



# **Manual Tire Changer**

## **Instructions**

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## **Preface**

The TC-500-M Manual Tire Changer offered by Redline Engineering is a manual tire changer that comes many unique features. Those features include:

1、 Ability to handle large diameter rims (max rim diameter 22in.) and ability to handle run-flat tires.

2、 A swing style vertical arm with locking system for safety. This style arm allows for time saving convenience, good repeatability and ensures quality protection while mounting and dismounting a tire.

3、 This model represents quality in design, materials, reliability and performance. It is easy and simple to use making it the perfect addition to any shop.

## **※ Warning ※**

1、 Read the instructions before using; use within the limits described by the instructions and pay attention to operational requirements.

2、 This machine is limited to the instructions provided in this manual and the manufacturer within the operation.

3、 This machine is designed for the use of changing tires within specification. Never use for any other purposes! Manufacturer will not assume any responsibility for improper usage and/or any modifications or alterations done to machine.

4、 The TC-500-M is designed for use by a single operator. The operator should always wear protective eye wear.

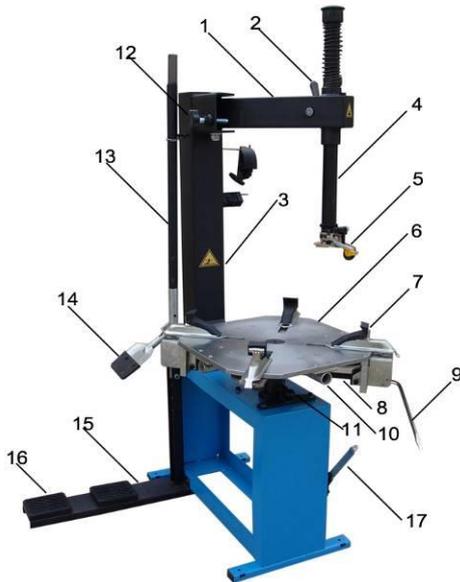
# 1、 General Description

## 1.1 Technical Specifications

Max. Wheel width: 300mm  
Operation Temperature: 0°C – 45°C  
Outside clamping: 10–19"  
Max. Width: 1220mm  
Net Weight: 123kg

Max. Wheel diameter: 920mm  
Inside clamping: 12–22"  
Max. Depth: 940mm  
Max. Height: 1960mm

## 1.2 Structure Description



- 1. Cross arm
- 2. Locking handle
- 3. Vertical arm
- 4. Vertical hexagonal rod

- 5. Mounting head
- 6. Turntable
- 7. Clamps
- 8. Screw
- 9. Locking handle
- 10. Rotating sleeve
- 11. Pin
- 12. Fitting bolt
- 13. Lever
- 14. Bead breaker
- 15. Support
- 16. Tire rubber
- 17. Crow bar

(Fig 1)

## 1.3 Control System

1.3.1 Move the cross arm to the right side of the machine, adjust the fitting bolt into position and adjust the mounting head to the rim position.

1.3.2 Lock the locking handle on the cross arm, now the mounting head can be fixed and is ready for operation.

1.3.3 Use the crow bar to help get the mounting head into position for mounting

and dismounting tires

### 1.4 Auto-centering turntable

1.4.1 The turntable is a synchronistic work station that is made to hold and turn the wheel.

1.4.2 Put the pin into the hole of the main shaft to keep the turntable in a fixed position.

1.4.3 Turn the locking handle, all four clamps on the turntable will clamp onto the rim from the inside or the outside depending on how the wheel is mounted.

1.4.4 Remove the pin from the main shaft so that the turntable can now move freely.

1.4.5 Put the lever into the rotating sleeve, and rotate the turntable in a clockwise direction to mount and dismount the tire.

### 1.5 Bead detacher

1.5.1 Push down on the bead breaker lever to allow bead breaker to detach tire from wheel.

1.5.2 Make sure to break bead all along both sides of the tire to ensure that bead is fully detached

## 2、 Mounting Head (Duck Head) Adjustment

### 2.1 Operation

2.1.1 After breaking the bead and separating the tire from the rim, fix the rim on the turntable by inside caliper or outside caliper.

2.1.2 Turn the cross arm, drop down the vertical hexagonal shaft, adjust the mounting head into optimal position and lock the locking handle tightly.

