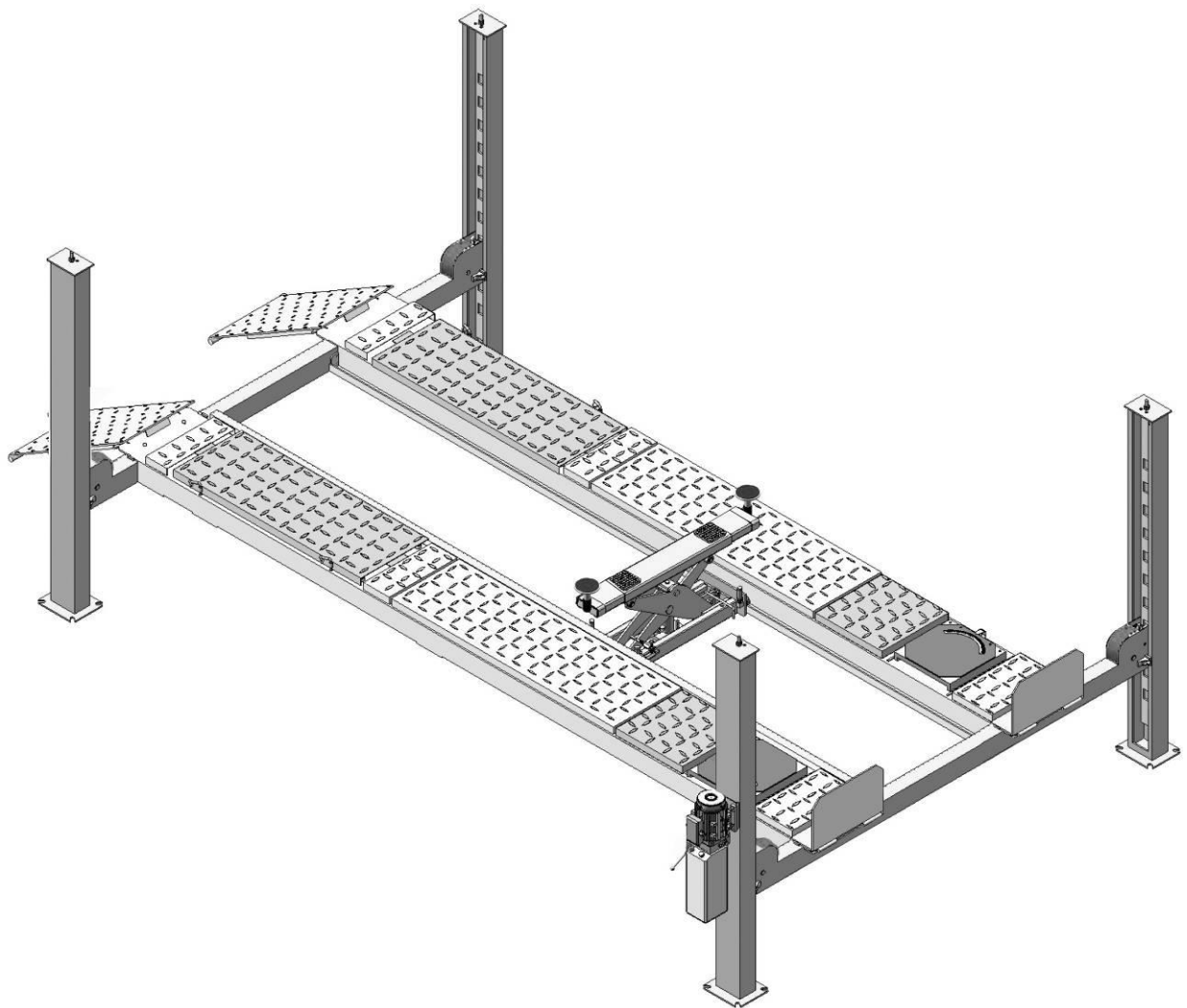


AMGO  [®] **Hydraulics**

Installation And Service Manual



FOUR-POST LIFT
Model: PRO-12A

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I. PRODUCT FEATURES AND SPECIFICATIONS

ALIGNMENT MODEL PRO-12A FEATURES

- Manual control air-operated system.
- Mechanical self-lock and air-drive safety release.
- Manual hydraulic power system, cable-drive.
- Strengthen and Non-skid diamond platforms.
- Multiple turn plate pockets fit with different wheel base.
- Adjustable platform and adjustable safety lock ladders.
- Optional Jack: With hand pump/Air-operated hydraulic pump/Controlled by power unit.
- Optional Turn plate

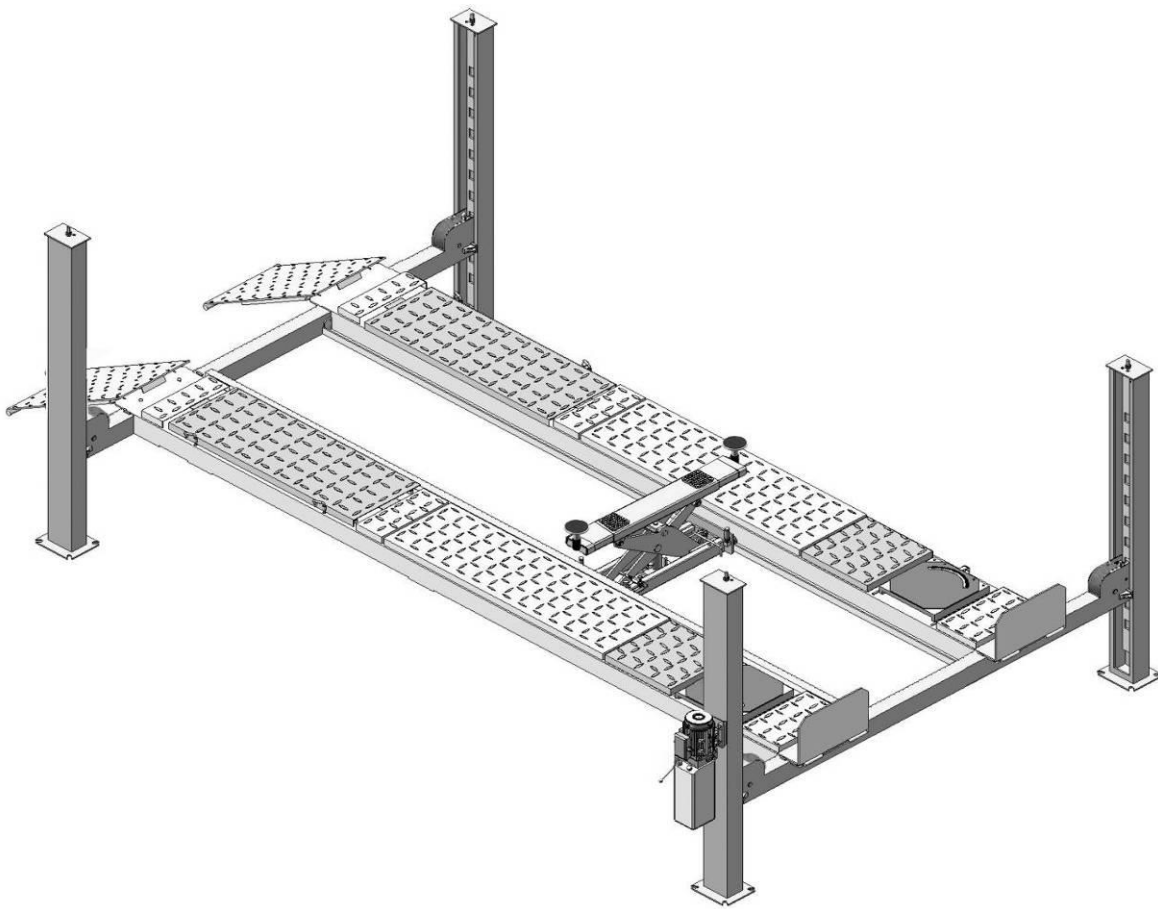


Fig. 1

ALIGNMENT MODEL SPECIFICATIONS

Model	Lifting Capacity	Lifting Height	Lifting Time	Overall Length (Inc. Ramps)	Overall Width	Width Between Columns	Gross Weight	Motor
PRO-12A	12,000 lbs	75 3/8"	62S	236 3/4"	126 3/8"	112 3/8"	2923 lbs	2.0HP

II. INSTALLATION REQUIREMEN

A. TOOLS REQUIRED

- ✓ Rotary Hammer Drill ($\Phi 19$)



- ✓ Hammer



- ✓ Level Bar



- ✓ English Spanner (12")



- ✓ Wrench Set
(10#, 12#, 13#, 14#, 17#, 19#, 24#, 30#)



- ✓ Ratchet Spanner With Socket (28#)



- ✓ Carpenter's Chalk



- ✓ Screw Sets



- ✓ Tape Measure (7.5m)



- ✓ Pliers



- ✓ Lock Wrench



- ✓ Socket Head Wrench
(3#, 5#, 6#)

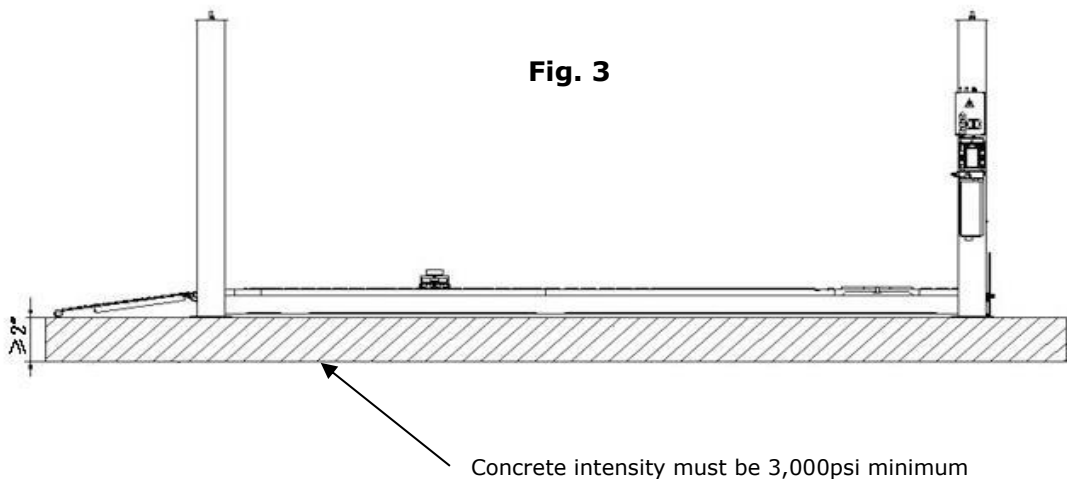


Fig. 2

B. SPECIFICATIONS OF CONCRETE (See Fig. 3)

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 100 mm 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 3,000 psi minimum.
3. Floors must be level and no cracks.



C. AIR SUPPLY

Air pressure requirement: 0.5Mpa~0.8Mpa, Air line size $\phi 8 \times \phi 6$ and $\phi 6 \times \phi 4$.

D. 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. STEPS OF INSTALLATION

A. Location of installation

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

B. Check the parts before assembly

1. Packaged lift and hydraulic power unit (See Fig. 4).



Fig. 4

2. Open the outer packing carefully (See Fig. 5).

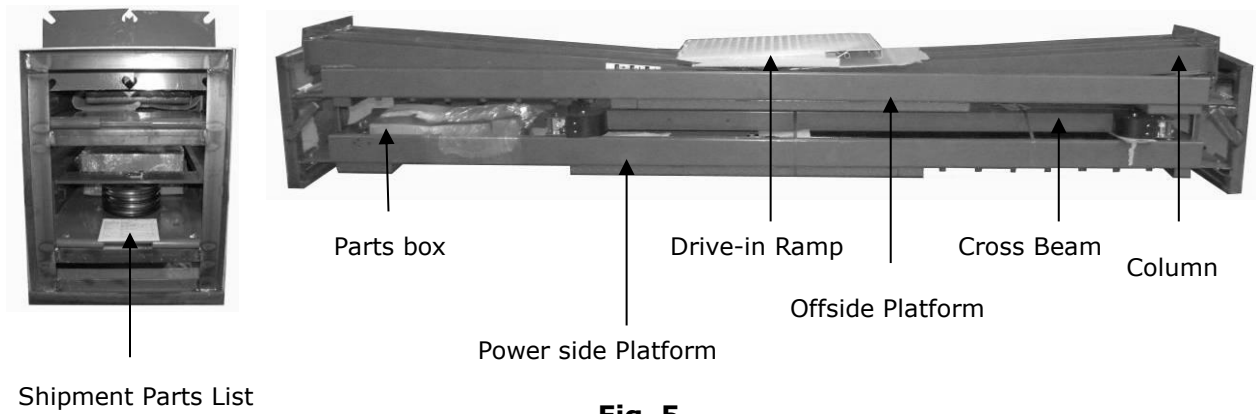


Fig. 5

3. Take off the Drive-in Ramps and Columns (See Fig. 6).



Fig. 6

4. Loosen the screws of the upper package stand, take off the offside platform, take out the parts inside the power side platform, then remove the package stand.
5. Move aside the parts and check the parts according to the shipment parts list

(See Fig. 7).

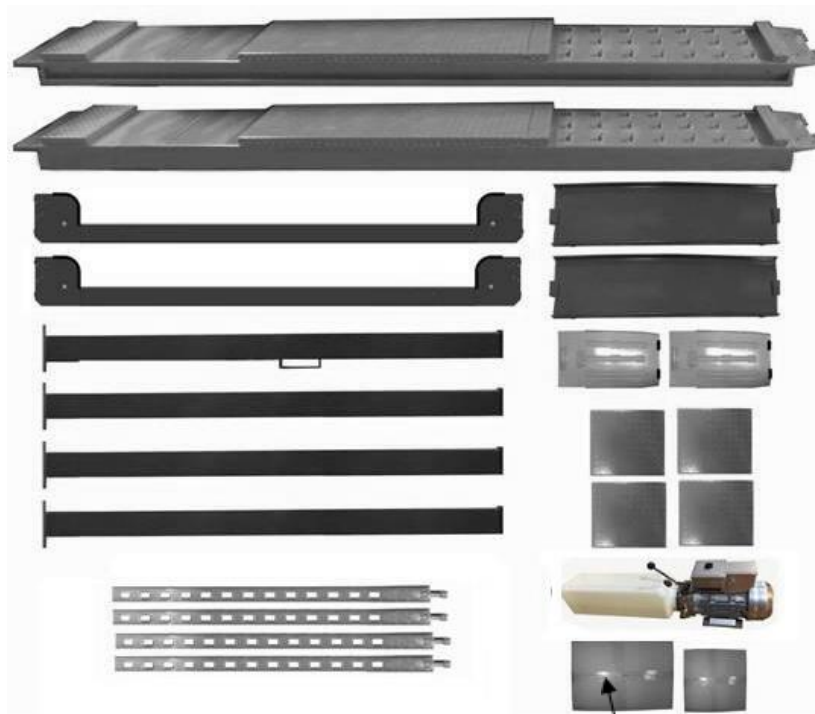


Fig. 7

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6. Open the carton of parts and check the parts according to the parts box list (See Fig. 8).



