



MOBILE COLUMN LIFT

ML-4030BC ML-6045BC ML-4034BC ML-6051BC

Installation, Operation, Maintenance Manual



**IMPORTANT: READ THIS MANUAL COMPLETELY BEFORE
INSTALLING OR OPERATING YOUR LIFT**

OWNER / EMPLOYER OBLIGATIONS

1. The Owner/Employer shall ensure that lift operators are qualified and that they are trained in the safe use and operation of the lift using the manufacturer's operating instructions; ALI/SM10-1, **ALI Lifting it Right safety manual**; ALI/ST-10 **ALI Safety Tips card**; ANSI/ALI ALOIM-2008, **American National Standard for Automotive Lifts - Safety Requirements for Operation, Inspection and Maintenance**; ALI/WL400 Series, **ALI Uniform Warning Label Decals/Placards**; and in the case of frame engaging lifts, ALI/LP-GUIDE, **Vehicle Lifting Points/Quick Reference Guide for Frame Engaging Lifts**.
2. The Owner/Employer shall establish procedures to periodically inspect the lift in accordance with the lift manufacturer's instructions or ANSI/ALI ALOIM-2008, **American National Standard for Automotive Lifts - Safety Requirements for Operation, Inspection and Maintenance**; and the Employer shall ensure that the lift inspectors are qualified and that they are adequately trained in the inspection of the lift.
3. The Owner/Employer shall establish procedures to periodically maintain the lift in accordance with the lift manufacturer's instructions or ANSI/ALI ALOIM-2008, **American National Standard for Automotive Lifts - Safety Requirements for Operation, Inspection and Maintenance**; and the Employer shall ensure that the lift maintenance personnel are qualified and that they are adequately trained in the maintenance of the lift.
4. The Owner/Employer shall maintain the periodic inspection and maintenance records recommended by the lift manufacturer's instructions or ANSI/ALI ALOIM-2008, **American National Standard for Automotive Lifts - Safety Requirements for Operation, Inspection and Maintenance**.
5. The Owner/Employer shall display the lift manufacturer's operating instructions; ALI/SM 10-1, **ALI Lifting it Right safety manual**; ALI/ST-10 **ALI Safety Tips card**; ANSI/ALI ALOIM-2008, **American National Standard for Automotive Lifts - Safety Requirements for Operation, Inspection and Maintenance**; ALI/WL Series, **ALI Uniform Warning Label Decals/Placards**; and in the case of frame engaging lifts, ALI/LP- GUIDE, **Vehicle Lifting Points/Quick Reference Guide for Frame Engaging Lifts** in a conspicuous location in the lift area convenient to the operator.
6. The Owner/Operator shall provide necessary lockout/tag out means for energy sources per ANSI Z244.1-1982 (R1993), **Safety Requirements for the Lockout/Tag out of Energy Sources**, before beginning any lift repairs and maintenance.
7. The Owner/Employer shall not modify the lift in any manner without the prior written consent of the manufacturer.

IMPORTANT SAFETY INSTRUCTIONS

When using this lift, basic safety precautions should always be followed, including the following:

1. Read all instructions in this manual and on the lift thoroughly before installing, operating, servicing or maintaining the lift.
2. Care must be taken as burns can occur from touching hot parts.
3. Do not operate equipment with a damaged cord or if the equipment has been dropped or damaged – until it has been examined by a qualified service person.
4. Do not let a cord hang over the edge of the table, bench, or counter or come

- in contact with hot manifolds or moving fan blades.
5. If an extension cord is necessary, a cord with a current rating equal to or more than that of the equipment should be used. Cords rated for less current than the equipment may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.
 6. Always unplug equipment from electrical outlet when not in use. Never use the cord to pull the plug from the outlet. Grasp plug and pull to disconnect.
 7. Let equipment cool completely before putting away. Loop cord loosely around equipment when storing.
 8. To reduce the risk of fire, do not operate equipment in the vicinity of open containers of flammable liquids (gasoline).
 9. Adequate ventilation should be provided when working on operating internal combustion engines.
 10. Keep hair, loose clothing, fingers, and all parts of body away from moving parts.
 11. To reduce the risk of electric shock, do not use on wet surfaces or expose to rain.
 12. Use only as described in this manual. Use only manufacturer's recommended attachments.
 13. **ALWAYS WEAR SAFETY GLASSES.** Everyday eyeglasses only have impact resistant lenses; they are not safety glasses.
 14. Inspect lift daily. Do not operate if it malfunctions or problems have been encountered.
 15. Never attempt to overload the lift. The manufacturer's rated capacity is shown on the identification label on the power side column. Do not override the operating controls or the warranty will be void.
 16. Only trained and authorized personnel should operate the lift. Do not allow customers or bystanders to operate the lift or be in the lift area.
 17. Position the lift support pads to contact the vehicle manufacturers recommended lifting points. Raise the lift until the pads contact the vehicle. Check pads for secure contact with the vehicle.
 18. **Caution!** Never work under the lift unless the mechanical safety locks are engaged.
 19. Note that the removal or installation of some vehicle parts may cause a critical load shift in the center of gravity and may cause the vehicle to become unstable. Refer to the vehicle manufacturer's service manual for recommended procedures.
 20. Always keep the lift area free of obstruction and debris. Grease and oil spills should always be cleaned up immediately.
 21. Never raise vehicle with passengers inside.
 22. Before lowering check area for any obstructions.
 23. Before removing the vehicle from the lift area, position the columns to prevent damage to the lift and /or vehicle.
 24. Check and adjust if need the correct air pressure in all tires before lifting. Do not exceed tire load when raising vehicle.
 25. DO NOT raise / lower only one side if a vehicle.
 26. Lift only on same axle. Do not stagger between axles.
 27. Do not drive over or pinch the electrical communication cables.
 28. Do not remove hydraulic fittings while under pressure.
 29. Check floor to ceiling height for clearance when vehicle is fully raised.

WARNING! Failure by purchaser to provide the recommended mounting surface could result in unsatisfactory lift performance, property damage, or personal injury.

LOCATION

This lift has been evaluated for **indoor use only** with an operating ambient temp. range of 5 - 40°C (41-104°F)

For additional safety instructions regarding lifting, lift types, warning labels, preparing to lift, vehicle spotting, vehicle lifting, maintaining load stability, emergency procedures, vehicle lowering, lift limitations, lift maintenance, good shop practices, installation, operator training and owner/employer responsibilities, please refer to “Lifting It Right” (ALI/SM) and “Safety Tips” (ALI/ST) and vehicle lift points for service garage lifting SAE J2184.

For additional instruction on general requirements for lift operation, please refer to “Automotive Lift-Safety Requirements for Operation, Inspection and Maintenance” (ANSI/ALI ALOIM).

Installation shall be performed in accordance with ANSO/ALI ALIS, Safety Requirements for Installation and Service of Automotive Lifts.



ATTENTION! This lift is intended for indoor installation only. It is prohibited to install this product outdoors. Operating environment temperature range should be 41 – 104 °F (5 – 40 °C). **Failure to adhere will result in decertification, loss of warranty, and possible damage to the equipment.**

NOTICE

If attachments,
accessories, or
configuration
modifying
components

used on this lift are located in the load path and affect operation of the lift, affect the lift electrical listing, or affect intended vehicle accommodation; and if they are not certified for use on this lift, then the certification of this lift shall become null and void. Contact the participant for information pertaining to certified attachments, accessories, or configuration modifying components.

