



MEDICAL GAS SYSTEMS & DEVICES OVERVIEW

Technology for a Better Future



Company Overview



Genstar Technologies Company, Inc (GENTEC®), founded in 1969, is a world class manufacturer of high quality apparatus for high purity, medical and industrial markets. For the medical industry, GENTEC® provides high quality products such as medical gas flow control systems, regulators, terminal-units, architectural products, and gas alarm systems.

Quality Assurance



GENTEC® manufactures its products in an ISO 9001: 2000 and ISO 13485 listed 150,000 square foot manufacturing facility in order to ensure the highest quality.

Corporate Culture & Management, Training

GENTEC® strives to instill employee confidence, team spirit, enthusiasm, and selfimprovement. The company culture enables employees to provide outstanding customer service, excellent product quality, and continuous technological innovation. Gentec believes in constant improvement to maintain its competitive edge. The company continues to invest considerable time and effort in developing comprehensive training programs to help its employees to fully realize their potential. All new employees take part in a series of training programs within the first two months of their employment.

Core Competency

GENTEC®'s core competency is rooted in the research, development, and production of components, equipment, and systems. The researchand development team consists of professionals from various fields, such as chemical engineering, material science, mechanical engineering, electrical engineering, and software programming.

Advanced Laboratorial Testing Devices

The state-of-the-art laboratory features a coordinate measuring system, flow rate measurement system, oxygen concentration monitor, micro-hardness tester, metallurgical microscope, spring testing machine, helium-leak detector, and profilometer. These high-end devices ensure product performance and quality.



04.~07. Medical Gas Source Equipment



08.~09. Monitoring, Alarm & Control Systems



10.~15. Medical Gas Outlets & Bedhead Units



16.~19. Oxygen & Humidification Therapy



20.~22. Suction Therapy



23.~26. Respiratory Care



27.~28. EMS Gas Flow Solutions

Medical Gas Flow Solutions



① Medical Vacuum Systems

GENTEC® Medical Vacuum System is designed to create a steady suction system to remove unwanted fluids or gases from hospital / laboratory work areas.

② Medical Air Systems

GENTEC® Medical Air System is designed to provide medical breathing air and instrument air for hospital and medical institutions.

③ Medical Alarm Systems

GENTEC® Medical Alarm System conducts network monitoring over all the gas source equipments and pipelines in the hospital through the intelligent network monitoring system and analyzes the gas usage in each area.



④ Medical Gas Manifold Systems

GENTEC® Medical Gas Manifold System is designed to supply an uninterrupted flow of medical gas from high pressure cylinders or liquid storage tanks.

⑤ Medical Pipeline Distribution Systems

GENTEC® Medical Pipeline Distribution System delivers the medical gases to the gas use points in a clean, safe and reliable manner. The copper tubes used for the pipeline system comply with ASTM B819 standard.

⑥ Medical Gas Outlets

GENTEC® offers a complete line of medical gas outlets, including American, French, British, German, Australian, and Japanese standards etc. The medical gas outlets are UL and CE listed.



GENTEC
www.gentec.com.cn

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MEDICAL GAS

SOURCE EQUIPMENT

Medical Vacuum Systems

- Seven types of vacuum pumps available:
Oil-sealed Rotary Vane, Dry claw vane, Specialized Oil-sealed Rotary Vane, Specialized Dry Claw Vane, Dry Rotary Vane, Liquid Ring, Side Channel blower
- Advanced control system with touch screen monitor, easy to operate
- NFPA 99: 2005 and NEC compliant, UL approved



Medical Air Compressor Systems

- Two types of compressor available:
Oil-less Reciprocating and Scroll Type
- Duplex, Triplex, and Quadruplex available
- Advanced control system with touch screen monitor, easy to operate
- NFPA 99:2005 and NEC compliant, UL approved



Cryogenic Gas Storage Tank

- Cryogenic storage tank is applicable to the storage and use of cryogenic gas: liquid oxygen, liquid nitrogen and liquid argon etc
- Strictly control the surface cleanliness degree of heat insulated layers and the selection of material in the production.
- Advanced pipeline process design: refined liquid-filling system, efficient pressure regulating circuit and reliable double safety relief



