



AUTOMATIC TYRE CHANGER 380V REF.: 9016



Operating manual and instructions

General information

Name:	
Address:	

Model:	
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**DECLARATION
OF CONFORMITY**



We:

KROFTOOLS
Parque Industrial da Pousa
Rua da Devesa, n.º 8
4755-307 Martim,
Barcelos

Declare under our sole responsibility that the product:

Part Number: 9016
Description: AUTOMATIC TYRE CHANGER 380V
Serial No:-

To which this declaration relates is in conformity with the following directive (s):

EN ISO 12100:2010 Safety of machinery - General principles for design - Risk assessment and risk reduction
EN 60204-1:2018 Safety of machinery - Electrical equipment of machines - Part 1: General requirements
EN 17347:2021 Title Road vehicles - Machines for mounting and demounting vehicle tyres - Safety requirements

Machinery Directive 2006/42/EC

Machinery Directive 2011/65/EU

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José Bárbara
CEO

Index

1. Description of equipment.....	5
2. General description.....	8
2.1 Operation instruction.....	8
2.2 Safety operation rule.....	8
3. Transport.....	8
4. Open package operation.....	8
5. Installation instruction.....	8
5.1 Space required.....	8
5.2 Commissioning.....	9
5.3 Debugging machine.....	10
5.4 Adjust the jaw position of turntable.....	11
6. Operation.....	11
6.1 Breaking the bead.....	12
6.2 Demount tyre.....	12
6.3 Mount tyre.....	14
7. Air inflation.....	15
7.1 Inflate the tyre with the nozzle.....	15
8. Reposition.....	15
9. Storage.....	16
10. Scrap.....	16
11. Repair and maintenance.....	16
11.1 Warning.....	16
11.2 Repair and maintenance.....	16
12. Troubleshooting.....	18
13. Technical data.....	18
14. Circuit and pneumatic connection diagram.....	19
14.1 Circuit diagram.....	19
14.2 Pneumatic connection diagram.....	19
14.3 Foot pedal.....	20
14.4 Shovel arm.....	22
14.5 Worktable.....	23
14.6 Pillar.....	24
14.7 Assistant.....	26

The data of automatic tyre changer

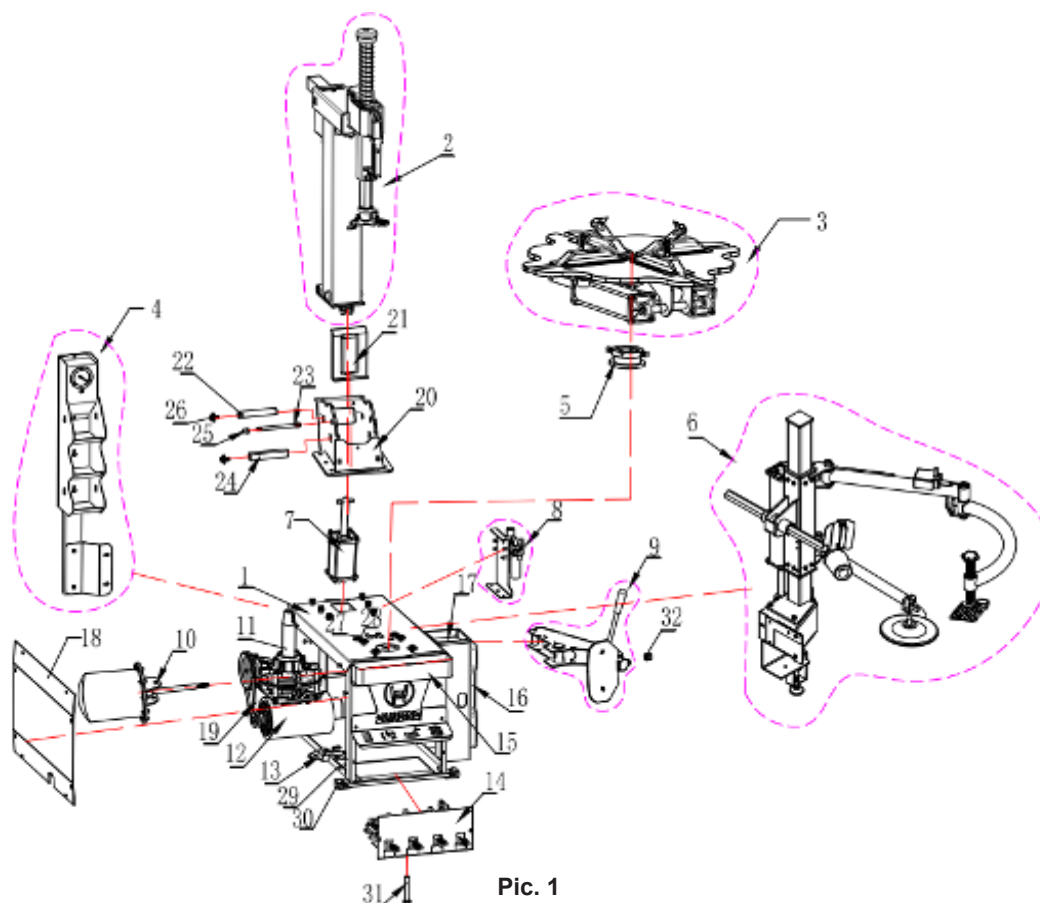
Provide the “complete product code” and the “model of automatic tyre changer”, so that we can provide you the technical services and required parts betterly.

This manual is an indispensable part for machine operation before using the machine, you should read each part of the manual carefully, The operation safety and maintenance parts are necessity.



his manual for future using

1. Exploded View Complete Machine

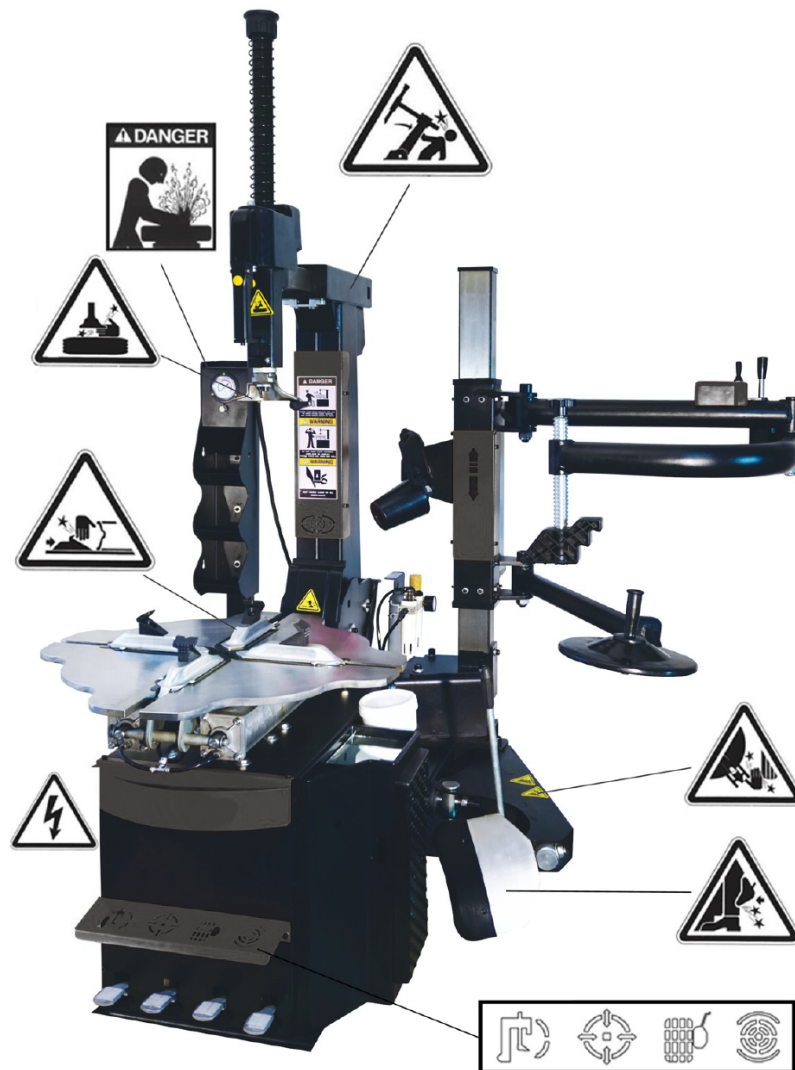


Pic. 1

Serial number	Name	Drawing number or specification	Number
1	819 box (spray painted)		1
2	819 Column Assembly		1
3	Large plate assembly	28 inch cone shaft flower disc	1
4	819B gas meter box assembly		1
5	Plastic pouring gas assembly		1
6	B Assist Hand Assembly		1
7	819 Column Cushion Cylinder Assembly		1
8	816C Oil Mister Assembly (Large)		1

