



MEDICVENT

Cleaning air in healthcare



**192011 Motor valve
Installation and maintenance
Series 21**

- **This manual is intended for Valves with serial number that begins with 21-.**
- **Before the system may be taken into use, this manual must be studied carefully.**
- **Only, by MEDICVENT, authorized personnel are allowed to perform adjustments or repairs on this equipment.**
- **Only MEDICVENT original parts may be used in repairs.**
- **MEDICVENT reserves the right to change system design and specifications without notice.**

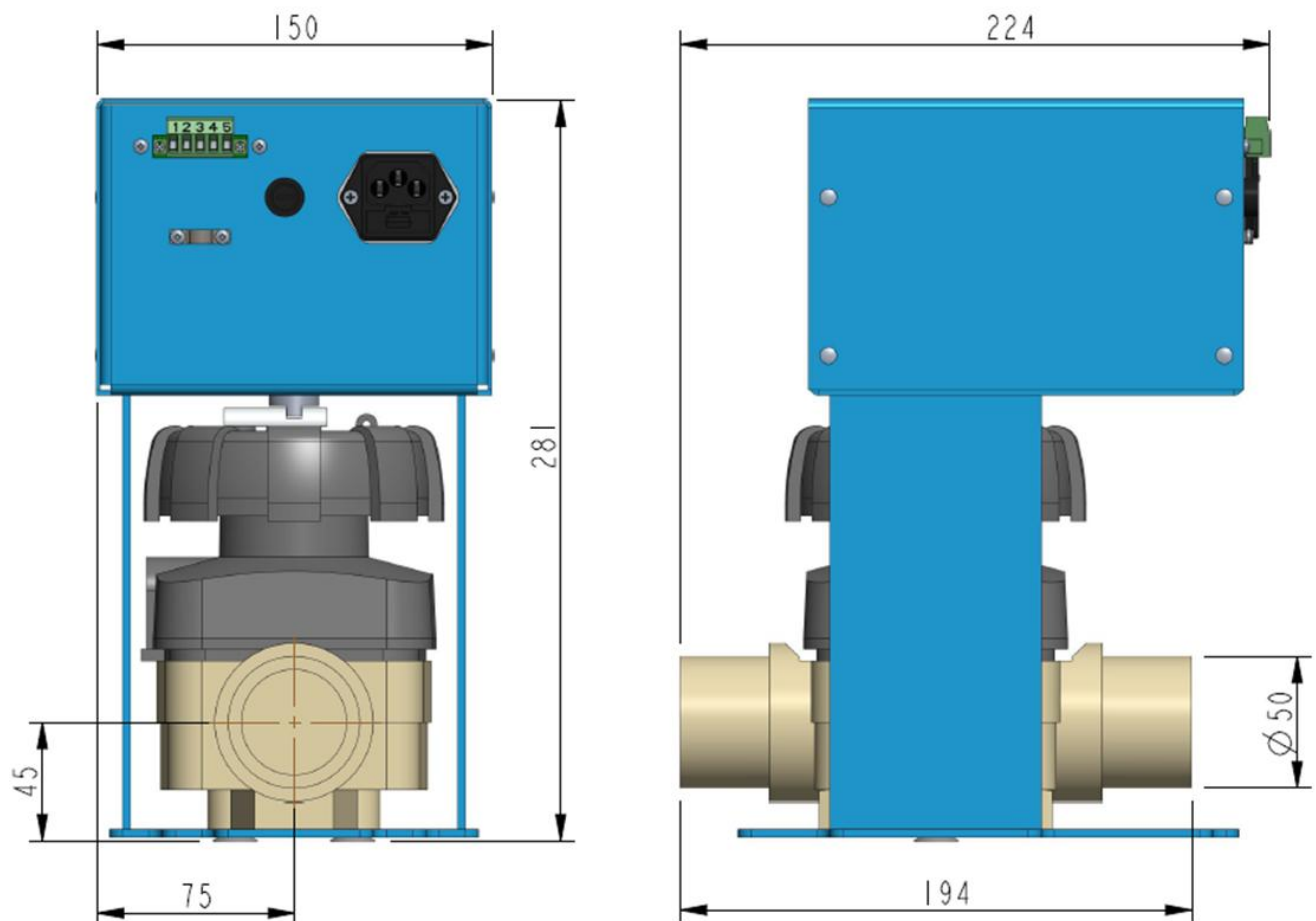
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Technical data

