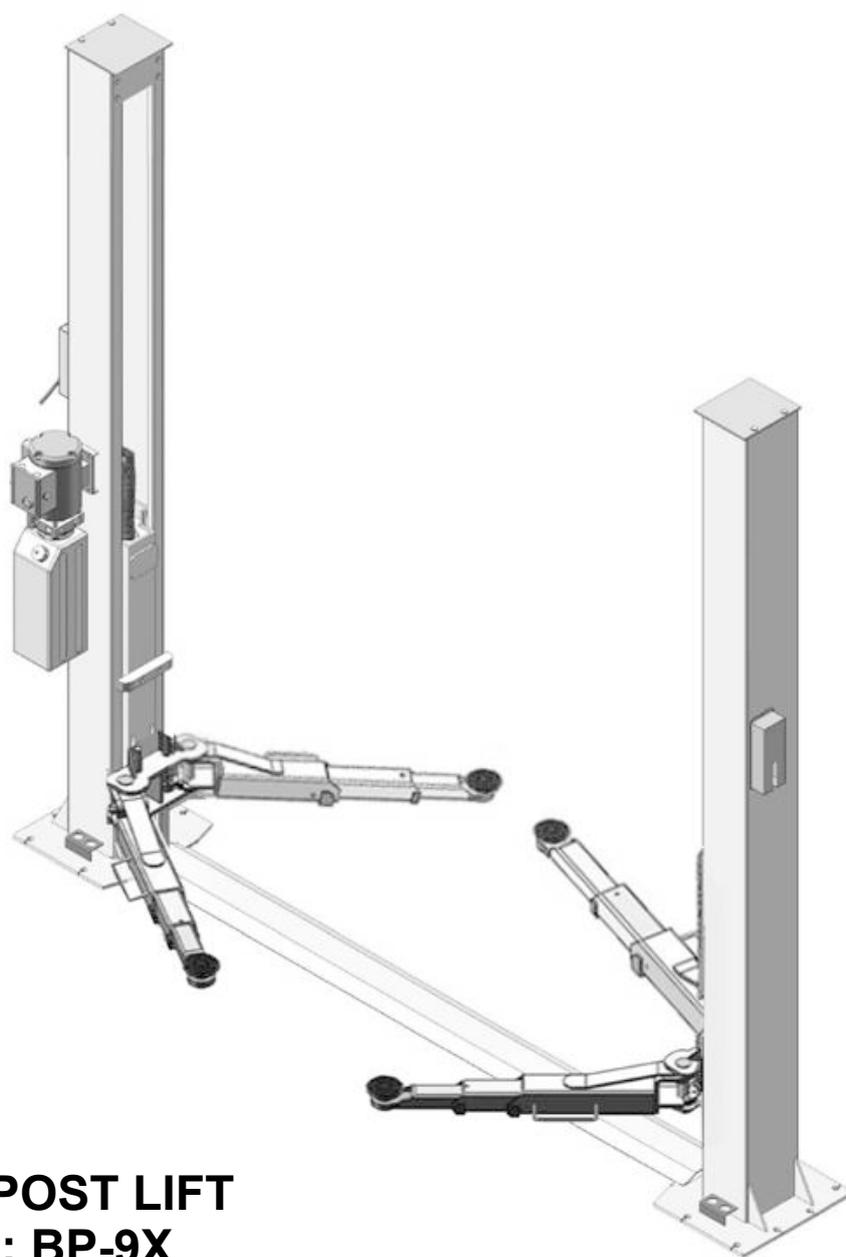


AMGO  [®] **Hydraulics**

Installation And Service Manual



TWO POST LIFT
Model: BP-9X

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I. PRODUCT FEATURES AND SPECIFICATIONS

FLOORPLATE CHAIN-DRIVE TWO POST LIFT

Model 209X (See Fig. 1)

- Dual hydraulic cylinders, **designed and made as standards, utilizing oil seal in cylinder**
- Self- lubricating UHMW Polyethylene sliders and bronze bush
- Floor-plate design, provide unobstructed floor space
- Single-point safety release, and dual safety design
- With 4pcs of 3-stages arms
- Stackable rubber pad with 1.5" and 2.5" extension adaptors

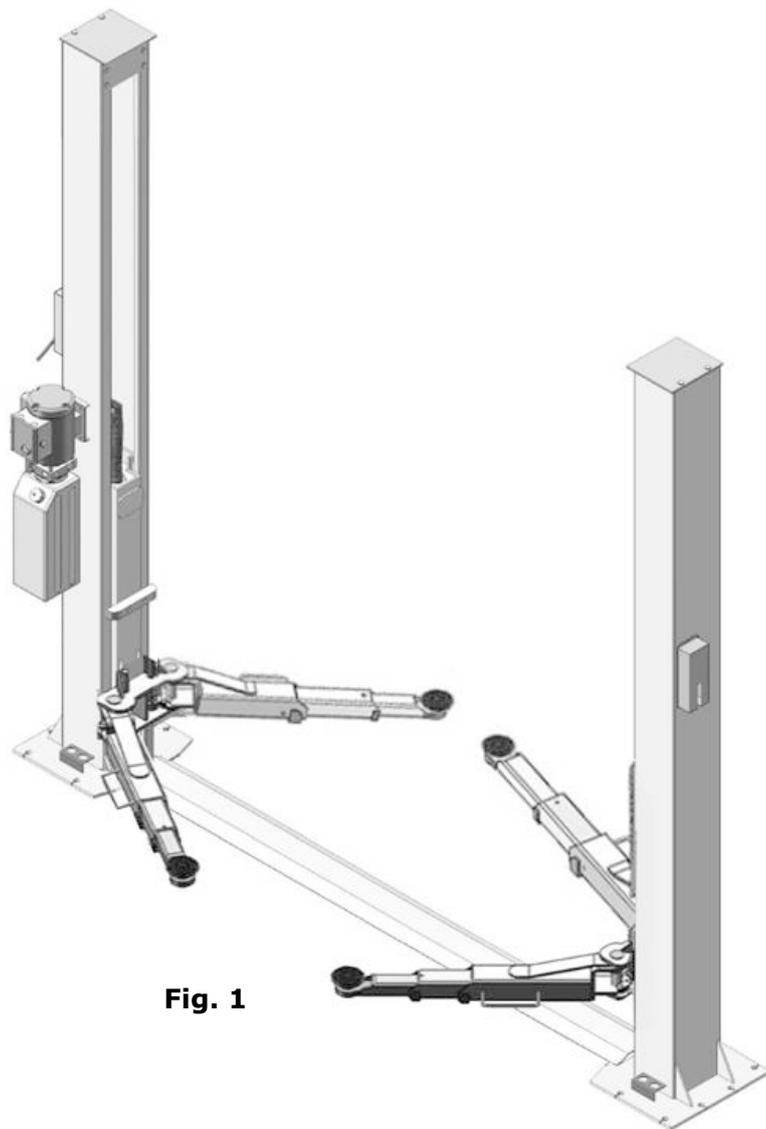


Fig. 1

Model	Style	Lifting Capacity	Lifting Time	Lifting Height	Overall Height	Overall Width	Width Between Columns	Minimum Pad Height	Gross Weight	Motor
BP-9X	Floor-plate Chain-driven	4000kg 9,000lbs	30S	1940-2169mm 76 3/8"-85 3/8"	2841mm 111 7/8"	3460mm 136 1/4"	2850mm 112 1/4"	83-318mm	706Kg 1,488 lbs	2.0 HP

								3 1/2"-12 1/2"		
--	--	--	--	--	--	--	--	-------------------	--	--

MODEL 209X SPECIFICATIONS

For Model 209X

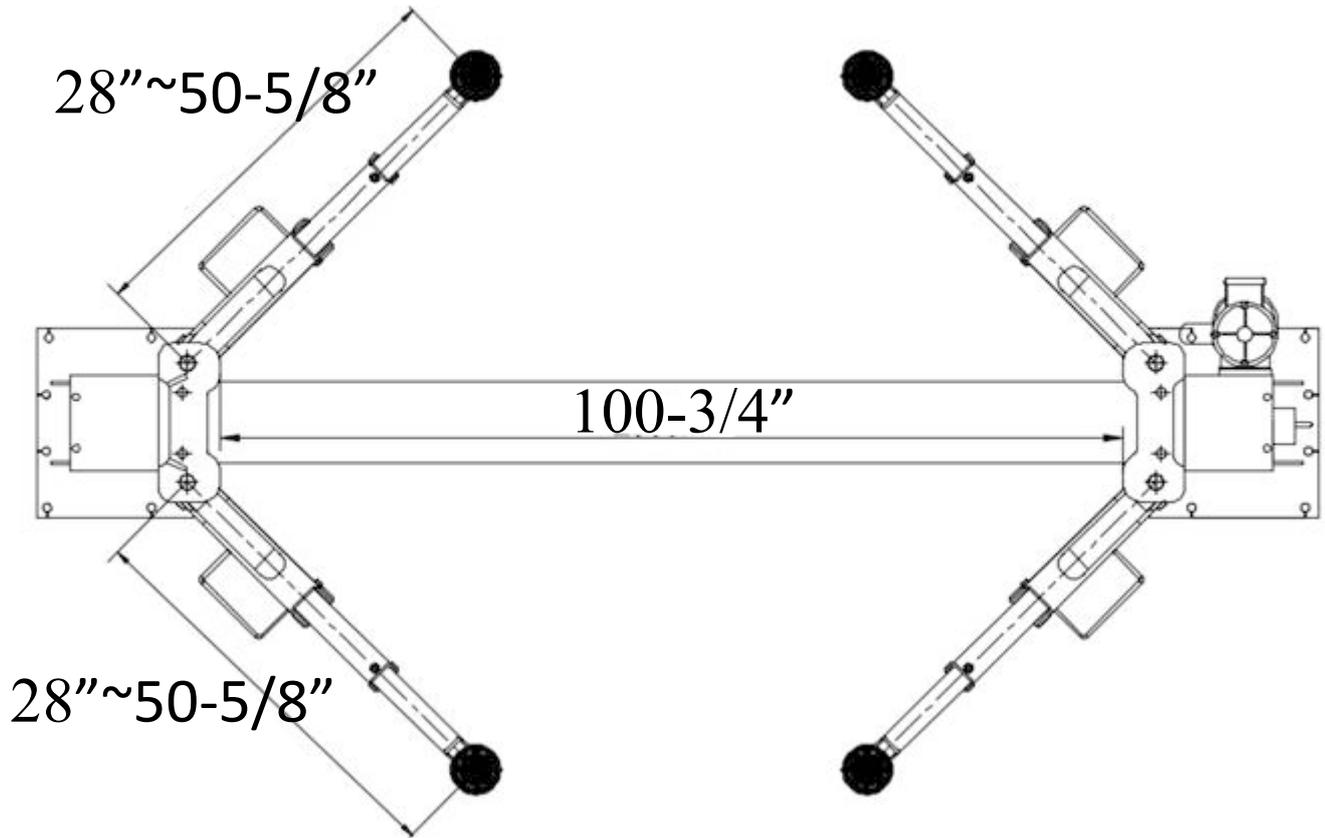


Fig. 2

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. SPECIFICATIONS OF CONCRETE (See Fig. 4).

