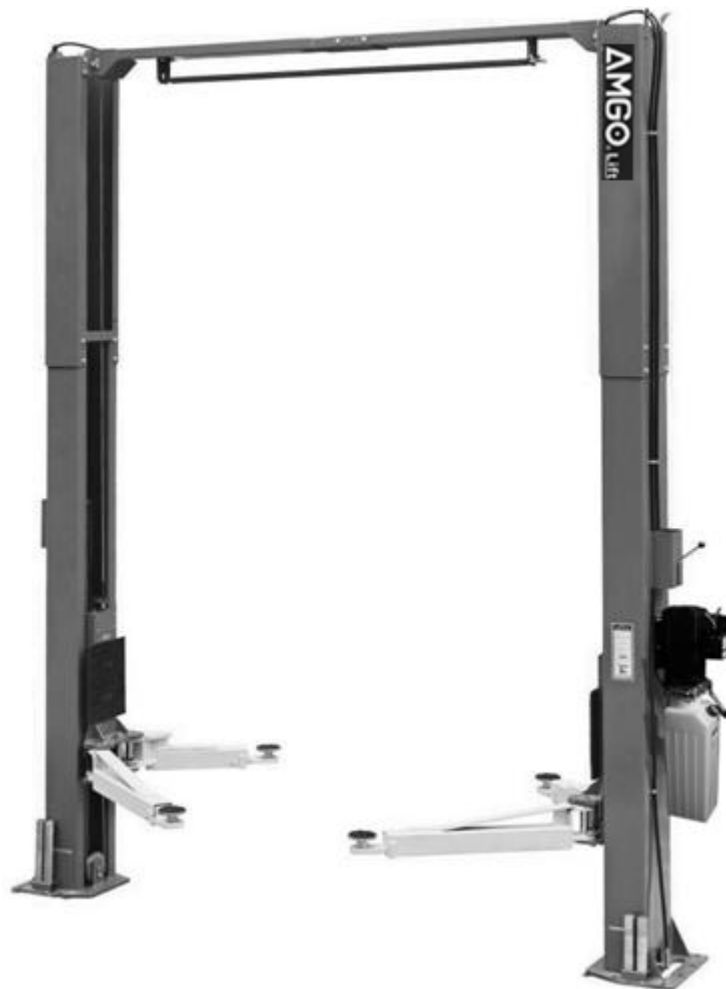




Installation And Service Manual



TWO POST LIFT
Model: HS-12

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I. PRODUCT FEATURES AND SPECIFICATIONS

CLEAR-FLOOR HYDRAULIC-DRIVEN MODEL FEATURES

Model HS-12 (See Fig. 1)

- Direct-driven design, minimize the lift wear parts and breakdown ratio
- Dual hydraulic cylinders, designed and made on ANSI standards, utilizing NOK oil seal in cylinder
- Self- lubricating UHMW Polyethylene sliders and bronze bush
- Single-point safety release with dual safety design
- Clear-floor design, provide unobstructed floor use
- Overhead safety shut-off device prevents vehicle damage
- Standard adjustable heights accommodates varying ceiling heights
- Super-asymmetric arms design can fit extremely wide vehicles.



Fig. 1

MODEL HS-12 SPECIFICATIONS

Model	Lifting Capacity	Lifting Time	Lifting Height	Overall Height	Overall Width	Width Between columns	Minimum Pad Height	Motor
HS-12	12,000 lbs	55S	72-1/2"~80- 1/2"	150"/165"/177"	150-3/4"	123-1/2"	4-1/2"~ 13-1/2"	2.0 HP

**Arm Swings View
For Model HS-12**

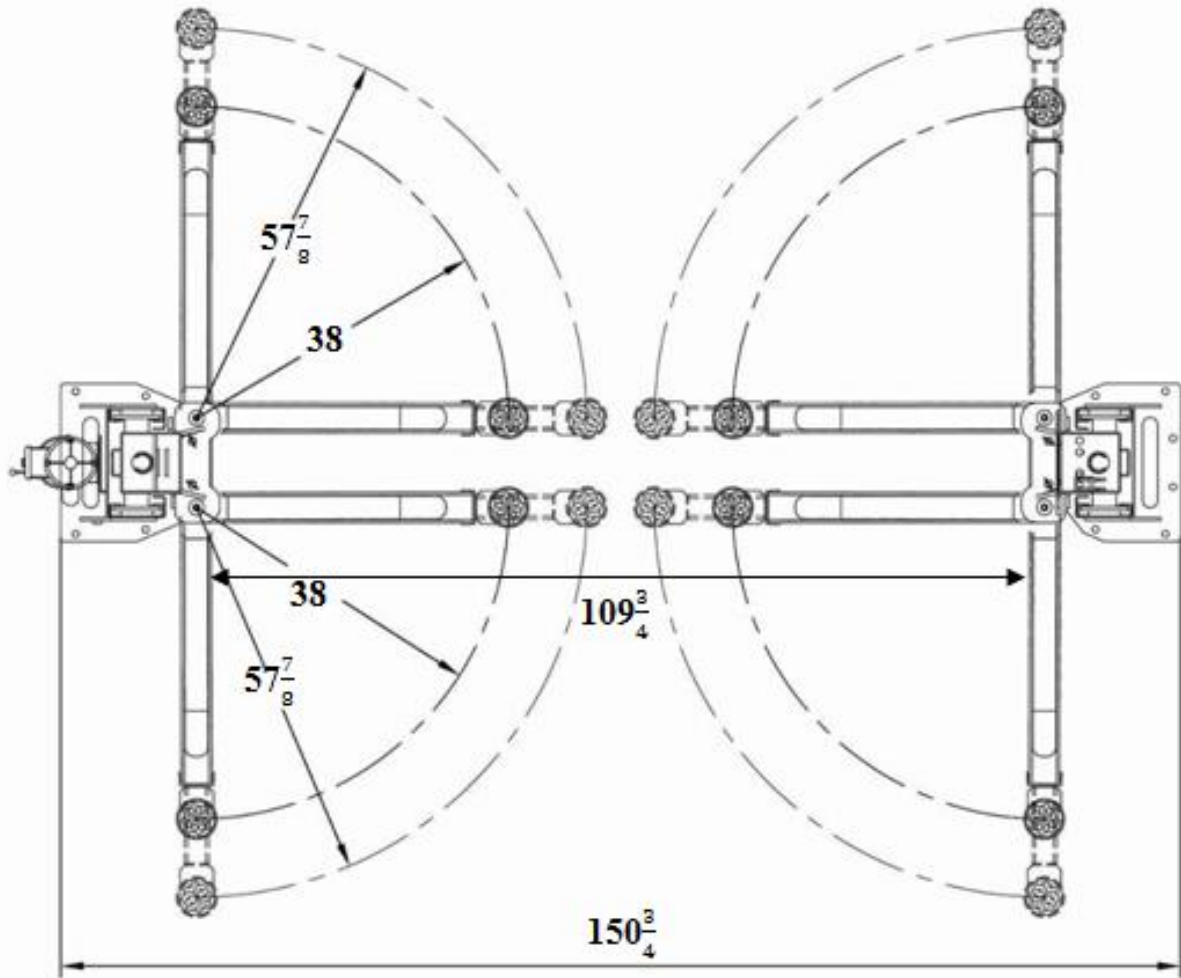


Fig. 2

II. INSTALLATION REQUIREMENT

A. TOOLS REQUIRED

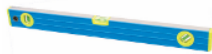
- ✓ Rotary Hammer Drill ($\Phi 19$)



- ✓ Hammer



- ✓ Level Bar



- ✓ English Spanner (12")



- ✓ Ratchet Spanner With Socket (28#)



- ✓ Wrench set
(10#, 13#, 14#, 15#, 17#, 19#, 24#, 27#, 30#,,)



- ✓ Carpenter's Chalk



- ✓ Screw Sets



- ✓ Tape Measure (295-1/4")



- ✓ Pliers



- ✓ Socket Head Wrench (3#, 5#, 8#)



- ✓ 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 4" minimum and without reinforcing steel bars, and must be totally dry before lift installation.
2. Concrete must be in good condition and must be of test strength 3,000psi minimum.
3. Floors must be level with no cracks or holes.

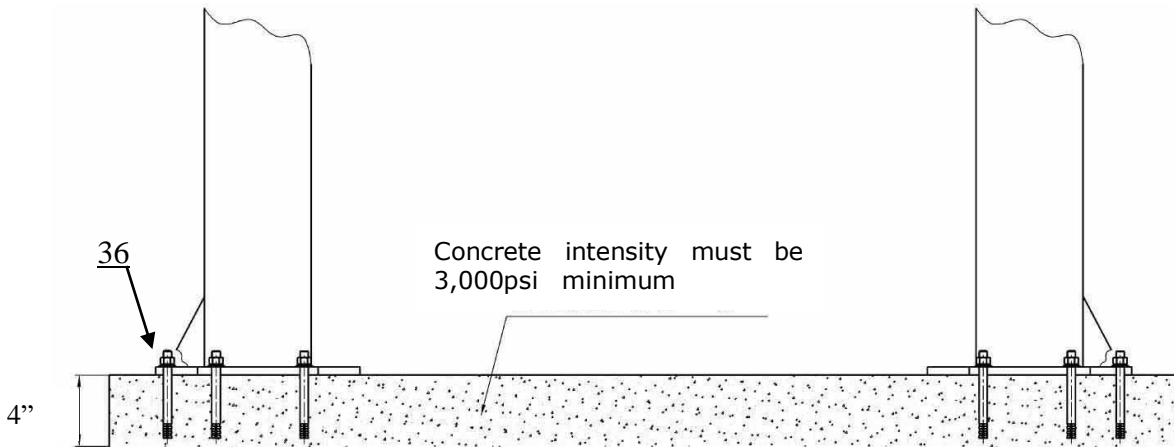


Fig. 4

C. POWER SUPPLY

The electrical source must be 2.0HP minimum. The source cable size must be 2.5mm² and in good condition of contacting with floor.

III. INSTALLATION STEPS

A. Location of installation

Check and ensure 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 base plate (See Fig. 5).

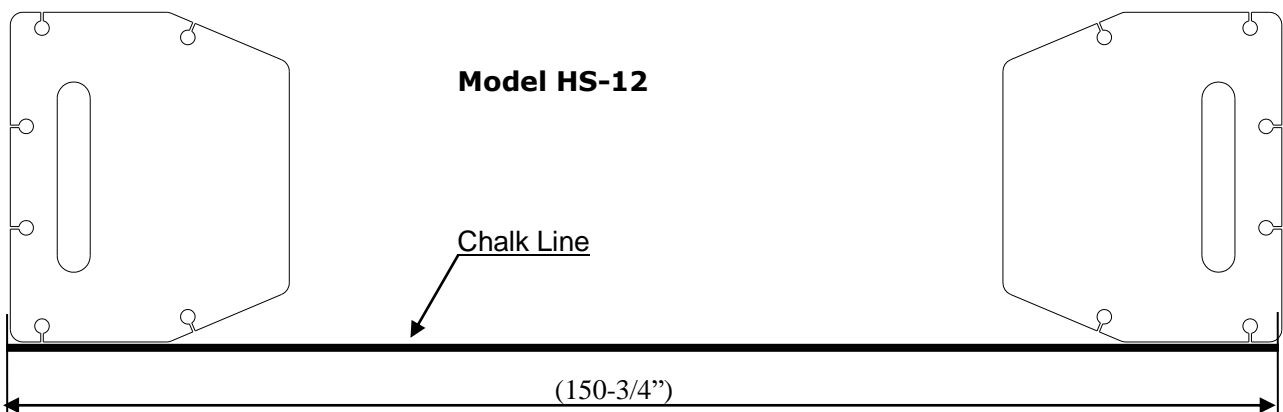


Fig. 5

C. Check the parts before assembly.

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



Fig. 6

2. Move the lift aside with a fork lift or hoist, and open the outer packing carefully, check the parts according to shipment list.
(See Fig. 7).

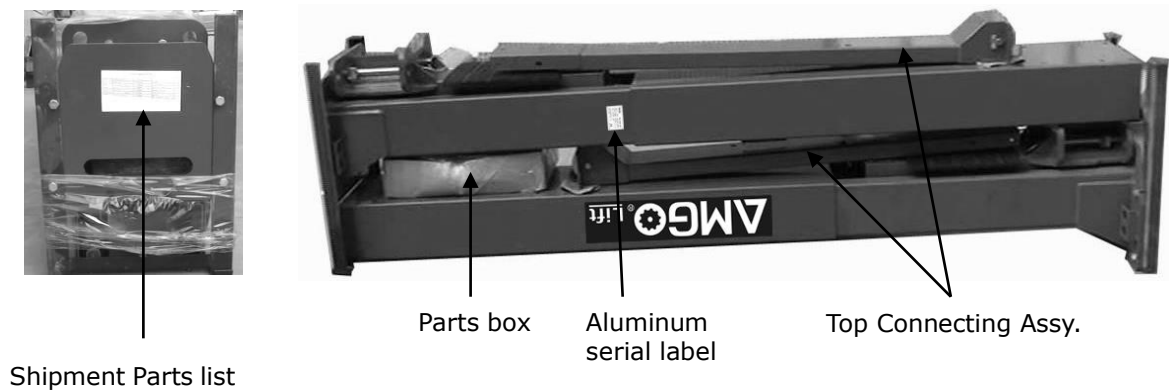


Fig. 7

3. Lift the upper column with a fork lift or hoist, loose the bolts of the upper package stand, take off the upper extension column, than take out the parts in the inner column **(See Fig. 8).**



Fig. 8

4. Lift the lower column with a fork lift or hoist, take down the package stand, than take off the lower extension column, take out the parts in the inner column (**See Fig. 9**).

