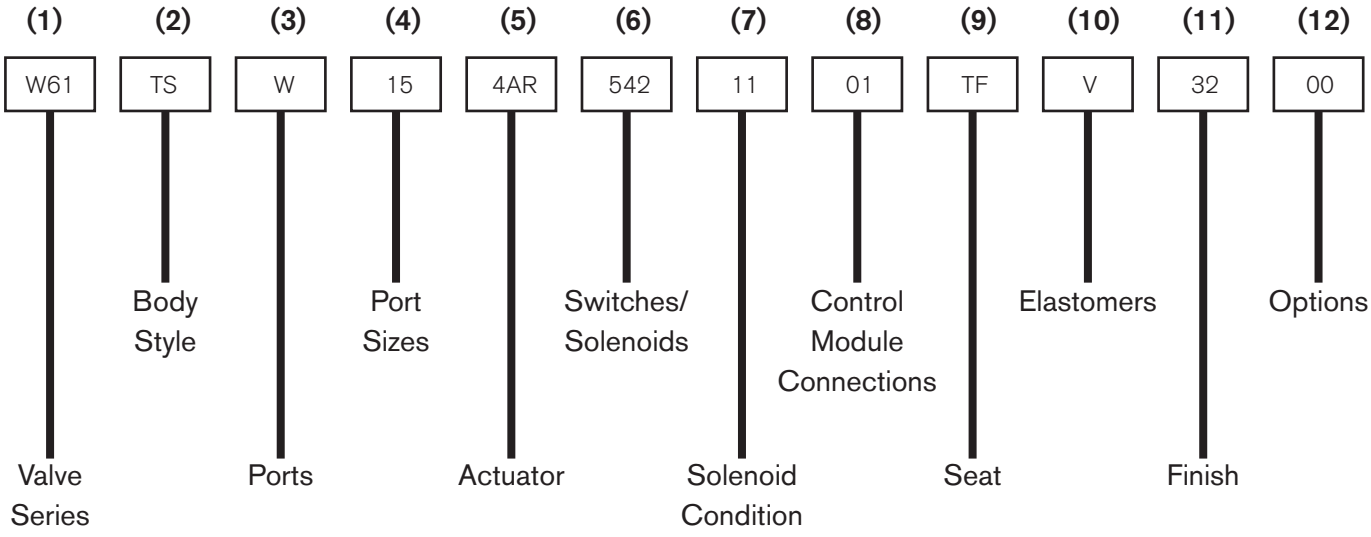
SPX®

Single Seat Valve Key

W 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 will always be a 12-digit number defining all areas of the valve's specification.

Example: W61 shut off valve with a TS body configuration, clamp by buttweld ports, 1.5" size, 4" Air to Raise Actuator, 2 Proximity switches, 1 solenoid, Standard S/O Cord connector, Tef Flow seat, Fluoroelastomer, 32Ra finish, and no special options.

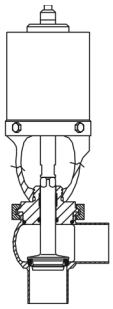


Waukesha Cherry-Burrell®

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

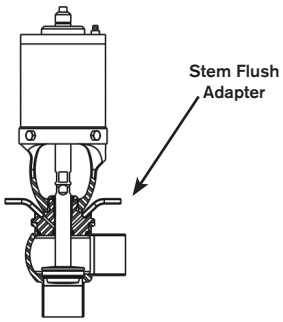
(1) Valve Series

W60



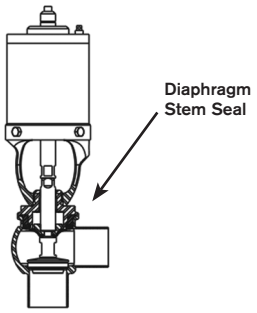
W61	Shut-off
W62	Divert
W63	Reverse Acting Shuf-off
W64	Tank Outlet Valve (Seat raises into tank)
W64R	Tank Outlet Valve (Seat lowers into valve body)
W65	Non Slamming Divert Valve
W68	Throttling Valve
W68R	Reverse Acting Throttling Valve
W685	Non-Slamming Divert Throttling Valve
W682	Conversion Throttling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