9	819E Shovel Arm Assembly		1
10	816C large cylinder assembly	Single exhaust large cylinder 185 * 500	1
11	Turbobox	200 cone axis	1
12	Gaobote Motor (Yingkou)	220V 50HZ 0.75KW	1
13	Inflatable side pedal assembly	819	1
14	Four foot pedal assembly	32A switch 220V single exhaust	1
15	Front decorative panel of the box	Claw - large shovel - rotating	1
16	Big tire rubber plate		1
17	Hexagonal water box		1
18	819 Left side sealing plate (spray painted)		1
19	V-belt	A-610	1
20	819 Column base assembly welding parts (spray painted)	819	1
21	Column baffle	plastics	1
22	Column shaft		1
23	Column limit stop rod	Double head screw	1
24	Column square steel (blackened)		1
25	Hexagonal cover nut (decorative cap)	M12	2
26	Full thread outer hexagon bolt	M10*20 8.8 level	2
27	Full thread outer hexagon bolt	M10*55 8.8 level	6
28	Flat washer 10 * 20 * 2 * white zinc	10*20*2	6
29	Full thread hexagonal cylindrical head bolt	M6*16	8
30	Rubber foot pad U200	foot pad	4
31	Full thread hexagonal cylindrical head bolt	M8*16	3
32	Non metallic self-locking nuts	M16	1

Danger warning sign (illustrations)



Pic. 2

2. General description

2.1 Operation instruction

The automatic tyre changer is designed to facilitate to mount and demount the tyres which the rim sizes is from 12 "to 26" and the maximum diameter of 1,120mm.



Operation against instruction is prohibited

The manufacturer shall not be liable for damage resulting from non-compliance with the instructions.

2.2 Safety operation rule



The tyre changer must be operated by trained personnel

The manufacturer shall not be liable for any damage caused by modification of the machine without the manufacturer's approval.

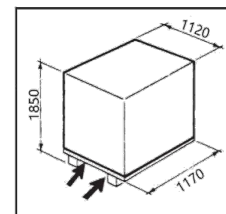
Manufacturers will immediately discontinue their safety commitments if the user breaches safety rules and causes damage of the machine's safety devices.

If there is any damage to the safety warning sign during the whole process, the customer can contact the manufacturer according to the icon on page 2 to replace the damaging icon as soon as possible.

3. Transport

The tyre changer must be transported with the original packaging. Place as indicated on the packing box.

Move the packed machine by a forklift truck with corresponding lifting capacity. Refer to figure 3 for the forklift insertion direction



Pic. 3

4. Open package operation

Open protective boxes and plastic bags.

Refer to figure 1 to check whether the machine surface is intact and the parts are missing and damaging.

If any problem is found, please do not use the machine and contact the supplier immediately.



The automatic tyre changer is prohibited to use in explosive gas

5. Installation instruction

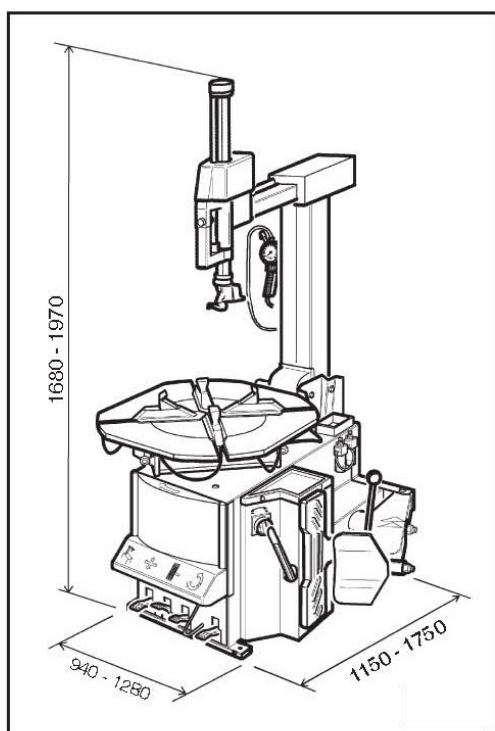
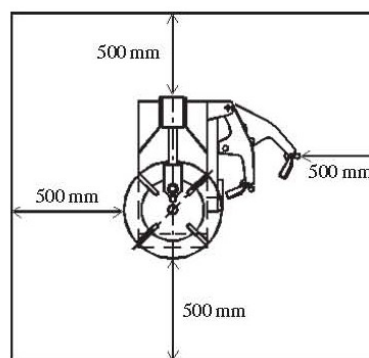
5.1 Space required

The installation position of the machine must meet the standard of safe working.

The automatic tyre changer should be placed near the main power supply and compressed air system.

The minimum space of the installation position shall not be lower than the space that be shown in figure 4 and figure 4/A to ensure normal operation without any restriction.

If the machine is installed outdoors, a protective shelter must be built.

**Pic.4****Pic.4/A**

5.2 Commissioning



Before the machine is turned on, make sure the user's voltage and air pressure are consistent with the machine's requirements.

When the operating voltage of the machine needs to be changed, the terminal board can be adjusted properly. (refer to part 14 circuit diagram)



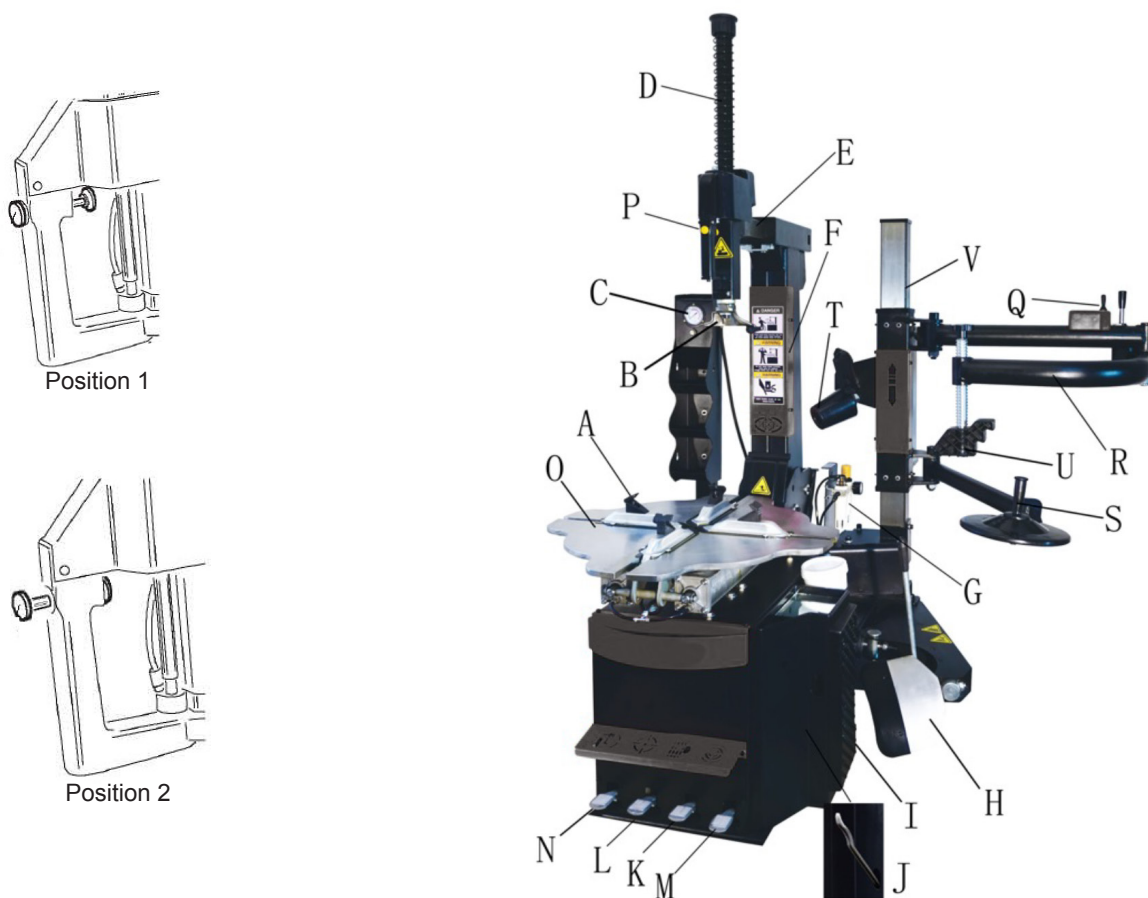
The electrical system must be operated by a professional.

