

BILT HARD

TIRE CHANGER

Operator's Manual



Model:PLA-1014BH

FOR YOUR SAFETY

READ AND UNDERSTAND THE ENTIRE MANUAL BEFORE OPERATING MACHINE

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Tyre Changer

Warning

This instruction manual is important for the machine, please read carefully before installation and use; also it is important for safe use and machine maintenance of machine. Please keep this manual properly in order to further maintenance of the machine.

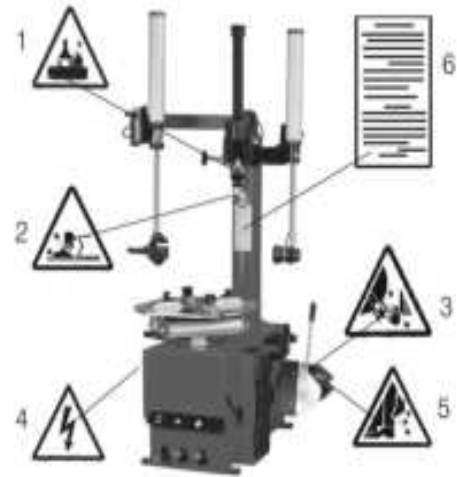
1. Introduction:

Application Range: The semi-automatic tyre changer is especially designed for demounting / mounting tyres from wheel rims.

Caution: Please use the machine only for purpose for which it is designed, don't use it for other purposes.

Manufacturer shall not be liable for any damage or injury caused by failure to comply with these regulations.

Safety regulation: Use of this machine is especially reserved to trained and qualified professional persons, those who already read the introduction manual carefully, or someone have the experience for operating similar machinery. Any changes and beyond the scope of use on this machine without manufacturer's permission or do not according to the manual, may cause the malfunction and damage to machine, manufacturer can cancel warranty coverage for above. If some parts are damaged due to some reason, please replace them according to the spare parts list. (Attention: warranty is one year after manufactures' delivery date; warranty excludes the easy-broken parts).



2. Safety Warnings:

- 01 Don't put hands under the Mounting/demounting head during operation;
- 02 Don't put hands between the jaws during operation;
- 03 Don't put hands inside the tyre bead when demounting the tyre;
- 04 Make sure and to check the system is equipped with a good grounding circuit;
- 05 Don't put feet between the Bead Breaker shovel and the body during operation;

Security warning labels

Caution:

When the security warning labels are defaced or off, please recovery them in time!

Do not allow to operate when the security warning labels are missed or imperfect.

Do not allow to set any objects to obscure the security warning labels.

Clients can self-set the warning labels (as right picture show) at any necessary positions.



3. Technical data

External locking rim dimensions	10~22 "
Internal locking rim dimensions	12~24 "
Max. Wheel diameter	1040mm(41 ")
Max. Wheel width	355mm(14 ")
Working Pressure	8-10bar
Power supply	110V (1ph)
Optional Motor power	1.5 kw
Max. Rotating Torque (Turntable)	1078 Nm
Overall Dimension	30.31*21.259*73.45inch
Noise Level	<75 Db

Remark:

Rim dimensions defined at above table are based on the iron wheel rims. Aluminum rims are thicker than the iron wheel rims, so here above rim dimensions are just for the reference.

4. Transport:

When transporting, the machine should be with original package and placed according to the mark on the package. For the already packaged machine should be handled with a corresponding tonnage forklift for loading and unloading. The location to insert the fork feet shown as Fig 1

5. Unpacking & Inspection:

Pull out the nail which is nailed on the plate with tip jaw; unpack the carton and plastic cover. Check and make sure all parts shown on the spare parts list are included. If any parts are missing or broken, please do not use the machine and contact the manufacturer or dealer ASAP.

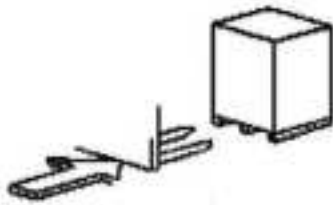


Fig 1

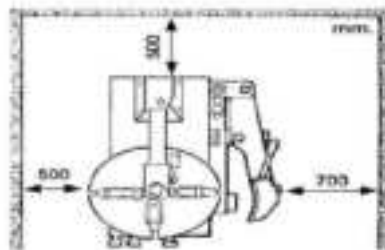


Fig 2

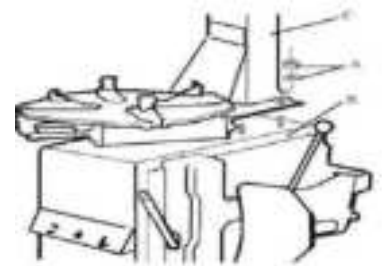


Fig 3

6. Workplace requirements:

Choose workplace in compliance with safety regulations. Connect power supply and air source according to manual and workplace must have good air condition; in order to make the machine run well, its workplace requires at least clear space from each wall shown as **Fig 2**. If installing it outdoor, it must be protected by roof against rain and sunshine.

