CEGA SYSTEMS
BY GREGGERSEN

ALL IN ONE CATALOG
CENTRAL GAS SUPPLY SYSTEMS
Our company has made a name for itself throughout the world by consistently developing new product and service ideas. Not only the high reliability of our products is a constant challenge for us, also is the growing expectations in terms of their design.

100 highly qualified members of staff plan, develop and assemble at the German production site for the customer’s benefit. Installation and maintenance are performed in the field.

With a production depth of up to 80% we retain the know-how within the company thus actively protecting the quality of our products. On account of long-term cooperation with our customers we can satisfactorily cater for their needs and develop innovations for practical use.

As it is in nature, so it is in technology; the value of experience shines through.

REFERENCES

Universitätsklinikum Hamburg-Eppendorf (UKE), Germany
Universitätsklinikum Bonn (UKB), Germany
Klinikum der Johann Wolfgang Goethe-Universität Frankfurt, Germany
Saudi German Hospitals (Yemen, UAE, Cairo/Egypt)
Magrabi Hospital, Saudi Arabia
Bugando University Hospital, Tanzania
Trust Hospital, Ghana
Tonekabon private Khazar Hospital, Iran
Medi City, Indien
Nishtar Hospital, Pakistan
Acibadem hospitals, Turkey
Zulekha hospital, UAE
Burjeel hospital, UAE
Any technical product is only as dependable as the person who makes it.

Our products are manufactured exclusively at our own plant in Germany. This way we can guarantee that each and every piece intertwines perfectly and that we can step in at any time to make immediate corrections if needed.

Our over 100 highly qualified employees and nearly 80% vertically integration in our manufacturing mean that we know our way around CEGA in our own company and can proactively ensure the outstanding quality of our products. We solely use the best materials in our manufacturing and carry out the work with flair. It’s because of our expertise in the industry that we enjoy long-term, successful partnerships with our customers. They prize our products because they know how much care we put into them.
THE SYSTEM
MORE THAN AN ARRAY OF HIGHTECH COMPONENTS

Patients need a reliable and uninterrupted supply of medical gases. Their health depends upon it — and often their lives do as well.

Modern concepts are based on the centralisation of gas supply sources: that’s why we provide oxygen, nitrous oxide and carbon dioxide in cylinders or liquid tanks, and produce compressed air and vacuums on-site using compressors and pumps.

All of these complex processes require extensive knowledge and experience, as well as technology that does not compromise on the development of hardware and software for materials selection and assembly.

Remember: Each of our parts is in 100% working order, but the system is only perfect when we deliver, assemble and maintain all of these parts.

Area monitoring and shut-off boxes from the VENTUS product family ensure the optimal gas supply for your patients. The gas pressure in individual areas is monitored through sensors and clearly shown. Technical or clinic staff can see all of the important information on the gas supply at a glance. Areas can also be shut off independently from one another as needed.

A area alarm panel permits all important announcements to be transferred to building management systems. You can use our network solutions to transfer all data (alarms, measured values, etc.) and to carry it over to the building management system (BMS).

The terminal units comply with national and international standards to link medical devices to the gas supply system. The prize-winning FORANO line of terminal units allows for a flexible installation in all variations imaginable. FORANO’s ease of use guarantees smooth operation in a hospital setting, and our anaesthetic gas severing system regulates the safe dispensing of anaesthetic gases. Our air motor system delivers the power supply needed for your compressed air tools.

We can customise our wall/ceiling supply units however you wish and put them at your service.

Vacuum system for suctioning secretions and liquids. Whether as a compact system or a customised installation, we deliver the most highly efficient solution at the right scale for you and create installations that follow the latest standards and regulations.

Medical compressed air for all important supply areas. We will scale your installation to your needs and plan, install and maintain your facilities, whether a doctor’s surgery or a university medical clinic. Our medical compressed air facilities meet the high demands of operational safety as well as the legal requirements for medical-grade compressed air. Each installation is built to facilitate maintenance and upkeep work without any interruption to operations.

Delivery system for medical gases consisting of pipes, shut-off valves and monitoring equipment. The gases are transported through medical-grade copper piping from the central location to the terminal unit. In order to guarantee the proper flow rate of the gas to the terminal units, our engineers calculate the optimal scale for your installation. During the assembly phase, our installers ensure precision and compliance with existing laws.

Supply systems for gas cylinders or cylinder racks. We deliver these modular systems to supply medical gases such as oxygen, nitrous oxide and carbon dioxide. Our decades of experience in the CEGA industry has also proved an advantage for our high-quality switchover systems. These installations have excellent workmanship, first-rate materials and an extremely long lifespan.

What’s more, their maintenance-friendly design reduces costs during the life cycle of the product.
BEAUTY

We hold our products to the highest quality standards, because we know how important technical reliability is when it comes to CEGA systems. These high standards are not just for the technology on the inside – they are also shown in the design on the outside.

Greggersen products deliver just what their appearance promises: perfect function, maximum reliability, accessible comfort.

True beauty comes from within. This is visible in both, the larger systems and the smallest details.

The growing demand for Greggersen manufacturing worldwide results from the harmony between technology and aesthetics.

When you cross timeless beauty with superior technology, an extraordinary thing arises.
Terminal Unit Forano BS
CONCEALED / HOLLOW WALL INSTALLATION

USAGE
The unit is used to withdraw compressed gases and vacuum from a central medical gas supply system in accordance with EN ISO 7396–1; integration of plugs and medical appliances with plug-in connections in line with BS 5682. The Forano terminal unit complies with the requirements of EN ISO 9170–1.

ADVANTAGES
• Two-part construction: gas-specific basic block and socket unit
• Sophisticated design: all-metal actuator with laser labelling; front panel with wavy lines and diaphragm ring
• Easy installation and servicing: cartridge with sealing elements, replacement possible without blocking the station
• Unique marking: gas-type labelling – laser labelling: chemical symbol + English; colour coding: in line with ISO32

TECHNICAL DATA
Input: 8 x 1 mm copper pipe
Operating pressure: 400 kPa to 1000 kPa – compressed gases
0 kPa to 99 kPa (absolute pressure) – vacuum

FORANO BS CONCEALED / HOLLOW-WALL – REAR PART (front part has to be ordered separately)
- Forano, O2, concealed / hollow wall, type BS: 903.350
- Forano, MA-4, concealed / hollow wall, type BS: 903.351
- Forano, VAC, concealed / hollow wall, type BS: 903.352
- Forano, N2O, concealed / hollow wall, type BS: 903.353
- Forano, MA-7, concealed / hollow wall, type BS: 903.354
- Forano, O2/N2O, concealed / hollow wall, type BS: 903.357

ACCESSORIES REQUIRED FOR OPERATION
- Front / wave screen to cover the built-in variant UP/HW: 903.298
- Front / wave screen to cover the built-in variant UP/HW (sales unit = 6 pcs.): 903.299

Terminal Unit Forano BS
SURFACE MOUNTING

USAGE
The unit is used to withdraw compressed gases and vacuum from a central medical gas supply system in accordance with EN ISO 7396–1; integration of plugs and medical appliances with plug-in connections in line with BS 5682. The Forano terminal unit complies with the requirements of EN ISO 9170–1.

ADVANTAGES
• Two-part construction: gas-specific basic block and socket unit
• Sophisticated design: all-metal actuator with laser labelling; front panel with wavy lines and diaphragm ring
• Easy installation and servicing: cartridge with sealing elements, replacement possible without blocking the station
• Unique marking: gas-type labelling – laser labelling: chemical symbol + German + English; colour coding: in line with ISO32

TECHNICAL DATA
Input: 8 x 1 mm copper pipe
Operating pressure: 400 kPa to 1000 kPa – compressed gases
0 kPa to 99 kPa (absolute pressure) – vacuum
Depth: 72 mm

FORANO BS, SURFACE MOUNTING – REAR PART (front part has to be ordered separately)
- FORANO, O2, surface installation, type BS: 903.340
- FORANO, MA-4, surface installation, type BS: 903.341
- FORANO, VAC, surface installation, type BS: 903.342
- FORANO, N2O, surface installation, type BS: 903.343
- FORANO, MA-7, surface installation, type BS: 903.344
- FORANO, O2/N2O, surface installation, type BS: 903.347
Terminal Unit Forano BS

**INSTALLATION INTO BED HEAD UNIT**

**USAGE**

The unit is used to withdraw compressed gases and vacuum from a central medical gas supply system in accordance with EN ISO 7396–1; integration of plugs and medical appliances with plug-in connections in line with BS 5682. The Forano terminal unit complies with the requirements of EN ISO 9170–1.

**ADVANTAGES**

- Two-part construction: gas-specific basic block and socket unit
- Sophisticated design: all-metal actuator with laser labelling; front panel with wavy lines and diaphragm ring
- Easy installation and servicing: cartridge with sealing elements, replacement possible without blocking the station
- Unique marking: gas-type labelling – laser labelling; chemical symbol + English; colour coding: in line with ISO32

**TECHNICAL DATA**

- **Input:** 8 x 1 mm copper pipe
- **Operating pressure:**
  - 400 kPa to 1000 kPa – compressed gases
  - 0 kPa to 99 kPa (absolute pressure) – vacuum

FORANO BS, PIPE STRAIGHT UP (front part has to be ordered separately)
- Forano, O2, bed-head unit pipe straight up, type BS 903.370
- Forano, MA-4, bed-head unit pipe straight up, type BS 903.371
- Forano, VAC, bed-head unit pipe straight up, type BS 903.372
- Forano, N2O, bed-head unit pipe straight up, type BS 903.373
- Forano, MA-7, bed-head unit pipe straight up, type BS 903.374
- Forano, O2/N2O, bed-head unit pipe straight up, type BS 903.377

FORANO BS, PIPE STRAIGHT BACK (front part has to be ordered separately)
- Forano, O2, pipe inline, type BS - marking: English 903.120
- Forano, MA-4, pipe inline, type BS - marking: English 903.121
- Forano, VAC, pipe inline, type BS - marking: English 903.122
- Forano, N2O, pipe inline, type BS - marking: English 903.123
- Forano, MA-7, pipe inline, type BS - marking: English 903.124
- Forano, O2/N2O, pipe inline, type BS - marking: English 903.127

Terminal Unit Forano BS

**INSTALLATION IN CEILING PENDANTS**

**USAGE**

The unit is used to withdraw compressed gases and vacuum from a central medical gas supply system in accordance with EN ISO 7396–1; integration of plugs and medical appliances with plug-in connections in line with BS 5682. The Forano terminal unit complies with the requirements of EN ISO 9170–1.

**ADVANTAGES**

- Two-part construction: gas-specific basic block and socket unit
- Sophisticated design: all-metal actuator with laser labelling; front panel with wavy lines and diaphragm ring
- Easy installation and servicing: cartridge with sealing elements, replacement possible without blocking the station
- Unique marking: gas-type labelling – laser labelling; chemical symbol + English; colour coding: in line with ISO32

**TECHNICAL DATA**

- **Input:**
  - 6 mm hose socket (compressed gases)
  - 8 mm hose socket (vacuum)
- **Operating pressure:**
  - 400 kPa to 1000 kPa – compressed gases
  - 0 kPa to 99 kPa (absolute pressure) – vacuum

FORANO BS, FOR CEILING PENDANT DVE (front part has to be ordered separately)
- Forano, O2, front part, type BS – marking: English 903.120
- Forano, MA-4, front part, type BS – marking: English 903.121
- Forano, VAC, front part, type BS – marking: English 903.122
- Forano, N2O, front part, type BS – marking: English 903.123
- Forano, MA-7, front part, type BS – marking: English 903.124
- Forano, O2/N2O, front part, type BS – marking: English 903.127
**Terminal Unit Forano BS**

**INSTALLATION INTO BED HEAD UNIT (E.G. TRILUX VS 100)**

**USAGE**

The unit is used to withdraw compressed gases and vacuum from a central medical gas supply system in accordance with EN ISO 7396–1; integration of plugs and medical appliances with plug-in connections in line with BS 5682. The Forano terminal unit complies with the requirements of EN ISO 9170–1.

