

"Apollo"

BACKFLOW PREVENTION



FIRE PROTECTION



IRRIGATION



WATERWORKS



PLUMBING

"Apollo" Flow-controls



	MODEL	FACTORY CODE	SIZE	PAGE
Double Check Valve	DC 4A, DCLF 4A	4A-100, 4ALF-100	1/2" - 2"	8
	DC/DCLF 4AST	4A100-ST	1-1/2" - 2"	8
	DCLF 4A	4ALF-100	2-1/2" - 12"	10-11
	DCLF 4An	4AnLF-100	2-1/2" - 12"	12-13
	DCLF4SG (2-1/2"-6") DC4SG (8") DC 4S (10")	4SGLF-100 4SG-100 4S-100	2-1/2" - 10"	18-19
Double Check Valve Detector Assembly	DCDALF 4A	4ALF-600	2-1/2" - 12"	14-15
	DCDALF 4An	4AnLF-600	2-1/2" - 12"	16-17
	DCDA/DCDALF 4AST	4A600-ST	1-1/2" - 2"	9
	DCDA 4SG, DCDA 4S (10")	4SGLF-600, 4SG-600, 4S-600	2-1/2" - 10"	20-21
Reduced Pressure Principle	RP 4A, RPLF 4A	4A-200, 4ALF-200	1/2" - 2"	22
	RP 4An, RPLF 4An		3/4" - 1"	23
	RP/RPLF 4AST	4A200-ST	1-1/2" - 2"	22
	RP 4AFHB	4A-200FHB	1"	34
	RP 40S (Stainless Steel)	40-200S (Stainless Steel)	1/4" - 1"	25
	RPLF 4A	4ALF-200	2-1/2" - 12"	26-27
	RPLF 4An	4AnLF-200	2-1/2" - 12"	28-29
Reduced Pressure Detector Assembly	RPDALF 4A	4ALF-700	2-1/2" - 12"	30-31
	RPDALF 4An	4AnLF-700	2-1/2" - 12"	32-33
	RPDA/RPDALF 4AST	4A700-ST	1-1/2" - 2"	24
Atmospheric Type Vacuum Breaker	AVB1, AVBLF1, AVB2	38-100/38LF-100/200	1/4" - 2"	35
Pressure Vacuum Breaker	PVB 4A, PVBLF 4A	4A-500, 4ALF-500	1/2" - 2"	36
Spill Resistant Pressure Vacuum Breaker	SVB 4A, SVBLF 4A	4A-900, 4ALF-900	1/4" - 1/2"	37
Dual Check w/Atmospheric Port	DCAP, DCAPLF	4A-400, 4ALF-400	1/2" - 3/4"	38
Dual Check Valve	DUC 4ALF	4ALF-300	3/8" - 1-1/4"	39
	DUC 4FP	DUC4FP	1" - 1-1/4"	40
	DUC 40, 40LF	40-300, 40LF-300	1/2" - 1"	40
Carbonated Beverage Backflow Preventer	CBBP	4C-100	1/4", 3/8"	41
Hose Connection Vacuum Breaker	HBV2	38-300	3/4"	42
Anti-Freeze Hose Connection Vacuum Breaker	HBVAF2	38-400	3/4"	42
Hose Connection Dual Check	HBDUC	38-300	3/4"	43
Lab Faucet Dual Check	LFDUC	38-500, 38LF-500	1/4"-3/8"	43
Freeze Protection Valve	FPV, FPVLF	40-000	1/4"	44
"Y" Strainers	YB, YBLF, YSCF	59/59LF & YCF	1/4"-12"	45-46
Thermal Expansion Valve	EXV, EXVLF	78-RV, RVLF	3/4" - 1"	47
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Hose Connection Pressure Gauge	HCPG	W-8078	3/4"	48
Test Kits	TK	40-200-TK	3 Valve / 5 Valve	48
Test Kit Accessories	TKF	40-000-TKF	1/4" - 3/4"	48
Valve Setters	4An	4An-000	2-1/2" - 12"	49
Backflow Shut-Off Valves				50
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PRODUCT CATALOG

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New!

Compact n Pattern Design Reduced Pressure Principle Backflow Preventer



FEATURES & BENEFITS

- Domestic "n" Flow Pattern Bronze Body
 - **Smallest Footprint: 1" = 5.5" C/C (3/4" = 5")**
 - RPLF 4An Lead Free (Potable/Drinking Water)
 - RP 4An Non-Lead Free (Non-Potable Water)
- Glass Reinforced Nylon Relief Valve
- Individual Access to Top Mounted Check Valves
- Top Mounted Testcocks
- Ball Valves with **Stainless Steel Handles & Nuts Standard**
- Common Check Valve & Relief Valve Repair Kits to Inline RP 4A
- Apollo® 5 Year Warranty



Slow Close Monitored Domestic Ball Valve for Smaller Fire Protection Applications 1 1/2" & 2" sizes



FEATURES & BENEFITS

- Domestic Bronze Body and Apollo® Ball Valves
 - Non-Lead Free Standard, Lead Free Option
- Vertical & Horizontal Approvals
- Modular, Center Stem-Guided Check Valve
 - Reversible Silicone Seat Discs
- Low, Flat Pressure Loss Characteristics
- Type 2 Bypass (Right Side)
 - Type 4 Bypass (Left Side) Option
- Gear Operated, Tamper Switch Ball Valve Shutoffs
- Shortest Lay-Lengths
- Apollo® 5 Year Warranty



DC



RP



DCDA



RPDA

PRESSURE DROP Calculator

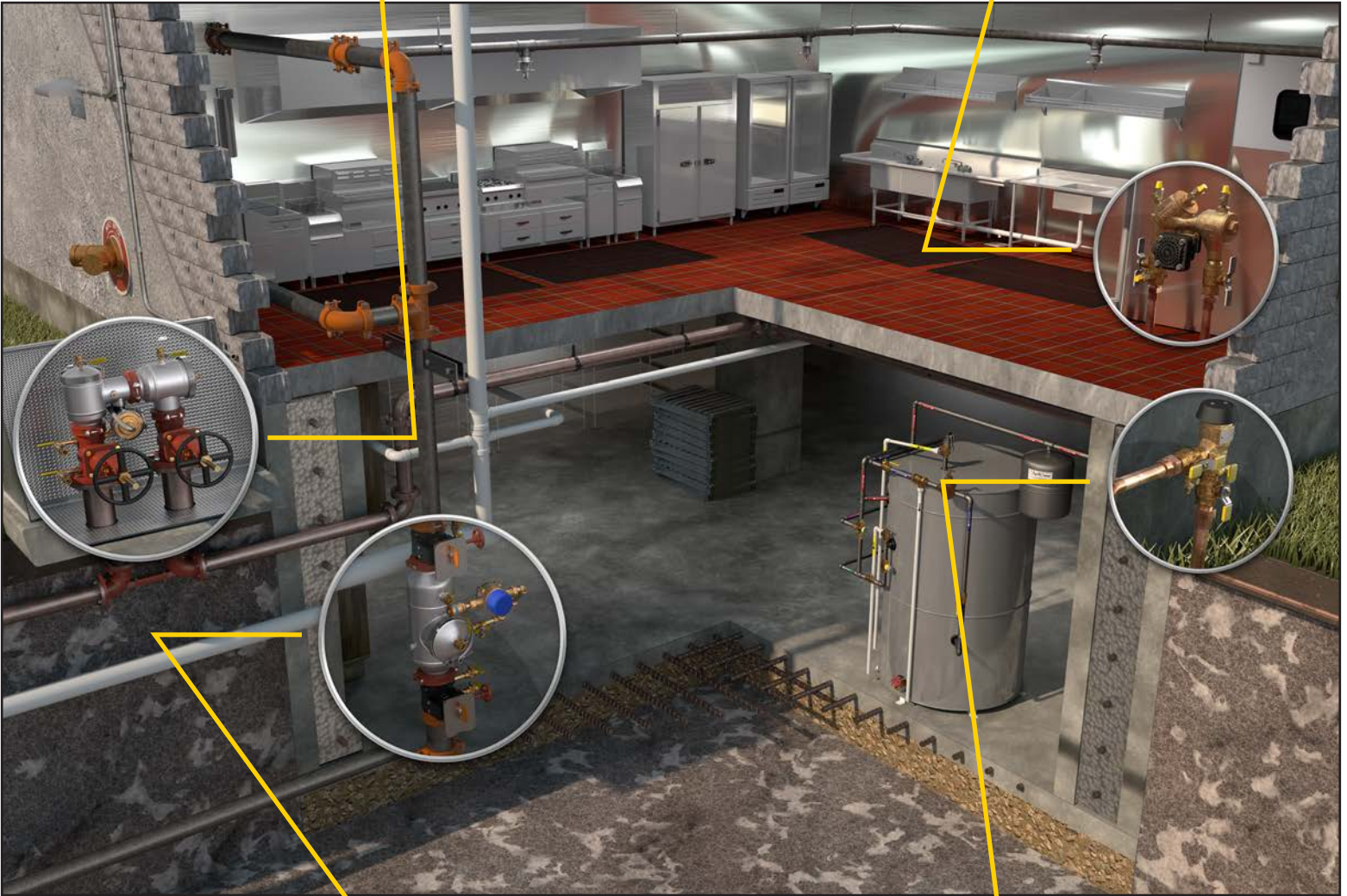
Check out our new pressure drop calculator located at pdc.apollovalves.com as well as on the page for each type of large backflow. On each type's page, there are also links to the actual Pressure Loss Flow Curves from the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.



WATERWORKS
RP 4An SERIES



PLUMBING
RP 4An SERIES



FIRE PROTECTION
DCDA 4A SERIES



IRRIGATION
PVB 4A SERIES



TYPE OF DEVICE	SERIES	**Apollo Recommended APPLICATION					PAGE NO.
		BACK SIPHONAGE	BACK PRESSURE	CONTINUOUS PRESSURE	AESTHETIC HAZARD	HEALTH HAZARD	
DOUBLE CHECK VALVE	DCLF 4A DCLF 4An DCLF 4SG, DCLF 4S	✓	✓	✓	✓		8-11 12-13 18-19
DOUBLE CHECK DETECTOR ASSEMBLY	DCDALF 4A DCDALF 4An DCDA 4SG, DCDA 4S	✓	✓	✓	✓		14-15 16-17 20-21
REDUCED PRESSURE PRINCIPLE	RPLF 4A	✓	✓	✓	✓	✓	22-23 25-27
REDUCED PRESSURE PRINCIPLE (n & V Flow)	RPLF 4An	✓	✓	✓	✓	✓	28-29
REDUCED PRESSURE PRINCIPLE (Stainless Steel)	RP 40-S	✓	✓	✓	✓	✓	25
REDUCED PRESSURE DETECTOR ASSEMBLY	RPDALF 4A RPDALF 4An	✓	✓	✓	✓	✓	24, 30-31 32-33
ATMOSPHERIC VACUUM BREAKER	AVB1, AVB1LF AVB2	✓			✓	✓	35
PRESSURE VACUUM BREAKER	PVB 4A, PVBLF 4A	✓		✓	✓	✓	36
SPILL RESISTANT PRESSURE VACUUM BREAKER	SVB 4A, SVBLF 4A	✓		✓	✓	✓	37
DUAL CHECK	DUC 4ALF DUC 4FP DUC40, DUCLF40	✓	✓	✓	✓		39 40 40
DUAL CHECK W/ ATMOS. PORT	DCAP 4A, DCAP 4ALF	✓	✓	✓	✓		38
CARBONATED BEVERAGE BACKFLOW PREVENTER	CBBP	✓	✓	✓	✓		41
HOSE CONNECTION VACUUM BREAKER	HBV2, HBV2LF	✓	✓*		✓	✓	42
ANTI FREEZE HOSE CONN. VACUUM BREAKER	HBVAF2, HBVAF2LF	✓	✓*		✓	✓	42
HOSE CONNECTION BACKFLOW PREVENTER	HBDUC, HBDUCLF	✓	✓*		✓	✓	43
LAB FAUCET VACUUM BREAKER	LFDUCLF	✓	✓		✓		43

* Limited back pressure to 10' head

** Check with local authorities having jurisdiction



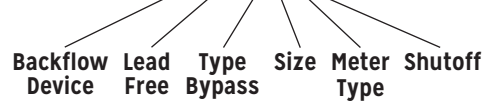
Apollo[®] Valve Backflow Preventers **Model Codes**