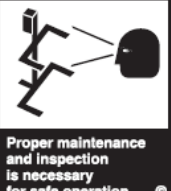
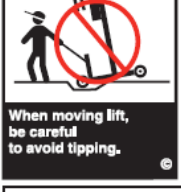
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ALI / WLSIA01

REFERENCE: AUTOMOTIVE LIFT INSTITUTE

Automotive Lift Institute, Inc. WL400 Series Label Kit

 WARNING Clear area if vehicle is in danger of falling.	 WARNING Remain clear of lift when raising or lowering vehicle.	 NOTICE Read operating and safety manuals before using lift.	 NOTICE Proper maintenance and inspection is necessary for safe operation.
 WARNING Locate lift on firm, level surface, preferably concrete.	 WARNING Be sure intended lifts are moving together evenly.	 NOTICE Do not operate a damaged lift.	The messages and pictographs shown are generic in nature and are meant to generally represent hazards common to all automotive lifts regardless of specific style. Funding for the development and validation of these labels was provided by the Automotive Lift Institute, PO Box 85 Cortland, NY 13045. Replacement label sets may be obtained from the original lift manufacturer and ALI's member companies. They are protected by copyright. www.autolift.org ©1993 by ALI, Inc. ALIWL400a
 WARNING All lifting forks must properly engage vehicle tires or supports.	 WARNING Do not drive over or pinch electrical cables.	 CAUTION Lift to be used by trained operator only.	 CAUTION Authorized personnel only in lift area.
 WARNING Keep feet clear of lift while lowering.	The messages and pictographs shown are generic in nature and are meant to generally represent hazards common to all automotive lifts regardless of specific style. Funding for the development and validation of these labels was provided by the Automotive Lift Institute, PO Box 85 Cortland, NY 13045. Replacement label sets may be obtained from the original lift manufacturer and ALI's member companies. They are protected by copyright. www.autolift.org ©1993 by ALI, Inc. ALIWL400a	 CAUTION When moving lift, be careful to avoid tipping.	 CAUTION Check for overhead obstructions before raising vehicle.
		The messages and pictographs shown are generic in nature and are meant to generally represent hazards common to all automotive lifts regardless of specific style. Funding for the development and validation of these labels was provided by the Automotive Lift Institute, PO Box 85 Cortland, NY 13045. Replacement label sets may be obtained from the original lift manufacturer and ALI's member companies. They are protected by copyright. www.autolift.org ©1993 by ALI, Inc. ALIWL400a	

“WARNING”: Risk of Explosion. This Equipment Has Internal Arcing Or Sparking Parts Which Should Not Be Exposed To Flammable Vapors. It Should Not Be Located In A Recessed Area Or Below Floor Level.

« AVERTISSEMENT »: Risque d'explosion. Cet équipement a l'arc interne ou des parties Sparking qui ne devrait pas être exposé à des vapeurs inflammables. Il ne doit pas être situé dans une zone en creux ou en dessous de niveau plancher.

SAVE THESE INSTRUCTIONS

Note: Some images in this manual are generic and may not resemble the lift you have purchased.

SPECIFICATIONS

Specifications	Certified Lift			
	Models			
Model	ML-4030BC	ML-6045BC	ML-4034BC	ML-6051BC
Lifting Capacity per Column	16,500 lbs. / 7,500 kl.	16,500 lbs. / 7,500 kl.	18,500 lbs. / 8,400 kl.	18,500 lbs. / 8,400 kl.
Column Configuration	Single/ Pair Four	Single/ Pair Four / Six	Single/ Pair Four	Single/ Pair Four / Six
Maximum Lift Capacity	66,000 lbs. / 30,650 kl.	99,000 lbs. / 44,900 kl.	74,000 lbs. / 33,560 kl.	111,000 lbs. / 50,350 kl.
Maximum Lifting Height	67" / 170 cm.	67" / 170 cm.	67" / 170 cm.	67" / 170 cm.
Lifting Time with Maximum Load*	80 Seconds	80 Seconds	90 Seconds	90 Seconds
Lowering Time with Maximum Load-	120 Seconds	120 Seconds	130 Seconds	130 Seconds
Carriage Type	Adjustable	Adjustable	Adjustable	Adjustable
Tire Diameter Sizes	19" - 44" / 43 cm-112 cm.	19" - 44" / 43 cm-112 cm.	19" - 44" / 43 cm-112 cm.	19" - 44" / 43 cm-112 cm.
Power Unit	24 Volt DC Electric Hydraulic			
Power Supply	Dual 12 Volt Industrial Grade Deep Cycle Battery with 120 Volt Battery Charging System per column			
Shipping Weight per Column	1605 lbs. / 730 kl.	1606 lbs. / 730 kl.	1700 lbs. / 771 kl.	1701 lbs. / 771 kl.
Shipping Dimensions	49" Length x 47" Width x 89" Height / 125 cm. Length x 119 cm. Width x 226 cm Height			
Warranty	Two Years Limited			

*Lifting and lowering speeds may vary depending on the weight of the vehicle. Speeds shown are at maximum weight load.

PACKING LIST

The complete lift is a set of four (4) mobile column lifting units and one (1) parts carton.

1. Each column is a self-contained unit.

2. The parts carton contains:

- Four (4) communication cables.
- Four (4) column top dust covers
- 10 sets of bolts and washers to secure top covers.
- Two (2) spare hydraulic fittings.
- Two (2) keys for column door interlock
- Important document packet that includes, Maxima Installation, Operation and Maintenance Manual, ALI Manual, "Lifting it Right", Automotive Lift Safety Tips Placard, ALI "Lifting Points Guide", ANSI/ALI ALOIM:2008 Safety Requirements for Operation, Inspection and Maintenance.
- Warranty Statement and Warranty Registration Instructions.

INSTALLATION REQUIREMENTS AND TOOLS / SUPPLIES

Foundation

Important: It is the user's responsibility to provide a satisfactory installation area for the lift. Lifts should only be installed on level concrete floors with a minimum thickness of four inches (4") or 102 mm. Concrete must have a minimum strength of 3500 psi and should be aged thirty (30) days prior to installation. Please consult an architect, contractor or engineer if doubt exists as to the strength and feasibility of the floor to enable proper lift installation and operation. **Do not use on asphalt.** Do not use on a suspended floor without approval from a licensed structural engineer.

A qualified person should be consulted to address seismic loads and other local or state requirements.

It is the user's responsibility to provide all wiring for electrical hook-up prior to installation and to insure that the electrical installation conforms to local building codes. Where required, it is the user's responsibility to provide an electrical isolation switch located in close proximity to the lift that will enable emergency stop capability and isolate electrical power from the lift for any servicing requirements.

Tools / Supplies

1. Cutting device to remove packaging.
2. Metric wrenches.
3. 6 mm allen wrench
4. Clean funnel for adding hydraulic oil.
5. Clean new * AW-32 Hydraulic Oil

Hydraulic Oil needed per model

- ML-4030BC 13 Gallons / 49.2 Liters
- ML-6045BC 19.5 Gallons / 73.8 Liters
- ML-4034BC 15 Gallons / 56.8 Liters
- ML-6051BC 22.5 Gallons / 85.2 Liters

Note: Use only new fresh clean AW-32 Hydraulic Oil. *The use of transmission fluids will void the lift warranty.

