Central System
of Medical Gases
Dear clients,

With present brochure we would like to introduce our newest system for central medical gas supply, which complies with demands of standards EN ISO 7396-1 or HTM 02-01 and includes the most advanced technical solutions. In this brochure you will find the most important benefits which the system offers, while detailed technical data and drawings are available in our Technical Catalogue.

Our entire production program of medical equipment includes the following product-groups:

- **Central System of Medical Gases**
- **Medical Suction Units**
- **Oxygen Therapy Devices**
- **Bed Head Units**
- **Medical Supporting Equipment**

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"Observe the status of your gas system from anywhere in the world"

Our experiences of over 30 years with production and installation of medical gas systems and our professional staff are the basic reasons why we are able to offer perfect and complete medical gas system to any healthcare institution, as well as the professional consulting in this field.

One of the main advantages of our system is new Supervision System with CAN-BUS technology, which enables collection of all conditions of gases in one place and distribution of this information worldwide via internet, or mobile phones. There are two supervision models available; one with central LED display and one as software which can be installed to PC. Working with MEDICOP Supervision System will offer you great pleasure, because of the following reasons:

**SUPERVISION AND MANAGEMENT**
the status of all medical gases and their characteristics can be seen in one place and therefore action in case of malfunction or maintenance-demand can be punctual.

**ACCURATE CALCULATION OF COSTS**
the system enables overview of gas consumption for separate sectors in a building and is therefore it a great tool for costs-calculation of medical gases.

**CAN-BUS TECHNOLOGY**
enables fast functioning of system, reliable connection, safe network and compatibility for integration in other networking systems (SAP, Navision, etc.).

**CONTROL FROM ANYWHERE**
the access into supervision system can be remote via internet and it is also possible that the system submits essential warnings as text-messages to the supervisor’s mobile phone.

**SCHEDULING OF MAINTENANCE**
warning messages for maintenance and service are displayed prior the work is required and therefore the supervisor can be always prepared for such action.

**SIMPLE UPGRADES**
when additional components are installed in an existing medical gas system, it is possible and very easy to include their status into the existing central supervision system.

**ASSISTANCE NEEDED?**
PC version of supervision system also enables the manufacturer to view the status of gases from his location and to offer professional assistance in case of malfunction, or maintenance-demand.

**AVAILABLE OPTIONS**
LED display for overview of plant/manifold status and area control boxes status
PC software for overview and management of complete medical gas system

*N2O CO2 AIR*
Gas manifolds are designed to supply the pipeline system with sufficient quantity of gas by cylinders and/or tanks. The typical manifold for medical gases (O₂, N₂O, CO₂, or medical AIR) according to EN ISO 7396-1 or HTM 02-01 consists normally of two-side cylinder supply with automatic change over between empty and full side, and additional third source for emergency supply. For oxygen usually the liquid source is being used as primary supply, while two-side cylinder supply is being used for reserve. The design of Medicop manifolds enables very reliable function and offers for user variable advantages, for example:

**MULTIFUNCTION**
- we have models available for small clinics with only one terminal unit for gas and up to the biggest health care institutions with thousands of terminal units.

**INTEGRATED DIGITAL DISPLAY**
- all information about manifold status (pressure level of each source, line pressure level) and alarm are being monitored on one display, which enables also forwarding of collected information to the central supervision of medical gases.

**EASY HANDLING**
- special conical shape of cylinder connection and a handle fixed on all connecting points enable that all empty cylinders are changed without using any tool.

**EASY MAINTENANCE**
- filters and other waste components are placed in such position that they are very easily accessible and therefore the regular service can be done in very short time.

**COMPATIBILITY FOR EVERYBODY**
- the valves for cylinder connections are available in all standards for high pressure equipment, which are being used around the world.

**FLOW IS NEVER INTERRUPTED**
- double line-pressure regulators and NIST inlets make it possible, that the pipeline is supplied with required quantity of gas even during maintenance or service of any component of a manifold.

**SAFETY, ALWAYS IN OUR MIND**
- there are special safety valves installed for each source of high pressure, as well as separate safety valve for line pressure.

