

***UNLOADING PROCEDURE OF
AN AIRFLOW CONTAINER***

LCO2 / LN2O



PHASE 1 : Preliminary check and first manipulations before the discharge

1. Security rules

1. Wear all required safety equipments for discharging.
2. Never open totally the valves.
3. Be aware of all gas related hazards
4. In case of Nitrous oxide, de sure that no grease is used and that the container is not located over asphalt.



PHASE 1 : Preliminary check and first manipulations before the discharge

2. Open the side doors of the container and check its general state.



PHASE 1 : Preliminary check and first manipulations before the discharge

3. Be sure that all the valves of both container and tank are fully closed.



PHASE 1 : Preliminary check and first manipulations before the discharge

4. Connect **DN40** Hose between the **HC7** connection of the container and the Gas Valve of the tank.



HC7



PHASE 1 : Preliminary check and first manipulations before the discharge

5. Connect **DN50** Hose between the **HC2** connection of the container and the liquid Valve of the tank.

HC2



PHASE 1 : Preliminary check and first manipulations before the discharge

6. Purge the connected **DN40** hose. Open the purge valve **V33** of the container then, open slightly the Gas valve of the tank.



V33

Let it open for 20 seconds then close V18.



PHASE 1 : Preliminary check and first manipulations before the discharge

7. Purge the connected **DN50** hose. Open **V17** & **V35** for 5 seconds, close it then purge the hose opening the purge valve **V18** of the container.



V18

Do this operation 3 times.



PHASE 1 : Preliminary check and first manipulations before the discharge

8. Plug electrical cable on the BALS (REF 2402) plug of the container.



PHASE 1 : Preliminary check and first manipulations before the discharge

9. Turn on the electrical panel using the red switch "ON" The light should turn on.



If the "POWER" light do not turn on, go to the table des causes.

Attention : Do not use the pump if a sealing is on the red switch.



PHASE 1 : Preliminary check and first manipulations before the discharge

10. Open **V2** and **V4** valve of the container (yellow globe valves) using the dedicated key.



V2



V4



PHASE 2 : Cool-down of the pump

11. Start to cool down the pump by opening **V7** et **V17**

The pump will be cold enough and ready when the « **ready** » sign is lighted up (about 30 min).

If the sign do not light up after 40 min, go to table des causes.



PHASE 2 : Cool-down of the pump

12. During the cool down, make the equilibrium between the tank and the container :

- Open **V19** then open the gas phase valve of the tank

V19



PHASE 2 : Cool-down of the pump

- Wait until the equilibrium is done. If the pressure of the tank is below the required pressure open **V5** until you reach the minimum pressure then close it.



Pressure gauge



V5



PHASE 3 : Discharge of the container

13. Start the pump ("**START**" button).



If the pump does not start; go to table des causes.



PHASE 3 : Discharge of the container

14. open progressively the liquid phase valve of the tank
- progressively close **V17** and open progressively **V35** holding the differential pressure between the entry (**PI1**) and the exit (**PI2**) between 17 and 21 bar.



PHASE 3 : Discharge of the container

- **Attention** : If you experience a heavy leakage, stop the transfer, tight the flanges and/or change the joints then start again.
- Open **V8** to raise the post pump pressure. If the pressure rises too much, close it.
- **V17** should stay close during all transfer independently of the V35 position.

If a hazard appears, use the "STOP" button or the emergency stop button, close V2, V4 pulling on the emergency cable.



PHASE 3 : Discharge of the container

15. Stay close of the container during all the transfer period, if the container is equipped and when the buzz is on, press the "**AWAKE MAN**" button to keep the pump in function.



PHASE 3 : Discharge of the container

16. When the speed pump changes, or when the level reach « 0 », push the « STOP » button on the control panel



PHASE 3 : Discharge of the container

17. Shut down the electrical box alimentation (red switch)



PHASE 4 : End of discharging process

18. When you have shut down the electrical panel, close **V35** of the container and the liquid phase valve on the receiving tank. Then open the purge valve (**V18**).



V35



V18



PHASE 4 : End of discharging process

19. Open **V19** on the container, close the gas phase valve of the receiving container and open the purge valve of the container (**V33**).



V19



V33



PHASE 4 : End of discharging process

20. Close **V7** and open **V17** to purge the pump.



V7



V17



PHASE 4 : End of discharging process

21. Close **V2** and **V4** of the container (use the dedicated key or the security cable).



V2



V4



PHASE 4 : End of discharging process

22. Unplug the electrical cable.



PHASE 4 : End of discharging process

23. Disconnect the hoses and the **HC2** and **HC7** flences.



Attention : Cold burns hazards due to remaining liquid in the hoses.



PHASE 4 : End of discharging process

24. Close **V17**, **V18** and **V33**.



V17



V18



V33



PHASE 4 : End of discharging process

25. Check that all the valves are closed and shut the containers doors.



P&ID Air Flow ISO Container

