

MANUAL

FOR PATENT STYLE SWING ARM CUTTING MACHINE

TW-510/512/516 A/B/C SERIES



QUZHOU TAIWEI PRECISE MACHINERY CO. LTD

Preface

In order to operate this machine more appropriately, please read this operation instruction carefully. Only when the structure, performance and working principle of this machine are completely understood, the functions of this machine can be fully utilized and the service life of this machine can be lengthened.

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1. General

1.1 Usage:

The TW-10/16A/B/C series Rocker Hydraulic Pressure Cutting Machine is qualitatively designed and manufactured based on more than ten years of experiences in production of cutting machine and combined with the loud noise and poor safety properties of small-tonnage mechanical cutting machine. It is a substitute for small-tonnage mechanical cutting machine.

This cutting machine is mainly used in different industries to cut various soft materials, e.g. leather, plastic, canvas, nylon, cardboard, etc., with knife die.

1.2 Characteristics:

- 1.) The cutting forces are 100KN and 160KN. The rocker arm width is 330mm.
- 2.) This machine is equipped with automatic lubricant system which can lessen wearing and prolong the service life.
- 3.) The electronic delay circuit is adopted to control the low limit position of stroke, providing higher precision and cutting quality. The hand wheel can be used adjust the height of working table of rocker arm distance, featuring more simple, reliable and convenient.
- 4.) Main key parts: both the main post and the piston of oil cylinder adopt high quality steel.
- 5.) The inertia of flywheel can realize instantaneous cutting with low energy consumption.
- 6.) Type A adopts gear pump, and Type B adopts vane pump. Type C is made in Italian, with selectable controls of pressure and time.

2. Main technical parameters

1.1	The maximum cutting force	100KN/120KN	160KN
1.2	The width of cutting pressure	330mm	330mm
1.3	Workbench dimension	420*750mm	420*900mm
1.4	Effective travel	50-140mm	5-140mm
1.5	Motor power	1.5HP	1.5HP
1.6	Overall dimension (length*width*height)	700*750*1350mm	720*900*1350mm
1.7	Hydraulic oil amount	45L	45L
1.8	Net weight	430kg	500kg
1.9	Gross weight	450kg	520kg

3.The installation of machine

3.1 Tie steel rope on rocker arm (note: close to arm post, no slippage). Transport this machine to installation site with lifting equipment. During lifting, the original wood pad on machine can not be removed. It shall be pressed on the workbench by rocker arm to prevent said rocker arm from swinging flexibly, which can ensure no damage in components such as hand wheel, handle, electrical apparatus, etc.

3.2 Clean relevant components with cleaning oil, especially the bright bared parts on main post, and then apply lubricant. Disassemble the plastic backing plate on workbench and calibrate the level in the vertical and transversal directions on the workbench surface with the level bar.

It's better to use forklift to shovel the bottom surface.

3.3 Disassemble the left-rear cover plate and add 45L of 46# antiwear hydraulic oil in oil tank. Note that the oil shall not contact with the flywheel.

3.4 Connect the power supply of machine and make reliable grounding as per the electrical principle and requirement. The power indicator will be on.

3.5 Press the ON button of motor to observe whether the rotation direction of the flywheel is in accordance with the clockwise direction. Carry out test punching for several times with empty load after idling for two minutes.

3.6 Press the OFF button of motor, the power indicator will be off, and the machine stops.

4.The function and debugging of machine control element

4.1 Set the delay timer in the minimum position.

4.2 Place the materials need cutting on the workbench.

4.3 Place the knife die on materials need cutting.

4.4 Move the rocker arm at the upright top position of the knife die to align rocker arm with the centre line of knife die as possible.

4.5 Rotate the upper hand wheel. Lower the rocker arm along clockwise direction and lift it along clockwise direction and lift it along anticlockwise direction, keeping a distance about 5~10mm between the bottom surface of rocker arm and the upper back of knife die.

4.6 Press the startup button (ON) of motor and push down the descending button of rocker arm with hands. Note that those two buttons must be pressed synchronously. If the cutting depth of knife die on backing plate is too large, adjust the knob of timer on the rocker arm to a smaller value. Adjust this knob in accordance with above condition until the knife die is pushed into the backing plate slightly.

