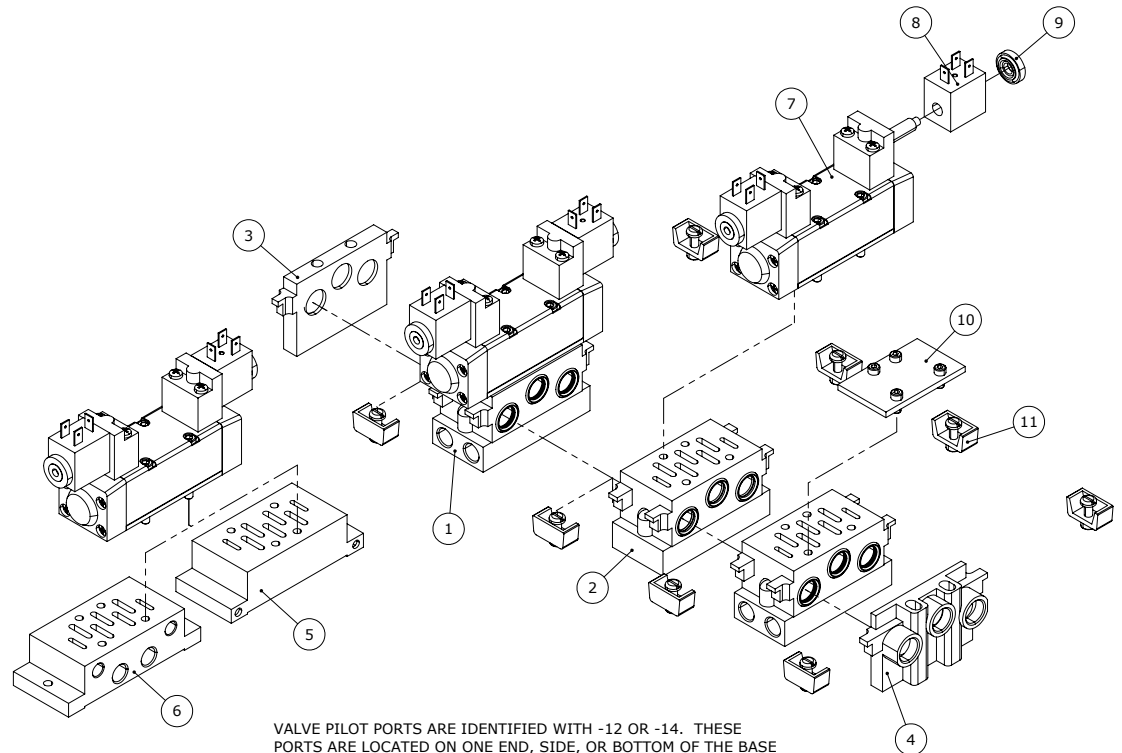




# ISO 5599 Solenoid Valves, Bases, Manifolds and Accessories

NITRA ISO 5599 valves and other components are a robust directional control solution that conforms to ISO 5599/1 standard. Components are available in size 1 or size 2 to deliver excellent performance for many industrial pneumatic systems. Valves and bases are interchangeable with other 5599/1 systems from other manufacturers. Bases and manifolds are available in either G-thread (BSPP) or NPT.

| ISO 5599 Manifolds/<br>Bases/Valves |                                     |
|-------------------------------------|-------------------------------------|
| 1                                   | Manifold Side Orientation           |
| 2                                   | Manifold Bottom Orientation         |
| 3                                   | Manifold Blind End Plate            |
| 4                                   | Manifold Inlet                      |
| 5                                   | Stand Alone Base Bottom Orientation |
| 6                                   | Stand Alone Base Side Orientation   |
| 7                                   | Solenoid Valve                      |
| 8                                   | Solenoid Coil                       |
| 9                                   | Coil Nut                            |
| 10                                  | Manifold Blank Plate                |
| 11                                  | Manifold Attaching Kit              |

