



SCHÖNN
Medizintechnik GmbH

CYLINDER MANIFOLDS GAS MANAGEMENT SYSTEMS



Cylinder manifolds comply with:

- Medical Device Directive MDD 93/42/EEC
- EN ISO 7396-1 and ISO 14971
- Health Technical Memorandum HTM 02-01 and HTM 2022

CYLINDER MANIFOLDS GAS MANAGEMENT SYSTEMS

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, NHS Health Technical Memorandum 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 or 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. The manifold shall be supplied fully assembled and tested.

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.

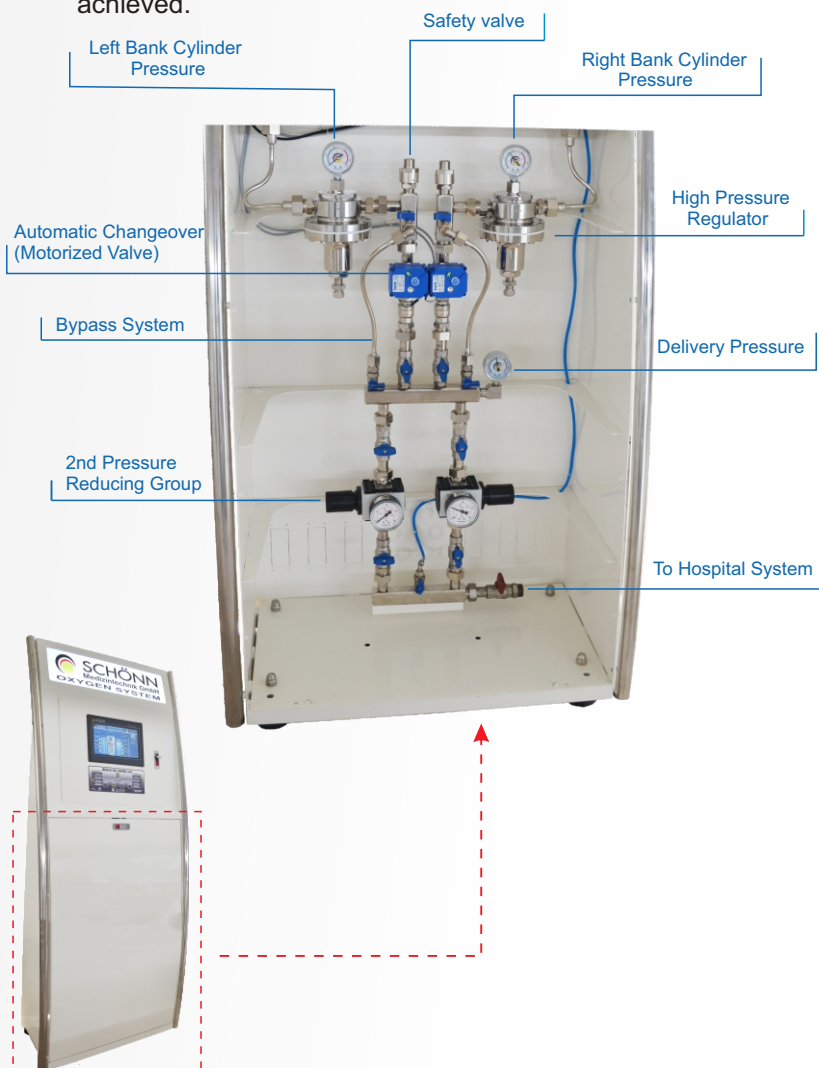
Manifolds are available for Oxygen, Nitrous Oxide, Entonox, Carbondioxide and Medical and Surgical Compressed Air. These manifolds comprise an automatic changeover panel with alarm & status monitoring, an isolation & relief valve assembly, non-return valve, two group manifold headers, two group cylinder racks and tailpipes with gas specific cylinder connectors.

