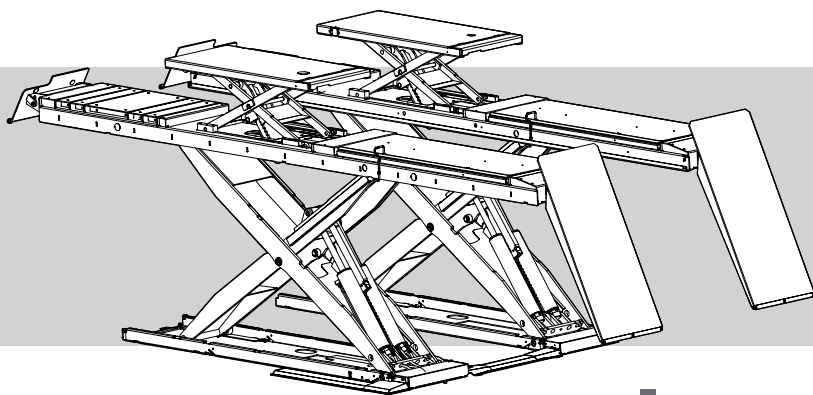




HESHBON SCISSORS LIFT

Installation/Operation & Maintenance Manual



HL-52N

Please read this manual before you get started.
You must read and understand the precautions for safety purposes and any damages that may occur to your property.

NOTE TO THE USER

Thank you for purchasing HESHBON CAR LIFT

Please read this instruction carefully for safety and proper use of the car lift, and retain it for future reference.

- This Manual is for model : HL-52N
- As for the assurance of safety in design and construction of car lift, read this Manual first.
- Please make sure that this manual is delivered to end users for their implementation of safety.
- Don't use the car lift in a potentially explosive atmosphere.

ANY PART OF THIS PRINT MUST NOT BE REPRODUCED IN ANY FORM WITHOUT PERMISSION.
THIS PRINT IS SUBJECT TO CHANGE WITHOUT NOTICE.

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PARTS LIST	

Introduction

Safety

Installation

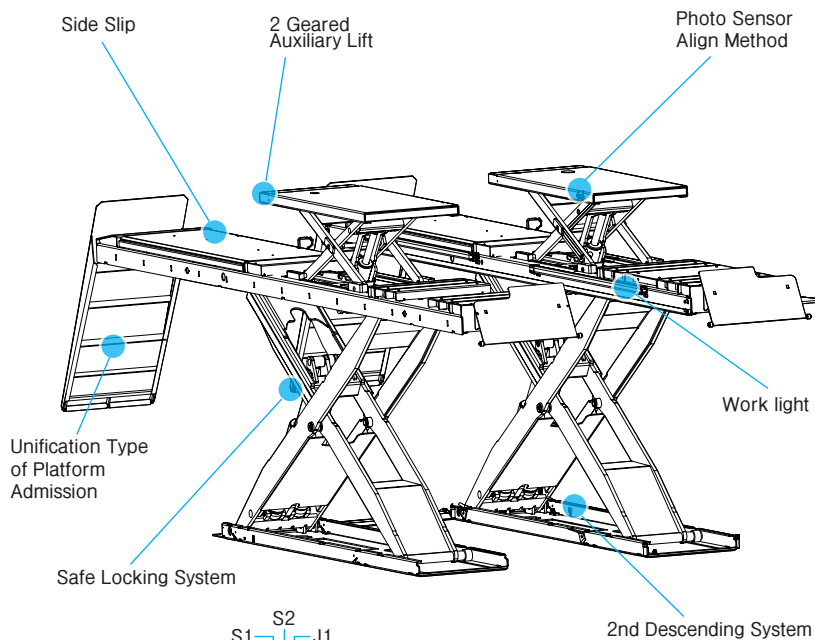
Operation

Maintenance

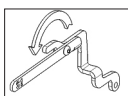
Part List

■ This manual was prepared in January, 2013 the product specifications contained in this manual are subject to change without notice.

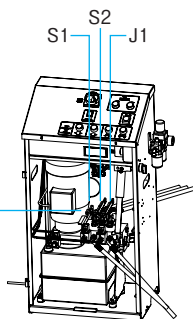
Features and Characteristics



3-Valves Only for Leveling When Installation, Always Closed.



Lever Position When Operating

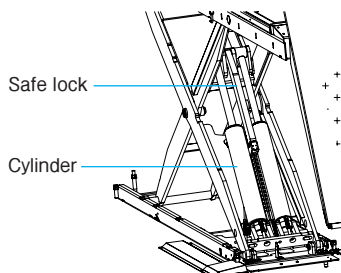


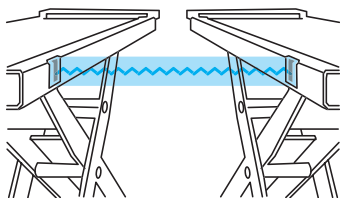
Oil Pressure Alignment System(for horizontal hydraulic leveling system when installation only)

- ▶ Common: closed
- ▶ Only for leveling adjusting→on and off operated →final off(closed)
- ▶ "J1" is for aux. lift, "S1, S2" are for main cylinder ("S1" is for left slave cylinder control, "S2" is for right slave cylinder control)→view point : the criterion of vehicle access direction

Safety Locking System

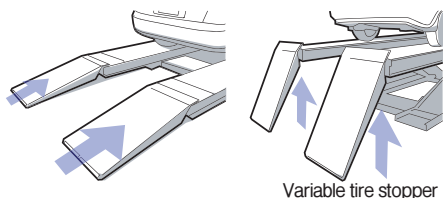
- ▶ 4 groups of safety locks are the center of links to help your safety in the workplace. (main lift -2 units, auxiliary lift -2 units)





■ Synchronization Photo Cell

► Controls the synchronization of the 2 auxiliary lift platforms that stops the function if the platforms are out of level.



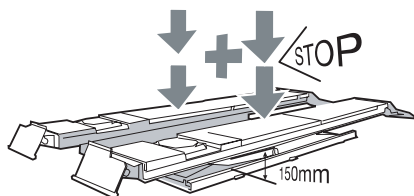
■ Drive-On

► Drive-On ramps ensure easy access while in lifted position they operate as wheel stops.



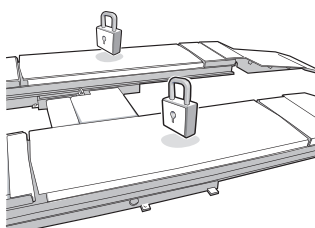
■ Lighting

► A set of 4 light units to provide ultimate underbody lighting is available as an option.



■ 2nd Descent System (Foot protection safety device)

► Normal descent stops automatically at 150mm from ground level. The warning buzzer sounds, and the 2nd descent system allows full descent to ground level.



■ Side Slip Locker

► This is for the movement lockup of the alignment rear wheel side-slip.

Part Descriptions

■ Tire Stopper(rear)

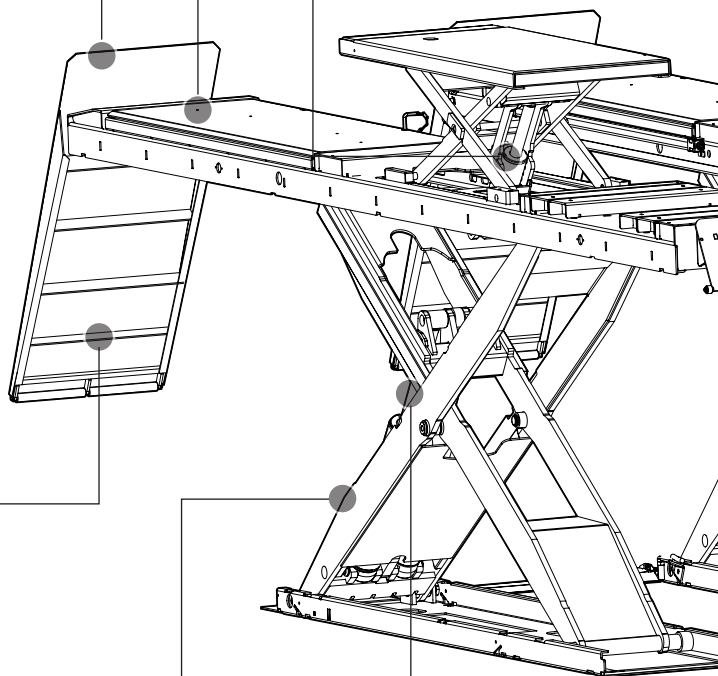
Automatic rear wheel stop

■ Side Slip

Air-operated rear slip plate for rear wheel alignment

■ Auxiliary Lift Cylinder

Adjustable auxiliary lift platform



■ Admission Valve

Integrated drive-on ramp

■ Main no. 1 Link

Ascents and descents the main platform.

■ Main Cylinder

Operates the platform of the main lift.

■ Platform

Adjustable auxiliary lift platform

■ Jack Link

Ascent and descent of jack (2 geared auxiliary lift)

■ Tire Stopper (front)

Fixed front wheel stop

■ Work Light (option)

Lightens the lower part of vehicle while performing the maintenance
– Consumer has to install.

■ Control Panel

Control panel

■ Air Regulator

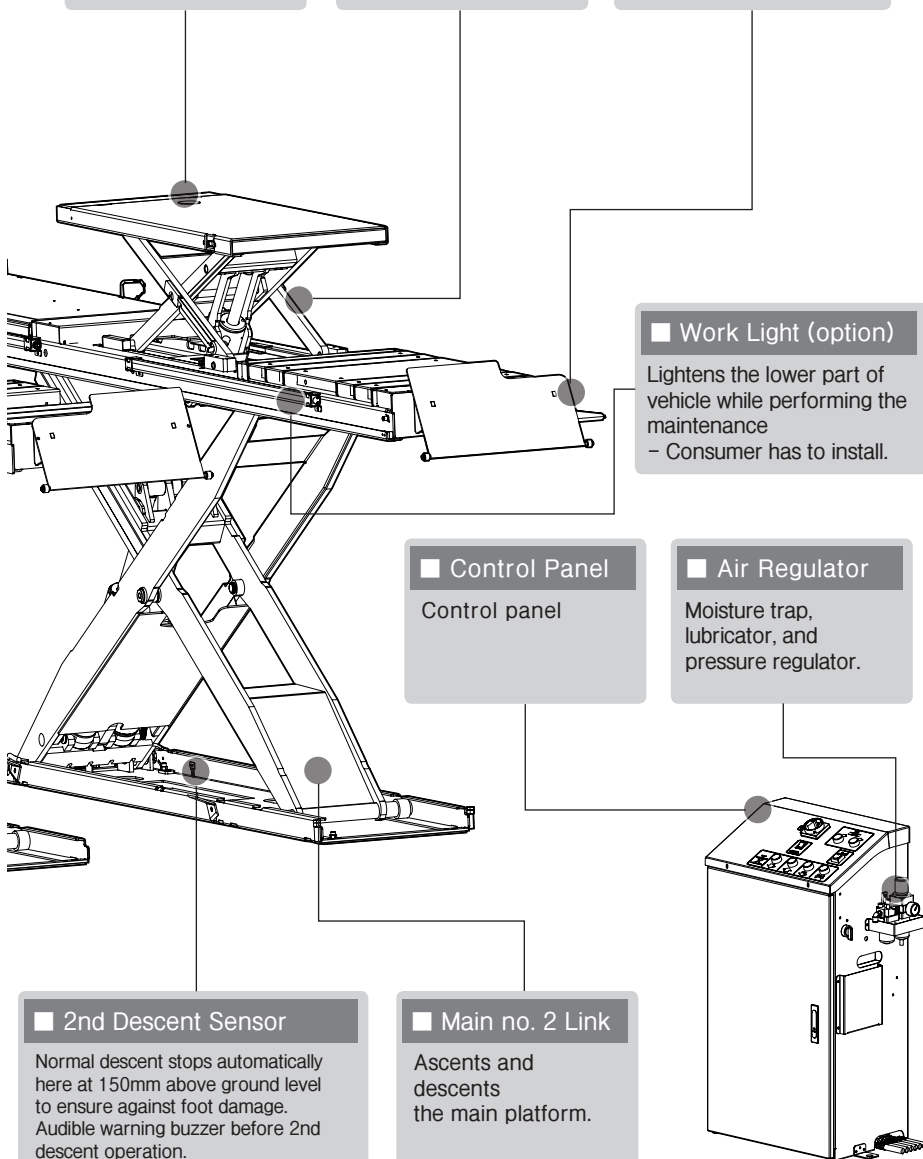
Moisture trap, lubricator, and pressure regulator.

■ 2nd Descent Sensor

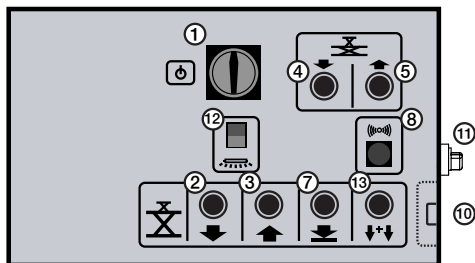
Normal descent stops automatically here at 150mm above ground level to ensure against foot damage.
Audible warning buzzer before 2nd descent operation.

■ Main no. 2 Link

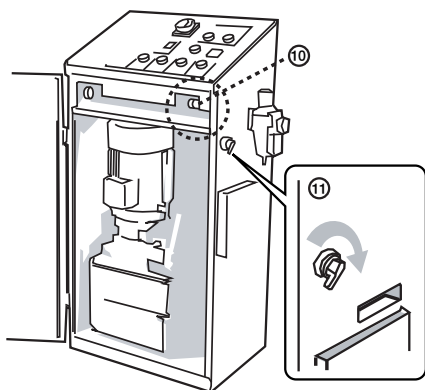
Ascents and descents the main platform.



Description



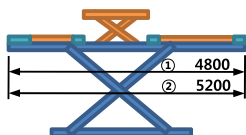
- ① Main Power Switch
- ② Main Descent Button
- ③ Main Ascent Button
- ④ Auxiliary Descent Button
- ⑤ Auxiliary Ascent Button
- ⑥ -
- ⑦ Main Locker
- ⑧ Buzzer
- ⑨ -
- ⑩ Emergency Descent Button
(Inside of the panel)
- ⑪ Side Slip Locker
- ⑫ Work Status Lamp (optional)
- ⑬ 2nd Descent Button (optional)
- If you push the 2nd main descent button in the status of the 2nd descent, it will descend.



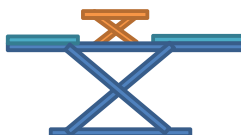
■ Control Panel

- ① Main Power Switch – Supply or isolate the power of the lift.
- ② Main Descent Button – Descends the main platform.
- ③ Main Ascent Button – Ascends the main platform.
- ④ Descent Button of the Auxiliary Lift – Descends the jack.
- ⑤ Ascent Button of the Auxiliary Lift – Ascends the jack.
- ⑥ -
- ⑦ Main Locker – (Lock the main platform) Function of hanging the safety locker on the locker rail.
- ⑧ Buzzer – When jack descends, operate photo sensor, emergency, main platform descends 2nd time, bell rings with red light.
- ⑨ -
- ⑩ Emergency Descent Button (Inside of the panel) – Return to normal mode when emergency status.
- ⑪ Side Slip Locker – Lockup rear wheel slide slip movement when working with alignment.
- ⑫ Work Status Lamp – Work status ON/OFF switch(optional)
- ⑬ 2nd Descent Button – When the 2nd descent status of main platform, if you push the number 2 descent button with pushing this, platform descends to bottom. (optional)

FULL VERSION



OPTION 1



OPTION 2



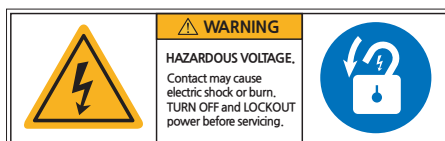
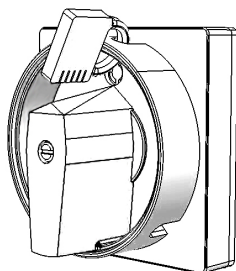
Specification

Model Name	HL – 52N
Capacity	Main Lift: 5,000 kg / Aux.Lift: 3,600 kg
Used Hydraulic Pressure	250 Kgf/cm ²
Platform	5200 mm / 4800 mm
Overall Max.Height	Main Lift: 2,007 mm / Aux.Lift: 438 mm
Min.Runways Height	Main Lift: 265 mm
Stroke	Main Lift: 1,742 mm
Lifting Time	Main Lift: 40~ 60 sec. / Aux.Lift: 10 ~ 20 sec.
Lowering Time	Main Lift: 40 ~ 60 sec. / Aux. Lift: 10 ~ 20 sec.
Standard Motor	3 phase / 3kw/230V/380V/400V/50Hz/60Hz
Net Weight	About 2,990 kg
Layout Dimension (L/H/W)	6715 x 2457 x 2126 (mm)

Inter Lock & Release

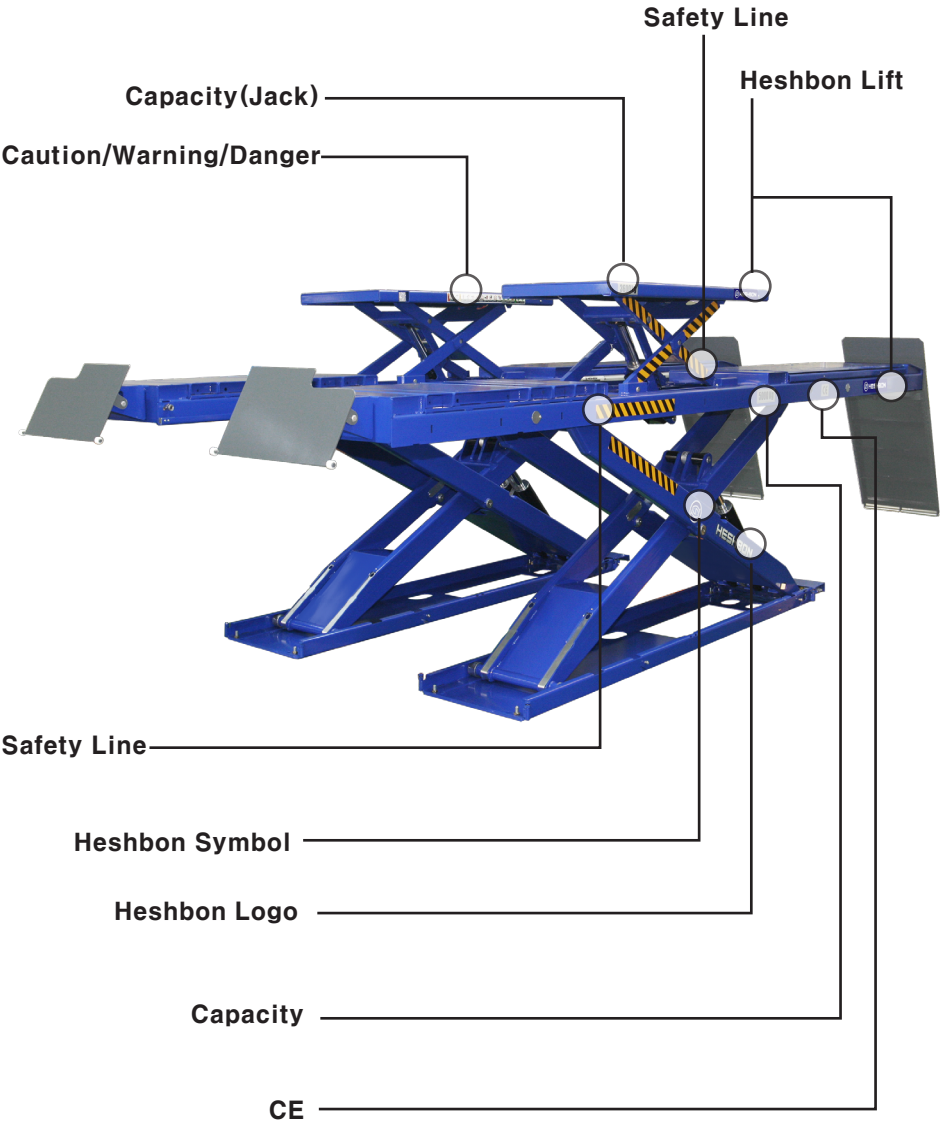
Item	Operation	Position	What happen	Release
Emo	Push Button	Control Panel	Power shut down All motion stop	Release the emo switch. (Turn right the switch.)
Safety Sensor	Photo Sensor	Platform	All motion stop	Remove an object or a body between The main platform.
2nd-down Limit	Limit Switch	Base Plate	Descending stop Buzzer go off	Push the 2nd down button + down button.