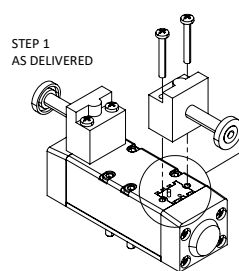


VALVE PILOT PORTS ARE IDENTIFIED WITH -12 OR -14. THESE PORTS ARE LOCATED ON ONE END, SIDE, OR BOTTOM OF THE BASE

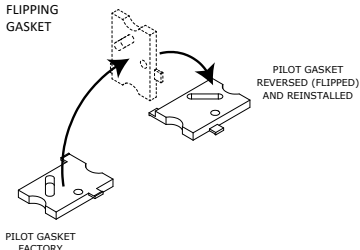
## NITRA ISO 5599 manifold components are easily assembled to meet your needs:

- Determine if bottom or side ports are needed.
- Join manifold sections with included clamps.
- Add inlet plate(s) and blind end plate (if needed).
- Install valves on the manifold sections. Blanking plates are available for unused stations.
- Install solenoid coils in desired voltage.
- Connect solenoids to control system and plumb as required.

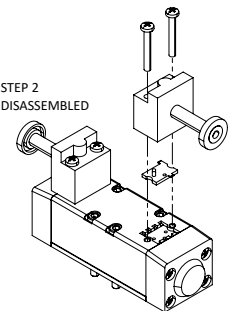
TO OPERATE THE VALVE AT AN OPERATING PRESSURE (PORT 1) BELOW THE MINIMUM PILOT PRESSURE, REMOVE THE PILOT VALVE AND REVERSE THE PILOT GASKET.



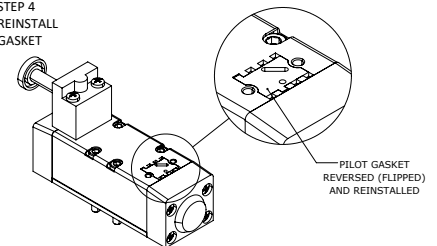
STEP 3  
FLIPPING  
GASKET



STEP 2  
DISASSEMBLED

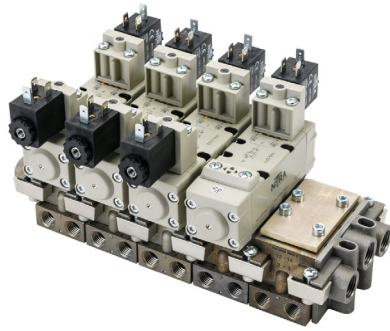


STEP 4  
REINSTALL  
GASKET





# ISO 5599 Solenoid Valves



Assembly examples show assembled ISO 5599 valves, bases and manifolds. (each sold separately)



## Features

- ISO 5599/1 sizes 1 and 2 interchange with all other brands meeting ISO 5599/1
- 5-port / 2-position and 5-port / 3-position valves available
- Order stand-alone bases or manifolds separately
- Solenoid coils sold separately in 12 & 24 VDC and 24, 110 & 220 VAC



See [www.AutomationDirect.com](http://www.AutomationDirect.com) for a wide variety of fitting and cable options



