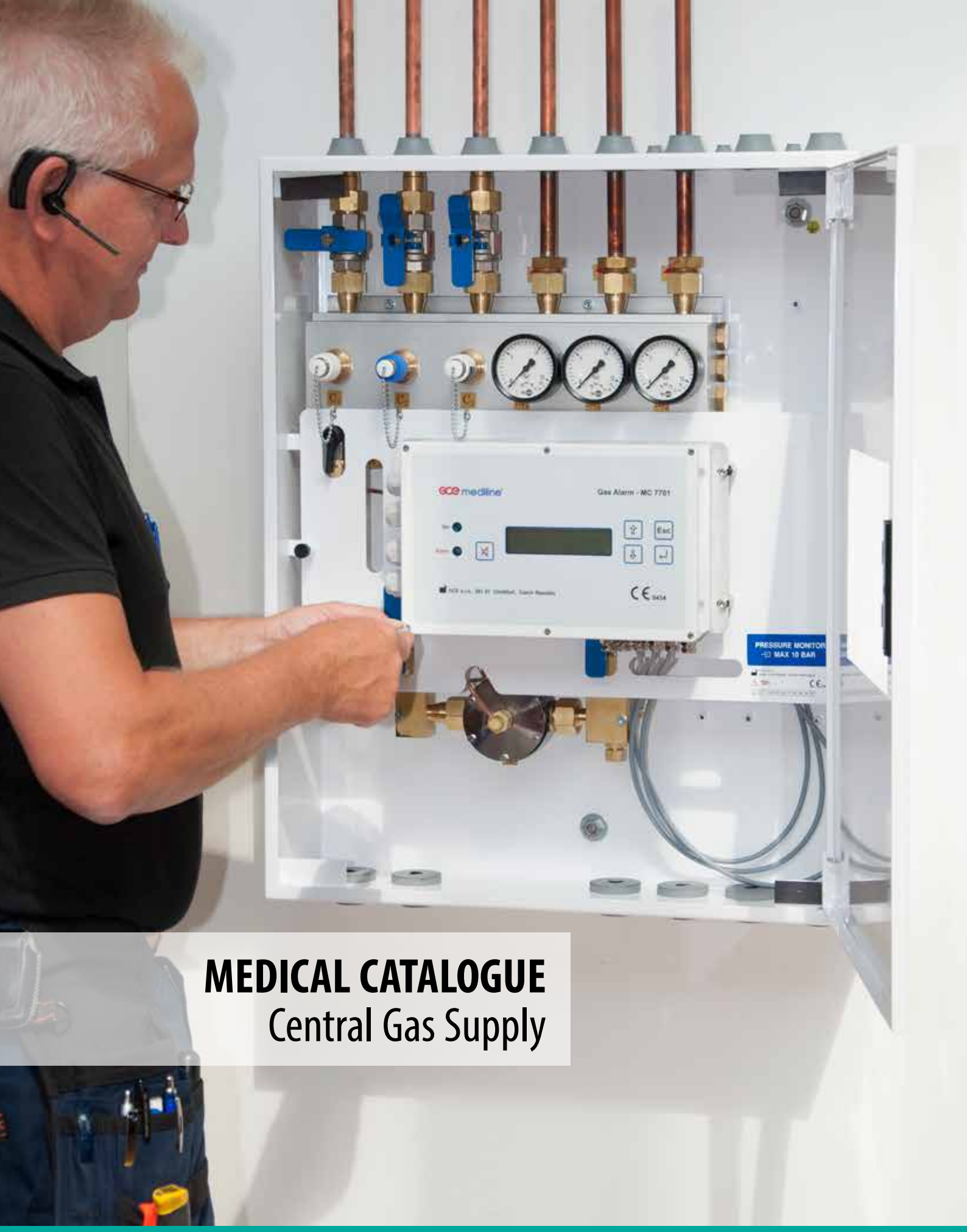
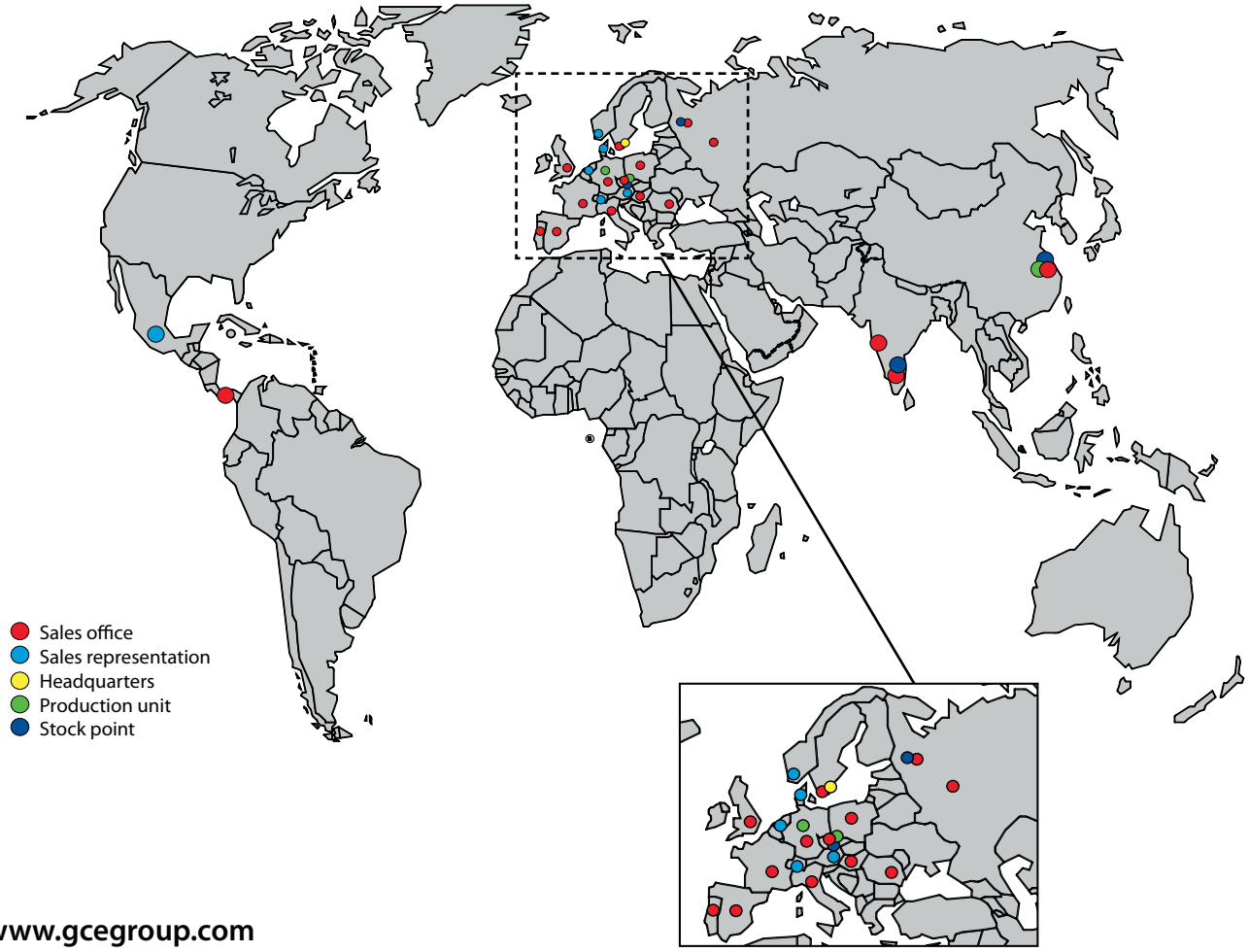


MEDICAL CATALOGUE
Central Gas Supply

EDITION 1/2015

gce druva™ MED

GCE WORLDWIDE



www.gcegroup.com

THE GCE BUSINESS

GCE has almost 100 years of experience in the manufacture and supply of high pressure gas equipment. During this time the GCE product range has increased dramatically. Today´s product portfolio fits a large variety of applications, from simple pressure regulators and blowpipes for cutting and welding to highly sophisticated gas supply systems for the medical, electronic and analytical industries.

GCE GROUP INCLUDES FOUR BUSINESS AREAS:

- Cutting & Welding Technologies
- Valves
- Healthcare
- Druva

ORIGINS

The origins of GCE (Gas Control Equipment) go back to the start of the 20th century when Gas Welding was first invented. The GCE group was formed as an independent company in 1987 through the merging of two of the worlds leading gas and welding companies into one independent unit. GCE has grown rapidly since its establishment and is leading the restructuring of the European gas equipment industry through mergers and acquisitions.
Through its extensive Research and Development programs GCE has set standards that have become the benchmark for the whole industry.

GCE SERVICES

The main industrial customers for GCE are wholesalers and local distributors. However in some markets GCE distributes equipment with the full cooperation of the main gas supplier for that market.
For these companies GCE provides both commercial and technical support. A significant part of the sales volume in this area also comes from key end user accounts such as shipyards, repair shops, OEM customers and welding machine manufacturers.

A COMPLETE RANGE FOR MEDICAL

The supply of Medical Gas Equipment is a very important part of our business. All Medical Gas Applications require the highest safety standards, specialised knowledge and a full understanding of patient respiratory requirements. GCE fully complies with the European Medical Directive 93/42/EEC and the QSR (Quality System Regulations known as the GMP standards).
Western Europe is the traditional market for a whole range of products for all different types of customers and together with the growing Eastern European market, these are GCE's main sales area. Our sales force is also active in a number of other markets including North and South America, North Africa and the Middle East, and continues to expand to other parts of the world, such as China and India. As a result, our products are designed in accordance with the requirements of all European standards as well as those of other regions where they will be used.
Supplies to the major Gas Companies account for the majority of sales however in each market various distributors, healthcare providers, hospitals and other manufacturers of medical also play a significant role in the distribution of GCE-branded and CE-marked products.
GCE supply complete systems for supplying oxygen, nitrous oxide, other gases and vacuum to hospitals, ambulance service providers, emergency services and home care providers, as well as other special services using this equipment.

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GAS MANIFOLDS, STABILIZERS AND ACCESSORIES

GCE druva™ MED

GAS MANIFOLDS AND STABILIZERS

GAS MANIFOLD MC25

The gas cylinder manifold MC25 has a capacity of 25 m^3/h and is primarily intended for small and medium-sized hospitals. The gas cylinder pressure is regulated in two steps. The change-over between operating side and reserve side is made automatically without any differences in the operating pressure. The alarm signal comes from the pressure switches to the alarm unit. The alarm signals from the alarm unit can be forwarded directly to a monitoring desk. Function control and service can be carried out without interruption in the gas supply.

SPECIFICATION

MC25 INCLUDES THE FOLLOWING COMPONENTS:

- Gas manifold MC25
- Gas alarm including power supply
- Evacuating kits for collecting pipe
- Shut-off valve for distribution line
- HP filters
- Collecting pipe for 2×1 cylinder

FOR A COMPLETE MC25 MANIFOLD ADD:

- High pressure collecting pipe set (high pressure valves, filters and non-return valves)
- High pressure hoses with safety wire
- Cylinder retaining brackets (included in gas cylinder collecting pipe set)
- Gas name sign

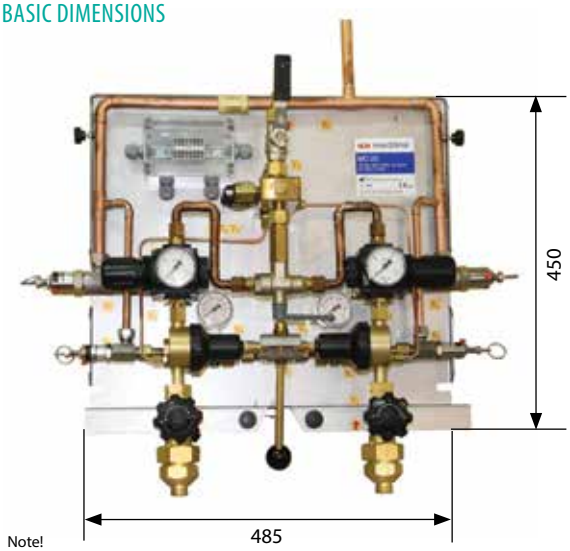
(For more information, please see Accessories pages 18–22)

Item No.	Denomination	Gas	Safety valve	Alarm
0727315	MC25 – 2×1	O_2	Manual activation	C44
0727316	MC25 – 2×1	Air	Manual activation	C44
0727317	MC25 – 2×1	N_2O, CO_2	Manual activation	C44

TECHNICAL DATA

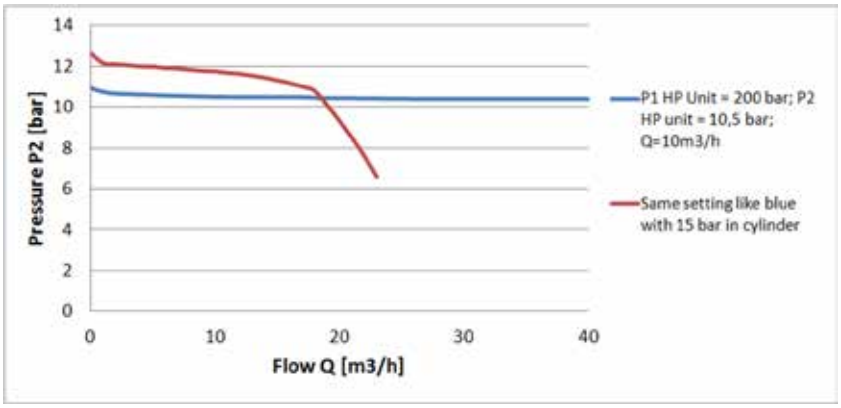
Gases:	O_2; Air; N_2; N_2O; CO_2; (all medical gases)
Nominal flow:	25 m^3/h
Inlet nominal pressure:	200 bar (20 000 kPa)
Outlet nominal pressure:	4,5 bar (setting range 0,5–6 bar)
Intermediate nominal pressure:	12 bar (setting range 9–16 bar)
Inlet connection:	W21,8×1/14"M
Outlet connection:	G1/2"M + soldering piece pipe ø 10, ø 15 mm
Outlet safety valve:	6,8 bar
Intermediate safety valve:	17 bar
Safety valve pipe dimension:	ø 15 mm
Regulatory status:	Complies with Medical directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply system)
	Complies with EN 60601-1-2 (Electromagnetic compatibility)

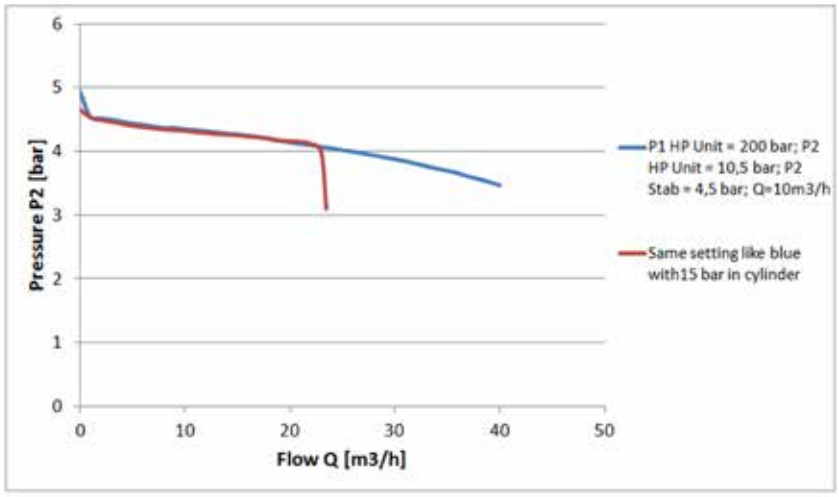
BASIC DIMENSIONS



Note!
Measurements in mm.

FLOW CHARTS OF MANIFOLD MC25 PRESSURE CHARACTERISTIC





GAS MANIFOLD MM40 - HP UNIT (SEMIAUTOMATIC)

Manifold MM40 Semiauto is a semi-automatic manifold. It is working on the principal different pressure between the operation and reserve regulator. By the manual lever, the operator can decide which side will be the operational side and which will be the reserve side. When the operating side is empty, the manifold will without any action start to supply gas from the reserve side with the lower regulator pressure and fulfilll the requests to supply without interrupting the flow.
MM40 Semiauto manifolds together with a stabilizer should be used as second and third source of gas in systems with liquid gas tank. For hospitals without liquid gas tanks it is possible to use manifold MM40 Semiauto together with a stabilizer as first and second source, and in connection with a third source (MM90 Standby) it will provide a final solution to fulfill ISO 7396-1 and national installation standards.
Manifolds are supplied with an Alarm system which increase safety to maximal level and inform the hospital personal about each non standard situation.

Gas Alarm C44 is a standard accessory. The gas alarm C44 gives visual and audible indications.

It surveillance and sounds the alarm when the following happens:

1. Leaking reserve side
2. Empty possision (High/Low distribution pressure when connected to a Stabilizer)
3. Change operation side
4. High intermeditate pressure

- The gas alarm C44 is able to communicate with other equipment through relays.
- The alarm has a battery back-up for 30 minutes of operation.
- Manifold MM40 Semiauto is only first stage of regulation and must be installed together with a Stabilizer which will stabilize the final pressure used in the hospital gas outlets.
- GCE medical manifolds are CE-marked and fulfill the ISO 7396-1 standard.

