

Technical Specification

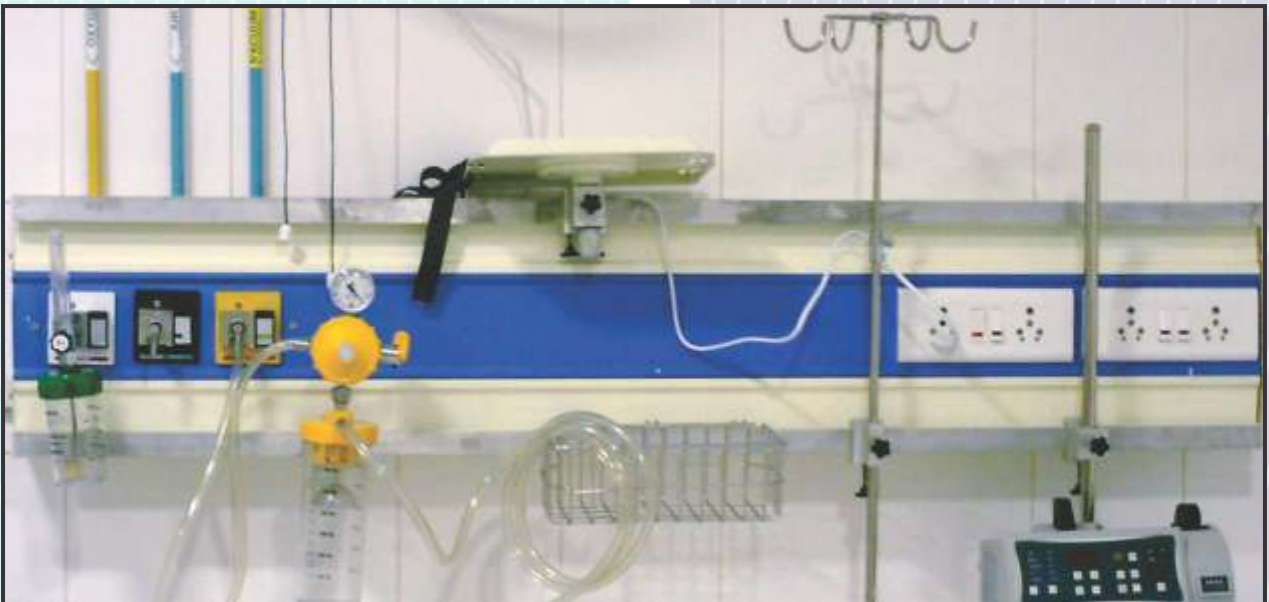
Medical Gas Pipeline System

Sigma-Meditech



Dedicated to caring for Life

An ISO 9001:2008 Certified Company



Bed Head Panel

We offer superior range of bed head panel to our client, where construction of the wall section is made by using extruded aluminum. Some other features of our product include:

The extruded aluminum structural lower channel will include a vertical integrate equipment mounting track to support optional track mounted equipment.

Optional equipments like I.V hook, infusion pole, utility basket, monitor tray etc can be installed into the track at any location along with the extruded aluminum channel.

Gas outlet/ switch socket/ monitor socket/ nurse call system can be fitted on middle portion of the bed console unit after cutting the aluminum sheet as per hospital requirement.

specifications

The medical gas outlet shall be a Sigma FL-1 series.

Outlets shall be manufactured with a 6 - 1/2" [165 mm] length type "K" 1/2" [12.7 mm] outside diameter (3/8" nominal) size copper inlet pipe stub which is silver brazed to the outlet body. The body shall be of 1 - 5/16" [33 mm] diameter, one piece brass construction. For positive pressure gas services, the outlet shall be equipped with a primary and secondary check valve and the secondary check valve shall be rated at a maximum of 200 psi [1,379 kPa] in the event the primary check valve is removed for maintenance. Outlet bodies shall be gas specific by indexing each gas service to a gas specific dual pin indexing arrangement on the respective identification module.