5500M Series Automatic Manifold System

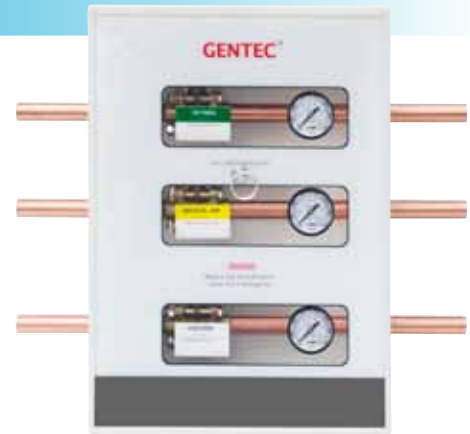


GENTEC® 5500M series automatic changeover manifold provides continuous gas flow. The display includes LED lights to indicate working conditions and alarms. The manifold can changeover automatically, even in the event of a power failure. It is NFPA 99 and ISO 7396 compliant. This product is patented.

Other manifolds: 5400 Series Semi-Automatic Manifold / 5500MD Series Automatic Digital Display Manifold / 5700M Series Automatic Cryogenic Manifold

Zone Valve Box

- Designed to house up to six shut-off valves, where each valve controls a different gas
- Gas Service is distinguished by label color
- Copper tubes are welded to prevent leakage
- Window may be detached for maintenance of shutoff valves
- Wall mount style
- Parts are cleaned according to CGA G-4.1, tubings are 100% tested for leakage
- NFPA 99 compliant



Area Valve Service Unit

- Includes shut-off valve and check valve with NIST connection, easy to operate and maintain
- Steel enclosure for durability
- Pressure gauges included to provide accurate reading of pressure
- HTM 02-01 compliant

Pressure Control Panel

- Designed for surgical tools and equipments
- Diaphragm-sensed regulator ensures a consistent outlet pressure
- CGA specified inlet connection
- Gas Service: N₂, AIR 800 (Instrument Air)
- NFPA 99 compliant



