



STTCM4

TYRE CHANGING MACHINE

INSTALLATION | OPERATION | MAINTENANCE MANUAL



KEEP THE MANUAL NEAR THE MACHINE AT ALL TIMES.
MAKE SURE ALL USERS HAVE READ THIS BEFORE USING.

FOLLOW THE INSTRUCTIONS
CAREFULLY.



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THIS MACHINE SHOULD ONLY BE USED FOR ITS INTENDED PURPOSE.

Disclaimer

- To take full advantage of the unit, you should be familiar with tyres of various kinds.
- All information, illustrations, and specifications contained in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.







Safety Precautions

Read all service procedures and precautions, installation instructions and equipment operating manuals thoroughly. Failure to observe these precautions, or the improper use of equipment, could result in property damage, serious injury or death. Never allow improperly trained personnel to perform these procedures or operate equipment.

- Only qualified technicians can operate TYRE CHANGER. Do not alter any parts or enlarge the usage scope without permission.
- TYRE CHANGER may be damaged directly or indirectly.
- Read the operating instructions before attempting to operate tyre changer. Keep this manual with tyre changer at all times.
- Do not put tyre changer in the extreme temperature or humidity environment.
- Do not install it near the heating system, water tap, air-humidifier or chimney place.
- Do not put tyre changer in the sun near windows. Cover the unit with a curtain or shield if necessary.
- Avoid lots of dust, ammonia, alcohol, thinner or spraying binder.
- Tyre changer should be installed on a smooth and stable surface.

- Third parties should be kept away from tyre changer except the operator during operating.
- Special attention to the warning signs on the unit.
- Do not touch or approach the moving parts by hand during operation.
- Leave 50cm distance between the back panel and the wall for good ventilation. Enough room should be left on both sides of tyre changer for convenient operation.
- Please consult for moving of TYRE CHANGER .

Warning Signs

1		EXERCISE CAUTION AND BE WARY OF ELECTRICAL DEVICES
2		DO NOT PUT YOUR LEG BETWEEN THE BEAD BREAKER ARM AND THE TYRE WHEN THE BEAD BREAKER IS BEING USED
3		DO NOT PUT YOUR HAND BETWEEN THE TYRE AND TURNTABLE WHEN THE MACHINE IS BEING OPERATED
4		DO NOT PUT YOUR HAND BETWEEN THE M/D HEAD AND THE TYRE
5		IT IS FORBIDDEN TO PUT YOUR HAND OR ANY TOOLS IN THE CLAWS WHEN THEY ARE OPENED OR CLOSED
6		DO NOT STAND BEHIND THE VERTICAL ARM WHEN MACHINE IS OPERATIONAL

Introduction

Thank you for purchasing one of our Tyre Changing Machines.

The machine has been manufactured in accordance with the very best quality principles.

Before using and operating the Tyre Changing machine, please read the manual carefully and adhere to all warnings and instructions.

This is integral to the safe operation and maintenance of the machine.

Keep this manual for future reference.

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Technical Specifications

Specifications

Weight

Net weight: 220kg

Motor

Rated voltage: AC220V/380V/110V, 50Hz

Power: 1.1kW/0.75kW

Pressure of bead loosener shoe: 2400kg

RPM of turntable: 7rpm

Air device

Working pressure: 8-12 bar

Working conditions

Working temperature: 0-45°C

Noise:<70db

Applicable Range

Max. wheel diameter:1000mm

Max. rim width: 305mm

Rim clamping diameter(outer):

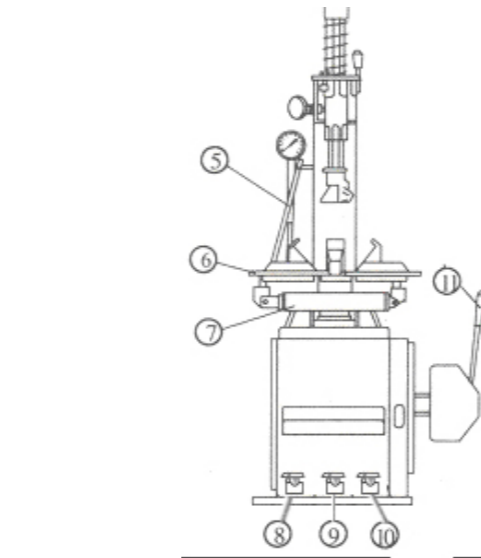
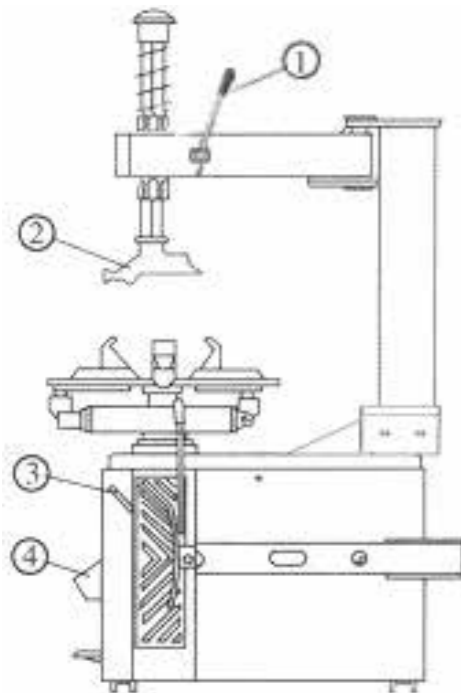
8"-19" 14"-24"

Rim clamping diameter(inner):

6"-17" 12"-22"

Structure

The structure of TYRE CHANGER is as shown in Fig.01.



- 1- Locking handle
- 2- Mount/demount head
- 3- Bead lifting tool
- 4- Front logo
- 5- Gun inflator
- 6- Turntable
- 7- Cylinder
- 8- Turntable control pedal (clockwise or counter clockwise)
- 9- Clamp control pedal
- 10- Bead loosener shoe pedal
- 11- Bead loosener shoe

Optional accessories are as shown in Fig.02.

001- Bead lifting tool

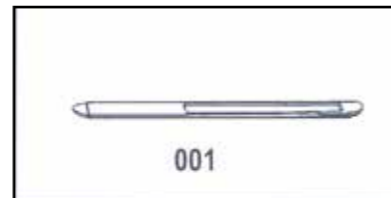


Fig.02-a

002-Gun inflator with a pressure gauge (already equipped on the inflator)



Fig.02-b

Installation

Installation requirements:

- Install TYRE CHANGER close to the main power and air compressor system.
- The minimum installation space of TYRE CHANGER is as shown in Fig.03, which can ensure the free operation of tyre mounting/demounting.
- It is necessary to build a protective shield for TYRE CHANGER if it is installed outdoors.
- Do not operate TYRE CHANGER if there is flammable gas.

