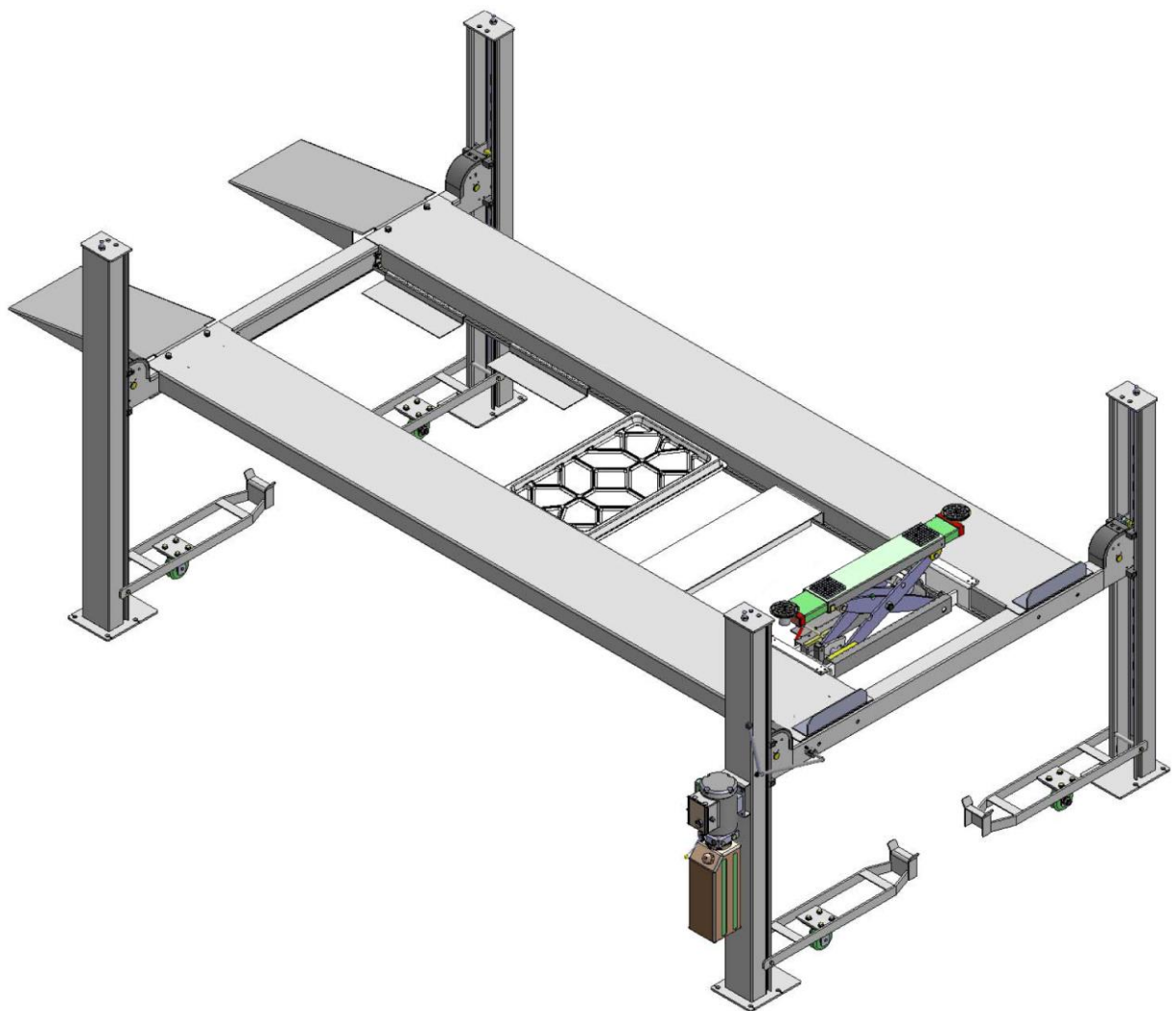




## Installation And Service Manual



### **FOUR-POST LIFT**

**Model: 409-P 409-HP**

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## I. PRODUCT FEATURES AND SPECIFICATIONS

#### 4-POST MODEL 409-P 409-HP FEATURES

- Single point manual safety release.
- Four mechanical locking devices, each equipped with both primary and secondly safety locks.
- Power-side column can be installed at both side, front or rear.
- Non-skid diamond platforms and adjustable safety lock ladders.
- Optional kits: Rolling jack with hand pump, caster kits.

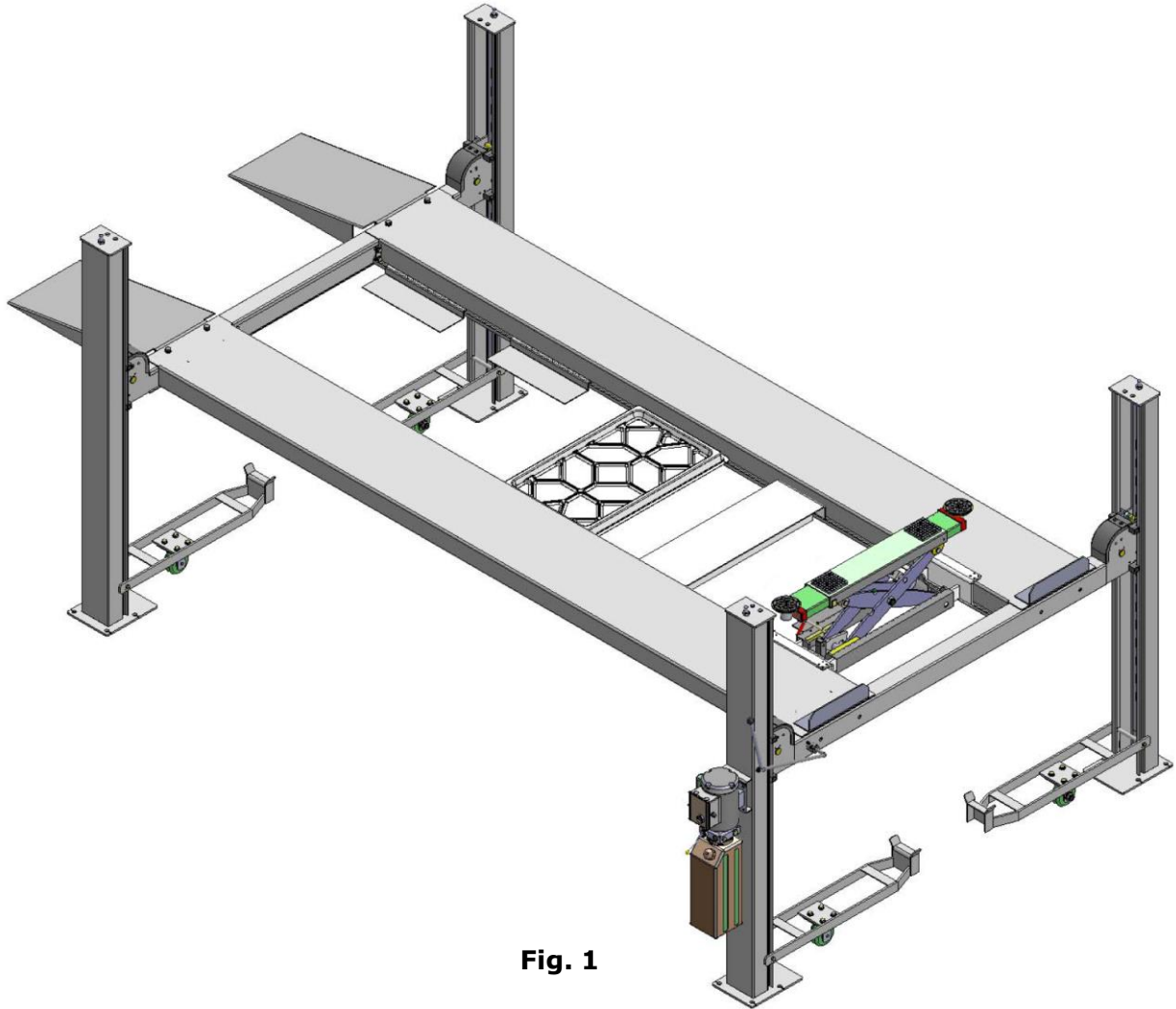


Fig. 1

#### MODEL 409-P 409-HP SPECIFICATIONS

Model	Lifting Capacity	Lifting Height	Lifting Time	Overall Length (Inc. Ramps)	Overall Width	Width Between Columns	Gross Weight	Motor
409-P	9,000 lbs	73 5/8"	45S	218 3/4"	126 1/4"	112 1/2"	2130lbs	2.0HP
409-HP	9,000 lbs	85 1/2"	53S	230 1/2"	126 1/4"	112 1/2"	2172lbs	2.0HP

## II. INSTALLATION REQUIREMENT

## A. TOOLS REQUIRED

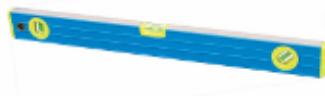
- ✓ Tape Measure (7.5m)



- ✓ Hammer



- ✓ Level Bar



- ✓ English Spanner (12")



- ✓ Wrench set

(12#, 13#, 14#, 15#, 17#, 19#, 24#, 30#)



- ✓ Carpenter's Chalk



- ✓ Screw Sets



- ✓ Pliers



- ✓ Lock Wrench



- ✓ Socket Head Wrench

(3#, 5#, 6#, 8#)

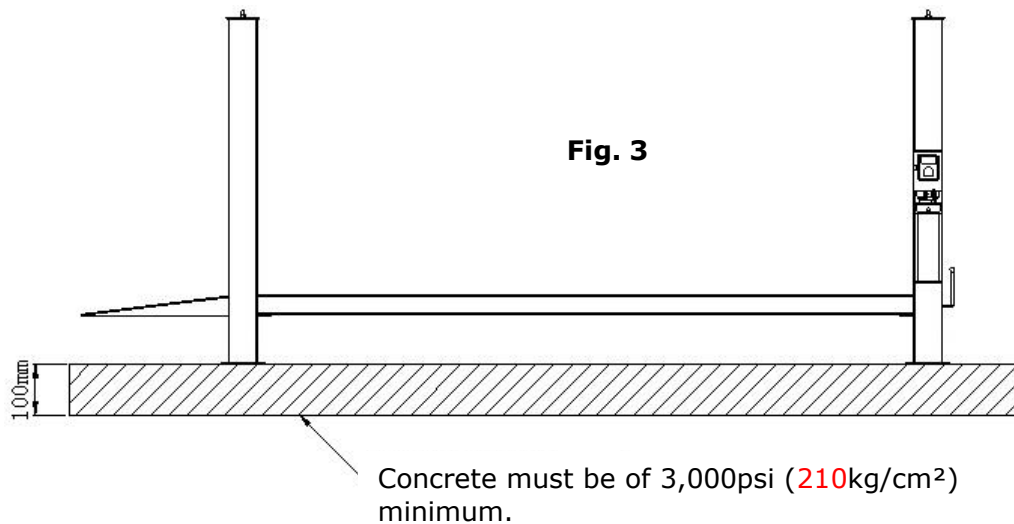


Fig. 2

## 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 4" 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/cm<sup>2</sup>) minimum.
3. Floors must be level and no cracks.



### **C. 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**

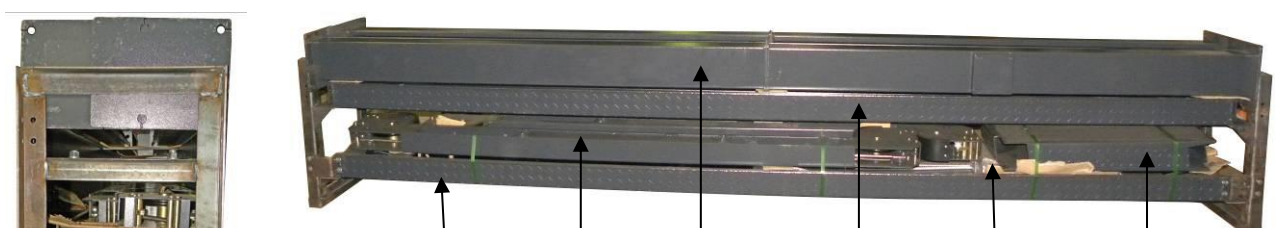
### **A. Check the parts before assembly**

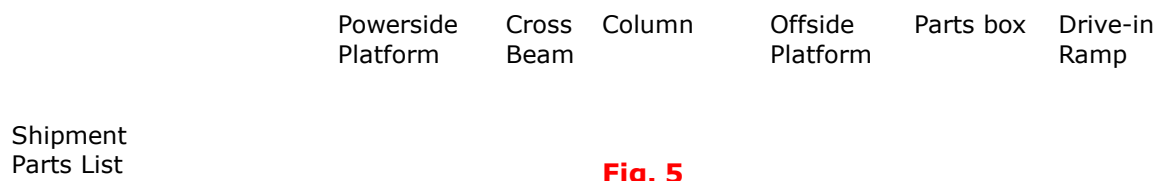
1. Packaged lift and Hydraulic Power Unit (See Fig. 4).



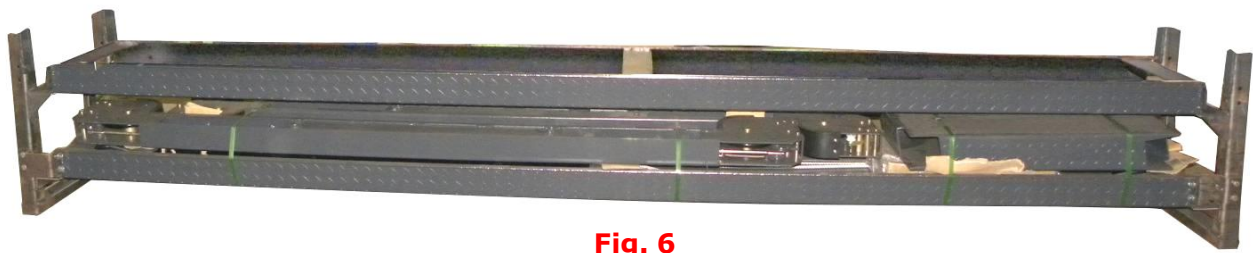
**Fig. 4**

2. Open the outer packing carefully, check the parts according to the shipment list.  
(See Fig. 5).



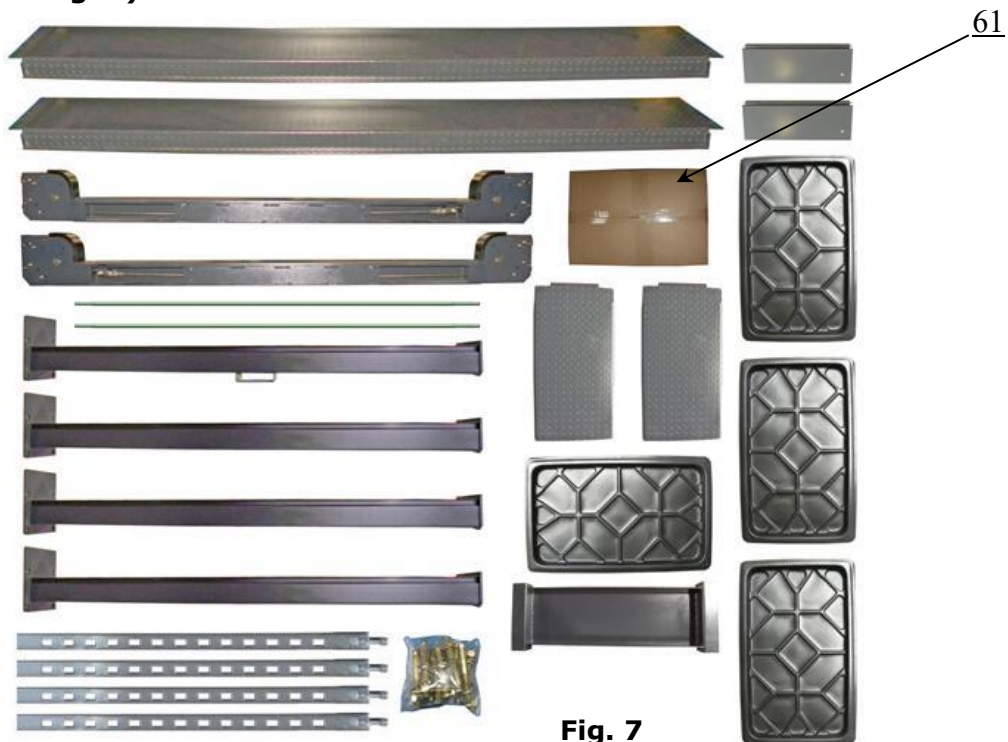


3. Take off the drive-in ramps and columns (**See Fig.6** ).



4. Loose the screws of the upper package stand, take off the offside platform, take out the parts inside the powerside platform, then remove the package stand.

