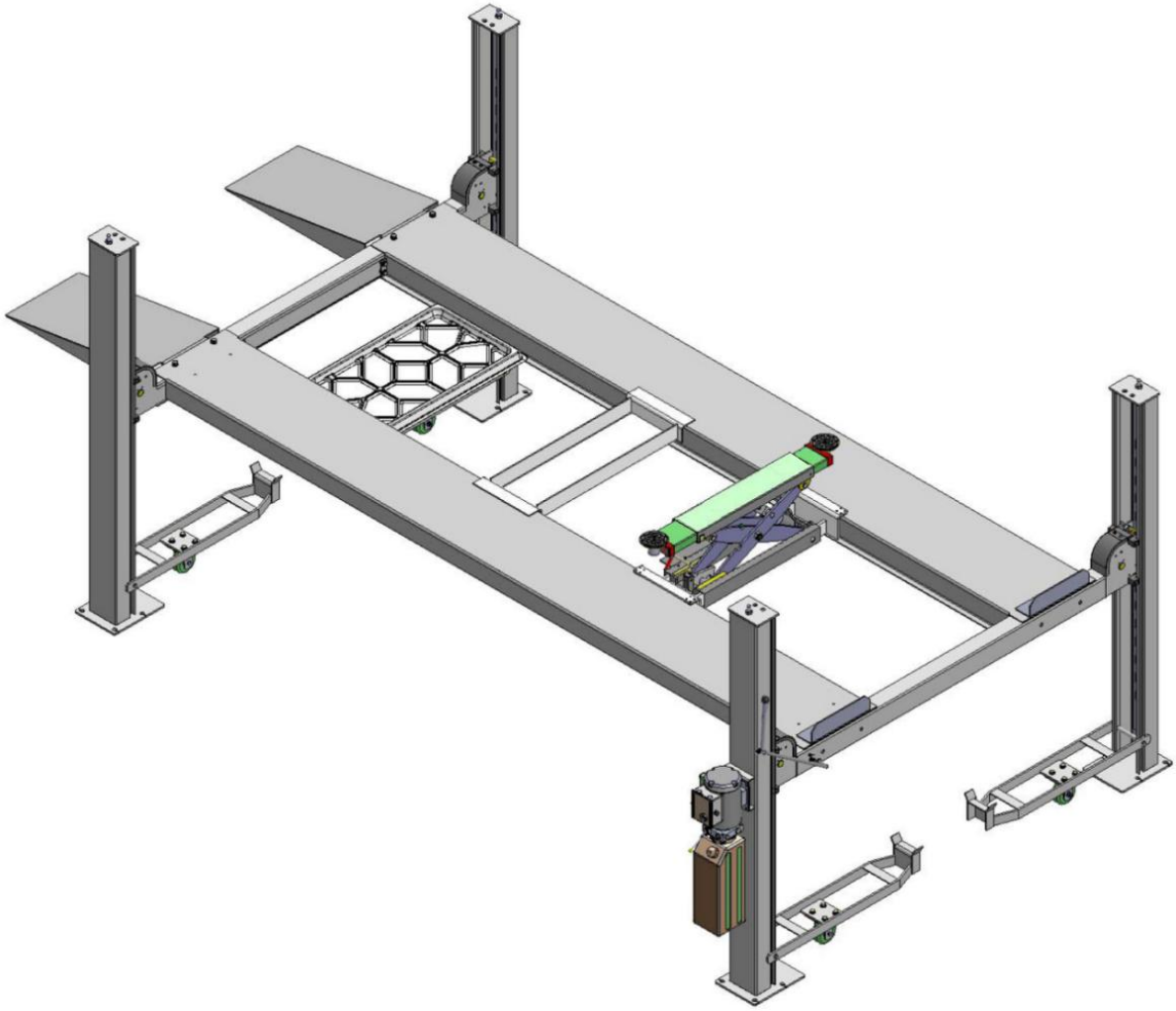
AMGO® Hydraulics

Original

Installation And Service Manual



FOUR-POST LIFT
Model: 408-HP

CONTENTS

I. PRODUCT FEATURES AND SPECIFICATIONS

4-POST MODEL 408-HP FEATURES

· Single cylinder drive and transmission by cable

· Single point manual safety release, more convenient and reliable for decent operation.

· 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, caster kits.

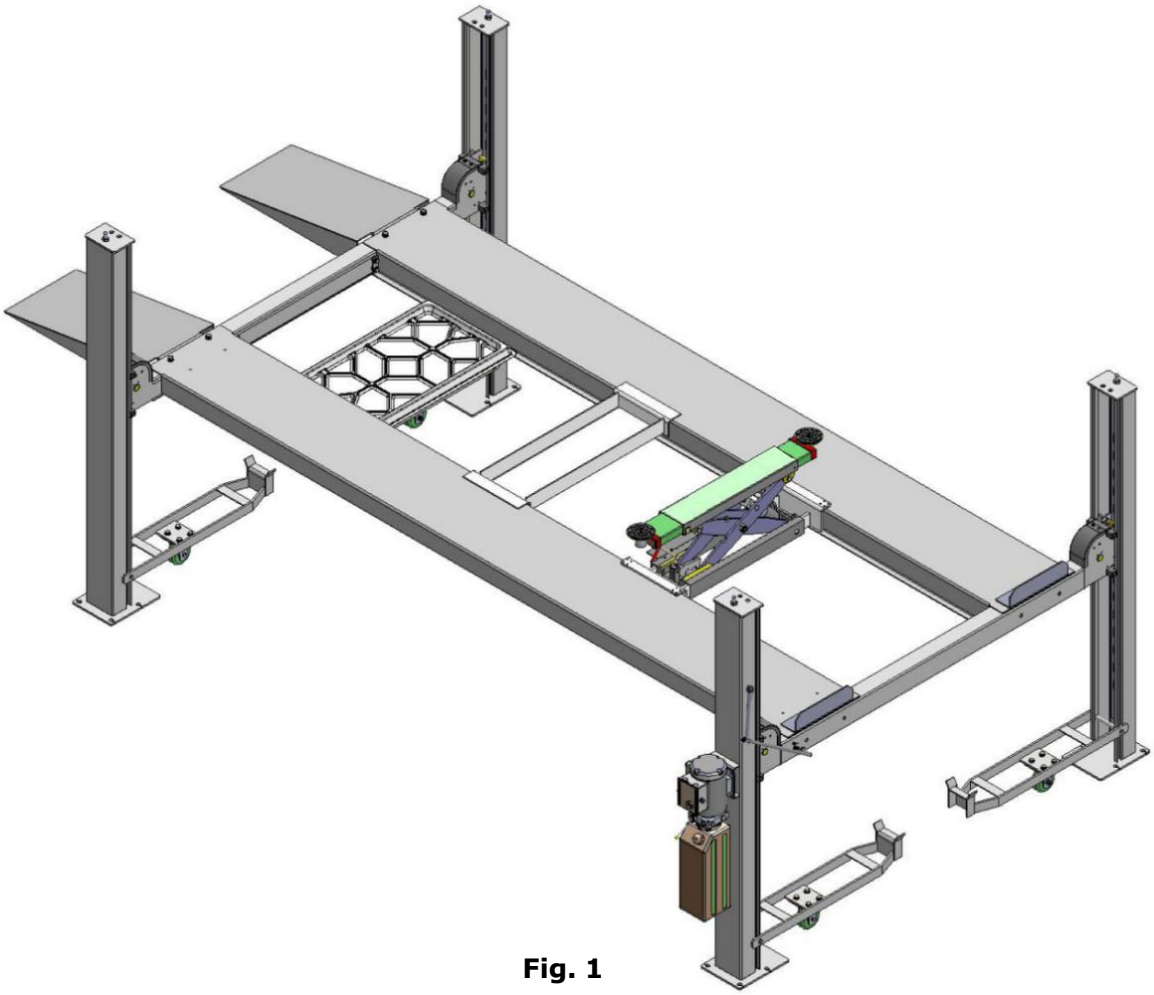


Fig. 1

MODEL 408-HP SPECIFICATIONS

Model	Lifting Capacity	Lifting Height	Lifting Time	Overall Length (Inc. Ramps)	Overall Width	Overall Height	Width Between Columns	Motor
408-HP	8,000lbs 3500KG	87 5/8" 2227mm	83S 38S	207" 5257mm	109 5/8" 2784mm	96 5/8" 2455mm	96 " 2438mm	110V：1.0HP 220V：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. Equipment storage and installation requirements.

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

C. The equipment should be unload and transfer by forklift.

Fig.3

D. 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"(100mm) minimum and without reinforcing steel bars, and must be dried completely before the installation.
2. Concrete must be in good condition and must be of test strength 3,000psi (210kg/cm²) minimum.
3. Floors must be level and no cracks.

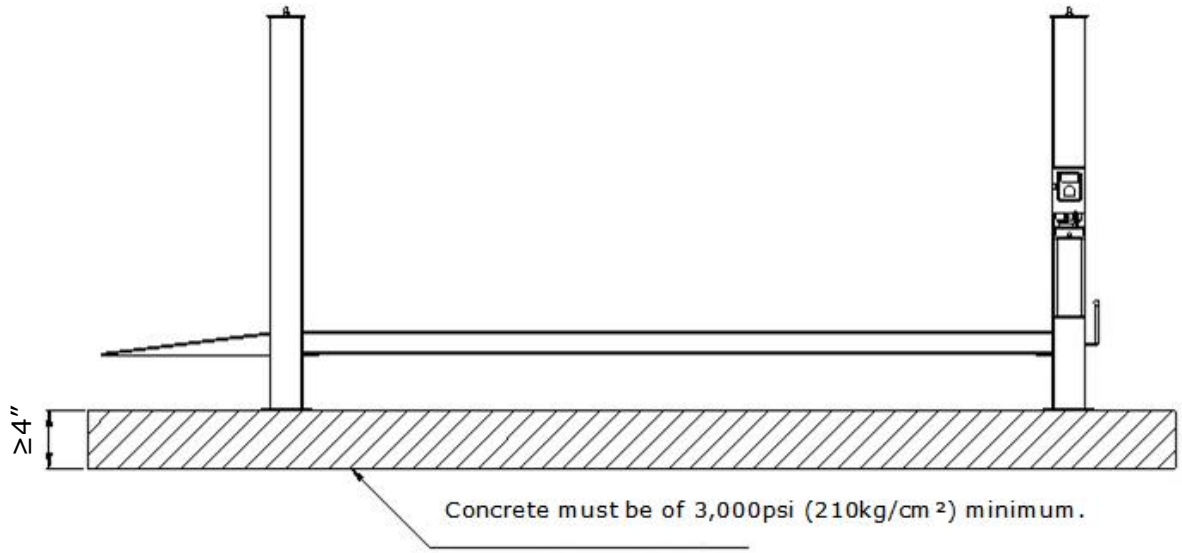


Fig. 4

E. POWER SUPPLY

The electrical source must be 3.0HP. The source cable size must be 2.5mm² 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. 5)**.

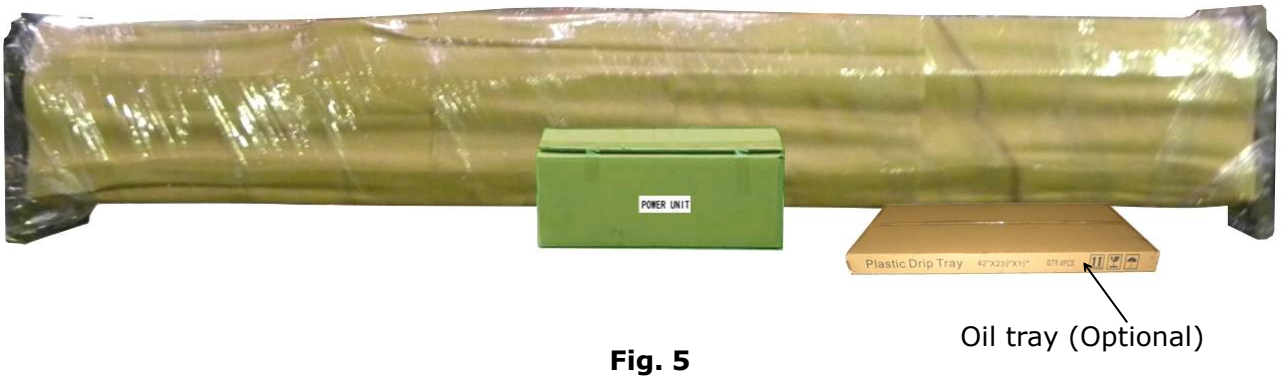


Fig. 5

2. Open the outer packing carefully, check the parts according to the shipment list. **(See Fig. 6)**.

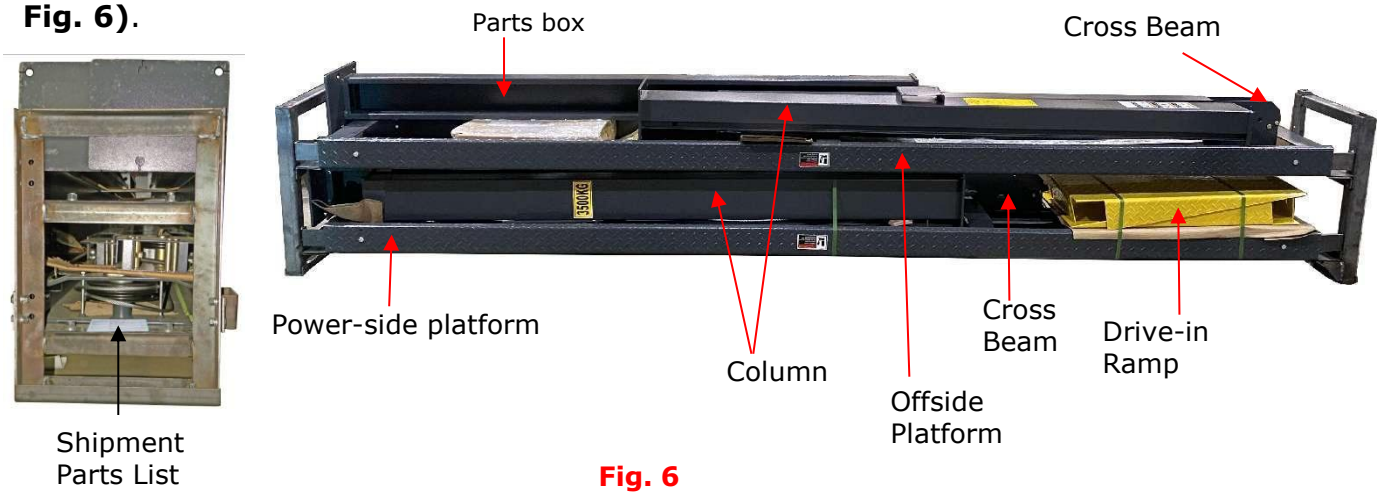


Fig. 6

3. Take off the drive-in ramps and columns **(See Fig.7)**.

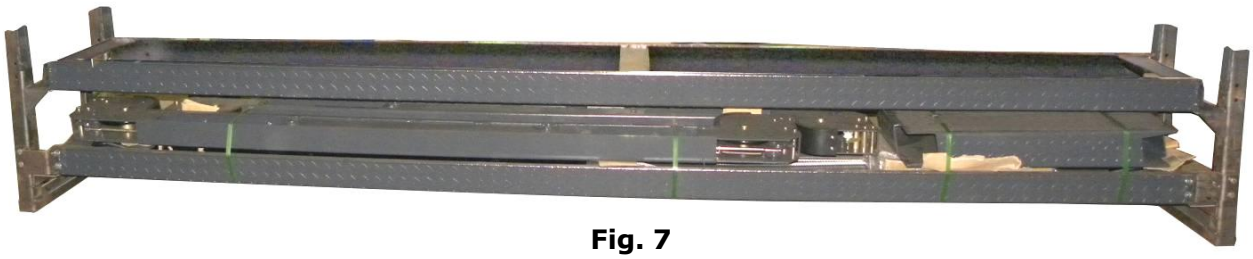


Fig. 7

4. Loose 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. 8).**

Fig.8

6. Open the carton of parts and check the parts according to the parts box list (See Fig. 9).

Fig. 9

7. Check the parts of the parts bag according to the parts bag list **(See Fig. 10)**.

Fig. 10

B. Use a carpenter's chalk line to establish installation layout as per Fig.11. Make sure the size is right and base is flat (see Fig. 11).
Note: Reserve space front and behind the installation site.

