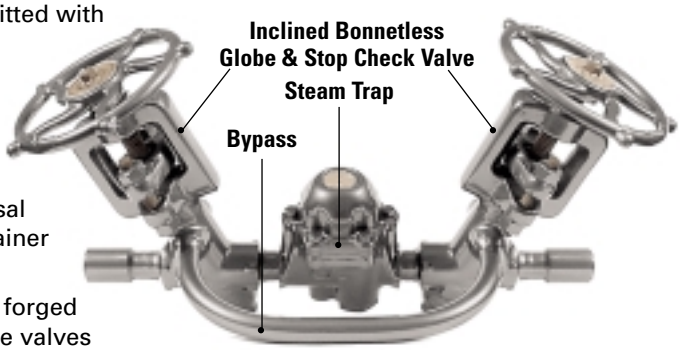
VELAN PIPING KING PACKAGE UNITS

Velan Forged Piping King Automatic Condensate Drain Units
A Unique Method in Steam Trap Piping

The Piping King Package unit fitted with a bypass, enables the steam trap to be isolated from the system allowing routine maintenance to be carried out.

THE UNIT CONSISTS OF:

- The unique patented Universal Steam Trap with integral strainer and check valve
- Two high-quality bonnetless forged steel special stop check globe valves mounted on either side of the trap.



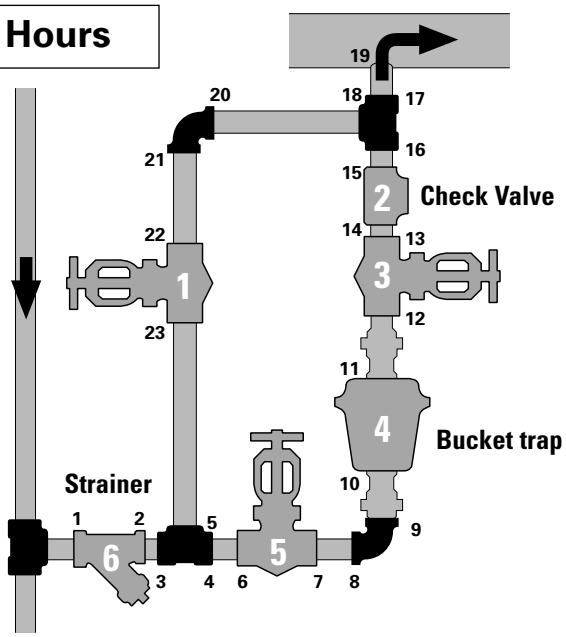
The valves are connected by the bypass pipe, enabling the steam trap to be isolated while the steam flow is maintained.

Piping King units are used extensively in power stations marine and similar applications where continuous operation is essential during routine maintenance. (See page 18, 19 for details.)

Velan Piping Kings Provide Substantial Savings, in Component Parts & Installation Costs

CONVENTIONAL UNIT WITH BYPASS (3 VALVES) AND BUCKET TRAP

8 Hours



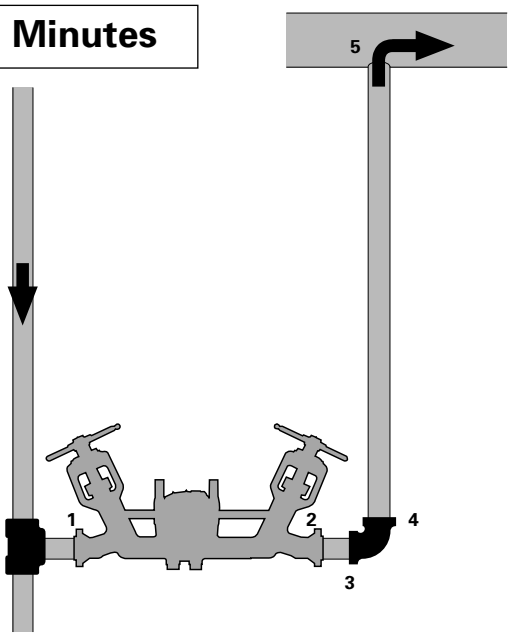
6 Units - 23 Welds

- **1** Steel 3/4" Bucket Steam Trap
- **3** Forged Steel Valves
- **1** Steel Strainer 3/4"
- **1** Steel Check Valve 3/4"
- **23** Welded Joints (6 hours)
- **2** Elbows 3/4" (s.w.)
- **3** Tees 3/4" (s.w.)
- **2** Unions 3/4"

  Fitting Time (2 hours)

VELAN PIPING KING UNIT WITH BYPASS (2 VALVES ONLY)

