

Valve Key

BUTTERFLY, BALL, SINGLE SEAT, MIX PROOF VALVES



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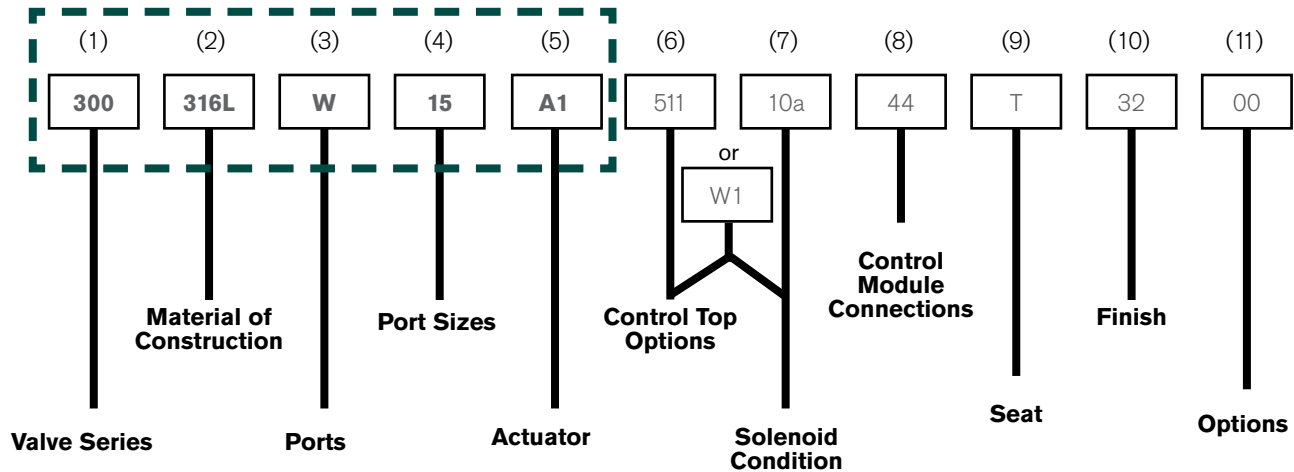
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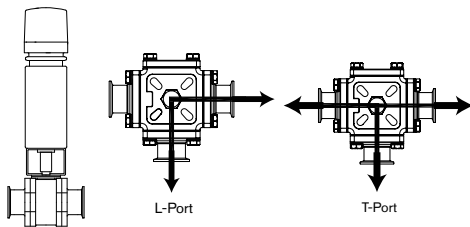
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The Valve Key is designed to provide our customers with a clear and concise description of the valve required. The key number will define all areas of the valve's specification.

Example Valve Order Number:



(1) VALVE SERIES



- 300** 2-way ball valve
- 350-L** 3-way ball valve¹ with L ports
- 350-T** 3-way ball valve¹ with T ports

¹Available only with S-Line Ports

(2) MATERIAL OF CONSTRUCTION

- 316L** Material

(3) PORTS

- W** Buttweld
- S** S-Line

(4) PORT SIZE(S)

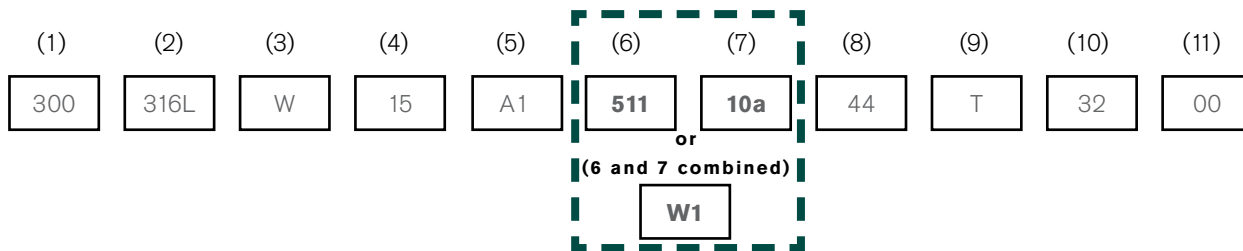
- 050** .50" (13 mm)
- 075** .75" (19 mm)
- 10** 1.00" (25 mm)
- 15** 1.50" (38 mm)
- 20** 2.00" (51 mm)
- 25** 2.50" (64 mm)
- 30** 3.00" (76 mm)
- 40** 4.00" (102 mm)

(5) ACTUATOR

- H** Manual Handle
- A1** 3" (80 mm) Linear Air to Spring Normally Closed
- A2** 3" (80 mm) Linear Air to Spring Normally Open
- A3** 3" (80 mm) Linear Air to Air Double Acting
- B1** 5" (125 mm) Linear Air to Spring Normally Closed
- B2** 5" (125 mm) Linear Air to Spring Normally Open
- B3** 5" (125 mm) Linear Air to Air Double Acting
- C1** 7" (180 mm) Linear Air to Spring Normally Closed
- C2** 7" (180 mm) Linear Air to Spring Normally Open
- C3** 7" (180 mm) Linear Air to Air Double Acting

R1C250, R1C450, R1C1000

Rack and Pinion Air to Spring Normally Closed



(6) (7) SEPARATE SWITCHES/SOLENOIDS

| DESCRIPTION | CONTROL TOP MODEL & POSITION INDICATION | COMMUNICATION CARD | SENSOR VOLTAGE | NO SOLENOIDS | (1) 24V DC SOLENOID | (2) 24V DC SOLENOIDS |
|---|---|--------------------|-----------------------------|----------------|---------------------|----------------------|
| WCB Control Top (6 and 7 separate) ^{6,7} | No sensors | None | - | 501 | 505 | 506 |
| | Set & Forget | None | 24V DC | 511 | 515 | 516 |
| | IS Prox Sensor (2) ² | | Intrinsically Safe 5-25V DC | 601 | 545I | 546I |
| | Set & Forget | AS-i ⁵ | 24V DC | 611 (31 or 62) | 615 (31 or 62) | 616 (31 or 62) |
| | Prox sensor (2) | | | 641 (31 or 62) | 645 (31 or 62) | 646 (31 or 62) |
| | Set & Forget | DeviceNet™ | 24 VDC ⁸ | 711 | 715 | 716 |
| | Prox sensor (2) | | | 741 | 745 | 746 |
| 8681 | Teach-In Position System | None | 24V DC or 110V AC | 8681(24VDC) | | |
| | Teach-In Position System | AS-i ⁵ | 24V DC | 8681(ASI) | 8681(ASI) | 8681(ASI) |
| | Teach-In Position System | DeviceNet™ | 24V DC | 8681(DNET) | 8681(DNET) | 8681(DNET) |
| Hazardous ⁹ | Prox sensors (2) | None | 24V DC | XP541 | XP545 | - |

² Requires amplifier (not included-provided by others)

⁵ Append "(31)" or "(62)" for number of max nodes/slaves available on AS-i card

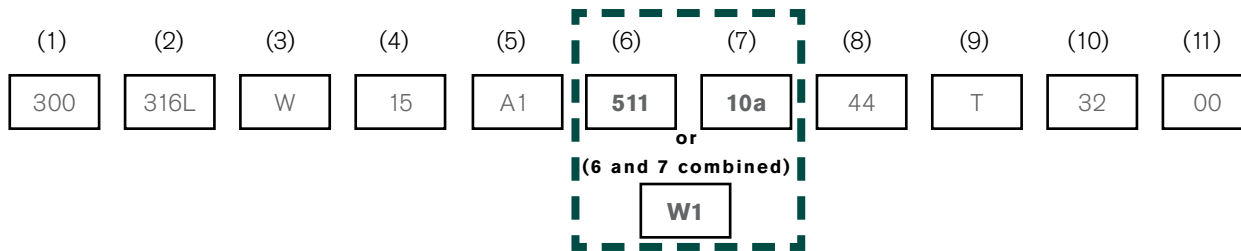
⁶ WCB Top with stainless steel cover use prefix = "SS"

⁷ WCB Control Top with NEMA 6 washdown kit append "(NEMA6)"

⁸ DeviceNet™ on WCB control top requires PNP sensors

⁹ Hazardous Top rated for Class I, Group B, C, D; Class II, Group E, F, G; Only available with (2) Prox Sensors; XP solenoid mounted externally; not available with bus communication

Consult factory for special control module requirements.



(6) (7) COMBINED SWITCHES/SOLENOIDS

| DESCRIPTION | CONTROL TOP MODEL & POSITION INDICATION | COMMUNICATION CARD | VOLTAGE | NO SOLENOIDS | CONTROL TOP - (1) 24V DC SOLENOID | (1) 24V DC SOLENOID WITH NOT ELEMENT |
|---------------------------|---|--------------------|--------------------------------|--------------|-----------------------------------|--------------------------------------|
| CU4 (6 AND 7 COMBINED) | Prox sensors (2) | None | Dual Rated 24V DC / 110V AC | N/A | W1 | W1NE |
| | Prox sensors (2) | AS-i ⁵ | 24V DC | | Y1 (62) | Y1NE (62) |
| | Non-contact Teach-in Sensor | None | 24V DC | | W1plus | W1plusNE |
| | Non-contact Teach-in Sensor | AS-i ⁵ | 24V DC | | Y1plus (62) | Y1plus NE (62) |
| | Non-contact Teach-in Sensor | IO Link | 24V DC | | S1plus | S1plusNE |

| DESCRIPTION | CONTROL TOP MODEL & POSITION INDICATION | COMMUNICATION CARD | VOLTAGE | BRACKET MOUNT - NO CONTROL TOP ¹ |
|--|---|--------------------|---|---|
| Manual Handle and Linear Actuators (Butterfly Valves Only) | Bracket Mount Prox sensor Ready | - | - | 510 |
| | Bracket Mount (2) Prox Open & Closed | | 24V DC | 540 |
| | Bracket Mount (2) Prox Open & Closed | | 110V AC | 570 |
| | Bracket Mount (2) Intrinsically Safe Prox Open & Closed | | Intrinsically Safe | 600 |
| Rack & Pinion Actuator (Ball Valves Only) | Puck Sensor (2) Prox Open & Closed on top of actuator | - | Puck Sensor (2) Prox Open & Closed on top of actuator | L32 |

¹ Where proximity sensors are indicated, these are externally mounted in yoke area unless specified otherwise

² Requires amplifier (not included-provided by others)

³ WCB Control Top with no sensors but with prox bracket = 501P or micro bracket = 501M

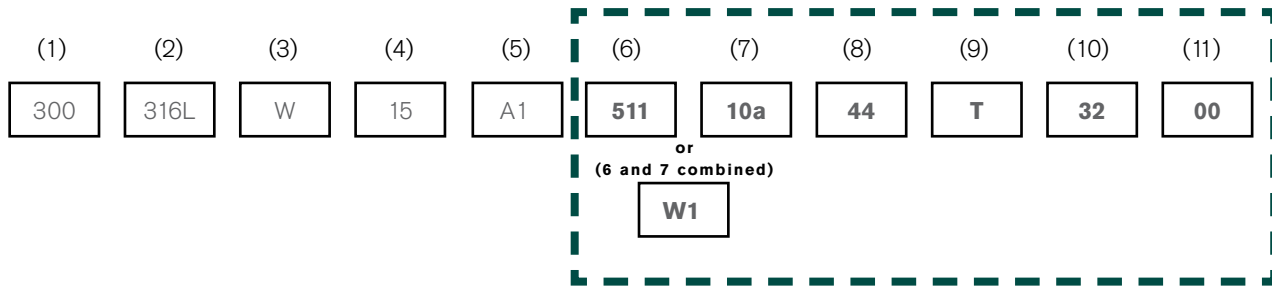
⁵ Append "(31)" or "(62)" for number of max nodes/slaves available on AS-i card. 8681 control top only available with 62 node

⁶ WCB Top with stainless steel cover use prefix = "SS"

⁷ WCB Control Top with NEMA 6 washdown kit append "(NEMA6)"

⁸ DeviceNet™ on WCB control top requires PNP sensors

Consult factory for special control module requirements.

**(7) SOLENOID CONDITION**

| | |
|------------|--|
| 00 | No Control Module |
| 10a | No Solenoid |
| 11a | 1 Solenoid, Valve Condition Air/Spring |
| 12 | 2 Solenoid, Valve Condition Air/Air |

(9) SEAT/SEAL

| | |
|----------|------|
| T | PTFE |
|----------|------|

(10) FINISH

| | |
|-----------|--|
| 32 | Standard Finish Machined <32Ra ID (.8µm) |
|-----------|--|

NOTE: Electropolish (EP) is in addition to the mechanical polish finish. Exterior 32Ra.

