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111 -001 thru -015

Ritter® by MIDMARK

Power Examination Table

Service and Parts Manual

Serial Number Prefix:
K, V, BX & CA

To purchase a printed copy of this manual, click on the "Place Order" button below.

Place Order

NO LONGER IN PRODUCTION

Some service parts may not be available for this product!

111 -001 thru -015

FOR USE BY MIDMARK TRAINED TECHNICIANS ONLY

Part No. 003-0699-00 Rev. S (2/18/13)

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(*) Indicates that there has been a serial number break for the illustration and that there are additional point page(s) following the original page.

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(*) Indicates that there has been a serial number break for the illustration and that there are additional point page(s) following the original page.

IMPORTANT INSTRUCTIONS

General Safety Instructions

Safety First: The primary concern of Midmark Corporation is that this power examination table is maintained with the safety of the patient and staff in mind. To assure that services and repairs are completed safely and correctly, proceed as follows:

(1) Read this entire manual before performing any services or repairs on this table.

(2) Be sure you understand the instructions contained in this manual before attempting to service or repair this table.

Warnings

Throughout this manual are Note, Caution, and Danger paragraphs that call attention to particular procedures. These items are used as follows:

NOTE
A note is used to amplify an operating procedure, practice or condition.

CAUTION
A CAUTION is used for an operating procedure, practice, or condition which, if not correctly followed, could result in equipment damage.

DANGER
A DANGER is used for an operating procedure, practice, or condition which, if not correctly followed, could result in loss of life or serious personal injury.

Warranty Instructions

Refer to the Midmark "Limited Warranty" printed on the back cover of the Installation and Operation Manual for warranty information. Failure to follow the guidelines listed below will void the warranty and/or render the 111 Power Examination Table unsafe for operation.

- In the event of a malfunction, do not attempt to operate the table until necessary repairs have been made.
- Do not attempt to disassemble table, replace malfunctioning or damaged components, or perform adjustments unless you are one of Midmark's authorized service technicians.
- Do not substitute parts of another manufacturer when replacing inoperative or damaged components. Use only Midmark replacement parts.

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SECTION I
GENERAL INFORMATION

1.1 Scope of Manual

This manual contains detailed troubleshooting, scheduled maintenance, maintenance, and service instructions for 111 Power Examination Table. This manual is intended to be used by Midmark's authorized service technicians.

1.2 How to Use Manual

A. Manual Use When Performing Scheduled Maintenance.

(1) Perform inspections and services listed in Scheduled Maintenance Chart (Refer to para 3.1).

(2) If a component is discovered to be faulty or out of adjustment, replace or adjust component in accordance with maintenance/service instructions (Refer to para 4.1).

B. Manual Use When Table Is Malfunctioning And Cause Is Unknown.

(1) Perform an operational test on table (Refer to para 2.1).

(2) Perform troubleshooting procedures listed in Troubleshooting Guide (Refer to para 2.2).

(3) If a component is discovered to be faulty or out of adjustment, replace or adjust component in accordance with maintenance/service instructions (Refer to para 4.1).

C. Manual Use When Damaged Component Is Known.

(1) Replace or adjust component in accordance with maintenance/service instructions (Refer to para 4.1).

1.3 Description Of 111 Power Examination Table

A. General Description (See Figure 1-1).

The 111 Power Examination Table is an examination table designed specifically for performing general medical examinations and procedures.

The major serviceable components of the table are the motor pump, up functions relief valve, down functions relief valve, up functions shuttle valve, down functions shuttle valve, anti-cavitation solenoid valve, capacitors, base down limit switch, control panel with terminal blocks, back cylinder, needle valve (on some older units), foot cylinder, tilt cylinder, base cylinder, base slide assembly, chain assembly, rotation bearings (optional on some tables), pan safety limit switch, auto return relay (CR1), time delay relay, foot switches, AUTO RETURN "STOP" buttons, AUTO RETURN "RETURN" buttons, and isolation transformer (export units only).

B. Theory of Operation (See Figures 5-1 thru 5-14 for wiring diagrams and electrical schematics, and Figures 5-15 and 5-16 for hydraulic flow diagrams.)

On domestic units, 115 VAC is supplied directly to the circuitry of the table. On export units, 220 or 240 VAC is supplied to an isolation transformer. The isolation transformer then supplies 115 VAC to the circuitry of the table.

Up Functions Electrical Operation:

When no functions are selected, 115 VAC is supplied to terminals 1 and 2 of all foot switches. There is no path to neutral, however, so no current flows and nothing happens. When the operator selects one of the four up functions (BACK UP, TABLE UP, FOOT UP, or TILT UP) with the foot control, three paths to neutral are created. Current flows from terminal 2 to terminal 4 of the selected footswitch and then across the motor pump winding T2 to neutral, starting the motor pump pumping. Current also flows from terminal 2 to terminal 4 of the footswitch and then across the coil of the anti-cavitation solenoid valve, energizing the valve and causing it to open. Current also flows from terminal 2 to terminal 3 of the footswitch and then across the coil of the cylinder solenoid valve and the time delay relay, energizing the cylinder solenoid valve and causing it to open. The time delay relay delays current flow across the coil of the cylinder solenoid valve for 1/10 of a second, causing it to energize 1/10 of a second after the motor pump and anti-cavitation solenoid valve have energized. This allows the motor pump to run and build oil pressure first, so table top will not drift

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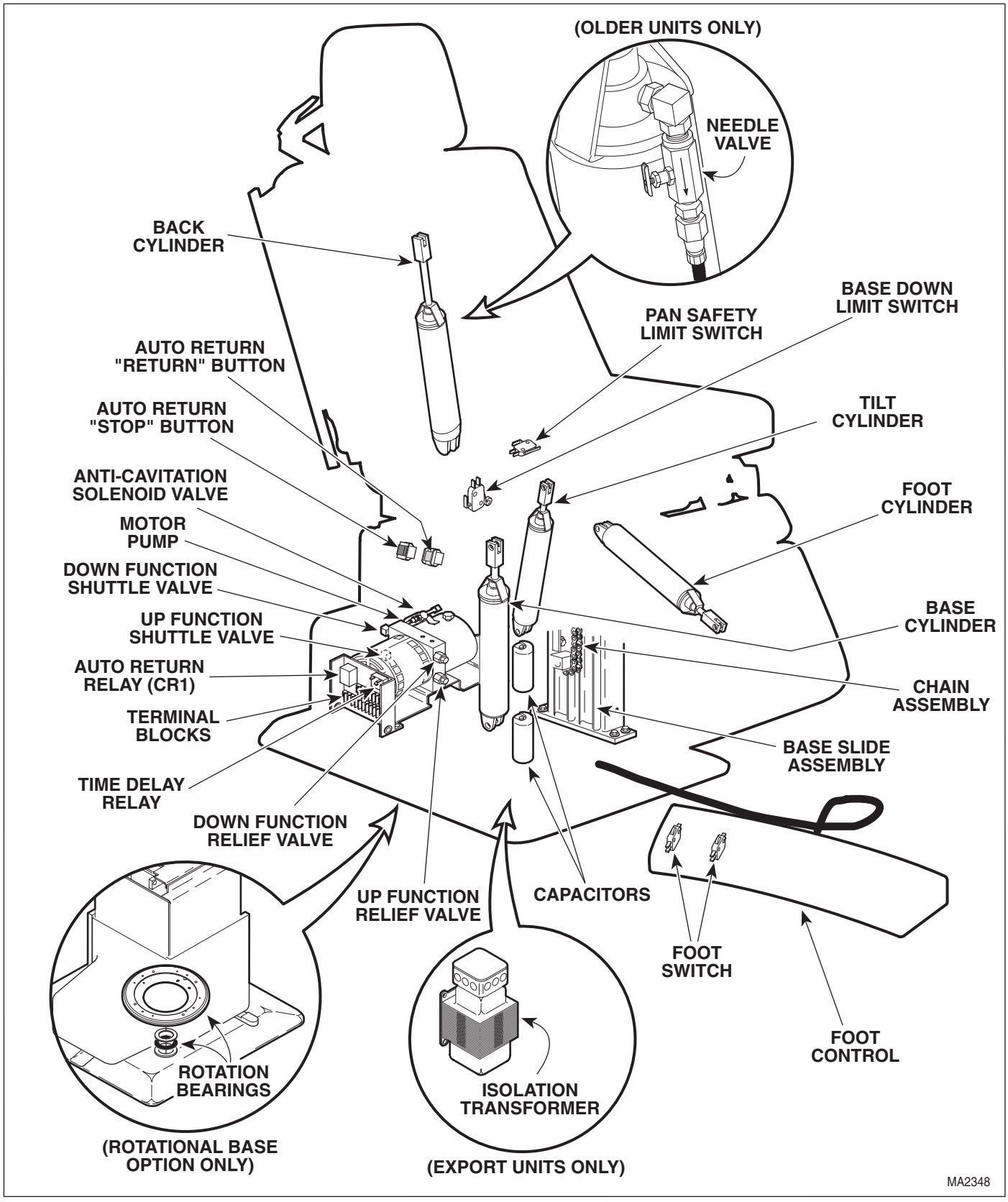

Figure 1-1. Major Components

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downward slightly before starting to rise. The foot function also has a pan safety limit switch in its circuit. If the treatment pan assembly is not pushed into its fully stowed position, the pan safety limit switch will not be tripped. If the pan safety limit switch is not tripped, current flow is interrupted, keeping the cylinder solenoid valve from energizing. This safety feature prevents the table operator from accidentally colliding the foot section into the treatment pan assembly.

Up Functions Hydraulic Operation:

When the motor pump starts pumping, suction is created by the rotating pump gears, which allows oil to defeat the reservoir check valve and flow into the pump gears. The pump gears pressurize the oil which flows to the up function shuttle valve. The check ball and shuttle in the up function shuttle valve are pushed to the open position by the oil, allowing oil to flow through the shuttle valve by flowing around the check ball (with the shuttle in the open position, oil is prevented from flowing through the reservoir ports and returning to the reservoir). The oil then flows through the open cylinder solenoid valve at the base of the selected cylinder, extending the cylinder rod. When the cylinder rod extends, oil is forced out of the rod end of the cylinder, through the open anti-cavitation solenoid valve and to the down function shuttle valve. The check ball and the shuttle in the down function shuttle valve are pushed to the closed position by the oil, which prevents oil from flowing through the shuttle valve and into the motor pump, but allows the oil to flow through the newly uncovered reservoir ports and into the reservoir. When the cylinder rod reaches the end of its travel, the up function relief valve opens when the pressure reaches 525 - 600 PSI (36.2 - 41.4 BARS) and allows the oil to return to the reservoir. This prevents the motor pump from developing too high of pressures and damaging the hydraulic system components, hoses, or the motor pump itself.

When the operator releases the pedal on the foot control, which is actuating the footswitch, the path to neutral is opened, causing the motor pump to shut down and the anti-cavitation solenoid valve and the cylinder solenoid valve to de-energize, causing the valves to close.

Down Functions Electrical Operation:

When no functions are selected, 115 VAC is supplied to terminals 1 and 2 of all foot switches. There is no path to neutral, however, so no current flows and nothing happens. When the operator selects one of the four down functions (BACK DOWN, TABLE DOWN, FOOT DOWN, or TILT DOWN) with the foot control, two paths to neutral are created. Current flows from terminal 2 to terminal 4 of the selected footswitch and then across the motor pump winding T3 to neutral, starting the motor pump pumping. Current also flows from terminal 2 to terminal 3 of the footswitch and then across the coil of the cylinder solenoid valve and the time delay relay, energizing the cylinder solenoid valve and causing it to open. The time delay relay delays current flow across the coil of the cylinder solenoid valve for 1/10 of a second, causing it to energize 1/10 of a second after the motor pump has energized. This allows the motor pump to run and build oil pressure before table is operated, so table top will not cavitate. The foot function also has a pan safety limit switch in its circuit. If the treatment pan assembly is not pushed into its fully stowed position, the pan safety limit switch will not be tripped. If the pan safety limit switch is not tripped, current flow is interrupted, keeping the cylinder solenoid valve from energizing. This safety feature prevents the table operator from accidentally colliding the foot section into the treatment pan assembly.

Down Functions Hydraulic Operation:

When the motor pump starts pumping, suction is created by the rotating pump gears, which allows oil to defeat the reservoir check valve and flow into the pump gears. The pump gears pressurize the oil which flows to the down function shuttle valve. The check ball and shuttle in the down function shuttle valve are pushed to the open position by the oil, allowing oil to flow through the shuttle valve by flowing around the check ball (with the shuttle in the open position, oil is prevented from flowing through the reservoir ports and returning to the reservoir). The oil then flows through the open anti-cavitation solenoid valve and into the rod end of the cylinder, causing the cylinder rod to retract. When the cylinder rod retracts, oil is forced out of the base of the cylinder, through the open cylinder solenoid valve to the up function shuttle valve. The check ball and the shuttle in the up function shuttle valve are pushed to the closed position by the oil, which prevents oil from flowing through the shuttle valve and into the motor pump, but allows the oil to flow through the newly uncovered reservoir ports and into the reservoir. When the cylinder rod reaches the end of its travel, the down functions relief valve opens when the pressure reaches

250 - 325 PSI (17.2 - 22.4 BARS) and allows the oil to return to the reservoir. This prevents the motor pump from developing too high of pressures and damaging the hydraulic system components, hoses, or the motor pump itself.

When the operator releases the pedal on the foot control, which is actuating the footswitch, the path to neutral is opened, causing the motor pump to shut down and the cylinder solenoid valve to de-energize, causing the valve to close.

Auto Return Function Operation:

When the operator presses one of the two AUTO RETURN "RETURN" buttons, current is applied across the normally closed contacts of the base down limit switch and then across the coil of the auto return relay (CR1), energizing the relay. When the auto return relay (CR1) is energized, five subswitches within the relay are switched; subswitches CR1-A, CR1-B, CR1-C, CR1-D, and CR1-E. If a subswitch was a normally open (N.O.) switch, it then switches to closed position (current can flow). If a subswitch was a normally closed (N.C.) switch, it then switches to an open position(current cannot flow).

Subswitch CR1-A switches from N.O. to closed position, allowing current to flow across the coil of the auto return relay (CR1) even after the AUTO RETURN 'RETURN" button is released. This keeps the auto return relay from de-energizing after the AUTO RETURN 'RETURN" button is released. It also supplies current to subswitch CR1-B.

Subswitch CR1-B switches from N.O. to closed position, allowing current from subswitch CR-A to flow across subswitch CR1-B and then across the coil of the base cylinder solenoid valve and time delay relay, energizing the base cylinder solenoid valve and causing it to open.

Subswitch CR1-C switches from N.O. to closed position, allowing current to flow across the motor pump windings T3 and T2 to neutral, starting the motor pump pumping. Subswitch CR1-C also supplies current to down function foot switches so they can be used during use of auto return function (this function of subswitch CR1-C is necessary because subswitch CR1-D removes normal current flow to foot switches).

Subswitch CR1-D switches from N.C. to open position, breaking current path to all footswitches. This prevents operator from using any up functions during use of auto return function.

Subswitch CR1-E switches from N.C. to open position, isolating Base UP and Base Down foot switches. This prevents the operator from using these foot switches while using auto return function.

When the table top lowers to the specified height for the auto return function, the base down limit switch is tripped. When the N.C. limit switch is opened, the circuit to the auto return relay (CR1) is opened, removing current flow from the coil of the auto return relay (CR1) and causing it to de-energize. Current flow to the coil of the base cylinder solenoid valve and motor pump is stopped, causing the auto return function to stop.

If the operator needs to stop the table top from lowering for any reason, one of the two AUTO RETURN "STOP" buttons can be pressed. When one of N.C. "STOP" buttons is pressed, the circuit to the auto return relay (CR1) is opened, removing current flow from the coil of the auto return relay (CR1) and causing it to de-energize. Current flow to the coil of the base cylinder solenoid valve and motor pump is stopped, causing the auto return function to stop.

General Information:

The anti-cavitation solenoid valve is in the hydraulic system to prevent oil from escaping out of the rod end of a cylinder while the table is not being moved. Otherwise, a cylinder rod would be able to extend on its own if upward pressure was placed on that function of the table top by the doctor or patient.

The cylinder solenoid valves are in the hydraulic system to prevent oil from escaping out of the base of the cylinder assemblies. Otherwise, a cylinder assembly could retract on its own, allowing the table top to drift.

On some older units (Serial No. K-8179 thru Present, BX-1000 thru BX-1739, and CA-1000 thru CA-1220), there is a needle valve attached to the rod end of the back cylinder. On these units, the needle valve is used to adjust the speed of the back cylinder.

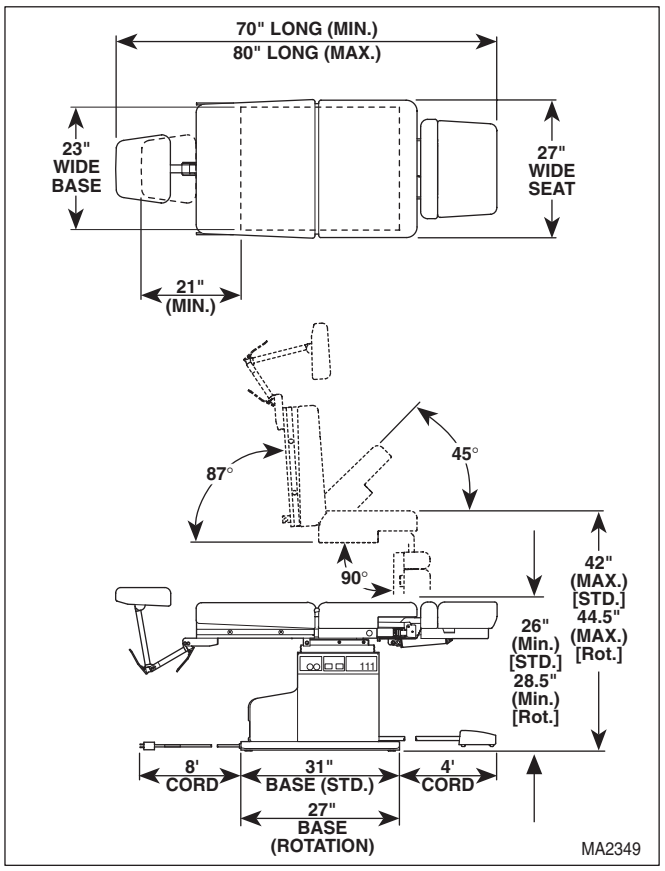

Figure 1-2. Table Dimensions

1.4 SPECIFICATIONS

Factual data for the 111 Power Examination Table is provided in Table 1-1. Also, see Figure 1-2.

Table 1-1. Specifications

Description	Data
Weight:	
Fixed Base	
Without Shipping Carton	462 lb (209.6 kg)
With Shipping Carton	517 lb (234.5 kg)
Rotational Base	
Without Shipping Carton	566 lb (256.7 kg)
With Shipping Carton	621 lb (281.7 kg)
Shipping Carton	58 in. "L" x 31 in. "W" x 42 in. "H" (147 cm x 79 cm x 107 cm)
Dimensions (See Figure 1-2):	
Table Top Length	70 in. (177.8 cm)
Table Top Length (headrest extended)	80 in. (203.2 cm)
Table Top Width	27 in. (68.6 cm)
Overall Width	27 in. (68.6 cm)
Table Positioning (Adjustable):	
Standard Base Table Top Height	26 in. to 42 in. (66 cm to 107 cm)
Rotational Base Table Top Height	28.5 in. to 44.5 in. (72 cm to 113 cm)
Weight Capacity	300 lb (136 kg)
Oil Used In Hydraulic System	light grade medicinal mineral oil
Hydraulic System	
Oil Capacity	Approx. 2.5 quarts (2.4 liters)
Motor Pump Reservoir Capacity	1 quart (.946 liter)
Electrical Requirements:	
115 VAC Unit	110 - 120 VAC, 60 HZ, 12 amp, single phase
230 VAC Unit	220 - 240 VAC, 50 - 60 HZ, 12 amp, single phase
Power Consumption:	
115 VAC Unit	960 WATTS, 8 amps @ 120 VAC
230 VAC Unit	960 WATTS, 4 amps @ 240 VAC
Recommended Circuit: A separate (dedicated) circuit is recommended for this table. The table *should not* be connected to an electrical circuit with other appliances or equipment unless the circuit is rated for the additional load.	
Up Function Relief Valve Setting	Valve opens at 525 to 600 PSI (36.2 to 41.4 BARS)
Down Function Relief Valve Setting	Valve opens at 250 to 325 PSI (17.2 to 22.4 BARS)

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GENERAL INFORMATION

1.5 Parts Replacement Ordering

If a part replacement is required, order the part directly from the factory as follows:

(1) Refer to Figure 1-3 to determine the location of the model number and serial number of the table and record this data.

(2) Refer to the Parts List to determine the item numbers of the parts, part numbers of the parts, descriptions of the parts, and quantities of parts needed and record this data (Refer to para 6.1).

NOTE
Ask the Purchasing Department of the company that owns the table for this information. Otherwise, this information may be obtained from the dealer that sold the table.

(3) Determine the installation date of the table and record this data.

(4) Call Midmark with the recorded information and ask for the Medical Products Technical Services Department (See back cover of this manual for the phone number) or use the Fax Order Form (See page 7-2 for Fax Order Form).

1.6 Special Tools

Table 1-2 lists all of the special tools needed to repair the table, how to obtain the special tools, and the purpose of each special tool.

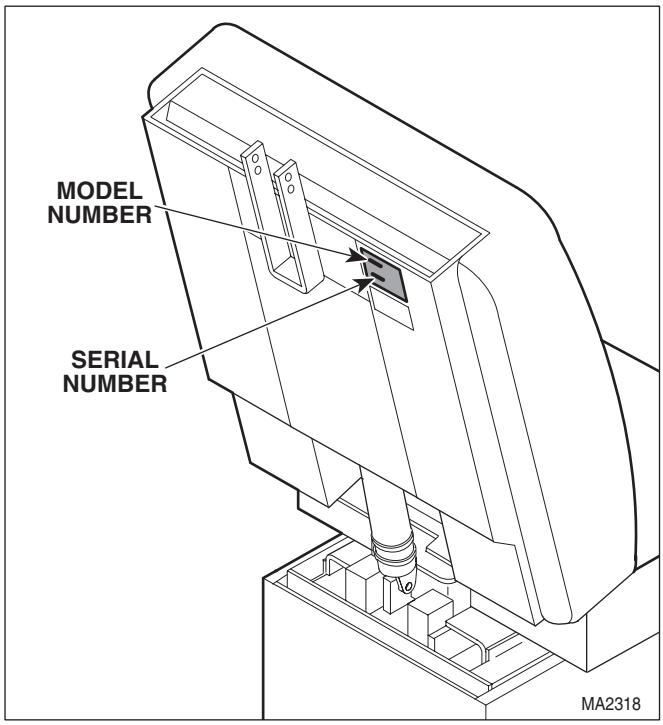

Figure 1-3. Model Number / Serial Number Location

Table 1-2. Special Tool List

Description of Special Tool	Manufacturer's Name / Address / Phone	Manufacturer's Part Number	Purpose of Special Tool
Multimeter	Commercially Available	Any Type	Used to perform continuity and voltage checks.
Retaining Ring Pliers - Large	Commercially Available	Any Type	Used to remove / install retaining ring which is removed during rotation bearing replacement.
Torque Wrench	Commercially Available	Any Type	Used with spanner socket to torque rotation nut.
Spanner Socket	Midmark Corp. 60 Vista Drive Versailles, Ohio 45380 (513) 526-3662 Call Midmark's Medical Products Technical Services Department to request a loan of the tool.	M05234	Used to remove / install rotation nut which secures rotation base to platform base weldment.

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SECTION II
TESTING AND TROUBLESHOOTING

2.1 Operational Test

In order to effectively diagnose the malfunction of the table, it may be necessary to perform an operational test as follows:

DANGER
Refer to the Operator Manual for complete instructions on operating the table. Failure to do so could result in personal injury.

NOTE
The Operational Test, for the most part, only describes what should happen when the table is operated. If the table does something other than described, a problem has been discovered. Refer to the Troubleshooting Guide to determine the cause of the problem and its correction.

(1) Plug the table into a grounded, non-isolated, correctly polarized outlet that has the proper voltage output for the table.

(2) Depress TABLE UP, TABLE DOWN, BACK UP, BACK DOWN, TILT UP, TILT DOWN, FOOT UP, and FOOT DOWN pedals on foot control.

(3) Observe. The table top should move in the direction corresponding to the pedal which is being depressed. Movement should be steady and should not be too slow or too fast.

(4) Lower FOOT DOWN function all the way. Pull the pan slide assembly outward until pan safety limit switch is no longer tripped. Depress either FOOT UP or FOOT DOWN pedal on foot control.

(5) Observe. The foot section of table top should not move when either FOOT UP or FOOT DOWN pedal is depressed.

(6) Push pan slide assembly inward until pan safety limit switch is tripped. Depress either FOOT UP or FOOT DOWN pedal on foot control.

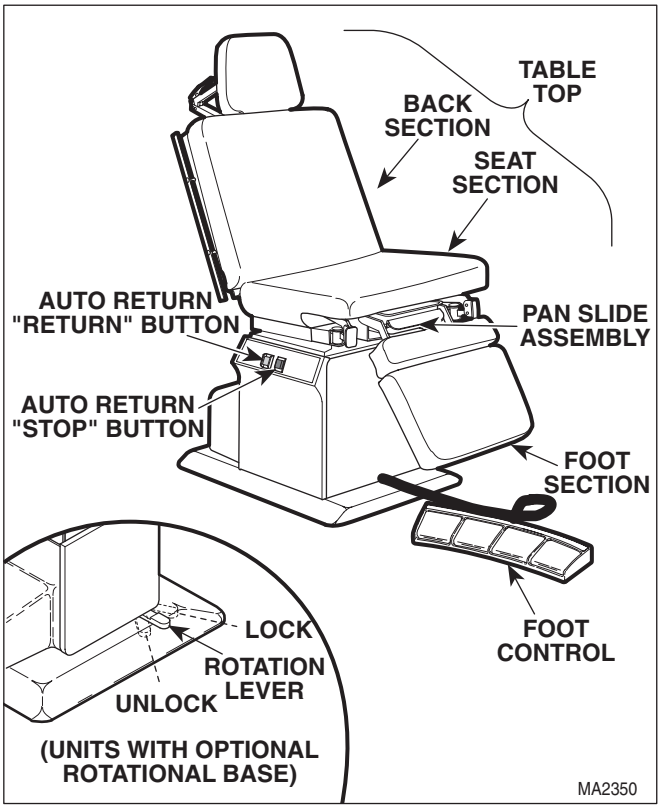

Figure 2-1. Operational Test

(7) Observe. The foot section of table top should move when FOOT UP or FOOT DOWN pedal is depressed.

(8) Raise TABLE UP function all the way up.

(9) Press one of the AUTO RETURN "RETURN" buttons. After table top lowers halfway, press one of the AUTO RETURN "STOP" buttons.

(10) Observe. When the AUTO RETURN "RETURN" button is pressed, the table top should begin to lower (and should keep lowering even when the button is released). When the AUTO RETURN "STOP" button is pressed, the table top should stop lowering.

(11) Press one of the AUTO RETURN "RETURN" buttons and allow the table top to lower completely.

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(12) Observe. When the table top is completely lowered, the motor pump should stop running, indicating that the base down limit switch has been tripped.

(13) Repeat steps 8 thru12 using the other AUTO RETURN "RETURN" button and AUTO RETURN "STOP" button.

NOTE
Steps 14 thru 17 apply only to units which have a rotational base (it is an option on some units).

(14) Move ROTATION lever to UNLOCK position. Attempt to rotate table top.

(15) Observe. The table should rotate easily and quietly; no binding should be felt or heard when rotating table top.

(16) Move ROTATION lever to LOCK position. Attempt to rotate table top.

(17) Observe. The table top should not be able to be rotated.

2.2 Troubleshooting Procedures

Table 2-1 is a Troubleshooting Guide which is used to determine the cause of the malfunction.

Table 2-1. Troubleshooting Guide

Problem	Symptom	Probable Cause	Check	Correction
Table will not operate when any of the eight up or down functions are selected.	When a foot pedal is depressed, motor pump does not run and solenoid cannot be heard being energized (audible click).	Power cord is not plugged into facility wall outlet, or on export models, power cord is not plugged into connector receptacle on table.	Check to see if power cord is plugged in.	Plug power cord into facility wall outlet and/or connector receptacle on table.
		Facility circuit breaker providing power to table is tripped.	Check to see if facility circuit breaker is tripped. One way of checking this is to plug a lamp into wall outlet that table was plugged into.	If circuit breaker is tripped, determine what caused circuit breaker to trip, correct the problem, and then reset/replace circuit breaker.
		Fuse(s) in AC connector receptacle is blown (export units only).	Perform continuity check on fuses.	Replace fuse(s).
		Wire connections loose.	Check all wiring connections from power cord to terminal block and from foot control to terminal block. Check wire connections to terminals 3 and 9 of auto return relay (CR1). Perform continuity check on wires. Use multimeter to check for proper voltage levels.	Clean any dirty connections. Tighten any loose connections. Replace any damaged connections.
		Subswitch CR1-D of auto return relay (CR1) is stuck open.	Check for 115 VAC at terminal 3 of auto return relay (CR1).	If 115 VAC is not present, replace auto return relay (CR1). Refer to para 4.21.
		Isolation transformer is malfunctioning (export units only).	Check input and output voltage of isolation transformer or replace suspect isolation transformer with known working transformer.	If isolation transformer is receiving proper input voltage but is not supplying 115 VAC output, replace isolation transformer.
	When a foot pedal is depressed, motor pump does not run, but solenoid can be heard being energized (audible click).	Capacitor(s) is blown (motor pump may be humming).	Replace suspect capacitor(s) with known working capacitor(s).	Replace capacitor(s). Refer to para 4.19.

Table 2-1. Troubleshooting Guide - Continued

Problem	Symptom	Probable Cause	Check	Correction
Table will not operate when any of the eight up or down functions are selected - Continued.	When a foot pedal is depressed, motor pump does not run, but solenoid energizes (audible click) - Continued.	Motor thermal overload switch is activated because motor pump overheated.	Unplug power cord and then wait 15 to 20 minutes.	Allow motor pump to cool and then try to operate table. If motor pump does not run, replace motor pump. Refer to para 4.9, 4.10, or 4.10.1.
		Motor pump is burned out.	Replace suspect motor pump with known working motor pump.	Replace motor pump. Refer to para 4.9, 4.10, or 4.10.1.
		Wire connections loose.	Check all wiring connections from terminal block to motor pump. Use multimeter to check for proper voltage levels.	Clean any dirty connections. Tighten any loose connections. Replace any damaged connections.
	When a foot pedal is depressed, motor pump runs, but table top does not move.	Time delay relay is malfunctioning.	Use a jumper wire to bypass time delay relay. If table moves, time delay relay is malfunctioning. Put a multimeter in line w/time delay relay and run each cylinder one at a time.	A multimeter reading >1.2 amps indicates a malfunctioning cylinder has caused the relay to fail. Replace the cylinder ***and*** the time delay relay. If reading is <1.2 amps, replace time delay relay ***only***. Refer to para 4.18.
	When foot pedal is pressed, motor pump runs and solenoid energizes.	Hydraulic system is low on mineral oil.	Check oil level in reservoir.	If necessary, add oil to reservoir. Refer to para 4.3.
	When foot pedal is pressed, motor pump hums, but does not run.	Capacitor(s) is blown.	Replace suspect capacitor(s) with known working capacitor(s).	Replace capacitor(s). Refer to para 4.19.
		Motor pump is locked up or burned out.	Replace suspect motor pump with known working motor pump.	Replace motor pump. Refer to para 4.9, 4.10, or 4.10.1.
The TABLE UP, BACK UP , TILT UP, and FOOT UP functions do not work, but TABLE DOWN, BACK DOWN, TILT DOWN, and FOOT DOWN functions do.	Motor pump runs when an up function foot pedal is depressed, but table top does not move.	Anti-cavitation solenoid valve is malfunctioning.	Check for slight magnetism on bottom side of anti-cavitation solenoid valve, indicating solenoid is not burned out or replace suspect anti-cavitation solenoid valve with known working anti-cavitation solenoid valve.	Replace anti-cavitation solenoid valve. Refer to para 4.6 or 4.6.1.
		Wire connections loose.	Check all wiring connections from terminal block to anti-cavitation solenoid valve. Use multimeter to check for proper voltage levels.	Clean any dirty connections. Tighten any loose connections. Replace any damaged connections.
		Up function shuttle valve is malfunctioning.	Check to see if check ball is loose in up function shuttle valve or adjacent elbow (check ball should be held in shuttle valve by metal ring).	Replace up function shuttle valve. Refer to para 4.4.

SECTION II
TESTING AND TROUBLESHOOTING

Table 2-1. Troubleshooting Guide - Continued

Problem	Symptom	Probable Cause	Check	Correction
The TABLE UP, BACK UP , TILT UP, and FOOT UP functions do not work, but TABLE DOWN, BACK DOWN, TILT DOWN, and FOOT DOWN functions do.	Motor pump runs when an up function foot pedal is depressed, but table top does not move. - *continued*	Motor pump is defective.	Replace suspect motor pump with known working motor pump.	Replace motor pump. Refer to para 4.9, 4.10, or 4.10.1.
	Motor pump does not run when an up function foot pedal is depressed, but does when a down function foot pedal is depressed.	Motor pump is defective.	Replace suspect motor pump with known working motor pump.	Replace motor pump. Refer to para 4.9, 4.10, or 4.10.1.
		Wire connection in foot control is loose.	Check all wiring connections in foot control.	Clean dirty connections. Repair loose / damaged connections.
The TABLE DOWN, BACK DOWN, TILT DOWN, and FOOT DOWN functions do not work, but TABLE UP, BACK UP, TILT UP, and FOOT UP functions do.	Motor pump runs when a down function foot pedal is depressed, but table top does not move.	Down function shuttle valve is malfunctioning.	Check to see if check ball is loose in down function shuttle valve or adjacent elbow (check ball should be held in shuttle valve by metal ring).	Replace down function shuttle valve. Refer to para 4.5 or 4.5.1.
		Motor pump is defective.	Replace suspect motor pump with known working motor pump.	Replace motor pump. Refer to para 4.9, 4.10, or 4.10.1.
	Motor pump does not run when a down function foot pedal is depressed, but runs when an up function is pressed.	Motor pump is defective.	Replace suspect motor pump with known working motor pump.	Replace motor pump. Refer to para 4.9, 4.10, or 4.10.1.
		Wire connection in foot control is loose.	Check all wiring connections in foot control.	Clean dirty connections. Repair loose / damaged connections.
TABLE UP function works, but TABLE DOWN function does not or TABLE DOWN function works but TABLE UP function does not. All other functions work.	Motor pump does not run and base cylinder solenoid valve does not energize.	TABLE UP or TABLE DOWN foot switch is malfunctioning.	Perform a continuity check on suspect foot switch.	Replace foot switch. Refer to para 4.28.
	Motor pump runs but base cylinder solenoid valve does not energize or vice versa.	Wire connection to foot switch is loose.	Check all wiring connections on suspect foot switch.	Clean dirty connections. Repair loose / damaged connections.
		TABLE UP or TABLE DOWN foot switch is malfunctioning.	Perform a continuity check on suspect foot switch in ON and OFF positions or replace suspect foot switch with known working foot switch.	Replace foot switch. Refer to para 4.28.

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Table 2-1. Troubleshooting Guide - Continued

Problem	Symptom	Probable Cause	Check	Correction
BACK UP function works, but BACK DOWN function does not or BACK DOWN function works but BACK UP function does not. All other functions work.	Motor pump does not run and back cylinder solenoid valve does not energize.	BACK UP or BACK DOWN foot switch is malfunctioning.	Perform a continuity check on suspect foot switch.	Replace foot switch. Refer to para 4.28.
	Motor pump runs but back cylinder solenoid valve does not energize or vice versa.	Wire connection to foot switch is loose.	Check all wiring connections on suspect foot switch.	Clean any dirty connections. Tighten any loose connections. Replace any damaged connections.
		BACK UP or BACK DOWN foot switch is malfunctioning.	Perform a continuity check on suspect foot switch.	Replace foot switch. Refer to para 4.28.
TILT UP function works, but TILT DOWN function does not or TILT DOWN function works but TILT UP function does not. All other functions work.	Motor pump does not run and tilt cylinder solenoid valve does not energize.	TILT UP or TILT DOWN foot switch is malfunctioning.	Perform a continuity check on suspect foot switch.	Replace foot switch. Refer to para 4.28.
	Motor pump runs but tilt cylinder solenoid valve does not energize or vice versa.	Wire connection to foot switch is loose.	Check all wiring connections on suspect foot switch.	Clean dirty connections. Fix any loose / damaged connections.
		TILT UP or TILT DOWN foot switch is malfunctioning.	Perform a continuity check on suspect foot switch.	Replace foot switch. Refer to para 4.28.
FOOT UP function works, but FOOT DOWN function does not or FOOT DOWN function works but FOOT UP function does not. All other functions work.	Motor pump does not run and foot cylinder solenoid valve does not energize.	FOOT UP or FOOT DOWN foot switch is malfunctioning.	Perform a continuity check on suspect foot switch.	Replace foot switch. Refer to para 4.28.
	Motor pump runs but foot cylinder solenoid valve does not energize or vice versa.	Wire connection to foot switch is loose.	Check all wiring connections on suspect foot switch.	Clean any dirty connections. Tighten any loose connections. Replace any damaged connections.
		FOOT UP or FOOT DOWN foot switch is malfunctioning.	Perform a continuity check on suspect foot switch.	Replace foot switch. Refer to para 4.28.

SECTION II
TESTING AND TROUBLESHOOTING

Table 2-1. Troubleshooting Guide - Continued

Problem	Symptom	Probable Cause	Check	Correction
TABLE UP and TABLE DOWN functions do not work. All other functions work.	Motor pump runs when TABLE UP or TABLE DOWN foot pedal is depressed, but table top does not move.	Base cylinder solenoid valve is malfunctioning.	Check to see if base cylinder solenoid valve energizes (audible click) when foot pedal is depressed.	Replace base cylinder. Refer to para 4.15.
		White wire running from terminal 3 of foot switch to terminal block is broken or disconnected.	Check continuity of wire and connections.	Clean any dirty connections. Tighten any loose connections. Replace any damaged connections.
		Wire running from terminal block to base cylinder solenoid valve is broken or disconnected. Wire connections to terminals 1 and 7 of auto return relay (CR1) are broken or disconnected.	Check continuity of wire and connections.	Clean any dirty connections. Tighten any loose connections. Replace any damaged connections.
		Subswitch CR1-E of auto return relay (CR1) is stuck open.	Check for 115 VAC at terminal 7 of auto return relay (CR1), when TABLE UP or TABLE DOWN footswitch is depressed.	If 115 VAC is not present, replace auto return relay (CR1). Refer to para 4.21.
BACK UP and BACK DOWN functions do not work. All other functions work.	Motor pump runs when BACK UP or BACK DOWN foot pedal is depressed, but table does not move.	Back cylinder solenoid valve is malfunctioning.	Check to see if back cylinder solenoid valve energizes (audible click) when foot pedal is depressed.	Replace back cylinder. Refer to para 4.12.
		Needle valve is plugged or adjusted closed (needle valve is only on some older units).	Check to see if needle valve is out of adjustment.	Adjust or clean needle valve. Refer to para 4.13. If necessary, replace needle valve.
		White/black wire running from terminal 3 of foot switch to terminal block is broken or disconnected.	Check continuity of wire and connections.	Clean any dirty connections. Tighten any loose connections. Replace any damaged connections.
		Wire running from terminal block to back cylinder solenoid valve is broken or disconnected.	Check continuity of wire and connections.	Clean any dirty connections. Tighten any loose connections. Replace any damaged connections.
	Motor pump runs when BACK UP or BACK DOWN foot pedal is depressed, but back section moves too slowly or too quickly.	Needle valve is plugged or adjusted closed (needle valve is only on some older units).	Check to see if needle valve is out of adjustment.	Adjust or clean needle valve. Refer to para 4.13. If necessary, replace needle valve.
TILT UP and TILT DOWN functions do not work. All other functions work.	Motor pump runs when TILT UP or TILT DOWN foot pedal is depressed, but table does not move.	Tilt cylinder solenoid valve is malfunctioning.	Check to see if tilt cylinder solenoid valve energizes (audible click) when foot pedal is depressed.	Replace tilt cylinder. Refer to para 4.14.
		Orange wire running from terminal 3 of foot switch to terminal block is broken or disconnected.	Check continuity of wire and connections.	Clean any dirty connections. Tighten any loose connections. Replace any damaged connections.
		Wire running from terminal block to tilt cylinder solenoid valve is broken or disconnected.	Check continuity of wire and connections.	Clean any dirty connections. Tighten any loose connections. Replace any damaged connections.

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Table 2-1. Troubleshooting Guide - Continued

Problem	Symptom	Probable Cause	Check	Correction
FOOT UP and FOOT DOWN functions do not work. All other functions work.	Motor pump runs when FOOT UP or FOOT DOWN foot pedal is depressed, but foot section does not move.	Foot cylinder solenoid valve is malfunctioning.	Check to see if foot cylinder solenoid valve energizes (audible click) when foot pedal is depressed.	Replace foot cylinder. Refer to para 4.16.
		Red/black wire running from terminal 3 of foot switch to terminal block is broken or disconnected.	Check continuity of wire and connections.	Clean any dirty connections. Tighten any loose connections. Replace any damaged connections.
		Wires running from terminal block to pan safety limit switch and foot cylinder solenoid valve are broken or disconnected.	Check continuity of wire and connections.	Clean any dirty connections. Tighten any loose connections. Replace any damaged connections.
		Treatment pan assembly is not pushed in all the way.	Check that the treatment pan assembly is pushed in all the way.	Push treatment pan assembly in all the way.
		Pan safety limit switch is out of adjustment.	Check to see if pan safety limit switch is being tripped by treatment pan assembly.	Adjust pan safety limit switch so it is tripped when treatment pan assembly is pushed in all the way. Refer to para 4.20.
		Pan safety limit switch is malfunctioning.	Perform continuity check on pan safety limit switch (pan in = closed).	Replace pan safety limit switch. Refer to para 4.20.
Auto return function does not operate properly.	Nothing happens when the AUTO RETURN "RETURN" button is pressed.	AUTO RETURN "RETURN" button is malfunctioning.	Perform continuity check on AUTO RETURN "RETURN" button.	Replace AUTO RETURN "RETURN" button. Refer to para 4.17.
		Auto return relay (CR1) is malfunctioning.	Watch subswitch contacts in auto return relay (CR1) while AUTO RETURN "RETURN" button is pressed. Should be able to see contacts move as relay energizes.	Replace auto return relay (CR1). Refer to para 4.21.
		Base down limit switch is tripped.	Table is already lowered all the way down, tripping limit switch or base down limit switch is out of adjustment, causing base down limit switch to remain tripped or to trip earlier than desired.	Adjust base down limit switch. Refer to para 4.22.
		Base down limit switch is malfunctioning - stuck open.	Perform continuity check on base down limit switch (limit switch not tripped = closed).	Replace base down limit switch. Refer to para 4.22.

SECTION II
TESTING AND TROUBLESHOOTING

Table 2-1. Troubleshooting Guide - Continued

Problem	Symptom	Probable Cause	Check	Correction
Auto return function does not operate properly - Continued.	When the AUTO RETURN "RETURN" button is pressed, the table top doesn't move, but the motor pump runs.	Subswitch CR1-B of auto return relay (CR1) does not close.	Check for 115 VAC at terminal 7 of auto return relay (CR1) after AUTO RETURN "RETURN" button has been pressed.	If 115 VAC is not present, replace auto return relay (CR1). Refer to para 4.21.
		Wire connections loose.	Check wire connections to terminals 4 and 7 of auto return relay (CR1). Perform continuity check on wires. Use multimeter to check for proper voltage levels.	Clean any dirty connections. Tighten any loose connections. Replace any damaged connections.
	When the AUTO RETURN "RETURN" button is pressed, the motor pump doesn't run, but the base cylinder solenoid valve energizes, allowing table to drift downward slowly.	Subswitch CR1-C of auto return relay (CR1) does not close.	Check for 115 VAC at terminal 6 of auto return relay (CR1) after the AUTO RETURN "RETURN" button has been pressed.	If 115 VAC is not present, replace auto return relay (CR1). Refer to para 4.21.
		Wire connections loose.	Check wire connections to terminals 6 and 9 of auto return relay (CR1). Perform continuity check on wires. Use multimeter to check for proper voltage levels.	Clean any dirty connections. Tighten any loose connections. Replace any damaged connections.
	Auto return function stops when operator releases the AUTO RETURN "RETURN" button.	Subswitch CR1-A of auto return relay (CR1) does not close.	Check for 115 VAC at terminal 5 of auto return relay (CR1), when AUTO RETURN "RETURN" button is pressed.	If 115 VAC is not present, replace auto return relay (CR1). Refer to para 4.21.
		Wire connections loose.	Check wire connections to terminals 5 and 8 of auto return relay (CR1). Perform continuity check on wires. Use multimeter to check for proper voltage levels.	Clean any dirty connections. Tighten any loose connections. Replace any damaged connections.
		One of the two AUTO RETURN "STOP" buttons are stuck open.	Perform continuity check on AUTO RETURN "STOP" button.	Replace AUTO RETURN "STOP" button. Refer to para 4.17.
	Motor pump continues to run after table top is completely lowered.	Base down limit switch is out of adjustment.	Check adjustment of base down limit switch.	Adjust base down limit switch. Refer to para 4.22.
		Base down limit switch is malfunctioning - stuck closed.	Perform continuity check on base down limit switch (limit switch tripped = open).	Replace base down limit switch. Refer to para 4.22.
		Auto return relay (CR1) is malfunctioning - stuck in energized position.	Perform continuity check on subswitch contacts.	Replace auto return relay (CR1). Refer to para 4.21.
	Auto return function does not stop when one of the AUTO RETURN "STOP" buttons are pressed.	One of the two AUTO RETURN "STOP" buttons are malfunctioning - contacts are broken open.	Perform continuity check on AUTO RETURN "STOP" button.	Replace AUTO RETURN "STOP" button. Refer to para 4.17.
		Wire connections to AUTO RETURN "STOP" buttons	Check continuity of wire and connections.	Clean any dirty connections. Tighten any loose

Table 2-1. Troubleshooting Guide - Continued

Problem	Symptom	Probable Cause	Check	Correction
Any of the four functions drift by themselves.	Table functions properly otherwise.	A cylinder solenoid valve is stuck in open position or is malfunctioning.	Unplug unit power cord. If cylinder continues to drift, cyclinder is malfunctioning. If cylinder stops drifting, foot switch is malfunctioning.	Try to flush foreign objects out of cylinder solenoid valve by running oil through cylinder in both directions ten times. If this doesn't correct problem, replace malfunctioning cylinder assembly.
		A foot switch is malfunctioning and holding cylinder solenoid valve in the open position.	Unplug unit power cord. If cylinder continues to drift, cyclinder is malfunctioning. If cylinder stops drifting, foot switch is malfunctioning. Or use multimeter to check for voltage at terminal 3 of suspect foot switch (no voltage should be present when foot switch is in OFF position).	Replace foot switch. Refer to para 4.28.
Back section of table top may be lifted by hand or tilt function may drift by itself.	Table functions properly otherwise.	Anti-cavitation solenoid valve is malfunctioning.	Replace suspect anti-cavitation solenoid valve with known working anti-cavitation solenoid valve.	Replace anti-cavitation solenoid valve. Refer to para 4.6 or 4.6.1.
Table moves fine for light patient, but will not move or moves slowly for very heavy patient.	Occurs for both the up and down functions.	Hydraulic system is low on mineral oil.	Check oil level in reservoir.	If necessary, add oil to reservoir. Refer to para 4.3.
		Up functions and down functions relief valves are malfunctioning.	Replace suspect relief valves with known working relief valves.	Replace up functions and down functions relief valves. Refer to paras 4.7 and 4.8.
Table moves fine for light patient, but will not move or moves slowly for very heavy patient - Continued.	Occurs for up functions only.	Up functions relief valve is malfunctioning.	Replace suspect up functions relief valve with known working relief valve.	Replace up functions relief valve. Refer to para 4.7.
	Occurs for down functions only.	Down function relief valve is malfunctioning.	Replace suspect down functions relief valve with known working relief valve.	Replace down functions relief valve. Refer to para 4.8.
Excessive sideways play of table top.	Table is not stable and can be moved from side to side.	Chain assemblies are loose.	Check tension of chain assemblies.	Adjust tension of chain assemblies. Refer to para 4.23.
		Base slide assembly is worn or deformed.	Check condition of base slide assembly.	Replace base slide assembly. Refer to para 4.24.
Rotational base not working.	Table top is binding when rotated.	Brake is out of adjustment.	Check adjustment of brake.	Adjust brake. Refer to para 4.29.
		Rotation bearings are contaminated or worn.	Check rotation bearings for wear or contamination.	Replace rotation bearings. Refer to para 4.31.
	Table top can still be rotated when ROTATION lever is in LOCK position.	Brake is out of adjustment.	Check adjustment of brake.	Adjust brake. Refer to para 4.29.

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SECTION III
SCHEDULED MAINTENANCE

3.1 Scheduled Maintenance

Table 3-1 is a Scheduled Maintenance Chart which lists the inspections and services that should be performed periodically on the table. These inspections and services should be performed as often as indicated in the chart.

Table 3-1. Scheduled Maintenance Chart

Interval	Inspection or Service	What to Do
Semi-annually	Obvious damage	Visually check condition of table for obvious damage such as: cracks in components, missing components, dents in components, leaking oil, or any other visible damage which would cause table to be unsafe to operate or would compromise its performance. Repair table as necessary.
	Fasteners/hardware	Check table for missing or loose fasteners/hardware. Replace any missing hardware and tighten any loose hardware as necessary.
	Warning and instructional decals	Check for missing or illegible decals. Replace decals as necessary.
	Pivot points/moving parts/accessories	Lubricate all exposed pivot points, moving parts, and accessories with silicone based lubricant.
	Hydraulic hoses and fittings	Check all hydraulic hoses and fittings for leaks. Replace any components causing leaks. Replace any hoses which have kinks, cuts, holes, or other damage.
	Foot control	Check that foot control works correctly. Make sure foot pedals contact switches properly.
	Hydraulic functions	Check that all four functions operate properly. If not, refer to the Troubleshooting Guide to determine the cause of the problem. Clean or replace components as necessary.
	Cylinders	Inspect all cylinders for signs of internal leaking or for weak operation. Replace cylinders as necessary.
	Drift in table	Check each cylinder to see if it drifts. Replace cylinder if necessary.
	Oil level	Check oil level in motor pump. Add oil to motor pump if necessary. Refer to para 4.3.
	Needle valve (on some older units only)	Check speed of back cylinder. The back cylinder should extend or retract fully in 8 - 9 seconds. Adjust needle valve as necessary. Refer to para 4.13.
	Stirrup Assemblies	Check that stirrup assemblies lock into one of three positions. Check for wear. Replace components as necessary. Refer to para 4.27.
	Headrest Assembly	Check headrest for proper adjustment. If headrest does not have enough holding power, adjust headrest handles. Refer to para 4.25.
	Pan safety limit switch	Check that pan safety limit switch prevents foot function from moving when limit switch is not tripped. Adjust or replace pan safety limit switch if necessary. Refer to para 4.20.
	Rotation function (only on units that have a rotational base)	Check rotation bearings for easy rotation. Replace rotation bearings if necessary. Refer to para 4.31. Check that brake functions properly. Adjust or replace brake if necessary. Refer to para 4.29 or 4.30.
	Excessive sideways play of table top	Check that table top does not have excessive side play. Adjust chain assembly if necessary. Refer to para 4.23.
	Anti-cavitation solenoid valve	Check to see if back section may be lifted by hand or if the tilt function drifts by itself. If so, replace anti-cavitation solenoid valve. Refer to para 4.6 or 4.6.1.
	Auto return function	Check both AUTO RETURN "RETURN" buttons and both AUTO RETURN "STOP" buttons for proper operation. If necessary, replace buttons. Refer to para 4.17. Check that the auto return function operates properly. Check that the base down limit switch gets tripped when the table top reaches the correct height and stops the auto return function. If not, adjust the base down limit switch. Refer to para 4.22.

SECTION III
SCHEDULED MAINTENANCE

Table 3-1. Scheduled Maintenance Chart

Interval	Inspection or Service	What to Do
Semi-annually - Continued	Electrical outlets	Check that the electrical outlets are functioning properly. Replace outlets as necessary.
	Upholstery	Check all upholstery for rips, tears, or excessive wear. Replace cushions as necessary.
	Accessories	Check that all accessories have all of their components and that they function properly. If necessary, repair or replace the accessory.
	Operational Test	Perform an Operational Test to determine if the table is operating within its specifications (Refer to para 2.1). Replace or adjust any malfunctioning components.

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SECTION IV
MAINTENANCE / SERVICE INSTRUCTIONS

4.1 Introduction

DANGER
Refer to the Operator Manual for complete instructions on operating the table. Failure to do so could result in personal injury.

NOTE
Perform an operational test on the table after the repair is completed to confirm the repair was properly made and that *all* malfunctions were repaired.

The following paragraphs contain removal, installation, repair, and adjustment procedures for the table.

4.2 Motor Cover Assembly Removal / Installation

A. Removal

DANGER
Always disconnect the power cord from the outlet before removing any of the table's covers/shrouds or making any repairs to prevent the possibility of electrical shock. Failure to comply with these instructions could result in severe personal injury or death.

(1) Unplug table power cord from outlet.

NOTE
220 VAC (export units) contain an additional strap on each side of the back outer shroud which helps secure the back outer shroud.

(2) Remove six screws (1, Figure 4-1) and motor cover assembly (2) from back outer shroud (3).

B. Installation

(1) Install motor cover assembly (2) against back outer shroud (3) and secure with six screws (1), making sure top edge of motor cover assembly is inserted behind lip of back outer shroud.

(2) Plug table power cord into outlet.

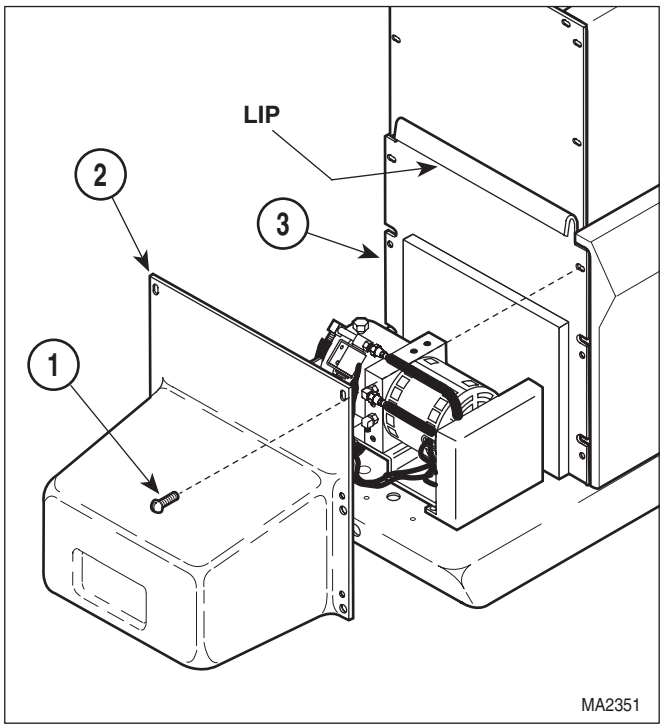

Figure 4-1. Motor Cover Assembly Removal / Installation

4.3 Checking / Adding Oil To Motor Pump

A. Checking / Adding Oil

(1) Move the BASE DOWN, BACK DOWN, TILT DOWN, and FOOT DOWN functions all the way down.

(2) Remove motor cover assembly (Refer to para 4.2).

(3) Remove filler cap (1, Figure 4-2) from motor pump (2).

(4) Remove screw (3) and gasket (4) from motor pump (2).

(5) Check oil level. If oil level in reservoir is not even with oil level check hole, oil must be added.

(6) Place a rag under oil level check hole.

SECTION IV
MAINTENANCE / SERVICE

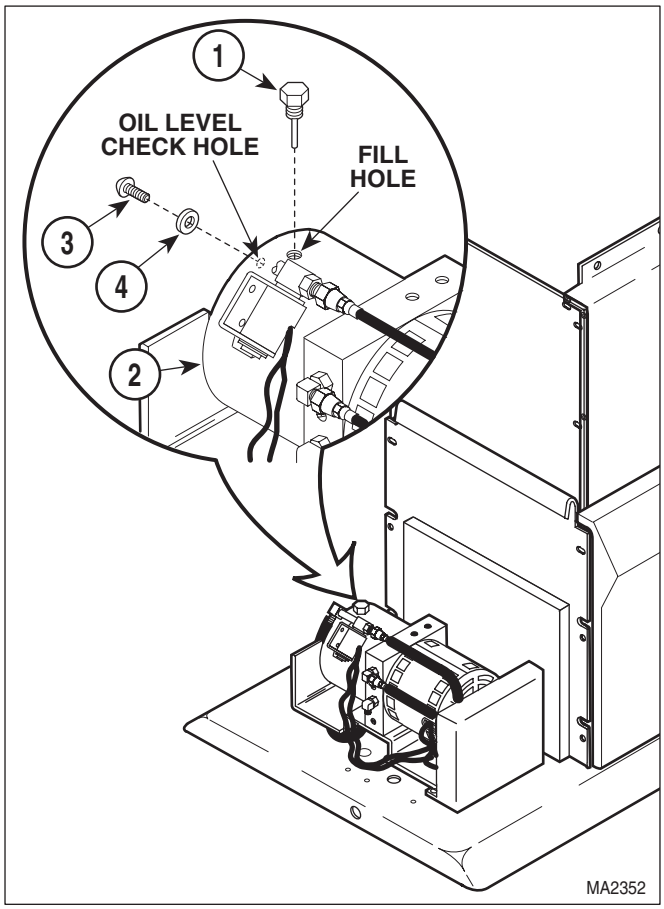

Figure 4-2. Checking / Adding Oil To Motor Pump

CAUTION
Hydraulic system is designed for use with light grade mineral oil only. Failure to comply could result in hydraulic system failure.

(7) Add oil to fill hole until oil starts to run out of oil level check hole.

(8) Install gasket (4) and screw (3) on motor pump (2).

(9) Install filler cap (1) on motor pump (2).

(10) Move each function to its up and down limit several times. Then repeat steps 1 thru 9.

(11) Install motor cover assembly (Refer to para 4.2).

(12) Dispose of used oil in accordance with local regulations.

4.4 Up Functions Shuttle Valve Removal / Installation

A. Removal

DANGER
Always disconnect the power cord from the outlet before removing any of the table's covers/shrouds or making any repairs to prevent the possibility of electrical shock. Failure to comply with these instructions could result in severe personal injury or death.

(1) Unplug table power cord from outlet.

(2) Remove motor cover (Refer to para 4.2).

NOTE
The up functions shuttle valve is lower than the oil level in the motor pump reservoir and oil will flow out of the up functions shuttle valve once the hose assembly is disconnected.

(3) Place drain pan under up functions shuttle valve (1, Figure 4-3).

(4) Disconnect hose assembly (2) from elbow of up functions shuttle valve (1).

(5) Remove up functions shuttle valve (1) from motor pump (3).

B. Installation

(1) Coat two o-rings on up functions shuttle valve (1) with mineral oil or vaseline.

(2) Install up functions shuttle valve (1) in motor pump (3).

(3) Connect hose assembly (2) to elbow of up functions shuttle valve (1).

(4) If necessary, add oil to motor pump (Refer to para 4.3).

(5) Install motor cover assembly (Refer to para 4.2).

(6) Plug table power cord into outlet.

(7) Dispose of used oil in accordance with local regulations.

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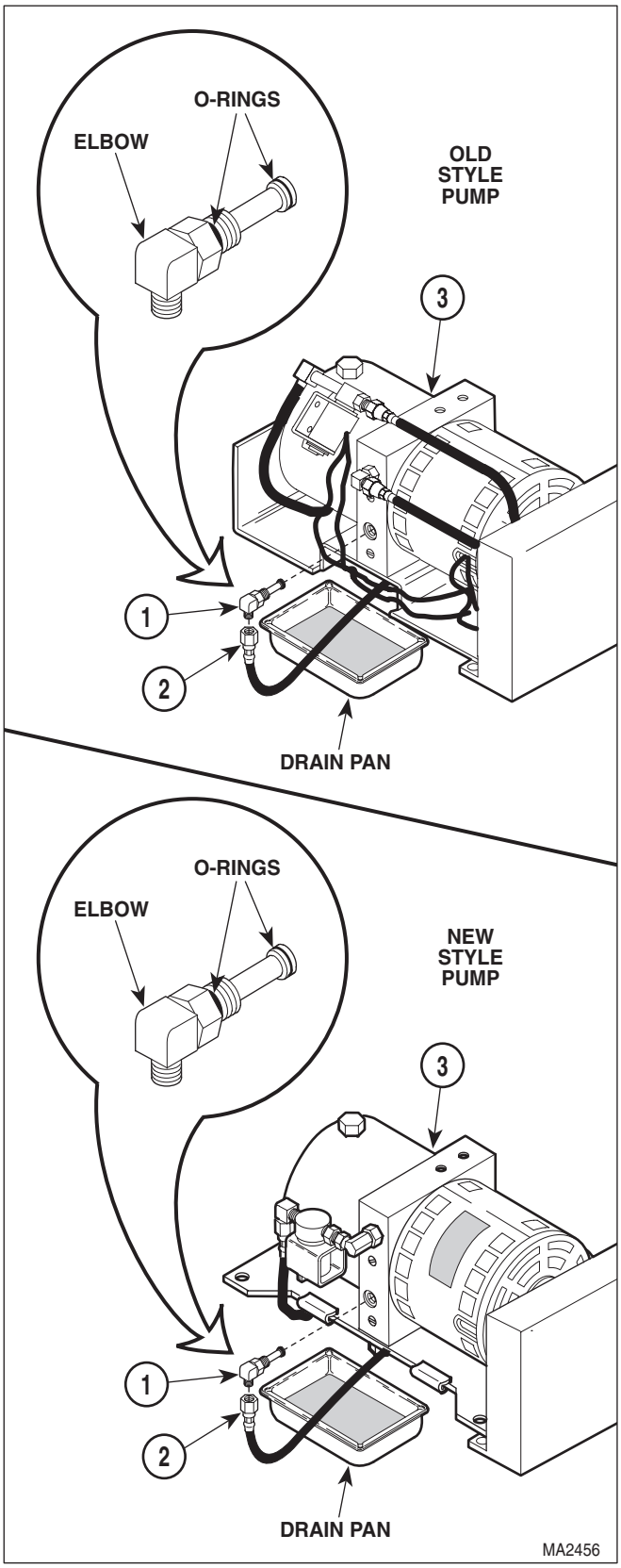

Figure 4-3. Up Functions Shuttle Valve Removal / Installation

4.5 Down Functions Shuttle Valve Removal / Installation (Units With Old Style Anti-Cavitation Solenoid Valve)

A. Removal

DANGER

Always disconnect the power cord from the outlet before removing any of the table's covers/shrouds or making any repairs to prevent the possibility of electrical shock. Failure to comply with these instructions could result in severe personal injury or death.

(1) Unplug table power cord from outlet.

(2) Remove motor cover assembly (Refer to para 4.2).

NOTE

The down functions shuttle valve is slightly lower than the oil level in the motor pump reservoir and oil will flow out of the down functions shuttle valve once the hose assembly is disconnected.

(3) Place rags or drain pan under down functions shuttle valve (1, Figure 4-4).

(4) Disconnect hose assembly (2) from elbow of down functions shuttle valve (1).

(5) Remove down functions shuttle valve (1) from motor pump (3).

B. Installation

(1) Coat two o-rings on down functions shuttle valve (1) with mineral oil or vaseline.

(2) Install down functions shuttle valve (1) in motor pump (3).

(3) Connect hose assembly (2) to elbow of down functions shuttle valve (1).

(4) If necessary, add oil to motor pump (Refer to para 4.3).

(5) Install motor cover assembly (Refer to para 4.2).

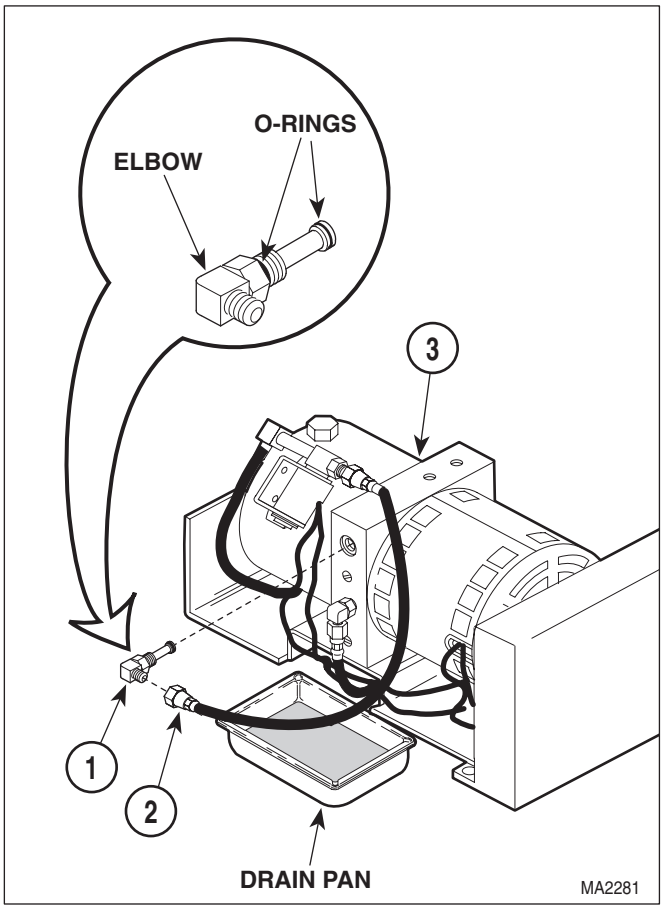

Figure 4-4. Down Functions Shuttle Valve Removal / Installation

(6) Plug table power cord into outlet.

(7) Dispose of used oil in accordance with local regulations.

4.5.1 Down Functions Shuttle Valve Removal / Installation (Units With New Style Anti-Cavitation Solenoid Valve)

A. Removal

DANGER
Always disconnect the power cord from the outlet before removing any of the table's covers/shrouds or making any repairs to prevent the possibility of electrical shock. Failure to comply with these instructions could result in severe personal injury or death.

(1) Unplug table power cord from outlet.

(2) Remove motor cover assembly (Refer to para 4.2).

NOTE
The down functions shuttle valve is slightly lower than the oil level in the motor pump reservoir and oil will flow out of the down functions shuttle valve once the hose assembly is disconnected.

(3) Place rags or drain pan under down functions shuttle valve (1, Figure 4-4.1).

(4) Using a wrench to hold male connector (2) stationary, loosen jam nut of elbow (3). Disconnect elbow from male connector.

(5) Remove elbow (3) from down function shuttle valve (1).

(6) Remove down functions shuttle valve (1) from motor pump (4).

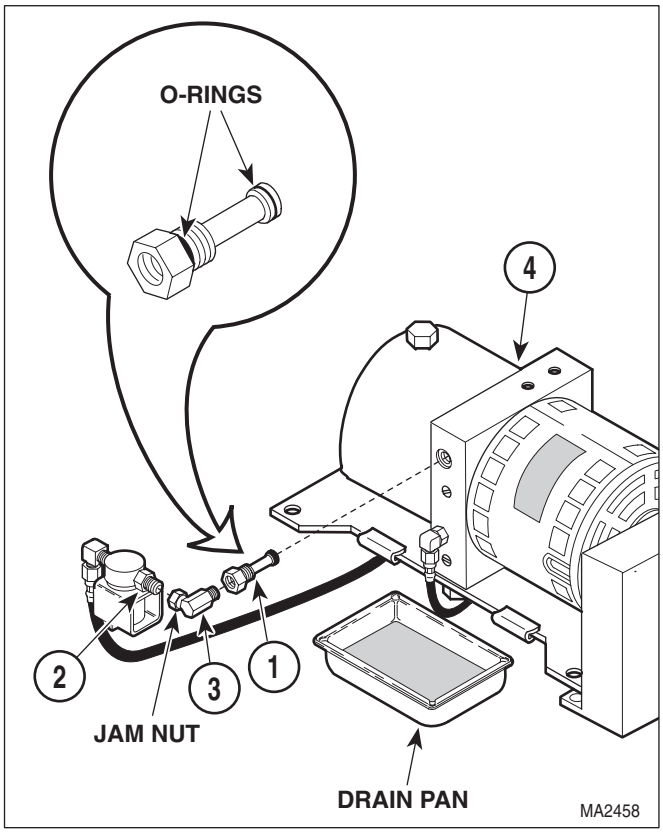

Figure 4-4.1 Down Functions Shuttle Valve Removal / Installation

B. Installation

NOTE
The down functions shuttle valve is sent from factory with an elbow installed on it. Remove it per step 1.

(1) Remove elbow from down function shuttle valve (1). Discard elbow.

(2) Coat two o-rings on down functions shuttle valve (1) with mineral oil or vaseline.

(3) Install down functions shuttle valve (1) in motor pump (4).

(4) Coat threads of male connector (2) and elbow (3) with pipe thread tape or sealant.

(5) Install elbow (3) on down functions shuttle valve (1).

(6) Connect elbow (3) to male connector (2) and secure by tightening jam nut.

(7) If necessary, add oil to motor pump (Refer to para 4.3).

(8) Install motor cover assembly (Refer to para 4.2).

(9) Plug table power cord into outlet.

(10) Dispose of used oil in accordance with local regulations.

4.6 Anti-Cavitation Solenoid Valve Removal / Installation (Units With Old Style Anti-Cavitation Solenoid Valve)

A. Removal

(1) Unplug table power cord from outlet.

(2) Remove motor cover assembly (Refer to para 4.2).

(3) Remove two screws (1, Figure 4-5) and control cover (2) from control panel (3).

(4) Loosen two terminal screws; then tag and disconnect anti-cavitation solenoid valve wires (4) from terminal block (5).

(5) Pull anti-cavitation solenoid valve wires (4) out thru wire hole.

(6) Disconnect hose assembly (6) from male connector (7).

(7) Disconnect hose assembly (8) from male elbow (9).

(8) Remove two screws (10), lockwashers (11), and anti-cavitation solenoid valve (12) from bracket (13).

(9) Remove male connector (7) and male elbow (9) from anti-cavitation solenoid valve (12).

