



TÜVRheinland®  
**CERT**  
ISO 9001

# INDUSTRIAL GAS SOLUTIONS

## Cryogenic & Non-Cryogenic



EN-2018

**Meca-inox**  
BALL VALVES



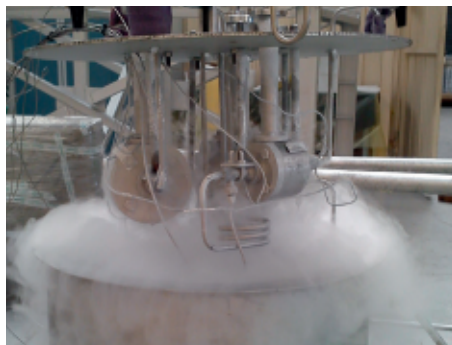
Since more than **50 years**, MECA-INOX is a ball valve strategic partner of major chemistry and process industries for liquid and gas management. **In 2001** Meca-Inox launched its first **cryogenic ball valve** and became a leading supplier of the **liquid air and industrial gas for Electronic, Chemistry, Pharmaceutical, Health and Industry.**

Designed, produced and tested in our plants, our ball valves are in compliance with **International Standards for Performances, Cleaning & Quality.**



**Strength & Tightness**

EN 12266-1, ISO 5208  
TA Luft « BH Class »



**Functionnal Test**

EN 12266-1, EN 1626  
BS6364 (On Demand)



**Cleaning**

EN 12300  
(<50mg/m<sup>2</sup> Hydrocarbon)