2.1.3 Mount and dismount the tire using the normal operating procedure.

## 3、 Accessories



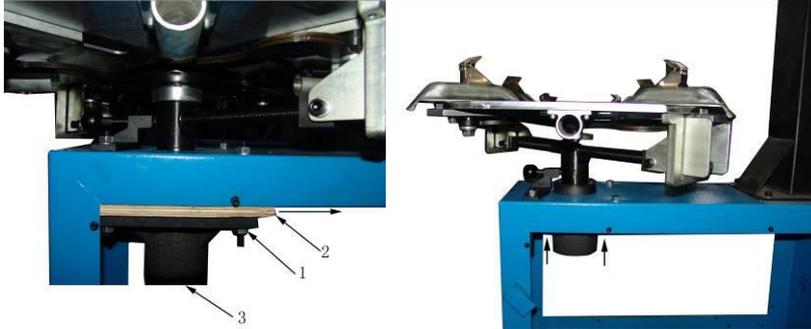
(Fig 2)

## 4、 Installation

**Attn: 1、 Tire changer should be placed at least 20 inches away from wall.  
2、 Equipment should not be installed anywhere that allows contact with moisture.**

### 4.1 Turn table assembly.

#### 4.1.1 Turntable assembly and placement



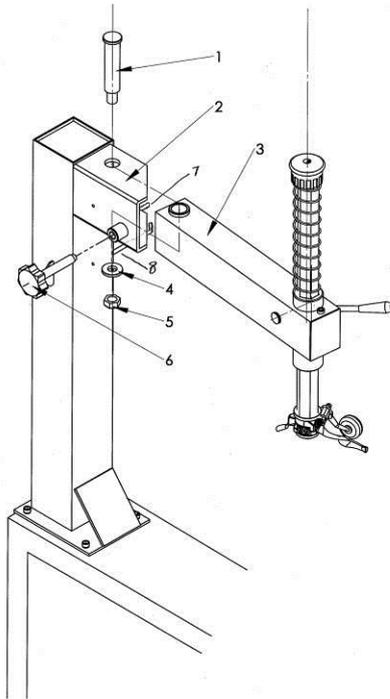
(Fig 3)

Loosen the four nuts (1), pull out 2pcs washer (2), clean surface (3), tighten the nuts (1) diagonal directions separately, Adjust piece (3) and the body, see fig (3).

#### 4.1.2 Connecting vertical arm.

Place the vertical arm(3) on the back of the body.(4)

Attach the vertical arm and body by Four screws(1), washers(2) and nuts(5).



(Fig 4)

#### 4.1.3 Installation of the cross arm

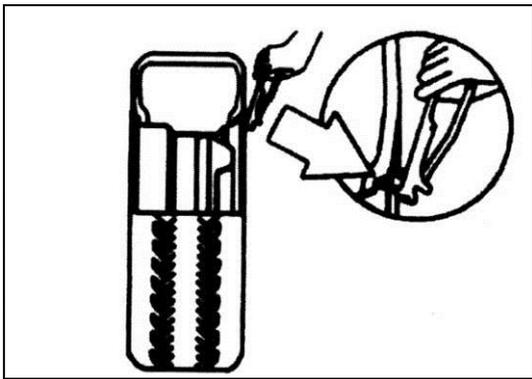
Insert the end of the cross arm(3) into the [ ] shaped frame(2), align axle hole of the cross arm(3) with the axle hole of the [ ] shaped frame(2), insert the positioning shaft(1) into the axle hole, install the washer(4), use the nut(5) to fix the positioning shaft(1), to make sure the cross arm to swinging around freely.

4.1.4. This unit has four holes drilled on the feet to allow anchoring onto a concrete surface

## 5、 Instructions for tire changing

**Attn: Please make sure that you have read operators manual and received proper training before using !**

### 5.1.1 Dismounting tire operation



(Fig 6)

Remove air from tire.

Remove the valve stem core.

Remove the balancing weights on rim  
(Fig 6)

### 5.1.2 Break the tire bead.



(Fig 7)

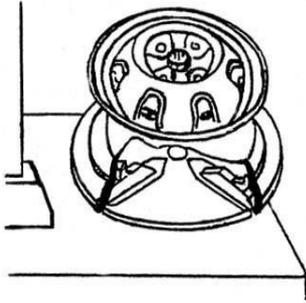
With the tire flat, brush along the rim and edge of tire with lubricant.

Place the bead breaker a ½ inch off the rim onto the tire.

Move the lever down to start breaking the tire bead. .