Fig. 8

7. Check the parts of the parts bag according to the parts bag list (See Fig. 9).

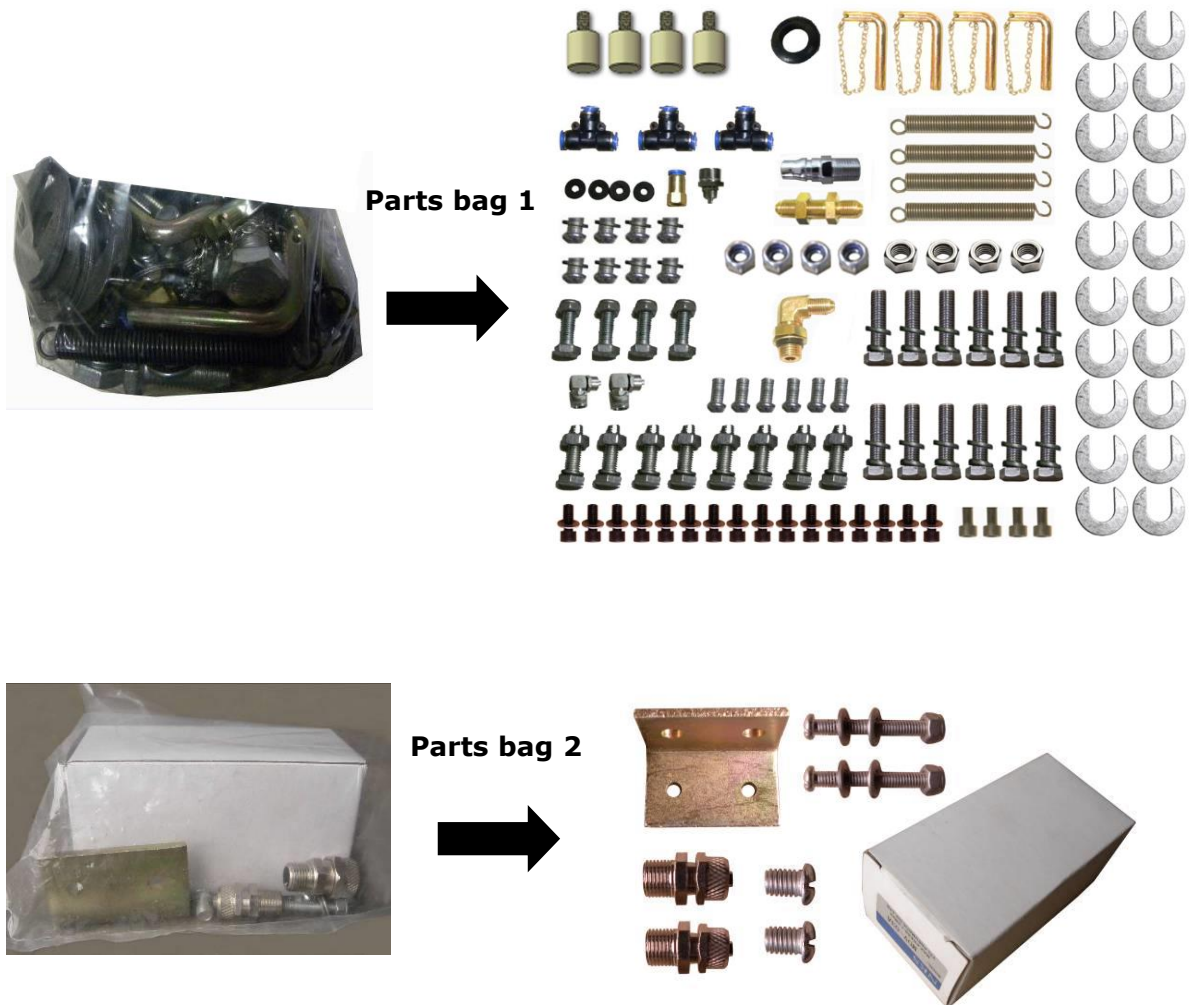


Fig. 9

C. Use a carpenter's chalk line to establish installation layout as per Table 1
 Make sure the size is right and base is flat (**see Fig. 10**).

Note: Reserve space before and behind the installation site.

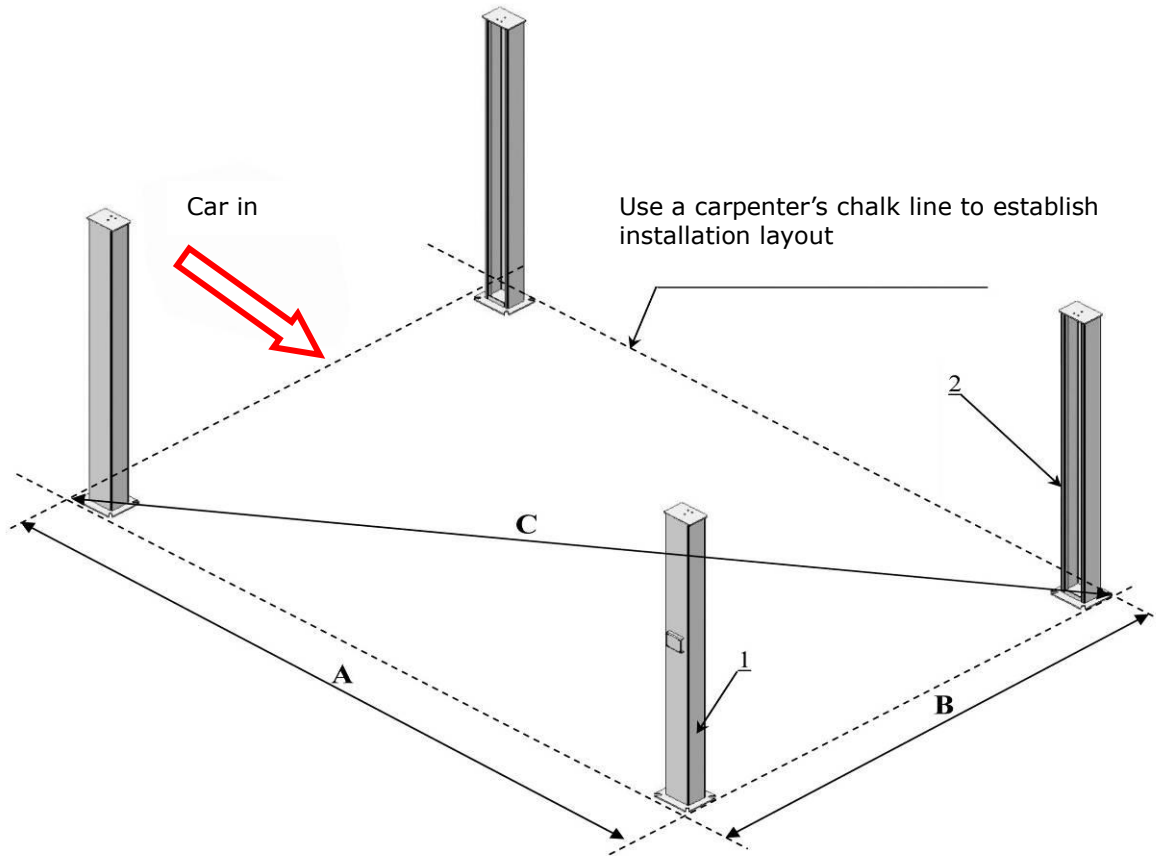


Fig. 10

Model	A	B	C
PRO-12A	200 3/4"	126 1/4"	237 1/4"

Table 1

D. Install cross beams (See Fig. 11, Fig. 12).

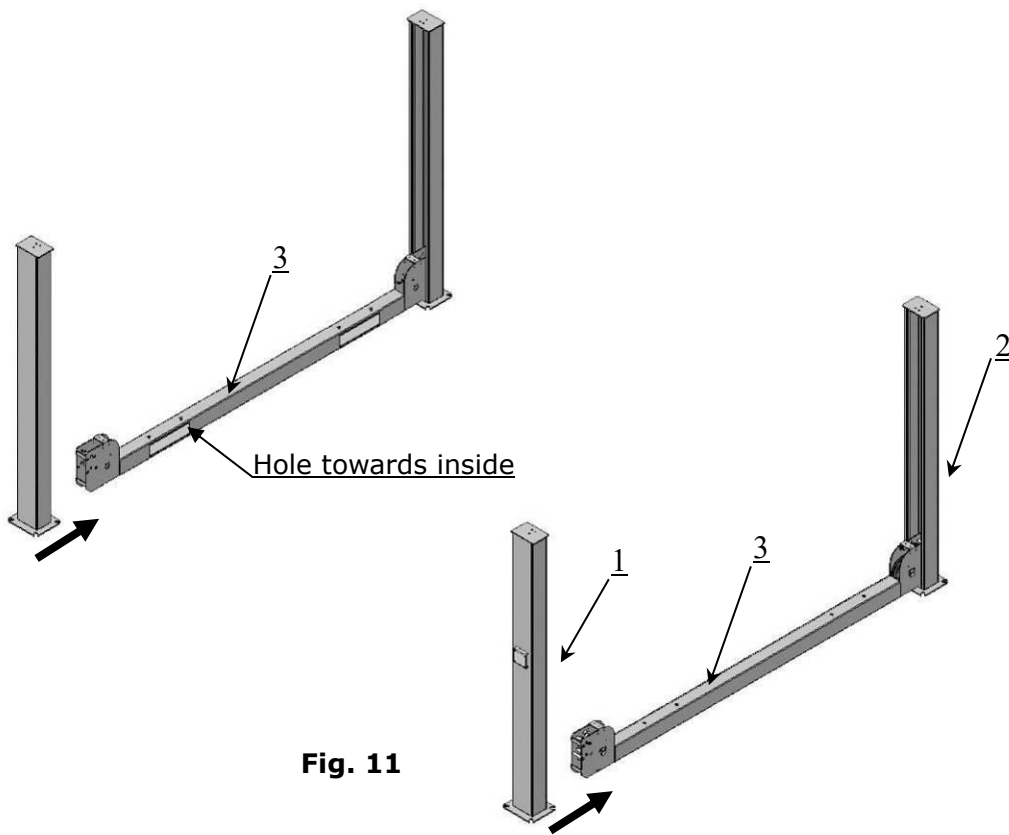


Fig. 11

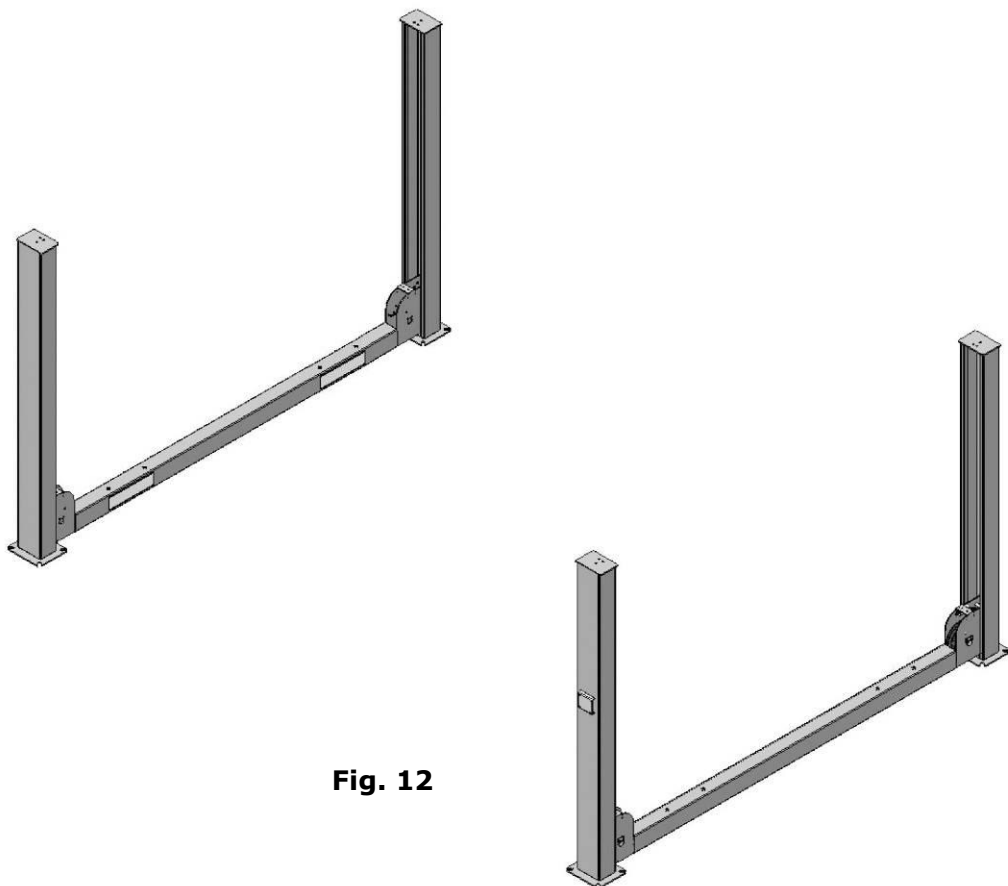
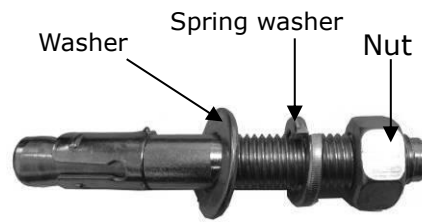


Fig. 12

E. Fix the anchor bolts

1. Prepare the anchor bolts (See Fig. 13).

Fig. 13



2. Using the prescribed rotary hammer drill, and drill all the anchor holes and install the anchor bolts. do not tighten the anchor bolts first (See Fig. 14).

Note: Minimum embedment of anchors is 3-1/2"

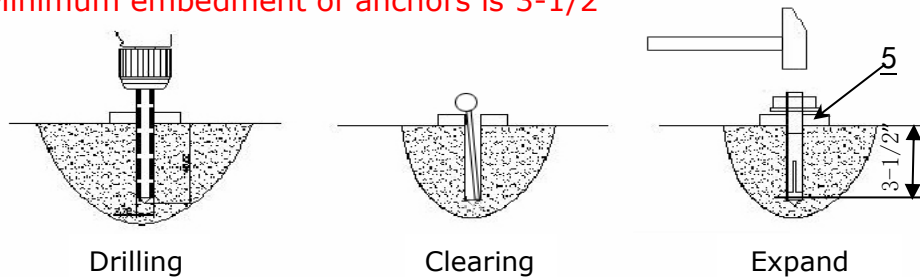


Fig. 14

F. Install the safety ladders

1. Take off the pulley safety cover and unscrew the four upper nuts of the Safety Ladders, and then adjust the four lower nuts to be at the same position. Withdraw the Slack-cable safety lock of the Cross-beam to insert the Safety Ladder in, raise the Safety Ladder, and screw the upper nuts (See Fig. 15).