**ADVANTAGES**

- Two-part construction: gas-specific basic block and socket unit
- Sophisticated design: all-metal actuator with laser labelling; front panel with wavy lines and diaphragm ring
- Easy installation and servicing: cartridge with sealing elements, replacement possible without blocking the station
- Unique marking: gas-type labelling – laser labelling: chemical symbol + English; colour coding: in line with ISO 32

**TECHNICAL DATA**

Input: 8 x 1 mm copper pipe

Operating pressure:
- Compressed gases: 400 kPa to 1000 kPa
- Vacuum: 0 kPa to 99 kPa (absolute pressure)

**FORANO BS, INSTALLATION INTO BED-HEAD UNIT, TRILUX VS100M (A) right** (front part has to be ordered separately)

- Forano, O2, Trilux VS100M (A), type BS: 903.310
- Forano, MA-4, Trilux VS100M (A), type BS: 903.311
- Forano, VAC, Trilux VS100M (A), type BS: 903.312
- Forano, N2O, Trilux VS100M (A), type BS: 903.313
- Forano, MA-7, Trilux VS100M (A), type BS: 903.314
- Forano, O2/N2O, Trilux VS100M (A), type BS: 903.317

**FORANO BS, INSTALLATION INTO BED-HEAD UNIT, TRILUX VS100M (B) left** (front part has to be ordered separately)

- Forano, O2, Trilux VS100M (B), type BS: 903.320
- Forano, MA-4, Trilux VS100M (B), type BS: 903.321
- Forano, VAC, Trilux VS100M (B), type BS: 903.322
- Forano, N2O, Trilux VS100M (B), type BS: 903.323
- Forano, MA-7, Trilux VS100M (B), type BS: 903.324
- Forano, O2/N2O, Trilux VS100M (B), type BS: 903.327

**Forano BS**

**FRONT PARTS FOR ALL INSTALLATION TYPES**

**FORANO FRONT PART – SCOPE OF DELIVERY**

Each gas-specific front part contains the following components:

- Actuator
- Cartridge
- Gas-specific socket unit
- Warning label (not ready for operation)

**FRONT PART FORANO BS, ISO32 COLOUR CODING** (rear part has to be ordered separately)

- Forano, O2, front part, type BS - marking: English: 903.120
- Forano, MA-4, front part, type BS - marking: English: 903.121
- Forano, VAC, front part, type BS - marking: English: 903.122
- Forano, N2O, front part, type BS - marking: English: 903.123
- Forano, MA-7, front part, type BS - marking: English: 903.124
- Forano, O2/N2O, front part, type BS - marking: English: 903.127

**FRONT PARTS FOR ALL INSTALLATION TYPES**

Each gas-specific front part contains the following components:

- Actuator
- Cartridge
- Gas-specific socket unit
- Warning label (not ready for operation)
Forano AGSS
ANAESTHETIC GAS SCAVENGING SYSTEM

USAGE
System for safe disposal of excess anaesthetic gases and anaesthetic vapours from the clinical environment.

All-metal construction, symbols for monitoring operation, with external ejector for vacuum generation. Suction adjustable; single-handed operation when connecting and disconnecting, unlocking via the connector receptacle. Fully mounted in a stainless steel casing, with stainless steel front panel (for concealed or hollow wall installation). Design complies with the requirements of EN ISO 9170-2.

TECHNICAL DATA
Dimensions: 145 x 120 x 65 mm (WxHxD)
Material: brass; casing and front panel stainless steel
Capacity: min. 50 L at 500 kPa
Input: copper pipe 8 mm
Output: copper pipe 15 mm
Marking: colour coding in line with ISO 32 standard magenta

FORANO AGSS
Forano AGSS, concealed / hollow wall 902.073
Forano AGSS, ceiling pendants, with external ejector 902.074
Forano AGSS, bed head units 902.075
Forano AGSS, surface mounting 902.076

Forano Airmotor
FOR DRIVING COMPRESSED AIR-OPERATED TOOLS IN ENCLOSED SPACES

USAGE
Terminal unit for supplying and disposing of air used to operate surgical tools. A combination of an outlet assembly (for supply) and an inlet assembly (for disposal), which is connected to a supply and disposal system. A non-return valve in the disposal system prevents return flow of consumed air.

TECHNICAL DATA
Dimensions: 145 x 120 x 65 mm (WxHxD)
Material: brass, chrome-plated; casing and front panel stainless steel
Capacity: min. 350 L at 800 kPa
Input: copper pipe 8 mm
Output: copper pipe 15 mm
Marking: colour coding in line with ISO 32 standard magenta
Operating pressure: 800 – 1000 kPa

FORANO AIR-MOTOR
Forano Air-Motor for concealed / hollow wall installation 902.090
Forano Air-Motor for ceiling pendants 902.091
Forano Air-Motor for bed head units 902.092
Forano Air-Motor for surface mounting 902.093
**Forano BS**

**IN TEHALIT WALL DUCT**

**USAGE**
Wall duct for surface mounting, fully fitted with various terminal units, Air-Motor and/or Anaesthetic Gas Scavenging System (AGSS in line with EN ISO 9170-2 with integrated ejector) in the aluminium duct. The length of the duct can be customised to suit requirements. The terminal units are ready-installed with piping laid. The feed pipe can come from the left, right, above, below or behind.

**TECHNICAL DATA**
- **Input**: 8 mm (1 terminal unit per gas)
  - 12 mm (2-3 terminal units per gas)
- **Output**: Forano terminal unit in accordance with BS 5682
- **Colour coding**: in line with ISO32

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**TEHALIT WALL DUCT**

Wall Duct Tehalit Forano, 2 outlets 903.400
Wall Duct Tehalit Forano, 3 outlets 903.401
Wall Duct Tehalit Forano, 4 outlets 903.402
Wall Duct Tehalit Forano, 5 outlets 903.403
Wall Duct Tehalit Forano, each additional outlet 903.404
Wall Duct Tehalit Forano, add-on 1 x AGSS 903.405
Wall Duct Tehalit Forano, add-on 1 x Air-Motor 903.406
Wall Duct Tehalit, meterage 903.040

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**Forano**

**INTERNATIONAL STANDARDS AND OTHER VARIANTS**

**GERMAN STANDARD, SCANDINAVIAN STANDARD (AGA), NORME FRANÇAISE, etc.**
The Forano terminal unit system is available in several other international standards beside the BS variant. Please contact us directly about the version you require. More information can be found on our website: www.greggersen.com/index.php/terminal-units.html
PERFECTION

All of our employees know that they are accountable to the patients who use our products. We guarantee certified quality, rigorously examine every link in the production chain, put solutions to the test and improve our products, it is the people that make the difference.

This is why Greggersen inspects each piece several times by hand. Most of our raw materials consist of 100% recyclable metals, such as brass and copper. We find consideration for the environment to be a fundamental sign of quality.

We design our products so that they will enjoy a long life, and that maintenance will be straightforward and affordable. Also we greatly value ergonomics and ease of use.

Offering perfect products is an extremely high standard, yet it is every Greggersen employee’s goal, every day.

Perfection is a high standard, one that can only be fulfilled if function and aesthetics develop in tandem.
Ventus shut-off valve systems

**GENERAL INFORMATION**

According to DIN EN ISO 7396-1, zone shut-off valves must be available in front of each functional area (operating room, intensive care nursing, normal wards, ...). The zone shut-off valves must be located in boxes with solid covers or doors. In addition to the shut-off valves, such a box must also contain a physical separation line and an emergency intake point. The door must be locked in its closed state, but must be accessible quickly in an emergency (emergency opening). The Ventus shut-off valve system fulfills all of these requirements.

Furthermore, emergency operational alarms are integrated in the Ventus system. Pressure sensors continuously monitor the network pressure. The electronics permanently monitor the measured value and compare it with the alarm limits. If the value exceeds or falls below the pressure limits there is a visual and acoustic signal (clinical emergency alarm). There are various options for the electronics such as digital display, flow measurement, network integration or logbook storage of all alarms and actions.

**ELECTRONICS DESIGN**

- High level of safety due to redundant microprocessors (if one processor fails, the second processor will assume all functions)
- Clinical operational alarm: Visual (red and green LEDs) and an acoustic signal in the presence of rising or falling pressure (according to DIN EN: ISO 7396-1)
- Reset key for alarm suppression or confirmation (time-dependent alarm repetition every 12 min); test key for a functional test

**HARDWARE DESIGN**

For each type of gas, the shut-off unit consists of the following components:

- Zone shut-off valve and manometer
- Physical separation of the pipe system
- Emergency intake option via NIST coupling
- Pressure sensor

**TECHNICAL DATA ELECTRONICS**

- Voltage supply: 12-24 V AC / 50 Hz
- Power consumption: 6 W
- Protection rating: IP41
- Acoustic signal generator: 60 dB at 1m distance
- Suppression: 12 minutes
- Inputs: max. 6 media monitored
- Outputs: max. 6 items potential-free
- Sensors: Vacuum/compressed gas: -100 to +600 kPa
- Compressed gas: 0 to 1600 kPa
- Supply voltage: 10-30 V DC
- Signal: 4-20 mA
- Display: Operation LED green, fault LED red (2x)
**Ventus 22mm**

**1 TO 6 VALVES**

22mm Version: Door made of steel, powder coated (RAL 9016), opening > 90° via a lateral hinge.

Valve-box with integrated emergency alarm panel 1-3 or 1-6 Media. According DIN EN ISO 7396-1 or HTM 02-01. For specifically close individual stations or functional units of the central gas supply system.

Complete metal version, fully installed in the box, to be embedded or installed on dry walls, sealing door with integrated emergency opening and impervious ventilation. Casing made up of sheet steel, front plated in RAL 9016. Infinity variable plaster compensation up to 30mm. Spatial separation of the electronic device and gas units. Window to read out the pressure gauges and the valve position.

**DESIGN**

The valve unit of the compressed gases or vacuum consists of the following components:

- medical ball-valve DN 20 and pressure gauge per gas type.
- valve group consists of valve block, shut-off valve and visible physical isolation for service.
- quick access by special lock and push in window
- diameter connection pipe 22mm available.
- emergency supply inlet NIST-Coupling (HTM two NIST connections optional)
- pressure transmitter for each gas type.

The pressure transmitter converts the current pressure to the alarm panel. The alarm panel system is programmed to ensure a warning signal in case of any increase or decrease of the pressure.