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 100mm 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 3,000psi (210kg/cm²) minimum.
3. Floors must be level and no cracks.

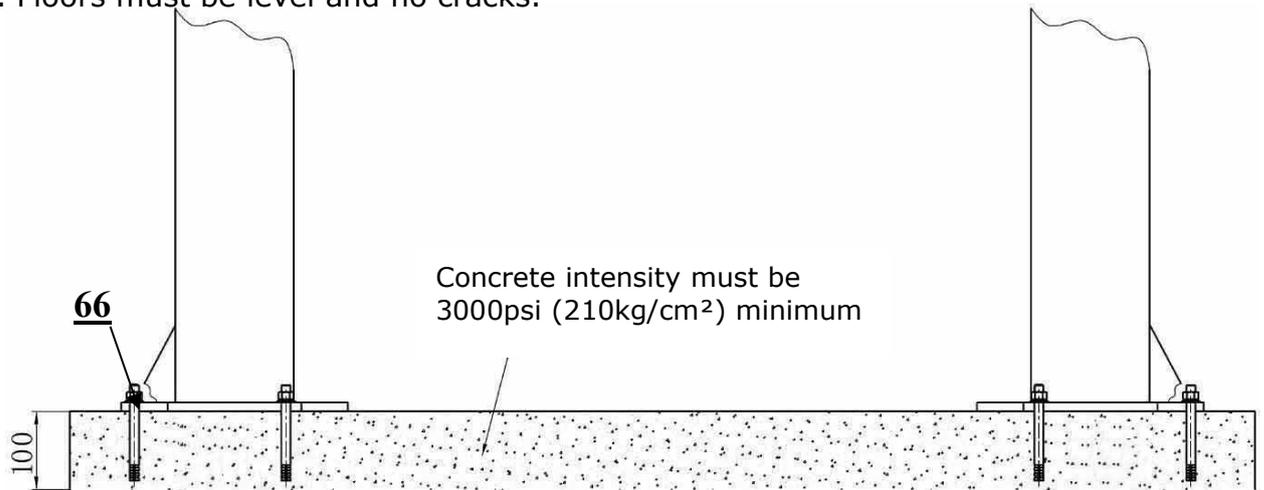


Fig. 4

C. POWER SUPPLY

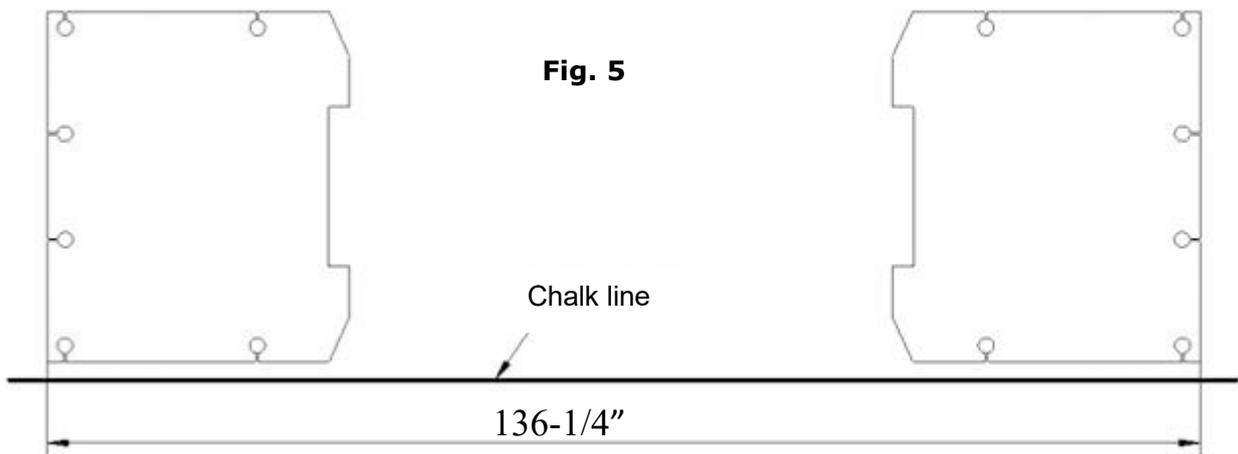
The electrical source must be 2HP minimum. The source cable size must be 2.5mm² and in good condition of contacting with floor.

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. 5).



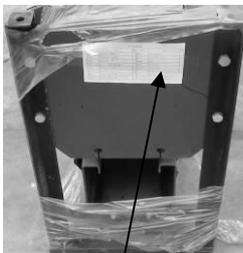
C. Check the parts before assembly.

1. Packaged lift and hydraulic power unit (See Fig. 6).



Fig. 6

2. Move the lift aside with 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. 7).



Shipment Parts list



Floor cover

Parts box

Fig. 7

3. Loosen the screws of the upper package stand, take off the upper column and remove the package stand.
4. Move aside the parts and check the parts according to the shipment parts list. (See Fig. 8, Fig. 9).

