Mobile Column Lift Set

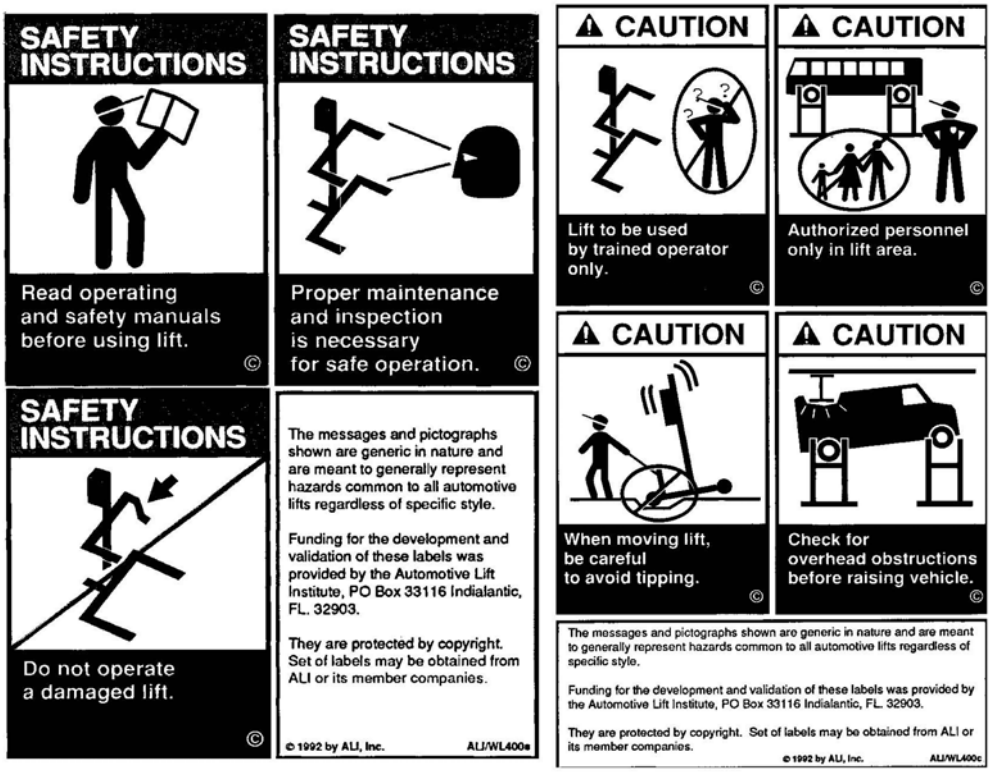
Capacity 8200kg (18000Lbs)/ Each Column

Item No. 167219W

Operation –Maintenance Manual

2012. Aug.

INDEX


SAFETY INSTRUCTIONS
Read operating and safety manuals before using lift.
SAFETY INSTRUCTIONS
Proper maintenance and inspection is necessary for safe operation.
CAUTION
Lift to be used by trained operator only.
CAUTION
Authorized personnel only in lift area.
SAFETY INSTRUCTIONS
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 33116 Indialantic, FL. 32903.
They are protected by copyright. Set of labels may be obtained from ALI or its member companies.
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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 33116 Indialantic, FL. 32903.
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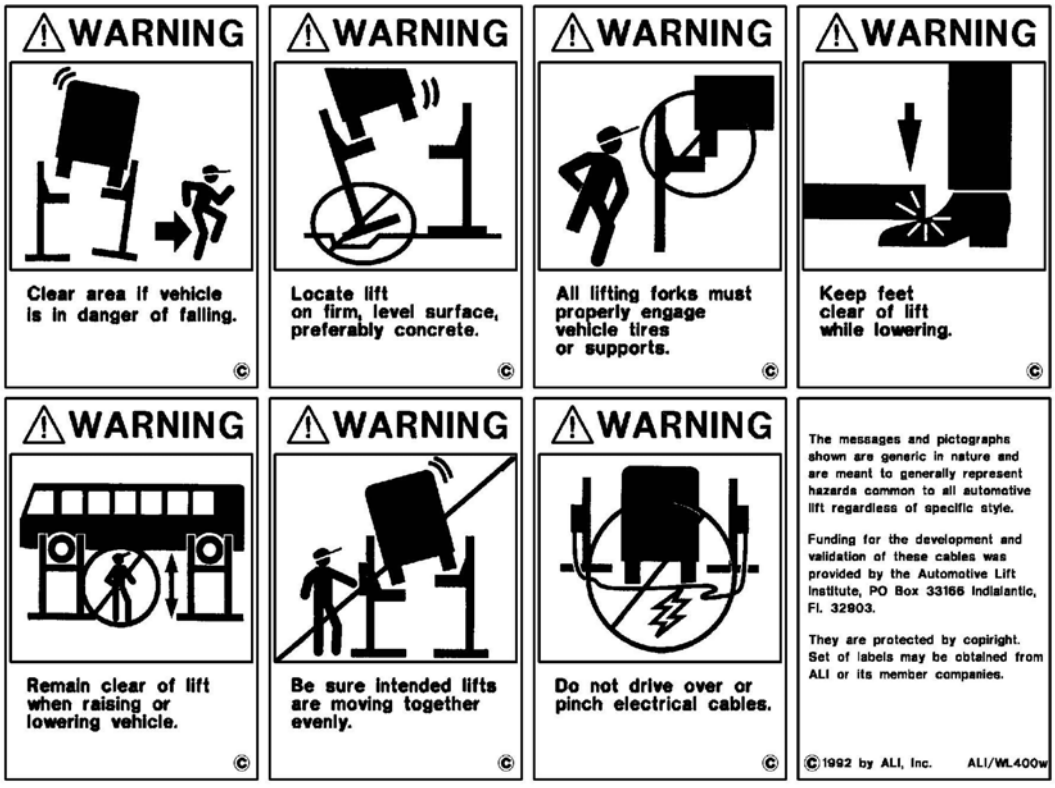
WARNING
Clear area if vehicle is in danger of falling.
WARNING
Locate lift on firm, level surface, preferably concrete.
WARNING
All lifting forks must properly engage vehicle tires or supports.
WARNING
Keep feet clear of lift while lowering.
WARNING
Remain clear of lift when raising or lowering vehicle.
WARNING
Be sure intended lifts are moving together evenly.
WARNING
Do not drive over or pinch electrical cables.
The messages and pictographs shown are generic in nature and are meant to generally represent hazards common to all automotive lift regardless of specific style.
Funding for the development and validation of these cables was provided by the Automotive Lift Institute, PO Box 33166 Indialantic, Fl. 32903.
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1. Operation.

Remarks:

-When using this lifting system, leave a space for a 24" (600mm) wide passage around the lifting system, which can serve as escape route.

-Before using the Mobile Column Lifts, ensure that the maximum load for each lifting column is not more than 7.500 kg /16.500 lbs.

-Ensure that before use, the lifting system is placed vertically seen from the sides as well as from the front.

-Make sure that the pallet jack mechanism is fully lowered before lifting a vehicle.

1.1 POSITIONING THE COLUMNS

A fully combination consists at least of 4 lifting columns. The position of the main column (1#) should be located opposite with column 2# loading the same axel of the vehicle. The 4# shall be at the other end of the same axel with 3#. (Fig. 1)

A set has a maximum lifting capacity of 66,000 lbs / 30000kg. This is the maximum lifting capacity of a standard set of 4 lifting columns of 16,500 lbs (7500kg) each.

