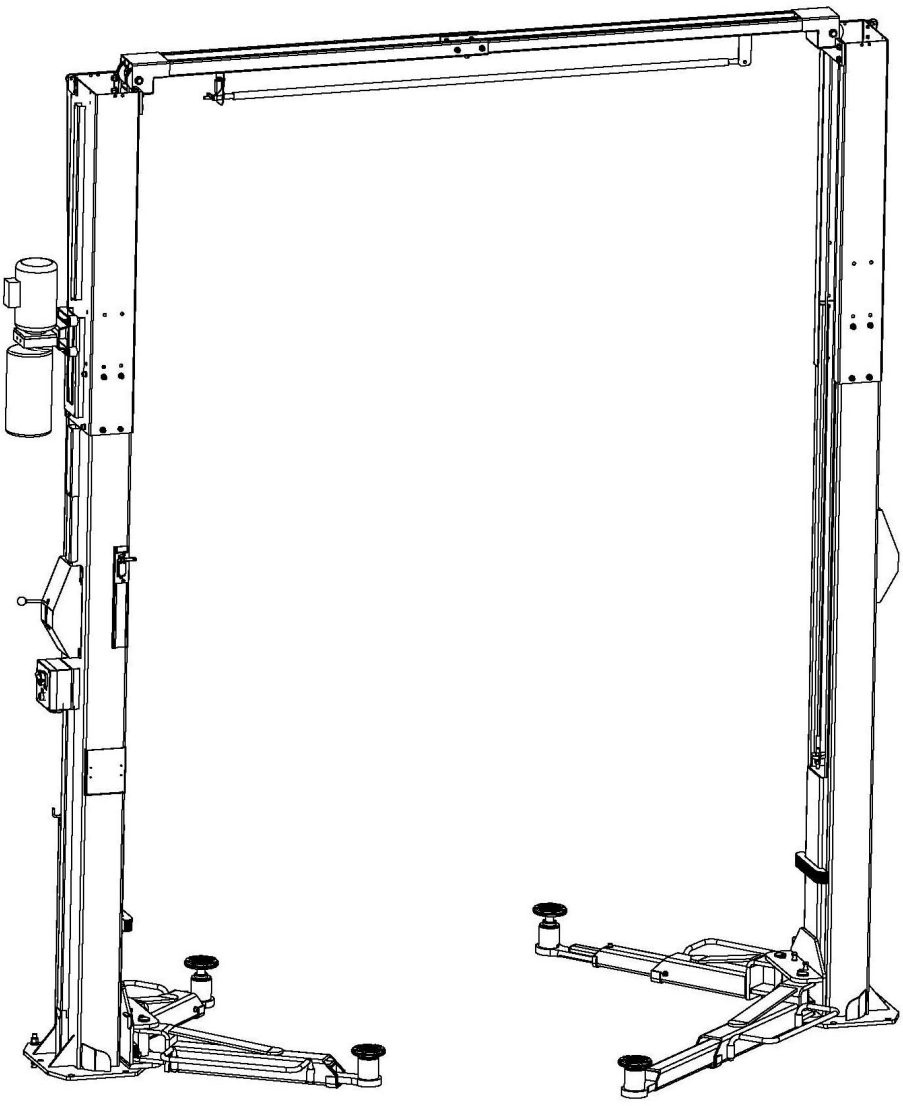
CAR LIFT

GL-4.0-2H1 INSTRU CTIONMANUAL



NOTE TO THE USER

Thank you for purchasing our CAR LIFT. Please read this instruction carefully for safe and proper use of the car lift, and keep it handy for future reference.

This Manual is for model: GL-4.0-2H1

WARRANTY

The warranty period of the Car Lift shall be for a period of one year from the date of delivery to sales agent.

Subject to the limitations set forth below,

Contractor warrants that the Car Lift will be free from defects in material and workmanship and undertakes to, at parts, including repaired or replaced parts, in the which are (1) due solely to defective material and/or poor workman -ship on the parts of contractor and/or its sub-contractors and (2) for which notice thereof is duly given to contractor in writing or by FAX. Confirmed in writing within thirty (30) days after discovery of any defects of which claim made hereunder.

This warranty is subject to the following conditions;

1) Car Lift shall be properly used and operated by the company's operator Solely in accordance with the specifications and operating instruction provided by contractor.

2) This warranty shall not be constructed to cover any defects due to ;

- Normal wear and tear;
- Bad operation and maintenance not in accordance with the operating and maintenance manuals to be provided by contractor;
- Operation under conditions more severe than those in the specification and drawings;
- Change in design or other modification by company without contractor's consent;
- Movement or transfer without contractor's consent;
- Consumable items in normal operating;
- Any other carelessness not attributable to contractor.

Contact your sales agent for warranty coverage.

TABLE OF CONTENTS

CHAPTER 1 SAFEGUARDS

Please read carefully this chapter first for safe and proper use of the car lift. This company will not be held responsibilities for any injuries or accidents which occur due to the car lift being operated without having understood the contents of the instruction manual. Keep the Instruction Manual close to the car lift so that anyone can refer to when necessary. Also, designate a person to take care of the manual.

1-1 Safety notices

To protect the operator or service personnel from any injuries or accidents during operating the car lift, please read this section and carefully for safe and proper use of the car lift.

◆ General Safeguards

1. Please read carefully this instruction manual for safe and proper use of the car lift.
2. Only qualified personnel should be allowed to work on this car lift.
3. Checking before operation and routine inspection should be carried out in accordance with the procedures described in the manual.
4. When the abnormal condition not specified at this instruction manual is occurred during operating, stop the operation of car lift and contact the manufacturer specified on cover page or distributor.
5. This car lift should be only for repairing the car.

◆ Danger Notices

DANGER	
	Do not enter under the car lift during lifting the car. You may result in a great physical danger or even death.
	Do escape to the safety zone without staying under car lift when the car is possible to fall down. You may crush under car and then, result in a great physical danger or even death.

◆ Caution Notice

CAUTION	
	Only qualified personnel should be allowed to work on this car lift. Unexpected accidents may be happened due to wrong operation.
	Do not lower the lift in the state of supporting a car by a stick to attach or detach components. The car may fall down.
	Do not shake the lifted-up car. The car may fall down.
	Do not move up the lift in the condition of putting only one side of car into the lift. A car may fall down or damage. And also, the lift may damage.
	Never modify safety devices. If safety devices are not operated, a serious accident may be happened.
	During lowering the lift, be careful to not put foot under a table. Serious injury may be happened.
	To ensure the safe and proper use of the lift, first operate it after carefully reading the instruction manual and making sure that you understand the contents. Failure to observe this may result in serious accident.
	When positioning the car on the lift ensure equilibrium in all directions. Failure to observe this may result in serious accident...
	Risk of electric shock: When opening an electrical control panel, take care to avoid contact with electrical connections. Failure to observe this may result in serious injury or even death.

◆ Warning Notice

WARNING

To ensure the safe and proper use of the lift first operate it after carefully reading the instruction manual and making sure that you understand the contents.

Prior to using the lift observe the following:

1. This Lift is only for repairing the car. Do not use for other purpose.
2. Do not use the lift if any of the safety devices are not operating normally.
3. When driving on to or off the lift drive the car smoothly and avoid sudden braking or acceleration in order to prevent damage to the lift or to the underside of the car.
4. Avoid wheel spin due to wet surface or worn tyres.

< During lifting and lowering the lift >

5. During moving up and down the lift must be observed by the operator throughout its entire motion.
6. If several lift are installed the respective allocation of the individual switches must be clear.
7. Never exceed the rated capacity of the lift.
8. Passenger transport is forbidden. Never operate the lift with personnel in the car or on the lift.
9. Check that the lift pads and arms are clean and free of oil/grease at all times.
10. Raise the lift only after checking that the car and pick-up pads are properly positioned.
11. Stop the operation of lift when it reaches the required working height or the maximum height.
12. Following any movement of the lift wait for 1 - 2 seconds before the next operation is carried out.
13. Be careful to not shake the car during lifting and lowering the lift. If the car should suddenly settle to one side, stop the operation of the lift immediately.
14. If on pressing the down switch the lift does not operate first press the up switch and then press the down switch again.
15. When the lift has been completely lowered to ground level swing the lift pads and arms free of the car and drive off the lift.
16. Ensure that unauthorized persons are nowhere near the lift during its operation.
17. Keep tools and component parts well clear of any moving parts of the lift. Failure to observe this may result in damage to the lift or the car.
18. During lowering the lift check that no person or any other obstruction is under or around the lift and car.

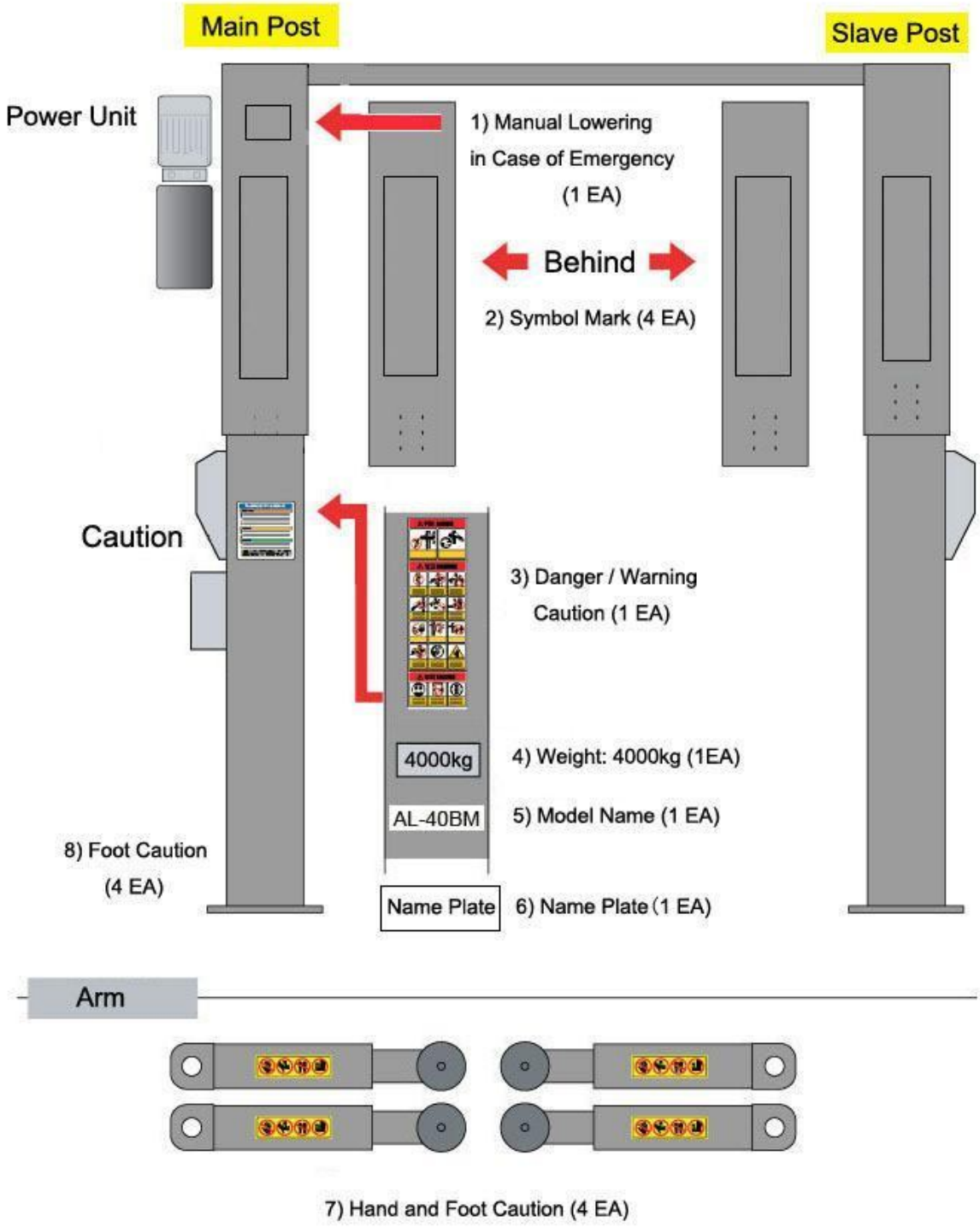
< During repairing the car observe the following: >

19. Check that the safety lock devices are properly engaged before entering the area under the car.
20. Prohibit unauthorized persons from entering the lift area.
21. Lower the lift completely if the operator intends leaving the lift area for a longer period or if the lift is not in operation.

< Other precautions >

22. Do not change or modify the lift without permission from the manufacturer. Failure to observe this may result in serious accident.
23. Should you find a fault on the lift during operation of during periodical safety checks, stop the operation of the lift immediately and call the distributor for maintenance service. DO NOT use the lift until it has been repaired.
24. Please note that this lift is not designed to be waterproof. Do not install the lift for car washing use or outdoor use..

1-2 Safety Signs and Warning location



1. Manual Lowering in case of Emergency	5. Model Name
2. Symbol Mark	6. Name Plate
3. Danger / Warning / Caution	7. Hand and Foot Caution
4. Weight: 4000kg	8. Foot Caution

1- 3 Illumination

This machine is not provided with a local lighting since it is designed for indoor use only. The sufficient illumination of the working area must be fulfilled by the factory in accordance with the appropriate code of practice and factory regulations. Minimum 300 lx is required. Flicker, dazzling, shadows and stroboscopic effects must be avoided to prevent a risk

1-4 Operation sound level

The equivalent continuous A-weighted sound pressure levels of car lift do not exceed 85dB (A).