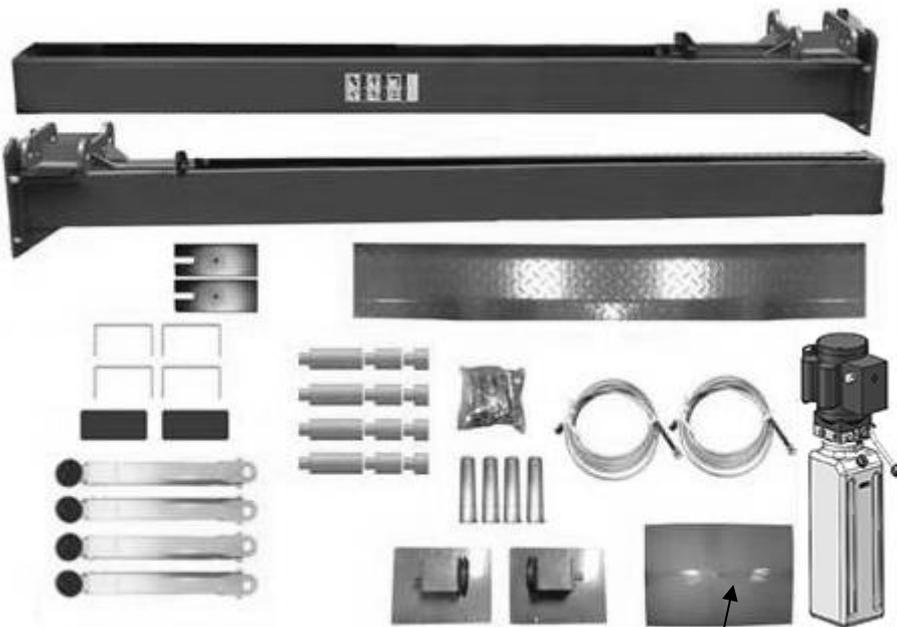


Fig. 8

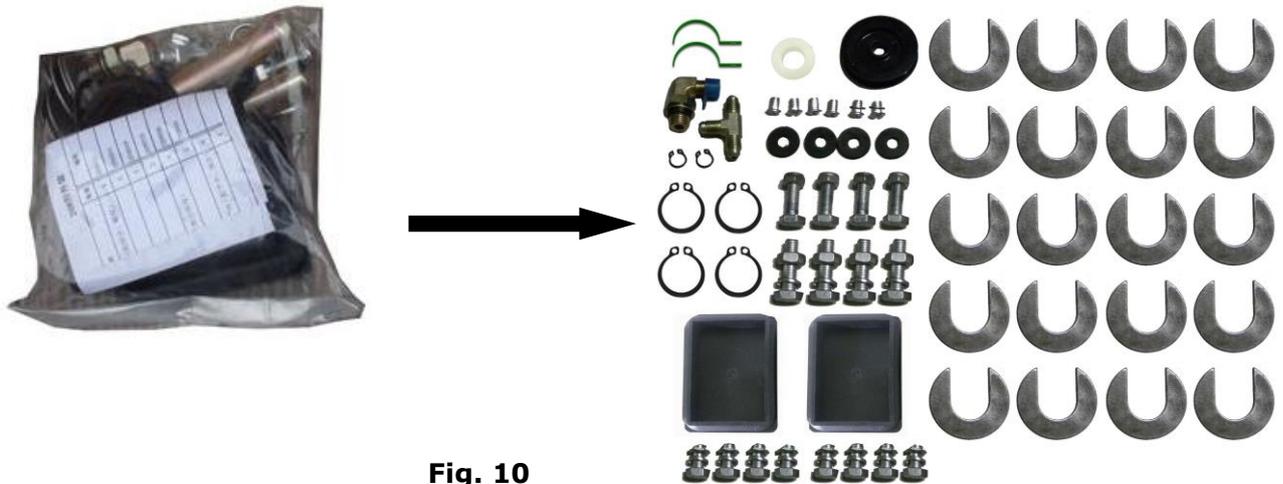
42A



Fig. 9

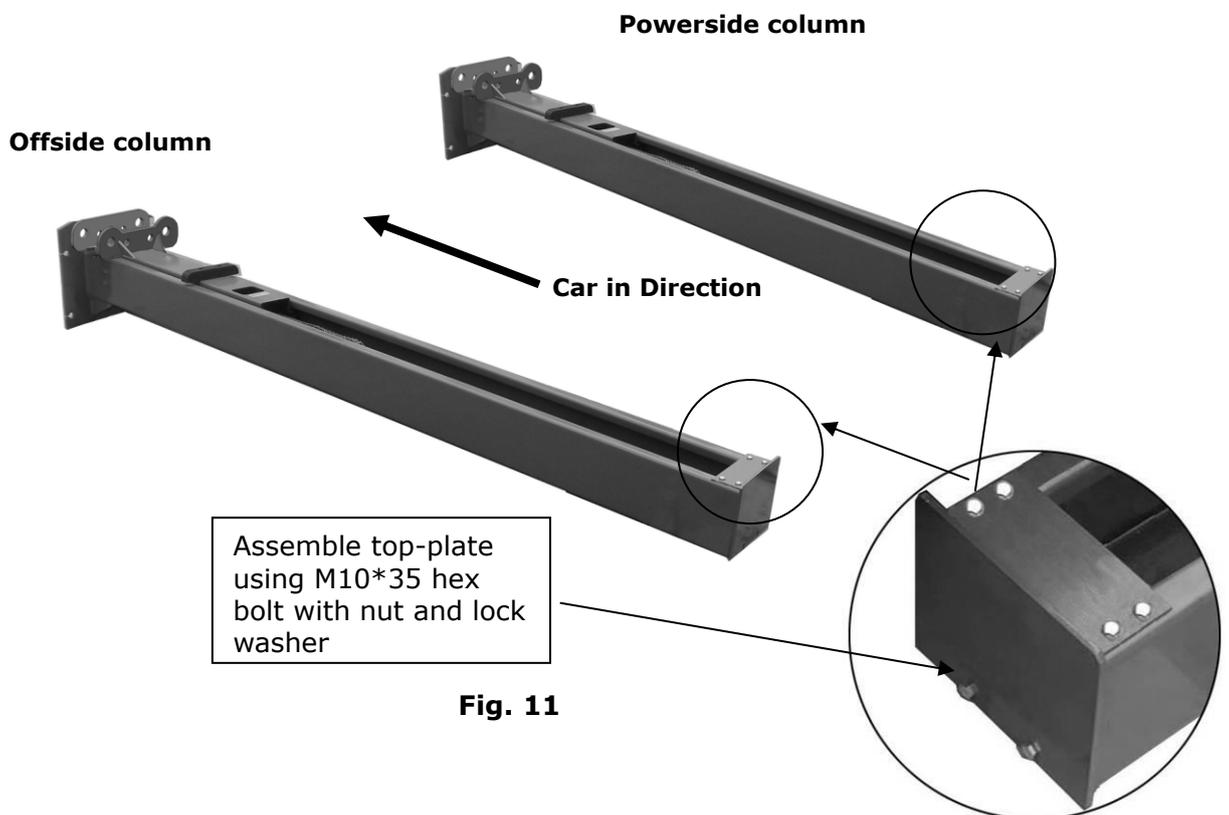
Parts in the parts box (42A)

5. Open the carton of parts and check the parts according to parts box list
(See Fig. 10).



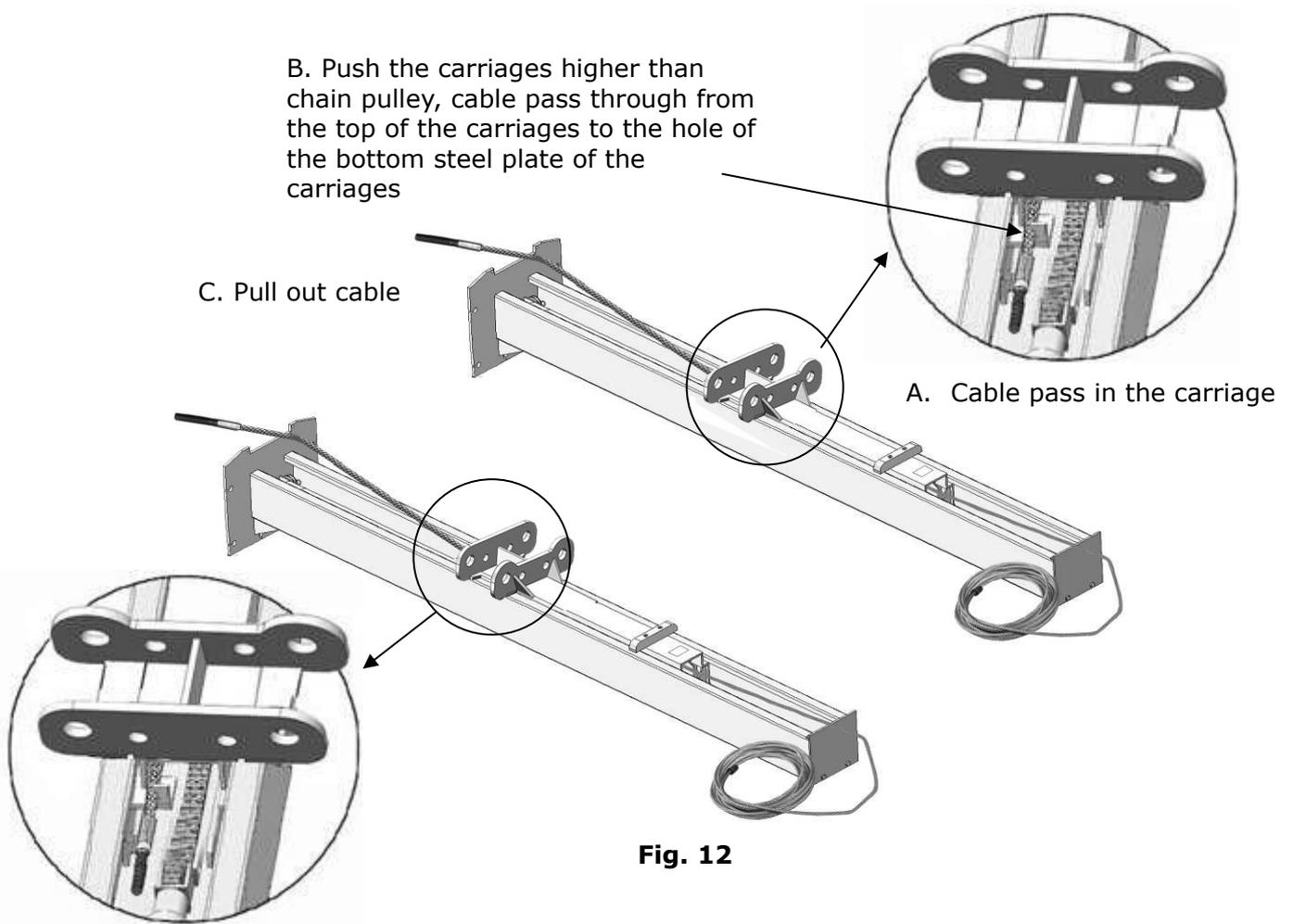
D. Position powerside columns

Lay down two columns on the installation site parallelly, position the powerside column according to the actual installation site. Usually, it is suggested to install powerside column on the front-right side from which vehicles are driven to the lift
(See Fig. 11).

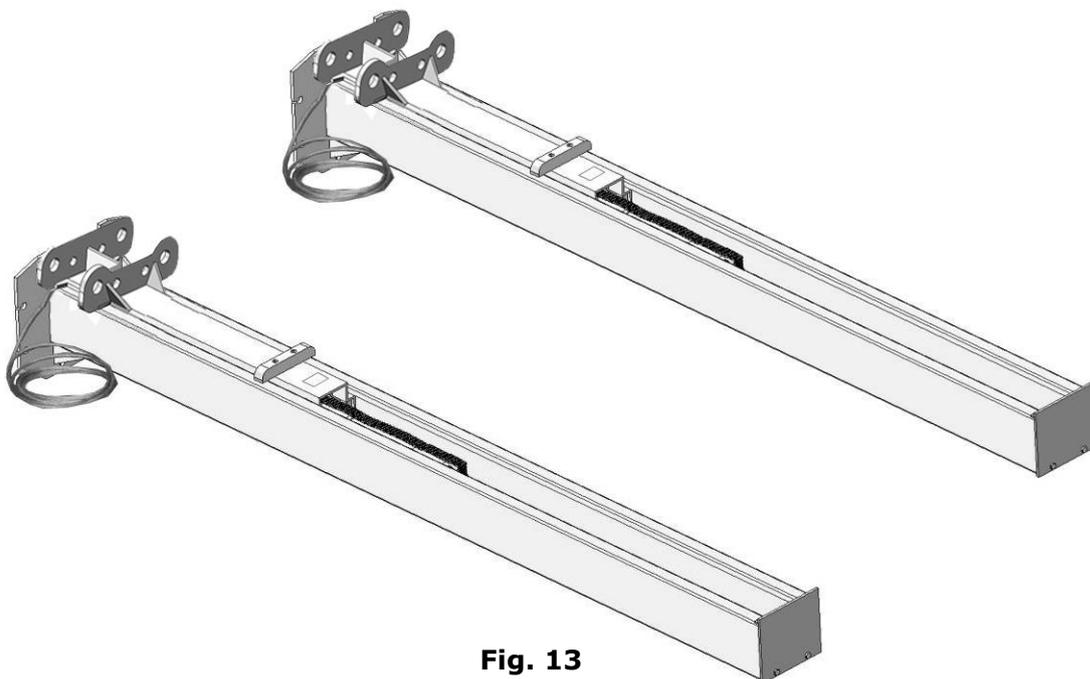


E. Connecting the cables

1. Put down columns and then push the carriages higher than chain pulley (**See Fig. 12**).



2. Push the carriages to the bottom of the columns (**See Fig. 13**).



F. Position columns (See Fig. 14)

Check the columns plumbness with level bar, and adjusting with the shims if the columns are not vertical.

