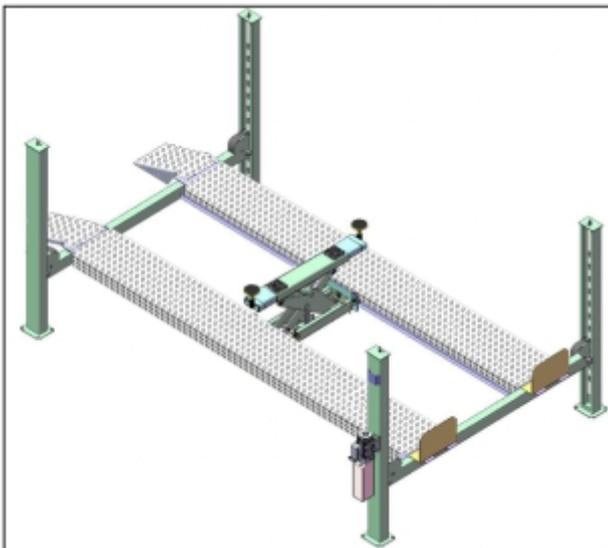


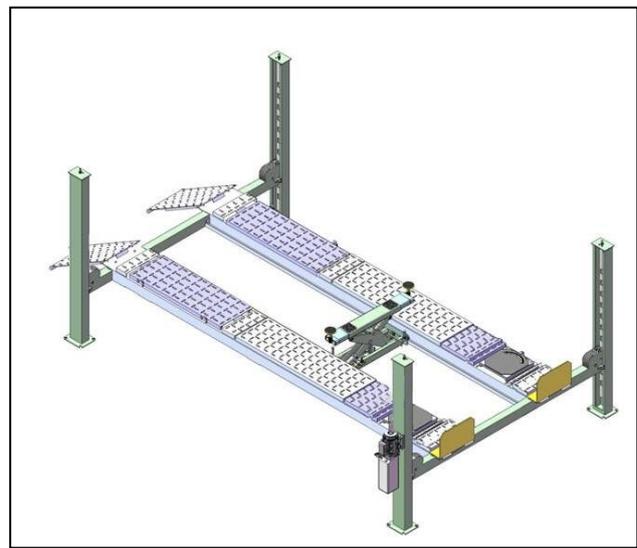
**AMGO**  <sup>®</sup> **Hydraulics**

Original

# Installation And Service Manual



**PRO-14 PRO-14E**



**PRO-14A PRO-14AE**

**FOUR POST LIFT  
PRO-14 PRO-14E  
PRO-14A PRO-14AE**

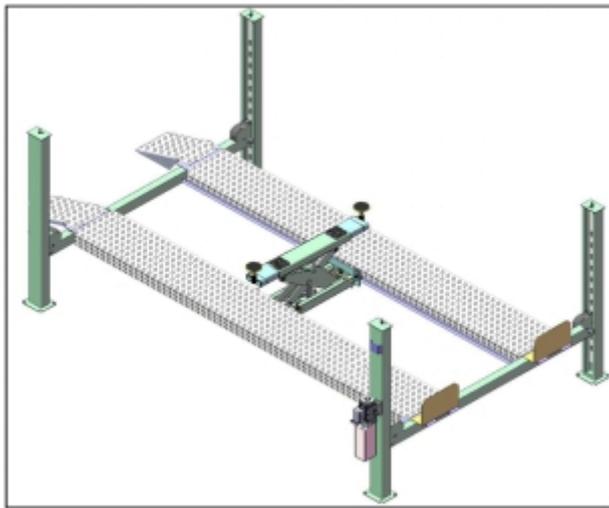
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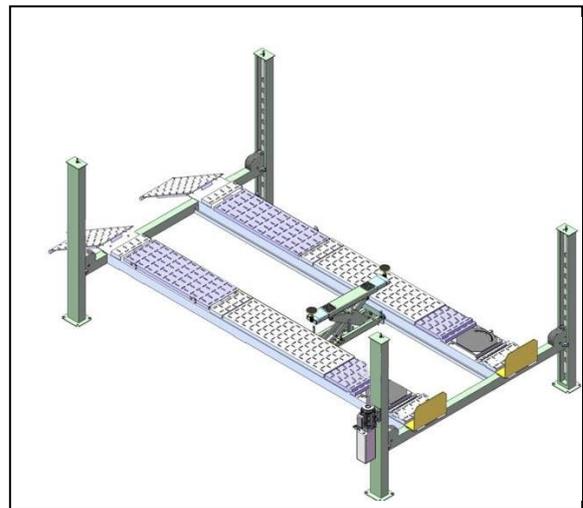
## I. PRODUCT FEATURES AND SPECIFICATIONS

### FEATURES

- Manual control system.
- Mechanical self-lock and air-drive safety release.
- Electric hydraulic power system, cable-drive.
- Strengthen and non-skid diamond platforms.
- Multiple turnplate 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 Turnplate (only for PRO-14A PRO-14AE)



**PRO-14 PRO-14E**  
**Fig.1**



**PRO-14A PRO-14AE**  
**Fig.2**

### MODEL SPECIFICATIONS

Model	Lifting Capacity	Lifting Height	Lifting Time	Overall Length (Inc. Ramps)	Overall Width	Width Between Columns	Motor
PRO-14	14000LBS	73-1/2"	81S	257-1/2"	130-7/8"	116"	2.0HP
PRO-14A	14000LBS	75-3/8"	81S	257"	130-7/8"	116"	2.0HP
PRO-14E	14000LBS	73-1/2"	81S	286"	130-7/8"	116"	2.0HP
PRO-14AE	14000LBS	75-3/8"	81S	285-1/2"	130-7/8"	116"	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. 3

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

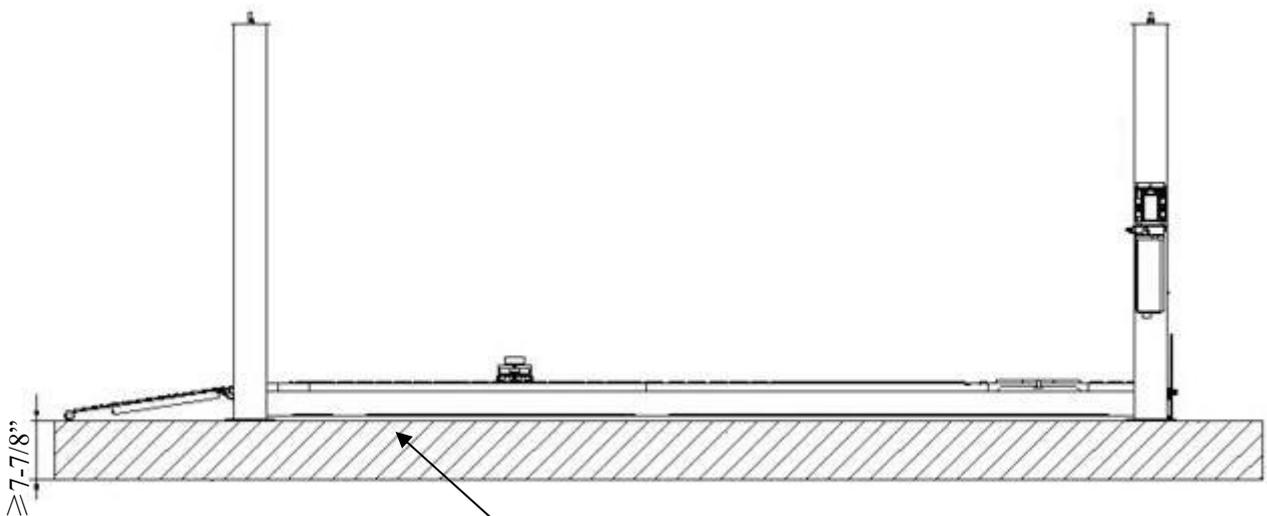
The equipment should be stored or installed in a shady, normal temperature, ventilated and dry place.

**C. 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 7-7/8" 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 3,000psi minimum.
3. Floors must be level and no cracks.



**Fig. 4**

Concrete Intensity must be 3000PSI minimum

**D. AIR SUPPLY**

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

**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.

### 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, The equipment should be unload and transfer by forklift. (See Fig.6)



Fig. 5

2. Packaged lift and Hydraulic Power Unit (See Fig. 6).

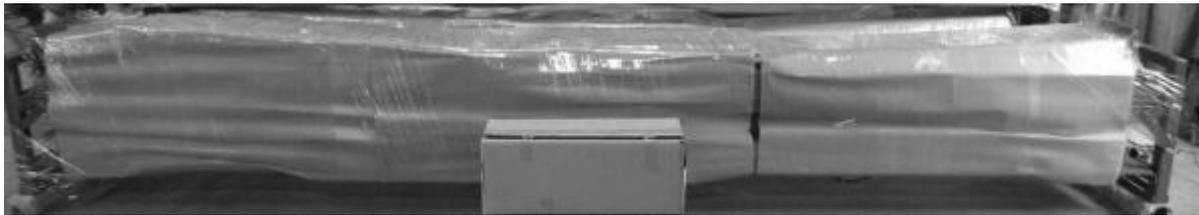


Fig. 6

3. Open the outer packing carefully (See Fig. 7).

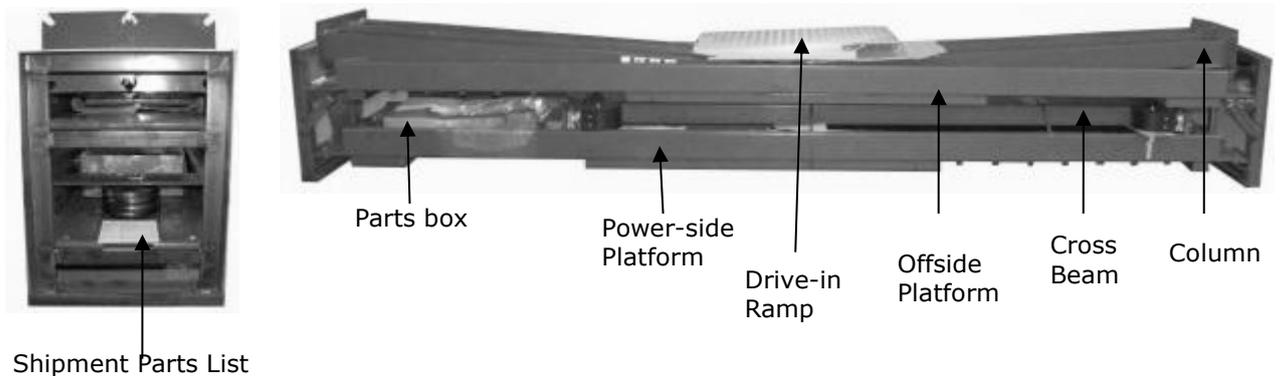


Fig.7

4. Take off the Drive-thru Ramps and Columns (See Fig. 8).



**Fig. 8**

5. Loose the screws of the upper package stand, take off the offside platform, take out the parts inside the power-side platform, than remove the package stand.

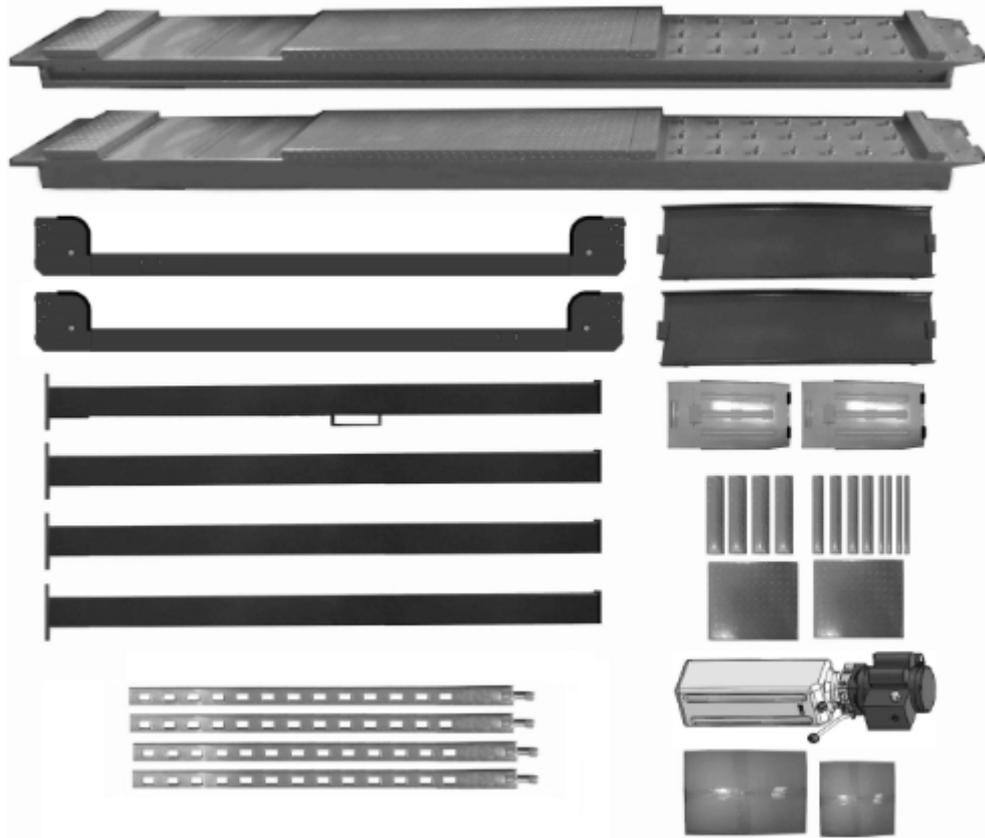
6. Move aside the parts and check the parts according to the shipment parts list (See Fig. 9, Fig. 10).

