1)Filling machine for transmission fluid

- Working process: to install filling gun manually → press the start button on the front of filling device
- vacuuming first time
- stabilize the pressure
- vacuuming second time
- filling
- resorption
- finishing filling
- take down the filling head

Filling volume: adjustable

Volume of storage tank: 50L

Filling pressure: 1-6 bar, adjustable

Production noise: ≤70dB

Filling head and the tube needed to be overhanged by balancer and be fixed on the hanging bracket. The length needs to be 15m.

- The whole operation process of Vacuum-pumping, filling and leakage detecting should be finished automatically in one time.
- The fuel tank can supplement fluid automatically, and it possesses alarm function when the fluid level is low, high and ultralow. There should be fluid mark on the tank.
- The device should be equipped with systems that can monitor;
- vacuum degree
- flow volume
- fluid pressure
- time

- Sound-light alarm
- Drip-proof vacuum suction: The filling device should keep the state of vacuum suction to avoid leakage that pollute the environment
- It can program and store:
- the filling volume
- vacuuming time
- hold time of vacuuming
- time-consuming of pumping back.
- The device should be able to extend industrial Ethernet which can be used later to output operation data of the device.
- The filling parameter for each vehicle type can be set up through human-computer interface.
- All the control parameter can be revise and store as demanded.
- Sound and light alarm of the system:

When Pipette finished sucking the brake fluid in barrel A,must give sound and light alarm so that the system can continue to work and replace the empty barrel.

- During the process of filling,when the vacuum level reaches the set point and leakage-inspection is OK, then the filling would begin. The filling pressure is less than 4.0Kg/cm^2 and can be adjustable.Pumping back and fixing fluid level are adopted.
- Oil-gas separator is mounted in the vacuum device of transmission fluid.

2)Vacuuming and filling machine for coolants

- Working process:
- Install filling gun manually
- press start button
- vacuuming first time
- keep vacuum for the first time

- stabileze the pressure
- vacuuming for the second time
- filling
- finishingfilling
- removing the filling head。
- The operator can set up parameters through the touch panel.
- Main performance parameters

Filling volume: adjustable

Filling pressure: 1-6 bar,

Production noise: ≤70dB

The filling head and the hose should be overhanged by balancer; the length of the filling pipe should be 5m.

- The parameters can be programme according to the vehicle types :
- vacuum value
- filling volume
- vacuuming first time
- stabilizing the pressure
- vacuuming second time
- filling
- Only the authorized operators can modify the parameter. The device can store 10 sets of filling parameter, and parameters can be select quickly through the touch panel.
- The device should be able to extend industrial Ethernet hereafter which can be used to output working data.
- The device should possess impurities filter for coolants.
- The filling head can inspect whether coolants have been filled to the device.
- The operator can finish all the work:
- Vacuming,leakage inspection and filling through single operation.

- Employing no leaking working method:
- the device only vacuumizes the vehicle without inspecting the leakproofness.
- Filling will be conducted after vacuumizing, and this will improve the effect of force filling.(fast filling)

3) Vacuuming and filling device for power steering fluid

- Working process:
- Install filling gun manually
- press start button
- vacuuming first time
- keep vacuum first time
- stabilize the pressure
- vacuuming second time
- filling
- finishing filling
- removing the filling head.
- Performance parameters:

  Filling quantity: adjustable

  The volume of the interior storage tank: 50L

  Filling pressure: adjustable between 1-6 bar

  Production noise: ≤70dB

  - The filling head and the hose should be hung by the balancer; the length of the hose need to be 15m.
- The device should be able to expand to industrial Ethernet, which can be used later to send data out.
- The operator can finish all the work:
- Vacuming,leakage inspection and filling through single operation
- Authority and password should be set up for parameter programming, only the

authorized operators can modify the parameter.

