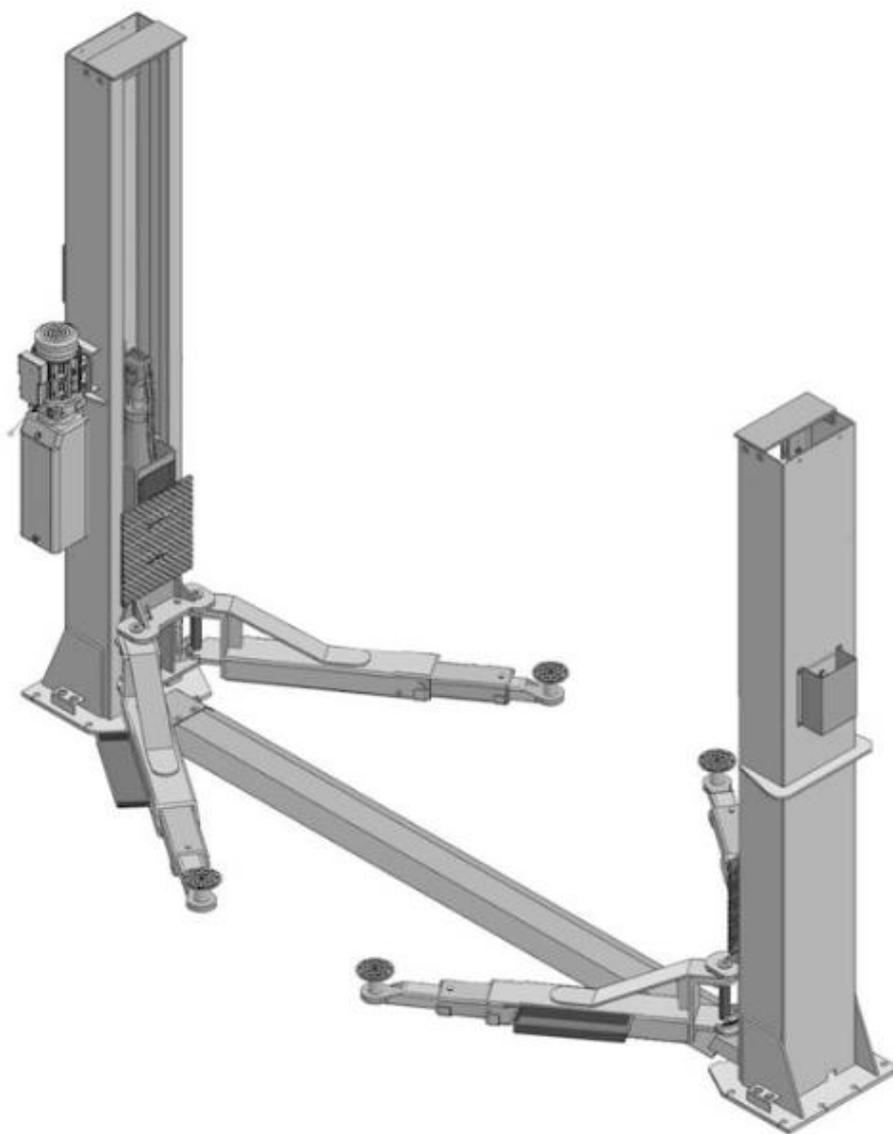


**AMGO**  <sup>®</sup> **Hydraulics**

## Installation And Service Manual



**TWO POST LIFT**  
**Model: BP-12**

# CONTENTS

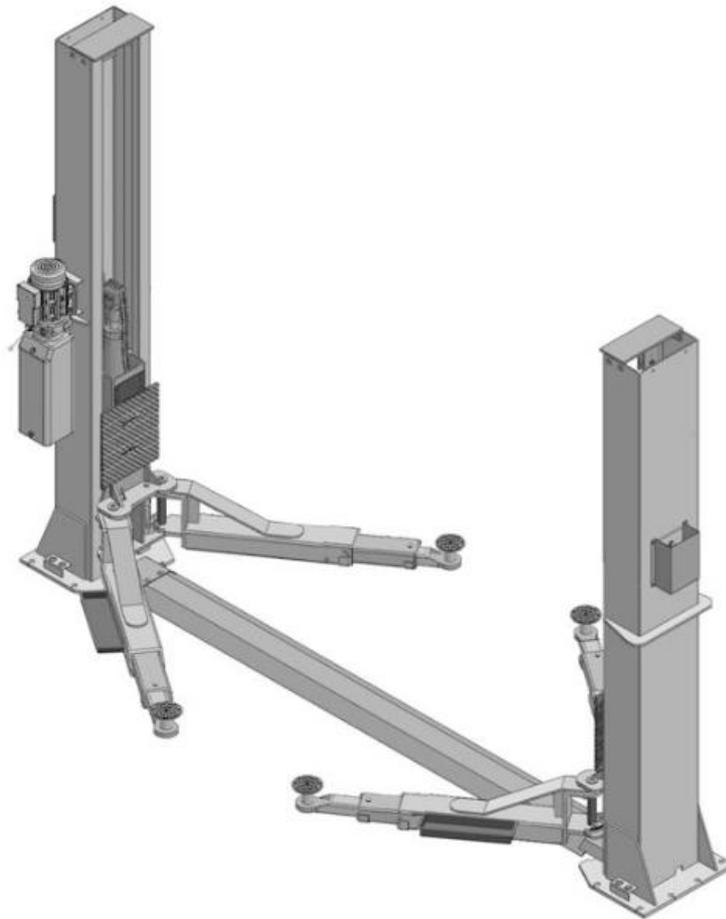
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# I. PRODUCT FEATURES AND SPECIFICATIONS

## FLOORPLATE CHAIN-DRIVED MODEL FEATURES

### MODEL BP-12 (See Fig.1)

- 12000lbs lifting capacity, compact design small footprint.
- Dual hydraulic cylinders is designed and manufactured according to standard, utilizing imported seals
- Adjustable column width, two optional column width installation 118 1/8" or 123 1/2"
- Stackable adapters 1.5", 2.5", 5" can be adjusted the minimum pad height in a short time.
  - . Lifting arm lock automatic release device, high strength moon gear for making the lift more reliable and safety.
- Self-lubricating UHMW Polyethylene sliders and bronze bush.
- Single-point safety release, and dual safety design.
- $\varnothing$  9.5 mm cable using for the lift make it more safety and more reliable.



### MODEL BP-12 SPECIFICATIONS

Model	Style	Lifting Capacity	Lifting Time	Lifting Height	Overall Height	Overall Width	Minimum Pad Height	Motor
BP-12	Floor-plate Chain-drive	12000lbs	55S	73 1/4"~82 1/4"	122 1/2"	145 3/8" 150 3/4"	4 3/4"~13 3/4"	2.0HP

### Arm Swings View

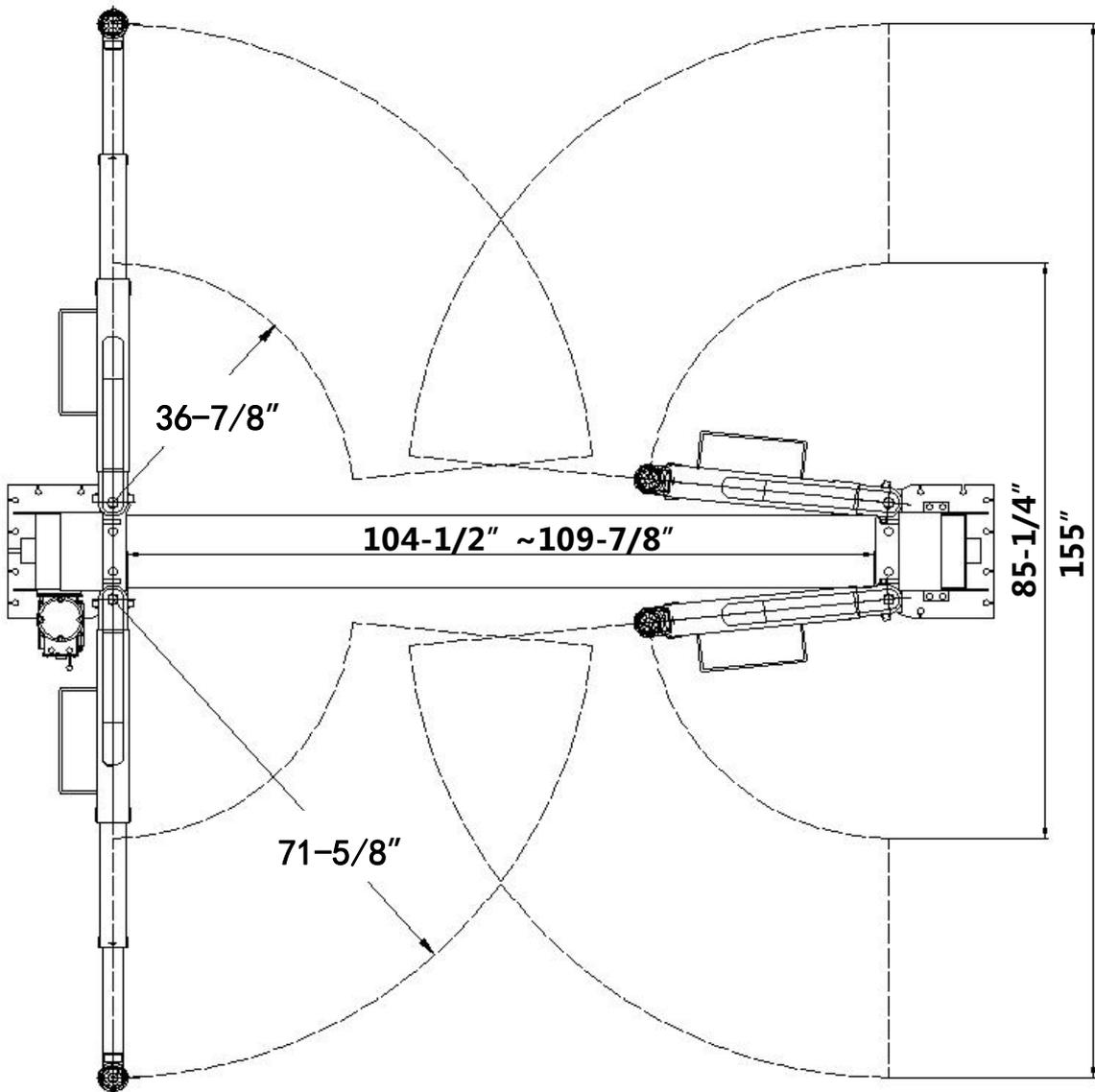


Fig.2

## II. INSTALLATION REQUIREMENT

### A. TOOLS REQUIRED

- ✓ Rotary Hammer Drill ( $\Phi 19$ )



- ✓ Hammer



- ✓ Level Bar



- ✓ English Spanner (12")



- ✓ Ratchet Spanner With Socket (28#)



↳

Wrench set  
(10#, 13#, 14#, 15#, 17#, 19#, 24#, 27#)



- ✓ Carpenter's Chalk



- ✓ Screw Sets



- ✓ Tape Measure (7.5m)



- ✓ Pliers



- ✓ Socket Head Wrench (6#)



↳

Lock Wrench

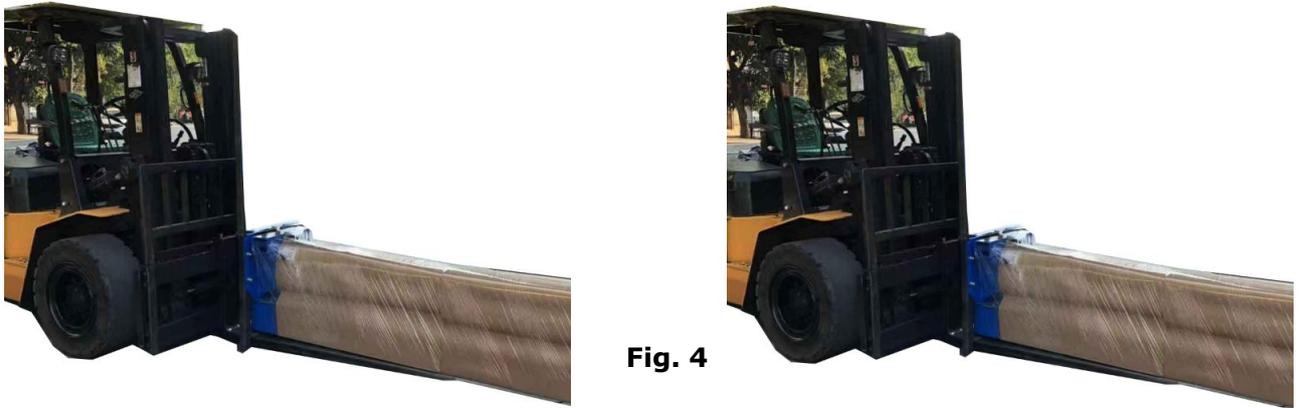


Fig. 3

**B. Equipment storage and installation requirements.**

The equipment should be stored or installed in a shady, normal temperature, ventilated and dry place.