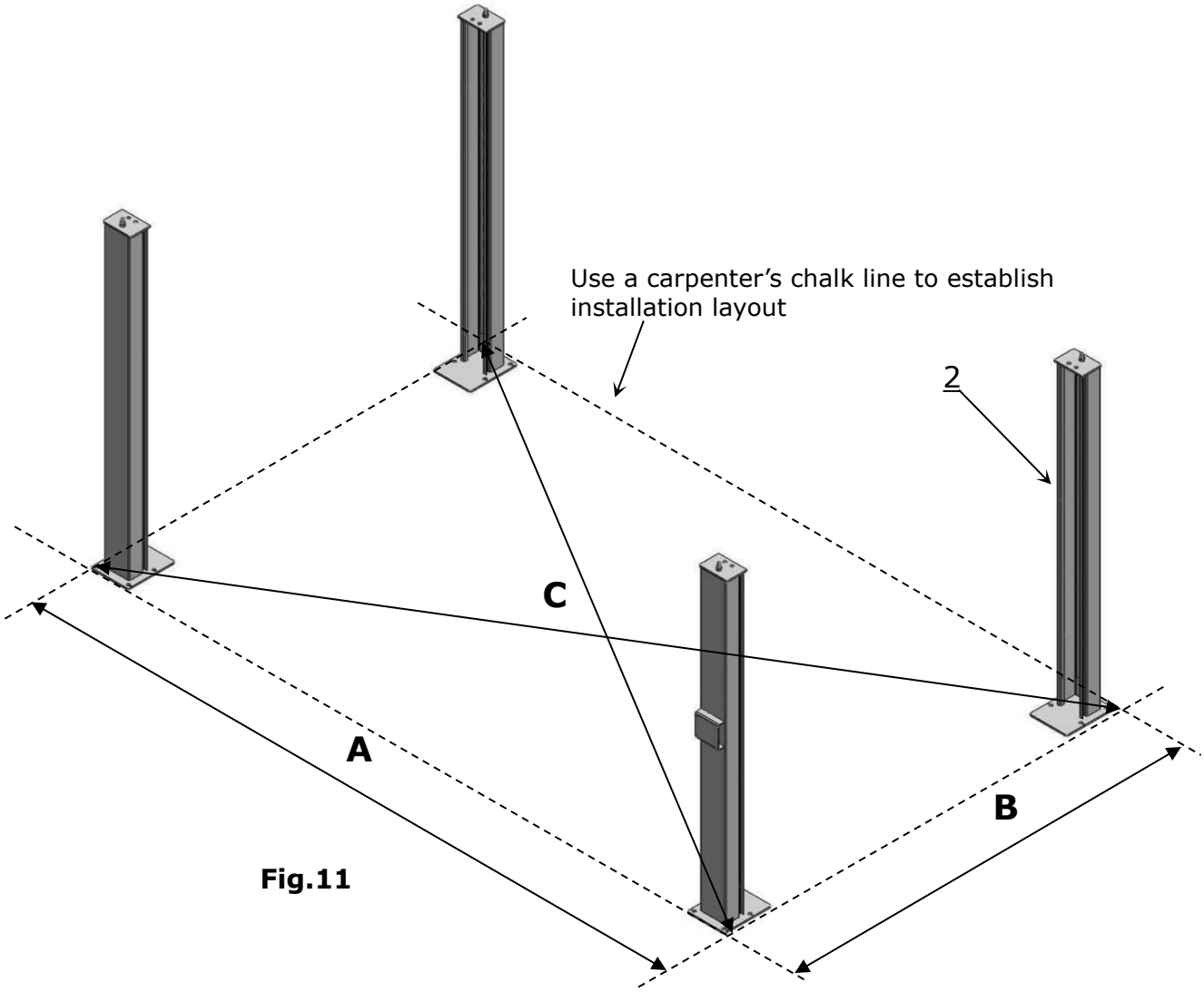


Fig.11

MODEL	A	B	C
408-HP	4400mm (173 1/4")	2784mm (109 5/8")	5207mm (205")

C. Install cross beams. The cross beam opening towards inside, the power-side column need to be installed close to the rotational safety device. (See Fig.12, Fig.13).

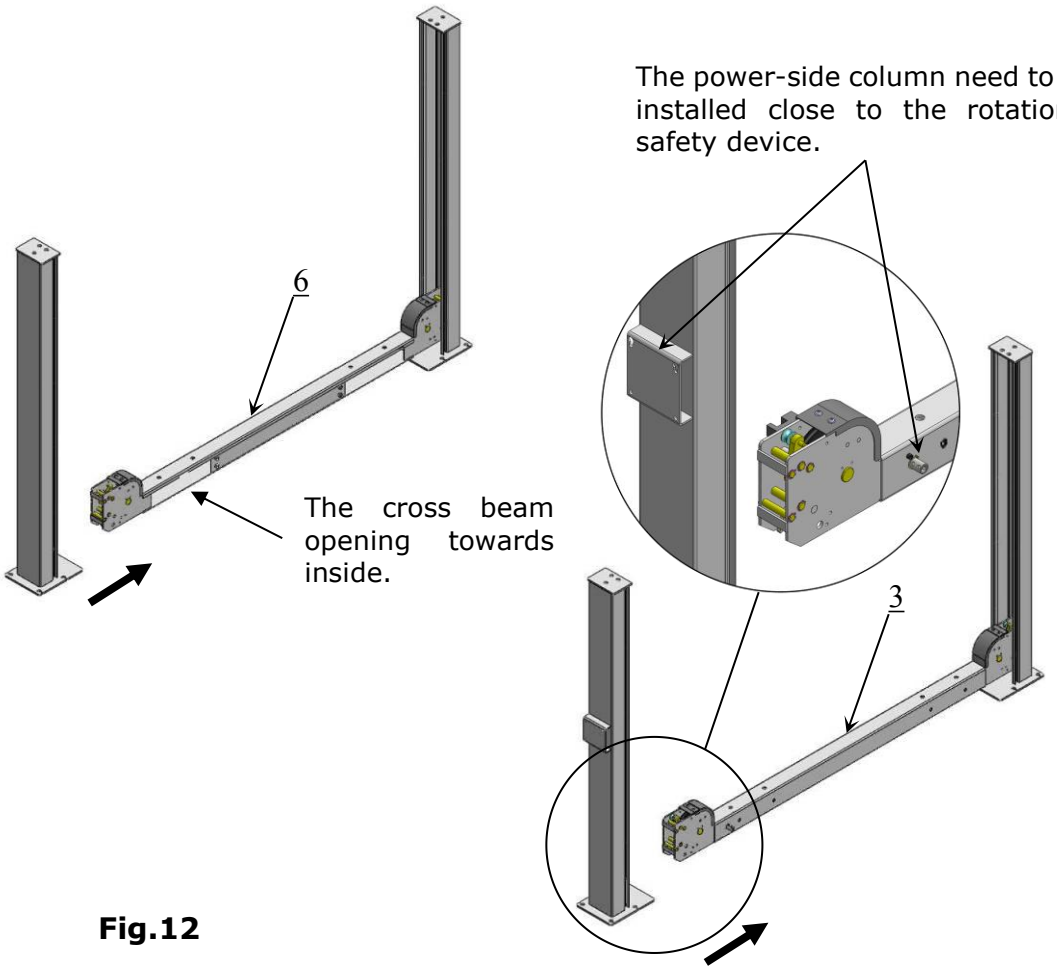


Fig.12

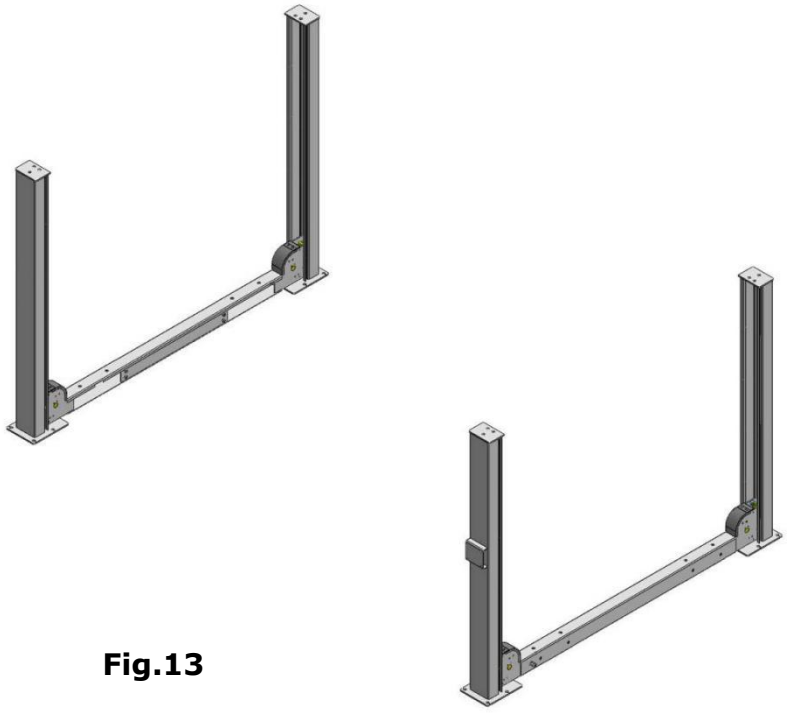


Fig.13

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. 14).**

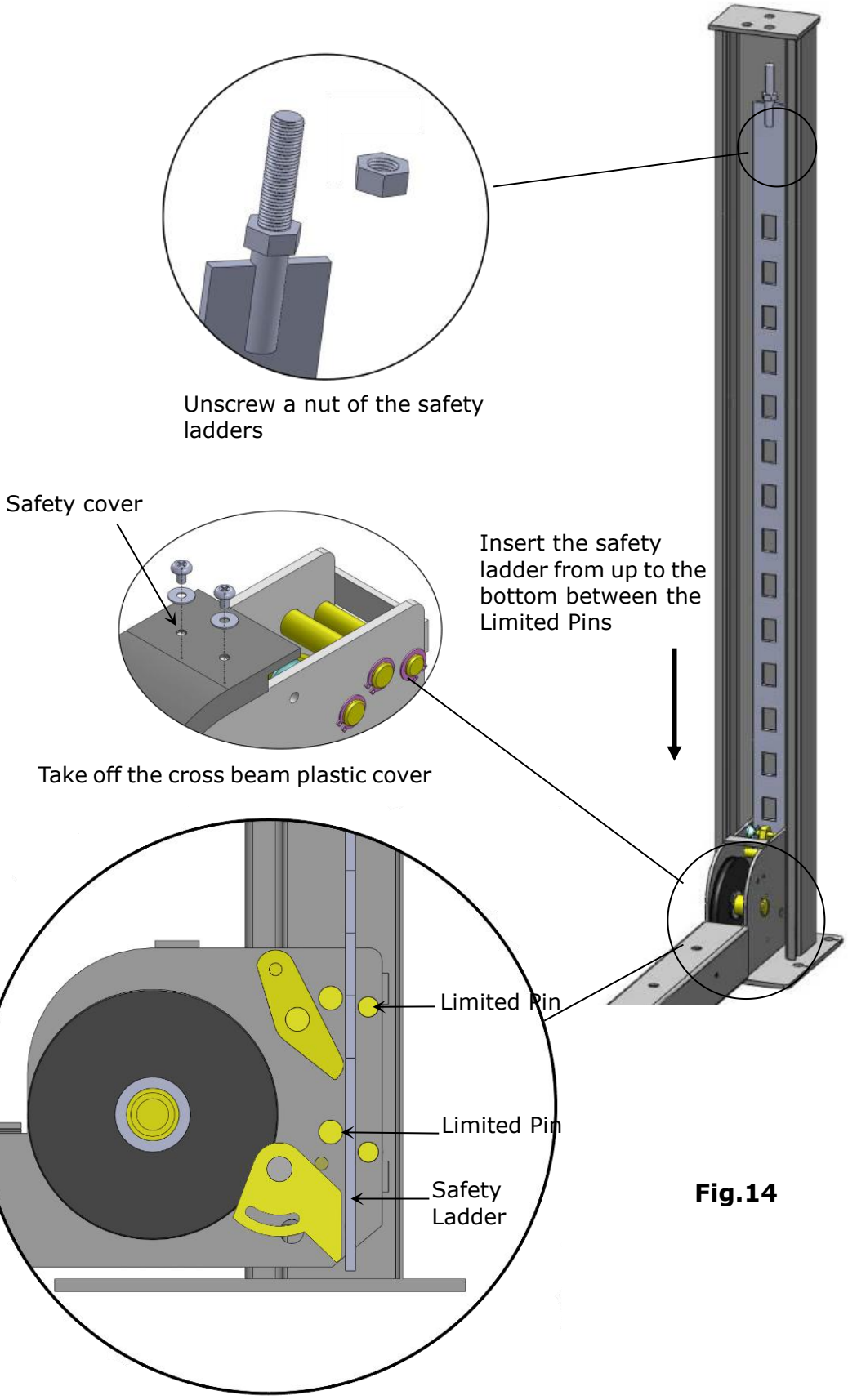


Fig.14

2. Install Safety Ladders **(See Fig. 15).**

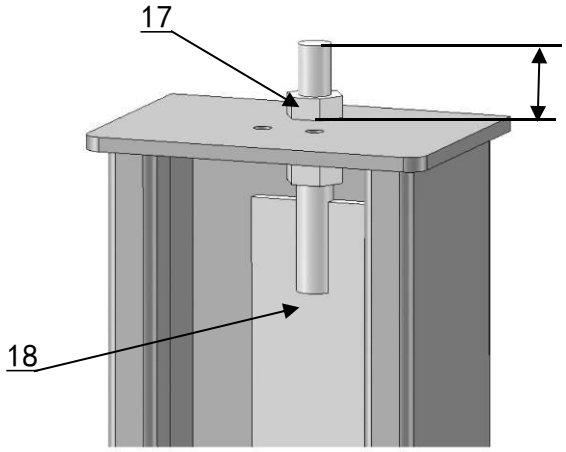


Fig. 15

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

E. Put the cross beams to the same height and lock at the safety ladder (See Fig. 16).

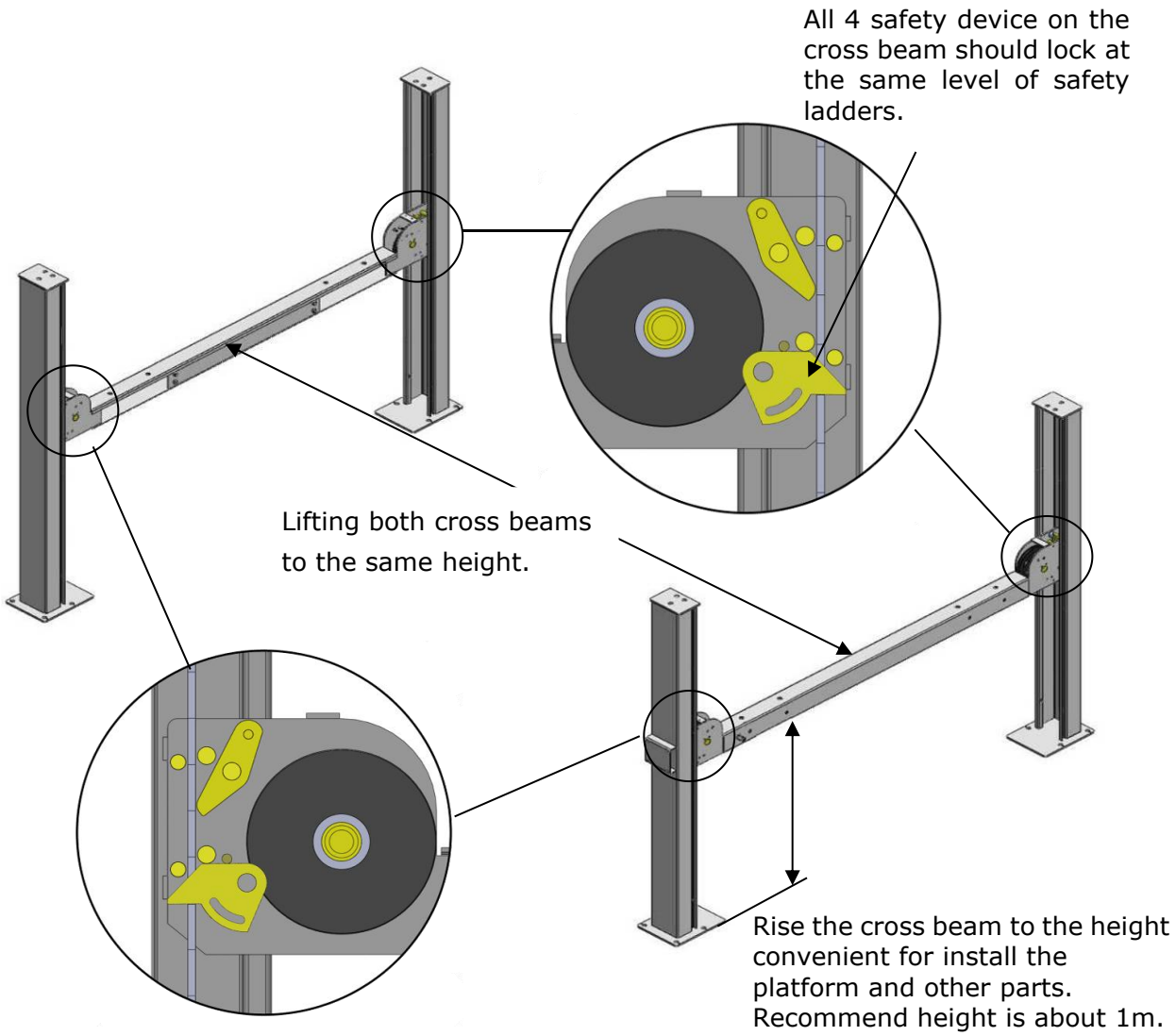


Fig. 16

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 outside a little until the pulleys of both platforms enter into the cross beams opening **(See Fig.17)**. Aligning holes on the power-side platform and cross beam, then screw up the bolts.