(8) CONTROL MODULE CONNECTIONS

| DESCRIPTION | OPTION NUMBER |
|--|---------------|
| No Connector | 00 |
| Strain Relief Connector | 01 |
| 10 Pin Eurofast Connector | 21 |
| 12 Pin Eurofast Connector | 22 |
| 10cm Cord Set M12 12-Pin Eurofast ¹ | 22(10cm) |
| 4 Pin Eurofast Connector ² | 24 |
| 10cm Cord Set M12 4-Pin Eurofast-AS-i ¹ | 24(ASI-10cm) |
| 5 Pin Eurofast Connector | 25 |
| 80cm Cord Set M12 5-Pin Eurofast-Dnet ¹ | 25(DNET-80cm) |
| 6 Pin Eurofast Connecto | 26 |
| 8 Pin Eurofast Connector, | 28 |

¹ Includes connector on control module only, mating connector and cable by others. Available with 8681 control top only

² Required on CU4 with AS-i and IO Link

(11) OPTIONS

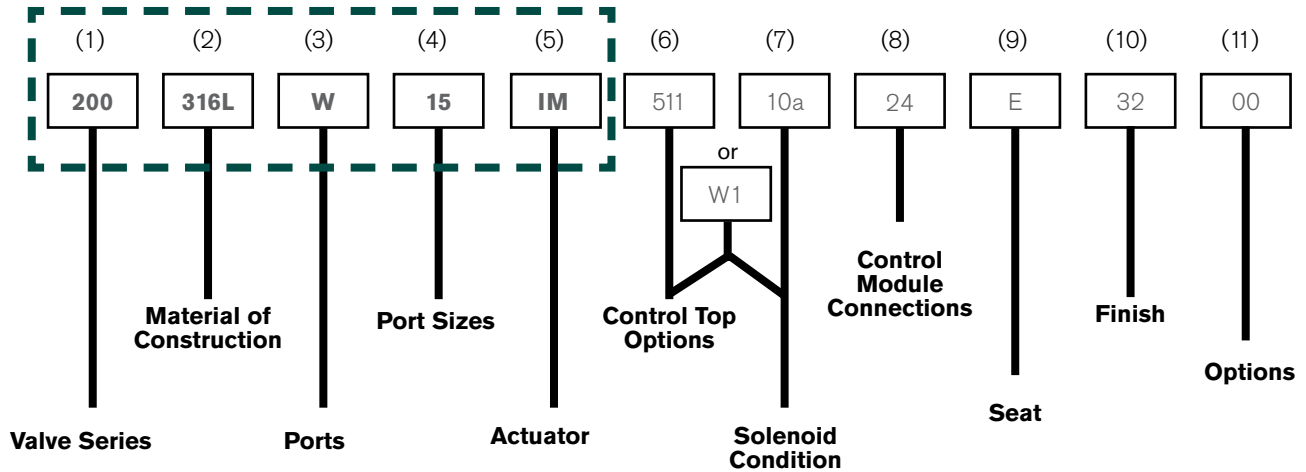
| | |
|-----------|------------|
| 00 | No Options |
| 08 | SS Tags |
| 18 | Paper Tags |

200 Series Butterfly Valves

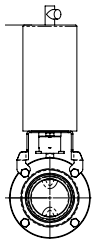
The Valve Key is designed to provide our customers with a clear and concise description of the valve required.

The key number will define all areas of the valve's specification.

Example Valve Order Number:



(1) VALVE SERIES



200 Butterfly valve

(4) PORT SIZE(S)

| | |
|------------|----------------|
| 050 | .50" (13 mm) |
| 075 | .75" (19 mm) |
| 10 | 1.00" (25 mm) |
| 15 | 1.50" (38 mm) |
| 20 | 2.00" (51 mm) |
| 25 | 2.50" (64 mm) |
| 30 | 3.00" (76 mm) |
| 40 | 4.00" (102 mm) |
| 60 | 6.00" (152 mm) |

(2) MATERIAL OF CONSTRUCTION

316L Material

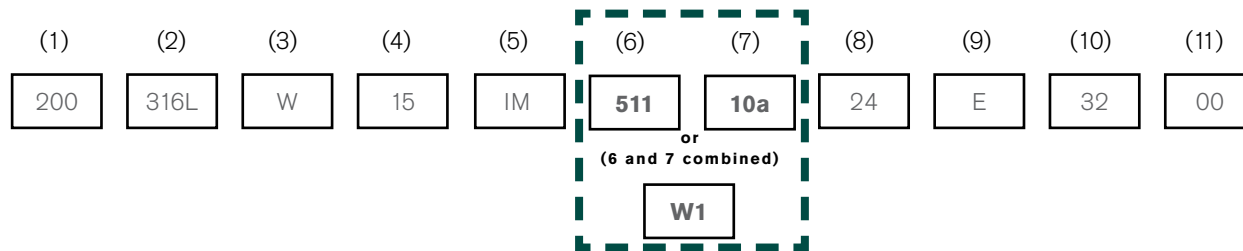
(3) PORTS

W Butt weld
S S-Line

(5) ACTUATOR

| | |
|-----------|--|
| IM | Intermediate Manual Handle |
| P | Pull Stop Handle |
| PL | Pull Stop with Lock Handle |
| A1 | 3" (80 mm) Linear Air to Spring Normally Closed |
| A2 | 3" (80 mm) Linear Air to Spring Normally Open |
| A3 | 3" (80 mm) Linear Air to Air Double Acting |
| B1 | 5" (125 mm) Linear Air to Spring Normally Closed |
| B2 | 5" (125 mm) Linear Air to Spring Normally Open |
| B3 | 5" (125 mm) Linear Air to Air Double Acting |

NOTE: "A" size actuator used on ½" (13 mm) - 3" (76mm) valves
"B" size actuator used on 4" (102 mm) and 6" (152 mm) valves



(6) (7) SEPARATE SWITCHES/SOLENOIDS

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| | Set & Forget | DeviceNet™ | 24 VDC ⁸ | 711 | 715 | 716 |
| | Prox sensor (2) | | | 741 | 745 | 746 |
| 8681 | Teach-In Position System | None | 24V DC or 110V AC | 8681(24VDC) | | |
| | Teach-In Position System | AS-i ⁵ | 24V DC | 8681(ASI) | 8681(ASI) | 8681(ASI) |
| | Teach-In Position System | DeviceNet™ | 24V DC | 8681(DNET) | 8681(DNET) | 8681(DNET) |
| Hazardous ⁹ | Prox sensors (2) | None | 24V DC | XP541 | XP545 | - |

² Requires amplifier (not included-provided by others)

⁵ Append "(31)" or "(62)" for number of max nodes/slaves available on AS-i card

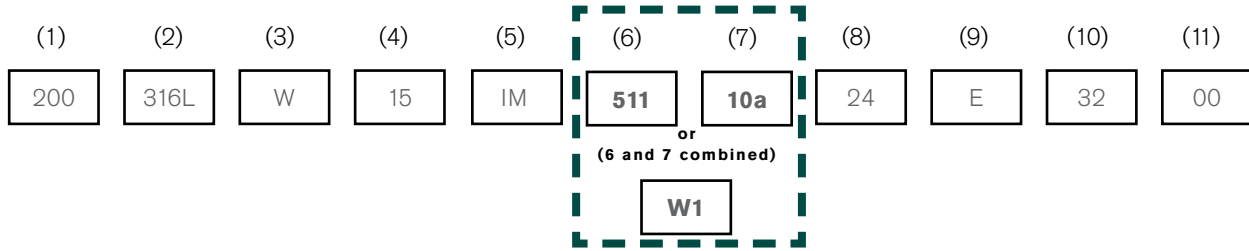
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⁸ DeviceNet™ on WCB control top requires PNP sensors

⁹ Hazardous Top rated for Class I, Group B, C, D; Class II, Group E, F, G; Only available with (2) Prox Sensors; XP solenoid mounted externally; not available with bus communication

Consult factory for special control module requirements.



(6) (7) COMBINED SWITCHES/SOLENOIDS

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|---------------------------|---|--------------------|--------------------------------|--------------|-----------------------------------|--------------------------------------|
| CU4 (6 AND 7 COMBINED) | Prox sensors (2) | None | Dual Rated 24V DC / 110V AC | N/A | W1 | W1NE |
| | Prox sensors (2) | AS-i ⁵ | 24V DC | | Y1 (62) | Y1NE (62) |
| | Non-contact Teach-in Sensor | None | 24V DC | | W1plus | W1plusNE |
| | Non-contact Teach-in Sensor | AS-i ⁵ | 24V DC | | Y1plus (62) | Y1plus NE (62) |
| | Non-contact Teach-in Sensor | IO Link | 24V DC | | S1plus | S1plusNE |

| DESCRIPTION | CONTROL TOP MODEL & POSITION INDICATION | COMMUNICATION CARD | VOLTAGE | BRACKET MOUNT - NO CONTROL TOP ¹ |
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| Manual Handle and Linear Actuators (Butterfly Valves Only) | Bracket Mount Prox sensor Ready | - | - | 510 |
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| | Bracket Mount (2) Intrinsically Safe Prox Open & Closed | | Intrinsically Safe | 600 |
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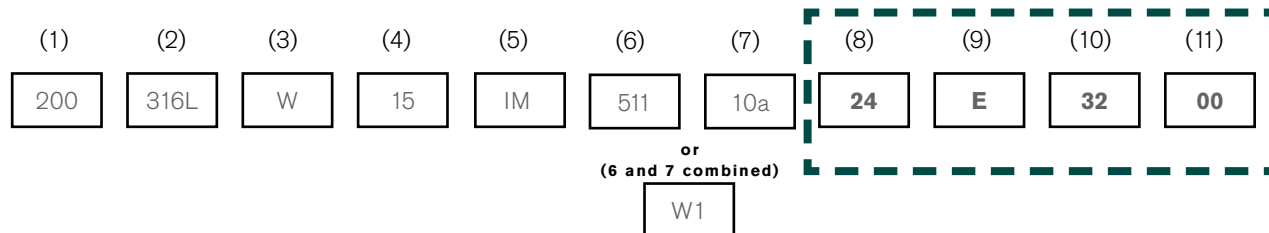
¹ Where proximity sensors are indicated, these are externally mounted in yoke area unless specified otherwise

⁵ Append “(31)” or “(62)” for number of max nodes/slaves available on AS-i card. 8681 control top only available with 62 node

Consult factory for special control module requirements.

(7) SOLENOID CONDITION

- 00** No Control Module
- 10a** No Solenoid
- 11a** 1 Solenoid, Valve Condition Air/Spring
- 12** 2 Solenoid, Valve Condition Air/Air



(8) CONTROL MODULE CONNECTIONS

| DESCRIPTION | OPTION NUMBER |
|---|---------------|
| No Connector | 00 |
| Strain Relief Connector | 01 |
| 10 Pin Eurofast Connector | 21 |
| 12 Pin Eurofast Connector | 22 |
| 10cm Cord Set M12 12-Pin Eurofast ¹ | 22(10cm) |
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| 10cm Cord Set M12 4-Pin Eurofast-As-i* ¹ | 24(ASI-10cm) |
| 5 Pin Eurofast Connector | 25 |
| 80cm Cord Set M12 5-Pin Eurofast-Dnet ¹ | 25(DNET-80cm) |
| 6 Pin Eurofast Connector | 26 |
| 8 Pin Eurofast Connector | 28 |

¹ Includes connector on control module only, mating connector and cable by others.

Available with 8681 control top only

² Required on CU4 with AS-i and IO Link

(9) SEAT/SEAL

- E** EPDM
- V** FKM

(10) FINISH

- 32** Standard Finish Machined <32Ra ID (.8µm)

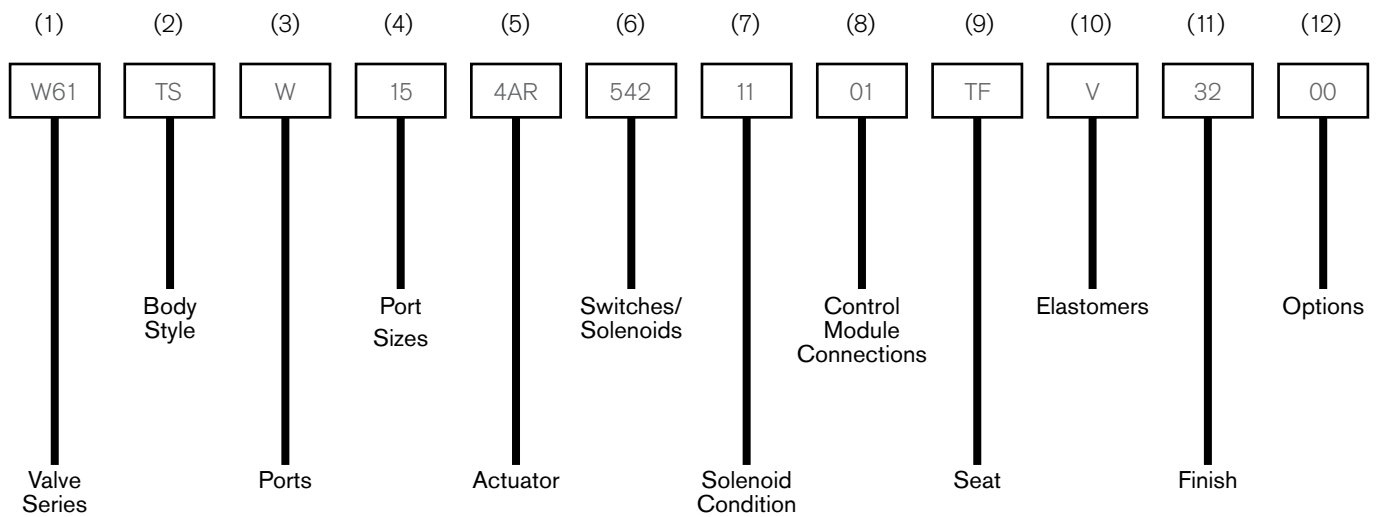
(11) OPTIONS

- 00** No Options
- 08** SS Tags
- 18** Paper Tags

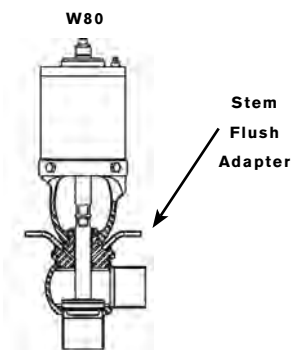
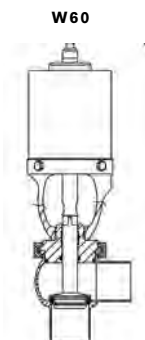
W60/W80 Series Single Seat Valves

The Valve Key is designed to provide our customers with a clear and concise description of the valve required. The key number should be an 11 or 12-digit number defining all areas of the valve's specification.

