

HYDRD-GAZ-MED POLISH MANUFACTURER OF MEDICAL EQUIPMENT Established in 1971



PRODUCT CATALOG



About us

Our company has been dealing with medical gas pipeline systems since 1971, for over 18 years we have have been producing medical gas pipeline systems components. For many years we have been consumer of products of other producers. This allowed us to gain lot of experiences either good and bad. At the moment as a producer we have done our best to improve and remove all the problems we have encountered. During all these years we wanted to offer you the best possible, so we ALWAYS use the highest quality materials, that is why we cooperate with well known producers like FRITZ STEPHAN Medizintechnik Gmbh, GREGGERSEN Gasetechnik Gmbh, OXYMAT A/S.

In the field of medical gas pipeline systems we modernize existing systems or we can design, build, test and commision a new one.

Here is a short history of our company:

- since 2003 we are installing oxygen concentrator systems in hospitals in Poland (we were first to do this)
- since 2006 we are producing our own valve boxes, to this day we sold over 600 units;
- since 2008 we are producing our own oxygen concentrator system, to this day almost 30 systems installed;
- since 2011 we are producing our own PNEUMAT switchover system for high pressure cylinder supply systems, to this day almost 100 systems sold;
- since 2013 we started to offer gas consumption measurement in our valve boxes;
- ▶ since 2014 we offer our own high-end central monitoring system for medical gas system;
- ▶ since 2015 we are producing small vacuum plant for small hospitals & clinics;
- > along with above we are also producing under plaster and on wall panels with sets of gas outlets.

In this catalog we want to present you the best we have to offer. Our products have been checked and tested in many ways by our demanding clients and meet the strict requirements of TÜV Nord Notified Body. We execute medical gas pipeline systems according to the newest european medical standards and MD-D/93/42

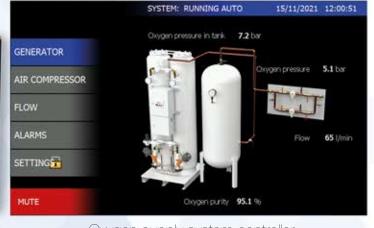
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Oxygen concentators for medical gas pipeline system

OXYKON® oxygen concentrator delivers "medical oxygen 93" by filtering compressed air and separating oxygen from other air components (including chemical weapons) to achieve up to 96% oxygen concertration. Because oxygen concentrator needs compressed air to deliver oxygen it allows to use the surplus compressed air as a medical air. This allows to eliminate extra costs of installing separate compressed air system. To minimize installation costs even more it can use compressed air from an existing compressed air system in hospital to deliver oxygen. Taking such sollution at the planning stage of investment it allows to save extra costs. At the end it can save up to 80% of oxygen therapy costs.

We are the first in Poland who have developed and implemented this system in Health Care Facilities. This economic system guarantees self-sufficiency and optimally uses available area.





Oxygen supply system controller

- concentrators pressure monitoring the status of concentrators
- oxygen purity monitoring by means of paramagnetic sensor
- oxygen oncentration in environment monitoring flow monitoring
- room temperature monitoring > oxygen outlet pressure monitoring
- compressor pressure monitoring I integration with SMS notification system

OXYKON[®] DUO concentrator



Features:

- ▶ up to 20 l/min @ 5 bar
- oxygen purity up to 96%
- gas outlet in EU standard
- small and light
- energy efficient