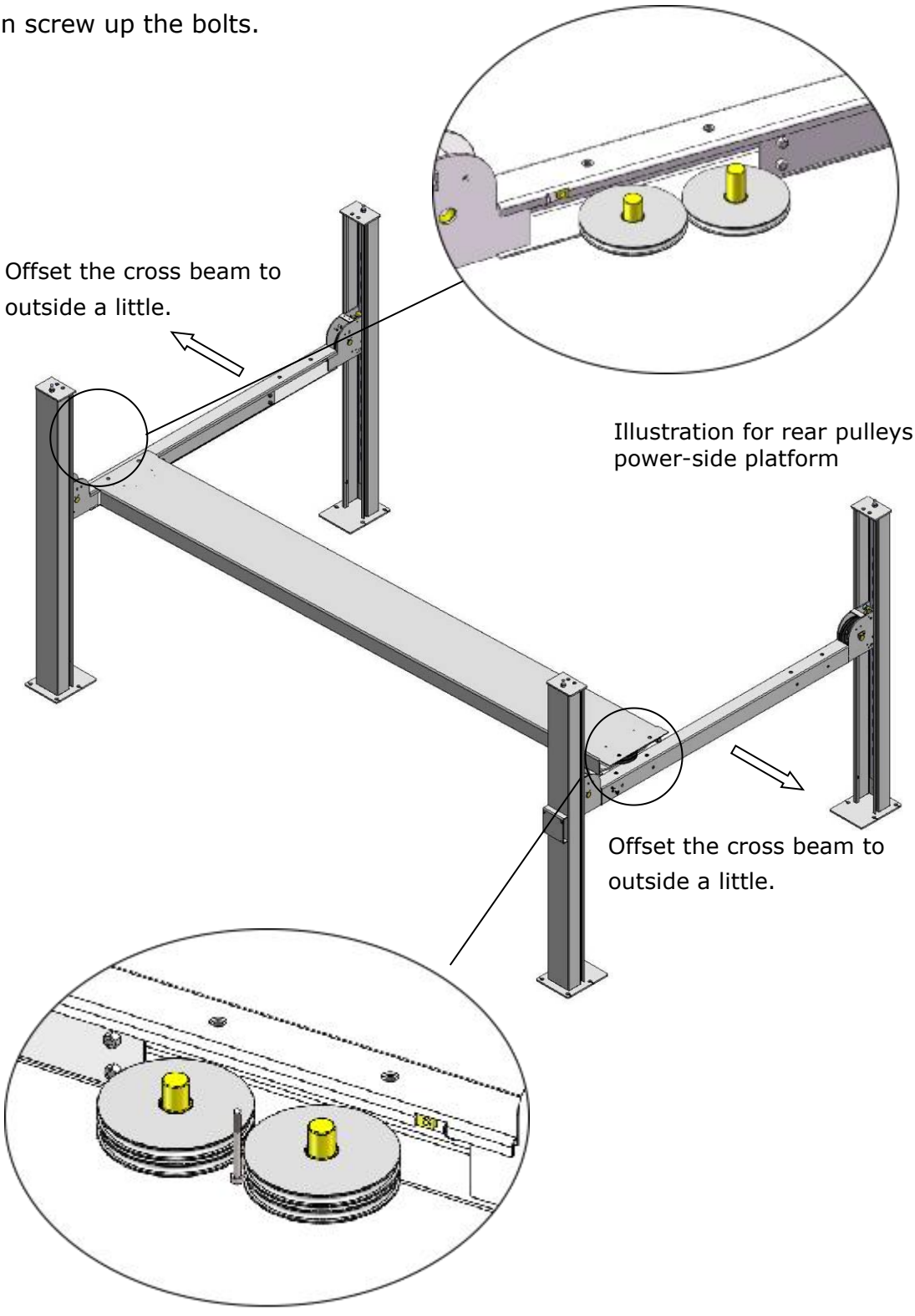


Fig. 17

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 bolt.

Note: The bolts for the side with tire stop plate are longer than the side without tire stop plate, pay attention when choosing the bolts **(See Fig.18)**

Instruction: 1). This lift both ends can drive the car in(cross beam **A** and **B**), user can install the lift according to the location. The following method of installation is driving the car in from the cross beam **B**, if choosing the cross beam **A** to drive the car in then install the tire stop plate to the other end.

2) . The Power-side column can be installed at cross beam **A** or **B**, but the power unit must be installed the same direction with the safety lock release handle.

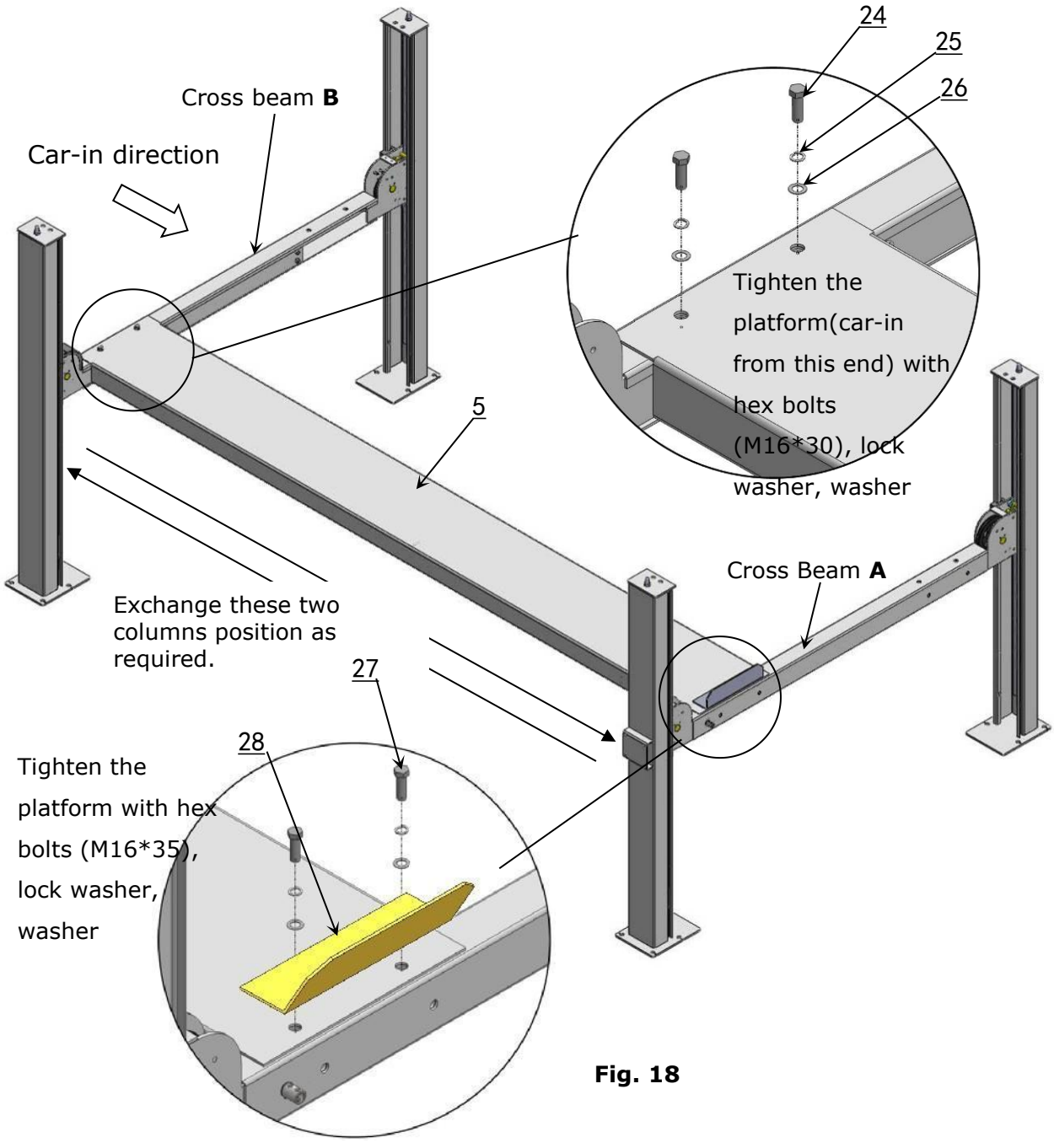


Fig. 18

G. Install offside platform and limit block, then install the bolts for the platform strengthen plate, check the plumbness of columns with level and adjusting with the shims (See Fig. 19).

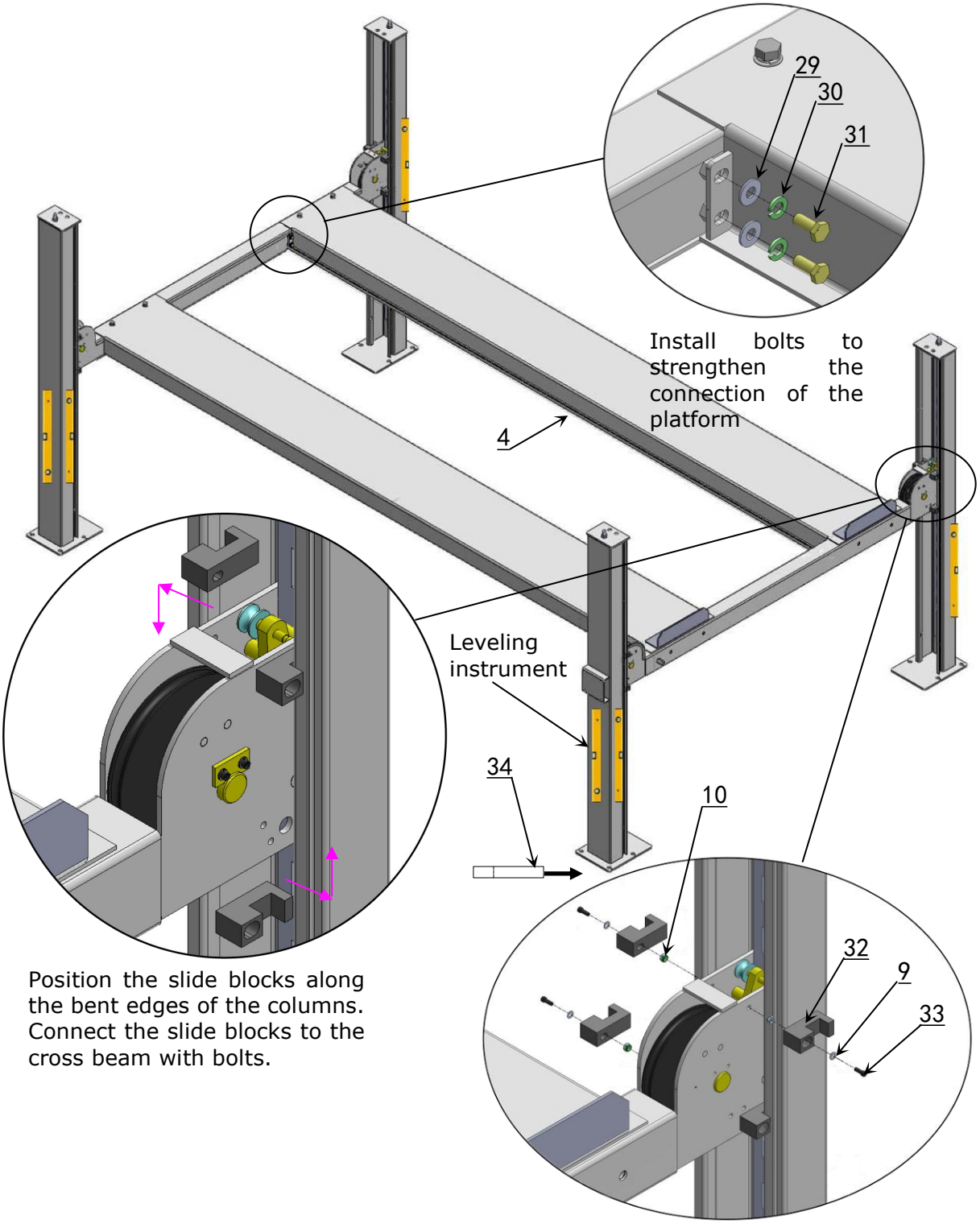
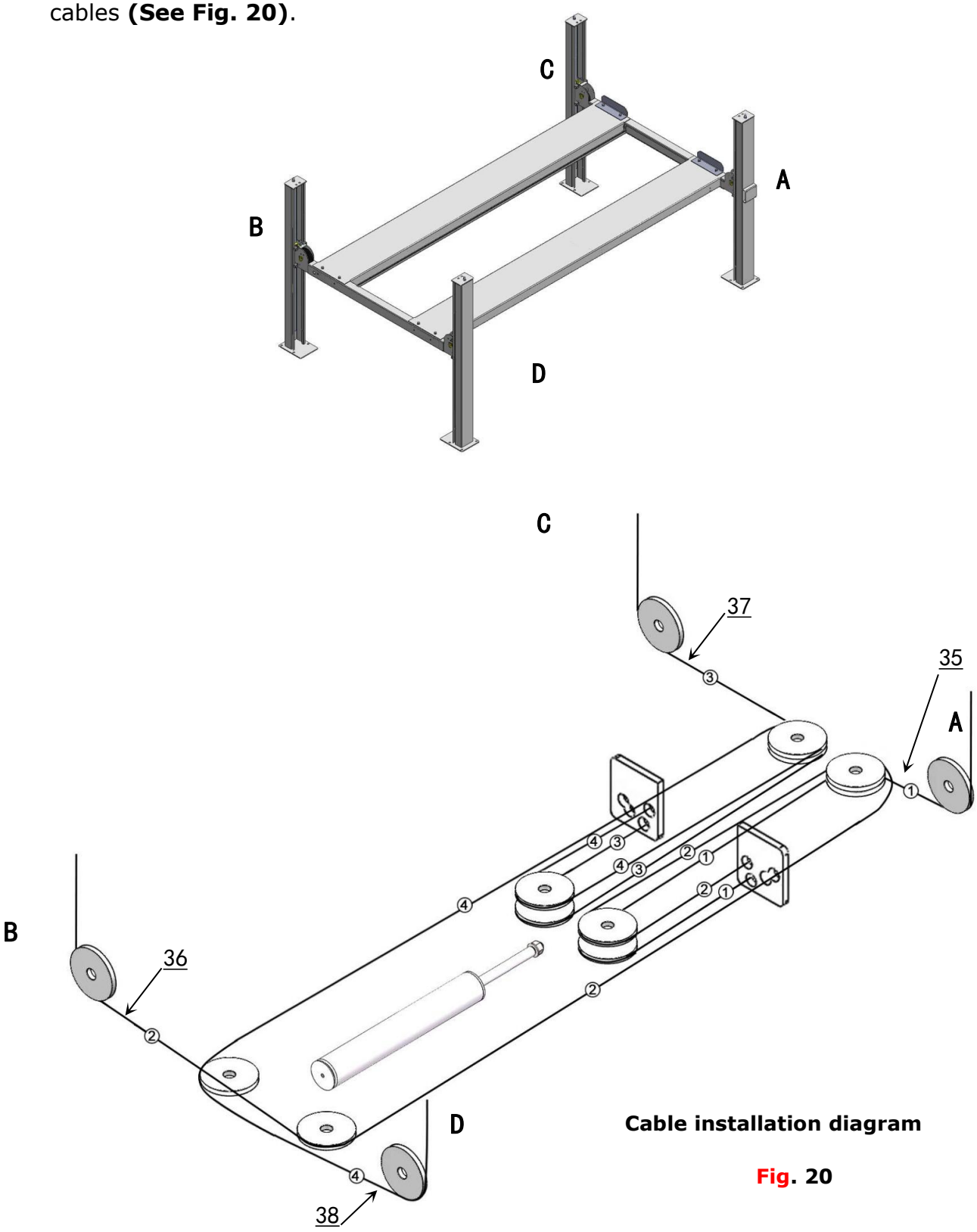


