

mt *MEDICAL TECHNOLOGIES LBI*
- An American-Lithuanian Joint Venture Company

*HOSPITAL EQUIPMENT & MEDICAL
GAS SYSTEMS*





TUV NORD

CERTYFIKAT WE / EC CERTIFICATE

zgodny z 93/42/EWG Załącznik II (p.p. 4) / acc. 93/42/EEC Annex II (p.p. 4)
 Niniejszym zaświadcza się, że firma / This certifies, that the company

MEDICAL TECHNOLOGIES LBI
 Savanoriu pr. 271, LT-50131 Kaunas Lithuania

dla kategorii wyrobów klasy IIa i IIb / for the product category class IIa i IIb
 (Lista wyrobów patrz załącznik 1 / List of products see annex 1)

Urządzenia do systemu gazów medycznych, podgrzewacze i endometry.
Devices for medical gas systems, warmers and endodontic apex locators.

stosuje system zapewnienia jakości w projektowaniu, produkcji i kontroli końcowej wymienionych wyrobów zgodny z wymaganiami Załącznika II (z wyłączeniem sekcji 4) dyrektywy 93/42/EWG. Dodatkowo, przy znaku CE musi zostać naniesiony numer identyfikacyjny jednostki notyfikowanej. Ważność tego certyfikatu zależy od utrzymania systemu zapewnienia jakości zgodnie z wymaganiami dyrektywy i jego nadzorowania przez jednostkę notyfikowaną zgodnie z Załącznikiem I, rozdział 5. Certyfikat nie może być przenoszony pod żadnymi warunkami.
 has established a quality system for design, production and final testing acc. to the requirements of Annex II (excluding section 4) of the directive 93/42/EEC. Additional to the CE-marking the notification number of the Notified Body has to be affixed. The validity of this certificate is based on the maintenance of the quality system in accordance with the requirements of the directive and its surveillance by the Notified Body according Annex II section 5. The certificate may not be transferred under any circumstances.

Nr rej. / Reg.-No. TNP/MDD/0294/3826/2019 Ważny od / Valid from 14-10-2019
 Raport nr / Report No.: PL3826/2019 Ważny do / Valid until 13-10-2022

 Karoswie, 01-2-2019
 Jednostka Certyfikująca Wyroby Medyczne /
 Certification body for medical devices
 Jednostka notyfikowana Numer identyfikacyjny 2274
 Notified Body ID. No. 2274

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Dopuszcza się kopiowanie certyfikatu tylko w niezmiętej postaci. / Copies of this certificate only without changes.

Products manufactured by our company complies with the requirements of Directive 93/42/EEC and have a CE mark

Design, manufacture and maintenance service are certified according to ISO 9001:2015 and ISO 13485:2012 standards

Medical equipment, produced by our company, is registered in many countries according to the requirements of their national standards.

SERTIKA

LIETUVOS NACIONALINIS AKREDITACIJOS REIKŠIS
 LT-50131 KAUNAS
 S. LAURIS

CERTIFICATE

Certificate registration No. 18K.1520 6th of November, 2018

The quality management system is designed, implemented and maintained in the

UAB Medical Technologies LBI
 Savanoriu av. 271, LT-50131 Kaunas, LITHUANIA

meets the requirements of the standard
ISO 9001:2015
 (LST EN ISO 9001:2015)

Scope of certification:
 Design, manufacturing and installation of hospital medical supply systems.

This certificate is valid up to 05th of November, 2021.

Director   Ingrida Kusiene

"Sertika" Ltd.
 Savanoriu av. 271-255,
 LT-50131 Kaunas, Lithuania sertika@sertika.lt
 www.sertika.lt

SERTIKA

CERTIFICATE

Certificate registration No. 18M.1521 6th of November, 2018

Medical devices. The quality management system is designed, implemented and maintained in the

UAB Medical Technologies LBI
 Savanoriu av. 271, LT-50131 Kaunas, LITHUANIA

meets the requirements of the standard
ISO 13485:2016
 (LST EN ISO 13485:2016)

Scope of certification:
 Design, manufacturing and installation of hospital medical supply systems.

This certificate is valid up to 05th November, 2021.
 Medical devices. The quality management system is certified since 17th of January, 2013.

Director   Ingrida Kusiene

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 LT-50131 Kaunas, Lithuania sertika@sertika.lt
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Medical Technologies LBI (MT) was established in 1992 as a Joint Venture company by founders from USA (Euromedika Company) and Lithuania (Scientific Research Institute).

The long-term strategy of this new firm was to design, develop, manufacture and supply medical institutions with modern, high technology medical devices and equipment in the global market.

Initially MT's equipment served the dental clinic sector. In 1996 the firm's main strategic focus shifted to the hospital sector: operating rooms, intensive care, recovery, therapy, medical gases and communication, control and safety systems. (Note: we DO NOT manufacture hospital furniture, instruments, diagnostic systems or materials, but can provide them in "turn-key" programs.)

Currently our major markets are in Europe and Asia with aggressive expansion into selective countries of Africa, Oceania and the Americas.

Our technical staff helps customers in the preparation of projects for medical gas systems and in the installation of related equipment. With our regional Partners/ Distributors, we globally execute complete, "turn-key" programs for hospitals.

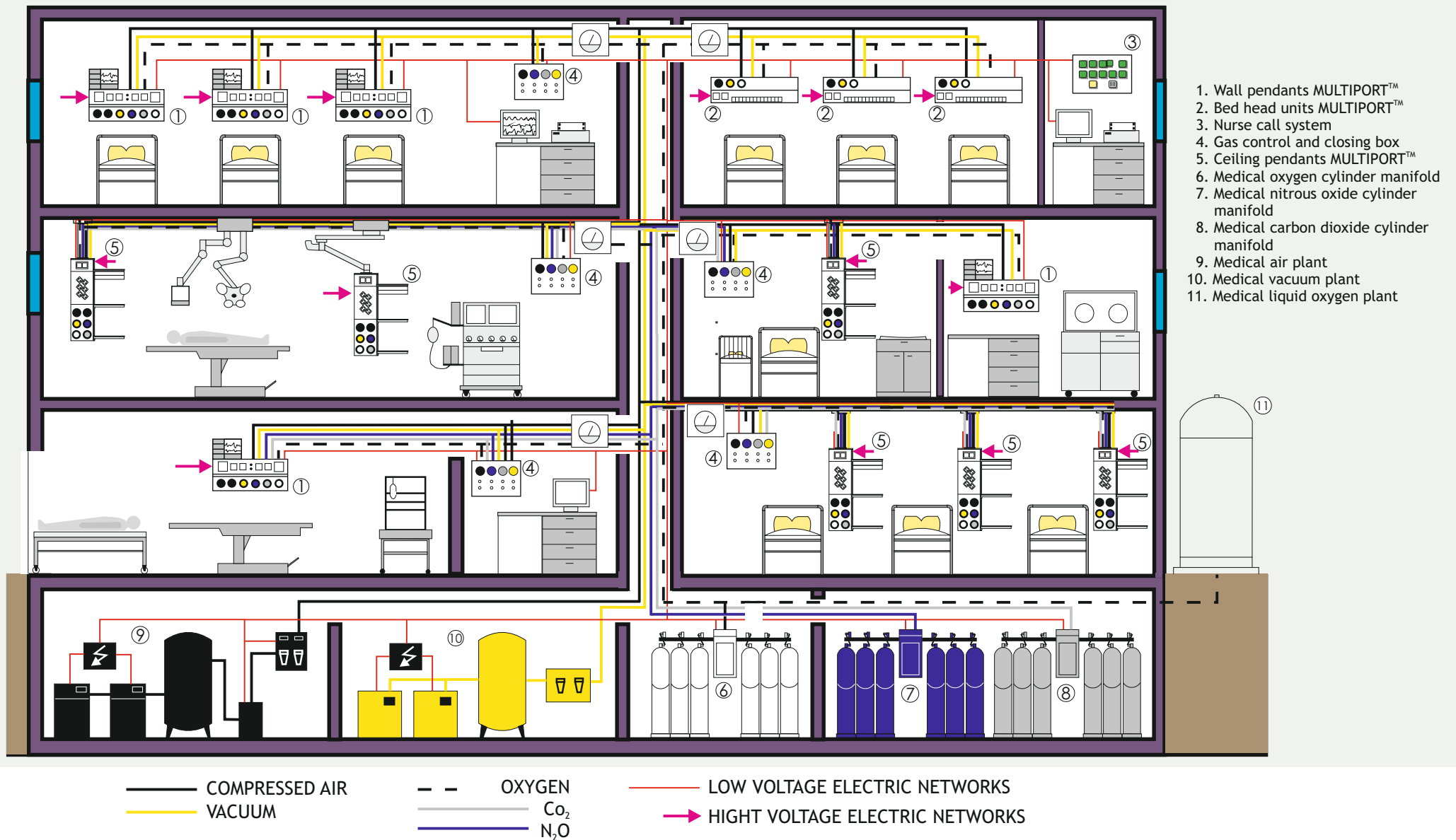
The Company participates in the largest International and Regional Medical Exhibitions to present its most modern and up-to-date hospital equipment and products, to meet new clients and to expand its contacts into new markets.

Medical Technologies LBI provides its Partners, Distributors and Direct Clients with high quality, cutting-edge technology, proven long-term reliability products at a reasonable price.



"Medical Technologies LBI" Headquarters and Manufacturing Building

COMPRESSED AIR, VACUUM, MEDICAL GASES, HIGH and LOW VOLTAGE ELECTRICAL NETWORKS FOR HOSPITAL



① MULTIPOINT™ PENDANT BRIDGES M-GM



- Special four-sections anodized aluminum profile
- Medical gas outlets, electric sockets, information signal ports, medical gas pressure control indicators
- Possibility to install in different locations, i. e. in front of the windows, glass partitions

MULTIPOINT™ MEDICAL GAS OUTLETS & PROBES



- Quick connection medical gas outlets for operative connection of the medical equipment to medical gas supply systems
- Concealed or surface installation
- Sockets and probes according DIN 13260-2

② MULTIPOINT™ BED HEAD UNITS M-PB



- Supply of medical gases, compressed air and vacuum to the patient's bed
- Available pneumatic outlets from various manufacturers
- Illumination - general, reading and night
- Electricity, audio-video supply of signals to the patient's bed
- Nurse call
- Length: 1200, 1500, 1800, 2000 mm

⑤ MULTIPOINT™ CEILING PENDANTS M-GL



- Load capacity: 75-260 kg
- Available various combinations of arms suspensions
- Up to 12 outlets for medical gas, compressed air, vacuum
- Up to 24 electric sockets
- Up to 12 equipotential pins
- Up to 6 outlets for low voltage signals
- Shelves and rail holders for anaesthetic and monitoring equipment
- Lower shelf with a drawer
- Active scavenging of anaesthetic gases
- Turning angle $\pm 330^\circ$



④ GAS CONTROL AND CLOSING M-KP



- For connection of medical gases to gas pipelines
- From 1 to 5 medical gases
- Gas pressure control
- Sound, light alarm system
- Alarm sound transmission to central control station
- Lock with emergency opening

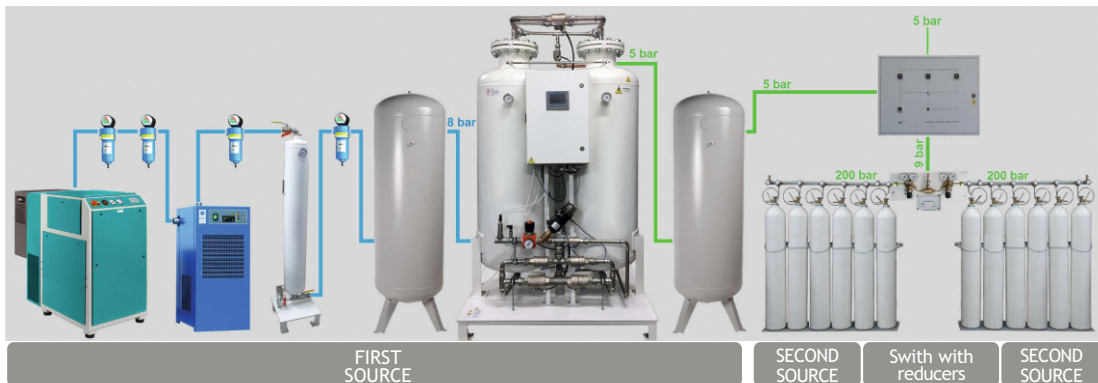
MEDICAL GAS CYLINDER MANIFOLDS M-R



- ⑥ - OXYGEN
- ⑦ - NITROUS OXIDE
- ⑧ - CARBON DIOXIDE

- Supply of O₂, N₂O, CO₂, AIR as primary, secondary and reserve sources of supply
- 3 types:
 - one collector manifold,
 - automatic two collectors manifold,
 - automatic two collectors manifold with autonomic mounting
- Electrical warming of evaporating section
- From 1 to 32 cylinders

⑨ MEDICAL OXYGEN GENERATING PLANTS M-DGS



⑩ MEDICAL VACUUM PLANT M-VS



- 2 or 3 rotary type vacuum pumps
- Double anti-bacterial filter with liquid assembler
- Control unit with integrated alarm system, remote control
- Rarefaction - minus 0,6 bar
- M-VS01 -2(3)x250 l/min
- M-VS02 -2(3)x580 l/min
- M-VS03 -2(3)x750 l/min
- M-VS04 -2(3)x1080 l/min
- M-VS05 -2(3)x1750 l/min
- M-VS06 -2(3)x2530 l/min



Activities in MEDICAL GAS SYSTEM projects:

- **Consulting** health institutions, architects, engineers, designers and general contractors on installation of medical gas systems in hospitals, according to international standards. In early planning of projects, providing answers to customer's general and specific questions.
- **Designing and developing** medical gas systems projects or systems for new medical institutions or renovations.
- **Selecting** equipment for medical gas systems in compliance with national standards, exact specifications of project and customer's financial capabilities.
- **Supplying** medical institutions with our Company's manufactured equipment for medical gas systems on very favorable terms.
- **Selecting** proper other manufacturers' equipment for medical gas systems in order to meet unconventional projects' specification.
- **Providing** supervision on our company's designed and developed projects, medical gas equipment and installation of piping networks.
- **Consulting** on performing tests for compliance with the international standards of medical gas systems in hospitals.
- **Guaranteeing** long - term (no less than ten years) supply of spare parts.

HOSPITAL MEDICAL GAS MONITORING SYSTEM

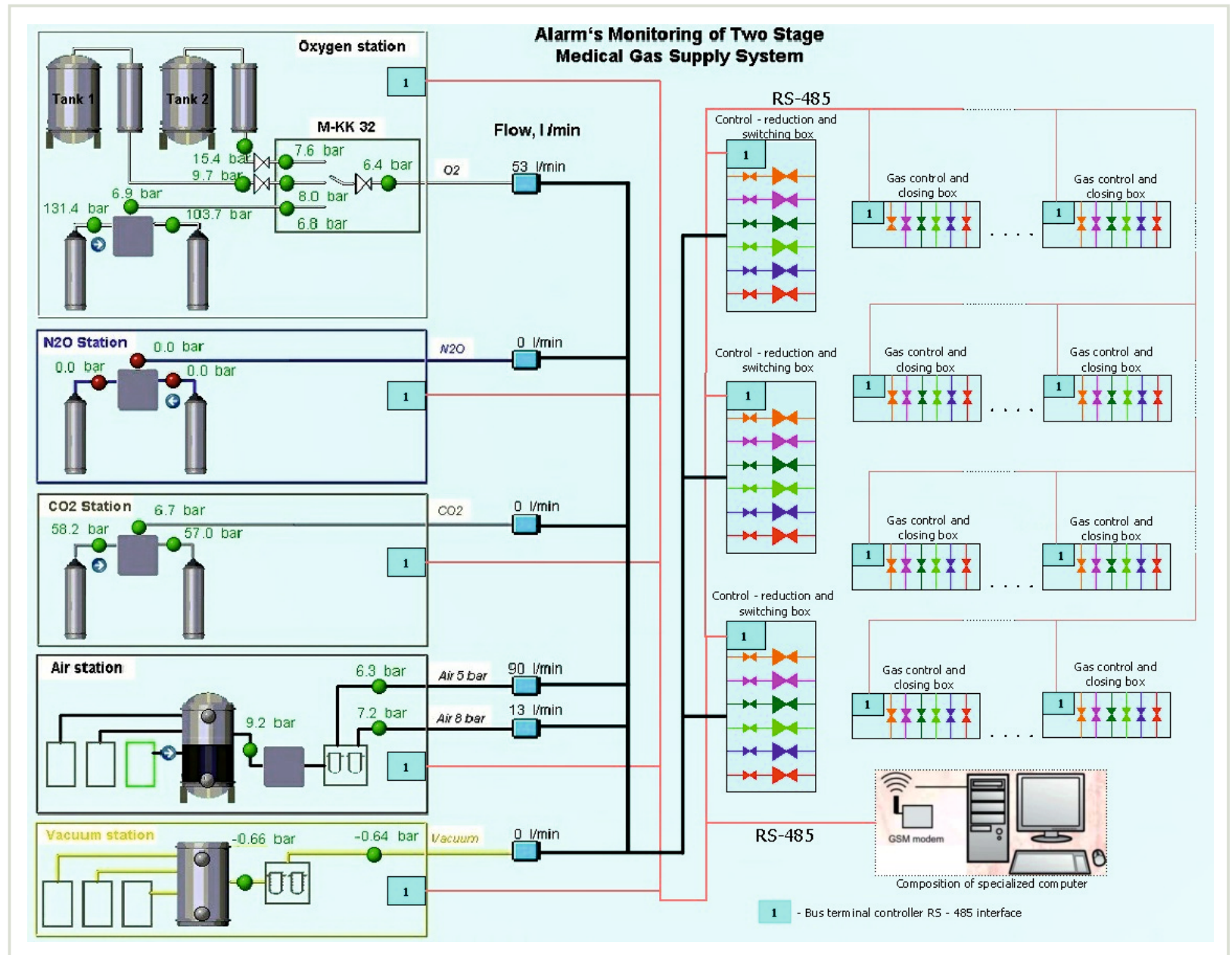
CENTRALIZED HOSPITAL MEDICAL GAS MONITORING SYSTEM IS DESIGNED TO:

- **Control** the hospital medical gas system pressure in the gas sources by the pressure control closure points.
- **Control** supplied medical gas flows detecting possible gas leaks, while analyzing earlier periods of gas flow quantities.
- **Perform** consumed medical gas calculation for a day, a week, a year.
- **Under** the system given pressure and flow parameters signal to the central computer and the mobile communication system about impermissible deviations.
- **Analyze** the obtained information in the central computer about cause of fault alarm signals and their correction method.
- **Perform** the most important system's installation working time recording, notify about the equipment's servicing terms, register failures.

THE SYSTEM CONSISTS OF:

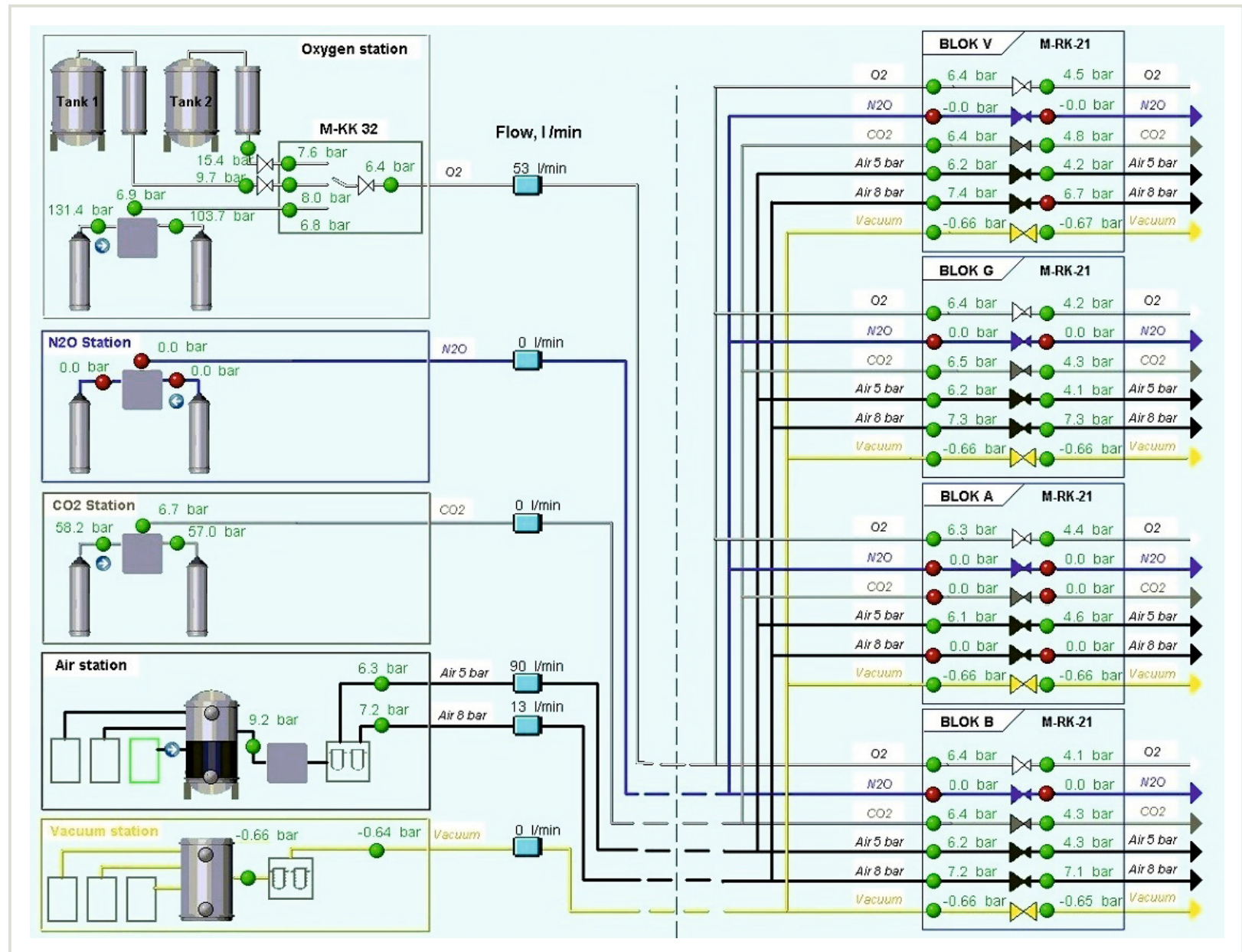
- Gas pressure and flow measurement with special modules.
- Analogic and digital modules which allows to process, convert and transmit to RS-485 interface or LAN. Modules can be integrated into devices or installed separately, depending in number of the control points.
- Three-wire system which allows all system interface modules to connect parallel or sequentially.
- Visual and sound alarm system, which informs about system status and emergencies.
- Special computer with RS 485 interfaces or LAN.
- Special software can be modified depending on the hospital's type and size of existing equipment.