Motor valve

| | |
|--------------------|--|
| Power: | 230 VAC \pm 10% (210-250 VAC), 50/60 Hz 1-phase |
| Mains connection: | Mains inlet C14 filtered |
| Fuses: | Mains inlet: 2 pcs 5x20 mm 160 mA Control circuit: 1 pcs 5x20 mm 315 mA |
| Power consumption: | 40 W |
| Dimensions: | 281x224x150 mm (HxLxW) |
| Weight: | 5,1 kgs |
| Pipe connections: | \varnothing 50 mm (outside) |



Description

Intended use

The Medicvent Motor valve is intended to firstly be used together with the Medicvent Central Fan System. The valve's function is to regulate the flow in the suction outlets in the OR.

The valve is controlled using Control Panel Display DM/SG. The valve can also be controlled with an external 0-10V DC signal.

The Motor valve can be used for other purposes if the instructions in this installation guide are followed.

Components and accessories

Components marked with ^A are included in package with article number 192010 A. Components marked with ^B are included in package with article number 192010 B. Components marked with ^D are included in package with article number 192010 D

| Article: | Description: | |
|---------------------|---|---|
| 192011 ^D | Motor valve The Motor valve controls the flow to each suction outlet. |  |
| 245000 ^D | Mains cable EU To connect the valve to a mains outlet, 1,8 meters |  |
| 190022 ^D | Control panel display DM/SG Used for control of system for smoke gas and Double mask evacuation. |  |
| 532019 ^D | Silencer Connection diameter Ø50mm (outside) |  |
| 532022 ^D | Double cuff Ø50mm Connection diameter Ø50/50mm (inside) |  |
| 532023 ^D | Adapter pipe Ø50/40mm Connection diameter Ø50/40mm (outside/inside) |  |
| 100189 | Control cable 5x0,5mm², shielded Control cable for connection between control panel and Motor valve. sold per meter. |  |
| 194000 | Mounting frame for Motor valves For simplified mounting of up to 5 Motor valves. |  |

Installation

General

The valve is intended for installation indoors in a non-humid and non-aggressive environment. It should be installed in a way that makes it possible to dismount the valve later.

If there is a risk that the valve might be exposed to outer contamination some form of cover should be installed. When the pipe system is installed, the open ends should always be covered with lids or something similar to avoid getting debris inside the system.

Before the valve is connected to the pipe system, the system should be blown through to make sure there is no debris inside the pipes. This is to avoid debris damaging the valve or the fan.

The valve is connected to a grounded 230VAC $\pm 10\%$ (210-250VAC) 50/60Hz outlet with a mains cable.

The control cable should be a five-wired 0,5mm² cable with a screen shield connected on the valve side only, **do not connect cable shield to earth on the control panel end**. The control cable connects on a screw terminal on the motor valve and to the control panel.

Mount the silencer on the valve and connect the assembly to a $\varnothing 50$ mm pipe system to the OR. The silencer should be placed on the OR side of the valve.

If the valve must be mounted nearby the OR and there is little room for $\varnothing 50$ mm pipes an adapter pipe (532023) can be mounted in the double cuff connector for a $\varnothing 40$ mm pipe to the OR.

ATTENTION Try to have as much space as possible around the valve when installing. It must be possible to disconnect the pipe system for repairing the valve.

ATTENTION The control cable must be of the shielded type. To avoid the risk of an earth fault in the room, the screen of the control cable should not be connected to earth on the control panel side, but only to the motor valve's earth connection. See page 9.

ATTENTION Before the auxiliary cable can be connected to the valve the control panel (or the control component specified) must be connected.

ATTENTION In the valves closed position it is not completely sealed. This is done to obtain a constant negative pressure in the whole pipe-system.

The motor valve is operated with Control panel Display DM/SG (190022). The valve can also be operated with 0-10V DC across pins 1(+) and 4(-) on the terminal block.

The motor valve has a built-in voltage supply to the 190022 Control panel Display DM/SG with 30V DC across pins 5(+) and 2(-) on the terminal block.

The Motor valve can be controlled by connection of the Motor valve and control panel to a computer in hospital central.