W80



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

W90



W91	Shut-off with diaphragm stem seal
W92	Divert with diaphragm stem seal
W93	Reverse Acting Shuf-off with diaphragm stem seal
W94	Tank Outlet Valve (Seat raises into tank) with diaphragm stem seal
W94R	Tank Outlet Valve (Seat lowers into valve body) with diaphragm stem seal
W95	Non Slamming Divert Valve with diaphragm stem seal
W98	Throttling Valve with diaphragm stem seal

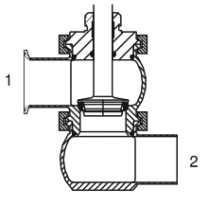
NOTE: Over pressure valves are denoted by an “R” in the model (i.e. WR61) and use a W60 or W80 series valve with an adjustable-spring actuator.

(2) Body Configuration *(See page 3)*

(3) Port(s)

W	Buttweld
S	S Line
I	I Line (female - 15I)
14I	I Line (male - 14I)
B	Bevel Seat (male threaded end)
F	Flange
Q	Q Line
D	DIN 11851 405 Thread
A	Aseptic I-Line (15NI)

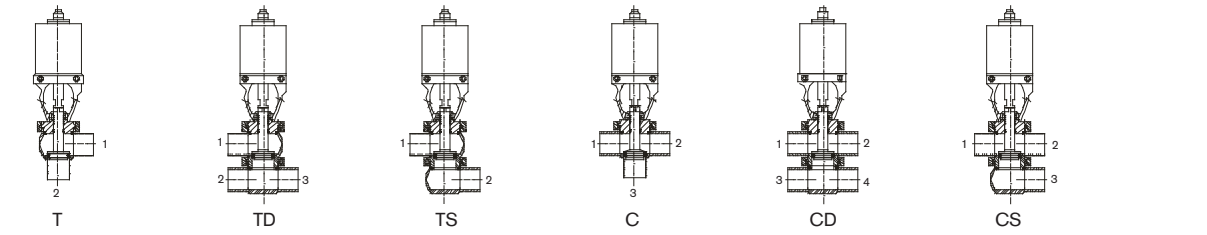
For mixed connection types, specify in order of port #.



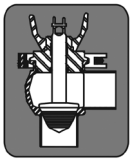
Example:
W61-TS-SW

Body Configurations

W61/W81/W91 SHUT-OFF (W68/W88/W98 THROTTLING)



Also Available

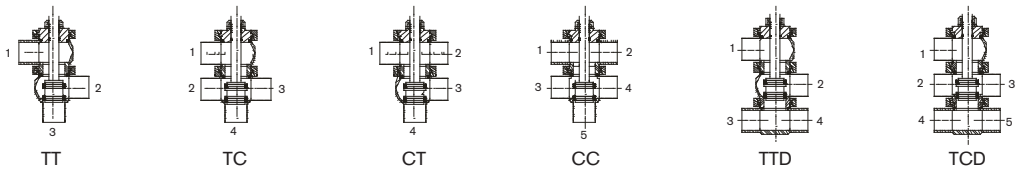


Throttling Plug

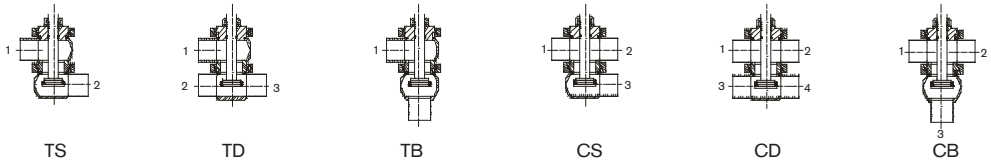
*L body only available w/ high flow CV on throttling valves

[1]Not available with 90-Series

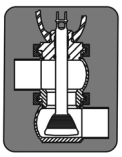
W62/W82/W92 DIVERT



W63/W83/W93 SHUT-OFF (W68R/W88R THROTTLING)