Lockout/Tagout



► HAZARDOUS VOLTAGE.
Contact may cause electric shock or burn.
TURN OFF and LOCKOUT power before servicing.

Caution Sticker Layout



Nameplate

1. Nameplate

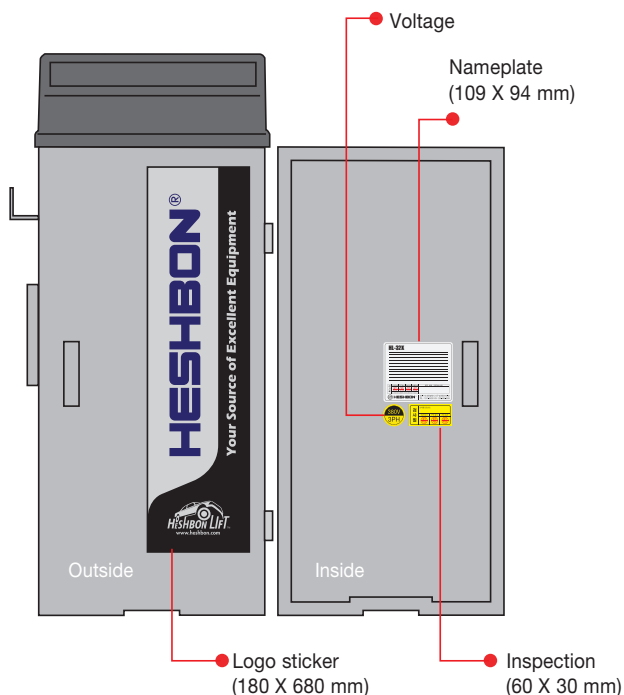
HL-52N SCISSORS LIFT		MADE IN KOREA	CE
MODEL NO.	모델명	HL-52N	
CAPACITY	능력	5,000 kg	
MAX.HEIGHT	최대상승높이	2,007 mm	
MIN.HEIGHT	최소높이	265 mm	
LIFTING TIME	상승시간	40 ~ 60 sec.	
LOWERING TIME	하강시간	40 ~ 60 sec.	
POWER & MOTOR	전원 및 모터	3PH 3HP 220/380/400V 50/60Hz	
NET.WEIGHT	자중	Approx. 2,990 kg	
DATE OF MANUFACTURE	제조일자	2013. 01. 01	

검사필	외관검사	구조검사	기능검사	최종검사	로트 번호 / SERIAL NO
	합격 PGC	합격 PGC	합격 FGC	합격 HMS	52N1200101

△ 주의! 명판이 없을 경우 고리세이프를 발급할 수 없습니다.

HESHBON® | 673-52, GYEONGSEO-DONG, SEO-GU, INCHEON, 404-170 KOREA
TEL:+82-1577-3520(Representative) / +82-32-585-3570(int'l trading)
FAX:+82-32-585-3535 <http://www.heshbon.com>

2. Position



Danger/Warning/Caution

Rules for Illustrations in the Manual

These are the rules
for the illustrations
in the Manual.
Make sure that you
read carefully and
understand them.
The rules are applied
only to the manuals
of Hesbon Co., Ltd.



Do not come
under the vehicle
during operation.
► This can cause
injury or death.



Evacuate to a safe
place instantly in
the event that the
vehicle tips.
► This can cause
injury or death.



Make sure you follow the instructions,
otherwise critical injury or death can occur.



Make sure you follow the instructions,
otherwise critical injury or damage can occur.



Make sure you follow the instructions;
otherwise, injury or damage can occur



The terms are described to enhance the
understanding of the equipment.



Information to use the equipment
efficiently.



Precautions or check points for the use
of the equipment.



Please refer to the page

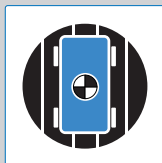


Warning Before Using the Equipment

Only trained
personnel may
operate the
equipment.
Inexperience can
cause accidents.



Position the vehicle
to make sure that
it is balanced front
and rear, right and
left (otherwise the
vehicle may fall off).



Do not operate
damaged equipment (a
critical accident could
occur – contact your
Heshbon supplier)



After that a vehicle
is placed on the
lift make sure that
the hand brake is
applied. Passenger
transport is
forbidden.





Warning While Operating

Allow no unauthorized persons in the work area.



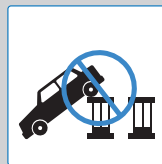
Before lowering the lift, check that there are no obstructions under the vehicle or the lift arms.



When the vehicle is lifted, do not rock it as this may dislodge it.



Do not lift a vehicle using one pair of arms only.



Safety

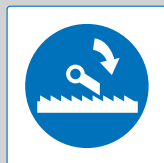


Warning While Operating

To avoid injury, keep your feet clear of the arms and carriages.



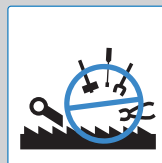
Before going under the lift, make sure that the safety pawls are engaged.



To avoid being electrocuted, disconnect the main power before opening the control panel.



Do not modify the control panel or the safety functions as this may impair their function.

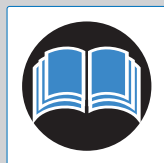


Warning While Operating

Do not rock the vehicle when lifted. Do not use a high pressure cleaner as the vehicle lower part.



Read and fully understand the manual before using the lift

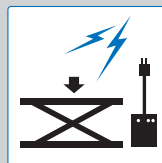


Warning Before Using the Equipment

Check the safety devices to see that they are clean and operable.



If the lift is idle for a long time, disconnect the main power supply. In the event of thunder storm, disconnect the main power supply.



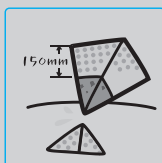


The lift should be installed by skilled engineers either from Heshbon or from Heshbon's appointed representatives. Failure to observe this makes the lift warranty invalid. If the lift is to be moved to another site at a later date, it must be reinstalled by skilled engineers either from Heshbon or from Heshbon's appointed representatives.

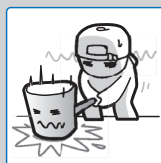
Checklist Before Installing

Installation Site

The site must be flat and horizontal. The floor must have minimum 150mm depth of reinforced concrete.



Surface load under the posts must be minimum 25N/mm².

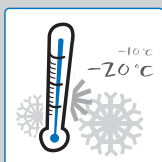


To maintain the warranty, the lift is intended for indoor installation only. In the event that it is installed outside it should be protected from snow and rain. Outdoor installation makes the warranty invalid.

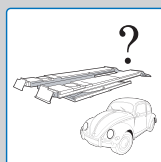


Installation Site

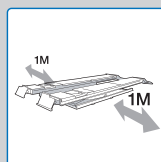
Ambient temperature -10°C to 50°C. Do not operate under freezing conditions.



Vehicle access to the lift must be safe and easy.



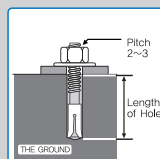
There must be a safe working distance of minimum 1m between the lift and the wall or any fixed object.



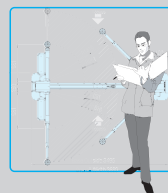
Installation Site

- Hoist to be installed in dry location.
- If hoist is installed in a Pit sufficient drainage should be allowed to keep hoist dry.
- If hoist does get wet make sure all electrical wiring is dried before operations as it could cause electric shock or damage to PCB.

To ensure that the anchor is secure, the hole for an anchor bolt must be more than 2/3 of the bolt length.



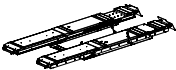
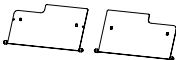
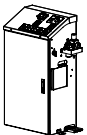
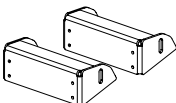
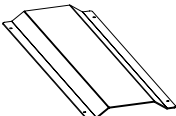
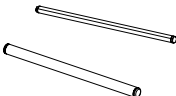
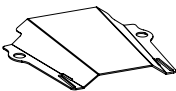
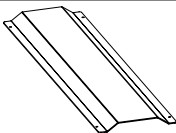

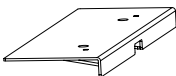
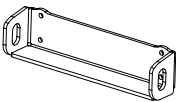

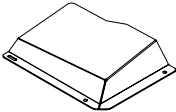
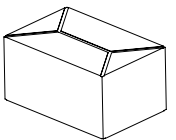
Skilled engineers of Heshbon or its sale representative agency shall install the lift, otherwise a failure may occur.



Place of Installation (Layout)

Checkpoints before selecting the place of installation

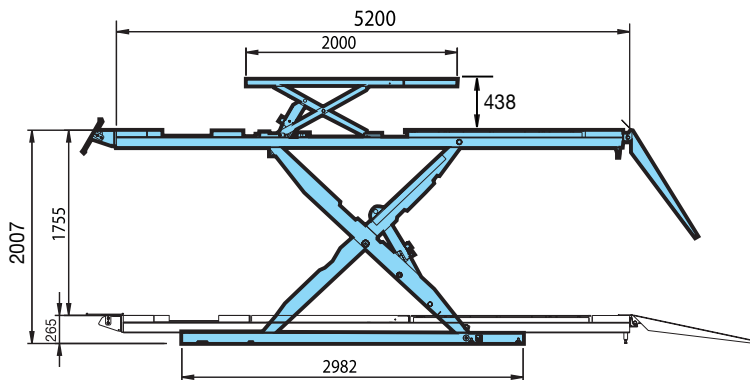
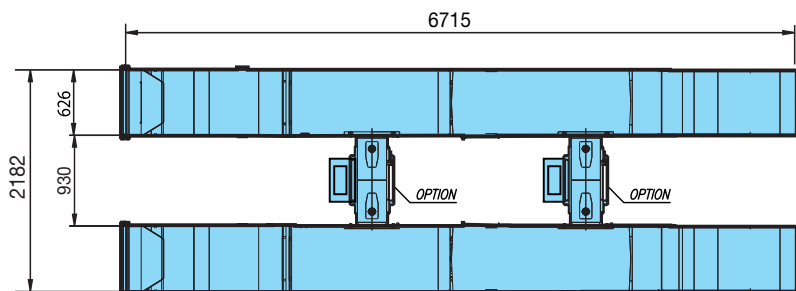
- ① Distance from the wall or any fixed object
- ② Drive-on direction
- ③ position of power post and slave posts
- ④ Ceiling height

No.	Name	Picture	No.	Name	Picture
1	Main Body		8	Tire stopper (Symmetric Between Left And Right)	
2	Control Panel		9	Tire Stopper Bracket: 2ea	
3	Center Cover 1: 1ea		10	Tire Stopper Pin(Front & Rear):2ea/2ea	
4	Center Cover 2: 2ea		11	Hose Cover (1000L): 4ea	
5	Drive-On Ramp: 2ea		12	Tail Board: 2ea	
6	Ramp Bracket: 2ea		13	Rear Stopper: 2ea	
7	Corner Hose Cover: 1ea		14	Accessory Box	



Check the items : If any of these items is missing from the box, contact your sales representative. Preparation for installation : Deploy the items in the installation site as specified in the layout. Check the positions of power and slave posts, drive-on direction, safe working area.

Lay-Out : HL-52N



Installation Procedures

1 Connecting of Hydraulic Line

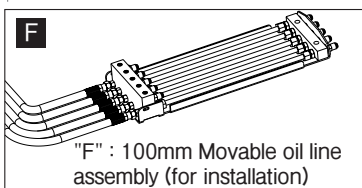
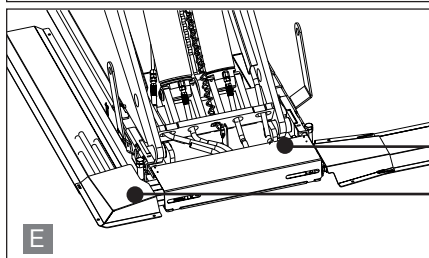
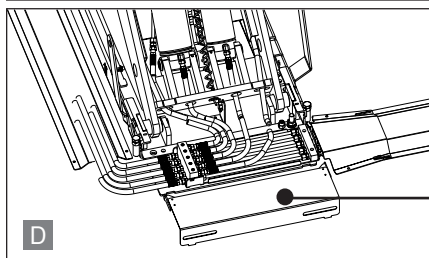
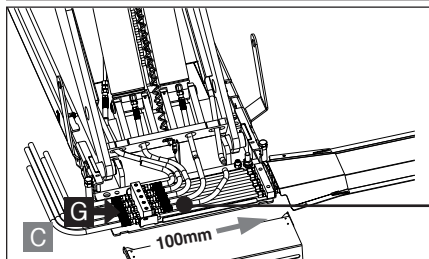
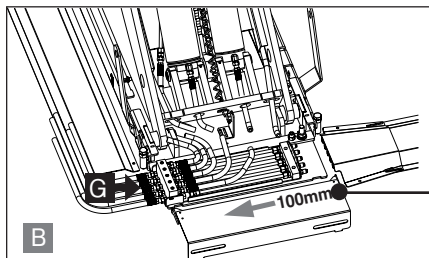
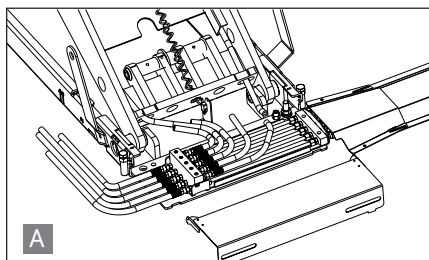
1) After setting the left and right side package of platform on the best position, connect the hydraulic lines on fig. "B" and move 100mm to the left for connection.

2) Like fig. "C", should move to right 100mm, and fasten the two screw for finish fixation.

3) Like fig. "D", assemble the cover "I" on anchor bolts "J" with it's nuts.

4) For finish, assemble the "K" line corner cover.

5) This method, for hydraulic primary connection between the machine basement and from controller lines is same with the in-ground type.



"F" : 100mm Movable oil line assembly (for installation)

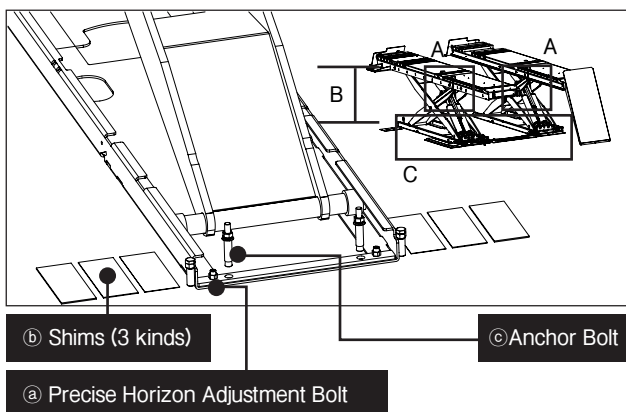
100mm moved to left

100mm moved to right after connect the hydraulic lines (group "G") from controller, and fasten the two screw "H".

Covering method for finish

Installation

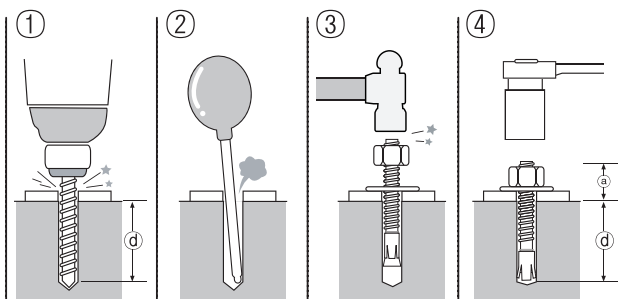
2 Fixation Horizon of The Base.



► After adjusting horizon of the product precisely, fix up using anchor bolt.

1. Adjust the horizon of the base after the Main platform should be ascended to 900~1000mm height "B"(common alignment measuring height) and both side parking system should be locked on engaged point fig."A". And after, adjust the bolts "a" positioned on each of "C" for precise horizon of platform.
2. Insert the shims for long time level maintenance into the gap between the basement and the ground. →the gap can be occurred on lower ground of installation position.
3. Fixation of base (anchor)

After inserting shims, for fixation fasten the anchor bolts "c". →the shims should be located near by anchor bolt as possible.

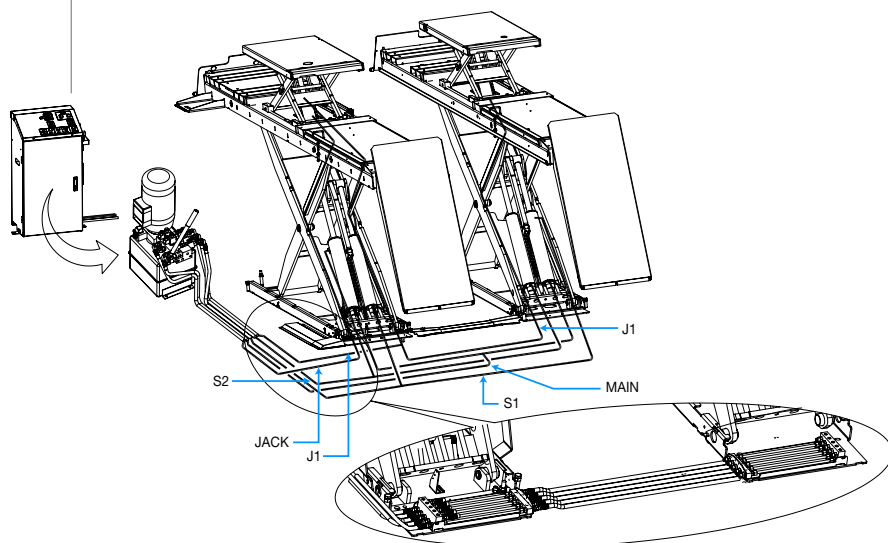


Anchor bolt installation.