Example: W61 shut off valve with a TS body configuration, butt weld ports, 1.5" (25 mm) size, 4" (101 mm) Air to Raise Actuator, 2 Proximity switches, 1 solenoid, Standard S/O Cord connector, Tef-Flow™ seat, Fluoroelastomer, 32Ra finish, and no special options.



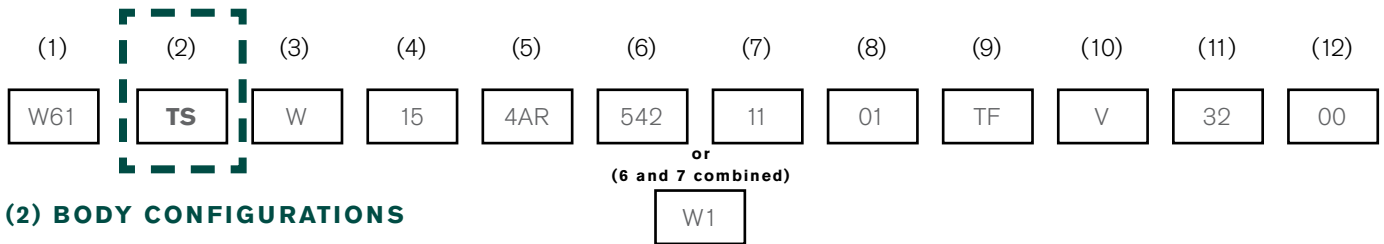
| | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| W61 | TS | W | 15 | 4AR | 542 | 11 | 01 | TF | V | 32 | 00 |

(1) VALVE SERIES

- W61** Shut-off
- W62** Divert
- W63** Reverse Acting Shuf-off
- W64** Tank Outlet Valve (Seat raises into tank)
- W64R** Tank Outlet Valve (Seat lowers into valve body)
- W65** Non Slamming Divert Valve
- W68** Throttling Valve
- W68R** Reverse Acting Throttling Valve
- W685** Non-Slamming Divert Throttling Valve
- W682** Conversion Throttling Valve
- W265** HTST Non Slam Flow Diversion Valve
- W262** HTST Flow Diversion Valve

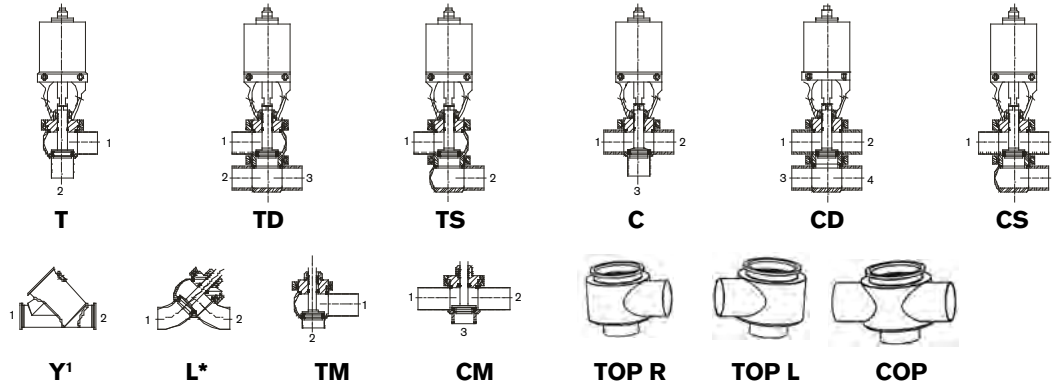
- W81** Shut-off with stem flush adapter
- W82** Divert with stem flush adapter
- W83** Reverse Acting Shut-off with stem flush adapter
- W84** Tank Outlet Valve (Seat raises into tank) with stem flush adapter
- W84R** Tank Outlet Valve (Seat lowers into valve body) with stem flush adapter
- W85** Non Slamming Divert Valve with stem flush adapter
- W88** Throttling Valve with stem flush adapter
- W88R** Reverse Acting Throttling Valve with stem flush adapter
- W885** Non-Slamming Divert Throttling Valve with stem flush
- W882** Conversion Throttling Valve with stem flush adapter
- W285** HTST Non Slam Flow Diversion Valve with stem flush adapter
- W282** HTST Flow Diversion Valve

NOTE: Over pressure valves are denoted by an "R" in the model (i.e. WR61) and use a W60 or W80 series valve with an adjustable-spring actuator.



(2) BODY CONFIGURATIONS

W61/W81 SHUT-OFF (W68/W88 THROTTLING)

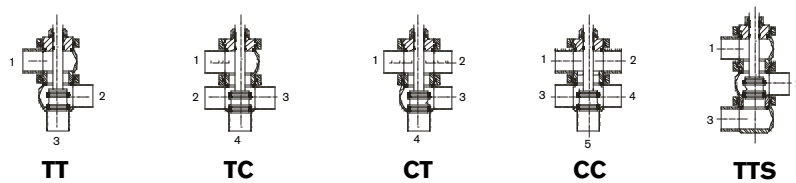


Also Available

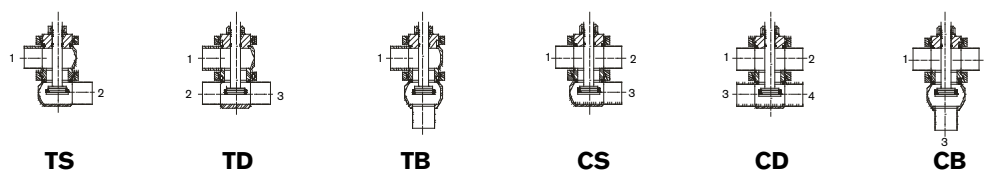


Throttling Plug
*L body only
available
w/ high flow
CV on
throttling valves

W62/W82 DIVERT



W63/W83 SHUT-OFF (W68R/W88R THROTTLING)

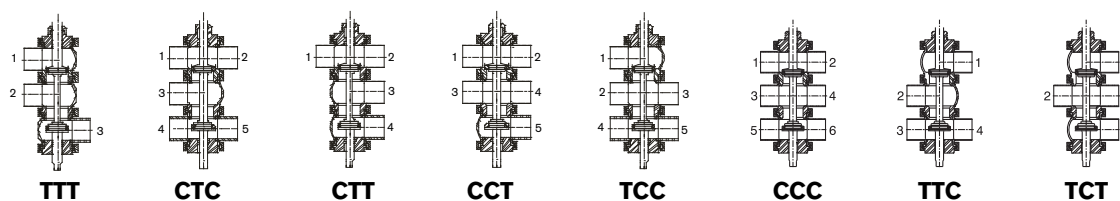


Also Available



Throttling Plug

W65/W85 DIVERT (W685/W885 THROTTLING)

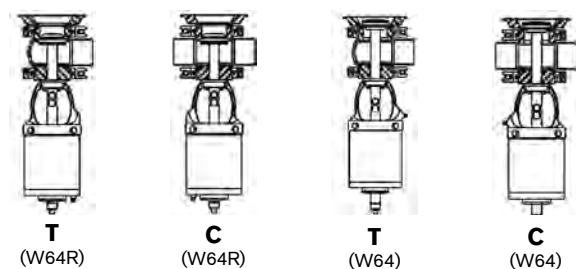


Also Available



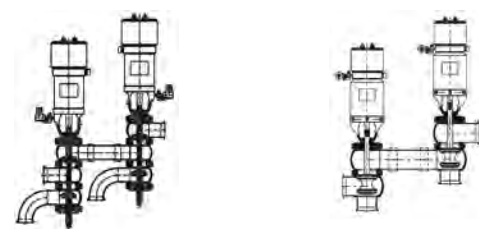
Throttling Plug

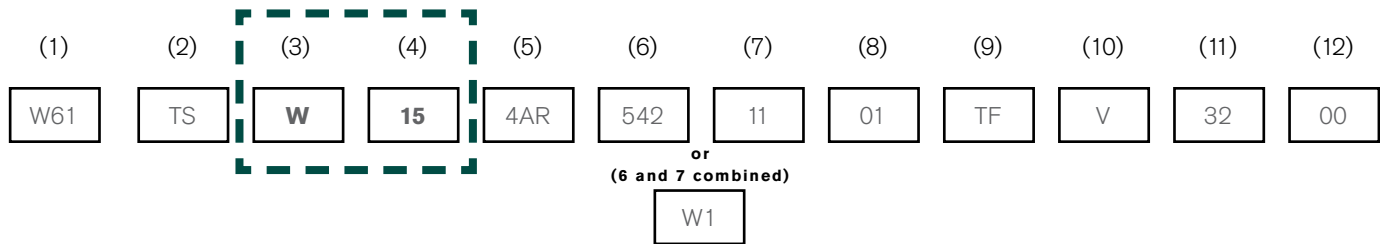
W64/W84 TANK OUTLET (NOTE: Tank Flanges sold separately)



W265/W285 FDV

W262/W282 FDV

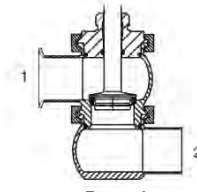




(3) PORT(S)

- W** Buttweld
- S** S-Line

For mixed connection types, specify in order of port #.



Example:
W61-TS-SW

(4) PORT SIZE(S)

- Standard Valves:**
- 10** 1" (25 mm) For mixed sized bodies indicate upper ports first.
 - 15** 1.5" (38 mm) Example: 1.5" (38 mm) Upper by 2" (51 mm) Lower is 1520.
 - 20** 2" (51 mm)
 - 25** 2.5" (64 mm) For reduced-seat bodies, indicate port size first, then plug size.
 - 30** 3" (76 mm) Example: 40/25 is 4" (101 mm) Body/2.5" (64 mm) plug size
 - 40** 4" (102 mm) Contact Factory to verify availability of mixed body and reduced-seat body sizes prior to placing an order.
 - 60** 6" (152 mm)

- Throttling Valves:**
- (See Cv Factor Chart below)
- 10(1.75)*** 1" (25 mm) (Cv 1.75, 2.5, 5, 7.5)
 - 15(10)** 1.5" (38 mm) (Cv 1.75, 2.5, 5, 7.5, 10 or Cv 35)
 - 20(30)** 2" (51 mm) (Cv 30 or Cv 70)
 - 25(60)** 2.5" (64 mm) (Cv 60 or Cv 120)
 - 30(90)** 3" (76 mm) (Cv 90 or Cv 150)
 - 40(110)** 4" (102 mm) (Cv 110 or Cv 210)

Cv Factor Chart

*Note: Cv rating follows port size.

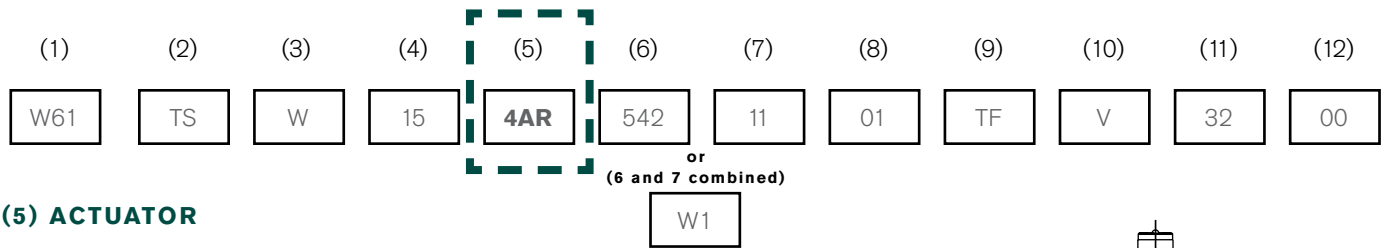
| % OF VALVE STROKE | VALVE STEM SIZE | | | | | | | | | | | | | |
|-------------------|-----------------------------------|--------|--------|--------|--------------|-------|------------|-------|--------------|--------|------------|--------|-------------|--------|
| | 1-1.5" (25-38 mm) REDUCED ORIFICE | | | | 1.5" (38 mm) | | 2" (50 mm) | | 2.5" (64 mm) | | 3" (76 mm) | | 4" (101 mm) | |
| | CV 1.75 | CV 2.5 | CV 5.0 | CV 7.5 | CV 10 | CV 35 | CV 30 | CV 70 | CV 60 | CV 120 | CV 90 | CV 150 | CV 110 | CV 210 |
| 10 | .175 | .25 | .50 | .75 | 1 | 3.5 | 3 | 7 | 6 | 12 | 9 | 15 | 11 | 21 |
| 20 | .35 | .50 | 1 | 1.5 | 2 | 7 | 6 | 14 | 12 | 24 | 18 | 30 | 22 | 42 |
| 30 | .525 | .75 | 1.5 | 2.25 | 3 | 10.5 | 9 | 21 | 18 | 36 | 27 | 45 | 33 | 63 |
| 40 | .70 | 1 | 2 | 3.0 | 4 | 14 | 12 | 28 | 24 | 48 | 36 | 60 | 44 | 84 |
| 50* | .875 | 1.25 | 2.5 | 3.75 | 5 | 17.5 | 15 | 35 | 30 | 60 | 45 | 75 | 55 | 105 |
| 60 | 1.05 | 1.5 | 3 | 4.5 | 6 | 21 | 18 | 42 | 36 | 72 | 54 | 90 | 66 | 126 |
| 70 | 1.225 | 1.75 | 3.5 | 5.25 | 7 | 24.5 | 21 | 49 | 42 | 84 | 63 | 105 | 77 | 147 |
| 80 | 1.4 | 2 | 4 | 6.0 | 8 | 28 | 24 | 56 | 48 | 96 | 72 | 120 | 88 | 168 |
| 90 | 1.575 | 2.25 | 4.5 | 6.75 | 9 | 31.5 | 27 | 63 | 54 | 108 | 81 | 135 | 99 | 189 |
| 100 | 1.75 | 2.5 | 5 | 7.5 | 10 | 35 | 30 | 70 | 60 | 120 | 90 | 150 | 110 | 210 |

*Optimum operating point. Data is based on water at 70°F (21°C), specific gravity 1.