Turn the wheel, repeat the above action until you have freed the tire from all sides of the rim. Then flip the tire over and repeat.

### 5.1.3 Clamping the tire

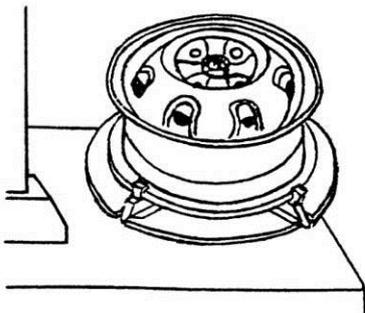


(Fig 8)

Before wheel clamping, make sure that the swing arm is all the way up and moved to the right.

Clamping the rim which diameter is 12"-22 " from inside to outside rims.

(Fig 8)



(Fig 9)

— Place the tire on the turn table.

— Push the pin (11) of the spindle into positioning hole, Put the handle (9) into the adjustment hole (8), turn the handle and the wheel can be tightened

— Turn the handle in the opposite direction and the wheel can be loosened. For the Asymmetric deep dish rim, put the narrow rim shoulder up. After locking the wheel, take out the pin (11), do not let the main shaft turn freely when getting ready to dismount tire.

Clamp the rim of 10"-19" from outside (Fig 9)

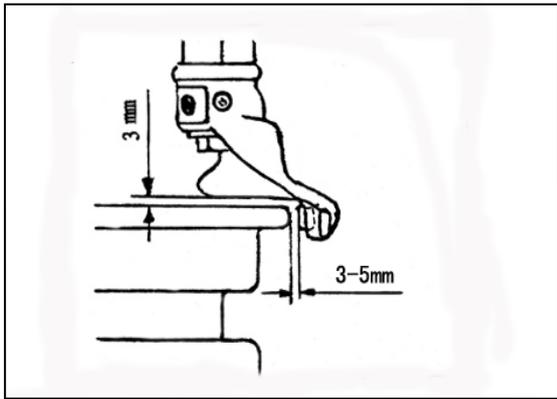
Push the pin (11) to the spindle positioning hole, Put the handle (9) in the adjustment hole (8), turn the handle, move the clamps outwards.

— Put on the rim or wheel.

— Turn the handle to make the clamps move inwards to clamp the wheel tightly, then take out the pin(11) to allow the turn table to move freely, to allow for the dismounting tire.

— To prevent damage to the rim , tighten rims from the outside of the rim.

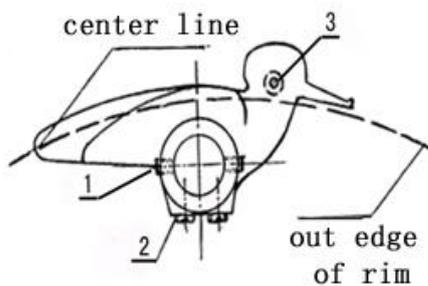
### 5.2 Dismounting head setting



(Fig 10)

Move horizontal arm to the side thoroughly and leave dismounting head at the top before mounting and dismounting tire. If the wheels have the same dimension, you need not to change the position. (Fig 10)

When you mount and dismount tires allow room between head and rim so that rim damage does not occur. See (Fig 10)



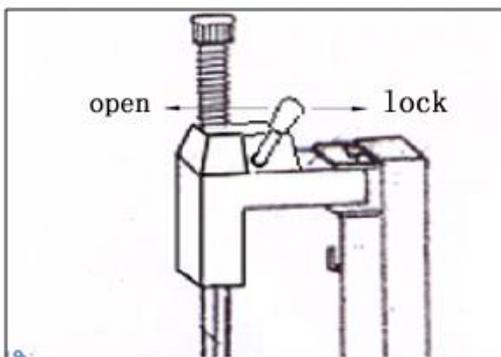
(Fig 11)

When rim is more than 17" or less than 8", re-adjust dismounting head.

Loosen the screw (1) of tire changer, adjust screw(2) to make it suitable leaving 3-5mm from (3) rim edge. E-rotating screw(1) after adjusting.

(Fig 11)

(Fig 12)

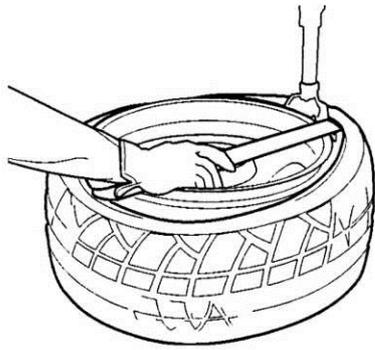


Keep the dismounting head locked.

