

## **Environment Protection Type**

**(Hanging Bottle Type) The Fuel System of Engine Cleaner  
(Equipped with Multiple Connectors)**



# Table of Contents

Do not use the cleaning machine without understanding this manual.

Please operate according to procedures in this manual.

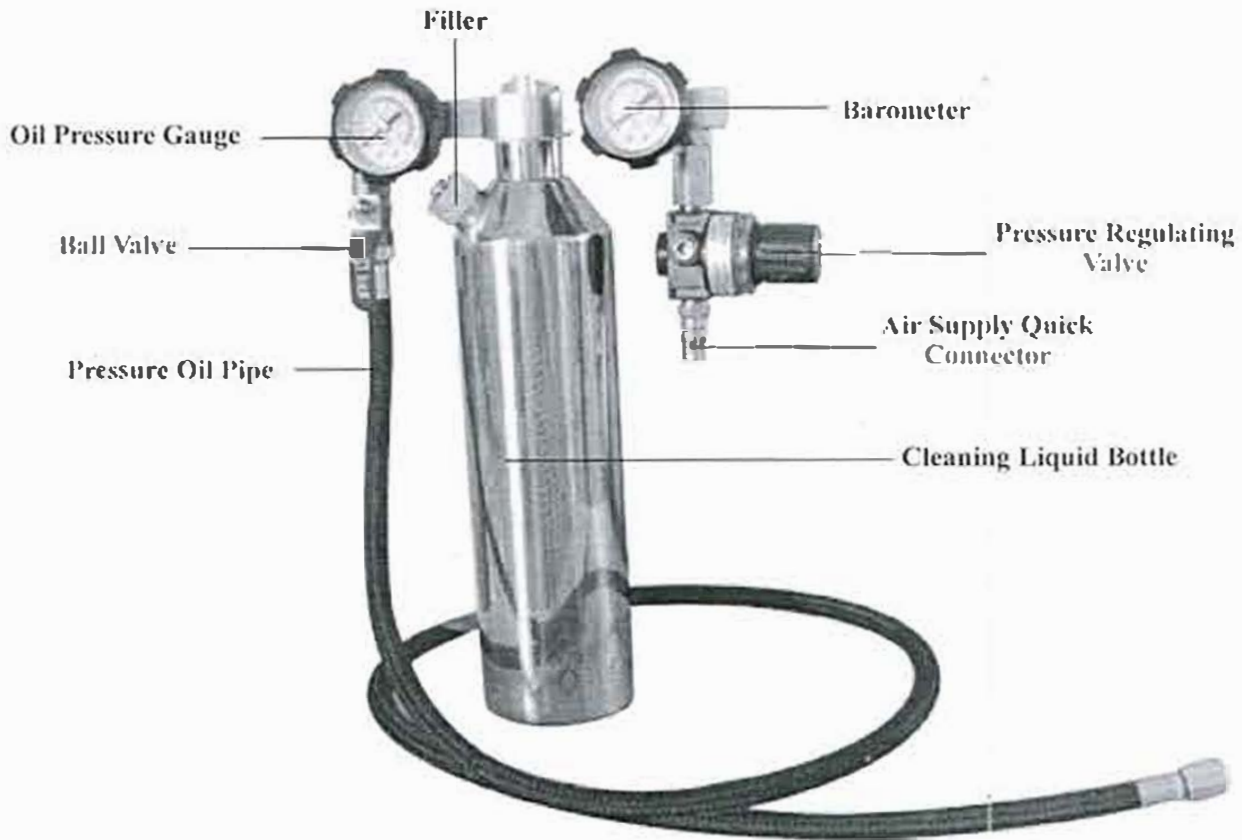
I. Name of Parts.....1

II. Operation Instructions.....1-4

III. Safety Notice.....4-5

IV. Connector Arrangement draw.....6-7

## I. Name of Parts



## II. Operation Instructions

### 1. Judge the combustion type of the engine of car to be cleaned.

- 1) Gas injection engine: Electronic injection type and mechanical injection type.
- 2) Carburetor engine.

