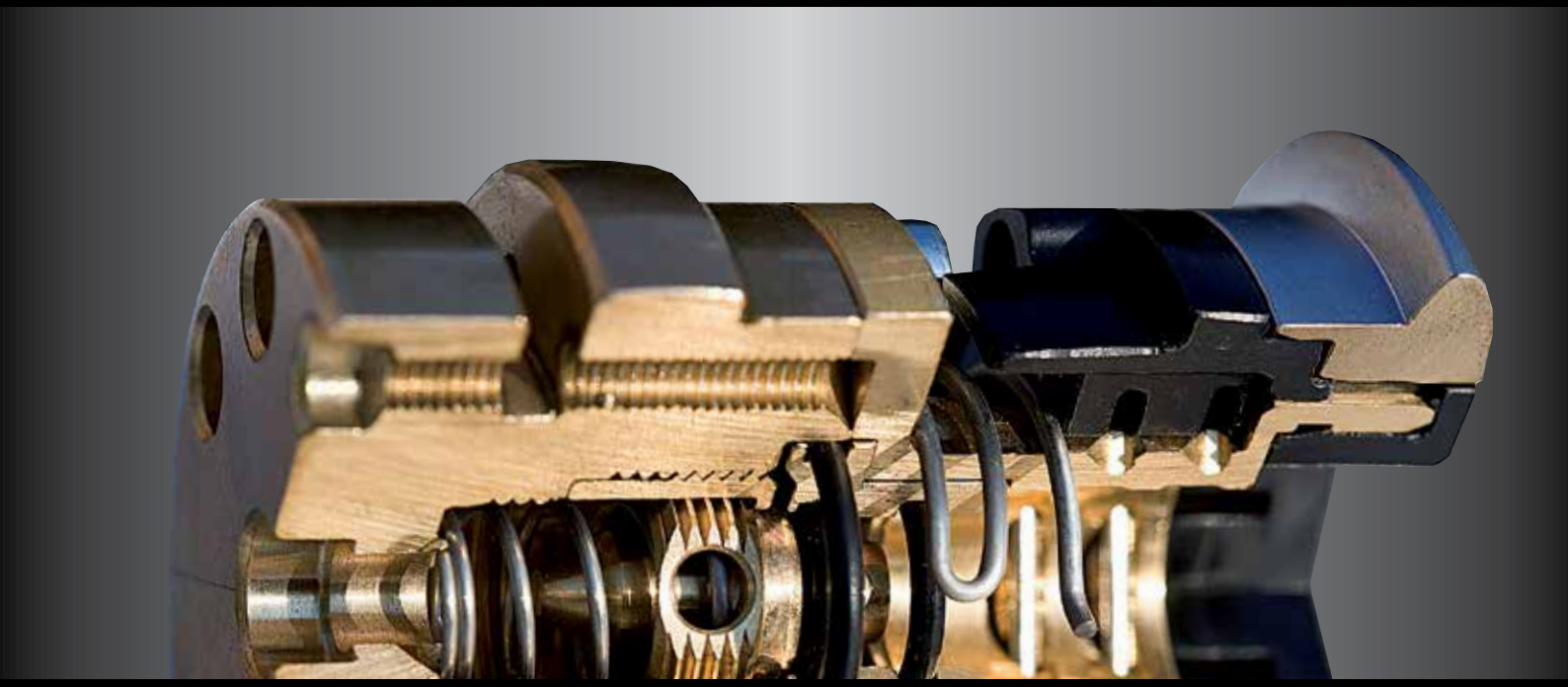
CEGA SYSTEMS
BY GREGGERSEN



ALL IN ONE CATALOG
CENTRAL GAS SUPPLY SYSTEMS

there is no substitute

GREGGERSEN

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

GREGGERSEN

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.

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

GREGGERSEN

Any technical
product is only
as dependable as
the person
who makes it.

MANUFACTORY

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

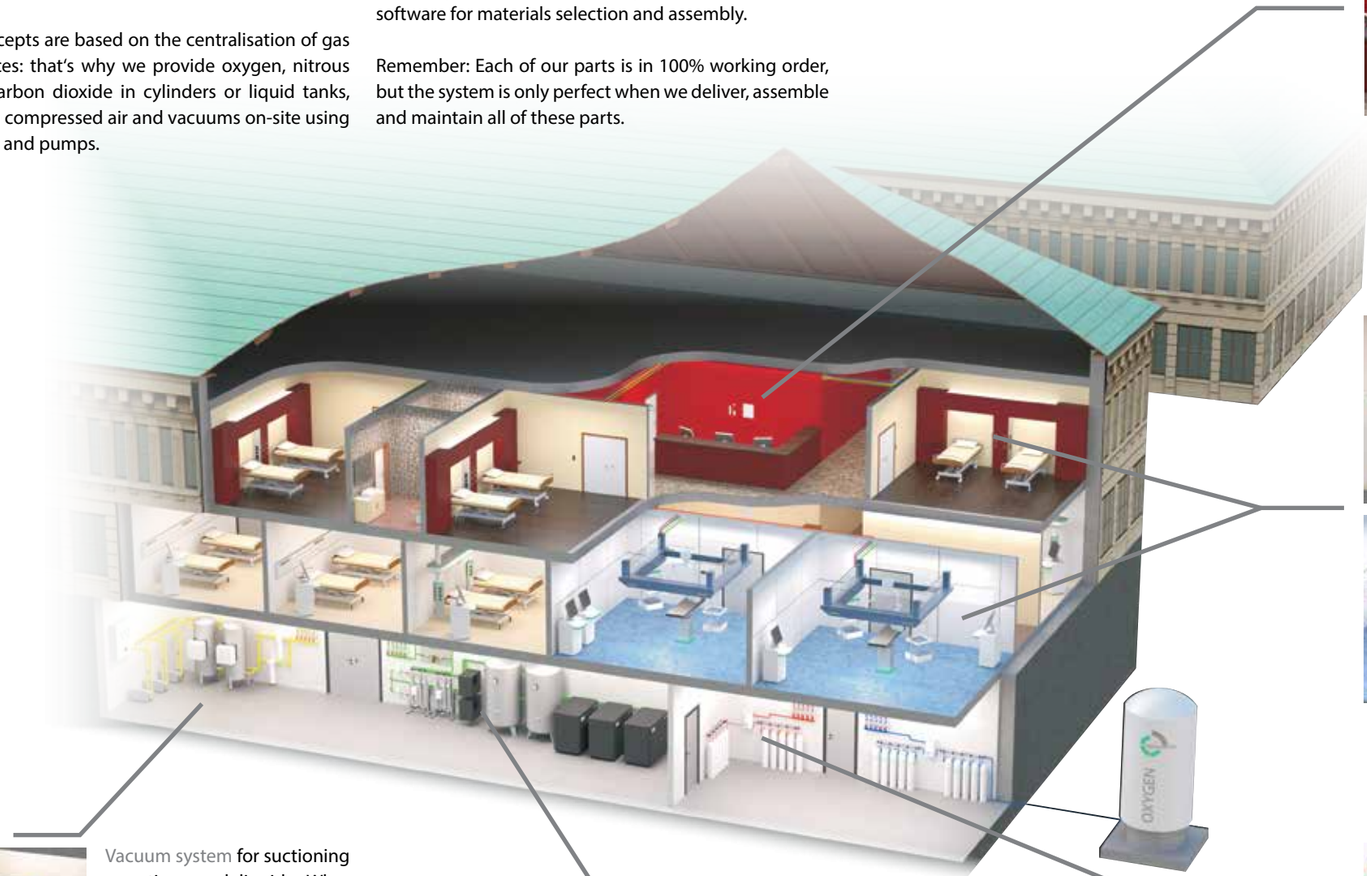
MORE THAN AN ARRAY OF HIGHTECH COMPONENTS

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.



