# • DANUBE™ station

The **DANUBE™** high pressure station, specially designed for medical gas distribution, has a fully automatic switch-over system to provide a continuous supply to medical gas networks from cylinders or bundles of cylinders. This equipment is available in Single Stage Network (SSN) and Double Stage Network (DSN) and can be used as a main source or as a backup source for your gas network.
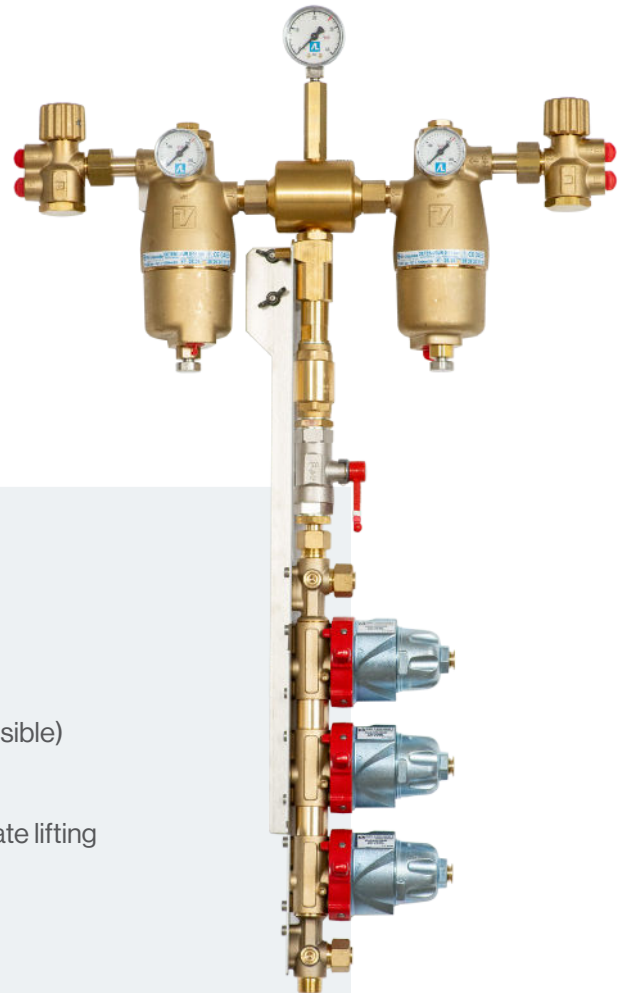
Optimized reliability
• 100% automatic pneumatic inversion
• Piston regulator with patented design
• Pressure stability optimized
• Immediate pressure readings (pressure gage always visible)

Simplified installation
• Two parts assembly using a sliding connector to facilitate lifting
• Only standard tools required for mounting