70 Minutes



1 Unit - 5 Welds

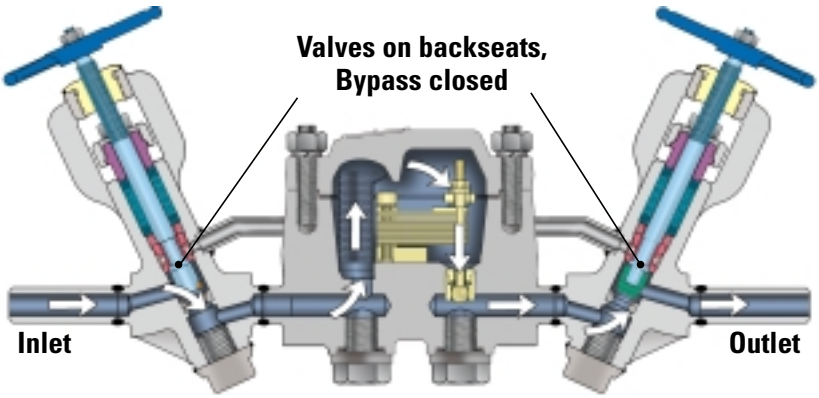
- **1** Velan Piping King 3/4" Type NV-BY
- **5** Welded Joints (1 hour)

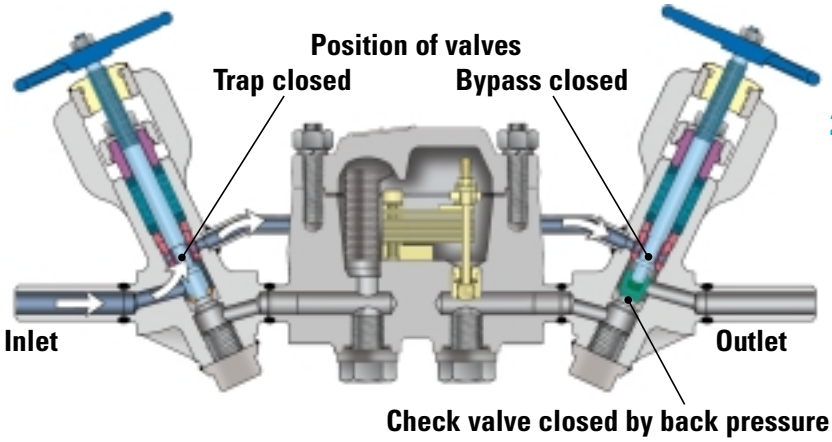
  Fitting Time (10 minutes)

HOW IT WORKS

1. AUTOMATIC STEAM TRAP OPERATION

Inlet valve and outlet valve both in top, closed position to provide double protection against leakage through the bypass.





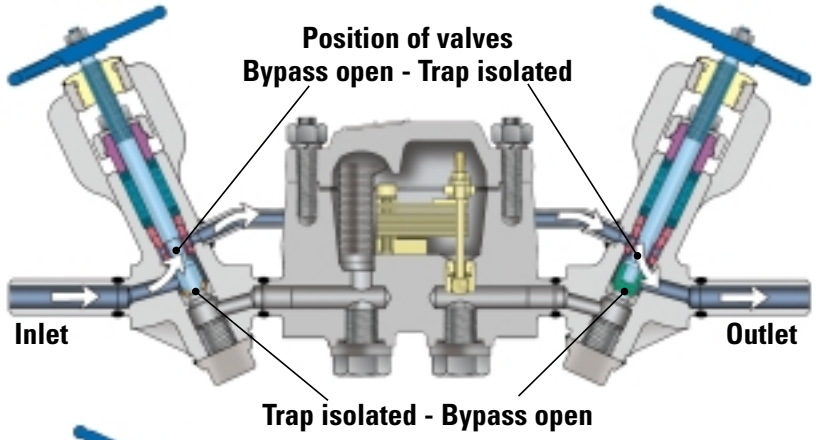
2. COMPLETE SHUTOFF - NO FLOW TRAP ISOLATED FOR SERVICE