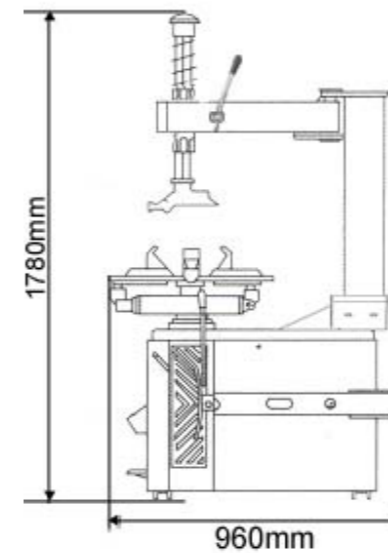


Fig.03-a

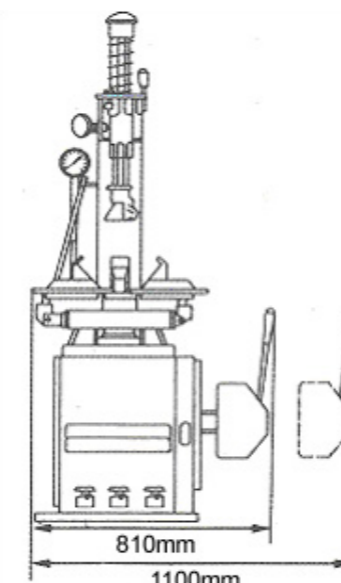


Fig.03-b

Note:

- It is suggested to keep at least 500mm distance between TYRE CHANGER and the wall.
- Holes are prepared on the chassis of TYRE CHANGER. Be sure to fix it to the ground with expansion bolts. Otherwise, it may cause loud noise.

Operation Procedures

Note:

Operators of TYRE CHANGER must be trained and qualified.

Demounting

Preparation

- Release all the air inside the tyre.
- Remove the counterweight on the wheel. (See Fig.04).

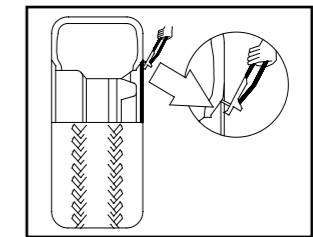


Fig.04

Demounting Tyre

- Place the tyre between the bead loosener shoe and tyre control rubber, and make the shoe between the bead and tyre, about 1cm to the bead. And then step on the tyre control pedal (see 9 of Fig.01) to separate the bead from the rim. (See Fig.05).

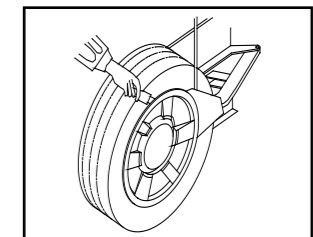


Fig.05

Note: Lubricate the bead with thick soap suds before demounting the tyre, so as to avoid wear and tear.

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- Repeat the above step till completely demounted.
- Place the separated wheel on the turntable.
- Put the vertical spindle in working position, and keep a distance of 2mm from the mount/demount head to the bead, and then lock the wheel with locking handle (see 1 of Fig.01).

Note: The mount/demount head is already calibrated according to the standard rim before delivery. The user can re-calibrate it for overlarge or over small rim so as not to damage the tyre.

- Lift the bead onto the mount/demount head with the bead lifting tool, and step on the turntable control pedal (see 10 in Fig.01) to turn the turntable clockwise till the bead is separated completely. See Fig.06. It is suggested to place the mount/demount head about 10mm to the right side of the air valve if the wheel has a tube, so as not to damage the tube.

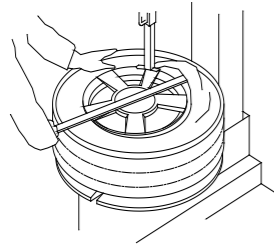


Fig.06

Note: If the tyre demounting is blocked, stop TYRE CHANGER at once, and pull up the pedal (see 10 in Fig.01) to turn the turntable counter-clockwise so as to clear up the block.

- Take out the tube if there is one. Turn over the wheel to let the other side toward the mount/demount head, and repeat the above steps to demount the other side bead. (See Fig.07).

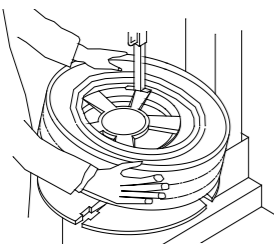


Fig.07

Note: Keep your hands and body away from the moving parts during operation. It is very dangerous to wear necklace, bracelet or loose blouse for the operators.

Mounting

Note: Make sure that the size of rim and tyre is the same before mounting the tyre.

See Fig.08 for the tyre mounting:

- Clamp the rim on the turntable.
- Put the bead on TYRE CHANGER with the left side upward, and press the carcass downward simultaneously.
- Lubricate the bead with soap suds, and turn the turntable clockwise to let the bead enter the bead seat.
- If there is a tube, place on rim and repeat the above steps to mount the upper side of the tyre. (See Fig.08).

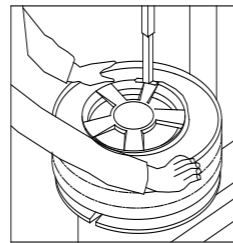


Fig.08

Note:

- It is not necessary to move the locking handle if the size of rims to be mounted/demounted are the same. Just move the horizontal swing arm.
- Do not put your head between the tyre and swing arm during locking so as to avoid body injury.

Inflating

The operation of inflating is as shown in Fig.09. TYRE CHANGER is equipped with a pressure gauge for pressure reading during inflating.

- Loosen the tyre from the turntable.
- Connect the inflator to the air valve on the tyre.
- Press the gun inflator slowly several times. Make sure the readings on the gauge do not exceed the manufacturer's limit.

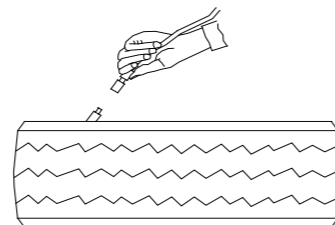


Fig.09.