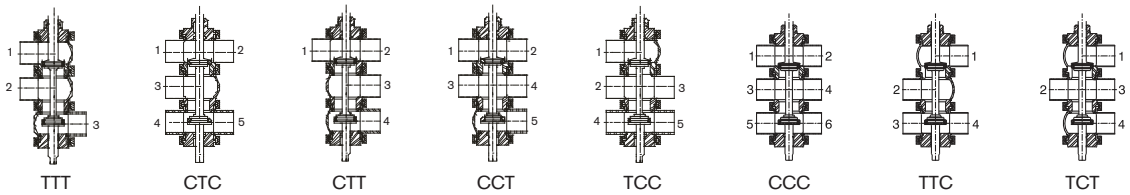


Also Available

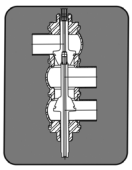


Throttling Plug

W65/W85/W95 DIVERT (W685/W885 THROTTLING)

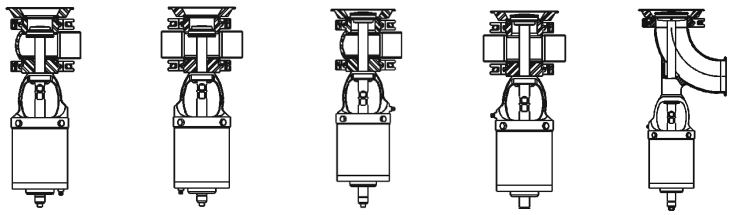


Also Available

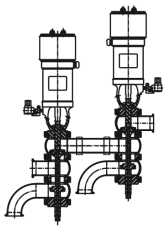


Throttling Plug

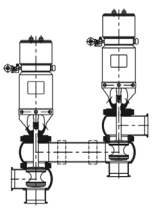
W64/W84/W94 TANK OUTLET (NOTE: Tank Flanges sold separately)



W265/W285 FDV[1]



W262/W282 FDV[1]



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

(4) Port Sizes (s)

Standard Valves:

10	1" (25mm)
15	1.5" (38mm)
20	2" (51mm)
25	2.5" (64mm)
30	3" (76mm)
40	4" (102mm)
60	6" (152mm)

For mixed sized bodies indicate upper ports first.

Example: 1.5" Upper by 2" Lower is 1520.
For reduced-seat bodies, indicate port size first, then plug size.
Example: 40/25 is 4" Body/2.5" plug size

Contact Factory to verify availability of mixed body and reduced-seat body sizes prior to placing an order.

W64 ET - 2", 2.5" & 3" sizes only.
90 Series available in 1.5" - 4" sizes

Throttling Valves:
(see Figure 2 below)

10(1.75)*	1" (Cv 1.75, 2.5, 5, 7.5)
15(10)	1.5" (Cv 1.75, 2.5, 5, 7.5, 10 or Cv 35)
20(30)	2" (Cv 30 or Cv 70)
25(60)	2.5" (Cv 60 or Cv 120)
30(90)	3" (Cv 90 or Cv 150)
40(110)	4" (Cv 110 or Cv 210)

***Note: Cv rating follows port size.

Cv Factor Chart

% of valve stroke	Valve Stem Size													
	1.0–1.5" Reduced Orifice				1-1/2"		2"		2-1/2"		3"		4"	
	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, 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 $m^3/hr = \frac{GPM}{4.4}$

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

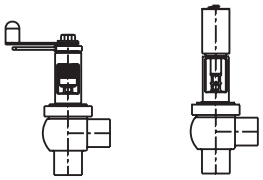
(5) Actuator*

4AR 4" (101mm) Air to Raise
4HAR[3] 4" (101mm) Heavy Duty Spring, Air to Raise
4AL 4" (101mm) Air to Lower
4HAL[3] 4" (101mm) Heavy Duty Spring, Air to Lower
4AA 4" (101mm) Air to Air
4ALLG 4" (101mm) Air to Lower, long stroke
4ARLG 4" (101mm) Air to Raise, long stroke

