The name „System 6“ stands for a modular system of solenoid coils, armature systems, solenoid operators and solenoid valves. The diameter of the armatures of all valve components is approximately 6 mm. This value is the major characteristic of this type. The components' efficiency has been increased to the optimum in years of simulation, construction and practical testing.

APPLICATION OF SYSTEM 6

The solenoid operators and solenoid valves of System 6 can be used for operating 2/2- or 3/2 way valves. Available switching functions are normally closed and normally open. For 3/2 way seat valves of this series, typical maximum values for operating pressure and nominal width are 10 bar/1 mm. For 2/2 way devices, a maximum operating pressure of 16 bar or a maximum nominal width of 1.8 mm can be achieved.

The components of System 6 are mainly used as pilot valves in pneumatics. The solenoid operators and solenoid valves are designed for the use with compressed air or other neutral gases. The use of other substances is possible according to prior agreement with nass magnet.

FUNCTION

While the solenoid operator/solenoid valve (standard version, 3/2 way, normally closed) is de-energized, the armature is pushed down on the lower valve seat by the reset spring. The lower valve seat is closed by a sealing element. In this switch position the upper valve seat in the magnetic core is open. When the valve is energized, the magnetic force exceeds the force of the reset spring and moves the armature into the opposite extreme position. In this case the upper valve seat is closed by the sealing element, whereas the lower valve seat is open.

Solenoid operators and solenoid valves have identical functionality. However, if solenoid operators are ordered, neither the lower valve seat nor the valve body is shipped. Those components have to be provided by the customer. 2/2 way valves do not have an upper valve seat. Besides that, the function of the magnet is identical.

Note
We reserve the right to make product changes without notice. For use other than general industrial pneumatics, please consult factory.
SOLENOID COIL

Width: 16,5 mm
Connection type: form C - EN 175301-803-C
Moulding material: thermoset resin

General Data
Voltage tolerance: ± 10 %
Ambient temperature: -20 °C to +50 °C
Relative duty cycle: 100 %
Insulation class of insulating materials according to DIN VDE 0580: F
Degree of protection with connector according to EN 60529: IP 65
Imprint: nass magnet (customer imprint possible)
**Technical Data** Standard Versions

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Voltage</th>
<th>Frequency [Hz]</th>
<th>Rated Power [W]</th>
<th>Power Level</th>
<th>$\Delta \theta_{st}$ [K]</th>
</tr>
</thead>
<tbody>
<tr>
<td>106-030-0007</td>
<td>12 V DC</td>
<td>-</td>
<td>1,2</td>
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<td>2</td>
<td>27</td>
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<td>106-030-0008</td>
<td>24 V DC</td>
<td>-</td>
<td>2,0</td>
<td>3</td>
<td>39</td>
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<tr>
<td>106-030-0037</td>
<td>230 V AC</td>
<td>50</td>
<td>3,2</td>
<td>3</td>
<td>34</td>
</tr>
<tr>
<td>106-030-0037</td>
<td>240 V AC</td>
<td>60</td>
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<td>34</td>
</tr>
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<td>12 V DC</td>
<td>-</td>
<td>3,1</td>
<td>4</td>
<td>56</td>
</tr>
<tr>
<td>106-030-0004</td>
<td>24 V DC</td>
<td>-</td>
<td>3,0</td>
<td>4</td>
<td>56</td>
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<tr>
<td>106-030-0005</td>
<td>24 V AC</td>
<td>50</td>
<td>3,6</td>
<td>4</td>
<td>57</td>
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<tr>
<td>106-030-0005</td>
<td>24 V AC</td>
<td>60</td>
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</tr>
<tr>
<td>106-030-0003</td>
<td>110 V AC</td>
<td>50</td>
<td>3,6</td>
<td>4</td>
<td>52</td>
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<tr>
<td>106-030-0003</td>
<td>120 V AC</td>
<td>60</td>
<td>3,6</td>
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</table>

