

# V5050A,B

## FLANGED LINEAR VALVE PN16 AND PN25/40

### PRODUCT DATA



### GENERAL

These three-port mixing valves are used for modulating control of hot/chilled water or steam in heating, ventilation, and air conditioning systems and can be operated by electric linear actuators ML6420/ML6425, ML7420/ML7425, and ML6421/ML7421 or by pneumatic actuator MP953.

### FEATURES

- Cast iron body with flanged end connections
- Low seat leakage rate
- Metal-to-metal seating for long life span
- Self-adjusting packing
- Accurate positioning to ensure state-of-the-art temperature control
- Easy mounting of direct-coupled electric and pneumatic actuators
- Constant total flow throughout entire plug travel

### SPECIFICATIONS

|   |  |
|---|--|
| <b>Action</b>   | Stem up to close port A-AB   |
| <b>Nominal pressure rating</b>  | PN16, PN25/40  |
| <b>Flow characteristic</b>  | linear for ports A-AB and B-AB   |
| <b>Rangeability</b>   | 50:1   |
| <b>Leakage rate</b>   | ≤0.1 % of kvs port A-AB<br>≤0.1 % of kvs port B-AB   |
| <b>Stroke</b>   | 20 mm DN15...80<br>38 mm DN100...150   |
| <b>Valve body</b>   |  |
| End connections   | Flanged per ISO 7005-2   |
| Material  | Cast iron (GG25) PN16<br>Cast steel (GS-C25) PN25/40   |
| <b>Dimensions</b>   | See Fig. 1.  |
| <b>Trim</b>   |  |
| Seat  | Stainless steel, replaceable   |
| Plug  | Stainless steel, skirt-guided  |
| Stem  | Stainless steel  |
| Packing   | Spring-loaded PTFE V-rings   |
| <b>Medium temperature and max. pressure</b>                               |  |
| PN16  | 2 ... 120 °C; max. 1600 kPa<br>120 ... 150 °C; max. 1440 kPa<br>150 ... 200 °C; max. 1280 kPa<br>200 ... 220 °C; max. 1200 kPa |
| PN25/40   | 2 ... 120 °C; max. 4000 kPa<br>120 ... 150 °C; max. 3920 kPa<br>150 ... 200 °C; max. 3800 kPa<br>200 ... 220 °C; max. 3720 kPa |
| <b>Maximum temperature differential in alternating hot/cold water use</b> | 60 K   |

## SIZES AND FLOW CAPACITIES

| order number | valve size  | kvs         |             |
|--------------|-------------|-------------|-------------|
| V5050A1124   | PN25/40     | DN15 2.5    |             |
| V5050A1132   |             | DN15 4.0    |             |
| V5050A1140   |             | DN20 6.3    |             |
| V5050A1157   |             | DN25 10.0   |             |
| V5050A1165   |             | DN32 16.0   |             |
| V5050A1173   |             | DN40 25.0   |             |
| V5050A1181   |             | DN50 40.0   |             |
| V5050A1199   |             | DN65 63.0   |             |
| V5050A1207   |             | DN80 100.0  |             |
| V5050A1215   |             | DN100 160.0 |             |
| V5050B1155*  |             | DN100 160.0 |             |
| V5050A1090   |             | PN16        | DN100 160.0 |
| V5050A1108   |             |             | DN125 250.0 |
| V5050A1116   |             |             | DN150 360.0 |
| V5050B1064*  | DN100 160.0 |             |             |
| V5050B1072*  | DN125 250.0 |             |             |
| V5050B1080*  | DN150 360.0 |             |             |

\* Reverse acting valve, only available on special request.

## INSTALLATION

- Water should meet VDI 2035 requirements.
- Do not install valve with stem below the horizontal.
- Fluid flow must correspond with the arrow direction on the valve body.
- The installation of a strainer is strongly recommended.

## REPAIR PACKING KIT

Part No.: R43176755004 (DN15...80)  
R43176755005 (DN100...150)

## ACTUATORS

### Electric Actuators

|            | 600 N              | 600 N<br>spring<br>return | 1800 N             |                    |
|------------|--------------------|---------------------------|--------------------|--------------------|
| valve size | DN15-80            |                           | DN 15-80           | DN 100-150         |
| model      | ML6420A<br>ML7420A | ML6425A,B<br>ML7425A,B    | ML6421A<br>ML7421A | ML6421B<br>ML7421B |

