DRASS
SCUBA

Air Dive Chambers

For the most part, scuba diving is a relatively safe activity providing you have a healthy respect for the laws of physics. Basically, it all comes down to pressure!

As open water divers, you learn about one of the biggest scuba diving risks: decompression sickness (DCS) or decompression illness (DSI), and is often referred to as ‘the bends’ or ‘divers disease’.

Decompression sickness is caused because the nitrogen absorbed from breathing compressed air underwater remains in the body’s fatty tissues and blood due to the ambient water pressure. When the pressure around the diver decreases, for example on ascent, the nitrogen leaches out of the tissues and back into the blood stream. However, if you reduce the pressure too quickly, the nitrogen starts forming bubbles in both the tissues and bloodstream rather than through exhalation, causing decompression sickness.

All forms of decompression sickness, no matter how severe, should be treated in a hyperbaric chamber. Early HBO (hyperbaric oxygen treatment) in divers with DCS is strongly associated with a better outcome. It seeks to help a diver with decompression sickness rid his body of the excess nitrogen by recompressing him, which is to say placing him under increased pressure again, and then reducing that pressure under carefully controlled circumstances. Giving the patient immediate medical attention along with a high oxygen percentage (up to 100%) is very often lifesaving. It is therefore essential to have easy access to an on-site hyperbaric chamber.

The therapeutic principle behind hyperbaric oxygen therapy lies in its ability to drastically increase partial pressure of oxygen in the tissues of the body. In other words, cells repair themselves more efficiently when exposed to a higher oxygen content via the blood. The hyperbaric chamber has different uses but when it comes to diving there are two main hyperbaric treatments:

- Decompression Chamber: A hyperbaric chamber used by surface-supplied (typically commercial) divers to make their decompression stops.
- Recompression Chamber: A hyperbaric chamber used to treat or prevent commercial or recreational divers suffering from decompression sickness.

A hyperbaric chamber is a container big enough to accommodate people while also holding gases at a specific pressure. The selected breathing mix is then delivered whilst the internal pressure of the chamber is increased.
Chambers come in various sizes, accommodating from one to multiple patients and have attendant staff within the chamber. The other significant factor when identifying different types of chambers is the pressure rating.

The following diagram itemizes the hyperbaric chambers within Drass’s scuba line of products. Each chamber is identified by pressure rating and number of occupants:


DRASSUNO


OXISHOT


OVETTO


DUETTO


FAIRDIVE
1600 / 1850


OXYSAFE


OXY SPACE

RATING
bar

7

6

5

4

3

2

1

DEFENCE
MEDICAL

COMMERCIAL &
RICREATIONL DIVING

SCUBA

DRASSUNO
RATING 7 bar
INNER Ø 650 mm

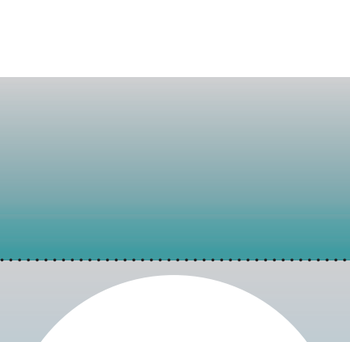
Class Certified

OVETTO
RATING 5 bar
INNER Ø 1300 mm

DUETTO
RATING 5 bar
INNER Ø 1300 mm

FAIRDIVE 1600 / 1850
RATING 5 bar
INNER Ø 1600 mm
INNER Ø 1850 mm

Class Certified
IMCA Compliant



OXISHOT
RATING 2 bar
INNER Ø 1300 mm

OXY SPACE
RATING 5 bar
INNER Ø 2000 mm

Class Certified
IMCA Compliant

OXYSAFE
RATING 6 bar
INNER Ø 1800 mm

Class Certified

1 2 2+1 3 3 +1 3+2 4+2

BASE LINE OCCUPANCY

MAXIMUM OCCUPANCY

DRASS SCUBA

85OA-01-02-00-00-00

STANDARD OCCUPANCY

DRASSUNO

One-man portable hyperbaic chamber

DRASS DRASSUNO is a one-man portable hyperbaric chamber for commercial, military, rescue, or scuba diving. Built with an internal diameter of 650 mm, DRASSUNO is designed to support shallow water diving operations in areas, such as onboard vessels, where emergency access to a fixed recompression chamber is not available. DRASSUNO can accommodate and medically treat a diver, permitting an immediate recompression on site at 70 msw in the event of a diving accident.

