

STRATUS 2 Post Overhead Lift Installation & Operation & Maintenance Instructions

Model No.: SAE-C12X

2 Post Overhead Lift

Single (1) Point Manual Release

Lifting Capacity:12000LBS

Installation & Operation

Maintenance & Instructions

STRATUS[®]

auto equipment



Important Note

- 1.This equipment can not be installed, operated or repaired without reading instructions.
- 2.Electricity must be hooked up by certified electrician.
- 3.Do not use this equipment beyond its rated capacity.

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1.-Equipment Description

1.1-Description

This 2 Post Overhead Lift is an advanced car maintenance equipment, mainly used for automotive repair and maintenance.

1.2-Technical Specifications

Model	SAE-C12X
Lifting capacity	12000lbs;5500KG
Overall Hight	173 3/8";4403mm
Overall Width	155 1/8";3940mm
Lifting height	74 13/16";1900mm
Min. height	4 5/8";118mm
Column inside	129 15/16";3300mm
Drive through	115 11/16";2939mm
Lifting time	About 60 sec.
Lowering Time	About 40 sec.
Column thickness of steel	6.0mm
Carriage thickness of steel	6.0mm
Arms thickness of steel	7.75mm
Arm range	35 1/16"-70 7/8";890-1800mm;
Diameter of cable	Ø9mm
Voltage	220V
Power	3.0Kw/4Hp
Frequency	60Hz
Phase	1Ph
Breaker	30A
Hydraulic oil	3-5 Gallons AW46/AW32
Shipping Size	118"×44"×28";2997×1118×712mm
Equipment weight	2360lbs/1071KG

Installation(See Fig 1)

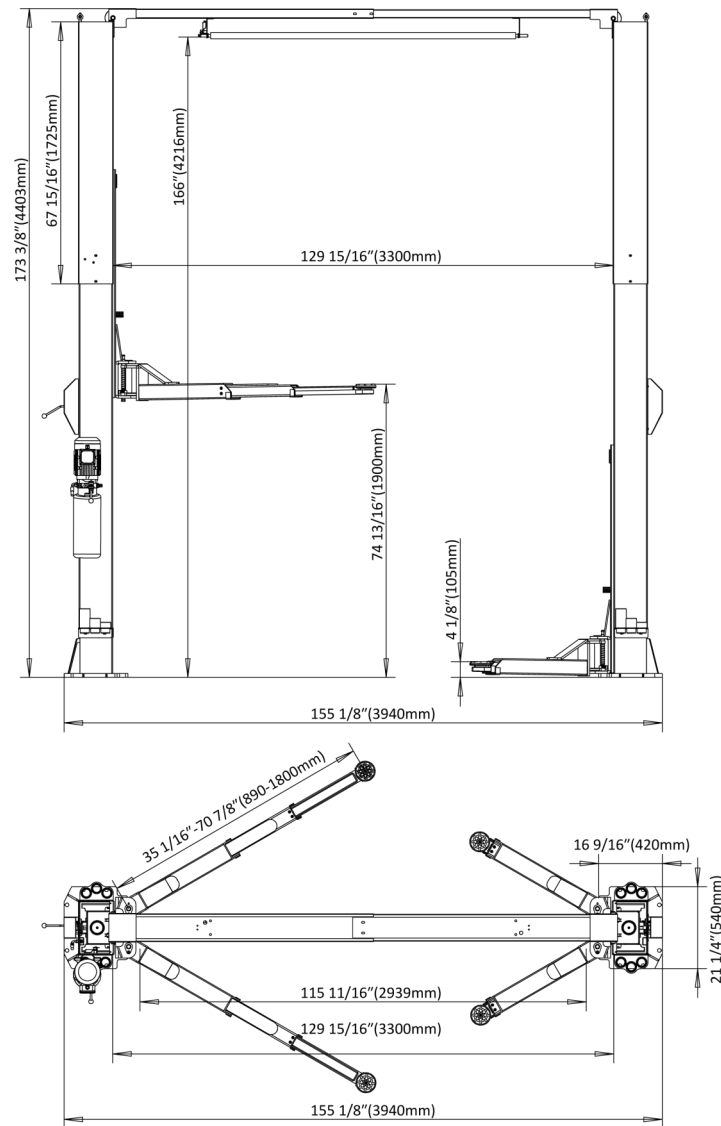


FIG 1

Features (See Fig 2)

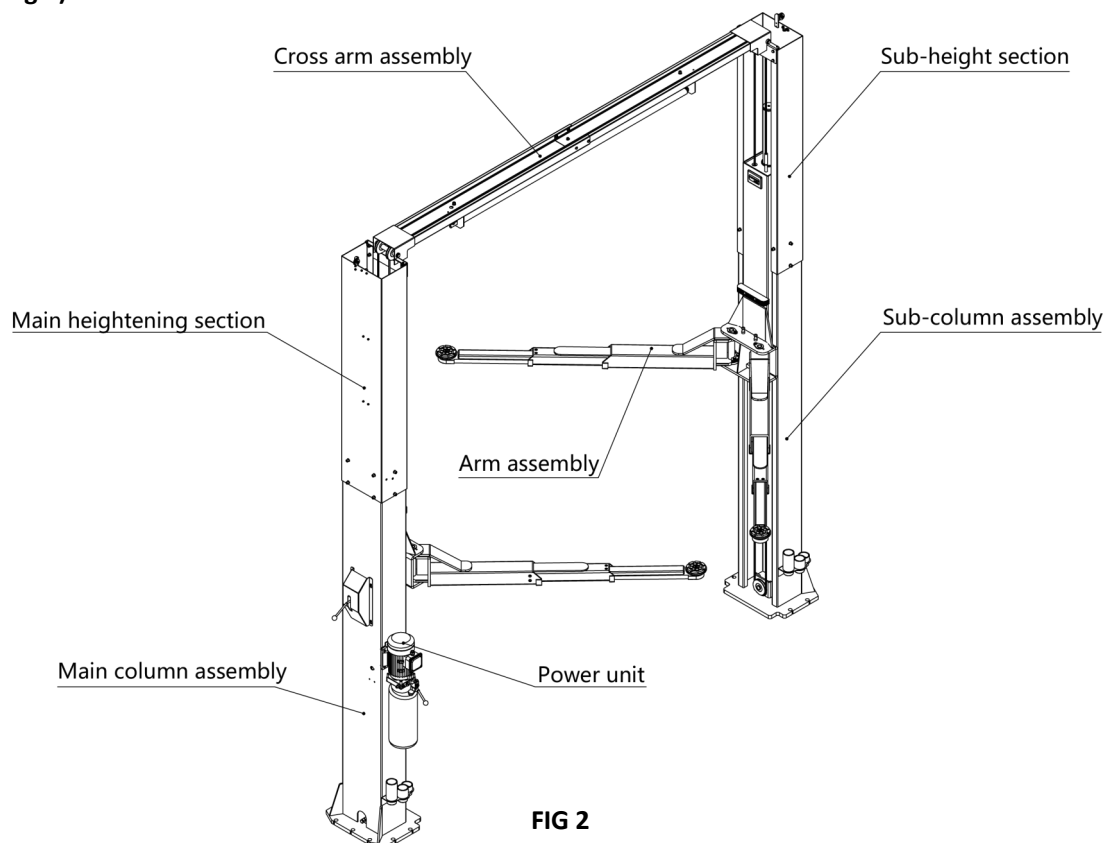


FIG 2

1.3-Installation requirement

Tools required

Name	Picture
Rotary hammer drill (Φ19)	
carpenter's chalk	
Hammer	
Screw Sets	
Level bar	
Tap measure	
English spanner(12")	
Pliers	
Ratchet spanner with socket(28#)	
Socket head wrench(3#,5#,8#)	
Lock wrench	
Wrench set(10#,13#,14#,15#,17#,19,24#,27#,30#)	

2-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.

- ◇ Concrete must be thickness 200mm minimum and without reinforcing steel bars, and must be completely dry before lift installation.
- ◇ Concrete must be in good condition and must be of test strength 3500psi(245kg/cm²) minimum.
- ◇ Floor must be level with no cracks or holes.

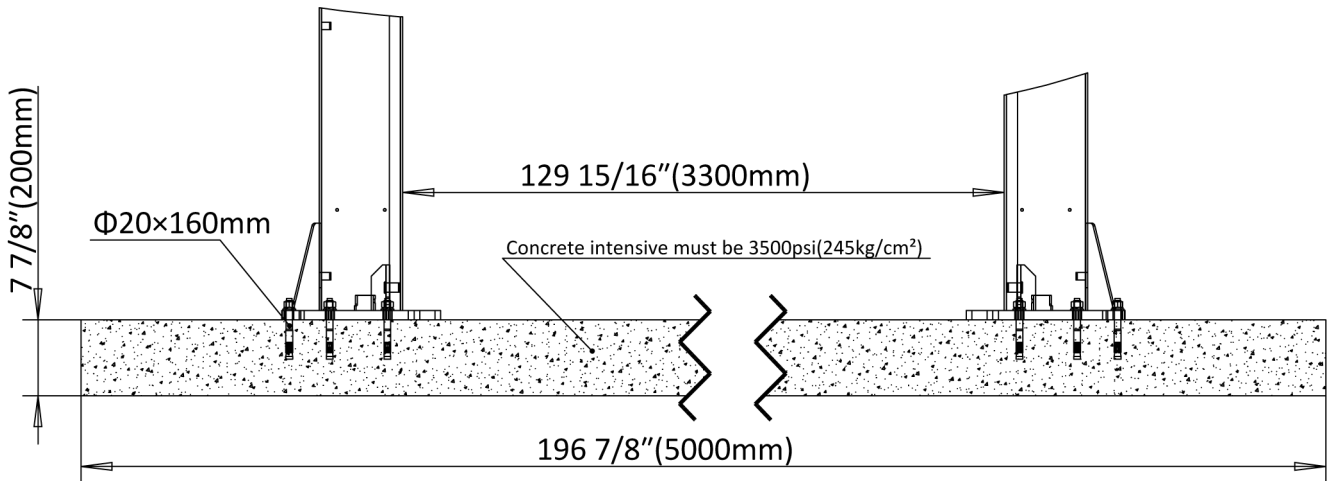


FIG 3

Steps of installation

- ◇ Location of installation

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

- ◇ Use a carpenter's chalk line to establish installation layout of baseplate(See Fig4).