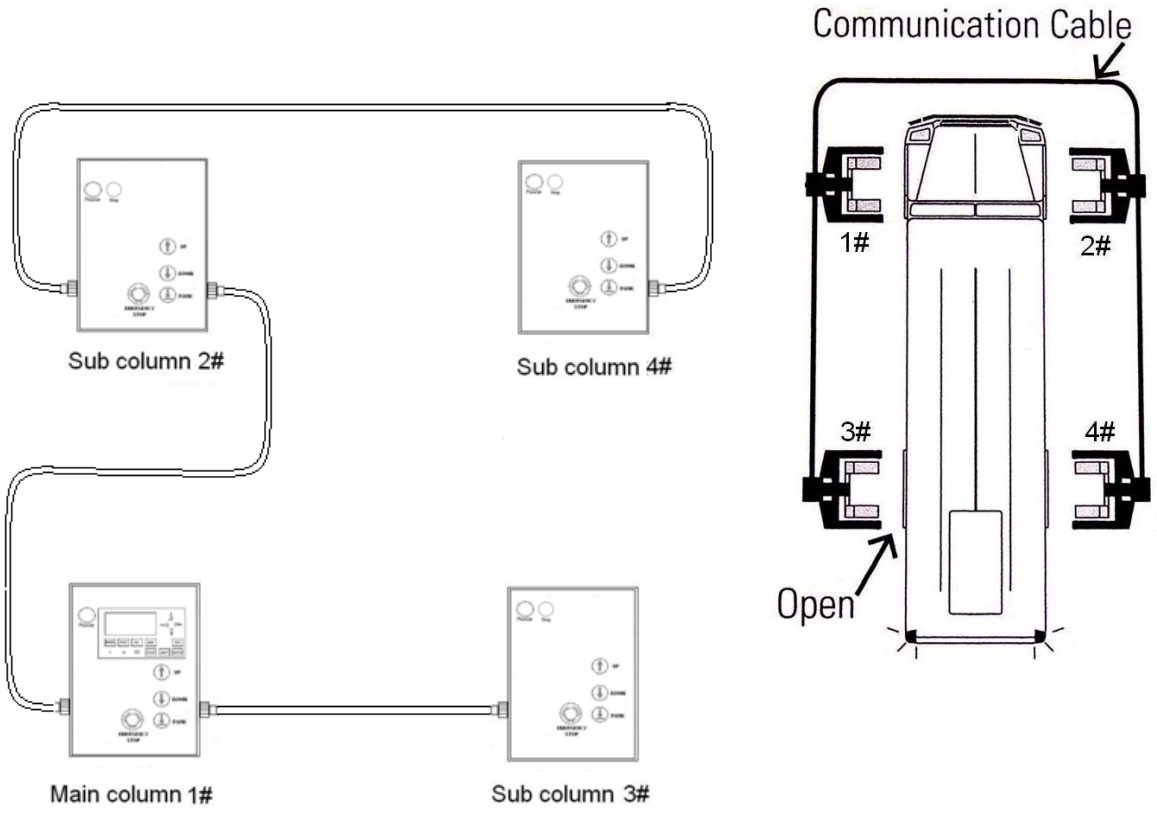


Fig. 1 Positioning Columns

STEP 1 Park the vehicle at the desired position.

STEP 2 Pull up the lever of the pallet jack to pump up the lift by moving up and down of the jack handle.(Fig. 2)

STEP 3 Center the wheel between the two forks.(Fig. 3)

Fig. 2

Fig. 3

STEP 4 Adjust the distance between the forks till it fits the wheel size.(Fig.4)

STEP 5 Again move the column till the side of the rubber wheel is about 5cm (1") away from the end of the forks.(Fig. 5)

Fig. 4

Fig. 5

STEP 6 Do above steps to other three columns.

STEP 7 Connect columns according to Fig.1

1.2 RUN THE SOFTWARE

1. Turn on the battery power switch of each column on the side. (Fig.6)

Fig. 6 Fig.7

2. Set the control box power switch [2] (Fig. 7) on each sub column to left position (ON) first, the green Power indicators [6] will be on (Fig. 8).

Fig. 8

3. Then turn on the switch [2] (Fig. 12) on main column to left (ON) and the LCD screen [19] is lighted. Wait until the LCD screen changed to the 4th display.

TD 400C Version 2.0.0.X INITIALIZING…

LCD screen 1st

Please wait…

LCD screen 2nd

TB6 Controller VX.XX Copyright @ Kernel Curr. status: RESET Self - Checking…

LCD screen 3rd

TB6 Controller VX.XX Copyright @ Kernel 170cm 4 Lifts Z___ Push START to confirm

LCD screen 4th

4. Press the START [15] button to start running of the system.

5. Check that all the emergency stop buttons have been released.(Fig. 9)

Mode: I bias: Z___ 0 0 0 0 0 0 Reset! 15time 4min

LCD screen 5th

Fig. 9

NOTE: 1) Every time only one button is in working. Others will be blocked automatically (not active).