- (1) Drill a hole (d: hole depth)
- (2) Clean the inside of the hole
- (3) Put the anchor bolt into the hole and hammer in until it reaches the bottom of the hole
- (4) Tighten the bolt with a spanner. (a: 35~45mm)
- Torque : 785kg.cm

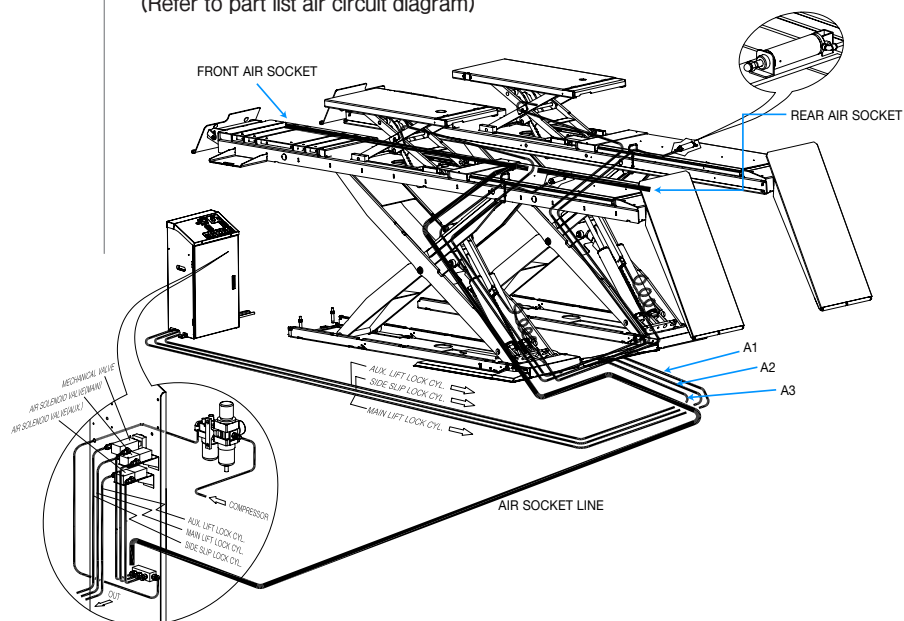
3 Connection of Oil Pressure Hose

- Connect oil pressure hose by referring oil pressure line diagram. (Refer to part list oil pressure circuit)



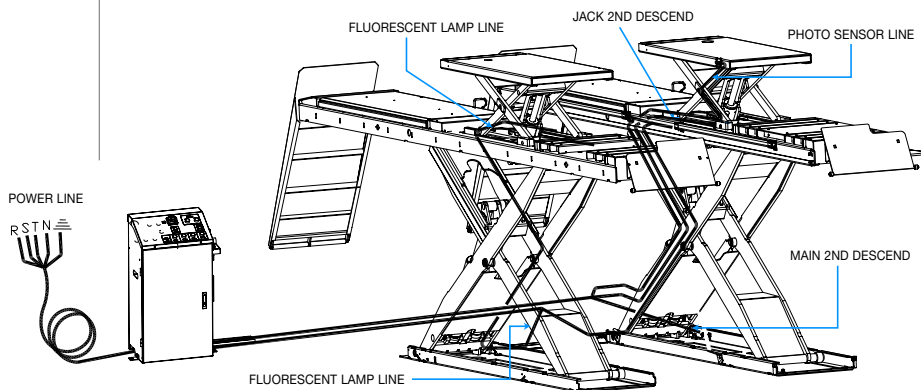
4 Connection of Air Hose

- Connect air hose by referring to air line diagram. (Refer to part list air circuit diagram)



5 Connecting Electronic Line

- Connect electronic line by referring to electronic diagram.
(Refer to part list electronic diagram)



Check Points Before Operation

Before loading the lift, check the following points.

■ Test Operation

► Operate ascent and descent 2~3 times under no load condition.

■ Switch Operation

► Check that the ascent and descent push buttons are working correctly.

■ Hydraulic Check

► Check if there are no hydraulic leaks from either cylinders, pipes, or hose joins.

■ Mechanical Check

► Check the tightness of all nuts, bolts, etc.

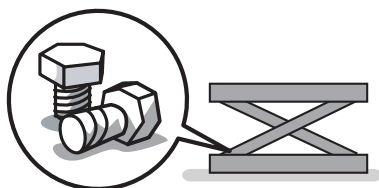
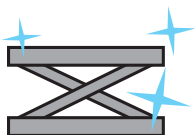
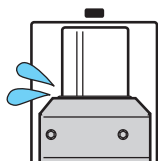
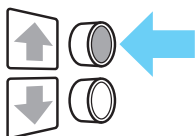
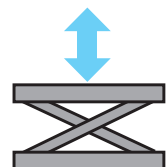
■ Exterior Check

► Check the exterior of the lift to ensure that there is no obvious damage.

■ Cleanliness

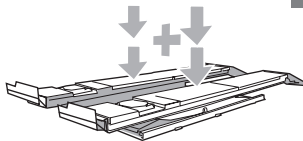
► Check every day that the lift is clean and that the work area is clean and free from debris or obstructions.

Inspect the lift everyday to operate the lift safely for a long time.



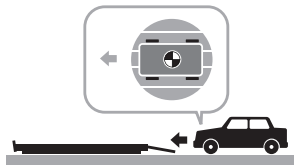
Operation

1 Prior to use



Check that the platforms are parked at floor level by using the descent button. Check that the auxiliary lift is at the down position.

2 Prior to vehicle entry



Check that the position of the righthand (movable) platform is suitable for the majority of the vehicles to be lifted. Fix the platform at this position with the bolts provided.



Attention before you enter

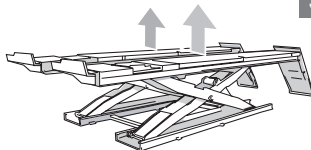


Attention the sudden stop.

After you drive into the lift, hold the side break.

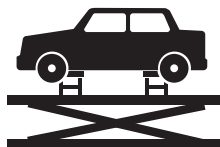
After you drive into the lift, get out of the car.

3 Ascent



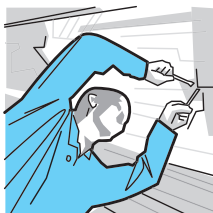
Operate the ascent button until platforms reach the chosen work height. park on the relevant ratchet holes.

4 Auxiliary lift operation



Raise the auxiliary lift app. 50mm to allow adjustment of the rear extensions. Position the rubber blocks provided under the vehicle pick-up points. Again, operate the auxiliary lift ascent button to raise the vehicle to the required work height.

5 Vehicle repair



Perform the necessary repairs and/or maintenance on the vehicle. After completion, lower the auxiliary lift. As soon as the vehicle load is firmly on the platforms, stop the descent of the auxiliary lift, remove the rubber pads, push in the extensions, and lower to bottom position. Lower main lift.

Operation procedures of each part

■ Adjusting auxiliary lift level

► Fill auxiliary lift slave cylinder(right cylinder when drive to the access direction) with oil pressure and operate main platform after installation is completed.

① First, for auxiliary lift horizon level, operate when the main lift positioned on bottommost. (photo-sensor unnecessary zone until 150mm raising height)

② Open(push lever "L1" to down→open) the "J1 valve" and push the button "A" until top position, make over pressure, push 2 or 3 times.

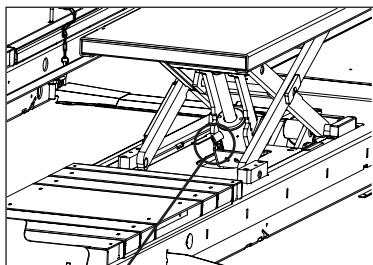
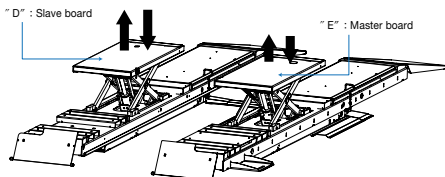
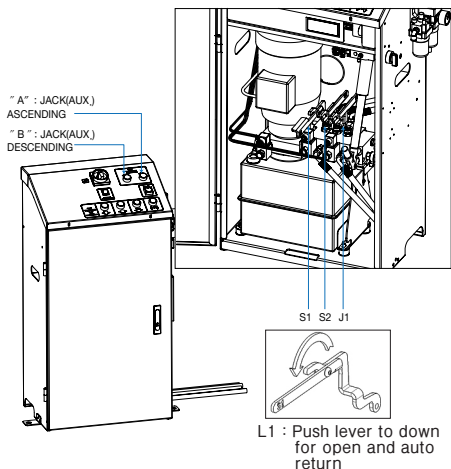
③ For exhaust air inside of slaver cylinder line "E to D", unscrew the "C, C-2" screw 1 or 2 cycle, and confirm if exhaust the inner air bubble by pushing the "button A, lever J1", and after fasten the screw.

④ Descend the aux. lift until bottommost with button "B".

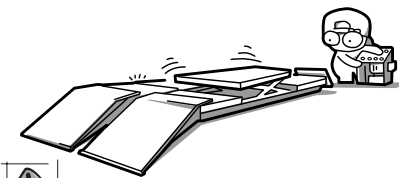
⑤ Final, you can see that the "D" board is little higher than "E". So, you should continue to push "B", and if you open the

⑥ "J1" slightly at same time, you can see the boards can be horizon. "J1" is important to make aux. lift level. when continue to push the "A", and that time if you open the "J1" at same time, you can see "D" ascend faster than "E". → you can adjust low position of the "D" to be horizon.

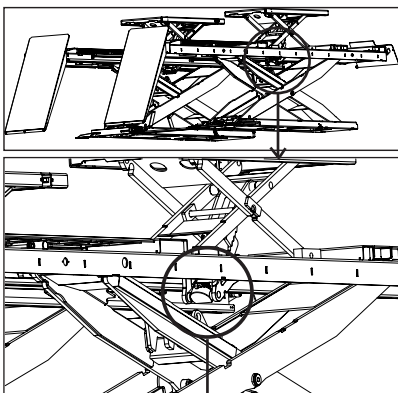
⑦ And if the "D" level is higher than "E", push the "B" with opening the valve "J1", you can see the board "D" descend faster than "E". So, you can adjust the "D" level if it is higher.



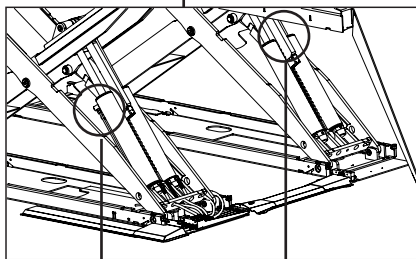
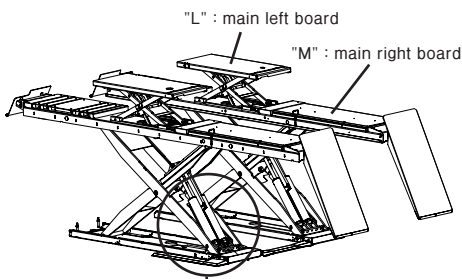
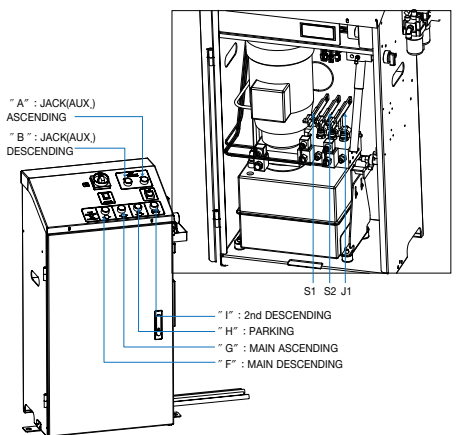
"C" : "Air bleeding vent" under the aux. lift master cylinder only.



The jack (auxiliary) level adjustment is done within 2nd safe descent range.(150mm from ground)
- Only when 2nd descent function is available.



"C-2" : "Air bleeding point" bottom of the aux. lift slaver cylinder input point.→unscrew a turn the hydraulic hex. screw and fasten after air bleeding



"K" : "Air bleeding vent" under the main lift master cylinders.

■ Adjusting Main Lift Level Horizontal (Hydraulic Synchronization System)

► Fill main lift slave cylinders (right inner cylinder and left inner cylinder : the criterion of vehicle access direction) with oil pressure and operate main platform after installation is completed.

① First, for main lift horizon level, operate until the main lift positioned on top point after open the manual valve "S1" and "S2" both. 2 or 3 times push the ascending button again after reached the top position for air bleeding.

② For exhaust air inside of cylinder, unscrew the "K" left and right both 1~2 cycle, and confirm if exhaust the inner air bubble, and after, fasten the screw.

③ Descend the main lift until bottommost with button "F".

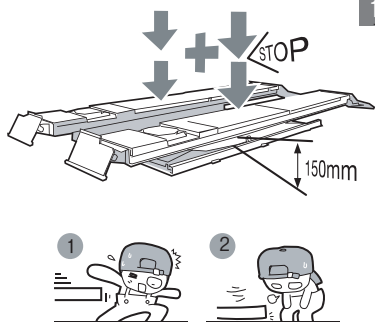
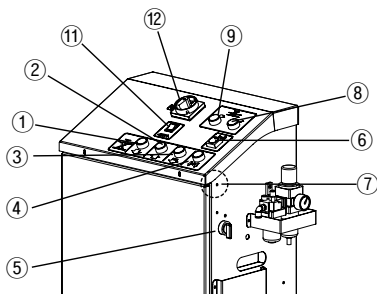
④ Finally, you can see that the "L or M" board are different height position each other. If so, you should continue to push "F" and "I", and if you notice "L" left board is higher, open the "S1" slightly at same time, you can see the boards can be horizontal. And if "M" board is higher, open the "S2" valve slightly with pushed "F" and "I", you can see the boards can be horizontal.

⑤ "S1" ("S2") are important to make main lift horizon. when continue to push the "G : ascend button", and that time if you open the "S1" ("S2") at same time, you can see "L" ("M") ascend faster than "M" ("L"). →you can adjust low position of the "L" ("M") board to be horizon.

⑥ And if the "L" level is higher than "M", push the "F: descending button" with opening the valve "S1", you can see the board "L" descend faster than "M". So, you can adjust the "L" level if it is higher. The right side "M" can be controlled with same method with "S2" and button "F".

⑦ Maintenance for level(only main lift): During operating, when preponderated one side of level, should ascend till top height, and push ascend button "G" and open(push down and auto close return) the valve lever "S1" "S2" at the same time. It can be horizontally level easily.

Driving Operation



■ Operating electric panel

► Check lift operating conditions on each buttons.

Refer to page 5 for names of each buttons.

1 Operation of the main lift (Button ①②)

► Ascent

-Main lift ascends when button no. ② is pressed.

► Descent

-Main lift descends when button no. ① is pressed. (Descends on 1st and 2nd)

-1st descent: Descends to 150mm from ground when button no. ① is pressed.

-2nd descent: Descends again when button no.1 and 4 are pressed at same time. (Buzzer sounds)

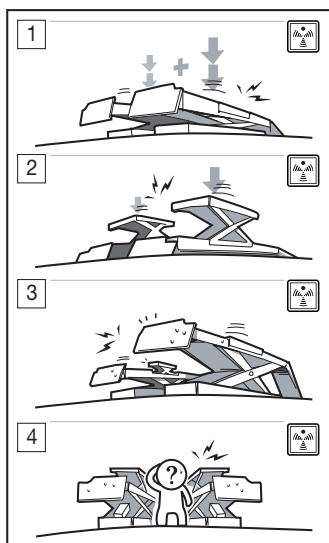
2 Buzzer operation (Buzzer no. 6)

► Sounds on 2nd descent stage of main lift. (150mm from ground)

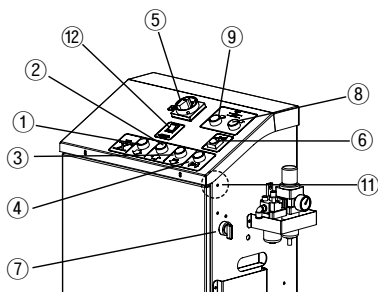
► Sounds during the 2nd descent range of auxiliary lift.

► Sounds when main and auxiliary lift are out of Synchronization zone. when the height difference exceeds 60mm between left board and right board.

► Sounds when the photo sensor of the auxiliary lift registers an out-synchronization situation.



► The buzzer sounds when possibility of trouble is high.



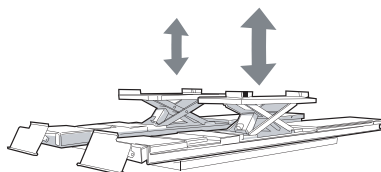
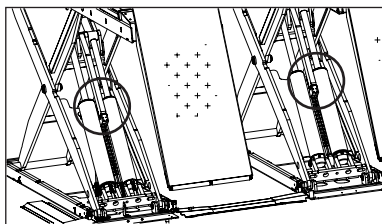
3 Operation of Underbody Lighting (Button 12)–Optional

► Button ⑫ and the wiring circuit for lighting are standard. The 4 light units to complete this function are optional extras.



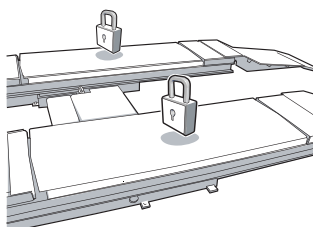
4 Parking Button (Button. ③)

► Lowers the lift to the first available parking position at working height, thereby ensuring that the lift platforms and cross members are horizontal and ensuring stability during the repair work.



5 Auxiliary Lift Operation Buttons (Button⑧⑨)

- Ascent
–Auxiliary lift ascends when button ⑧ is pressed.
- Descent
–Auxiliary lift descends when button ⑨ is pressed.
(Buzzer sounds auxiliary lift 2nd descent zone)



6 Rear Slide Slip Lock (Button ⑦): Model HL–52N

► Lock the rear slip plates to allow vehicle entry; unlock the rear slip plates for 4–wheel alignment.

Emergency Descent Operation. (Button. ⑪)

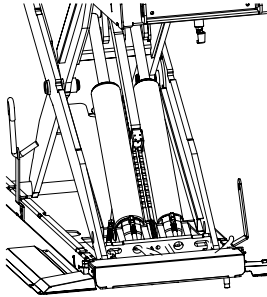
7 Operating on Emergency

► If the photo sensor registers an out-of synchronization situation, the buzzer will sound and the warning light will come on, and the normal control functions will be isolated. Re-synchronize by use of the emergency button ⑪



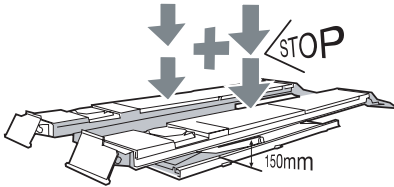
- The emergency descent operation switch must be operated by experienced technician of this product.
- Request for services when in potentially dangerous situation.

■ Safety Devices



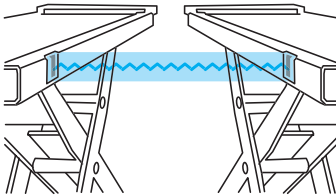
1 Operating Safety Locker

- Operate safety device for safe maintenance work.
(Operates where the center of the link, main, auxiliary lift)



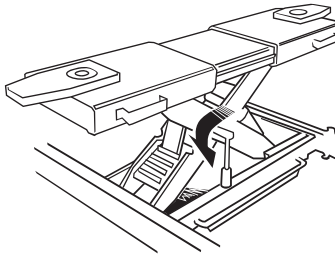
2 2nd Descent Unit (Protection Worker's Foot)

- If you push descent button, this lift descends 150mm from the plate 1st time. This time, if you check the status and push the descent button, it descends to the plate.



3 Alignment Sensor (Photo sensor)

- There is photo sensor left/right side of the main lift and auxiliary lift. If the heights of the left/right platform are different or if there is any obstacle inside of the platform, the lift stops and bell rings.



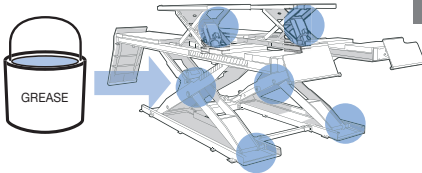
4 Manual Jack Safety Locker-Optional (Center rolling jack is applied)

- If the lift center 2 level is used, operate the safety lock manually and use it safely.

Equipment Maintenance And Service

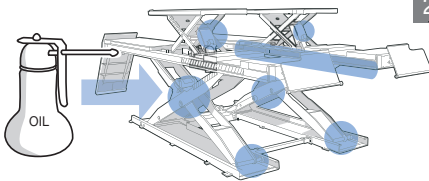
■ Lubrication

► Grease or oil should be applied every 2 or 3 months to the parts shown below.



