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PETRA Hyperbaric Chamber

MONOPLACE

2.0 ATA – 2.4 ATA PRESSURE LEVEL



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HPOTECH MEDİKAL VE TEKNİK ÇÖZÜMLER SANAYİ VE TİCARET AŞ
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PETRA is the hyperbaric chamber designed for total visibility

The priority with PETRA is to provide total visibility during hyperbaric oxygen therapy (HBOT). This focus on user experience creates a safe and serene environment with total connection to the outside to enjoy HBOT on the inside.



The total visibility concept



Enjoy the session from the inside.

The PETRA hyperbaric chamber features an ingenious retractable front acrylic panel (30 mm thick) to facilitate a wide accessway inside the chamber for people with mobility challenges. The retractable system works with a pneumatic motor for smooth on-axis window movement.



Stay connected to the outside.

The retractable window opening provides the solution to design the chamber with 3 large windows that connect the user to the outside.

This helps eliminate the sense of confinement and claustrophobia during HBOT sessions.



Wireless control, smart therapy.

Start your HBOT session with a tap.

Forget fixed control panels and operate your chamber from a tablet or smartphone via a secure wireless connection.

Personalize your hyperbaric oxygen therapy with intuitive software designed for ease and flexibility. Adjust session settings, monitor progress, and enjoy breathing pure oxygen.

→ CENTRALIZED SOFTWARE CONTROL

The user-friendly interface allows the customization of specific HBOT protocols with accurate metrics and simple controls. Our automation software provides all the instrumentation for chamber operation. This includes the gas control systems for HBOT sessions and the communications system.





Tracking session progress and user data in real-time

Sensors track essential parameters during HBOT sessions, enabling real-time monitoring and adjustments. The system gathers and displays real-time session information, including pressure, oxygen, temperature, humidity, patient vitals, and treatment duration.