This cylindrical, single-lock chamber is outfitted with a removable stretcher, a manhole with a toothed flange suitable for coupling with STANAG flange, a door and an interlocking mechanism.

Main characteristics

Working pressure ..... 7 bar (8 bar absolute) = 70 msw	Lock volume ..... ~0,74 m^3
Inner diameter ..... 650 mm	Medical lock dimensions..... W125 mm, L215 mm
Total length..... ~2380 mm	Number of windows 2
Maximum width..... ~1010 mm	Windows diameter ..... 160 mm (127 mm clear)
Manway ..... ~650 mm	Total weight ..... ~670 kg

The control panel provides these main control tools:

- Pressurization/decompression
- Divers breathing through BIBS
- Depth monitoring
- Internal atmosphere gas analysis

DRASSUNO has a trolley platform for horizontal and vertical movement, and is supplied with two (2) cylinders, one oxygen and one air, of 14 liters/200 bar. The cylinders are installed on the chamber and ensure the oxygen supply of the patient during transportation.

Optional class certification (DNVGL, LR, KR etc) is available.

PN	Description
85OA-01-02-00-00-00	**DRASSUNO One-Man Transportable Chamber**

DRASS SCUBA

74SB-01-01-01-00-00

STANDARD OCCUPANCY

OXISHOT

Single-lock hyperbaric chamber

DRASS OXYSHOT is a single-lock hyperbaric chamber outfitted for two (2) persons: one patient on a bed plus one attendant on a foldable seat.
Built with an internal diameter of 1300 mm, OXYSHOT is designed to accommodate and medically treat scuba divers, permitting an immediate recompression on site at 18 msw in the event of a diving accident.
OXYSHOT is equipped with all items required for standard operation and a complete set of optional accessories.

Main characteristics

Working pressure .....1.8 bar (2.8 bar absolute) = 18 msw
Inner diameter .....1300 mm
Total length.....approx. 2300 mm
Lock volume ..... 2.7 m^3
Entry lock manway .....700 mm

Number of windows..... 1 + 1
(plus 1 spare for optional food lock)
Windows diameter..... 160 mm (127 mm clear)
Total weight .....~1450 kg

The control panel is connected to the flat end and provides the following main control tools:

- Pressurization/decompression
- Divers breathing through BIBS
- Depth monitoring
- Internal atmosphere gas analysis

OXYSHOT can be customized with a variety of options available on client request, including the installation of the Easy Automation System which enables preset depth profiles (non-modifiable by user).

The pressure vessel is designed and built according to EN 13445. A PED certification is provided.

OXYSHOT can be supplied with an additional Spherical Entry Lock to permit the entry of a doctor for the provision of medical assistance and monitoring.

PN	Description
74SB-01-01-01-00-00	**OXYSHOT Main Lock**
74SB-01-01-01-01-00	**Spherical Entry Lock**

DRASS SCUBA

74SB-02-01-01-00-00

STANDARD OCCUPANCY

OVETTO

Twin-lock portable hyperbaric chamber

DRASS OVETTO is a cylindrical twin lock hyperbaric chamber designed for two (2) persons in the main lock: one patient on a bed plus one attendant on a foldable seat. The entry lock chamber allows the locking of one (1) person and transportation on main lock chamber. It comes with a foldable seat enabling medical assistance and monitoring of the patient.

Built with an internal diameter of 1300mm, OVETTO is equipped with all items required for standard operation as well as a complete set of optional accessories.

OVETTO is specifically designed to accommodate and medically treat surface-supplied divers, permitting an immediate recompression on site at 50 msw in the event of a diving accident.

Main characteristics

Working pressure	5 bar (6 bar absolute) = 50 msw
Total weight	~1300 kg
Inner diameter	1300 mm
Total length	approx. 3300 mm
Main lock volume	2.5 m^3
Main lock manway	700 mm
Entry lock volume	1.23 m^3
Entry lock manway	700 mm
Lock manway	ND 700 mm
Number of windows	2 + 1 (1 per lock plus 1 spare for use as a possible food lock)
Windows diameter	160 mm (127 mm clear)

The control panel monitors:

- Pressurization/decompression
- Diver breathing through BIBS
- Depth monitoring
- Internal atmosphere gas analysis

OVETTO is designed to accommodate various options available on client request, including the installation of the Easy Automation System which enables preset depth profiles (non-modifiable by user).