1 Injecting Grease

- Inject enough grease at shaft of auxiliary lift and roller. (2~3 month period)
- Auxiliary lift slide rubbing surface.

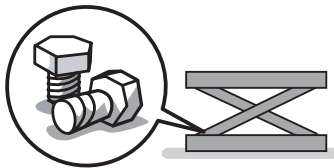


2 Injecting Oil

- Location of injecting lubricating oil
- Paints the lubricant oil to the rubbing surface, base platform every 2~3 month.

■ Cleanliness

► Check the working area under and around the lift for cleanliness. Check visibly if any nuts or bolts are loose or missing. Replace and retighten as necessary.



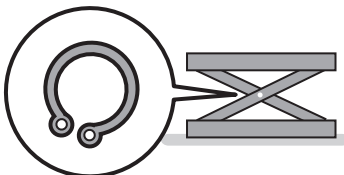
► Safety Devices

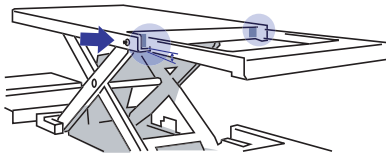
Check the area around the safety devices for cleanliness and any obstruction.



■ Check The Snap-Ring Of The Link Axis

► Check the existence of the inside and outside of the link axis.





■ Auxiliary Lift Platform Extensions Lay Down Lies.

► Check that the rear extensions can be adjusted throughout the full length of their travel without obstruction. Check that the stop bolts at full travel are in place and are tight. Check the surfaces of the extension arms for wear.

■ Emergency Descent

How To Descent The Lift Manually in Emergency

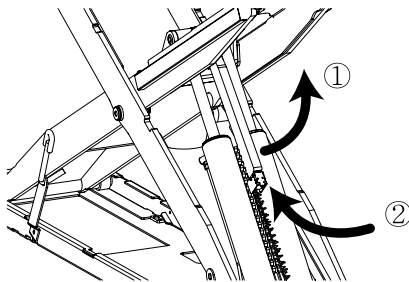
1

It is necessary

- ① when a blackout or the hydraulic circuit failure occurs
- ② When the lift cannot descend as specified in the troubleshooting

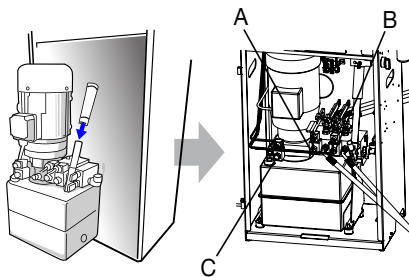
Preparation Before Operating

- ① Remove any object under the lift.
- ② Turn off the main power switch and panel power switch.
- ③ Manually release the locker
In case of locking state, releases the locker while another hydraulic device is lifting the locker 30 mm high .
- ④ After taking the pieces manually apart, put the supports between lockers.



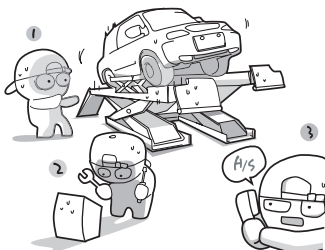
► Release of the main, auxiliary lift locker -4

- ① Release of the locker
- ② Lay down locker after insert a release supporter under the upper locker.

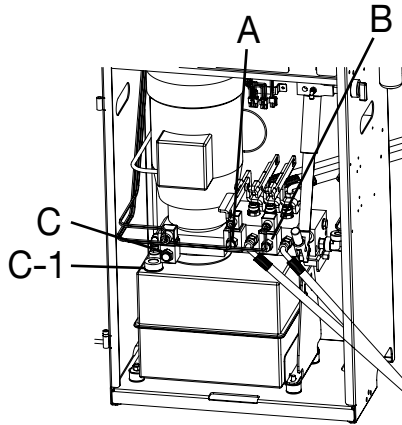


■ For locker release, use manual pump.

► With putting handle manually, push the valve emergency cock which needs "A" or "B" if you operated for 30-40 times.
A : For aux. lift emergency cock push point.
B : For main lift emergency cock push point.



This situation is potentially very dangerous.
This operation should not be undertaken by unskilled staff. Therefore, if in any doubt, call your lift supplier immediately for after sales service.



Operation Procedure Of Manual Descent

- Remove the cover of the powerpack. Remove the solenoid valve hexagon cap(C-1) (19mm) in the middle of the pump manifold. Turn the emergency cock lever (C) very slowly anti-clockwise with pushing the cock "A" or "B" which you needed one. Too much unscrewed movement will increase descent speed too much.(valve "B" is for main lift)



Turn the emergency cock lever very slowly to ensure that descent speed is slow and safe, especially if there is a vehicle on the lift.

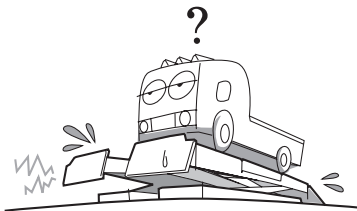
Steps After Completing The Operation

- Turn the lever clockwise and lock it securely when the lift reaches bottom position. Replace and refit the hexagon cap. Request after sales service to check the lift.

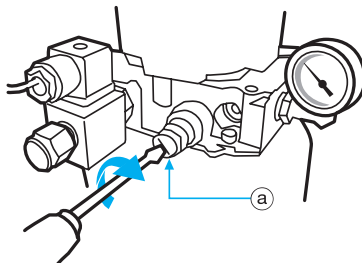
2 Powerpack Pressure



The pressure is set by the factory. The lift may be damaged if the operator increases the pressure. If the equipment does not lift the rated capacity, contact your lift supplier for engineer assistance.



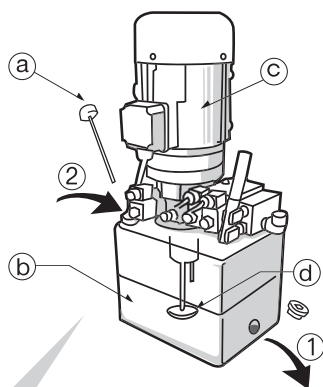
Information For The Authorized Service Engineer Only



Open the control panel and install a pressure gauge in the pump manifold as shown. The pressure adjusting screw (a) is sealed by the factory. Remove the seal and adjust the pressure with a screwdriver. This should be done while pressing the ascent button at the same time and with the lift loaded with the full rated capacity.

Proper pressure by model

HL-52N - 255kgf/cm²



- | | |
|-------------------------------|-----------------|
| a Cap of the oil tank | ① Oil injection |
| b Oil tank | ② Oil discharge |
| c Cover of the hydraulic unit | |
| d Oil nozzle cap | |

3 Oil Change

► Oil should be changed 3 months after installation and thereafter annually.

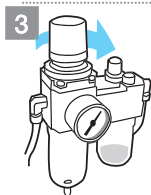
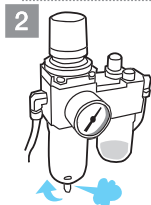
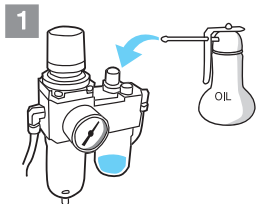
Oil Change Procedure

- ① Remove the cover of the hydraulic unit.
- ② Remove the oil filter cap and dipstick. Carefully remove the oil drain plug and allow the oil to discharge into a suitable container.
- ③ Refit the drain plug and tighten.
- ④ Refill the oil tank with new oil.
- ⑤ Check with the dipstick that the level is correct, raise and lower the lift and recheck that the level is still correct. If not, top up with oil.
- ⑥ Refit the cover.



At the annual oil change, after having drained the oil tank, remove the oil tank from the pump and check the condition of the pump filter. Clean or replace as necessary. Replace tank and follow the above procedure.

■ Air Regulator Maintenance



1 Lubricator

Disconnect the air line. Check the level of oil in the lubricator and top up at intervals as necessary. Type of oil according to the air tool manufacturer's specifications. Refit air line.

2 Moisture Separator

Check at regular intervals and drain the moisture separator glass through the drain plug as necessary. Refit air line.

3 Pressure Adjustment

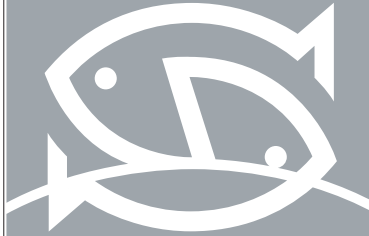
Pressure should be maintained at minimum 6 kg/cm^2 and maximum 8 kg/cm^2 . Adjust regulator cap as necessary.

Trouble Shooting

Symptoms		Check point	Corrective Action to be taken
Hydraulic Cylinder And Its Units	An abnormal noises at motor,	1. Rated capacity is exceeded. 2. Relief pressure is low. 3. Shortage of hydraulic oil.	1. Operate within rated capacity. 2. Adjust to relief pressure (275 bar) 3. Let air out of the hydraulic unit after supplying the oil.
	Hydraulic oil is leaking,	1. Defect in hydraulic hoses. 2. Leakage from connecting parts. 3. Bad cylinder packing.	1. Replace the hydraulic hose. 2. Tighten the connection. 3. Request A/S.
	Oil is contaminated.	Check if an water or Foreign substance comes into the cylinder.	Exchange oil (annually) (Hydraulic oil : 32CST/12liter)
	The lift is not move up .	Check if the oil is leaked or hydraulic pump are damaged.	Contact customer service department,
	The lift is not lowered.	Check if the valve is properly operated.	Contact customer service department,
	The fitting parts is rusted.	Check if the grease is not sufficiently injected.	Inject the grease every 1 month.
Electric Devices	Moto is not operating and the abnormal noise at motor is listened,	1. Check if the motor is damaged. 2. Check if the fuse is opened. 3. Check if the push button is damaged. 4. Check if the upper limit is operated. 5. Check if wiring gauge is proper. 6. Check if the input power less than 200V is supplied.	1 Replace the motor (Request A/S). 2. Replace the fuse after solving trouble. 3. Replace the push button(Request A/S). 4. Re-operate after lowering the lift. 5. Replace to the cable with over 3.5mm2 diameter. 6. Increase the input power capacity.
	Fuse is snapped	1. Check the Contact of magnetic contactor. 2. Check the capacity of circuit breaker. 3. Check if the wire is damaged.	1. Replacement (Request A/S). 2. Replacement (Request A/S). 3. Replacement after checking.
	Motor is operating but lift is not moved up.	1. Check if the rotating direction of motor is correct. 2. Check if hydraulic lines is damaged.	1. Re-operate after changing the phase connection. 2. Refer to check points for hydraulic cylinder and unit.

Check List and Periodic Maintenance

Inspection Period	Points to be Checked	Items to be Checked	Inspection Method	Action to be Taken	Replacement Period
1 Week	Rubber Support for Adjustment	Abrasion And Deformation	Visual	Replacement	1 Year
	Magnetic Contactor	Damage of Contact	Measurement	Replacement	2 Year
3 Months	Wire Rope	Abrasion, Deformation, and Breaking of Wire	Visual	Replacement	2 Year
			2 Months (Use Over 20 Times Per One Day)		6 Months (Use Over 20 Times Per One Day)
	Post Guide	Abrasion	Visual	Replacement	4 Year
	DU Bush	Abrasion	Visual	Replacement	4 Year
	Axle for Wire Pulley	Noise And Abrasion	Visual	Replacement	5 Year
	Wire Pulley	Abrasion	Visual	Replacement	5 Year
6 Months	Electrical Components	Damage of Components	Measurement	Replacement	3 Year
	Hydraulic Oil	Shortage of Oil	Visual	Replacement	1 Year
1 Year	Piston Seal Kit	Oil Leak or Deformation	Visual	Replacement	3 Year
	Load Seal Kit	Oil Leak or Deformation	Visual	Replacement	3 Year



- PART LIST
- HYDRAULIC CIRCUIT
- ELECTRIC CIRCUIT

MODEL

HL-52N

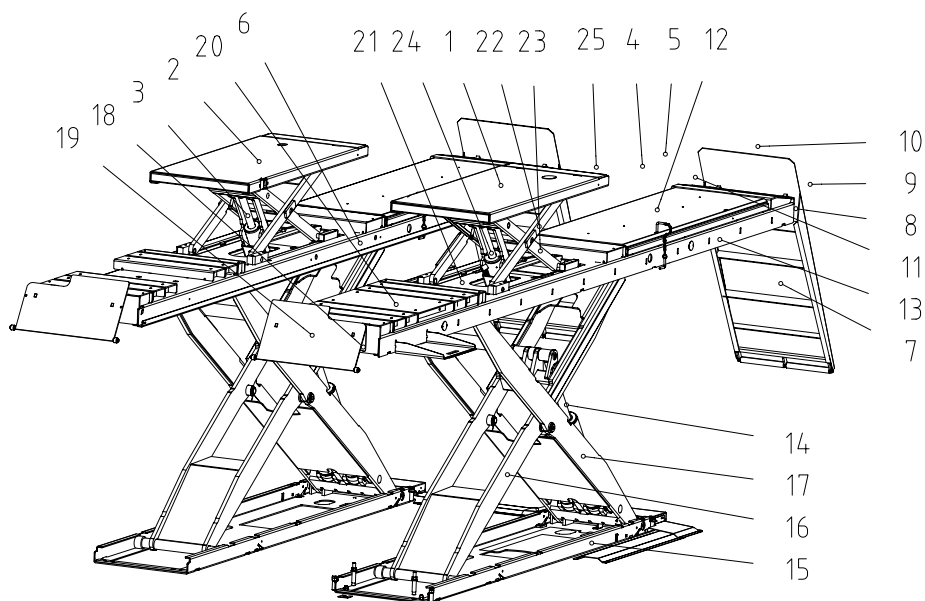
Version 3 - 01.2013

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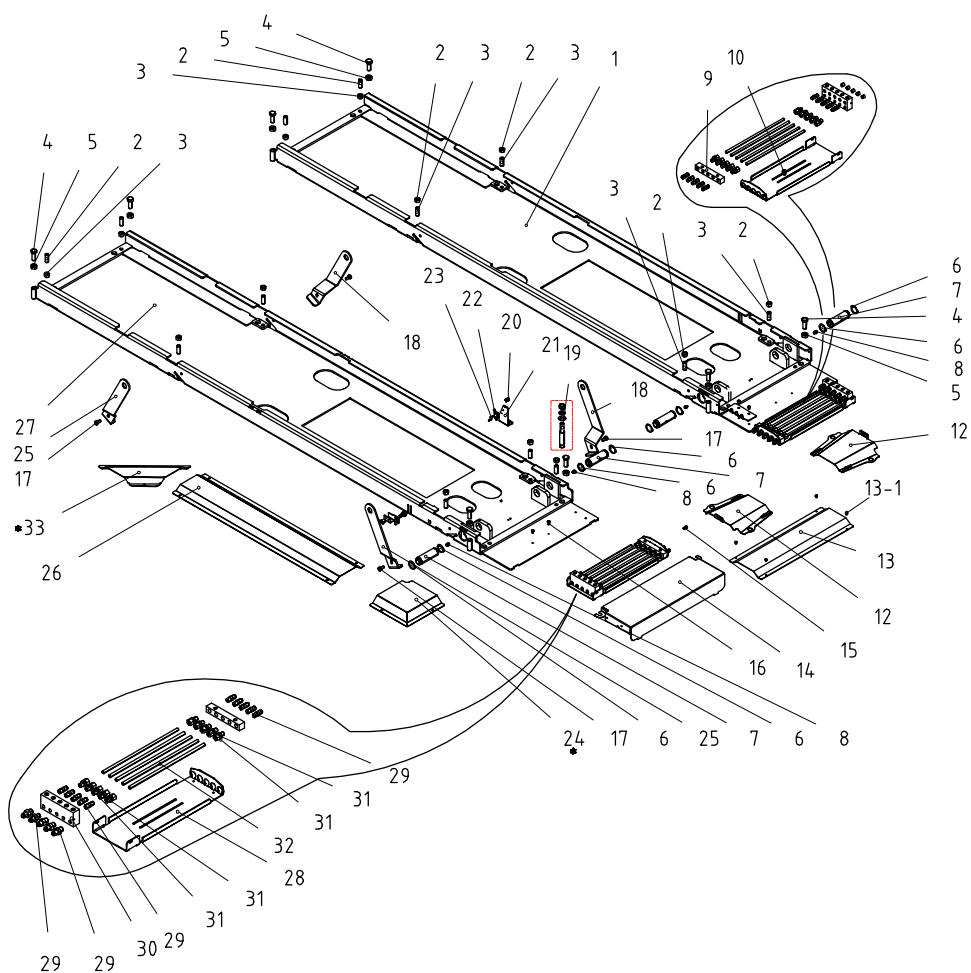
This installation manual is prepared as of January 2013. This manual is subject to change without prior notice if the lift specification is changed.

