

AUTOMATIC TRANSMISSION FLUID OIL EXCHANGER

Operation Manual Model: CT4105

This manual contains all the important warning information, recommendations, assembly instructions, operation and service procedures

We advise to keep the Operation Manual together with the purchase invoice.

Furthermore, we also suggest putting the invoice number here: _____

Keep the Operation Manual for future use, in a safe and dry place.

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WARNING INFORMATION RELATED TO SAFETY – SAFETY MEASURES



Note: In order to reduce the risk of injuries and material damage, always follow basic safety rules, when using the device. It is recommended to read the Operation Manual, before the first activation of the device.

- 1) **Keep the workplace clean and tidy:** Messy workplace may result in injuries.
- 2) **Pay attention to the working conditions in a particular area:** Do not operate electric machines and equipment in humid or wet places. Do not expose such equipment to rain. Provide proper lighting in the workplace. Do not operate electric equipment in the presence of gases of flammable fluids.
- 3) **Keep the workplace out of the reach of children.** Make sure that children cannot access the workplace. Do not let children play with the device or use tools/extension cords.
- 4) **Put unused material back, where it belongs.** Unused tools must be stored in a dry place, so as to protect them against corrosion. Always keep tools locked and away from the reach of children.
- 5) **Adjust tools to the type of work to be done.** Do not attempt to carry out any work with small tools or accessories, if such work must be done with large industrial tools. This device has been designed only for certain applications. The device will operate in the most efficient and safe manner, provided that is used according to the frequency it has been designed for. Do not modify the device or use it for any other purposes (that the intended one).
- 6) **Wear proper working clothes.** Do not wear any loose clothing, or necklaces that could become trapped in the moveable parts of the machine. It is recommended to always wear protective clothing and shoes, when working. Use protective headwear to cover long hair.
- 7) **Use eye and ear protection.** When working in dusty environments and in the presence of chemical vapours, always wear a dust-mask or a protective mask with an ANSI certificate.
- 8) **Do not lean over.** Make sure your feet are well supported and there is no risk of losing balance. Do not reach beyond working machines.
- 9) **Take proper care of tools.** Carry out periodic inspections of non-collapsible and flexible cords, so as to make sure that they are clean, dry, and not soiled with oils and lubricants, at all times.
- 10) **Make sure that the device cannot be switched on inadvertently:** Check, whether the air pressure switch is in the OFF position, when the device is not in operation or before connecting a flexible hose.
- 11) **Exercise maximum care:** Pay attention, when carrying out operations and always observe the rules of common sense. Do not work with the device or any tool, if you feel too tired.
- 12) **Make sure that there is no potential damage to any of the tools.** Prior to using any tool, carefully check every element that seems to be damaged. This is the only way to make sure that it will work properly and perform all required functions. Check the location and fixing of all moveable

parts. The device may not work properly, if assembly elements or tools are damaged or show other defects. All damaged elements must be repaired or replaced, by a qualified technician. Do not operate the device, if any of its control systems/the breaker switch works improperly.

- 13) **Spare parts and accessories:** When carrying out maintenance inspections of the device, use only original spare parts. The warranty becomes null and void, if non-original spare parts have been used. Use only those accessories that have been specifically designed for the operations carried out with the device.
- 14) **Do not operate the device, if you are intoxicated with alcohol or drugs.** When using prescribed drugs, carefully read the package leaflet to make sure that the taken medication has no adverse effects on the ability to assess situations or the correctness of reactions. Refrain from using the device, if in doubt.
- 15) **Maintenance inspections.** For safety reasons, the device must be used and regularly maintained, by qualified technicians.
- 16) **Warning for people with pacemakers.** People with pacemakers must consult a doctor, before operating the device. The electromagnetic field present in the vicinity of a pacemaker may disturb or damage the pacemaker. Furthermore, people with pacemakers must observe the following recommendations: Exercise extra care in the vicinity of coils, electric cords of sparking plugs, or timing gears in a working motor. The motor must be turned off, prior to commencing any adjustment on a timing gear.



Note: Performance of the device may vary, depending on air pressure fluctuations and on the capacity of the compressor.

SAFETY MEASURES RELATED TO THE PRODUCT



Note: The device must only be operated by qualified workers, who have undergone proper training, read and understood the warning information concerning safety, as well as the information concerning implementation procedures provided herein.

- 1) Wear protective goggles with an ANSI certificate.
- 2) Do not smoke in the vicinity of the device.
- 3) Use the device in a well-ventilated place.
- 4) In the case of leaking from the device or from hoses, immediately turn off the device and eliminate the leakage.
- 5) Do not apply any detergents on the device.
- 6) There must always be an empty container present near the device, to contain a potential leakage.
- 7) Keep an ABC fire extinguisher near the device, to contain any potential fire.
- 8) Make sure that oils and solvents have no contact with eyes and skin.



Note: The warning remarks and instructions contained in this Operation Manual do not include all possible conditions and situations that may actually occur. The operator must understand that common sense and care are the two factors that make the product safer, and they are the sole responsibility of the operator.

UNPACKING

When unpacking, make sure that the package contains all the elements listed below. Should any of the elements be missing or damaged, contact a local distributor.