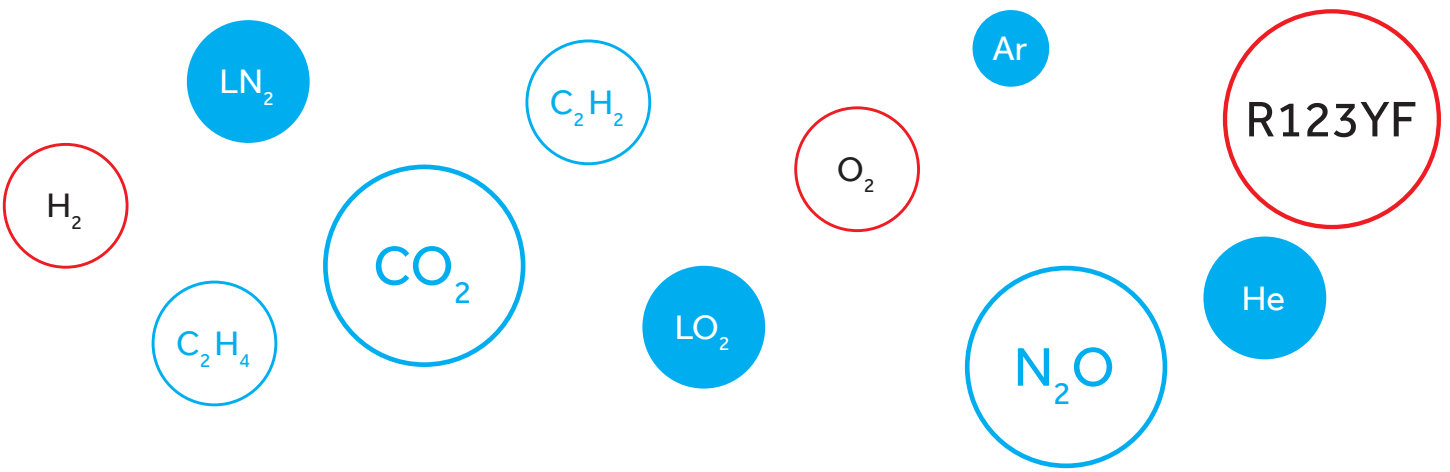
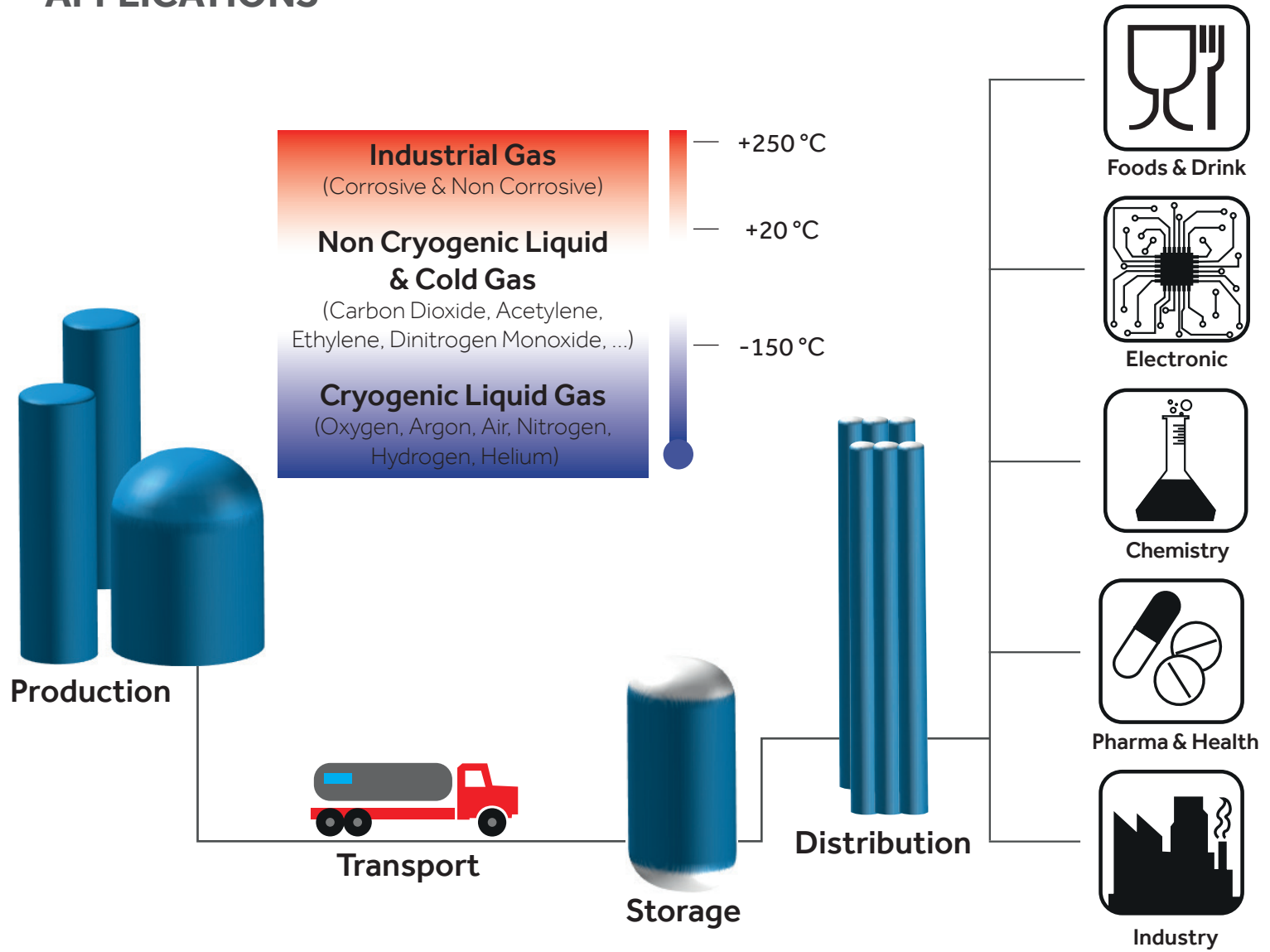
**THEY TRUST US**

AIR LIQUIDE, AIR PRODUCTS, BOC, CARBAGAS, CHART GROUP, CHEMET, GLI, LINDE, MESSER, OMSP MACOLA, PRAXAIR, VRV, WORTHINGTON ARITAS ...