OVERALL INDEX



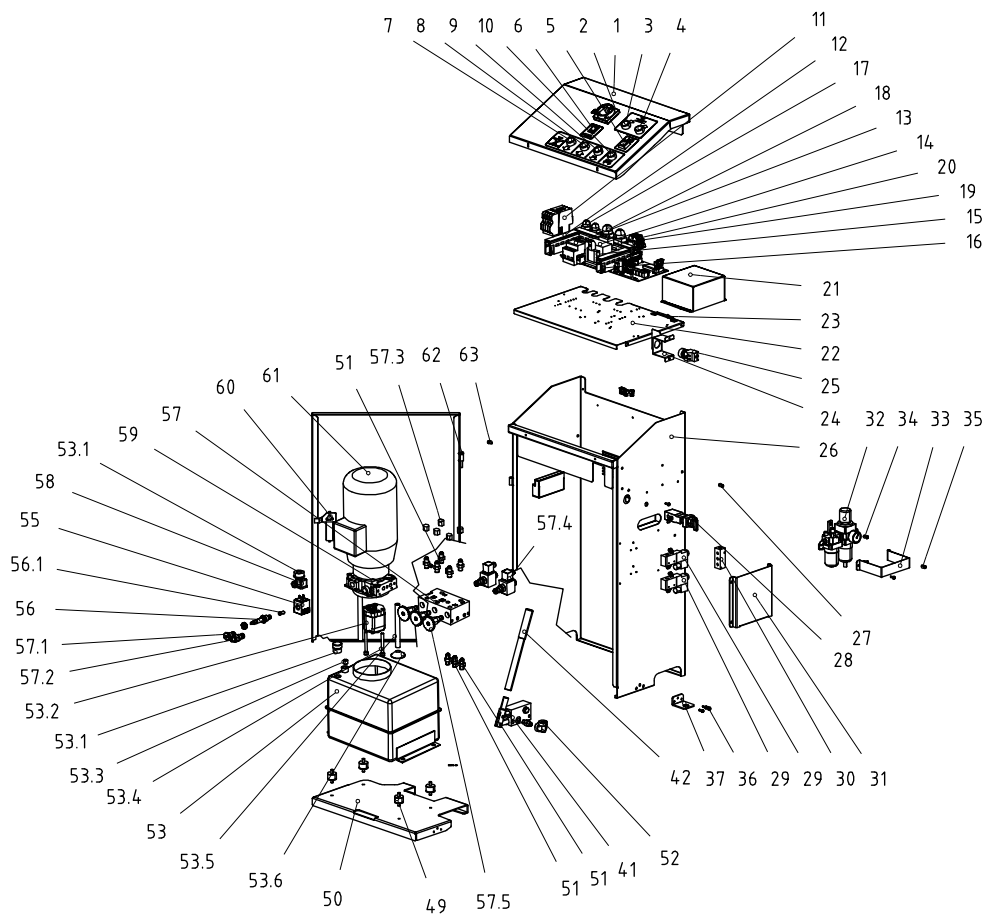
25	AUX. LIFT FULL SET	1			52NV00-
24	AUX. LIFT CYLINDER-LEFT	1			52NV80-
23	AUX. LINK 2	2(1R/1L)			52NV70-
22	AUX. LINK 1	2(1R/1L)			52NV50-
21	AUX. BASEMENT	2			52NV30-
20	FRONT TURN TABLE ADJUSTER	2/8			52NB65/70-
19	FRONT STOPPER	2(1R/1L)			52NH10-
18	STOPPER BRACKET	2		STANDARD for FRONT	52NH00-
17	LINK 1	2			52NE00-
16	LINK 2	2			52NF00-
15	BASEMENT	1			52NC00-
14	MAIN CYLINDER SET	2/2			52NG00-
13	PLATFORM-LEFT	1			52NB30-
12	SIDE SLIP(REAR TURN TABLE)	2			52NJ00-
11	IN-GROUND EDGE ATTACHMENT	2	OPTION IN-GROUND ONLY		52NB55-
10	STOPPER BRACKET	2	OPTION IN-GROUND ONLY Y(REAR)		52NH00-
9	CONNECTOR for IN-GROUND TYPE	2	OPTION IN-GROUND ONLY		52NH20-
8	RAMP BRACKET	2			52NH30-
7	RAMP	2			52NH60-
6	PLATFORM-RIGHT	1			52NB30-R
5	MAIN LIFT PLATE TYPE GROUP 2	2,2,2	OPTION PLATE TYPE ONLY(4800)		52NB95/80/85-
4	MAIN LIFT PLATE TYPE GROUP 1	2,2,2	OPTION PLATE TYPE ONLY(5200)		52NB75/80/85-
3	AUX. LIFT CYLINDER-RIGHT	1			52NW00-
2	AUX. LIFT BOARD-RIGHT	1			52NV10-R
1	AUX. LIFT BOARD-LEFT	1			52NV10-
Item	Description	Qty	Material	Standard	Remark

Base



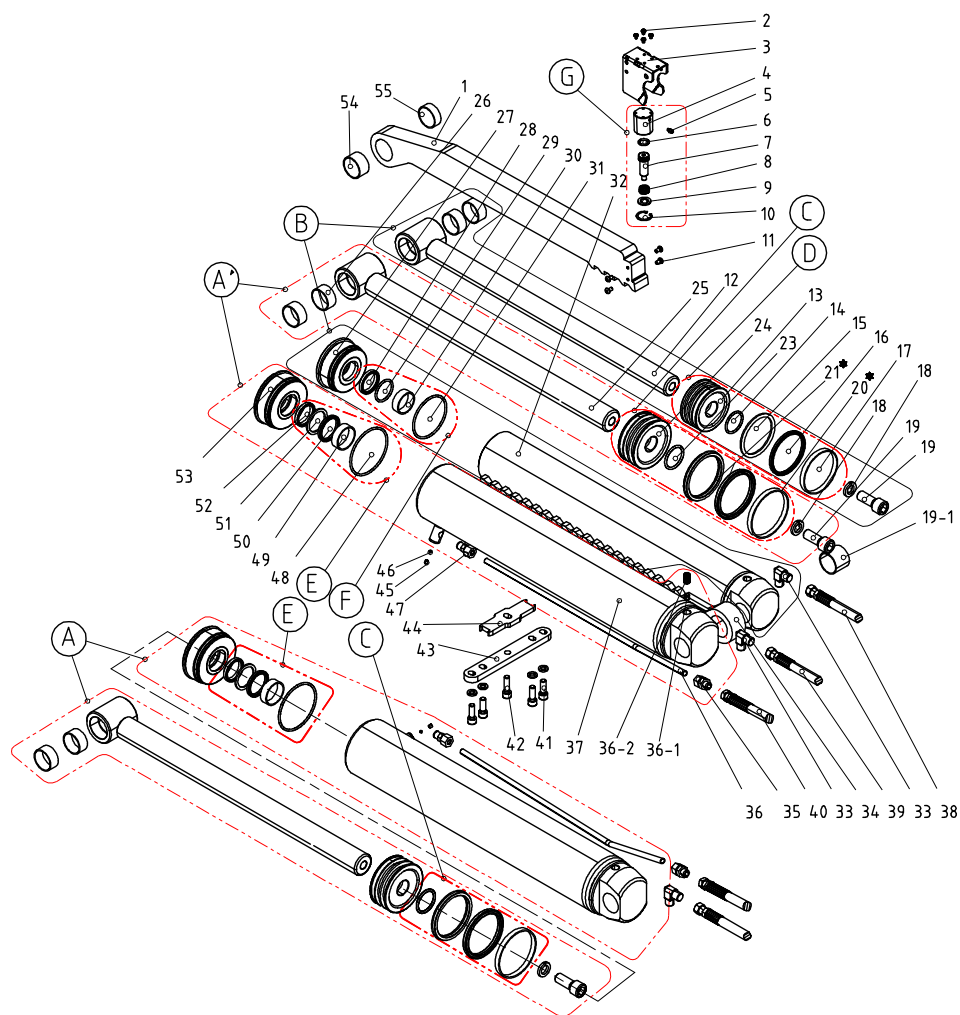
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NO.	PART NAME	QTY	SPECIFICATION	DWG.NO.	ITEM NO.
1	BASEMENT-RIGHT	1	6t*90*584*2982	52NC01-R	52N53200
2	HEX NUT	16	M16		HN3M16
3	SET SCREW	16	M16*50L		MWBM1650
4	HEX BOLT	8	5/8*60L		MWBM1650
5	HEX NUT	8	5/8"		HN3M16
6	SNAP RING	8	CS35		SN-CS35
7	BASEMENT PIN	4	Ø35*114.2L	52NC03-	52N53203
8	GREASE NIPPLE	4	PT1/8*ST.		GN-1/8S
9	OIL BLOCK 2	2	25*25*126L	52NC18-	52N53218
10	ROUND HEAD SCREW	2	M5*13L		RHCBM0513
11	BLOCK BRACKET	1	2.3t*19.2*60*136	52NC21-	52N53221
12	CENTER LINE COVER 2	2	2.3t*50.7*275.6*238.2	52NC13-	52N53213
13	CENTER LINE COVER 1	1	2.3t*22.3*203.1*580	52NC12-	52N53212
13-1	ROUND HEAD SCREW	4	M5*5L		RHCBM0505
14	BASEMENT COVER	2	2.3t*87*202*591.6	52NC11-	52N53211
15	ROUND HEAD SCREW	1	M6*15L		RHCBM0615
16	ROUND HEAD SCREW	2	M6*10L		RHCBM0610
17	HEX BOLT	8	M10*15L		HEXM1015
18	HANGER 2	4(2R/2L)	6t*97.8*60*324.4	52NC16-	52N53216
19	ANCHOR BOLT	16	M16*125L		ANCW-16-125
20	ROUND HEAD SCREW	2	M5*8L		RHCBM0508
21	SWITCH BRACKET(DOMESTIC ONLY)	1	2.3t*35*55*100	52NC09-	52N53209
22	MICRO SWITCH(DOMESTIC ONLY)	1	V15F-07C		V15F-07C
23	ROUND HEAD SCREW	2	M3*15L		RHCBM0315
24	CORNER LINE COVER	1	2.3t*73.7*225.8*292.9		52N53215
25	HANGER 1	4(2R/2L)	6t*50.5*60*322.9	52NC06-	52N53206
26	LINE COVER ST.	4	2.3t*22.3*206.6*1000	52NC20-	52N53220
27	BASEMENT-LEFT	1	6t*90*584*2982	52NC01-	52N53200
28	OIL BLOCK MOVABLE BRACKET	1	3.2t*48.3*57.4*163.4*471.2	52NC19-	52N53219
29	OIL NIPPLE-ST	4	PT1/4*1/2-20UNF		HMCM-1/4-05U
30	OIL BLOCK 2	1	30*50*157	52NC17-	52N53217
31	MALE CONNECTOR-ST.	4	PT1/4*ST.*Ø10		BMC10-1/4
32	STEEL PIPE	4	Ø10*376L	52NQ01-	52N57080
33	HOSE CORNER COVER	1	2.3t*24.6*155.2*405.7	52NC24-	52N53215

Controller



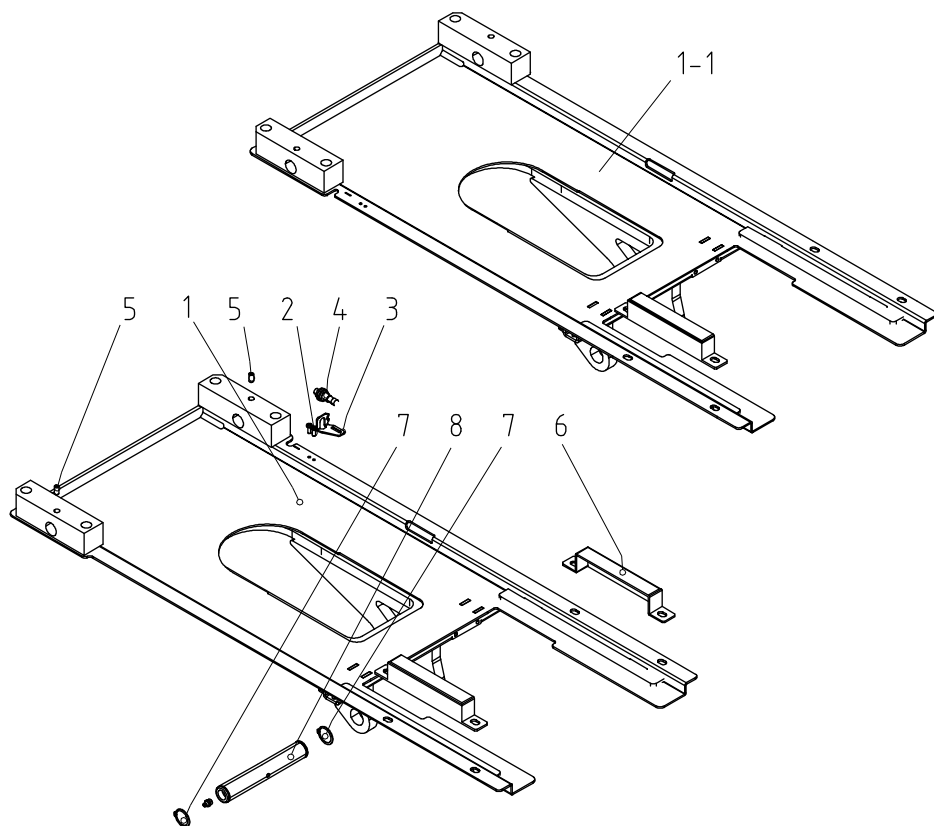
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NO.	PART NAME	Q'TY	SPECIFICATION	DWG.NO.	ITEM NO.
0	CONTROL PANEL ASSEMBLY	1			52N58500
1	UPPER COVER	1	2.3t*141.9*354.1*507	52NQ04-	52N54604
2	POWER CAM SWITCH	1			90000110
3	PUSH BUTTON SW-BLACK	1			KP5BRRFBK10S
4	PUSH BUTTON SW-WHITE	1			KP5BRRFW10S
5	BUZZER	1			31S80060
6	SEE-SAW SW	1			DJR602-4210(LF)
7	PUSH BUTTON SW-BLACK	1			KP5BRRFBK10S
8	PUSH BUTTON SW-WHITE	1			KP5BRRFW10S
9	PUSH BUTTON SW-GREEN	1			KP5BRRFG10S
10	PUSH BUTTON SW-BLACK	1			KP5BRRFBK10S
11	MAGNET SW, OCR	1,1			90000041,52N57301
12	CABLE DUCT 1	2			52F00709
13	MCCB	1			56H51170
14	TRANSFORMER	1			TR4002110050
15	CABLE DUCT 1	-			52F00709
16	PCB	1			52N81260
17	CABLE LOCKER 1	2			JOKW-21
18	CABLE LOCKER 2	2			NEC-01-20A
19	CABLE DUCT 2	1			52F00709
20	ELEC. TERMINAL	1SET	(Yellow/Green) / Blue/Grey		52F00720/30/40
21	PCB COVER	1	1.2b*90x145x171	52NQ18-	52F10130
22	ELEC. ASSEMBLY PLATE	1	1.6t*15*320.5*494	52NQ08-	52N54608
23	ELEC. EARTH PLATE	1			42F80090
24	EMERGENCY BUTTON BRACKET	1	1.6t*43.6*86.8*106.3	52NQ14-	52N54614
25	PUSH BUTTON-EMERGENCY	1			31S80070
26	CONTROLLER BODY	1	2.3t*326.5*500*944.6	52NQ05-	52N54605
27	ROUND HEAD SCREW	2	M5*13L		TRTBM0513
28	AIR MECHANICAL VALVE	1	PT1/8		52F10210
29	AIR SOLENOID VALVE	2			52N57351
30	AIR DISTRIBUTOR BLOCK	1	25x25x70L		52F10170
31	MANUAL BROCHURE POCKET	1	1.6b*20x180x200		31S79310
32	AIR REGULATOR SET	1	TAW-3000-02BG	52NQ23-	52N57352
33	AIR REGULATOR GUIDER	1	1.6b*35x106x162	52NQ12-	31S80094
34	ROUND HEAD SCREW	2	M5*13L		TRTBM0513
35	ROUND HEAD SCREW	2	M5*13L		TRTBM0513
36	ROUND HEAD SCREW	6	M5*13L		TRTBM0513
37	ANCHOR BRACKET	2	3.2t*30*50*60	52NQ13-	52F10090
41	MANUAL PUMP	1			K250182000
42	MANUAL PUMP HANDLE	1			K250182100
49	ANTH-VIBRATION RUBBER	4	M8*%%c30*20H		30N80100
50	POWER PACK-BASEMENT	1			52N54607
51	STEEL NIPPLE-ST.	1	PT1/4*ST.		HMCM-1/4-05U
52	EL-NIPPLE	1			52F10230
53	TANK-RESERVIOR	1	15L		52F80040
53	CHECK VV. CAP	1			90000296
53	PUMP	1	4.8cc		C1640140RZ
53	STOP BOLT	1	PT1/4*11L		MWBU1-4-11
53	WRENCH BOLT	2	M8*100L		WBM08100
53	SUCTION PIPE	1	PT1/4*170L		SUC-PIPE
53	SUCTION FILTER	1	PT1/4		SUC-FILTER
55	COIL	1	24V DC		C1664010C2
56	CHECK SOL. VALVE	1	SINGLE CHECK		V389603E10
56	ORIFICE	1	10Lit/min		V38951900
57	OIL BLOCK-MAIN	1	50*91.5*149	52NT10C	52N57700
57	CHECK VALVE	1	300508		V389226000
57	RELIEF VALVE	1	300507		V388904A23
57	CAP(BRASS COPPER)	5	PT1/4		CAP-PT1/4
57	BOUBLE CHECK VV.(POPPET TYPE)	2	NCS047-DOUBLE CHECK VV.		52N57402
57	NEEDLE VV.(KNOVE)	3	3/4-16UNF		NDL-VV-047-N
58	CABLE CONNECTOR	1			90000290
59	MOTOR	1	3KW*3PH		M33805640
60	DOOR LOCKER KEY	1			52F10110
61	DOOR	1			52N54606
62	HINGE PIN	2			52N54626
63	ROUND HEAD SCREW	4	M5*13L		TRTBM0513

Cylinder



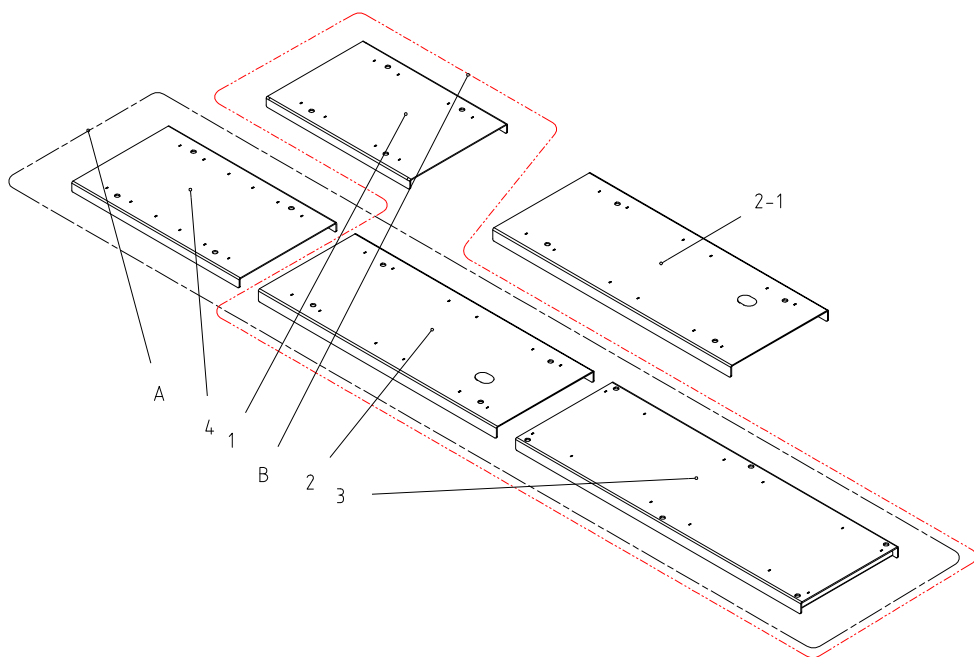
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NO.	PART NAME	Q'TY	SPECIFICATION	DWG.NO.	ITEM NO.
A	MASTER CYLINDER ASSY"(right)	1SET		52NG00C	52N58520
A'	MASTER CYLINDER ASSY"(left)	1SET		52NG00C	52N58510
B	SLAVER CYLINDER ASSY"	2SET		52NG20C	52N58530
C	KIT SEAL for master piston	2SET		-	52N59310
D	KIT SEAL for slaver piston	2SET		-	52N59320
E	KIT SEAL for master rod cover	2SET		-	52N59330
F	KIT SEAL for slaver rod cover	2SET		-	52N59340
G	AIR CYLINDER ASSY"	2SET		-	52N55030
1	UPPER LOCKER	2	35t*104.1*700.5	52NG10I	52N53610
2	ROUND HEAD SCREW	8	M4*6L	-	RHCBM0406
3	AIR CYLINDER FIXER		3.2t*43*53*76.7	52NG12-	52N53612
4	AIR CYLINDER	2	Ø35x58L	52NU31-	52N55031
5	ONE TOUCH AIR NIPPLE	2	M5xØ4*ST.	-	EC0504
6	O-RING	2	P16(Ø2.4xØ16xØ20)	-	ORP16
7	AIR PISTON	2	Ø20*56L	52NU32-	52N55032
8	SPRING	2	Ø18.4xØ16x36Lx5C	52NU04-	30N93150
9	HEAD COVER	2	Ø15.2*Ø24.2*2L	52NU34-	52N55034
10	SNAP RING	2	CR25	-	SN-CR25
11	ROUND HEAD SCREW	8	M6*10L	-	RHCBM0610
12	SLAVE ROD BAR	2/2		52NG09/G26-	52N53626
13	SLAVE PISTON	2	Ø89x41L	52NG22-	52N53622
14	O-RING	2	P40(Ø3.5xØ40xØ46)	-	ORP40
15	U-PACKING	4	Ø90xØ80x6B	-	UHP908006
16	U-PACKING	-	Ø90xØ80x6B	-	UHP908006
17	WEAR RING	2	Ø90xØ85x2.5tx10B	-	WEAR908510
18	SPRING WASHER	4	M18	-	WSM18
19	WRENCH BOLT	4	M18x40L	-	WBM1840
19	DU BUSH	2	DU4035	-	DU4035
20	WEAR RING	2	Ø100*Ø95*2.5t*10B	-	WEAR1009510
21	U-PACKING	4	Ø100*Ø85*9B	-	UHP1008509
22	-	-	-	-	-
23	O-RING	2	P44(Ø3.5xØ44xØ50)	-	ORP44
24	MASTER PISTON	2	Ø100*41L	52NG02-	52N53602
25	MAST ROD BAR	2/2		52NG06/G09-	52N53606
26	DU BUSH	8	DU4020	-	DU4020
27	SLAVE HEAD COVER	2	Ø100x41L	52NG24-	52N53624
28	DUST SEAL	2	Ø40xØ48x5B	-	DHS4048065
29	O-RING	2	P40(Ø3.5xØ40xØ46)	-	ORP40
30	WEAR RING	2	Ø40xØ45x2.5tx15B	-	WEAR404515
31	O-RING	2	G85	-	ORG85
32	SLAVE CYLINDER TUBE	2		52NG21/G23-	52N53621
33	STEEL NIPPLE-EL	4	PT1/4*EL	-	HMCN-1/4-1/2WE
34	BOTTOM LOCKER	2	35t(34)*96.7*689.5	52NG08-	52N53608
35	MALE CONNECTOR	2	PT1/4*ST.	-	BMC10-1/4
36	STEEL PIPE(BENDED)	2	Ø10*570L	52NQ01-	52N57100
36	ORIFICE	2		-	52F71201
36	SPRING	2		-	31S71203
37	MASTER CYLINDER TUBE	2		52NG01/G03-	52N53601
38	OIL HOSE	1	700L	52NQ01-5	52N57050
39	OIL HOSE	1	540L	52NQ01-4	52N57040
40	OIL HOSE	1	500L	52NQ01-3	52N57030
41	WRENCH BOLT	8	M10*20L	-	WBM1020
42	WRENCH BOLT	2	M10*35L	-	WBM1035
43	BOTTOM LOCKER BRACKET	2	12t*30*217.5	52NG07-	52N53607
44	LOCKER SPACER	2	9t*30*123.8	52NG15-	52N53615
45	SET SCREW	2	M8*8L	-	MWBMM0808W
46	STEEL BALL	2	3/16"	-	BALL-3/16"
47	MALE CONNECTOR	2	PT1/4*ST.	-	BMC10-1/4
48	O-RING	2	G95	-	ORG95
49	WEAR RING	2	Ø43*Ø48*15B	-	WEAR434815
50	ROD SEAL	2	Ø43*Ø53*6B	-	ROD43536
51	BACK UP RING	2	Ø43*Ø53*3t	-	ORP435303
52	DUST SEAL	2	Ø43*Ø51*5B	-	DHS435105
53	MASTER HEAD COVER	2	Ø114*44.5L	52NG04-	52N53604
54	DU BUSH	2	FDU4012, FDU4020	-	DU4012F / DU4020F
55	DU BUSH	2	FDU4012	-	DU4012F