$\Delta \theta_{st}$ [K]: steady-state over-temperature according to VDE 0580
SOLENOID COIL

Width: 16.5 mm
Connection type: form C - EN 175301-803-C
Moulding material: thermoplastic

General Data
Voltage tolerance: ± 10 %
Ambient temperature: -20 °C to +50 °C
Relative duty cycle: 100 %
Insulation class of insulating materials according to DIN VDE 0580: F
Degree of protection with connector according to EN 60529: IP 65
Imprint: nass magnet (customer imprint possible)
## Technical Data Standard Versions

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Voltage</th>
<th>Frequency [Hz]</th>
<th>Rated Power [W]</th>
<th>Power Level</th>
<th>(\Delta \theta_{st} [K])</th>
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<td>24 V DC</td>
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<td>24 V DC</td>
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<td>3,0</td>
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</tr>
<tr>
<td>106-030-0069</td>
<td>24 V AC</td>
<td>50</td>
<td>3,6</td>
<td>4</td>
<td>63</td>
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<td>110 V AC</td>
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<td>106-030-0067</td>
<td>120 V AC</td>
<td>60</td>
<td>3,7</td>
<td>4</td>
<td>58</td>
</tr>
<tr>
<td>106-030-0066</td>
<td>220 V AC</td>
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<td>3,7</td>
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<tr>
<td>106-030-0066</td>
<td>240 V AC</td>
<td>60</td>
<td>3,7</td>
<td>4</td>
<td>63</td>
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</tbody>
</table>

\(\Delta \theta_{st} [K]\): steady-state over-temperature according to VDE 0580
SOLENOID COIL

Width: 16,5 mm
Connection type: flying leads
Moulding material: thermoplastic

**General Data**

- Voltage tolerance: ± 10 %
- Ambient temperature: -20 °C to +50 °C
- Relative duty cycle: 100 %
- Insulation class of insulating materials: F
- Degree of protection with connector: IP 65
- Imprint: *nass magnet* (customer imprint possible)
## Technical Data Standard Versions

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Voltage</th>
<th>Frequency [Hz]</th>
<th>Rated Power [W]</th>
<th>Power Level</th>
<th>(\Delta\theta_s) [K]</th>
</tr>
</thead>
<tbody>
<tr>
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<td>24 DC</td>
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<td>2.0</td>
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<td>106-030-0039</td>
<td>24 DC</td>
<td>-</td>
<td>3.0</td>
<td>4</td>
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</tr>
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<td>106-030-0038</td>
<td>230 AC</td>
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<td>4.0</td>
<td>4</td>
<td>63</td>
</tr>
<tr>
<td>106-030-0038</td>
<td>230 AC</td>
<td>60</td>
<td>3.4</td>
<td>4</td>
<td>63</td>
</tr>
</tbody>
</table>

**Note:** alternative length of flying leads on request

\(\Delta\theta_s\) [K]: steady-state over-temperature according to VDE 0580
SPECIAL REMARKS

The technical data are valid for the indicated standard voltages. Other voltages are available on request.

Perfect function of these solenoid coils with the pertinent components included in this catalogue is assured with the winding having reached its operating temperature (max. ambient temperature and max. voltage tolerance). The steady-state over-temperature is reached in case of valve body of plastic and coil jacketing made of thermoplastic. All valves are designed in compliance with DIN VDE 0580. Arrangement of the valves in modular design is possible, however, it may ensue a higher temperature increased by up to 20 K and may limit the function.

A general lifetime of the products cannot be specified, as it is decisively influenced by ambient conditions, the single application and combination with other components. The function can only be fulfilled in case of exclusive use of nass magnet products.