Installation Instructions

When the lift arrives on site:

Check for any freight damages. The shipment should be thoroughly inspected as soon as it is received. The signed bill of lading is acknowledgement by the carrier of receipt in good condition of shipment covered by our invoice. If any of the goods called for on your bill of lading are shorted or damaged, do not accept them until the carrier makes a notation on the freight bill of the missing or damaged goods. Do this for your own protection. Check the contents of the accessory and hardware boxes to make sure no parts are missing.

NOTE: IT IS DIFFICULT TO COLLECT FOR LOSS OR DAMAGE AFTER YOU HAVE GIVEN THE CARRIER A CLEAR RECEIPT. THE LIFT MANUFACTURER IS NOT RESPONSIBLE FOR ANY FREIGHT DAMAGE.

Unpacking Procedure

- Remove all plastic wrap and cardboard. Be careful not to cut into the lower hydraulic hoses and fittings or to scratch the paint or damage the safety decals.
- Use a 13 mm wrench remove the forklift brackets attached on the top of the carriage and / or the column sides.
- Carefully open the parts carton, avoid cutting the enclosed communication cables.
- Remove all of the cables, column cover, spare parts and document packet.

Preparing Lift for Initial Startup

To transport the columns to a location in the repair facility for setup requires that the lifts be moved. To easily move the columns, raise and lower the trolley handle in a pumping motion 3-5 times until the inner lower column edge is lifted from the floor. You can now maneuver the lifts to any location by pulling the trolley handle to the desired location. Once you have moved the lifts into position squeeze the release lever to lower the column to the floor. The lifts will not operate unless the columns are lowered.

Installing the column covers: Inside the parts carton are four (4) column covers that should be fitted and bolted to the open column tops using the provided bolts, washers and lock washers.

Adding hydraulic oil: To open the column main door, move the trolley handle to the extreme right position to prevent the door from hitting the handle when opened. Use the 6 mm allen wrench and remove the 3 door bolts on the left side of the column and open the main lift cabinet. The hydraulic power unit tank will have a red plastic plug in the top opening and black breather plug on the bottom outer edge of the tank. Remove both items and put the red plug in the bottom hole. (The tank does not have a drain hole) Use a clean funnel and add new hydraulic oil (AW-32) to the tank and fill to approx. 2" from the top of the tank fill hole. The approx. amount of oil per column is shown below:

- ML-4030BC 13 Quarts / 12.3 Liters
- ML-6045BC 13 Quarts / 12.3 Liters
- ML-4034BC 15 Quarts / 14.3 Liters
- ML-6051BC 15 Quarts / 14.3 Liters

Install the black breather cap in the top of the tank. Close cabinet door and secure with the top and bottom bolts. The center bolt secures the battery charger bay door and does not need to be re-installed. (If the battery charger door tends to stay open,

then loosely re-install the bolt by hand to secure the door thereby making future battery charging procedures faster)

Note: The hydraulic system was tested during manufacturing. Each hydraulic cylinder and the power unit tank was filled and cycled to test for leaks and for performance. During this process the hydraulic cylinders were bleed to remove any air. The hydraulic oil was removed from the tank after testing. Because residual oil at the bottom of the tank and inside the cylinder remain, additional hydraulic system *bleeding is not necessary*.

Battery charging: The LCD display panel will advise you if the batteries need to be charged. To charge the batteries open the battery charger access door on the left side of the column by

removing the bolt and then pull outward on the black knob and fully open the door. A battery charger is built in to each column. Plug the battery charger electrical cord into a 110 volt grounded electrical outlet. Charge each mobile column lifts using a separate electrical outlet. Best performance will be obtained by charging all mobile column batteries at the same time. Each battery charger front panel has a red and green indicator light. When the indicator light is red means the battery is charging. When the indicator light is green means the battery is fully charged.

When the lifts are new, charge the batteries for the first time approx. 12-15 hours or until the battery charger indicator light turns green. Battery charging after 20-30 cycles will typically take 6-8 hours. When the batteries are fully charged, disconnect the electrical cable and store in the charger bay. Close the access door and loosely secure the door with the bolt.

Please note the safety information below:

An extension cord should not be used unless absolutely necessary. Use of improper extension cords could result in a risk of fire or electric shock. If extension cords must be used, make sure the following safety precautions are observed.

- That the pins of plug of the extension cord are the same number, size and shape of those of the plug on the battery charger.
- That the extension cord is properly wired and in good electrical condition.
- That the wire in the extension cord is proper size as recommend below.

Minimum recommended wire size for various length extension cords used with each battery charger:

Length of Cord	25'	50'	100'
Cord Gauge	16 Gauge	14 Gauge	12 Gauge

- Do not operate the battery charger with a damaged cord or plug.
- Do not operate the battery charger if it has received a sharp blow, been dropped or otherwise damaged in any way.
- Do not disassemble the charger. Incorrect reassembly may result in a risk of electric shock or fire.
- To reduce the risk of electric shock, unplug the charger from outlet before attempting any maintenance or cleaning. Disconnecting the leads will not reduce this risk.
- To reduce the risk of shock or spark, never touch the ring terminals together while the charger is plugged into an outlet or extension cord.
- External connections to the battery charger shall comply with all local, state, and federal regulations.

RISK OF EXPLOSIVE GASES

WORKING IN THE VICINITY OF A LEAD ACID BATTERY IS DANGEROUS. BATTERIES CONTAIN SULFURIC ACID AND PRODUCE EXPLOSIVE GASES. A BATTERY EXPLOSION COULD RESULT IN LOSS OF EYESIGHT OR SERIOUS BURNS. FOR THIS REASON, IT IS OF UTMOST IMPORTANCE THAT YOU FOLLOW THE INSTRUCTIONS EACH TIME YOU USE THE CHARGER TO REDUCE THE RISK OF BATTERY EXPLOSION, FOLLOW THESE INSTRUCTIONS AND THOSE PUBLISHED BY THE BATTERY MANUFACTURER FOR ANY EQUIPMENT YOU INTEND TO USE IN THE VICINITY OF THE BATTERY. REVIEW CAUTIONARY MARKINGS ON THESE PRODUCTS AND ON ENGINE, MOTOR OR OTHER EQUIPMENT REQUIRING BATTERY USAGE.

