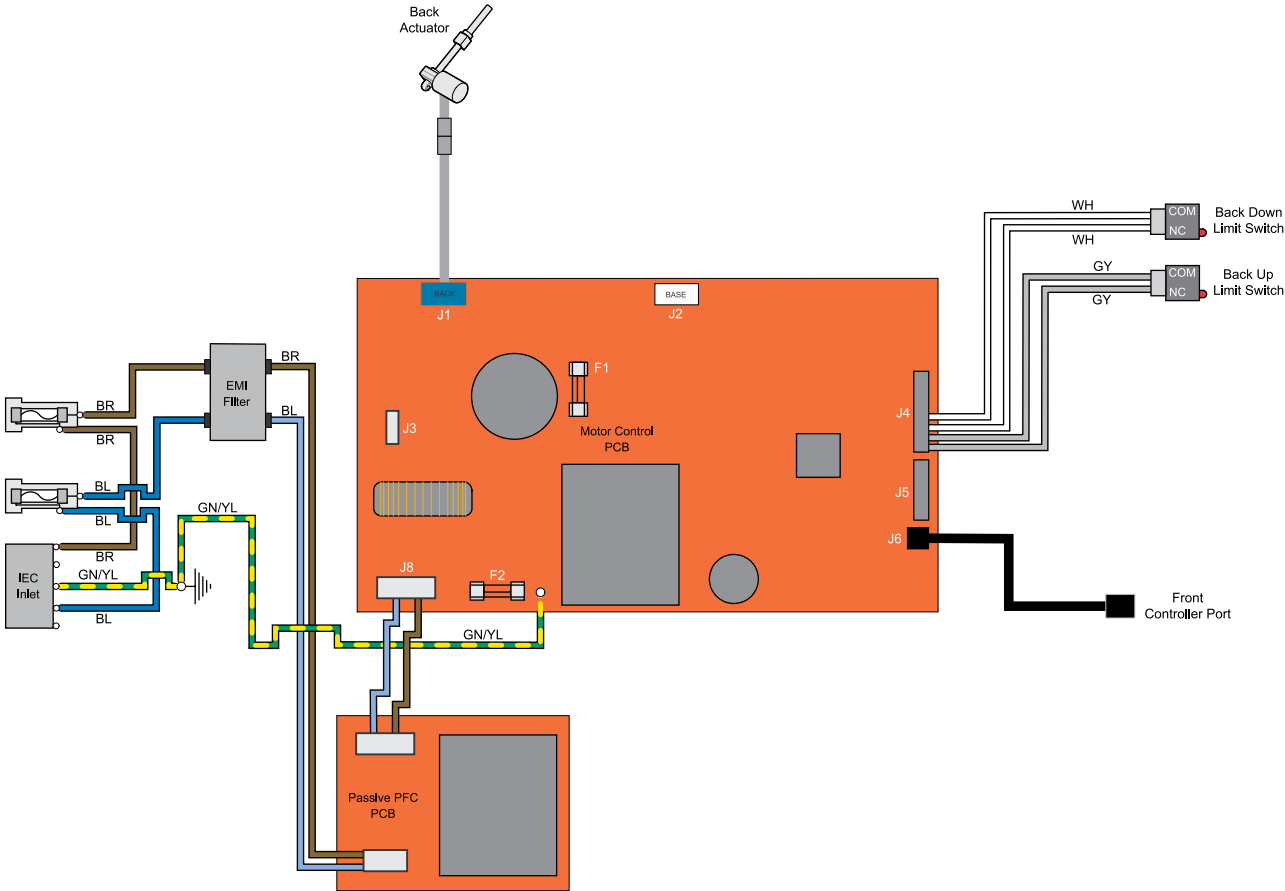
The actuator motor runs and lowers the table.

Actuator motor runs until:

1. Foot control button is released.
2. Base Down limit switch is tripped.
3. Active Sensing Technology™ activated.
4. Overcurrent protection tripped.

Back UP / DOWN Function / 225 (-002 /-003)

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



MA10417i

Back UP / DOWN Function 225 (-002 /-003)

Power to Foot / Hand Control

Line voltage (115 VAC) is supplied thru two primary fuses located at the table base.

The 115 VAC is sent thru the Passive PFC board to the Motor Control PC board.

The Motor Control PC board reduces the voltage to 3.3 VDC which is supplied to the foot control

Fuse F2 on the Motor Control PC board protects the transformer on the board and the electronics supplied by the transformer.

Back Up Operation

When the Back Up function is activated, the foot control sends a command to the Motor Control PC Board.

The Motor Control PC board supplies the correct voltage to the Back actuator motor.

Fuse F1 on the Motor Control PC board protects the Back actuator motor.

The actuator motor runs and raises the Back section.

Actuator motor runs until:

1. Foot control button is released.
2. Back Up limit switch is tripped.
3. Overcurrent protection tripped.

Back Down Operation

When the Back Down function is activated, the foot control sends a command to the Motor Control PC board.

The Motor Control PC board supplies the correct voltage to the Back actuator motor.

Fuse F1 on the Motor Control PC board protects the Back actuator motor.

The actuator motor runs and lowers the Back section.