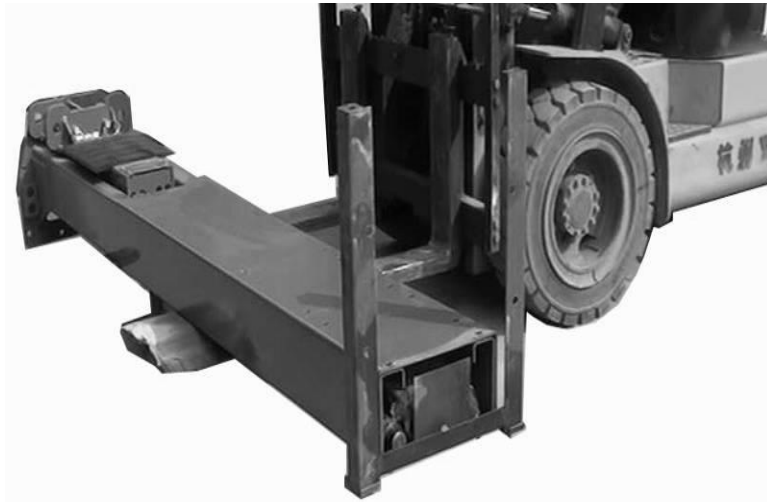


Fig. 9

5. Move aside the parts and check the parts according to the shipment parts list (**See Fig. 10,11**).

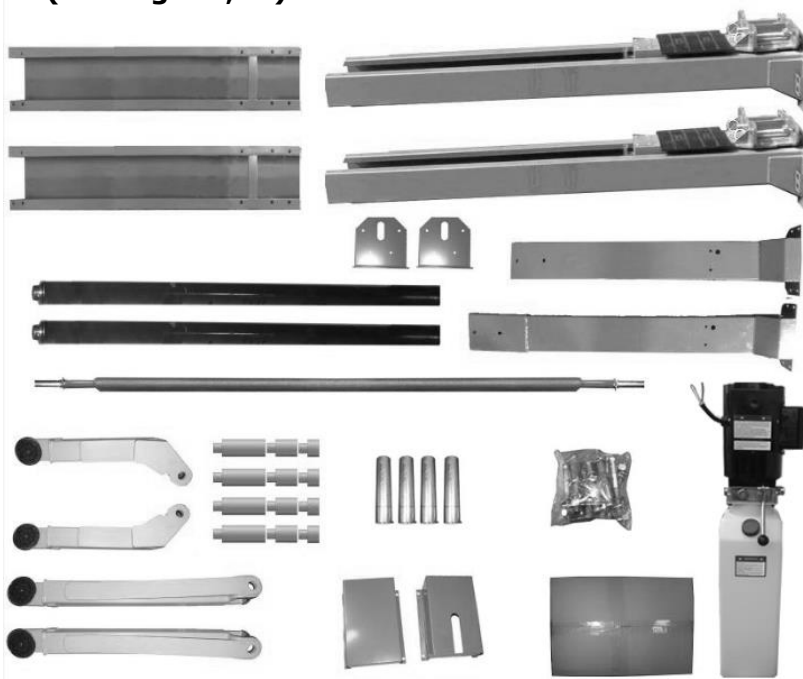


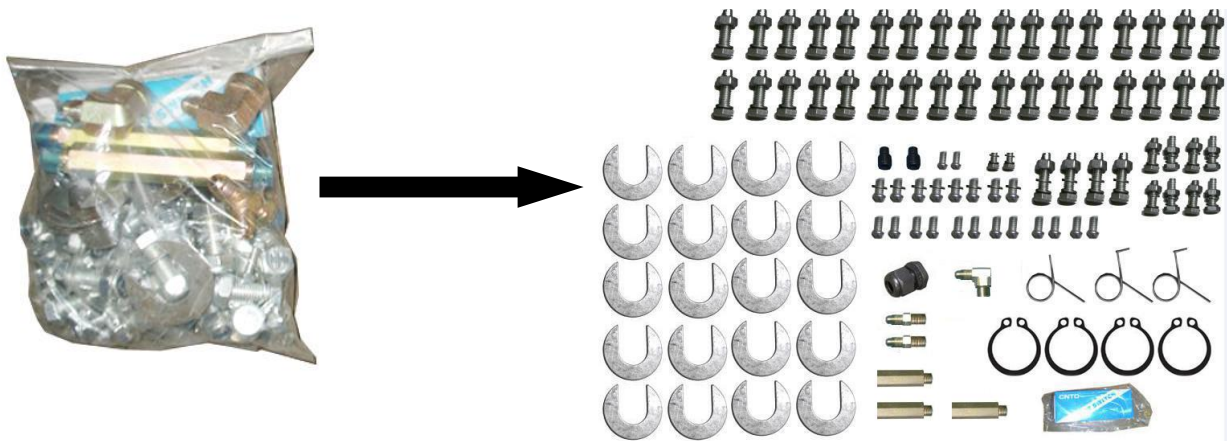
Fig. 10

Parts box (85) list



Fig. 11

6. Check the parts of the parts bag 1 according to parts bag list (**See Fig. 12**).



D. Install parts of extension columns (See Fig. 15).

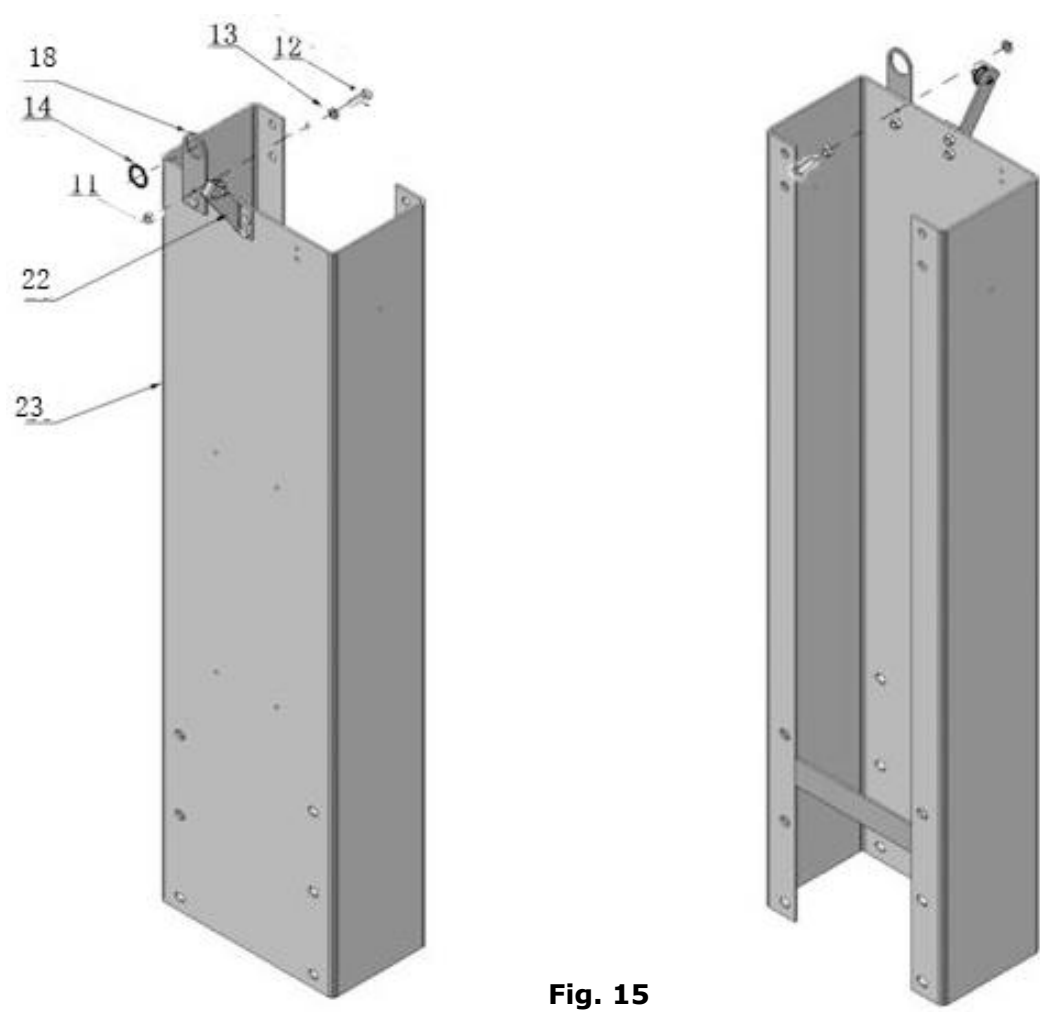


Fig. 15

E. Install hydraulic cylinder

Connecting the extended straight fitting and 90° fitting to the cylinders, and then install the cylinder in the carriages (**See Fig. 16**).

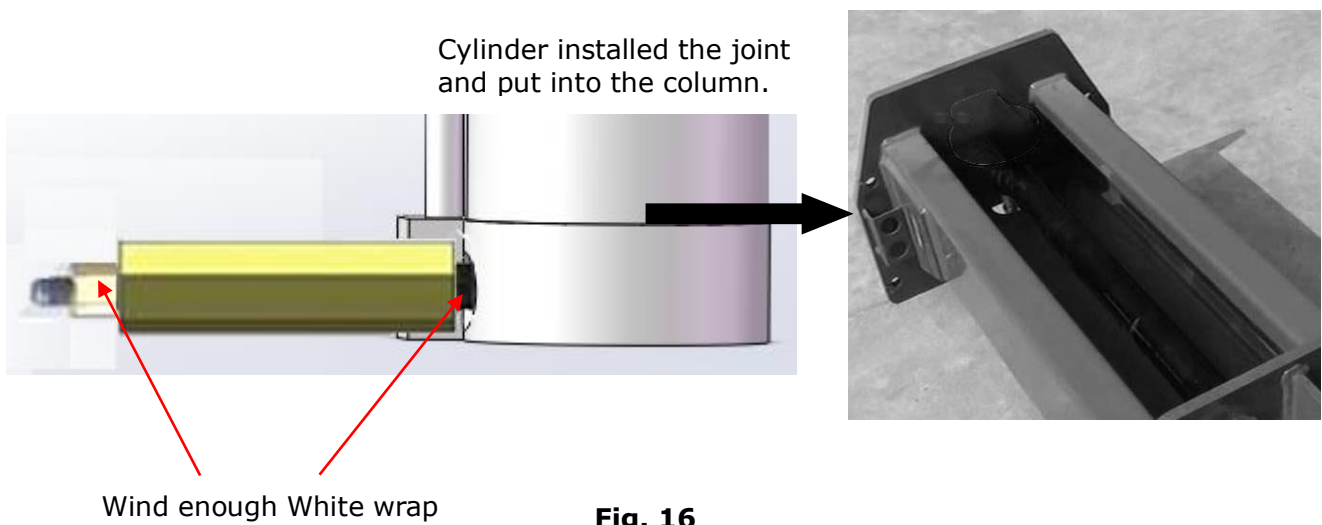
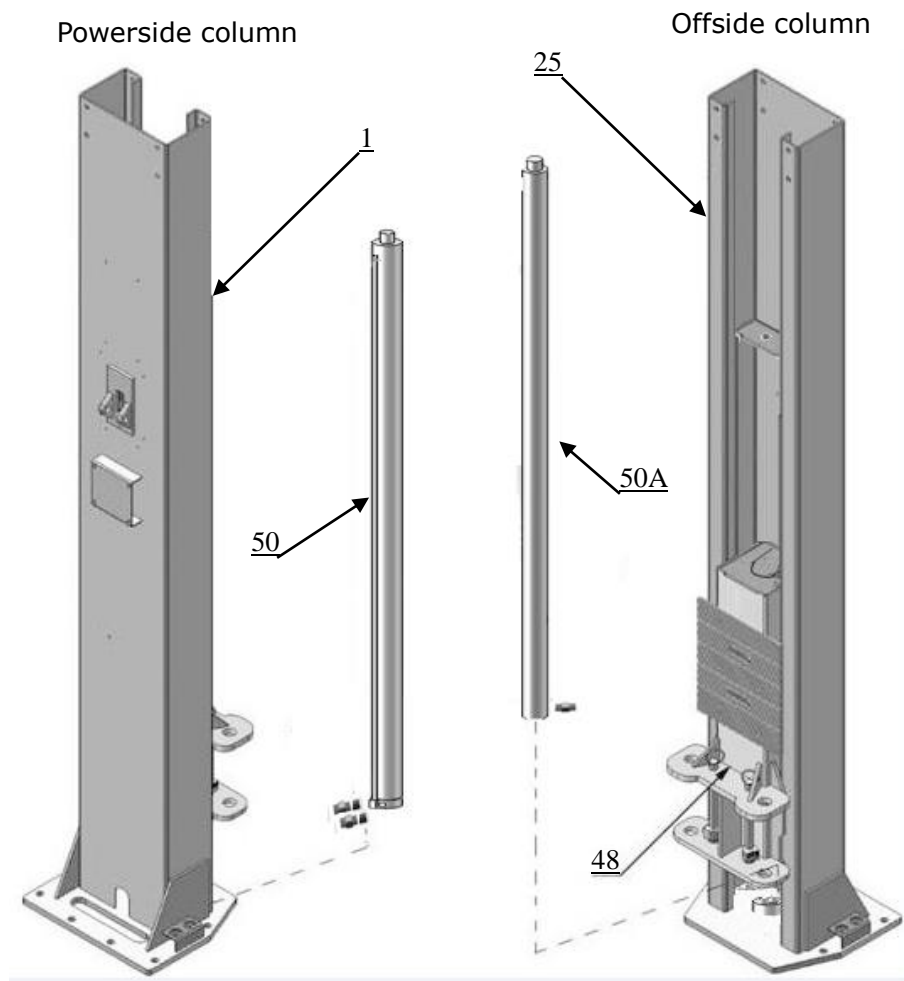


Fig. 16

F. Install 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. This lift is designed with 2-section columns. Adjustable height according to the ceiling height while connecting the extension columns.