The way to lock Dismounting head (fig12): push in on the button located on the handle, that's mean tire changer is locked. Push out on the button to unlock the dismounting head

- Attn:**
- 1、 Dismounting head, rolling ball and rim edge do not make contact!!
  - 2、 Use nylon protectors when you mount or dismount alloy rim.
  - 3、 The angle of dismounting head has been adjusted according to 14"normal rim before manufactured, please re-positioning dismounting head if the rim is too big or small.

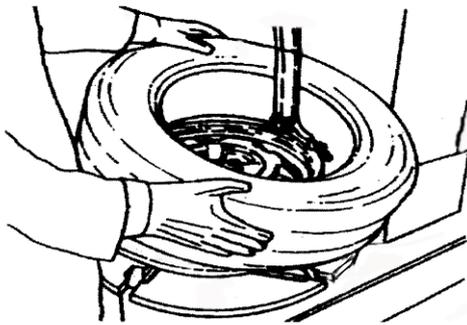
### 5.3 Dismounting tire



(Fig 13)

crowbar, unlock the turn table and start rotating the turn table clockwise. The top of the tire should start to slide over the rim. Once the top of the tire is dismounted. Use the same steps to remove the bottom side of the tire.

Lubricate rim and edge before dismounting tire. Once lubricated take the crowbar and pry the tire edge over the duckhead. Remove the



(Fig 14)

Repeat above steps and dismount the other rim edge.(fig14)  