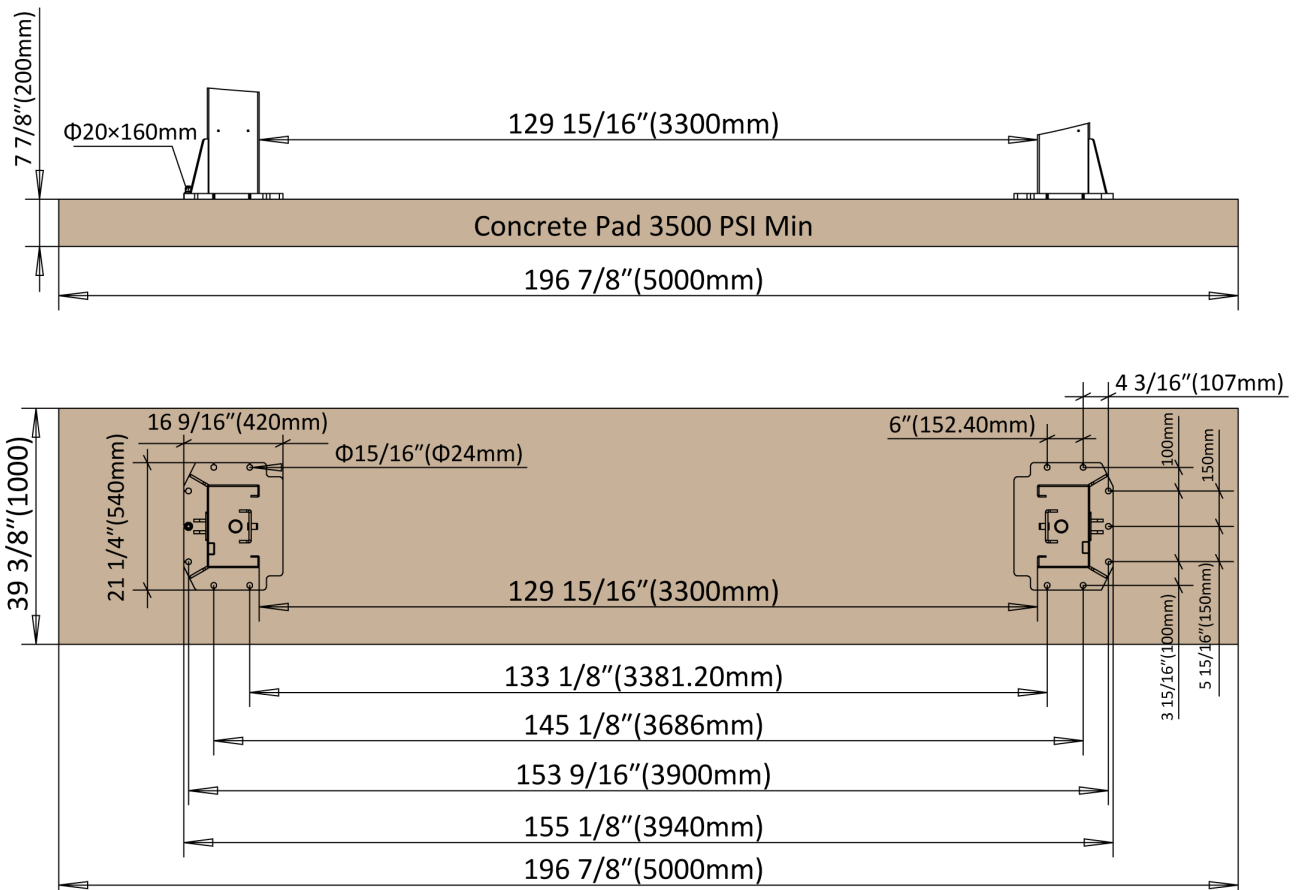


FIG 4

3-Installation steps

Step 1:Check the parts before assembly

Packaged lift and hydraulic power unit(See Fig 5)

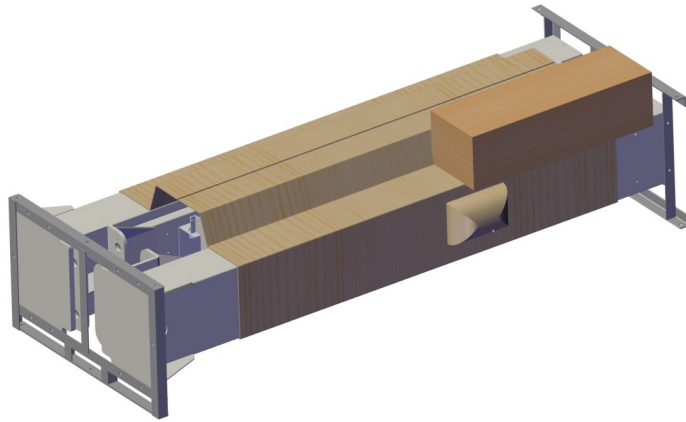


FIG 5

Step 2:Move aside the parts and check the parts according to the shipment parts list (See Fig 6).

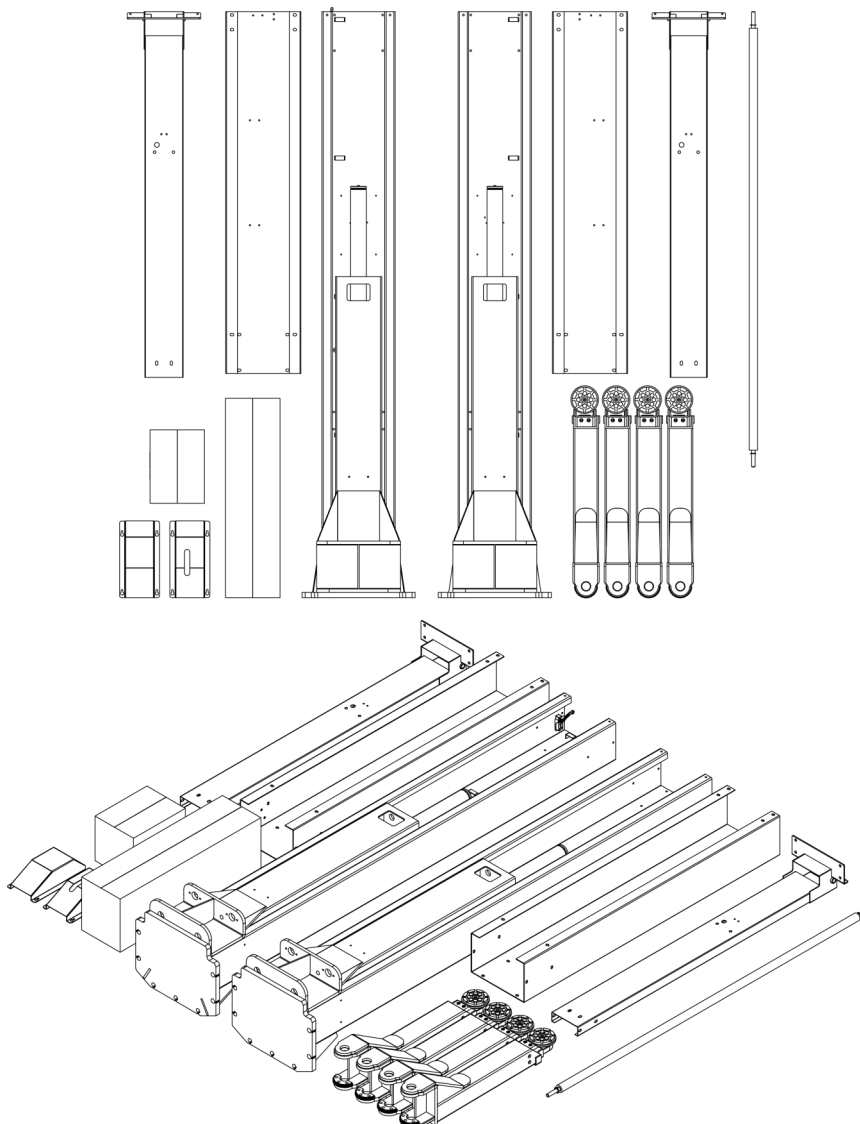


FIG 6

Step 3: Spare parts in the accessories box.

Serial number	Name	Photo	Parameter	Quantity
1	Arm shaft		$\Phi 40 \times 250L$	4
2	Arm shaft fixing screw		Countersunk Hexagon Screw $M10 \times 15L$	4
3	Arm bottom pad		$\Phi 70mm$	4
4	Increased set		$\Phi 60 \times 100L$	4
5	Heightening bracket			2
6	Heightening sleeve bracket fixing screw		Hexagon socket screws $M8 \times 10L$	2
7	Anti-collision tape			2
8	Anti-collision rubber strip fixing screws		Hexagon socket screws $M8 \times 30$	4
9	Power unit frame			1
10	Power unit frame fixing screws		Hexagon socket screws $M10 \times 16L$	Each 2
11	Power unit fixing screws		Hexagon Screw $M8 \times 25L$	Each 4
12	Manual unlocking lever		M10	Each 1
13	Safety lock release cable			1
14	Wire rope U-shaped chuck		M3	2
15	Expansion screw		$M20 \times 160L$	14

Serial number	Name	Photo	Parameter	Quantity
16	Plastic gasket			15
17	Plastic cable tie			30
18	Main column upper limit switch			1
19	Main column upper limit switch fixing screw		Phillips round head screws M5×10L	2
20	Upper limit plate and limit switch		M4×10 and M4×25	1
21	Upper limit board			1
22	Upper limit plate fixing screw		Hexagon Screw M10×20L	Each 4
23	Two cross arm connecting screws		Hexagon Screw M8×20L	Each 6
24	Two-section cross arm end fixing screws		Hexagon Screw M10×25L	Each 8
25	Heightening section and column connecting screw		Hexagon socket screws M10×12L	Each 16
26	Wire rope support frame at the upper end of the heightening section			2
27	Fixing screws for the upper wire rope support frame of the heightening section		Hexagon socket screws M5×10L	4
28	Plastic buckle cover fixing screw		Phillips round head screws M6×8L	8
29	Increased fuel-saving pipe pressure pocket			6
30	Increased the fuel-saving pipe pressure pocket fixing screw		Hexagon socket screws M6×10L	Each 12
31	Block rubber cover			2
32	Locking and unlocking rope seat assembly accessories			2
33	User's manual			1

Step 4: Install anchor bolts

Position the columns on the installation layout of baseplate. Install the anchor bolts. Check the columns plumbness with level bar, and adjusting with the shims if the columns are not vertical. Do not tighten the anchor bolts (See Fig 7).