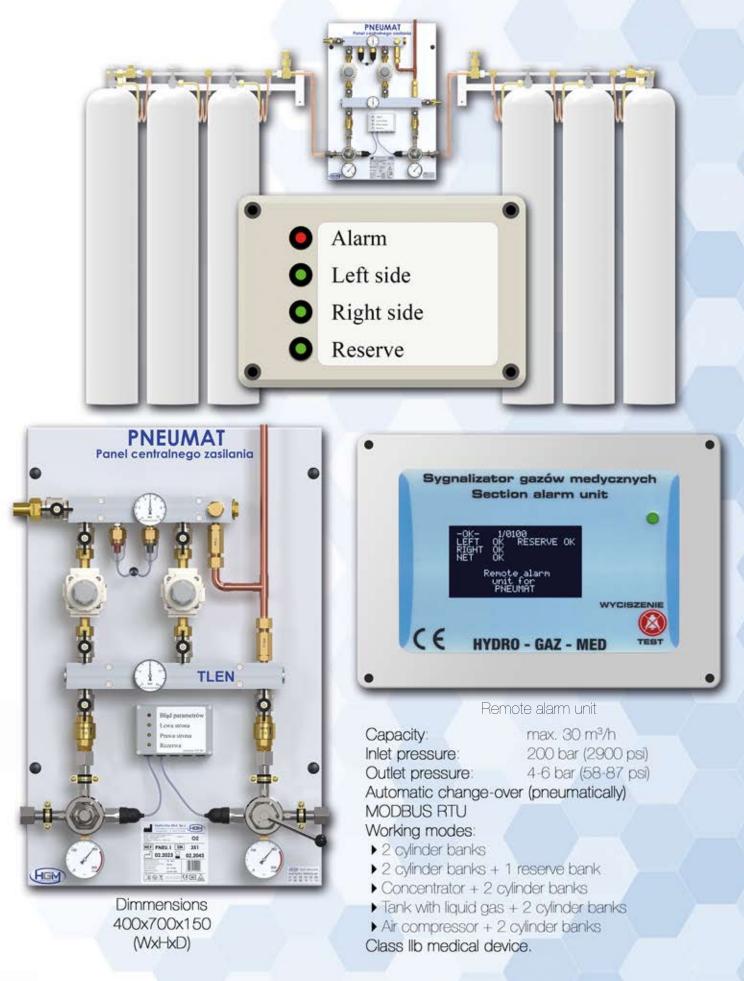
Application:

- anaesthesia machines
- oxygen supply in field hospitals
- emergency respond teams
- military field hospitals
- ▶ one-day surgery clinics

OXYKON[®] mobile concentrator

Switchover system for cylinder supply "PNEUMAT I"

PNEUMAT I as 2 cylinder banks supply system



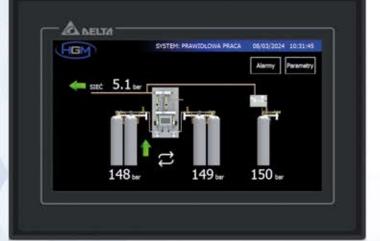
Switchover system for cylinder supply "PNEUMAT II"

PNEUMAT II as 2 cylinder banks + reserve bank supply system



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Dimmensions 450x800x200 (WxHxD)



And Personnel Vice Street

Alarm unit

Capacity: max. 80 m³/h Inlet pressure: 200 bar (2900 psi) Outlet pressure: 4-6 bar (58-87 psi) Automatic change-over (electronically) MODBUS RTU, MODBUS TCP/IP Working modes:

- > 2 cylinder banks
- > 2 cylinder banks + 1 reserve bank
- Concentrator + 2 cylinder banks
- Tank with liquid gas + 2 cylinder banks
- ► Air compressor + 2 cylinder banks Class IIb medical device.

Switchover system for cylinder supply "PNEUMAT III"

PNEUMAT III as tank with liquid oxygen + 2 cylinder banks supply system



1-stage reserve supply panel "PNEUMAT"

Reserve supply panel PNEUMAT 50



Dimmensions 350x280x150 (WxHxD) Reserve supply for switchover systemCapacity:50 m³/hInlet pressure:200 bar (2900 psi)Outlet pressure:7 bar (101 psi)

Reserve supply panel PNEUMAT 200



Dimmensions 350x280x150 (WxHxD) Reserve supply for switchover systemCapacity:200 m³/hInlet pressure:200 bar (2900 psi)Outlet pressure:7 bar (101 psi)

2-stage reducer panel for high pressure cylinder supply



Function

To reduce high pressure from cylinders to the level required by user in medical pipeline system. Main purpose is to work as a reserve source for medical gases.

Technical data:

2-stage pressure reduction, high pressure analog sensor or contact switch, shut-off valve, safety valve.