Example: **DCDA2 LF 4A OFBG GPM 4**



Apollo[®] Valve Backflow Preventers **Factory Codes**

Example: **4A LF 62A E4**



- or -

	MODEL CODES	FACTORY CODES
Backflow Device	Series	
Double Check Valve Assemblies (DC)	DC 4A (LF)	4A 10X (4ALF)
	DCLF 4An	4AnLF 10X
	DC 4SG, 4SGLF	4SG 10X, 4SGLF 10X
Double Check Detector Assemblies (DCDA)	DCDA LF 4A	4ALF 62X
	DCDA 4AnLF	4AnLF 62X
	DCDA 4SG, 4SGLF	4SG 60X, 4SGLF 60X
Reduced Pressure Assemblies (RP)	RP 4A (LF)	4A 20X (4ALF)
	RP 4AnLF	4AnLF 20X
Reduced Pressure Detector Assemblies (RPDA)	RPDA 4ALF	4ALF 72X
	RPDA 4AnLF	4AnLF 72X
Options		
Std. "81" metal Bronze	No Code	No Code
Lead Free Bronze	LF	LF
No Strainer (Standard 1/2" - 12")	No Code	No Code
With Wye Strainer	YS	1
Type - Detector Bypass Configuration Orientation determined by facing downstream		
Type 2 - Standard & on Right Side (except 4SG on top)	2	2
Type 1 - On Right Side (Except 4SG - on top)	1	No Code
Type 3 (Same as Type 1, Only on Left Side)	3	3
Type 4 (Same as Type 2, Only on Left Side)	4	4
Size		
1/4"	14	1
3/8"	38	2
1/2"	12	3
3/4"	34	4
1"	1	5
1 1/4"	114	6
1 1/2"	112	7
2"	2	8
2 1/2"	212	9
3"	3	0
4"	4	A
6"	6	C
8"	8	E
10"	10	G
12"	12IN	H
Detector Assembly Meters		
Cubic feet Meter	CFM	C
Gallons Meter	GPM	E
Less Meter	LM	G



	MODEL CODES	FACTORY CODES
Assembly Shutoff Valve Options		
1/2" - 2"		
Less Shutoffs	LS	T1
Ball Valves FNPT	Standard No Code	A2
Union Ball Valves	UBV	A4
Press Connection	PR	PR
Push Connection	P	P
2 1/2" - 12"		
Less Shutoffs	LS	1
NRS FXF	NF	2
NRS FXG	NFG	12
NRS GXG	NG	11
OSY FXF	OF	3
OSY FXG	OFG	7
OSY GXG	OG	8
F OSY X Butterfly G	OFBG	4
F OSY X Post Indicator F	OFPIF	6
F OSY X Post Indicator G	OFPIG	5
G Butterfly X Butterfly G	BG	9
G Butterfly X Post Indicator F	BGPIF	15
F Ball Valve X Ball Valve F	FBV	5
F Post Indicator X Butterfly G	PIFBG	13
F Post Indicator X Post Indicator F	PIFPIF	14
F Post Indicator X OSY G	PIFOG	17
G OS&Y x Post Indicator G	OGPIG	18
G Butterfly x Post Indicator G	BVGPIG	19
F Post Indicator x OS&Y F	PIFOF	20
G Post Indicator x OS&Y G	PIGOF	21
G Post Indicator x Butterfly G	PIGBG	22
G Butterfly x OS&Y F	GBOF	23
Testcock Options		
1/8" SAE Flare (Standard 1/2" - 1" Assemblies)	F	F
1/4" FNPT (Standard 1 1/4" - 2" Assemblies)	No Code	No Code
1/2" FNPT (Standard 2 1/2" - 4" Assemblies)	No Code	No Code
3/4" FNPT (Standard 6" - 12" Assemblies)	No Code	No Code
Shutoff Valve Handle Options		
"T" Handles (Standard on 1/2" - 1" Assemblies)	No Code	No Code
Level Handles (Standard on 1 1/4" - 2" Assemblies)	No Code	No Code
Locking Lever Handles (1/2" - 2")	LL	LL
Dual Check, DCAP Options – Inlet, Outlet Options		
FNPT	F	A
MNPT	M	B
Solder	S	H
F Meter Threads	FMR	C
M Meter Threads	MMR	E
F Swivel Meter Threads	FSMTR	S
F BSPP	FBSPP	F
Chrome Plating Options (Selected Models)		
Rough Chrome	RC	03
Satin Chrome	SC	CS
Polished Chrome	PC	06

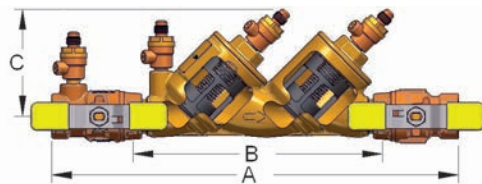
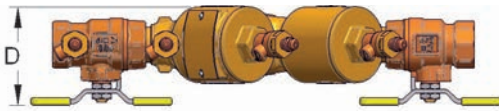


DC 4A SERIES

DOUBLE CHECK VALVE BACKFLOW PREVENTER



Sizes 1/2", 3/4", 1", 1-1/4", 1-1/2", 2"



Slo Cloz with Monitor Switches
T2ST Option (1-1/2" and 2" only)
See SSI396 for dimensions

The Apollo[®] MODEL DC 4A Double Check Valves are designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are objectionable, but non-health hazards. The modular check valve captured spring cartridges have replaceable seats and reversible silicone seat discs. Ball valve shut-offs with stainless steel handles and nuts are standard.

OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. Each check valve is designed to maintain a minimum of 1 psi across the valve during normal operation. Should the downstream pressure increase to within 1 psi of supply pressure, both check valves will close to prevent a backflow condition.

FEATURES

- Low Pressure Loss
- Captured Spring Cartridge Check Valves
- Compact, Yet Easy to Maintain
- Ball Valve Shut-Offs w/ SS Handles & Nuts Standard
- Top Access for Fast Testing & Maintenance
- Threaded Testcock Protectors
- Corrosion Resistant
- No Special Tools Required
- 5 Year Warranty
- Lead-Free Option
- AWWA C510
- UL, ULC Classified (T2ST Option or Less Shutoffs)
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California
- ASSE 1015
- IAPMO
- CSA
- Chloramine-Resistant Elastomers
- Horizontal and Vertical Up Approvals
- Maximum Working Pressure: 175 psi
- Temperature Range: 33°F - 180°F
- Designed, Manufactured, Assembled and Tested in South Carolina, USA

STANDARD MATERIALS LIST

BODY, CAPS	Bronze C84400/LF C89836
BV SHUT-OFFS, TESTCOCKS	Bronze C84400 or LF C87800
CHECK VALVES	Glass-Filled PPO
SPRINGS	300 Series Stainless Steel
SEAT DISCS	Chloramine-Resistant Silicone
O-RINGS	Chloramine-Resistant EPDM
BALL VALVE HANDLES	Stainless Steel

PART NUMBER MATRIX

4A [X]	1 X	X	X X	X
	Y-strainer	SIZE	SHUT-OFF VALVES	OPTIONS (CAN BE COMBINED)
4A = Standard 4ALF = Lead Free	0 = Standard 1 = w/Y-strainer (shipped loose)	3 = 1/2" 4 = 3/4" 5 = 1" 6 = 1-1/4" 7 = 1-1/2" 8 = 2"	A = Apollo Intl. bronze BV A2 = w/ball valves (Standard) A4 = w/union ball valves (3/4" - 2") T = Apollo domestic bronze BV T2 = w/ball valves (Standard) T4 = w/union ball valves (3/4" - 2") T2ST = w/gear operated ball valves w/tamper switch (1-1/2" - 2"	F = SAE threaded test cocks (standard 1/2" - 2") LL = SS locking lever handles PR = Press connections (factory installed) P = Push (3/4" - 1") connections (factory installed)
EXAMPLE: 4A 104 A4LL = 3/4" double check valve assembly with union ball valves with locking lever handles				

DIMENSIONS See Page 54 For Flow Curves

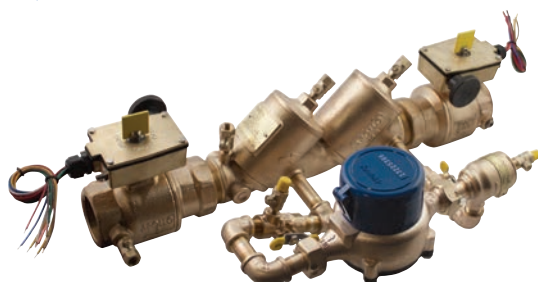
Model No.	4A 103 A2F	4A 103 A2F	4A 104 A2F	4A 104 A2F	4A 105 A2F	4A 105 A2F	4A 106 A2F	4A 106 A2F	4A 107 A2F	4A 107 A2F	4A 108 A2F	4A 108 A2F
Factory No.	DC 4A 12	DC 4A 12	DC 4A 34	DC 4A 34	DC 4A 1	DC 4A 1	DC 4A 114	DC 4A 114	DC 4A 112	DC 4A 112	DC 4A 2	DC 4A 2
Size	1/2"	15 mm.	3/4"	20 mm.	1"	25mm.	1-1/4"	32 mm.	1-1/2"	40 mm.	2"	50 mm.
A*	10-7/8	276	12-5/8	321	14-5/8	371	17-1/2	445	18	457	20-1/8	511
B	7-3/8	187	8-1/2	215	9-1/2	241	11-3/4	298	11-5/8	295	12-3/4	324
C	3-1/4	83	3-1/2	89	4	100	4-1/2	114	4-1/2	114	5	127
D	2-1/2	64	3	76	3-1/4	83	4-3/4	121	4-3/4	121	5-3/8	136
WEIGHTS	lbs.	kg.	lbs.	kg.	lbs.	kg.	lbs.	kg.	lbs.	kg.	lbs.	kg.
Net Wt.	4.1	1.9	5.4	2.5	9.0	4.0	9.1	4.1	12.9	5.9	16.5	7.5

*For T2ST Option, Union Ball Valve, Press, and Push connection dimensions, see submittal sheets.



DCDA2/DCDA2LF 4A SERIES

BRONZE DOUBLE CHECK DETECTOR ASSEMBLY



The Apollo® Model DCDA24A or DCDA2LF4A Lead Free* 1-1/2" - 2" Double Check Detector Assembly consists of a mainline double check valve with a Type 2 bypass consisting of a single check (SCV) and meter bypassing the mainline second check to prevent backflow while accurately measuring all flows up to 2 gpm while the mainline 2nd check remains closed. The pressure drop across the assembly shall be documented by independent approval agencies. The assembly shall prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are non-health hazards. This Made in America assembly features Apollo® UL® Listed, slow-close, full open port, gear operated ball valves with integral tamper switches and carries the five-year Apollo® factory warranty.

FEATURES

- Low Pressure Loss Documented By Independent Approval Agencies
- Easily Removable Modular Check Valve Cartridges
- Captured Stainless Steel Springs
- Apollo® UL® Listed, Slow-Close, Full Open Port, Gear Operated Ball Valves with Integral Tamper Switches
- Top-Mounted Test Cocks for Easy Testing
- No Special Tools Required
- Chloramine-Resistant Elastomers
- **Designed, Cast, Machined, Assembled and tested in the USA**
- Short Lay-Length for Small Spaces
- Pre-Wired Tamper (Supervisory) Switches

PERFORMANCE RATING

- Maximum Working Pressure: 175 psi
- Temperature Range: 33°F - 140°F
- Hydrostatic Test Pressure: 350 psi

APPROVALS

- ASSE 1048 (Horizontal & Vertical Up)
- UL® Classified (Horizontal & Vertical Up)
- C-UL® Classified (Horizontal & Vertical Up)
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California. (Horizontal & Vertical Up)

STANDARD MATERIALS LIST

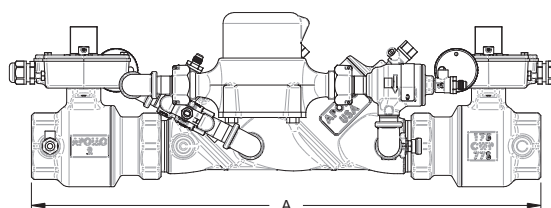
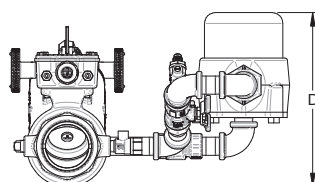
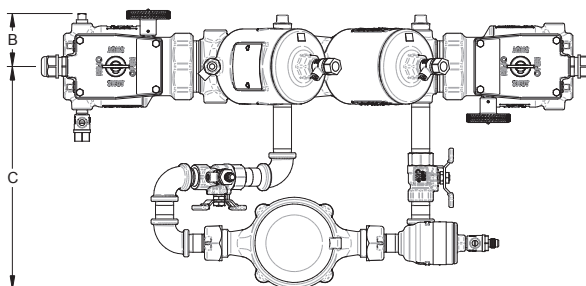
BODY, CAPS, BALL VALVE SHUTOFFS, TEST COCKS	Bronze C84400 or C89836 or C87800 (Lead Free*)
CHECK VALVE CARTRIDGES	Glass-Filled PPO
SPRINGS	300 Series Stainless Steel
SEAT DISCS	Chloramine-resistant Silicone
O-RINGS	Chloramine-resistant EPDM

DIMENSIONS See Page 54 For Flow Curves

Size (in.)	Dimensions (in.)					Wt. (lbs.)
	A	B	C	D	E	
1-1/2"	22-1/4	2-5/8	9-3/4	7-5/8		35.2
2"	23-3/4	2-5/8	10	8		45.8

PART NUMBER MATRIX

4A [LF]	6 X	X	X 2ST
	BYPASS SIDE	SIZE	METER OPTION
4A - Standard	<input type="checkbox"/> 2 - Bypass line on right side (standard - as shown)	<input type="checkbox"/> 7 - 1-1/2"	<input type="checkbox"/> C - ft ³ /min
4ALF - Lead Free	<input type="checkbox"/> 4 - Bypass line on left side	<input type="checkbox"/> 8 - 2"	<input type="checkbox"/> E - gpm <input type="checkbox"/> G - no meter





DCLF 4A SERIES

DOUBLE CHECK VALVE BACKFLOW PREVENTER



Sizes 2-1/2" - 12"



TriForce™ Check

The Apollo[®] MODEL DCLF 4A Double Check Valves are designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are objectionable, but non-health hazards. The TriForce™ center stem guided check valves feature replaceable and reversible silicone seat discs. The body is domestic stainless steel from 2-1/2"-8" and FDA epoxy coated ductile iron in the 10" and 12". Available with a wide variety of shutoff valve options.

OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. Each check valve is designed to maintain a minimum of 1 psi across the valve during normal operation. Should the downstream pressure increase to within 1 psi of supply pressure, both check valves will close to prevent a backflow condition.

FEATURES

- Domestic Stainless Steel Body: 2-1/2"-8"
- FDA Epoxy coated Ductile iron body: 10" & 12"
- Easy Maintenance: No Special Tools Required
- Snap-in Check Retainers: 2-1/2"-6"
- Bolted-in Checks: 8"-12"
- Low Pressure Loss as Documented by an independent Approval Laboratory
- Center Stem Guided TriForce™ Check Valves
- Approved for Horizontal and Vertical Up Flow
- Chloramine-Resistant Elastomers
- Lead-Free Standard
- ASSE 1015
- CSA B64.5
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California (2-1/2" - 8")
- AWWA C-510
- IAPMO
- UL, ULC Classified
- FM Approved
- Maximum Working Pressure: 175 psi
- Temperature Range: 33°F - 140°F, 180°F intermittent
- US Patent Nos. 6,443,184; 7,025,085; 7,533,699
- **Made in the USA** (D Option)
- 5 Year Warranty

STANDARD MATERIALS LIST

BODY (2-1/2" - 8")	304 Stainless Steel
BODY (10" & 12")	FDA Epoxy Coated Ductile Iron
COVERS (2-1/2" - 6")	Glass Filled PPO/SS
COVERS (8")	304 Stainless Steel
COVERS (10" & 12")	FDA Epoxy Coated Ductile Iron
CHECK VALVES	Bronze/Glass-Filled PPO/SS
SPRINGS	Stainless Steel
SEAT DISCS	Chloramine-Resistant Silicone

PART NUMBER MATRIX

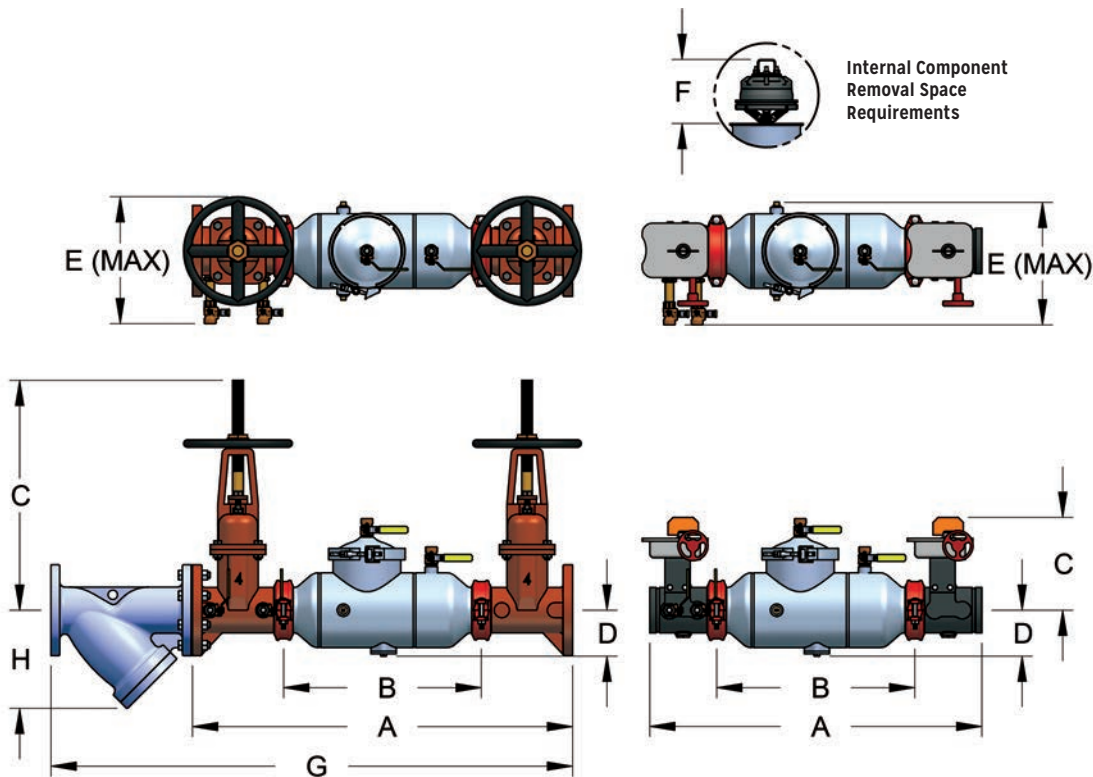
4ALF	1 X	X	OX [X]	XX
	Y-STRAINER	SIZE	SHUT-OFF VALVES	OPTIONS
4ALF = Lead Free Standard	0 = Standard 1 = w/Y-strainer (shipped loose)	9 = 2-1/2" 0 = 3" A = 4" C = 6" E = 8" G = 10" H = 12"	1 = Less Shut-off Valves 2 = NRS Flg x NRS Flg 3 = OS&Y Flg x OS&Y Flg 4 = OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv [†] 6 = OS&Y Flg x Post indicator Flg** 7 = OS&Y Flg x OS&Y Grv 8 = OS&Y Grv x OS&Y Grv 9 = Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv [†] 10 = OS&Y Flg x Post Indicator Grv** 11 = NRS Grv x NRS Grv 12 = NRS Flg x NRS Grv 13 = Post Indicator Flg x Mon. Butterfly Vlv Grv [†] 14 = Post Indicator Flg x Post Indicator Flg 16 = Mon Butterfly Vlv Grv x Post Indicator Flg [†] 17 = Post Indicator Flg x OS&Y Grv 18 = OS&Y Grv x Post Indicator Grv 19 = Mon. Butterfly Vlv Grv x Post Indicator Grv 20 = Post Indicator Flg x OS&Y Flg 21 = Post Indicator Grv x OS&Y Grv 22 = Post Indicator Grv x Mon. Butterfly Vlv Grv 23 = Mon. Butterfly Vlv Grv x OS&Y Flg	D = Domestic Assembly R1 = Retrofit* R2 = Retrofit* R3 = Retrofit* *Custom length retrofit orders must be accompanied with signed from #OFBFRETRO with exact length required.

EXAMPLE:
4ALF 10A 03 = 4" size Lead Free Double Check Valve Assembly with OS&Y flanged inlet x OS&Y flanged outlet shut-off valves (shown above)



DCLF 4A SERIES

DOUBLE CHECK VALVE BACKFLOW PREVENTER



DIMENSIONS See Page 55 For Flow Curves

Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances ($\pm 1/8"$ (3 mm) per joint)

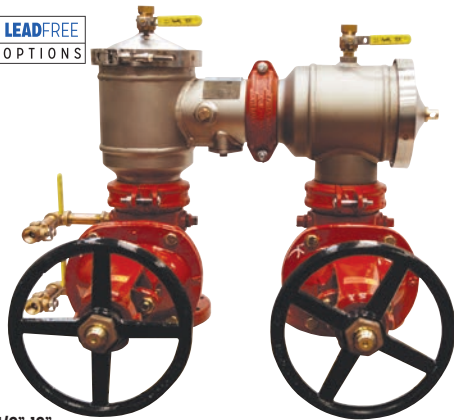
Size	2 1/2"	65 mm	3"	80mm	4"	100mm	6"	150mm	8"	200mm	10"	250mm	12"	300MM
A (Butterfly Valves)	28	711	28.5	724	33.3	846	38.9	988	46.4	1179	52.3	1328	N/A	N/A
A (Gate Valves)	31	787	32	813	38	965	45.9	1166	53.4	1356	62.3	1582	65.5	1664
B (less Shut-off Valves)	15.9	404	15.9	404	19.6	498	24.5	622	30	762	36	914	37	940
C (Butterfly Valves)	8	203	8.4	213	9.1	231	10.1	257	12	305	13.4	340	N/A	N/A
C (NRS/PI Gate Valves)	11.8	300	13	330	14	356	17.8	452	21	533	24.5	622	30	762
C (OS&Y Open)	18.8	478	20.3	515	22.1	562	29.4	747	36.8	934	45.2	1147	52.2	1326
D (Centerline to Bottom)	3.9	99	3.9	99	4.6	117	6	152	8.1	206	11.8	300	12	305
E (Width Max)	10.5	267	11	279	12.5	318	14.4	366	17.6	447	21	533	22	559
F (Check Removal Clearance)	4.8	122	4.8	122	6.5	165	7.5	191	7.5	191	10	254	10	254
G (With Strainer)	41.9	1064	43.6	1107	52	1321	64.5	1638	78.9	2004	88.4	2245	95.6	2428
H (Strainer Clearance)	8	203	8.8	224	9.5	241	12.6	320	16.4	417	19	483	22	559
Test Cocks (NPT)	1/2"	13	1/2"	13	1/2"	13	3/4"	20	3/4"	20	3/4"	20	3/4"	20
WEIGHTS	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg
Net Wt. (Less Shutoff's)	22	10	23	10	39	18	75	34	208	95	702	319	805	366
Ship Wt. (Less Shutoff's)	52	24	53	24	69	31	135	61	308	140	892	405	995	452
Net Wt. (W/ Butterfly Valves)	49	22	53	24	83	38	143	65	339	154	920	418	N/A	N/A
Ship Wt. (W/ Butterfly Valves)	133	60	137	62	147	67	231	105	487	221	1110	505	N/A	N/A
Net Wt. (W/ NRS Valves)	76	35	94	43	137	62	258	117	525	239	1209	550	1665	757
Ship Wt. (W/ NRS Valves)	160	73	178	81	222	101	346	157	673	306	1399	636	1855	843
Net Wt. (W/ OS&Y Valves)	94	43	110	50	165	75	317	144	600	273	1324	602	1780	809
Ship Wt. (W/ OS&Y Valves)	178	81	194	88	253	115	406	185	748	340	1514	688	1970	895

1. Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances (1/8" per joint).
2. Internal body connections are grooved on 2 1/2" – 10" sizes.
3. Internal body connections are flanged on 12" size.
4. Strainer option only available for flanged-end shut-off options.



DCLF 4An SERIES

n STYLE DOUBLE CHECK VALVE BACKFLOW PREVENTER



n Flow
Sizes 2-1/2"-12"



Optional Valve Setter
(see page 49)



TriForce™ Check

The Apollo® MODEL DCLF 4An Double Check Valves are designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are objectionable, but non-health hazards. The TriForce™ center stem guided check valves feature replaceable and reversible silicone seat discs. The normally vertical up/vertical down oriented body incorporates an internal swivel connection providing the ability to pivot the second check. The n style flow body is domestic stainless steel from 2-1/2"-8" and FDA epoxy coated ductile iron in the 10" and 12". Available in a wide variety of shut-off valves.

OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. Each check valve is designed to maintain a minimum of 1 psi across the valve during normal operation. Should the downstream pressure increase to within 1 psi of supply pressure, both check valves will close to prevent a backflow condition.