System testing before actual use

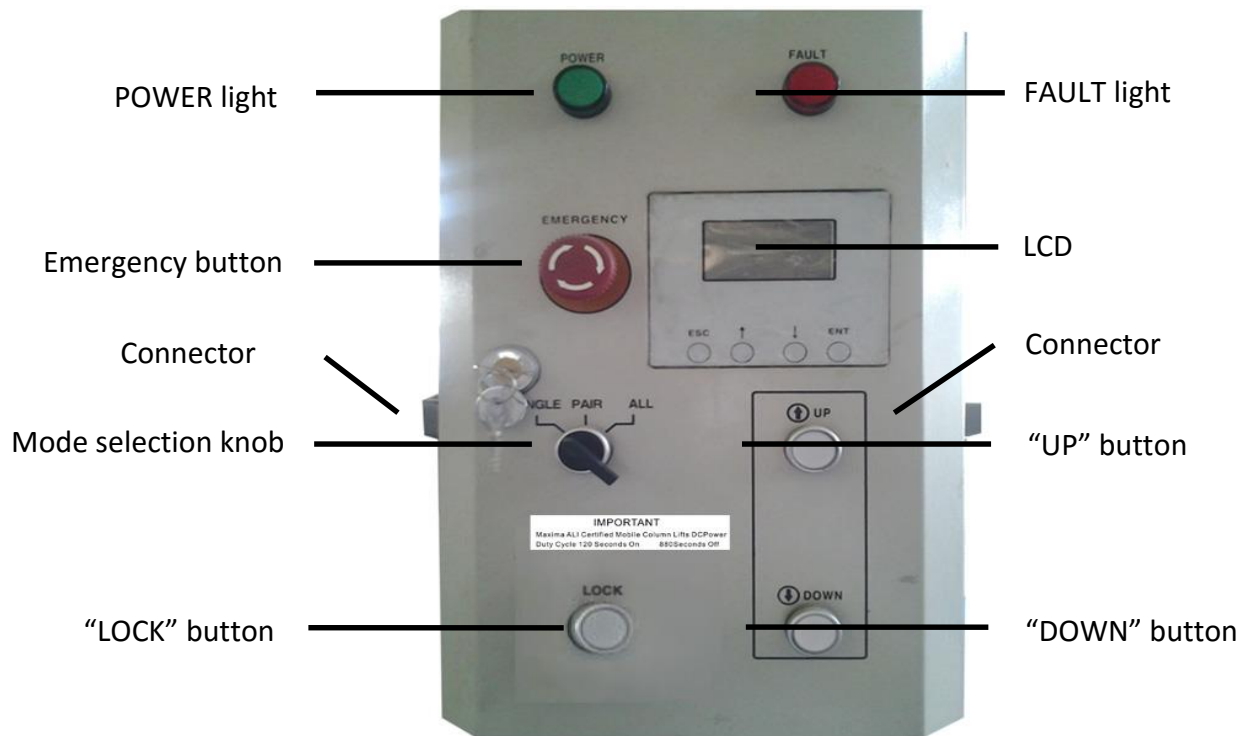
(Do not do any testing using a vehicle)

Familiarize yourself with the electronic controls and warning lights by reviewing the functions of each item listed below.

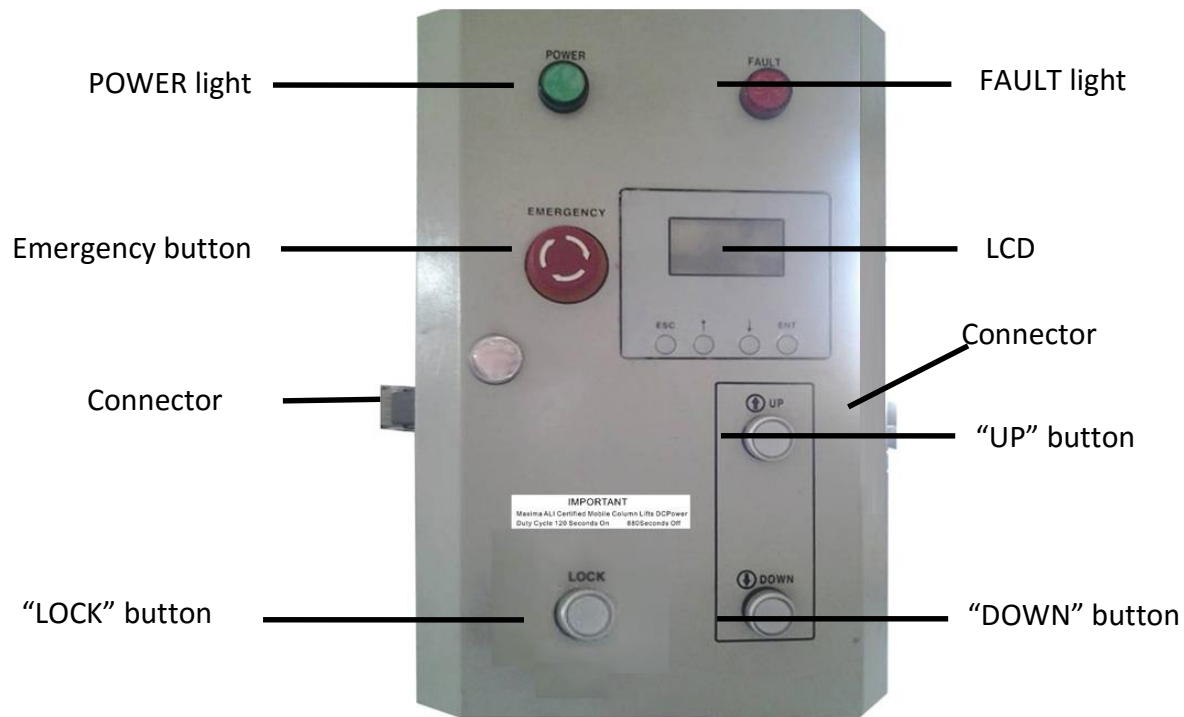
The Electronics:

The electronic control system of ML-4030BC and ML-4034BC includes one master and three slave control panels. The electronic control system of the ML-6045BC and ML6051BC includes one master and five slave control panels. Each column has one displacement sensor, one electric hydraulic pump, one micro-switch, and one electromagnet.

The photos below illustrate the Master and Slave control panels



Master Control Panel



Slave Control Panel

Control switches:

- **Power switch:** (located on the right side of each column) when this switch is at "OFF", the lift is powered off and no operation is available; when this switch is at "ON", the lift is powered on and prepared for operation.
- **Power light:** when the power switch is at "ON", it illuminates.
- **Fault light:** it illuminates when the carriages have overrun the limit synchronous value of each column or the communication cables becomes loose, at this point all the other switches do not work.
- **Mode selection knob:** turn the knob to "SINGLE", columns can be operated to go up and down individually: Turn the knob to "PAIR" or "ALL", two columns/four columns/six columns can be operated to go up and down together.
- **Emergency button:** when you press this switch, no operation is available immediately. There is one emergency button on each control box. It must be released before lift operation then turn on the power switch.
- **"UP" button:** Press and hold this button, the carriages will rise.
- **"DOWN" button:** Press and hold this button, the carriages go down to the required height after system unlocks the safety locks automatically.
- **"LOCK" button:** Press and hold this button, the carriage will slowly lower and lock onto first lowest column.

Note:

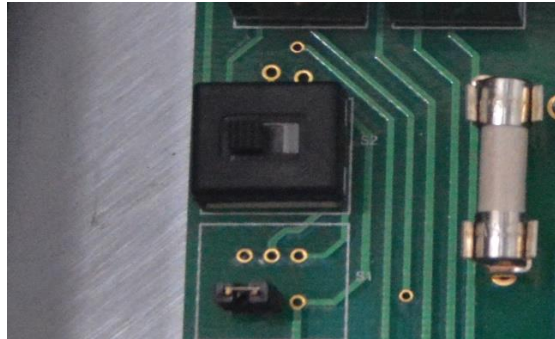
Before turning Mode Selection knob, power off the lift and wait for 20 seconds.