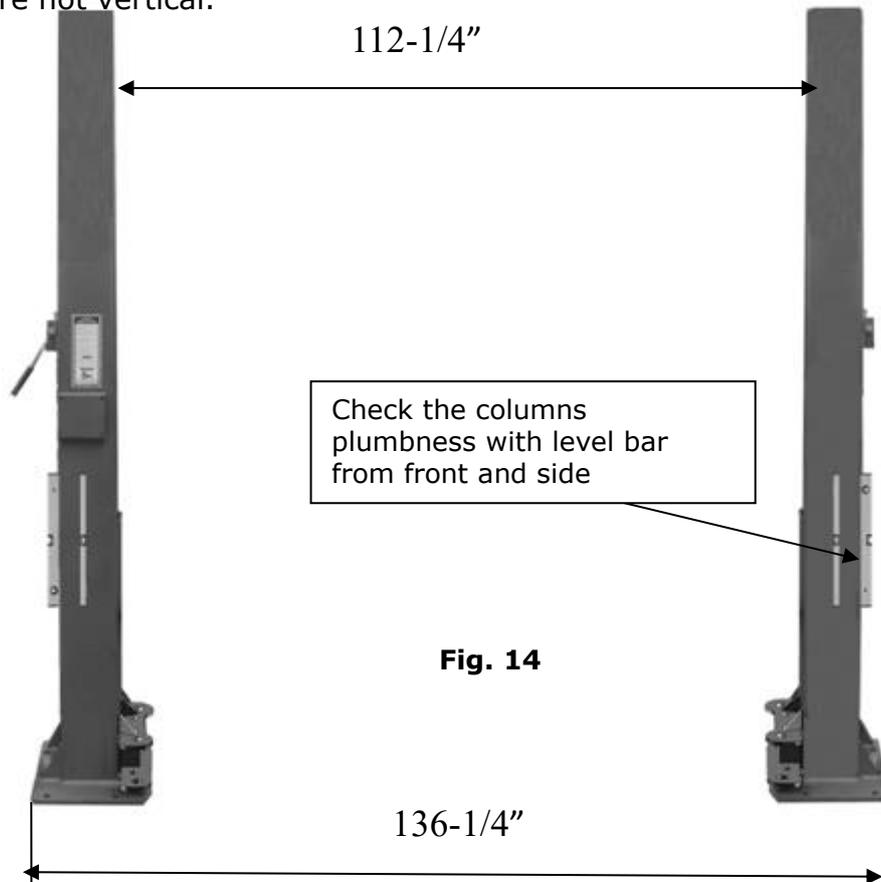


Fig. 14

G. Fix anchor bolts

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



Fig. 15

2. Using the prescribed rotary hammer drill, and 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 3-1/2\".

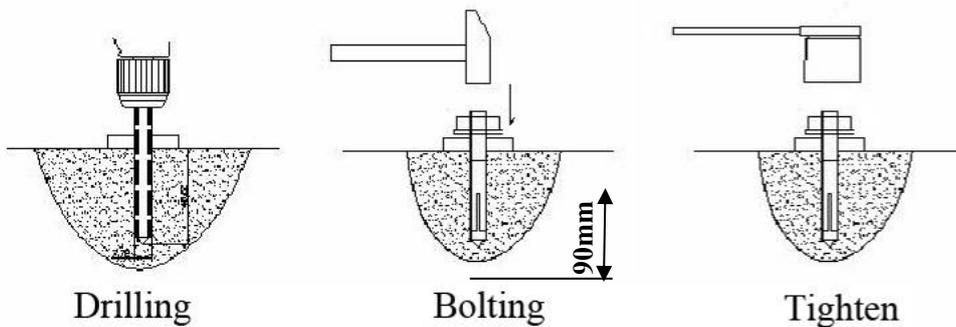


Fig. 16

**H. Lift the carriages up by hand and make them be locked at the same level
(See Fig. 17).**

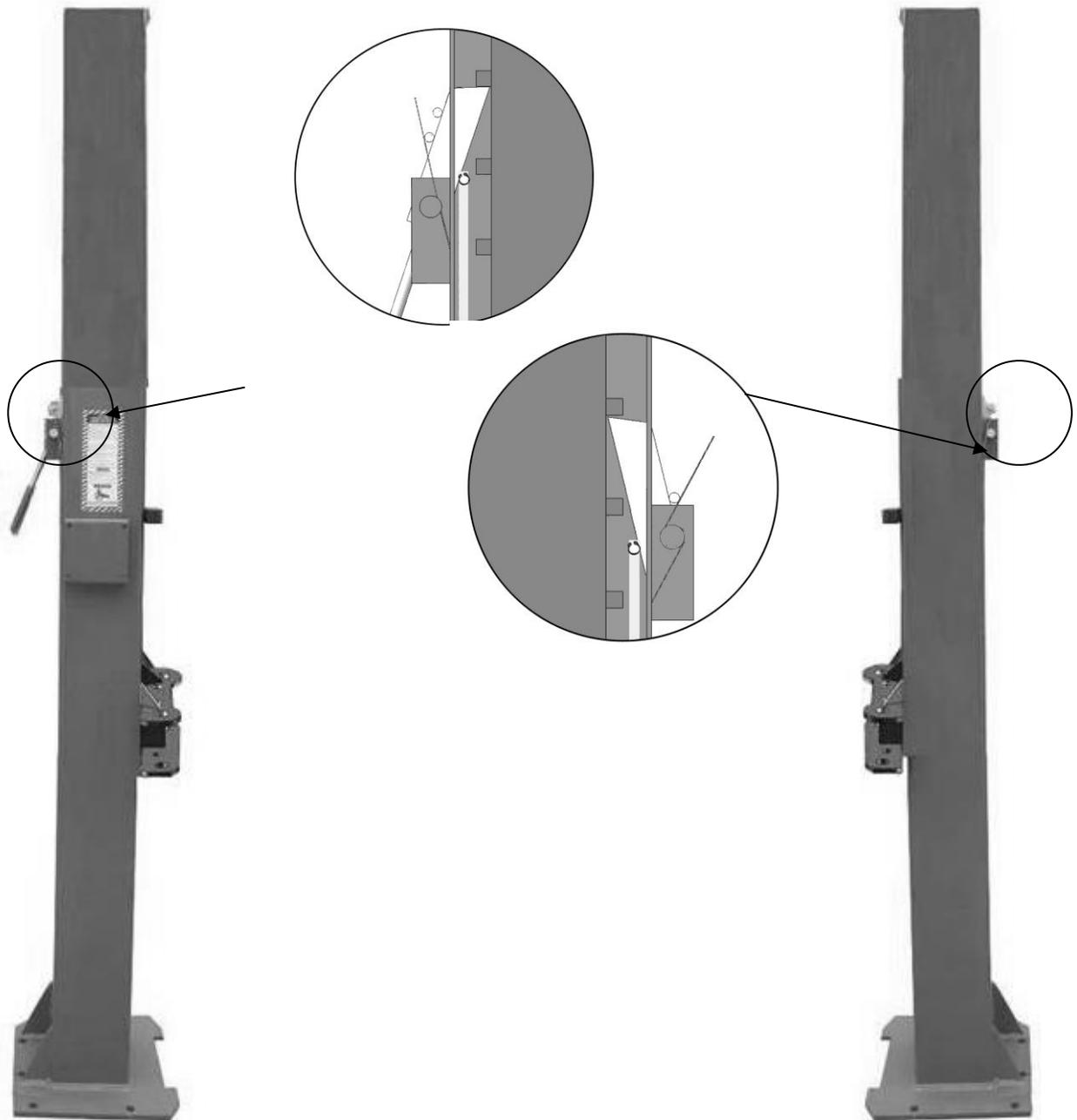


Fig. 17