**TECHNICAL DATA**

- Front frame (1-3 fold): 390 x 530 x 16 mm (WxHxD)
- Base frame dimensions (1-3 fold): 330 x 470 x 77 mm (WxHxD)
- Front frame (4-6 fold): 630 x 530 x 16 mm (WxHxD)
- Base frame dimensions (4-6 fold): 570 x 470 x 77 mm (WxHxD)
- Compressed gases connection: 22 mm CU-pipe sleeves
- Vacuum connection: 22 mm (snif CU-pipe 8mm optional) sleeves
- Max. pressure for compressed gases: 0 to 10 bar
- Max. pressure for vacuum: 1 to 0 bar
- Pressure gauges: 50 mm o D.
- Pressure transmitter: 4-20 mA / +12-24 V AC/DC
- Color standard: RAL 9016 fine structure

**VENTUS 22MM COMPONENTS**

- Ventus 22mm 1 valve, for flush mounting 900.877
- Ventus 22mm 2 valves, for flush mounting 900.878
- Ventus 22mm 3 valves, for flush mounting 900.879
- Ventus 22mm 4 valves, for flush mounting 900.880
- Ventus 22mm 5 valves, for flush mounting 900.881
- Ventus 22mm 6 valves, for flush mounting 900.882

**FRAMES FOR SURFACE MOUNTING**

- Ventus 22mm surface frame 1 to 3 valves 900.874
- Ventus 22mm surface frame 4 to 6 valves 900.875

**Ventus Basic**

**1 TO 6 VALVES**

Basic version: Door made of sheet steel, powder-coated (RAL 9016), opening > 90° via a lateral hinge.

**TECHNICAL DATA**

- Dimensions of flush mount frame 1-3 valves: W 370 x H 450 x D 72 mm
- Dimensions of flush mount frame 4-6 valves: W 655 x H 450 x D 72 mm
- Dimensions front 1-3 valves: W 400 x H 480 mm
- Dimensions front 4-6 valves: W 685 x H 480 mm
- Connection: 15 mm CU connection pipe
- Nominal pressure of compressed gases: max. 1000 kPa
- Nominal pressure vacuum: max. -100 kPa
- Manometer: 50 mm o D; Scale: 0..16 bar /Vacuum 0...1 bar
- Pressure transmitter: 4-20 mA/24 V DC
- Primary voltage: 230 V 50 Hz AC
- Secondary voltage: 12 V AC

**VENTUS BASIC BACK COMPONENTS** (When ordering, always specify the desired types of gas e.g., 3 valve, O2 / AIR / VAC)

- Ventus 1 valve, only back component, for flush mounting 900.803
- Ventus 2 valves, only back component, for flush mounting 900.804
- Ventus 3 valves, only back component, for flush mounting 900.805
- Ventus 4 valves, only back component, for flush mounting 900.806
- Ventus 5 valves, only back component, for flush mounting 900.807
- Ventus 6 valves, only back component, for flush mounting 900.808

**VENTUS BASIC FRONT COMPONENTS** (When ordering, always specify the desired types of gas e.g., 3 valve, O2 / AIR / VAC)

- Ventus basic, 1 valve, only front component 900.809
- Ventus basic, 2 valves, only front component 900.810
- Ventus basic, 3 valves, only front component 900.811
- Ventus basic, 4 valves, only front component 900.812
- Ventus basic, 5 valves, only front component 900.813
- Ventus basic, 6 valves, only front component 900.814

**FRAMES FOR SURFACE MOUNTING**

- Ventus surface frame 1 to 3 valves 900.815
- Ventus surface frame 4 to 6 valves 900.816
**Ventus Basic Plus**

*Basic plus version:* Door made of sheet steel, powder-coated, opens via an upward moving lifting mechanism.

**TECHNICAL DATA**

- **Dimensions of flush mount frame 1-3 valves:**
  - W 370 x H 450 x D 72 mm
  - W 655 x H 450 x D 72 mm
  - W 416 x H 496 mm
  - W 701 x H 496 mm

- **Connection:** 15 mm CU connection pipe

- **Nominal pressure of compressed gases:**
  - max. 1000 kPa
  - max. 50 mm aDe; Scale: 0...16 bar /Vacuum 0...-1 bar

- **Pressure transmitter:** 4-20 mA/24 V DC

- **Primary voltage:** 230 V 50 Hz AC (integrated mains power supply)

- **Secondary voltage:** 12 V AC

**FRAMES FOR SURFACE MOUNTING**

- **VENTUS SURFACE FRAME 1 TO 3 VALVES**
  - Ventus basic Plus 1 valve, only front component 900.824
  - Ventus basic Plus 2 valves, only front component 900.825
  - Ventus basic Plus 3 valves, only front component 900.826
  - Ventus basic Plus 4 valves, only front component 900.827
  - Ventus basic Plus 5 valves, only front component 900.828
  - Ventus basic Plus 6 valves, only front component 900.829

- **VENTUS SURFACE FRAME 4 TO 6 VALVES**
  - Ventus basic Plus 4 valve, only front component 900.830
  - Ventus basic Plus 5 valve, only front component 900.831
  - Ventus basic Plus 6 valve, only front component 900.832

**VENTUS BASIC PLUS FRONT COMPONENTS** (When ordering, always specify the desired types of gas e.g., 3 valve, O2 / AIR / VAC)

- Ventus 1 valve, only back component, for flush mounting 900.800
- Ventus 2 valves, only back component, for flush mounting 900.801
- Ventus 3 valves, only back component, for flush mounting 900.802
- Ventus 4 valves, only back component, for flush mounting 900.803
- Ventus 5 valves, only back component, for flush mounting 900.804
- Ventus 6 valves, only back component, for flush mounting 900.805

**VENTUS GLASS FRONT COMPONENTS** (When ordering, always specify the desired types of gas e.g., 3 valve, O2 / AIR / VAC)

- Ventus glass, 1 valve, only front component 900.818
- Ventus glass, 2 valves, only front component 900.819
- Ventus glass, 3 valves, only front component 900.820
- Ventus glass, 4 valves, only front component 900.821
- Ventus glass, 5 valves, only front component 900.822
- Ventus glass, 6 valves, only front component 900.823

**FRAMES FOR SURFACE MOUNTING**

- **VENTUS SURFACE FRAME 1 TO 3 VALVES**
  - Ventus surface frame 1 to 3 valves 900.831

- **VENTUS SURFACE FRAME 4 TO 6 VALVES**
  - Ventus surface frame 4 to 6 valves 900.832

**Ventus Glass**

*Glass Version:* Door made of milk glass with interior illumination, opens via a lifting mechanism.

**TECHNICAL DATA**

- **Dimensions of flush mount frame 1-3 valves:**
  - W 370 x H 450 x D 72 mm
  - W 655 x H 450 x D 72 mm
  - W 416 x H 496 mm
  - W 701 x H 496 mm

- **Connection:** 15 mm CU connection pipe

- **Nominal pressure of compressed gases:**
  - max. 1000 kPa
  - max. 50 mm aDe; Scale: 0...16 bar /Vacuum 0...-1 bar

- **Pressure transmitter:** 4-20 mA/24 V DC

- **Primary voltage:** 230 V 50 Hz AC (integrated mains power supply)

- **Secondary voltage:** 12 V AC

**FRAMES FOR SURFACE MOUNTING**

- **VENTUS SURFACE FRAME 1 TO 3 VALVES**
  - Ventus surface frame 1 to 3 valves 900.831

- **VENTUS SURFACE FRAME 4 TO 6 VALVES**
  - Ventus surface frame 4 to 6 valves 900.832
**Ventus Spy**

**1 TO 6 VALVES**

*Spy version:* Door made of one-way plate glass, opens upwards via a lifting mechanism. The internal illumination turns on during an alarm making it possible to see the manometer.

**TECHNICAL DATA**

- Dimensions of flush mount frame 1-3 valves: W 370 x H 450 x D 72 mm
- Dimensions of flush mount frame 4-6 valves: W 655 x H 450 x D 72 mm
- Dimensions front 1-3 valves: W 406 x H 485 mm
- Dimensions front 4-6 valves: W 690 x H 485 mm
- Connection: 15 mm CU connection pipe
- Nominal pressure of compressed gases: max. 1000 kPa
- Nominal pressure vacuum: 50 mm H₂O; Scale: 0...16 bar / Vacuum 0...-1 bar
- Manometer: 4-20 mA/24 V DC
- Pressure transmitter: 230 V 50 Hz AC (integrated mains power supply)
- Primary voltage: 12 V AC
- Secondary voltage: 230 V 50 Hz AC (integrated mains power supply)

**VENTUS BASIC BACK COMPONENT** (When ordering, always specify the desired type of gas e.g., 3 valve, O₂ / AIR / VAC)

- Ventus 1 valve, only back component, for flush mounting: 900.800
- Ventus 2 valves, only back component, for flush mounting: 900.801
- Ventus 3 valves, only back component, for flush mounting: 900.802
- Ventus 4 valves, only back component, for flush mounting: 900.803
- Ventus 5 valves, only back component, for flush mounting: 900.804
- Ventus 6 valves, only back component, for flush mounting: 900.805

**VENTUS SPY FRONT COMPONENT** (When ordering, always specify the desired type of gas e.g., 3 valve, O₂ / AIR / VAC)

- Ventus spy, 1 valve, only front component: 900.812
- Ventus spy, 2 valves, only front component: 900.813
- Ventus spy, 3 valves, only front component: 900.814
- Ventus spy, 4 valves, only front component: 900.815
- Ventus spy, 5 valves, only front component: 900.816
- Ventus spy, 6 valves, only front component: 900.817

**FRAMES FOR SURFACE MOUNTING**

- Ventus surface frame 1 to 3 valves: 900.831
- Ventus surface frame 4 to 6 valves: 900.832

---

**Ventus Spy**

**1 TO 6 VALVES**

*Spy version:* Door made of one-way plate glass, opens upwards via a lifting mechanism. The internal illumination turns on during an alarm making it possible to see the manometer.

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- Dimensions front 1-3 valves: W 406 x H 485 mm
- Dimensions front 4-6 valves: W 690 x H 485 mm
- Connection: 15 mm CU connection pipe
- Nominal pressure of compressed gases: max. 1000 kPa
- Nominal pressure vacuum: 50 mm H₂O; Scale: 0...16 bar / Vacuum 0...-1 bar
- Manometer: 4-20 mA/24 V DC
- Pressure transmitter: 230 V 50 Hz AC (integrated mains power supply)
- Primary voltage: 12 V AC
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- Ventus 1 valve, only back component, for flush mounting: 900.800
- Ventus 2 valves, only back component, for flush mounting: 900.801
- Ventus 3 valves, only back component, for flush mounting: 900.802
- Ventus 4 valves, only back component, for flush mounting: 900.803
- Ventus 5 valves, only back component, for flush mounting: 900.804
- Ventus 6 valves, only back component, for flush mounting: 900.805

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- Ventus spy, 2 valves, only front component: 900.813
- Ventus spy, 3 valves, only front component: 900.814
- Ventus spy, 4 valves, only front component: 900.815
- Ventus spy, 5 valves, only front component: 900.816
- Ventus spy, 6 valves, only front component: 900.817

**FRAMES FOR SURFACE MOUNTING**

- Ventus surface frame 1 to 3 valves: 900.831
- Ventus surface frame 4 to 6 valves: 900.832

---

**Ventus Customizations**

**VENTUS SPECIAL VARIATIONS**

Upon request, we can deliver the Ventus basic system with observation windows for the manometers (individually or as a large cutout).

- Ventus Biathlon 3 valves: 900.857
- Ventus Biathlon 6 valves: 900.858
- Ventus observation window: upon request

**SURFACE DECORATIONS**

The surface of the Ventus system can be individually designed. We offer everything including different colors and the most varying materials!

- Individualized surface from Ventus: upon request

**VENTUS DIGITAL**

The Ventus system can be equipped with a blue illuminated liquid crystal display. Thus, the user has access to diverse informational options.