5. Move aside the parts and check the parts according to the shipment parts list (**See Fig. 7**).



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).

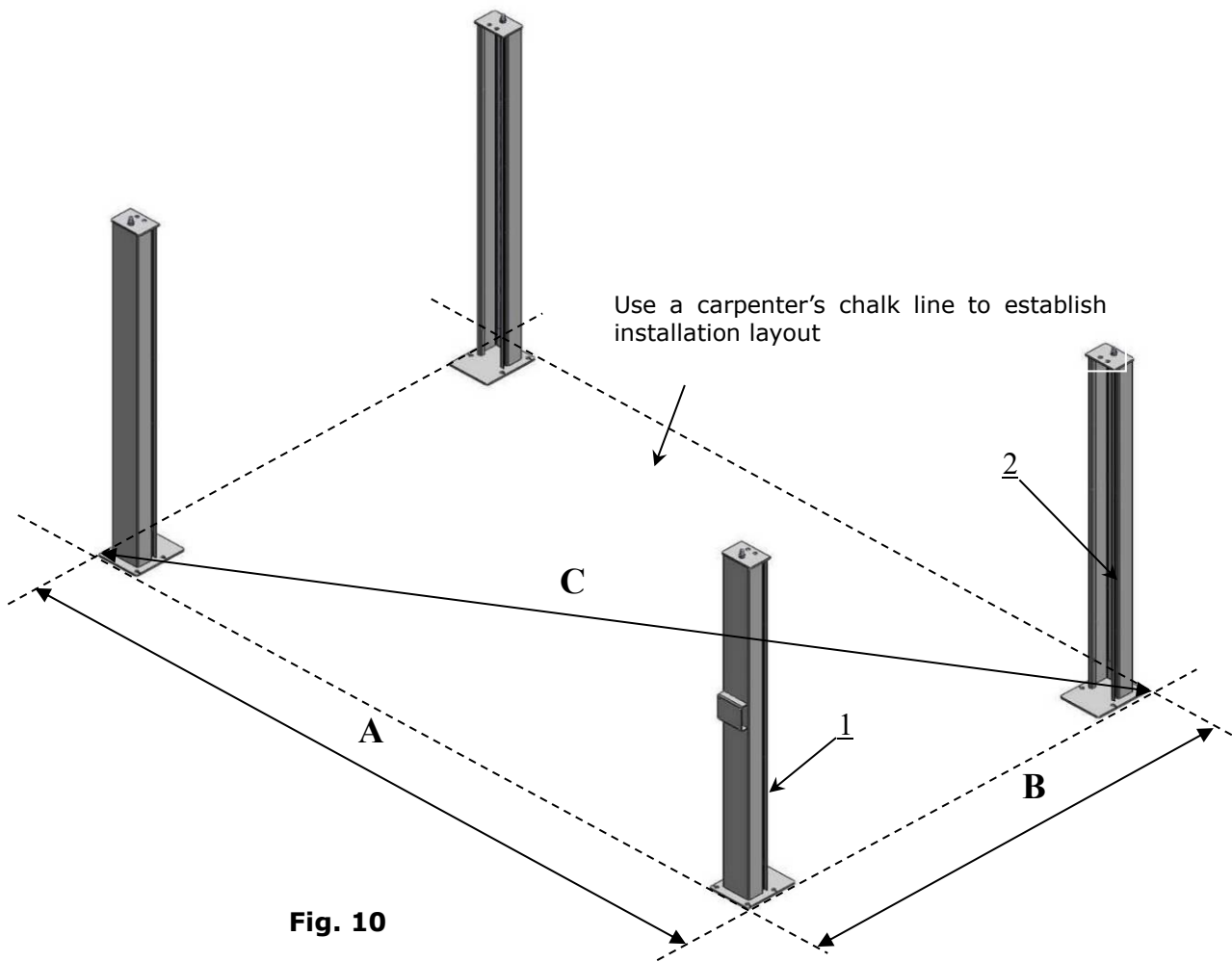


**Fig. 9**

**B.** 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 front and behind the installation site.**

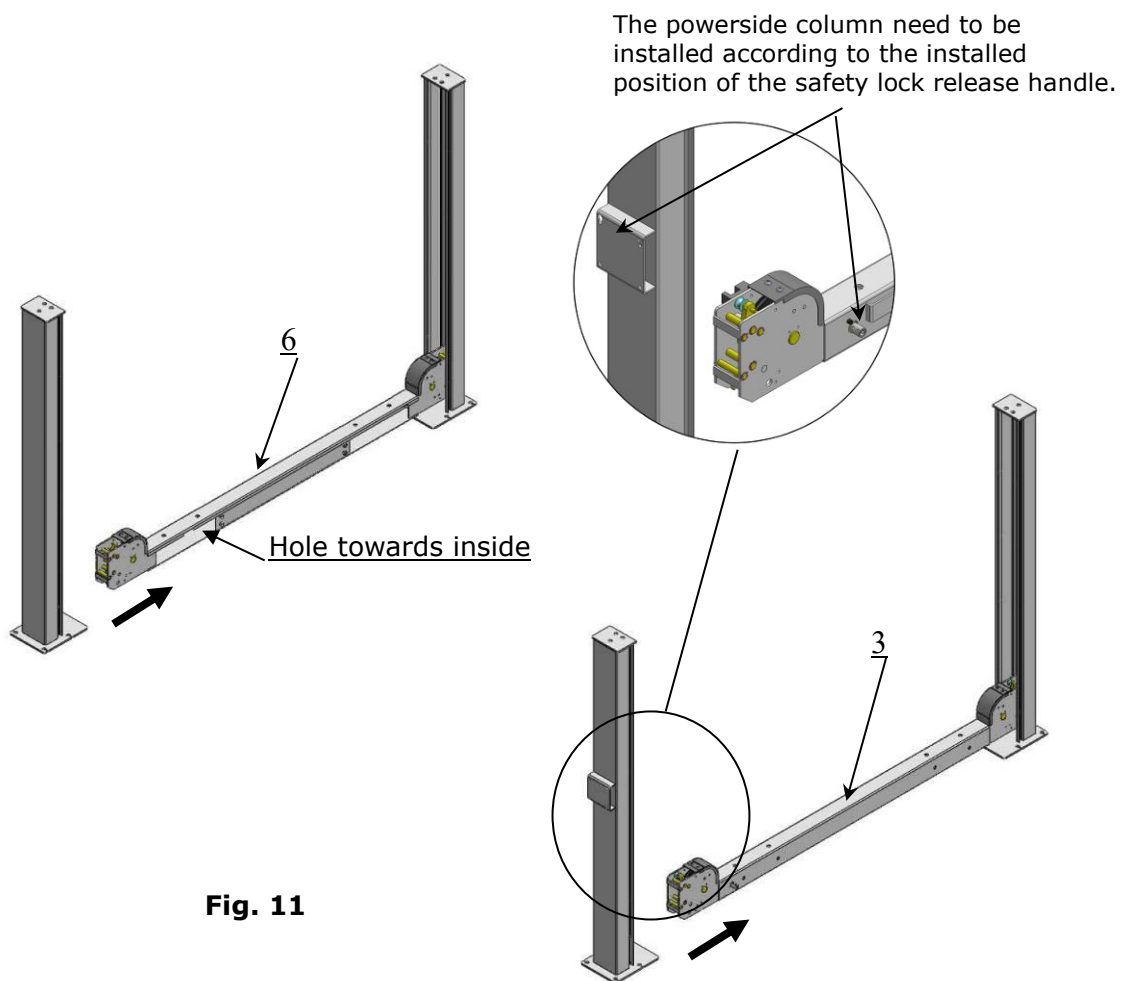


MODEL	A	B	C
409-P	185"	126 1/8"	224"
409-HP	196 7/8"	126 1/8"	233 7/8"

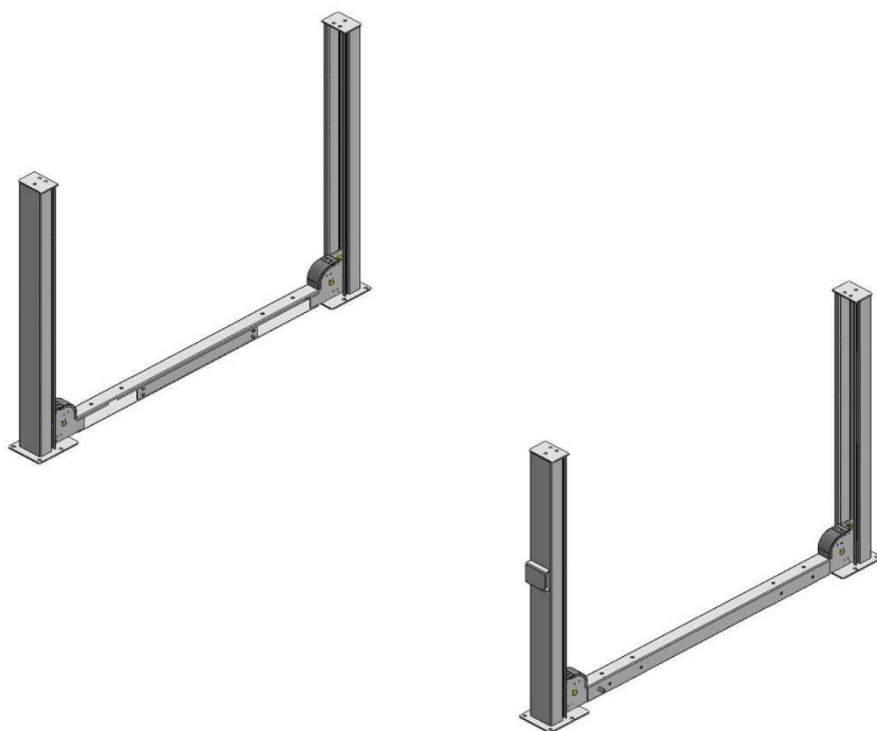
**C. Install cross beams (See Fig.11, Fig.12).**







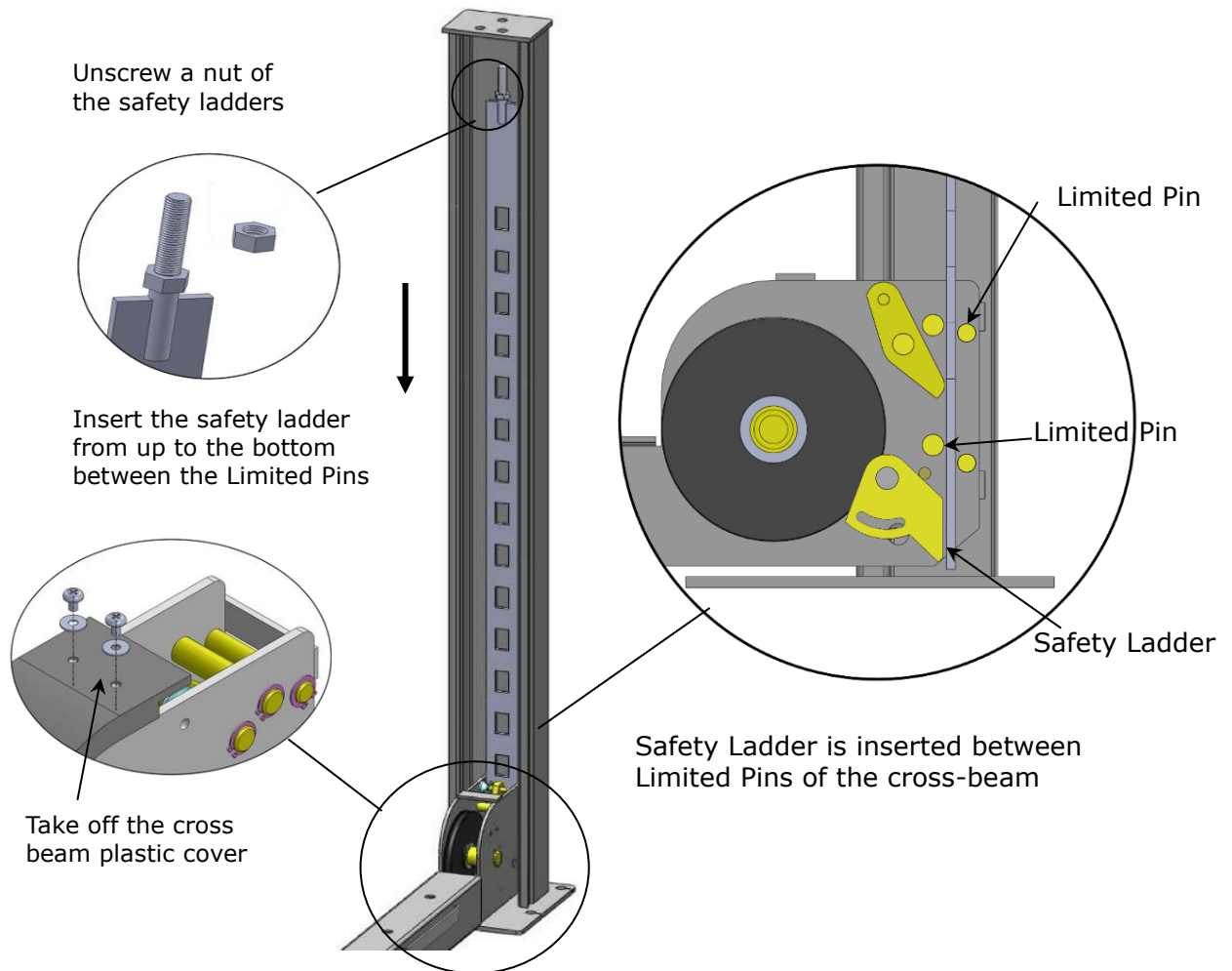
**Fig. 11**



**Fig. 12**

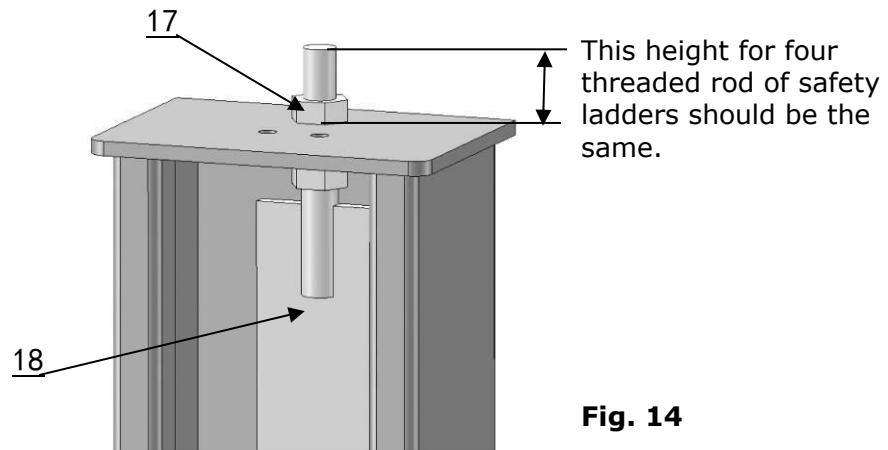
#### **D. Install the Safety Ladders.**

1. Take off the pulley safety cover and unscrew a nut of the safety ladders, and then adjust the four lower nuts to be at the same position. Then install the safety ladder (**See Fig. 13**).