### 2. Cleaning method of each type of engine.

#### A. Gas injection engine: electronic injection type and mechanical injection type:

- 1) Once the vehicle arrives, brake and stop the engine. Open the engine hood and determine if the engine of vehicle to be cleaned is of electronic injection type or mechanical injection type as well as its number of cylinders.
- 2) Before cleaning, open the oil tank cap of the vehicle to keep the gas in smooth circulation and reduce the pressure of oil way.
- 3) Screw off the hanging bottle and fill sufficient volume of cleaning liquid in the bottle

according to the number of cylinders of the engine and then mount the hanging bottle according to original state. (Note: while mounting the hanging bottle, please do not ignore the oil suction pipe and O-ring seal.) After that, hang the hanging bottle equipment on the engine hood.

- 4) Find oil inlet pipe of the engine and remove it. Take out connector and connection pipe matching the oil inlet of the engine from the accessories box of the cleaning machine and connect them to the oil inlet of the engine and then to the quick connector of pressure oil pipe of the cleaning machine.
- 5) Find oil return pipe of the engine and remove it. Take out connector and connection pipe matching the oil return end of the engine from the accessories box of the cleaning machine and connect them to the oil return end of the engine. Then have a 30cm short connection pipe with female quick connector at both ends in the accessories box connected to block the return oil of the engine. Alternatively, use pipe clamp to clamp the oil return pipe of the engine and block the return oil. (If the engine of vehicle to be cleaned does not have oil return pipe, this step is not necessary.)
- 6) Choose appropriate connector and connection pipe link the oil inlet pipe from gas pump of the engine and oil return pipe from the oil tank so that oil coming out from gas pump of the engine directly flows back to the oil tank via the oil return pipe. However, the best approach for this step is to remove the protection of gas pump so as to disable the gas pump to operate. (This step is compulsory before cleaning.)
- 7) Thus, while cleaning, the oil supply of the cleaning machine will replace the original oil supply from the oil tank.
- 8) Turn the pressure regulating valve of the cleaning machine anti-clockwise to the end to closed state and do the same to the ball valve. (Pull out the knob of the pressure regulating valve a little before turning.)
- 9) Connect gas supply and turn on pressure regulating valve. Pull out the knob of the pressure regulating valve a little and then turn it clockwise until the indication of pressure gauge of the equipment reaches  $2.5\text{kg/cm}^2$  (but pressure must be regulated according to the need for start of the engine), then turn the ball valve clockwise to open the pipe.
- 10) Start the engine and keep it running at idle speed to start cleaning. During the cleaning process, check connectors and pipe joints for any leak.
- 11) Run the engine at idle speed for 5 minutes and then accelerate from low speed to high speed slowly. When the engine reaches peak speed, step on and then immediately release the pedal for three consecutive times with duration of each time no more than three seconds. Filter the

oil for every 5 minutes of cleaning at idle speed. While cleaning a vehicle, such operation needs to be repeated for 5 times so as to get rid of carbon deposit and impurities. The duration of cleaning is about 25 or just use up the cleaning liquid.

- 12) When the cleaning is finished, turn the knob of pressure regulating valve anti-clockwise to shut it and then turn the ball valve anti-clockwise to shut it as well. When the vehicle automatically flames out, turn the key of the vehicle to original position.
- 13) Disconnect the air connectors and remove the connectors and connection pipes. Then restore the oil inlet and oil return pipe to original state, replace the gas filter and dismount the hanging bottle cleaning machine. Start the engine and accelerate appropriately to check if there is oil leak at connectors and pipes.
- 14) Clear the site and prepare for future use.

### **B. Cleaning method of carburetor engine:**

- 1) Once the vehicle arrives, brake and stop the engine. Open the engine hood and determine if the engine of vehicle to be cleaned is of carburetor type as well as its number of cylinders.
- 2) Before cleaning, open the oil tank cap of the vehicle to keep the gas in smooth circulation and reduce the pressure of oil way.
- 3) Screw off the hanging bottle and fill sufficient volume of cleaning liquid in the bottle according to the number of cylinders of the engine and then mount the hanging bottle according to original state. (Note: while mounting the hanging bottle, please do not ignore the oil suction pipe and O-ring seal.) After that, hang the hanging bottle equipment on the engine hood.
- 4) Find oil pipe of carburetor of gas engine and remove it at connection pipe at the end of gas pump. Take out connector and connection pipe matching the oil inlet of the carburetor from the accessories box of the cleaning machine and connect them to the oil inlet of the carburetor and then to the quick connector of pressure oil pipe of the cleaning machine. (If oil distributing ring is available in the pipe from gas pump to carburetor, the pipe is connected to pressure oil pipe of the machine at pipe joint from the oil distributing ring to pipe connector, and it blocks the oil distributing ring and oil outlet or remove the oil outlet end of gas pump.
- 5) Remove the oil inlet pipe from gas pump and block the oil pipe from oil tank to the oil nozzle of gas pump. For vehicle with return oil pipe, it is required to clamp the oil return pipe of the engine and block the return oil to the oil tank.
- 6) When necessary, remove the protection of gas pump so as to disable the gas pump to operate. (This step is compulsory before cleaning.)