Proven product
• Marketed since 2012
• More than 5,000 stations installed

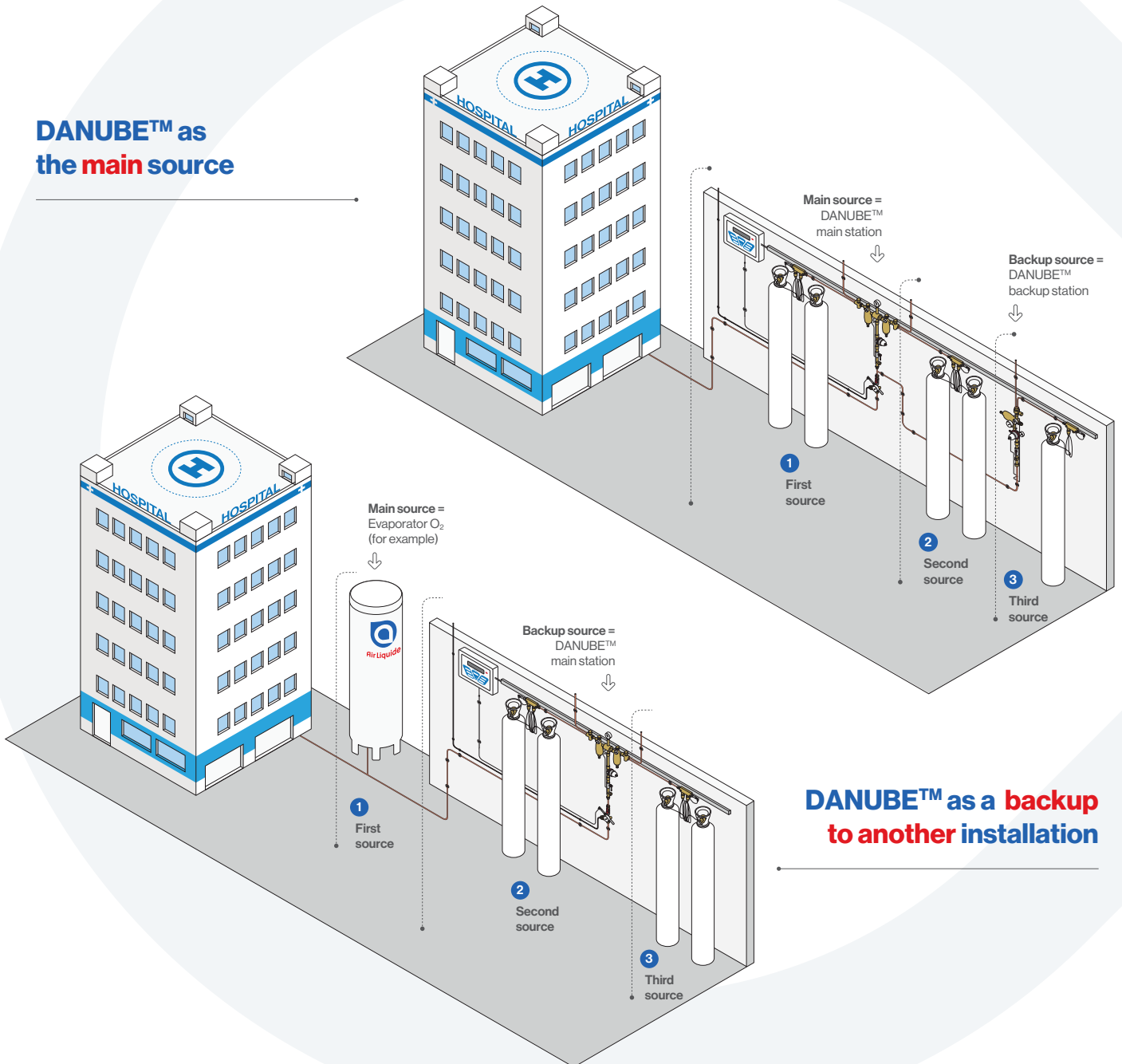|			
Available for	O₂, Air, N₂O, CO₂, N₂ (Not compatible with acetylene and corrosive gases)	**Inlet connection**	With double ring for 5 x 10 copper tube
Number of cylinders	1 to n cylinders	**Outlet connection**	With double ring for 12 x 14 copper tube
Outlet pressure	SSN unit: between 4 and 5 bar (preset at 5 bar)	**Dimensions**	SSN unit: Main: 456 x 772 (mm) Backup: 236 x 714 (mm)
	DSN unit: between 8 and 9 bar (preset 8.5 bar)		DSN unit: Main: 456 x 608 (mm) Backup: 236 x 714 (mm)
Inlet pressure	Up to 200 bar	**Weight of main station**	Between 13.5 kg and 16.7 kg depending on the reference
Flow rate	SSN = 40 and 80Nm³/h	**Weight of backup station**	Between 6.1 kg and 9.5 kg depending on the reference
	DSN = 80Nm³/h	**Class**	IIb class medical device
Standards	ISO 7396-1 and ISO 10524-2 standards	**Lifetime**	15 years
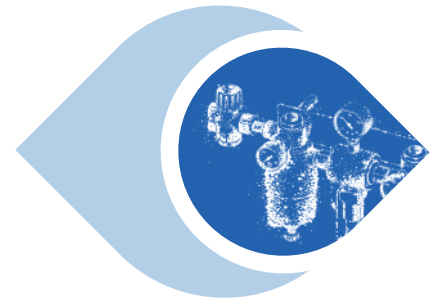
Types of installation

DANUBE™ can be used as the main source and can also be used as a backup to another installation.

