SCHÖNN
Medizintechnik GmbH

COMPRESSED GAS MANIFOLD SYSTEMS



Cylinder manifolds comply with:

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

EN ISO 7396-1 and EN ISO 10524-2

Health Technical Memorandum HTM 02-01

COMPRESSED GAS CYLINDER MANIFOLDS

Cylinder manifolds are a key element of the medical gas supply system in hospitals. They provide a continuous supply of medical gas to the pipeline from high-pressure cylinder banks and regulate it to a stable pipeline pressure. The core of the system is the Gas Control Station.

Schönn automatic manifolds are designed in accordance with EN ISO 7396-1 (Medical gas pipeline systems) and EN ISO 10524-2 (Manifold and line pressure regulators), and with the requirements of HTM 02-01.

The manifold supplies gas from two equally sized cylinder banks, designated "Duty" and "Standby". When the pressure in the Duty bank falls to a preset level, the Automatic Control Panel (ACP) switches the supply to the Standby bank without interrupting flow. The depleted bank can then be replaced while the system remains in operation.

Two-stage pressure regulation provides a stable nominal pipeline pressure of 400 kPa (4 bar). The system has a duplex design: each side can be fully isolated with a full-flow ball valve, so regulators can be serviced or replaced while supply continues. A sintered bronze filter protects each first-stage regulator against particulate matter.

Available for: Oxygen (O_2), Nitrous Oxide (N_2O), Carbon Dioxide (CO_2) and Medical/Surgical Air.

Cylinder bank pressures and pipeline pressure are measured by pressure sensors and shown on the digital control panel.

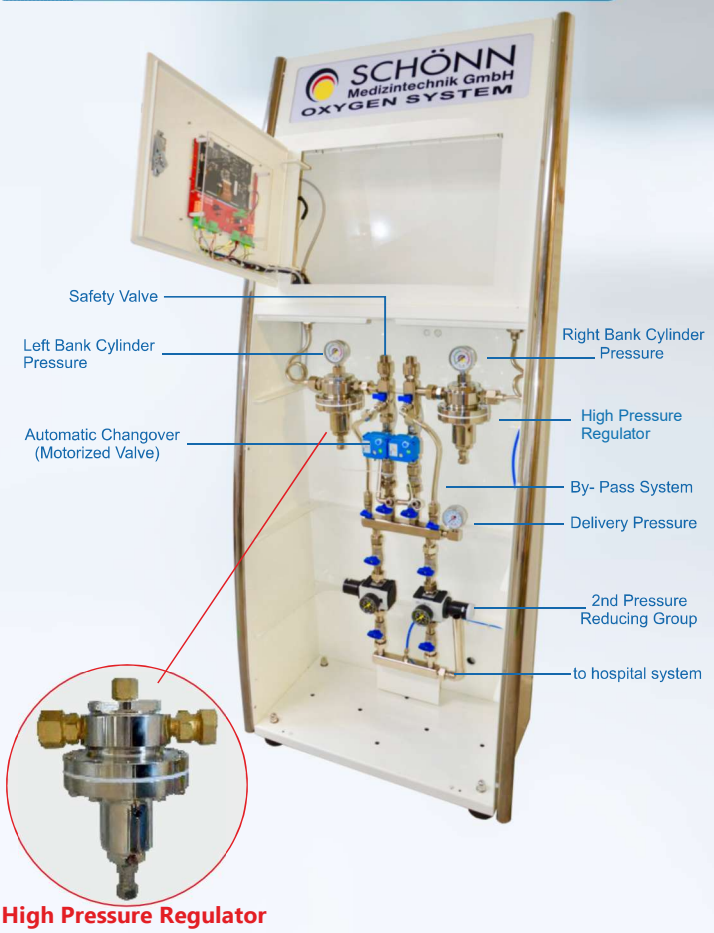
Status and alarm signals can be transferred to a master alarm panel or to the hospital BMS.

Fail-safe operation: In the event of a power failure, the motorized valves open so that supply from both banks continues. When power is restored, the system returns to the bank that was in use.

Latched changeover: After an automatic changeover, the system stays on the Standby bank until the empty cylinders have been replaced and the reset button is pressed. This prevents accidental return to an empty bank.

Manual control: Manual changeover buttons allow either side to be taken out of service for maintenance. An emergency by-pass keeps gas flowing if the control unit is out of service.

Easy service: Electronic boards use plug-in connectors for quick replacement.



High Pressure Regulator

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.