- 7) Thus, while cleaning, the oil supply of the cleaning machine will replace the original oil supply from the oil tank.
- 8) Pull out the knob of the pressure regulating valve a little and then turn it anti-clockwise to the end to closed state, then turn the ball valve anticlockwise to close the pipe.
- 9) Connect gas supply and turn on pressure regulating valve. Pull out the knob of the pressure regulating valve a little and then turn it clockwise until the indication of pressure gauge of the equipment reaches  $1 \text{ kg/cm}^2$  (but pressure must be regulated according to the need for start of the engine), then turn the ball valve clockwise to open the pipe.
- 10) At the same time, start the engine and keep it running at idle speed to start cleaning. During the cleaning process, check connectors and pipe joints for any leak. Pressure adjustment will not lead to engine flame out or leak of carburetor.
- 11) During the cleaning process, run the engine at idle speed for 5 minutes first and then accelerate from low speed to high speed slowly. When the engine reaches peak speed, step on and then immediately release the pedal for three consecutive times with duration of each time no more than three seconds. Filter the oil for every 5 minutes of cleaning at idle speed. While cleaning a vehicle, such operation needs to be repeated for 5 times so as to get rid of carbon deposit and impurities. The duration of cleaning is about 25 or just use up the cleaning liquid.
- 12) When the cleaning is finished, turn the knob of pressure regulating valve anti-clockwise to shut it and then turn the ball valve anti-clockwise to shut it as well. When the vehicle automatically flames out, turn the key of the vehicle to original position.
- 13) Disconnect the air connectors and remove the connectors and connection pipes. Then restore the oil inlet and oil return pipe to original state, replace the gas filter and dismount the hanging bottle cleaning machine. Start the engine and accelerate appropriately to check if there is oil leak at connectors and pipes.
- 14) Clear the site and prepare for future use.