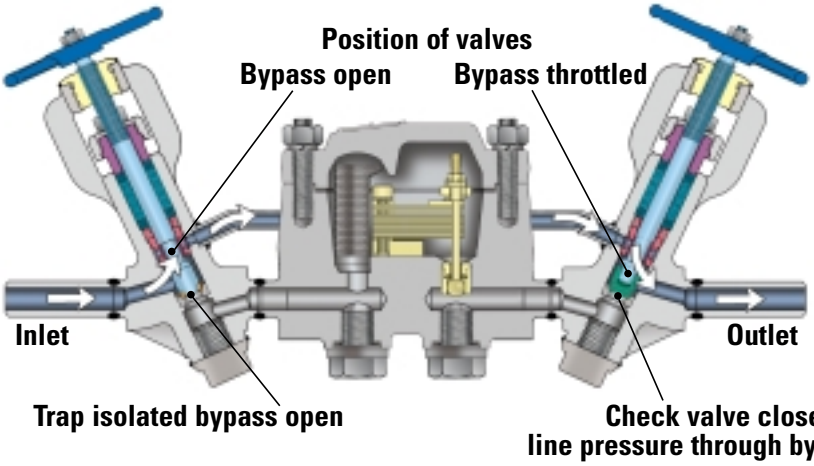
Inlet valve in bottom position, outlet valve in top position. The trap is now sealed off by the inlet valve and the bypass is closed by the outlet valve. The valve is protected from back-pressure by the check valve portion of the outlet valve.

3. BYPASS OPEN - FULL FLOW TRAP ISOLATED FOR SERVICE PREFERRED SERVICE POSITION

Both inlet valve and outlet valves in bottom position to seal off the trap against flow and back-pressure.

Trap is isolated and ready for service.



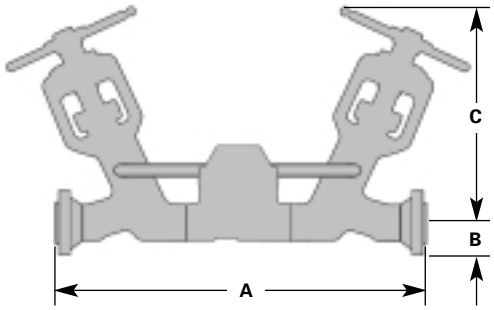


4. THROTTLED BY-PASSING - TRAP ISOLATED FOR SERVICE

Inlet valve in bottom position, outlet valve in intermediate position. The trap is sealed off by the inlet valve and flow through the bypass is restricted by the position of the outlet valve. The floating check valve of the outlet valve protects the trap from back pressure.

VELAN PIPING KING PACKAGE UNITS

TS-V-BY, TSF-V-BY & SF-V-BY



ENGINEERING DATA

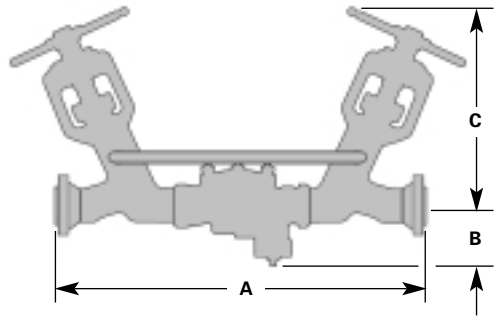
TYPE	PRESSURE RANGE psi/bar	ORIFICE in/mm	MAX. CAPACITY lb/h kg/h
TS-V-BY (1)(2)	0-120 0-8	3/8 9.5	1,650 750
	0-250 0-17	5/16 8	1,500 682
	0-300 0-21	5/16 8	1,700 773
TSF-V-BY (1)	0-200 0-14	3/8 9.5	2,000 909
	0-485 0-33.5	1/4 6.5	1,400 636
SF-V-BY (1)	0-50 0-3.5	3/4 19	3,250 1,477
	0-150 0-10.4	1/2 12.7	3,250 1477
	0-300 0-21	1/2 12.7	4,500 2,045
	0-400 0-28	3/8 9.5	3,100 1,409
	0-600 0-42	5/16 8	2,600 1,182

Material and maximum temperature:
(1) A105, max. temp. 850°F (454°C), which is permissible, but not recommended for prolonged use above 800°F (426°C).
(2) F316, max. temp. 1,000°F (532°C).

DIMENSIONS & WEIGHTS

TYPE	SIZE in/mm	A Face to Face SCR/SW	A Face to Face BW	A Face to Face FLG	B Center to Bottom	C Center to Top	Weight lb/kg SCR/SW	Weight lb/kg BW	Weight lb/kg FLG
TS-V-BY	3/8 10	11 1/4 286	17 1/4 438	15 1/4 387	2 50	7 3/4 197	17 7.5	18 8	24 11
	1/2 15								
	3/4 20								
TSF-V-BY	1/2 15	11 5/8 295	17 5/8 448	15 5/8 397	2 50	7 3/4 197	29 13	30 14	35 16
	3/4 20								
SF-V-BY-50	1/2 15	13 3/8 340	19 3/8 492	17 1/8 435	2 50	7 3/4 197	40 18	42 19	48 22
	3/4 20	14 5/8 371	20 5/8 524	18 3/8 467	2 1/4 57	8 9/16 217			
	1 25	14 5/8 371	20 5/8 524	18 3/8 467	2 1/4 57	8 9/16 217			
SF-V-BY-150 SF-V-BY-300 SF-V-BY-400 SF-V-BY-600	1/2 15	13 3/8 340	19 3/8 492	17 3/8 441	2 50	7 3/4 197	40 18	42 19	48 22
	3/4 20	13 3/8 340	19 3/8 492	17 3/8 441	2 50	7 3/4 197			
	1 25	14 5/8 371	20 5/8 524	18 5/8 473	2 1/4 57	8 9/16 217			