### Pneumatic Actuators

| valve size    | actuator |        | action |         | positioner |
|---------------|----------|--------|--------|---------|------------|
|               | model    | size   | direct | reverse |            |
| DN<br>15-80   | MP953A   | 5", 8" | x      |         | yes        |
|               | MP953B   | 7"     |        | x       |            |
|               | MP953C   | 5", 8" | x      |         | no         |
|               | MP953D   | 7"     |        | x       |            |
| DN<br>100-150 | MP953A   | 13"    | x      |         | yes        |
|               | MP953C   | 13"    | x      |         | no         |

**CLOSE OFF PRESSURE RATINGS in kPa****Electric Actuators**

| actuator                                 |        | valve size |      |      |      |      |      |      |      |       |       |       |
|--|--------|------------|------|------|------|------|------|------|------|-------|-------|-------|
| model                                    | force  | DN15       | DN20 | DN25 | DN32 | DN40 | DN50 | DN65 | DN80 | DN100 | DN125 | DN150 |
| ML6420A, ML6425A,B<br>ML7420A, ML7425A,B | 600 N  | 1000       | 1000 | 1000 | 600  | 350  | 200  | 120  | 50   | -     | -     | -     |
| ML6421A, ML7421A                         | 1800 N | 2500       | 2500 | 2500 | 2000 | 1300 | 750  | 500  | 230  | -     | -     | -     |
| ML6421B, ML7421B                         |        | -          | -    | -    | -    | -    | -    | -    | -    | 230   | 90    | 90    |

**Pneumatic Actuators**

| actuator           |                         |                          | closed valve seat | valve size   |              |              |             |            |            |            |           |        |            |           |           |
|--------------------|-------------------------|--------------------------|-------------------|--------------|--------------|--------------|-------------|------------|------------|------------|-----------|--------|------------|-----------|-----------|
| model              | actuator spring range   | air pressure in actuator |                   | DN 15        | DN 20        | DN 25        | DN 32       | DN 40      | DN 50      | DN 65      | DN 80     | DN 100 | DN 125     | DN 150    |           |
| MP953 A,C;<br>(5") | 27-76 kPa<br>(4-11 PSI) | 0 kPa<br>115 kPa         | upper<br>lower    | 160<br>410   | 160<br>410   | 160<br>410   | 70<br>230   | -          | -          | -          | -         | -      | -          | -         |           |
| MP953 C;<br>(5")   | 55-83 kPa<br>(8-12 PSI) |                          |                   | 550<br>220   | 550<br>220   | 550<br>220   | 310<br>110  | 180<br>50  | -          | -          | -         | -      | -          | -         | -         |
| MP953C;<br>(8")    | 14-48 kPa<br>(2-7 PSI)  |                          |                   | 370<br>1600  | 370<br>1600  | 370<br>1600  | 200<br>1600 | 110<br>100 | 40<br>570  | -          | -         | -      | -          | -         | -         |
| MP953A,C;<br>(8")  | 27-76 kPa<br>(4-11 PSI) |                          |                   | 980<br>1500  | 980<br>1500  | 980<br>1500  | 570<br>890  | 340<br>540 | 180<br>290 | 100<br>180 | 40<br>80  | -      | -          | -         | -         |
| MP953C;<br>(8")    | 55-83 kPa<br>(8-12 PSI) |                          |                   | 1600<br>1100 | 1600<br>1100 | 1600<br>1100 | 1300<br>700 | 820<br>420 | 450<br>220 | 280<br>130 | 140<br>60 | -      | -          | -         | -         |
| MP953C;<br>(13")   | 14-48 kPa<br>(2-7 PSI)  |                          |                   | -            | -            | -            | -           | -          | -          | -          | -         | -      | 90<br>620  | 30<br>250 | 30<br>250 |
| MP953A,C;<br>(13") | 27-76 kPa<br>(4-11 PSI) |                          |                   | -            | -            | -            | -           | -          | -          | -          | -         | -      | 230<br>320 | 90<br>120 | 90<br>120 |
| MP953D;<br>(7")    | 27-76 kPa<br>(4-11 PSI) |                          |                   | 880<br>530   | 880<br>530   | 880<br>530   | 510<br>300  | 300<br>170 | 160<br>80  | 90<br>40   | -         | -      | -          | -         | -         |
| MP953B,D;<br>(7")  | 55-90 kPa<br>(8-13 PSI) |                          |                   | 680<br>1300  | 680<br>1300  | 680<br>1300  | 390<br>800  | 230<br>440 | 110<br>260 | 60<br>160  | 20<br>70  | -      | -          | -         | -         |