FEATURES

- Domestic Stainless Steel Body: 2-1/2"-8"
- FDA Epoxy Coated Ductile Iron Body: 10" & 12"
- Easy Maintenance: No Special Tools Required
- Drop-In Check Retainers: 2-1/2"-6"
- Bolted-In Checks: 8"-12"
- Low Pressure Loss as Documented by an Independent Approval Laboratory
- Center Stem Guided TriForce™ Check Valves
- Lead-Free Standard
- Small Installation Space Required - Small Footprint
- Chloramine-Resistant Elastomers
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California (2-1/2" - 8")
- ASSE 1015
- UL, ULC Classified
- FM Approved
- Maximum Working Pressure: 175 psi
- Temperature Range: 33°F - 140°F, 180°F Intermittent
- Optional Valve Setters Eliminate Need for Thrust Blocks
- US Patent Nos. 6,443,184; 7,025,085; 7,533,699
- 5 year Warranty
- Made in the USA (D Option)

STANDARD MATERIALS LIST

BODY (2-1/2" - 8")	304 Stainless Steel
BODY (10" & 12")	FDA Epoxy Coated Ductile Iron
COVERS (2-1/2" - 6")	Glass Filled PPO/SS
COVERS (8")	304 Stainless Steel
COVERS (10" & 12")	FDA Epoxy Coated Ductile Iron
CHECK VALVES	Bronze/Glass-Filled PPO/SS
SPRINGS	Stainless Steel
SEAT DISCS	Chloramine-Resistant Silicone

PART NUMBER MATRIX

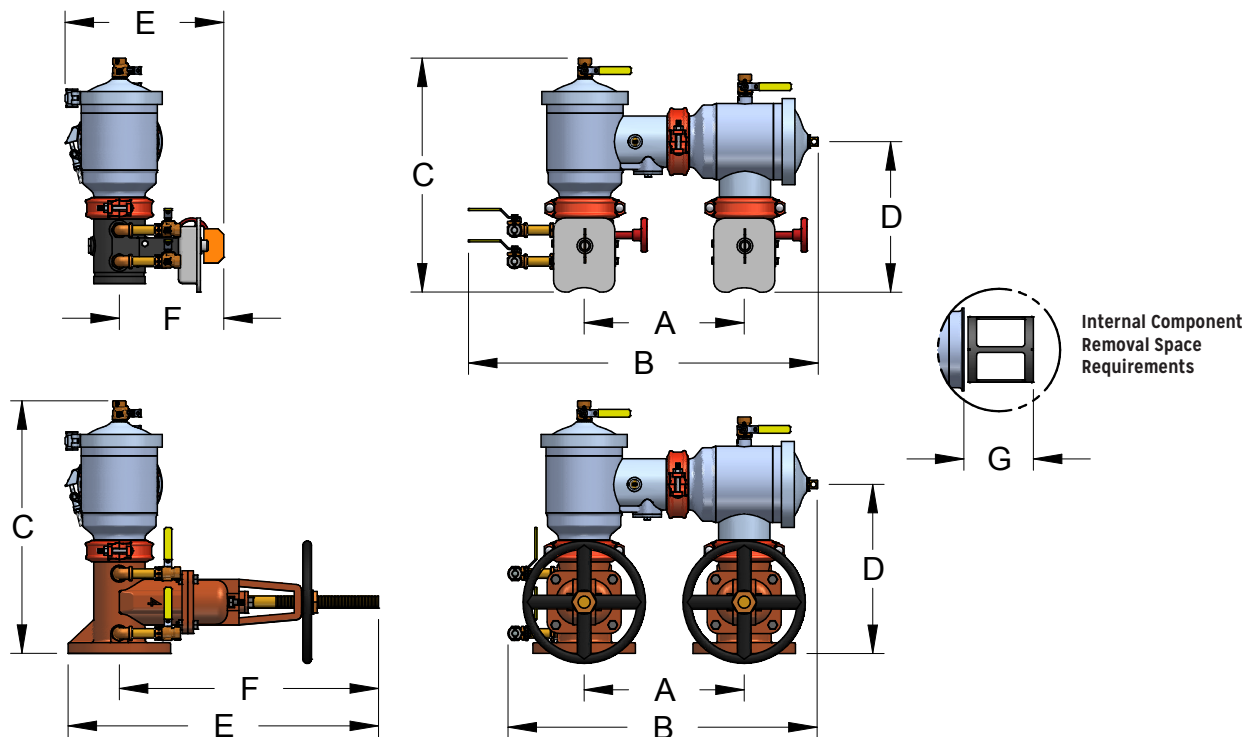
4AnLF	1 X	X	OX	X
	Y-STRAINER	SIZE	SHUT-OFF VALVES	OPTIONS
4AnLF = Lead Free Standard	0 = Standard 1 = w/Y-strainer (shipped loose)	9 = 2-1/2" 0 = 3" A = 4" C = 6" E = 8" G = 10" H = 12"	1 = Less Shut-off Valves 2 = NRS Flg x NRS Flg 3 = OS&Y Flg x OS&Y Flg 4 = OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv 6 = OS&Y Flg x Post indicator Flg 7 = OS&Y Flg x OS&Y Grv 8 = OS&Y Grv x OS&Y Grv 9 = Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv 10 = OS&Y Flg x Post Indicator Grv 11 = NRS Grv x NRS Grv 12 = NRS Flg x NRS Grv 13 = Post Indicator Flg x Mon. Butterfly Vlv Grv 14 = Post Indicator Flg x Post Indicator Flg 16 = Mon Butterfly Vlv Grv x Post Indicator Flg 17 = Post Indicator Flg x OS&Y Grv 18 = OS&Y Grv x Post Indicator Grv 19 = Mon. Butterfly Vlv Grv x Post Indicator Grv 20 = Post Indicator Flg x OS&Y Flg 21 = Post Indicator Grv x OS&Y Flg 22 = Post Indicator Grv x Mon. Butterfly Vlv Grv 23 = Mon. Butterfly Vlv Grv x OS&Y Flg	D = Domestic Assembly

EXAMPLE:
4AnLF 10A 03 = 4" size Lead Free Double Check Valve Assembly with OS&Y flanged inlet x OS&Y flanged outlet shut-off valves (shown above)



DCLF 4An SERIES

n STYLE DOUBLE CHECK VALVE BACKFLOW PREVENTER



DIMENSIONS See Page 56 For Flow Curves

Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances ($\pm 1/8"$ (3 mm) per joint)

Size	2 1/2"	65 mm	3"	80mm	4"	100mm	6"	150mm	8"	200mm	10"	250mm	12"	300mm
A (Centerline to Centerline)	12.5	318	12.5	318	14	356	16	406	18.5	470	21	533	26.8	681
B (Lay Length Space - Butterfly Valves)	27.5	699	27.5	699	30.8	782	36	914	37.4	950	43	1092	N/A	N/A
B (Lay Length Space - Gate Valves)	24.5	622	24.5	622	27	686	32	813	40.8	1036	49	1245	55.8	1417
C (Butterfly Valves - Flange to Top)	18.3	465	18.5	470	20	508	24.8	630	28.5	724	37	940	N/A	N/A
C (Gate Valves - Flange to Top)	19.6	498	20	508	22.5	572	27.8	706	32.1	815	40	1016	44	1118
D (Centerline to bottom Butterfly Valves)	11.5	292	11.8	300	13.3	338	15.4	391	17.9	455	19.8	503	N/A	N/A
D (Centerline to bottom Gate Valves)	13	330	13.5	343	14.9	378	18	457	21.4	544	24.8	630	28.8	732
E (Maximum Width - Butterfly Valves)	11.5	292	12.1	307	12.9	328	15.9	404	22.3	566	23.1	587	N/A	N/A
E (Maximum Width - NRS/PI Gate Valves)	15.6	396	16.9	429	18.6	472	23.8	605	29.1	739	36.3	922	40	1016
E (Maximum Width - OS&Y Valves Open)	22.3	575	24.2	614	26.6	679	34.4	875	44.9	1140	57.0	1447	61.9	1572
F (Centerline to Width - Butterfly Valves)	8	203	8.4	213	9	229	10.9	277	12.9	328	13.5	343	N/A	N/A
F (Centerline to Width - NRS/PI Gate Valves)	11.8	300	13	330	14	356	17.8	452	21	533	24.5	622	30	762
F (Centerline to Width - OS&Y Valves Open)	18.8	478	20.3	515	22.1	562	29.4	747	36.8	934	45.2	1147	52.2	1326
G (Check Removal Clearance)	6	152	6	152	6	152	8	203	8.5	216	12	305	12	305
Test Cocks (NPT)	1/2"	13	1/2"	13	1/2"	13	3/4"	20	3/4"	20	3/4"	20	3/4"	20
WEIGHTS	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg
Net Wt. (Less Shutoff Valves)	30	14	30	14	39	18	74	34	305	139	785	357	910	413
Ship Wt. (Less Shutoff Valves)	60	27	60	27	79	36	134	61	405	184	975	443	1100	413
Net Wt. (W/ Butterfly Valves)	57	26	60	27	84	38	142	65	436	198	963	438	N/A	N/A
Ship Wt. (W/ Butterfly Valves)	118	54	121	55	145	66	222	101	571	260	1153	524	N/A	N/A
Net Wt. (W/ NRS/Post Indicator Valves)	84	38	101	46	134	61	257	117	757	344	1292	587	1770	805
Ship Wt. (W/ NRS/Post Indicator Valves)	145	66	162	74	192	87	337	153	892	405	1482	674	1960	891
Net Wt. (W/ OS&Y Valves)	102	46	117	53	165	75	316	144	697	317	1407	640	1885	857
Ship Wt. (W/ OS&Y Valves)	163	74	178	81	226	103	396	180	832	378	1597	726	2075	943

1. Internal body connections are grooved on 2-1/2" to 10" sizes.
2. Internal body connections are flanged on 12" size.



DCDALF 4A SERIES

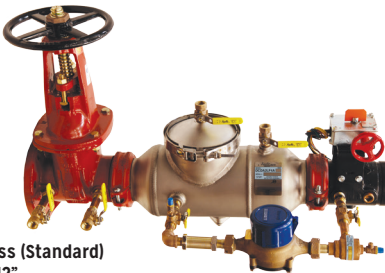
DOUBLE CHECK DETECTOR BACKFLOW PREVENTER



Type 2 Bypass (Standard)



Type 1 Bypass



Type 2 Bypass (Standard)
Sizes 2-1/2-12"



TriForce™ Check

The Apollo® MODEL DCDALF 4A Double Check Detector Assembly is designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are objectionable, but non-health hazards. The TriForce™ center stem guided check valves feature replaceable and reversible silicone seat discs. The bypass assembly serves to measure accurate water use of up to 2 GPM. Available in a wide variety of shut-off options.

The standard Type 2 bypass uses the first check of the mainline assembly as the first check of the bypass. The second check of the bypass is a single check valve with a model number and serial number for test recording. This arrangement complies with the National Backflow Standards. The arrangement provides the same level of protection as the Type 1 bypass and the testing procedure is the same.

FEATURES

- Domestic Stainless Steel Body: 2-1/2"-8"
- FDA Epoxy Coated Ductile Iron Body: 10" & 12"
- Easy Maintenance: No Special Tools Required
- Drop-In Check Retainers: 2-1/2"-6"
- Bolted-In Checks: 8"-12"
- Low Pressure Loss as Documented by an Independent Approval Laboratory
- Center Stem Guided TriForce™ Check Valves
- Approved for Horizontal and Vertical Up Flow
- Chloramine-Resistant Elastomers
- Lead-Free Standard
- ASSE 1048 (With Meter)
- UL, ULC Classified
- FM Approved
- CSA B64.5
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University Of Southern California (DCDA4ALF 4A 2-1/2" - 8" Type 1 Bypass)
- Maximum Working Pressure: 175 Psi
- Temperature Range: 33°F - 140°F, 180°F Intermittent
- US Patent Nos. 6,443,184; 7,025,085; 7,533,699
- Made in the USA (D Option)
- 5 Year Warranty
- Optional Mounting of Bypass on Either Side for Ease of Installation

STANDARD MATERIALS LIST

BODY (2-1/2" - 8")	304 Stainless Steel
BODY (10" & 12")	FDA Epoxy Coated Ductile Iron
COVERS (2-1/2" - 6")	Glass Filled PPO/SS
COVERS (8")	304 Stainless Steel
COVERS (10" & 12")	FDA Epoxy Coated Ductile Iron
CHECK VALVES	Bronze/Glass-Filled PPO/SS
SPRINGS	Stainless Steel
SEAT DISCS	Chloramine-Resistant Silicone