Efficiency:

Flow: Inlet pressure: Outlet pressure: 50 m³/h max. 200 bar (2900 psi) 5 bar (72 psi)

mm

Connections:

inlet: G 1/2"	
outlet:	copper pipe 15

Medium:

oxygen, nitrous oxide, carbon dioxide, air, nitrogen, argon

High pressure manifold system

Technical data:

- up to 10 cylinders in single manifold
- shut off valve
- exhaust valve
- non-return valves for each cylinder
- gas specific connections



Black - Compressed air

P

Blue - Nitrous Oxide

Manifolds delivered along with headers.



2 cylinder header

Technical data:

- maximum inlet pressure 200 bar (2900 psi)
- easily adjustable pigtail shape
- inlet/outlet connections according to gas coding standards

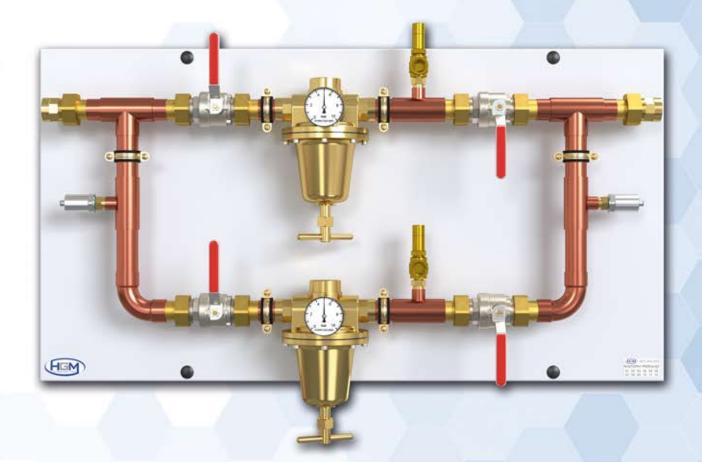


One cylinder header

Technical data:

- maximum inlet presure 200 bar (2900 psi)
- ▶ lenght ~80cm
- inlet/outlet connections
- according to gas coding standards

Reducing sets for liquid oxygen tank



Function

To reduce pressure of liquid oxygen from tank to a level required by user.

Technical data:

- 2 parallel pressure reducers;
- brass ball valves with chrome body and stainless steel ball;
- 2 safety valves;
- pressure analog sensor;

Capacity:

- max inlet pressure 25 bar (362 psi);
- outlet pressure 1-10 bar (14-140 psi);
- max flow (28mm pipe) 200m³;
- ▶ ambient temperature -20°C do +40°C;
- ▶ safety valve to 11 bar (154 psi).

Connections:

▶ copper pipe size 28 mm;

Reducing sets for compressed medical gases



Function

To reduce pressure of compressed medical gases to a level required by user.

Technical data:

- 2 parallel pressure reducers;
- brass ball valves with chrome body and stainless steel ball;
- pressure sensor or 2 pressure switches;
- max inlet pressure 16 bar (232 psi);
- outlet pressure 1-10 bar (14-145 psi);
- ▶ max flow 50m³ or 200m³
- ambient temperature -20°C do +40°C;
- safety valve to 7 bar (101 psi) or 11 bar (159 psi);
- ▶ standard outlet pressure 5 (72 psi) and 8 bar (116 psi), others on demand.

Connections:

copper pipe size 15 to 22 mm;

Compact vacuum plant "HGM VAC"



Pressure	-0.7	bar	
Next inspection	8757	h	
Pump 1	1	h	
Pump 2	1	h	
Pump 3	1	h	N I
P1 🌘 P2	🚺 РЗ		

PUMPS WORK CORRECTLY

3 pcs

1 piece

110 L

EQUIPMENT

- ► Vacum pump
- Bacteria filter
 2 pcs
- Secretion collecting unit 1 piece
- Electronic control
- Vacuum tank
- MODBUS RTU

WORKING CONDITIONS

- ▶ ambient temperature: 5-35 °C
- ▶ atmospheric pressure : 900-1050 hPa
- ▶ relative humidity : 20-90 %

PURPOSE

- Supports up to 10 vacuum outlets
- Operating room
- ▶ Postoperative room
- > 2 beds ICU

TECHNICAL DATA:

Parameter	Value	
Capacity at atmospheric pressure 1024 hPa (m³/h)	18 m³/h	
Capacity at -0,5 bar (m ³ /h)	6 m³/h	
Tank volume (L)	110	
Pump type	3x HMGV-1	
Motor power (KW)	0,75	
Noise level (dB)	62	
Inlet port, copper pipe (mm)	22	
Exhaust, copper pipe (mm)	22	
Weight (kg)	~130	
Max vacuum (relative pressure)	-0,7 bar (-10 psi)	
Power supply	3x2,5 mm ² , 230V, 12A	
Dimension (mm)	1500x1300x500	



Section alarm unit

Area valve boxes "SZI"

Main function of valve box is to shut-off and to monitor pressure of medical gases and vacuum in wards, operating theatres, intensive care units.

Basic parameters :

- from 1 up to 6 gases in one box
- shut-off valves for each gas and vacuum
- shut-off valves for ceiling pendants (SZI-OP version)
- pressure sensors for each medium
- gauge for each gas
- physical separation
- drainage
- emergency supply point type NIST/DIN/AGA

14,2kg

15,4kg

- larm unit with LCD display
- max pipe diameter for vacuum is 28 mm
- MODBUS RTU (optional)

Technical data:

Housing made from zinc plated steel, standard color for cover is RAL 9010, equipped in emergency opening, emergency supply point, sensors, ball valves, inlet / outlet from top, from 1 up to 6 gases in single housing.

Pressure:	compressed gases	0 - 10 bar (145 psi)	
	vacuum	00.9 bar (-13 psi)	
Alarms:	compressed gases 5 bar	low pressure 4 bar (58 psi)	
		▶ high pressure 6 bar (87 psi)	
	compressed gases 8 bar	▶ low pressure 6,5 bar (94 psi)	
		▶ high pressure 9,5 bar (137 psi)	
	vacuum	▶ pressure -0,4 bar (-5.8 psi)	
Class llb r	nedical device.		
Available v	valve boxes:		
TYPE	Weight	Dimensions (LXWXH)	
SZI-1	5,5kg	350x90x460	
SZI-2	6,1kg	350x90x460	
SZI-3	7,3kg	350x90x460	
SZI-4	10,5kg	350x90x460	

560x90x480

560x90x480

SZI-5

SZI-6

Area valve box with flow meter "SZI-P"

					INYCH
O2	AIR	VACUUM	Oxygen co	nsumption	n Back
and the second second			Total consumption	0	m3
5.1 bar	5.0 bar	-0.7 bar	Current month	0	m3
			1 month back	0	m3
Flow	Flow		2 months back	0	m3
35 l/min	68 l/min		3 months back	0	m3
HGM	Alarms Setting	IS	4 months back	0	m3
			5 months back	0	m3

Function

Designed to monitor pressure and flow rate of medical gases.

It can sum up total consumption of gas, also has history for last 6 months and every month is displayed separately.

Technical data:Type:SZI-PWorking pressure:compressed gases 0 - 8 bar (0-116 psi)Dimensions:350x460x90 (WxHxD)Power supply:24V DC, 1AMODBUS RTU, MODBUS TCP/IP

Standard measuring ranges: 1. 0-100 l/min

- 2. 0-200 l/min
- 3. 0-500 l/min
- 4. Other upon request

Class llb medical device.

Remote alarm units for medical gases compatible with HGM devices



Function:

Reads from the master alarm unit all shared informations about medical gases. It shows exact copy of screen of master unit which is connected to. It has visual and audio alarm as same as alarm unit mounted in valve box. ALL devices are connected with use of FTP cables and RJ-45 plugs.

SYSTEM ADVANTAGES:

- limitless possibilities of expansion
- safe electrical supply 12V DC
- power supply can be delivered to only one device and the whole network will be supplied
- one commonly available plug system RJ-45
- means to connect whole monitoring system to multiple central alarm units and/or PC and/or laptop
- compatible with 3rd party valve boxes with pressure switches or pressure sensors

Central alarm unit "S9"

HGM	MODE: AUTO Air inlet 0.0 bar pressure	14/11/2021 12:40:26
GENERATOR		MODULE 1 Standby WH 0 h
AIR COMPRESSOR		
SETTING	Tank parameters Oxygen purity 0.0 % Oxygen pressure 0.0 bar	A A A A A A A A A A A A A A A A A A A
MUTE		MODULE 2 Standby WH 0 h

Central alarm unit allows to remote monitoring multiple devices at the same time. It shows conditions, alarm states from every device within the "HGM network" connected via BMS, via MODBUS RTU, MODBUS TCP/IP or via LAN/WIFI module. Records gas consumption or pressure values as graph.