The number of control points in the monitoring system is not limited. When developing a monitoring project, it is necessary to control gas pressure in sources and control pressure in main pipelines.



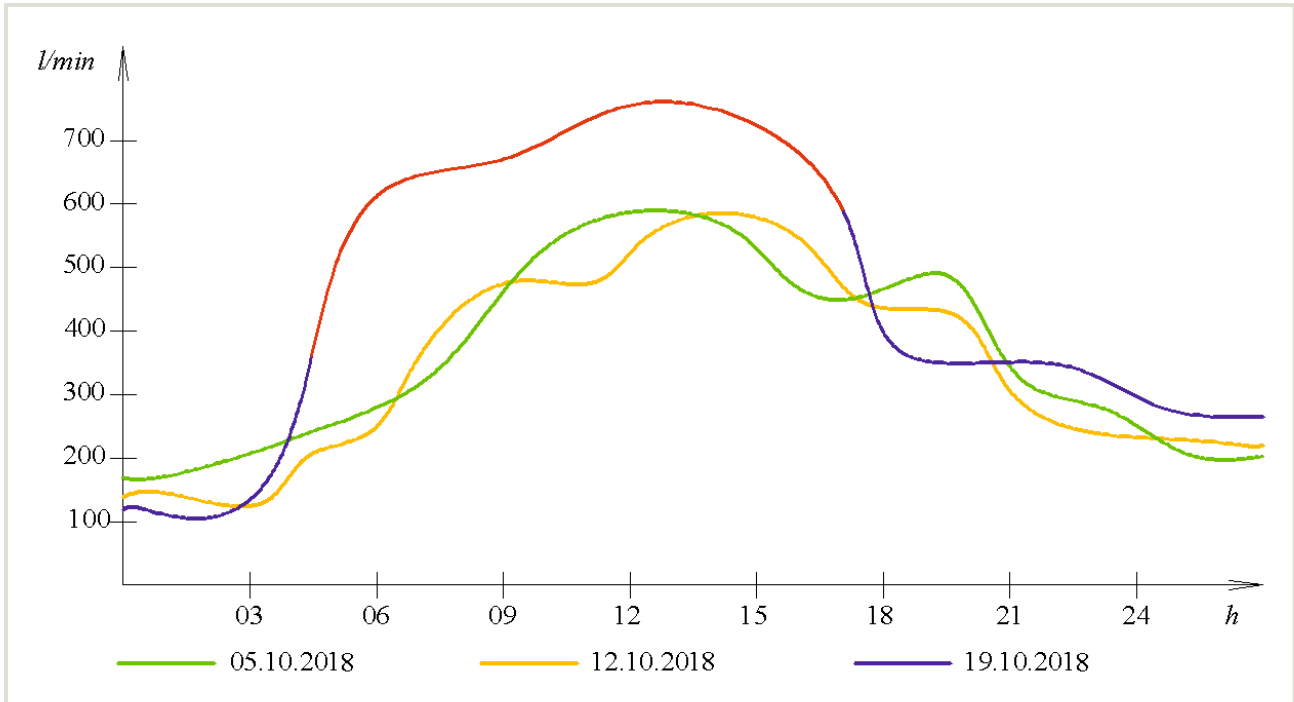
Hospital medical gas monitoring system-functional scheme

Monitoring the pressure of gases entering the terminal devices through control disconnecting devices allows you to quickly identify and eliminate faults in the pipelines

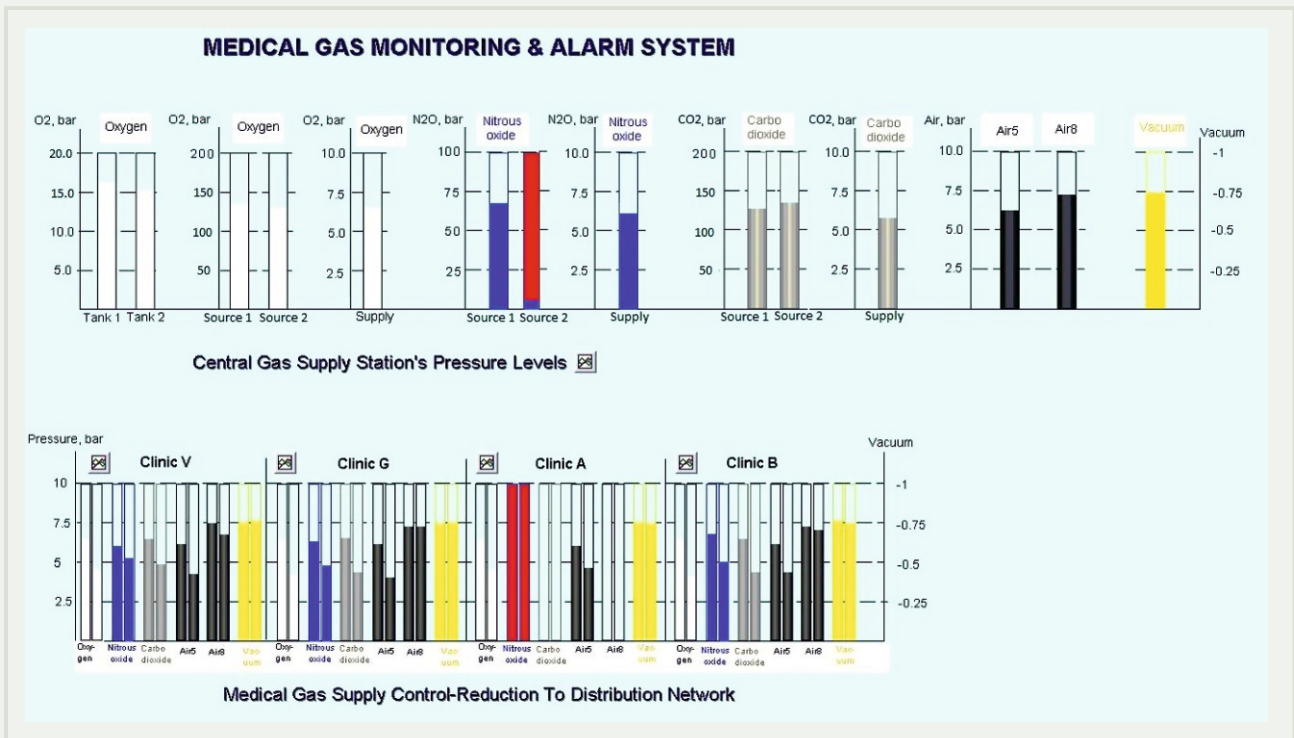


Medical gas pressure and flow drawing from working hospital

Red part of the flow chart 19.10.2018 is informing about appeared leakage in the system or sanctioned increased oxygen demand



Oxygen daily flows comparison chart



The main points of the gas pressure bar graphs

MULTIPOINT™ TERMINAL UNITS

CEILING PENDANTS M-GL

Ceiling pendants in operating rooms, intensive care wards, emergency rooms ensure:

Comfortable placement and operative positioning of life-support and controlling devices

Convenient handling of medical gases, compressed air, vacuum, low-voltage signals delivery to the patient's bed

Optimal space usage of space around the operating table, patient's bed, ensuring free access to life-support and control devices

FIXED POSITION CEILING PENDANTS WITH ONE AXIS ROTATION

FOR EMERGENCY ROOMS, INTENSIVE CARE WARDS AND SMALL OPERATING ROOMS

M-GL03 TECHNICAL DATA

- Designed individually depending on the height of the facility
- Service head's turning angle 330°
- Service head's length up to 1,5 m
- Maximum load 260 kg



CAN BE EQUIPPED WITH:

- shelves with railings for suspended devices
- Monitor holder
- I.V. pole for infusion fluid bags and pumps
- examination lights
- bedside screen

TYPICAL SET OF CEILING PENDANT



M-GL06 One arm ceiling pendant

- Ceiling pendant's construction with fixation elements and conical roller bearings for service head fixation
- Service head consists of:
 - up to 12 outlets for medical gas, compressed air, vacuum
 - up to 24 electric sockets
 - up to 12 equipotential pins
 - up to 6 low-voltage signal outlets
 - digital control of medical gas pressure and vacuum with alarm in case of pressure deviation
- To service head mounted:
 - up to 3 shelves with railings (580x460x35 mm or 500x400x35 mm)
 - lower shelf with drawer
 - 1 or 2 infusion holders for infusion fluid bags and pumps
 - additional shelves for monitors

Complete set of ceiling pendant is arranged by order specification



Fixed position ceiling pendant with one axis rotation in Emergency Center examination room.



Arrangement of the M-GL ceiling pendants in the operating room at Emergency Center.

Anesthetic two arms ceiling pendant with vertical service head.
Lifting capacity up to 230 kg

Surgical two arms ceiling pendant with horizontal service head.
Lifting capacity up to 240 kg

ONE OR TWO ARMS CEILING PENDANTS

For anesthesia or surgery working place in the operating rooms or intensive care wards. Ceiling pendants enable convenient placement of control and life support devices and other various medical equipment. Provides supply of medical gas, electricity and low-voltage signals to surgery field or place of medical procedures.



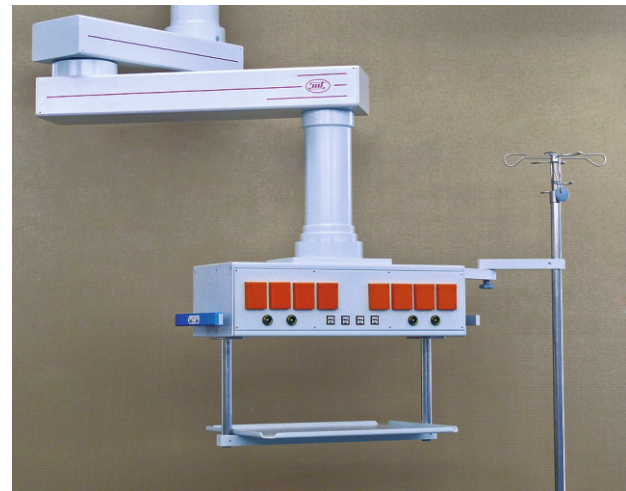
M-GL09 Two arms ceiling pendant

TECHNICAL DATA

- Designed individually depending on the height of facility
- Fixed arm and service head's turning angle 330°
- Fixed arm's length up to 1,8 m
- Service head's length up to 1,5 m
- Pneumatic-brakes with inversion (absolute stop without of compressed air)
- No need to use a transitional module between ceiling and ceiling pendant's
- Maximum load 240 kg, depending on the length of arms



M-GL09 Two arms ceiling pendant for endoscopy

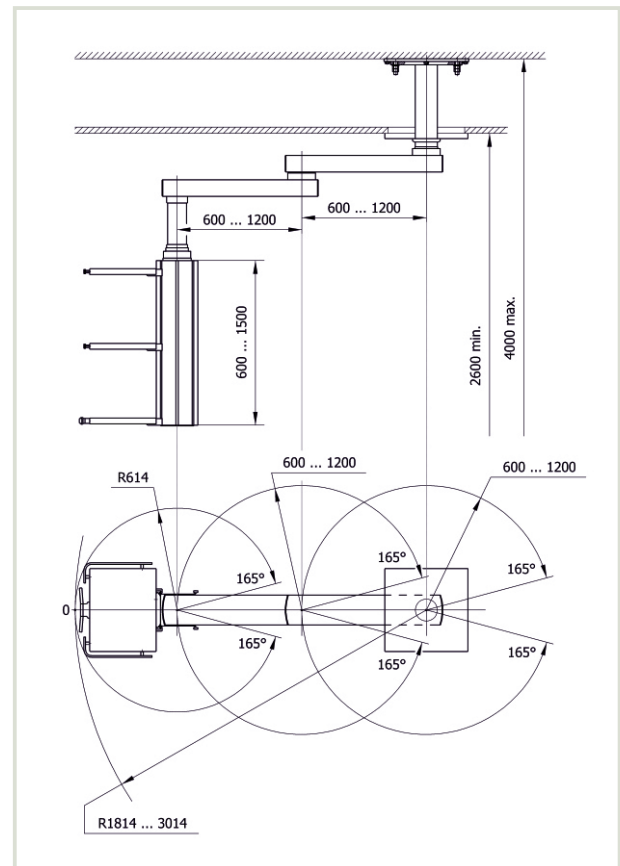


M-GL09H Two arms horizontal ceiling pendant





M-GL09 Two arms ceiling pendant



ONE OR TWO ARMS HEIGHT ADJUSTABLE CEILING PENDANTS

FOR CONVENIENT PLACEMENT OF ANESTHESIA OR SURGICAL DEVICES IN THE OPERATING ROOMS



M-GL09A Two arms height adjustable ceiling pendants

TECHNICAL DATA

- Designed individually depending on the height of facility
- Arms length 0,6-1,0 m
- Height adjustable arms length 0,6-0,9 m
- Arms and service head's turning angle 330°
- With electric pneumatic brakes
- Service head's length up to 1,5 m
- Service head's height adjustment 0,7 m
- Lifting capacity up to 230 kg
- Up to 4 height adjustable shelves fixed to the service head



M-GL09AH Two arms height adjustable ceiling pendant with horizontal service head

- Horizontal service head length 0,6-0,9 m
- Four horizontal rails for suspended devices
- Height of suspended shelf module with drawer up to 1000 mm
- Arms and service head's turning angle 330°
- Adjustable friction brakes

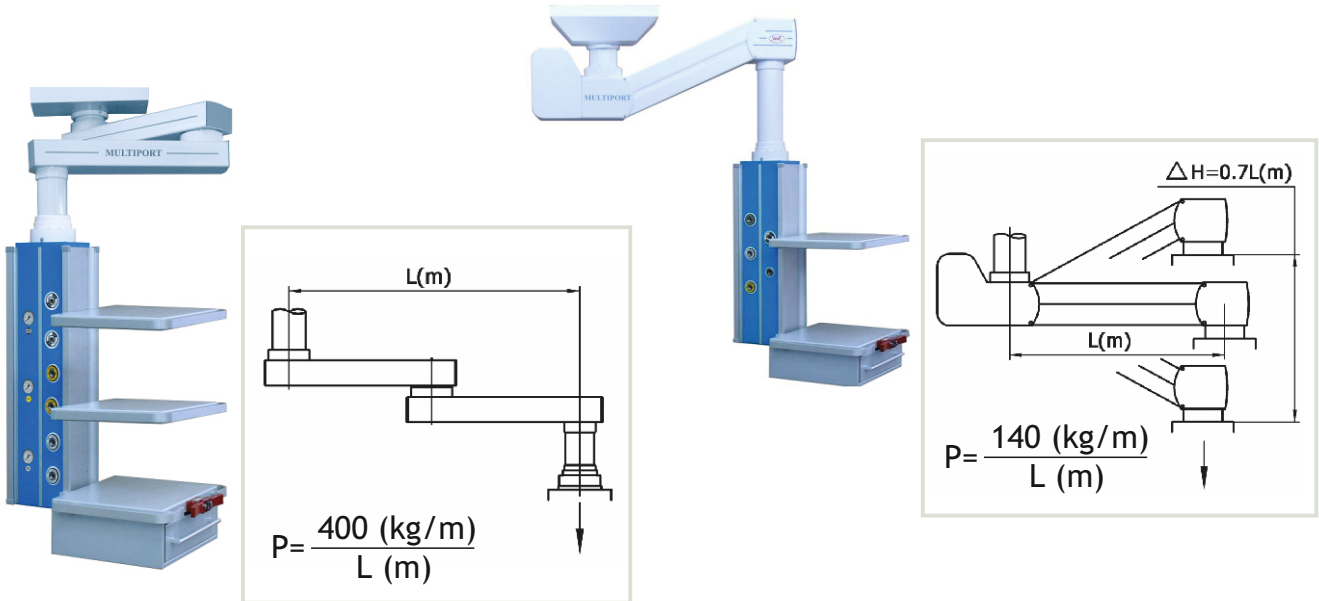


M-GL09A Two arms height adjustable ceiling pendant with hanging module for anesthesia machine or other workstations

Operating room with two arms height adjustable ceiling pendant M-GL09A for anesthetic equipment and surgical ceiling pendant M-GL09AH with horizontal service head.



CEILING PENDANTS MULTIPOINT FEATURES



Payload P for ceiling pendants M-GL06, M-GL09 is calculated using the formula, where L (m) is the distance between axes for fixing to the ceiling and service head.

Payload P for ceiling pendants M-GL06A, M-GL09A with height adjustable service head is calculated using the formula, where L(m) the distance between the vertical axes of rotation of the height adjustable arm



Reflected LED light sources on the ceiling pendant arms prevent fatigue caused from patients direct light.



Ceiling pendants service head with vertical stainless steel tubes Ø32 or Ø38 for various accessories mounting.

TWIN CEILING PENDANTS

FOR SPECIALIZED INTENSIVE CARE WARDS



M-GL06/M-GL09



- Intensive care and reanimation ward with ceiling pendants M-GL06/M-GL09 and additional source of high intensity reflected light:
- easy and prompt placing of all medical equipment on two service heads: monitoring and infusion;
- the most convenient access to the patient from all sides, without any equipment or connection cables on the ground of the ward.

Colors of side panels:

RAL 3004

RAL 5015

RAL 6018

RAL 6027

RAL 2003

Anodized aluminum

Colors of shelves:

RAL 9006

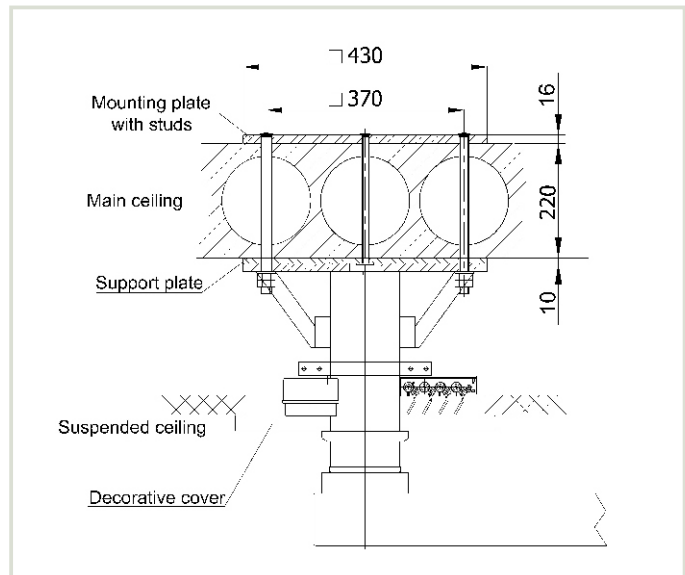
Colors of shoulders and carrying tubes:

RAL 9016

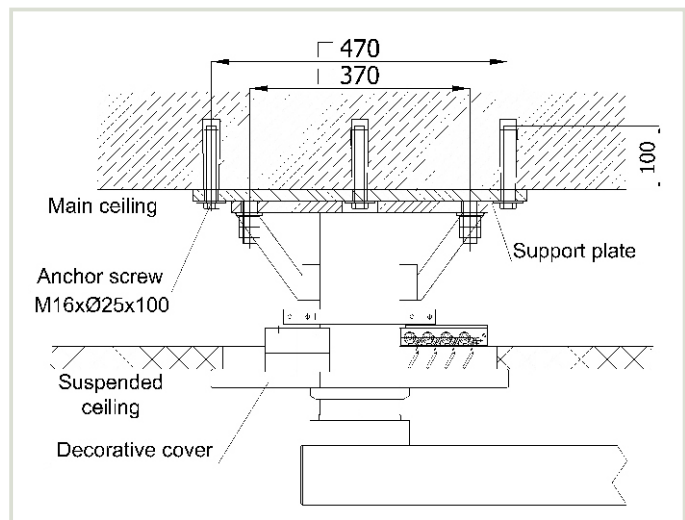
INSTALLATION OF CEILING PENDANTS MULTIPOINT

Ceiling pendants MULTIPOINT mounting is performed without intermediate module fixing to the ceiling slab in 3 ways.