### 6.1 PRO-14, PRO-14E



**Fig.9**

## 6.2 PRO-14A, PRO-14AE



**Fig.10**

7. Open the carton of parts and check the parts according to the parts box list (See Fig. 11).



**Fig. 11**

8. Check the parts of the parts bag according to the parts bag list (See Fig. 13).



Parts bag 1 for PRO-14,  
PRO-14E



Parts bag 1 for PRO-14A,  
PRO-14AE



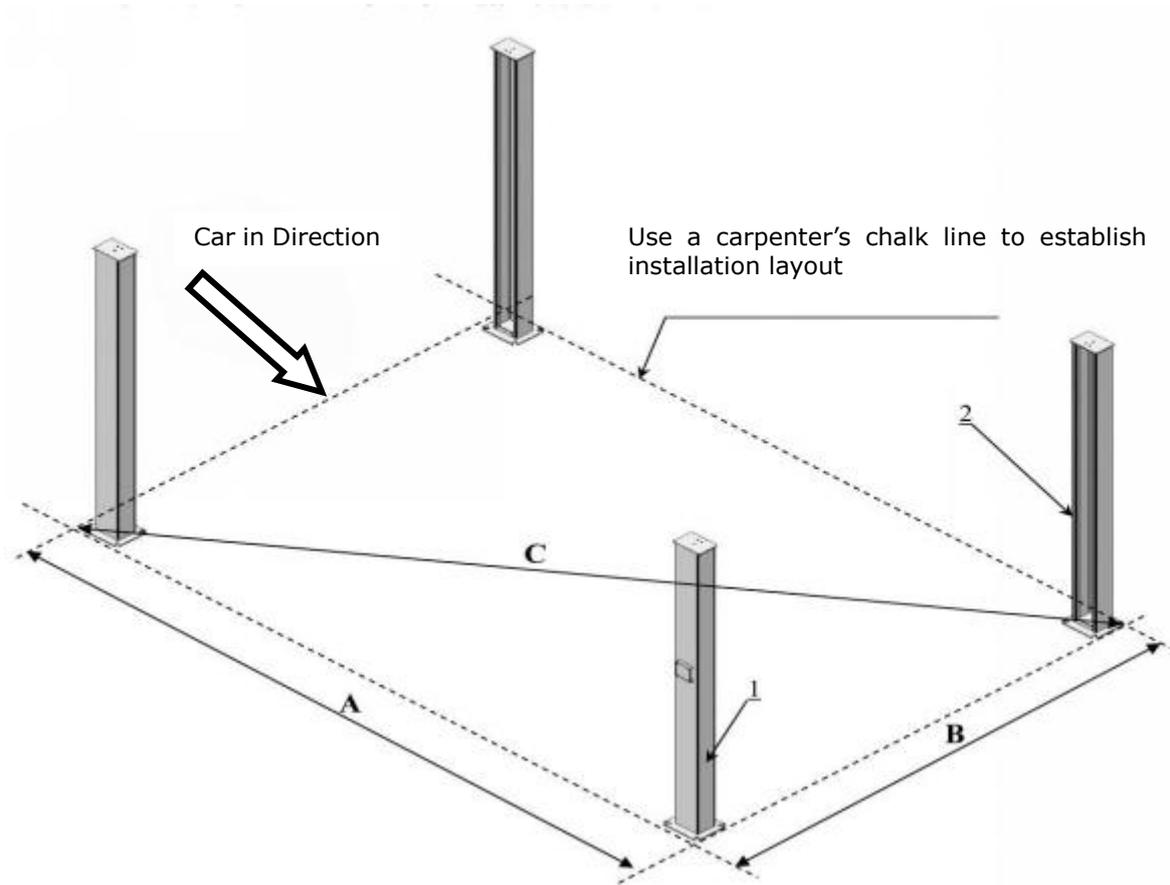
Parts bag (2)



Fig.13

- 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. 14**).

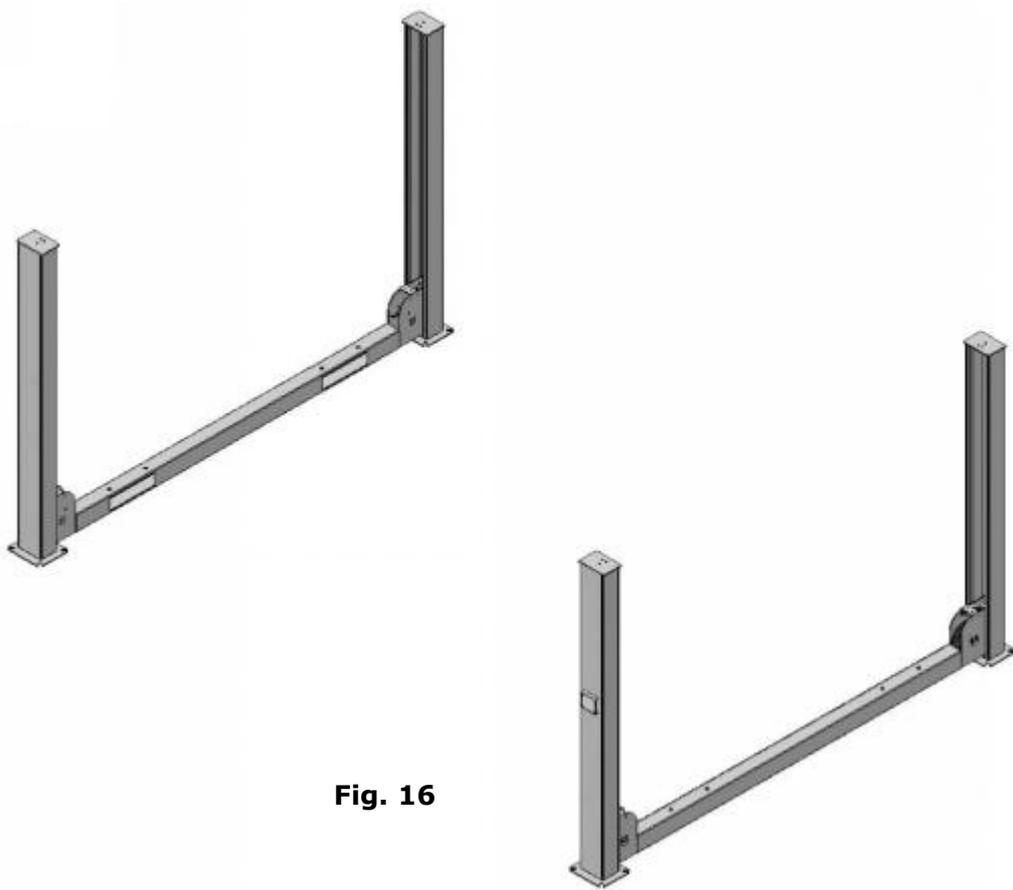
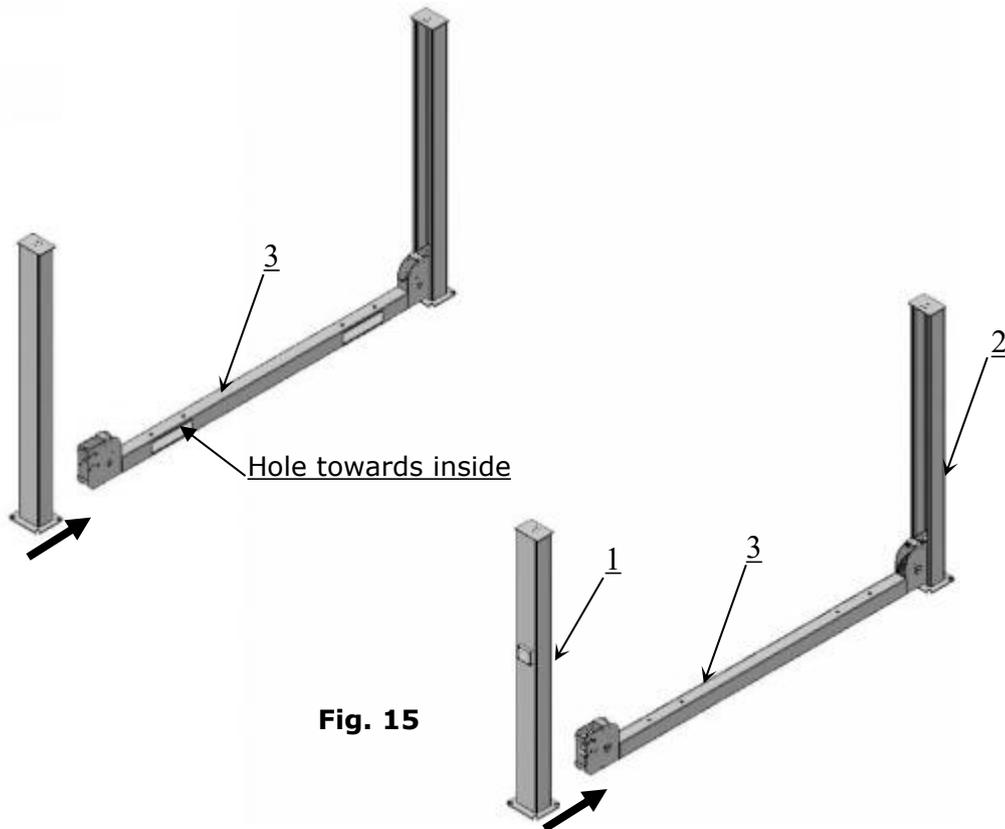
**Note: Reserve space front and behind the installation site.**



**Fig. 14**

<b>Model</b>	<b>A</b>	<b>B</b>	<b>C</b>
PRO-14,PRO-14A	216 1/2"	130-7/8"	253"
PRO-14E, PRO-14AE	245"	130-7/8"	277-7/8"

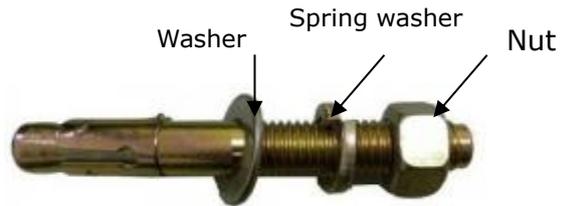
**D. Install Cross Beams (See Fig. 15, Fig. 16).**



## E. Fix the Anchor Bolts

1. Prepare the Anchor Bolts (See Fig. 17).

Fig. 17



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. 18).

**Note: Anchor bolts driven into the ground at least 110mm**

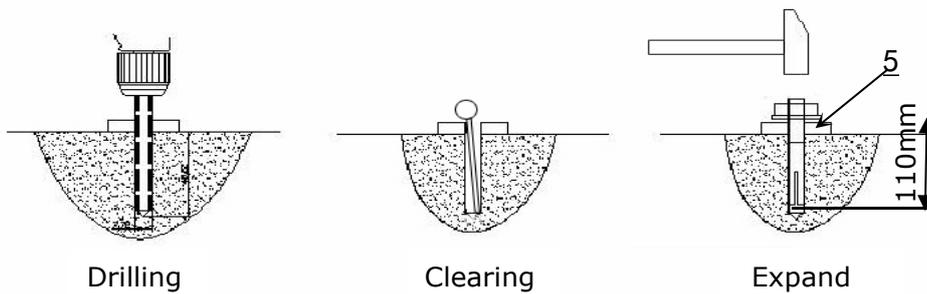


Fig. 18

## 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. 19).

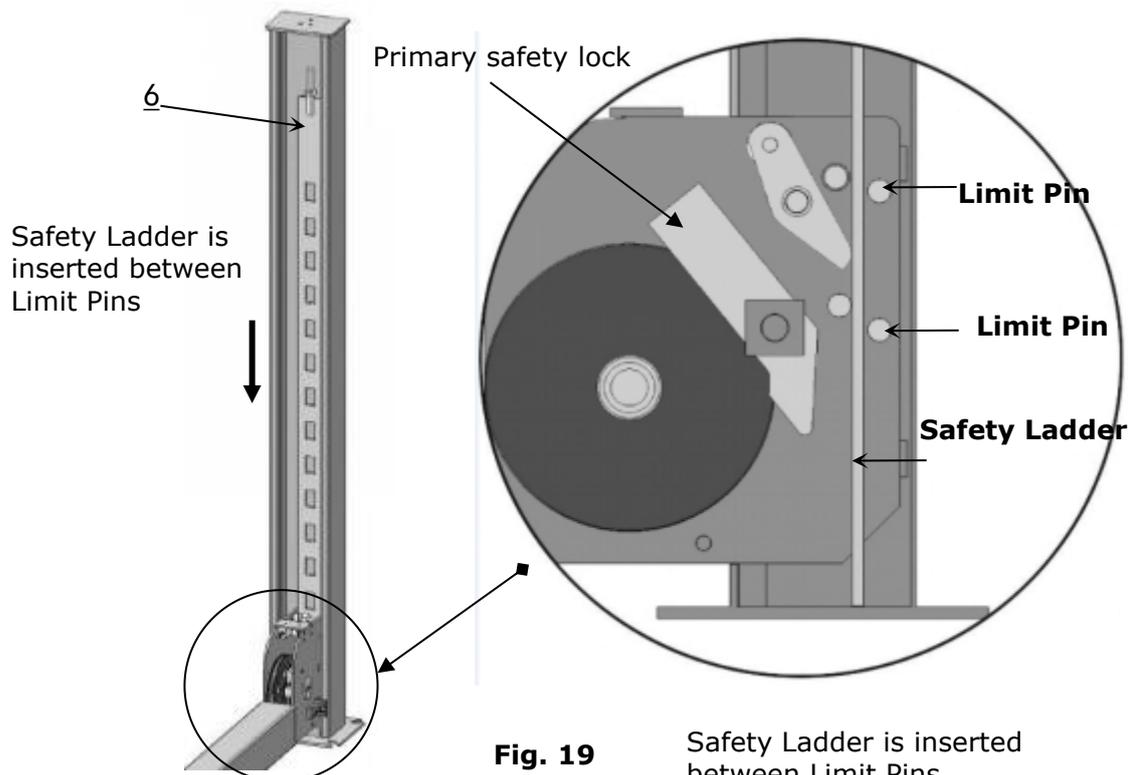
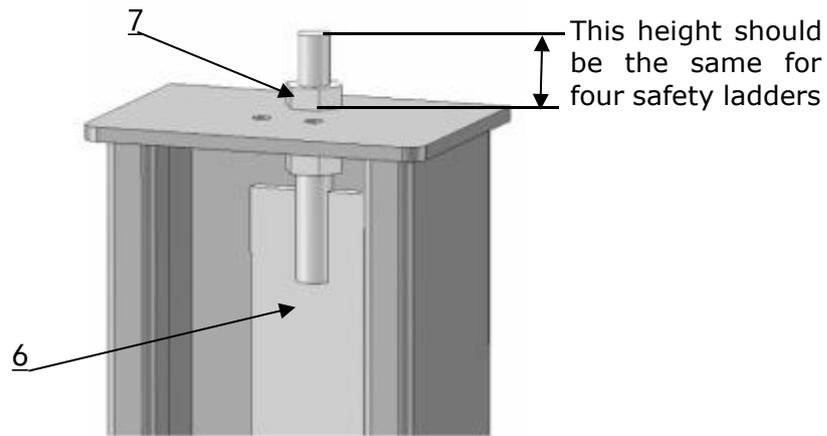


