Electric Coolant Exchanger

Operation Manual

Model: GD-535

This manual contains all important warnings, advice, operating instructions, operations and base maintenance information of GD-535.
It is recommended to keep this manual with the purchase invoice.

Besides, please note down the number of the purchase invoice here:

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Pleases store this manual in a safe and dry place for future reference.

Contents

Safety Definitions: Follow all WARNING and CAUTIONmessages in this manual. These messages aredefined as follows: WARNING means you may risk death or serious personal injury; CAUTION means you may risk personal injury,property damage, or serious unit damage. This manual provides clear and useful tips. These safety messages cover situations we are aware of. We cannot know, evaluate, and advise you regarding allpossible hazards. You must make sure all conditions and procedures do not endanger your personal safety.

Disclaimer: 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 obligation to notify any person or organization of such revisions or changes.If necessary, obtain detailed health and safety information from the appropriate government agencies, and the vehicle and coolant manufacturers.Further, our company shall not be liable for errors contained herein or for incidental or consequential damages(including lost profits or losses after accident in connection with the furnishing, performance, or use of coolant solutions).

⚠WARNING ⚠

1) Before using the coolant exchanger, read, understand and follow the safety precautions and operating instructions outlined in this manual. This equipment must be operated by qualified personnel who must be familiar with vehicle cooling systems, coolants and the dangers they present.
2) Contact with antifreeze/coolant may cause injury. Hot antifreeze/coolant can burn skin and injure eyes.
3) Wear protective equipment, including safety goggles and gloveswhen operating this equipment. If eyes accidentally contacting with antifreeze/coolantoccurs, call a physician immediatelyand flush eyes with cold water for 30 minutes. If contacting with skin occurs, thoroughly wash the area with soap and water.
4) Do not store ethylene glycol based solutions in open or unlabeled containers. Ethylene glycol causes birth defects in laboratory animals; solution may taste pleasant to animals, but is poisonous to them.
5) Vehicle cooling systems are hot and under pressure. Please do not open the radiator cap and do not remove hoses from a hot system except as directed in this manual. Otherwise it may cause burns to the skin.
6) Do not pressurize the vehicle cooling system above its rated pressure. Or it may result in cooling system failure and the leakage of engine coolant.
7) Never run a vehicle engine without adequate ventilation. Vehicle emissions can cause sickness, injury, or death.
8) Please keep the working place away from lead-acid or other automotive battery.Never smoke and keep away from all appliances that produce sparks or flame. Batteries generate explosive gases during normal operation.
9) This equipment is not designed for any other purposes than testing cooling systems and exchanging used antifreeze/ coolant with new or recycled product.
10）The operator is responsible for complying with any and all applicable laws and regulations governing the use of this type of equipment, as well as disposal of used antifreeze/coolant and used equipment and components.
11) The equipment shall be immediately turned off when the leakage is found and do not use it unless after checking to confirm and troubleshoot the leak.
12）Place an empty container next to it for storage of the liquid leaked in case of a sudden leak.
13）The power supply of this machine is AC220V. Please pay attention to the safety of power connection.
14）Please check whether the amount of coolant filled is accurate or not after completing the exchange. Otherwise, our company will not be liable for the damage caused to the vehicle due to the inaccurate filling.
15）Please contact the supplier or manufacturer in time if you encounter any problems in the process of using the machine. It is strictly prohibited to disassemble the machine without permission.The warnings and precautions contained in this manual do not include all contingencies or conditions that may occur. The operator must be aware that common sense and caution are the two elements of safe operation of the equipment. They are the responsibility of the operator.

PACKAGE

CAUTION

- After unpacking, please check if the machine is in good condition or whether the parts are loose or fall off before using it.

When unpacking, the following machine must be included. If any accessories are damaged or missing, please contact your local distributor.

Packing List:
GD-535 1 Unit

Figure 1

MACHINE FEATURES

Our GD-535 electric coolant exchanger can complete the exchange of vehicle coolant in a very short time. Equipped with a LCD screen, convenient, practical and easy to operate.