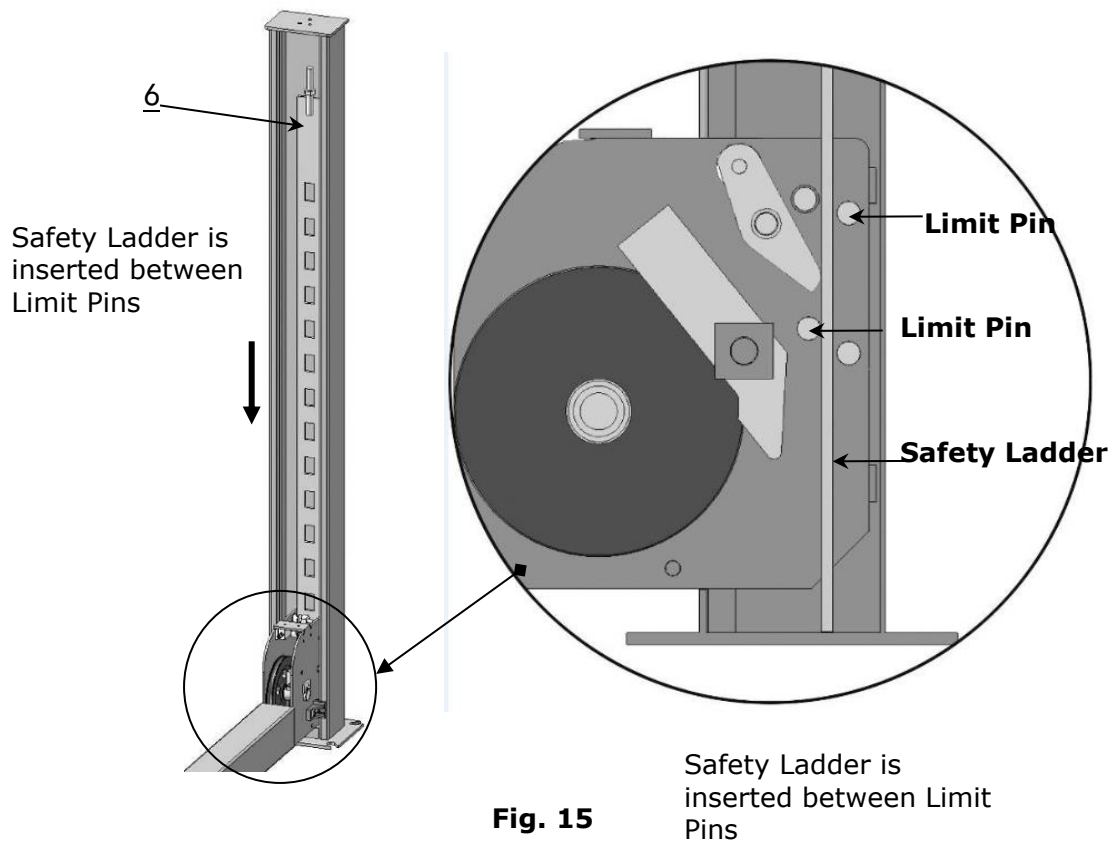
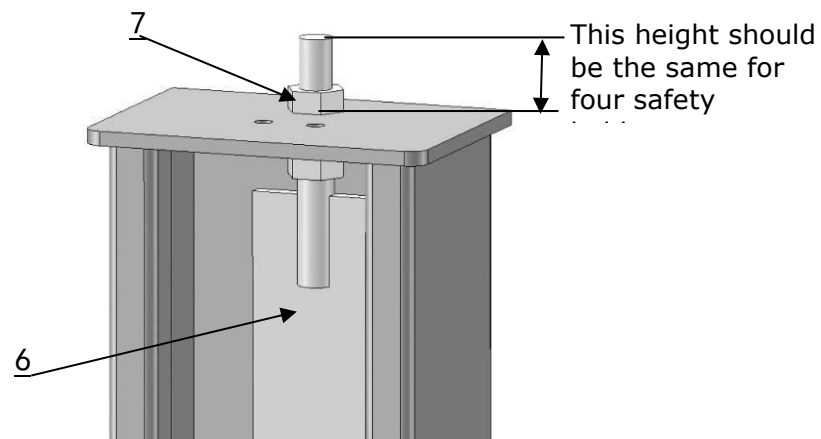


Fig. 15

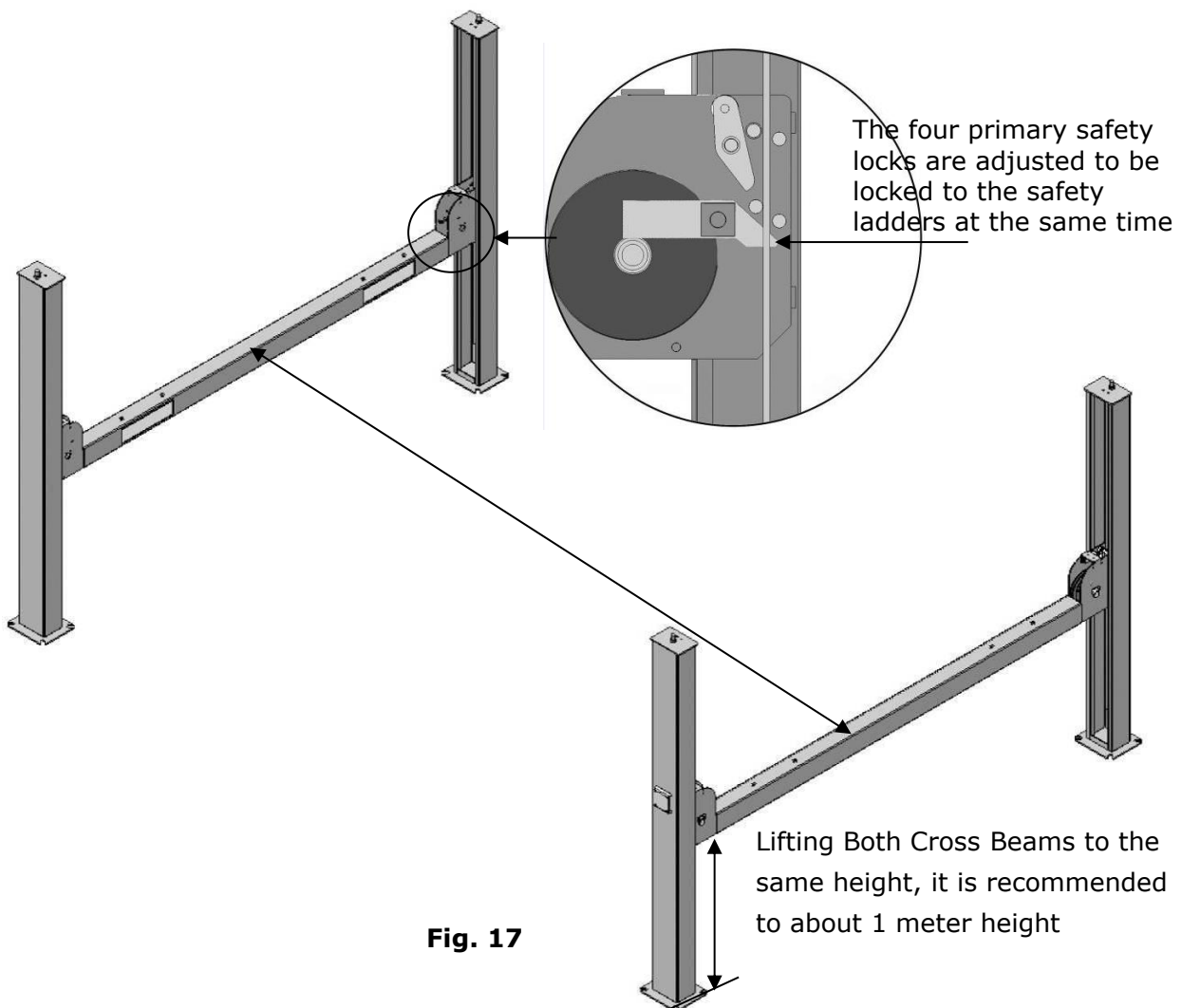
2. Install safety ladders (See Fig. 16).



Safety ladder pass through the hole of the top plate, then tighten the two nuts

Fig. 16

G. Put the Cross Beams at the same height (See Fig. 17).



H. Install power side platform.

1. Put the power side platform upon the cross beams by fork lift or manual, offset the cross beams to the outside till the pulleys of both platforms can set up into the cross beam (See Fig.18), Install the power side platform and screw up the bolts (See Fig.19).

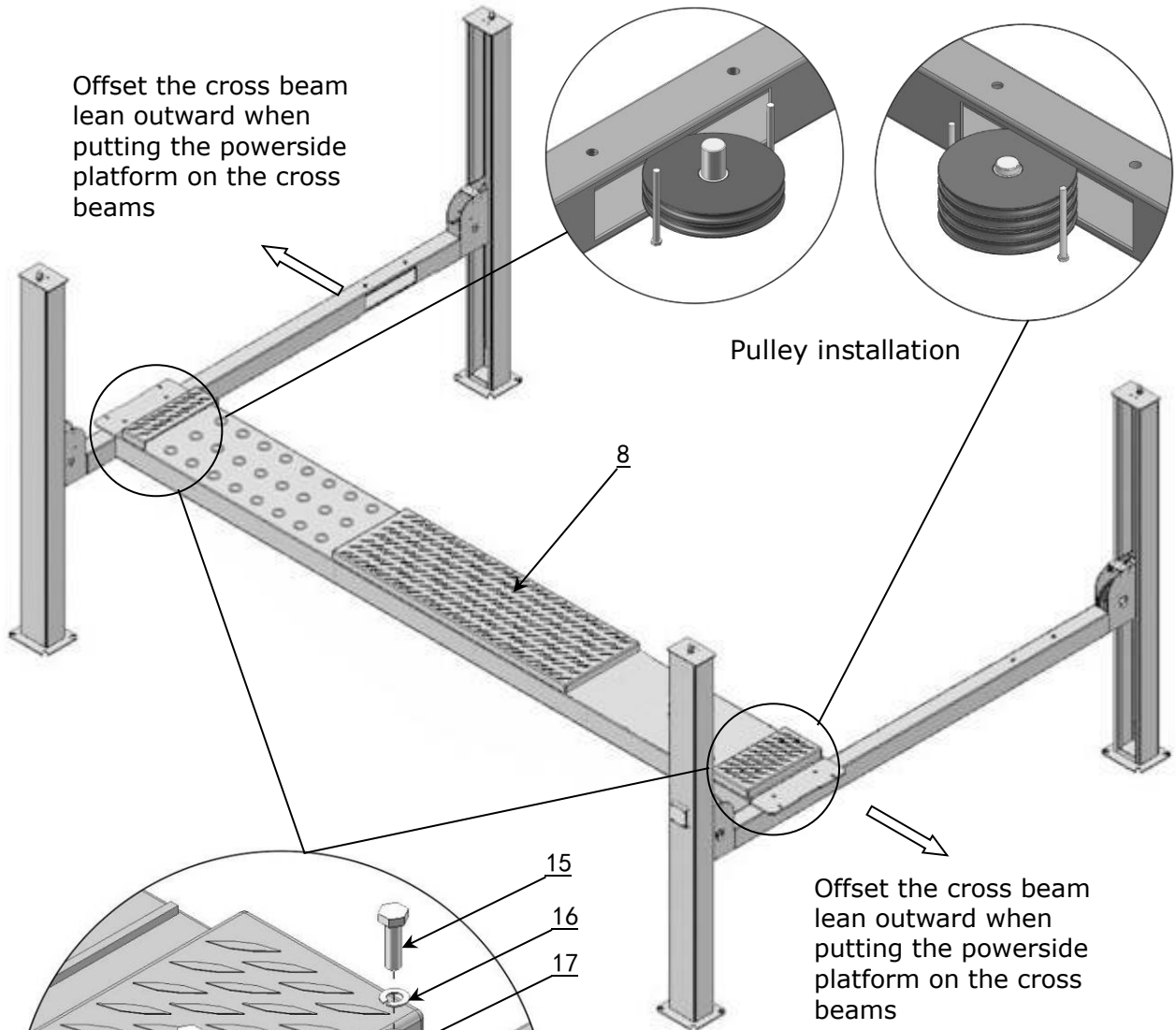
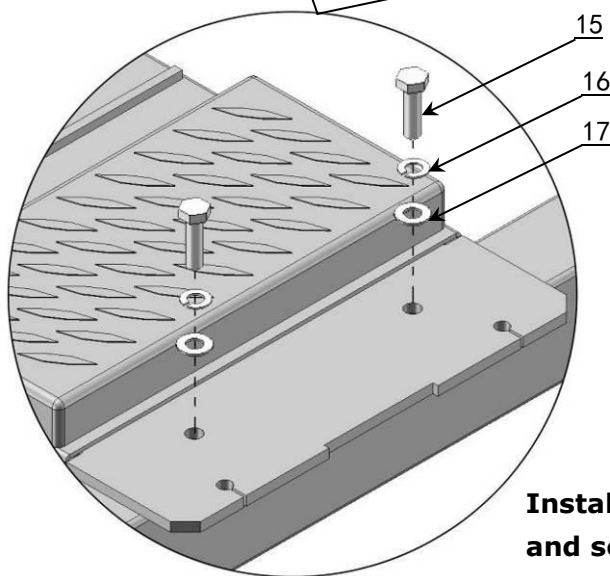


Fig.18



Install the power side platform and screw up the bolts

Fig.19

I. Assembly offside platform and slider block, check the vertical of columns with Level bar, adjusting with the shims if not, and then tighten the anchor bolts (**See Fig. 20**).