Warning: the machine with motor must not be operated in explosive atmosphere.

7. Position and installation:

1. Unscrew the nuts at the bottom, position the machine and calibrate it with the horizontal rule. Mount the machine with all the screws and to ensure the machine is stable. Make sure the system is equipped with a good grounding circuit for prevent electric leakage And have operation range of ground for skid prevention.

2. Unscrew the nut A on the cabinet body B as shown in Fig 3. Lift the column C; mount it on the machine body B by using the nut A through the bolt located on the machine body B. If the column becomes loose after a period of using, tight them immediately. Otherwise the result of damage to the tyre may happen.

8. Electricity and Pneumatic connections:

Caution: Before installation and connection, check to be sure that the electricity power supply corresponds to the machine technical data. All the installation of electric and pneumatic devices must be operated by a professional electrician.

Connect the compressed air connector which is on the machine right side with compressed air system. The electric grid that the machine connects to must have fuses protection device and good outer cover grounding protection. Install the leakage automatic air switch on the main power supply, leakage current is set at 30mA

Caution: No power plug for this machine, the user should self-connect one power plug no less than 16A as well as in line with the machine voltage. Or directly connect with the power supply **according to the above requirements**.

9. Adjusting operation:

Control devices are shown as Fig 3 and included the following:

- Locking switch button (P), used to lock or unlock Swing arm (O). Mounting head (I) can be raised about 2-3mm automatically if locking.
- jaw clamping pedal (V), used to make four jaws (G) on the turntable open or close.
- bead breaker pedal (U), used to operate bead breaker arm (R).
- reverse pedal (Z), used to make turntable (Y) rotate in clockwise /anti-clockwise direction.

Check whether the tyre changer runs well or not after connection finished:

Depress the reverse pedal to turn the turntable in clockwise direction.

Push the reverse pedal up to turn the turntable in anti-clockwise direction.

Depress the bead breaker pedal to open the bead breaker arm. Loosen it to turn the bead breaker arm back.

Depress the jaw clamping pedal completely to open the jaws on the turntable, depress it once again to close the jaws.

When the pedal is in the middle position, the jaws are in the static status.

Tyre changer operation is consisted of three parts:

- 1) Demounting the tyre bead
- 2) Demounting the tyre
- 3) Mounting the tyre

Caution: Before any operations, don't wear loose clothing and wear protective hat, gloves, and skid-proof shoes. Ensure to exhaust the air in the tyre completely, and remove all the wheel weights from the rim.



9.1. Breaking the tyre bead:

1) Be careful when loosening tyre. Bead breaker arm will move rapidly with powerful force when depressing the bead breaker pedal, it may crash things in its working area. Deflate the tyre completely, take off the core of valve stem;

2) Close the four jaws on the turntable to avoid conflict. If jaws open, it may scratch hands, so don't touch the bead when loosening.

3) Open the bead breaker arm by hands by pushing it towards the outside, place the tyre against the rubber buffer. Bring the paddle against the bead about 10mm from the edge of the rim shown as Fig 5.

Caution: Place the paddle against the tyre bead.

4) Depress Bead breaker pedal to push paddle into tyre. Repeat the above operations on different positions around the tyre and both sides of tyre until tyre is released completely.

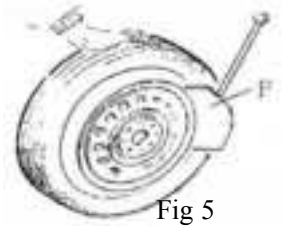


Fig 5

9.2. Clamping the tyre:

1) Remove all the weights on the wheel rim;

2) Lubricate the tyre bead;

3) Swing the swing arm to non-working position.

4) Secure the wheel rim on the turntable from inside or outside.

Don't put your hands under the wheel while clamping the wheel rim.

Put the tyre on the center of the turntable.

Check to make sure the wheel firmly secured by the four jaws.

a- to clamp the wheel from outside (Tyre Diameter From 10" To 22"):

Depress the jaw clamping pedal halfway down to position the four jaws, put the tyre on turntable, and depress the jaw clamping pedal until the wheel is secured by the jaws.