Fig. 19

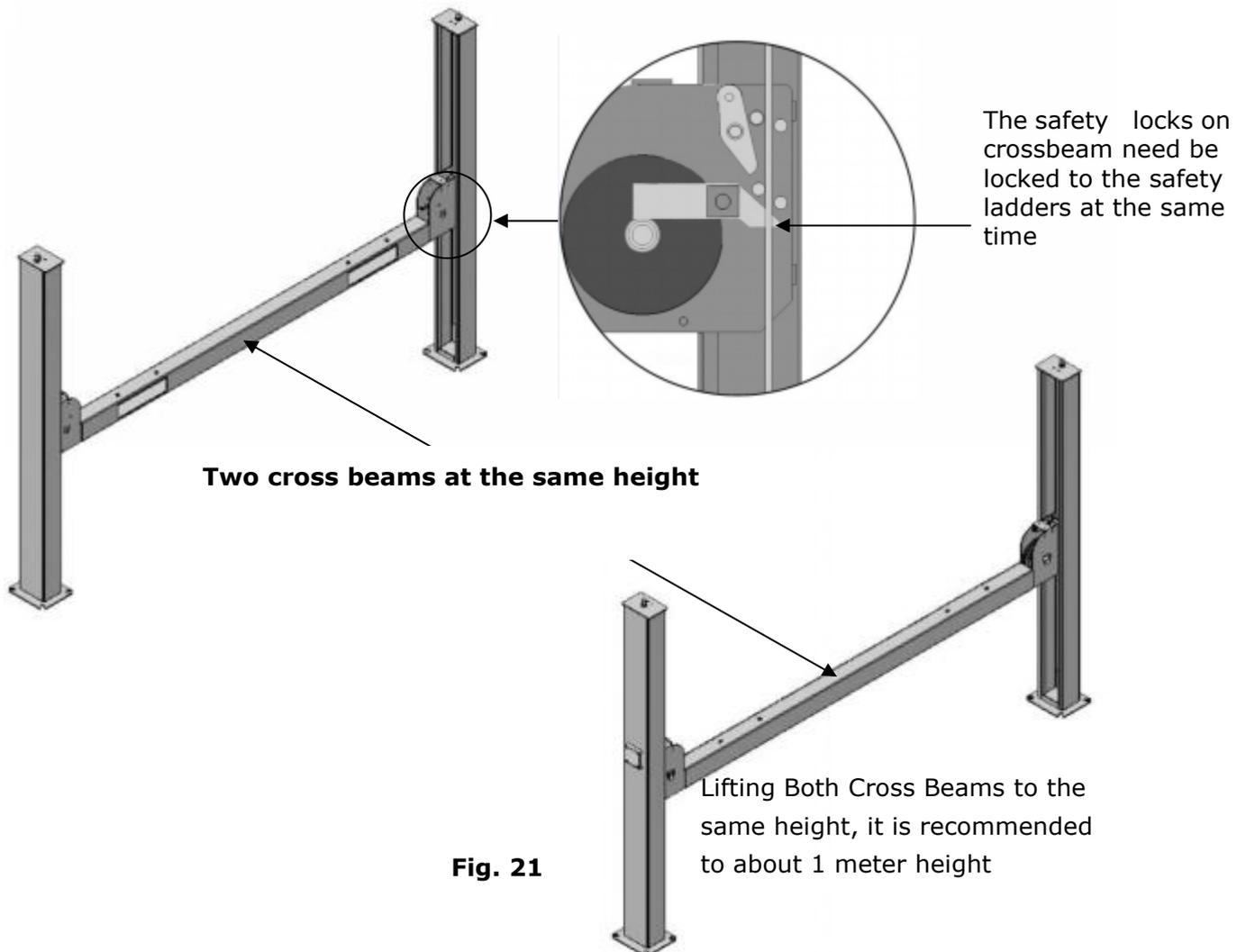
2. Install Safety Ladders (See Fig. 20).



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

**Fig. 20**

G. Put the Cross Beams at the same height (See Fig. 21).



**Fig. 21**

## 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.22), Install the power side platform and screw up the bolts. (See Fig.23)

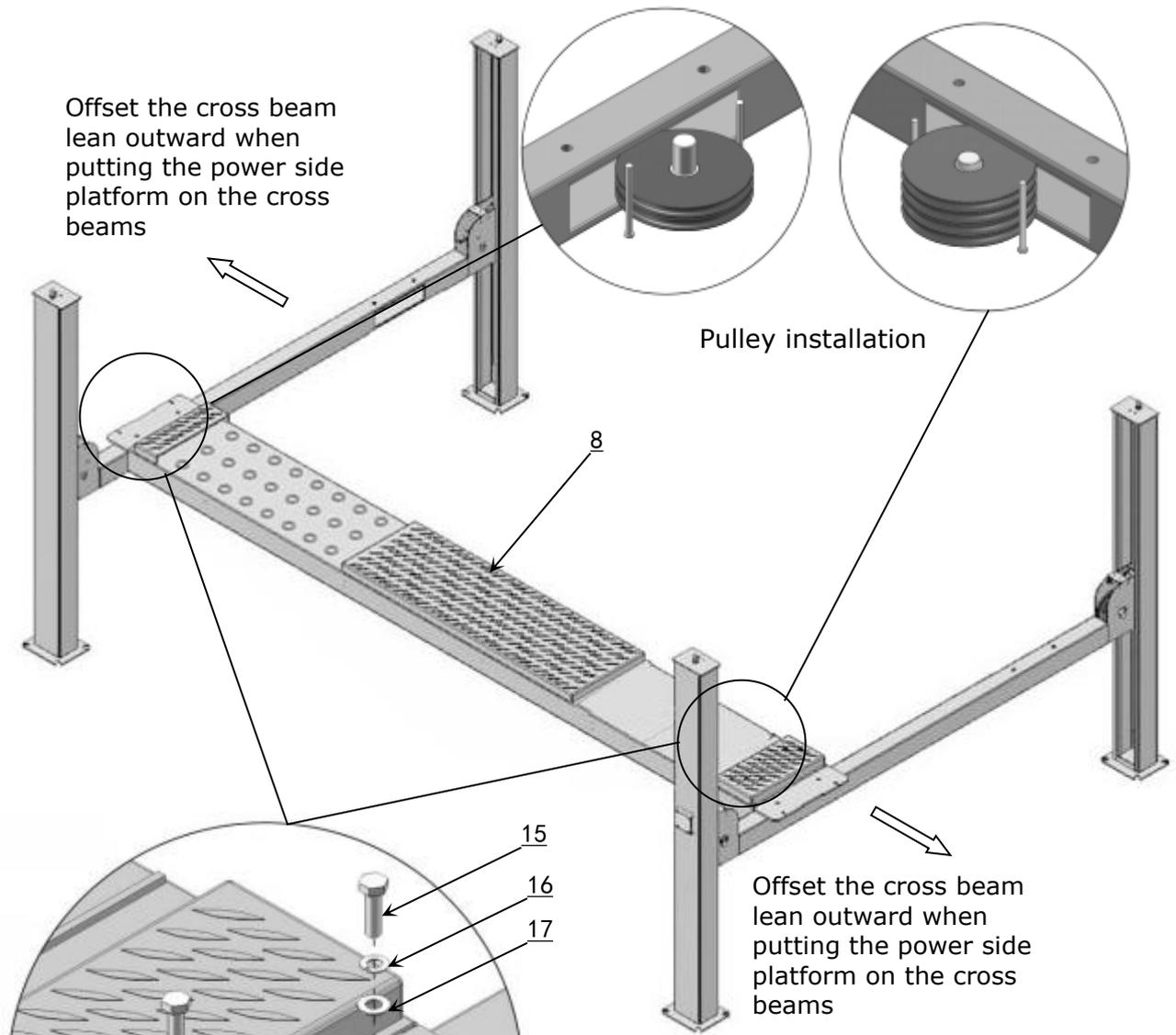
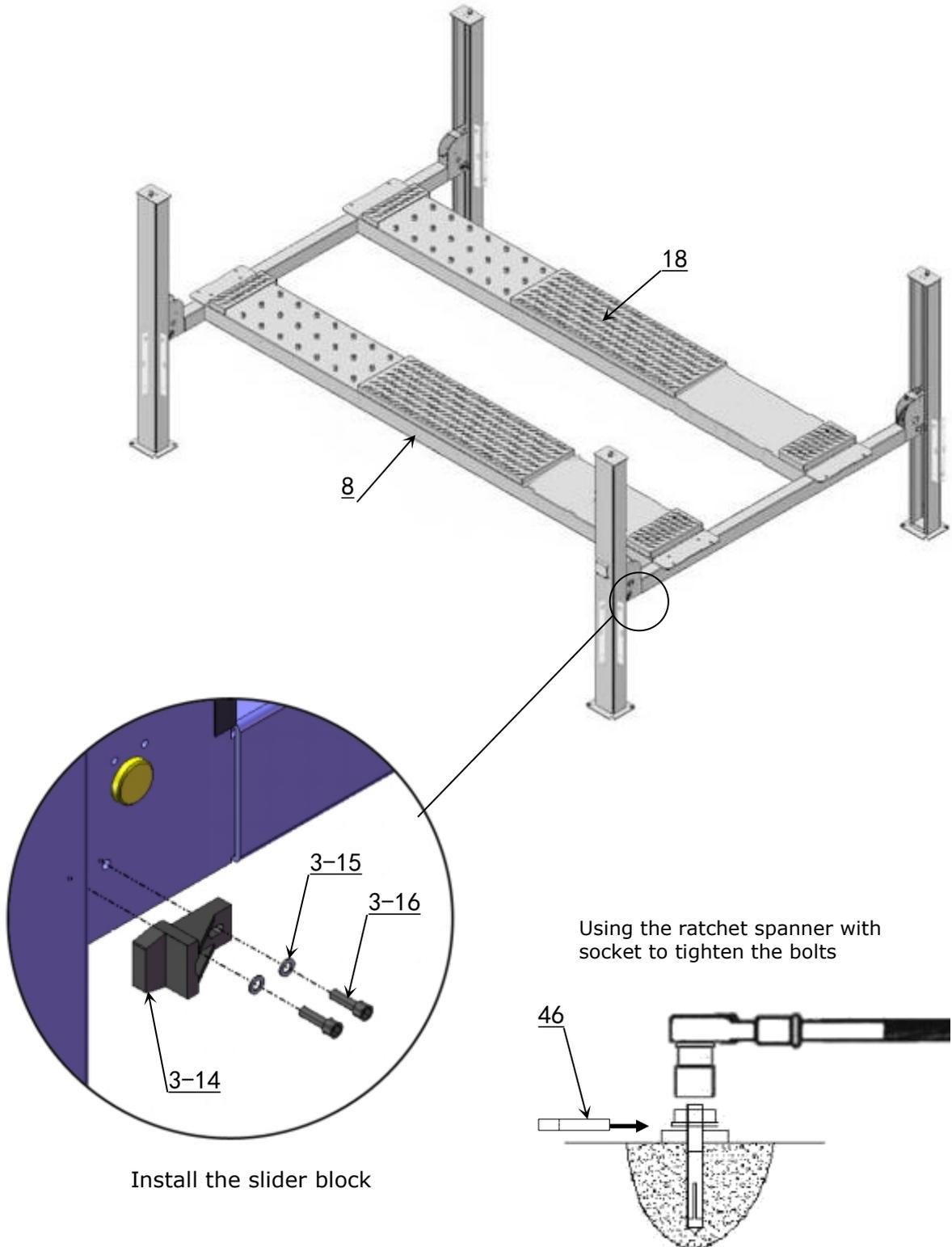


Fig. 22

**Install the power side platform and screw up the hex nuts M16\*40**

Fig. 23

**I. Assembly offside platform and slider block.** check the vertical of columns with level bar, adjusting with the shims if the columns are not vertical, and then tighten the anchor bolts (See Fig. 24).