2) Every time one button is released, within 2 seconds, the STOP light will be on. Do not press any button within this period.

1.3 Raise the vehicle

Note: Set the pallet lifting mechanism in the lowest position, and the lever to the neutral position (2), whenever the column lift is to hoist a vehicle.

1. Set the mode to be WHEEL / SINGLE by pressing button [11]
2. Press the UP button to raise the fork of the column to touch the tire then raise up about 10cm (4 “).
3. Repeat for other three columns.
4. Make sure that the vehicle on each column is stable.
5. Set the mode to ALL / VEHICLE by pressing button [13].
6. Press UP button to raise up the vehicle to desired height.
7. Press PARK button to lock the vehicle.

NOTE:

(1) It is recommended but not required that the lift be lowered into the mechanical locks.

(2) Before to work under the vehicle, it is recommended to support the vehicle with the safety stand before turning power switch to middle position (OFF)

1.4 Lower the vehicle and finish the work.

1. Check the mode is still in **ALL** mode.
2. Press DOWN button until the height reading to be zero.

ATTENTION:

(1) When the DOWN button is pressed, the columns will be raised up a little distance, to unlock the mechanical lock. Then it will lower down.

(2) Every time the columns lower to ground or below the customized zero height, the MODE will be changed back to SINGLE/ WHEEL automatically.

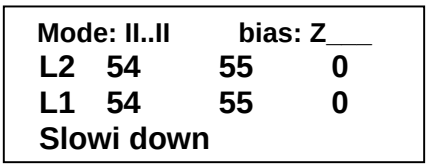
3. Move out the columns by pallet jack.
4. Drive away the vehicle.
5 If no more work to do, it is suggested to charge the battery at once.

2. INFORMATION ON SCREEN.

2.1 Slow down

LCD screen 6th

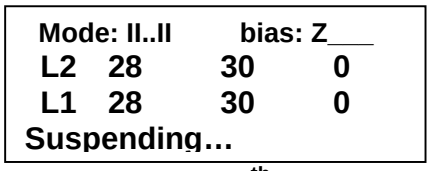
Or



LCD screen 7th

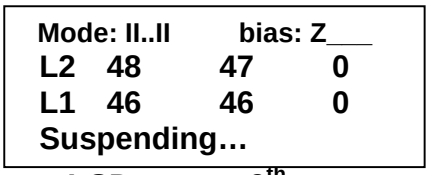
Column 2# or both 1# and 2# are quick in rising or lowering, The height difference is greater than 3/4" (20mm), the column(s) will be slowed down automatically.

2.2 Suspending



LCD screen 8th

Or

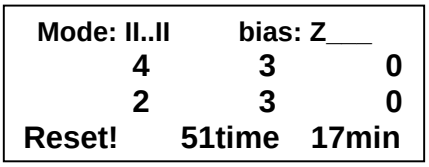


LCD screen 9th

Both column 1# and 2# are quick in rising or lowering. The height difference is greater than 2" (50mm), the column will be suspended (pause) automatically.

2.3 Times and minutes

When in ALL mode, there are **time** and **min** on the bottom line on the screen. It shows from the beginning (software installed) how many circles the lifts have been raised up and down. And how long the pump have worked for pump up the cylinder.



LCD screen 10th

2.4 Locked column

If when one button A is pressed in working (including emergency button), any other button B be pressed and is released after A, that control box of B button will be locked.

LCD screen 11th

Or, if one button is released. But within 2 second (the red STOP light[20] is on), one button is pressed again, the control box of later pressed button will be locked.

To unlock the locked control box, buttons on other control box has to be

used to press one button one time.