- Digital logbook function: 900.850
- Digital pressure display: 900.852
- Digital flow display: 900.853

**NETWORK CAPABILITY**

As in the case of many other CEGA components, we offer a network interface for the Ventus system. Thereby, the Ventus can be integrated into a monitoring system of the medical media supply. This facilitates the central monitoring of the entire gas supply system.

- Network function: 900.851

**SEALED EMERGENCY OPENING**

Upon request, we can in addition to the serial door opening alarm also equip the Ventus system with a proven seal system. It is able to immediately detect an unauthorized opening of the Ventus system.

- Sealed emergency opening for Ventus basic: 900.854
- Sealed emergency opening for Ventus basic plus, glass, spy: 900.855

**LOCKABLE LOCK**

Upon request, the Ventus can be equipped with a lockable lock. Naturally, the emergency opening option remains functional.

- Lockable lock: 900.856
We tailor our offerings to our customers, because we work close together to find solutions. We understand their problems and their particularities, whilst keeping in mind, the big picture as well as the small details.

This is as true for products as it is for services. And it applies not only to what we produce, but also to how we produce it.

Greggersen knows each customer’s needs and attends to them with care and with professionalism. Whether we are designing the architecture of a network or arranging visible elements from glass, metal or other materials in close consultation with the customer, our products are always made to individual specifications.

In a world where offerings grow more and more similar, we emphasize individuality that is fitted to our customers’ needs.
Aeolus manifold
ACCORDING TO DIN EN ISO 7396-1

GENERAL
Greggersen sets a new standard - Aeolus.

The Aeolus central gas supply system ensures a continuous supply of medical gases (oxygen, nitrous oxide, carbon dioxide and other gases). Aeolus controls the continuous supply of a system from various sources and constantly displays the system status on the integrated LCD display.

The Aeolus E series consists of a newly developed electronic control unit which is responsible for monitoring all pressure sensors. It switches all magnetic valves and alarm states. Aeolus therefore represents a fully automatic and fully electronically controlled functional unit. As a medical device, the Aeolus system is in conformity with DIN EN ISO 7396-1, HTM 02-01 and 93/42/EEC: class II b.

The status of the plant is visible on the LCD display at all times. The control elements beneath it can be used to navigate through all the Aeolus menu levels with ease. All information on the settings is clearly output on the LCD display.

Aeolus is also perfectly prepared for emergencies. In the event of a power failure, both valves open to ensure the supply of medical gases.

An extensive accessories kit allows individualization of the plant configuration. This means that the needs and requirements of various medical facilities can be met.

Like all Greggersen products, Aeolus is not only technically mature, but, with its elegantly designed protective hood and its sophistication inside, also makes an excellent visual impression.

ADVANTAGES
- Unique design
- Compact and light
- Powerful
- Modular construction and individual accessories
- Capacity up to 165 m³/h
- Simple access to all components for servicing and maintenance
- EC conformity declaration - the entire system meets DIN EN ISO 7396-1 and HTM 02-01 specifications and is classified as a class II b medical device.
- Overview of the complete system status from the illuminated display
- Supply reliability from three sources
- Display languages German, English and Dutch
- Logbook function
- Network connectivity

GREGGERSEN SYSTEM PHILOSOPHY
If all the parts of a system are carefully coordinated, the functionality multiplies and a loose collection of instrumental soloists becomes a harmonious orchestra.

This principle not only applies to music, but also in technology. So Greggersen does not restrict itself to manufacturing high quality components and systems, but offers a flexible system for planning, realising, optimising and maintaining highly complex central gas supply systems (CEGA). Using intelligent components and clearly defined processes, functionality can be guaranteed on a top level at all times.

This is also evident from our rapid innovation and ensures that we renew ourselves at ever shorter intervals - technologically and always with a view to customer benefit. Greggersen offers everything from a single source, full service from planning through to service. The systems are continuously developed further, but always stay backwards compatible - today and of course tomorrow too.
THE AEOLUS GAS SUPPLY SYSTEM

The Aeolus central gas supply system guarantees a continuous supply of medical gases (oxygen, nitrous oxide, compressed air, carbon dioxide etc.).

All components for operating Aeolus:

- AEOLUS manifold
- Measurement line mains system pressure
- Emergency feed point
- Pressure reducer panel for tank or reserve supply
- Aeolus header system

Further there are pipe connections made of high quality copper for medical applications, holder systems for gas cylinders and installation material.

Depending on usage, the modules can be combined in different ways (e.g. as a reserve supply or for tank supply).

CLASSIFICATION

- DIN EN ISO 7396-1 & HTM 02-01
- 93/42/EEC class II b

FUNCTION

The pressure reducer panel lowers the tank supply pressure (or reserve supply) to the mains system pressure. The gas from the cylinder bank flows through the header system to the manifold. The high pressure from the cylinders is reduced in two stages within the switchover system:

- The two reducer units from the first stage reduce the pressure from the cylinder bank to between 10 bars and 12 bars.
- The two second stage pressure reducers then finally reduce the pressure to the required mains system pressure.

Depending on the intended use and configuration of the plant, a primary source is defined in the electronic control, with which the sequence of access to the different sources is defined:

In a plant with tank supply the tank is used as the primary supply. Only once the pressure from this source drops below a certain value are the cylinder batteries accessed.

In case of a plant with reserve supply, the two cylinder batteries are used as the primary source. Only if the pressure drop below the minimum operating pressure does the plant revert to the reserve battery.

POSSIBLE COMBINATIONS

AEOlUS E SERIES WITH TWO SOURCES + RESERVE SUPPLY

AEOlUS E SERIES WITH TWO SOURCES + TANK SUPPLY
Technical reliability is essential in CEGA systems. This is why Greggersen sets the highest qualitative standards for its products. Greggersen also makes very high demands on design. For this reason, Greggersen has been intensively involved with corporate identity and corporate product design over recent years.

The result of these activities is products that are not only elegant, but also ergonomic and user-friendly. Greggersen products are aesthetic masterpieces that deliver what their appearance promises: Perfect functionality, top reliability and tangible ergonomics.
### Aeolus E40 Manifold

**System Components**

| Material: | Installation plate: steel (zinc coated) |
| Dimensions: | 880 x 470 x 310 mm (H x W x D) |
| Inlet pressure: | max. 200 bar |
| Outlet pressure: | 1st stage: 11 bar, safety valve: 16 bar |
| Pressure reducers: | 1st stage: HD 60 |
| Throughput: | 40 m³/h at 5 bar |
| Inlet: | M 24 x 1,5 |
| Outlet: | copper pipe Ø 22 mm |
| Weight: | 33,5 kg |
| Interfaces: | potential-free contacts / N2 Open |
| Protection type: | IP 50 |
| Operating temperature: | 10° to 40° C |
| Solenoid: | 24 V DC ± 5 % |
| Scope of delivery: | Aeolus E40 installation plate, dust cover, power supply unit, pressure sensors, M10 electronics |

**Accessories for the Aeolus E40 Manifold**

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aeolus E40 manifold O₂</td>
<td>903.610</td>
</tr>
<tr>
<td>Aeolus E40 manifold CO₂</td>
<td>903.611</td>
</tr>
<tr>
<td>Aeolus E40 manifold N₂O</td>
<td>903.612</td>
</tr>
<tr>
<td>Other gases</td>
<td>on request</td>
</tr>
</tbody>
</table>

**Electronics Accessories**

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply unit 100 - 240 V AC / 50 - 60 Hz - 24 V DC</td>
<td>903.670</td>
</tr>
<tr>
<td>Measurement line for mains system pressure size 1 O₂</td>
<td>903.665</td>
</tr>
<tr>
<td>Measurement line for mains system pressure size 1 neutral gases</td>
<td>903.666</td>
</tr>
<tr>
<td>Aeolus M10 electronics</td>
<td>903.633</td>
</tr>
<tr>
<td>Emergency feed point O₂</td>
<td>903.678</td>
</tr>
<tr>
<td>Emergency feed point CO₂</td>
<td>903.680</td>
</tr>
<tr>
<td>Emergency feed point N₂O</td>
<td>903.681</td>
</tr>
</tbody>
</table>

### Aeolus E70 Manifold

**System Components**

| Material: | Installation plate: steel (zinc coated) |
| Dimensions: | 880 x 470 x 310 mm (H x W x D) |
| Inlet pressure: | max. 200 bar |
| Outlet pressure: | 1st stage: 11 bar, safety valve: 16 bar |
| Pressure reducers: | 1st stage: HD 60 |
| Throughput: | 70 m³/h at 5 bar |
| Inlet: | M 24 x 1,5 |
| Outlet: | copper pipe Ø 22 mm |
| Weight: | 35 kg |
| Interfaces: | potential-free contacts / N2 Open |
| Protection type: | IP 50 |
| Operating temperature: | 10° to 40° C |
| Solenoid: | 24 V DC ± 5 % |
| Scope of delivery: | Aeolus E70 installation plate, dust cover, power supply unit, pressure sensors, M10 electronics |

**Accessories for the Aeolus E70 Manifold**

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
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</thead>
<tbody>
<tr>
<td>Aeolus E70 manifold O₂</td>
<td>903.620</td>
</tr>
<tr>
<td>Aeolus E70 manifold CO₂</td>
<td>903.621</td>
</tr>
<tr>
<td>Aeolus E70 manifold N₂O</td>
<td>903.622</td>
</tr>
<tr>
<td>Other gases</td>
<td>on request</td>
</tr>
</tbody>
</table>

**Electronics Accessories**

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply unit 100 - 240 V AC / 50 - 60 Hz - 24 V DC</td>
<td>903.670</td>
</tr>
<tr>
<td>Measurement line for mains system pressure size 2 O₂</td>
<td>903.688</td>
</tr>
<tr>
<td>Measurement line for mains system pressure size 2 neutral gases</td>
<td>903.689</td>
</tr>
<tr>
<td>Aeolus M10 electronics</td>
<td>903.635</td>
</tr>
<tr>
<td>Emergency feed point O₂</td>
<td>903.679</td>
</tr>
<tr>
<td>Emergency feed point CO₂</td>
<td>903.680</td>
</tr>
<tr>
<td>Emergency feed point N₂O</td>
<td>903.681</td>
</tr>
</tbody>
</table>
Aeolus E165 manifold

**SYSTEM COMPONENTS**

- **Material:** Installation plate: steel (zinc coated)
  Components: brass, copper
- **Dimensions:** 880 x 470 x 310 mm (H x W x D)
- **Inlet pressure:** max. 200 bar
- **Outlet pressure:**
  - 1st stage: 11 bar, safety valve: 16 bar
  - 2nd stage: 4 to 5 bar
- **Pressure reducers:**
  - 1st stage: HD 60 Twin
  - 2nd stage: MD ¾”
- **Throughput:** 165 m³/h at 5 bar
- **Inlet:** M 24 x 1.5
- **Outlet:** copper pipe Ø 22 mm
- **Weight:** 40 kg
- **Interfaces:** potential-free contacts / N2Open
- **Protection type:** IP 50
- **Operating temperature:** 10° to 40°C
- **Solenoid:** 24 V DC ± 5 %
- **Scope of delivery:** Aeolus E165 installation plate, dust cover, power supply unit, pressure sensors, M10 electronics

Other gases on request

**ACCESSORIES FOR THE AEOLUS E 165 MANIFOLD**

**ELECTRONICS ACCESSORIES**

- **Power supply unit**
  - 100 - 240 V AC / 50 - 60 Hz - 24 V DC
  - 903.670
- **Measurement line for mains system pressure size 2**
  - O2
  - CO2
  - N2O
  - 903.688
- **Measurement line for mains system pressure size 2 neutral gases**
  - 903.689
- **Aeolus M10 electronics**
  - 903.635
- **Emergency feed point O2**
  - 903.679
- **Emergency feed point CO2**
  - 903.680
- **Emergency feed point N2O**
  - 903.681

MC 2025P manifold

**USAGE**

The MediControl central gas supply system guarantees continuous supply with medical gases (oxygen, nitrous oxide, carbon dioxide, etc).