Note:

- Be careful when inflating the tyre, and keep your hands and body away from the tyre.
- Make sure that the size of rim is the same as

that of the tyre. Check the wear of the tyre. Be sure that the tyre is not damaged before inflating. Remember the pressure inside the tyre should not exceed 3.5bar.

Package & Transport

Note: Take every step to protect TYRE CHANGER when moving and/or transporting.

Make sure to transport with its original package, and place it according to the marks on the package.

Maintenance

Note: Only qualified technicians can perform the repairs of TYRE CHANGER.

To take full use of TYRE CHANGER and prolong its usage, it is necessary to maintain it periodically according to the User Manual. Otherwise, the performance of TYRE CHANGER may be reduced, and the operators or standers may be hurt.

Note: Make sure to cut off the power supply before maintenance. (See Fig.10 for electrical diagram.)

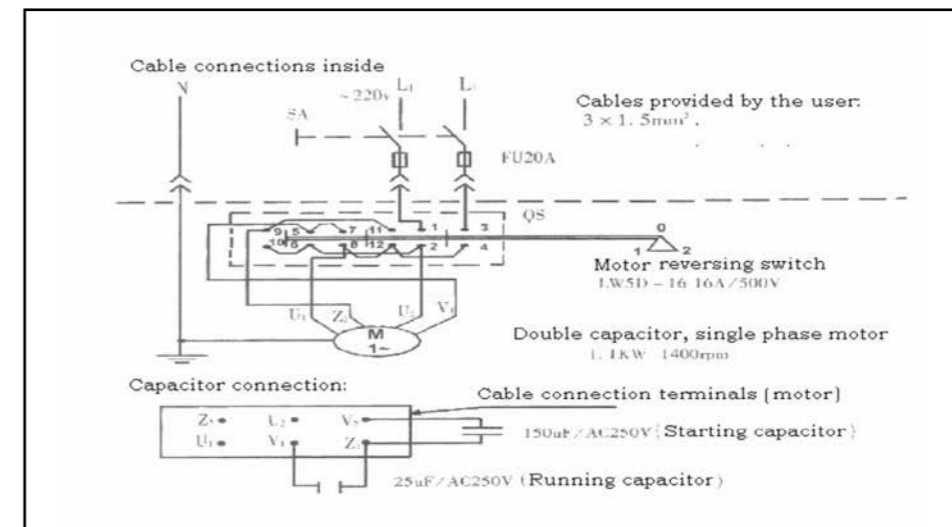


Fig.10-a Cable connection diagram for single phase TYRE CHANGER

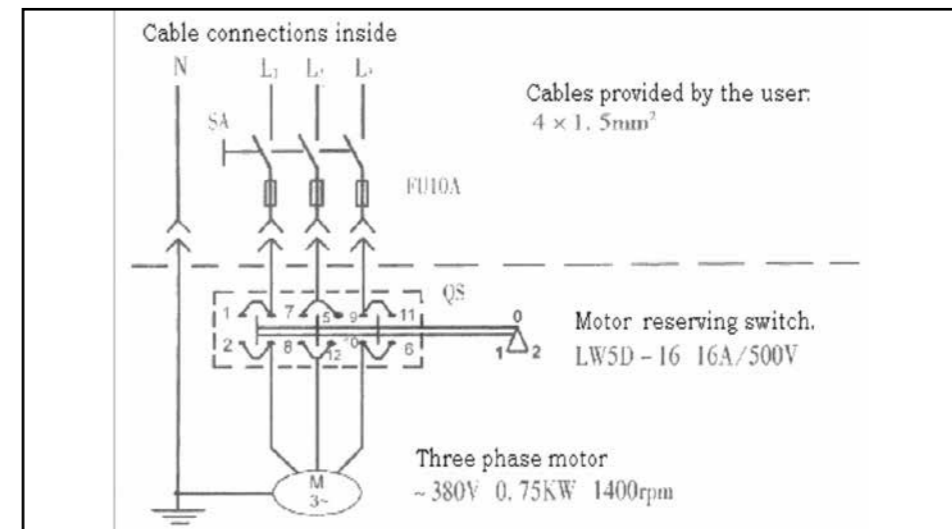


Fig.10-b Cable connection diagram for three phase TYRE CHANGER

- Check the level of lubricating oil in the air-compressed cup periodically, and refill it with oil SAE30 if necessary. (HYDRAULIC OIL ONLY)
- Clear the water segregator periodically.
- Clean the moving parts of the turntable. (See Fig.11.)

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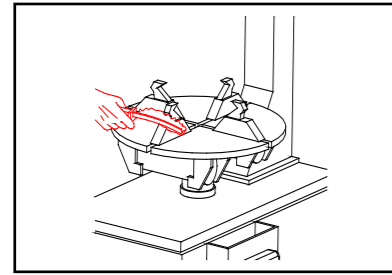


Fig.11

- Check and tighten the connecting bolts periodically.
- Keep the hexagonal vertical axle dry and clean (clean it with diesel, see Fig.12).

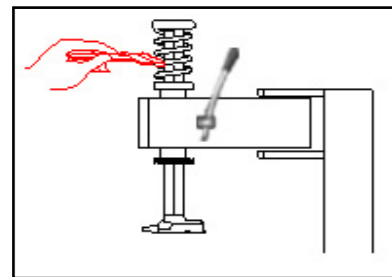
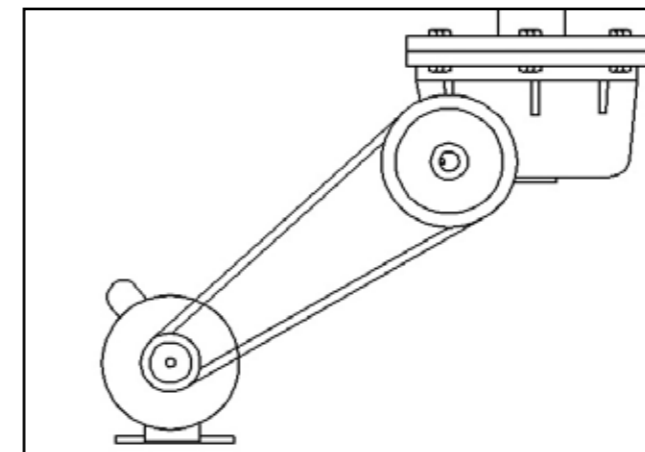


Fig.12

- Check the gear oil in the reduction gearbox, and refill it with high viscosity or alike if necessary.
- Check and adjust the tension of driving belt.
- Keep TYRE CHANGER and the working area clean to avoid the dust entering the moving parts.
- Lubricate the connecting surfaces of all moving parts weekly.