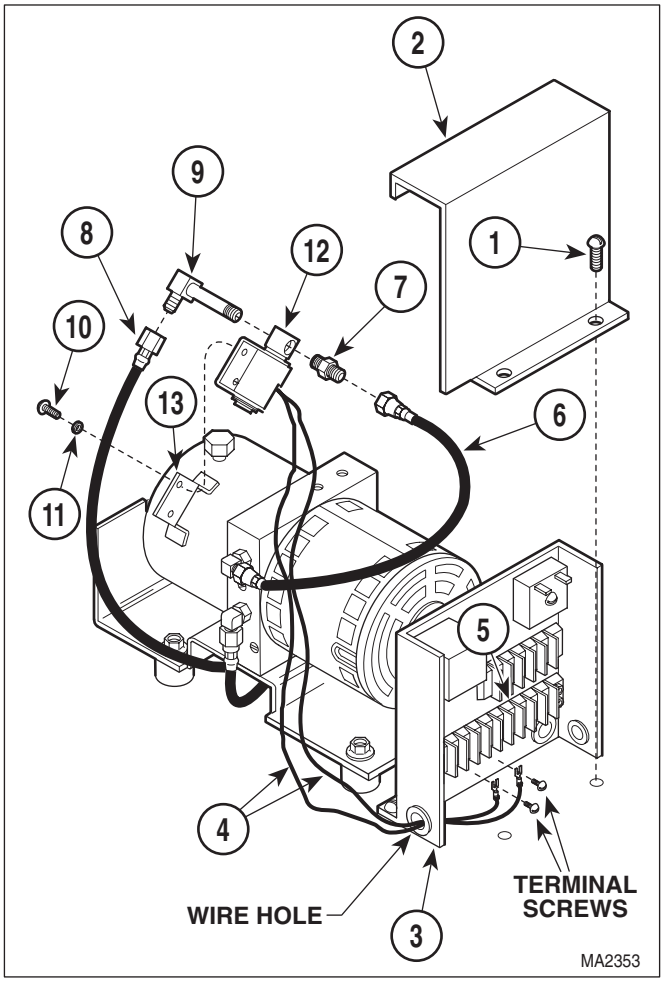

Figure 4-5. Anti-cavitation Solenoid Valve Removal / Installation

B. Installation

(1) After November 1, 1993, new style anti-cavitation solenoid valves will be shipped instead of the present style, which will not mount to the motor pump of the unit you are repairing. In order to use the new style anti-cavitation solenoid valve, disassemble components of new style anti-cavitation valve and re-install them on the bracket of old style anti-cavitation solenoid valve. To perform this procedure, refer to para 4.34.

CAUTION
Do not coat last two threads of male elbow and male connector with teflon tape or sealant. Otherwise, little particles of the tape / sealant can break loose and can contaminate hydraulic system.

(2) Coat threads of male elbow (9) and male connector (7) with pipe thread tape or sealant.

(3) Install male elbow (9) and male connector (7) on anti-cavitation solenoid valve (12).

(4) Install anti-cavitation solenoid valve (12) on bracket (13) and secure with two lockwashers (11) and screws (10).

(5) Connect hose assembly (8) to male elbow (9).

(6) Connect hose assembly (6) to male connector (7).

(7) Feed two anti-cavitation solenoid valve wires (4) thru wire hole.

(8) Connect two anti-cavitation solenoid valve wires (4) to terminal block (5) and secure by tightening two terminal screws.

(9) Install control cover (2) on control panel (3) and secure with two screws (1).

(10) Install motor cover assembly (Refer to para 4.2).

(11) Plug table power cord into outlet.

4.6.1 Anti-Cavitation Solenoid Valve Removal / Installation (Units With New Style Anti-Cavitation Solenoid Valve)

A. Removal

(1) Unplug table power cord from outlet.

(2) Remove motor cover assembly (Refer to para 4.2).

(3) Remove two screws (1, Figure 4-5.1) and control cover (2) from control panel (3).

(4) Loosen two terminal screws; then tag and disconnect anti-cavitation solenoid valve wires (4) from terminal block (5).

(5) Pull anti-cavitation solenoid valve wires (4) out thru wire hole.

(6) Disconnect hose assembly (6) from elbow (7).

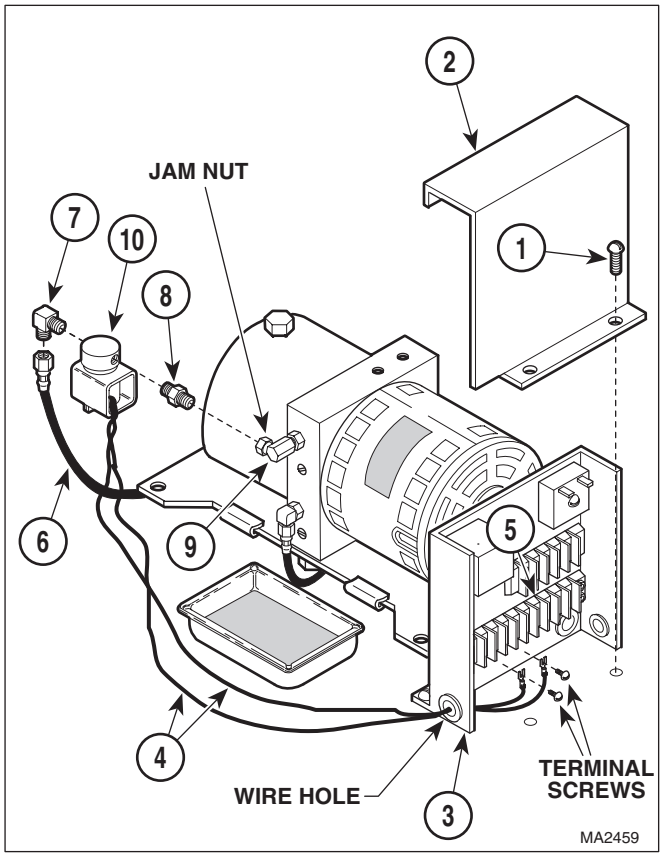

Figure 4-5.1 Anti-cavitation Solenoid Valve Removal / Installation

(7) Using a wrench to hold male connector (8) stationary, loosen jam nut of elbow (9). Disconnect male connector from elbow.

(8) Remove elbow (7) and male connector (8) from anti-cavitation solenoid valve (10).

B. Installation

CAUTION
Do not coat last two threads of elbow and male connector with teflon tape or sealant. Otherwise, little particles of the tape / sealant can break loose and can contaminate hydraulic system.

(1) Coat threads of elbow (7) and male connector (8) with pipe thread tape or sealant.

(2) Install elbow (7) and male connector (8) on anti-cavitation solenoid valve (10).

(3) Connect hose assembly (6) to elbow (7).

(4) Coat threads of male connector (8) with pipe thread tape or sealant.

(5) Connect elbow (9) to male connector (8) and secure by tightening jam nut.

(6) Feed two anti-cavitation solenoid valve wires (4) thru wire hole.

(7) Connect two anti-cavitation solenoid valve wires (4) to terminal block (5) and secure by tightening two terminal screws.

(8) Install control cover (2) on control panel (3) and secure with two screws (1).

(9) Install motor cover assembly (Refer to para 4.2).

(10) Plug table power cord into outlet.

4.7 Up Functions Relief Valve Removal / Installation

A. Removal

(1) If possible, raise BASE UP function all the way up.

(2) Unplug table power cord from outlet.

(3) Remove motor cover assembly (Refer to para 4.2).

(4) Remove four screws (1, Figure 4-6) and back outer shroud (2) from left and right hand outer shrouds (3).

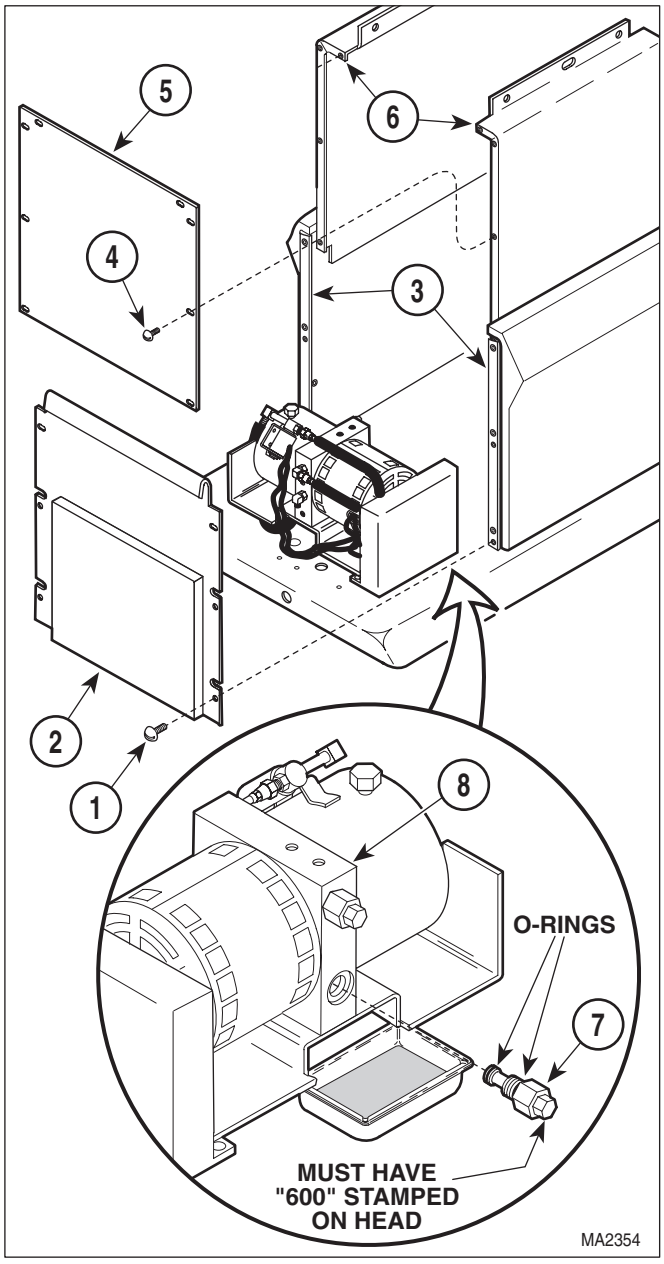

Figure 4-6. Up Functions Relief Valve Removal / Installation

NOTE
The back inner shroud must be removed if it will obstruct removal of up functions relief valve.

(5) If necessary, remove eight screws (4) and back inner shroud (5) from left and right hand inner shrouds (6).

NOTE
Oil will flow out of relief valve port when up functions relief valve is removed. Either have the new up functions relief valve ready to install or place a drain pan under relief valve port to catch oil.

(6) Remove up functions relief valve (7) from motor pump (8).

B. Installation

(1) Coat two o-rings on up functions relief valve (7) with mineral oil or vaseline.

CAUTION
Make sure relief valve has "600" stamped on its hex head; it *must not* be stamped "L2". Failure to install proper relief valve will result in faulty table performance.

(2) Install up functions relief valve (7) in motor pump (8).

(3) If removed, install back inner shroud (5) on left and right inner shrouds (6) and secure with eight screws (4).

(4) Install back outer shroud (2) on left and right hand outer shrouds (3) and secure with four screws (1).

(5) If necessary, add oil to motor pump (Refer to para 4.3).

(6) Install motor cover assembly (Refer to para 4.2).

(7) Plug table power cord into receptacle.

(8) Dispose of used oil in accordance with local regulations.

4.8 Down Functions Relief Valve Removal / Installation

A. Removal

(1) Unplug table power cord from outlet.

(2) Remove motor cover assembly (Refer to para 4.2).

(3) Remove four screws (1, Figure 4-7) and back outer shroud (2) from left and right hand outer shrouds (3).

NOTE
The back inner shroud must be removed if it will obstruct removal of up functions relief valve.

(4) If necessary, remove eight screws (4) and back inner shroud (5) from left and right hand inner shrouds (6).

NOTE
Oil will flow out of relief valve port when down functions relief valve is removed. Either have the new down functions relief valve ready to install or place a drain pan under relief valve port to catch oil.

(5) Remove down functions relief valve (7) from motor pump (8).

B. Installation

(1) Coat two o-rings on down functions relief valve (7) with mineral oil or vaseline.

CAUTION
Make sure relief valve has "L2" stamped on its hex head; it *must not* be stamped "600". Failure to install proper relief valve will result in faulty table performance.

(2) Install down functions relief valve (7) in motor pump (8).

(3) If removed, install back inner shroud (5) on left and right inner shrouds (6) and secure with eight screws (4).

(4) Install back outer shroud (2) on left and right hand outer shrouds (3) and secure with four screws (1).

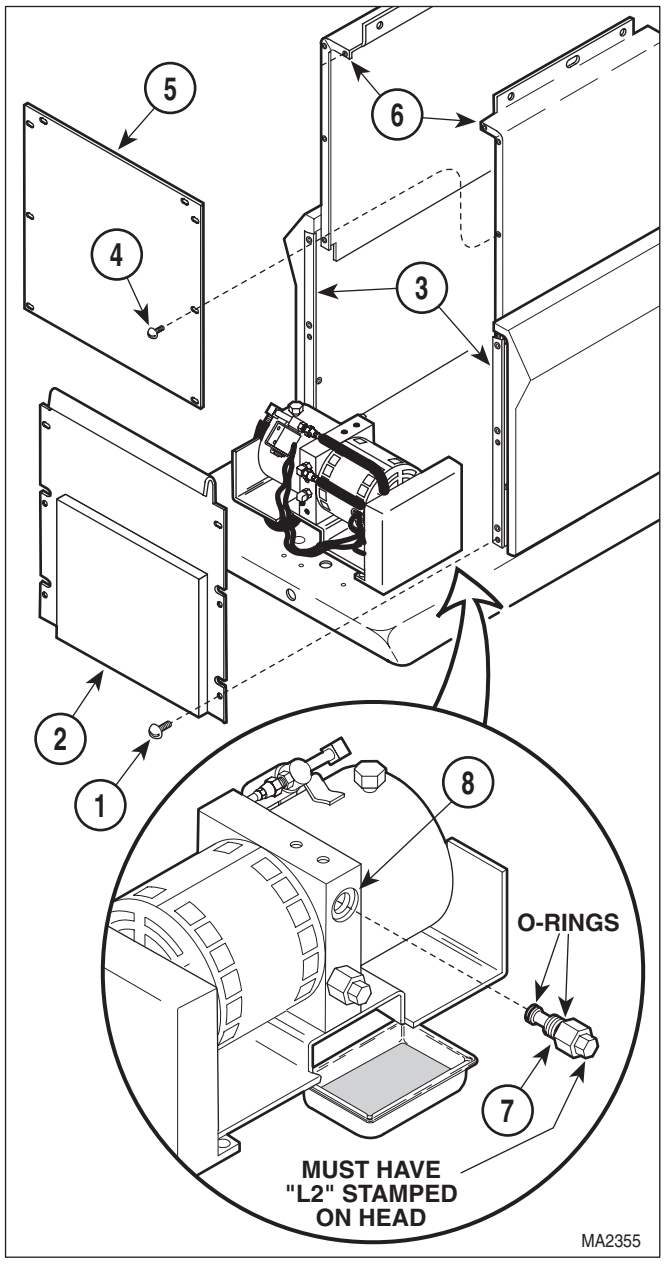

Figure 4-7. Down Functions Relief Valve Removal / Installation

(5) If necessary, add oil to motor pump (Refer to para 4.3).

(6) Install motor cover (Refer to para 4.2).

(7) Plug table power cord into receptacle.

(8) Dispose of used oil in accordance with local regulations.

4.9 Motor Pump Assembly - Complete Removal / Installation

A. Removal

(1) Unplug table power cord from outlet.

(2) Remove motor cover (Refer to para 4.2).

(3) Remove four screws (1, Figure 4-8) and back outer shroud (2) from left and right hand outer shrouds (3).

(4) Remove two screws (4) and control cover (5) from control panel (6).

(5) Loosen three terminal screws; then tag and disconnect three motor pump wires (7) from terminal block (8).

(6) Pull motor pump wires (7) out thru wire hole.

(7) Loosen two terminal screws; then tag and disconnect anti-cavitation solenoid valve wires (9) from terminal block (8).

(8) Pull anti-cavitation solenoid valve wires (9) out thru wire hole.

(9) Remove four nuts (10) from four motor mounts (11).

(10) Disconnect hose assembly (12) from male elbow (13).

(11) Place a drain pan under elbow (14).

(12) Disconnect hose assembly (15) from elbow (14). Allow oil to drain into drain pan.

(13) Remove motor pump assembly (16) from four motor mounts (11).

B. Installation

(1) Install motor pump assembly (16) on four motor mounts (11) and secure with four nuts (10).

(2) Connect hose assembly (15) to elbow (14).

(3) Connect hose assembly (12) to male elbow (13).

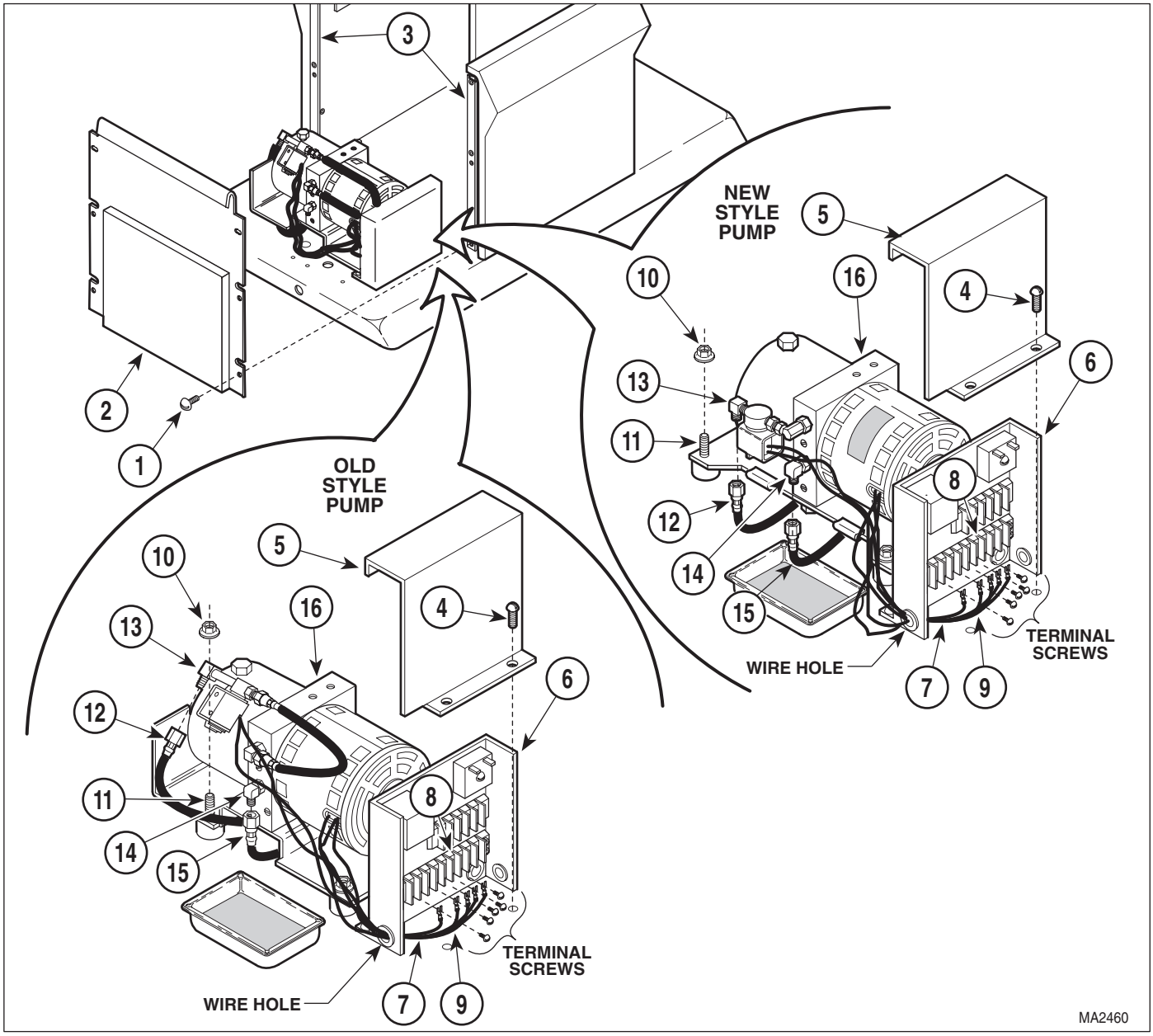

Figure 4-8. Motor Pump Assembly - Complete Removal / Installation

(4) Feed two anti-cavitation solenoid valve wires (9) thru wire hole.

(5) Connect two anti-cavitation solenoid valve wires (9) to terminal block (8) and secure by tightening two terminal screws.

(6) Feed three motor pump wires (7) thru wire hole.

(7) Connect three motor pump wires (7) to terminal block (8) and secure by tightening three terminal screws.

(8) Install control cover (5) on control panel (6) and secure with two screws (4).

(9) Install back outer shroud (2) on left and right hand outer shrouds (3) and secure with four screws (1).

(10) Add oil to motor pump (Refer to para 4.3).

(11) Install motor cover assembly (Refer to para 4.2).

(12) Plug table power cord into outlet.

(13) Dispose of used oil in accordance with local regulations.

4.10 Motor Pump Removal / Installation (Units With Old Style Anti-Cavitation Solenoid Valve)

A. Removal

(1) Unplug table power cord from outlet.

(2) Remove motor pump assembly - Complete (Refer to para 4.9).

(3) Remove filler cap and drain any remaining oil into drain pan (See Figure 4-9).

(4) Disconnect hose assembly (1, Figure 4-9) from elbow of down functions shuttle valve (2).

(5) Remove two screws (3), lockwashers (4), and anti-cavitation solenoid valve assembly (5) from bracket.

(6) Remove down functions shuttle valve (2) and up functions shuttle valve (6) from motor pump (7).

(7) Loosen outer jam nut (8).

(8) Remove two screws (9), lockwashers (10), and motor base (11) from motor pump (7).

B. Installation

(1) Install motor base (11) on motor pump (7) and secure with two lockwashers (10) and screws (9).

(2) Tighten outer jam nut (8).

(3) Install up functions shuttle valve (6) and down functions shuttle valve (2) on motor pump (7).

(4) Install anti-cavitation solenoid valve assembly (5) on bracket and secure with two lockwashers (4) and screws (3).

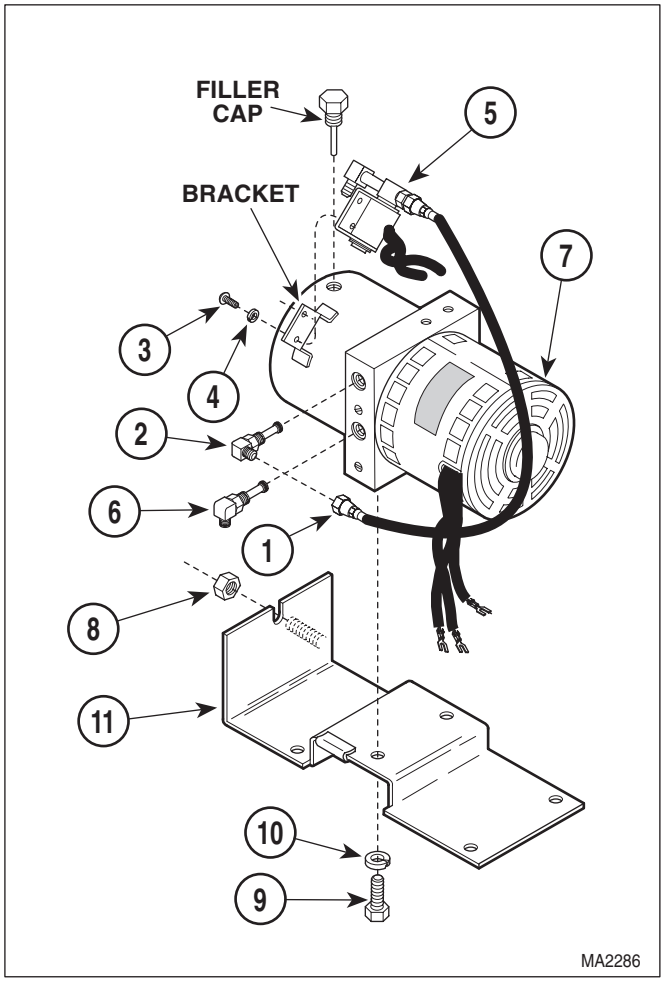

Figure 4-9. Motor Pump Removal / Installation

(5) Connect hose assembly (1) to elbow of down functions shuttle valve (2).

(6) Install motor pump assembly (Refer to para 4.9).

(7) Plug table power cord into outlet.

4.10.1 Motor Pump Removal / Installation (Units With New Style Anti-Cavitation Solenoid Valve)

A. Removal

(1) Unplug table power cord from outlet.

(2) Remove motor pump assembly - Complete (Refer to para 4.9).

(3) Remove filler cap and drain any remaining oil into drain pan (See Figure 4-9.1).

(4) Using a wrench to hold male connector (1, Figure 4-9.1) stationary, loosen jam nut of elbow (2). Disconnect male connector/anti-cavitation solenoid valve from elbow.

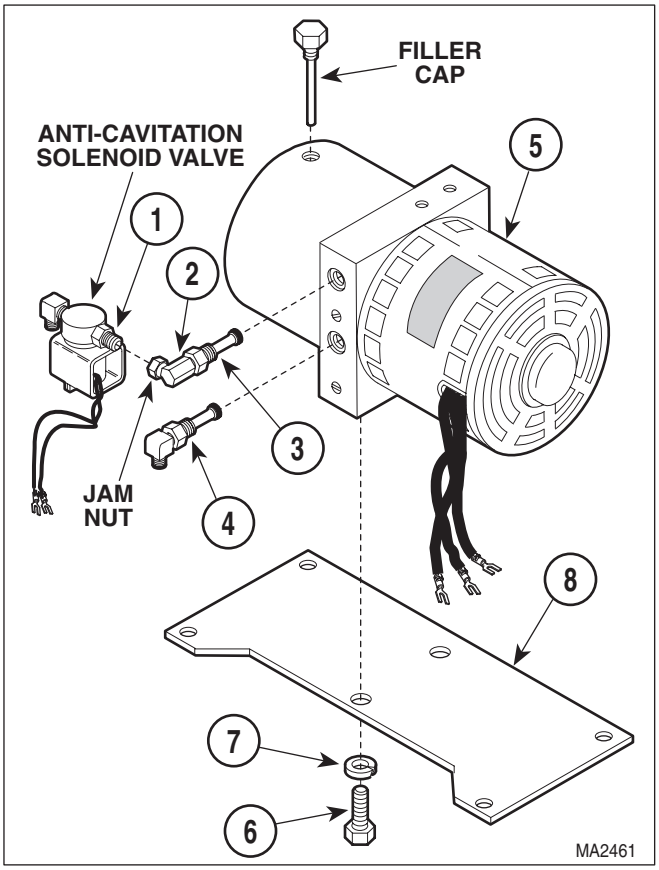

Figure 4-9.1 Motor Pump Removal / Installation

(5) Remove down functions shuttle valve (3) and up functions shuttle valve (4) from motor pump (5).

(6) Remove two screws (6), lockwashers (7), and motor base (8) from motor pump (5).

B. Installation

(1) Install motor base (8) on motor pump (5) and secure with two lockwashers (7) and screws (6).

(2) Install up functions shuttle valve (4) and down functions shuttle valve (3) on motor pump (5).

(3) Coat threads of male connector (1) with pipe thread tape or sealant.

(4) Connect male connector (1)/anti-cavitation solenoid valve to elbow (2) and secure by tightening jam nut.

(6) Install motor pump assembly (Refer to para 4.9).

(7) Plug table power cord into outlet.

4.11 Motor Shaft Seal Removal / Installation (Applies Only To Units With New Style Motor Pump)

A. Removal

(1) Unplug table power cord from outlet.

(2) Remove motor pump (Refer to para 4.10.1).

NOTE
Reservoir will come off hard. Use a screwdriver to pry reservoir off of manifold block, but make sure not to damage o-ring.

(3) Remove four screws (1, Figure 4-10) and reservoir (2) from manifold block (3).

(4) Remove magnet (4) from strainer (5).

(5) Remove four screws (6) and pump housing (7) from manifold block (3).

(6) Remove pump gear (8) and woodruff key (9) from shaft of rotor assembly (10).

(7) Remove four screws (11) and motor housing (12) from manifold block (3).

(8) Push rotor assembly (10) inward toward manifold block (3); then remove retaining ring (13) from end of rotor assembly shaft.

(9) Remove rotor assembly (10) from manifold block (3).

(10) Using a screwdriver, pry motor shaft seal (14) out of manifold block (3).

B. Installation

(1) Clean all metal shavings off of all components.

(2) Coat motor shaft seal (14) with vaseline or mineral oil.

CAUTION
Do not allow motor shaft seal to become cocked during installation or it will become impossible to install without damaging it.

(3) Using a hammer and 3/4 inch socket, install motor shaft seal (14) in manifold block (3).

(4) Slide shaft of rotor assembly (10) thru manifold block (3) and secure in place by installing retaining ring (13) on end of rotor assembly shaft.

(5) Install motor housing (12) on manifold block (3) and secure with four screws (11).

(6) Install woodruff key (9) and pump gear (8) on shaft of rotor assembly (10).

(7) Install pump housing (7) on manifold block (3) and secure with four screws (6).

(8) Install magnet (4) on strainer (5).

(9) Make sure o-ring on manifold block is present and clean. Coat o-ring with mineral oil.

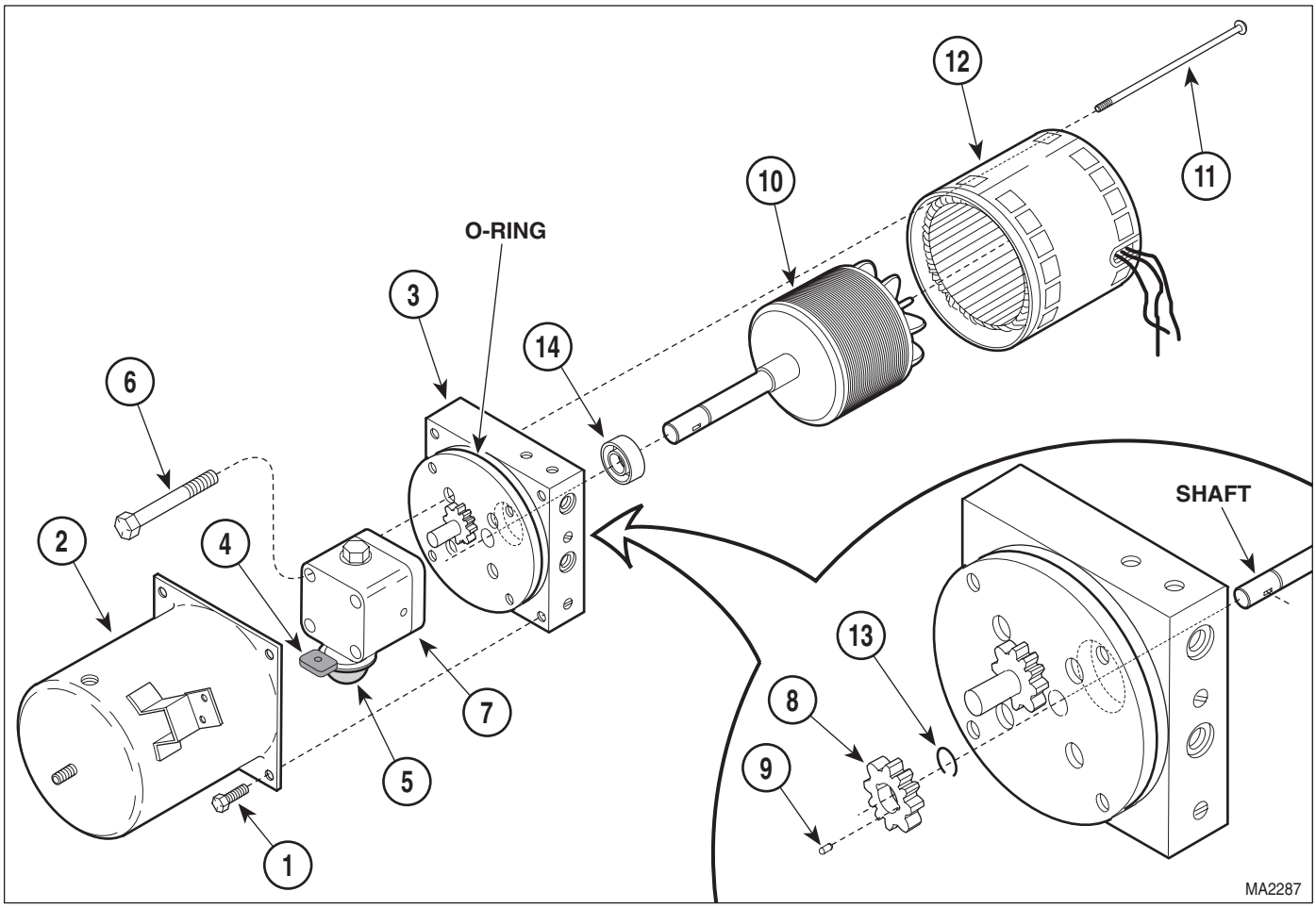

Figure 4-10. Motor Shaft Seal Removal / Installation

NOTE
Strainer may get in way when reservoir is being installed. If so, rotate strainer out of the way.

(10) Install reservoir (2) on manifold block (3) and secure with four screws (1).

(11) Install motor pump (Refer to para 4.10.1).

(12) Plug table power cord into outlet.

4.12 Back Cylinder Removal / Installation

A. Removal

(1) Unplug table power cord from outlet.

(2) Remove upholstered seat section (Refer to steps 5 thru 8 of para 4.32A.

(3) Remove four screws (1, Figure 4-11) and front outer shroud (2) from left and right hand outer shrouds (3).

(4) Remove eight screws (4) and front inner shroud (5) from left and right hand inner shrouds (6).

(5) Remove screw (7) and wire clip (8) securing wires and hoses to base weldment (9).

(6) Remove motor cover assembly (Refer to para 4.2).

(7) Remove two screws (1, Figure 4-12) and control cover (2) from control panel (3).

(8) Loosen two terminal screws; then tag and disconnect back cylinder wires (4) from terminal block (5).

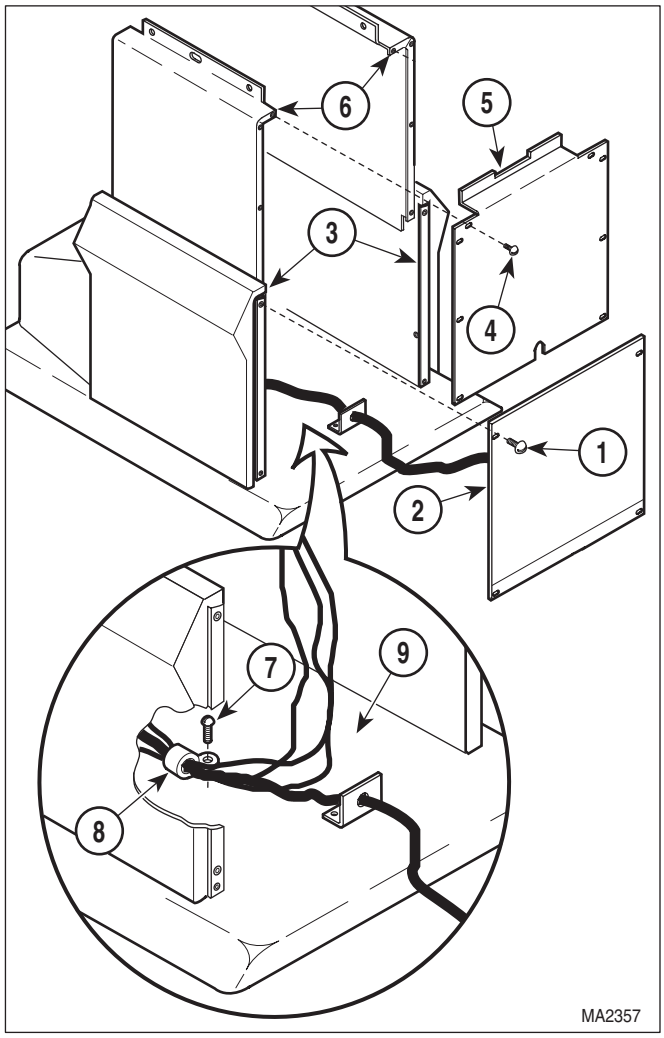

Figure 4-11. Table Access

(9) Pull back cylinder wires (4) out thru wire hole.

(10) Remove four screws (1, Figure 4-13) and back cover (2) from back weldment (3).

(11) Cut two cable ties which are securing hose assemblies (4 and 5) to back cylinder (6).

(12) While supporting back weldment (3), remove four E-rings (7), two clevis pins (8), and partially separate back cylinder (6) from cylinder brackets (9). Fold back section over onto seat section.

(13) Tag hose assemblies (4 and 5).

(14) Disconnect hose assembly (4) from back cylinder (6).

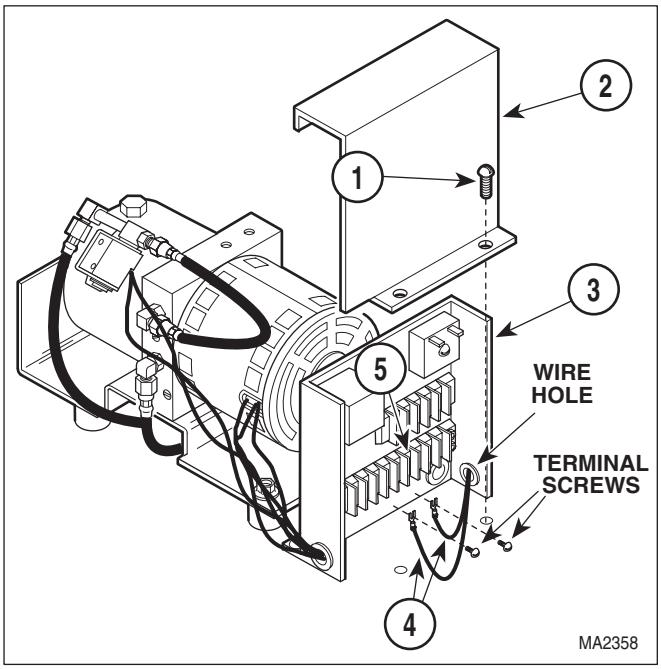

Figure 4-12. Back Cylinder Wires Disconnection / Connection

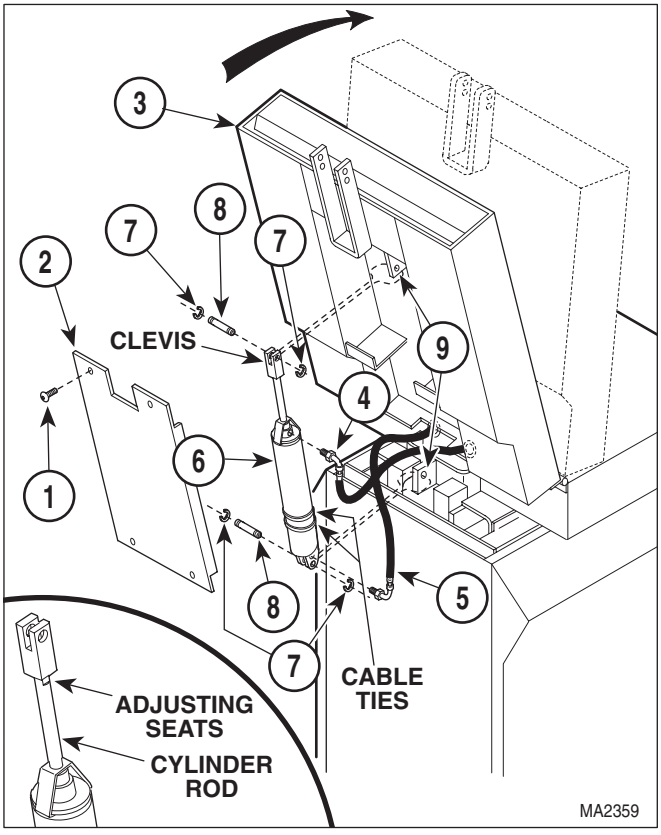

Figure 4-13. Back Cylinder Removal / Installation

(15) Disconnect hose assembly (5) from back cylinder (6).

(16) Cut necessary cable ties and remove back cylinder (6) from table.

B. Installation

NOTE
No sealant is required when connecting hose assemblies. The back cylinder has an o-ring in each port which seals the hose assemblies.

(1) Connect hose assembly (5, Figure 4-13) to back cylinder (6).

(2) Connect hose assembly (4) to back cylinder (6).

(3) Install back cylinder (6) on cylinder brackets (9) and secure with two clevis pins (8) and four E-rings (7).

(4) Secure hose assemblies (4 and 5) to back cylinder (6) with two cable ties.

(5) Route back cylinder wires (4, Figure 4-12) thru table.

(6) Feed back cylinder wires (4) thru wire hole.

(7) Connect two back cylinder wires (4) to terminal block (5) and secure by tightening two terminal screws.

(8) Install control cover (2) on control panel (3) and secure with two screws (1).

(9) Secure wires and hoses to base weldment (9, Figure 4-11) with wire clip (8) and screw (7). Install any cable ties removed during removal.

(10) Install front inner shroud (5) on left and right hand outer shrouds (6) and secure with eight screws (4).

(11) Install front outer shroud (2) on left and right hand inner shrouds (3) and secure with four screws (1).

(12) Install upholstered seat section (Refer to steps 7 thru 9 of para 4.32B).

(13) Plug table power cord into outlet.

(14) Lower BACK DOWN function all the way down.

CAUTION
TILT DOWN function must be completely lowered for following step. Failure to do so will result in incorrect adjustment.

(15) If back section *is not* level with floor when the BACK DOWN function is completely lowered, perform steps 16 thru 18. If back section *is* level when the BACK DOWN function is completely lowered, go to step 19.

CAUTION
The cylinder rod must be partially ex - tended before performing step 17. If the cylinder rod is fully extended or retracted when step 17 is being performed, damage to seals will occurr.

(16) Raise BACK UP function up until cylinder rod is extended halfway.

(17) Place a wrench on adjusting seats of cylinder rod and use it to rotate cylinder rod to adjust clevis up or down as necessary.

(18) Repeat steps 14 thru 17 until back section is level when BACK DOWN function is completely lowered.

(19) Install back cover (2) on back weldment (3) and secure with four screws (1).

(20) If necessary, add oil to motor pump (Refer to para 4.3).

(21) Install motor cover assembly (Refer to para 4.2).

4.13 Back Cylinder Needle Valve Adjustment (Applies Only To Units With Serial Numbers K-9496 Thru Present, BX1000 Thru BX1739, And CA1000 Thru CA1220)

A. Adjustment

(1) Remove four screws (1, Figure 4-14) and back cover (2) from back weldment (3).

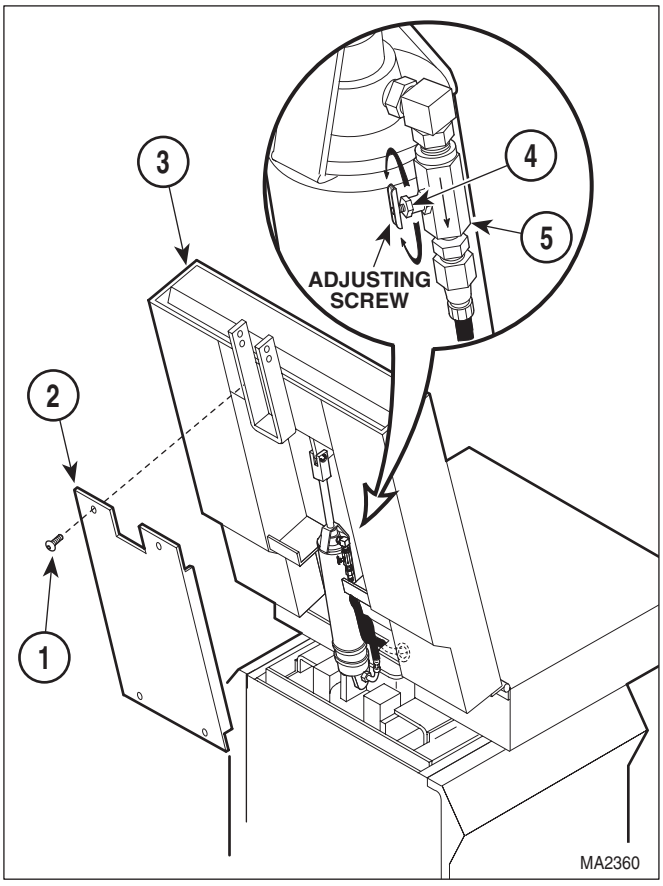

Figure 4-14. Back Cylinder Needle Valve Adjustment

(2) Loosen locknut (4) on needle valve (5).

(3) Lower BACK DOWN function all the way down.

(4) Using a stop watch to record time, raise BACK UP function all the way up.

(5) Back section should raise completely in 8 to 9 seconds. If back section raises too slowly, turn adjusting screw in counter-clockwise direction. If back section raises too quickly, turn adjusting screw in clockwise direction.

(6) Repeat steps 3 thru 5 until back section raises completely in 8 to 9 seconds.

(7) Tighten locknut (4), making sure adjusting screw does not turn.

(8) Install back cover (2) on back weldment (3) and secure with four screws (1).

4.14 Tilt Cylinder Removal / Installation

A. Removal

(1) If possible, lower TILT DOWN function all the way down.

(2) Raise FOOT UP function all the way up.

(3) Unplug table power cord from outlet.

(4) Remove motor cover assembly (Refer to para 4.2).

(5) Remove two screws (1, Figure 4-15) and control cover (2) from control panel (3).

(6) Loosen two terminal screws; then tag and disconnect two tilt cylinder wires (4) from terminal block (5).

(7) Pull tilt cylinder wires (4) out thru wire hole.

(8) Remove four screws (1, Figure 4-16) and front outer shroud (2) from left and right hand outer shrouds (3).

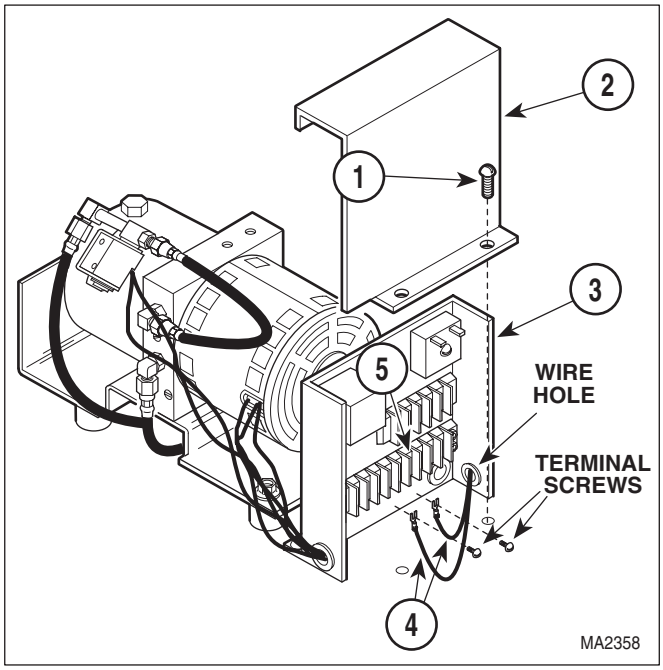

Figure 4-15. Tilt Cylinder Wire Disconnection / Connection

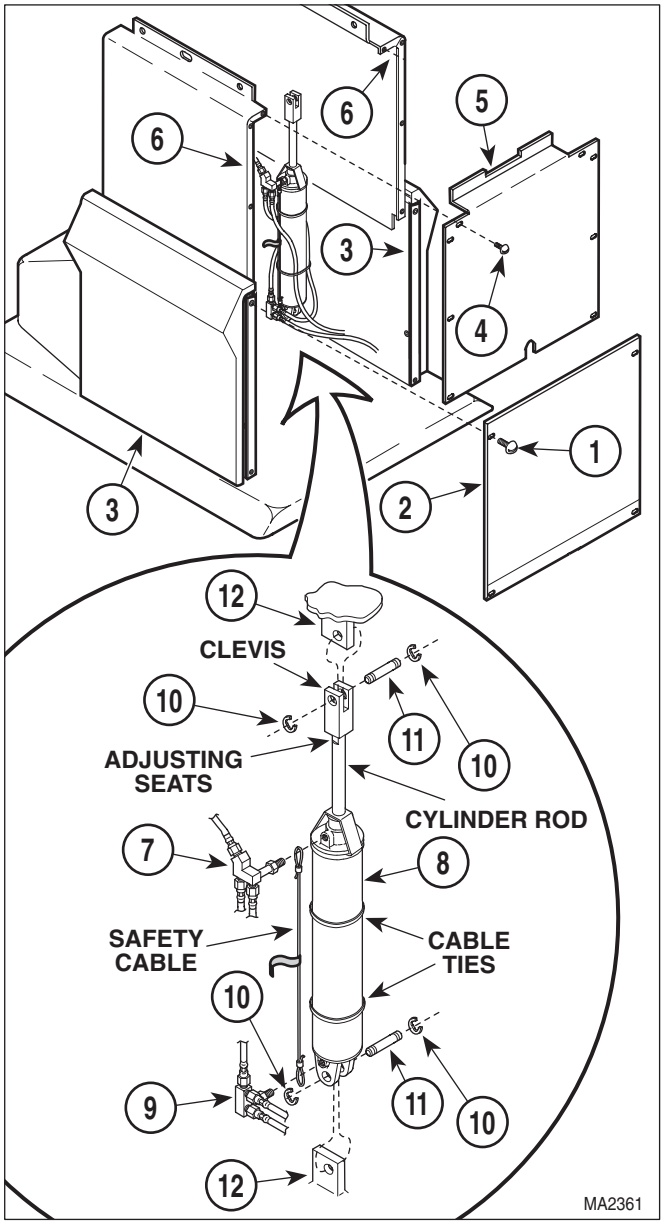

Figure 4-16. Tilt Cylinder Removal / Installation

(9) Remove eight screws (4) and front inner shroud (5) from left and right hand inner shrouds (6).

(10) Disconnect return manifold (7) from rod end of tilt cylinder (8).

(11) Disconnect power manifold (9) from base of tilt cylinder (8).

(12) Cut cable ties which secure hose assemblies and wire harnesses to tilt cylinder (8).

DANGER
The foot end of table top must be supported while removing tilt cylinder. Failure to do will allow table top to fall which could result in serious personal injury.

NOTE
Cut cable ties as necessary to remove tilt cylinder.

(13) While supporting foot end of table top, remove four E-rings (10), two clevis pins (11), and tilt cylinder (8) from brackets (12).

B. Installation

(1) Install tilt cylinder (8, Figure 4-16) on brackets (12) and secure with two clevis pins (11) and four E-rings (10).

DANGER
Make sure the safety cable is properly installed on the return and power manifolds. Failure to do so could result in serious personal injury to patient or table operator.

(2) Connect power manifold (9) to base of tilt cylinder (8).

(3) Connect return manifold (7) to rod end of tilt cylinder (8).

(4) Secure wire harnesses and hose assemblies to tilt cylinder (8) with a cable tie.

(5) Route tilt cylinder wires (4, Figure 4-15) thru table.

(6) Feed tilt cylinder wires (4) thru wire hole in control panel (3).

(7) Connect two tilt cylinder wires (4) to terminal block (5) and secure by tightening two terminal screws.

(8) Install control cover (2) on control panel (3) and secure with two screws (1).

(9) Install any cable ties which were removed.

(10) Plug table power cord into outlet.

(11) Lower TILT DOWN function all the way down.

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(12) If seat section *is not* level with floor when the TILT DOWN function *is* completely lowered, perform steps 13 thru 15. If seat section is level when the TILT DOWN function is completely lowered, go to step 16.

CAUTION
The cylinder rod must be partially ex - tended before performing step 14. If the cylinder rod is fully extended or retracted when step 14 is being performed, damage to seals will occurr.

(13) Raise TILT UP function up until cylinder rod is extended halfway.

(14) Place a wrench on adjusting seats of cylinder rod and use it to rotate cylinder rod to adjust clevis up or down as necessary.

(15) Repeat steps 11 thru 15 until seat section is level when TILT DOWN function is completely lowered.

(16) Install front inner shroud (5) on left and right hand inner shrouds (6) and secure with eight screws (4).

(17) Install front outer shroud (2) on left and right hand outer shrouds (3) and secure with four screws (1).

(18) If necessary, add oil to motor pump (Refer to para 4.3).

(19) Install motor cover assembly (Refer to para 4.2).

4.15 Base Cylinder Removal / Installation

A. Removal

(1) Unplug table power cord from outlet.

(2) Remove motor cover assembly (Refer to para 4.2).

(3) Remove four screws (1, Figure 4-17) and back outer shroud (2) from left and right hand outer shrouds (3).

(4) Remove eight screws (4) and back inner shroud (5) from left and right hand inner shrouds (6).

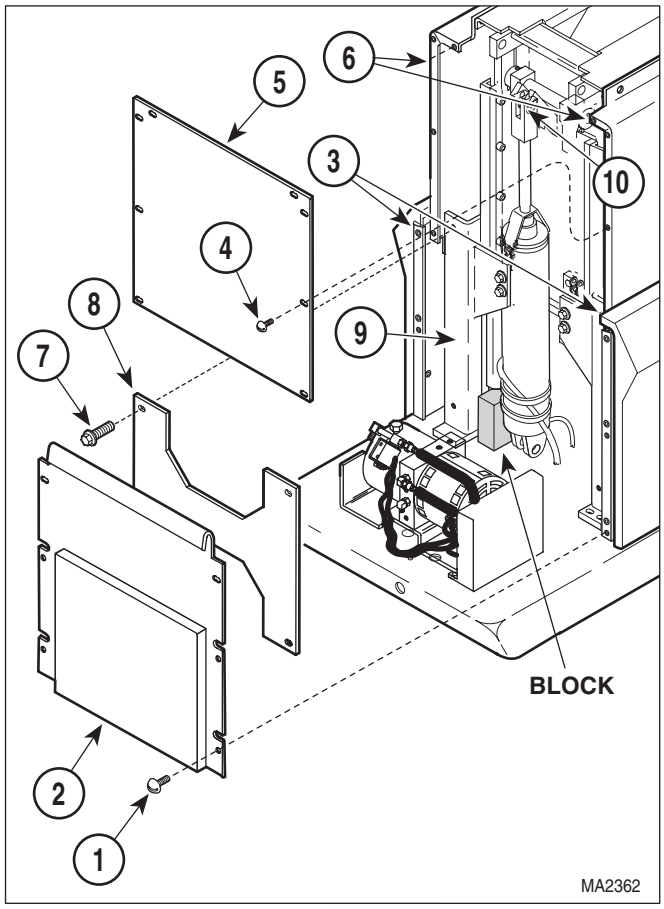

Figure 4-17. Base Cylinder Access

NOTE
The motor pump and control panel can be carefully pushed out of the way to allow a socket and ratchet to be used on the bottom two screws (7).

(5) Remove four screws (7) and brace (8) from base slide assembly (9).

(6) Plug table power cord into outlet.

(7) If BASE DOWN function is operable, place a block under middle slide of base slide assembly (9). Then lower the BASE DOWN function until the middle slide of the base slide assembly is resting on block and pressure is off clevis pin (10). If BASE DOWN function is not operable, move table top to a horizontal position and place supports under each end of table.

(8) Remove two screws (1, Figure 4-18) and control cover (2) from control panel (3).

SECTION IV
MAINTENANCE / SERVICE

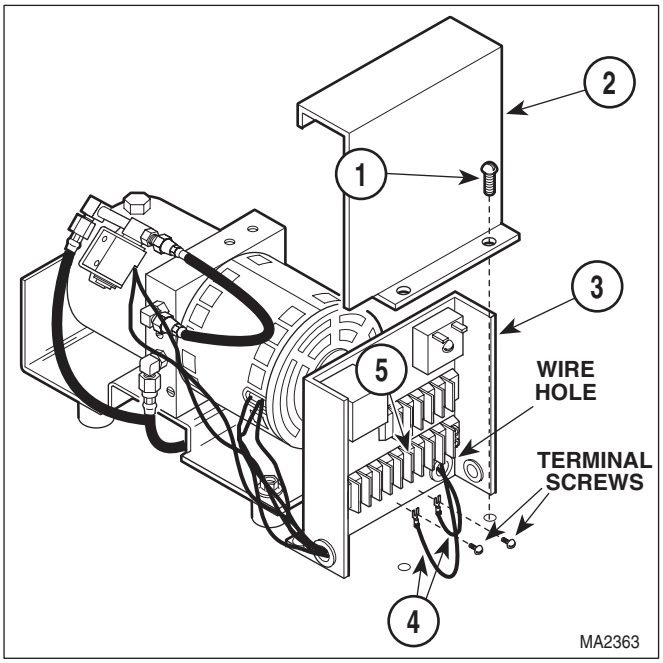

Figure 4-18. Base Cylinder Wires Disconnection / Connection

(9) Loosen two terminal screws; then tag and disconnect base cylinder wires (4) from terminal block (5).

(10) Pull base cylinder wires (4) out thru wire hole.

DANGER

Make sure table top is properly secured from lowering or tipping over when base cylinder is disconnected from table top. Clevis pin (2, Figure 4-19) should not have any weight on it if table top is supported properly. Failure to have table top properly secured could result in serious personal injury or death.

(11) Remove hitch pin clip (1, Figure 4-19) and clevis pin (2) from rod end of base cylinder (3).

(12) Remove hitch pin clip (4), clevis pin (5), and partially separate base cylinder (3) from brackets (6).

(13) Cut two cable ties securing hose assembly (7) to base cylinder (3).

(14) Disconnect hose assembly (7) from base cylinder (3).

(15) Place rags under base tee (8).

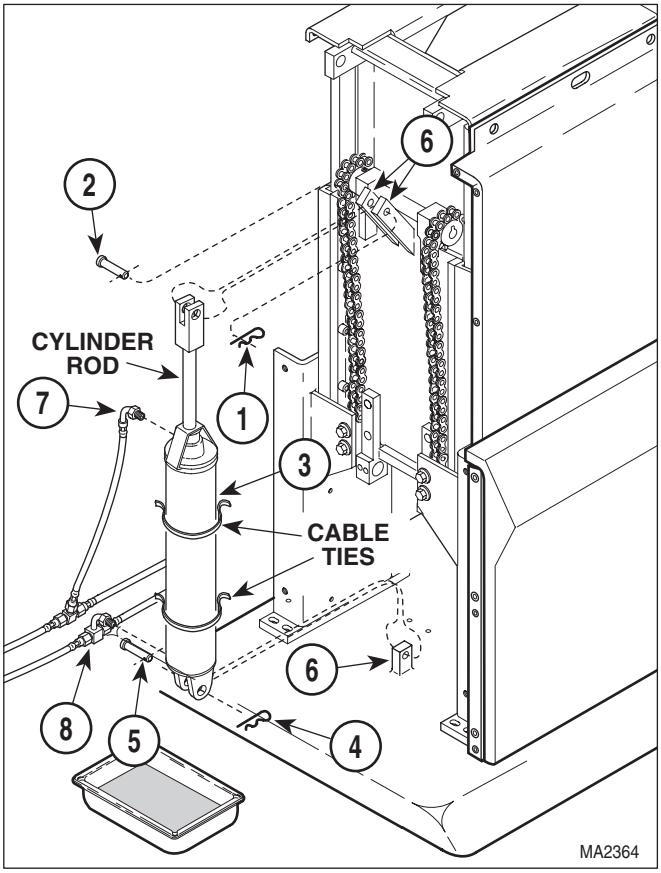

Figure 4-19. Base Cylinder Removal / Installation

NOTE

When base tee is disconnected from base cylinder, oil will be free to flow out of the motor pump thru the base tee. Either be ready to install the new base cylinder or have drain pan and rags ready to catch the oil.

(16) Disconnect base tee (8) from base cylinder (3). Remove base cylinder from table.

B. Installation

(1) Position base cylinder (3, Figure 4-19) on table.

(2) Connect base tee (8) to base cylinder (3).

(3) Connect hose assembly (7) to base cylinder (3).

(4) Secure hose assembly (7) to base cylinder (3) with two cable ties.

(5) Install base cylinder (3) on brackets (6) and

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secure with clevis pins (2 and 5) and hitch pin clips (1 and 4).

(6) Feed base cylinder wires (4, Figure 4-18) thru wire hole.

(7) Connect two base cylinder wires (4) to terminal block (5) and secure by tightening two terminal screws.

(8) Install control cover (2) on control panel (3) and secure with two screws (1).

(9) Plug table power cord into outlet.

(10) See Figure 4-17. Raise BASE UP function slightly and remove block from under middle slide of base slide assembly (9) or remove supports from under table top.

(11) Lower BASE DOWN function all the way down.

(12) See Figure 4-20. If there *is not* a 1/16 to 1/8 inch (1.6 to 3.2 mm) gap between inner member weldment and top of middle slide when the BASE DOWN function is completely lowered (it especially important that the inner member weldment does not come into contact with the top of the middle slide), perform steps 13 thru 15. If gap is correct when the BASE DOWN function is completely lowered, go to step 16.

CAUTION
The cylinder rod must be partially ex - tended before performing step 14. If the cylinder rod is fully extended or retracted when step 14 is being performed, damage to seals will occurr.

(13) Raise BASE UP function up until cylinder rod is extended halfway.

(14) Place a wrench on adjusting seats of cylinder rod and use it to rotate cylinder rod to adjust clevis up or down as necessary.

(15) Repeat steps 11 thru 15 until there *is* a 1/16 to 1/8 inch (1.6 to 3.2 mm) gap between inner member weldment and middle slide of base slide assembly when the BASE DOWN function is completely lowered.

(16) Install brace (8, Figure 4-17) on base slide assembly (9) and secure with four screws (7).

(17) Install any cable ties removed during removal.

(18) Install back inner shroud (5) on left and right hand inner shrouds (6) and secure with eight screws (4).

(19) Install back outer shroud (2) on left and right hand outer shrouds (3) and secure with four screws (1).

(20) If necessary, add oil to motor pump (Refer to para 4.3).

(21) Install motor cover assembly (Refer to para 4.2).

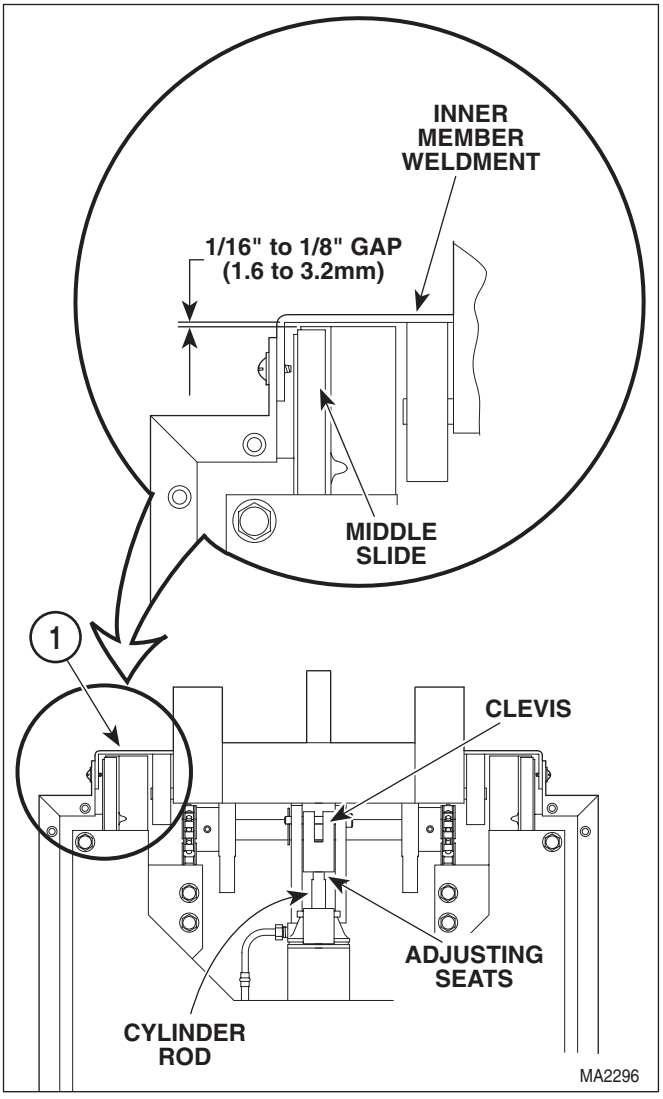

Figure 4-20. Base Cylinder Clevis Adjustment

4.16 Foot Cylinder Removal / Installation

A. Removal

(1) If possible, raise FOOT UP function all the way up.

(2) Unplug table power cord from outlet.

(3) Remove motor cover assembly (Refer to para 4.2).

(4) Remove two screws (1, Figure 4-21) and control cover (2) from control panel (3).

(5) Loosen two terminal screws; then tag and disconnect two foot cylinder wires (4) from terminal block (5).

(6) Pull foot cylinder wires (4) out thru wire hole.

(7) Remove four screws (1, Figure 4-22) and front outer shroud (2) from left and right hand outer shrouds (3).

(8) Remove eight screws (4) and front inner shroud (5) from left and right hand inner shrouds (6).

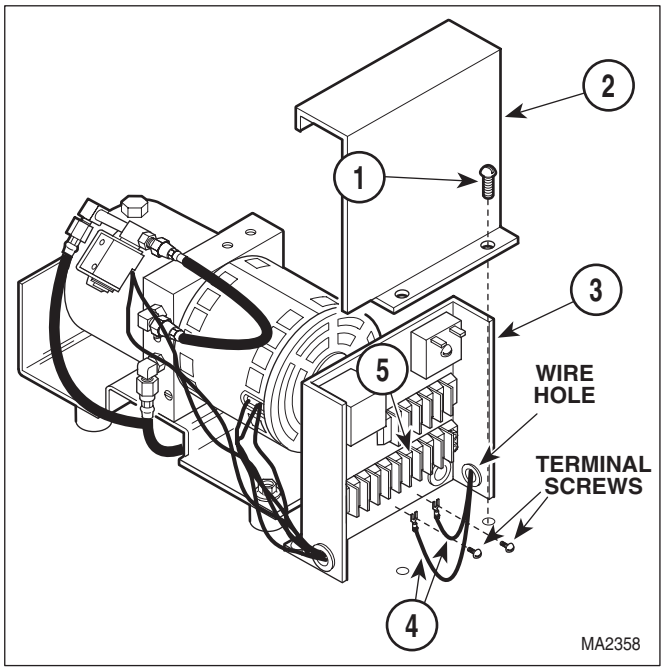

Figure 4-21. Foot Cylinder Wire Disconnection / Connection

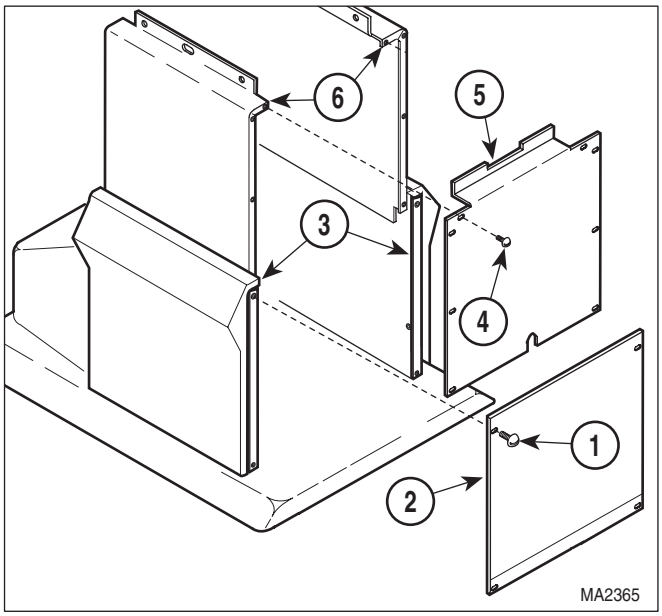

Figure 4-22. Shrouds Removal / Installation

(9) Cut cable ties securing foot cylinder wire harness (1, Figure 4-23).

(10) Remove screw (2) and wire clip (3) securing foot cylinder wire harness (1) to seat weldment (4).

(11) Cut cable ties securing hose assemblies to foot cylinder (5).

(12) Disconnect hose assembly (6) from foot cylinder (5).

(13) Disconnect hose assembly (7) from foot cylinder (5).

(14) Support foot section of table top and then remove hitch pin clip (8), clevis pin (9), two E-rings (10), clevis pin (11), and foot cylinder (5) from brackets (12).

B. Installation

(1) Install foot cylinder (5, Figure 4-23) on brackets (12) and secure with clevis pin (11), two E-rings (10), clevis pin (9), and hitch pin clip (8).

(2) Connect hose assembly (7) to foot cylinder (5).

(3) Connect hose assembly (6) to foot cylinder (5).

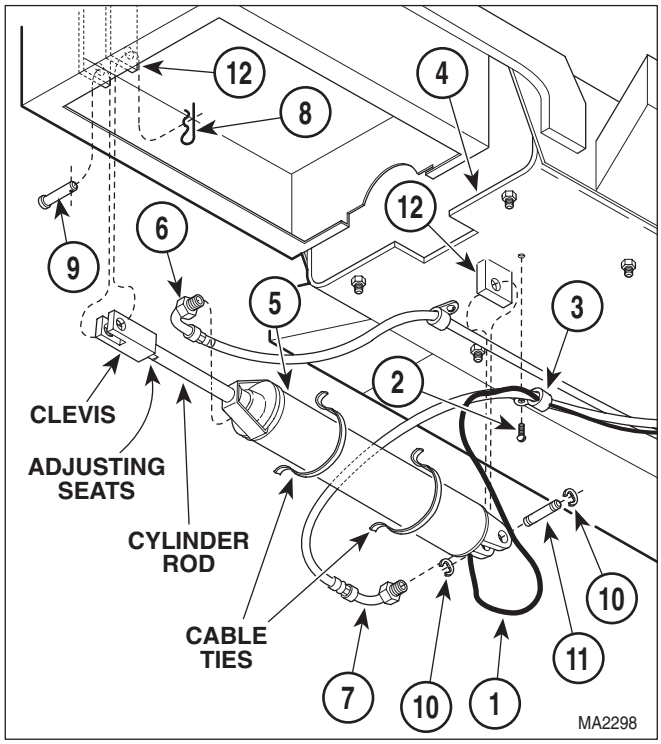

Figure 4-23. Foot Cylinder Removal / Installation

(4) Secure hose assemblies (6 and 7) to foot cylinder (5) with cable ties.

(5) Secure foot cylinder wire harness (1) to seat weldment (4) with wire clip (3) and screw (2).

(6) Feed foot cylinder wires (4, Figure 4-21) thru wire hole in control panel (3).

(7) Connect two foot cylinder wires (4) to terminal block (5) and secure with two terminal screws.

(8) Install control cover (2) on control panel (3) and secure with two screws (1).

(9) Plug table power cord into outlet.

(10) Raise FOOT UP function all the way up.

(11) If foot section *is not* level with seat section when FOOT UP function is completely raised, perform steps 12 thru 14. See Figure 4-23. If foot section *is* level when the FOOT UP function is completely raised, go to step 17.

CAUTION

The cylinder rod must be partially ex - tended before performing step 13. If the cylinder rod is fully extended or retracted when step 13 is being performed, damage to seals will occurr.