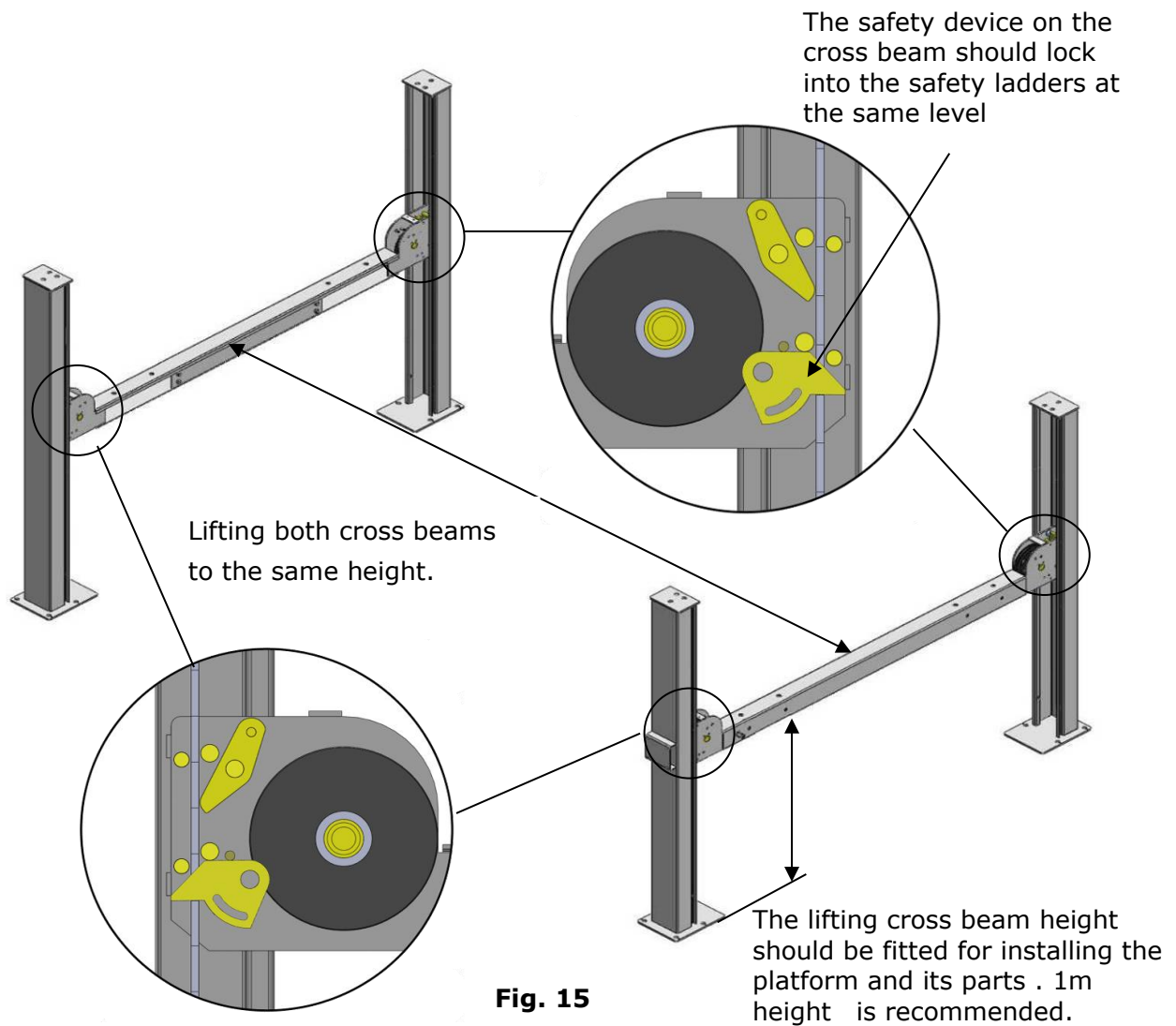
**Fig. 13**

2. Install Safety Ladders (**See Fig. 14**).



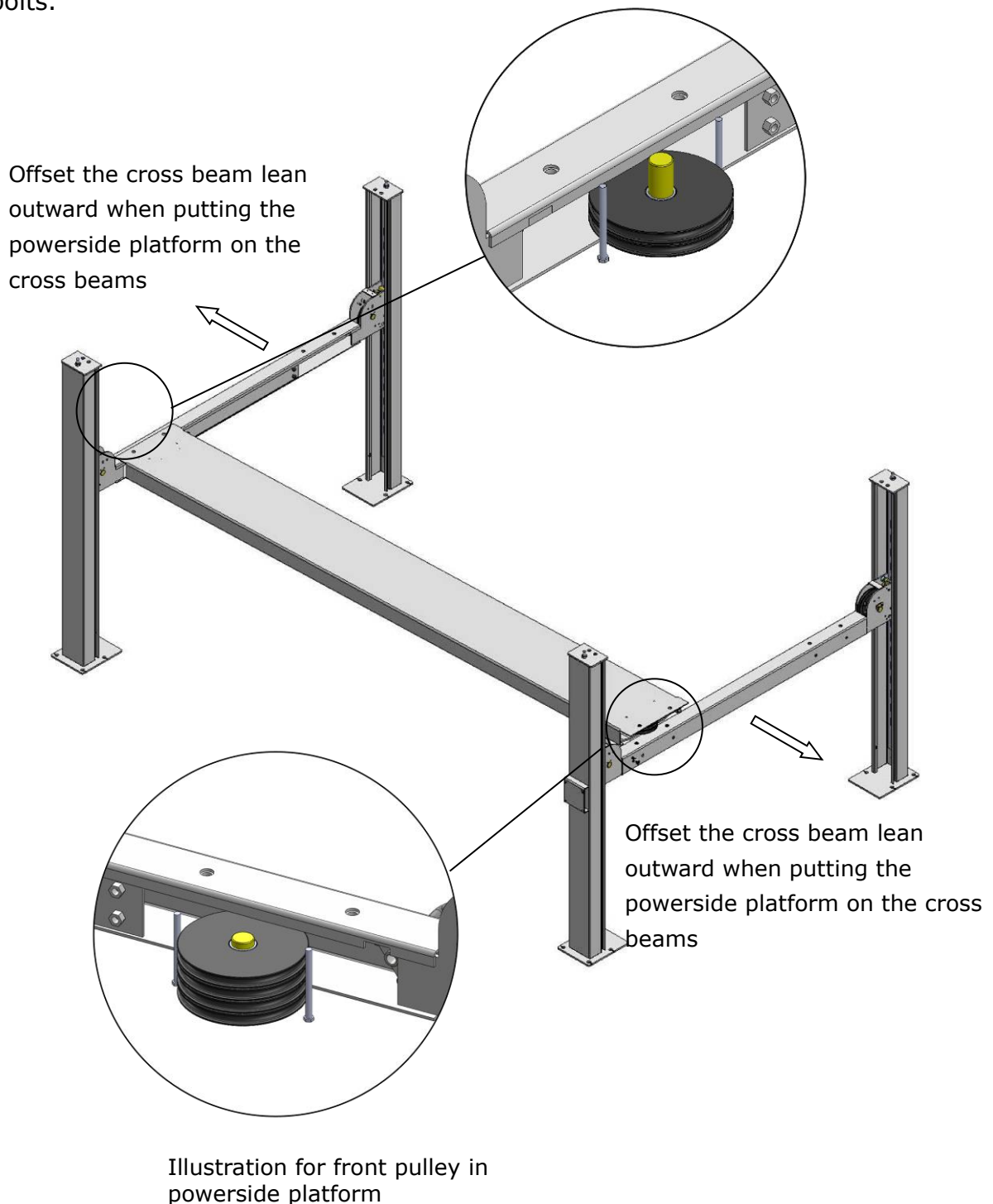
Safety ladder pass through the hole of the top plate, then tighten the two nuts

**E. Put the cross beams at the same height and lock on the safety ladder (See Fig. 15).**



**F. Install power side platform.**

1. Install the power side platform on the cross beams by a fork lift or manual, offset the cross beams to the outside till the pulleys of both platforms can rest into the cross beams' slots (**See Fig.16**), Install the power side platform and screw up the bolts.



**Fig. 16**

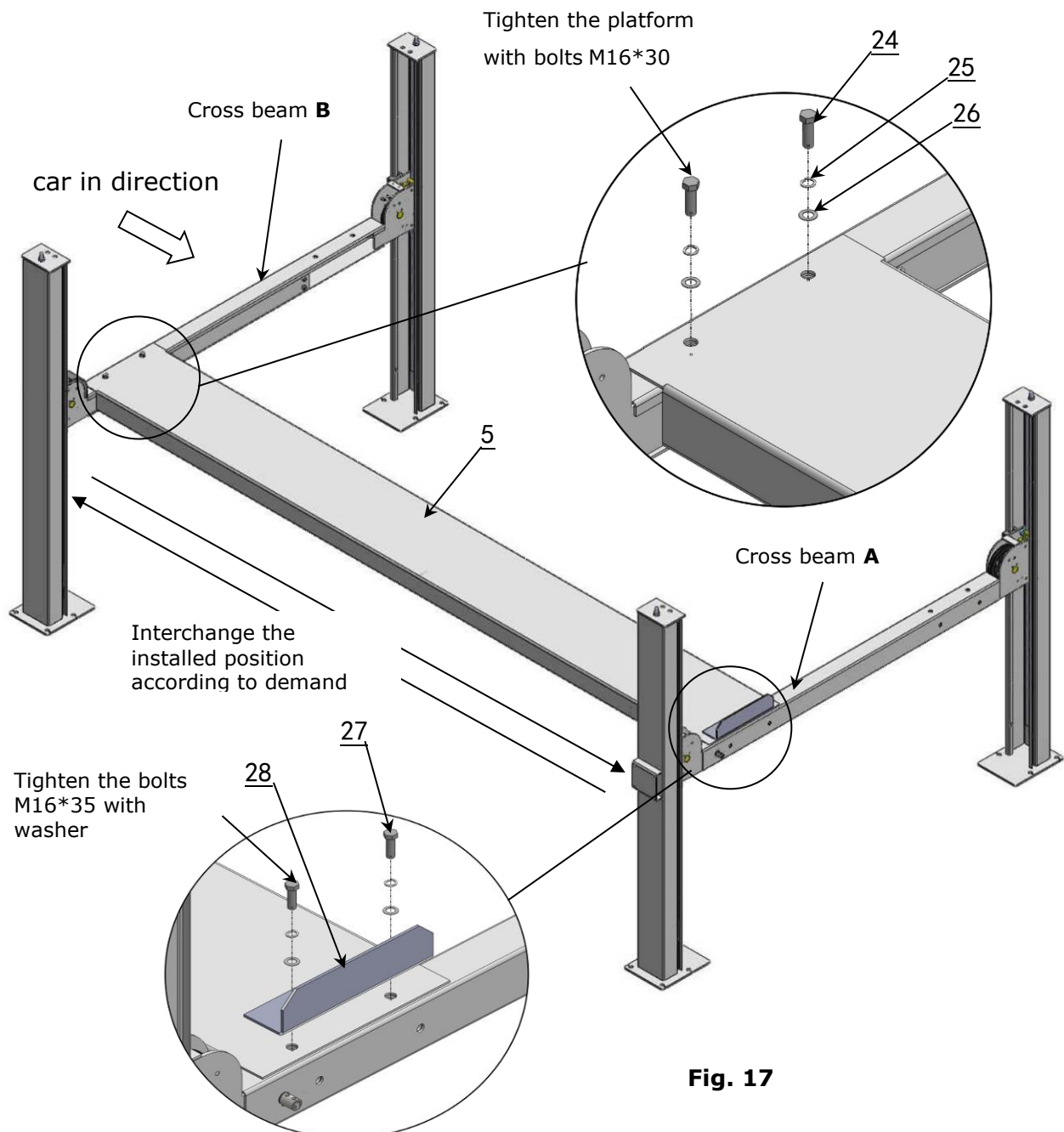
2. **Install tire stop plate with bolts and washer on the platform:** Tighten the platform on cross beam **B** with bolts, tighten the tire stop plate on cross beam **A** with bolts

**Note:** The bolts for the side with tire stop plate is longer, pay attention when choosing the bolts (**See Fig.17**)

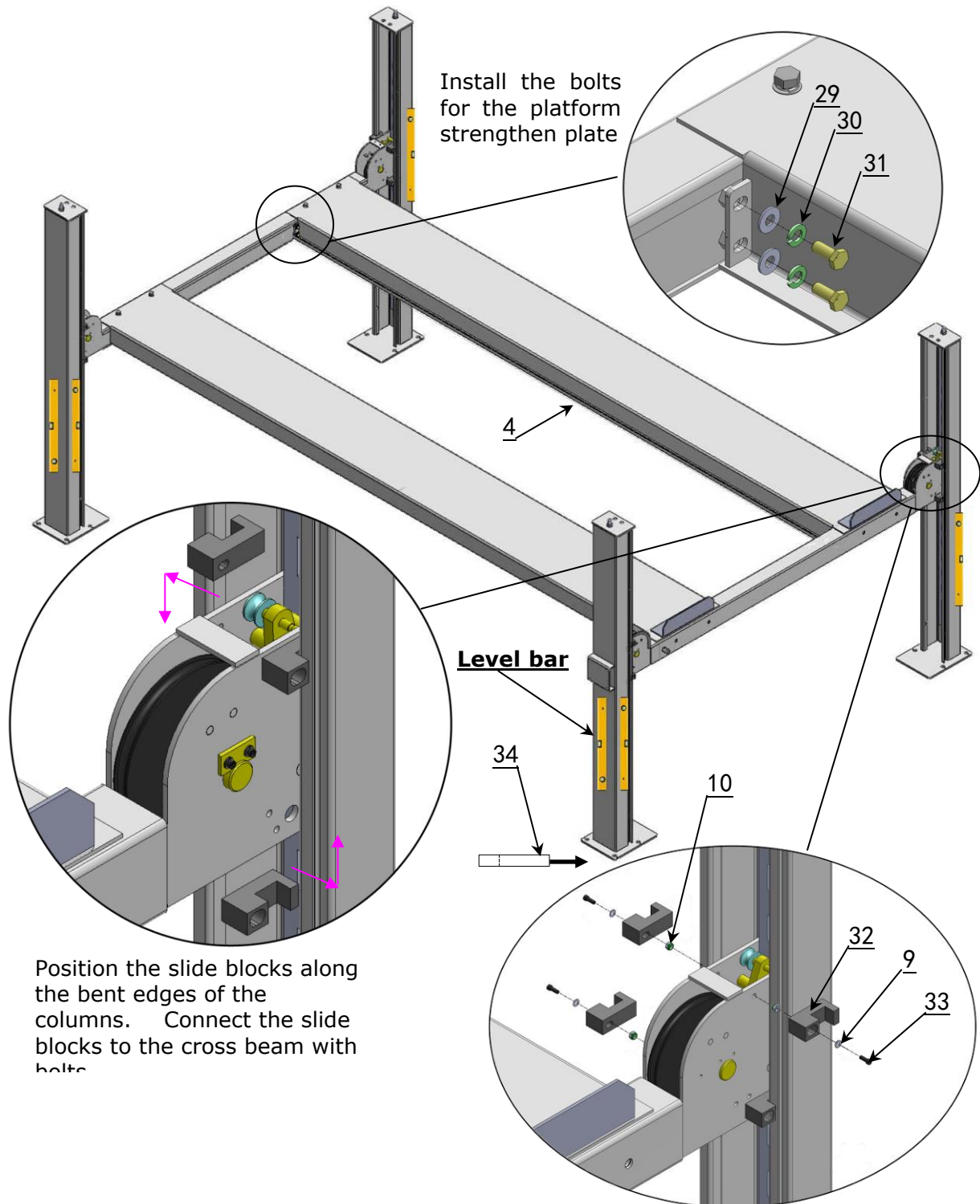
**Instruction:**

1) This lift is designed in both side (cross beam **A** and cross beam **B**) car in direction, user can install the lift according to the location. Below is the installation for the side of cross beam **B** car in direction. If choosing the side of cross beam **A** car in direction, then install the tire stop plate to the other side.

2) Powerside column can be installed at any position on customers' requirement, but the power unit must be installed near the side with the safety lock release handle.



- G.** Install offside platform and plastic block, then install the bolts for the platform strengthen plate, check the plumbness of columns with level and adjusting with the shims (**See Fig. 18**).