For model HS-12

1. When the ceiling height is over 177-1/8", connecting the extension columns with the lower holes (**See Fig. 17**).

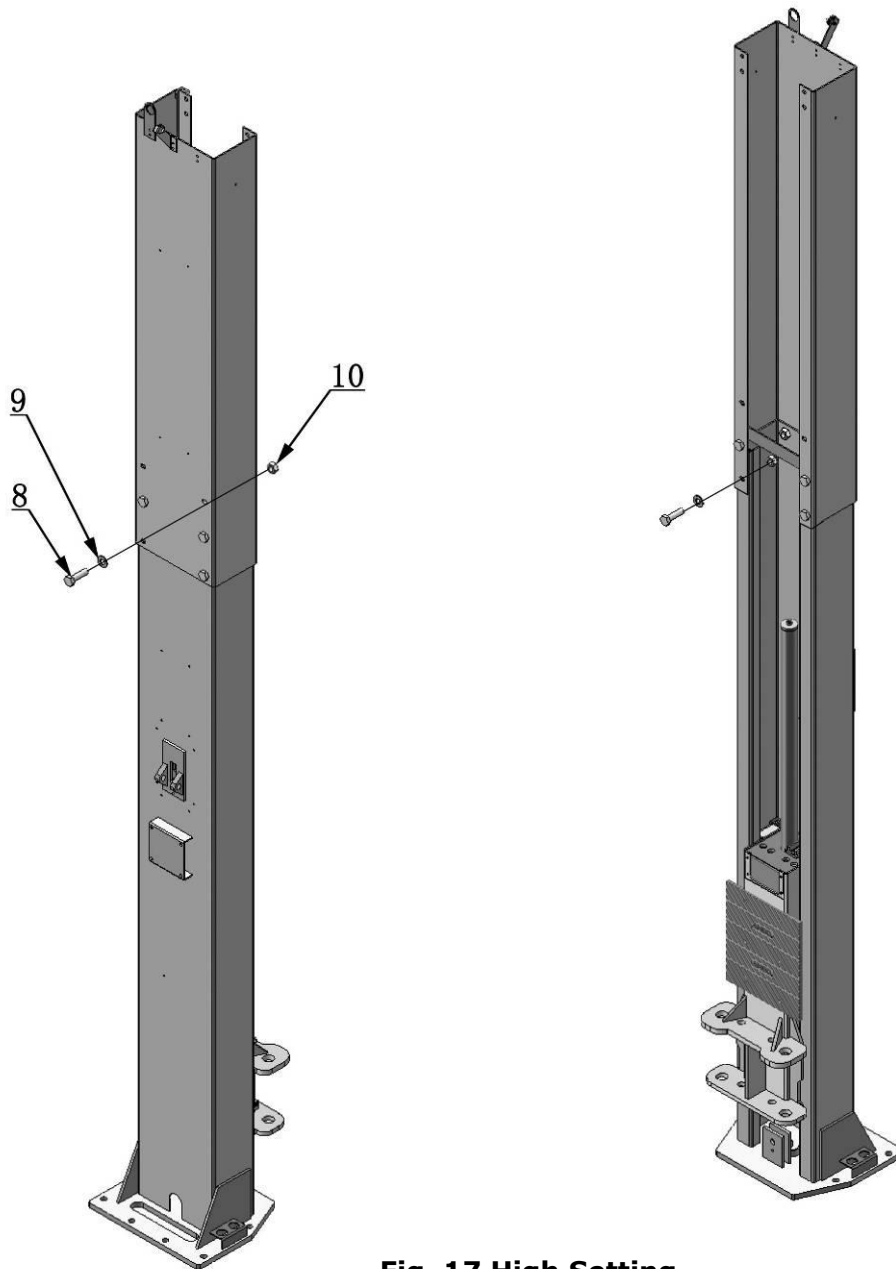


Fig. 17 High Setting

2. When the ceiling height is less than 165-1/4", connecting the extension columns with the upper holes **(See Fig.18)**.

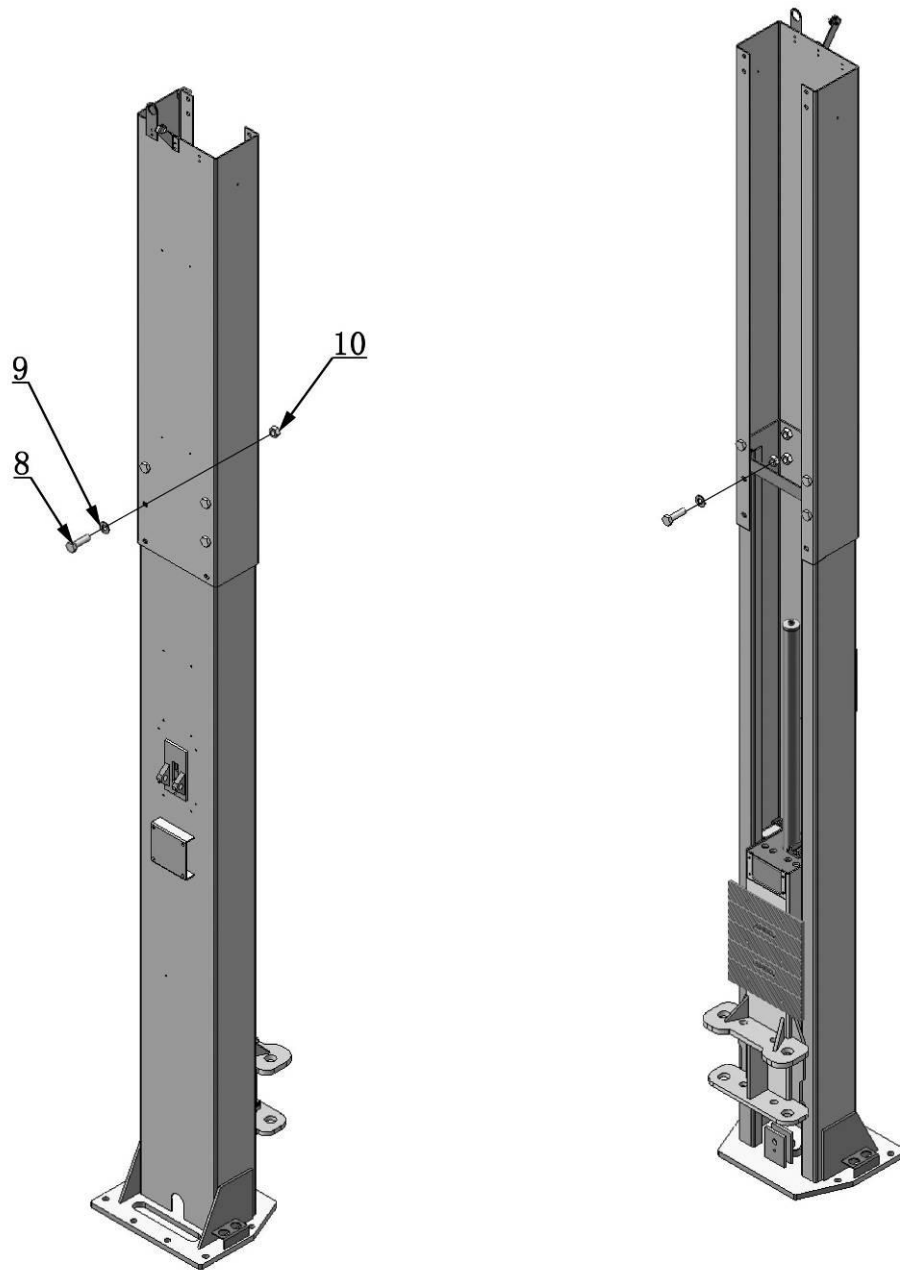


Fig. 18 Low Setting

G. Position columns

Position the columns on the installation layout of baseplate. Install the anchor bolts. Check the columns plumbness with level bar, and adjusting with the shims if the columns are not vertical. Do not tighten the anchor bolts (**See Fig.19**).

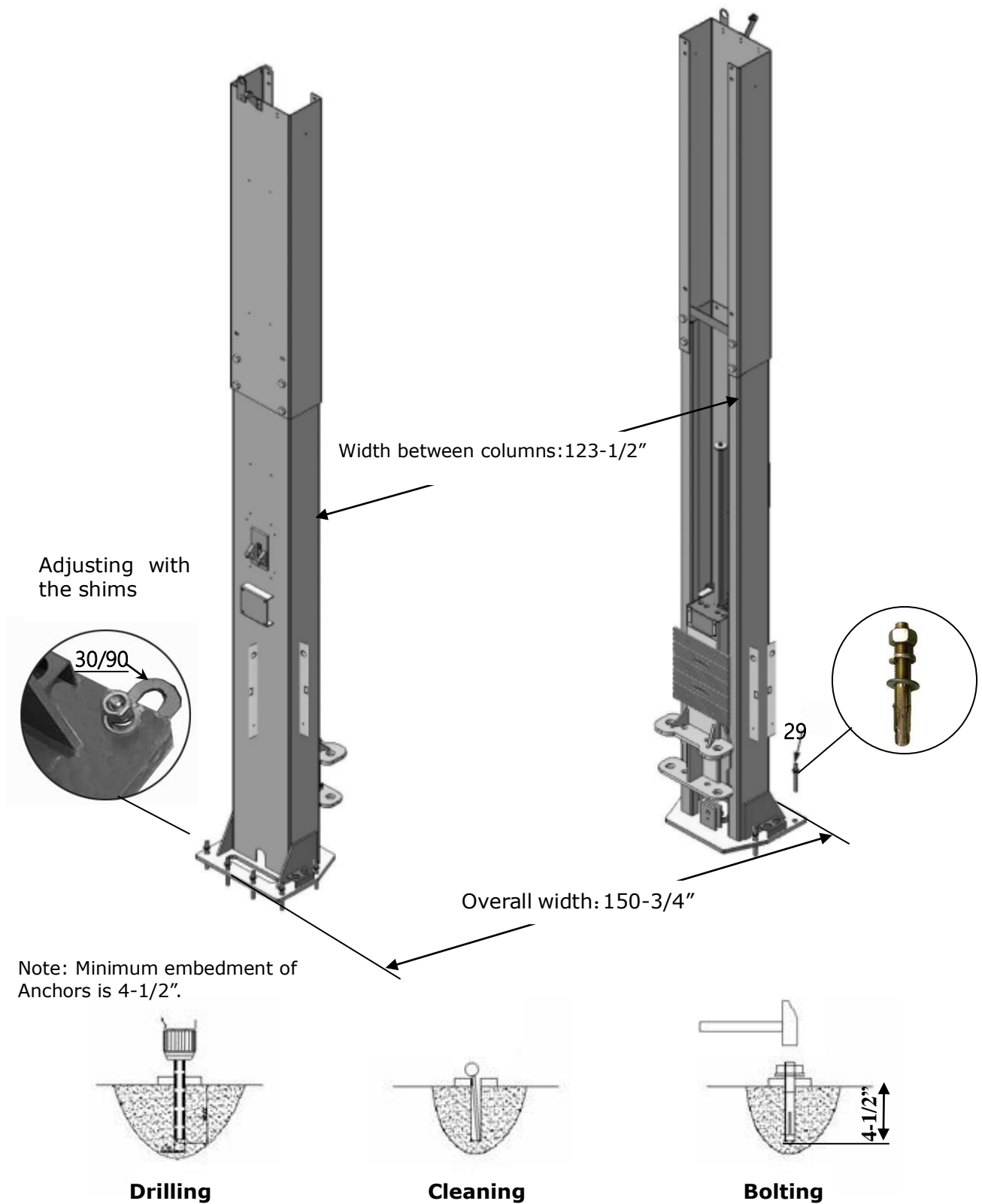


Fig. 19

H. Install overhead top beam

1. With help of the hook of top beam, put one side of top beam on top of the extension column and connecting the top beam to extension column by bolts, tighten the bolts. Then assemble the connecting bracket (**See Fig. 20**).

