



# CO<sub>2</sub> Ball Valve Installation Instructions

## Product Use:

NDL CO<sub>2</sub> Ball Valves are suitable for installation in refrigeration and AC applications. Valves are compatible with CO<sub>2</sub> (R744), Ammonia (R717, only models with stainless steel connections), HCFC, HFC, HFO refrigerants and oils.

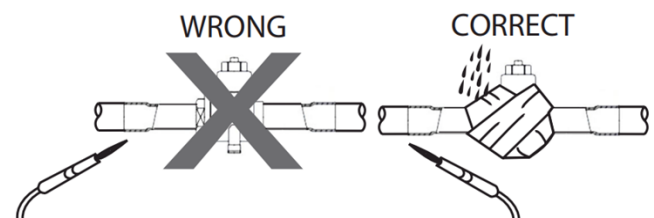
## Operating Specifications:

- Temperature: -40 °C to 150 °C (-40 °F to 302 °F)
- Maximum working pressure up to 140 bar (2030 PSI)

## Installation Instructions:

1. Remove the valve stem cap and make sure the valve is in the fully open position. If your valve has an access port, remove the cap and the Schrader core; this is very important.
2. Clean the ends of the tube and valve so it is free from dirt, debris, or oxidation.
3. Wrap the valve with a well-soaked wet cloth, ensuring the entire valve is covered.
4. Brazing or welding should be carried out by qualified personnel (EN ISO 13585, EN ISO 9606) in accordance with applicable standards. Purge nitrogen thru the open valve to prevent internal oxidation when brazing or welding.

- Copper connections: The brazing of valves with solder connections should be carried out carefully, using a low melting point filler



material (minimum 5 % silver alloy). It is essential to avoid direct contact between the torch flame and the valve body, which could be damaged and compromise the proper functioning of the entire valve.

- Steel connectors: TIG welding should be performed as quickly as possible. The connection material is SS 304; it is only possible to use SS 308 filler material if welding to pipes is made from the same type of material. For pipes made from other materials, please contact your supplier.
- Remember to make sure your cloth is wet enough during brazing or welding.



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**5.** After brazing the valve in place, it must be cooled down. This should be done by applying another wet cloth over and around the valve and allowing the air to cool.

**6.** Installed valves should be fixed in a stable position to prevent vibrations and mechanical stress.

**7.** Testing: The system should be pressurized to ensure no leaks in any welds. If you should find that the stem is leaking, the packing screw, and locking nut, needs to be tightened. It would be best if you used a torque wrench to accomplish this. The torque chart for each size is to the right:

BALL VALVE SIZE	TORQUE OF LOCK NUT (N M)	TORQUE OF LOCK NUT (LBF IN)
3/8"	7.5	66.38
1/2"	7.5	66.38
5/8"	10	88.51
3/4"	10	88.51
7/8"	12	106.21
1-1/8"	15	132.76
1-3/8"	15	132.76
1-5/8"	20	177.01
2-1/8"	28	247.82
2-5/8"	32	283.22
3-1/8"	35	309.77

**8.** Please note the limit of the valve when opening/closing the valve. Valve stops are external and metal.

- 90 degrees, ¼ turn, clockwise rotation of stem is full open.
- 90 degrees, ¼ turn, counter clock rotation of stem is fully closed.

*The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of a product.*

*All installations must completely comply with all NDL Industries warnings and instructions, national state and local codes and all applicable ANSI standards.*

*NDL Industries product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Customer Service. NDL Industries reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on NDL products previously or subsequently sold.*



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