"PAIR" mode can be used when four/six columns are communicating...A and B columns become a pair, same with C and D columns. Use caution when using this function to keep vehicle level. "ALL" mode is used when there are four/six columns connected together.

"SINGLE" mode can be used to operate one column individually;

In case of an emergency, use the key to access the control panel and move the switch to right side as illustrated below so that the equipment can be operated without the communication cables connected. *The switch is located at the extreme lower left side of the circuit board next to the fuse holder.*

Move the switch to the right



Make sure that you have connected all communication cables according to Fig. 1 and Fig. 2 before operation.

Four Column Configuration

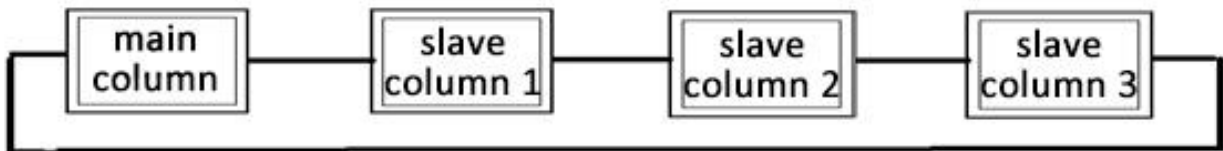


Fig. 1

Six Column Configuration

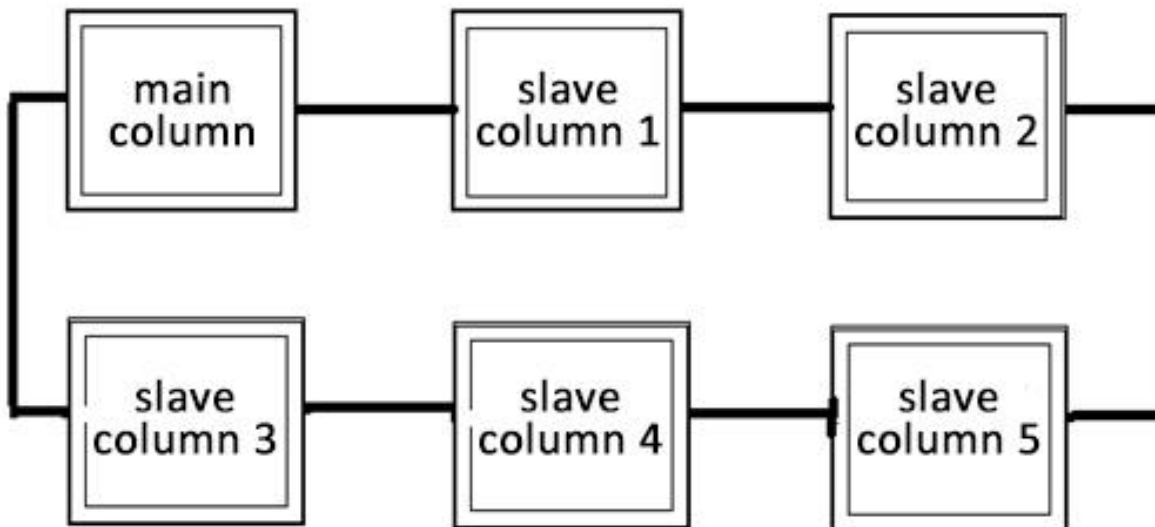


Fig. 2

Operation test:

Power on: Connect all 4/6 columns with communication cables as shown above, turn the Mode Selection knob to SINGLE, and power on main column and all slave columns. LCD screen will show work interface after successful connection.

Rise: **Unloaded**, press and hold the “UP” button on the master control box, check if the carriage rises normally. Repeat to try the other columns in same way

Press and hold the “UP” button and allow the carriage to rise to its highest position. Check for any hydraulic leaks.

Emergency stop: Press the red emergency button to stop the lift. Turn red button to the right to release it after testing to see if the columns have stopped.

Lower: Press and hold the “DOWN” button, the carriages go down to the required height after the safety locks have disengaged automatically.

“PAIR” or “ALL” columns test:

Power on: Connect all 4/6 columns with communication cable according to Fig.1 or Fig. 2, turn the Mode Selection knob to PAIR or ALL mode, and power on main column and all slave columns. LCD screen will show work interface after successful connection.

Rise: Unloaded, press and hold the “UP” button at the master control box, check if all the corresponding carriages can rise normally.

Emergency stop: Press the red emergency button to stop the lift. Turn red button to the right to release it after testing to see if the columns have stopped.

Lock: Press and hold this button, the carriage will slightly go down and will lock into the closest safety lock. **Use the lock button every time you operate the lifts.**

Lower: To lower you must raise lifts a few inches for the safety locks to disengage then press and hold the “DOWN” button, the carriages go down to the required height after the safety lock disengage.

*After you have read and understand all of the information in this manual and finished the operations testing you are ready to proceed to lifting vehicles. **All technicians that will be using this equipment MUST read and understand all of the safety and operation items in this manual.***

Lifting Vehicles:

1. Check and correct the tire pressure in each tire.
2. Position each mobile column adjacent to each tire on the vehicle. If the vehicle has dual rear axles position the mobile columns to use on the drive axle. Note: If an older vehicle has air bag suspension on the non-drive axles and mobile column are not used, extra support for the axles may be needed to prevent air bag damage. Consult with the vehicle manufacturer to determine if the air bag suspension has mechanical stops.
3. Adjust the lifting arms so they are at the narrowest position that will allow the arms to position under the tires. To adjust the arms lift and slide the arms inward as shown below.



4. After adjusting the lifting arms, raise the lift slightly using the jacking trolley and position the lifts arms as far inward as possible. Notice the position of the column top in relationship to external mirrors or vehicle body. Always maintain approx. 6 inches of clearance between the column top and the vehicle. Lower the lift using the trolley hydraulic release handle. Note: The lift will not operate when the columns until the column trolley is fully lowered.
5. Connect all communication cables as show in Fig. 1 or Fig. 2.
6. Turn the mode selection knob to "ALL" and turn the power control switch on the side of the lift to "ON" on the master control panel and all slave control panels.
7. Depress the "UP" button and all columns will rise approx. 6 inches and the lift will stop and make an audible beeping sound. Release the "UP" button and use this time to inspect all of the columns to insure that the lifting arms are positioned properly.
8. Depress the "UP" button again and raise the vehicle to the desired height. *Note: During the raising process you may notice one or more columns stop lifting momentary, this occurs when the lift control system is synchronizing each column to maintain level lifting. This is normal.*
9. After reaching to the desired height, press the "LOCK" button. All lift columns will lower to the first available safety lock position. When the lifts have settled onto the safety locks release the "Lock" button. The lift is now safe and secured and ready for vehicle service.
10. To lower the lifts, check that all tools and equipment and has been removed from under the vehicle. Press and hold the "UP" button for a few seconds to allow the lifts to raise 3-4 inches above the safety locks. Release the "UP" button and then press the "DOWN" button. The lifts will lower slowly to the floor. At approx. 6 inches from the floor the lifts will make an audible beeping sound. This is a safety reminder to double check that nothing in under the tires or lifting arms. Double check the communication cables are also clear of the lifting arms.