| ISO 5599 Solenoid Valves                                      |                                                                            |                                         |                           |                           |                           |                                     |                                         |                           |                           |                           |
|---------------------------------------------------------------|----------------------------------------------------------------------------|-----------------------------------------|---------------------------|---------------------------|---------------------------|-------------------------------------|-----------------------------------------|---------------------------|---------------------------|---------------------------|
| Model                                                         | <a href="#">HVS-5211</a>                                                   | <a href="#">HVS-5212</a>                | <a href="#">HVS-53C12</a> | <a href="#">HVS-53E12</a> | <a href="#">HVS-53P12</a> | <a href="#">HVS-5221</a>            | <a href="#">HVS-5222</a>                | <a href="#">HVS-53C22</a> | <a href="#">HVS-53E22</a> | <a href="#">HVS-53P22</a> |
| Price                                                         | \$86.00                                                                    | \$112.00                                | \$134.00                  | \$134.00                  | \$134.00                  | \$132.00                            | \$155.00                                | \$163.00                  | \$163.00                  | \$163.00                  |
| Drawing                                                       | <a href="#">PDF</a>                                                        | <a href="#">PDF</a>                     | <a href="#">PDF</a>       | <a href="#">PDF</a>       | <a href="#">PDF</a>       | <a href="#">PDF</a>                 | <a href="#">PDF</a>                     | <a href="#">PDF</a>       | <a href="#">PDF</a>       | <a href="#">PDF</a>       |
| Diagram                                                       | A                                                                          | B                                       | C                         | D                         | E                         | A                                   | B                                       | C                         | D                         | E                         |
| Weight (lbs.)                                                 | 0.76                                                                       | 0.86                                    | 0.82                      | 0.82                      | 0.82                      | 1.58                                | 1.63                                    | 1.59                      | 1.59                      | 1.59                      |
| Fluid                                                         | Filtered air without lubrication; lubrication, if used, must be continuous |                                         |                           |                           |                           |                                     |                                         |                           |                           |                           |
| ISO Size                                                      | 1                                                                          |                                         |                           |                           |                           | 2                                   |                                         |                           |                           |                           |
| Operating Pressure                                            | Vacuum to 10 bar (vacuum to 145 psi)                                       |                                         |                           |                           |                           |                                     |                                         |                           |                           |                           |
| Min. Pilot Pressure                                           | 2.5 bar (36 psi)                                                           | 1 bar (15 psi)                          |                           |                           |                           | 2.5 bar (36 psi)                    | 1 bar (15 psi)                          |                           |                           |                           |
| Operating Temp. Range                                         | -10 to 60°C (14 to 140°F)                                                  |                                         |                           |                           |                           |                                     |                                         |                           |                           |                           |
| Nominal Diameter                                              | 7.5 mm                                                                     |                                         |                           |                           |                           | 12mm                                |                                         |                           |                           |                           |
| Sonic Conductance (C)                                         | 250 NI/min • bar (36.5 scfm/psi)                                           |                                         |                           |                           |                           | 657.14 NI/min • bar (95.9 scfm/psi) |                                         |                           |                           |                           |
| Critical Pressure Ratio (b)                                   | 0.36                                                                       |                                         |                           |                           |                           | 0.25                                |                                         |                           |                           |                           |
| Flow Rate at 6 bar @ delta-P 0.5 bar (87 psi @ delta-P 7 psi) | 700 NI/min (24.7 scfm)                                                     |                                         |                           |                           |                           | 1800 NI/min (63.6 scfm)             |                                         |                           |                           |                           |
| Flow Rate at 6 bar @ delta-P 1 bar (87 psi @ delta-P 15 psi)  | 1100 NI/min (38.8 scfm)                                                    |                                         |                           |                           |                           | 2700 NI/min (95.3 scfm)             |                                         |                           |                           |                           |
| Min Response ON/OFF                                           | 24/50 ms                                                                   | 20/20 ms                                |                           |                           |                           | 39/60 ms                            | 25/25 ms                                |                           |                           |                           |
| Installation                                                  | Any                                                                        | Vertical not recommended with vibration |                           |                           |                           | Any                                 | Vertical not recommended with vibration |                           |                           |                           |
| Assembly                                                      | On single and manifold bases according to ISO 5599/1                       |                                         |                           |                           |                           |                                     |                                         |                           |                           |                           |
| Manual Override                                               | Locking                                                                    |                                         |                           |                           |                           |                                     |                                         |                           |                           |                           |
| Coils                                                         | 22mm Form B in Accordance with EN 175301-803-B (11mm pin width)            |                                         |                           |                           |                           |                                     |                                         |                           |                           |                           |
| Max. Coil Nut Torque                                          | 1 Nm / 9 lb-in                                                             |                                         |                           |                           |                           |                                     |                                         |                           |                           |                           |
| Approvals                                                     | N/A                                                                        |                                         |                           |                           |                           |                                     |                                         |                           |                           |                           |