SPECIFICATION

MM40 INCLUDES THE FOLLOWING COMPONENTS:

- MM40 SEMIAUTO Manifold
- Gas alarm C44
- Purge valves
- HP filters
- Shut-off valve for distribution line to stabilizer

FOR A COMPLETE MM40 SEMIAUTO MANIFOLD ADD:

- Collecting pipe set (high pressure valves, and non-return valves /high pressure components)
- Cylinder retaining brackets (included in gas cylinder collecting pipe set)
- High pressure hoses with safety wire
- Plug for close collecting pipeline
- Gas name sign
- Stabilizer

(For more information, please see Accessories pages 18-22)

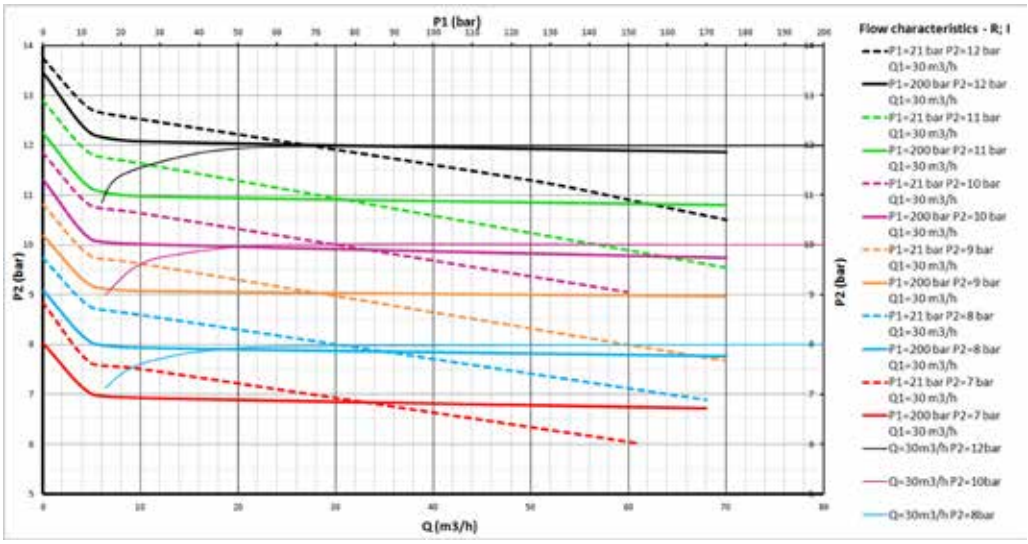
Item No.	Denomination	Gas	Safety valve	Alarm
0727330	MM40 – HP unit 2×1	O_2, Air, N_2	Standard	C44
0727331	MM40 – HP unit 2×1	O_2, Air, N_2	Manual activation	C44
0727334*	MM40 – HP unit 2×1	O_2, Air, N_2, N_2O, CO_2	Standard	–
0727335	MM40 – HP unit 2×1	N_2O, CO_2	Standard	C44
0727336	MM40 – HP unit 2×1	N_2O, CO_2	Manual activation	C44

*basic version without electric sensors

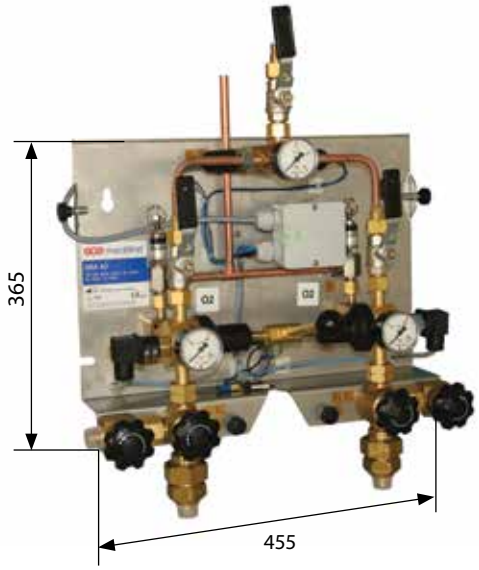
TECHNICAL DATA

Gases:	O_2; Air; N_2; N_2O; CO_2 (all medical gases)
Nominal flow:	40 m^3/h
Inlet nominal pressure:	200 bar
Outlet nominal pressure:	12 bar (setting range 9–16 bar)
Inlet connection:	W21,8×1/14"M
Outlet connection:	G1/2"M + soldering piece pipe ø 10, ø 15 mm
Safety valve:	17 bar
Safety valve pipe dimension:	ø 10 mm
Purge valves connection:	W21,8×1/14"M
Regulatory status:	Complies with Medical directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply system)
	Complies with EN 60601-1-2 (Electromagnetic compatibility)

FLOW CHART OF MANIFOLD MM40 PRESSURE CHARACTERISTIC



BASIC DIMENSIONS



Note!
Measurements in mm.

LINE REGULATOR

A stabilizer is a pressure reduction unit with the task to equalize the eventual pressure variation in the hospital pipeline system to ensure a correct pressure from the terminal units.
The stabilizer makes it possible to distribute gas with different pressure to department and buildings in the hospital area. In some cases it is needed to deliver a higher pressure from the main gas manifold to compensate for small pipe dimensions. In those cases the Stabilizer shall be mounted as close as possible before the first terminal unit, to ensure a correct pressure to the patient.

SPECIFICATION

LINE REGULATOR INCLUDES THE FOLLOWING COMPONENTS:

- Line regulator

FOR A COMPLETE LINE REGULATOR ADD:

- Plastic cover for locking
- Alarm unit (included if ordered together with HP unit)

Item No.	Denomination	Gas type	Inlet*
0727333	LINE REG	O_2, N_2O, Air, CO_2, N_2	LH
K141621	LINE REG	O_2 – AFNOR	LH
K141631	LINE REG	O_2 – AFNOR	RH
K141622	LINE REG	N_2O – AFNOR	LH
K141632	LINE REG	N_2O – AFNOR	RH
K141623	LINE REG	Air – AFNOR	LH
K141633	LINE REG	Air – AFNOR	RH
K141629	LINE REG	Air-800 – AFNOR	LH
K141639	LINE REG	Air-800 – AFNOR	RH
K141624	LINE REG	N_2 – AFNOR	LH
K141625	LINE REG	CO_2 – AFNOR	LH

*LH = inlet from left side; RH = inlet from right side

TECHNICAL DATA

Gases:	O_2; Air; Air–800; N_2; N_2O; CO_2 (all medical gases)
Nominal flow:	40 m^3/h
Inlet nominal pressure:	16 bar (1600 kPa)
Outlet nominal pressure:	4,5 bar (setting range 0,5–10 bar)
Inlet connection:	G1/2"M + soldering piece pipe ø 12 mm
Outlet connection:	G1/2"M + soldering piece pipe ø 12 mm
Pressure sensors:	Optional (Pressure switches; Transmitters 0–50 mV; 4–20 mA)
Emergency QC inlet:	Optional QC by national standards
Regulatory status:	Complies with Medical directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply system)
	Complies with EN 60601-1-2 (Electromagnetic compatibility)

Note!
Measurements in mm.

GAS MANIFOLD MM40 – STABILIZER

Manifold MM40 – STABILIZER is a second stage pressure reduction unit with the task to equalize the eventual pressure variation in the hospital pipeline system to ensure a correct pressure from the terminal units. MM40 – STABILIZER is only second stage reduction unit where the primary gas supply is provided by high pressure gas manifolds (such as MM40 – HP Unit). In case of signal for pressure deviation in relation to the alarm settings, the alarm can easily be displayed on a Gas alarm unit. It is also possible to send information to the central operation control. The stabilizer can be delivered with either pressure transmitter 4–20 mA, pressure transmitter 0–50 mV or with pressure switches. Gas reduction unit MM40 – STABILIZER must always be installed in compliance with the standards EN ISO 7396-1 and the appropriate national standards.

SPECIFICATION

MM40 STABILIZER INCLUDES THE FOLLOWING COMPONENTS:

- MM40 Stabilizer Manifold

FOR A COMPLETE MM40 STABILIZER MANIFOLD ADD:

- Plastic cover for locking
- Alarm unit (included if ordered together with HP unit)

Item No.	Denomination	Gas	Safety valve	Alarm
0727329	MM40 – Stabilizer	O_2, N_2O, Air, CO_2, N_2	–	–

ACCESSORIES

Item No.	Denomination
COM001002	Locable cover

TECHNICAL DATA

Gases:	O_2; Air; Air–800; N_2; N_2O; CO_2 (all medical gases)
Nominal flow:	40 m^3/h
Inlet nominal pressure:	16 bar (1600 kPa)
Outlet nominal pressure:	4,5 bar (setting range 0,5–10 bar)
Inlet connection 1:	G1/2"M + soldering piece pipe ø 12 mm
Inlet connection 2:	Optional (G1/2"M + soldering piece pipe ø 12 mm)
Outlet connection:	G1/2"M + soldering piece pipe ø 12 mm
Safety valve:	Optional (6,8 bar; outlet pipe ø 15 mm)
Pressure sensors:	Optional (Pressure switches; Transmitters 0–50 mV; 4–20 mA)
Emergency QC inlet:	Optional QC by national standards
Regulatory status:	Complies with Medical directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply system)
	Complies with EN 60601-1-2 (Electromagnetic compatibility)

BASIC DIMENSIONS

Note!
Measurements in mm.

GAS MANIFOLD MM90 - HP UNIT (AUTOMATIC)

The MM90 automatic medical manifold is intended for use in hospital pipeline system as medical gas source. Together with MM90, always use an alarm providing all alarms according to standard (like gas alarm C44). As 2nd stage is recommended to use a stabilizer.
The manifolds covered by this description are designed to allow equal numbers of cylinders to be manifold together to give an operating bank and a reserve bank. The manifold will deliver gas from the operating bank to the manifold pressure regulator until the cylinders are exhausted. At that point the supply will switch to the reserve bank and the empty bank can be replenished. The object gives uninterrupted gas supply.
Gas Alarm C44 is a standard accessory. The gas alarm C44 gives visual and audible indication.

It surveils and the alarm sounds when the following happens:
1. Change operation side/Leaking on reserve side
2. High operation pressure
3. Low operation pressure
4. Empty possision (High/Low distribution pressure when connected to a Stabilizer)

The gas alarm C44 is able to communicate with other equipment through relays. The alarm has a battery back-up for 30 minutes of operation.

SPECIFICATION

MM90 INCLUDES THE FOLLOWING COMPONENTS:

- MM90 AUTO Manifold
- Gas alarm C44
- Purge valves
- HP filters

FOR A COMPLETE MM90 AUTO MANIFOLD ADD:

- Collecting pipe set (high pressure valves, and non-return valves /high pressure components)
- Cylinder retaining brackets (included in gas cylinder collecting pipe set)
- High pressure hoses with safety wire
- Plug for close collecting pipeline
- Gas name sign
- Stabilizer

(For more information, please see Accessories pages 18-22)

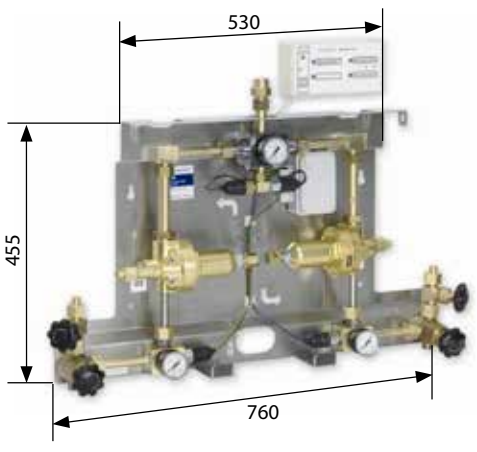
Item No.	Denomination	Gas	Safety valve	Alarm
0727301	MM90 – HP unit AUTO 2×1	O_2	Standard	C44
0727302	MM90 – HP unit AUTO 2×1	Air	Standard	C44
0727303	MM90 – HP unit AUTO 2×1	N_2O, CO_2	Standard	C44
0727308*	MM90 – HP unit AUTO 2×1	O_2, N_2O, Air, CO_2, N_2	Standard	–
0727309	MM90 – HP unit AUTO 2×1	O_2	Standard	Pressure switch
0727310	MM90 – HP unit AUTO 2×1	Air	Standard	Pressure switch
0727311	MM90 – HP unit AUTO 2×1	N_2O, CO_2	Standard	Pressure switch

*basic version without electric sensors

TECHNICAL DATA

Gases:	O_2; Air; N_2; N_2O; CO_2 (all medical gases)
Nominal flow:	90 m^3/h
Inlet nominal pressure:	200 bar (20 000 kPa)
Outlet nominal pressure:	9 bar (setting range 9-15 bar)
Inlet connection:	W21,8×1/14"M
Outlet connection:	G3/4"F + soldering piece pipe ø 22 mm
Safety valve:	16 bar
Safety valve pipe dimension:	ø 10 mm
Purge valves connection:	W21,8×1/14"M + soldering piece pipe ø 10 mm
Regulatory status:	Complies with Medical directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply system)
	Complies with EN 60601-1-2 (Electromagnetic compatibility)

BASIC DIMENSIONS



Note!
Measurements in mm.

GAS MANIFOLD MM90 - HP UNIT (SEMIAUTOMATIC)

The MM90 semiautomatic medical manifold is intended for use in hospital pipeline system as medical gas source. Together with MM90, always use an alarm providing all alarms according to standard (like gas alarm C44). As 2nd stage is recommended to use a stabilizer.
The manifolds covered by this description are designed to allow equal
numbers of cylinders to be manifold together to give an operating bank and a reserve bank. The manifold will deliver gas from the operating bank to the manifold pressure regulator until the cylinders are exhausted. At that point the supply will switch to the reserve bank and the exhausted bank can be replenished. The object gives uninterrupted gas supply.
Gas Alarm C44 is a standard accessory. The gas alarm C44 gives visual and audible indication. It surveils and the alarm sounds when the following happens:

1. Change operation side
2. Leaking on reserve side
3. High operation pressure Low operation pressure
4. Low operation pressure

The gas alarm C44 is able to communicate with other equipment through relays. The alarm has a battery back-up for 30 minutes of operation.

SPECIFICATION

MM90 INCLUDES THE FOLLOWING COMPONENTS:

- MM90 SEMIAUTO Manifold
- Gas alarm C44
- Purge valves
- HP filters

FOR A COMPLETE MM90 SEMIAUTO MANIFOLD ADD:

- Collecting pipe set (high pressure valves, and non-return valves /high pressure components)
- Cylinder retaining brackets (included in gas cylinder collecting pipe set)
- High pressure hoses with safety wire
- Plug for close collecting pipeline
- Gas name sign
- Stabilizer

(For more information, please see Accessories pages 18-22)

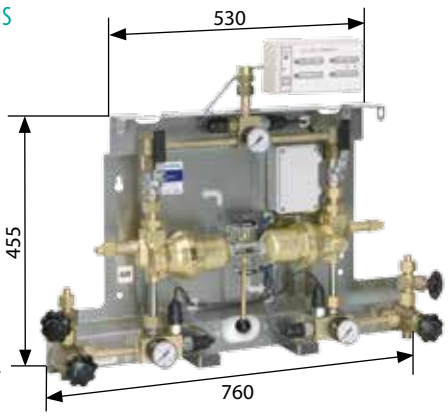
Item No.	Denomination	Gas	Safety valve	Alarm
0727304	MM90 – HP unit 2×1	O_2	Standard	C44
0727305	MM90 – HP unit 2×1	Air	Standard	C44
0727306	MM90 – HP unit 2×1	N_2O, CO_2	Standard	C44
0727313*	MM90 – HP unit 2×1	O_2, Air	Manual activation	MC7701
0727314*	MM90 – HP unit 2×1	N_2O, CO_2	Manual activation	MC7701
0727327**	MM90 – HP unit 2×1	O_2, N_2O, Air, CO_2, N_2	Standard	–

*in accordance HB370
**basic version without electric sensors

TECHNICAL DATA

Gases:	O_2; Air; N_2; N_2O; CO_2 (all medical gases)
Nominal flow:	90 m^3/h
Inlet nominal pressure:	200 bar (20 000 kPa)
Outlet nominal pressure:	9 bar (setting range 9–15 bar)
Inlet connection:	W21,8×1/14"M
Outlet connection:	G3/4"F + soldering piece pipe ø 22 mm
Safety valve:	16 bar
Safety valve pipe dimension:	ø 10 mm
Purge valves connection:	W21,8×1/14"M + soldering piece pipe ø 10mm
Regulatory status:	Complies with Medical directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply system)
	Complies with EN 60601-1-2 (Electromagnetic compatibility)

BASIC DIMENSIONS



Note!
Measurements in mm.

GAS MANIFOLD MM90 - STANDBY (BACKUP)

The manifold MM90 STANDBY covered by this description is designed to be used as a third source of supply in medical central gas systems. The manifold will deliver gas when the nominal supply system pressure falls below a set level (7 bar). This is a back up source.
Together with MM90 STANDBY, always use the MM90 AUTO or SEMIAUTO alarm providing all alarms according to standard (like Gas alarm C44). As 2nd stage is recommended to use a stabilizer.

Gas Alarm C44 is a standard accessory. The Gas alarm C44 gives visual and audible indication.
It surveils and the alarm sounds when the following happens:

1. Too high outlet pressure
2. Too low outlet pressure
3. Empty cylinder

The Gas alarm C44 is able to communicate with other equipment through relays. The alarm has a battery back-up for 30 minutes of operation.

SPECIFICATION

MM90 STANDBY INCLUDES THE FOLLOWING COMPONENTS:

- MM90 STANDBY Manifold with pressure switch
- Purge valves
- HP filters

FOR A COMPLETE MM90 STANDBY MANIFOLD ADD:

- Gas alarm C44
- Collecting pipe set (high pressure valves, and non-return valves /high pressure components)
- Cylinder retaining brackets (included in gas cylinder collecting pipe set)
- High pressure hoses with safety wire
- Plug for close collecting pipeline
- Gas name sign
- Stabilizer

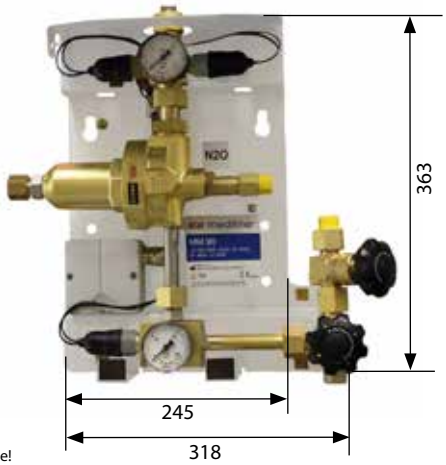
(For more information, please see Accessories pages 18-22)

Item No.	Denomination	Gas	Safety valve	Alarm
0727307	MM90 STANDBY	O_2, Air	Standard	Pressure switches
0727312	MM90 STANDBY	N_2O, CO_2	Standard	Pressure switches
0727337	MM90 STANDBY	O_2, Air	Manual activation	Pressure switches
0727338	MM90 STANDBY	N_2O, CO_2	Manual activation	Pressure switches

TECHNICAL DATA

Gases:	O_2; Air; N_2; N_2O; CO_2 (all medical gases)
Nominal flow:	90 m^3/h
Inlet nominal pressure:	200 bar (20 000 kPa)
Outlet nominal pressure:	7 bar (setting range 7–15 bar)
Inlet connection:	W21,8×1/14"M
Outlet connection:	G3/4"F + soldering piece pipe ø 22 mm
Safety valve:	16 bar
Safety valve pipe dimension:	ø 10 mm
Purge valves connection:	W21,8×1/14"M + soldering piece pipe ø 10 mm
Regulatory status:	Complies with Medical directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply system)
	Complies with EN 60601-1-2 (Electromagnetic compatibility)

BASIC DIMENSIONS



Note!
Measurements in mm.

