



2019

800 SERIES CONTROL VALVE SELECTION GUIDE



CONTROL YOU CAN COUNT ON SEASON AFTER SEASON

INTERNAL CAGE



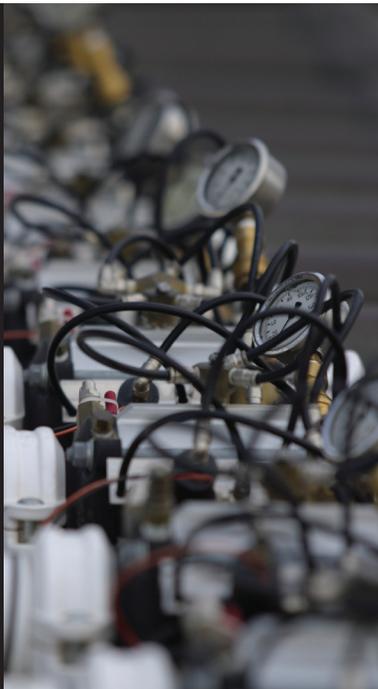
CLOSED — UPSTREAM WATER IS APPLIED TO THE OUTER SLEEVE CHAMBER, THE SLEEVE BECOMES HYDRAULICALLY BALANCED AND THE FLOW PASSAGE IS CLOSED OFF BY THE SLEEVE PRESSING AGAINST THE CENTER SEAT.



OPEN — WATER PRESSURE IS RELIEVED FROM THE SLEEVE CHAMBER, ALLOWING THE VALVE TO OPEN.

PRESSURE

2



MANUAL ON-OFF

ALL 800 SERIES VALVES (EXCEPT 800P) ARE EQUIPPED WITH A 3-WAY MANUAL ON-OFF SELECTOR VALVE.



ELECTRIC ON-OFF

ADD A SOLENOID FOR ELECTRIC ON-OFF CAPABILITY.

VALVE HOUSING (GALVANIZED STEEL FOR 6" & 8" AND ANODIZED ALUMINUM FOR 2", 3", & 4")

PLASTIC CENTER BARRIER

STAINLESS STEEL CENTER STUD

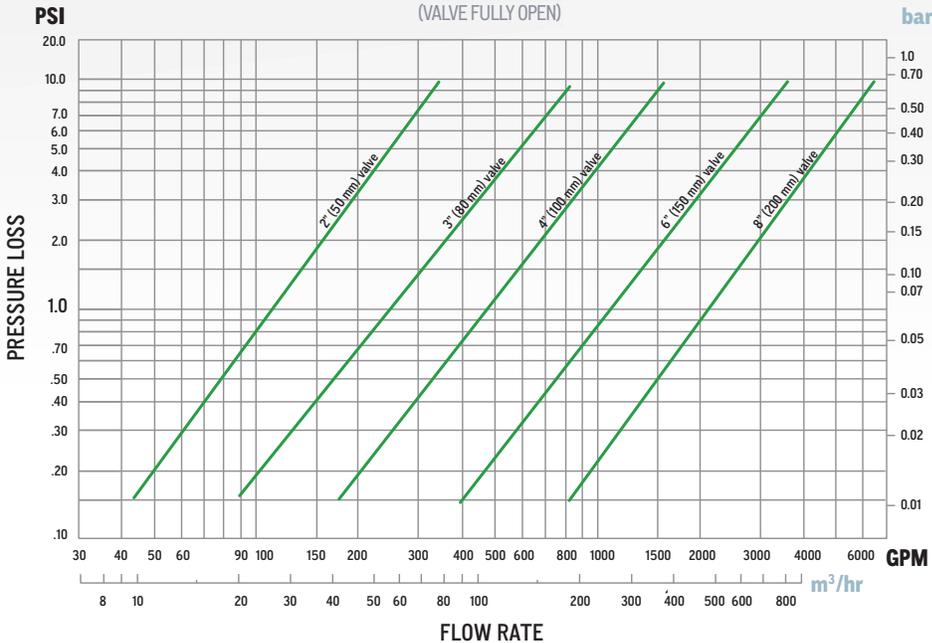
CAGE

SLEEVE (SPECIAL NATURAL RUBBER)



800 SERIES CONTROL VALVES PRESSURE LOSS DATA

(VALVE FULLY OPEN)



AS A HYDRAULICALLY OPERATED SLEEVE-TYPE VALVE, THE 800 SERIES CONTROL VALVE IS DESIGNED FOR VERSATILITY. THE BASIC BODY CAN BE EQUIPPED WITH SEVERAL DIFFERENT OPTIONS FOR CONTROLLING PRESSURE AND FLOW. IT'S ALSO ENGINEERED FOR EXTREMELY HIGH EFFICIENCY, RESULTING IN LOW PRESSURE LOSS AND HIGH FLOW CAPACITY.