The Cv Factor is the flow coefficient in the full open position (100% stroke).

To calculate process Cv: $C_v = \frac{GPM}{\sqrt{\Delta P (psi)/SG}}$ $K_v = \frac{m^3/hr}{\sqrt{\Delta P (bar)/SG}}$

1 bar = 14.5 psi $m^3/hr = \frac{GPM}{4.4}$



(5) ACTUATOR

- 4AR** 4" (101 mm) Air to Raise
- 4HAR³** 4" (101 mm) Air to Raise, Heavy Duty Spring³
- 4RHAR⁴** 4" (101 mm) Air to Raise, Spring Adjustable, Heavy Duty Spring³
- 4ARLG** 4" (101 mm) Air to Raise, Long Stroke
- 4AL** 4" (101 mm) Air to Lower
- 4HAL³** 4" (101 mm) Air to Lower, Heavy Duty Spring³
- 4RHAL⁴** 4" (101 mm) Air to Lower, Spring Adjustable, Heavy Duty Spring³
- 4ALLG** 4" (101 mm) Air to Lower, Long Stroke
- 4AA** 4" (101 mm) Air to Air

- 5AR** 5" (127 mm) Air to Raise
- 5HAR³** 5" (127 mm) Air to Raise, Heavy Duty Spring³
- 5RHAR⁴** 5" (127 mm) Air to Raise, Spring Adjustable, Heavy Duty Spring³
- 5AL** 5" (127 mm) Air to Lower
- 5HAL³** 5" (127 mm) Air to Lower, Heavy Duty Spring³
- 5RHAL⁴** 5" (127 mm) Air to Lower, Spring Adjustable, Heavy Duty Spring³
- 5AA** 5" (127 mm) Air to Air

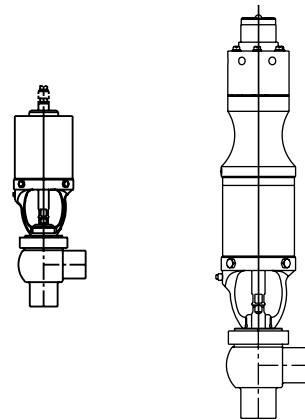
- 6AR** 6" (152 mm) Air to Raise
- 6HAR³** 6" (152 mm) Air to Raise, Heavy Duty Spring³
- 6RHAR⁴** 6" (152 mm) Air to Raise, Spring Adjustable, Heavy Duty Spring³
- 6ARLG** 6" (152 mm) Air to Raise, Long Stroke
- 6AL** 6" (152 mm) Air to Lower
- 6HAL³** 6" (152 mm) Air to Lower, Heavy Duty Spring³
- 6RHAL⁴** 6" (152 mm) Air to Lower, Spring Adjustable, Heavy Duty Spring³
- 6ALLG** 6" (152 mm) Air to Lower, Long Stroke
- 6AA** 6" (152 mm) Air to Air
- 6ARY²** 6" (152 mm) Air to Raise, Extra Long Stroke
- 6ALY²** 6" (152 mm) Air to Lower, Extra Long Stroke

- A1** 3" (74 mm) Air to Raise, Maintenance-Free
- A2** 3" (74 mm) Air to Lower, Maintenance-Free
- A3** 3" (74 mm) Air to Air, Maintenance-Free
- B1** 4.5" (110 mm) Air to Raise, Maintenance-Free
- B2** 4.5" (110 mm) Air to Lower, Maintenance-Free
- B3** 4.5" (110 mm) Air to Air, Maintenance-Free
- C1** 6.5" (165 mm) Air to Raise, Maintenance-Free
- C2** 6.5" (165 mm) Air to Lower, Maintenance-Free
- C3** 6.5" (165 mm) Air to Air, Maintenance-Free

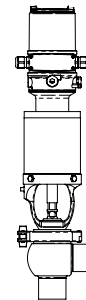
² Used with Y-Body valves. Consult with application engineering for use with 6" (152 mm) OD size valves.

³ Use TFP metal or TR seats for heavy spring actuators.

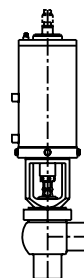
⁴ Used with over-pressure valves, use TFP or metal seats.



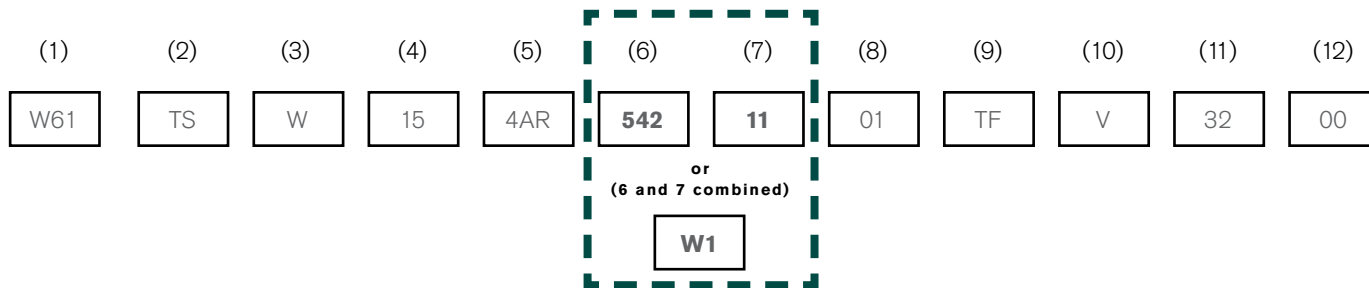
- 4ARP** 4" (101 mm) Air to Raise w/positioner
- 4ALP** 4" (101 mm) Air to Lower w/positioner
- 5ARP** 5" (127 mm) Air to Raise w/positioner
- 5ALP** 5" (127 mm) Air to Lower w/positioner
- 6ARP** 6" (152 mm) Air to Raise w/positioner
- 6ALP** 6" (152 mm) Air to Lower w/positioner



- 4ALEP** 4" (102 mm) Air to Lower, Electropneumatic Positioner
- 5ALEP** 5" (127 mm) Air to Lower, Electropneumatic Positioner
- 6ALEP** 6" (152 mm) Air to Lower, Electropneumatic Positioner
- 4AREP** 4" (102 mm) Air to Raise, Electropneumatic Positioner
- 5AREP** 5" (127 mm) Air to Raise, Electropneumatic Positioner
- 6AREP** 6" (152 mm) Air to Raise, Electropneumatic Positioner



- 4AR3** 4" (101 mm) Air to Raise, 3 position
- 4AL3** 4" (101 mm) Air to Lower, 3 position



(6) (7) SEPARATE SWITCHES/SOLENOIDS

| DESCRIPTION | CONTROL TOP MODEL & POSITION INDICATION | COMMUNICATION CARD | SENSOR VOLTAGE | NO SOLENOIDS | (1) 24V DC SOLENOID | (2) 24V DC SOLENOIDS |
|---|---|--------------------|-----------------------------|----------------|---------------------|----------------------|
| WCB Control Top (6 and 7 separate) ^{6,7} | No sensors | None | - | 501 | 505 | 506 |
| | Set & Forget | None | 24V DC | 511 | 515 | 516 |
| | IS Prox Sensor (2) ² | | Intrinsically Safe 5-25V DC | 601 | 545I | 546I |
| | Set & Forget | AS-i ⁵ | 24V DC | 611 (31 or 62) | 615 (31 or 62) | 616 (31 or 62) |
| | Prox sensor (2) | | | 641 (31 or 62) | 645 (31 or 62) | 646 (31 or 62) |
| | Set & Forget | DeviceNet™ | 24 VDC ⁸ | 711 | 715 | 716 |
| | Prox sensor (2) | | | 741 | 745 | 746 |
| 8681 | Teach-In Position System | None | 24V DC or 110V AC | 8681(24VDC) | | |
| | Teach-In Position System | AS-i ⁵ | 24V DC | 8681(ASI) | 8681(ASI) | 8681(ASI) |
| | Teach-In Position System | DeviceNet™ | 24V DC | 8681(DNET) | 8681(DNET) | 8681(DNET) |
| Hazardous ⁹ | Prox sensors (2) | None | 24V DC | XP541 | XP545 | - |

² Requires amplifier (not included-provided by others)

⁵ Append "(31)" or "(62)" for number of max nodes/slaves available on AS-i card

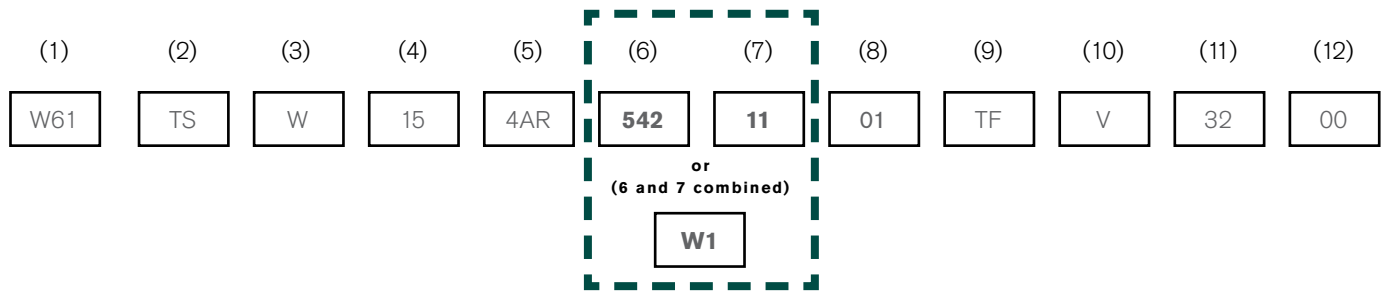
⁶ WCB Top with stainless steel cover use prefix = "SS"

⁷ WCB Control Top with NEMA 6 washdown kit append "(NEMA6)"

⁸ DeviceNet™ on WCB control top requires PNP sensors

⁹ Hazardous Top rated for Class I, Group B, C, D; Class II, Group E, F, G; Only available with (2) Prox Sensors; XP solenoid mounted externally; not available with bus communication

Consult factory for special control module requirements.



(6) (7) COMBINED SWITCHES/SOLENOIDS

| DESCRIPTION | CONTROL TOP MODEL & POSITION INDICATION | COMMUNICATION CARD | VOLTAGE | NO SOLENOIDS | CONTROL TOP - (1) 24V DC SOLENOID | (1) 24V DC SOLENOID WITH NOT ELEMENT |
|---------------------------|---|--------------------|---------|--------------|-----------------------------------|--------------------------------------|
| CU4 (6 AND 7 COMBINED) | Prox sensors (2) | None | 24V DC | N/A | W1 | W1NE |
| | Prox sensors (2) | AS-i ⁵ | 24V DC | | Y1 (62) | Y1NE (62) |
| | Non-contact Teach-in Sensor | None | 24V DC | | W1plus | W1plusNE |
| | Non-contact Teach-in Sensor | AS-i ⁵ | 24V DC | | Y1plus (62) | Y1plus NE (62) |
| | Non-contact Teach-in Sensor | IO Link | 24V DC | | S1plus | S1plusNE |

| DESCRIPTION | CONTROL TOP MODEL & POSITION INDICATION | COMMUNICATION CARD | VOLTAGE | NO CONTROL TOP |
|----------------|---|--------------------|---------|----------------|
| NO CONTROL TOP | No sensors | - | - | 000 |
| | No sensors, WCB Control top indicator stem | | | 001 |
| | No sensors, WCB Control top indicator stem - Set & Forget | | | 001SF |

| DESCRIPTION | ACTUATOR OPTION & POSITION INDICATION | COMMUNICATION CARD | VOLTAGE | BRACKET MOUNT - NO CONTROL TOP ¹ |
|--|---------------------------------------|--------------------|---|---|
| MAINTAINABLE ACTUATORS - NO CONTROL TOP | Set & Forget Only | - | 24V DC | 510 |
| | Prox sensor (2) | | Dual Rated 24V DC / 110V AC ² | 540 |
| | Prox Sensor (2) ² | | Intrinsically Safe 5-25V DC | 600 |
| | IS Prox sensor (2) | | Intrinsically Safe 5-25V DC | YS2I |
| MAINTENANCE-FREE ACTUATORS - NO CONTROL TOP | Bracket Mount (2) Prox Open & Closed | | 24V DC | |

¹ Where proximity sensors are indicated, these are externally mounted on top of actuators unless specified otherwise with "YS" for yoke switch

² Requires amplifier (not included-provided by others)

³ WCB Control Top with no sensors but with prox bracket = 501P or micro bracket = 501M

⁴ When one proximity or microswitch is supplied, Default is as follows: W61, W62, W64R, W65 – lower position W63, W64 – Upper position

⁵ Append "(31)" or "(62)" for number of max nodes/slaves available on AS-i card

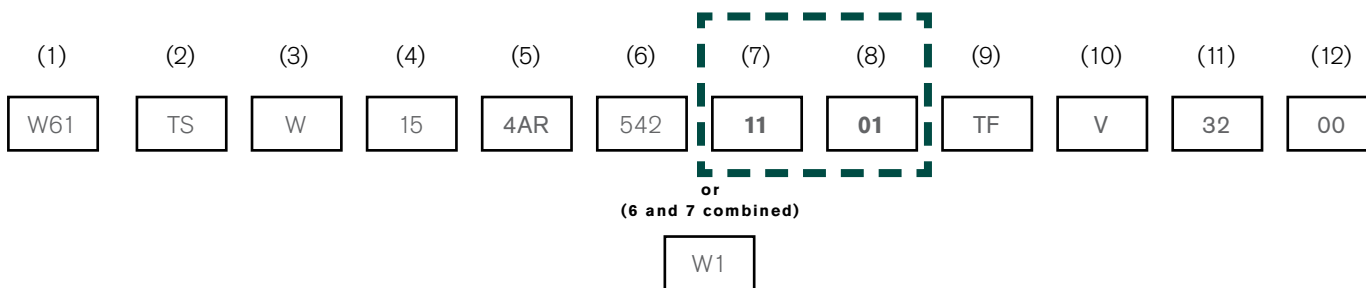
⁶ WCB Top with stainless steel cover use prefix = "SS"

⁷ WCB Control Top with NEMA 6 washdown kit append "(NEMA6)"

⁸ DeviceNet™ on WCB control top requires PNP sensors

⁹ Hazardous Top rated for Class I, Group B, C, D; Class II, Group E, F, G; Only available with (2) Prox Sensors; XP solenoid mounted externally; not available with bus communication

Consult factory for special control module requirements.