I. Install cable (See Fig. 18)

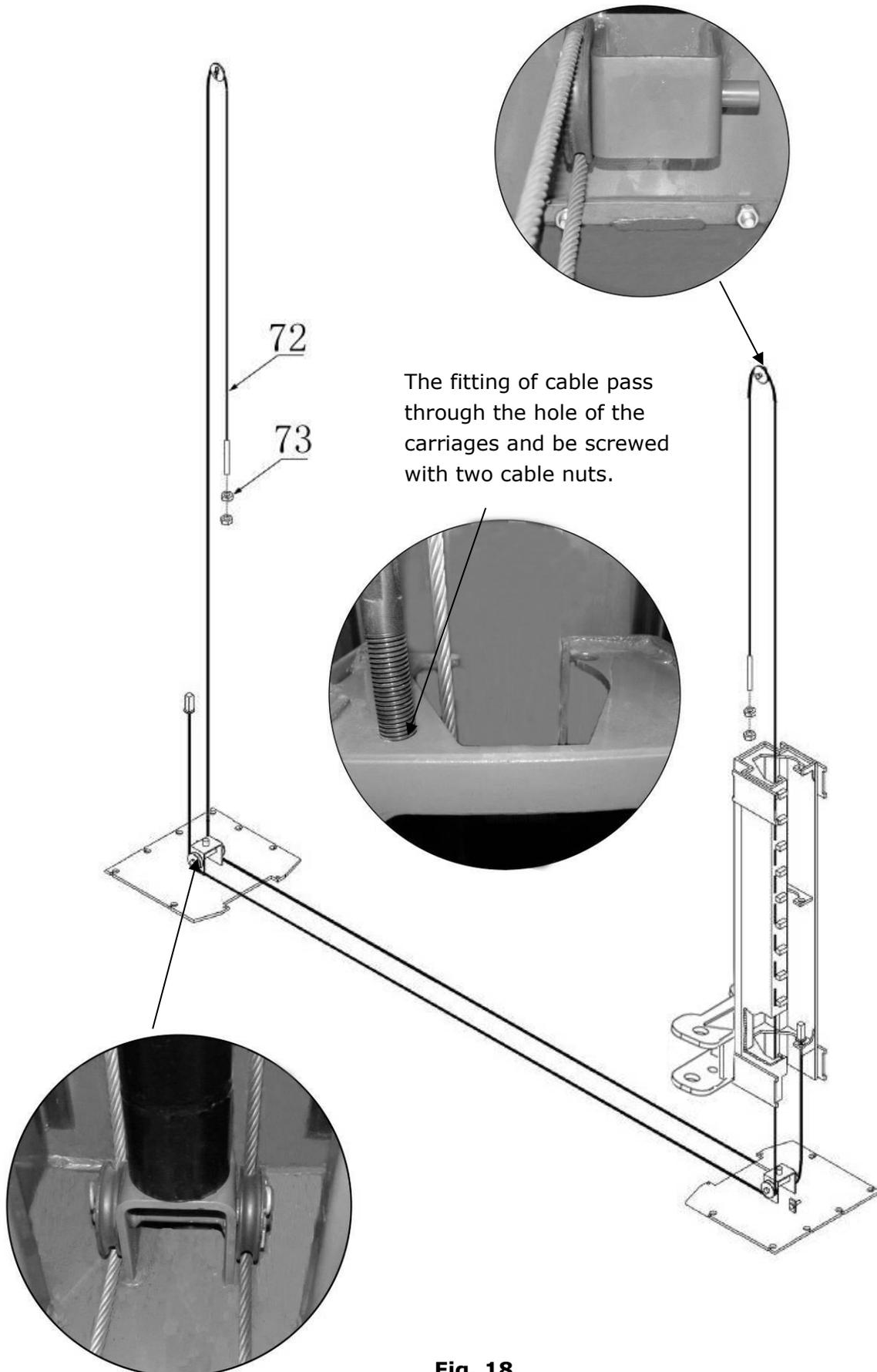


Fig. 18

J. Assembly oil hose assy. (See Fig. 19).

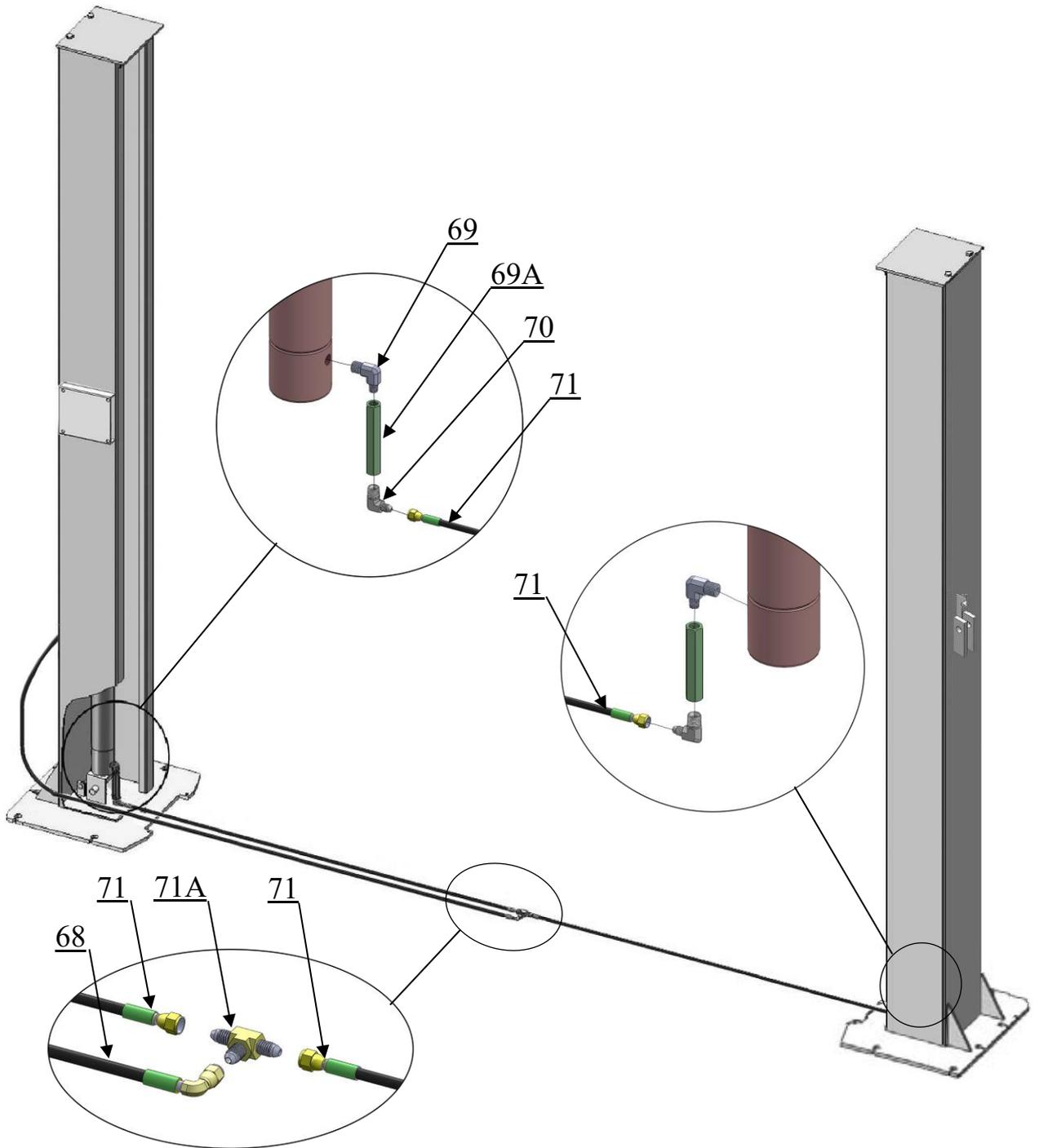
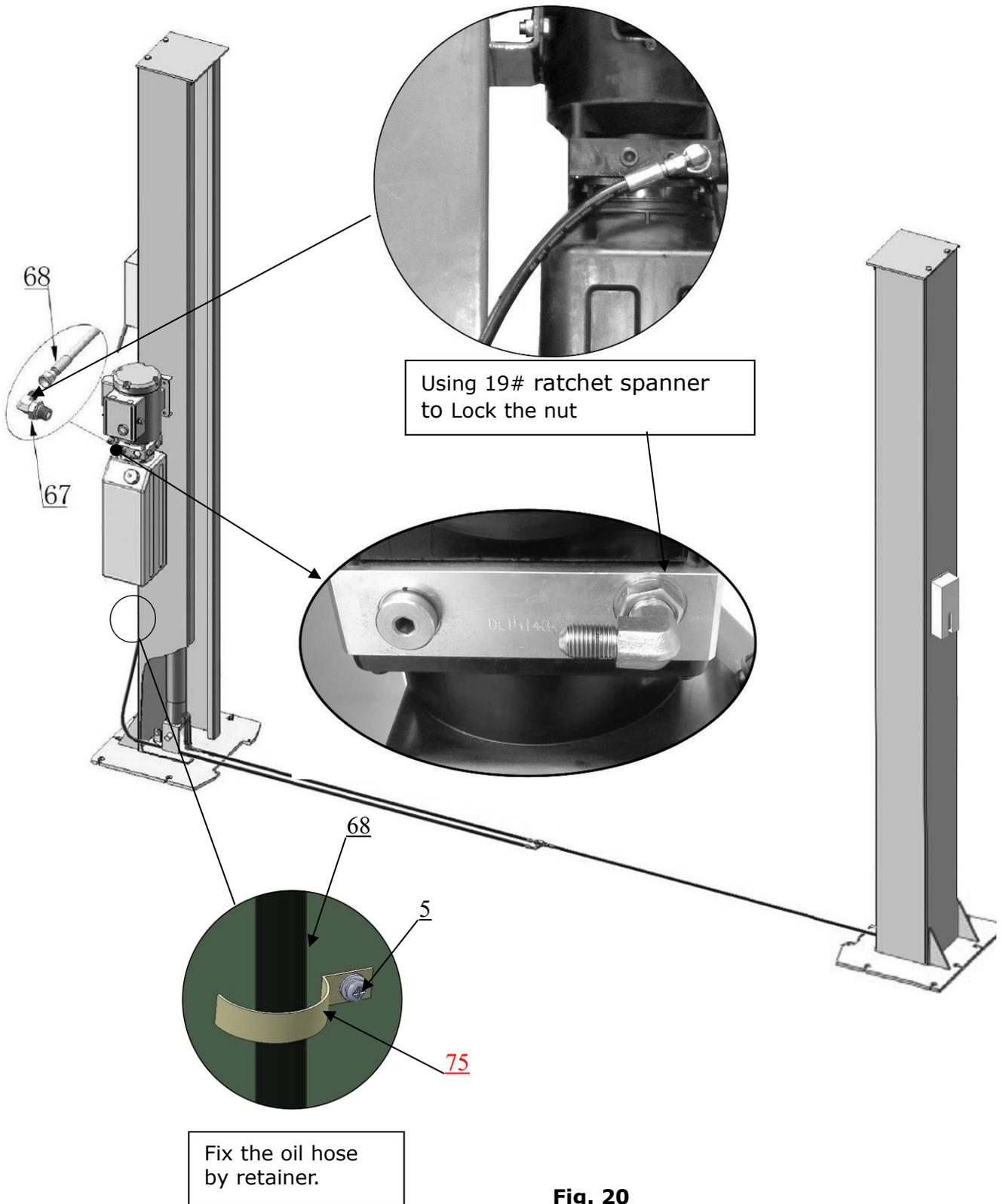


Fig. 19

K. Install hydraulic power unit and oil hose assy. (See Fig. 20).



L. Install safety device and safety cable (See Fig. 21).

- NOTE:** 1. Assemble safety cable from offside safety assy.
 2. Pay attention to the connecting direction of safety cable.