1) Clear marks of liquid inlet/outlet hose
2) Automatic exchange of new/used coolant
3) LCD screen allows easy operation
4) Pressure test for checking leaks as standard configuration to improve maintenance efficiency
5) Multiple adapters fit to large numbers of vehicle in European, American or Asian markets, etc.
6) Improve several functions of the manual model like improving the coolant replacement rate
7) Shorter time plus higher coolant replacement rate

WORKING CONDITIONS AND PARAMETERS

1. Working Conditions

1) Environmental temperature：-20℃~+60℃
2) Relative humidity：＜85%

2. Parameters

1) Power supply：AC220V
2) Motor power：120W
3) Air pressure for coolant exchange：≤8Bar
4) Working pressure of leak check：＜1.2Bar
5) Recharge/return hose length：about 2.5m
6) Multipurpose fluid transfer hose：about 2.0m
7) New tank capacity：about 20L
8) Waste tank capacity：about 16L
9) Maximum flow rate of pump：about 7.0L /Min
10) Machine dimensions：450*450*1350 mm

PRODUCT STRUCTURE

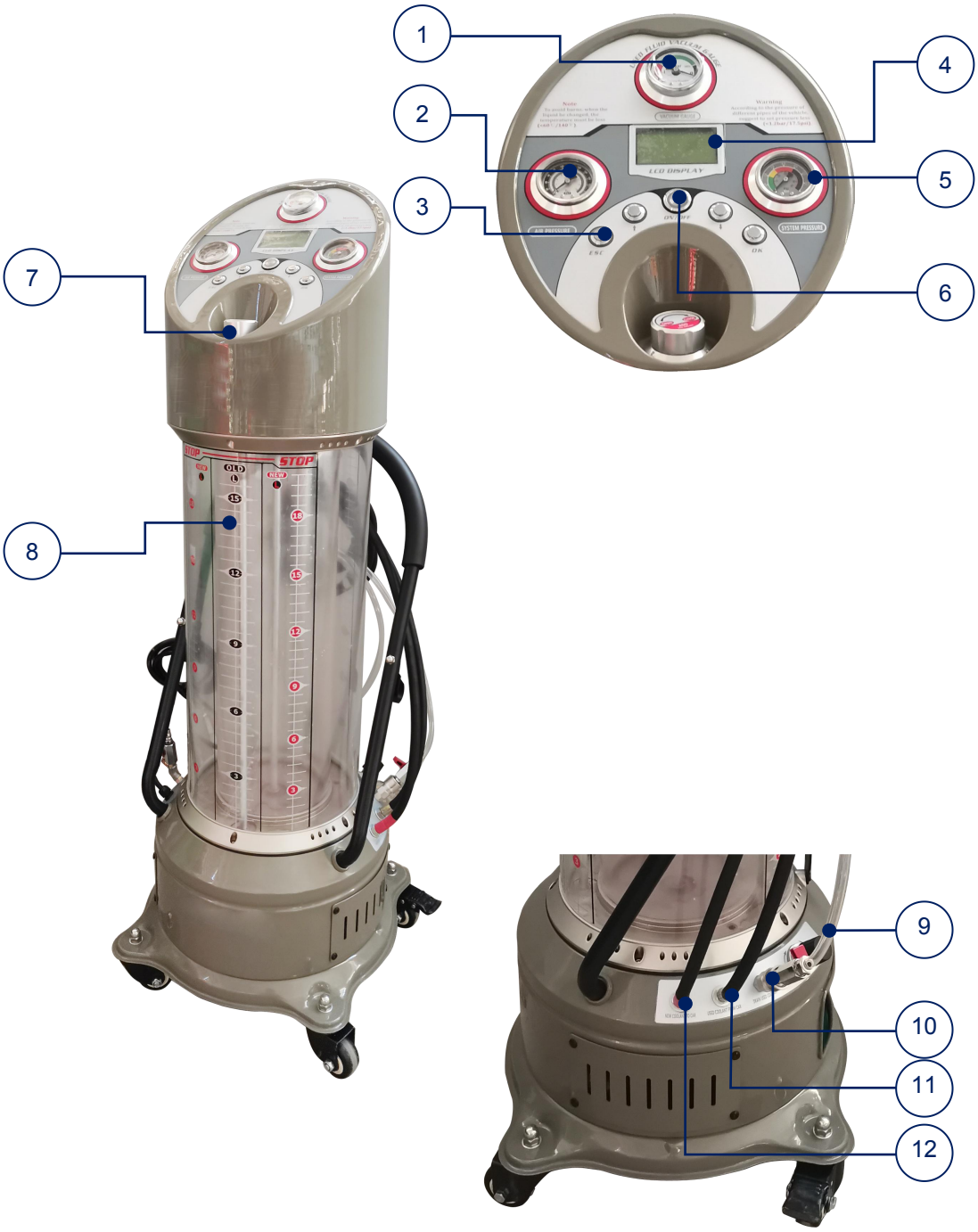


Figure 2

1.Used coolant vacuum gauge:shows the negative pressure of used coolant recycling