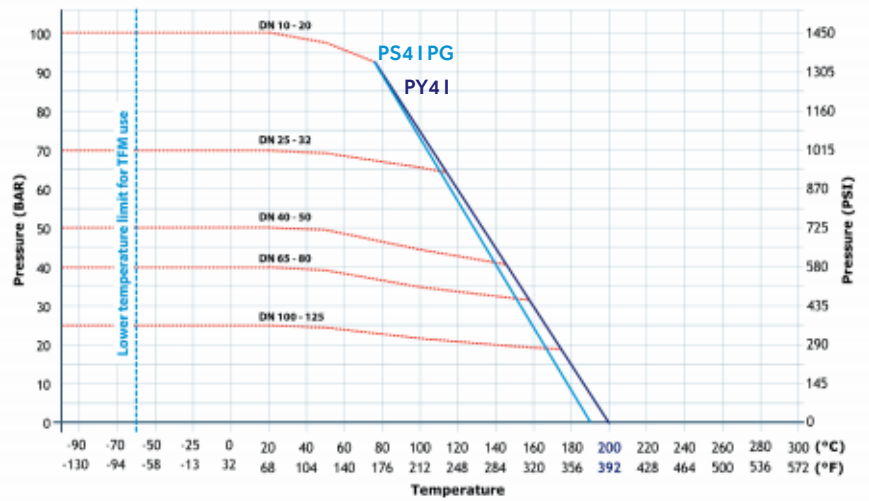
## APPLICATIONS



**NON CRYOGENIC DESIGN**



**Pressure & Temperature Performances**



316L Body, Ends, Ball & Stem - Environment temperature [-50°C to +80°C]  
Ball with Upstream Vent Hole for Liquid Vaporization (One Way Valves)

Valve Type	Seats	Fluids Temperatures @ ΔP 1bar	Uses
PS4 PG	PTFE 2ND GENERATION	-50°C to +190°C	LCO2, N20, R1234YF ... Certified EN14432 [-50°C to +80°C]
PY4	TF3215 ® PTFE + Carbon Fibers	-50°C to +200°C (-196°C GASES)	Liquefied Gases & Cold Gases Functional EN1626 / -50°C

**Standard**

- ✓ Full Bore / Reduced Bore
- ✓ Manual / Actuated (Pneumatic & Electric)
- ✓ Large choice of ends (BW, SW, NPT, BSP, Schedule, Nipple, PN40 flange ...)
- ✓ Pipe line up to 6"
- ✓ FDA 21CFR Certified Plastics (PS4 PG)
- ✓ CE1935 Food Contact Certified Plastics (PS4 PG & PY4)
- ✓ EN12300 degreased (<50mg/m<sup>2</sup> Hydrocarbon & Particles)

**EUROPEAN REFERENCE BALL VALVES**



**Design**

- ✓ Loose Body Flanges (Meca-Inox Patent 1966)
- ✓ All Ends Produced In House
- ✓ Low Flow Restriction
- ✓ Easy Mounting (-30% time)

**Performances**

- ✓ High Performance PTFE Modified Gland Packing
- ✓ EN12266-1 "Class A"
- ✓ Helium Tightness 20°C < 10<sup>-5</sup> mbar/l.s-1
- ✓ Chemical Resistance

## CRYOGENIC EXTENDED DESIGN



Valve Size Full bore	Extension Length* (from line center)	-196°C Max Torque	-196°C Max Pressure Drop (for Max Torque)
DN15 (1/2")	188 mm	12Nm	40 bar
DN25 (1")	230 mm	36Nm	40 bar
DN40 (1" 1/2)	270,5 mm	86Nm	40 bar
DN50 (2")	281 mm	158Nm	40 bar
DN65 (2" 1/2)	318 mm	172Nm	10 bar
DN80 (3")	330 mm	172Nm	10 bar
DN100 (4")	349 mm	301Nm	10 bar