GAS MANIFOLD DUPLEX (MC80)

The MC80 gas manifold is suitable for medium to large sized hospital. It has a flow capacity up to 200 m^3/h and is conveniently designed in modules. The MC80 reduces the gas pressure in two steps to a constant distribution pressure. Service and tests can be carried out with no disturbance in the supply of gas to the gas distribution system.

THE DUPLEX MC80 CONSISTS OF THE THREE FOLLOWING UNITS:

1. MC80 - HIGH PRESSURE UNIT

This module contains two regulators with safety valves and it is connected to two various cylinder banks with high pressure hoses. When the cylinder bank, which has been connected for operation, has been emptied the other duty side is automatically connected.

2. MC80 - STABILIZER

The stabilizer makes the operating pressure in the distribution system remain constant. The module contains two regulators with safety valves. Since the gas pressure is reduced in two steps the drop in pressure, when changing from the operating cylinder to the other bank of cylinders, is kept to a minimum. The unit is prepared for connection to a liquid Oxygen supply tank (LOX).

3. GAS ALARM - MC7701

This monitor displays the current gas pressure and provides visual and audible indication and a message in plain text. It surveils electronically and the alarm sounds when the following happens:

1. Too high or too low distribution pressure,
2. Too high intermediate pressure,
3. Leakage on the reserve gas cylinder bank,
4. When change of operating side has been effected.
5. Weak back up battery

When connected to a liquid tank the following disturbances will be reported:

1. Too high or too low distribution pressure,
2. Too high intermediate pressure,
3. Leakage from the reserves,
4. When change of operating side has been effected.

The MC7701 is able to communicate with another equipment through a serial link and / or relays. The alarm has a battery back-up for 30 minutes of operation.

SPECIFICATION

DUPLEX (MC80) INCLUDES THE FOLLOWING COMPONENTS:

- MC80 – High Pressure Unit
- MC80 – Stabilizer
- Gas alarm – MC7701
- Evacuating kits for collecting pipe
- Shut-off valve for the distribution line
- HP filters

FOR A COMPLETE DUPLEX (MC80) STANDBY MANIFOLD ADD:

- Collecting pipe set (high pressure valves, and non-return valves /high pressure components/)
- High pressure hoses with safety wire
- Gas name sign
- Connection pipe 90 degree
- Extension pipes if needed

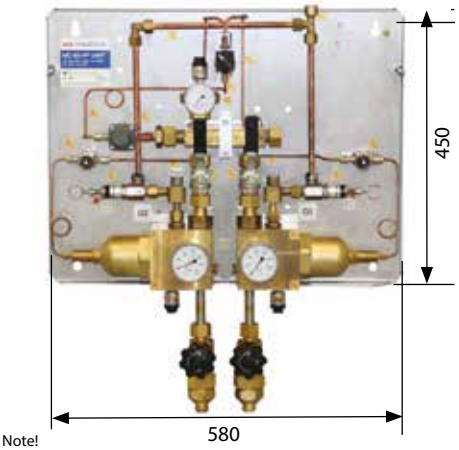
(For more information, please see Accessories pages 18-22)

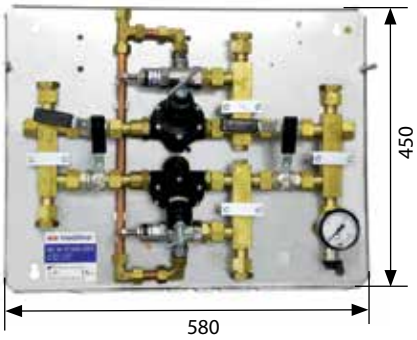
Item No.	Denomination	Gas	Safety valve	Alarm
0727318	DUPLEX 2×1	O_2	Manual activation	MC7701
0727319	DUPLEX 2×1	Air	Manual activation	MC7701
0727320	DUPLEX 2×1	N_2O/CO_2	Manual activation	MC7701
0727321	MC80 HP 2×1	O_2	Manual activation	0–50 mV
0727322	MC80 HP 2×1	Air	Manual activation	0–50 mV
0727323	MC80HP 2×1	N_2O/CO_2	Manual activation	0–50 mV
0727324	MC80 STAB	O_2	Manual activation	0–50 mV
0727325	MC80 STAB	Air	Manual activation	0–50 mV
0727326	MC80 STAB	N_2O/CO_2	Manual activation	0–50 mV
0727339	MC80 STAB	ALL	Manual activation	Contact gauge
0727340	MC80 STAB	ALL	Manual activation	4–20 mA

TECHNICAL DATA

Gases:	O_2; Air; N_2; N_2O; CO_2 (all medical gases)
Nominal flow:	200 m^3/h
High Pressure Unit MC80	
Inlet nominal pressure:	200 bar (20 000 kPa)
Outlet nominal pressure:	12 bar (setting range 10–16 bar)
Inlet connection:	W21,8×1/14"M
Outlet connection:	G3/4"F
Safety valve:	17 bar
Safety valve pipe dimension:	ø 10 mm
Purge valves connection:	W21,8×1/14"M + pipe ø 15 mm
Stabilizer MC80	
Inlet nominal pressure:	16 bar (1600 kPa)
Outlet nominal pressure:	4,5 bar (setting range 0,5–6 bar)
Inlet connection:	G3/4"F
Outlet connection:	G3/4"F
Safety valve:	6,8 bar
Safety valve pipe dimension:	ø 15 mm
Regulatory status:	Complies with Medical directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply system)
	Complies with EN 60601-1-2 (Electromagnetic compatibility)

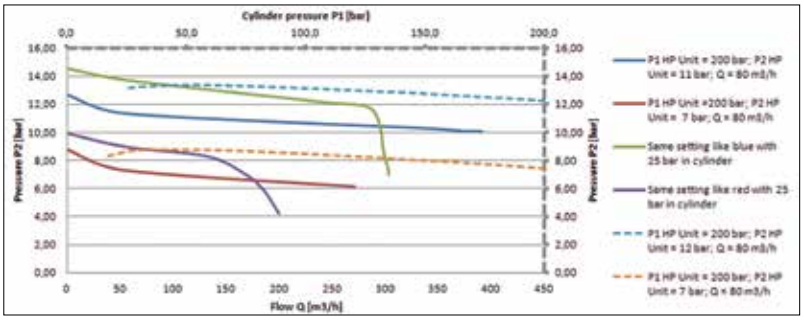
BASIC DIMENSIONS



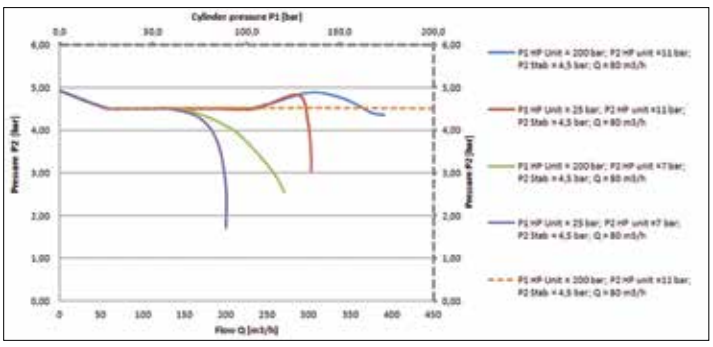


Note!
Measurements in mm.

FLOW CHART: MC80 - HP UNIT



FLOW CHART: SET MC80 - STABILIZER + MC80 - HP UNIT



GAS MANIFOLD MC80 - STABILIZER

Manifold MC80 – STABILIZER is a second stage pressure reduction unit with the task to equalize the eventual pressure variation in the hospital pipeline system to ensure a correct pressure from the terminal units.
MC80 – STABILIZER is only second stage reduction unit where the primary gas supply is provided by high pressure gas manifolds (such as MC80, MM90 or liquid oxygen tank (LOX). In case of signal for pressure deviation in relation to the alarm settings, the alarm can easily be displayed on a Gas alarm unit. It is also possible to send information to the central operation control. The stabilizer can be delivered with either pressure transmitter 4–20 mA, pressure transmitter 0–50 mV or with contact gauge.
Gas reduction unit MC80 – STABILIZER must always be installed in compliance with the standards EN ISO 7396-1 and the appropriate national standards.

SPECIFICATION

MC80 STABILIZER INCLUDES THE FOLLOWING COMPONENTS:

- MC80 Stabilizer Manifold

FOR A COMPLETE MC80 STABILIZER MANIFOLD ADD:

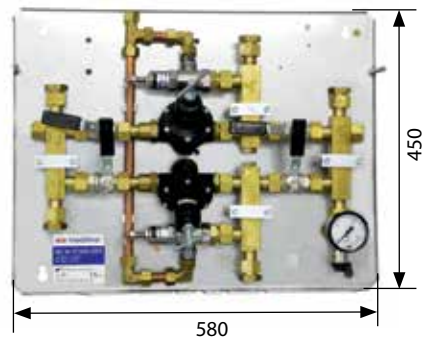
- Alarm unit (included if ordered together with HP unit)

Item No.	Denomination	Gas	Safety valve	Alarm
0727324	MC80 STAB	O_2	Manual activation	0–50 mV
0727325	MC80 STAB	Air	Manual activation	0–50 mV
0727326	MC80 STAB	N_2O/CO_2	Manual activation	0–50 mV
0727339	MC80 STAB	ALL	Manual activation	Contact gauge
0727340	MC80 STAB	ALL	Manual activation	4–20 mA

TECHNICAL DATA

Gases:	O_2; Air; N_2; N_2O; CO_2 (all medical gases)
Nominal flow:	200 m^3/h
Inlet nominal pressure:	16 bar (1600 kPa)
Outlet nominal pressure:	4,5 bar (setting range 0,5–6 bar)
Inlet connection:	G3/4"F
Outlet connection:	G3/4"F
Safety valve:	6,8 bar
Safety valve pipe dimension:	ø 15 mm
Regulatory status:	Complies with Medical directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply system)
	Complies with EN 60601-1-2 (Electromagnetic compatibility)

BASIC DIMENSIONS



Note!
Measurements in mm.

GAS MANIFOLD MC150 - STABILIZER

MC150 - STABILIZER is a second stage pressure reduction unit with the task to equalize the eventual pressure variation in the hospital pipeline system to ensure a correct pressure from the terminal units. MC150 - STABILIZER is only second stage reduction unit where the primary gas supply is provided by high pressure gas manifolds (such as MC80, MM90 or liquid oxygen tank (LOX). In case of signal for pressure deviation in relation to the alarm settings, the alarm can easily be displayed on a Gas alarm unit. It is also possible to send information to the central operation control. The stabilizer can be delivered with either pressure transmitter 4-20 mA, pressure transmitter 0-50 mV or with contact gauge.
Gas reduction unit MC150 - STABILIZER must always be installed in compliance with the standards EN ISO 7396-1 and the appropriate national standards.

SPECIFICATION

MC150 STABILIZER INCLUDES THE FOLLOWING COMPONENTS:

- MC150 Stabilizer Manifold

FOR A COMPLETE MC150 STABILIZER MANIFOLD ADD:

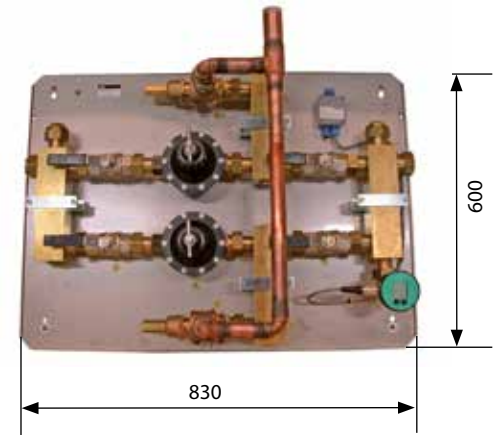
- Alarm unit (included if ordered together with HP unit)

Item No.	Denomination	Gas	Safety valve	Alarm
325397706	MC150 STAB	O_2	Manual activation	Contact gauge
325397707	MC150 STAB	O_2 /Air /N_2	Manual activation	4-20 mA

TECHNICAL DATA

Gases:	O_2; Air; N_2; N_2O; CO_2 (all medical gases)
Nominal flow:	360 m^3/h
Inlet nominal pressure:	16 bar (1600 kPa)
Outlet nominal pressure:	4,5 bar (setting range 0,5-6 bar)
Inlet connection:	2× G1 1/2"F+soldering piece pipe ø 35 mm
Outlet connection:	2× G1 1/2"F+soldering piece pipe ø 35 mm
Safety valve:	6,8 bar
Safety valve pipe dimension:	ø 35 mm
Regulatory status:	Complies with Medical directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply system)
	Complies with EN 60601-1-2 (Electromagnetic compatibility)

BASIC DIMENSIONS



Note!
Measurements in mm.

GAS MANIFOLD SIMPLEX MMR

The Simplex MMR gas manifold is suitable for such health care where the capacity requirement is limited, such as laboratories and small health care clinics, veterinary etc. This gas manifold consists of only one group of cylinders.

The regulator is mounted in the collection unit. Each inlet connection has a filter, a non-return valve and a shut-off valve. This arrangement makes it possible to use one cylinder at a time.

In order to obtain a stabile outlet pressure this gas manifold is equipped with a preset two-stage regulator. On the high pressure side of the regulator there is a contact gauge the signal of which can be carried further to an alarm unit.

SPECIFICATION

SIMPLEX MMR IINCLUDES THE FOLLOWING COMPONENTS:

- Gas cylinder manifold Simplex MMR
- Collecting pipe Manyflow block for three hoses
- Gas evacuation kits for collecting pipe

FOR A COMPLETE SIMPLEX MMR ADD:

- Gas alarm C44
- Safety valve with manual activation
- High pressure hoses with safety wire
- Cylinder retaining brackets (included in gas cylinder collecting pipe set)
- Gas name signs
- Safety valve

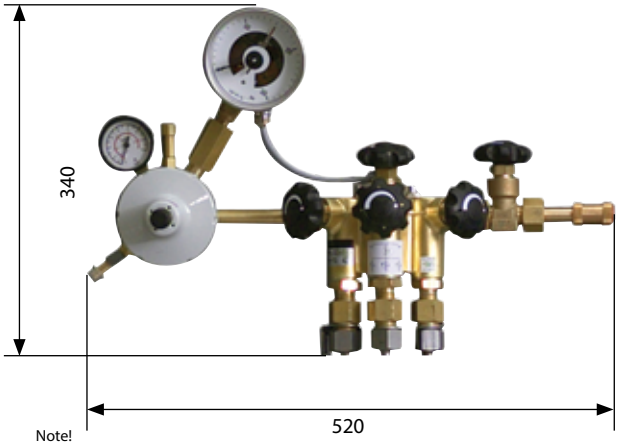
(For more information, please see Accessories pages 18-22)

Item No.	Denomination	Gas	Safety valve	Alarm
325397702	Simplex MMR	O_2, Air, N_2, Ar, N_2O, CO_2	Standard integrated	Contact gauge

TECHNICAL DATA

Gases:	O_2; Air; N_2;Ar; N_2O; CO_2 (all medical gases)
Nominal flow:	30 m^3/h
Inlet nominal pressure:	200 bar (20000 kPa)
Outlet nominal pressure:	5 bar (setting range 4–5 bar)
Inlet connection:	W21,8×1/14"M
Outlet connection:	G3/8"M
Safety valve:	6 bar
Safety valve pipe dimension:	ø 10 mm
Purge valves connection:	W21,8×1/14"M+pipe ø 15 mm
Regulatory status:	Complies with Medical directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply system)
	Complies with EN 60601-1-2 (Electromagnetic compatibility)

BASIC DIMENSIONS



Note!
Measurements in mm.

HIGH PRESSURE GAS MANIFOLD ACCESSORIES

GCE can supply a complete range of high pressure accessories making it possible to install a medical gas supply system. All accessories are designed and manufactured according to the relevant standard for high pressure systems. The high pressure pipe components are manufactured in the following materials: stainless steel AISI 316 L and brass CuZn39Pb3, and they are tested at 360 bar. Cylinder holders for cylinders and connecting pipes are manufactured in AISI 316.

COLLECTION PIPE LINE

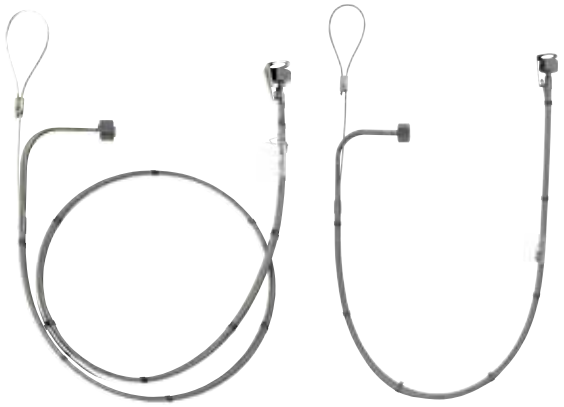
Collecting pipe sets are prepared for GCE HP manifold units. These sets are increasing the inlet points for HP cylinders or bundles. Collecting sets are possible to connect serially therefore select ideal combination.