1-5 Training

CAUTION	The factory must provide operator(s) with the appropriate measures including but not limited to an ear protection and a warning Sign if the sound pressure of 85dB (A) is exceeded.

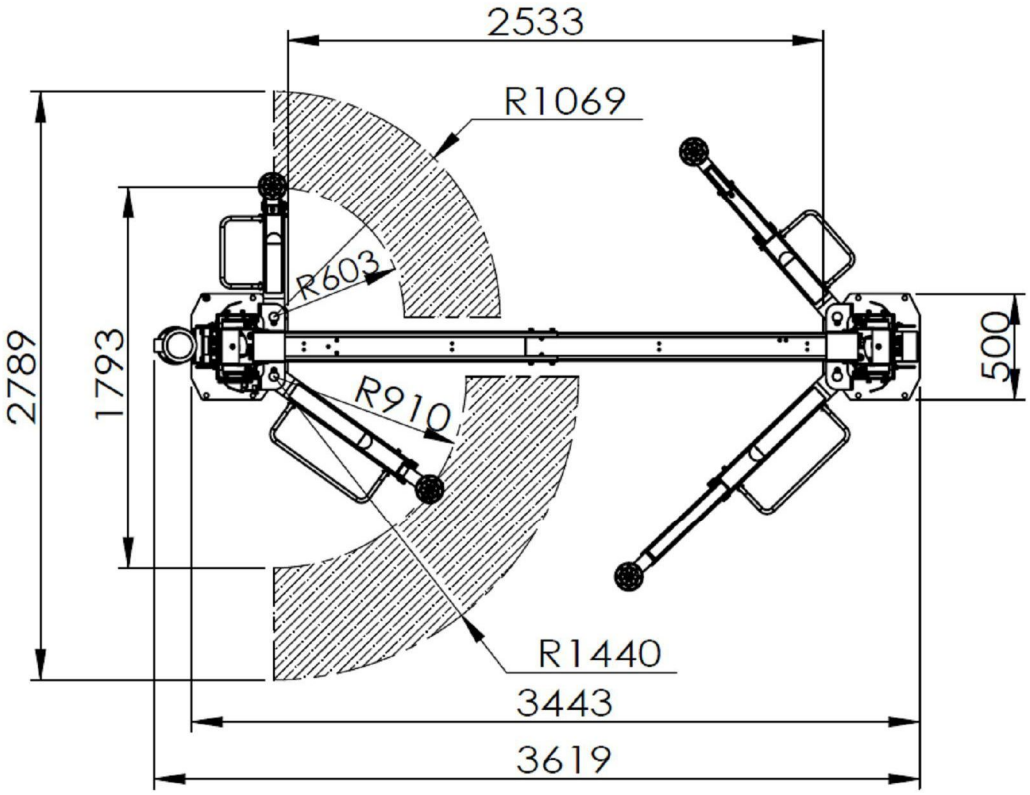
Contact the manufacturer specified on cover page for information on training courses to aid you in becoming familiar with this car lift.

CHAPTER 2 Overview of machine

AL–40BM is a stationary 2-column lift designed to raise vehicles for the purpose of examining them or working on or under the whilst time in a raised position.

2-1 Specification

SPECIFICATION		
MODEL NO.		GL-4.0-2H1
LIFTING CAPACITY		4,000 kg(8,800lbs)
LIFTING MAX.HEIGHT		1,890-2005mm
MIN.HEIGHT		90-205 mm
STROKE		1,800 mm
OUT DWG.MAX HEIGHT		3,755-4,005 mm
LIFTING TIME		About 40-70 sec.
LOWERING TIME		About 30-40sec.
POWER &MOTOR	1P	2.5HP×220V×60Hz
	3P	2HP×380V×60Hz
OPERATING METHOD		CONTROL PANEL
NET WEIGHT		760 kg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R603
R910
R1440
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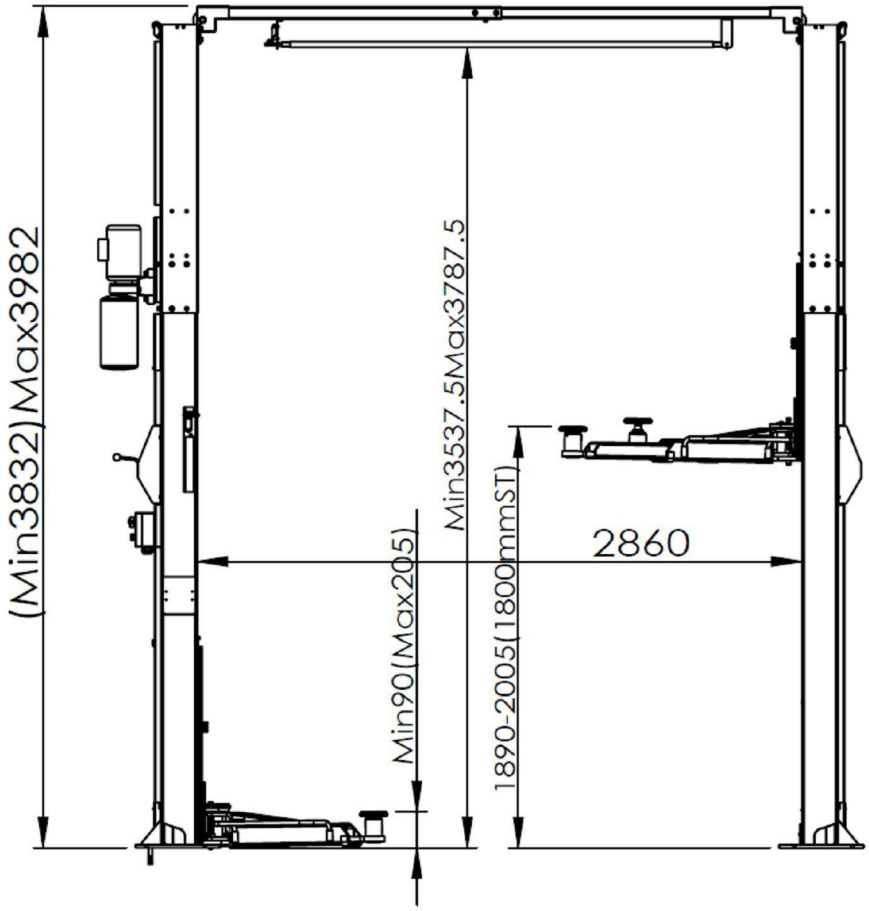
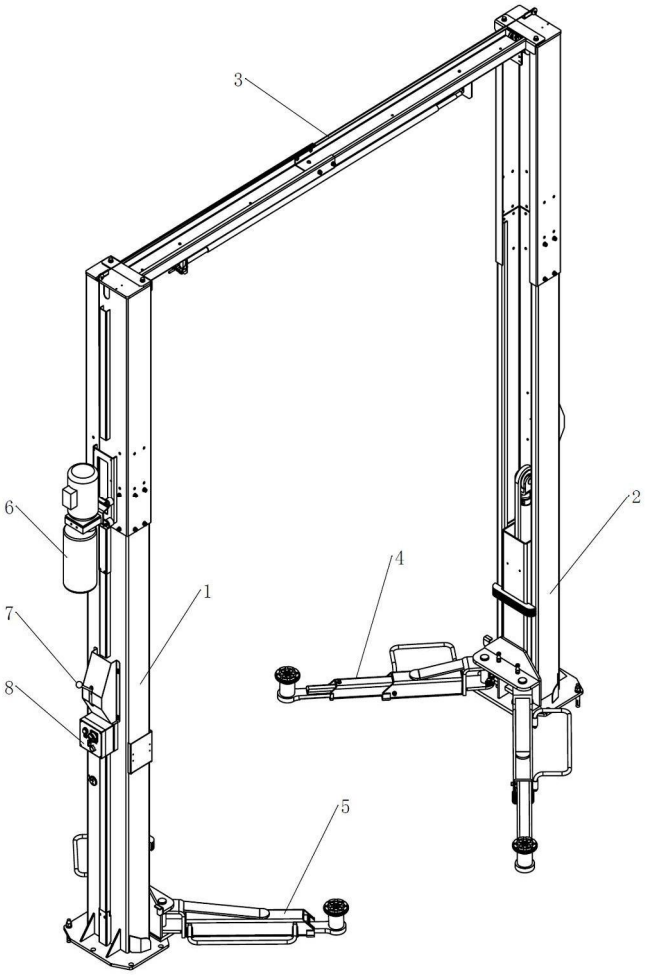
3619


(Min3832)Max3982
Min3537.5Max3787.5
2860
Min90(Max205)
1890-2005(1800mmST)

2-2 Description of Construction

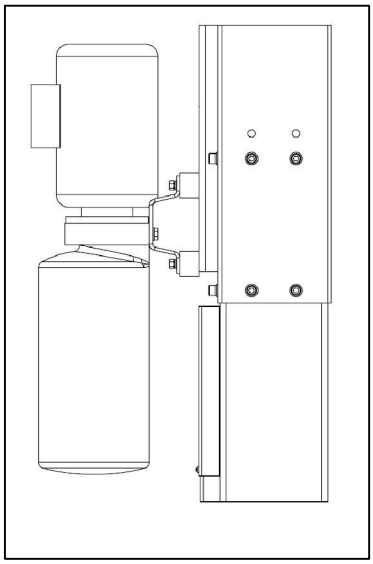
2-2-1 Construction of car lift



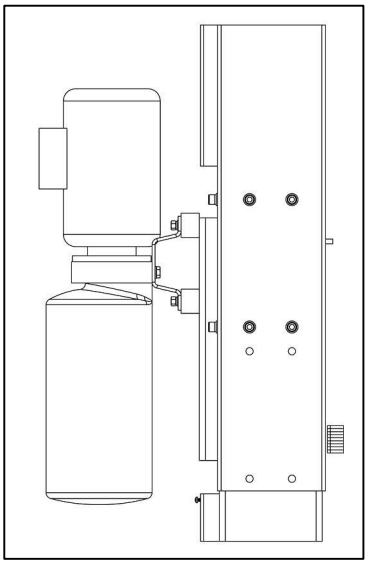
Item	Description
1	Main Post Ass'y
2	Slave Post Ass'y
3	Cross Beam Ass'y
4	Short Arm Ass'y(L/R)
5	Long Arm Ass'y(L/R)
6	Power Unit Ass'y
7	Manual Lever Ass'y
8	Control Panel Ass'y

2-2-2 Installation of power unit

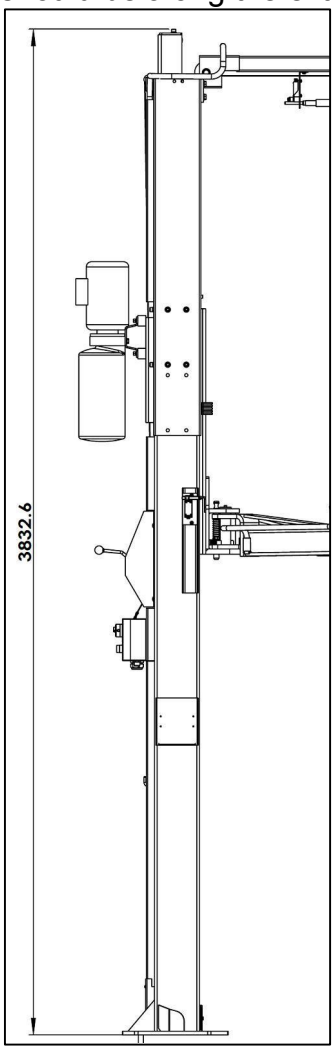
Power unit of low post height

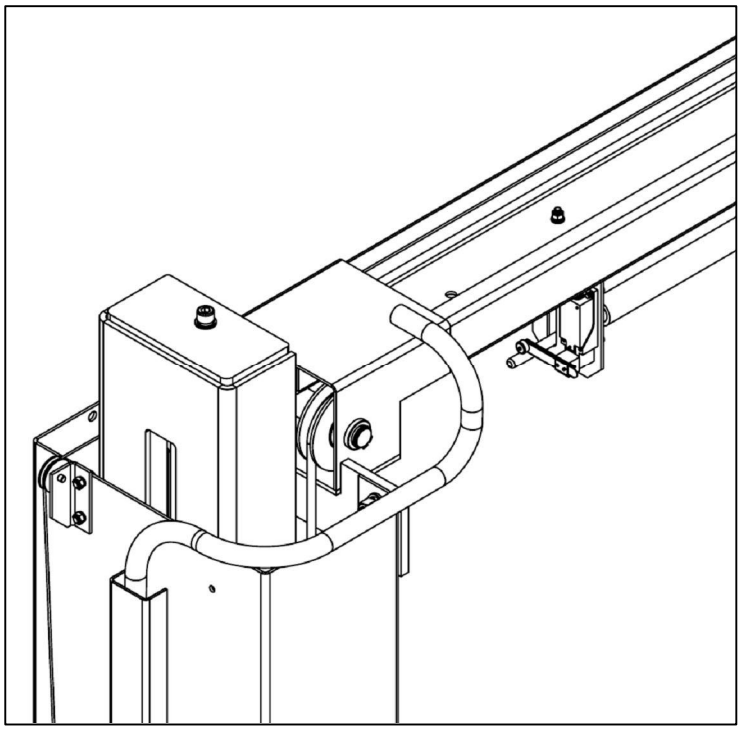


Power unit of standard post height

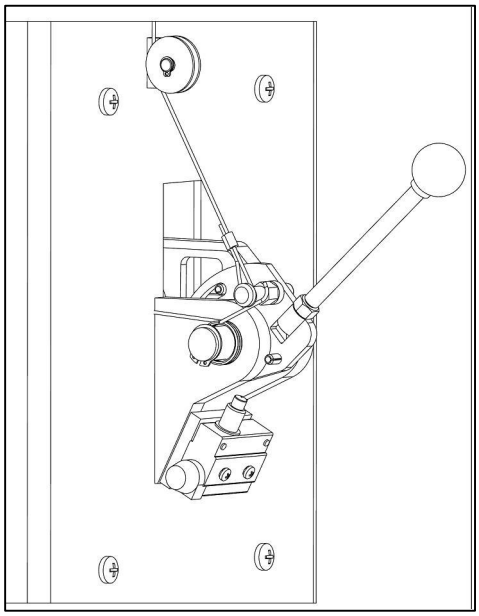


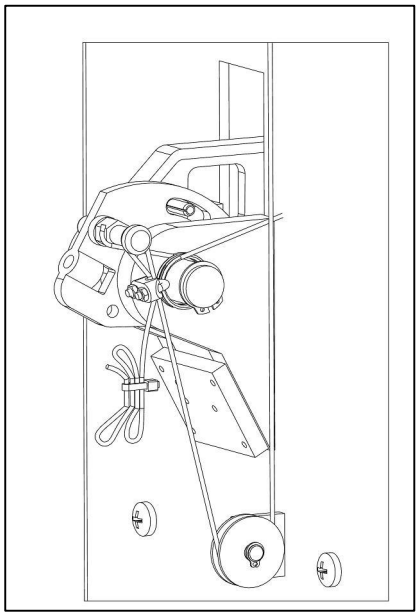
If the low post height is chosen, the overall height is 3832.6mm and the spare space must be leave in advance. At the same time, the hydraulic tube and the cable must steer clear of the carry. They should be along the extended post.