DANUBE™ range also offers its own backup module in the event of supply shortage for the main DANUBE™ station.

DANUBE™ as the main source

Main source =
DANUBE™
main station

Backup source =
DANUBE™
backup station

1 First source

2 Second source

3 Third source

Main source =
Evaporator O_2
(for example)

Backup source =
DANUBE™
main station

1 First source

2 Second source

3 Third source

DANUBE™ as a backup to another installation

Technical sheet

Composition of the station

DANUBE™
Video to help you use the product

Installation and maintenance
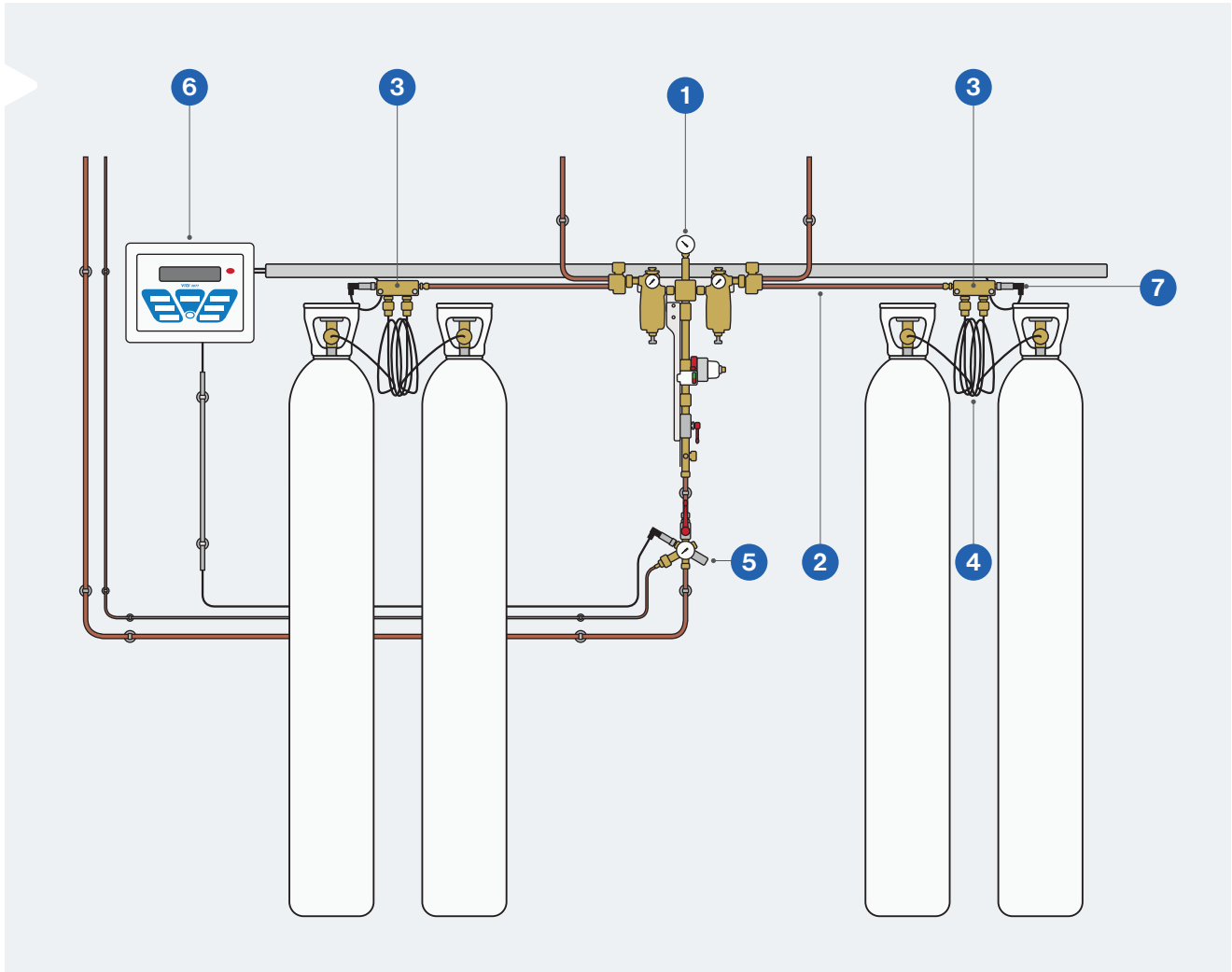
Main station	backup	Connection accessories	Safety accessories
DANUBE™ Single Stage Network	**DANUBE™** Single Stage Network backup	High pressure copper pipe degreased 2	Line valve assembly 5
		High pressure valve box 3	Sensor Connection Valve
DANUBE™ Double Stage Network 1	**DANUBE™** Single Stage Network backup	Pigtails for cylinders 4, and/or Cylinder bundle station	Rack for cylinder fixing on the wall
			Protective cover
			Safety and instructions poster
			VIGI™ alarm 6
			Pressure sensor 7