THE SET CONTAINS:

- High Pressure Valve
- Non Return Valve
- Collection Pipe

Item No.	Denomination	Application
0733003	1 cylinder collection pipe set, without cylinder holder	Back up manifold
0733004	2 cylinders collection pipe set, without cylinder holder	Back up manifold
0733005	4 cylinders collection pipe set, without cylinder holder	Back up manifold
0733000	2×1 cylinder collection pipe set	Cylinder bundles
0733001	2×2 cylinders collection pipe set	Cylinder bundles
0733002	2×4 cylinders collection pipe set	Cylinder bundles
0733006	2×1 cylinder collection pipe set+cylinder holders	Gas cylinders
0733007	2×2 cylinders collection pipe set+cylinder holders	Gas cylinders
0733008	2×4 cylinders collection pipe set+cylinder holders	Gas cylinders

HIGH PRESSURE HOSES



Medical high pressure hoses are used to connect cylinders or cylinder bundles to gas supply systems. The high pressure hose is intended to be used with a pressure up to maximum 230 bar. Pressure tested at 345 bar. The hose is equipped with a safety wire.

HANDLING

The high pressure hose shall be transported, stored, installed and maintained according to Instruction of Use. Maximum life time after installation is 5 years.

Item No.	Gas	Lenght (mm)	Inlet connection	Outlet connection
325197641	O_2	1250	W21,8×1/14"RH	W21,8×1/14"RH
325197651	O_2	2000	W21,8×1/14"RH	W21,8×1/14"RH
325197642	N_2O	1250	R3/8"RH	W21,8×1/14"RH
325197652	N_2O	2000	R3/8"RH	W21,8×1/14"RH
325197643	Air, Air–800	1250	R5/8"RH	W21,8×1/14"RH
325197653	Air, Air–800	2000	R5/8"RH	W21,8×1/14"RH
325197644	N_2/Ar	1250	W24,32×1/14"RH	W21,8×1/14"RH
325197654	N_2/Ar	2000	W24,32×1/14"RH	W21,8×1/14"RH
325197645	CO_2	1250	W27×2"RH	W21,8×1/14"RH
325197655	CO_2	2000	W27×2"RH	W21,8×1/14"RH

TECHNICAL DATA - MATERIAL

Tube:	Acid-proof Stainless Steel (AISI 316)
Plait:	Stainless Steel (AISI 304)
Wire:	Stainless Steel (AISI 304)
Nut and tightening material:	Acid-proof Stainless Steel (AISI 316)
Case and Oetiker:	Stainless Steel (AISI 304)
Regulatory status:	Complies with Medical Devices Directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply System)
	Complies with EN ISO 21969 (High Pressure Flexible Connection)

CONNECTING PIPES FOR CYLINDER MANIFOLDS

Connecting pipes with retaining brackets of stainless steel, for 1–4 cylinders.

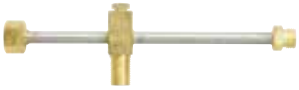
Item No.	Connecting threads	Length (mm)	Number of cylinders
325197218	W21,8×1/14"RH EXT–INT	290	1
215191072	W21,8×1/14"RH EXT–INT	580	2
215191073	W21,8×1/14"RH EXT–INT	1160	4

CYLINDER RETAINING BRACKETS

Cylinder retaining brackets, completely made of stainless steel, for 1 or 2 cylinders.

Item No.	Length (mm)	Number of cylinders
215191074P	260	1
215191075P	550	2

CONNECTION PIPES FOR CYLINDER PACK MANIFOLDS



Item No.	Connecting threads	Length (mm)	Number of cylinders
215191012	W21,8×1/14"RH EXT–INT	290	1
215191013	W21,8×1/14"RH EXT–INT	580	2
215191014	W21,8×1/14"RH EXT–INT	1159	4

EXTENSION PIPES

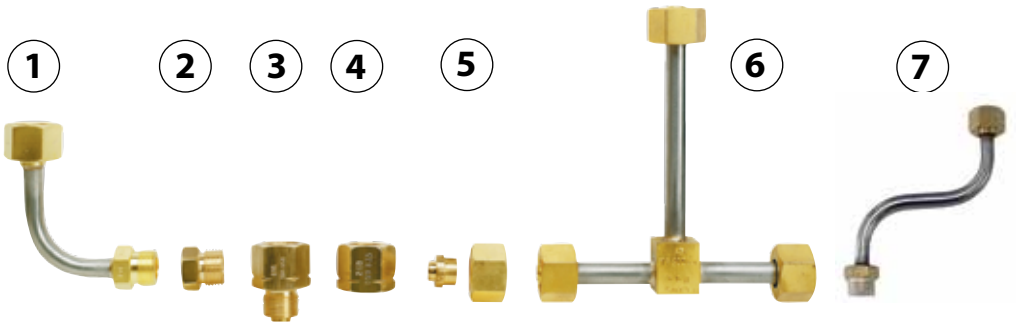
Item No.	Connecting threads	Length (mm)
215191011	W21,8×1/14"RH EXT–INT	700

GAS EVACUATION VALVE KIT

Item No.	Inlet connection	Outlet connection pipe (mm)
325199080	W21,8×1/14" INT	ø 15

CONNECTING COMPONENTS FOR CYLINDER MANIFOLDS

Item No.	Description	Thread	Position
215191010	Connection pipe 90º	W21,8×1/14" EXT–INT	1
215191077	Blind plug	W21,8×1/14" EXT	2
215191068	Adaptor	W21,8×1/14" LH/ RH EXT–INT	3
200059835P	Coupling nut	W21,8×1/14" LH/RH INT–INT	4
215191080	End plug with nut	W21,8×1/14" INT	5
215191085	T–pipe for DUPLEX	W21,8×1/14" INT–INT–INT	6
215191126	S–pipe	W21,8×1/14" EXT–INT	7
202502362	Aluminium washer 50 pcs	16×12,5×1,5 mm	
325111032P	Copper washers 10 pcs	18×12,7×1,5 mm	



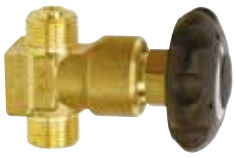
NON-RETURN VALVES FOR CONNECTION PIPES

Item No.	Denomination	Inlet	Outlet
215191044	Non-return valve for connection pipes	W21,8×1/14"RH EXT	W21,8×1/14"RH INT

HIGH PRESSURE FILTER

Item No.	Denomination	Inlet	Outlet
9459650P	High pressure filter	W21,8×1/14"RH EXT	W21,8×1/14"RH INT

HIGH PRESSURE VALVES 300 BAR



Item No.	Denomination	Inlet	Outlet
0765001	SOV DN4	W21,8×1/14"RH	W21,8×1/14"LH

Item No.	Denomination	Inlet	Outlet
BV777097	BV300 DN8	W21,8×1/14"RH	W21,8×1/14"RH

GAS SIGNS

LAMINATED LABELS

Item No.	Label description	Country	Dimensions
700325847	ANDNINGSOXYGEN	SE	297×210 mm
700325143	MEDISINSK OKSYGEN	NO	297×210 mm
700325297	MEDICINSK OXYGEN	DK	297×210 mm
700325145	HAPPI	FI	297×210 mm
700325848	LUSTGAS	SE	297×210 mm
700325185	MEDISINSK LYSTGASS	NO	297×210 mm
700325132	DINITROGENOXID	DK	297×210 mm
700325164	DITYPPIOKSIDI	FI	297×210 mm
700325328	MEDICINSK LUFT	SE	297×210 mm
700325162	MEDISINSK LUFT	NO	297×210 mm
700325853	AIR	DK	297×210 mm
700325146	ILMA	FI	297×210 mm
700325849	MEDICINSK KOLDIOXID	SE	297×210 mm
700325757	MEDISINSK KARBONDIOKSID	NO	297×210 mm
700325851	MEDICINSK KULDIOXID	DK	297×210 mm
700325852	CO_2	FI	297×210 mm

INDICATION PANELS

Item No.	Denomination
215190287	Indication panel

SAFETY VALVE MEDICAL PIPELINE SYSTEMS

The safety valve is used in medical pipeline systems to secure that the pressure does not exceed 6,8 bar.
The safety valve shall be mounted on outgoing pipelines on Simplex MMR or can be mounted on other pipelines.

SAFETY VALVE TUBE MOUNTING

Item No.	Gas	Relief Pressure	Inlet connection	Outlet connection
325197387	Medical gases and air	6,8 bar	G3/4"F	G3/4"F

SAFETY VALVES SIMPLEX MMR MOUNTING

Item No.	Gas	Relief Pressure	Inlet connection	Outlet connection
325197306	Medical gases and air	6,8 bar	G3/8"F	G3/4"F

TECHNICAL DATA

Evacutaion flow:	200 m^3/h
Evacutaion outlet pipe:	ø 15 mm
Relief pressure:	6,8 bar
Material:	Brass, copper, stainless steel, rubber
Pressure class:	PN16
Regulatory status:	Degreesing for Oxygen use
	no CE-marking

PRESSURE MONITOR, PRESSURE WATCH, GAS ALARMS, AND VALVES

druva MED

PRESSURE MONITOR

The pressure monitor makes sure that the lower distribution pressure for nitrous oxide compared to oxygen is kept.
The lower nitrous oxide pressure will be maintained according to standards even when the emergency supply is used through quick connectors or central emergency supply. The pressure monitor is equipped with a digital pressure monitor unit (MC7701) monitoring the current gas pressures, and giving all the visual and acoustic alarms required by standards. The signal to the gas alarm comes from pressure transmitters. The visual and audible signals can be sent to a manned area, if it is required.
The following gases are under surveillance: breathing Oxygen, Nitrous Oxide, Air and instrument Air. The alarm is indicated by an acoustic and and visual signal at the same time as the exact cause of the alarm is written on the display. This happens if the gas pressure rises above or sinks below the set maximum or minimum limits respectively. The pressure monitor is also equipped with bayonet coupling for breathing oxygen, nitrous oxide, breathing air, and instrument air. When necessary, it is possible to connect spare gas to these.

Item No.	Denomination	Inlet pipe	Outlet pipe	ES pipe
0732818	For 2 gases O_2, Air	ø 15	ø 15	–
0732819	For 3 gases O_2, N_2O, Air	ø 15	ø 15	–
0732820	For 4 gases O_2, N_2O, Air, Air–800	ø 15	ø 15	–
0732821*	For 2 gases O_2, Air with ES	ø 15	ø 15	ø 15
0732822*	For 3 gases O_2, N_2O, Air with ES	ø 15	ø 15	ø 15
0732823*	For 4 gases O_2, N_2O, Air, Air–800 with ES	ø 15	ø 15	ø 15

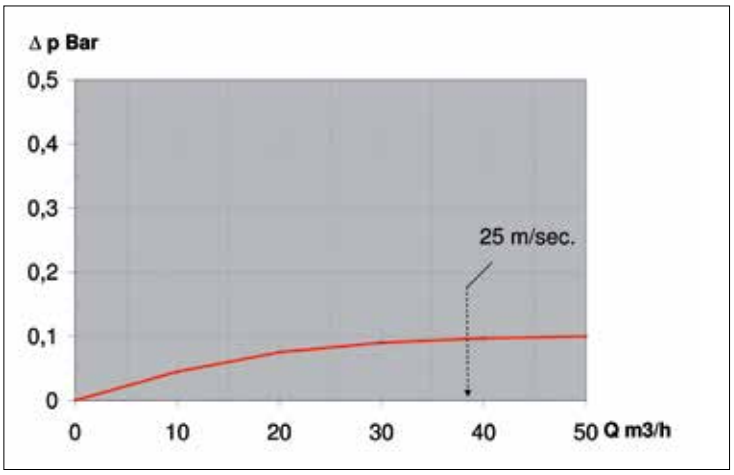
*With central emergency supply from below

ACCESSORIES - EMERGENCY SUPPLY HOSES

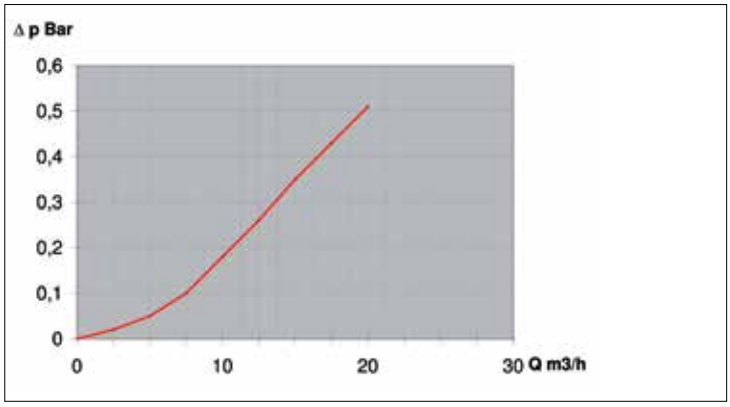
Item No.	Gas	Length	Inlet conn.	Outlet conn.
325197814	O2	1,3 m	SW NUT G3/8" – 6 mm	QC SS straight
325197815	N2O	1,3 m	SW NUT G3/8" – LH	QC SS straight
325197816	Air	1,3 m	SW NUT G3/8" – 8 mm	QC SS straight
325197817	Air–800	1,3 m	SW NUT G3/8"	QC SS straight

TECHNICAL DATA

Gases:	O_2; N_2O; Air; Air–800; CO_2; N_2; VAC (all medical gases)
Number of gases:	2 to 4 valves (DN15)
Working pressure:	4–5 bar (breathing gases)
	7–10 bar (instrumental gases)
Maximum pressure:	16 bar
Safety regulator capacity at 3 bar:	150 l/min
Tube dimension:	ø 15×1 mm
Emergency QC inlets:	QC by national standards
Pressure gauges:	0–16 bar
Pressure sensors:	Transmitters 0–50 mV (special order); 4–20 mA
Regulatory status:	Complies with Medical Devices Directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply System)
	and present SIS HB 370
	Complies with EN 60601-1-2 (Electromagnetic compatibility)

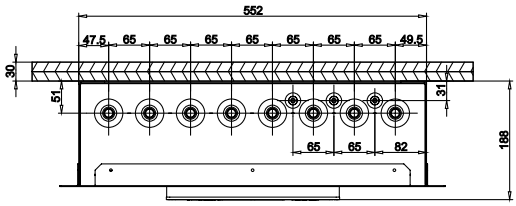


Pressure drop test. Inlet pressure 5 bar.

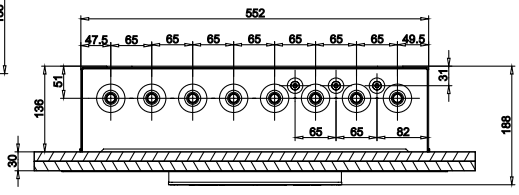


Pressure drop test. Inlet pressure 5 bar.
Emergency QC inlets.

BASIC DIMENSIONS



4 VALVE BOX SURFACE MOUNTED
SEEN FROM ABOVE



4 VALVE BOX RECESSED
SEEN FROM ABOVE

Note!
Measurements in mm.

PRESSURE WATCH

The Pressure Watch has the same shut off function as an ordinary Emergency Shut-Off Valve Box. Behind the plexiglass you can find quick couplings and gauges. The quick couplings are used to connect spare cylinders with regulators and emergency supply hoses.

To inform the hospital staff regarding gas failures the Pressure Watch is equipped with sensors for one of the following alarm systems; 1) – pressure switches that you connect to Gas alarm C44, 2) – pressure transmitters that you connect to Gas alarm MC7701 or 3) – pressure transmitters 4–20 mA that you connect directly to the hospital central computer system.

The Pressure Watch is delivered with 300 mm connection tubes and each box has been test pressurized and controlled for tightness. The Pressure Watch has large ergonomical handles.
If mounted in a recessed way, the emergency shut-off valve box fits walls with 70 mm beam.

With a 90 mm beam there is extra space (23,5 mm) behind the valve box usable for e.g. fire isolation. All models, also with four or five gases, fits between the beams in a CC-60 wall. The box is gas-tight which prevents gas accumulation inside the wall.

The product is CE-marked according to EN ISO 7396-1 and present SIS HB 370.

It is important that the boxes are placed so that they are easily available for authorized personnel. The front door shall be sealed. In order to avoid mistakes the boxes shall be clearly and distinctly marked with gas sort. A sign showing which section the box serves must be placed in its immediate vicinity. The valves are open when the handles are in vertical position in line with the printed marking on the plate. To close the valves you turn the handle 90 degrees clockwise.

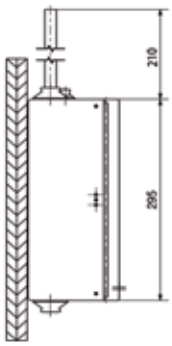
PRESSURE WATCH DN15 WITH PRESSURE SWITCHES

Item No.	No. of valves DN15	Gas	Inlet/Outlet pipe mm
325397726	1	O_2	ø 15
325397727	2	O_2, Air	ø 15
0732828	2	O_2,VAC yel	ø 15
325397728	3	O_2, N_2O, Air	ø 15
0732824	3	O_2, Air, VAC yel	ø 15
325397729	4	O_2, N_2O, Air, Air–800	ø 15
0732825	4	O_2, N_2O, Air, VAC yel	ø 15
325397730	5	O_2, N_2O, Air, Air–800, CO_2	ø 15
0732831	5	O_2, N_2O, Air, Air–800, VAC yel	ø 15

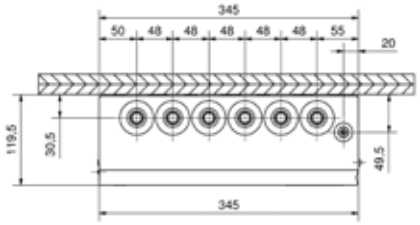
PRESSURE WATCH DN15 WITH TRANSMITTER 4-20 mA

Item No.	No. of valves DN15	Gas	Inlet/Outlet pipe mm
325397861	1	O_2	ø 15
325397862	2	O_2, Air	ø 15
325397863	3	O_2, N_2O, Air	ø 15
325397858	3	O_2, Air, VAC red	ø 15
325397864	4	O_2, N_2O, Air, Air–800	ø 15
325397865	5	O_2, N_2O, Air, Air–800, CO_2	ø 15

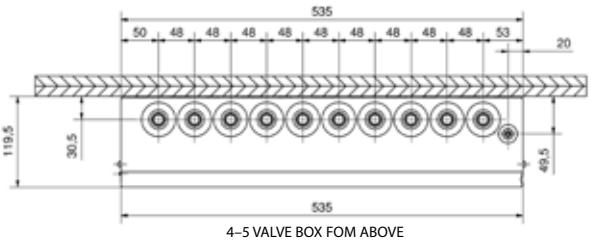
BASIC DIMENSIONS



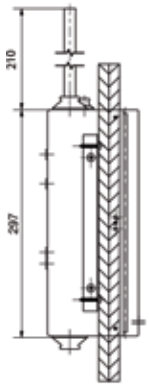
EXPOSED MOUNTING
SEEN FROM SIDE



1–3 VALVE BOX FROM ABOVE



4–5 VALVE BOX FOM ABOVE



RECESSED MOUNTING
SEEN FROM SIDE

Note!
Measurements in mm.