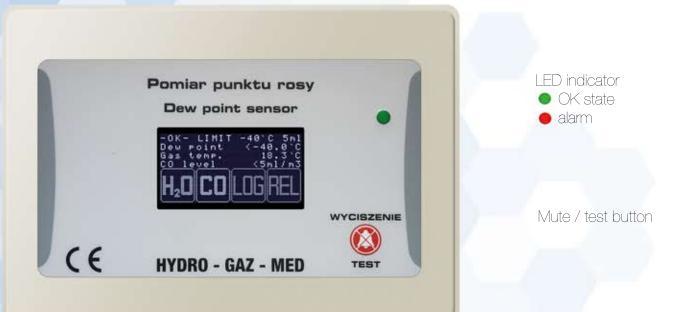
Each central alarm unit is programmed individually for our clients, depending on their needs and the network configuration.

Ul is very user-friendly and intuitive to use on 7" LCD HQ touch display.

ALL devices can be connected with use of single Modbus converter.

Each alarm system can be equipped with SMS module, which allows to receive text message with alerts directly on mobile phone right after alarm appears. Our SMS module can send messages up to 3 different numbers at the same time.

Dew point and carbon monoxide monitor for compressed air systems



Function

To continuously monitor dew point, temperature and carbon monoxide level in compressed air. Built-in potential free relay and LOG module, that records events up to 10 days back.

MODBUS RTU.

Optional features: 4,3" LCD touch screen HMI panel, MODBUS TCP/IP



TECHNICAL DATA:

Standard	HGM		
Output	Measurement of dew point temperature in compressed air and content of CO Digital MODBUS (optional)	SHT75, IT8, IQ5 Relay(HF49F) max 30V 3A DC / 48V 3A AC 9600 BAUD, 8 bits, 2 stop bits without parity control	
	LOG module	Last 250 entries, recording every 1 hour all alarms and confirmations	
Measuring range	Ambient temperature Dew point temerature Carbon monoxide	5°C - 50°C -70°C - 100°C 0-2000 ppm	
AIR inlet pressure AIR inlet	Max 16 bar 6 mm (selflocking)		
Connections Power supply	Transmission VO 230V AC	RJ-45 or STL-1550/4-3.5 STL-1550/4-3.5 / MC-1.5/2-5.08	
Current Housing	~25 mA PET	max 200mA	
Wokring temperature Storing temperature	5-50°C -20-60°C		
Dimensions	Width Height Depth	200 mm 150 mm 80 mm	
Weight	~1.2 kg		

Gas monitoring

Oxygen monitor



Features:

- flow rate: according to demand acuuracy: +/- 3%
- ▶ pressure: 0-10 bar
- oxygen content: 0-100% with means of paramagnetic oxygen sensor accuracy 0.1%
- 6 potential free contacts (NO/NC to be set)
- MODBUS RTU, TCP/P
- SMS notification system
- ▶ power supply: 230V, 50Hz

Purpose of this device is to continuously monitor parameters of medical oxygen according to EN ISO 7396-1:2016, European Pharmacopeia and HTM 02-01. This device helps to control quality of oxygen delivered to the patients.



Gas analyzer

Features:

- required gas flow 10 lpm
- ▶ MODBUS RTU
- paramagnetic oxygen sensor,
- Infrared CO, sensor,
- Dew point sensor
- SO2, NOX, CO sensor
- MODBUS RTU module for BMS
- medium: medical oxygen and medical compressed air
- power supply: 230V, 50Hz

Purpose of this device is to continuously monitor parameters of medical compressed air and medical oxygen according to EN ISO 7396-1:2016, European Pharmacopeia, US Pharmacopeia and HTM 02-01.