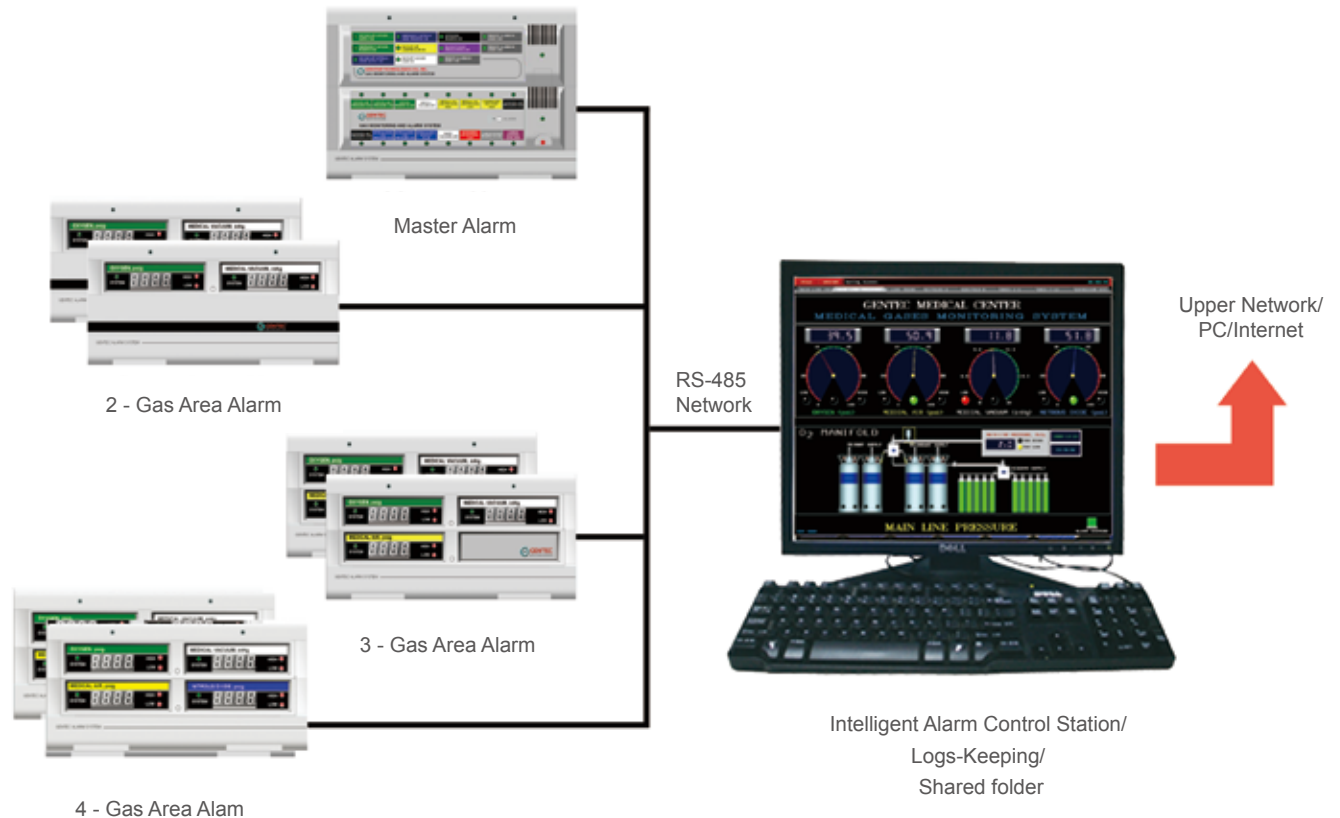


MONITORING, ALARM & CONTROL SYSTEMS

Monitoring Alarm & Control System

GENTEC® Universal Monitoring, Alarm and Control System (GUMACST[™]) is a highly modular system utilizing the most advanced technologies in electronics and software. Accepts all 4-20mA and voltage signals and can monitor customized reading or alarm conditions such as humidity, temperature, concentration levels, and flow rates in addition to typical pressure readings. GUMACST[™] alarm series complies with the latest edition of NFPA 99 and HTM 02-01.

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MEDICAL GAS OUTLETS & BEDHEAD UNITS



Medical Gas Outlets

GENTEC® Medical Gas Outlets shall be UL Listed, cleaned for medical gas service, and compliant with the latest edition of NFPA 99. They shall accept only corresponding Ohmeda®, DISS, Chemetron®, or Puritan Bennett® style quick connect adapters. Outlets are designed with an universal rough-in assembly for interchangeability on different quick connects without removing the entire outlet. For outlets providing positive pressure gas, they shall have a primary and a secondary check valve, where the secondary check valve allows for servicing without isolating an entire zone.

Latch Valve Assembly (front)

The latch-valve assembly shall have gas specific index corresponding to the gas service on the rough-in assembly to prevent interchanging of gas service. Each latch-valve assembly shall be color coded for its specified gas service.

Rough-In Assembly (back)

The rough-in assembly shall be manufactured using (1/2" outside diameter) type "K" copper tubing, silverbrazed to the outlet body. The tubing allows 360 degree swivel on the outlet body for easy installation. Rough-in assembly is manufactured to accept only the specified gas service by use of indexes.





American Standard
Medical Gas Outlets



French Standard
Medical Gas Outlets



Australian Standard
Medical Gas Outlets



American/ French /Australian Standard Medical Gas Outlets

- Accepts only Ohmeda, DISS, Chemetron, Puritan Bennett, Afnor, or SIS style gas specific adapters for respective standards
- Unique pin index for gases to prevent interchanging of gas service
- Universal rough-in assembly
- Color-coded for easy gas identification
- 360° swivel on the inlet pipe for easy installation
- 100% tested and individually packaged
- UL listed and complies with the latest edition of NFPA 99: 2005
- French Standard is UL listed, NF EN 737-1 compliant
- Australian Standard complies with NF EN 737-1 and AS 2896-1998



German Standard
Medical Gas OutletsBritish Standard
Medical Gas OutletsJapanese Standard
Medical Gas Outlets

German/British/Japanese Standard Medical Gas Outlets

- Color-coded for easy gas identification according to ISO 32
- Pressure lid can be disassembled during maintenance
- Multiple assembly methods
- Built in maintenance valve
- 100% tested for gas leakage
- German Standard is CE listed and compliant with EN 737-1 and DIN 13620-2
- British Standard is CE listed and compliant with HTM 02-01, EN 737-1 and BS 5682-1998
- Japanese Standard is compliant with JIST 7101