PRESSURE WATCH

PRESSURE WATCH DN20 WITH PRESSURE SWITCHES

Item No.	No. of valves	Gas	Inlet/Outlet pipe mm
0732829	1	Air–800	ø 22
0732802	2	O_2, Air	ø 22
0732826	2	Air–800, N_2O	ø 22
0732830	2	O_2, VAC yel	ø 22
0732804	3	O_2, N_2O, Air	ø 22
0732803	3	O_2, Air, Air–800	ø 22
0732805	3	O_2, Air, VAC red	ø 22
0732827	3	O_2, Air, VAC yel	ø 22

PRESSURE WATCH DN20 WITH TRANSMITTER 4-20 MA

Item No.	No. of valves	Gas	Inlet/Outlet pipe mm
0732806	2	O_2, Air	ø 22
0732808	3	O_2, N_2O, Air	ø 22
0732807	3	O_2, Air, Air–800	ø 22
0732809	3	O_2, Air, VAC red	ø 22

PRESSURE WATCH DN20 EMERGENCY SOURCE WITH PRESSURE SWITCHES

Item No.	No. of valves	Gas	Inlet/Outlet pipe mm
0732810	2	O_2, Air	ø 22
0732812	3	O_2, N_2O, Air	ø 22
0732811	3	O_2, Air, Air–800	ø 22
0732813	3	O_2, Air, VAC red	ø 22

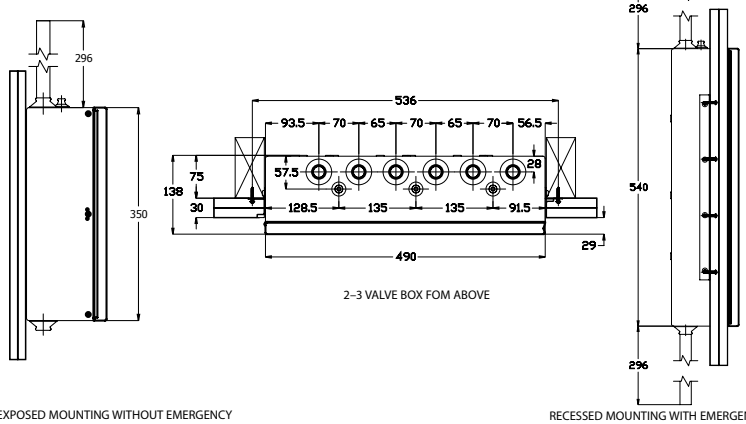
PRESSURE WATCH DN20 EMERGENCY SOURCE WITH TRANSMITTER 4-20 MA

Item No.	No. of valves	Gas	Inlet/Outlet pipe mm
0732814	2	O_2, Air	ø 22
0732816	3	O_2, N_2O, Air	ø 22
0732815	3	O_2, Air, Air–800	ø 22
0732817	3	O_2, Air, VAC red	ø 22

TECHNICAL DATA

Gases:	O_2; N_2O; Air; Air–800; CO_2; N_2; VAC (all medical gases)
Number of gases:	(ø 15×1) 1 to 5 valves (DN15)
	(ø 22×1) 1 to 3 valves (DN20)
Working pressure:	4–5 bar (breathing gases)
	7–10 bar (instrumental gases)
Maximum pressure:	16 bar
Tube dimension:	ø 15×1 mm
	ø 22×1 mm
Emergency QC inlets:	QC by national standards
Pressure gauges:	0–16 bar
Pressure sensors:	Pressure switches; Transmitters 0–50 mV (special order); 4–20 mA
Regulatory status:	Complies with Medical Devices Directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply System)
	and present SIS HB 370

BASIC DIMENSIONS



Note!
Measurements in mm.

EXPOSED MOUNTING WITHOUT EMERGENCY SOURCE SEEN FROM SIDE

RECESSED MOUNTING WITH EMERGENCY SOURCE SEEN FROM SIDE

GAS ALARM - GCE TOUCH

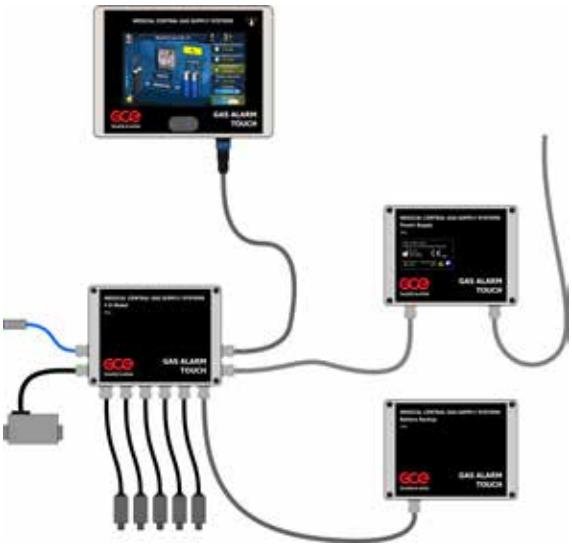
The purpose with alarm systems is to inform hospital personal about none standard pressure deviation in the hospital medical gas systems. It is one of the most important security products in the medical gas systems.
It ensures that downtime, pressure changes, etc. will be indicated and personal are informed in order to act according to hospital instructions.
The gas alarm GCE TOUCH is an alarm that has all necessary functions for an early detection of these problems. GCE TOUCH is very easy to operate with its clear and straight forward menu layout. It is a user-friendly alarm based on a 7" LCD touch screen display with graphic buttons, simple control and with lots of extra functionality. GCE TOUCH has a GSM module for transmitting an alarm situation directly to the hospital engineers and the ability to communicate through an Ethernet connection. The SMS module can send information about alarm status to up to 10 mobile phone numbers. As GCE TOUCH has a log function to store all emergency situations it is possible to find historical data if necessary.
GCE TOUCH gas alarm fulfills ISO 7396, national installation standards, and all relevant electrical standards as EN 60601-1, EN 60601-1-2, which guarantee safety usage in hospitals.

GCE TOUCH contains:
- Manifold local alarm
- Pressure monitor alarm
- Pressure watch alarm
- Section gas alarm

For information about item numbers, please contact Sales and Product Support (page 2)

TECHNICAL DATA

Display:	7" LCD Touch screen
Analog inputs:	10×; 4–20mA; 2 wires connection
Digital inputs:	8×; log0<2 VDC; log 1>4 VDC; 2 wires + ground
Switching outputs:	2×; semi-conductor high-side switch; 24V / 0,5A
Relay output:	3×; NO/NC/GND
Acoustic alarm:	440Hz/880Hz; min 57dB
Log database:	Min. 1000 items
Communication:	1 × Ethernet
	1 × GSM module for SIM card
	1 × RS485 for slave alarm unit
	Communication protocol ModBUS TCP
	1 × USB for service purposes
Power supply:	100–240 VAC; 50–60 Hz
Backup battery:	Optional accessories; external 2×12 VDC
Enclosure:	IP65
Working temperature:	10–40 °C
Dimensions L × W × H	
Display part:	225×165×60 mm
I–O Module:	116×125×75 mm
Power supply:	166×125×75 mm
Battery backup:	166×125×75 mm
Regulatory status	Complies with Medical Devices Directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply System)
	Complies with EN 60601-1 (Electrical safety)
	Complies with EN 60601-1-2 (EMC – Electromagnetic compatibility)



GAS ALARM - MC7701

This alarm gives visual and audible indications as well as status messages in plain language. When used with a manifold, the following conditions are surveilled:

1. Too high or too low distribution pressure,
2. Too high intermediate pressure,
3. Leakage on the non-operating gas cylinder bank,
4. When change of operating side has been effected.

When connected to a liquid tank the following disturbances will be reported:

1. Too high or too low distribution pressure,
2. Too high intermediate pressure
3. Leakage on the non-operating gas cylinder bank.
4. When change of operating side has been effected.

When used with a pressure monitor or pressure watch the following conditions are surveilled: Too high or too low distribution pressure.
The MC7701 is able to communication wtih another equipment through a serial link RS485, Modbus RTO and / or relays. The alarm has a battery back-up for 30 minutes of operation.

Item No.	Denomination
325197497P	Digital pressure monitor MC7701 UNILARM

ACCESSORIES

Item No.	Denomination
325112696P	Cable with Hirsman contact 3m
325112698P	Cable with cable conecting piece 3 m
325112496	Backup batteries MC7701
325110804P	Pressure Transmitter 0–50 mV G1/8" 0–16 bar
325110528P	Pressure Transmitter 0–50 mV G1/8" 0–25 bar
325110527P	Pressure Transmitter 0–50 mV G1/8" 0–250 bar

TECHNICAL DATA

Power supply:	230 VAC; 0,3A/24 VAC; 1,3 A
Backup battery:	10,8 V
Power Consumption:	15 VA
Enclosure:	IP65
Working temperature:	10–40 °C
Relay outputs:	14 potential free contacts
Relay output max. rating:	125 VAC; 60 UDC/1A/62,5 VA/30 W
Serial communication:	Modbus RTU
Display languages:	Swedish, Norwegian, Danish, Finnish, English and Hungarian
Regulatory status:	Complies with Medical Devices Directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply System)
	EMC tested in accordance EN 60601-1-2 (Emission and immunity)

BASIC DIMENSIONS

Note!
Measurements in mm.

GAS ALARM - G4

The alarms are summation alarms for both high and low pressure. In addition to this, a failure in the computer communication system, or a damaged signal cable (for example: cut off) is also indicated. The loudness of the sound can be adjusted by using the potentiometer placed behind the covering lid. At delivery the sound is set at medium.

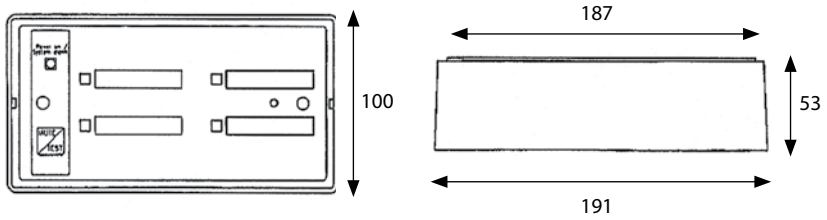
The gas alarm G4 is available in two different designs, for recessed mounting and for exposed mounting. The display will show any of eight languages chosen from stickers enclosed. The alarm is equipped with a rechargeable battery in case of power failure.

Item No.	Denomination
325197713	Gas alarm G4 recessed mounting
325197714	Gas alarm G4 exposed mounting

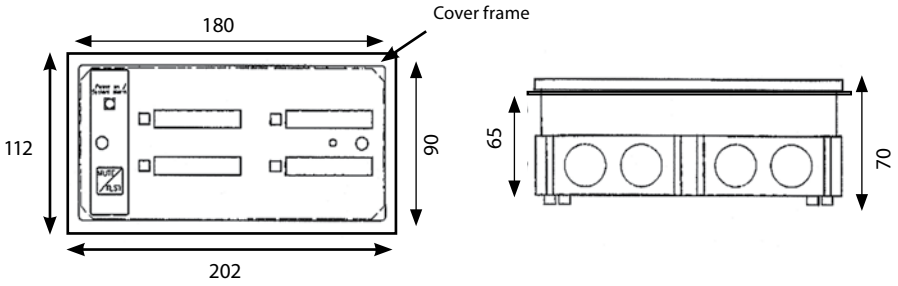
TECHNICAL DATA

To be used only together with digital Gas alarm - MC7701	
Maximum units in serial connection:	10 units
Backup battery:	9 V
Working temperature	10-40 °C
Power supply:	From MC 7701 (15V; 4,5 VA)
Recommended cable:	Signal cable 0,75 mm^2
	Computer wire like Alpha type 5472C or similar
Maximum cable lenght:	400 m (between alarms)
Regulatory status	Complies with Medical Devices Directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply System)
	EMC tested in accordance EN 60601-1-2 (Emission and immunity)

EXPOSED MOUNTING



RECESSED MOUNTING



Note!
Measurements in mm.

GAS ALARM - C44

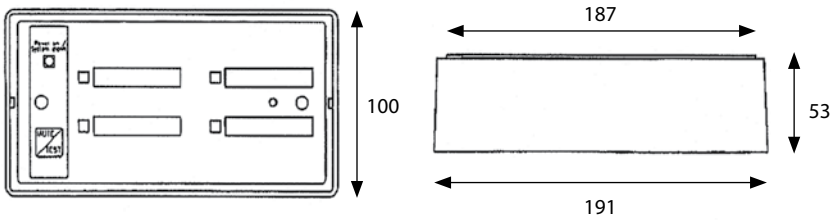
Gas Alarm C44 is a gas pressure alarm intended for small gas manifolds, stabilizers and for example contact gauges/pressure switches connected directly to the main line. The C44 is a microprocessor based alarm for 4 alarm channels and is connected to the pressure sensing device with volt free contacts, for example contact gauges or pressure switches. Alarm C44 is voltage fed with 11,5 VAC. Supply voltage is fed by the enclosed transformer. Visible from the front is an integrated push button TEST/MUTE. If there is no alarm condition, all the light emitting diodes and the buzzer can be tested when the button is pushed.
Should there be an alarm condition, the signal will be suppressed for 15 minutes. If an alarm has been silenced and a new one occurs, the MUTE function is cleared and the signal comes back until the cause has been attended to and the MUTE button is pushed again.
Alarm C44 is equipped with an environmental-friendly rechargeable NiMH back-up battery.
The sound volume is adjustable via a potentiometer placed behind the cover. At delivery the sound volume is set at medium.

Item No.	Denomination
325197710P	Gas alarm C44 recessed mounting
325197711P	Gas alarm C44 exposed mounting

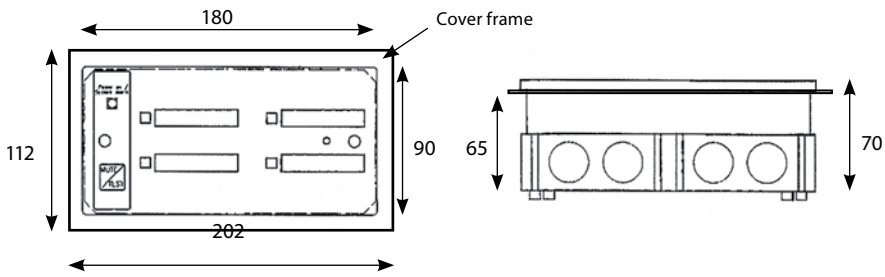
TECHNICAL DATA

Power supply:	230 VAC; 14VA/11,5 VAC; 0,9 A
Backup battery:	9 V
Power Consumption:	about 3,5 VA
Working temperature:	10–40 °C
Relay outputs:	4 potential free contacts
Relay output max. rating:	125 VAC; 60 UDC/1A/62,5 VA/30 W
Recommended cable:	Signal cable 0,25 mm^2
	Feed cable 0,75 mm^2
Maximum cable lenght:	3 m (alarm-pressure switches)
Regulatory status:	Complies with Medical Devices Directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply System)
	EMC tested in accordance EN 60601-1-2 (Emission and immunity)

EXPOSED MOUNTING



RECESSED MOUNTING



Note!
Measurements in mm.

SHUT-OFF VALVE BOX

For safety and service reasons a central gas system must be equipped with shut-off valves placed so that the gas supply can easily be interrupted. The valves are mounted in a box. The emergency shut-off valve boxes shall be placed so that the gas can be shut off section wise. This means that the boxes should be placed before each ward, operating unit, part of ward for critical treatment and individual surgeries.

The emergency shut-off valve box is delivered with connection tubes and each box has been test pressurized and leakage tested. The emergency shut-off valve has large ergonomical handles.

If mounted in a recessed way, the emergency shut-off valve box fits walls with 70 mm beam. With a 90 mm beam there is extra space (23,5 mm) behind the valve box usable for e.g. fire isolation.

All models, also with four or five gases, fits between the beams in a CC-60 wall. The box is gas-tight which prevents gas accumulation inside the wall.

The product is CE–marked according to EN ISO 7396-1 and current SIS HB 370.

It is important that the boxes are placed so that they are easily available for authorized personnel. The front door shall be sealed.

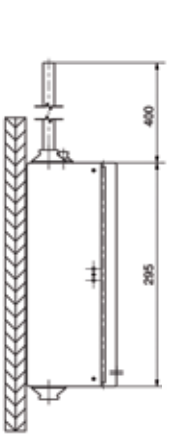
In order to avoid mistakes the boxes shall be clearly and distinctly marked with the gas sort. A sign showing which section the box serves must be placed in its immediate vicinity.

The valves are open when the handles are in vertical position in line with the printed marking on the plate.