5. The operation order of machine

- 5.1 Place the materials need cutting on the plastic backing plate of the workbench.
 - 5.2 Place the knife die on the position of the materials need cutting.
 - 5.3 Move the rocker arm at the upright top position of the knife die.
 - 5.4 Press the descending button of the rocker arm with hands.
 - 5.5 Release the descending button of rocker arm to move rocker arm. Remove the required cutting materials. One cycle of operation is completed.
 - 5.6 Place the knife die on the materials need cutting again to enter next cutting operation.
- Note: Press the OFF button of motor when people leave machine or repair it.

6. The maintenance and service of machine

6.1 The cleaning work of machine

The routine cleaning work of machine shall be carried out once per shift, and the overall cleaning work shall be carried out once per week. The oil filter must be cleaned once per month.

Suggestion: Raise the main post to the maximum position and clean it. Blow off pollutants from inside to outside with compressed air during cleaning of oil filter.

6.2 Hydraulic oil level

It is necessary to check the oil level in machine body in application of machine. If it is lower than the minimum position, the hydraulic oil of the same type shall be supplemented. If there is severe loss, please find out the reason and take corresponding measurements.

After cumulative 2000 hours or at most no more than 1 year of working time, the hydraulic oil shall be replaced.

Suggestion: When clean the oil tank just after the machine stops, do not wipe it with wool yarn.

6.3 The overflow valve, which has been set before leaving factory and locked, can not be adjusted randomly so as to avoid the machine being damaged due to overload.

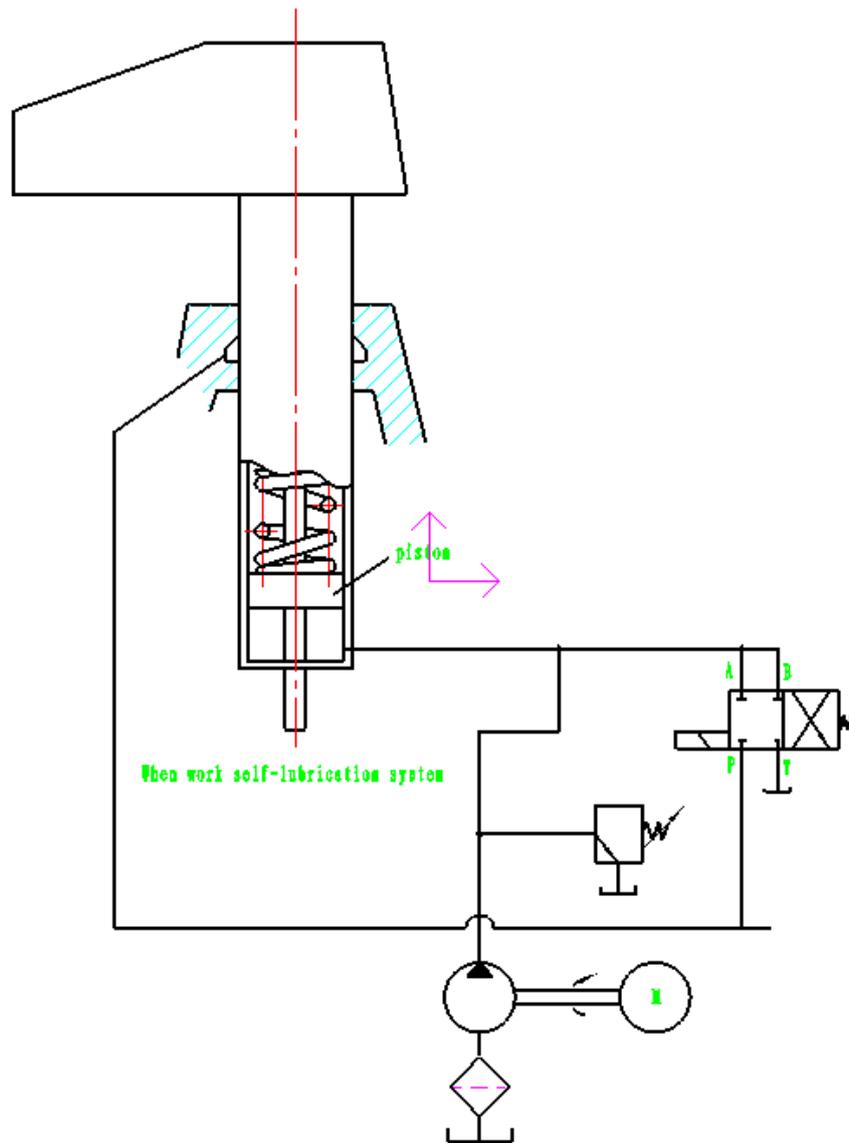
6.4 In the material cutting process, any position of plastic backing plate shall be used evenly and can be rotated 180° in horizontal plane.