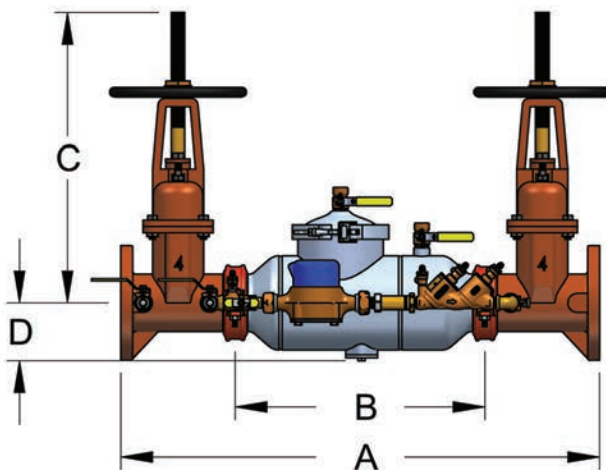
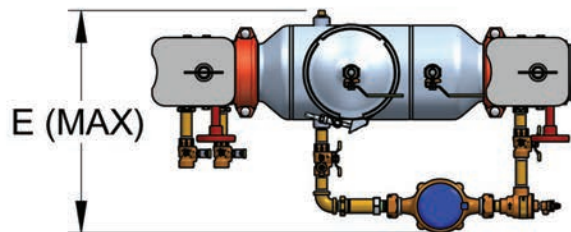
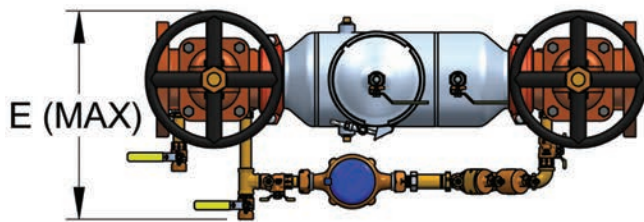
PART NUMBER MATRIX

4ALF	6 X	X	X	[X]	X
	BYPASS SUB-ASSEMBLY OPTIONS	SIZE	METER OPTION	SHUT-OFF VALVES (Inlet X Outlet)	SIZE
4ALF = Lead Free	0 = Type 1 w/ 1/2" Double Check 2 = Type 2 w/1/2" Single Check (STD) 3 = Type 1 w/ bypass on left* 4 = Type 2 w/ bypass on left*	9 = 2-1/2" 0 = 3" A = 4" C = 6" E = 8" G = 10" H = 12"	C = Cubic feet/min E = Gallons/min G = Less meter	1 = Less Shut-off Valves 3 = OS&Y Flg x OS&Y Flg 4 = OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv [†] 6 = OS&Y Flg x Post indicator Flg 7 = OS&Y Flg x OS&Y Grv 8 = OS&Y Grv x OS&Y Grv 9 = Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv [†] 10 = OS&Y Flg x Post Indicator Grv 13 = Post Indicator Flg x Mon. Butterfly Vlv Grv [†] 14 = Post Indicator Flg x Post Indicator Flg 16 = Mon Butterfly Vlv Grv x Post Indicator Flg [†] 17 = Post Indicator Flg x OS&Y Grv 18 = OS&Y Grv x Post Indicator Grv 19 = Mon. Butterfly Vlv Grv x Post Indicator Grv 20 = Post Indicator Flg x OS&Y Flg 21 = Post Indicator Grv x OS&Y Grv 22 = Post Indicator Grv x Mon. Butterfly Vlv Grv [†] 23 = Mon. Butterfly Vlv Grv x OS&Y Flg	D = Domestic Assembly
<p>EXAMPLE: 4ALF 60A E3 = 4" size Lead Free Double Check Detector Assembly with OS&Y flanged inlet x OS&Y flanged outlet shut-off valves w/ meter in gallons.</p>					
<p>*Orientation of bypass looking downstream. Standard is right hand side. Left hand is on opposite side †Butterfly valves not available in 12" size.</p>					

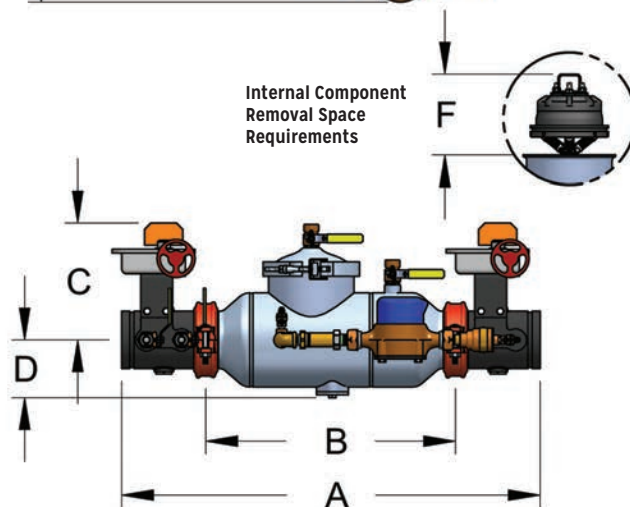


DCDALF 4A SERIES

DOUBLE CHECK DETECTOR BACKFLOW PREVENTER



TYPE 1 BYPASS



TYPE 2 BYPASS

DIMENSIONS See Page 58 For Flow Curves

Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances ($\pm 1/8"$ (3 mm) per joint)

Size	2 1/2"	65 mm	3"	80mm	4"	100mm	6"	150mm	8"	200mm	10"	250mm	12"	300MM
A (Butterfly Valves)	28	711	28.5	724	33.3	846	38.9	988	46.4	1179	52.3	1328	N/A	N/A
A (Gate Valves)	31	787	32	813	38	965	45.9	1166	53.4	1356	62.3	1582	65.5	1664
B (Less Shut-off Valves)	15.9	404	15.9	404	19.6	498	24.5	622	30	762	36	914	37	940
C (Butterfly Valves)	8	203	8.4	213	9.1	231	10.1	257	12	305	13.4	340	N/A	N/A
C (NRS/PI Gate Valves)	11.8	300	13	330	14	356	17.8	452	21	533	24.5	622	30	762
C (OS&Y Open)	18.8	478	20.3	515	22.1	562	29.4	747	36.8	934	45.2	1147	52.2	1326
D (Centerline to Bottom)	3.9	99	3.9	99	4.6	117	6	152	8.1	206	11.8	300	12	305
E (Width Max)	17	432	17	432	17	432	20	508	21.5	546	26.5	673	26.5	673
F (Check Removal Clearance)	4.8	122	4.8	122	6.5	165	7.5	191	7.5	191	10	254	10	254
Test Cocks (NPT)	1/2"	13	1/2"	13	1/2"	13	3/4"	20	3/4"	20	3/4"	20	3/4"	20
WEIGHTS	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg
Net Wt. (W/ Butterfly Valves)	64	29	68	31	98	45	158	72	354	161	940	427	N/A	N/A
Ship Wt. (W/ Butterfly Valves)	88	40	92	42	183	83	248	113	502	228	1130	514	N/A	N/A
Net Wt. (W/ Post Ind. Valves)	94	43	109	50	149	68	273	124	540	245	1229	559	1685	766
Ship Wt. (W/ Post Ind. Valves)	178	81	193	88	234	106	361	164	688	313	1419	645	1875	852
Net Wt. (W/ OS&Y Valves)	109	50	125	57	180	82	333	151	615	280	1343	610	1800	818
Ship Wt. (W/ OS&Y Valves)	193	88	209	95	265	120	421	191	763	347	1533	697	1990	905

1. Internal body connections are grooved on 2-1/2" to 10" sizes.
2. Internal body connections are flanged on 12" size.



DCDALF 4An SERIES

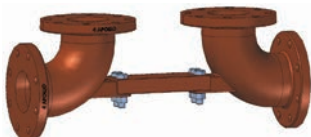
n STYLE DOUBLE CHECK DETECTOR BACKFLOW PREVENTER



Type 2 Bypass (Standard)
Sizes 2-1/2"-12"

The Apollo[®] MODEL DCLF 4An Double Check Valves are designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are objectionable, but non-health hazards. The TriForce™ center stem guided check valves feature replaceable and reversible silicone seat discs. The by-pass assembly serves to measure water use of up to 2 GPM. The normally vertical up/vertical down oriented body incorporates an internal swivel connection providing the ability to pivot the second check. The grooved connections on the bodies from 2-1/2" to 10" allow for easy connection to butterfly or gate shut-off valves. The 12" DCDA 4An has flanged connections for gate shut-off valves.

The standard Type 2 bypass uses the first check of the mainline assembly as the first check of the bypass. The second check of the bypass is a single check valve with a model number and serial number for test recording. This arrangement complies with the National Backflow Standards. The arrangement provides the same level of protection as the Type 1 bypass and the testing procedure is the same.



Optional Valve Setter
(see page 49)



TriForce™ Check

FEATURES

- Domestic Stainless Steel Body: 2-1/2"-8"
- FDA Epoxy Coated Ductile Iron Body: 10" & 12"
- Easy Maintenance: No Special Tools Required
- Drop-In Check Retainers: 2-1/2"-6"
- Bolted-In Checks: 8"-12"
- Low Pressure Loss as Documented by an Independent Approval Laboratory
- Center Stem Guided TriForce™ Check Valves
- 5 Year Warranty
- Small Installation Space Required - Small Footprint
- Chloramine-Resistant Elastomers
- Lead-Free Standard
- ASSE 1048 (with Meter)
- UL, ULC Classified
- CSA B64.5
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California (2-1/2" - 8" Type 1 Bypass)
- FM Approved
- Maximum Working Pressure: 175 psi
- Temperature Range: 33°F - 140°F, 180°F intermittent
- Optional Valve Setters Eliminate Need for Thrust Blocks Below Grade
- US Patent Nos. 6,443,184; 7,025,085; 7,533,699
- Made in the USA (D Option)
- Optional Mounting of Bypass on either Side for Ease of Installation

STANDARD MATERIALS LIST

BODY (2-1/2" - 8")	304 Stainless Steel
BODY (10" & 12")	FDA Epoxy Coated Ductile Iron
COVERS (2-1/2" - 6")	Glass Filled PPO/SS
COVERS (8")	304 Stainless Steel
COVERS (10" & 12")	FDA Epoxy Coated Ductile Iron
CHECK VALVES	Bronze/Glass-Filled PPO/SS
SPRINGS	Stainless Steel
SEAT DISCS	Chloramine-Resistant Silicone

PART NUMBER MATRIX

4AnLF	6 X	X	X	X [X]	X
	BY-PASS SUB-ASSEMBLY OPTIONS	SIZE	METER OPTION	SHUT-OFF VALVES (Inlet X Outlet)	OPTIONS
4AnLF = Lead Free	0= Type 1 w/ 1/2" Double Check 2= Type 2 w/1/2" Single Check (STD) 3= Type 1 w/ bypass on left* 4= Type 2 w/ bypass on left*	9= 2-1/2" 0= 3" A= 4" C= 6" E= 8" G= 10" H= 12"	C= Cubic feet/min E= Gallons/min G= Less meter	1 = Less Shut-off Valves 3 = OS&Y Flg x OS&Y Flg 4 = OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv [†] 6 = OS&Y Flg x Post indicator Flg 7 = OS&Y Flg x OS&Y Grv 8 = OS&Y Grv x OS&Y Grv 9 = Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv [†] 10 = OS&Y Flg x Post Indicator Grv 13 = Post Indicator Flg x Mon. Butterfly Vlv Grv [†] 14 = Post Indicator Flg x Post Indicator Flg 16 = Mon Butterfly Vlv Grv x Post Indicator Flg [†] 17 = Post Indicator Flg x OS&Y Grv 18 = OS&Y Grv x Post Indicator Grv 19 = Mon. Butterfly Vlv Grv x Post Indicator Grv 20 = Post Indicator Flg x OS&Y Flg 21 = Post Indicator Grv x OS&Y Grv 22 = Post Indicator Grv x Mon. Butterfly Vlv Grv [†] 23 = Mon. Butterfly Vlv Grv x OS&Y Flg	D = Domestic Assembly

EXAMPLE:

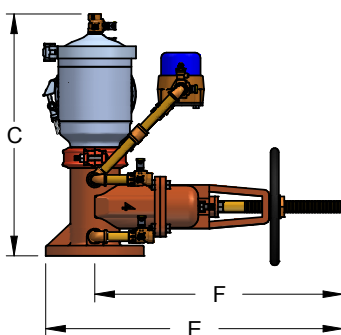
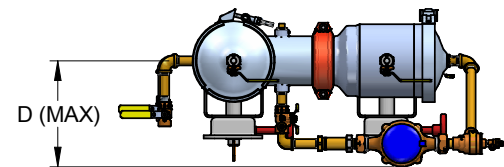
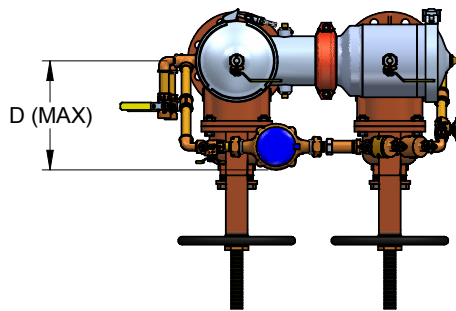
4AnLF 62A E7 = 4" size Lead Free Double Check Detector Assembly with OS&Y flanged inlet x OS&Y grooved outlet shut-off valves with Type 2 bypass w/ meter in GPM

*Orientation of bypass looking downstream. Standard is right hand side. Left hand is on opposite side
†Butterfly valves not available in 12" size.