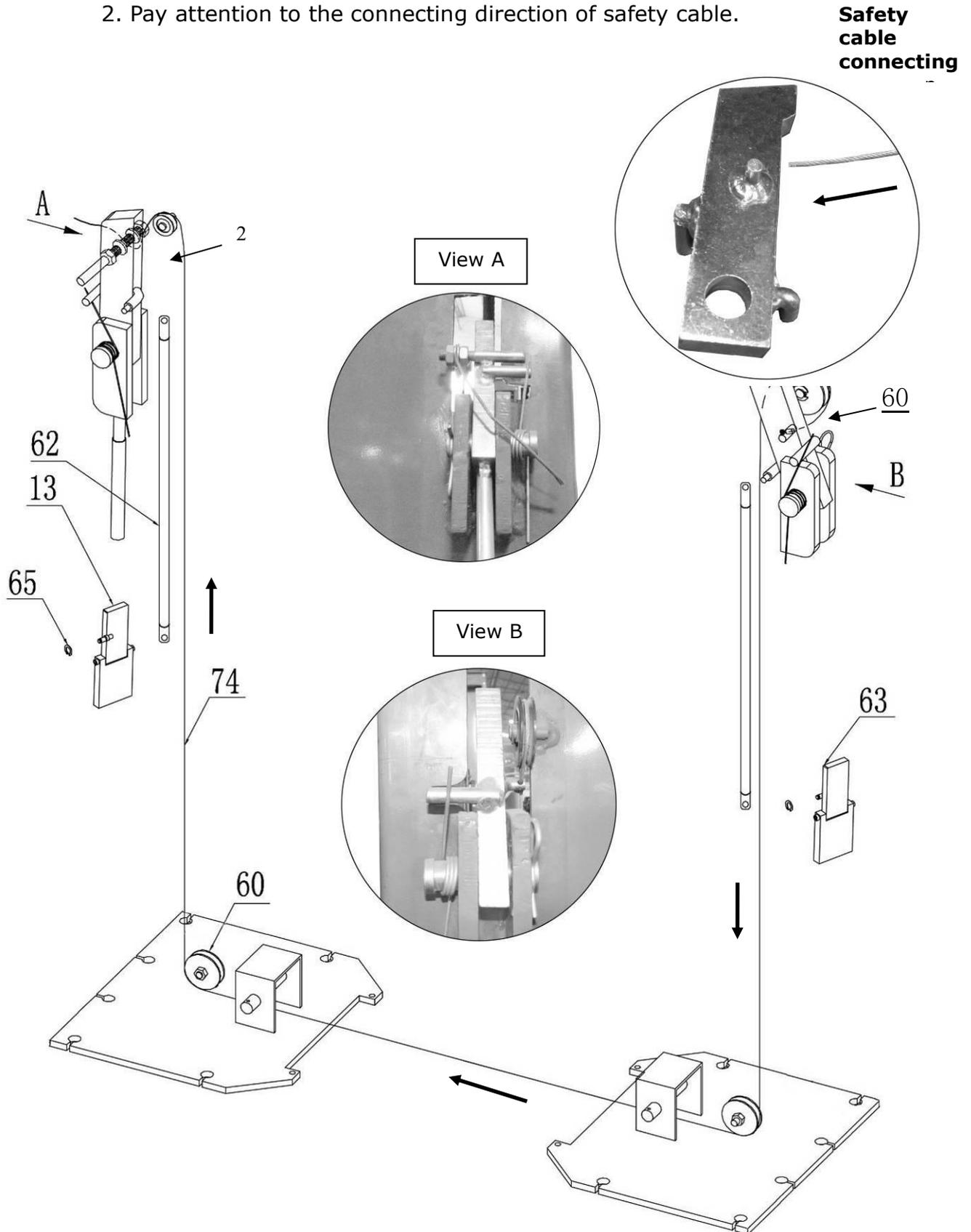


Fig. 21

M. Assemble floor cover (See Fig. 22).

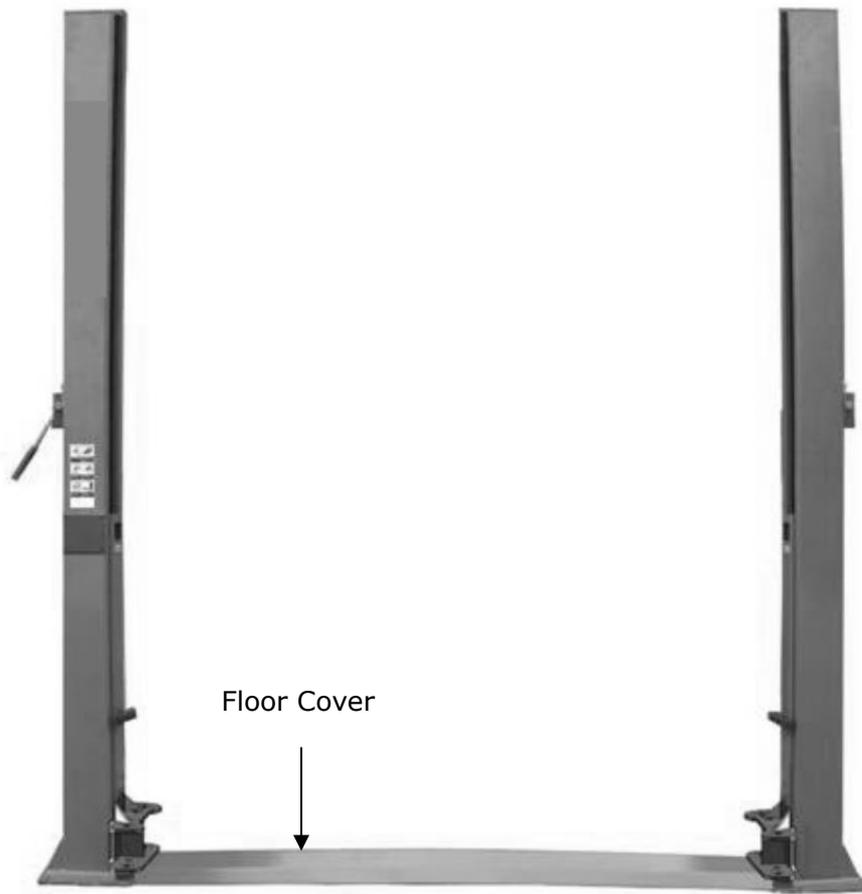


Fig. 2 2

N. Install lifting arms and adjust the arm locks

1. Install the lifting arms (See Fig. 23, 24)

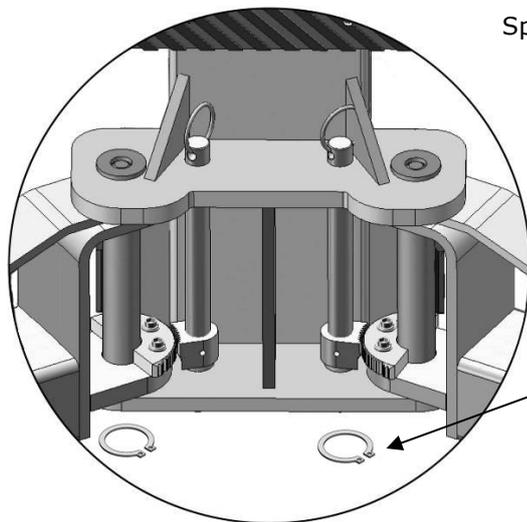
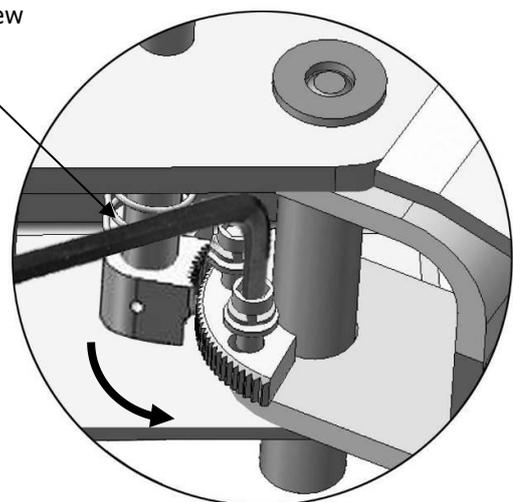


Fig. 23

Spanner loose screw



Use the 8# socket head wrench to loosen the socket bolt

Fig. 24

2. Lowering the carriages down to the lowest position, then use the 8# socket head wrench

to loosen the socket bolt (See Fig. 24)

3. Adjust the moon gear as arrow direction (See Fig. 25).

4. Adjust the moon gear and arm lock to make it to be meshed, then tighten bolts of arm lock (See Fig. 26).

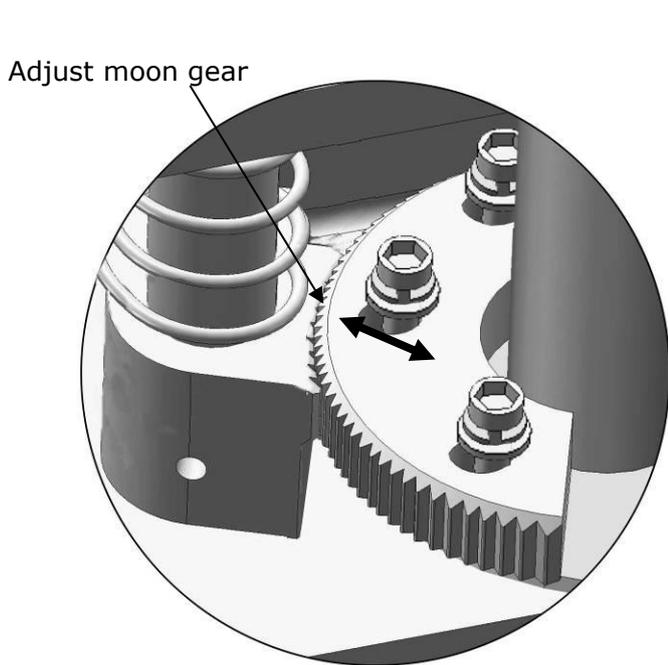


Fig. 25

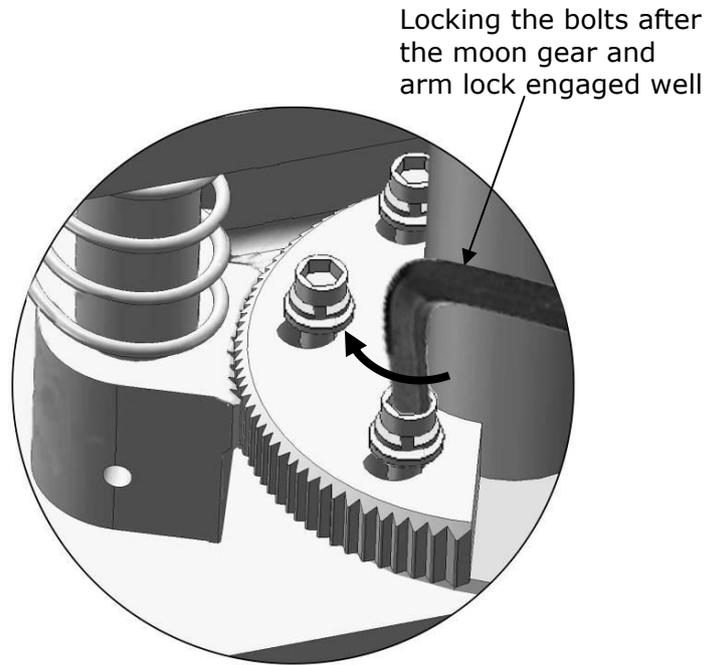


Fig. 26

O. Tighten all the hydraulic fittings, and fix the oil hose by retainer.

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

P. Install Electrical System

Connect the power source on the data plate of Power Unit.

Note: 1. For the safety of operators, the power wiring must contact the floor well.

2. Pay attention to the direction of rotations when using 380V, three phase motors.

Single phase motor (See Fig. 27).

1. Connecting the two power supply lines (active wire **L** and neutral wire **N**) to terminals of AC contactor marked **L1**, **L2** respectively.
2. Connecting the two motor wires to terminals of AC contactor marked **T1**, **T2**.
3. Connecting **A2** to **L2** of AC contactor.
4. Terminal **4#** of control button is connected with terminals **A1** of AC contactor;

Terminal **3#** of control button is connected with terminals **L1** of AC contactor.

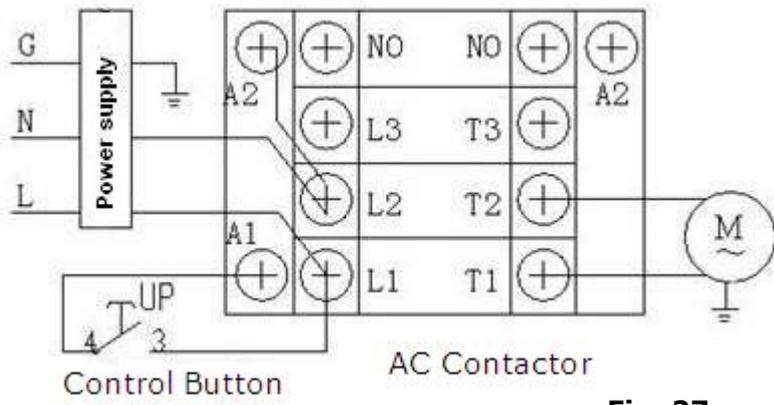
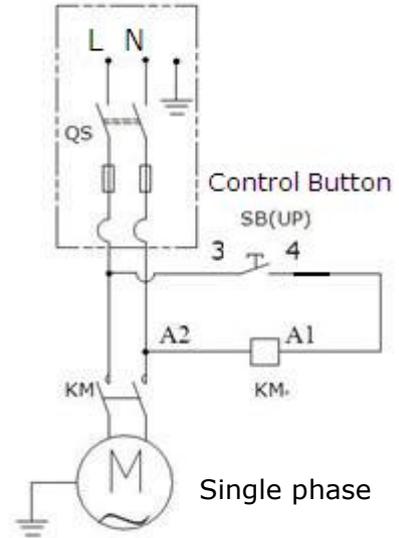