The pressure vessel is designed and built according to EN 13445. A PED certification is provided.

PN	Description
74SB-02-01-01-00-00	**OVETTO**

DRASS SCUBA

84DD-01-01-01-00-00

STANDARD OCCUPANCY

DUETTO

Dual-lock portable hyperbaric chamber

DRASS DUETTO is a versatile, dual-lock portable hyperbaric chamber with a main lock chamber and an entry lock chamber. The main lock chamber accommodates two (2) persons: one patient on a bed plus one attendant on a foldable seat. The compact entry lock chamber allows the locking of one (1) person and transportation on main lock chamber. It comes with a foldable seat enabling medical assistance and monitoring of the patient.
Built with an internal diameter of 1300mm, DUETTO is equipped with all items required for standard operation and a complete set of optional accessories.
DUETTO is specifically designed to accommodate and medically treat surface-supplied divers, permitting an immediate recompression on site at 50 msw in the event of a diving accident.

Main characteristics

Working pressure .....5 bar (6 bar absolute) = 50 msw
Total weight .....~1450 kg
Inner diameter .....1300 mm
Main lock length.....approx. 2470 mm
Entry lock length.....approx. 1000 mm
Main lock volume..... 2.9 m^3
Entry lock volume ..... 1.15 m^3

Entry lock manway ..... 700 mm
Main lock manway ..... 700 mm
Medical lock dimensions..... W125 mm, L215 mm
Number of windows ..... 2 +1
(1 per lock plus 1 spare for use as a possible food lock)

Windows diameter ..... 160 mm (127 mm clear)

The control panels (one for each lock) provide the following main control tools:

- Pressurization/decompression
- Diver breathing through BIBS
- Depth monitoring
- Internal atmosphere gas analysis

DUETTO is designed to accommodate various options available on client request including the installation of the Easy Automation System, enabling preset depth profiles (non-modifiable by user).

The pressure vessel is designed and built according to EN 13445. A PED certification is provided.

PN	Description
84DD-01-01-01-00-00	DUETTO Main Lock with male STANAG flange
84DD-01-01-01-01-00	DUETTO Entry Lock with female STANAG flange