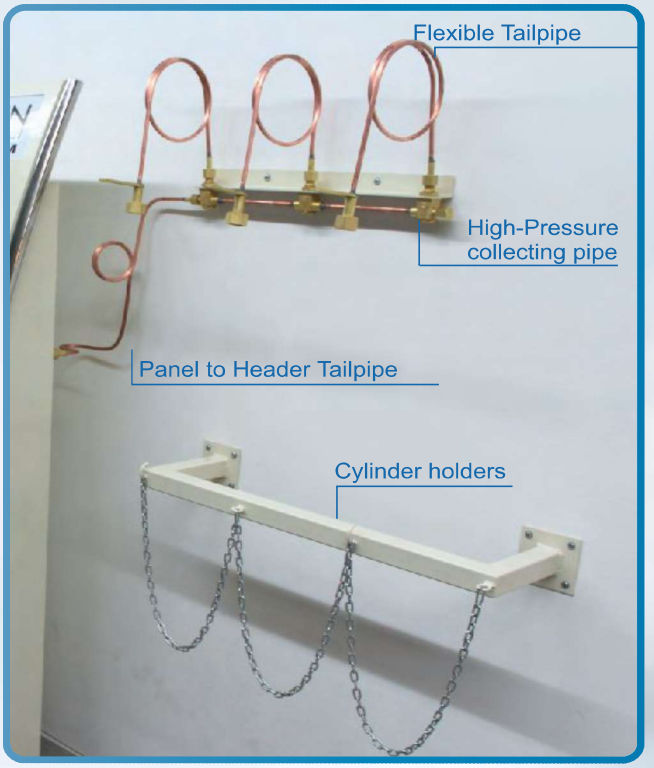
Flexible Tailpipe

The Schönn copper tailpipes shall have a Ø 8 mm x 2 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.

Automatic Manifold Systems

- Touch Screen Display Control Panel

Features

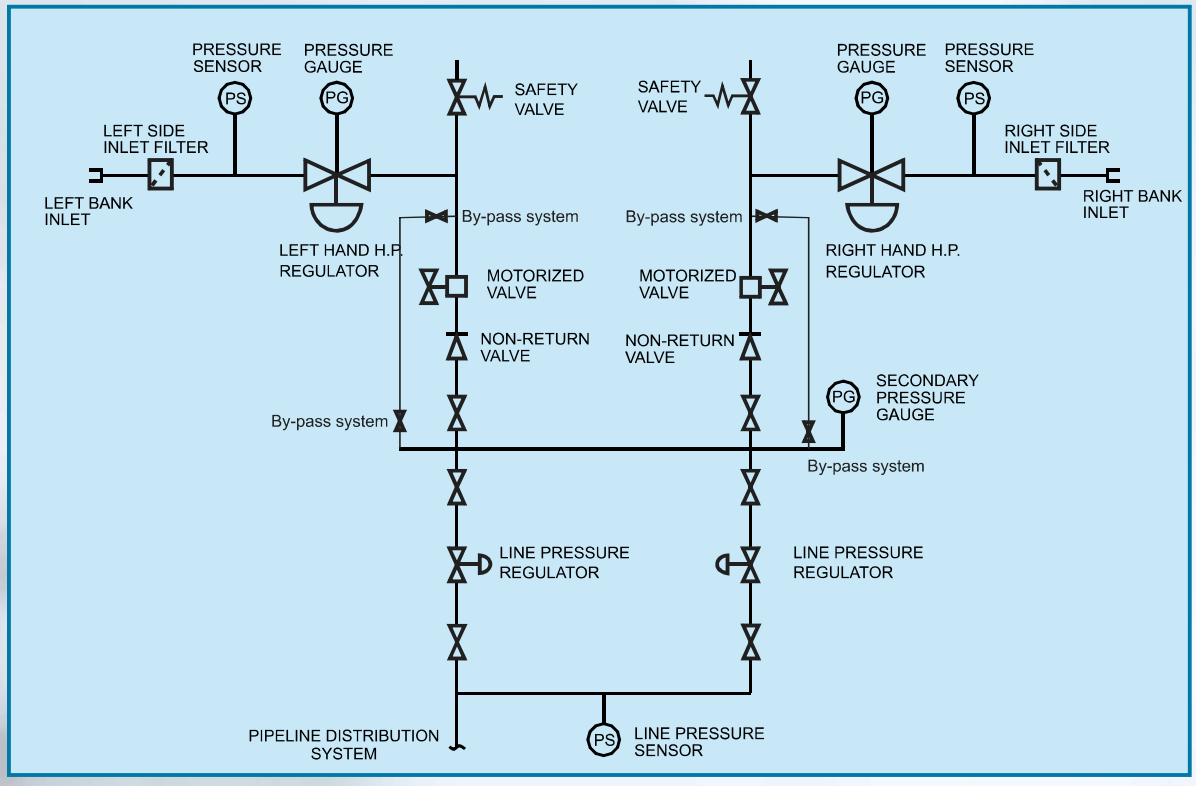
- 10" Touch-Screen Display
- Colorful and easy-to-use display.
- Manual and automatic adjustable working system.
- Audio-visual status display and system failure display.
- Remote access with Modbus-RTU and connection to Hospital BMS.
- The pressure values of the changeovers for the cylinder banks groups 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

- 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.