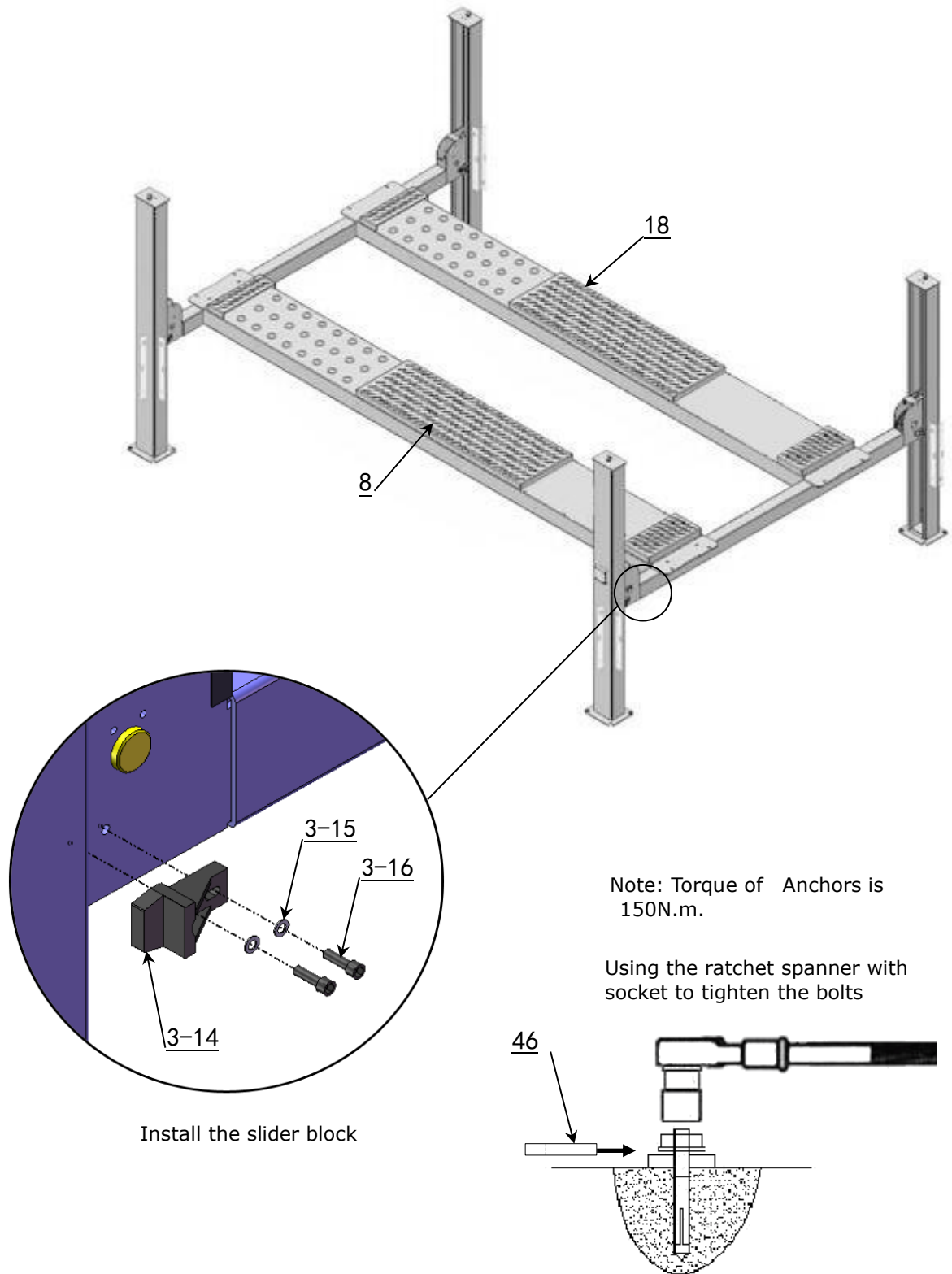


Fig. 20

J. Install cables

1. Pass through the cables from the platform to the columns according to the number of the cables (**See Fig. 21**).

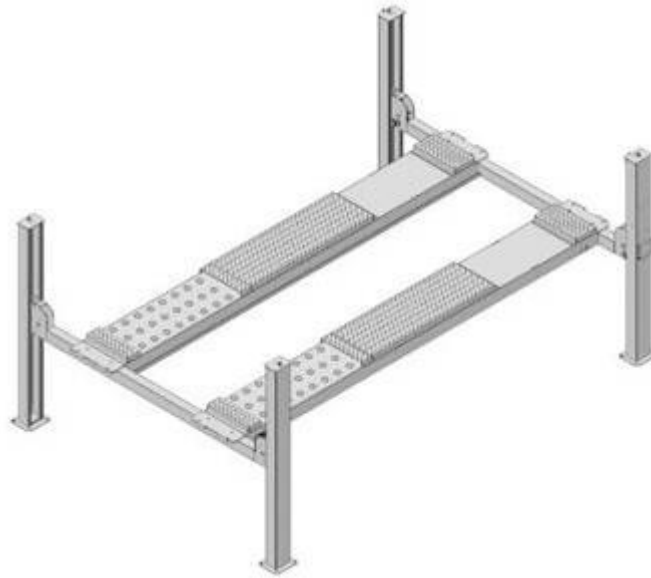


Fig. 21

Cable \ No.	ϕ	∅	∅	∅
Length (inc. connecting fitting)	148-5/8"	406-1/2"	211-3/4"	343"

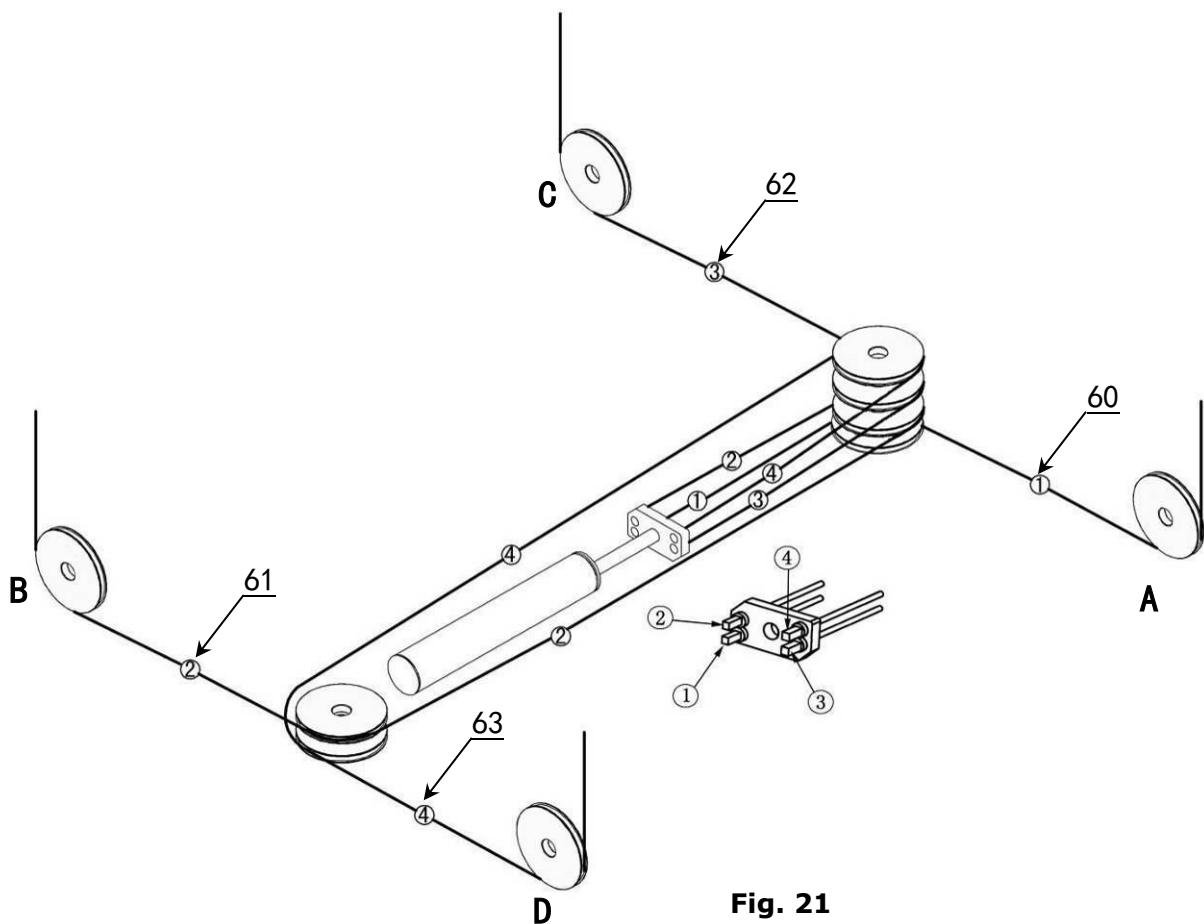


Fig. 21

2. The cable pass through the cross beam to top plate of columns and be screwed with cable nuts (**See Fig. 22**).

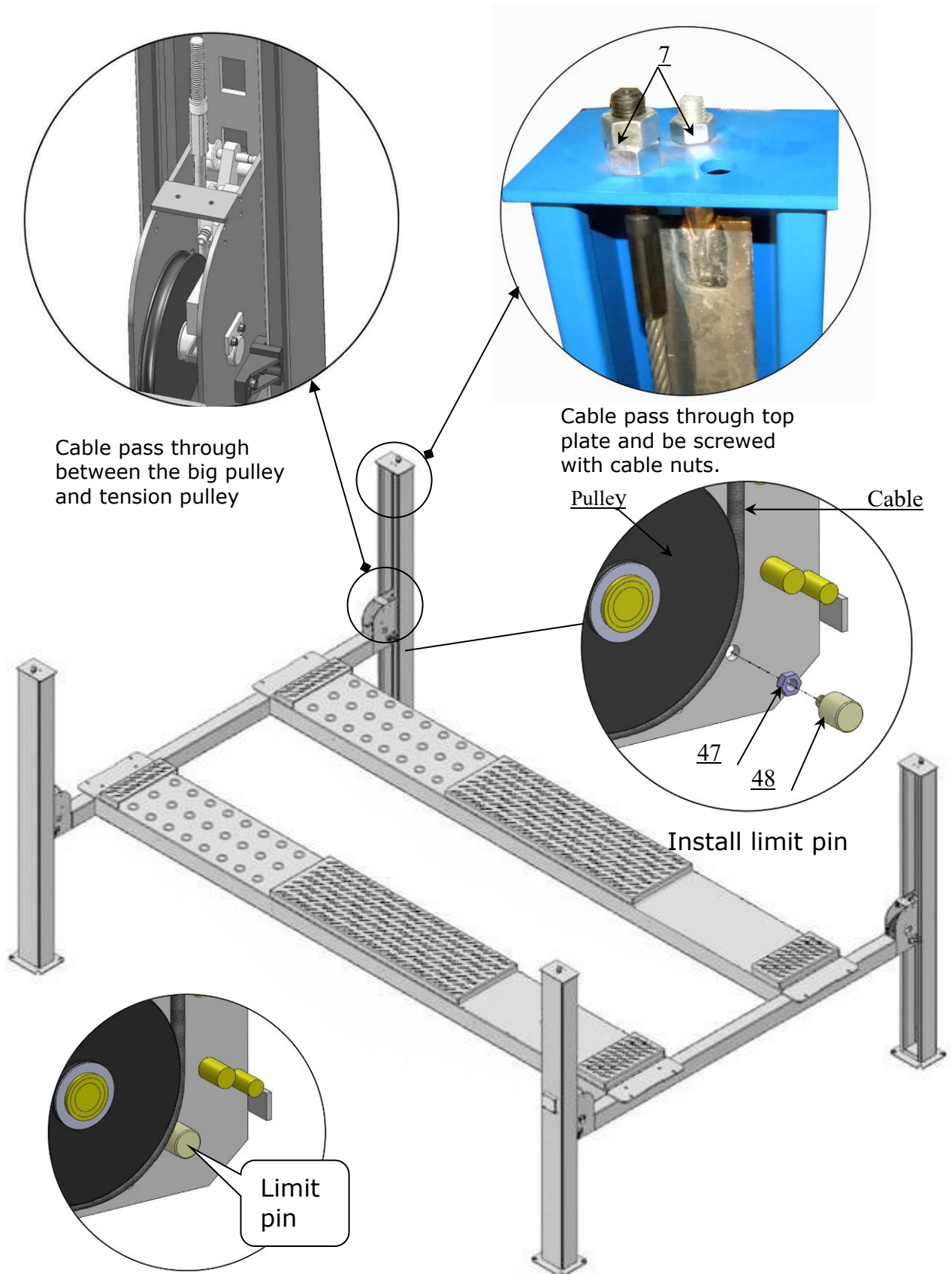


Fig. 22

3. Illustration for platform cables (See Fig. 23).

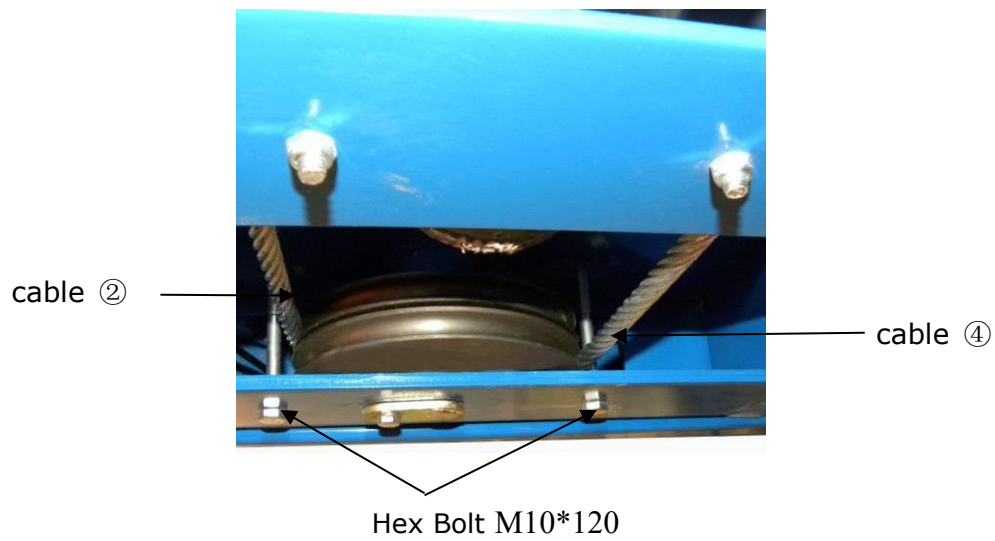
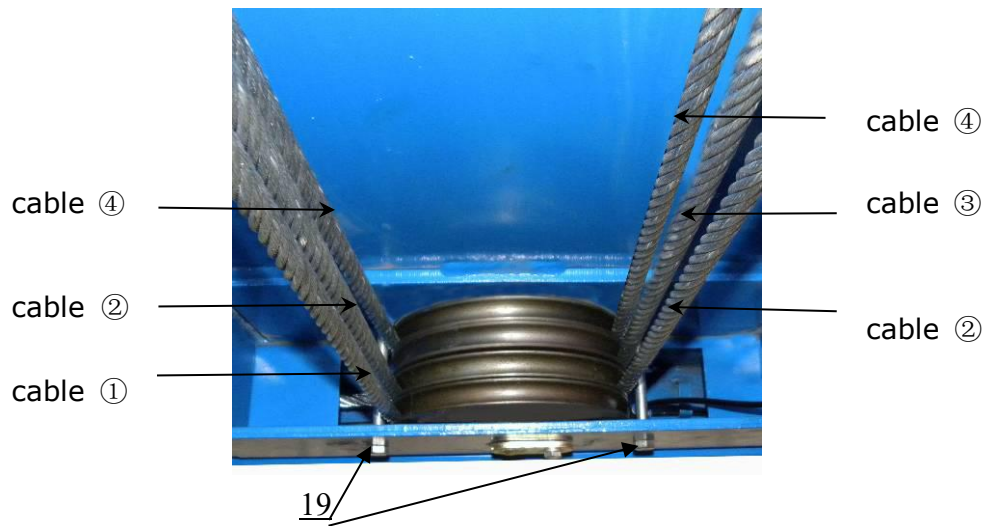
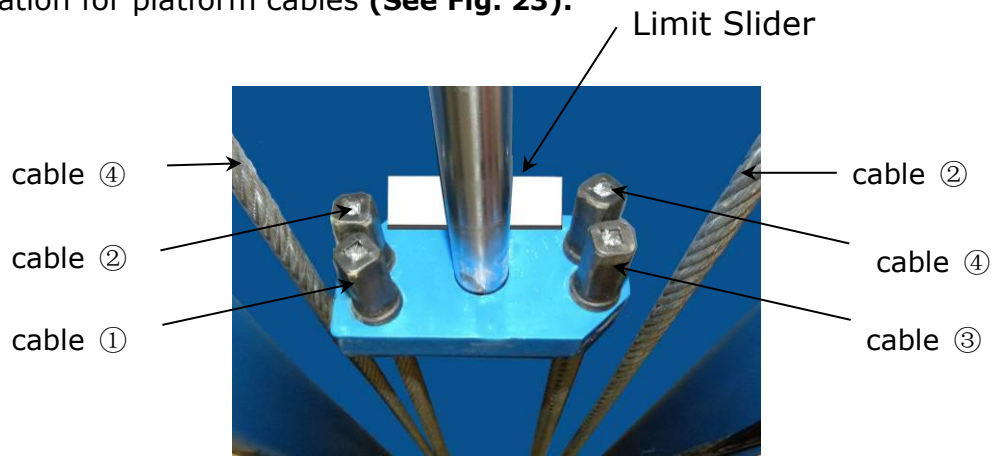