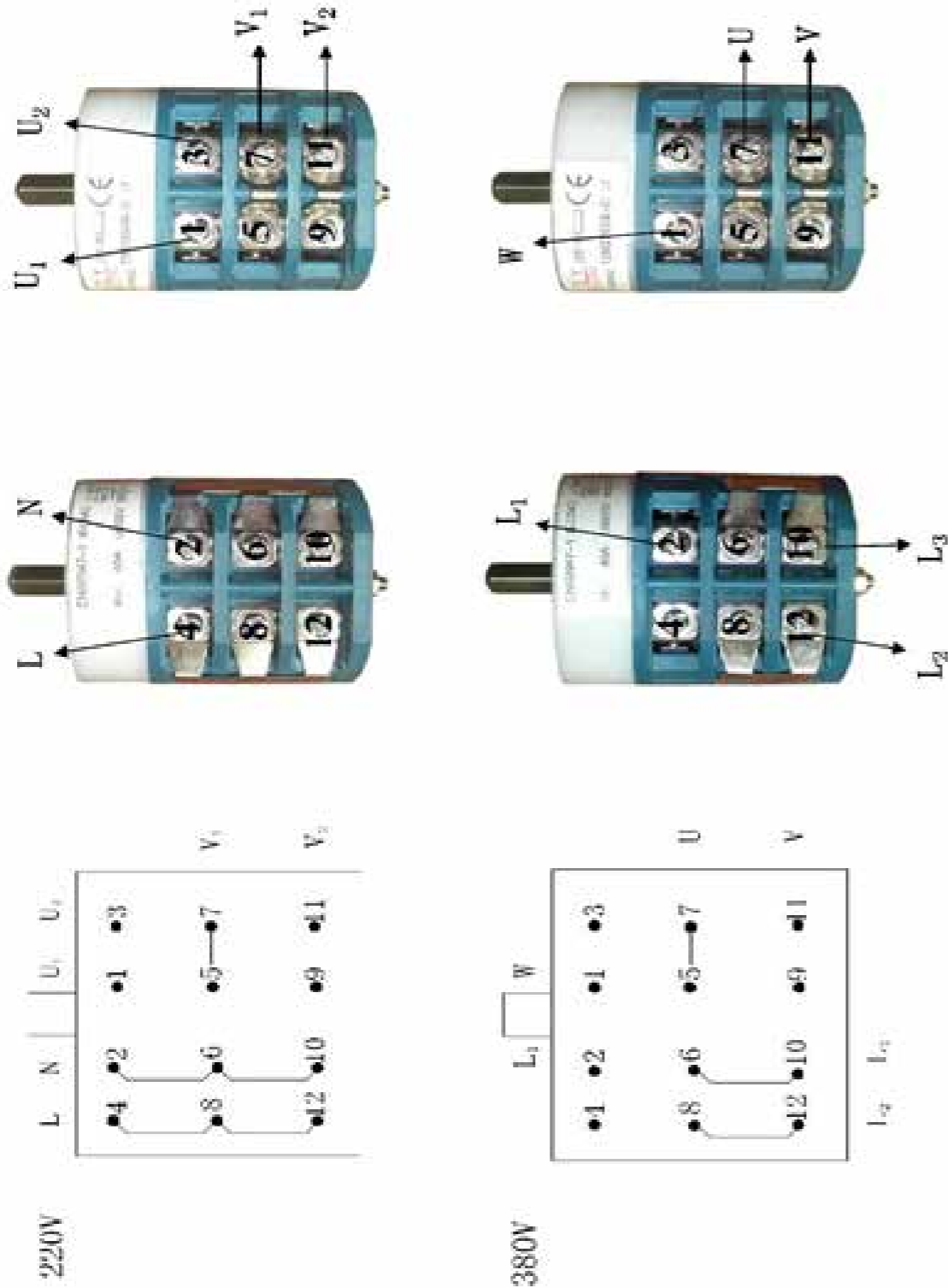
Troubleshooting

Symptom	Possible Cause	Solution
The turntable rotates only in one direction.	<ul style="list-style-type: none"> • The reversing switch is damaged. 	<ul style="list-style-type: none"> • Replace the reversing switch.
The turntable does not rotate.	<ul style="list-style-type: none"> • The belt is damaged • The reversing switch is damaged. • The motor malfunctions • The belt is too loose. 	<ul style="list-style-type: none"> • Replace the belt. • Replace the reversing switch. • Check the motor power, or cable connection of the terminal block. • Replace the motor if broken. • Adjust the belt tension. (Fig.13)
The turntable cannot lock the rim.	<ul style="list-style-type: none"> • The clamps are worn. • Sealing gasket on the turntable is damaged. 	<ul style="list-style-type: none"> • Replace the clamps. • Replace the sealing gasket.
The pedal does not reset after depressing.	<ul style="list-style-type: none"> • The spring is damaged. 	<ul style="list-style-type: none"> • Replace the spring.