SSF-V-BY



ENGINEERING DATA

TYPE	PRESSURE RANGE psi/bar	ORIFICE in/mm	MAX. CAPACITY lb/h kg/h
SSF-V-F-125	0-125 0-8.5	1 25	5,750 2,608
SSF-V-F-200	0-200 0-14	7/8 22	6,400 2,903
SSF-V-F-400	0-400 0-28	9/16 14	5,300 2,409
SSF-V-F-600	0-600 0-42	1/2 12.7	5,200 2,360

Material and maximum temperature:
WCB, max. temp. 850°F (454°C),which is permissible, but not recommended for prolonged use above 800°F (426°C).

DIMENSIONS & WEIGHTS

TYPE	SIZE in/mm	A Face to Face SCR/SW	A Face to Face BW	A Face to Face FLG	B Center to Bottom	C Center to Top	Weight lb/kg SCR/SW	Weight lb/kg BW	Weight lb/kg FLG
SSF-V-BY-125	2 50	27 686	33 838	31 787	5 3/8 137	16 11/16 424	198 90	198 90	200 91
SSF-V-BY-200 SSF-V-BY-400 SSF-V-BY-600	1 1/2 40	25 635	31 787	29 737	5 3/8 137	15 9/16 395	119 54	123 56	146 66
	2 50	25 635							

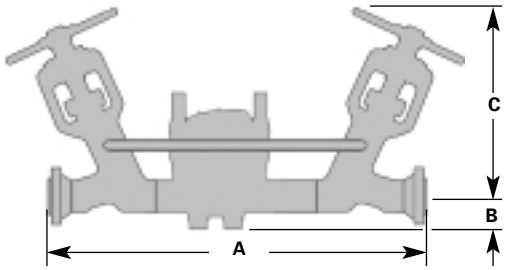
VELAN PIPING KING PACKAGE UNITS

N-V-BY-150, N-V-BY-300, N-V-BY-675, N-V-BY-900, N-V-BY-1500, N-V-BY-2500, N-V-BY-2600

ENGINEERING DATA

TYPE	PRESSURE RANGE psi/bar	ORIFICE in/mm	MAX. CAPACITY lb/h kg/h
N-V-BY-150 (1)(2)(3)	0-150 0-10.5	1/2 12.7	2,800 1,272
N-V-BY-300 (1)(2)(3)	0-300 0-21		3,500 1,590
N-V-BY-675 (1)(2)(3)	0-675 0-46.5	5/16 8	2,900 1,315
N-V-BY-900 (1)(2)(3)	0-900 0-62	1/4 6.4	1,850 8,41
N-V-BY-1500 (1)(2)(3)	0-1500 0-103		2,100 955
N-V-BY-2500 (2)	500-2500 34.5-172	5/16 8	4,800 2,182
N-V-BY-2600 (4)	500-2600 34.5-179		4,900 2,227

Material and maximum temperature:
(1) A105/WCB, max. temp. 850°F (454°C) which is permissible, but not recommended for prolonged use above 800°F (426°C).,
(2) F22, max. temp. 1,050°F (565°C),
(3) F316, max. temp. 1,000°F (537°C),
(4) F91, max. temp. 1,100°F (593°C).



ALSO AVAILABLE WITH VELAN POWER BALL VALVE:
- **Two isolating valves**
- **Three bypass valves**