Art Wall Enclosure

- Designed for hospital rooms where design is emphasized, replaces traditional bedhead units
- The painting sits on a sliding mechanism which can hide the medical equipments while they are not in use
- The art piece and exterior design can be customized to meet or match a variety of design requirements
- A wide range of medical products & accessories can be custom-ordered
- Gas and electrical channels are insulated to ensure safety



Bedhead Units



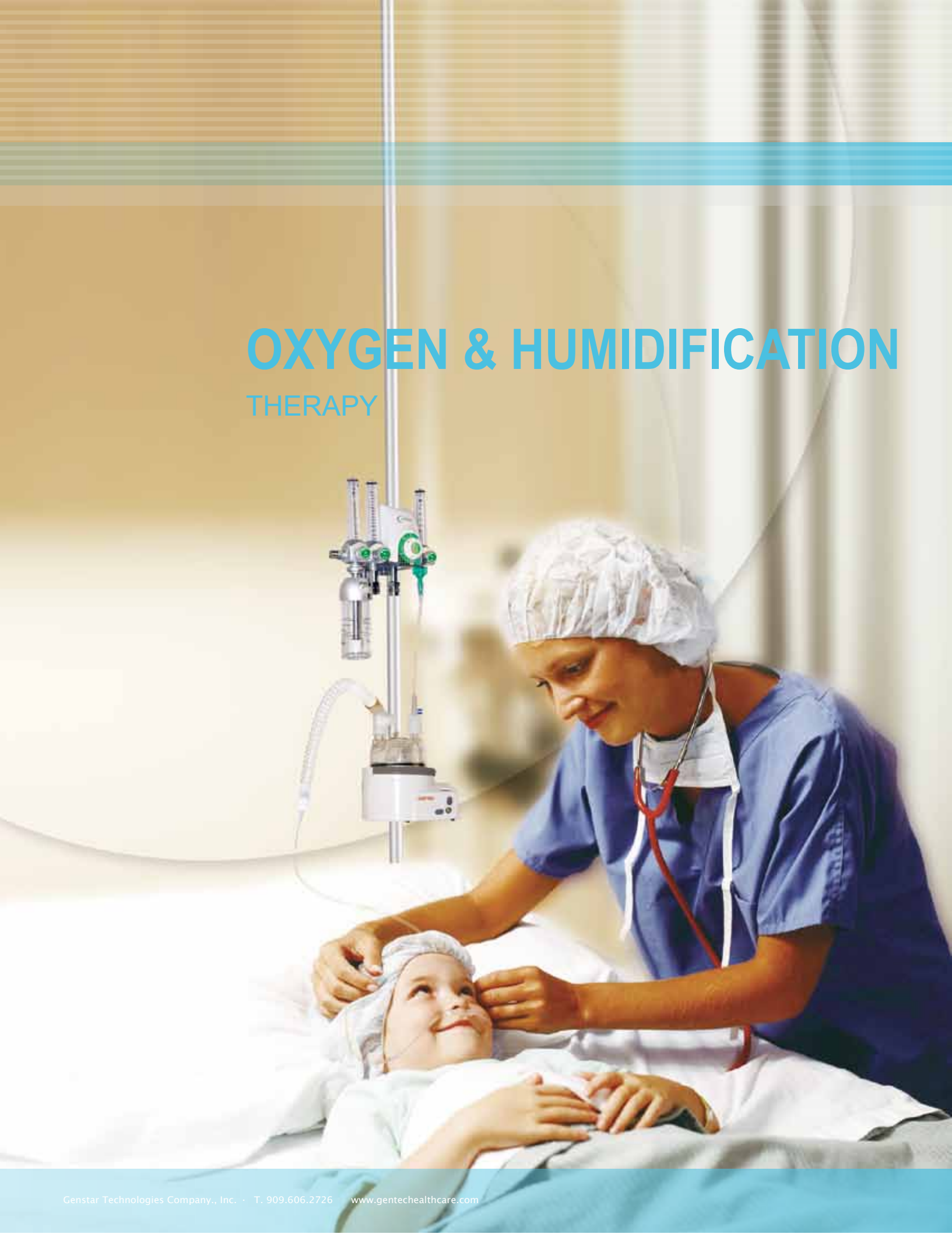
- Aluminum alloy, powder coated to protect against oxidation
- Single and dual trunks available
- Gas and electrical channels are separated by trunks to ensure safety
- Easy installation and maintenance
- Custom-ordered color available
- 100% tested for leakage