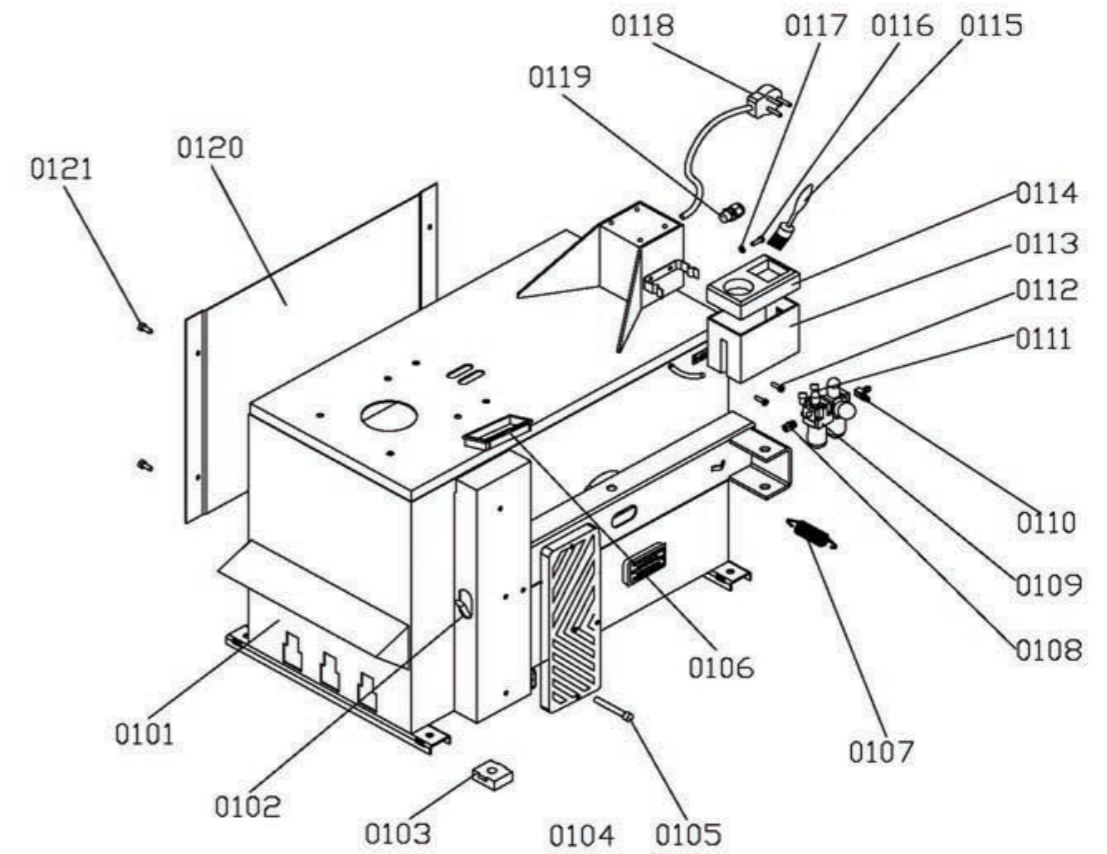


• Fig.13

380V/220V reversing switch wiring diagram



Main Assembly Parts List



TCM4-0101	Cabinet	1	TCM4-0111	Bolt 4X8	2
TCM4-0102	Crow	1	TCM4-0112	Bolt 6X10	2
TCM4-0103	Corner Rubber	4	TCM4-0113	Plastic Box	1
TCM4-0104	Bead Break Blade Protection Rubber	2	TCM4-0114	Plastic Box Cover	1
TCM4-0105	Inner Hexagonal Bolt M8X25	6	TCM4-0115	Brush	1
TCM4-0106	Tool Crib	1	TCM4-0116	Bolt M6X12	1
TCM4-0107	Spring of Bead Break Blade	1	TCM4-0117	Washer 6	1
TCM4-0108	Inner Connector of Oil Segregator	1	TCM4-0118	Power Supply Wire	1
TCM4-0109	Oil Segregator	1	TCM4-0119	Clip	1
TCM4-0110	Inner Inserter of Oil Segregator	1	TCM4-0120	Side Board 8	1
			TCM4-0121	Bolt M5X12	1

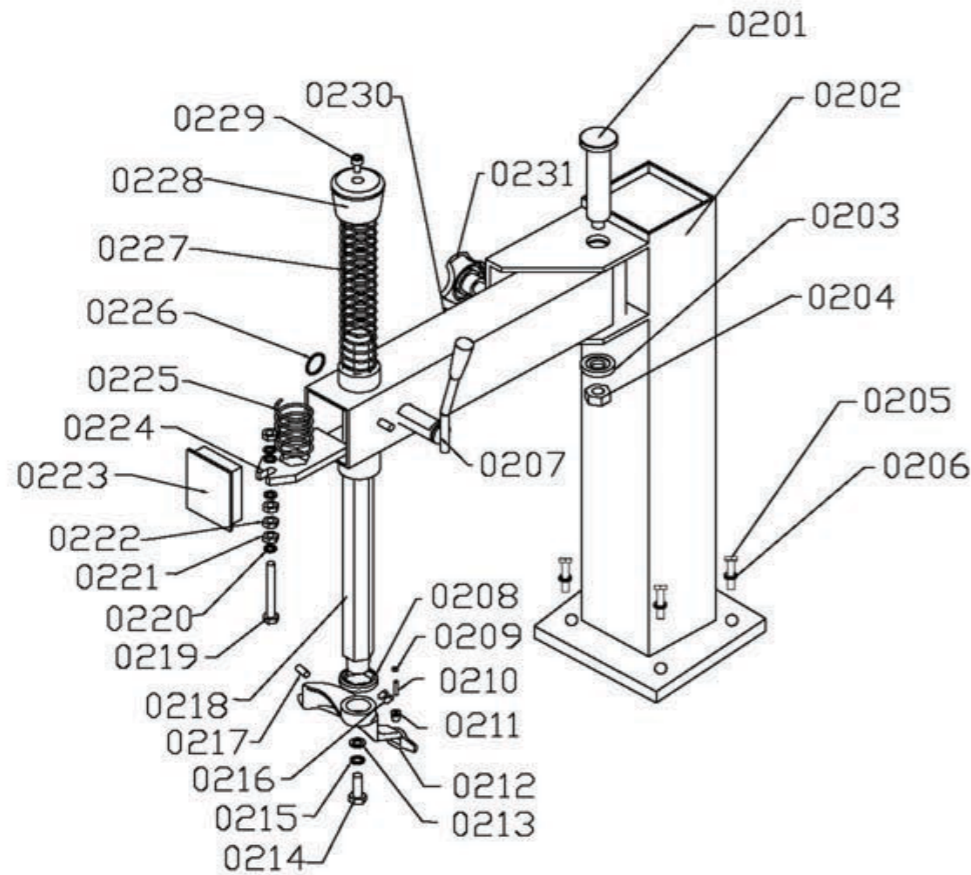
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Swing Arm Assembly Parts List