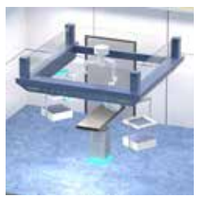
Vacuum system for suctioning secretions and liquids. Whether as a compact system or a customised installation, we deliver the most highly efficient solution at the right scale for you and create installations that follow the latest standards and regulations.

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.

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.

reddot design award winner 2009

The Chicago Athenaeum Museum 2008

product design award 2009

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.

When you cross timeless beauty with superior technology, an extraordinary thing arises.

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.

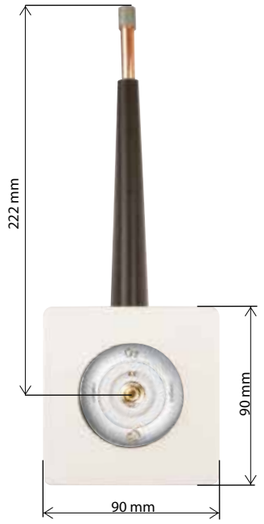
Greggersen products deliver just what their appearance promises: perfect function, maximum reliability, accessible comfort.

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.

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	903.258
Front / wave screen to cover the built-in variant UP/HW (sales unit = 6 pcs.)	903.259.

Terminal Unit Forano BS

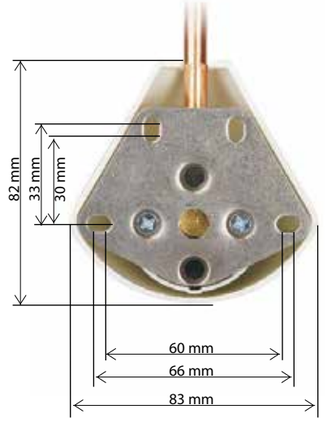
SURFACE MOUNTING

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 pr.) – 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)

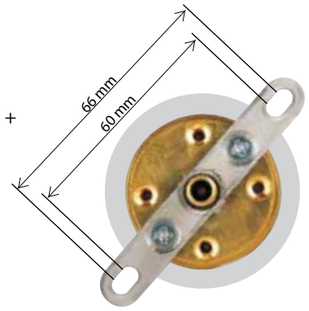
Forano, O2, pipe inline, type BS - marking: English	903.120
Forano, MA-4, pipe inline, type BS - marking: English	903.121
Forano, VAC, pipe inline, type BS - marking: English	903.122
Forano, N2O, pipe inline, type BS - marking: English	903.123
Forano, MA-7, pipe inline, type BS - marking: English	903.124
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

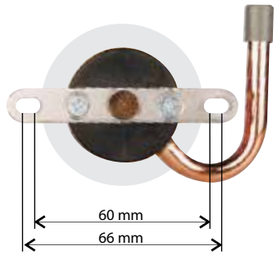
Input:	6 mm hose socket (compressed gases)
	8 mm hose socket (vacuum)
Operating pressure:	400 kPa to 1000 kPa – compressed gases
	0 kPa to 99 kPa (absolute pressure) – vacuum

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)



VS 100 M (A)

VS 100 M (B)

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 pr.) – vacuum

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:

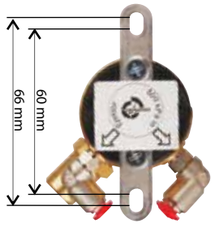
- actuator
- cartridge
- gas-specific socket unit
- warning label (not ready for operation)

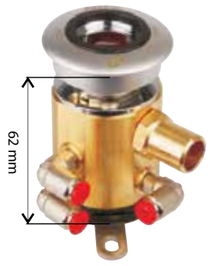
FRONT PART FORANO BS, ISO32 COLOUR CODING (rear part has to be ordered separately)

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

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

surface version 130 x 205 x 70 mm

concealed version 175 x 175 mm

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

concealed version 175 x 175 mm

surface version 130 x 205 x 70 mm

Forano BS

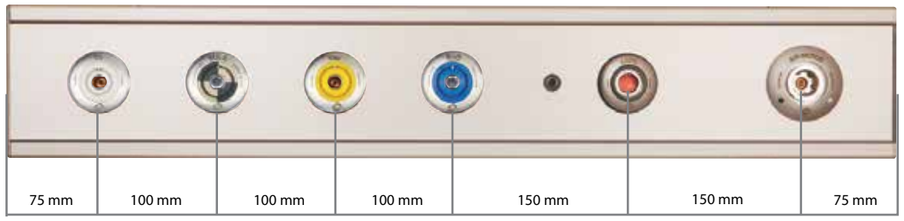
IN TEHALIT WALL DUCT

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



TEHALIT WALL DUCT (Please specify gas type for each outlet)

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

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 is a high standard, one that can only be fulfilled if function and aesthetics develop in tandem.

