HYDROTECHNIK UK
TEST ENGINEERING LTD

Nitrogen gas charging & testing device operation instructions

5401-02-00.00

DISCOVER MORE AT HYDROTECHNIK.CO.UK/CHARGING

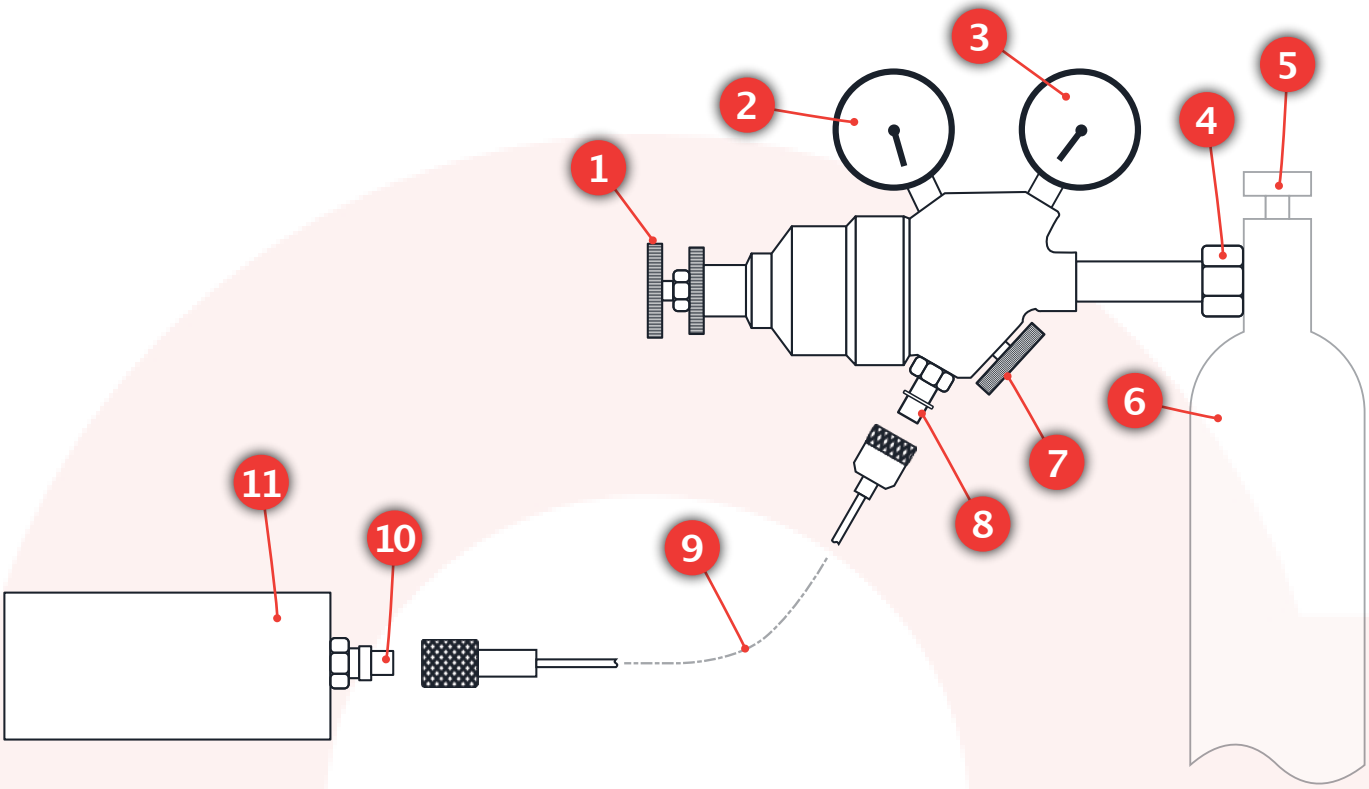

Diagram 1 *Gas Charging Setup*

Measurement of accumulator pressure on the gas side

This measurement can be conducted without the connection of the pressure reducing valve to a nitrogen cylinder.

Measurement

Please refer to diagram 1.