Fig. 27



IV. EXPLODED VIEW

Model BP-9X

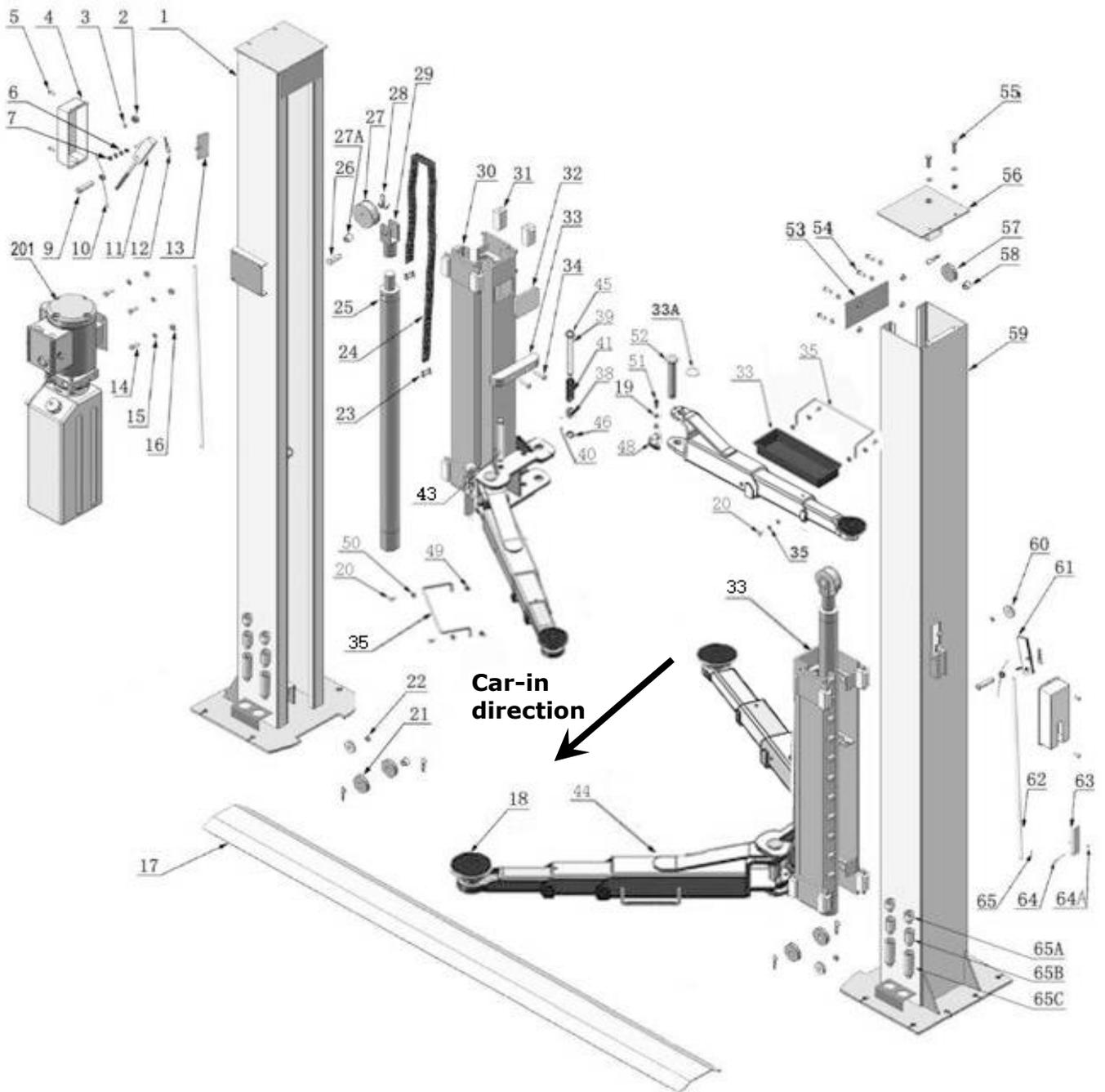


Fig.28

Cylinders

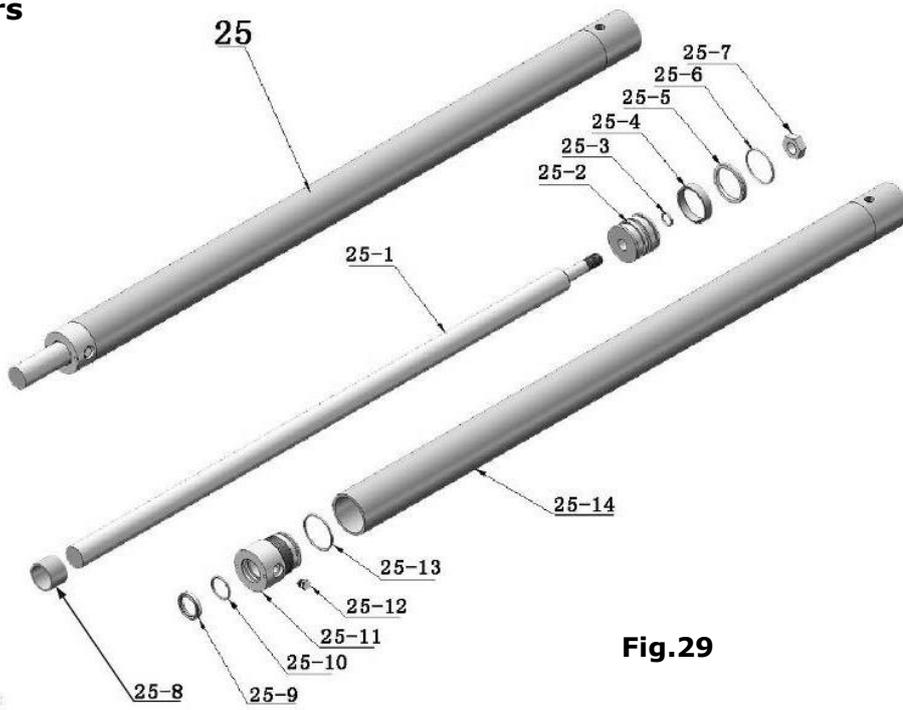


Fig.29

MANUAL POWER UNIT

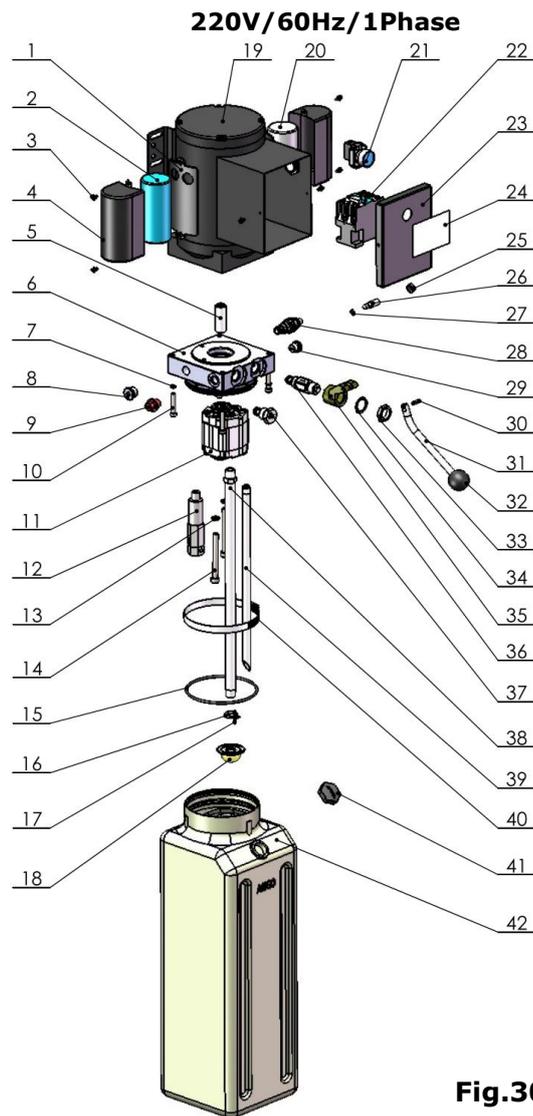


Fig.30

Illustration of hydraulic valve for hydraulic power unit

a. Manual power unit, 220V/60Hz, Single phase (See Fig. 31)

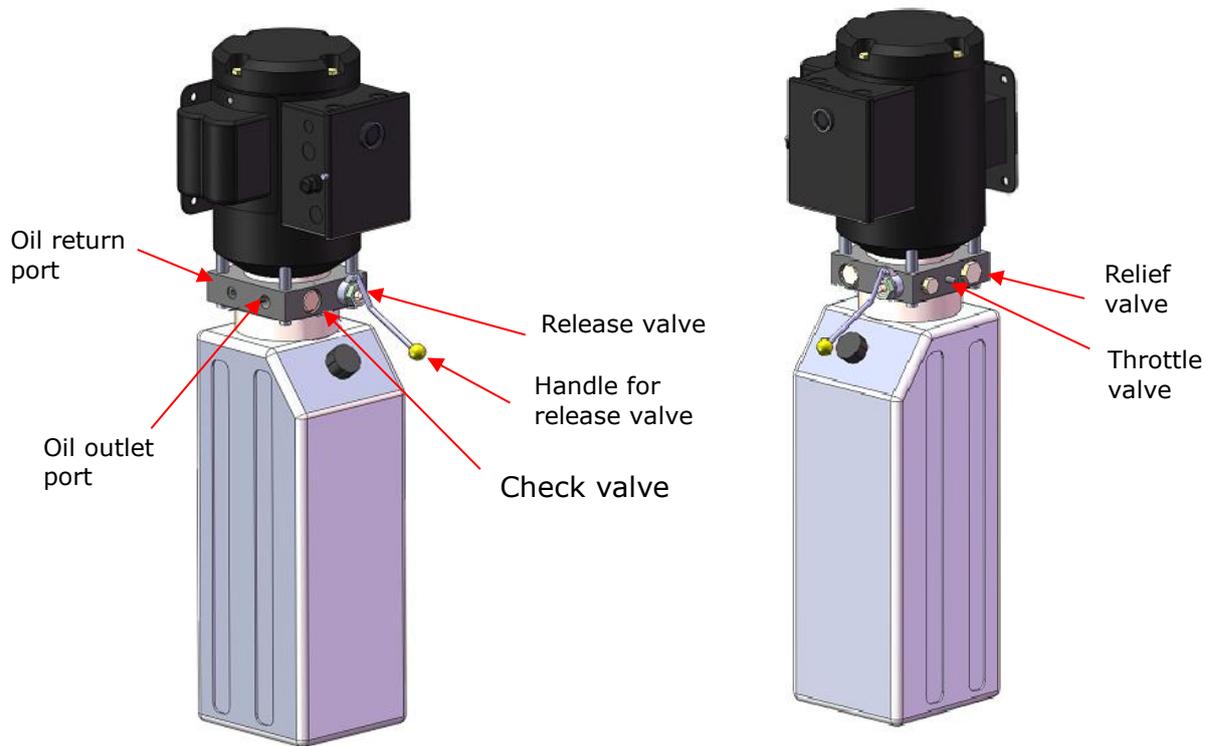


Fig. 31

V. TEST RUN

1. Adjust synchronous cable (See Fig. 32)

Push button "UP" to lift the carriages up to the position of the cable nut higher than chain pulley. Use wrench to hold the cable fitting, meanwhile use ratchet spanner to tighten the cable nut. Make sure two cables are with the same tension so that two carriage can work synchronously. Fit the plastic hole cover on the lifting head.

