Gas supply device

The present invention relates to a device for supplying gas.

The invention relates more particularly to a device for supplying gas comprising a support frame housing a plurality of pressurized-gas cylinders connected to a fluid circuit for withdrawing from or filling the cylinders, said circuit comprising a first connection end connected to the cylinders via a first isolation valve to allow filling of and withdrawing from the cylinders and a second connection end which is distinct and is connected to the cylinders via a second isolation valve and a pressure regulator so as to allow fluid to be withdrawn, the support frame comprising, on one of its faces, an interface panel comprising at least one opening providing a user access to the circuit.

The invention notably relates to gas supply devices sometimes referred to as "frames".

Such a device is described for example in documents DE20103682U1, GB2007348 A1 or DE102011014065 A1.

Such devices generally use an array of cylinders storing gas at high pressures, for example 200 bar, 300 bar or above.

These devices need to meet various, and often conflicting, requirements, for example: a cylinder filling circuit compatible with high flow rates and pressures and allowing satisfactory mixing of gas (in terms of homogeneity and/or filling time in particular), a withdrawing circuit that offers safety of use for the user, ergonomic use and prevents incorrect handling.

Embodiments of the present invention seek to alleviate all or some of the prior art disadvantages listed above.

According to an aspect of the present invention, there is provided a device for supplying gas comprising a support frame housing a plurality of pressurized-gas cylinders connected to a fluid circuit for withdrawing from or filling the cylinders, said circuit comprising a first connection end connected to the cylinders via a first isolation valve to allow filling of and withdrawing from the cylinders and a second connection end which is distinct and is connected to the cylinders via a second isolation valve and a pressure regulator so as to allow fluid

to be withdrawn, the support frame comprising, on one of its faces, an interface panel comprising at least one opening providing a user access to the circuit characterized in that the device comprises a control member for manually operating the second isolation valve and comprising a pivoting lever, and in that the interface panel comprises a slot providing access to the lever, said lever being mobile through the slot between a first position in which the lever is situated in the plane of the interface panel or set back therefrom within the frame volume and a second position in which at least part of the lever projects

CLAIMS

1. A device for supplying gas comprising a support frame housing a plurality of pressurized-gas cylinders connected to a fluid circuit for withdrawing from or filling the cylinders, said circuit comprising a first connection end connected to the cylinders via a first isolation valve to allow filling of and withdrawing from the cylinders and a second connection end which is distinct and is connected to the cylinders via a second isolation valve and a pressure regulator so as to allow fluid to be withdrawn, the support frame comprising, on one of its faces, an interface panel comprising at least one opening providing a user access to the circuit, characterized in that the device comprises a control member for manually operating the second isolation valve and comprising a pivoting lever, and in that the interface panel comprises a slot providing access to the lever, said lever being mobile through the slot between a first position in which the lever is situated in the plane of the interface panel or set back therefrom within the frame volume and a second position in which at least part of the lever projects with respect to the interface panel toward the outside of the frame and through the slot.

2. The device as claimed in claim 1, characterized in that the lever comprises a body in the overall form of a rod the free end of which has a head that is enlarged in comparison with the rest of the body, and in that, in its second position, the head of the lever projects with respect to the interface panel through the slot.

3. The device as claimed in claim 1 or 2, characterized in that the slot has an overall shape corresponding to the shape of the outline of the lever.

4. The device as claimed in any one of claims 1 to 3, characterized in that the device comprises a guarantee seal which, in a first configuration, has a first end fixed to the panel and a second end fixed to the lever placed in its first position, the seal in its first configuration forming an end stop preventing the lever from moving from the first to its second position, the seal comprising a rupture zone configured for manually

placing the seal in a second configuration in which the connection attaching the seal to the interface panel and/or to the lever is broken.

5. The device as claimed in claim 4, characterized in that the seal has the form of a flat tab and comprises an end for grasping.

6. The device as claimed in any one of claims 1 to 5, characterized in that the lever comprises a zone of weakness such as a local reduction in thickness to make it easier to break in the event of a knock and to limit the force transmitted to the second valve.

7. The device as claimed in any one of claims 1 to 6, characterized in that the first connection end comprises a filling coupling situated facing the interface panel, said panel comprising a first opening for accessing the first connection end.

8. The device as claimed in claim 7, characterized in that it comprises a mobile cover for opening or closing the first opening.

9. The device as claimed in any one of claims 1 to 8, characterized in that the second connection end comprises a withdrawing coupling situated facing the interface panel, said panel comprising a second opening for accessing the second connection end.

10. The device as claimed in any one of claims 1 to 9, characterized in that the circuit comprises a pressure gauge situated facing the interface panel, said panel comprising a third opening for accessing the pressure gauge.