

# HOW TO SELECT A VERSA VALVE

Every letter and digit in the product number of a Versa Valve has significant meaning. For example, the product number shown below (VSG-4522-U-14-A120) indicates the following:

|                   |               |                         |          |          |                      |              |                        |                                                            |             |
|-------------------|---------------|-------------------------|----------|----------|----------------------|--------------|------------------------|------------------------------------------------------------|-------------|
| <b>V</b>          | <b>S</b>      | <b>G</b>                | <b>4</b> | <b>5</b> | <b>2</b>             | <b>2</b>     | <b>U</b>               | <b>14</b>                                                  | <b>A120</b> |
| PNEUMATIC SERVICE | SPRING RETURN | SOLENOID PILOT-ACTUATED | FOUR-WAY | 1/2" NPT | SIDE PORTS (INPILOT) | TWO POSITION | UPRIGHT STYLE SOLENOID | SOLENOID OPERATOR EQUIPPED WITH SILENCER/DUST EXCLUDER NUT | 120V60 COIL |

## BASIC PRODUCT NUMBER

| <b>V</b>                                                                                                                                               | <b>S</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>G</b>                                      | <b>4</b>                                                                                                                                                                                                                         | <b>5</b>                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| <b>VALVE SERIES</b>                                                                                                                                    | <b>ACTUATING DEVICES</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                               | <b>FUNCTIONAL TYPE OF VALVE</b>                                                                                                                                                                                                  | <b>VALVE PORT SIZE</b>                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                                                                                                                                        | <b>ON LEFT END OF VALVE LOOKING AT INLET</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>ON RIGHT END OF VALVE LOOKING AT INLET</b> |                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>V</b> <b>Series "V" Valve</b><br>Pneumatic service to 200 psi (14 bar)<br><b>T</b> <b>Series "T" Valve</b><br>Hydraulic service to 500 psi (35 bar) | <b>A</b> Special actuator of any type. Letter indicates position of actuator relative to right and left end of body. Suffix detail is required to designate specific actuator<br><b>B</b> Spring Centering (for 3 position manually operated valves)<br><b>C</b> Cam<br><b>D</b> Spring Centering from one offset position only (for 3 position manually operated valves). Spring pulls spool to center<br><b>E</b> Spring Centering from one offset position only (for 3 position manually operated valves). Spring pushes spool to center<br><b>F</b> Pedal (for toe operation)<br><b>G</b> Solenoid-Pilot/2 position<br><b>H</b> Hand Lever (offset lever)<br><b>I</b> Palm Button<br><b>J</b> Pilot-Spring Centering (for 3 position pilot operated valves)<br><b>K</b> Differential Pilot Return<br><b>L</b> Hand Lever (centerline lever)<br><b>N</b> Non-return Device (for manually operated valves — allows valve to be positioned anywhere without detents)<br><b>P</b> Pressure Pilot/2 position (for bleed pilot also use suffix detail "—1")<br><b>R</b> Reverse Spring Return (for manually operated valves). Spring pulls valve spool<br><b>S</b> Spring Return. Spring pushes valve spool<br><b>T</b> Treadle (for heel-toe operation)<br><b>U</b> Three-Detent (for manually operated valves)<br><b>W</b> Diaphragm-Pilot/2 position<br><b>X</b> Solenoid-Pilot Spring Centering (for 3 position solenoid operated valves)<br><b>Y</b> Diaphragm-Pilot Spring Centering (for 3 position diaphragm operated valves)<br><b>Z</b> Two-Detent (for manually operated valves) |                                               | <b>2</b> Two-Way<br><b>3</b> Three-Way<br><b>4</b> Four-Way<br><b>5</b> Five-Way (Dual Pressure Four-Way)<br><br><b>7</b> Two-Outlet (Directional Three-Way-Diverter)<br><br><b>8</b> Two-Inlet (Directional Three-Way-Selector) | <b>2</b> 1/8" NPT<br><b>*3</b> 1/4" NPT<br>-----<br><b>4</b> 3/8" NPT<br><b>*5</b> 1/2" NPT<br>-----<br><b>6</b> 3/4" NPT<br><b>*7</b> 1" NPT<br><b>7</b> with suffix-12 provides 1 1/4" (32mm) capacity with 1"NPT side-ports or 1 1/4" NPT subplate ports<br><br>For sizes 1/8 TO 1/2: ISO 228/1 "G" type threads are indicated by additional use of suffix "-2B". Contact factory for availability.<br><br>*Basic valve size |

# SELECTOR CHART

## SUFFIX DETAILS

Suffix details indicate modifications or variations to the basic valve. When specifying simply add those suffix details required in alphabetical and/or numerical order.