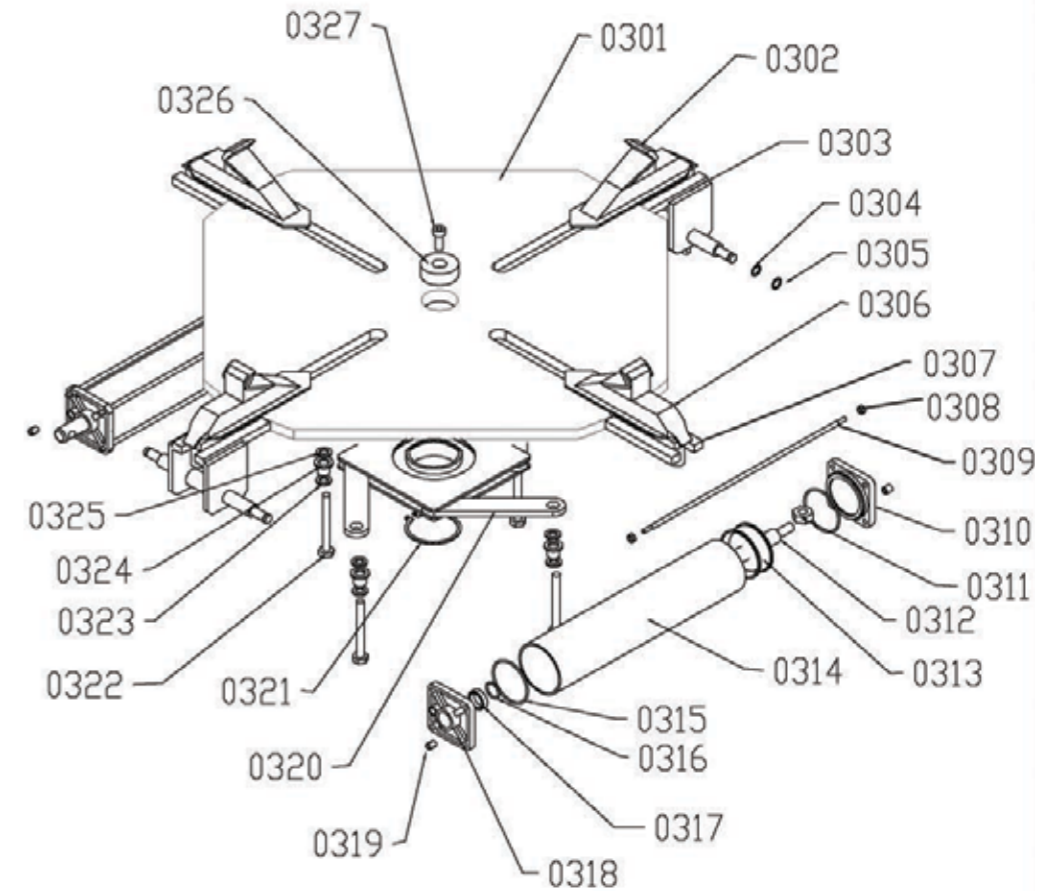


TCM4-0201	Swing Arm Pin	1	TCM4-0217	Hexagonal Bolt M12X12	2
TCM4-0202	Tower Arm Welding	1	TCM4-0218	Hexagonal Shaft	1
TCM4-0203	Swing Arm Pin Washer 5=8	1	TCM4-0219	External Hexagonal Bolt M10X90	1
TCM4-0204	Anti-loosing Nut M16	1	TCM4-0220	Flat Washer Ø10	4
TCM4-0205	Hexagonal Bolt M12X4	4	TCM4-0221	Nut M10	1
TCM4-0206	Flat Washer Ø12	4	TCM4-0222	Locking Nut M10	2
TCM4-0207	Locking Bolt	1	TCM4-0223	Protection Cover	1
TCM4-0208	Shocking Pad of Duckhead	1	TCM4-0224	Lock Plate	1
TCM4-0209	Inner Hexagonal Bolt M6X4	1	TCM4-0225	Lock Pressure Spring	1
TCM4-0210	Cylinder Pin 5x22	1	TCM4-0226	Snap Ring for Shaft 30	2
TCM4-0211	Demounting Head Roller	1	TCM4-0227	Press Spring for Hexagonal Axis	1
TCM4-0212	Duckhead	1	TCM4-0228	Cap for Hexagonal Axis	1
TCM4-0213	Washer of Demounting Head	1	TCM4-0229	Inner Hexagonal Bolt M8X20	1
TCM4-0214	External Hexagonal Bolt M12X25	1	TCM4-0230	Swing Arm	1
TCM4-0215	Spring Washer Ø12	1	TCM4-0231	Limited Position Handle	1
TCM4-0216	Internal Hexagonal Bolt M12X12	2			

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Turntable Assembly Parts List