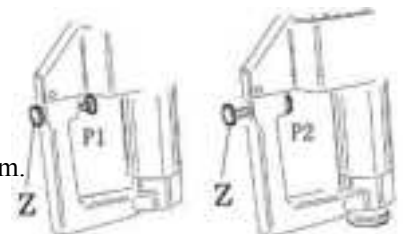
b- to clamp the wheel from inside (Tyre Diameter From 12 " To 24 "):

Depress the jaw clamping pedal to close the four jaws on the turntable. Put the tyre on the turntable and depress the jaw clamping pedal to open the jaws, thereby lock the wheel in place.

Position 1 of the locking button locks the mounting bar and arm.

Position 2 of the locking button unlocks the arms.

The mounting head positions itself automatically at the correct distance from the rim.



Caution: Check to make sure the wheel firmly secured by the four clamps before next step.

9.3. Demounting the tyre :

1) Adjust horizontal arm on the column to the working position. Don't put your hands on the wheel rim to avoid injury during this operation.

2) Lower the vertical arm until the mounting head rests next to the wheel and on the top of tyre. Then lock the vertical arm in position using the locking switch button. The mounting head can raise 2mm-3mm automatically from the edge of the wheel rim.

3) Insert the lifting lever between the tyre bead and the front section of the mounting head, and move the tyre above the mounting head as shown as Fig 6.

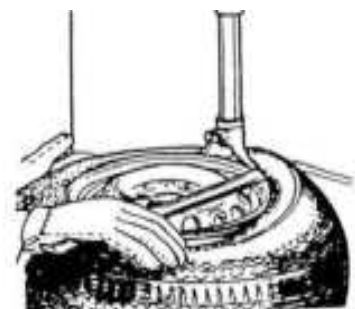


Fig 6

Note: In order not to damage the inner tube, it is recommended to perform this step with the inner tube valve stem positioned about 10 cm to the right of the mounting head.

With the lifting lever held in position shown as Fig 6, rotate the turntable in a clockwise direction by fully depressing the reverse pedal. Continue until the tyre is completely separated from the wheel rim.

To prevent accident, keep hands and other parts of your body away from moving devices during operation.

Note: The tyre can be slid out easily from the mounting head due to hardness. In order to prevent it, with the lifting lever held in position shown as Fig 6, rotate the turntable about 1~2 cm in anti-clockwise direction before rotating in clockwise direction.

- 4) Remove the inner tube if there is one.
- 5) Repeat the step 3 for the other side of the tyre.
- 6) Swing the swing arm to the non-working position. Remove the tyre from the wheel rim.

Caution: Chains, bracelets, loose clothes and anything else close to the rotating parts will bring danger to the operator.

9.4. Mounting the tyre :

Caution: Check to make sure that the tyre and the wheel rim are of same size before mounting the tyre.

To avoid any damage on tyre, lubricate the tyre bead and the wheel rim with the lubrication recommended by manufacturer. Put on the tyre and check the situation.

Caution: When clamp the wheel rim, don't put your hands on the wheel rim to avoid injury during this operation.

During rim locking NEVER keep your hands under the tire. For a correct locking operation set the tire exactly in the middle of turntable.

9.4.1 Checking tyre and wheel rim:

Caution: Check to make sure that the tyre and the wheel rim are of same size, it can prevent burst of the tyre during inflating and mounting.

Check as follows:

- No damage for tyre and tyre components, don't use it if some defects on the tyre appear.
- No convex and concave defects on the wheel rim.

Note: Especially for alloy wheel rim, it may have some micro inner cracks caused by concave defects. It is the danger to operators or the damage to the wheel rim. The tyre and the wheel rim must be of the same size.

Note: The diameter of the wheel rim is stamped on itself, so is the tyre. If you are not sure, don't mount the tyre.

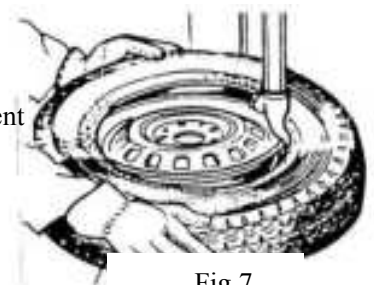


Fig 7

9.4.2 Mounting the tyre:

- 1) Lubricate the tyre bead and the wheel rim with the lubrication recommended by manufacturer.
- 2) Clamp the wheel rim according to the section of “clamping the tyre” if the tyre is removed from the turntable.
- 3) Swing the swing arm on the column to the working position. Don't put your hands on the wheel rim to avoid injury during this operation.
- 4) Place the mounting head above the edge of the wheel rim with hands. Lock the vertical arm as described as step 2 in the section of “demounting the tyre”.