2.5 Other message on screen

	MESSAGE	EXPLAINATION
1	Configuration error	a. Missing one or more columns. b. Columns are not in pairs. c. Add one pair of column not in RESET state. d. PLC or encoder address error.
2	PLC err. Check & repower (L2)	Communicating of column 2# failed in self- checking or running: a. Column 2# is without power or in error b. Address of column 2# is not correct. After error is fixed, power off all then on again.
3	Data err. go dn manually (L2)	Encoder of column 2# does not communicate with main PLC a. Encoder is not working b. Address is not correct. c. Data transmitting error d. Too big height difference between columns
4	Stop!	a. One emergency button is pressed. b. Communication between columns is broken. c. One or more column is power off. d. Within 2 second after button is released.
5	Reach end of strock	One column stops after reaching its height limit. (this column will not raise when lower down)
6	24VDC insuficient	After moving stopped, one or more columns were found battery in low voltage. The lift will not raise up any more but may lower down.
7	Reset!	RESET state: one lift height is below 5 cm when in ALL mode. Lift will be back in ZERO bias. Free movement is possible and pair of column can be added or taken away. Any operation will leave this RESET state.
8	Free up/dn, < 5s/ time	Under RESET status, when single wheel operation is chosen. In FREE MOVEMENT, max. 5 sec. in single pressing can be carried out.

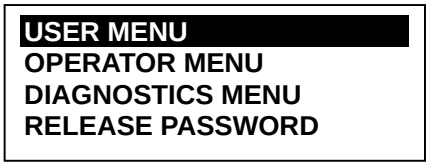
3. OTHER SETTINGS

3.1 TRAVEL DISTANCE CHANGE

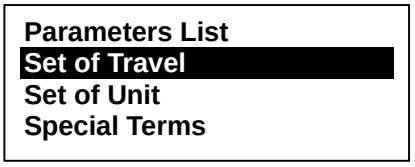
If the lifting height is small than 67" (170cm) due to low shop ceiling, the travel distance shall be set in following steps before starting the lifting operation.

1. After power on, waiting the LCD screen to be the LCD screen 4th, then press ESC button [18] to change to system menu. (LCD screen 12th)

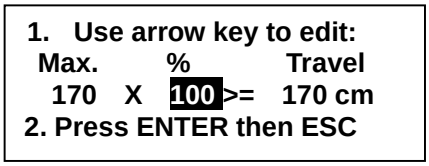
2. When 'USER MENU' is high lighted, press ENTER button [17] to enter the sub menu of USER MENU. (LCD screen 13th)



LCD screen 12th



LCD screen 13th



LCD screen 14th

3. Press DIRECTION DOWN button [8] to move to ' **Set of Travel**' as in LCD screen 13th.

4. Press ENTER button [17] again to enter the travel distance modification screen. (LCD screen 14th)

5. To change the travel distance, using 'DIRECTION' buttons [7], [8], [9] and [10] to move cursor to the percentage on the screen then change the number. Note: The percentage range is 60%--100%. Min. step is 2" (5cm).

6. Press ENTER to confirm the modification and press ESC to exit this function to upper menu. (LCD screen 13th)

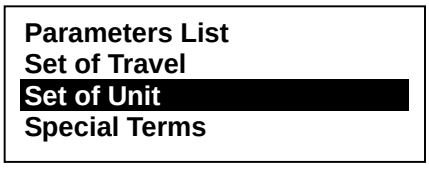
3.2 HEIGHT READING'S UNIT CHANGE

1. From LCD screen 6th, Use 'DIRECTION' buttons to choose '**Set of Unit**'. (LCD screen 15th)

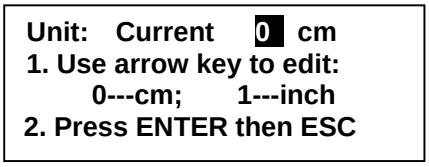
2. Press ENTER button [17] to enter the unit modification screen. (LCD screen 16th)

3. To change the unit, using 'DIRECTION ' UP and DOWN buttons [7], [8] to change the number. '1' refers to inch. '0' refers to cm.