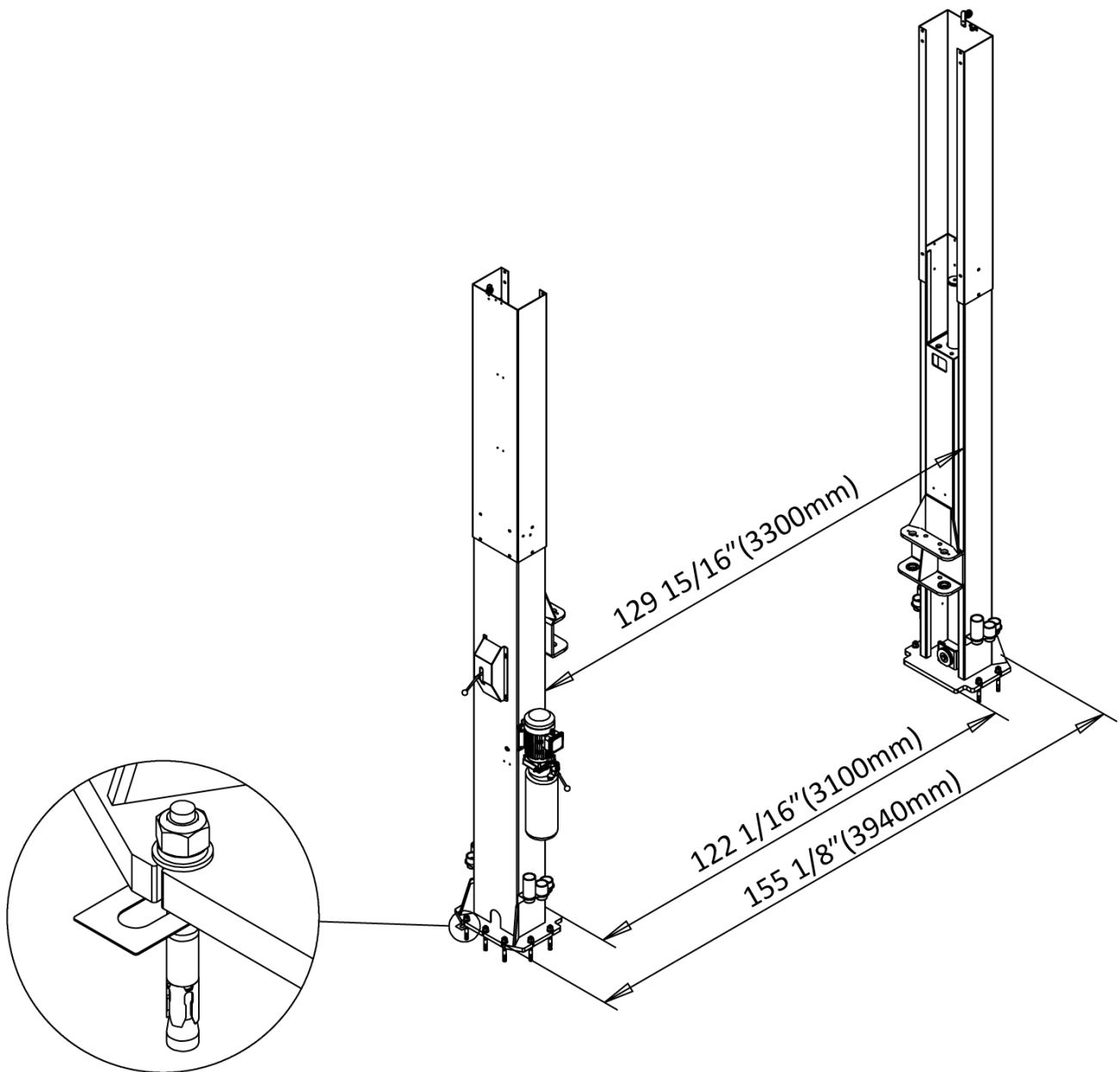


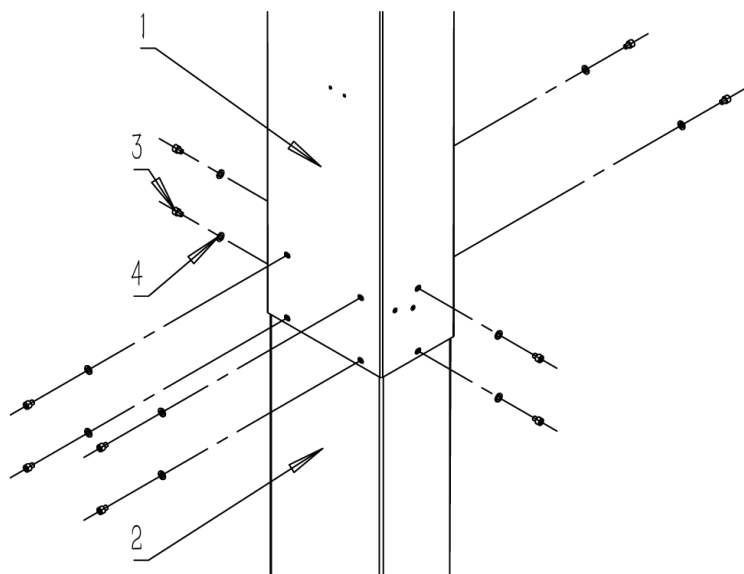
FIG 7

Note: Anchor bolts driven into the ground at least 150mm.(See Fig 8)



FIG 8

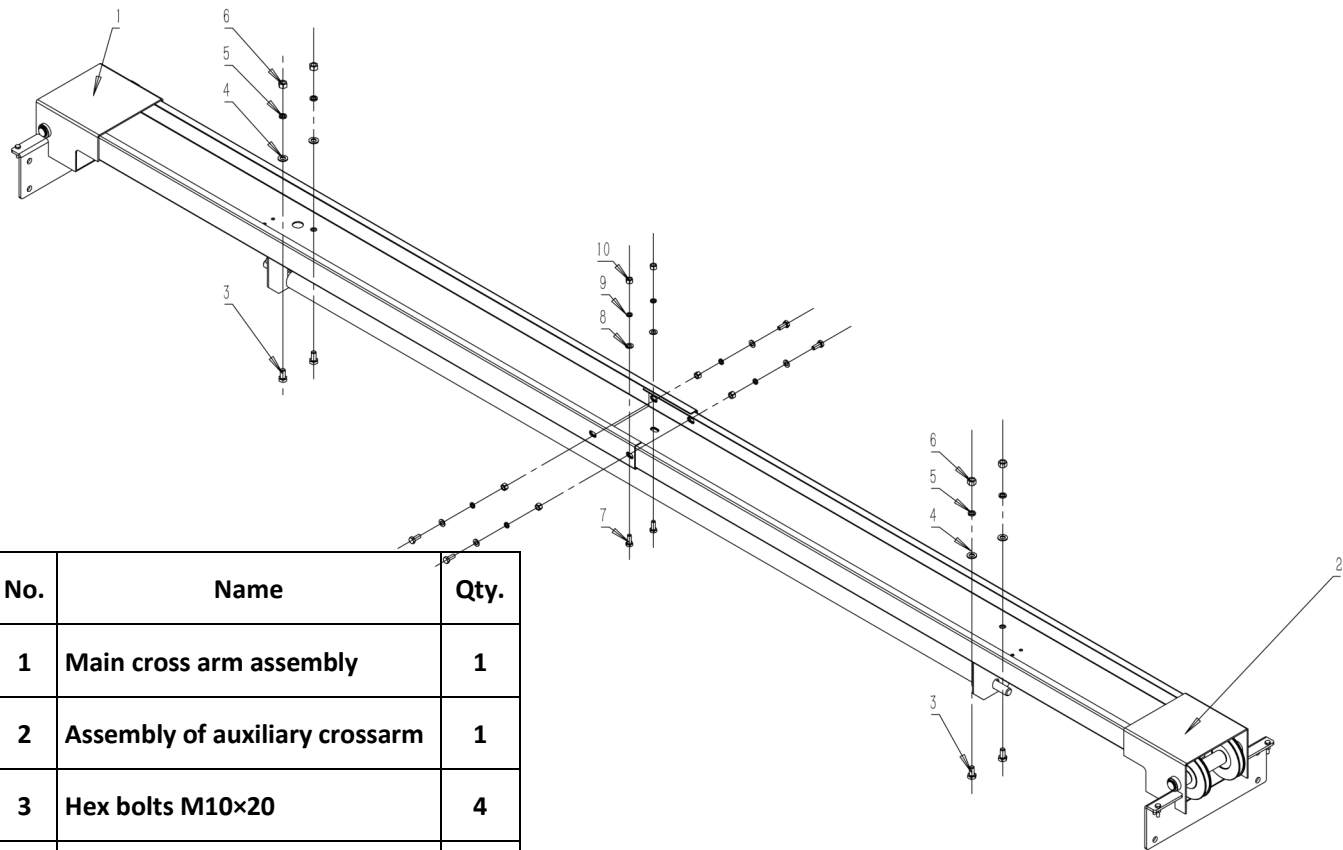
STEP 5:Column and height-increasing joint connection installation. (See Fig 9)



NO.	Name	Qty.
1	Main column heightening section	1
2	Main column welding	1
3	Socket head cap screws M10×12	10
4	Flat pad	10

FIG 9

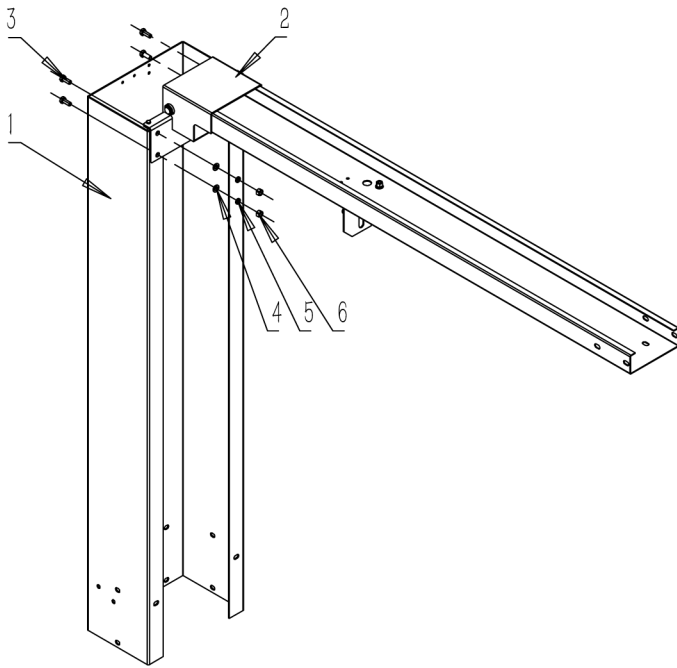
Step 6:Cross arm installation (See Fig 10)



No.	Name	Qty.
1	Main cross arm assembly	1
2	Assembly of auxiliary crossarm	1
3	Hex bolts M10×20	4
4	Flat pad Φ10	4
5	Spring cushion Φ10	4
6	Hex nuts M10	4
7	Hex bolts M8×20	6
8	Flat pad Φ8	6
9	Spring cushion Φ8	6
10	Hex nuts M8	6

FIG 10

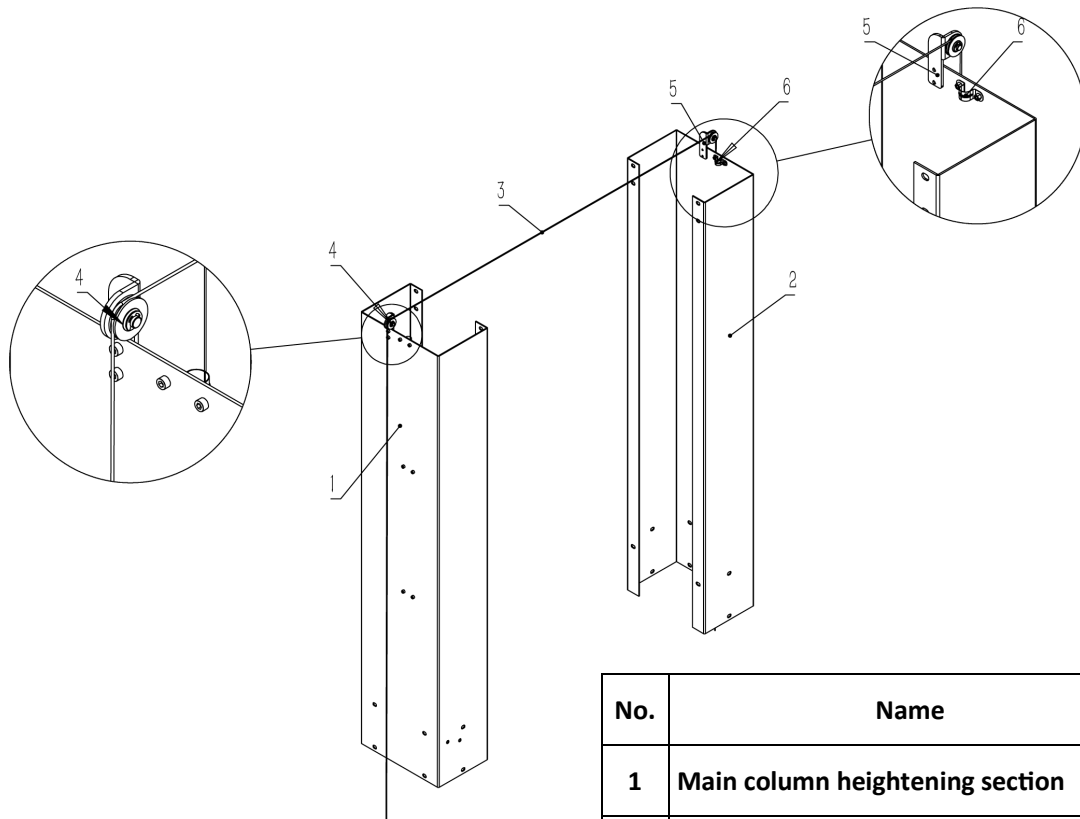
Step 7: Cross arm and height-increasing section connection installation (See Fig 11)