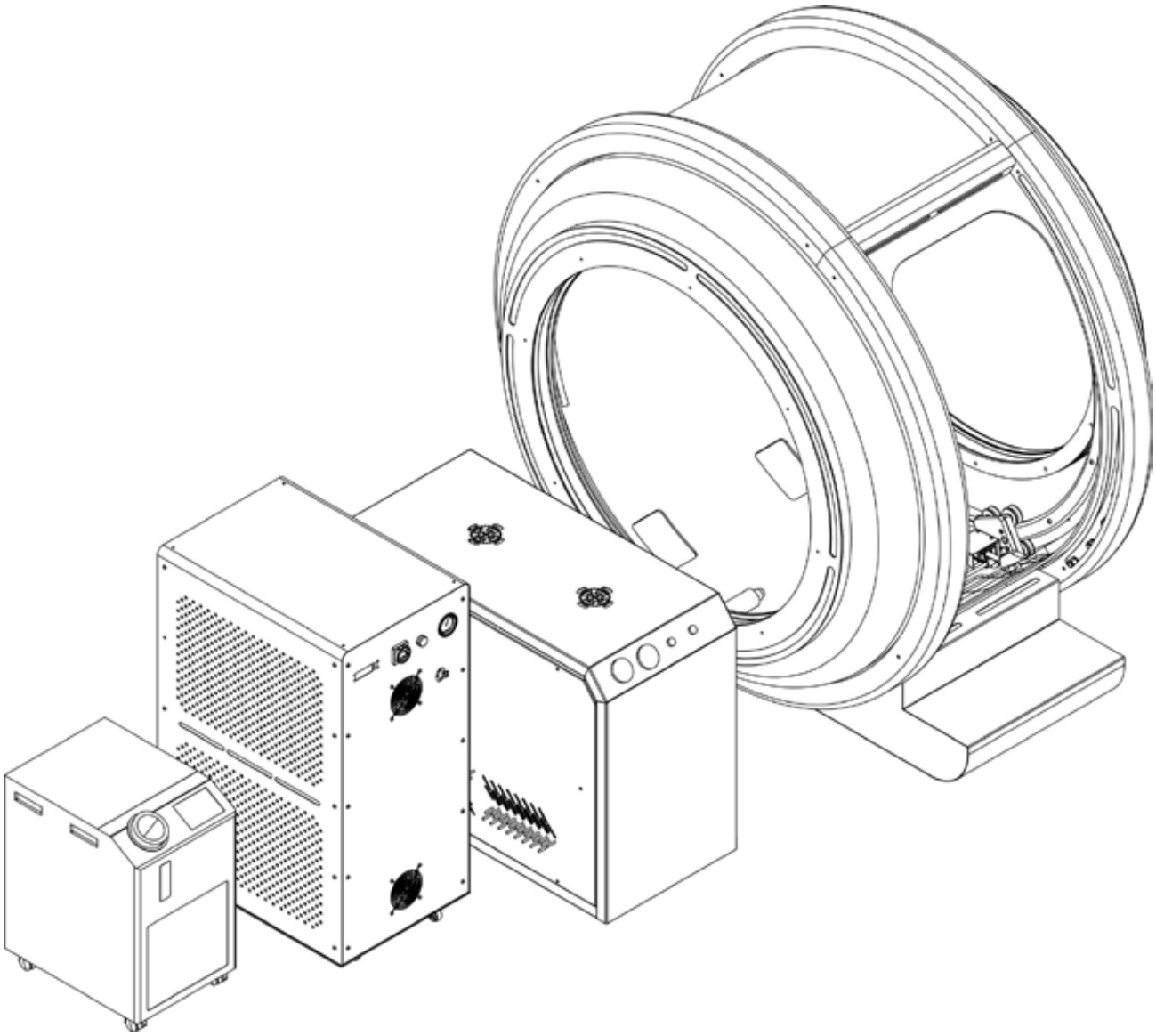
Session status management

The protocols of each HBOT session are recorded in the data logger for future reference. This enables healthcare providers to observe treatment response, adjust protocols if necessary, and assess the overall progress of the therapy.

Advanced automation system

The chamber is fully automated via an advanced Automation System. Automation streamlines chamber operations and reduces manual intervention. The system consists of automation software, industrial PLC, sensors, valves, and a PC. The PLC is the central control unit, monitoring and controlling the connected devices.

→ THE HYPERBARIC CHAMBER SYSTEM

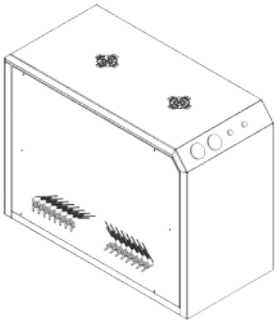


→ SYSTEM COMPONENTS



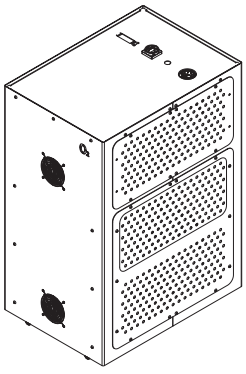
→ HYPERBARIC CHAMBER 1 SEAT

The Hyperbaric Chamber is a capsule in which users breathe pure oxygen under controlled pressure levels more up to more than double the atmospheric pressure (2.0 ATA → 2.4 ATA).



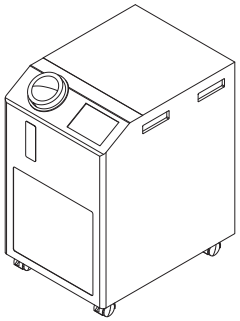
→ AIR COMPRESSOR 1 UNIT

The Hyperbaric chamber is pressurized with breathable air from the Air Compressor. Pressure + Oxygen are the two most important factors in HBOT.



→ OXYGEN CONCENTRATOR 1 UNIT

During treatment, the user breathes high-purity oxygen supplied using the Oxygen Concentrators (6.0 ATA working pressure), directly into the BIBS (Built-In Breathing system). The number of Oxygen Concentrators is equal to the number of patients inside.



