



CPAP

Devices - Masks - Accessories
for respiratory assistance in CPAP

HAROL

HAROL is one of the Italian companies leader in developing and selling CPAP systems, determining the most appropriate solutions for all your needs.

We take care of our customers with our expertise, awareness and rapidity.

Our continuous connection with the main Italian Opinion Leaders in Non Invasive Ventilation keep us always updated with a constant scientific innovation that enables us to provide you with high-quality new products.

List of abbreviations and common terms used in Non Invasive ventilation in PSV and CPAP:

BiLevel: Bi-Level positive airway pressure

BiPAP: Bi-Level positive airway pressure

BIPAP: Biphasic Positive Airway Pressure

COPD: Chronic Obstructive Pulmonary Disease

CPAP: Continuous Positive Airway Pressure

CPO: Cardiogenic pulmonary oedema

EPAP: Expiratory Positive Airway Pressure

EtCO₂: End-Tidal CO₂

F: Flow

FiO₂: Fraction of Inspired Oxygen

IPAP: Inspiratory Positive Airway Pressure

ARF: Acute Respiratory Failure

NIV: Non Invasive Ventilation

NPPV: Non-invasive Positive Pressure Ventilation

Paw: Airway Pressure

PEEP: Positive End-Expiratory Pressure

PEEPi: intrinsic PEEP

PS: Pressure Support

PSV: Pressure Support Ventilation

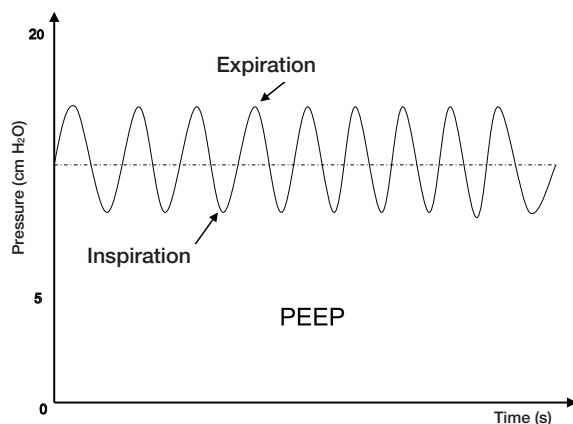
SIMV: Synchronized Intermittent Mechanical Ventilation

NGT: Naso GastricTube

Vd: Dead Volume

Vt: Tidal Volume

Vte: Expiratory Tidal Volume



Continuous High Flow Generator with Venturi Effect

Medical device for CPAP Ventilation with mask or helmet

Oxygen is always available in every hospital ward and ambulance, and you don't need anything else to be able to use the High Flow Generator 9293/D **HAROL**.

Thanks to the double flowmeter system (2 graduated columns of 30 L/min each) and a special device with Venturi effect, the generator 9293/D can provide a flow rate from 25 to 190 L/min with FiO₂ from 33 to 100%, for a proper CPAP ventilation with mask or helmet.

The medical personnel is able to set the correct flow and FiO₂ for a proper CPAP therapy depending on the specific disease and the used interface, by using a specific table, provided with this device. The table also allows to calculate the instantaneous oxygen consumption, very useful in case portable oxygen cylinders are used.



The High Flow Generator **HAROL** can be provided with the below fixing system depending on the hospital ward needs:

- direct connection to the oxygen wall outlet with standard coupling.
- with mounting bracket
- with trolley
- bar with holder for the GT2 monitor

Technical features - code: 9293/D:

- Dimensions (without oxygen coupling): 30 x 12 x 9 cm
- Weight (without oxygen coupling): 500 gr
- Flow: from 25 to 190 L/min
- FiO₂: from 33 to 100%
- Maximum oxygen consumption: 60 L/min
- Oxygen coupling: UNI or AFNOR or SIO
- Certification: IIa Class Dir. EU. 93/42/EEC