5) Move the tyre so that the bead passed below the front section of the mounting head and is brought up against the edge of the rear section of the mounting head. (Fig 7)

Note: if the tyre doesn't have inner tube, make the valve stem and mounting head in the same line. Keep the tyre bead pressed down into the wheel rim channel with hands. Then, depress the pedal to rotate the turntable in clockwise direction. Continue this process throughout the entire circumference of the wheel rim and tyre.

To prevent accident, keep hands and other parts of your body away from moving devices.

- 6) Insert the inner tube if there is one.
- 7) Repeat the steps above for the other side of the tyre. Swing the swing arm to non-working position.
- 8) Depress the pedal, remove the tyre from the turntable.

Note: The turntable is always rotating clockwise during mounting or demounting; anti-clockwise rotating is just for correcting operation.

10. Inflating the tire:

Importance: It is very dangerous during inflating operation, take carefully and comply with instruction. When inflating, it will turn to be extremely dangerous if problems happen to tyre or rim. The possible burst force tire goes upward and outward, the big power may cause injury or death of the operator or the people around.

Tyre may burst caused by following:

- 1) The wheel rim and the tyre are not of the same size;
- 2) The tyre or the wheel rim is damaged;
- 3) The pressure of tyre inflation is over the max. pressure recommended by manufacturer;
- 4) The operator fail to comply with the safety regulation;

Please operate as follows:

- 1) Remove the valve cap from the valve stem;
- 2) Check to make sure the air nozzle is pressed down completely over the threads of the valve stem.
- 3) Check to make sure that the tyre and the wheel rim are of the same size;
- 4) Lubricate both the tyre bead and the wheel rim, additional lubrication is required if needed;
- 5) Inflate the tyre with break, while inflating, check the pressure listed on the pressure gauge, also check whether the bead is fixed or not. Repeat operation above until the bead is secured; you need take special steps when inflating convex rim or double convex rim;
- 6) Continue inflating and check the air pressure frequently until to reach the required pressure.



Fig 8

Handheld Burst inflation function:

When the air gun cannot inflate the tire, please use the horn type explosive inflation function

Operation method:

1. Insert the horn into the gap between the tire and the rim edge, and press it against the edge of the rim.
2. Press the pneumatic control valve to quickly inflate the tire, and use high-pressure airflow to seal the gap between the tire lip and the rim edge, thereby inflating the tire.



WARNING :



Note:

Never exceed the max. inflation pressure given by the tyre manufacturer.

Keep hands and your body away from inflating tyres.

Only specially trained persons are allowed to perform the operations, do not allow other to operate or be near the tyre changer.

Do not direct the inflation port towards people or other objects.

Please remember, safety comes first and do not attempt dangerous inflation methods easily.

11. Moving machine:

Please use forklift to move the machine. Disconnect the tyre changer from the electricity power supply and pneumatic power supply, lift the base board and insert the feet of forklift. Then mount the tyre changer machine to a new position and fix it tightly.

Note: the place chosen for fixing the tyre changer must meet the safety regulation.

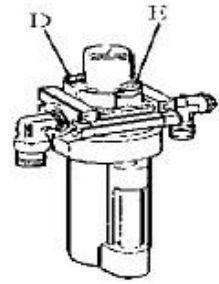


Fig 9

12. Maintenance:

Caution: only the professional persons can do the maintenance. To prolong the machine's life, maintain the machine timely according to the manual. Otherwise, it will impact the reliability of the machine or even cause injury to operator and others nearby.

Caution: before performing any maintenance, disconnect the tyre changer from the electric power supply and pneumatic power supply, and tread the Jaws open and close Pedal or Turntable Rotation Pedal for 3~4 times to evacuate all compressed air from the machine. Damaged parts must be replaced by professional persons with the spare parts provided by manufacturer.

Please regularly drain the water from the sealed tank.(Fig.14)

Fig 14



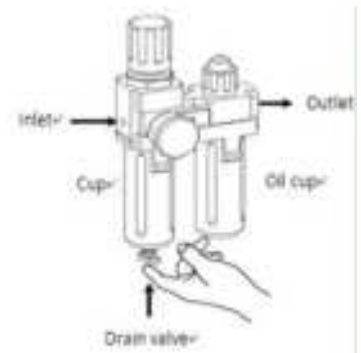
- Clean the machine once every day after work. Clean the dirt on the turntable with diesel oil once per week and lubricate the slides and clamps.