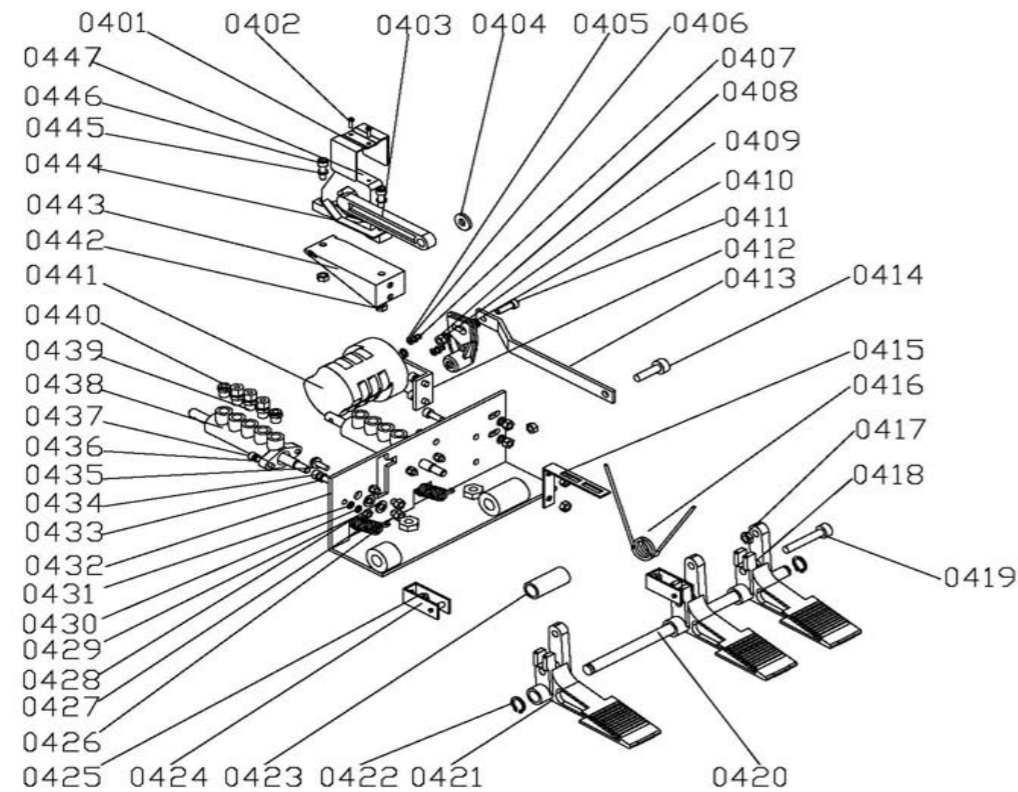


TCM4-0301	Turntable	1	TCM4-0317	O Ring 28X2.5	2
TCM4-0302	Claw	4	TCM4-0318	Cylinder Front Cover	2
TCM4-0303	Welding for Slide Suspension Frame	2	TCM4-0319	Quick Connector	2
TCM4-0304	Flat Washer Ø12	4	TCM4-0320	Welding	1
TCM4-0305	Snap Ring for Shaft 12	4	TCM4-0321	Snap Ring for Shaft 65	1
TCM4-0306	Welding for Slide Suspension	2	TCM4-0322	Inner Hexagonal Bolt M10X90	8
TCM4-0307	Welding for Slide Board	4	TCM4-0323	Flat Washer Ø10	4
TCM4-0308	Anti-Loosing Nut M6	16	TCM4-0324	Collar	4
TCM4-0309	Connecting Bar	8	TCM4-0325	Washer 10	4
TCM4-0310	Cylinder Rear Cover	2	TCM4-0326	Pressure Washer	1
TCM4-0311	Self Locking Nut M12	2	TCM4-0327	Inner Hexagonal Bolt M12X30	1
TCM4-0312	Piston Lever	2			
TCM4-0313	Piston	2			
TCM4-0314	Small Cylinder Body	2			
TCM4-0315	O Ring 60X2.65	4			
TCM4-0316	O Ring 24X2.4	2			

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Foot Pedal Assembly Parts List



TCM4-0401	Limited Position Board	1
TCM4-0402	Bolt Ø4X10	2
TCM4-0403	Little Pole	1
TCM4-0404	Adjusting Washer	1
TCM4-0405	Spring Washer	4
TCM4-0406	Flat Washer Ø4	3
TCM4-0407	Spring Washer	3
TCM4-0408	Bolt M4X10	3
TCM4-0409	Nut M6	1
TCM4-0410	Washer 6	2
TCM4-0411	Inner Hexagonal Bolt M6X25	1
TCM4-0412	Transition Switch Lever	1
TCM4-0413	Transition Switch Supporting Board	1
TCM4-0414	Inner Hexagonal Bolt M8X25	1
TCM4-0415	Spring Bracket	1
TCM4-0416	Torsion Spring	1
TCM4-0417	Anti-Loosing Nut M8	1

TCM4-0418	Nut M8	1
TCM4-0419	Inner Hexagonal Bolt M8X50	1
TCM4-0420	Axle of Controlling Assembly	1
TCM4-0421	Pedal	3
TCM4-0422	Snap Ring for Shaft 14	2
TCM4-0423	Pedal Sheath	1
TCM4-0424	Valve Lever Bracket	2
TCM4-0425	Anti-loosing Nut M8	2
TCM4-0426	Nut M6	2
TCM4-0427	Spring	2
TCM4-0428	Washer 8	2
TCM4-0429	Nut M5	4
TCM4-0430	Spring Washer 5	4
TCM4-0431	Washer 5	4
TCM4-0432	Controlling Assembly Bracket	1
TCM4-0433	Washer 6	1
TCM4-0434	Inner Hexagonal Bolt M6X16	1

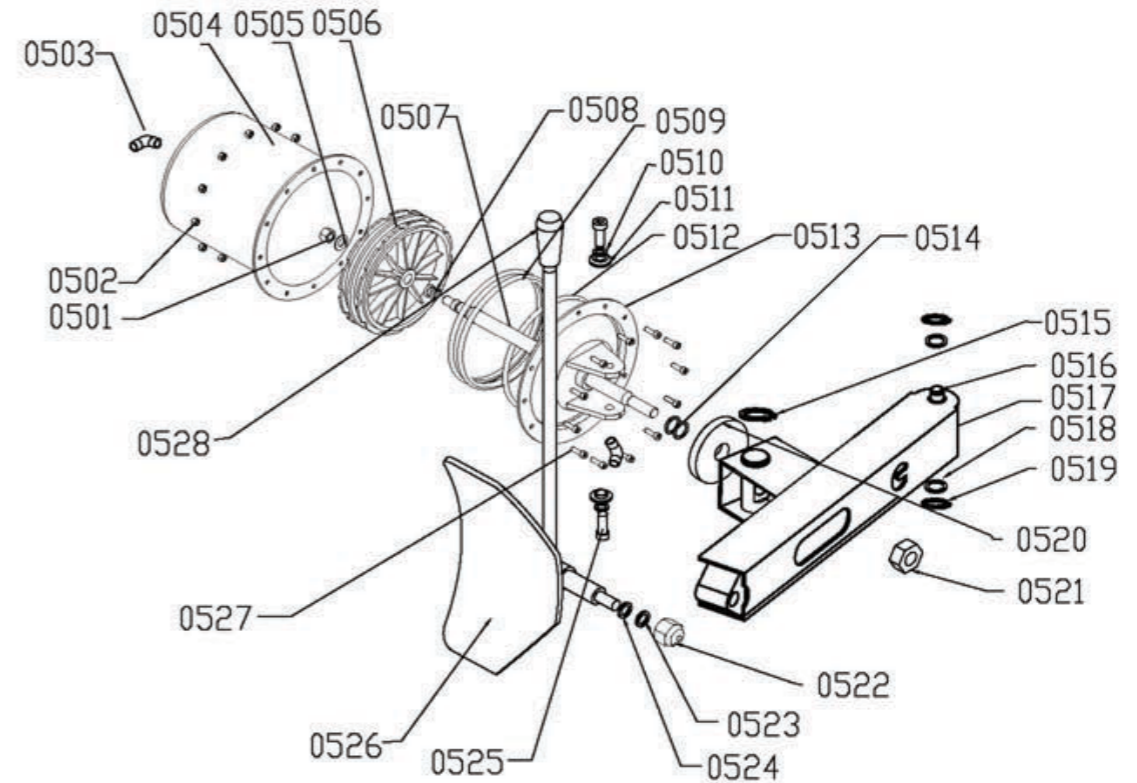
TCM4-0435	Bolt M6X16	1
TCM4-0436	Washer 5	4
TCM4-0437	Inner Hexagonal Bolt M5X16	4
TCM4-0438	Pedal Valve Assembly	2
TCM4-0439	Quick Direct Connector	6
TCM4-0440	Muffler	4
TCM4-0441	Torsion Switch	1
TCM4-0442	Nut M6	2
TCM4-0443	Limited Position Bracket	1
TCM4-0444	Spring Piece	1
TCM4-0445	Washer	2
TCM4-0446	Inner Hexagonal Bolt M6X20	2
TCM4-0447	Limited Position Device	1