2.Working pressure gauge: shows the air inlet pressure of the machine

3.Buttons: select/perform the operation

4.Display screen: present functions and options

5.System Pressure: Pressure gauge of leak check, shows the pressure of leak checking

6.Power switch: turn the machine on/off

7. Manual refill port: for manual new tank refill (with built-in quick connector)

8.Liquid storage tanks: the inner tank is for used coolant; the outer, the new

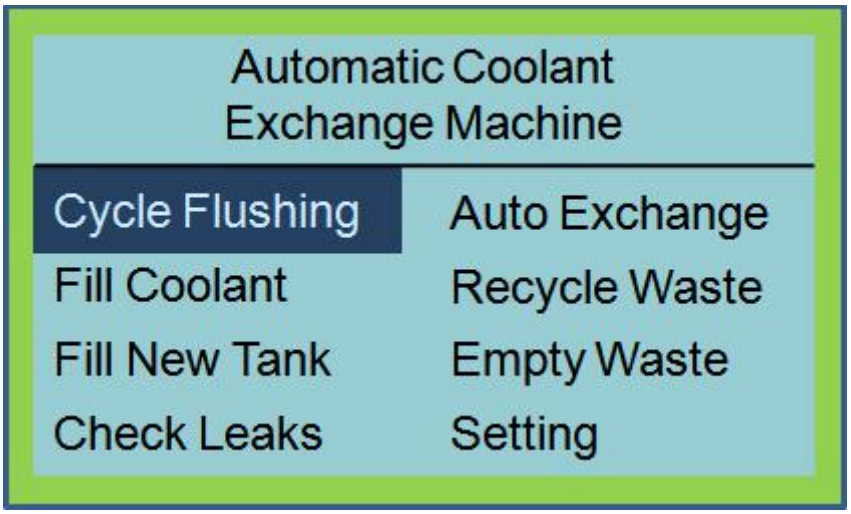
9.Multipurpose fluid transfer hose: could be used in different occasions

10.Drain used coolant: the used coolant in the machine is discharged from this port
11.Used coolant from car: return hose for recycling used coolant from the cooling system
12.New coolant to car: recharge hose to transfer new coolant from the machine to the cooling system

figure 3

13.Air inlet : air source inlet of the used coolant recycle procedure
14.Regulating valve(Pressure testing): regulate the output pressure of leak check
15.New coolant to unit: for automatic new tank refill of the machine
16.Conversion valve: Coolant outlet to car/New coolant to unit
17.Tool cabinet: adapters storage
18.Multiple adapter kit: connect the machine to vehicle cooling system
19.Shop air: air source inlet of leak check
20.Air supply outlet to car: air source outlet of leak check
21.Power connector

1. Main Menu Interface



- Cycle Flushing: cycle flush the vehicle cooling system according to the time set by users (optional)
- AutoExchange: exchange the coolant from vehicle cooling system according to the time set by users
- Fill Coolant: fill new coolant to the vehicle cooling system
- Recycle Waste: recycle used coolant from the vehicle cooling system
- Fill New Tank: refill new coolant to the new coolant tank of the machine
- Empty Waste: empty the waste coolant tank of the machine
- CheckLeaks: Pressure test for checking leaks of vehicle cooling system
- Setting: work record, machine information and data reset

2. Fill New Tank (two refill options)

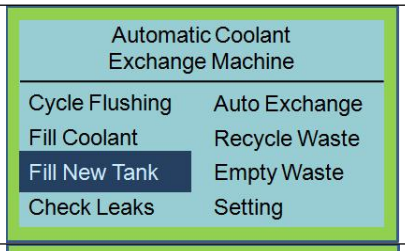
CAUTION

- Please refer to the vehicle maintenance manual or consult relevant professional organizations or personnel to determine the volume and type of coolant for the vehicle cooling system.