Technical sheet

Connection accessories

The valve box

The **valve** box connects the station to its gas sources.

It allows the connection either of **pigtails** for the use of individual cylinders or of HP hoses for the use of cylinder bundles.

High level of safety
- No risk of pigtail flapping when changing the cylinders thanks to its non-return valve
- Limited risks associated with adiabatic compression (flash fire) thanks to its "zero plastic" design

Type of connection	1/4" high pressure gas connection for 5 x 10 mm copper pipe	Weight	1 kg
Allowable pressure	Up to 200 bar	Materials	Brass
Wall mounting	spacers and screws supplied	Dimensions	67 mm (H) x 112 mm (L) x 26 mm (W)
Standard	ISO 7396-1	Lifetime	15 years

Pigtail

The **pigtails** are the final connectors of the high pressure station. They connect the valve boxes to the cylinders.
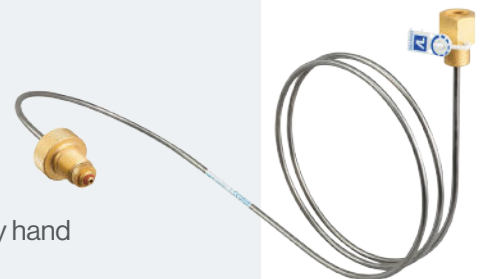
Strength
- Robust design with induction brazing
- Stainless steel

Simplified use
- Cylinders replaceable by simply screwing/unscrewing them by hand

Guaranteed safety
- Connected by hand, impossible to disconnect under pressure

Gases available	O_2, Air, N_2O, $CO_2 2$, N_2,	Weight	712.5 g
Working pressure	Up to 200 bar	Materials	316 L stainless steel tube, brass fittings
Inlet connection	NF and other standards	Lifetime	15 years
Class	Class IIa Medical Device	Standard	ISO 21969

The Bundle kit

To connect the **DANUBE™** station to cylinder bundles, it is possible to use a bundle station. The **bundle station** can include 1 or 2 valve boxes. The connection between the bundle station and the bundles is made using a high pressure hose and the connection to the gas station via a copper tube.

Strength
• Robust design
• Stainless steel
• Built-in and protected non-return valve box

Gases available	O_2, Air, N_2O, CO_2, N_2
Supply pressure	Up to 200 bar
Inlet connection	Bundle connection according to gas
Outlet connection	¼" high pressure gas connection for 5 x 10 mm copper pipe
Dimensions	750 mm (H) x 250 mm (L) x 250 mm (W)
Weight	5.8 kg
Materials	Stainless steel bundle station, brass fittings and valve box
Attachment to the floor	4 holes diameter 11 mm, spacing 190 mm x 190 mm
HP safety cable attachment	Two holes in the bundle station then attachment of the HP safety cable

Safety accessories

Line Valve Assembly (LVA)

The **LVA** secures the high pressure medical gas network. This all-in-one device isolates the high pressure gas station from the downstream network, evacuates excess pressure and enables a continuous supply of the network during maintenance. Combined with the pressure sensors, the **LVA** is used to monitor the network.