DRASS SCUBA

75SF-01-01-03-05-00

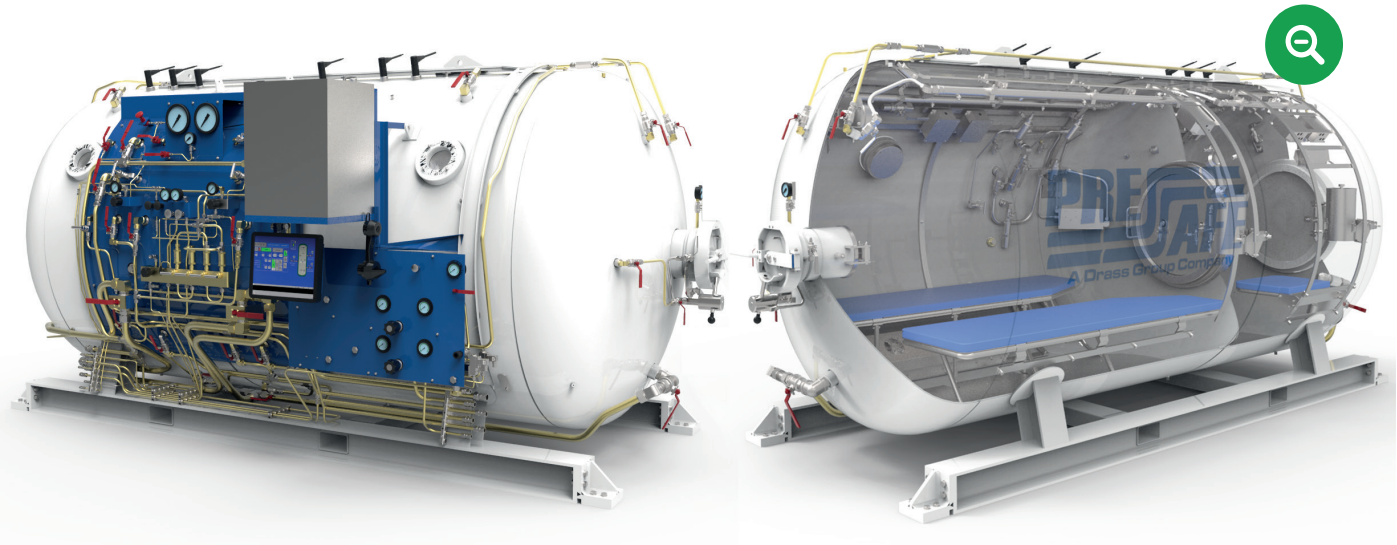
STANDARD OCCUPANCY

MAXIMUM OCCUPANCY

FAIRDIVE

Twin-lock hyperbaric chamber

DRASS FAIRDIVE is a cylindrical twin-lock hyperbaric chamber. The main lock chamber accommodates a maximum of six (6) seated divers, or two (2) divers on beds. The entry lock chamber comes equipped with two foldable seats accommodating up to two (2) persons to medically assist and monitor the patient(s).
Built with an internal diameter of 1600 mm (or 1850 mm as optional), FAIRDIVE comes equipped with all items required for standard operation as well as a complete set of optional accessories.
FAIRDIVE is specifically designed to accommodate and medically treat surface-supplied divers, permitting an immediate recompression on site at 50 msw in the event of a diving accident.



Main characteristics

Working pressure	5 bar (6 bar absolute) = 50 msw
Inner diameter	1600 mm (1850 mm optional)
Total weight	~3900 kg
Total length	approx. 4200 mm
Main lock volume	4.9 m³
Entry lock volume	2.3 m³
Entry lock manway	700 mm
Main lock manway	700 mm
Lock manway	700 mm
Medical lock dimensions	W220 mm, L310 mm
Number of windows	2
Windows diameter	160 mm (127 mm clear)

The control panel provides the main control tools:

- Pressurization/decompression
- Diver breathing through BIBS
- Depth monitoring
- Internal atmosphere gas analysis

FAIRDIVE is designed to accommodate various options available on client request including the installation of the Easy Automation System, enabling preset depth profiles (non-modifiable by user).

IMCA compliance and Class (RINA) certification are optional. The pressure vessel is designed and built according to EN 13445. A PED certification is provided

PN	Description
75SF-01-01-03-05-00	FAIRDIVE COC 1600
75SF-01-01-02-14-00	FAIRDIVE COC 1850
75SF-01-01-03-01-00	FAIRDIVE IMCA 1600
75SF-01-01-02-13-00	FAIRDIVE IMCA 1850
75SF-01-01-03-04-00	FAIRDIVE IMCA+RINA 1600
75SF-01-01-02-10-00	FAIRDIVE IMCA+RINA 1850

DRASS SCUBA

74SB-03-01-01-00-00

STANDARD OCCUPANCY

MAXIMUM OCCUPANCY

OXYSAFE

Twin-lock hyperbaric chamber

DRASS OXYSAFE is a twin-lock hyperbaric chamber with flat ends and two (2) compartments: a main chamber and an entrance lock. The main lock chamber accommodates a maximum of six (6) seated divers, or two (2) divers on beds. The entry lock chamber comes equipped with two foldable seats accommodating up to two (2) persons to medically assist and monitor the patient(s).

Built with an internal diameter of 1800 mm, OXYSAFE comes equipped with all items required for full functionality, best ergonomics and easy control.

OXYSAFE is specifically designed to accommodate and medically treat divers, permitting an immediate recompression on site at 50 msw in the event of a diving accident.

Main characteristics

Working pressure	5 bar (6 bar absolute) = 50 msw
Inner diameter	~1800 mm
Entry lock length	~1190 mm
Entry lock volume	~3 m³
Main lock length	~2000 mm
Main lock volume	~5 m³
Total length	~3400-3500 mm
Doors minimum dimension	rectangular, 600x1500 mm
Number of windows	2
Windows diameter	160 mm (127 mm clear)
Medical Lock dimensions	W220 mm, L310 mm

The control panel provides these main control tools:

- Pressurization/decompression
- Divers breathing through BIBS
- Depth monitoring
- Internal atmosphere gas analysis

IMCA compliance and Class certification are optional. The pressure vessel is designed and built according to EN 13445. A PED certification is provided.