# DIMENSIONS

## Valve

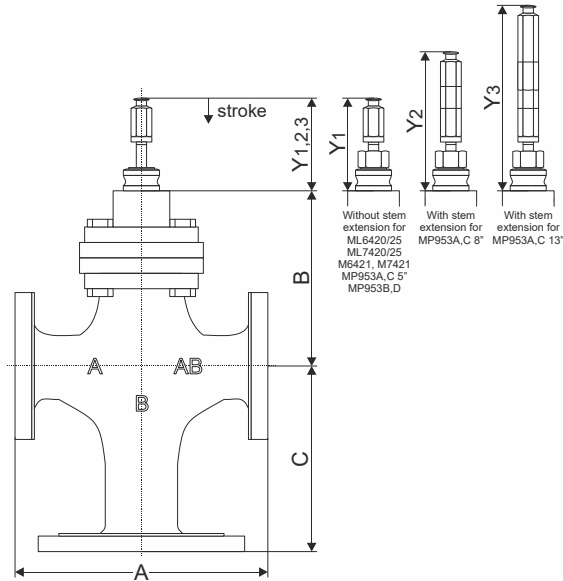


Fig. 1. V5050A,B (dimensions in mm, stem up)

| valve size | A   | B   | C   | Y <sub>1</sub> * | Y <sub>2</sub> * | Y <sub>3</sub> * |
|------------|-----|-----|-----|------------------|------------------|------------------|
| DN15       | 130 | 126 | 120 | 107              | 151              | -                |
| DN20       | 150 |     | 135 |                  |                  |                  |
| DN25       | 160 |     | 140 |                  |                  |                  |
| DN32       | 180 | 155 | 150 | 170.5            | -                | 227              |
| DN40       | 200 |     | 165 |                  |                  |                  |
| DN50       | 230 |     | 220 |                  |                  |                  |
| DN65       | 290 | 181 | 245 | -                | -                | -                |
| DN80       | 310 |     | 270 |                  |                  |                  |
| DN100      | 350 |     | 219 |                  |                  |                  |
| DN125      | 400 | 219 | 270 | -                | -                | -                |
| DN150      | 480 |     | 270 |                  |                  |                  |

\* = Adjustment dimension. Port A-AB closed.