4. Press ENTER [17] to confirm the modification and press ESC [18] to exit this function to upper menu. (LCD screen 15th)



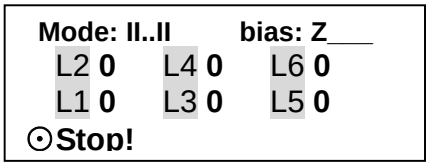
LCD screen 15th



LCD screen 16th

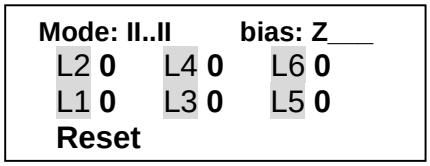
3. 3 UNIFORM HEIGHT REFERENCE

After travel distance and unit modification, the screen is back to LCD screen 4th. If press START button (15) at this step, the screen change to 17th.



LCD screen 17th

or



LCD screen 18th

(Here the L1,L2,L3,L4,L5,L6 are to indicate the position of height reading of each column. They are not shown in screen in operation)

In this LCD screen 10th, the bias 'Z___' means the system height reference is in uniform height reference. The height reading is zero while the lifting fork at the bottom as it is set in factory. While in VEHICLE mode or AXLE mode, the lifts will be in same height while lifting or lowering

The right row L5 and L6 reading (0, 0) in the screen is no meaning. The software can work for 6 columns under cable mode.

3. 4 CUSTOMIZED HEIGHT REFERENCE

If for any reason, the height of different column shall be kept differently, (difference is greater than 2"/50 mm), the Customized height reference shall be chosen as following.

1. Press WHEEL / SINGLE button [11], change the screen into LCD screen 19th.

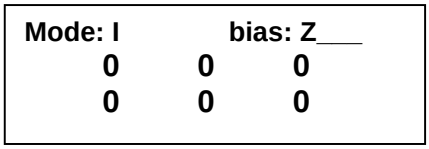
2. Press UP button [3] on one column to raise single column to desired height. Repeat for other three columns.

WARNING:

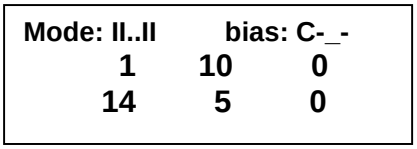
In this step, the height of each column shall keep the vehicle in horizontal. Never try to raise up too much or it will cause vehicle to move, to drop.

Each pressing can only keep moving for about 5 seconds.

3. Press **BIAS** button [14] for 2 to 4 seconds. The system changes into customized height reference system: '**C-_-**'. The LIFTING MODE will change into ALL / VEHICLE automatically. (LCD screen 20th)



LCD screen 19th



LCD screen 20th

The height of every column (14, 1, 5, 10 in the LCD 20th) is memorized as the customized zero points.

Note:

1) The customized zero-point height reference can only be performed just after LCD screen 9th display. Any lifting operation (UP, DOWN, PACK) in MODE ALL or AXLE will cancel the performance and keep the reference system to be UNIFORM immediately.

2) Under customized zero-point height reference, if all columns' height are below theirs customized zero points and at least one column within 6" (150mm) to the ground, the reference will be back to uniform reference, SINGLE and the 'Z___' will be on the screen again.

3) So, to change the height reference system (also travel distance or height unit) second time, operator shall wait all lifting forks in lowest (ground) position and the LCD screen is 18th again.

4. CHANGE THE NUMBER OF THE COLUMNS

Normally the mobile column lift set working with four columns. But it can work only with two columns (only 1# and 2# column).

To take away columns (4→2), please do as following.

Step 1
Lower down all the columns to ground. (Height readings must be small than 5cm)

Step 2
'RESET!' appears on the screen.

Step 3
Turn off the power switch of each control units.

Step 4
For cable model, disconnect the cable between column 1#--3#, 2#--4#.
For wireless model, skip this step.

Step 5
Turn on the power switch of the control unit on desired columns (1# and 2#) again.

Step 6
After self-check, now the system is working with only two columns.

To add columns (2→4), do above steps except in Step 4 connect the cables from 1#--3#, 2#--4# and in Step 5 turn on all the power switches on columns.

NOTE:
To lower down all columns to ground and to wait for '**RESET!'** APPEAR ON THE SCREEN is necessary.

6. MAINTENANCE

6.1 STORE THE MOBILE COLUMN LIFT

After all the work has been done on the vehicle, lower down all the lifting forks. When one of the lifting column touch the ground, release the DOWN button for 2 seconds.