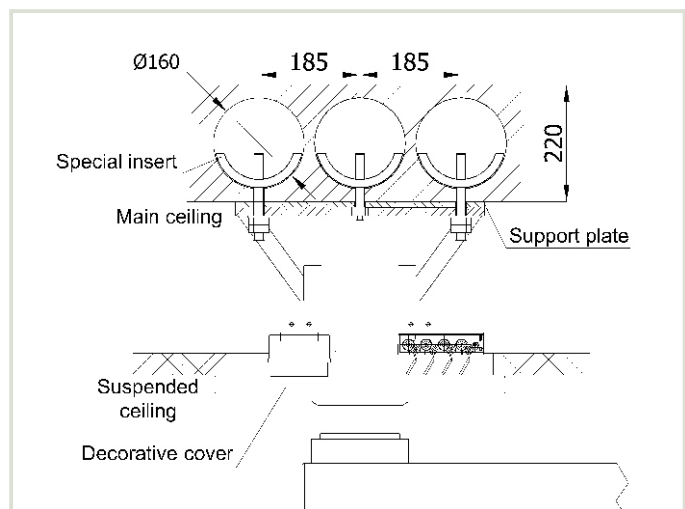
- Ceiling pendant mounted to the main ceiling through the ceiling slab.
- This method is the most secure and suitable for all types of ceiling.



- Ceiling pendant mounted with anchors to the monolithic ceiling slab.
- It requires high quality monolithic slab.
- This type of mounting does not damage flooring in upper floor.



- Ceiling pendant mounted to the hollow core slab with special inserts.
- This type of mounting does not damage flooring in upper floor.

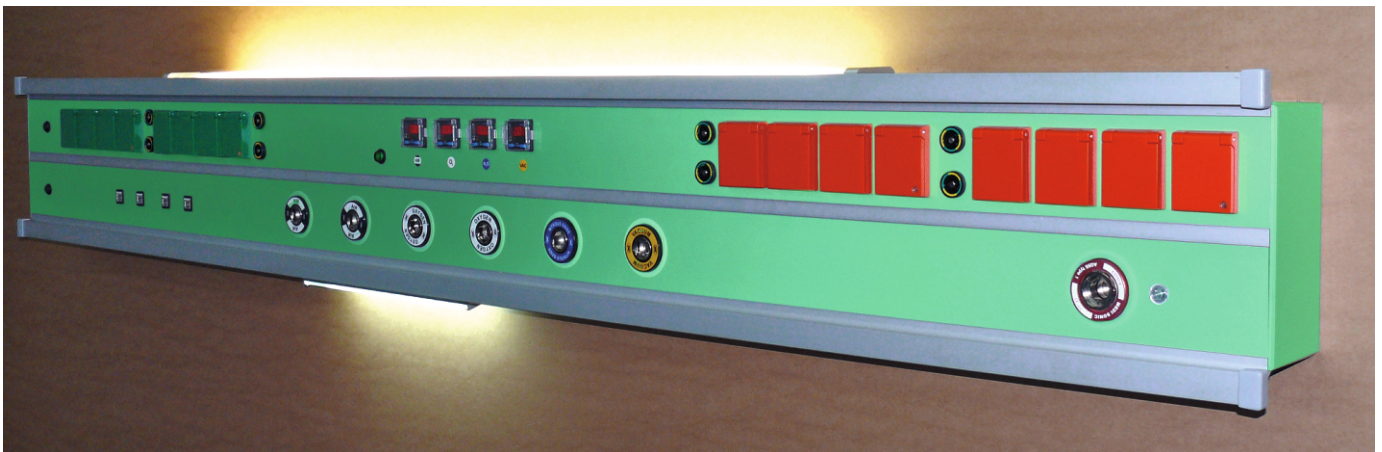


MULTIPOINT™ TERMINAL UNITS

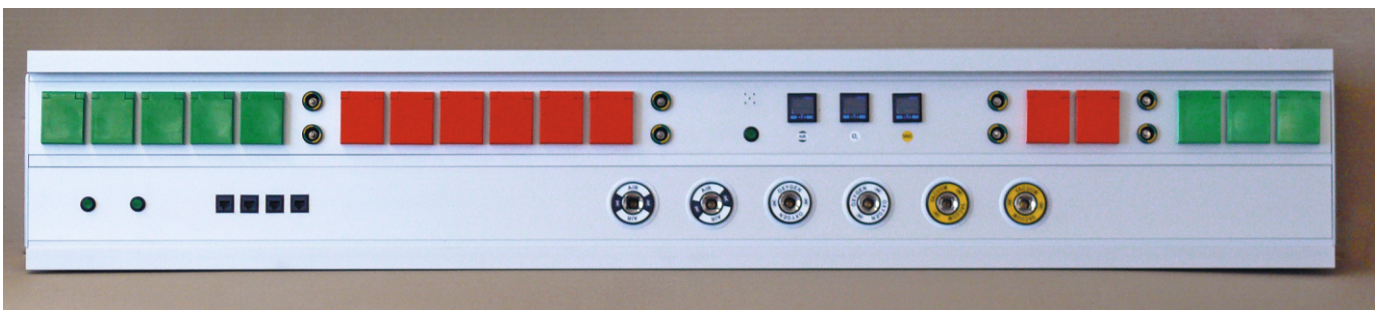
WALL PENDANTS M-GB

FEATURES of M-GB09

- Supply of medical gases, compressed air and vacuum
- Supply of electricity, low-voltage and audio-video signals
- Easy fitting of control and life support devices on shelves, rails and I.V. poles



- Special four-sections anodized aluminum profile 250 x 116 mm, length depends on the project
- The front panels and side covers are from anodized aluminum or coated with powder paint in RAL colors
- Two railings 10 x 25 mm for accessories
- Indirect lighting, patient's zone lighting and night lighting
- Medical gas outlets, electric sockets, information signal sockets, medical gas pressure control indicators
- The panel can be equipped with various national standard outlets





COMPONENTS AND SET OPTIONS:

- Shelf for the monitor, rotating and height adjustable
- Shelf for the monitor with drawer
- I.V. pole for infusion , syringe pumps and drips
- Suspended shelf with drawers
- Direct light sources for patient's examination
- Bedside screen
- Flowmeter with oxygen humidifier mounted on the rail or direct connection
- Suction systems from centralized vacuum, compressed air with fluid collection jars
- Catheter holder and other suspended devices
- Remote control for nurse call and lighting system control

FIELD OF APPLICATION



- For small operating theatres
- For anaesthesiology wards
- For intensive therapy wards and resuscitation rooms

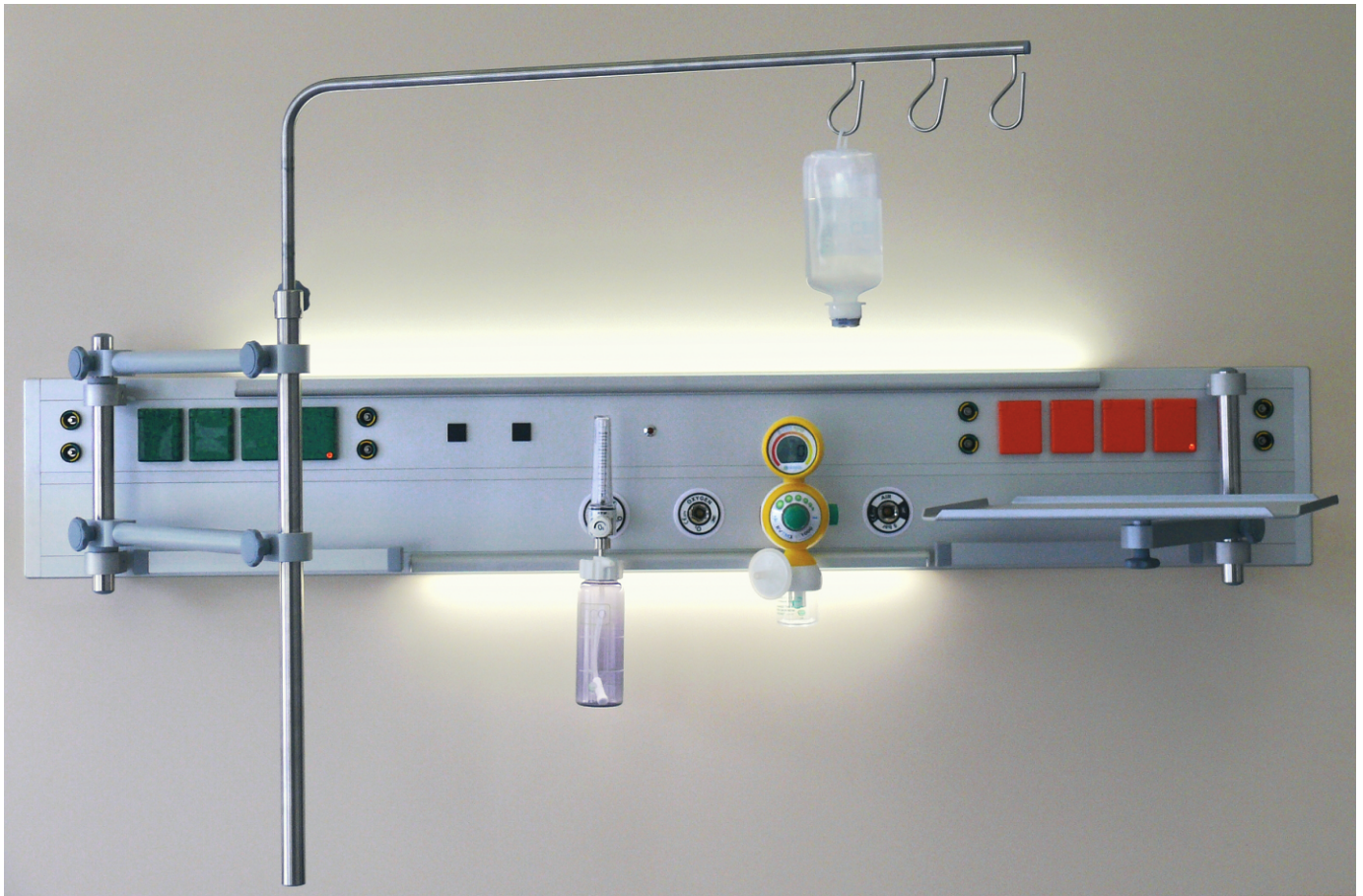


- For neonatal wards
- For emergency rooms
- For treatment rooms



Wall pendants can be joined end-to-end to form a continuous module for general resuscitation rooms and intensive therapy wards

CONCEALED INSTALLATION WALL PENDANTS M-GB09H



FEATURES:

- Concealed installation
- For wards of improved design and comfort
- Supply of medical gas, electricity and data signal
- General indirect lighting, direct lighting for reading and night lighting with LED lamps
- Wireless remote for nurse call and lighting control
- Prompt setup of accessories
- Length of the profile depends on the number of gas outlets, electric sockets and sockets of data signal
- Console body - anodized two-sections aluminum profile



Colors of side shelves:

RAL 3004

RAL 5015

RAL 6018

RAL 6027

RAL 2003

Anodized aluminum

Colors of profile:

Anodized aluminum

Colors of front panels:

RAL 9016

VERTICAL WALL PENDANTS



FEATURES:

- For two beds service in resuscitation, intensive care wards with maximum space saving
- Supply of medical gas, electricity and data signal for each patient
- I.V. poles for infusion, syringe pumps and drips
- Upper and lower indirect lighting around the patient
- The panel can be equipped with various national standard outlets.

Colors of side panels:

RAL 3004

RAL 5015

RAL 6018

RAL 6027

Colors of profile:

RAL 1013

RAL 9010

Colors of shelves:

RAL 9016

VERTICAL WALL PENDANTS M-GB09V FOR SPECIAL APPLICATIONS

ECONOMIC VERSION OF WALL-MOUNTED VERTICAL PENDANTS
WITH A LIMITED HORIZONTAL SPACE FOR:

- intensive care wards
- wards of general therapy and emergency care
- treatment rooms

COMPONENTS AND SET OPTIONS:

- up to 8 gas outlets and system AGSS (Anaesthetic Gas Scavenging System)
- up to 8 electricity socket and 4 equipotential pins
- reading light source LED up to 14 Wt with string switches
- dual outlet Rj45
- system nurse call modules

THE PENDANT IS OPTIONALLY COMES WITH FOLOWING ACCESORIES:

- rails for suspended equipment
- shelf for the monitor and other equipment
- dropper holder
- infusion pump holder
- source of focused LED light
- oxygen flowmeter with humidifier
- vacuum regulator with collection jars



Console length up to 2000mm., height 148 mm, depth 103 mm
Console body (profile) and console front panels - anodized (light silver color)
The front panels can be powder painted in RAL colors

Colors of side shelves:

RAL 3004

RAL 5015

RAL 6018

RAL 6027

Anodized aluminum

Colors of profile:

Anodized aluminum

Colors of front panels:

RAL 9006

MULTIPOINT™ TERMINAL UNITS

PENDANT BRIDGES M-GM

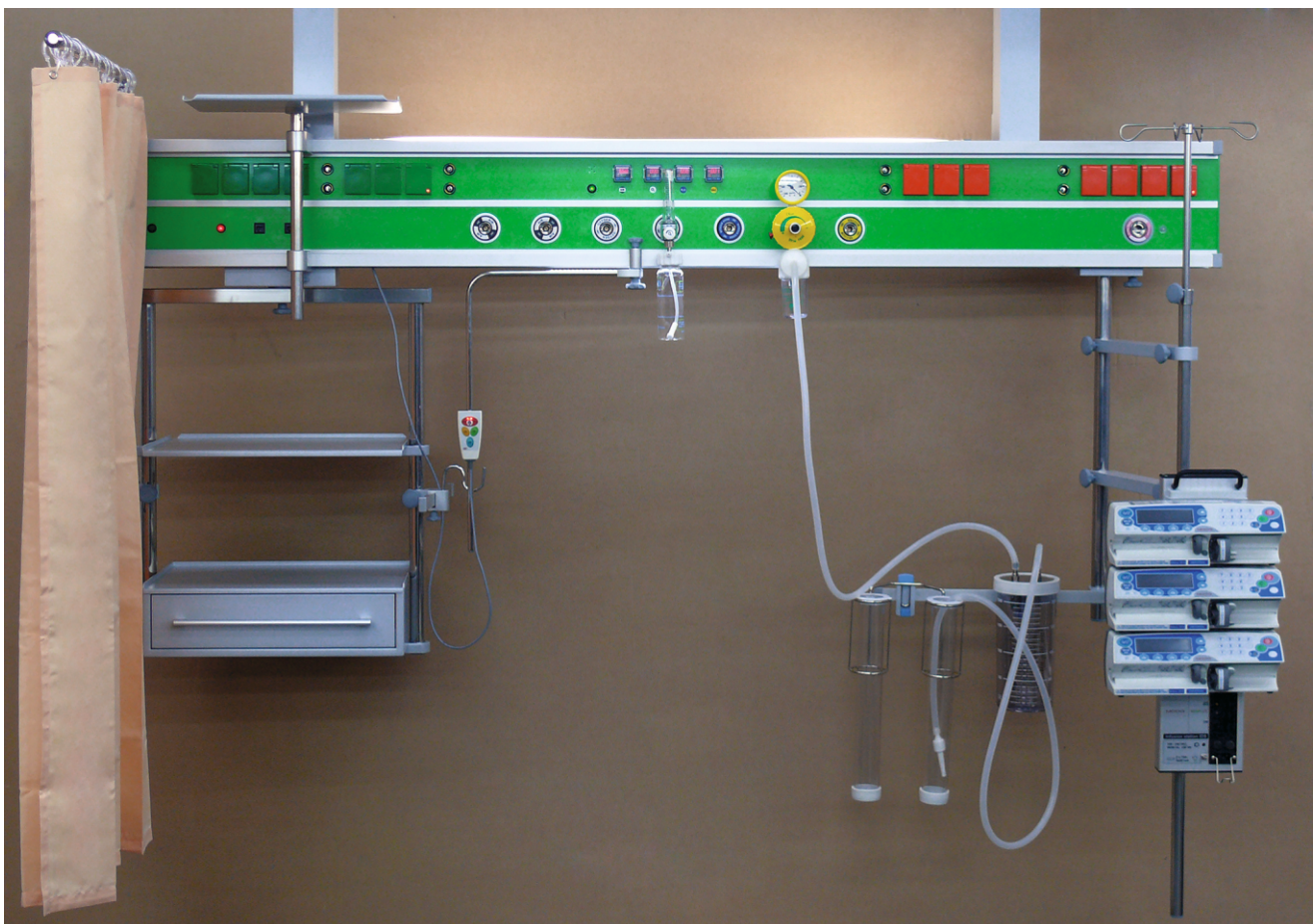
FEATURES:

- Delivery of medical gases, compressed air and vacuum to the patient's bed
- Delivery of electricity, low-voltage and audio-video signals
- For easy installation of patient's life support devices on shelves, rails and infusions stands
- Possibility to install in different places, e. g. in front of windows, glass partitions
- Convenient approach to patient from all sides
- Easy equipment installation of the suspended shelves and stands
- Special four-sections anodized aluminum profile 225 x 135 mm, length depends on a project
- Two railings 10 x 25 mm for additional devices
- The front and side areas are coated with anodized aluminum or with powder paint in RAL colors
- Indirect lighting, patient's zone lighting and night light
- Medical gas outlets, electric sockets, information signals, medical gas pressure control indicators



COMPONENTS AND SET OPTIONS:

- Bridge pendant can be assembled with:
- Sliding shelf module, moving along entire profile length, with rotation around vertical axis, with two shelves 500x400 mm, lower shelf with a drawer
- Extra rails 10x25x400 mm for suspended devices (fixed on the sliding module)
- A rotating shelf for a monitor 300x400 mm, adjustable height
- Sliding I. V. pole for infusion pumps and drips, with standard rail 10x25 mm for suspended equipment
- Sources of direct light for patient's examination
- Bedside telescopic screens
- Flowmeter with oxygen humidifier mounted on a rail or with direct connection
- Suction system with fluid collection jars from central vacuum or compressed air. Option to fix fluid collection jars on the euro rail.
- Catheter holder and other suspended devices
- Remote control for nurse call and lighting system control



FIELD OF APPLICATION



- For small operating wards
- For anesthesia wards
- For intensive therapy wards and resuscitation rooms



- For neonatal wards
- For emergency rooms
- For treatment rooms

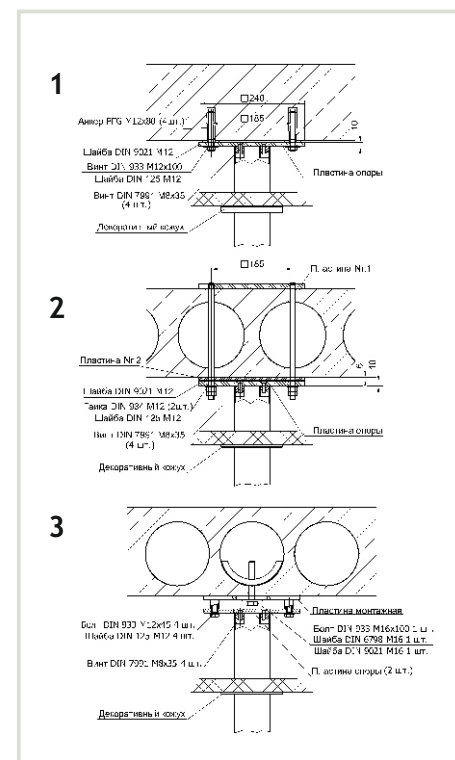


Bridge pendants can be joined end-to-end to form a continuous module for general resuscitation rooms, intensive therapy wards and others

CONSTRUCTION FEATURES



- Solid mounting into the ceiling with two support-legs. Possible three options of mounting support-legs to the ceiling: **with anchors to the monolithic ceiling slab (1), mounted to the main ceiling through the ceiling slab (2), mounted to the hollow core slab with special inserts (3).**
- Four-section special anodized aluminum profile with two special rails 10x25 mm in front, with line roll bearing though all length of profile for sliding modules
- Front and end covers are made from aluminum profile and fixed into main profile grooves without any fasteners
- Profile length for one place depends on the project from 1500 mm up to 2800 mm
- Separate pendant bridges are possible to join in one line without gaps, using special connection components