- Employing no leaking working method:
- The device only vacuumizes the vehicle without inspecting the leakproofness.
- Filling will be conducted after vacuumizing, and this will improve the effect of force filling(fast filling)
- Single step mode:
- vacuuming,
- keeping vacuum,
- filling
- pumping back can be conducted through single step.
- Filter which can conduct removing impuritis needs to be installed.
- Adjusting Liquid level,can be realized by pumping back.

4) Vacuum Filling Machine for Anti Freezing Liquid Pumping

- Working process:
- manual connection
- press start button
- first vacuum
- second vacuum
- filling
- pressurestabilization
- suction
- filling finish
- removing the filling head.
- The operator can be set parameters through the touch screen.

    - The main performance parameters:
    - Filling volume: adjustable volume

- The vacuum degree of load system is less than or equal to 15mbar
- Volume of liquid storage tank: 200L
- Filling pressure: 1-6bar (adjustable)

- Production noise: less than 70dB
- Filling head and tubing overhung by balancer , length of hose:15m
- The device has two working state:automatic and manual single step . The automatic state is divided into vacuum leak test filling and non vacuum leak test filling.
- The vacuum leak filling process:
- the first vacuum (large leak test)
- vacuum preservation (small leak test)
- the second vacuum
- Filling
- liquid level adjustment.
- During the vacuum leak test filling, the equipment respectively detects the sealing performance of the vehicle after the first vacuum and vacuum preservation according to presented vacuum index.if qualified ,for the next filling. If any link is not qualified,the leak warning information will be prompted and the filling or refuse filling action will act according to the pre-set treatment .
- The main process of non vacuum leaktest filling :
- Vacuum
- Filling
- liquid level adjustment.
- During the non vacuum leak test filling, the device creates vacuum only for the vehicle,not detect the tightness of vehicles, and fills the vehicles after completion of vacuum.
- The equipment adopts automatic filling mode, so the operator only needs a fixture to complete all the vacuum pumping,leak test, filling and other

operations. The start & stop button is embedded on the filling connector, the start button to start the filling process and the stop button to stop the filling process at any time in the whole process.

- It is provided with user-friendly human-computer interaction function.The equipment status, condition information, fault location shall be real-time displayed through sound (buzzer), light (indicator lamp).
- The vacuum degree, filling, level adjustment time and other parameters shall be pre programmed through the touch screen to optimize the production process and the effect of filling.And the permissions password should be set, only authorized users shall modify the parameters. The equipment shall store 10 sets of filling parameters, which shall be fast selected through the touch screen.
- When the liquid inside the tank is insufficient, it shall give warning information to timely remind the operator to change barrels, and this period, it shall continue to filling.
- Suitable for expanding the industrial Ethernet to output working data of device.
- The main tank in the device is provided with transparent liquid level indicator tube.

5) Window Washing liquid Filling Machine

- To adopt GRACO pneumatic plunger pump.
- To set the amount of filling as need, the LCD screen displays the filling state and filling quantity.
- The filling rate: greater than or equal to 5 l/min.

6) RearAxle Oil Filling Machine

- To adopt GRACO pneumatic plunger pump.
- To set the amount of filling as need, the LCD screen displays the filling state and filling quantity.

- The filling rate: greater than or equal to 5 l/min.

7) Grease Filling Machine

- The double column grease filling machine is suitable for 180-220 kilograms of standard oil barrel, with stable performance, high degree of automation.
- The pump body is in the form of GRACO brand pneumatic plunger pump, the pressure ratio is 50:1.
- The specification of oil storage barrel is 55 gallon drums with double column and grease plate lifting mechanism.
- Without heating system in this filling machine.
- The high pressure oil pipe: imported pipe, the main pipeline length is 8m.
- The grease gun nozzle is used universally forthe gun .
- To provide air pipe joint 2 sets (including standard male, female connector), compressed air spiral tube (length 9m) 1 sets, 1 sets of triple pieces.
- The oil filling capacity: 15g - 30g
- **Configuration Table:**

GRACO 239888 grease pump

Double column

Grease gun

Compressed air spiral pipe

Grease tube

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