Anaesthetic Gas Scavenging System

- **GENTEC®** Anaesthetic Gas Scavenging System is used for the safe removal of excess anaesthetic gas and anaesthetic vapors
- Complies with EN 737-2, EN 737-4 (TYPE 1)
- Color-coded for easy gas service identification according to ISO 32
- Flow: 25~50 l/min (Pressure drop: 0.15~0.29 psi)
- Air driving flow : 10~15 l/min (Pressure: 58 psi)
- 15 mm piping
- 100% tested and individually packaged

OXYGEN & HUMIDIFICATION THERAPY





Air / Oxygen Blender

- Suitable for use in Emergency Room and ICU where accurate oxygen concentration is required
- Double-ended proportioning valve enables easy adjustment of oxygen concentration from 21% to 100%
- Two-stage pressure-balancing mechanism is adopted to deliver steady oxygen concentration
- Two outlet ports and bleed valve allow a wide range of applications
- Internal bypass and alarm mechanism ensure safe use
- Available in US and ISO colors
- Available in hi-flow & low-flow
- Accuracy: $\pm 3\%$ FS

Medical Gas Regulator



Medical Gas Regulator

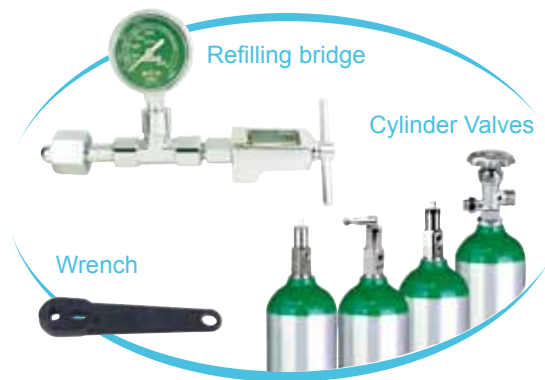


Cylinders

Refilling bridge

Cylinder Valves

Wrench



Medical Gas Regulators

- Suitable for emergency applications
- Chrome-plated brass body
- 1-1/2" diameter gauges
- Diaphragm-sensed or piston-sensed configurations
- Sintered inlet filter for longer service life
- Inlet cylinder connection: CGA, BS, DIN, JIS, GB

Aluminum & Carbon Composite Cylinders

- Three specifications available: 1.1L, 3L, 5L



Flowmeters

- Slim body flowmeter
- Available in anodized aluminum (FM197A) or chrome-plated brass body (FM191, FM197B)
- Polycarbonate tubes for maximum durability
- Back-pressure compensated
- Flow range: 0~15 LPM
- Calibrated at 50 psi*
- CE listed



* Optional calibration for 65 psi available.
Please add "E" after liters per minute.
Example: FM191-15LE-XX

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Oxygen Flowmeter with Humidifier

- Polycarbonate flow tube and outer cover are impact resistant for maximum durability and service life
- Inlet connection with filter
- Nasal cannula optional

Oxygen Humidifiers & Nebulizers

Oxygen Humidifiers:

- CGA 1240 standard connection
- External safety valve, pressure relief alarm

Nebulizers:

- Applicable to inhalation therapy
- With pressure relief alarm and medicine filling port
- Reusable

SUCTION THERAPY





Suction Regulators

- 882VR Series continuous only suction regulator has three modes available: CONT, OFF, and FULL.
- 881VR Series continuous-intermittent combination suction regulator has three modes available: INT, OFF, and CONT.