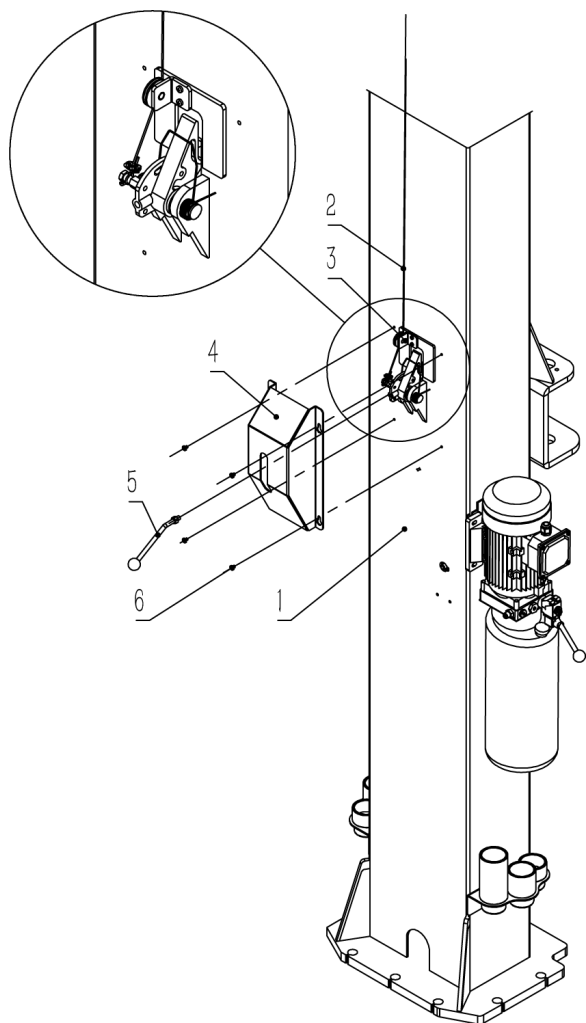
No.	Name	Qty.
1	Main column heightening section	1
2	Main cross arm assembly	1
3	Hex bolts M10×25	4
4	Flat pad Φ10	4
5	Spring cushion Φ10	4
6	Hex nuts	4

FIG 11

Step 8: Unlock wire rope installation (See Fig12)



No.	Name	Qty.
1	Main column heightening section	1
2	Secondary column heightening section	1
3	Unlock the thin wire rope	1
4	Unlock wire bracket 1	1
5	Unlock wire bracket 2	1
6	Tubing pressure pocket	6



No.	Name	Qty.
1	Main column assembly	1
2	Unlock the thin wire rope	1
3	Unlock the sheave seat	1
4	Safety lock cover (Opening)	1
5	Unlock lever	1
6	Phillips round head screw M6×10	4

No.	Name	Qty.
1	Sub-column assembly	1
2	Unlock the thin wire rope	1
3	Unlock the sheave seat	1
4	Safety lock cover	1
5	Phillips round head screws M6×10	4

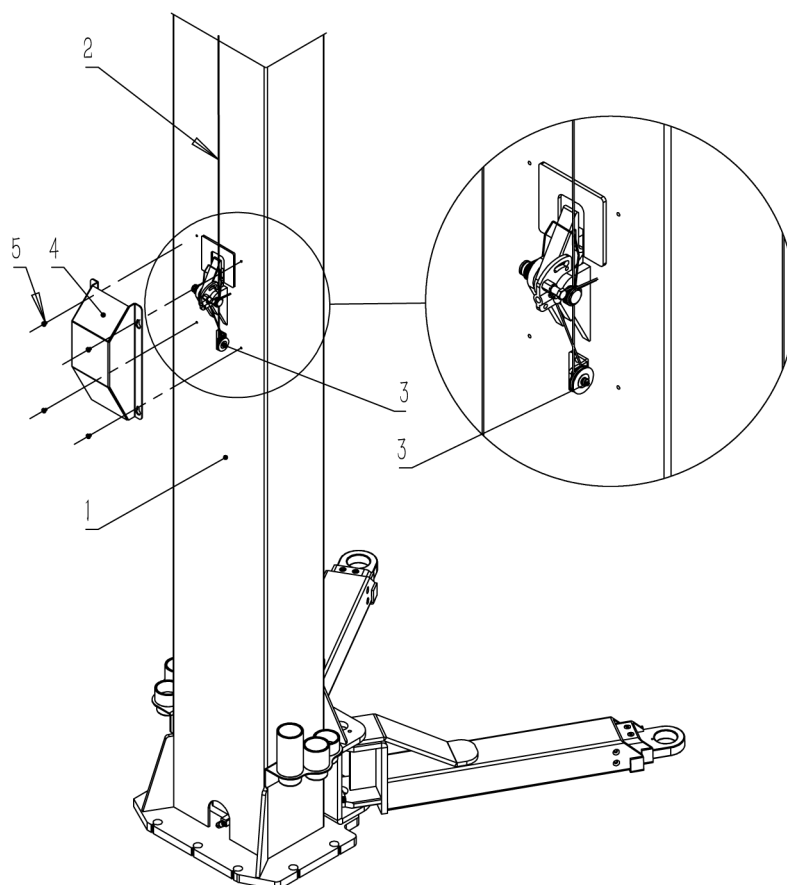


FIG 12

Step 9: Equalized cable installation (See Fig13)

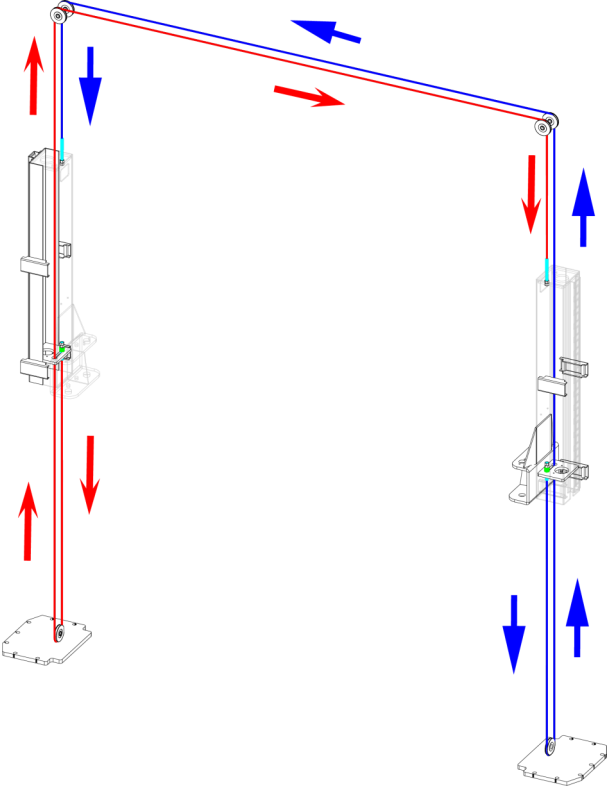


FIG 13

Connect steel cables

- 1. Route and fix according to the following diagram of steel cable connection.
- 2. Raise both carriages to the first locking point.
- 3. Make sure that the mechanical safety locks in each post are fully engaged before attempting to route cables.
- 4. After the cable being fixed, adjust and make the cable at both sides be with the same tightness which could be judged by the sound emitted during lifting process. Make judge and adjustment after trial running.
- 5. Grease after being fixed. (It is a must.)

Step 10: Hydraulic tubing connection installation (See Fig 14).

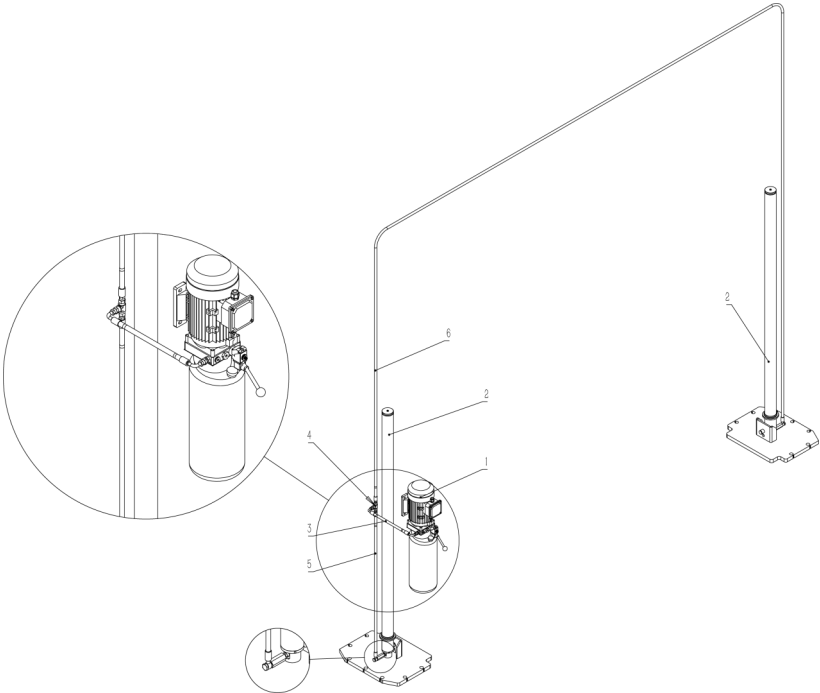
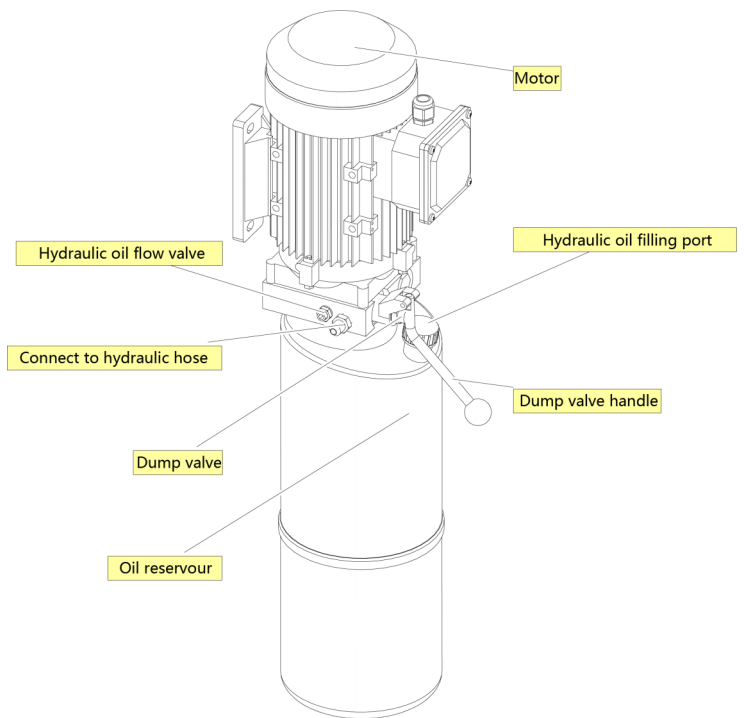
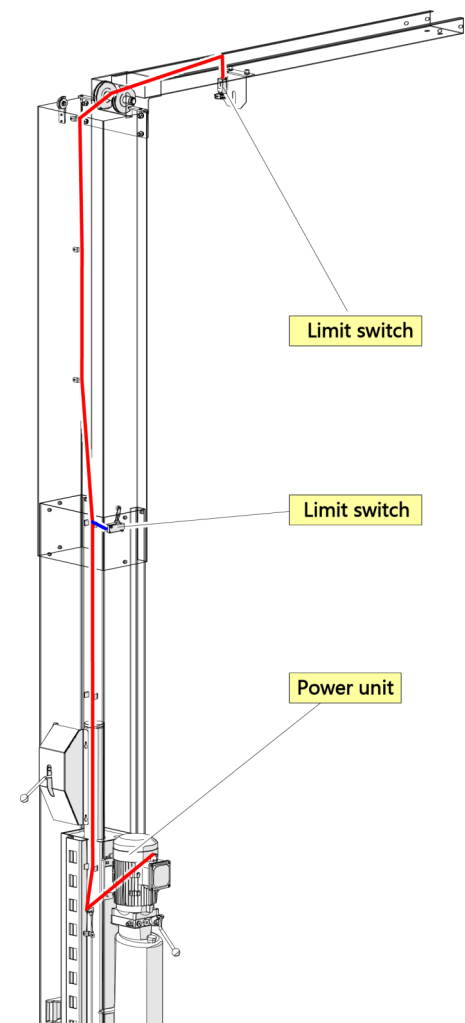