Fig. 19

H. Illustration for cable installation

1. The cables pass through the platform to the columns according to the number of the cables **(See Fig. 20)**.



Cable installation diagram

Fig. 20

NO. / Cable	①	②	③	④
Length (inc. cable fitting)	5011mm	10789mm	6390mm	9400mm

2. The cable goes through the cross beam to top plate of columns and be screwed with cable nuts **(See Fig. 21).**

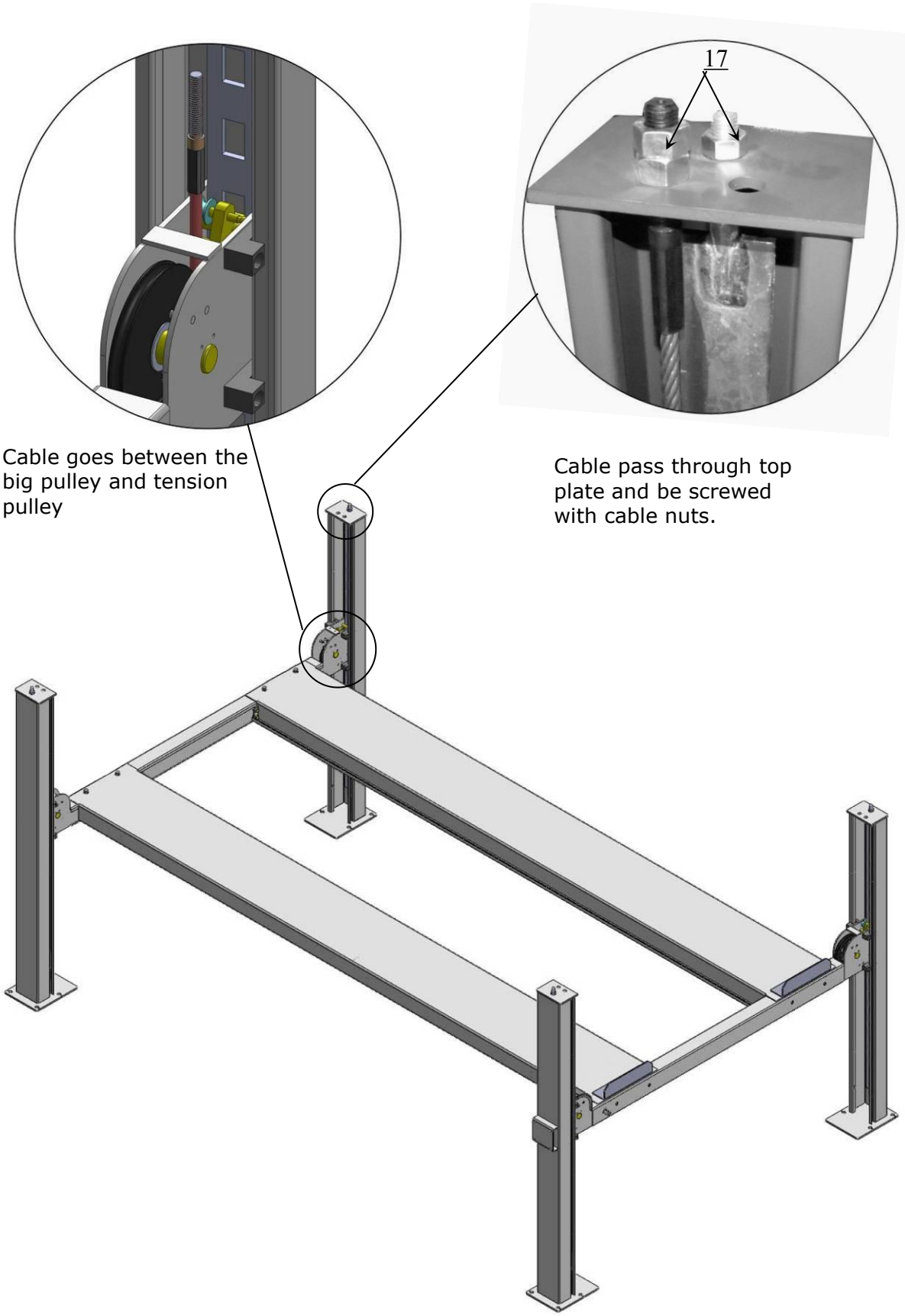
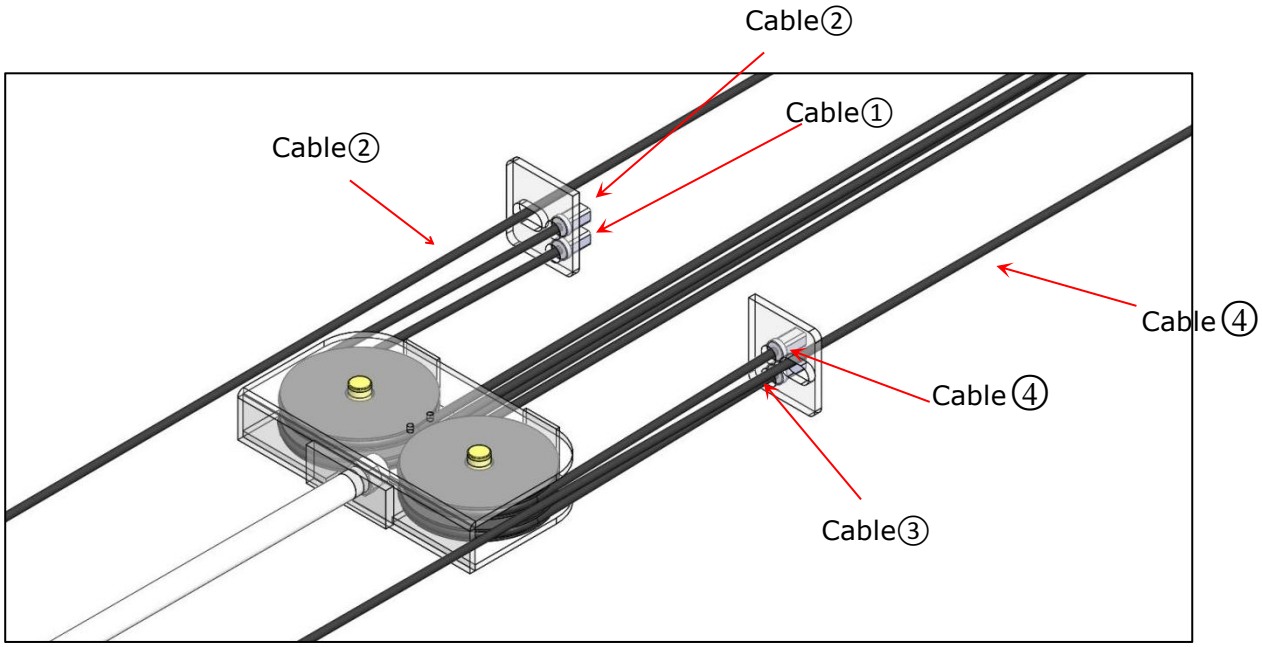
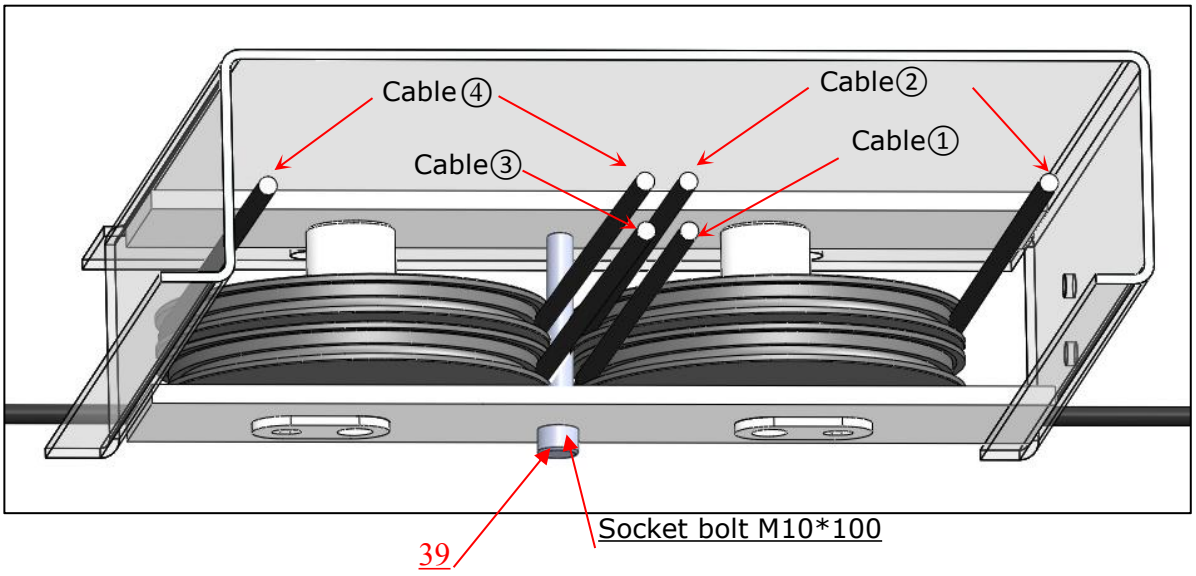


Fig. 21

3. Illustration for platform cables **(See Fig. 22).**





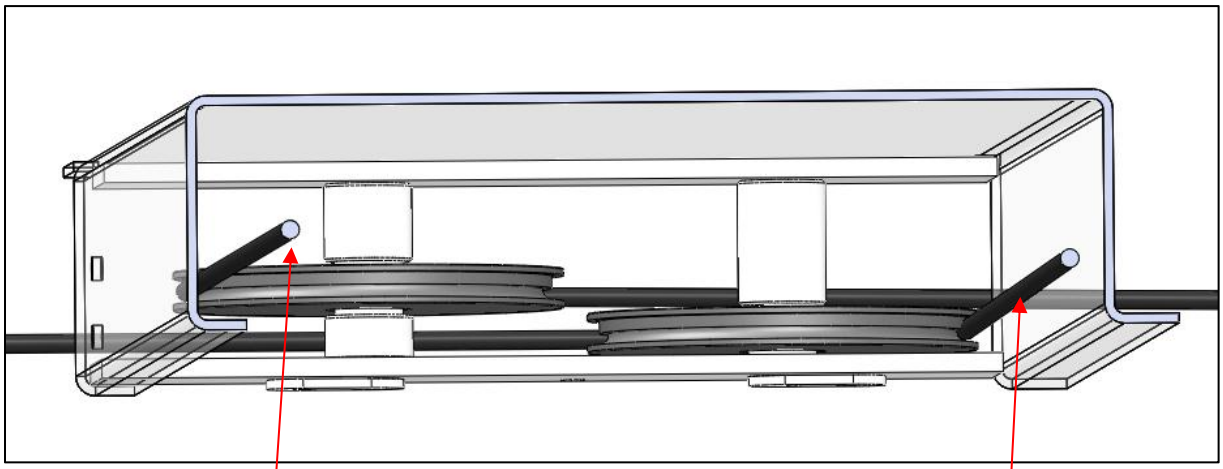


Fig. 22

I. Install connecting bar for safety device and release handle (See Fig. 23).

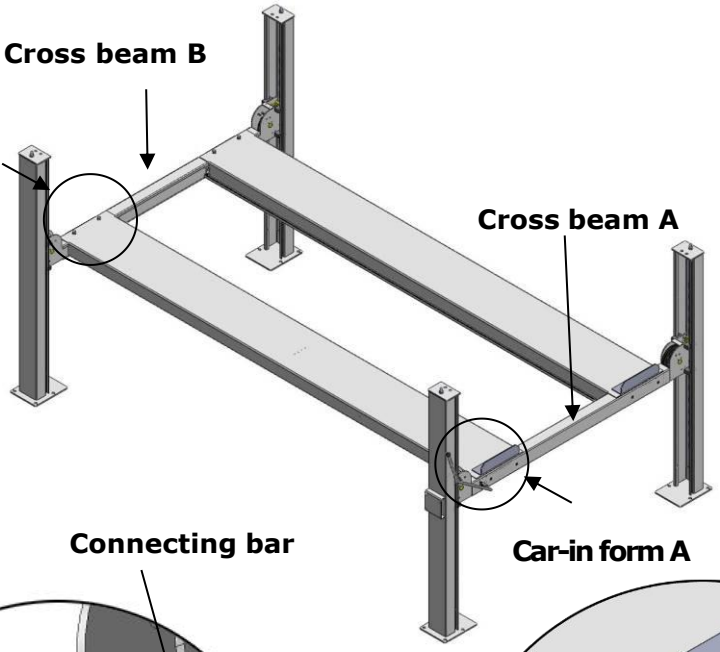
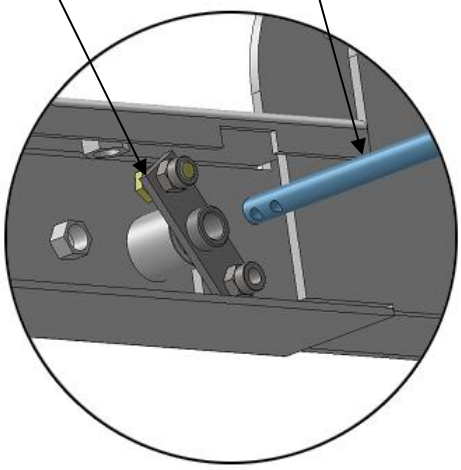
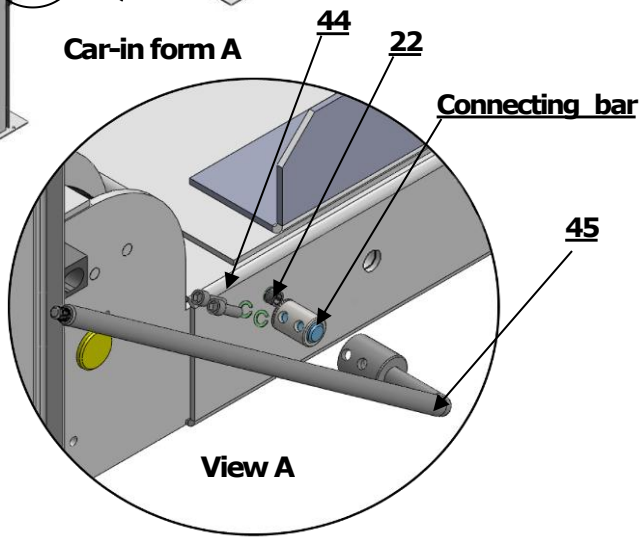


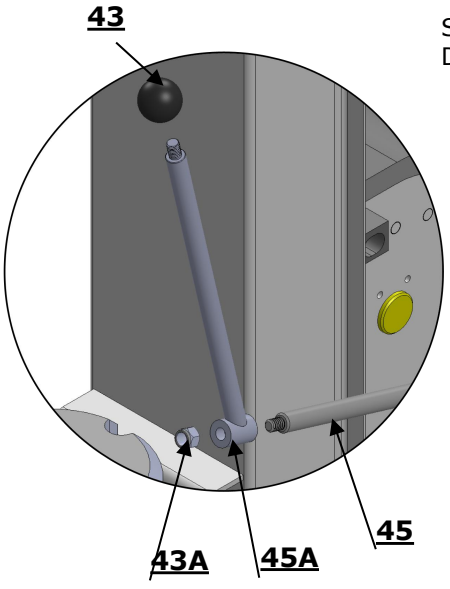
Fig. 23



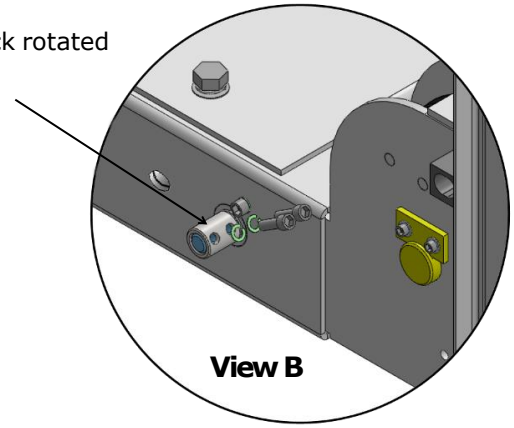
Pass the connecting bar through middle of the rotational safety device of cross beam **A/B**



Rotate and adjust the connecting bar, aligning the connecting holes in the rotational safety device and release handle on cross beam **A**, then tighten with socket bolts (M8*35) and lock washers.