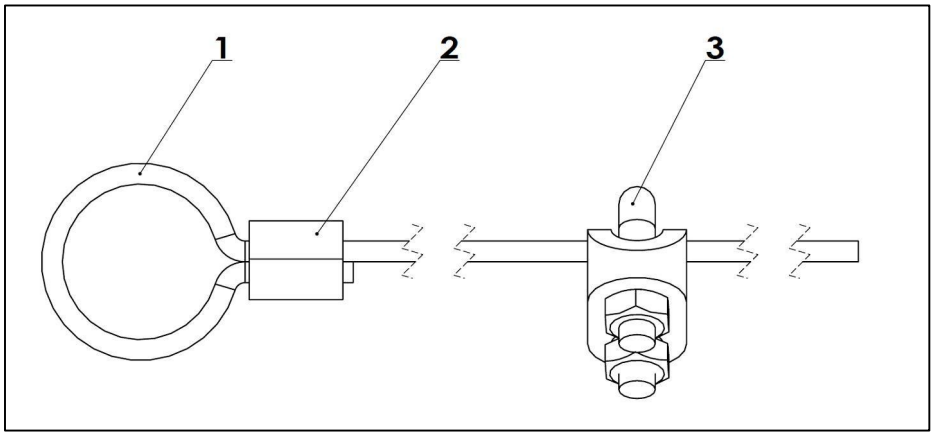


Installation drawing of lock wire roller (R/L)



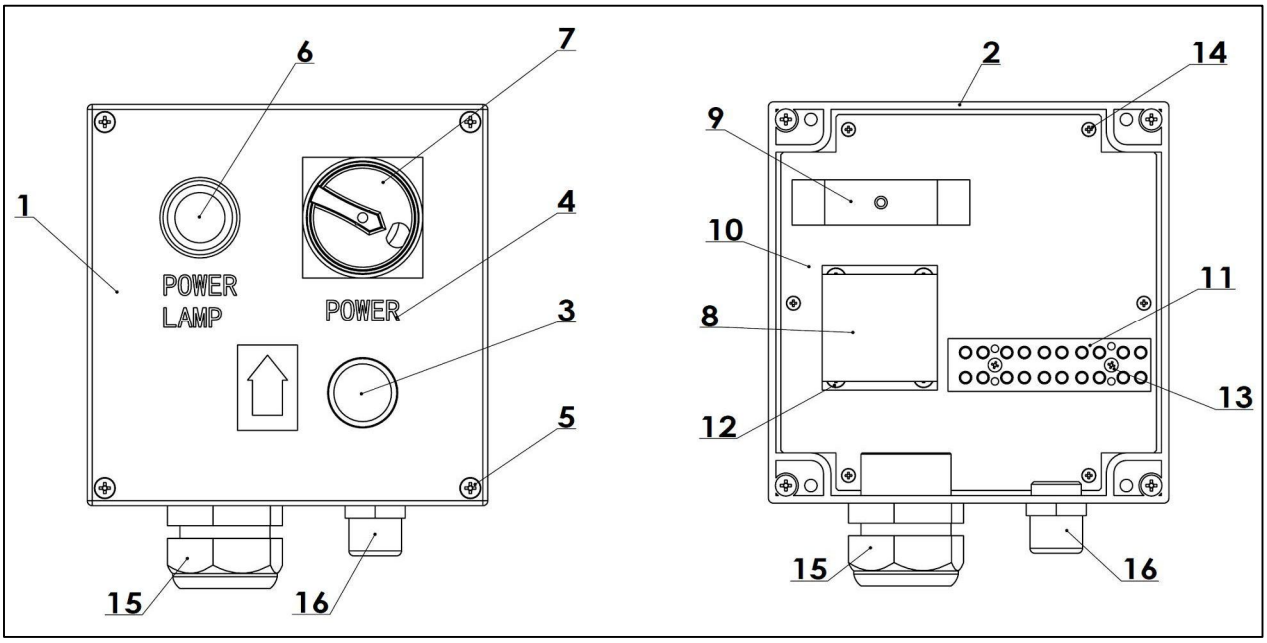


Drawing of lock wire



Item	Description	Qty.
1	Φ2x8000mm Stainless Steel Wire rope	1
2	Φ2 wire rope aluminum sleeve	1
3	wire rope clip	1

Control Panel Ass'y

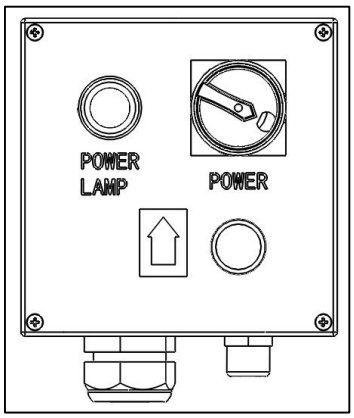


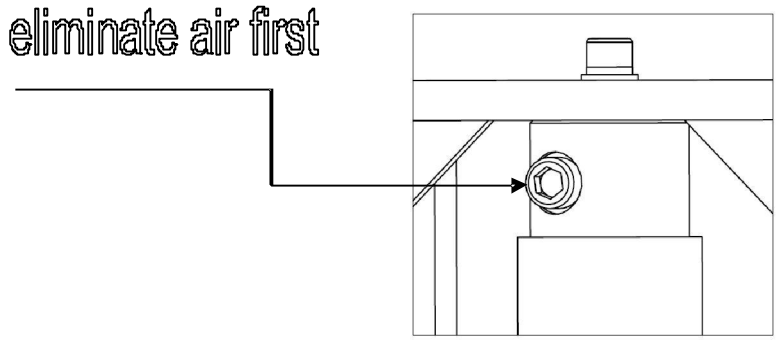
Item	Qty.	Part No.	Description
1	1	40AS-05-01	Control Panel Cover
2	1	40AS-05-02	Control Panel Body
3	1	LAY37-11-1	Up Push Button（10A/AC380V）
4	1	Label	Silk Screen Printing
5	4	GB819-M04x20	Cross Recessed Countersunk Head Screw
6	1	TPNR-252	AC220V TEND

7	1	Cam Switch	3LBB-20/X531.2GS
8	1	CJX4-0910E	AC Contactor
9	1	RT19-16	Fuse 3A 250V
10	1	40AS-05-03	Electric Parts Plate
11	1	H3801-10	Connection Pole
12	4	GB818-M04x10	Cross Recessed Pan Head Screw
13	2	GB818-M03x16	Cross Recessed Pan Head Screw
14	6	GBT845-ST2.9-6.5	Cross Recessed Pan Head Screw
15	1	PG29	Cable Locker
16	1	M20x1.5	Cable Locker

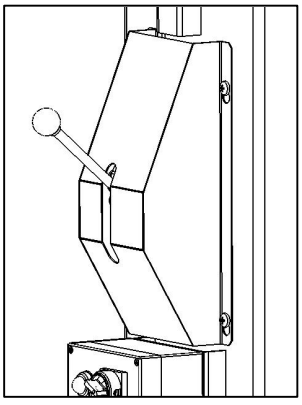
Operation of Control Panel Ass'y

1. After the unit is assembled, first press ascend button to rise. But the lift cannot run calmly. It is because of the air in the hydraulic pipeline. You should loose the bleeding screw until the oil flows out
without air bubbles. Retighten. (see figure below)

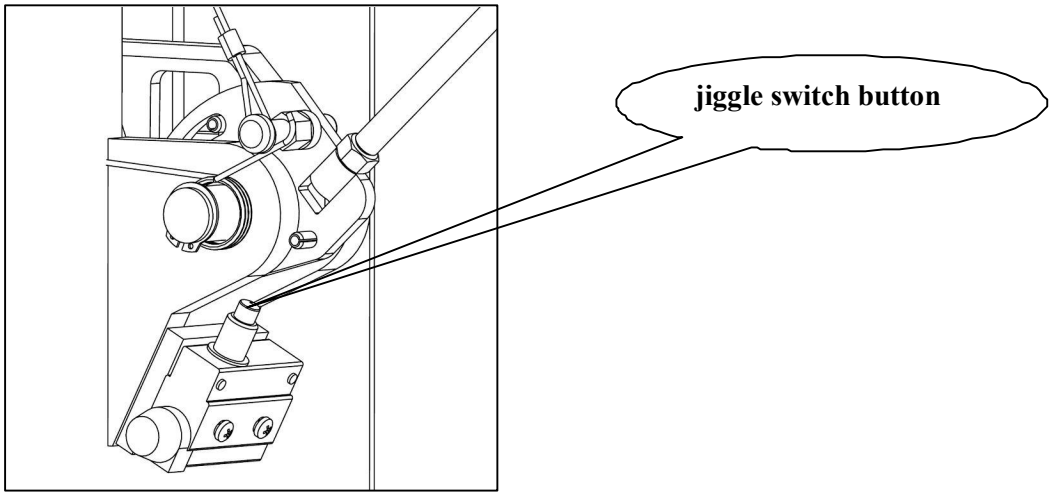




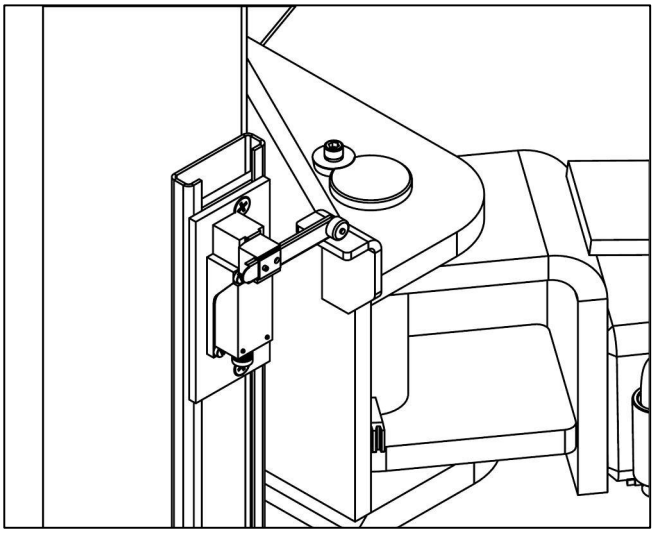
2. Descent: Operate the lever manually to lower the lift. But sometimes the manual lever isn't in the anticipant position; you don't operate it too hard. You should raise the lift slightly, operate the lever manually to retract the pawls, and lower the lift.