A large color coded front plate shall be used for ease of gas identification and aesthetic appeal.

With the back rough-in mounted the outlet shall adjust up to 3/4" [19 mm] variation in mounting plate thickness.

The latch valve assembly shall be Puritan-Bennett Quick Disconnect compatible and accept only corresponding Puritan-Bennett type gas specific adapters.

All outlets shall be cleaned and degreased for medical gas service, factory assembled and tested.

Sigma products comply with NFPA-99.



Gas Outlet Point (PB Compatible)

features

- Flow rate exceeds the requirements of NFPA and CSA
- Accepts only Puritan-Bennett gas specific adapters
- 100 % Hydrostatic testing of each outlet and cleaned for medical gas service
- Indexed to eliminate inter-changeability of gas services
- Up to 3/4" [19 mm] mounting plate thickness adjustment
- 360° swivel inlet pipe for easy installation
- Universal rough-in assembly to accept Quick Disconnects or DISS Front Adapters (Can be interchanged at any time)



Gas Outlet Point (PARKODEX)

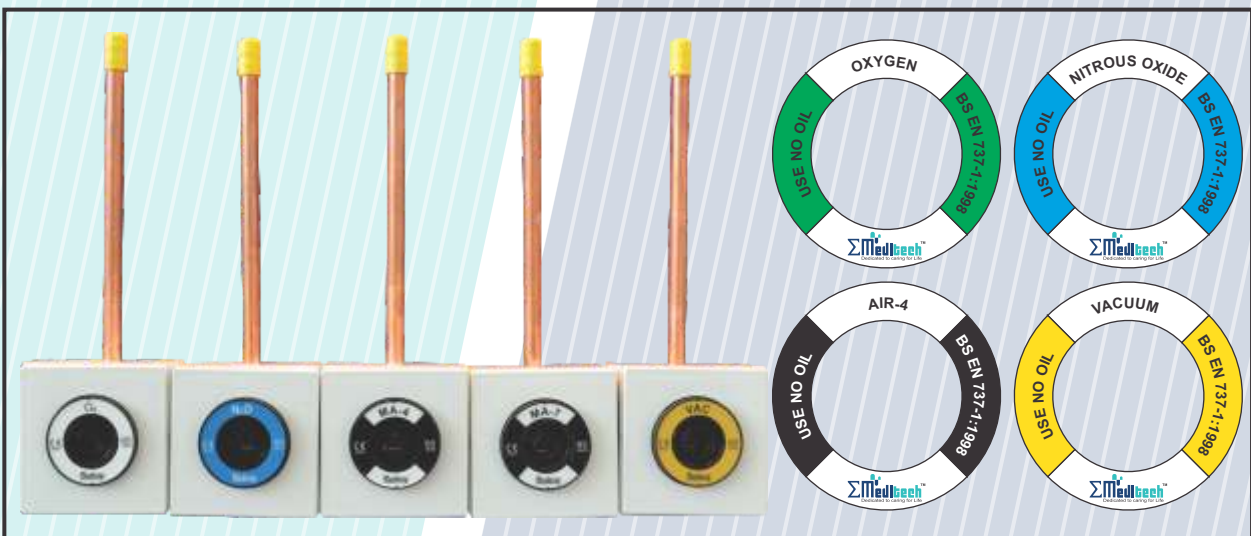
SCREDDER TYPE

We offer to our clients a range of gas outlet point (hook loose type) that is used in head wall unit/ wall and pendant unit. Our product also comprises of double locking (secondary) facility. Some other features of the equipment include :

The medical gas outlet combines ease of installation and low cost maintenance. Non- interchangeable self-sealing quick connect gas outlet for oxygen/N₂O/ vacuum/ C.A.4/ C.A.7/ CO₂.

Front facia of gas outlets are non-interchangeable and gas color coded.