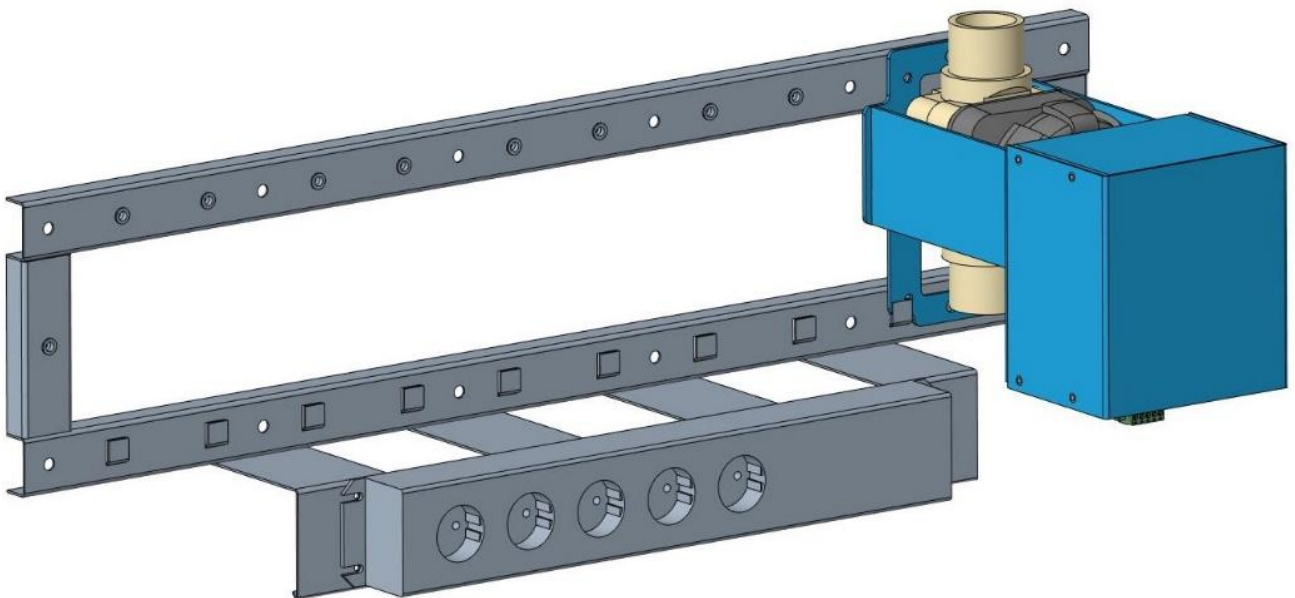
When the valve is closed there is a slight leakage over the valve to keep an under pressure in the suction outlet, this to secure that there no risk of contaminated air escaping out to the OR when opening the suction outlet.

Mounting

The Motor valve can be mounted with the pipe connections vertically or horizontal and there is no specific flow direction through the valve.

The valve should preferably be mounted on the Medicvent mounting frame (194000), mounting profiles or a wall.

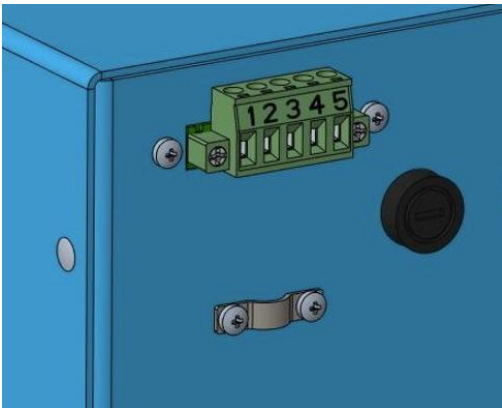
If the Medicvent Mounting frame is used, up to 5 valves may be placed on the same profile.



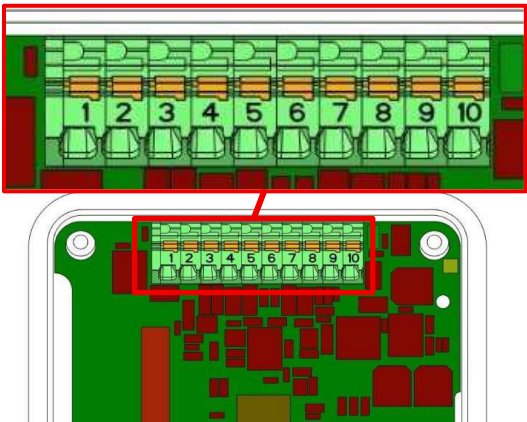
Control cable connection

The control cable between the Motor Valve and the control panel is connected according to the table below. The control cable's isolation is stripped approximately 10mm and clamped to the Motor Valve cover.

| Pin (Valve) | Pin (Panel) | Connection type |
|-------------|-------------|---|
| 1 | 2 | Analogue signal (0-10V) |
| 2 | 9 | Power supply 0 VDC (-) |
| 3 | - | Power supply for old control panels 192014 or 192016, 12 V DC |
| 4 | 1 | Analogue signal, ground |
| 5 | 10 | Power supply 24VDC \pm 10% (+) |



Terminal on Motor valve



Terminal on control panel 190022

Connection, older control panels

Motor valves in series 21 can also be operated with older control panels, 192014 or 192016. Connection should then be made according to the table below.