Fig. 23

J. Install oil-water separator, manual control air valve and power unit
 (See Fig. 24).

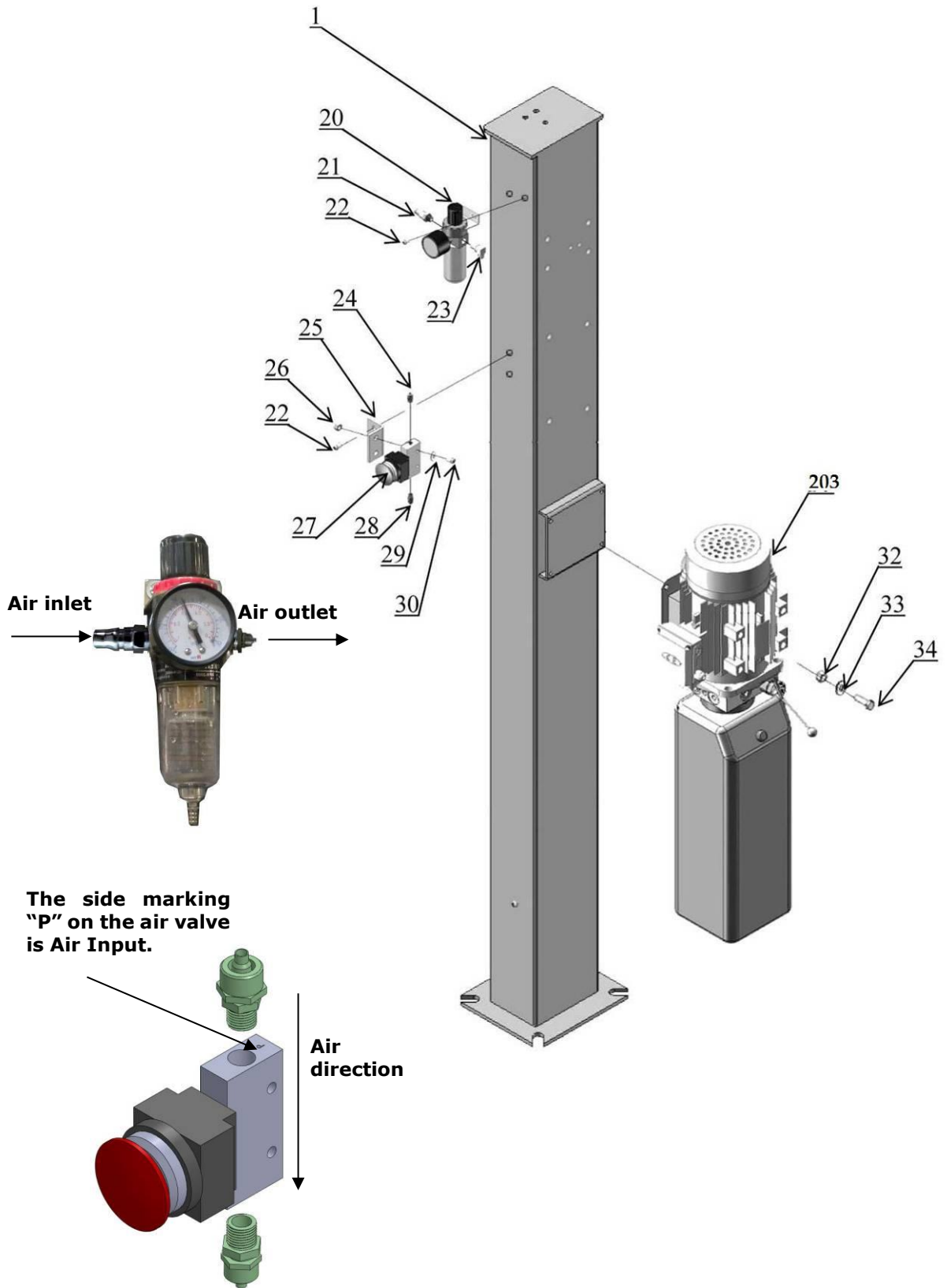
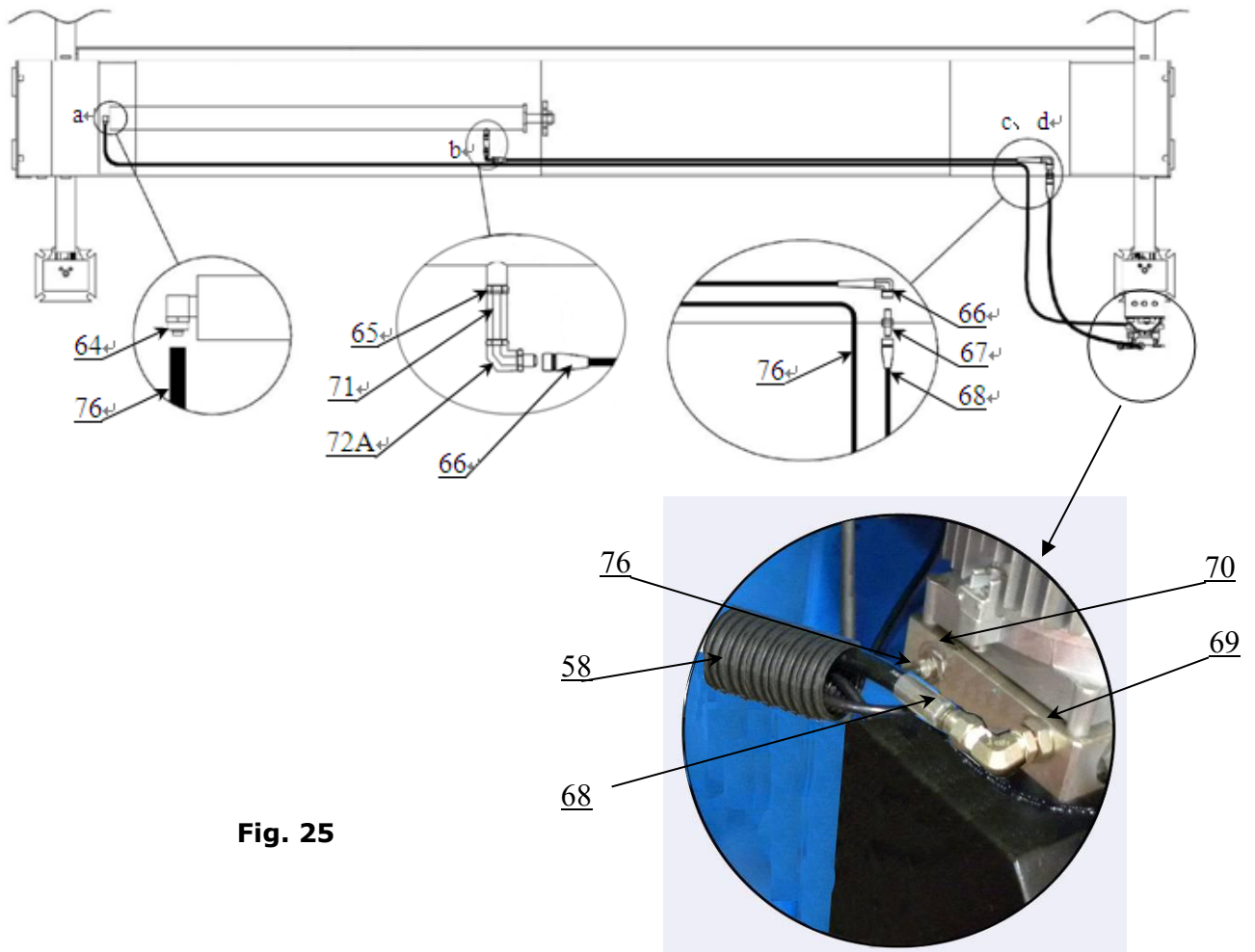
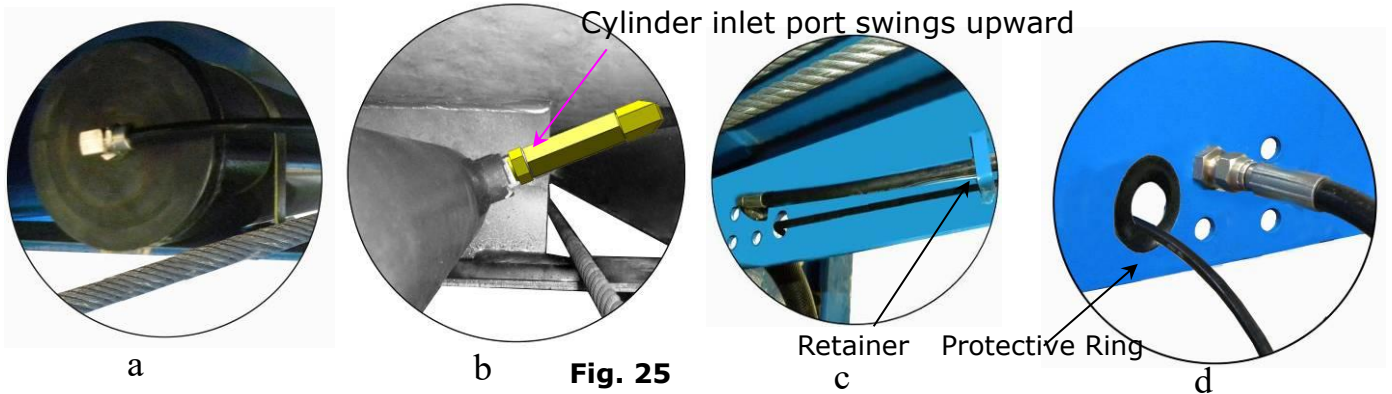


Fig. 24

L. Install hydraulic system (See Fig. 25).

Note: Oil hoses and oil return pipe connected to oil cylinder must be passed above the cable and cylinder inlet port must swing upward to avoid the oil hose and oil return pipe scratched by cable.



M. Install air-line system

1 Cut $\phi 6 \times \phi 4$ black air line between two retainers , and then connect to T-fitting.

(See Fig.26)

2. Connecting front and rear cross beam cylinders by using $\phi 6 \times \phi 4$ black air line

(See Fig. 27).