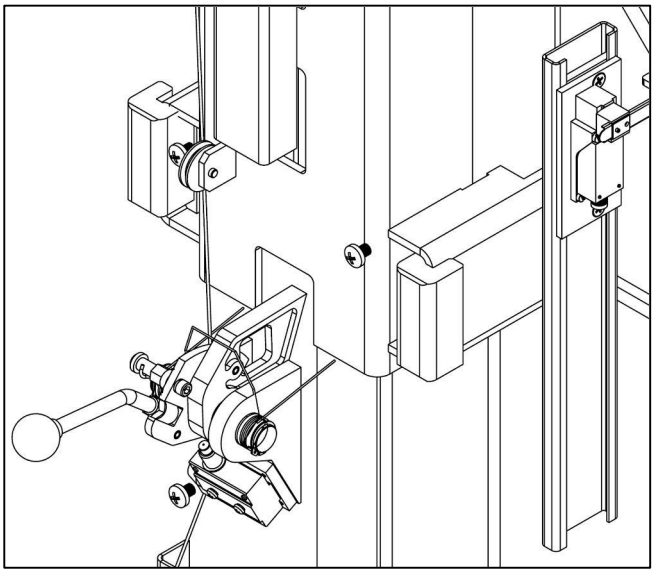


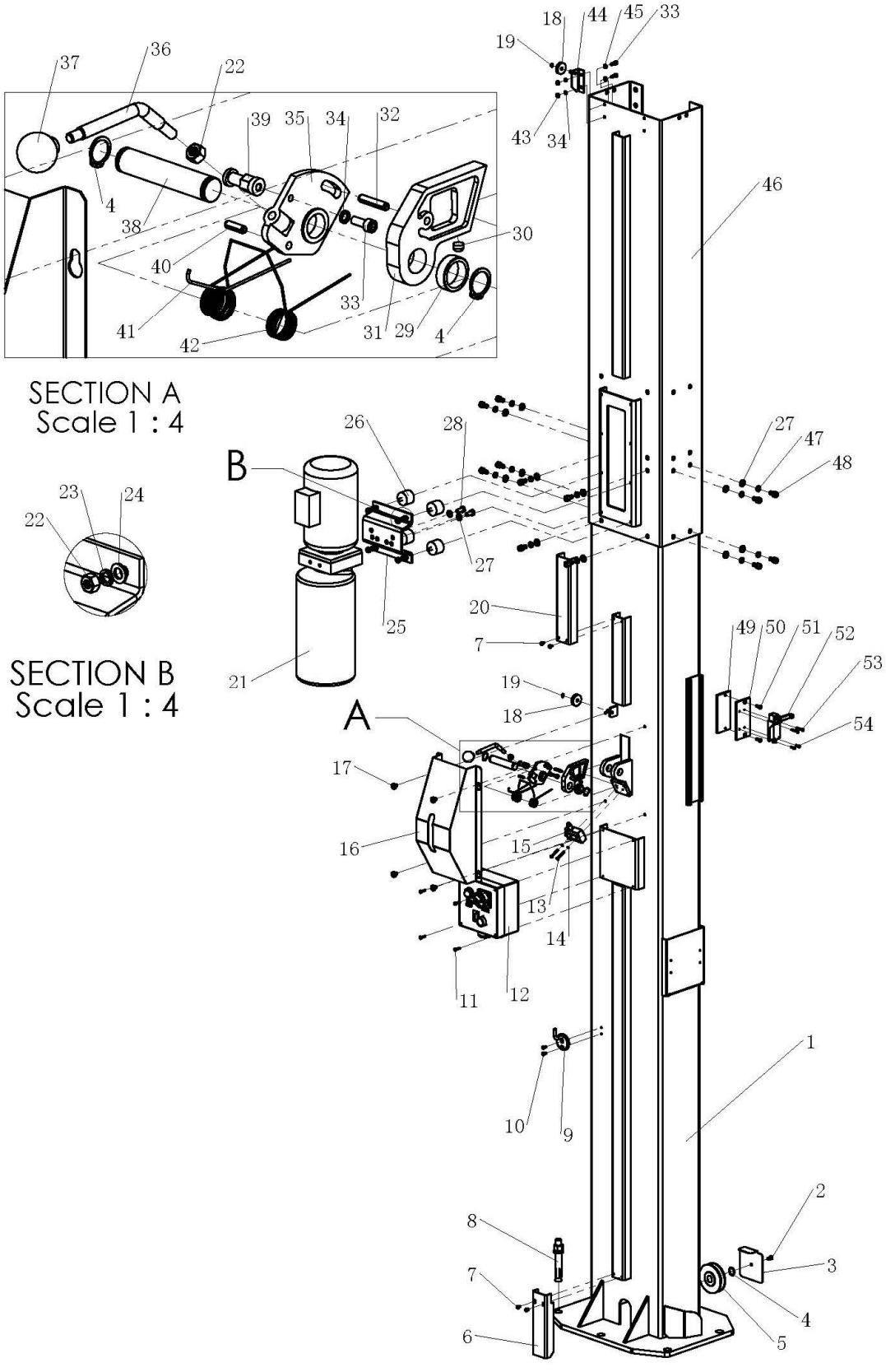
3. When the lift need keep lifting, the pawls must wedge the carry. You should press the jiggle switch
to do it, and then shut off the power. When to descent, you should repeat the second step.



How to adjust the limit switch of cylinder? The carry should move up to the highest position, the lock block should open easily and the cylinder should be in the stroke range.






SECTION A
Scale 1 : 4
SECTION B
Scale 1 : 4
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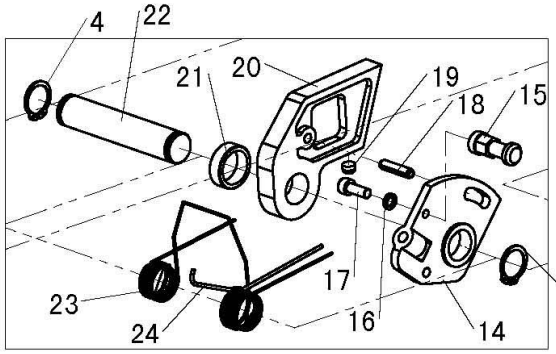
B

Item	Part No.	Description	Qty.
1	40CS-02-00L	Drive Post	1
2	GB5781- M6X12	Hexa Bolt	1
3	40C-02-23	Wire Roller Protector	1
4	GB894.1- 20	Circlip for Shaft-Type A	3
5	40C-0-7（nylon）	Wire Roller	1
6	40C-02-21a	Line Protector 7	1
7	GB818- M5X8	Cross Recessed Pan Head Screw	4
8	Anchor Bolt	Anchor Bolt M16X140	1
9	40C-2-18-00	Cable Hook	1
10	GB819- M5X12	Cross Recessed Countersunk Head Screw	2
11	GB818-M04x10	Cross Recessed Countersunk Head Screw	4
12	40AS-05-00	Control Panel Ass'y	1
13	GB818- M4X30	Cross Recessed Pan Head Screw	2
14	GB93-4	Spring Washer	2
15	Switch TZ-7110	Limit Switch	1
16	40AS-00-13-00L	Lock Cover	1
17	GB818- M8X10	Cross Recessed Pan Head Screw	4
18	40AS-02-02	Lock Wire Roller	2
19	GB894.1-8	Circlip for Shaft-Type A	2
20	40C-02-19a	Line Protector 2	1
21		Power Unit Ass'y	1
22	GB41- M8	Hexa Nut	5
23	GB93-8	Spring Washer	4
24	GB95-8	Flat Washer	4
25	40C-0-16	Power Unit Bracket	1
26	40C-0-17-00	Anti-vibrated Rubber	4
27	GB95-10	Flat Washer	14
28	GB5781- M10X20	Hexa Bolt	2
29	40C-0-22	Spacer	1
30	40C-0-24	Silence Rubber	1
31	40AS-00-19	Lock Block	1
32	GB879-85 -6X30	Spring Pin	1
33	GB70.1- M6X16	Hexagon Socket Head Cap Screw	3
34	GB93-6	Spring Washer	3
35	40AS-02-01	Lever Connector	1
36	40CS-02-04	Down Lever Handle	1
37	GB4141.12 M08X25	Plastic Ball	1
38	40C-0-21	Shaft	1
39	40AS-02-09	Lock Wire Fixture	1
40	GB879-85 -6X20	Spring Pin	1
41	40AS-02-08	Lock Spring 1	1
42	40C-0-28	Lock Spring 2	1
43	GB41- M6	Hexa Nut	2
44	40AS-02-05-00L	Lock Wire Roller Bracket	1
45	GB95-6	Flat Washer	2
46	40C-2-12-00L	Drive Extended Post	1
47	GB93-10	Spring Washer	12
48	GB70.1- M10X16	Hexagon Socket Head Cap Screw	12
49	40C-0-15	Under Plate	1
50	40C-0-14	Upper Plate	1
51	GB819- M6X16	Cross Recessed Countersunk Head Screw	2
52		Limit Switch	1
53	GB/T65-M4×25	Slotted Head Screw	2
54	GB/T65-M4×12	Slotted Head Screw	2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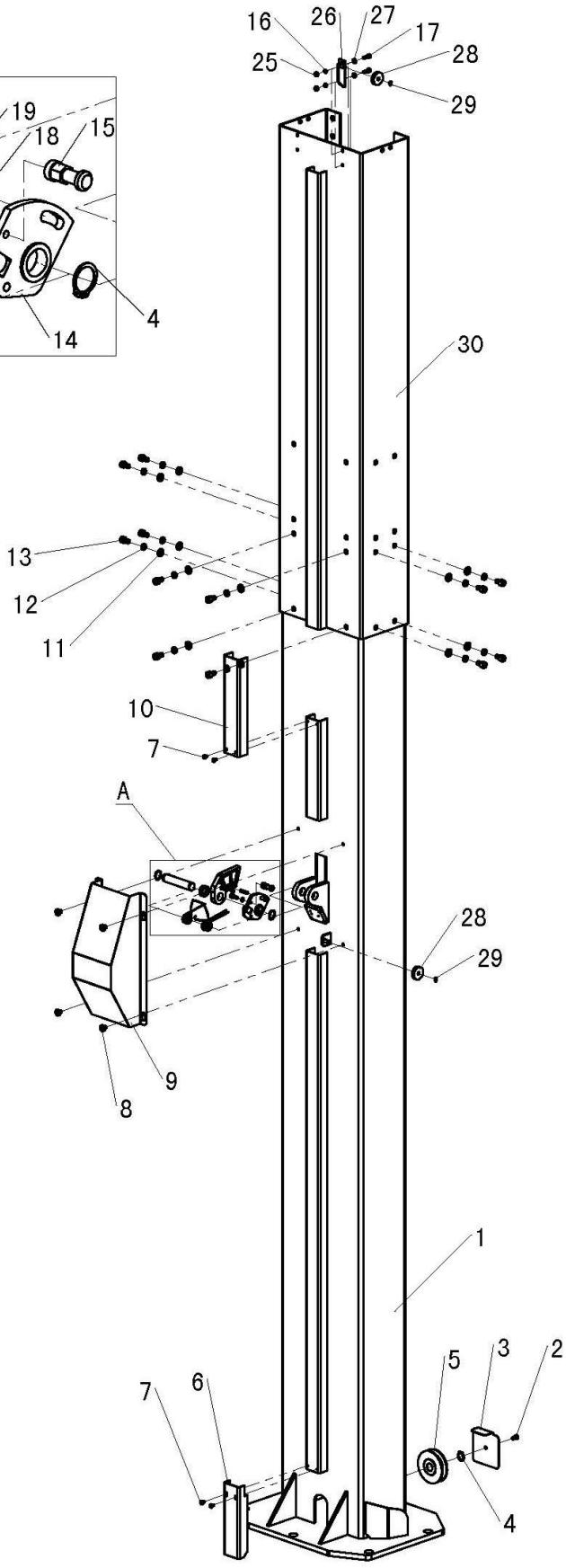
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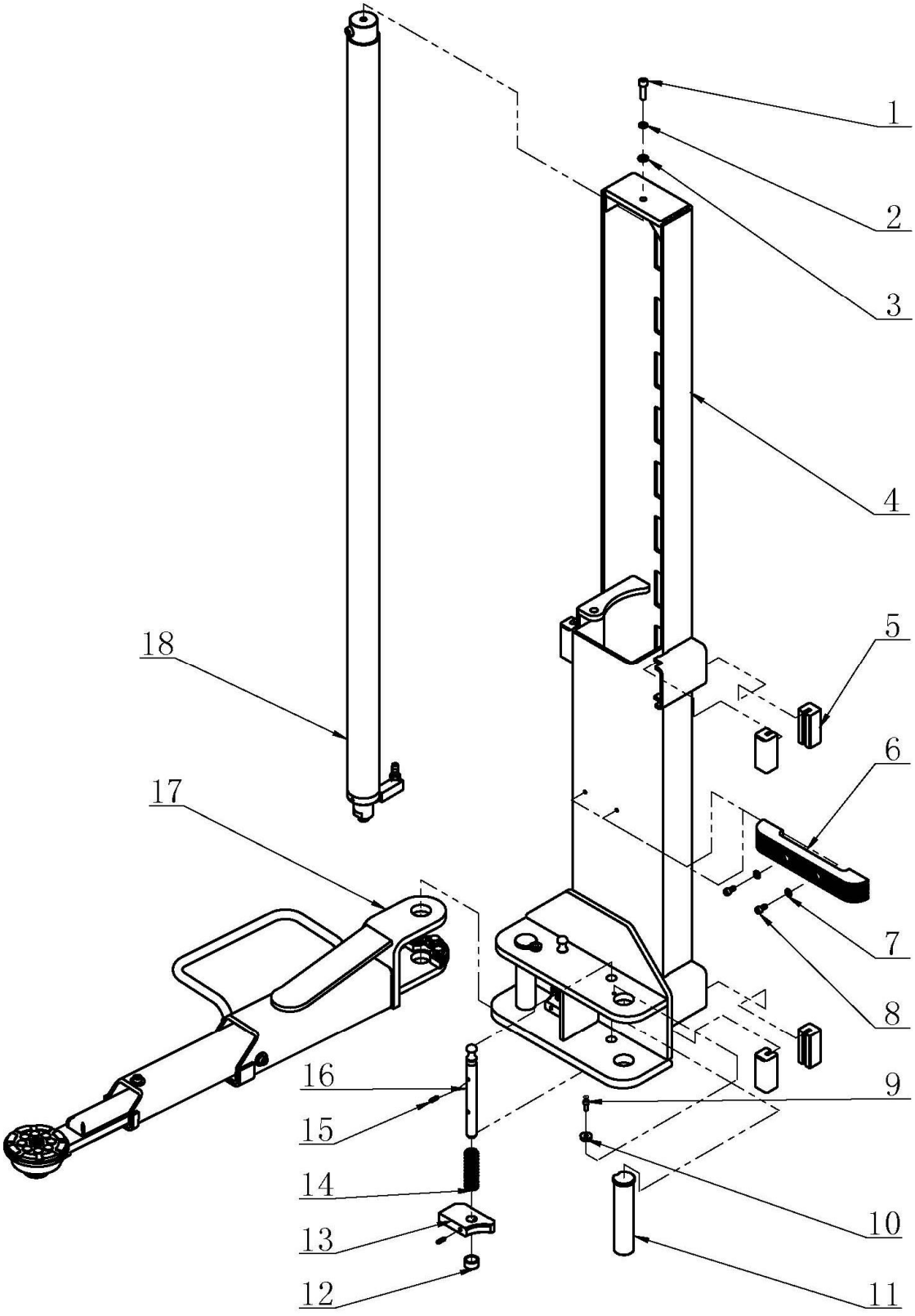
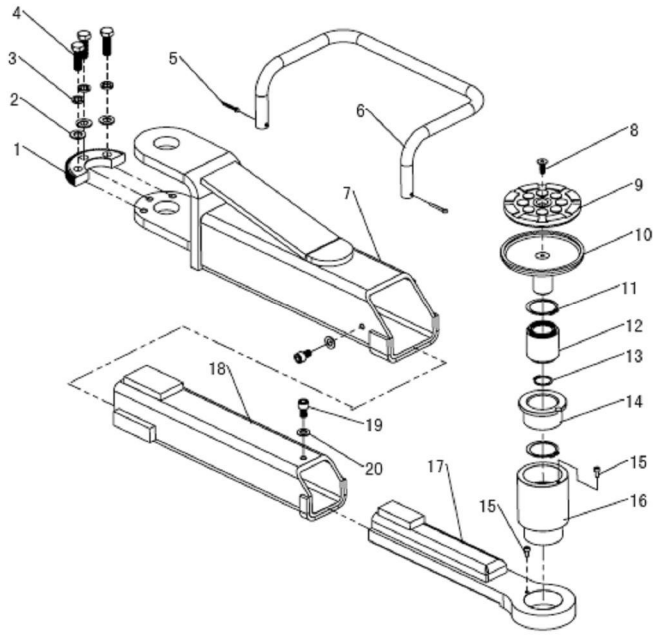
Item	Part No.	Description	Qty.
1	40CS-02-00R	Driven Post	1
2	GB5781- M6X12	Hexa Bolt	1
3	40C-02-23	Wire Roller Protector	1
4	GB894.1- 20	Circlip for Shaft-Type A	3
5	40C-0-7（nylon）	Wire Roller	1
6	40C-02-21a	Line Protector 7	1
7	GB818- M5X8	Cross Recessed Pan Head Screw	4
8	GB818- M8X10	Cross Recessed Pan Head Screw	4
9	40C-00-13-00	Lock Cover	1
10	40C-02-19a	Line Protector 2	1
11	GB95-10	Flat Washer	12
12	GB93-10	Spring Washer	12
13	GB70.1- M10X16	Hexagon Socket Head Cap Screw	12
14	40AS-02-01	Lever Connector	1
15	40AS-02-09	Lock Wire Fixture	1
16	GB93-6	Spring Washer	3
17	GB70.1- M6X16	Hexagon Socket Head Cap Screw	3
18	GB879-85 -6X26	Spring Pin	1
19	40C-0-24	Silence Rubber	1
20	40AS-00-19	Lock Block	1
21	40C-0-22	Spacer	1
22	40C-0-21	Shaft	1
23	40C-0-28	Lock Spring 2	1
24	40AS-02-08	Lock Spring 1	1
25	GB41- M6	Hex Nut	2
26	40AS-02-05-00R	Lock Wire Roller Bracket(R.)	1
27	GB95-6	Flat Washer	2
28	40AS-02-02	Lock Wire Roller	2
29	GB894.1-8	Circlip for Shaft-Type A	2
30	40C-2-12-00R	Drive Extended Post	1