Listed below are the suffix detail modifications found in this catalog and the page on which they are noted.

| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | - U - 1 4 -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | COIL CODE |              |  |         |     |          |     |         |     |
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| BODY DETAILS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | SPOOL DETAILS (Flow patterns)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | SUPPLEMENTARY ADAPTATIONS TO VERSA SERIES V & T VALVES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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| <p><b>0 SIDEPORTED-EXPILOT</b><br/>Body with integral, pipe threaded ports. This type of body is directly connected to pressure lines and is used for mechanical, manual and EXPilot* type solenoid or pilot actuated valves.</p> <p><b>1 SUBPLATE MOUNTING-EXPILOT</b><br/>Body-ported for subplate mounting. This type of body is screw-connected to a subplate or manifold that is connected to pressure lines and is used for mechanical, manual and EXPilot* type solenoid or pilot actuated valves.</p> <p><b>2 SIDEPORTED - INPILOT</b><br/>Body same as "0" above, except it has an auxiliary internal passage to supply INPilot** type solenoid and pilot actuators.</p> <p><b>3 SUBPLATE MOUNTING-INPILOT</b><br/>Body same as "1" above, except it has internal auxiliary passage to supply INPilot** type solenoid and pilot actuators.<br/>*Separate pressure line connection needed to supply solenoid-pilot, differential pilot return or to control pressure pilot.<br/>**Internal auxiliary porting supplies pressurized medium being controlled to pilot, solenoid-pilot or differential pilot return.</p> | <p><b>TWO-WAY or THREE-WAY VALVES</b><br/><b>Two Position</b></p> <p><b>1</b> Normally Closed (actuating device must be on right end of valve)</p> <p><b>2</b> Normally Open (actuating device must be on left end of valve)</p> <p><b>THREE-WAY VALVES</b><br/><b>Three Position</b></p> <p><b>3</b> All ports blocked in center position</p> <p><b>FOUR-WAY VALVES</b><br/><b>Two Position</b></p> <p><b>2</b> Standard flow pattern: inlet alternately open to one cylinder port; opposite cylinder port alternately open to exhaust.</p> <p><b>FIVE-WAY VALVES</b><br/><b>Two Position</b></p> <p><b>2</b> Standard flow pattern: each inlet port open (alternately) to one cylinder port; opposite cylinder port open (alternately) to exhaust</p> <p><b>FOUR-WAY OR FIVE-WAY VALVES</b><br/><b>Three Position</b><br/>(Offset flows as standard flow patterns, above)</p> <p><b>Center Position</b></p> <p><b>3</b> All ports blocked</p> <p><b>4</b> Cylinder ports open to exhaust</p> <p><b>8</b> Inlet(s) open to both cylinder ports</p> <p><b>9</b> All ports open</p> <p><b>DIVERTER &amp; SELECTOR VALVES</b></p> <p><b>2</b> 2-position</p> <p><b>3</b> All ports blocked in center position</p> | <p><b>Actuator Orientation:</b></p> <ul style="list-style-type: none"> <li>-218A thru -218G, Hand Lever, page V-10.1</li> <li>-226, Cam actuator, page V-10.2</li> <li>-227A thru -227C, Pilot actuator, page V-10.2</li> <li>-3470, Treadle actuator, page V-56 thru 61</li> </ul> <p><b>Coil/Coil Housing:</b></p> <ul style="list-style-type: none"> <li>-243, Grommeted housing, page V-3.8</li> <li>-HC, -HCC, DIN connector, page V-3.5 &amp; 3.8</li> <li>-HT, Class H coil, page V-3.6 &amp; 70.1</li> <li>-P, Plug-in