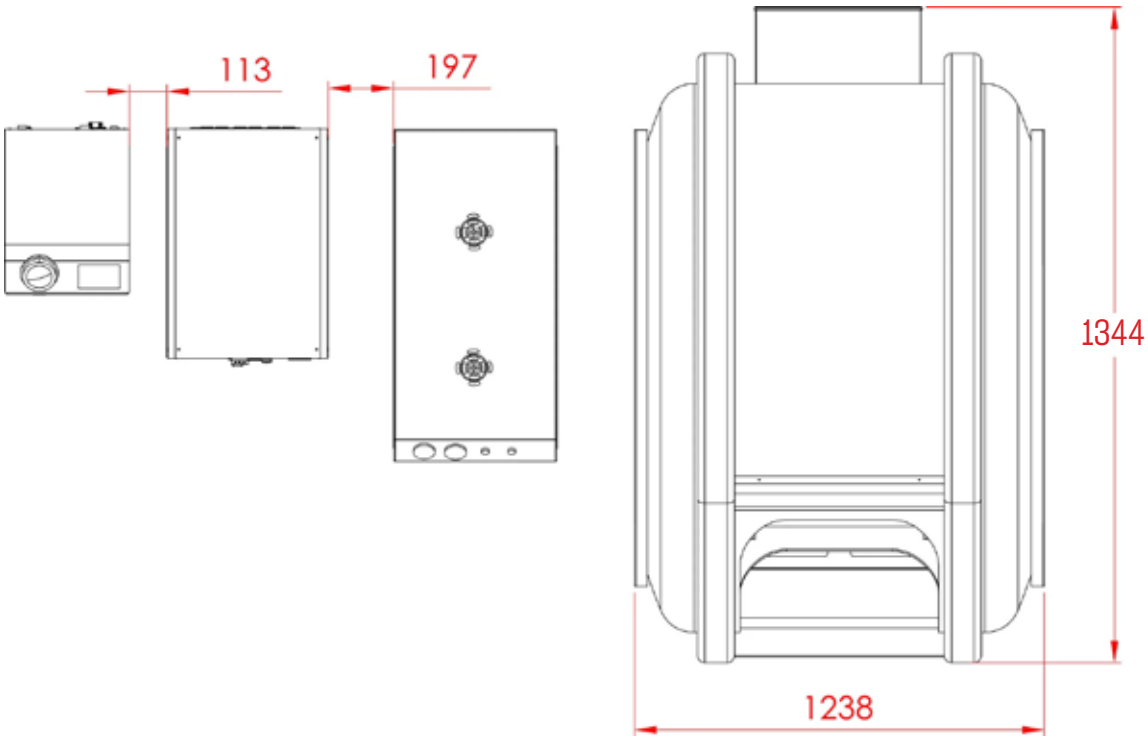
→ AIR COOLER 1 UNIT

The system is also connected to an Air Cooler to keep the air fresh inside the chamber and the temperature under control.