# ISO 5599 Solenoid Valves

## ISO 5599 Valve Diagrams

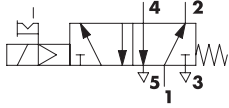


Diagram "A"

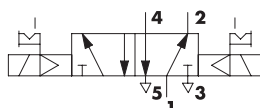


Diagram "B"

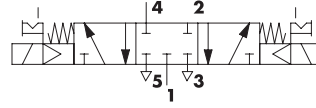


Diagram "C"

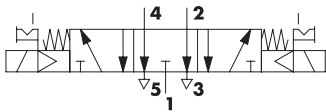


Diagram "D"

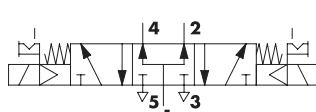
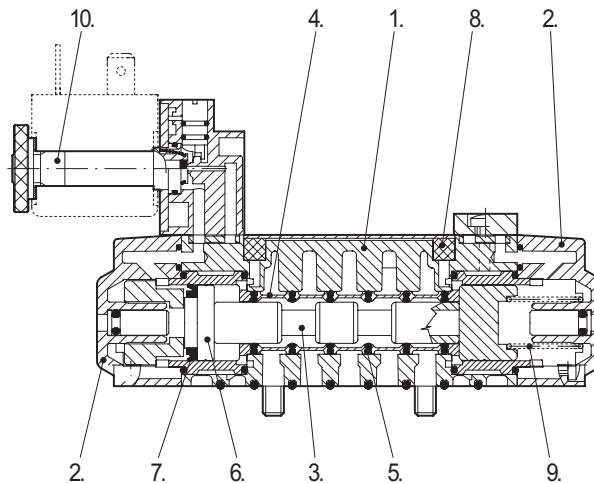


Diagram "E"

## ISO 5599 Valve Components

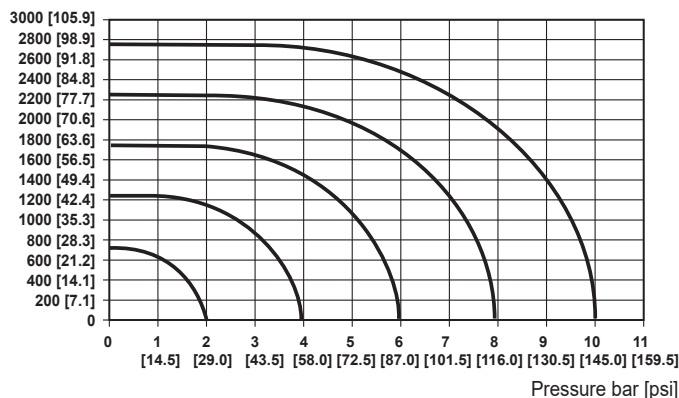
1. VALVE BODY: Aluminium
2. END CAP: Hostaform®
3. SPOOL: chemically nickel-plated aluminium
4. DISTANCE PLATES: plastic
5. GASKETS: NBR (Buna-N)
6. PISTONS: Hostaform®
7. PISTON GASKET: NBR (Buna-N)
8. FILTER: sintered bronze
9. SPRINGS: special steel
10. OPERATOR: Brass pipe – Stainless steel core



## ISO 5599 Valve Flow Charts

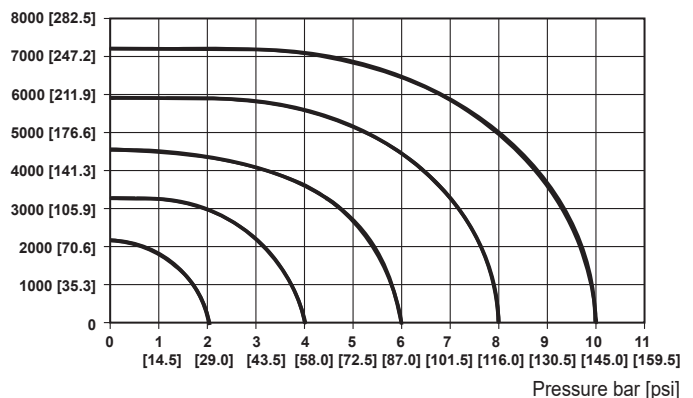
ISO 1

Flow rates NI/min [scfm]



ISO 2

Flow rates NI/min [scfm]





# ISO 5599 Solenoid Valve Bases

NITRA ISO 5599 Series Valve Bases allow mounting a single ISO 5599/1 solenoid valve. Bases will fit other brands of ISO 5599/1 valves.