Jack Base



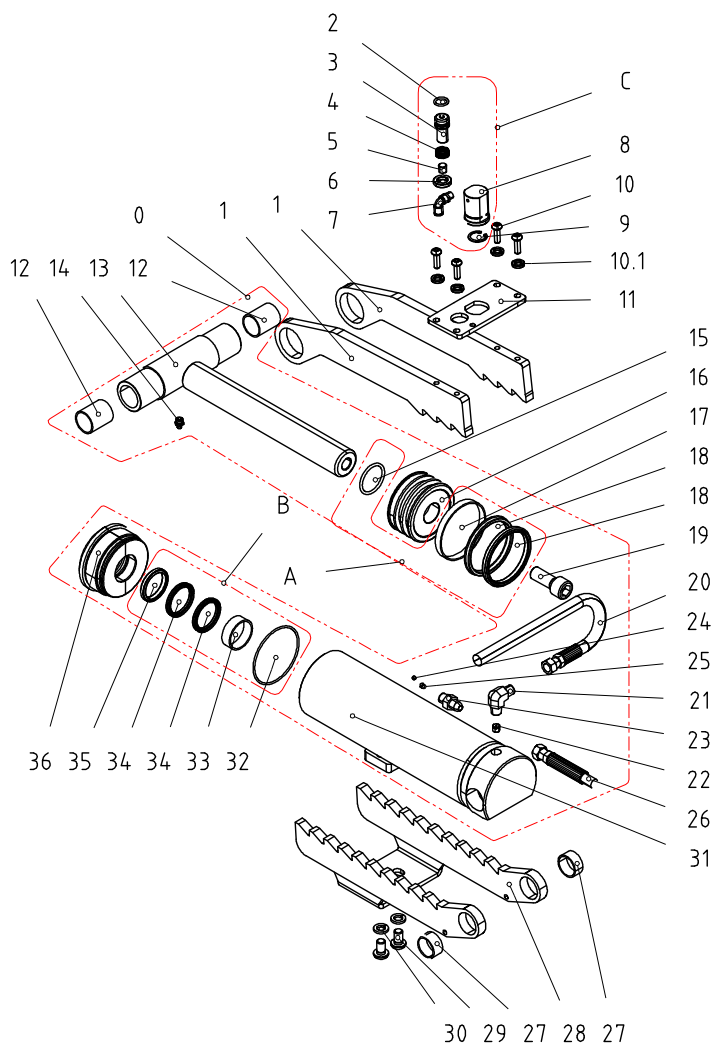
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1	AUX. LIFT BASEMENT BODY	2		V34/37-	52N55130
1-1	AUX. LIFT BASEMENT BODY	2		V34/37-	52N55230
2	ROUND HEAD SCREW	2	M5*13L		TRTBM0513
3	APPROACH SENSOR BRACKET	1	2.3t*29*25*40	52NV38-	52N55138
4	APPROACH SENSOR	1	PR12-4DN	52NV39-	52N54090
5	SET SCREW	4	M8*15L		MWBM0815
6	ROLLER GUIDER	4	3.2t*30*40*242	52NV41-	52F08055
7	SNAP RING	4	CS30		SN-CS30
8	CYLINDER BOTTOM PIN	2	Ø30*190.4L	52NV40-	52N55140

Plain type



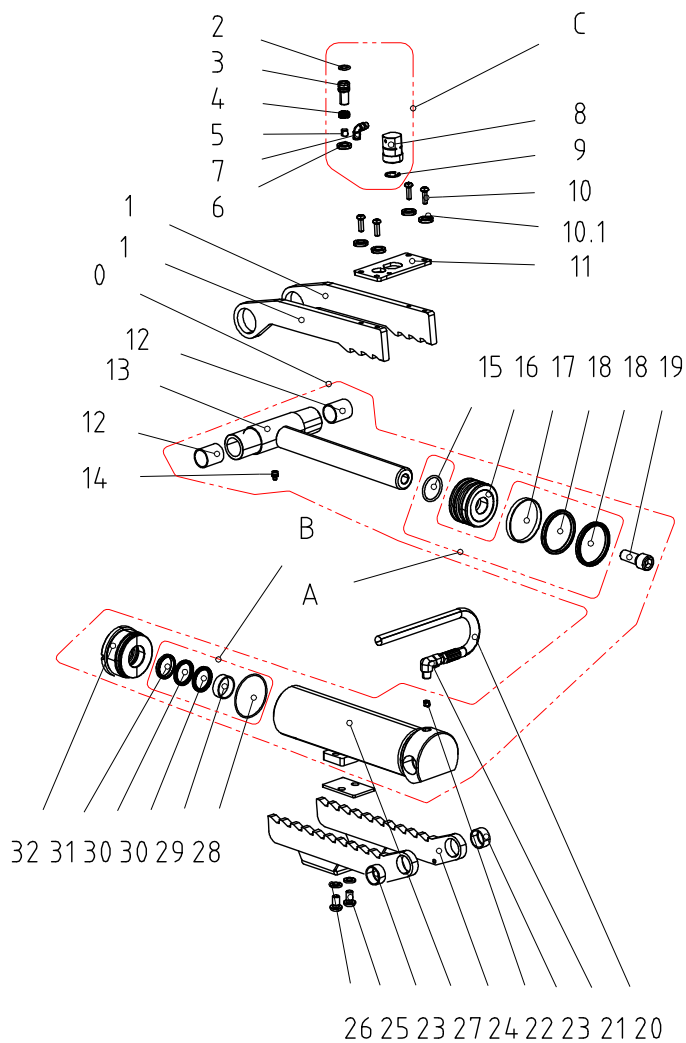
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NO.	PART NAME	Q'TY	SPECIFICATION	DWG. NO.	ITEM NO.
1	PLATE TYPE FRONT COVER(4800)	2	4800 LENGTH ONLY	52NB75A	52N53175
2	PLATE TYPE MIDDLE COVER(L)	1		52NB80A	52N53180
2-1	PLATE TYPE MIDDLE COVER(R)	1		52NB80A	52N53180
3	PLATE TYPE REAR COVER	2		52NB85A	52N53185
4	PLATE TYPE FRONT COVER(5200)	2	5200 LENGTH ONLY	52NB95A	52N53195
A	MAIN LIFT PLATE TYPE GROUP 1 (5200)	1SET	5200 LENGTH ONLY	-	52N52000-01
B	MAIN LIFT PLATE TYPE GROUP 2 (4800)	1SET	4800 LENGTH ONLY	-	52N52000-02

Jack Cylinder1



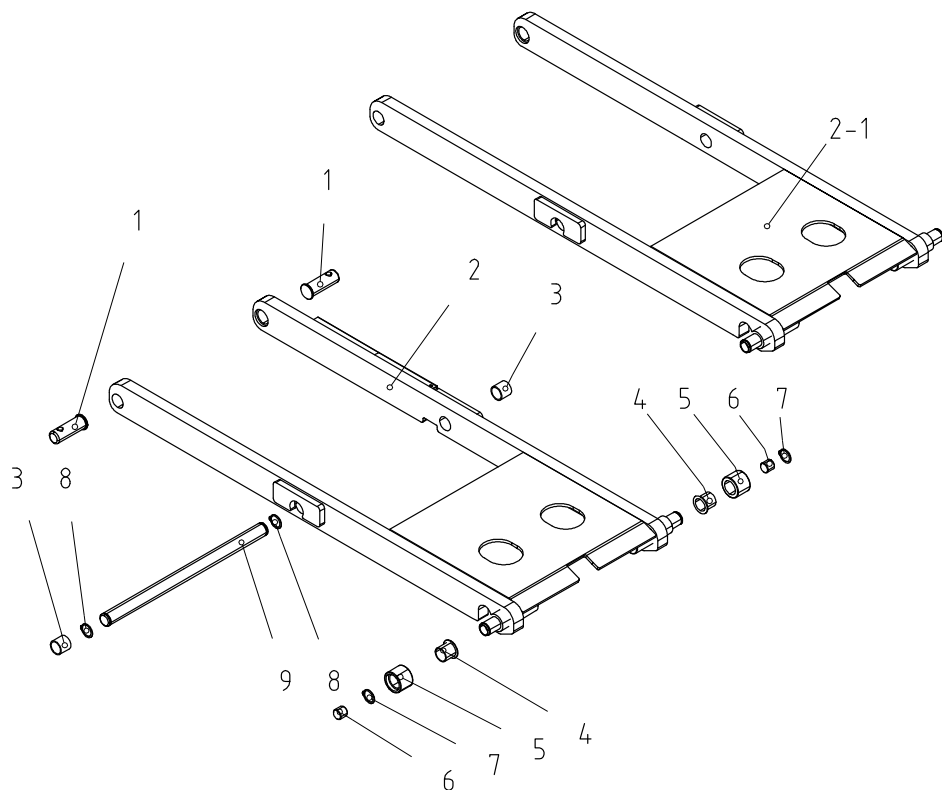
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NO.	PART NAME	Q'TY	SPECIFICATION	DWVG. NO.	ITEM NO.
A	AUX. LIFT master piston kit	1set		-	52N59410
B	AUX. LIFT rod cover kit	1set		-	52N59420
C	JACK AIR CYLINDER2 ASSY"	1set		52NU00A	52N55200
0	JACK MASTER CYLINDER ASSY	1set		52NV80A	52N58550
1	AUX. LIFT UPPER LOCKER	4	14t*87.6*374.2	52NV92C	52N55192
2	O-RING	2	P16(Ø2.4xØ16xØ20)	-	OPR16
3	PISTON	2	Ø20*40L	52NU03A	52N55003
4	SPRING	2	Ø18.4xØ16x36Lx5C	31SU05C	30N93150
5	ROD GUIDER	2	Ø11x10L	42FU07A	42F04759
6	HEAD COVER	2	Ø25*5L	52NU05B	52N55005
7	ONE TOUCH AIR NIPPLE-EL	2	M5*90°*Ø6	-	EC0506E
8	AIR CYLINDER TUBE	2	Ø35*47L	52NU02D	52N55002
9	SNAP RING	2	CR25	-	SN-CR25
10	ROUND HEAD WRENCH BOLT	8	M8*20L	-	WRBM0820
10.1	SPRING WASHER	4	M8	-	WSM08
11	JACK LOCKER CONNECTOR	2	6t*65*133	52NV90B	52N55190
12	DU BUSH	4	DU3040	-	DU3040
13	ROD BAR WELDING GROUP-R	1	Ø41*309L	52NV85A	52N55185
14	GREASE NIPPLE-ST.	2	PT1/8*ST.	-	GN-1/8S
15	O-RING	1	P41	-	ORP41
16	MASTER PISTON	1	Ø90*44L	52NV81A	52N55181
17	WEAR RING	1	Ø85*Ø90*10B	-	WEAR859010
18	PISTON SEAL	2	Ø75*Ø90*9B	-	UHP75909
19	WRENCH BOLT	1	M18*40L	-	WBM1840
20	OIL HOSE	1	4430L	52NQ01B	52N57020
21	STEEL NIPPLE-EL	1	PT1/4*EL*1/2-20UNF	-	HMCN-1/4-1/2WE
22	ORIFICE	2	9x9x8L	52FV96C	52F09750
23	STEEL NIPPLE-ST.	2	PT1/4*1/2-20UNF	-	HMCN-1/4-05U
24	STEEL BALL	1	3/16"	-	BALL-3/16"
25	SET SCREW	1	M8*8L	-	MWBM0808W
26	OIL HOSE	1	4800L	52NQ01B	52N57070
27	DU BUSH	4	DU 3012	-	DU3012
28	BOTTOM LOCKER for AUX. LIFT	2SET		52NV89B	52N55280
29	ROUND HEAD WRENCH BOLT	4	M12x20L	-	WRBM1220
30	SPRING WASHER	4	M12	-	WSM12
31	JACK MASTER CYLINDER TUBE	1	Ø100*Ø90*315L	52NV82A	52N55182
32	O-RING	1	G85	-	ORG85
33	WEAR RING	1	Ø41*Ø46*15B	-	WEAR414615
34	ROD SEAL	2	Ø41*Ø51*6B	-	ROD41516
35	DUST SEAL	1	Ø43*Ø51*5B	-	DHS435105
36	MASTER HEAD COVER	1	Ø100*46L	52NV83A	52N55183

Jack Cylinder2



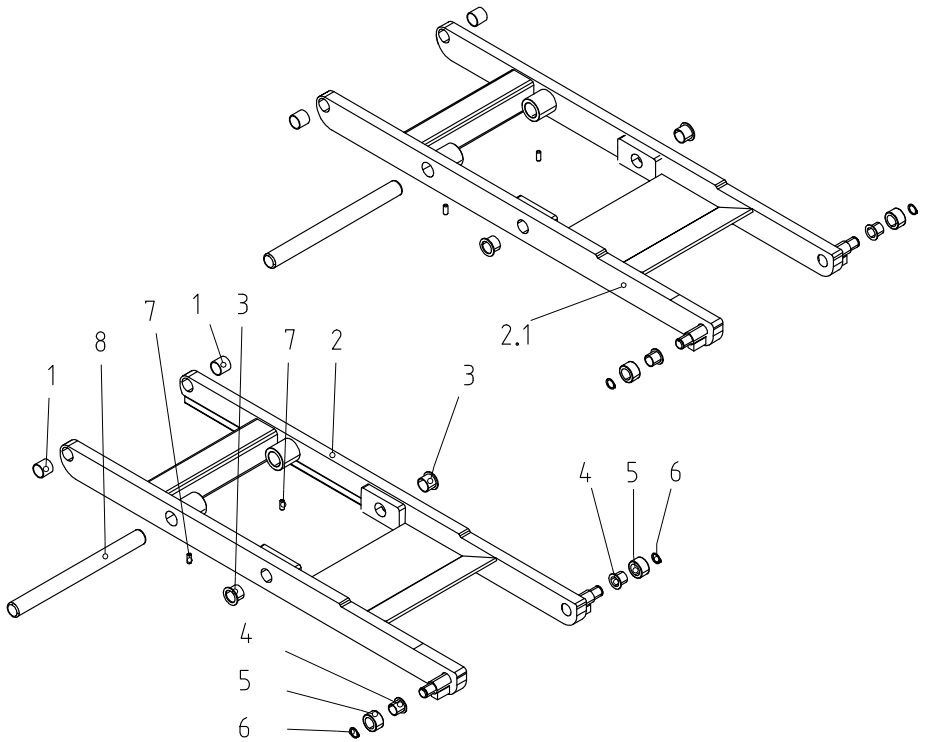
번호 NO.	품명(영문) PART NAME	수량 Q'TY	규격 SPECIFICATION	도번 DWG.NO.	품번 ITEM NO.
A	AUX. LIFT slaver piston kit	1set	-		52N59430
B	AUX. LIFT slaver rod cover kit	1set	-		52N59440
C	JACK AIR CYLINDER1 ASSY"	1set	52N55100		52N55100
0	JACK SLAVE CYLINDER ASSY	1set	52NW00A		52N58560
1	AUX. LIFT UPPER LOCKER	-	52NV92C	14t*87.6*374.2	52N55192
2	O-RING	-	-	P16(Ø2.4xØ16xØ20)	OPR16
3	PISTON	-	52NU03A	Ø20*40L	52N55003
4	SPRING	-	31SU05C	Ø18.4xØ16x36Lx5C	30N93150
5	ROD GUIDER	-	42FU07A	Ø11x10L	42F04759
6	HEAD COVER	-	52NU05B	Ø25*5L	52N55005
7	ONE TOUCH AIR NIPPLE-EL	-	-	M5*90°*Ø6	EC0506E
8	AIR CYLINDER TUBE	-	52NU06B	Ø35*47L	52N55006
9	SNAP RING	-	-	CR25	SN-CR25
10	ROUND HEAD WRENCH BOLT	-	-	M8*20L	WRBM0820
10.1	SPRING WASHER	4	-	M8	WSM08
11	JACK LOCKER CONNECTOR	-	52NV90B	6t*65*133	52N55190
12	DU BUSH	-	-	DU3040	DU3040
13	ROD BAR WELDING GROUP-R	1	52NW05A	Ø40x309L	52N55305
14	GREASE NIPPLE-ST.	-	-	PT1/8*ST.	GN-1/8
15	O-RING	1	-	P40(Ø3.5xØ40xØ46)	ORP40
16	SLAVE PISTON	1	52NW01A	Ø80x44L	52N55301
17	WEAR RING	1	-	Ø80xØ75x2.5tx10B	WEAR807510
18	PISTON SEAL	2	-	Ø80xØ70x6B	UHP80706
19	WRENCH BOLT	1	-	M18*40L	WBM1840
20	OIL HOSE	1	52NQ01B	4800L	52N57070
21	STEEL NIPPLE-EL	-	-	PT1/4*EL+1/2-20UNF	HMCN-1/4-1/2WE
22	ORIFICE	-	52FV96C	9x9x8L	52F09750
23	DU BUSH	-	-	DU 3012	DU3012
24	BOTTOM LOCKER for AUX. LIFT	-	52NV89B		52N55280
25	ROUND HEAD WRENCH BOLT	-	-	M12x20L	WRBM1220
26	SPRING WASHER	-	-	M12	WSM12
27	JACK SLAVE CYLINDER TUBE	1	52NW02B	Ø90*Ø80*315L	52N55302
28	O-RING	1	-	G75	ORG75
29	WEAR RING	1	-	Ø40*Ø45*15B	WEAR404515
30	ROD SEAL	2	-	Ø40*Ø50*6B	ROD40506
31	DUST SEAL	1	-	Ø40*Ø48*5B	DHS4048065
32	SLAVE HEAD COVER	1	52NW03A	Ø90*46L	52N55303