Option 1: Manually pour the new coolant into the tank

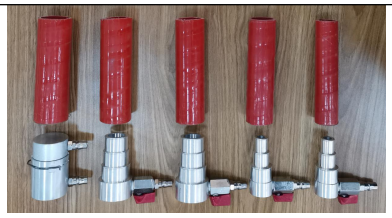
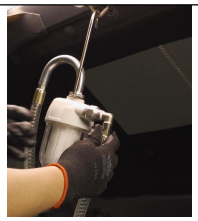
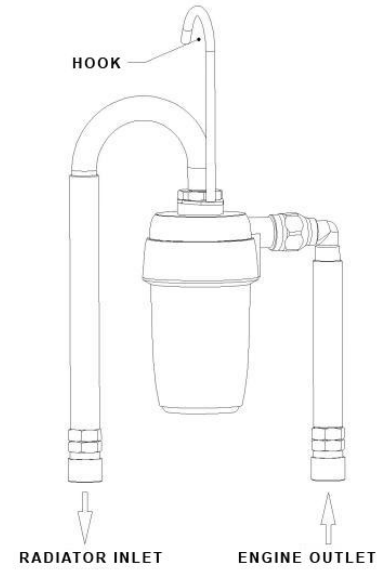
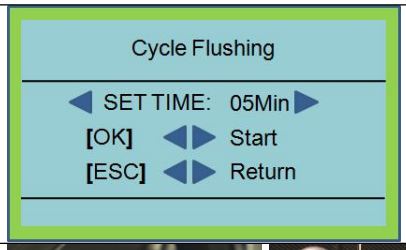
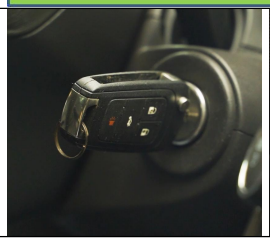
Unscrewing the manual refill port cover (figure 2 -7) and manually pour the new coolant into the tank according to demand. Then tighten the cover.	

Option 2: automatically refill the new coolant via “Fill New Tank” function

Unscrewing the manual refill port cover (figure 2 -7), connect the recharge hose(figure 2 -12) with the built-in quick connector(figure 2 -7) on the manual refill port	
Turn the changeover valve to the "New Coolant to Unit " position(figure 3-16)	
Connect one end of the multipurpose fluid transfer hose(figure 2-9) to the New Coolant to Unit(figure 3-15) of the machine and the other to a new coolant barrel. Then turn on the ball valves on both ends of the multipurpose fluid transfer hose(figure 2-9).	
Connect the power supply, start the machine.	
Press “ ↑ ” or “ ↓ ” button to select “Fill New Tank” on the screen(figure 2 -4) and press OK button to proceed to the next step.	
Set the time by pressing “ ↑ ” or “ ↓ ” button and press OK button again to start this procedure. Then the machine starts filling new coolant to the tank.	
Fill new coolant to the tank according to the actual needs. Then end this operation.	

3. Cycle Flushing

Turn off the engine.	
Disconnect the hose between the radiator and engine	

Select the suitable adapter(figure3-18) with the same inner diameter as radiator hose.	
Connect the coolant flush filter assembly(optional) to the corresponding connectors respectively and hang the filter assembly to the vehicle engine cover.	  
Connect the power supply, start the machine.	
Press “↑” or “↓” button to select “Cycle Flushing” on the screen(figure 2-4) and press OK button to proceed to the next step.	
Start the car engine, and the timer of the machine. Then the cycle flushing operation begins.	 