Secondary isolating valve allows the maintenance of the gas outlet without the needs for a pipeline system shutdown.



Gas Outlet Point (BS EN 737-1:1998)

The range of gas outlet point (front loaded) we offer to clients comprises of the same features as hook loose type have. These also come with a non-interchangeable self sealing quick connect gas outlet for oxygen/N₂O/ vacuum/ C.A.4/ C.A.7/ CO₂. Our products are also checked on stringent quality parameters to ensure that they are made as per ISO standards and specifications before sending them at the client's end. (Accept probes BS 5682:1984)



Automatic Gas Control Panel

We offer to our customers a range of high performing fully automatic gas control panel for oxygen, N₂O, CO₂. These equipments are designed with both safety and continuity of flow supply at a constant pressure. Some other features of our product include :

A-bank in use (green indication).

B- bank ready for use (yellow indication).

Control panel has in built LED display to indicate normal, low for line pressure.

The control panel include pressure gauge (63mm) to indicate the gas pressure of each header and pipe line distribution pressure.

Capable to provide a distribution flow rate in excess of 1500 Lpm.

The control panel incorporate safety puncture in case of excess pressure i.e 100Psi.



Semi Automatic Gas Control Panel

We offer our semi automatic gas control panels with manifolds. These equipment are used for checking the gas level. Fitted with control panels, our product are known for their ability to yield accurate results.

We offer to our clients, a range of movable and rigid ceiling pendants that are coated with heavy duty epoxy powder. These pendants have internally segregated compartments for mechanical, electrical and specialist mechanical services. Some other features of our product include :



Rigid Ceiling Pendant

The pendant is made of stainless steel laminated sheet of 20gauge thickness.

It is rectangular shape having different length 1mtr to 4feet

It consist of six gas outlet point of different services and electrical switch sockets

It has provision of I V hook

The pendants having monitor tray facility up to load capacity of 25 kgs (optional)

The inlet connections of gas are connected by high pressure antistatic tube.

The gas outlet point provision is done on the bottom surface of the pendant



**Swivel Ceiling Pendant
330° Rotating**

The pendant drop tube and bearing assembly.

Pendant carrying capacity of 150kg equipment load pendant rotate at 330°.

Encapsulated central pivot bearing system sealed for life and free maintenance.

Pendants having additional hand on assembly monitor keeping shelf, cable arm, tilt and turn equipment platform pump rod set etc.

Rail for hanging any required accessories.

6 nos multi pin electrical switch sockets with provision for 6 nos ISO 9001:2000 standard gas outlet point, 2 nos I.V. Hooks.

Ceiling Pendants for OT and ICU

We cater the entire range of pendants as per need of the customer



Movable Pendant

The single arm movable pendants manufactured by us are known for their precision made nature. Highly efficient, these products are available in different specifications.



Air Compressor

Non lubricated air compressor -oil free

Electric Motor -5 hp

Pressure - 7 kg/cm sq

Piston displacement - 17.5 CFM

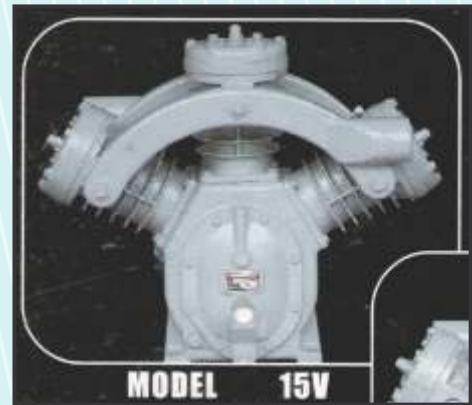
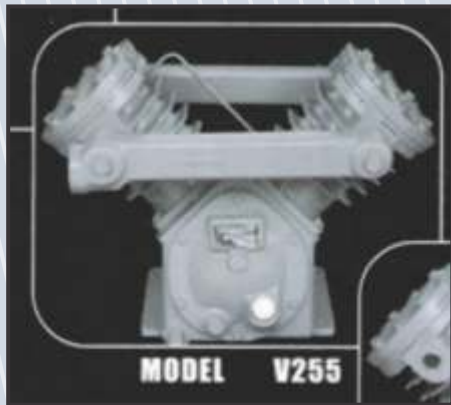
R.P.M. - 750