**C. The equipment should be unload and transfer by forklift.**



**Fig. 4**

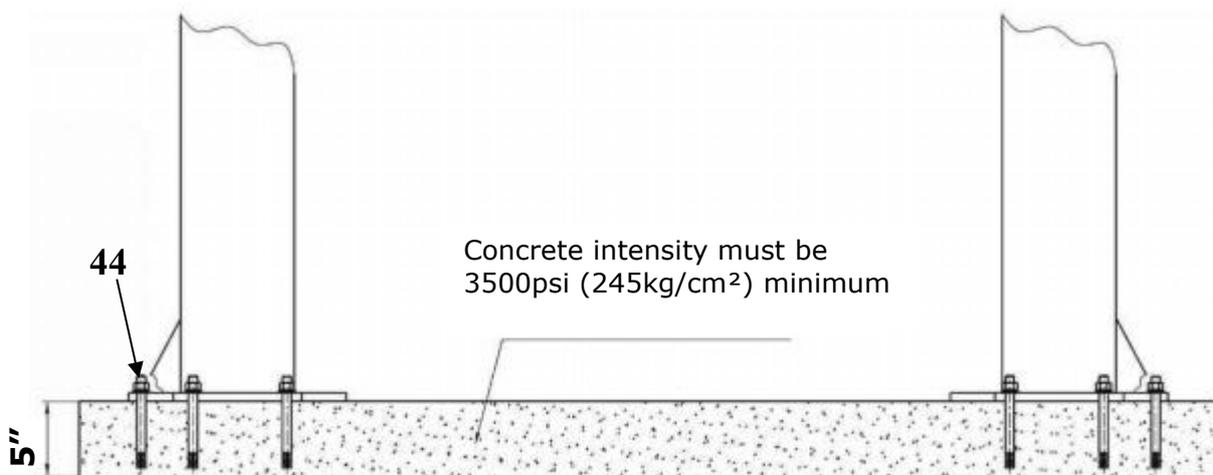
**D. SPECIFICATIONS OF CONCRETE (See Fig. 5)**

**Specifications of concrete must be adhered to the specification as following. Failure to do so may result in lift and/or vehicle falling.**

1. Concrete must be thickness 5" minimum and without reinforcing steel bars, and must be dried completely before the installation.
2. Concrete must be in good condition and must be of test strength 3,500psi minimum.
3. Floors must be level and no cracks.

**E. POWER SUPPLY**

The electrical source must be 2.0HP minimum. The source cable size must be 2.5mm<sup>2</sup> and in good condition of contacting with floor.



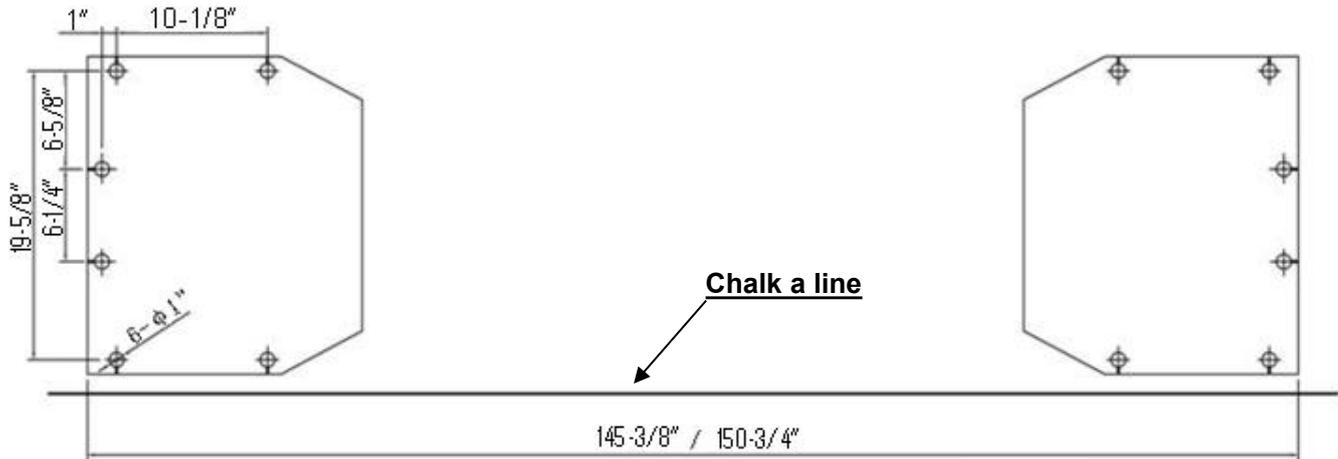
**Fig. 5**

### III. STEPS OF INSTALLATION

#### A. Location of Installation

Check and insure the installation location (concrete, layout, space size etc.) is suitable for lift installation.

**B.** Use a carpenter's chalk line to establish installation layout of baseplate (**See Fig. 6**).



**Fig. 6**

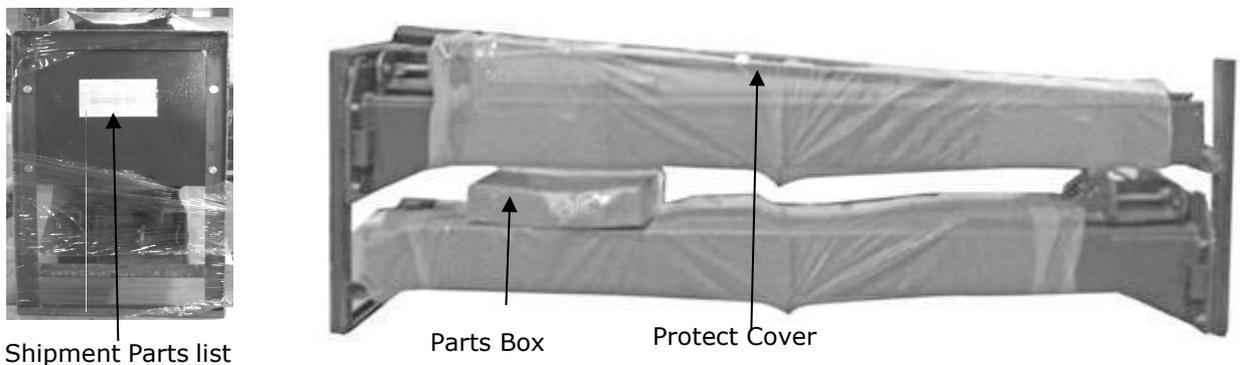
#### C. Check the parts before assembly

1. Packaged lift and hydraulic power unit (**See Fig. 7**)



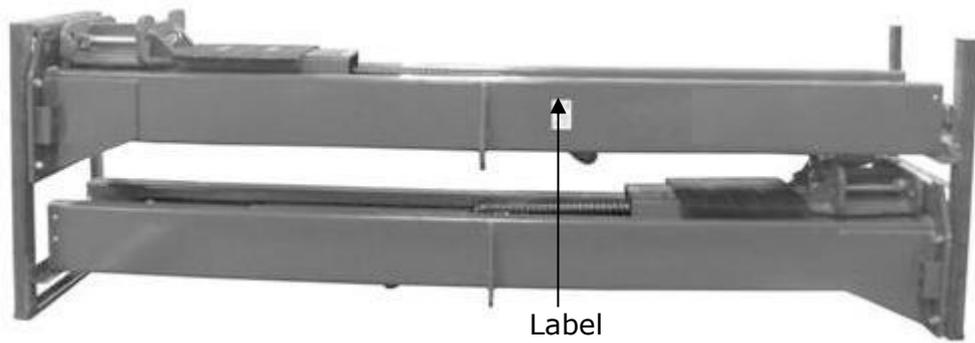
**Fig. 7**

2. Move the lift aside with a fork lift or hoist, and open the outer packing carefully, take off the parts from upper and inside the column, take out the parts box, check the parts according to the shipment parts list (**See Fig. 8**).



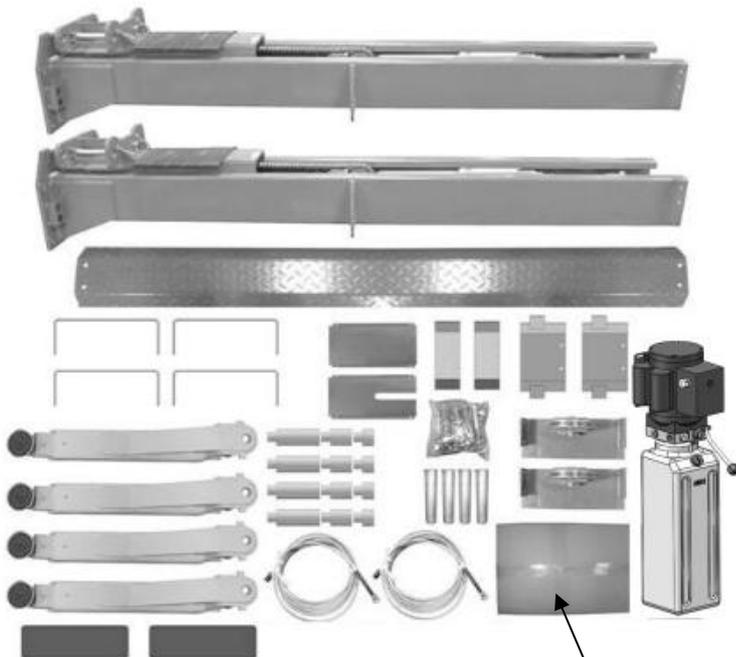
**Fig. 8**

3. Take out the parts upper and inside the column, move them beside the installation site.  
See Fig.9



**Fig. 9**

4. Loosen the screws of the upper package stand, take off the upper column and remove the package stand.  
5. Move aside the parts and check the parts according to the shipment parts list (**See Fig. 10,11**)