Install the slider block

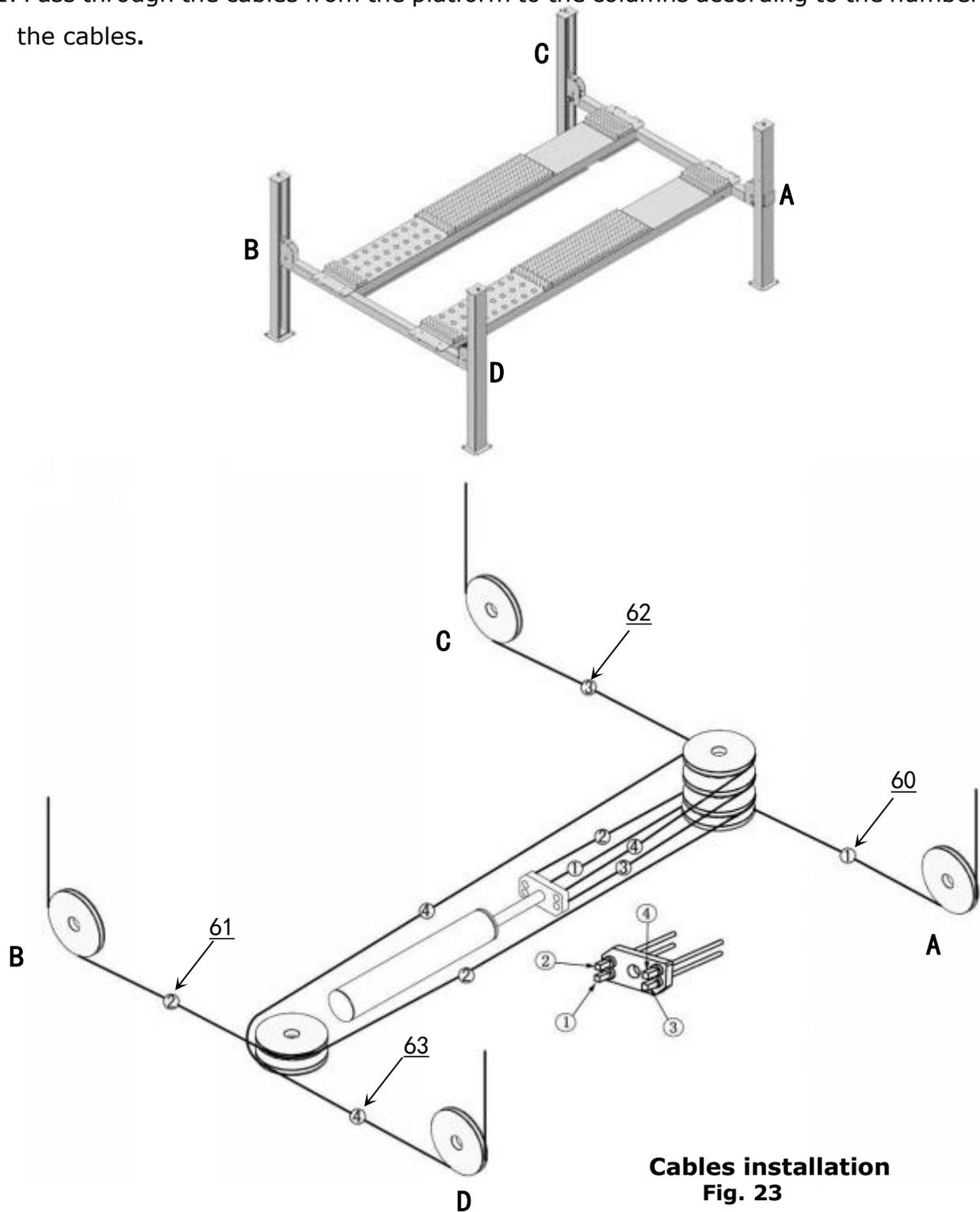
Using the ratchet spanner with socket to tighten the bolts

**Note: The tightening torque for the anchor bolt is 150N.m**

**Fig. 24**

**J. Install cables (See Fig. 25).**

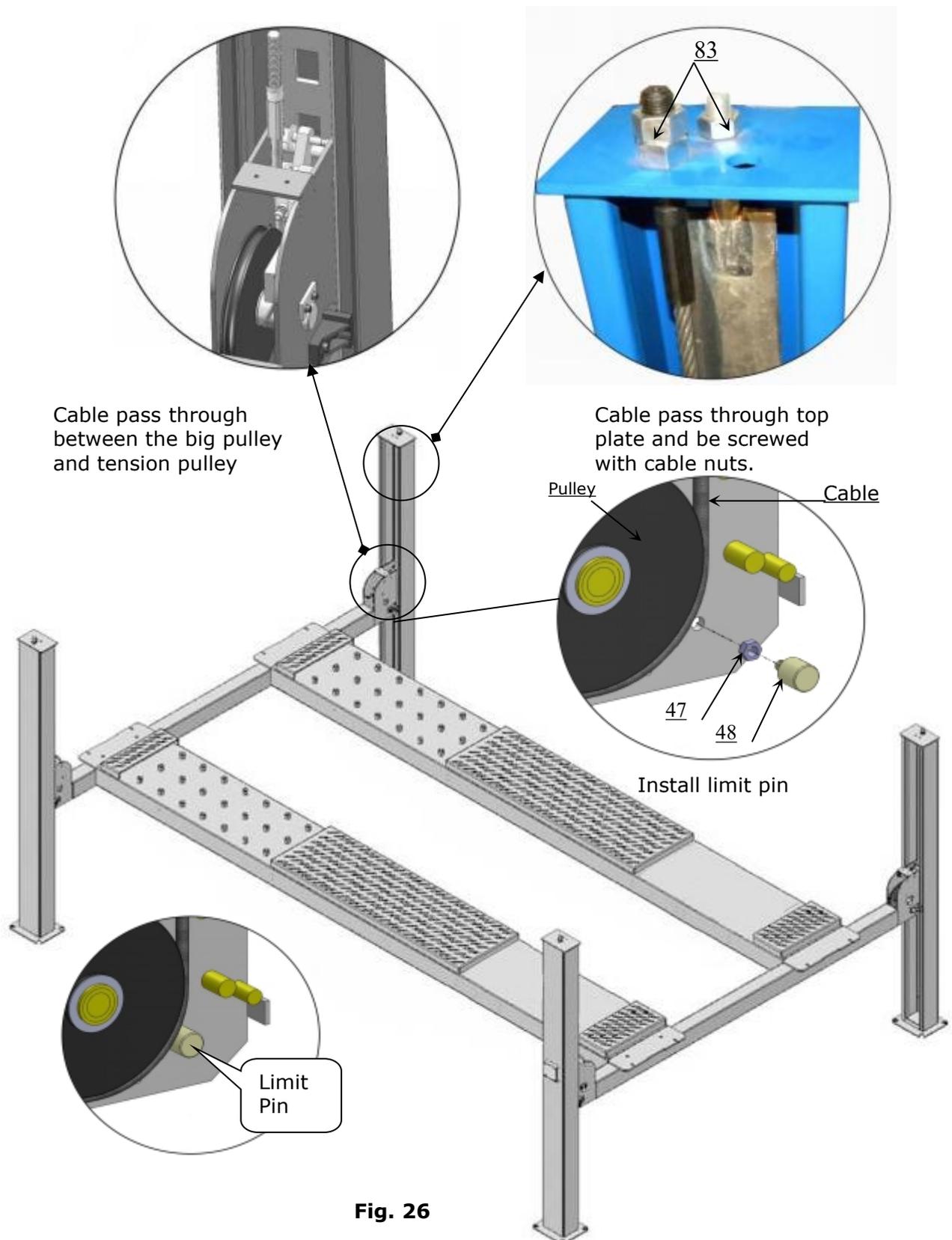
1. Pass through the cables from the platform to the columns according to the number of the cables.



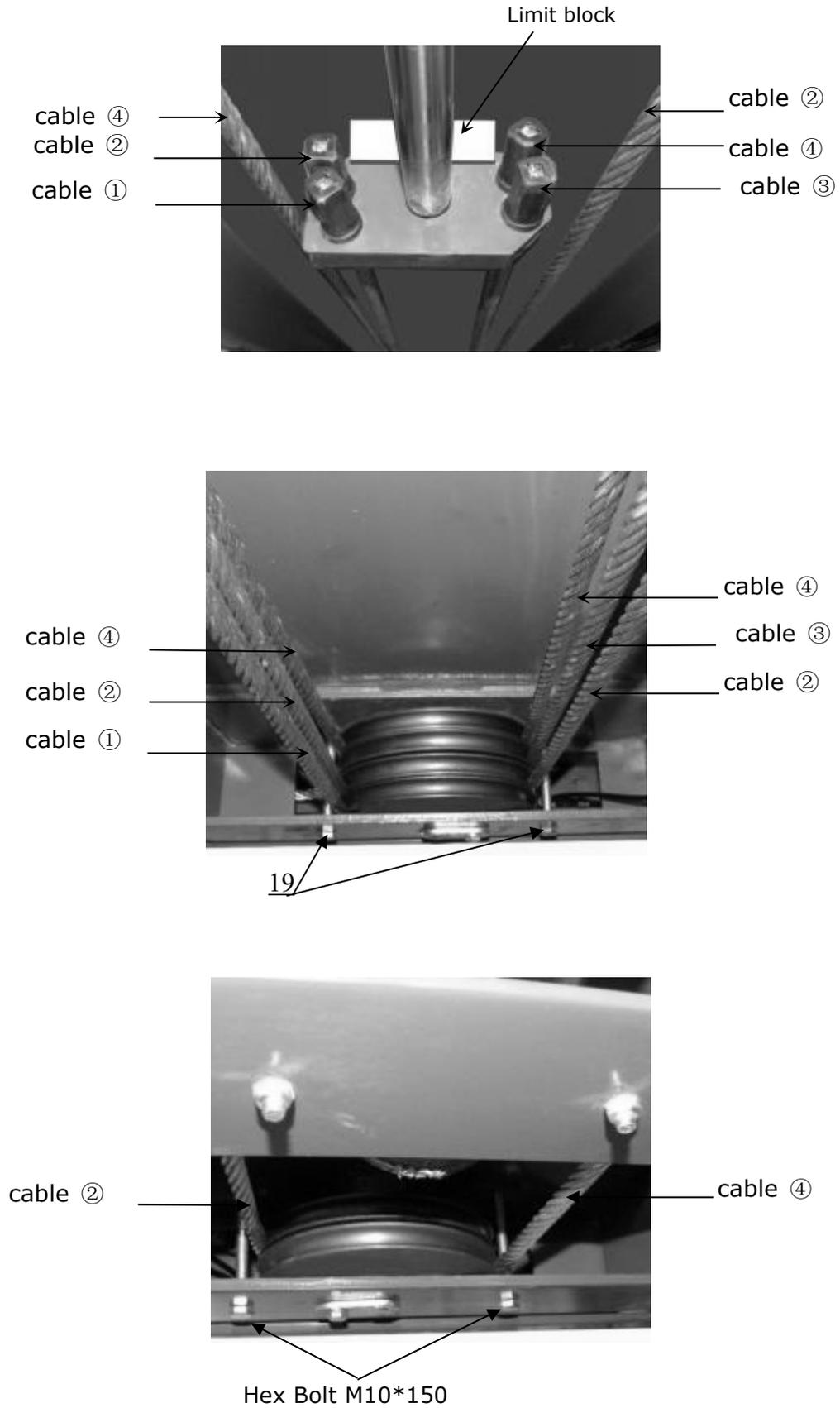
**Cables installation  
Fig. 23**

No. Cable	①	②	③	④
Length PRO-14(A) (inc. connecting fitting)	162-3/4"	438-1/2"	230-1/2"	371"
Length PRO-14E(AE) (inc. connecting fitting)	191-3/8"	495-5/8"	259"	428-1/8"

2. The cable pass through the cross beam to top plate of columns and be screwed with cable nuts (See Fig. 26).



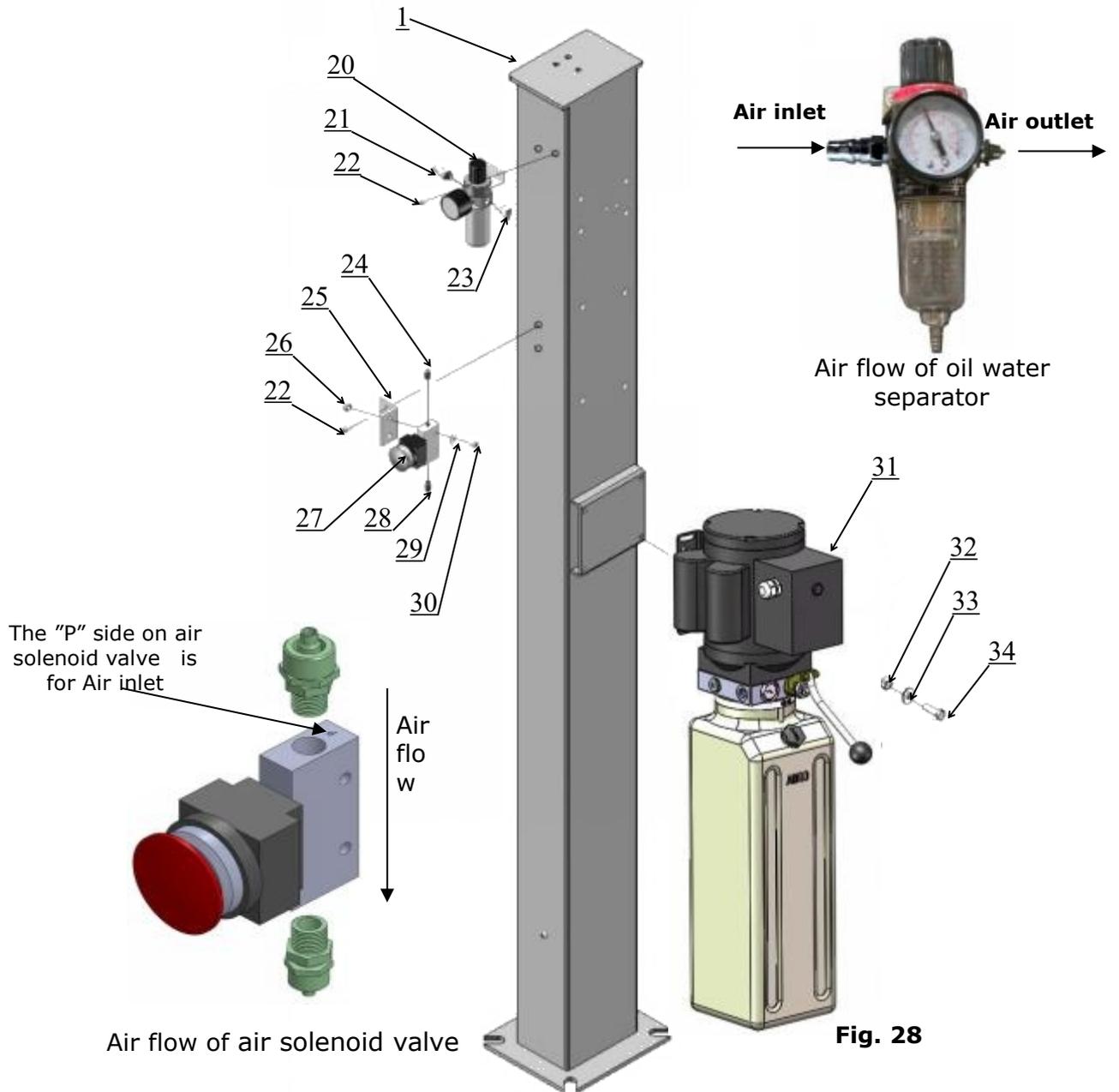
3. Illustration for platform cables (See Fig. 27).