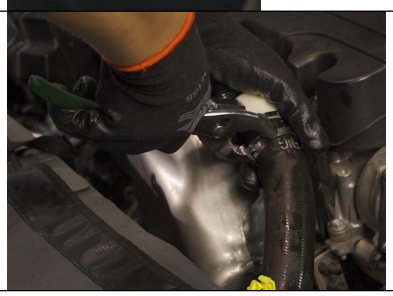
4. Auto Exchange

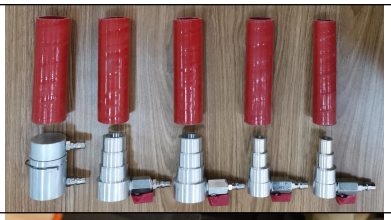
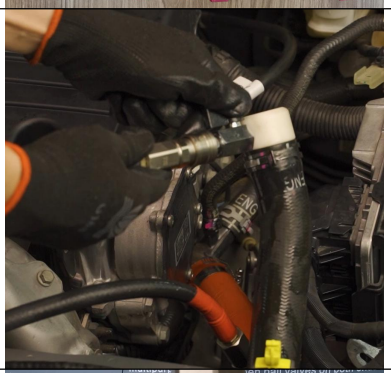
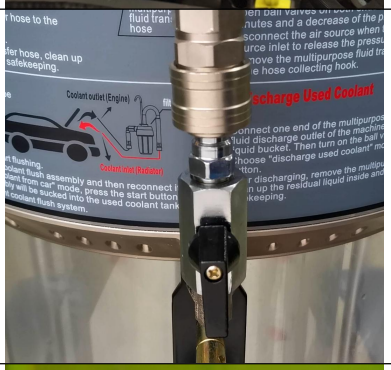
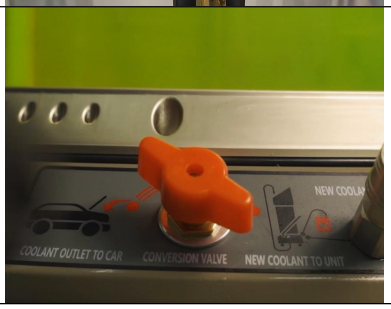
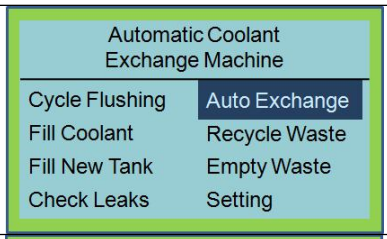
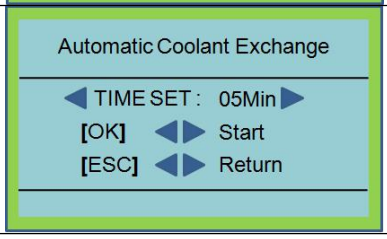
WARNING

- Never run a vehicle engine in a garage or windtight room which lacks a proper exhaust system because engine produces carbon monoxide, which can causedeath in a sealed room.
- Coolant in the vehicle cooling systems is hot with high pressure. Please wear goggles, gloves and protection suit and be really careful when remove the radiator cap and hoses.
- Please pay attention to the hose connection direction: the recharge hose(figure 2-12) is connected to the coolant inlet of the radiator, and the return hose of the machine (figure 2-11), to the coolant outlet of the engine.
- Must check whether the coolant level of the cooling system is within a reasonable range after the exchange. If necessary, the level height can be adjusted by recycling used coolant or filling new coolant function.

CAUTION

- If any problem is found in the process of exchange, the operation can be stopped by pressing the OK /ESC button.
- For models with thermostat, if the coolant drops to a certain temperature, it may cause the exchange to stop. At this point, please first close the ball valve on the adapter (figure3-18). Then start the engine again, keep the radiator fan runs for 1-2 minutes and turn off the engine. Finally, continue coolant exchange process.

Start the car engine and wait for the radiator fan to run for 1-2 minutes before turning off.	
Remove radiator hose from engine or radiator.	

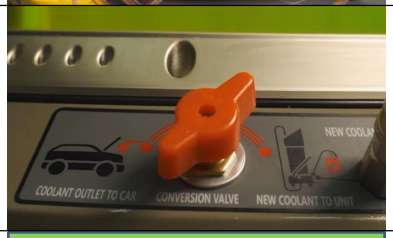
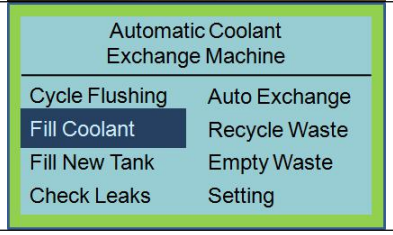
Select the suitable adapter(figure3-18) with the same inner diameter as radiator hose.	
Connect the recharge hose(figure2-12) to the coolant inlet of the radiator and the return hose(figure2-11), to the coolant outlet of the engine.	
Connect air source to the air inlet of the machine(figure3-13) and turn on the ball valve. The air pressure must be not more than 8bar.	
Turn the Conversion valve to the "Coolant Outlet to Car" position(figure 3-16).	
Connect the power supply, start the machine.	
Press “↑” or “↓” button to select “Auto Exchange” on the screen(figure 2 -4) and press OK button to proceed to the next step.	
Set the time by pressing “↑” or “↓” button and press OK button again to start this procedure. Then the machine starts “Auto Exchange”.	
Observing the color of waste fluid via a transparent window on the ret urn hose (figure2-11). The exchange process is completed when the color of the coolant in the return hose is the same as new coolant.	