According to DIN EN 737-3 the system is designed as main supply source with 2-sided bottle battery. In addition a third reserve supply source can be connected.

The pneumatically controlled switchover system controls the supply of the gas supply system. At the same time it reduces the pressure of the bottle batteries. The status of the entire system can be checked by an optional monitoring unit.

**DESIGN**

Pneumatically controlled supply system for medical gases, design according to DIN EN 737-3, pressure monitoring for high and low pressure range with pressure switches. The pressure switches can be connected to an evaluation unit (optional), this displays the operating states of the supply system. Manual switchover of the supply sources by hand is possible using a control lever on the pressure reducer.

Constant output pressure by two-stage pressure reduction.
Duplicated second stage for higher safety. No pressure reducer settings have to be changed in maintenance work.

Pneumatic priority connection.
Safety control pressure gauge in every pressure stage.

Emergency feeding point (NIST) integrated, completely installed on an installation plate, removable housing with cover and viewing window.
MC custom made manifold

Customized medical manifolds with different flow rates up to 300m³/h.

We create special manifolds according the needs of a project. Equipped with extra measurement units, different outgoing signals, pressure reducers with high performance. According the standards ISO 7396-1 or HTM 02-01.

Reserve supply units (emergency)
size 1 / size 2

**USAGE**

The reserve supply is connected permanently to the Medi-Control central gas supply system as third source.

**DESIGN**

- Pressure monitoring for high pressure range by a pressure sensor
- Main shutoff valve in the input for separating the tank supply from the mains
- Constant output pressure by two-stage pressure reduction
- Safety valve and pressure gauge for mains pressure indication
- Completely mounted on an installation plate

**TECHNICAL DATA**

<table>
<thead>
<tr>
<th>Material:</th>
<th>Installation plate: steel (zinc coated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components:</td>
<td>copper, brass</td>
</tr>
<tr>
<td>Dimensions:</td>
<td>400x400x200 mm (WxHxD)</td>
</tr>
<tr>
<td>Input pressure max.:</td>
<td>200 bar</td>
</tr>
<tr>
<td>Output pressure:</td>
<td>1-8 bar (5 bar standard)</td>
</tr>
<tr>
<td>Capacity size 1:</td>
<td>50 m³/h</td>
</tr>
<tr>
<td>Capacity size 2:</td>
<td>100 m³/h</td>
</tr>
<tr>
<td>Input:</td>
<td>G ¾ &quot;</td>
</tr>
<tr>
<td>Output:</td>
<td>½&quot; on copper pipe 22 mm</td>
</tr>
<tr>
<td>Weight size 1:</td>
<td>20 kg</td>
</tr>
<tr>
<td>Weight size 2:</td>
<td>30 kg</td>
</tr>
</tbody>
</table>

**PRESSURE REDUCER UNIT FOR RESERVE SUPPLY**

Pressure reducer unit size 1 for reserve supply 327.900
Pressure reducer unit size 2 for reserve supply 505.367
Aeolus

**HP HEADER SYSTEM**

**USAGE**
For high pressure cylinder banks. Connects several cylinders with each other, complete installed with HP non-return valves for each cylinder.
Screw connection for venting valve and main shut-off valve.
The header system can be expanded by threaded connections as desired.
For use of an uneven number of cylinders one connector sealed with a cap.

**DESIGN**
Fully pre-assembled unit for wall mounting with shut-off and ventilation valves.

**TECHNICAL DATA**
- Material: copper/brass
- Operating pressure: 200 bar
- Inlet: W 21.8
- Outlet: G ¾"
- Venting: solder connection Ø 8 mm
- Separation of the cylinders: approx. 300 mm
- Installation length: depending on the variant (2-10)

**HP HEADER SYSTEM**
- High pressure header system 2-fold (please specify gas type) 903.870
- High pressure header system 4-fold (please specify gas type) 903.871
- High pressure header system 6-fold (please specify gas type) 903.872
- High pressure header system 8-fold (please specify gas type) 903.873
- High pressure header system 10-fold (please specify gas type) 903.874
- Other sizes on request

**Aeolus header system accessories**

**PIGTAIL ACCORDING DIN477**

**USAGE**
To connect the cylinders with the Aeolus header system.

**TECHNICAL DATA**
- Material: copper, brass
- Operating pressure: max. 200 bar
- Inlet: W 21.8
- Outlet: W 21.8

<table>
<thead>
<tr>
<th>Pigtail</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>O₂</td>
<td>903.830</td>
</tr>
<tr>
<td>CO₂</td>
<td>903.829</td>
</tr>
<tr>
<td>N₂O</td>
<td>903.827</td>
</tr>
<tr>
<td>AIR</td>
<td>903.826</td>
</tr>
<tr>
<td>Other gases &amp; other standards (BS)</td>
<td>on request</td>
</tr>
</tbody>
</table>

**HP CONNECTION PIPE**

**USAGE**
To connect the header system with Aeolus.

**TECHNICAL DATA**
- Material: copper, brass
- Operating pressure: max. 200 bar
- Inlet: G ¾"
- Outlet: M24x1,5 mm

| HP connection pipe header system | 903.694 |
| HP connection pipe to MC 2025P | 324.010 |
| HP connection pipe from header to reserve supply | 324.018 |

**CYLINDER HOLDER**

**USAGE**
For safe positioning of the cylinders.

**TECHNICAL DATA**
- Material: stainless steel

| Cylinder holder header system 1-fold | 903.862 |
| Cylinder holder header system 2-fold | 903.863 |
**Usage**

The pressure reducer panel is designed to reduce the pressure from the tank to the desired operating pressure.

**Technical Data**

**Material:**
- Installation plate: steel (zinc coated)
- Components: copper, brass

**Dimensions Size 1:**
- 300 x 430 x 170 mm (WxHxD)

**Outlet Pressure:**
- 1-8 bar

**Throughput Size 1:**
- up to 40 m³/h

**Inlet Size 1:**
- M24x1.5 mm

**Outlet Size 1:**
- solder connection Ø 22 mm
- solder connection Ø 28 mm

**Dimensions Size 2:**
- 400 x 580 x 170 mm (WxHxD)

**Outlet Pressure:**
- 1-8 bar

**Throughput Size 2:**
- up to 165 m³/h

**Inlet Size 2:**
- M24x1.5 mm

**Outlet Size 2:**
- solder connection Ø 28 mm

**Reserve Panel Aeolus**

**Usage**

The pressure reducer panel is designed to reduce the pressure from the emergency supply to the desired operating pressure.

**Technical Data**

**Material:**
- Installation plate: steel (zinc coated)
- Components: copper, brass

**Dimensions Size 1:**
- 300 x 430 x 170 mm (WxHxD)

**Outlet Pressure:**
- 1-8 bar

**Throughput Size 1:**
- up to 40 m³/h

**Inlet Size 1:**
- M24x1.5 mm

**Outlet Size 1:**
- solder connection Ø 22 mm
- solder connection Ø 28 mm

**Dimensions Size 2:**
- 400 x 580 x 200 mm (WxHxD)

**Outlet Pressure:**
- 1-8 bar

**Throughput Size 2:**
- up to 165 m³/h

**Inlet Size 2:**
- M24x1.5 mm

**Outlet Size 2:**
- solder connection Ø 28 mm

**Pressure Reducer Panel Size 1 for Reserve Supply O₂ (for Aeolus E40)**
- 903.650

**Pressure Reducer Panel Size 2 for Reserve Supply O₂ (for Aeolus E70 / E165)**
- 903.651

**Pressure Reducer Panel Size 1 for Reserve Supply CO₂ (for Aeolus E40)**
- 903.656

**Pressure Reducer Panel Size 2 for Reserve Supply CO₂ (for Aeolus E70 / E165)**
- 903.660

**Pressure Reducer Panel Size 1 for Reserve Supply N₂O (for Aeolus E40)**
- 903.657

**Pressure Reducer Panel Size 2 for Reserve Supply N₂O (for Aeolus E70 / E165)**
- 903.661

**Pressure Reducer Panel Size 2 for Reserve Supply N₂O (for Aeolus E70 / E165)**
- 903.662

**Pressure Reducer Panel Size 2 for Reserve Supply N₂O (for Aeolus E70 / E165)**
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**Pressure Reducer Panel Size 2 for Reserve Supply N₂O (for Aeolus E70 / E165)**
- 903.662
Pressure reducer unit for liquid oxygen tanks (VIE)

**USAGE**
The main tank supply is connected permanently to the Medi-Control central gas supply system as the primary source.

**DESIGN**
- Pressure monitoring for high pressure range by a pressure sensor
- Main shutoff valve in the input for separating the tank supply from the mains
- Safety valve and pressure gauge for low pressure indication
- Emergency feeding point (NIST)
- Completely mounted on an installation plate

**TECHNICAL DATA**
- **Material:** Installation plate: steel (zinc coated)
- **Components:** copper, brass
- **Dimensions:** 400x400x200 mm (WxHxD)
- **Input pressure max.:** 16 bar
- **Output pressure:** 1-8 bar (5 bar standard)
- **Capacity:** 150 m³/h
- **Input:** G ¼”
- **Output:** ½” on copper pipe 22 mm
- **Weight:** 20 kg

Duplex pressure reducer unit VIE

**USAGE**
The main tank supply is connected permanently to the MediControl central gas supply system as the primary source.

**DESIGN**
- Pressure monitoring for high pressure range by a pressure sensor
- Main shutoff valve in the input for separating the tank supply from the mains
- Pressure reducer duplicated.
- Safety valve and pressure gauge for low pressure indication
- Emergency feeding point (NIST)
- Completely mounted on an installation plate

**TECHNICAL DATA**
- **Material:** Installation plate: steel (zinc coated)
- **Components:** copper, brass
- **Dimensions:** 400x400x200 mm (WxHxD)
- **Input pressure max.:** 16 bar
- **Output pressure:** 1-8 bar (5 bar standard)
- **Capacity:** 150 m³/h
- **Input:** Ø 28x1.5 solder cone with check valve
- **Output:** Ø 28x1.5 solder cone
- **Weight:** 20 kg
Anyone who wants to deliver outstanding quality must work with the very best partners. In close contact, eye to eye.

**PARTNERS**

The exclusive quality of our products is an obligation to apply our high standards everywhere. We therefore place strict criteria on the selection of our co-operation partners. All of our German partners and providers share our emphasis on equality, openness and mutual trust.

This is the only way that each partner can benefit from the other, so ultimately customers can benefit from a well-practised team.
**Oxygen Concentrators**  
**FOR CENTRAL GAS SUPPLY SYSTEMS**

**USAGE**
The new oxygen generator uses Pressure Swing Adsorption technology to isolate oxygen molecules from other molecules in compressed air. The result is high purity oxygen at the outlet of the generator.

The OGP series is a very cost-efficient source of oxygen used in various industries like waste water treatment, ozone production, health care, glass industry, and many others.