11. To move the vehicle, turn off the power at all lift columns and disconnect the communication cables. Move the mobile columns safely away from the vehicle before attempting to move the vehicle. Use caution to not drive over the communication cables.
-

Maintenance Instructions

Caution: If you are not familiar with vehicle lift maintenance and service procedures, do not attempt repairs and contact the factory for assistance. Use only experienced lift service technicians to perform lift maintenance.

Daily: Check hydraulic system for leaks.
Check the safety lock mechanism.
Check communication cables for damage
Inspect lifting forks and insure they are in proper location and engaged in the locks.

Monthly: Test the emergency stop button on all columns. Columns should stop immediately.
Check the battery charging cables and cable ends.
Inspect communication cables and cable ends for wear or damage.
Check oil levels in hydraulic pump tank. If oil is needed follow directions on page 7.

Annually: Have a ALI Certified Lift inspector check all of your vehicle lifts and the safety systems for wear or damage.

System Diagnostic Codes

The mobile column lifts have self-diagnostic systems that may display a fault code on the LCD screen. Most fault codes indicate some sort of operator error and are designed so the user can correct the most common operation mistakes without employing a service technician. Listed below are the most common fault codes.

Error Code 1-X: X means different column, for example, 2 means column B, 3 means column C, 4 means column D. Check the indicated column. Check connections between columns, confirm all power switches have been powered on, and ensure no emergency button has been pressed down.

Error Code 2: Mode shift error. Do not change working mode during operation. Select the correct operation mode and restart the equipment.

Error Code 4-X: Check communication between columns.

Error Code 5-X: Check for overheated power unit. The control panel has power unit cycle times posted. If these times are exceeded the power may overheat. If this occurs allow the power unit to cool off to the recommended duty cycle time

Error Code 6: “UP” and “DOWN” buttons have been pressed at the same time.

Error Code 7: The equipment has non-synchronization situation. If this happens when powering on, please check if there is height difference which is more than 2 inches among columns, and if yes, change working mode to “SINGLE”, and adjust the 4 columns to be same; if this happens during going up, please check the 2-way-3-position valve on the highest column; if this happens during descending, please check if there is leakage with two 2-way-2-position valves.

Error Code 8-X: Electromagnet has not been actuated. Please check micro switch. Change to “SINGLE” mode, press “DOWN” to see if electromagnet has been actuated. If no, please check the connection between electromagnet and connecting lines.

Error Code 9-X: Safety lock failed to lock the carriage. Check whether safety lock can exit electromagnet, if no, please check safety lock; if yes, please check micro switch. When safety lock leaves the electromagnet, its compression bar should not contact micro switch.

Error Code 12-X: Change-over switch is in wrong position. Open control panel with access key and move position switch as shown on page 11 of this manual.

Service

Caution: If you are not familiar with vehicle lift maintenance and service procedures, do not attempt repairs and contact the factory for assistance. Use only experienced lift service technicians to perform lift maintenance.

Before and vehicle lift is serviced, follow the proper procedure for lock / out tag / out below.

Rules for Using Lockout Procedure

Use the Lockout Procedure whenever the lift is being repaired or serviced, waiting for repair when current operation could cause possible injury to personnel, or for any other situation when unintentional operation could injure personnel. No attempt shall be made to operate the lift when the energy isolating device is locked out.

Purpose

This procedure establishes the minimum requirements for the lockout of energy that could cause injury to personnel by the operation of lifts in need of repair or being serviced. All employees shall comply with this procedure.

Responsibility

The responsibility for assuring that this procedure is followed is binding upon all employees and service personnel from outside service companies (Installers, contactors, service repairmen). All employees shall be instructed in the safety significance of the lockout procedure by the facility owner/manager. Each new or transferred employee along with visiting outside service personnel shall be instructed by the owner/manager (or assigned designee) in the purpose and use of the lockout procedure

Preparation

Employees authorized to perform lockout shall ensure that the appropriate energy isolating device (circuit breaker, fuse, disconnect, etc.) is identified for the lift being locked out. Other such devices for other equipment may be located in close proximity of the appropriate energy isolating device. If the identity of the device is in question, see the shop supervisor for resolution. Assure that proper authorization is received prior to performing the lockout procedure.

Sequence of Lockout Procedure

Notify all affected employees that a lockout is being performed and the reason for it.

Unload the subject lift. Shut it down and assure the disconnect switch is "OFF" if one is provided on the lift.

The authorized lockout person operates the main energy isolation device removing power to the subject lift.

If this is a lockable device, the authorized lockout person places the assigned padlock on the device to prevent its unintentional reactivation. An appropriate tag is applied stating the person's name, at least 3"x 6" in size, an easily noticeable color, and states do not operate device or remove tag.

If this device is a non-lockable circuit breaker or fuse, replace with a "dummy" device and tag it appropriately as mentioned *above*.

Attempt to operate lift to assure the lockout is working. Be sure to return any switches to the "OFF" position.

The equipment is now locked out and ready for the required maintenance or service.

Restoring Equipment to Service

Assure the work on the lift is complete and the area is clear of tools, vehicles, and personnel.

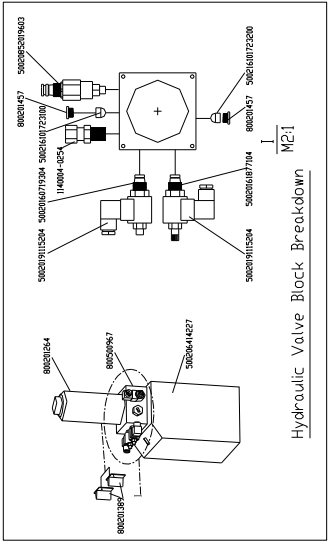
At this point, the authorized person can remove the lock (or dummy circuit breaker or fuse) & tag and activate the energy isolating device so that the lift may again be placed into operation.

Lift Parts and Drawings

ML-4030BC/ML-6045BC Mechanical Parts List

ITEM	DESCRIPTION	CODING	ITEM	DESCRIPTION	CODING
1	Column	2030048-0011	42	Big Cover	2030014-0040
2	Reinforce Bracket	2030047-1000	43	Battery Fixing Frame	2030014-0041
3	Bumper	1150009-0025	44	up Battery Seat	2030014-0043
4	Torsion spring	1040018-0003	45	Battery Fixing Strip	2020010-0194
5	Safety Hook	2040009-1000	46	Fixing Bracket	2030051-0001
6	Hook shaft	2040002-1000	47	Bolt With Slot	2020002-0153
7	Long Bar	2040008-1005	48	Under Battery Seat	2030014-0048
8	Pin C	2040002-0146	49	Power Switch	1130004-0081
9	Pin A	2040002-1001	50	Fuse Fixing Strip	2030056-0002
10	Pin B	2040002-1002	51	Charger Door	2030014-0044
11	Short Bar	2040008-0067	52	Battery	1130014-0008
12	Clip	2040010-1007	53	Flat Washer 30	2020005-1006
13	Electromagnet Bracket	2030056-0001	54	Sheave	2020006-1000
14	Sensor Bracket	2030057-1000	55	Sensor	2060004-1009
15	Micro-switch Bracket	2020010-0153	56	Micro-switch	1130004-0082
16	Carriage	2030063-0004	57	Electromagnet	1130010-0006
17	Rubber Hose	1140005-0104	58	Fuse Box	1130003-0026
18	Short Hose	2040011-1001	59	Fuse 0298150	1130003-0023
19	Steel Ball Fixing Cover	2040005-0041	60	Charger	1130014-0062
20	Cylinder	1140001-0010	61	Charger Wire	1100001-0145
21	Active Fitting (For Hydraulic)	1140004-0203	62	Switch Sol Act	800201389
22	Hydraulic Throttle Screw	1140008-0103	63	Mandril	2030007-0039
23	Side Sliding Block	2020014-1001	64	Under Micro-switch Bracket	2020010-0323
24	Cylinder Adjusting Washer	2040005-1000	65	Hydraulic Power Unit	1140002-0030 800601677
25	Shim	2040007-0012	66	Motor, Dc, 24v 2Term	800201264
26	Shaft Sheath	2040005-1034	67	Base Valve Block	800500967