2 - 2 - 3 Construction o f Carry



No.	Part No.	Description	Qty.
1	GB70.1- M10X35	Hexagon Socket Head Cap Screw	1
2	GB93-10	Spring Washer	1
3	GB95-10	Flat Washer	1
4	40CS-03-00	Carry	1
5	40C-0-4	Carry Guide	8
6	40C-3-13	Door Protect Rubber	1
7	GB95-8	Flat Washer	2
8	GB70.1- M8X16	Hexagon Socket Head Cap Screw	2
9	GB70.1- M6X16	Hexagon Socket Head Cap Screw	2
10	40CS-03-14	Shaft Cover	2
11	40CS-00-03	Arm Shaft	2
12	40C-0-11	Arm Locker Spacer	2
13	40C-0-5	Lock Gear (inner)	2
14	40C-00-01	Spring	2
15	GB879-85 -6X20	Spring Pin	4
16	40C-0-9	Gear Shaft	2
17		40CH short arm left	1
18	40CS-04-00	Cylinder Ass'y	1

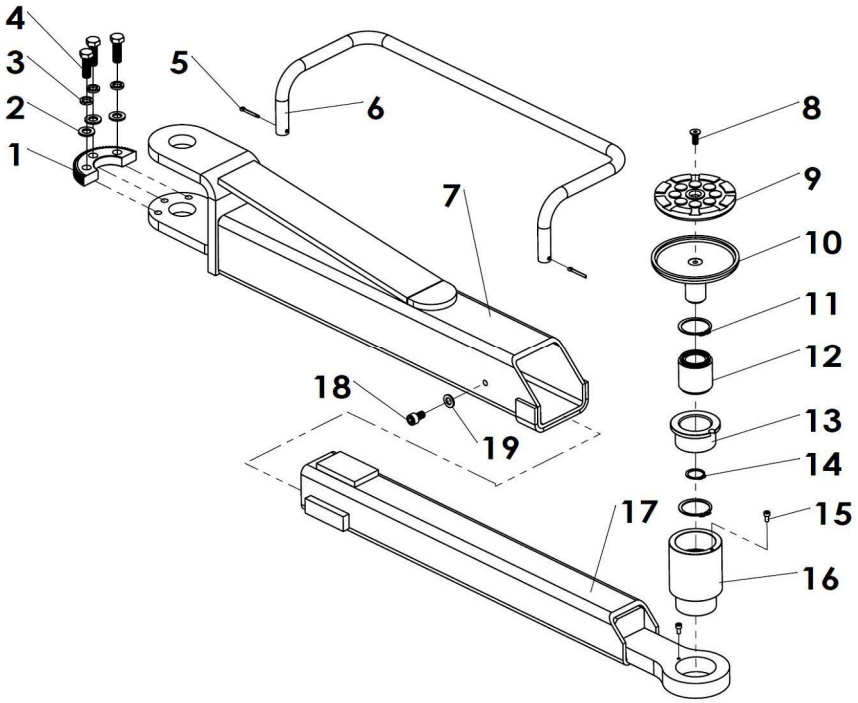
Structure of the short arm supporter ass'y



No.	Part No.	Description	Qty.
1	26A-00-06	Lock Gear	1
2	GB95-12	Flat Washer	3
3	GB93-12	Spring Washer	3
4	GB5781- M12X35	Hexa Bolt	3
5	GB91-4X25	Cotter Pin	2
6	26A-10-03	Feet Safety Guide(2)	1
7	26A-10-00R	Short Arm 1	1
8	GB70.3- M8X20	Wrench Bolt	1
9	JLH-16-00	Arm Support Rubber	1
10	26A-13-00	Arm Supporter	1

11	GB894.1-45	Snap Ring	2
12	26A-00-12	Arm 2nd Supporter	1
13	GB894.1-25	Snap Ring	1
14	40ASF-01-01	Arm 3rd Supporter	1
15	GB70.1- M5X10	Hexagon Socket Head Cap Screw	2
16	40ASF-01-02-01	Extended Post	1
17	40AS-12-00	Short Arm 3	1
18	26A-11-00R	Short Arm 2	1
19	GB70.1- M10X16	Hexagon Socket Head Cap Screw	2
20	GB95-10	Flat Washer	2

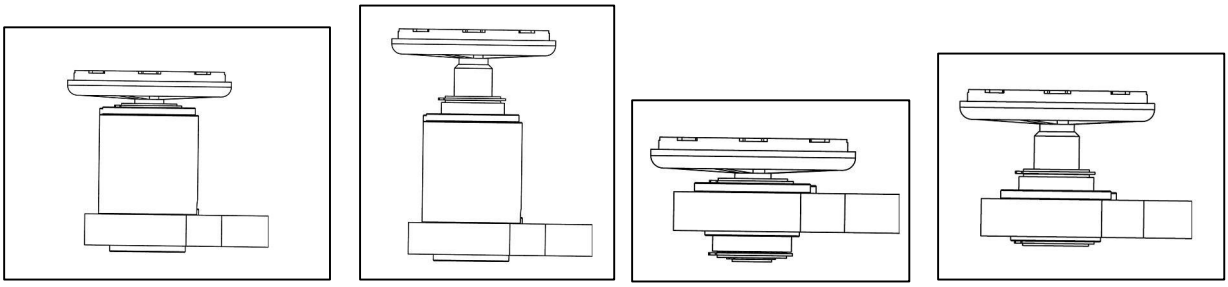
Structure of the long arm supporter ass'y



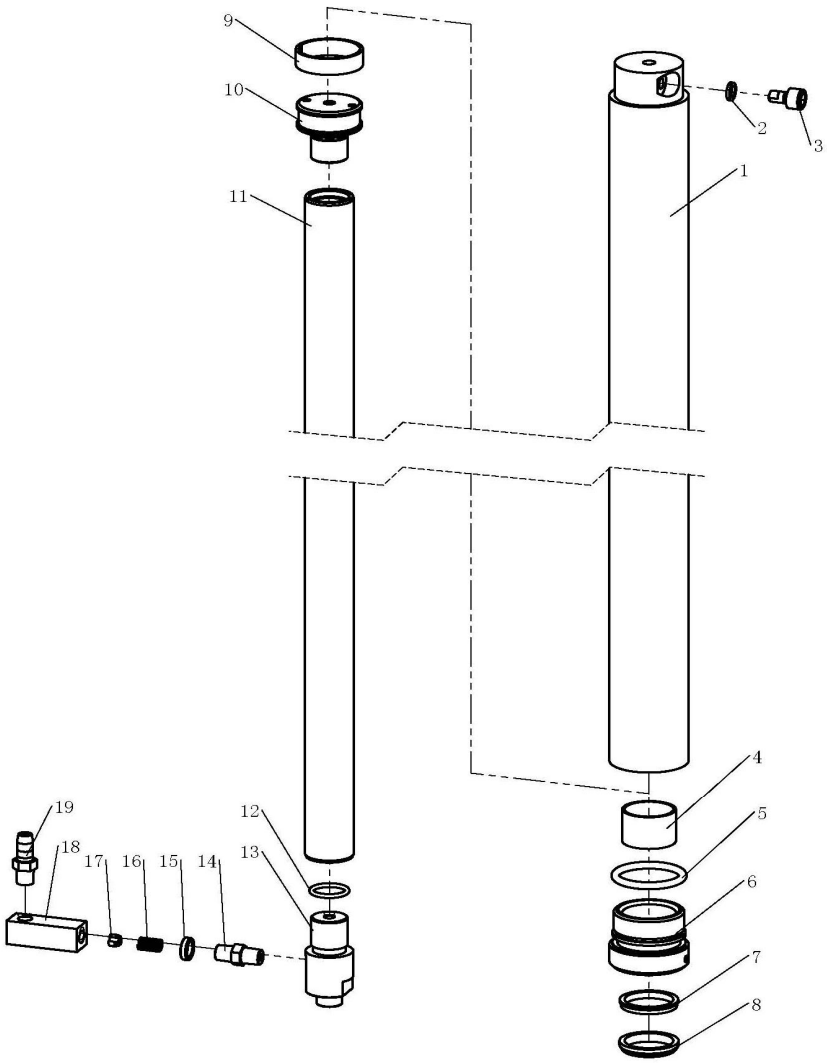
No.	Part No.	Description	Qty.
1	26A-00-06	Lock Gear	1
2	GB95-12	Flat Washer	3
3	GB93-12	Spring Washer	3
4	GB5781-M12X35	Hexa Bolt	3
5	GB91-4X25	Cotter Pin	2
6	26A-14-03	Feet Safety Guide(1)	1
7	26A-14-00 右	Long Arm 1	1
8	GB70.3- M8X20	Wrench Bolt	1
9	JLH-16-00	Arm Support Rubber	1
10	26A-13-00	Arm Supporter	1
11	GB894.1-45	Snap Ring	2
12	26A-00-12	Arm 2nd Supporter	1
13	40ASF-01-01	Arm 3rd Supporter	1
14	GB894.1-25	Snap Ring	1
15	GB70.1- M5X10	Hexagon Socket Head Cap	2

		Screw	
16	40ASF-01-02-01	Extended Post	1
17	40AS-15-00 右	Long Arm 2	1
18	GB70.1-M10X16	Hexagon Socket Head Cap Screw	1
19	GB95-10	Flat Washer	1

