



SCHÖNN
Medizintechnik GmbH

COMPRESSED GAS MANIFOLD SYSTEMS



Cylinder manifolds complies with:

EN 60601-1, EN 60601-1-2 and EN 60601-1-8

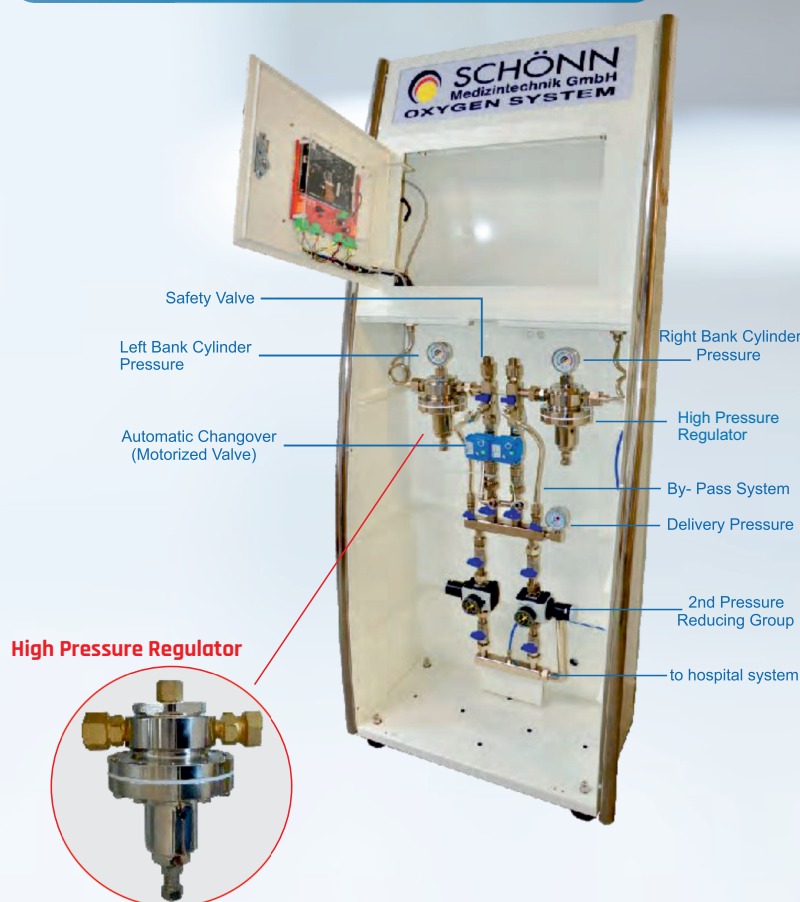
EN ISO 7396-1

Health Technical Memorandums HTM 02-01 and HTM 2022.

COMPRESSED GAS CYLINDER MANIFOLDS

Cylinder manifolds are an important element of gas management in hospitals. They ensure the supply with medical gases and control the gas pressure. The core of the system is the Gas Control Station. The manifold control system shall conform to ISO 7396-1 "Medical gas pipeline systems" and the Health Technical Memorandums HTM 2022 and HTM 02-01. The manifold control system shall provide an uninterrupted supply of a specific medical gas from equally sized high pressure cylinder banks via a suitable arrangement of pressure regulators, providing a constant downstream nominal pipeline gauge pressure of 400 kPa (4 bar) to 700 kPa. The entire system shall be "duplexed" such that any single functional component failure will not affect the integrity of the medical gas supply. Automatic manifolds provide a continuous supply of gas from two banks of cylinders by automatically changing to the standby bank when the duty bank has become depleted. These manifolds are available for Oxygen, Nitrous Oxide, Entonox, Carbon Dioxide and Medical Compressed Air. The manifold bank may be designated "Duty" and the Automatic Control Panel (ACP) shall automatically changeover to supply the distribution system from the "Standby" bank when pressure in the "Duty" bank falls to a pre-determined level. Each side of an ACP shall be capable of being fully isolated via a full flow ball valve in order to change any regulator without cessation of supply. The first stage regulator shall be protected from the particulate matter by a sintered bronze filter.

Cylinder pressures and pipeline pressure are monitored by pressure sensors in a digital control panel and can be monitored on a Master alarm panel or central computer. There shall be a fail-safe system in the event of power failure so that the motorized valves open and there is full continuity of supply pressure and flow. Upon power restoration, the unit shall revert back to the original bank of cylinders being used. To avoid inadvertent resetting of the change-over system, the motorized valves shall be latched so that once changeover has occurred and the cylinders have been replaced, a reset button must be depressed to return the system to automatic. There shall be manual changeover buttons so that servicing either side of the system can be achieved. The PCB's shall be linked with plug and socket connectors for easy removal.