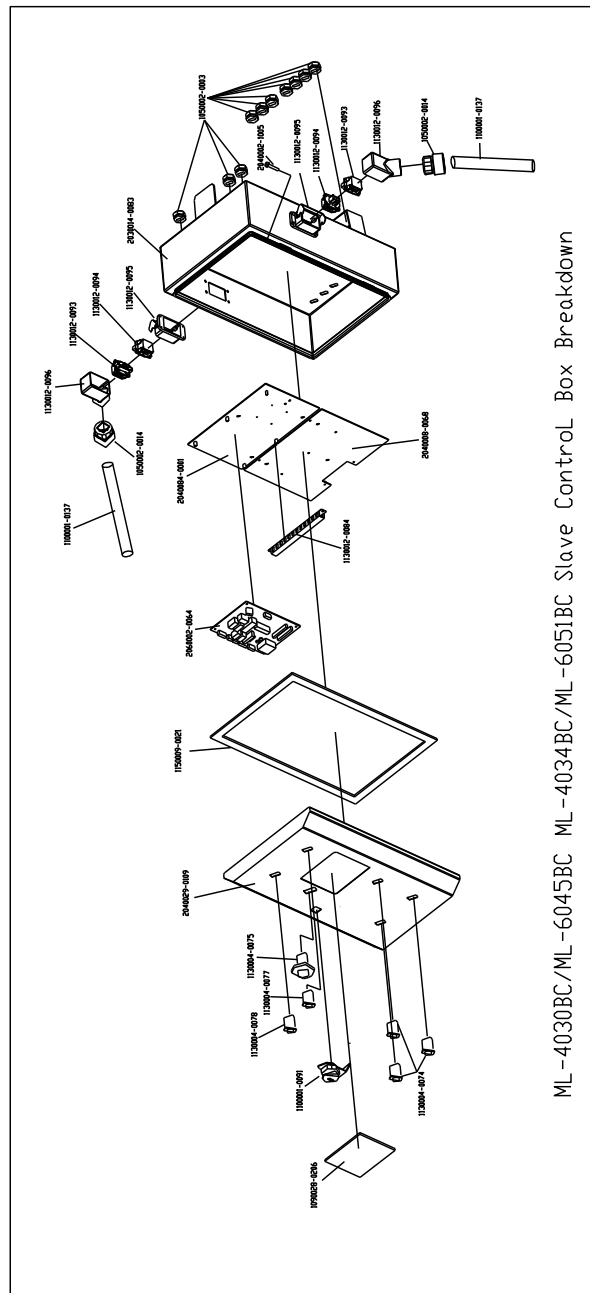
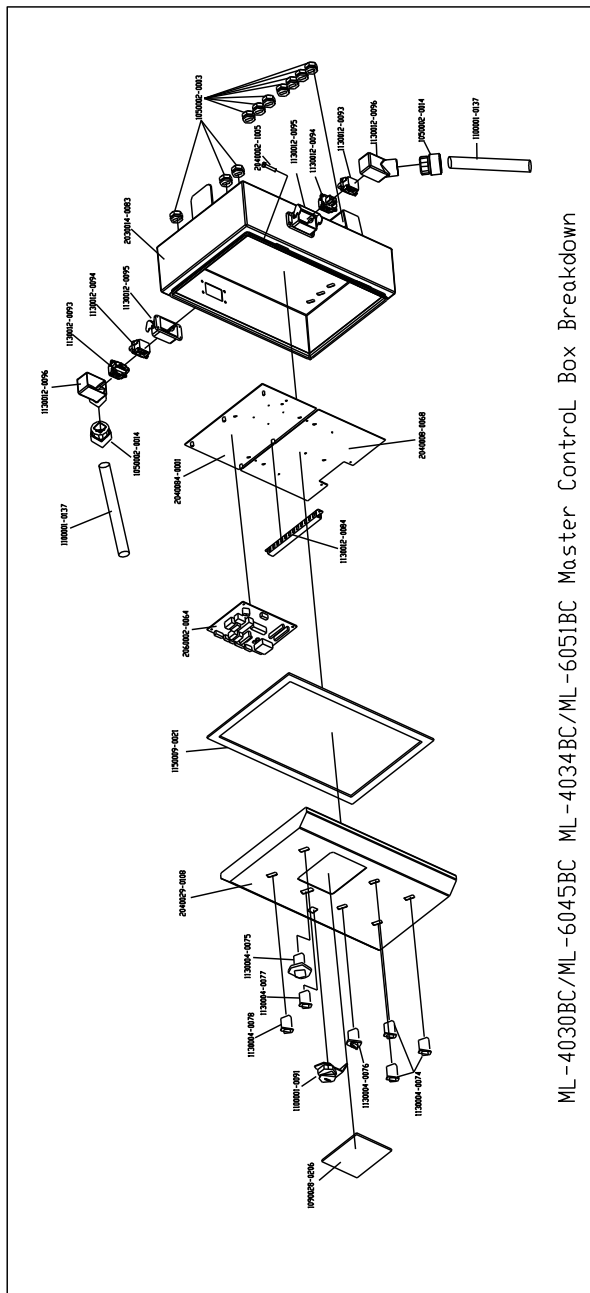
27	Swing Block	2040008-1008	68	Plug	800201457
28	Slider Block	2020008-1016	69	Resv,Plastic,9*10*18	500206414227
29	Holding Fork Arm	2030067-0001	70	Pressure Relief Valve	50020852019603
30	Hydraulic Dolly	2050034-1002	71	Active Fitting NPT3/8	1140004-0254
31	Left Crank	2040063-0002	72	Right-angle Fitting NPT3/8	1140004-0035
32	Right Crank	2040063-0003	73	Little Poppet Assy	500216101723100
33	Support shaft	2040002-0206	74	Big Poppet Assy	500216101723200
34	Outer Shaft 20	2040002-0214	75	Cartridge ,2W/2P Valve	50020160719304
35	Inner Shaft	2040002-0217	76	Cartridge ,2W/2P Valve With Manual Override Knob	50020161877104
36	Long Shaft	2040002-0215	77	Coil, 24VDC	50020191115204
37	Outer Shaft	2040002-1037	78		
38	Dustproof Cover	2030014-1022	79		
39	Long linkage	2040063-0001	80		
40	Truckle	2040006-0056	81		
41	Pendulum block	2040074-0002	82		



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ML-4030BC/ML-6045BC /ML-4034BC/ML-6051BC Electric Parts List