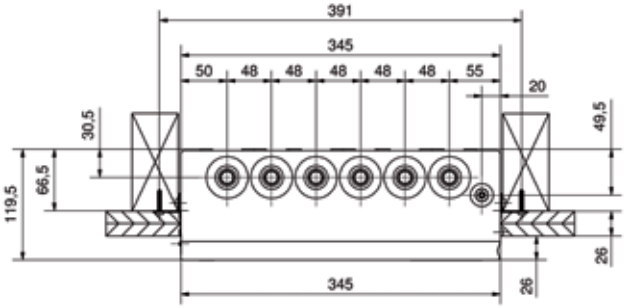
SHUT-OFF VALVE BOX DN15

Item No.	Type	Inlet pipe	Outlet pipe
325397721	1 valve DN15	ø 15	ø 15
325397722	2 valves DN15	ø 15	ø 15
325397723	3 valves DN15	ø 15	ø 15
325397724	4 valves DN15	ø 15	ø 15
325397725	5 valves DN15	ø 15	ø 15

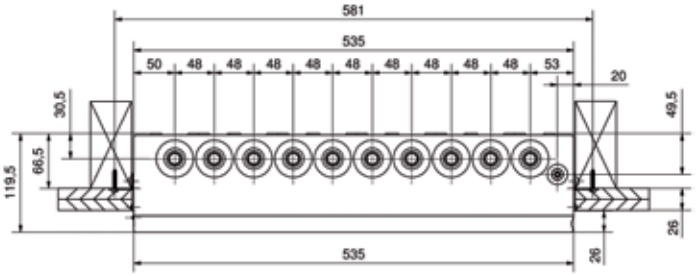
BASIC DIMENSIONS



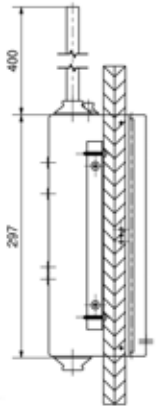
EXPOSED MOUNTING
SEEN FROM SIDE



1–3 VALVE BOX FROM ABOVE



4–5 VALVE BOX FOM ABOVE



RECESSED MOUNTING
SEEN FROM SIDE

Note!
Measurements in mm.

SHUT-OFF VALVE BOX

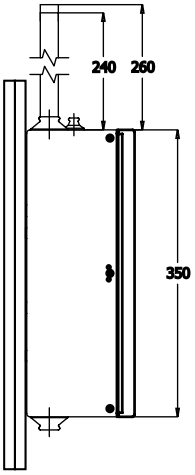
SHUT-OFF VALVE BOX DN20

Item No.	Type	Inlet pipe	Outlet pipe
0732701	2 valves DN20	ø 22	ø 22
0732702	3 valves DN20	ø 22	ø 22

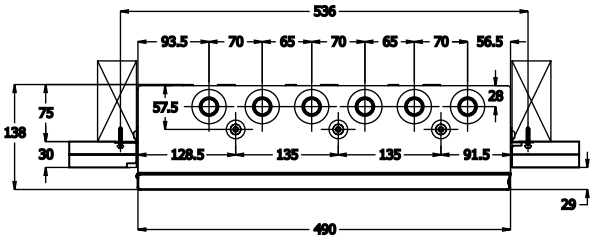
TECHNICAL DATA

Gases:	O_2; N_2O; Air;Air–800; CO_2; N_2; VAC (all medical gases)
Number of gases:	(ø 15×1) 1 to 5 valves (DN15)
	(ø 22×1) 1 to 3 valves (DN20)
Working pressure:	4–5 bar (breathing gases)
	7–10 bar (instrumental gases)
Maximum pressure:	16 bar
Tube dimension:	ø 15×1 mm
	ø 22×1 mm
Regulatory status:	Complies with Medical Devices Directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply System)
	and current SIS HB 370

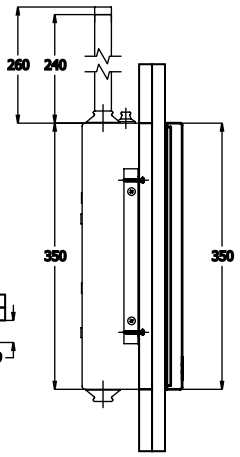
BASIC DIMENSIONS



EXPOSED MOUNTING
SEEN FROM SIDE



1–3 VALVE BOX RECESSED
FROM ABOVE



RECESSED MOUNTING
SEEN FROM SIDE

Note!
Measurements in mm.

MEDICAL SHUT OFF VALVES

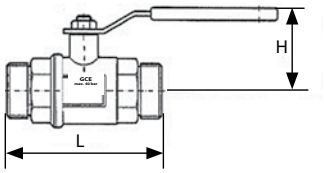
To meet safety requirements, the gas supply to operating rooms etc must be fitted with a device to allow instant shut off. To allow maintenance the gas supply must be controlled by section. To achieve the demands of safety and maintenance, shut-off valves should be fitted in every main line, riser and branch line in the pipework system.

The valves are degreased and blown clean. They can be equipped with unions to be soldered to the copper piping.

Before delivery each valve is individually leak tested. The ball is sealed with washer of PTFE. The stem is sealed with two silicon O–rings or PTFE washer. The valve housings are sealed with an EPDM quality O–ring.

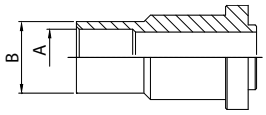
No maintenance – the ball valve does not need services, when necessary the whole valve is exchanged.

SHUT-OFF VALVE INCL 2 PCS WASHER



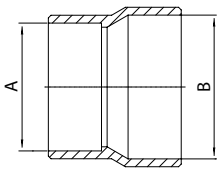
Item No.	Conn. thread	Valve	L (mm)	H(mm)
325196767	ISO – G1/2"	DN10	67	46
325196768	ISO – G3/4"	DN15	77	48
325197794	ISO – G1"	DN20	100	52
325196770	ISO – G1 1/4"	DN25	115	54
325397236	ISO – G1 1/2"	DN32	132	72
325397237	ISO – G2"	DN40	145	84

CONNECTION PARTS (2 CONNECTION NUTS AND 2 CONNECTION PIECES)



Item No.	Material	Valve	A/B mm
325196910	Red brass SS 5204	DN10	10/15
325196911	Red brass SS 5204	DN10	12
325196912	Red brass SS 5204	DN15	15/22
325196913	Red brass SS 5204	DN15	18
325197795	Red brass SS 5204	DN20	22/28
325196914	Red brass SS 5204	DN25	22/35
325196915	Red brass SS 5204	DN25	28
325197324	Red brass SS 5204	DN32	35/42
325197325P	Red brass SS 5204	DN40	42/48

CONNECTION PARTS (SOLDERING ADAPTER DN40-DN50 2 PCS)



Item No.	Material	A/B mm
325196776	Red brass SS 5204	48/54

Order both DN 40 and DN 50 for union enlargement.

SPARE PARTS

Item No.	Denomination	Valve	Thread
325196777P	Labelsheet	DN10, 15, 25, 32, 40	–
325110373P	Washer, 10 pcs	DN10	–
325100729P	Washer, 10 pcs	DN15	–
325113389P	Washer, 10 pcs	DN20	–
325100730P	Washer, 10 pcs	DN25	–
201241192P	O–ring, EPDM, 5 pcs	DN32	–
201241193P	O–ring, EPDM, 5 pcs	DN40	–
202502266	Connection nut, 2 pcs	DN10	ISO – G1/2"
202502268	Connection nut, 2 pcs	DN15	ISO – G3/4"
325113373P	Connection nut, 2 pcs	DN20	ISO – G1"
202502270	Connection nut, 2 pcs	DN25	ISO – G1 1/4"
325112281P	Connection nut, 1 pce	DN40	ISO – G2"

TECHNICAL DATA

Gases:	O_2; Air; N_2;Ar; N_2O; CO_2 (all medical gases)
Material valve housing:	Nickel plated brass
Ball:	Chrome plated brass
Stem:	Nickel plated brass
Max working pressure:	33 bar (3300 kPa)
Tighten proof:	50 bar (5000 kPa)
Regulatory status:	Complies with Medical Devices Directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply System)

NON RETURN VALVE

The non return valve unit is intended for use in medical central gas systems to secure that gas does not flow back from the equipment and pipes through the central gas system. This is very important for example when technical air is taken from medical air pipes for use in laboratories.

The non return valve unit consists of a non return valve (NRV) with flow direction arrow, lockable medical shut off valves, soldering pieces, nuts and a gasspecific medical quick coupling (QC) for medical breathing air. This design makes the NRV very easy to test. The QC can also be used for checking the pressure, doing leak tests and take gas samples. The NRV unit can also be delivered with QC for instrumental air. Contact the manufacturer for more information.

NON RETURN VALVE UNIT

Item No.	Denomination	Total Length
329000825	Non return valve unit medical oxygen DN15	415 mm
325397676	Non return valve unit medical breathing air DN15	415 mm
329000826	Non return valve unit Air–800 DN15	415 mm
325397677	Non return valve unit medical breathing air DN25	505 mm
325397777	Non return valve unit Air–800 DN25	505 mm
325397678	Non return valve unit medical breathing air DN40	932 mm

SEALING BETWEEN NON RETURN VALVE AND CONNECTING PIECE

Item No.	Denomination
944610218P	DN15 O–ring, 10 pcs
325112713P	DN25 Sealing, 10 pcs
325112880P	DN40 O–ring, 10 pcs

TECHNICAL DATA

Opening pressure:	0,06 bar (6 kPa)
Pressure class:	PN16
Regulatory status:	Degreesing for Oxygen use
	no CE–marking

TERMINAL UNITS

gce druva MED

TERMINAL UNIT - MEDIUNIT (DIN)

Medical terminal units provide quick and easy connection of hospital ward gas equipment to the hospital gas source. The type of medical gasoutlets are decided by national standards in each country and sometimes from local requests in each hospital. GCE complies with ISO 7396 and national installation standards with secure products where every product is fully tested in production. Our Medical gas outlets are in accordance with ISO EN 9170-1, ISO EN 9170-2 international standards.

- Wall housing is compatible with all GCE MediUnit standards like DIN, BSI, SS, CZ
- All functional components are brass
- Simple installation
- Fast connection and disconnection
- Designed for medical environment, Small size and Easy to clean
- Complies with colour coding and description by standard
- After 10 years it is possible to upgrade the units with a special upgrade pack
- Recessed, Exposed and Bed head installation versions

Recessed version

Exposed version

Installation plug

Item No.	Denomination	Type	Marking
0732020	O_2 – RECESSED	Pipe ø 10 mm	O_2
0732021	AIR – RECESSED	Pipe ø 10 mm	AIR
0732022	VAC – RECESSED	Pipe ø 10 mm	VAC
0732023	N_2O – RECESSED	Pipe ø 10 mm	N_2O
0732024	CO_2 – RECESSED	Pipe ø 10 mm	CO_2
0732025	O_2 – EXPOSED	Pipe ø 10 mm	O_2
0732026	AIR – EXPOSED	Pipe ø 10 mm	AIR
0732027	VAC – EXPOSED	Pipe ø 10 mm	VAC
0732028	N_2O – EXPOSED	Pipe ø 10 mm	N_2O
0732029	CO_2 – EXPOSED	Pipe ø 10 mm	CO_2

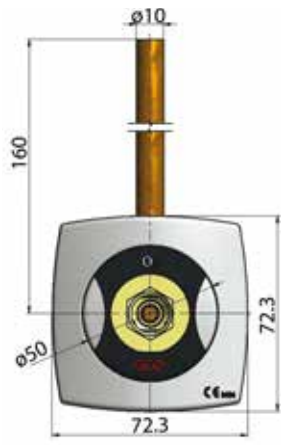
INSTALLATION TOOLS

Item No.	Denomination
MP_00345	QC installation keys
MP_00324	Button remover
MP_01157ST	Pendants/bedhead unit – installation tool
0732040	Installation plug (10 pcs)

TECHNICAL DATA

Gases:	O_2; N_2O; Air, Air-800; CO_2; AGSS; VAC
Dimensions:	Height: 73 mm, Width: 73 mm, Depth: 63 mm
Working pressure:	4–5 bar (breathing gases)
	7–10 bar (instrumental gases)
	(-0,4) – (-0,9) bar (vacuum)
Maximum pressure:	20 bar
Regulatory status:	Complies with Medical Devices Directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply System)
	Complies with EN ISO 9170-1 (Terminal units)
	Complies with EN ISO 9170-2 (Terminal units for AGSS)
	Complies with DIN 13260-2 (DIN gas specific connections)

BASIC DIMENSIONS



Note!
Measurements in mm.

TERMINAL UNIT - MEDIUNIT (SS)

Medical terminal units provide quick and easy connection of hospital ward gas equipment to the hospital gas source. The type of medical gasoutlets are decided by national standards in each country and sometimes from local requests in each hospital. GCE complies with ISO 7396 and national installation standards with secure products where every product is fully tested in production. Our Medical gas outlets are in accordance with ISO EN 9170-1, ISO EN 9170-2 international standards.

- Wall housing is compatible with all GCE MediUnit standards like DIN, BSI, SS, CZ
- All functional components are brass
- Simple installation
- Fast connection and disconnection
- Designed for medical environment, Small size and Easy to clean
- Complies with colour coding and description by standard
- After 10 years it is possible to upgrade the units with a special upgrade pack
- Recessed, Exposed and Bed head installation versions

Recessed version

Exposed version

Installation plug

Item No.	Denomination	Country	Type	Marking
0732058	O_2 – RECESSED	SE	Pipe ø 10 mm	ANDNINGSOXYGEN
0732059	AIR – RECESSED	SE	Pipe ø 10 mm	ANDNINGSLUFT
0732060	VAC – RECESSED	SE	Pipe ø 10 mm	GASUTSUG red
0732061	N_2O – RECESSED	SE	Pipe ø 10 mm	LUSTGAS
0732062	CO_2 – RECESSED	SE	Pipe ø 10 mm	MEDICINSK KOLDIOXID
0732063	AIR-800 – RECESSED	SE	Pipe ø 10 mm	INSTRUMENTLUFT
0732064	AGSS – RECESSED	SE	Pipe ø 10 mm	GASUTLOPP blue/brown
0732065	O_2 – EXPOSED	SE	Pipe ø 10 mm	ANDNINGSOXYGEN
0732066	AIR – EXPOSED	SE	Pipe ø 10 mm	ANDNINGSLUFT
0732067	VAC – EXPOSED	SE	Pipe ø 10 mm	GASUTSUG red
0732068	N_2O – EXPOSED	SE	Pipe ø 10 mm	LUSTGAS
0732069	CO_2 – EXPOSED	SE	Pipe ø 10 mm	MEDICINSK KOLDIOXID
0732070	AIR-800 – EXPOSED	SE	Pipe ø 10 mm	INSTRUMENTLUFT
0732071	AGSS – EXPOSED	SE	Pipe ø 10 mm	GASUTLOPP blue/brown
0732075	O_2 – RECESSED	DK	Pipe ø 10 mm	MEDICINSK OXYGEN
0732076	AIR – RECESSED	DK	Pipe ø 10 mm	MEDICINSK LUFT
0732077	VAC – RECESSED	DK	Pipe ø 10 mm	VAKUUM red
For other configurations (DK, FI, NO) please contact Sales and Product Support (page 2)				

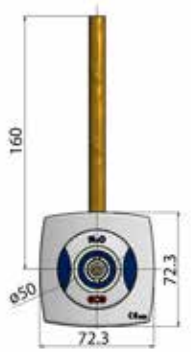
INSTALLATION TOOLS

Item No.	Denomination
MP_00345	QC installation keys
MP_00324	Button remover
MP_01157ST	Pendants/bedhead unit – installation tool
0732040	Installation plug (10 pcs)

TECHNICAL DATA

Gases:	O_2; N_2O; Air, Air–800; CO_2; N_2; Ar; AGSS; VAC
Dimensions:	Height: 73 mm, Width: 73 mm, Depth: 63 mm
Working pressure:	4–5 bar (breathing gases)
	7–10 bar (instrumental gases)
	(-0,4) – (-0,9) bar (vacuum)
Maximum pressure:	20 bar
Regulatory status:	Complies with Medical Devices Directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply System)
	Complies with EN ISO 9170-1 (Terminal units)
	Complies with EN ISO 9170-2 (Terminal units for AGSS)
	Complies with SS 8752430 (SS gas specific connections)

BASIC DIMENSIONS



Note!
Measurements in mm.

Split view

TERMINAL UNIT - MEDIUNIT (BSI)

Medical terminal units provide quick and easy connection of hospital ward gas equipment to the hospital gas source. The type of medical gasoutlets are decided by national standards in each country and sometimes from local requests in each hospital. GCE complies with ISO 7396 and national installation standards with secure products where every product is fully tested in production. Our Medical gas outlets are in accordance with ISO EN 9170-1, ISO EN 9170-2 international standards.

- Wall housing is compatible with all GCE MediUnit standards like DIN, BSI, SS, CZ
- All functional components are brass
- Simple installation
- Fast connection and disconnection
- Designed for medical environment, Small size and Easy to clean
- Complies with colour coding and description by standard
- After 10 years it is possible to upgrade the units with a special upgrade pack
- Recessed, Exposed and Bed head installation versions

Recessed version

Exposed version

Installation plug

Item No.	Denomination	Type	Marking
0732046	O_2 – RECESSED	Pipe ø 10 mm	O_2
0732047	AIR – RECESSED	Pipe ø 10 mm	AIR
0732048	VAC – RECESSED	Pipe ø 10 mm	VAC
0732049	N_2O – RECESSED	Pipe ø 10 mm	N_2O
0732024	O_2/N_2O – RECESSED	Pipe ø 10 mm	O_2/N_2O
0732051	AIR-800 – RECESSED	Pipe ø 10 mm	AIR-800
0732052	O_2 – EXPOSED	Pipe ø 10 mm	O_2
0732053	AIR – EXPOSED	Pipe ø 10 mm	AIR
0732054	VAC – EXPOSED	Pipe ø 10 mm	VAC
0732055	N_2O – EXPOSED	Pipe ø 10 mm	N_2O
0732024	O_2/N_2O – EXPOSED	Pipe ø 10 mm	O_2/N_2O
0732051	AIR-800 – EXPOSED	Pipe ø 10 mm	AIR-800

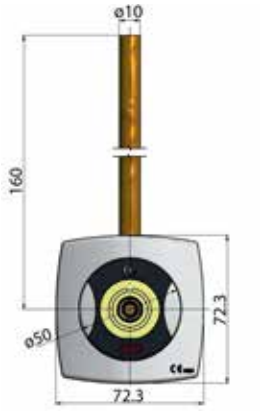
INSTALLATION TOOLS

Item No.	Denomination
MP_00345	QC installation keys
MP_00324	Button remover
MP_01157ST	Pendants/bedhead unit – installation tool
0732040	Installation plug (10 pcs)

TECHNICAL DATA

Gases:	O_2; N_2O; O_2/N_2O; Air; Air-800; AGSS; VAC
Dimensions:	Height: 73 mm, Width: 73 mm, Depth: 63 mm
Working pressure:	4–5 bar (breathing gases)
	7–10 bar (instrumental gases)
	(-0,4) – (-0,9) bar (vacuum)
Maximum pressure:	20 bar
Regulatory status:	Complies with Medical Devices Directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply System)
	Complies with EN ISO 9170-1 (Terminal units)
	Complies with EN ISO 9170-2 (Terminal units for AGSS)
	Complies with BS 5682 (BSI gas specific connections)

BASIC DIMENSIONS



Note!
Measurements in mm.