Install extend lock release handle and plastic ball

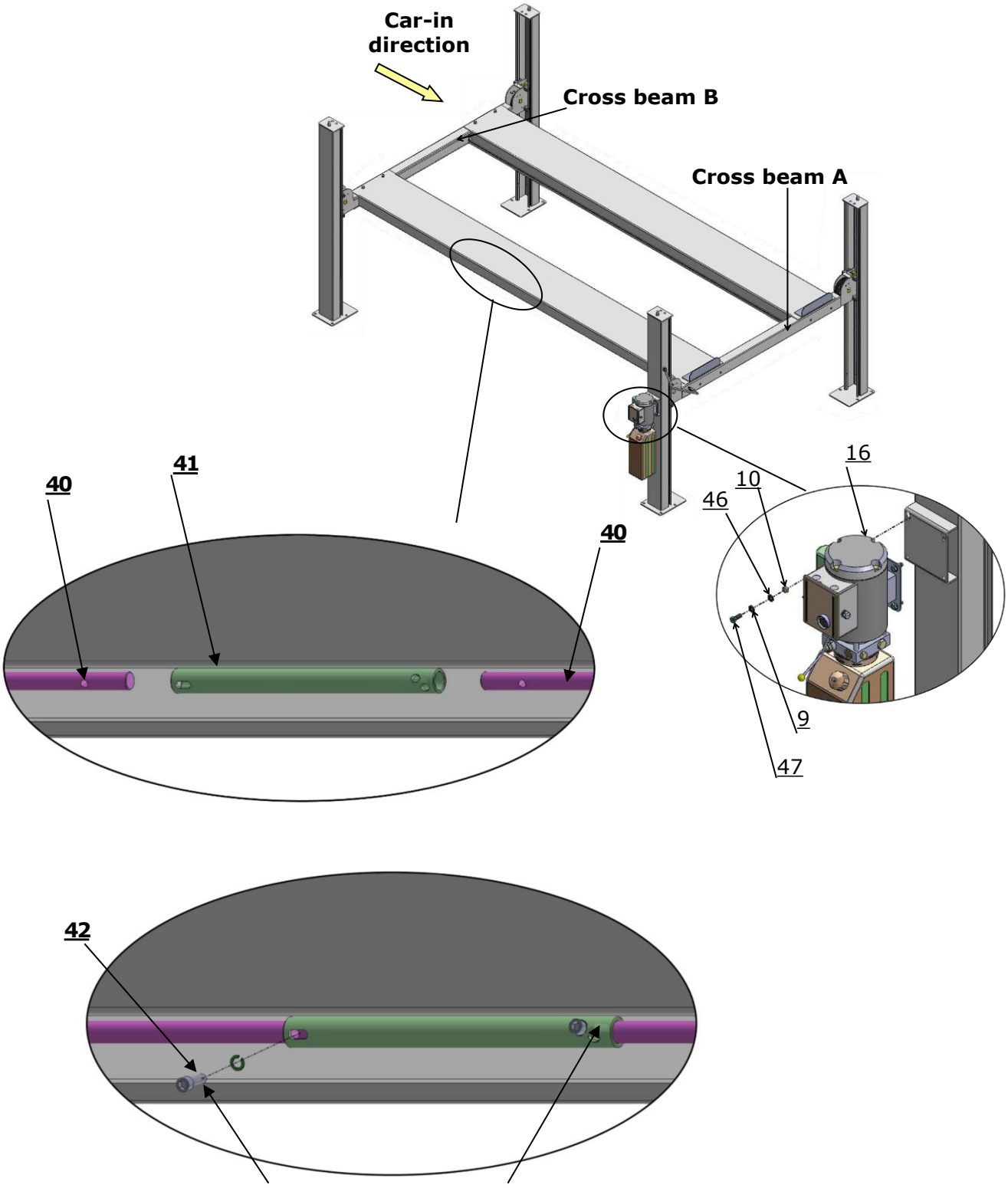


Rotate and adjust another connecting bar, then aligning the holes in the rotational safety device of cross beam **B**, then tighten with socket bolts (M8*35) and lock washers.

J. Install power unit, articulated casing tube

Note: Power unit must be installed the same side as the safety release handle.

1. Install Power unit on the cross beam **A**, the installation of Connection tube is as **Fig.24**



Install socket bolt (M8*25) with lock washer to these two holes. (Connect the connecting bar and articulated casing tube)

Fig. 24

2. Diagram of installation for articulated casing tube when power unit on the cross beam B. (See Fig.25)

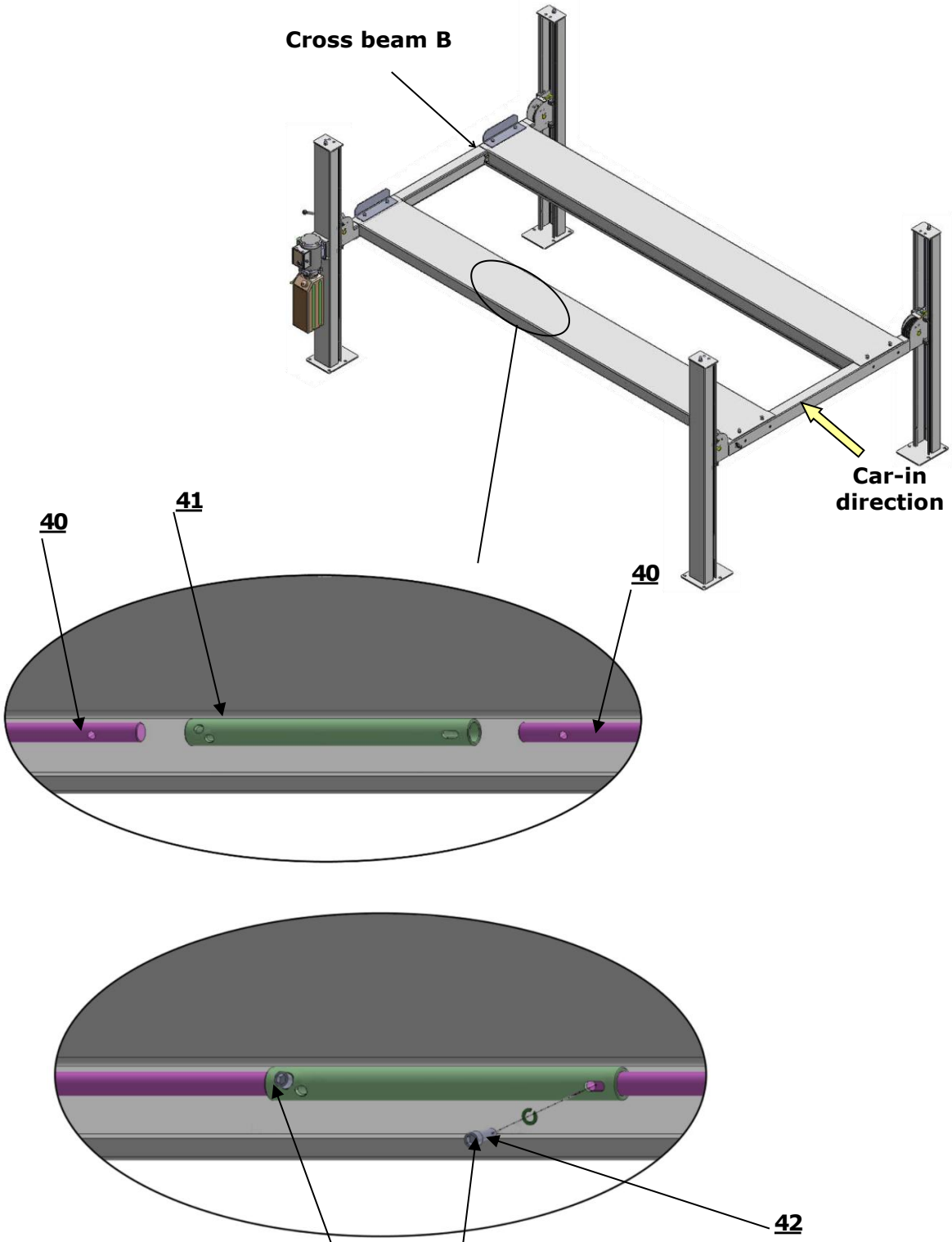


Fig. 25

K. Install Hydraulic System

1. For power unit install to the column at the side of cross beam **A (See Fig. 26)**

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

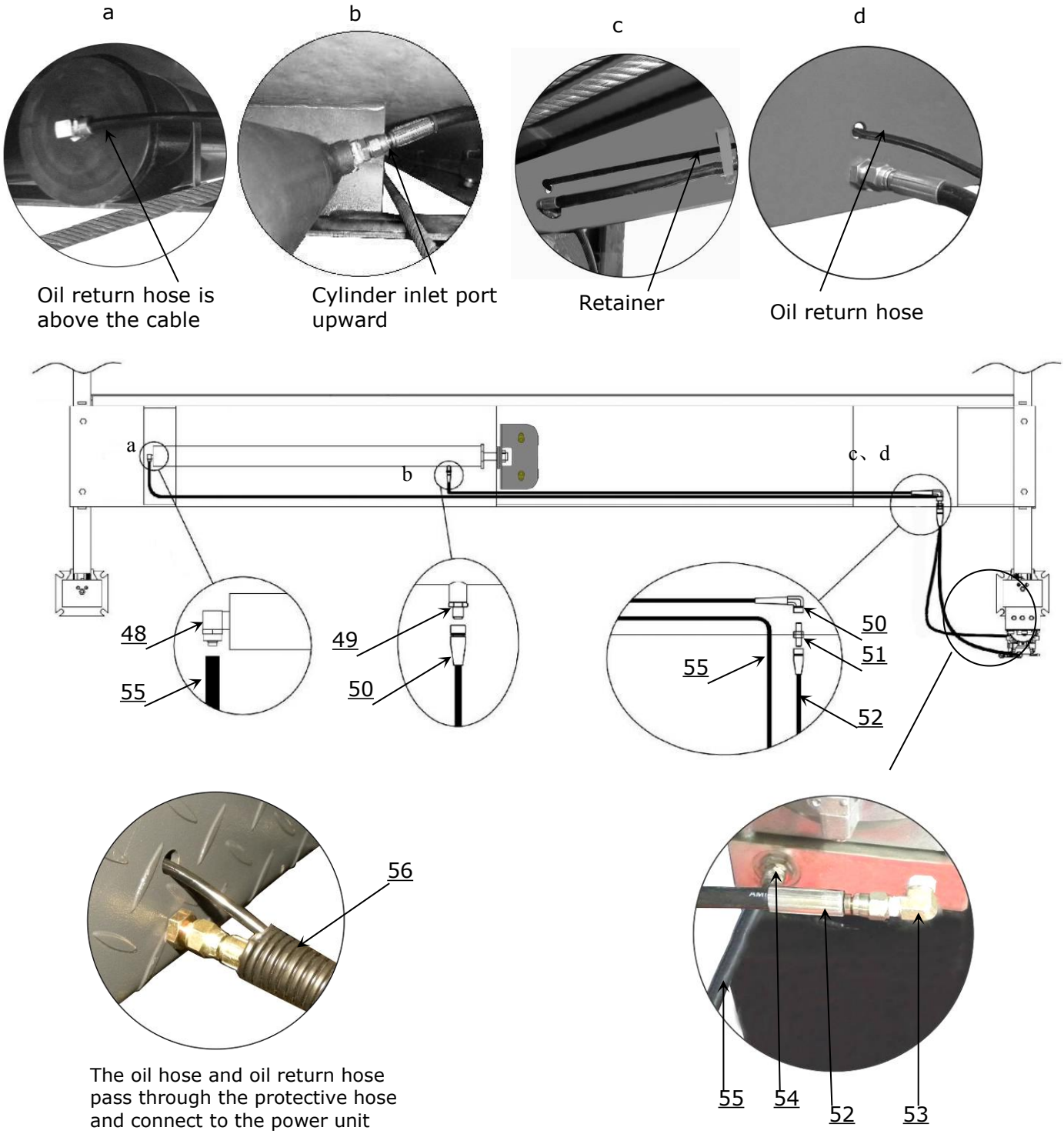


Fig. 26

2. For power unit install to the column at the side of cross beam **B (See Fig. 27)**.

Note: The length of oil return hose can be cut short as required.

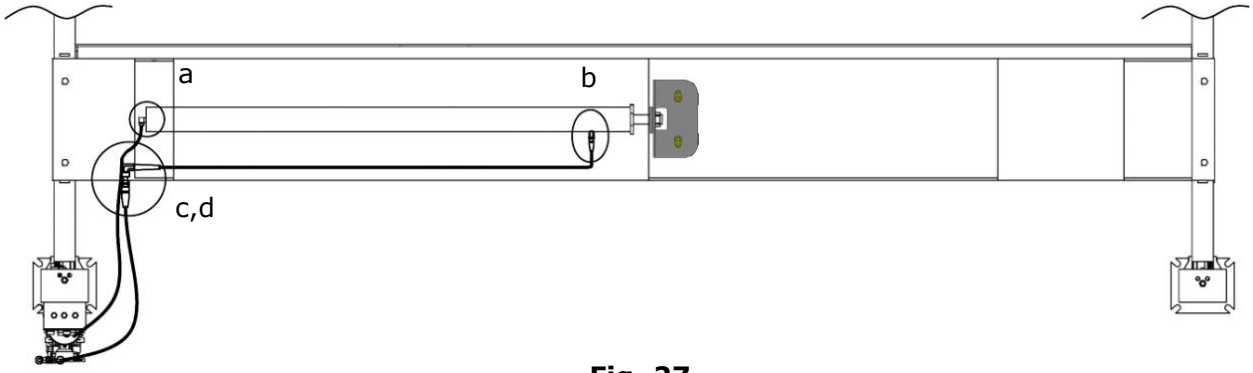


Fig. 27

L. Install Electrical System

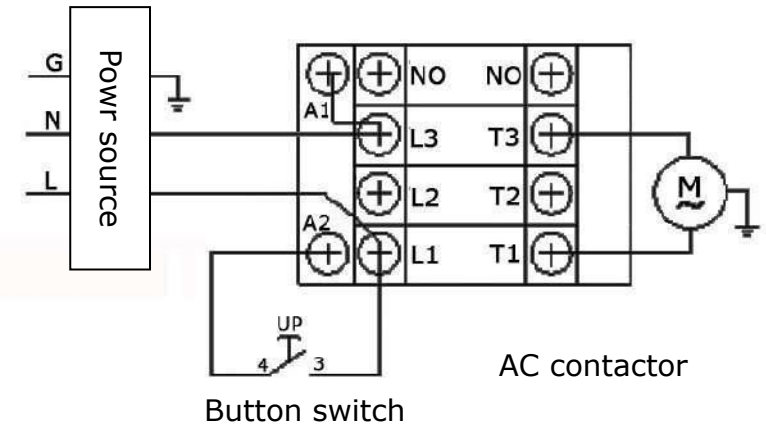
Connect the power source on the data plate of Motor.