Either the left or right hand 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 the ACP shall be capable of being fully isolated via a full flow ball valve in order to change any regulator without blocking of supply. The inlet of the 1st stage regulator shall be protected from the particle by a sintered bronze filter.

Cylinder pressures and pipeline pressure are monitored by pressure sensors in a digital control panel and can be remotely viewed on the Master alarm panel or central computer system.

The changeover valves are electro-mechanical so in case of an electrical loss, they are disabled. In such cases, the system can continue over the bypass line manually. Thus, supply pressure and flow can be fully continuous. Upon power restoration, the unit shall revert to the original bank of cylinders being used. To avoid inadvertent resetting of the change cylinder alarm the motorized valves shall be latched so that once changeover has occurred and the cylinders have been replaced, a reset button must be operated to cancel the alarm condition.

There shall be manual changeover buttons so that servicing either side of the system can be simply achieved.



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-hand loading quick release. The holder fixes permanently to the keeping cylinders clear of the floor to allow easy cleaning and reducing hazards on corridors and doorways. It provides a permanent storage location for cylinders inwards corridors, controlling the number of cylinders stored within in area.

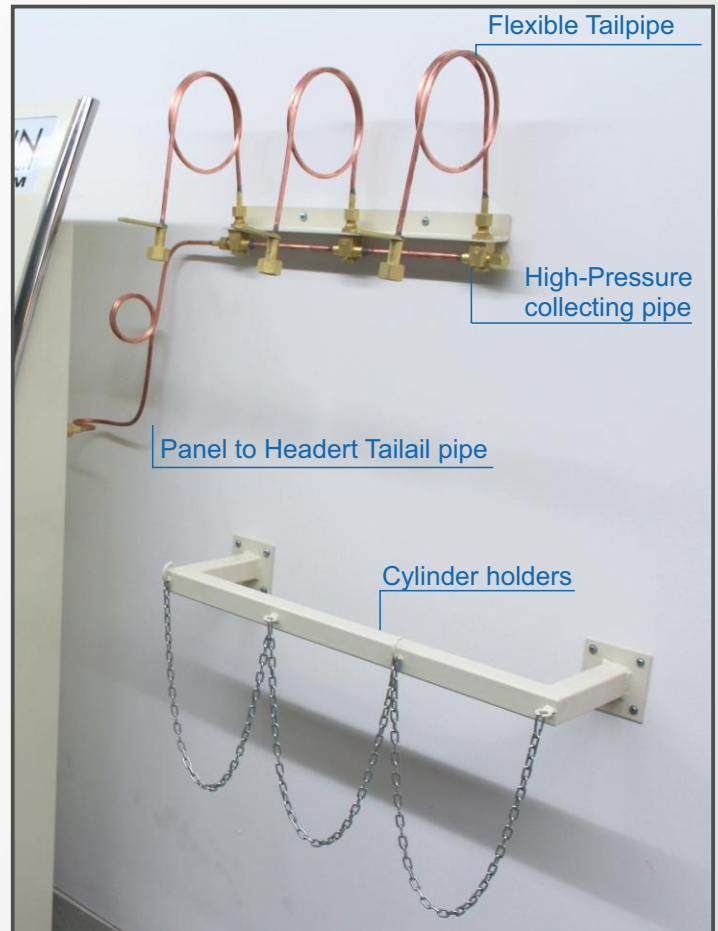
Flexible Tailpipe

The Schönn copper tailpipes shall have a Ø8mm x 2mm wall thickness, copper tube.