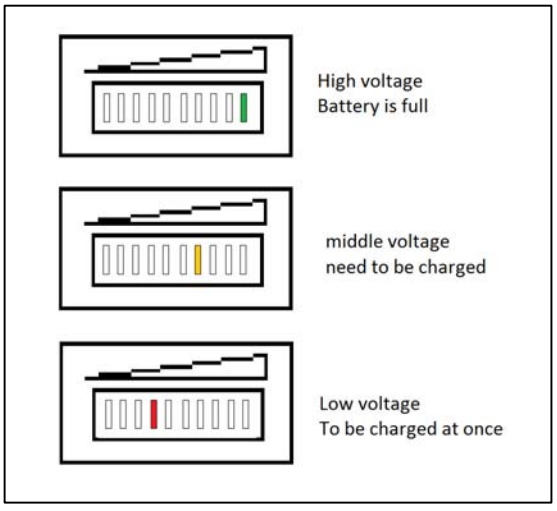
Press the DOWN button again to lower all the lifting forks to ground. Then turn off the power switches to middle position (OFF).

Using the pallet jack mechanism, move the lifting column out of the vehicle. Position them at the storage place.

6.2 CHARGE THE BATTERY

After finish one day's operation or the battery indicator [22] shows the voltage is low, it is suggested to charge the batteries. Different battery needs different charging time. Please refer to the manual of the battery.

1. Move the columns near the AC power supply ports on the wall.
2. Connect the charging cable to the charge port. (Fig. 12)
3. Turn the power switch to the right position (CHARGE) on each column.
4. Connect the charger to the AC power supply.
5. When all the green indicators LED all lighted, the battery is fully charged. (about 10 hours)



[22] Battery indicator

Fig. 12

NOTE:

1. When "**Low voltage on** " or **" Voltage deficient"** is on the screen, lower down the vehicle, shut off the lift, then charge the batteries at once. Continue to use the batteries will short the lift of them.
2. Charge the batteries immediately after the job is finished. This will help to prolong the lift of batteries.
3. Before to store the lifts, the batteries shall be fully charged first. Every six months charge again. Discharge the batteries once a year at 30% then charge them fully.
4. It is better to dismount the batteries from the lift for long period storage and keep it indoor.
5. Check the battery once a month for out looking, output voltage (open circle) and etc. to keep it in a good condition.

6.3. MAINTENANCE

All maintenance on the lifting equipment must be performed only by trained lift service person.

During inspection and maintenance the columns should be in the lowest position and the power switches should be turned off. This means that the power switches should be turned to the middle position.

The power switch should be turned on again only for the adjustments and checks that require it.

6.3.1 DAILY (BY OPERATOR)

-Check for visible damage.

-Check for oil leaks in the hydraulic unit, lines and cylinder.

6.3.2 MONTHLY (BY OPERATOR)

-Check hydraulic fluid level, and replenish as necessary.

-Check the emergency release mechanism.

(1) Push the emergency stop button when the columns are moving. All the columns should stop immediately.

(2) To release the emergency stop button by turning it counter-clockwise, set the main switch(es) to OFF and then to ON to restore control power.

-Check the functionality of the mechanical safety locks.

-Examine the lifting system for fluid leaks and signs of damaged or worn parts.

-Examine the electrical cables and connectors for signs of damage.

-Oil the dry piston shaft.

6.3.3 ANNUALLY (BY OPERATOR)

- Grease the carriage rollers and rubber plate with multipurpose grease.

-Check the contacts inside the DC contactor. If necessary, please change a new contactor.

- Check the bearing of the rollers. If necessary, change the bearings.

6.3.4 EVERY 2 YEARS (BY OPERATOR)

- Change the oil.

(1) Lower the lift completely to floor.

(2) Remove the cover of the power unit.

(3) Remove the oil from the tank.

(4) Refill with approximately 12 Liters of hydraulic oil meeting ISO-VG 32,filtrated to 5 Micrometer.

(5) Check the oil level in oil tanks on each column, add if necessary.