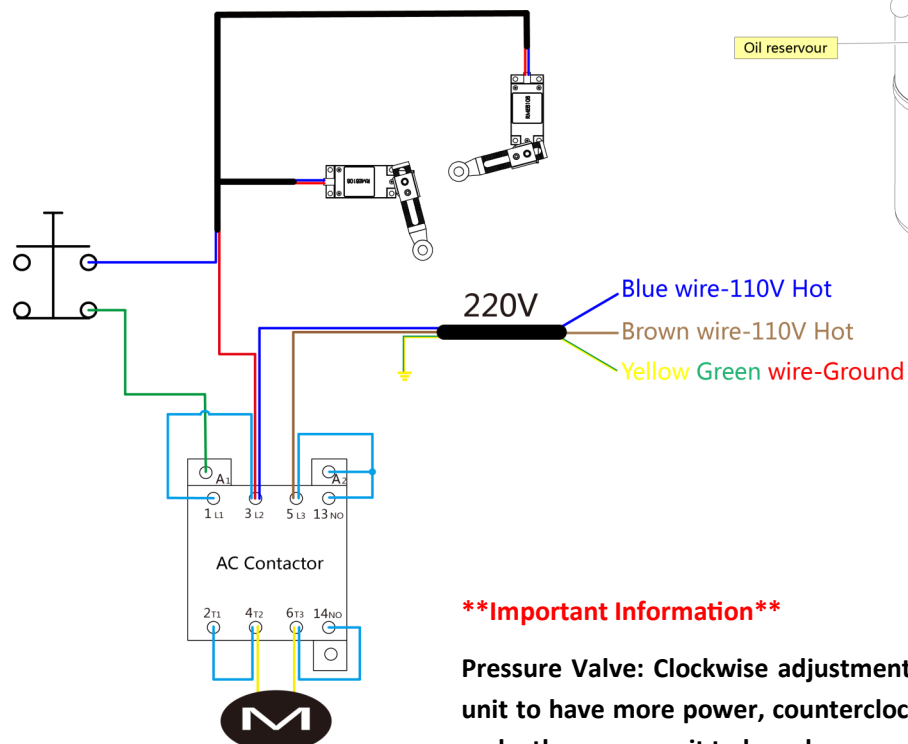
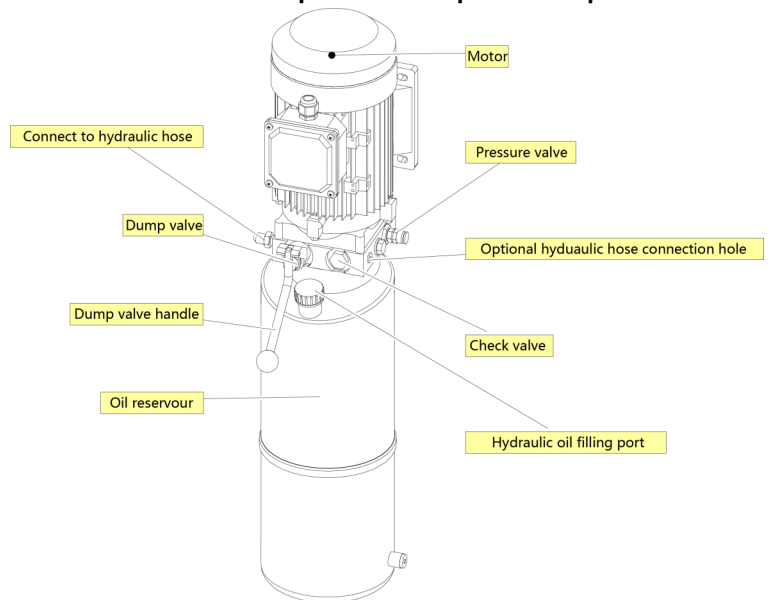
FIG 14

No.	Name	Qty.
1	Power unit	1
2	Hydraulic cylinder	2
3	Hose 1	1
4	Tee connector	1
5	Hose 2	1
6	Hose 3	1

Step 11: Limit switch connection installation (See Fig15)



Functional description of each part of the power unit



****Important Information****

Pressure Valve: Clockwise adjustment increases pressure to make the power unit to have more power, counterclockwise adjustment decreases pressure to make the power unit to have less power.

Hydraulic Oil flow valve: Clockwise adjustment to speed up, counterclockwise adjustment to slow down.

Fig 15

Step 12: Power unit installation (See Fig 16)

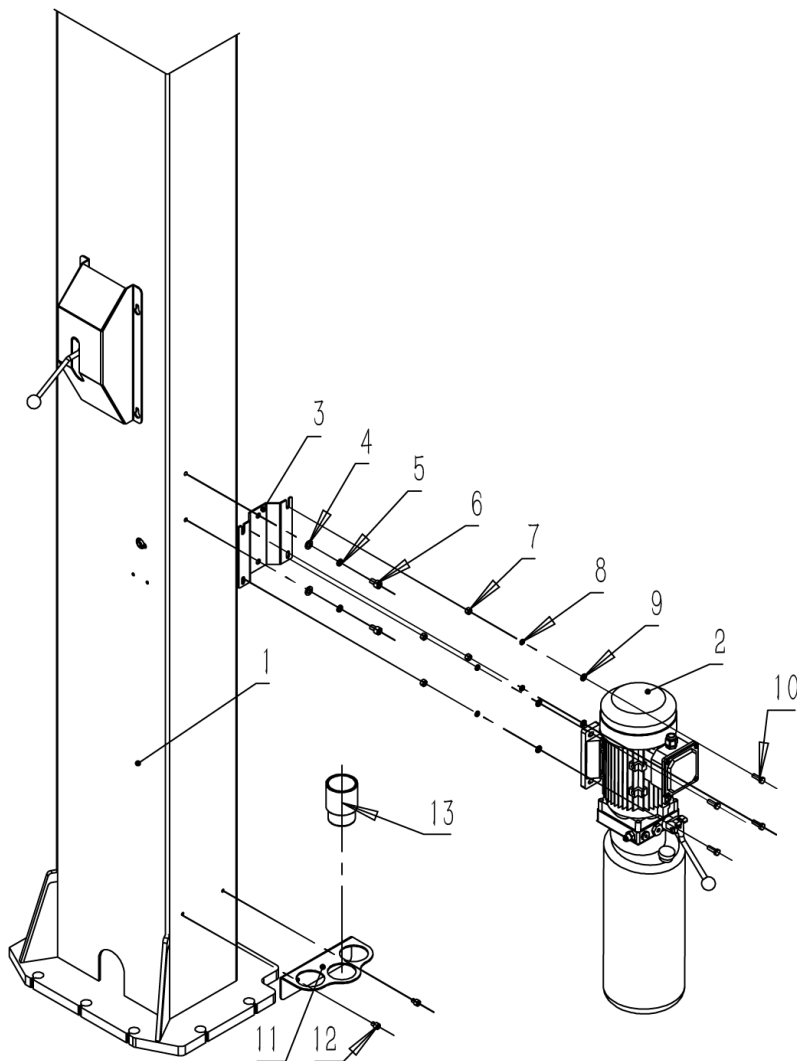


Fig 16

No.	Name	Qty.
1	Main column assembly	1
2	Power unit	1
3	Power unit backpack	1
4	Flat pad Φ10	2
5	Spring cushion Φ10	2
6	Socket head cap screws M10×16	2
7	Hex nuts M8	4
8	Flat pad Φ8	4
9	Spring cushion Φ8	4
10	Hex bolts M8×25	4
11	Heightening bracket	1
12	Socket head cap screws M8×10	2
13	Increase the set 1	1

Fill with hydraulic oil.

CLEAN AND FRESH OIL ONLY

DON'T FILL THE TANK COMPLETELY FULL.

Lift must be fully lowered before changing or adding hydraulic oil

Pour 13 liters HM32 anti-abrasion hydraulic oil into the oil tank. The level of oil shall reach the tippets volume mark of the tank.

Add more oil after running the lift for several cycles until the lift can rise to the maximum lifting height.

Note: As running speed of the lift is mainly decided by the viscosity of the hydraulic oil, we suggest using NO.46 hydraulic oil when average temperature of the location is above 18 degree Celsius and using NO.32 hydraulic oil when temperature is below 18 degree

Celsius. Change the oil 6 month after initial use and change once per year thereafter.

Step13: Install lifting arms. (See Fig 17)

Connect the lifting arm and the carriage. The arm pin shafts must be greased at the installation. Ensure the arm lock can engage and release effectively. .

Attention: Install Lifting arms and fix feet protection bars **ONLY** after the complete assembly has been erected and anchored.

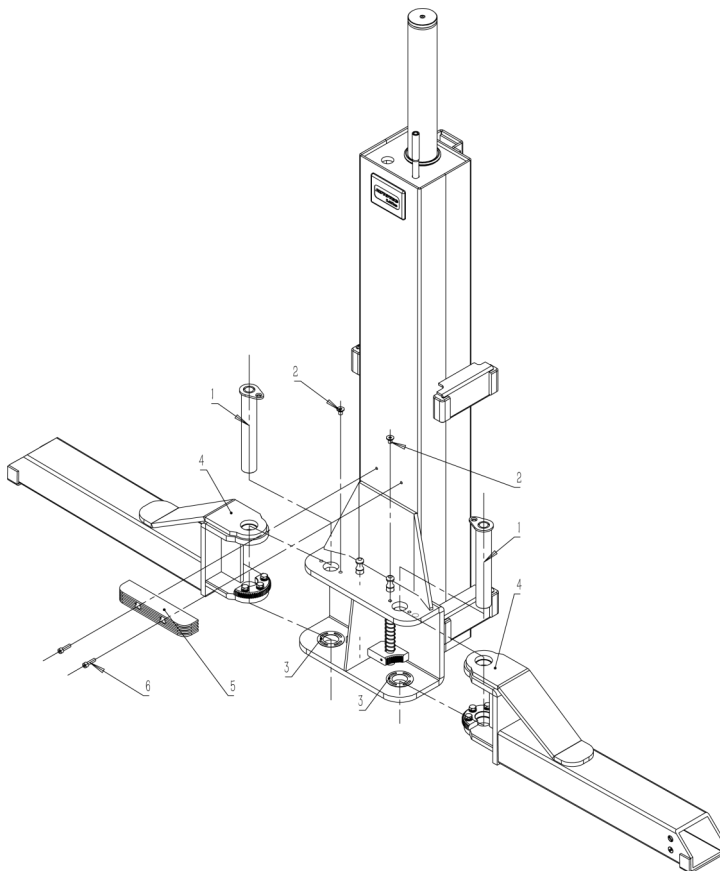


FIG 17

No.	Name	Qty.
1	Arm shaft	2
2	Socket head cap screws M10×16	2
3	Arm bottom pad	2
4	Welding of support arm	2
5	Anti-collision tape	1
6	Socket head cap screws M8×30	2

Step14: Trial running. (See Fig 18)

Get familiar with lift controls by running the lift through a few cycles before loading vehicle on lift. This step is of particular importance for it can check if the oil hose is well connected. The connection is qualified when there is no abnormal sound or leakage after having been tested for 5-6 times.

Bleeding the hydraulic system

Unscrew but don't remove the nut on top of the oil cylinder and slightly press the UP button until oil gets out. Screw the nut tight thereafter. After bleeding, oil level in power unit reservoir may be down. Raise and lower lift several cycles. Add more oil if necessary to raise lift to full height. It is only necessary to add oil to raise lift to full height.