TERMINAL UNIT - MEDIUNIT (CZ)

Medical terminal units provide quick and easy connection of hospital ward gas equipment to the hospital gas source. The type of medical gasoutlets are decided by national standards in each country and sometimes from local requests in each hospital. GCE complies with ISO 7396 and national installation standards with secure products where every product is fully tested in production. Our Medical gas outlets are in accordance with ISO EN 9170-1, ISO EN 9170-2 international standards.

- Wall housing is compatible with all GCE MediUnit standards like DIN, BSI, SS, CZ
- All functional components are brass
- Simple installation
- Fast connection and disconnection
- Designed for medical environment, Small size and Easy to clean
- Complies with colour coding and description by standard
- After 10 years it is possible to upgrade the units with a special upgrade pack
- Recessed, Exposed and Bed head installation versions

Recessed version

Exposed version

Installation plug

Item No.	Denomination	Type	Marking
0732030	O_2 – RECESSED	Pipe ø 10 mm	O_2
0732031	AIR – RECESSED	Pipe ø 10 mm	AIR
0732032	VAC – RECESSED	Pipe ø 10 mm	VAC
0732033	N_2O – RECESSED	Pipe ø 10 mm	N_2O
0732034	CO_2 – RECESSED	Pipe ø 10 mm	CO_2
0732035	O_2 – EXPOSED	Pipe ø 10 mm	O_2
0732036	AIR – EXPOSED	Pipe ø 10 mm	AIR
0732037	VAC – EXPOSED	Pipe ø 10 mm	VAC
0732038	N_2O – EXPOSED	Pipe ø 10 mm	N_2O
0732039	CO_2 – EXPOSED	Pipe ø 10 mm	CO_2

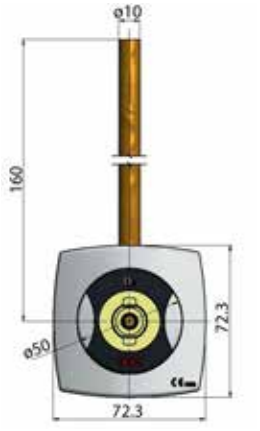
INSTALLATION TOOLS

Item No.	Denomination
MP_00345	QC installation keys
MP_00324	Button remover
MP_01157ST	Pendants/bedhead unit – installation tool
0732040	Installation plug (10 pcs)

TECHNICAL DATA

Gases:	O_2; N_2O; Air, CO_2; AGSS; VAC
Dimensions:	Height: 73 mm, Width: 73 mm, Depth: 63 mm
Working pressure:	4–5 bar (breathing gases)
	7–10 bar (instrumental gases)
	(-0,4) – (-0,9) bar (vacuum)
Maximum pressure:	20 bar
Regulatory status:	Complies with Medical Devices Directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply System)
	Complies with EN ISO 9170-1 (Terminal units)
	Complies with EN ISO 9170-2 (Terminal units for AGSS)
	Complies with CSN 85 2762 (Czech gas specific connections)

BASIC DIMENSIONS



Note!
Measurements in mm.

TERMINAL UNIT - MC70 (SS)

GCE gas outlets type MC 70 generation are self-sealing, i.e. they close automatically when a connected apparatus is removed. The gas outlets are furnished with a quick connection valve which means that the desired apparatus can be connected or disconnected by means of a simple one-step motion.

The MC 70 gas outlets may be recessed in the wall or mounted in a panel.

All MC 70 gas outlets have the same design but different colour codings and labels for different gases and of course gas specific non-interchangeable quick connection valves.

Special efforts have been made to make the maintenance of the gas outlets as easy as possible.

- No special tools
- Maintenance valve of ball-type
- Few components

Furthermore the MC70 are made according to standard SS EN 8752430 for quick connections and international standard SS EN ISO 9170-1 for terminal units. This means that the gas components are non-interchangeable in every maintenance connection point.

The gas outlet is delivered with separate packages for quick connection valve, valvebody, plastic cover with name plate, push-release plate etc. To make installation easier, the valve body has a tightening plug mounted for convenient pressure testing.

All necessary mounting details such as brackets, screws etc. are included in the packages. Detailed instructions are also part of the delivery. When mounting the gas outlet in a recessed way the gas outlet can be mounted either in the front wall or in the rear wall, depending on which is first set up. Recessed and exposed instalation set is necessary orded separately.

Item No.	Denomination	Type	Marking
325397281	O_2 – BEDHEAD	Pipe ø 8 mm	O_2
325397282	N_2O – BEDHEAD	Pipe ø 8 mm	N_2O
325397283	AIR – BEDHEAD	Pipe ø 8 mm	Air
325397284	VAC – BEDHEAD	Pipe ø 8 mm	VAC yellow
325397285	AGSS – BEDHEAD	Pipe ø 8 mm	AGSS purple
325397286	AIR–800 – BEDHEAD	Pipe ø 8 mm	Air–800
325397287	N_2 – BEDHEAD	Pipe ø 8 mm	N_2
325397288	CO_2 – BEDHEAD	Pipe ø 8 mm	CO_2

FOR RECESSED MOUNTING ADD

Item No.	Denomination
325396031	Recessed installation set

FOR EXPOSED MOUNTING ADD

Item No.	Denomination
325396034	Exposed installation set

INSTALLATION TOOL

Item No.	Denomination
325197290	Combi tool

SERVICE KIT

Item No.	Denomination
325197222	Sparepart kit

TECHNICAL DATA

Gases:	O_2; N_2O; Air, Air–800; CO_2; N_2; Ar; AGSS; VAC
Dimensions:	Diameter: 90 mm, Depth: 60 mm
Working pressure:	4–5 bar (breathing gases)
	7–10 bar (instrumental gases)
	(-0,4) – (-0,9) bar (vacuum)
Maximum pressure:	20 bar
Regulatory status:	Complies with Medical Devices Directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply System)
	Complies with EN ISO 9170-1 (Terminal units)
	Complies with EN ISO 9170-2 (Terminal units for AGSS)
	Complies with SS 8752430 (SS gas specific connections)

LABELS MC70

Item No.	Denomination	Languages
548234A26760	Circular Label O_2 White 85/55 TU SS	–
325113069	Circular Label MEDICINSK OXYGEN White 85/55 TU SS	SE
548234A26770	Circular Label N_2O Blue 85/55 TU SS	–
325113070	Circular Label DINITROGENOXID N_2O Blue 85/55 TU SS	DK
325113071	Circular Label MEDICINSK LUFT Black/White 85/55 TU SS	SE
548234A26780	Circular Label Air Black/White 85/55 TU SS	–
548234A37600	Circular Label Air–800 Black/White 85/55 TU SS	–
325113074P	Circular Label MEDICINSK KULDIOXID Grey 85/55 TU SS	DK
548234A26790	Circular Label VAC Red 85/55 TU SS	–
325113072	Circular Label VAC Red 85/55 TU SS	DK
548234A26800	Circular Label VAC Yellow 85/55 TU SS	–
548234A40850	Circular Label GASUTLOPP Blue/Brown 85/55 TU SS	SE
548234A40860	Circular Label GASUDLØB Blue/Brown 85/55 TU SS	DK
548234A40870	Circular Label GASSUTLØP Blue/Brown 85/55 TU SS	NO
548234A40880	Circular Label KAASUJEN POISTO Blue/Brown 85/55 TU SS	FI
548234A26810	Circular Label AGSS Purple 85/55 TU SS	–

TERMINAL UNIT - AFNOR

MEDICONNECT DC allow a safe and fast connection of medical devices to an existing pipeline system (flowmeter, vacuum regulators,...)
These terminal units can be manufactured to be either surface or recessed mounted, for a whole range of medical gases:

- oxygen
- medical air
- vacuum
- nitrous oxide
- nitrogen
- carbon dioxide

Item No.	Denomination	Type	Marking
K007061	O_2 – EXPOSED	Pipe ø 10 mm	O_2
K007062	VAC – EXPOSED	Pipe ø 10 mm	VIDE
K007063	N_2O – EXPOSED	Pipe ø 10 mm	N_2O
K007064	AIR – EXPOSED	Pipe ø 10 mm	AIR
K007065	N_2 – EXPOSED	Pipe ø 10 mm	N_2
K007066	CO_2 – EXPOSED	Pipe ø 10 mm	CO_2
K007070	AIR-800 – EXPOSED	Pipe ø 10 mm	AIR-800
K007081	O_2 – RECESSED	Pipe ø 10 mm	O_2
K007082	VAC – RECESSED	Pipe ø 10 mm	VAC
K007083	N_2O – RECESSED	Pipe ø 10 mm	N_2O
K007084	AIR – RECESSED	Pipe ø 10 mm	AIR

INSTALLATION TOOL

Item No.	Denomination
K007091	Multi-functions Spanner

SERVICE KIT

Item No.	Denomination	Type
K292409	Check valve assy, ø 7 mm	O_2 /N_2O /Air /CO_2
K292410	Check valve assy, ø 8 mm	VAC /N_2 /O_2+CO_2
K290506	Check valve assy, ø 6 mm	O_2+N_2 / O_2+N_2O
K292404	Housing check valve	All gases
K303099	Quick coupling sealing washer	All gases

TECHNICAL DATA

Gases:	O_2; N_2O; Air, Air–800; CO_2; N_2; VAC
Dimensions:	65×65, Depth: 50 mm
Working pressure:	4–5 bar (breathing gases)
	7–10 bar (instrumental gases)
	(-0,4) – (-0,9) bar (vacuum)
Maximum pressure:	20 bar
Regulatory status:	Complies with Medical Devices Directive 93/42/EEC
	Complies with EN ISO 7396-1 (Central Gas Supply System)
	Complies with EN ISO 9170-1 (Terminal units)
	Complies with NF S90-116 (AFNOR gas specific connections)
	Complies with FD S90-119 (AFNOR – AIR-800 gas specific connections)

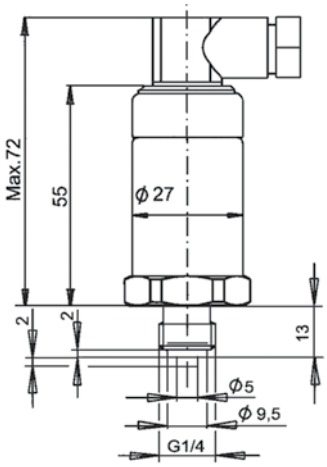
PRESSURE TRANSMITTER

Small compact pressure transmitter with good performance.
Suitable for mobile applications when vibration reliable sensors are needed.
Compact connectors.

- Max. deviation 1,0%
- For relative pressure
- Pressure range from 0...0,25 bar to 0...1000 bar
- Degreased for Oxygen

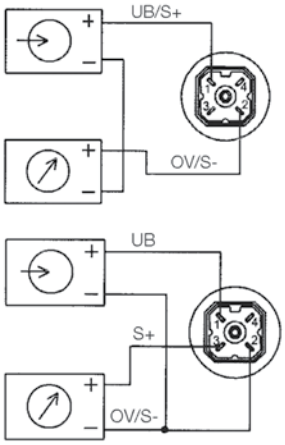
Item No.	Denomination	Pressure	Thread	Cable
325112798P	Pressure transmitter	0–16 bar	G1/4"	1 m
325112799P	Pressure transmitter	0–25 bar	G1/4"	1 m
325112800P	Pressure transmitter	0–250 bar	G1/4"	1 m

MEASUREMENTS



Note!
Measurements in mm.

CONNECTION



TECHNICAL DATA

Performance:	Pressure range ≤16 bar
	Piezoresistive sensor
	Pressure range ≥25 bar
	hin film-sensor
Max. deviation:	≤1,0% of end value according to DIN 16086≤0,5% BFSL)
Liniarity and hysteresis:	Included in above
Repeat accurasy:	≤±0,05% of end value
Long term:	≤±0,2% of end value per annum
Overpressure sensitivity:	≤16 bar 3,5×; ≤600 bar 2×; >600 bar 1,5×
Underpressure sensitivity:	Insensitive for vacuum
Response time:	≤1 ms för 10–90% of range
Pressure connection:	G1/4“ External thread
Sensor body:	Acid-proof stainless steel SIS2350
Parts in connection	
with the medium:	Acid-proof stainless steel SIS2350
Mediun temperature:	-30°C till +100°C
Surrounding temperature:	-30°C till +85°C
Temperature deviation:	±0,3% of measure range/10K for zero and measure range
Temp.compensated range:	0°C till +80°C
Signal alternative:	4–20 mA, 0–10V
Supply Voltage:	Signal 4–20 mA 10–30V DC
	Signal 0–10V 14–30V DC
Max. permitted load for:	RA[Ω]=UB[V]–10V signal 4–20 mA 0,02A
Max. permitted load for:	RA>10kΩ signal 0–10V
Elektrcal connection:	Contact Hirschmann–Mini G4a1MMT Polarity reversal safe,
	short circuit and overload protected
Adjustability:	Not adjustable
Protective class :	IP65 acc. to EN 60529/IEC529
EMC–data:	Emmision EN 61326
	Immunity EN 61326
Weight:	0,10 kg

	2–wire mA	3–wire V DC
Supply voltage UB+	1	1
Supply voltage OV-	2	2
Signal S+		3
Signal S-		2

IMPORTANT INFORMATION AND RECOMMENDATIONS

SAFETY INSTRUCTIONS

The objective of the company GCE is not only customer satisfaction with reliable products but also safe operation of all equipment associated with medicinal gases. Therefore is it necessary to observe all instructions for the use and, particularly, the following safety principles:

1. Concentrated oxygen shall not come into contact with oils, grease and impurities to prevent its self-ignition.
2. Pressure cylinders shall be always secured against fall, exposure to heat and manipulation by unauthorized person.
3. Smoking and open fire manipulations are strictly prohibited in the proximity of pressure cylinders or gas equipment.
4. Personnel working with classified gas equipment shall be properly trained.

CERTIFICATION

GCE has introduced and certified its quality management system according to IS013485:2003 for medical devices.

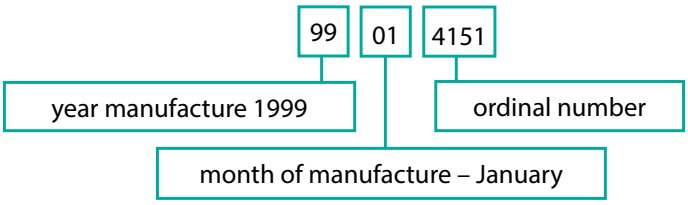
The products meet the requirements of the EU Directive 93/42/EEC and they are certified and provided with the CE mark.

Any requirements for other technical parameters shall be discussed with the manufacturer.

PRODUCT SERIAL NUMBER MARKING

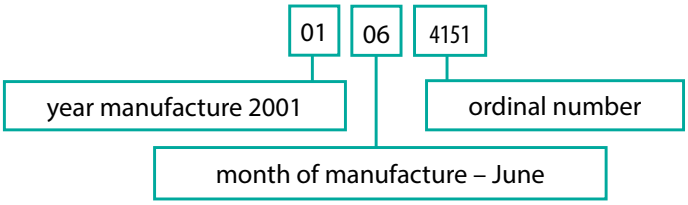
EXAMPLE FOR PRODUCTS MADE BY THE BEGINNING OF 1999:

Serial number 99014151



EXAMPLE FOR PRODUCTS MADE DURING 2000:

Serial number 010616539



CERTIFICATES

DNV BUSINESS ASSURANCE
MANAGEMENT SYSTEM CERTIFICATE

Certificate No. 109396-2012-AQ-CZS-NA

This is to certify that the Management System of:

GCE Holding AB

Källvattengatan, SE-200 21, Malmö, Sweden

With sites as per attachment

has been found to conform to the standard:

ISO 9001:2008

This Certificate is valid for the following product or service ranges:

Design, production, sales and servicing of equipment for using of technical gases in industry. Pressure regulators, closing, combined and special valves, cutting, welding, heating and brazing torches, safety equipment, specialty torches, fittings, accessories for industrial purposes.

Initial Certification date: 28 February 1997

This Certificate is valid until: 28 February 2015

The audit has been performed under the supervision of
Evangelos Tavandžis
Lead Auditor

MSYS 002

Place and date: Høvik, 04 July 2014

for the Accredited Unit:
DET NORSKE VERITAS CERTIFICATION AS, NORWAY

Bjørg Synnøve Nesgård
Management Representative

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.
This Certificate has been digitally signed. See www.dnv.com/digitalsignatures for more info
HEAD OFFICE. Det Norske Veritas AS, Veritasveien 1, 1322 Hovik, Norway. Tel: +47 67 57 99 00 Fax: +47 67 57 99 11 - www.dnv.com

DNV BUSINESS ASSURANCE
MANAGEMENT SYSTEM CERTIFICATE

Certificate No. 109399-2012-AQ-CZS-NA

This is to certify that the Management System of:

GCE Holding AB

Källvattengatan 9, SE-200 21, Malmö, Sweden

With sites as per attachment

has been found to conform to the standard:

NS-EN-ISO 13485:2012

This Certificate is valid for the following product or service ranges:

Design, production, sales and servicing of medical devices for using of medical gases in health service. Pressure regulators, terminal units, suction equipment, medical hoses, cylinder and combi valves and flow meters for medical gases.