Colors of side panels:

RAL 3004

RAL 5015

RAL 6018

RAL 6027

Anodized
aluminum

Colors of
profile:

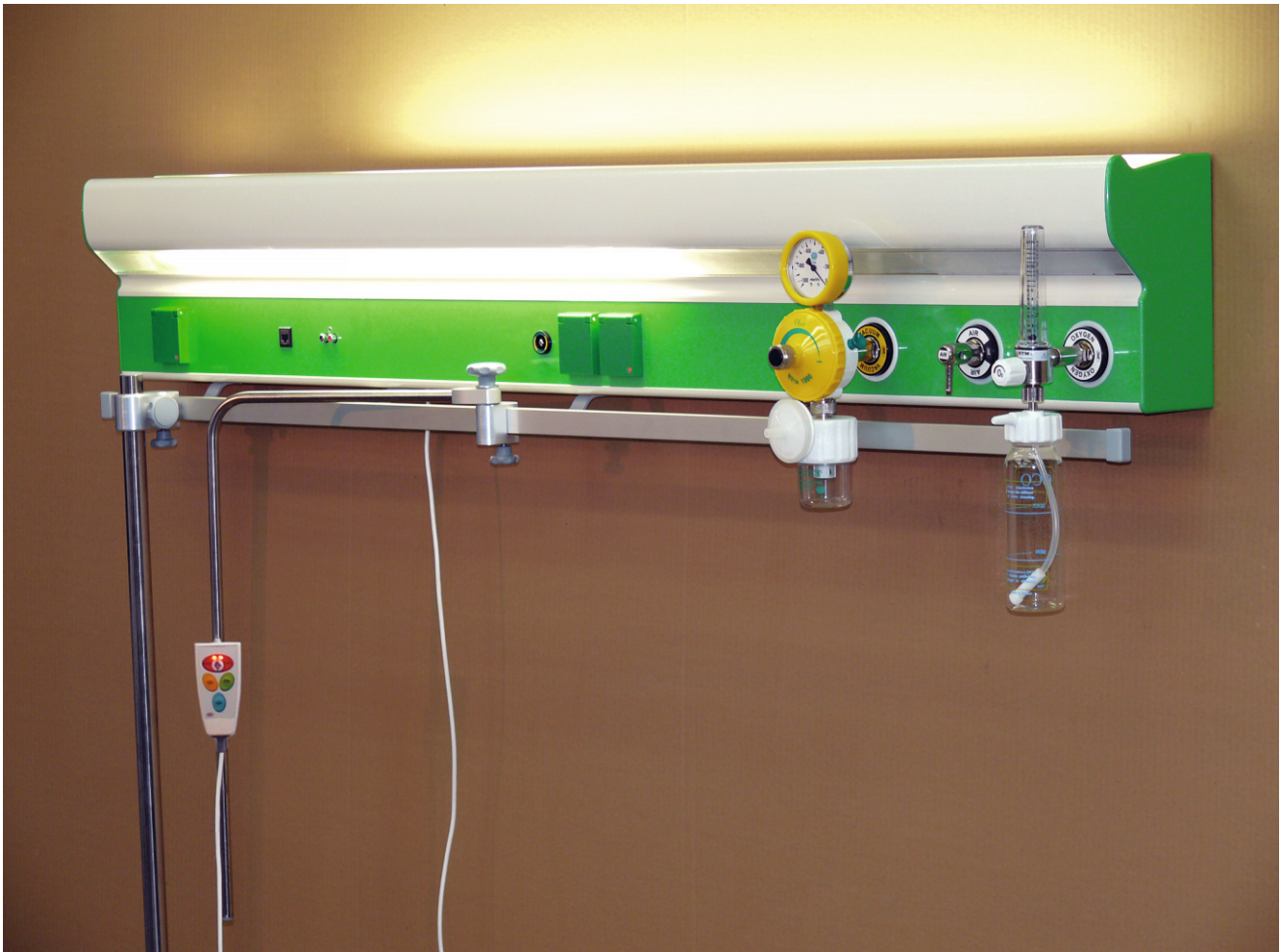
Anodized
aluminum

Colors of support
and shelves:

RAL 9006

MULTIPOINT™ TERMINAL UNITS

BAD HEAD UNITS M-PB



FEATURES:

- Medical gas, compressed air and vacuum supply to the patient's bed
- Indirect ward lighting
- Direct lighting for reading and procedures
- Night lighting
- Electricity, audio-video supply of signals to the patient's bed
- Nurse call for various centralized monitoring systems
- Call and activation of lights by patient's remote control on movable magnet holder
- Attachment of infusion fluid bags and pumps
- Mobile shelf for monitor on entire length of bed head unit
- Railing for suspended equipment
- Inner ultraviolet air sterilization



COMPONENTS AND SET OPTIONS:

- Special aluminum profile 225 x 137 mm colour according to RAL
- Up to 6 medical gas outlets of any standard
- The source of direct light: LED 28W
- The source of indirect light: LED 16W
- The source of night light: LED 4W
- Timer (for ultraviolet air sterilization)
- Monitor shelf 360 x 240 mm
- Patient's remote control attached to a flexible cable with membrane panel on the mobile magnetic holder
- Mobile turning holder for infusion bags
- Mobile holder for infusion pumps
- Railing (10 x 25 mm) for suspended equipment
- Bed head units can be separate for each bed or joined end-to-end to form long continuous module





TYPICAL TECHNICAL SPECIFICATIONS:

Characteristics	Modification			
	M-PB0512	M-PB0515	M-PB0518	M-PB0520
Length, mm	1200	1500	1800	2000
The source of indirect lighting, LED,W	28	28	28	28
The source of direct lighting (for reading), LED,W	16	16	16	16
The source of night lighting, LED,W	4	4	4	4
Option for air sterilization lamp	-	+	+	+
Medical gas outlets, up to 6 pcs.	3	4	6	6
Nurse call system with light control	+	+	+	+
Electrical sockets, up to 8 pcs.	3	4	6	8
Equipotential pins, up to 4 pcs.	1	2	2	4
Low-voltage supply outlets RJ45, up to 2 pcs.	1	1	2	2
Audio-video outlets, up to 2 pcs.	1	1	2	2

- Bed head units may be assembled with various standard medical gas outlets.
- Components and assembly versions for bed head units per customer's request.

FIELD OF APPLICATION



- For inpatient wards
- For wards of recovery
- For maternity / neonatal rooms
- For day patient's rooms
- For emergency rooms
- For treatment rooms



Color of profile:

Colors of front panel and side covers:

RAL 1013

RAL 9010

RAL 3004

RAL 5015

RAL 6018

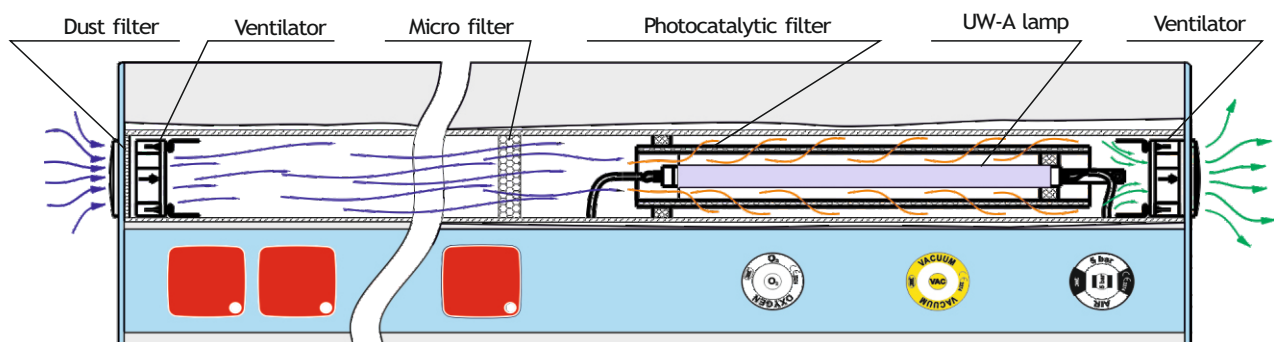
RAL 6027

RAL 9010

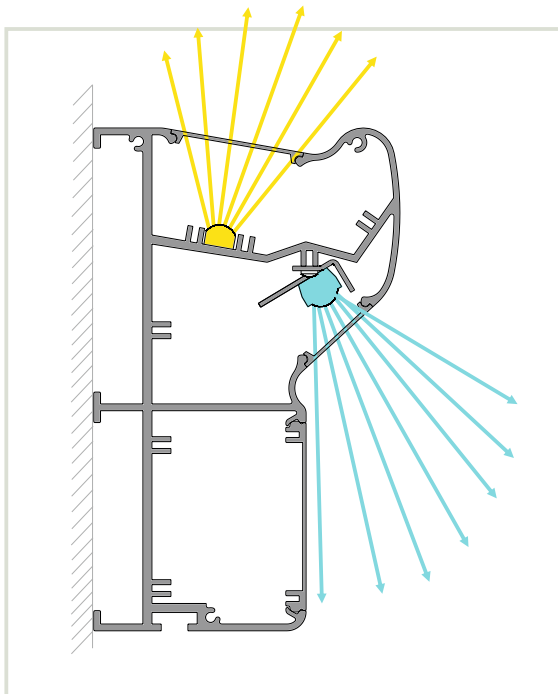
BHU M-PB05S WITH AIR STERILIZATION & LED LIGHTS



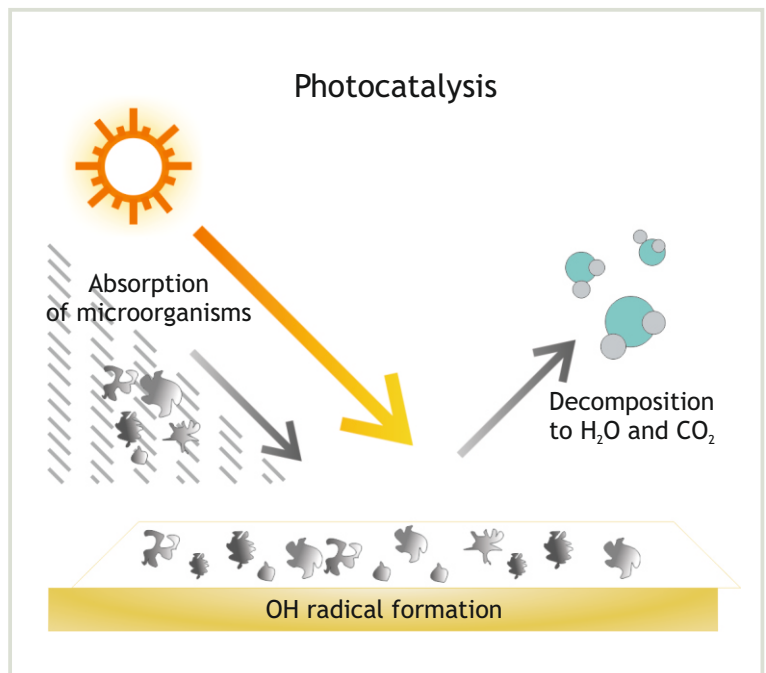
- The Patented Air Sterilization (PAS) system, integrated in our BHU, guarantee to eliminate viruses COVID-19 and others bacterias and fungi in patient's ward air.
- With our patented system harmful to humans OZONE gas is NOT released in the sterilization process, unlike with the use of ultraviolet industrial air sterilizers.
- With PAS air sterilization may be continued when patients or medical staff are present in the room. Operating noise level does not exceed the normal background noise in the typical hospital ward.
- Our BHU indirect and patient's direct (reading) lights use high efficiency, low energy consumption, very long life, and "cutting-edge technology" LED elements.
- Indirect and direct lights are designed not to dazzle the eyes of patients and medical staff.
- Light and nurse call magnetic remote control is extremely convenient to the patient. It is always within easy reach of the patient and quickly attaches to any metal surface for safe keeping.



Air sterilization process drawing



Direct and indirect light flow diagram



Air sterilization using Photocatalysis process

TECHNICAL DATA:

Characteristics	Modification		
	M-PB0515S	M-PB0518S	M-PB0520S
Length, mm	1500	1800	2000
Air sterilization ventilator capacity m ³ /h	2x23	2x23	2x23
Ventilator noise level dBA, not more than	11	11	11
Sterilization mode any time by choice of med personnel, h	24	24	24
Intensity of the reflected light at a distance of 1m, Lux	560	560	560
Intensity of the patients zone light at a distance of 1m, Lux	420	420	420
Remote control for the light sources and nurse call on the magnet holder	+	+	+
A place for nurse call system installation	+	+	+
Medical gas outlets, up to 6 pcs	3	5	6
Electrical sockets, up to 8 pcs.			
Optional equipotential pins, low voltage and special connection outlets	4	6	8
	+	+	+

- The patent of this photocatalyst has the assigned right for use in this medical device.
- Elements, which are used in our PAS chain, exceed a 10,000 hour performance life.
- The dust filter needs to be changed after 3,000 hours of use.
- The high performance LED elements do not require service. Their performance life is over 30,000 hours.

SINGLE WALL PENDANT

THE ECONOMIC MODELS OF WALL PENDANTS:

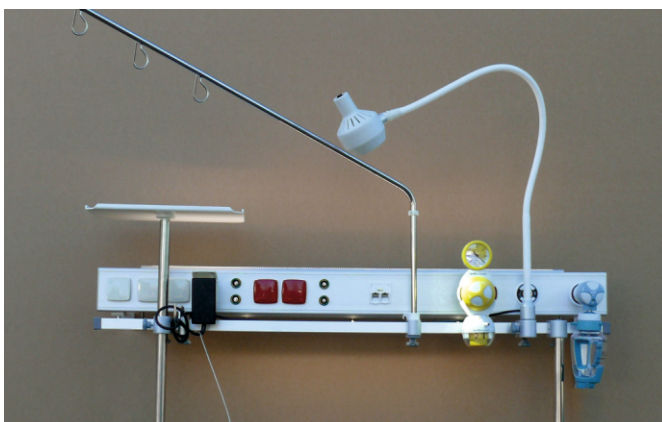
FIELD OF APPLICATION:

- intensive care wards
- wards of general therapy and emergency care
- treatment rooms



COMPONENTS AND SET OPTIONS:

- rails for suspended equipment
- shelf for the monitor
- dropper holder
- infusion pump holder
- source of focused LED lamp
- flowmeter with oxygen humidifier
- vacuum regulator system with collection jars
- up to 8 gas outlets and system AGSS
- up to 12 electricity sockets and 6 equipotential pins
- LED light sources up to 28 W with switch
- reading light source LED up to 16 W with string switches
- nurse call module



- Console length up to 3000mm., height 1024 mm, depth 73 mm
- The front panels can be powder painted in RAL colors (see below)

Colors of side panels:

Colors of profile:

Colors of shelves:

RAL 3004

RAL 5015

RAL 6018

RAL 6027

Anodized aluminum

Anodized aluminum

RAL 9006

BED HEAD UNIT for VIP wards



FEATURES:

- Concealed installation
- Picture slides on top of bed head unit when it is not under operating conditions
- Supply of medical gases, electricity and of data signals
- Indirect ward lighting, direct lighting for reading and night lighting with LED lamps
- Wireless remote for nurse call and control of lighting sources
- I.V. bag holder
- Railing for suspended equipment
- The image on the picture depends on a request of customer
- Dimensions 819 x 595 x 114,3 mm
- Built-in depth 74 mm



NURSE CALL SYSTEM

COMPATIBLE WITH DIFFERENT MODELS OF SUPPLY UNITS
UNITS PRODUCED BY “MEDICAL TECHNOLOGIES LBI“

FEATURES

- Complies with the requirements of standards and recommendations for nurse call systems
- Three different levels of alarm call
- Up to 254 adressable call points
- Extension of features when connected to PC
- Pocket paging system (optional)
- Control of staff operations with magnetic key (optional)
- Door monitoring equipment
- Parallel connection of modules using two-wire system
- Selection of remote control
- Printed out or stored to disk of nurse call data
- Suitable for connecting to existing nurse call system wiring



MAIN PRODUCT OVERVIEW:



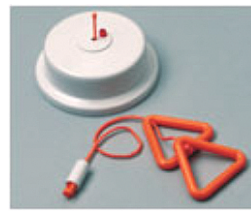
- NET243
Indication panel with large text display; LCD indicator/control panel; Two rows of text; 12 mm high characters; Integrated sounder.



- NET201
Central control unit (with power supply unit); 254 addressable call points; 26 LCD indicator panels; power supply;



- NET205M
Addressable nurse call unit; controlled by
 - push-button;
 - indication light;
 - a socket for a
 - push-to-call extension lead.



- NET214
Ceiling mounted pull switch; 2.5 meters of orange cord; two triangular pulls; a red reassurance light.



- NET210
Over door light



- NET236
Jack plug programmer.

SHORT OPERATING DESCRIPTION:

Operation of the Nurse call system

- To call a nurse, press the red button on the remote control. This is the first level of challenge. The call confirmation indicators on the remote control and on the NET243 terminal panel light up.
- And on the display module - the place of the call with sound confirmation of the call.
- Arriving in the ward, the nurse presses the blue (PRESENCE - confirmation of presence) button on the terminal device panel
- If the nurse needs additional help, she presses the red button (ALARM) on the terminal device panel (second call level)
- The third level of the call is the emergency call. Used in emergency situations. This requires a combination of button presses. The buttons must be pressed in sequence: the red button on the remote control; then the red button (ALARM - alarm) on the terminal device panel; and press the red button on the remote control again.
- After the visit, the nurse must press the blue (RESET) button on the terminal device panel again.

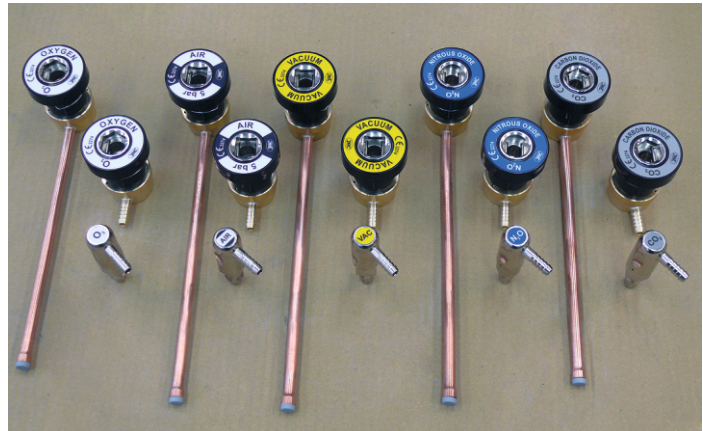
MULTIPORT™ TERMINAL UNITS

MEDICAL GAS OUTLETS & PROBES

Quick-connection medical gas outlets for operative connection of the medical equipment to medical gas supply systems

TECHNICAL DATA

- Maximum inlet pressure to 10 bar
- Vacuum rarefaction to -0.9 bar
- Pressure decrease at the flow 60 l/min is less than 0.15 bar
- Colour marking according EN ISO 9170-1
- Complies with standard DIN 13260-2
- Dimensions: height 65 mm, diameter 48 mm



FEATURES

- **Two fixed connection positions**
 - working (gas slot open)
 - stand by (gas slot closed)
- **Two gas closing valves:**
 - working
 - maintenance
- **Mechanical purifying filter**
- **Socket coding to the base block** in order to protect from wrong connection with other type medical gases
- **Simple and fast socket separation** from base block



MODELS

- **O₂:** M-TD1 for copper pipes
M-TD2 for flexible hoses
- **AIR:** M-TO1 for copper pipes
M-TO2 for flexible hoses
- **N₂O:** M-TA1 for copper pipes
M-TA2 for flexible hoses
- **CO₂:** M-TB1 for copper pipes
M-TB2 for flexible hoses
- **VAC:** M-TV1 for copper pipes
M-TV2 for flexible hoses

TYPE OF INSTALLATION OF MEDICAL GAS OUTLETS



Installation of outlets with two screws to the plate when the distance between the valve installation and the panel is 60 mm



Installation of outlets to rails in various profiles when the distance between valve installation and panel is 88 mm



Various individual Installation options for special requests. Installation in profiles of ward bedside consoles.