PRESSURE CONTROL

THE PRESSURE CONTROL REGULATOR ("REDUCING" FOR DOWNSTREAM, "SUSTAINING" FOR UPSTREAM) DIRECTS WATER FLOW WHICH POSITIONS THE SLEEVE DURING OPERATION.



RATE-OF-FLOW

ADD THE RATE-OF-FLOW (MODEL D18) CONTROL TO REGULATE THE FLOW RATE DURING SYSTEM START UP.

800 SERIES CONTROL VALVES

TO ORDER: Select one option from each of the five sections to build the valve description code.

SECTION	1. SIZE/MATERIAL/CONNECTIONS	2. PRESSURE	3. PRESSURE CONTROL	4. ON/OFF CONTROL	5. FILTER
CODE	A6 B5	C3	D01	E01	H3
DESCRIPTION	6" Cast Iron Wafer w/Stud Kit	Medium (18-80 psi)	None	Manual Selector Only	Internal Filter

1. SIZE/MATERIAL/CONNECTIONS		
CODE	MATERIAL	CONNECTIONS
2" VALVES		
A2 B3	Cast Iron	2" Threaded (NPT)
A2 B6		2" Victaulic
A2 B9	Aluminum	Wafer (no stud kit)
A2 B10		Wafer w/stud kit for 2" Flanges
A2 B17		Wafer w/stud kit for 75/100 Big Gun
3" VALVES		
A3 B6	Cast Iron	3" Victaulic
A3 B9	Aluminum	Wafer (no stud kit)
A3 B10		Wafer w/stud kit for 3" Flanges
A3 B17		Wafer w/stud kit for 150 Big Gun
4" VALVES		
A4 B4	Cast Iron	Wafer (no stud kit)
A4 B5		Wafer w/stud kit for 4" Flanges
A4 B21		Wafer 6x4x6 (no stud kit)
A4 B22		Wafer 6x4x6 w/stud kit
A4 B9	Aluminum	Wafer (no stud kit)
A4 B10		Wafer w/stud kit for 4" Flanges
A4 B17		Wafer w/stud kit for 200 Big Gun
A4 B23		Wafer 6x4x6 (no stud kit)
A4 B24		Wafer 6x4x6 w/stud kit
6" VALVES		
A6 B4	Cast Iron	Wafer (no stud kit)
A6 B5		Wafer w/stud kit for 6" flanges
A6 B21		Wafer 8x6x8 (no stud kit)
A6 B22		Wafer 8x6x8 w/stud kit
8" VALVES		
A8 B4	Cast Iron	Wafer (no stud kit)
A8 B5		Wafer w/stud kit for 8" flanges

2. PRESSURE	
CODE	OPERATING PRESSURE
C1	Low (10-50 psi)
C2	High (30-200 psi)
C3	Medium (18-80 psi)

3. PRESSURE CONTROL	
CODE	ADJ. RANGE
D01	None
PRESSURE REDUCING	
D02	5-50 psi, 4-8"
D03	10-120 psi, 4-8"
D04	25-200 psi, 4-8"
D11	5-30 psi, 2" and 3"
D12	5-60 psi, 2" and 3"
D13	10-120 psi, 2" and 3"
PRESSURE SUSTAINING	
D05	25-200 psi, 4-8"
D08	10-120 psi, 4-8"
D09	5-50 psi, 4-8"
D15	5-60 psi, 2" and 3"
D16	10-120 psi, 2" and 3"
RATE OF FLOW	
D18-1	3" Pipe, 120-400 gpm
D18-2	4" Pipe, 200-550 gpm
D18-3	6" Pipe, 350-1000 gpm
D18-4	6" Pipe, 500-2000 gpm
D18-5	8" Pipe, 500-1550 gpm
D18-6	8" Pipe, 900-3800 gpm
SLEEVE EXHAUST	
D06	Valve open below 30 psi
D06-1	Valve open below 10 psi
SHUTTLE CHECK	
D07	Shuttle Check