7. The troubleshooting and elimination of machine

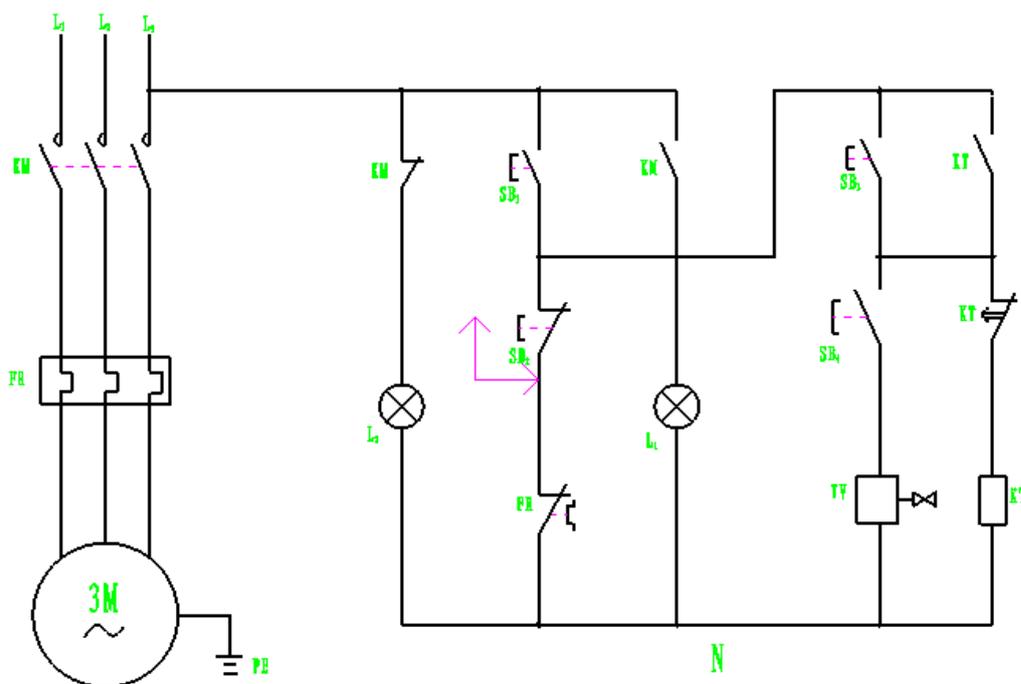
Sequence number	Faults	Causes	Action
1	The motor is out of operation	<ol style="list-style-type: none"> 1. The power supply is disconnected. 2. The contactor of control motor can not work. 3. The startup head (NO) of motor damaged. 	<ol style="list-style-type: none"> 1. Check the power supply line for soundness, especially the zero line. 2. Check the contactor and repair or replace it. 3. Check the switch and repair or replace it.
2	The motor rotates reversely.	The two phase lines of motor are connected reversely.	Interchange the external two phase lines of motor.
3	The motor can rotate when the startup button is pressed and stop when released.	The contactor of motor has been broken or the head has been broken.	Check the contactor or switch and repair or replace it.
4	The motor stops suddenly during normal operation.	The thermal relay is released and current is overloaded.	Check the thermal relay, readjust or replace it.
5	The handle switch is not pressed and the rocker arm descending.	There are errors in handle switch and solenoid valve.	Check the handle switch contact and valve, repair or replace it.
6	The rocker arm can not descend when the handle switch is pressed.	<ol style="list-style-type: none"> 1. There is error in manual switch. 2. There is no sufficient oil amount in oil tank. 3. There is leakage in hydraulic oil pipe or joint. 4. The relief valve is loosed. 5. Switches are not pressed synchronously by hands. 6. The solenoid valve can not work. 7. The seal ring is broken or the wearing is 	<ol style="list-style-type: none"> 1. Check, repair or replace it. 2. Add hydraulic oil of the same type. 3. Check oil pipe and joints to eliminate faults. 4. Readjust the relief valve. 5. Press again synchronously. 6. Check the electromagnet or surrounding wires. 7. Check seal ring or oil cylinder and eliminate faults as per condition.