After dismounting, move the horizontal arm to the side.

#### 5.4 Tire installment

**Attn:** Check the dimensions of tire and rim before installment.

Clamp rim tightly, make sure there is 180 degrees between tire inflating entrance and dismounting head.

Lubricate rim and edge.



(Fig 15)

Begin to rotate the turntable in a clockwise manner. This should allow the tire edge to slide over the rim.

Set operation model according to 5.2.  
Adjust the duckhead to the top of the rim.  
Put the bead pressing block on the rim edge in front of the dismounting head.

After installing the tire, take out the rotating crowbar, unclamp wheel from turntable.



## 6、 Maintenance

**Attn:** Cleaning and maintenance should be done by professionals according to instructions.



(Fig 16)

Clean all parts on the turntable. (Fig 16)

Injecting lubricating in all rotating parts' shaft and holes.

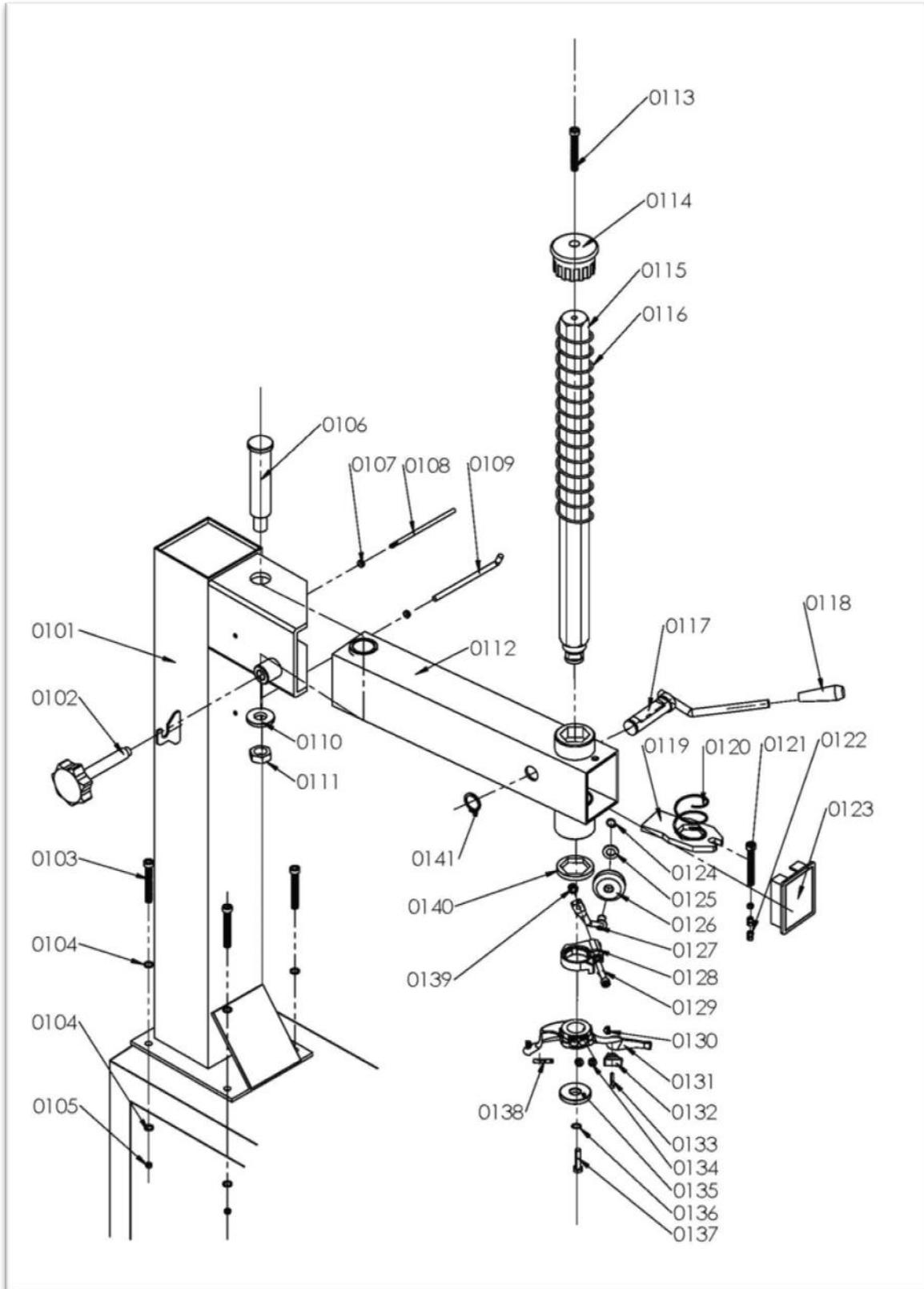
Keeping the equipment clean.