Performance
• Sealing provided by the ball valve

Simplified use
• Direct supply to the network with its built-in connector

Guaranteed safety
• Network monitoring via pressure sensors

Reliable
• Design validated by many years of feedback from the field

Gases available	O_2, Air, N_2O, CO_2, N_2	**Input/Output**	Connection with 1 ring for copper pipe ø 14 mm
Pressure gage class	1.6	**Dimensions**	260 mm (H) x 260 mm (L) x 80 mm (W)
Max flow per connector	NIST: 60 m³/h; NF: 80 m³/h	**Valve calibration**	SNP: Full opening at 10 bar/Closing above 7 bar
			DNP: Full opening at 12 bar/Closing above 9.5 bar
Passage diameter	712.5 g	**Materials**	Nickel-plated brass and brass
Sensor connection	M10 x 100	**Standard**	ISO 7396-1 standard
SNP connector standard	SNP: NIST DNP: NF	**Lifetime**	15 years
Weight	1.7 kg	**Class**	Medical device class IIa

Sensor Connection Valve (SCV)

The **sensor connection valve** is intended to be installed at the outlet of the high pressure station.

It complements the **line valve assembly** by allowing the connection of additional sensors and the analysis of the quality of medical gases.

References

Stations

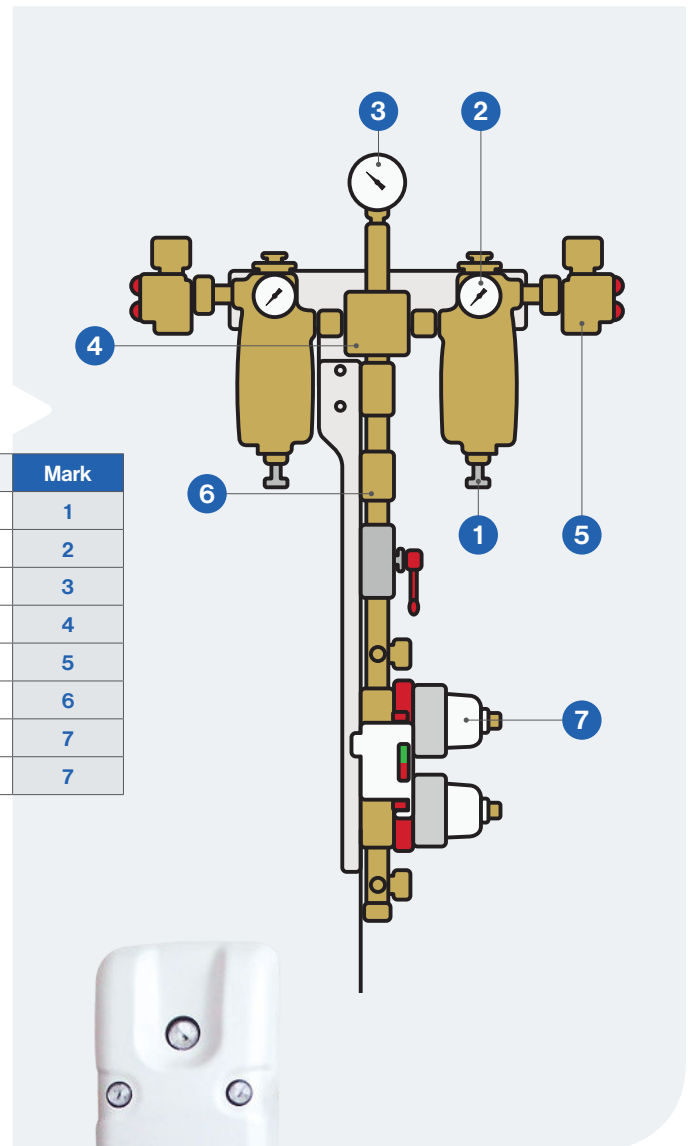| Description	Reference
DANUBE™ DSN 9b 80 m³/h	AD078000
DANUBE™ SSN 9b 80 m³/h	AD078200
DANUBE™ SSN 5b 40 m³/h	AD078500
DANUBE™ BACKUP DSN 9b 80 m³/h	AD078100
DANUBE™ BACKUP SSN 5b 80 m³/h	AD078300
DANUBE™ BACKUP SSN 9b 80 m³/h	AD078400
DANUBE™ BACKUP SSN 5b 40 m³/h	AD078600