Parts in the shipment parts list

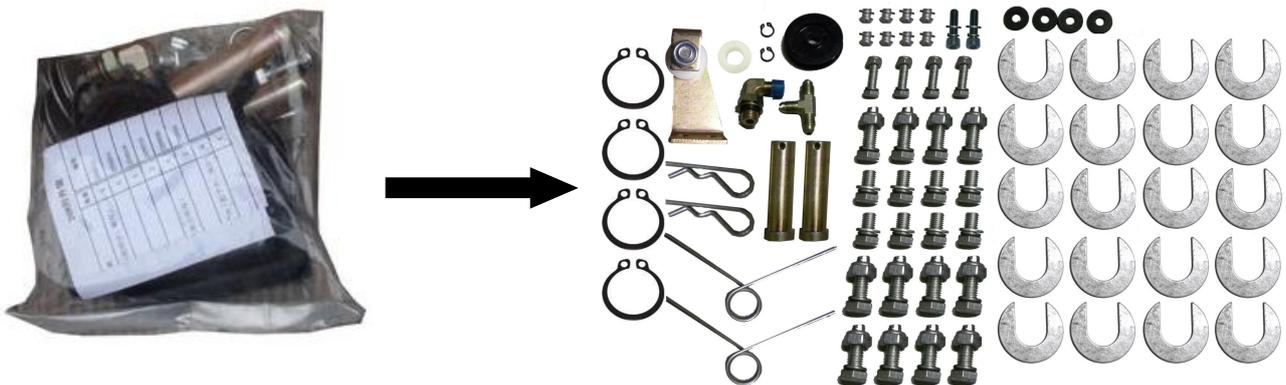
**Fig. 10**



**Fig. 11**

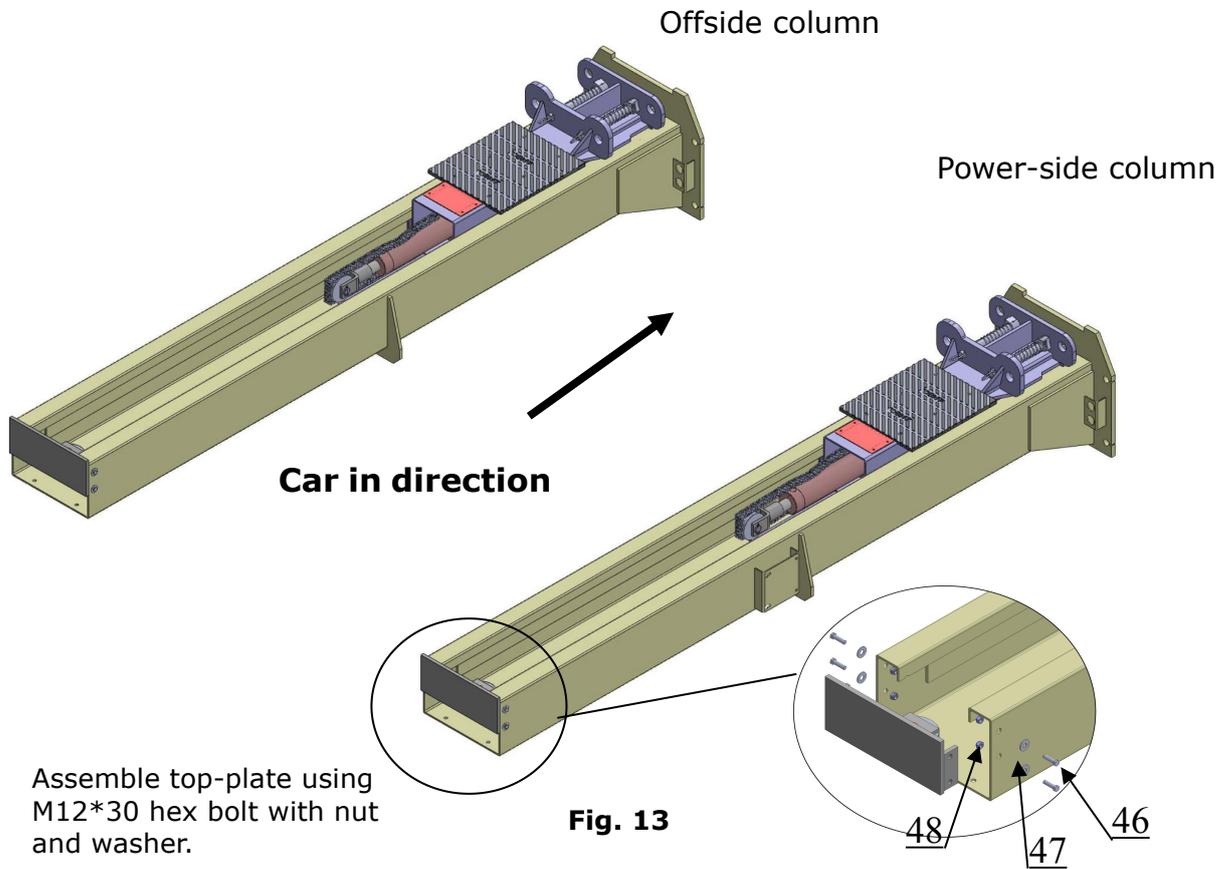
**Parts in the parts box (45)**

6. Open the parts bag and check the parts according to parts box list (**See Fig. 12**).



**Fig. 12**

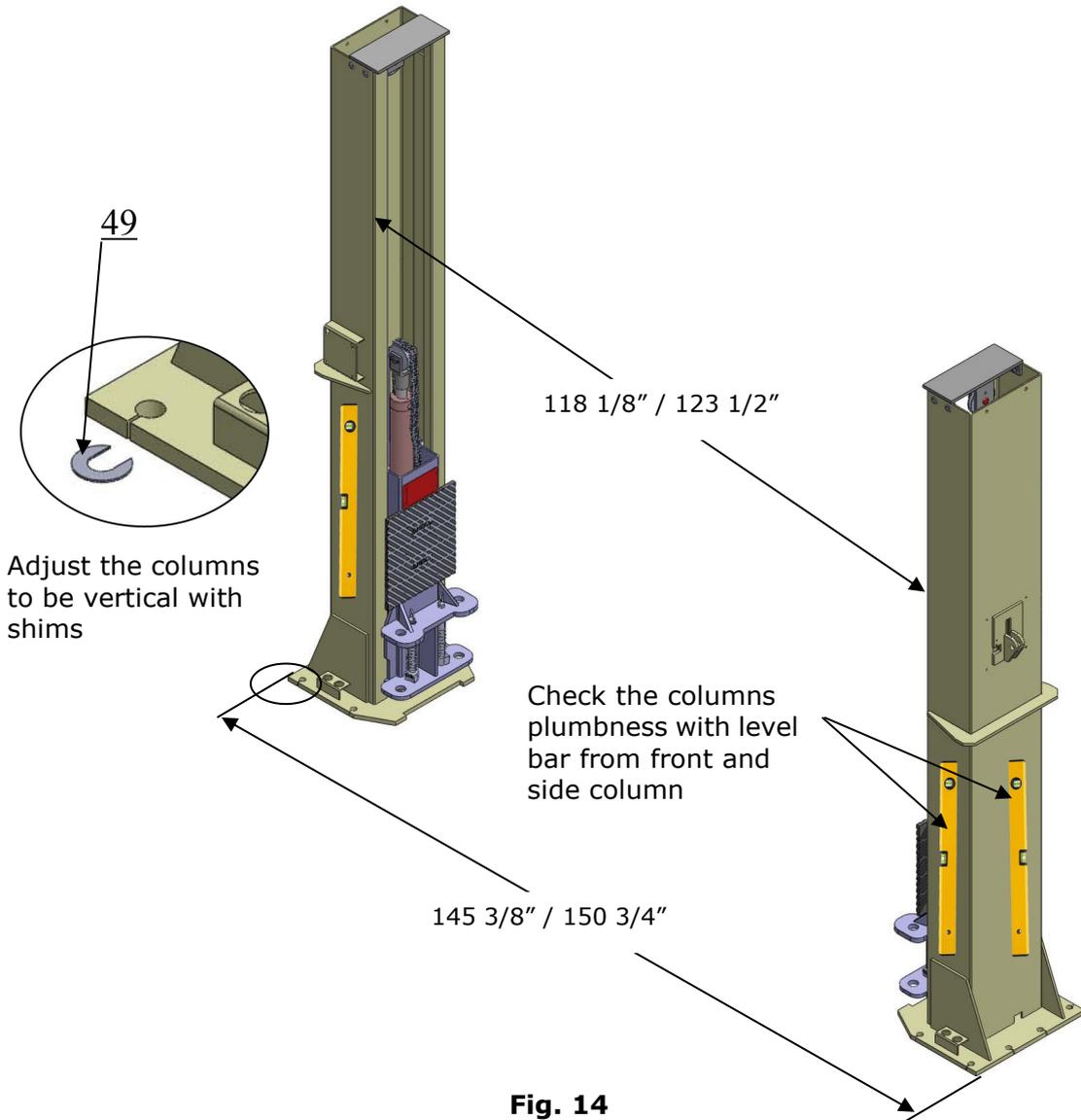
**D.** Lay down two columns on the installation site parallelly, position the power-side column according to the actual installation site. Usually, it is suggested to install Power side column on the front-right side from which vehicles are driven to the lift. Then install the top plate (**See Fig. 13**).



**E. Position columns and install anchor bolts (See Fig. 14)**

Check the columns plumbness with level bar, and adjusting with the shims if the columns are not vertical. Anchor bolts should not be tightened.

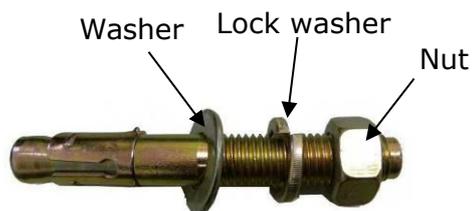
**Note: Lifts are designed to two level width, install according to customer's needs**



**Fig. 14**

**F. Install anchor bolts**

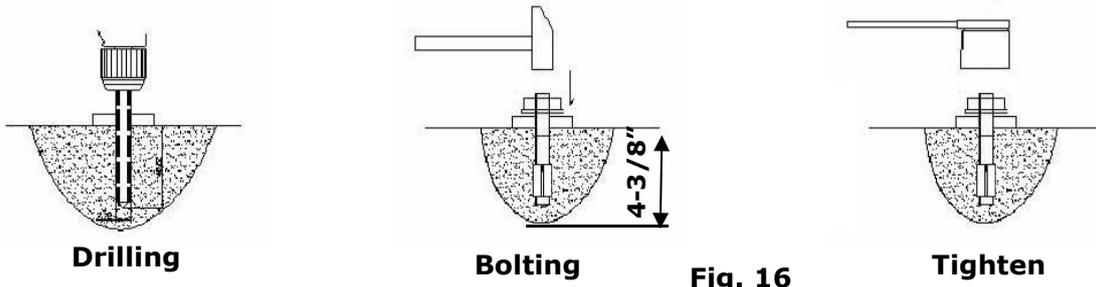
1. Prepare the anchor bolts (See Fig.15)



**Fig. 15**

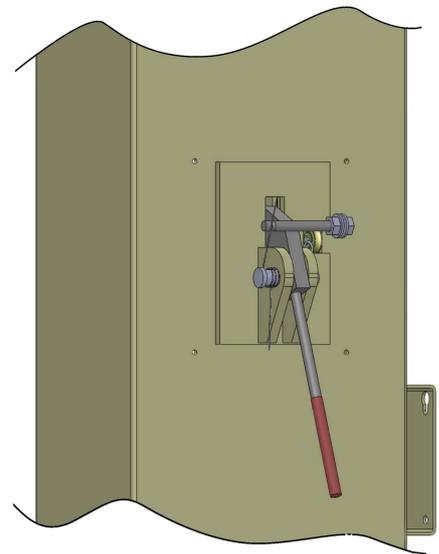
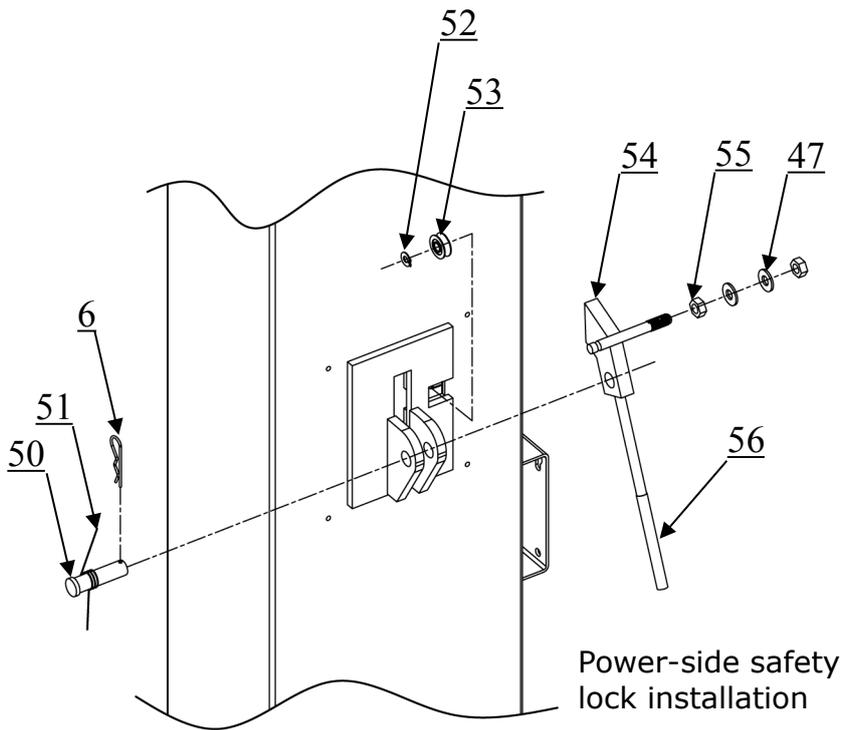
2. Using the prescribed rotary hammer drill, drill all the anchor holes and install the anchor bolts. Then tighten the anchor bolts (**See Fig. 16**).