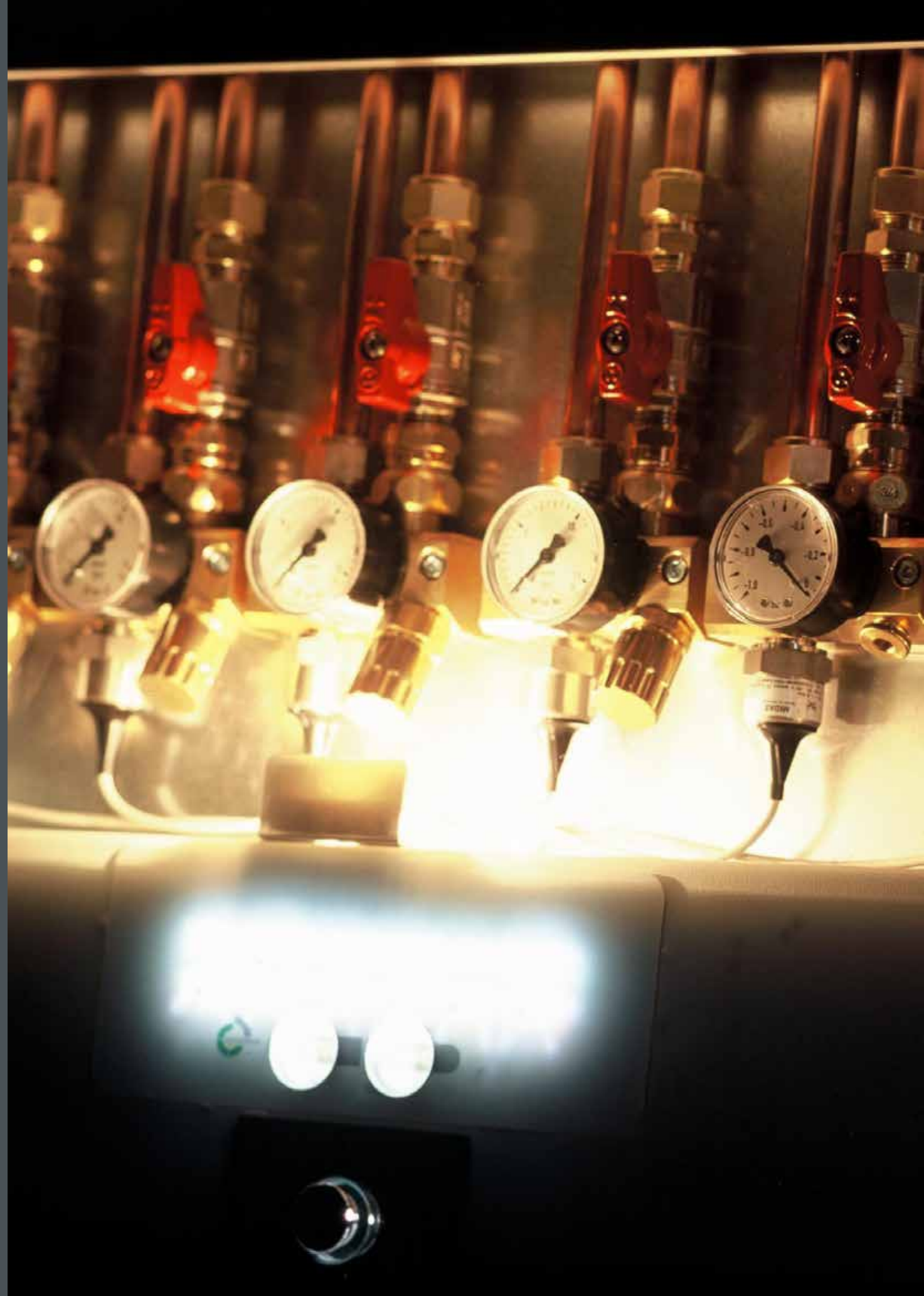
PERFECTION

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.



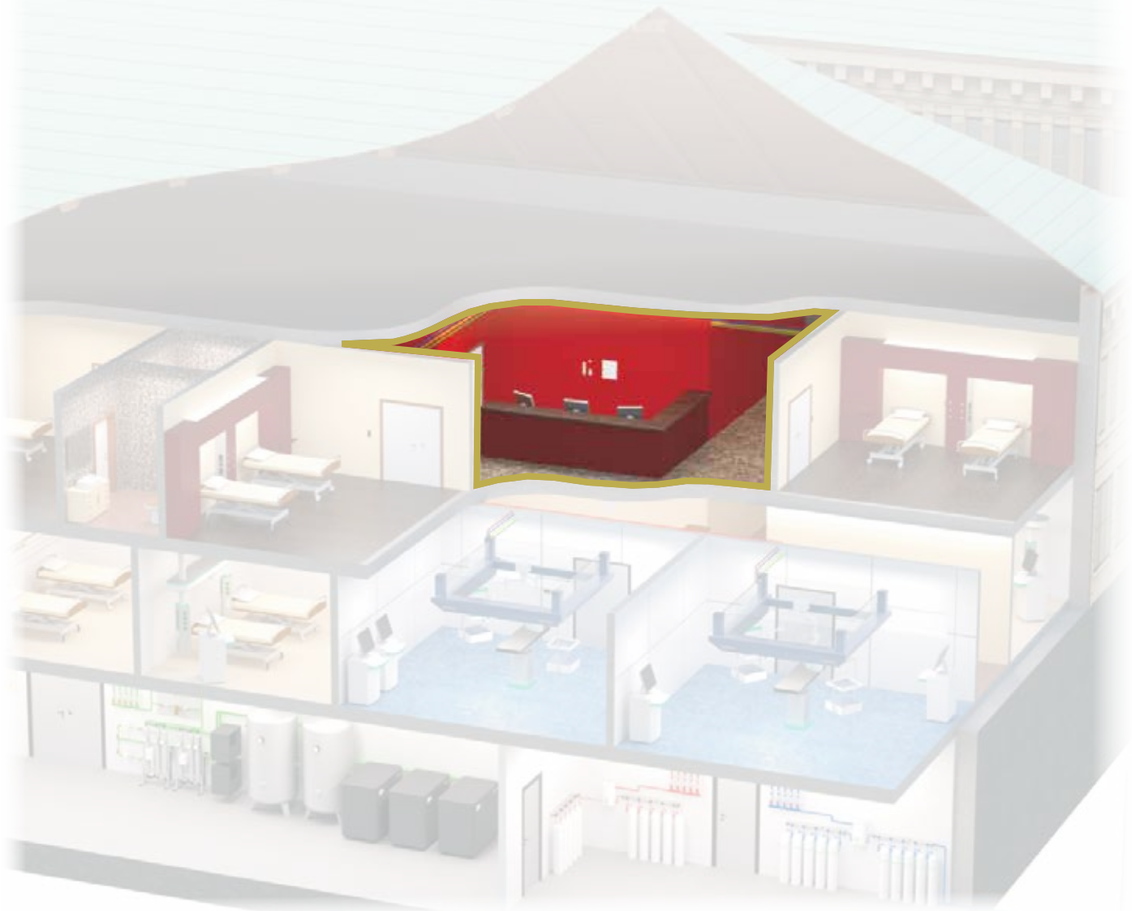
Ventus shut-off valve systems

GENERAL INFORMATION

The Ventus shut-off valve system

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 fullfills 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.



Ventus shut-off valve systems

GENERAL INFORMATION

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
- The board contains an integrated connection to the central instrumentation and control systems, i.e. possibility of transmitting the alarm via potential-free relay contacts
- Possibility of retrofitting additional electronics or connection to a network system
- RS485 interface for maintenance / service on the electronics
- Display panel for the media designation

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 imperative ventilation. Casing made up of sheet steel , front plated in RAL 9016. Infinitely 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 (sniff 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 aD; 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)

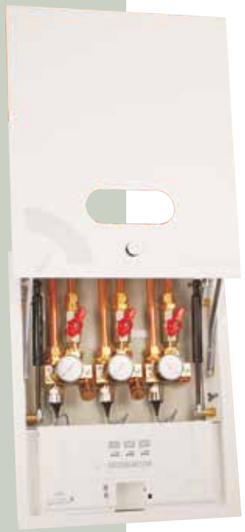
Ventus 1 valve, only back component, for flush mounting	900.800
Ventus 2 valves, only back component, for flush mounting	900.801
Ventus 3 valves, only back component, for flush mounting	900.802
Ventus 4 valves, only back component, for flush mounting	900.803
Ventus 5 valves, only back component, for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

VENTUS 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	900.806
Ventus basic, 2 valves, only front component	900.807
Ventus basic, 3 valves, only front component	900.808
Ventus basic, 4 valves, only front component	900.809
Ventus basic, 5 valves, only front component	900.810
Ventus basic, 6 valves, only front component	900.811

FRAMES FOR SURFACE MOUNTING

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



Ventus Basic Plus

1 TO 6 VALVES

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
Dimensions of flush mount frame 4-6 valves:	W 655 x H 450 x D 72 mm
Dimensions front 1-3 valves:	W 416 x H 496 mm
Dimensions front 4-6 valves:	W 701 x H 496 mm
Connection:	15 mm CU connection pipe
Nominal pressure of compressed gases:	max. 1000 kPa
Nominal pressure vacuum:	max. -100 kPa
Manometer:	50 mm aD; 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

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	900.800
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 BASIC PLUS FRONT COMPONENTS (When ordering, always specify the desired types of gas! e.g., 3 valve, O2 / AIR / VAC)

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

FRAMES FOR SURFACE MOUNTING

VENTUS SURFACE FRAME 1 TO 3 VALVES	900.831
VENTUS SURFACE FRAME 4 TO 6 VALVES	900.832

Ventus Glass

1 TO 6 VALVES

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
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:	max. -100 kPa
Manometer:	50 mm aD; 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

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	900.800
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 valves, 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	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.