COMPRESSED GAS CYLINDER MANIFOLDS

High-Pressure Collecting Pipe

High-Pressure Collecting Pipe manifolds shall provide connection points for flexible copper tailpipes. They shall be available in 'primary' and 'secondary' configurations, with either single or double cylinder connection points. 'Primary' headers shall connect directly to the manifold control system with extensions for additional cylinders being provided by the addition of 'secondary' headers. Non-return valves shall be fitted to each tailpipe connection point to protect the system in the event of a tailpipe fracture.

Cylinder Holders

The design allows simple one-handed loading and quick release. The holder fixes permanently to the wall, keeping cylinders clear of the floor to allow easy cleaning and reducing hazards in corridors and doorways. It provides a permanent storage location for cylinders in wards and corridors, controlling the number of cylinders stored within an area.

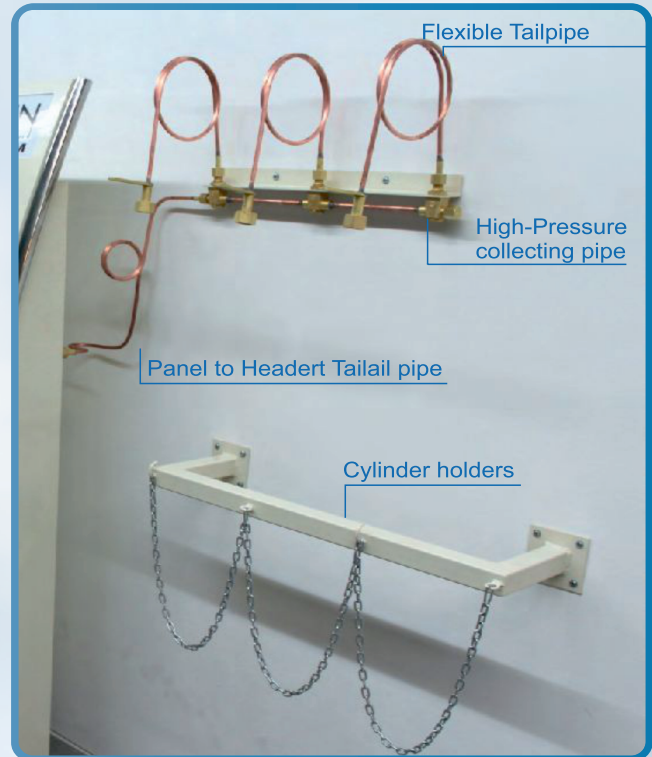
Flexible Tailpipe

The Schönn copper tailpipes shall have a $\varnothing 8 \text{ mm} \times 2 \text{ mm}$ wall thickness, copper tube.

- Maximum 250 bar working pressure on tubing
- All tailpipes 100% tested before shipping and labelled for gas service and pressure rating
- Standard length 900mm

Flow is never interrupted

Double line-pressure regulators make it possible, that the pipeline is supplied with required quantity of gas even during maintenance or service of any component of a manifold.



Maintenance

All components are placed in such position that they are very easily accessible and therefore the regular service can be done in very short time.

Compatibility For Everybody

The valves for cylinder connections are available in all standards for high pressure equipment, which are being user around the world.

Safety

There are special safety valves installed for each source of high pressure, as well as separate safety valve for line pressure.