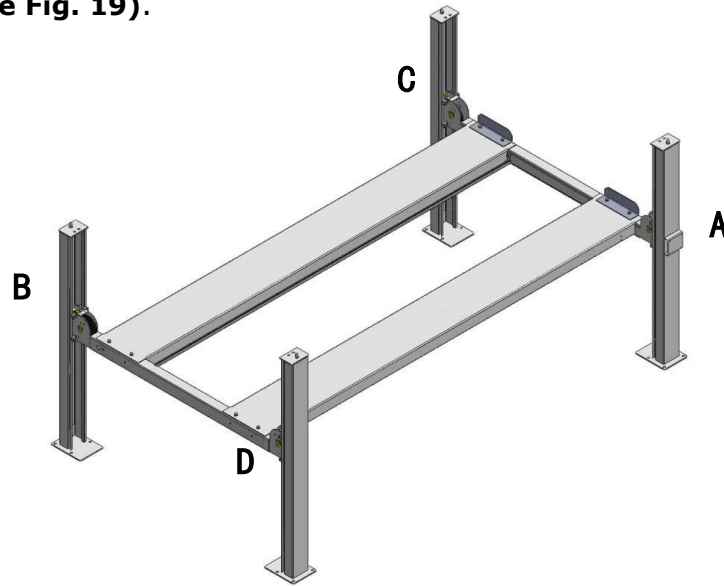
**Note: DO NOT** completely tighten the limit slide blocks. Loosen 1/4 lap after tightening.

**Fig. 18**

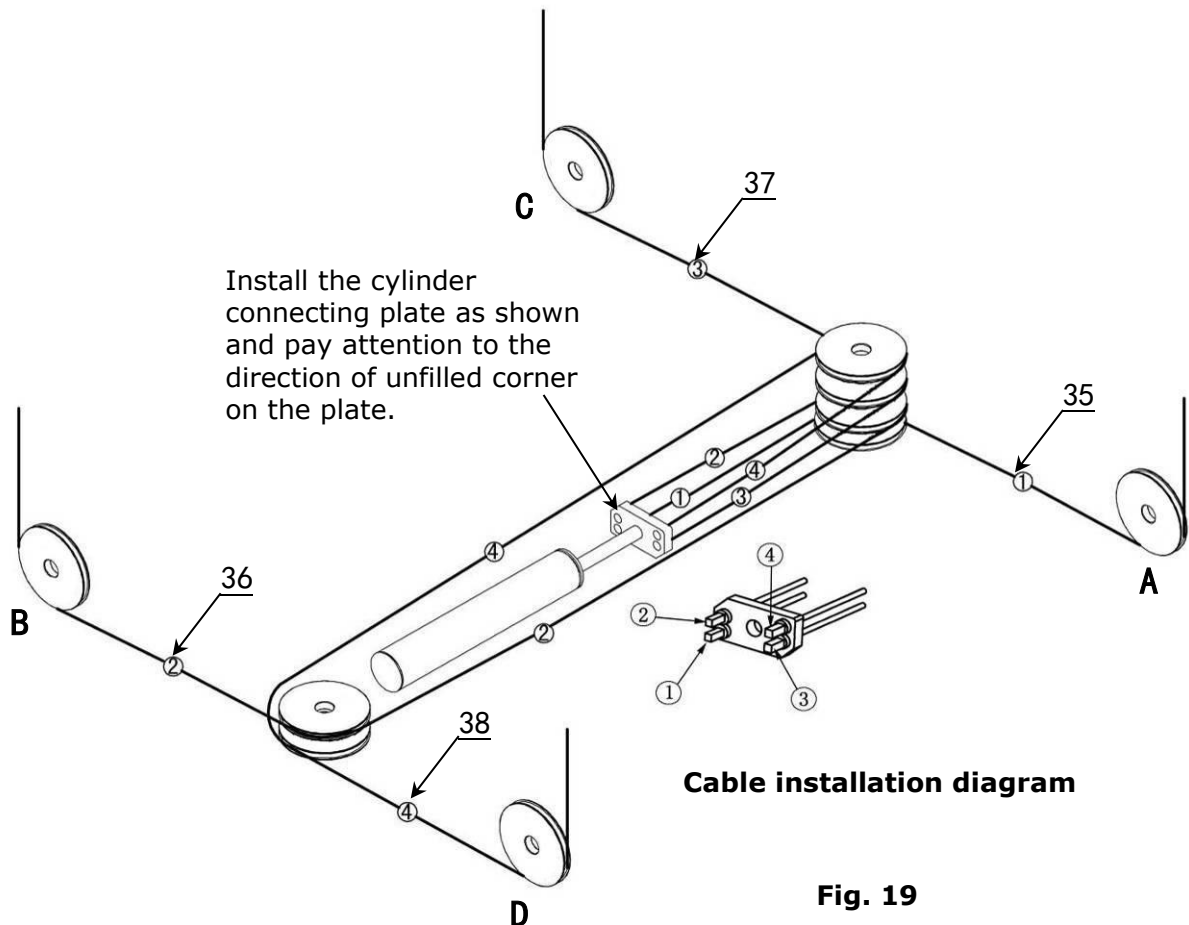


## H. Illustration for cable installation

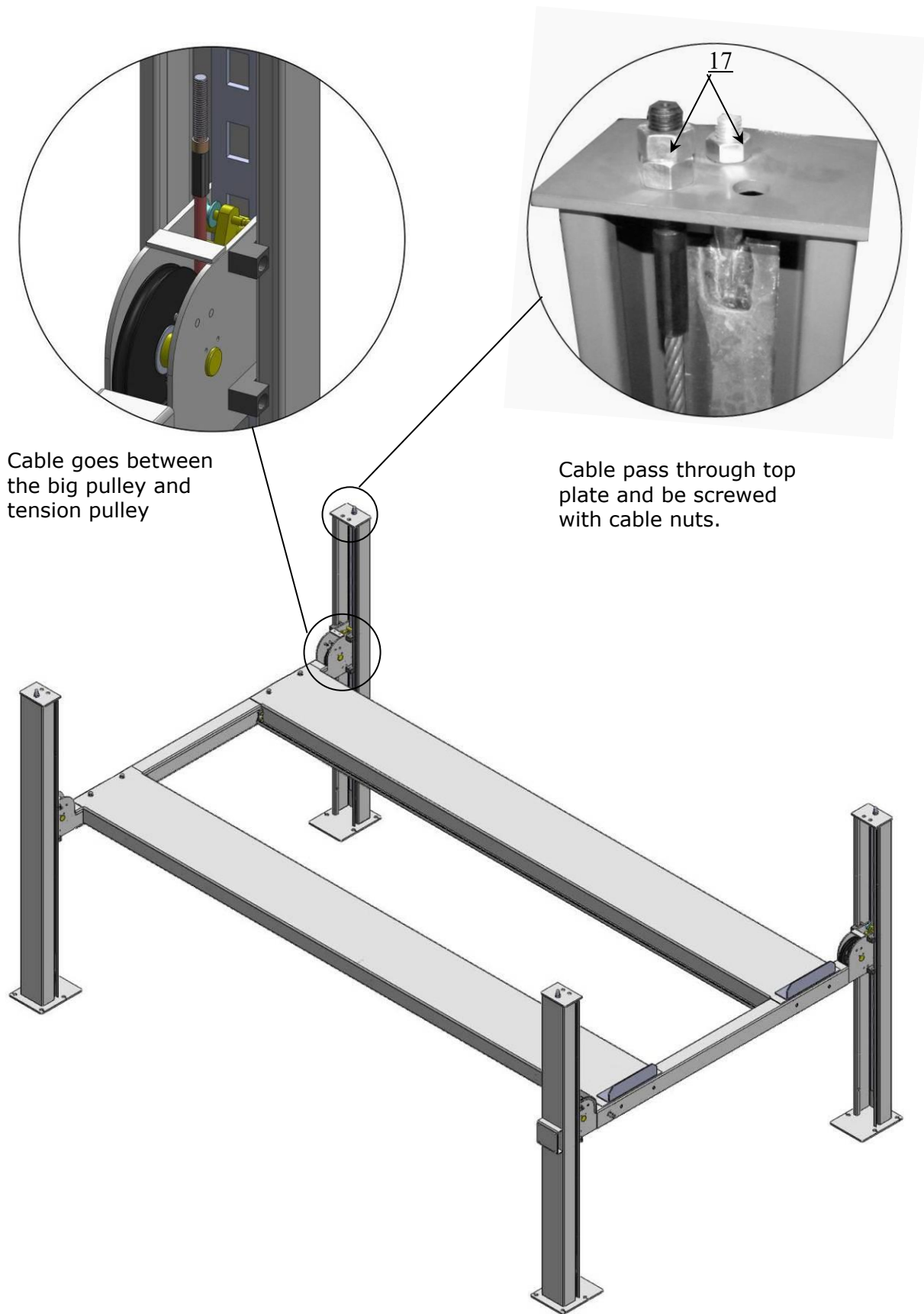
1. Pass through the cables from the platform to the columns according to the number of the cables (**See Fig. 19**).



NO.	①	②	③	④
Cable				
Length for 409-P (inc. connecting fitting)	124"	363 1/4"	187"	301 3/8"
Length for 409-HP (inc. connecting fitting)	132 3/4"	383 1/4"	194 3/4"	321 1/4"



2. The cable goes through the cross beam to top plate of columns and be screwed with cable nuts (**See Fig. 20**).



**Fig. 20**

3. Illustration for platform cables (See Fig. 21).

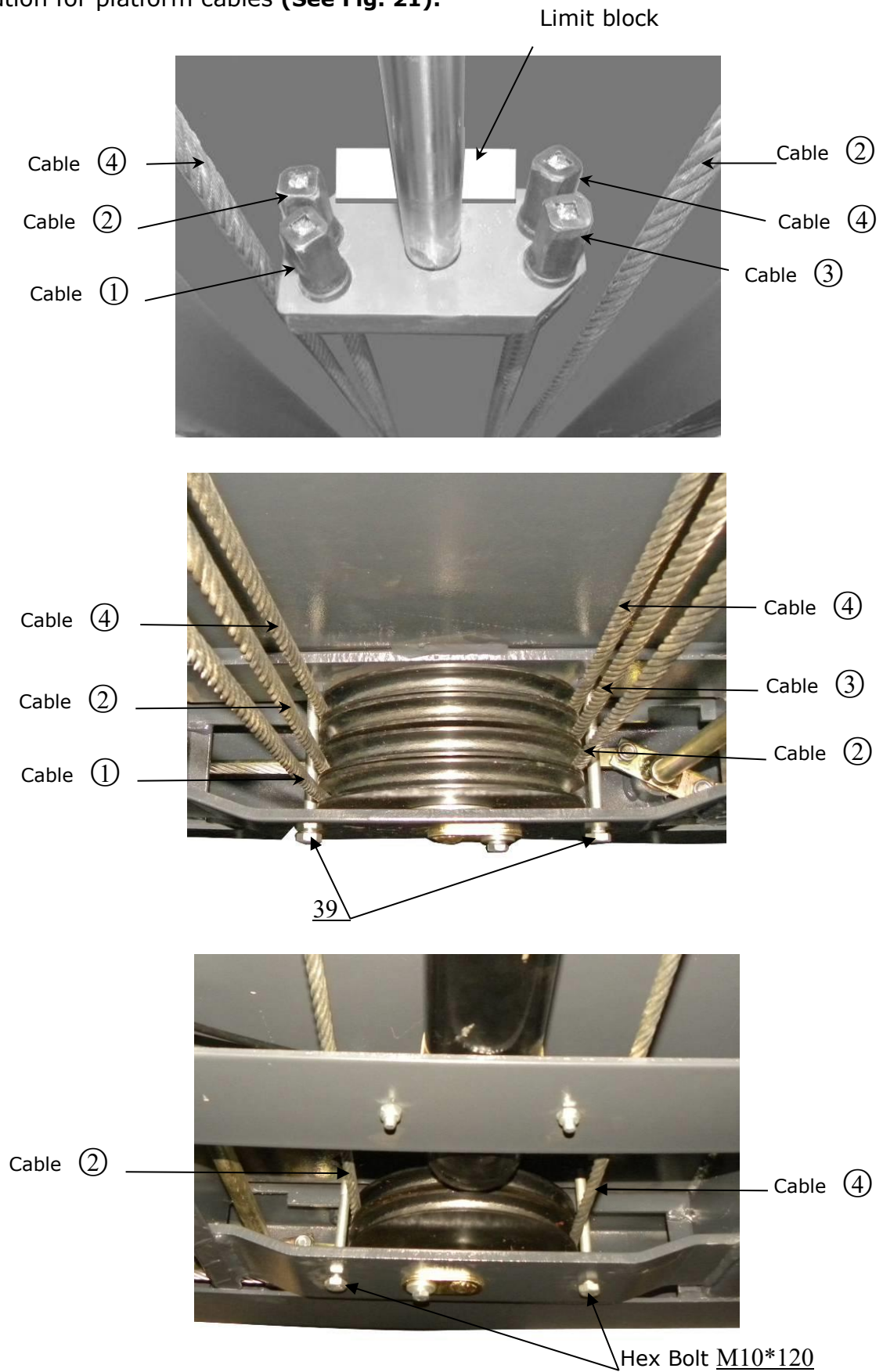
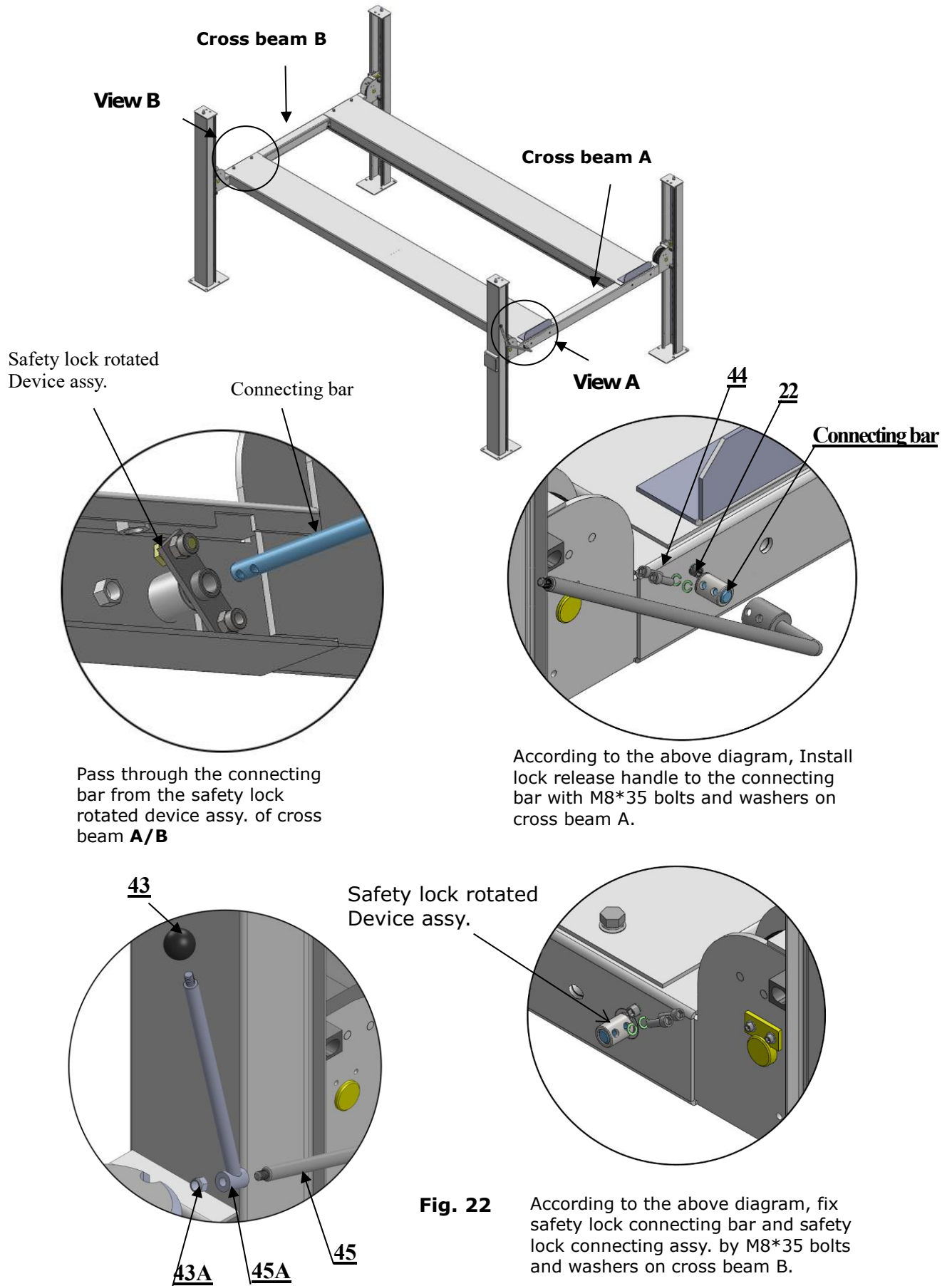