If the carriage does not Synchronize when lifting, please tighten the cable nut of lower side carriage.

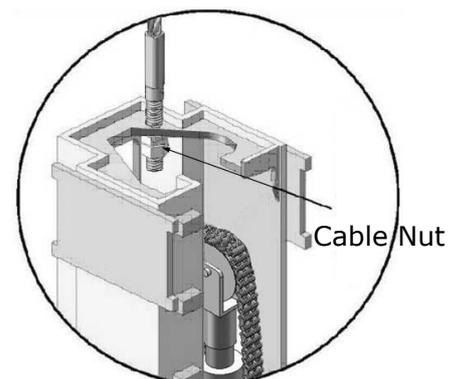


Fig. 32

2. Adjust safety cable

Lifting the carriage and lock at the same height, strain the safety cable and then release a little, and then tighten the cable nuts. Make sure the safety device can always be worked properly.

3. Adjust the lower speed

You can adjust the lower speed of the lift if needing: Loosen the Fixing Nut of the throttle valve, and then turn the throttle valve clockwise to decrease the lower speed, or counterclockwise to increase the lower speed. Do not forget to tighten the fixing nut after the lower speed adjustment has been done.



Adjust clockwise, slow down to decent

Counter clockwise, faster descent

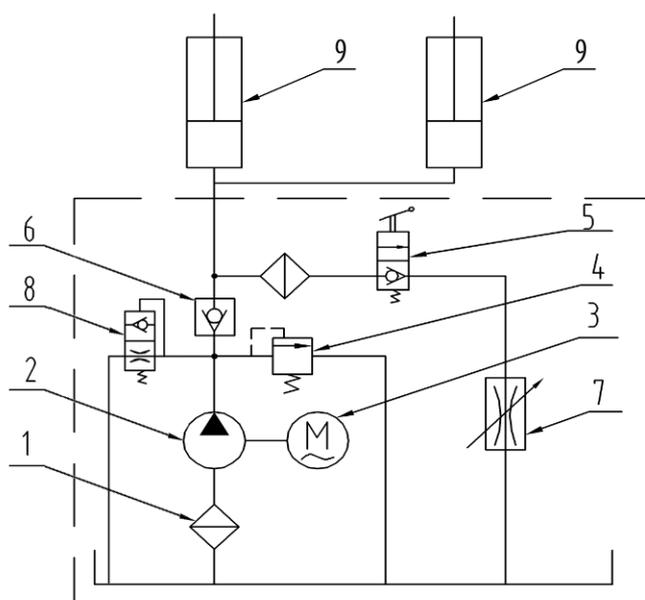
Fig. 33

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 System



- NOTE
- 1. Filter
 - 2. Gearpump
 - 3. Motor
 - 4. Relief Valve
 - 5. Release Valve
 - 6. Check Valve
 - 7. Throttle Valve
 - 8. Buffering valve
 - 9. Hydraulic Cylinder

VI. OPERATION INSTRUCTIONS

Fig. 34

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 150 Nm;
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.

VIII.TROUBLE SHOOTING

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

IX. PARTS LIST FOR MODEL BP-9X

Item	Part#	Description	Qty.	Note
1	11203140	Powerside column	1	
2	10209011	Plastic Pulley	1	
3	10209010	Snap Ring	2	
4	10209008	Safety device protect cover	2	
5	10209009	Cup Head Bolt	6	
6	10206006	Washer	2	
7	10206023A	Hex Nut	2	
201	81513001/ 81513002	Manual Power Unit	1	
9	11206002	Safety Pin	2	
10	10209007	Safety Spring	2	
11	11203002	Powerside Safety device	1	
12	10209012	Hair Pin	8	
13	11203015	Safety Block (Main)	1	
14	10209003	Hex Bolt	4	
15	10209004	Rubber Ring	4	
16	10209005	Self locking nut	8	
17	11203003	Floor Cover	1	
18	10201046A	Rubber Pad Assy.	4	
18A	10420138	Socket bolt	4	
18B	10209134	Rubber Pad	4	
18C	11680030C	Rubber Pad Frame	4	
19	10209039	Lock Washer	16	
20	10201002	Hex Bolt	14	
21	11209057	Pulley	4	
22	10209056	Self locking nut	2	
23	10201010A	Chain Connector	4	
24	10203005	Chain	2	
25	11201008	Hydraulic Cylinder	2	
26	11203040	Pin For Chain Pulley	2	
27	10203004	Chain Pulley	2	
27A	10203004A	Bronze bush for Chain Pulley	4	
28	10201005	Split Pin	2	
29	11201004	Chain Pulley Seat	2	
30	11203134	Powerside Carriage	1	
31	10209015	Slider	16	
32	10209016	Carriage Plastic Cover	2	
33	11206156	Tool Tray	2	
34	10206046	Self-tapping Screw	4	
35	10206154	Toe guard- Rear	2	
36	10209021	Hex Nut	8	
37	10209022	Washer	12	
38	10217044	Moon gear	4	
Item	Part#	Description	Qty.	Note

38A	11206155	Toe guard - Front	2	
39	11207046A	Arm Lock Bar (left)	2	
39A	11207046	Arm Lock Bar (right)	2	
40	10206036	Hair Pin	4	
41	10217045	Spring	4	
42	10206045	Protective Rubber Bar	4	
42A	10203501B	Parts Box	1	
43	11206046	Rack handle	2	
44	11203130	Lifting Arm - Front (drop-in)	2	
44A	11203146	Outer Arm - Front	2	
44B	11203147	Middle Arm - Front	2	
44C	11203148	Inner Arm - Front	2	
45	10209153	Pull Ring for Arm Lock Bar	4	
46	10206032	Snap Ring	4	
47	10620065	Shim(2mm)	10	
47A	10201090	Shim(1mm)	10	
48	11206049	Moon Gear	4	
49	10209033	Washer	22	
50	10209034	Lock Washer	14	
51	10206048	Socket Bolt	12	
52	11217168	Arm Pin	4	
52A	10520023	Snap ring	4	
53	11203009	Connecting plate	2	
54	10209043	Hex Bolt	8	
55	10209046	Hex Bolt	4	
56	11203010	Top plate	2	
57	11209045	Pulley	2	
58	10209057A	Bronze Bush For Pulley	6	
59	11203167	Offside column	1	
60	10209049	Plastic Pulley	3	
61	11203012	Offside safety device	1	
62	11203013	Coupling	2	
63	11203014	Safety Block (Secondly)	1	
64	10205026	Socket Bolt	2	
64A	10610026	Self locking nut	2	
65	10420049	Snap Ring	4	
65A	11209051B	Stackable Adapter (1.5")	4	
65B	11209052B	Stackable Adapter (2.5")	4	
65C	11209053B	Stackable Adapter (5")	4	
66	10209059B	Anchor bolt	12	
67	10209060	90°Fitting	1	
68	10201081	Oil Hose	1	
69	10207024	90°Fitting	2	
69A	11201082	Extended Straight Fitting	2	
70	10420097	90°Fitting	2	

71	10203109	Oil Hose	2	
71A	10211016	T Fitting	1	
72	10203020	Cable	2	
73	10209066	Hex Nut	4	
74	10203021	Safety Cable	1	
75	11217048	Cable clamp	2	
Parts For Hydraulic Cylinder				
25-1	11201027	Piston Rod	2	
25-2	11201028	Piston	2	
25-3	10206069	O-Ring	2	
25-4	10201029	Support Ring	2	
25-5	10201030	Y-Ring	2	
25-6	10201031	O-Ring	2	
25-7	10206071	Hex Nut	2	
25-8	11201037	Adjustment bar	2	
25-9	10209078	Dust Ring	2	
25-10	10201032	O-Ring	2	
25-11	11201033	Head Cap	2	
25-12	10201034	Bleeding Plug	2	
25-13	10201035	O-Ring	2	
25-14	11201036	Bore Weldment	2	

PARTS LIST FOR MANUAL POWER UNIT

Parts for Manual Power Unit 220V/60Hz/1Phase				
Item	Part#	Description	Qty.	Note
1	81400180	Rubber Pad	2	
2	81400130	Starting capacitor	1	
3	420148	Cup Head Bolt with washer	6	
4	81400066	Cover of Motor Terminal Box	2	
5	81400363	Motor Connecting Shaft	1	
6	81400362	Manifold block	1	
7	10209149	Washer	4	
8	81400276	Iron plug	1	
9	81400259	Red rubber plug	1	
10	85090142	Socket bolt	4	
11	81400280	Gear pump	1	
12	81400294	Buffer valve	1	
13	10209034	Washer	2	
14	81400295	Socket bolt	2	
15	81400365	O ring	1	
16	10209152	Ties	1	
17	85090167	Magnet	1	
18	81400290	Filter	1	
19	81400287	Motor	1	

20	81400088	Running capacitor	1	
21	10420070	Push button	1	
22	41030055	AC connector	1	
23	81400287	Motor terminal box cover	1	
24	71111065	AMGO power unit label	1	
25	81400296	Nut	1	
26	81400459	Throttle valve body	1	
27	10209069	O-ring	1	
28	81400266	Relief valve	1	
29	81400284	Inner hex iron plug	1	
30	81400452	Hair pin	1	
31	81400451	Release valve handle	1	
32	10209020	Plastic ball	1	
33	81400125	Release valve nut	1	
34	81400124	Release Valve washer	1	
35	81400450	Release valve handle seat	1	
36	81400443	Release valve	1	
37	81400267	Check valve	1	
38	81400288	Oil suction pipe	1	
39	81400289	Oil return pipe	1	
40	81400364	Clamp	1	
41	81400263	Oil tank cap	1	
42	81400275	Oil tank	1	



AMGO HYDRAULIC CORPORATION

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