

ET4393 Brake Fluid Bleeder

User Manual



This instruction manual describes the operation this pressure brake bleeder. The safe operation of this equipment can only be realised if you read the operating instructions and safety instructions completely and strictly follow the instructions contained therein.

Please use and handle this brake fluid bleeder in a professional manner that complies with safety specifications. Only trained personnel should be permitted to use this device to change brake fluid.

For Your Safety

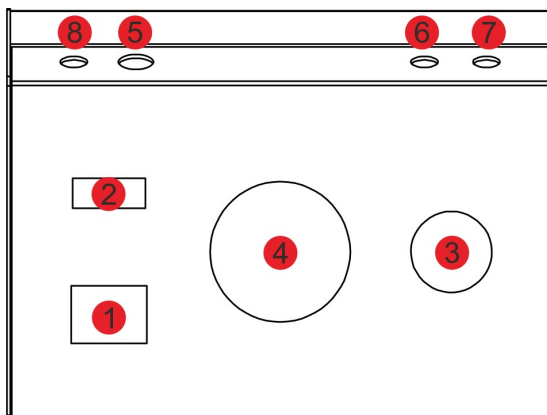
Work performed incorrectly can lead to injury or property damage!

	<p>Operator must have basic theoretical knowledge of automobile braking systems.</p>
<h1>DOT</h1>	<p>Only applicable to bleed DOT fluid in automobile brake and clutch systems. Any other kind of use beyond the scope shall be deemed as not being used as required, which may cause equipment failure and must be prohibited. In case of incorrect application, the manufacturer shall not be liable for any damage caused. The risks arising therefrom shall only be borne by the operator.</p>
	<p>For safety reasons, the working pressure must NOT exceed 3 bar, otherwise brake pipelines and this tool may be damaged.</p>
	<p>Brake fluids are toxic and can lead to serious injury!</p> <ul style="list-style-type: none"> ● Avoid all contact with brake fluid. ● Wear safety goggles to minimize the risk of injury from splashing. ● Wear suitable, protective gloves to minimize the risk of injury caused by skin contact. ● In case of skin contact with brake fluid, wash off immediately with water. ● Remove contaminated clothing. <p>Do not carry any rags or anything else that has been in contact with brake fluid in your clothes.</p>
	<p>Ensure the battery is healthy and the voltage is not lower than 12V.</p>
	<p>After bleeding, the vehicle braking system performance must be road tested.</p>
	<p>Perform self bleed on the equipment regularly.</p>

Technical Data

Model	ET4393
Voltage	DC 9~15V (Vehicle Battery), AC 90~240V(via power adapter)
Max Power	35 Watt
Max Flow Rate	1.7 LPM
Working Pressure	0.6 - 3.0 bar (the device must not be set to work at pressure over 3.0 bar)
Anti-air	Supported (automatically shut off the device while new fluid tank's empty)
Refill Hose	3.5m
Noise	≅ 50dB
Trolley Dim.	200 x 145 mm
Unit Dim.	260×204×240mm
Standard Accessories	Waste fluid collection bottle * 1, E20 adapter*1, E20 adapter fitting*2 (18mm, 28mm), Power Adapter*1

Operating / Device Schematic



- ① "ON / OFF" Switch
- ② "Start" Button
- ③ Pressure Regulator
- ④ Pressure Gauge
- ⑤ Power Cord
- ⑥ Suction Hose
- ⑦ Pressure Balance Hose
- ⑧ Filling Hose

The adaptor (different versions are available.), used to connect to the brake fluid reservoir, is not shown.

Operating Principles

Brake fluid is taken from its container by a pump operating at up to 3.0 bar pressure and is continuously pumped into the brake fluid reservoir. The individual wheel brake cylinders can then be drained of their used brake fluid until the new brake fluid comes through.

You thus avoid the regular emptying and filling operations, in contrast to conventional systems and also avoid any resulting water absorption in the brake fluid.