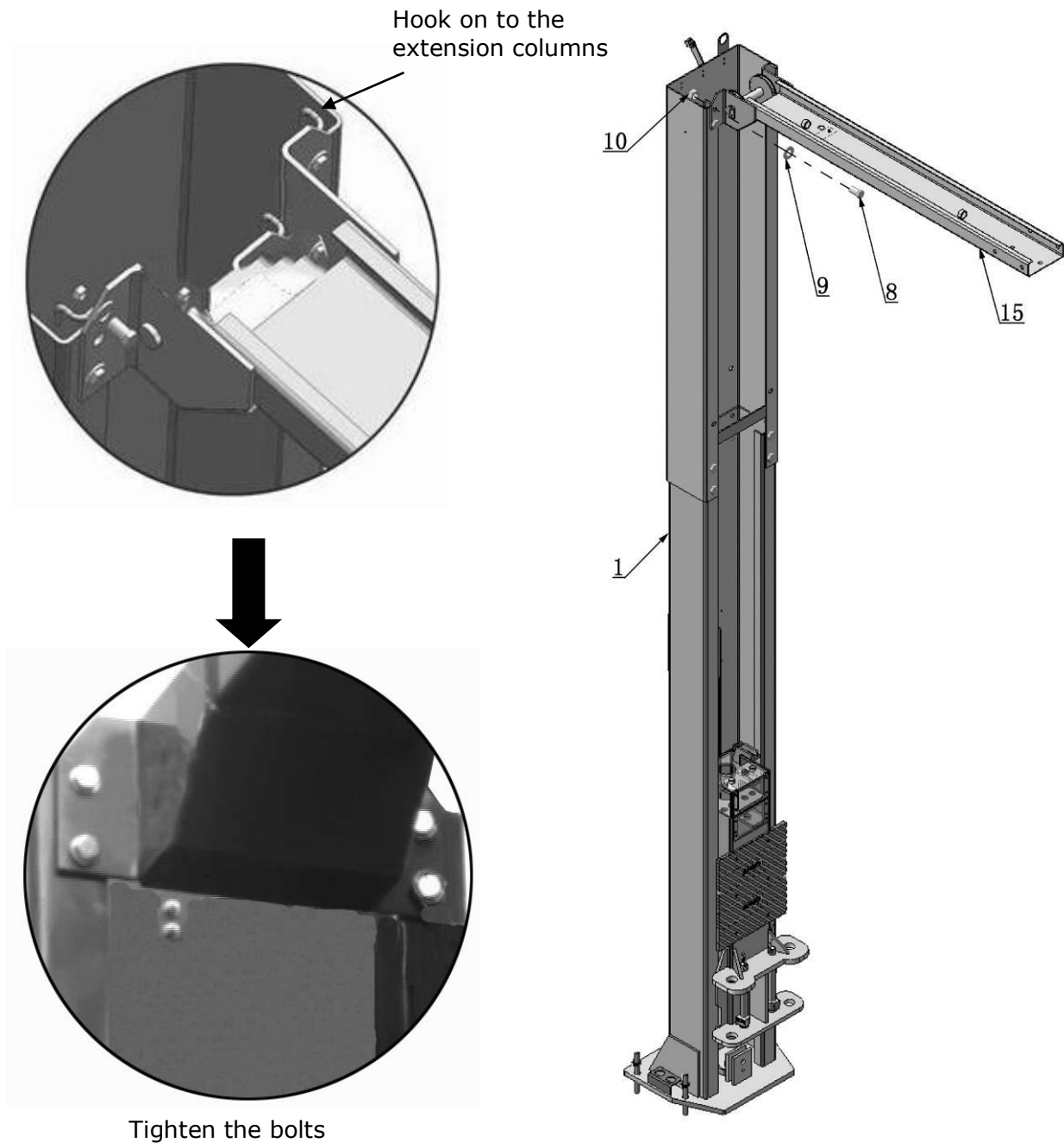
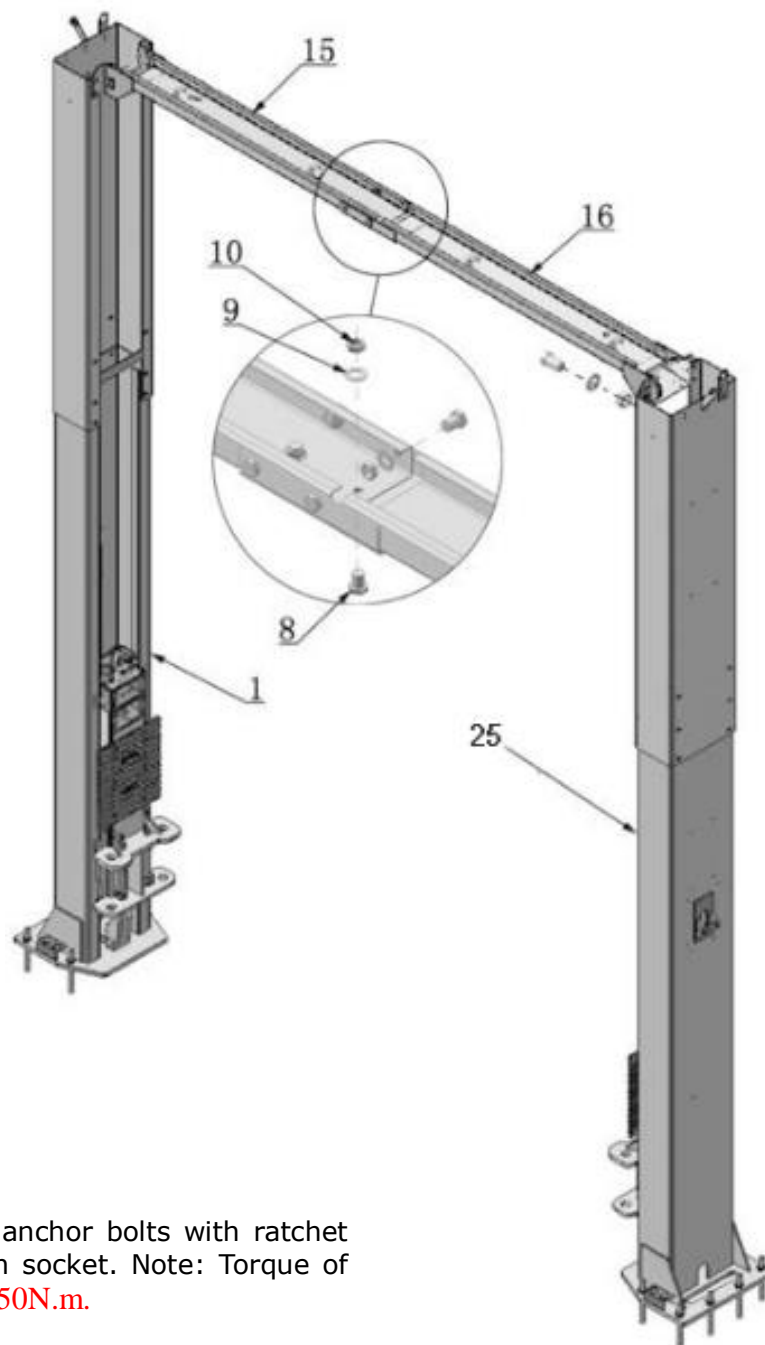
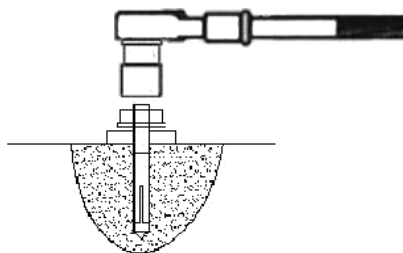


Fig. 20

2. Assemble overhead top beam, tighten the columns anchor bolts (**See Fig. 21**).



Tighten the anchor bolts with ratchet spanner with socket. Note: Torque of Anchors is **150N.m**.

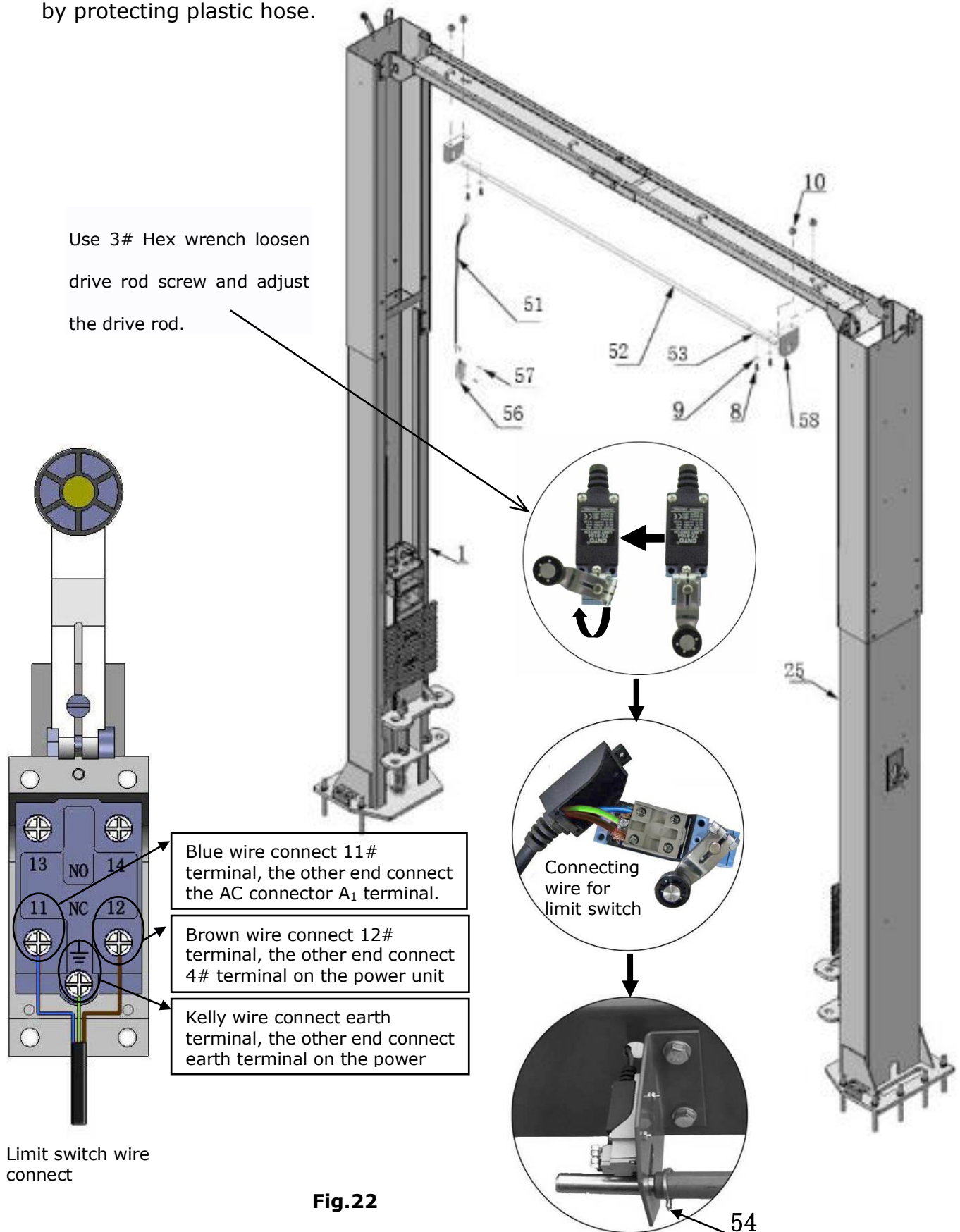


Tighten

Fig.21

I. Installing the limit switch control bar and limit switch (See Fig. 22).

Note: Wire of limit switch should be protected by protecting plastic hose.



J. Install safety device (See Fig. 23 & Fig. 24).

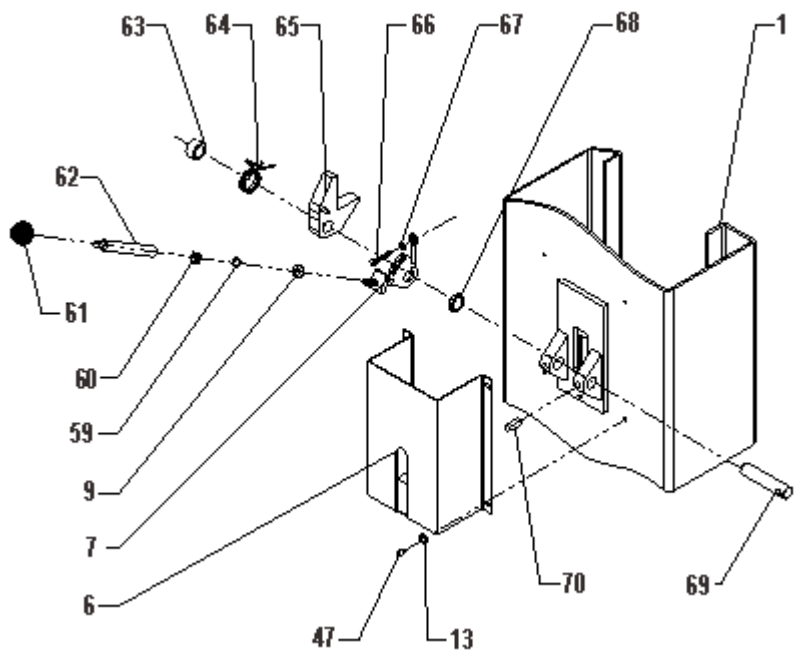
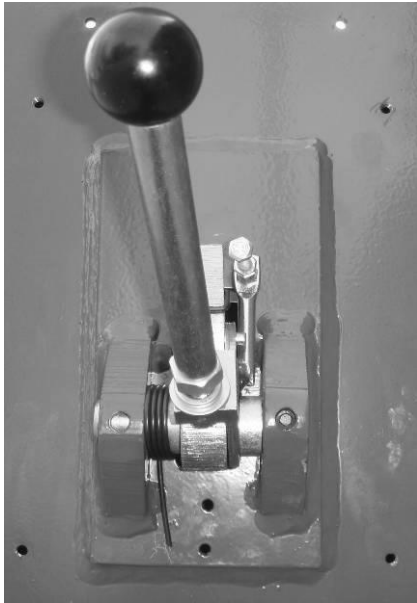