Four position of the arm supporter ass'y

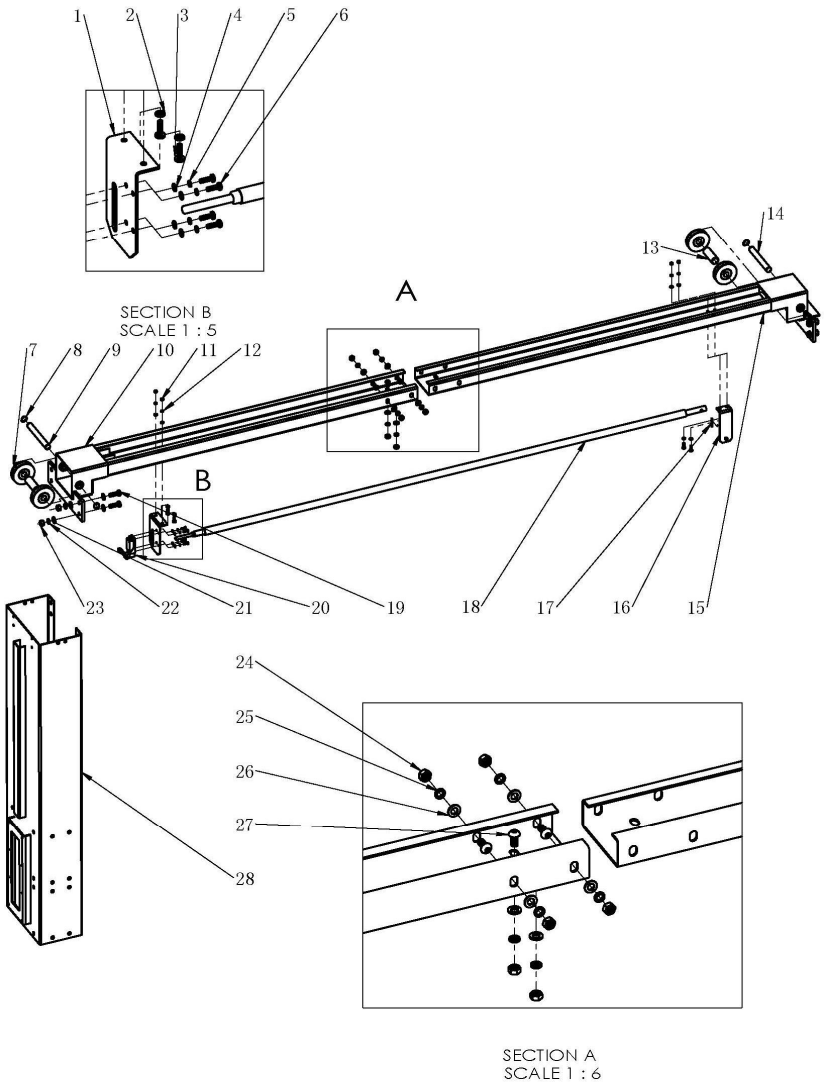


2-2-4 Construction of Cylinder



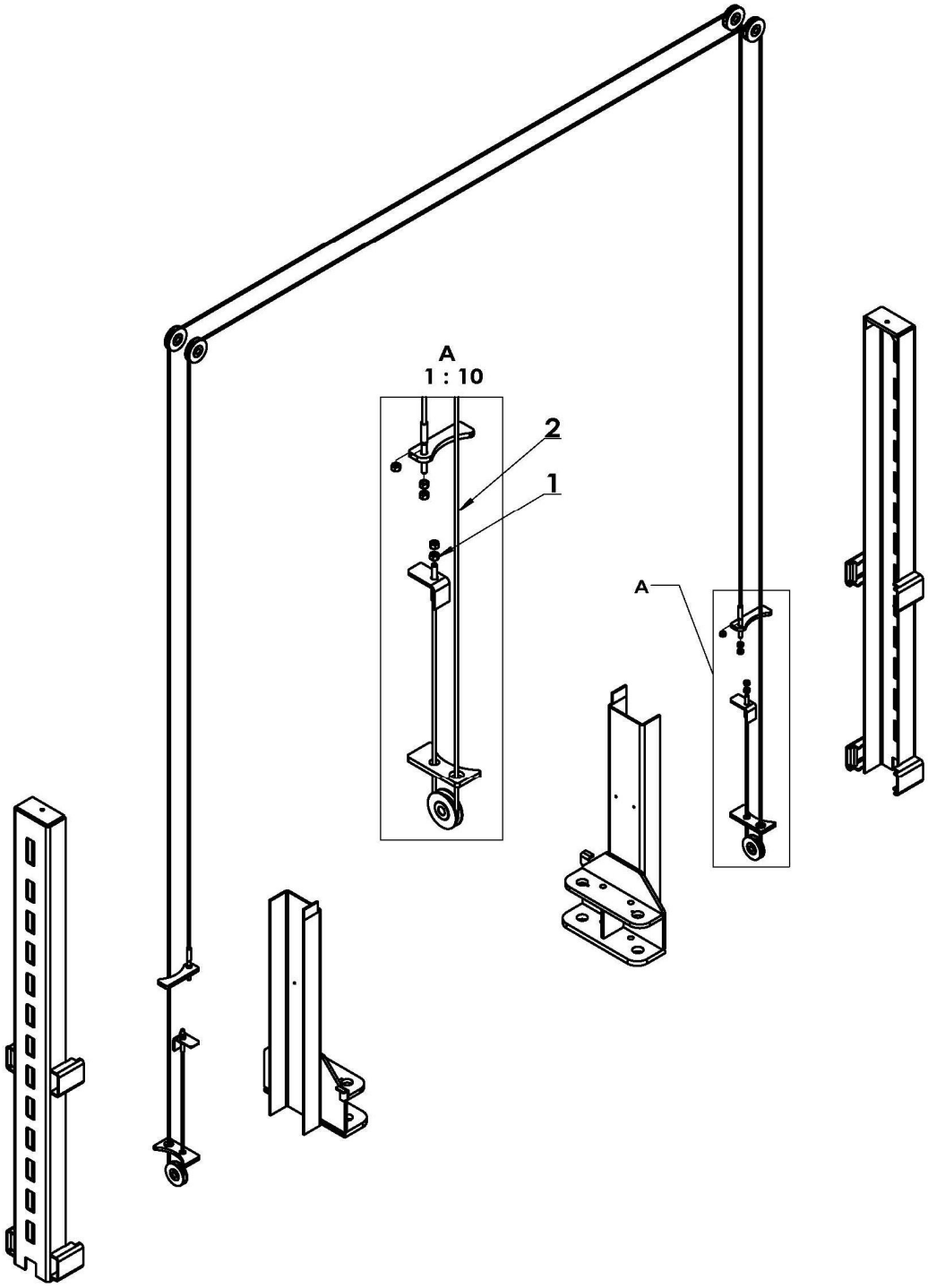
No.	Part No.	Description	Qty.
1	40CS-04-02-00	Cylinder	1
2	JB982-10	Combination Seal Φ10	1
3	40CS-04-12	Release Bolt	1
4	SF-1P4030	Bearing	1
5	O-Ring 50x6.3	O-Ring	1
6	40CS-04-01	Head Cover	1
7	Seal 40x48x6.3	Combination Seal	1
8	Dust Seal WP6-40	Dust Seal	1
9	Ring NAK-WR-055	Wear Ring	1
10	40CS-04-04	Piston	1
11	40CS-04-03	Rod Bar	1
12	O-Ring 28.5x3.55	O-Ring	1
13	40CS-04-15	Cylinder Seat	1
14	40C-4-05	Rc1/4 Steel Nipple	1
15	40C-4-06	Spacer	1
16	40C-4-07	JLH-0-10-03	1
17	40C-4-08	Limit Flow Spacer	1
18	40CS-04-09	Pressure Hose Adapter	1
19	40C-4-10	Steel Nipple	1

2-2-5 Construction of Upper Support Beam



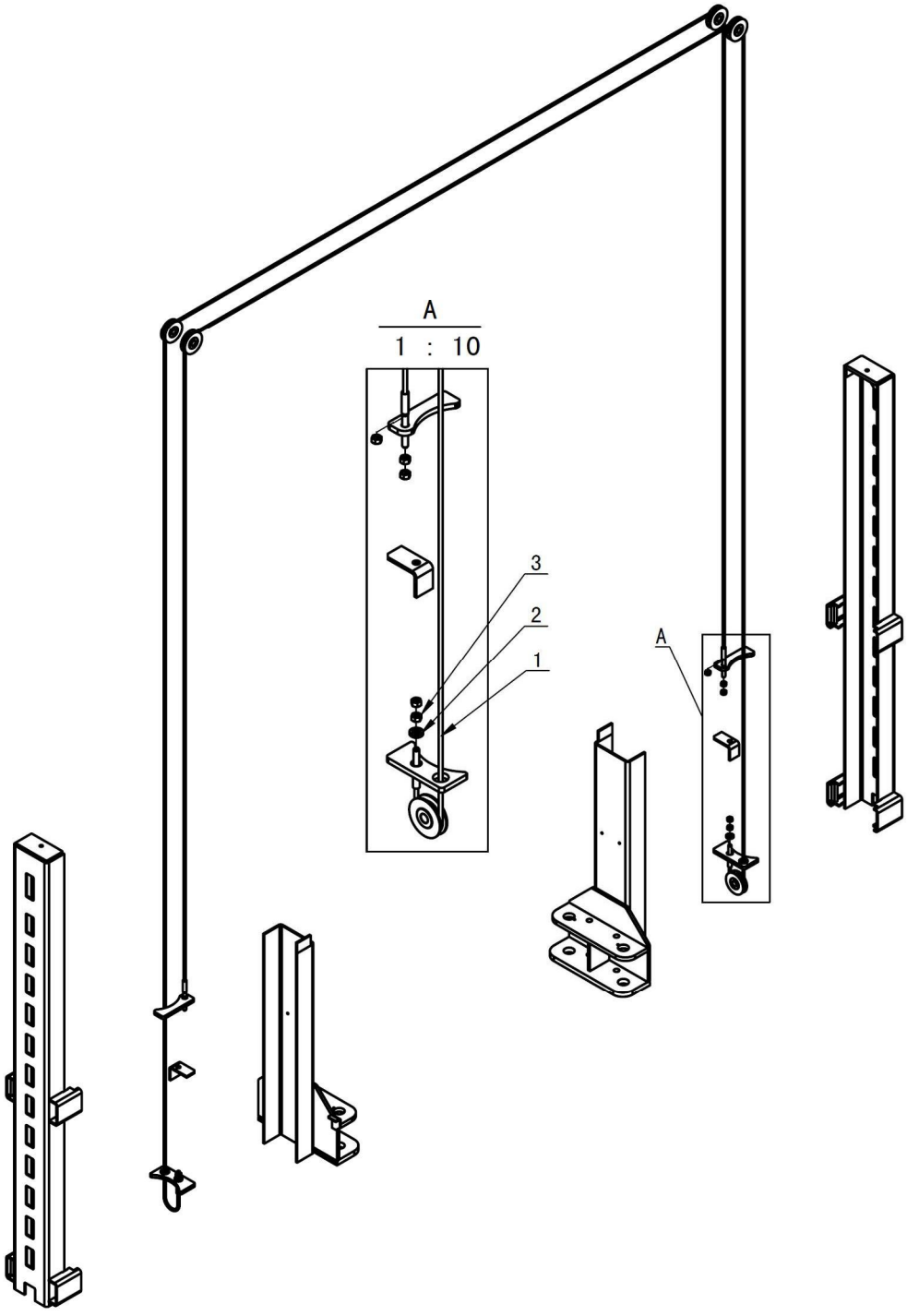
Item	Part No.	Description	Qty.
1	40CA-01-05	Limit Switch Fixture	1
2	GB95-6	Flat Washer	8
3	GB818-H-M6X20	Cross Recessed Pan Head Screw	4
4	GB95-5	Flat Washer	4
5	GB93-5	Spring Washer	4
6	GB818-H-M5X16	Cross Recessed Pan Head Screw	4
7	40C-0-7（nylon）	Wire Roller	4
8	GB894.1- 20	Circlip for Shaft-Type A	4
9	40C-01-02-06	Upper Wire Roller Shaft(L)	1
10	40CA-01-02-00	Upper Support Beam	1
11	GB41- M6	Hex Nut	4
12	GB93-6	Spring Washer	4
13	40C-01-01	Wire Roller Spacer	2
14	40C-01-03-06	Upper Wire Roller Shaft(R.)	1
15	40CS-01-03-00	Upper Support Beam	1
16	40CS-01-06-00	Limit Switch Fixture	1
17	Pin GB91-4X25	Cotter Pin	1
18	40CS-01-04-00	Limit Touch Bar	1
19	GB5781- M12X35	Hexa Bolt	8
20		Limit Switch	1
21	GB95-12	Flat Washer	16
22	GB93-12	Spring Washer	8
23	GB41- M12	Hex Nut	8
24	GB41- M10	Hex Nut	6
25	GB93-10	Spring Washer	6
26	GB95-10	Flat Washer	6
27	GB70.2- M10X20	Hex Socket Button Head Screw	6
28	40C-2-12-00L	Drive Extended Post	1