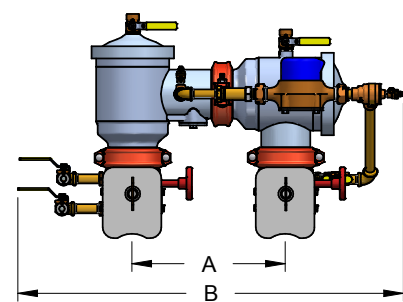
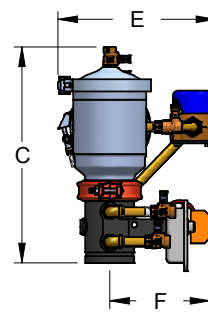
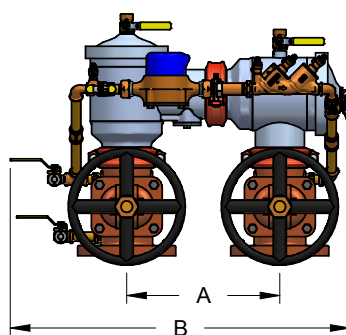


DCDALF 4An SERIES

n STYLE DOUBLE CHECK DETECTOR BACKFLOW PREVENTER



Type 1 Bypass



Type 2 Bypass

DIMENSIONS See Page 59 For Flow Curves

Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances ($\pm 1/8"$ (3 mm) per joint)

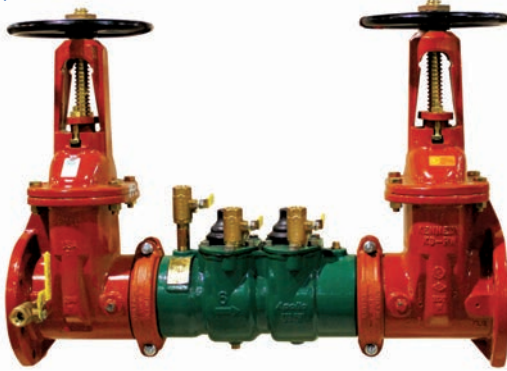
DIMENSIONS	2-1/2"	60mm	3"	75mm	4"	100mm	6"	150mm	8"	200mm	10"	250mm	12"	300mm
A (Centerline to Centerline)	12.5	318	12.5	318	14	356	16	406	18.5	470	21	533	26.8	681
B (Lay Length Space - Butterfly Valves)	32.8	833	32.8	833	35.3	897	40	1016	44	1118	54	1372	N/A	N/A
B (Lay Length Space - Gate Valves)	31	787	31	787	31.8	808	36.3	922	41.5	1054	49	1245	55.8	1417
C (Butterfly Valves - Flange to Top)	18.3	465	18.5	470	20	508	24.8	630	28.5	724	37	940	N/A	N/A
C (Gate Valves - Flange to Top)	19.6	498	20	508	22.5	572	27.8	706	32.1	815	40	1016	44	1118
D (Centerline to bottom Butterfly Valves)	11.5	292	11.8	300	13.3	338	15.4	391	17.9	455	19.8	503	N/A	N/A
D (Centerline to bottom Gate Valves)	13	330	13.5	343	14.9	378	18	457	21.4	544	24.8	630	28.8	732
E (Centerline to Maximum Bypass Width)	10	254	10	254	10.1	257	11.3	287	12.5	318	14.4	366	15.3	389
F (Maximum Width - Butterfly Valves)	11.5	292	12.1	307	12.9	328	15.9	404	22.3	566	23.1	587	N/A	N/A
F (Maximum Width - NRS/PI Gate Valves)	15.6	396	16.9	429	18.6	472	23.8	605	29.1	739	36.3	922	40	1016
F (Maximum Width - OS&Y Valves Open)	22.7	575	24.2	514	26.6	679	34.4	875	44.9	1140	57.9	1471	61.9	1572
G (Centerline to Width - Butterfly Valves)	8	203	8.4	213	9	229	10.9	277	12.9	328	13.5	343	N/A	N/A
G (Centerline to Width - NRS/PI Gate Valves)	11.8	300	13	330	14	356	17.8	452	21	533	24.5	622	30	762
G (Centerline to Width - OS&Y Valves Open)	18.8	478	20.3	515	22.1	562	29.4	747	36.8	934	45.2	1147	52.2	1326
H (Check Removal Clearance)	6	152	6	152	6	152	8	203	8.5	216	12	305	12	305
Test Cocks (NPT)	1/2"	13	1/2"	13	1/2"	13	3/4"	20	3/4"	20	3/4"	20	3/4"	20
WEIGHTS	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg
Net Wt. (W/ Butterfly Valves)	57	26	60	27	84	38	142	65	436	198	963	438	N/A	N/A
Ship Wt. (W/ Butterfly Valves)	118	54	121	55	145	66	222	101	571	260	1153	524	N/A	N/A
Net Wt. (W/ Post Indicator Valves)	84	38	101	46	134	61	257	117	622	283	1292	587	1770	805
Ship Wt. (W/ Post Indicator Valves)	145	66	161	73	195	89	337	153	757	344	1482	674	1960	891
Net Wt. (W/ OS&Y Valves)	102	46	117	53	165	75	316	144	697	317	1407	640	1885	857
Ship Wt. (W/ OS&Y Valves)	163	74	178	81	226	103	396	180	832	378	1597	726	2075	943

1. Internal body connections are grooved on 2-1/2" to 10" sizes.
2. Internal body connections are flanged on 12" size.



DC 4SG SERIES

DOUBLE CHECK VALVE ASSEMBLY



Sizes 2-1/2", 3", 4", 6", 8", 10"

The Apollo® DC 4SG Series Double Check Valve is designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are non-health hazards. The modular check valves have replaceable seats and reversible EPDM seat discs. Grooved connections on an epoxy-coated ductile iron body allow for easy connection to butterfly valves or gate valves. (2-1/2" - 8")

FEATURES

- Lightweight
- Short Lay Length
- Low Pressure Loss
- Modular Check Valves
- Individual Access to Check Valves
- Reversible/Replaceable Seat Discs
- Approved for Vertical (Up) and Horizontal Installations
- Gate Valves Epoxy Coated (FDA)
- Lead-Free (2-1/2" - 6" only)
- Corrosion Resistant Epoxy-Coated Ductile Iron Body
- ASSE 1015
- CSA
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California (2-1/2"-6" Lead Free. 8" & 10" Non-Lead Free Only)
- AWWA C-510
- UL Classified
- FM Approved
- US Patents #5,711,341 and #6,343,618
- 5 Year Warranty

STANDARD MATERIALS LIST

BODY	FDA Epoxy Coated Ductile Iron
COVERS (2-1/2" - 6")	FDA Epoxy Coated Steel
COVERS (8" & 10")	FDA Epoxy Coated Ductile Iron
CHECK VALVES (2-1/2" - 6")	Glass-Filled PPO
CHECK VALVES (8" & 10")	Bronze (C84400/LF C89836)
SPRINGS	Stainless Steel
SEAT DISCS	Chloramine-Resistant EPDM
TEST COCK HANDLES	Stainless Steel

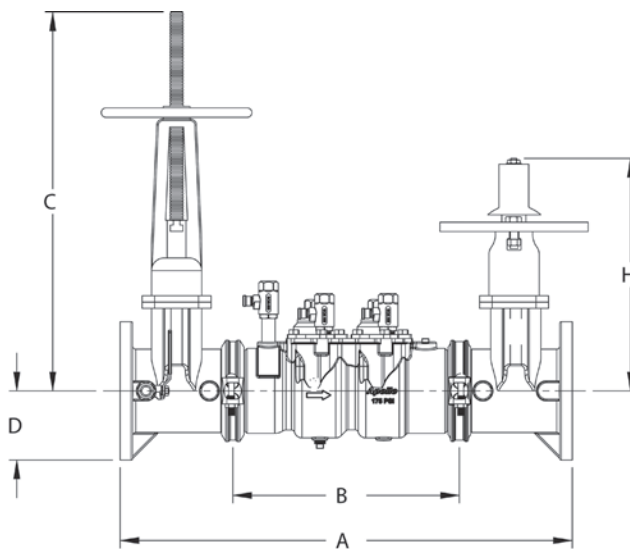
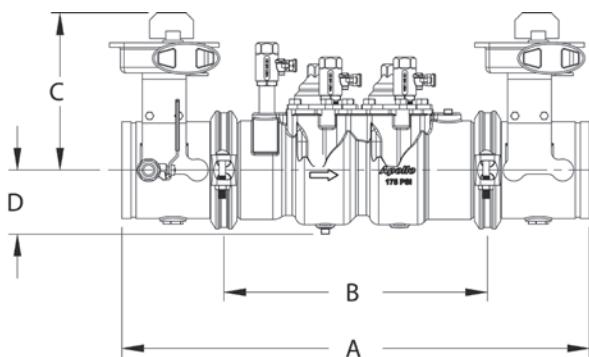
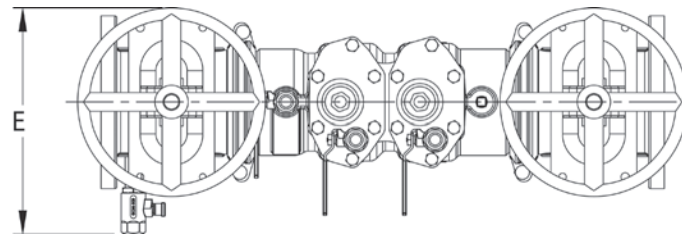
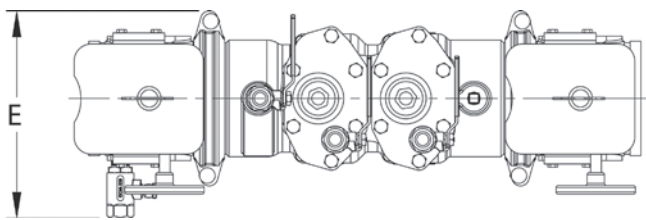
PART NUMBER MATRIX

4SG [X]	1 X X		O X	X
	Y-STRAINER	SIZE	SHUT-OFF VALVES (Inlet x Outlet)	OPTIONS
4SG LF = Lead Free (2-1/2"-6" only)	0= None (Standard) 1= With Y-Strainer (Flanged only, shipped loose)	9= 2-1/2" 0= 3" A= 4" C= 6" E= 8" G= 10"	1 = Less Shut-off Valves (grooved-end body) 2 = NRS Flg x NRS Flg 3 = OS&Y Flg x OS&Y Flg 4 = OS&Y Flg x Monitored Butterfly Valve Grv 6 = OS&Y Flg x Flg Post Indicator 7 = OS&Y Flg x OS&Y Grv 8 = OS&Y Grv x OS&Y Grv 9 = Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv 10 = OS&Y Flg x Grv Post Indicator	D= Domestic Assembly
<p>EXAMPLE: 4SG 10A 07 = 4" size Double Check Valve Assembly with OS&Y flanged inlet x OS&Y grooved outlet shut-off valves</p>				
<p>* 10" body is flanged internal connections only (Model 4S)</p>				



DC 4SG SERIES

DOUBLE CHECK VALVE ASSEMBLY



DIMENSIONS See Page 57 For Flow Curves

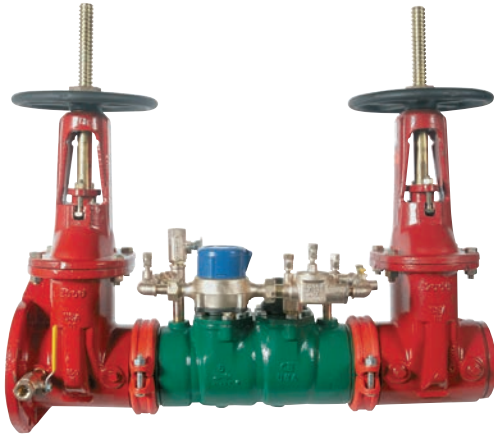
Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances ($\pm 1/8"$ (3 mm) per joint)