MEDICAL GAS PROBES

- With non-return valves for flexible hoses and 360° rotation:

O₂
AIR
N₂O
CO₂

- For direct connection of oxygen humidifier:

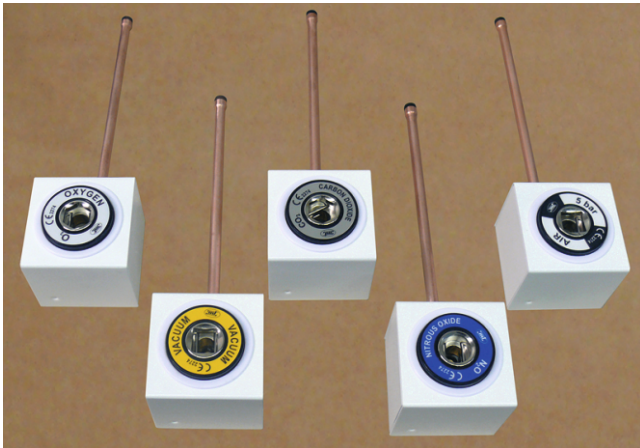
O₂

- For direct connection for vacuum regulator:

VAC

MEDICAL GAS OUTLETS IN MOUNTING CASES

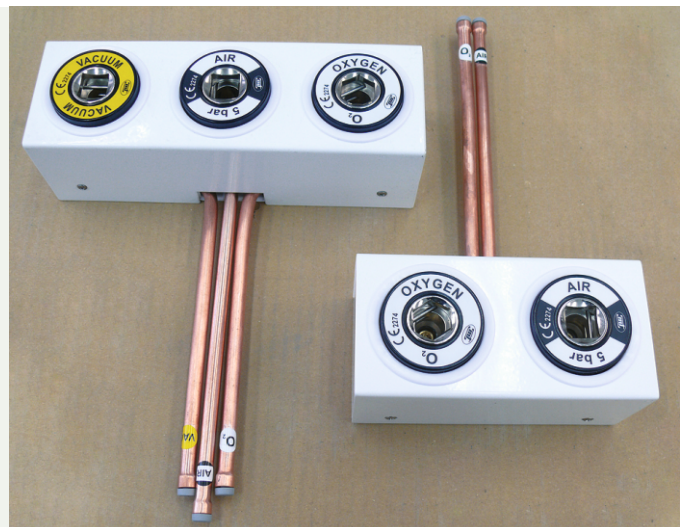
SURFACE INSTALLATION



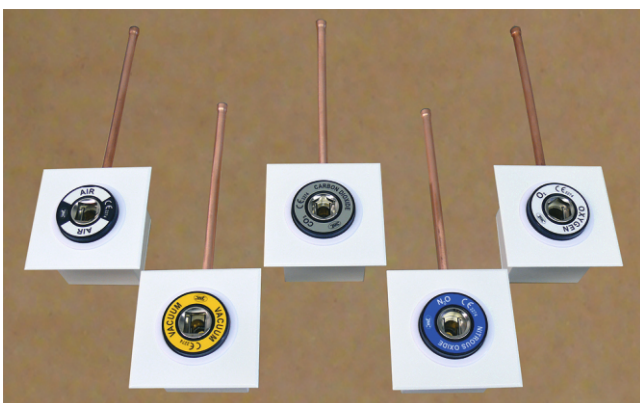
Dimensions:
length 70 mm
width 70 mm
height 68 mm

O₂: in cases for surface installation 500861
AIR: in cases for surface installation 500862
N₂O: in cases for surface installation 500863
CO₂: in cases for surface installation 500864
VAC: in cases for surface installation 500865

- Dimensions:
140x70x60 mm set of any two gases
210x70x60 mm set of any three gases
- Installation: 4 screws
- X - type of gas:
 - 1 - O₂
 - 2 - AIR
 - 3 - N₂O
 - 4 - CO₂
 - 5 - VAC



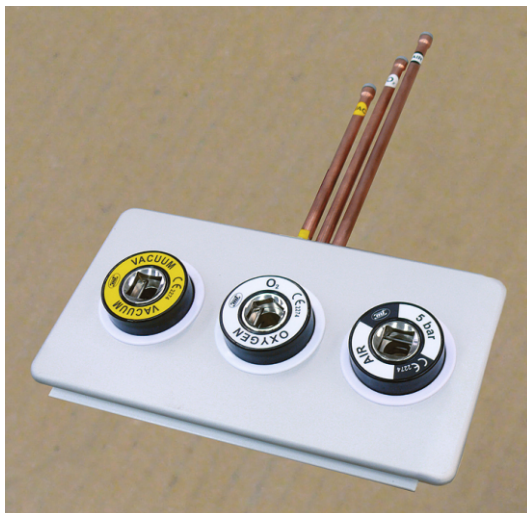
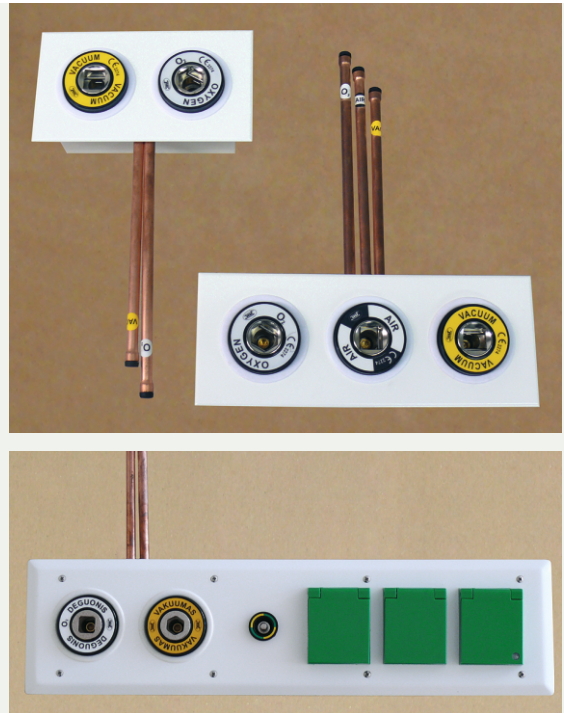
CONCEALED INSTALLATION



Dimensions:
length 90 mm
width 90 mm
height 68 mm
depth 57 mm

O₂: in cases for hidden installation 500871
AIR: in cases for hidden installation 500872
N₂O: in cases for hidden installation 500873
CO₂: in cases for hidden installation 500874
VAC: in cases for surface installation 500875

- Dimensions:
160x90x68 mm set of any two gases
230x90x68 mm set of any three gases
- Fastening: 4 screws
- X - type of gas:
1 - O₂
2 - AIR5
3 - N₂O
4 - CO₂
5 - VAC
- Gas outlets and electrical sockets in mounting cases can be designed according to individual needs



- Dimensions
170x142x67 mm set of any two gases
240x142x67 mm set of any three gases
310x142x67 mm set of any four gases
342x142x75 set of any three gases + AGSS

- Fastening: concealed installation

- X - type of gas:

- 1 - O₂
- 2 - AIR
- 3 - N₂O
- 4 - CO₂
- 5 - VAC
- 6 - AGSS

Gas outlets can be designed according to individual need

- Magnetic cover mounting
- Concealed installation

OUTLETS AND PROBES FOR ANESTHETIC GAS SCAVENGING

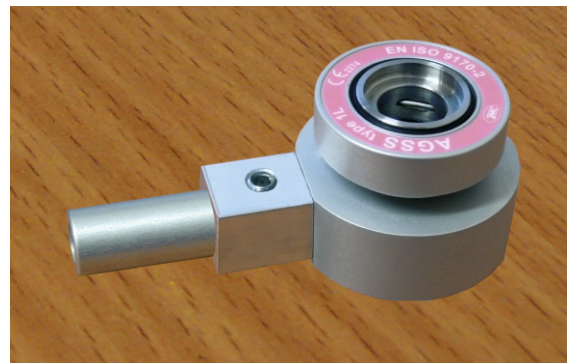


TECHNICAL DATA

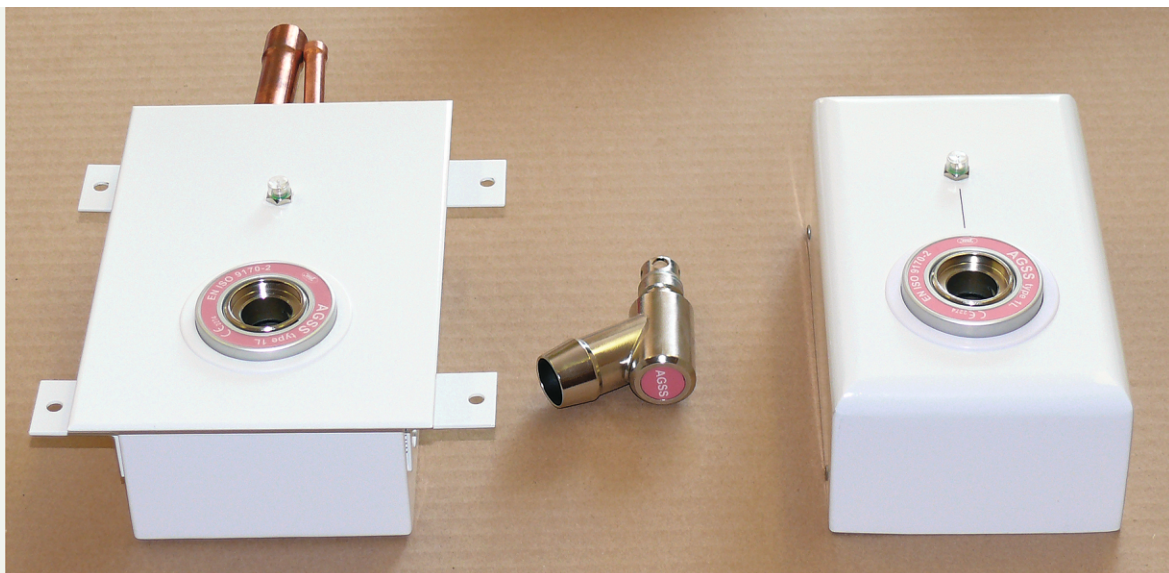
- AGSS active outlet type 1L with ejector of compressed air according to ISO 9170-2
- Indication when suction is turned ON
- Adjustment of the suction flow from 10 to 100 l/min
- The compressed air at inlet 3-8 bar for AGSS with ejector
- Outlets comply with DIN 13260-2
- Dimensions: 110 x 68 x 60 mm



- Probe for active and passive AGSS outlets type 1L according to ISO 9170-2
- Dimensions: 70x57x24 mm



- AGSS passive outlet type 1L according to ISO 9170-2 for centralized system of anesthetic gas scavenging
- Dimensions: 110 x 60 x 44 mm

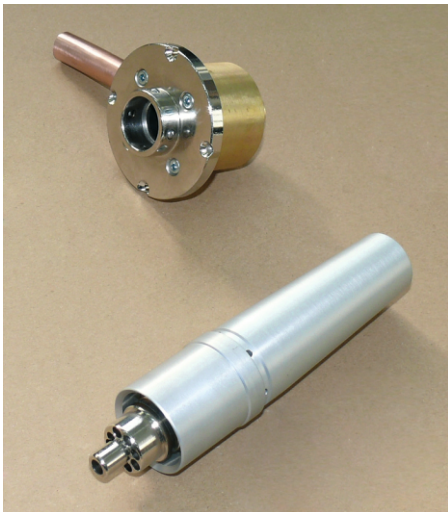


- AGSS active outlet in mounting case for concealed installation
- Dimensions: 180 x 120 x 75 mm

- AGSS active outlet in mounting case for surface installation
- Dimensions: 170 x 100 x 65 mm

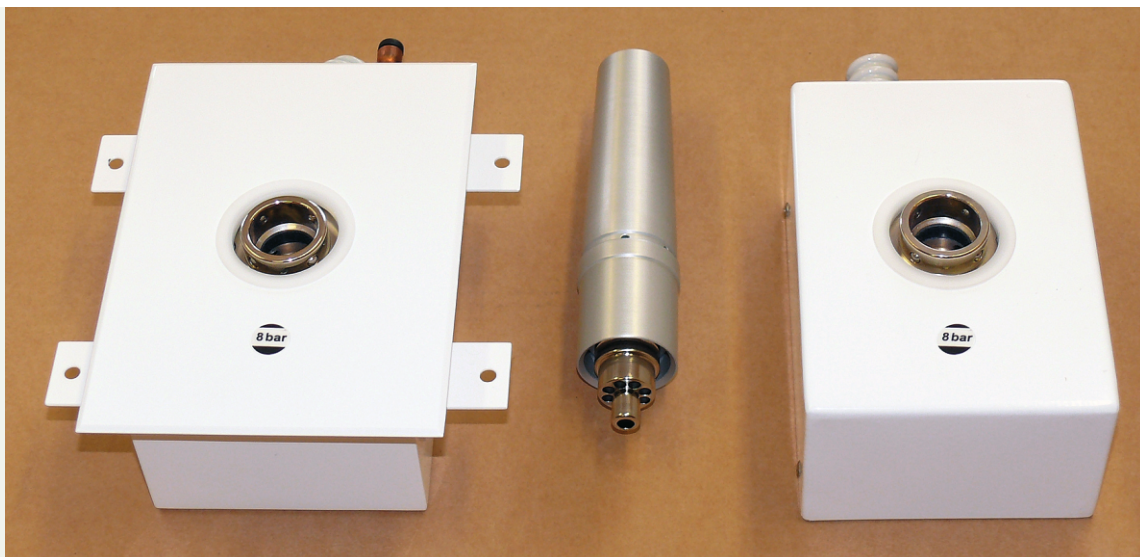
OUTLETS AND PROBES FOR SUPPLY AND DISPOSAL OF AIR FOR OPERATING SURGICAL TOOLS

For operative connection of pneumatic surgical tools to the centralized supply system of compressed air with return of used air to the centralized disposal system



TECHNICAL DATA

- Pressure in the channel of supply is 8 bar
- Pressure drop at the air flow of 300 l/min is less than 0.7 bar
- Pressure in the channel of used air up to 5 bar
- Air supply channel Ø 8 mm
- Used air channel Ø 15 mm



- Instrument Air 8 bar outlet in mounting case for concealed installation
- Dimensions: 120 x 164 x 67 mm

- Instrument Air 8 bar outlet in mounting case for surface installation
- Dimensions: 100 x 144 x 65 mm

MEDICAL FLUID WARMERS

OXYGEN HUMIDIFIER FLUID WARMER MP-24

Designed to work with oxygen humidifiers for adults and pediatric inhalation



MP-24

FEATURES:

- Contactless fluids warming
- Adjustment of infusion warming temperature using microprocessor's program
- Indication of warming readiness
- Simple and quick insertion of humidifier bottle
- Resistance to variety of disinfecting detergents and moist cleaning
- Two-level protection against overheating
- Increases efficiency of oxygen humidifier, when relative oxygen humidity is risen up to 90%

TECHNICAL DATA:

- Power supply: DC 24V
- Power consumption: 50 W
- Warming temperature +32 - +42°C
- 250 ml fluids warming up till 30°C temperature in 7 minutes
- Max warming up temperature +42°C
- Safety temperature +43°C
- Operating temperature: +10 - +30°C
- Heating fluid container inner diameter:
 - MP-24-2 diameter Ø 55,2 mm
 - MP-24-3 diameter Ø 54,6 mm
- Weight: 542 g
- External dimensions Ø 72 x 120 mm



MEDICAL INFUSION FLUID WARMERS MP-14, MP-14A, MP-14B

Warmers are designed for warming up various infusion fluids to human's body temperature before these fluids access the body



MP-14, MP-14B

FEATURES:

- Contactless warming of infusion fluids
- Adjustment of infusion warming temperature using microprocessor's program
- Indication of warming readiness
- Quick and easy insertion of the inhalation tube
- Resistance to variety of disinfecting detergenys and moist cleaning
- Two-level protection against overheating
- Convenient fit when used with a dripper and infusion pumps

TECHNICAL DATA:

- Power supply: DC 24V, 12V, 55W
- Warmer pipe length 580 mm
- Working temperature reached in 1 min
- Maximum warming up temperature +42°C
- Safety temperature +43,5°C
- Operating environment temperature: +10 - +30°C
- Weight: 250 g
- External dimensions: 120 x 50 x 17,7 mm

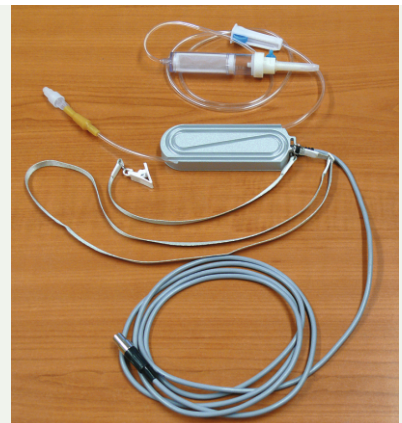
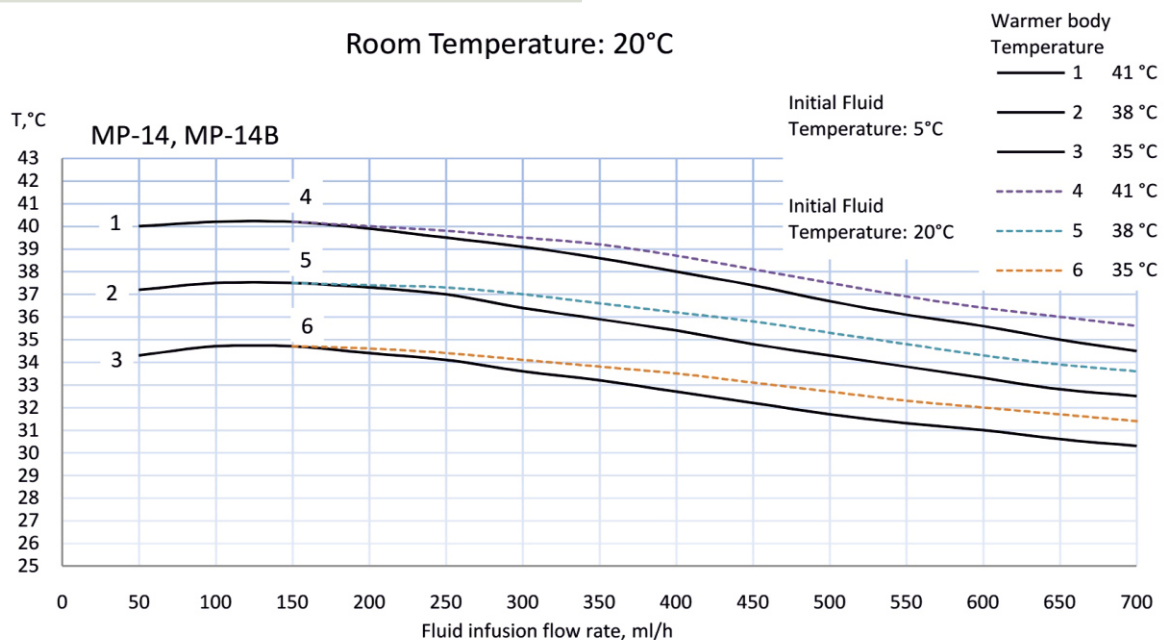


DIAGRAM OF WARMING INFUSION FLUIDS





MP-14A

FEATURES:

- Contactless warming of infusion fluids and blood
- Quick and easy insertion of the inhalation tube
- Protection against overheating
- For infusion tubes with outer diameter Ø4 mm - Ø5 mm
- For warming fluids and blood up to the infusion flow speed of 10 ml/min.