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Bead Breaker Assembly Parts List



TCM4-0501	Self Locking Nut M12	12
TCM4-0502	Nut M6	12
TCM4-0505	L Connector	2
TCM4-0504	Cylinder Body Ø186	1
TCM4-0505	Flat Washer	1
TCM4-0506	Piston	1
TCM4-0507	Piston Bar	1
TCM4-0508	Y Ring 186X12X9	1
TCM4-0509	O Ring 186X5.7	1
TCM4-0510	Flat Washer	2
TCM4-0511	Big Washer	2
TCM4-0512	O Ring Ø180X5.7	2
TCM4-0513	Front Cover of Big Cylinder	1
TCM4-0514	O Ring 22X2.4	2
TCM4-0515	Snap Ring for Holes Ø30	1
TCM4-0516	Tower Tilt Pin	1
TCM4-0517	Bead Breaker Holder	1
TCM4-0518	Flat Washer Ø16	1

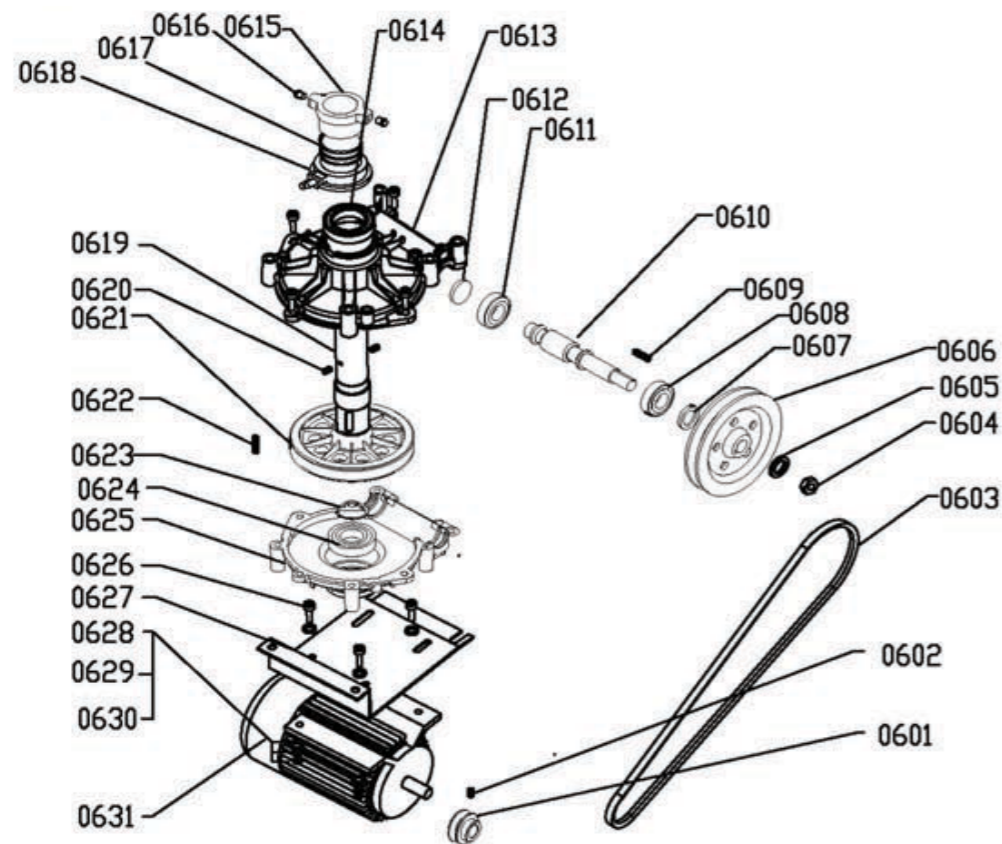
TCM4-0519	Snap Ring for Shaft 16	1
TCM4-0520	Shocking Pad	1
TCM4-0521	Self locking nut M16	1
TCM4-0522	Cap Nut M12	1
TCM4-0523	Spring Washer Ø12	1
TCM4-0524	Flat Washer Ø12	1
TCM4-0525	Hexagonal Nut M8	2
TCM4-0526	Bead Break Blade	1
TCM4-0527	Inner Hexagonal Bolt	12
TCM4-0528	Handle Sleeve	1

FULL RANGE OF SPARE PARTS AVAILABLE. CONTACT MCS

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Motor Gearbox Assembly Parts List



TCM4-0601	Motor belt Wheel	
TCM4-0602	Fix Bolt	
TCM4-0603	Delta Belt B-1270	
TCM4-0604	Nut M16	
TCM4-0605	Big Sheave	
TCM4-0606	Outer Coupling Body	
TCM4-0607	Grease Seal	
TCM4-0608	Bearing 30205	
TCM4-0609	Flat Key	
TCM4-0610	Worm Screw	
TCM4-0611	Bearing 30205	
TCM4-0612	Grease Plug	
TCM4-0613	Up Cover of Gear Box	
TCM4-0614	Bearing 6010	
TCM4-0615	Inner Sheath of Distribution Valve	
TCM4-0616	Quick Insert connector	
TCM4-0617	O Ring 60X2.5	

TCM4-0618	Outer Sheath of Distribution Valve	
TCM4-0619	Main Shaft	
TCM4-0620	Fixing Bolt	
TCM4-0621	Gear	
TCM4-0622	Flat Key	
TCM4-0623	Snap Ring for Shaft	
TCM4-0624	Bearing 6208	
TCM4-0625	Down Cover of Gear Box	
TCM4-0626	Hexagonal Box	
TCM4-0627	Supporting Board for Motor	
TCM4-0628	Motor Shock Absorption Washer	
TCM4-0629	Flat Washer	
TCM4-0630	Nut M8	
TCM4-0631	Motor	



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