Station spare parts

Description	Reference	Mark
HP regulator 100 m³/h Danube	CE061400	1
Manometer 0-315 bar ø 40 for HP regulator	CX071000	2
Manometer 0-40 bar ø 50 for switch-over	CX092800	3
Automatic swich-over	AG060700	4
Purge valve with sintered filter	AE071100	5
Non-return valve	AD070600	6
MP regulator module DSN	BB021500	7
MP regulator module SSN	BB026100	7

Description	Reference
Manometer 0-40 bar ø 50 for backup station	CX012600
Manometer 0-40 bar ø 40 for backup station	BY020700
Diabolo gasket for manometer (x20)	CX079200
5 years maintenance kit for HP regulator	CY008200
Filter kit for purge valve	CY009000
5 years maintenance kit for purge valve	CY008100
5 years maintenance kit for MP module (x10)	CY008800

Covers

Description	Reference
DANUBE™ protective cover for main station	AD078700
DANUBE™ protective cover for backup station	AD078800

Connection accessories

Valve box

Description	Reference
Valve box HP	AC101100
Valve box HP O_2 ES/IT	AC106100
Valve box HP AIR ES/IT	AC102400
Valve box HP N_2O ES/IT	AC102500
Valve box HP N_2 CO_2 ES	AC102600
Valve box HP CO_2 IT	AC106000
Valve box HP N_2 IT	AC106700

Spare parts

Description	Reference	Mark
Copper gasket 11 x 6 x 2 (x 10)	YJ101600	3
Plug H19 1/4" gas	CX086301	4

Valve box accessories

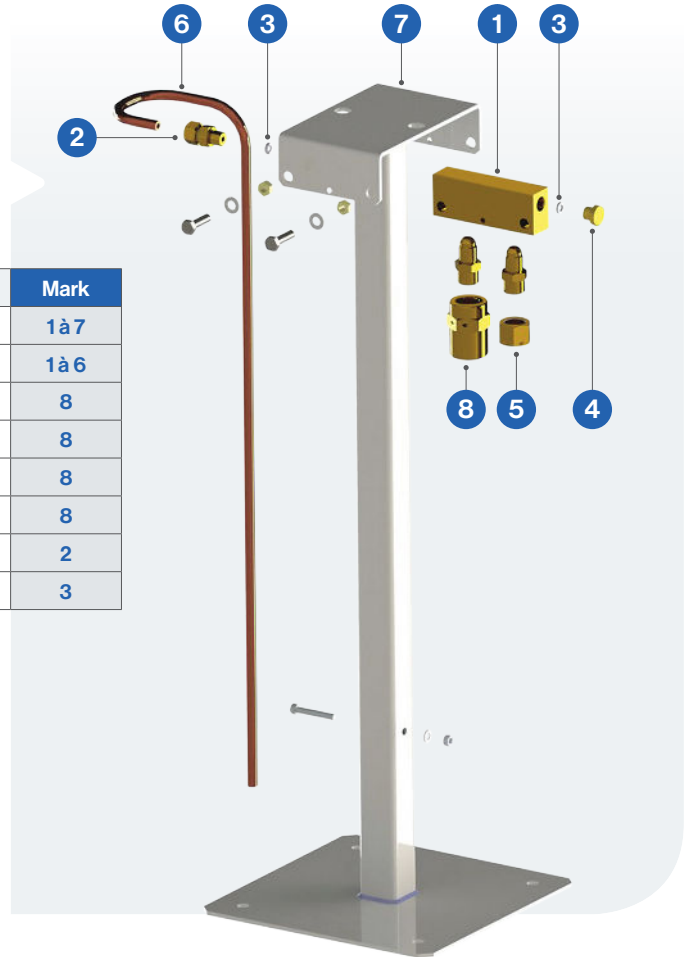| Description	Reference	Mark
Plug M20 x 1.5	AC101600	1
Plug M20 x 1.5 Air for Spain/Italy	AC105100	1
Plug M20 x 1.5 N_2O for Spain/Italy	AC105200	1
Plug M20 x 1.5 N_2 - CO_2 for Spain	AC105300	1
HP fitting 5 x 10 1/4" gas in brass (x 5)	AE070300	2
HP fitting 6 x 8 1/4" gas stainless steel (x 5)	AE070500	2