(7) SOLENOID CONDITION

| DESCRIPTION | CONDITION NO. |
|---|---------------|
| No Control Module | 00 |
| Single Seat - No Solenoid - AR | 10 |
| Single Seat - No Solenoid - AL & Air to Air | 10a |
| Single Seat - 1 Solenoid - AR | 11 |
| Single Seat - 1 Solenoid - AL | 11a |
| Single Seat - 2 Solenoid - Air Boost & Air to Air | 12 |

Note: For Single Seat Valves AR = Air to Raise Actuator, AL = Air to Lower Actuator

(8) CONTROL MODULE CONNECTIONS

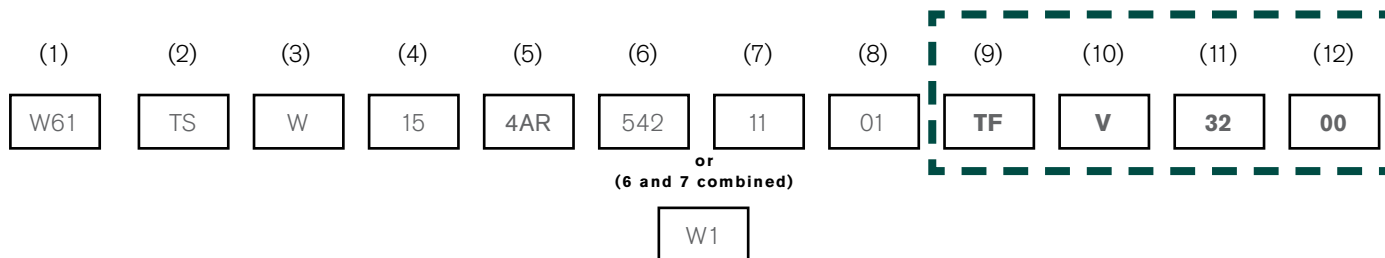
| DESCRIPTION | OPTION NUMBER |
|--|---------------|
| No Connector | 00 |
| Strain Relief Connector | 01 |
| 10 Pin Eurofast Connector | 21 |
| 12 Pin Eurofast Connector | 22 |
| 10cm CORD SET M12 12-PIN EUROFAST ² | 22(10cm) |
| 4 Pin Eurofast Connector ³ | 24 |
| 10cm CORD SET M12 4-PIN EUROFAST-ASI ² | 24(ASI-10cm) |
| 5 Pin Eurofast Connector | 25 |
| 80cm CORD SET M12 5-PIN EUROFAST-DNET ² | 25(DNET-80cm) |
| 6 Pin Eurofast Connector | 26 |
| 8 Pin Eurofast Connector | 28 |

Includes connector on control module only, mating connector

¹ Available on maintenance-free actuator only

² Available with 8681 control top only

³ Required on CU4 with AS-i and IO Link



(9) SEAT

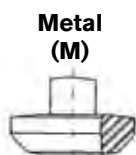
- TF** Tef-Flow™
- TFP** Tef-Flow™ P**
- TFPMD** Tef-Flow™ P-Metal-Detectable
- TR** Tri Ring*, ***
- M** Metal

Tef-Flow™ (TF)

Tef-Flow™ “P” (TFP)

Tef-Flow™ “P” Metal-Detectable (TFPMD)

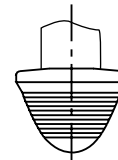
Tri Ring (TR)



Throttling Stem Tri Ring Seat (TR)*



Throttling Stem Metal Seat (M)



*TR seat not available on CV 1.75, 2.5, 5.0 & 7.5 and 5ALD & 5ALDP actuated throttling valves.
 **TFP used on all over-pressure, Y-body, W262 and W265 valves. Heavy spring actuators are required.
 ***6” (152 mm) valves only available with TR seats.

(10) ELASTOMER

(Specifies materials for all gaskets, O-rings, and Tri Ring seals)

- E** EPDM
- V** Fluoroelastomer
- X** Optional Elastomer (specify)
- EMD** EPDM-Metal-Detectable
- VMD** FKM-Metal-Detectable

Contact Factory for special requirements.

(11) FINISH

- 32** Standard Finish Machined <32Ra ID (.8µm)
- 15** 15Ra Mechanical Polish ID (.2µm)

(12) OPTIONS

| DESCRIPTION | OPTION NUMBER |
|---------------------------------|---------------|
| No Options | 00 |
| High Pressure Adapter and clamp | 04 |
| Heat Certification / MTR's | 06 |
| SS Tags | 08 |
| Wiping Stems Seal | 10 |
| Paper Tags | 18 |

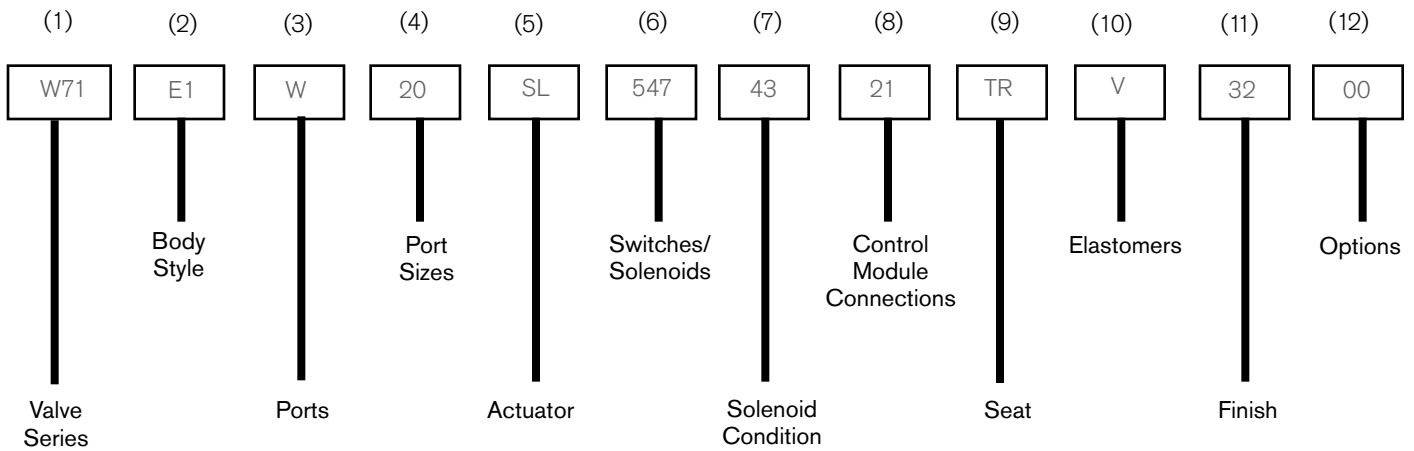
For multiple options: Example: High Pressure Stem Adapter & Mill Test-04,06.

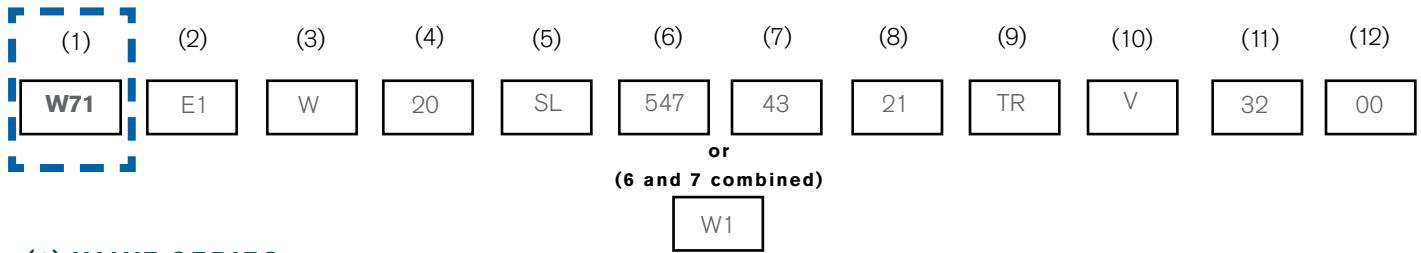
W70 Series Mix Proof Valves

The Valve Key is designed to provide our customers with a clear and concise description of the valve required.

The key number should be an 11 or 12-digit number defining all areas of the valve's specification.

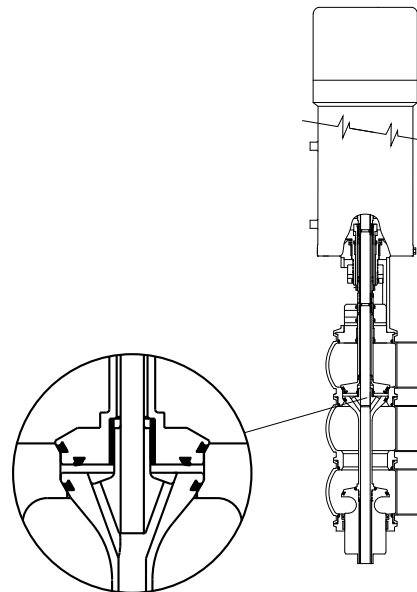
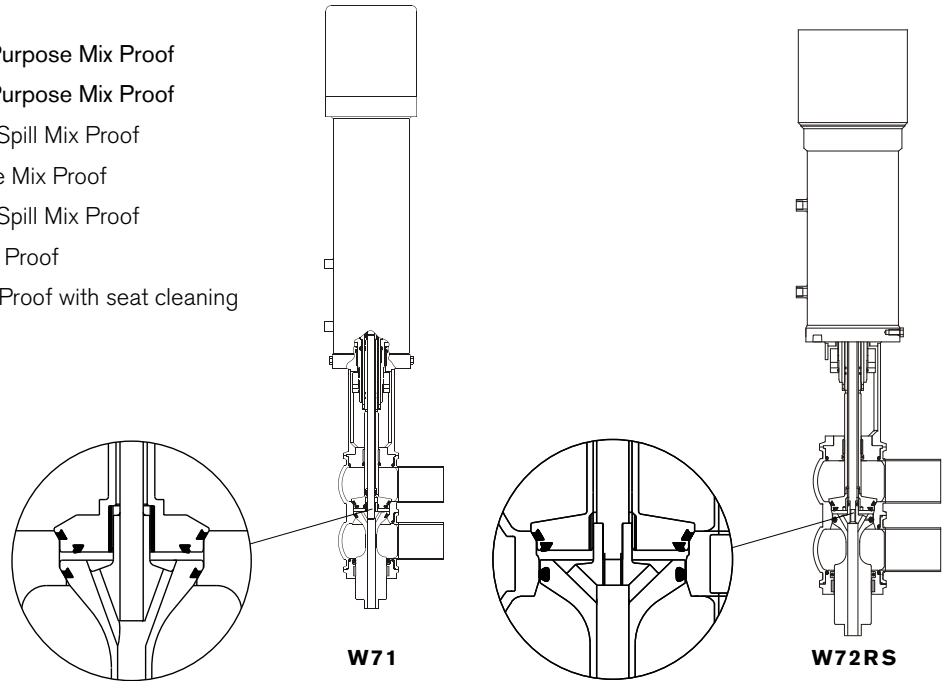
Example: W71 Mix Proof valve with an E1 one piece body, butt weld ports, 2" (51 mm) size, seat lifting actuator, WCB control top, (2) proximity switches, and (3) solenoids, 10 Pin Eurofast connector, Tri Ring seats, Fluoroelastomer, 32 Ra Finish, and no options.