**Fig. 27**

### K. Install Oil-water separator, Manual control air valve and Power unit

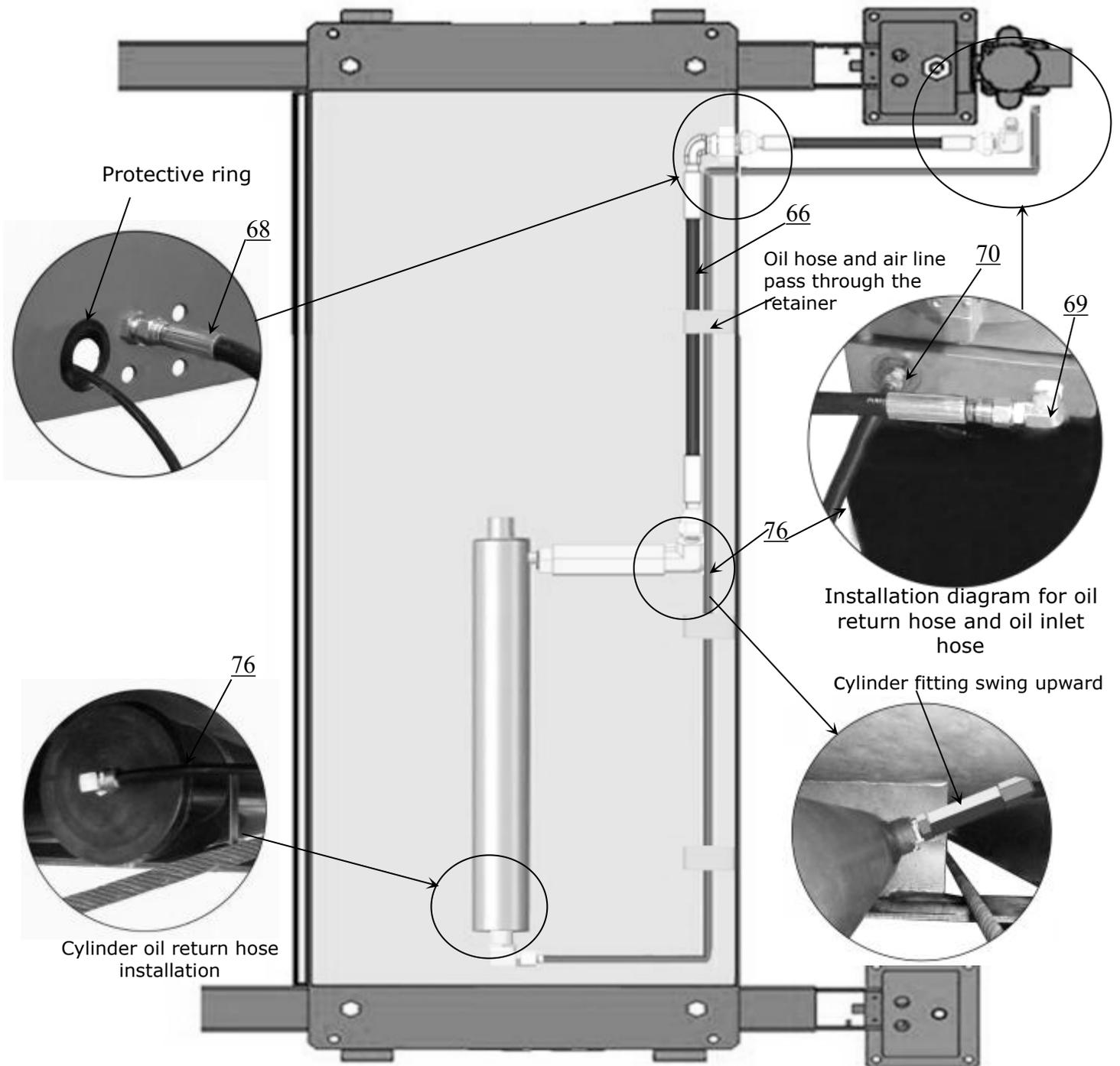
(See Fig. 28).



Item	Part#	Description	QTY
20	10420145	Oil-water separator AFR-2000	1
21	10420146	Straight Fitting for air line	1
22	10209009	Cup Head Bolt	8
23	10420076	Fitting	1
24	10420159	Straight Fitting	1
25	11420160	Fixing plate of Manual Control Valve	1
26	10420161	Self locking nut	2
27	10420162	Manual Control Air Valve	1
28	10420163	Straight Fitting for Air Line	1
29	10420148	Washer	4
30	10420164	Cup Head Bolt	2
31	071102	Manual power unit	1
32	10209005	Self locking nut	14
33	10209004	Rubber Ring	4
34	10209003	Hex Bolt	4

### L. Install Hydraulic System (See Fig. 29).

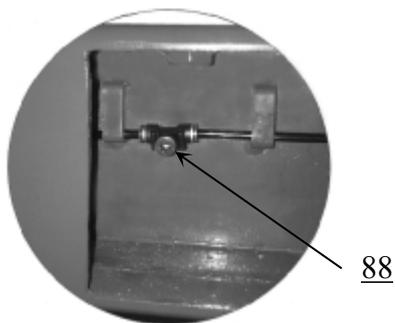
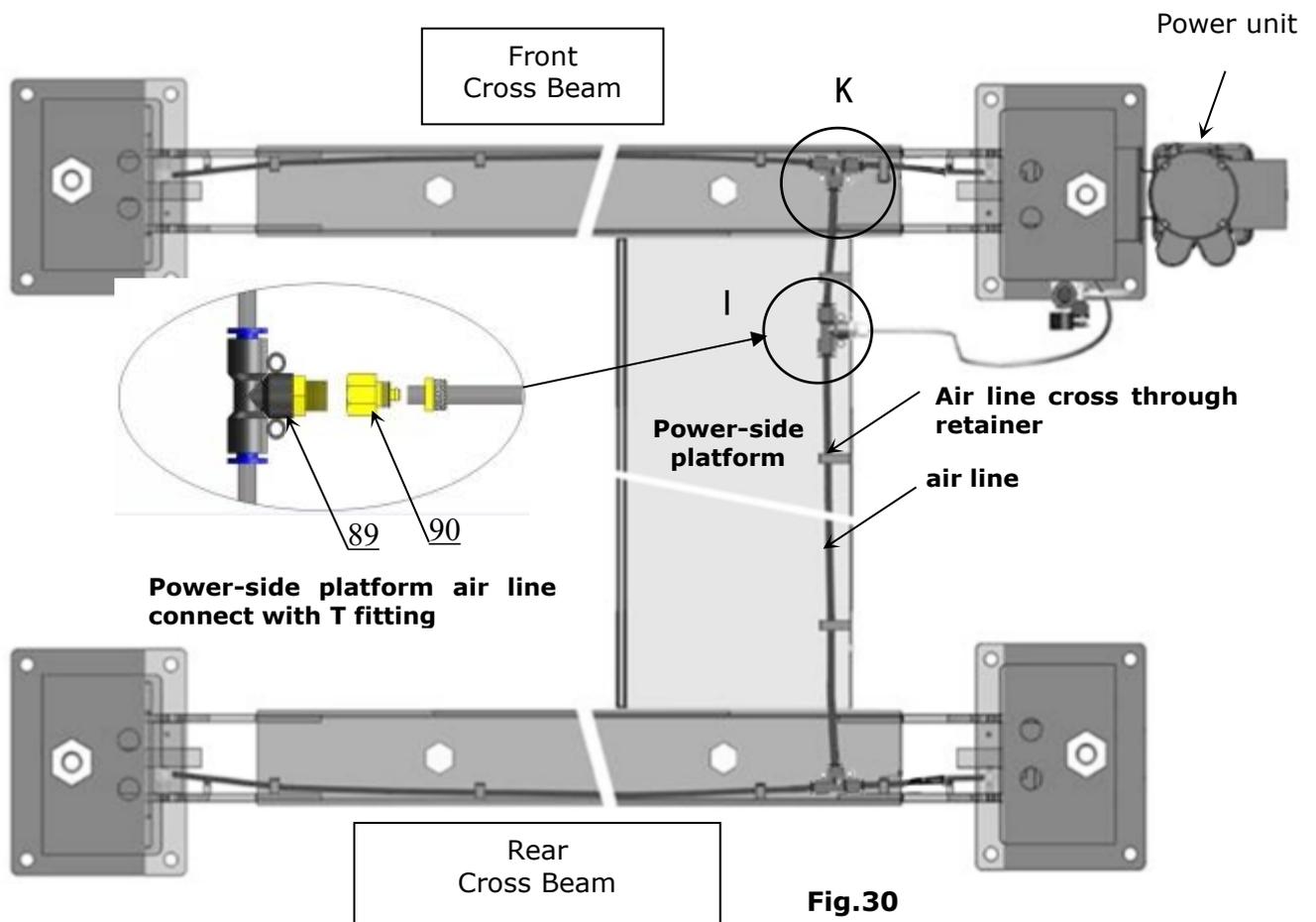
Note: Oil hoses connected to oil cylinder must be passed above the cable, cylinder inlet port must swing upward to avoid the oil hose and oil return pipe scratched by cable.



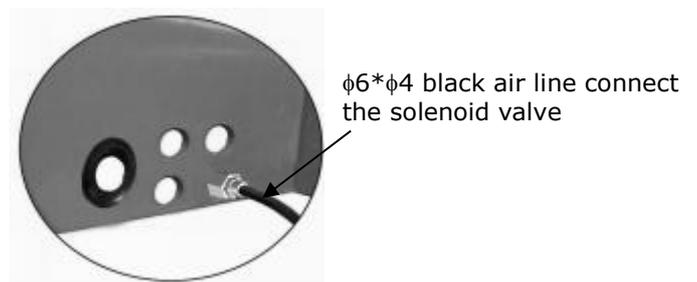
**Fig.29**

### M. Install air-line system

1. Connecting front and rear Cross Beam cylinders by using 6\*4 black air line. (the actual length of air line can be cut by user) **(See Fig.30)**
2. Cut the 6\*4 black air line by scissor between two retainer, then connect the air line with T fitting. **(See Fig. 31).**
3. Connecting the solenoid valve using 6\*4 black air line (the actual length of air line can be cut by user) **(See Fig. 32).**