Composition of a complete valve box:
- 2 fixing spacers
- 2 connectors for 5 x 10 copper pipe for connection to the high pressure station and to another valve box
- 1 outlet plug for installation at the end of the manifold

Other connection accessories

Description	Reference
HP copper pipe 5 x 10, 2 meters long	YD021100
HP copper pipe 5 x 10, 1 meter long	YD021200
Union fitting Ermeto 5 x 10	AC052000
Tee fitting Ermeto 5 x 10	AC052300

Bundle station

Description	Reference	Mark
Single-bundle station	AB090700	1 à 7
Second-bundle station	AB092000	1 à 6
Connector kit O_2 Inlet fitting M35 x 28	AB090900	8
Connector kit Air Inlet fitting M30 x 1.758	AB091000	8
Connector kit N_2O Inlet fitting M41 x 28	AB091100	8
Connector kit N_2 et CO_2 Inlet fitting M38 x 28	AB091200	8
HP fitting 5 x 10 1/4" gas in brass (x 5)	AE070300	2
Copper gasket 11 x 6 x 2 (x10)	YJ101600	3

Pigtails

Description	Reference	Raccord d'entrée
Pigtails O_2 NF X2	AC107000	NF type F
Pigtails AIR NF X2	AC107100	NF type D
Pigtails N_2O NF X2	AC107200	NF type G
Pigtails N_2 CO_2 NF X2	AC107300	NF type C
Pigtails O_2 DIN X2	AC108000	DIN type 9
Pigtails AIR DIN X2	AC108100	DIN type 13
Pigtails N_2O DIN X2	AC108200	DIN type 11
Pigtails CO_2 DIN X2	AC108400	DIN type 6
Pigtails N_2 DIN X2	AC108300	DIN type 10
Pigtails O_2 IT X2	AC104600	Italy type 2
Pigtails AIR IT X2	AC104300	Italy type 6
Pigtails N_2O IT X2	AC104400	Italy type 9
Pigtails CO_2 IT X2	AC106600	Italy type 10
Pigtails N_2 IT X2	AC104500	Italy type 10
Pigtails O_2 NF X2	AC107500	Spain type F
Pigtails AIR ES/IT X2	AC107600	Spain type B
Pigtails N_2O ES X2	AC107700	Spain type U
Pigtails N_2 CO_2 ES X2	AC107800	Spain type C

Pigtails are supplied in 2: one pigtail for connecting the cylinder on the left and one pigtail for connecting the cylinder on the right. The length of the pigtails is 3 m for Italian pigtails and 2m for the other standard pigtails.