Touch Screen Display



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)	1.490 x 690 x 350 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

TECHNICAL DATA

COMPRESSED GAS CYLINDER MANIFOLDS

ORDERING INFORMATION

Gas Name	Product Name	Product Code	Model Name/Number	Cylinders in each bank
Oxygen	Medical Gas Manifold Plant	S90-111-201	Oxygen Manifold Plant 2x1	2x1
		S90-111-202	Oxygen Manifold Plant 2x2	2x2
		S90-111-203	Oxygen Manifold Plant 2x3	2x3
		S90-111-204	Oxygen Manifold Plant 2x4	2x4
		S90-111-205	Oxygen Manifold Plant 2x5	2x5
		S90-111-206	Oxygen Manifold Plant 2x6	2x6
		S90-111-208	Oxygen Manifold Plant 2x8	2x8
		S90-111-210	Oxygen Manifold Plant 2x10	2x10
		S90-111-215	Oxygen Manifold Plant 2x15	2x15
		S90-111-220	Oxygen Manifold Plant 2x20	2x20
Nitrous Oxide	Medical Gas Manifold Plant	S90-121-201	Nitrous Oxide Manifold Plant 2x1	2x1
		S90-121-202	Nitrous Oxide Manifold Plant 2x2	2x2
		S90-121-203	Nitrous Oxide Manifold Plant 2x3	2x3
		S90-121-204	Nitrous Oxide Manifold Plant 2x4	2x4
		S90-121-205	Nitrous Oxide Manifold Plant 2x5	2x5
		S90-121-206	Nitrous Oxide Manifold Plant 2x6	2x6
		S90-121-208	Nitrous Oxide Manifold Plant 2x8	2x8
		S90-121-210	Nitrous Oxide Manifold Plant 2x10	2x10
		S90-121-215	Nitrous Oxide Manifold Plant 2x15	2x15
		S90-121-220	Nitrous Oxide Manifold Plant 2x20	2x20
Medical Air	Medical Gas Manifold Plant	S90-131-201	Medical Air Manifold Plant 2x1	2x1
		S90-131-202	Medical Air Manifold Plant 2x2	2x2
		S90-131-203	Medical Air Manifold Plant 2x3	2x3
		S90-131-204	Medical Air Manifold Plant 2x4	2x4
		S90-131-205	Medical Air Manifold Plant 2x5	2x5
		S90-131-206	Medical Air Manifold Plant 2x6	2x6
		S90-131-208	Medical Air Manifold Plant 2x8	2x8
		S90-131-210	Medical Air Manifold Plant 2x10	2x10
		S90-131-215	Medical Air Manifold Plant 2x15	2x15
		S90-131-220	Medical Air Manifold Plant 2x20	2x20
Carbon Dioxide	Medical Gas Manifold Plant	S90-171-201	Carbon Dioxide Manifold Plant 2x1	2x1
		S90-171-202	Carbon Dioxide Manifold Plant 2x2	2x2
		S90-171-203	Carbon Dioxide Manifold Plant 2x3	2x3
		S90-171-204	Carbon Dioxide Manifold Plant 2x4	2x4
		S90-171-205	Carbon Dioxide Manifold Plant 2x5	2x5
		S90-171-206	Carbon Dioxide Manifold Plant 2x6	2x6
		S90-171-208	Carbon Dioxide Manifold Plant 2x8	2x8
		S90-171-210	Carbon Dioxide Manifold Plant 2x10	2x10
		S90-171-215	Carbon Dioxide Manifold Plant 2x15	2x15
		S90-171-220	Carbon Dioxide Manifold Plant 2x20	2x20
Other Gas	Medical Gas Manifold Plant	S90-181-201	Other Gas Manifold Plant 2x1	2x1
		S90-181-202	Other Gas Manifold Plant 2x2	2x2
		S90-181-203	Other Gas Manifold Plant 2x3	2x3
		S90-181-204	Other Gas Manifold Plant 2x4	2x4
		S90-181-205	Other Gas Manifold Plant 2x5	2x5
		S90-181-206	Other Gas Manifold Plant 2x6	2x6
		S90-181-208	Other Gas Manifold Plant 2x8	2x8
		S90-181-210	Other Gas Manifold Plant 2x10	2x10
		S90-181-215	Other Gas Manifold Plant 2x15	2x15
		S90-181-220	Other Gas Manifold Plant 2x20	2x20

Headquarters/Factory

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