## Features

- Stand-alone bases compatible with all ISO 5599/1 valves in sizes 1 and 2
- Available with side or bottom ports
- Available port threads in G-thread (BSPP) or NPT
- Aluminum alloy



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for a wide variety of fitting and  
cable options



| ISO 5599 Series Valve Bases                                                         |                                |                                             |                      |             |                                   |               |         |                            |
|-------------------------------------------------------------------------------------|--------------------------------|---------------------------------------------|----------------------|-------------|-----------------------------------|---------------|---------|----------------------------|
| Item Photo                                                                          | Part No.                       | Pressure                                    | Inlet(s) / Outlet(s) | Orientation | Usage                             | Weight (lbs.) | Price   | Drawing Link               |
|    | <a href="#"><u>HSB-1SG</u></a> | 145 psi (10 bar) maximum operating pressure | G1/4 female BSPP     | Side        | ISO 5599/1 size 1 solenoid valves | 0.36          | \$14.50 | <a href="#"><u>PDF</u></a> |
|    | <a href="#"><u>HSB-1SN</u></a> |                                             | 1/4 in female NPT    |             |                                   | 0.36          | \$14.50 | <a href="#"><u>PDF</u></a> |
|  | <a href="#"><u>HSB-1BG</u></a> |                                             | G1/4 female BSPP     | Bottom      |                                   | 0.43          | \$14.00 | <a href="#"><u>PDF</u></a> |
|  | <a href="#"><u>HSB-1BN</u></a> |                                             | 1/4 in female NPT    |             |                                   | 0.43          | \$14.00 | <a href="#"><u>PDF</u></a> |
|  | <a href="#"><u>HSB-2SG</u></a> |                                             | G3/8 female BSPP     | Side        | ISO 5599/1 size 2 solenoid valves | 0.57          | \$23.00 | <a href="#"><u>PDF</u></a> |
|  | <a href="#"><u>HSB-2SN</u></a> |                                             | 3/8 in female NPT    |             |                                   | 0.57          | \$23.00 | <a href="#"><u>PDF</u></a> |
|  | <a href="#"><u>HSB-2BG</u></a> |                                             | G3/8 female BSPP     | Bottom      |                                   | 0.67          | \$19.50 | <a href="#"><u>PDF</u></a> |
|  | <a href="#"><u>HSB-2BN</u></a> |                                             | 3/8 in female NPT    |             |                                   | 0.67          | \$19.50 | <a href="#"><u>PDF</u></a> |



# ISO 5599 Solenoid Valve Manifolds

NITRA ISO 5599 Series pneumatic valve manifolds can be joined with included fasteners to build valve islands. These manifolds will fit other brands of ISO 5599/1 valves.

## Features

- Manifolds compatible with all ISO 5599/1 valves
- Available with side or bottom ports
- Available port threads in G-thread (BSPP) or NPT
- Aluminum alloy