- Close bleed valve (7).
- Connect MINIMESS test hose to the test point (8).
- Connect MINIMESS test hose to the gas charging valve (10) of the hydraulic reservoir.
- Read off the stored hydraulic pressure from the test pressure gauge (2) and compare it with the recommended value relating to the instrument.

Charging of hydraulic reservoirs

Before utilising the pressure regulator valve, the test pressure gauge (2) should be monitored. Should pressure remain, then it must be released by opening the stop valve (7).

Preparation

Before adjusting the required charging pressure:

- Close bleed valve (7).
- Connect pressure regulator to nitrogen cylinder.
- Unscrew pressure regulating screw (1).
- Slowly open N2 cylinder valve (5) (*refer to 'caution' at the bottom of page 4*)
- Screw in the pressure regulating screw until the test pressure gauge (2) indicates the desired charging pressure.
- Unscrew the safety cap from the gas charging valve (10).

Should the desired adjustment of charging pressure be exceeded, the following procedure should be executed:

- Unscrew the pressure regulating screw (1).
- Close the N2 cylinder valve (5).
- Briefly open bleed valve (7)
- By screwing in the pressure regulating screw (1), the desired charging pressure can be adjusted anew.

The pressure regulating screw (1) can be protected against being misadjusted (use lock nut).

Charging

- Connect MINIMESS test hose (9) to regulator test point (8) and gas charging valve (10) of the hydraulic accumulator (11).
- Slowly open the N2 cylinder valve (5) and wait for the temperature to stabilise (pressure rise).

The charging process is not finished until the temperature has stabilised.
The charging pressure needs to be corrected, if necessary.

When charging and emptying the hydraulic reservoir, the temperature of the gas volume in the reservoir changes. An adjustment to the surrounding temperature needs to be anticipated. Only then can the exact value be measured.

Once the charging process is complete

- Close N2 cylinder valve (5).
- Unscrew MINIMESS test hose (9) from the gas charging valve (10).
- Screw the safety cap onto the gas charging valve.
- Disconnect pressure regulator by opening the bleed valve (7).

Reducing the gas pressure in hydraulic reservoirs ***with*** connected nitrogen cylinder (6)

Preparation

- Close N2 cylinder valve (5).
- Briefly open bleed valve(7) until the pressure regulator valve is free of pressure.
- Connect MINIMESS test hose (9) to the test connection point (8) and gas charging valve (10).

Reducing the gas pressure

- Open bleed valve (7) until the gas pressure in the hydraulic accumulator (11) has reached the desired pressure.
- Close bleed valve (7)

Reducing the gas pressure in hydraulic reservoirs ***without*** connected nitrogen cylinder (6)

Preparation

- Close bleed valve (7).
- Connect MINIMESS test hose (9) to the test connection point (8) and gas charging valve (10).

Reducing the gas pressure

- Slowly open bleed valve (7), whilst continually monitoring the test pressure gauge(2).
- When the suggested charging pressure has been reached, close the bleed valve (7).
  Wait for the temperature to stabilise.

Caution

The releasing procedure is not finished until the temperature stabilising process is complete, the pressure of the hydraulic accumulator eventually needs to be corrected.

When charging and emptying the hydraulic accumulator, temperature changes of the gas volume within the accumulator occur. A constant temperature between surroundings and gas volume needs to be anticipated. Not until the temperature has stabilised, can the exact value of the gas pressure be measured.

Charging of hydraulic reservoirs with interactive pressure gauge block.

More exact reading of the lower secondary measuring range

With certain lower pressure hydraulic accumulators, adjustments need to be made with higher accuracy, lower ranged pressure gauges. To enable this use a pressure gauge block with eg 20, 40 or 60 bar ranged gauges as necessary. *Please refer to diagram 2.*

Preparation

- Close N2 cylinder valve (5).
- Briefly open bleed valve (7) until the pressure regulator is free of pressure.
- Connect the pressure gauge block (12) to the test point (8).
- Connect the MINIMESS test hose (9) to the test point (13) of the pressure gauge block (12) and gas charging valve (10).

Charging

- Unscrew pressure regulating screw (1)
- Slowly open N2 cylinder valve (5) (*refer to caution on page 4*)
- Screw in the pressure regulating screw (1) with extreme care until the test pressure gauge (14) shows the desired charging pressure.

