



HIDRACAR S.A.



INSTRUCTIONS OF USE OF THE HIDRACAR CHARGING & CONTROL GAS KIT FOR PULSATION DAMPENERS AND HYDRO-PNEUMATIC ACCUMULATORS

DESCRIPTION: [follow drawing n°. BV(***)AX#M]

A complete kit includes:

- a) A block (with a maximum design pressure of 600 bar) with: Pressure gauge (2), punch insertion lever for the valve opening (1), gas purge valve lever (4), check valve (3), and knurled swivel nut (5) to secure the block to the accumulator charging valve.
- b) A flexible hose (for a max. working pressure of 600 bar).
- c) A female thread adapter for connecting the hose to the Nitrogen cylinder valve.
- d) A plastic case for the protection and transport of the kit.

Note: The upper limit of the pressure gauge scale should be approximately 30% higher than the gas precharge value.

OPERATION: [follow drawing n°. BV(***)AX#M]

WARNING! Charge with **NITROGEN** gas only. The use of **OXYGEN** is **FORBIDDEN**. Oxygen is prohibited due to the risk of explosion in case it reacts with the liquid in the circuit. For low gas charging pressures or with liquids that do not react with atmospheric oxygen, compressed air can also be used. Before proceeding with the filling or verification of gas pressure, be sure the pump is stopped and there's no pressure in the circuit.

I – Remove the plug from the accumulator charging valve (located at the top of the accumulator/pulsation damper) and check that the sealing O-ring is properly seated in the charging valve housing.

II – Check that the core depressor pin of the block (12) is retracted into the block. For this, the valve core drive handle (1) must be completely turned counter-clockwise. Also, make sure that the gas purge valve handle (4) is firmly screwed in (closed). Once all this has been checked, proceed to attach the charging block to the charging valve and screw it by rotating the knurled nut (5) until firmly secured.

III – Now connect the flat seat end fitting of the flexible hose to the check valve (3) of the block (after removing its cap and checking that its o-ring is in place, all just as you did before with the accumulator one).

IV – Connect the fitting in the other end of the flexible hose, with the appropriate adapter already attached, to the Nitrogen cylinder valve. Screw the handle (1) fully clockwise and open the cylinder gas valve handle very slowly (Please note that the pressure in the nitrogen bottle must be higher than the precharge plus the valve core opening pressure). You should do this while keeping the accumulator in vertical position.

Required cartridge opening pressure:

004-AI = 3 – 4 bar

004-AI-MAP = 6 – 7 bar

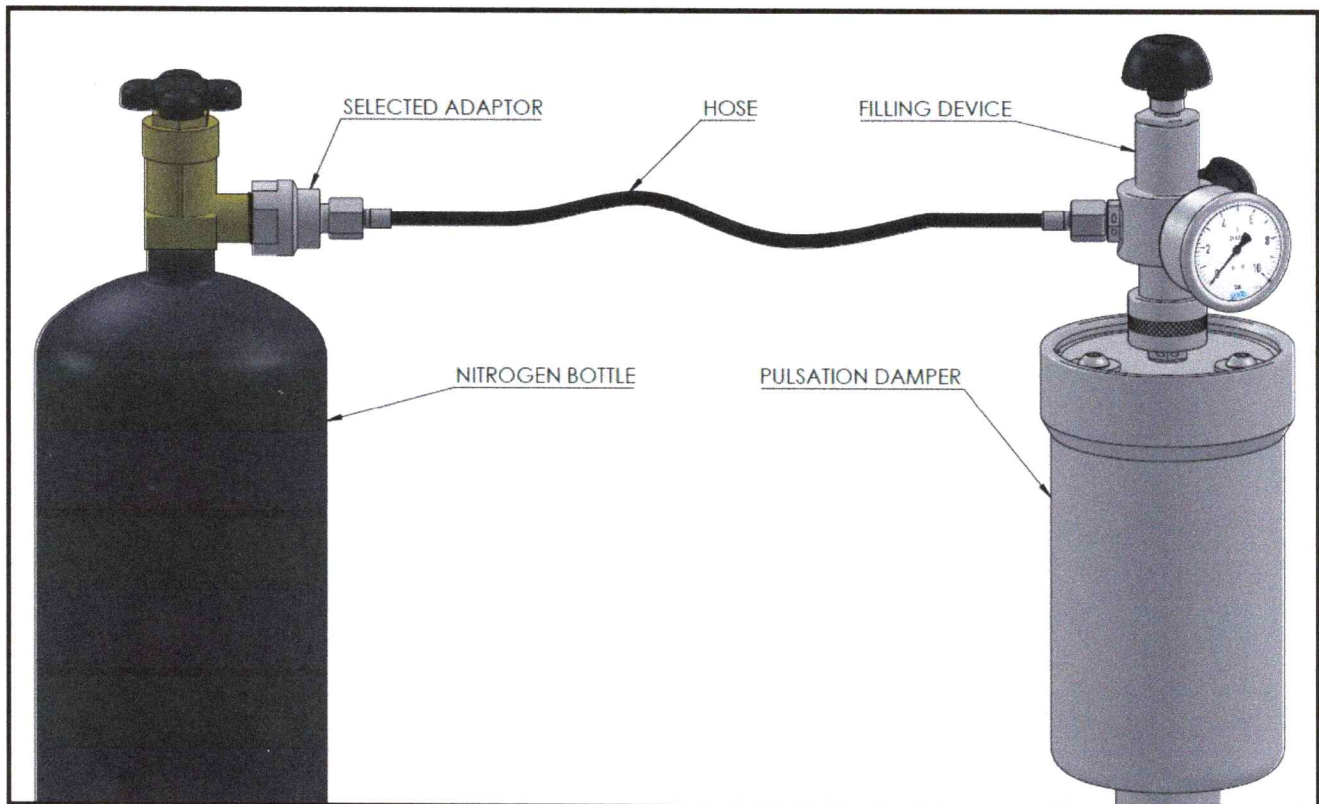
V – When the needle on the pressure gauge (2) is approximately 15% above the required charging pressure, close the nitrogen bottle valve.