Fig. 21

**I. Install connecting bar for safety device and release handle (See Fig. 22).**

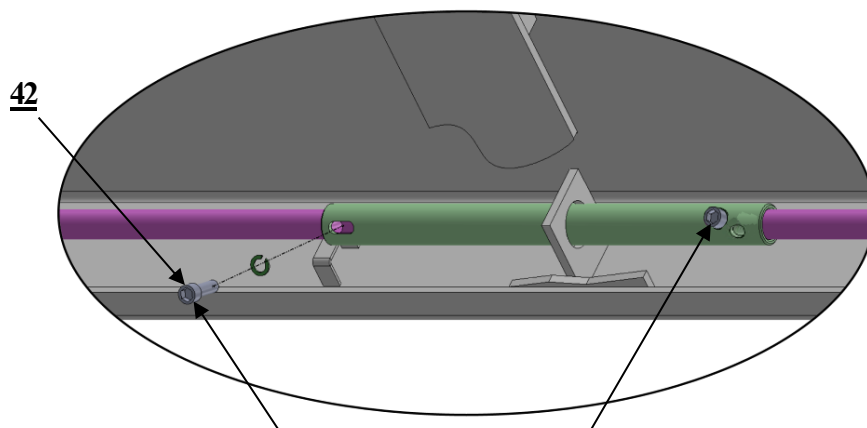
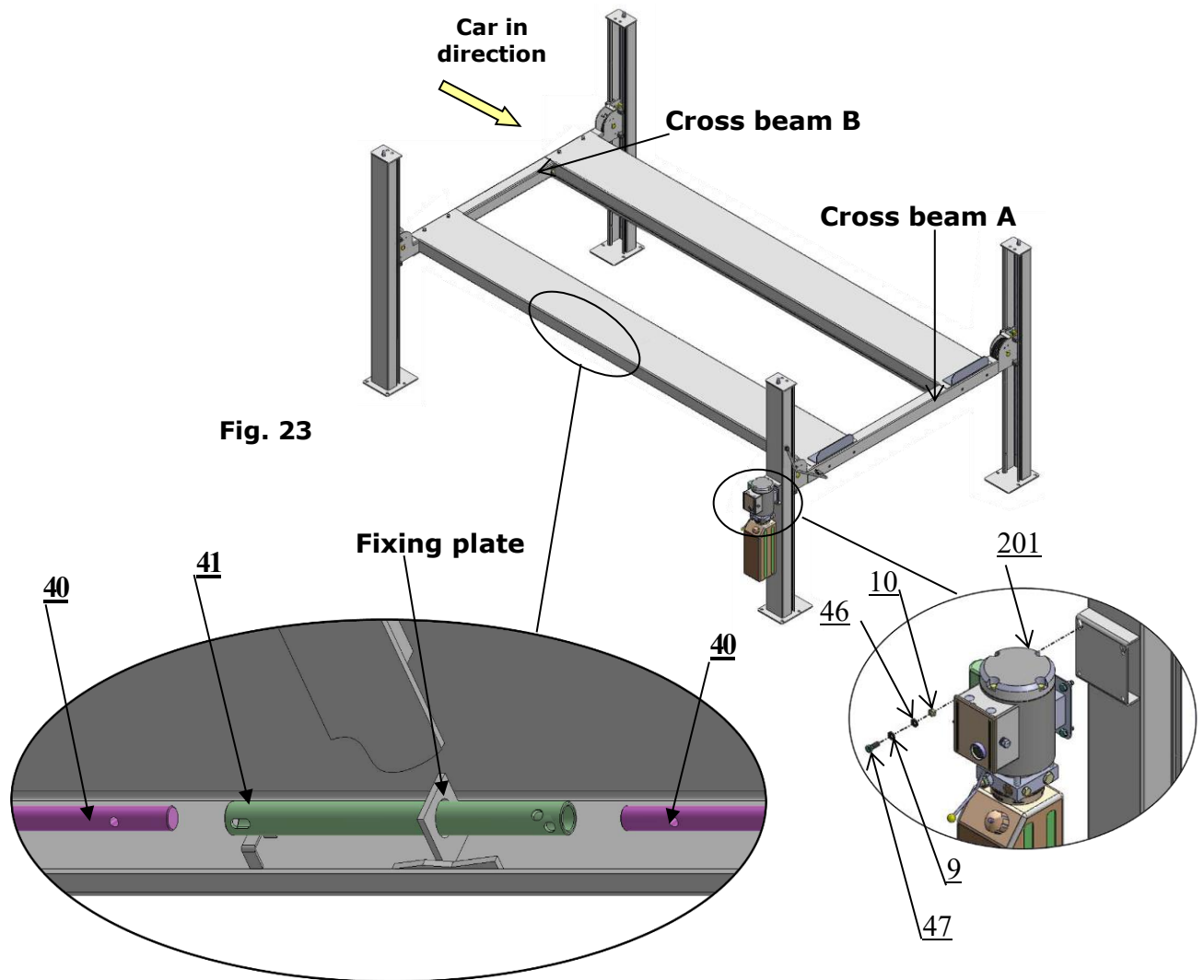


**Fig. 22**

## J. Install power unit

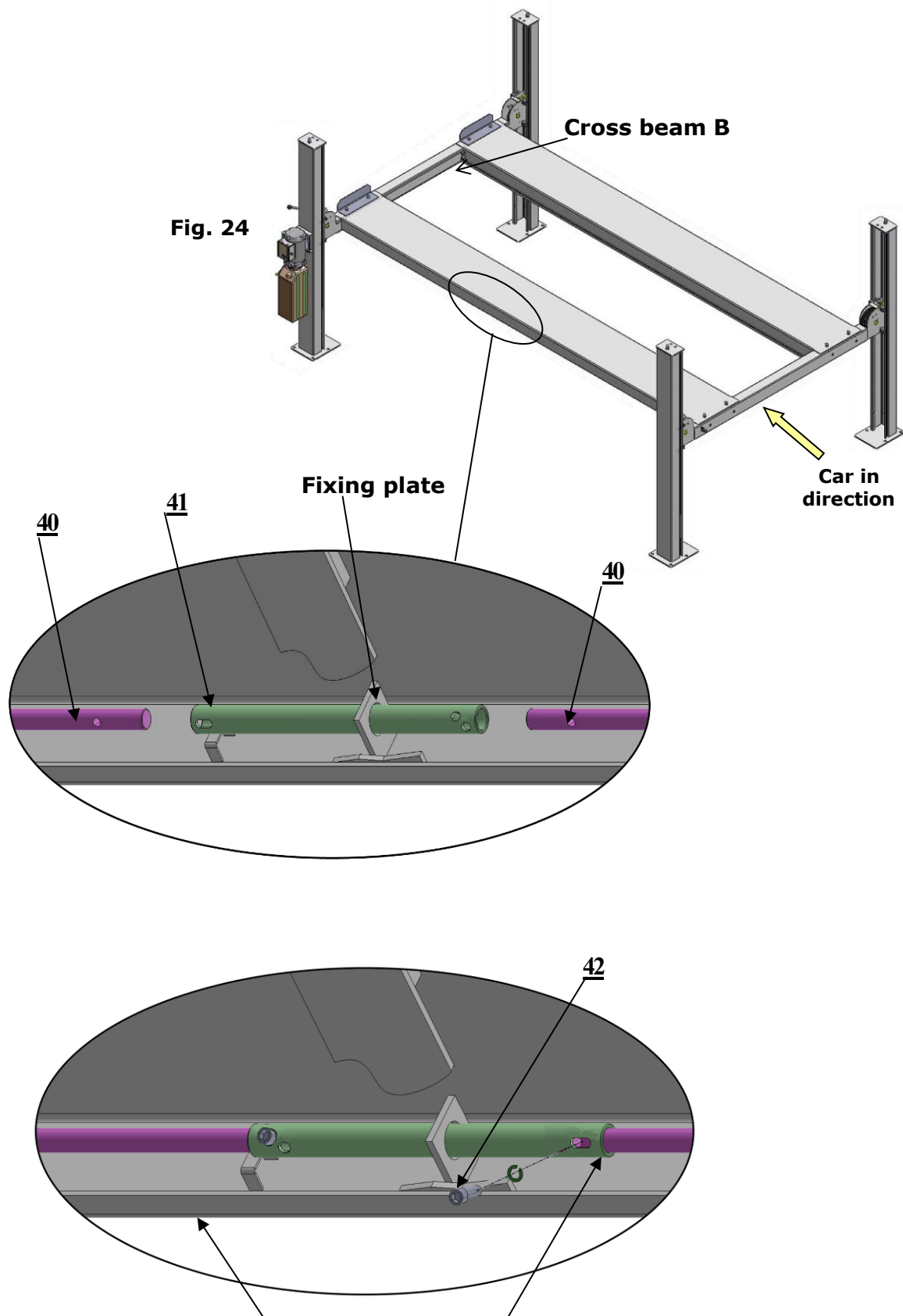
**Note:** Power unit must be installed near the safety release handle

1. Install Power unit on the cross beam **A**, the installation of connection tube as Fig.23



Install M8\*25 Socket bolt with washer to these two holes.

2. Install Power unit on the cross beam **B** (See Fig.24).



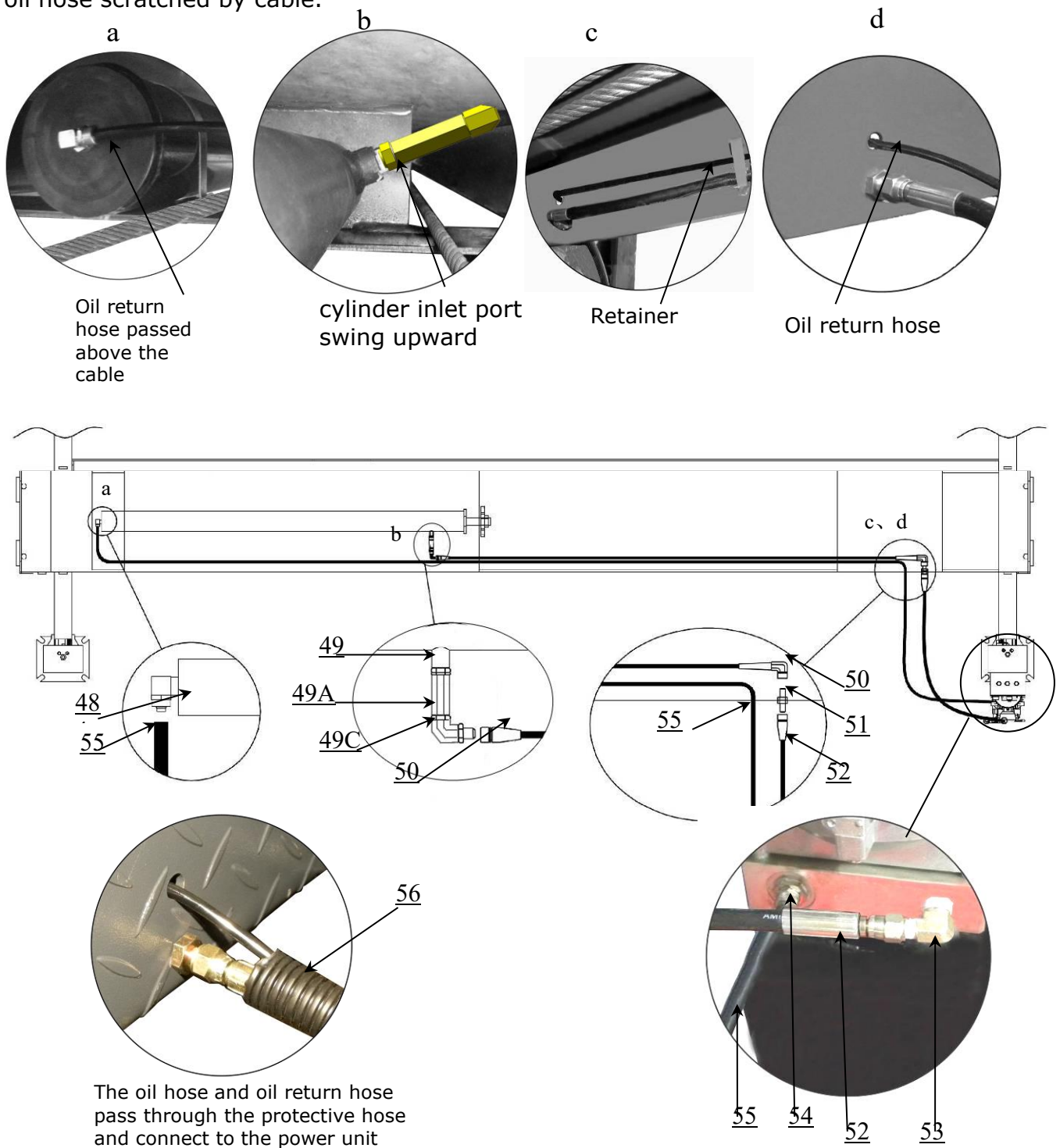
Install M8\*25 Socket bolt with washer to these two holes.



## K. Install Hydraulic System

1. For power unit attached to the column of cross beam **A** (See Fig. 25)

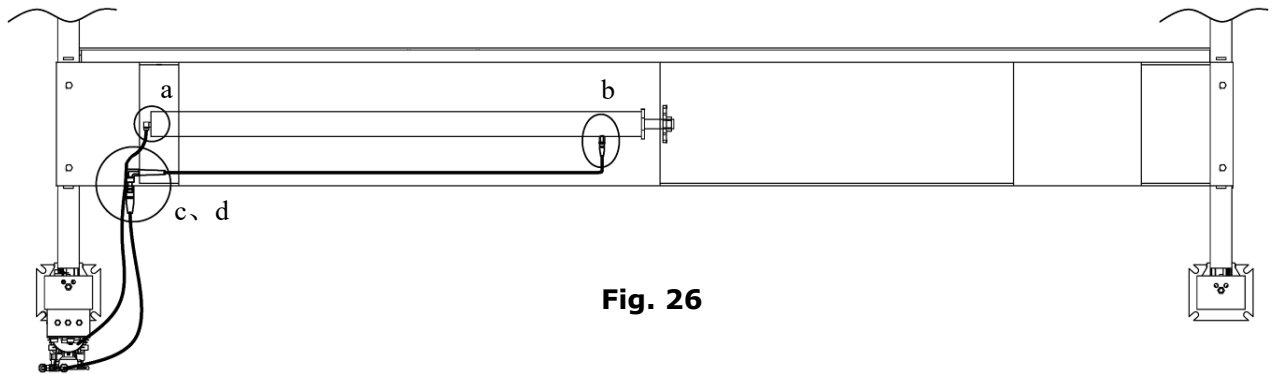
**Note:** Oil hoses connected to oil cylinder must be passed above the cable to avoid the oil hose scratched by cable.