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:	max. -100 kPa
Manometer:	50 mm aD; 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

VENTUS BASIC BACK COMPONENT (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 SPY FRONT COMPONENT (When ordering, always specify the desired types 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 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 vales	900857
Ventus Biathlon 6 valves	900858
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

In a world where offerings grow more and more similar, we emphasize individuality that is fitted to our customers‘ needs.

INDIVIDUALITY

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.

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 m^3/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.

Aeolus

POSSIBLE COMBINATIONS

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 sytem

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:

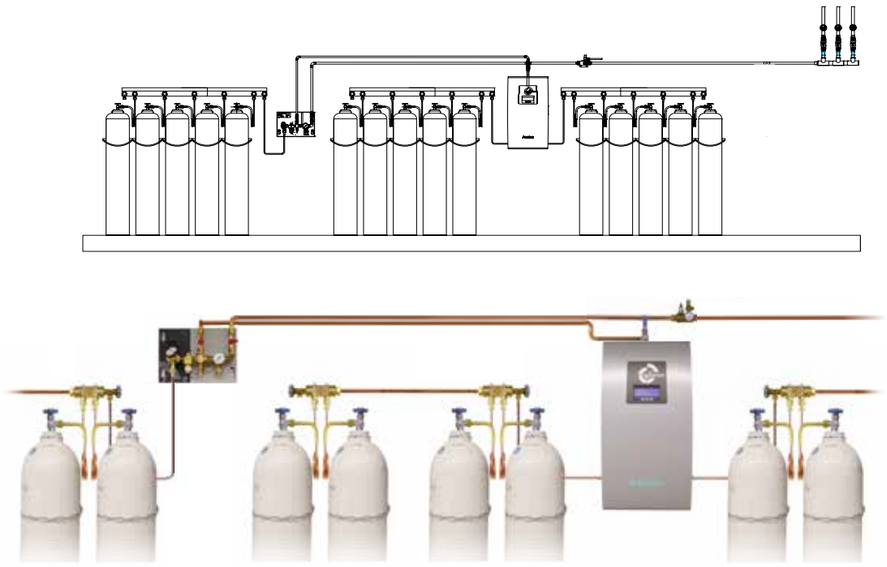
- The two reducer units from the first stage reduce the pressure from the cylinder bank to between 10 bars and 12 bars.
- The two second stage pressure reducers then finally reduce the pressure to the required mains system pressure.

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:

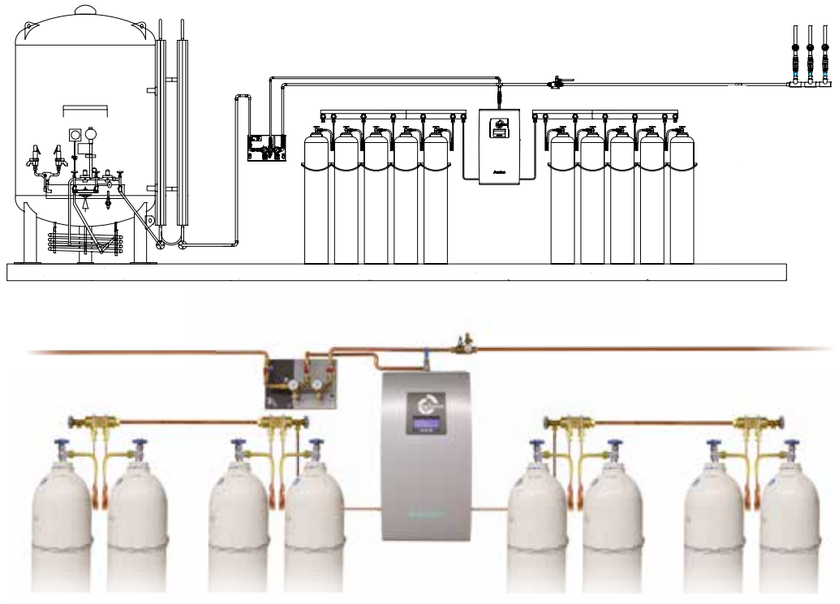
In a plant with tank supply the tank is used as the primary supply. Only once the pressure from this source drops below a certain value are the cylinder batteries accessed.

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.

AEOLUS E SERIES WITH TWO SOURCES + RESERVE SUPPLY



AEOLUS E SERIES WITH TWO SOURCES + TANK SUPPLY



DESIGN
AND FUNCTION

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 esthetic 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) 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 2nd stage: MD ½"
Throughput:	40 m^3/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

Aeolus E 40 manifold O_2	903.610
Aeolus E 40 manifold CO_2	903.611
Aeolus E 40 manifold N_2O	903.612
Other gases	on request

ACCESSORIES FOR THE AEOLUS E 40 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 1 O_2	903.665
Measurement line for mains system pressure size 1 neutral gases	903.666
Aeolus M10 electronics	903.635
Emergency feed point O_2	903.679
Emergency feed point CO_2	903.680
Emergency feed point N_2O	903.681

Aeolus E70 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 2nd stage: MD ½"
Throughput:	70 m^3/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

Aeolus E 70 manifold O_2	903.620
Aeolus E 70 manifold CO_2	903.621
Aeolus E 70 manifold N_2O	903.622
Other gases	on request

ACCESSORIES FOR THE AEOLUS E 70 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 O_2	903.688
Measurement line for mains system pressure size 2 neutral gases	903.689
Aeolus M10 electronics	903.635
Emergency feed point O_2	903.679
Emergency feed point CO_2	903.680
Emergency feed point N_2O	903.681

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 m^3/h at 5 bar
Inlet:	M 24 x 1,5
Outlet:	copper pipe Ø 22 mm
Weight:	40 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 E165 installation plate, dust cover, power supply unit, pressure sensors, M10 electronics

Aeolus E 165 manifold O_2	903.630
Aeolus E 165 manifold CO_2	903.631
Aeolus E 165 manifold N_2O	903.632
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 O_2	903.688
Measurement line for mains system pressure size 2 neutral gases	903.689
Aeolus M10 electronics	903.635
Emergency feed point O_2	903.679
Emergency feed point CO_2	903.680
Emergency feed point N_2O	903.681

MC 2025P manifold

Picture similar to MC 2025P with pressure gauges

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 2025P manifold	327.025

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

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

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 is 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)	903.674
Other sizes	on request

Aeolus header system accessories

PIGTAIL ACCORDING DIN477

USAGE

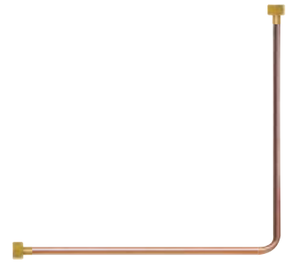
To connect the cylinders with the Aeolus header system.