Jack Link1



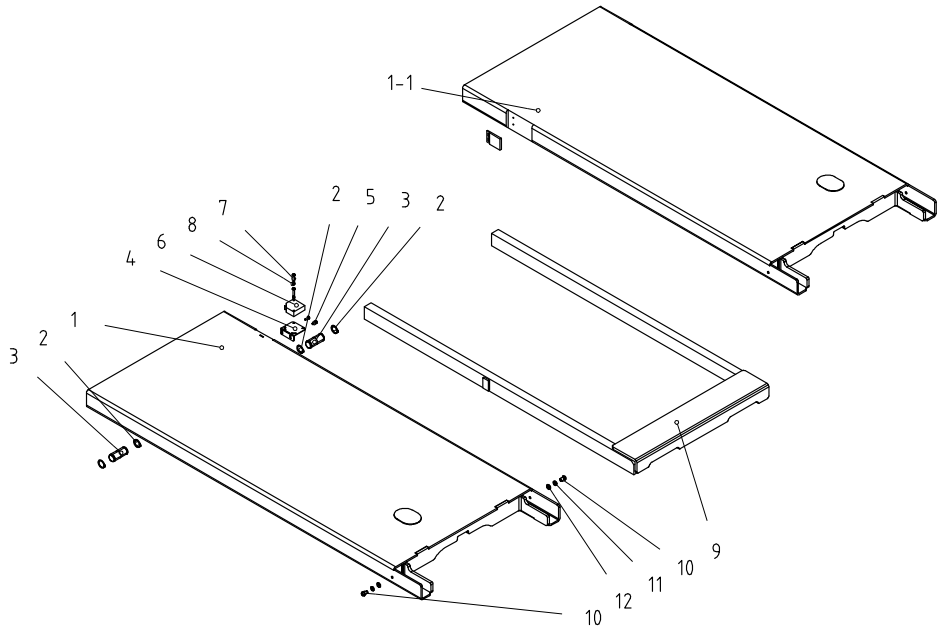
번호	품명(영문)	수량	규격	도번	품번
NO.	PART NAME	Q'TY	SPECIFICATION	DWG. NO.	ITEM NO.
1	AUX. LIFT LINK1 BOTTOM PIN	4	Ø25*73.8L	52NV56-	52n55156
2	AUX. LIFT LINK1 BODY(LEFT)	2(1R/1L)		52NV50-	52N55150
2.1	AUX. LIFT LINK1 BODY(RIGHT)	2(1R/1L)		52NV50-	52N55250
3	DU BUSH	4	DU 2525		DU2525
4	FLANGE DU BEARING	4	FDU2525		DU2525F
5	AUX. UPPER ROLLER	4	Ø42x31.5L	52NV59-	52F09055
6	AUX. UPPER FRICTION GUIDER	4	Ø20x18L	52NV60-	31X00013
7	SNAP RING	4	CS25		SN-CS25
8	SNAP RING	4	CS25		SN-CS25
9	AUX. LIFT CENTER PIN	2	Ø25*411L	52NV57-	52F09045

Jack Link2



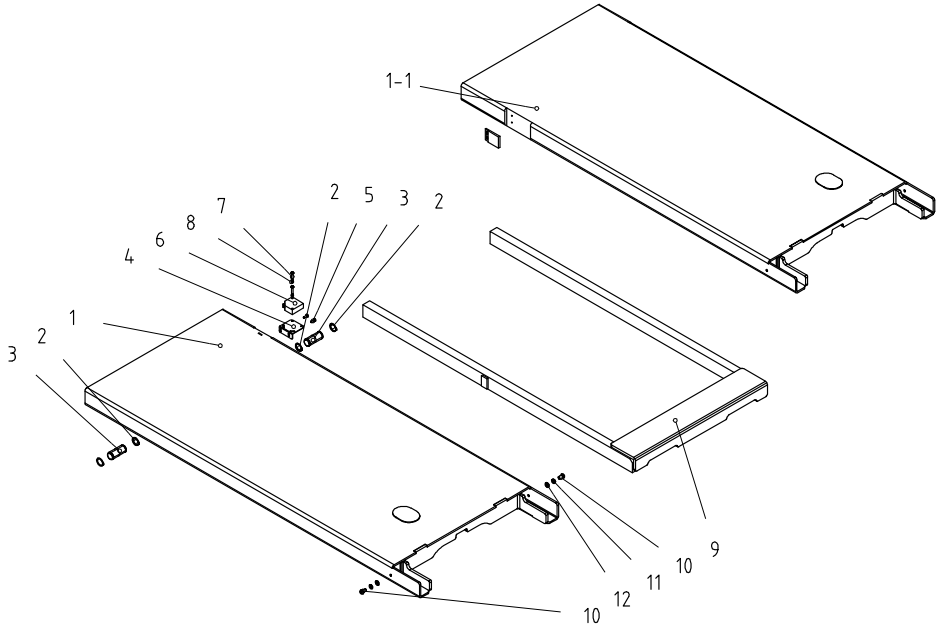
번호 NO.	품명(영문) PART NAME	수량 Q'TY	규격 SPECIFICATION	도번 DWG.NO.	품번 ITEM NO.
1	DU BUSH	4	DU 2525		DU2525
2	AUX. LIFT LINK2 BODY(LEFT)	1		52NV70-	52N55150
2.1	AUX. LIFT LINK2 BODY(RIGHT)	1		52NV70-	52N55250
3	FLANGE DU BUSH	4	FDU 2525		DU2525F
4	FLANGE DU BUSH	4	FDU2020		DU2020F
5	AUX. LINK2 BOTTOM ROLLER	4	Ø35x20L	52NV78-	52F00655
6	SNAP RING	4	CS20		SN-CS20
7	SET SCREW	4	M8x20L		MWBM0820
8	AUX. CYLINDER UPPER PIN	2	Ø30*338L	52NV77-	52N55177

Jack Platform



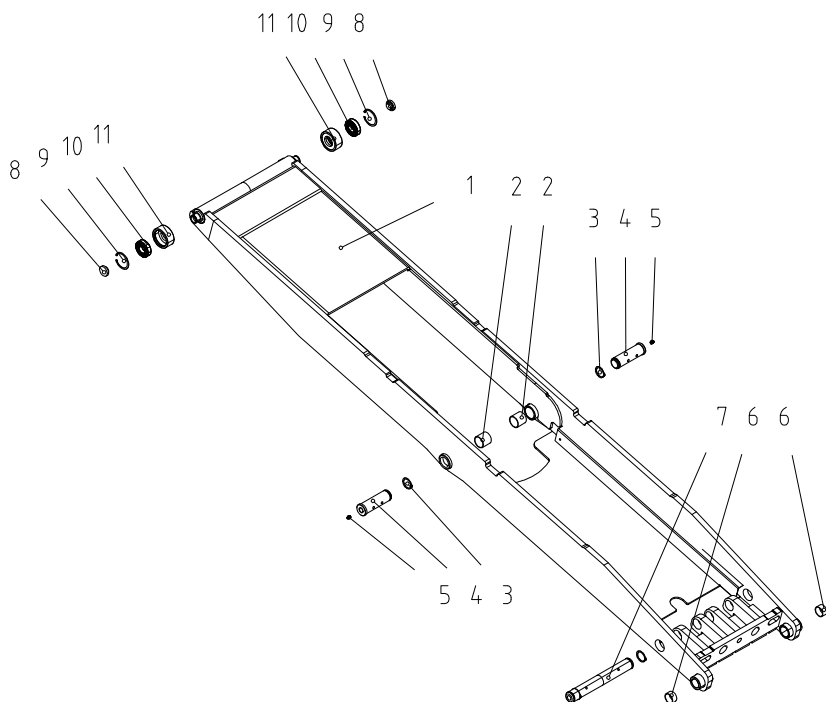
번호	품명(영문)	수량	규격	도번	품번
NO.	PART NAME	Q'TY	SPECIFICATION	DWG.NO.	ITEM NO.
1	AUX. LIFT BOARD(LEFT)	1		52NV10-	52N55110
1.1	AUX. LIFT BOARD(RIGHT)	1		52NV10-	52N55210
2	SNAP RING	8	CS25		SN-CS25
3	UPPER PIN for AUX. LIFT	4	%c25*61.8L	52NV18-	52N55118
4	PHOTO SENSOR BRACKET	1	1.6t*22*54*58	52NV22-	52F07540
5	ROUND HEAD SCREW	2	M5*13L		TRTBM0513
6	PHOTO SENSOR	1	E3JK-R4M2	52NV21-	90000020
7	PHOTO SENSOR BOLT	2	M4*25L		RHCBM0425
8	PHOTO SENSOR NUT	2	M4		HNM04
9	EXTENSION BOARD	2(1R/1L)		52NW20-	52N55320
10	ROUND HEAD WRENCH BOLT	4	M8*15L		WRBM0815
11	SPRING WASHER	4	M8		WSM08
12	PLATE WASHER	4	M8		WPM08

Jack Platform



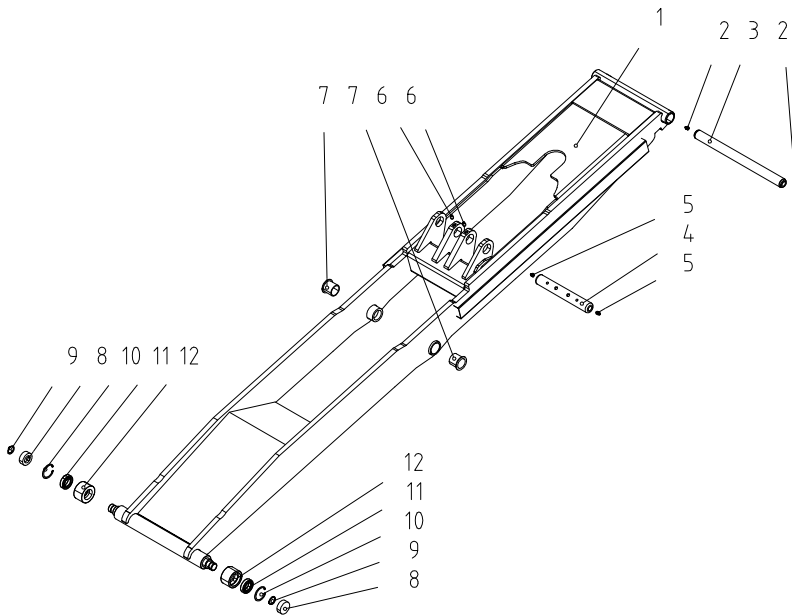
번호	품명(영문)	수량	규격	도번	품번
NO.	PART NAME	Q'TY	SPECIFICATION	DWG.NO.	ITEM NO.
1	AUX. LIFT BOARD(LEFT)	1		52NV10-	52N55110
1.1	AUX. LIFT BOARD(RIGHT)	1		52NV10-	52N55210
2	SNAP RING	8	CS25		SN-CS25
3	UPPER PIN for AUX. LIFT	4	φ25×61.8L	52NV18-	52N55118
4	PHOTO SENSOR BRACKET	1	1.6t×22×54×58	52NV22-	52F07540
5	ROUND HEAD SCREW	2	M5×13L		TRTBM0513
6	PHOTO SENSOR	1	E3JK-R4M2	52NV21-	90000020
7	PHOTO SENSOR BOLT	2	M4×25L		RHCBM0425
8	PHOTO SENSOR NUT	2	M4		HNM04
9	EXTENSION BOARD	2(1R/1L)		52NW20-	52N55320
10	ROUND HEAD WRENCH BOLT	4	M8×15L		WRBM0815
11	SPRING WASHER	4	M8		WSM08
12	PLATE WASHER	4	M8		WPM08

Link1



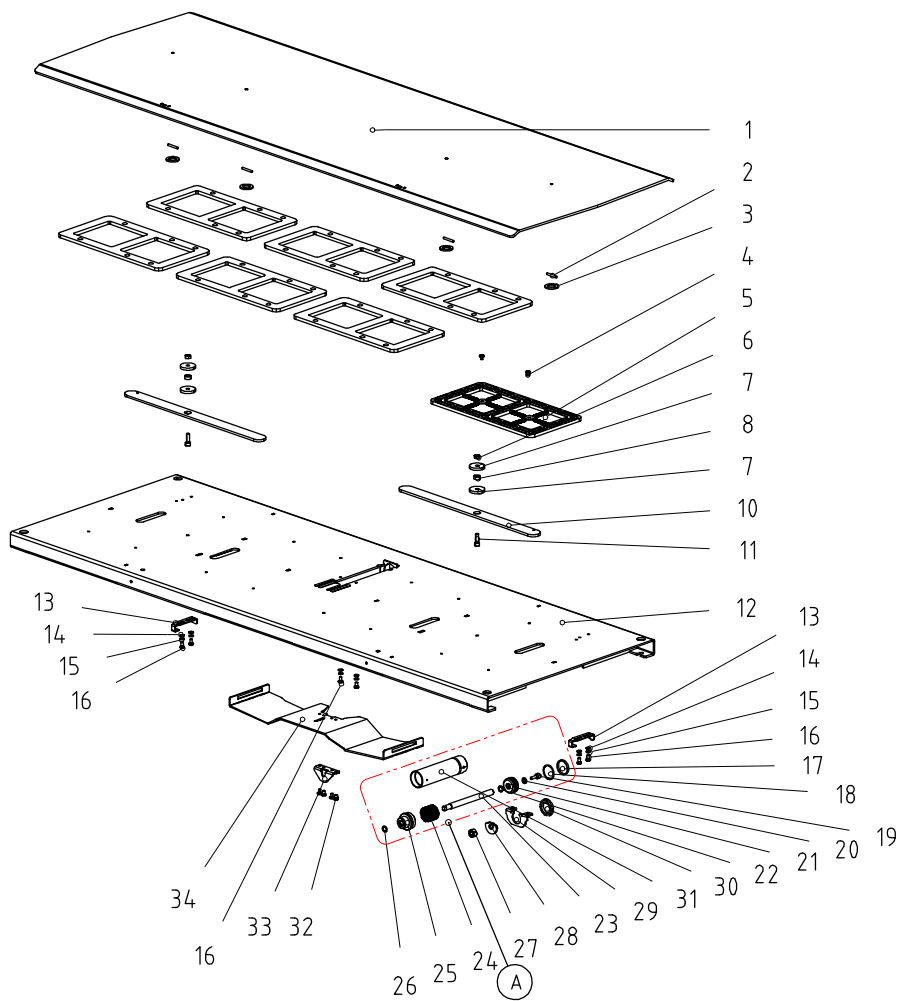
번호	품명(영문)	수량	규격	도번	품번
NO.	PART NAME	Q'TY	SPECIFICATION	DWG.NO.	ITEM NO.
1	LINK 1 BODY	2		52NE00G	52N53400
2	DU BUSH	4	DU4040	-	DU4040
3	SNAP RING	4	CS40	-	SN-CS40
4	CENTER PIN	4	Ø44×134.7L	52N53413	52N53413
5	GREASE NIPPLE	4	PT1/8×ST.	-	GN-1/8S
6	DU BUSH	4	DU3540	-	DU3540
7	CYLINDER BOTTOM PIN	2	Ø40×303.9L	52NE07D	52N53407
8	FRICTION GUIDER	4	Ø38×15L	52NE15A	52N53415
9	SNAP RING	4	CR30	-	SN-CR30
10	BALL BEARING	4	6206.2ZR	-	BALL62062ZR
11	UPPER ROLLER	4	Ø76×31.5L	52NE14D	52N53414

Link2



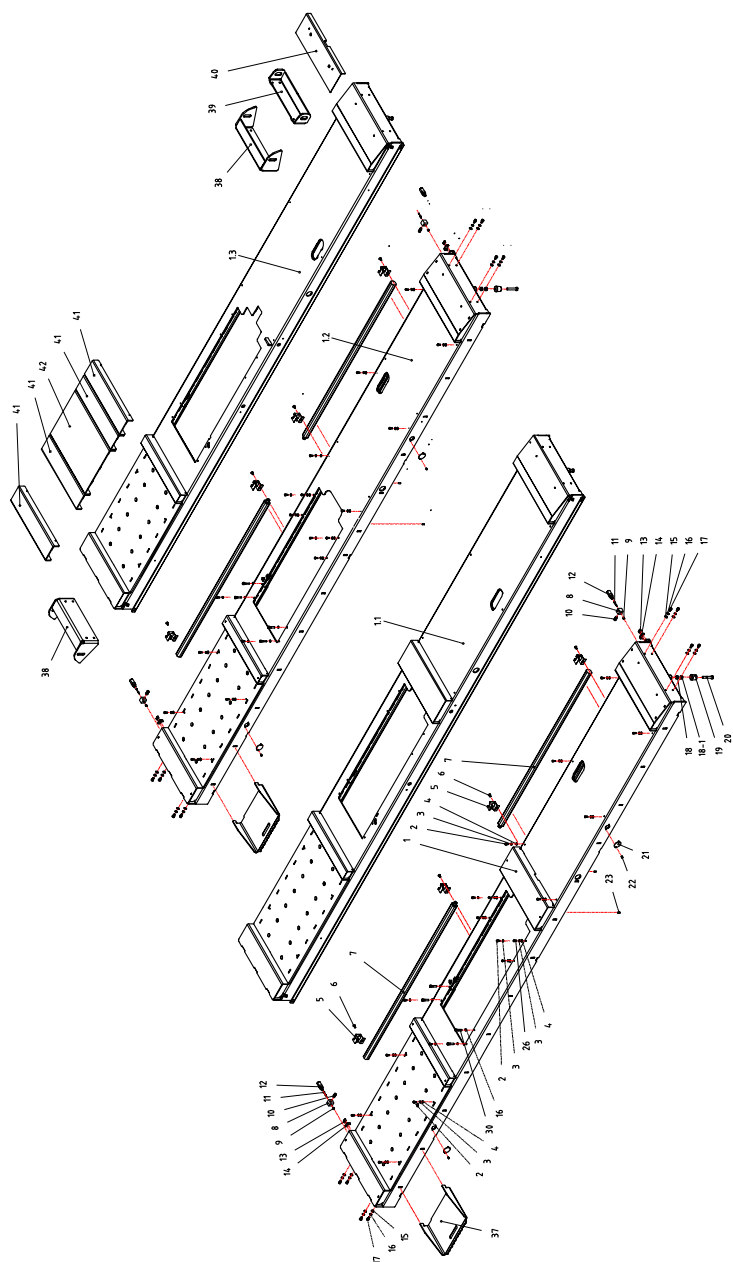
번호	품명(영문)	수량	규격	도번	품번
NO.	PART NAME	Q'TY	SPECIFICATION	DWG.NO.	ITEM NO.
1	LINK 2 BODY	2		52NF00C	52N53500
2	GREASE NIPPLE	4	PT1/8*ST.	-	GN-1/8S
3	LINK2 UPPER PIN	2	Ø35*462L	52NF13A	52N53513
4	CYLINDER UPPER PIN	2	Ø40*273L	52NF10C	52N53510
5	GREASE NIPPLE	4	PT1/8*ST.	-	GN-1/8S
6	SET SCREW	4	M8*15L	-	MWBM0815
7	FLANGE DU BUSH	4	FDU4040(4040F)	-	DU4040F
8	LINK2 FRICTION GUIDER	4	Ø50*18L	52NF16	52N53516
9	SNAP RING	4	CS30	-	SN-CS30
10	SNAP RING	4	CR55	-	SN-CR55
11	BALL BEARING	4	6006.2ZR	-	BALL60062ZR
12	BOTTOM ROLLER	4	Ø70*42L	52NF15A	52N53515