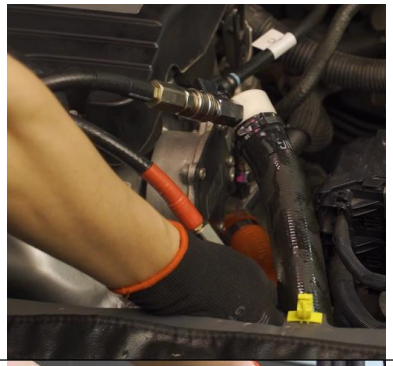
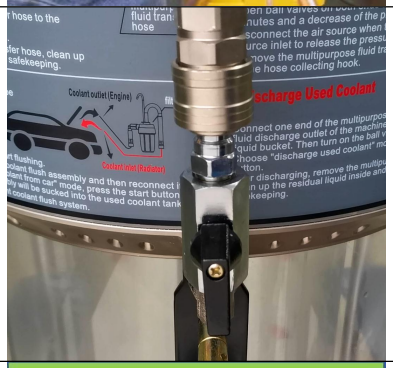
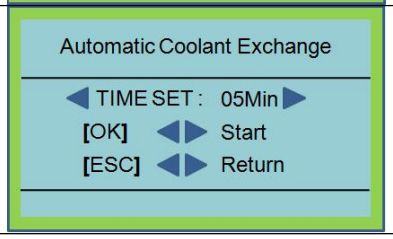
Additional Remarks：

Recharge Another Type of New Coolant (add another type of the new coolant in an extra container to the vehicle cooling system, and recycle the used coolant to the machine at the same time)

WARNING

- Never run a vehicle engine in a garage or windtight room which lacks a proper exhaust system because engine produces carbon monoxide, which can causedeath in a sealed room.
- Coolant in the vehicle cooling systems is hotwith high pressure. Please wear goggles, gloves and protection suit and be really careful when remove theradiator cap and hoses.
- Please pay attention to the hose connection direction: the recharge hose(figure 2-12) is connected to the coolant inlet of theradiator, and the return hose of the machine(figure 2-11), to the water outlet of the engine.

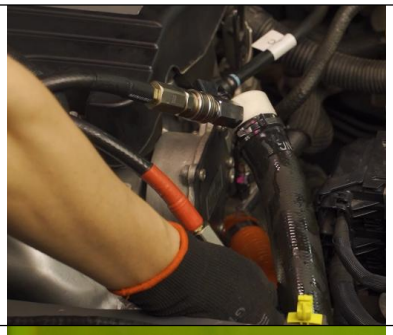
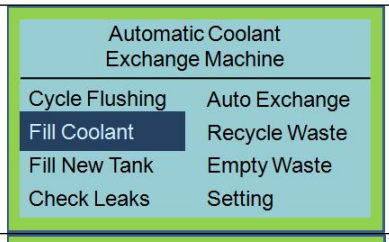
Connect the recharge hose(figure 2 -12) with the built-in quick connector(figure 2 -7) on the manual refill port.	
Connect one end of the multipurpose fluid transfer hose(figure 2 -9) to the New Coolant to Unit (figure 3 -15), and the other not connect to any device. Then turn on the ball valves on both ends.	
Turn the Conversion valve to the "New Coolant to Unit" position(figure3-16)	
Press “ ↑ ” or “ ↓ ” button to select “Fill Coolant” on the screen(figure 2-4) and press OK button to proceed to the next step.	
Set the time by pressing “ ↑ ” or “ ↓ ” button and press OK button again to start filling coolant. Then discharge the residual new coolant in the hose to the machine new coolant tank.	

Disconnect the recharge hose(figure 2-12) frombuilt-in quick connector and reconnect it to the vehicle coolant inlet; the return hose(figure 2-11), to the the coolant outlet of the engine.	 
Connect the other end of the multipurpose fluid transfer hose to the barrel containing the other type of coolant.	
Connect compressed air source to air inlet(figure3-13)and turn on the ball valve. The air pressure must be not more than 8bar.	
Press “ ↑ ” or “ ↓ ” button to select “Auto Exchange” on the screen(figure 2 -4) and press OK button to proceed to the next step.	
Set the time by pressing “ ↑ ” or “ ↓ ” button and press OK button again. Then the machine starts“Auto Exchange”.	
After “Auto Exchange”, clean up the residual liquid inside all hoses and put them back for safekeeping.	