- Following maintenance must be done at least once per month:

Check oil level in Oil Fog Maker, please be filled with SAE30# oil if need.

Unscrew with hex wrench (E). Based on connection of compressed air, first to tread Jaws open and close Pedal or Turntable Rotation Pedal 5-6 times, and then check whether oil in Oil Fog Maker drops down a drip of oil. For continuous operation, tread twice every time, drop down a drip of oil, otherwise adjust the screw (D) that controlled oil enter with minus screwdriver.

As shown in Figure 9-1, when you found there are some water in the cup, push up the drain valve to drain away water with your fingers; loosen your fingers after drained water, drain valve can be automatic closed under the action of the spring.



Note: After the first 20 days of use, retighten the jaws with tightening screws (B) on the Turntable (Fig 10)

Note: in the event of turntable lose power, check to see if the belt is tight as follow steps:

Remove the left side cover by unscrewing the screws; adjust two screws located on the motor support, keep a suitable distance between motor support and motor base; tight the screws for the belt tension. (Fig 11)

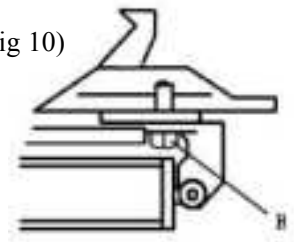


Fig 10

Note: In order to achieve the reliability of jaws and Bead Breaker shovel, operate as follows to keep their valves clean:

1. Remove the left side cover of the machine body by unscrewing the two screws;
2. Loosen the valve Muffler (A) which belong to Jaws open and close Pedal and Bead Breaker Pedal; (Fig13)
3. Clean the mufflers with compressed air, please replace it referring to the spare parts list if it is damaged. (Fig13)

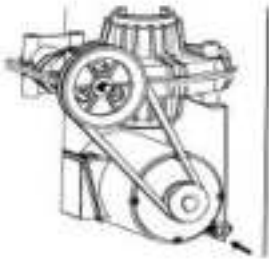


Fig 11

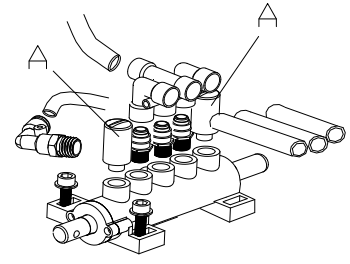


Fig 13

13. Help Arm

help arm is auxiliary device of tyre changer for helping operator to demount / mount tyre much easier.

Warning: Before install this help arm to the tyre changer, please make sure which is matched with the tyre changer.

This help arm device must be used together with our tire changers, we are not sure it can work with other supplier tyre changers.

Warning: Before any operation of this machine, the operator is requested to read the manual carefully. Do not attempt any operations that are not stated in it. Manufacturer will not be responsible for any injury or damage caused by improper operation. Please keep the manual handy for consulting.

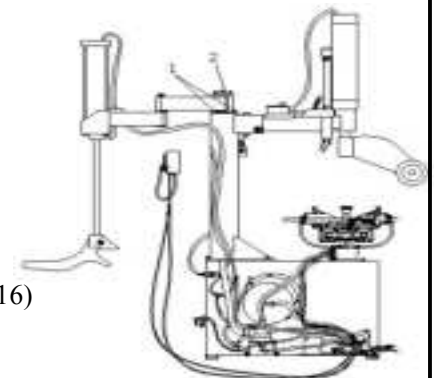
13.1 Installation

NOTE: the help arm device should be assembly by the professional person. Before install this device, please make sure to disconnect the tyre changer from the electricity power supply and pneumatic power supply.

The help arm is auxiliary device of tyre changer, please make sure the working space has been reserved as manual required.

Please follow the steps to assemble help arm:

- 1) Disconnect the tyre changer from power supply and air source.
- 2) Fix the support of the tyre pressing arm on the top of column with four screws (Fig 16)
- 3) Mount the help arm 1# with pin on its support shown as Fig 16. Mount 2# help arms with pin on the right side of the swing arm.
- 4) Connect the air hose to the corresponding L-union on the back of the body. (Fig 16)



13.2. Functional parts:

The functional components of help arm are illustrated as follows:

- A- Swing arm
- B- 2# help arm
- C- Roller for pressing tyre
- D- Handle for roller (A-D shown as fig 16)
- E- Handle for pressing head
- F- Tyre pressing head (upper)
- G- Tyre pressing head (bottom) (E-G shown as fig 20)

The function of the help arm handle is as follows:

The handle for the roller is used for adjustment of the roller when demounting and mounting. The handle for head is used for adjustment of the tyre pressing head when demounting and mounting.