Glow in the dark vacuum gauge

- Clockwise & Counterclockwise configurations available
- Vacuum trap prevents overflow of waste fluid from entering the suction regulator.
- Antimicrobial protected control knobs
- CE listed
- Patented



CE
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1 Canister Station

- Designed to support canister jars
- Stable 5-caster base with two locking casters
- Durable construction, easy to clean
- Includes suction trap for additional safety
- Shut-off valve and canister slides included
- Supports up to 4 canisters
- Base diameter: 560 mm
- Height: 640 mm
- Easy maintenance

2 Slides

Holds canisters in place

3 Canisters

- Designed to collect fluids
- Autoclave up to 121°C
- Ball float design prevents overflow
- Built-in bracket for easy installation
- Patented



RESPIRATORY CARE

NEBULIZER, MASKS, CIRCUITS



Super-Micro Nebulizer System



Nebu series nebulizers are small and portable. Designed for treatment of cystic fibrosis, asthma, COPD and other respiratory diseases through a mesh-sonic design. The mesh-sonic design breaks medical solutions into small aerosol droplets as a very fine mist for direct inhalation to the lungs. Common problems experienced from ultrasonic-wave nebulizers such as having too much liquid waste and heating of liquids can be solved with the **GENTEC®** Nebu series.



NebuSmart
All-in-one Nebulizer



NebuCare
In-line Electrical Nebulizer

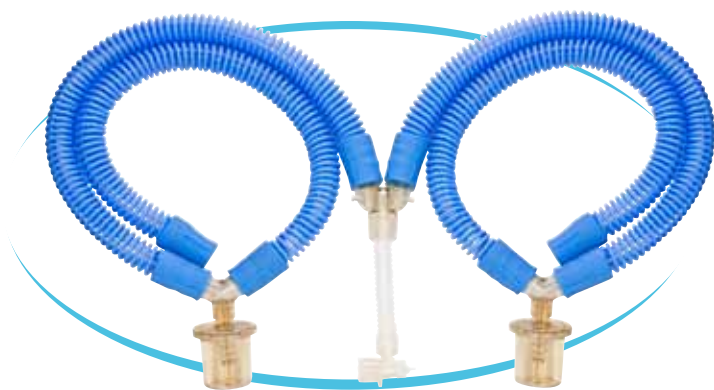


Hospital
Masks

Respiratory Nebulization System

Respiratory nebulization therapy includes in-line electrical nebulizer using mesh technology, disposable nebulizer, and therapy masks.

- Nebulizer particle size 2~4.8 μ m
- Ergonomic design
- Easy to clean and disinfect



Anesthesia Ventilation Circuit System



G-Mask



G-Smart Adult Test Lung

Circuits, Masks and Test Lung

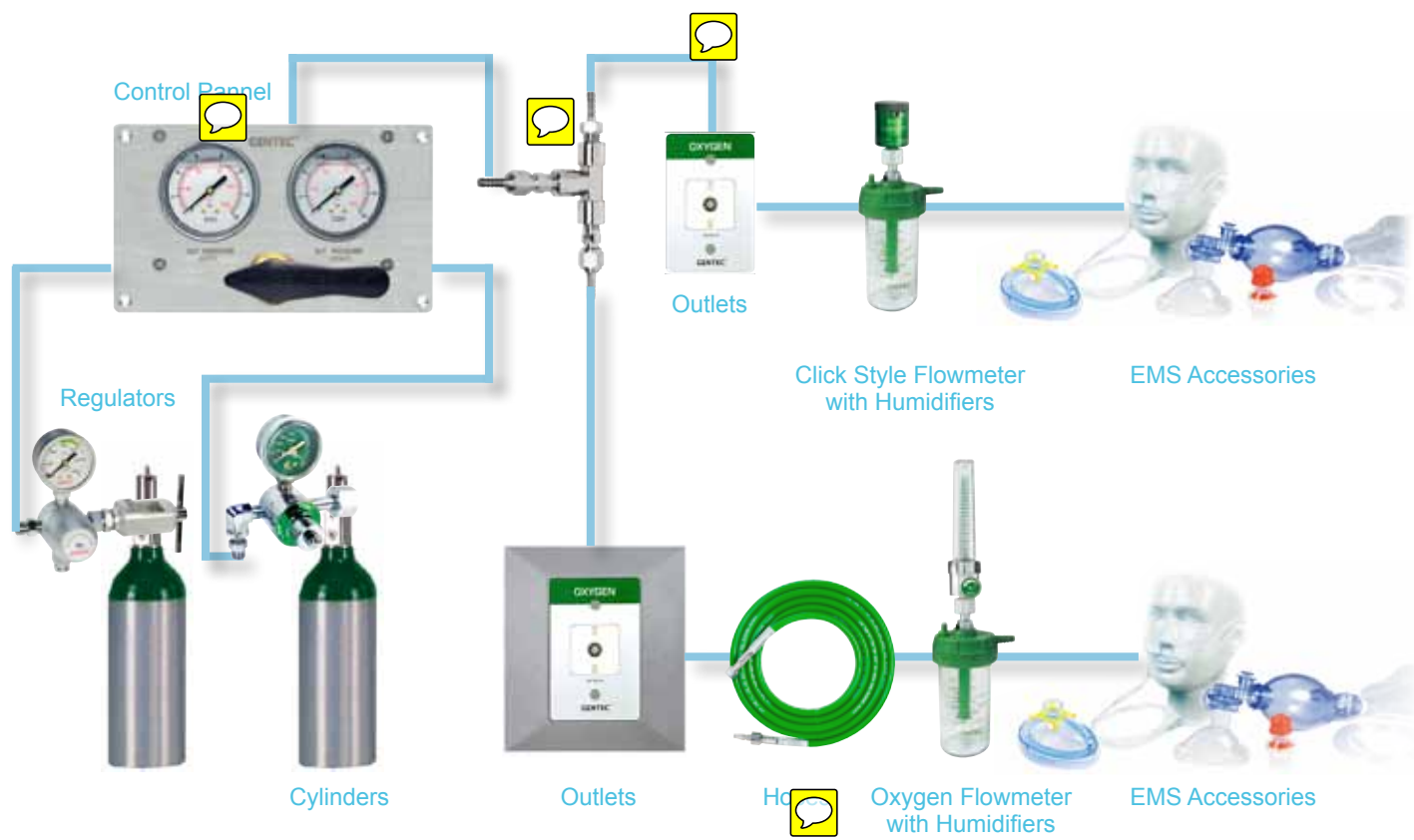
- Circuits are made from one piece extrusion with high tension medical grade silicone.
- G-mask is designed ergonomically to ensure patient comfortability.
- The G-Smart Adult Test Lung is designed to provide accurate demonstrations and testing applications on mechanical adult ventilators.