(12) Lower FOOT DOWN function down until cylinder rod is extended halfway.

(13) Place a wrench on adjusting seats of cylinder rod and use it to rotate cylinder rod to adjust clevis up or down as necessary.

(14) Repeat steps 10 thru 14 until foot section is level with seat section when FOOT UP function is completely raised.

(15) Install any cable ties removed during removal.

(16) Install front inner shroud (5, Figure 4-22) on left and right hand inner shrouds (6) and secure with eight screws (4).

(17) Install front outer shroud (2) on left and right hand outer shrouds (3) and secure with four screws (1).

(18) If necessary, add oil to motor pump (Refer to para 4.3).

(19) Install motor cover assembly (Refer to para 4.2).

(20) Plug table power cord into outlet.

4.17 AUTO RETURN "RETURN" Button or "STOP" Button Removal / Installation

A. Removal

(1) Remove motor cover assembly (Refer to para 4.2).

(2) Remove four screws (1, Figure 4-24) and back outer shroud (2) from left and right hand outer shrouds (3).

(3) Remove four screws (4) and front outer shroud (5) from left and right hand outer shrouds (3).

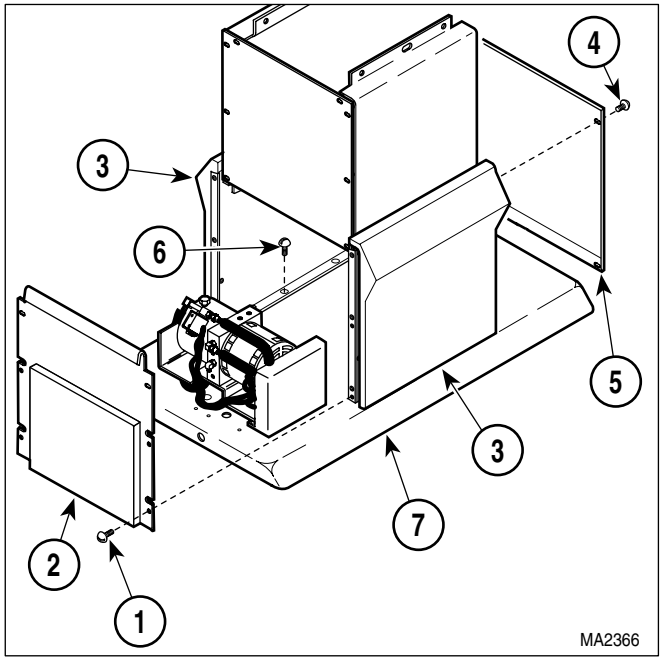

Figure 4-24. Shrouds Removal / Installation

it on floor.

(5) Remove four screws (1, Figure 4-25) and backplate (2) from outer shroud (3).

(6) Disconnect two wires (4) from "RETURN" button or "STOP" button (5).

(7) Press on four tabs of "RETURN" button or "STOP" button (5), while simultaneously pulling the button out of the outer shroud (3).

B. Installation

(1) Push "RETURN" button or "STOP" button (5, Figure 4-25) into outer shroud (3) until it "pops" into place.

(2) Connect two wires (4) to "RETURN" button or "STOP" button (5).

(3) Install backplate (2) on outer shroud (3) and secure with four screws (1).

(4) Install outer shroud (3, Figure 4-24) on base weldment (7) and secure with three screws (6).

(5) Install front outer shroud (5) on left and right hand outer shrouds (3) and secure with four screws (4).

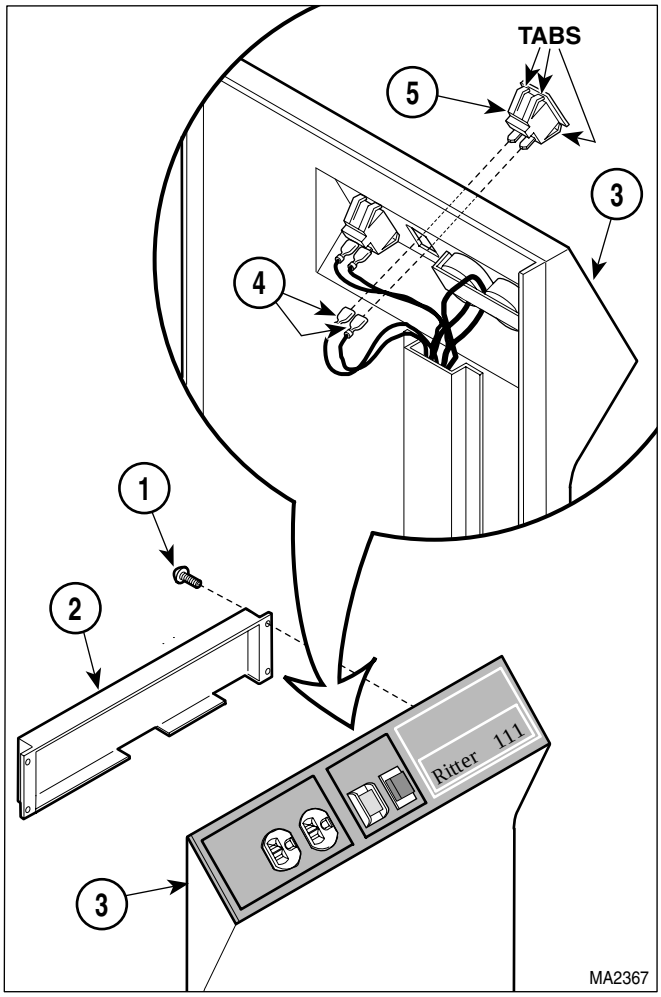

Figure 4-25. AUTO RETURN "RETURN" Button or "STOP" Button Removal / Installation

(6) Install back outer shroud (2) on left and right hand outer shrouds (3) and secure with four screws (1).

(7) Install motor cover assembly (Refer to para 4.2).

4.18 Time Delay Relay Removal / Installation

EQUIPMENT ALERT

Put a multimeter in line w/time delay relay and run each cylinder one at a time. A reading >1.2 amps indicates a malfunctioning cylinder. Replace the cylinder before replacing the relay. Failure to do so will result in damage to new relay.

A. Removal

(1) Unplug table power cord from outlet.

(2) Remove motor cover assembly (Refer to para 4.2).

(3) Remove two screws (1, Figure 4-26) and control cover (2) from control panel (3).

(4) Tag and disconnect two wires (4) from terminals of time delay relay (5).

(5) Remove nut (6), screw (7), washer (8), and time delay relay (5) from control panel (3).

B. Installation

(1) Install time delay relay (5) on control panel (3) and secure with washer (8), screw (7), and nut (6).

(2) Connect two wires (4) to terminals of time delay relay (5).

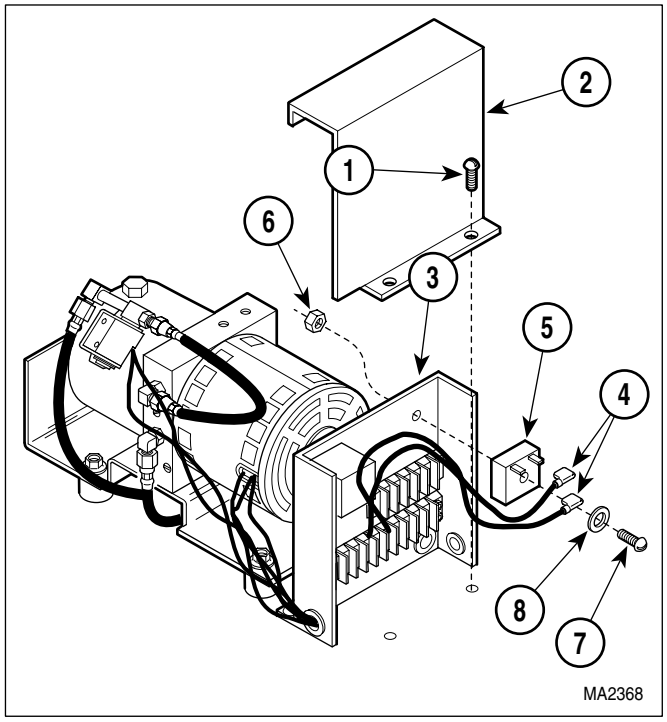

Figure 4-26. Time Delay Relay Removal / Installation

(3) Install control cover (2) on control panel (3) and secure with two screws (1).

(4) Install motor cover assembly (Refer to para 4.2).

(5) Plug table power cord into outlet.

4.19 Capacitors Removal / Installation

A. Removal

NOTE
Units with Serial Numbers Prior to 37420 or K-9496 thru Present have only one capacitor instead of two (unless they have been upgraded to two capacitors with the upgrade kit). For those units, this paragraph may be used as a guide only.

(1) If possible, raise FOOT UP function all the way up.

(2) Unplug table power cord from outlet.

(3) Remove four screws (1, Figure 4-27) and front outer shroud (2) from left and right hand outer shrouds (3).

(4) If necessary to gain access to capacitors, remove eight screws (4) and front inner shroud (5) from left and right hand inner shrouds (6).

(5) Cut cable tie securing wires to capacitor (7).

(6) Using a screwdriver, pry tab of capacitor mounting bracket (8) upward and remove capacitor (7) from capacitor mounting bracket.

(7) Remove capacitor cap (9) from capacitor (7).

DANGER
A capacitor contains stored electricity. Never touch terminals of a capacitor, even if power has been shut off or disconnected. Always discharge capacitor before touching capacitor terminals or wires. Failure to comply with these instruction could result in serious personal injury or death.

(8) Discharge capacitor (7).

(9) Disconnect wires (10 and 11) from terminals of capacitor (7).

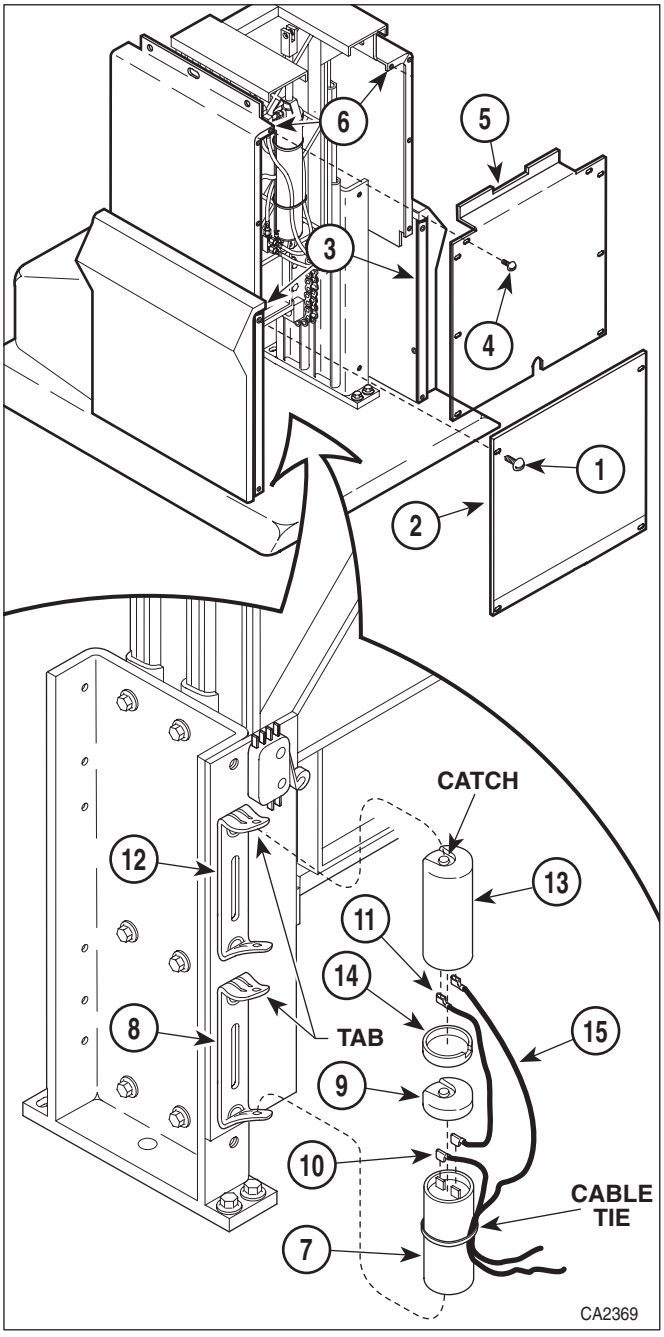

Figure 4-27. Capacitors Removal / Installation

(10) Using a screwdriver, pry tab of capacitor mounting bracket (12) upward and remove capacitor (13) from capacitor mounting bracket.

(11) Remove capacitor cap (14) from capacitor (13).

DANGER

A capacitor contains stored electricity. Never touch terminals of a capacitor, even if power has been shut off or disconnected. Always discharge capacitor before touching capacitor terminals or wires. Failure to comply with these instruction could result in serious personal injury or death.

(12) Discharge capacitor (13).

(13) Disconnect wires (11 and 15) from terminals of capacitor (13).

B. Installation

(1) Connect capacitor wires (11 and 15) to terminals of capacitor (13).

(2) Install capacitor cap (14) on capacitor (13).

(3) Position bottom of capacitor (13) on capacitor mounting bracket (12) and then push the top of the capacitor in. Using a screwdriver, force tab of capacitor mounting bracket (12) down over catch.

(4) Connect capacitor wires (10 and 11) to terminals of capacitor (7).

(5) Install capacitor cap (9) on capacitor (7).

(6) Position bottom of capacitor (7) on capacitor mounting bracket (8) and then push the top of the capacitor in. Using a screwdriver, force tab of capacitor mounting bracket (8) down over catch.

(7) Install cable tie to secure wire to capacitor (7).

(8) If removed, install front inner shroud (5) on left and right hand inner shrouds (6) and secure with eight screws (4).

(9) Install front outer shroud (2) on left and right hand outer shrouds (3) and secure with four screws (1).

(10) Plug table power cord into outlet.

4.20 Pan Safety Limit Switch Removal / Installation

A. Removal

NOTE
In most cases, if the pan safety limit switch is malfunctioning, the foot section cannot be moved. However, the foot section must be able to be moved in order to remove upholstered seat section so access to the pan safety limit switch can be gained. Steps 1 thru 3 must be performed if the foot function will not move and is prohibiting the upholstered seat section from being removed.

(1) Remove motor cover assembly (Refer to para 4.2).

(2) Remove two screws (1, Figure 4-28) and control cover (2) from control panel (3).

(3) Use a jumper wire to connect between terminals of terminal block (4) so pan safety limit switch is bypassed by jumper wire. See Figures 5-1 thru 5-14 to determine which terminals to connect the jumper wire to.

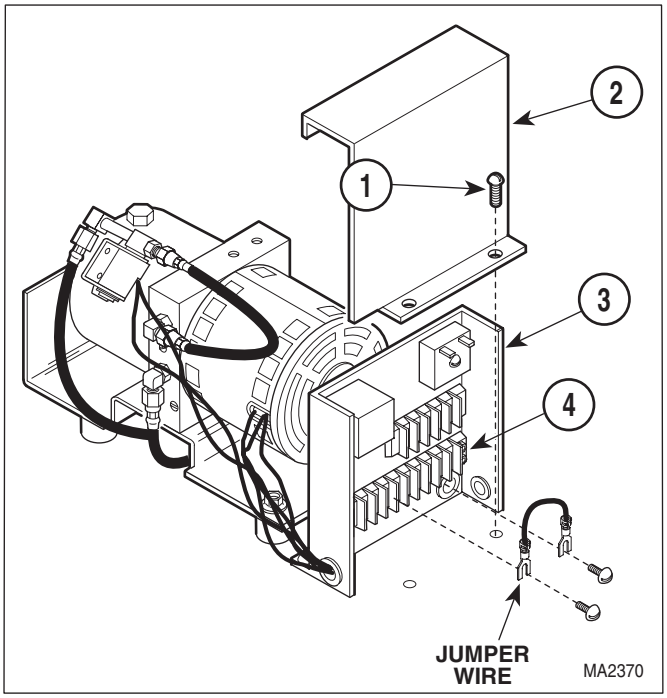

Figure 4-28. Jumper Wire Connection / Disconnection

(4) Remove upholstered seat section (Refer to steps 5 thru 8 of para 4.32A.

(5) Disconnect wire harness (1, Figure 4-29) from pan safety limit switch (2).

(6) Remove two screws (3), lockwashers (4), washers (5), and pan safety limit switch (2)/ bracket (6) as an assembly from seat weldment (7).

(7) Remove two nuts (8), lockwashers (9), screws (10), and pan safety limit switch (2) from bracket (6).

B. Installation

(1) Install pan safety limit switch (2, Figure 4-29) on bracket (6) and secure with two screws (10), lockwashers (9), and two nuts (8).

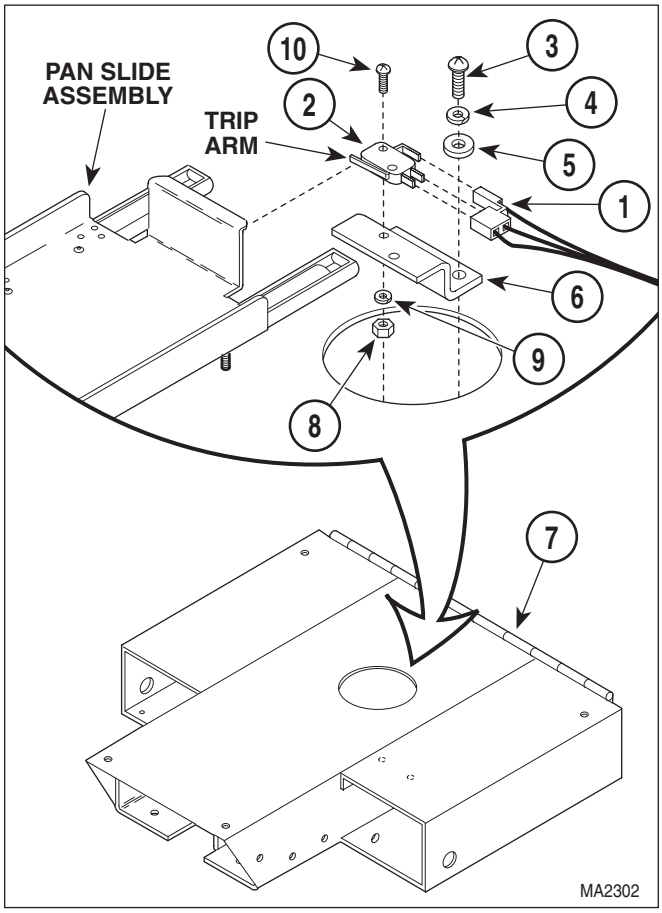

Figure 4-29. Pan Safety Limit Switch Removal / Installation

(2) Install bracket (6) and pan safety limit switch (2) as an assembly on seat weldment (7) and secure with two washers (5), lockwashers (4), and screws (3). Do not tighten screws fully.

(3) Push pan slide assembly inward until it "locks" into its fully stowed position.

(4) Slide bracket (6) toward rear panel of pan slide assembly until trip arm of pan safety limit switch (2) is firmly tripped by pan slide assembly. Tighten two screws (3).

(5) Connect wire harness (1) to pan safety limit switch (2).

(6) If installed, remove jumper wire (See Figure 4-28) from terminals of terminal block (4).

(7) If removed, install control cover (2) on control panel (3) and secure with two screws (1).

(8) If removed, install motor cover assembly (Refer to para 4.2).

(9) Install upholstered seat section (Refer to steps 7 thru 9 of para 4.32B.

4.21 Auto Return Relay [CR1] Removal / Installation

A. Removal

(1) Remove motor cover assembly (Refer to para 4.2).

(2) Remove two screws (1, Figure 4-30) and control cover (2) from control panel (3).

(3) Tag and disconnect ten wires (4) from auto return relay [CR1] (5).

(4) Remove two nuts (6), screws (7), and auto return relay [CR1] (5) from control panel (3).

B. Installation

(1) Install auto return relay [CR1] (5) on control panel (3) and secure with two screws (7) and nuts (6).

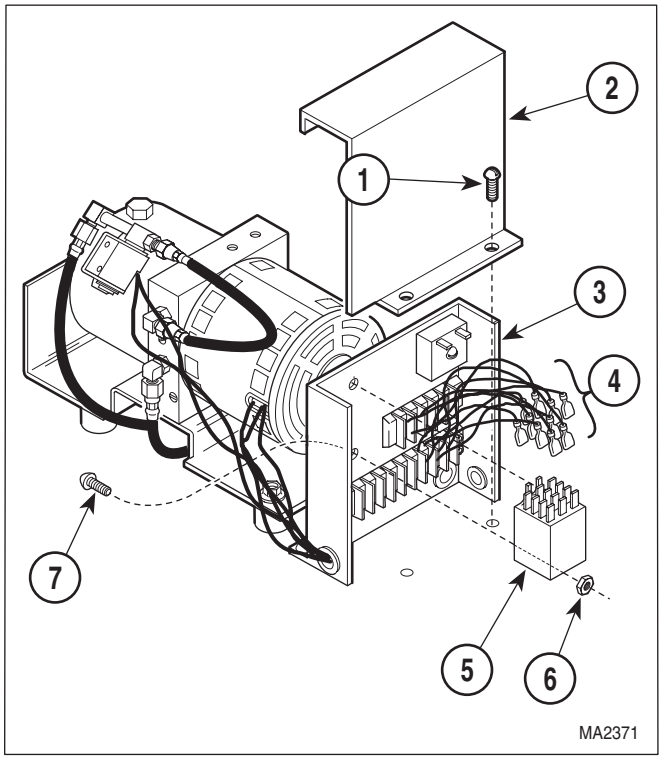

Figure 4-30. Auto Return Relay [CR1] Removal / Installation

(2) Connect ten wires (4) to auto return relay [CR1] (5).

(3) Install control cover (2) on control panel (3) and secure with two screws (1).

(4) Install motor cover assembly (Refer to para 4.2).

4.22 Base Down Limit Switch Removal / Installation / Adjustment

A. Removal

(1) Raise FOOT UP function all the way up.

(2) Unplug table power cord from outlet.

(3) Remove four screws (1, Figure 4-31) and front outer shroud (2) from left and right hand outer shrouds (3).

(4) Remove eight screws (4) and front inner shroud (5) from left and right hand inner shrouds (6).

(5) Tag and disconnect four wires (7) from termi-

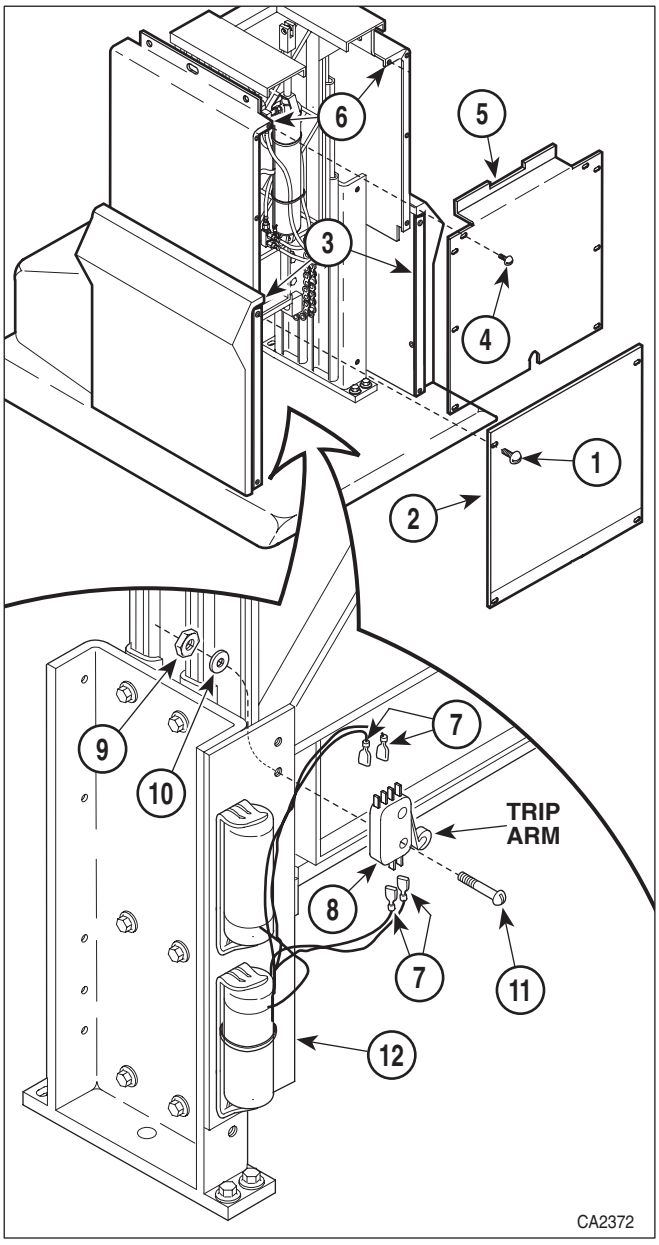

Figure 4-31. Base Down Limit Switch Removal / Installation / Adjustment

nals of base down limit switch (8).

(6) Remove two nuts (9), lockwashers (10), screws(11), and base down limit switch (8) from auto return bracket (12).

B. Installation

(1) Install base down limit switch (8) on auto return bracket (12) and secure with two screws (11), lockwashers (10), and two nuts (9).

(2) Connect four wires (7) to terminals of base down limit switch (8).

C. Adjustment

(1) If base down limit switch was not replaced and is only being adjusted, perform steps 1 thru 4 of removal section of this paragraph to gain access to base down limit switch.

NOTE
If the motor pump continues to run after the AUTO RETURN function has lowered the table top all the way down, the base down limit switch must be adjusted so its trip arm contacts the trip plate before the table top is completey lowered.

(2) Loosen two nuts (9) and adjust base down limit switch (8) as necessary so trip arm of base down limit switch is getting tripped by trip plate just before the AUTO RETURN function lowers the table top all the way down.

DANGER
Do not touch any bare wires or electrical shock could occur. Do not place hands or head inside base area of table while it is being lowered. Failure to follow these safety precautions could result in serious personal injury or death.

(3) Plug power cord into outlet.

(4) Raise TABLE UP function all the way up.

(5) Press AUTO RETURN "RETURN" button.

(6) If the motor pump automatically shuts off when AUTO RETURN function stops, base down limit switch is adjusted properly. If the motor pump continues to run after table top is completely lowered, repeat steps 2 thru 6 again.

(7) Install front inner shroud (5) on left and right hand inner shrouds (6) and secure with eight screws (4).

(8) Install front outer shroud (2) on left and right hand outer shrouds (3) and secure with four screws (1).

4.23 Chain Assembly Adjustment

A. Adjustment

(1) Raise BASE UP function all the way up.

(2) Unplug table power cord from outlet.

(3) Remove four screws (1, Figure 4-32) and front outer shroud (2) from left and right hand outer shrouds (3).

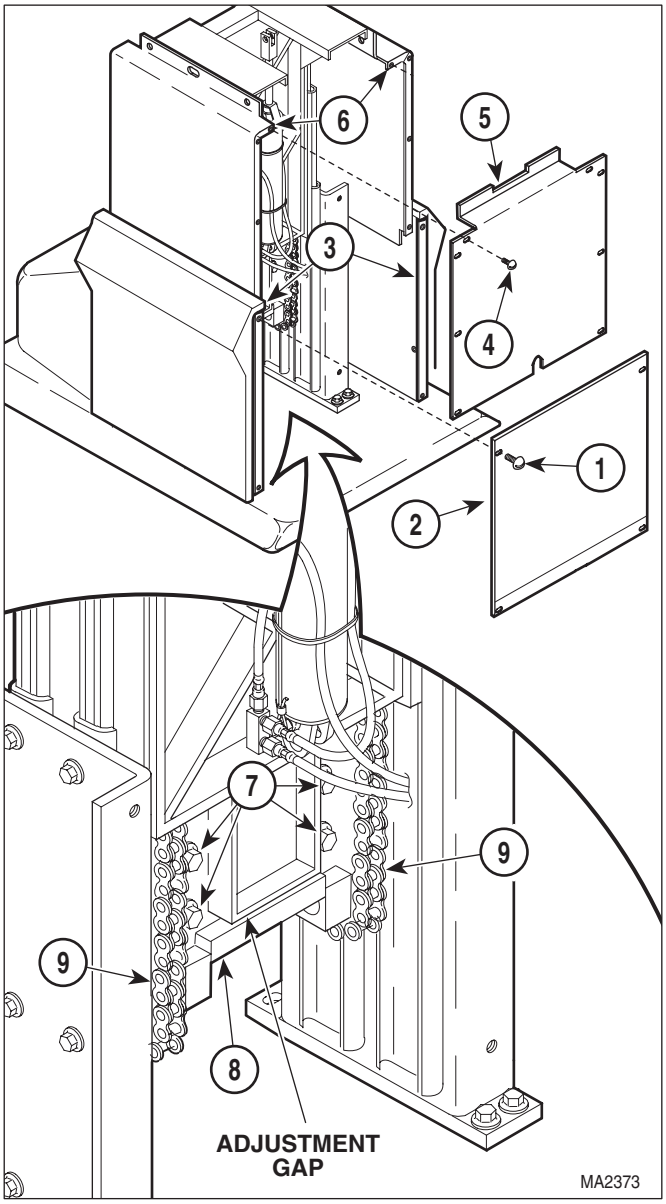

Figure 4-32. Chain Assembly Adjustment

(4) Remove eight screws (4) and front inner shroud (5) from left and right hand inner shrouds (6).

(5) Loosen four screws (7).

CAUTION
Adjust chains so they are tight, yet have a slight spring back. Also, adjust chains so there is an equal amount of tension on each chain. Failure to do so will result in chains loosening earlier and uneven wear.

(6) Insert a pry bar or large screwdriver into adjustment gap and pry downward on idler adjustment weldment (8) until chains (9) are tight, but not drum tight. Tighten four screws (7).

(7) Install front inner shroud (5) on left and right hand inner shrouds (6) and secure with eight screws (4).

(8) Install front outer shroud (2) on left and right hand outer shrouds (3) and secure with four screws (1).

(9) Plug table power cord into outlet.

4.24 Base Slide Assembly Removal / Installation

A. Removal

(1) If possible, raise BASE UP function all the way up.

(2) Move the back, seat, and foot sections of the table top to a horizontal position.

(3) Unplug table power cord from outlet.

(4) Remove motor cover assembly (Refer to para 4.2).

(5) Remove four screws (1, Figure 4-33) and back outer shroud (2) from left and right hand outer shrouds (3).

(6) Remove eight screws (4) and back inner shroud (5) from left and right hand inner shrouds (6).

(7) Remove four screws (7) and front outer shroud (8) from left and right hand outer shrouds (3).

(8) Remove eight screws (9) and front inner shroud (10) from left and right hand inner shrouds (6).

(9) Remove six screws (11), washers (12), and left and right hand inner shrouds (6) from base slide assembly (13).

(10) Remove six screws (14) and partially separate left and right hand outer shrouds (3) from base weldment (15).

DANGER

The supports must be capable of holding up table top after table top is disconnected from base slide assembly and the base slide assembly is removed. Failure to support table top properly could result in table top falling out-of-control which could result in serious personal injury or death.

(11) Place supports (See Figure 4-34) under foot section and back section of table top, making sure weight of table top is being supported by supports. If necessary, plug table power cord

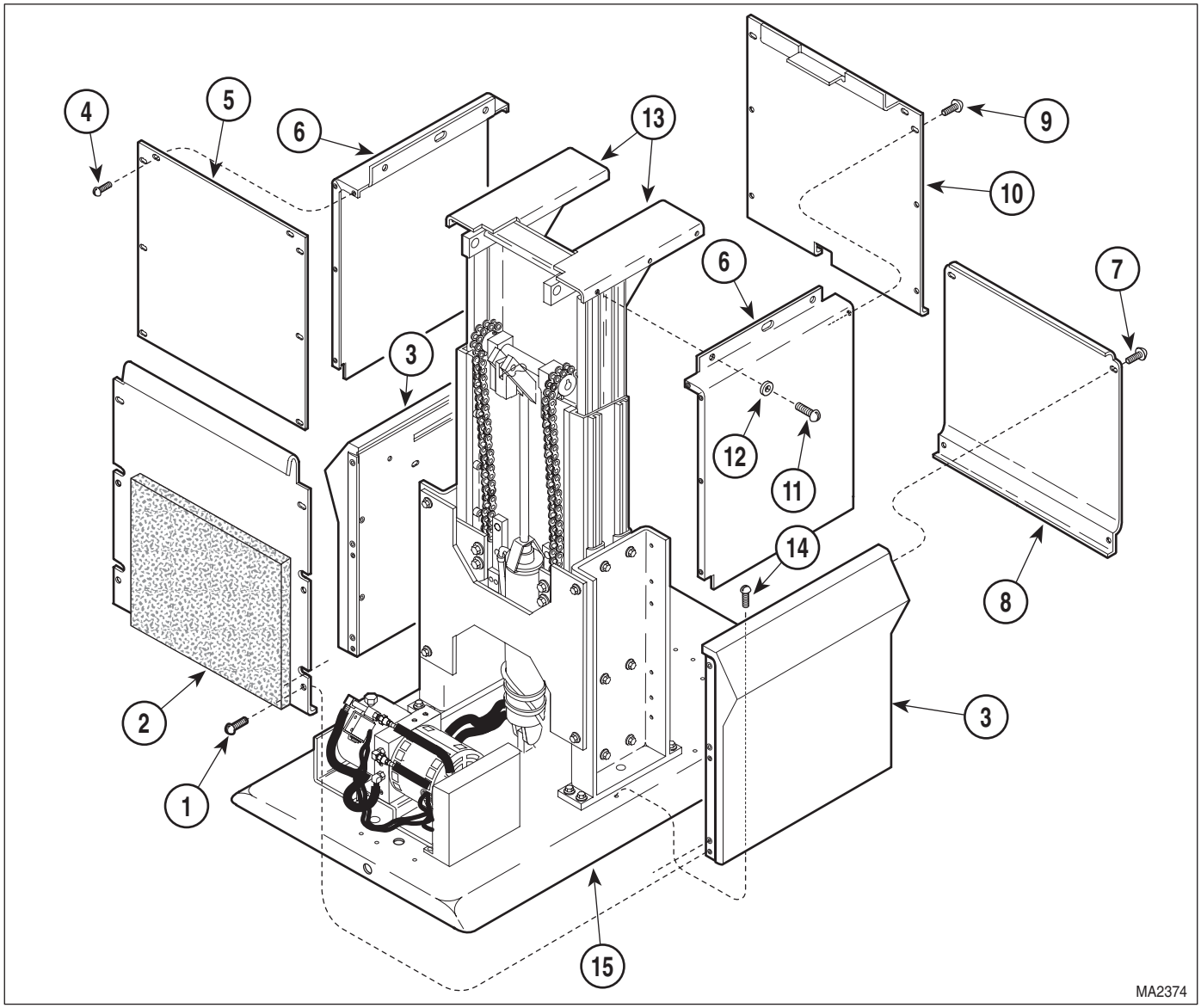

Figure 4-33. Shrouds Removal / Installation

SECTION IV
MAINTENANCE / SERVICE

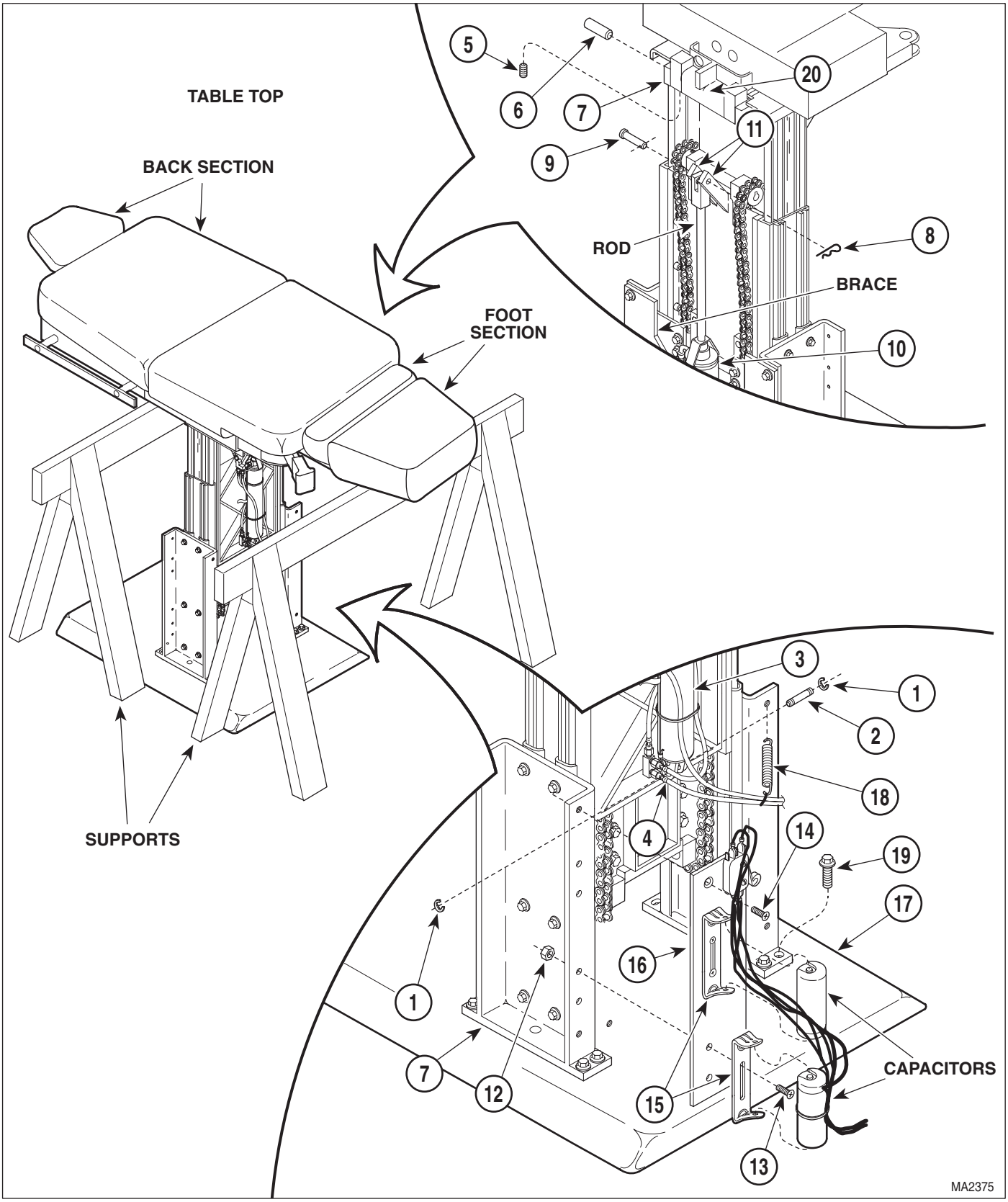

Figure 4-34. Base Slide Assembly Removal / Installation

into outlet and lower table top onto supports. Unplug table power cord from outlet.

(12) Remove two E-rings (1, Figure 4-34), clevis pin (2), and separate tilt cylinder (3) from bracket (4).

(13) Loosen four setscrews (5). Remove two tilt pivot pins (6) from base slide assembly (7).

DANGER

Make sure table top is properly supported for the following step. Table top will rest only on supports after this step. Also do not touch any wires inside of table when power cord is plugged in. This could result in electrical shock. Failure to comply with this warning could result in serious personal injury or death.

(14) Plug table power cord into outlet. Lower BASE DOWN function all the way down. Unplug table power cord from outlet.

DANGER

Make sure base slide assembly is fully retracted (collapsed) before disconnecting base cylinder. Failure to do so will result in base slide assembly collapsing after base cylinder is disconnected which could result in serious personal injury.

(15) Remove hitch pin clip (8), clevis pin (9), and separate rod of base cylinder (10) from bracket (11).

(16) Remove capacitors (Refer to para 4.19).

(17) Remove five nuts (12), four screws (13), one screw (14), two capacitor mounting brackets (15), and partially separate auto return bracket assembly (16) from base slide assembly (7). Lay auto return bracket assembly out of the way on base weldment (17).

(18) Disconnect spring (18) from base slide assembly (7).

(19) Remove eight screws (19) from base slide assembly (7).

NOTE

If necessary, remove four screws and brace to allow base slide assembly to be pulled over base cylinder.

(20) With the help of an assistant, remove base slide assembly (7) from base weldment (17).

B. Installation

(1) With the help of an assistant, install base slide assembly (7, Figure 4-34) on base weldment (17), making sure base cylinder (10) gets inserted between brace and base slide assembly.

(2) Secure base slide assembly (7) on base weldment (17) with eight screws (19).

(3) Connect spring (18) to base slide assembly (7).

(4) Install auto return bracket assembly (16) and two capacitor mounting brackets (15) on base slide assembly (7) and secure with one screw (14), four screws (13), and five nuts (12).

(5) Install capacitors (Refer to para 4.19).

(6) Install rod end of base cylinder (10) on bracket (11) and secure with clevis pin (9) and hitch pin clip (8).

NOTE

Install beveled edge of tilt pivot pins first. The beveled edge allows the tilt pivot pins to be started more easily.

(7) Raise BASE UP function until base slide assembly (7) is aligned with seat weldment (20). Secure base slide assembly to seat weldment with two tilt pivot pins (6).

(8) Secure tilt pivot pins (6) in place by tightening four setscrews (5).

(9) Install base of tilt cylinder (3) on bracket (4) and secure with clevis pin (2) and two E-rings (1).

(10) Remove supports from under head section and foot section of table top.

(11) If necessary, adjust base down limit switch (Refer to para 4.22).

(12) Install left and right hand outer shrouds (3, Figure 4-33) on base weldment (15) and secure with six screws (14).

(13) Install left and right hand inner shrouds (6) on base slide assembly (13) and secure with six washers (12) and screws (11).

(14) Install front inner shroud (10) on left and right hand inner shrouds (6) and secure with eight screws (9).

(15) Install front outer shroud (8) on left and right hand outer shrouds (3) and secure with four screws (7).

(16) Install back inner shroud (5) on left and right hand inner shrouds (6) and secure with eight screws (4).

(17) Install back outer shroud (2) on left and right hand outer shrouds (3) and secure with four screws (1).

(18) Install motor cover assembly (Refer to para 4.2).

(19) Plug table power cord into outlet.

4.25 Headrest Adjustment

A. Adjustment

(1) Unlock upper lock handle (See Figure 4-35).

(2) Loosen setscrew (1, Figure 4-35).

(3) Tighten adjusting screw (2) slightly; then lock upper lock handle. Repeat this step until axis A and B have the strongest possible holding power, but operation of upper lock handle is not too difficult.

(4) Tighten setscrew (1).

(5) Unlock lower lock handle.

(6) Loosen setscrew (3).

(7) Tighten adjusting screw (4) slightly; then lock lower lock handle. Repeat this step until axis C has the strongest possible holding power, but operation of lower lock handle is not too difficult.

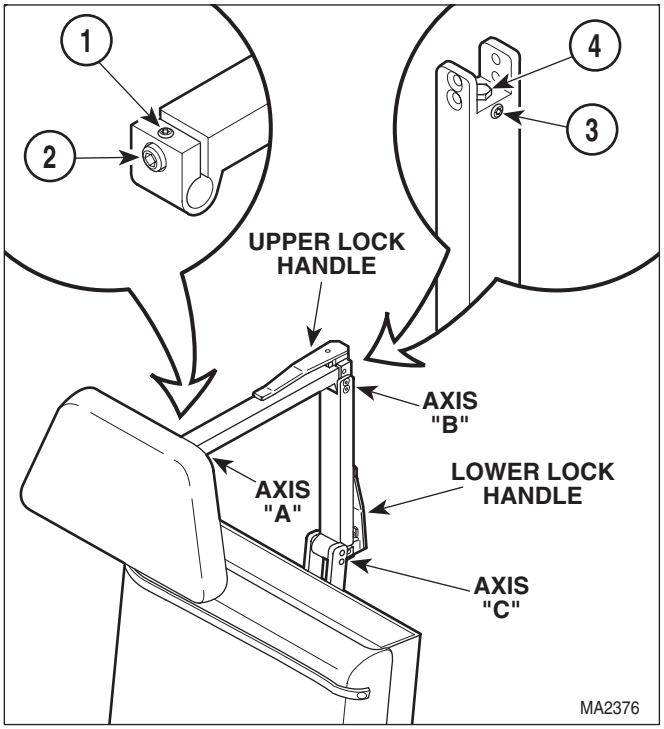

Figure 4-35. Headrest Adjustment

(8) Tighten setscrew (3).

4.26 Headrest Handles Handle Stops Adjustment

A. Adjustment

(1) Loosen nut (1, Figure 4-36).

(2) Push on upper lock handle until it reaches a point where the upper lock handle wants to lock itself by going over center; then allow upper lock handle to go over center a few degrees. Hold the upper lock handle in this position and adjust stop screw (2) so the upper lock handle will be forced to stop in this position each time it is locked.

(3) Tighten nut (1).

(4) Loosen nut (3).

(5) Push on lower lock handle until it reaches a point where the lower lock handle wants to lock itself by going over center; then allow lower lock handle to go over center a few degrees. Hold the lower lock handle in this position and

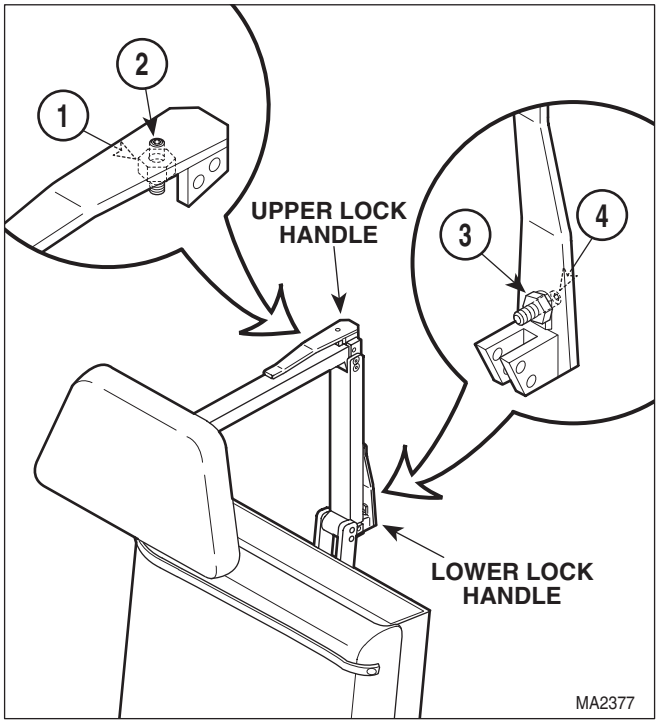

Figure 4-36. Headrest Handles Handle Stops Adjustment

adjust stop screw (4) so the lower lock handle will be forced to stop in this position each time it is locked.

(6) Tighten nut (3).

4.27 Stirrup Assembly And Components Removal / Installation (Applies Only To Units With New Style Stirrup Assembly)

A. Removal

(1) Remove hole plug (1, Figure 4-37) from access hole in seat weldment (2).

(2) Insert screwdriver in access hole and remove screw (3) from stirrup assembly (4).

(3) Pull stirrup assembly (4) out of pivot boss (5).

(4) Remove pivot boss (5) and stirrup guide bracket (6) from stirrup mount weldment (7).

(5) If damaged, remove stirrup index spring (8) from stirrup guide bracket (6).

B. Installation

(1) If removed, install stirrup index spring (8) on stirrup guide bracket (6).

(2) Install stirrup guide bracket (6) in stirrup mount weldment (7) and secure with pivot boss (5).

(3) Slide stirrup assembly (4) thru slot in pivot boss (5) and thru slot in stirrup guide bracket (6).

(4) Install screw (3) on stirrup assembly (4).

(5) Install hole plug (1) in access hole of seat weldment (2).

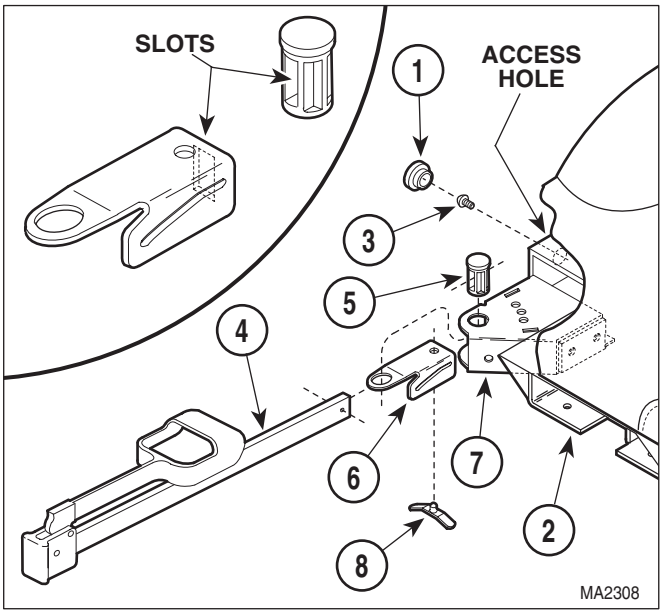

Figure 4-37. Stirrup Assembly And Components Removal / Installation

4.28 Typical Foot Switch Removal / Installation

A. Removal

DANGER
The foot control contains high voltage (115 VAC) when the table power cord is plugged in. Unplug table power cord before disassembling foot control to prevent electrical shock. Failure to do so could result in serious personal injury or death.

(1) Unplug table power cord from outlet.

(2) Remove two screws (1, Figure 4-38) and partially separate foot switch bracket (2) from foot control casting (3).

(3) Remove screw (4), spacer (5), and pedal (6) from foot switch bracket (2).

(4) Tag and disconnect four wires (7) from terminals of foot switch (8).

(5) Remove two nuts (9), washers (10), screws (11), and foot switch (8) from foot switch bracket (2).

B. Installation

(1) Install foot switch (8) on foot switch bracket (2) and secure with two screws (11), washers (10), and nuts (9).

(2) Connect four wires (7) to terminals of foot switch (8).

(3) Ensure springs and spacers are in position and have not fallen off.

(4) Install pedal (6) on foot switch bracket (2) and secure with spacer (5) and screw (4), making sure pedal is mounted on pivot spacer.

(5) Install foot switch bracket (2) on foot control casting (3) and secure with two screws (1).

(6) Plug table power cord into outlet.

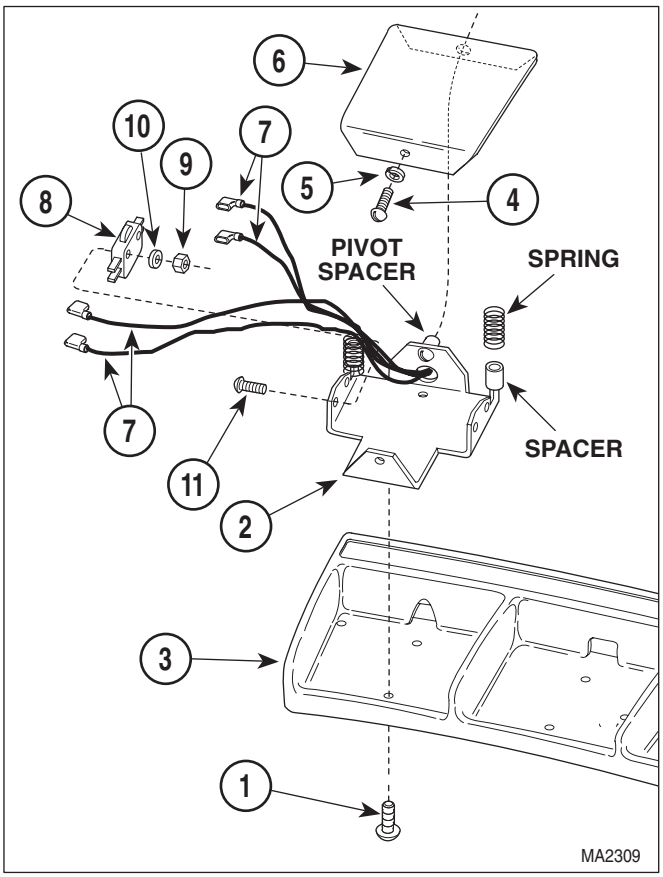

Figure 4-38. Typical Foot Switch Removal / Installation

4.29 Brake Adjustment (Only On Units With Rotational Base)

A. Adjustment

(1) Raise TABLE UP function all the way up.

(2) Unplug table power cord from outlet.

(3) Remove four screws (1, Figure 4-39) and front outer shroud (2) from left and right hand outer shrouds (3).

(4) Move ROTATION LOCK / UNLOCK lever to UNLOCK.

(5) Loosen nut (4) fully.

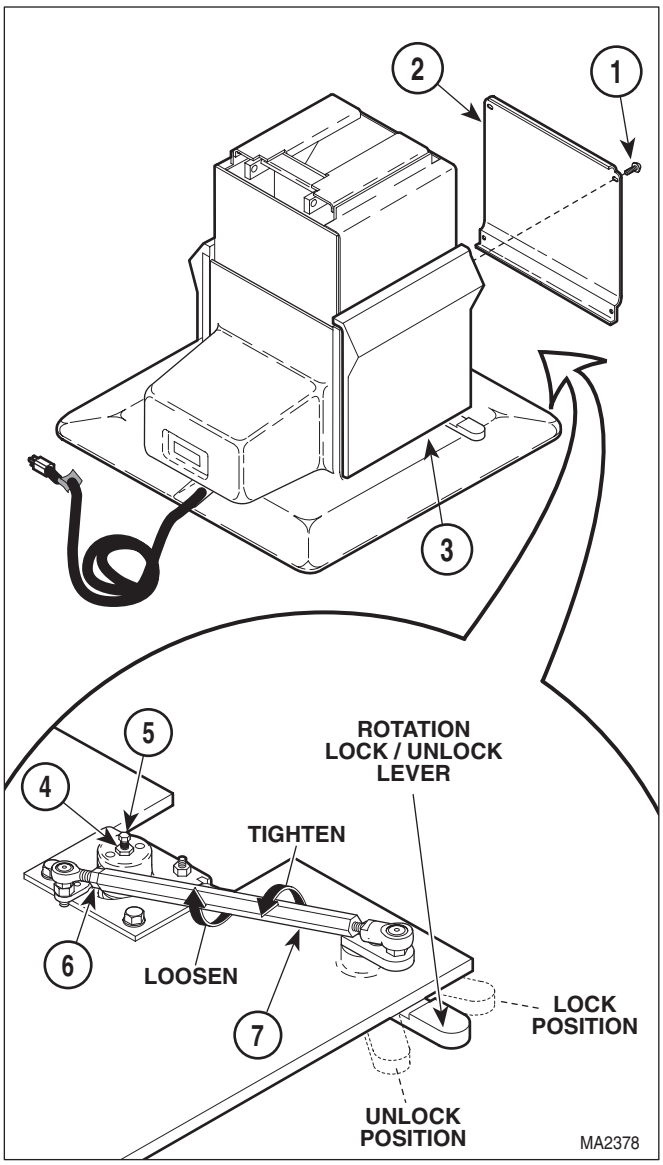

Figure 4-39. Brake Adjustment

CAUTION

Try to rotate the table top after screw has been backed off 1/2 turn. If brake is dragging when table top is being rotated, loosen screw (5) an additional 1/4 turn. Failure to do so will result in brake dragging continuously.

(6) Tighten screw (5) handtight; then back screw off 1/2 turn.

(7) Tighten nut (4), making sure screw (5) does not move.

(8) Move ROTATION LOCK / UNLOCK lever to LOCK position and try to rotate table top to check brake function. Then move ROTATION LOCK / UNLOCK lever to UNLOCK position and try to rotate table top to check brake function. If brake does not hold table top from rotating when ROTATION LOCK lever is in LOCK position, tighten turnbuckle as described in step 9. If brake drags when ROTATION LOCK lever is in UNLOCK position, loosen turnbuckle as described in step 9.

(9) Loosen nut (6). Turn turnbuckle (7) in direction shown to tighten or loosen turnbuckle. Repeat steps 8 and 9 until table top will not rotate when ROTATION LOCK lever is in LOCK position, but brake does not drag when ROTATION LOCK lever is in UNLOCK position.

(10) Tighten nut (6), making sure turnbuckle (7) does not turn.

(11) Install front outer shroud (2) on left and right hand outer shrouds (3) and secure with four screws (1).

4.30 Brake Removal / Installation (Only On Units With Rotational Base)

A. Removal

(1) Raise TABLE UP function all the way up.

(2) Unplug table power cord from outlet.

(3) Remove four screws (1, Figure 4-40) and front outer shroud (2) from left and right hand outer shrouds (3).

(4) Loosen nut (4).

(5) Unscrew rod end (5) from brake lever of brake (6).

(6) Remove two screws (7). Then remove brake (6) and bracket (8) as an assembly from platform base weldment (9).

(7) Remove brake (6) from bracket (8).

B. Installation

(1) Install brake (6) on bracket (8).

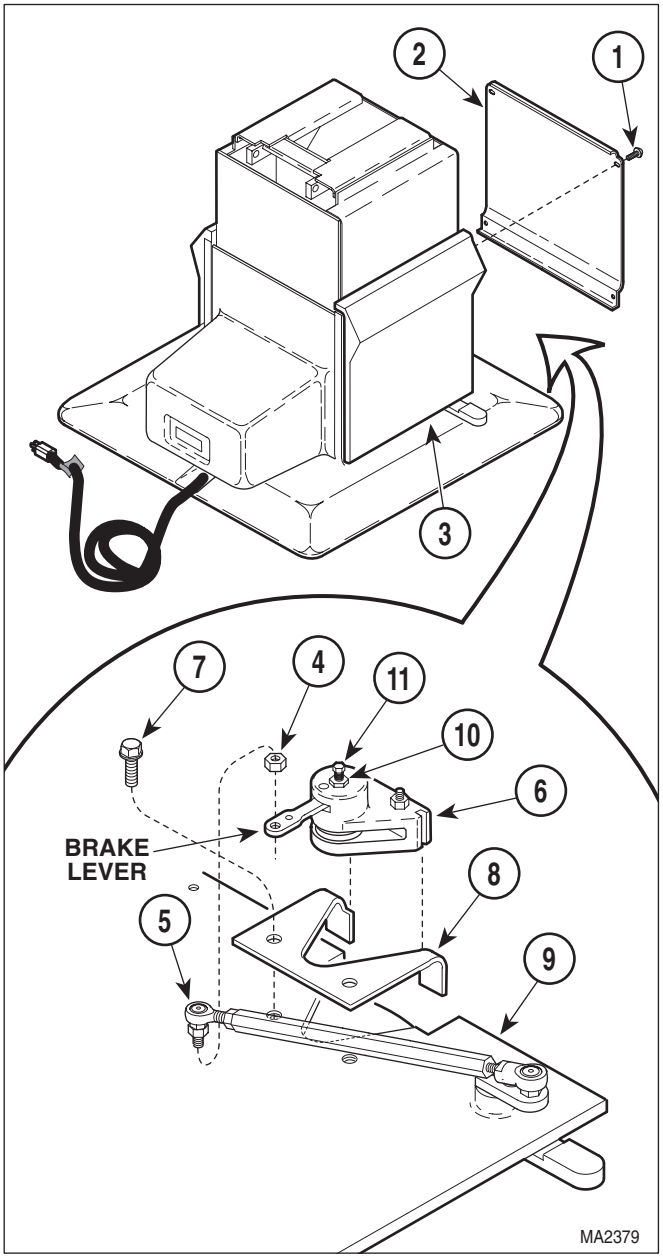

Figure 4-40. Brake Removal / Installation

NOTE
Use a screwdriver to hold brake pads apart, so brake may be installed.

(2) Install bracket (8) and brake (6) as an assembly on platform base weldment (9) and secure with two screws (7). If brake cannot be installed because brake pads cannot be spread far enough apart, loosen nut (10) and unscrew screw (11) until brake pads are far enough apart to allow brake to be installed.

(3) Screw rod end (5) onto brake lever of brake (6).

(4) Tighten nut (4).

(5) Adjust brake (Refer to para 4.29).

(6) Install front outer shroud (2) on left and right hand outer shrouds (3) and secure with four screws (1).

4.31 Rotation Bearings Removal / Installation (Only On Units With Rotational Base)

A. Removal

(1) Raise TABLE UP function all the way up.

(2) Unplug table power cord from outlet.

(3) Remove motor cover assembly (Refer to para 4.2).

(4) Remove four screws (1, Figure 4-41) and front outer shroud (2) from left and right hand outer shrouds (3).

(5) Remove four screws (4) and back outer shroud (5) from left and right hand outer shrouds (3).

(6) Remove six screws (6) and left and right hand outer shrouds (3) from platform base weldment (7).

(7) Remove brake (Refer to para 4.29).

(8) Remove filler cap (8) from motor pump (9).

(9) Install plug (provided in bearing replacement kit) on motor pump (9).

(10) Remove two screws (1, Figure 4-42) and control cover (2) from control panel (3).

(11) Loosen three terminal screws; then tag and disconnect three wires (4) from terminal block (5).

NOTE
Cut cable ties as necessary during the following steps.

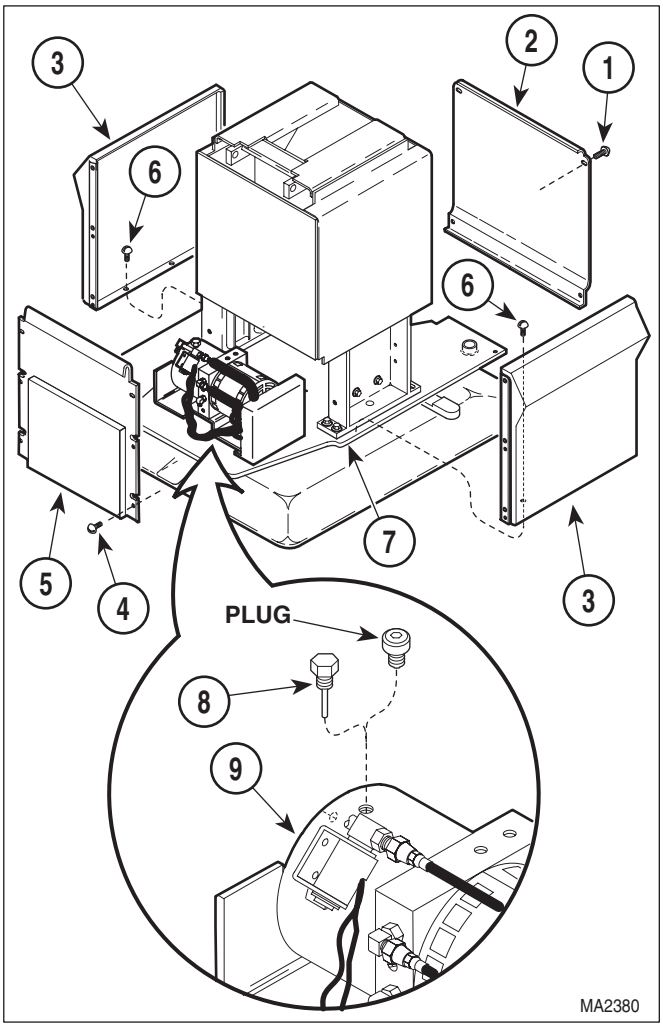

Figure 4-41. Shrouds Removal / Installation

(12) Loosen eight terminal screws; then tag and disconnect eight wires (6) from terminal blocks (5).

(13) Remove screw (7), washer (8), and cable clamp (9) securing wires (4 and 6) to platform base weldment (10).

DANGER

The table is very heavy. Use proper lifting techniques to prevent back strain. Use a block or jackstand strong enough to support base of table. Make sure base of table is supported securely so it will not fall while being worked on. Failure to do so could result in serious personal injury.

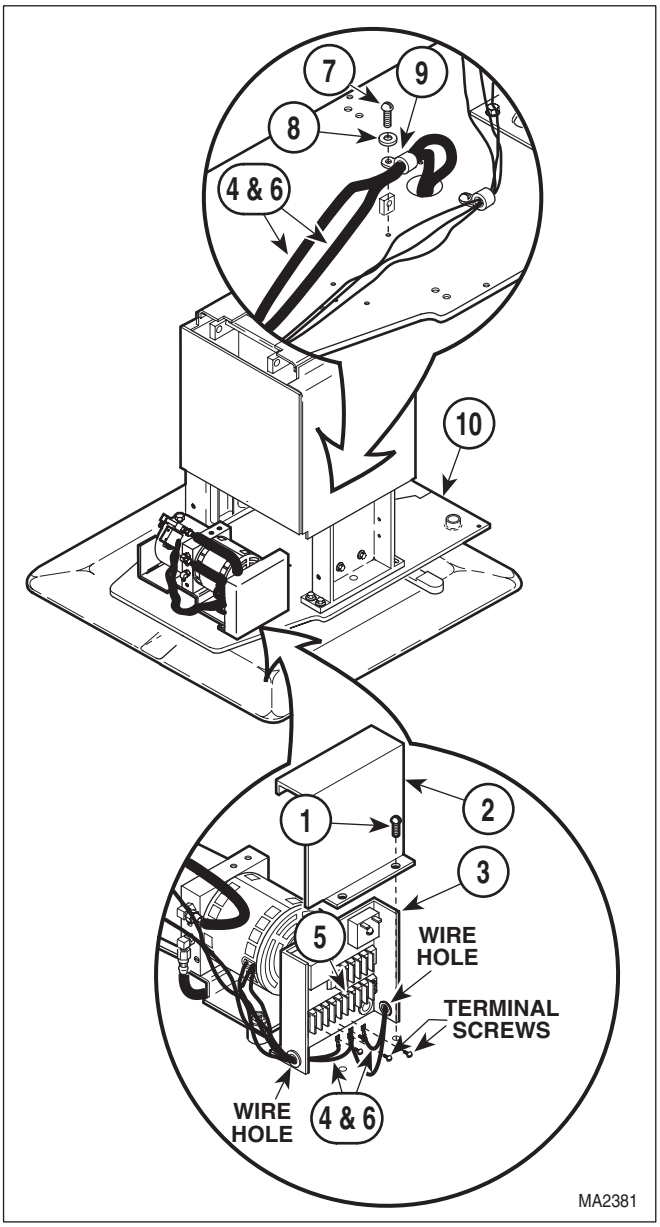

Figure 4-42. Wires Disconnection / Connection

(14) With help of an assistant, lay table onto its left (patients left) side and block base of table off of floor by putting a block/jackstand under base slide assembly. See Figure 4-43.

(15) Remove eight screws (1, Figure 4-43) and cable cover (2) from rotational base (3).

(16) Pull wire harnesses (4 and 5) out thru bottom of platform base weldment (6).

(17) Remove retaining ring (7) from platform base weldment (6).

SECTION IV
MAINTENANCE / SERVICE

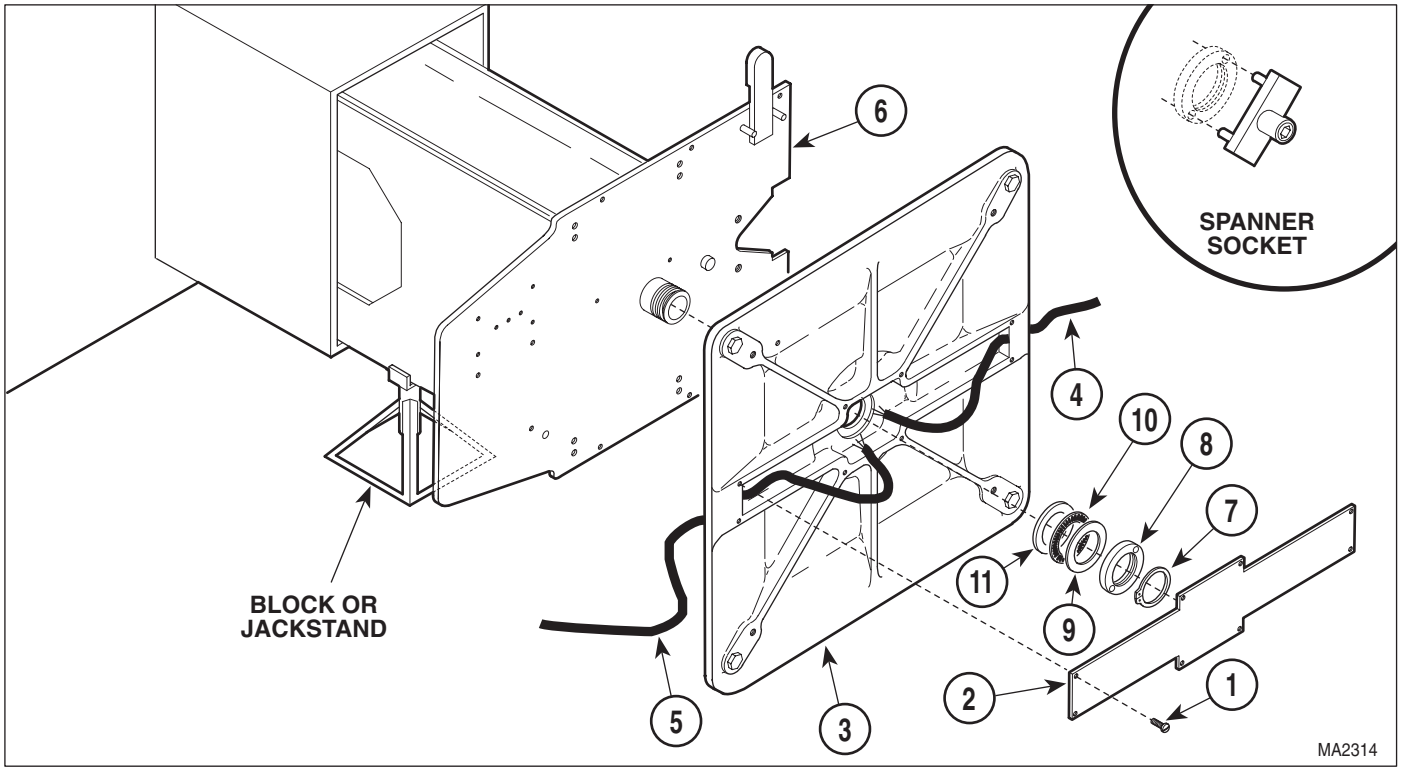

Figure 4-43. Rotational Base Removal / Installation

(18) Using spanner socket, remove rotation nut (8) from platform base weldment (6). Refer to Table 1-2 for special tool.

DANGER
Platform base weldment weighs approximately 100 lbs (45 kg). If necessary, use an assistant to help in removing platform base weldment. Use proper lifting techniques to prevent back strain. Failure to do so could result in serious personal injury.

(19) Remove rotational base (3), thin bearing washer (9), thrust bearing (10), and thick bearing washer (11) from platform base weldment (6).

(20) Remove two screws (1, Figure 4-44).

(21) Remove table rotation bearing (2) and rotation stop plate (3) from rotational base (4), by pulling table rotation bearing straight up and off of two groove pins (5).

(22) If damaged, remove stop plate post (6) from rotational base (4).