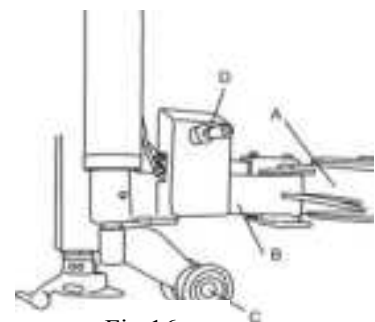


Fig 16

13.3. Test:

Connect the help arm with the air compressor well, ensure the air pressure is no less than 8 bar.

Turn the handle for roller up to raise the roller, turn the roller handle down to lower the roller. Turn the handle for hook up to raise the tyre pressing head (upper/ bottom), turn it down to lower the assembled tyre pressing head.

Safety Label:

Warning: Unreadable and missing warning labels must be replaced immediately.

Do not use the tyre changer if one or more labels are missing.

Do not place any objects that could prevent the operator from seeing the labels.

Use the code in this label according to your needs.

13.4 Safety warning label

Warning: When the safety warning label dirty or fall off, please replaced immediately.

Do not use the tire changer if one or more labels are missing.

Do not add any object that could prevent the operator from seeing the labels.

Order the warning labels shown as fig 17 on the place where you need.



13.5 Help Arm operation:

Demount and mounting a wide flat tyre is never that easy, with the proper operation of Auxiliary arm system to demount and mounting tyre from wheel rim makes the job simpler. Auxiliary arm system can be used with normal tyres as well. First of all, follow the instruction manual to fix the tyre in position. During the demounting & mounting process, the advice provides the following miscellaneous function:

The device has been designed to facilitate the operations of wheel locking and mounting/demounting, especially on the flat tread tyres. In any case, the device would make these jobs easier on any type of wheel.

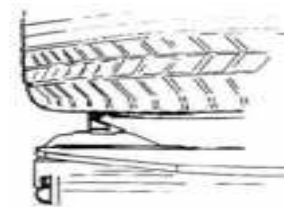


Fig 19

13.5.1. Clamping the tire

Release the beads both sides of the tyre as the manual stated, clamp the tyre from outside to avoid the damage (add protection bush to jaws).

Turn the rotating arm to non-working position, and depress the corresponding pedal to open the jaws.

Put the tyre on the turntable, depress the corresponding pedal to close the jaws until they near the rim.

Press and fix the rim with the tyre pressing head, then lift the tyre pressing head after lock the rim by depressing the corresponding pedal twice.

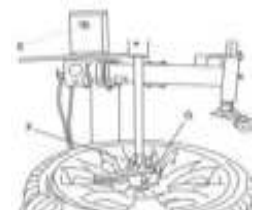


Fig 20

13.5.2. Demounting the tyre

1. Press the tyre with the tyre pressing roller located on the right arm, and lubricate the circumference of the tyre, then turn the turntable to loosen the tyre, lift the tyre pressing roller. (Fig 21)

2. Operate the locking switch button to lock the vertical arm, which bring the mounting head about 2-3mm from the edge of rim.

3. Discharge the tyre pressing head (bottom), remove the tyre pressing head (upper). Depress the tyre and insert the lifting lever into the clearance between the rim and bead near the mounting head. Move tyre pressing head to the opposite side of the mounting head, depress the tyre into the center and hang the tyre on the mounting head with the help of the lever. (Fig 22)

4. Press the rim with the roller and keep the distance of 3-5 mm between the mounting head and the rim. Ensure not to damage the rim. Rotate the turntable to demount the upper tyre bead.