**AVAILABLE OPTIONS**

<table>
<thead>
<tr>
<th></th>
<th>50 m³/h</th>
<th>100 m³/h</th>
<th>180 m³/h</th>
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</thead>
<tbody>
<tr>
<td>Capacity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of cylinders</td>
<td>1 – 48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display of status/alarm</td>
<td>analogue by gauges, digital with central LCD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of Gas</td>
<td>Oxygen, Nitrous Oxide, Carbon Dioxide, Air, Nitrogen, Helium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Available standards</td>
<td>EN ISO 7396-1 or HTM 02-01</td>
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</table>
Save huge amount of energy with an appropriate gas plant. We offer medical gas plants for compressed air, vacuum and anesthetic gas scavenging. Compressed air can be used either as medical air, or as energy source for driving surgical tools. The typical plant according to EN ISO 7396-1 or HTM 02-01 usually consists of 2 or 3 compressors/pumps, board for their control, pressure vessel, filtration system and pressure control panel. The design of Medicop plants enables very reliable functions and offers variable advantages for user, for example:

**Energy saving:** the most important function for a gas plant is that the operation and capacity of all components are synchronized, because in that way the consumption of energy is as low as possible. Therefore we offer special control boards for operation of compressors, pumps and filtration systems.

**Low noise level**

The use of a low speed fan and modern techniques of vibro-acoustic optimization has resulted in extremely low noise levels.

**Simple to install, easy to operate**

We deliver all components of plant preassembled and ready for operation. On site it is just necessary to connect all components and start up the plant.

**Perfect overview of status**

The control board for operation of compressors/pumps and filtration system provides all possible information about the status of plants, like current pressure level, overheating notice, fault of separate component, counter of working hours, etc. It is possible to connect all information to the central gas supervision.

**Optimized pressure control**

Pressure control panel can be combined for medical air and surgical air, or separate for each air source. Double regulators with bypass are installed for each source to assure continuous supply in case of service or maintenance of any component.

**Perfect air quality**

The water separator and coalescing filters remove free water and particles down to 0.01 micron and eliminate oil droplets down to 0.01 ppm. A heatless desiccant dryer reduces moisture content to a pressure dew point of -40 °C, removing any risk of condensation, bacteria and mould growth. A dual cleaning stage includes activated carbon to eliminate hydrocarbons (oil vapor, smells). A catalyst then converts CO into CO₂. A particle filter at the exit removes particles which may have been introduced in the desiccant stages down to 0.01 micron.

**High efficiency compressors**

We use compressors/pumps, which are designed and manufactured to meet the industry’s expectations of the highest quality standards. They have been designed to be service friendly with direct and easy access to all components. Wear out of parts is reduced to a minimum.

**Available options**

- **Available capacity of air plant:** 200 – 5000 lit/min
- **Available capacity of vacuum plant:** 25 – 760 m³/h
- **Available capacity of AGSS plant:** 8 – 295 m³/h
- **Available standards:** EN ISO 7396-1 or HTM 02-01
CONTROL-CLOSING BOXES

“Keep all gases in your building under perfect control”

Control boxes are installed in individual floors and allow status control of medical gases throughout the building. Medicop boxes include all features required by standards EN ISO 7396-1, HTM 02-01 like monitoring of pressure, possibility to close the flow, alarm for too high, or too low pressure, emergency supply inlet, but their design provides following advantages for the user:

FASCINATING DESIGN
front panel is made of dark tempered glass. All controls and monitored parameters are integrated on that very panel.

AUTOMATIC ADJUSTABLE DIGITAL DISPLAY
the field of display is automatically adjust-able regarding the number of gases installed in a box. It is possible to install 1 to 5 different gases in a single box. With push buttons TAB and DOWN the user can check and manage all available menus of the software. The settings in software are allowed only to authorized personal and the access is secured by PIN code.

MEASURING OF TEMPERATURE
with installed ambient temperature-sensor it is possible to set an alarm for too high temperature of gas.

HISTORY OBSERVATION
all events for each installed gas are being stored in a software of display. A user can therefore observe the history of all errors of pressure level, temperature errors, inappropriate opening of doors, etc. For each event its start and end are being stored.

INTEGRATION WITH CENTRAL GAS SUPERVISION
there are available CAN-BUS contacts and potential-free contacts to integrate information of control box with central gas supervision system.

MEASURING OF CONSUMPTION
with an installed flow-sensor a user can obtain information about how much gas was spent in a certain period of time in a certain medical department.

PHYSICAL INTERRUPTION OF FLOW
with special plates attached (red-stop), (green-go) it is possible to close the flow physically and then carry out a professional leakage test.