2-2-6 Connection of the cables, if the low post height is chosen

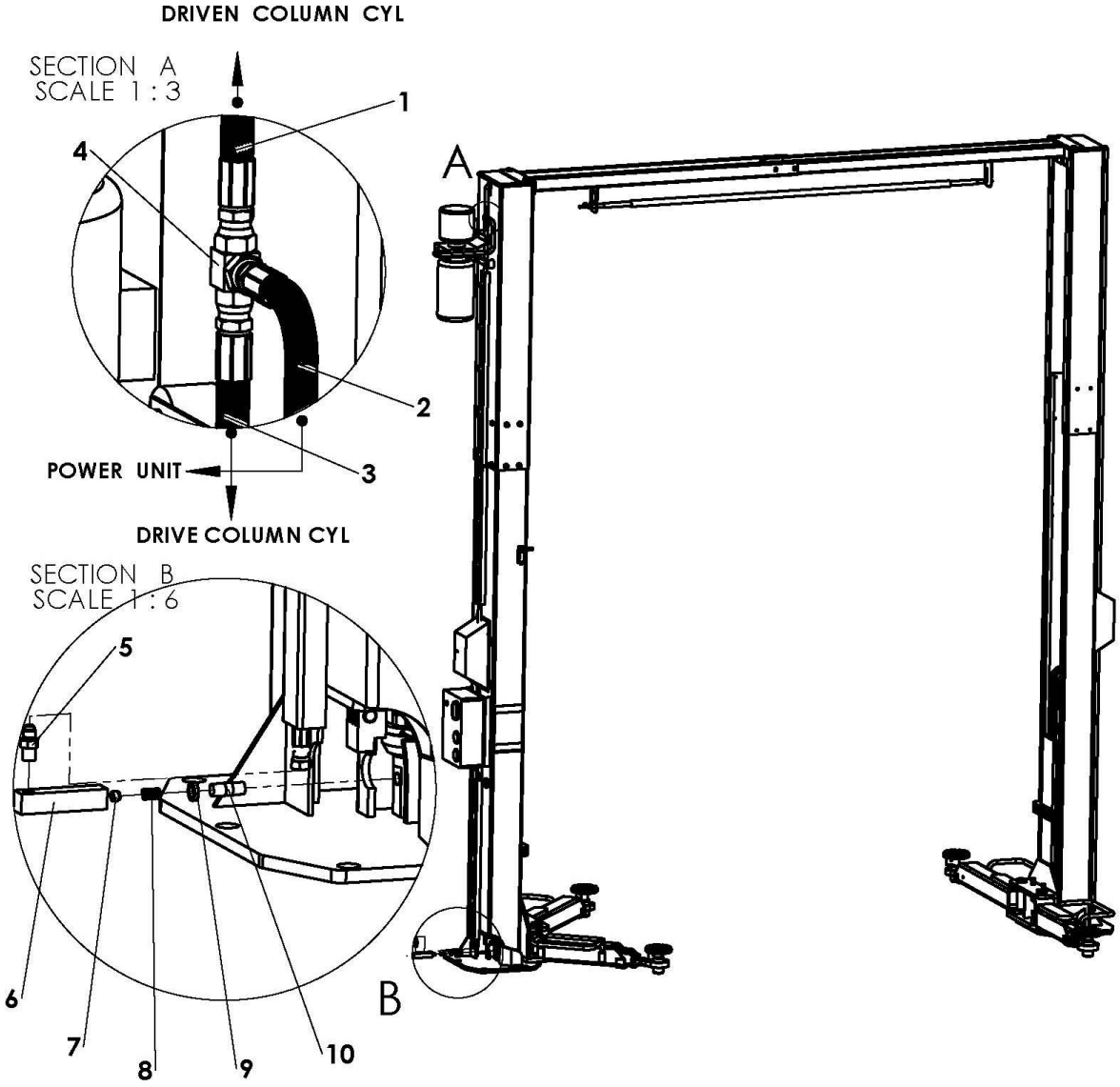


Item	Part No.	Description	Qty.(low post height)
1	GB6171- M12x1.5	Hexa Bolt	10
2	40C-09-00	Cable	2

2-2-7 Connection of the cables, if the standard post height is chosen

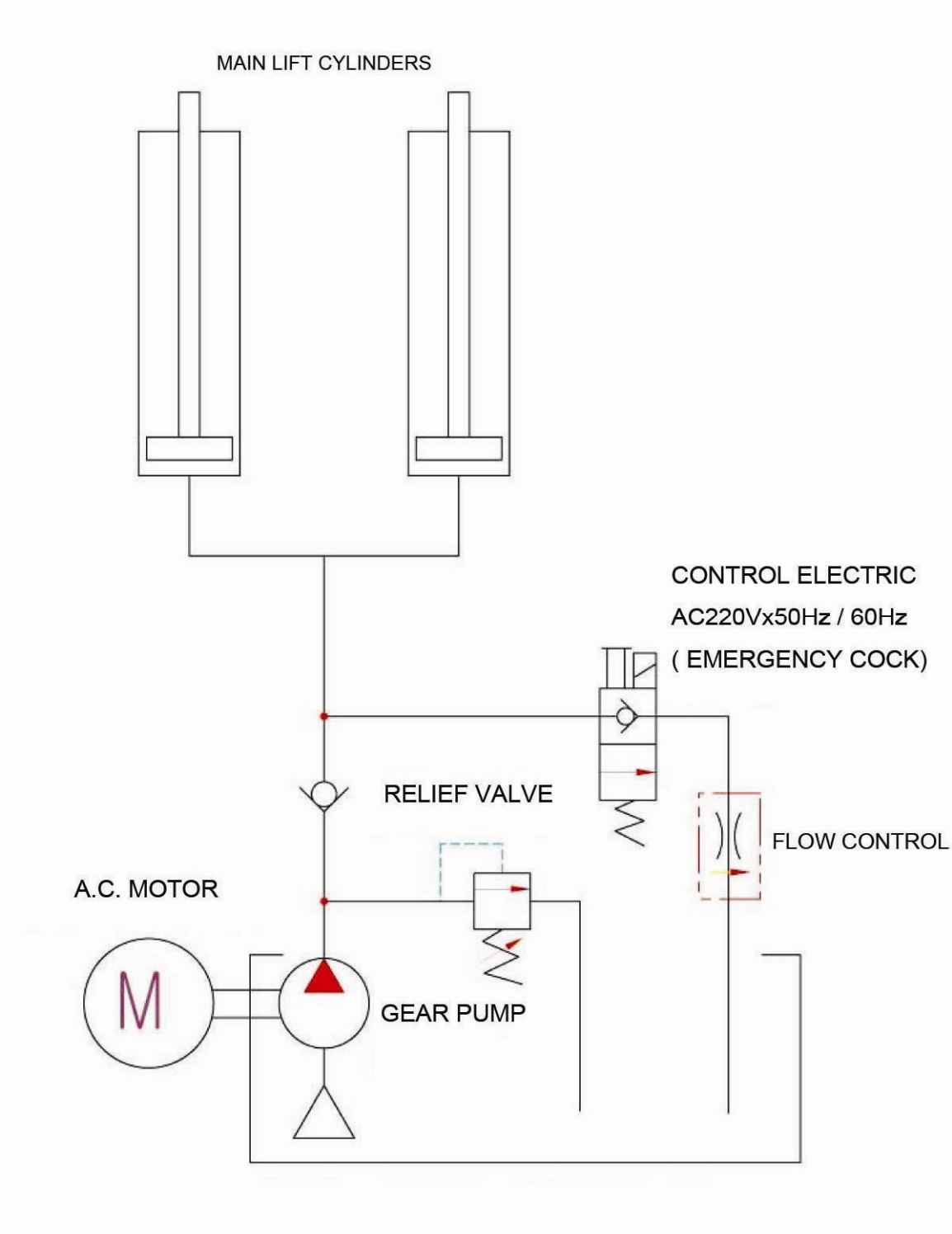


Item	Part No.	Description	Qty.(standard post height)
1	40C-09-00	Cable	2
2	40C-03-01	Spacer	2
3	GB6171- M12x1.5	Hexa Bolt	10



MARK	DESCRIPTION	Q'TY	WEIGHT OR SIZE
1	PRESSURE HOSE 1	1	ST. x ST. x7370L
2	PRESSURE HOSE 2	1	ST. x EL. x 450L
3	PRESSURE HOSE 3	1	ST. x ST. x 3710L
4	UNION TEE	1	3 x PT 1/4
5	OIL STEEL NIPPLE	2	PT 1/2 x PT 1/4
6	HOSE ADAPTER	2	22 x 22 x 98L
7	ORIFICE	2	Φ10.5 xΦ1.9 x7.5L
8	ORIFICE SPRING	2	Φ1
9	ORIFICE GUIDE	2	Φ20 x Φ13.5 x 5T
10	OIL NIPPLE	2	PT 1/4 x PT 1/4

2 - 2 - 8 Hydra u lic C irc uit



2-3 Safety device

The following safety device is installed at this lift.

Device	Description
Safety Lock	The safety lock is attached to the side of the cylinder and prevents the lowering of the lift in the event of a hydraulic circuit damage. The safety lock is not in operation in the lower part of the lift range beneath the lock position. (Safety lock is operational at heights above 570mm).
Check Valve	The check valve is a non-return valve to maintain the hydraulic pressure of the lift during lifting.
Wire rope	The wire rope connects the 2 lift carriages left and right to ensure synchronization at all times and to ensure that they remain at the same horizontal level.

CHAPTER 3 Transportation and Installation

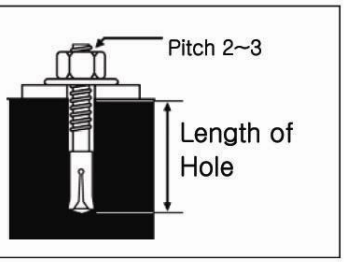
3-1 Installation place

1. Lifts should only be installed on level concrete floors with a minimum thickness of 250 mm
2. The anchor bolt shall endure the tensile load of at least 8KN/m
3. The load of the floor under the posts shall be at least 350KN/m
4. In order to manage the unit, the lift must be installed indoor.
5. If it is inevitable to install the unit outside, the lift must be covered with tent against snow or rain.(The cable entrance of control panel should be water-proofed.)
6. The lift must be installed on the location with operation temperature range (-10 ℃~50℃)and humidity (30%~70%).
7. Ensure that the tower is level. Refinish under column base with concrete or mortar. (This operation must be carried out by the user.)
8. Drill holes fairly deep for anchor bolts and tighten the bolts hard. (Refer to the third figure below)

Our company is not responsible for any problem occurs after the unit is removed and installed by any third party except the dis-tributors or the manufacturer.

Do not install the lift at outdoor.

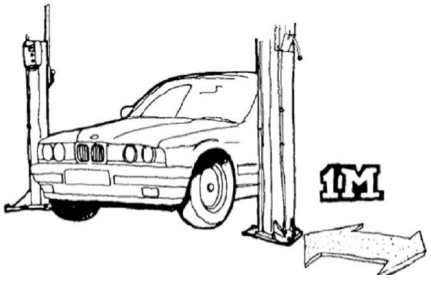
(The lift can broke down.)



Length of Hole
120mm Anchor Bolt 80mm
150mm Anchor Bolt 110mm
Drill holes fairty deep for anchor bolts and tighten the bolts hard.

3-2 Precaution during installation

1. Install the lift about 1m or move away from the wall in order to ensure the sufficient work space.



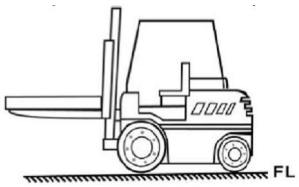
2. Do not change the specifications (lifting or lowering speed, and pressure) that have been pre-set at the factory.

3.Do not install the lift out of outdoors; doing so invalidates the warranty. Should you, however, choose to do so at your own risk, ensure that the electrical connection to the control panel is waterproof.

3-3 Transportation

The lift is packaged in a wooden box at the factory. After the lift is arrived at the installation site, transport the product to the installation location in accordance with following procedure.

1) Machine should be transported to installation place by fork lift.



2) Unloading and unpacking

Check the packages against the packing list and assembly drawing carry them into the installation site in order. It is to be desired that packages should be unpacked at the final installation place wherever practicable. Reinforced materials are usually fitted with this machine so as to protect parts against transport damage. Make sure not to remove them until the installation work starts.

3) Checking accessories and spares.

Check that all accessories and spares are provided when unpacking the lift. Check all accessories and spares against the provided packing list. When you ordered optional equipment, check the equipment against the accessories and spares against packing list.

Contact our company immediately if any part is missing or damaged.

3 - 4 Installation

The installation should be carried out in accordance with the following procedures.

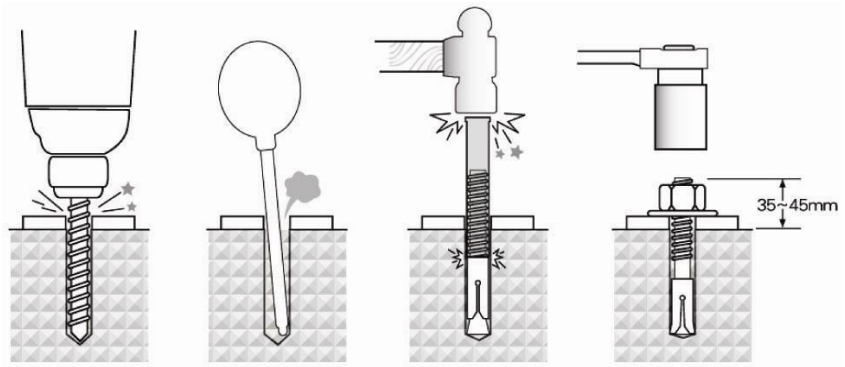
1. After checking the parts, arrange them to the installation site.
2. Erect the post.

3. Assemble the upper support beam using the truck or ladder etc.
4. By the use of a water hose gauge or spirit level check that the right and left carriages are level. If necessary, adjust under the base plates with spacers to equalize the height.
5. Check that both posts are perpendicular in both directions, using a magnetic spirit level.
6. The lift shall be installed on hard and flat floor made with reinforced concrete with the thickness of 250mm.