Package content:

The GD-505 device.



Note: Prior to activating the GD-505 device, check whether there are any loose couplings or connections.

FEATURES

GD-505 Automatic Transmission Fluid Oil Exchanger is designed to achieve the replacement of cooling oil of transmission, fluid torque converter, and the transmission radiator in the shortest time, with the oil-changing rate for more than 90%; Machine equipped with a LCD display to make the operation much more simple and convenient.

- 1) Automatic flow direction switch.
- 2) Automatically exchange the used and new transmission oil.
- 3) High precise recharging and discharge value controlled by the computer.
- 4) Oil pressure and machine inner pressure showed on the LCD display directly.
- 5) A variety of connectors, suitable for a large number of Europe, USA, Asia and other countries' car models.

- 6) Able to solve a series of problems caused by incomplete transmission oil exchange.
- 7) Greatly extend the service life of the transmission, and improve the working environment of the transmission.
- 8) Rapid in operation and high exchanging rate.

WORKING ENVIRONMENT AND EQUIPMENT PARAMETERS

Working environment:

- 1) Environment temperature: -20°C- +60°C
- 2) Relative humidity: < 85%

Equipment parameters:

- 1) Voltage : AC110~220V 50Hz 1PH
- 2) Motor power : 140W
- 3) Pressure gauge range : 0~16Bar (0~220Psi)
- 4) Working pressure : ≤6Bar (0~87Psi)
- 5) Outlet pipe length : 2.5m
- 6) Inlet pipe length : 2.5m
- 7) Discharge pipe length : 1.5m
- 8) Precision of the filter element : 5μm

- 9) Volume of the oil tank : 25L
- 10) Precise of the gravity sensor : $\pm 0.1L$
- 11) Maximum oil-replacing speed : 3.0L/Min
- 12) Dimension of machine : 510mm×540mm×1075mm
- 13) Dimension of packing : 685mm×435mm×1180mm

LEGEND RELATED TO CONTROL INSTRUMENTS AND INDICATORS PROVIDED ON THE DEVICE



Fig. 2

- | | |
|---|---|
| ① New oil: observe the condition of new oil | ⑧ Used oil: observe the condition of used oil |
| ③ Cancel: return or cancel the operation | ④ Up: previous row or increase the value |
| ⑤ Down: next row or decrease the value | ⑥ Enter: key to confirm and save |

- ⑦ Outlet pressure gauge: output oil pressure of the device ⑧ Oil-returning pressure gauge: pressure of oil returning to the device

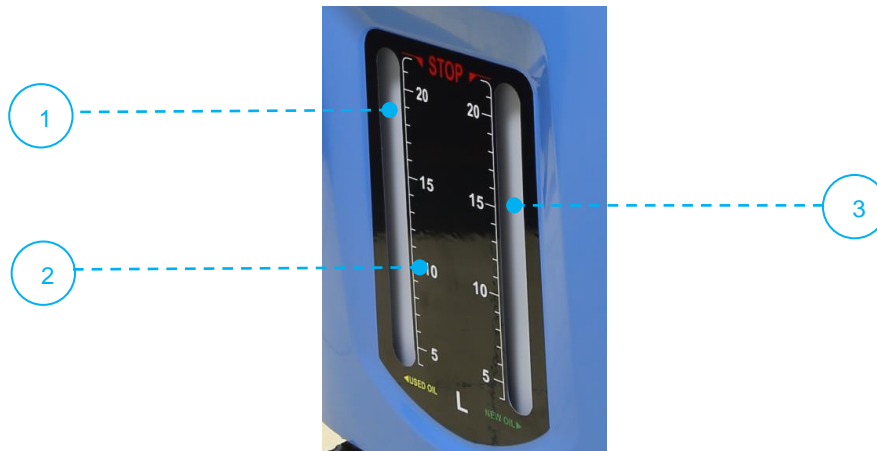


Fig. 3

- ① Oil level window of the used oil: observe the remaining oil mass of the used oil tank
- ② Oil level scale: reference value for adding new oil and discharging the used oil
- ③ Oil level window of the new oil: observe the remaining oil mass of the new oil tank