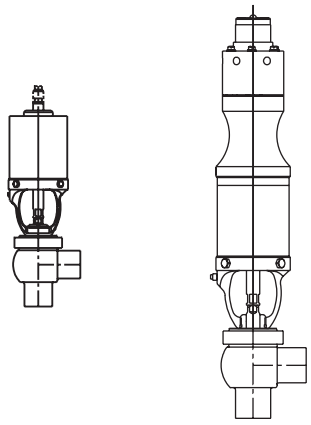
5AR 5" (127mm) Air to Raise
5HAR[3] 5" (127mm) Heavy Duty Spring, Air to Raise
5AL 5" (127mm) Air to Lower
5HAL[3] 5" (127mm) Heavy Duty Spring, Air to Lower
5AA 5" (127mm) Air to Air
5ALD* 5" (127mm) Air to Lower, diaphragm

6HAR[3] 6" (152mm) Heavy Spring, Air to Raise
6HAL[3] 6" (152mm) Heavy Spring, Air to Lower
6AR 6" (152mm) Light Spring, Air to Raise
6AL 6" (152mm) Light Spring, Air to Lower
6AA 6" (152mm) Air to Air
6ALLG 6" (152mm) Air to Lower, long stroke
6ARLG 6" (152mm) Air to Raise, long stroke
6AALG 6" (152mm) Air to Air, long stroke
6ARY[2] 6" (152mm) Air to Raise, Extra long stroke
6ALY[2] 6" (152mm) Air to Lower, Extra long stroke
6AAY[2] 6" (152mm) Air to Air, Extra Long Stroke

4RHAR[4] 4" (101mm) Adjustable-Spring, Air to Raise
5RHAR[4] 5" (127mm) Adjustable-Spring, Air to Raise
6RHAR[4] 6" (152mm) Adjustable-Spring, Air to Raise
4RHAL[4] 4" (101mm) Adjustable-Spring, Air to Lower
5RHAL[4] 5" (127mm) Adjustable-Spring, Air to Lower
6RHAL[4] 6" (152mm) Adjustable-Spring, Air to Lower



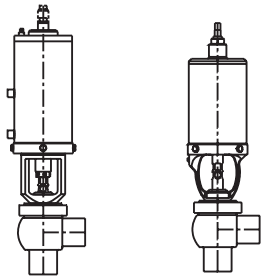
H Hand Lock
HLG Hand Lock, long stroke
M Micrometer
HY Hand Lock, Extra Long Stroke



4ARP 4" (101mm) Air to Raise w/positioner
4ALP 4" (101mm) Air to Lower w/positioner

5ARP 5" (127mm) Air to Raise w/positioner
5ALP 5" (127mm) Air to Lower w/positioner
5ALDP* 5" (127mm) Air to Lower, diaphragm w/positioner

6ARP 6" (152mm) Air to Raise w/positioner
6ALP 6" (152mm) Air to Lower w/positioner



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

[2] Used with Y-Body valves. Consult with application engineering for use with 6" OD size valves.
*5ALD & 5ALDP - Only available on throttling valves.
[3] Use TFP metal or TR seats for heavy spring actuators.
[4] Used with over-pressure valves, use TFP or metal seats.