Receiver capacity - 250/480 liters

Special features :

1. Use of oil is completely eliminated
2. Self lubricated material for piston rings and guide rings
3. Special bearings (grease filled)
4. Low maintenance
5. Air cooled, no cooling water, cooling tower etc. required
6. Maximum power saving , compressor stops as soon as tank is having required pressure and starts automatically when pressure recedes in tank i.e. Automatic start - stop

The purpose of this station is production and storage of vacuum in hospitals, labs and industry. The stations are fully automatic. A time relay regulates the vacuum pump working in this way to let them work alternately in time intervals. At the time of an exceeded consumption automatically also idle vacuum pump is put in gear. The vacuum pumps are set up in the way to enable always the repair and the cleaning.



Direct drive, oil lubricated and air-cooled, petty noise and without vibration outwards. The setting up is possible without pump anchoring. Automatic outlet at cessation of work. A counter-return valve protects pump from the recurring effect of vacuum.

SINGLE STAGE DRY VACUUM PUMP DATA

Model	No. of Cylinder	Piston Displacement		Vacuum (Hg)		Motor	
		cfm	Lpm	inches	mm	hp	kw
V235	2	21.60	611	29.00	737	1.5	1.10
V244	2	34.60	980	29.00	737	2.0	1.50
V255	2	60.00	1699	29.00	737	5.0	3.70
7V	2	110.00	3114	29.00	737	7.5	5.50
15V	3	149.60	4235	29.20	742	10.0	7.50

Notes:

1. Performances indicated are at sea level.
2. Simplex/duplex/triplex system may be customized as per requirement.
3. Packaged system shall incorporate electric motor, silencer, ball valve, vacuum filter, drain valve, NRV, vacuum tank (as per requirement), vacuum gauge, auto switch gear system and interconnection.
4. Bacterial filter (optional)
5. Electric control panel with manual/auto/duplex modes (optional).



Electric Control Panel [1-Duplex system]

Common electrical control panel for vacuum pumps and along with automatic switch gear system for motors two vacuum switches, complete with inside wiring & cabling, electrical contractors with single phase preventing units & Digital voltmeter, ammeter.

*Subject to Customization

Technical :

incomer

1	MCB 40 A 4P	1
3	AMMETER	1
4	AMMETER SELECTOR SWITCH	1
5	CTs 30/5A	3
6	DIGITAL VOLTMETER	1
7	VOLTMETER SELECTOR SWITCH	1
8	PHASE INDICATING LIGHT	3
9	6A SP MCB	3
10	POWER TB	4

5 HP DOL STARTER

		2
1	18A TP CONTACTOR+AUX. CONTACT	2
2	OVER LOAD RELAY 12-18A	2
3	6A SP MCB	1
4	ON/OFF/TRIP INDICATING LIGHT	6
5	START/STOP PUSH BUTTON	4
6	CONTROL TB	6
7	POWER TB	6
8	PUMP SELECTER SWITCH	