**FEATURES AND BENEFITS**
- Ready to Use
- Only requires a supply of dry compressed air
- Plug-and-play
- No specialist installation or commissioning
- Fully automated and monitored including oxygen sensor as standard
- Performance guaranteed independent from temperature Cost Savings
- Low installation and running cost - highly efficient technology
- No additional costs such as order processing, refills and delivery charges
- Virtually service free Exceptional Convenience
- Continuous availability (24 hours a day, 7 days a week)
- Risk of production breakdown due to gas running out is eliminated
- Desired purity
- Very easy to set up the device for other purity levels
- High Flow Capacity
- The wide product range and oxygen flows up to 200 Nm³/h make the new

**TECHNICAL DATA**

**Oxygen Generator, OGP 6 with 150l pre buffer and special 250l O2 buffer (11 bar)**

**GENERATOR SPECIFIC**
- Capacity: 6,5 m³/h
- Purity: 93 %
- Inlet pressure: 7 bar
- Outlet pressure: 5 bar
- Air consumption: 1,3 m³/min FAD
- Hose connection: 1” hose
- Power supply: 240-110V/50-60Hz
- Climalic Conditions:
  - Ambient temp.: 5 °C to 45 °C
  - Altitude: less than 300 meters a.s.l.
- Dry and ventilated room.

Compressor GA 7.7.5 bar screw compressor EL graphic, 3 phase integrated
Refrigeration dryer, Power supply: 400-440V/50-60Hz
Filter Package 1 micron and 0,01 micron filter with drain valve and hose

**COMP. AIR SPEC.**
- Air delivery: 1,3 m³/min FAD (7,5bar)
- Air quality spec.: ISO 8573.1:2001.2.4.1
- Dew point: +3°C
- Filtration grade: 0.01 micron
- Display Control 1, LCD display, Alarm indication
- Oxygen monitor for oxygen generators (standard) Range 0,1-100% includes alarm function (through control)

---

**Single concentrator unit**
**WITH AUTOMATIC MANIFOLD MC2025P**

1. Compressor (oil lubricated) with integrated dryer
2. Air Tank
3. Oxygen Generator
4. Oxygen buffer tank
5. Filters
6. Auto Drain
7. Outlet Pressure Regulator
8. Filters
10. Automatic Manifold MC2025P
11. High Pressure Compressor oil free (150 bar)
12. Filling ramp for 6 cylinders

---

*Reference conditions:
  - Ambient temperature 20°C
  - Ambient pressure 1013 mbar
  - Unit inlet temperature 20°C
  - Inlet pressure 7.5 bar(g)
  - Unit outlet oxygen purity 93%
  - Compressed air inlet quality ISO8573-1 class 1-4-1
  - Outputs
    - Maximum compressed air inlet temperature 45°C
    - Minimum compressed air inlet temperature - 5°C
    - Maximum ambient temperature 45°C
    - Minimum ambient temperature - 5°C
    - Minimum ambient temperature 0°C
    - Maximum compressed air inlet pressure 4 bar(g)
    - Maximum compressed air inlet pressure 10 bar(g)
    - Minimum oxygen purity 90%
    - Maximum oxygen purity 95%
Medical Air Compressors

**OIL FREE**

**USAGE**
Greggersen’s medical air systems are the ideal compressed air generators whenever a reliable compressed air is needed quickly in the fields of medical technology. They are built in accordance to ISO 7396-1 and HTM 02-01.

The air systems are equipped with different types of air compressors; receivers; dryers and filter units. The produced medical air quality is according to the European Pharmacopoeia. Different combined air systems take care of the different project requirements that guarantee safe, continuous operation.

Our range of services include the following:
- Plant design and engineering
- Oil injected screw compressors and oil lubricated piston compressors
- Oil free screw and turbo compressors
- Compressed air treatment, filtration, measurement
- Energy efficient system development

**CENTRAL MEDICAL AIR PLANT**

Version MCA-B

The compressed air plant is flexible to mount on the ground floor. The vertical standing vessels are connected by copper pipe to the compressor device. This arrangement allows a flexible position in limited technical rooms.

Greggersen offers a complete equipment pack which conforms to the international Standard DIN EN ISO 7396-1 and guideline HTM 02-01.

**SYSTEM TP MED AIR GG DUPLEX**

1x SF 11 DM 8 bar; 2x5,5KW/7 HP; 2x50%= 2x0,6m³/min; 400V 50Hz; 2x desiccant dryer MED 13 max flow 0,78m³/min:

---

**MEDICAL AIR COMPRESSOR OIL-FREE SCROLL TYPE**

Total flexibility:
The SF 11 oil-free scroll technology.
Two by two compressor modules are integrated into one canopy, incorporating all the benefits and flexibility of a modular system.

Efficiency in operation:
SF 11-8 scroll compressors are equipped with AC’s Elektronikon®.
- Multi Scroll Compressor Controller (MSCC).
The Elektronikon® continuously monitors the status of each element and starts and stops the compression elements, thereby insuring that the compressed air output matches the air demand.

**SCROLL COMPRESSOR SF 11 DM / 8**

All-automatic, internally completely piped and wired compact unit, oil free, single-stage, air-cooled and equipped with 2x ELEKTROMONI MARK IV monitoring and regulating system designed for 100% redundancy.

**TECHNICAL DATA**

Reference conditions:
- Inlet pressure abs. 1 bar
- Inlet temperature 20 °C
- Relative humidity 0 %
- Motor drive speed 3495 min-1

Usable volume flow acc. to ISO 1217 ed. 1996
- At working pressure (e) 8,0 bar 9,70 l/s 0,58 m³/min
- 7,0 bar 9,80 l/s 0,59 m³/min
- 4,0 bar 10,1 l/s 0,61 m³/min

Total power consumption acc. to ISO 1217 ed. 1996
- At working pressure (e) 8,0 bar 5,8 kW
- 7,0 bar 5,4 kW
- 4,0 bar 4,3 kW

**TECHNICAL DATA COMPRESSED AIR VESSELS FOR 11 BAR**

<table>
<thead>
<tr>
<th>Model</th>
<th>1000</th>
<th>1500</th>
<th>2000</th>
<th>3000</th>
<th>5000</th>
<th>10000</th>
<th>20000</th>
<th>30000</th>
</tr>
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<tbody>
<tr>
<td>Volume</td>
<td>0</td>
<td>120</td>
<td>150</td>
<td>500</td>
<td>1000</td>
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<td>3000</td>
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<tr>
<td>Pressure</td>
<td>bar</td>
<td>11</td>
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<td>11</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>High</td>
<td>(mm)</td>
<td>1620</td>
<td>1730</td>
<td>2285</td>
<td>2400</td>
<td>2380</td>
<td>2400</td>
<td>2400</td>
</tr>
<tr>
<td>Diameter</td>
<td>(mm)</td>
<td>400</td>
<td>500</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>1200</td>
<td>1500</td>
</tr>
<tr>
<td>Weight approx.</td>
<td>Kg</td>
<td>38</td>
<td>77</td>
<td>120</td>
<td>255</td>
<td>250</td>
<td>421</td>
<td>989</td>
</tr>
</tbody>
</table>
Medical air treatment
WITHIN CENTRAL GAS SUPPLY SYSTEMS

MEDICAL AIR AS A DRUG
To protect the patients the medical air is classified as a drug to ensure compliance with the European Pharmacopoeia monograph. This field of patient care requires a high quality purified air. The Greggersen medical air system is designed to fulfill this regulatory. A dew point controller guaranteed a constant dew point and remove the energy costs. The dew point is controlled by the dew point control sensor continuously and is to see on the display. The dew point control system regulated the dry cycle. Is the outlet pressure dew point better the default parameters (-40°C), delayed the dew point controller the switch over of the vessels (max. 24 hours).

FOUR STEPS TO QUALITY BREATHING AIR
Assured purity, complete endurance Providing the standard of ultra clean air you require, installed in a space you decide, within a budget you demand, the MED series’ innovative filtration system is the definitive medical air solution.

THE AMBIENT AIR CHALLENGE
In a typical city or industrial environment, air can contain high levels of sulphur dioxide, carbon monoxide, carbon dioxide and moisture. The MED is designed to perform in worst case but real life conditions.

THE MED’S MULTI-STAGE FILTRATION OFFERS UNPARALLELED AIR PURITY:
1. A WSD water separator and DD and PD coalescing filters remove free water and particles down to 0.01 micron and eliminate oil droplets down to 0.01 ppm.
2. A heatless desiccant dryer reduces moisture content to a pressure dew point of -40°C, -40°F – removing any risk of condensation, bacteria and mold growth.
3. A dual cleaning stage includes activated carbon to eliminate hydrocarbons (oil vapor, smells). A catalyst then converts CO into CO2.
4. A particle PDp filter at the exit removes particles which may have been introduced in the desiccant stages down to 0.01 micron.

Master alarm unit air
SHORT TERM: MAU-air

USAGE
For monitoring compressed air plant. The involved supply sources of the central gas supply will be monitored. If a gas source is no longer available for the system, this will be displayed on the alarm system according ISO 7396-1 and HTM 02-01. This may involve different supply systems of compressors, (dysfunction or breakdown), The switch from primary to secondary supply can also be displayed.

SPECIFICATION
Reset button for alarm confirmation.
Test-button for the functional test of the alarm system.
Optical and acoustic alarm
green “mains supply on”; “normal status”
yellow “pump failure”; “plant emergency”
red “pipeline air pressure fault”
potential-free contacts for each report (closers) to building management system or network.
Integrated power supply unit

TECHNICAL DATA
Dimensions: 280 x 262 x 64 mm (w,h,d)
Power supply: 100-240V AC/ 45-65Hz
Internal power: 12-24V AC or DC
Input performance: 500mA / 10W
Inputs: max. 6 signals monitored
Outputs: max. 6 potential-free contacts
Resistance: 50W/13 W
RS-485 Transmission: 9600 Baud

COMPLETE 3 SOURCES SYSTEM WITH GREGGERSEN EMERGENCY PLANT.
Medical Air Compressors
OIL LUBRICATED

MODEL GA 5, 7, 11

Atlas Copco has redesigned its smallest oil-injected screw compressor range GA 5-11 / GAS-15 kW (Variable Speed Drive, VSD). Driven by a future generation element and using most advanced development techniques this new range is even More Performant, More Flexible, and More Reliable and sets a new industry standards in the 5-11 kW range.

More Air delivery up to 8%, Noise levels as low as 60dB(A), new VSD voltage variants, an extended operating range, a new Elektronikon controller and an additional Tank mounted GA 15 VSD-model, boosts customer value for this new range.

The compressors includes a state of the art single stage screw compressor element, driven by a totally enclosed fan cooled high efficiency electric motor, lubrication and cooling system with water separator totally built in a silencing canopy.

The GA 5-15 VSD compressors are available as standard 46°C / 115°F temperature design with the following versions: air cooled, Pack or Full Feature (including dryer) and high ambient versions (up to 55°C / °F for pack up to 50°C / 131°F for Full Feature).

GA5-11 THE PREMIUM SOLUTION

Capable to tackle extreme duties as daily challenges, Atlas Copco's high-performance tank-mounted GA compressor is ready to supply high-quality air, they keep the air network clean and your production running

1) Drive train:
Superior screw elements with the latest Atlas Copco asymmetric rotor profile designed for the optimum combination of maximized free air delivery with low power consumption.

2) Cooling Set up:
After the cooler an integrated water separator is installed, for a supply of cool compressed air free of liquid condensate to protect your production system.

3) Elektronikon® with compressor visualization:

The next-generation Elektronikon® operating system offers a great variety of control and monitoring features that allow you to increase your compressor's efficiency and reliability thanks to the many embedded advanced control algorithms.