		severe or there is leakage in oil cylinder.	
7	The blanking of rocker arm has not been cut off.	The delay timer can not match with the travel distance, or there is leakage or sufficient oil amount in oil cylinder position or the oil filter is blocked.	Readjust it. If the blanking is not been cut off, check the relief valve, oil cylinder, piston, oil filter and repair them as per checking results.
8	The blanking has been cut off, but the cutting depth of knife die is too large. The motor rotate slowly and even stops.	<ol style="list-style-type: none"> 1. The delay time is too long. 2. The relief valve is loosed and the pressure of overflowed liquid is low. 3. The solenoid valve can not be reset. 	<ol style="list-style-type: none"> 1. Reset a shorter time. 2. Readjust the pressure. 3. Repair or replace it.
9	The rocker arm can not be reset after descending.	<ol style="list-style-type: none"> 1. The solenoid valve can not be reset. 2. The piston and piston rod are loosed. 	<ol style="list-style-type: none"> 1. Repair or replace the solenoid valve. 2. Disassemble and repair it.

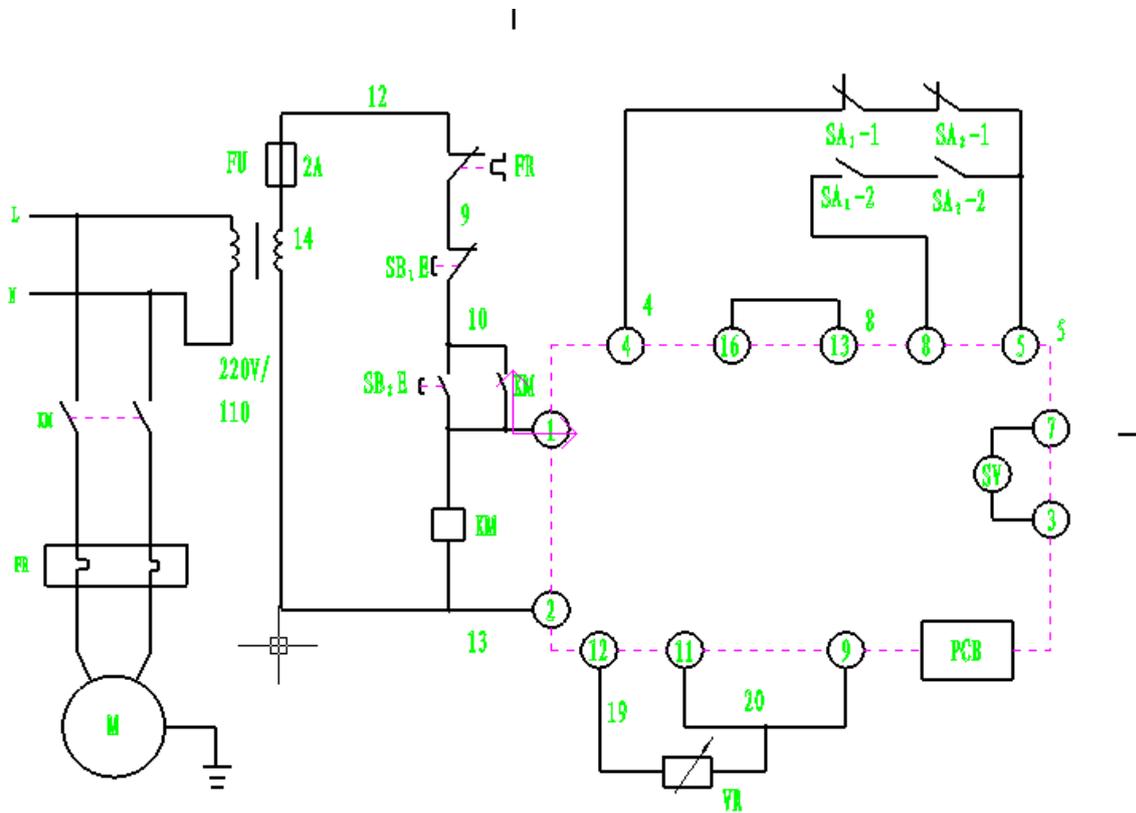
8. Hydraulic Schematic Diagram



9. Electric Diagram For TW-510/512/516



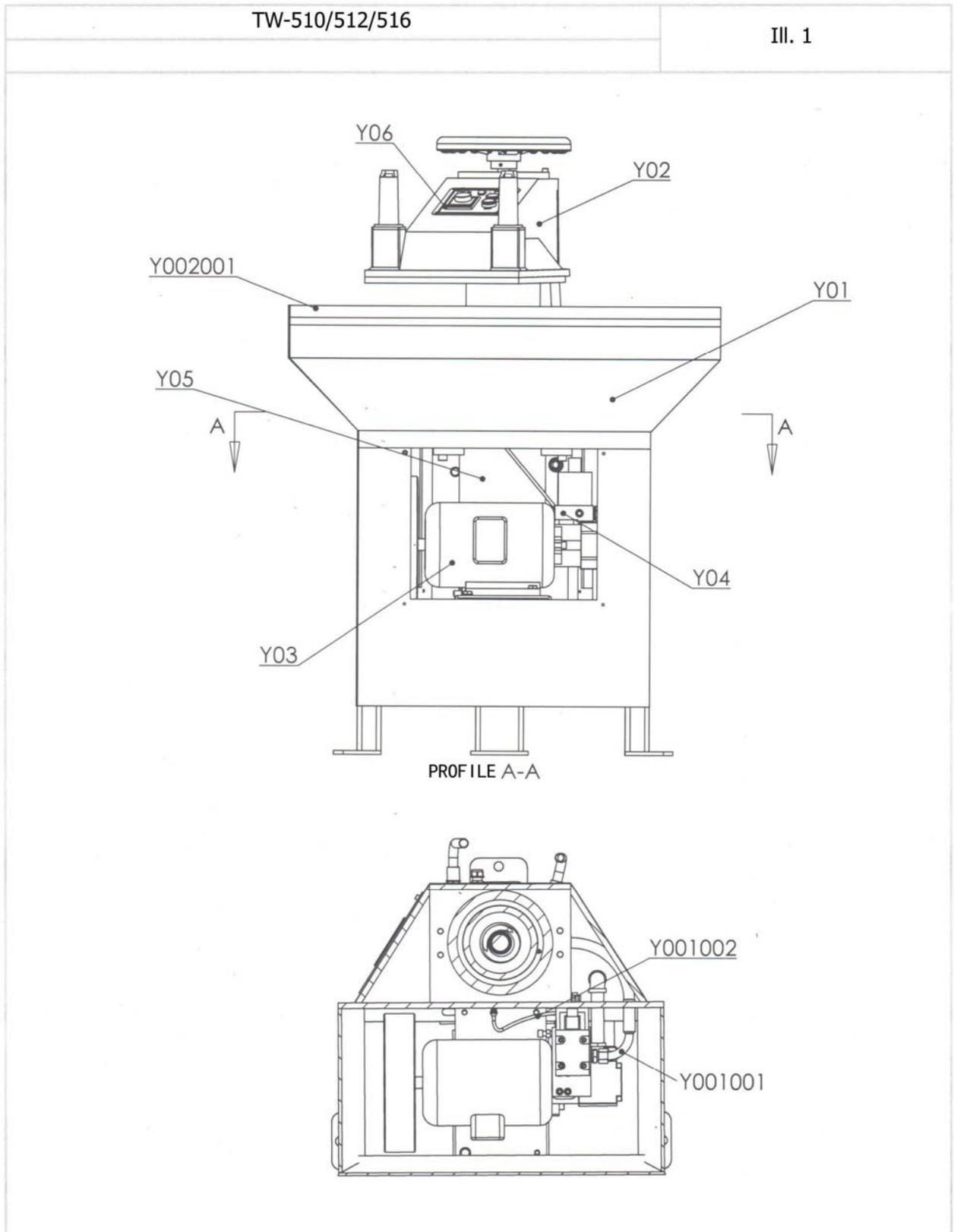
9. Electric Diagram For TW-510C/512C/516C