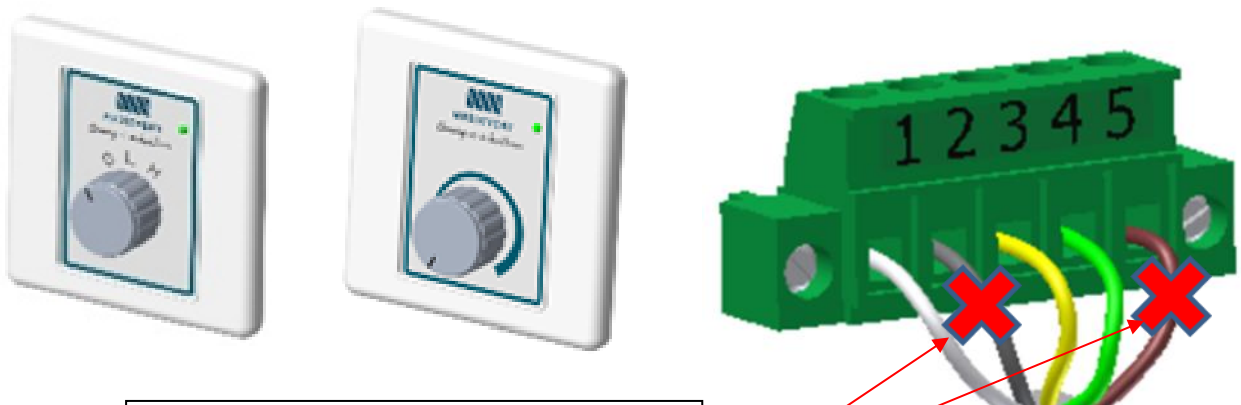
| Pin (Valve) | Pin (Panel) | Connection type |
|-------------|-------------|---|
| 1 | 1 | Analogue signal (0-10V) |
| 3 | 3 | Power supply for old control panels 192014 or 192016, 12 V DC |
| 4 | 4 | Analogue signal, ground |

WARNING When connecting Control panel DM 3-way (192014) or Control panel SG stepless (192016), connection terminals 2 and 5 must not be connected.

All plugs connect as follows:

1. White 1-10V (+)
2. Grey 30Vdc Supply Control Panel Display DM/SG (-)
3. Yellow 12Vdc (+) Supply Control panel DM 3-way (192014) or Control panel SG stepless (192016)
4. Green 1-10V (-)
5. Brown 30Vdc Supply Control Panel Display DM/SG (+)

Connect the wires as in pictures below. The plug mounts in the socket the Motor valve and secures with screws. Strip the cable to the screen 10mm wide and secure it with clamp on the Motor valve as in picture.



The connection on 2 and 5 needs to be disconnected when changing and not connected when installing a motor valve to these control panels.

Settings

Note: This chapter is intended for qualified personnel only. Contact Medicvent for support.

The keypad settings menu is opened by holding down the two outer buttons on the front of the panel for 8 seconds. Confirm all menu items with the middle button.

Surgical smoke

If the control panel is used for flow selection in a surgical smoke evacuation system, no settings shall be made in the control panel.

Double mask

If the control panel is used for flow selection in a nitrous oxide or anaesthetic gas evacuation system, the Low and High flow modes may need to be adjusted. It is done in the following way;

1. Enter the settings menu by holding down the two outer buttons for 8 seconds.
2. Go to the menu item 'Calibration' and confirm with the middle button.
3. The valve will now set itself to the Low Flow position. Check the flow against the flow meter in the room, adjust the value with the right or left button so that the flow meter ball is at the bottom line. Confirm the value with the middle button.
4. The valve will now set itself to the High Flow position. Repeat the adjustment and check that the ball of the flow meter is at the top line. Confirm the value with the middle button.
5. Exit the menu by going to the menu item 'Back' and confirm with the middle button. The valve is now set to the position that was selected before entering the menu.