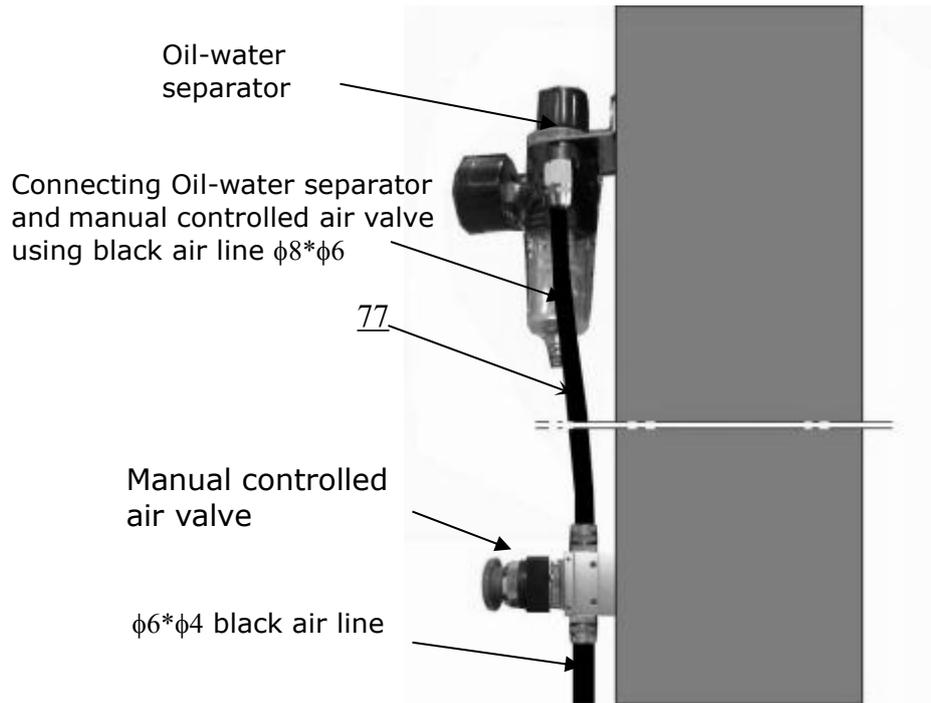


K enlarged view  
Fig.31



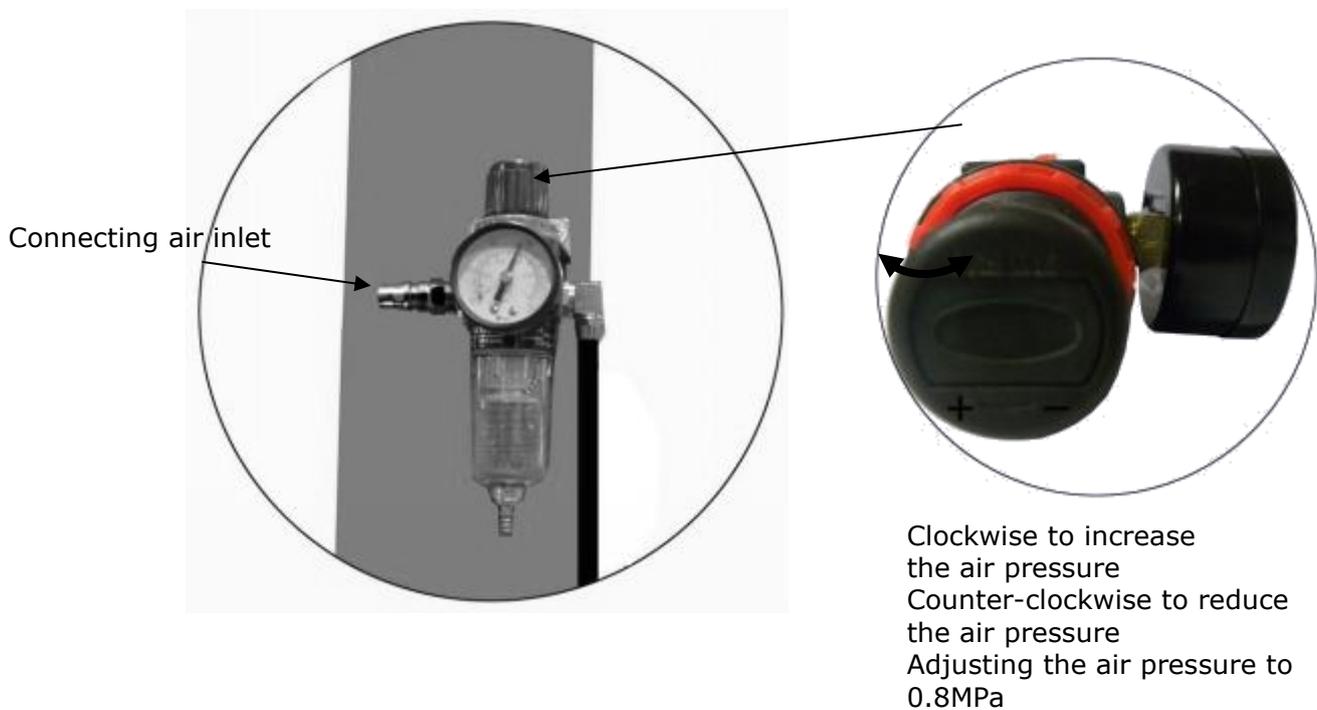
L enlarged view  
Fig.32

5. Install oil-water separator and manual control air valve. (see **Fig.33**)



**Fig. 33**

6. Connecting air inlet (Air supply pressure 5kg/cm<sup>2</sup>- 8kg/cm<sup>2</sup>), adjusting the air pressure of Oil-water separator to 0.8MPa (**See Fig. 34**).



**Fig. 34**

## 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. 35).

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.

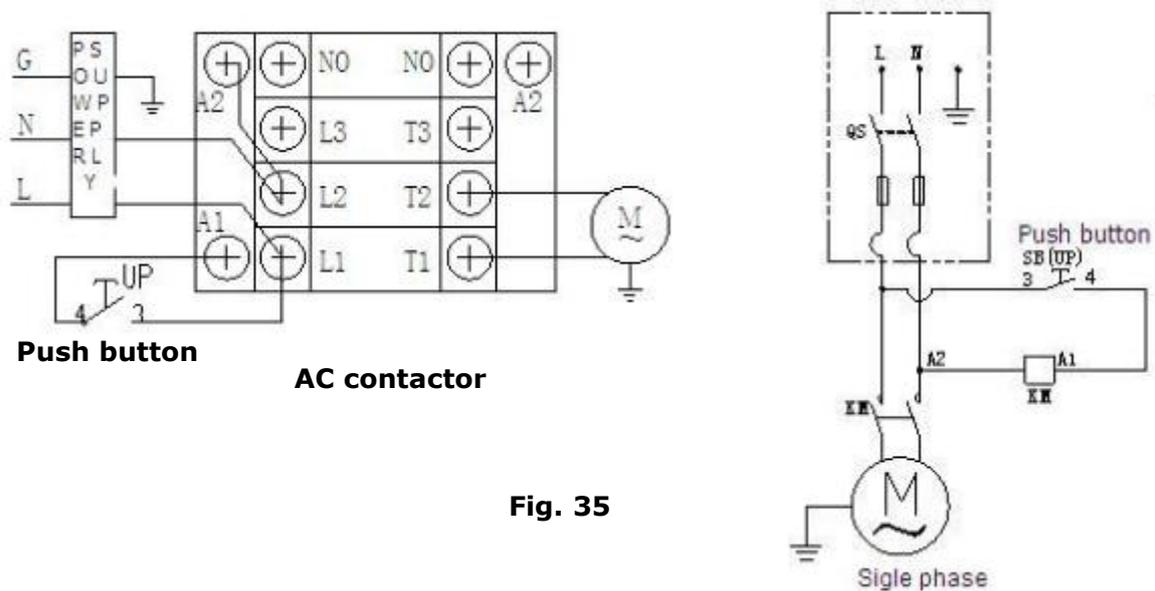


Fig. 35

## O. Install Spring and Safety Cover of Cross Beam (See Fig. 36).

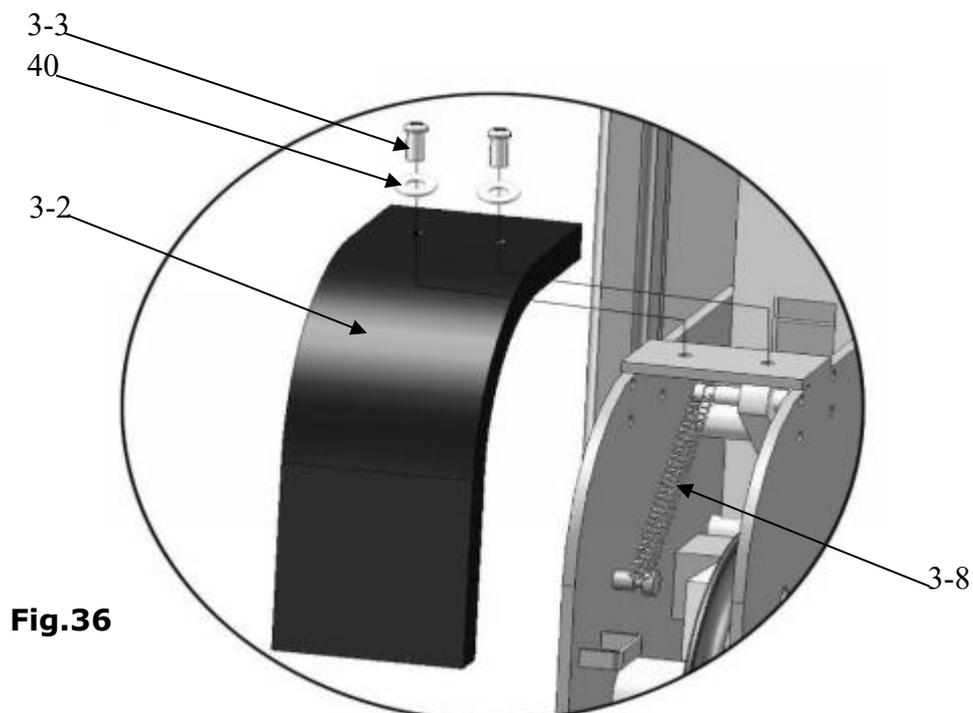
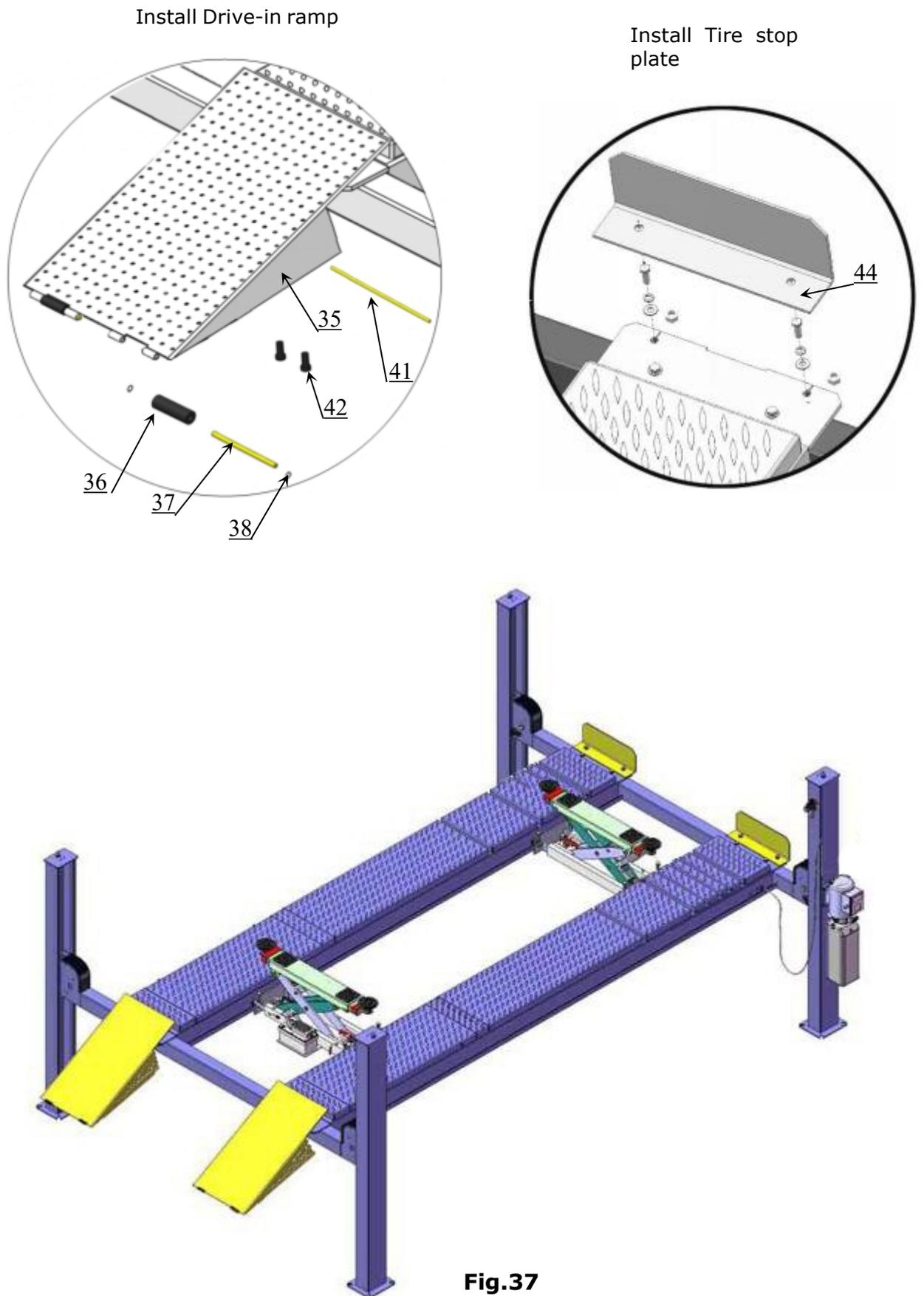