TECHNICAL DATA

Material:	copper, brass
Operating pressure:	max. 200 bar
Inlet:	gas-specific
Outlet:	W 21,8

Pigtail O_2	903.830
Pigtail CO_2	903.829
Pigtail N_2O	903.827
Pigtail AIR	903.826
Other gases & other standarts (BS)	on request

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

Tank panel Aeolus

size 1 / size 2

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)
Dimensions size 2:	400 x 580 x 170 mm (WxHxD)
Outlet pressure:	1-8 bar
Throughput size 1:	up to 40 m^3/h
Throughput size 2:	up to 165 m^3/h
Inlet size 1:	solder connection Ø 22 mm
Outlets size 1:	solder connection Ø 22 mm solder connection Ø 22 mm
Inlet size 2:	solder connection Ø 22 mm
Outlets size 2:	solder connection Ø 22 mm solder connection Ø 28 mm

TANK PANEL AEOLUS

Pressure reducer panel size 1 for tank supply O_2 (for Aeolus E40)	903.650
Pressure reducer panel size 2 for tank supply O_2 (für Aeolus E70 / E165)	903.651

Reserve panel Aeolus

size 1 / size 2

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)
Dimensions size 2:	400 x 580 x 200 mm (WxHxD)
Outlet pressure:	1-8 bar
Throughput size 1:	up to 40 m^3/h
Throughput size 2:	up to 165 m^3/h
Inlet size 1:	M24x1,5mm
Outlets size 1:	solder connection Ø 22 mm solder connection Ø 22 mm
Inlet size 2:	M24x1,5 mm
Outlets size 2:	solder connection Ø 22 mm solder connection Ø 28 mm

RESERVE PANEL AEOLUS

Pressure reducer panel size 1 for reserve supply O_2 (for Aeolus E40)	903.655
Pressure reducer panel size 1 for reserve supply CO_2 (for Aeolus E40)	903.656
Pressure reducer panel size 1 for reserve supply N_2O (for Aeolus E40)	903.657
Pressure reducer panel size 2 for reserve supply O_2 (for Aeolus E70 / E165)	903.660
Pressure reducer panel size 2 for reserve supply CO_2 (for Aeolus E70 / E165)	903.661
Pressure reducer panel size 2 for reserve supply N_2O (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 m^3/h
Input:	G ¾ ”
Output:	½“ on copper pipe 22 mm
Weight:	20 kg

PRESSURE REDUCER UNIT FOR TANK SUPPLY

Pressure reducer unit liquid oxygen	327.800

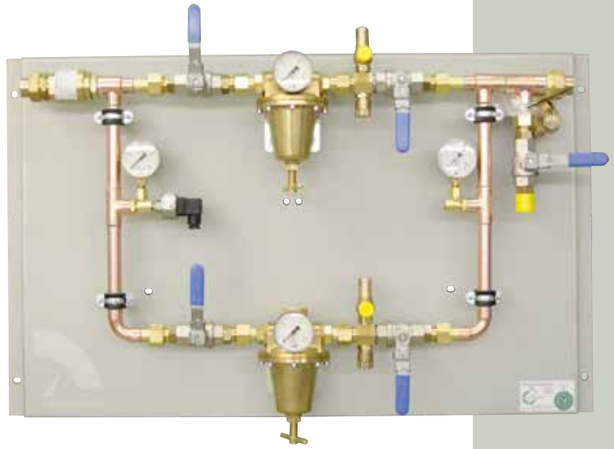
Duplex pressure reducer unit VIE

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 m^3/h
Input:	Ø 28x1.5 solder cone with check valve
Output:	Ø 28x1.5 solder cone
Weight:	20 kg

DUPLEX PRESSURE REDUCER UNIT FOR TANK SUPPLY

Duplex pressure reducer unit liquid oxygen	505.359

CEGA_aio 01/2013

CEGA MANIFOLDS

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 ultimatly customers can benefit from a well-practised team.

Oxygen Concentrators

FOR CENTRAL GAS SYPPLY 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
- Oxygen supply according to your need: from 90% to 95% 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 Nm^3/h make the new

TECHNICAL DATA*

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

GENERATOR SPECIFIC

Capacity:	6,5 m^3/h
Purity:	93 %
Inlet pressure:	7 bar
Outlet pressure:	5 bar
Air consumption:	1,3 m^3/min FAD
Hose connection:	1“ hose
Power supply:	240-110 V/50-60 Hz
Climatic 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

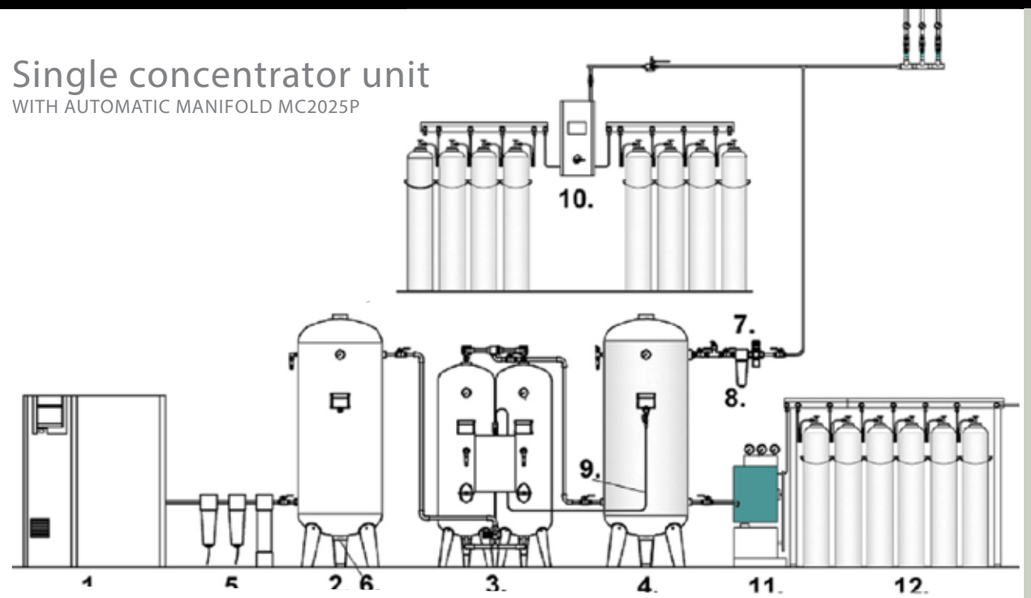
COMPR. AIR SPEC.

Air delivery:	1,3 m^3/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
9. Oxygen Feedback line to Oxygen Sensor and Pressure Sensor
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
Maximum ambient temperature 45°C
Minimum compressed air inlet temperature 5°C
Minimum ambient temperature 0°C
Minimum 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 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 build in accordance to ISO7396-1 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 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

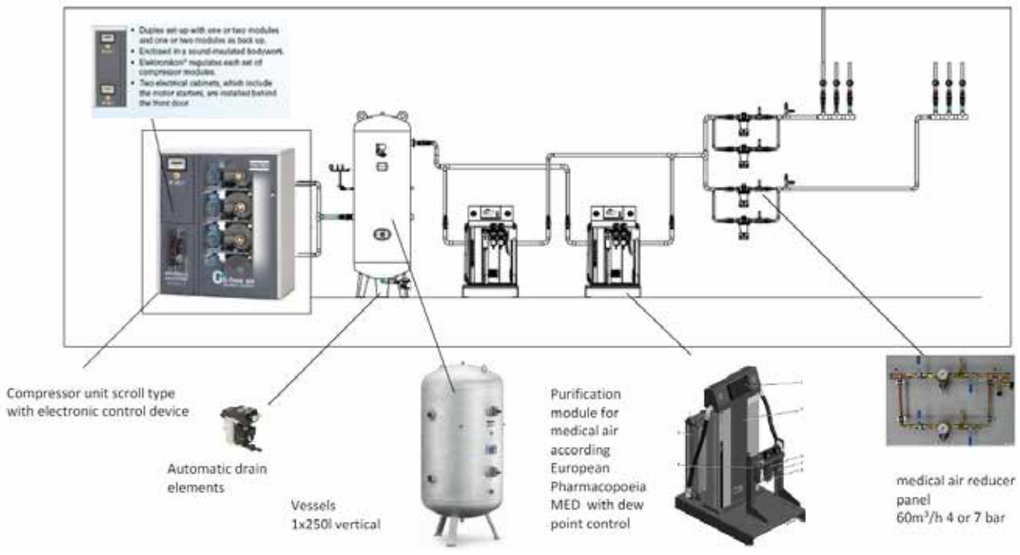
Version MCA-B

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 TYP 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 ELEKTRONIKON 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