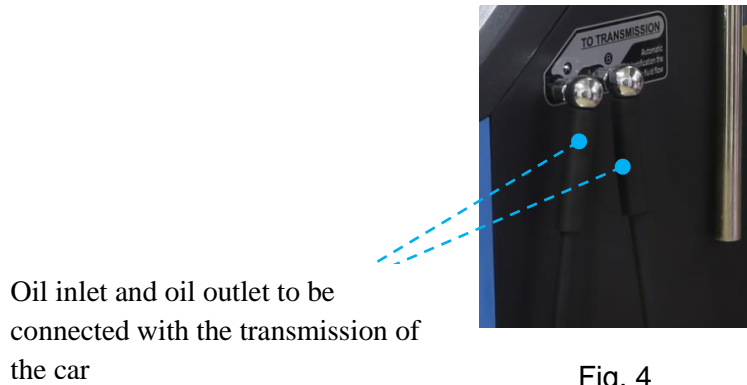


Fig. 4

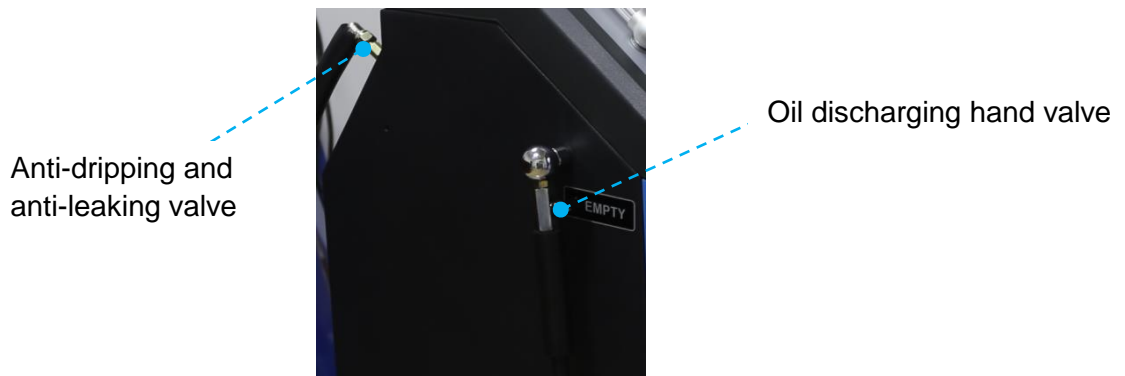


Fig. 5

OPERATION INSTRUCTIONS

1. Preparation

Note: Never start car engine in a garage or any other closed room, if there is no proper extraction system for exhaust gases. Working engine generates carbon monoxide, which becomes lethal in a closed room. The first symptoms of carbon monoxide intoxication are similar to flu (headache, dizziness, or nausea).

Should any of such symptoms occur, immediately leave the room and get some fresh air.

- 1.1 **Before the first use, please open the back door of the machine, and turn off the protection screw of the electronic scale.**
- 1.2 Confirm whether the new and used oil tank is empty; connect to the power supplies; turn on the power switch. Check to see whether the oil level of the oil tank displayed on the screen is 0. If it is 0, operate the machine normally; otherwise, conduct calibration operation for the electronic scales of the new and used oil tanks according to the calibration operation for the electronic scale on the page 15 of the manual.
- 1.3 Pull up the handbrake, put the gear-change lever in the "P" position and turn off the engine.
- 1.4 Put the vehicle on a car lifting frame or on other equivalent safe supports, in a ventilated room.
- 1.5 Find out a detachable oil tube on the car which connects the automatic transmission and the radiator; select the adapters that match the detached tube connectors from the adapter kit.
- 1.6 Connect the two oil pipes indicated with "TO TRANSMISSION" on the GD-505 to the both ends of the detached oil pipe of the automatic transmission (no need to consider the flow directions, the system will automatically recognize the inlet and outlet), as shown in Fig. 6.

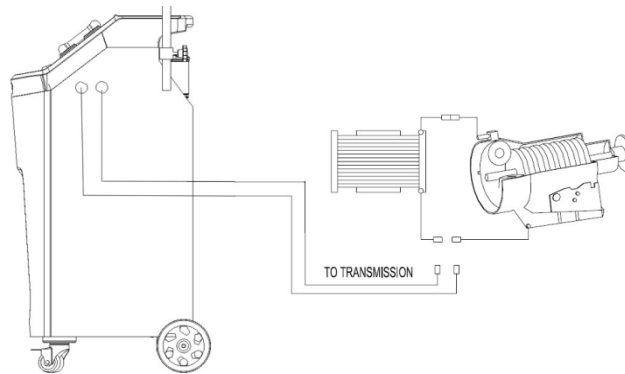


Fig. 6

- 1.7 Screw off the new oil filler cap on the top of the machine, and fill the new transmission oil to the new oil tank of the machine through the oil filler.

Note: before changing the transmission oil for a car, please check the relevant information to confirm the oil type for transmission, to avoid the improper transmission oil infusing into the transmission and causing damage to the transmission. The maximum capacity of the oil tank in the

machine is 25L; please make sure the filling amount of the new transmission oil is 3-5L more than that of the used oil from the transmission.

2. Adding cleaning fluid

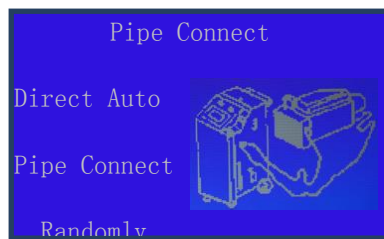
The transmission is cleared through the cooperation between the filtration system of the machine and its inner filtration system. This machine does not equip the sole cleaning fluid adding function. If the user decided to clear the transmission with the cleaning fluid, there are two options could be adopted:

- 2.1 Refer to relevant information to confirm the appropriate cleaning fluid for transmission, find out new oil filler on the car transmission and add appropriate cleaning fluid through the filler.
- 2.2 If there is no new oil fill hole on the transmission, open the back door of the machine and pull the fluid-sucking pipe out of the new oil tank to insert it into the bottle of the cleaning fluid; use the function of “add new oil” of the machine to add cleaning fluid.