PN	Description
74SB-03-01-01-00-00	**OXYSAFE**

DRASS SCUBA

75SF-01-01-01-01-00

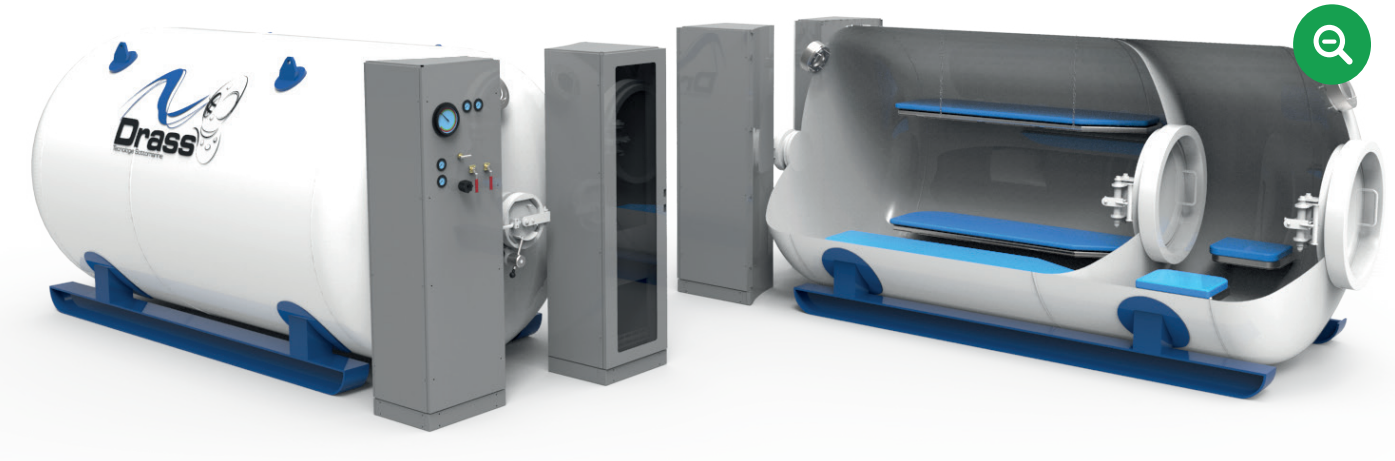
STANDARD OCCUPANCY

MAXIMUM OCCUPANCY

OXYSPACE

Twin-lock hyperbaric chamber

DRASS OXYSPACE is a cylindrical twin-lock hyperbaric chamber. The main lock chamber accommodates a maximum of six (6) seated divers, or two (2) divers on beds. The entry lock chamber comes equipped with two foldable seats accommodating up to two (2) persons to medically assist and monitor the patient(s).
Built with an internal diameter of 2000 mm, OXYSPACE comes equipped with all items required for standard operation as well as a complete set of optional accessories.
OXYSPACE is specifically designed to accommodate and medically treat surface-supplied divers, permitting an immediate recompression on site at 50 msw in the event of a diving accident.



Main characteristics

Working pressure	6 bar (7 bar absolute) = 60 msw
Inner diameter	2000 mm
Total length	~4200 mm
Main lock volume	8,1 m^3
Entry lock volume	3,6 m^3
Entry lock manway	800 mm
Main lock manway	800 mm
Lock manway	800 mm
Medical lock dimensions	W220 mm, L310 mm
Number of windows	2
Windows diameter	160 mm (127 mm clear)
Total weight	~5830 kg

The control panel provides the main control tools:

- Pressurization/decompression
- Divers breathing through BIBS
- Depth monitoring
- Internal atmosphere gas analysis
- CCTV system
- Fire Fighting system

Additionally, OXYSPACE is:

- Compliant with DNV Rules
- Installed with the best ergonomics for divers
- Equipped with primary communication system, plus back up communication system

PN	Description
74SB-03-01-01-00-00	**OXYSPACE**