**Note:** Torque of Anchors is 150N.m. Minimum embedment of Anchors is 4-3/8".

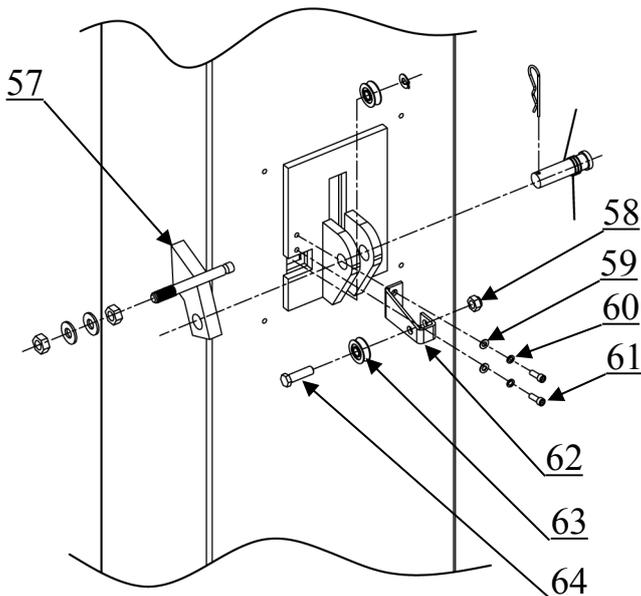


**Fig. 16**

**G. Install safety Lock (See Fig. 17 & 18)**

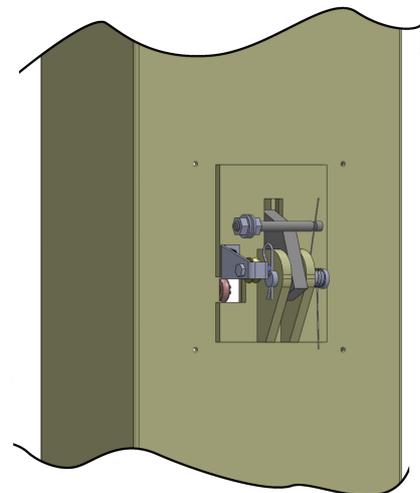


**Fig. 17**

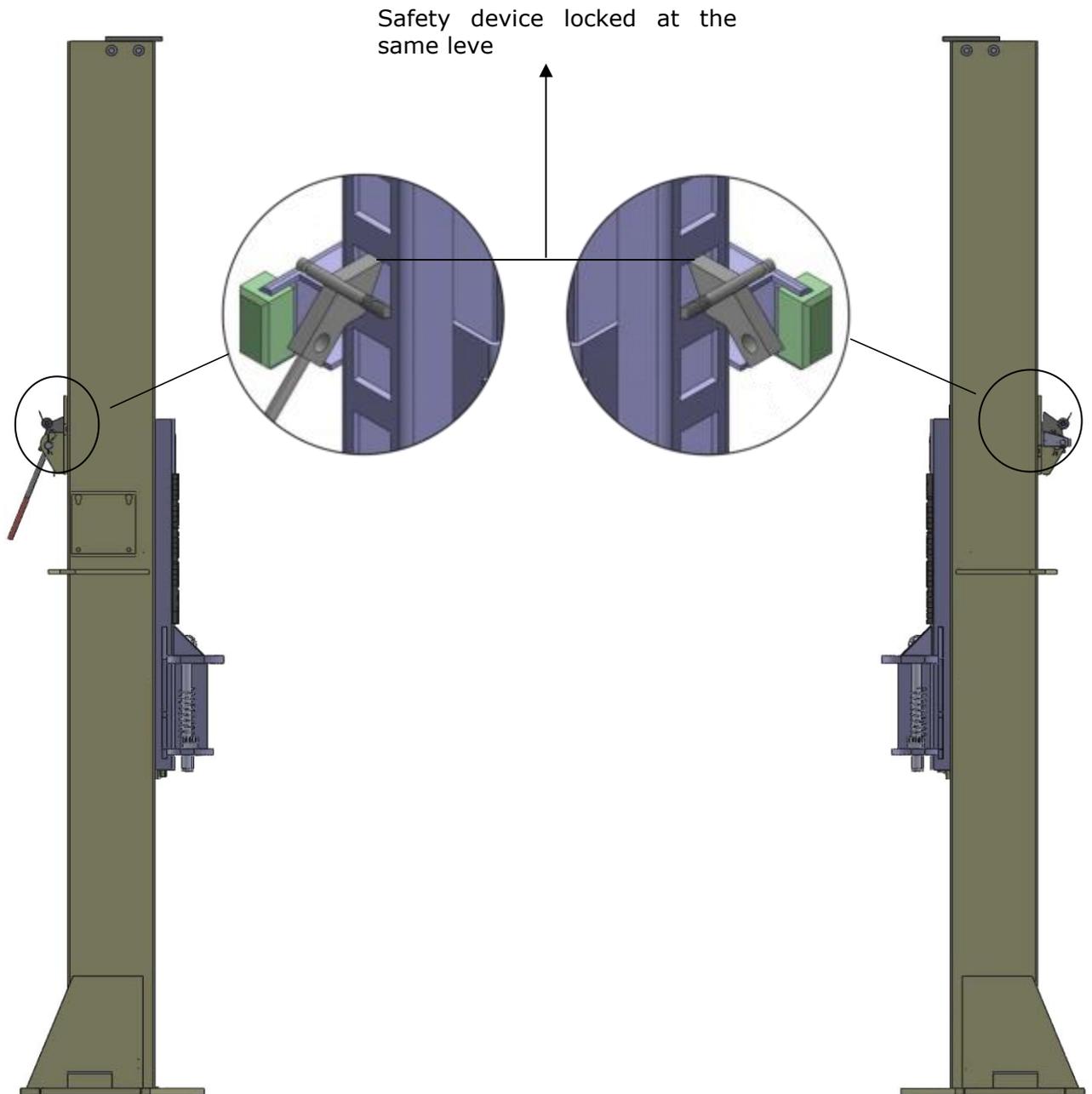


**Offside safety lock installation**

**Fig.18**



**H. Lift the carriages up by hand and make them be locked at the same level (See Fig.19).**

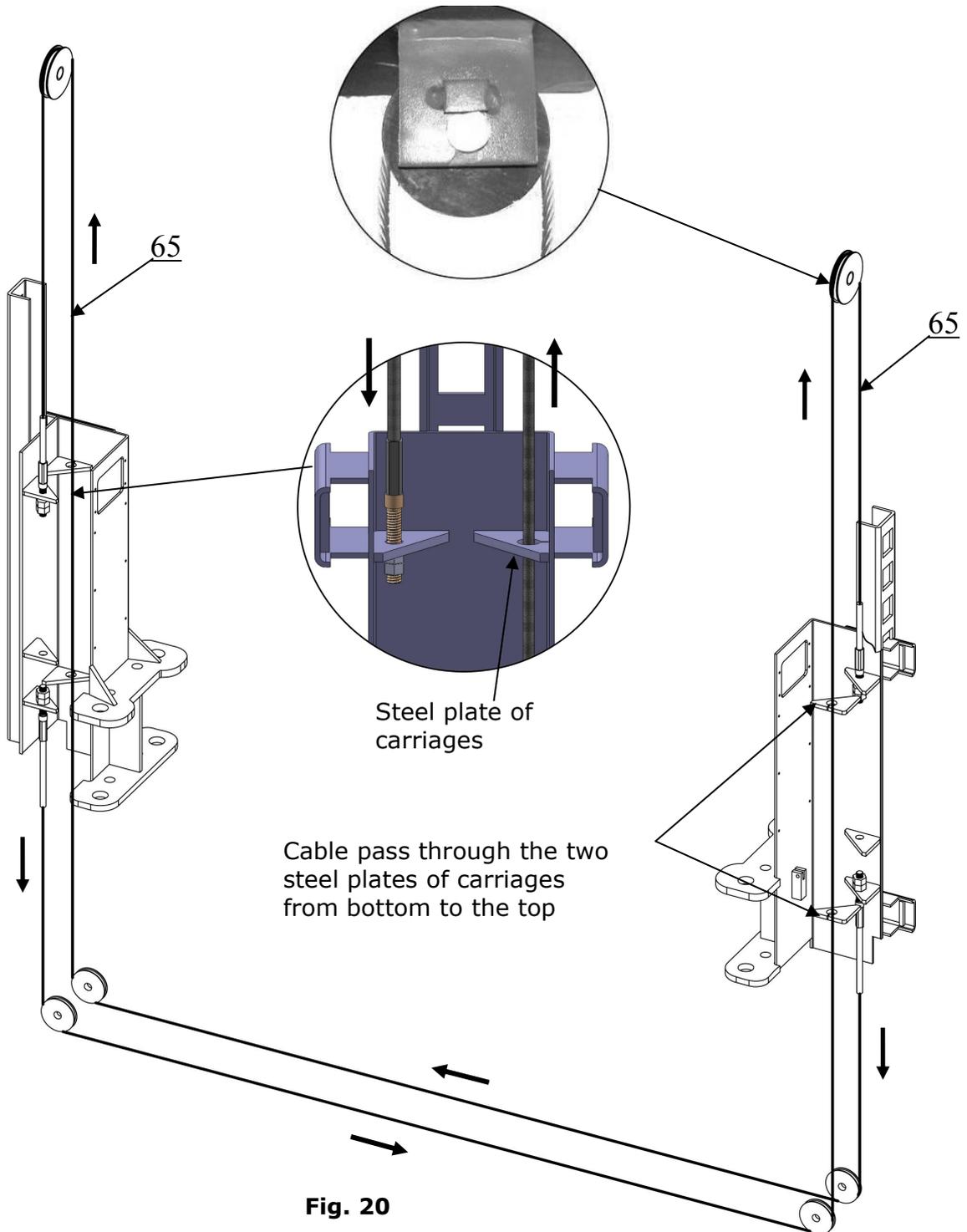


**Fig.19**

**I. Connecting cables (See Fig. 20)**

1. Select the width of the foundation according to step E (**Fig.14**) and select the width of the foundation size 150-3/4" to install the cable (**see Fig.20**)

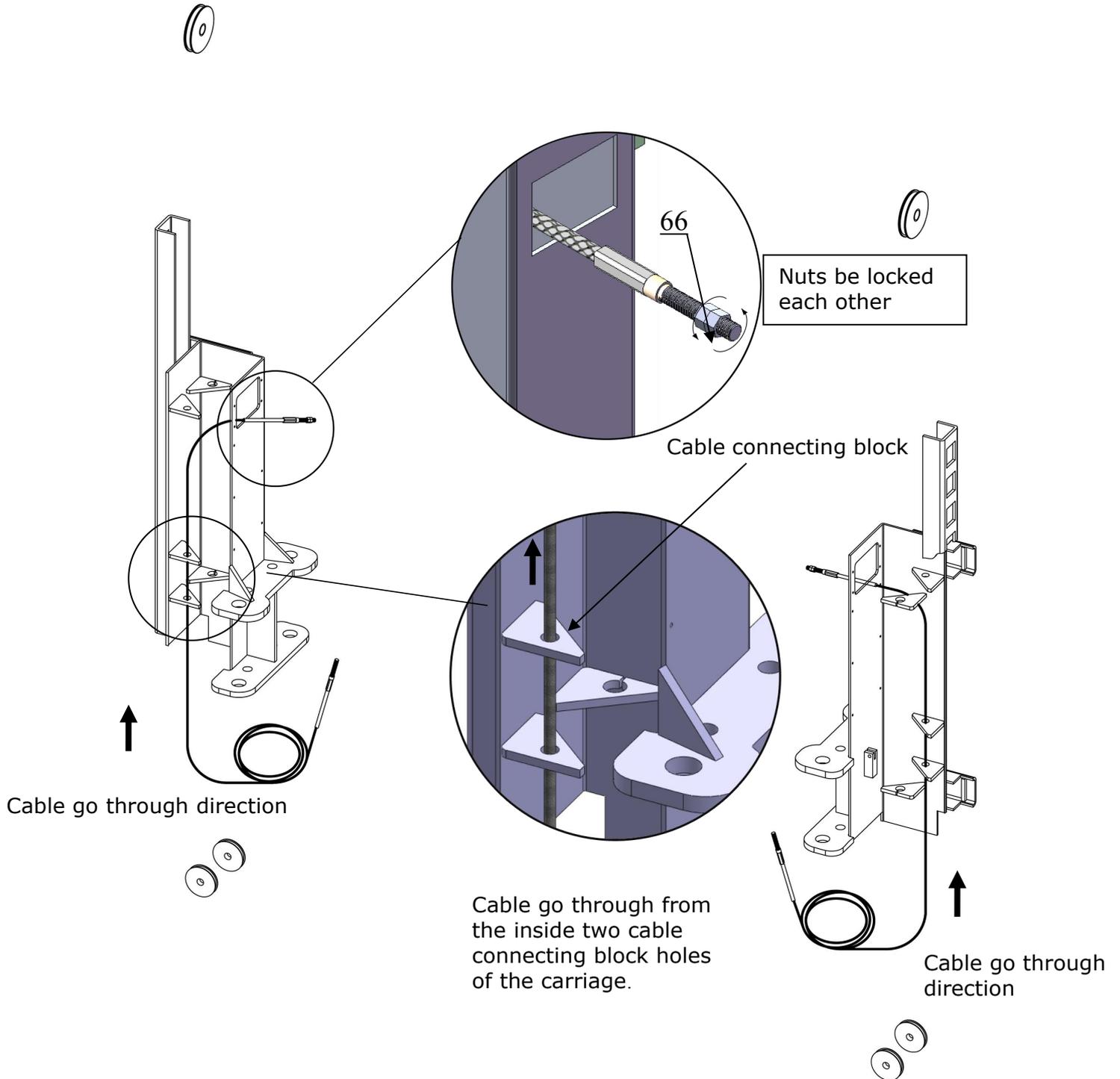
**Note: Cable pass through from one carriage to another must be passed through the hole of the bottom steel plate of carriages**



**Fig. 20**

2. Select the width of the foundation according to step E (**Fig.14**) and select the width of the foundation size 145-3/8" vzto install the cable.(**Fig.21&Fig22**)

**2.1. Cable go through from bottom to the top, tighten the two cable nuts when it pass through the opening of the carriage. (Fig.21)**



**Fig. 21**

2.2 Foundation size 145 3/8" cable installation diagram.

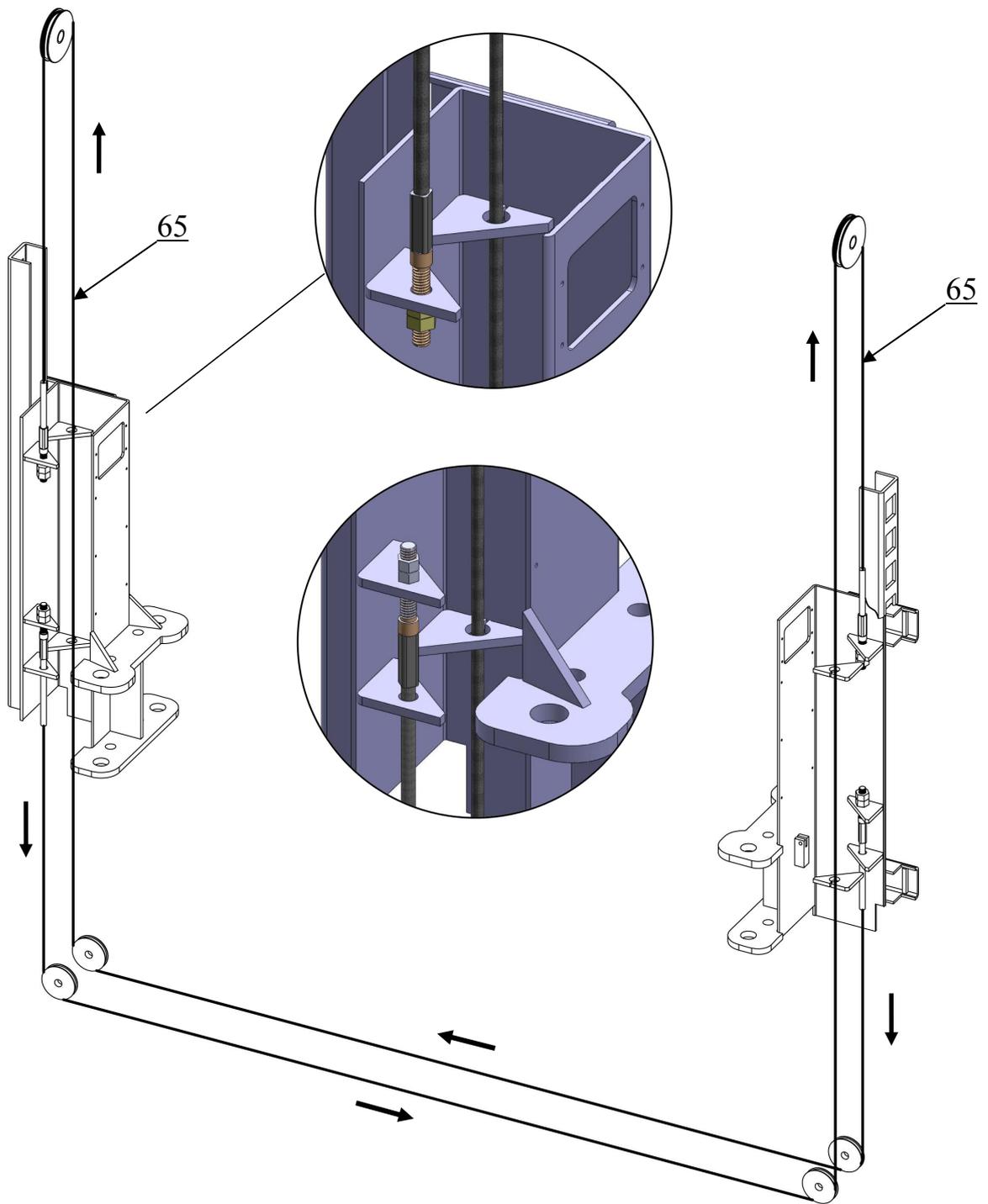
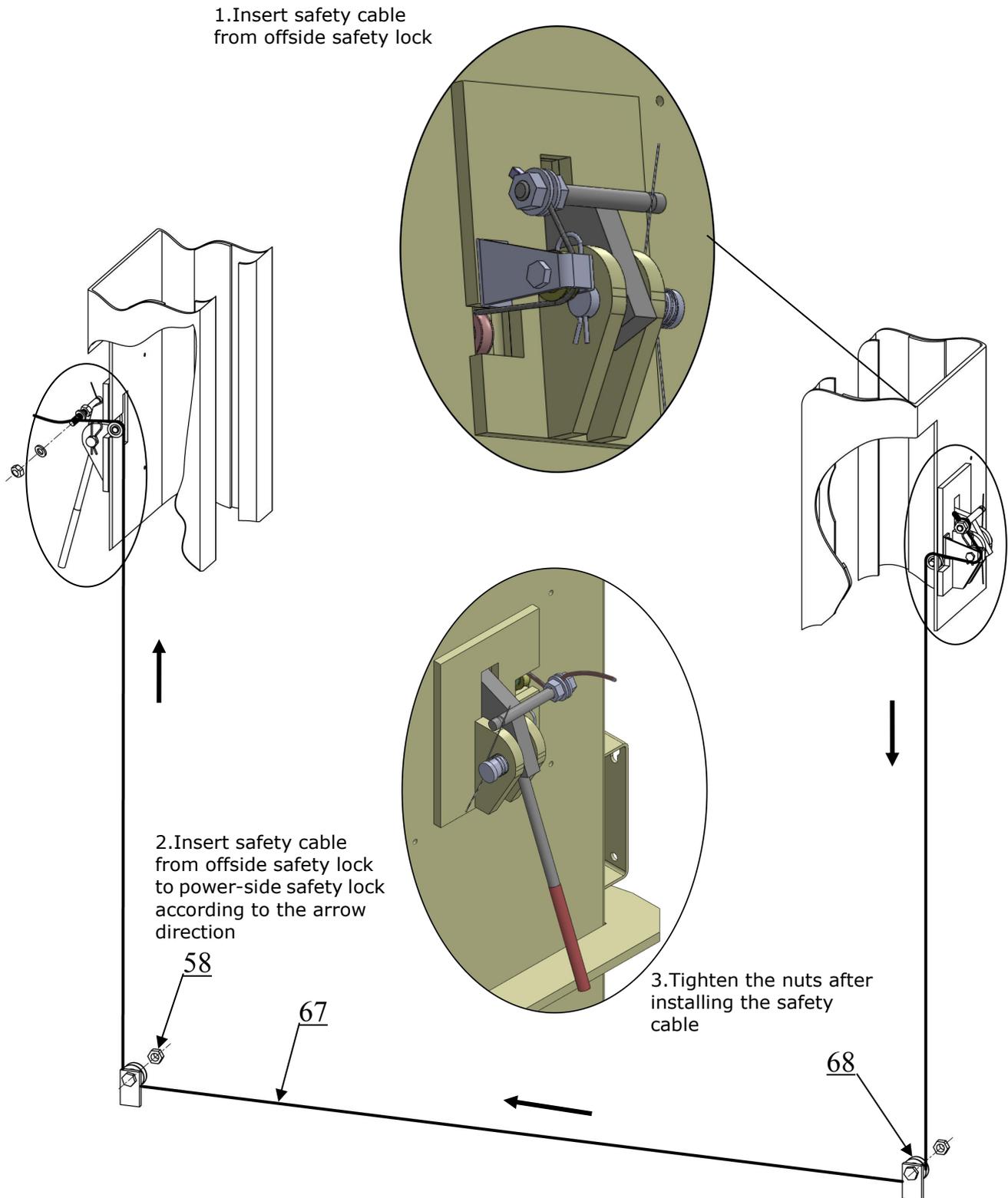