Fig. 23 Powerside safety device

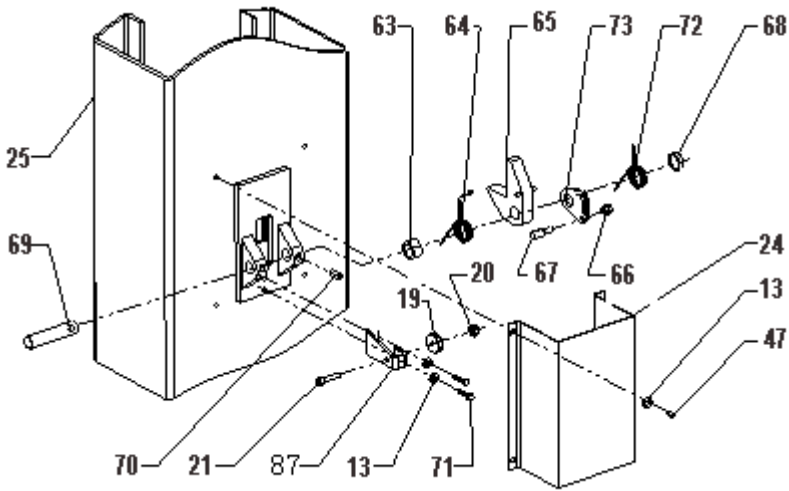


Fig. 24 Offside safety device

K. Lift the carriages up by hand and make them be locked at the same level (**See Fig. 25**).

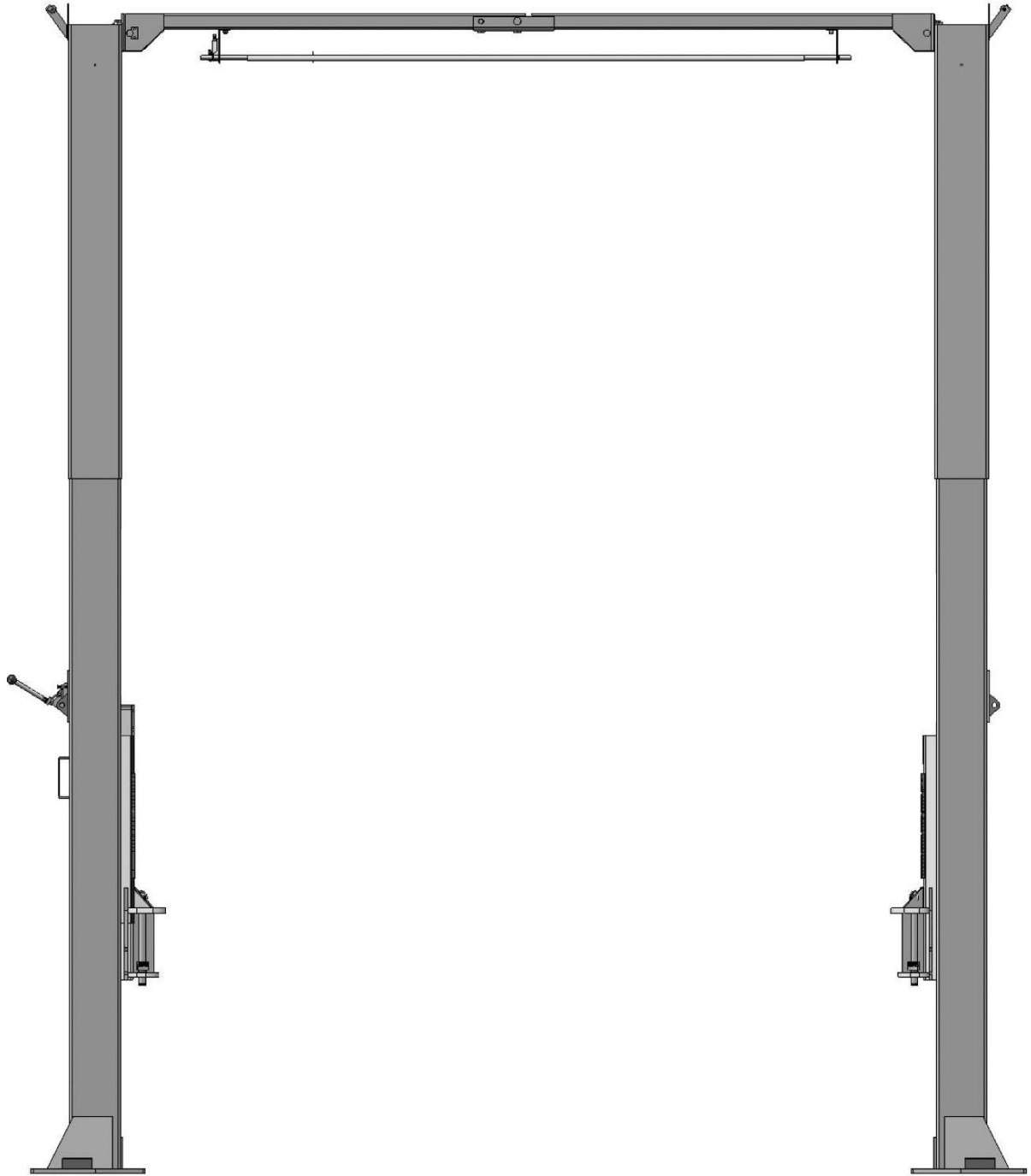


Fig. 25

L. Install power unit (See Fig. 26)

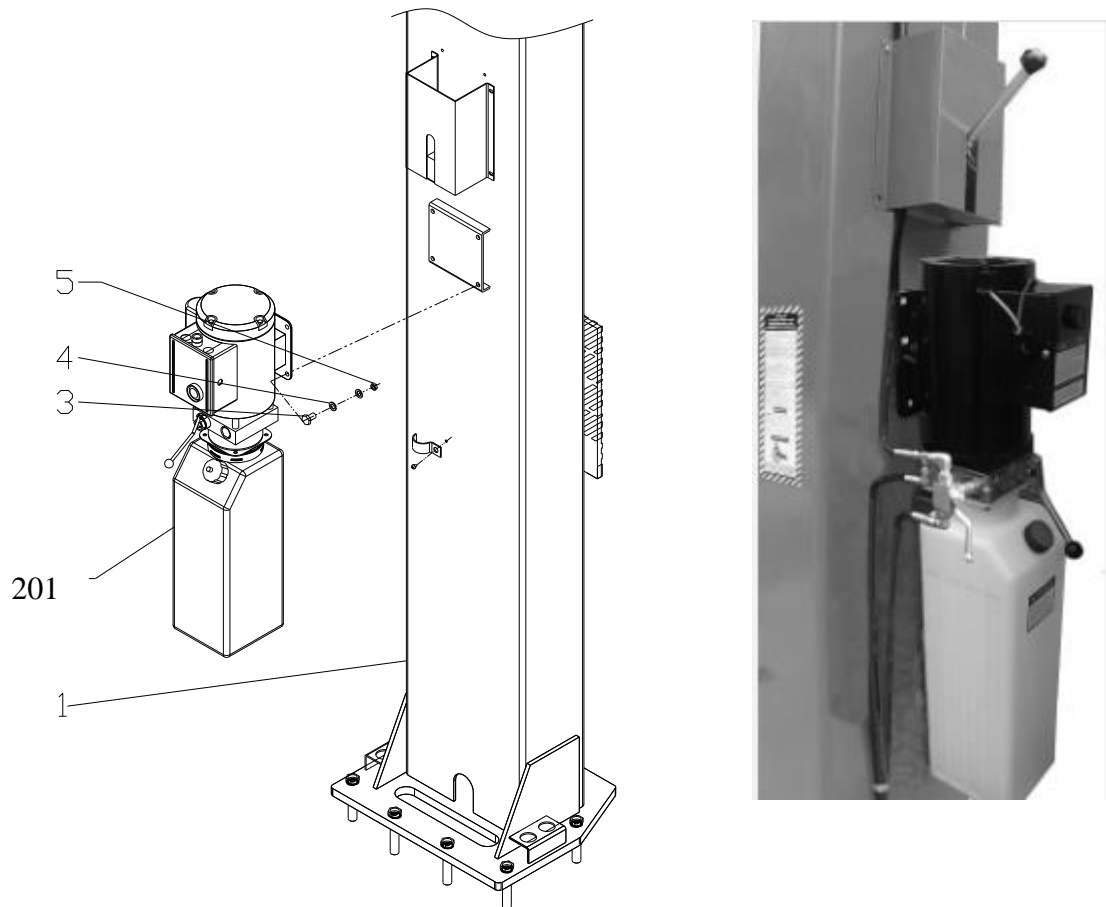
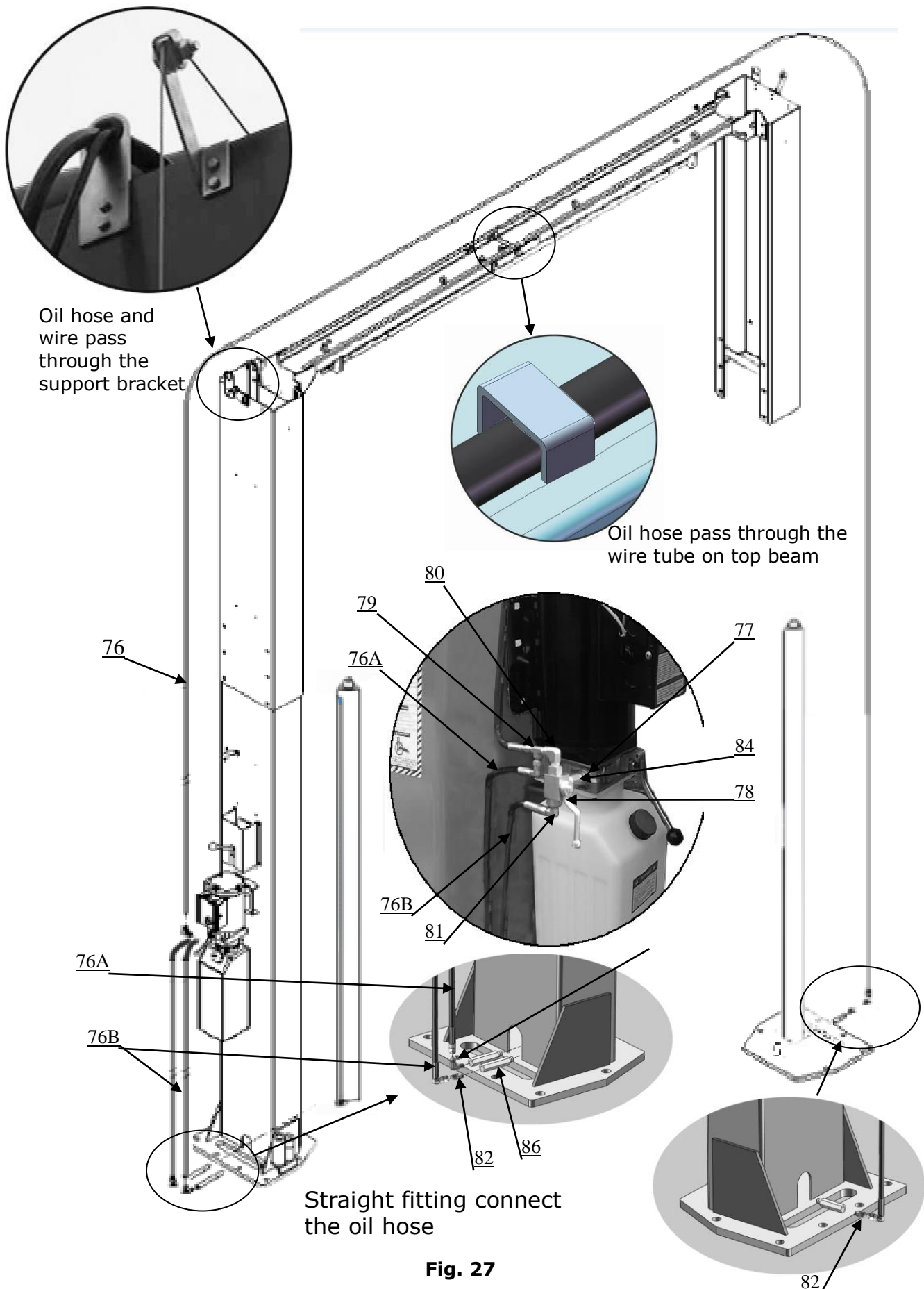


Fig. 26

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

M. Install oil hose

At high setting and low setting oil hose connection (**See Fig. 27**).



N. Install safety cable.

Install safety cable from offside safety assy. to powerside safety assy., pass through the top beam (See Fig. 28).