Model No. Factory No. Size	DC4SG212 4SG-109 2 1/2"	DC4SG212 4SG-109 65 mm.	DC4SG3 4SG-100 3"	DC4SG3 4SG-100 80 mm.	DC4SG4 4SG-10A 4"	DC4SG4 4SG-10A 100 mm.	DC4SG6 4SG-10C 6"	DC4SG6 4SG-10C 150 mm.	DC4SG8 4SG-10E 8"	DC4SG8 4SG-10E 200	DC4S10 4S-10G 10"	DC4S10 4S-10G 250
A (Butterfly Valves)*	29	737	29-1/2	749	29-3/4	756	32-1/2	815	43	1092	N/A	N/A
A (Gate Valves)*	32	813	33	838	34-1/2	876	39	991	50-1/4	1276	55-3/4	1416
B (Grooved End Body)	17	432	17	432	16-1/2	419	18	457	27	686	29-1/2	750
C (Butterfly Valves)	8	200	8-1/2	216	9-1/4	235	10-1/4	260	12	300	N/A	N/A
C (OS&Y Open)	18.8	478	20.3	515	22.1	562	29.4	747	36.8	934	45.8	1147
D (Butterfly Valves)	4-1/2	114	4-1/2	114	4-1/2	114	4-1/2	114	6-1/2	165	N/A	N/A
D (Gate Valves)	3-1/2	89	3-3/4	95	4-1/2	114	5-1/2	140	6-3/4	171	8.0	203
E (Butterfly Valves)	9	229	9	229	9-1/2	241	12	300	15	381	N/A	N/A
E (Gate Valves)	11.5	292	12	305	12.5	318	14.6	366	17.6	447	21	533
H (Post Indicator Valve)	14.75	375	14.80	376	14.80	376	18.75	476	23.42	595	26.5	673
Test Cocks (NPT)	1/2	13	1/2	13	1/2	13	3/4	20	3/4	20	3/4	20
WEIGHTS	lbs.	kg.	lbs.	kg.	lbs.	kg.	lbs.	kg.	lbs.	kg.	lbs.	kg.
Net Wt. (Less shutoff's)	53	24	53	24	53	24	60	27	375	170	470	N/A
Ship Wt. (Less shutoff's)	83	38	83	38	83	38	120	55	475	216	570	N/A
Net Wt. (W/ Butterfly Valves)	80	36	83	38	97	44	128	58	506	230	N/A	N/A
Ship Wt. (W/ Butterfly Valves)	164	75	168	76	185	84	216	98	654	297	N/A	N/A
Net Wt. (W/ PI Valves)	67	30	124	56	148	67	208	95	692	315	997	453
Ship Wt. (W/ PI Valves)	151	69	209	95	236	107	296	135	840	382	1167	530
Net Wt. (W/ OS&Y Valves)	125	57	140	64	179	81	303	138	767	349	1092	496
Ship Wt. (W/ OS&Y Valves)	209	95	225	102	264	120	391	178	915	416	1282	583



DCDA 4SG SERIES

DOUBLE CHECK DETECTOR ASSEMBLY



Sizes 2-1/2", 3", 4", 6", 8", 10"

The Apollo® DCDA 4SG Series Double Check Detector Assembly is designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are non-health hazards. The device consists of a mainline double check valve with resilient seated shut-off valves. The by-pass serves to measure water use of up to 3 gpm. Grooved connections on an epoxy-coated ductile iron body allow for easy connection to butterfly valves or gate valves. (2-1/2" - 8")

FEATURES

- Lightweight
- Short Lay Length
- Low Pressure Loss
- Modular Check Valves
- Individual Access to Check Calves
- Reversible/Replaceable Seat Discs
- Approved for Vertical and Horizontal Installations
- Gate Valves Epoxy Coated (FDA)
- Corrosion Resistant FDA Epoxy Coated Ductile Iron Body
- UL Classified
- FM Approved
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California (2-1/2" - 10" Non Lead Free Only)
- ASSE 1048 (with Meter)
- CSA
- US Patents #5,711,341 and #6,343,618
- 5 Year Warranty

STANDARD MATERIALS LIST

BODY (MAINLINE)	FDA Epoxy Coated Ductile Iron
BYPASS DC	Bronze (C84400/LF C89836)
COVERS (2-1/2" - 6")	FDA Epoxy Coated Steel
COVERS (8")	FDA Epoxy Coated Ductile Iron
CHECK VALVES (2-1/2" - 6")	Glass-Filled PPO
CHECK VALVES (8" - 10")	Bronze (C8440)
SPRINGS	Stainless Steel
SEAT DISCS	Chloramine-Resistant EPDM
TEST COCK HANDLES	Stainless Steel

PART NUMBER MATRIX

4SG [X]	60 X	X	[X]	X
	SIZE	METER OPTION	SHUT-OFF VALVES (Inlet x Outlet)	OPTION
4SG = Standard	9 = 2-1/2"	C = Cubic feet/min	3 = OS&Y Flg x OS&Y Flg	D = Domestic Assembly
4S = 10"	0 = 3"	E = Gallons/min	4 = OS&Y Flg x Monitored Butterfly Valve Grv	
	A = 4"	G = Less meter	6 = OS&Y Flg x Flg Post Indicator	
	C = 6"		7 = OS&Y Flg x OS&Y Grv	
	E = 8"		8 = OS&Y Grv x OS&Y Grv	
	G = 10"#		9 = Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv	
			10 = OS&Y Flg x Grv Post Indicator	

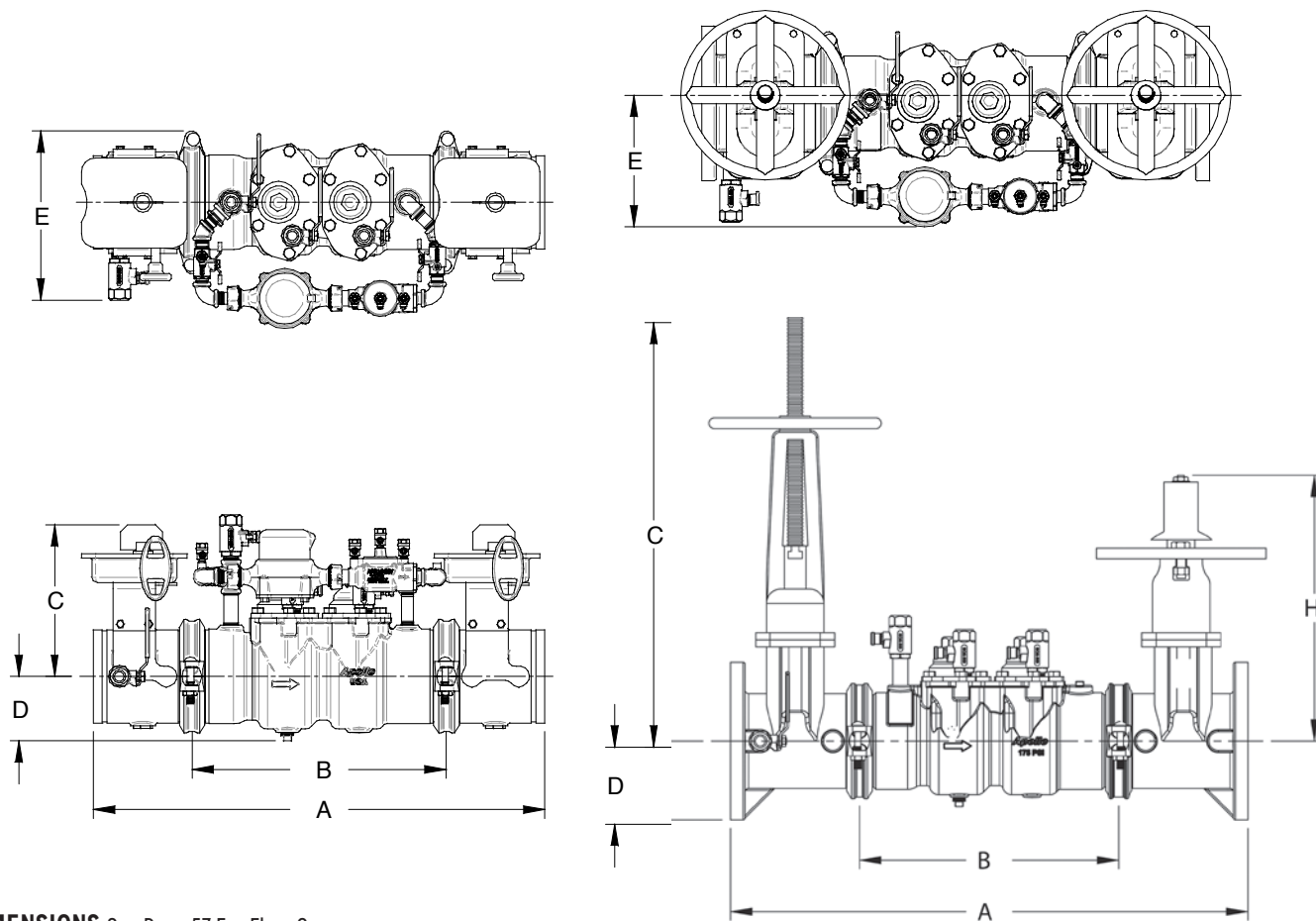
4SG 60A E7 = 4" size Double Check Detector Assembly with meter in gpm and OS&Y flanged inlet x OS&Y grooved outlet shut-off valves

* 10" body is flanged internal connections only (Model 4S)



DCDA 4SG SERIES

DOUBLE CHECK DETECTOR ASSEMBLY



DIMENSIONS See Page 57 For Flow Curves

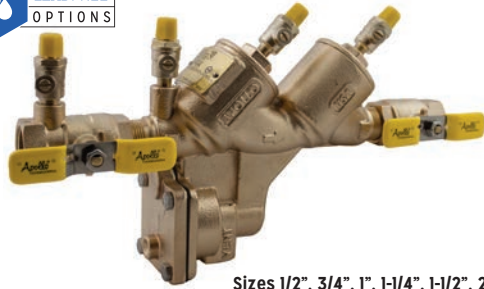
Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances ($\pm 1/8"$ (3 mm) per joint)

Model No.	DC45G212	DC45G212	DC45G3	DC45G3	DC45G4	DC45G4	DC45G6	DC45G6	DC45G8	DC45G8	DC4510	DC4510
Factory No.	45G-109	45G-109	45G-100	45G-100	45G-10A	45G-10A	45G-10C	45G-10C	45G-10E	45G-10E	45-10G	45-10G
Size	2 1/2"	65 mm.	3"	80 mm.	4"	100 mm.	6"	150 mm.	8"	200 mm.	10"	250 mm.
A (Butterfly Valves)*	29	737	29-1/2	749	29-3/4	756	32-1/2	815	43	1092	N/A	N/A
A (Gate Valves)*	32	813	33	838	34-1/2	876	39	991	50-1/4	1276	55-3/4	1416
B (Grooved End Body)	17	432	17	432	16-1/2	419	18	457	27	686	29-1/2	750
C (Butterfly Valves)	8	200	8-1/2	216	9-1/4	235	10-1/4	260	12	300	N/A	N/A
C (OS&Y Open)	18.8	478	20.3	515	22.1	562	29.4	747	37.8	934	45.8	1147
D (Butterfly Valves)	4-1/2	114	4-1/2	114	4-1/2	114	4-1/2	114	6-1/2	165	N/A	N/A
D (Gate Valves)	3-1/2	89	3-3/4	95	4-1/2	114	5-1/2	140	6-3/4	171	8.0	203
E	9	229	9	229	9	229	9	229	10-3/4	273	13.0	330
H (Post Indicator Valve)	14.75	375	14.80	376	14.80	376	18.75	476	24.42	595	11-1/2	292
Test Cocks (NPT)	1/2	1/2	1/2	1/2	1/2	1/2	3/4	3/4	3/4	3/4	3/4	3/4
WEIGHTS	lbs.	kg.	lbs.	kg.	lbs.	kg.	lbs.	kg.	lbs.	kg.	lbs.	kg.
Net Wt. (W/ Butterfly Valves)	92	42	95	43	109	50	140	64	523	238	N/A	N/A
Ship Wt. (W/ Butterfly Valves)	175	80	179	81	270	123	304	138	691	314	N/A	N/A
Net Wt. (W/ PI Valves)	119	54	136	62	160	73	255	116	712	324	997	453
Ship Wt. (W/ PI Valves)	203	92	220	100	245	111	343	156	860	391	1187	540
Net Wt. (W/ OS&Y Valves)	137	62	152	69	191	87	315	143	787	358	1112	505
Ship Wt. (W/ OS&Y Valves)	221	100	236	107	276	125	403	183	935	425	1302	592

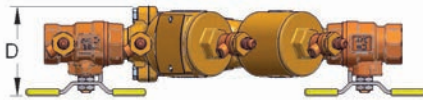
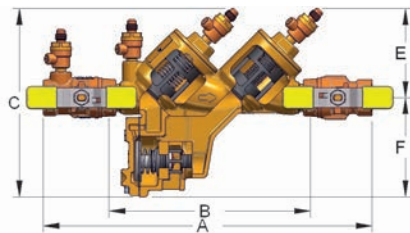


RP 4A SERIES

REDUCED PRESSURE PRINCIPLE



Sizes 1/2", 3/4", 1", 1-1/4", 1-1/2", 2"



Slo Cloz with Monitor Switches T2ST Option (1-1/2" and 2" only) See SSI397 for dimensions

The Apollo® Series RP 4A Reduced Pressure Principle Backflow Preventer is designed to give maximum protection against backflow caused by either back-pressure or back-siphonage from substances that are hazardous. The durable but economical device is easily maintained in the line with modular check cartridge assemblies that require no special tools. It consists of two independently acting spring-loaded check valves with an automatic differential relief valve located between the check valves. All testcocks are mounted at the top of the unit to assure easy access during repair and maintenance when unit is installed in tight places.