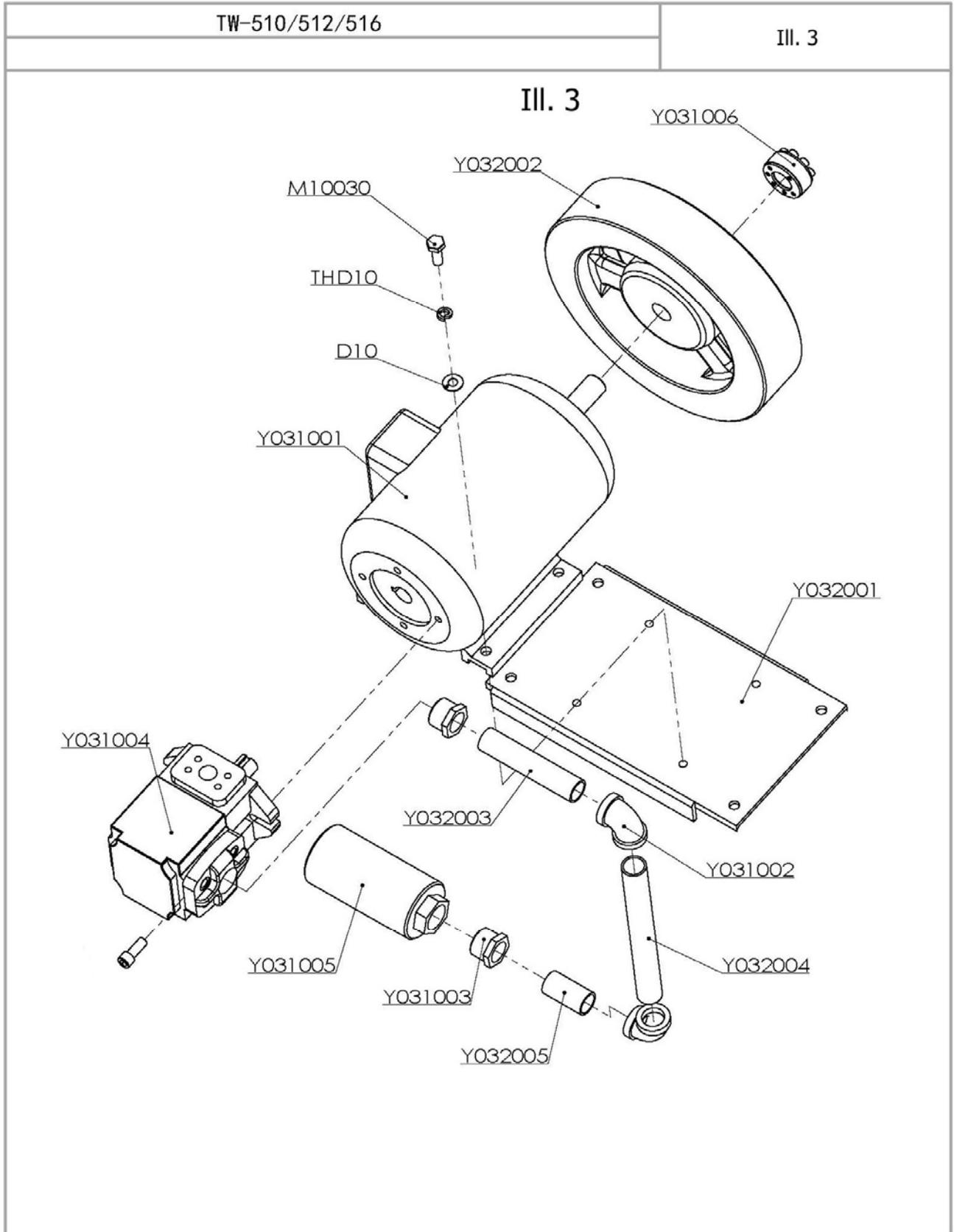
Note for user

1. The whole machine and main components of this factory are guaranteed for a year.
2. If this product has quality fault under guarantee period, user can apply for free repair to the sales department of this product through machine purchasing invoice and complete guarantee repair list.
3. The quality guarantee system shall be performed as per national relevant stipulations. The guarantee repair list shall be kept appropriately by user and the missing one can not be supplemented. It will be invalid if altered and become worthless when expired.
4. Note! Product with one of the following conditions will not be guaranteed, but it can be maintained with charge:
 - ① The valid invoice or guarantee repair list can not be offered;
 - ② There are modifications on invoice or guarantee repair list, and the products on guarantee repair list can not comply with machine no.; The machine no. is modified or replaced;
 - ③ The product is artificially damaged due to improper operation, maintenance and storage by user;
 - ④ Non-specific maintenance list or machine after maintenance;
 - ⑤ Damage caused by force majeure.