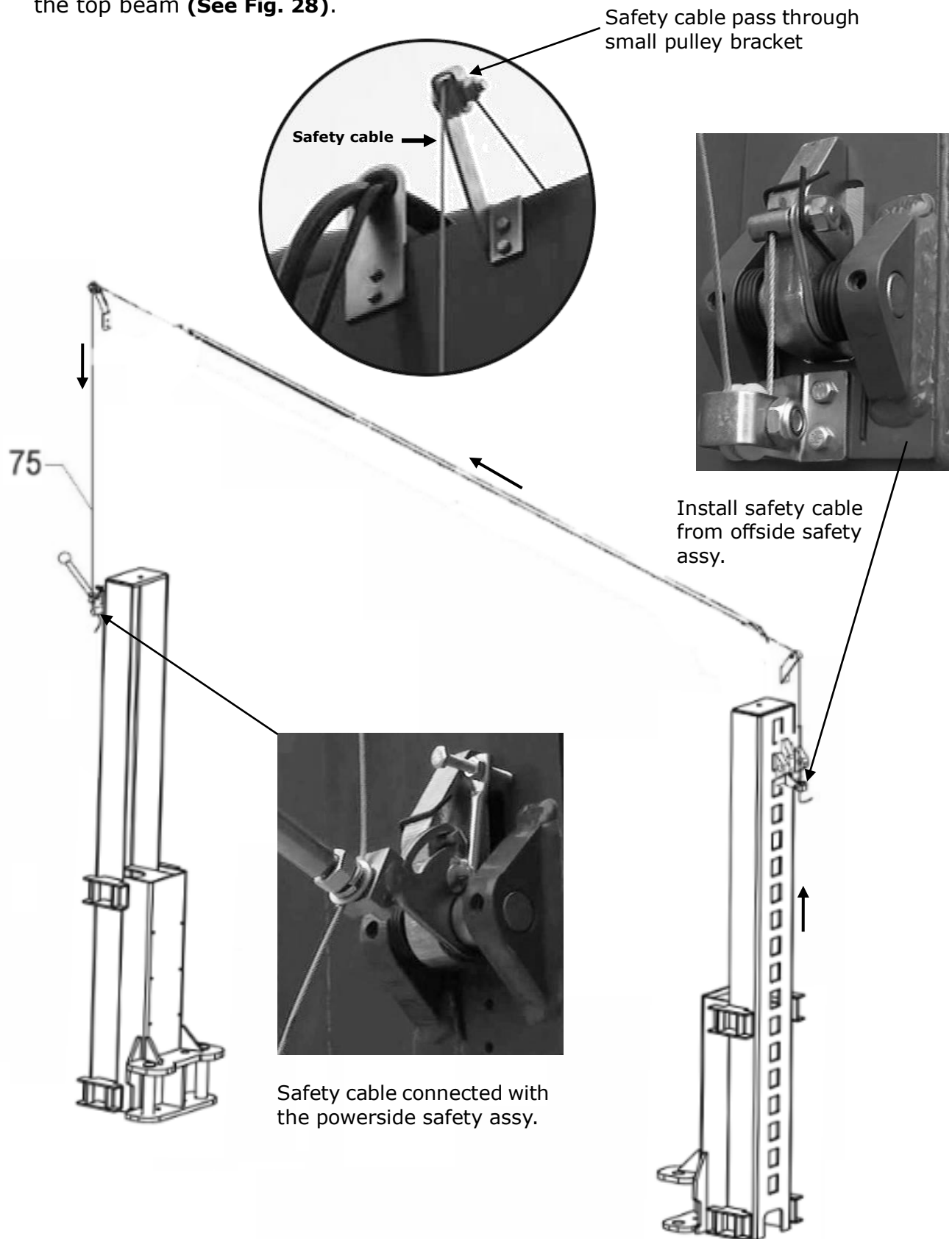


Fig. 28

O. Install retainer (See Fig. 29).

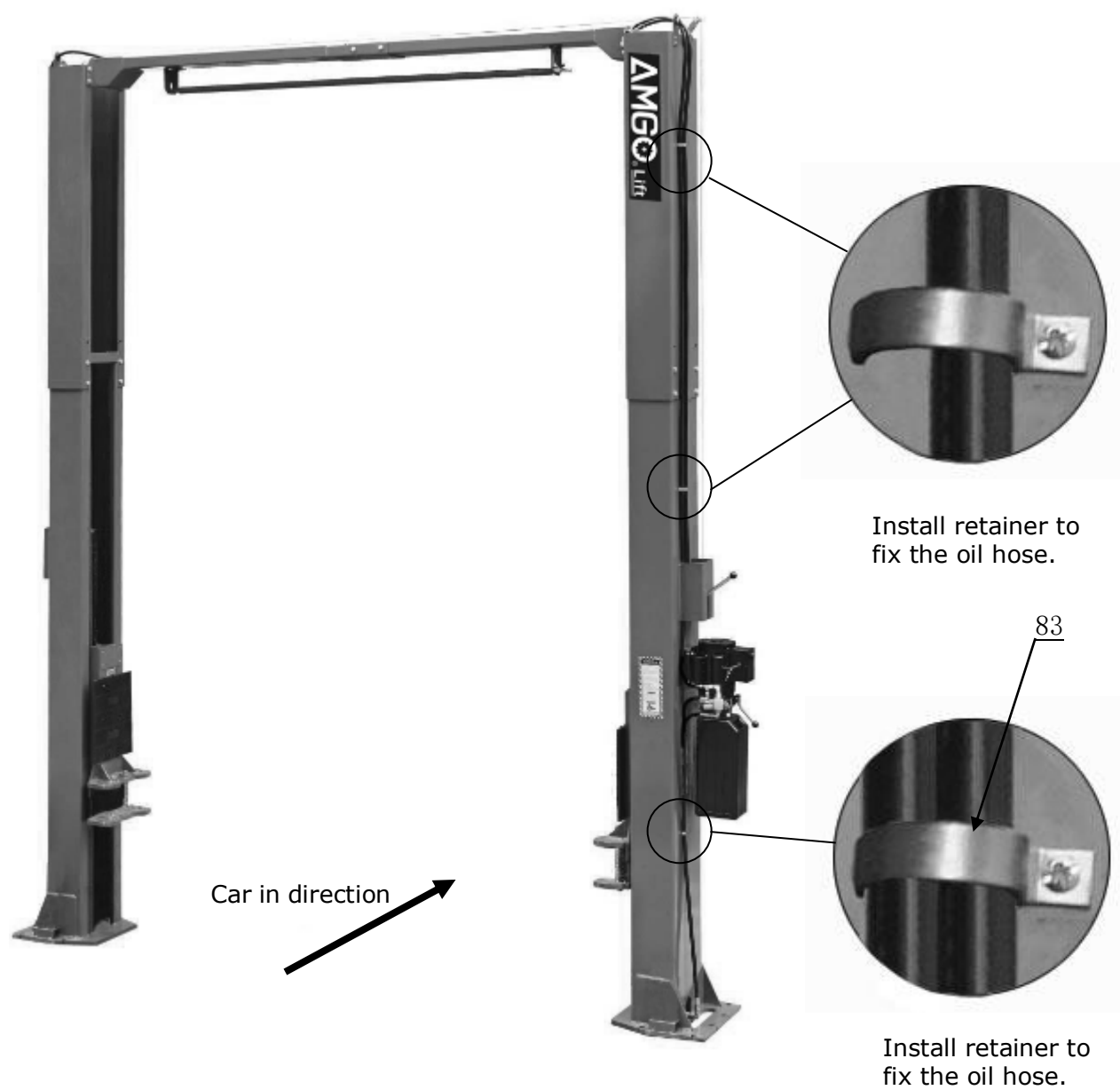


Fig. 29

P. Install lifting arms and adjust the arm locks

1. Install lifting arms (**See Fig. 30**).
2. Lowering the carriages down to the lowest position, then use the 8# socket head wrench to loosen the socket bolt (**See Fig.31**).
3. Adjust moon gear as direction of arrow (**See Fig.32**).
4. Adjust moon gear and arm lock to make it to be meshed, then tighten the socket bolts of arm lock (**See Fig.33**).

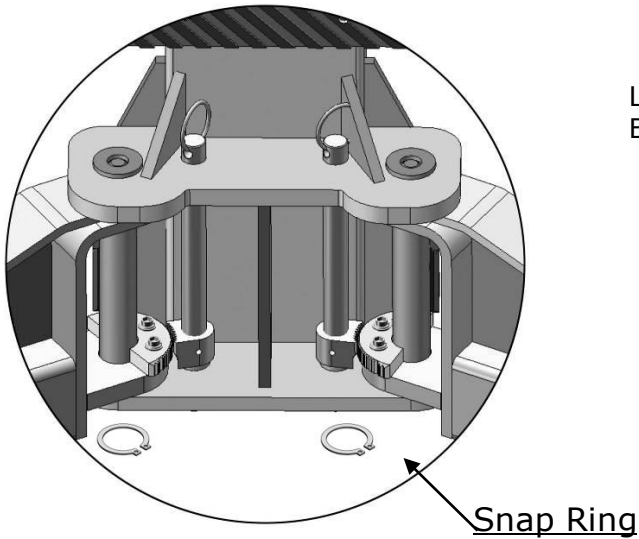


Fig. 30

Loosen the Socket Bolt

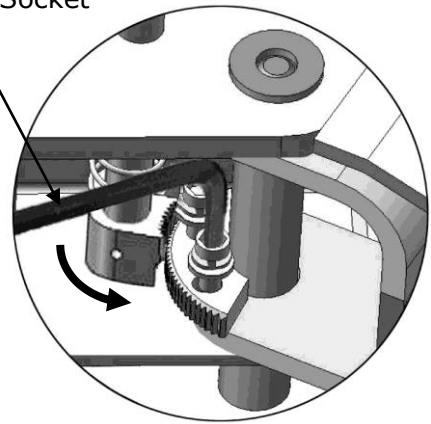


Fig. 31

Moon Gear

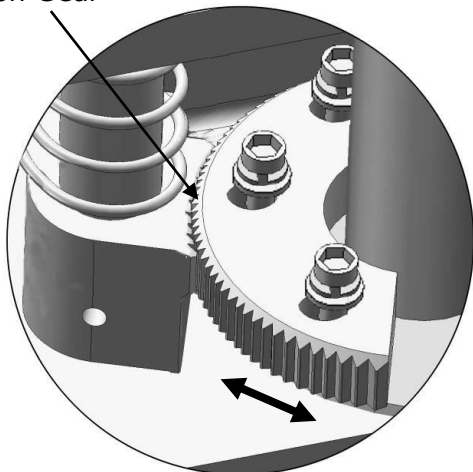


Fig. 32

Locking the bolts after the moon gear and arm lock engaged well

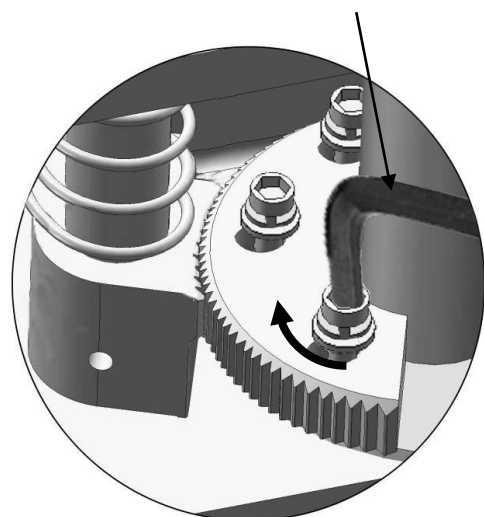


Fig. 33

Q. 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 three phase motors.

Single phase motor (See Fig. 34).

1. Connecting the two power supply lines (Active **L** and Neutral wire **N**) to terminals of AC contactor marked **6#**, **2#** respectively.
2. Connecting the power supply earth wire to **G** on the motor.
3. Connecting the Limit Switch: Removing the wire of connecting terminal **4#** on control button and terminal **1#** on AC contactor firstly (See Fig. 35), then connecting wire **10#** of the limit switch with terminal **4#** of the control button and connecting wire **9#** with terminal **A1** on AC contactor respectively (See Fig. 36).

Motor Connecting Diagram

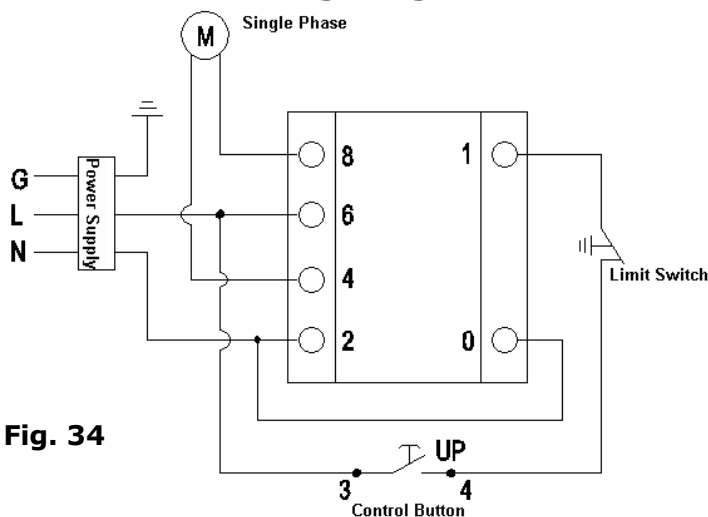


Fig. 34

Schematic Circuit Diagram

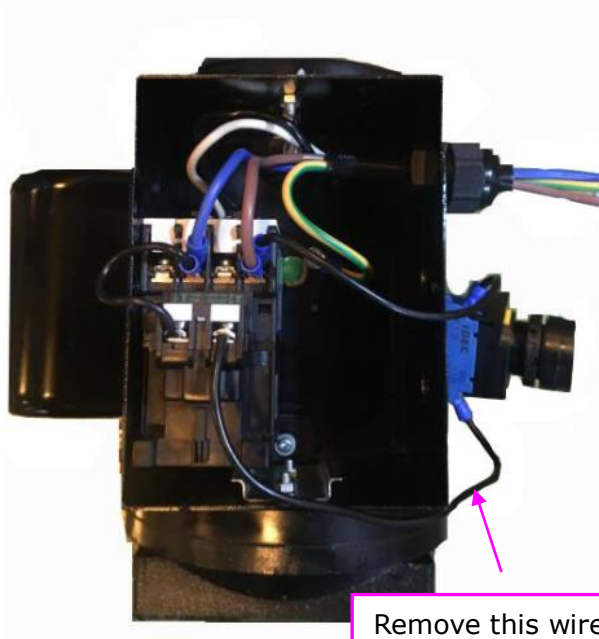
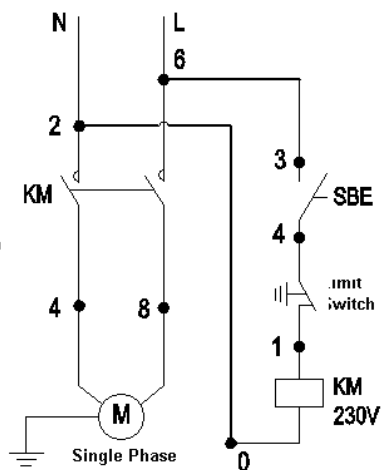