3. Connecting air solenoid valve using $\phi 6 \times \phi 4$ black air line (See Fig. 27).

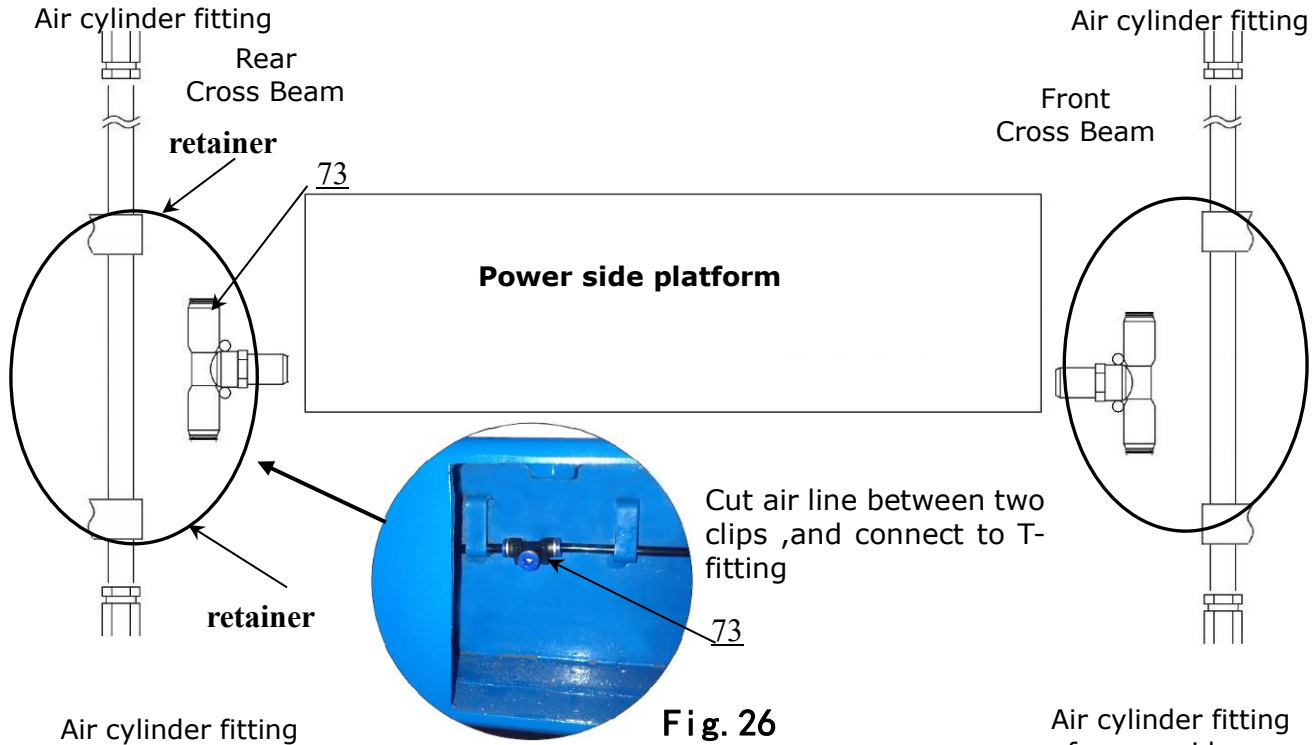


Fig. 26

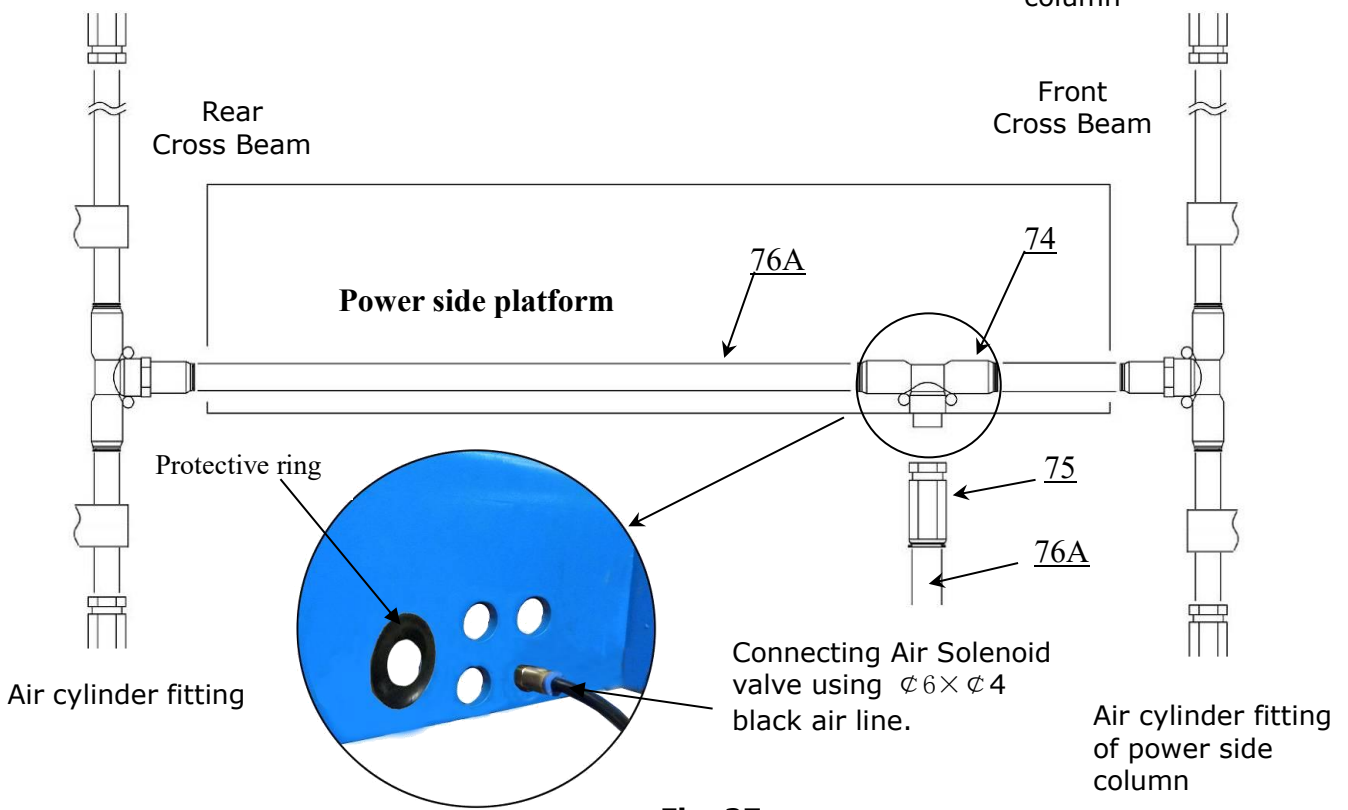


Fig. 27

4. Connecting Oil hose and Air lines (See Fig. 28).

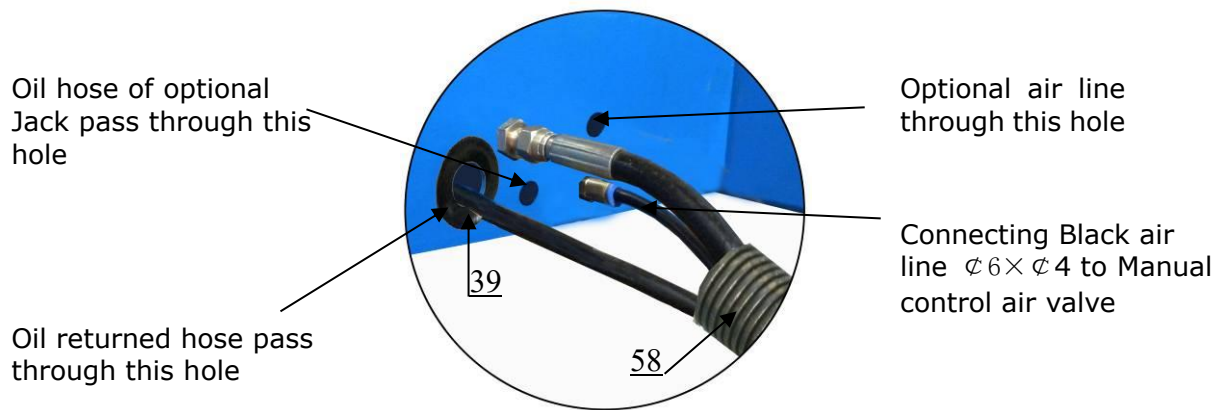


Fig. 28

5. Connecting Oil-water separator and Manual control air valve using air line (See Fig. 29).

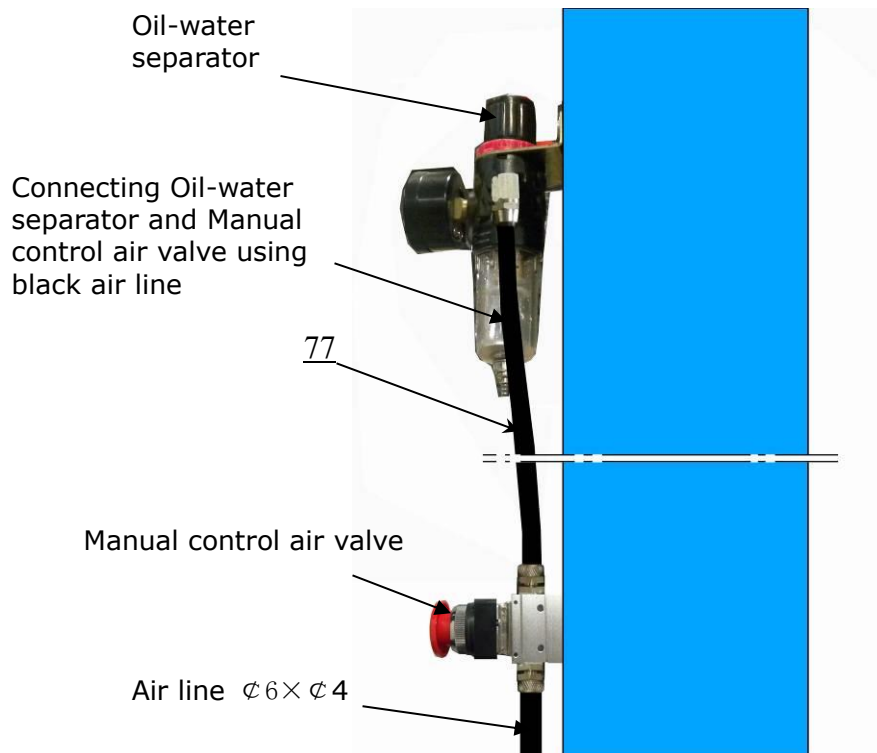


Fig. 29

6. Connecting air inlet (Air supply pressure 5 kg/cm²- 8 kg/cm²), adjusting the air pressure of Oil-water separator to 0.4 - 0.6 MPa (**See Fig. 30**).

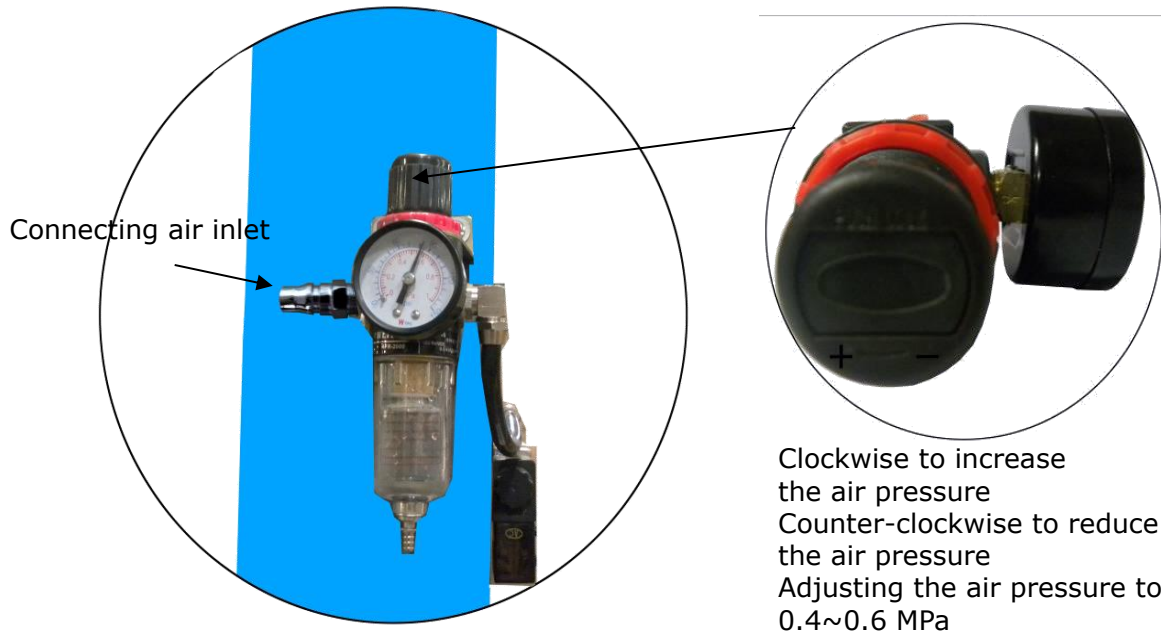


Fig. 30

N. Install Electrical System

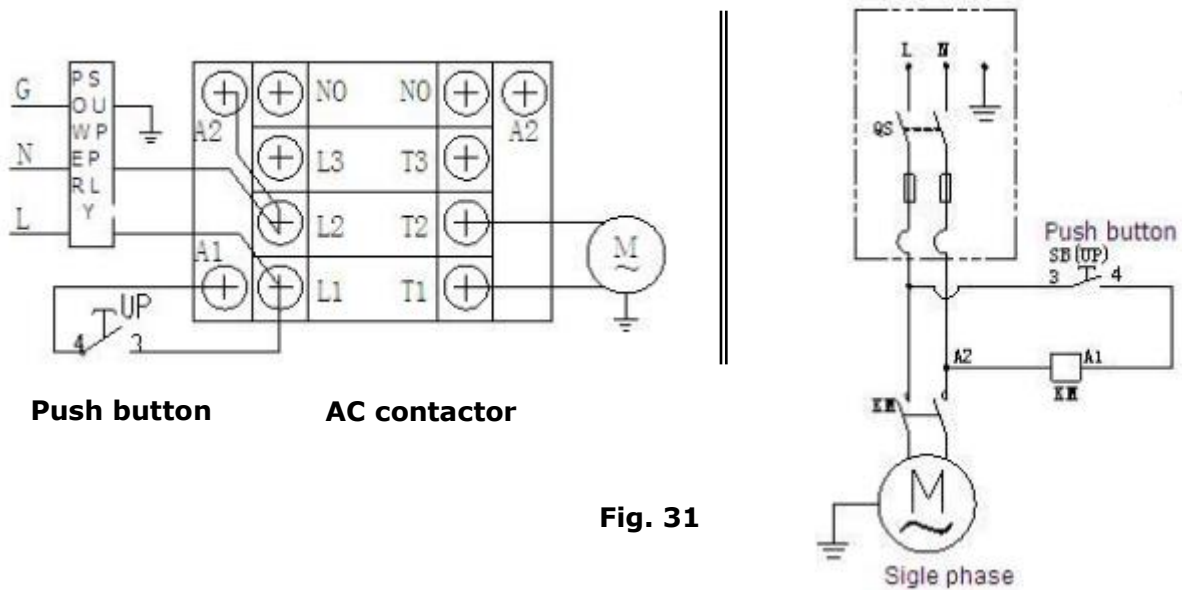
Connect the power source on the data plate of Motor.

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. 31).

1. Connecting the two power supply lines (fire wire **L** and zero 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** of AC contactor to **L2**.
4. Connect the two push button wires to the terminals of AC contactor marked A1,L1.



P. Install spring and safety cover of cross beam (See Fig. 32).

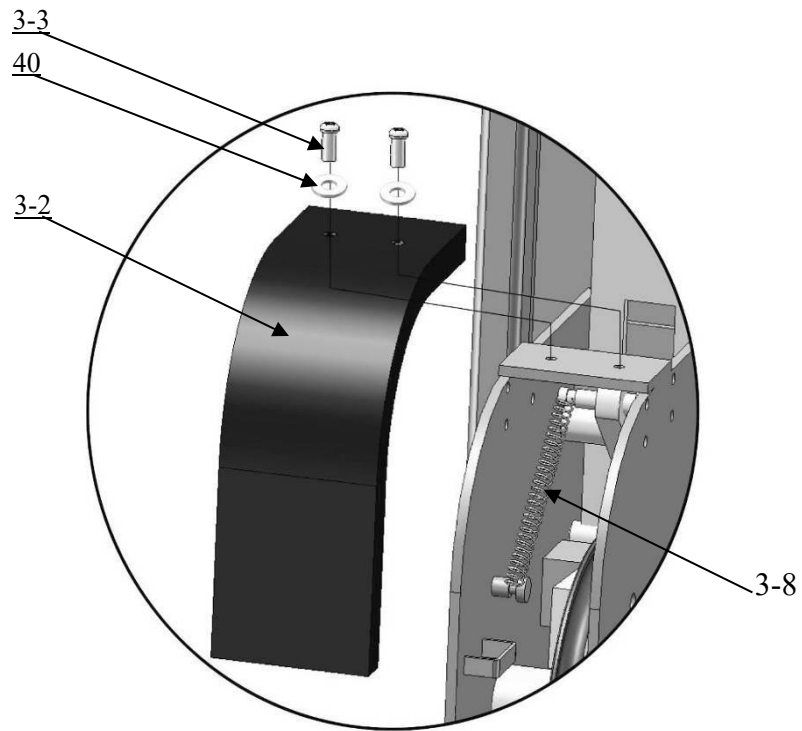
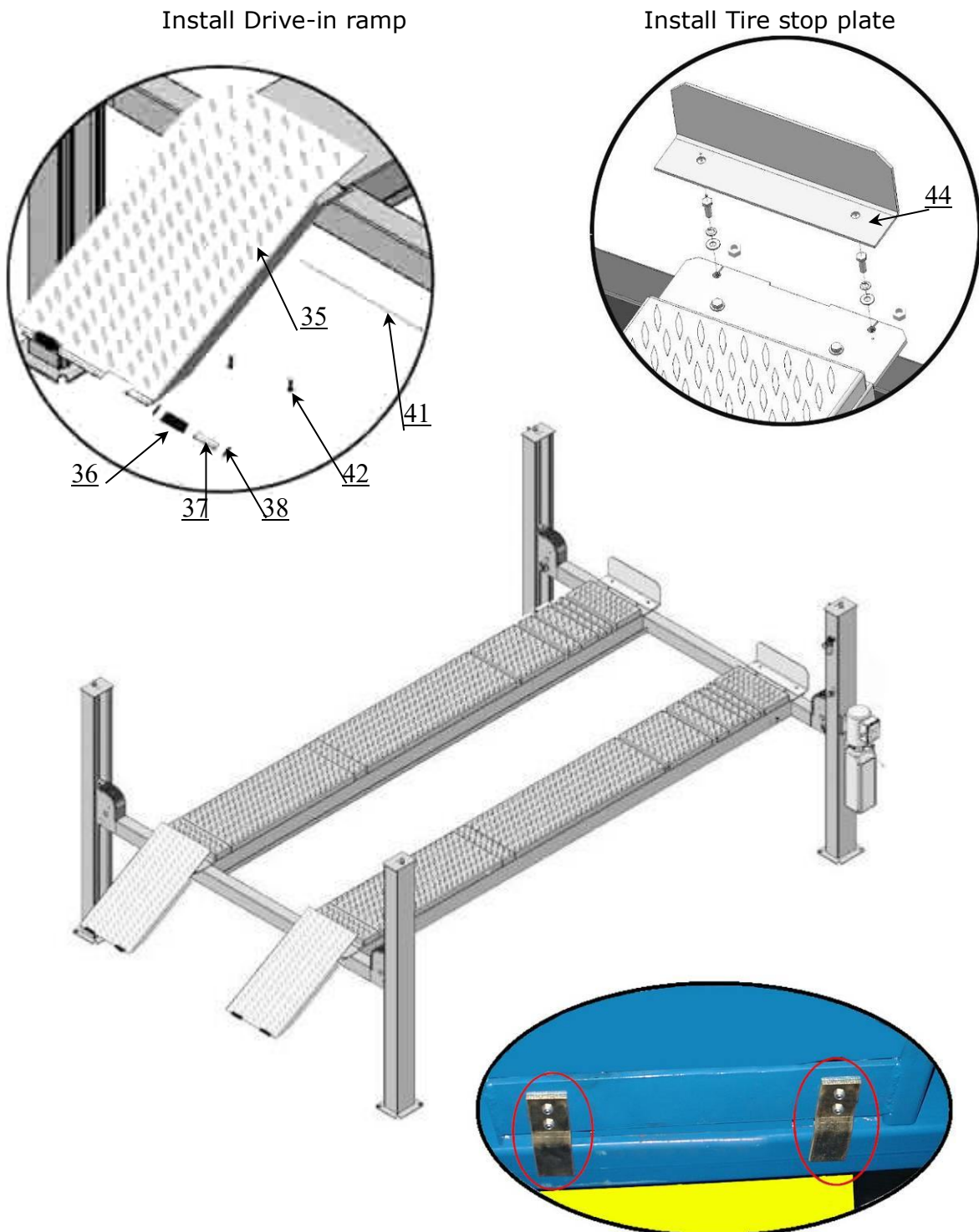


Fig. 32

Q. Install Drive-in ramp, Tire stop plate, Platform lock plates, Steel ball set
(See Fig. 33).



The lock plates are used to prevent the turning & slipping of offside platform, Using Hex bolt M8×20 for the connection.