The pump used to fill the brake fluid reservoir is equipped with pressure monitoring. Should it not be possible to build pressure or should the pump pull in air, the pump will switch itself off automatically.

Startup Procedure

The startup procedure describes the connection of the brake bleeder to the container with brake fluid, as well as the bleeding of the brake bleeder itself. Bleeding of the brake fluid bleeder must be carried out as part of the initial startup procedure.

The safety instructions in the section above “For Your Safety” must be strictly adhered to.

1 Before the initial startup procedure, make sure that the local voltage is the same as the information on the brake maintenance device’s rating plate. The rating plate is located on the back of the brake maintenance device.

Only operate the brake maintenance device when the information matches.

2. Position the brake maintenance device on a stable, level surface.
3. Unscrew the lid from the container.
4. Place a container in the holder of the brake bleeder; secure the container against falling out.
5. Feed the suction hose and the pressure balance hose down to the base of the container. One line is used for suction. The other line allows for excess pressure to flow back into the container.
6. To bleed the brake bleeder, do not connect the adapter to the vehicle, but only to the filling hose and position it over a collection container.
7. Turn the “ON/OFF” switch ON. Press the “Start” button and hold. The pump starts to deliver the brake fluid.
8. Place the adapter over a collection container until the brake fluid flows without any air bubbles.
9. Turn the “ON/OFF” switch OFF and wait for the pressure regulator to drop to 0 bar. Remove the adapter.
10. The brake bleeder is now ready for use, even when the pressure gauge displays 0 bar. The pressurised side of the brake maintenance device should be free of bubbles.

Operation

Exchanging brake fluid

- The safety instructions in the section “For Your Safety” must be strictly adhered to.
- Before starting any work, please note the instructions for the vehicle manufacturer for the maximum filling pressure and any other specific instructions.
- In general, always follow the recommended instructions and guidelines for bleeding the brake system as mandated by the manufacturer for each type of vehicle.
- Factory settings for the pressure regulator are set to 1.6-2.0 bar. This ensures that the brake fluid reservoir will not become deformed and that no leaks occur at the secondary cuff. Bleeding or exchanging brake fluid with a lower or higher working pressure can be adjusted using the pressure regulator (Max. 3.0 bar).

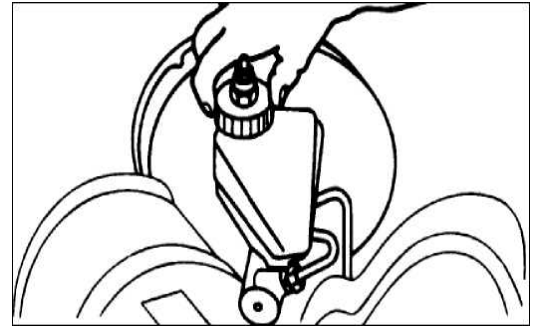
1 Install the supplied adapter, or the appropriate adapter according to the instructions on the brake fluid reservoir.

2. Connect the filling hose to the already installed adapter.

3. Supply power to the brake bleeder and turn the "ON/OFF" switch ON.

4. Press the "Start" button and hold until the pressure is at least 1.0 bar. The operating pressure can be adjusted with the pressure regulator.

With the pressure built up successfully, release the "Start" button and the brake bleeder will still work.



If there is no pressure build up, release the "Start" button and the brake bleeder will stop working immediately. Possible causes:

1) New brake fluid in the container is not enough. 2) The pressure is set too low on the pressure regulator.

5. Check that the adapter is correctly seated and tight where it connects to the brake fluid reservoir. If brake fluid leaks, immediately switch off the brake bleeder and find the cause.

6. Now bleed the brakes, one-by-one, beginning with the back right brake and finishing with the front left brake. To do this, open the valve on the wheel brake cylinder. Catch the old brake fluid with the collection bottle. As soon as the new, bubble-free brake fluid begins to flow out of the drain hole, the valve can be closed again.