Item	Description	Unit
9293/D	Venturi High Flow Generator with oxygen coupling	1 pc
6000/10	Venturi High Flow Generator with trolley and Monitor GT2	1 pc
GT2	Digital Monitor for the PEEP and the FiO ₂ with high-low pressure visual/acoustic alarms	1 pc
G18007	Oxygen sensor for Monitor GT2	1 pc
D05122	Cable (1,5 mt) for connecting the oxygen sensor (G18007) to the monitor GT2	1 pc
9200	Spare part - Venturi high flow generator	1 pc
9300/D	Spare part - Double flowmeter of 30+30 L/min	1 pc
611-10	Analogic manometer with rubber protection and scale in cmH ₂ O for monitoring the PEEP	1 pc

Portable Emergency CPAP System

*Usable also with
Boussignac* Valve
and Portable Ventilators*



In order to administer CPAP therapy with mask or helmet without using a power source we developed a backpack that includes a 400 L oxygen supply and an high Venturi flow generator (code 9293/D)** that can produce flows from 0 to 190 L/min with FiO₂ adjustable from 33 to 100 %.

The generator Harol 9293/D is very efficient; it provides flows of 45 L/min with FiO₂ of 50% with an oxygen consumption lower than 10 L/min (with peep valve of 5 cmH₂O) providing a 40 minutes autonomy, by using, for example, the CPAP helmet.

In addition the oxygen cylinder has a special pressure reducer with a flowmeter for low-pressure oxygen therapy (from 0 to 15 L/min) with mask/nasal canula.

Therefore with only the backpack, it is possible to administer CPAP or Oxygen therapy reducing drastically the number of devices to carry.

The oxygen cylinder has also a security device that guarantees a safe use, thanks to the tulip cap that protect the valve and the reducer during the transport, according to EN 962.

Item	Description	Unit
CPAP 10000	Backpack complete with 2 L oxygen cylinder (empty) with oxygen coupling UNI	1 pc
CPAP 10001	Backpack complete with 2 L oxygen cylinder (empty) with oxygen coupling AFNOR	1 pc
CPAP 10002	Empty backpack	1 pc

* The Boussignac CPAP systems are registered trademark of Vygon

** The High Flow Generator 9293/D needs to be ordered separately

Continuous Flow CPAP (Air/Oxygen Mix)

The CPAP system, code 6000, is the updated version of the first Continuous Flow CPAP with air/oxygen mix and reservoir of 25 L. This type of CPAP system is required for the special technical features that allow a CPAP ventilation both with intubated patients (also single-lung ventilation) and the new interfaces for Non Invasive Ventilation.

The system consists of 4 flowmeters, where air and oxygen are mixed, a reservoir bag for CPAP of 25 L (available also with Latex) and a Water valve. The system is also equipped with a continuous monitoring system (GT2) for the FiO₂ and the PEEP with high-low pressure alarms. It can also be used with an active humidification system.

The system is provided on a trolley.



Technical data:

Flow: from 0 to 48 lpm

FiO₂: adjustable as required

Pressure: from 0 to 30 cm H₂O resolution 1 cm H₂O

Power supply: 220V AC 50÷60 Hz

SAFETY NORMS:

EN 60601-1 class I type B

CERTIFICATION:

According to directive 93/42/EEC

Item	Description	Unit
6000	Continuous Flow CPAP system with trolley and monitor GT2	1 pc
GT2	Monitor for the PEEP and the FiO ₂ with acoustic/visual alarms	1 pc
406-100-000	Disposable PVC breathing circuit for CPAP 6000	10 pcs
151/25	Disposable reservoir bag for CPAP of 25 L - Latex Free	10 pcs
151/15	Disposable reservoir bag for CPAP of 15 L - Latex Free	10 pcs
6151/25	Reservoir bag for CPAP of 25 L - with latex	1 pc
6151/15	Reservoir bag for CPAP of 15 L - with latex	1 pc
6151/10	Reservoir bag for CPAP of 10 L - with latex	1 pc
6000/3	Water valve for CPAP – Size: adult	1 pc
6000/R	Water valve for CPAP – Size: children	1 pc
6000/B	Water valve for CPAP – Size: infant	1 pc

CPAP Masks



HAROL can offer you a complete line of CPAP masks with single or double port. Thanks to the inflatable cushion, the mask adjusts perfectly to the patient's face preventing air leakage.

The double port mask has a flow inlet connector of 22M for the inspiration tube and a flow outlet connector 30M for the PEEP valve; no adapter is needed.