Fig. 35

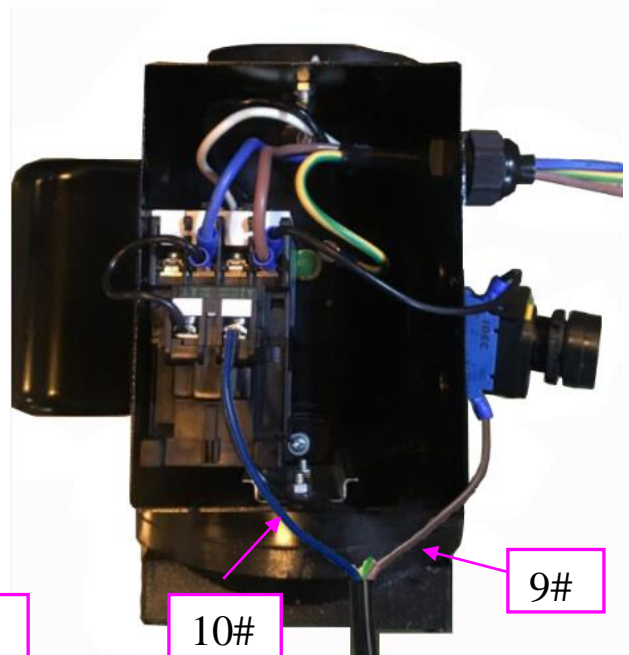


Fig. 36

IV. EXPLODED VIEW

Model HS-12

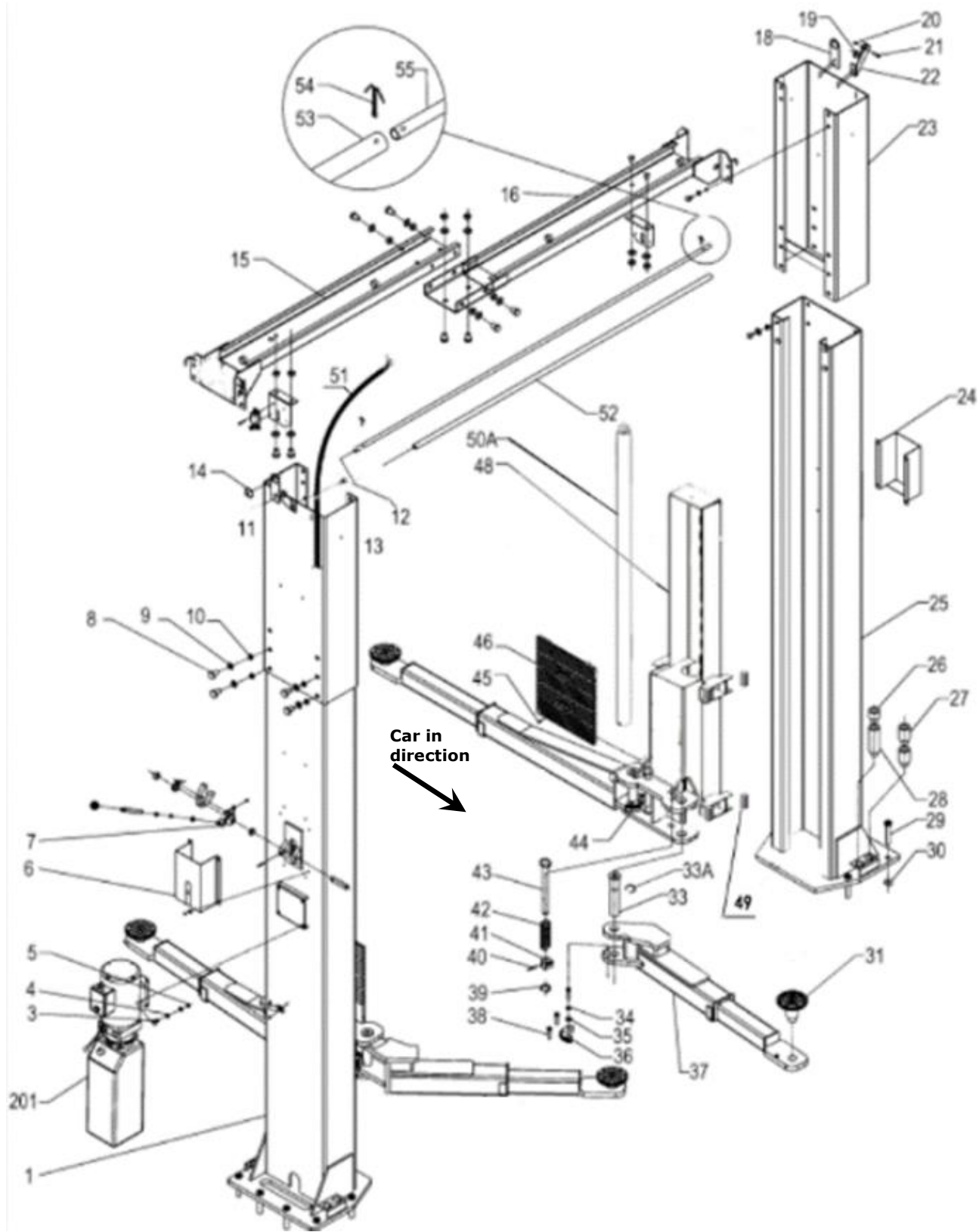


Fig. 37

Main Cylinder

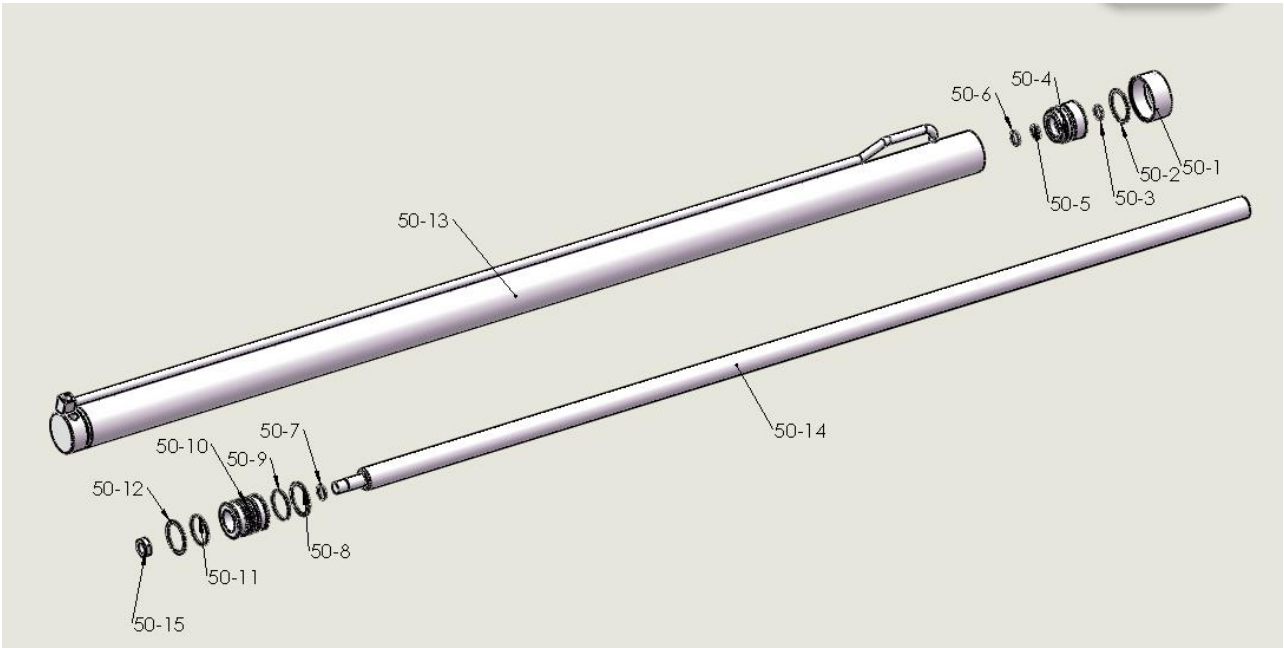


Fig. 38

Secondary Cylinder

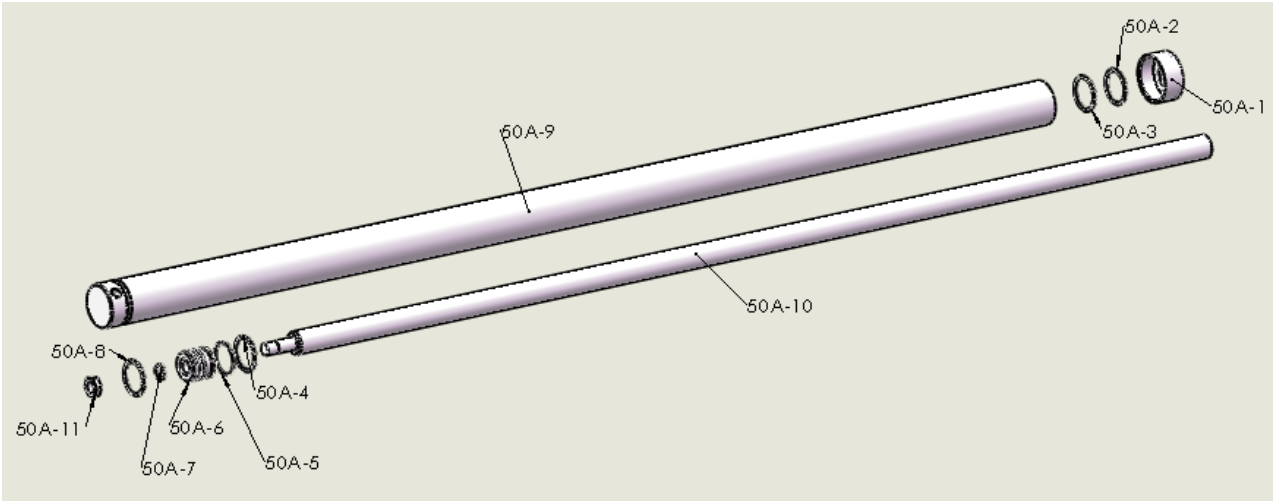


Fig. 39

POWER UNIT EXPLODED VIEW 220V/50HZ, single phase

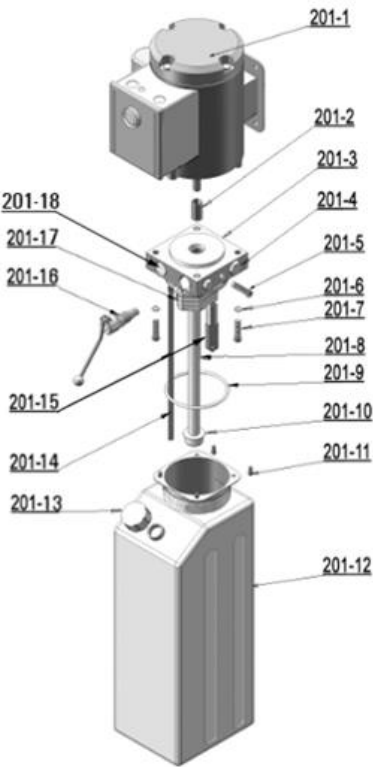


Fig. 40

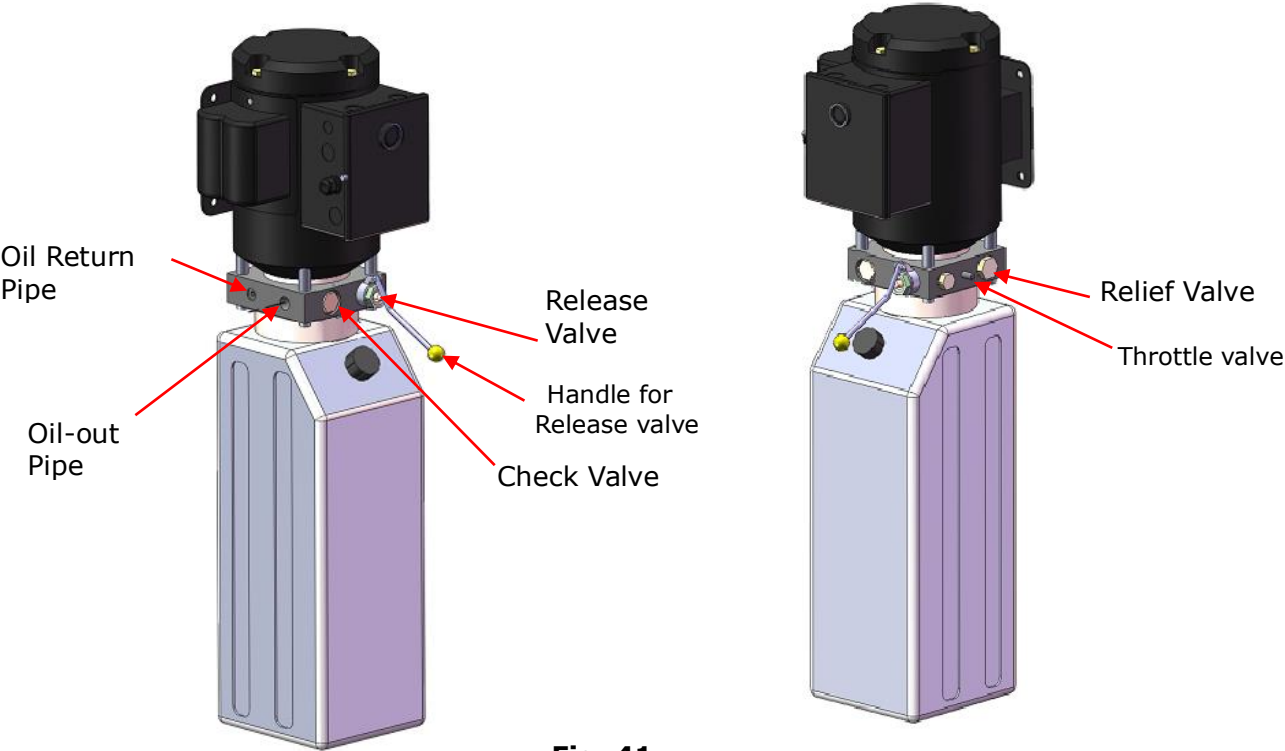


Fig. 41

V. TEST RUN

1. Adjust safety cable

Lifting the carriages 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.