Note: the cleaning fluid in the market is divided into the concentrated type and the non-concentrated type; if using the concentrated cleaning fluid, it is recommended to dilute the cleaning fluid with some new oil for easy adding into the transmission.

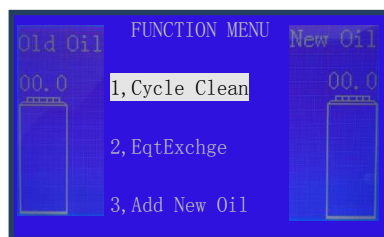
3. Cycle cleaning

- 3.1 Confirm that the machine oil pipe and the transmission system of the car is firm without leakage.
- 3.2 Turn on the power switch of the machine and the boot interface is as follows:

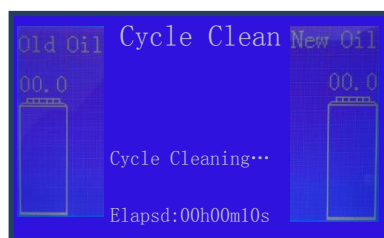


- 3.3 Press the Enter key to enter the function menu

- 3.4 Press the Up or Down key on the operation panel to choose the “cycle cleaning” function



- 3.5 Press the Enter key to enter the cycle cleaning



- 3.6 Start the car engine to start the cycle clean of the transmission system

(In order to save time, choose to stay for about one minute in each gear; when it comes to the high-speed gear, throttle up the engine to speed the motor vehicle to 60Km/h to ensure the cleaning quality and speed)

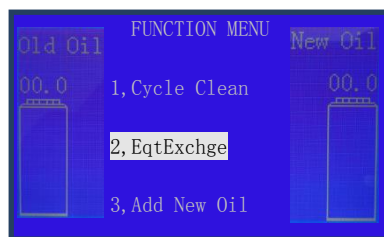
3.7 After cycling for more than ten minutes, shut down the car engine; press the Enter key to stop the cycle cleaning as well as to complete the cycle cleaning of the car transmission system

4. Equivalent exchange

4.1 Confirm that the machine oil pipe and the transmission system of the car is connected firmly without leakage.

4.2 Turn on the power switch of the machine to enter the function menu

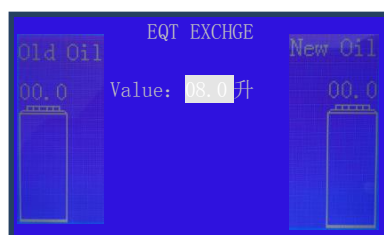
4.3 Press the Up or Down key on the operation panel to choose the “Equivalent Exchange” function



4.4 Press the Enter key to enter the Equivalent exchange



4.5 Press the Enter key to enter the setting of Equivalent exchange

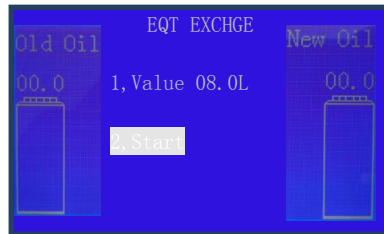


4.6 Press the Up or Down key to set the exchange amount of the transmission

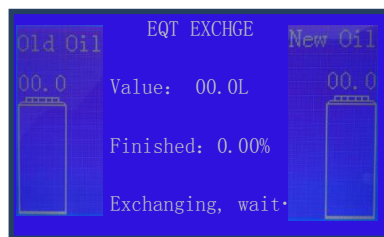
4.7 Press the Enter key to save the exchange setting amount of the transmission



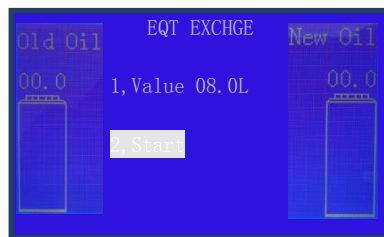
4.8 Press the Up or Down key to choose to start



4.9 Press the Enter key to start exchanging the transmission oil; press the Enter key to stop the exchange if necessary; press Enter key again to keep on exchanging ;press the Esc key to stop the exchange and exit.



If the oil storage of the new oil tank is in shortage or is smaller than the set amount, the transmission oil cannot be exchanged, as shown in the following; reset the exchange amount or complement the new oil in the new oil tank and then conduct the oil exchange operation



Note:

Although the equipment is able to ensure the accuracies of exchanging amount, however, the transmission oil level is probably out of the range before exchanging. Thus, please inspect the transmission oil level after operation is done. In case, the transmission oil level is out of range, please choose the "add new oil" or "recycle old oil" function to adjust the oil level to the normal range.

As the car is lifted up, in this process, the ABS trouble light is likely to be on.

To ensure the quality of the replacement, the new oil in the equipment shall be 2-3L more than that of the car automatic transmission.

5. Adding new oil (equip with separate charging function when the oil is not enough in the transmission)

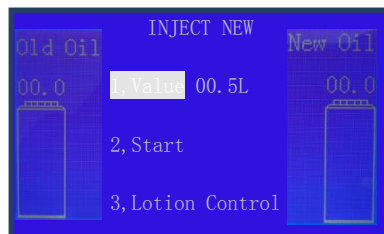
5.1 Confirm that the oil pipe of the machine and the car transmission system is connected firmly without leakage.