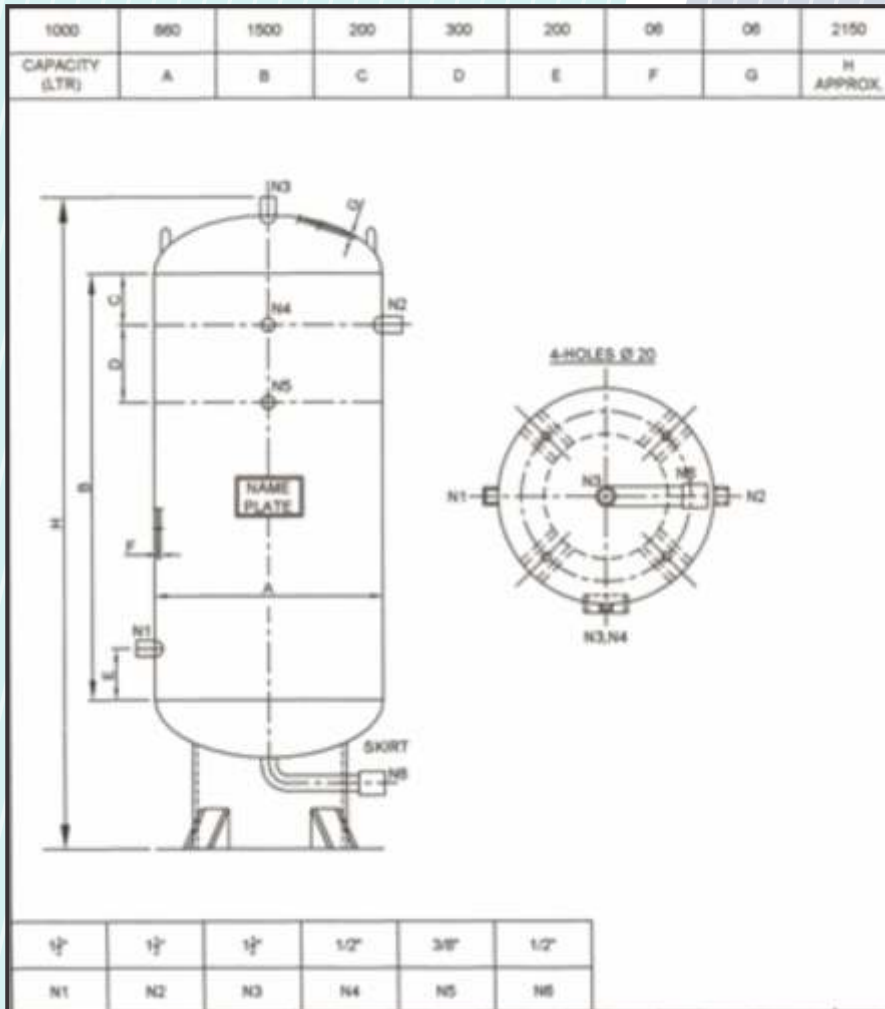
Electric Control Panel [2-Duplex system]

Common electrical control panel for vacuum pumps and along with automatic switch gear system for motors two vacuum switches, complete with inside wiring & cabling, electrical contractors with single phase preventing units & Digital voltmeter, ammeter.

*Subject to Customization

Most Advance designed with DOL Starter & relays
Auto Phase correction ▪ to prevent reverse rotation
Mode: Manual/Auto/Duplex (optional)
Timer Controlled ▪ for duty/stand-by auto selection
Digital Ammeter/Voltmeters
Hour-meter for each motor
Phase Indicator
MCBs/MCCBs
Compact Design
0-24 hours programmable for Duty selection of motors

Vacuum vessel can be set in lying or standing position. It is made of steel plate, outside and inside galvanized, with cleaning opening. Vacuum vessel stores a vacuum, so that is not necessary, that a pump will work for the whole time.



GENERAL NOTES AND DESIGN DATA FOR 1000 LT VESSEL

CODE OF CONSTRUCTION : IS:2825

ALL SOCKET ARE BSP CONNECTION

MATERIAL OF CONSTRUCTION : IS:2062

SHELL/DISH THICKNESS : 06/08 MM



Ward Vacuum Unit

The ward vacuum unit we manufacture is designed for minimum servicing and high efficiency. These products have the capacity of 600/1000/2000 ml. Some of the features of the product include:

Regulator body, which houses an on/off switch, regulation knob, vacuum gauge graduated in mbar. The on/off switch allows the operator to start or stop suction by turning the switch.