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cable options



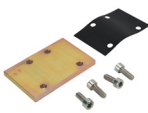
| ISO 5599 Series Valve Size 1 Manifolds                                              |                               |                                             |                      |             |                                   |               |         |                            |
|-------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------|----------------------|-------------|-----------------------------------|---------------|---------|----------------------------|
| Item Photo                                                                          | Part No.                      | Pressure                                    | Inlet(s) / Outlet(s) | Orientation | Usage                             | Weight (lbs.) | Price   | Drawing Link               |
|    | <a href="#"><u>HM-1G</u></a>  | 145 psi (10 bar) maximum operating pressure | G3/8 female BSPP     | N/A         | ISO 5599/1 size 1 solenoid valves | 0.28          | \$11.00 | <a href="#"><u>PDF</u></a> |
|    | <a href="#"><u>HM-1N</u></a>  |                                             | 3/8 in female NPT    |             |                                   | 0.28          | \$11.00 | <a href="#"><u>PDF</u></a> |
|   | <a href="#"><u>HM-1SG</u></a> |                                             | G1/4 female BSPP     | Side        |                                   | 0.29          | \$26.00 | <a href="#"><u>PDF</u></a> |
|  | <a href="#"><u>HM-1SN</u></a> |                                             | 1/4 in female NPT    |             |                                   | 0.29          | \$26.00 | <a href="#"><u>PDF</u></a> |
|  | <a href="#"><u>HM-1BG</u></a> |                                             | G1/4 female BSPP     | Bottom      |                                   | 0.69          | \$26.00 | <a href="#"><u>PDF</u></a> |
|  | <a href="#"><u>HM-1BN</u></a> |                                             | 1/4 in female NPT    |             |                                   | 0.69          | \$26.00 | <a href="#"><u>PDF</u></a> |

| ISO 5599 Series Valve Size 1 Manifold Accessories |                        |                                                                                                                                             |               |        |                     |
|---------------------------------------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------|---------------------|
| Item Photo                                        | Part No.               | Description                                                                                                                                 | Weight (lbs.) | Price  | Drawing Link        |
|                                                   | <a href="#">HM-1B</a>  | NITRA blind end, aluminum alloy. For use with ISO 5599/1 size 1 manifolds.                                                                  | 0.17          | \$5.75 | <a href="#">PDF</a> |
|                                                   | <a href="#">HM-1BP</a> | NITRA blanking plate, aluminum alloy. For use with ISO 5599/1 size 1 manifolds. Assembly screws and seal included.                          | 0.10          | \$5.75 | <a href="#">PDF</a> |
|                                                   | <a href="#">HM-1A</a>  | NITRA manifold attaching kit, aluminum alloy. For use with ISO 5599/1 size 1 solenoid valves. Includes (2) assembly clamps and (3) o-rings. | 0.10          | \$3.00 | <a href="#">PDF</a> |



# ISO 5599 Solenoid Valve Manifolds

| ISO 5599 Series Valve Size 2 Manifolds                                              |                        |                                             |                      |             |                                   |               |         |                     |
|-------------------------------------------------------------------------------------|------------------------|---------------------------------------------|----------------------|-------------|-----------------------------------|---------------|---------|---------------------|
| Item Photo                                                                          | Part No.               | Pressure                                    | Inlet(s) / Outlet(s) | Orientation | Usage                             | Weight (lbs.) | Price   | Drawing Link        |
|    | <a href="#">HM-2G</a>  | 145 psi (10 bar) maximum operating pressure | G1/2 female BSPP     | N/A         | ISO 5599/1 size 2 solenoid valves | 0.45          | \$14.00 | <a href="#">PDF</a> |
|    | <a href="#">HM-2N</a>  |                                             | 1/2 in female NPT    |             |                                   | 0.45          | \$14.00 | <a href="#">PDF</a> |
|    | <a href="#">HM-2SG</a> |                                             | G3/8 female BSPP     | Side        |                                   | 0.69          | \$31.50 | <a href="#">PDF</a> |
|    | <a href="#">HM-2SN</a> |                                             | 3/8 in female NPT    |             |                                   | 0.69          | \$31.50 | <a href="#">PDF</a> |
|   | <a href="#">HM-2BG</a> |                                             | 3/8 in female NPT    | Bottom      |                                   | 1.11          | \$31.50 | <a href="#">PDF</a> |
|  | <a href="#">HM-2BN</a> |                                             | 3/8 in female NPT    |             |                                   | 1.11          | \$31.50 | <a href="#">PDF</a> |