Side slip table



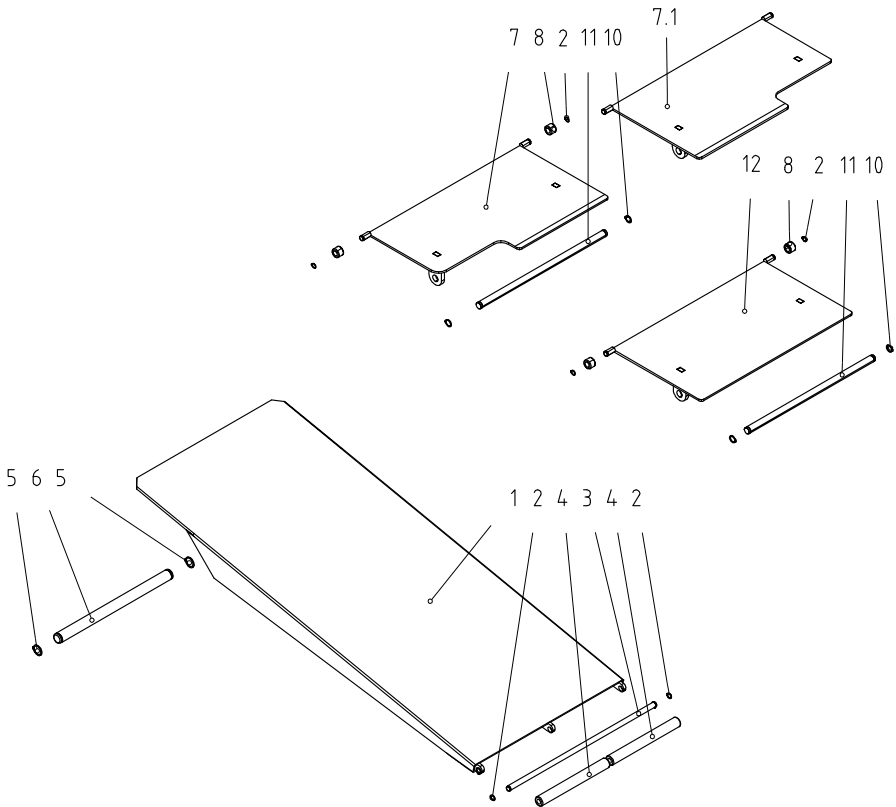
번호	품명(영문)	수량	규격	도번	품번
NO.	PART NAME	Q'TY	SPECIFICATION	DWG. NO.	ITEM NO.
0	SIDE SLIP ASS'Y	2SET		52NJ00-	52N53900
1	SIDE SLIP PLATE	2		52NJ20-	52N53920
2	SPRING PIN	4	Ø5*35L		SPIN0535
3	PLATE WASHER	4	Ø21*Ø34*3.2t		WPM213432
4	ROUND HEAD SCREW	32	M6*8L		RHCBM0608
5	SLIDE BALL GROUP	16		52NJ30-	51G00315
6	HEX NUT	4	M8		HNM08
7	RETURN SHAFT WASHER	8	6t*Ø8.5*Ø40	52NJ47-	52N53947
8	RETURN SHAFT	4	Ø18*7L	52NJ45-	52N53945
10	RETURN BAR	4	6t*38*507	52NJ52-	52N53952
11	WRENCH BOLT	4	M8*35L		WBM0835
12	SIDE SLIP BOY	2	4.5t*44*620*1664	52NJ41-	52N53940
13	SPRING STOPPER	4	2.3t*18.2*20*80	52NJ44-	52N53944
14	PLATE WASHER	8	M6		WPM06
15	SPRING WASHER	8	M6		WSM06
16	ROUND HEAD WRENCH BOLT	8	M6*12L		WRBM0612
17	WEAR RING	2	Ø36xØ40x2b5H		WEAR364005
18	O-RING	2	G35		ORG35
19	WRENCH BOLT	2	M8x20L		WBM0820
20	SPRING WASHER	2	M8		WSM08
21	PISTON	2	Ø39x20L	52NU13-	52F00378
22	O-RING	2	P10A(Ø2.4xØ14xØ10)		ORP10
23	AIR CYL. ROD BAR	2	Ø14x181L		52F00380
24	SPRING	2	Ø38xØ2.5x150L	52NU15-	52F00379
25	HEAD COVER	2	Ø45x34L	52NU16-	52F00383
26	O-RING	2	P14(Ø2.4xØ14xØ18)		ORP14
27	HEX NUT	2	M12		HNM12
28	ROD BAR WASHER	2	4.5t*30*40		52N53955
29	FIXER BRACKET	2	3.2t*23.2*37.5*76.4	52NJ49-	52N53949
30	BEARING NUT(LOCKER NUT)	2	M30x1.5Px7B		52F00384
31	AIR CYLINDER TUB	2		52NU12/U17-	52N55010
32	ROUND HEAD WRENCH BOLT	8	M6*10L		WRBM0610
33	LOCKING BRACKET	2	3.2t*25.2*32.8*75.6	52NJ51-	52N53951
34	SLIP RETURN ARM	2	3.2t*37.4*161.4*573	52NJ54-	52N53954
34-1	ROUND HEAD WRENCH BOLT	4,4,4	M6*12L		WRBM0612

Platform



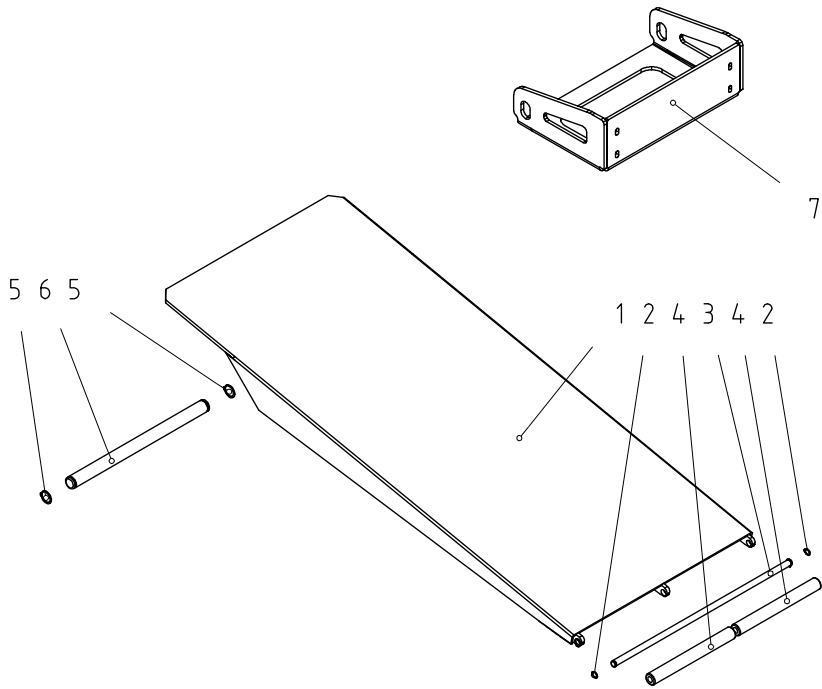
번호	품명(영문)	수량	규격	도번	품번
NO.	PART NAME	Q'TY	SPECIFICATION	DWG.NO.	ITEM NO.
1	BODY(5200)	1	5200mm(OPTION)	52NB30-	52N53130
1-1	BODY(4800)	1	4800mm(OPTION)	52NB00-	52N01000
1-2	BODY(4800)-L			52NB30E	52N01000(L)
1-3	BODY(4800)-R			52NB00F	52N01000(R)
2	WRENCH BOLT	12	M8*15L	-	WBM0815
3	SPRING WASHER	12	M8	-	WSM08
4	PLATE WASHER	12	M8	-	WPM08
5	LAMP BRACKET	8(4R/4L)		52NB44-	52N53114
6	ROUND HEAD WRENCH BOLT	8	M8	-	WRBM0815
7	LAMP	4		52NB21-	90020060
8	AIR BLOCK	2		52NB37-	26E79120
9	STOP BOLT	2		-	MWBU1-4-11
10	AIR NIPPLE	2	PT1/4*Ø10*ST.	-	EC4108
11	ROUND HEAD SCREW	4	M4*15L	-	TRTBM0415
12	AIR NIPPLE(PROVAC)	2	PT1/4*Ø10*ST.	-	EC41065
13	ROUND HEAD WRENCH BOLT	8	M6*12L	-	WRBM0612
14	JACK STOPPER	4		52NB52-	52N53123
15	PLATE WASHER	16	M10	-	WPM10
16	SPRING WASHER	16	M10	-	WSM10
17	WRENCH BOLT	16	M10*25L	-	WBM1025
18	HEXA. NUT	2	M14	-	HNM14
18	HEXA. NUT(CLASS 3)	2	M14	-	HN3M14
19	PROTECT RUBBER	2	Ø41.5*40L	52NB58-	L5AA11019
20	HEXA-HEAD BOLT	2	M14*80L	-	HEXM1480
21	HOLE COVER	4	1.6t*8*52*61	52NB42-	52N53118
22	ROUND HEAD WRENCH BOLT	4	M6*10L	-	WRBM0610
23	SET SCREW	4	M8*15L	-	MWBM0815
26	ROUND HEAD WRENCH BOLT	8	M8*20L	-	WRBM0820
30	WRENCH BOLT	8	M10*45L	-	WBM1045
37	FEET STEP	1	6t*65*400*349.9	52NB05-	L5AA32200
38	TIRE STOPPER BASE	2	Q'TY 4 ->INGROUND TYPE ONLY	-	52N58100
39	RAMP FIXER	2		-	52N58230
40	INGROUND FINISHER	2	INGROUND TYPE ONLY	-	52N53155
41	ASSISTANT BOARD 1	6	Q'TY 8 ->5200 LENGTH ONLY	-	52N53165
42	ASSISTANT BOARD 2	2	OPTIONAL	-	52N53170

Ramp1



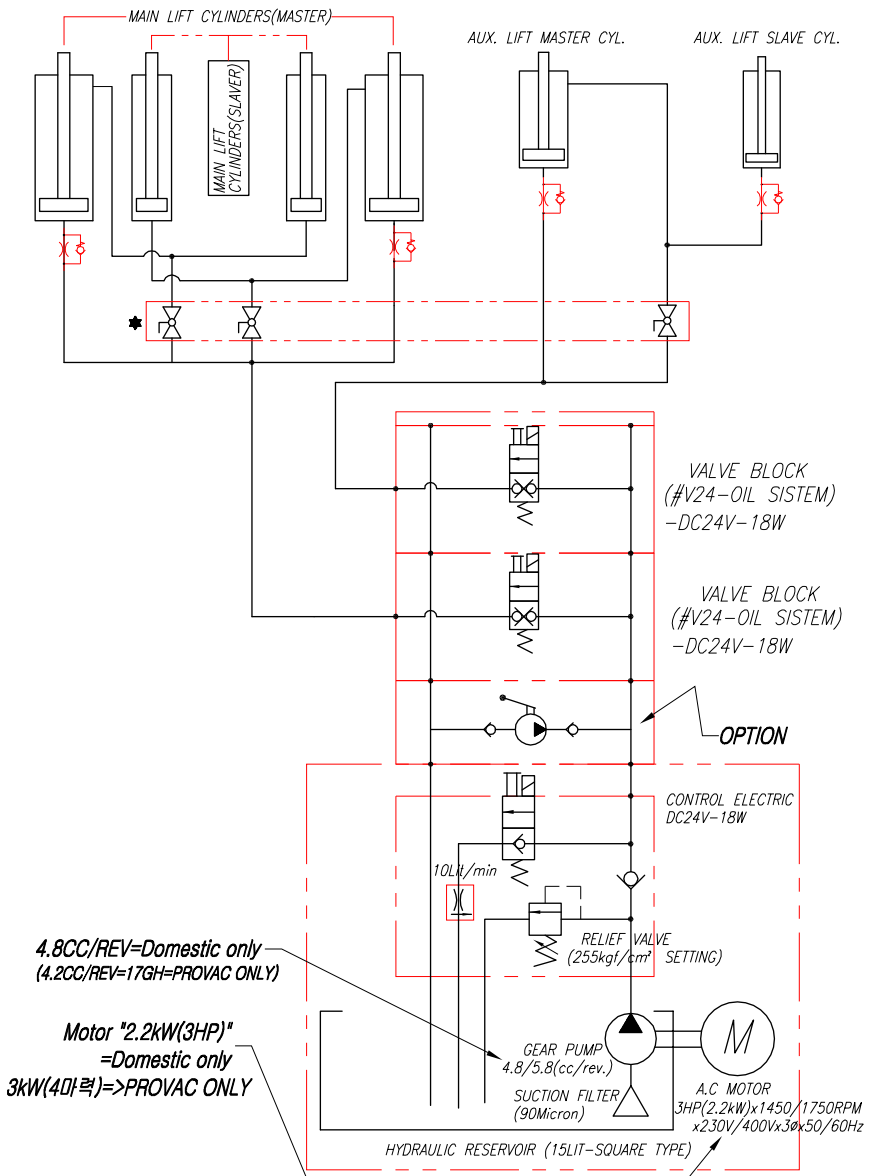
번호	품명(영문)	수량	규격	도번	품번
NO.	PART NAME	Q'TY	SPECIFICATION	DW/G.NO.	ITEM NO.
1	RAMP	2		52FH60G	52F05511
2	SNAP RING	4	CS15	-	SN-CS15
3	ROLLER PIN	2	Ø30xØ16x271L	52FH51C	52F05560
4	RAMP ROLLER	4	Ø30xØ16x271L	52FH50D	52F05555
5	SNAP RING	4	CS30	-	SN-CS30
6	RAMP PIN	2	Ø30x484.4L	52NH52A	52N58252
7	FRONT STOPPER-LEFT	1		52NH10A	52N58210
7	FRONT STOPPER-RIGHT	1		52NH10A	52N58215
8	STOPPER ROLLER	4	Ø28x20L	52FH14A	52F50140
10	SNAP RING	4	CS20	-	SN-CS20
11	FRONT STOPPER PIN	2	Ø20x508L	52FH15B	52F50150
12	REAR CONNECTOR STOPPER(option)	2	IN-GROUND ONLY	52NH20A	52N58220

Ramp2-Drive through type only

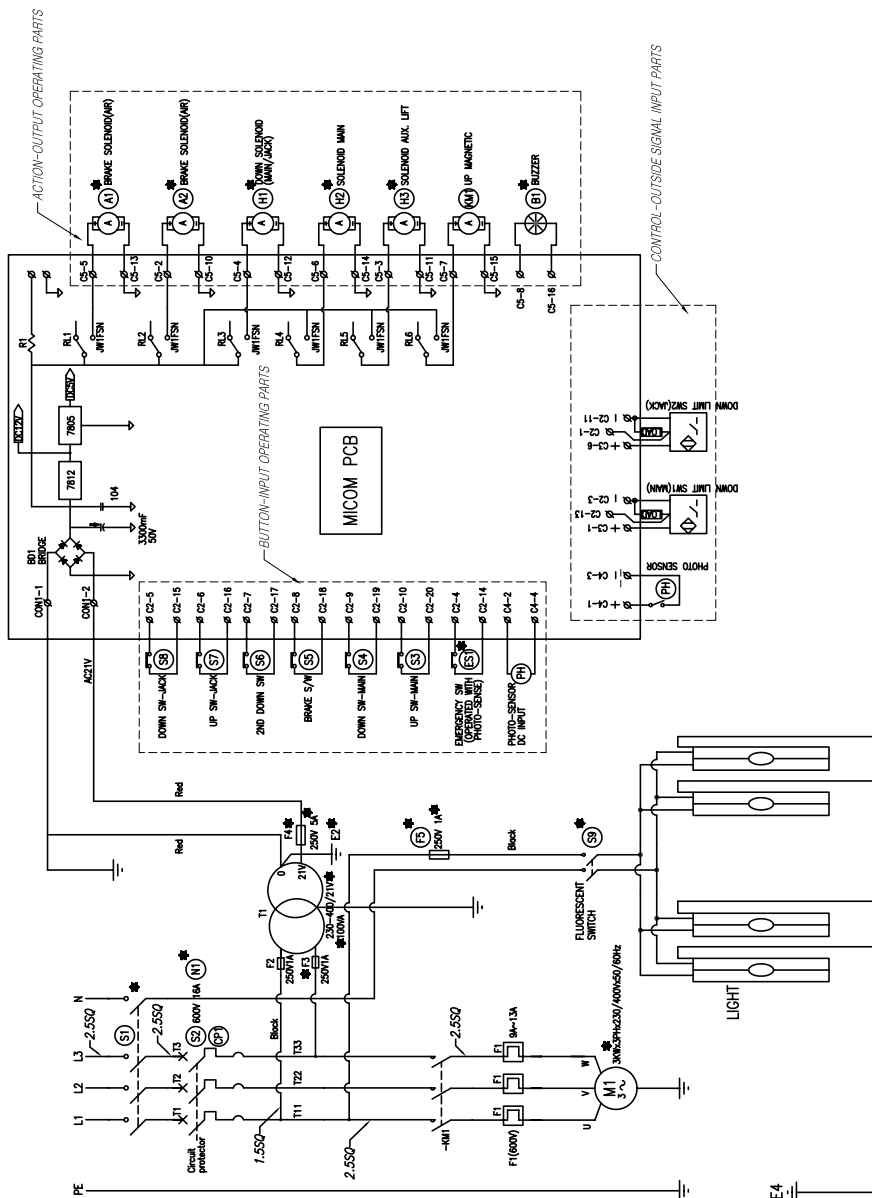


번호 NO.	품명(영문) PART NAME	수량 Q'TY	규격 SPECIFICATION	도번 DWG.NO.	품번 ITEM NO.
1	RAMP	2		52FH60G	52F05511
2	SNAP RING	4	CS15	-	SN-CS15
3	ROLLER PIN	2	Ø30xØ16x271L	52FH51C	52F05560
4	RAMP ROLLER	4	Ø30xØ16x271L	52FH50D	52F05555
5	SNAP RING	4	CS30	-	SN-CS30
6	RAMP PIN	2	Ø30x484.4L	52NH52A	52N58252
7	DRIVE THROUGH BRACKET	2	9t*155*287.9*462	52NH35A	52N58235

Hydraulic circuit



Electric circuit





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