Sound pressure level	acc. to ISO 2151 61 dB(A)
Cooling air requirements	0,36 m³/s
Air outlet temperature = Inlet temperature	+ 8 °C

Limitations:

Working pressure (e)	4 up to 8 bar
Inlet temperature	0 up to 40 °C
Cooling air temperature	0 up to 40 °C

Data of electric motor

Three-phase squirrel cage motor, type of protection	IP 55, insulation class F.
Make:	WEG
Rated output / rated speed	2 x 5,5 kW / 3495 min-1
Voltage / frequency	400 V / 50 Hz
Compressed air connection	2x G1"
Condensate drain connection	2x 4mm / 5,5mm
Dimensions:	
Length / width / height	1630 / 750 / 1850 mm
Net weight	503 kg

TECHNICAL DATA COMPRESSED AIR VESSELS FOR 11 BAR

Model		MAB 120	MAB 250	MAB 500	MAB 1000	MAB 1500	MAB 2000	MAB 3000
Volume	l)	120	250	500	1000	1500	2000	3000
pressure	(bar)	11	11	11	11	11	11	11
high	(mm)	1360	1730	2185	2400	2380	2460	3440
Diameter	(mm)	400	500	600	800	1000	1150	1150
Weight approx.	Kg	38	77	130	255	250	421	585

Medical air treatment

WITHIN CENTRAL GAS SUPPLY SYSTEMS

MEDICAL AIR AS A DRUG

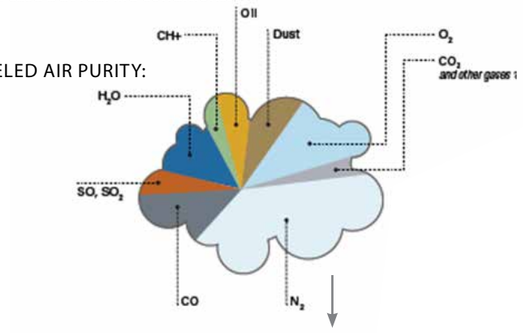
To protect the patients the medical air is classified as a drug to ensure compliance with the European Pharmacopoeia monograph. This field of patient care requires a high quality purified air. The Greggersen medical air system is designed to fulfill this regulatory. A dew point controller guaranteed 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.

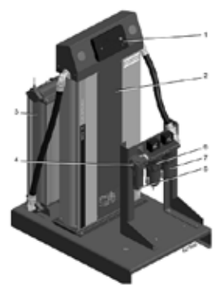
THE AMBIENT AIR CHALLENGE

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.

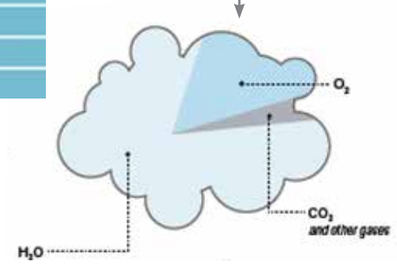


THE MED'S MULTI-STAGE FILTRATION OFFERS UNPARALLELED AIR PURITY:

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.



	European Pharmacopoeia	Medical Air System air quality
O_2	20.4% < x < 21.4%	
[1] CO_2	< 500 ppm	< 220 ppm
[2] CO	< 5 ppm	< 1 ppm
[3] SO_2	< 1 ppm	< 0.2 ppm
[4] NO_x	< 2 ppm	< 1 ppm
Water vapor	ADP -45°C (-49°F) / PDP -31°C (-23°F)	PDP -40°C / -40°F
Oil vapor	< 0.1 mg/m³	< 0.003 ppm
Dirt particles	not specified	< 0.01 ppm
Taste and odor	taste and odor free	free



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.

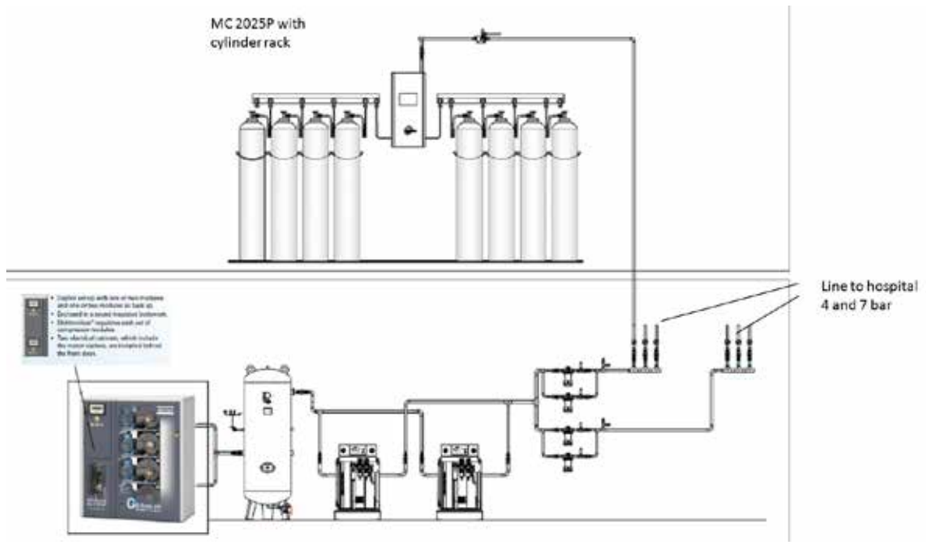
SPECIFICATION

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 (closer) 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
Resilience:	50V/3 W
RS-485 Transmission:	9600 Baud

COMPLETE 3 SOURCES SYSTEM WITH GREGGERSEN EMERGENCY PLANT.



CEGA AGGREGATES

Medical Air Compressors

OIL LUBRICATED

MODEL GA 5, 7, 11

Atlas Copco has redesigned its smallest oil-injected screw compressor range GA 5-11 /GA5-15kW (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 extented 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 suply 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 you 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 sepatarion 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. Optionally 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.

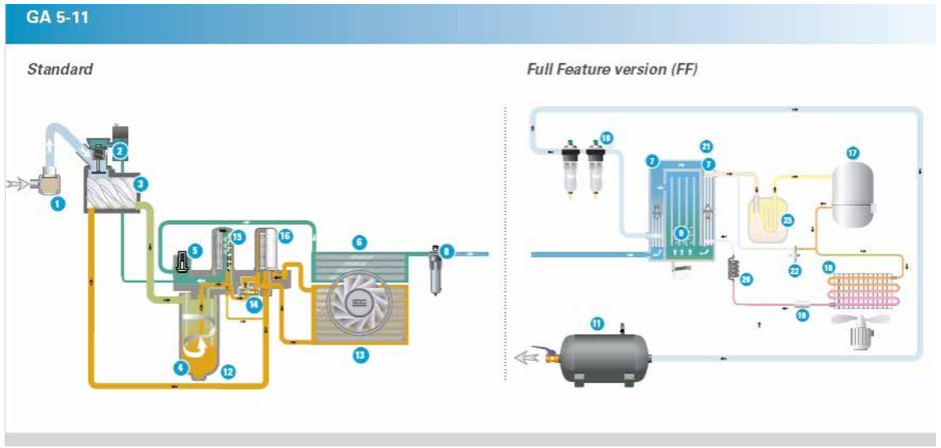
Available Options:

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(OSD)
Electronic water drain (EWD) on pack unit (Cooler)
500 liter air receiver
Electronic water drain (EWD) on 500l vessel
Integrated oil/water separator OSD
Phase sequence relay
Tropical thermostat
Freeze protection
Heavy duty inlet filter
Water Droplet Protection
Main power isolator switch
Relays for ES 100 sequence selector
Food grade oil
Roto–Xtend duty oil
Central Control license 4 (ES 4i) or 6 (ES 6i) machines on Elektronikon® graphic
Modulating control
High ambient temperature versions
Food-grade oil
Dryer Saver Cycle
Compressor inlet Pre-filter
5% Choke on VSD*
IT ancillaries*
AIR*Connect*™*
Motor space heater + thermistors*

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 relay(s), Motor star-delta starter with overload relay for 50Hz and 60Hz compressors, Transformers, Phase Sequense 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 energy costs.