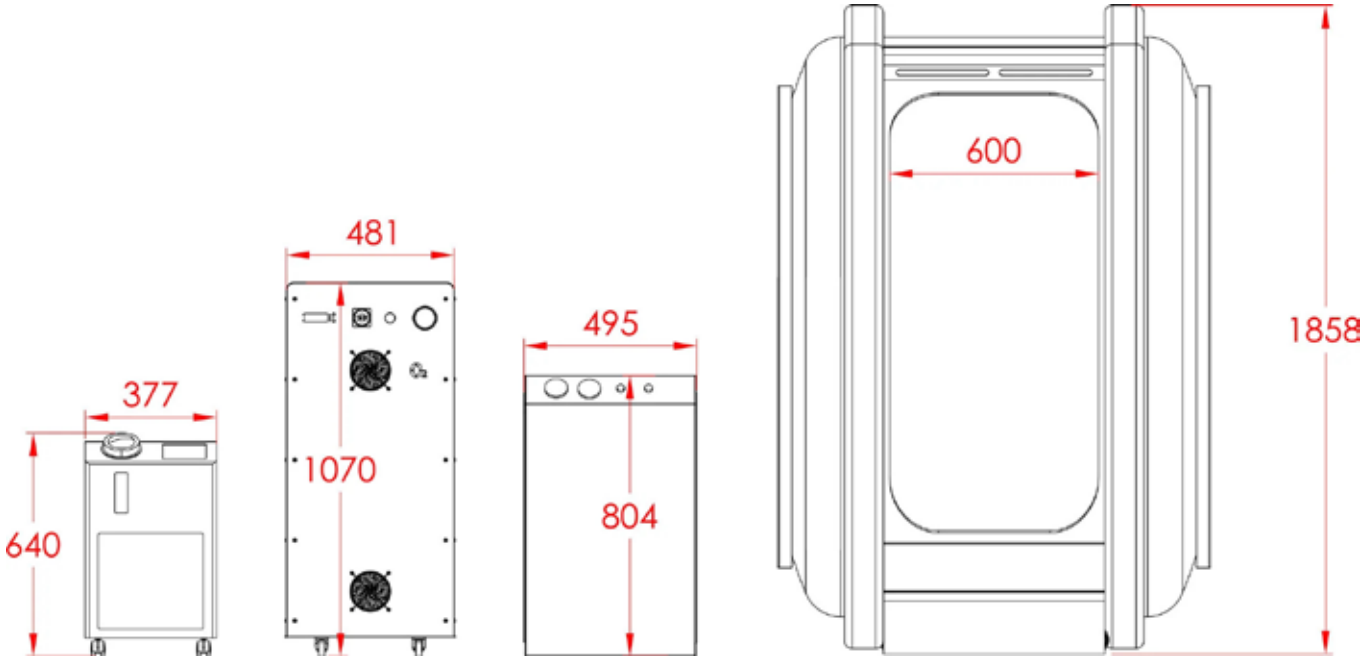
→ SYSTEM COMPONENTS

HYPERBARIC CHAMBER

front view



top view



CAPACITY

1 Person (1 seat)

MATERIAL

Aero-space aluminium

SHAPE AND DESIGN

One unit, cylindrical shape, 3 modules, designed to fit any standard doorway and space

MODULE LENGTH

770 mm
30.315 in

MINIMUM INSTALLATION FLOOR SIZE

5500 mm × 2800 mm
216.53 in × 100.23 in

OVERALL LENGTH

1344 mm
52.91 in

OVERALL WIDTH

1238 mm
48.74 in

HEIGHT

1858 mm
73.14 in

WEIGHT

700 kg
1543 lbs

INTERNAL LENGTH

1620 mm
63.77 in

INTERNAL VOLUME

1.9 m^3

MAX. OPERATING PRESSURE

2.4 ATA (1.4 BAR)
34.80 PSI

DESIGN TEMPERATURE

0° C to 38° C
32° F to 100.4° F

AIR PRESSURIZATION

3.45 bar to 7.2 bar

AIR SUPPLY FLOW

250 LPM

BIBS OXYGEN SUPPLY

3.2 bar to 4.0 bar

VENTILATION RATE

125 LPM to 400 LPM

EMERGENCY DEPRESSURIZATION RATE

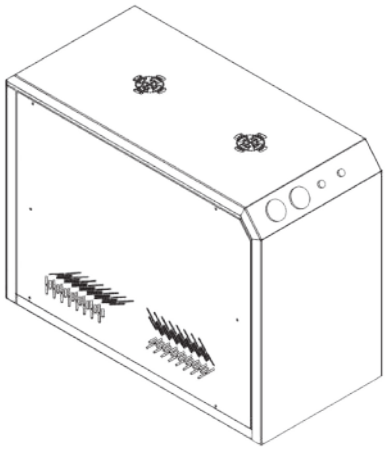
2.0 ATA to 1.0 ATA in 90 sec
29.39 PSI to 14.69 PSI

MAXIMUM PATIENT WEIGHT

225 kg
496.04 lbs

→ SYSTEM COMPONENTS

AIR COMPRESSOR



POWER

4 HP

PRESSURE RANGE

1-8 bar/116 PSI

WEIGHT

67 kg
147.71 lbs

FLOW

564 LPM

NOISE LEVEL

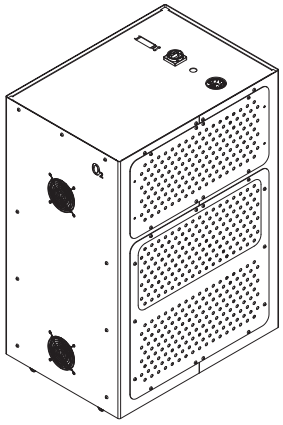
62 decibel

SIZE

(W) 495 mm
(L) 1004 mm
(H) 804 mm
(W) 19.48 in
(L) 39.52 in
(W) 31.65 in

→ SYSTEM COMPONENTS

OXYGEN CONCENTRATOR



POWER

2500 W / 3,3 HP

OXYGEN FLOW RANGE

1~20 LPM

OXYGEN OUTPUT PRESSURE

5 BAR / 72 PSI

OXYGEN PURITY

90%—93%

NET WEIGHT

155 KG
341.717 lbs

NOISE DB(A)