5. Rise the tyre into the center of rim's channel with the tyre pressing head (upper) (shown as Fig 24). Insert the lifting lever into the tyre near the mounting head, lift the tyre and turn the turntable to demount the lower bead. (show as Fig 25)

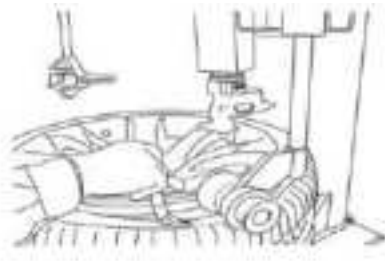


Fig21



Fig22

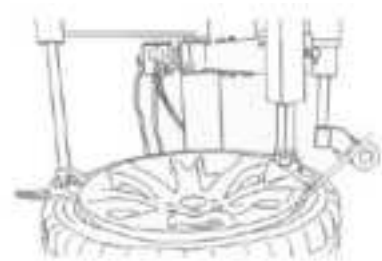


Fig23

13.5.3. Mounting the tyre

1. Lubricate both edge of the tyre and rim to avoid the friction.
2. Bring the mounting head under the lower bead. Rotate the turntable to mount the lower bead.
3. Press the tyre to the center of the rim's channel with the tyre pressing head (upper), and press the tyre under the mounting head with the roller on the right arm. Rotate the turntable until the mounting procedure is finished.(Fig 26)

Caution:

- 1) Pay special attention to this operation!
- 2) Lubricate the tyre upper bead to protect the tyre.
- 3) Do not press the wheel rim with the assembled tyre pressing head (upper), or it will harm the rim caused by friction. Keep hands far away.