DIMENSIONS & WEIGHTS

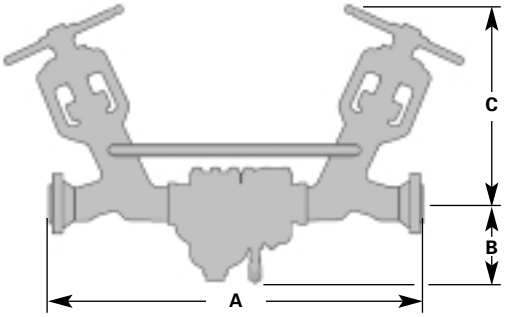
TYPE	SIZE in/mm	A Face to Face SCR/SW	A Face to Face BW	A Face to Face FLG	B Center to Bottom	C Center to Top	Weight lb/kg SCR/SW	Weight lb/kg BW	Weight lb/kg FLG
N-V-BY-675 N-V-BY-900 N-V-BY-1500	1/2 15	14 1/2 368	20 1/2 521	18 1/2 470	2 50	7 3/4 197	36 16	39 18	42 19
	3/4 20	15 3/4 400	21 3/4 552	20 1/4 514	2 1/4 57	8 9/16 217	57 26	60 27	63 29
	1 25	18 5/8 473	24 5/8 625	23 1/8 587	2 11/16 68	11 1/2 292	69 31	72 33	75 34
N-V-BY-2500 N-V-BY-2600	1/2 15	18 1/2 470	24 1/2 622	24 610	2 7/8 73	9 1/8 232	96 43	100 45	110 50
	3/4 20	21 3/8 543	27 3/8 695	26 7/8 683	3 76	12 1/4 311	120 54	125 57	140 63
	1 25	24 610	30 762	29 1/2 749	4 1/4 108	16 1/2 419	170 77	175 79	190 86

SPF0-V-BY TO SPF7-V-BY SP6-V-BY TO SP8-V-BY

ENGINEERING DATA

TYPE	PRESSURE RANGE psi/bar	ORIFICE in/mm	MAX. CAPACITY lb/h kg/h
SPF0-V-BY (1)(2)(3)	10-200 0.69-14	7/8 22	17,000 7,727
SPF1-V-BY (1)(2)(3)	10-350 0.69-24		19,000 8,636
SPF2-V-BY (1)(2)(3)	10-600 0.69-42		22,000 10,000
SPF3-V-BY (1)(2)(3)	10-1500 0.69-103		27,000 12,273
SPF4-V-BY (1)(3)	10-200 0.69-14	1 3/8 35	38,000 17,272
SPF5-V-BY (1)(3)	10-350 0.69-24		43,000 19,545
SPF6-V-BY (1)(3)	10-600 0.69-42		49,000 22,272
SPF7-V-BY (1)(3)	10-1500 0.69-103		63,000 28,636
SP6-V-BY (1)	10-200 0.69-14	2 51	90,000 40,909
SP7-V-BY (1)	10-600 0.69-42		130,000 59,090
SP8-V-BY (1)	10-1500 0.69-103		160,000 72,727

Material and maximum temperature:
(1) A105/WCB, max. temp. 850°F (454°C) which is permissible, but not recommended for prolonged use above 800°F (426°C).,
(2) F22, max. temp. 1,050°F (565°C),
(3) F316, max. temp. 1,000°F (537°C).



DIMENSIONS & WEIGHTS

TYPE	SIZE in/mm	A Face to Face SCR/SW	A Face to Face BW	A Face to Face FLG	B Center to Bottom	C Center to Top	Weight lb/kg SCR/SW	Weight lb/kg BW	Weight lb/kg FLG
SPF0-V-BY SPF1-V-BY SPF2-V-BY SPF3-V-BY(1)	1 25	19 1/8 486	25 1/8 638	23 1/8(1) 587	2 11/16 68	11 1/2 292	90 41	93 42	118 63
	1 1/2 40	21 3/4 552	27 3/4 705	25 3/4(1) 654	5 3/8 137	15 9/16 395			
SPF4-V-BY SPF5-V-BY SPF6-V-BY SPF7-V-BY(2)	1 1/2 40	22 3/4 578	28 3/4 730	26 3/4(2) 679	5 3/8 137	15 9/16 395	167 75	170 77	217 98
	2 50	24 3/4 629	30 3/4 781	28 3/4(2) 730	5 3/8 137	16 11/16 424			
SP6-V-BY SP7-V-BY SP8-V-BY(3)	2 50	32 813	38 965	36(3) 914	5 3/8 137	16 11/16 424	275 125	275 125	286 130
	2 1/2 65	38 965	38 965	38(3) 965					
	3 80	38 965	38 965	38(3) 965					

(1) For SPF3-V-BY with Flanged Connection, A (face to face) for 1" is 23 5/8" (600 mm) and for 1 1/2" is 26 1/4" (669 mm).
(2) For SPF7-V-BY with Flanged Connection, A (face to face) for 1 1/2" is 27 1/4" (692 mm) and for 2" is 31 3/4" (806 mm).
(3) For SP8-V-BY with Flanged Connection, A (face to face) is 39" (991 mm) for all sizes.