The icon based display is unilingual and gives a clear and easy read-out of the Elektronikon® controller. Standard Internet based compressor visualization using Ethernet

4) Oil separator, Oil filter and consumables
High efficiency 2 step air oil separator system for reduced oil consumption ensuring low maintenance costs and good oil separation result in between 2 service intervals.

The oil filter cleans the oil continuously from particles bigger than 25 micron with 99% efficiency in order to protect the lubrication quality and health of the rotating components.

5) Electrical cubicle

Reduced cubicle temperatures, by forced air ventilation through the cubicle, doubles the lifetime of the electrical components and keeps the unit up and running even in the harshest conditions. Standard all units run without de-rating up to 46°C. Optionnally high ambient versions are available for 50°C, on FF variants, and 55°C pack variants.

6) Full Feature

The integrated dryer efficiently removes moisture, aerosols and dirt particles to protect your investment. This quality air expands the life of equipment, increasing efficiency and ensuring quality in your final product.

Pressure dew point at 3°C at maximum FAD. (100% relative humidity at 20°C)
Can be outfitted with optional DD and PD filters, allowing you to obtain the exact air quality you need for your specific application.

Available Options:

The compressor performance can be even further enhanced with the inclusion of the following built in options:

| Integrated filter kit class 1 |
| Integrated filter kit class 2 |
| Dryer by pass |
| Integrated oil/water separator (ODS) |
| Electronic water drain (EWD) on pack unit (Cooler) |
| 500 liter air receiver |
| Electronic water drain (EWD) on 500K vessel |
| Integrated oil/water separator (ODS) |
| Phase sequence relay |
| Tropical thermostat |
| Freeze protection |
| Heavy duty inlet filter |
| Water Droplet Protection |
| Mains power isolator switch |
| Relays for ES 100 sequence selector |
| Food grade oil |
| Roto-Xendor duty oil |
| Central Control license 4 (ES 4) or 6 (ES 6) machines on Elektronikon® graphic |
| Modulating control |
| High ambient temperature versions |
| Food grade oil |
| Dryer Saver cycle |
| Compressor inlet pre-filter |
| 9% Draaien on VSD* |
| IT ancillary* |
| AIRConnect** |
| Motor space heater + thermostat* |
TYPICAL FLOW DIAGRAM:
The diagram below depicts the flow for the air, oil and coolant within the GA 5-11 & 5-15VSD

Control Cubicle:
GA 5-11 compressors are equipped with a control cubicle containing:
Fan motor overload relays, Motor star-delta starter with overload relay for 50Hz and 60Hz compressors, Transformers, Phase Sequence relay as standard (to prevent wrong rotation), Plexiglass screen protection (in case copper bars are exposed), Start-stop button and isolator switch (Optional), Elektronikon graphic on the GA+ models, regulation, safety and indication panel, All wiring

Drive system:
The GA 5-11 & 5-15VSD compressors are driven by Leroy Somer, IP 55 squirrel cage induction motors. The motors boost the efficiency of the compressor package, they are rated according to the efficiency 1 standard (50Hz) or the NEMA Epact standard (60Hz).

Regulation System:
GA 5-11 & 5-15VSD compressors are equipped with the power conscious, efficient, automatic full-load / no-load regulation system.

The Elektronikon regulation is equipped with the delayed second stop feature (DSS) for the main motor which significantly cuts the electricity cost.

Elektronikon Standard Module (standard scope) with online visualization

The Elektronikon standard is offered as standard for the GA 5-11 for fixed speed compressors with online visualization. Elektronikon standard controls and monitors the key compressor parameters efficiently as stated below.

GA 5-11 compressors are equipped with the power conscious, efficient, automatic full-load / no-load regulation system.
The Elektronikon regulation is equipped with the delayed second stop feature (DSS) for the main motor which significantly cuts the electricity cost.
Elektronikon Standard regulator module

The regulating system includes the Elektronikon Standard module to regulate, control and monitor compressor operation. All GA 5-11 series Elektronikon control modules display and monitor the following:

1. COMPRESSOR STATUS INDICATION
   Voltage on (LED indication)
   Compressor loaded
   Compressor unloaded
   Compressor maximum allowed unloading pressure
   Automatic operation (LED indication)
   General warning/alarm (LED indication)
   Service required (LED indication)

2. TEMPERATURE, NUMERICAL READOUTS
   Delivery air
   Ambient air temperature

3. PRESSURE, NUMERICAL READOUTS
   Delivery air

4. COMPRESSOR CONTROL
   Start / Stop
   Emergency stop
   Reset / Test

5. HOURMETERS
   Total running hours
   Total loading hours

6. SERVICE REQUIREMENT INDICATIONS
   Air filter
   Oil filter
   Oil lifetime
   Oil separator

7. DIGITAL OUTPUT RELAYS FOR REMOTE MONITORING (VOLTAGE FREE)
   Remote start and stop

8. COMPRESSOR SAFETY - WARNING INDICATIONS
   High dew point temperature
   Sensor error

9. COMPRESSOR SAFETY - SHUTDOWN INDICATIONS
   High element outlet temp.
   Drive motor/fan motor overload
   Emergency stop

10. DIGITAL OUTPUT RELAYS FOR REMOTE MONITORING (VOLTAGE FREE)
    Remote start and stop

11. OPTIONAL UPGRADEABLE TO ELEKTRONIKON GRAPHIC WITHOUT RECALIBING

12. OPTION ENERGY SAVING
    through integrated multi compressor control (Elektronikon Graphic only)
    ES4i (up to 4 compressors)
    ES6i (up to 6 compressors)
### Filter unit compressed air

**APPLICATION**
To process the compressed air generated from the compressors.

**DESIGN**
- Prefilter
- Active carbon filter
- Bacteria filter
- Redundant design
- Fully fitted on installation plate

**TECHNICAL DATA**
- Material: Installation plate: steel (zinc coated)
- Components: copper, brass
- Filter: aluminium, stainless steel
- Dimensions: 1060 x 850 x 130 mm (WxHxD)
- Inlet pressure: max. 16 bar
- Throughput size 1: 50 m³/h
- Throughput size 2: 300 m³/h
- Inlet / outlet size 1: solder connection Ø 22 mm
- Inlet / outlet size 2: solder connection Ø 28 mm
- Weight size 1: 20 kg
- Weight size 2: 25 kg

### Pressure reducer unit compressed air

**APPLICATION**
To reduce the pressure in a central compressed air system from approx. 10 - 15 bar to the required mains system pressure.

**DESIGN**
- Pressure monitoring for mains system pressure from pickup
- Safety valve and manometer for mains system pressure display
- Redundant design
- Fully fitted on installation plate

**TECHNICAL DATA**
- Material: Installation plate: steel (zinc coated)
- Components: copper, brass
- Filter: aluminium, stainless steel
- Dimensions: 880 x 500 x 200 mm (WxHxD)
- Inlet pressure: max. 16 bar
- Outlet pressure: 1 - 8 bar
- Throughput size 1: 50 m³/h
- Throughput size 2: 300 m³/h
- Inlet / outlet size 1: solder connection Ø 22 mm
- Inlet / outlet size 2: solder connection Ø 28 mm
- Weight size 1: 20 kg
- Weight size 2: 30 kg
Vacuum
WITHIN CENTRAL GAS SUPPLY SYSTEMS

MEDICAL VACUUM

Greggersen vacuum systems are the ideal vacuum generators whenever a reliable vacuum is needed quickly in the fields of medical technology.

The vacuum systems are equipped with the tried and tested R5 rotary vane vacuum pumps that guarantee safe, continuous operation. These R5 vacuum pumps are oil-lubricated. This allows a high ultimate vacuum pressure up to -0.95 bar and good water vapour tolerance. The inspection work can be carried out while the machine is in operation.

The vacuum systems can supply vacuum to several users. This means that individual remote vacuum pumps can be replaced and energy can be saved. Since the vacuum system can be set up in a separate room, there is neither heat build-up nor noise emission in the workplace. Each pump in the system delivers the total flow rate of the hospital.

The vacuum systems are available in three different versions VA, VB and VC, all of them are functional identically:

CENTRAL VACUUM STATIONS IN DIFFERENT TYPES

Version MVA
The vacuum pumps are mounted on a horizontal vessel and are ideal for installation in rooms with low ceilings.

Version MV B
Vacuum pumps are mounted in a rack, one above the other. The vertical standing vacuum vessel is connected by a flexible hose to the vacuum device.
This arrangement requires little floor space and is therefore suitable when limited room is available.
Both versions are assembled modularly and so can be expanded from one up to three or four vacuum pumps, should an increased amount of vacuum be needed.

Version MVC
Vacuum pumps are flexible to mount on the ground floor. The vertical standing vacuum vessel is connected by copper pipe to the vacuum device. This arrangement allows a flexible position in limited technical rooms.

Greggersen offers a complete equipment pack which conforms to the international Standard DIN EN ISO 7396-1 and guideline HTM 02-01.

Vacuum system Typ MVA single up to triplex
Vacuum system Typ MV B vertical

VACUUM SYSTEM TYP MVC TRIPLEX FLEXIBLE EXAMPLE:

VACUUM SYSTEM TYP MVC QUADRUPLEx FLEXIBLE EXAMPLE:
THE VACUUM PUMPS:

VACUUM PUMPS 50 HZ
- air-cooled
- oil re-circulation lubrication
- Electro-norm engine, flanged
- non return valve, inlet-side
- Oil mist separator assembled with oil mist filter elements with return of separated oil
- Gas ballast

Nominal aspiration capacity from 10 up to 630 m³/h
Ultimate-pressure 0.1 mbar
Nominal engine performance from 0.37 up to 15 kW
Voltage 3x380 Volt
Frequency 50 Hz

VACUUM PUMPS 60 HZ
- air-cooled
- oil re-circulation lubrication
- Electro-norm engine, flanged
- non return valve, inlet-side
- Oil mist separator assembled with oil mist filter elements with return of separated oil
- Gas ballast

Nominal aspiration capacity from 12 up to 760 m³/h
Ultimate-pressure 0.1 mbar
Nominal engine performance from 0.55 up to 18.5 kW
Voltage 3x380 Volt
Frequency 60 Hz

TECHNICAL DATA

<table>
<thead>
<tr>
<th>Model</th>
<th>VB150</th>
<th>VB250</th>
<th>VB350</th>
<th>VB450</th>
<th>VB550</th>
<th>VB650</th>
<th>VB750</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal displacement 50 Hz [m³/h]</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
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<td>21</td>
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<tr>
<td>Nominal displacement 60 Hz [m³/h]</td>
<td>22</td>
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<td>24</td>
<td>25</td>
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<td>Ultimate pressure [hPa]</td>
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<td>700</td>
<td>700</td>
<td>700</td>
<td>700</td>
<td>700</td>
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<tr>
<td>Nominal engine capacity [kW]</td>
<td>3,77</td>
<td>3,86</td>
<td>3,95</td>
<td>4,03</td>
<td>4,11</td>
<td>4,20</td>
<td>4,30</td>
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<tr>
<td>Motor efficiency [%]</td>
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<td>92,5</td>
<td>92,5</td>
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<td>92,5</td>
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<tr>
<td>Operating temperature [°C]</td>
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<tr>
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<td>0.2</td>
<td>0.2</td>
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<tr>
<td>Weight [kg]</td>
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<td>43</td>
<td>45</td>
<td>47</td>
<td>49</td>
<td>51</td>
<td>53</td>
</tr>
</tbody>
</table>

THE VACUUM VESSELS

Vacuum vessels are available in vertical or horizontal position. They are mild steel coated and inside and outside galvanized. Complete with cleaning opening and drain connections.