TECHNICAL DATA:

- Power supply: DC 24V, 55W
- Warmer pipe length 1000 mm
- Working temperature reached in 2 min
- Maximum warming up temperature +42°C
- Safety temperature +43,5°C
- Operating environment temperature: +10 - +30°C
- Weight: 410 g
- External dimensions: 50 x 205 x 17,7 mm

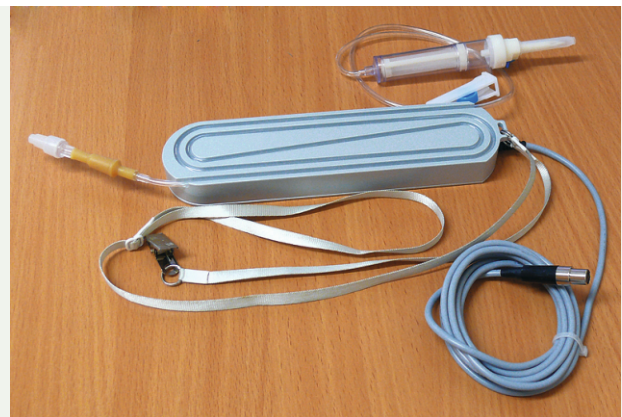
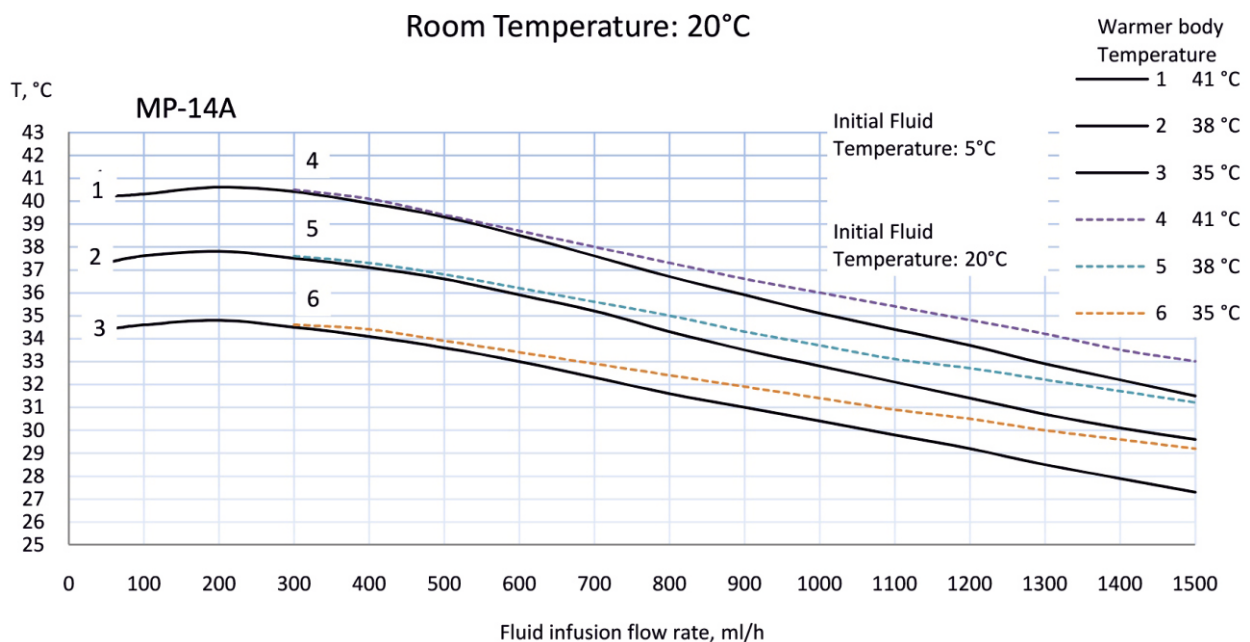
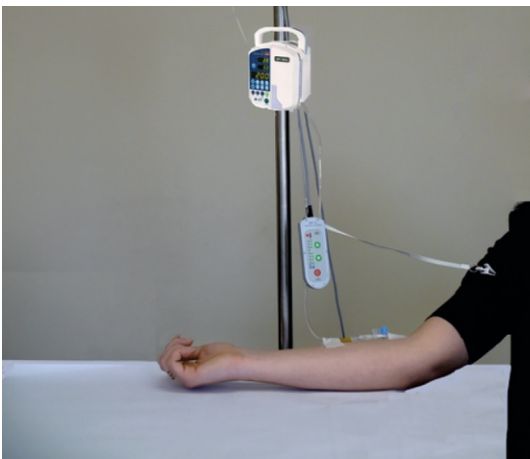


DIAGRAM OF WARMING INFUSION FLUIDS

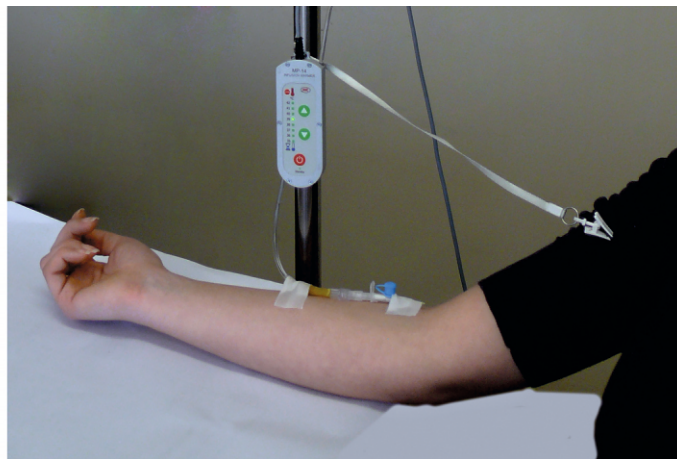


- Infusion warmers have integrated sound and visual alarm system
- Visual alarm contains of two individual LED indicators:
 - red LED indicator- indicates exceeding maximum temperature
 - blue LED indicator - indicates minimum temperature
- In case of failure in heating circuit of the device, sound and visual alarm turns on automatically
- Sound alarm can be switched off by pressing “Standby” button approx (≤ 1 s)
- If there is still an unresolved fault for 12 min, sound alarm will be activated again.

Examples of application of the heater during the infusion process



Using with infusion pump



Using with set of driper

At low speeds of flow at the outlet warmer uses a special thermal protection infusion tube

ADAPTER AC/DC FOR MEDICAL FLUID WARMERS



TECHNICAL DATA:

- Power supply: AC 110÷250 V; 50-60 Hz
- Output power: DC 24 V; 2,5 A
- Operating temperature $+5^{\circ}\text{C}\div+35^{\circ}\text{C}$
- Power for medical devices IP40, Class B

2 YEARS GUARANTEE for all types of warmer's

Warmers are designed and manufactured in accordance with directive 93/42/EEC requirements.

CONTROL SYSTEMS

GAS CONTROL AND CLOSING BOX

For main medical gas pipeline connection with the operating rooms, intensive care and patient wards



M-KP23

FEATURES:

- Connection of main pipeline with the consumer
- Consumer lines cut off from the main pipelines
- Gas pressure control
- Sound and light alarm system
- Transmission of alarm signal to central control station
- Lock with emergency opening
- Two models: surface and concealed installation

TECHNICAL DATA:

Characteristics	Model					
	M-KP21	M-KP22	M-KP23	M-KP24	M-KP25	M-KP26
Number of pipelines	1	2	3	4	5	6
Maximum gas flow in the line, l/min	500	500	500	500	500	500
Pressure control range, bar	0 ÷ 10	0 ÷ 10	0 ÷ 10	0 ÷ 10	0 ÷ 10	0 ÷ 10
Vacuum control range, bar	-1 ÷ 0	-1 ÷ 0	-1 ÷ 0	-1 ÷ 0	-1 ÷ 0	-1 ÷ 0
Alarm signals:						
Light	+	+	+	+	+	+
Sound	+	+	+	+	+	+
Medical gas output diameter, mm	15	15	15	15	15	15
Dimensions, L x H x W, mm	300x300x114	300x300x114	434x300x114	434x300x114	530x300x114	624x300x114
Weight, kg	6,1	7,1	9,7	10,7	12,8	15,2

FEATURES

- Removable frame with doors for easier installation
- Convenient connection of pipelines
- Option for concealed installation



- The lock with emergency access shut off valves
- Electric section is isolated from gas section

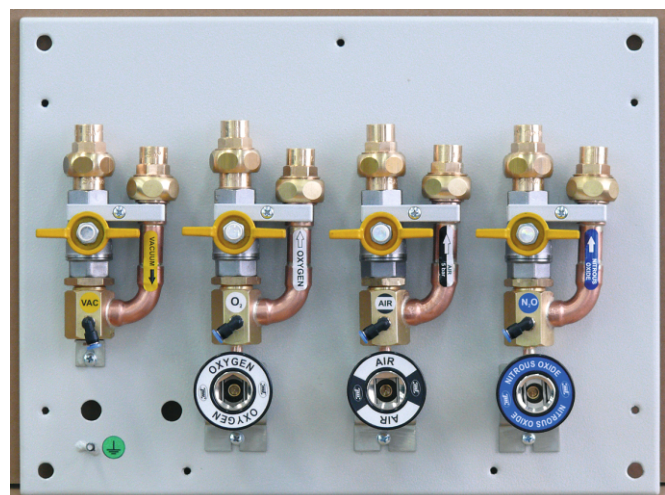
MODELS:

Surface installation	concealed installation
----------------------	------------------------

M-KP21	M-KP31
M-KP22	M-KP32
M-KP23	M-KP33
M-KP24	M-KP34
M-KP25	M-KP35
M-KP26	M-KP36

O₂, AIR5, N₂O, CO₂, VAC, AIR8
 Can be various medical gas pipeline combinations

CONVENIENT INSTALLATION



MEDICAL GAS CONTROL SYSTEM

GAS REDUCING, CONTROL AND CLOSING BOX

Medical gas pressure control and second stage reduction in medical gas pipeline systems



M-RK23

FEATURES

- Adjustment of outlet pressure
- Assurance of constant pressure for the consumer at various gas flow rates
- Consumer lines cut off from main pipeline
- Digital pressure indicators for easier and faster system leak detection
- Protection of terminal devices from gas contamination
- Control of inlet and outlet gas pressure
- Sound and light alarm system

TECHNICAL DATA

Characteristics	Model	
	M-RK22	M-RK23
Number of controlled pipelines	2	3
Maximum gas flow in the pipeline, l/min	2000	2000
Gas inlet pressure, bar	5 - 10	5 - 10
Gas outlet pressure, bar	2 - 8	2 - 8
Output pressure deviation, bar	< 0,1	< 0,1
Filtration, µm	100	100
Medical gas inlet - outlet diameter, mm	Ø 22	Ø 22
Vacuum inlet - outlet diameter, mm	Ø 28	Ø 28
Dimensions, L x H x W mm	543x460x180	760x460x180
Weight, kg	27	35

FEATURES

- Removable frame with doors for easier installation
- Convenient connection of pipelines

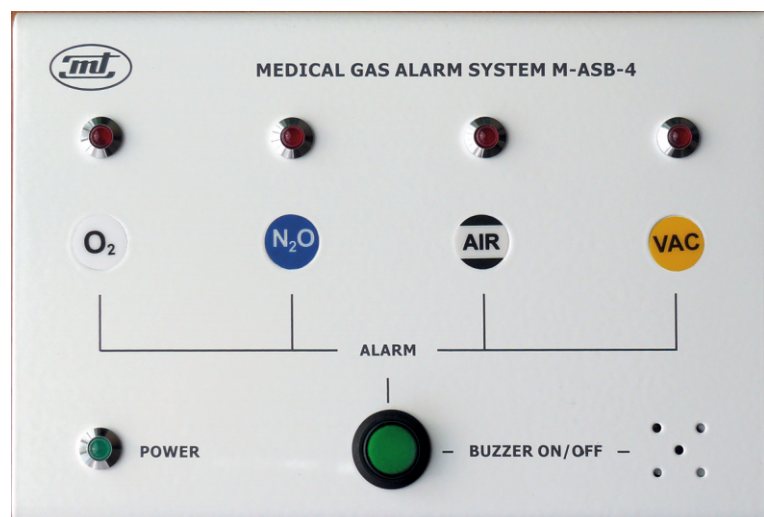


- The lock with emergency access shut off valves
- Electric section is isolated from gas section

MK-RK23

MEDICAL GAS ALARM SYSTEM M-ASB

- Up to 6 control lines
- Sound and light alarm indication
- Adjustable alarm limits
- Options of connection with controlled pressure lines:
 - pressure sensors as part of the device
 - pressure sensors installed on the controlled pipelines



MEDICAL OXYGEN GENERATING PLANTS M-DGS1



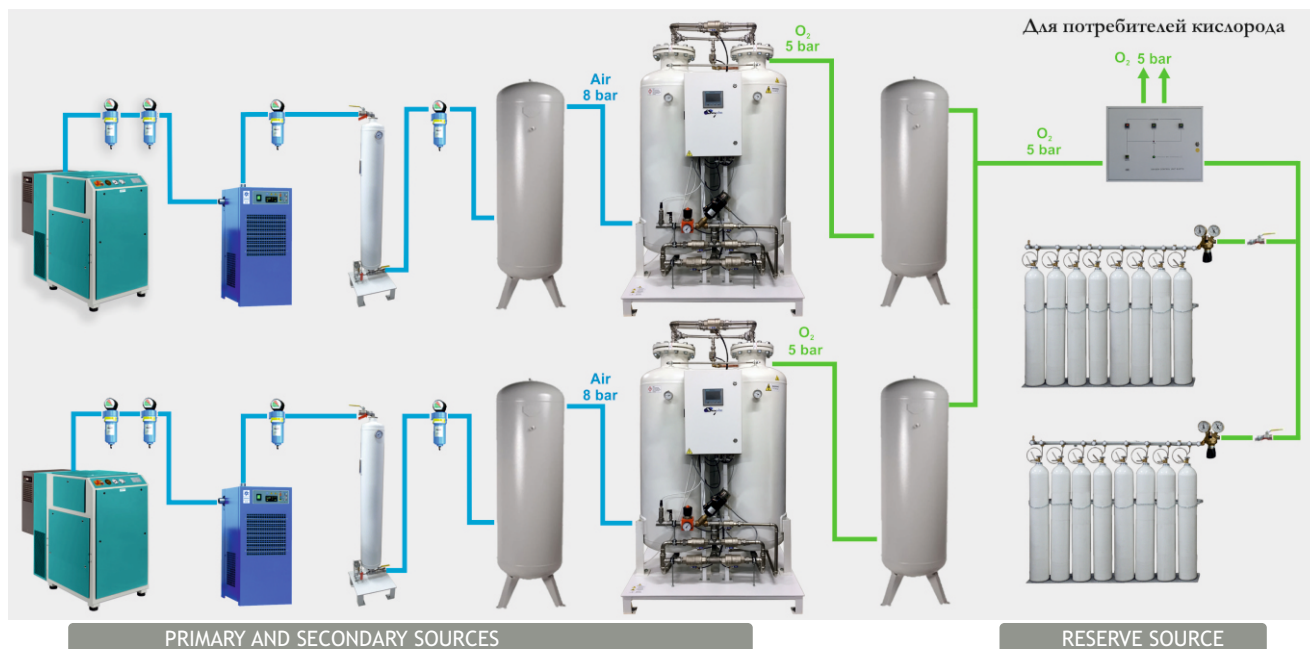
According to standard ISO 7396-1:2016

AVAILABLE MODELS OF MEDICAL OXYGEN GENERATING PLANTS M-DGS1

Model	Capacity l/min, O ₂ 93%	Compressor	Air dryer +3°C, l/min	O ₂ pressure, bar	Efficiency 1m ³ O ₂ =kWh	Receiver, l		Quantity of cylinders (50 l)	Nominal power consumption, kW
						Air	O ₂		
M-DGS1/40	40	550	900	4,5 - 5,3	1,52	270	150	2 x 2	6,0
M-DGS1/68	68	960	1500	4,5 - 5,3	1,52	500	200	2 x 3	9,0
M-DGS1/96	96	1350	2000	4,5 - 5,3	1,50	500	200	2 x 4	13,0
M-DGS1/132	132	1850	2800	4,5 - 5,3	1,50	725	270	2 x 6	19,0
M-DGS1/158	158	2200	3400	4,5 - 5,3	1,50	725	500	2 x 8	21,0
M-DGS1/226	226	3200	4960	4,5 - 5,3	1,48	1000	725	2 x 10	25,0
M-DGS1/290	290	4100	6400	4,5 - 5,3	1,48	1500	725	2 x (6+6)	34,0
M-DGS1/363	363	5100	7800	4,5 - 5,3	1,45	2000	900	2 x (8+8)	38,0
M-DGS1/408	408	5800	8900	4,5 - 5,3	1,45	2000	1000	2 x (9+9)	44,0
M-DGS1/500	500	7000	11000	4,5 - 5,3	1,45	3000	1500	2 x (10+10)	52,0

- Continuous oxygen supply in medical institutions in case of electricity shortage or equipment breakdown
- Significant oxygen costs reduction in hospitals
- As a part of the station, an oxygen compressor can be supplied to refuel backup ramp cylinders
- Medical Oxygen Generating Plants meet the requirements of the international standard
- **ISO 7396-1:2016** and other normative documents

MEDICAL OXYGEN GENERATING PLANTS M-DGS2



Available models of Medical Oxygen Generating Plants M-DGS2

Model	Capacity l/min, O ₂ 93%	Compressor l/min (8 bar)	Air dryer +3°C l/min	O ₂ pressure, bar	Efficiency 1m ³ O ₂ =kWh	Receiver, l		Quantity of cylinders (50 l)
						Air	O ₂	
M-DGS2/40	2 x 40	2 x 550	2 x 900	4,5 - 5,3	1,52	2 x 270	2 x 150	3
M-DGS2/68	2 x 68	2 x 960	2 x 1500	4,5 - 5,3	1,52	2 x 500	2 x 200	5
M-DGS2/96	2 x 96	2 x 1350	2 x 2000	4,5 - 5,3	1,50	2 x 500	2 x 200	8
M-DGS2/132	2 x 132	2 x 1850	2 x 2800	4,5 - 5,3	1,50	2 x 725	2 x 270	10
M-DGS2/158	2 x 158	2 x 2200	2 x 3400	4,5 - 5,3	1,50	2 x 725	2 x 500	6 + 6
M-DGS2/226	2 x 226	2 x 3200	2 x 4960	4,5 - 5,3	1,48	2 x 1000	2 x 725	8 + 8
M-DGS2/290	2 x 290	2 x 4100	2 x 6400	4,5 - 5,3	1,48	2 x 1500	2 x 725	10 +10
M-DGS2/363	2 x 363	2 x 5100	2 x 7800	4,5 - 5,3	1,45	2 x 2000	2 x 900	2 (6+6)
M-DGS2/408	2 x 408	2 x 5800	2 x 8900	4,5 - 5,3	1,45	2 x 2000	2 x 1000	2 (8+8)
M-DGS2/500	2 x 500	2 x 7000	2 x 11000	4,5 - 5,3	1,45	2 x 3000	2 x 1500	2 (10+10)
M-DGS2/636	2 x 636	2 x 8900	2 x 13000	4,5 - 5,3	1,40	2 x 3000	2 x 1500	3 (8+8)
M-DGS2/818	2 x 818	2 x 11500	2 x 17000	4,5 - 5,3	1,40	2 x 4000	2 x 2000	3 (10+10)
M-DGS2/1000	2 x 1000	2 x 14000	2 x 22000	4,5 - 5,3	1,40	2 x 5000	2 x 3000	4 (8+8)
M-DGS2/1235	2 x 1235	2 x 17300	2 x 26300	4,5 - 5,3	1,40	4 x 3000	2 x 3000	4 (10+10)

- Continuous oxygen supply in medical institutions in case of electricity shortage or equipment breakdown
- Significant oxygen costs reduction in hospitals
- 14 different station models for the production of oxygen with a capacity from 40 to 1235 l / min.
- Medical Oxygen Generating Plants meet the requirements of the international standard **ISO 7396-1:2016** and other normative documents.

MODULAR MEDICAL OXYGEN GENERATING PLANT M-DGS1/K

AN EFFECTIVE SOLUTION FOR RENOVATING OR CHANGING THE PROFILE OF A MEDICAL INSTITUTION

ADVANTAGES OF THE CONTAINER STATION:

- Low cost of generated oxygen;
- No additional space required to accommodate the station;
- Minimum land area required at the treatment building;
- The station comes from the factory fully assembled and tested;



Models of a medical oxygen generation station M-DGS/K

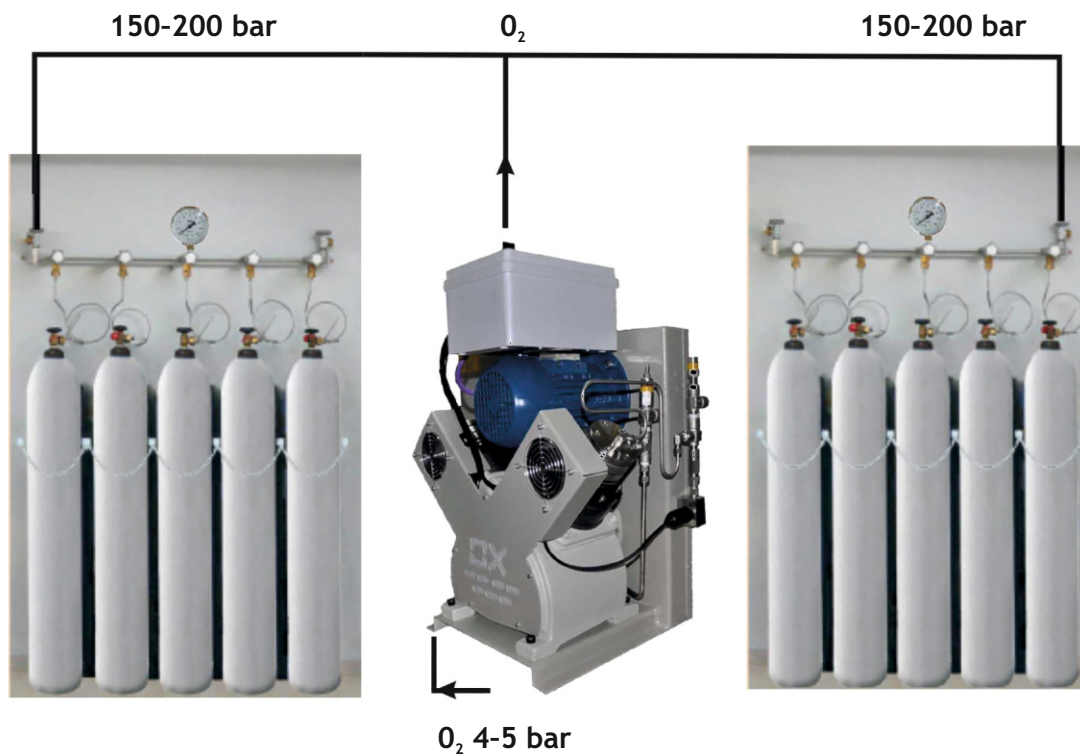
Model	Capacity l/min at concentration 93% O ₂ l/min	Concentration O ₂ %	O ₂ pressure bar	Working Temperature °C	Rated power consumption kW	Number of cylinders in reserve manifold pcs.	Total weight Kg.
M-DGS1K/132	132	93±2%	5,0+1	-30°C + 40°C	20,0	14,0	4800
M-DGS1K/178	178	93±2%	5,0+1	-30°C + 40°C	24,0	14,0	5200
M-DGS1K/226	226	93±2%	5,0+1	-30°C + 40°C	29,0	20,0	5700
M-DGS1K/290	290	93±2%	5,0+1	-30°C + 40°C	34,0	20,0	6260

- Continuous medical oxygen supply in hospitals;
- Significant reduction in oxygen costs in hospitals;
- Container stations for the production of medical oxygen comply with the requirements of the international standard **ISO 7396-1: 2016** and other regulatory documents;

OXYGEN CYLINDER FILLING STATION M-DPS

Oxygen cylinder filling stations are used for filling cylinders from existing medical oxygen sources of pressure 4-5 bar in medical institutions. This is a convenient way to provide small hospitals with medical cylinder oxygen and to fill small ambulance oxygen balloons.