The compressed air system is connected to the machine by a pipe joint (G) on the oil-water separator beside of the box. As shown in figure (5)

When connecting the circuit of the machine, the circuit must be equipped with safety fuse, grounding wire and must be installed with 30mA automatic circuit breaker.

Note: The power plug of the tyre changer shall be prepared by the customer. The rated current of the power plug shall not be lower than 16A, at the same time meet the voltage of the machine.

5.3 Debugging the machine



Pic.5

When the pedal (M) is stepped on, the turntable (O) should turn clockwise. When the pedal is raised, the turntable should turn counterclockwise.

Note: if the turntable is opposite to the specified rotation direction, switch the two wires of the three-phase plug.

When the pedal (K) is stepped on, the pressure tyre device (H) will start; When the pedal is released, the tyre pressure device returns to its original position.

When the pedal (L) is stepped on, four clamp jaws will open (A); step on the pedal again and the clamp jaws are closed.

When the pedal (N) is stepped on, the vertical column (F) will tilt backward. When the pedal is released, the vertical column (F) returns to its original position.

When the manual valve button (P) is in position 1, the hexagon shaft and push-pull arm are locked, the working head is automatically located in the working position.

When the manual valve button (P) is in position 2, the hexagon shaft and push-pull arm are released. Press exhaust valve button (C) on the air inflation indicator box to discharge air from the pipe.

5.4 Adjust the jaw position of turntable

The clamps of tyre changer have been adjusted to the central position before leave factory, the outer clamping range is from 14" to 24". Inside size is from 16" to 26".

If you want to demount the larger or smaller rim, you can adjust the position of the four clamps, as shown in figure 6.

Adjustment range:

clamp rim outside size is from the smallest 12" to the largest 24".

clamp rim inside size is from the smallest 13" to the largest 26".

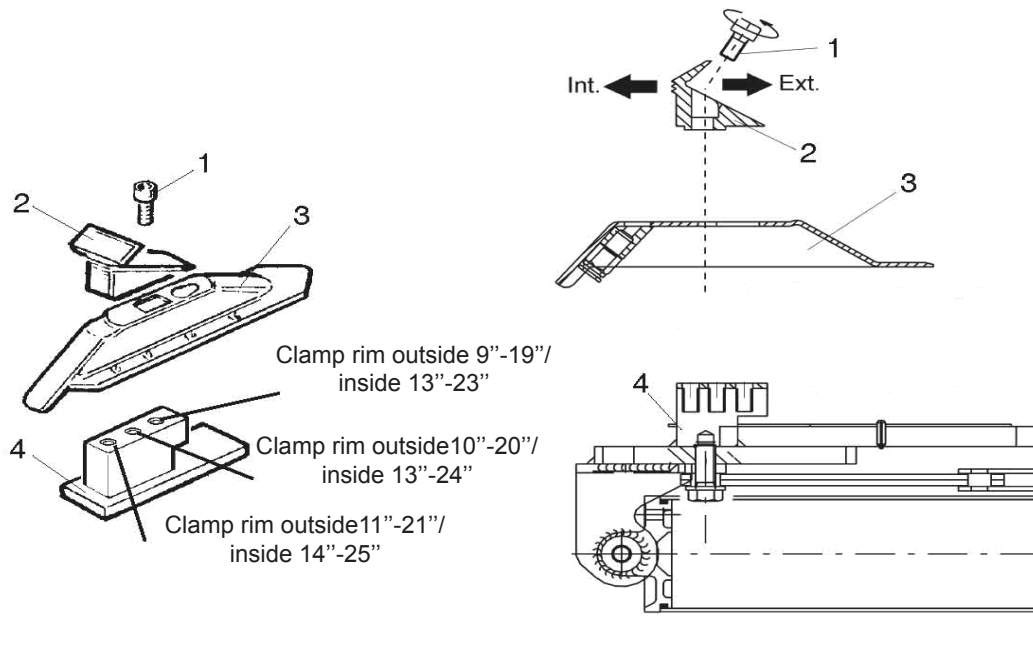
The operation is as follows:

Use universal wrench unscrew the screw (1).

Mobile clamp jaw (2) and slider (3), the position corresponding to one of the screw hole of the lock size.

Tighten screw, universal wrench torque must be 72 N.m.

Note: The corresponding positions of the four clamps should be ensured when the above adjustment is carried out.



Pic.6

6. Operation



Please read the instruction manual carefully and note before operating the machine.

The operation of automatic tyre changer is divided into the following three parts:

A) breaking the bead B) demount tyre C) mount tyre

Discharge all air from the tyre and remove the balance lead from the tyre.

Matters need attention:

More and more motorcycle rims are made from special materials such as aluminum magnesium alloys and carbon fiber, In order to lock into this kind of rim , must use special repair tool of the motorcycle tyre.

To avoid damage, the turntable clamp jaw is fitted with a plastic protective sleeve.

6.1 Breaking the bead



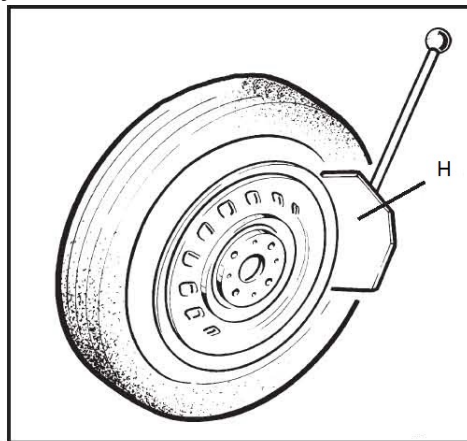
You have to be very careful when you are operating bead breaker. When the pedal is operated, the breaker arm will swing rapidly and forcefully, and any object within the movable range of the breaker arm is at risk of being crushed

Check the tyre to see if it has emptied the gas. If not, empty the gas.
Please close the clamp jaws of the turntable.



Do not place your hand on the side wall of the tyre during operation of the turntable. The clamp may be pressed to your hand when it is open

Lean against the tyre on the rubber pad (I) on the right side of the automatic tyre changer.
Press the bead breaker closer to the edge of the rim 1cm (figure 7). It should be noted that the bead breaker should be placed on the tyre instead of the rim.
Step on the pedal (K) and the pressure device is started. Release the pedal when the bead breaker completes the operation or the rim is off.
Gently rotate the tyre and repeat in the rest of the tyre until the flange is completely off the rim. Repeat on the other side of the tyre.



Pic.7

6.2 Demount tyre



Before any operation, check to see if the tyre is out of air. And ensure that the balance lead has been removed from the rim



Make sure that behind the tyre changer is no man, then the vertical column tilt can be carried out

Step on the pedal (N) to tilt the column and open the space above the turntable.
Apply special lube to the wheel rim.



Not apply lube may result in wheel rim damage



**Do not put your hand under the tyre when you lock the rim
To properly lock the tyres, place tyre in the center of the turntable**

Clamp the rim outside between 12 and 24 inches

Step the pedal (L) to the central position and locate the clamp (A) according to the reference scale of the turntable.

Place the tyre on the clamp so that the rim is near the lowest part of the clamp and step on the pedal (L) to the bottom.

Clamp the rim inside between 13 and 26 inches

Make the clamp (A) closed completely.

Place the tyre on the clamps and step the pedal L to clamp the rim.