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

1. Connecting the two power supply wire (fire wire **L** and zero wire **N**) to terminals of AC contactor marked **L1, L3** respectively.
2. Connecting the two motor wires to terminals of AC contactor marked **T1, T3**.
3. Connecting **A1** to **L3** of AC contactor.
4. Connecting the two wires of the button switch to the terminals of AC contactor marked **A2, L1.**



Button switch

AC contactor

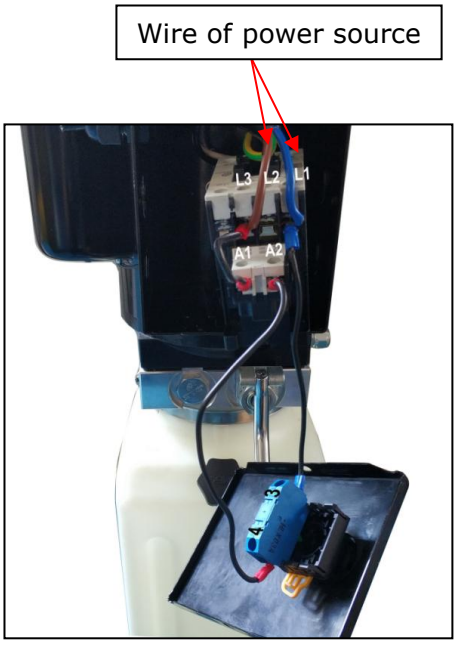


Fig. 28

M. Install spring and safety cover of cross beam (See Fig. 29).

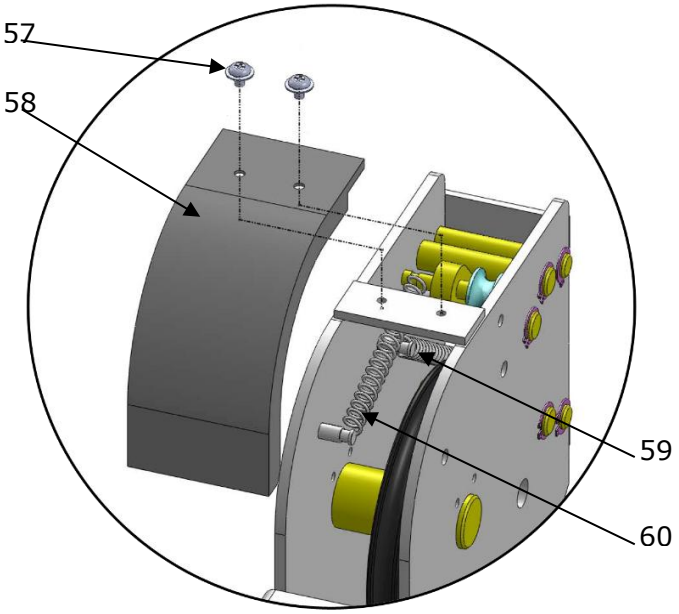


Fig.29

N. Install drive-in ramp, jack tray and plastic oil tray (See Fig. 30).

According to the below diagram screw up the bolts (M16*30), then install the drive-in ramp.

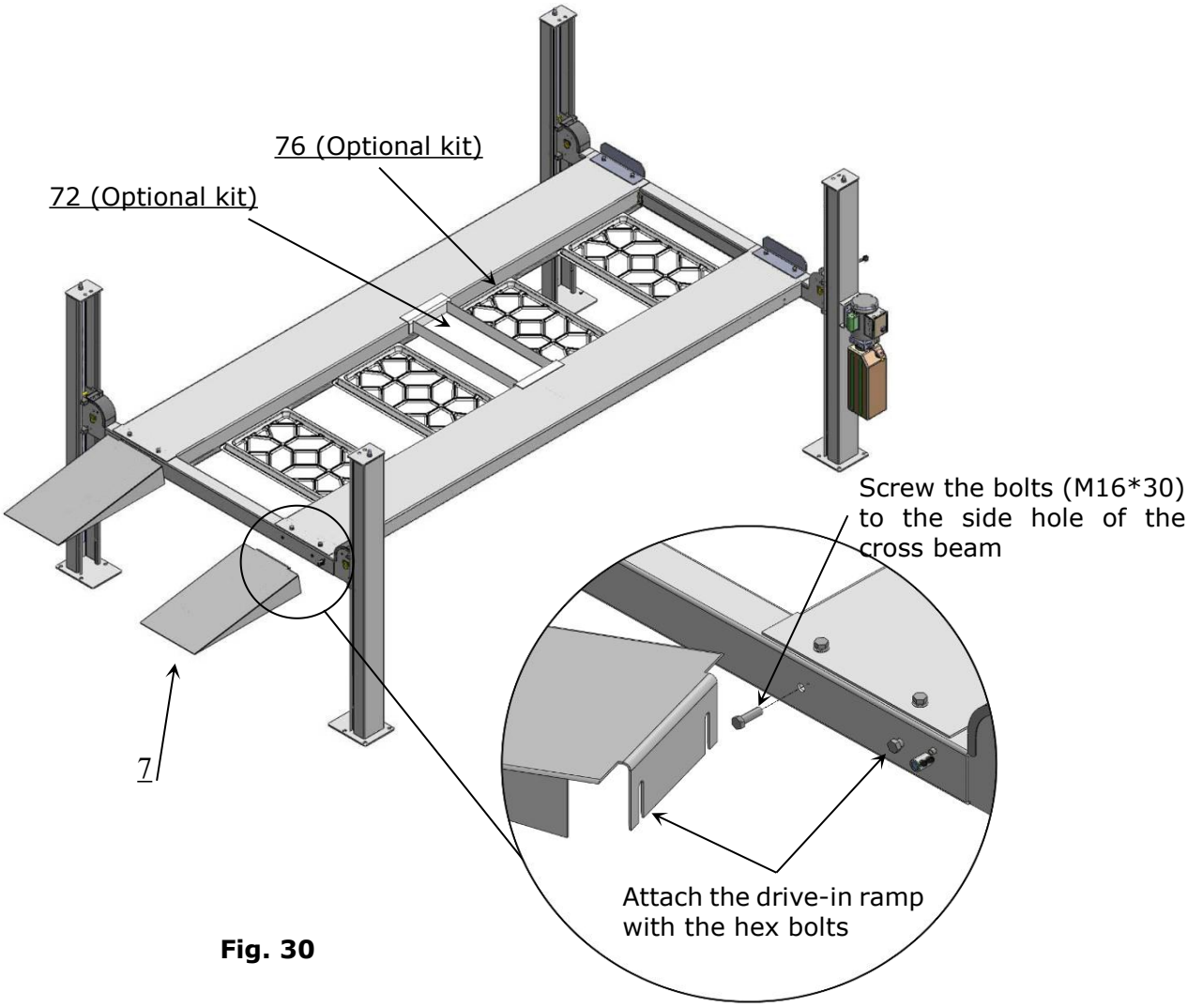


Fig. 30

O. Install Rear wheel stop plates (See Fig. 31)

After the vehicle is on the lift, take off the drive-in ramp, replace with rear wheel stop plates.

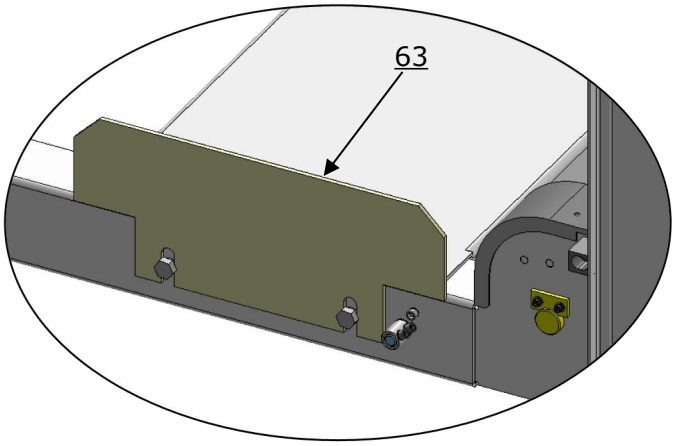


Fig. 31

P. Installation of optional kits.

1. Install caster kits or Rolling jack (See Fig. 32)

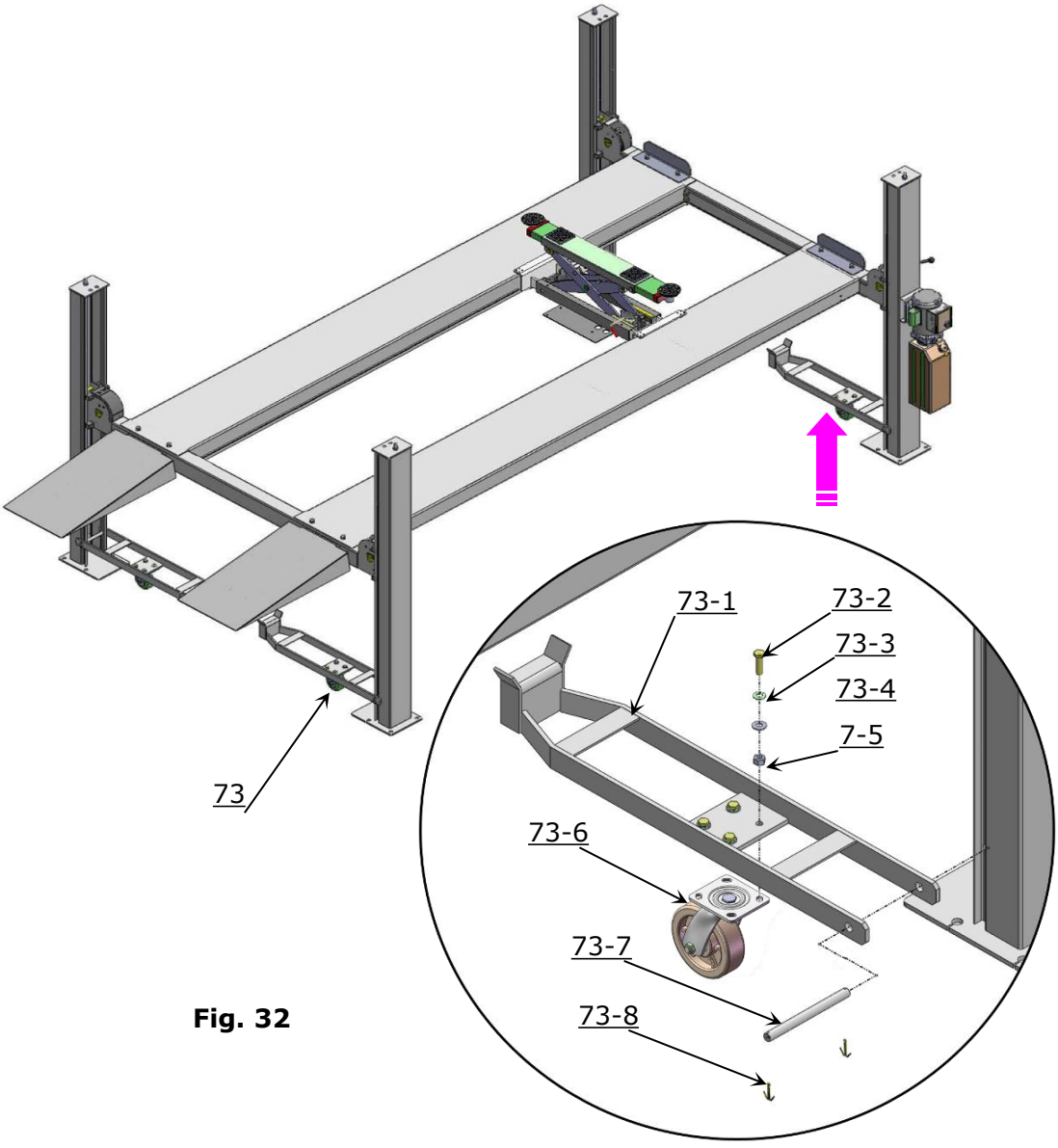
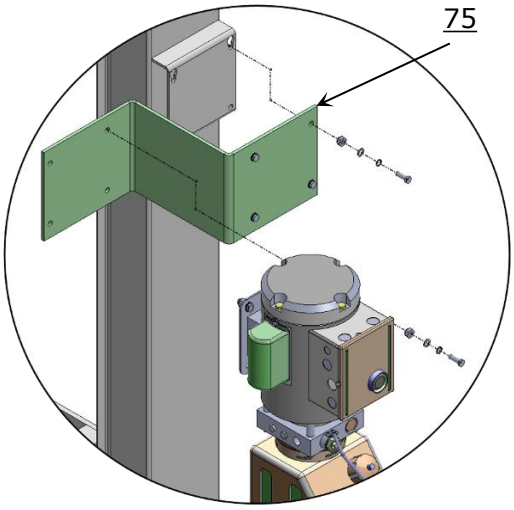


Fig. 32

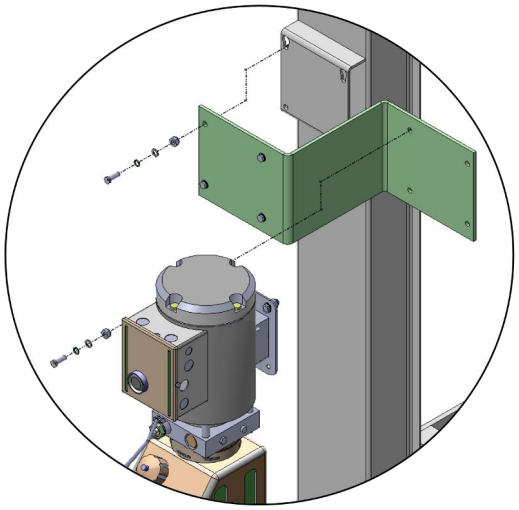
Item	Part#	Description	QTY.
73-1	11410042A	Support bracket	4
73-2	10209125	Hex bolt M10*30	16
73-3	10209039	φ10 Lock washer	16
73-4	10209022	φ10 Washer	16
73-5	10209021	Hex nut M10	16
73-6	10410035	Universal wheel(6'')	4
73-7	11410034	Connecting pin φ19*216	4
73-8	10209012	Hair Pin φ3.2	8

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



Motor fixing bracket on cross beam **A**

Fig. 33



Motor fixing bracket on cross beam **B**

Fig. 34

Q. Install the anchor bolts.

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

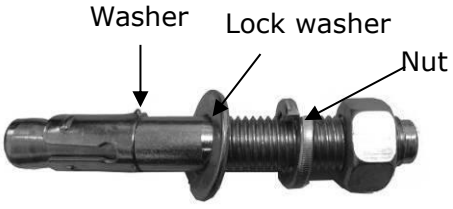


Fig. 35

2. Check the plumbness of columns with leveling instrument and adjusting with the shims. 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 3 1/2"(90mm).