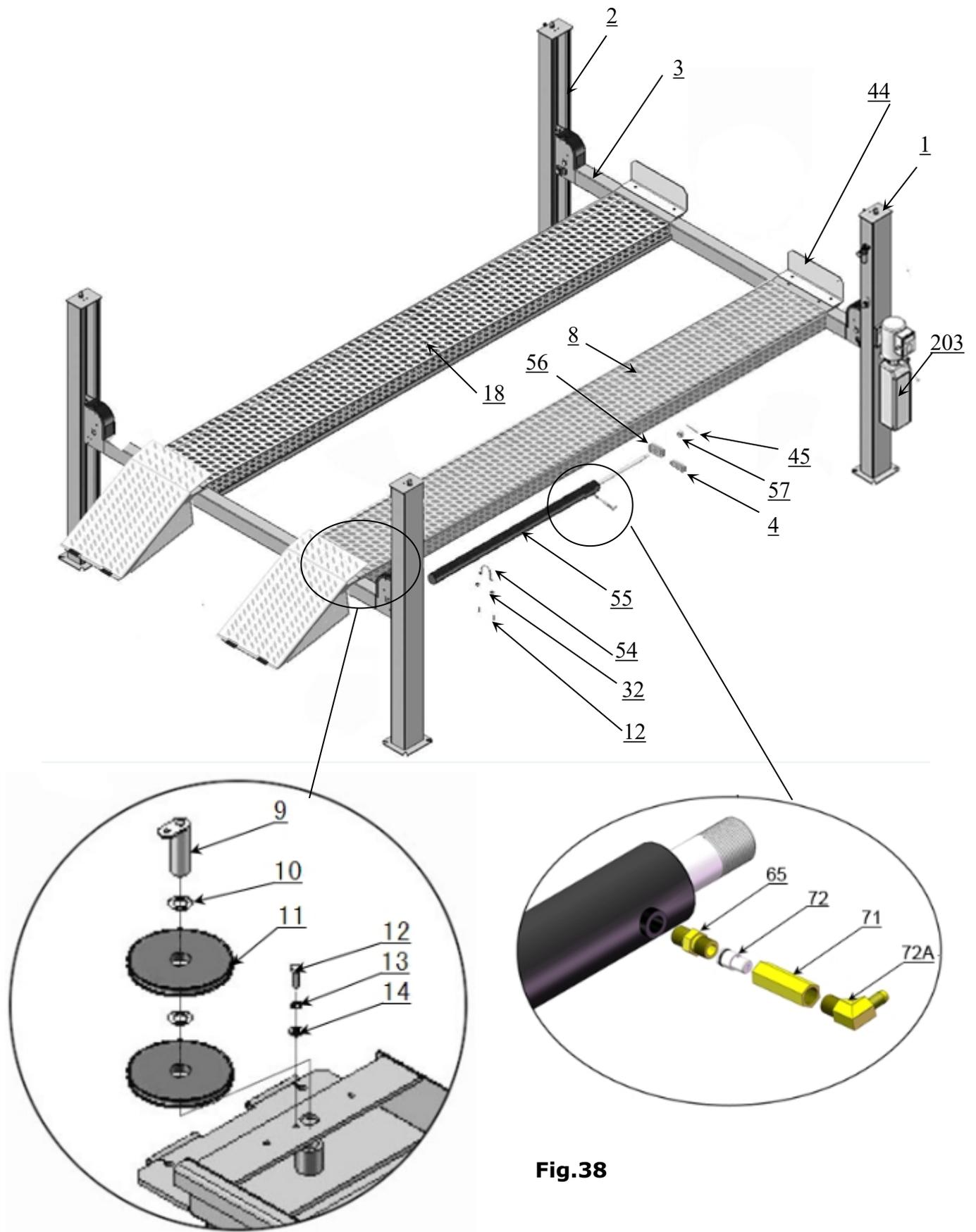
Fig.36

**P. Install Drive-in ramp, Tire stop plate, Platform locking plates, Steel ball set  
(See Fig. 37).**



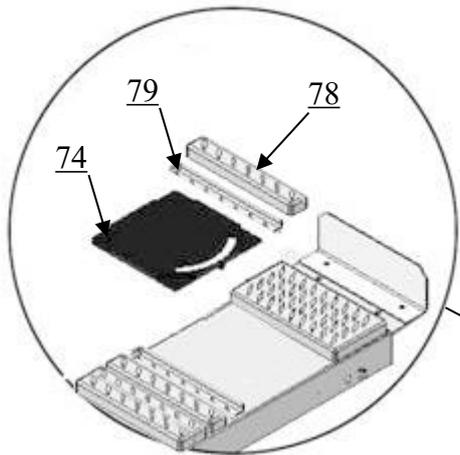
# IV. EXPLODED VIEW

## Model PRO-14, PRO-14E

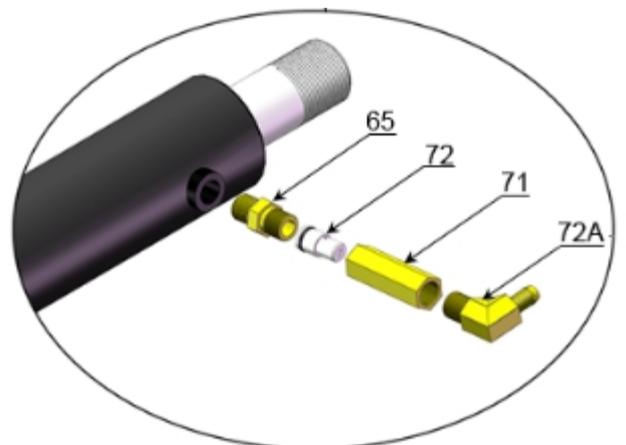
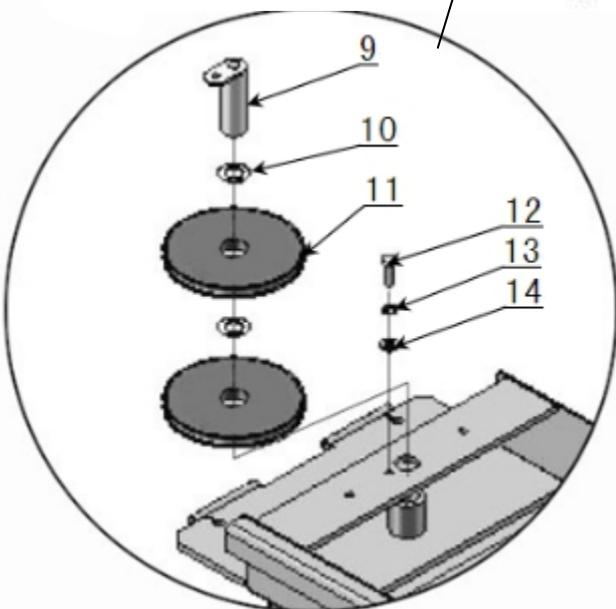
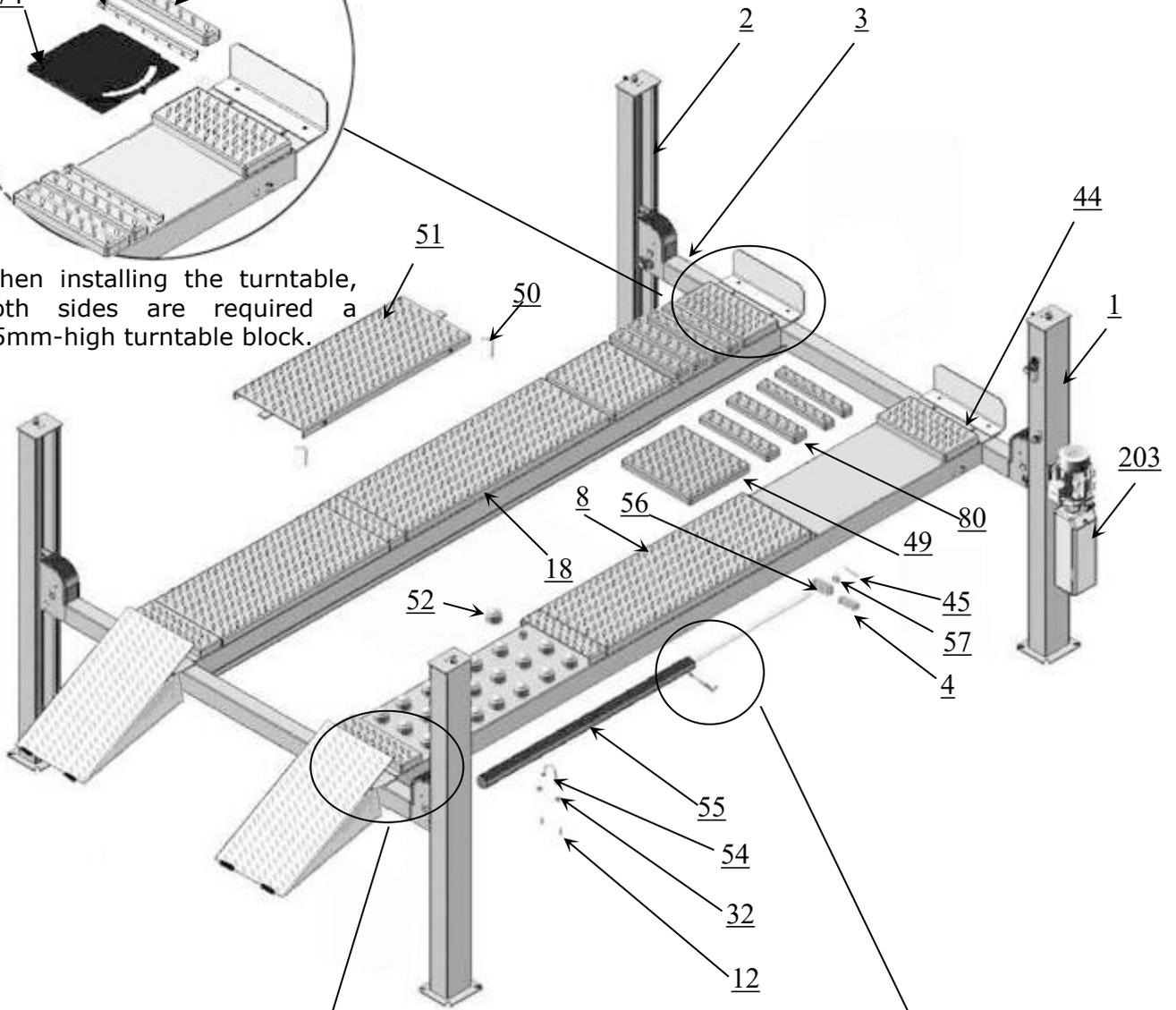


**Fig.38**

**Model PRO-14A, PRO-14AE**



When installing the turntable, both sides are required a 35mm-high turntable block.



**Fig.39**

**Parts list for PRO-14, PRO-14A, PRO-14E, PRO-14AE**

Item	Part#	Description	PRO-14	PRO-14A	PRO-14E	PRO-14AE
1	11460021	Power-side Column	1	1	1	1
2	11460020	Offside Column	3	3	3	3
3	10460063	Cross Beam assy.	2	2	2	2
4	10476016	Limit slider	1	1	1	1
5	10209059	Anchor Bolt	16	16	16	16
6	11460074	Safety Ladder	4	4	4	4
7	10476014	Hex Nut	8	8	8	8
8	11460054	Power-side Platform	1	0	0	0
	11460024		0	1	0	0
	11460024		0	0	1	0
	11460055		0	0	0	1
9	11476010	Pulley Shaft Weldment	2	2	2	2
10	10476029	Washer for pulley	4	4	4	4
11	11476636	Pulley	6	6	6	6
11A	10476025	Bronze Bush for Pulley	10	10	10	10
12	10209043	Hex Bolt	12	12	12	12
13	10209034	Lock Washer	2	2	2	2
14	10420144	Washer	2	2	2	2
15	10420030	Hex Bolt	12	12	12	12
16	10201114	Lock Washer	8	8	8	8
17	10209128	Washer	8	8	8	8
18	11460055	Offside Platform	1	0	0	0
	11460026		0	1	0	0
	11460026		0	0	1	0
	11460055		0	0	0	1
19	10476015	Hex Bolt	4	4	4	4
20	10420145	Oil-water Separator	1	1	1	1
21	10420146	Straight Fitting for Air Line	1	1	1	1
22	10209009	Cup Head Bolt	8	8	8	8
23	10420076	90° Fitting for Air Line	1	1	1	1
24	10420159	Straight Fitting for Air Line	1	1	1	1
25	11420160	Fixing plate of Manual Control Valve	1	1	1	1
26	10420161	Self locking nut	2	2	2	2
27	10420162	Manual Control Air Valve	1	1	1	1
28	10420163	Straight Fitting for Air Line	1	1	1	1
29	10420148	Washer	4	4	4	4
30	10420164	Cup Head Bolt	2	2	2	2
203	071102	Manual power unit	1	1	1	1
32	10209005	Self locking nut	14	14	14	14
33	10209004	Rubber Ring	4	4	4	4
34	10209003	Hex Bolt	4	4	4	4
35	11460028	Drive-in ramp	2	0	2	0
	11470003A		0	2	0	2
36	10620063	Roller for Drive-thru Ramp	4	4	4	4
37	11620043	Roller pin	4	4	4	4
38	10209010	Snap	8	8	8	8

Item	Part#	Description	PRO-14	PRO-14A	PRO-14E	PRO-14AE
39	10420156	Protecting Rubber Ring	1	1	1	1
40	10420045	Washer	20	20	20	20
41	10420004	Pin for Drive-in Ramp	2	2	2	2
42	10420005	Fixing Bolt	4	4	4	4
43	10460501	Parts box	1	0	1	0
	10470501		0	1	0	1
44	11420031-1	Tire Stop Plate	2	2	2	2
45	10201005	Split pin	1	1	1	1
46	10201090	Shim (1mm)	20	20	20	20
	10620065	Shim (2mm)	20	20	20	20
47	10209056	Self locking nut	4	4	4	4
48	11420217	Cable Limit Pin	4	4	4	4
49	11430004	Turn plate cover	0	2	0	2
50	11520037	Split pin	0	4	0	4
51	11450003	Slip Plate	0	2	0	2
52	10420157	Steel Ball Set	0	60	0	60
54	11460029	Fixing Ring For Oil Cylinder	1	1	1	1
55	10460030	Cylinder	1	1	1	1
56	11430622	Cable connecting plate	1	1	1	1
57	10420014	Hex Nut	1	1	1	1
58	10420016B	Protective hose	1	1	1	1
59	10420158	Turn plate	0	2	0	2
60	10460066	No.① Cable	1	1	0	0
	10460087		0	0	1	1
61	10460069	No.② Cable	1	1	0	0
	10460090		0	0	1	1
62	10460067	No.③ Cable	1	1	0	0
	10460088		0	0	1	1
63	10460068	No.④ Cable	1	1	0	0
	10460089		0	0	1	1
64	10420166	90° Fitting	1	1	1	1
65	10420243	Straight Fitting	1	1	1	1
66	10460060	Oil Hose	1	1	0	0
	10460091		0	0	1	1
67	10420120	Extended Straight Fitting (with Nut)	1	1	1	1
68	10460038	Oil Hose	1	1	1	1
69	10209060	90° Fitting For Hydraulic Power Unit	1	1	1	1
70	10420095	Straight Fitting	1	1	1	1
71	10420245	Fitting	1	1	1	1
72	10420247	Compensation Valve	1	1	1	1
72A	10201020	90° Fitting	1	1	1	1
73	10420124	T-Fitting For Air Line	2	2	2	2
74	10420242	T-Fitting	1	1	1	1
75	10420241	Straight Fitting	1	1	1	1
76	10476007	Oil Return Hose	1	1	0	0
	10460092		0	0	1	1



Item	Part#	Description	Qty	Note
3-15	10209033	Washer	40	
3-16	10420043	Socket Bolt	32	
3-17	10420175	Slack-cable safety lock (left & right )	Each 2	
3-18	10420171	Pin	8	
3-19	10420172	Pin Bush For Slack-cable safety lock	8	
3-20	10206019	Snap Ring	16	
3-21	10209010	Snap Ring	4	
3-22	10420035	Tension Pulley	4	
3-23	11420174	Spacer	4	
3-24	11476026	Pulley Pin	4	
3-25	11460076	Pulley shaft sleeve	4	