\* Standard length for machined extensions, other length on demand

### 100% Machined Extended Stem - No Weld

Valve Type	Seats	Description	Uses
PY4 CY	TF3215 ® PTFE + Carbon Fibers	Body Seals : PTFE Studs & Nuts + Red PTFE Spacers	Liquid Gases & Cold Gases
	Functional EN1626 / -196°C		

## Standard

- ✓ Full Bore / Reduced Bore
- ✓ Manual / Actuated (Pneumatic & Electric)
- ✓ Large choice of ends (BW, SW, NPT, BSP, Schedule, Nipple, PN40 flange ...)
- ✓ Pipe line up to 6"
- ✓ CE1935 Food Contact Certified Plastics
- ✓ EN12300 degreased (<50mg/m<sup>2</sup> Hydrocarbon & Particles)

## FOR PERFORMANCE & RELIABILITY

Size Full bore	ΔP=1bar Kv (m <sup>3</sup> /h)
DN15	13
DN25	46
DN40	120
DN50	223
DN65	423
DN80	617
DN100	1154

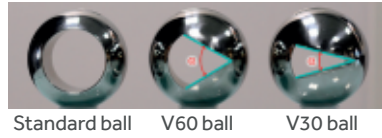
### Reliability

- ✓ Self Compressed Gland by Spring Washers
- ✓ TA LUFT "Class BH" (Helium) 2500 actuations
- ✓ Low & Constant Operating Torques

### Maintenance

- ✓ Spare Kits of Seals Permanent Stock
- ✓ Valve Body KIT
- ✓ Easy Disassembling (MTTR <5minutes)

**SLOW OPENING & FLOW MANAGEMENT – V BALL VALVE**



- ✓ LN2 Circuits,
- ✓ ...

**Tight in Close Position**  
**No Water Hammer**  
**Flow 2 times better than Globe Valve**

**FLUIDS DISTRIBUTION & SWITCHING – 3 WAYS VALVE 3VLH**



**DN08 to DN150**  
**Low Flow Restriction**

- ✓ Vaporizers Switch,
- ✓ Liquid Gases Storage & Lines,
- ✓ ...

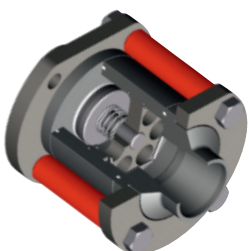
**SAFETY VALVES MANAGEMENT – DIVERTOR VALVE 3VTH**



**DN08 to DN150**  
**Low Flow Restriction**  
**Special Ends NPT**

- ✓ Cryogenic storage tanks,
- ✓ ...

**NON RETURN FLOW – CHECK VALVE CL4**



**DN08 to DN65**  
**PN80 All Design**  
**-196°C to +180°C**

- ✓ Gas injection line,
- ✓ ...



## ADR/RID 2017 – Transport Tanks, Trailers & Wagons



Valve Type	EN14432 Certification	Pi Marking for TPED (EU)
PS4 & PS4 PG	-50°C to +80°C - DN08 to DN100 - 2 & 3 Ways Non Refrigerated Liquefied Gases Class 2	YES
PY4	-50°C to +50°C - DN08 to DN100 - 2 & 3 Ways Non Refrigerated Liquefied Gases Class 2	YES

## Food & Drink – CE1935/2004 & FDA21CFR

Soda, food freezing, beer, ...



Valve Type	CE1935/2004 FOOD CONTACT	FDA21CFR
PS4 PG	-50°C to +121°C – Multiple Contacts All Food Gases (LCO <sub>2</sub> , CO <sub>2</sub> ...)	YES
PY4 PY4 CY	-200°C to +121°C – Multiple Contacts All Food Gases (LN <sub>2</sub> , N <sub>2</sub> ...)	NO