| ISO 5599 Series Valve Size 2 Manifold Accessories                                   |                        |                                                                                                                                             |               |        |                     |
|-------------------------------------------------------------------------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------|---------------------|
| Item Photo                                                                          | Part No.               | Description                                                                                                                                 | Weight (lbs.) | Price  | Drawing Link        |
|  | <a href="#">HM-2B</a>  | NITRA blind end, aluminum alloy. For use with ISO 5599/1 size 2 manifolds.                                                                  | 0.29          | \$9.00 | <a href="#">PDF</a> |
|  | <a href="#">HM-2BP</a> | NITRA blanking plate, aluminum alloy. For use with ISO 5599/1 size 2 manifolds. Assembly screws and seal included.                          | 0.21          | \$7.25 | <a href="#">PDF</a> |
|  | <a href="#">HM-2A</a>  | NITRA manifold attaching kit, aluminum alloy. For use with ISO 5599/1 size 2 solenoid valves. Includes (2) assembly clamps and (3) o-rings. | 0.10          | \$3.25 | <a href="#">PDF</a> |



# ISO 5599 Valve Coils

NITRA ISO 5599 Series pneumatic valve coils fit NITRA ISO 5599/1 solenoid valves.

## Features

- Voltage tolerance: -10% to + 15%
- Insulation class: F155
- IP65 EN60529 protection with connector
- Coil temperature 100% ED: 55°C at 20°C – ambient temperature
- In accordance to Atex 2014/34/EU rule, group 2, category 3 GD
- Coils have 11mm DIN style connector



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for a wide variety of fitting and  
cable options



| ISO 5599 Series Valve Coils                                                         |                                 |                                                                               |               |         |                            |
|-------------------------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------------------------|---------------|---------|----------------------------|
| Item Photo                                                                          | Part No.                        | Description                                                                   | Weight (lbs.) | Price   | Drawing Link               |
|    | <a href="#"><u>HVC-12D</u></a>  | NITRA solenoid coil, 12 VDC, 2W. For use with HVS series solenoid valves.     | 0.1           | \$10.50 | <a href="#"><u>PDF</u></a> |
|    | <a href="#"><u>HVC-24D</u></a>  | NITRA solenoid coil, 24 VDC, 2W. For use with HVS series solenoid valves.     | 0.1           | \$10.50 | <a href="#"><u>PDF</u></a> |
|   | <a href="#"><u>HVC-24A</u></a>  | NITRA solenoid coil, 24 VAC, 3.5VA. For use with HVS series solenoid valves.  | 0.1           | \$10.50 | <a href="#"><u>PDF</u></a> |
|  | <a href="#"><u>HVC-110A</u></a> | NITRA solenoid coil, 110 VAC, 3.5VA. For use with HVS series solenoid valves. | 0.1           | \$10.50 | <a href="#"><u>PDF</u></a> |
|  | <a href="#"><u>HVC-220A</u></a> | NITRA solenoid coil, 220 VAC, 3.5VA. For use with HVS series solenoid valves. | 0.1           | \$10.50 | <a href="#"><u>PDF</u></a> |



# ISO 5599 Valve Accessories

| ISO 5599 Series Valve Accessories                                                 |                                  |                                                                                                                                   |               |        |
|-----------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------|--------|
| Item Photo                                                                        | Part No.                         | Description                                                                                                                       | Weight (lbs.) | Price  |
|  | <u><a href="#">HS-NUT</a></u>    | NITRA solenoid coil nut, replacement. For use with HVS series solenoid valves.                                                    | 0.05          | \$4.25 |
|  | <u><a href="#">HVS-1SEAL</a></u> | NITRA seal kit, replacement. For use with ISO 5599/1 size 1 solenoid valves. Includes o-rings, lip seals and valve bottom gasket. | 0.05          | \$3.75 |
|  | <u><a href="#">HVS-2SEAL</a></u> | NITRA seal kit, replacement. For use with ISO 5599/1 size 2 solenoid valves. Includes o-rings, lip seals and valve bottom gasket. | 0.05          | \$5.75 |