Make sure that the rim is firmly fixed to the clamps



Don't put your hands on the wheel: if you put your hands between rim and mounting head, it may getting hurt when column return to its original position

Step pedal N, column F return to its original position.

When manual control press-button P is on position 2, hexagon shaft D is moving down until it is against edge of the rim.

When manual control press-button P in on position 1, hexagon shaft D and push-pull horizontal arm are locked. During locking process, working head may move away from the rim 2mm in both vertical and horizontal direction.(See pic. 8)



Don't put your hands on the wheel: if you put your hands between rim and mounting head, it may getting hurt when column return to its original position

With the crowbar J interested between the bead and the front section of mounting head, move the tyre bead over the mounting head with crowbar J.

Note: In order to avoid damaging the inner tube, if there is one, it should be 10cm to the right of the mounting head I about the above operation

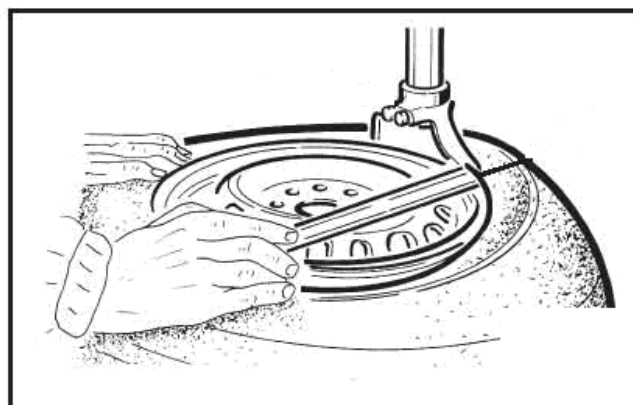


Keep your hands and body as far away as possible from the moving parts when operating the machine, to avoid getting hurt. It is dangerous to wear necklace, bracelets and loose clothes

While the crowbar in this position, rotate the turntable O clockwise by pressing down on pedal M until the tyre is completely separated from the wheel rim.(Pic.7)

Remove the inner tube if there is one, no need to unlock the operating arm, just step the pedal N to tilt the operating arm, and take the inner tube out.

Repeat the same operation for the other bead.



Pic.8

6.3 Tyre mounting



Note: To avoid explosion in inflating, it is important to check the tyre and rim. Before mounting the tyre, pay attention to the following points:

Don't mount the tyre if the outside of tyre is damaged

Whether the rim is dented or deformed. In particular, there will be small cracks in the rims of alloy wheels, which cannot be seen with naked eyes, which will damage the durability of wheel, so there will also be risks in inflating process.

Make sure that the wheel rim and tyre are of the same size. If you can't make sure of it, don't mount the tyre

Lubricate the tyre beads with special grease in order to avoid damaging them and to facilitate the mounting operations.

Clamp the rim firmly on the turntable.



Don't put your hands under the tyre during clamping process

In order to clamp the rim correctly, it should be placed in central position about the wheel on the turntable



Before operating the column tilting, make sure that there is nobody standing behind the column

Note: When working with the rims of the same size, it is not necessary always to lock and unlock the mounting bar, just tilt and return to its original position about column.



Don't put your hands between tyre and clamps, avoiding body injury

Move the tyre so that the bead passes below the front section of the mounting head is brought up against the edge of the rear section of the mounting head itself.

Keep the tyre bead pursed down into the wheel rim channel with your hands. Step pedal M to rotate the turntable clockwise. Continue until you have covered the entire circumference of the wheel rim.

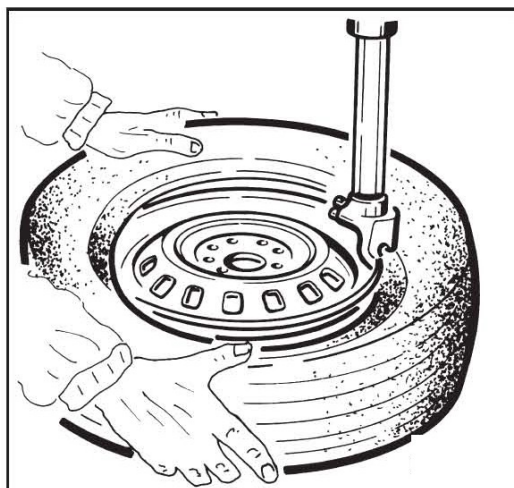


Keep your hands and body as far as away from the operating arm when rotating the turntable, avoiding body injury

Insert the inner tube, if there is one. Repeat the above operation for the other side of bead.



Turntable is always rotating clockwise during mounting and demounting process, unless the machine is something wrong or operating mistakenly, it may rotate anticlockwise



Pic.9

7. Inflating



You have to inflate the tyre carefully, following below instructions strictly. Pls note there is no protection device on designing of the tyre changer for the safety of the operator on the machine or surrounded machine if the tyre explode suddenly.

A burst of tyre or breakage of the rim under pressure can both cause serious injury or even death of the operator.

⚠ DANGER



Check carefully that the wheel rim and the tyre are of the same size.

Check the state of wear of the tyre and there is no defects before beginning the inflation stage.

Inflate the tyre with brief jets of air, checking the pressure frequently.

All our tyre changers are limited to a maximum inflating pressure of 3.5 bar in any case never exceed the pressure recommended by the manufacturer.

Keep your hands and body as far as possible from the tyre in inflation stage.

7.1 Inflating tyre with nozzle

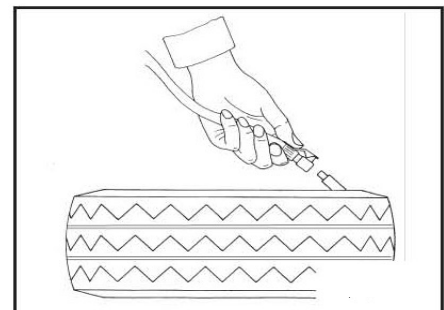
Tyre changer is equipped with nozzle to inflate a tyre.

Follow below instructions to inflate a tyre:

Connect the nozzle fitting to the tyre valve.

Check the wheel rim and the tyre are of the same size

Check the wheel flange and rim are with enough lubrication.



Pic.10

Press the nozzle trigger, in this stage, control the inflating pressure, until the tyre fits to the rim completely.

Continue to inflate the tyre and check the inflating pressure frequently, never to exceed the pressure indicated by the manufacturer.

Danger of burst:

Never to exceed the pressure indicated by the manufacturer: 3.5bar

⚠ DANGER



Remove the tyre from the turntable, if you need more inflating pressure, place the tyre in special protection cage to continue the inflation operation.

Never to exceed the maximum inflation pressure.

Keep your hands and body as far as away from the tyre.

Only professionals are allowed to use the machine. Other people are not allowed to use or approach the machine during the inflation stage.

8. Relocate

Forklifts are needed to move fully automatic tyre changer.

Disconnect the electric power supply and compressed air system.

Insert the crowbar on one side bottom of the tyre changer, get the machine off the ground, and then insert the fork, lifting it up.

Place the tyre changer in new position.

Note: Location of the new place must comply with national safety regulations.

9. Storage

If the tyre changer need to be stored for some time, pls follow below instructions:
Disconnect all energy supplies and lubricate the slide of the clamps on the turntable to prevent oxidation.

10. Scrap

Make sure all energy supplier are disconnected when deciding to scrap the equipment.

All nonferrous metals and nonmetals shall be disposed of as scrap in accordance with relevant laws and regulations.

Process the oil inside the machine at the place specified by applicable law.

Discard the remaining steel.

11. Repair and maintenance

11.1 Warning

Untrained people is not allowed to carry out maintenance work.

Regular maintenance as described in the instructions for correct operation and long lifetime of the tyre changer.

If maintenance is not carried out regularly, the operation and reliability of the machine may be compromised, thus placing the operator and anyone else in the vicinity at risk.



Before carrying out any maintenance work, disconnect the electric and pneumatic supplies.

Moreover, if it is necessary to break the bead load less 3-4 times in order to let the air in pressure go out the circuit.

Damaged parts must be replaced exclusively by expert personnel use the manufacturer's spare parts.

It is forbidden by national safety regulation to disassemble and replace safety devices (safety valves and regulating valves).



In particular, the manufacturer shall not be liable for any damage caused by users using parts of other manufacturers or damage by disassembly and damage of safety devices.