4. ON/OFF CONTROLS*	
CODE	ON/OFF CONTROL
E00	None
E01	Manual Selector Only
MANUAL SELECTOR WITH SOLENOID	
E11	E11 Solenoid - 12 VDC, 1.6mm, NC*
E20	E20 Window+ Controller, 1.6mm (4-8")
E21	E21 Solenoid - 12 VDC, 1.6mm
E23	E23 Solenoid - 9-12 VDC Lat., 1.2mm
E25	E25 Solenoid - 12 VDC, 3.2mm, NC*
E29	E29 Solenoid - 12-40 VDC Lat., 2.0mm
E30	E30 Solenoid - 24 VDC, 1.6mm
E31	E31 Window+ Controller, 1.2mm (2" and 3")
E34	E34 Solenoid - 24 VDC, 1.2mm
E40	E40 Solenoid - 24 VAC, 1.6mm, 2.5W
E41	E41 Solenoid - 24 VAC, 1.6mm, 8W
E43	E43 Solenoid - 24 VAC, 1.2mm, 3W
E46	E46 Solenoid - 24 VAC, 1.6mm, 5.5W
E50	E50 Solenoid - 120 VAC, 1.6mm, 8W
E52	E52 Solenoid - 120 VAC, 3.2mm, 17W
E53	E53 Solenoid - 110 VAC, 1.6mm, 5.5W

5. FILTER	
CODE	FILTER
H2	External Filter
H3	Internal Filter (2" and 3")
	Internal Filter (4-8")
FILTER WITH TUBING PROTECTION	
H4	External Filter
H5	Internal Filter (2" and 3")
	Internal Filter (4-8")

*Contact Factory for full solenoid specifications. Other models available for special order.

*Normally closed solenoid for pressure sustaining, normally open valve ("PSNO") for applications at filter stations.

Nelson Control Valves come standard normally closed. Use the following codes to specify non-standard, normally open, or special solenoid plumbing logic.

OPTIONAL SOLENOID LOGIC											
SOLENOID ONLY			SUSTAINING W/ SOLENOID			REDUCING W/ SOLENOID			SUSTAINING/REDUCING W/ SOLENOID		
CODE	SOLENOID STATUS	VALVE STATUS	CODE	SOLENOID STATUS	VALVE STATUS	CODE	SOLENOID STATUS	VALVE STATUS	CODE	SOLENOID STATUS	VALVE STATUS
L02	Energized	Closed	L03	Energized	Sustaining	L08	Energized	Closed	L09	Energized	Sustaining-Reducing
	De-energized	Open		De-energized	Closed		De-energized	Reducing		De-energized	Closed
			L04 †	Energized	Sustaining				L10	Energized	Sustaining
				De-energized	Open					De-energized	Reducing
			L05	Energized	Closed				L11	Energized	Reducing
				De-energized	Sustaining					De-energized	Sustaining
			L06	Energized	Open						
				De-energized	Sustaining						

†Pressure Sustaining normally-open valve ("PSNO") for applications at filter stations.

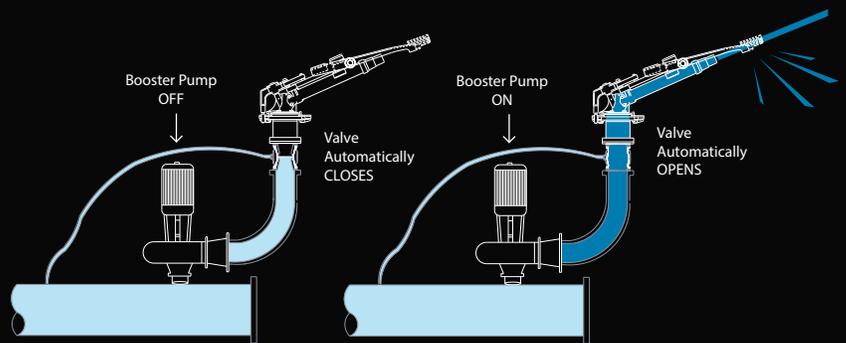
BIG GUN® CONTROL VALVES

PIVOT GUN CONTROL VALVES are specified as the 800P (see below). SOLID SET GUN CONTROL VALVES can be specified as a 2", 3" or 4" B17 800 Series Valve (see page 4). This includes a 3-way manual on-off selector kit, a mounting bracket and rubber drain/plug but does not include a ball drain/vent kit.



PIVOT GUN CONTROL VALVE 800P CONTROL VALVE + SR75 OR SR100

THE 2" VALVE IS NORMALLY CLOSED. WHEN THE BOOSTER PUMP IS TURNED ON, THE ADDED PRESSURE* CAUSES THE VALVE TO OPEN OPERATING THE GUN. NO OTHER ACCESSORY IS NEEDED.



*BOOSTER PUMP ADDED PRESSURE MUST BE 18 PSI (1.2 BAR) OR MORE.