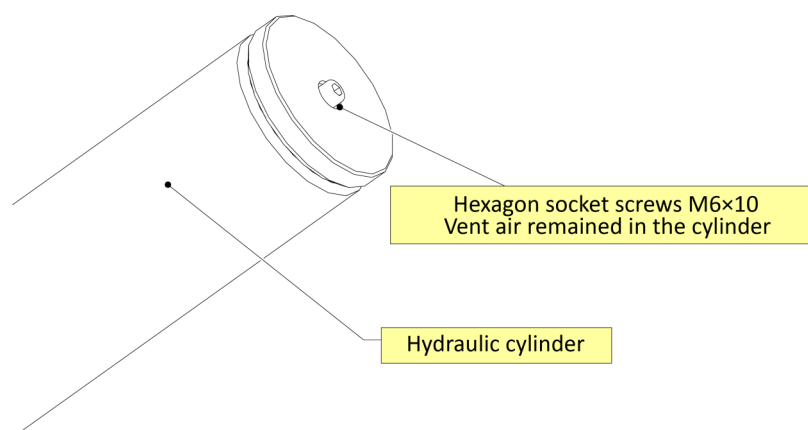


FIG 18

4-Operation and Use

4.1-Operation

Place the lifting arm at the support point specified by the vehicle and adjust the rubber tray to the same height.

Check the position of the rubber tray under the vehicle chassis before each single raising or when vehicle is lowered to the ground and need to raise again.

4.2-Raising/ Lifting

Press the power switch until the vehicle reaches desired height. When the vehicle is raised, the safety lock automatically engaged.

During raising/lifting, whether the arm lock has been locked, it can be visually checked when it is raised to a certain height (stop and check).

***Danger*:** Unlocked arms can cause vehicle fall off from the lift.

4.3-Stopping

After raising to desired height, press the lower lever and the lift will automatically lower to a safe position, the safety lock will be engaged and the lift will be locked.

4.4-Lowering

The safety lock must be released before lowering.

1. Press the power switch to raise the car by approximately 30mm/1.2".
2. Pull the safety lock release cables on both sides to unlock.
3. Press the lower lever to start lowering process, the arm lock will be automatically released and allow the arm rotating when the vehicle is completely lowered to the ground.

5-Safety

Please read this manual carefully as it contains important safety information that the operators need to know.

***WARNING*:** The design and construction of this lift is only suitable for lifting whole vehicle. All other uses are unauthorized, this lift CAN NOT be used to : wash vehicles, build lifting platforms, lifting personnel, use as cargo lifts and use as lifting partial of the vehicles.

5.1-Important Reminder: Personal and Equipment Safety

1. During vehicle lifting process, operators should be at a safe position/area.
2. Turn off the vehicle engine and manual brake on.
3. Load vehicle correctly (Fig 19).
4. The vehicle CAN NOT exceed the rated lifting capacity and required size.

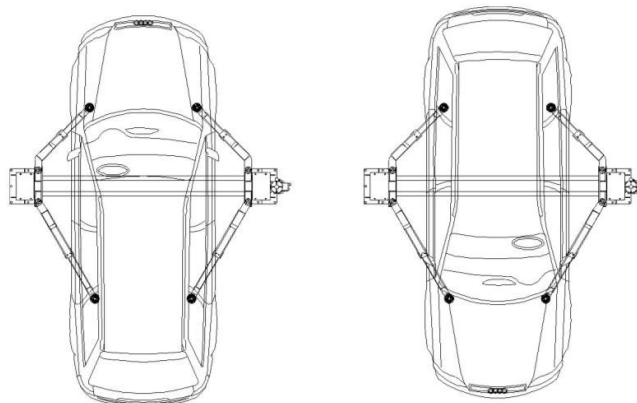


Fig 19

5.2-Vehicle Position

Once the vehicle is raised, vehicle **CAN NOT** be moved backwards or forwards as it may cause falling.

WARNING: Do not attempt to move the vehicle while it is parked on the lift.

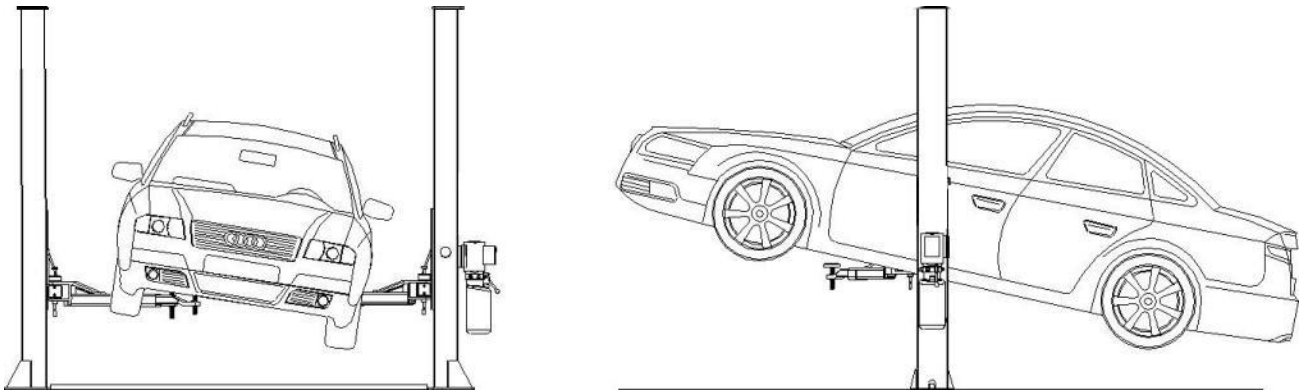


FIG 20

5.3-Risk of Vehicle falling off from the lift

Note that when positioning the vehicle on the lift, incorrect center of gravity of the vehicle can cause the vehicle falling off from the lift (Fig 20).

Important Note: Make sure that the front and rear of the vehicle need to be balanced and the cables on both sides also need to be balanced. Do not board/step on the vehicle or the lift when the lift is raised.

Below actions may cause the vehicle fall off from the lift .(Fig 21)

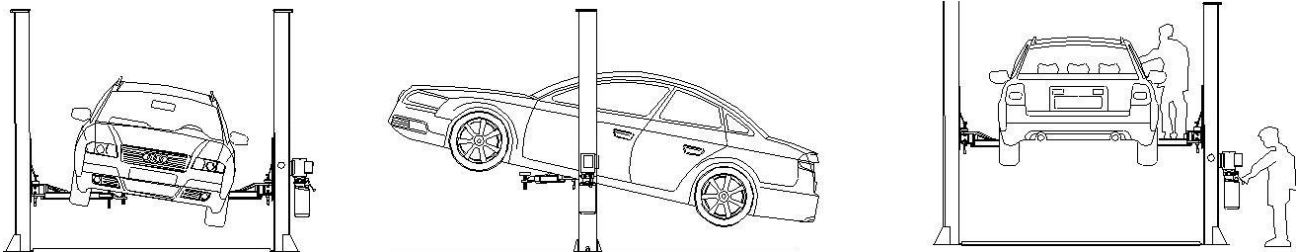


Fig 21DO TOT do

6-Maintenance

6.1-Every Month

Hydraulic System

1. Check hydraulic oil level, fill hydraulic oil if necessary.
2. Check the pump, hose and cylinder and see if there is hydraulic oil leaking.

6.2-Every 3 Month

Safety Maintenance

1. Check the condition of the safety lock and the wear of the stop block.
2. Check the anchor bolts, tighten nuts if necessary.
3. Check if any nuts are loose, tighten nuts if necessary.
4. Check if the arm locking system is working properly.
5. Lubricate/grease all moving parts.
6. Check if the arm locking system is working properly.
7. Check if the 2 carriage on both sides are at the same level.

6.3-Every 6 Month

Hydraulic Pump

1. Check the condition and aging of the hydraulic fluid. Unqualified hydraulic fluid is the main reason to cause valve failure and reduces the life of the gear pump.

2. Check the noise variation of the motor and gear pump while normal operating.

6.4-Every 12 Month

1. Visually inspect all structural and mechanical parts to make sure there is no abnormalities have occurred.

2. Check and see if there is anything wrong with the motor, wiring ,top limiter switch and circuit breaker.

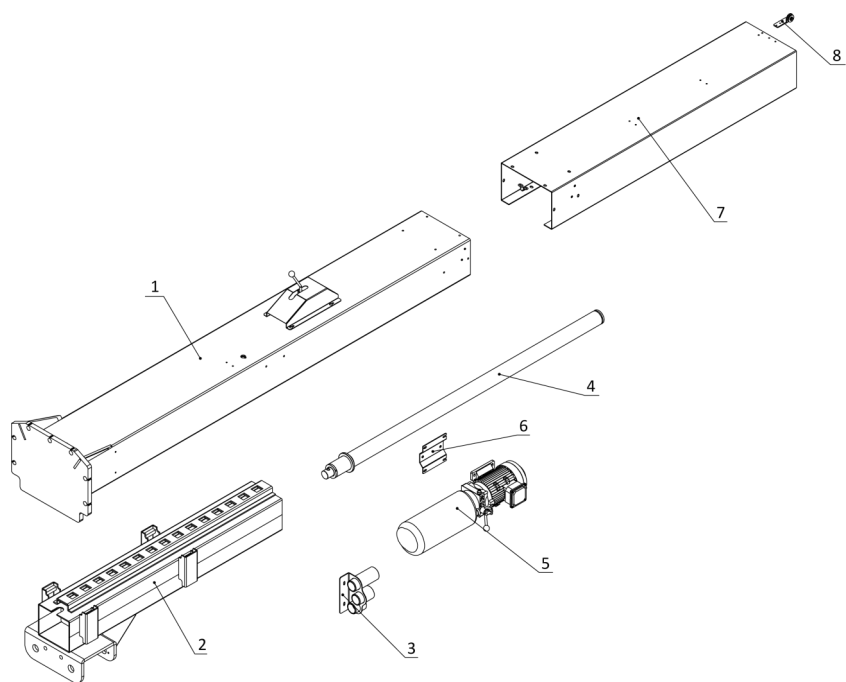
7. Troubleshooting Guide

Troubleshooting Guide

Malfunction	Possible reason	Solution
The motor does not work	Check the air switch.	Turn off or replace the air switch.
	Check if the voltage is correct.	User correct power supply.
	The motor burned.	Replace the motor.
	Start switch burned.	Replace the start switch.
	Top limiter switch burned.	Replace the top limiter switch.
	AC contactor burned.	Replace the AC contactor.
The motor works but can't lift	Pressure valve pressure is too small.	Clockwise adjust the pressure valve(fine adjustment).
	Pump station takes in air.	Unscrew check valve on the power unit, and then start the motor until hydraulic oil flows out from the check valve.
	Hydraulic oil suction hose is detached or broken.	Install/replace the suction hose.
	Insufficient hydraulic oil.	Fill more hydraulic oil.
Does not lowering	Safety lock engaged.	Slightly raise the device and then pull the safety lock release cable.
	Other object inside the columns stops the carriage.	Check and remove the objects.
	The flow valve needs to be adjusted.	Counterclockwise adjust the flow valve (fine adjustment).
Self-Lowering	Dump valve failure.	Replace the dump valve.
	Hydraulic oil leaks.	Check and repair.
	The valve body of the power unit has holes.	Replace the valve body.
Raise without load, but doesn't raise with load	The voltage is too low.	Install the voltage stabilizer.
	Objects in the dump valve.	Remove objects from the dump valve.
	The pressure valve pressure is too small.	Increase pressure properly(fine adjust the pressure valve).
	Overload.	This operation is prohibited.
Lifting is not leveled	The cables are not balanced.	Balance cables by adjusting the cable's length.
Loud motor noise	After raising to the highest point, the motor is still working and the top limiter switch is disabled.	Replace the top limiter switch.
	Hydraulic oil pollution.	Replace the hydraulic oil.
	Overload.	This operation is prohibited.