Actuator motor runs until:

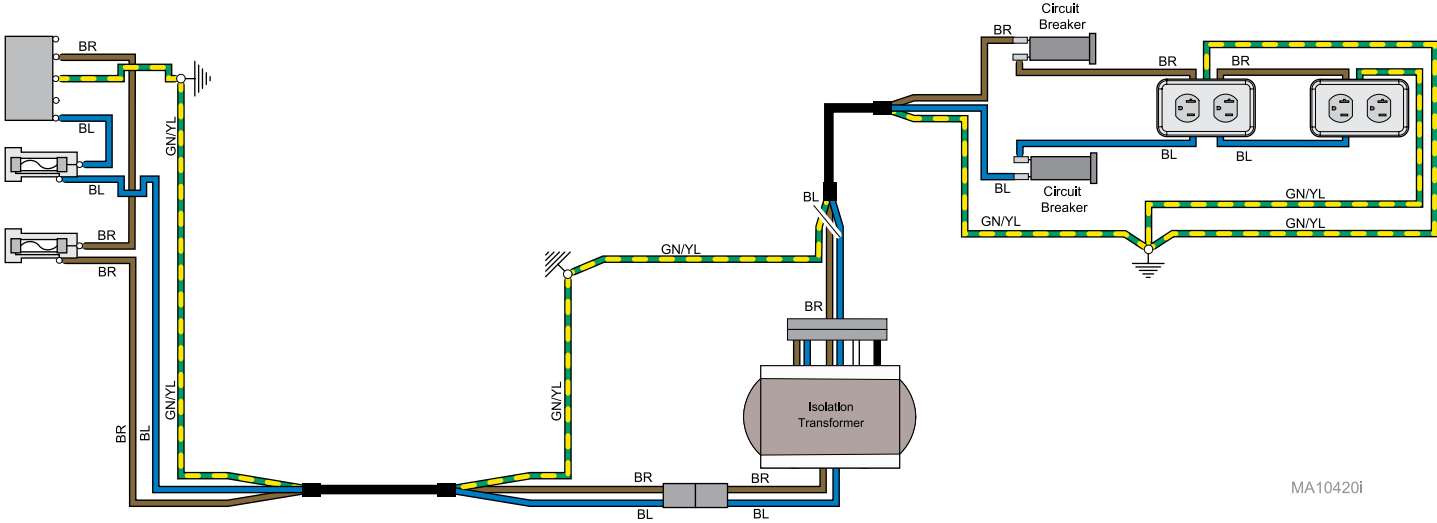
1. Foot control button is released.
2. Back Down limit switch is tripped.
3. Overcurrent protection tripped.

Table Receptacles 224 (-002 /-003) / 225 (-002 /-003)

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

Table Receptacles

Line voltage (115 VAC) is supplied directly to the receptacles thru two inlet fuses, isolation transformer, and circuit breakers. [Voltage bypasses the PC Board(s)].



Drawer Heater System 224 (-002 /-003) / 225 (-002 /-003)

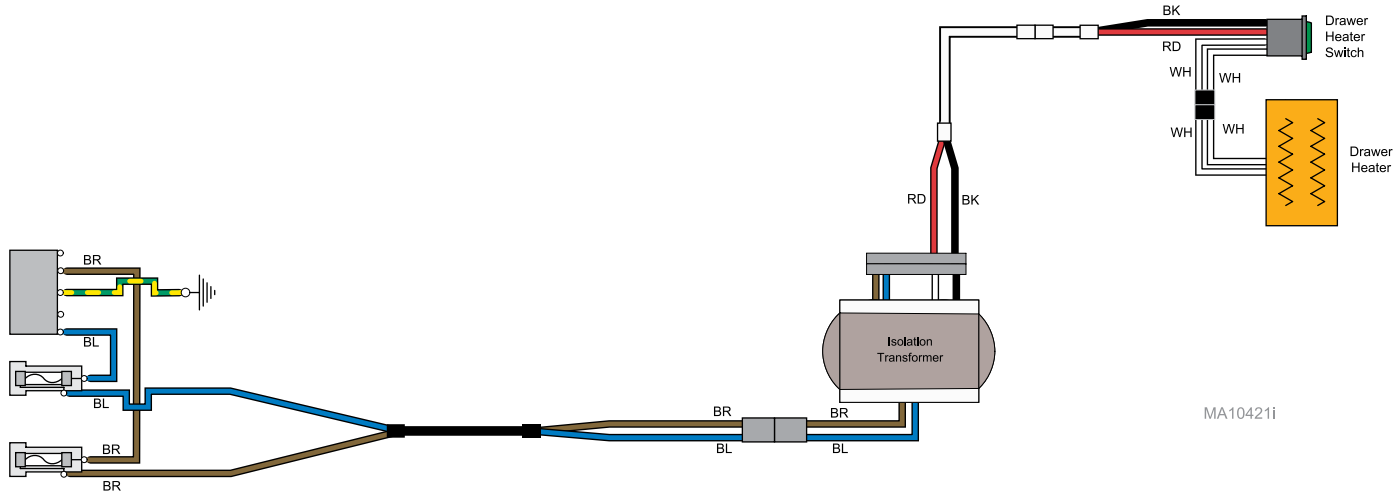
This illustration shows only the components that affect the Drawer Heater System. A detailed description of current flow during this function also appears below.

Drawer Heater

Line voltage (115 VAC) is supplied directly to the Drawer Heater thru two inlet fuses, isolation transformer, and Drawer Heater switch.

[Voltage bypasses the PC Board(s)].

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.





Because we care.