COMPRESSED GAS CYLINDER MANIFOLDS

Automatic Manifold Systems

- **Touch Screen Display Control Panel**
MODEL: AMS 3000

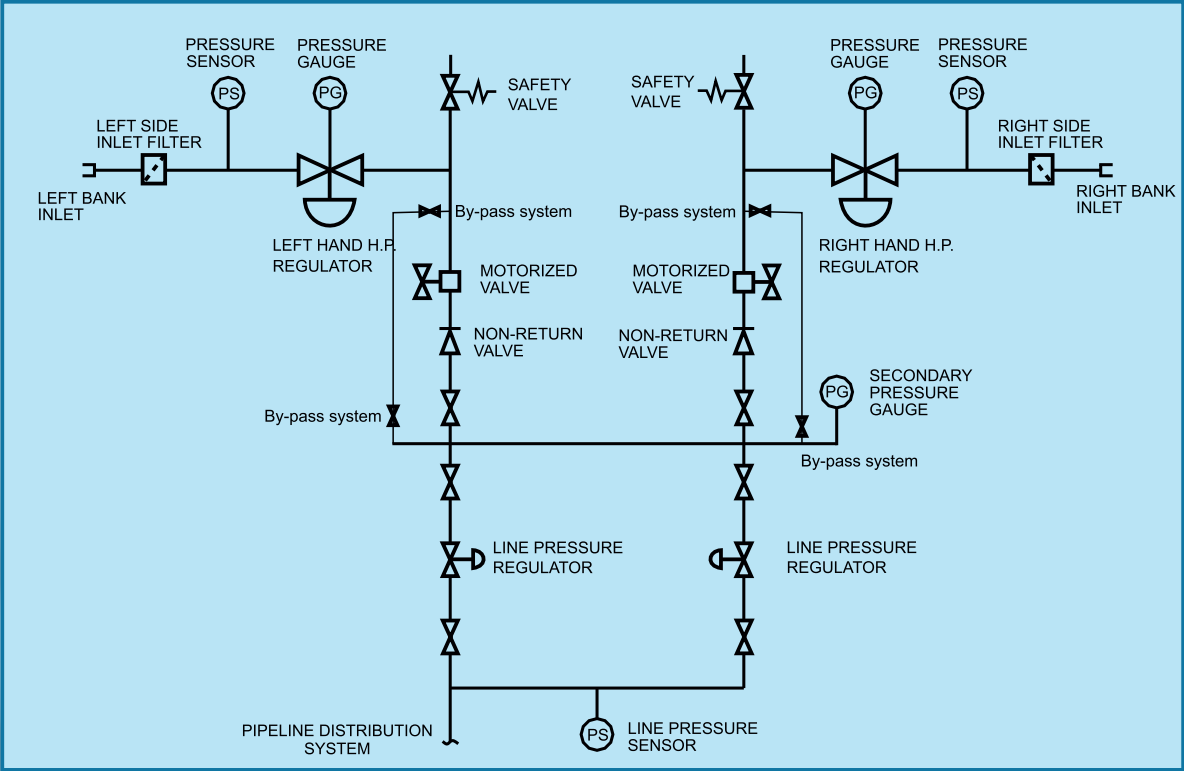
Features

- 10" Touch-Screen Display
- Colorful and easy-to-use display.
- Manual and automatic adjustable working system.
- Audio-visual status display and system failure display.
- Remote access with Modbus-RTU and connection to Hospital BMS.
- The pressure values of the changeovers for the cylinder banks groups can be adjusted both to right or left bank.
- When a fault occurs in the system, the date, time and cause of the fault remain recorded in the reports page.
- The system shows analogously the values of the left group, right group and line pressures in the manifold system.
- Changeover of Cylinders groups is automatic.
- Pressure measurement units: bar, kPa and psi.
- Cylinders pressure status can be monetarized instant.
- Alarm status is designed in accordance with HTM standards.
- High pressure and low pressure alarm status are adjustable.
- The status of the plant can be monitored by the LED signals on the control panel.
- In case of emergency, manual gas flow is provided by by-pass system.
- The audible alarms can be set to silent mode.
- Language selection (German-English)
- Authorized person access by password.



MODEL: AMS 3000

COMPRESSED GAS CYLINDER MANIFOLDS



Automatic Changeover Manifold Schematic Diagram

Feature	Value
Flowrate	150m3h
Inlet Pressure	150-250 bar
Outlet pressure of High Pressure Regulator	7-8 bar
Outlet pressure of 2nd Stage Pressure Regulator	4,2 bar
Pipeline connection diameter	15 mm
Automatic Changeover Valve Diameter	15 mm
Dimensions of Control Panel (HeightxWidthxDepth)	149x69x35 mm
Control Panel incoming Voltage	220 V
Control Panel outgoing Voltage (to Changeover valves)	24 V
Control Panel outgoing Voltage (to PCB)	12 V
Safety Valve	12-12,5 bar
Pigtail diameter	8 mm
Pigtail pipewall thickness	2 mm
Quantity of Non-Return Valves on a ramp	1 to 5 Valves
Depending upon customer request	
Diameters of Pigtail connections	
To Ramp	3/8 inch
To Cylinder	3/4 inch

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TECHNICAL DATA