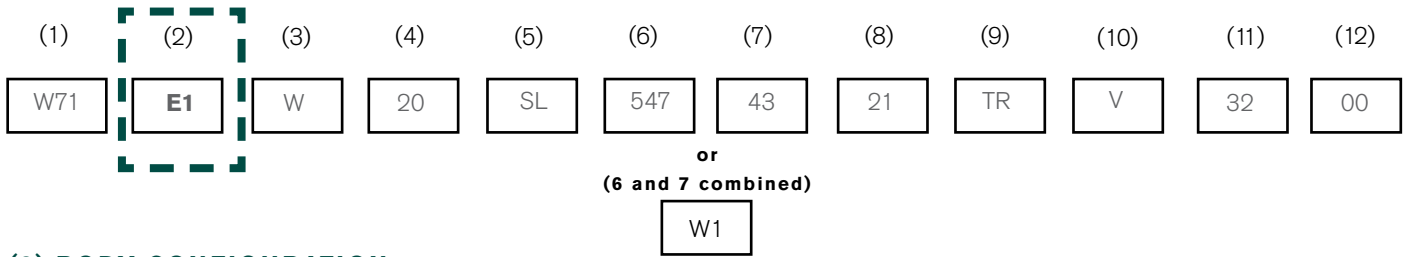




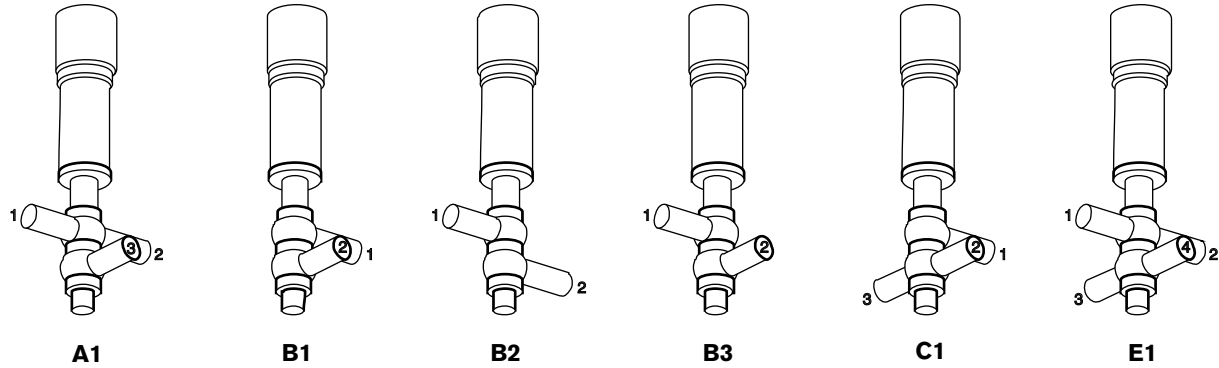
(1) VALVE SERIES

- W71** General Purpose Mix Proof
- W71 Tank Outlet** General Purpose Mix Proof
- W72RS** Minimum Spill Mix Proof
- W72RSP** Particulate Mix Proof
- W72RS Tank Outlet** Minimum Spill Mix Proof
- W73** Divert Mix Proof
- W75CP Tank Outlet** PMO Mix Proof with seat cleaning



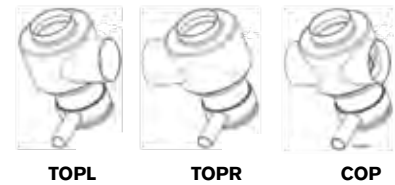
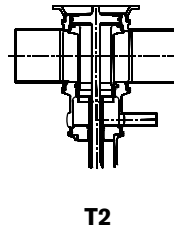
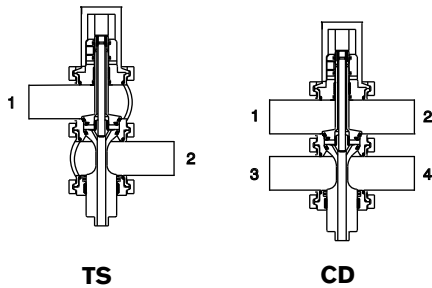


(2) BODY CONFIGURATION



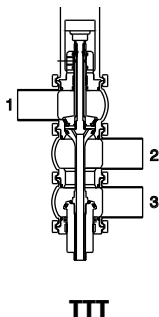
Two Piece Clamped Bodies*

Tank Outlet Bodies

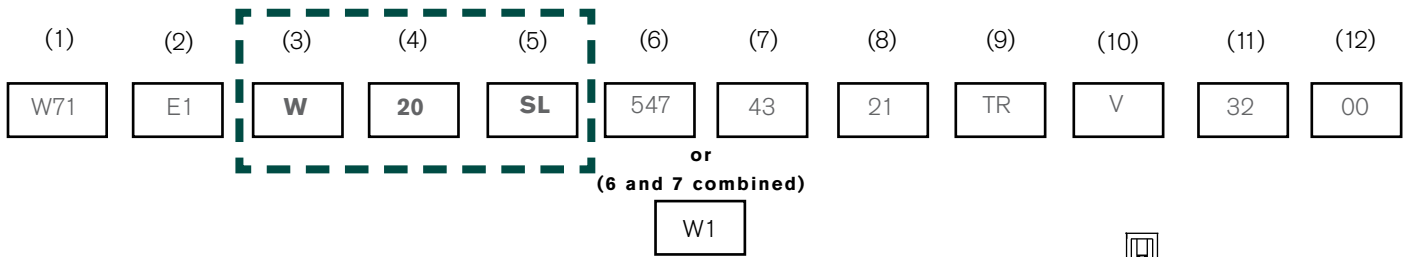


W73 - Divert

Three Piece Clamped Bodies*



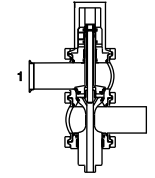
*Clamped bodies allow ports to be rotated in any direction.
Note: Indicate "none" for valve insert less body



(3) PORTS

- W** Butt Weld
- S** S-Line

For mixed connection types, specify in order of port # shown in body configuration see page 22.



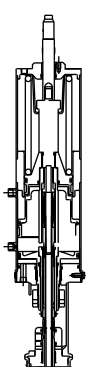
Example W71-TS-SW

(4) PORTS SIZE (S)

| Tube Size OD: | | IPS Sch 5s: | |
|---------------|--------------|-------------|-------------|
| 15 | 1.5" (38 mm) | 20V | 2" (51 mm) |
| 20 | 2" (51 mm) | 30V | 3" (76 mm) |
| 25 | 2.5" (64 mm) | 40V | 4" (102 mm) |
| 30 | 3" (76 mm) | 60V | 6" (152 mm) |
| 40 | 4" (102 mm) | | |
| 60 | 6" (152 mm) | | |

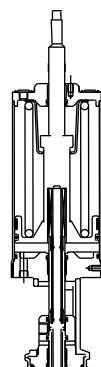
For mixed sized bodies indicate upper ports first.
 Example: 1.5" (38 mm) Upper by 2" (51mm) Lower is 1520.
 Contact Factory to verify availability of mixed body sizes prior to placing an order.

(5) ACTUATOR



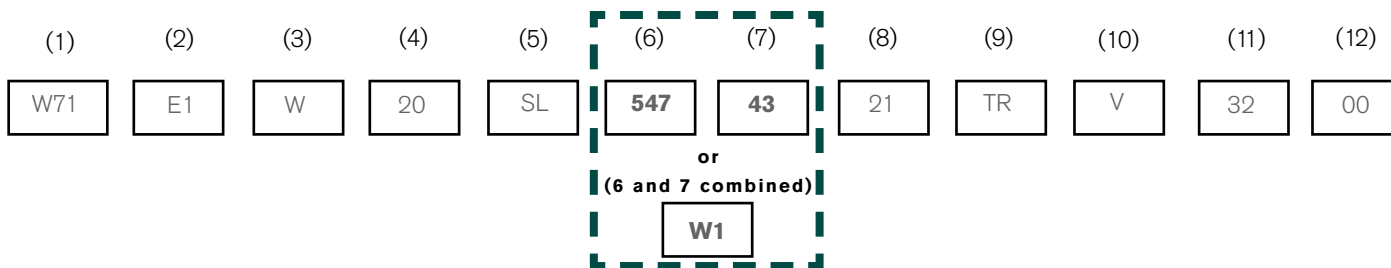
SL Seat Lifting

Fully maintainable
 Standard with quick exhaust
 valve on lower seat lift air
 connection



NSL Non Seat Lifting

Fully maintainable



(6) (7) SEPARATE SWITCHES/SOLENOIDS

| DESCRIPTION | CONTROL TOP MODEL & POSITION INDICATION | COMMUNICATION CARD | SENSOR VOLTAGE | NO SOLENOIDS | (1) 24V DC SOLENOID | (3) 24V DC SOLENOIDS |
|--|--|--------------------|-----------------------------|-----------------------|---------------------|----------------------|
| WCB Control Top (6 and 7 separate) ^{6,7} | No sensors ³ | None | - | 501 | 505 | 507 |
| | Set & Forget ¹¹ | None | 24V DC | 511 | 515 | 517 |
| | Prox sensor (2) | | Dual Rated 24V DC / 110V AC | 541 | 545 | 547 |
| | Prox sensor (2) Control Top, (1) External Yoke Mounted ¹¹ | | | 801 | 805 | 807 |
| | Prox Sensor (2) ² | | Intrinsically Safe 5-25V DC | 601 | 545I | 547I |
| | Set & Forget ¹¹ | AS-i ⁵ | 24V DC | 611 (31 or 62) | 615 (31 or 62) | 617 (31 or 62) |
| | Prox sensor (2) | | | 641 (31 or 62) | 645 (31 or 62) | 647 (31 or 62) |
| | Prox sensor (2) Control Top, (1) External Yoke Mounted ¹⁰ | | | 811 (31 or 62) | 815 (31 or 62) | 817 (31 or 62) |
| | Set & Forget ¹¹ | DeviceNet™ | 24 VDC ⁸ | 711 | 715 | 717 |
| | Prox sensor (2) | | | 741 | 745 | 747 |
| Prox sensor (2) Control Top, (1) External Yoke Mounted ¹⁰ | 821 | | | 825 | 827 | |
| 8681 | Teach-In Position System | None | 24V DC or 110V AC | 8681(24VDC or 120VAC) | 8681 (24VDC) | 8681 (24VDC) |
| | Teach-In Position System | AS-i ⁵ | 24V DC | 8681(ASI) | 8681(ASI) | 8681(ASI) |
| | Teach-In Position System | DeviceNet™ | 24V DC | 8681(DNET) | 8681(DNET) | 8681(DNET) |
| Hazardous ⁹ | Prox sensors (2) | None | 24V DC | XP541 | XP545 | - |

¹ Where proximity sensors are indicated, these are externally mounted on top of actuators unless specified otherwise

² Requires amplifier (not included-provided by others)

³ Append "(31)" or "(62)" for number of max nodes/slaves available on AS-i card

⁶ WCB Top with stainless steel cover use prefix = "SS"

⁷ WCB Control Top with NEMA 6 washdown kit append "(NEMA6)"

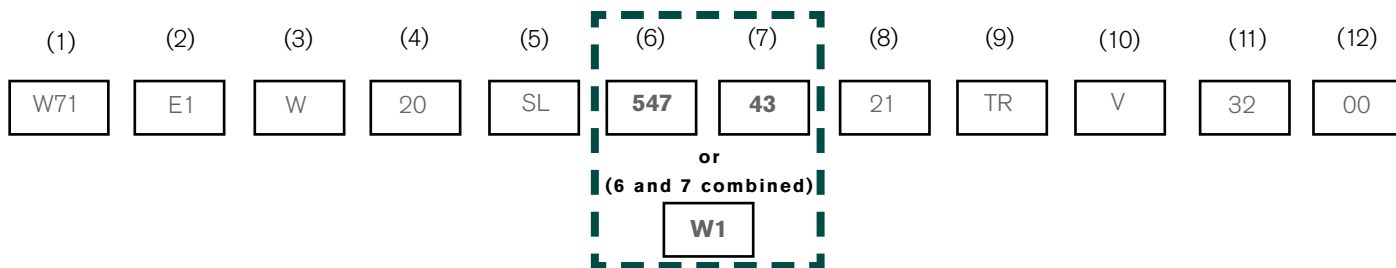
⁸ DeviceNet™ on WCB control top requires PNP sensors

⁹ Hazardous Top rated for Class I, Group B, C, D; Class II, Group E, F, G; Only available with (2) Prox Sensors; XP solenoid mounted externally; not available with bus communication

¹⁰ Indicates PMO control top options, the 3rd proximity switch is yoke mounted. For 8681 top with yoke prox, specify code "43" in the solenoid condition of the valve key

¹¹ Set & Forget sensor not available on W72 series valves

Consult factory for special control module requirements.