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

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 UPGRADABLE TO ELEKTRONIKON GRAPHIC WITHOUT RECABLING

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 m^3/h
Throughput size 2:	300 m^3/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

FILTER UNITS

Filter unit compressed air size 1	325.820
Filter unit compressed air size 2	325.825

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
Dimensions:	880 x 500 x 200 mm (WxHxD)
Inlet pressure:	max. 16 bar
Outlet pressure:	1-8 bar
Throughput size 1:	50 m^3/h
Throughput size 2:	300 m^3/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

PRESSURE REDUCER UNITS

Pressure reducer unit compressed air size 1	325.810
Pressure reducer unit compressed air size 2	325.815

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 R 5 rotary vane vacuum pumps that guarantee safe, continuous operation. These R 5 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 work place. 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

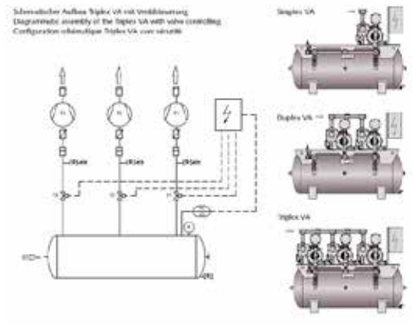
Version MVA
The vacuum pumps are mounted on a horizontal vessel and are ideal for installation in rooms with low-ceilings.

Version MVB
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.

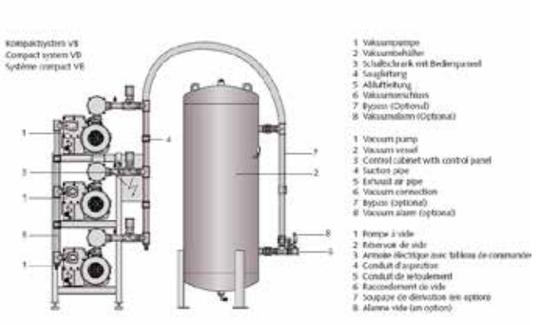
Version MVC
Vacuum pumps are flexible to mount on the ground floor. The vertical standing vacuum vessel is connected by copper pipe to the vacuum device. This arrangement allows a flexible position in limited technical rooms.

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

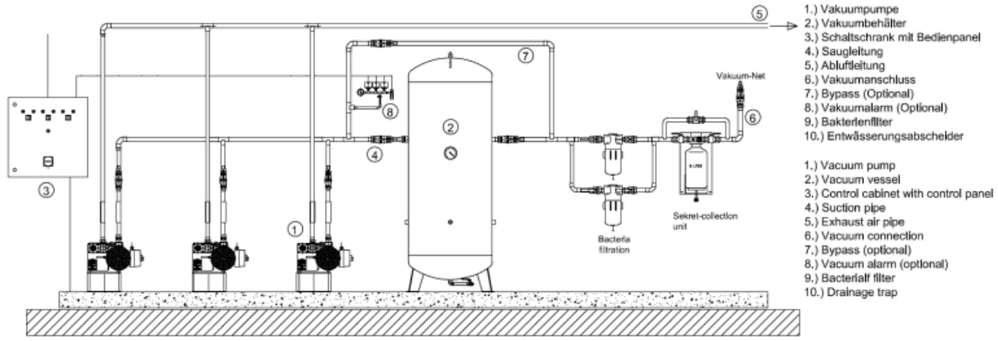
Vacuum system Typ MVA single up to triplex



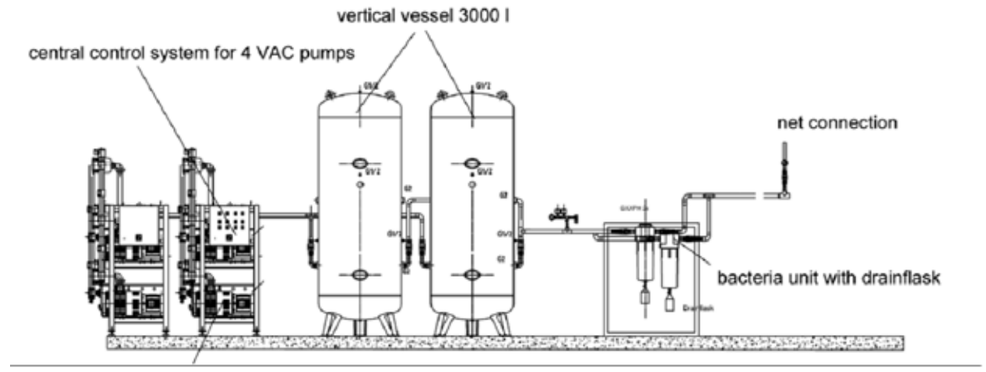
Vacuum system Typ MVB triplex verical



VACUUM SYSTEM TYP MVC TRIPLEX FLEXIBLE EXAMPLE:



VACUUM SYSTEM TYP MVC QUADRUPLEX FLEXIBLE EXAMPLE



THE VACUUM PUMPS:

VACUUM PUMPS 60 HZ

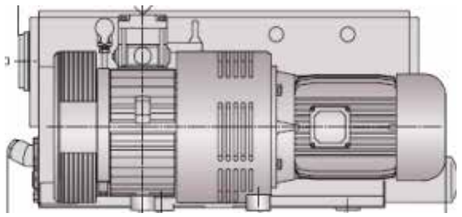
- air-cooled
- oil re-circulation lubrication
- Electro-norm engine, flanged
- non return valve, inlet-side
- Oil mist seperator assembeld with oil mist filter elements with return of seperated oil
- Gas ballast

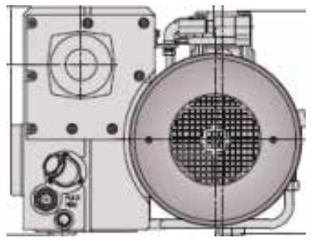
Nominal aspiration capacity from 12 up to 760 m^3/h
Ultimate-pressure 0,1 mbar
Nominal engine performance from 0,55 up to18,5 kW
Voltage 3x380 Volt
Frequency 60 Hz

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 m^3/h
Ultimate-pressure 0,1mbar
Nominal engine performance from 0,37 up to 15kW
Voltage 3x380 Volt
Frequency 50 Hz