The pressure regulating screw (1) can be protected against being misadjusted (use lock nut).

Once the charging process is complete

- Close the N2 cylinder valve (5).
- Unscrew the MINIMESS hose (9) from the gas charging valve (10).
- Screw safety cap onto the gas charging valve (10).
- Release pressure regulating pressure valve by opening the stop valve (7).

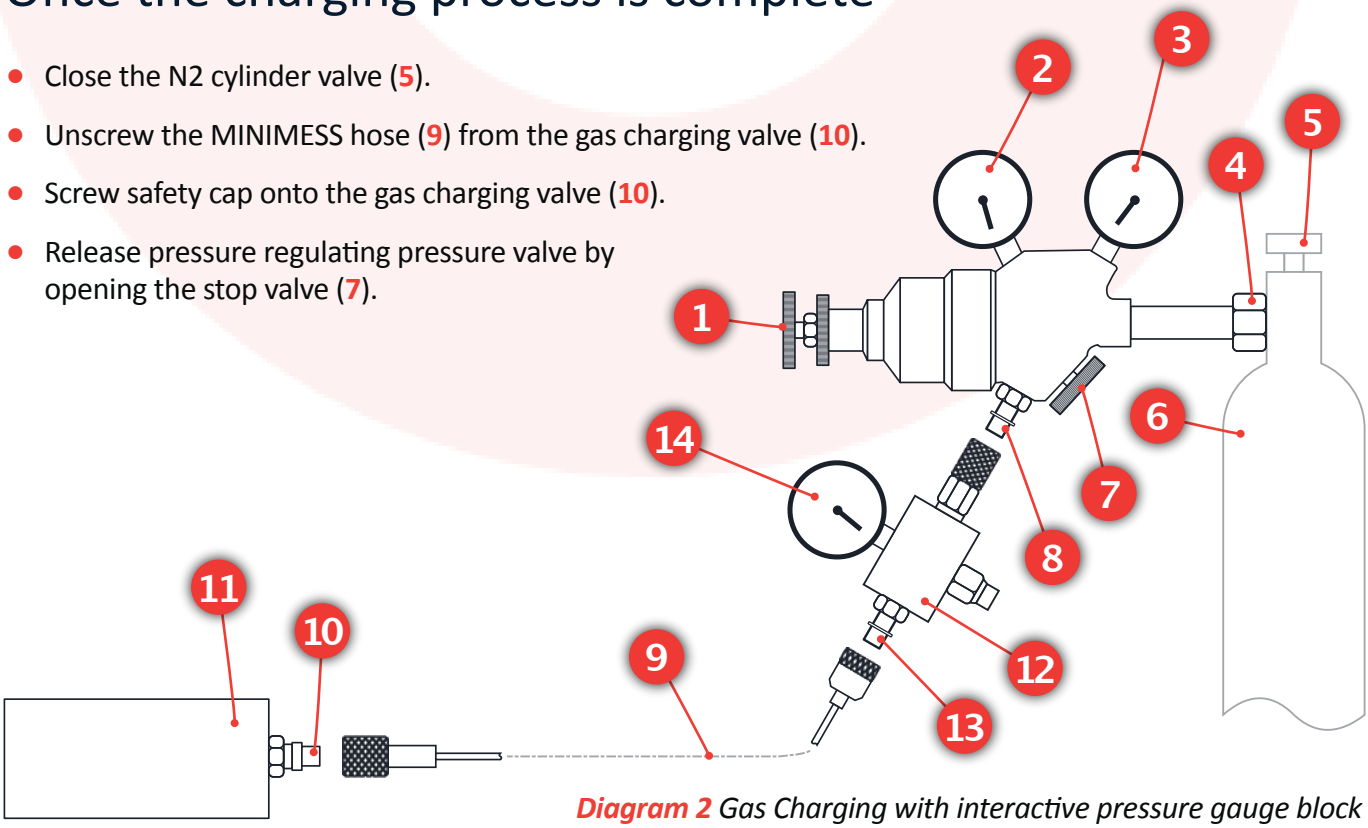

Diagram 2 *Gas Charging with interactive pressure gauge block*