## Oxygen – Bronze Ball & Ends

Cryogenic Liquid & Gas

### PY4CY Bronze Ball & Ends

- Functional EN1626 & EN12266-1
- -196°C to +200°C
- PN25 to PN100



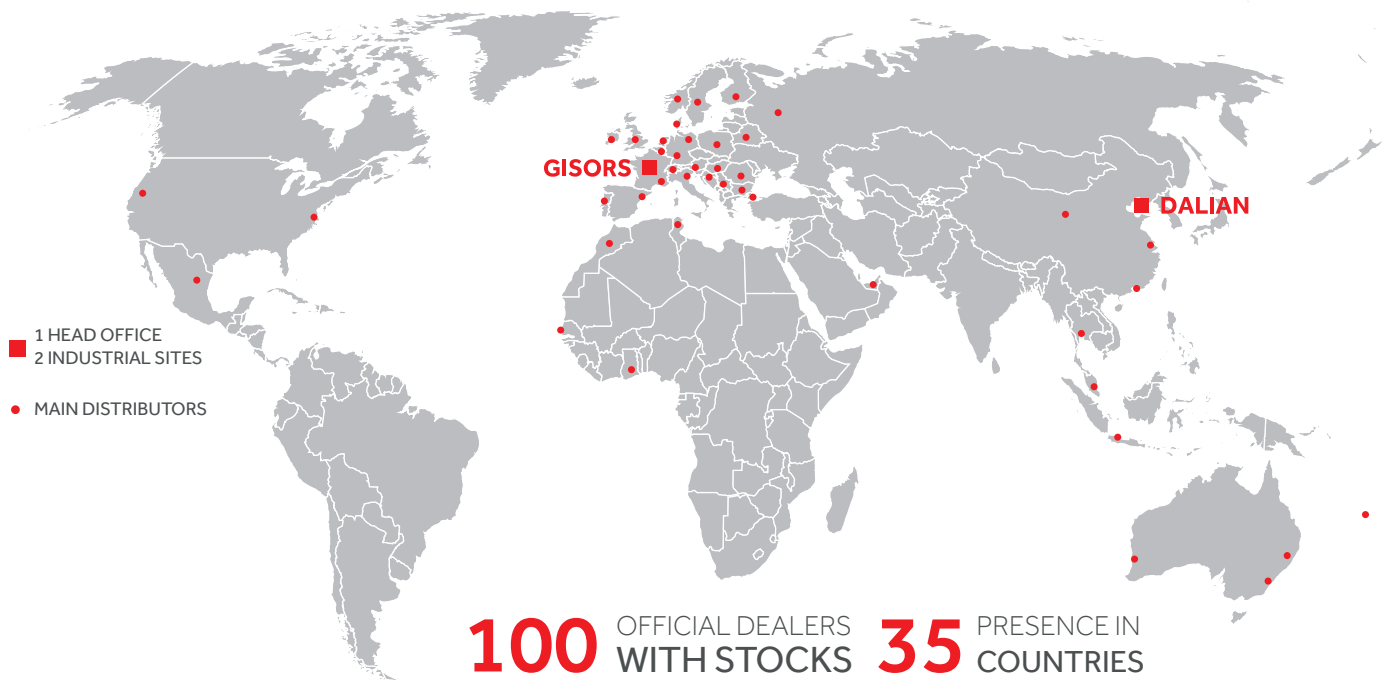
**HDPE Fluoride Free seals & seats on demand**

# Meca-inox

## BALL VALVES

HIGH QUALITY BALL VALVES

BORN IN FRANCE, WORLDWIDE AVAILABLE



Since 1967, MECA-INOX has manufactured ball valves and is a European leading signature for high quality ball valves dedicated to Chemistry, Pharma & Cosmetic, Cryogenic fluids, Food & Beverage and Industry with more than 3 million valves installed all over the world and 150 000 ball valves yearly production.

Expert in stainless steel and carbon steel ball valves technology, we have developed over the years a complete products offer internationally recognized for its reliability, performance, and flexibility of use. Combining high quality materials and our specific knowhow of design and manufacturing, our products meet the most stringent requirements.

From our industrial sites of Gisors (France) and Dalian (China), our teams can support you anywhere in the world. Our network of distributors provide an optimal availability of our valves and equipment for your international projects.

[meca-inox.com](http://meca-inox.com)

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A BRAND OF GROUP

Meca-inox  
SINCE 1955