THE VACUUM SWITCH CABINET STANDARD ISO 7396-1 AND HTM 02-01

Switch and control cabinet for the automatic pressure-dependent control of 2-3 or 4 vacuum pumps. The separate starter units for each pump are integrated in the plant control panel. This unit is complete equipped with:

- Plant status and indication by signal lamps (optional LCD panel) (d/c)
- Pneumatic control component consisting of pressure control sensor (-10V, -1000 mbar) vacuum contactor, test valve with manometer for the adjustment of the pressure sensor.
- Individual pump starting
- Selector switch HAND-O-AUTOMATIC (c) for each vacuum pump (selection of duty/stand-by manual or automatic controlled)
- Mains switch with ’Emergency Stop’ function (a)
- Operation hours time counter for each pump (hour meter) (f)
- Motor safety switches (up to 4 pieces)
- Switching pressure for base, middle and peak load pumps are programmable on the panel
- After-running time for each vacuum pump adjustable
- Automatic base load change in consideration of defect pumps
- Potential-free contacts, designed as closer load: max. voltage 230 V; 4.0 A to connect BMS and mains alarm panel or Network
- Alarm signal status unit with potential free contacts for failure and alarm conditions
- Terminal for remote switching (on/off) the pumps
- Vacuum minimum alarm signal
BACTERIAL DOUBLE-FILTER STAGE

To protect the vacuum tanks and the pumps from contamination with germs and foreign matter, as well as filtering of the aspirated conveyor air. Redundant construction, maintenance works and filter changes are possible without interrupting the vacuum supply. The unit is completely pre installed on an installation plate for system wall mounting.

CONSISTING OF:
- 1 ball valve and 2 ball valves
- 2 Bacterial filter with drainage trap
- 1 Installation plate (or rack)
- 2 Connection to network copper pipe

TECHNICAL DATA

Performance: 10 up to 760 m³/h
Connection: Copper pipe 20 up to 80 mm
Effectiveness: 99,999% at 0,01 µ
Pressure drop: 30 mbar

COLLECTION CONTAINERS FOR SECRETIONS VAC

to protect the vacuum system from contaminations (e.g. secretions), that might be accidentally aspirated into the pipeline.

CONSISTING OF:
- Totally pre-installed unit for wall-mounting with fast tightening appliance to support the secretions flask
- 2 two ball valves for the bypass, optional 1 valve for bypass
- 5 Liter secretions bowl, vacuum-meter 0-1 bar 50mm rd.
- ventilation valve. The bowl is suitable for steam sterilization at 134°C

TECHNICAL DATA

Dimensions: appr. 570x360x70mm (WxHxD)
Container capacity: 5 Liters
Inlet: Soldered threading Ø 35 mm
Outlet: Soldered threading Ø 35 mm

SECRETION TRAP

SECRETION TRAP

FILTER UNIT

Filter unit vacuum

325.850

MASTER ALARM MAU-VAC

for monitoring of the vacuum plant. The involved supply sources of the central gas supply will be monitored. If a gas source is no longer available for the system, this will be displayed on the alarm system according ISO 7396-1 and HTM 02-01. This may involve different supply systems of vacuum-pumps, (dysfunction or breakdown), the switch from primary to secondary supply can also be displayed.

DESIGN

- Reset button for alarm confirmation.
- Test-button for the functional test of the alarm system.
- Optical and acoustic alarm
- green “mains supply on”, "normal status"
- yellow “pump failure”, "plant emergency"
- red “pipeline VAC pressure fault”
- potential-free contacts for each report (closer) to building
- management system or network.
- Integrated power supply unit

TECHNICAL DATA

Dimensions: 280 x 262 x 64 mm (b,h,t)
Power supply: 100-240V AC / 45-65Hz
Internal power: 12-24V AC or DC
Input performance: 500mA / 10W
Inputs: max. 6 signals monitored
Outputs: max. 6 potential-free contacts
Resilience: 50V/3 W
RS-485 Transmission: 9600 Baud
Medical copper pipe and fittings
WITHIN CENTRAL GAS SUPPLY SYSTEMS

MEDICAL COPPER TUBE

Tube designed for medical gas supply equipment and vacuum installations. This tube features a smooth, dry and particularly clean internal surface. It surpasses the corresponding requirements of EN 13348 (seamless copper tubes for medical gases and vacuum).

This specification requires, among other things, that the maximum allowable contamination of the tube’s internal surface (measured as carbon content) may not exceed 20 mg/m².

Med tubes are suitable for medical gas distribution systems according to EN 7396-1. Each tube is closed at both ends to ensure that the inner surface remains clean until the moment the tubes are installed. To guarantee traceability in compliance with the EU Pressure Equipment Directive PED 97/23/EC, the exact manufacturing date, the dimension of the tube and other information are permanently engraved on each tube.

DESCRIPTION
Type of tube  Drawn, seamless tube
Delivery form   Straight lengths
Material  Cu-DHP
Temper Hard drawn
Outside Diameter  6.00 - 108.00 mm
Wall thickness   0.70 - 2.50 mm
Total tube length  5.00 m

SPECIFICATIONS
EN 13348/ EN1057

Copper-pipe  8 x 1,0 mm
Copper-pipe  12 x 1,0 mm
Copper-pipe  15 x 1,0 mm
Copper-pipe  22 x 1,0 mm
Copper-pipe  28 x 1,5 mm
Copper-pipe  35 x 1,5 mm
Copper-pipe  42 x 1,5 mm
Copper-pipe  54 x 2,0 mm
Copper-pipe  64 x 2,0 mm
Copper-pipe  76 x 2,0 mm
Copper-pipe  80 x 2,0 mm

MEDICAL COPPER FITTINGS

Fittings are all seamless, one piece fittings, which makes them stronger and easier to use. Different fittings are available from 8 mm to 108 mm for use with the medical copper tubes. Copper tube supports on ceilings and walls, are available from 8 mm to 108 mm
Upon request.

Mounting Materials
WITHIN CENTRAL GAS SUPPLY SYSTEMS

MOUNTING MATERIALS

Supports for medical gas pipelines.

Corner-, U- and T-profiles and/or profile rails in suitable thickness or the production of support for pipelines in walls and ceilings.

Different types with fire approval and for noise reduction.

Pipe clamps, screws, rail systems support channels upon request.
Line Valves
WITHIN CENTRAL GAS SUPPLY SYSTEMS

LOCKABLE LINE VALVE

The Lockable Line Valve consist of a chrome plated brass ball and a brass body. The valve handle is lockable in the open or closed position by way of a sliding device and Brass Padlock supplied to prevent unauthorised or inadvertent operation of the valve.

All line valve assemblies are fully pressure tested. Lockable Line Valves are available for all standard pipe work sizes from ø10mm to ø50mm. Cleared for oxygen use according ISO 15001. Other sizes are available on request. Non-lockable versions are also available.

TECHNICAL DATA

Dimensions:
- DN 10 (3/8") to 12mm copper pipe
- DN 15 (1/2") to 15mm copper pipe
- DN 20 (3/4") to 22mm copper pipe
- DN 25 (1") to 28mm copper pipe
- DN 32 (1 1/4") to 35mm copper pipe
- DN 40 (1 1/2") to 42mm copper pipe
- DN 50 (2") to 54mm copper pipe

Max. Pressure: 16 bar

Full port design, free of silicone; blow out proof nickel plated brass stem.
DN6-DN50 adjustable stem packing
DN65-DN100 with O-ring 1xViton 1xPerbunan

Material:
- Body: brass nickel plated
- Ball: brass chrome plated
- Ball seal: PTFE
- Packing: PTFE
- Handle: steel zinc coated with blue plastic cover

Distribution panels
WITHIN CENTRAL GAS SUPPLY SYSTEMS

APPLICATION

To supply up to six independent service networks from the central system to the periphery (e.g. ascending pipe or building distributor).

DESIGN

- One shut-off valve and manometer in each case
- Fully fitted on installation plate

TECHNICAL DATA

Material: Installation plate: steel (zinc coated)
- Inlet size 1: copper pipe Ø 22 mm
- Outlet size 1: copper pipe Ø 15 mm
- Inlet size 2: copper pipe Ø 28 mm
- Outlet size 2: copper pipe Ø 22 mm
- Inlet size 3: copper pipe Ø 35 mm
- Outlet size 3: copper pipe Ø 28 mm

DISTRIBUTION PANEL SIZE 1

- 2-fold (please specify gas type) 324.002
- 3-fold (please specify gas type) 324.003
- 4-fold (please specify gas type) 324.104
- 5-fold (please specify gas type) 324.105
- 6-fold (please specify gas type) 324.106

DISTRIBUTION PANEL SIZE 2

- 2-fold (please specify gas type) 324.004
- 3-fold (please specify gas type) 324.007
- 4-fold (please specify gas type) 324.107
- 5-fold (please specify gas type) 324.108
- 6-fold (please specify gas type) 324.109

DISTRIBUTION PANEL SIZE 3

- 2-fold (please specify gas type) 324.008
- 3-fold (please specify gas type) 324.009
- 4-fold (please specify gas type) 324.110
- 5-fold (please specify gas type) 324.111
- 6-fold (please specify gas type) 324.112
Bed head units & Ceiling pendants
NORMAL CARE / INTENSIVE CARE

Upon request Gregersen offers a wide range of bed head units and ceiling pendants for different purposes:

Intensive care, Normal care, Surgery, Monitoring, Endoscopy and Anesthesia
Each of our components functions at 100%, but the system is not perfect until we have delivered every part, installed and serviced it.

**SYSTEM**

When all of the parts of a system are carefully coordinated with one another, its functionality increases, and a loose bunch of instrumental soloists becomes an orchestra playing in harmony.

Greggersen uses a flexible system to plan, realise, optimise and maintain the highly complex equipment used in CEGA. The use of intelligent components and clearly defined processes shows that the highest level of function can be guaranteed at all times. This also testifies to our rapid speed of innovation. We modernise our technology as quickly as possible, always with our customers in mind.

We offer full service – everything from manual labour to computer-aided manufacturing processes. Our system is continually evolving, but always remains backward compatible, making it work easier for our customers.
Medical Equipment
MADE BY PEOPLE, FOR PEOPLE

For the treatment of patients medical gases such as oxygen, compressed air, nitrous oxide, vacuums and carbon dioxide are required in virtually all fields. These gases are either reduced, metered or used for other apparatus by Greggersen Medical Equipment products in order to allow individualised treatment of the patient. Always according to the policy: optimum dose for the patient’s benefit.

FLOW METERS are used during insufflation and inhalation. Drug nebulisation and oxygen therapies can also be conducted with these precision products.

SUCTION UNITS There are vacuum-driven and air-driven suction units available depending on the driving gas. Bronchial suction, wound exudation suction or thorax drainage – the reliable products of all-metal design will meet your requirements.

PRESSURE REDUCING VALVES handle two tasks at the same time: safe, reliable reduction of cylinder pressure and constant metering of mean pressure or required flow.

COMBINATION UNITS are created by combining components from the product categories of flow meters, suction units and pressure-reducing valves. These compact devices fulfil several purposes and are used in emergency supply for example.

ACCESSORIES serves to round off the portfolio of Greggersen Medical Equipment: storage baskets, holding arms or medical hoses and tubes – here you will find the matching accessory.

All catalogs are available for download on www.greggersen.com

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