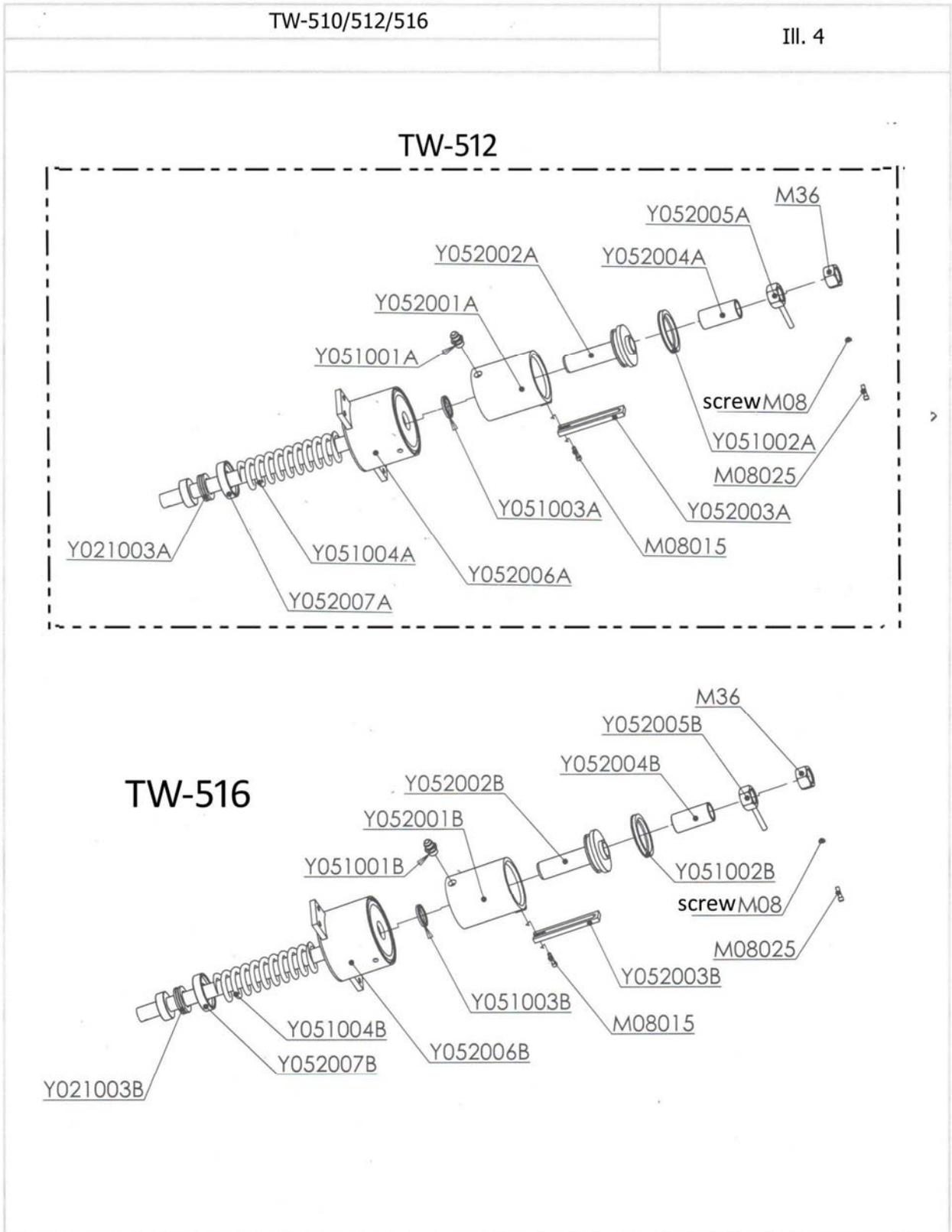
10. Components Illustration