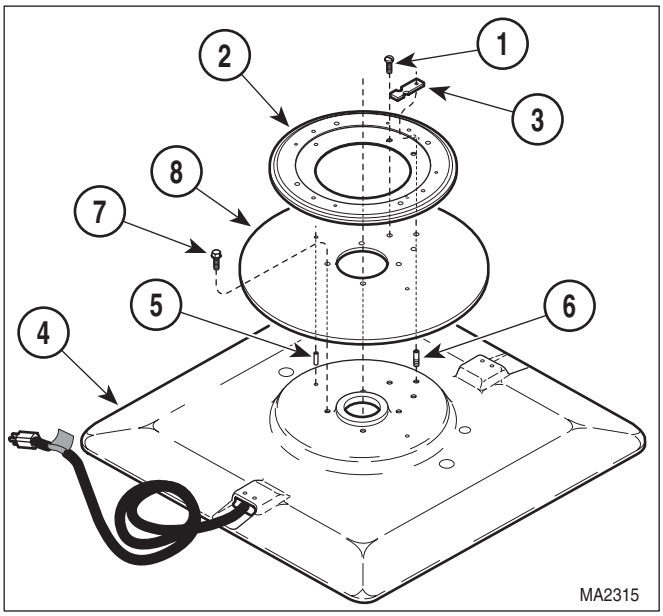

Figure 4-44. Table Rotation Bearing Removal / Installation

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(23) If damaged, remove four screws (7) and stop disc (8) from rotational base (4).

(24) If damaged, use vise grips to remove two groove pins (5) from rotational base (4). Drill groove pins out if necessary.

B. Installation

(1) If removed, install groove pins (5, Figure 4-44) in rotational base (4).

(2) If removed, install stop disc (8) on rotational base (4) and secure with four screws (7).

(3) If removed, coat threads of stop plate post (6) with removeable threadlocking adhesive (Loctite 242) Install stop plate post (6) in rotational base (4).

(4) Coat bearings of table rotation bearing (2) with high temperature grease.

NOTE
Table rotation bearing can only be installed one way. Look at screw hole locations to properly line up table rotation bearing. Groove pins assist in helping to align bearing.

(5) Install table rotation bearing (2) and rotation stop plate (3) on rotational base (4), making sure stop plate post (6) goes thru rotation stop plate to hold rotation stop plate in position.

(6) Coat threads of two screws (1) with removeable threadlocking adhesive (Loctite 242).

(7) Secure table rotation bearing (2) with two screws (1).

(8) Coat mating surfaces of thick bearing washer (11, Figure 4-43), thrust bearing (10) and thin bearing washer (9) with high temperature grease.

(9) Coat threads of rotation nut (8) with removeable threadlocking adhesive (Loctite 242).

DANGER
Platform base weldment weighs approximately 100 lbs (45 kg). If necessary, use an assistant to help in removing platform base weldment. Use proper lifting techniques to prevent back strain. Failure to do so could result in serious personal injury.

(10) Install rotational base (3) on platform base weldment (6) and secure with thick bearing washer (11), thrust bearing (10), thin bearing washer (9), and rotation nut (8). Use spanner socket to torque rotation nut to 20 ft-lbs (27 n•m). Refer to Table 1-2 for special tool.

(11) Install retaining ring (7) on platform base weldment (6).

(12) Feed wire harnesses (4 and 5) thru center of platform base weldment (6).

(13) Install cable cover (2) on rotational base (3) and secure with eight screws (1).

DANGER
The table is very heavy. Use proper lifting techniques to prevent back strain. Failure to do so could result in serious personal injury.

(14) With help of an assistant, raise table to its upright position.

(15) Connect eight wires (6, Figure 4-42) to terminal block (5) and secure by tightening eight terminal screws.

(16) Connect three wires (4) to terminal block (5) and secure by tightening three terminal screws.

(17) Secure wires (4 and 6) to platform base weldment (10) with cable clamp (9), washer (8), and screw (7).

(18) Install any cable ties which were removed during removal.

(19) Install control cover (2) on control panel (3) and secure with two screws (1).

(20) Remove plug from motor pump (9, Figure 4-41).

(21) Install filler cap (8) in motor pump (9).

(22) Install brake (Refer to para 4.30).

(23) Adjust brake (Refer to para 4.29).

(24) Install left and right hand outer shrouds (3, Figure 4-41) on platform base weldment (7) and secure with six screws (6).

(25) Install back outer shroud (5) on left and right hand outer shrouds (3) and secure with four screws (4).

(26) Install front outer shroud (2) on left and right hand outer shrouds (3) and secure with four screws (1).

(27) Install motor cover assembly (Refer to para 4.2).

4.32 Upholstery Removal / Installation

A. Removal

NOTE
If the table you are working on has the optional soft touch upholstery, the upholstered seat section, upholstered back section, and hinge cover are combined as an assembly. Some of the steps will be different for this type of upholstery.

(1) Move table top to flat position.

(2) Remove four screws (1, Figure 4-45) and upholstered headrest (2) from headboard pivot brackets (3).

(3) Remove four screws (4) and back cover (5) from back weldment (6).

(4) Remove four screws (7) and upholstered back section (8) from back weldment (6).

(5) Lower FOOT DOWN function all the way down.

(6) Pull open pan slide assembly (9). Remove treatment pan (10) from pan slide assembly (9). Close pan slide assembly to its fully stowed position.

(7) Raise FOOT UP function all the way up.

NOTE
The two screws closest to the head end of the table must be accessed thru access holes.

(8) Remove four screws (11) and upholstered seat section (12) from seat weldment (13).

(9) Remove two screws (14) and upholstered leg rest (15) from foot extension weldment (16).

(10) Squeeze release latches and remove foot board assembly (17) from foot extension weldment (16).

NOTE
Step 11 only needs to be performed on soft touch upholstery. Regular upholstery comes with upholstered footrest already assembled on foot board assembly.

(11) Release two springs (18) from release latches. Remove four screws (19), lockwashers (20), two springs (18), and upholstered foot rest (21) from foot board assembly (22).

(12) If necessary, remove hinge cover (23) from seat weldment (13) and back weldment (6). Scrape all glue residue off of seat weldment and back weldment.

B. Installation

(1) Coat mating surfaces of hinge cover (23), seat weldment (13) and back weldment (6) with contact cement glue.

(2) Install hinge cover (23) over hinge on seat weldment (13) and back weldment (6).

(3) Install upholstered foot rest (21) and two springs (18) on foot board assembly (22) and secure with four lockwashers (20) and screws (19).

(4) Compress springs (18) and then latch free end of springs to release latches.

(5) Install foot board assembly (17) on foot extension weldment (16).

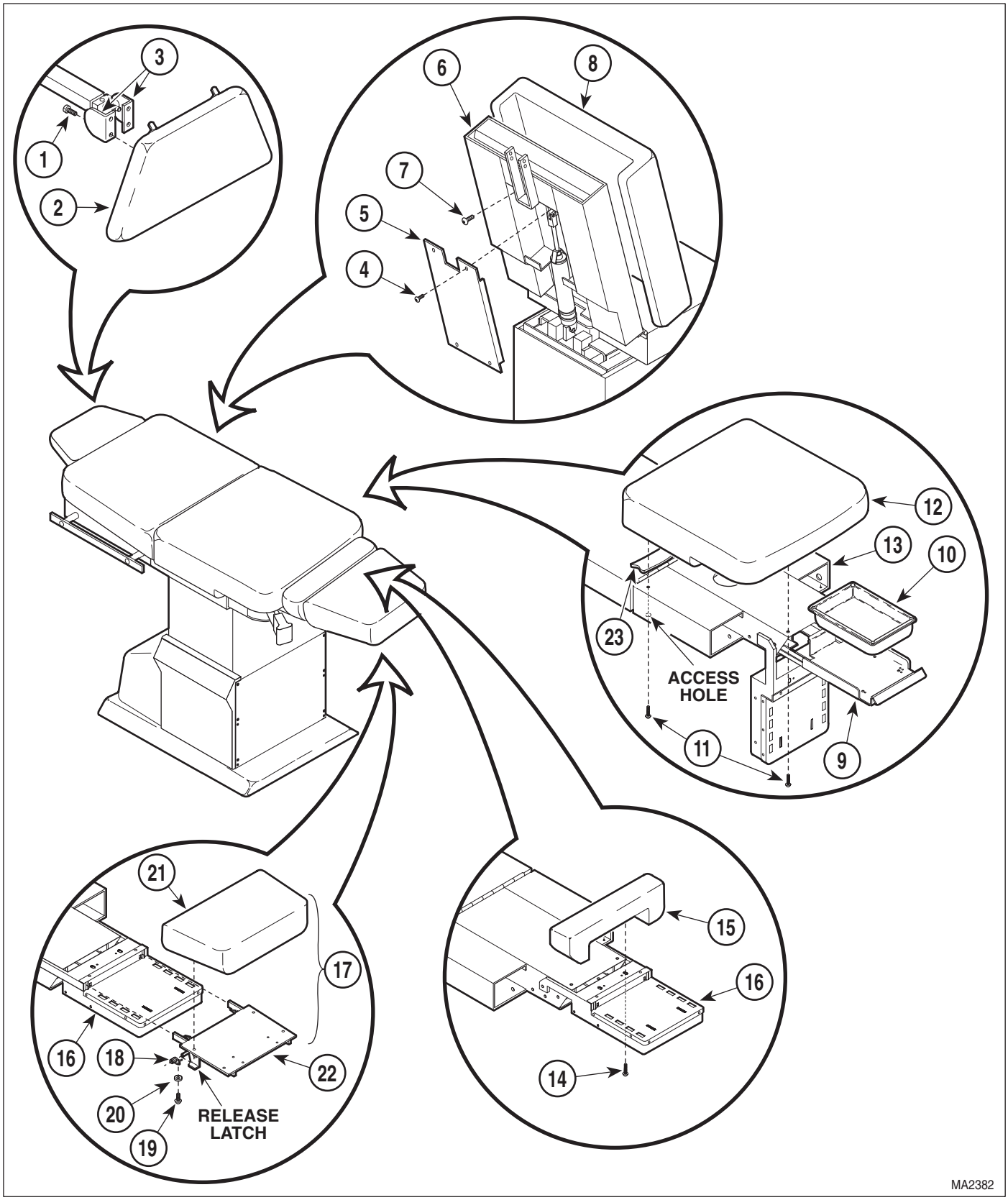

Figure 4-45. Upholstery Removal / Installation

(6) Install upholstered leg rest (15) on foot extension weldment (16) and secure with two screws (14).

(7) Install upholstered seat section (12) on seat weldment (13) and secure with four screws (11).

(8) Lower FOOT DOWN function all the way down.

(9) Pull open pan slide assembly (9). Install treatment pan (10) in pan slide assembly (9). Close pan slide assembly to its fully stowed position.

(10) Raise FOOT UP function all the way up.

(11) Install upholstered back section (8) on back weldment (6) and secure with four screws (7).

(12) Install back cover (5) on back weldment (6) and secure with four screws (4).

(13) Install upholstered headrest (2) on headboard pivot brackets (3) and secure with four screws (1).

4.33 Hydraulic System Flushing Procedure

NOTE
The following procedure is recommended for the following reasons:
- The hydraulic system is excessively contaminated with dirt particles or water, causing repeated malfunctions of hydraulic components.
- An oil other than light weight mineral oil has been added to the hydraulic system, causing the table to malfunction or perform erratically.

A. Flushing Procedure

(1) Lower TABLE DOWN**,** BACK DOWN**,** TILT DOWN**,** and FOOT DOWN functions all the way down.

(2) Remove motor cover assembly (Refer to para 4.2).

(3) Remove filler cap (1, Figure 4-46) from reservoir (2).

(4) Get a suitable drain pan with a capacity of approximately 2 quarts (1.9 liters).

(5) Using a syringe or suction device, remove all oil from the reservoir (2).

(6) Refill reservoir (2) with light grade mineral oil.

(7) Disconnect hose (A) from down functions shuttle valve (3) and place end of hose in drain pan.

(8) Raise TABLE UP**,** BACK UP**,** TILT UP**,** and FOOT UP functions all the way up, while making sure to keep refilling reservoir (2) with light grade mineral oil as necessary.

(9) Connect hose (A) to down functions shuttle valve (3).

(10) Disconnect hose (B) from up functions shuttle valve (4) and place end of hose in drain pan.

(11) Lower TABLE DOWN**,** BACK DOWN**,** TILT DOWN**,** and FOOT DOWN functions all the way down, while making sure to keep refilling reservoir (2) with light grade mineral oil as necessary.

(12) Connect hose (B) to up functions shuttle valve (4).

(13) Repeat steps 7 thru 12 until oil being removed is clear and contains no dirt particles.

(14) Run all the functions up and down until all air is purged from the hydraulic system.

(15) Lower all functions; then check oil level and add or remove oil as necessary (Refer to para 4.3).

(16) Install motor cover assembly (Refer to para 4.2).

(17) Dispose of used oil in accordance with local regulations.

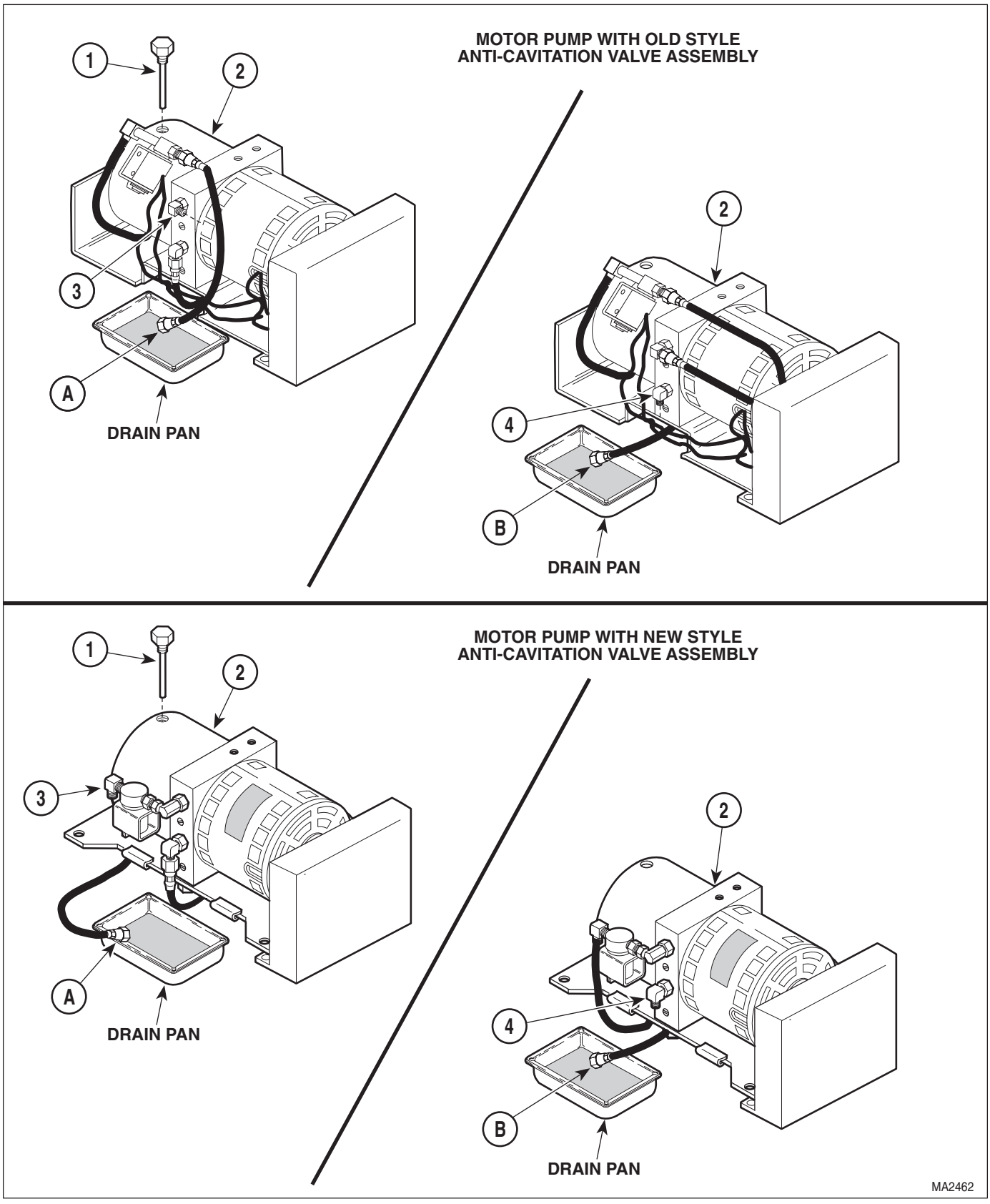

Figure 4-46. Hydraulic System Flushing Procedure

4.34 Old Style Anti-Cavitation Solenoid Valve Rebuild

A. Disassembly Of New Style Anti-Cavitation Solenoid Valve

(1) Loosen screw (1, Figure 4-47) and remove wire clip (2) from groove of solenoid valve (3).

(2) Remove solenoid valve (3), coil (4), and spring tab (5) from bracket (6).

B. Disassembly Of Old Style Anti-Cavitation Solenoid Valve

NOTE
There are two types of fasteners used to secure the solenoid valve; a wire clip or locking cap.

(1) Loosen screw (7, Figure 4-47) and remove wire clip (8) from groove of solenoid valve (9) **or** remove locking cap (10) from groove of solenoid valve (9).

(2) Remove solenoid valve (9) and coil (11) from bracket (12).

C. Assembly Of Old Style Anti-Cavitation Solenoid Valve

(1) Install new coil (4, Figure 4-47) and solenoid valve (3) on bracket (12).

(2) Install wire clip (2) on groove of solenoid valve (3) and secure by tightening screw (1).

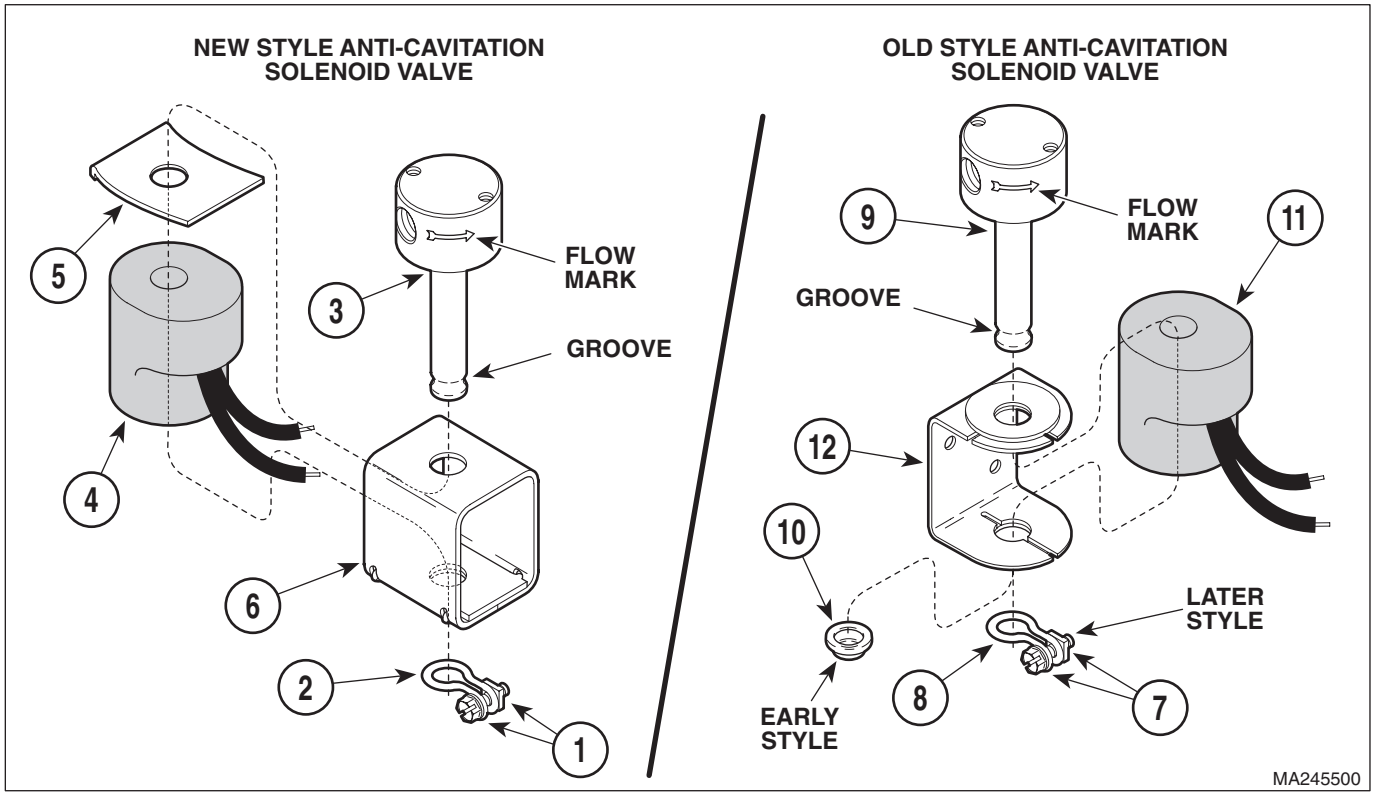

Figure 4-47. Old Style Ant-Cavitation Solenoid Valve Rebuild

SECTION V
SCHEMATICS AND DIAGRAMS

5.1 Electrical Schematics / Wiring Diagrams

Figures 5-1 thru 5-14 illustrate the logic/current flow and wiring connections between the electrical components in the table. Record serial number of table being worked on in order to determine which electrical schematic or wiring diagram to use.

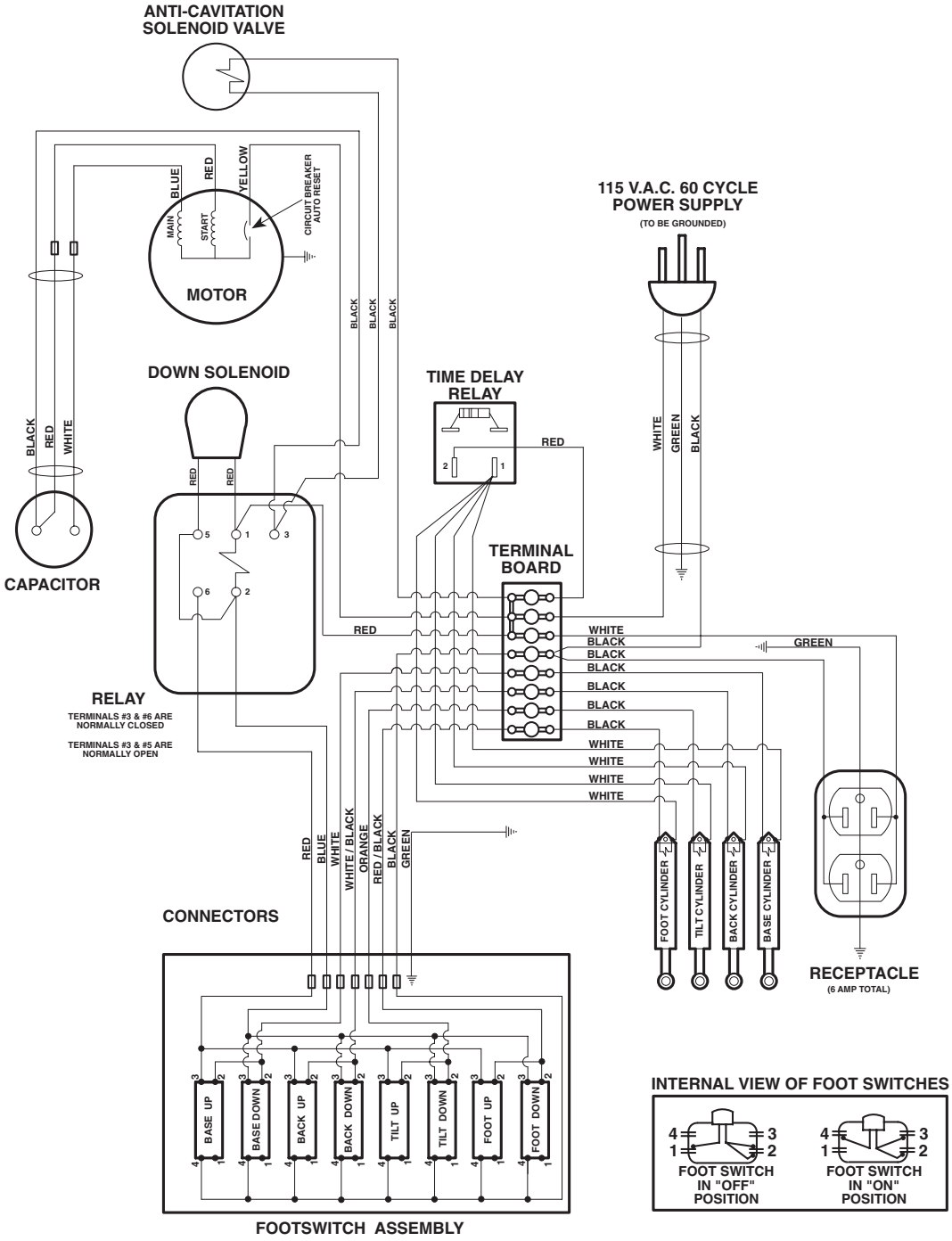

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Figure 5-1. Wiring Diagram - Domestic Units With Serial Numbers Prior To 37420

SECTION V
SCHEMATICS AND DIAGRAMS

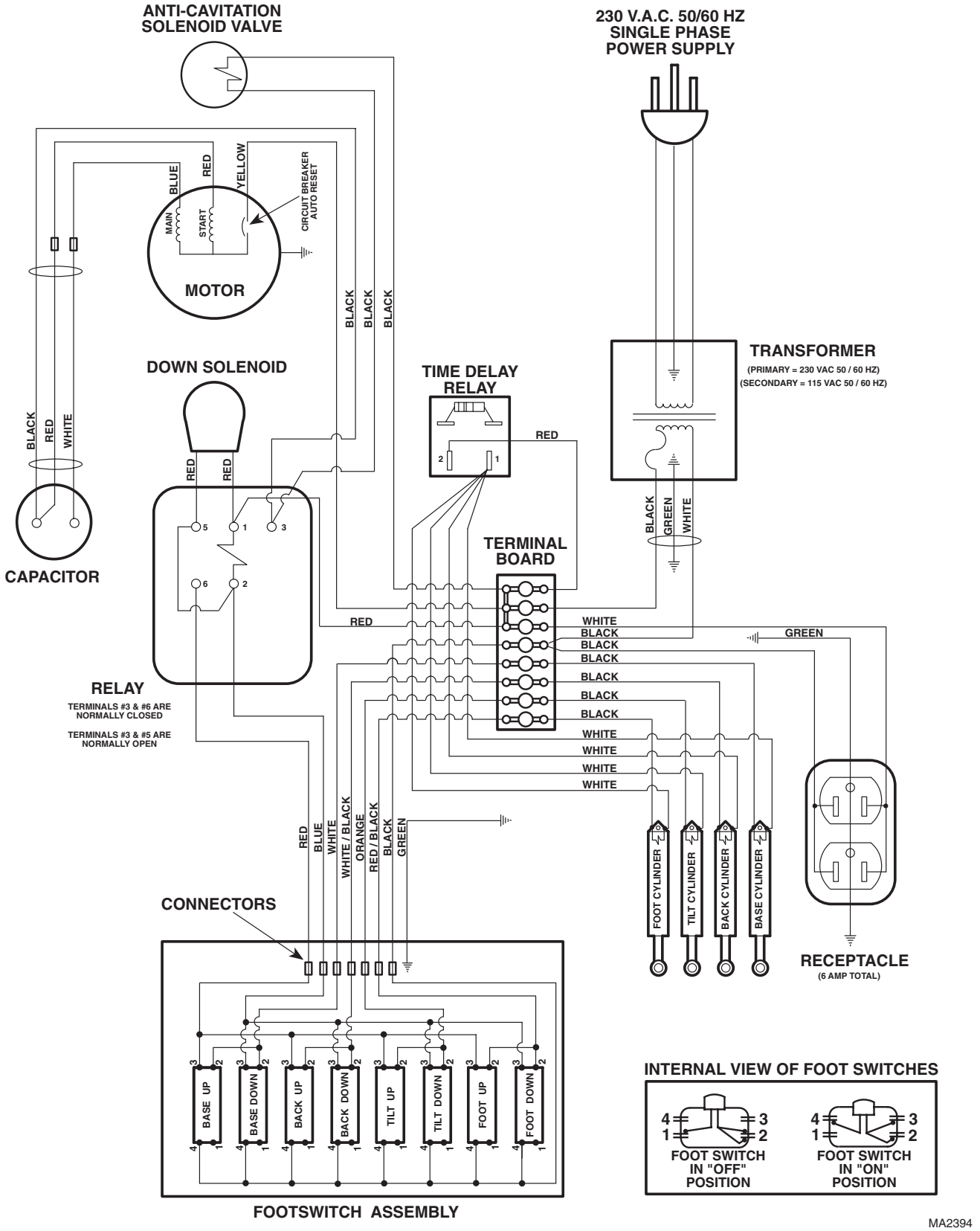

Figure 5-2. Wiring Diagram - Export Units With Serial Numbers Prior To 37420

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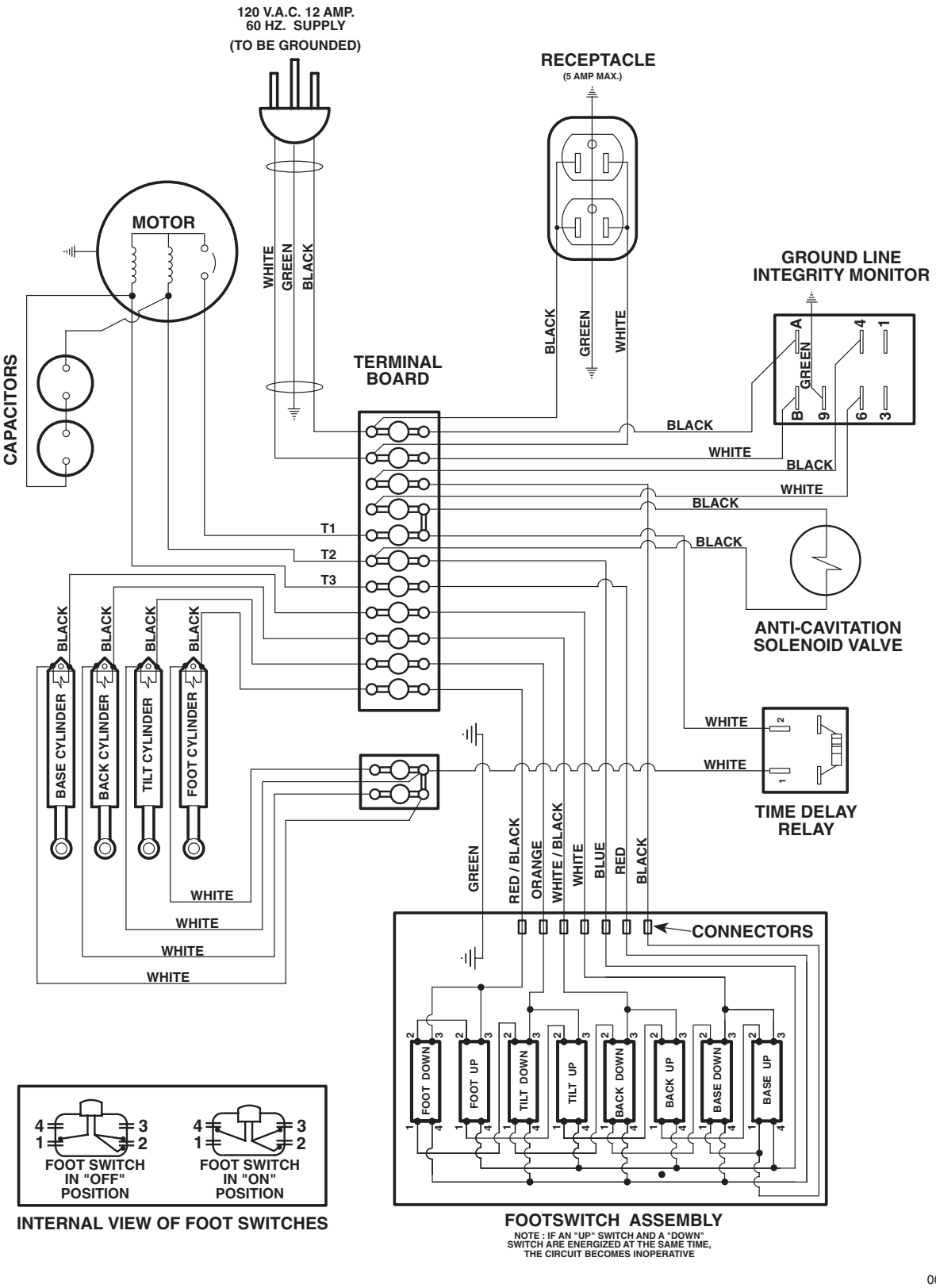

Figure 5-3. Wiring Diagram - Domestic Units With Serial Numbers 37420 Thru K-3769

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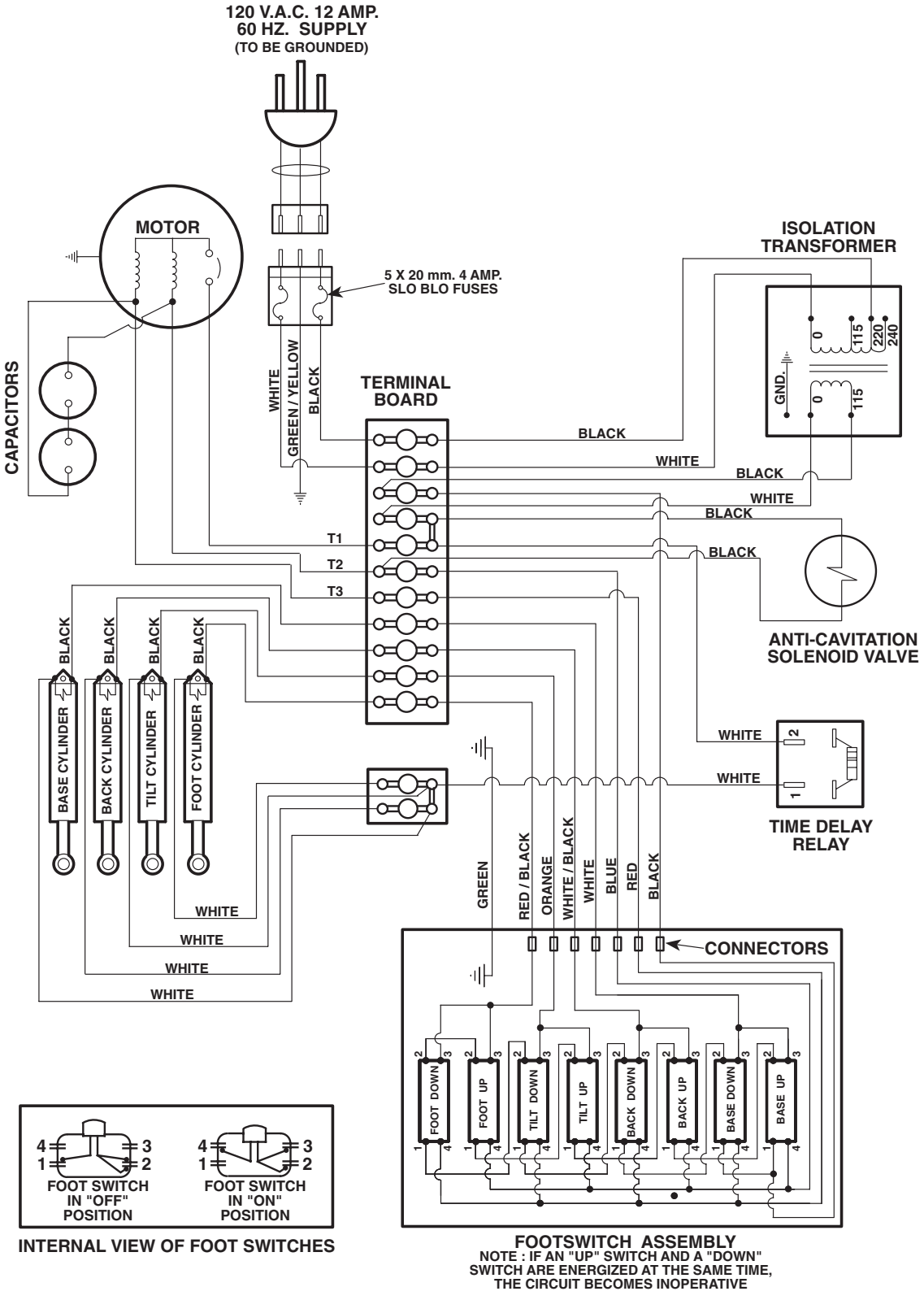
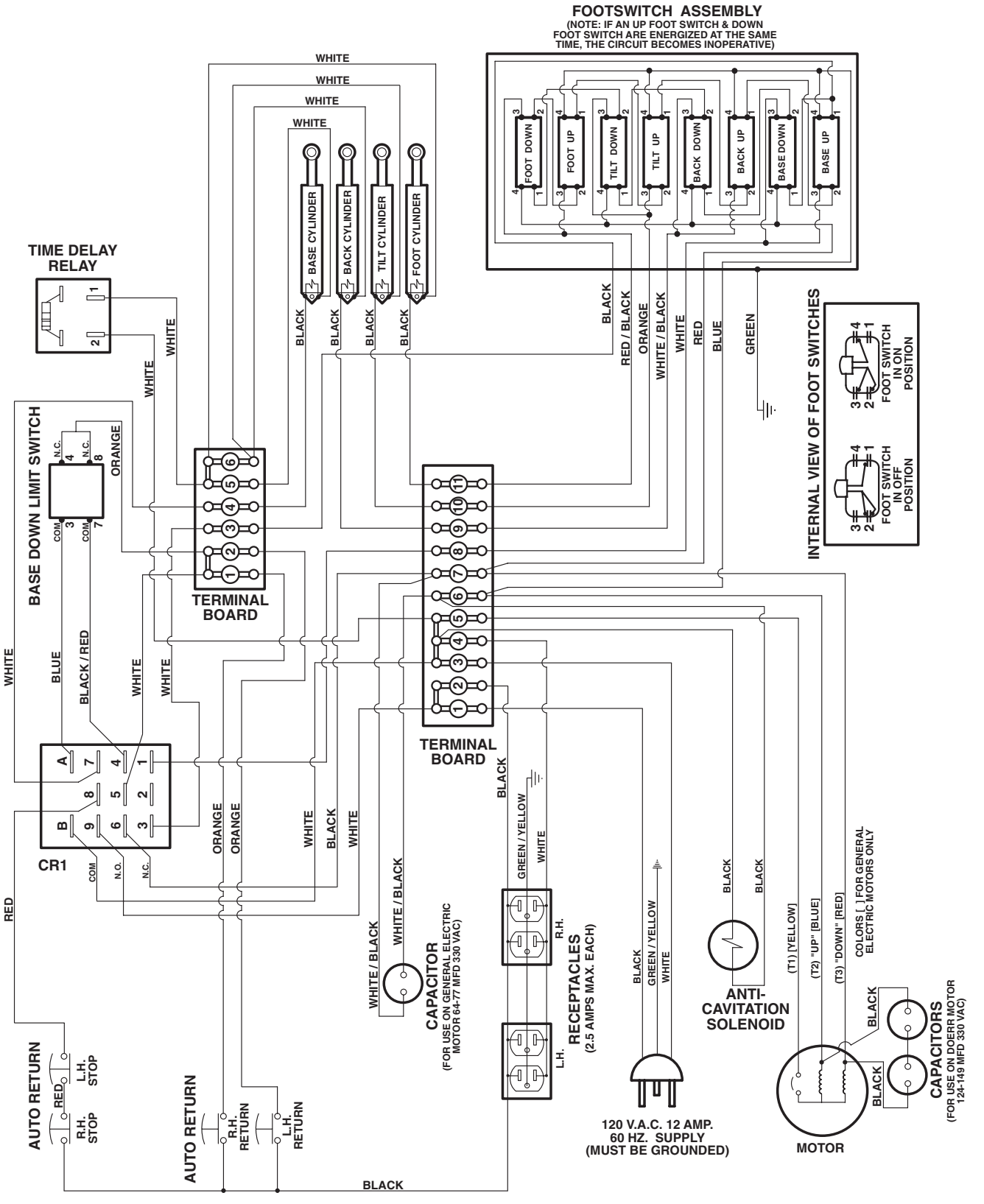
SECTION V
SCHEMATICS AND DIAGRAMS



MA2396
003-0111-04

Figure 5-4. Wiring Diagram - Export Units With Serial Numbers 37420 Thru K-3769

Printed in U.S.A.



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003-0274-00

Figure 5-5. Wiring Diagram - Domestic Units With Serial Numbers K-3770 Thru K-7001

SECTION V
SCHEMATICS AND DIAGRAMS

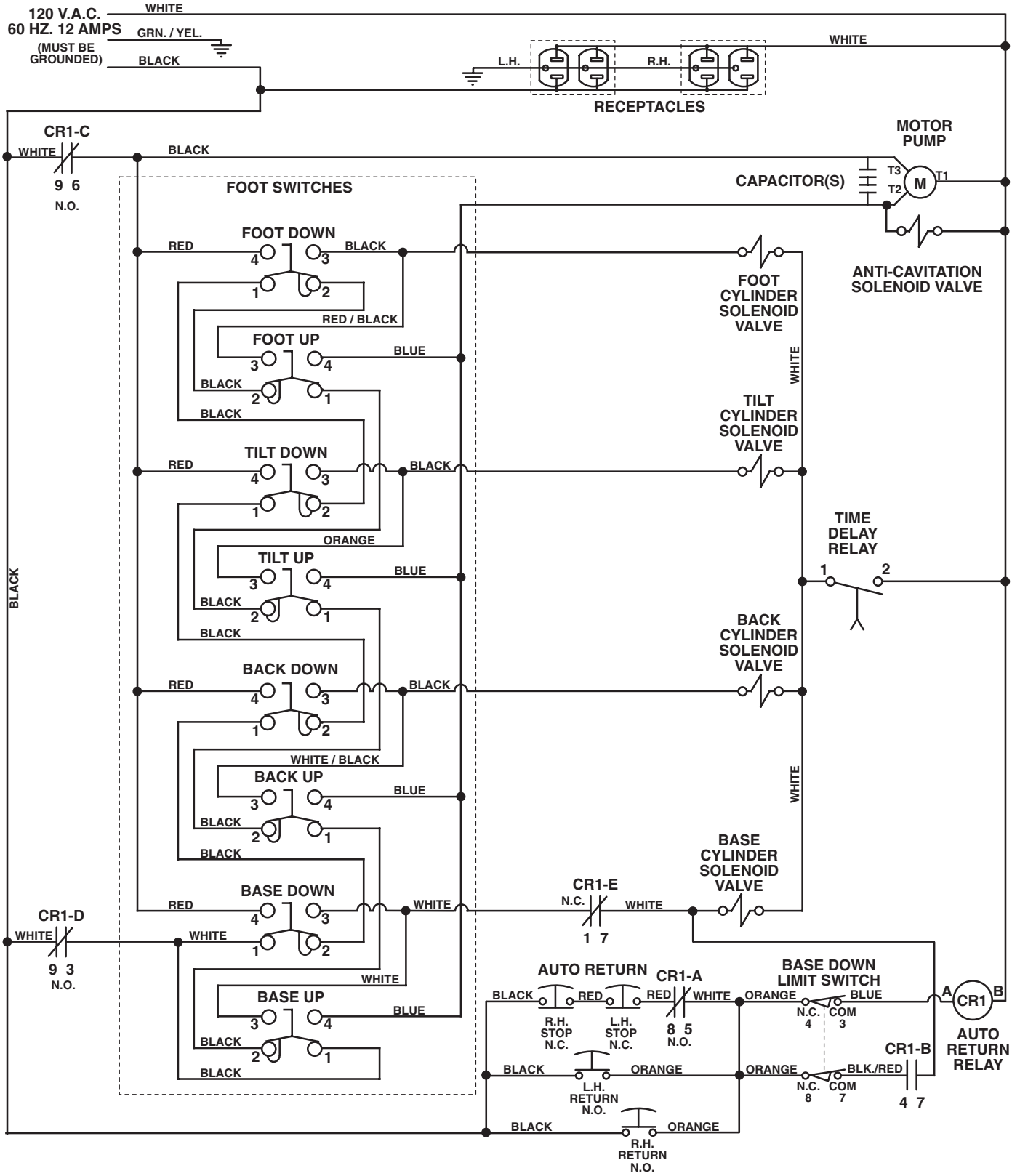

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Figure 5-6. Electrical Schematic - Domestic Units With Serial Numbers K-3770 Thru K-7001

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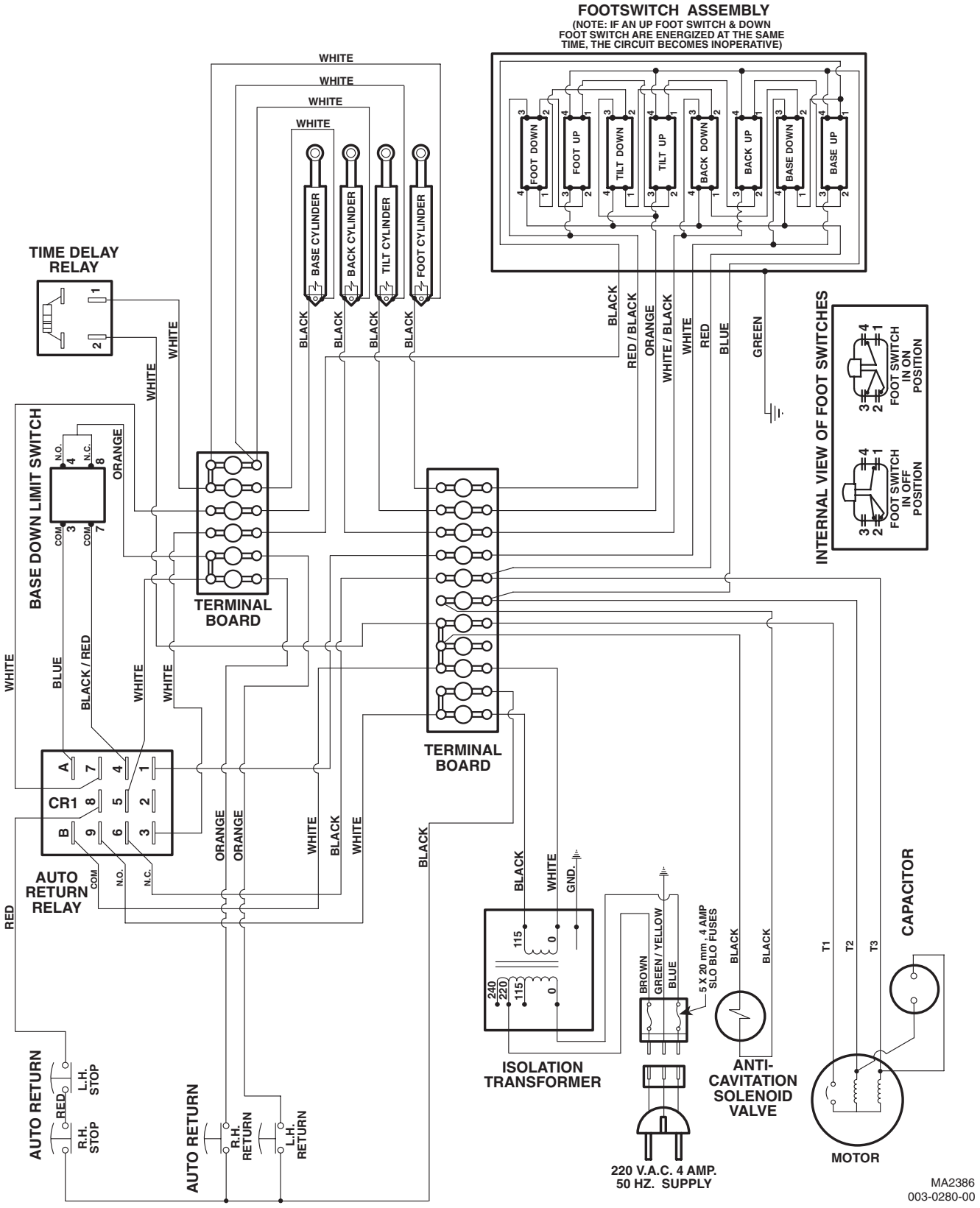

Figure 5-7. Wiring Diagram - Export Units With Serial Numbers K-3770 Thru K-7001

SECTION V
SCHEMATICS AND DIAGRAMS

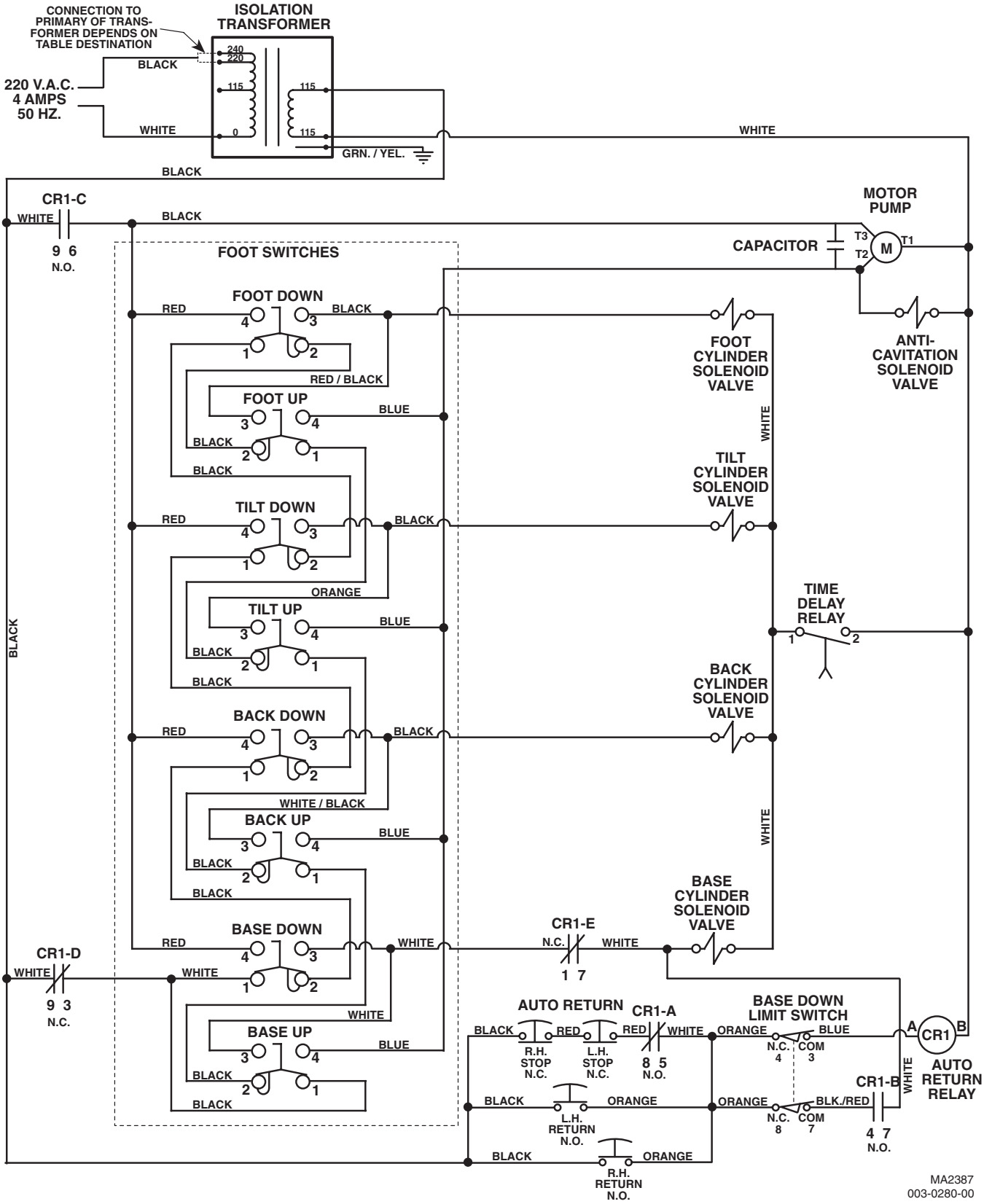

Figure 5-8. Electrical Schematic - Export Units With Serial Numbers K-3770 Thru K-7001

Printed in U.S.A.

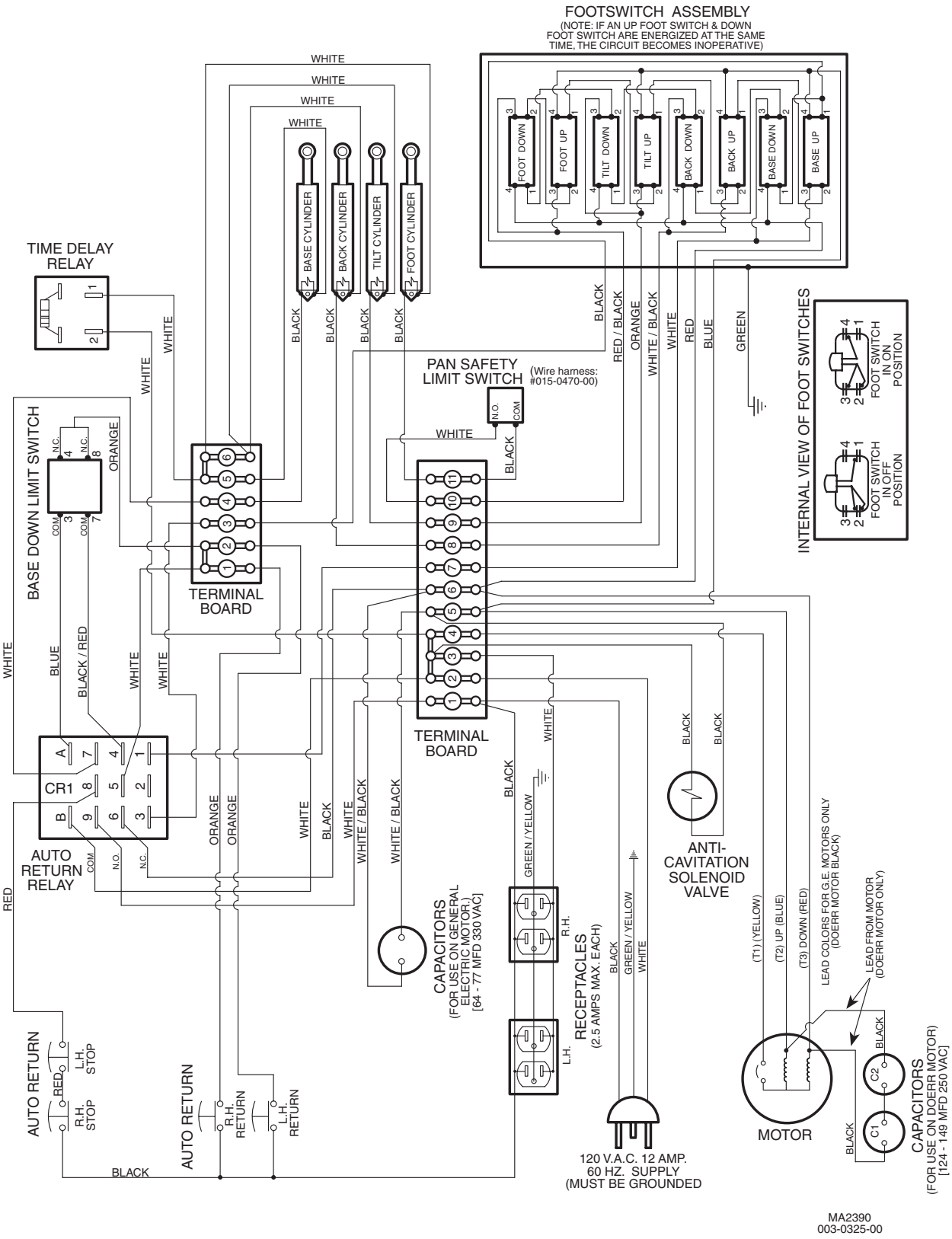

Figure 5-9. Wiring Diagram - Domestic Units With Serial Numbers K-7002 Thru Present

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003-0325-00

SECTION V
SCHEMATICS AND DIAGRAMS

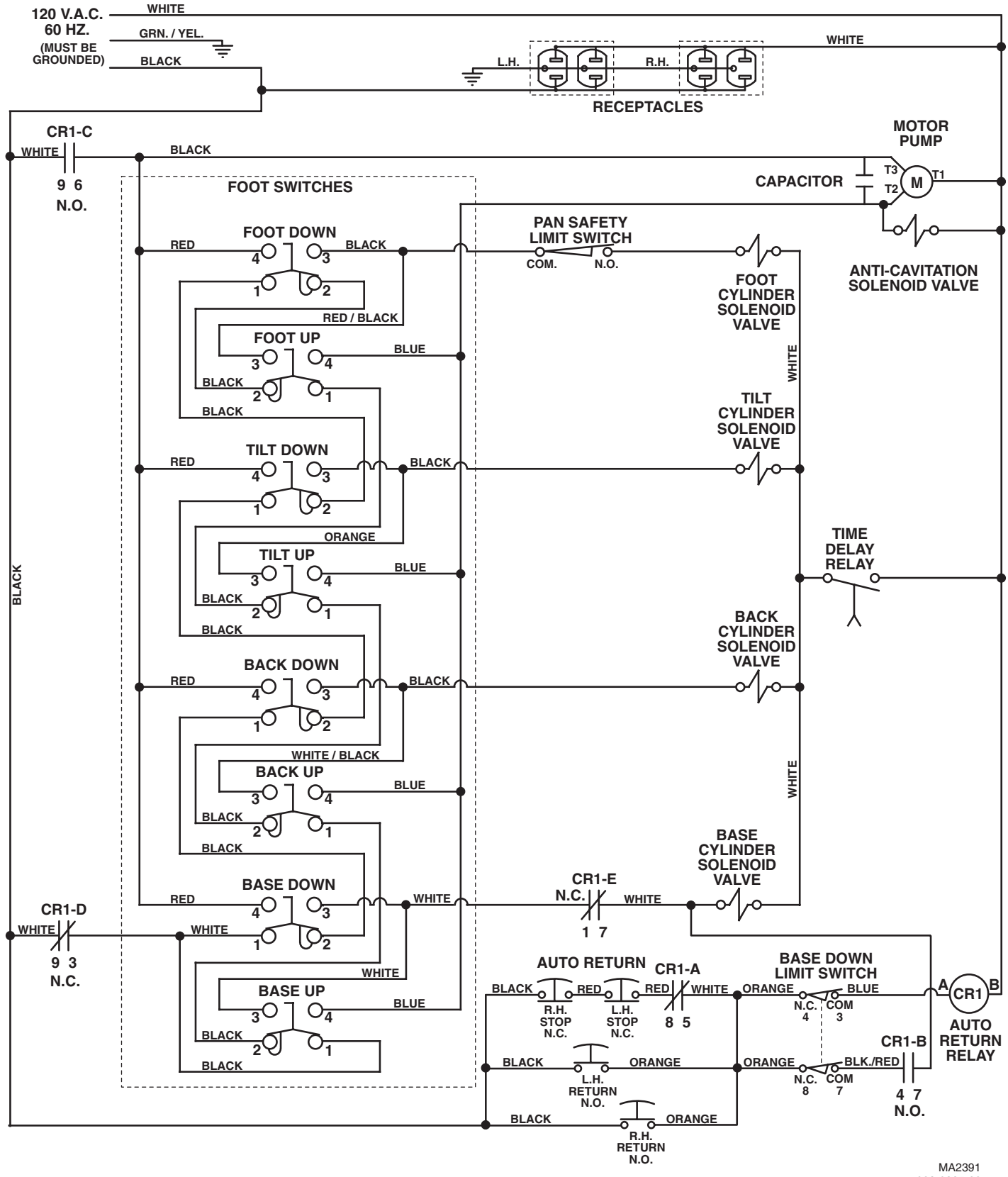

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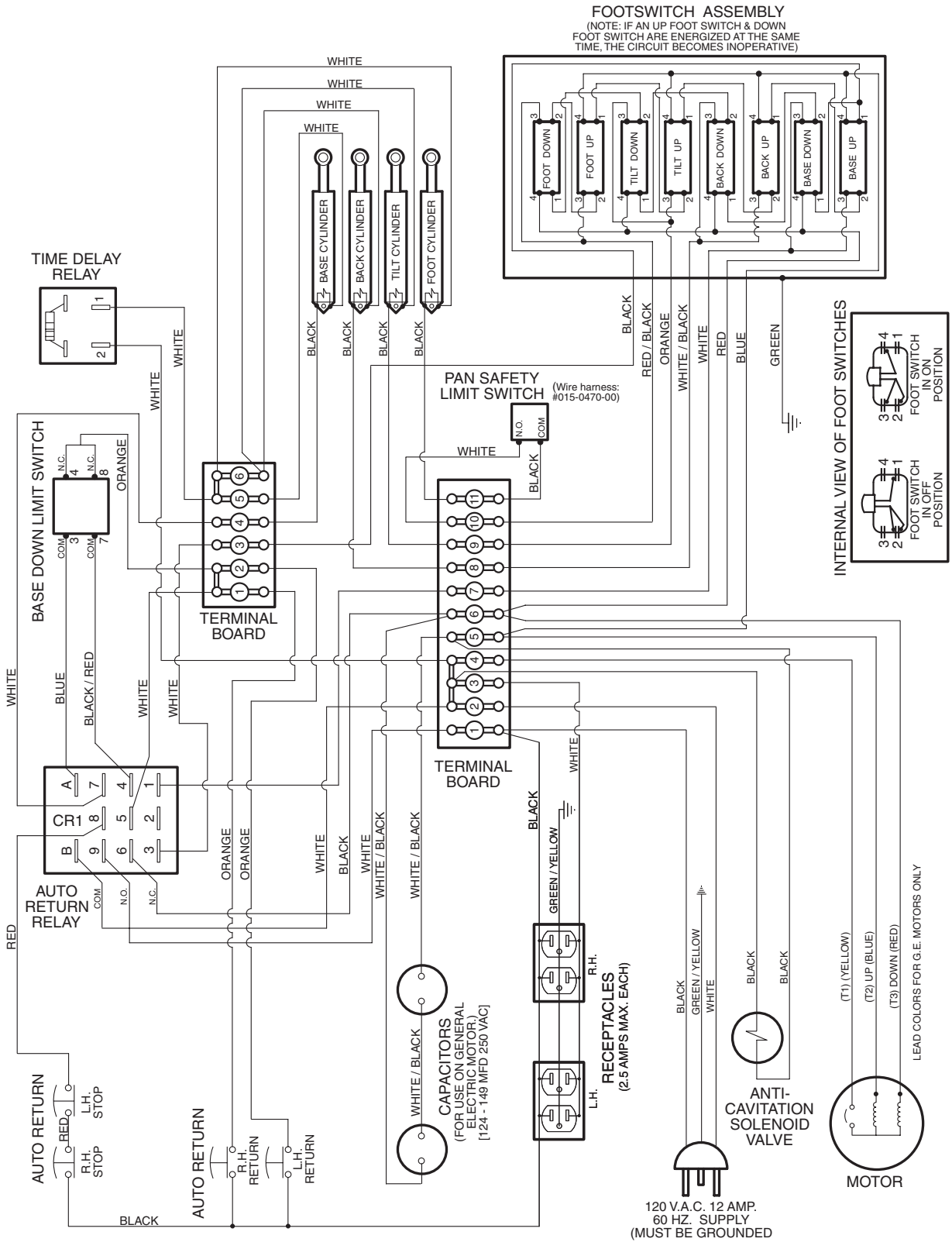
Figure 5-10. Electrical Schematic - Domestic Units With Serial Numbers K-7002 Thru Present

Printed in U.S.A.



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003-0500-00

Figure 5-11. Wiring Diagram - Domestic Units With Serial Numbers BX-1000 Thru Present

SECTION V
SCHEMATICS AND DIAGRAMS

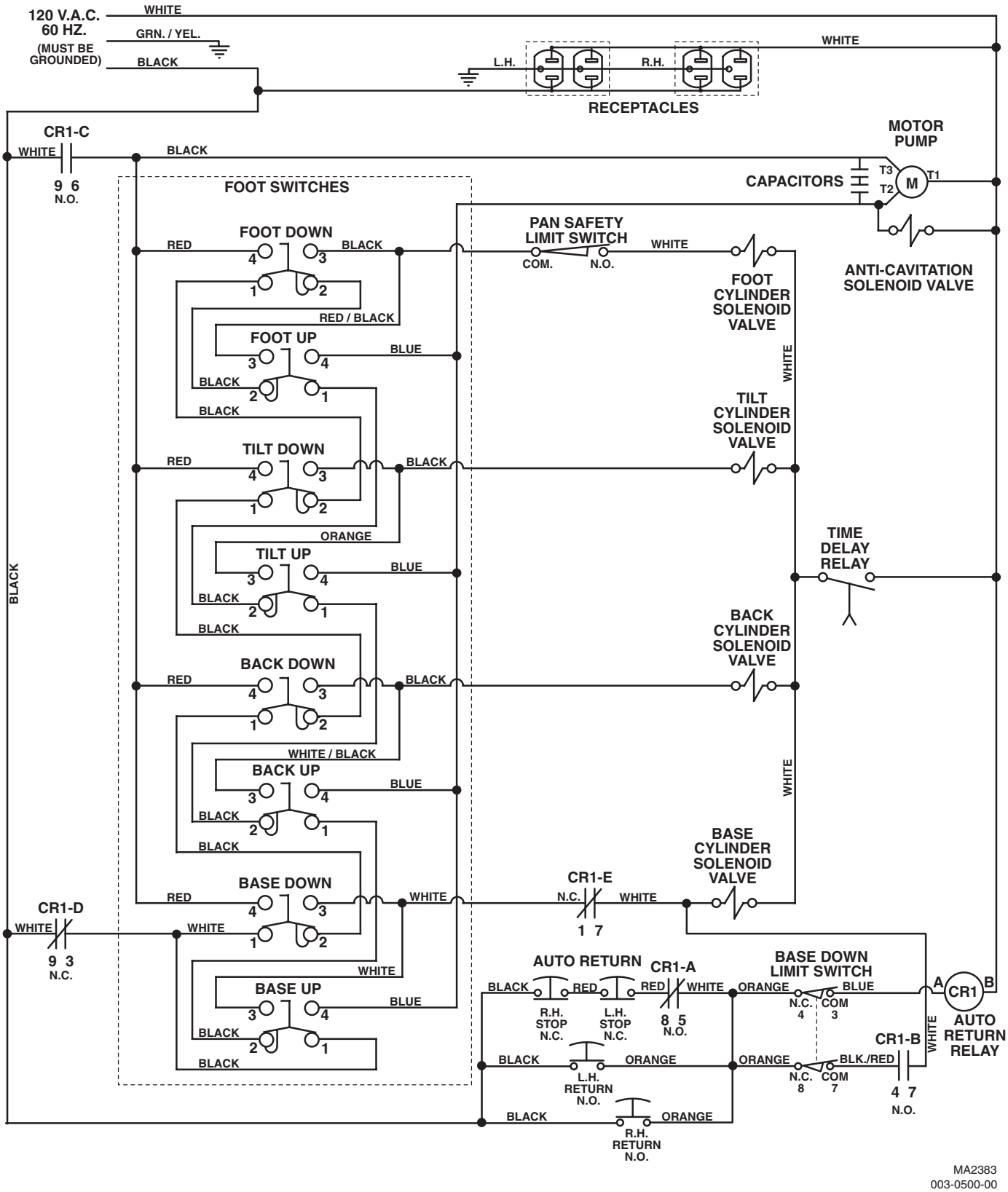


Figure 5-12. Electrical Schematic - Domestic Units With Serial Numbers BX-1000 Thru Present

Printed in U.S.A.