The station consists of a high-pressure oxygen compressor of various capacities and manifolds for connecting cylinders with instrumentation



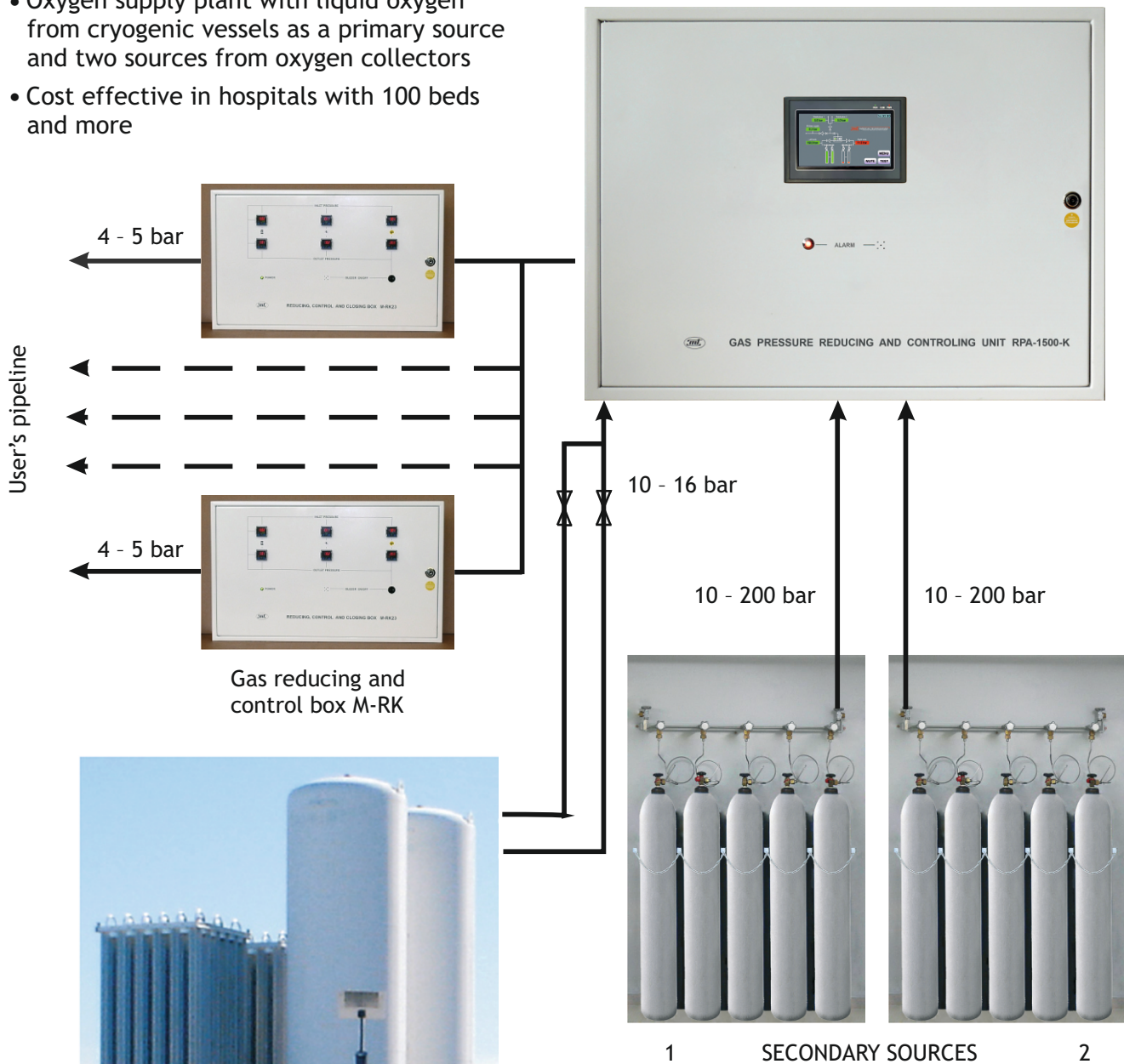
Code	Model	O ₂ pressure at the compressor intel, bar	O ₂ flow at the compressor intel, bar	The number of refilled cylinders (50 liters) day	Number of rcollectors and connected cylinders	O ₂ pressure of the cylinders to be filled bar
77021	M-DPS21	4 - 5	60	9	2 x 5	150
77022	M-DPS22	4 - 5	80	15	2 x 8	150
77023	M-DPS23	4 - 5	200	35	3 x 10	150
77024	M-DPS24	4 - 5	360	67	4 x 10	150

Main characteristics of the M-DPS oxygen cylinder filling station

CENTRAL GAS SUPPLY

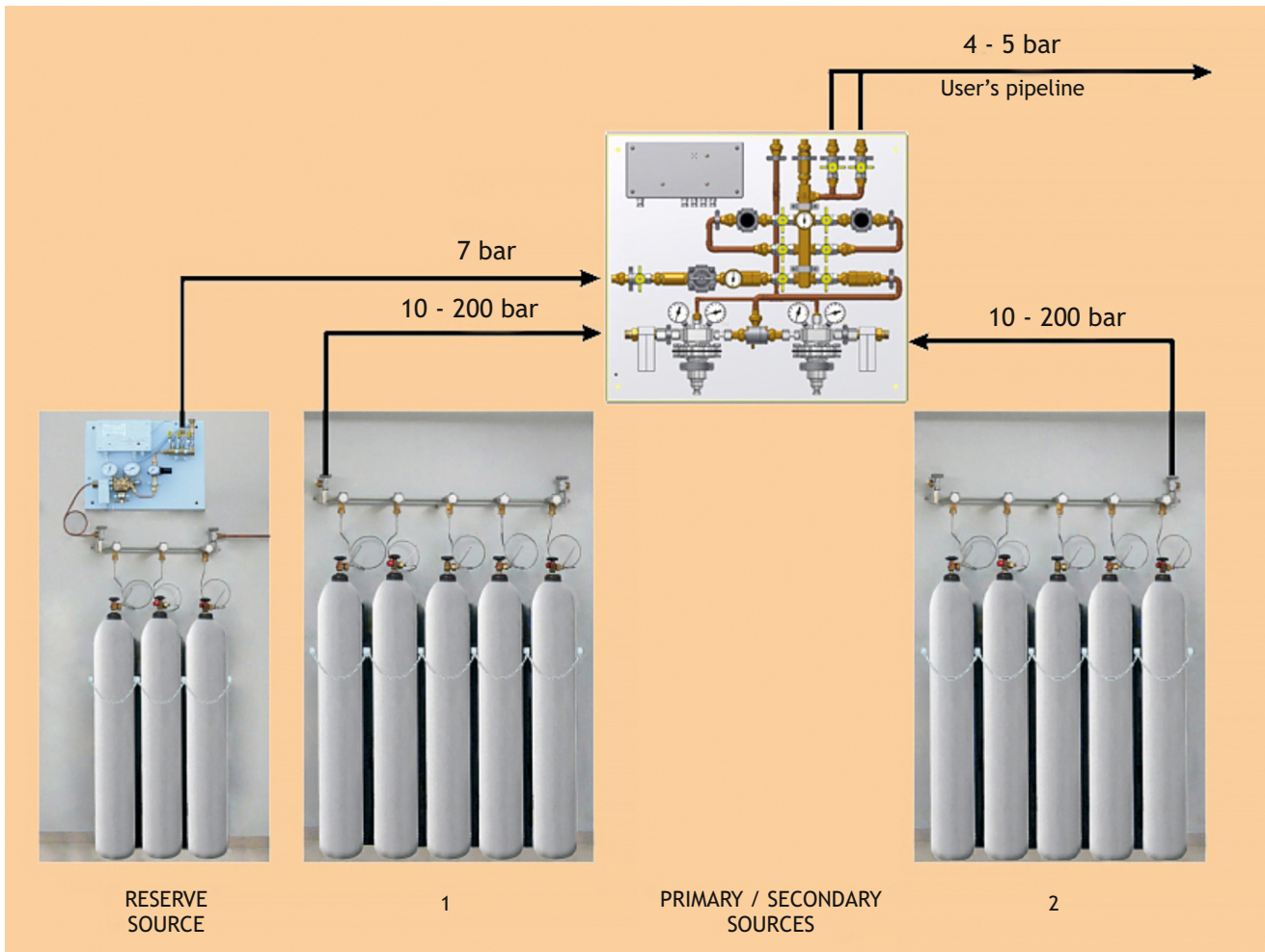
OXYGEN SUPPLY PLANT

- Oxygen supply plant with liquid oxygen from cryogenic vessels as a primary source and two sources from oxygen collectors
- Cost effective in hospitals with 100 beds and more



PRIMARY / SECONDARY SOURCES

- The capacity of cryogenic vessels from 3 m³ to 16 m³.
- Maximum oxygen flow from 700 l / min to 3000 l / min
- Oxygen output pressure from evaporators 12-18 bar
- For operation of stations with cryogenic vessels, reserve backup ramps are required depending on the oxygen flow from 10 to 60 cylinders



HIGH PRESSURE COLLECTORS



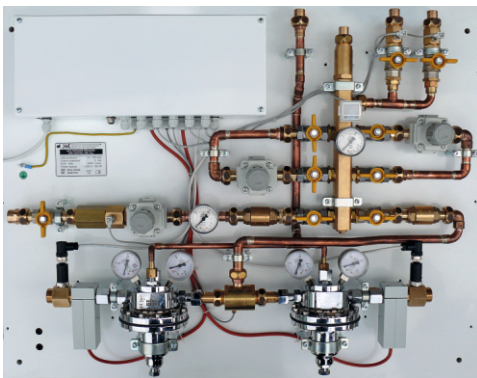
- With fixation of cylinders to the wall from 2x2 to 2 x10 cylinders
- M-R2N - for nitrous oxide
- M-R2C - for carbon dioxide
- M-R2O - for oxygen

- With fixation of cylinders to the special frame from 2x8 and 4x8 cylinders
- M-R3N - for nitrous oxide
- M-R3C - for carbon oxide
- M-R3O - for oxygen

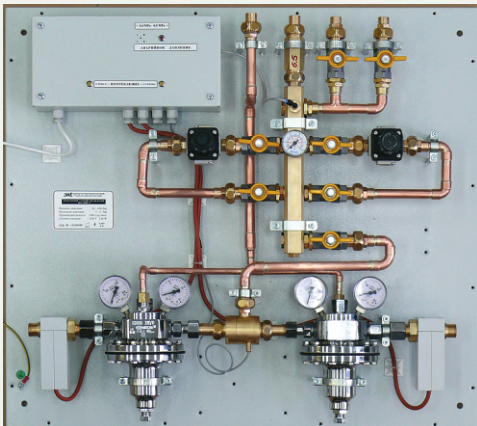
GAS PRESSURE REDUCING AND CONTROL UNITS

RPA 1500 K

- For connection of three supply sources
- Indication of supply source
- One inlet 7 -20 bar
- Two inlets 10 - 200 bar
- Two stage pressure adjustment
- Outlet pressure 3 - 10 bar



- Two parallel branches for pressure reduction
- Productivity up to 1500 l/min
- Digital pressure control
- Light and sound alarm system
- Heated high pressure reducers
- Safety valves



RPA 1500 B

- Two high pressure inlets 10 - 200 bar
- Two stage pressure adjustment
- Outlet pressure 3 - 10 bar
- Two parallel branches for pressure reduction
- Productivity up to 1500 l/min
- Indication of supply source
- Light and sound alarm system
- Heated high pressure reducers
- Safety valves

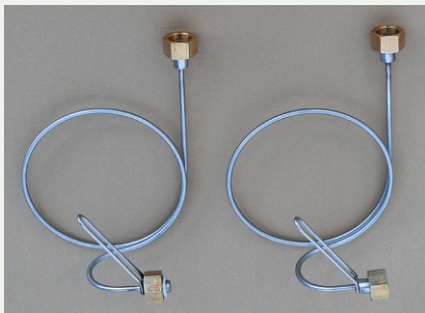
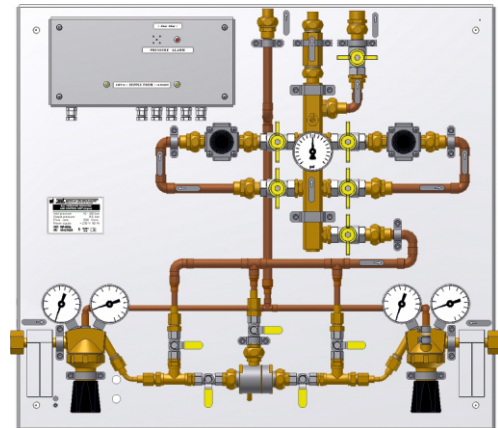


RP 500

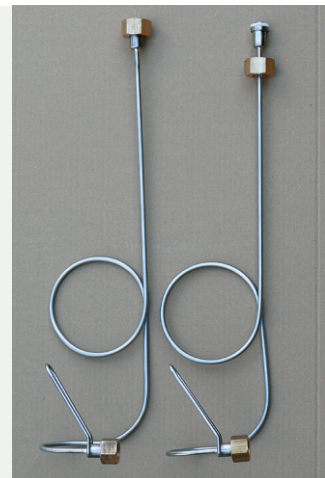
- For one manifold
- Two stage pressure adjustment
- Heated high pressure reducer
- Safety valve
- Pressure control of supply system
- Productivity up to 500 l/min

RPA 500 S

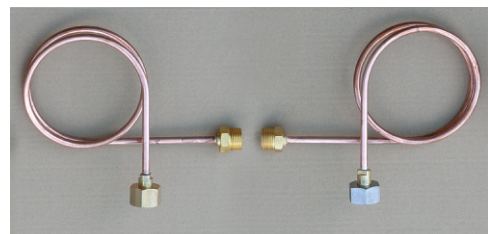
- For two collectors with automatic changeover
- Two stage pressure adjustment
- Heated high pressure reducers
- Safety valves
- Pressure control, transmission of alarm signal
- Indication of supply source
- Productivity to 500 l/min



- Semi-flexible stainless steel tubes with various types brass joints for connection of collectors and cylinders
- Maximum pressure up to 30 Mpa
- Connection joints for cylinders according to client's national standard

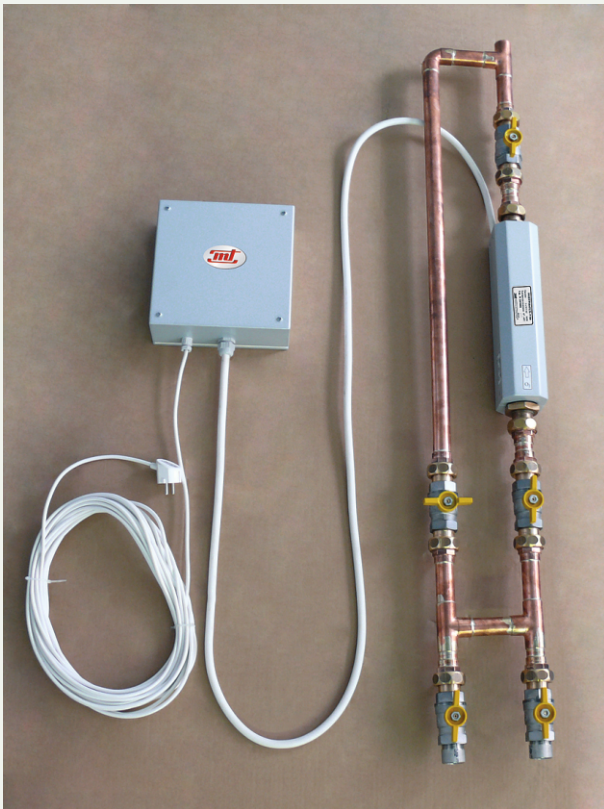


- Semi-flexible thick-walled copper tubes for connection of reducing device with high pressure collectors
- Maximum pressure to 300 bar



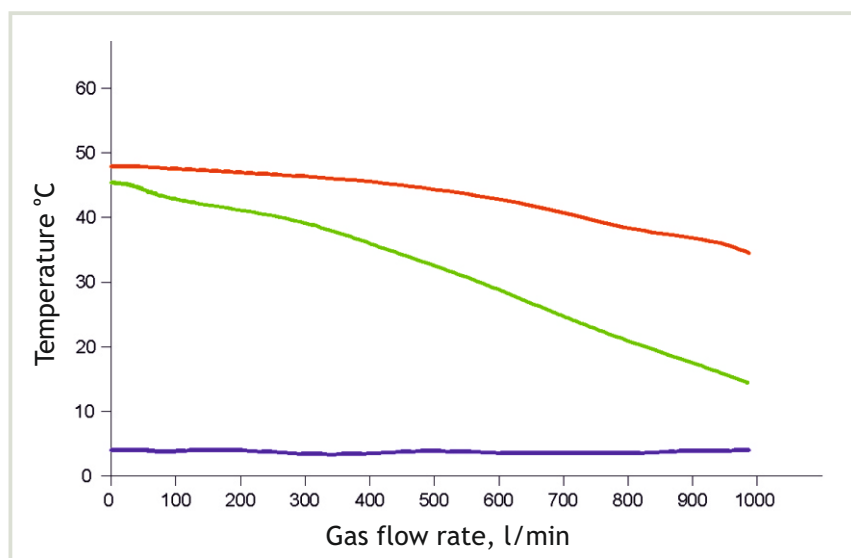
WARMER FOR MAIN OXYGEN PIPELINE MP-M

Designed for heating oxygen from cryogenic vessels and cylinder oxygen stations in winter.



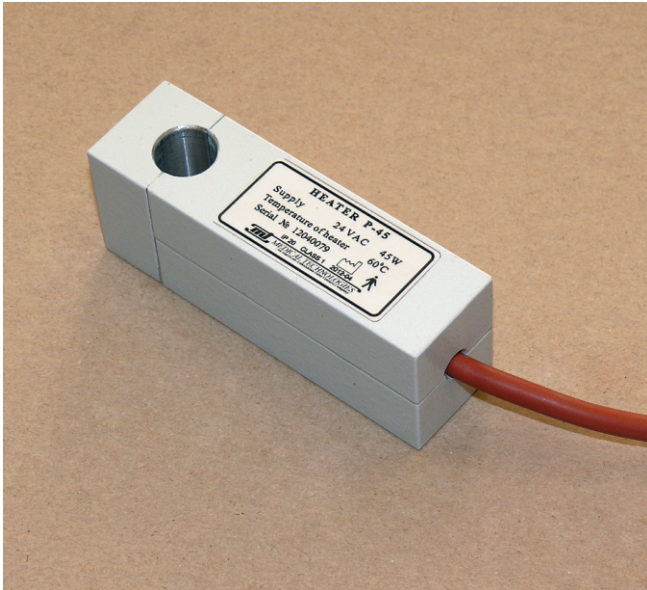
FEATURES

- Warming temperature $45 \div 60^{\circ} \text{C}$
- Power consumption 650 VA
- Power supply ~ 220V/50Hz
- Working pressure 0-20 bar
- The length of main pipeline from the warmer of oxygen to the consumer is not less than 15 m
- Dependency of the gas temperature at the output of the warmer shown in the diagram



- Inlet temperature
- Outlet temperature
- Warmer body temperature

WARMER FOR HIGH PRESSURE REDUCERS

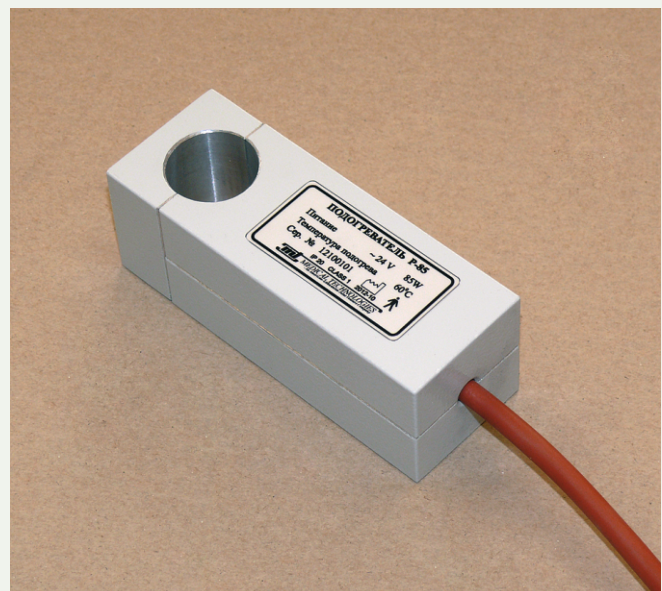


MP-01

- Warming temperature 45±55 ° C
- Power consumption 45 W
- Power supply 24 V
- Diameter of heating pipe Ø16 mm
- Dimensions 30x40x105 mm

MP-02, MP-03

- Warming temperature 45±55 ° C
- Power consumption:
 - MP-02 - 45 W
 - MP-03 - 60 W
 - MP-04 - 85 W
- Power supply 24 V
- Diameter of heating pipe Ø25 mm
- Dimensions 40x40x110 mm



MEDICAL AIR PLANTS

For centralized compressed air generation in hospitals: for patient's breathing, surgical instruments, other medical equipment.