7. Then turn the "ON/OFF" switch OFF, to stop the brake bleeder working.

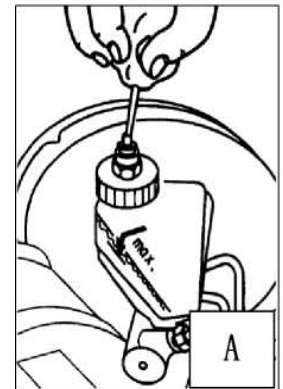
8. On the pressure gauge check that the pressure has gone down to 0 bar.

Note: Usually the brake maintenance device automatically purges remaining pressure. However, if during the refilling process, the pressure was regulated lower, there will still be pressure remaining. If the pressure does not go down to 0 bar, the pressure regulator must be unloaded first. After turning off the device, turn the pressure regulator to the right until the release point for the remaining pressure is reached. The working pressure drops to 0 bar.

9. Uncouple the depressurised filling hose from the adapter. Remove the adapter from the brake fluid reservoir.

10. The brake fluid reservoir is now full to the rim. Using a pipette, remove enough brake fluid from the brake fluid reservoir until the permissible fill level has been reached (A).

11. Close the brake fluid reservoir.



Important: After completing the bleeding process or exchanging brake fluid, should the operation of the brake or clutch pedal be too long or the pressure behind the operation be too "soft", repeat depressing the pedal several times, each time applying stronger pressure to the pedal or clutch. If the situation remains unchanged, the bleeding procedure needs to be carried out again.

Troubleshooting

Problem	Cause	Countermeasure
Pump does not suction, or does not build-up pressure, or build-up pressure not stable.	<ul style="list-style-type: none"> ● Fluid reservoir empty ● Pressure regulator fully closed or fully opened up ● Kink in suction hose ● Air in the hose ● Strainer on suction hose 	<ul style="list-style-type: none"> ● Change the container. ● Set the correct working pressure (e.g. 2.0 bar). ● Remove kink, replace defective hose if necessary.

		<ul style="list-style-type: none"> ● Bleed brake maintenance device, as with the startup procedure. ● Clean the strainer.
No Power	Wiring faulty	<ul style="list-style-type: none"> ● Check if wiring is loose. ● Check if the PCB has power output.
Pump does not depressurise after filling	Pressure Balance Valve faulty	<ul style="list-style-type: none"> ● Bleed brake bleeder, as per the startup procedure. After use 2.0 bar air source to blow the pressure balance hose.
Brake fluid spilled from pressure regulator	Pressure regulator defective	Replace pressure regulator O ring.

Care and Maintenance

- Before any work is performed on the brake bleeder, disconnect the power source.
- Never clean the brake bleeder with a high-pressure steam washer.
- Always keep the brake bleeder clean. Immediately remove any spilled brake fluid.

Disposal

Take care with regards to environment sustainability, health risks, disposal regulations and local possibilities for proper disposal.

- Disconnect all hoses from containers or tanks.
- Make sure that the hoses are empty.
- Disassemble the brake bleeder into its individual components (hoses, metal, electrical, equipment).
- Return the individual materials to an environmentally friendly recycling site.

Warranty and Liability

In principle our “General Terms of Sale and Delivery Terms” apply. These are available to the end-user / operator since contract signing. Warranty and liability claims for personal injury and property damage are excluded, when one or more of the following causes apply:

- Improper use
- Improper startup procedure, operation and maintenance of the brake maintenance device.
- Failure to follow the instructions in the operating manual for the startup procedure, operation and

maintenance.

- Unauthorized change of the brake maintenance device.
- Improper repair
- Catastrophic events caused by exposure to foreign objects and acts of God.

Customer service requests and payment for the return costs will not be honored when they result from not following the above-mentioned, itemized list of points. Before returning the product, please contact the manufacturer.