Fig. 33

IV. EXPLODED VIEW

Model PRO-12A

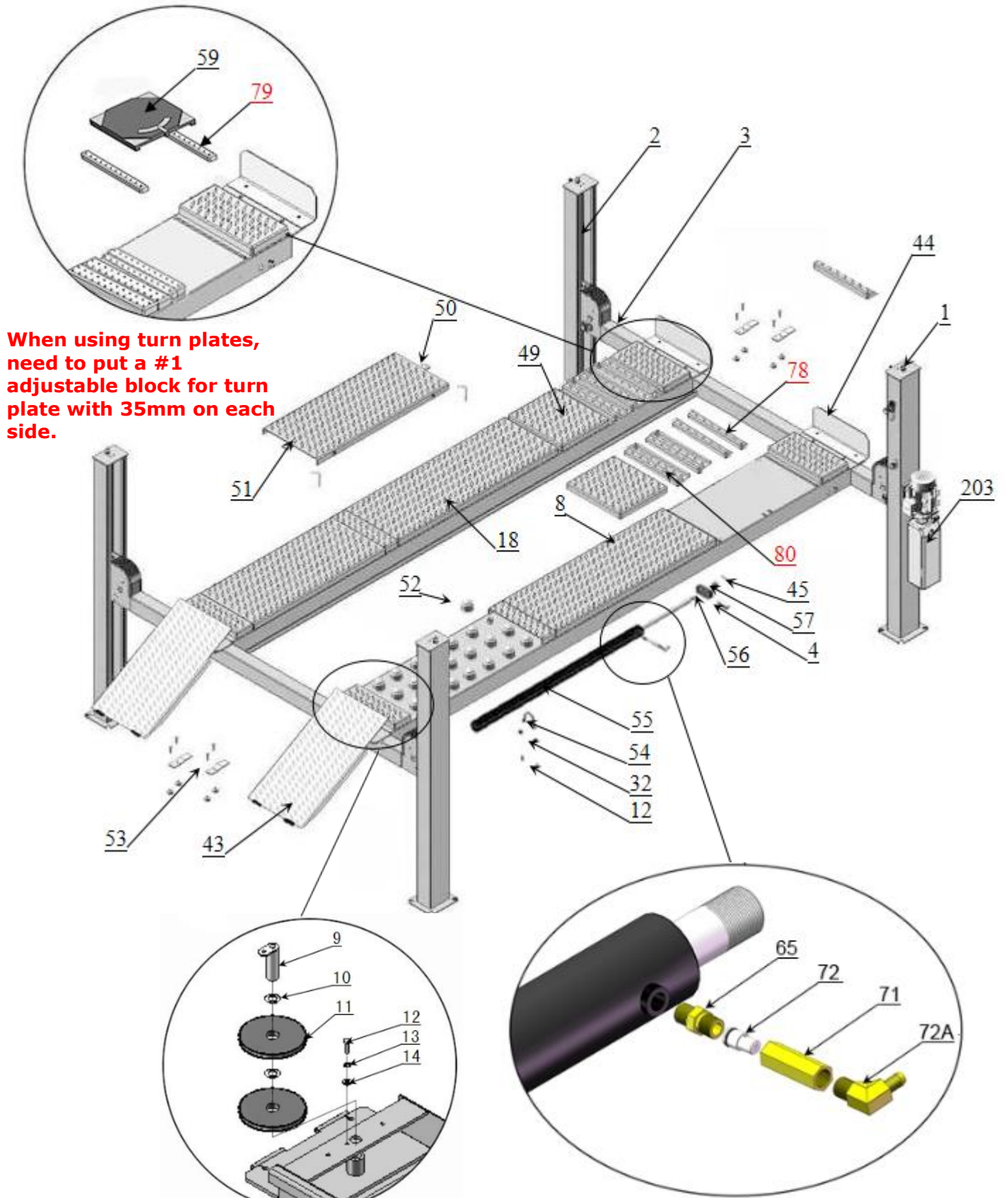


Fig. 34

CROSS BEAM

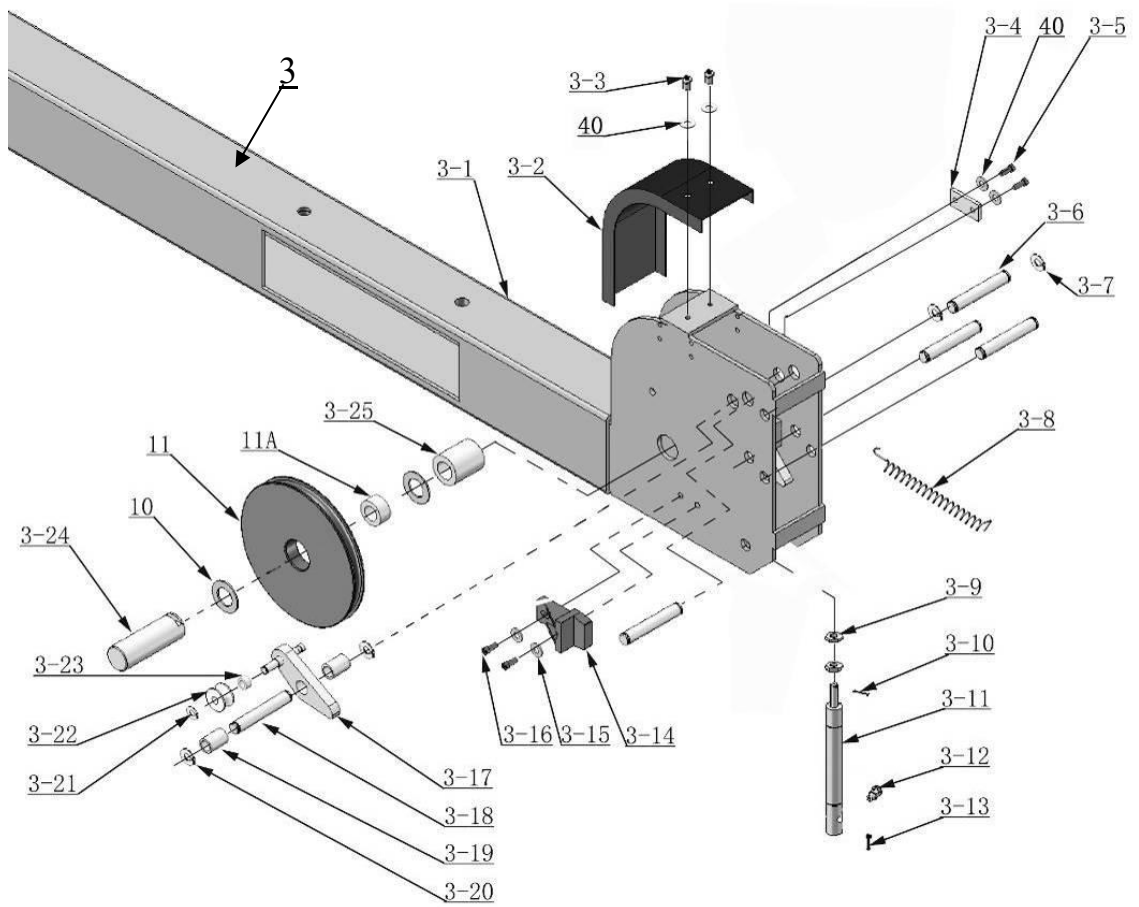


Fig. 35

CYLINDERS

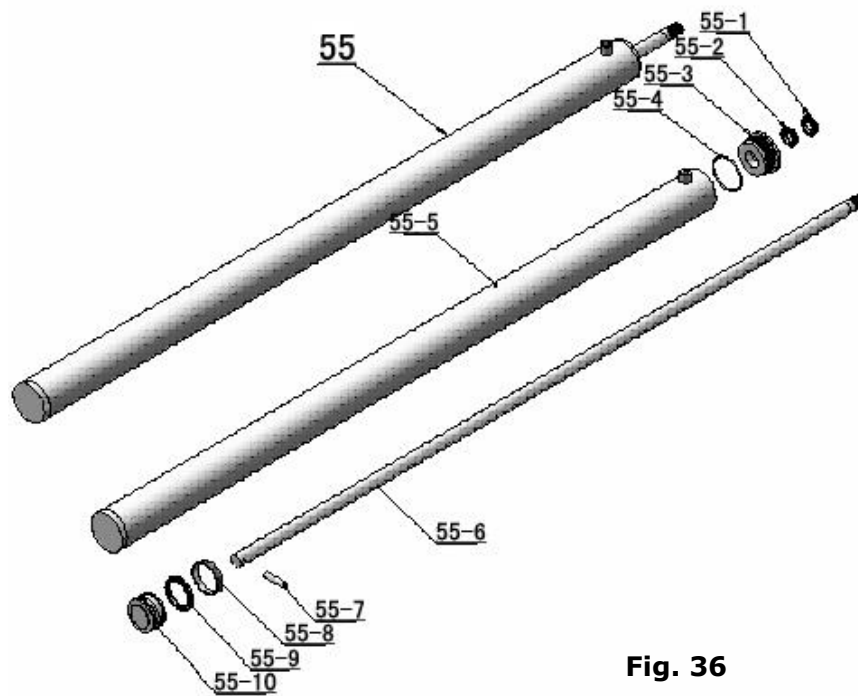
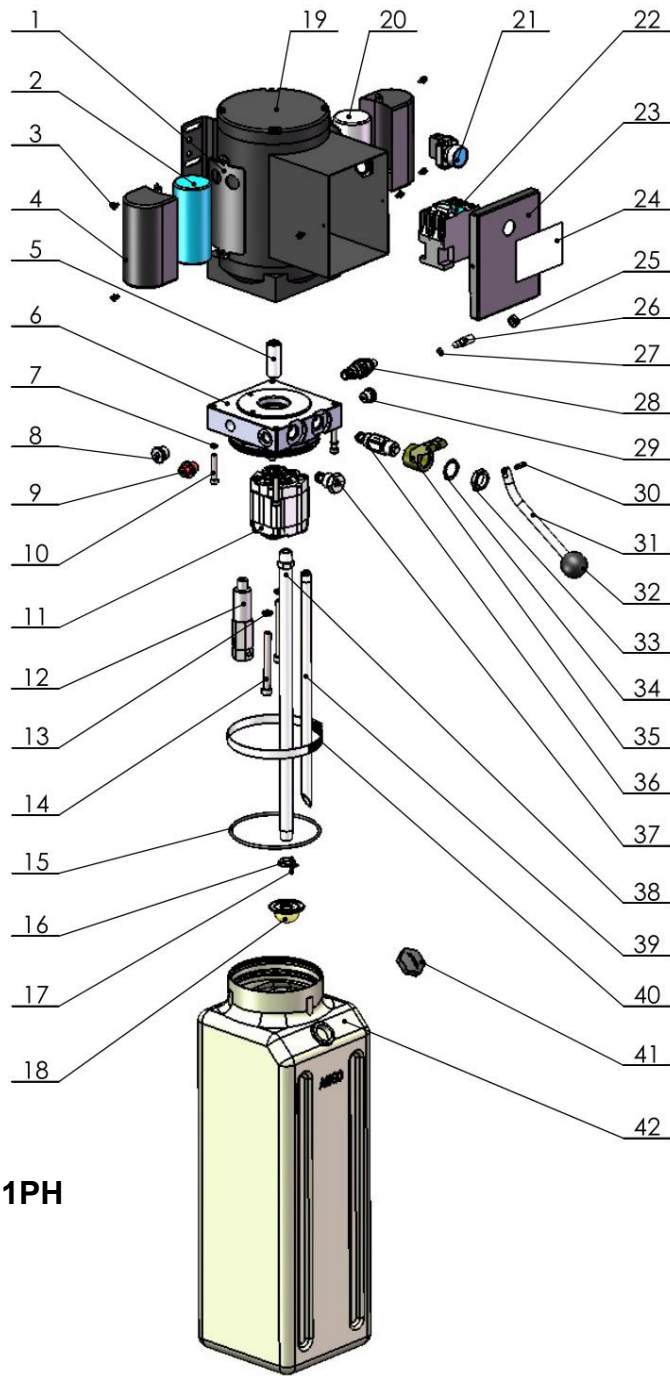