With regulation knob operation, knob operator can set the necessary vacuum amount.

The jar is made of polycarbonate transparent and unbreakable autoclave at 130°.

Well proven fluid control trap (safety) fitted on the unit automatically and efficiently shut off vacuum fully, while preventing the transfer of liquid to the vacuum regulator, pipeline and pump.



Theatre Suction Trolley

We are one of the trusted name in manufacturing a range of Theater suction Trolley that caters to the diversified requirements of medical industry. These trolleys are used in operation Theater, accidents as well as emergency use. We offer the range of products at the most competitive prices to our clients.



BPC (Oxygen) Flow meter

The strong and reliable BPC flow meter we offer to clients is made by imbining latest technical improvements for a precise measuring of the flow with $\pm 5\%$ accuracy. Some other specifications of the product include :

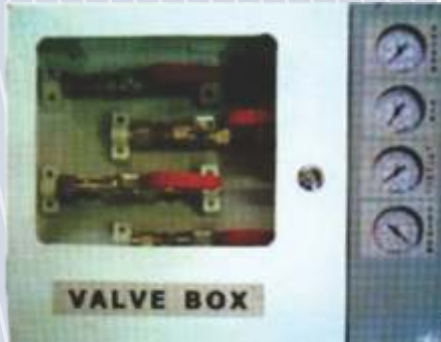
Chrome plated brass body.

Graduated flow tube and cover made of polycarbonate and are unbreakable.

Back pressure compensated.

Standard flow 0-15 LPM.

Inlet filter made of SS wire net.



Area Valve Box

We bring for our clients our area valve box that are based on latest technology. The area valve box come with proper locking lid having closure. The lid is also surrounded with external seal. The area valve boxes available with us are being largely used by the global clients.



Area Alarm (Analog)

Available in: 1-gas/2gas/3gas/4-gas

Alarm Parameters:

- High pressure
- Normal pressure
- Low pressure

Switches: Test, Mute



Area Alarm (Digital)

Microprocessor Controlled Gas Alarm for different services like Oxygen, N₂O, Air, Vac, CO₂, N₂ having the following features :

Accurate on line Digital Display of Line Pressure for all the services.

Factory calibrated imported pressure sensors.

Colour coded Bar Graph Display (LED) of Line pressure status (High, Caution, Normal, Caution, Low).

Audible Alarm for High & Low pressure condition.

Test and Alarm Acknowledge/ Mute facility .

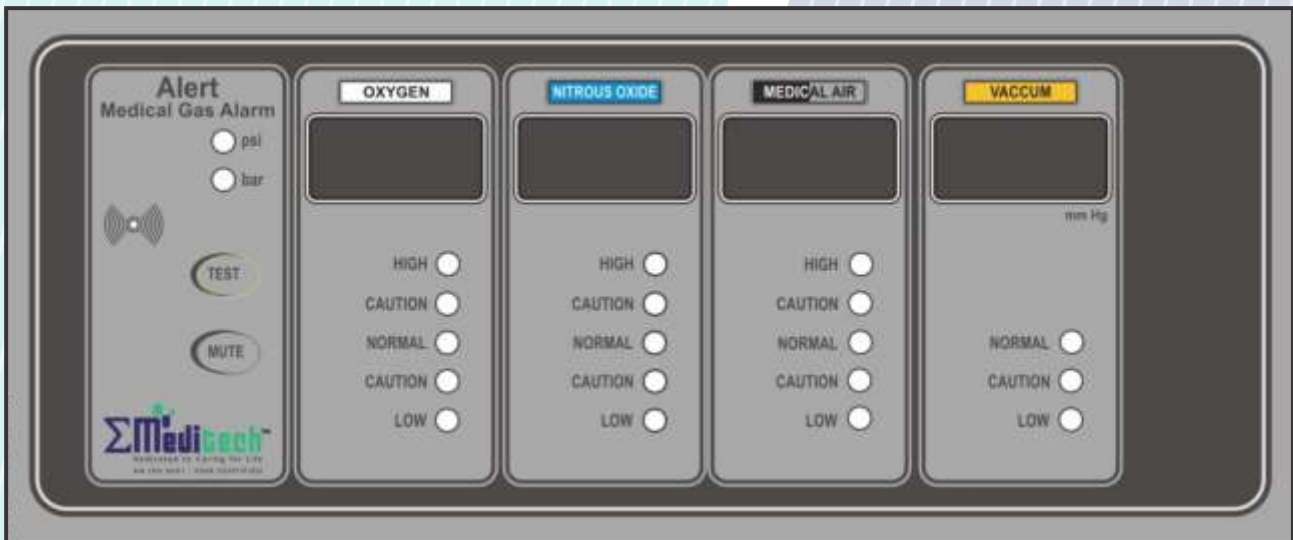
Adjustable Alarm acknowledge time span through program (Password protected).