#### 4.2 CYLINDERS EXPLODED VIEW (10460030)

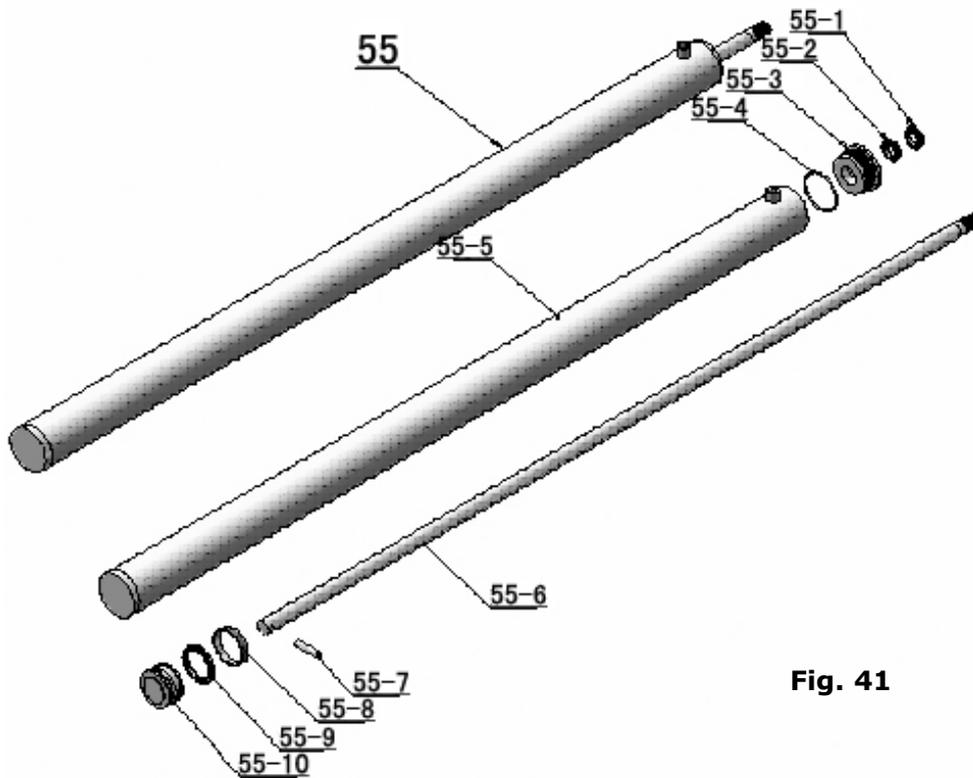
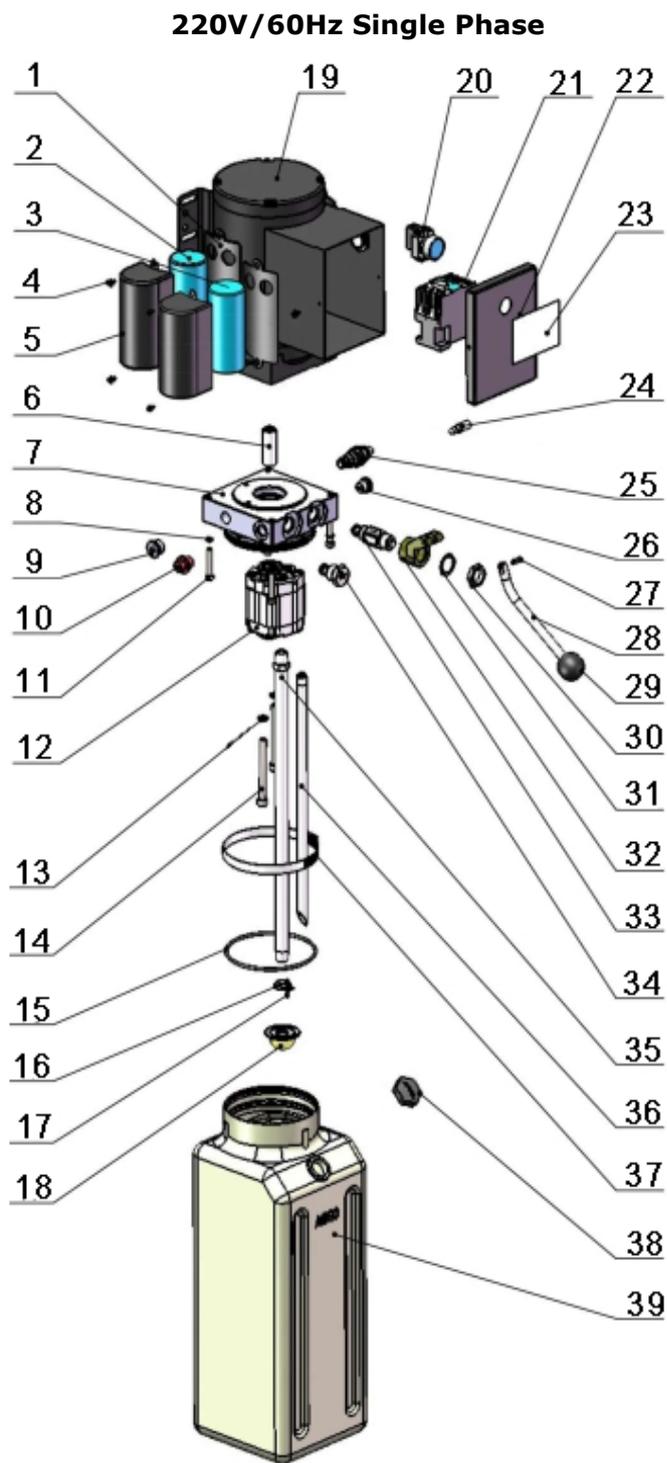


Fig. 41

Parts list For Cylinder				
Item	Part#	Description	Qty	Note
55-1	10420059	Dust Ring	1	
55-2	10420060	Y- Ring	1	
55-3	11460046	Head Cap	1	
55-4	10460047	O- Ring	1	
55-5	11460048	Bore Weldment	1	
55-6	11420064	Piston Rod	1	
55-7	11460050	Pin	1	
55-8	10460051	Support Ring	1	
55-9	10460052	Y- Ring	1	
55-10	11460053	Piston	1	

### 4.3 POWER UNIT EXPLODED VIEW (071102)

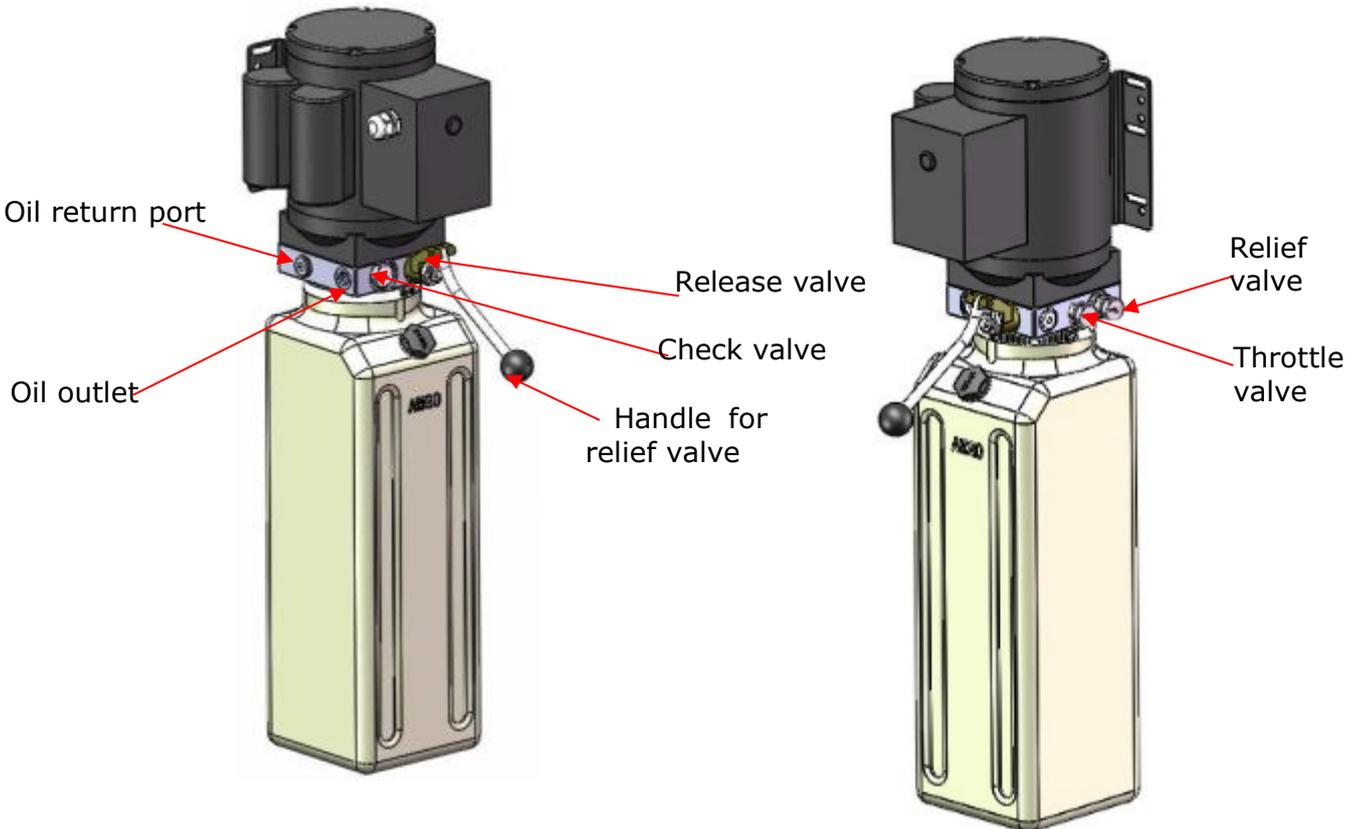


**Fig.42**

**Parts list for 220V/60Hz, Single Phase**

<b>Item</b>	<b>Part#</b>	<b>Description</b>	<b>Qty</b>
1	81400180	Rubber Pad	2
2	81400130	Starting capacitor	1
3	81400088	Running capacitor	1
4	10420148	Cup Head Bolt with washer	4
5	81400066	Cover of Motor Terminal Box	2
6	81400363	Motor Connecting Shaft	1
7	090106	Manifold block	1
8	10209149	Washer	4
9	81400276	Iron plug	1
10	81400259	Red rubber plug	1
11	85090142	Socket bolt	4
12	81400280	Gear pump	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	81400413	Steel Motor	1
20	10420070	Push button	1
21	41030055	AC connector	1
22	81400287	Motor terminal box cover	1
23	71111216	AMGO power unit label	1
24	81400560	Throttle valve	1
25	81400266	Relief valve	1
26	81400284	Inner hex iron plug	1
27	10720118	Hair pin	1
28	81400451	Release valve handle	1
29	10209020	Plastic ball	1
30	81400421	Release valve nut	1
31	81400422	Shim	1
32	81400449	Valve Seat	1
33	070001	Release Valve	1
34	070002	Check Valve	1
35	81400366	Oil suction pipe	1
36	81400289	Oil return pipe	1
37	81400364	Clamp	1
38	81400263	Oil tank cap	1
39	81400319	Oil tank	1

**Illustration of hydraulic valve for power unit**

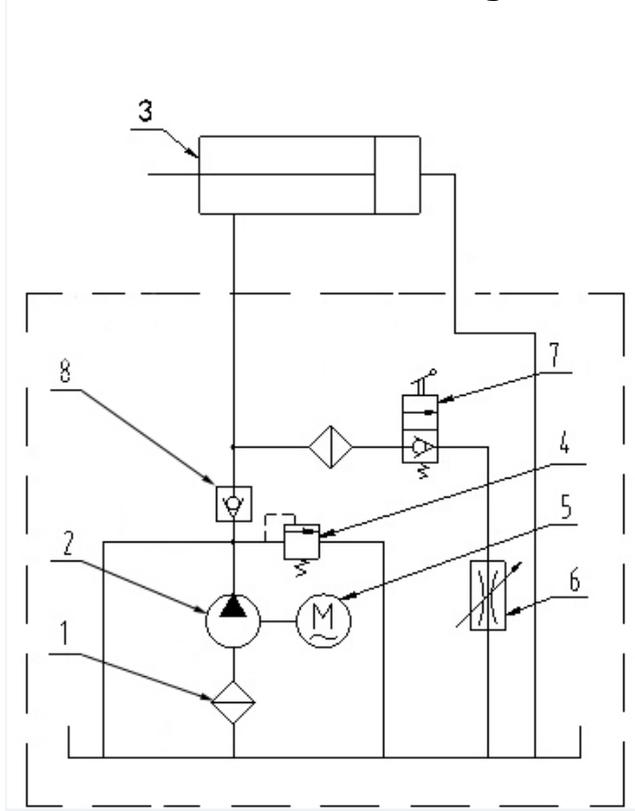


**Fig.43**

## 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 push button , the Cables will be strained. Check whether the Cables match the Pulley. Make sure the Cables are not across.
3. Press the Handle of release valve 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. You need to run the lift up and down for several times, meanwhile do the synchronous adjustment till the four Safety Devices can lock and release 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, test running the lift with load. Run the lift with Platforms in low position first, make sure the Platforms can rise and lower synchronously and 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.

**Circuit Diagram of Hydraulic System**



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1. Filter
2. Gear pump
3. Cylinder For Four-post lift
4. Relief Valve
5. Motor
6. Throttle Valve
7. Release Valve
8. Check Valve

**Fig. 44**

## **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 push 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 push 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"> <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> <li>5. Height limit switch is damaged</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> <li>5. Replace</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. Release valve in damage</li> <li>3. Gear pump 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 too slow	<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. 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 in activated</li> <li>2. Release valve damaged</li> <li>3. Air Cylinder damaged</li> <li>4. Air leaks</li> </ol>	<ol style="list-style-type: none"> <li>1. Release the safeties</li> <li>2. Replace or repair</li> <li>3. Replace the cylinder</li> <li>4. Clean the air line</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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