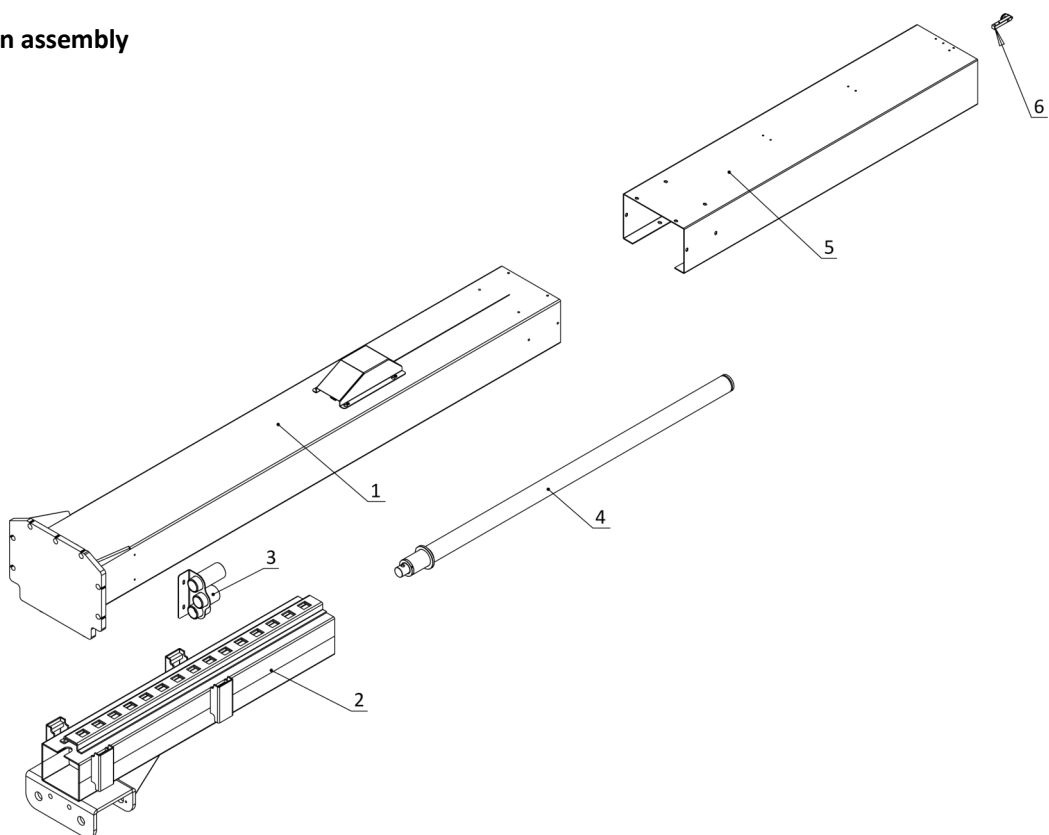
8-Structure and Parts List

8.1-Main column assembly



No.	Name	Qty.	No.	Name	Qty.
1	Main column assembly	1	5	Power unit	1
2	Block assembly	1	6	Power unit backpack	1
3	Heightening bracket	1	7	Main column heightening section	1
4	Cylinder assembly	1	8	Unlock the rope bracket	1

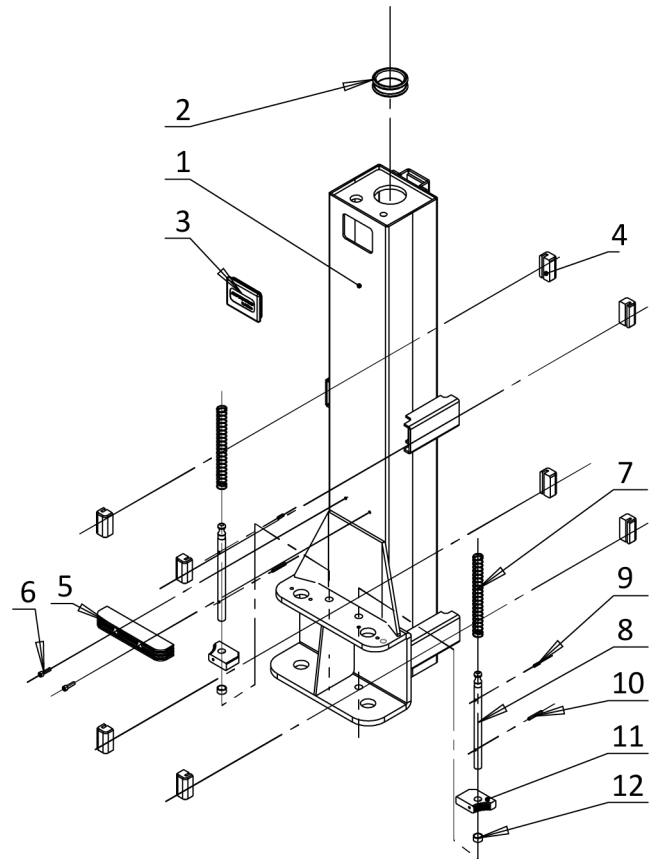
8.2-Sub-column assembly



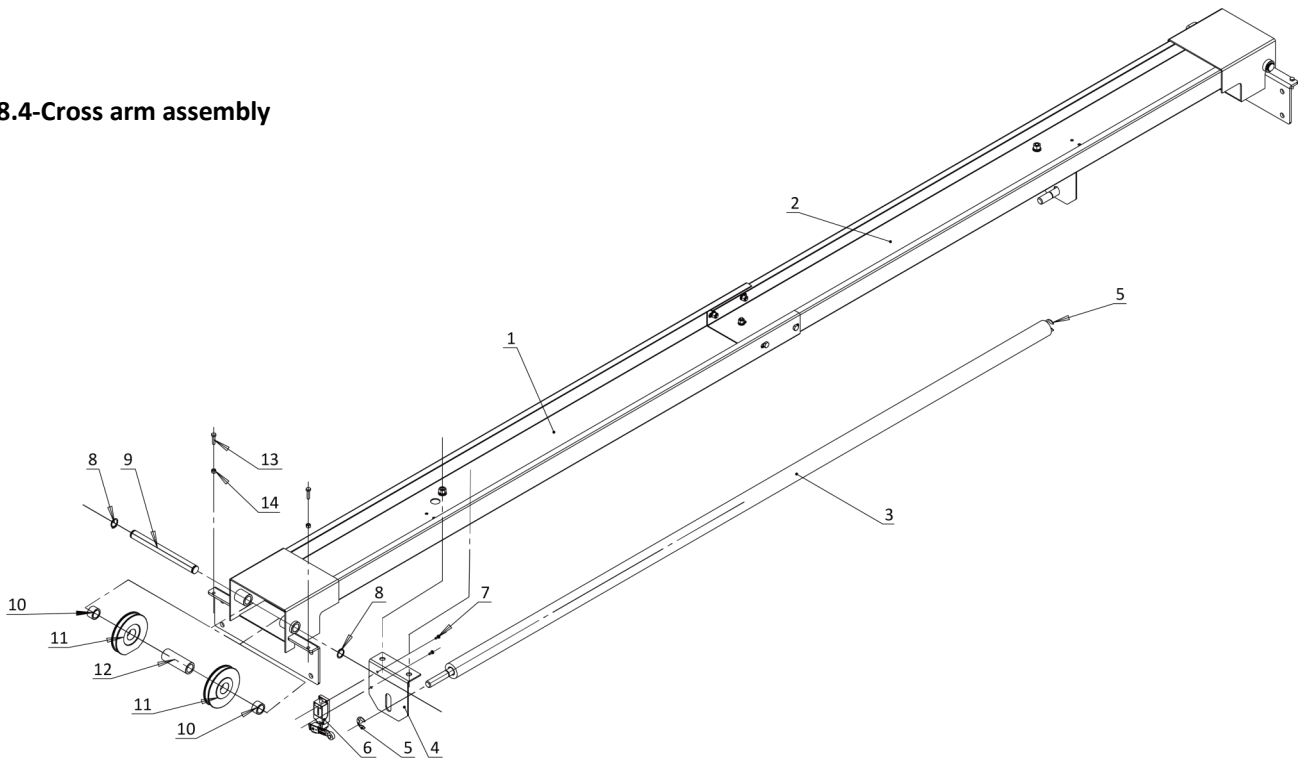
No.	Name	Qty.	No.	Name	Qty.
1	Sub-column assembly	1	4	Cylinder assembly	1
2	Block assembly	1	5	Secondary column heightening section	1
3	Heightening bracket	1	6	Unlock the rope bracket	1

8.3-Block assembly

No.	Name	Qty.
1	Block welding	1
2	Rubber band	1
3	Block rubber cover	1
4	Nylon slider	8
5	Anti-collision tape	1
6	Socket head cap screws M8×30	2
7	Arm lock spring	2
8	Arm lock shaft	2
9	Elastic cylindrical pin $\Phi 6 \times 22$	2
10	Elastic cylindrical pin $\Phi 6 \times 50$	2
11	Square tooth	2
12	Square gear shaft cushion cover	2

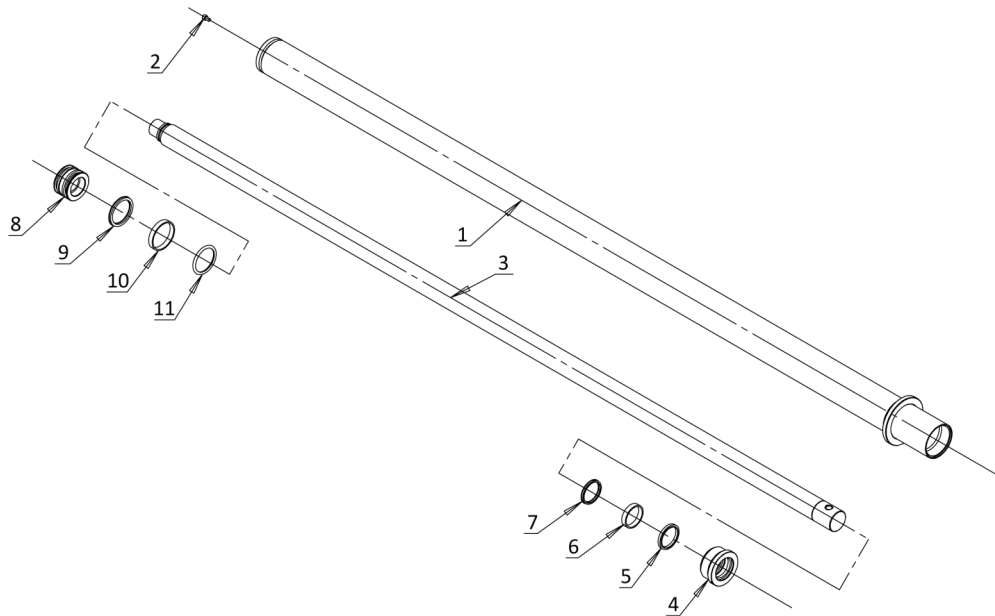


8.4-Cross arm assembly



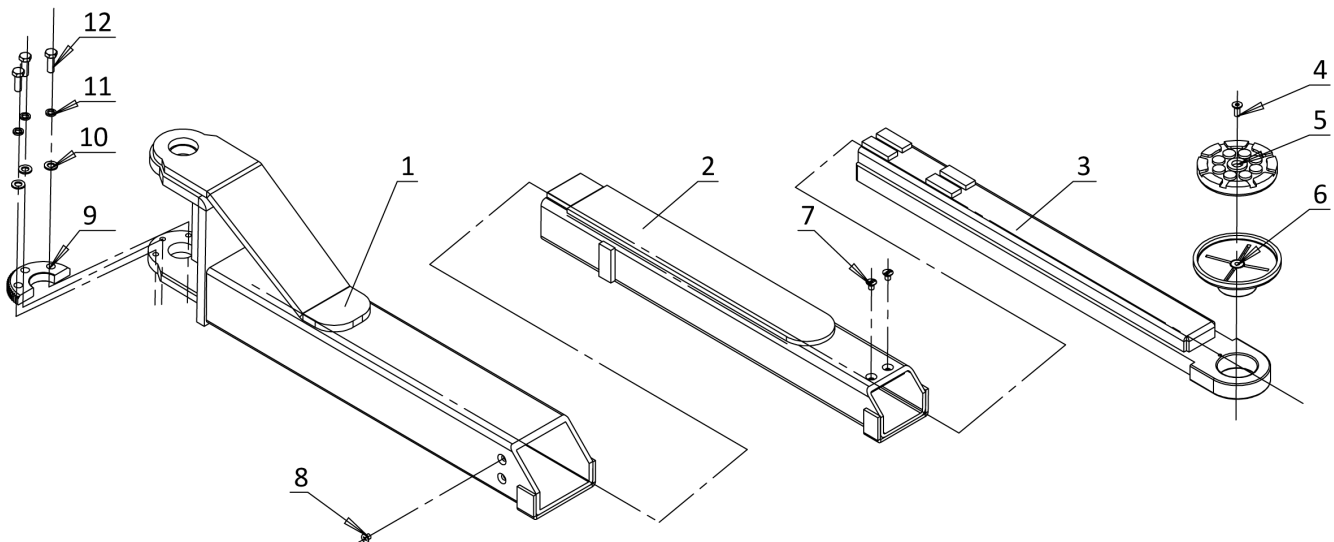
No.	Name	Qty.	No.	Name	Qty.
1	Beam 1	1	8	Elastic washer for shaft $\Phi 20$	2
2	Beam 2	1	9	Beam axis	1
3	Beam rod	1	10	Wire rope pulley bushing	2
4	Beam rod support ear 1	1	11	Wire rope wheel	2
5	Open retaining ring $\Phi 15$	2	12	Cross beam 1 spacer	1
6	Limit switch 8108	1	13	Hex bolts M6×35	2
7	Phillips round head screws M4×35	2	14	Hex nuts M6	2