**Fig. 25**

2. For power unit attached to the column of cross beam **B** (See Fig. 26).

**Note:** The oil return hose can be adjusted when installation



**Fig. 26**

## L. Install Electrical System

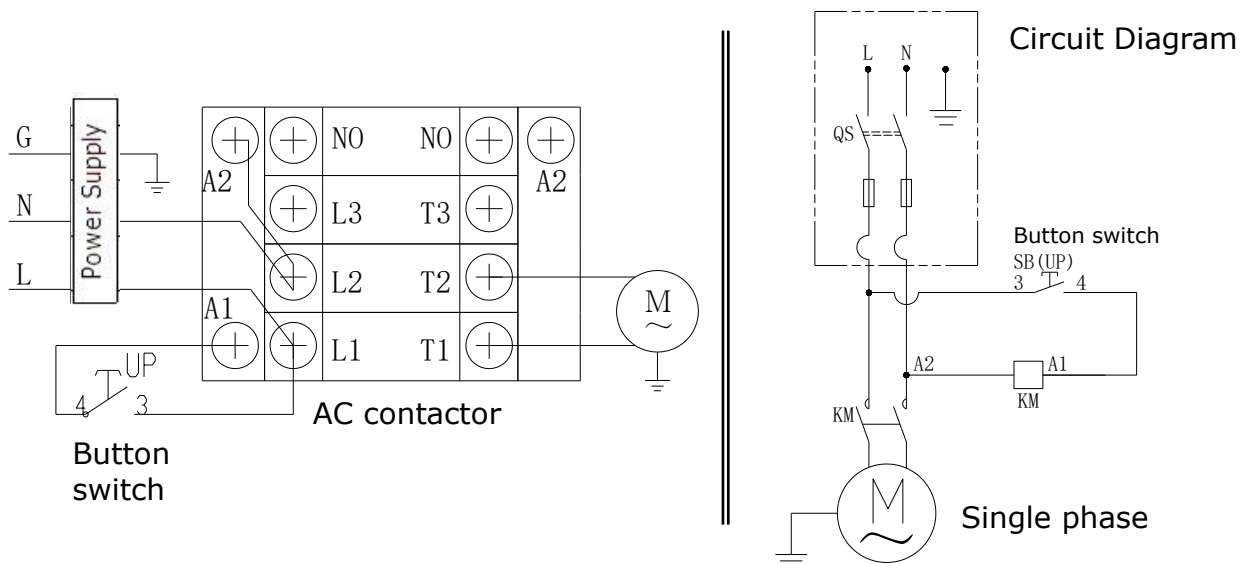
Connect the power source on the data plate of Power Unit.

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

**Single phase motor (See Fig.27).**

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** to **L2** of AC contactor.
4. Connect the two wire of the button switch to the terminals of AC contactor marked **A1**, **L1**.

### Motor wire connection

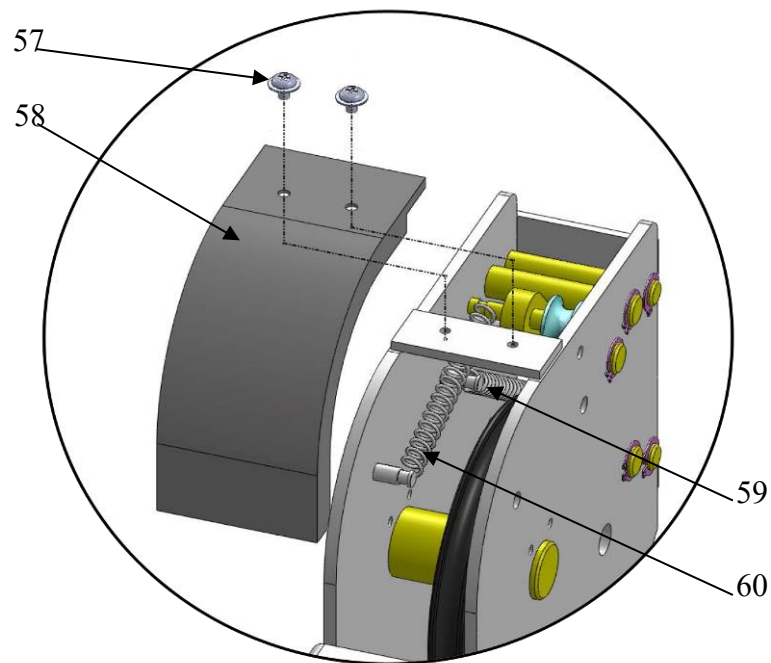


**Fig. 27**

## 2. Connection Step (See Fig. 30)

- a. The source wires (**L1, L2, L3**) are connected with terminals of AC contactor marked **L1, L2, L3** respectively.
- b. Terminals **4#** of control button is connected with terminals of AC contactor marked **L1**; wire **3#** is connected with **A1** terminals of control button.

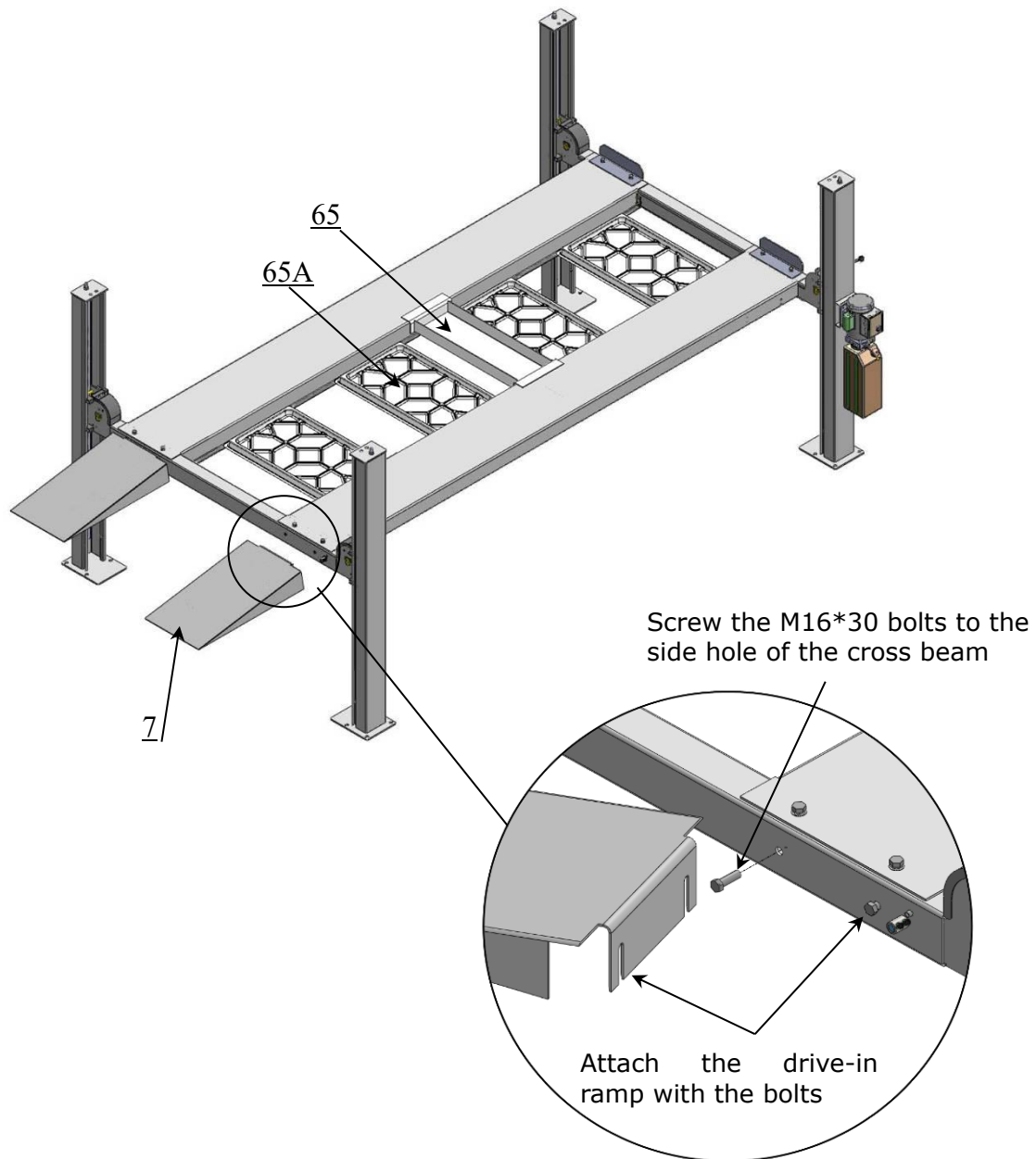
**M. Install spring and safety cover of cross beam (See Fig. 28).**



**Fig. 28**

**N. Install drive-in ramp, jack tray and plastic oil pans (See Fig. 29).**

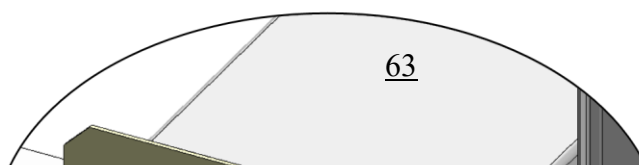
According to the below diagram screw up the M16\*30 bolts, then attach the drive-in ramp.



**Fig. 29**

**O. Install Rear wheel stop plates (See Fig. 33)**

After driving the vehicle on the lift, take off the drive-in ramp, install rear wheel



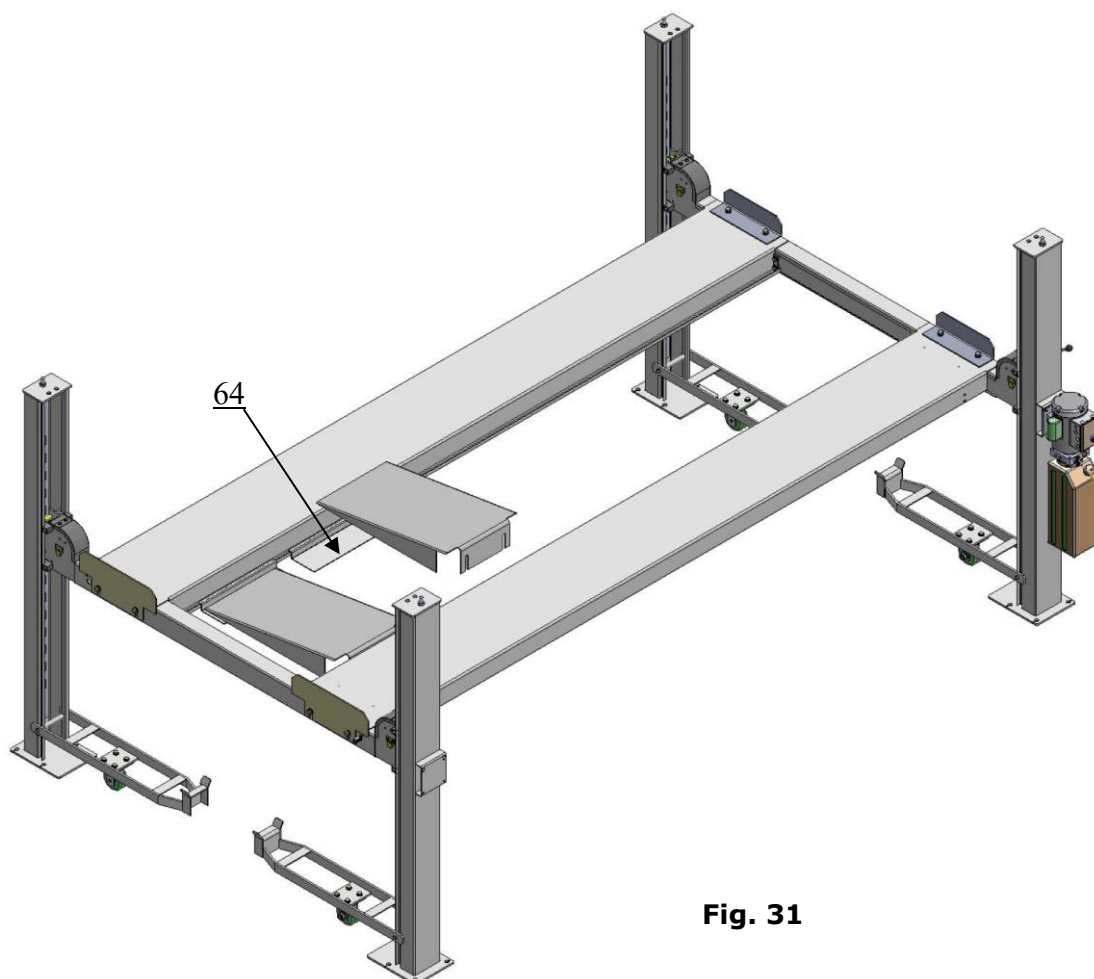
stop plates to the drive-in ramp position.



**Fig. 30**

**P. Install Layer Board Assy. for Drive in Ramp**

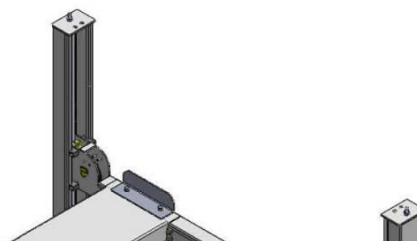
**Take down the Drive in Ramp, and put it in the platform and layer board assy. (See Fig. 31)**

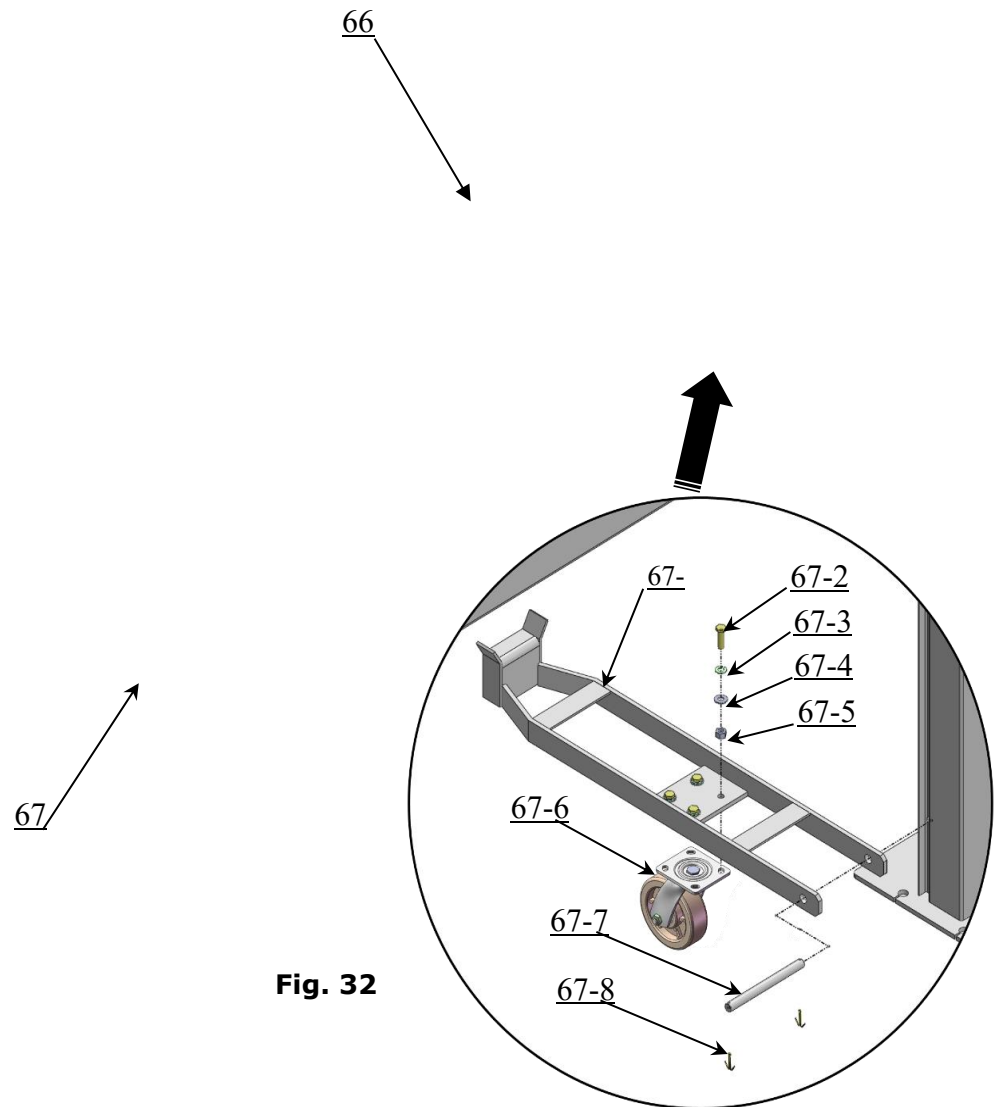


**Fig. 31**

**For optional kits installation.**

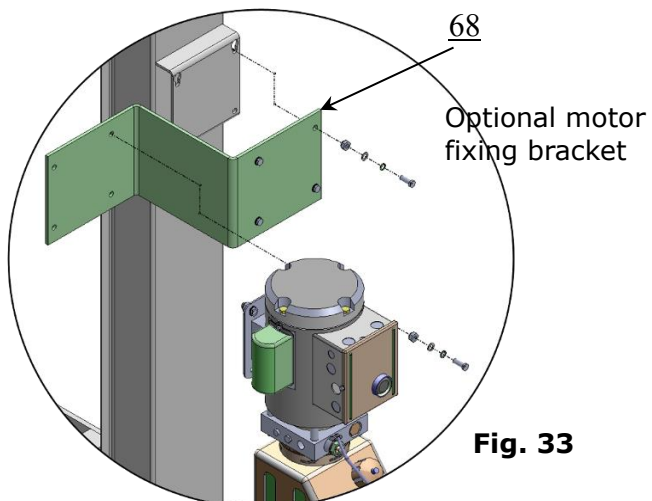
1. Install optional caster kits (See Fig. 32)