SET OPTIONS:

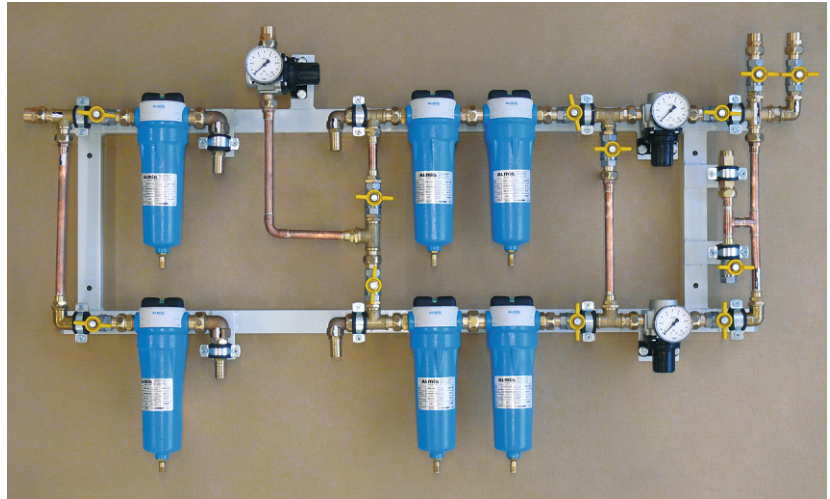
- 2 or 3 screw type long life compressors
- Pressure receivers are galvanized from inside and outside
- Air dryers: refrigeration, adsorption
- Filtration and pressure reducing unit
- Control unit with integrated alarm system

TECHNICAL DATA:

Model	Productivity l/min	Dryer l/min dew point °C	Filtration 0,1 µm filter + 0,01 µm filter / active carbon 0,003 µm, l/min	Air pressure, bar	Air tank, l	Voltage V, hz, kW
M-KS01	2(3) x 420	2 x 600 /+3	2 x 621 / 700	4, 7-8	2x500	3x380V / 50 hz / 10 kW
M-KS02	2(3) x 640	2 x 900 /+3	2 x 1283 / 1300		2x750	3x380V / 50 hz / 12 kW
M-KS03	2(3) x 980	2 x 1300 /+3	2 x 1983 / 1300		2x750	3x380V / 50 hz / 17 kW
M-KS04	2(3) x 1300	2 x 1767 /+3	2 x 1983 / 2800		2x900	3x380V / 50 hz / 25 kW
M-KS05	2(3) x 1840	2 x 2400 /+3	2 x 2833 / 2800		2x900	3x380V / 50 hz / 35 kW
M-KS06	2(3) x 2360	2 x 3600 /+3	2 x 5100 / 3667		2x900	3x380V / 50 hz / 40 kW
M-KS07	2(3) x 3080	2 x 5000 /+3	2 x 5100 / 5100		2x900	3x380V / 50 hz / 50 kW
M-KS08	2(3) x 4460	2 x 6083 /+3	2 x 7517 / 10500		4x900	3x380V / 50 hz / 65 kW
M-KS09	2(3) x 5490	2 x 8000 /-3	2 x 10483 / 10500		4x900	3x380V / 50 hz / 80 kW

FILTRATION AND PRESSURE REDUCING FILTER UNIT FOR COMPRESSED AIR

- The set of filters with differential pressure manometers:
 - 0,1 μm
 - 0,01 μm
 - charcoal
 - sterile
- Filter model depends on plant productivity
- Pressure reducers:
 - 500 kPa
 - 800 kPa
- Shut off valves
- Connection to the pipelines diameter \varnothing 15 - \varnothing 32 mm



MEDICAL AIR PLANT CONTROL UNIT



- Programmed for control of two or three compressors
- Digital pressure manometer
- Visual and sound alarm
- Option to connect to central control system
- Emergency opening lock
- Dimensions: 444 x 344 x 150 mm

MEDICAL VACUUM PLANTS

FOR CENTRALIZED VACUUM GENERATION IN HOSPITAL



SET OPTIONS:

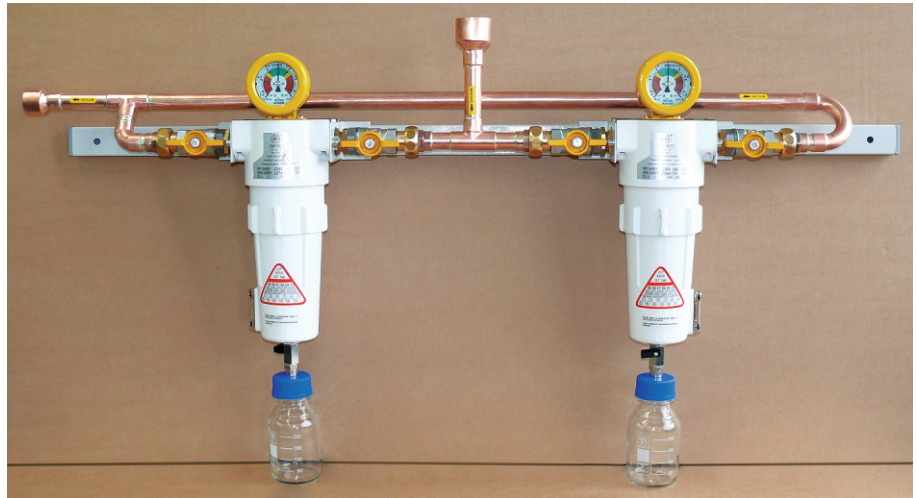
- 2 or 3 rotary vacuum pumps type “VANE”
- Pressure receivers are galvanised from inside and outside
- Double anti-bacterial filter with collection of contamination
- Control unit with integrated alarm system

TECHNICAL DATA:

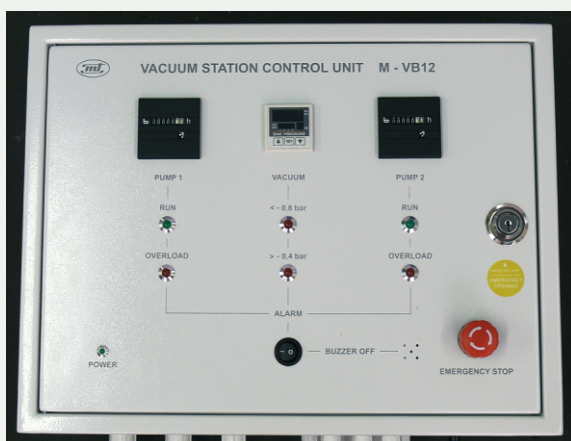
Model	Productivity l/min	Antibacterial filter, l/min	Rarefaction bar	Vacuum tank, l	Voltage V, hz, kW
M-VS01	2(3) x 280	2x400	minus 0,8	270	3x380V / 50 hz / 1,1 kW
MVS02	2(3) x 580	2x625		500	3x380V / 50 hz / 1,5 kW
M-VS03	2(3) x 750	2x1040		500	3x380V / 50 hz / 2,2 kW
M-VS04	2(3) x 1080	2x1500		1000	3x380V / 50 hz / 3,0 kW
M-VS05	2(3) x 1750	2x2500		1000	3x380V / 50 hz / 4,4 kW
M-VS06	2(3) x 2530	2x3800		1000	3x380V / 50 hz / 6,0 kW
M-VS07	2(3) x 3420	2x5100		2000	3x380V / 50 hz / 8,0 kW
M-VS08	2(3) x 5000	2x7700		3000	3x380V / 50 hz / 11,0 kW

DOUBLE ANTIBACTERIAL FILTER UNIT FOR VACUUM SYSTEM

- Double anti-bacterial filter with differential pressure manometers
- Filter flow rate depends on vacuum station model
- Shut off valves for replacment of filters
- Connection to the pipelines diameter \varnothing 28 - \varnothing 42 mm (depending on model)



MEDICAL VACUUM PLANT CONTROL UNIT

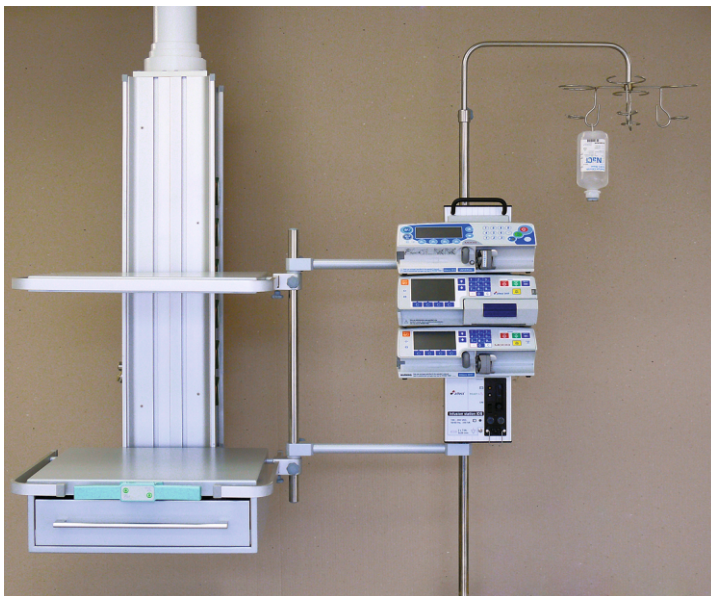


- Programmed for control of two or three vacuum pumps
- Digital pressure manometers
- Visual and sound alarm
- Working time indicator
- Option to connect to central control system
- Dimensions: 444 x 344 x 150 mm

ACCESSORIES

I. V. POLES

For infusion pumps and fluid bags

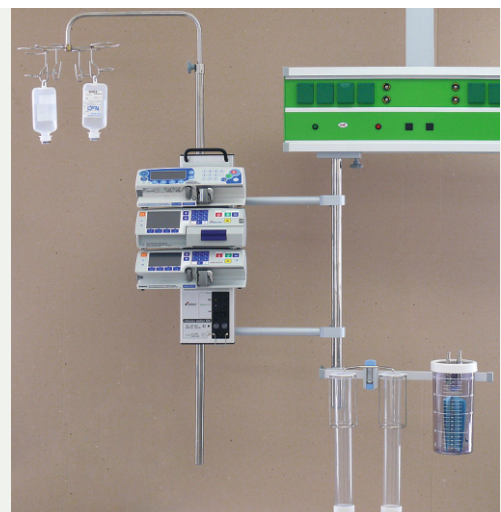


M-IS16

- For 4 infusion fluid bags/bottles
- Up to 6 infusion pumps
- Stainless steel construction
- Rail-mounted
- Height adjustable
- Various length of turning arms up to 500 mm
- Dripper holders are removed from the axis of attachment of infusion pumps by 200 mm with a rotation of 360 °
- Maximum load - 20kg.

Sliding I.V. pole for Pendant Bridges M-GM

- For 4 infusion fluid bags/bottles
- Stainless steel construction
- On special linear rail system with movement brakes and additional railings for extra accessories
- Height adjustable
- Various length turning arm up to 500 mm
- Maximum load - 25kg.



I.V. Holder for
Bed Head Unit M-PB

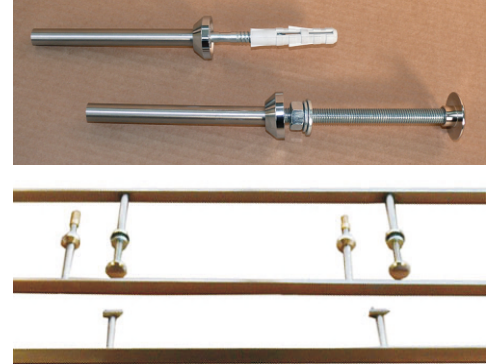


Infusion pump pole
for rail mounting

RAILINGS FOR SUSPENDED EQUIPMENT

M-RL

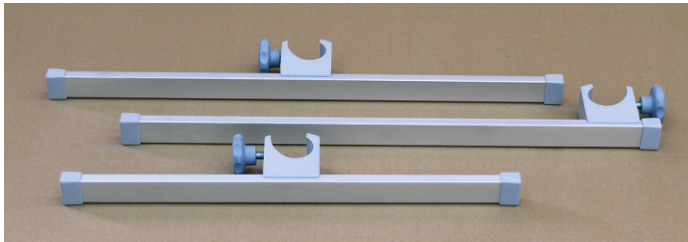
- Wall mounted rails for suspended equipment
- Standard rail dimensions 10 x 25 mm
- Maximum load 40 kg/meter
- Stainless steel construction



For mounting to Bed Head Unit profile



For various suspended equipment with fixation on tube Ø25, Ø32, Ø38



BEDSIDE SCREENS



M-BS05T

- Two types of holders:
telescopic **M-BS05T**
ceiling profile **M-BS05C**
- Various length and height holders
- Large selection of curtain materials
- Easy cleaning
- Flame resistant materials
- Fixation of telescopic bedside screens:
on the wall
on the rails
- Special profile for suspended ceiling



M-BS05C

ACCESORIES FOR MAIN EQUIPMENT



Sliding shelf module for Pendant Bridges M-GM

- Mobile system can be moved along the pendant with rotation about vertical axis, with a separate height-adjustable shelf
- On special linear rail system with movement brakes
- Made from stainless steel and aluminum, which is painted with powder paint in metallic colors
- Dimensions may be standard or by customer's request;
- Resistant to all the cleaning detergents
- Maximum load - 80 kg/per self

Suspended shelf with one or two drawers for Wall Pendants M-GB and M-PB

- Aluminum painted with powder paint with the top shelf made from stainless steel
- Easy to clean, without sharp edges
- Convenient mounting to the profile of wall pendant
- Resistant to all the cleaning detergents



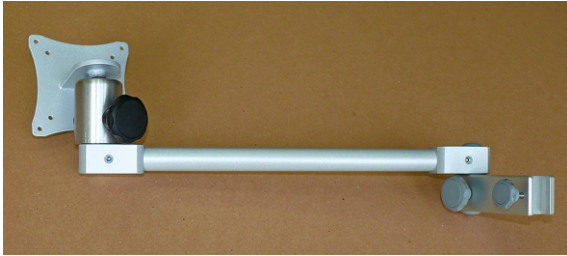
Shelf with drawer for Ceiling Pendants M-GL

- Two rails 10x25 mm for suspended equipment
- Handle to control pendant's pneumobrakes
- Made from aluminum painted with powder paint in "metallic" colors RAL 9006
- Dimensions may be standard or by customer's request
- Resistant to all the cleaning detergents

Shelf for Ceiling Pendants M-GL

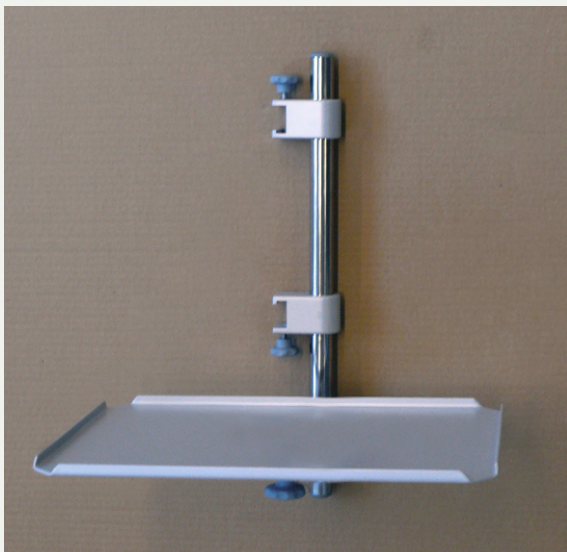
- Rail 10x25 mm for suspended equipment
- Possibility to adjust the height of mounting
- Made from stainless steel and aluminum, which is painted with powder paint in "metallic" colors RAL9006
- Dimensions may be standard or by customer's request
- Resistant to all the cleaning detergents





Monitor holder VESA

- For various sizes monitors fixation to the ceiling pendants, wall pendants, bed head units.
- Maximum load 17 kg
- Arm length up to 500 mm
- Monitor Position Adjustment - Three Axes



Monitor shelf for intensive care consoles

- Convenient mounting of the shelf through the whole length of the pendant
- Adjustable height
- Mounting on the 10x25 mm rail
- Made from aluminum painted with powder paint in metallic colors
- Dimensions may be standard or by customer's request
- Resistant to all the cleaning detergents
- Option - model with drawer

Shelf for the monitor for Bed Head Unit

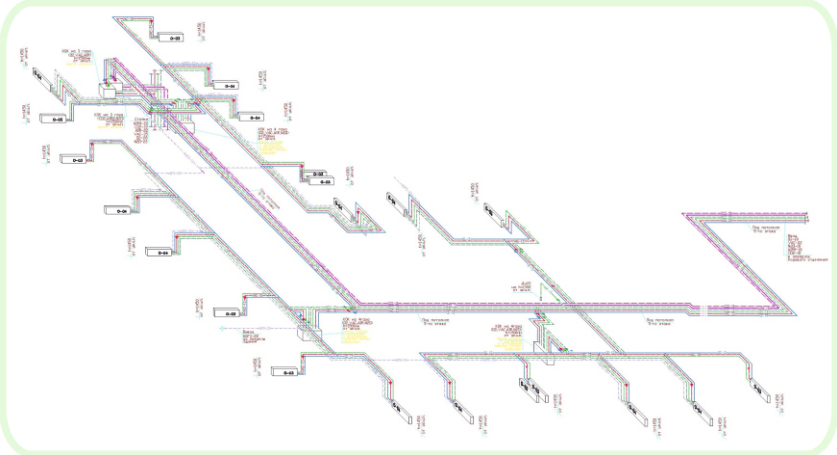
- Convenient mounting of the shelf through the whole length of the pendant
- Made from stainless steel and aluminum painted with powder paint in "metallic" colors RAL9006
- Dimensions may be standard or by customer's request
- Resistant to all the cleaning detergents



MEDICAL GAS SYSTEMS DESIGN, INSTALLATION AND MAINTENANCE

№№ по плану	НАИМЕНОВАНИЕ ПОМЕЩЕНИЙ	площадь м ²	кат. помещений
1	2	3	4
5019	Школа	14,7	-
5020	Салонка	5,5	-
5021	Салонка	4,6	-
5022	Школа	7,6	-
5023	Индифферентная разбавная камера	32,4	-
5024	Подготовительная паровая	14,0	-
5025	Лабораторный пост	11,4	-
5026	Школа	5,3	-
5027	Салонка	3,6	-
5028	Индифферентная разбавная камера	32,0	-
5029	Школа	9,4	-
5030	Школа	3,6	-
5031	Индифферентная разбавная камера	35,0	-
5032	Лабораторный пост	15,6	-
5033	Подготовительная паровая	16,8	-
5034	Школа	4,0	-

№№ по плану	НАИМЕНОВАНИЕ ПОМЕЩЕНИЙ	площадь м ²
1	2	3
5044	Кабинет	10,6
5045	Салонка	4,4
5046	Индифферентная разбавная камера	28,6
5047	Школа	4,7
5048	Подготовительная паровая	12,3
5049	Лабораторный пост	11,9
5050	Школа	4,7
5051	Индифферентная разбавная камера	31,0
5052	Школа	4,6
5053	Индифферентная разбавная камера	33,0
5054	Салонка	4,4
5055	Интерьерный кабинет	6,4
5056	Салонка	13,0
5057	Подготовительная паровая	16,5
5058	Помещение фрезной паровой аппаратуры	11,2
5059	Лабораторный пост	14,3



EXAMPLES OF HOSPITALS AROUND THE WORLD EQUIPPED WITH MEDICAL TECHNOLOGIES PRODUCTS



Regionl perinatal center in Ryazan, Russian Federation



The newest LUHS“Trauma and Emergency center“ in Kaunas, Republic of Lithuania



Lambert - Sante surgical hospital at Petion-Villee, Haiti



Regionl perinatal center in Krasnodar, Russian Federation



City Children’s Hospital No2 for 350 beds in Astana Republic of Kazakhstan



Clinical and Rehabilitation Complex of President’s Affairs Administration of the Republic of Kazakhstan in Astana



KIRA hospital (SWISS Clinic) in Bujumbura, Republic of Burundi

Scale 1:10,000,000
Lambert Conformal Conic Projection,
standard parallels 55°N and 65°N



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