Programming facility of (High– Caution– Normal– Caution– Low) Alarm limits for all services, from front panel (Password protected).

Facility to deactivate / activate any of the gas services through front panel programming key (Password protected).

Facility to connect to remote slave alarm by potential free contacts provided.

DIGITAL GAS ALARM-ALERT SERIES-1



1. Ethernet Unit –

This is a small unit which replaces the alarm extension port inside the Alarm System (2-8Gas Alarms) to enable LAN connectivity. UDP, ICMP, ARP and Mod-bus over UDP are the protocols supported by this tiny interface.

2. Central unit for SMS service-

Purpose:

Used for Linking the Hospital Alarm System with GSM cell phone network. User Configured messages can be sent to up to 32 Mobiles.

Hardware Features:

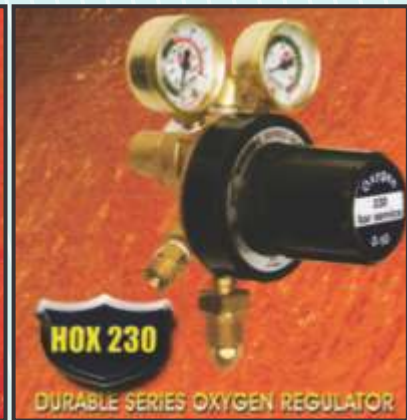
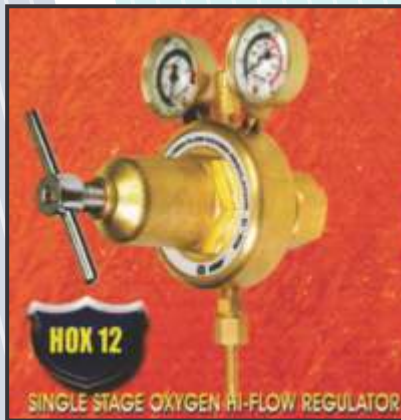
- 16 Bit Microcontroller and Adequate Static RAM and Flash Memory.
- Real Time Clock.
- 10 BaseT Ethernet Interface for Connecting with the Hospital LAN.
- RS-485 Port us to interface with RS-485 Ports.
- In-Built GSM Modem for connectivity with the GSM Network. User needs to Provide a SIM with active telephone number and adequate balance. Post connection is preferred.
- 2x16 Character LCD and 6 Soft Keys for System Configuration.
- ABS Enclosure Dimensions 192 x 96 x 50 mm.
- External Power Adapter for 220VAC.

Software Features:

- Supports up to 32 Mobile Numbers.
- User can select the message text as well as events on which a message is to be sent.
- Different Messages can be assigned to different mobile numbers.
- Complete Status can be sent to selected mobiles at predefined time.
- Last 1000 Events are Logged with date and time information.
- Alarms Status can be monitored on one or more PCs in the hospital connected over LAN.
- Protocols Supported: UDP, TCP/IP, ICMP, ARP.