Fig. 22

**J. Install safety cable, see Fig.23**

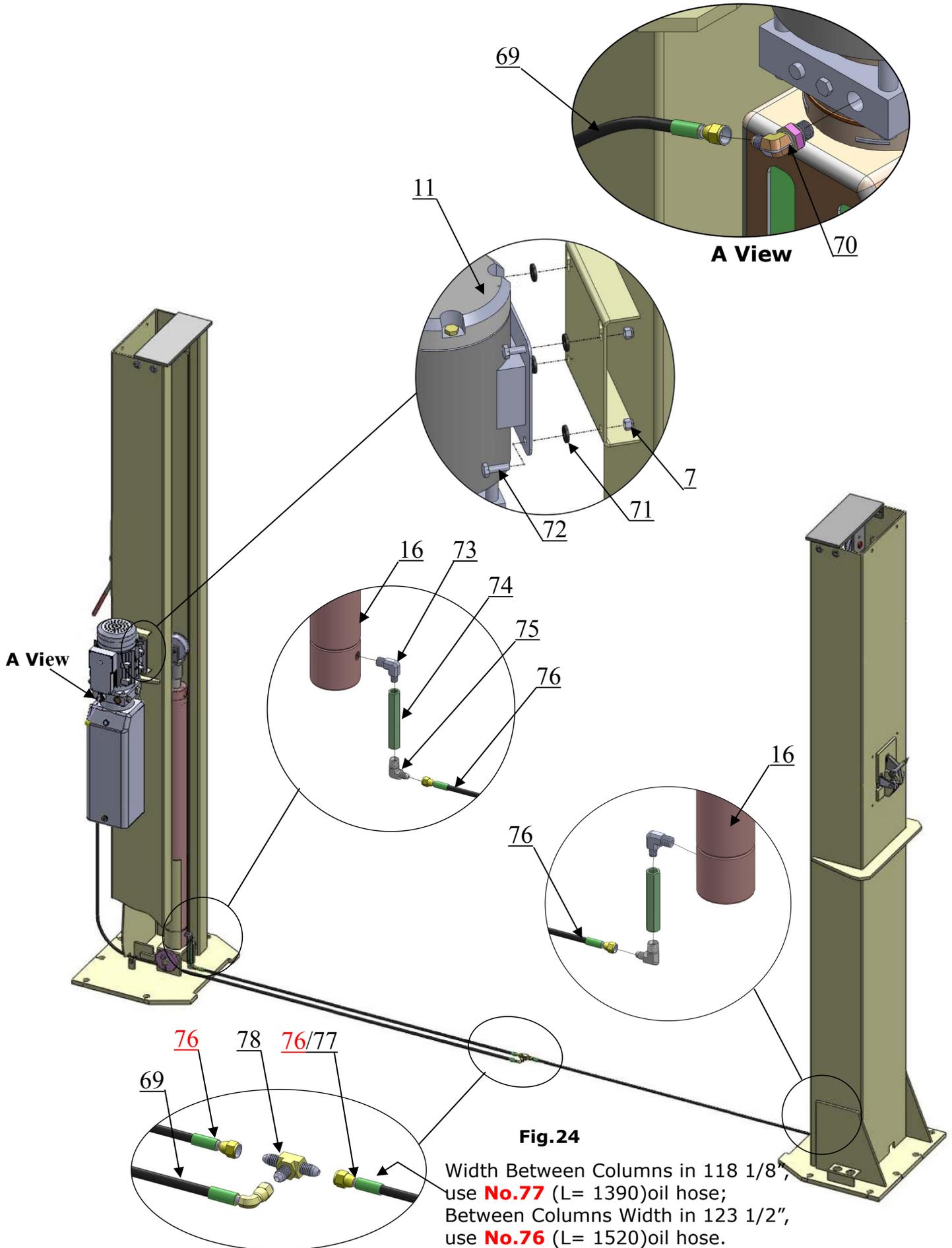
**NOTE:** 1. Assemble safety cable from offside safety assy.

2. Pay attention to the connecting direction of safety cable.



**Fig.23**

**K. Install power unit and oil hose (See Fig. 24)**



### L. Install protect cover (see Fig.25)

Note: Install cable protect cover or cable protect cover assy with connecting protect cover according to the foundation width of step 5

Install the cable protect cover assy with protect cover plate, choosing columns width in 123 1/2"

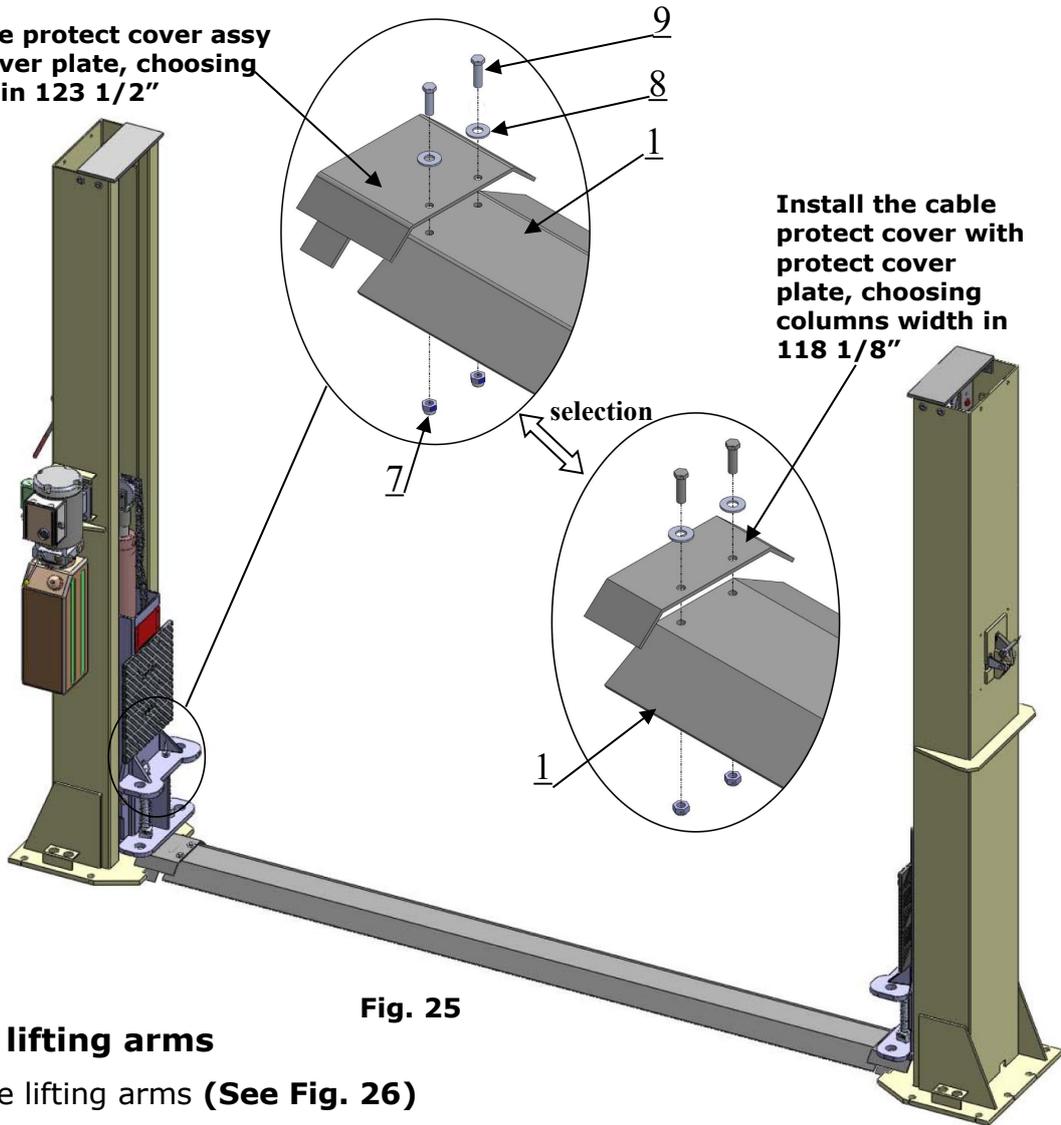


Fig. 25

### M. Install lifting arms

1. Install the lifting arms (See Fig. 26)
2. Lowering the carriages down to the lowest position, then use the 10# socket head wrench to loosen the socket bolt (See Fig. 27)