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

(6) Switches/Solenoids

Description	No Control Module	Control Module no solenoids	Control Module with (1) 110V AC sol	Control Module with (2) 110V AC sol	Control Module with (1) 24V DC sol	Control Module with (2) 24V DC sol
No Switches	000	501	502	503	505	506
No Switches, Control top stem	001	-	-	-	-	-
Set & Forget	-	511	-	-	515	516
24 VDC Only						
Prox Switch (1) lower	520	521	522	523	525	526
Prox Switch (1) upper	530	531	532	533	535	536
Prox Switch (2)	540	541	542	543	545	546
24VDC/110 VAC						
Microswitch (1) lower	550	551	552	553	555	556
Microswitch (1) upper	560	561	562	563	565	566
Microswitch (2)	570	571	572	573	575	576
24VDC/110 VAC						
Prox Switch (1) lower[2]	580	581	-	-	-	-
Prox Switch (1) upper[2]	590	591	-	-	-	-
Prox Switch (2)[2]	600	601	-	-	-	-
Intrinsically Safe						
5-25VDC						
AS-i Card & Set & Forget	-	611	-	-	615	616
AS-i Card & Prox Switch (1) lower	-	621	-	-	625	626
AS-i Card & Prox Switch (1) upper	-	631	-	-	635	636
AS-i Card & Prox Switch (2)	-	641	-	-	645	646
24 VDC Only						
DeviceNet Card & Set & Forget	-	711	-	-	715	716
DeviceNet Card & Prox Switch (1) lower	-	721	-	-	725	726
DeviceNet Card & Prox Switch (1) upper	-	731	-	-	735	736
DeviceNet Card & Prox Switch (2)	-	741	-	-	745	746
24 VDC (requires PNP switches)						

[1]Where proximity switches are indicated, these are externally mounted on top of actuator. (No Control Module)
[2]Requires barrier (not included, provided by others)
When one proximity or microswitch is supplied, Default is as follows: W61, W62, W64R, W65 – lower position W63, W64 – Upper position
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 Control Module	00
S/O Cord, Strain Relief (Std)	01
4 Pin Turck Eurofast (1 or 2 Switches only, no solenoid; Std for Asi; AC/DC)	24
5 Pin Turck Eurofast (Std for Device Net only; AC/DC)	25
6 Pin Turck Eurofast (1 or 2 Switches and 1 solenoid; DC only)	26
8 Pin Turck Eurofast (1 or 2 Switches and up to 2 solenoids; DC only)	28
6 Pin Turck Minifast (1 or 2 Switches and up to 2 solenoids; AC/DC)	46
5 Pin Turck Minifast (1 or 2 Switches, no solenoid; AC/DC)	45
7 Pin Turck Minifast (1 or 2 Switches and up to 2 solenoids; AC/DC)	47

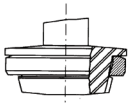
Includes connector on control module only. Mating connector and cable sold separately, by others.
*Turck is WCB Standard for pin connectors.

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

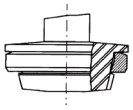
(9) Seat

TF	Tef-Flow
TFP	Tef-Flow P**
TR	Tri-Ring*, ***
M	Metal
B	Bonded

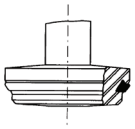
Tef-Flow™ (TF)



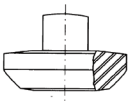
Tef-Flow™ "P" (TFP)



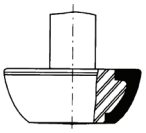
Tri-Ring (TR)



Metal (M)

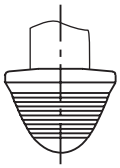


Bonded (B)



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 inch valves only available with TR seats.

(10) Elastomer

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

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)
32EP	32Ra Machined Finish and Electropolish ID
15EP	15Ra Mechanical Polish and Electropolish ID

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

(12) Options

Description	Option Number
No Options	00
High Pressure Stem Adapter & Body Clamp	04
Mill Test Reports	06
Stainless Steel Tags	08
Quick dump valve	09
Wiping stem seal(s)	10

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

SPX®

Global locations

AMERICAS

SPX FLOW TECHNOLOGY

611 Sugar Creek Road

Delavan, WI 53115

United States of America

+1 262 728 1900

Based in Charlotte, North Carolina, SPX Corporation (NYSE: SPW) is a multi-industry manufacturing leader.
For more information, please visit www.spx.com

SPX FLOW TECHNOLOGY

611 Sugar Creek Road

Delavan, WI 53115

P: (262) 728-1900 or (800) 252-5200

F: (262) 728-4904 or (800) 252-5012

E: wcb@spx.com

ISSUED 02/2015 DS-1204