11.2 Repair and maintenance

Clean the turntable once a week with diesel fuel so as to prevent the formation of dirt, and grease the clamp sliding guides.

Perform the following maintenance work once a month:

Control the oil level of oil-water separator. If the level is low, screw off the oil cup F before adding. Use only oils specified by ISO HG with viscosity ISO VG32. Such as: ESSO Febis K32, Mobil Vacuoline 1405, KLUBER32

Step pedal bead breaker 3-4 times, checking if some oil filled in oil cup G. If not, adjusting screw D. (Pic.11)

Note: After the first 20 days of work, retighten the clamp tightening screws and screws on turntable slides (Pic.12)

Note: In the event of a loss of power, check that the drive belt is tight as follow:
Disconnect power supply before operation

Remove the left side body panel of tyre changer, unscrewing the four fixing screws.

Tighten the drive belt by means of the special adjusting screw X on the motor support. (Pic.13)

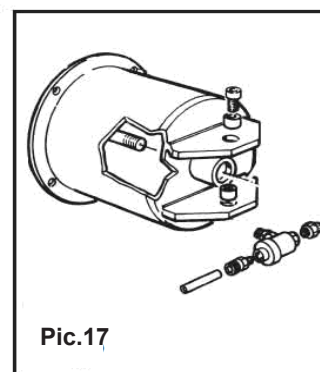
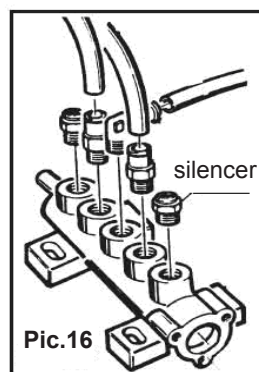
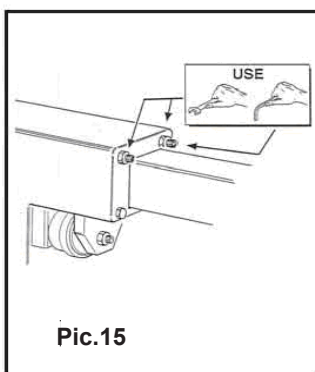
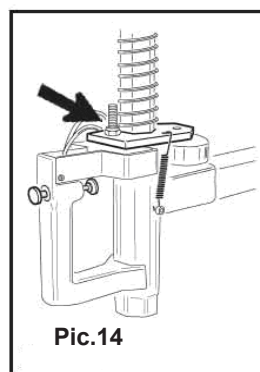
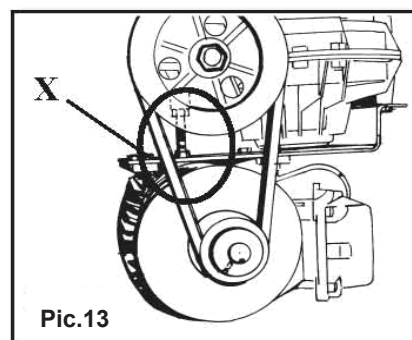
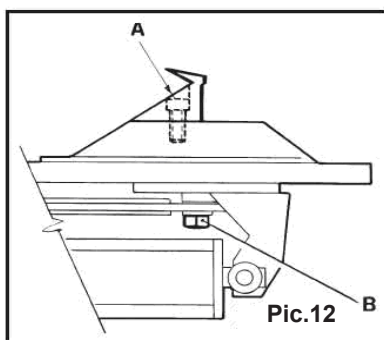
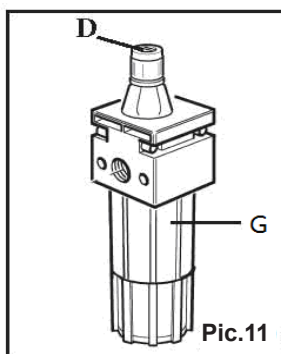
Note: If the working head is not locked or cannot be stopped 2mm above the rim, the locking plate of the operating arm shall be adjusted as shown in pic. 14.

If the working head is too far away from the rim in the horizontal direction, adjust the adjusting screw of the locking plate of the push-pull arm as shown in pic. 15 to make the working head 2mm away from the rim in the horizontal direction.

Note: For cleaning or replacing the silencer of opening/closing clamps A (See Pic.16), proceed as follows:

- 1) Remove the left side panel of the machine body by unscrewing the four fixing screws.
- 2) Unscrew the silencer put on pedal system L, on the clamp A opening/closing pedal.
- 3) Clean by a jet of compressed air, or if damaged, replace by the same spare parts.

Note: For cleaning or replacing the silencer of bead breaker L, see pic. 16, and proceed as shown on previous point 1&3.



12. Trouble shooting

Trouble	Cause	Troubleshooting
Turntable rotates only in one direction	Universal switch is damaged	Universal switch
Turntable doesn't rotate	1. Belt is damage 2. Universal switch is damage 3. Motor trouble	1. Replace the belt 2. Replace the universal switch 3. Replace motor
Turntable doesn't work	Belt loose	Adjust belt tension
Clamp open/close slowly	Silencer trouble	Clean or replace
turntable doesn't lock the rim correctly	1. Clamp is damaged 2. Cylinder of turntable is damaged	1. Replace clamp 2. Replace the sealing ring of cylinder
The working head touch the rim when operation	1. Locking place position is incorrect or damaged 2. Turntable locking screw loose	1. Adjust or replace locking plate 2. Tighten screw
Pedal should not be located in working position	Return spring damage	Replace the return spring
Bead breaker operation difficult	1. Silencer trouble 2. Cylinder sealing ring of bead breaker is damaged	1. Clean or replace the silencer 2. Replace the sealing ring

13. Characteristics

Outer Clamping Range: 12"-24"

Inner Clamping Range: 14"-26"

Max. tyre width: 14"

Max. tyre diameter: 1120mm (44")

Working pressure: 8bar-10bar (145 Psi)

Max. inflation pressure: 3.5bar

Voltage 380V: (3ph)

Power: 1.1kw

Max. shaft torque: 1200Nm~1500Nm

Beadbreaking Force: 2500Kg

Machine size: 1600x1600x1990mm

Net weight: 325Kg

Level of noise: <75dB (A)

Turntable rotation speed:

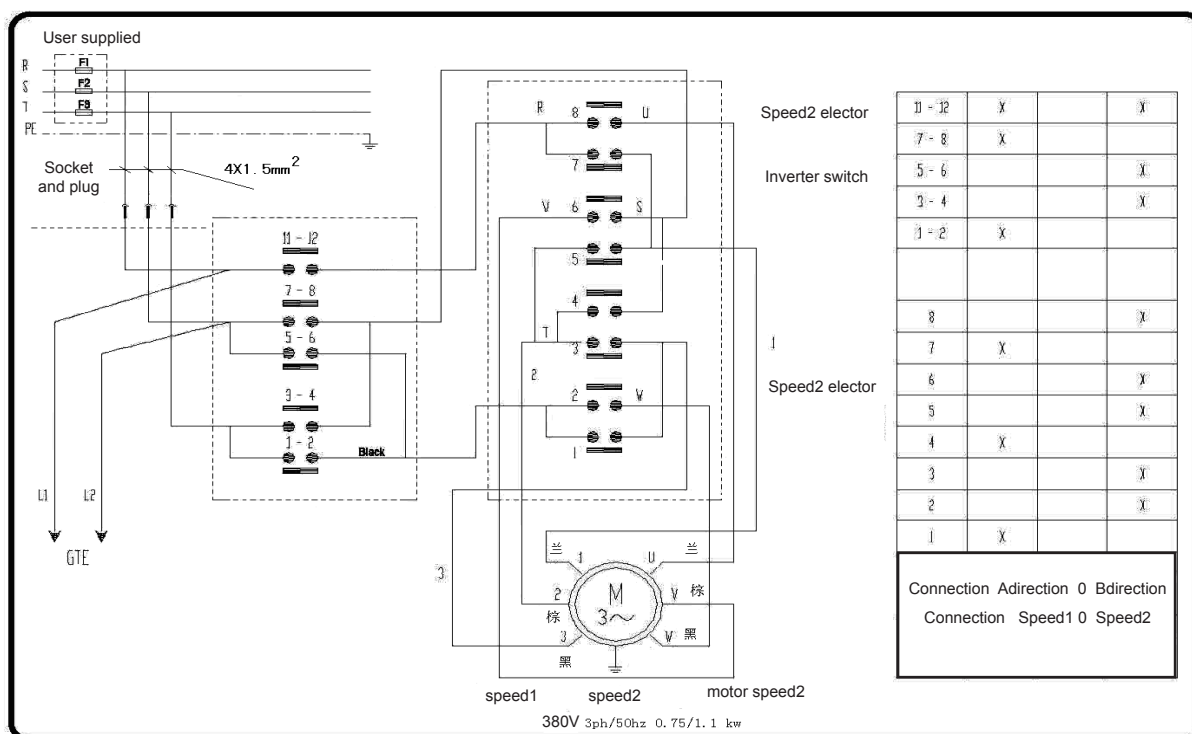
Low speed: 6 r/min

High speed: 12 r/min

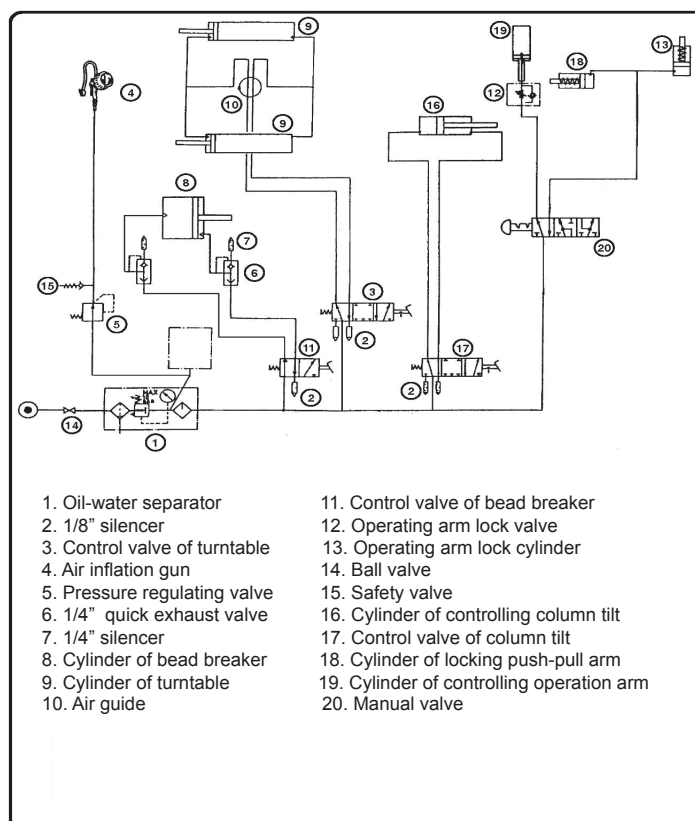
14. Circuit diagram and pneumatic connection diagram