Medical containers

In our rich offer, we have also turnkey solutons for stationary and mobile medical containers. We provide comprehensive services in the field of medical gas supply equipment for containers. Every container is made to individual order and meets requirements of ISO 13485 and HTM 02 01.

TEN

Medical containers



Oxygen generator



Oxygen generator



Compressed air system



Compressed air system



Oylinder filling station



High pressure compressors

Medical gas outlets



System AGA SS 875 24 30



System DIN 13260-2



System NF S 90-116



System BS 5682



Gas outlet for bed-head units



Under-plaster



On-plaster



For ceiling pendants with hose connection





For compressed air driven surgical tools AIRMOTOR For AGSS, Venturi type

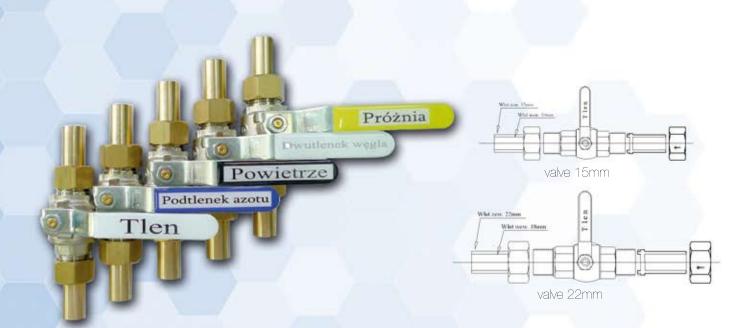
Gas outlet panel "SPG"



Medical gas outlets mounted in panel for under plaster installation are used to acquire medical gases and vacuum. Panel can be equipped with any number of gas outlets either with or without anesthetic gas scavening system or AIRMOTOR.

Gas outlets can be in AGA SS 875 24 30, DIN 13260-2, NF S 90-116 and BS 5682 connection standard. In our products we use gas outlets produced by renowned company GREGGERSEN GASETECHNIK.

Ball valves for medical compressed gases



Function

Ball valves are used to shut-off parts of medical pipeline gas system. They allow to divide it to smaller parts, which simplifies, e.g.: maintenance works, repairs, extensions and periodic tests.

Ball valves types:

- Source shut-off valve;
- Raiser valve;
- Section shut-off valve;
- Maintenance valve;
- Service valve;
- Drainage valve.

Construction

Valve is made of brass housing, inside is a stainless steel ball which opens and closes by rotating the valve handle by 90-degrees. Valves have 2 external threads, equipped in soldering union connection with tellon seals.

Ball valves are maintenance free.

Each valve is labeled with gas name.

Max working pressure is 20 bar.

Available sizes for pipes:

15 mm, 18 mm, 22 mm, 28 mm, 35 mm, 42 mm, 54 mm.

Oxygen analyzer



Features:

- oxygen purity range 0-100% accuracy: +/- 0.01%
- carbon monoxide range 0-2000 ppm accuracy: +/- 1%
- carbon dioxide range 0-2000 ppm accuracy: +/- 1%
- MODBUS RTU
- MODBUS TCP/IP
- dry contacts
- ▶ 4.3" HMI panel
- medium: compressed medical gases

Oxygen analyzer is used for continuous measurement of the parameters of connected medium. When the measured parameters are exceeded, it signals with an appropriate message and an acoustic signal.

Records hourly values as a graph for up to 30 days back.

Designed for use in central oxygen installations in hospitals, clinics, health centers, etc.

Additional specs:

- paramagnetic oxygen sensor (do not require replacement)
- NDIR carbon monoxide sensor (do not require replacement)
- NDIR carbon dioxide sensor (do not require replacement)
- calibration required every year
- ▶ 4 or 6 mm PU hose connection
- consumes only 1 l/min

Sample projects



Maintenance and emergency node



Oxygen concentrator system



National Stadium in Warsaw - temporary COVID hospital



Oxygen concentrator system



Medical air plant

Sample projects



Container with self-lifting system



Medical container system



Oxygen modular concentrators system



Oxygen concentrator and cylinder filling system in container



Oxygen control panel