AVAILABLE OPTIONS
- Number of gases: 1 – 5
- Installation: surface-mounted, sunken-mounted
- Monitoring/alarm: analogue by gauges, or digital by LCD
- Size of connecting pipe: 8 – 22 mm
- Additional equipment: flow-sensor, temperature-sensor, back-up battery for display, valve sensor, door sensor
- Available standards: EN ISO 7396-1 or HTM 02-01
TERMINAL UNITS
THE SMARTLETS

“Simple, reliable, and delivered immediately”

Terminal unit for medical gases is the product we have the most experiences with. We started to produce and install those products 30 years ago. Continuous improvements during the years made our terminal units to be among the best in the world nowadays. There are several reasons, why you should choose Medicop terminal unit for medical gases:

STRONG CONSTRUCTION
Features:
• Main constituent parts made of metal
• Less components used
• Smooth connection and disconnection
Benefits:
• Resistant against wear out
• Long shelf life

EASY INSTALLATION AND SERVICE
Features:
• Same design and base plate for all standards & models
• Cartridge service kit
• Delivery of preassembled products
Benefits:
• Easy installation and maintenance by using only one standard tool
• Wide compatibility to any model of bed head units or ceiling pendants

INTELLIGENT RFID TECHNOLOGY
Features:
• Integrated electronic RFID tag transferring and exchanging data with the RFID reader device for the purpose of non-contact and automatic object detection
• A wide variety of potential outlet data stored in the RFID tag: serial number, production date, service schedule, service kit number ...
Benefits:
• Easy outlet identification and tracking
• Faster and more accurate data entry and processing
• Overview of maintenance status

SMART GAS PRESSURE CONTROL
Feature:
• Integrated red LED indicator providing a warning in case gas pressure is below or above of permitted limits
Benefit:
• Comprehensive and reliable pressure control at location of gas usage

AVAILABLE OPTIONS

<table>
<thead>
<tr>
<th>Available standards</th>
<th>DIN (German), BS (British), SS (Scandinavian), AFNOR (French)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Way of installation</td>
<td>surface wall-mounted, flush wall-mounted, BH/pendant mounted, hose-mounted, Y-model</td>
</tr>
<tr>
<td>Gases</td>
<td>oxygen, N₂O, medical air, surgical air, vacuum, CO₂, nitrogen, AGSS, mixture O₂/N₂O, AGSS</td>
</tr>
</tbody>
</table>

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“Connect perfect components with perfect network”

High quality components of medical gas system are worthless, if they are not connected by professionally installed pipeline system. MEDICOP has more than 30 years of experiences with installations and maintenance of medical gas systems and therefore we can assure to our clients professional service for this work, either by our own installation teams, or trained partners.

**MEDICAL COPPER PIPES**
we use only specially degreased copper pipes with certificate for medical gases.

**FULL ASSORTMENT OF FITTINGS**
no matter what shape and size your facility is, we can provide appropriate fittings, which will make the work for installers easy and fast.

**ACCOMMODATION FOR SPECIAL BUILDINGS**
we can provide special carriers and supporters for pipes in case the regular models are not appropriate regarding the situation on a building.

**SECURED CONTROL OVER PIPELINE SYSTEM**
the shut-off valves can be provided either lockable, or un-lockable models. The advantage of lockable model is to prevent incompetent persons to shut down/on the gas flow.

**SUITABLE PRESSURE & FLOW AT EACH SECTION**
the in-line pressure regulators can be provided of different capacities in order to assure appropriate quantity of gas at each sector of the building.

**DON’T BELIEVE PROMISES, BELIEVE TEST RESULTS**
each component of gas system as well as the complete system are tested according to all requirements of relevant standards before the system is handed over to the user.

**ASSISTANCE FOR CALCULATIONS**
we are pleased to offer our clients also the professional consulting for the new medical gas systems, or their upgrades in order to chose the appropriate components of the system regarding to capacity, power, pipeline sizes, etc.

**AVAILBLE OPTIONS**
- Sizes of copper pipes and fitting: 8 mm – 76 mm
- Sizes of shut-off valves: 3/8” – 3”
- Models of shut-off valves: lockable type, un-lockable type
- Capacity of in-line pressure regulators: 50 Nm³/h, 100 Nm³/h, 180 Nm³/h
All products comply with:
MDD 93/42/EEC and 2007/47/EEC