Each mask is provided with an anti-suffocation valve in case of lack of flow. We realized a specific KIT for ventilation with mask that allows to administer Non Invasive Ventilation in PSV or in Continuous Flow CPAP using the same interface. The kit consists of an oronasal mask with high volume - low pressure air-cushion, a special connector for the NGT, a TEE connector, a circuit, an HEPA filter and an headgear. With the mask provided with the kit it is possible to change from NIV to CPAP therapy (and vice versa), without removing the mask and the NGT, simply inserting or removing the TEE connector. **HAROL** CPAP masks are single patient, Latex Free and complying with the directive 93/42/EEC

Item	Description	Unit
9016/XL	CPAP mask with double port with inflatable cushion. Size XL	1 pc
9016	CPAP mask with double port with inflatable cushion. Size L	1 pc
9017	CPAP mask with double port with inflatable cushion. Size M	1 pc
1520-180-209	CPAP KIT with mask, circuit, adjustable PEEP valve Mask size XL	1 pc
1520-180-210	CPAP KIT with mask, circuit, adjustable PEEP valve Mask size L	1 pc
1520-180-211	CPAP KIT with mask, circuit, adjustable PEEP valve Mask size M	1 pc
1520-180-184	NIV and CPAP KIT with mask with connector for NGT, headgear, circuit, filter and TEE connector – Mask size XL	1 pc
1520-180-185	NIV and CPAP KIT with mask with connector for NGT, headgear, circuit, filter and TEE connector – Mask size L	1 pc
1520-180-186	NIV and CPAP KIT with mask with connector for NGT, headgear, circuit, filter and TEE connector – Mask size M	1 pc

CPAP

PEEP Valves



HAROL PEEP valves are dynamometric and non-flow dependent (with preset spring), in order to guarantee that proper pressure is maintained during the therapy. Even with high flows, they are very noiseless.

Available PEEP valves type:

- Fixed valves, single patient, colour code with pre-set values: 3 - 5 - 7,5 - 10 -12,5 - 15 and 20 cmH₂O
- Adjustable valves single patient, with graduated scale, adjustable from 3 to 20 cmH₂O

All valves are provided with a connector 22 M for breathing circuits.

Item	Description	Unit
9003	Fixed PEEP valve pre-set at 3 cmH ₂ O - colour black	10 pcs
9005	Fixed PEEP valve pre-set at 5 cmH ₂ O - colour blue	10 pcs
9007	Fixed PEEP valve pre-set at 7,5 cmH ₂ O - colour yellow	10 pcs
9010	Fixed PEEP valve pre-set at 10 cmH ₂ O - colour green	10 pcs
9012	Fixed PEEP valve pre-set at 12,5 cmH ₂ O - colour pink	10 pcs
9015	Fixed PEEP valve pre-set at 15 cmH ₂ O - colour brown	10 pcs
9020	Fixed PEEP valve pre-set at 20 cmH ₂ O - colour red	10 pcs
KM 809	PEEP valve, adjustable from 3 to 20 cmH ₂ O	1 pc
611-10	Analogic manometer with rubber protection and scale in cmH ₂ O for monitoring the PEEP	1 pc

Headgear for CPAP masks



A good headgear is very important in order to hold the mask in place.

HAROL can offer you reusable and disposable headgears. Choose the headgear based on the therapy's duration and the specific needs of the patient. All available headgears

can be part of a Custom Pack on your demand.

Item	Description	Unit
9018	Silicone headgear with 4 straps – can be sterilized – size adult	1 pc
9019	Disposable headgear with 4 straps – size adult	1 pc
KM-P007	Headgear in elastic transpiring material – size large	1 pc
KM-P008	Headgear in elastic transpiring material – size small	1 pc

CPAP CUSTOM MADE PROGRAM

In order to meet your needs we can customise specific products.

In details:

- CPAP kit with masks, PEEP valves, tubes and filters.
- CPAP kit with helmet, neckseals, PEEP valves, tubes, filters.

HAROL products come from Italian projects and are partly manufactured or assembled in Italy. This guarantees that proposals and comments from the operators will be always taken into high consideration. Every day we improve our products also thanks to our customers.

HAROL devices are complying with the directive 93/42 EEC and products with latex are clearly marked out.

Harol: Thirty Years of Commitment to the Healthcare.

HAROL

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