3. Remote control for calibration-

The Gas Alarms are provided with an Infrared port. A normal Infrared Remote is used for calibrating and adjusting the limits of the Gas Alarm.



Medical Oxygen (MOX) Regulator

For medical oxygen only

Single/Double stage

Inlet Pressure: Cylinder pressure up to 250 kg/cm square

Output: Preset type (factory set) for 4.0 to 4.5 kg/cm square.

Fitted with Neoprene/matal Diaphragm and Safety valve.

ISI Marked.

Material: Brass forged

Finish: Plating

Easy to use in Medical B/D Type Cylinder.

Temper resistance design.



Distribution piping (indigenous)

- a) Copper pipes shall be solid drawn, tempered, seamless, phosphorous deoxidized, non-arsenic and degreased seamless round copper tube (Grade : CW024A /Cu-DHP) for oxygen service conforming to BS EN 13348:2008 (supersedes BS EN 13348:2001).
- b) The supply of pipes shall accompany with manufacturers test certificates for physical properties and chemical composition. The supply of pipes shall be further substantiated with inspection certificates from third party inspectors like LLOYDS.
- c) Each pipe shall be capped at both ends before supply.
- d) The contractor shall use the following sizes:

Nominal outside diameter (d)	Nominal wall thickness								
	0.7	0.8	0.9	1.0	1.2	1.5	2.0	2.5	3.0
12		X		R					
15	R			R	X				
22			R	R	X	R			
28			R	R	X	R			
35				X	R	R	X		
42				X	R	R	X		
54				X	R	R	R		
76.1						R	R		
108						R		R	



- e) Fittings used for connecting copper tubing shall be made of Copper and brazed type connection as per BS EN:1254-1:1998.
- f) Installation and testing
 - i. Installation of piping shall be carried out with utmost cleanliness. Only pipes, fittings and valves that have been degreased and fittings brought in polythene sealed bags will be used at site. Pipes fixing clamps shall be of non-ferrous and non-deteriorating plastic suitable for the diameter of the pipe.
 - ii. All pipe joints shall be made using inert gas using flux less silver brazing method (silver brazing). Continuous purging with oil-free nitrogen to be carried out while brazing is done.
 - iii. Adequate supports shall be provided while laying pipelines to ensure that the pipes do not sag. Suitable sleeves shall be provided wherever pipes cross through walls/slabs. All pipe clamps shall be non-reactive to copper.
 - iv. After erection, the pipes will be flushed with dry nitrogen gas and then pressure tested with dry nitrogen at a pressure equal to twice the working pressure or 150 psig, whichever is higher for period of not less than 24 hours.
 - v. All the piping system shall be tested in the presence of the site-engineer or his authorized representative.

vi. Painting: All exposed pipes should be painted with two coats of synthetic enamel paint and color codification should be as per BS 1710:1984.

International Collaboration:



We collaborated/tied-up with Medicop d.o.o. (slovenia) to meet international quality / standard in our products.

Medicop is an internationally renowned manufacturer of medical equipment and ambulance vehicles. The company is recognized at home and abroad as one of the most trustworthy and highest quality providers of products that save the lives of patients and accident victims.



We tied up with M/s Pneumatik Berlin GmbH- Germany to meet international quality in our Ceiling Supply Units.

Pneumatik Berlin GmbH is leading manufacturer of wall and ceiling supply unit, Medical ICU Bridge supply. All are products are under international standard CE certification.



Our Products

Anaesthesia Equipments.
Medical Gas pipe line System.
Modular Operation Theater.
Analytical Equipments



Σ Meditech™

Dedicated to caring for Life

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[An ISO 9001:2008 Certified Company]

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All products comply with:
MDD 93/42/EEC and 2007/47/EEC