## Electric Actuators

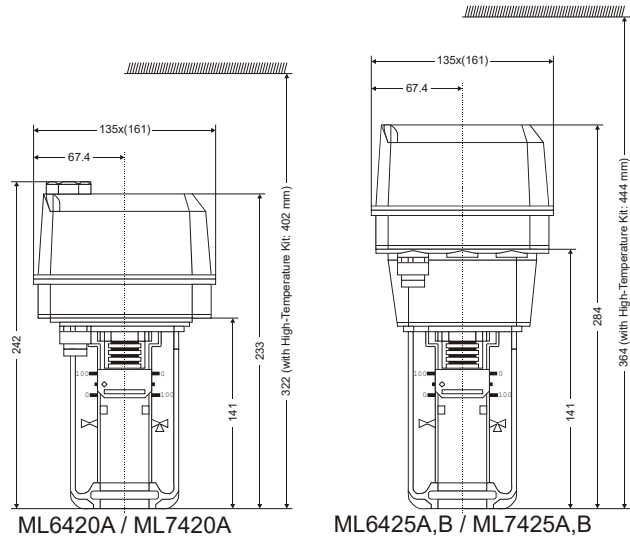


Fig. 2. ML6420A / ML7420A, ML6425A,B / ML7425A,B

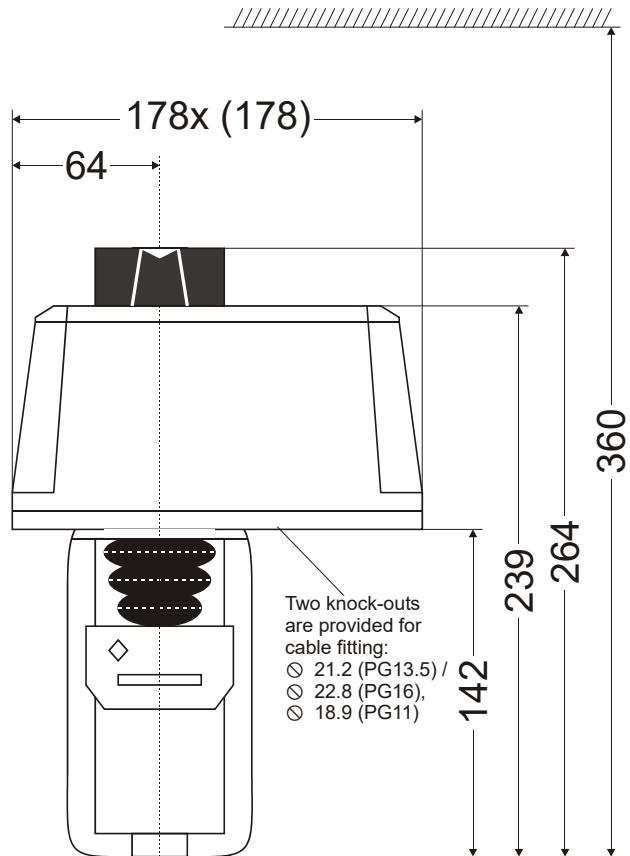


Fig. 3. ML6421A/ML7421A (dimensions in mm)

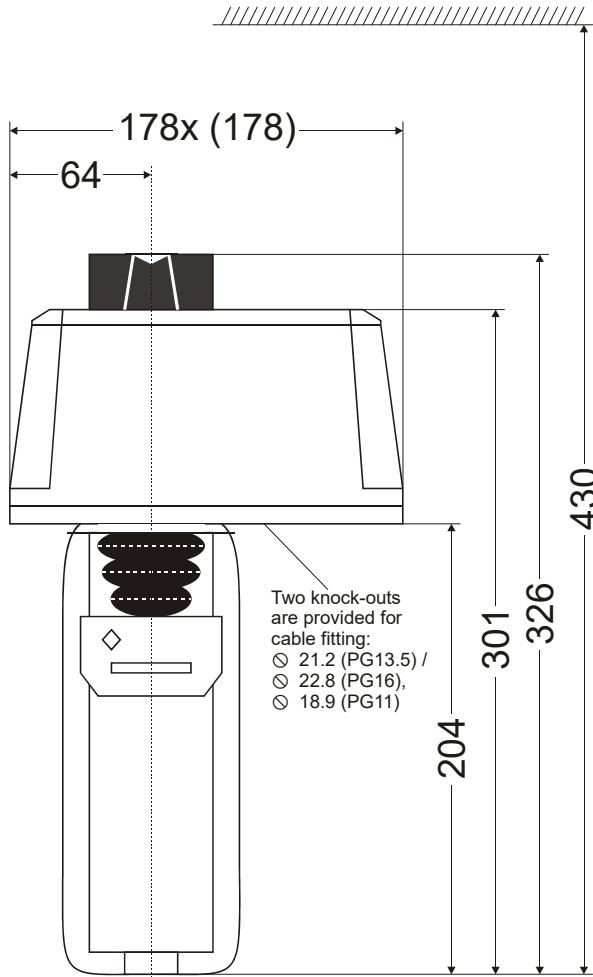


Fig. 4. ML6421B/ML7421B (dimensions in mm)

## Pneumatic Actuators

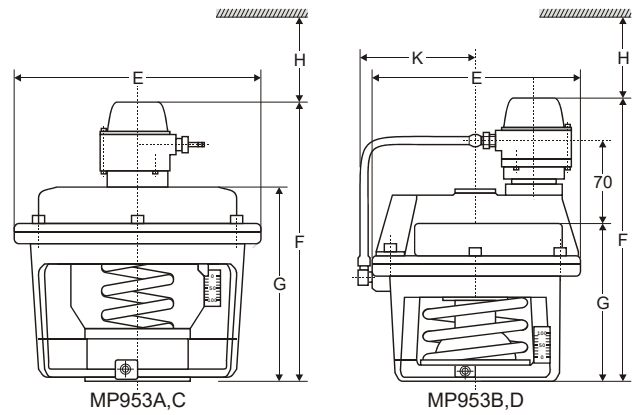


Fig. 5. MP953A,C/MP953B,D (dimensions in mm)

| model       | ØE  | F   | G   | H   | K   |
|-------------|-----|-----|-----|-----|-----|
| MP953A, 5"  | 130 | 192 | -   | 120 | -   |
| MP953C, 5"  |     | -   | 120 |     | -   |
| MP953A, 8"  | 210 | 237 | -   | 140 | -   |
| MP953C, 8"  |     | -   | 165 |     | -   |
| MP953A, 13" | 343 | 327 | -   | 200 | -   |
| MP953A, 13" |     | -   | 255 |     | -   |
| MP953B      | 180 | 242 | -   | 120 | 107 |
| MP953D      |     | -   | 137 |     | -   |

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