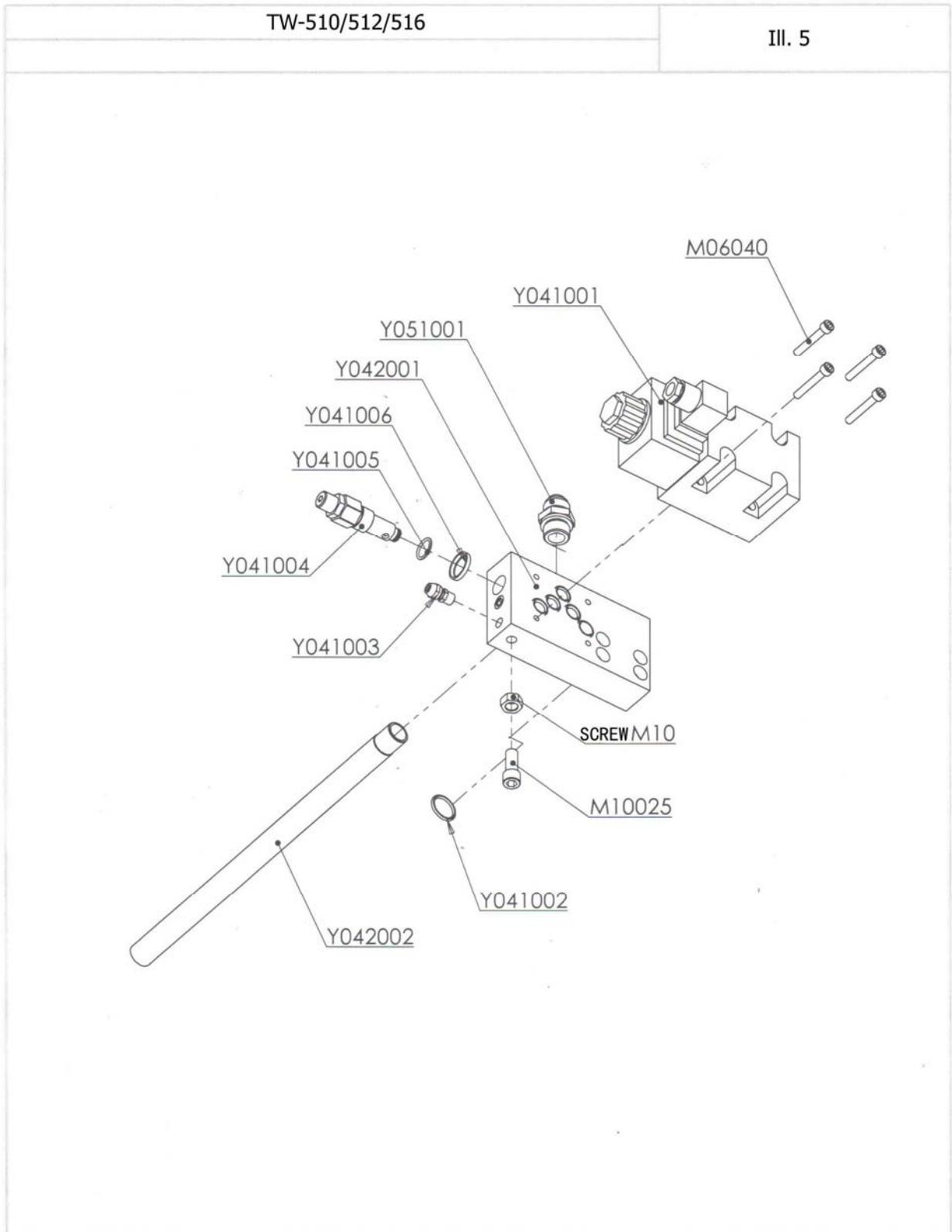
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