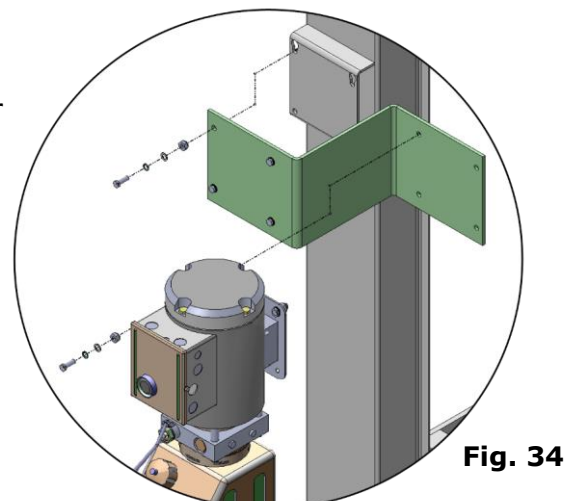
**Fig. 32**

2. Install optional motor fixing bracket (See Fig. 33, 34).



**Fig. 33**

Motor fixing bracket on cross beam **A**



**Fig. 34**

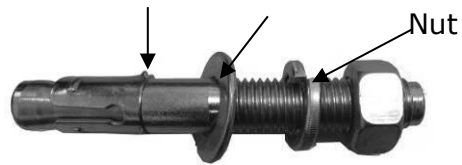
Motor fixing bracket on cross beam **B**

## Q. Fix the anchor bolts

1. Prepare the anchor bolts (See Fig. 35).

Washer      Spring washer

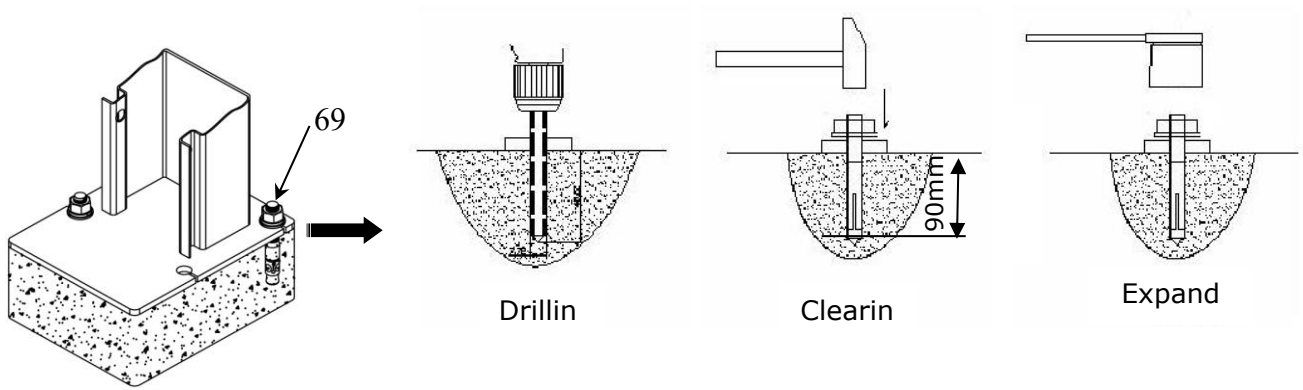




**Fig. 35**

2. Using the prescribed rotary hammer drill, and drill all the anchor holes and install the anchor bolts. Do not tighten the anchor bolts (**See Fig. 36**).

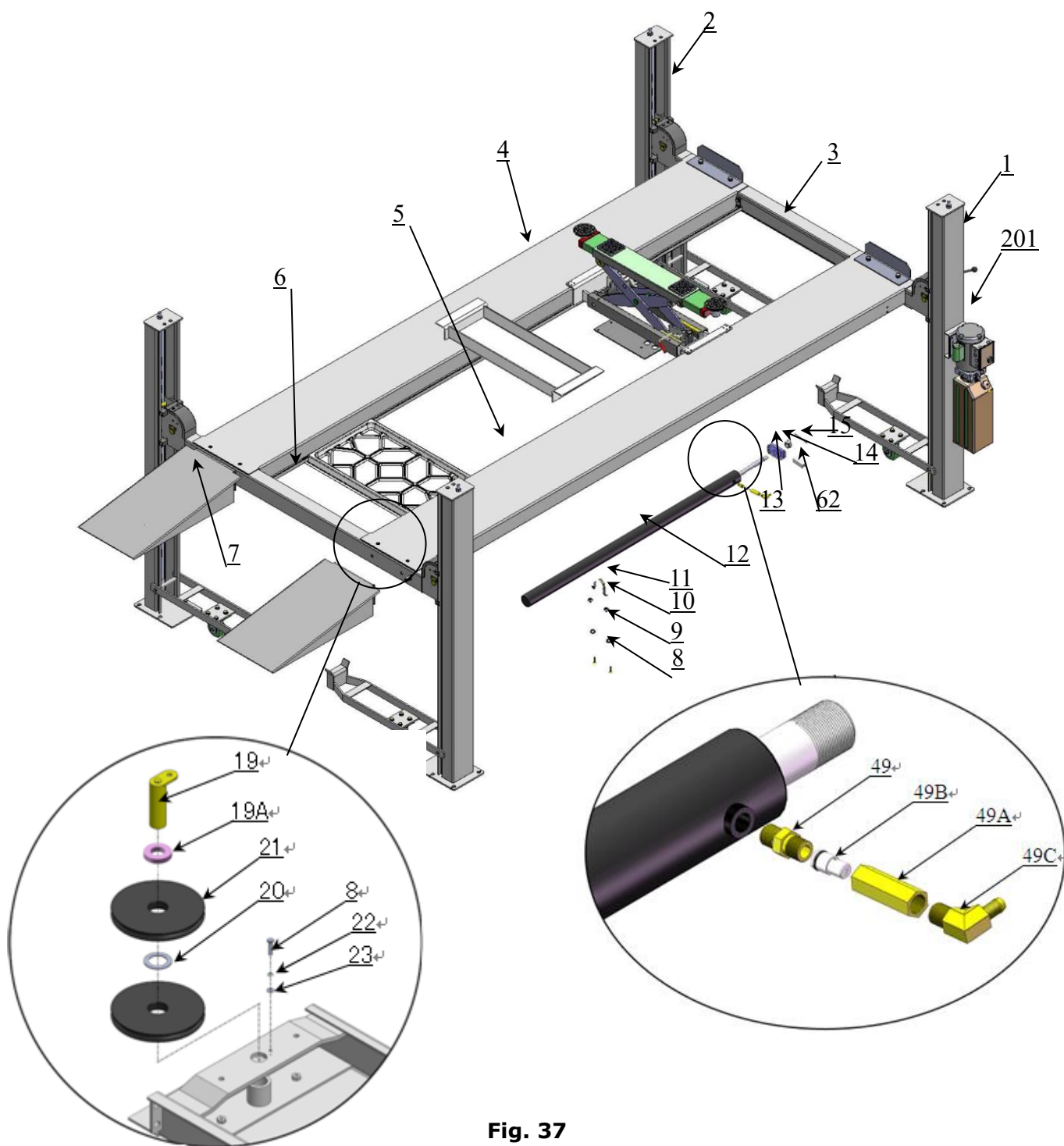
**Note: The tightening torque for the anchor bolt is 150N.m ,Anchor bolts driven into the ground at least 90mm**