EMS GAS FLOW SOLUTIONS



EMS GAS FLOW SOLUTIONS

GENTEC® GMAP Series provides a complete gas flow solution for ambulances and emergency care vehicles. Gentec offers gas switchover systems, regulators, fittings, hose assemblies, gas outlets, gas alarms, outlets, flowmeters, suction devices, flowmeters, and EMS accessories. Customized solutions are also available.





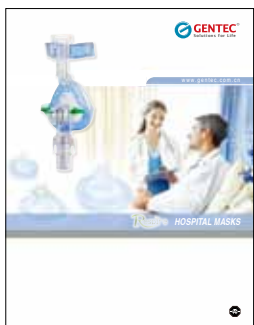
Medical Pipeline System

- Medical Gas Systems Total Solution
- Source Equipment
- Zone Valve Box & Area Valve Service Unit
- Monitoring Alarm & Control System
- Art Wall Enclosure
- Medical Console Units
- Medical Gas Outlets
- Anaesthetic Gas Scavenging System
- Oxygen Therapy
- Suction Therapy
- Oxygen Concentrator & Nebulizers
- Respiratory Care



Medical Alarm System

- GUMACSTM Overview
- Medical Gas Area Alarm
- Medical Gas Master Alarm
- Medical Gas Combination Alarm
- Advanced Applications



Medical Masks

- Non-invasive Ventilation Mask NIV
- Full Face Mask
- Non-invasive Ventilation Mask NIV
- Nasal Mask
- Full Face Mask
- Nasal Mask
- Anesthesia Face Mask (Flavor)



oxygen & suction therapy

- Flowmeters with Humidifiers
- Medical Flowmeters
- Flowmeter Accessories
- Medical Flowmeters and Connectors
- Oxygen Flowmeter Regulators with Humidifier
- Suction Regulators
- Venturi Vacuum Regulators
- Suction Traps
- Suction Gauges & Venturi Vacuum Modules
- Venturi Vacuum System
- Disposable Collection Systems
- Reusable Collection Systems



Anesthesia Ventilation Circuit System

- Anesthesia, Breathing Circuit for Adult
- Anesthesia, Breathing Circuit for Child
- Accessories



Portable Nebulizer System

- Nebuhome Nebulizer
- Nebubabe Nebulizer



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