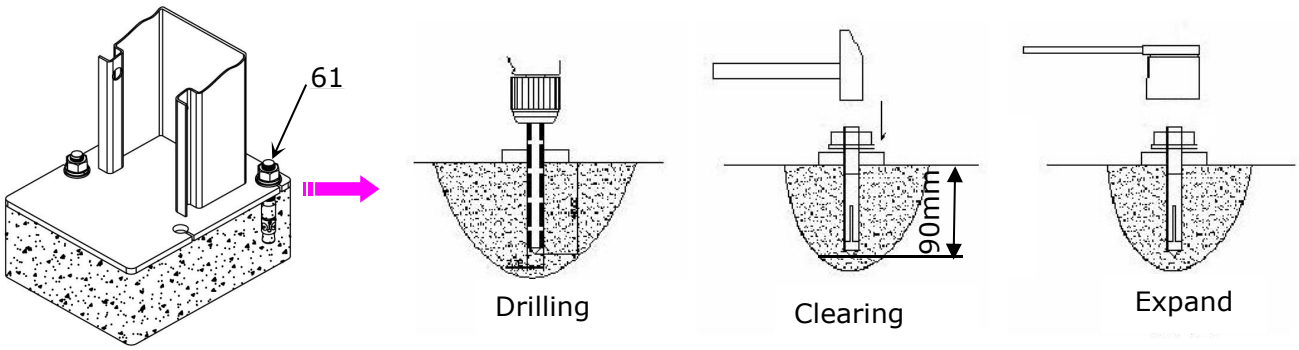


Fig. 36

IV. EXPLODED VIEW

Model 408-HP

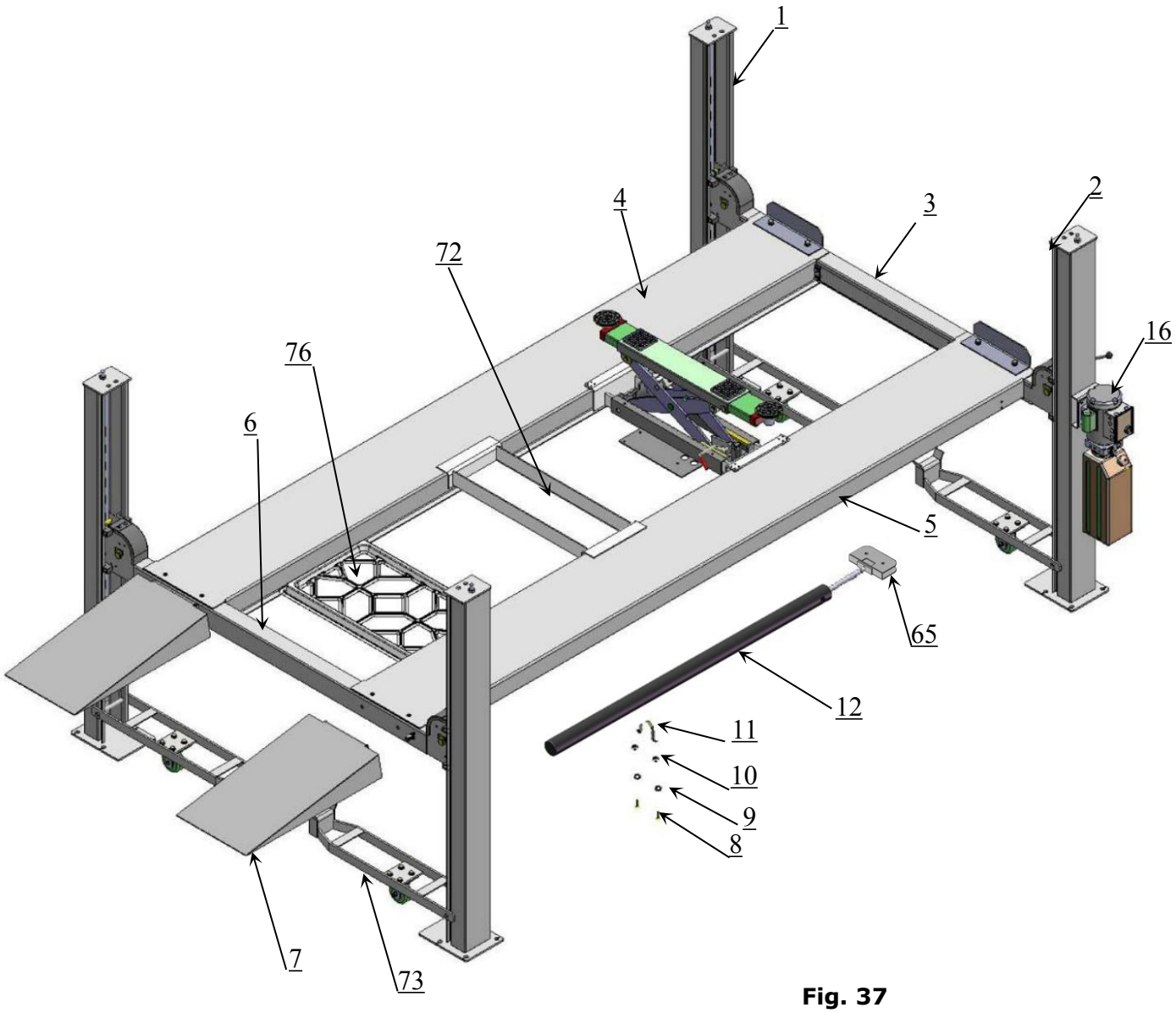


Fig. 37

EXPLODED VIEW of Power-side platform

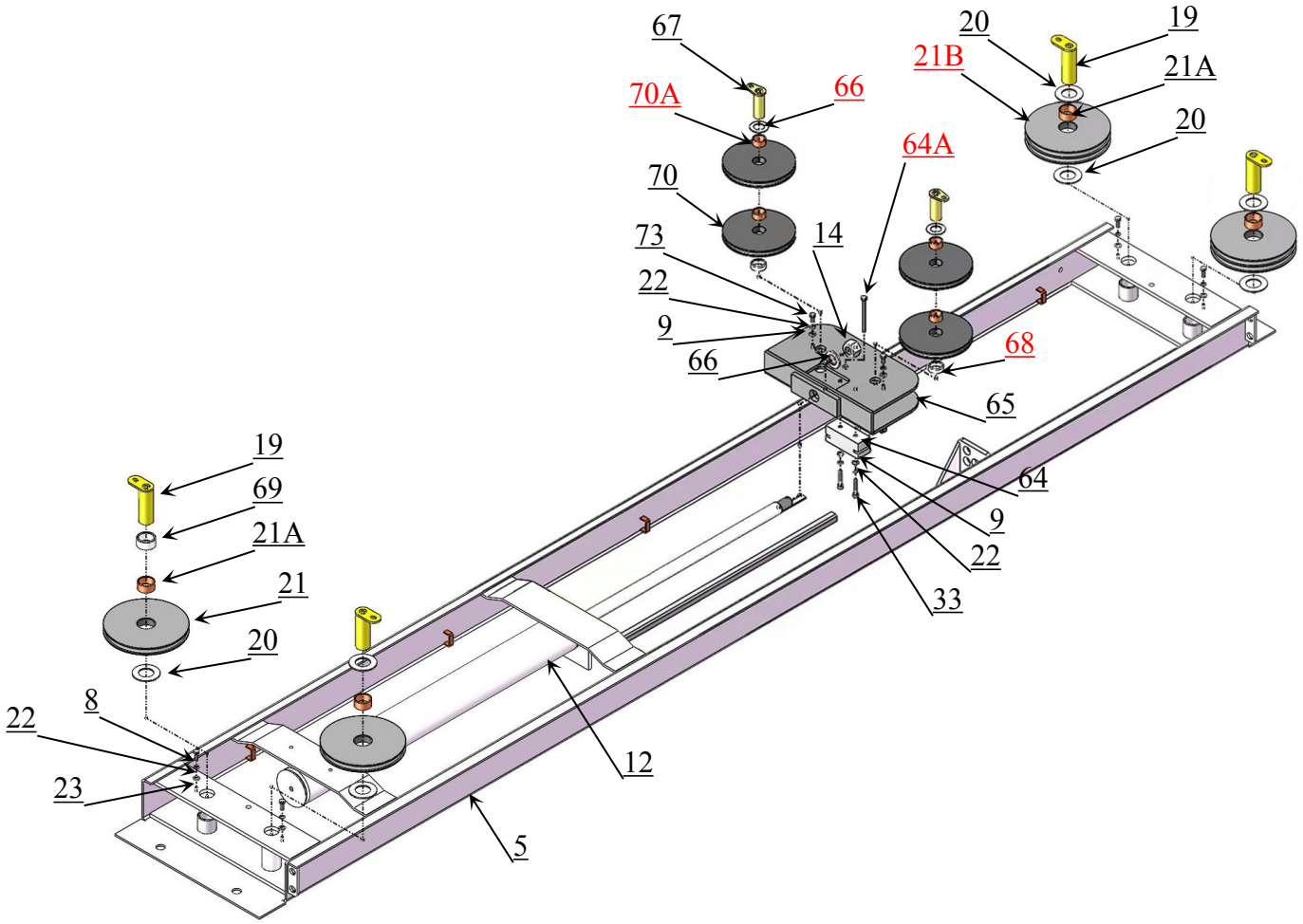


Fig. 38

PARTS LIST FOR MODEL 408-HP

Item	Part#	Description	408-HP	NOTE
1	11410074-01	Power-side Column	1	
2	11410075-01	Offside Column	3	
3	11410003-01	Cross Beam A	1	
4	11410004	Offside Platform	1	
5	1104533001A	Power-side Platform	1	
6	11410006-01	Cross Beam B	1	
7	11410007	Drive-in ramp	2	
8	10209043	Hex Bolt M8*20	6	
9	10209033	Washer φ8	32	
10	10209005	Self locking Nut	26	
11	11420012A	Cylinder fixed ring	1	
12	1004536000	Cylinder φ80*1041	1	
13	1104533013A-01	Piston rod connecting seat	1	
14	10410012	Hex Nut M24	1	
15	10201005	Split Pin φ4*50	1	
16	071103	Manual power unit	1	
17	10420175A	Hex nut M20	16	
18	11410073-01	Safety ladder L=2324	4	
19	1101533012A	Pulley pin φ35*96.5	4	
20	10420023A	Washer φ36*φ65*3	13	
21	11420024B	Pulley	6	
21A	10530042	Bush bronze φ41.3*φ35.1*28	6	
21B	1104533023	Dual-Slots Pulley φ190*30	2	
22	10209034	Lock washer φ8	16	
23	10420144	Washer φ8*φ25*3	4	
24	10410013	Hex Bolt M16*30	8	
25	10420137	Lock washer φ16	8	
26	10420029	Washer φ16	8	
27	10410014	Hex Bolt M16*35	4	
28	11410116-1	Tire stop plate	2	
29	10206006	Washer φ12	12	
30	10420026	Lock washer φ12	8	
31	10410105	Hex Bolt M12*20	8	
32	10410016A	Slide block 81*38*38mm	16	
33	10410017	Socket bolt M8*40	18	
34	10201090	Shim(2mm)	20	
	10620065	Shim(1mm)	20	
35	1004505003	Cable 1 9.52*5011mm	1	
36	1004505004	Cable 2 9.52*10789mm	1	
37	1004505002	Cable 3 9.52*6390mm	1	
38	1004505001	Cable 4 9.52*9400mm	1	
39	10650502	Socket Bolt M10*100	1	
40	11410023	Connecting bar φ19*2060mm	2	
41	11410024	Articulated casing tube	1	
42	10209032	Socket bolt M8*25	4	

Item	Part#	Description	408-HP	NOTE
43	10217005	Plastic ball M10	1	
43A	10209056	Self locking Nut M10	1	
44	10410025	Socket bolt M8*35	4	
45	11410026	Safety release handle	1	
45A	11410100	Extension release handle	1	
46	10209004	Rubber ring φ8*φ20*3	4	
47	10209003	Hex Bolt M8*25	8	
48	10420166	90^0 Fitting	1	
49	10420119	Straight Fitting for cylinder 1/4JIC(M)*3/8NPT(M)	1	
50	1004533005	Oil hose 1/4*2569mm	1	
51	10420120	Extended straight fitting with nut	1	
52	10207026	Oil hose 1/4*1520mm	1	
53	10209060	90^0 Fitting for power unit	1	
54	10420095	Straight fitting	1	
55	10410028	Oil return hose L=5500mm	1	
56	10410036	Protective hose φ20*1*1500mm	1	
57	10209145A	Cup head bolt with washer M6*12	8	
58	10410029	Plastic cover for cross beam	4	
59	10410146	Spring φ14*2.0*75	4	
60	10420033	Spring φ14*1.8*100	4	
61	10209059	Anchor bolt 3/4*5-1/2	16	
62	10410500A	Parts box	1	
63	11410094	Tyre stop plate	2	
64	1004533006	Slider 106*49*40	1	
64A	85090332	Socket bolt M10*70	1	
65	1104533013A-01	Piston rod connecting seat	1	
66	10481005	Wash Φ30	2	
67	1104533017A-01	Pulley pin φ25*77.5	2	
68	1104533024	Cushion tube φ40*23	2	
69	1104533020	Pulley adjustment sleeve φ45*5*23	1	
70	1104533011	Pulley φ167*16	4	
70A	1004542002	Bronze bush Φ36*Φ30.1*15	4	
71	10201002	Hex bolt M8*16	2	
Optional Parts				
72	11410040	Jack tray	1	
73	1040801	Caster kit	4	
74	96600002	Rolling Jack J5H	1	
75	1140802B	Motor fixing plate	1	
76	10410039	Oil tray	4	

4.1 CYLINDERS EXPLODED VIEW (1004536000)

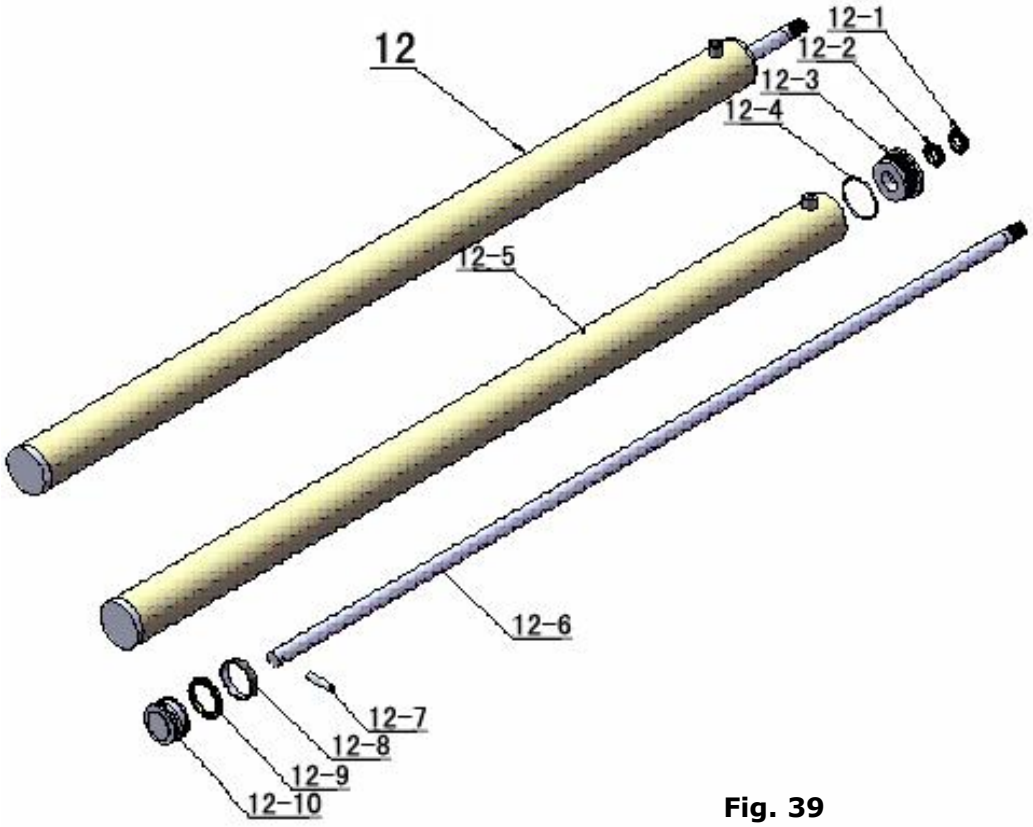


Fig. 39

Item	Part#	Description	408-HP	Note
12-1	10420059	Dust Ring	1	
12-2	10420060	Y- Ring	1	
12-3	11420061	Head Cap	1	
12-4	10420062	O- Ring	1	
12-5	1004536001A	Bore Weldment	1	
12-6	1104536002	Piston Rod	1	
12-7	11420065	Pin	1	
12-8	10420066	Support Ring	1	
12-9	10420067	Y- Ring	1	
12-10	11420068	Piston	1	