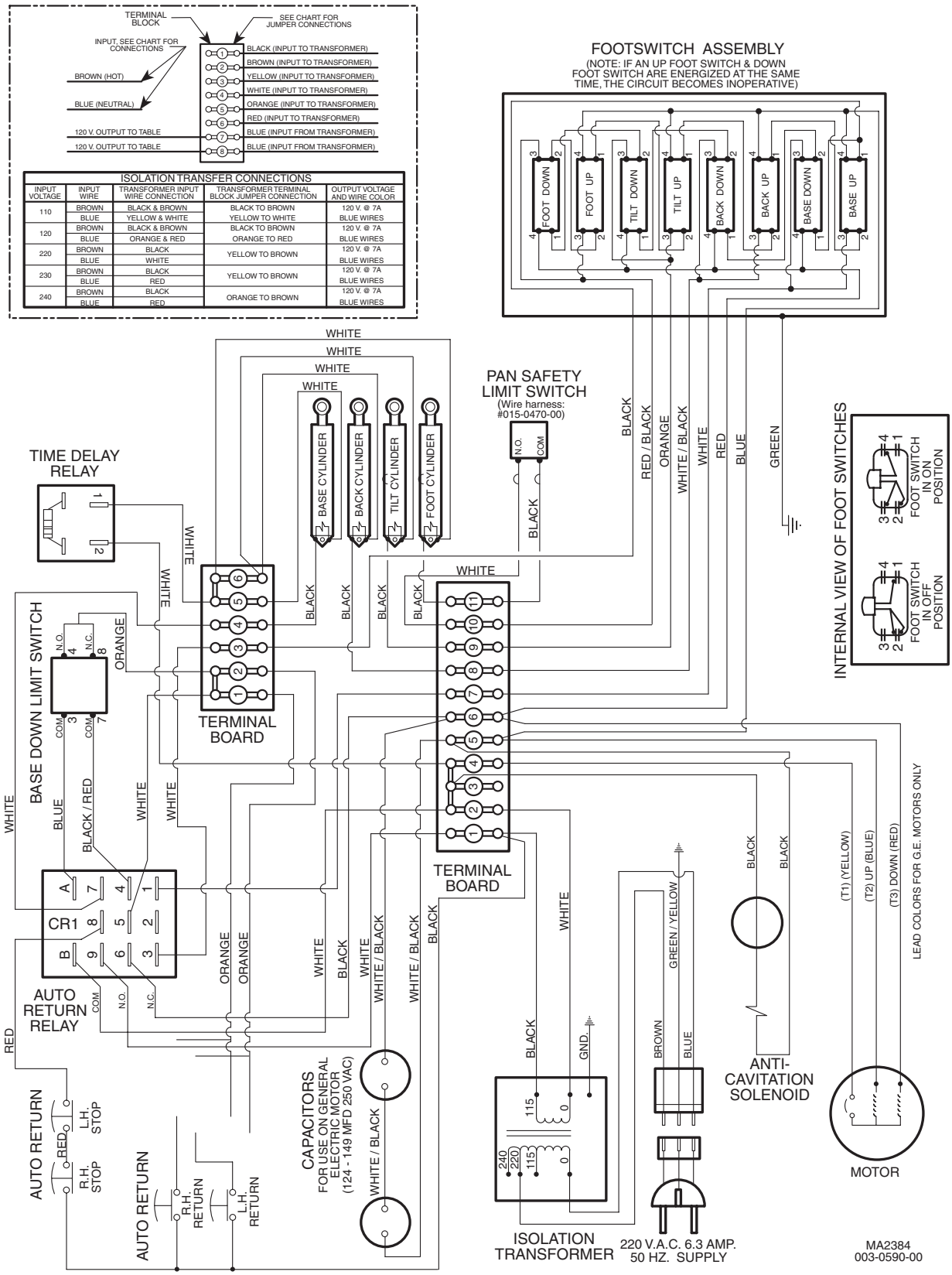
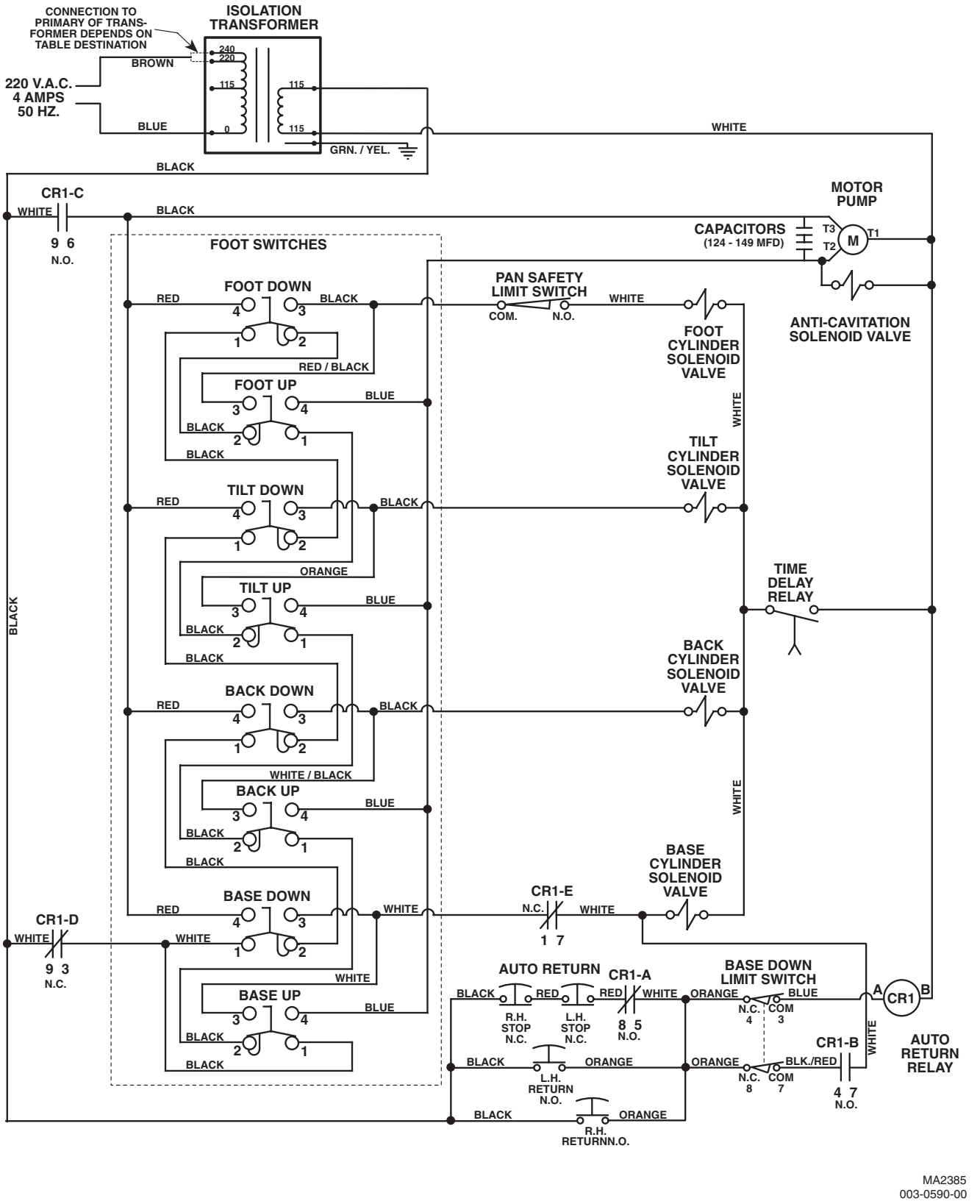


Figure 5-13. Wiring Diagram - Export Units With Serial Numbers CA-1000 Thru Present

SECTION V
SCHEMATICS AND DIAGRAMS



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003-0590-00

Figure 5-14. Electrical Schematic - Export Units With Serial Numbers CA-1000 Thru Present

Printed in U.S.A.

5.2 Hydraulic Flow Diagrams

Figure 5-15 illustrates the hydraulic oil flow through the table when an up function is selected. Figure 5-16 illustrates the hydraulic oil flow through the table when a down function is selected.

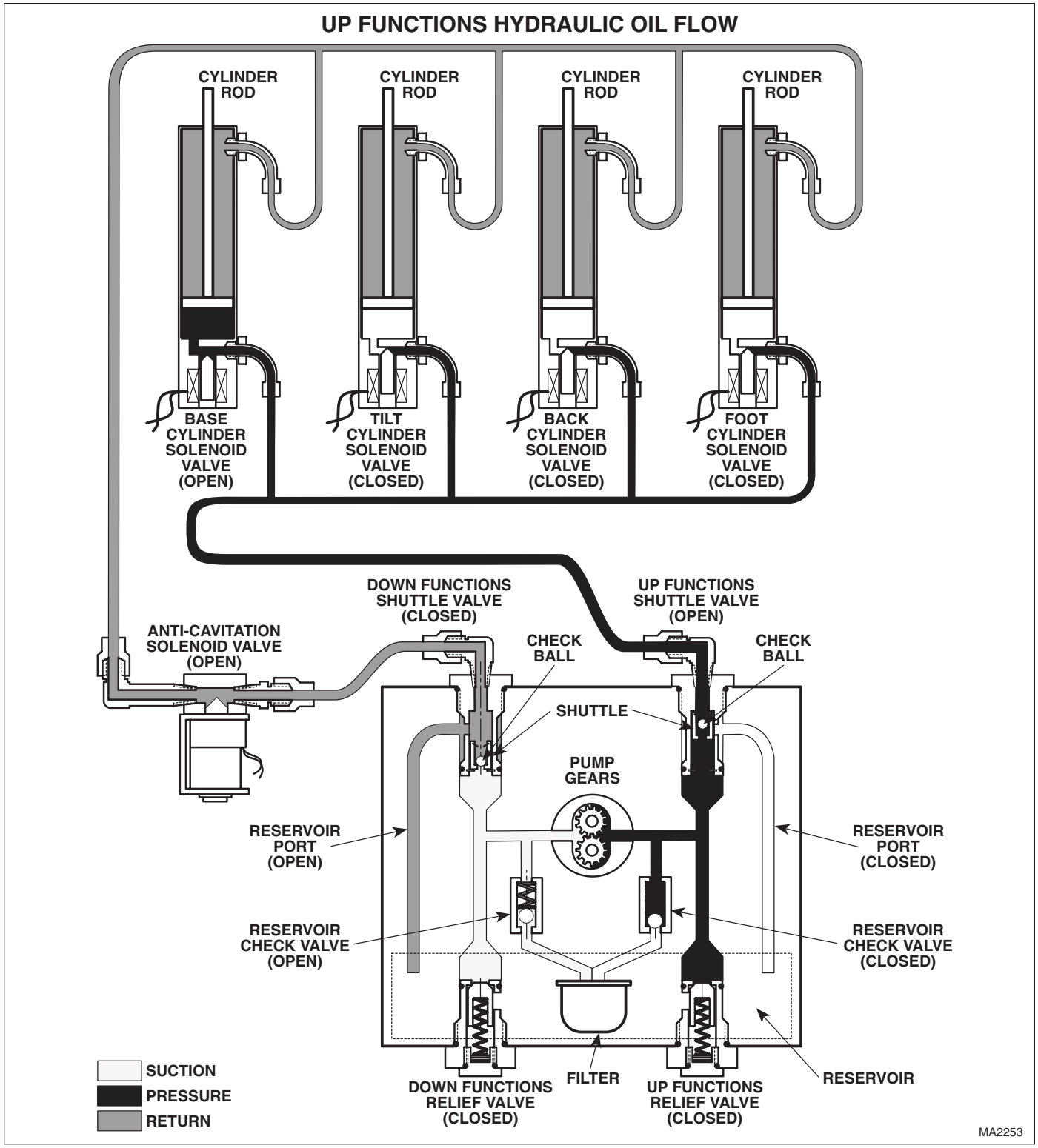

Figure 5-15. Up Functions Hydraulic Flow Diagram

SECTION V
SCHEMATICS AND DIAGRAMS

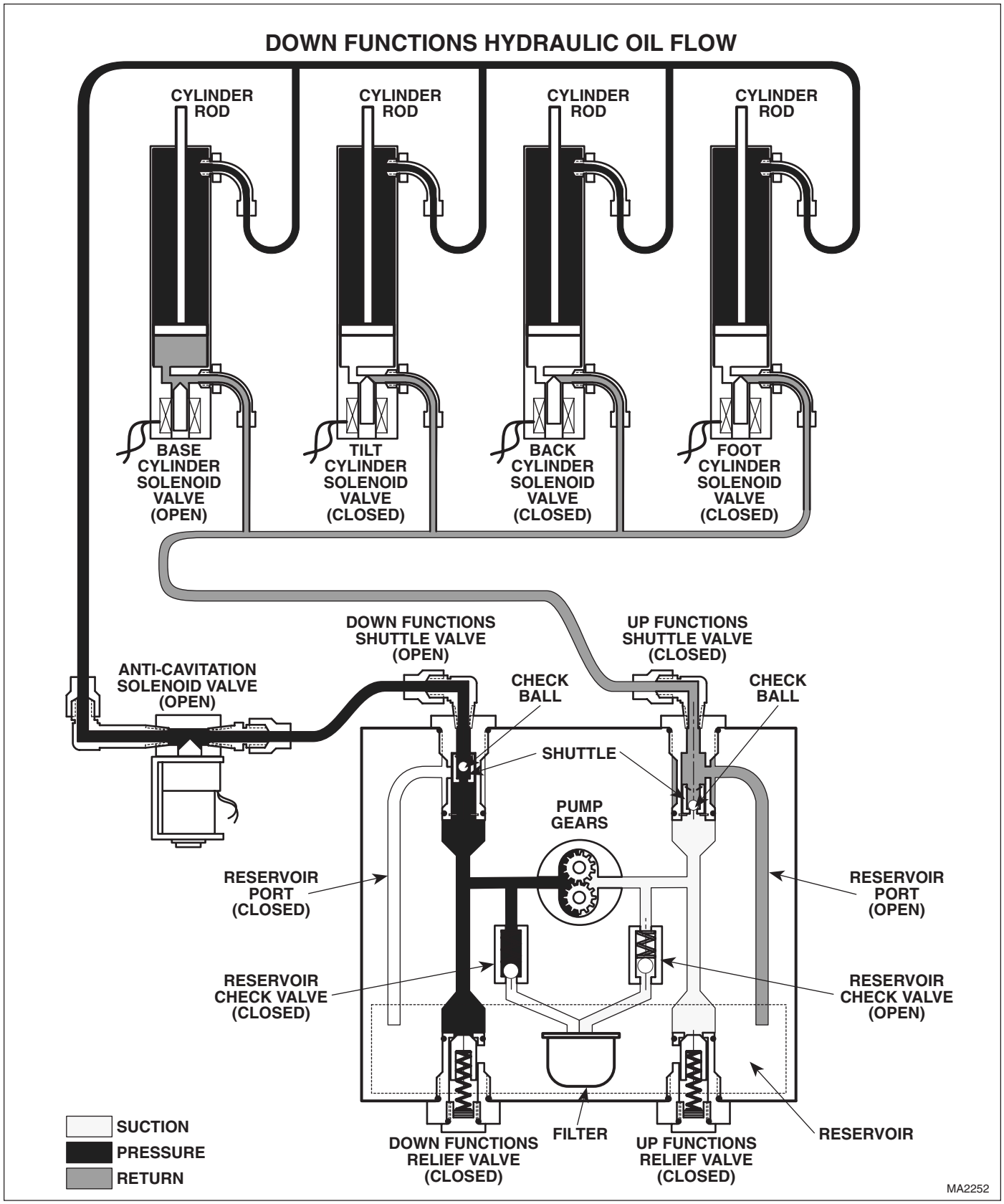

Figure 5-16. Down Functions Hydraulic Flow Diagram

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SECTION VI
PARTS LIST

6.1 Introduction

The illustrated parts list provides information for identifying and ordering the parts necessary to maintain the unit in peak operating condition. Refer to paragraph 1.5 for parts ordering information.

The parts list also illustrates disassembly and assembly relationships of parts.

6.2 Description of Columns

The *Item* column of the parts list gives a component its own unique number. The same number is given to the component in the parts illustration. This allows a part number of a component to be found if the technician can visually spot the part on the illustration. The technician simply finds the component in question on the illustration and notes the item number of that component. Then, he finds that item number in the parts list. The row corresponding to the item number gives the technician the part number, a description of the component, and quantity of parts per subassembly. Also, if a part number is known, the location of that component can be determined by looking for the item number of the component on the illustration.

The *Part No.* column lists the MIDMARK part number for that component.

The *Description* column provides a physical description of the component.

The *Qty.* column lists the number of units of a particular component that is required for the subassembly. The letters “AR” denote “as required” when quantities of a particular component cannot be determined, such as: adhesive.

Bullets [•] in the *Part No.* column and the *Description* column show the indenture level of a component. If a component does not have a bullet, it is a main component of that illustration. If a component has a bullet, it is a subcomponent of the next component listed higher in the parts list than itself that does not have a bullet. Likewise, if a component has two bullets, it is a subcomponent of the next component listed higher in the parts list than itself that has only one bullet.

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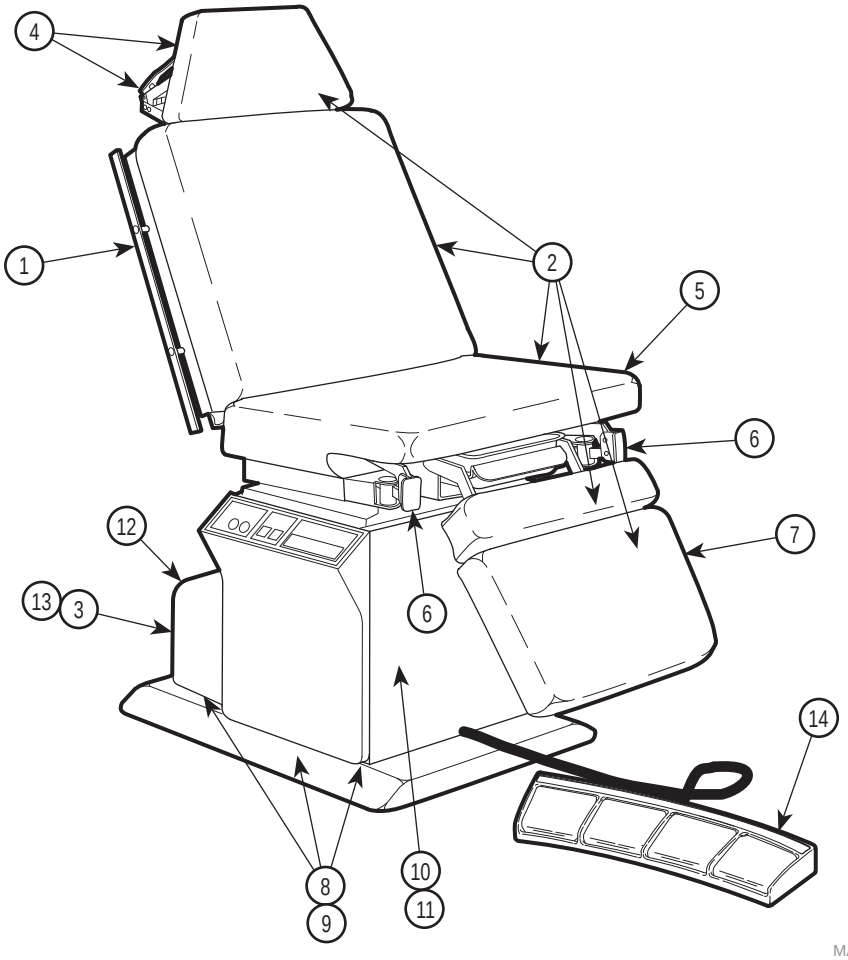
Pictorial Index



MA232700

Used on units with Serial Number K-1000 thru Present

Item	Part No.	Description	Page
		111 Power Examination Table	
1	•	• Back Components	6-3
2	• •	• • Upholstery Set	6-4
	• •	• • Upholstery Set	6-4.1
3	• •	• • Hydraulic System	6-5
	• •	• • Hydraulic System	6-5.1
	• •	• • Hydraulic System	6-5.2
	• •	• • Hydraulic System	6-5.3
	• •	• • Hydraulic System	6-5.4
4	• •	• • Headrest Assembly	6-6
5	•	• Seat Components	6-7
	•	• Seat Components	6-7.1
	•	• Seat Components	6-7.2
6	• •	• • Stirrup Assembly	6-8
7	•	• Footboard Components	6-9
8	•	• Base Covers And Enclosures	6-10
	•	• Base Covers And Enclosures	6-10.1
9	• •	• • Side Panel Assembly	6-11
	• •	• • Side Panel Assembly	6-11.1
10	•	• Base Mechanical Components	6-12
11	• •	• • Base Slide Assembly	6-14
12	•	• Base Electrical Comp.-Domestic	6-15
	•	• Base Electrical Comp.-Domestic	6-15.1
	•	• Base Electrical Comp.-Domestic	6-15.2
	•	• Base Electrical Comp.-Domestic	6-15.3
13	• •	• • Motor / Pump Assembly	6-17
	• •	• • Motor / Pump Assembly	6-17.1
	• •	• • Motor / Pump Assembly	6-17.2
	• •	• • Motor / Pump Assembly	6-17.3
14	•	• Foot Control Assembly	6-18
		OPTIONAL ACCESSORIES	
		Refer to MEDICAL ACCESSORY BOOK {004-0096-00}	
15	• 9A43001	• Chair Arm	9A43
16	• 9A46001	• Rotating Clamp	9A46
17	• 9A51001	• Facial Pad	9A51
18	• 9A60001	• Restraint Belts	9A60
19	• 9A74002	• Knee Crutch Assembly	9A74
20	• 9A75001	• Caster Base (K1000 thru K2725)	9A75
21	• 9A77001	• I.V. Pole	9A77
22	• 9A78001	• Vision Block Screen	9A78
23	• 9A79001	• Surgery Headrest	9A79
24	• 9A81001	• Articulating Armboard	9A81
25	• 9A82001	• Surgery Armboard	9A82
26	• 9A83001	• Instrument Tray	9A83
27	• 9A103001	• Urology Accessory	9A103
28	• 9A157001	• Side Rail Accessory	9A157
29	• 9A179001	• Fixed Armboard	9A179
30	• 9A18400x	• Base Rail Kit	9A184
31	• 9A197001	• Swivel Wheel Caster Accessory (K2726 thru Present)	9A197

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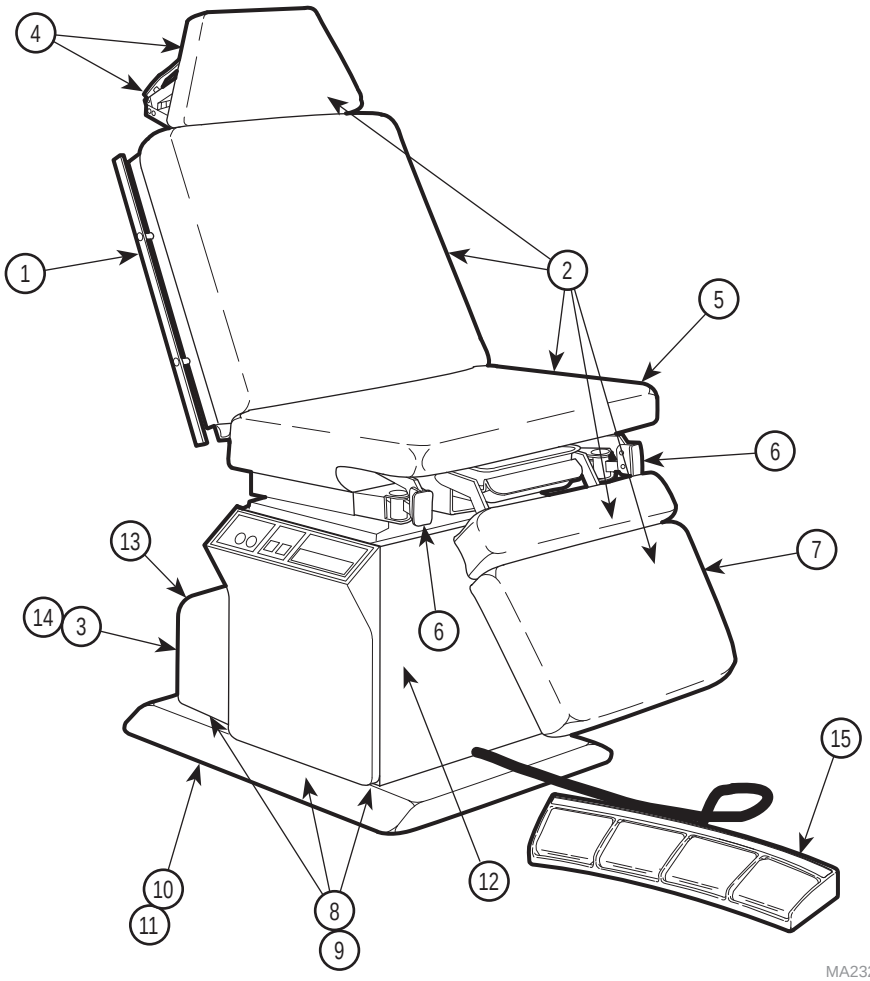
Pictorial Index



Used on units with Serial Number BX-1000 & CA-1000 thru Present

Item	Part No.	Description	Page
		111 Power Examination Table	
1	•	• Back Components	6-3.1
2	• •	• • Upholstery Set	6-4.2
3	• •	• • Hydraulic System	6-5.4
	• •	• • Hydraulic System	6-5.5
4	• •	• • Headrest Assembly	6-6.1
5	•	• Seat Components	6-7.3
	•	• Seat Components	6-7.4
6	• •	• • Stirrup Assembly	6-8
	• •	• • Stirrup Assembly	6-8 .1
	• •	• • Stirrup Assembly	6-8.2
7	•	• Footboard Components	6-9.1
8	•	• Base Covers And Enclosures	6-10.2
9	• •	• • Side Panel Assembly	6-11.1
10	•	• Base Mechanical Components	6-12.1
11	•	• Rotational Base Assembly	6-13
12	• •	• • Base Slide Assembly	6-14.1
13	•	• Base Electrical Comp.-Dom.	6-15.1
	•	• Base Electrical Comp.-Export	6-16
14	• •	• • Motor / Pump Assembly	6-17.3
15	•	• Foot Control Assembly	6-18.1

Item	Part No.	Description	Page
		OPTIONAL ACCESSORIES	
		Refer to MEDICAL ACCESSORY BOOK {004-0096-00}	
14	• 9A43001	• Chair Arm	9A43
15	• 9A46001	• Rotating Clamp	9A46
16	• 9A51001	• Facial Pad	9A51
17	• 9A60001	• Restraint Belts	9A60
20	• 9A74002	• Knee Crutch Assy. (BX1000 thru BX1513 and CA1000 thru CA1185)	9A74
21	• 9A75001	• Caster Base	9A75
22	• 9A77001	• I.V. Pole	9A77
23	• 9A78001	• Vision Block Screen	9A78
24	• 9A79001	• Surgery Headrest	9A79
25	• 9A81001	• Articulating Armboard	9A81
26	• 9A82001	• Surgery Armboard	9A82
27	• 9A83001	• Instrument Tray	9A83
28	• 9A103001	• Urology Accessory	9A103
29	• 9A147002	• Knee Crutch Assy. (BX1514 & CA1186 thru Present)	9A147
30	• 9A157001	• Side Rail Accessory	9A157
31	• 9A179001	• Fixed Armboard	9A179
32	• 9A18400x	• Base Rail Kit	9A184
33	• 9A197001	• Swivel Wheel Caster Acc.	9A197
34	• 9A209002	• Knee Crutch Assy.	9A209

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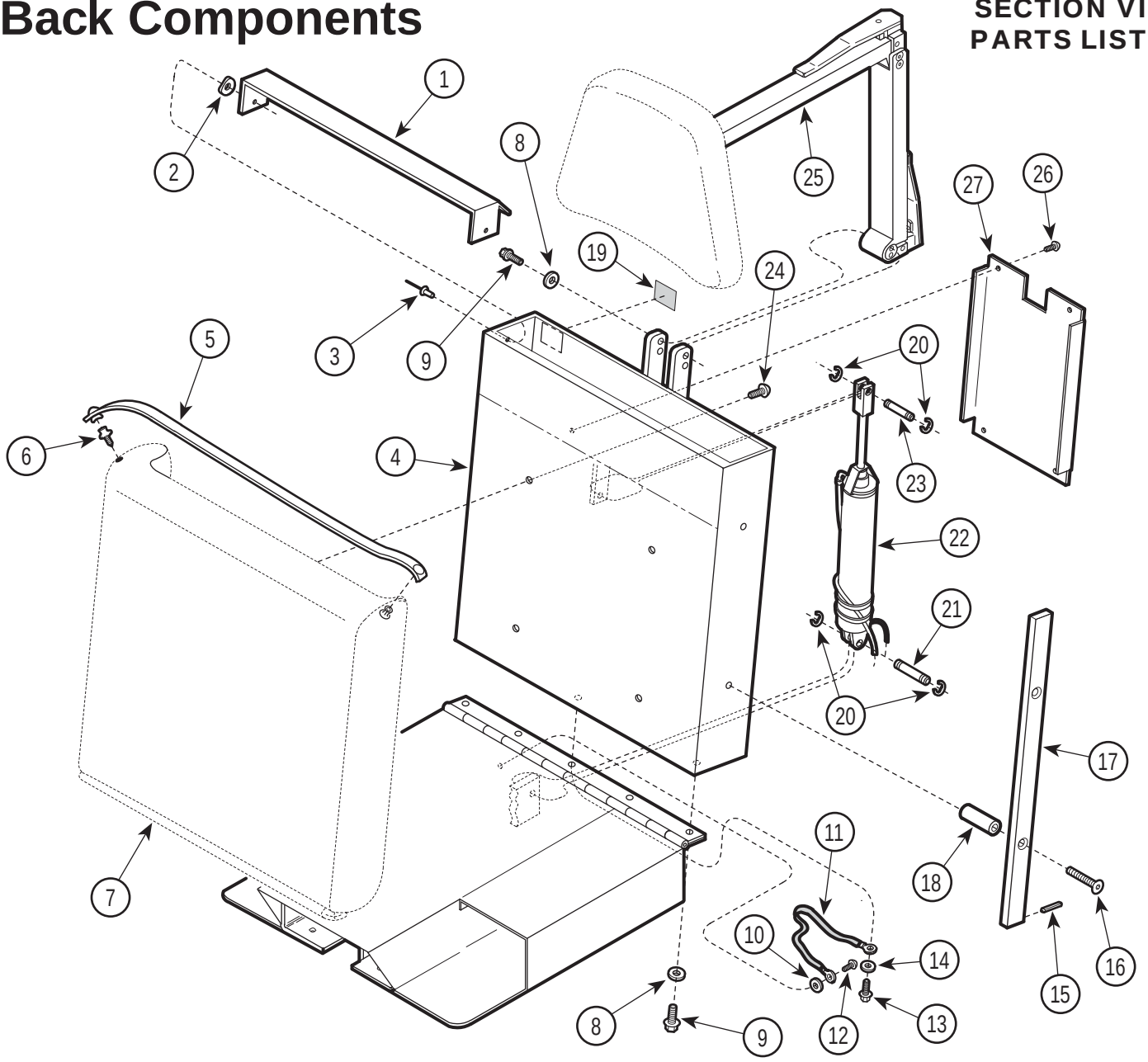
Back Components



MA224001

Used on units with Serial Number K-1000 thru Present

Item	Part No.	Description	Qty.
1	050-0472-00	Paper Cover	1
2	045-0001-12	Curved Washer	2
3	042-0010-03	Pop Rivet	2
4	030-0128-00	Back Weldment	1
5	002-0049-00	Paper Tear Strip Set (32")	1
	002-0050-00	Paper Tear Strip Set (26")	1
	002-0146-00	Paper Tear Strip Set (24")	1
6	016-0022-00	Stud	2
7		Upholstered Back Section (Refer to "Upholstery Set" Elsewhere)	Ref
8	045-0001-03	Lockwasher	4
9	040-0250-10	Screw	6
10	045-0001-31	Lockwasher	1
11	015-0082-02	Grounding Braid	1
12	040-0010-04	Screw	1
13	040-0250-10	Screw	1
14	045-0001-05	Lockwasher	1
15	042-0001-02	Roll Pin	1
16	040-0375-15	Screw	4
17	051-0112-00	Side Rail Bar	2
18	057-0057-00	Side Rail Mount	4
19		Serial Number Tag	1
20	042-0007-00	E-Ring	4
21	042-0006-01	Clevis Pin	1
22		Back Cylinder (Refer to "Hydraulic System" Elsewhere)	Ref
23	042-0006-00	Clevis Pin	1
24	040-0010-01	Screw	4
25		Two Arm Headlock Assembly (Refer to "Headrest Assembly" Elsewhere)	Ref
26	040-0006-06	Screw	4
27	050-0872-00	Back Cover	1

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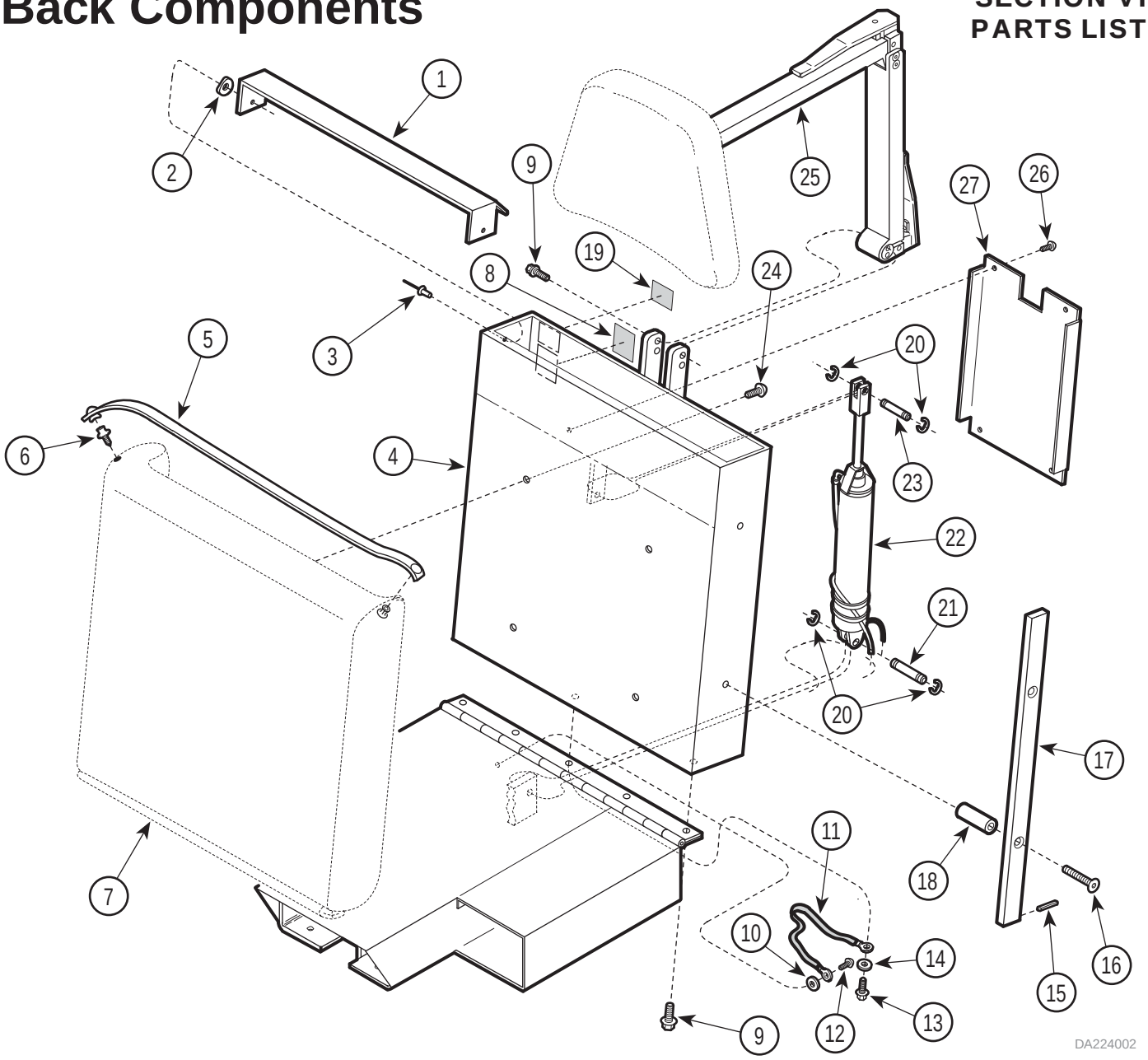
Back Components



Used on units with Serial Number BX-1000 & CA-1000 thru Present

Item	Part No.	Description	Qty.
1	050-0472-20	Paper Cover	1
2	045-0001-12	Curved Washer	2
3	042-0010-03	Pop Rivet	2
4	030-0128-20	Back Weldment	1
5	002-0049-00	Paper Tear Strip Set (32")	1
	002-0050-00	Paper Tear Strip Set (26")	1
	002-0146-00	Paper Tear Strip Set (24")	1
6	016-0022-00	Stud	2
7		Upholstered Back Section (Refer to "Upholstery Set" Elsewhere)	Ref
8		Standards Label (Contact Factory)	1
9	040-0250-88	Screw	8
10	045-0001-31	Lockwasher	1
11	015-0082-02	Grounding Braid	1
12	040-0010-04	Screw	1
13	040-0250-10	Screw	1
14	045-0001-05	Lockwasher	1
15	042-0001-02	Roll Pin	1
16	040-0375-15	Screw	4
17	051-0112-00	Side Rail Bar	2
18	057-0057-22	Side Rail Mount	4
19		Serial Number Tag (Contact Factory)	1
20	042-0007-00	E-Ring	4
21	042-0006-01	Clevis Pin	1
22		Back Cylinder (Refer to "Hydraulic System" Elsewhere)	Ref
23	042-0006-00	Clevis Pin	1
24	040-0010-01	Screw	4
25		Two Arm Headlock Assembly (Refer to "Headrest Assembly" Elsewhere)	Ref
26	040-0006-06	Screw	4
27	050-0872-20	Back Cover	1

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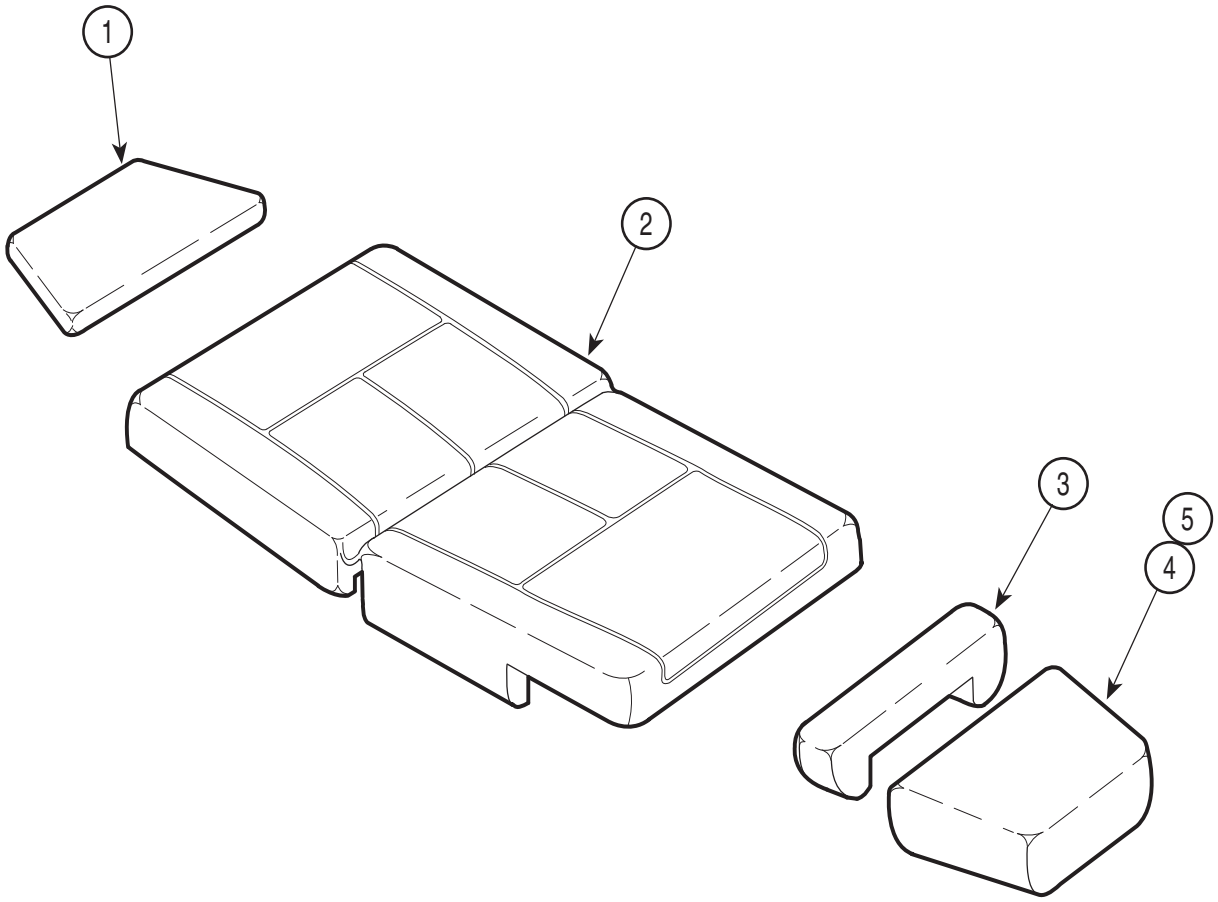
Upholstery Set - Soft Touch (standard)



Color Selector.....www.midmark.com

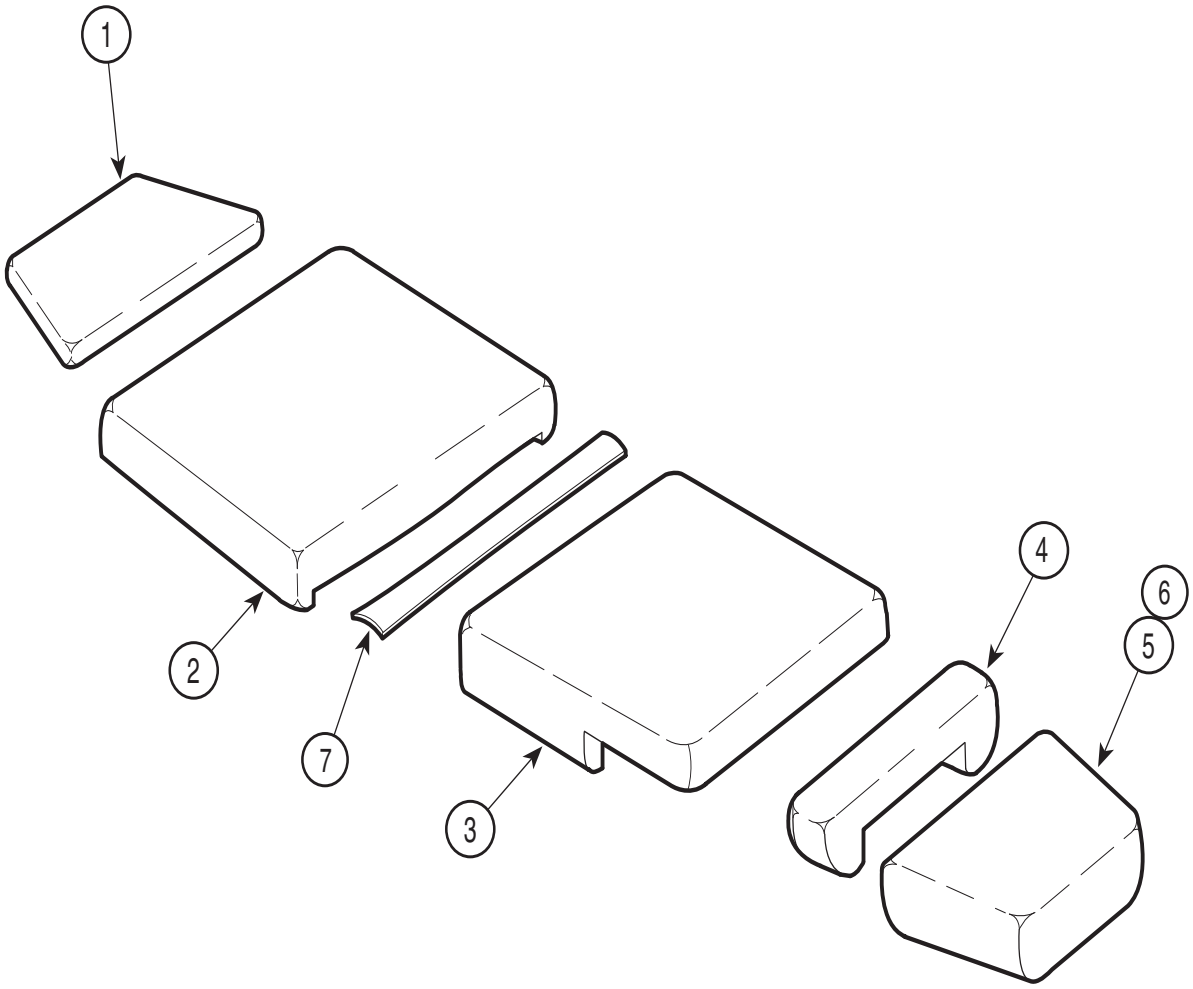
MA234001

Item	Part No.	Description	Qty.
	N.L.A.	Soft Touch Uph. Set w/Hardware (Includes items 1, 2, 3, & 5) {* Specify Color}	1
	N.L.A.	Soft Touch Uph. Set w/o Hardware (Includes items 1, 2, 3, & 4) {* Specify Color}	1
1	• *N.L.A.*	• Headrest {* Specify Color}	1
2	• *N.L.A.*	• Body Section {* Specify Color}	1
3	• *N.L.A.*	• Legrest {* Specify Color}	1
4	• *N.L.A.*	• Footrest (Upholstery only) {* Specify Color}	1
5	• *N.L.A.*	• Footrest Assembly (Incl. weldment) {* Specify Color}	1

* Click on the Current Color Options link above to see available colors.

Always Specify Model & Serial Number

Upholstery Set - Narrow (optional)



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Item	Part No.	Description	Qty.
	N.L.A.	Upholstery Set - Narrow (Includes Items 1 thru 5) {* Specify Color}	1
1	• *N.L.A.*	• Headrest- Narrow {* Specify Color}	1
2	• *N.L.A.*	• Back Section-Narrow {* Specify Color}	1
3	• *N.L.A.*	• Seat Section - Narrow {* Specify Color}	1
4	• *N.L.A.*	• Legrest - Narrow {* Specify Color}	1
5	• *N.L.A.*	• Footrest Assembly (Incl. weldment) {* Specify Color}	1
6	*N.L.A.*	Footrest (Upholstery only) {* Specify Color}	1
7	002-0268-03	Hinge Cover {* Specify Color}	1

* Click on the Current Color Options link above to see available colors.

N.L.A. Denotes "No Longer Available"

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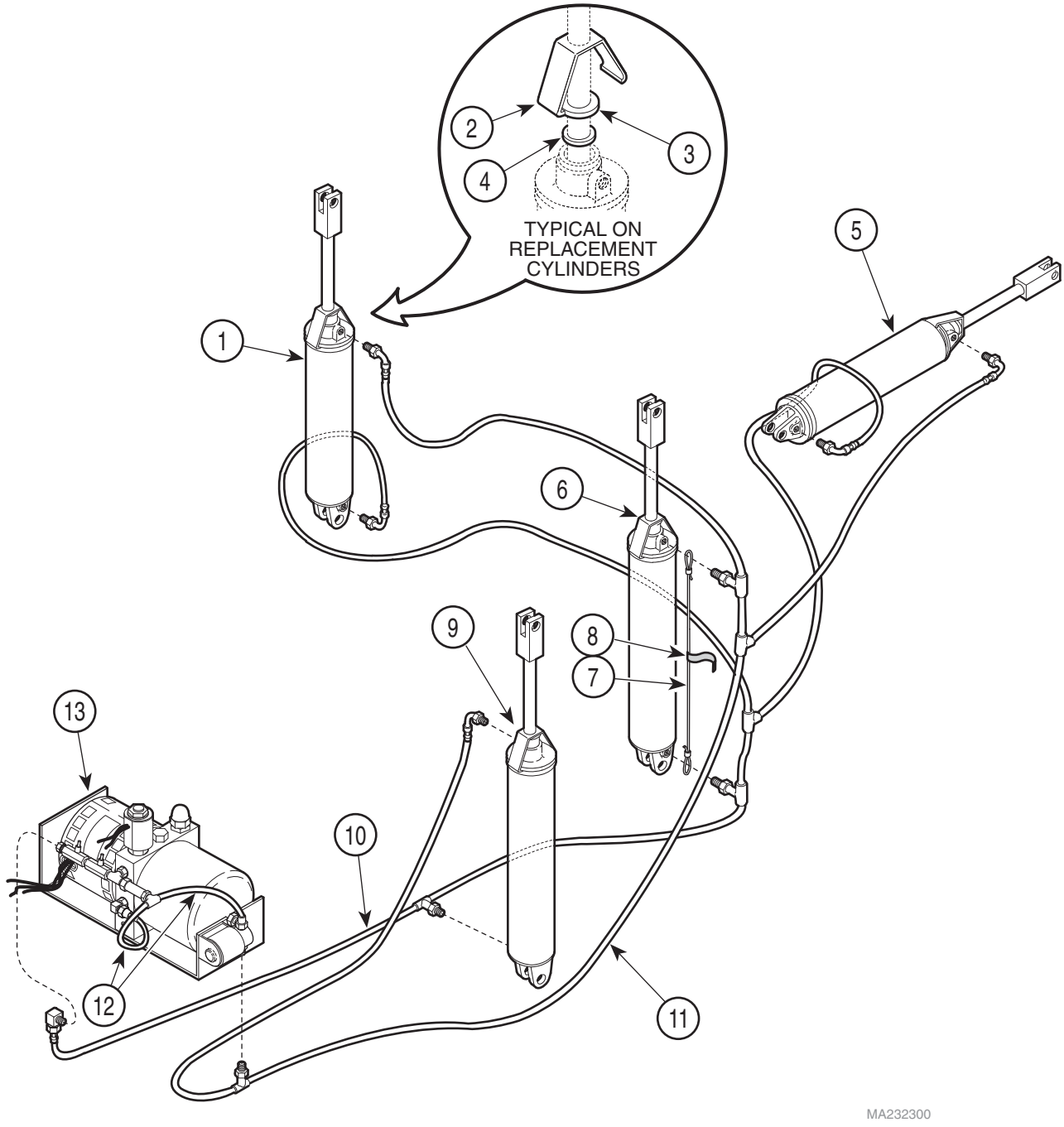
Hydraulic System



Used on units with Serial Numbers Prior to 37420

Item	Part No.	Description	Qty.
1	002-0003-00	Back Cylinder Kit	1
2	025-0032-00	Rod Wiper Bracket	AR
3	054-0109-00	Felt Wiper (1")	AR
4	054-0108-00	Felt Wiper (11/16")	AR
5	002-0003-00	Foot Cylinder Kit	1
6	002-0002-00	Tilt Cylinder Kit	1
7	016-0161-00	Safety Cable	1
8	061-0113-00	Safety Cable Label	1
9	002-0001-00	Base Cylinder Kit	1
10	~~002-0014-00~~	Power Hose Kit	1
11	002-0012-00	Return Hose Kit	1
12	~~002-0031-00~~	Hose Assembly Kit	1
13	002-0034-00	Motor / Pump Components (See Breakdown Elsewhere)	1

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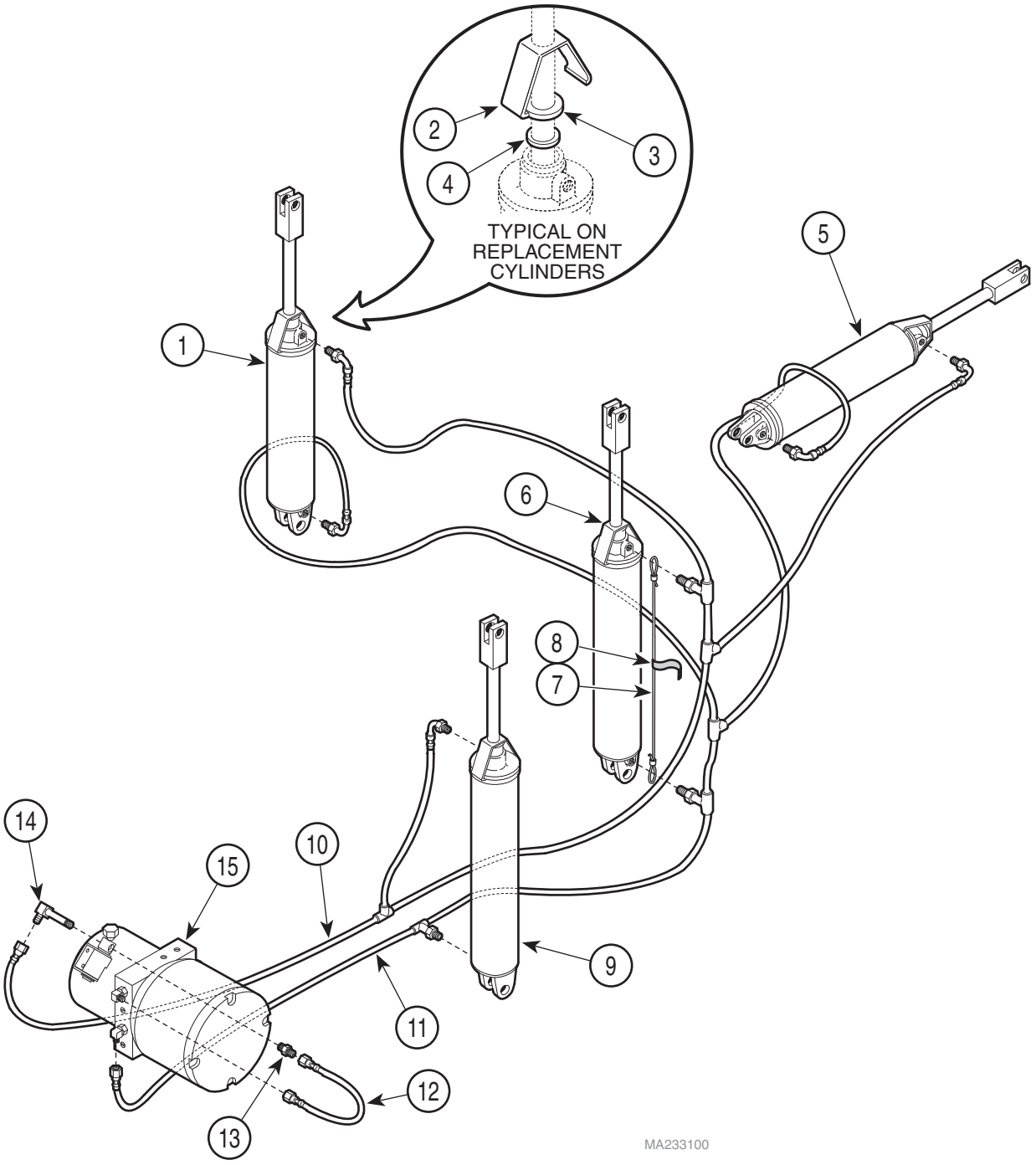
Hydraulic System

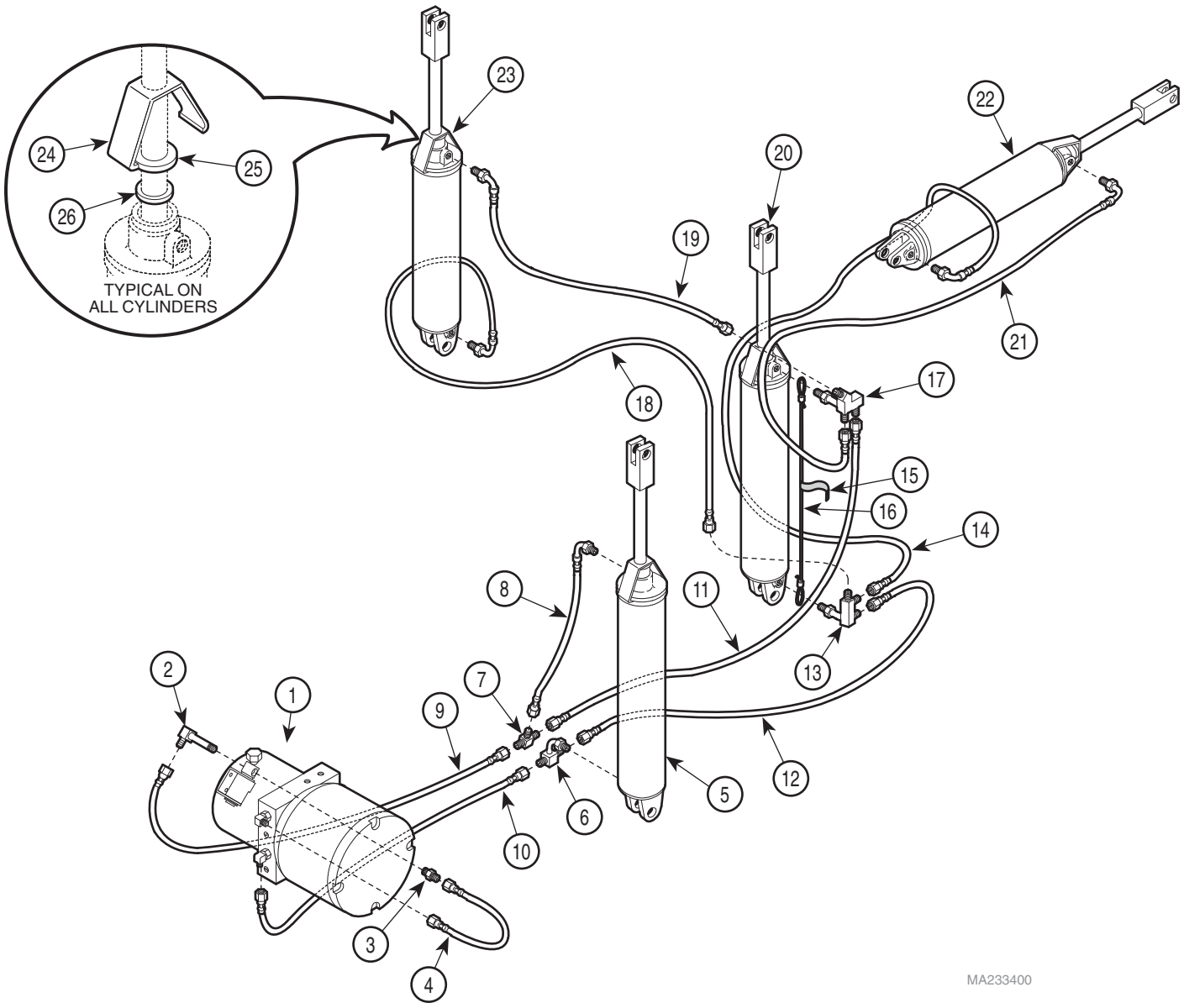


Used on units with Serial Numbers 37420 thru K-2725

Item	Part No.	Description	Qty.
1	002-0003-00	Back Cylinder KIt	1
2	025-0032-00	Rod Wiper Bracket	AR
3	054-0109-00	Felt Wiper (1")	AR
4	054-0108-00	Felt Wiper (11/16")	AR
5	002-0003-00	Foot Cylinder Kit	1
6	002-0002-00	Tilt Cylinder Kit	1
7	016-0161-00	Safety Cable	1
8	061-0113-00	Safety Cable Label	1
9	002-0001-00	Base Cylinder Kit	1
10	~~002-0021-00~~	Return Hose Kit	1
11	~~002-0014-00~~	Power Hose Kit	1
12	~~002-0032-00~~	Hose Assembly Kit	1
13	014-0099-00	Male Connector	1
14	~~014-0114-00~~	Male Elbow	1
15	002-0035-00	Motor / Pump Components (See Breakdown Elsewhere)	1

Always Specify Model & Serial Number

Hydraulic System



Used on units with Serial Number K-2726 thru K-8178

Item	Part No.	Description	Qty.
1	002-0127-00	Motor / Pump Components (See Breakdown Elsewhere)	Ref
2	~~014-0114-00~~	Male Elbow	1
3	014-0099-00	Male Connector	1
4	002-0117-00	Hose Assembly Kit	1
5	002-0001-00	Base Cylinder Kit	1
6	014-0135-00	Base Tee	1
7	014-0098-00	Union Tee	1
8	002-0120-00	Hose Assembly Kit	1
9	~~002-0118-00~~	Hose Assembly Kit	1
10	002-0119-00	Hose Assembly Kit	1
11	002-0122-00	Hose Assembly Kit	1
12	002-0121-00	Hose Assembly Kit	1
13	014-0136-00	Tilt Power Manifold	1
14	002-0123-00	Hose Assembly Kit	1
15	061-0113-00	Safety Cable Label	1
16	016-0161-00	Safety Cable	1
17	014-0137-00	Return Manifold	1
18	002-0125-00	Hose Assembly Kit	1
19	002-0126-00	Hose Assembly Kit	1
20	002-0002-00	Tilt Cylinder Kit	1
21	002-0124-00	Hose Assembly Kit	1
22	002-0003-00	Foot Cylinder Kit	1
23	002-0003-00	Back Cylinder KIt	1
24	025-0032-00	Rod Wiper Bracket	AR
25	054-0109-00	Felt Wiper (1")	AR
26	054-0108-00	Felt Wiper (11/16")	AR
27	015-0013-00	Cable Tie (Not Shown)	AR
28	015-0013-02	Cable Tie (Not Shown)	AR
29	015-0016-00	Cable Tie (Not Shown)	AR
30	015-0017-00	Cable Tie (Not Shown)	AR

Always Specify Model & Serial Number

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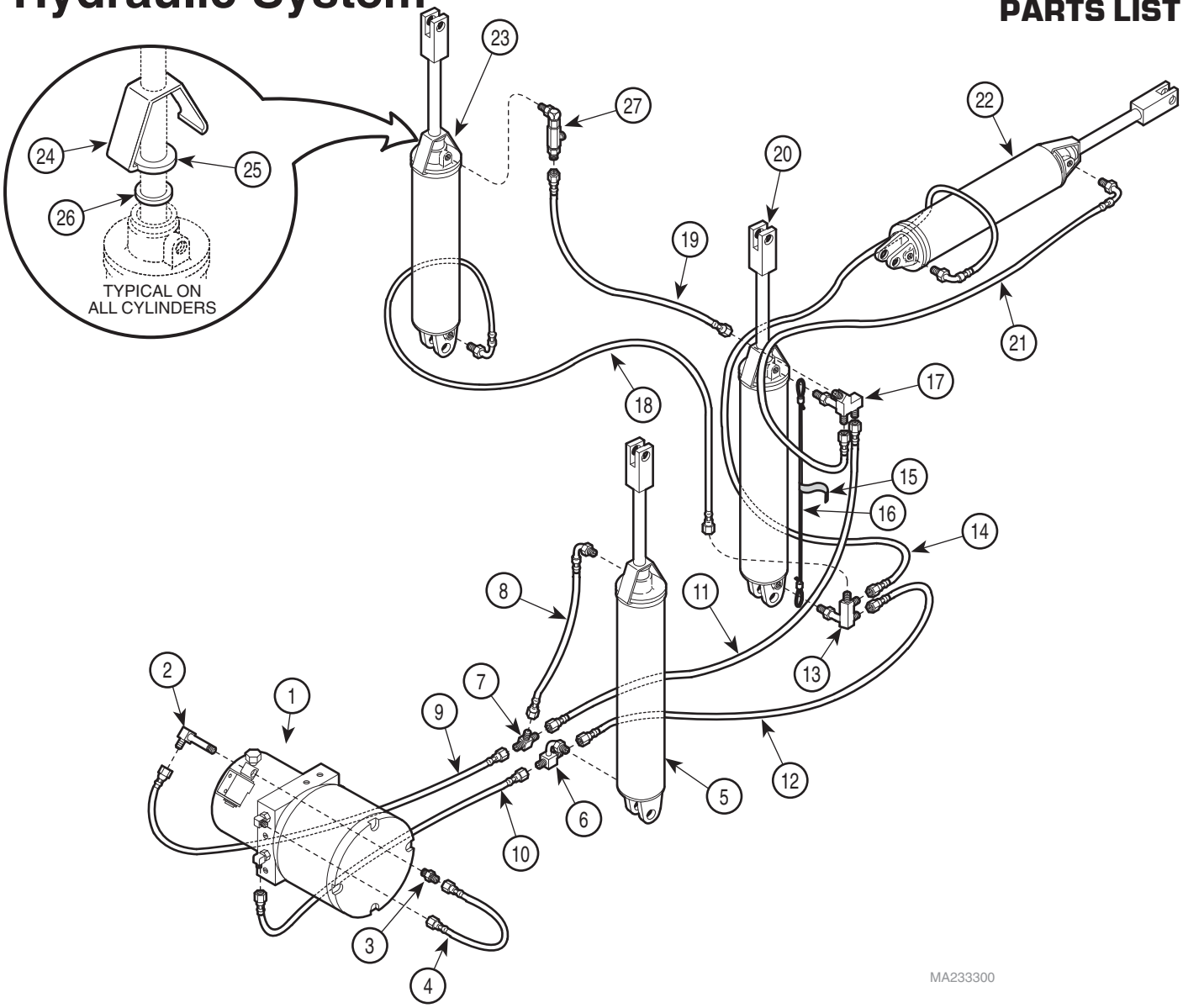
Hydraulic System

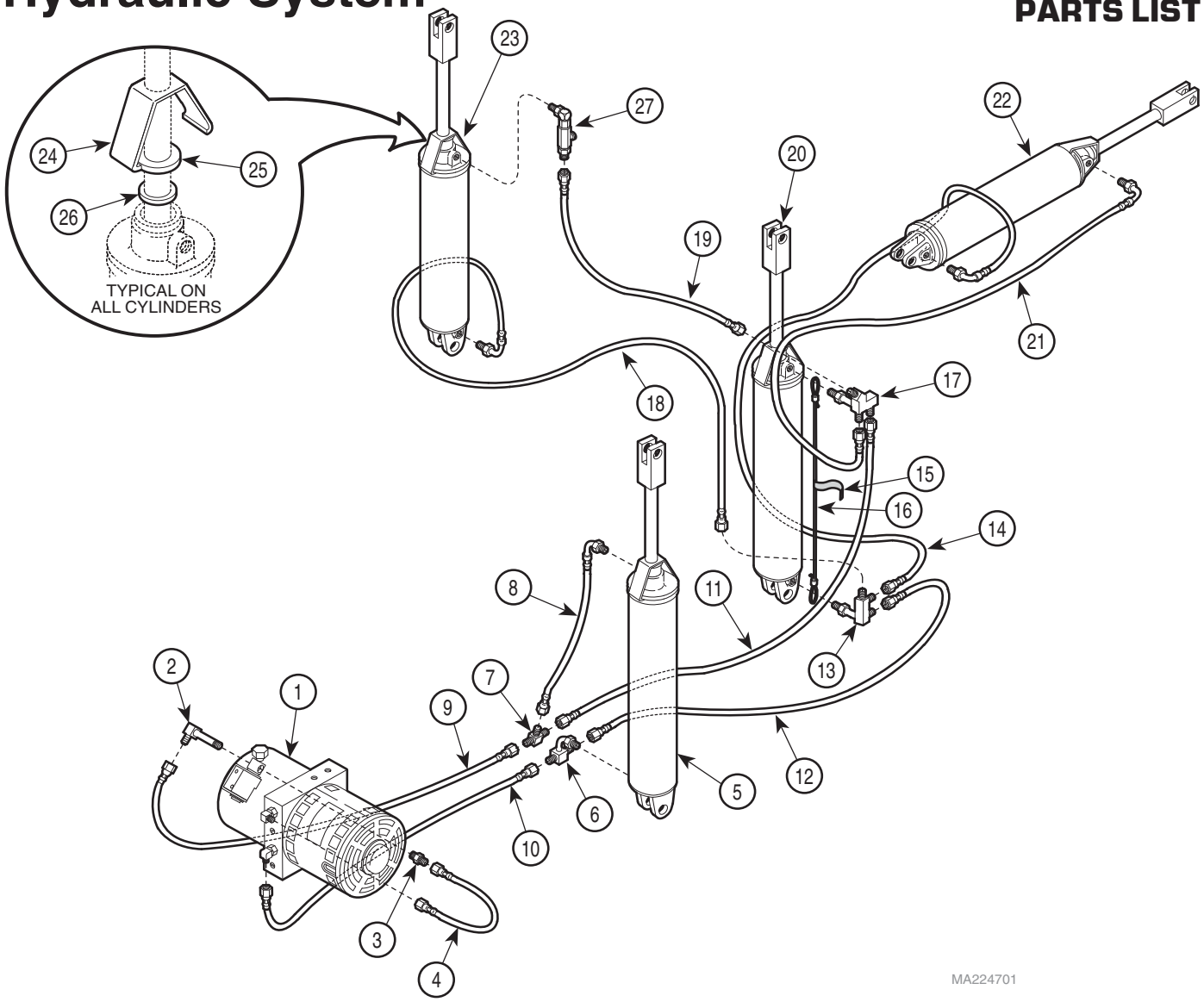


Used on units with Serial Number K-8179 thru K-9495

Item	Part No.	Description	Qty.
1	002-0127-00	Motor / Pump Components (See Breakdown Elsewhere)	Ref
2	~~014-0114-00~~	Male Elbow	1
3	014-0099-00	Male Connector	1
4	002-0117-00	Hose Assembly Kit	1
5	002-0001-00	Base Cylinder Kit	1
6	014-0135-00	Base Tee	1
7	014-0098-00	Union Tee	1
8	002-0120-00	Hose Assembly Kit	1
9	~~002-0118-00~~	Hose Assembly Kit	1
10	002-0119-00	Hose Assembly Kit	1
11	002-0122-00	Hose Assembly Kit	1
12	002-0121-00	Hose Assembly Kit	1
13	014-0136-00	Tilt Power Manifold	1
14	002-0123-00	Hose Assembly Kit	1
15	061-0113-00	Safety Cable Label	1
16	016-0161-00	Safety Cable	1
17	014-0137-00	Return Manifold	1
18	002-0125-00	Hose Assembly Kit	1
19	002-0178-00	Hose Assembly Kit	1
20	002-0002-00	Tilt Cylinder Kit	1
21	002-0124-00	Hose Assembly Kit	1
22	002-0003-00	Foot Cylinder Kit	1
23	002-0003-00	Back Cylinder KIt	1
24	025-0032-00	Rod Wiper Bracket	AR
25	054-0109-00	Felt Wiper (1")	AR
26	054-0108-00	Felt Wiper (11/16")	AR
27		Valve Assembly (Includes the Following:	
	• 014-0109-00	• Adapter	1
	• 014-0125-00	• Needle Valve	1
	• 014-0099-00	• Male Connector	1
	• 014-0128-00	• Male Elbow	1
28	015-0013-00	Cable Tie (Not Shown)	AR
29	015-0013-02	Cable Tie (Not Shown)	AR
30	015-0016-00	Cable Tie (Not Shown)	AR
31	015-0017-00	Cable Tie (Not Shown)	AR

Always Specify Model & Serial Number

Hydraulic System

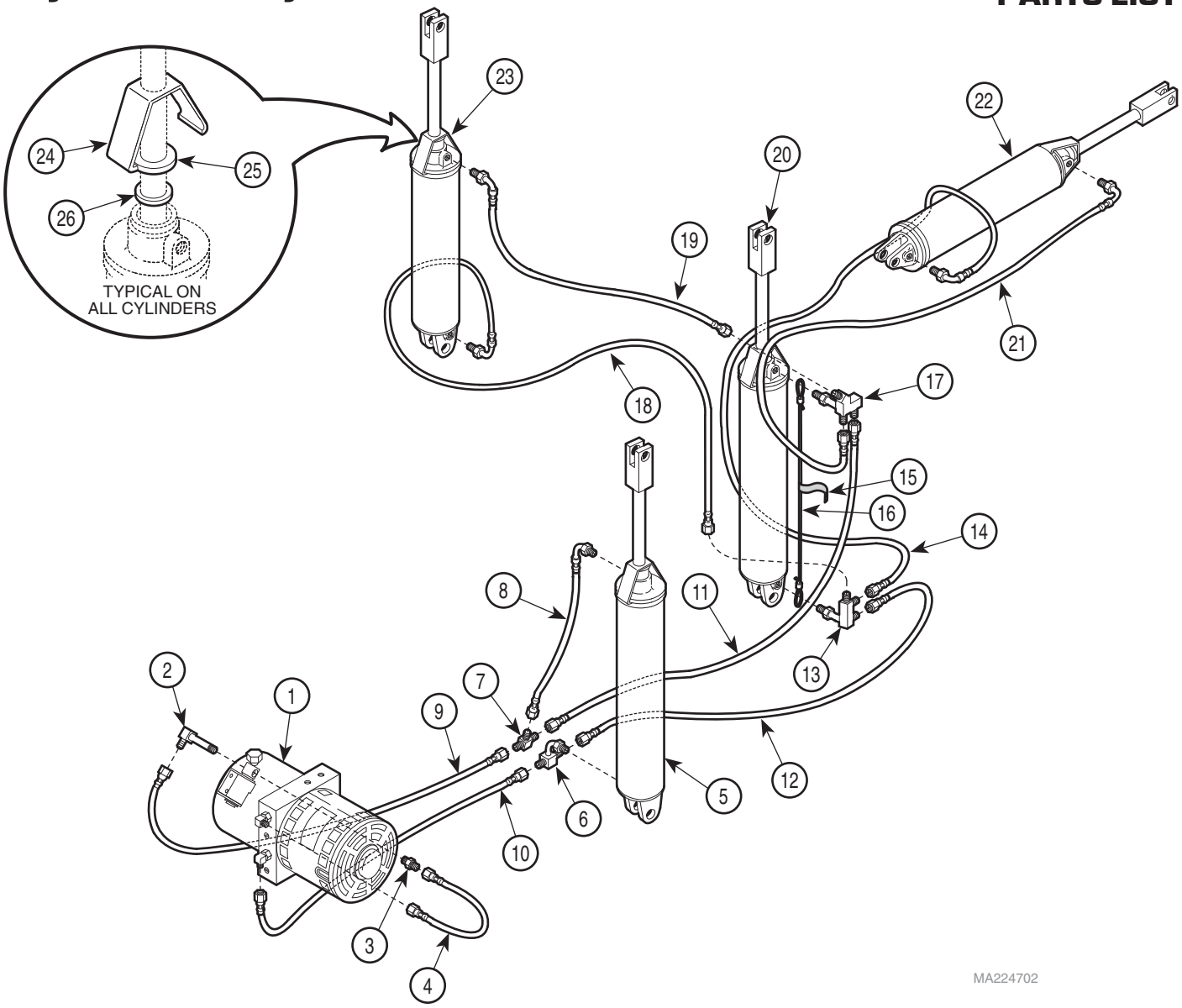


Used on units with Serial Number K-9496 thru Present, BX-1000 thru BX-1739 & CA-1000 thru CA-1220