5.2 Turn on the power switch of the machine to enter the function menu.

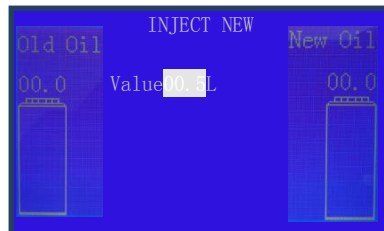
5.3 Press the Up or Down key on operation panel to choose “add new oil”.



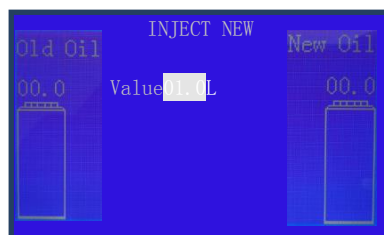
5.4 Press the Enter key to enter the “add new oil”



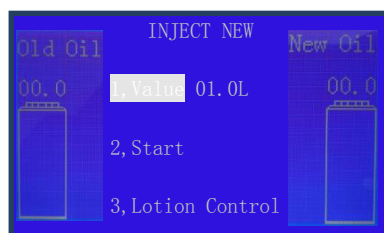
5.5 Press the Enter key to enter the setting of adding oil value



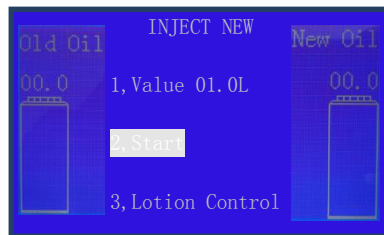
5.6 Press the Up or Down key to set the adding value of new oil



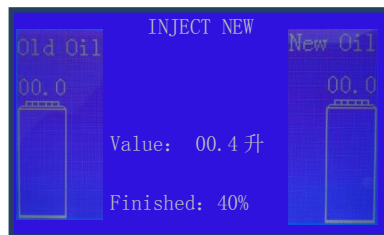
5.7 Press the Enter key to confirm saving the adding value of new oil



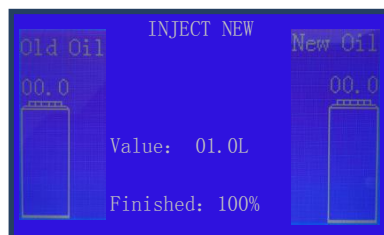
5.8 Press the Up or Down key to choose to start



5.9 Press the Enter key to start adding new oil, press the Enter key during the adding process to pause and press the ESC to return.



5.10 The machine will stop automatically when the new oil amount reaches the set value, as the following interface shows:



5.11 Press the Enter key or the Esc key to return to the function menu

6. Recycling old oil (the sole transmission oil discharge function when adjusting oil level in transmission)

6.1 Confirm that the oil pipe of the machine and the transmission system of car is connected firmly without leakage.

6.2 Turn on the power switch of the machine to enter the function menu.

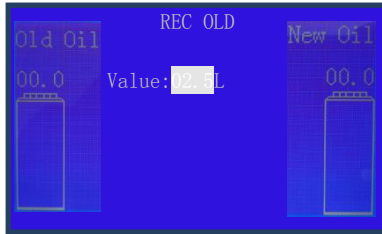
6.3 Press the Up or Down key on the operation panel to choose “recycling old oil” function



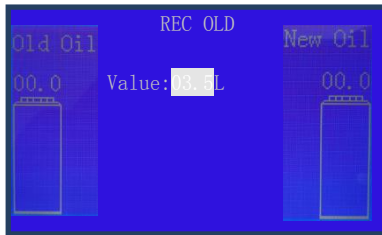
6.4 Press the Enter key to enter the “recycling old oil” function



6.5 Press the Enter key to enter the recycling value setting of old oil.



6.6 Press the Up or Down key to set the recycling value of old oil.



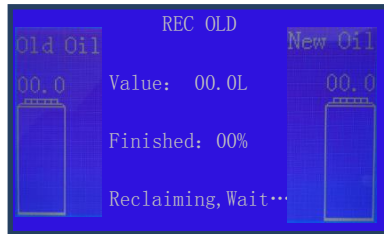
6.7 Press the Enter key to confirm saving the recycling value of old oil.



6.8 Press the Up or Down key to choose to start



6.9 Press the Enter key to start recycling the old oil.



6.10 The machine will stop automatically when the old oil amount reaches the set value, as the following interface shows:



6.11 Press the Enter key or the Esc key to return to the function menu.

7. Empty the oil tank of equipment

The accuracy of gravity sensor will be decreased greatly due to the long-time pressure. So the transmission oil of new and old oil tanks shall be emptied after the work has been finished every day.