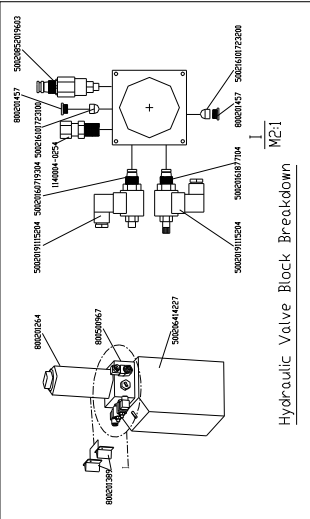
ITEM	DESCRIPTION	CODING	ITEM	DESCRIPTION	CODING
1	Master Control Box Door	2040029-0108	13	Fault Light	1130004-0077
2	Slave Control Box Door	2040029-0109	14	E-Stop	1130004-0075
3	Seal Strip	1150009-0021	15	Control Board	2060002-0064
4	Main Board Fixing Pedestal	2040084-0001	16	Wiring duct-slot	1130012-0084
5	Contactor Fixing Pedestal	2040008-0068	17	Cable	1100001-0137
6	Control Box Body	2030014-0083	18	Heavy Duty Plug	1130012-0096
7	LCD	1090028-0206	19	Female Connector	1130012-0094
8	Lock	1050008-0023	20	Male Connector	1130012-0093
9	Push Button	1130004-0074	21	Heavy Duty Socket	1130012-0095
10	Select Switch	1130004-0076	22	Cable Gland	1050002-0003
11	Power light	1130004-0078	23	Brass Cable Gland	1050002-0014
12	Pin	2040002-1005			



ML-4034BC/ML-6051BC Mechanical Parts List

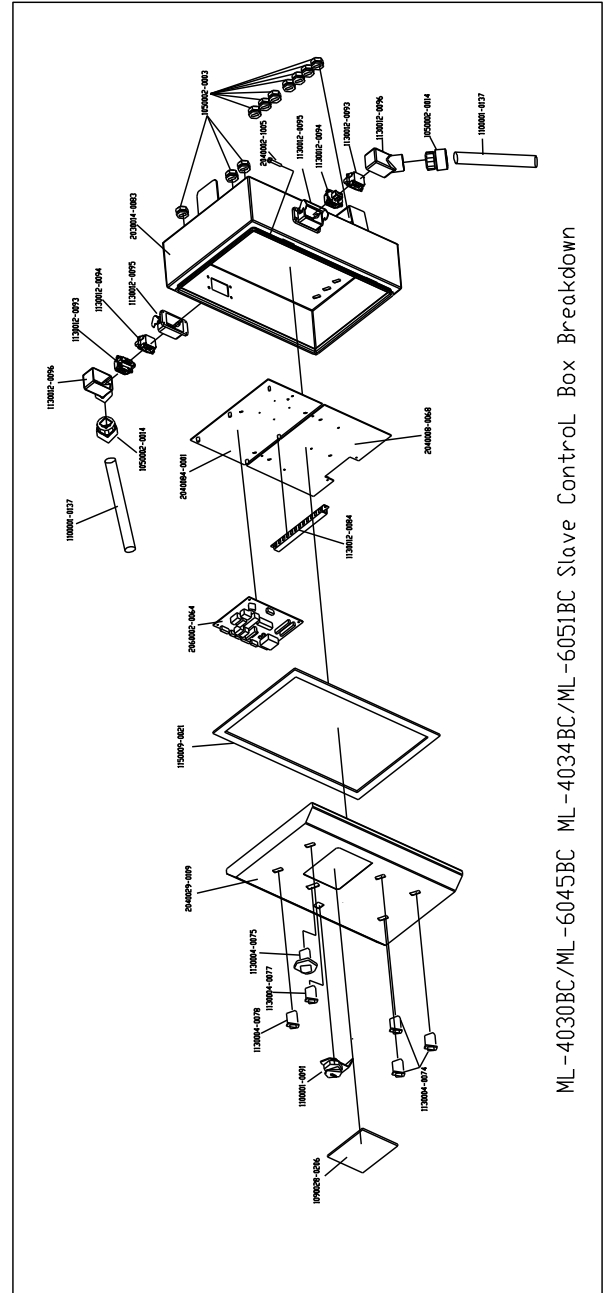
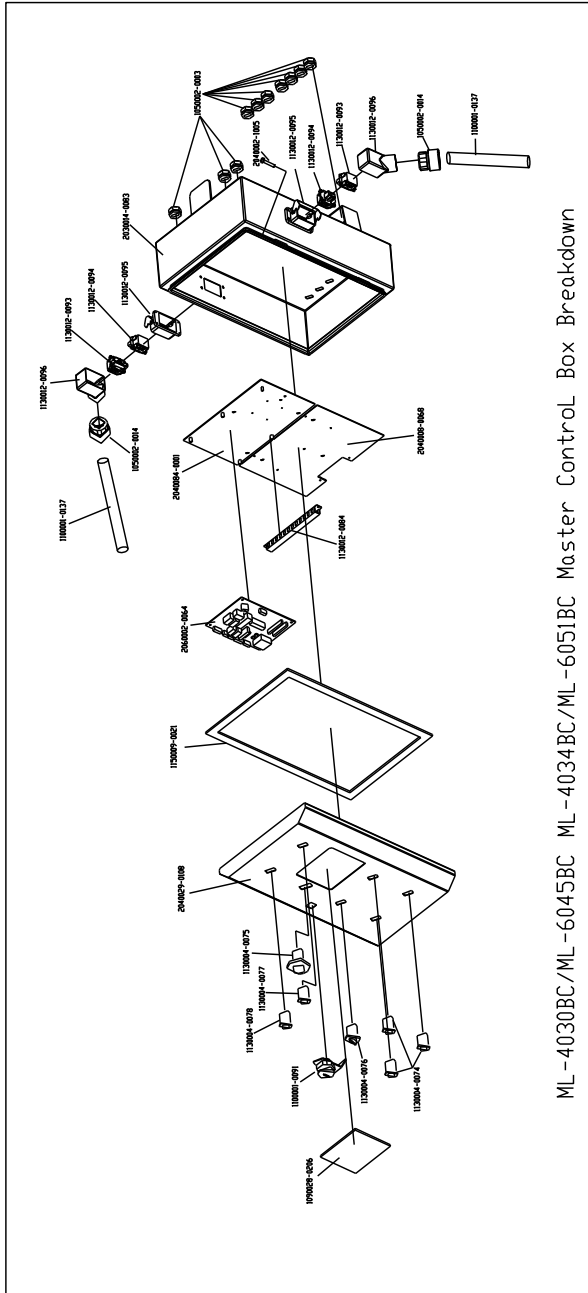
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22	Hydraulic Throttle Screw	1140008-0103	63	Mandril	2030007-0039
23	Side Sliding Block	2020014-1001	64	Under Micro-switch Bracket	2020010-0323
24	Nut	2040004-1053	65	Hydraulic Power Unit	1140002-0030 800601677
25	Shim	2040007-0012	66	Motor, Dc, 24v 2Term	800201264

26	Shaft Sheath	2040005-1034	67	Base Valve Block	800500967
27	Swing Block	2040008-1008	68	Plug	800201457
28	Slider Block	2020008-1106	69	Resv,Plastic,9*10*18	500206414227
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