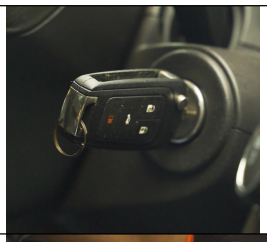
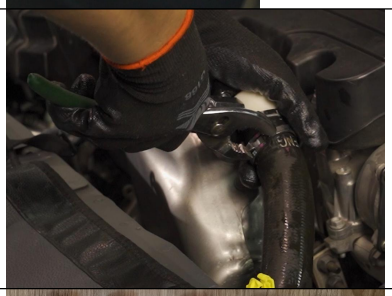
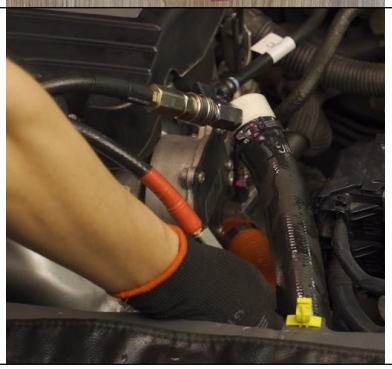
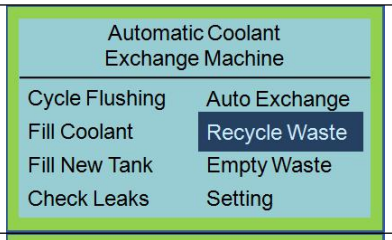
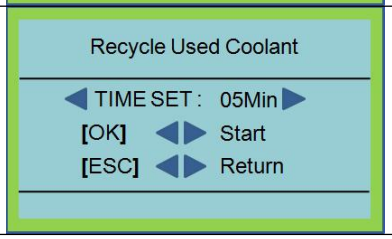
5. Fill Coolant

CAUTION

- Fill coolant: If it is found that the liquid level of the vehicle cooling system islow after “Auto Exchange” operation, add new coolant to the vehicle through “Fill Coolant” function.
- If any problem is found in the process of exchange, the operation can be stopped by pressing the OK /ESC button.
- Operation tips: If need to fill new coolant only, it can also be injected directly from the vehicle coolant expansion tank without disconnecting the cooling system pipeline.

Connect the recharge hose(figure2-12) to the coolant inlet of the radiator and the return hose(figure2-11), to the coolant outlet of the engine.	
Turn the Conversion valve to the "Coolant Outlet to Car" position(figure3-16)	
Connect the power supply, start the machine.	
Press “ ↑ ” or “ ↓ ” button to select “Fill Coolant” on the screen(figure 2 -4) and press OK button to proceed to the next step.	
Set the time by pressing “ ↑ ” or “ ↓ ” button and press OK button again to start filling coolant.	
Keep observing the liquid level in the cooling system, end “Fill Coolant” when the liquid level rises between the reasonable range.	

6. Recycle Waste

Start the engine, keep the radiator fan runs for 1-2 minutes and then turn off the engine.	
Remove the hose from radiator or engine.	
Select the suitable adapter(figure3-18) with the same inner diameter as radiator hose.	
Connect the recharge hose(figure2-12) to the coolant inlet of the radiator and the return hose(figure2-11), to the coolant outlet of the engine.	
Connect the power supply, start the machine.	
Press “ ↑ ” or “ ↓ ” button to select “Recycle Waste” on the screen(figure 2 -4) and press OK button to proceed to the next step.	
Set the time by pressing “ ↑ ” or “ ↓ ” button and press OK button again to start “Recycle Waste” progress.	
“Recycle Waste” is completed until no used coolant flow back to the machine.	