7.1.1 Empty the new oil tank of the machine

7.1.2 Ensure that the oil inlet and outlet pipes are not connected with the car, open the power switch of machine, and enter the Function Menu

7.1.3 Press the Up or Down key on the operation panel to choose "Empty Box" function



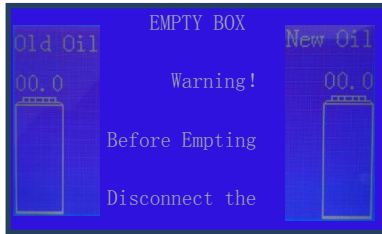
7.1.4 Press the Enter key to enter the interface of Empty Box



7.1.5 Press the Up or Down key to choose "New Box"



7.1.6 Press the Enter key to enter the interface of Empty Box Warning



7.1.7 Turn on the anti-leak oil nozzle at the end of the discharge pipe

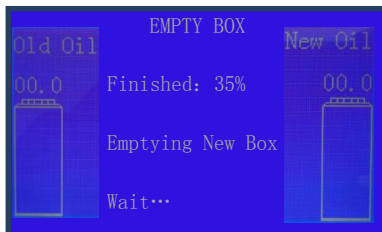


7.1.8 Put the discharge pipe in an outer new oil tank or an empty tank

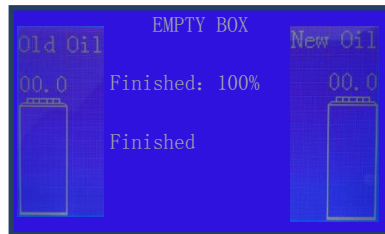
7.1.9 Open the hand valve on the discharge pipe. If the hand shank is parallel to the pipe, it means opened; if the hand shank is perpendicular to the pipe, it means closed



7.1.10 Press the Enter key to start emptying the new oil tank; press the Enter key to suspend and press the Esc to exit and return



7.1.11 It will display the interface that the new oil tank has been emptied after emptying the new oil tank of the machine



7.1.12 Press the Enter key to return

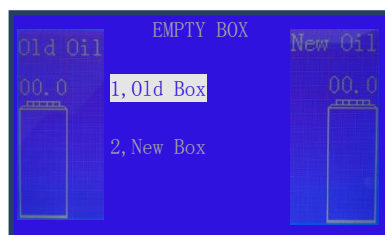
7.2 Empty the old oil tank of equipment

7.2.1 Ensure that the oil inlet and outlet pipes are not connected with the car, open the power switch of machine, and enter the Function Menu

7.2.2 Press the Up or Down key on the operation panel to choose "Empty Box" function



7.2.3 Press the Enter key to enter the interface of Empty Box



7.2.4 Press the Up or Down key to choose "Old Box"



7.2.5 Press the Enter key to enter the interface of Empty Box Warning

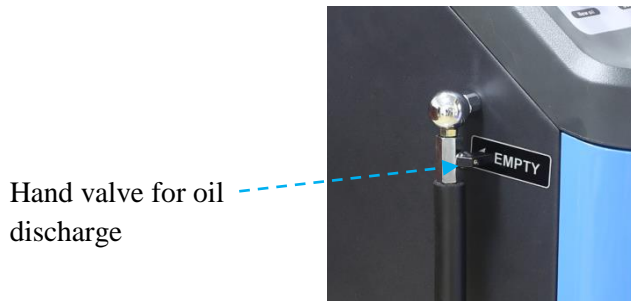


7.2.6 Turn on the anti-leak oil nozzle at the end of the discharge pipe

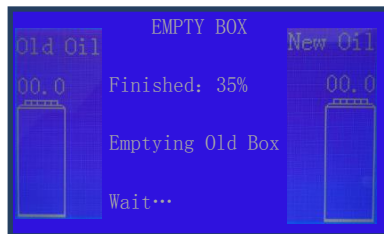


7.2.7 Put the discharge pipe in an outer waste oil tank or an empty tank

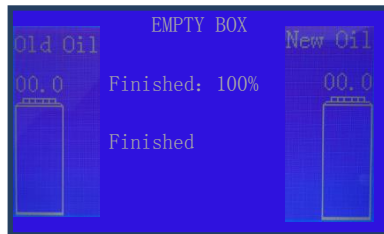
7.2.8 Open the hand valve on the discharge pipe. If the hand shank is parallel to the pipe, it means opened; if the hand shank is perpendicular to the pipe, it means closed



7.2.9 Press the Enter key to start emptying the old oil tank



7.2.10 It will display the interface that the old oil tank has been emptied after emptying the old oil tank of the machine



7.2.11 Press the Enter key to return

8. System set

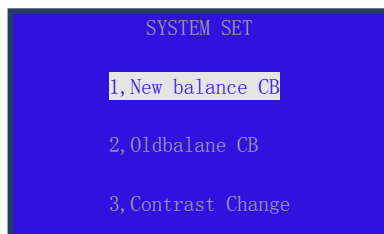
Please ensure that the gravity sensors for new and old oil have been calibrated before the first use of the new equipment. Please ensure that the new and old oil tanks are empty before calibration.