Initial Certification date: 28 February 1997

This Certificate is valid until: 28 February 2015

The audit has been performed under the supervision of
Evangelos Tavandžis
Lead Auditor

MSYS 002

Place and date: Høvik, 04 July 2014

for the Accredited Unit:
DET NORSKE VERITAS CERTIFICATION AS, NORWAY

Bjørg Synnøve Nesgård
Management Representative

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HEAD OFFICE. Det Norske Veritas AS, Veritasveien 1, 1322 Hovik, Norway. Tel: +47 67 57 99 00 Fax: +47 67 57 99 11 - www.dnv.com

DNV BUSINESS ASSURANCE
EC CERTIFICATE – FULL QUALITY ASSURANCE SYSTEM

Certificate No. 73547-2010-CE-CZS-NA 5.0

This Certificate consists of 3 pages

This is to certify that the Quality Management System of

GCE s.r.o.

Žižkova 381, 583 81 Chotěboř, Czech Republic

for design, production and final product inspection/testing of

Medical Devices for use with Medical Gases

has been assessed with respect to
the conformity assessment procedure described in Article 11.3.a and Annex II excluding section 4 (Module H) of Council Directive 93/42/EEC on Medical Devices, as amended, and found to comply

Further details are given overleaf

Place and date: Høvik, 04 March 2013

For DET NORSKE VERITAS CERTIFICATION AS NORWAY

Eugenie Winger Husebye
Certification Manager

Notified Body No.: 0434

This Certificate is valid until: **30 March 2015**

Aud Løken Eiklid
Technical Reviewer

This Certificate has been digitally signed. See www.dnv.com/digitalsignatures for more info

Notice: The certificate is subject to terms and conditions overleaf. Any significant changes in design or construction may render this certificate invalid.

Det Norske Veritas Certification AS, Veritasveien 1, 1322 Hovik, Norway. Tel: +47 67 57 9900 Fax: +47 6757 9911 www.dnv.com

Page 1 of 3

Note!
Measurements in mm.

TECHNICAL INSTRUCTION
TPED/ADR T224-B2 REV 4

Inspecta

Appendix 2: Certificate

INTERNAL PRODUCTION CONTROL

Approval of internal production control according to **Swedish Civil Contingencies Agency** (MSB) ordinance MSBFS 2011:3, 1.8.7.6, ADR(Directive 2010/35/EU)

Inspecta Sweden hereby approves that manufacturer:

GCE, s.r.o, CZ-583 81 Chotebor, Czech Republic may carry out the internal production control for the in [Enclosure 1] specified equipment(s) according to Swedish Civil Contingencies Agency (MSB) ordinance MSBFS 2011:3, 1.8.7.6, ADR(Directive 2010/35/EU)

Prerequisite for Inspecta Sweden AB's approval:

The by Inspecta Sweden assessed Procedures and Specifications [Enclosure 2] for the internal production control may not be changed without Inspecta Sweden's written permission.

Periodic audits must be carried out twice a year by Inspecta Sweden or by an Inspecta Sweden appointed representative DET NORSKE VERITAS CZ s.r.o.

Responsible for the internal production control, Petra Stastna, GCE, Chotebor.

This approval is drawn up 2014-12-18 by, Hans Wennberg, Inspecta Sweden AB

Valid until 2015-07-31 provided that above conditions and regulation MSBFS 2011:3, 1.8.7.6, ADR(Directive 2010/35/EU) are fully met.
Any changes in MSBFS 2011:3, ADR(Directive 2010/35/EU) will invalidate this document.

Inspecta Sweden AB
Notified Body 0409

Utfärdad av:	Granskad av:	Godkänd av:	
Mikael Rahn	Gunnar Larsson	Anders Johansson	
Revision:	Datum:	Nr:	Sida:
2:1	2015-07-06	T223b	1 av 1

GENERAL BUSINESS TERMS AND CONDITIONS

PREAMBLE

1. These General Conditions shall apply when the parties agree in writing or otherwise thereto. Deviations from the Conditions shall not apply unless agreed in writing.
When used in these conditions the term "written" or "in writing" refers to a document signed by both parties or a letter, fax, electronic mail or other means agreed by the parties.

PRODUCT INFORMATION

2. Data in product information and price lists are binding only to the extent that they are expressly referred to in the contract.

TECHNICAL DOCUMENTS AND TECHNICAL INFORMATION

3. All drawings and other technical documents regarding the goods or their manufacture submitted by one party to the other, prior or subsequent to the formation of the contract, shall remain the property of the submitting party.
Drawings, technical documents or other technical information received by one party shall not, without the consent of the other party, be used for any other purpose than that for which they were submitted. They may not without the consent of the other party be copied, reproduced, transmitted or otherwise communicated to a third party.
4. The Seller shall, not later than by delivery of the goods, free of charge provide the Buyer with one copy, or the larger number of copies that may have been agreed, of drawings and other technical documents, which are sufficiently detailed to permit the Buyer to carry out installation, commissioning, operation and maintenance (including running repairs) of all parts of the goods.
The Seller shall not, however, be obliged to supply manufacturing drawings of the goods or spare parts.

DELIVERY TEST

5. Where a delivery test has been agreed, it shall, unless otherwise agreed, be carried out where the goods are manufactured.
If technical requirements for the test have not been agreed, the test shall be carried out in accordance with general practice in the industry concerned in the country where the goods are manufactured.
6. The Seller shall notify the Buyer in writing of the delivery test in sufficient time to permit the Buyer to be present at the test.
If the Buyer has received such notice, the test may be carried out even if the Buyer is not represented at the test.
The Seller shall record the test. The test report shall be sent to the Buyer. The report shall, unless otherwise shown by the Buyer, be considered to correctly describe the execution of the test and its results.
7. If at the delivery test the goods are found not to be in accordance with the contract, the Seller shall as soon as possible ensure that the goods comply with the contract. If so required by the Buyer a new test shall thereafter be carried out. The Buyer may not, however, require a new test if the defect was insignificant.
8. If no other division of the costs has been agreed, the Seller shall bear all costs for delivery tests carried out where the goods are manufactured. The Buyer shall, however, at such delivery tests bear all costs for his representatives, including costs for travel and subsistence.

DELIVERY

9. Where a trade term has been agreed, it shall be interpreted in accordance with the INCOTERMS in force at the formation of the contract. If no trade term is specifically agreed, the delivery shall be Ex Works.

TIME FOR DELIVERY. DELAY

10. If, instead of a fixed date for delivery, the parties have agreed on a period of time within which delivery shall take place, such period shall start to run at the formation of the contract.
11. If the Seller finds that he will not be able to deliver the goods at the agreed time or if delay on his part seems likely, he shall without undue delay notify the Buyer thereof in writing, stating the reason for the delay and if possible the time when delivery can be expected. If the Seller fails to give such notice, he shall, regardless of the provisions of Clauses 13 and 14, reimburse the Buyer for any additional expenses, which the latter incurs and which he would have avoided, had he received notice in time.
12. If delay in delivery is caused by a circumstance which under Clause 36 constitutes ground for relief or by an act or omission on the part of the Buyer, including suspension by the Seller under Clause 18, the time for delivery shall be extended by a period, which is reasonable having regard to the circumstances in the case. The time for delivery shall be extended even if the reason for delay occurs after the originally agreed time for delivery.
13. If the Seller fails to deliver the goods on time, the Buyer is entitled to liquidated damages from the date on which delivery should have taken place.
The liquidated damages shall be payable at a rate of 0.5 per cent of the agreed price for each complete week of delay. If the delay concerns only a part of the goods, the liquidated damages shall be calculated on the part of the price which is properly attributable to the part of the goods which cannot be taken in use due to the delay.
The liquidated damages shall not exceed 7.5 per cent of that part of the price on which it is calculated.
The liquidated damages become due at the Buyer's written demand but not before all of the goods have been delivered or the contract is terminated under Clause 14.
The Buyer loses his right to liquidated damages if he has not lodged a written claim for such damages within six months after the time when delivery should have taken place.
14. If the Buyer is entitled to maximum liquidated damages under Clause 13, and the goods are still not delivered, the Buyer may in writing demand delivery within a final reasonable period which shall not be less than one week.
If the Seller fails to deliver within such final period and this is not due to any circumstance for which the Buyer is responsible, the Buyer may, by written notice to the Seller, terminate the contract in respect of that part of the goods which cannot be taken in use due to the delay.
In case of such termination the Buyer shall also be entitled to compensation for the loss he suffers because of the Seller's delay to the extent that the loss exceeds the maximum of liquidated damages which the Buyer may claim under Clause 13. This compensation shall not exceed 7.5 per cent of that part of the price which is properly attributable to the part of the goods in respect of which the contract is terminated.
The Buyer shall also have the right to terminate the contract by written notice to the Seller if it is clear that there will be a delay, which under Clause 13 would entitle the Buyer to maximum liquidated damages. In case of termination on this ground the Buyer shall be entitled to both maximum liquidated damages and compensation under the third paragraph of this Clause.
Except for liquidated damages under Clause 13 and termination of the contract with limited compensation under this Clause 14, all other claims in respect of the Seller's delay shall be excluded.
This limitation of the Seller's liability shall not apply, however, where the Seller has been guilty of gross negligence.
15. If the Buyer finds that he will be unable to accept delivery of the goods on the agreed date, or if delay on his part seems likely, he shall without undue delay notify the Seller thereof in writing stating the reason for the delay and, if possible, the time when he will be able to accept delivery.
If the Buyer fails to accept delivery on the agreed date, he shall nevertheless make any payment which is dependent on delivery as if the goods in question had been delivered. The Seller shall arrange storage of the goods at the Buyer's risk and expense. If the Buyer so requires, the Seller shall insure the goods at the Buyer's expense.
16. Unless the Buyer's failure to accept delivery as referred to in Clause 15 is due to any such circumstance as described in Clause 36, the Seller may by written notice require the Buyer to accept delivery within a reasonable period.
If, for any reason for which the Seller is not responsible, the Buyer fails to accept delivery within such period, the Seller may, by written notice to the Buyer, terminate the contract in respect of that part of the goods which is ready for delivery but has not been delivered due to the Buyer's default. The Seller shall then be entitled to compensation for the loss he has suffered by reason of the Buyer's default. The compensation shall not exceed that part of the price which is properly attributable to the part of the goods in respect of which the contract is terminated.

PAYMENT

17. Unless otherwise agreed, the agreed purchase price, together with value added tax, if any, shall be invoiced with one third at the formation of the contract, one third when the Seller gives written notice that the bulk of the goods are ready for delivery. Final payment shall be invoiced at delivery of the goods. The invoiced amount becomes due 30 days after the date of the invoice.
18. If the Buyer fails to pay, the Seller shall be entitled to interest from the due date at the rate of interest determined by the law on late payments in the Seller's country.
If the Buyer fails to pay by the due date, the Seller shall also, after having notified the Buyer in writing thereof, suspend performance of his contractual obligations until payment is made.
19. If the Buyer has failed to pay the amount due within three months after the due date, the Seller may terminate the contract by written notice to the Buyer and, in addition to interest on late payment, claim compensation for the loss he has suffered. The compensation shall not exceed the agreed purchase price.

RETENTION OF TITLE

20. The goods shall remain the property of the Seller until paid for in full, to the extent that such retention of title is valid.

LIABILITY FOR DEFECTS

21. The Seller shall, in accordance with the provisions of Clauses 23–33 below, remedy any defect in the goods resulting from faulty design, materials or workmanship.
The Seller is not liable for defects arising out of material provided by the Buyer or a design stipulated or specified by him.
22. The Seller's liability does not cover defects caused by circumstances, which arise after the risk has passed to the Buyer.
The liability does not, for example, cover defects due to conditions of operation deviating from those anticipated in the contract or to improper use of the goods. Nor does it cover defects due to faulty maintenance or incorrect installation from the Buyer's side, alterations undertaken without the Seller's written consent or faulty repairs by the Buyer. Finally the liability does not cover normal wear and tear or deterioration.
23. The Seller's liability is limited to defects which appear within a period of one year from the date of delivery of the goods. If the goods are used more intensely than agreed, this period shall be reduced proportionately.
24. For parts, which have been repaired or replaced under Clause 21, the Seller shall have the same liability for defects as for the original goods for a period of one year. For other parts of the goods the liability period referred to in Clause 23 shall be extended only by the period during which the goods could not be used due to a defect for which the Seller is liable.
25. The Buyer shall notify the Seller in writing of a defect without undue delay after the defect has appeared and in no case later than two weeks after the expiry of the liability period defined in Clause 23 as supplemented by Clause 24. The notice shall contain a description of how the defect manifests itself. If the Buyer fails to notify the Seller in writing within the above time limits, he loses his right to make any claim in respect of the defect. If there is reason to believe that the defect may cause damage, notice shall be given forthwith. If notice is not given forthwith, the Buyer loses the right to make any claim based on damage which occurs and which could have been avoided if such notice had been given.
26. After receipt of a written notice under Clause 25, the Seller shall remedy the defect without undue delay. Within this limit the time for remedial work shall be chosen in order not to interfere unnecessarily with the Buyer's activities. The Seller shall bear the costs as specified in Clauses 21–32.
Remedial work shall be carried out at the Buyer's premises unless the Seller finds it appropriate to have the defective part or the goods sent to him for repair or replacement at his own premises.
The Seller shall carry out dismantling and re-installation of the part if this requires special knowledge. If such special knowledge is not required, the Seller has fulfilled his obligations in respect of the defect when he delivers a duly repaired or replaced part to the Buyer.
27. If the Buyer gives such notice as referred to in Clause 25, and no defect is found for which the Seller is liable, the Seller shall be entitled to compensation for the work and costs which he has incurred as a result of the notice.
28. If remedy of the defect requires intervention in other equipment than the goods, the Buyer shall be responsible for any work or costs caused thereby.
29. All transports in connection with repair or replacement shall be at the Seller's risk and expense.
The Buyer shall follow the Seller's instructions regarding how the transport shall be carried out.
30. The Buyer shall bear the increase in costs for remedying a defect which the Seller incurs when the goods are located elsewhere than at the destination stated in the contract or – if no destination has been stated – the place of delivery.
31. Defective parts, which have been replaced under Clause 21, shall be placed at the Seller's disposal and shall become his property.
32. If the Seller fails to fulfil his obligations under Clause 26 within a reasonable time, the Buyer may by written notice require him to do so within a final time. If the Seller fails to fulfil his obligations within that time limit, the Buyer may at his option:
a) have the necessary remedial work carried out and/or have new parts manufactured at the Seller's risk and expense, provided that the Buyer proceeds in a reasonable manner, or
b) demand a reduction of the agreed purchase price not exceeding 15 per cent thereof.
If the defect is substantial, the Buyer may instead terminate the contract by written notice to the Seller. The Buyer shall also be entitled to such termination where the defect remains substantial after measures referred to in a). In case of termination, the Buyer shall be entitled to compensation for the loss he has suffered. The compensation shall not, however, exceed 15 per cent of the agreed purchase price.
33. Regardless of the provisions of Clauses 21–32, the Seller shall have no liability for defects in any part of the goods for more than two years from the start of the liability period referred to in Clause 23.
34. The Seller shall have no liability for defects save as stipulated in Clauses 21–33. This applies to any loss the defect may cause, such as loss of production, loss of profit and other consequential economic loss. This limitation of the Seller's liability shall not apply, however, if he has been guilty of gross negligence.

LIABILITY FOR DAMAGE TO PROPERTY CAUSED BY THE GOODS

35. The Buyer shall indemnify and hold the Seller harmless to the extent that the Seller incurs liability towards any third party in respect of loss or damage for which the Seller is not liable towards the Buyer according to the second and third paragraphs of this Clause.
The Seller shall have no liability for damage caused by the goods:
a) to any (movable or immovable) property, or consequential loss due to such damage, occurring while the goods are in the Buyer's possession, or
b) to products manufactured by the Buyer or to products of which the Buyer's products form a part.
The above limitations of the Seller's liability shall not apply if he has been guilty of gross negligence.
If a third party lodges a claim for compensation against Seller or Buyer for loss or damage referred to in this Clause, the other party to the contract shall forthwith be notified thereof in writing.
The Seller and the Buyer shall be mutually obliged to let themselves be summoned to the court or arbitral tribunal which examines claims against either of them based on damage or loss alleged to have been caused by the goods. The liability as between the Seller and the Buyer shall, however, always be settled by arbitration in accordance with Clause 39.

GROUNDS FOR RELIEF (FORCE MAJEURE)

36. The following circumstances shall constitute grounds for relief if they impede the performance of the contract or makes performance unreasonably onerous: industrial disputes and any other circumstance beyond the control of the parties, such as fire, war, mobilization or military call up of a comparable scope, requisition, seizure, trade and currency restrictions, insurrection and civil commotion, shortage of transport, general shortage of materials, restrictions in the supply of power and defects or delays in deliveries by subcontractors caused by any such circumstance as referred to in this Clause.
The above described circumstances shall constitute grounds for relief only if their effect on the performance of the contract could not be foreseen at the time of formation of the contract.
37. The party wishing to claim relief under Clause 36 shall without delay notify the other party in writing on the intervention and on the cessation of such circumstance.
If grounds for relief prevent the Buyer from fulfilling his obligations, he shall reimburse the expenses incurred by the seller in securing and protecting the goods.
38. Notwithstanding other provisions of these General Conditions, either party shall be entitled to terminate the contract by notice in writing to the other party, if performance of the contract is delayed more than six months by reason of any grounds for relief as described in Clause 36.

DISPUTES. APPLICABLE LAW

39. Disputes arising out of or in connection with the contract shall not be brought before the court, but shall be finally settled by arbitration in accordance with the law on arbitration applicable in the Seller's country.
40. All disputes arising out of the contract shall be judged according to the law of the Seller's country.

GCE Group is one of the world's leading companies in the field of gas control equipment. The headquarters are in Malmö, Sweden, and the two major supply units are located in Europe and Asia.

The company operates 15 subsidiaries around the world and employs more than 900 people. GCE Group includes four business areas – Cutting & Welding Technologies, Valves, Healthcare and Druva.

Today's product portfolio corresponds to a large variety of applications, from single pressure regulators and blowpipes for cutting and welding to sophisticated gas supply systems for medical and electronics industry applications.

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