Accessories Pigtails

Description	Reference	Gas Cylinder
Thoric gasket R5 silicone (x10)	YJ040600	NF All gas
Thoric gasket EP851 10.5 x 2.7 (x10)	YJ102500	Valve box side
Thoric gasket R10 SILICONE (x 10)	YJ069000	DIN O_2 type 9
Nylon joint 17.5 X 11 X 2 (x 10)	YJ105400	Italy O_2 type 2
Thoric gasket 9.19 x 2.62 (x 10)	YJ086500	Spain Air type B
Thoric gasket R7 SILICONE (x 10)	YJ067800	Spain N_2O type U

Safety accessories

Line Valve Assembly

Description	Reference
VSP SSN NIST O_2	BA062100
VSP SSN NIST Air	BA062200
VSP SSN NIST N_2O	BA062300
VSP SSN NIST CO_2	BA062500
VSP SSN NIST N_2	BA062400
VSP DSN NF O_2	BA063100
VSP DSN NF Air	BA063200
VSP DSN NF N_2O	BA063300
VSP DSN NF CO_2	BA063500
VSP DSN NF N_2	BA063400
Sensor connection assembly	BA070000
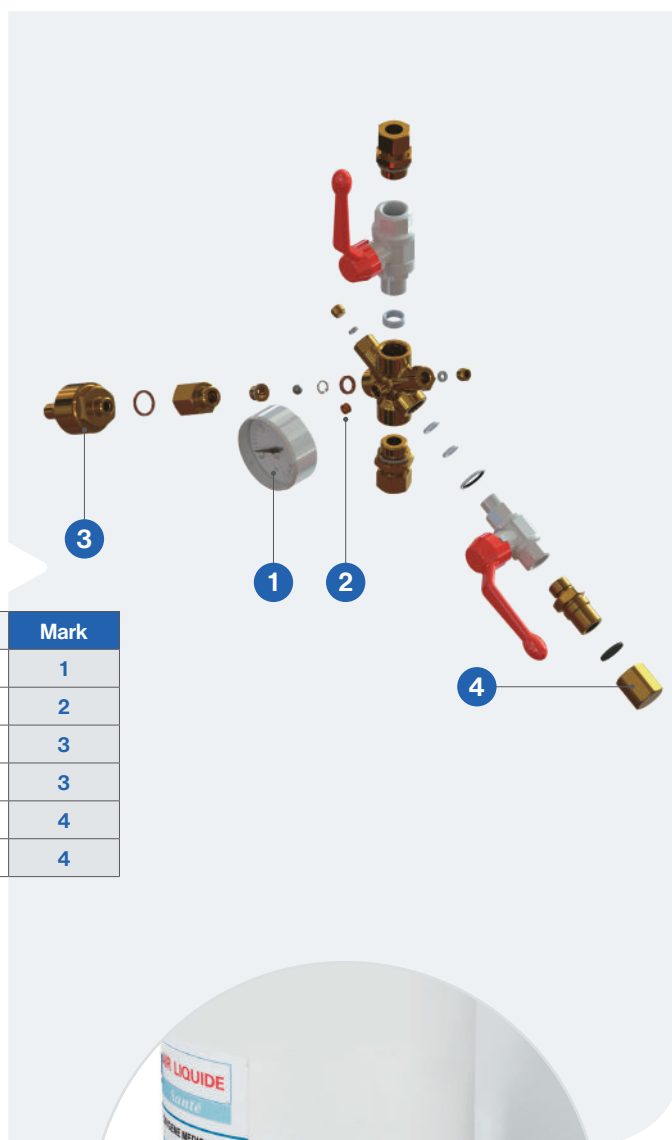
Spare parts

Description	Reference	Mark
Manometer 0-16 bar / M10 x 100	BY005900	1
Diabolo gasket for manometer (x 20)	CX079200	2
Safety valve 10 bar for VSP SSN	AH011000	3
Safety valve 12 bar for VSP DSN	AH011200	3
Cap for NIST inlet with flat gasket	BY017000	4
Plug H19 1/4" gas	CX086301	4

Other accessories

Description	Reference
Cylinder rack in stainless steel	AC024100
Safety label for HP gas-station	YL003200
Safety label for N_2O specificity	YL003000
Label "O_2" (x10)	YF254078
Label "AIR" (x10)	YF254079
Label "CO_2" (x10)	YF254080
Label "N_2O" (x10)	YF254081
Label "N_2" (x10)	YF254083
Seal in white plastic with AL logo 185 mm (x10)	YA011100