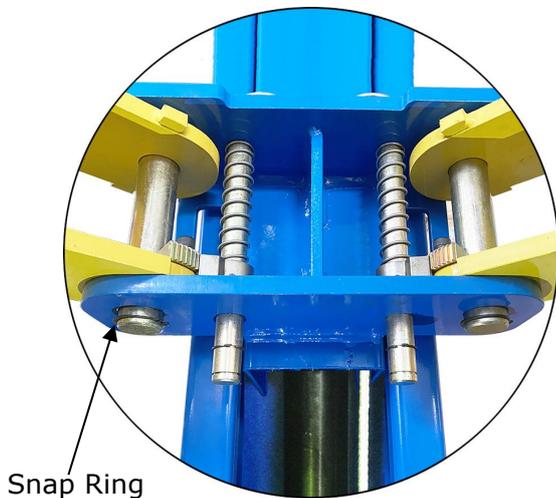


Fig. 26

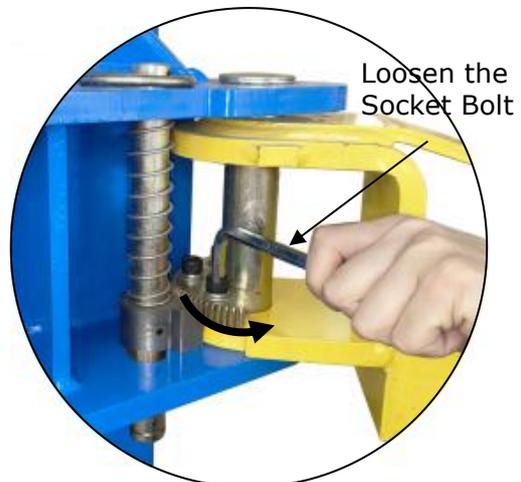


Fig. 27

3. Adjust the moon gear as arrow direction (See Fig. 28).

4. Adjust the moon gear and arm lock to make it to be meshed, then tighten bolts of arm lock (See Fig. 29).

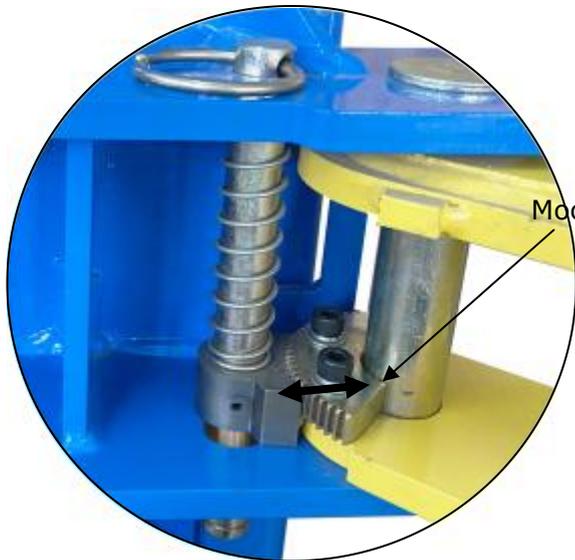


Fig. 28



Fig. 29

2. Install lifting arm guardrails

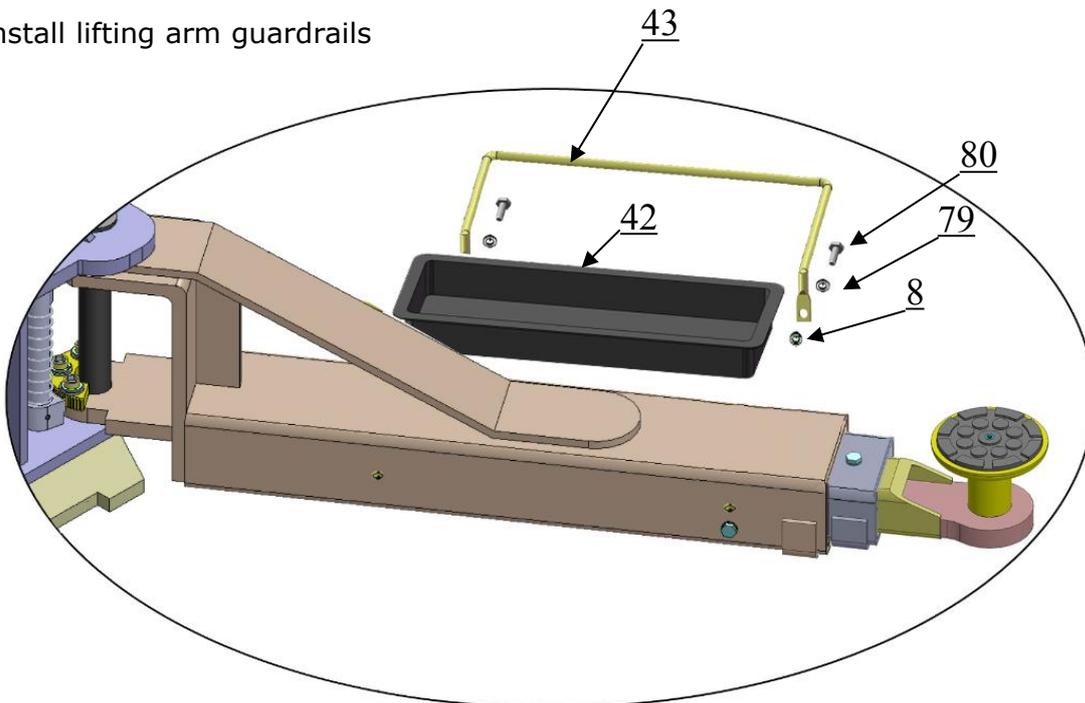


Fig. 30

**M. Tighten all the hydraulic fittings, and fill the reservoir with hydraulic oil**

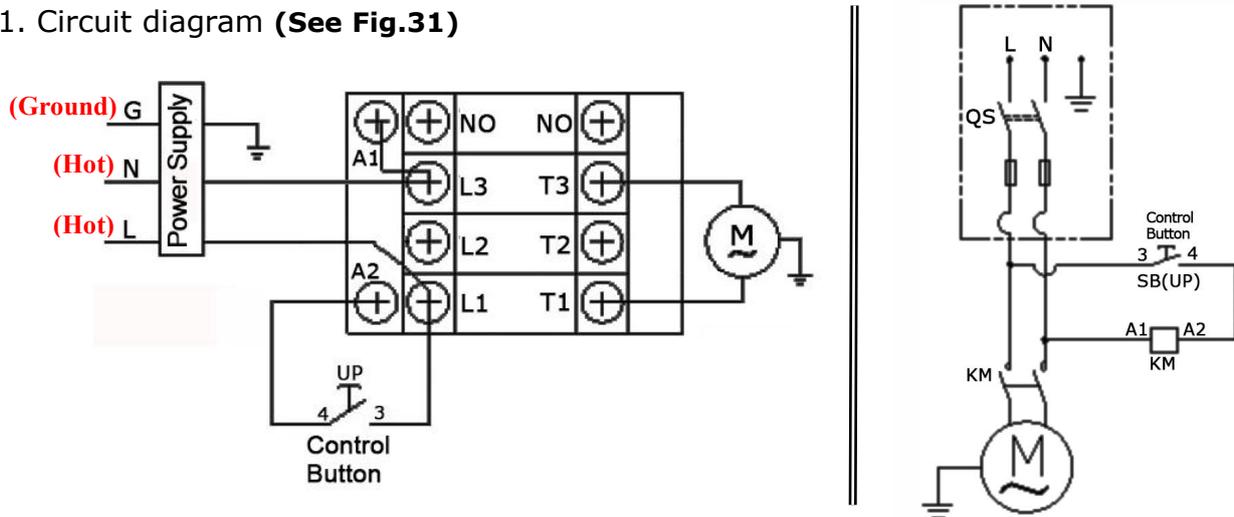
Note: In consideration of Hydraulic Power Unit's durability and keep the equipment running in the perfect condition, please use Hydraulic Oil 46#.

**O. Install Electrical System Connect the power source on the data plate of power unit.**

**Note:** For the safety of operators, the power wiring must contact the floor well.

**Single phase motor**

1. Circuit diagram (See Fig.31)

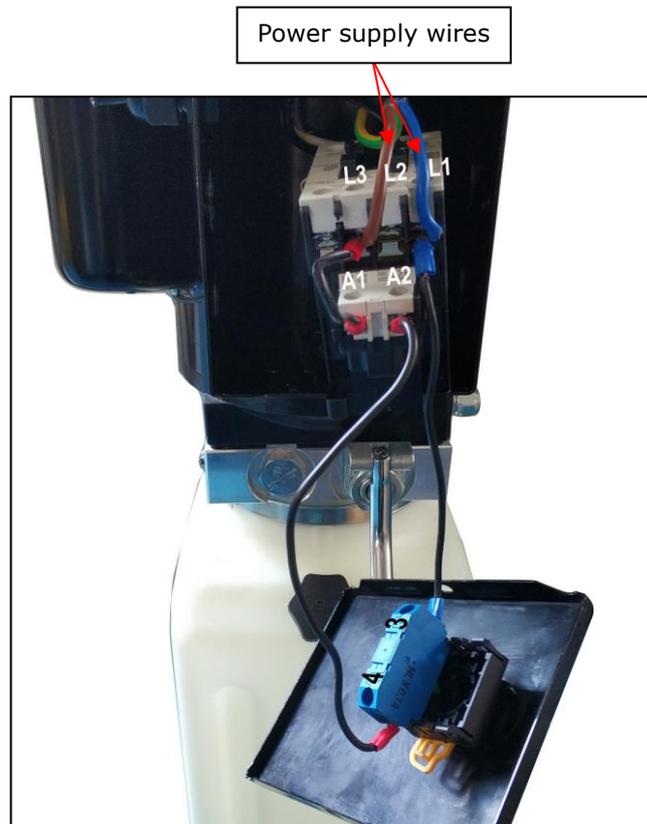


**Fig. 31**

2. Connection step (See Fig. 32)

Connecting the two power supply wires to terminals of AC contactor marked L1, L3 respectively.

Earth wire( yellow and green wire) is connected with the earth wire terminal of the motor



**Fig. 32**

# IV. EXPLODED VIEW

## Model BP-12

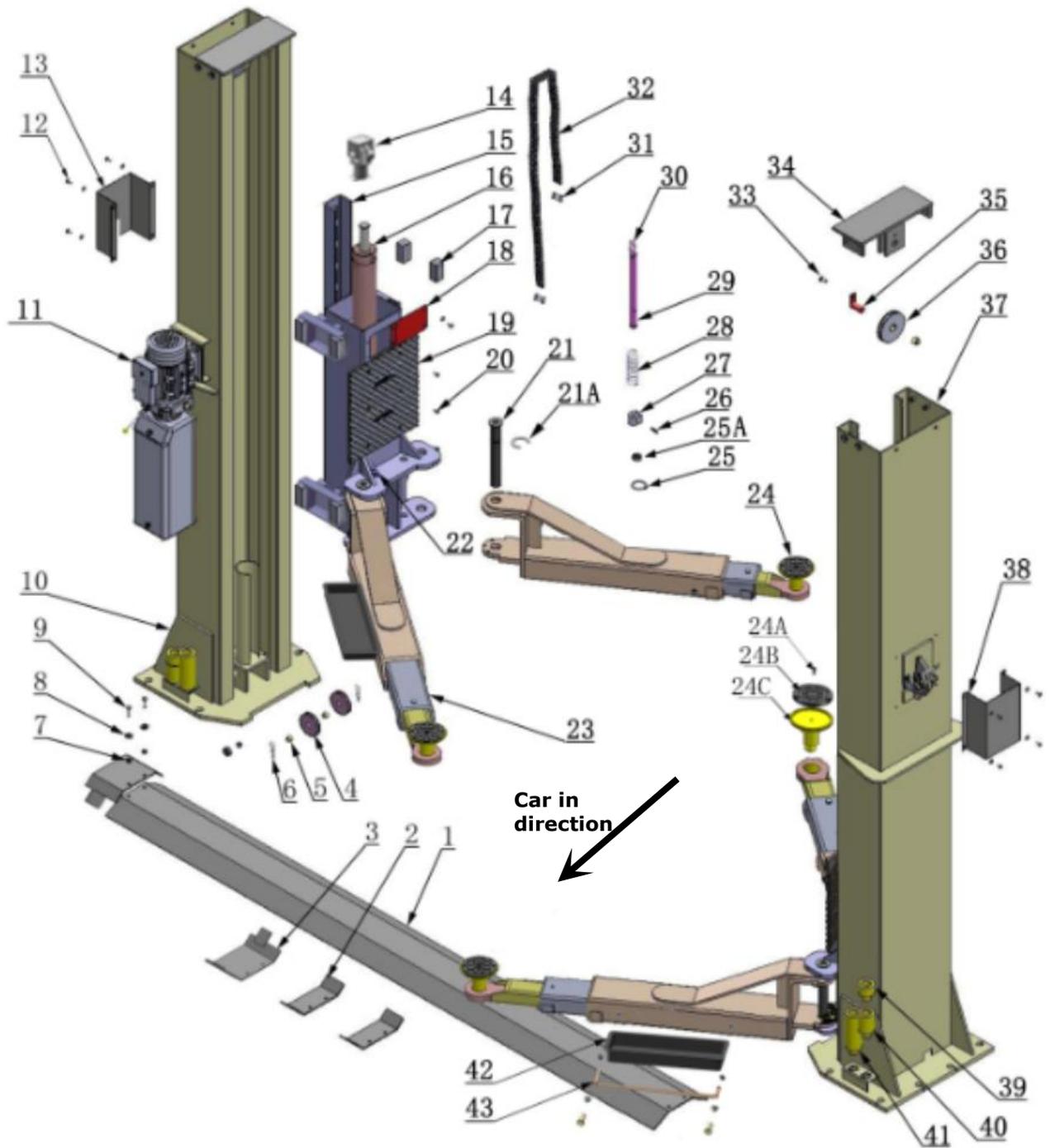


Fig. 33

## PARTS LIST FOR Model BP-12

Item	Part#	Description	Qty.	Note
1	11207001	Protect Cover	1	
2	11207002	Cable Protect Cover	2	
3	11207003	Cable Protect Cover Assy	2	
4	11217019	Top Pulley	4	
5	10217020	Bronze Bush For Pulley	6	
6	10209012	Elastic Pin $\phi$ 3.2	6	
7	10209005	Self locking Nut M8	8	
8	10209033	Lock Washer $\phi$ 8	10	
9	10209043	Hex Bolt M8*20	4	
10	11207053	Power-side Column	1	
11	071101	Power Unit	1	
12	10209009	Cap Head Bolt M6*8	12	
13	11207005	Main Safety Block Cover	1	
14	11207681	Chain pulley support assy.	2	
15	11207009A	Lifting carriage	2	
16	10207010	Cylinder $\phi$ 75*870	2	
17	10217188	Slider Block	16	
18	11207047	Carriage Plastic Cover	2	
19	10217053	Rubber Protect Block	2	
20	10209019	Screw M6*16	12	
21	11217047B	Lifting arms Pin	4	
21A	10520023	Snap Ring $\phi$ 38	4	
22	11217046C	Arm Lock bar (Right) $\phi$ 30*323	2	
23	10207062	Lifting Arm Assy.	4	
24	10217114A	Rubber Pad Assy	4	
24A	10420138	Socket Bolt M6*16	4	
24B	10420134	Rubber Pad	4	
24C	11680030C	Rubber Pad Frame	4	
25	10610008	Snap Ring $\phi$ 30	4	
25A	1102163002	Washer $\phi$ 39*4*18	4	
26	10206036-01	Elastic Pin $\phi$ 6*45	4	
27	1002163001	Rack M1.5*72*24	4	
28	10217045A-01	Compressed spring $\phi$ 31* $\phi$ 36* $\phi$ 2.5 (L=214.5)	4	
29	11217046B	Arm Lock bar (left) $\phi$ 30*323	2	
30	11209153	Rack Handle ring-pull	4	
31	10201010A	Connector BL646	4	
32	10207015	Chain BL646	2	
33	10209038	Hex Bolt M10*15	2	
34	11207016	Top Plate Assy	2	
35	11217037	Base pulley pin	2	