The anchor bolt shall endure the tensile load of at least 8KN/m^2

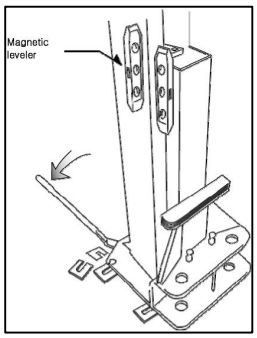
The load of the floor under the posts shall be at least 350KN/m^2

7. Make enough space around the lift, and install the lift at a distance of at least 1 meter from the wall in consideration of operation work.

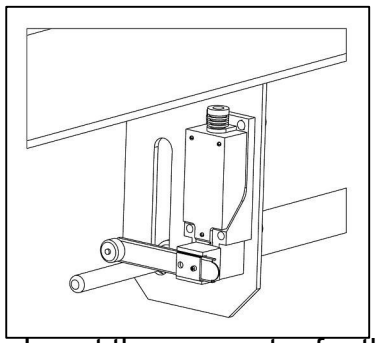


Drill hole same diameter as anchor | Clean Hole | Hit anchor bolt by special tool to spread out collar (Hit strong enough at 3~4 times) | Tighten nut

8. Using the base plate holes as templates drill the floor.



9. Assemble the hydraulic hose to union on the drive post.



10. Insert the connector for the limit switch.
11. Bind the hydraulic hose at beam fixing hole located at the opposite side with a cable tie.

12. Start the lift. Listen for the engagement of the safety lock. When this occurs, stop the lift, adjust the position of the threaded sleeve crimped to the wire rope end. Fit and tightly fasten the lock nuts.

13. Check if the hydraulic oil of hydraulic unit tank is properly maintained.

14. Check if the motor is rotated to the counter-clockwise when pressing the UP button. When the motor is rotated to the clockwise, change the phase connection of motor.

15. After finishing all of the above confirmation, start no-load test run. Press the UP and DOWN switch 2 or 3 times at the intervals of about 2 seconds. Should something wrong be found as the result of the test run, refer to troubleshooting.

16. If the above no-load test runs passes satisfactorily, you can make test run under load. It is convenient to record the test result for future maintenance.

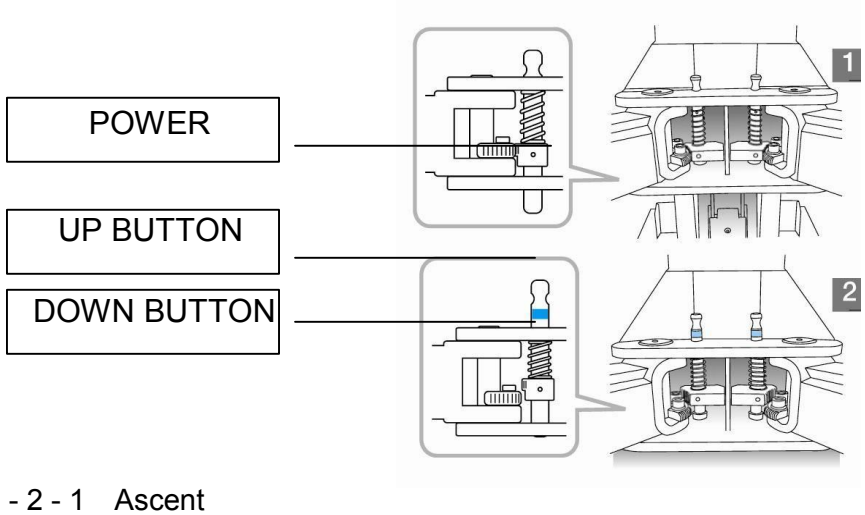
CHAPTER 4 OPERATION

4- 1 Preparation before operation

Check the following items before loading a car on to the lift;

(1) Ensure that the lift is at the bottom position.
(2) Prohibit the access of unauthorized persons to the lift area.
(3) If the lift has been out of use for a long time check the oil level in the pump unit and top up if necessary. Operate the lift up and down 2-3 times without load.
(4) When driving the car on to the lift ensure that the vehicle is equally distant from each post.
(5) Do not change the pre-set safety valve pressure as this is adjusted by the manufacturer.
(6) If the oil level is too low the lift cannot operate effectively. Do not operate the lift under these conditions.
(7) Before lowering the car lift, check that the lift area is clear and there are no persons or obstructions to prevent lowering.
(8) Passenger transport on the lift or in/on the vehicle is forbidden.
(9) During the winter season, operate the lift 3 to 5 times without load in 5℃~ - 2 0 ℃.Do not use the lift the temperate below -20℃.

4 - 2 Arm lock operation



4 - 2 - 1 Ascent

When the carriages go up the arm locks are engaged automatically. Ensure that the gears controlling the locks are in mesh, i.e. fully engaged. If not, the arm must be marginally adjusted until the spring loading operates and locks successfully.

4-2-2 Descent

At the bottom position the locks are automatically disengaged.

4-3 Operation

The procedure for operating the lift is as follows;

1. Lower the carriage to the ground by pressing the manual lever for lowering the lift.
2. Spread the arms to their maximum positions as shown so that the car can be driven on to the lift.
3. Drive the car on to the lift and ensure that it is equally distant from each post and that the center of gravity is midway between the 2 posts.
4. After leaving the car, position the 4 arms so that the pick-up pads are directly below the vehicle manufacturers recommended pick-up points. Press the up button and raise the lift to the required working height.
5. For your safety, do not release the locker and fix the carry to the locker position.
6. After checking that the lift is in order, repair the car.
7. After finishing the repair raise the lift slightly to disengage the safety lock. Then operate the down lever to lower the lift to ground level.
8. When the lift reaches its lowest position swing the arms out from under the car to their maximum straight-ahead position and drive the car off the lift to a safe area.

4- 4 How to lower the lift manually in the event of an emergency

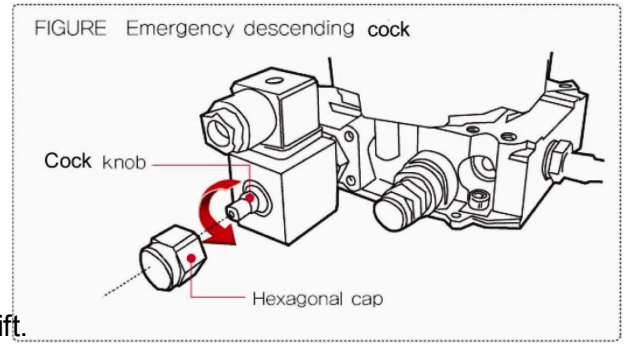
4 - 4 - 1 Situations that could require manual descent operation:

1) General power failure
2) Damage to hydraulic circuits
3) Failure of electrical components fitted to the lift

4 - 4 - 2 Preparation prior to the manual descent operation

1) Remove all obstructions under the lift.
2) Turn off the power switch.

FIGURE Emergency descending cock



3) Check if there are no persons under the lift.

4 - 4 - 3 Operation procedures

1) Operate the down switch to disengage the safety lock. If the lock does not disengage it is under load in which case the lift must be raised more than 30mm by the use of a hydraulic trolley jack and extension under the base of the lift carriage to raise the lock above the ratchet position and thereby allow the manual lever to disengage the lock. When it is disengaged, lower the trolley jack and remove it to avoid obstruction under the lift.

2) Open the hydraulic cock provided anti-clockwise to lower the lift during an emergency. The cock is situated on the side of the hydraulic unit, see sketch above. This allows the oil to return to the end and the car to be lowered by gravity.

3) Retighten the hydraulic cock when the lift is completely at floor level.

CHAPTER 5 TROUBLESHOOTING

5-1 Inspection and repair

Symptoms		Check point	Corrective Action to be taken
Wire Rope and Locking device	Carriages and arms do not synchronize during lifting.	1. Check if wire rope is partially loosened. 2. Check if clip of wire rope is loosened.	1. Readjust the fixing bolts of the wire rope to ensure that the carriages are leveled. 2. Tighten clips after adjustment.
	Lift does not lower when down lever is operated or if down button is operated independently	1. Check if the safety lock is engaged in the carriage and under load. 2. Check the electrical power is available at the down button and solenoid valve	1. Raise the lift, disengage the safety lock with the down lever, and lower the lift. 2. Repair the electrical connections if possible, alternatively lower the lift in accordance with the manual descent procedure.
	Carriages and arms do not synchronize during lowering.	1. Check if the oil at load head cover is sufficient. 2. Check if the air is mixed at the hydraulic oil.	1. Top up the oil tank to the correct level. 2. Bleed the air from the hydraulic unit.
	Safety lock does not Operate during lifting or lowering.	1. Check the connection of wire and connector. 2. Check the operation of manual lever.	1. Reconnect if necessary. 2. Release manual lever.
Hydraulic system and its componen ts	Abnormal noise from the motor.	1. Rated capacity is exceeded. 2. Relief pressure is low. 3. Shortage of hydraulic oil.	1. Operate within rated capacity. 2. Adjust to 4 ton. 3. Bleed the hydraulic unit after topping up the oil level.
	Hydraulic oil leakage	1. Defective hydraulic hoses 2. Leakage from hydraulic unions 3. Lead age from cylinder high pressure seal	1. Replace the hydraulic hose. 2. Tighten the union connection 3. Request A/S center.
	Oil connections	Hydraulic fluid pollution by water or foreign debris.	1. Exchange oil (annually) (Hydraulic oil : 32CST/11liter) First oil change 2 months after installation, Therefore regular oil changes at annual intervals.
	The lift does not rise.	1. Check for oil leaks or damage to the hydraulic unit. 2. Check that the correct operating procedure is being used. 3. Check that the load is not above the rated capacity. 4. Check that the pressure valve is correctly adjusted	1. Request A/S center. 2. Bleed the hydraulic system. 3. Limit the load to the rated capacity or less. 4. Adjust to 4ton.
	The lift does not lower.	1. Check if the safety lock is engaged and under load. 2. Check if the electric circuit is damaged.	1. Re-lower after lifting slightly to allow the safety lock to disengage. 2. Refer to electric check points.
		Lower it in accordance with the procedure to emergency, and then, request A/S center.	lower manually the lift during
Electric componen ts	Motor does not operate and/or abnormal noise from the motor.	1. Check if the motor is damaged. 2. Check for blown fuses. 3. Check if the push button is damaged. 4. Check if the upper limit is operative. 5. Check that the wire gauge on the electrical supply is correct. 6. Check that the input voltage is no less than minimum 200V.	1. Replace the motor (Request A/S center). 2. Replace the fuse after solving trouble. 3. Replace the push button (Request A/S center). 4. Re-operate after lowering the lift. 5. Replace to the cable with over 3.5mm^2 diameter. 6. Increase the input power capacity.
	NFB or circuit breaker (30A) is operated.	1. Check the Contact of magnetic contactor. 2. Check the capacity of circuit breaker.	1. Replacement (Request A/S center). 2. Replacement (Request A/S center). 3. Replacement after checking.
	Motor operates but lift does not rise.	1. Check that the phases are correctly connected and that the motor rotates anti-clockwise.	1. Re-operate after changing the phase connection. 2. Refer to check points for hydraulic cylinder

CHAPTER 6 MAINTENANCE

6 -1 General precautions for maintenance

1) Maintenance should be performed by more than two persons.
2) Maintenance should first be carried out after the work area has been clearly marked "no entry".
3) Do not disassemble any system before you are familiar with the dismantling procedure.
4) Record the place or parts where maintenance is needed.
5) Keep the disassembled parts safely.
6) Fasten bolts and nuts correctly in their respective position during attaching the parts.
7) Before opening the control box check always that the CAM switch is in the OFF position.
8) During replacement of electrical component, fasten the bolts of part tightly after checking the wire no. (or color) and parts no.
9) When replacing the motor, use a stabile ladder or work platform.
10) After replacing the motor, carry out the insulation resistance test to the new motor.
11) When replacing the oil filter, drain the oil tank completely.
12) Clean the control box inside with compressed air once a month (remember that the CAM switch is to be in the OFF position).
13) Check once a week whether the bolts are loosen, if the bolts are loosen, fasten the bolts tightly.
14) Before maintenance of the control box, first obtain the permission of the person(s) in authority.

6-2 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 if necessary	1 year
	Magnetic	Damage of contact points	Measurement	Replacement	2 year
3 months	Wire Rope	Abrasion, deformation and Breaking of wire	Visual	Replacement	2 year
	Leaf Chain	Abrasion and deformation	Visual	Replacement	4 year
	Leaf Chain Wheel and DU bearing		Visual	Replacement	4 year
	Axle for Arm Lock	Operation of lock	Visual	Replacement	4 year
	Housing for Arm Lock	Operation of lock	Visual	Replacement	4 year
	Dust-proof rubber	Abrasion and deformation	Visual	Replacement	2 year
6 months	Carriage Guide		Visual	Replacement	3 year
	Electrical components	Damage to components	Visual / Measurement	Replacement	3 year
	Hydraulic Oil Level	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

6-3 Lubricant

Moving parts should be lubricated with the application of oil or grease in the situations where a grease nipple for this purpose is fitted. This form of maintenance reduces the frictional losses and increases the power available and therefore the efficiency of the machine. The followings are the type of lubricant recommended:

Oil supplying plan

Location to be applied	Kinds of oil or grease	Period of exchange
MC rail	SAE 20 or SAE 30	Supply every 6 months

A P P E N D I X

1. ELECTRIC CIRCUIT