Should there be deviating or additional operating conditions compared to the abovementioned conditions, special testing is necessary in order to verify the usability of the nass magnet products. – nass magnet will be glad to give you the required advice.
ARMATURE ASSEMBLY FL

Switching function: 2/2 and 3/2 way
De-energized state: NC (normally closed)
Connection type: flange

**General Data**
Ambient temperature: -10 °C to +50 °C
Quality of medium according to ISO 8573-1: compressed air class 4, 3, 4
Mounting position: any (preferably plunger in vertical direction)
**Technical Data** Standard Versions

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<tbody>
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<td>106-010-0003</td>
<td>3/2 way 1</td>
<td>1</td>
<td>0,6</td>
<td>0,7</td>
<td>DC</td>
<td>brass</td>
<td>x FPM</td>
</tr>
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<td>106-010-0007</td>
<td>3/2 way 1</td>
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<td>0,6</td>
<td>0,7</td>
<td>DC</td>
<td>stainless steel</td>
<td>x HNBR</td>
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<tr>
<td>106-010-0012</td>
<td>3/2 way 1</td>
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<td>0,6</td>
<td>0,7</td>
<td>DC</td>
<td>x FPM</td>
<td></td>
</tr>
<tr>
<td>106-010-0002</td>
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<td>0,9</td>
<td>DC</td>
<td>FPM</td>
<td></td>
</tr>
<tr>
<td>106-010-0005</td>
<td>3/2 way 3</td>
<td>3</td>
<td>0,8</td>
<td>0,9</td>
<td>DC AC</td>
<td>FPM</td>
<td></td>
</tr>
<tr>
<td>106-010-0004</td>
<td>2/2 way 3, 4</td>
<td>see below</td>
<td>see below</td>
<td>DC AC</td>
<td>x FPM</td>
<td></td>
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<td>106-010-0001</td>
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<td>4</td>
<td>1,0</td>
<td>1,1</td>
<td>DC AC</td>
<td>x FPM</td>
<td></td>
</tr>
</tbody>
</table>

**Power Levels for 2/2 Way Versions**

- AC - 50 Hz
- AC - 60 Hz
- DC - 5 % residual ripple
- max. test pressure: 18 bar · special versions on request

![Power Level 3 Diagram](image1)

![Power Level 4 Diagram](image2)
VALVE SYSTEM SF

Switching function: 3/2 way
De-energized state: NC (normally closed)
Valve body: plastics
Gasket of the pneumatic interface: O’rings, asymmetrical, side flange (SF)
sealing material FPM

General Data
Ambient temperature ........................................... - 10 °C to + 50 °C
Quality of medium according to ISO 8573-1 .......... compressed air class 4, 3, 4
Mounting position .............................................. any (preferably plunger in vertical direction)

Pneumatic Diagram
### Technical Data Standard Versions

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Power Level</th>
<th>Nominal Orifice [mm]</th>
<th>Pressure [bar]</th>
<th>Flow Rate [l/min]*</th>
<th>Manual Override</th>
<th>Appropriate for</th>
<th>Armature Guide</th>
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<tbody>
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<td>inlet</td>
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<td>2-3</td>
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<td>0,7</td>
<td>8</td>
<td>12</td>
<td>14</td>
<td>x</td>
</tr>
<tr>
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<td>2</td>
<td>0,8</td>
<td>0,9</td>
<td>8</td>
<td>20</td>
<td>26</td>
<td>x</td>
</tr>
<tr>
<td>106-050-0008</td>
<td>2</td>
<td>0,8</td>
<td>0,9</td>
<td>8</td>
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<td>0,9</td>
<td>10</td>
<td>23</td>
<td>31</td>
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<tr>
<td>106-050-0025</td>
<td>4</td>
<td>1,0</td>
<td>1,1</td>
<td>10</td>
<td>27</td>
<td>37</td>
<td>DC</td>
</tr>
<tr>
<td>106-050-0017</td>
<td>4</td>
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<td>1,1</td>
<td>10</td>
<td>27</td>
<td>37</td>
<td>x</td>
</tr>
<tr>
<td>106-050-0004</td>
<td>4</td>
<td>1,0</td>
<td>1,1</td>
<td>10</td>
<td>27</td>
<td>37</td>
<td>x</td>
</tr>
</tbody>
</table>