800P - 2" (50 MM) PIVOT END GUN VALVE (Booster Pump Controlled - no solenoid required)
Medium Pressure sleeve (18-80 psi) includes ball drain/vent, 2 rubber drains, and 1/4" tube fitting in jacket

MODEL NO.	DESCRIPTION	PART NUMBER
800P	800P End Gun Valve, A2B12C3, no stud kit	13271-003
	800P End Gun Valve, A2B11C3, with stud kit	13271-001



2 x Rubber drain/plug
(1) #9800 Upstream - to release air
(1) #9800-100 Downstream - to drain gun



10753 Ball drain/vent
Installed in booster pump volute or valve jacket to prevent booster pump air lock



SOLENOIDS & VALVE ACCESSORIES

3-Way Solenoid Specifications (For Electric On-Off choose from DC, DC Latching or AC Solenoids.)

MODEL #	MFG.	VOLTAGE	RECOMM. VALVE SIZE	IN-RUSH AMPS	HOLD-ING AMPS	RESIS-TANCE (OHM)	WATTS	INLET ORIFICE	ELECTRICAL CONNECTION	MAX. PRES-SURE	PART NUMBERS			
											KIT	COIL +BASE	COIL	
E11	GEM-SOL	12 VDC NC ¹	2" - 6"	-	0.83	14.3	10	1.6 mm	1/16"	1/2" FNPT w/ Leads	175 psi	8925-011	7510-011	-
E21	PARKER	12 VDC	all	-	0.6	20	8	1.6 mm	1/16"	1/2" FNPT w/ Leads	175 psi	8925-001	7510-001	7510-101
E23	BACCARA	9/12 VDC Lat	2" - 4"	-	-	4.2	3	1.2 mm	3/64"	>12" Leads	175 psi	8925-035	7510-052	7510-152
E25	SOLENOID SOLUTIONS	24 VDC NC ¹	6" & 8"	1.42	1.42	-	17	3.2 mm	1/8"	>12" leads	150 psi	8925-020	7510-036	7510-136
E29		12-40 VDC Lat	all	-	-	-	-	2 mm	5/64"	47" Leads	140 psi	8925-029	7510-029	NA
E30	PARKER	24 VDC	all	-	0.3	83	8	1.6 mm	1/16"	1/2" FNPT w/ Leads	175 psi	8925-002	7510-002	7510-102
E34	BACCARA	24 VDC	2" - 4"	0.125	0.125	119	3	1.2 mm	3/64"	>12" Leads	175 psi	8925-037	7510-054	7510-154
E40	GEM-SOL	24 VAC	all	0.15	0.15	diode ²	2.5	1.6 mm	1/16"	1/2" FNPT Plug-In	175 psi	8925-043	7510-015	7510-115
E41	PARKER	24 VAC	all	1.1	0.65	7.8	8	1.6 mm	1/16"	1/2" FNPT w/ Leads	175 psi	8925-003	7510-003	7510-103
E43	BACCARA	24 VAC	2" - 4"	0.125	0.125	diode ²	3	1.2 mm	3/64"	>12" Leads	175 psi	8925-033	7510-050	7510-150
E46	GEM-SOL	24 VAC	all	0.8	0.43	9	5.5	1.6 mm	1/16"	1/2" FNPT Plug-In	175 psi	8925-044	7510-016	7510-116
E50	PARKER	120 VAC	all	0.2	0.1	184	8	1.6 mm	1/16"	1/2" FNPT w/ Leads	175 psi	8925-004	7510-004	7510-104
E52	PARKER	120 VAC	6" & 8"	0.7	0.3	27	17	3.2 mm	1/8"	1/2" FNPT w/ Leads	175 psi	8925-024	7510-033	7510-133
E53	GEM-SOL	110 VAC	all	0.15	0.11	230	5.5	1.6 mm	1/16"	1/2" FNPT Plug-In	175 psi	8925-045	7510-051	7510-151

1. Normally closed solenoids for pressure sustaining normally open ("PSNO") applications, and other normally open valve applications.

2. If the solenoid contains a diode, the resistance reading obtained using a voltmeter will be inaccurate (extremely high). This is because a diode acts like a check valve that only opens when a sufficient amount of "pressure" (voltage) is present.

Protect control tubing from damage caused by coyotes and other animals. Choose Factory installed H4 or H5 depending on valve size or order kit #13038.



DESCRIPTION	4" Valve x 6" Flange Adapter Kit	6" Valve x 8" Flange Adapter Kit	Window + Controller w/ 12/24 VDC Lat.
PART NO.	11433, 11433-001 (w/6" stud kit)	12225, 12225-001 (w/8" stud kit)	E31 for 2, 3"; E20 for 4, 6, 8"

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848 Airport Road, Walla Walla, Washington 99362 U.S.A.

Tel: +1 509.525.7660 / Fax: +1 509.525.7907

info@nelsonirrigation.com / nelsonirrigation.com

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