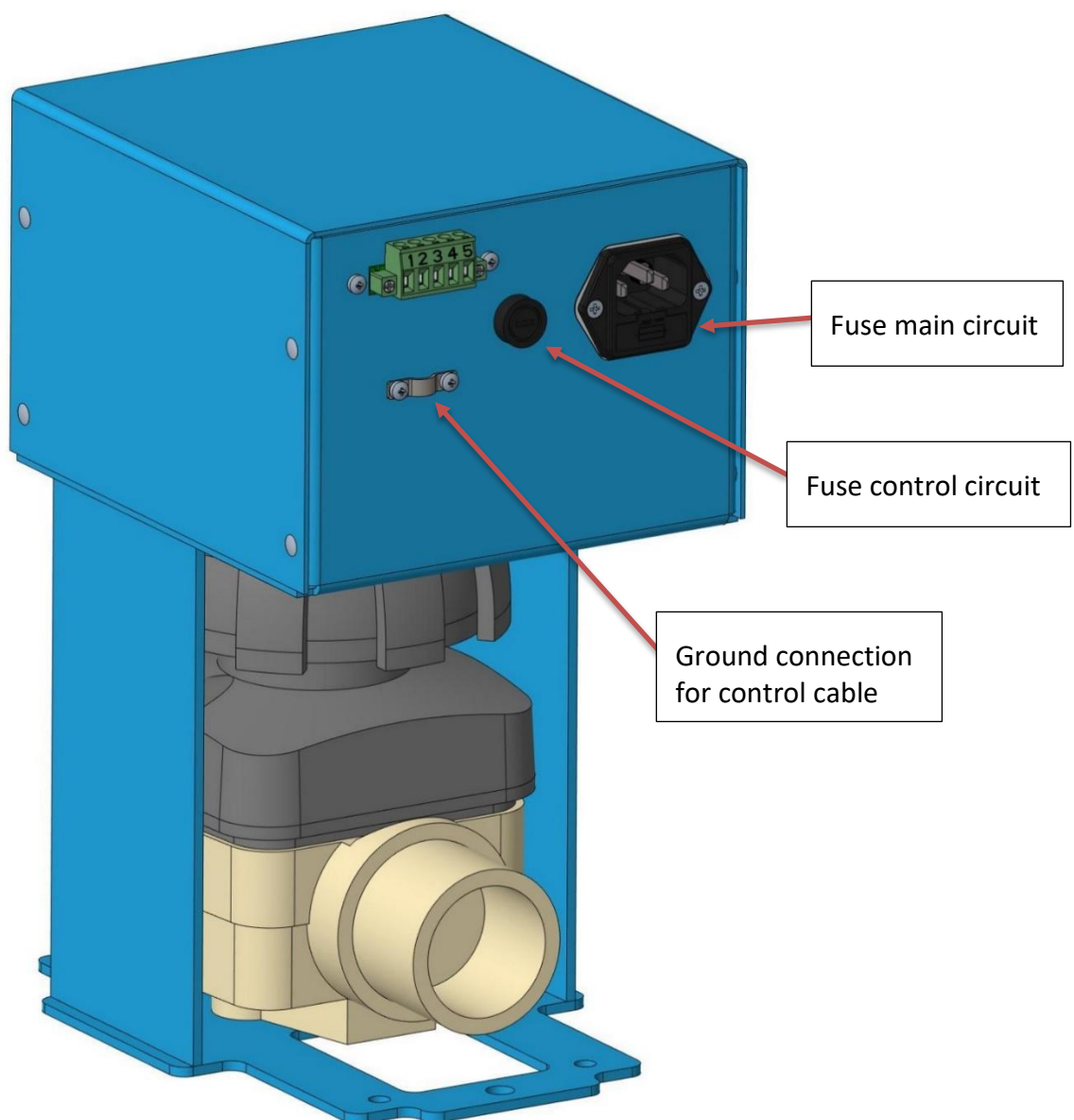
Troubleshooting

WARNING! The valves cover shall not be opened, risk for electric shock! Make sure that the sealing tape is not broken.

ATTENTION! Factory warranty will be questioned if warranty seals are broken.

If the valve doesn't comply with the settings on the control device, follow the steps below.

1. Check the function with another control panel.
2. Measure the control cable installation (page 8).
3. Check the mains fuses, 2pcs 5x20mm 160mAT and check mains power.
4. Check the circuit fuse, 5x20mm 315mAT.
5. Contact Medicvent for support (state valve serial number).





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