8.1 To calibrate the gravity sensor for new oil

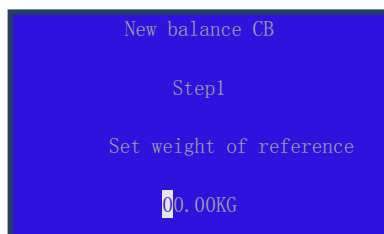
8.1.1 Turn on the power switch of the machine and enter the Function Menu

8.1.2 Press the Up or Down key on the operation panel to choose "System Set" function

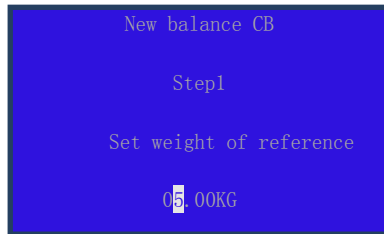
8.1.3 Press the Enter key to enter System Set



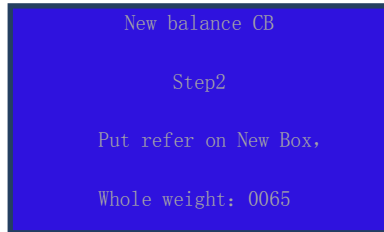
8.1.4 Press the Enter key to enter the interface of New balance CB



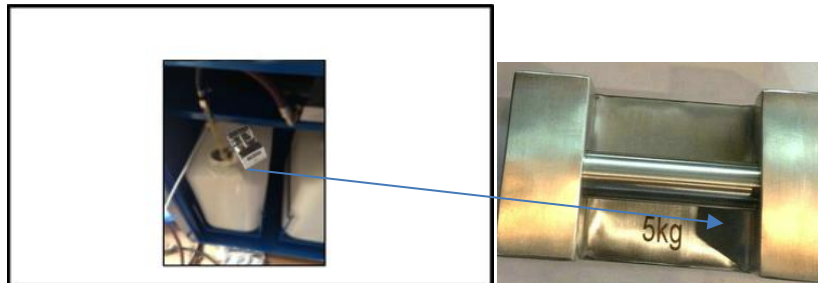
8.1.5 Press the Enter and the Esc key for right shift and left shift of the cursor; press the Up or Down key to set the weight of standard reference substance to be used (it is suggested to use 5Kg standard weight as the known standard weight for reference)



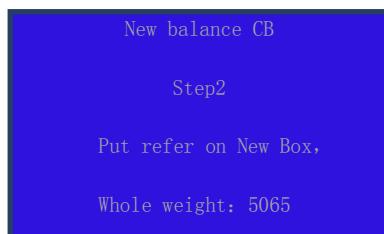
8.1.6 Press the Enter key to move the cursor on last bit, press the Enter key to confirm and save the set value of the weight of standard reference substance, and enter the next interface



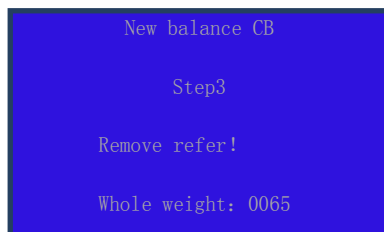
8.1.7 Put the standard reference substance (5kg standard weight) on the new oil tank



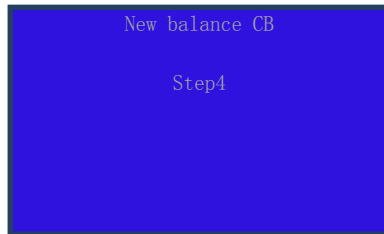
8.1.8 Observe the weight on display screen



8.1.9 Press the Enter key to enter the next step when the weight value is stable



8.1.10 Remove the reference substance, and when the weight value is stable, press the Enter key to save the calibration value and return to finish the calibration or press the Cancel key to give up saving and return



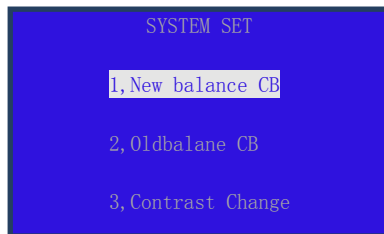
8.1.11 It is suggested to return to the main interface after finishing calibration, and then put a reference substance with standard weight on the scale to verify whether the weight displayed is in line with the standard weight as well as to judge whether the calibration is successful.

8.2. To calibrate the gravity sensor for used oil

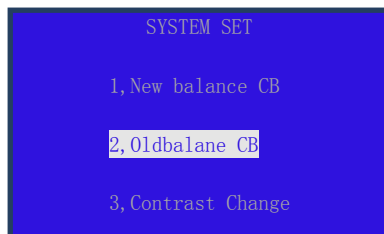
8.2.1 Turn on the power switch of the machine to enter the Function Menu

8.2.2 Press the Up or Down key on operation panel to choose the "System Set" function

8.2.3 Press the Enter key to enter System Set



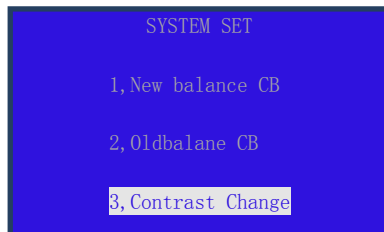
8.2.4 Press the Up or Down key to choose the "Old balance CB" function



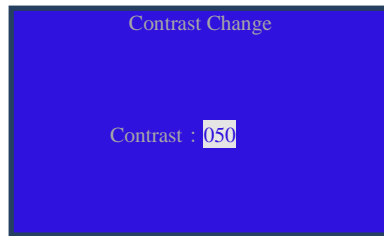
8.2.5 Other steps are the same as 8.1.4-8.1.10