8.5-Cylinder assembly



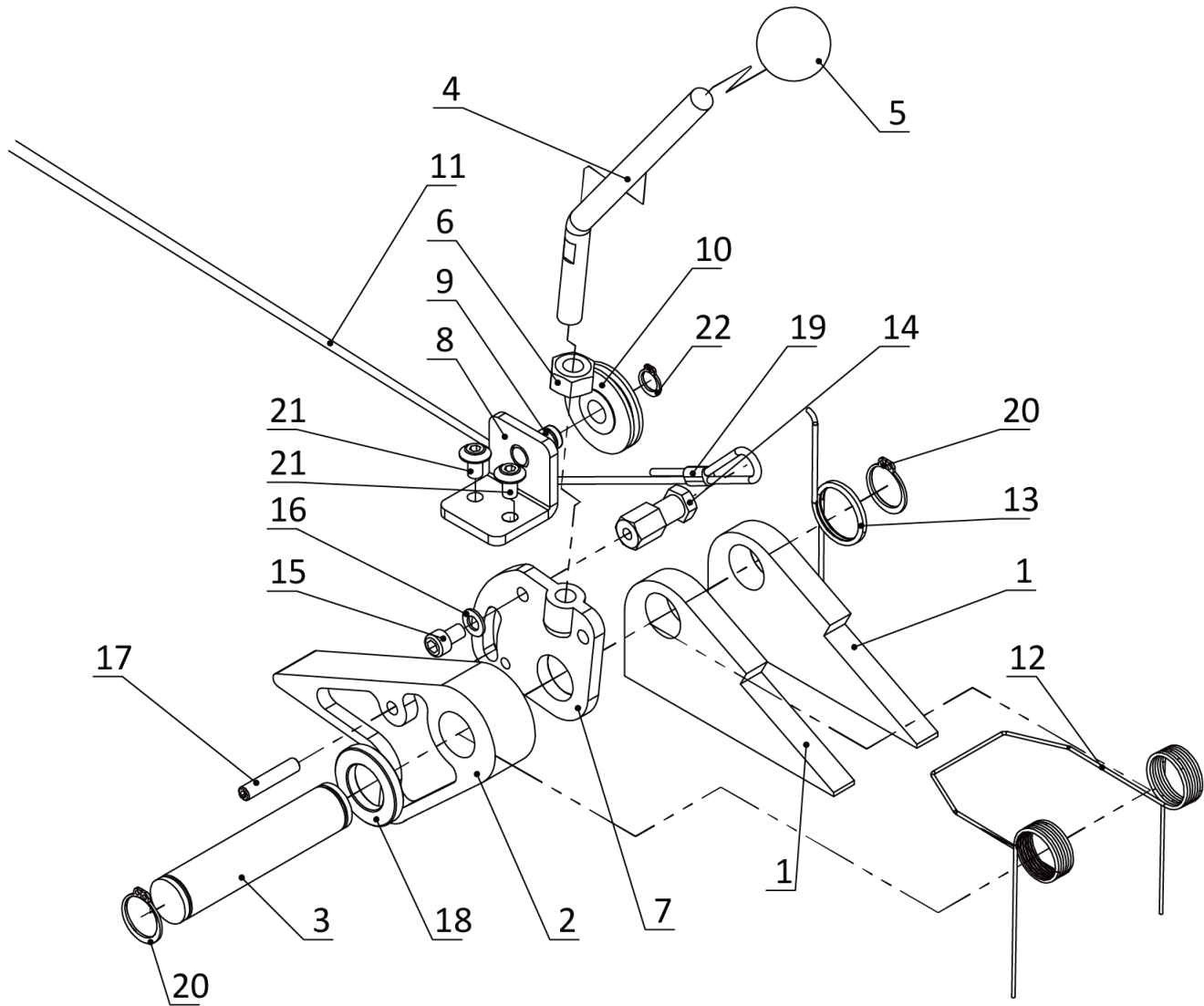
No.	Name	Qty.	No.	Name	Qty.
1	Welding of inverted cylinder	1	7	Sealing ring UN45-52-6	1
2	Socket head cap screws M6×10	1	8	Inverted cylinder piston	1
3	Inverted cylinder piston rod	1	9	Sealing ring UN53-63-5	1
4	Pull the cylinder head	1	10	Guide belt D63	1
5	Dust seal D54D45h6.2	1	11	O type rubber ring 63-5.5	1
6	Guide belt D45	1			

8.6-Three-section arm assembly



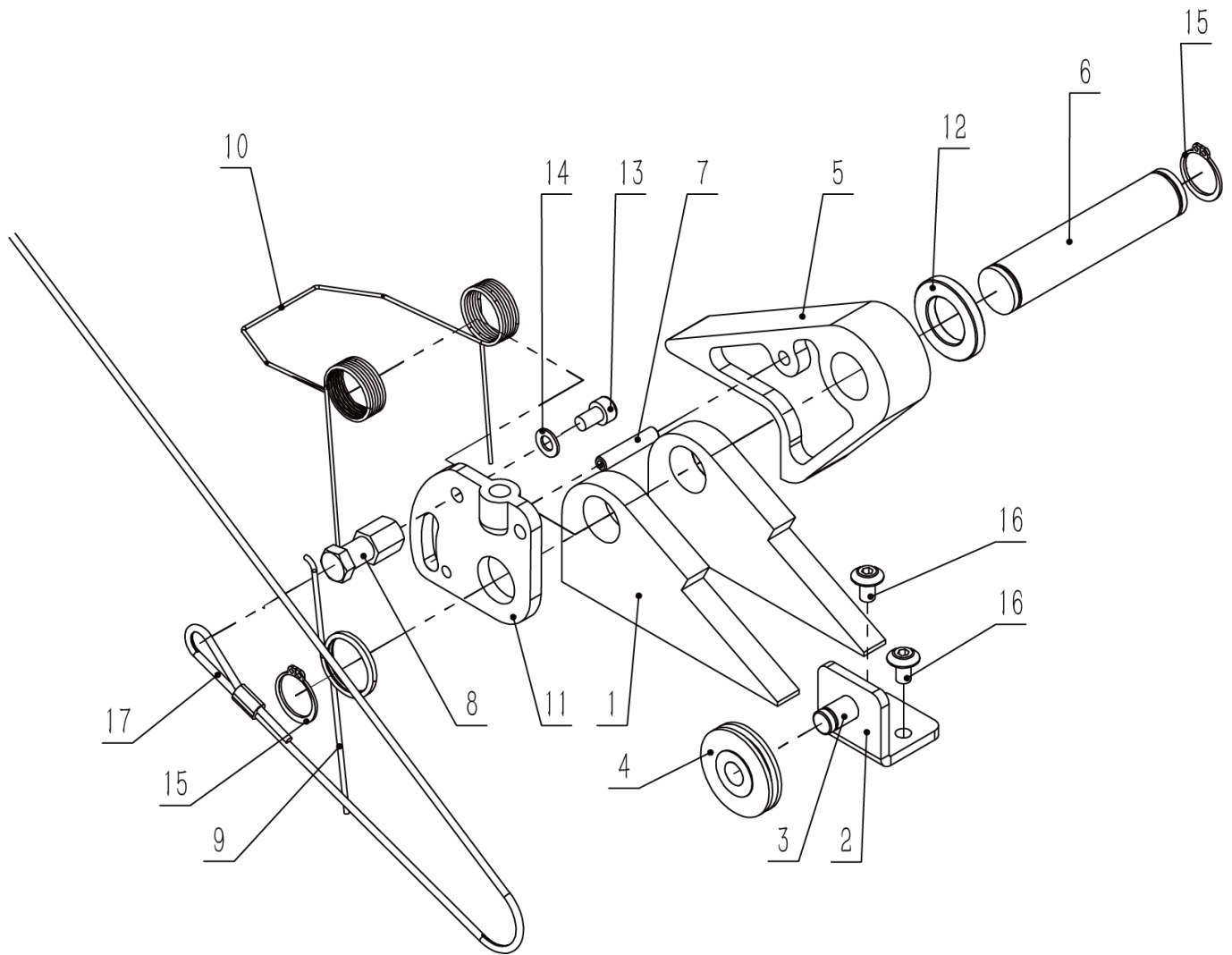
NO.	Name	Qty.	No.	Name	Qty.
1	Three-section support arm big arm welding	1	7	Flat head hexagon socket screw M8×10	2
2	Three-section support arm middle arm welding	1	8	Socket head cap screws M10×12	1
3	Three-section support arm forearm welding	1	9	Moon teeth	1
4	Flat head hexagon socket screw M8×16	1	10	Flat pad Φ10	3
5	Round rubber pad	1	11	Spring cushion Φ10	3
6	Pallet welding	1	12	Hex bolts M10×30	3

8.7-Main column safety lock assembly



No.	Name	Qty.	No.	Name	Qty.
1	Security lock ears	2	12	Door spring	1
2	Safety tip lock	1	13	Torsion spring	1
3	Safety lock shaft	1	14	Unlock the rope seat	1
4	Unlock lever	1	15	Socket head cap screws M6×10	1
5	Handball	1	16	Flat pad Φ6	1
6	Hexagon nut M10	1	17	Elastic cylindrical pin Φ6×30	1
7	Unlock the handle seat	1	18	Security lock spacer	1
8	Unlock the sheave seat	1	19	U-shaped chuck	1
9	Unlock the sheave shaft	1	20	Circlip Φ20	2
10	Unlock the sheave	1	21	Phillips round head screws M6×10	2
11	Unlock the thin wire rope	1	22	Circlip Φ10	1

8.8-Secondary column safety lock assembly



No.	Name	Qty.	No.	Name	Qty.
1	Security lock ears	2	10	Door spring	1
2	Unlock the sheave seat	1	11	Unlock the handle seat	1
3	Unlock the sheave shaft	1	12	Security lock spacer	1
4	Unlock the sheave	1	13	Socket head cap screws M6×10	1
5	Safety tip lock	1	14	Flat pad Φ6	1
6	Safety lock shaft	1	15	Circlip Φ20	2
7	Elastic cylindrical pin Φ6×30	1	16	Phillips round head screws M6×10	2
8	Unlock the rope seat	1	17	Unlock the thin wire rope	1
9	Torsion spring	1			