Inspect regularly

7



**Vertical arm separate parts picture**

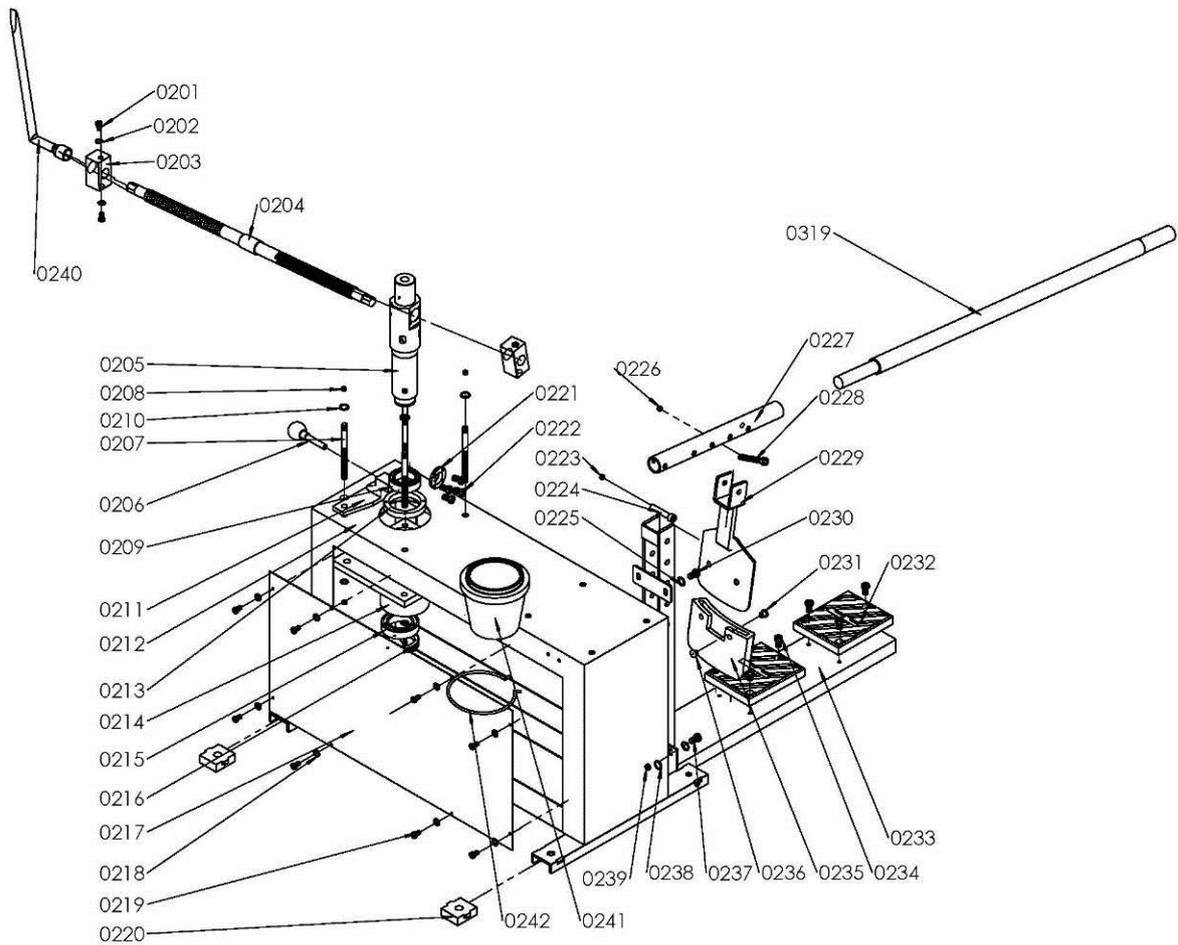


Vertical arm separate parts picture

No.	Name	Quan.	Spec.	No.	Name	Quan.	Spec.
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0101	Vertical arm	1		0124	Elastic ring for shaft	1	D12
0102	The plum blossom jackscrew	1		0125	Washer	1	D12
0103	Hex bolt	4	M10X60	0126	Bead pressing roller	1	
0104	Washer	8	D10	0127	Wheel pressure frame	1	
0105	Nut	4	M10	0128	Rotating holder	1	
0106	Positioning shaft	1		0129	Hex bolt	1	M8X60
0107	Nut	2	M6	0130	Six-angular round screw for tightening	2	M12X10
0108	Pylons(up)	1		0131	Demounting head	1	
0109	Pylons(down)	1		0132	Plastic cover of the Demounting head	1	
0110	Plat washer	1		0133	Bolt	1	M6
0111	Lock nut	1	M20	0134	Six-angular round screw For tightening	2	M12X20
0112	Cross arm	1		0135	Washer of demounting head	1	
0113	Hex bolt	1	M10X25	0136	Spring washer	1	D10
0114	Cap of the hex shaft	1		0137	Hex bolt	1	M10X25
0115	Hexagonal shaft	1		0138	Plastic cover of the demounting head	1	
0116	Spring	1		0139	Lock nut	1	M8
0117	Lock handle	1		0140	Washer of the hexagonal shaft	1	
0118	Cover of the lock handle	1		0141	Elastic ring for shaft	1	D25
0119	Locking plate	1					
0120	Locking spring	1					
0121	Hex bolt	1	M10X60				
0122	Nut	5	M10				
0123	The front panel	1					