VI – Since the pressure is slightly higher than the required charging pressure, now purge the excess gas by opening the gas purge valve handle (4) until the pressure is adjusted.

VII – Next, turn the handle (1) fully counterclockwise and then purge the gas inside the block by slowly opening the gas purge valve handle (4) until the pressure gauge (2) reads 0 bar and no more gas comes out of the gas purge hole (9).

VIII – Finally, remove the flexible hose and then unscrew the knurled rotating nut (5) to separate the block from the accumulator. Operation complete.

SCHEMATIC CONNECTION:



Note: When the gas is compressed, its temperature increases. With high gas charging pressure values, it is necessary to wait a few minutes before checking the pressure in the manometer.

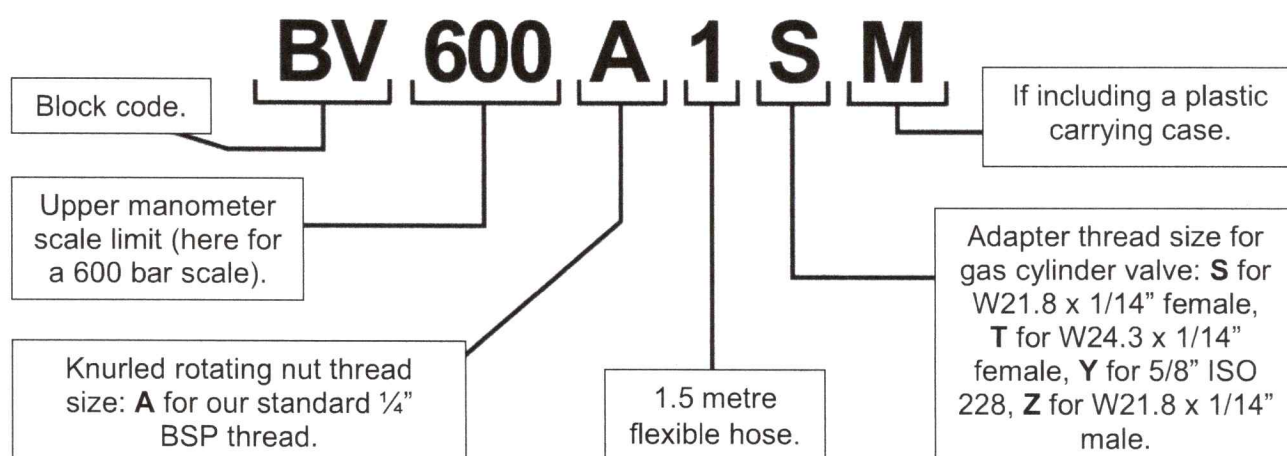
If the working temperature is higher than the room temperature, the following formula must be used to determine the charging pressure:

$$P_0 \text{ (fill)} = P_0 \text{ (required)} \times \frac{\text{charging temp} + 273}{\text{working temp.} + 273} \quad (P_0 = \text{Charging pressure})$$

When detaching the flexible hose, you must be careful with the gas stored inside.

To check the pressure inside the accumulator, follow the actions in points I, II, VII, IX and X.

Weight of complete kit: 2 Kg. Dimensions of the case: 31 cm x 38 cm x 10 cm.

EXAMPLE OF REFERENCE CODE FOR A COMPLETE KIT:

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