4.2 CROSS BEAM EXPLODED VIEW (10410003-01/10410006-01)

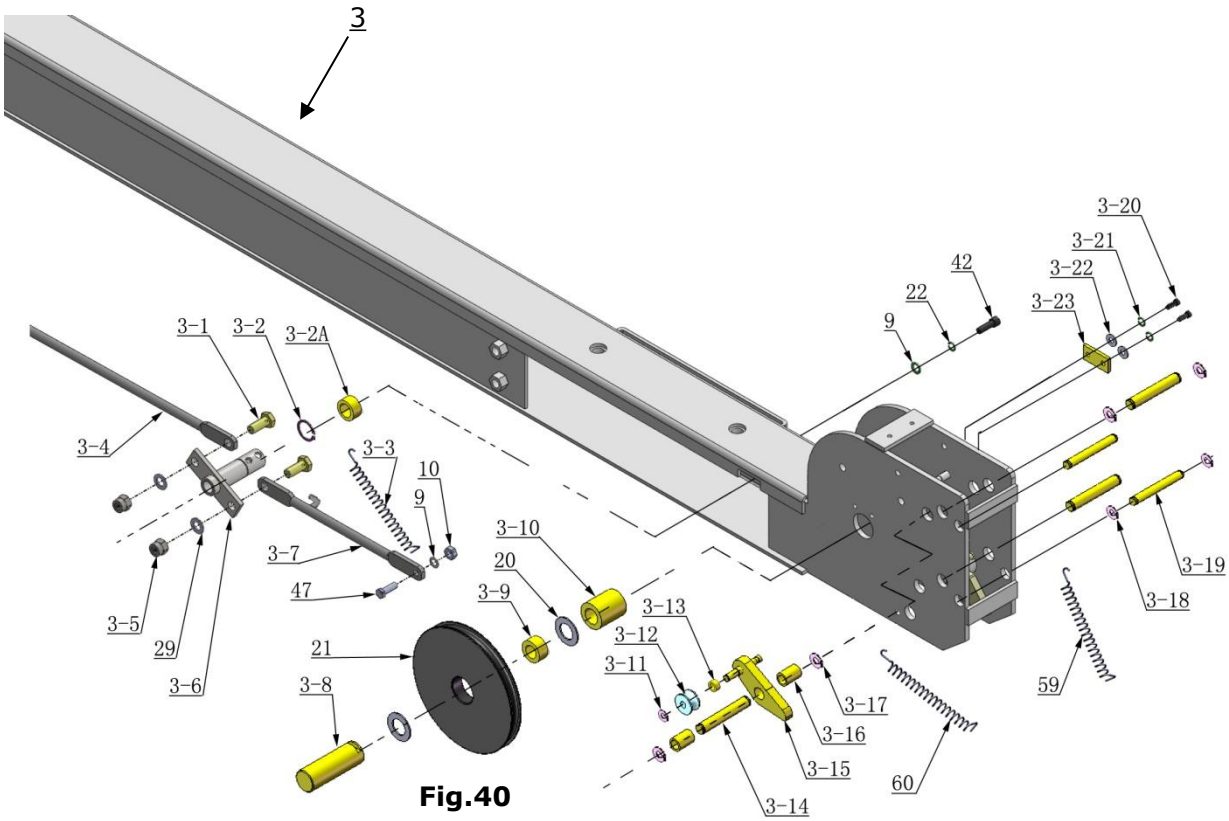


Fig.40

Item	Part#	Description	408-HP	Note
3-1	10206024	Hex bolt M12*25	4	
3-2	10206032	Snap ring φ25	2	
3-2A	10217020	Bronze bush φ31*φ25.1*16	2	
3-3	10410099	Spring φ14*φ2.5*100	2	
3-4	11410031	Connecting bar for safety lock	2	
3-5	10206023	Self locking Nut M12	4	
3-6	11410032-01	Rotational safety lock device	2	
3-7	11410033-01	Connecting bar for safety lock	2	
3-8	11420041A	Pulley Pin φ35*105	4	
3-9	10420132A	Pulley Bush φ41.3*φ35.1*20	10	
3-10	11420040A	Pulley pin sleeve φ42*3*48	4	
3-11	10209010	Snap ring φ10	4	
3-12	10420035	Tension pulley	4	
3-13	11420174	Spacer φ18*4*5.5	4	
3-14	11420171	Pin φ19*98	12	
3-15	11420175	Slack-cable safety lock (Left & Right)	2/ea.	
3-16	11420172	Pin Bush φ25*3*31	8	
3-17	10206019	Snap ring φ19	24	
3-18	10420037	Snap ring φ16	16	
3-19	11420038	Pin φ16*98	8	
3-20	10420138	Socket Bolt M6*16	8	
3-21	10209149	Lock washer φ6	8	
3-22	10420045	Washer φ6	8	
3-23	11420044	Limit block	4	

4.3 Power unit (071103) exploded view：

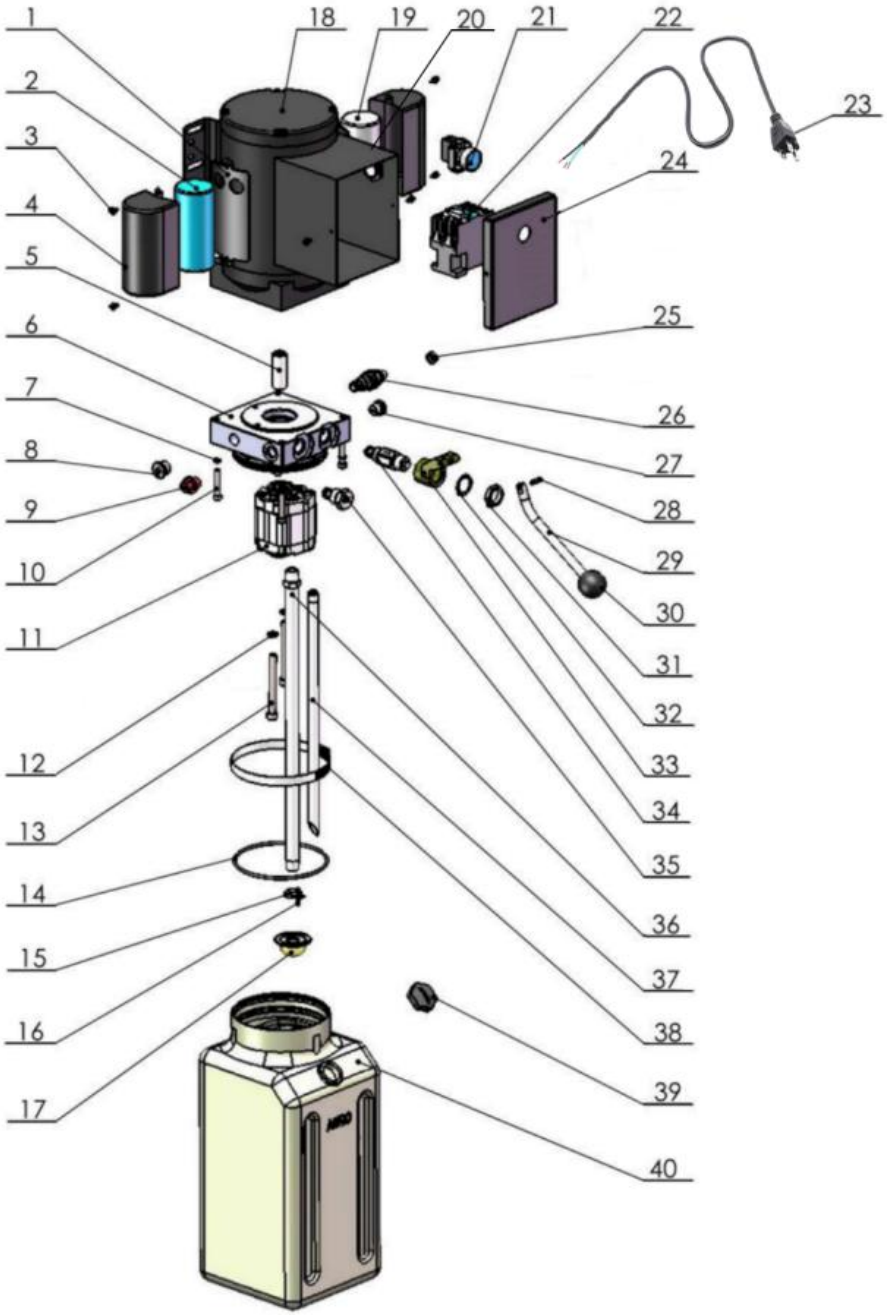


Fig.41

Parts list for 110V/60Hz, Single Phase

Item	Part No.	Description	Qty
1	81400180	Rubber Pad	2
2	80101034	Starting capacitor	1
3	10420148	Cup head bolt with washer	1
4	81400527	Protective cover for capacitor	6
5	81400363	Motor Connecting Shaft	1
6	80101013	Manifold block	1
7	10209149	Lock Washer	4
8	81400276	Iron plug	1
9	81400259	Red rubber plug	1
10	85090142	Socket bolt	4
11	81400312	Gear pump	1
12	10209034	Lock Washer	2
13	81400295	Socket bolt	2
14	81400365	O ring	1
15	10209152	Ties	1
16	85090167	Magnet	1
17	81400290	Filter	1
18	81400412	Steel Motor	1
19	80101035	Running capacitor	1
20	81400530	Motor terminal box	1
21	10420070	Switch button	1
22	81400559	AC contactor	1
23	80101039	America wire and plug	1
24	81400528	Motor terminal box cover	1
25	81400560	Throttle valve	1
26	81400266	Relief valve	1
27	81400284	Socket iron plug	1
28	81400452	Hair pin	1
29	81400451	Release valve handle	1
30	10209020	Plastic ball	1
31	81400421	Release valve nut	1
32	81400422	Shim	1
33	81400449	Valve Seat	1
34	81400567	Release Valve	1
35	80203001	Check Valve	1
36	81400375	Oil suction pipe	1
37	81400376	Oil return pipe	1
38	81400364	Clamp	1
39	81400263	Oil tank cap	1
40	81400275	Oil tank	1

Illustration of hydraulic valve for power unit

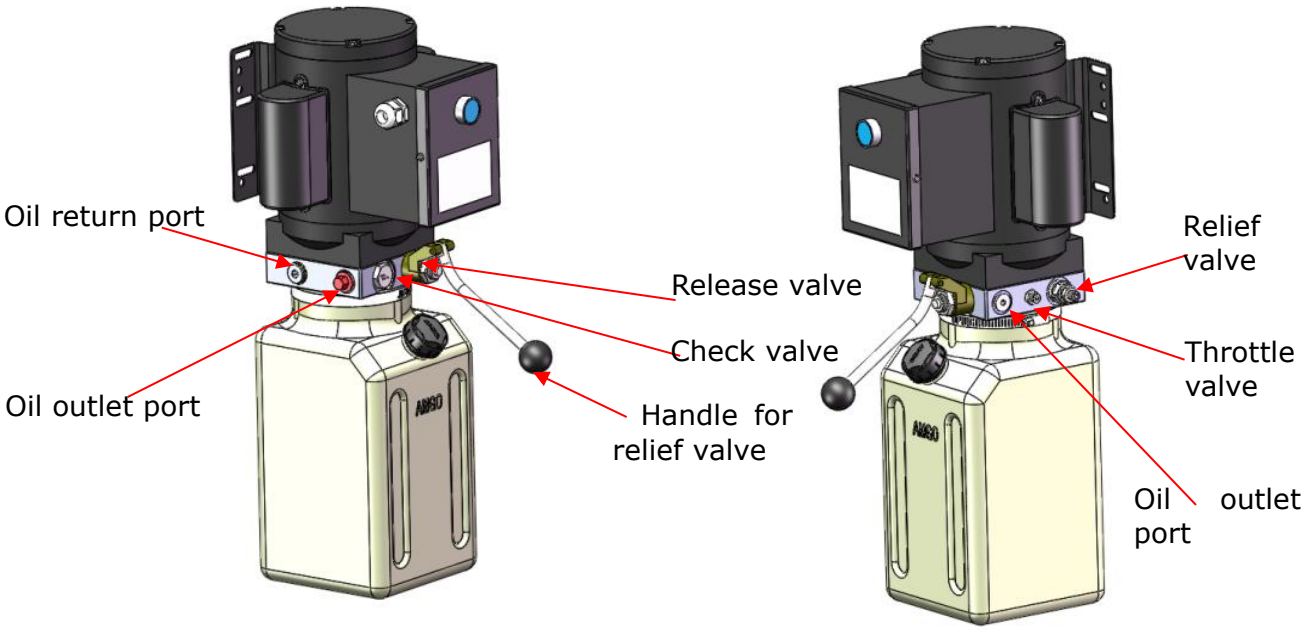


Fig.42

V. TEST RUN

1. Fill the reservoir with Hydraulic Oil about 6L (**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.

Circuit Diagram of Hydraulic System

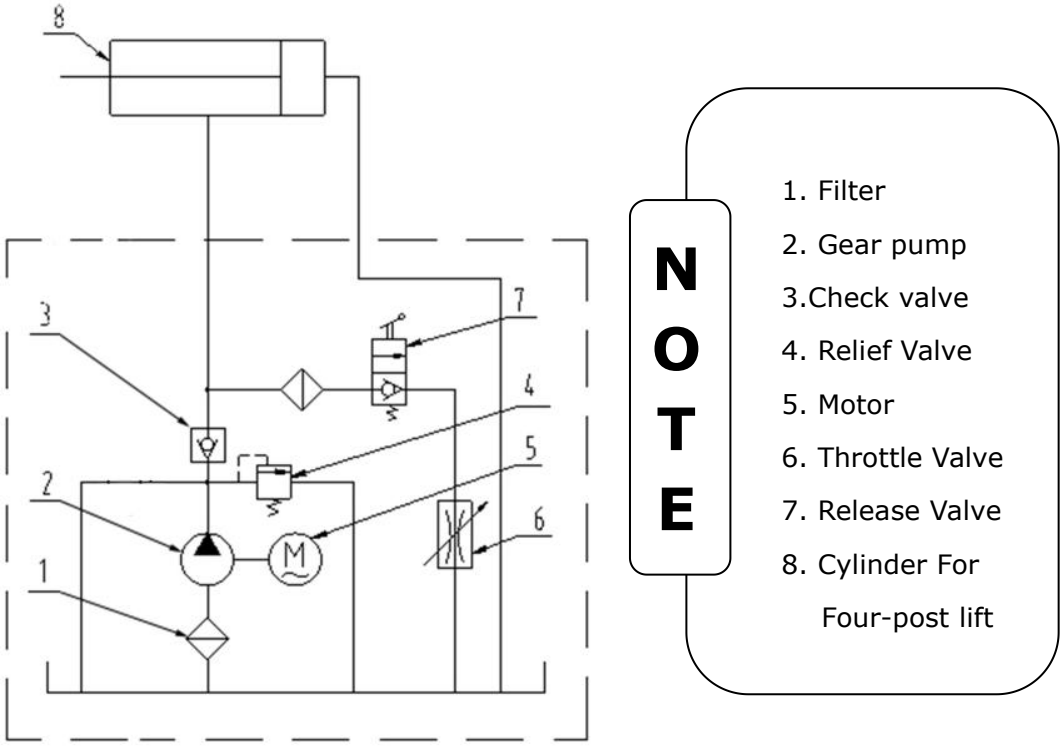


Fig.43

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. 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.

Oil cylinder maintenance:

In order to extend the service life of the oil cylinder, please operate according to the following requirements.

1. Recommend to use N46 anti-wear hydraulic oil.
2. The hydraulic oil of the lifts should be replaced regularly during using. Replace the hydraulic oil 3 months after the first installation, Replace the hydraulic oil once a year afterwards.
3. Make at least one full trip raising and lowering per day. For exhausting the air from the system, which could effectively avoid the corrosion of the cylinder and damage to the seals caused by presence of air or water in the system.
4. Protect the outer surface of the oil cylinder’s piston rod from bumping and scratching, and timely clean up the debris on the oil cylinder dust-ring and the piston rod.

VIII. TROUBLE SHOOTING

TROUBLE	CAUSE	REMEDY
Motor does not run	1. Start Button does not work 2.Wiring connections are not in good condition 3. Motor burned out 4. AC contactor burned out	1.Replace start 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. LIFT DISPOSAL:

When the car lift cannot meet the requirements for normal use and needs to be dispose d, it should follow local laws and regulations.

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