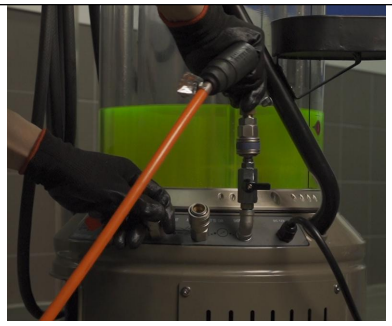
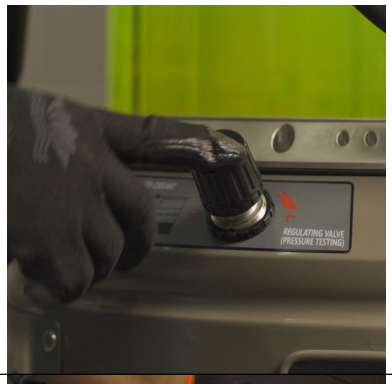
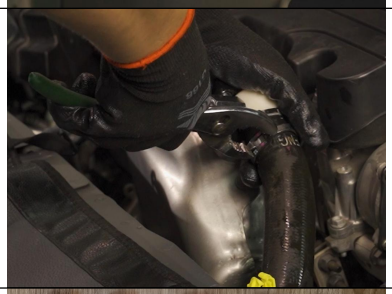
7. Empty Waste

Connect one end of the multipurpose fluid transfer hose(figure 2 -9) to the Drain used coolant (figure 2 -10), and the other to a waste liquid bucket. Then turn on the ball valves on both ends.	
Connect the power supply, start the machine.	
Press “ ↑ ” or “ ↓ ” button to select “Empty Waste” on the screen(figure 2 -4) and press OK button to proceed to the next step.	
Set the time by pressing “ ↑ ” or “ ↓ ” button and press OK button again to start “Empty Waste” progress.	
“Empty Waste” is completed until there is no waste coolant in the inner tank.	

8. CheckLeaks

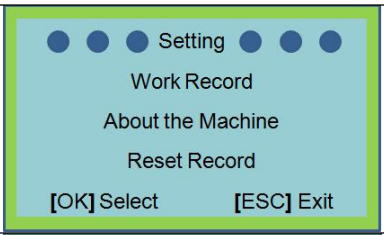
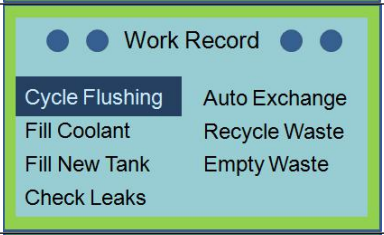
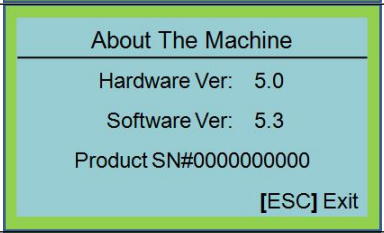
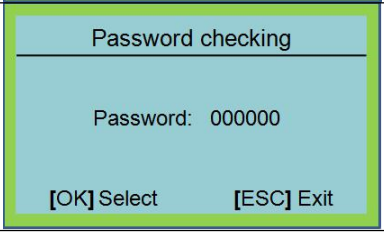
WARNING

- Never pressurize the vehicle cooling system above its rated pressure in checking for leaks. Or it may result in cooling system failure. Please obtain maximum pressure of the cooling system from car maintenance manual or consult the relevant professional of the vehicle manufacturers. The maximum pressure our company have learned is not exceed 1.2bar/17.5psi, for reference only.

Connect the compressed air to the Shop air of the machine(figure3-19) and turn on the ball valves. Then adjust the pressure to the proper range(The maximum pressure our company have learned is not exceed 1.2bar/17.5psi, for reference only. Specific maximum pressure are recommended to refer to the vehicle maintenance manual or consult the relevant professional of the automobile manufacturer.)	 
Remove the hose from radiator or engine.	
Select the suitable adapter(figure3-18) with the same inner diameter as radiator hose and close the ball valve on the adapter of coolant outlet of the cooling system.If there is an expansion water tank, please use shut off clamp to seal the hose of it.	 
Connect one end of the multipurpose fluid transfer hose (figure2-9) to vehicle coolant inlet with dual seal cable gland, the other end to the Air supply outlet to car(figure3-20) on the machine. Open ball valves on both ends of the multipurpose fluid transfer hose slowly and close the air source inlet valve (figure3-19) at the same time.	

Wait for about 1-3 minutes according to different vehicle models and no change of the pressure value indicates no leakage in the cooling system. Otherwise, please check the leakage points.	
Disconnect the air source when the leak checking is finished. Open the ball valve near the air source inlet to release the pressure in the vehicle pipe line to complete the operation.	

9. Setting

Select ”Setting” in the main menu interface and then press “OK” button into machine setting	
Work Record : check the cumulative hours of working, as well as the number of service times	
About the Machine: View hardware/software version and other information	
Record Reset: resetting work record	

CIRCUIT DIAGRAM