Fig. 36

MANUAL POWER UNIT



Manual 220V 60Hz 1PH

Fig. 37

**Illustration of Hydraulic Valve for power unit
220V,60Hz,Single phase manual power unit(See Fig.38)**

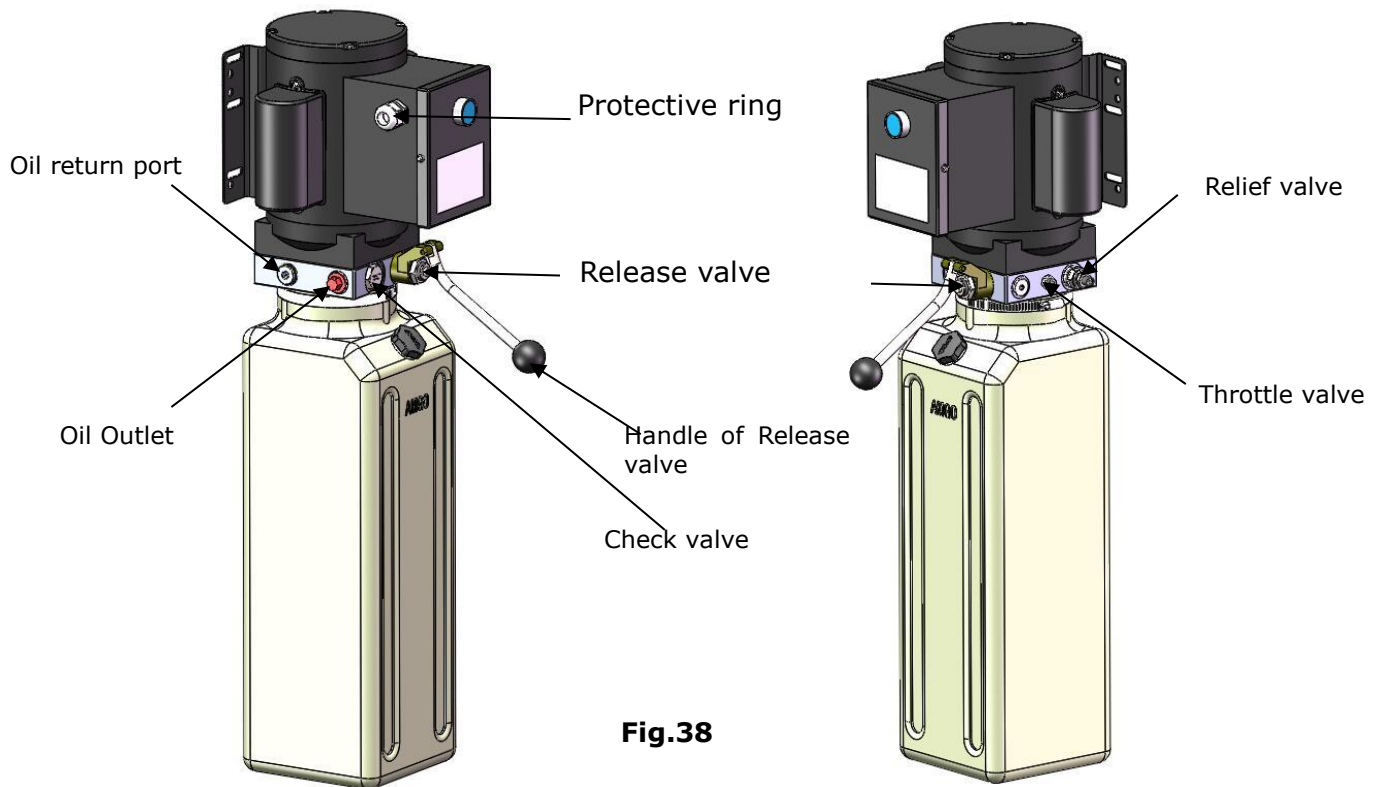


Fig.38

V. TEST RUN

1. Fill the reservoir with approximately 14L Hydraulic Oil (**Note:** In consideration of Power Unit's durability, please use **Hydraulic Oil 46#**).
2. Press the button on the power unit, the Cables will be strained. Check whether the Cables match the Pulley. Make sure the Cables are not across.
3. Press the release handle of the power unit to lock the Cross-beam to the safety ladders, and then adjust the platforms to be level by adjusting the nuts of Safety Ladders.
4. Adjust the cable fitting Hex nuts to make platforms and four safety locks work synchronously. Lift up and down for several times, meanwhile do the synchronous adjustment till the four Safety Devices can be locked and released at the same time.
5. Adjust the clearance between the post and the plastic slider of Cross-beam to about 2mm, and then tighten the fixing nut of slider.
6. After finishing the above adjustment, testing the lift with load. Lift the Platforms in low position first, make sure the Platforms can be up and down synchronously and the Safety Device can be locked and released synchronously. And then raise the lift to the top completely. If there are anything improper, repeat the above adjustment.

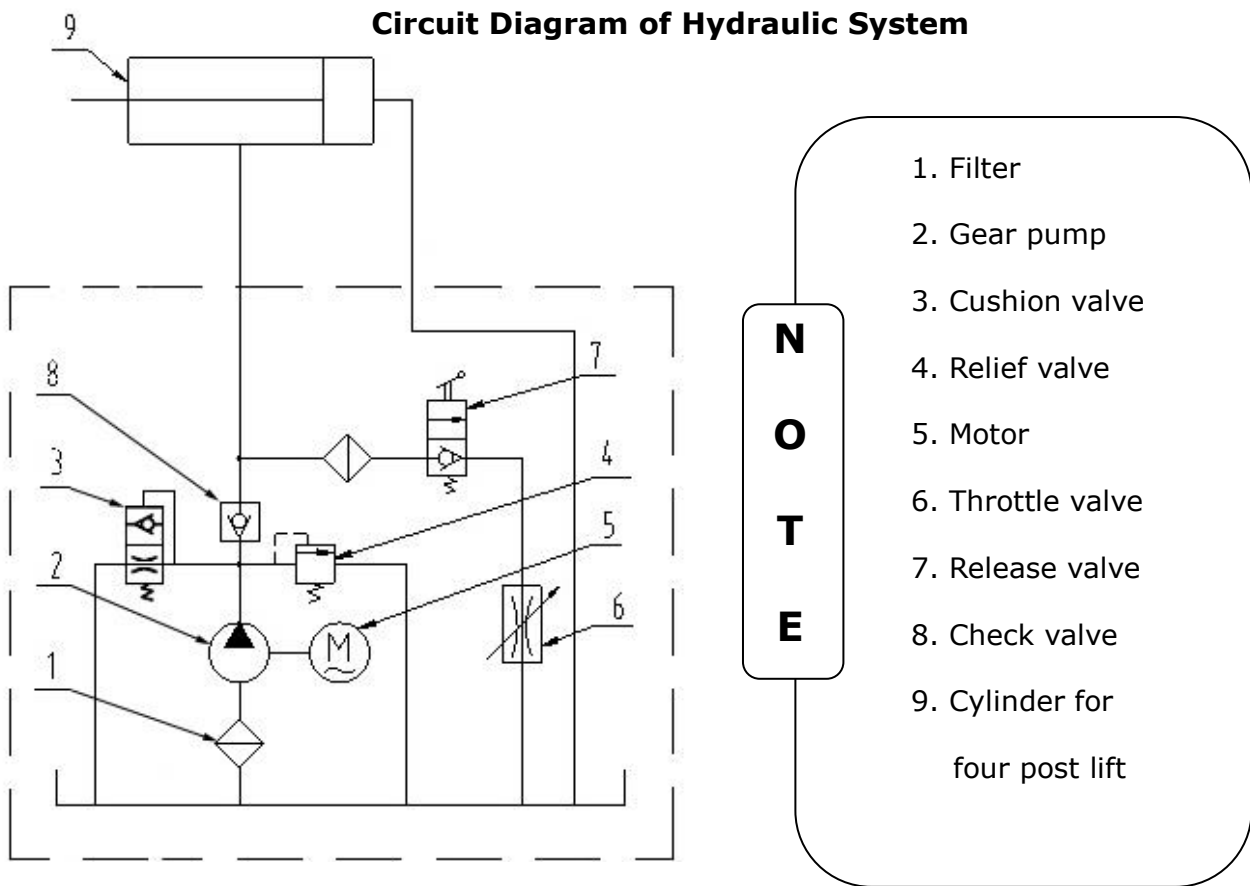


Fig. 43

VI. OPERATION INSTRUCTIONS

To lift vehicle

1. Keep clean of environment near the lift;
2. Drive vehicle to the Platform and put on the brake;
3. Turn on the power and press the button, raise the lift to the working position;
Note: make sure the vehicle is steady when the lift is raised.
4. Press the Handle of release valve to lock the lift in the safety position. Make sure the Safety device is locked at the same height.

To lower vehicle

1. Be sure the clearance of around and under the lift, only leaving operator in lift area;
2. Press the button, the lift will be raised for 3-5 seconds, and then press the button of Manual-controlled air valve by hand to make sure the safety device released, press the handle of release valve by the other hand then the lift starts being lowered automatically;
3. Drive away the vehicle when the lift is lowered to the lowest position.
4. Turn off the power.

VII. MAINTENANCE SCHEDULE

Monthly:

1. Re-torque the anchor bolts to 150 Nm;
2. Lubricate cable with lubricant;
3. Check all cable connection, bolts and pins to insure proper mounting;
4. Make a visual inspection of all hydraulic hoses/lines for possible wear or leakage;
5. Lubricate all Rollers, Safety devices 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 to insure level lifting.
3. Check the vertical of columns.

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 burned out 5. Height limit switch is damaged 	<ol style="list-style-type: none"> 1. Replace button 2. Repair all wiring connections 3. Repair or replace motor 4. Replace AC contactor 5. Replace
Motor runs but the lift is not raised	<ol style="list-style-type: none"> 1. Motor runs in reverse rotation 2. Release valve in damage 3. Gear pump 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 too slow	<ol style="list-style-type: none"> 1. Oil line is jammed 2. Motor running on low voltage 3. Oil mixed with Air 4. 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 in activated 2. Release valve damaged 3. Air Cylinder damaged 4. Oil system is jammed 	<ol style="list-style-type: none"> 1. Release the safeties 2. Replace or repair 3. Replace the cylinder 4. Clean the oil system

IX. PARTS LIST FOR PRO-12A

Item	Part#	Description	QTY.	Note
1	420011A	Power side Column	1	
2	420002	Offside Column	3	
3	420253	Cross Beam Assy.	2	
4	440041	Slider block	1	
5	209059	Anchor Bolt	16	
6	410022	Safety Ladder	4	
7	420175A	Hex Nut	16	
8	450002	Power side Platform	1	
9	420022A	Pulley Shaft Assy.	2	
10	460072	Washer	4	
11	440623	Pulley	6	
11A	420132A	Bronze Bush for Pulley	10	
12	209043	Hex Bolt	12	
13	209034	Lock Washer	2	
14	420144	Washer	2	
15	420030	Hex Bolt	12	
16	420137	Lock Washer	12	
17	420029	Washer	12	
18	450001	Offside Platform	1	
19	420020B	Hex Bolt	4	
20	420145	Oil-water Separator	1	
21	420146	Straight Fitting for Air Line	1	
22	209009	Cup Head Bolt	12	
23	420076	900 Fitting for Air Line	1	
24	420159	Straight Fitting For Air Line	1	
25	420160	Fixing plate of Manual Control Valve	1	
26	420161	Self locking Nut	2	
27	420162	Manual Control Air Valve	1	
28	420163	Straight Fitting For Air Line	1	
29	420148	Washer	4	
30	420164	Cup Head Bolt	2	
203	071101	Manual Hydraulic Power Unit	1	
32	209005	Self locking Nut	14	
33	209004	Rubber Ring	4	
34	209003	Hex Bolt	4	
35	430002	Drive-in Ramp assy.	2	
36	620063	Drive-in Ramp pulley	4	
37	610667	Drive-in Ramp pulley pin	4	
38	209010	Snap ring	8	
39	420156	Protecting Ring	1	
40	420045	Washer	20	
41	420004	Pin for Drive-in Ramp	2	
42	420005	Fixing Bolt	4	
43	450501	Part box	1	

Item	Part#	Description	QTY.	Note
44	420031	Tire stop plate	2	
45	201005	Split pin	1	
46	620065/201090	Shim	20 ea.	
47	209056	Self locking Nut	4	
48	420217	Cable limit pin	4	
49	430004	Plate for Adjustable Turn plate	2	
50	430006	Pin For Slip Plate	4	
51	430003	Slip Plate	2	
52	420157	Steel Ball Set	60	
53	420007	Platform Lock Plate	4	
54	420012A	Fixing Ring For Oil Cylinder	1	
55	420012	Oil Cylinder	1	
56	420013	Cylinder Connecting Plate	1	
57	420014	Hex Nut	1	
58	420016B	Protective hose	1	
59	420158	Turn plate	2	
60	440078	No.① Cable	1	
61	440081	No.② Cable	1	
62	440079	No.③ Cable	1	
63	440080	No.④ Cable	1	
64	420166	90° Fitting	1	
65	420243	Straight Fitting For Cylinder	1	
66	440042	Oil Hose	1	
67	420120	Extended Straight Fitting (with Nut)	1	
68	207026	Oil Hose	1	
69	209060	Straight Fitting For Power Unit	1	
70	420095	Straight Fitting	1	
71	420245	Straight fitting	1	
72	420247	compensation Valve	1	
72A	201020	90° Fitting	1	
73	420124	T-Fitting For Air Line	2	
74	420242	T-Fitting For Air Line	1	
75	420241	Straight Fitting For Air Line	1	
76	420195A	Oil Return Hose	1	
76A	420131B	Black Air Line	1	
77	420167A	Black Air Line	1	
78	480023	Adjustable block for Turn plate	4	
79	480045	#1 Adjustable block for Turn plate	4	
80	480082	#2 Adjustable block for Turn plate	4	

Parts For Cross Beam				
3-1	420254	Cross Beam	2	
3-2	420051B	Pulley Safety Cover	4	
3-3	209009	Cup Head Bolt	8	
3-4	420044	Limit Plate	4	
3-5	420138	Socket Bolt	8	
3-6	420038	Pin	12	
3-7	420037	Snap Ring	24	
3-8	420033	Spring	4	
3-9	209021	Hex Nut	8	
3-10	420049	Split Pin	4	
3-11	420048	Air Cylinder	4	
3-12	420047	Fitting for Air Cylinder	4	
3-13	420046	Split Pin	8	
3-14	420042	Plastic Slider	8	
3-15	209033	Washer	24	
3-16	420043	Socket Bolt	16	
3-17	420175	Slack-cable safety lock (left & right)	2/ea.	
3-18	420171	Pin	8	
3-19	420172	Pin Bush For Slack-cable Safety Lock	8	
3-20	206019	Snap Ring	16	
3-21	209010	Snap Ring	4	
3-22	420035	Tension Pulley	4	
3-23	420174	Spacer	4	
3-24	420041A	Pulley Pin	4	
3-25	420040A	Pulley Bush	4	
Parts For Cylinder				
55-1	420059	Dust Ring	1	
55-2	420060	Y- Ring	1	
55-3	420061	Head Cap	1	
55-4	420062	O- Ring	1	
55-5	420063	Bore Weldment	1	
55-6	420064	Piston Rod	1	
55-7	420065	Pin	1	
55-8	420066	Support Ring	1	
55-9	420067	Y- Ring	1	
55-10	420068	Piston	1	

Parts For Manual Power Unit, 220V/60 OHz/1 phase

1	81400180	Rubber pad	2	
2	81400130	Start Capacitor	1	
3	420148	Cup head nut with washer	6	
4	81400066	Capacitor cap	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	Lock Washer	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	Run capacitor	1	
21	10420070	Push button	1	
22	41030055	AC connector	1	
23	81400287	Cover of Motor Terminal Box	1	
24	71111065	AMGO Name plate	1	
25	81400296	Nut	1	
26	81400459	Throttle valve body	1	
27	10209069	O ring	1	
28	81400266	Relief valve	1	
29	81400284	Iron plug	1	
30	81400452	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	Valve seat	1	
36	81400443	Release valve	1	
37	81400267	Check valve	1	
38	81400288	Oil inlet pipe	1	
39	81400289	Oil return pipe	1	
40	81400264	Hose clamp	1	