Item	Part No.	Description	Qty.
1	002-0133-00	Motor / Pump Components (See Breakdown Elsewhere)	Ref
2	~~014-0114-00~~	Male Elbow	1
3	014-0099-00	Male Connector	1
4	002-0117-00	Hose Assembly Kit	1
5	002-0001-00	Base Cylinder Kit	1
6	014-0135-00	Base Tee	1
7	014-0098-00	Union Tee	1
8	002-0120-00	Hose Assembly Kit	1
9	~~002-0118-00~~	Hose Assembly Kit	1
10	002-0119-00	Hose Assembly Kit	1
11	002-0122-00	Hose Assembly Kit	1
12	002-0121-00	Hose Assembly Kit	1
13	014-0136-00	Tilt Power Manifold	1
14	002-0123-00	Hose Assembly Kit	1
15	061-0113-00	Safety Cable Label	1
16	016-0161-00	Safety Cable	1
17	014-0137-00	Return Manifold	1
18	002-0125-00	Hose Assembly Kit	1
19	002-0178-00	Hose Assembly Kit	1
20	002-0002-00	Tilt Cylinder Kit	1
21	002-0124-00	Hose Assembly Kit	1
22	002-0003-00	Foot Cylinder Kit	1
23	002-0003-00	Back Cylinder Klt	1
24	025-0032-00	Rod Wiper Bracket	AR
25	054-0109-00	Felt Wiper (1")	AR
26	054-0108-00	Felt Wiper (11/16")	AR
27		Valve Assembly (Includes the Following:	
	• 014-0109-00	• Adapter	1
	• 014-0125-00	• Needle Valve	1
	• 014-0099-00	• Male Connector	1
	• 014-0128-00	• Male Elbow	1
28	015-0013-00	Cable Tie (Not Shown)	AR
29	015-0013-02	Cable Tie (Not Shown)	AR
30	015-0016-00	Cable Tie (Not Shown)	AR
31	015-0017-00	Cable Tie (Not Shown)	AR

Always Specify Model & Serial Number

Hydraulic System



Used on units with Serial Number BX-1740 thru BX-2310 & CA-1221 thru CA-1506

Item	Part No.	Description	Qty.
1	002-0133-00	Motor / Pump Components (See Breakdown Elsewhere)	Ref
2	~~014-0114-00~~	Male Elbow	1
3	014-0099-00	Male Connector	1
4	002-0117-00	Hose Assembly Kit	1
5	002-0001-00	Base Cylinder Kit	1
6	014-0135-00	Base Tee	1
7	014-0098-00	Union Tee	1
8	002-0120-00	Hose Assembly Kit	1
9	~~002-0118-00~~	Hose Assembly Kit	1
10	002-0119-00	Hose Assembly Kit	1
11	002-0122-00	Hose Assembly Kit	1
12	002-0121-00	Hose Assembly Kit	1
13	014-0136-00	Tilt Power Manifold	1
14	002-0123-00	Hose Assembly Kit	1
15	061-0113-00	Safety Cable Label	1
16	016-0161-00	Safety Cable	1
17	014-0137-00	Return Manifold	1
18	002-0125-00	Hose Assembly Kit	1
19	002-0126-00	Hose Assembly Kit	1
20	002-0002-00	Tilt Cylinder Kit	1
21	002-0124-00	Hose Assembly Kit	1
22	002-0003-00	Foot Cylinder Kit	1
23	002-0346-00	Back Cylinder KIt	1
24	025-0032-00	Rod Wiper Bracket	AR
25	054-0109-00	Felt Wiper (1")	AR
26	054-0108-00	Felt Wiper (11/16")	AR
27	015-0013-00	Cable Tie (Not Shown)	AR
28	015-0013-02	Cable Tie (Not Shown)	AR
29	015-0016-00	Cable Tie (Not Shown)	AR
30	015-0017-00	Cable Tie (Not Shown)	AR

Always Specify Model & Serial Number

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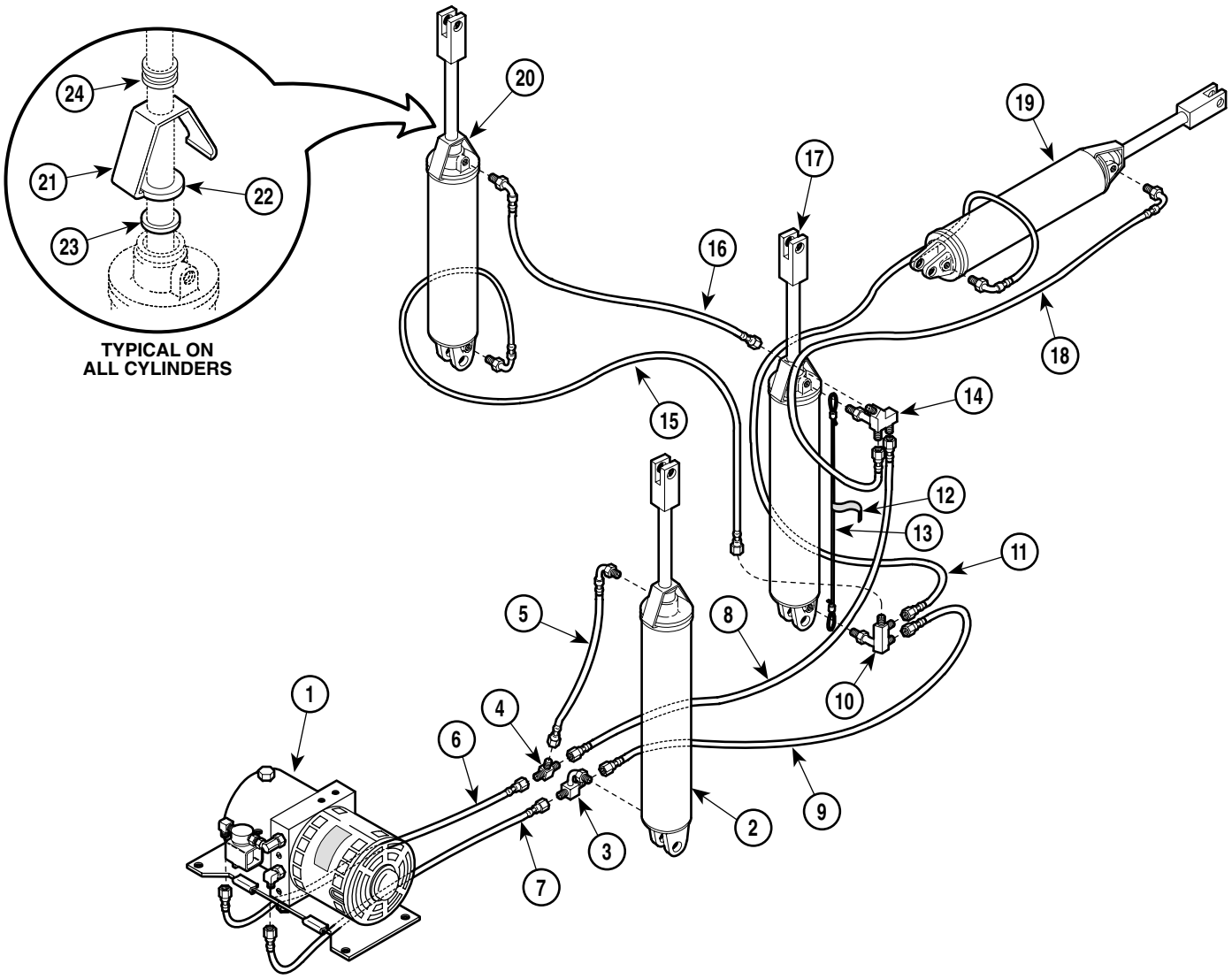
Hydraulic System



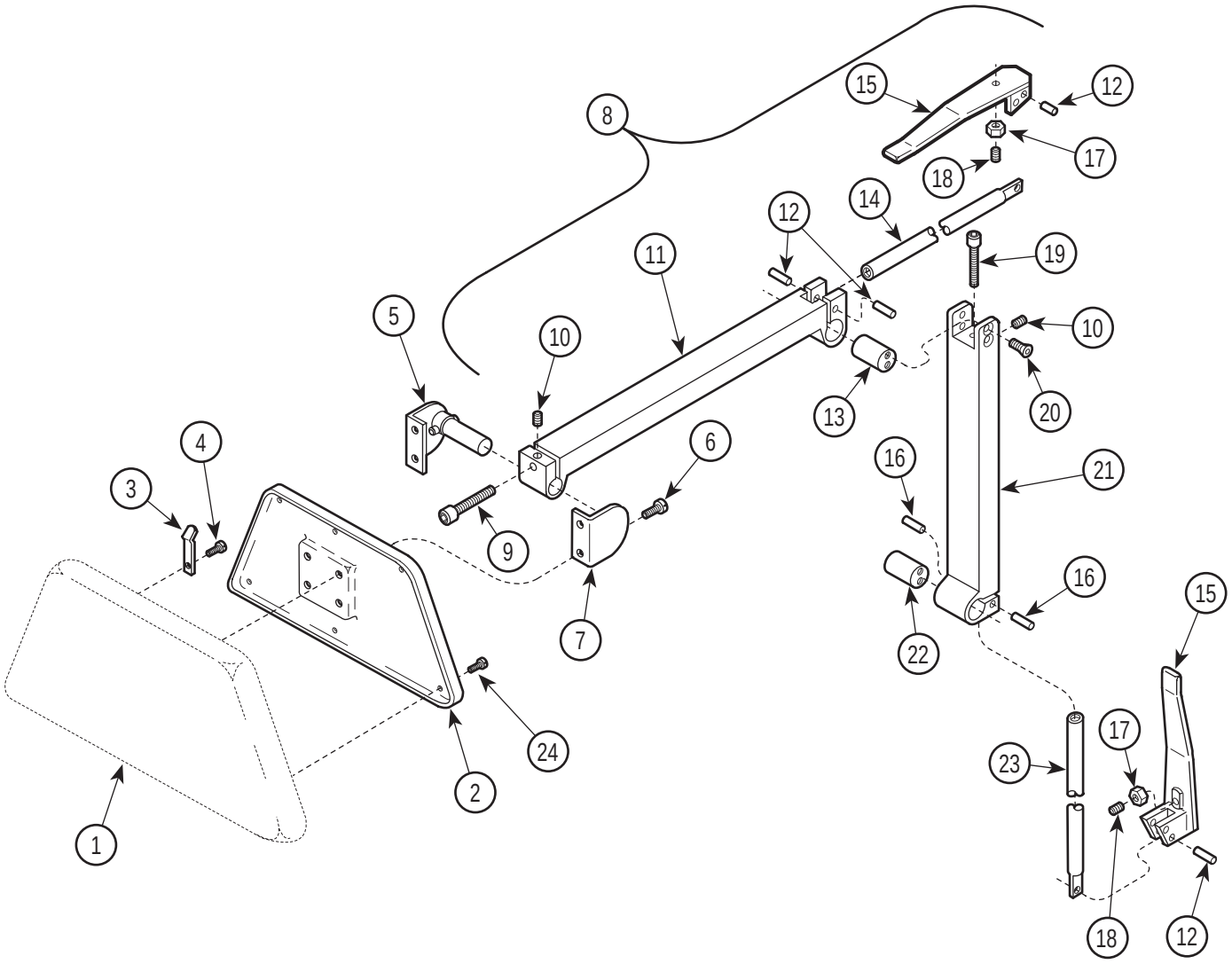
MA241500

Used on units with Serial Number BX-2311 & CA-1507 thru Present

Item	Part No.	Description	Qty.
1	002-0444-00	Motor / Pump Components (See Breakdown Elsewhere)	Ref
2	002-0001-00	Base Cylinder Kit	1
3	014-0135-00	Base Tee	1
4	014-0098-00	Union Tee	1
5	002-0120-00	Hose Assembly Kit	1
6	002-0117-00	Hose Assembly Kit	1
7	002-0119-00	Hose Assembly Kit	1
8	002-0122-00	Hose Assembly Kit	1
9	002-0121-00	Hose Assembly Kit	1
10	014-0136-00	Tilt Power Manifold	1
11	002-0123-00	Hose Assembly Kit	1
12	061-0113-00	Safety Cable Label	1
13	016-0161-00	Safety Cable	1
14	014-0137-00	Return Manifold	1
15	002-0125-00	Hose Assembly Kit	1
16	002-0126-00	Hose Assembly Kit	1
17	002-0002-00	Tilt Cylinder Kit	1
18	002-0124-00	Hose Assembly Kit	1
19	002-0003-00	Foot Cylinder Kit	1
20	002-0346-00	Back Cylinder KIt	1
21	025-0032-00	Rod Wiper Bracket	AR
22	054-0109-00	Felt Wiper (1")	AR
23	054-0108-00	Felt Wiper (11/16")	AR
24	053-0226-03	Snap-in Nyliner Bearing	AR
25	015-0013-00	Cable Tie (Not Shown)	AR
26	015-0013-02	Cable Tie (Not Shown)	AR
27	015-0016-00	Cable Tie (Not Shown)	AR
28	015-0017-00	Cable Tie (Not Shown)	AR

Always Specify Model & Serial Number

Headrest Assembly



MA223401

Used on units with Serial Number K-1000 thru Present

Item	Part No.	Description	Qty.
1		Upholstered Headrest {Specify Color} (Refer to "Upholstery Set" Elsewhere) ...	1
2	*N.L.A.*	Headboard Cover ...	1
3	058-0001-03	Painted Bag Clip ...	2
4	040-0006-52	Screw ...	2
5	029-0103-00	Headboard Pivot Weldment ...	1
6	040-0010-53	Screw ...	4
7	030-0124-00	Headboard Pivot Bracket ...	1
8	~~029-0389-00~~	(No Longer Available) (Includes Items 9 thru 23) ...	1
9	• *(N.S.P.)*	• Screw ...	1
10	• *(N.S.P.)*	• Set Screw ...	2
11	• *(N.S.P.)*	• Headlock Head ...	1
12	• *(N.S.P.)*	• Dowel Pin ...	4
13	• *(N.S.P.)*	• Pivot Bar ...	1
14	• *(N.S.P.)*	• Draw Bar ...	1
15	• *(N.S.P.)*	• Head Pivot Handle Weldment ...	2
16	• *(N.S.P.)*	• Dowel Pin ...	2
17	• *(N.S.P.)*	• Jam Nut ...	2
18	• *(N.S.P.)*	• Set Screw ...	2
19	• *(N.S.P.)*	• Screw ...	1
20	• *(N.S.P.)*	• Screw ...	4
21	• *(N.S.P.)*	• Headlock Base ...	1
22	• *(N.S.P.)*	• Pivot Bar ...	1
23	• *(N.S.P.)*	• Draw Bar ...	1
24	040-0006-20	Screw ...	6

N.L.A. Denotes "No Longer Available"
(N.S.P.) Denotes "Non Servicable Part"
Always Specify Model & Serial Number

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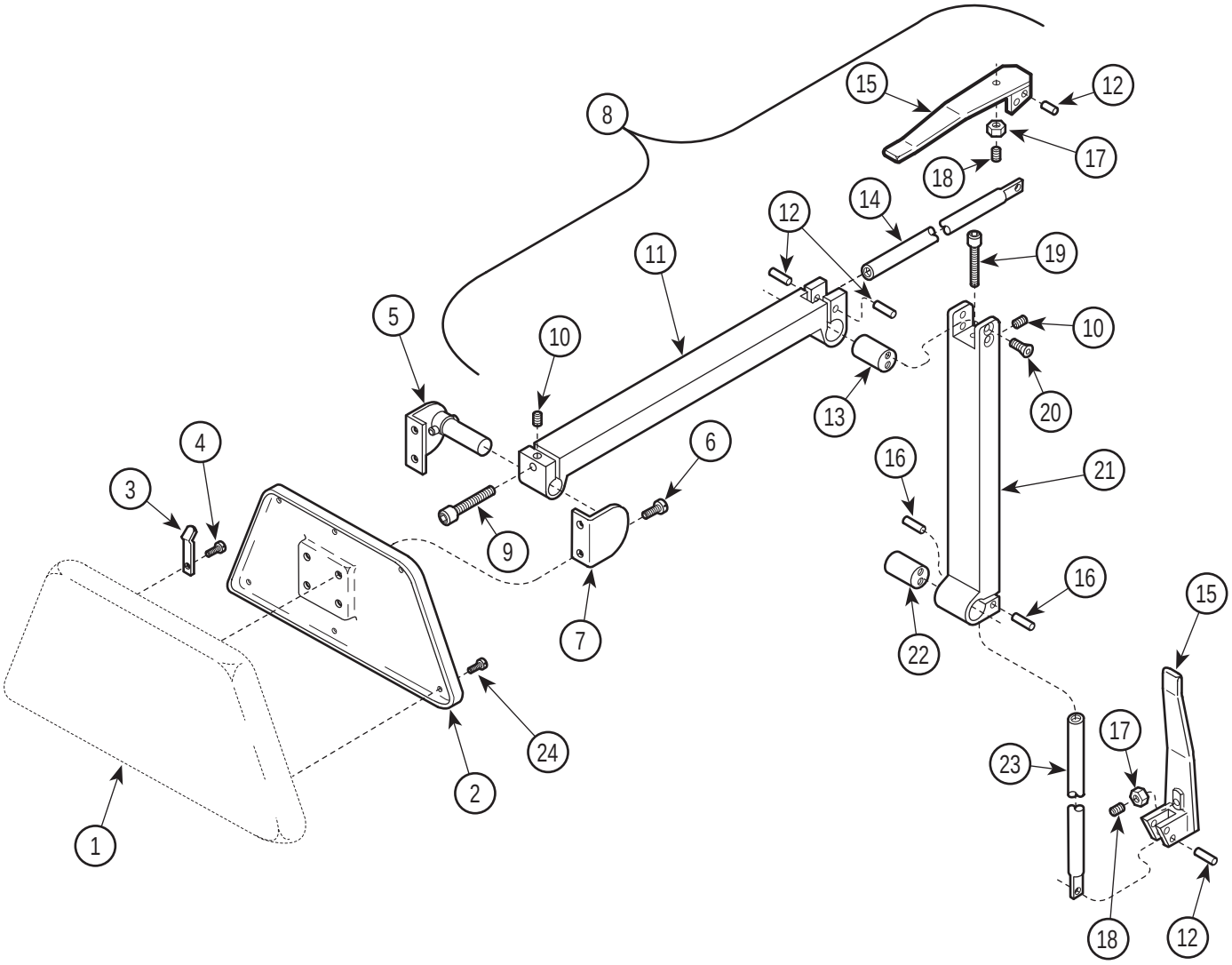
Headrest Assembly



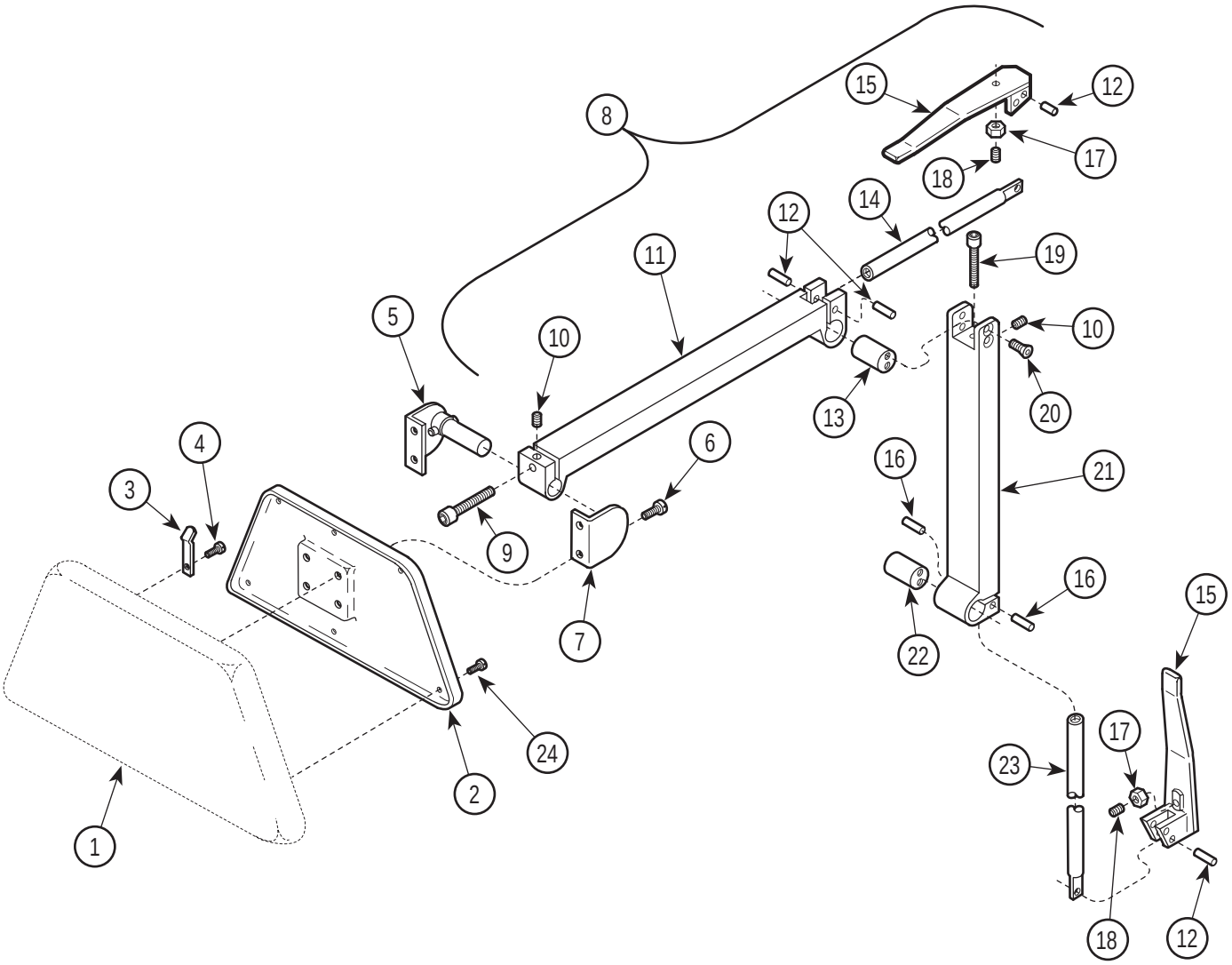
MA223401

Used on units with Serial Number BX1000 thru BX3072 and CA1000 thru CA1621

Item	Part No.	Description	Qty.
1		Upholstered Headrest {Specify Color} (Refer to "Upholstery Set" Elsewhere)	1
2	*N.L.A.*	Headboard Cover	1
3	058-0001-03	Painted Bag Clip	2
4	040-0006-52	Screw	2
5	029-0103-20	Headboard Pivot Weldment	1
6	040-0010-53	Screw	4
7	030-0124-20	Headboard Pivot Bracket	1
8	029-1100-01	Two Arm Headlock Assembly (Includes Items 9 thru 23)	1
9	• *(N.S.P.)*	• Screw	1
10	• *(N.S.P.)*	• Set Screw	2
11	• *(N.S.P.)*	• Headlock Head	1
12	• *(N.S.P.)*	• Dowel Pin	4
13	• *(N.S.P.)*	• Pivot Bar	1
14	• *(N.S.P.)*	• Draw Bar	1
15	• *(N.S.P.)*	• Head Pivot Handle Weldment	2
16	• *(N.S.P.)*	• Dowel Pin	2
17	• *(N.S.P.)*	• Jam Nut	2
18	• *(N.S.P.)*	• Set Screw	2
19	• *(N.S.P.)*	• Screw	1
20	• *(N.S.P.)*	• Screw	4
21	• *(N.S.P.)*	• Headlock Base	1
22	• *(N.S.P.)*	• Pivot Bar	1
23	• *(N.S.P.)*	• Draw Bar	1
24	040-0006-20	Screw	6

N.L.A. Denotes "No Longer Available"
(N.S.P.) Denotes "Non Servicable Part"
Always Specify Model & Serial Number

Headrest Assembly



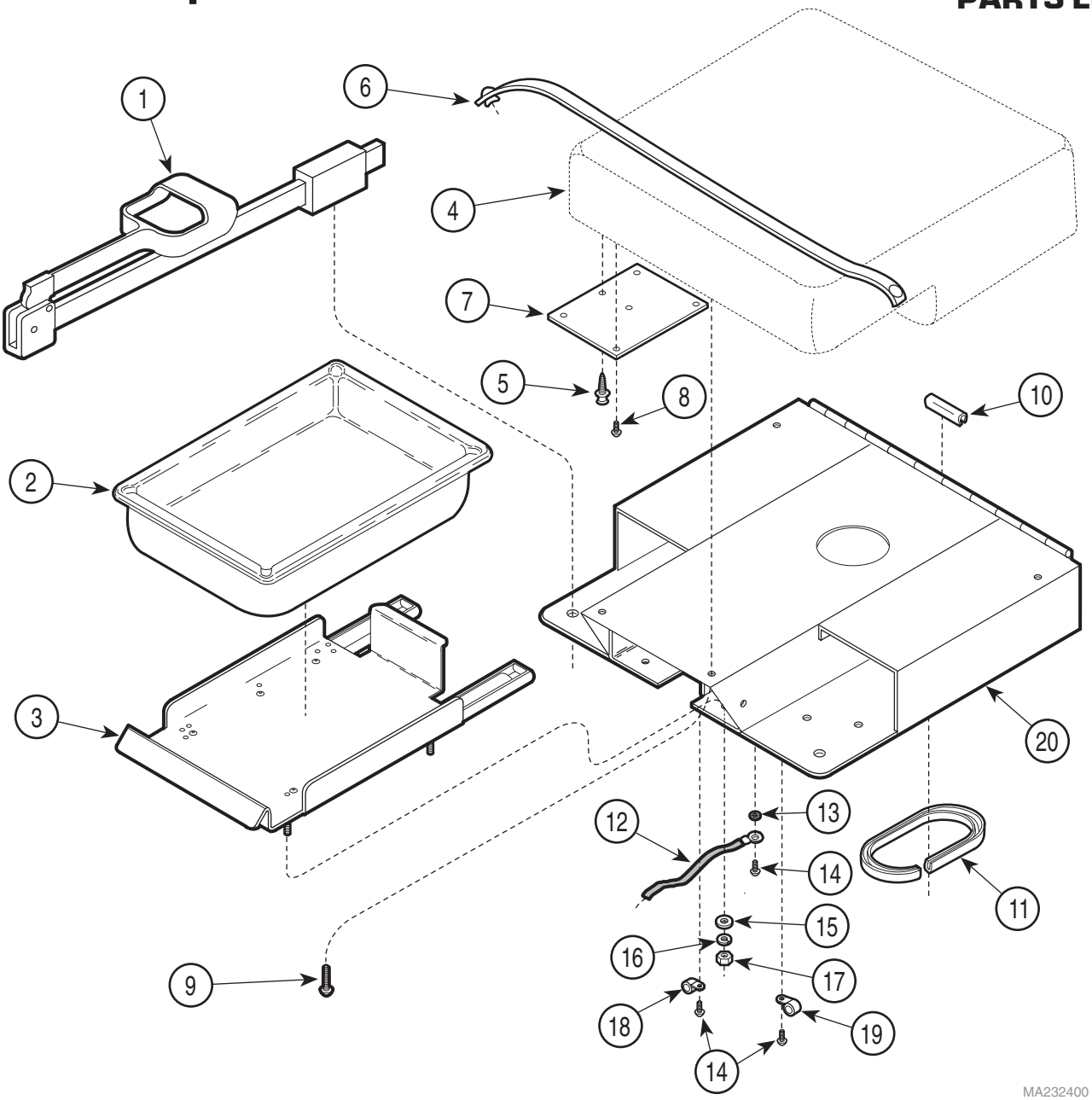
MA223401

Used on units with Serial Number BX3073 & CA1622 thru Present

Item	Part No.	Description	Qty.
1		Upholstered Headrest {Specify Color} (Refer to "Upholstery Set" Elsewhere)	1
2	*N.L.A.*	Headboard Cover	1
3	058-0001-03	Painted Bag Clip	2
4	040-0006-52	Screw	2
5	029-0103-20	Headboard Pivot Weldment	1
6	040-0010-53	Screw	4
7	030-0124-20	Headboard Pivot Bracket	1
8	029-1100-03	Two Arm Headlock Assembly (Includes Items 9 thru 23)	1
9	• *(N.S.P.)*	• Screw	1
10	• *(N.S.P.)*	• Set Screw	2
11	• *(N.S.P.)*	• Headlock Head	1
12	• *(N.S.P.)*	• Dowel Pin	4
13	• *(N.S.P.)*	• Pivot Bar	1
14	• *(N.S.P.)*	• Draw Bar	1
15	• *(N.S.P.)*	• Head Pivot Handle Weldment	2
16	• *(N.S.P.)*	• Dowel Pin	2
17	• *(N.S.P.)*	• Jam Nut	2
18	• *(N.S.P.)*	• Set Screw	2
19	• *(N.S.P.)*	• Screw	1
20	• *(N.S.P.)*	• Screw	4
21	• *(N.S.P.)*	• Headlock Base	1
22	• *(N.S.P.)*	• Pivot Bar	1
23	• *(N.S.P.)*	• Draw Bar	1
24	040-0006-20	Screw	6

N.L.A. Denotes "No Longer Available"
(N.S.P.) Denotes "Non Servicable Part"
Always Specify Model & Serial Number

Seat Components



Used on units with Serial Numbers Prior to K-3033

Item	Part No.	Description	Qty.
1		Stirrup Assembly (Refer to Breakdown Elsewhere)	2
2	~~016-0079-00~~	Treatment Pan	1
3	029-0303-00	Pan Slide Assembly	1
4		Upholstered Seat Section (Refer to "Uphholstery Set" Elsewhere)	1
5	016-0022-00	Stud	2
6	002-0049-00	Paper Tear Strip Set (32")	1
	002-0050-00	Paper Tear Strip Set (26")	1
	002-0146-00	Paper Tear Strip Set (24")	1
7	050-0452-00	Seat Cover (Soft Touch Upholstery {Shown})	2
	050-0530-00	Seat Cover-L.H. (Narrow Upholstery)	1
	050-0530-01	Seat Cover-R.H. (Narrow Upholstery)	1

Item	Part No.	Description	Qty.
8	040-0006-01	Screw	10
9	040-0010-01	Upholstery Screw	4
10	016-0162-00	Trim Lock (Specify Length - 2")	2
11	016-0162-00	Trim Lock (Specify Length - 11")	1
12	015-0082-01	Ground Braid	1
13	040-0001-31	Lockwasher	1
14	040-0010-04	Screw	3
15	045-0001-39	Washer	4
16	045-0001-19	Lockwasher	4
17	041-0008-00	Nut	4
18	015-0001-00	Wire Clip	1
19	015-0014-00	Wire Clip	1
20	030-0653-00	Seat Weldment	1

Always Specify Model & Serial Number

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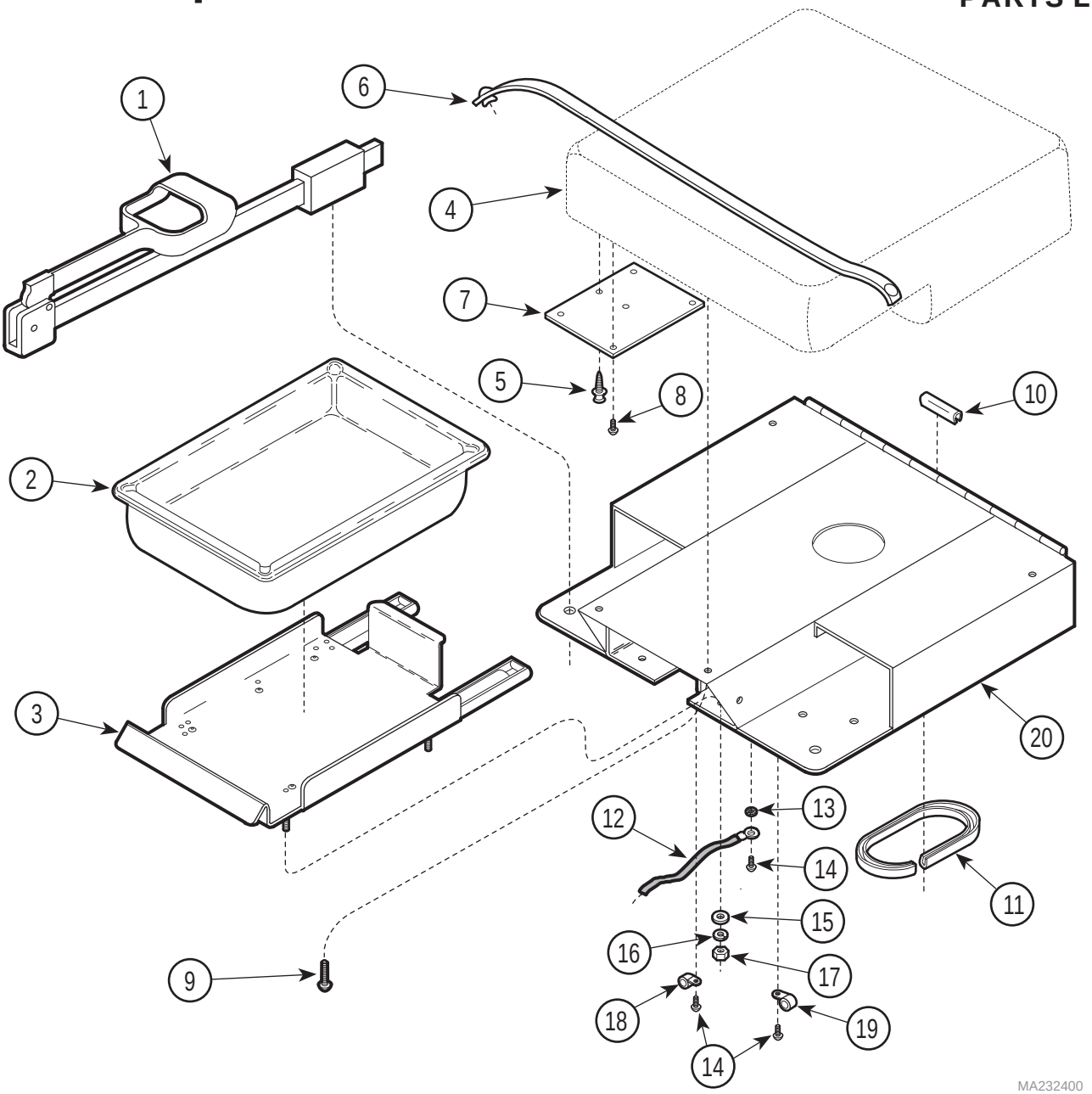
Seat Components



Used on units with Serial Number K-3034 thru K-7001

Item	Part No.	Description	Qty.
1		Stirrup Assembly (Refer to Breakdown Elsewhere)	2
2	016-0373-00	Treatment Pan	1
3	029-0356-00	Pan Slide Assembly	1
4		Upholstered Seat Section (Refer to "Uphholstery Set" Elsewhere)	1
5	016-0022-00	Stud	2
6	002-0049-00	Paper Tear Strip Set (32")	1
	002-0050-00	Paper Tear Strip Set (26")	1
	002-0146-00	Paper Tear Strip Set (24")	1
7	050-0452-00	Seat Cover (Soft Touch Upholstery {Shown})	2
	050-0530-00	Seat Cover-L.H. (Narrow Upholstery)	1
	050-0530-01	Seat Cover-R.H. (Narrow Upholstery)	1

Item	Part No.	Description	Qty.
8	040-0006-01	Screw	10
9	040-0010-01	Upholstery Screw	4
10	016-0162-00	Trim Lock (Specify Length - 2")	2
11	016-0162-00	Trim Lock (Specify Length - 11")	1
12	015-0082-01	Ground Braid	1
13	040-0001-31	Lockwasher	1
14	040-0010-04	Screw	3
15	045-0001-39	Washer	4
16	045-0001-19	Lockwasher	4
17	041-0008-00	Nut	4
18	015-0001-00	Wire Clip	1
19	015-0014-00	Wire Clip	1
20	030-0653-00	Seat Weldment	1

Always Specify Model & Serial Number

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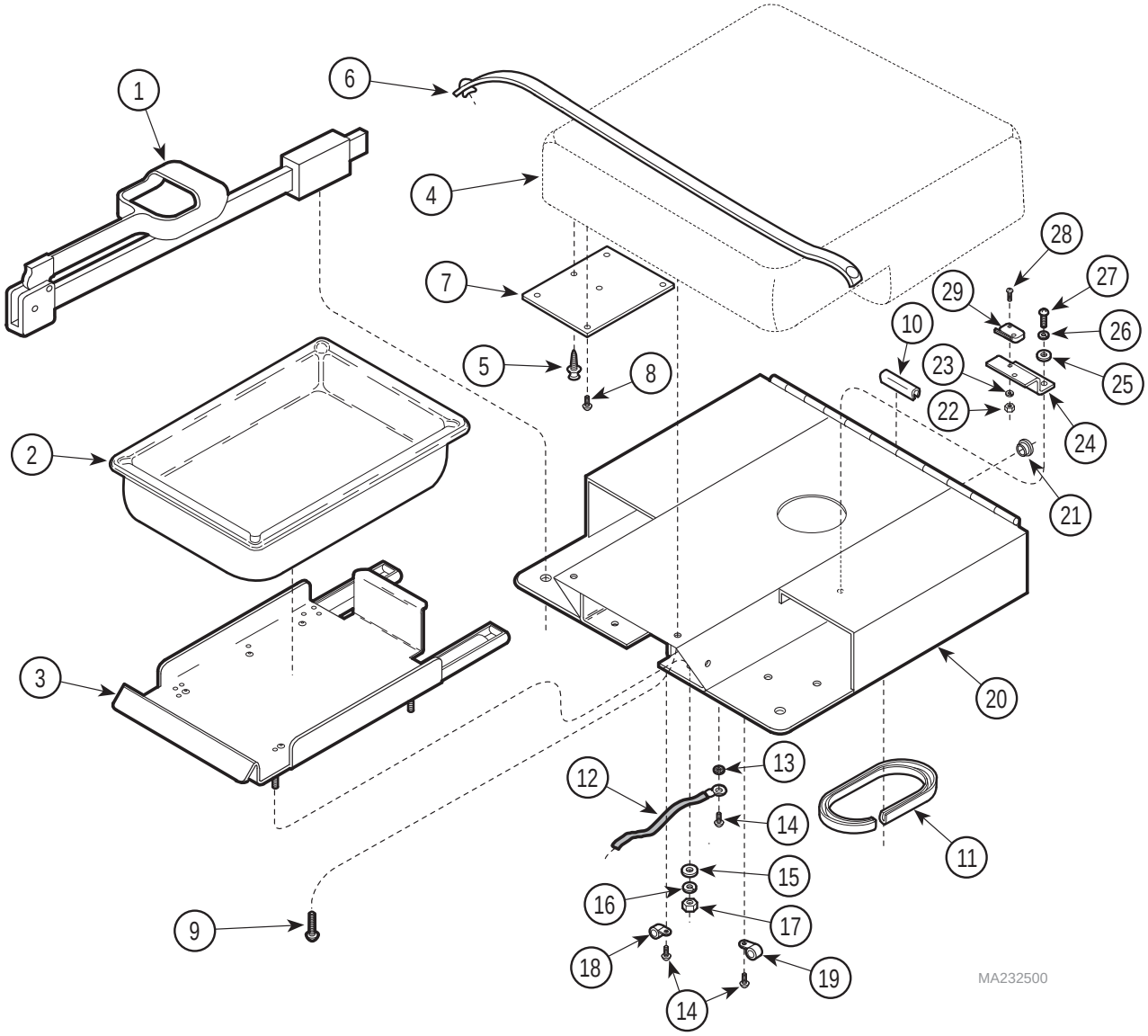
Seat Components



Used on units with Serial Number K-7002 thru Present

Item	Part No.	Description	Qty.
1		Stirrup Assembly (Refer to Breakdown Elsewhere)	2
2	016-0373-00	Treatment Pan	1
3	029-0356-00	Pan Slide Assembly	1
4		Upholstered Seat Section (Refer to "Upholstery Set" Elsewhere)	1
5	016-0022-00	Stud	2
6	002-0049-00	Paper Tear Strip Set (32")	1
	002-0050-00	Paper Tear Strip Set (26")	1
	002-0146-00	Paper Tear Strip Set (24")	1
7	050-0452-00	Seat Cover (Soft Touch Upholstery {Shown})	2
	050-0530-00	Seat Cover-L.H. (Narrow Upholstery)	1
	050-0530-01	Seat Cover-R.H. (Narrow Upholstery)	1
8	040-0006-01	Screw	10
9	040-0010-01	Upholstery Screw	4
10	016-0162-00	Trim Lock (Specify Length - 2")	2
11	016-0162-00	Trim Lock (Specify Length - 11")	1
12	015-0082-01	Ground Braid	1
13	040-0001-31	Lockwasher	1
14	040-0010-04	Screw	3
15	045-0001-39	Washer	4
16	045-0001-19	Lockwasher	4
17	041-0008-00	Nut	4
18	015-0001-00	Wire Clip	1
19	015-0014-00	Wire Clip	1
20	030-0653-00	Seat Weldment	1
21	053-0068-06	Snap Bushing	2
22	041-0004-00	Nut	2
23	045-0001-43	Lockwasher	2
24	050-1127-00	Switch Bracket	1
25	045-0001-15	Washer	2
26	045-0001-04	Lockwasher	2
27	040-0010-00	Screw	2
28	040-0004-09	Screw	2
29	015-0425-00	Limit Switch	1

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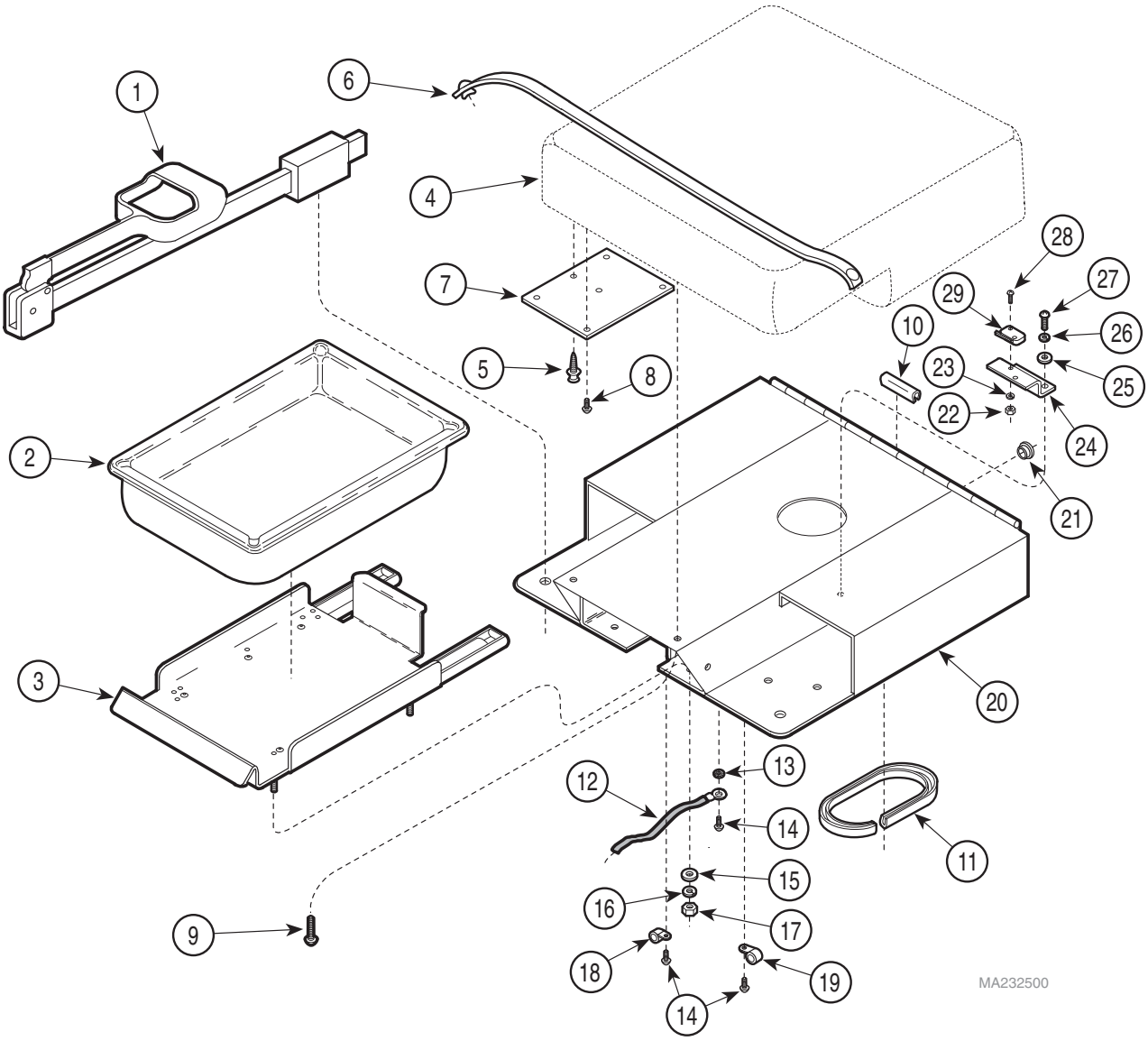
Seat Components



Used on units with Serial Number BX-1000 & CA-1000 thru BX-1512 & CA-1184

Item	Part No.	Description	Qty.
1		Stirrup Assembly (Refer to Breakdown Elsewhere)	2
2	016-0373-00	Treatment Pan	1
3	~~029-1276-00~~	Pan Slide Assembly	1
4		Upholstered Seat Section (Refer to "Upholstery Set" Elsewhere)	1
5	016-0022-00	Stud	2
6	002-0049-00	Paper Tear Strip Set (32")	1
	002-0050-00	Paper Tear Strip Set (26")	1
	002-0146-00	Paper Tear Strip Set (24")	1
7	050-3102-20	Seat Cover (Soft Touch Upholstery {Shown})	2
	050-3103-21	Seat Cover-L.H. (Narrow Upholstery)	1
	050-3103-20	Seat Cover-R.H. (Narrow Upholstery)	1
8	040-0006-00	Screw	10
9	040-0010-43	Upholstery Screw	4
10	016-0162-00	Trim Lock (Specify Length - 2")	2
11	016-0162-00	Trim Lock (Specify Length - 11")	1
12	015-0082-01	Ground Braid	1
13	040-0001-31	Lockwasher	1
14	040-0010-04	Screw	3
15	045-0001-39	Washer	4
16	045-0001-19	Lockwasher	4
17	041-0008-00	Nut	4
18	015-0001-00	Wire Clip	1
19	015-0014-00	Wire Clip	1
20	030-0653-20	Seat Weldment	1
21	053-0068-06	Snap Bushing	2
22	041-0004-00	Nut	2
23	045-0001-43	Lockwasher	2
24	050-1127-00	Switch Bracket	1
25	045-0001-15	Washer	2
26	045-0001-04	Lockwasher	2
27	040-0010-47	Screw	2
28	040-0004-09	Screw	2
29	015-0425-00	Limit Switch	1

Always Specify Model & Serial Number

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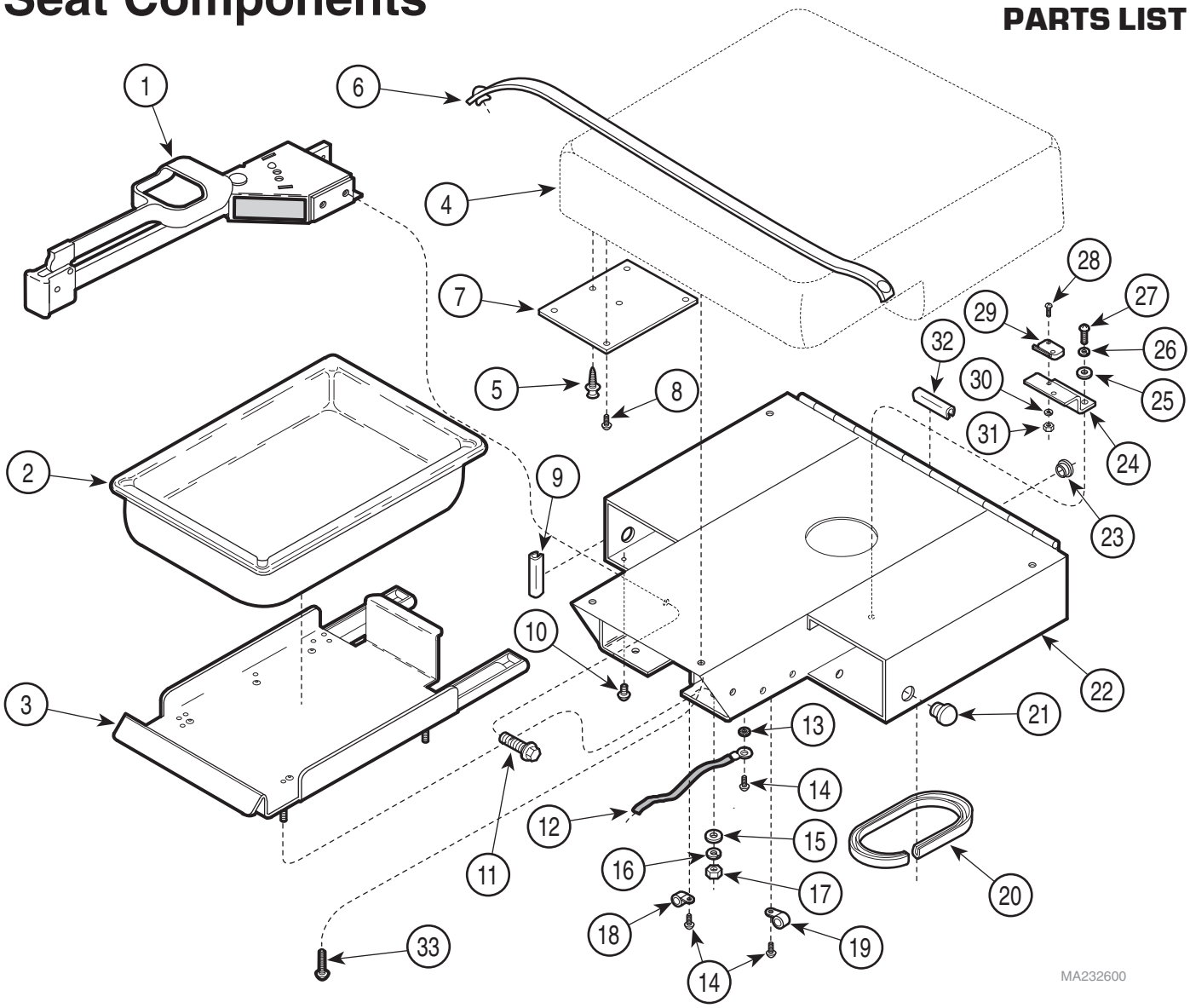
Seat Components



Used on units with Serial Number BX-1513 & CA-1185 thru Present

Item	Part No.	Description	Qty.
1		Stirrup Assembly {Includes Items 10 & 11} (Refer to Breakdown Elsewhere)	2
2	016-0373-00	Treatment Pan	1
3	~~029-1276-00~~	Pan Slide Assembly	1
4		Upholstered Seat Section (Refer to "Uphholstery Set" Elsewhere)	1
5	016-0022-00	Stud	2
6	002-0146-00	Paper Tear Strip Set (24")	1
7	050-3102-20	Seat Cover (Soft Touch Upholstery {Shown})	2
	050-3103-21	Seat Cover-L.H. (Narrow Upholstery)	1
	050-3103-20	Seat Cover-R.H. (Narrow Upholstery)	1
8	040-0006-00	Screw	10
9	016-0140-00	Trim Lock (Specify Length - 1 1/2")	2
10	040-0010-47	Screw	2
11	040-0375-00	Screw	4
12	015-0082-01	Ground Braid	1
13	040-0001-31	Lockwasher	1
14	040-0010-04	Screw	3
15	045-0001-39	Washer	4
16	045-0001-19	Lockwasher	4
17	041-0008-00	Nut	4
18	015-0001-00	Wire Clip	1
19	015-0014-00	Wire Clip	1
20	016-0162-00	Trim Lock (Specify Length - 11")	1
21	053-0050-00	Hole Plug	2
22	*(N.L.A.)*	Seat Weldment	1
23	053-0068-06	Snap Bushing	2
24	050-1127-00	Switch Bracket	1
25	045-0001-15	Washer	2
26	045-0001-04	Lockwasher	2
27	040-0010-47	Screw	2
28	040-0004-09	Screw	2
29	015-0425-00	Limit Switch	1
30	045-0001-38	Lockwasher	2
31	041-0004-01	Nut	2
32	016-0162-00	Trim Lock (Specify Length - 2")	2
33	040-0010-43	Upholstery Screw	4

N.L.A. Denotes "No Longer Available"
Always Specify Model & Serial Number

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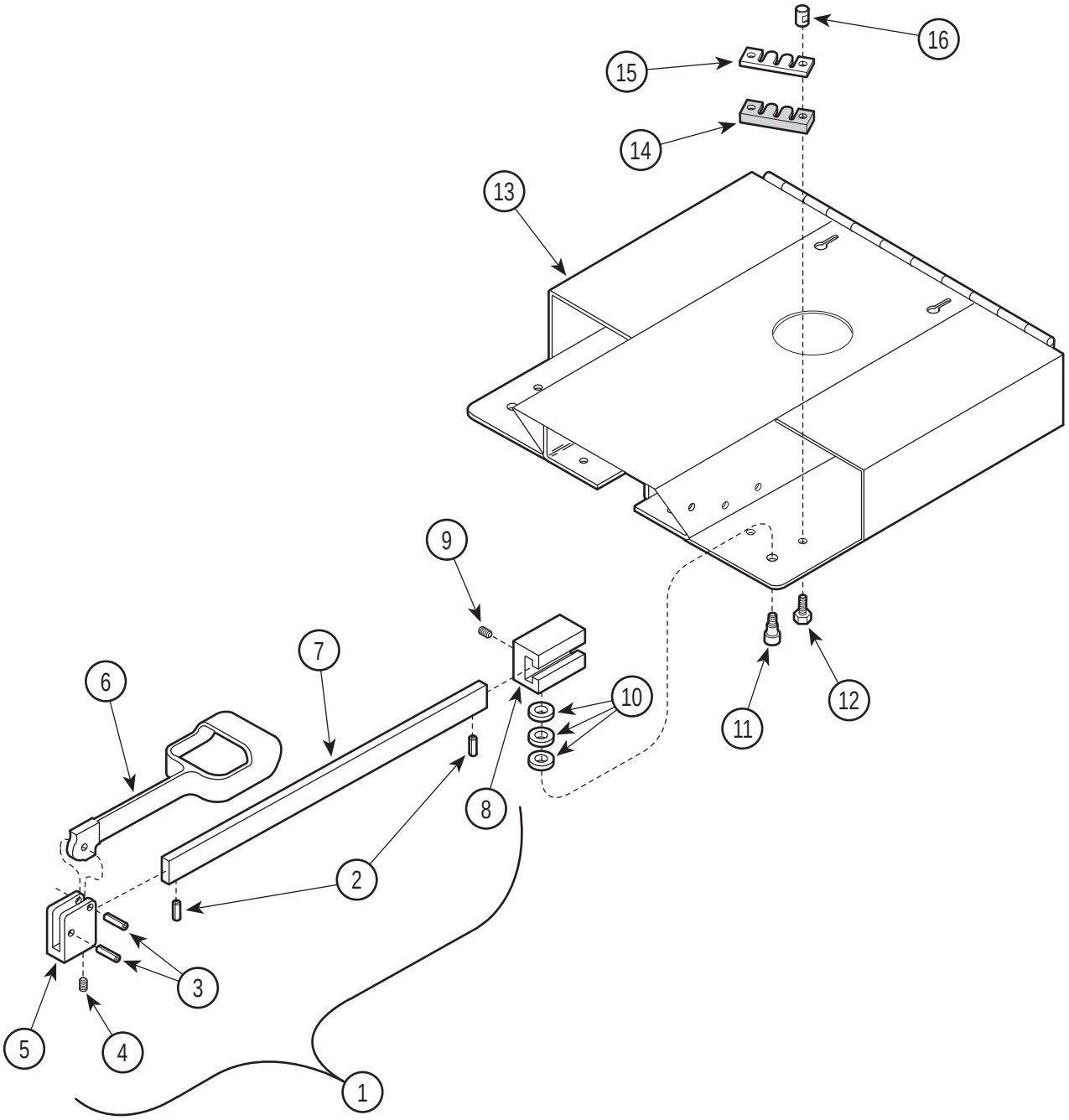
Stirrup Assembly



MA2270

Used on units with Serial Number K-1000 thru Present, BX-1000 thru BX-1512 & CA-1000 THRU CA-1184

Item	Part No.	Description	Qty.
1	~~029-0115-00~~	(No Longer Available) {Not Shown} (Includes Items 1 thru 8)	1
	~~029-0115-01~~	(No Longer Available) {Shown} (Includes Items 1 thru 8)	1
2	• 042-0001-02	• Roll Pin	2
3	• 042-0001-00	• Roll Pin	2
4	• 040-0250-15	• Set Screw	1
5	• 020-0012-00	• Pivot Block	1
6	• 020-0001-01	• Stirrup	1
7	• 051-0005-00	• Horizontal Bar (Plated)	1
8	• 051-0113-00	• Pivot Block	1
9	040-0010-14	Set Screw	2
10	025-0013-00	Spring Washer	6
11	042-0014-00	Shoulder Bolt	2
12	040-0312-03	Screw	4
13		Seat Weldment (Refer to "Seat Components" Elsewhere)	Ref
14	053-0027-01	Gear Lock Pad	2
15	050-0006-00	Gear Lock	2
16	057-0049-00	Stirrup Stop	4

Always Specify Model & Serial Number

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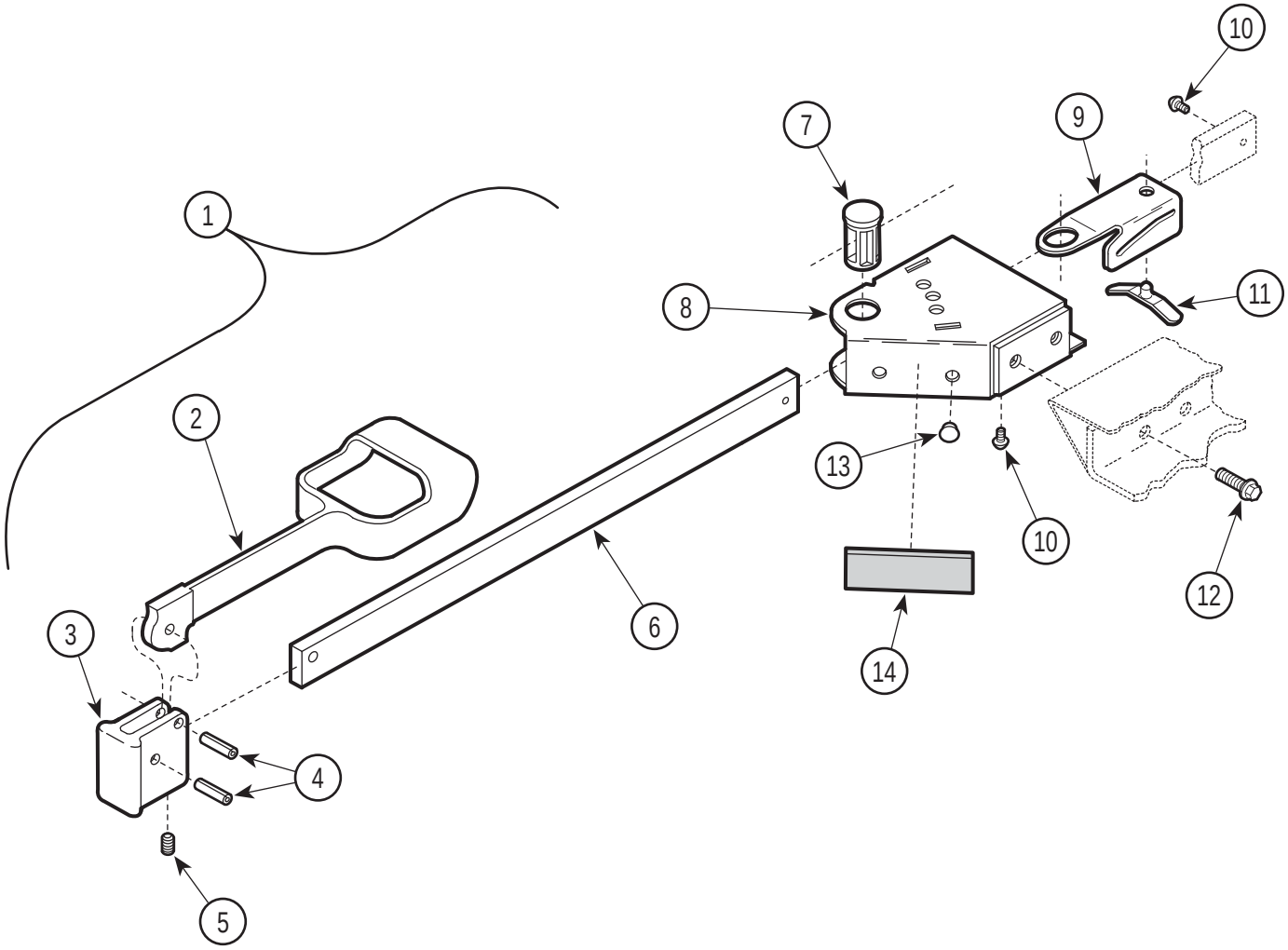
Stirrup Assembly



MA223700

This assembly is no longer available.
It has been replaced by 002-0719-00.
Note: This kit contains two complete stirrup assemblies.

Used on units with Serial Number BX-1513 thru BX-1821 & CA-1185 thru CA-1226

Item	Part No.	Description	Qty.
	029-1285-00	R.H. Stirrup Assembly {Shown} (Includes Items 1 thru 12)	1
	029-1285-01	L.H. Stirrup Assembly {Not Shown} (Includes Items 1 thru 13)	1
1	• 029-1277-00	• Stirrup Assembly (Includes Items 2 thru 6)	1
2	• • 020-0181-00	• • Stirrup	1
3	• • 020-0182-00	• • Pivot Block	1
4	• • 042-0001-00	• • Roll Pin	2
5	• • 040-0250-15	• • Set Screw	1
6	• • 051-0634-00	• • Horizontal Stirrup Bar (Chrome)	1
7	• 053-0387-00	• Pivot Boss	1
8	• 030-0736-20	• R.H. Stirrup Mount Weldment (Shown)	1
	• 030-0737-20	• L.H. Stirrup Mount Weldment (Not Shown)	
9	• 050-1785-02	• Stirrup Guide Bracket	1
10	• 040-0010-47	• Screw	2
11	• 016-0400-00	• Stirrup Index Spring	1
12	• 040-0375-00	• Screw	2
13	• 053-0050-05	• Hole Plug (Used on R.H. Stirrup Mount Weldments Only)	2
14	061-0279-00	Stirrup Instruction Label (Used on L.H. Stirrup Mount Weldments Only)	1

Always Specify Model & Serial Number

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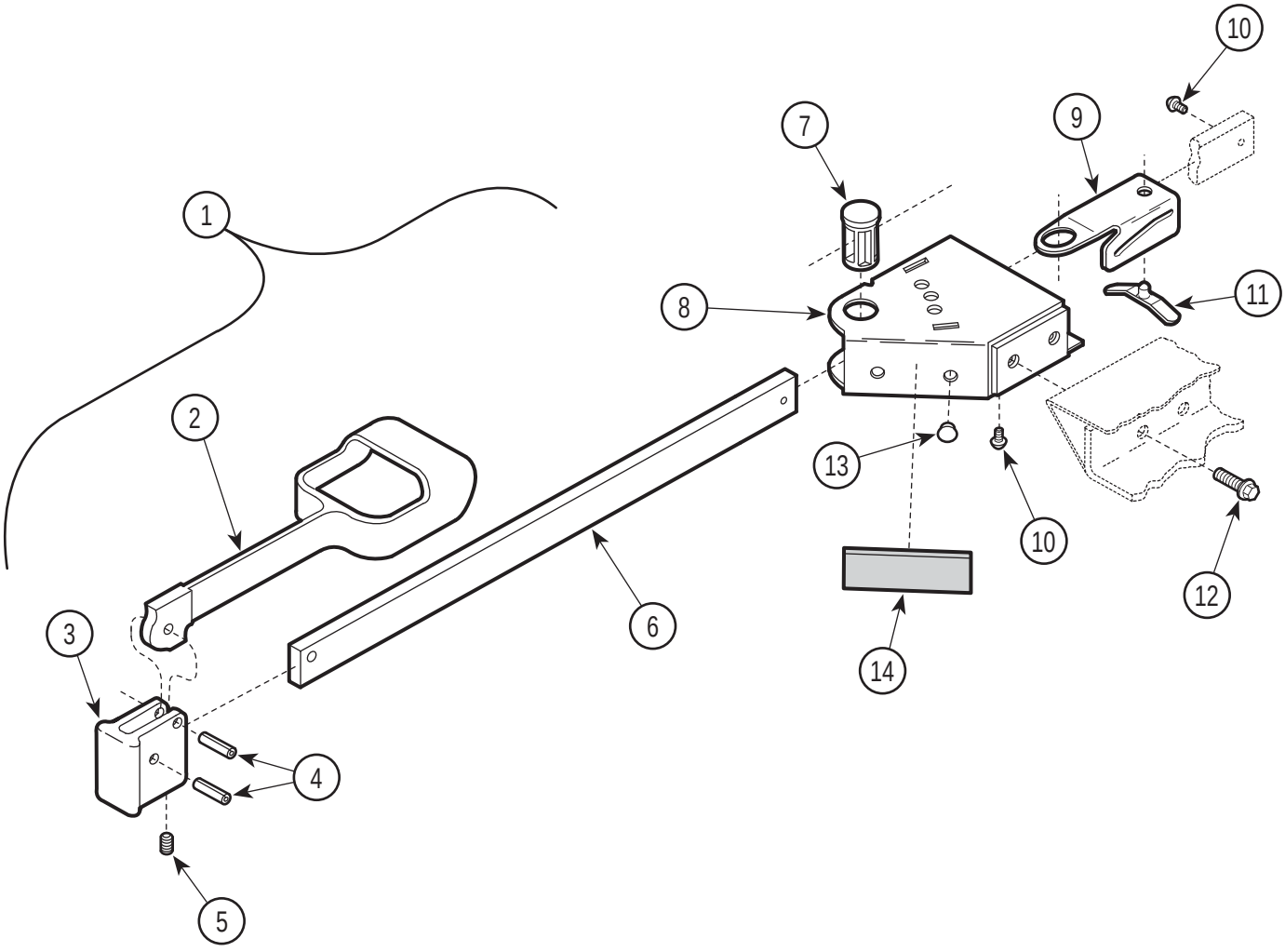
Stirrup Assembly



This assembly is no longer available.
It has been replaced by 002-0719-00.
Note: This kit contains two complete stirrup assemblies.