2. Balance the machine

This machine use hydraulic balance adjustment way.



Fig. 42



Fig. 43

A. Turn the handle to the position as **Fig.42**, push **UP** button, lifting the powerside carriage to highest. Then turn the handle to another side as **Fig.43**, push UP button, lifting the offside carriage to highest.

B. Turn back the handle to the position as **Fig.42**, and open the safety device, press the release handle, low down the carriage to the bottom.

C. Turn the handle to the position as **Fig.43**, continues press the release handle until the inside air all come out. Then turn back the handle as **Fig.42**, push **UP** button. If both side of the carriage lifting at the same time it means balance adjustment finished. If still not synchronization, turn the handle to the position as **Fig.43**, fill oil.

D. Reply the above steps several times, until the machine balance.

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.

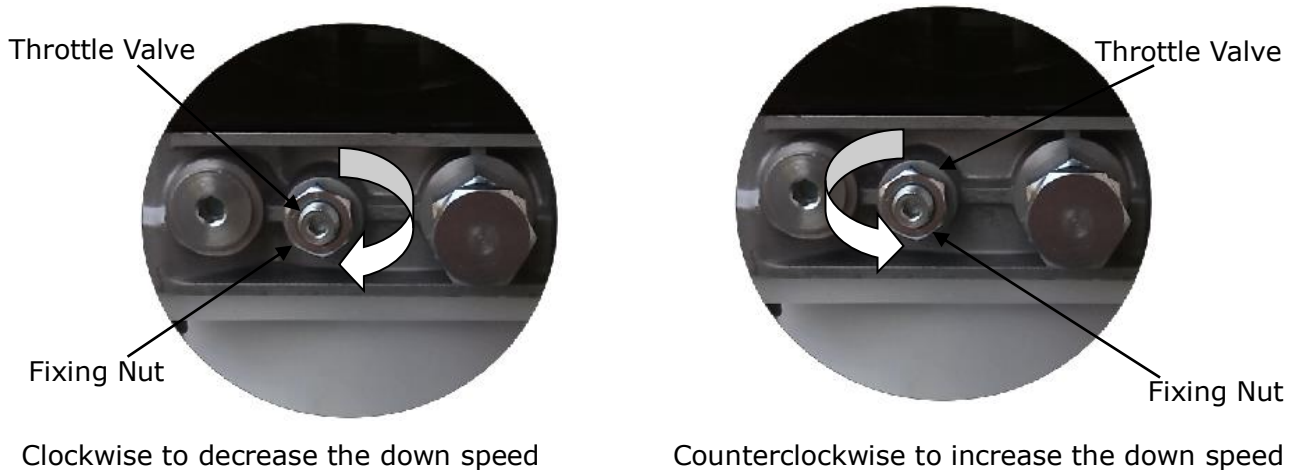


Fig. 44

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 are anything improper, repeat the above adjustment.

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

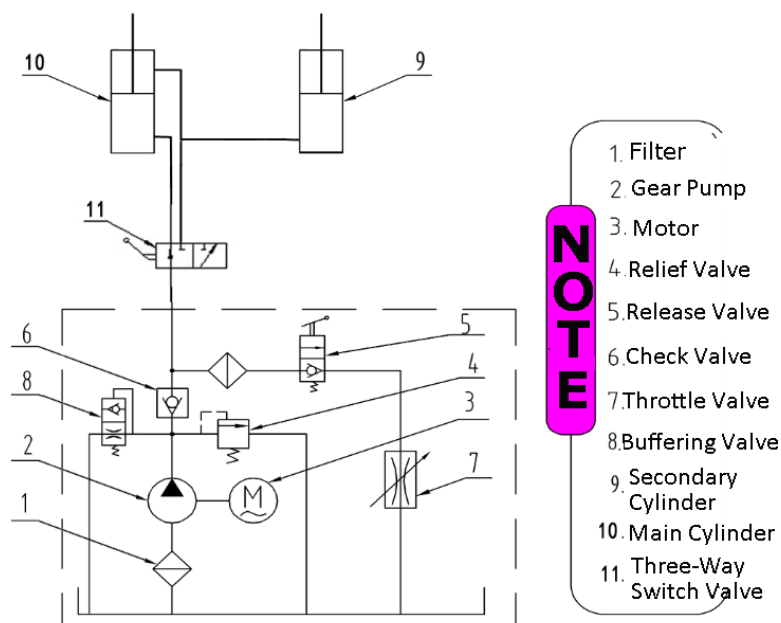


Fig. 45

VI. OPERATION INSTRUCTIONS

Please read the safety tips carefully before operating the lift

To lift vehicle

1. Keep clear of site around the lift.
2. Position lifting arms to the lowest position.
3. Shorten the arms to the shortest condition.
4. Open the lifting arms to allow vehicle driving in.
5. Position vehicle between columns.
6. Move/adjust 4 arms so that lifting pads are under correct lift points (per manufacturer's recommendation) of vehicle. Adjust pads so that all four pads will contact the lift points simultaneously. This ensures the vehicle will be lifted in a level position.
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 button **"DOWN"** 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. Position the arms to the shortest length and then open the them.
4. Drive away the vehicle.
5. Turn off the power.

VII. MAINTENANCE SCHEDULE

Monthly:

1. Re-torque the anchor bolts to **150.m**;
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 work2. Wiring connections are not in good condition3. Motor burned out4. Height Limit Switch is damaged5. AC Contactor burned out	<ol style="list-style-type: none">1. Replace button2. Repair all wiring connections3. Repair or replace motor4. Replace the Limit Switch5. Replace AC Contactor
Motor runs but the lift is not raised	<ol style="list-style-type: none">1. Motor runs in reverse rotation2. Gear Pump out of operation3. Release Valve in damage4. Relief Valve or Check Valve in damage5. Low oil level	<ol style="list-style-type: none">1. Reverse two power wire2. Repair or replace3. Repair or replace4. Repair or replace5. Fill tank
Lift does not stay up	<ol style="list-style-type: none">1. Release Valve out of work2. Relief Valve or Check Valve leakage3. Cylinder or Fittings leaks	Repair or replace
Lift raises slowly	<ol style="list-style-type: none">1. Oil line is jammed2. Motor running on low voltage3. Oil mixed with Air4. Gear Pump leaks5. Overload lifting	<ol style="list-style-type: none">1. Clean the oil line2. Check electrical system3. Fill tank4. Replace Pump5. Check load
Lift can not lower	<ol style="list-style-type: none">1. Safety device are locking2. Release valve in damage3. Safety cable broken4. Oil system is jammed5. Hydraulic Solenoid valve does not work.	<ol style="list-style-type: none">1. Release the safeties2. Repair or replace3. Replace4. Clean the oil system5. Replace

IX. Parts list for model HS-12

Item	Part#	Description	Qty.	Note
1	217259	Powerside Column	1	
201	209002	Power Unit	1	
3	209003	Hex Bolt	4	
4	209033	Lock washer	4	
5	217002	Hex Nut	4	
6	217003	Powerside Safety Lock Cover	1	
7	217004	Main Cam Lock	1	
8	217069	Hex Bolt	34	
9	206006	Lock washer	35	
10	206023	Self locking Nut	34	
11	420018	Self locking Nut	8	
12	217013	Hex Bolt	8	
13	420045	Lock washer	18	
14	61K074	Protected Ring	2	
15	217015B	Top Beam(right)	1	
16	217016B	Top Beam(Left)	1	
17	420138	Socket Bolt	4	
18	217024	Oil hose Support Plate	2	
19	206009	Plastic Small Pulley	3	
20	209056	Self locking Nut	3	
21	209046	Hex Bolt	3	
22	217026	Safety Cable Support Bracket	2	
23	217027B	Extension column	2	
24	217028	Offside Safety Lock Cover	1	
25	217260	Offside Column	1	
26	209051B	Adapter 1.5 "	4	
27	209052B	Adapter2.5 "	4	
28	209053B	Adapter 5 "	4	
29	207045	Anchor bolt	12	
30	620065	Shim	10	
31	217114A	Rubber pad assy.	4	
31A	420138	Socket Bolt	4	
31B	209134	Rubber Pad	4	
31C	680030B	Rubber Pad Frame	4	
32	209038	Hex Bolt	4	
33	217047A	Arm Pin	4	
33A	520023	Snap Ring	4	
34	209039	Lock Washer	16	
35	209022	Lock washer	16	

Item	Part#	Description	Qty.	Note
36	206049	Moon gear	4	
37	217052C	Lifting Arm	4	
37A	217120	Lifting Arm - Outer	4	
37B	217121A	Lifting Arm - Inner	4	
38	206048	Socket Bolt	12	
39	206032	Snap Ring	4	
40	206036	Hair Pin	4	
41	217044	Arm Lock	4	
42	217045	Spring	4	
43	217046B	Arm Lock bar (left)	2	
44	217046C	Arm Lock bar (Right)	2	
45	209019	Screw	12	
46	217053	Protective Rubber	2	
47	209009	Cup Head Bolt	18	
48	217261	Carriage	2	
49	217188	Slider Block	16	
50	217262	Main Cylinder	1	
50A	217263	Secondary Cylinder	1	
51	217173	Wire Cable L=191"	1	
52	206025A	Foam Cushion	1	
53	206129	Control Bar L=94-1/2"mm	1	
54	201005	Split Pin	2	
55	206025C	Connecting Pin for Control Bar	2	
56	206013	Limit Switch	1	
57	206011	Cup Head Bolt	2	
58	206042	Limit Control Bar Bracket	2	
59	420026	Lock Washer	1	
60	206023B	Hex Nut	6	
61	217005	Plastic ball	1	
62	217006	Safety Lock handle	1	
63	217007	Large Spacer	2	
64	217030	Main spring	2	
65	217009	Main lock assy.	2	
66	217010	Hex Bolt	1	
67	217011	Hex Nut	1	
68	217012	Small Spacer	2	
69	217050	Main Lock Pin	2	
70	217051	Socket Screw	2	
71	217066	Hex Bolt	2	
72	217008	Torsion spring	1	

Item	Part#	Description	Qty.	Note
73	217031	Offside Cam lock	1	
74	217033	Locking Nut	1	
75	217064B	Safety Cable L=374"	1	
76	217246	Oil Hose	1	
76A	217233	Oil Hose	1	
76B	217234	Oil Hose	1	
77	440009	Power Unit Straight Fitting	1	
78	680065	3-way Switch Valve	1	
79	209062	Cylinder T Fitting	1	
80	52K027	90°Fitting	1	
81	420097	90°Fitting	2	
82	209064	Straight Fitting	2	
83	217191	Retainer	12	
84	630103	Transition Fitting	1	
85	217500B	Parts Box	1	
86	217235	Lengthen Straight Fitting	3	
87	217029	Small pulley bracket	1	
88	201090	Shim	10	
Parts For Main Hydraulic Cylinder				
50-1	217274	Head cap	1	
50-2	620054	Y-Ring	1	
50-3	217078	Dust Ring	1	
50-4	217273	Head Cup Seal Sleeve	1	
50-5	217243	Y-Ring	1	
50-6	217241	Support Ring	1	
50-7	206069	O-Ring	1	
50-8	620053	Support Ring	1	
50-9	620054	Y-Ring	1	
50-10	217276	Piston	1	
50-11	620054	Y-Ring	1	
50-12	620053	Support Ring	1	
50-13	217792	Bore weldment	1	
50-14	217275	Piston rod	1	
50-15	206071	Nut	1	
Parts For Secondary Hydraulic Cylinder				
50A-1	217279	Head cap	1	
50A-2	217078	Dust Ring	1	
50A-3	217244	O-Ring	1	
50A-4	217258	O-Ring	1	
50A-5	217257	Y-Ring	1	

Item	Part#	Description	Qty.	Note
50A-6	217280	Piston	1	
50A-7	206069	O-Ring	1	
50A-8	217256	Support Ring	1	
50A-9	217793	Bore weldment assy.	1	
50A-10	217275	Piston rod	1	
50A-11	206071	Nut	1	
Parts For AMGO Electric Power Unit 220V/50HZ/1 Phase				
201-1	81400287	Motor	1	
201-2	81400363	Motor Connecting Shaft	1	
201-3	81400362	Manifold Block	1	
201-4	81400266	Overflow Valve	1	
201-5	81400268	Flow Control Valve	1	
201-6	209149	Lock Washer	4	
201-7	85090142	Socket Bolt	4	
201-8	81400288	Oil Suction Pipe	1	
201-9	81400365	O-Ring	1	
201-10	81400290	Filter	1	
201-11	203018	Socket Bolt	4	
201-12	81400275	Reservoir	1	
201-13	81400263	Filter Cap	1	
201-14	81400289	Oil Return Pipe	1	
201-15	81400294	Buffering Valve	1	
201-16	81400265	Release Valve	1	
201-17	81400280	Gear Pump	1	
201-18	81400267	Check Valve	1	



AMGO HYDRAULIC CORPORATION

1931 Jo Rogers Blvd, Manning, South Carolina, USA

Tel: (803) 505-6410

Fax: (803) 505-6410