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

Flow is never interrupted

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



Maintenance

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

Compatibility For Everybody

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

Safety

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

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Automatic Manifold Systems

Touch Screen Display Control Panel

MODEL: AMS 3000

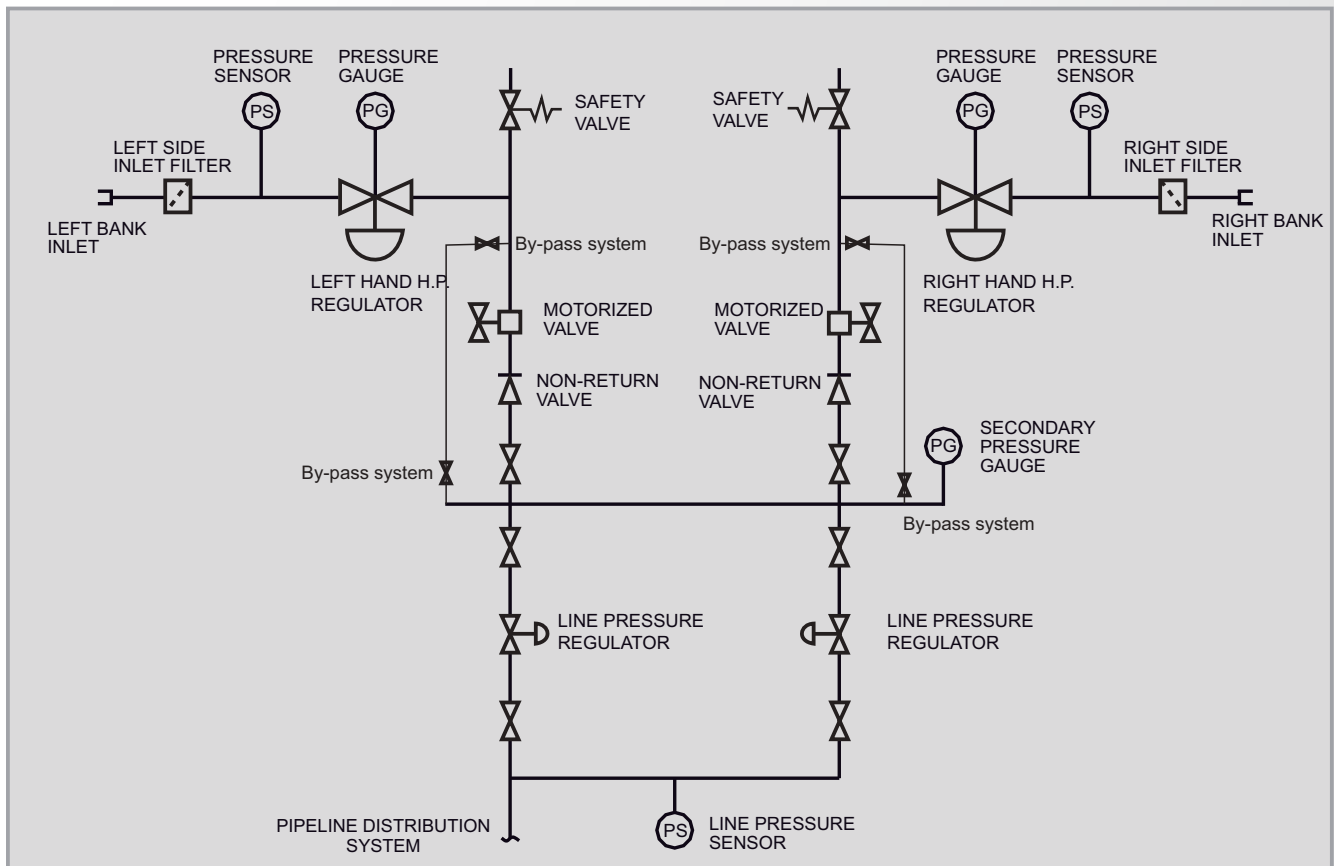
Features

- 10" Touch-Screen Display
- Colorful and easy use to interface
- Manual and automatic adjustable working system.
- Audio-visual status 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 the 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 monitored constantly.
- Alarm status is designed in accordance with HTM standards.
- High pressure and low pressure alarm levels 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

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Automatic Changeover Manifold Schematic Diagram

Feature	Value
Flowrate	120m3h
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)	178x76x45 cm
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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