MA223700

Used on units with Serial Numbers BX-1822 & CA-1227 thru Present

Item	Part No.	Description	Qty.
	(N.L.A.)	R.H. Stirrup Assembly {Shown} (Includes Items 1 thru 13)	1
	(N.L.A.)	L.H. Stirrup Assembly {Not Shown} (Includes Items 1 thru 13)	1
1	• 029-1397-00	• Stirrup Assembly (Includes Items 2 thru 6)	1
2	• • 020-0181-00	• • Coated Stirrup	1
3	• • 020-0182-00	• • Pivot Block	1
4	• • 042-0001-00	• • Roll Pin	2
5	• • 040-0250-15	• • Set Screw	1
6	• • 051-0668-00	• • Horizontal Stirrup Bar (Black)	1
7	• 053-0387-00	• Pivot Boss	1
8	• 030-0736-20	• R.H. Stirrup Mount Weldment (Shown)	1
	• 030-0737-20	• L.H. Stirrup Mount Weldment (Not Shown)	1
9	• 050-5027-00	• Stirrup Guide Bracket	1
10	• 040-0010-47	• Screw	2
11	• 016-0400-00	• Stirrup Index Spring	1
12	• 040-0375-00	• Screw	2
13	• 053-0050-05	• Hole Plug ([1] Used on R.H. Stirrup Mount Weldment, [2] Used on R.H. Stirrup Mount Weldment	3
14	061-0279-00	Stirrup Instruction Label (Used on L.H. Stirrup Mount Weldments Only)	1

(N.L.A.) Denotes "No Longer Available"
Always Specify Model & Serial Number

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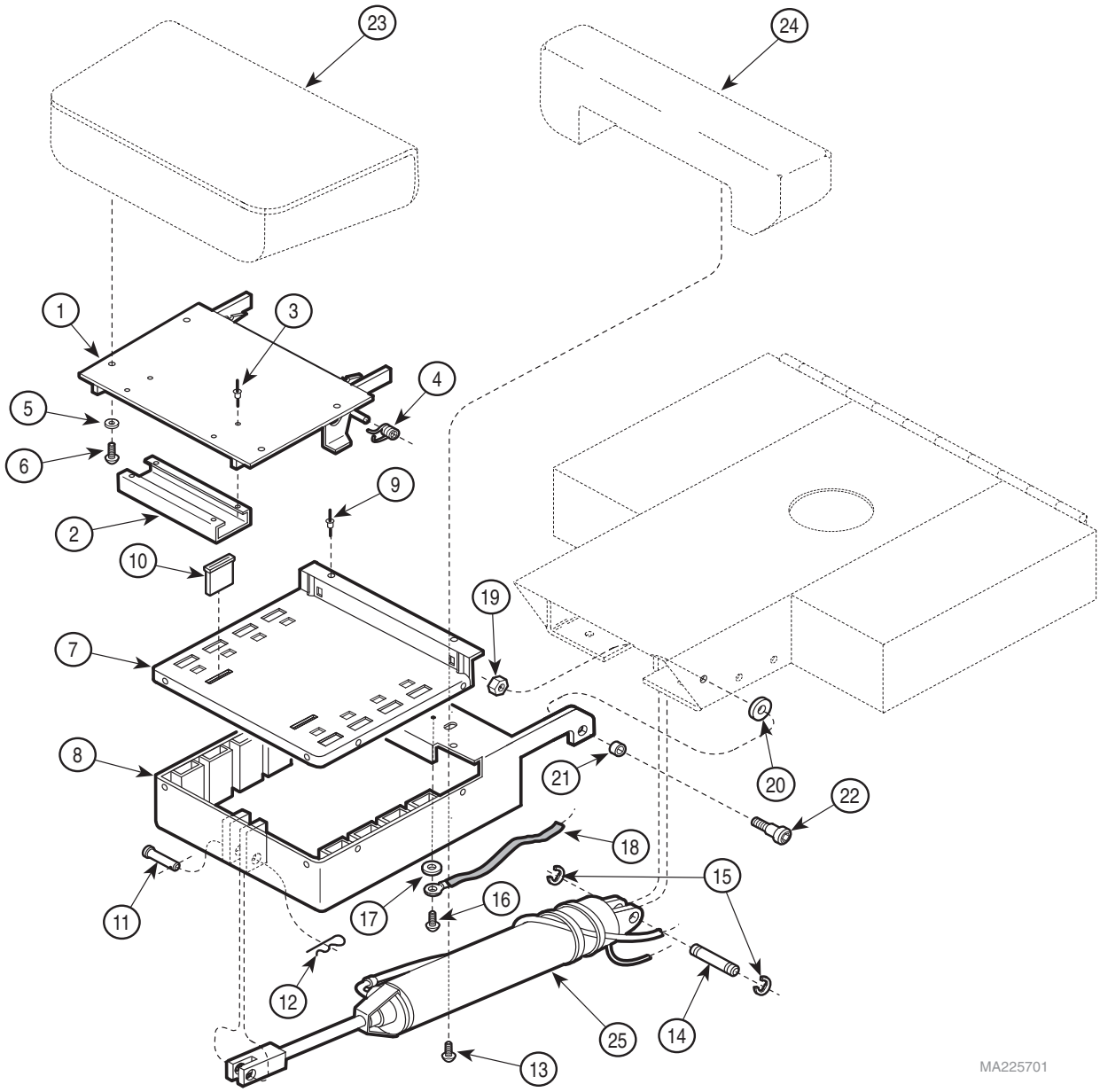
Footboard Components

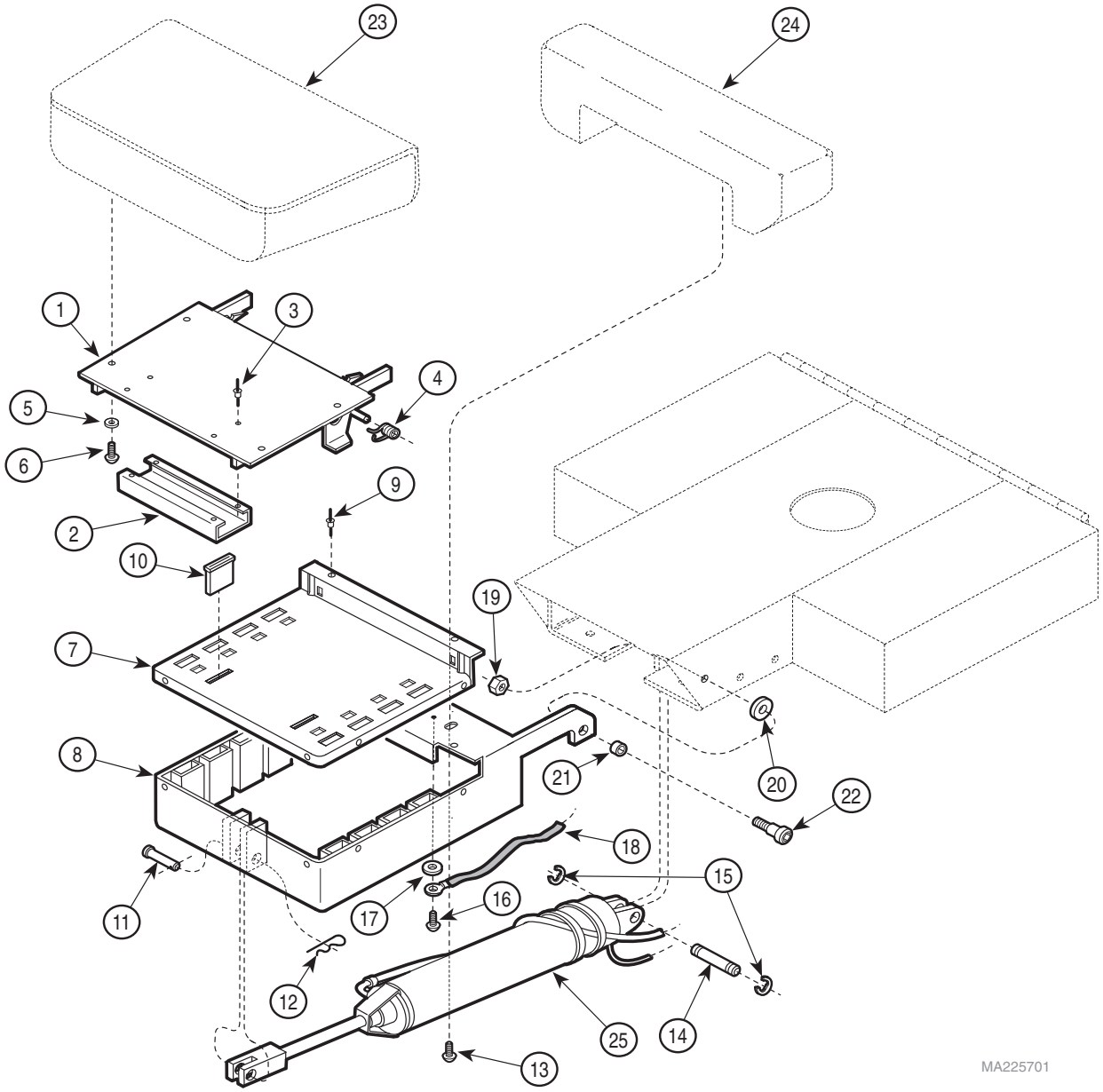


Used on units with Serial Number K-1000 thru Present

Item	Part No.	Description	Qty.
1	030-1113-xx	Footboard Weldment (Specify Color)	1
2	050-0868-00	Catch Channel	1
3	042-0010-02	Pop Rivet	4
4	~~025-0014-01~~	L.H. Spring (Not Shown)	1
	~~025-0014-00~~	R.H. Spring (Shown)	1
5	045-0001-03	Washer	4
6	040-0250-44	Screw	4
7	050-0871-00	Foot Trim	1
8	030-0284-00	Foot Extension Weldment	1
9	042-0010-04	Pop Rivet	8
10	016-0092-00	Magnet	2
11	042-0005-03	Clevis Pin	1
12	042-0004-00	Pin Clip	1
13	040-0010-01	Screw	2
14	042-0006-01	Clevis Pin	1
15	042-0007-00	E-Ring	2
16	040-0010-04	Screw	1
17	045-0001-31	Lockwasher	1
18	015-0082-01	Ground Braid	1
19	041-0375-05	Jam Nut	2
20	045-0004-00	Washer	2
21	016-0076-00	Bushing	2
22	042-0014-00	Shoulder Screw	2
23		Upholstered Foot Rest (Refer to "Upholstery Set" Elsewhere)	Ref
24		Upholstered Leg Rest (Refer to "Upholstery Set" Elsewhere)	Ref
25		Foot Cylinder (Refer to "Hydraulic System" Elsewhere)	Ref

Always Specify Model & Serial Number

Footboard Components



Used on units with Serial Number BX-1000, CA-1000 thru Present

Item	Part No.	Description	Qty.
1	030-1113-20	Footboard Weldment	1
2	050-0868-00	Catch Channel	1
3	042-0010-02	Pop Rivet	4
4	~~025-0014-01~~	L.H. Spring (Not Shown)	1
	~~025-0014-00~~	R.H. Spring (Shown)	1
5	045-0001-03	Washer	4
6	040-0010-43	Screw	4
7	050-0871-00	Foot Trim	1
8	030-0284-20	Foot Extension Weldment	1
9	042-0010-04	Pop Rivet	8
10	016-0092-00	Magnet	2
11	042-0005-03	Clevis Pin	1
12	042-0004-00	Pin Clip	1
13	040-0010-43	Screw	2
14	042-0006-01	Clevis Pin	1
15	042-0007-00	E-Ring	2
16	040-0010-04	Screw	1
17	045-0001-31	Lockwasher	1
18	015-0082-01	Ground Braid	1
19	041-0375-05	Jam Nut	2
20	045-0004-00	Washer	2
21	016-0076-00	Bushing	2
22	042-0014-00	Shoulder Screw	2
23		Upholstered Foot Rest (Refer to "Upholstery Set" Elsewhere)	Ref
24		Upholstered Leg Rest (Refer to "Upholstery Set" Elsewhere)	Ref
25		Foot Cylinder (Refer to "Hydraulic System" Elsewhere)	Ref

Always Specify Model & Serial Number

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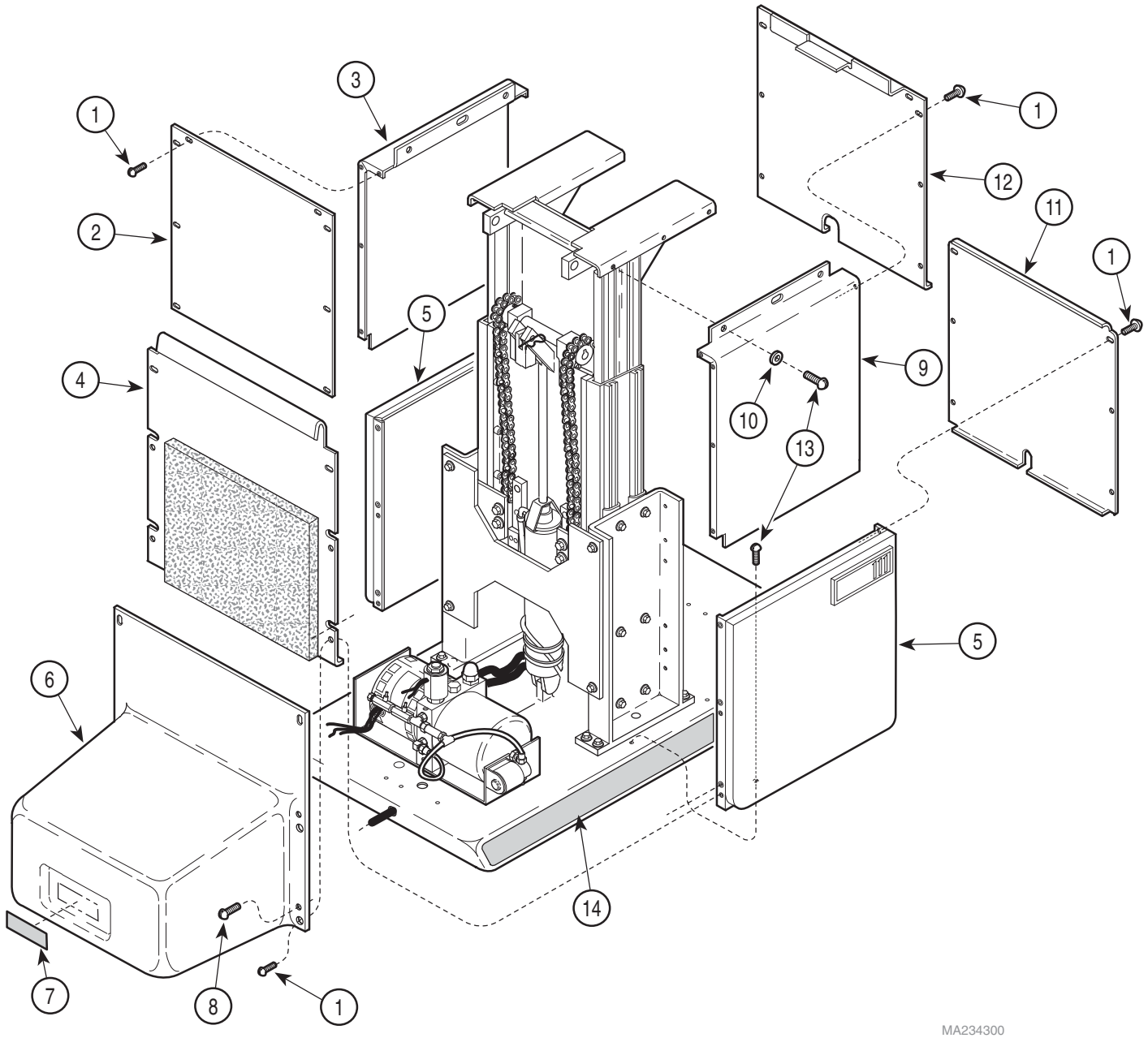
Base Covers And Enclosures

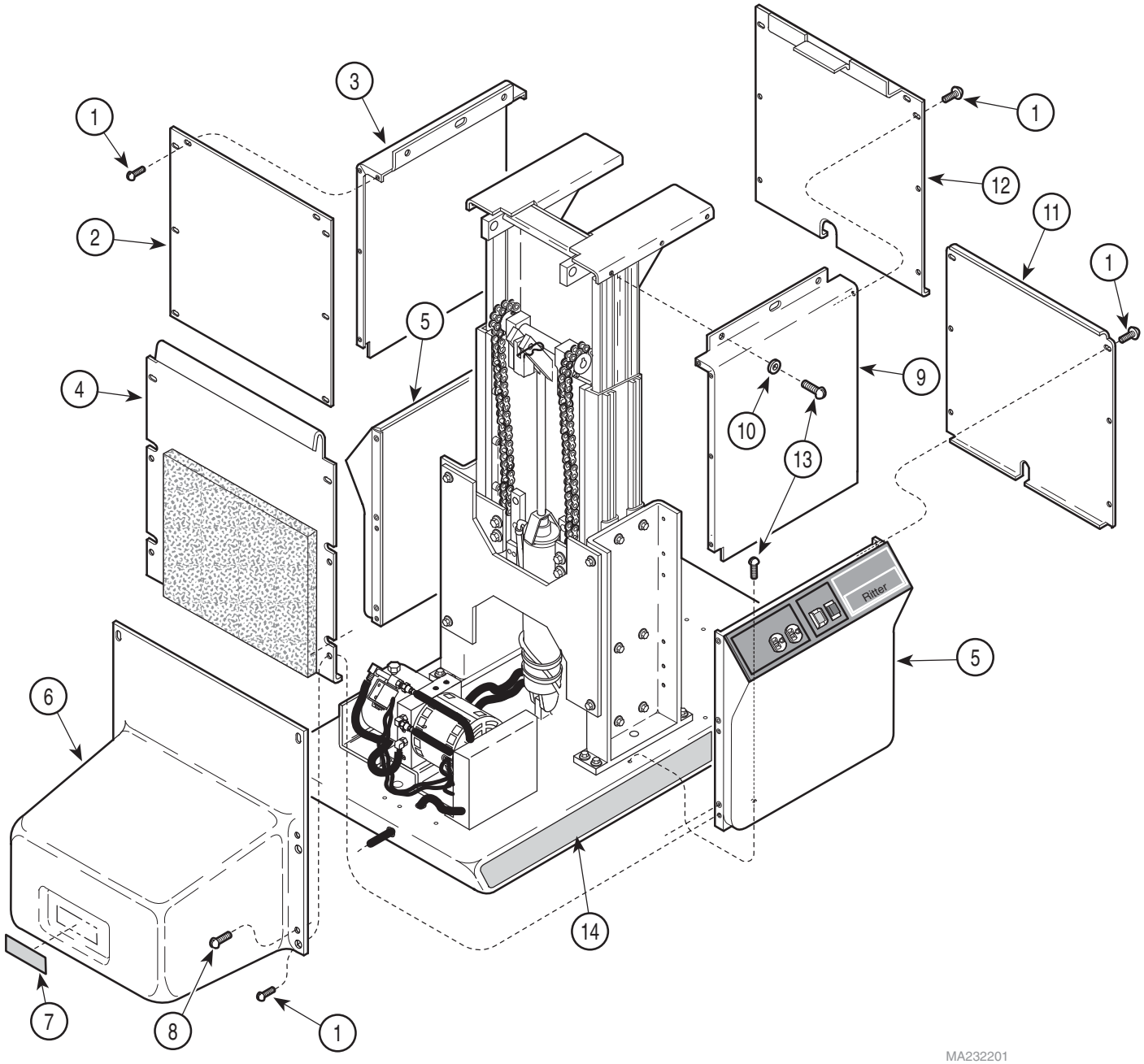


Used on units with Serial Numbers Prior to K-3770

Item	Part No.	Description	Qty.
1	040-0008-29	Screw	24
2	050-0362-00	Back Inner Shroud	1
3	050-0947-01	L.H. Inner Shroud (Less Nutserts)	1
	• 042-0045-02	• Nutsert	8
4	~~029-0355-00~~	Back Outer Shroud Assembly	1
5		Side Panel Assembly (See Breakdown Elsewhere)	2
6	029-0354-00	Motor Cover Assembly (Domestic Units Only)	1
	029-0357-00	Motor Cover Assy. (Export Units Only)	1
7	061-0033-00	Caution Label (Domestic Units Only)	1
8	040-0010-34	Screw	6
9	050-0947-00	R.H. Inner Shroud (Less Nutsert)	1
	• 042-0045-02	• Nutsert	8
10	045-0001-15	Washer	6
11	050-0948-00	Front Outer Shroud	1
12	050-0463-00	Front Inner Shroud	1
13	040-0010-47	Screw	12
14	053-0079-00	Scuff Plate	2

Always Specify Model & Serial Number

Base Covers And Enclosures

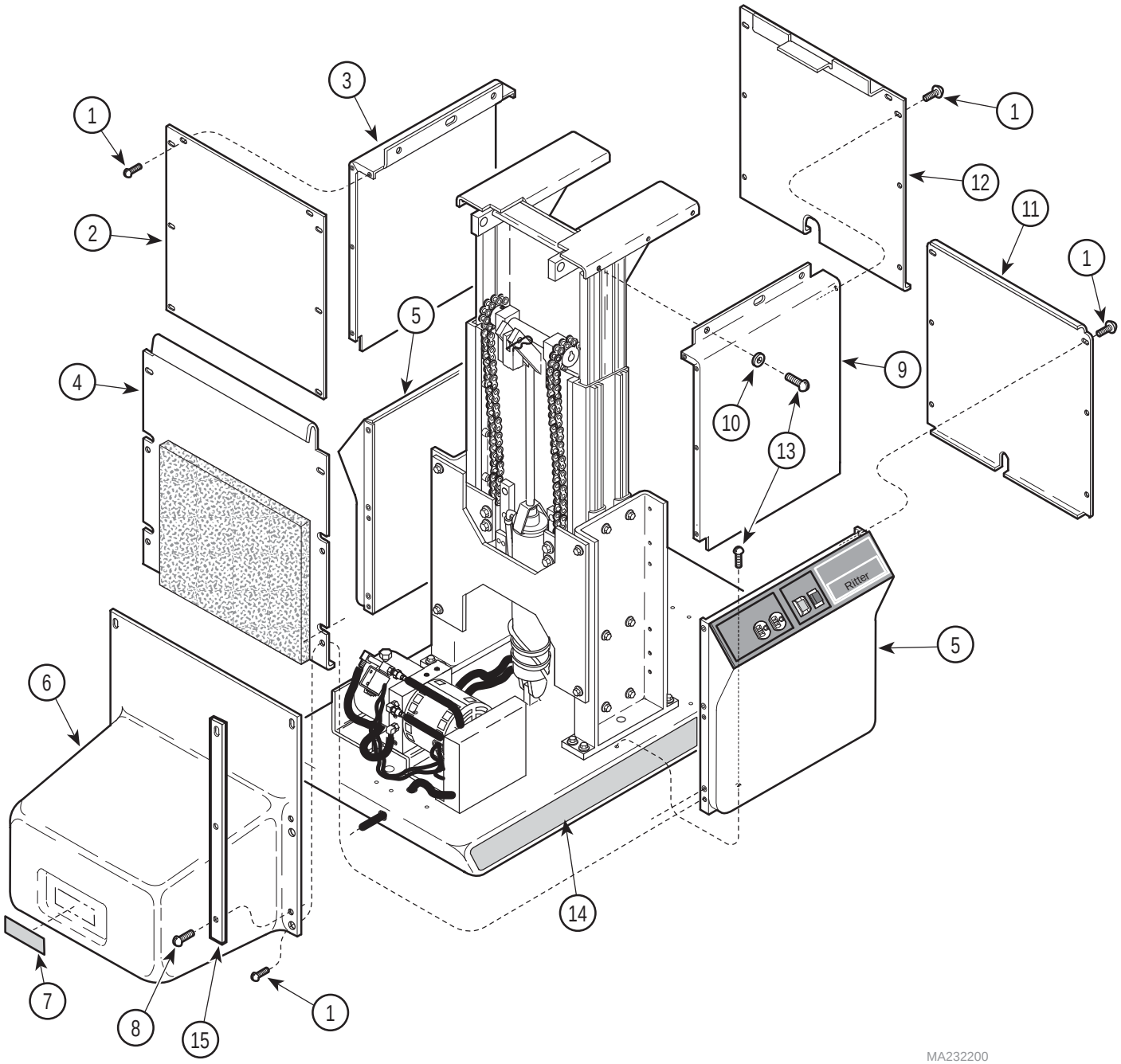


Used on units with Serial Number K-3770 thru Present

Item	Part No.	Description	Qty.
1	040-0008-29	Screw	24
2	050-0362-00	Back Inner Shroud	1
3	050-0947-01	L.H. Inner Shroud (Less Nutserts)	1
	• 042-0045-02	• Nutsert	8
4	~~029-0355-00~~	Back Outer Shroud Assembly	1
5		Side Panel Assembly (See Breakdown Elsewhere)	2
6	029-0354-00	Motor Cover Assembly (Domestic Units Only)	1
	029-0357-00	Motor Cover Assy. (Export Units Only)	1
7	061-0033-00	Caution Label (Domestic Units Only)	1
8	040-0010-34	Screw	6
9	050-0947-00	R.H. Inner Shroud (Less Nutsert)	1
	• 042-0045-02	• Nutsert	8
10	045-0001-15	Washer	6
11	050-0948-00	Front Outer Shroud	1
12	050-0463-00	Front Inner Shroud	1
13	040-0010-47	Screw	12
14	053-0079-00	Scuff Plate	2

Always Specify Model & Serial Number

Base Covers And Enclosures



Used on units with Serial Number BX-1000 & CA-1000 thru Present

Item	Part No.	Description	Qty.
1	040-0008-29	Screw	24
2	050-0362-20	Back Inner Shroud	1
3	050-0947-21	L.H. Inner Shroud (Less Nutserts)	1
	• 042-0045-02	• Nutsert	8
4	029-0355-01	Back Outer Shroud Assembly	1
5		Side Panel Assembly (See Breakdown Elsewhere)	2
6	029-0354-01	Motor Cover Assembly (Domestic Units Only)	1
	029-0357-01	Motor Cover Assy. (Export Units Only)	1
7	061-0033-00	Caution Label (Domestic Units Only)	1
8	040-0010-34	Screw (Domestic Units Only)	6
	040-0010-129	Screw (Export Units Only)	6
9	050-0947-20	R.H. Inner Shroud (Less Nutsert)	1
	• 042-0045-02	• Nutsert	8
10	045-0001-15	Washer	6
11	050-0948-20	Front Outer Shroud	1
12	050-0463-20	Front Inner Shroud	1
13	040-0010-47	Screw	12
14	053-0079-00	Scuff Plate (Earlier Units Only)	2
15	051-0796-20	Motor Cover Strap (Export Units Only)	2

Always Specify Model & Serial Number

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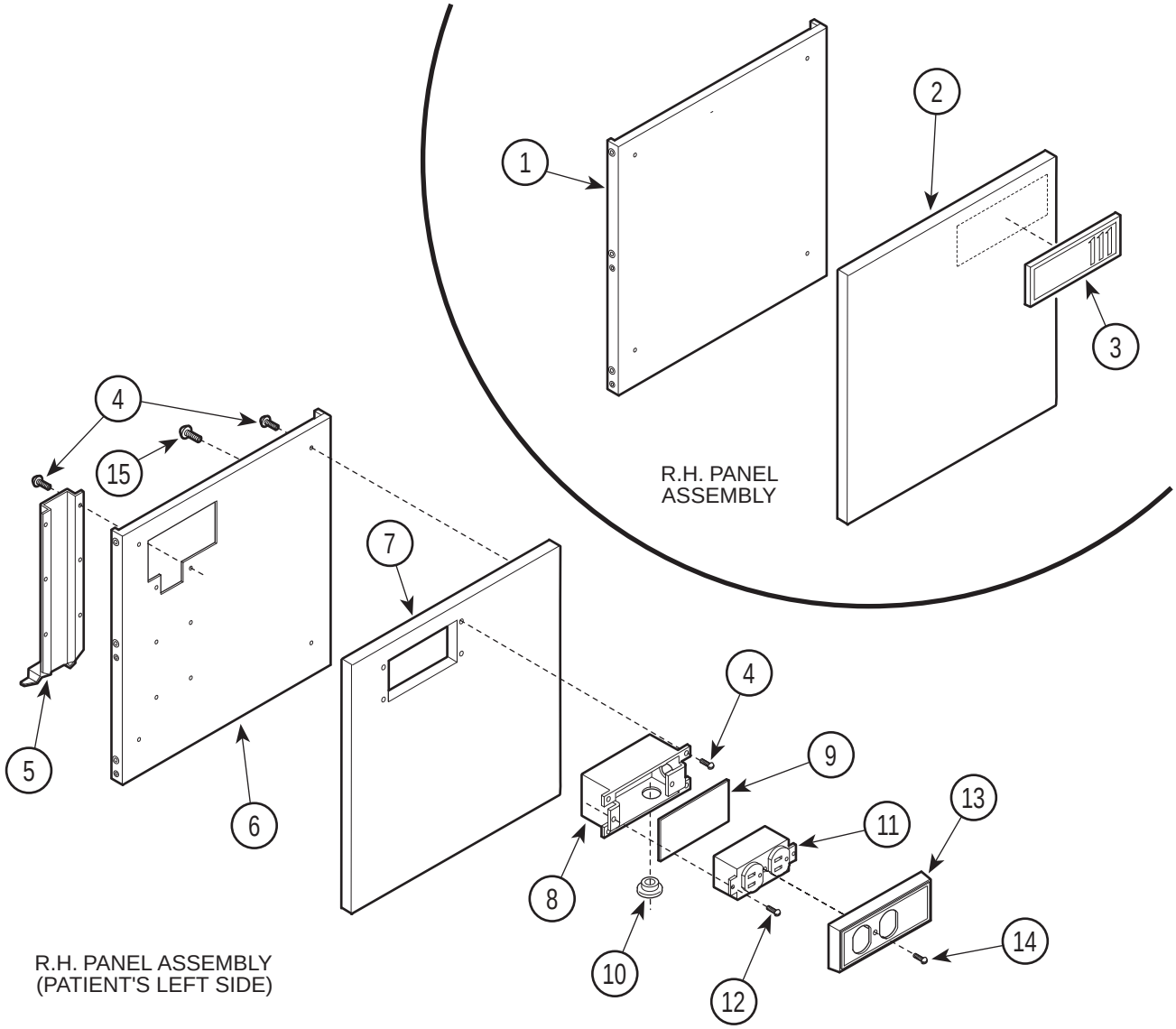
Panel Assembly



Used on units with Serial Numbers Prior to K-3770

Item	Part No.	Description	Qty.
1	050-0441-01	Outer Shroud, L.H. Side	1
2	055-21xx-01	Table Panel, L.H. (Specify Color)	1
3	061-0061-04	Nameplate-111	1
4	040-0006-00	Screw	14
5	050-0465-00	Wire Channel	1
6	050-0441-00	Outer Shroud, R.H. Side	1
7	055-29xx-01	Table Panel, R.H. (Specify Color)	1
8	050-0561-01	Receptacle Holder	1
9	053-0092-00	Insulator, Fishpaper	1
10	053-0068-00	Snap Bushing	1
11	015-0083-00	Duplex Receptacle	1
12	040-0006-13	Screw	2
13	053-0134-00	Receptacle Cover	1
14	040-0006-23	Screw	1
15	040-0010-45	Screw	1

Always Specify Model & Serial Number

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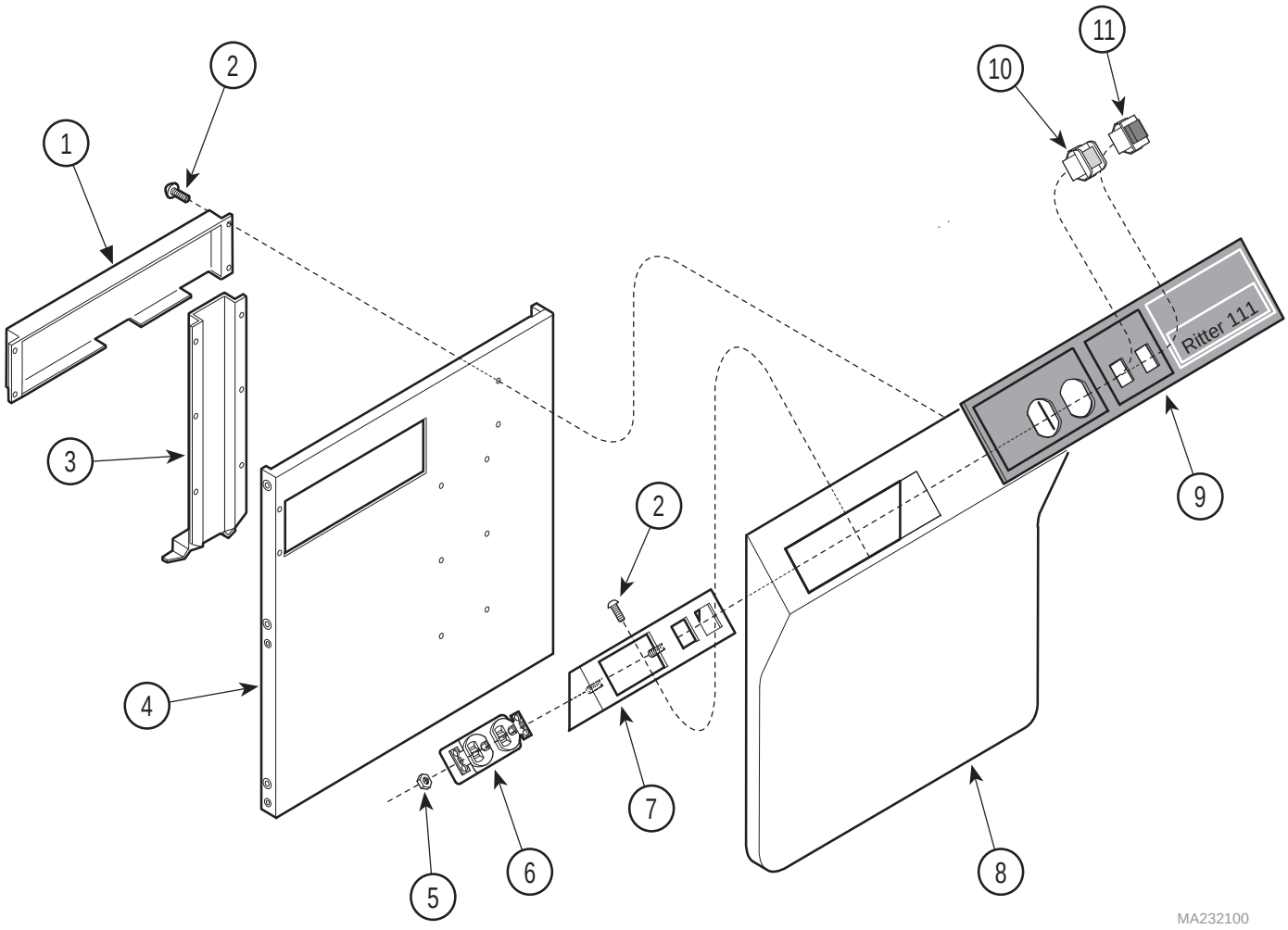
Panel Assembly



Used on units with Serial Number K-3770 thru Present

Item	Part No.	Description	Qty.
	029-0374-00	L.H. Panel Assembly (Not Shown) (Includes Items 1 thru 11)	1
	029-0375-00	R.H. Panel Assembly (Shown) (Includes Items 1 thru 11)	1
1	050-0944-00	Backplate	1
2	040-0006-00	Screw	16
3	050-0951-00	Wire Channel	1
4	050-0950-00	Outer Shroud, L.H. (Less Nutserts)	1
	• 042-0045-01	• Nutsert	3
	• 042-0045-02	• Nutsert	4
	050-0949-00	Outer Shroud, R.H. (Less Nutserts)	1
	• 042-0045-01	• Nutsert	3
	• 042-0045-02	• Nutsert	4
5	041-0008-02	Locknut	2
6	015-0083-00	Receptacle	1
7	030-0320-00	Receptacle Enclosure	1
8	055-51XX-00	Side Panel (Specify Color)	1
9	061-0200-00	Nameplate	1
10	015-0424-00	Auto Return Switch	1
11	015-0376-00	Stop Switch	1

Always Specify Model & Serial Number

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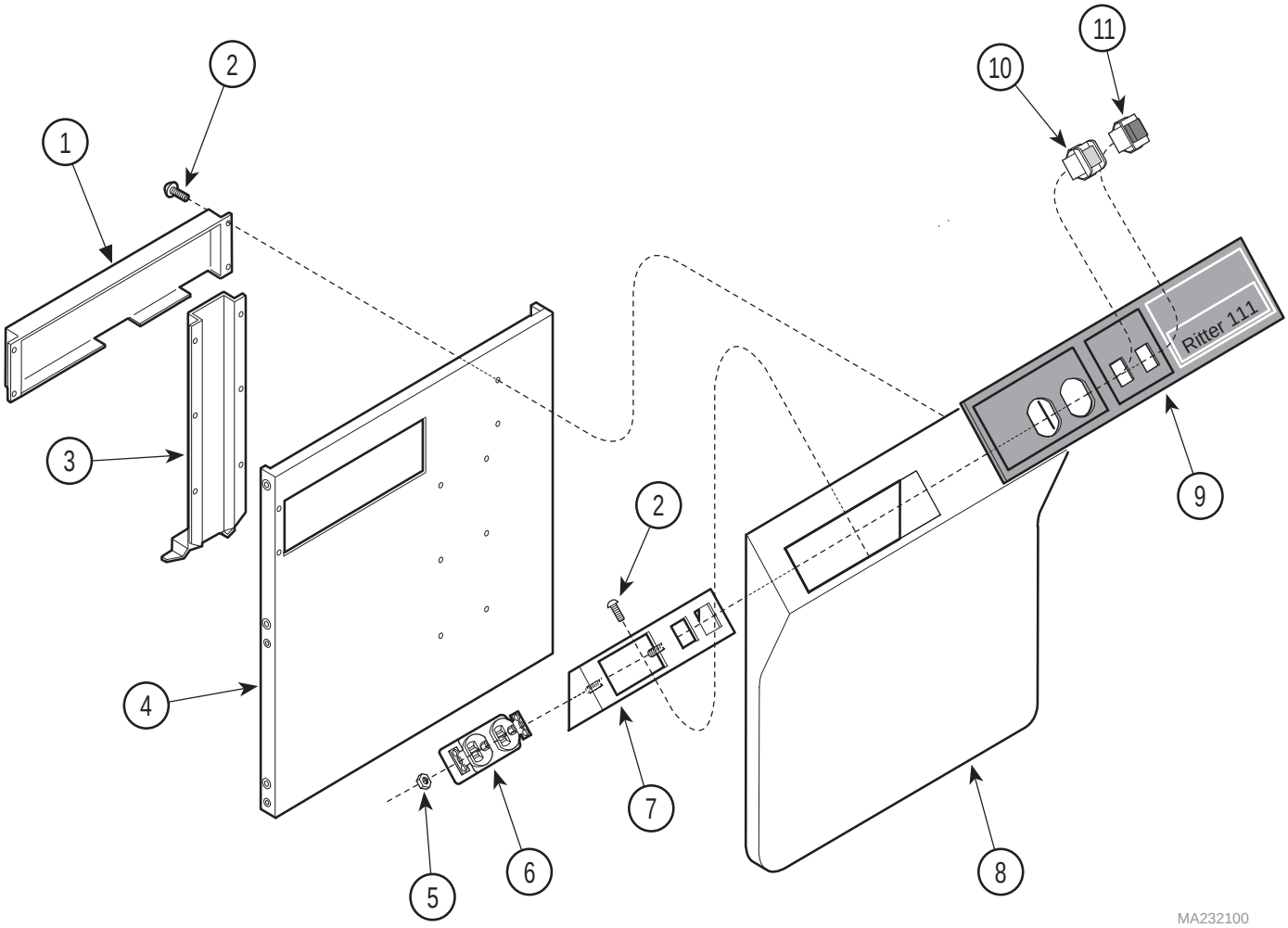
Panel Assembly



Used on units with Serial Number BX-1000 & CA-1000 thru Present

Item	Part No.	Description	Qty.
	029-1214-00	L.H. Panel Assembly (Not Shown) (Includes Items 1 thru 11)	1
	029-1213-00	R.H. Panel Assembly (Shown) (Includes Items 1 thru 11)	1
1	050-0944-20	Backplate	1
2	040-0006-00	Screw	16
3	050-0951-20	Wire Channel	1
4	050-0950-20	Outer Shroud, L.H. (Less Nutserts)	1
	• 042-0045-01	• Nutsert	3
	• 042-0045-02	• Nutsert	4
	050-0949-20	Outer Shroud, R.H. (Less Nutserts)	1
	• 042-0045-01	• Nutsert	3
	• 042-0045-02	• Nutsert	4
5	041-0008-02	Locknut	2
6	015-0083-01	Receptacle	1
7	030-0320-20	Receptacle Enclosure	1
8	055-51XX-00	Side Panel (Specify Color)	1
9	061-0638-00	Nameplate	1
10	015-0424-00	Auto Return Switch	1
11	015-0376-00	Stop Switch	1

Always Specify Model & Serial Number

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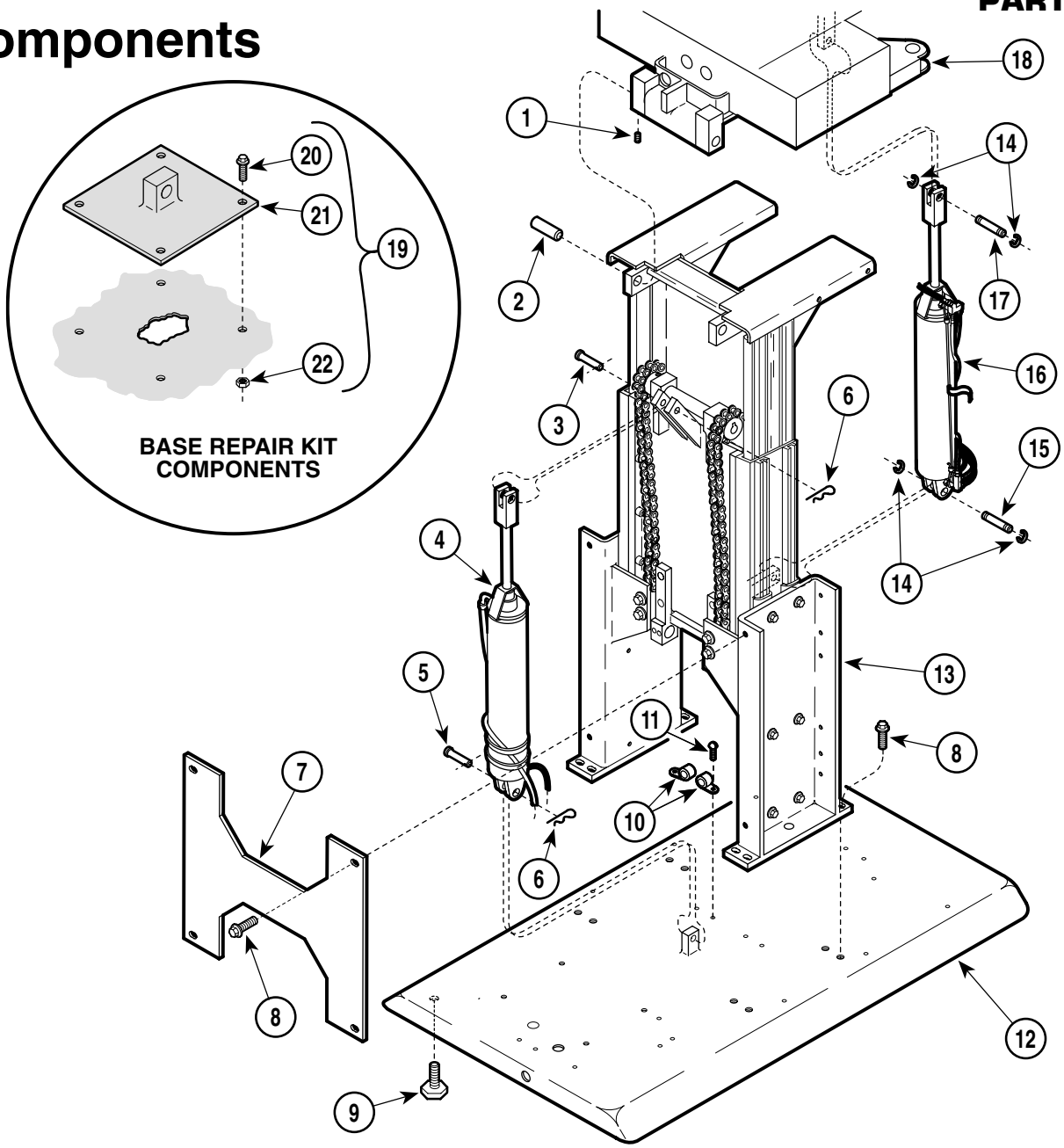
Base Mechanical Components



MA224201

Used on units with Serial Number K-1000 thru Present

Item	Part No.	Description	Qty.
1	040-0250-04	Set Screw	4
2	057-0027-00	Tilt Pivot Pin	2
3	042-0005-03	Clevis Pin	1
4		Base Cylinder (Refer to "Hydraulic System" Elsewhere)	Ref
5	042-0005-01	Clevis Pin	1
6	042-0004-00	Hitch Pin Clip	2
7	050-1475-00	Brace	1
8	040-0375-00	Screw	12
9	016-0001-00	Leveling Screw	4
10	015-0001-00	Wire Clip	2
11	040-0010-04	Screw	2
12	030-0602-00	Base Weldment (Less Nutserts)	1
	• 042-0045-01	• Nutsert	2
13		Base Slide Assembly (Refer to Breakdown Elsewhere)	Ref
14	042-0007-00	E-Ring	4
15	042-0006-01	Clevis Pin	1
16		Tilt Cylinder Assembly (Refer to "Hydraulic System" Elsewhere)	Ref
17	042-0006-00	Clevis Pin	1
18		Seat Weldment (Refer to "Seat Components" Elsewhere)	Ref
19	002-0514-00	Base Repair Kit (Includes Items 20 thru 22 {Not used with Rotational Bases})	1
20	• 040-0250-89	• Screw	4
21	• 030-1010-00	• Base Cylinder Mount Weldment	1
22	• 041-0250-13	• Nut	4

Always Specify Model & Serial Number

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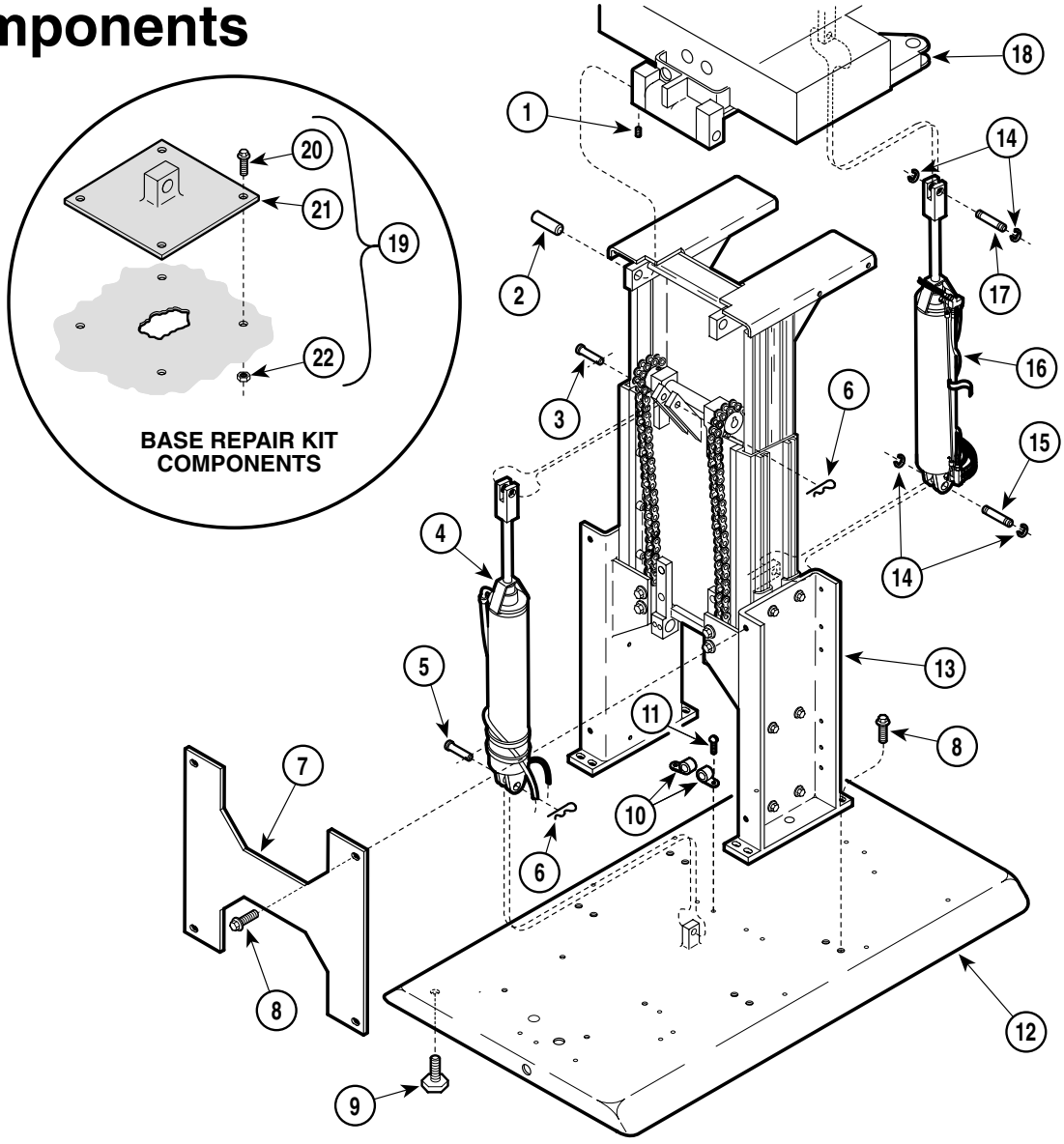
Base Mechanical Components



MA224201

Used on units with Serial Number BX-1000 & CA-1000 thru Present

Item	Part No.	Description	Qty.
1	040-0250-04	Set Screw	4
2	057-0027-00	Tilt Pivot Pin	2
3	042-0005-03	Clevis Pin	1
4		Base Cylinder (Refer to "Hydraulic System" Elsewhere)	Ref
5	042-0005-01	Clevis Pin	1
6	042-0004-00	Hitch Pin Clip	2
7	050-1475-20	Brace	1
8	040-0375-00	Screw	12
9	016-0001-00	Leveling Screw	4
10	015-0001-00	Wire Clip	2
11	040-0010-04	Screw	2
12	030-1057-00	Stationary Base Weldment -Standard (Less Nutserts)	1
	• 042-0045-01 (*)	• Nutsert	2
		Rotational Base Assembly -Optional (Refer to "Rotational Base Assembly" Elsewhere)	Ref
13		Base Slide Assembly (Refer to Breakdown Elsewhere)	Ref
14	042-0007-00	E-Ring	4
15	042-0006-01	Clevis Pin	1
16		Tilt Cylinder Assembly (Refer to "Hydraulic System" Elsewhere)	Ref
17	042-0006-00	Clevis Pin	1
18		Seat Weldment (Refer to "Seat Components" Elsewhere)	Ref
19	002-0514-00	Base Repair Kit (Includes Items 20 thru 22 {Not used with Rotational Bases})	1
20	• 040-0250-89	• Screw	4
21	• 030-1010-00	• Base Cylinder Mount Weldment	1
22	• 041-0250-13	• Nut	4

Always Specify Model & Serial Number

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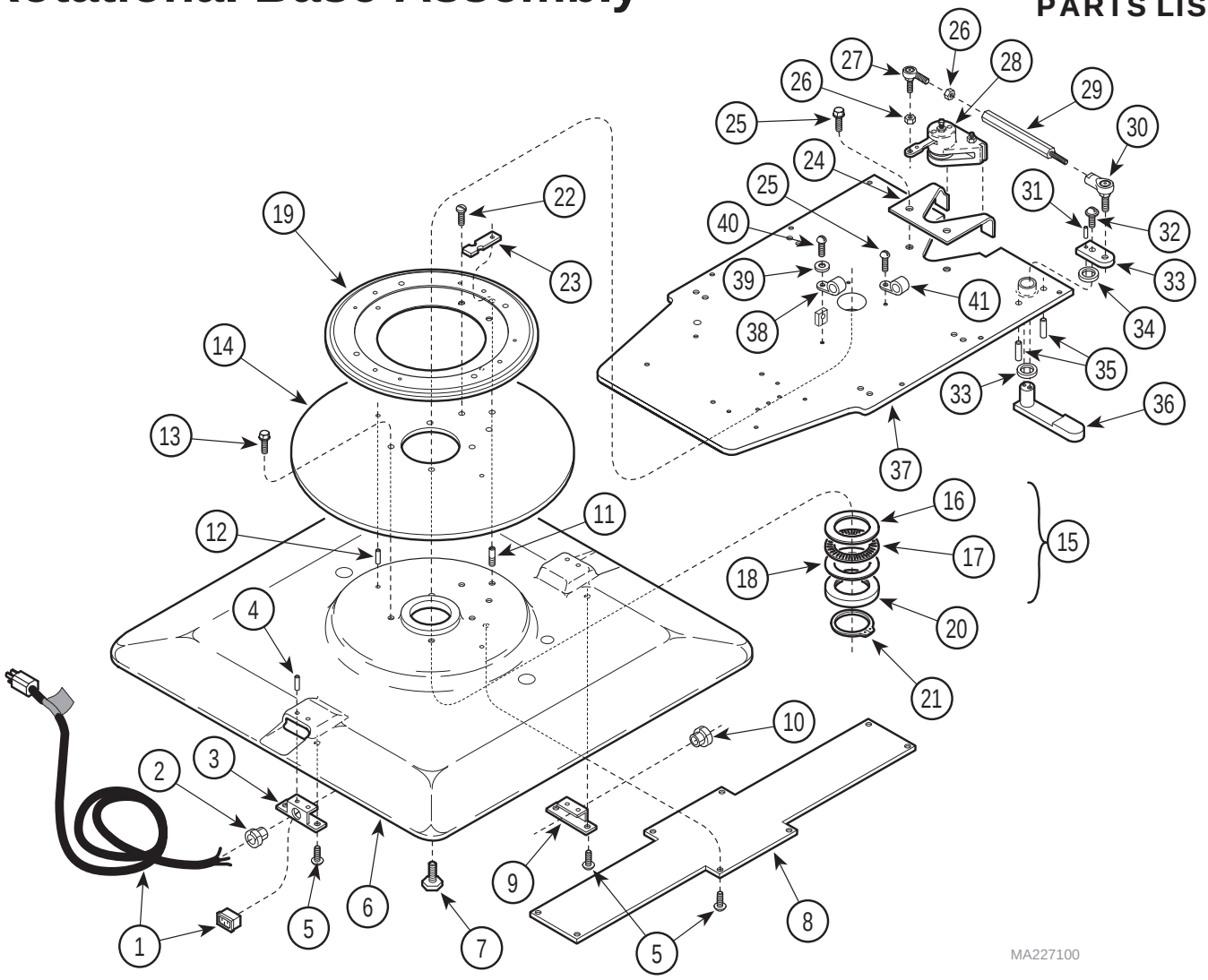
Rotational Base Assembly



Used on units with Serial Number BX-1898 & CA-1000 thru Present

Item	Part No.	Description	Qty.
1	002-0040-00	Power Cord Set Kit (Domestic)	1
	015-0639-00	A.C. Receptacle (Export)	1
2	015-0002-01	Strain Relief Bushing (Domestic)	1
3	050-2173-00	Power Cord Bracket (Domestic)	1
	050-2191-00	Power Cord Bracket (Export)	1
4	042-0009-04	Groove Pin	4
5	040-0010-47	Screw	13
6	020-0132-00	Rotational Base	1
7	016-0001-01	Leveling Screw	4
8	050-2174-00	Cable Cover	1
9	050-2173-00	Power Cord Bracket	1
10	015-0008-00	Strain Relief Bushing	1
11	057-0345-00	Stop Plate Post	1
12	042-0009-01	Groove Pin	2
13	040-0250-88	Screw	4
14	050-2171-00	Stop Disc	1
15	002-0432-00	Bearing Kit (Includes 16 thru 21)	1
16	• R501715	• Radial Bearing Washer (Thick)	1
17	• R501710	• Thrust Bearing	1
18	• R501714	• Radial Bearing Washer (Thin)	1
19	• R501726	• Table Rotation Bearing	1
20	R501725	Rotation Nut	1

Item	Part No.	Description	Qty.
21	R501709	Retaining Ring	1
22	040-0312-44	Screw	2
23	R501708	Rotation Stop Plate	1
24	050-2193-00	Brake Mounting Bracket	1
25	040-0375-00	Screw	2
26	041-0312-07	Nut	2
27	016-0462-00	Rod End (Male)	1
28	016-0464-00	Brake	1
29	051-0708-00	Hex Adjuster	1
30	016-0463-00	Rod End (Female)	1
31	042-0001-06	Roll Pin	1
32	042-0109-00	Screw	1
33	051-0706-20	Top Lever Arm	1
34	053-0110-05	Spacer	2
35	042-0009-07	Groove Pin	2
36	030-0800-00	Lever Arm Weldment	1
37	030-0798-20	Platform Base Weldment	1
38	015-0478-01	Wire Clip	1
39	045-0001-15	Washer	1
40	040-0010-04	Screw	1
41	015-0014-01	Wire Clip	1

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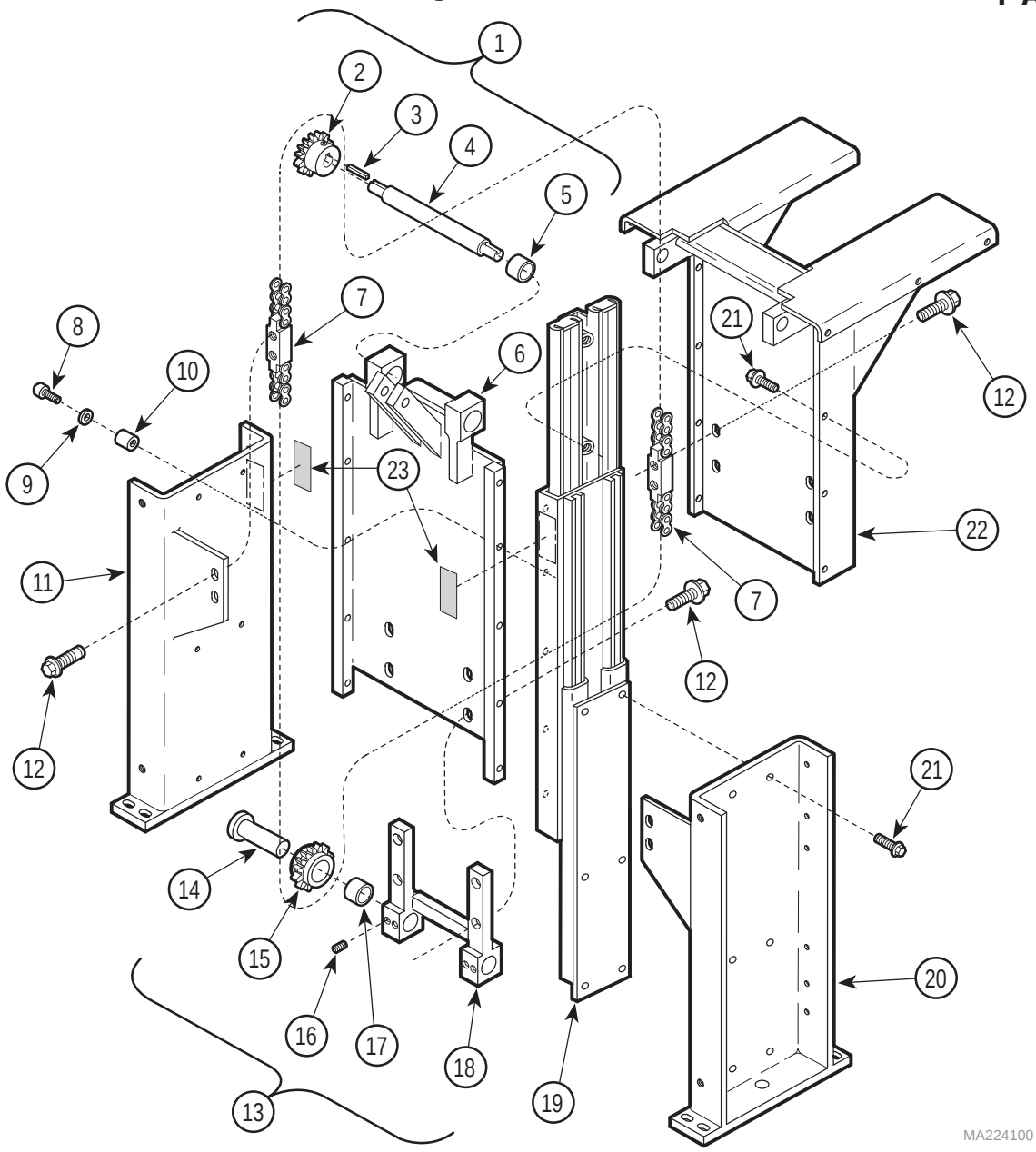
Base Slide Assembly



Used on units with Serial Number K-1000 thru Present

Item	Part No.	Description	Qty.
	029-0069-00	Base Slide Assembly (Includes Items 1 thru 22)	1
1	• 029-0072-02	• Middle Member Assembly (Includes Items 2 thru 6)	1
2	• • 016-0151-00	• • Sprocket (Includes Set Screw)	2
3	• • 042-0008-00	• • Machine Key	2
4	• • 057-0105-00	• • Axle	1
5	• • 016-0149-00	• • Bearing	2
6	• • 030-0094-00	• • Middle Member Weldment	1
7	• 029-0070-00	• Chain Assembly	2
8	• 040-0008-30	• Screw	10
9	• 045-0001-10	• Lockwasher	10
10	• 052-0015-00	• Spacer	10
11	• 030-0092-01	• L.H. Support Channel Weldment	1
12	• 040-0375-00	• Screw	12
13	• 029-0071-00	• Idler Adjuster Assembly (Includes Items 14 thru 18)	1
14	• • 030-0274-00	• • Journal Weldment	1
15	• • 016-0152-00	• • Sprocket	2
16	• • 040-0250-04	• • Set Screw	4
17	• • 016-0149-00	• • Bearing	2
18	• • 030-0273-00	• • Idler Adjuster Weldment	1
19	• 016-0234-01	• L.H. Base Slide (Opposite)	1
	• 016-0234-00	• R.H. Base Slide (Shown)	1
20	• 030-0092-00	• R.H. Support Channel Weldment	1
21	• 040-0250-88	• Screw	20
22	• 030-0096-00	• Inner Member Weldment	1
23	061-0045-00	Cover Caution Label	2

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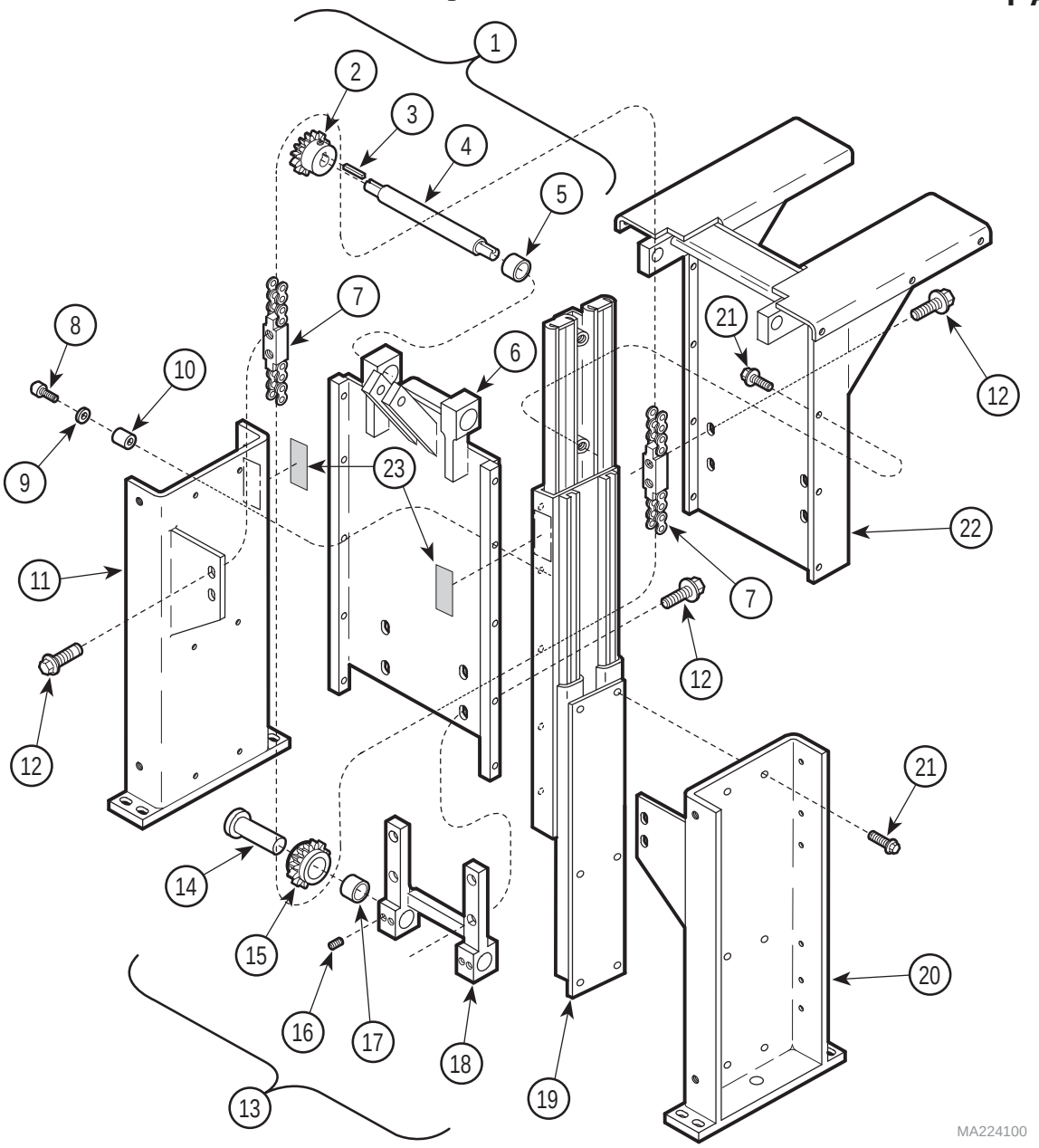
Base Slide Assembly



Used on units with Serial Number BX-1000 & CA-1000 thru Present

Item	Part No.	Description	Qty.
	029-0069-01	Base Slide Assembly (Includes Items 1 thru 22)	1
1	• 029-0072-03	• Middle Member Assembly (Includes Items 2 thru 6)	1
2	• • 016-0151-00	• • Sprocket (Includes Set Screw)	2
3	• • 042-0008-00	• • Machine Key	2
4	• • 057-0105-00	• • Axle	1
5	• • 016-0149-00	• • Bearing	2
6	• • 030-0094-20	• • Middle Member Weldment	1
7	• 029-0070-00	• Chain Assembly	2
8	• 040-0008-30	• Screw	10
9	• 045-0001-10	• Lockwasher	10
10	• 052-0015-00	• Spacer	10
11	• 030-0092-21	• L.H. Support Channel Weldment	1
12	• 040-0375-00	• Screw	12
13	• 029-0071-03	• Idler Adjuster Assembly (Includes Items 14 thru 18)	1
14	• • 030-0274-00	• • Journal Weldment	1
15	• • 016-0152-00	• • Sprocket	2
16	• • 040-0250-04	• • Set Screw	4
17	• • 016-0149-00	• • Bearing	2
18	• • 030-0273-20	• • Idler Adjuster Weldment	1
19	• 016-0234-01	• L.H. Base Slide (Opposite)	1
	• 016-0234-00	• R.H. Base Slide (Shown)	1
20	• 030-0092-21	• R.H. Support Channel Weldment	1
21	• 040-0250-88	• Screw	20
22	• 030-0096-20	• Inner Member Weldment	1
23	061-0045-00	Cover Caution Label	2

Always Specify Model & Serial Number

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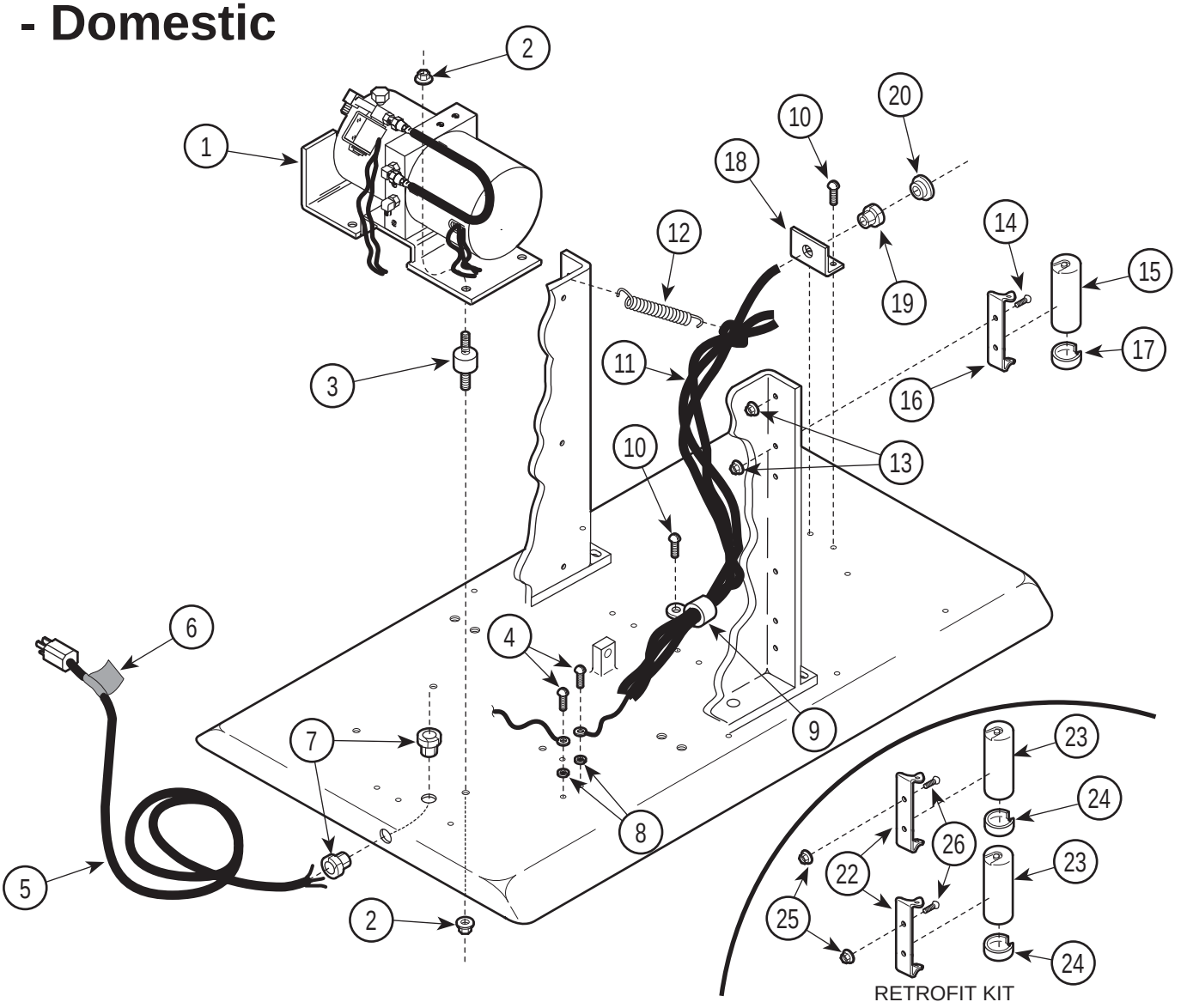
Base Electrical Components - Domestic



Used on units with Serial Number Prior to 37420

Item	Part No.	Description	Qty.
1		Motor / Pump Assembly (Refer to Breakdown Elsewhere)	1
2	041-0250-13	Nut	8
3	053-0051-00	Motor Mount	4
4	040-0010-47	Screw	4
5	002-0040-00	Power Cord Set Kit	1
6	061-0034-00	Cord Tag	1
7	015-0002-01	Strain Relief Bushing	2
8	045-0001-31	Lockwasher	5
9	015-0014-00	Wire Clip	1
10	040-0010-04	Screw	3
11		Wire Assembly (Refer to "Wiring Diagram" Elsewhere {Section 5})	Ref
12	025-0025-00	Spring	1
13	041-0010-02	Nut	2
14	040-0010-28	Screw	2
15	002-0043-00	Capacitor Kit {64/77 MFD - 350V} (Includes Items 16 & 17)	
16	• 015-0412-00	• Capacitor Mounting Bracket	1
17	• 015-0413-01	• Capacitor Cap	1
18	050-0957-00	Strain Relief Bracket	1
19	015-0008-00	Strain Relief Bushing	1
20	053-0068-10	Snap Bushing	1
21	002-0310-00	Capacitor Retrofit Kit (Includes Items 22 thru 26)	1
22	• 015-0412-02	• Capacitor Mounting Bracket	2
23	• 015-0437-07	• Capacitor {124/149 MFD - 250V}	2
24	• 015-0413-01	• Capacitor Cap	2
25	• 041-0010-02	• Nut	4
26	• 040-0010-28	• Screw	4