(6) (7) COMBINED SWITCHES/SOLENOIDS

| DESCRIPTION | CONTROL TOP MODEL & POSITION INDICATION | COMMUNICATION CARD | VOLTAGE | NO SOLENOIDS | CONTROL TOP - (1) 24V DC SOLENOID | (3) 24V DC SOLENOIDS |
|---------------------------|---|--------------------|-----------------------------------|--------------|-----------------------------------|----------------------|
| CU4 (6 and 7 combined) | Prox sensors (2) | None | Dual Rated 24V DC / 110V AC | N/A | W1 | W3 |
| | Prox sensors (2) | AS-i ⁵ | 24V DC | | Y1 (31 or 62) | Y3 (31 or 62) |

| DESCRIPTION | CONTROL TOP MODEL & POSITION INDICATION | COMMUNICATION CARD | VOLTAGE | NO CONTROL TOP |
|----------------|---|--------------------|---------|----------------|
| NO CONTROL TOP | No sensors | - | - | 000 |
| | No sensors, WCB Control top indicator stem | | | 001 |
| | No sensors, WCB Control top indicator stem - Set & Forget | | | 001SF |

| DESCRIPTION | ACTUATOR OPTION & POSITION INDICATION | COMMUNICATION CARD | VOLTAGE | BRACKET MOUNT - NO CONTROL TOP ¹ |
|----------------|---------------------------------------|--------------------|-----------------------------------|---|
| NO CONTROL TOP | Set & Forget Only ¹¹ | - | Dual Rated 24V DC / 110V AC | 510 |
| | Prox sensor (2) | | | 540 |
| | Prox Sensor (2) ² | | Intrinsically Safe 5-25V DC | 600 |

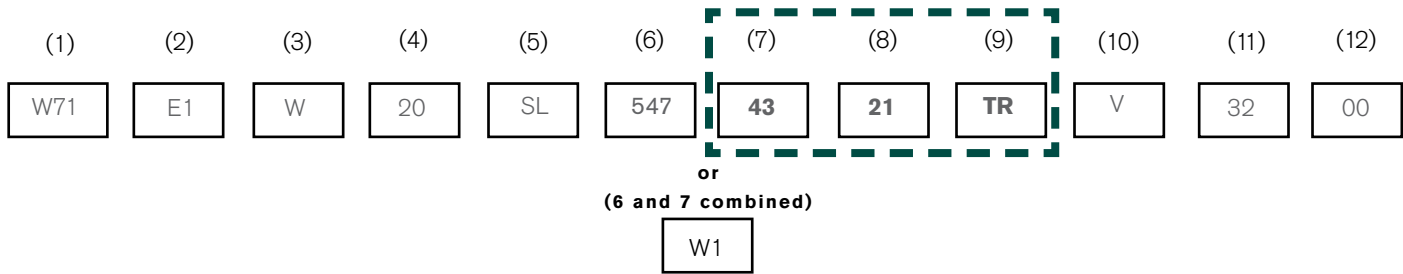
¹ Where proximity sensors are indicated, these are externally mounted on top of actuators unless specified otherwise

² Requires amplifier (not included-provided by others)

⁵ Append "(31)" or "(62)" for number of max nodes/slaves available on AS-i card

¹¹ Set & Forget sensor not available on W72 series valves

Consult factory for special control module requirements.



(7) SOLENOID CONDITION

| VALVE | DESCRIPTION* | OPTION NUMBER |
|----------|--|---------------|
| | No Option | 00 |
| W71, W73 | Mix Proof - No Solenoid | 20 |
| | Mix Proof - 1 Solenoid | 21 |
| | Mix Proof - 2 Solenoids | 22 |
| | Mix Proof - 3 Solenoids | 23 |
| W72RS | Mix Proof Radial Seal (RS) - No Solenoid | 30 |
| | Mix Proof Radial Seal (RS) - 1 Solenoid | 31 |
| | Mix Proof Radial Seal (RS) - 2 Solenoid | 32 |
| | Mix Proof Radial Seal (RS) - 3 Solenoid | 33 |

Note: For Mix Proof Valves, Solenoid 1 = Valve Open, Solenoid 2 = Upper Seat Clean, Solenoid 3 = Lower Seat Clean

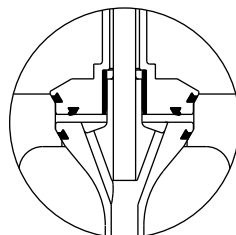
(8) CONTROL TOP CONNECTORS

| DESCRIPTION | OPTION NUMBER |
|--|---------------|
| No Connector | 00 |
| Strain Relief Connector | 01 |
| 10 Pin Eurofast Connector | 21 |
| 12 Pin Eurofast Connector | 22 |
| 10cm Cord Set M12 12-Pin Eurofast ² | 22(10CM) |
| 4 Pin Eurofast Connector | 24 |
| 10cm Cord Set M12 4-Pin Eurofast-Asi ² | 24(ASI-10CM) |
| 5 Pin Eurofast Connector | 25 |
| 80cm Cord Set M12 5-Pin Eurofast-Dnet ² | 25(DNET-80CM) |
| 6 Pin Eurofast Connector | 26 |
| 8 Pin Eurofast Connector | 28 |

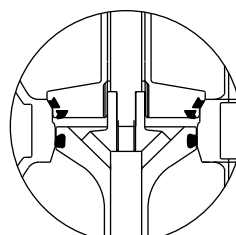
Includes connector on control module only, mating connector

- 1. Available on maintenance-free actuator only
- 2. Available with 8681 control top only

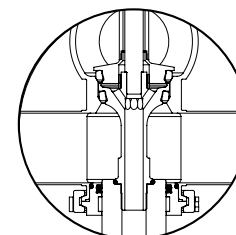
(9) SEAT



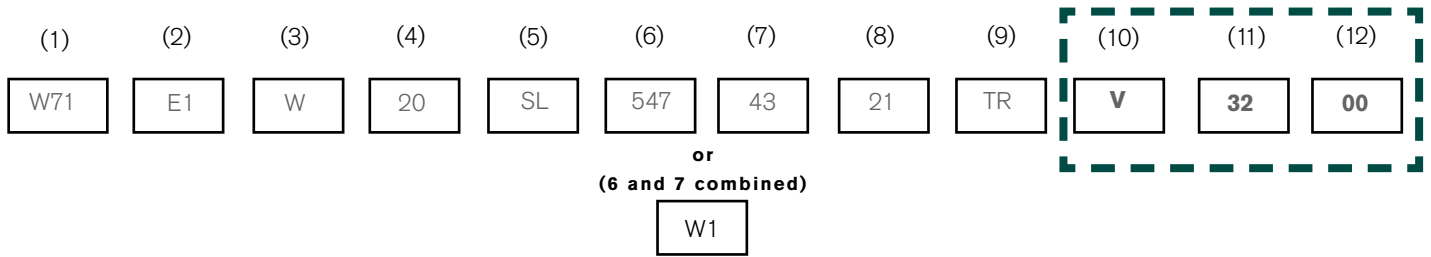
TR - Tri Ring Compression
(W71/W73)



TR - Tri Ring Radial Seal
(W72RS)



Tef-Flow™ P
(W71/W73 Option)



(10) ELASTOMER

(Specifies materials for all gaskets, O-rings, & Tri Ring seals)

- E** EPDM
- V** Fluoroelastomer
- X** Optional Elastomer (specify)

Contact Factory for special requirements.

(11) FINISH

- 32** Standard Finish (Machined <32Ra) ID (.8µm)
- 15** 15Ra Mechanical Polish ID (.2µm)

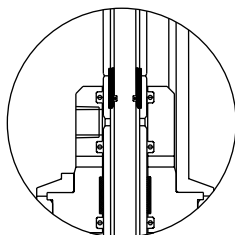
Electropolish (EP) is in addition to the mechanical polish finish.

(12) OPTIONS

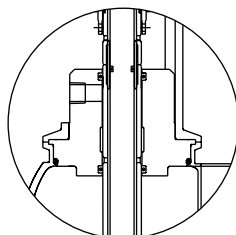
| DESCRIPTION | OPTION NUMBER |
|---------------------------------------|---------------|
| No Options | 00 |
| Heat Certification / MTR's | 06 |
| SS Tags | 08 |
| Quick Dump Valve | 09 |
| Ext Flush (Liquid vent cavity only) | 11 |
| Quad Ring Upper and Lower | 13 |
| Paper Tags | 18 |
| 1" (25 mm) Hose Barb Drain Connection | 70 |

Multiple options available (Example: Stainless Steel Tags & External Liquid Flush: 08,11)

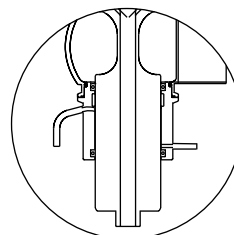
*Steam continually accesses vent cavity when valve is open and closed.



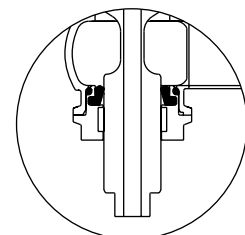
**External Flush
Liquid Vent Cavity**



**External Flush
Steam Vent Cavity
Upper Stem**



**External Flush
Lower Stem
(Liquid or Steam)**



**Wiping Stem Seal
(Lower Stem Shown)**

D4 Series Double Seat Mix Proof Valves

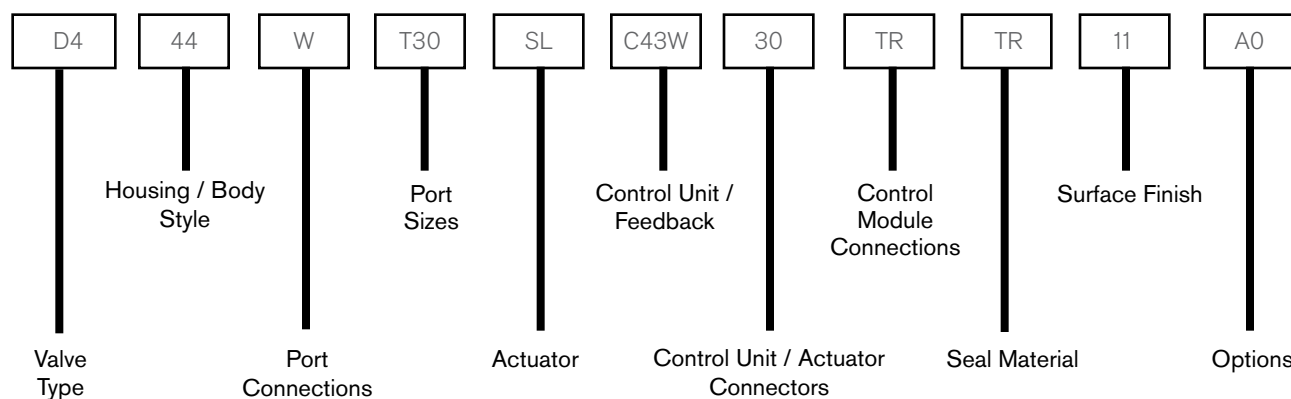
The D4 Series is the next generation of mix proof valve technology resulting from the continued development of both the APV™ and Waukesha Cherry-Burrell™ brands. This global valve utilizes a slightly different valve key and part number structure than the traditional Waukesha Cherry-Burrell™ brand valves.

D4 Series model range includes:

- D4 – primary, price-competitive model which meets basic mix proof needs for reliable separation, seat lift (SL) or non-seat lift (NSL) cleanability, and low product switching losses
- DA4 – ultra-hygienic model for critical applications requiring enhanced cleanability of product contact surfaces and low CIP losses to drain

The Valve Key is designed to provide our customers with a clear and concise description of the valve required. The key number should be an 11-digit number defining all areas of the valve's specification.

Example: D4 Mix Proof valve with a 44 style one piece body, butt-weld port connection, 3.0" size, seat lifting actuator, CU4 24V Direct Connect control unit, (2) sensors, and (3) solenoids, cable gland connector, 1/4" OD air fittings, elastomeric profile seat seals, EPDM seal material, 32 Ra inside surface finish, and no options.





D4 Series Double Seat Mix Proof Valves

(1) VALVE TYPE

D4 Double Seat Mix Proof

(2) HOUSING COMBINATIONS

Shut-off Valves



(3) PORT CONNECTIONS

W Buttweld

T Clamp

Additional and mixed port connections available upon request. Please contact factory.

(4) PORT SIZES

- T15** 1.5" Tube
- T20** 2.0" Tube **P20** 2" IPS Schedule 5 Pipe
- T25** 2.5" Tube
- T30** 3.0" Tube **P30** 3" IPS Schedule 5 Pipe
- T40** 4.0" Tube **P40** 4" IPS Schedule 5 Pipe
- T60** 6.0" Tube **P60** 6" IPS Schedule 5 Pipe

For mixed size valves, indicate lower ports first.
Example: 1.5" Lower Housing by 2" Upper Housing is T15T20.
 To verify availability of mixed sizes, please contact Factory

(5) ACTUATOR

| IDENTIFIER | DESCRIPTION |
|------------|------------------|
| NSL | Non Seat Lifting |
| SL | Seat Lifting |

(6) CONTROL UNIT / FEEDBACK

See page 33 for most common control unit configurations. **BOLD** indicates standard control unit options. Use identifier "HP0N" as default for valves without control unit.

CU Identifier Positions 1 & 2

| CONTROL TOP TYPE | |
|------------------|------------|
| C4 | CU4 |
| CP | CU4plus |
| BK | 8681 |

CU Identifier Position 3

| SOLENOID | |
|----------|-------------|
| 1 | 1 Solenoid* |
| 3 | 3 Solenoids |

*Not available with seat lift actuator

CU Identifier Position 4

| | COMMUNICATION TYPE | | CU UNITS AVAILABLE |
|----------|-----------------------|---------------|---------------------------|
| | COMMUNICATION | VOLTAGE | |
| W | Direct Connect | 24V DC | CU4, CU4plus, 8681 |
| Y | AS-i 62 | | CU4, CU4plus, 8681 |
| Z | DeviceNET | | 8681 |
| S | IO Link | | CU4Plus |

(7) CONTROL UNIT / ACTUATOR CONNECTORS

| 1/4" AIR FITTINGS | ELECTRICAL CONNECTION |
|-------------------|-------------------------|
| 3X | No CU |
| 30 | Cable Gland |
| 34 | 4-pin M12 Connector* |
| 35 | 5-pin M12 Connector** |
| 38 | 8-pin M12 Connector** |
| 32 | 12-pin M12 Connector*** |

*Available on CU with AS-i and IO Link Communication

**Only available on CU4 with Direct Connect or with DeviceNET

***Only available on 8681 with Direct Connect

(8) SEAT TYPE

TR Elastomeric Profile Seal

(9) SEAL MATERIAL

E EPDM

V FPM

(10) SURFACE FINISH

| GLASS BLASTED OD | INSIDE POLISH |
|------------------|-------------------------|
| 11 | 32 µ-in (0.8 µm) Ra ID |

(11) OPTIONS

A0 None

C1 Shaft flush

NOTE: 3-A certified design is standard



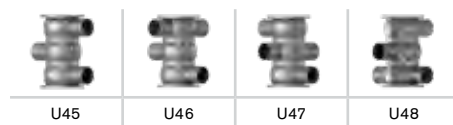
D4 Series Double Seat Mix Proof Changeover Valve

(1) VALVE TYPE

D4 Double Seat Mix Proof

(2) HOUSING COMBINATIONS

Shut-off Valves



(3) PORT CONNECTIONS

W Buttweld

T Clamp

Additional and mixed port connections available upon request. Please contact factory.