14.1 Circuit diagram

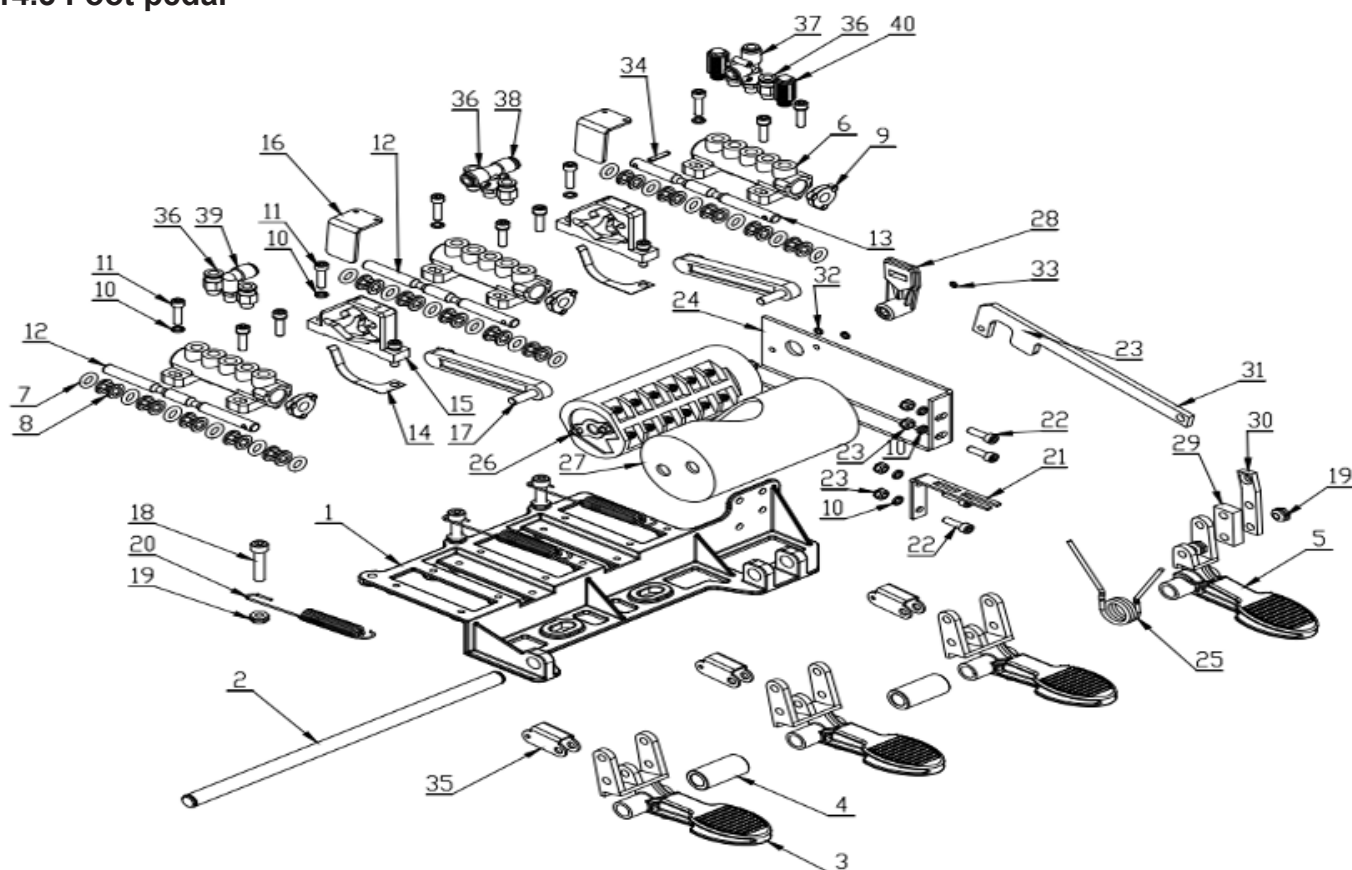
380V - 3 PH - 2 SPEED



14.2 Pneumatic connection diagram



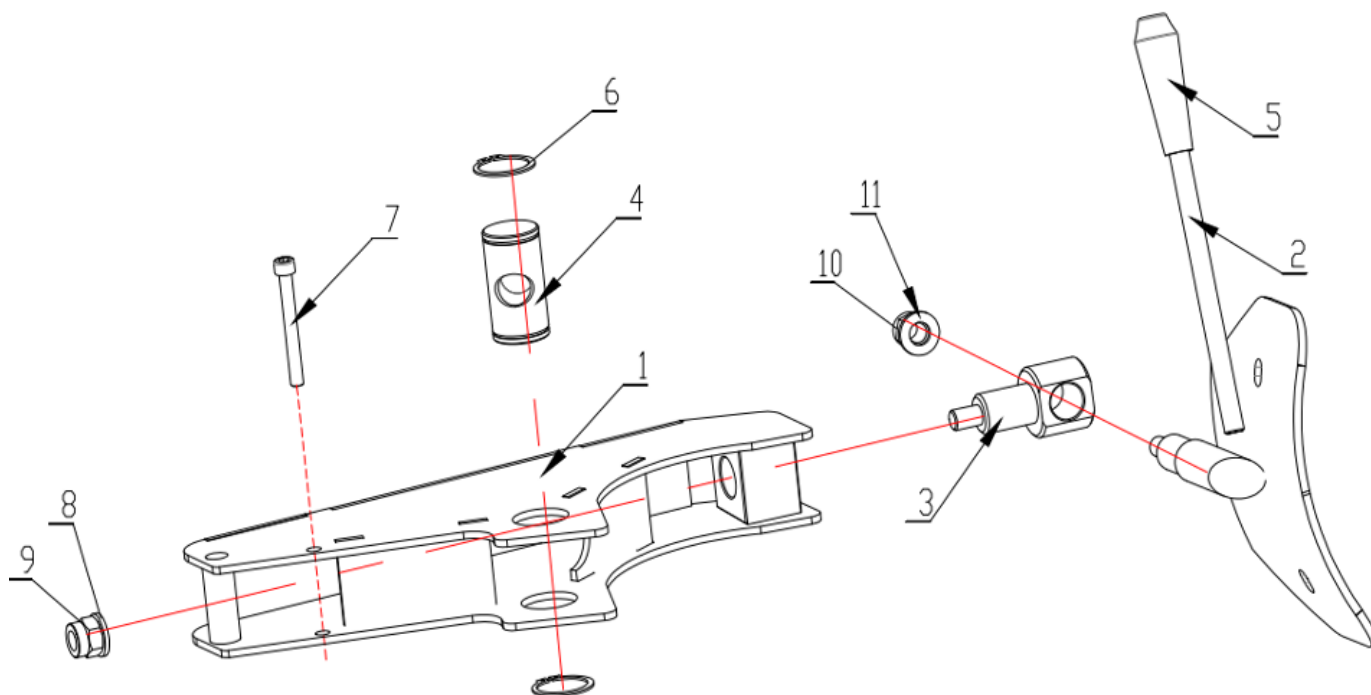
14.3 Foot pedal



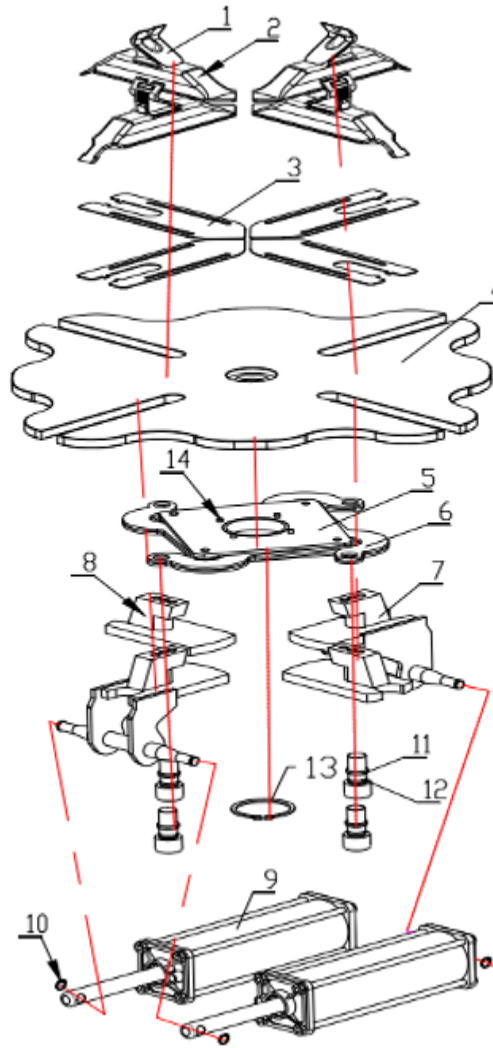
Serial Number	Name	Drawing number or specification	Number
1	Four-foot aluminum chassis		1
2	bed shaft		1
3	Air valve tread		3
4	Pedal spacer sleeve		2
5	Switch foot		1
6	seated valve		3
7	O-ring		18
8	New spacer		15
9	Seat valve end cap		3
10	Standard spring washer 6		17
11	hexagon socket head cap screws	M6×25	13
12	Lifting valve stem		2
13	Lifting valve large cylinder stem		1
14	Linkage shrapnel		2
15	cam		2
16	CAM baffle		2
17	CAM link		2
18	hexagon socket head cap screws	M8×40	3
19	Hexagon nut Class C M8		5
20	pullback spring		3
21	Torsional spring bracket		1
22	hexagon socket head cap screws	M6×20	4

Serial Number	Name	Drawing number or specification	Number
23	Hexagon nut Class C M6		5
24	New two-speed switch support board		1
25	torsional spring		1
26	two speed switch 40A 380V		1
27	Two-speed switch sleeve		1
28	Two-speed switch rotation		1
29	base plate		1
30	support plate		1
31	Switch tie rod		1
32	standard spring washer 5		2
33	"standard spring washer 4"		1
34	Elastic cylindrical pin straight slot heavy duty	4×20	1
35	link span		3
36	"straight in 8-G1/8"		6
37	Three-way side Φ8, R1/8		1
38	Middle of tee Φ8 ,R1/8		1
39	Insert elbow Φ8 ,R1/8		1
40	Plastic muffler		2

14.4 Shovel arm section

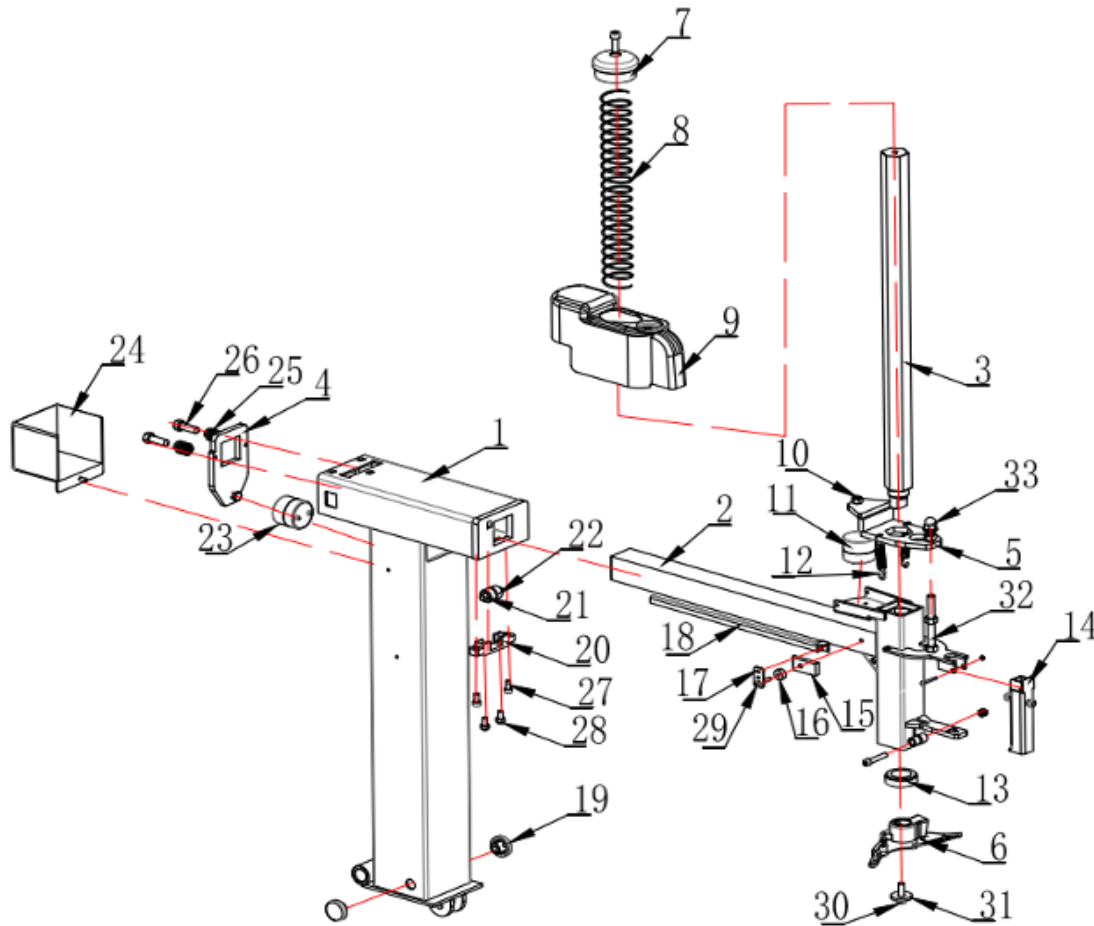


Serial Number	Name	Drawing number or specification	Number
1	816 Shovel arm assembly welding parts (spray coating)		1
2	Ordinary large shovel assembly welding parts (galvanized)		1
3	Shovel arm universal joint shaft (galvanized)		1
4	Shovel arm center axis (galvanized)		1
5	Big shovel handle sleeve	rubber	1
6	External retaining ring	φ40	2
7	Full thread hexagonal cylindrical head bolt	M10*75	1
8	Flat washer	16*28*2	1
9	Non metallic self-locking nuts	M16	1
10	Non metallic self-locking nuts	M14	
11	flat washer	14*35*2	