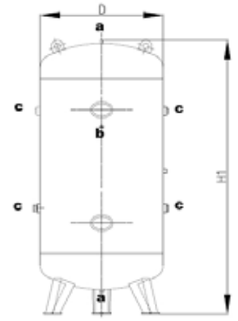


TECHNICAL DATA

Model	RS-0010E	RS-0015E	RS-0025F	RS-0040F	RS-0063F	RS-0100F	RS-0165D	RS-0205D	RS-0255D	RS-0305D	RS- 0400B	RS- 0502B	RS- 0630B
Nominal displacement 50 Hz (m^3/h)	10	16	25	40	63	100	160	200	250	300	400	500	630
Nominal displacement 60 Hz (m^3/h)	12	19	30	48	76	120	190	240	300	360	480	600	760
ultimate pressure hPa (mbar)	2	2	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Nominal motor rating 50 Hz (kW)	0,37	0,55	0,75	1,1	1,5	2,2	4	4	5,5	5,5	11	11	15
Nominal motor rating 60 Hz (kW)	0,37	0,55	1,1	1,5	2,2	3	5,5	5,5	7,5	7,5	15	15	18,5
Nominal motor speed 50 Hz (min-1)	3000	3000	1500	1500	1500	1500	1500	1500	1500	1500	1000	1000	1000
Nominal motor speed 60 Hz (min-1)	3600	3600	1800	1800	1800	1800	1800	1800	1800	1800	1200	1200	1200
Sound level DIN EN ISO2151 50 Hz dB (A)	59	60	60	63	64	65	70	72	72	74	77	77	77
Sound level DIN EN ISO2151 60 Hz dB (A)	63	64	63	66	66	68	72	74	74	76	79	79	79
Operating temperatur 50 Hz °C	64	66	80	82	84	84	64	71	80	82	80	80	80
Operating temperatur 60 Hz °C	71	73	85	90	92	93	66	78	81	85	80	85	80
water vapour capacity l/h at 150hPa (mbar)	0,2	0,3	0,9	1,1	1,8	2,8							
water vapour capacity 50Hz kg/h							2,5	4	4,5	5	9	11	18
water vapour capacity 60Hz kg/h							2,8	4,6	5	5,8	11	13	22
water vapour tolerance at 85°C hPa (mbar)	30	30	40	40	40	40	40	40	40	40	40	40	40
Oil filling l	0,3	0,3	1	1	2	2	6,5	6,5	6,5	6,5	12	12	15
Weight approx. Kg	16	18	34	38	52	70	160	160	195	195	435	530	550

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.



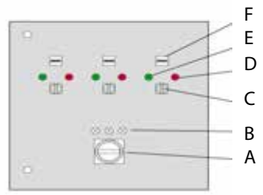
TECHNICAL DATA

Model	VB150	VB250	VB350	VB500	VB750	VB1000	VB1500	VB2000	VB3000
Volume (l)	150	250	350	500	750	1000	1500	2000	3000
Vacuum pressure (bar)	-1	-1	-1	-1	-1	-1	-1	-1	-1
high (H1) (mm)	1165	1565	1785	1940	2005	2120	2200	2470	2760
Diameter (mm)	450	500	500	600	750	800	1000	1100	1250
Weight approx. Kg	65	100	150	180	250	310	410	500	660

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;e)
- Pneumatic control component consisting of pressure control sensor (0-10V, -0-1000 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)
- 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
- motor safety switches (up to 4 peaces)
- mains contactors and starters and separate power supply for each pump
- sequence restart of the pumps after reinstatement
- Pressure regulation with pressure transducer
- 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:

- T 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 m^3/h
Connection:	Copper pipe 20 up to 80 mm
Effectiveness:	99,999% at 0,01 µ
Pressure drop:	30 mbar

FILTER UNIT

Filter unit vacuum	325.850

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- -1bar 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	903.500

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 clams, screws, rail systems support channels upon request.

CEGA ACCESSORIES

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.
Cleaned for oxygen use according ISO 15001
Other sizes are available on request.
Non-lockable versions are also available.

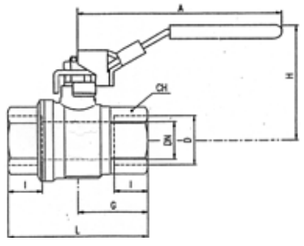
TECHNICAL DATA

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

Kennzeichen	S33E00	S33C00	S33D00	S33E00	S33F00	S33G00	S33H00	S33I00
D (Zoll)	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
DN(mm)	8	10	15	20	25	32	40	50
l (mm)	12.5	12.5	15.5	18	21	23	24.5	26.5
L (mm)	51	51	61	74.5	90.5	104	117	135
G (mm)	25.5	25.5	30.5	37	45.5	52	59	67.5
A (mm)	82	82	100	120	120	158	158	158
H (mm)	39.5	39.5	43	52.5	57	78	85	92
CH(mm)	22	22	27	32	41	50	55	70



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) Components: copper, brass
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)	324.006
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

CEGA ACCESSORIES

Bed head units & Ceiling pendants

NORMAL CARE / INTENSIVE CARE

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

Intensive care, Normal care, Surgery, Monitoring, Endoscopy and Anesthesia

CEGA_aio 01/2013

CEGA ACCESSORIES

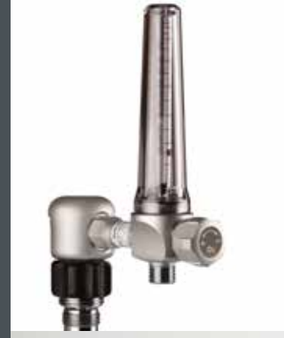
Each of our components functions at 100%, but the system is not perfect until we have delivered every part, installed and serviced it.

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.

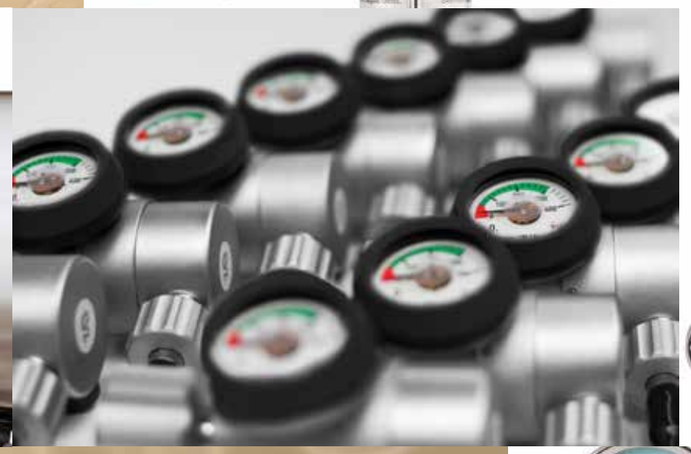











Medical Equipment

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

Contact us

HOW CAN WE HELP?

Reception
Tel.: +49 (0)40 - 73 93 57 - 0
Fax: +49 (0)40 - 73 93 57- 27
Email: info@greggersen.de

Department International Sales
Tel.: +49 (0)40 - 730 912 35
Fax: +49 (0)40 - 73 93 57- 47
Email: a.jahn@greggersen.de

Consulting CEGA Projects
Tel.: +49 (0)40 - 73 93 57 - 26
Fax: +49 (0)40 - 73 93 57- 47
Email: t.virkus@greggersen-consulting.de

Please visit our website www.greggersen.com too.

greggersen gasetechnik gmbh | bodestraße 27–29 | 21031 hamburg | germany
fon: +49 (0)40 - 73 93 57 - 0 | fax: +49 (0)40 - 73 93 57 - 27 | info@greggersen.com | www.greggersen.com

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