Item	Part#	Description	Qty.	Note
36	11217036	Big Pulley	2	
37	11207054	Offside column	1	
38	11207018	Offside Safety Lock Cover	1	
39	11209051B	Stackable Adapter(1.5 " )	4	
40	11209052B	Stackable Adapter(2.5 " )	4	
41	11209053B	Stackable Adapter(5 " )	4	
42	10206156	Tool Tray ( short )	2	
43	11206154	Toe guard (short)	4	
44	10209059	Anchor bolt 3/4*5-1/2	12	
45	10207500A	Parts Box	1	
46	10217069	Hex Bolt M12*30	8	
47	10206006	Washer $\phi$ 12	12	
48	10206023	Self locking Nut M12	8	
49	10201090	Shim (1mm)	10	
	10620065	Shim (2mm)	10	
50	11206002	Safety Block Pin	2	
51	10209007A	Torsional spring	2	
52	10209010	Snap Ring $\phi$ 10	2	
53	10209011	Plastic Small Pulley	2	
54	11207019	Power-side Safety Lock	1	
55	10206023A	Hex Nut M12	4	
56	10206003A	Handle Gun Cover	2	
57	11207020	Offside Safety Lock	1	
58	10209056	Self locking Nut M10	3	
59	10420045	Lock washer $\phi$ 6	14	
60	10209149	Spring Washer $\phi$ 6	2	
61	10207021	Socket Bolt M6*12	1	
62	11217029	Pulley Support	1	
63	10206009	Plastic small Pulley	1	
64	10209046	Hex Bolt M10*35	1	
65	10207022	Cable Assy. L=8400mm	2	
66	10209066	Cable Nut M16	8	
67	10206065	Safety cable Assy. L=7450mm	1	
68	10209049	Plastic black pulley	2	
69	10207023-01	Oil hose 1/4*3210mm(straight + 90°)	1	
70	10209060	90° Fitting	1	
71	10209004	Rubber ring $\phi$ 8* $\phi$ 20*3	4	
72	10209003	Hex bolt M8*25	4	
73	10207024	90° Fitting 3/8NPT(M)*1/4NPT(M)	2	
74	10207035	Extended Straight fitting L=86mm	2	
75	10420097	90° Fitting 1/4NPT(M)*1/4JIC(M)	2	

Item	Part#	Description	Qty.	Note
76	10207026	Oil hose 1/4*1520mm(double straight)	2	
77	10207034	Oil hose 1/4*1390mm (double straight)	1	
78	10211016	T fitting	1	
79	10209034	Spring Washer φ8	8	
80	10201002	Hex Bolt M8*16	8	

#### 4.1 Lifting arm (10207062) exploded view

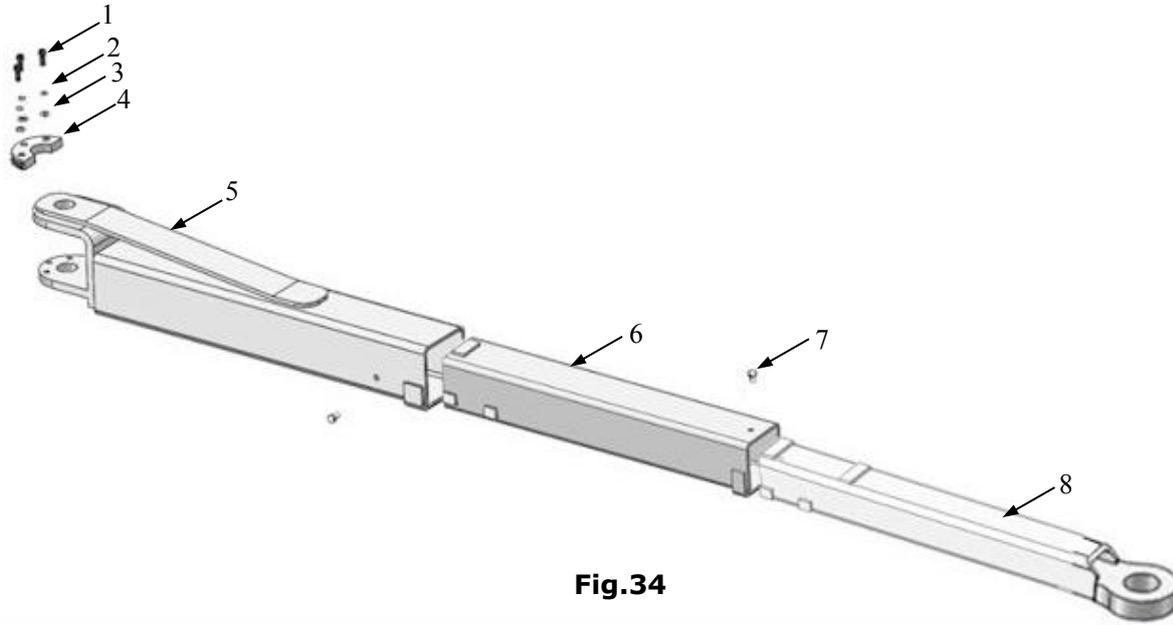


Fig.34

Item	Part#	Description	QTY.	Item	Part#	Description	QTY.
1	1102163005	Hex bolt M12*48	12	5	11207012A	Outer arm	4
2	10420026	Lock washer φ 12	12	6	11217337	Middle arm	4
3	10206006	Washer φ 12	12	7	10201149	Cap Head Bolt M8*12	8
4	1102163001	Moon gear	4	8	11217836	Inner Arm	4

#### 4.2 Chain pulley seat assy. (11207681) exploded view :

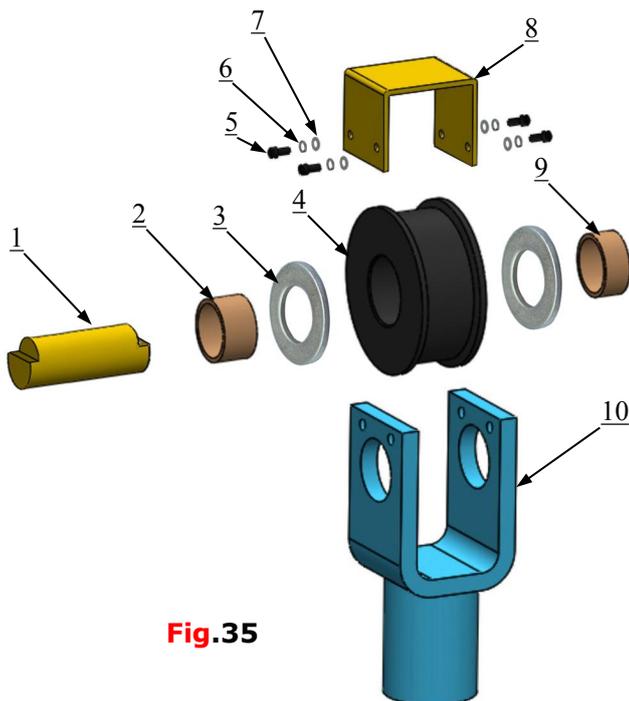
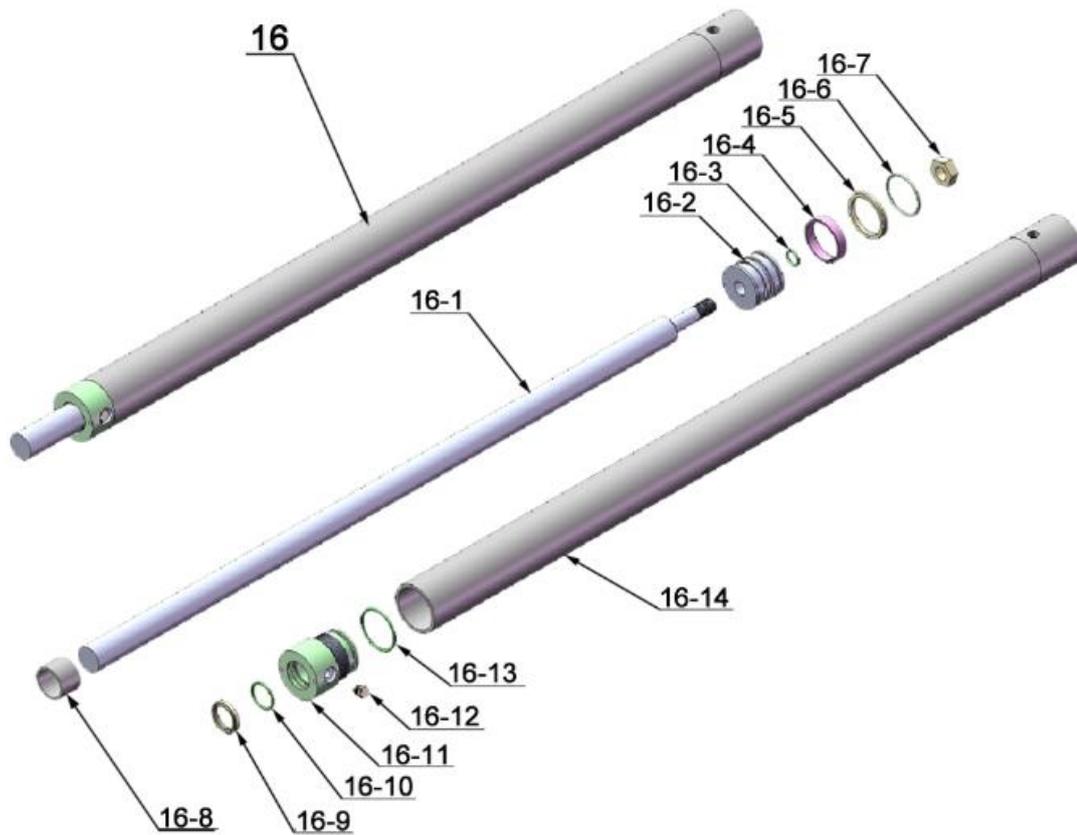


Fig.35

Item	Part#	Description	Qty.
1	11207006	Pin for Chain Pulley Φ35*93	1
2	10420132A	Bronze Bush Φ41.2*Φ35.1*20	1
3	11530023	Washer Φ44*Φ35.5*2	2
4	11207007	Chain Pulley Φ105*50	1
5	10430138	Socket Bolt M6*16	4
6	10209149	Spring Pad Φ6	4
7	10420045	Washer Φ6	4
8	11207693	Chain limit block	1
9	10530042	Bronze Bush Φ41.2*Φ35.1*28	1
10	11207008	Chain Pulley Seat	1

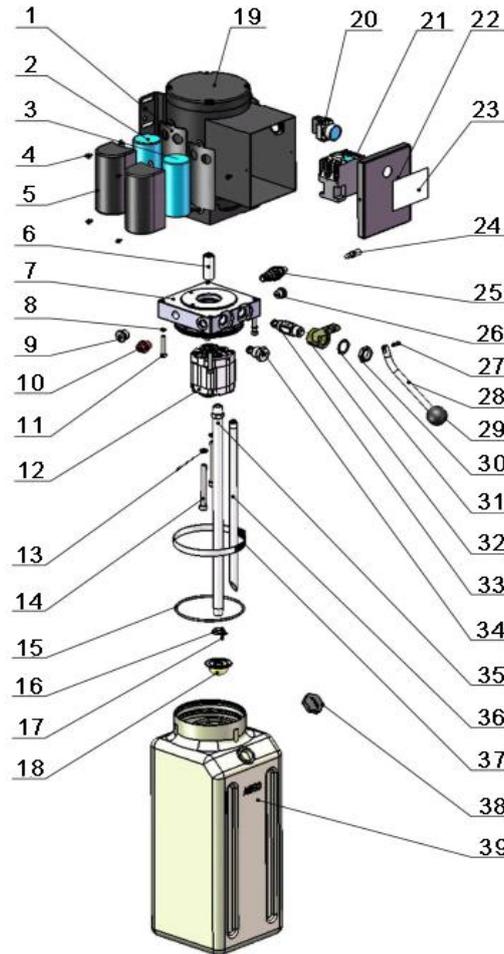
### 4.3 Cylinder (10207010) exploded view.