14.5 Worktable

Serial Number	Name	Drawing number or specification	Number
1	Claw		4
2	boat		4
3	Small boat slide		4
4	workplate	24 \"Flower Plate	1
5	Two board motherboard		2
6	Two plate pull plate		8
7	Small boat main hanger		2
8	Small boat auxiliary hanger		2
9	Working disc small cylinder assembly		2
10	A-type retaining ring for shaft	φ12	4
11	spring washer	φ12	4
12	Internal hexagonal cylindrical head bolt	M12×45	4
13	Hole retaining ring	φ40	1
14	cylindrical pin	φ6	8

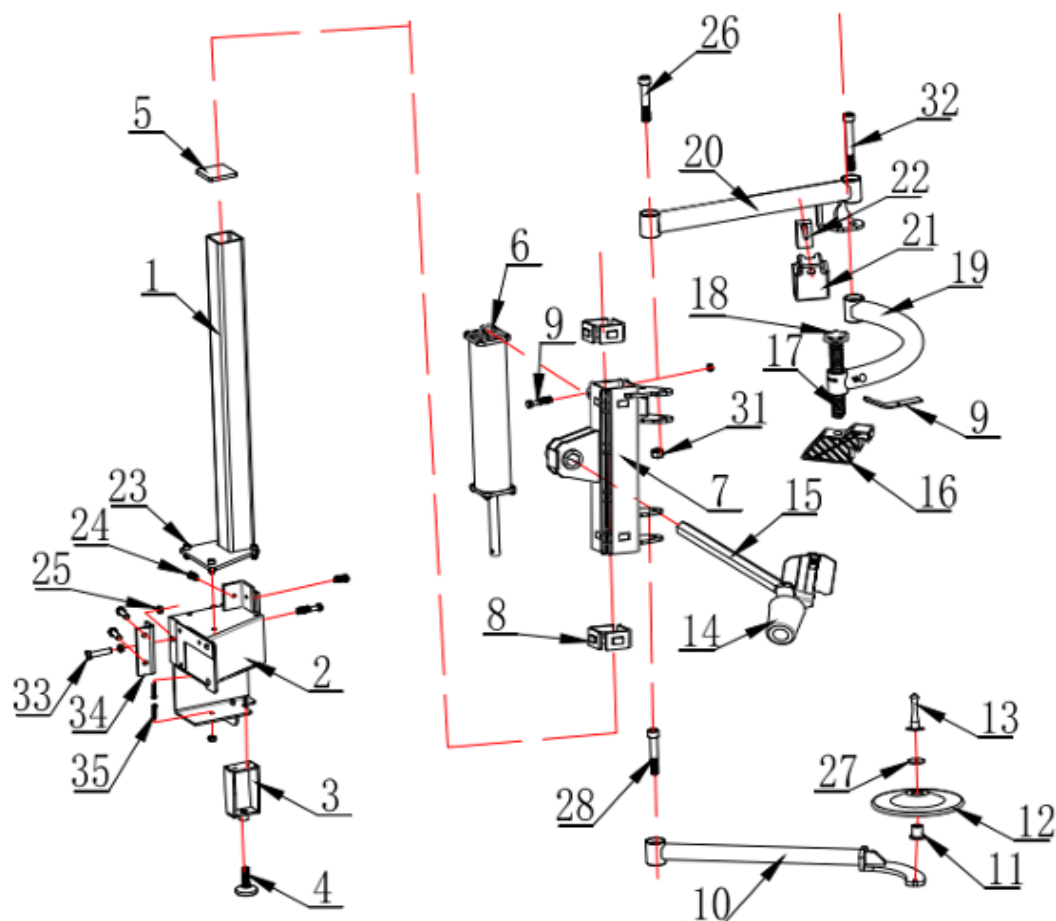
14.6 Pillar



Serial Number	Name	Drawing number or specification	Number
1	819 Column assembly welding parts (spray coating)		1
2	819 Push Pull Arm Assembly Weldment (Spray Coating)		1
3	Hexagonal bar	740mm	1
4	Square locking plate (blackened)	819	1
5	Hexagonal locking plate (boiled black)	819	1
6	White Steel Bird Head (02)	Revised bird head 22.10.17	1
7	Hexagonal cap		1
8	Hexagonal bar compression spring	3.5*55*630	1
9	Large buckle cover		1
10	Full thread outer hexagon bolt	M10*20 8.8 level	1
11	Hexagonal bar locking cylinder assembly		1
12	Hexagonal locking plate tension spring	1.8*10*72	1
13	Hexagonal shock absorber pad		1
14	Locking hand valve small assembly		1
15	Plastic stopper		1
16	SHIELD SPACER		1
17	Push pull arm stopper (blackened)		1

Serial Number	Name	Drawing number or specification	Number
18	Slide bar		1
19	Column plastic stopper		2
20	Roller seat (galvanized)		1
21	Straight pin	12*55	1
22	needle roller bearing without inner ring	5624098	2
23	Square bar locking cylinder assembly		1
24	Rear locking cylinder cover		1
25	Square locking plate tower spring	3.0*18*22*32	1
26	Full thread outer hexagon bolt	M12*130	2
27	Internal hexagonal cylindrical head bolt	M8*10 8.8 level	2
28	Internal hexagonal flat end set screw (top thread)	M8*25	2
29	Full thread hexagonal cylindrical head bolt	M8*30	1
30	Full thread hexagonal cylindrical head bolt	M10*25	1
31	Flat washer 10 * 35 * 5 * white zinc	10*35*5	1
32	Full thread outer hexagon bolt	M12*130	1
33	Hexagonal cover nut (decorative cap)	M12	3

14.7 Assistant



Serial Number	Name	Drawing number or specification	Number
1	Assistant B pillar assembly welding parts (spray coating)		1
2	B Assistant Base Assembly Weldment (Spray)		1
3	Support leg assembly welding parts (spray painted)		1
4	Support foot top wire assembly welding component (blackened)		1
5	Square tube buckle cover		1
6	cylinder	94*405	1
7	B Hand block assembly welds (front/back)	a group	1
8	Car slide		8
9	Rod assembly welds (galvanized)		2
10	Welding of tire support arm assembly (spray coating)		1
11	Placental support installation shaft (electroplated)		1
12	Plastic placenta support		1
13	Placental support handle	Assistant B	1

Serial Number	Name	Drawing number or specification	Number
14	Large cone roller		1
15	Hexagonal tire pressing rod assembly welding parts (blackened)		1
16	Trapezoidal tire pressure head		1
17	Lead screw (galvanized)		1
18	Plum blossom handle	M14	1
19	Bending arm assembly welding parts (spray coating)		1
20	Rotating arm assembly welding parts (spray coating)		1
21	Plastic cover for lifting valve		1
22	Lift valve		1
23	Full thread hexagonal cylindrical head bolt	M12*30	4
24	Full thread outer hexagon bolt	M12*35	2
25	hex nut	M12	3
26	Full thread hexagonal cylindrical head bolt	M20*120	1
27	Flat washer 10 * 35 * 5 * white zinc	10*35*5	1
28	Full thread hexagonal cylindrical head bolt	M20*120	1
29			15
30			15
31	Non metallic self-locking nuts	M20	4
32	Hexagonal cylindrical head bolt half tooth	M20*160	1
33	Outer hexagon cylindrical head bolt with full teeth	M12*25	
34	Link bend (spraying)		
35	Outer hexagon cylindrical head bolt with full teeth	M12*65	