(4) PORT SIZES

T15 1.5" Tube

T20 2.0" Tube

T25 2.5" Tube

T30 3.0" Tube

T40 4.0" Tube

(5) ACTUATOR

| IDENTIFIER | DESCRIPTION |
|------------|--------------|
| SL | Seat Lifting |

(6) CONTROL UNIT / FEEDBACK

See page 33 for most common control unit configurations. **BOLD** indicates standard control unit options. Use identifier "HP0N" as default for valves without control unit.

CU Identifier Positions 1 & 2

| CONTROL TOP TYPE | |
|------------------|------------|
| C4 | CU4 |
| CP | CU4plus |
| BK | 8681 |

CU Identifier Position 3

| SOLENOID | |
|----------|-------------|
| 3 | 3 Solenoids |

*Not available with seat lift actuator

CU Identifier Position 4

| | COMMUNICATION TYPE | | CU UNITS AVAILABLE |
|----------|-----------------------|---------------|---------------------------|
| | COMMUNICATION | VOLTAGE | |
| W | Direct Connect | 24V DC | CU4, CU4 plus |
| Y | AS-i 62 | | CU4, CU4plus, 8681 |
| Z | DeviceNET | | 8681 |
| S | IO Link | | CU4Plus |

(7) CONTROL UNIT / ACTUATOR CONNECTORS

| 1/4" AIR FITTINGS | ELECTRICAL CONNECTION |
|-------------------|-------------------------|
| 3X | No CU |
| 30 | Cable Gland |
| 34 | 4-pin M12 Connector* |
| 35 | 5-pin M12 Connector** |
| 38 | 8-pin M12 Connector** |
| 32 | 12-pin M12 Connector*** |

*Available on CU with AS-i and IO Link Communication

**Only available on CU4 with Direct Connect or with DeviceNET

***Only available on 8681 with Direct Connect

(8) SEAT TYPE

TR Elastomeric Profile Seal

(9) SEAL MATERIAL

E EPDM

V FPM

(10) SURFACE FINISH

| GLASS BLASTED OD | INSIDE POLISH |
|------------------|-------------------------|
| 11 | 32 μ-in (0.8 μm) Ra ID |

(11) OPTIONS

A0 None

NOTE: 3-A certified design is standard



DT4 Tank Outlet And DP4 Piggable Mix Proof Valve



Tank Outlet Piggable

The order code is constructed as follows:

| POSITION | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11* |
|----------|-----|-----|---|-----|----|------|----|----|---|----|-----|
| CODE | DT4 | T42 | W | T25 | SL | C43Y | 34 | TR | E | 11 | C1 |

(1) VALVE TYPE

DT4 Tank Outlet Mix Proof

DP4 Piggable Mix Proof Valve

(2) HOUSING COMBINATIONS

Shut-off Valves

| Tank Outlet | Piggable | |
|-------------|----------|------|
| | | |
| T42 | DP42 | DP44 |

(3) PORT CONNECTIONS

W Buttweld

Additional port connections available upon request. Please contact factory.

(4) PORT SIZES

T15 1.5" Tube

T20 2.0" Tube

T25 2.5" Tube

T30 3.0" Tube

T40 4.0" Tube

(5) ACTUATOR

| IDENTIFIER | DESCRIPTION |
|------------|--------------|
| SL | Seat Lifting |

(6) CONTROL UNIT / FEEDBACK

See page 33 for most common control unit configurations. **BOLD** indicates standard control unit options. Use identifier "HP0N" as default for valves without control unit.

CU Identifier Positions 1 & 2

| CONTROL UNIT TYPE | |
|-------------------|------------|
| C4 | CU4 |
| CP | CU4plus |

CU Identifier Position 3

| SOLENOID | |
|----------|-------------|
| 3 | 3 Solenoids |

CU Identifier Position 4

| COMMUNICATION TYPE | | | CU UNITS AVAILABLE |
|--------------------|-----------------------|---------------|---------------------|
| | COMMUNICATION | VOLTAGE | |
| W | Direct Connect | 24V DC | CU4 |
| Y | AS-i 62 | | CU4, CU4plus |
| S | IO Link | | CU4plus |

(7) CONTROL UNIT / ACTUATOR CONNECTORS

| 1/4" AIR FITTINGS | ELECTRICAL CONNECTION |
|-------------------|-----------------------|
| 3X | No CU |
| 30 | Cable Gland |
| 34 | 4-pin M12 Connector* |
| 38 | 8-pin M12 Connector** |

*Available on CU with AS-i and IO Link Communication

**Only available on CU4 with Direct Connect

(8) SEAT TYPE

TR Elastomeric Profile Seal

(9) SEAL MATERIAL

E EPDM

V FPM

H HNBR

(10) SURFACE FINISH

| GLASS BLASTED OD | INSIDE POLISH |
|------------------|------------------------|
| 11 | 0.8 μm (32 μ-in) Ra ID |

(11) OPTIONS

A0 None

C1 Shaft flush

NOTE: Shaft flush and 3-A certified design as standard

DA4 Series Double Seat Mix Proof Valves



(1) VALVE TYPE

DA4 Advanced Ultra-Hygienic Double Seat Mix Proof

(2) HOUSING COMBINATIONS

Shut-off Valves



(3) PORT CONNECTIONS

W Buttweld

T Clamp

Additional and mixed port connections available upon request. Please contact factory.

(4) PORT SIZES

T15 1.5" Tube

T20 2.0" Tube

T25 2.5" Tube

T30 3.0" Tube

T40 4.0" Tube

For mixed size valves, indicate lower ports first.

Example: 1.5" Lower Housing by 2" Upper Housing is **T15T20**.

To verify availability of mixed sizes, please contact Factory

(5) ACTUATOR

| IDENTIFIER | DESCRIPTION |
|------------|---|
| SL | Seat Lifting (Includes Integrated Upper and Lower Shaft Flush for extensive cleaning and minimal CIP losses to drain) |

(6) CONTROL UNIT / FEEDBACK

See page 33 for most common control unit configurations. **BOLD** indicates standard control unit options. Use identifier "HP0N" as default for valves without control unit.

CU Identifier Positions 1 & 2

| CONTROL TOP TYPE | |
|------------------|------------|
| C4 | CU4 |
| CP | CU4plus |
| BK | 8681 |

CU Identifier Position 3

| SOLENOID | |
|----------|-------------|
| 3 | 3 Solenoids |

CU Identifier Position 4

| | COMMUNICATION TYPE | | CU UNITS AVAILABLE |
|----------|-----------------------|---------------|---------------------------|
| | COMMUNICATION | VOLTAGE | |
| W | Direct Connect | 24V DC | CU4, CU4plus, 8681 |
| Y | AS-i 62 | | CU4, CU4plus, 8681 |
| Z | DeviceNET | | 8681 |
| S | IO Link | | CU4plus |

(7) CONTROL UNIT / ACTUATOR CONNECTORS

| 1/4" AIR FITTINGS | ELECTRICAL CONNECTION |
|-------------------|-----------------------|
| 3X | No CU |
| 30 | Cable Gland |
| 34 | 4-pin M12 Connector* |
| 35 | 5-pin M12 Connector** |
| 38 | 8-pin M12 Connector** |

*Available on CU with AS-i and IO Link Communication

**Only available on CU4 Direct Connect Wire or 8681 with DeviceNET

(8) SEAT TYPE

TR Elastomeric Profile Seal

(9) SEAL MATERIAL

E EPDM

V FPM

(10) SURFACE FINISH

| GLASS BLASTED OD | INSIDE POLISH |
|------------------|-------------------------|
| 11 | 32 μ-in (0.8 μm) Ra ID |

(11) OPTIONS

A0 None

D4PMO Double Seat Mix Proof Valves



(1) VALVE TYPE

D4PMO PMO Compliant Double Seat Mix Proof

(2) HOUSING COMBINATIONS

Shut-off Valves



(3) PORT CONNECTIONS

W Butt weld

T Clamp

Additional and mixed port connections available upon request. Please contact factory.

(4) PORT SIZES

T15 1.5" Tube

T20 2.0" Tube

T25 2.5" Tube

T30 3.0" Tube

T40 4.0" Tube

For mixed size valves, indicate lower ports first.
Example: 1.5" Lower Housing by 2" Upper Housing is T15T20.
To verify availability of mixed sizes, please contact factory.

(5) ACTUATOR

| IDENTIFIER | DESCRIPTION |
|------------|---|
| SL | Seat Lifting (Includes Integrated Upper Shaft Flush for extensive cleaning during seat lift movement without external piping) |

(6) CONTROL UNIT / FEEDBACK

See page 33 for most common control unit configurations. **BOLD** indicates standard control unit options. Use identifier "HPON" as default for valves without control unit.

CU Identifier Positions 1 & 2

| CONTROL TOP TYPE | |
|------------------|----------------|
| CP | CU4plus |
| BK | 8681 |

CU Identifier Position 3

| SOLENOID | |
|----------|-------------|
| 3 | 3 Solenoids |

CU Identifier Position 4

| | COMMUNICATION TYPE | | CU UNITS AVAILABLE |
|----------|--------------------|---------|----------------------|
| | COMMUNICATION | VOLTAGE | |
| W | Direct Connect | 24V DC | CU4plus, 8681 |
| Y | AS-i 62 | | CU4plus, 8681 |
| Z | DeviceNET | | 8681 |
| S | IO Link | | CU4plus |

(7) CONTROL UNIT / ACTUATOR CONNECTORS

| 1/4" AIR FITTINGS | ELECTRICAL CONNECTION |
|-------------------|-------------------------|
| 3X | No CU |
| 30 | Cable Gland |
| 34 | 4-pin M12 Connector* |
| 35 | 5-pin M12 Connector** |
| 32 | 12-pin M12 Connector*** |

*Available on CU with AS-i and IO Link Communication
**Only available on 8681 with DeviceNET
***Only available on 8681 with Direct Connect

(8) SEAT TYPE

TR Elastomeric Profile Seal

(9) SEAL MATERIAL

E EPDM

V FPM

(10) SURFACE FINISH

| GLASS BLASTED OD | INSIDE POLISH |
|------------------|-------------------------|
| 11 | 32 μ-in (0.8 μm) Ra ID |

(11) OPTIONS

A0 None

Control Units for D4 Series Valves



Control Units are identified with a 4 digit code.

| IDENTIFIER POSITION | 1 & 2 | 3 | 4 |
|------------------------|---|---|---|
| EXAMPLE CODE | C4 | 3 | W |
| EXAMPLE VALVE KEY CODE | D4- 44- W- T30- SL- C43W- 30- TR- E- 11- A0 | | |

COMMON CONFIGURATIONS

| CONTROL UNIT IDENTIFIER | CU TYPE | COMMUNICATION TYPE | SOLENOIDS | COMMON VALVE TYPE AVAILABLE |
|-------------------------|---------------------|------------------------|-------------|------------------------------|
| HP0N | Prox Holder Bracket | None | 0 solenoids | D4NSL, D4SL, DT4, DA4, D4PMO |
| C41W | CU4 | Direct Connect 24V DC | 1 solenoids | D4NSL |
| C43W | CU4 | Direct Connect 24V DC | 3 solenoids | D4SL, DT4, DA4, DP4 |
| C41Y | CU4 | AS-i 62 | 1 solenoids | D4NSL |
| C43Y | CU4 | AS-i 62 | 3 solenoids | D4SL, DT4, DA4, DP4 |
| CP1W | CU4plus | Direct Connect 24V DC | 1 solenoids | D4NSL |
| CP3W | CU4plus | Direct Connect 24V DC | 3 solenoids | D4SL, DT4, DA4, D4PMO, DP4 |
| CP1Y | CU4plus | AS-i 62 | 1 solenoids | D4NSL |
| CP3Y | CU4plus | AS-i 62 | 3 solenoids | D4SL, DT4, DA4, D4PMO, DP4 |
| CX1W | ATEX / IECEx CU | Direct Connect 24 V DC | 1 solenoids | D4 |
| CP1S | CU4plus | IO Link | 1 solenoids | D4NSL |
| CP3S | CU4plus | IO Link | 3 solenoids | D4SL, DT4, DA4, D4PMO |
| CX3W | ATEX / IECEx CU | Direct Connect 24 V DC | 3 solenoids | D4, DA |
| BK1W | 8681 | 24V DC | 1 solenoids | D4NSL |
| BK3W | 8681 | 24V DC | 3 solenoids | D4SL, DT4, DA4, D4PMO |
| BK1Y | 8681 | AS-i 62 | 1 solenoids | D4NSL |
| BK3Y | 8681 | AS-i 62 | 3 solenoids | D4SL, DT4, DA4, D4PMO |
| BK1Z | 8681 | DeviceNET | 1 solenoids | D4NSL |
| BK3Z | 8681 | DeviceNET | 3 solenoids | D4SL, DT4, DA4, D4PMO |

| CONTROL UNIT TYPE | DESCRIPTION |
|-------------------|---|
| C4 | CU4 model with 2 Hall sensors for feedback |
| CP | CU4plus model with Teach-in/Linear sensor for feedback and SLD |
| BK | Burkert brand 8681 model with Teach-in/Linear sensor for feedback, SLD, M12 pin connector as standard |

SLD = Seat Lift Detection for Mix Proof Valves



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