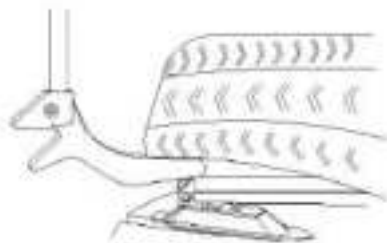


Fig 24

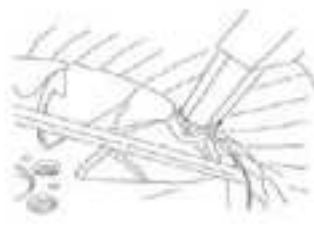


Fig 25

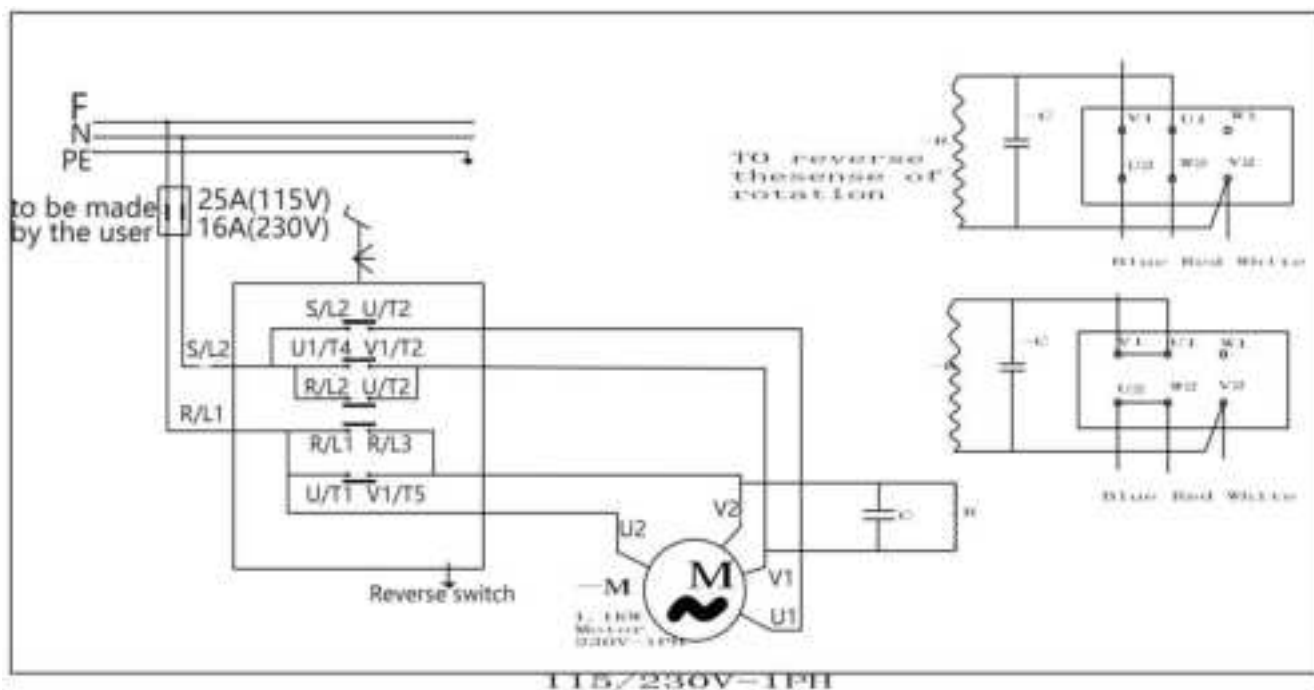


Fig 26

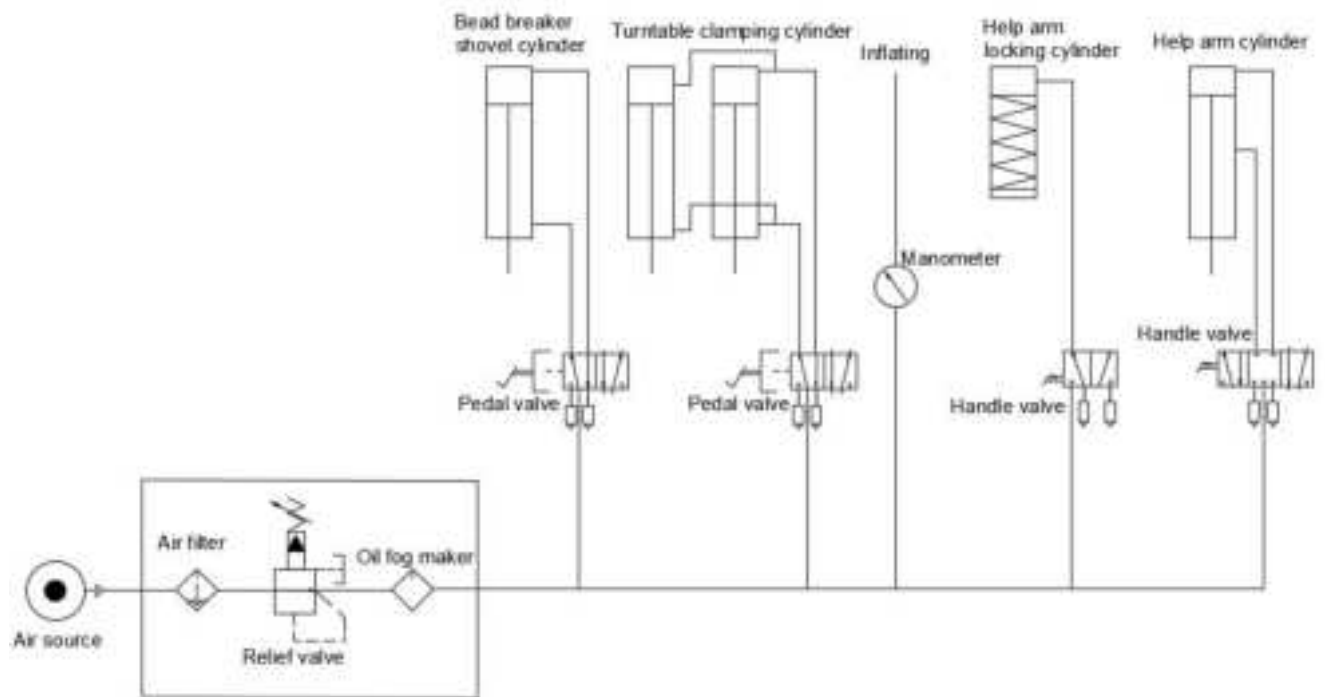
14. Trouble shooting table:

Problem	Reason	Solution
The turntable rotates just in one direction or can't rotate.	Reverse Switch broken	Replace the Reverse Switch
	Belt broken	Replace the belt
	The Motor's malfunction	Check the motor cable or terminal block wire; Replace the motor if it was broken.
Demount or fix the wheel, the turntable can't lock (spin with wheel); The jaws delay to open/close; The turntable locks the rim incorrectly.	Leakage of Air network	Check all the parts on the air network.
	The clamping cylinder can't work.	Replace the cylinder piston.
	Worn jaws	Replace the jaws.
	Broken washers of the chuck cylinder	Replace it.
The mounting/demounting head always touch the rim during operation.	The locking plate incorrectly adjust or unqualified.	Replace or adjust it.
	Screws on the chuck loose; the Hexagonal Vertical Arm can't be locked by Locking Plate	Tighten the screws; replace the Locking Plate.
The Bead Breaker Pedal and Jaw open and close Pedal can't turn back to the original position.	Pedal spring broken	Replace it.
The Bead Breaker shovel operates difficultly.	Jammed silencer	Clean it or replace it.
	The washer on the Bead Breaker cylinder is broken.	Replace it.

15. Circuit diagram:



16. Pneumatic drawing:





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