coil</li> <li>-PC, -PS, Potted coil, page V-10.4 &amp; 70.1</li> </ul> <p><b>Combination Actuators:</b></p> <ul style="list-style-type: none"> <li>-113, -113L, Hand/2-detent, page V-69.1</li> <li>-114, -114L, Hand/3-detent, page V-69.1</li> <li>-115, Palm button/2-detent, page V-69.1</li> <li>-130, -130A, -130L Hand/spring return, page V-69.2, V-69.1</li> <li>-136, Palm button/spring return, V-69.1</li> <li>-138, Solenoid/spring return, page V-69.3</li> <li>-150, Pilot/2-detent, page V-69.2</li> <li>-159, Pilot/spring return, page V-69.3</li> <li>-173, Solenoid/spring return, page V-69.3</li> </ul> <p><b>Hazardous Service Solenoids (page V-3.5 &amp; V-3.7):</b></p> <ul style="list-style-type: none"> <li>-3567, Hazardous locations, Low Watt, UL &amp; CSA</li> <li>-LB-XN, (d)Flameproof, Low Watt, ATEX</li> <li>-ST, -TR50-ST, Stainless steel housing, page V-3.8 &amp; 70.1</li> <li>-XDAS, -XDAT, (d)Flameproof, ATEX</li> <li>-XIFA, -XIFE, -XIFF, (ib)Intrinsic Safe, ATEX</li> <li>-HC-XISC, -HCC-XISC, Hazardous locations, FM &amp; CSA</li> <li>-HC-XISX6, -HCC-XISX6, (ia)Intrinsic Safe, ATEX</li> <li>-XMAA, -XMAE, -XMAF, -XMAG, (m)Encapsulation, (e)Increased Safety, ATEX</li> <li>-XMFA, -XMFE, -XMFF, -XMFG, (m)Encapsulation, (e)Increased Safety, ATEX</li> <li>-XN, (d)Flameproof, ATEX</li> <li>-XX, Hazardous locations, UL &amp; CSA</li> </ul> <p><b>Manual Override (page V-10.4):</b></p> <ul style="list-style-type: none"> <li>-G, Guarded</li> <li>-G5R, Guarded-locking</li> <li>-M, Unguarded</li> <li>-M5R, Unguarded-locking</li> </ul> <p><b>Seals:</b></p> <ul style="list-style-type: none"> <li>-3, Continuous duty solenoid/high temp core, fluorocarbon FKM, page V-3.6 &amp; 10.4</li> <li>-11, High nitrile NBR, page V-3.1, 3.4 &amp; 3.6</li> <li>-31, U-cup pilot, page V-3.3</li> <li>-155, Fluorocarbon FKM, page V-3.1, 3.4 &amp; 3.6</li> <li>-EP, Ethylene propylene EPR, page V-3.1</li> </ul> <p><b>Special service/lubrication:</b></p> <ul style="list-style-type: none"> <li>-1, Bleed pilot, page V-4.7</li> <li>-10, Electroless nickel plating-internal, page V-3.1</li> <li>-14, Silencer/dustproof coil cover nut, page V-10.4</li> <li>-21, INPilot/EXPilot</li> <li>-33, Retainer cap, page V-65</li> <li>-55A, FDA approved silicone grease, page V-3.4</li> <li>-55M, Silicone grease, page V-3.4</li> <li>-167, Electroless nickel plating-external, page V-3.1</li> <li>-200, Plus pressure rating to 200 psi (14 bar), page V-3.3</li> <li>-H, Threaded solenoid exhaust, page V-10.4 &amp; 70.1</li> <li>-H500, Hydraulic solenoid rated to 450 psi (31 bar), page V-3.3</li> </ul> <p>Solenoid actuated valves require a Coil Code that indicates the specific coil current/frequency and voltage. The Coil Code consists of a letter to indicate the current frequency:</p> <p><b>Rating Code:</b></p> <p><b>A=</b> 60Hz frequency<br/><b>D=</b> Direct Current (DC)<br/><b>E=</b> 50Hz frequency</p> <p>Three numbers follow the Rating Code to indicate voltage:</p> <p><b>Examples:</b></p> <table border="1"> <thead> <tr> <th colspan="2">Voltage Code</th> </tr> </thead> <tbody> <tr> <td>24V60 =</td> <td>024</td> </tr> <tr> <td>120V60 =</td> <td>120</td> </tr> <tr> <td>24VDC =</td> <td>024</td> </tr> </tbody> </table> <p>See page V-3.5 for specific coil and codes.</p> |           | Voltage Code |  | 24V60 = | 024 | 120V60 = | 120 | 24VDC = | 024 |
| Voltage Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           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