## Cabinet separate parts picture

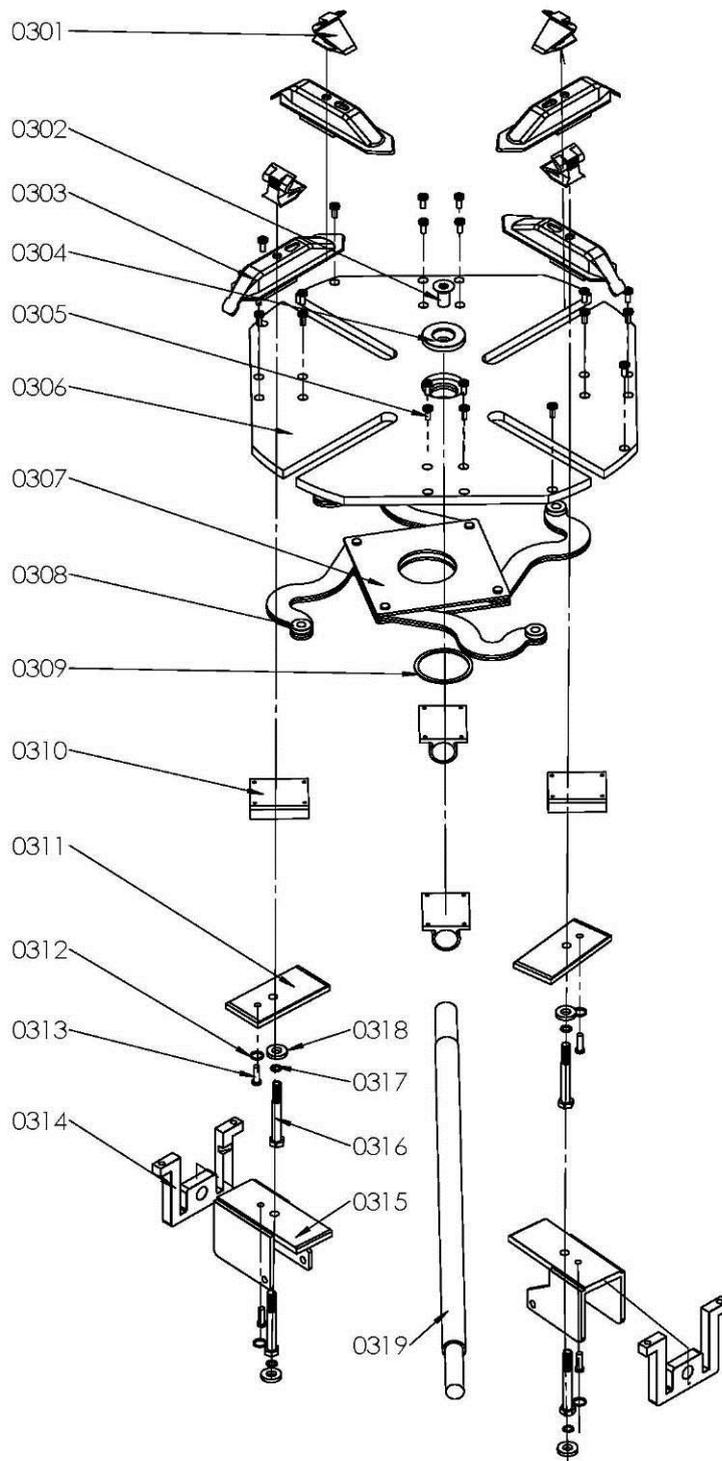


### Cabinet separate parts picture and list

No.	Name	Quan.	Spec.	No.	Name	Quan.	Spec.
0201	Six-angular nut	4	M10X16	0224	Six-angular nut	1	M10X60
0202	Flat washer	4	Φ10	0225	Flat washer	4	D8

0203	Nut	2		0226	Nut	1	M10
0204	Vertical shaft screw	1		0227	Bead breaker rob	1	
0205	Vertical shaft	1		0228	Six-angular nut	1	M10X60
0206	Stop lever	1		0229	Bead breaker		
0207	Nipple	4	M10X170	0230	Six-angular nut	2	M8X25
0208	Nut	8	M10	0231	Protector button	2	
0209	6010 shaft	1		0232	cushion block	2	
0210	Flat washer	8	D10	0233	Arm of bead breaker	1	
0211	Locking supporting structure	1		0234	Six-angular nut	6	M6X16
0212	Cabinet	1		0235	Protector of bead breaker	1	
0213	Upper cover	1		0236	Protector button	2	
0214	Vertical shaft seat	1		0237	Six-angular screw	2	M8X25
0215	6008 shaft	1		0238	Flat washer	4	D8
0216	Lower cover	1		0239	Nut	4	M8
0217	Side box board	2		0240	Spanner	1	
0218	Flat washer	16	D5	0241	Lubricant box	1	
0219	Six-angular nut	16	M5X10	0242	Support of lubricant	1	
0220	Pitch block	4					
0221	Vertical shaft end cover	2					
0222	Six-angular nut	8	M5X10				
0223	Nut	1	M10				

Turntable separate parts picture



Turntable separate parts picture and list

No.	Name	Quan.	Spec.	No.	Name	Quan.	Spec.
0301	Clamp	4		0310	Turntable rotating	4	

					seat		
0302	Six-angular nut	1	M16X30	0311	Connected board of slide	2	
0303	Clamp base	4		0312	Spring ring	4	D8
0304	Blockage turntable for	1		0313	Round bolt	4	M8X25
0305	Round bolt	20	M8X16	0314	lead screw support	2	M8
0306	Turntable	1		0315	Connected board of slide	2	
0307	S-plate	1		0316	Hexagon bolt	4	M12X90
0308	S-plate axis	4		0317	Spring ring	4	D12
0309	Spring spacer ring for shaft	1	D75	0318	Flat washer ring	4	
				0319	Wrench level	1	