8.3. Set the contrast of screen display

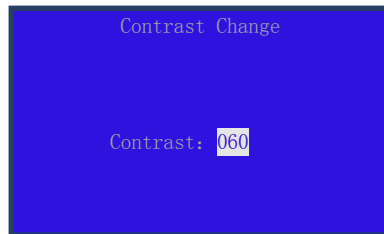
8.3.1 On the System Set interface, press the Up or Down key to choose the "Contrast Change" function



8.3.2 Press the Enter key to enter the interface of Contrast Change



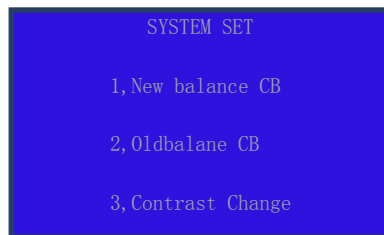
8.3.3 Press the Up or Down key to adjust the contrast value



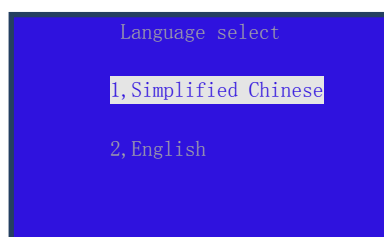
8.3.4 Press the Enter key to confirm and save the adjustment value

8.4. Set the display language

8.4.1 On the System Set interface, press the Up or Down key to choose the "Language Select" function



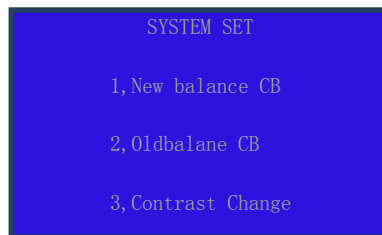
8.4.2 Press the Enter key to enter the interface of Language Select



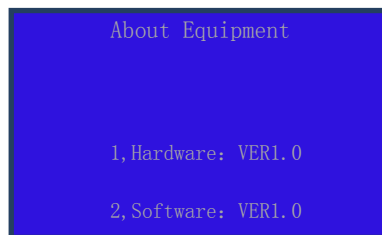
8.4.3 Press the Up or Down key to choose the system language interface that is going to be used; press the Enter key to confirm and save the language selected

8.5. Look up the equipment information

8.5.1 On the System Set interface, press the Up or Down key to choose the “About Equipment” function



8.5.2 Press the Enter key to enter the interface of About Equipment to look up the relevant information of current equipment.



TROUBLESHOOTING

1. Starting up without display

1.1 Cause: fuse burn-out

Solution: change the fuse

1.2 Cause: failure of power switch

Solution: repair or change the switch

1.3 Cause: circuit damage

Solution: repair or change the circuit

1.4 Cause: computer board damage

Solution: repair or change the computer board

2. Failure of equivalent exchange

2.1 Cause: electronic scale has not been set successfully

Solution: re-calibrate the electronic scale follow the calibration steps of electronic scale that stated in the instruction

2.2 Cause: the component (solenoid valve or oil pump) damaged

Solution: inspect and find out the damaged component, change or repair it

2.3 Cause: Irregular operation

Solution: Follow the instruction to operate the machine

2.4 Cause: the oil pump fails to suck new oil

Solution: check whether the oil pipe has been inserted to the lowest point; adjust the position of the oil pipe; make sure the oil pump inserted to the lowest point. If the pump is confirmed already reach to the bottom, it probably entered air into the pump. The solution is as follows:

2.4.1 Shut down the car

2.4.2 Open the hand valve and turn on the nozzle at the end of the discharge oil pipe, then put it into the oil filler

2.4.3 Run the "Empty box" function and stop it after 3 seconds; repeat the steps until the air has been discharged fully.

2.4.4 Firstly, check whether the connection of oil-way is correct or not; secondly, the pressure may be less than 0.5 kilogram due to the aging of the automatic transmission (in this case, the equipment works normally, no need to be changed)

3. Fail to empty the new oil

Solutions:

- a) The oil pump fails to pump oil as the pump doesn't reach to the bottom of the oil tank. In this case, please insert the oil pump to the bottom
- b) The oil pump does not work, please change a new oil pump

4. Unable to empty the used oil

Solutions:

- a) The oil pumping reversing valve may damage, please change a new one.
- b) The oil pump fails to pump oil as the pump doesn't reach to the bottom of the oil tank. In this case, please insert the oil pump to the bottom
- c) The oil pump does not work, please change a new oil pump

5. Fail to add new oil or recycle used oil

Solutions:

- a) The oil pump fails to pump oil as the pump doesn't reach to the bottom of the oil tank. In this case, please insert the oil pump to the bottom
- b) The oil pump does not work, please change a new oil pump

6. The oil of new and old oil tanks has been added more during the cycle cleaning

Solutions:

- a) Inspect if the one-way valve is damaged and change a new one-way valve if it fails

- b) Check if the solenoid valve which controls changing used oil is damaged, please change a new one if it fails

Warm Prompt

Please take down the four protection screws on the bottom of the equipment before the first use!