* qv flow rate at an inlet pressure of 6 bar (ΔX = 1 bar) and 0 °C; flow rate detection in compliance with ISO 6358
VALVE SYSTEM KR

Switching function: 3/2 way
De-energized state: NC (normally closed)
Valve body: plastics
Gasket of the pneumatic interface: concentric O’rings (KR)
sealing material FPM

General Data
Ambient temperature -10 °C to +50 °C
Quality of medium according to ISO 8573-1 compressed air class 4, 3, 4
Mounting position any (preferably plunger in vertical direction)

Pneumatic Diagram

without manual override

with manual override

bistable manual override

without manual override

bistable manual override
### Technical Data
#### Standard Versions

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Power Level</th>
<th>Nominal Orifice [mm]</th>
<th>Pressure [bar]</th>
<th>Flow Rate [l/min]*</th>
<th>Manual Override</th>
<th>Appropriate for</th>
<th>Armature Guide</th>
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<tbody>
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<td></td>
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<td>inlet</td>
<td>exhausted</td>
<td>1-2</td>
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<tr>
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<td>1</td>
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<td>0,7</td>
<td>8</td>
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<td>14</td>
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</tr>
<tr>
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<td>1</td>
<td>0,6</td>
<td>0,7</td>
<td>8</td>
<td>12</td>
<td>14</td>
<td>x</td>
</tr>
<tr>
<td>106-050-0006</td>
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<td>0,9</td>
<td>8</td>
<td>23</td>
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<td>1,1</td>
<td>10</td>
<td>32</td>
<td>40</td>
<td>x</td>
</tr>
</tbody>
</table>

* qv flow rate at an inlet pressure of 6 bar (ΔX = 1 bar) and 0 °C; flow rate detection in compliance with ISO 6358
Knurled nut · M 6 x 0,5 mm
Part No.: 106-080-0001
Explanation: tightening torque max. 1,0 Nm; use with spring washer #106-080-0009

Silencer · M 6 x 0,5 mm
Part No.: 106-080-0004
Explanation: inclusive sintered filter; tightening torque max. 1,0 Nm; use with spring washer #106-080-0009

Spring washer
Part No.: 106-080-0009
Explanation: use with knurled nut #106-080-0001 or silencer #106-080-0004

Mounting plate
Part No.: 106-702-0001
Explanation: only for armature assembly FL

Valve seat · orifice size 0,6
Part No.: 106-034-0001

Valve seat · orifice size 0,8
Part No.: 106-034-0002
Fillister head screw · M 3 x 25 mm
Part No.: 900-822-0049
Explanation: with slots and cross slots; only for valve system SF (for one valve system two screws are required); tightening torque max. 0,5 Nm

Valve seat · orifice size 1,0
Part No.: 106-034-0003

Valve seat · orifice size 1,2
Part No.: 106-034-0006

Valve seat · orifice size 1,3
Part No.: 106-034-0004

Valve seat · orifice size 1,4
Part No.: 106-034-0007

Valve seat · orifice size 1,5
Part No.: 106-034-0005
Flange seal NBR
Part No.: 106-723-0001
Explanation: only for valve system SF

O’ring FPM · 2,5 x 1,5 mm
Part No.: 900-841-0065
Explanation: only for valve system KR

Cheese-head screw · M 3 x 18 mm
Part No.: 900-822-0037
Explanation: with slots and cross slots; only for valve system KR (for one valve system two screws are required); tightening torque max. 0,5 Nm

O’ring FPM · 11,5 x 1,5 mm
Part No.: 900-841-0077
Explanation: only for valve system KR
PNEUMATIC CONNECTION SOLENOID OPERATOR

Note:

Specifications regarding the characteristic of the customer interface are available at nass magnet on request.