**Fig. 36**

#### **IV. EXPLODED VIEW**

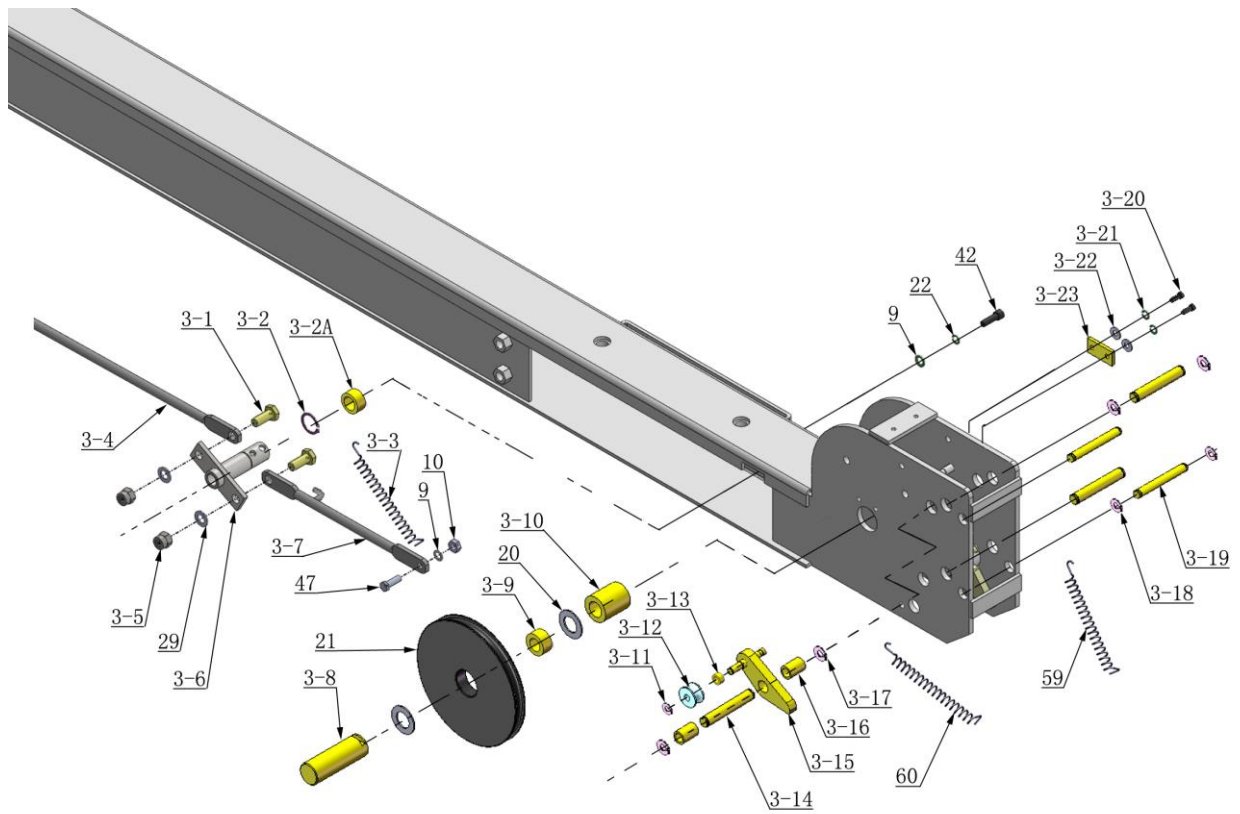
**Model 409-P/409-HP**



**Fig. 37**

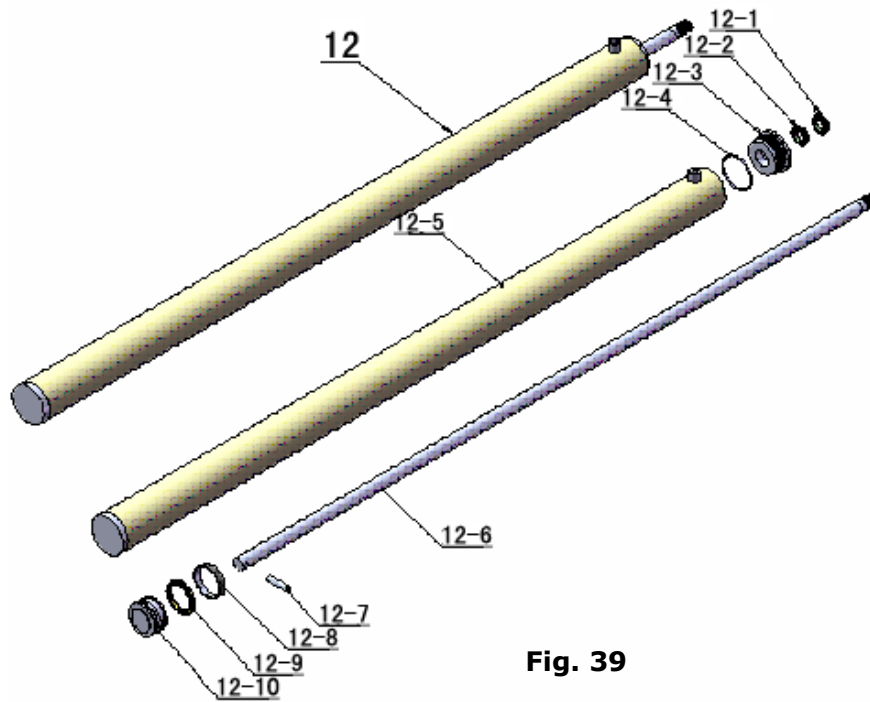
**CROSS BEAM**





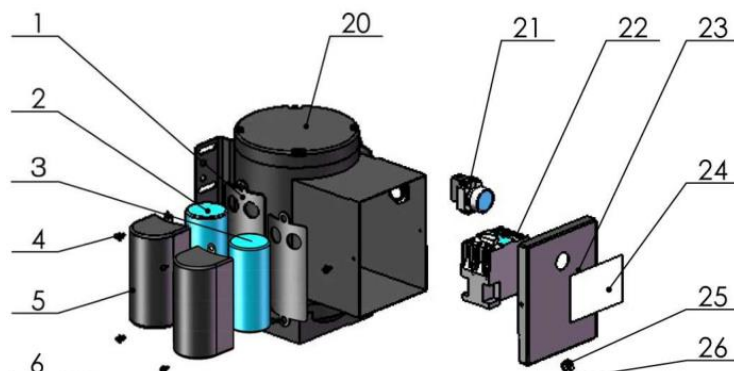
**Fig.38**

## CYLINDERS



**Fig. 39**

## Manual power unit 220V,60Hz

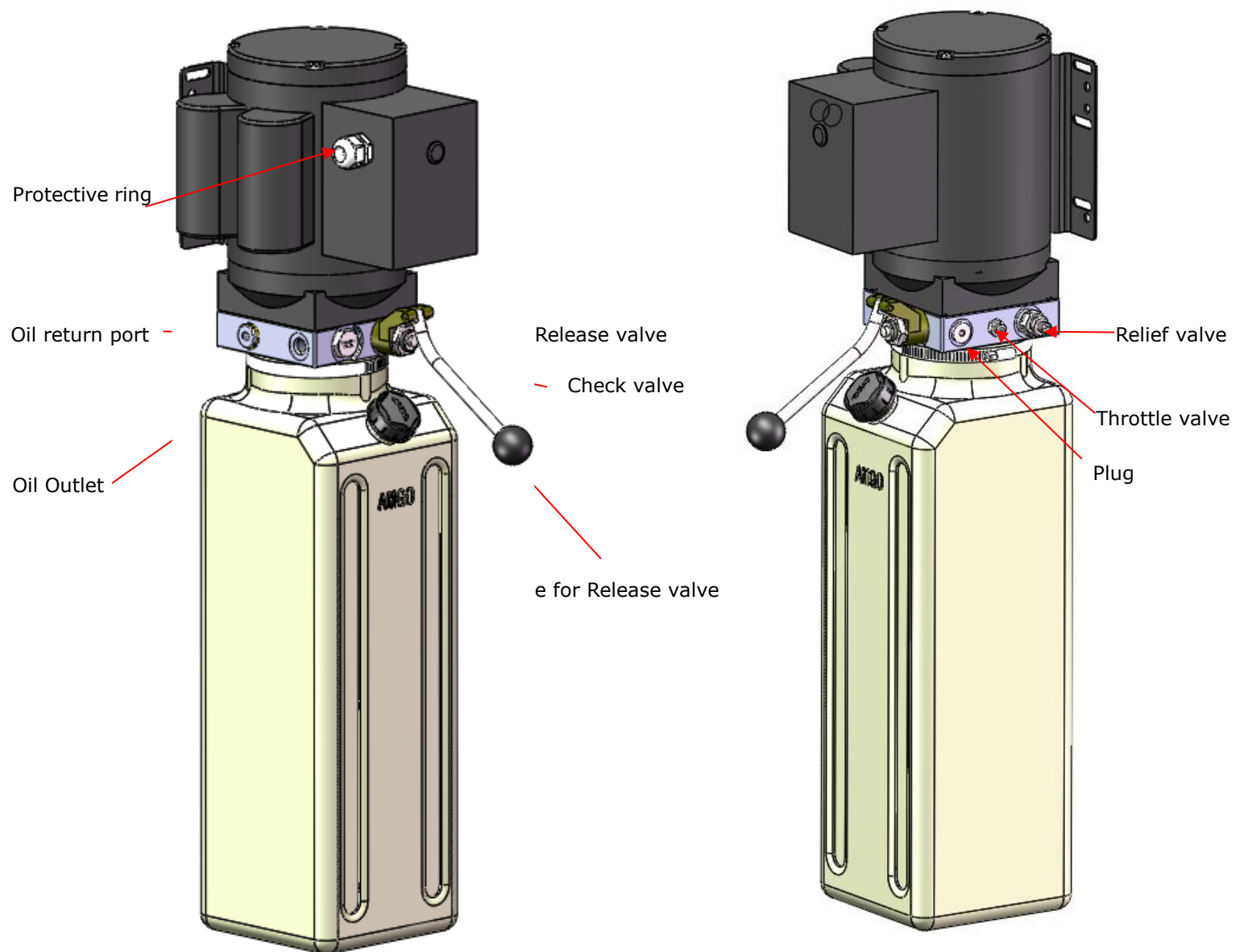


**Fig. 43**

**Fig. 40**

**Illustration of hydraulic valve**

**Manual hydraulic power unit 110V.60Hz,single phase(Fig. 41)**



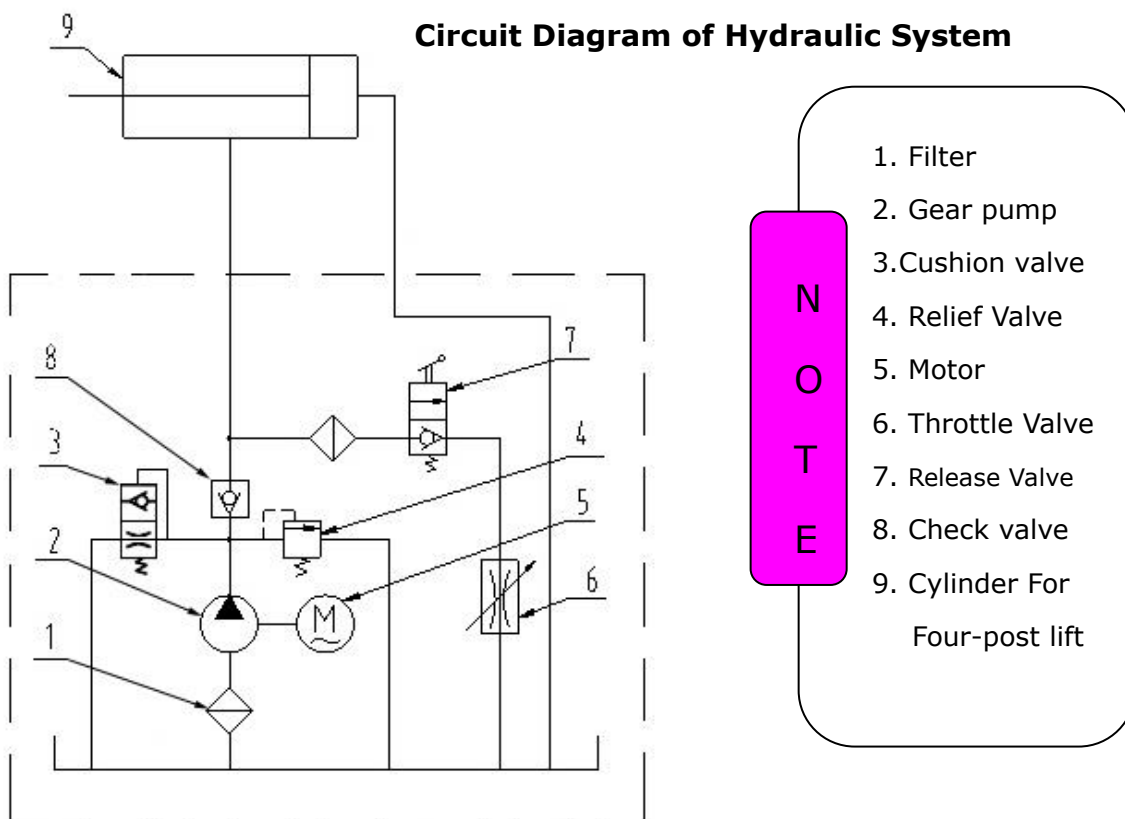
**Fig. 41**

## **V. TEST RUN**

1. Fill the reservoir with Hydraulic Oil (**Note:** In consideration of Power Unit's

durability, please use **Hydraulic Oil 46#**).

2. Press the control button, the cables will be strained. Check whether the cables match the pulley. Make sure the cables are not across.
3. Press the release valve handle 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 column and the plastic slider of cross-beam to about 2mm, Do not tighten the bolts of the sliding block, let the sliding block can be turned after installing the bolts
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.



**Fig. 42**

## **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. Take off the drive-in ramp, install rear wheel stop plates to the drive-in ramp position.
4. Turn on the power and press the control button, raise the lift to the working position.

**Note: make sure the vehicle is steady when the lift is raised.**

5. Press the release valve handle 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 control button, the lift will be raised for 3-5 seconds, and then press the safety release handle, make sure the safety device released, press the release valve handle 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. Take off the rear wheel stop plates and install drive-in ramp, then left the lift.
4. Turn off the power.

**VII. MAINTENANCE SCHEDULE****Monthly:**

1. Lubricate cable with lubricant;
2. Check all cable connection, bolts and pins to insure proper mounting;
3. Make a visual inspection of all hydraulic hoses/lines for possible wear or leakage;
4. Lubricate all rollers, safety devices with 90wt. gear oil or equivalent.

**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 columns for plumbness.

## VIII. TROUBLE SHOOTING

<b>TROUBLE</b>	<b>CAUSE</b>	<b>REMEDY</b>
Motor does not run	1. Button does not work 2. Wiring connections are not in good condition 3. Motor burned out 4. AC contactor burned out	1. Replace button 2. Repair all wiring connections 3. Repair or replace motor 4. Replace AC contactor
Motor runs but the lift is not raised	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	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	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	1. Oil line is jammed 2. Motor running on low voltage 3. Oil mixed with Air 4. Pump leaks 5. Overload lifting	1. Clean the oil line 2. Check electrical system 3. Fill tank 4. Repair or replace pump 5. Check load
Lift cannot lower	1. Safety device are not in activated 2. Release valve damaged	1. Operate again 2. Repair or replace

## IX. PARTS LIST FOR MODEL 409-P 409-HP

Item	Part#	Description	Qty.		Note
			409-P	409-HP	
1	410001	Power-side Column	1	0	
	410074		0	1	
2	410002	Offside Column	3	0	
	410075		0	3	
3	410050	Cross Beam <b>A</b>	1	1	
4	410051	Offside Platform	1	0	
	410076		0	1	
5	410052	Powerside Platform	1	0	
	410077		0	1	
6	410053	Cross Beam <b>B</b>	1	1	
7	410007	Drive-in ramp	2	2	
8	209043	Hex Bolt	4	4	
9	209033	Washer	28	28	
10	209005	Self locking Nut	26	26	
11	410090	Cylinder fixed ring	1	1	
12	410081	Cylinder	1	0	
	410070		0	1	
13	420626	Cable connecting plate	1	1	
14	420014	Hex Nut	1	1	
15	201005	Split Pin	1	1	
201	410095	Manual power unit	1	1	
17	420175A	Hex nut	16	16	
18	410022	Safety ladder	4	0	
	410073		0	4	
19	420022A	Pulley pin assy.	2	2	
20	420023A	Washer	13	13	
21	420024B	Pulley	10	10	
22	209034	Lock washer	10	10	
23	420144	Washer	2	2	
24	410013	Hex Bolt	8	8	
25	420137	Lock washer	8	8	
26	420029	Washer	8	8	
27	410014	Hex Bolt	4	4	
28	410015	Tire stop plate	2	2	
29	206006	Washer	12	12	
30	420026	Lock washer	8	8	

31	410105	Hex Bolt	8	8	
32	410016A	Plastic block	16	16	
Item	Part#	Description	Qty		Note
			409-P	409-HP	
33	410017	Socket bolt	16	16	
34	620065/201090	Shim	20	20	
35	410167	Cable 1	1	0	
	410171		0	1	
36	410168	Cable 2	1	0	
	410172		0	1	
37	410166	Cable 3	1	0	
	410170		0	1	
38	410165	Cable 4	1	0	
	410169		0	1	
39	420020B	Hex Bolt	4	4	
40	410059	Connecting bar for safety device	2	0	
	410069		0	2	
41	410024	Connecting tube	1	1	
42	209032	Socket bolt	4	4	
43	217005	Plastic ball	1	1	
43A	209056	Self locking Nut	1	1	
44	410025	Socket bolt	4	4	
45	410026	Safety release handle	1	1	
45A	410100	Extension release handle assy	1	1	
46	209004	Rubber ring	4	4	
47	209003	Hex Bolt	8	8	
48	420166	90° Fitting	1	1	
49	420243	Straight Fitting for cylinder	1	1	
49A	420245	Straight Fitting	1	1	
49B	209119	compensation valve	1	1	
49C	201020	T-fitting	1	1	
50	410136	Oil hose	1	0	
	410137		0	1	
51	420120	Extend straight fitting with nut	1	1	
52	207026	Oil hose	1	1	
53	209060	90° Fitting for power unit	1	1	
54	420095	Straight fitting	1	1	
55	410061	Oil return hose	1	0	
55	410072	Oil return hose	0	1	

56	410036	Protective hose	1	1	
57	209145A	Cup head bolt with washer	8	8	
Item	Part#	Description	Qty		Note
			409-P	409-HP	
58	410029	Plastic cover for cross beam	4	4	
59	410030	Spring	4	4	
60	420033	Spring	4	4	
61	410501	Parts box	1	0	
	410502		0	1	
62	420239	Limit block	1	1	
63	410094	Rear wheel stop plate	2	2	
64	410101	Layer board assy for drive in ramp	2	2	
69	209059	Anchor bolt	16	16	
<b>Optional kits (See Fig.34-36)</b>					
65	410062	Jack tray	1	1	
65A	410095	Oil tray	4	4	
66	410041	Optional Jack	1	1	
67	40801	Mobile bracket assy.	4	4	
68	40802	Fixing plate for motor	1	1	
<b>Parts for optional caster kits (See Fig.34)</b>					
67-1	410042A	Support bracket	4	4	
67-2	209125	Hex bolt	16	16	
67-3	209039	Lock washer	16	16	
67-4	209022	Washer	16	16	
67-5	209021	Hex nut	16	16	
67-6	410035	Plastic wheel	4	4	
67-7	410034	Connecting pin	4	4	
67-8	209012	Hair Pin	8	8	
<b>Parts For Cross Beam (See Fig.38)</b>					
3-1	206024	Hex bolt	4	4	
3-2	206032	Snap ring	2	2	
3-2A	217020	Bronze bush	2	2	
3-3	410099	Spring	2	2	
3-4	410063	Connecting bar for safety lock	2	2	
3-5	206023	Self locking Nut	4	4	
3-6	410032	Safety lock rotated device assy.	2	2	
3-7	410064	Connecting bar assy.for safety lock	2	2	
3-8	420041A	Pulley Pin	4	4	
3-9	420132A	Pulley Bush	10	10	
3-10	420040A	Pulley pin sleeve	4	4	
3-11	209010	Snap ring	4	4	

3-12	420035	Tension pulley	4	4	
3-13	420174	Spacer	4	4	
Item	Part#	Description	Qty.	Note	Item
			409-P	409-HP	
3-14	420171	Pin	12	12	
3-15	420175	Slack-cable safety lock (Left)	1	1.	
	420240	Slack-cable safety lock(Right)	1	1	
3-16	420172	Pin Bush For Slack-cable safety lock	8	8	
3-17	206019	Snap ring	24	24	
3-18	420037	Snap ring	16	16	
3-19	420038	Pin	8	8	
3-20	420138	Socket Bolt	8	8	
3-21	209149	Lock washer	8	8	
3-22	420045	Washer	8	8	
3-23	420044	Stop block	4	4	
<b>Parts For Cylinder (See Fig. 40)</b>					
12-1	420059	Dust Ring	1	1	
12-2	420060	Y- Ring	1	1	
12-3	410082	Head Cap	1	1	
12-4	410083	O- Ring	1	1	
12-5	410084	Bore Weldment	1	0	
	410078		0	1	
12-6	420064	Piston Rod	1	0	
	410079		0	1	
12-7	410085	Pin	1	1	
12-8	410086	Support Ring	1	1	
12-9	410087	Y- Ring	1	1	
12-10	410088	Piston	1	1	
<b>Parts For Manual Power Unit, 220V/60Hz/single phase</b>					
1	81400180	Rubber Gasket	2	2	
2	81400130	Start Capacitor	1	1	
3	420148	Run Capacitor	1	1	
4	81400066	Cup Head Bolt With Washer	6	6	
5	81400363	Cover of Capacitor	2	2	
6	81400362	Motor Connecting Shaft	1	1	
7	10209149	manifold block	1	1	
8	81400276	Spring Washer	4	4	
9	81400259	Inner hex iron plug	1	1	
10	85090142	Red Plastic Plug	1	1	
11	81400280	Socket Bolt	4	4	

12	81400294	Gear Pump	1	1	
13	10209034	Relief Valve	1	1	
Item	Part#	Description	Qty.		Note
			409-P	409-HP	
14	81400295	Spring Washer	2	2	
15	81400365	Hex Screw	2	2	
16	10209152	O-Ring	1	1	
17	85090167	Ties	1	1	
18	81400290	Magnet of power units	1	1	
19	81400412	Filter	1	1	
20	81400088	Motor	1	1	
21	10420070	Push Button	1	1	
22	81400463	Socket Bolt	1	1	
23	81400287	O-Ring	1	1	
24	71111106	Ties	1	1	
25	81400296	Magnet of power units	1	1	
26	81400459	Filter net	1	1	
27	10209069	Motor	1	1	
28	81400266	Relief Valve	1	1	
29	81400284	Inner Hex Iron Plug	1	1	
30	81400452	Elastic latch	1	1	
31	81400451	Handle For Release Valve	1	1	
32	10209020	Plastic ball of rack handle	1	1	
33	81400125	Release valve nut	1	1	
34	81400124	Release valve spacer	1	1	
35	81400450	Valve seat	1	1	
36	070001	Release Valve	1	1	
37	81400267	Check Valve	1	1	
38	81400288	Inlet Pipe	1	1	
39	81400289	Oil Return Pipe	1	1	
40	81400364	Hose Clamp	1	1	
41	81400263	Filler Cap	1	1	
42	81400275	Oil tank	1	1	





## **AMGO HYDRAULIC CORPORATION**

1931 Jo Rogers Blvd, Manning, South Carolina, USA

Tel: (803) 505-6410

Fax: (803) 505-6410

**Manual Part No: 72147401**

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