**Fig. 36**

Item	Part#	Description	Qty.	Item	Part#	Description	Qty.
16-1	11207027	Piston Rod	2	16-8	10207029	Adjustment Tube	2
16-2	11207028	Piston	2	16-9	10217078	Dust Ring	2
16-3	10206069	O-Ring	2	16-10	10520058	O-Ring	2
16-4	10620053	Support Ring	2	16-11	11207030	Head Cap	2
16-5	10620054	Y-Ring OSI	2	16-12	10201034	Bleeding Plug	2
16-6	10630027	O-Ring	2	16-13	10207031	O-Ring	2
16-7	10206071	Hex Nut	2	16-14	11207032	Bore Weldment	2

#### 4.4 POWER UNIT EXPLODED VIEW(071101)



220V/60HZ

Manual Power unit

Fig.37

Item	Part#	Description	Qty.	Item	Part#	Description	Qty.
1	81400180	Rubber Pad	2	21	41030055	AC connector	1
2	81400250	Starting capacitor	1	22	81400287	Motor terminal box cover	1
3	81400200	Running capacitor	1	23	71111216	AMGO power unit label	1
4	10420148	Cap Head Bolt with washer	4	24	81400560	Throttle valve	1
5	81400066	Cover of Motor Terminal Box	2	25	81400266	Relief valve	1
6	81400363	Motor Connecting Shaft	1	26	81400284	Inner hex iron plug	1
7	090106	Manifold block	1	27	10720118	Hair pin	1
8	10209149	Washer	4	28	81400451	Release valve handle	1
9	81400276	Iron plug	1	29	10209020	Plastic ball for release handle	1
10	81400259	Red rubber plug	1	30	81400421	Release valve nut	1
11	85090142	Socket bolt	4	31	81400422	Shim	1
12	81400280	Gear pump	1	32	81400449	Valve Seat(low)	1
13	10209034	Washer	2	33	070001	Release Valve	1
14	81400295	Socket bolt	2	34	070002	Check Valve	1
15	81400365	O ring	1	35	81400288	Oil suction pipe	1
16	10209152	Ties	1	36	81400289	Oil return pipe	1
17	85090167	Magnet	1	37	81400364	Clamp(stainless steel)	1
18	81400290	Filter	1	38	81400263	Oil tank cap	1
19	81400413	Steel Motor	1	39	81400275	Oil tank	1
20	10420070	Push button	1				

## Illustration of hydraulic valve for hydraulic power unit

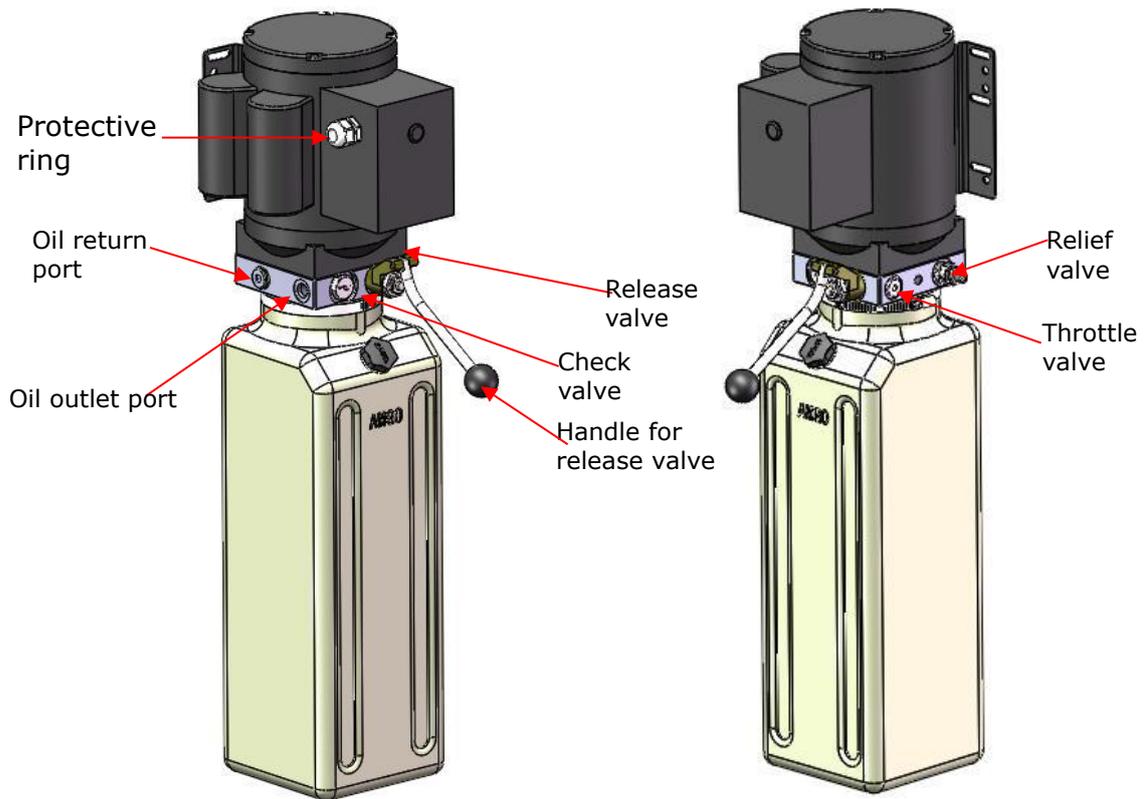


Fig.38

## V. TEST RUN

### 1. Adjustment of synchronous cable (See Fig. 39)

Use wrench to hold the cable fitting, meanwhile using ratchet spanner to tighten the cable nut until the two cables are in the same tension.

If the two vehicle carriages do not Synchronized when lifting and lowering, please screw and tighten the cable nut on the lower side carriage.

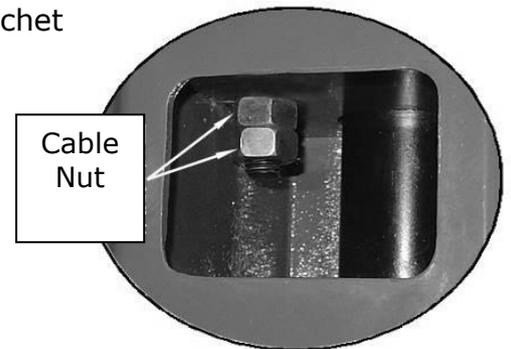


Fig. 39

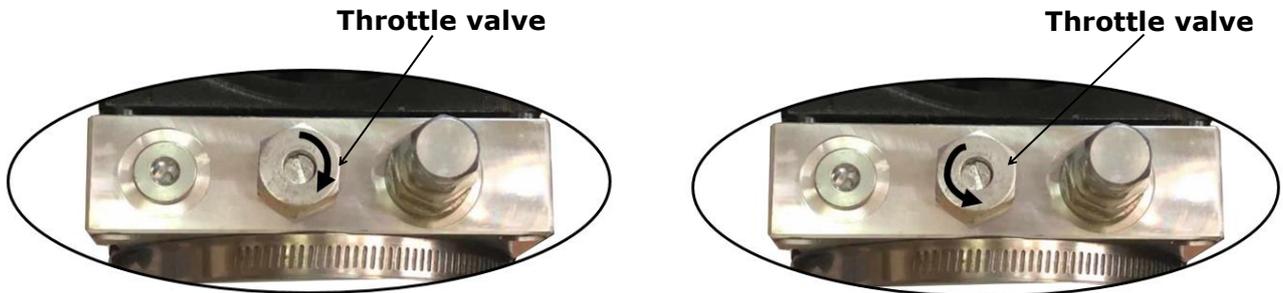
### 2. Adjust safety cable

Rise the vehicle carriages and lock them at the same height, strain the safety cable and then release a little, and then tighten the safety cable nuts. Make sure the safety device can always lock the carriages properly.

At last, install the plastic cover of the safety device.

### 3. Adjust the lowering speed

You can adjust the lowering speed of the lift if needing: screw the throttle valve clockwise to decrease the lowering speed, or counterclockwise to increase the lowering speed.



Adjust clockwise, decrease lowering speed

Counterclockwise, increase lowering speed

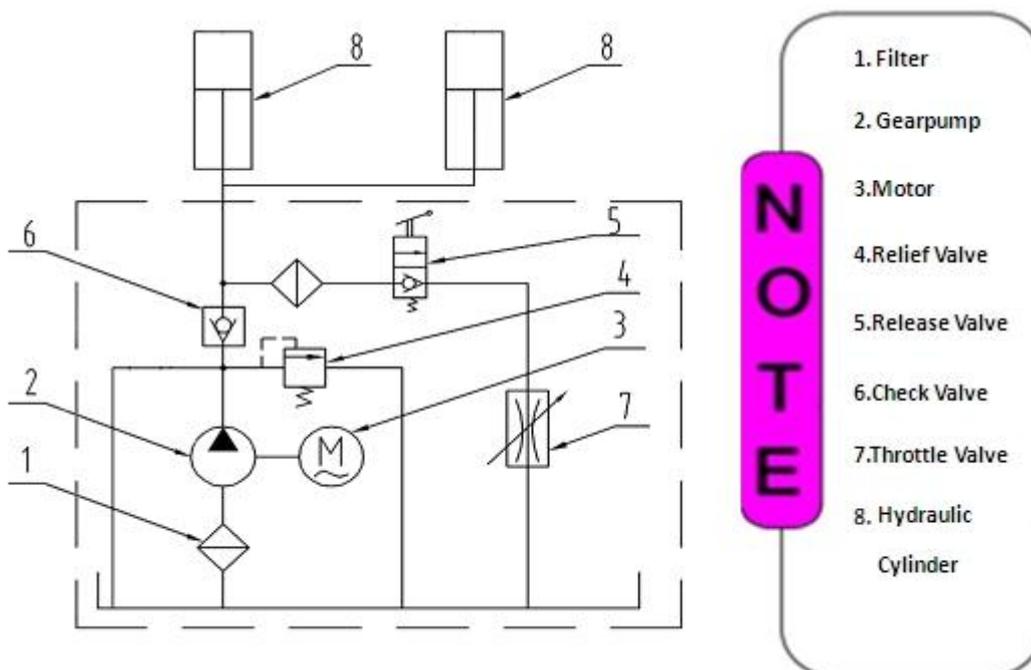
**Fig. 40**

### 4. Test with load

After finishing the above adjustment, test running the lift with load. Run the lift in low position for several times first, make sure the lift can rise and lower synchronously, the Safety Device can lock and release synchronously. And then test run the lift to the top completely. If there is anything improper, repeat the above adjustment.

**NOTE: It may be vibrated when lifting at start, please lifting it with load for several times, the air would be bled and the vibration would be disappeared automatically.**

### Hydraulic Schematic Diagram



**Fig. 41**

## **VI. OPERATION INSTRUCTIONS**

**Please read the safety tips carefully before operating the lift**

### **To lift vehicle**

1. Keep clean of site near the lift;
2. Position lift arms to the lowest position;
3. To shortest lift arms;
4. Open lift arms;
5. Position vehicle between columns;
6. Move arms to the vehicle's lifting point;

**Note: The four lift arms must at the same time contact the vehicle's lifting point where manufacturers recommended**

7. Push button "**UP**" until the lift pads contact underside of vehicle totally. Recheck to make sure vehicle is secure;
8. Continue to raise the lift slowly to the desired working height, ensuring the balance of vehicle;
9. Push lowering handle to lower lift onto the nearest safety. The vehicle is ready to repair.

### **To lower vehicle**

1. Be sure clear of around and under the lift, only leaving operator in lift area;
2. Push button "**UP**" to raise the vehicle slightly, and then release the safety device, lower vehicle by pushing lowering handle.
3. Open the arms and position them to the shortest length;
4. Drive away the vehicle.
5. Turn off the power.

## **VII. MAINTENANCE SCHEDULE**

### **Monthly:**

1. Re-torque the anchor bolts to 150Nm;
2. Check all connectors, bolts and pins to insure proper mounting;
3. Lubricate cable with lubricant;
4. Make a visual inspection of all hydraulic hoses/lines for possible wear or leakage;
5. Check safety device and make sure proper condition;
6. Lubricate all rollers and pins with 90wt. Gear oil or equivalent;

**Note: All anchor bolts should take full torque. If any of the bolts does not function for any reason, DO NOT use the lift until the bolt has been replaced.**

**Every six months:**

1. Make a visual inspection of all moving parts for possible wear, interference or damage.
2. Check and adjust as necessary, equalizer tension of the cables to insure level lifting.
3. Check columns for plumbness.
4. Check rubber pads and replace as necessary.
5. Check safety device and make sure proper condition.

**Oil cylinder maintenance:**

In order to extend the service life of the oil cylinder, please operate according to the following requirements.

1. Recommend to use N46 anti-wear hydraulic oil.
2. The hydraulic oil of the lifts should be replaced regularly during using. Replace the hydraulic oil 3 months after the first installation, Replace the hydraulic oil once a year afterwards.
3. Make at least one full trip raising and lowering per day. For exhausting the air from the system, which could effectively avoid the corrosion of the cylinder and damage to the seals caused by presence of air or water in the system.
4. Protect the outer surface of the oil cylinder's piston rod from bumping and scratching, and timely clean up the debris on the oil cylinder dust-ring and the piston rod.

## VIII.TROUBLE SHOOTING

TROUBLE	CAUSE	REMEDY
Motor does not run	<ol style="list-style-type: none"> <li>1. Start Button does not work</li> <li>2. Wiring connections are not in good condition</li> <li>3. Motor burned out</li> <li>4. AC contactor burned out</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace Start button</li> <li>2.Repair all wiring connections</li> <li>3. Repair or replace motor</li> <li>4. Replace AC Contactor</li> </ol>
Motor runs but the lift is not raised	<ol style="list-style-type: none"> <li>1. Motor runs in reverse rotation</li> <li>2. Gear pump out of operation</li> <li>3. Release valve in damage</li> <li>4. Relief valve or check valve in damage</li> <li>5. Low oil level</li> </ol>	<ol style="list-style-type: none"> <li>1.Reverse two power wire</li> <li>2.Repair or replace</li> <li>3. Repair or replace</li> <li>4.Repair or replace</li> <li>5.Fill tank</li> </ol>
Lift does not stay up	<ol style="list-style-type: none"> <li>1. Release Valve out of work</li> <li>2. Relief Valve or Check Valve leakage</li> <li>3. Cylinder or Fittings leaks</li> </ol>	Repair or replace
Lift raises slowly	<ol style="list-style-type: none"> <li>1. Oil line is jammed</li> <li>2. Motor running on low voltage</li> <li>3. Oil mixed with air</li> <li>4. Gear Pump leaks</li> <li>5. Overload lifting</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean the oil line</li> <li>2. Check Electrical System</li> <li>3. Fill tank</li> <li>4. Replace Pump</li> <li>5. Check load</li> </ol>
Lift cannot lower	<ol style="list-style-type: none"> <li>1. Safety device are locking.</li> <li>2. Release valve in damage</li> <li>3. Safety cable broken</li> <li>4. Oil system is jammed</li> </ol>	<ol style="list-style-type: none"> <li>1. Release the safeties</li> <li>2. Repair or replace</li> <li>3. Replace</li> <li>4. Clean the oil system</li> </ol>

## IX. LIFT DISPOSAL:

When the car lift cannot meet the requirements for normal use and needs to be disposed, it should follow local laws and regulations.



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