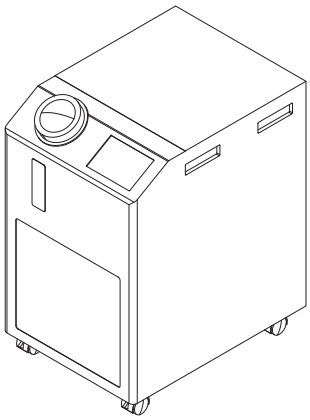
≤ 72 DB

DIMENSION

(L) 695 mm
(W) 481 mm
(H) 1070 mm
(W) 27.36 in
(L) 18.93 in
(W) 42.12 in

→ SYSTEM COMPONENTS

AIR COOLER



COOLING CAPACITY

1500 W (at 5° C 66° F)

TEMPERATURE STABILITY

±0.1° C
32.18° F

SET TEMPERATURE RANGE

5°C to 40°C
66° F to 104° F

COOLING METHOD

Air-cooled refrigeration

SIZE

(W) 377 mm
(L) 500 mm
(H) 640 mm
(W) 14.84 in
(L) 19.68 in
(W) 25.19 in


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→ BIBS MASK

The Built-In Breathing System (BIBS) is regulated by the tempo of your breath.



The BIBS system provides a comfortable and efficient way to inhale pure oxygen during hyperbaric therapy sessions. The BIBS mask and regulator work together to deliver oxygen to the user while removing carbon dioxide, ensuring a safe and controlled environment.

This system is particularly beneficial for regulating oxygen intake compared to free-flow methods, maximizing the therapeutic benefits of hyperbaric oxygen therapy.

Welcome a new age of controlled oxygen breathing

➜ CONTINUOUS FLOW OF OXYGEN

The BIBS system offers a continuous flow of oxygen, unlike traditional demand regulators. This ensures a consistent oxygen supply, even for patients with breathing difficulties.

➜ REDUCED RISK OF CO2 BUILDUP

The system helps prevent carbon dioxide buildup, minimizing potential risks associated with high-pressure environments.

➜ CONTROLLED OXYGEN CONCENTRATION

BIBS also provides precise control over oxygen concentration, regardless of chamber pressure fluctuations.



→ SMART TECHNOLOGY, USER-FRIENDLY OPERATION.



Experience maximum comfort

Ergonomic seating

Tailored to your body's physiology, the ergonomic seats reduce pressure point stress and boost circulation, ensuring a relaxed oxygen treatment session. You can choose one of three available seat models, with manual or automatic controls.



Mirrored commands

External control tablet

Manage everything with the external touchscreen control, from setting the pressure and session parameters to locking the chamber door. Monitor the session with clear visuals and data on chamber pressure, time, and other vital information.



Internal cooler

Temperature control

Operated using the control tablet, the internal cooling system adjusts chamber temperature when pressurized for a comfortable HBOT session experience. The automatic ventilation system ensures the air inside is always fresh.



End the session fast and safe

Emergency Stop button

Peace of mind control: Terminates the session in the pressure room if needed, and quickly drops chamber pressure to a safe level.



Manometer

Analog pressure indicator

Mechanical dial indicator for quick analog reading of pressure variations inside the chamber.



Pressure release

Manual decompression valve

In case of emergency, the pressure chamber is relieved by rotating the manual spherical valve from inside or outside the chamber.



Connectivity

USB port

The USB port is used for downloading .CSV data logger files related to individual HBOT sessions and their working protocols and parameters.



Voice connection

Intercom system

Provides voice connection with the user inside. It's always open for crystal clear communication with volume control.











Experience the true power of hyperbaric oxygen therapy

HPO TECH provides hyperbaric oxygen therapy chambers with customizable components, delivering complete and innovative solutions for hyperbaric medicine. Each system includes a two-year warranty and reliable support for every project. Our services also cover installation, training, periodic maintenance, and ongoing assistance to ensure seamless operation.

Certifications

HPO TECH systems are compliant with all international safety and quality standards.



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