### **III. Safety Notice**

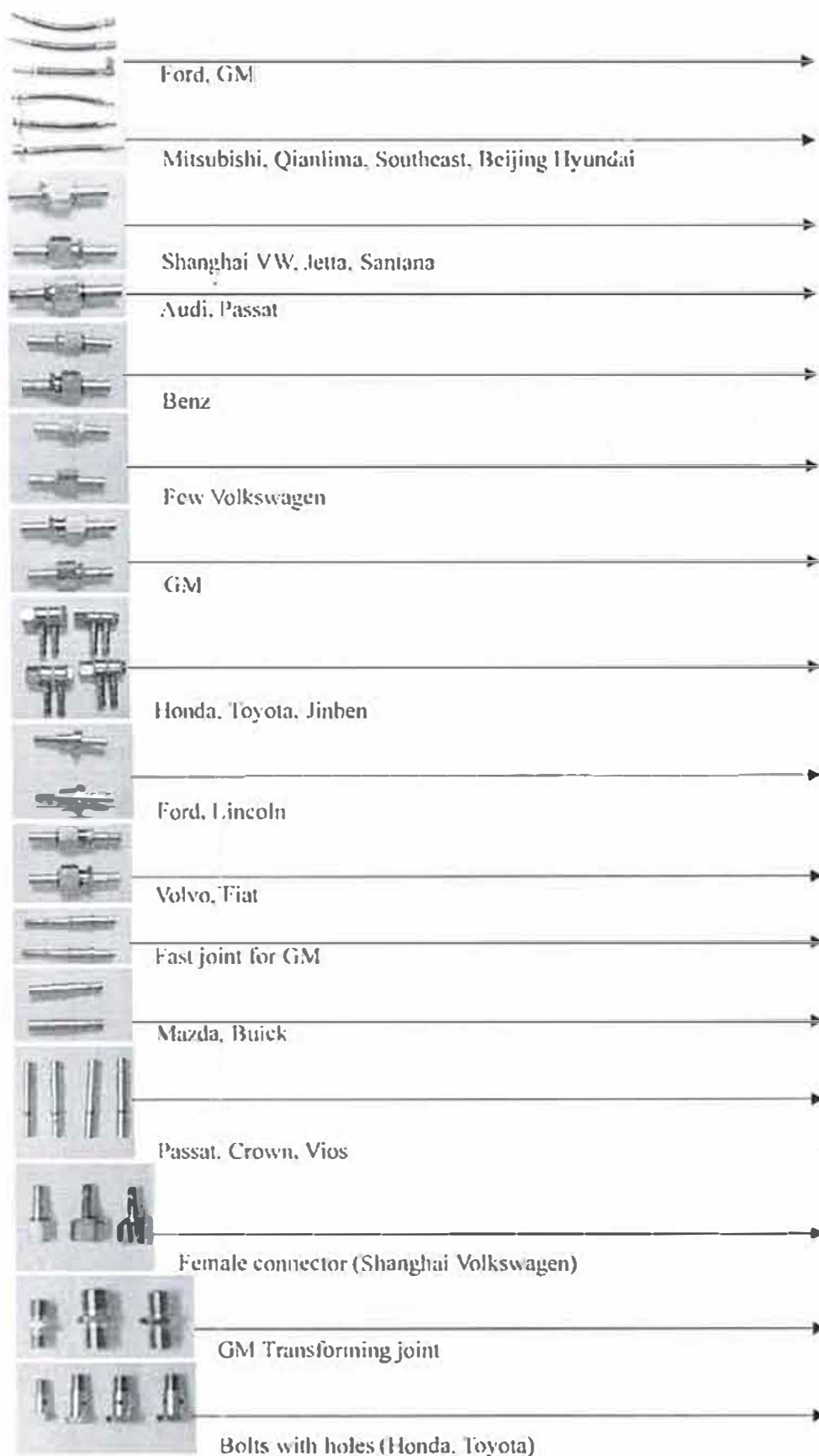
- 1) Try best to wear colorless glasses so as to prevent gas and cleaning liquid from entering the eyes.
- 2) Dangerous actions such as smoking near the cleaning machine and lighting a fire are prohibited so as to avoid fire and explosion.
- 3) Keep carburant or objects with flames from the cleaning site.
- 4) Prevent fuel and cleaning liquid from flowing to the engine while connecting pipes.
- 5) The work site should be of good ventilation so as to avoid inhalation of nitrides.

- 6) The work site should be equipped with fire prevention equipment such as fire extinguisher.
- 7) Discharge accumulated water in the cleaning machine everyday so as to prevent malfunction caused by excessive water entering the cleaning machine.
- 8) Do not inhale the cleaning liquid mist emitted by the cleaning machine and engine.
- 9) Open the oil tank cap of vehicle before operation.
- 10) Once cleaning is finished, disconnect air connector before removing other connection pipes.
- 11) During the cleaning process, leak of the cleaning equipment and joints, if any, should be handled properly before moving on to the cleaning work.
- 12) The cleaning machine is equipped with a safety valve with pressure set at  $4\text{kg/cm}^2$  before delivery which will automatically break open to discharge the air and reduce pressure. The maximum pressure withstanding capacity of steel cylinders for cleaning liquid of this machine is  $10\text{ kg/cm}^2$ , but the actual air pressure in the steel cylinders during use should not exceed  $8\text{ kg/cm}^2$ .
- 13) Do not use cleaning liquid not specified by the manufacturer so as to guarantee the service life of oil valves and rubber parts and cleaning effect.
- 14) Read and understand the operation procedure of this machine carefully before use so as to ensure the machine is at best state and reduce occurrence of fault.

**Usage:** used for inspection of automobile oil nozzles only; **Capacity:** Fill 1800ml into inspection instrument of oil nozzle. **Note:** used for inspection instrument only.

**Usage:** used for ultrasonic cleaning of oil nozzles only; **Capacity:** Fill 380ml into ultrasonic slot while in use. **Note:** used for ultrasonic cleaning only, do not fill into inspection instrument of oil nozzle.

## IV. Connector Arrangement draws







Buckles



Short fast connector



DONGFENG Citroen, Peugeot, Buick, Citron ZX, Hainan Mazda



Φ10, tube joint, universal



Φ8, tube joint, universal



Φ6, tube joint, universal