Always Specify Model & Serial Number

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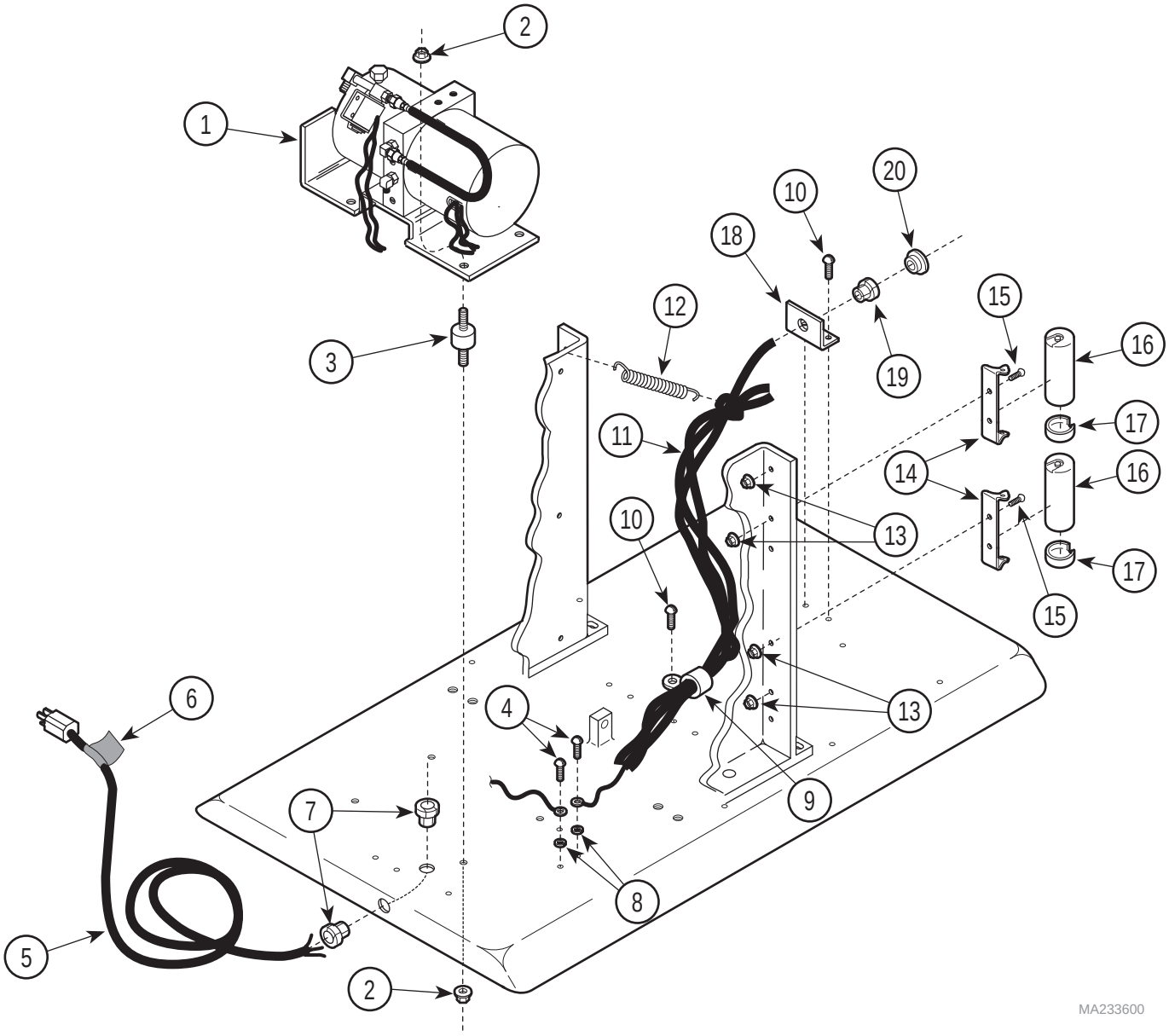
Base Electrical Components - Domestic



Used on units with Serial Number 37420 thru K-3769

Item	Part No.	Description	Qty.
1		Motor / Pump Assembly (Refer to Breakdown Elsewhere)	1
2	041-0250-13	Nut	8
3	053-0051-00	Motor Mount	4
4	040-0010-47	Screw	4
5	002-0040-00	Power Cord Set Kit	1
6	061-0034-00	Cord Tag	1
7	015-0002-01	Strain Relief Bushing	2
8	045-0001-31	Lockwasher	5
9	015-0014-00	Wire Clip	1
10	040-0010-04	Screw	3
11		Wire Assembly (Refer to "Wiring Diagram" Elsewhere {Section 5})	Ref
12	025-0025-00	Spring	1
13	041-0010-02	Nut	4
14	015-0412-02	Capacitor Mounting Bracket	2
15	040-0010-28	Screw	4
16	002-0044-00	Capacitor Kit (124/149 MFD {250V})	2
17	015-0413-01	Capacitor Cap	2
18	050-0957-00	Strain Relief Bracket	1
19	015-0008-00	Strain Relief Bushing	1
20	053-0068-10	Snap Bushing	1

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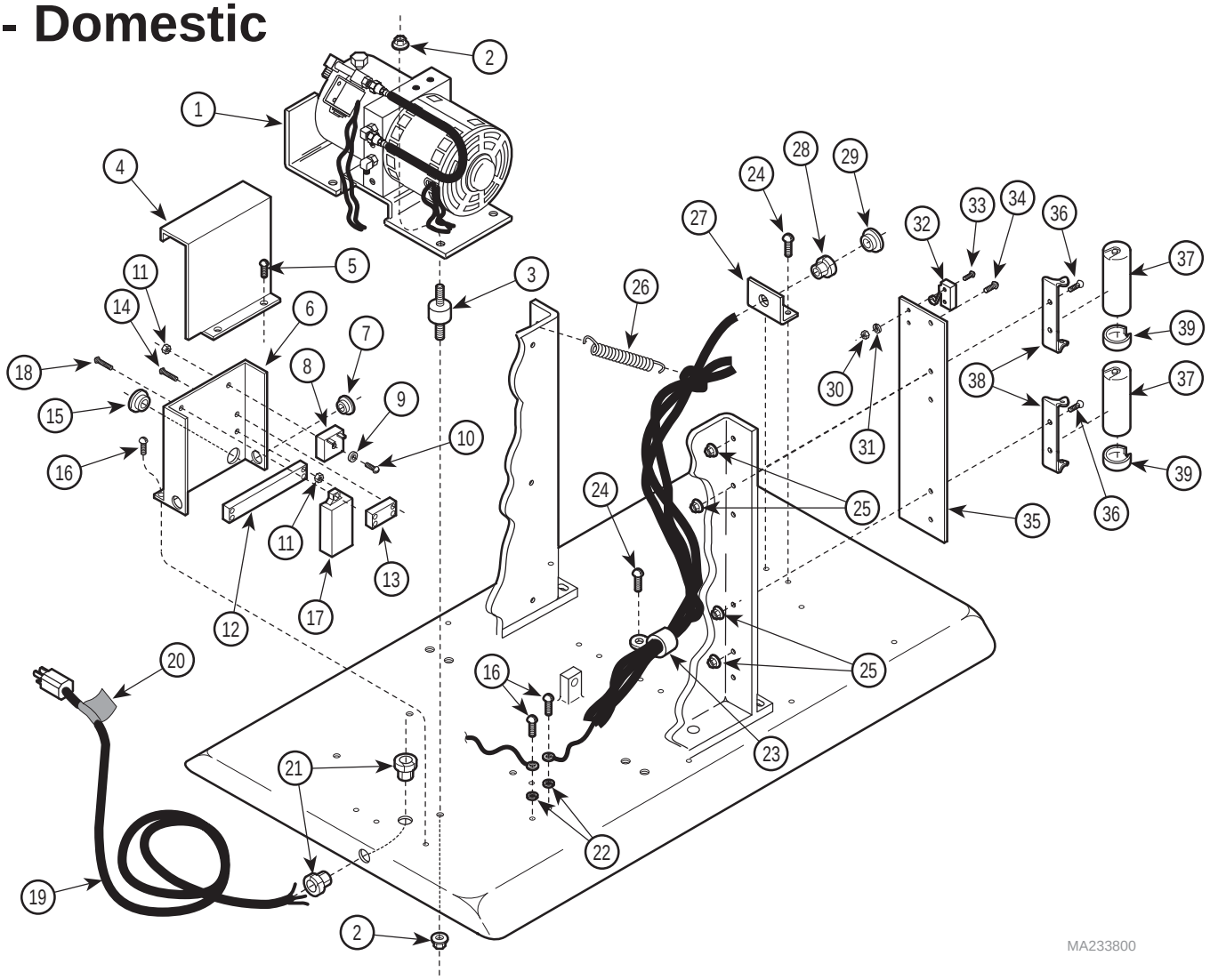
Base Electrical Components - Domestic



Used on units with Serial Number K-3770 thru K5009

Item	Part No.	Description	Qty.
1		Motor / Pump Assembly (Refer to Breakdown Elsewhere)	1
2	041-0250-13	Nut	8
3	053-0051-00	Motor Mount	4
4	050-1533-00	Control Cover	1
5	040-0010-34	Screw	2
6	050-1532-00	Control Panel	1
7	053-0068-09	Snap Bushing	2
8	002-0041-00	Time Delay Relay Kit	1
9	045-0001-21	Washer	1
10	040-0006-11	Screw	1
11	041-0006-01	Nut	7
12	015-0009-01	Terminal Block	1
13	015-0009-03	Terminal Block	1
14	040-0006-33	Screw	4
15	053-0068-06	Snap Bushing	1
16	040-0010-47	Screw	4
17	015-0374-00	Auto Return Relay	1
18	040-0006-10	Screw	2
19	002-0040-00	Power Cord Set Kit	1
20	061-0034-00	Cord Tag	1
21	015-0002-01	Strain Relief Bushing	2
22	045-0001-31	Lockwasher	5
23	015-0014-00	Wire Clip	1
24	040-0010-04	Screw	3
25	041-0010-02	Nut	4
26	025-0025-00	Spring	1
27	050-0957-00	Strain Relief Bracket	1
28	015-0008-00	Strain Relief Bushing	1
29	053-0068-10	Snap Bushing	1
30	041-0004-00	Nut	2
31	045-0001-43	Washer	2
32	015-0381-00	Return Limit Switch	1
33	040-0004-07	Screw	2
34	040-0010-12	Screw	1
35	050-0952-00	Auto Return Bracket	1
36	040-0010-28	Screw	4
37	002-0044-00	Capacitor Kit (124/149 MFD {250V})	2
38	015-0412-02	Capacitor Mounting Bracket	2
39	015-0413-01	Capacitor Cap	2

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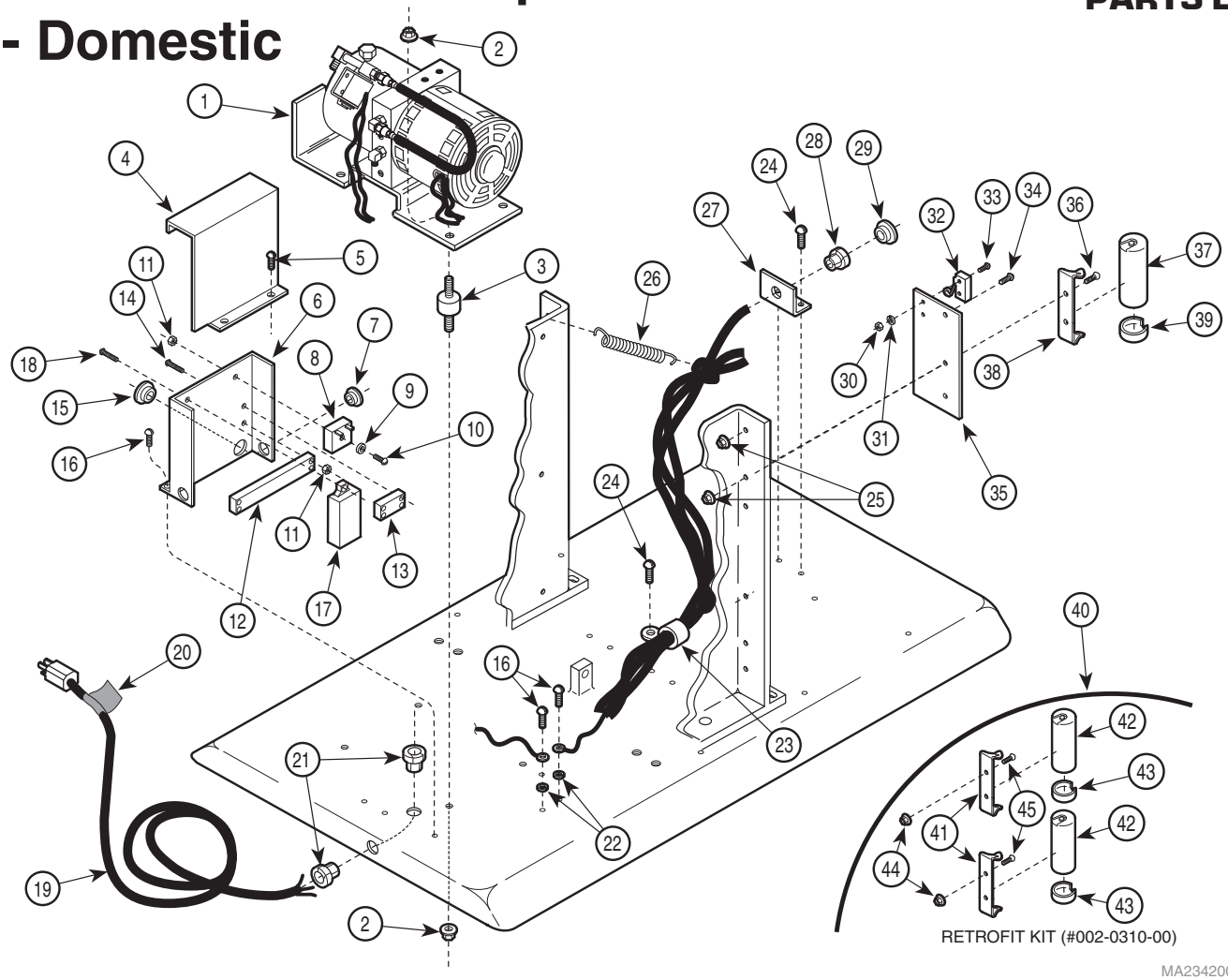
Base Electrical Components - Domestic



Used on units with Serial Number K-5010 thru Present

Item	Part No.	Description	Qty.
1		Motor / Pump Assembly (Refer to Breakdown Elsewhere)	1
2	041-0250-13	Nut	8
3	053-0051-00	Motor Mount	4
4	050-1533-00	Control Cover	1
5	040-0010-34	Screw	2
6	050-1532-00	Control Panel	1
7	053-0068-09	Snap Bushing	2
8	002-0041-00	Time Delay Relay Kit	1
9	045-0001-21	Washer	1
10	040-0006-11	Screw	1
11	041-0006-01	Nut	7
12	015-0009-01	Terminal Block	1
13	015-0009-03	Terminal Block	1
14	040-0006-33	Screw	4
15	053-0068-06	Snap Bushing	1
16	040-0010-47	Screw	4
17	015-0374-00	Auto Return Relay	1
18	040-0006-10	Screw	2
19	002-0040-00	Power Cord Set Kit	1
20	061-0034-00	Cord Tag	1
21	015-0002-01	Strain Relief Bushing	2
22	045-0001-31	Lockwasher	5
23	015-0014-00	Wire Clip	1
24	040-0010-04	Screw	3
25	041-0010-02	Nut	4
26	025-0025-00	Spring	1
27	050-0957-00	Strain Relief Bracket	1
28	015-0008-00	Strain Relief Bushing	1
29	053-0068-10	Snap Bushing	1
30	041-0004-00	Nut	2
31	045-0001-43	Washer	2
32	~~015-0421-00~~	Return Limit Switch	1
33	040-0004-07	Screw	2
34	040-0010-12	Screw	1
35	050-0952-00	Auto Return Bracket	1
36	040-0010-28	Screw	2
37	002-0043-00	Capacitor Kit (64/77 MFD {350V})	1
38	015-0412-02	Capacitor Mounting Bracket	1
39	015-0413-01	Capacitor Cap	1
40	002-0310-00	Capacitor Retrofit Kit (Includes Items 41 thru 45)	1
41	• 015-0412-02	• Capacitor Mounting Bracket	2
42	• 015-0437-07	• Capacitor {124/149 MFD - 250V}	2
43	• 015-0413-01	• Capacitor Cap	2
44	• 041-0010-02	• Nut	4
45	• 040-0010-28	• Screw	4

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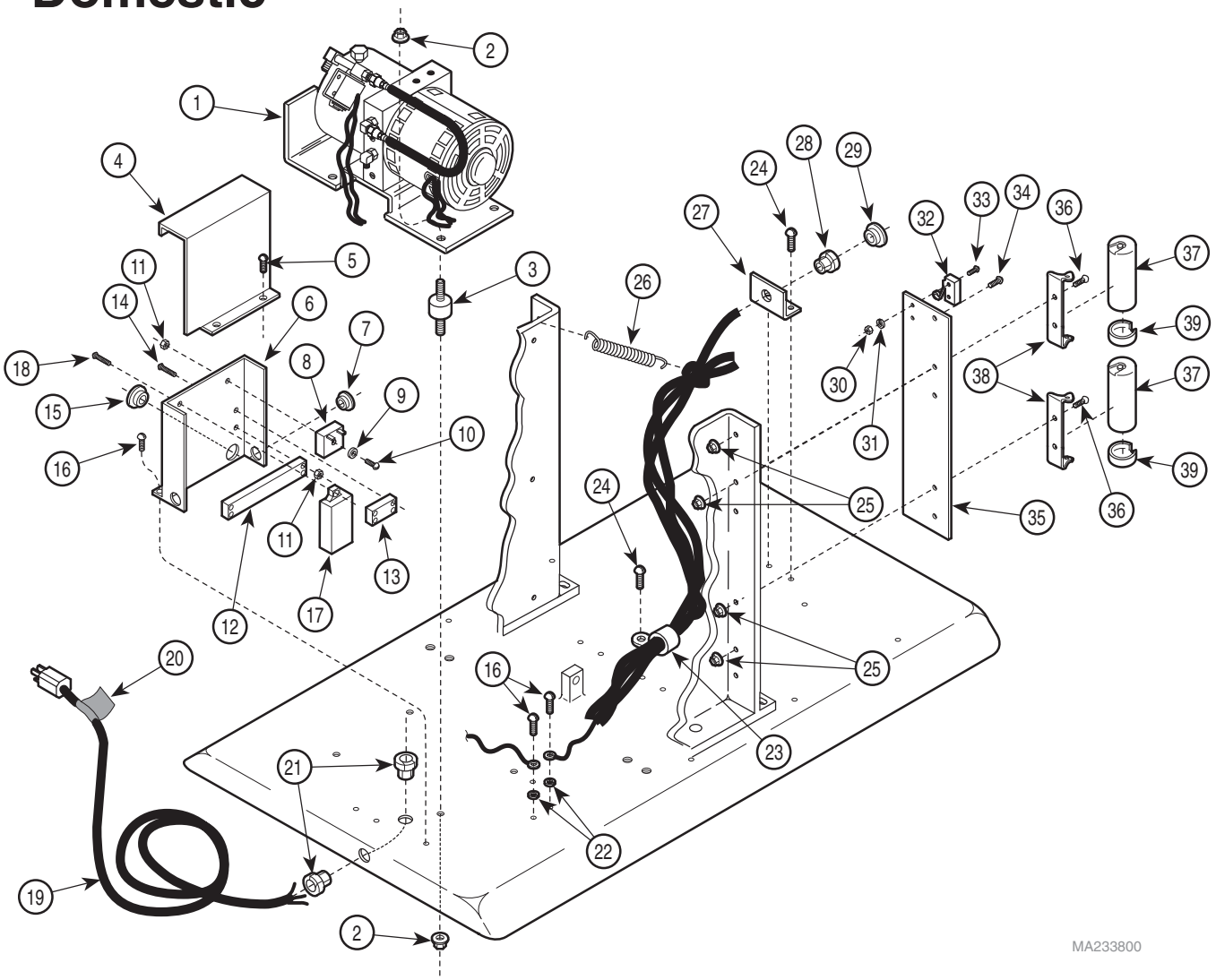
Base Electrical Components - Domestic

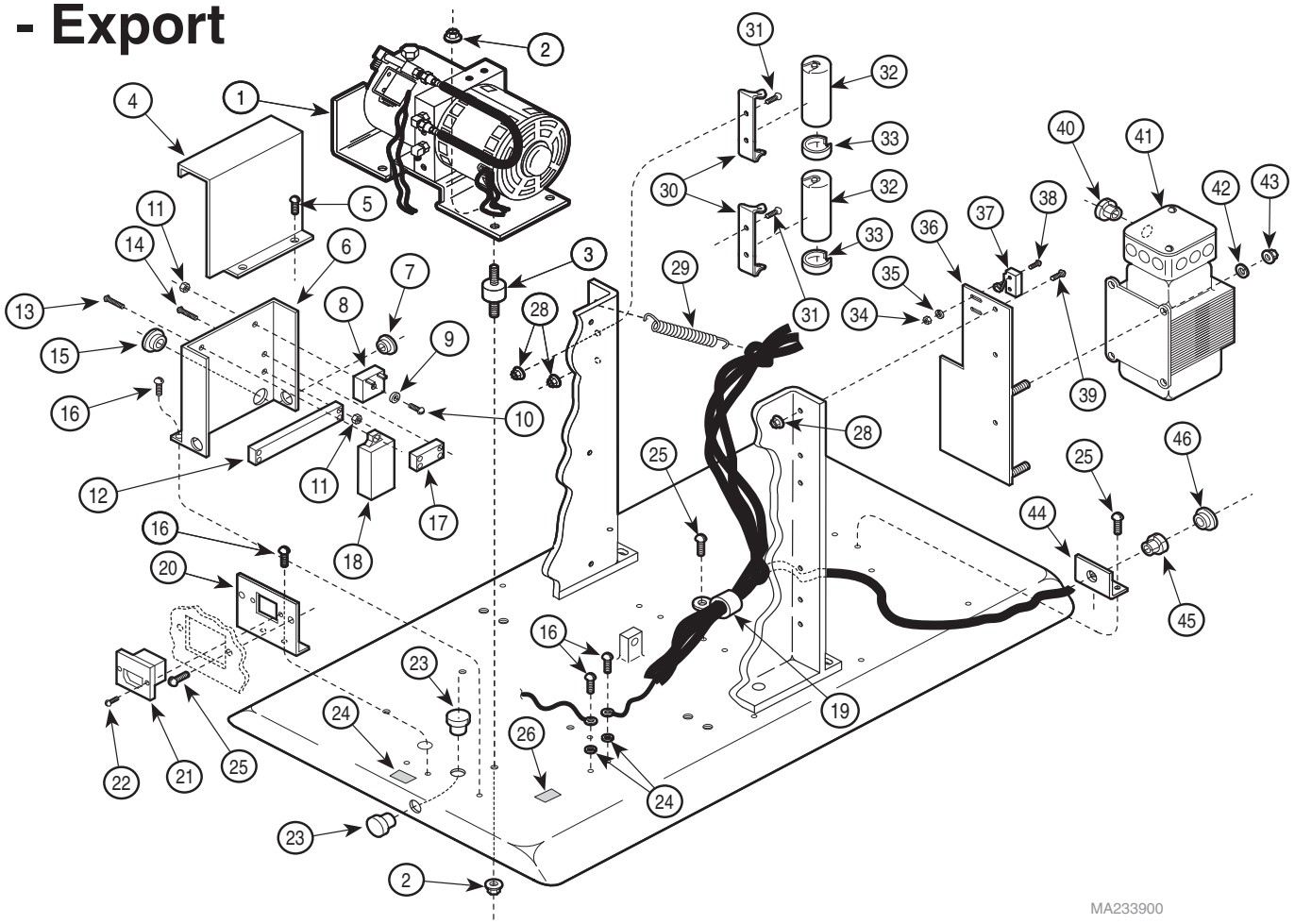


Used on units with Serial Number BX-1000 thru Present

Item	Part No.	Description	Qty.
1		Motor / Pump Assembly (Refer to Breakdown Elsewhere)	1
2	041-0250-13	Nut	8
3	053-0051-00	Motor Mount	4
4	050-1533-20	Control Cover	1
5	040-0010-34	Screw	2
6	050-1532-20	Control Panel	1
7	053-0068-09	Snap Bushing	2
8	002-0041-00	Time Delay Relay Kit	1
9	045-0001-21	Washer	1
10	040-0006-11	Screw	1
11	041-0006-01	Nut	7
12	015-0009-01	Terminal Block	1
13	015-0009-03	Terminal Block	1
14	040-0006-33	Screw	4
15	053-0068-06	Snap Bushing	1
16	040-0010-47	Screw	4
17	015-0374-00	Auto Return Relay	1
18	040-0006-10	Screw	2
19	002-0040-00	Power Cord Set Kit	1
20	061-0034-00	Cord Tag	1
21	015-0002-01	Strain Relief Bushing	2
22	045-0001-31	Lockwasher	5
23	015-0014-00	Wire Clip	1
24	040-0010-04	Screw	3
25	041-0010-02	Nut	4
26	025-0025-00	Spring	1
27	050-0957-00	Strain Relief Bracket	1
28	015-0008-00	Strain Relief Bushing	1
29	053-0068-10	Snap Bushing	1
30	041-0004-00	Nut	2
31	045-0001-43	Washer	2
32	~~015-0421-00~~	Return Limit Switch	1
33	040-0004-07	Screw	2
34	040-0010-12	Screw	1
35	050-0952-20	Auto Return Bracket	1
36	040-0010-28	Screw	4
37	002-0044-00	Capacitor Kit (124/149 MFD {250V})	2
38	015-0412-02	Capacitor Mounting Bracket	2
39	015-0413-01	Capacitor Cap	2

Always Specify Model & Serial Number

Base Electrical Components - Export



Used on units with Serial Number CA-1000 thru Present

Item	Part No.	Description	Qty.
1		Motor / Pump Assembly (Refer to Breakdown Elsewhere)	1
2	041-0250-13	Nut	8
3	053-0051-00	Motor Mount	4
4	050-1533-20	Control Cover	1
5	040-0010-34	Screw	2
6	050-1532-20	Control Panel	1
7	053-0068-09	Snap Bushing	2
8	002-0041-00	Time Delay Relay	1
9	045-0001-21	Washer	1
10	040-0006-11	Screw	1
11	041-0006-01	Nut	7
12	015-0009-01	Terminal Block	1
13	040-0006-10	Screw	2
14	040-0006-33	Screw	2
15	053-0068-06	Snap Bushing	1
16	040-0010-47	Screw	4
17	015-0009-03	Terminal Block	1
18	015-0374-00	Auto Return Relay	1
19	015-0014-00	Wire Clip	1
20	050-2489-20	Receptacle Bracket	1
21	015-0364-00	A.C. Connector Receptacle (Complete)	1
	• 015-0346-20	• Fuse	2
	• 015-0364-01	• Inlet Housing	1
	• 015-0364-02	• Fuse Holder	2

Item	Part No.	Description	Qty.
22	040-0004-11	Screw	2
23	053-0071-00	Caplug	2
24	061-0528-00	Fuse Rating Tag	1
25	040-0010-04	Screw	5
26	061-0071-00	Eartyh Symbol Label	1
27	045-0001-31	Lockwasher	2
28	041-0010-02	Nut	7
29	025-0025-00	Spring	1
30	015-0412-02	Capacitor Mounting Bracket	2
31	040-0010-28	Screw	4
32	015-0437-07	Capacitor	2
33	015-0413-01	Capacitor Cap	2
34	041-0004-00	Nut	2
35	045-0001-43	Washer	2
36	030-0810-20	Transformer Bracket Weldment	1
37	~~015-0421-00~~	Return Limit Switch	1
38	040-0004-07	Screw	2
39	040-0010-12	Screw	3
40	053-0068-00	Snap Bushing	1
41	015-0118-00	Isolation Transformer	1
42	045-0001-71	Washer	4
43	041-0250-01	Nut	4
44	050-0957-00	Strain Relief Bracket	1
45	015-0008-00	Strain Relief Bushing	1
46	053-0068-10	Snap Bushing	1

Always Specify Model & Serial Number

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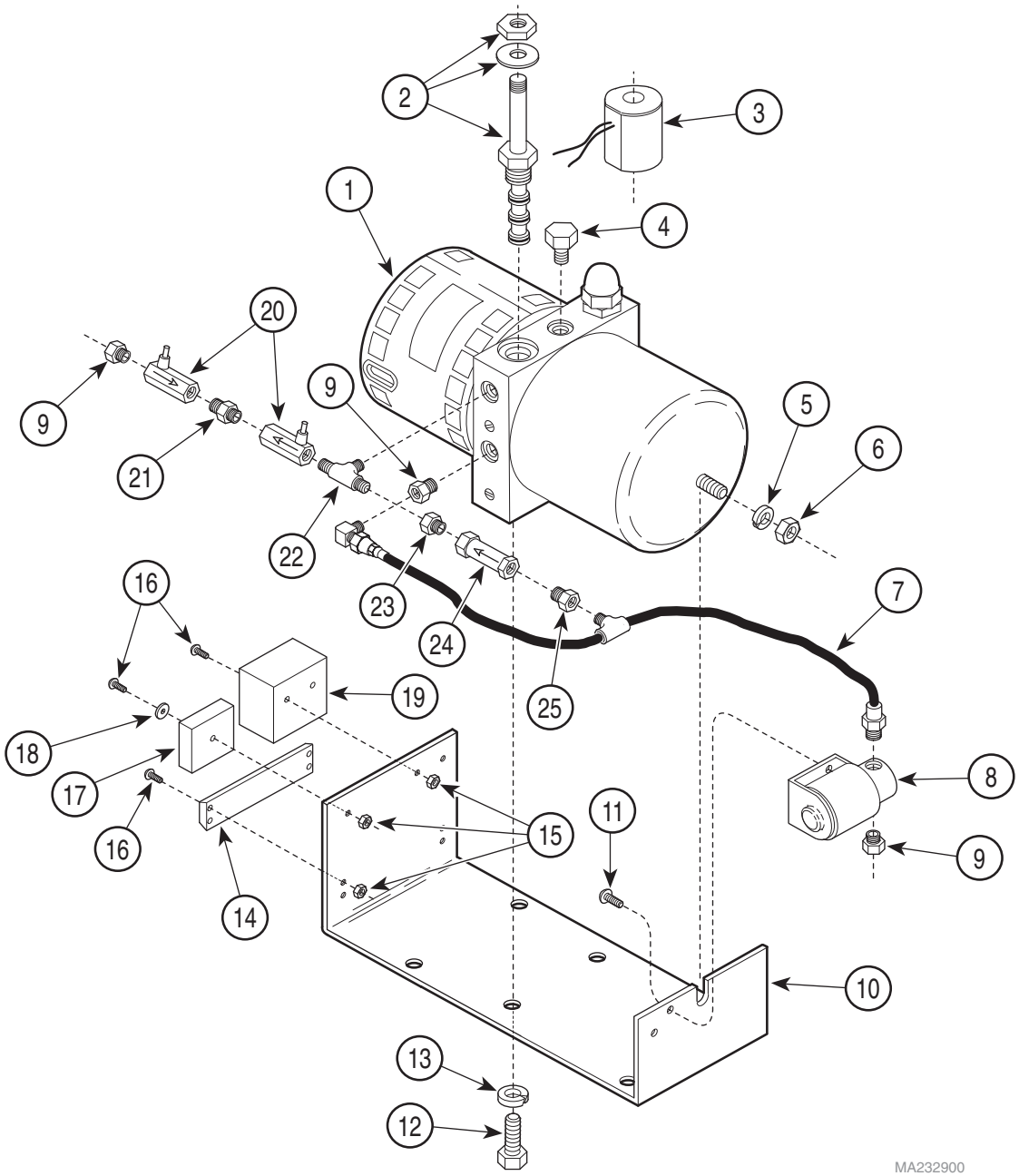
Motor / Pump Components

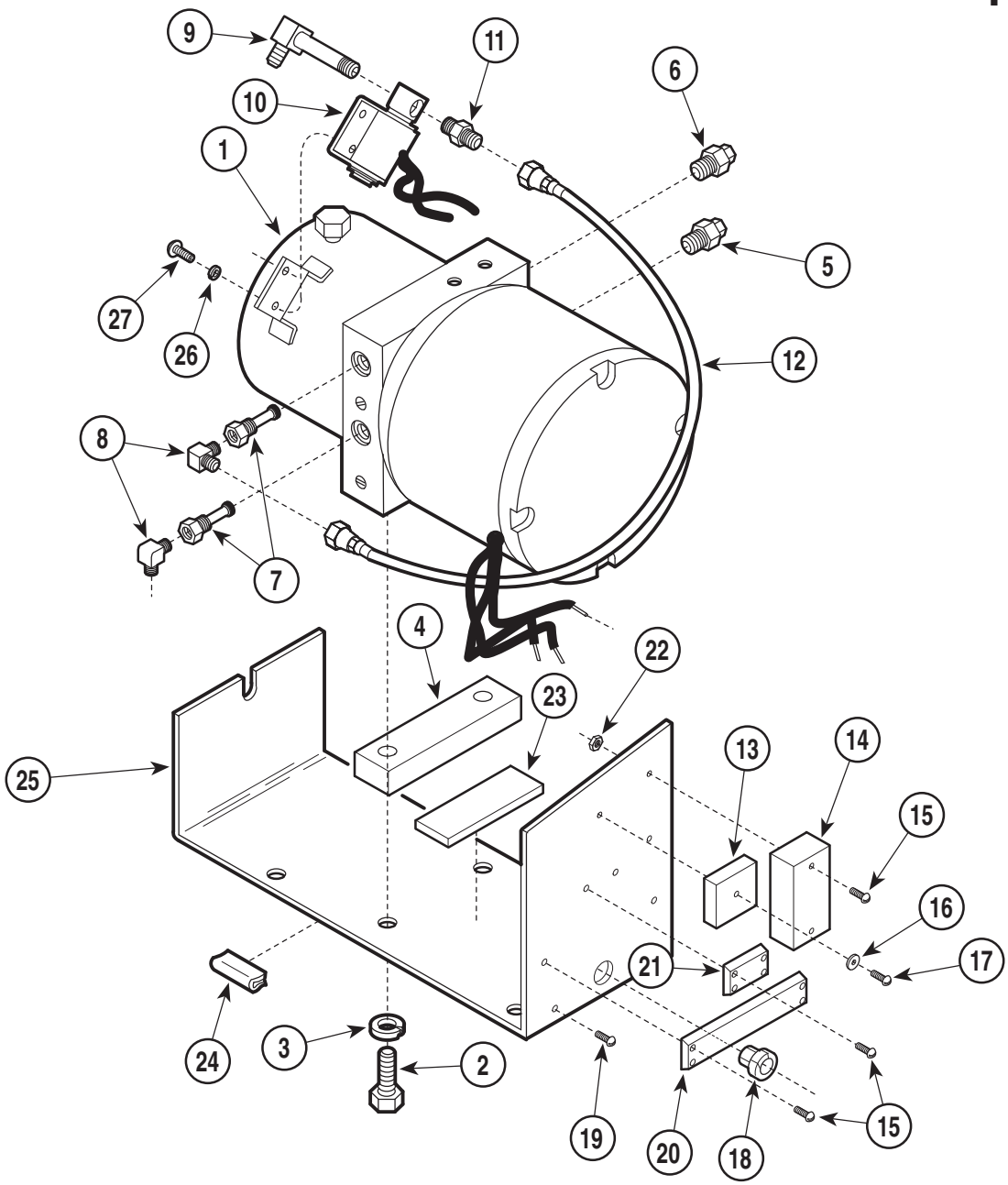


Used on units with Serial Numbers Prior to 37420

Item	Part No.	Description	Qty.
1	002-0034-00	Motor / Pump Assembly (Includes Items 2 thru 6)	1
2	• 002-0037-00	• Solenoid Valve Body (Less Coil)	1
3	• 002-0036-00	• Solenoid Coil	1
4	•	• Breather	1
5	•	• Washer	1
6	•	• Nut	1
7	~~002-0031-00~~	Pump Hose Assembly	1
8	002-0038-00	Anticavitation Valve	1
9	014-0024-00	Half Union	3
10	050-0344-00	Motor Base	1
11	040-0008-04	Screw	2
12	040-0375-07	Screw	2
13	045-0001-09	Lockwasher	2
14	015-0009-00	Terminal Board	1
15	041-0006-01	Nut	5
16	040-0006-11	Screw	5
17	002-0041-00	Time Delay Relay	1
18	045-0001-21	Washer	1
19	015-0023-00	Relay	1
20	~~014-0033-00~~	Flow Control Valve	2
21	014-0045-00	Hex Nipple	1
22	014-0022-00	Male Pipe Tee	1
23	014-0023-00	Bushing	1
24	014-0034-00	Relief Check Valve	1
25	014-0025-00	Half Union	1

Always Specify Model & Serial Number

Motor / Pump Components



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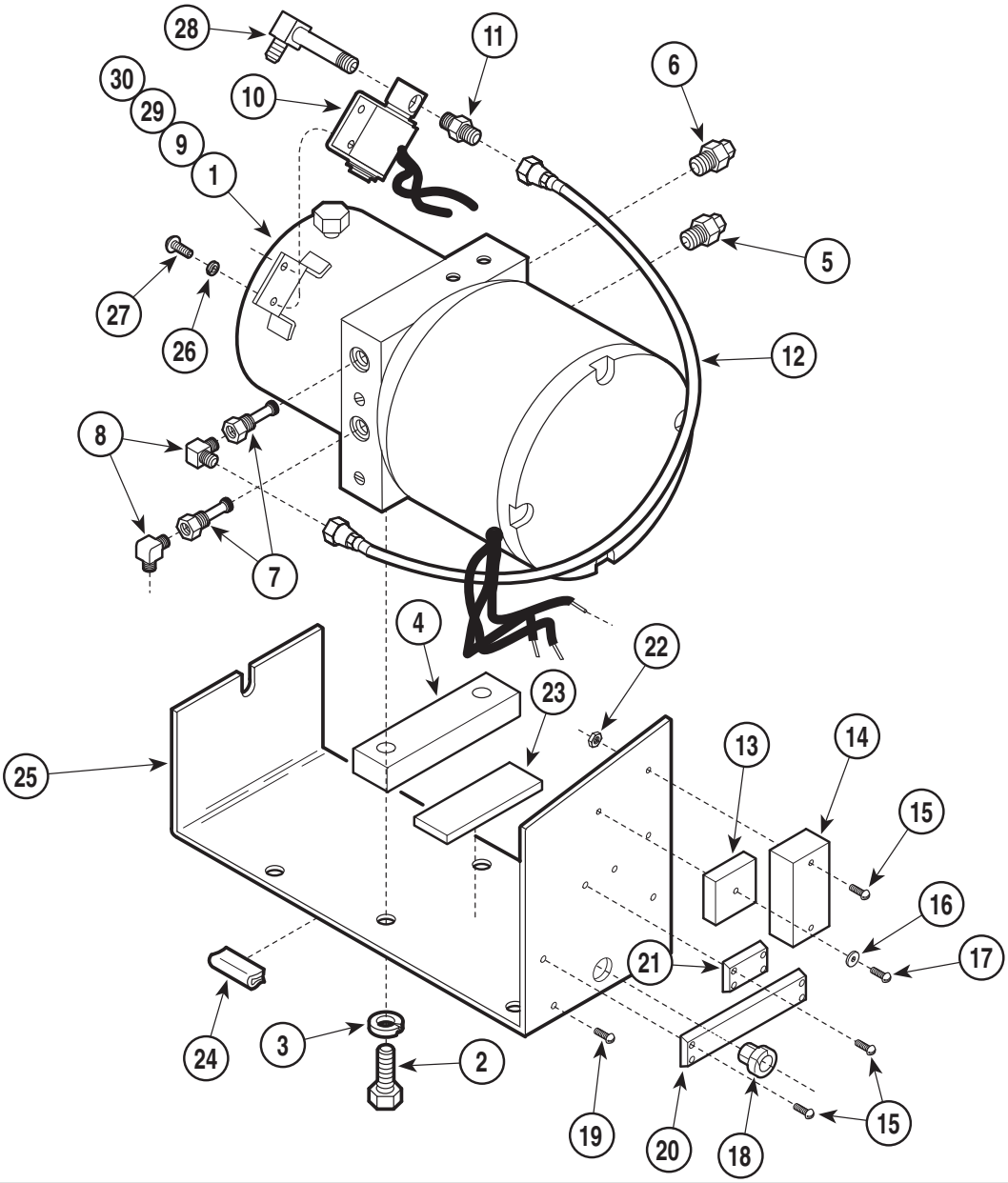
Used on units with Serial Number 37420 thru K-2725

Item	Part No.	Description	Qty.
1	002-0035-00	Motor / Pump Assembly (Includes Items 1 thru 8)	1
2	• 040-0500-01	• Screw	2
3	• 045-0001-33	• Lockwasher	2
4	• 051-0224-00	• Spacer	1
5		• Relief Valve (High Pressure)	1
6		• Relief Valve (Low Pressure)	1
7	•	• Shuttle Valve	2
8	•	• Elbow	2
9	~~014-0114-00~~	Male Elbow	1
10	002-0038-00	Anticavitation Valve	1
11	014-0099-00	Male Connector	1
12	014-0104-00	Hose Assembly	1
13	002-0041-00	Time Delay Relay	1
14	015-0261-00	GLIM (Ground Line Integrity Monitor)	1
15	040-0006-07	Screw	6
16	045-0001-21	Washer	1
17	040-0006-11	Screw	1
18	053-0068-00	Strain Relief Bushing	1
19	040-0010-47	Screw	1
20	015-0009-01	Terminal Board	1
21	015-0009-02	Terminal Board	1
22	041-0006-01	Nut	7
23	054-0069-00	Sound Damp	1
24	016-0140-00	Trim Lock (Specify Length - 2")	1
25	050-0741-00	Motor Base	1
26	045-0001-19	Lockwasher	2
27	040-0008-04	Screw	2

Always Specify Model & Serial Number

Motor / Pump Components



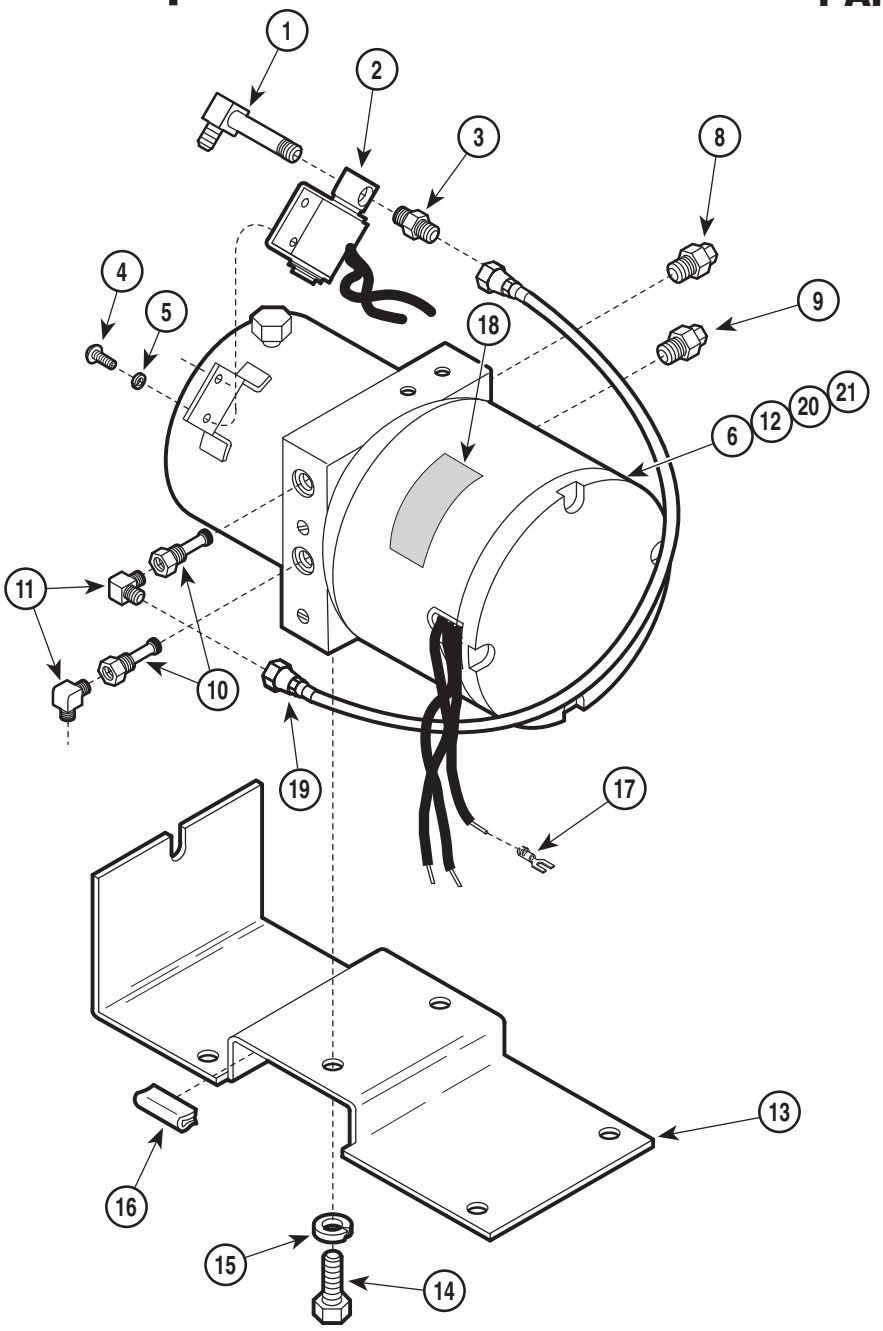
MA531700

Used on units with Serial Number K-2726 thru K-3769

Item	Part No.	Description	Qty.
1	002-0127-00	Motor / Pump Assembly (Includes Items 1 thru 9)	1
2	• 040-0500-02	• Screw	2
3	• 045-0001-33	• Lockwasher	2
4	• 051-0224-00	• Spacer	1
5		• Relief Valve (High Pressure)	1
6		• Relief Valve (Low Pressure)	1
7	• 014-0168-00	• Shuttle Valve (Includes Item 8)	2
8	• • 014-0096-00	• • Elbow	2
9	• 014-0262-02	• Reservoir O-Ring Seal (Not Shown)	1
10	002-0038-00	Anticavitation Valve	1
11	014-0099-00	Male Connector	1
12	014-0104-00	Hose Assembly	1
13	002-0041-00	Time Delay Relay	1
14	015-0261-00	GLIM (Ground Line Integrity Monitor)	1
15	040-0006-07	Screw	6
16	045-0001-21	Washer	1
17	040-0006-11	Screw	1
18	053-0068-00	Strain Relief Bushing	1
19	040-0010-47	Screw	1
20	015-0009-01	Terminal Board	1
21	015-0009-02	Terminal Board	1
22	041-0006-01	Nut	7
23	054-0069-00	Sound Damp	1
24	016-0140-00	Trim Lock (Specify Length - 2")	1
25	050-0741-00	Motor Base	1
26	045-0001-19	Lockwasher	2
27	040-0008-04	Screw	2
28	~~014-0114-00~~	Male Elbow	1
29	014-0056-00	Mineral Oil	AR
30	014-0007-00	Pipe Sealant	AR

Always Specify Model & Serial Number

Motor / Pump Components



MA531800

Used on units with Serial Number K-3770 thru K-9495

Item	Part No.	Description	Qty.
1	~~014-0114-00~~	Male Elbow	1
2	002-0038-00	Anticavitation Solenoid Valve Kit	1
3	014-0099-00	Male Connector	1
4	040-0008-04	Screw	2
5	045-0001-19	Lockwasher	2
6	002-0127-00	Motor / Pump Assembly (Includes Items 7 thru 12)	1
7	• 014-0169-00	• Motor Shaft Seal (Not Shown)	1
8	•	• Relief Valve (Low Pressure)	1
9	•	• Relief Valve (High Pressure)	1
10	• 014-0168-00	• Shuttle Valve (Includes Item 12)	2
11	•• 014-0096-00	•• Elbow	2
12	• 014-0262-02	• Hose Assembly	1
13	050-0955-20	Motor Base	1
14	040-0500-02	Screw	2
15	045-0001-33	Lockwasher	2
16	016-0140-00	Trim Lock (Specify Length - 2")	1
17	015-0018-03	Spring Spade Terminal	5
18	061-0135-00	Motor Caution Label	1
19	014-0104-00	Hose Assembly	1
20	014-0056-00	Mineral Oil	AR
21	014-0007-00	Pipe Sealant	AR

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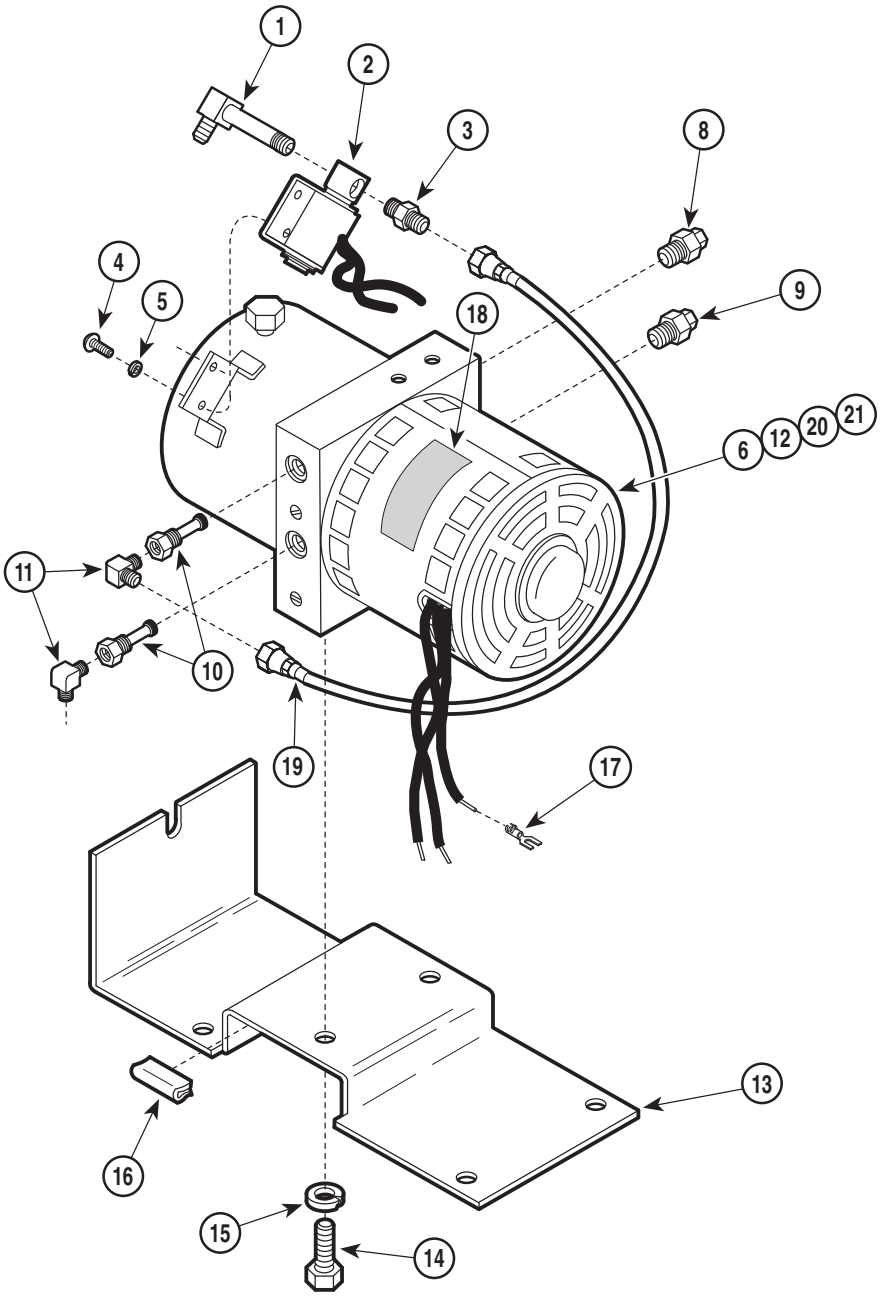
Motor / Pump Components



MA531900

Used on units with Serial Numbers K-9496 thru Present, BX-1000 thru BX-2310 & CA-1000 thru CA-1506

Item	Part No.	Description	Qty.
1	~~014-0114-00~~	Male Elbow	1
2	002-0038-00	Anticavitation Solenoid Valve Kit	1
3	014-0099-00	Male Connector	1
4	040-0008-04	Screw	2
5	045-0001-19	Lockwasher	2
6	002-0133-00	Motor / Pump Assembly (Includes Items 7 thru 12)	1
7	• 014-0169-00	• Motor Shaft Seal (Not Shown)	1
8	• 014-0248-00	• Relief Valve (Low Pressure)	1
9	• 014-0249-00	• Relief Valve (High Pressure)	1
10	• 014-0168-00	• Shuttle Valve (Includes Item 11)	2
11	• • 014-0096-00	• • Elbow	2
12	• 014-0262-02	• Reservoir O-Ring Seal (Not Shown)	1
13	050-0955-20	Motor Base	1
14	040-0500-02	Screw	2
15	045-0001-33	Lockwasher	2
16	016-0360-00	Trim Lock (Specify Length - 2")	1
17	015-0018-03	Spring Spade Terminal	5
18	061-0135-00	Motor Caution Label	1
19	014-0104-00	Hose Assembly	1
20	014-0056-00	Mineral Oil	AR
21	014-0007-00	Pipe Sealant	AR

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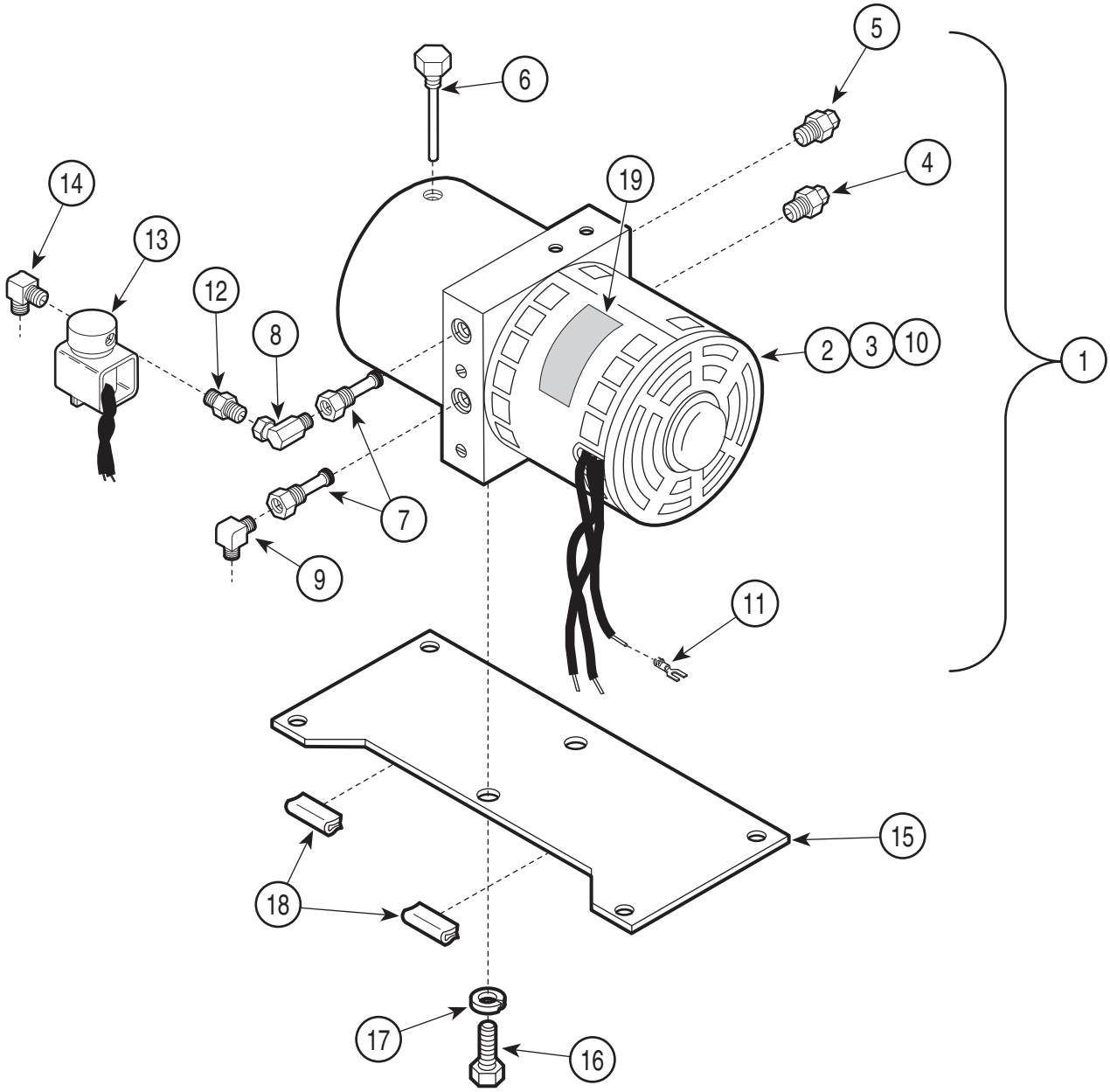
Motor / Pump Components



MA533800

Used on units with Serial Numbers and BX-2311 & CA-1507 thru Present

Item	Part No.	Description	Qty.
1	002-0444-00	Motor / Pump Assembly (Includes Items 2 thru 12)	1
2	• 014-0262-00	• Motor / Pump (Includes Items 3 thru 10)	
3	• • 014-0169-00	• • Motor Shaft Seal (Not Shown)	1
4	• • 014-0249-00	• • Relief Valve (High Pressure)	1
5	• • 014-0248-00	• • Relief Valve (Low Pressure)	1
6	• • 014-0262-01	• • Filler Cap	1
7	• • 014-0168-00	• • Shuttle Valve	2
8	• • 014-0260-00	• • Elbow	1
9	• • 014-0096-00	• • Elbow	1
10	• • 014-0262-02	• • Reservoir O-Ring Seal (Not Shown)	1
11	• 015-0018-03	• Spring Spade Terminal	3
12	• 014-0045-00	• Connector	1
13	002-0493-00	Anticavitation Solenoid Valve Kit	1
14	014-0096-00	Elbow	1
15	050-2662-20	Motor Base	1
16	040-0500-02	Screw	2
17	045-0001-33	Lockwasher	2
18	016-0360-00	Trim Lock (Specify Length - 2")	2
19	061-0135-00	Motor Caution Label	1

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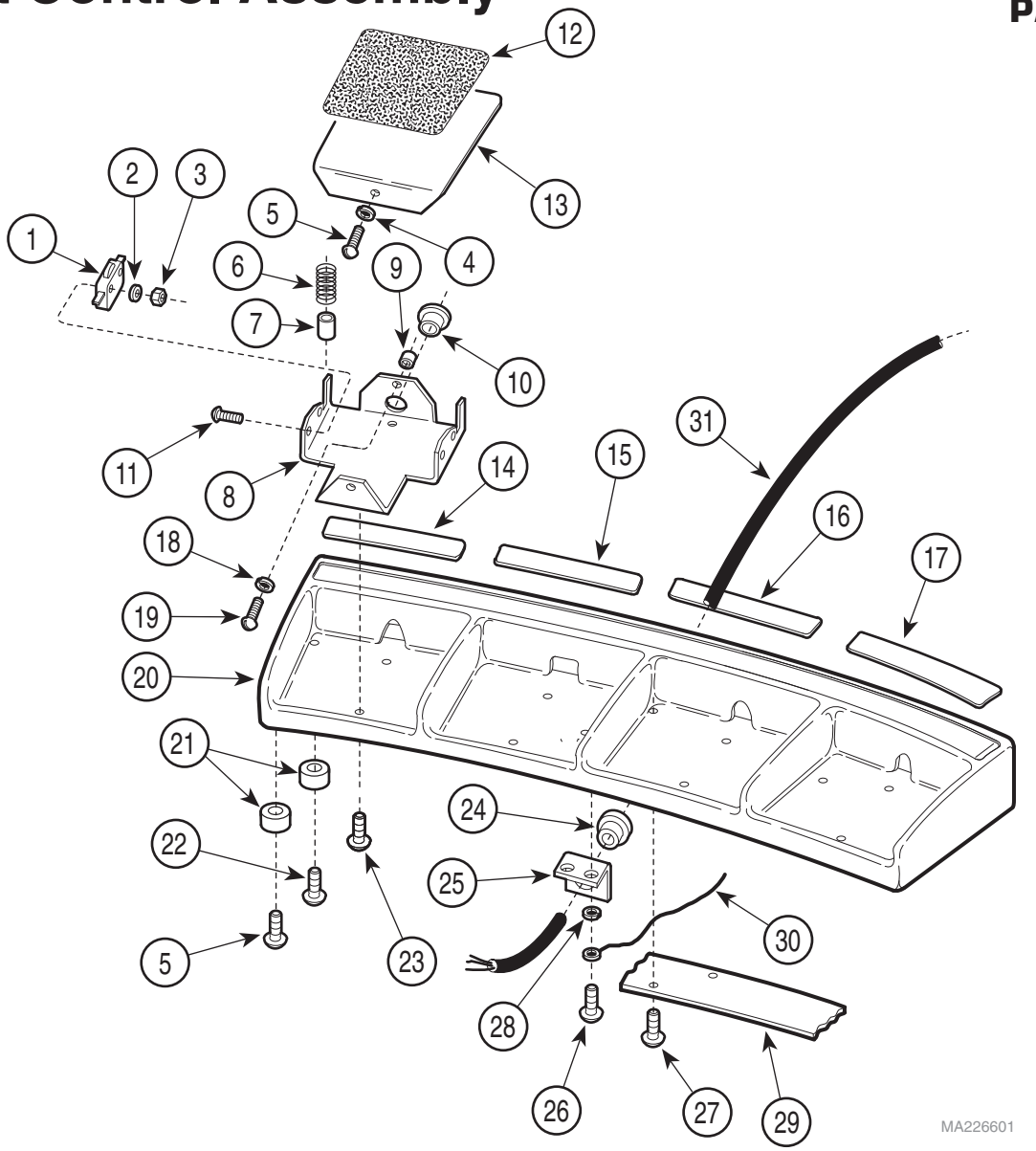
Foot Control Assembly



Used on units with Serial Number K-1000 thru Present

Item	Part No.	Description	Qty.
	~~029-0395-00~~	Foot Control Assembly (Includes Items 1 thru 22)	1
1	• 002-0045-00	• Switch	8
2	• 045-0001-07	• Washer	16
3	• 041-0003-00	• Nut	16
4	• 052-0076-00	• Spacer	4
5	• 040-0010-129	• Screw	6
6	• 025-0009-00	• Spring	8
7	• 052-0010-00	• Spacer	8
8	• 050-3258-00	• Step Mount	4
9	• 052-0075-00	• Spacer	4
10	• 053-0155-00	• Split Bushing (Earlier Units Only)	4
11	• 040-0003-00	• Screw	16
12	• 053-0154-00	• Foot Tread	4
13	• 050-0941-03	• Pedal	4
14	• ~~061-0136-00~~	• (No Longer Available)	1
15	• ~~061-0136-01~~	• (No Longer Available)	1
16	• ~~061-0136-02~~	• (No Longer Available)	1
17	• ~~061-0136-03~~	• (No Longer Available)	1
18	• 045-0001-08	• Washer	4
19	• 040-0010-36	• Screw	4
20	• 020-0144-00	• Foot Control Casting	1
21	• 053-0156-00	• Glide	4
22	• 040-0010-45	• Screw	4
23	• 040-0010-52	• Screw	8
24	• 015-0008-00	• Strain Relief Bushing	1
25	• 050-0957-00	• Strain Relief Bracket	1
26	040-0010-129	Screw	2
27	040-0010-00	Screw	7
28	045-0001-08	Lockwasher	2
29	050-0942-00	Wire Channel Cover	1
30		Ground Wire (Refer to "Wiring Diagram" {Section 5})	Ref
31	002-0048-00	Foot Control Cord (Refer to "Wiring Diagram" {Section 5})	Ref
32	002-0491-00	Footswitch Cover Kit (Not Shown)	1

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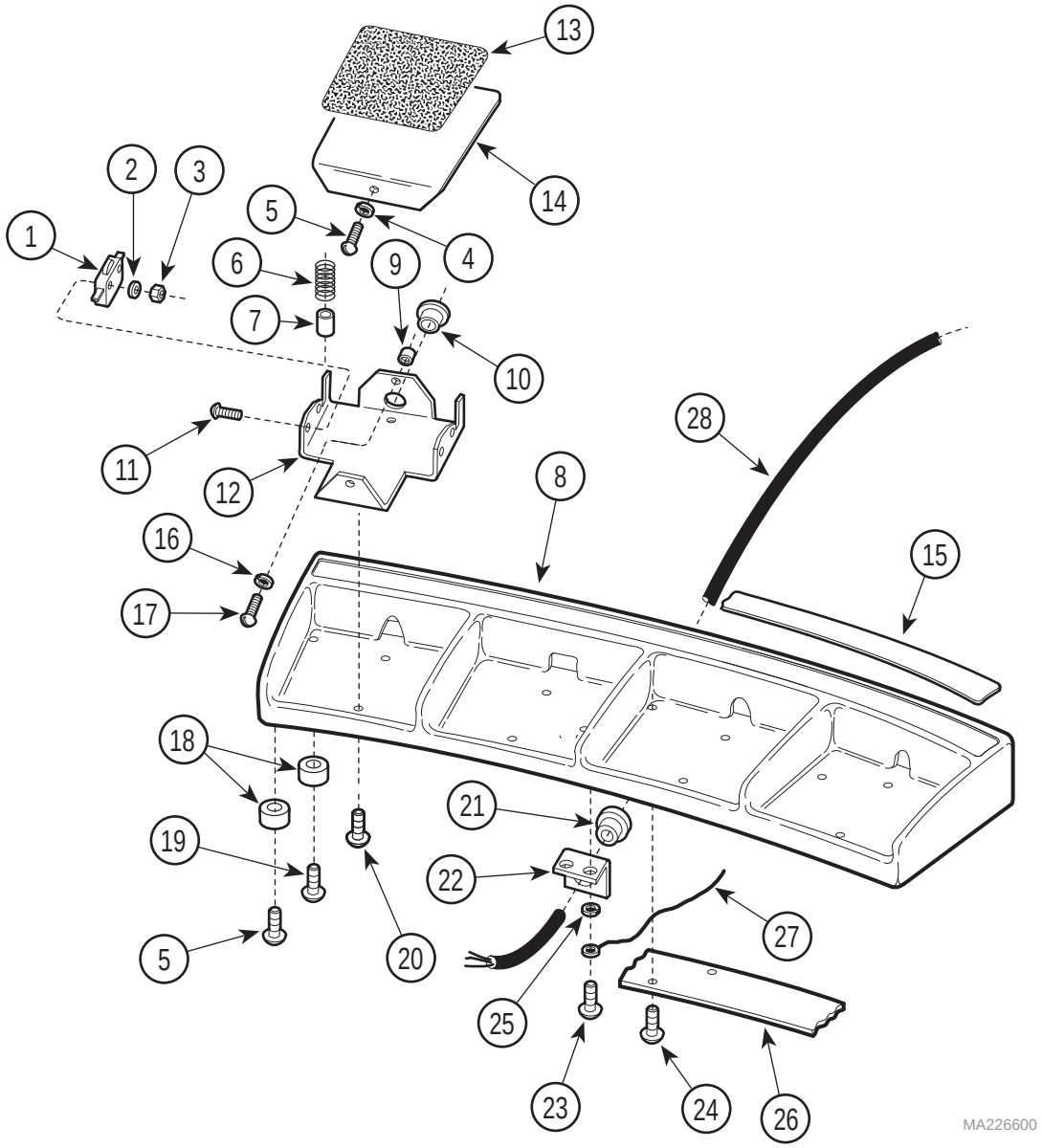
Foot Control Assembly



Used on units with Serial Number BX-1000 & CA-1000 thru Present

Item	Part No.	Description	Qty.
	015-0606-02	Foot Control Assembly (Includes Items 1 thru 22)	1
1	• 002-0045-00	• Switch	8
2	• 045-0001-07	• Washer	16
3	• 041-0003-00	• Nut	16
4	• 052-0076-00	• Spacer	4
5	• 040-0010-129	• Screw	6
6	• 025-0009-00	• Spring	8
7	• 052-0010-00	• Spacer	8
8	• 020-0144-03	• Foot Control Casting	1
9	• 052-0075-00	• Spacer	4
10	• 053-0155-00	• Split Bushing (Early Units Only)	4
11	• 040-0003-00	• Screw	16
12	• 050-3258-00	• Step Mount	4
13	• 053-0154-00	• Foot Tread	4
14	• 050-0941-04	• Pedal	4
15	• 061-0427-00	• Decal	1
16	• 045-0001-08	• Washer	4
17	• 040-0010-36	• Screw	4
18	• 053-0156-00	• Glide	6
19	• 040-0010-129	• Screw	4
20	• 040-0010-52	• Screw	8
21	• 015-0008-00	• Strain Relief Bushing	1
22	• 050-0957-00	• Strain Relief Bracket	1
23	040-0010-129	Screw	2
24	040-0010-47	Screw	7
25	045-0001-08	Lockwasher	2
26	050-0942-00	Wire Channel Cover	1
27		Ground Wire (Refer to "Wiring Diagram" {Section 5})	Ref
28	002-0048-00	Foot Control Cord (Refer to "Wiring Diagram" {Section 5})	Ref
29	002-0491-00	Footswitch Cover Kit (Not Shown)	1

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FAX ORDERING FORM

(SERVICE PARTS ONLY)

NOTES:

- ALL BLOCKED AREAS MUST BE COMPLETED.
- USE FOR NON-WARRANTY FAX ORDERS ONLY. WARRANTY ORDERS MUST BE TELEPHONED IN (1-800-MIDMARK).

ATTENTION: SERVICE DEPARTMENT FAX#: 877-249-1793

ACCT #: ______________ P.O. #: ______________ DATE: ______________

NAME: ______________
ADDRESS: ______________
CITY, ST.: ______________
CONTACT: ______________
PHONE: ______________

SHIP TO: ______________

☐ NON-EMERGENCY ORDER - TO SHIP WITHIN 72 HOURS IF PART(S) IN STOCK.

☐ EMERGENCY ORDER - TO SHIP WITHIN 24 HOURS IF PART(S) IN STOCK (IF ORDER IS RECEIVED BEFORE 1:00 P.M. E.S.T).

SEND NOTIFICATION IF PARTS ARE NOT AVAILABLE TO SHIP WITHIN 24 HOURS VIA E-MAIL OR FAX TO: ______________

METHOD OF SHIPMENT

UPS	FED EX	OTHER
☐ NEXT DAY A.M.	☐ NEXT DAY A.M.	______________
☐ NEXT DAY P.M.	☐ NEXT DAY P.M.	
☐ 2ND DAY	☐ 2ND DAY	
☐ GROUND	☐ ECONOMY	

QTY.	PART #	DESCRIPTION (SPECIFY COLOR OF ITEM IF APPLICABLE)	COLOR CODE	PRICE/PER
			TOTAL COST: $	

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P.O. Box 286
Versailles, Ohio 45380-0286
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