FEATURES

- Maximum Protection Against Back-Pressure/Back-Siphonage
- Modular Check Valve Cartridges w/ Easily Replaced Parts
- Reversible/Removable Chloramine-Resistant Silicone Seat Discs
- Low Head Pressure Loss
- Top Mounted Test Cocks
- Threaded Testcock Protectors
- Internal Sensing Passage
- Modular Captured Spring Relief Valve
- ASSE 1013
- CSA B64.4
- Lead-Free Option
- NSF 61/8/G/372
- Federal Public Law III-380
- AWWA C511
- UL, ULC Classified (T2ST Option or Less Shutoffs)
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California
- Standard with Full Port Ball Valves with Stainless Steel Handles
- Corrosion Resistant
- Maximum Working Pressure: 175 psig
- Operating Temperature Range: 33°F-180°F
- Horizontal Installation Approvals on 1/2" through 2"
- 5 Year Warranty

STANDARD MATERIALS LIST

BODY, CAPS	Bronze (C84400/LF C89836)
BV SHUT-OFFS, TESTCOCKS	Bronze (C84400/LF C87800)
SPRINGS	300 Series SS
SEAT DISCS	Chloramine-Resistant Silicone
DIAPHRAGM	Nitrile and Nylon
CHECK MODULES	Glass-Filled PPO
O-RINGS	Chloramine-Resistant EPDM
BALL VALVE HANDLES	Stainless Steel

Contact local water authorities for installation/service requirements.

PART NUMBER MATRIX

4A [X]	2 X	X	X X	X
	Y-STRAINER	SIZE	SHUT-OFF VALVES	OPTIONS (CAN BE COMBINED)
4A = Non-Lead Free 4ALF = Lead Free	0 = Standard 1 = With Y-Strainer (Shipped loose)	3 = 1/2" 4 = 3/4" 5 = 1" 6 = 1-1/4" 7 = 1-1/2" 8 = 2"	A = Apollo Intl. Bronze BV A2 = w/ball valves (Standard) A4 = w/union ball valves (3/4" - 2") T = Apollo Domestic Bronze BV T2 = w/ball valves (Standard) T4 = w/union ball valves (3/4" - 2") T2ST* = w/Gear Operated ball valves w/tamper switch (1-1/2" - 2")	F = SAE threaded test cocks (standard 1/2") L = Lever handle (3/4" & 1" only) LL = Locking lever handles PR = Press Connection (Factory Installed) P = Push Connection (Factory Installed) B = Theft Deterrent Coating
EXAMPLE: 4A 215 A4LL = 1" Reduced Pressure Backflow Preventer with strainer, union ball valves and locking lever handles				

DIMENSIONS See Page 60 For Flow Curves

Model No.	RP4A12	RP4A12	RP4A34	RP4A34	RP4A1	RP4A1	RP4A114	RP4A114	RP4A112	RP4A112	RP4A2	RP4A2
Factory No.	4A 203 A2F	4A 203 A2F	4A 204 A2F	4A 204 A2F	4A 205 A2F	4A 205 A2F	4A 206 A2F	4A 206 A2F	4A 207 A2F	4A 207 A2F	4A 208 A2F	4A 208 A2F
Size	1/2"	15 mm.	3/4"	20 mm.	1"	25mm.	1-1/4"	32 mm.	1-1/2"	40 mm.	2"	50 mm.
A*	10-7/8	276	12-5/8	321	14-5/8	371	17-1/2	445	18	457	20-1/8	511
B	7-3/8	187	8-1/2	216	9-1/2	241	11-3/4	298	11-5/8	295	12-3/4	324
C	7-1/8	181	7-3/8	187	8	203	9-7/8	251	9-7/8	251	11	279
D	2-7/8	73	3-1/8	79	3-1/4	83	5-1/8	130	5-1/8	130	5-7/8	149
E	3-1/4	83	3-1/2	89	4	100	4-1/2	114	4-1/2	114	5	127
F	3-7/8	98	3-7/8	98	4	100	5-3/8	137	5-3/8	137	6	150
WEIGHTS	lbs.	kg.	lbs.	kg.	lbs.	kg.	lbs.	kg.	lbs.	kg.	lbs.	kg.
Net Wt.	6.9	3.1	8.2	3.7	11.7	5.3	13.6	6.2	17.4	7.9	24.5	11.1

*For T2ST Option, Union Ball Valve, Press, and Push connection dimensions, see submittal sheets.



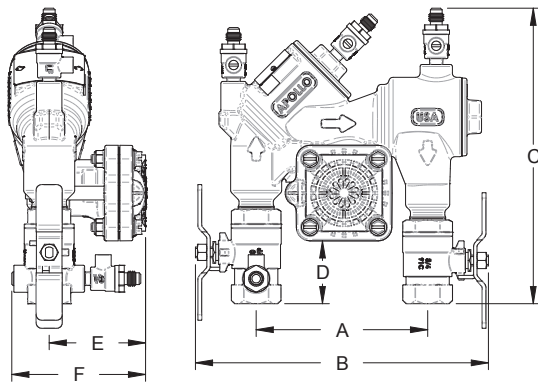


RP 4AN SERIES

REDUCED PRESSURE PRINCIPLE



Sizes 3/4" & 1"



The Apollo® Model RP4AN and RPLF4AN Lead Free* Reduced Pressure Backflow Preventers provide maximum protection of the potable water supply due to back-siphonage or backpressure from substances that are hazardous to the potable water supply. The easily accessible modular check valve cartridges provide captured springs, replaceable seats and reversible silicone seat discs. This Made in America assembly features ball valves with stainless steel handles and nuts as standard and carries the five-year Apollo® factory warranty.

FEATURES

- Smallest Footprint Eliminates Elbows for Compact and Economical Installation
- Top-Mounted Test Cocks with SAE Flare Fittings are Standard to Speed Up and Simplify Testing
- Low Pressure Loss Documented by Independent Approval Agencies
- Easily Removable Modular Check Valve Cartridge with Captured Spring
- Captured Stainless Steel Springs
- Ball Valves w/ SS Handles & Nuts Standard
- Modular Relief Valve with Captured Spring
- Chloramine-Resistant Elastomers
- No Special Tools Required
- Designed, Cast, Machined, Assembled and Tested in the USA
- Theft Deterrent Coating (optional)
- ASSE 1013
- CSA B64.4
- IAPMO Listed
- Maximum Working Pressure: 150 psi
- Temperature Range: 33° F - 140° F

STANDARD MATERIALS LIST

BODY, CAPS	Bronze (C84400/LF C89836)
BV SHUT-OFFS, TESTCOCKS	Bronze (C84400/LF C87800)
RELIEF VALVES	Glass-Filled PPO
SPRINGS	300 Series Stainless Steel
SEAT DISCS	Chloramine-Resistant Silicone
O-RINGS	Chloramine-Resistant EPDM

DIMENSIONS See Page 61 For Flow Curves

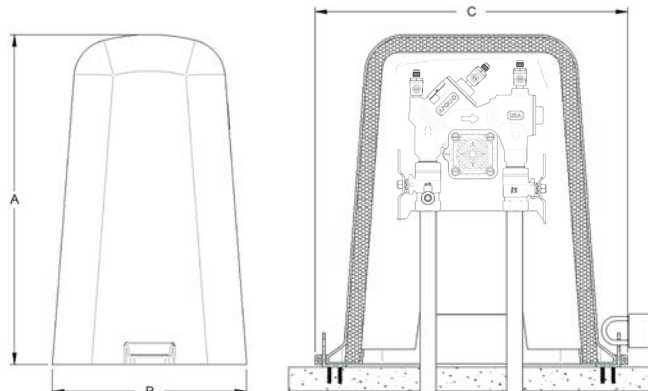
Size	Dimensions (in.)						Net Wt. (lbs)
	A	B	C	D	E	F	
3/4"	5.00	8.50	8.625	2.00	2.875	4.00	8.00
1"	5.50	9.50	9.375	2.375	2.875	4.00	10.50

PART NUMBER MATRIX

4A [X]	2 X	X	X X	X
	Y-STRAINER	SIZE	SHUT-OFF VALVES	OPTIONS (CAN BE COMBINED)
4AN = Non-Lead Free 4ANLF = Lead Free	0 = Standard 1 = With Y-Strainer (Shipped loose)	4 = 3/4" 5 = 1"	A = Apollo Intl. Bronze BV A2 = w/ball valves (Standard) A4 = w/union ball valves (3/4" - 1")	F = SAE threaded test cocks (standard) B = Theft Deterrent Coating

ENC4ANI

RP 4AN OPTIONAL ENCLOSURE



DIMENSIONS

Dimensions (in.)			Net Wt. (lbs)
A	B	C	
21.00	12.40	20.00	7

See SSI408 For Additional Information



RPDA2/RPDA2LF 4A SERIES

BRONZE REDUCED PRESSURE DETECTOR ASSEMBLY



The Apollo[®] Model RPDA24A or RPDA2LF4A Lead Free* 1-1/2"– 2" Reduced Pressure Detector Assembly consists of a mainline reduced pressure principle backflow preventer (RP) with a Type 2 bypass consisting of a single check (SCV) and meter bypassing the mainline second check to prevent backflow while accurately measuring all flows up to 2 gpm while the mainline 2nd check remains closed. The pressure drop across the assembly shall be documented by independent approval agencies. The assembly shall prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are health and non-health hazards. This Made in America assembly features Apollo[®] UL[®] Listed, slow-close, full open port, gear operated ball valves with integral tamper switches and carries the five-year Apollo[®] factory warranty.

FEATURES

- Low Pressure Loss Documented By Independent Approval Agencies
- Easily Removable Modular Check Valve Cartridges
- Captured Stainless Steel Springs
- Apollo[®] UL[®] Listed, Slow-Close, Full Open Port, Gear Operated Ball Valves with Integral Tamper Switches
- Top-Mounted Test Cocks for Easy Testing
- No Special Tools Required
- Chloramine-Resistant Elastomers
- Designed, Cast, Machined, Assembled and tested in the USA
- Short Lay-Length for Small Spaces
- Pre-Wired Tamper (Supervisory) Switches
- Maximum Working Pressure: 175 psi
- Temperature Range: 33°F – 140°F
- Hydrostatic Test Pressure: 350 psi
- ASSE 1047 (Horizontal)
- UL[®] Classified (Horizontal)
- C-UL[®] Classified (Horizontal)
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California. (Horizontal)

STANDARD MATERIALS LIST

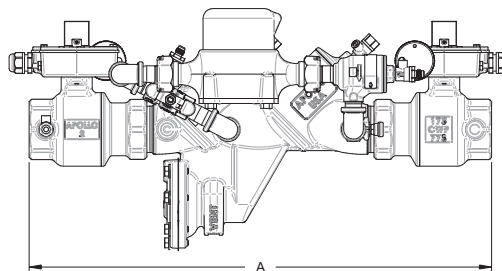
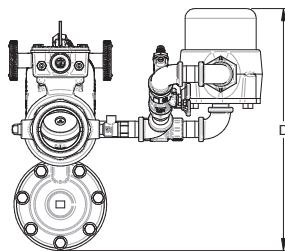
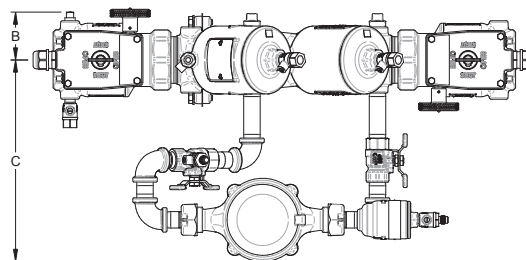
BODY, CAPS, BALL VALVE SHUTOFFS, TEST COCKS	Bronze C84400 or C89836 or C87800 (Lead Free*)
CHECK VALVE CARTRIDGES	Glass-Filled PPO
SPRINGS	300 Series Stainless Steel
SEAT DISCS	Chloramine-resistant Silicone
O-RINGS	Chloramine-resistant EPDM

DIMENSIONS See Page 61 For Flow Curves

Size (in.)	Dimensions (in.)					Wt. (lbs.)
	A	B	C	D	E	
1-1/2"	22-1/4	2-5/8	9-3/4	10-1/2		39.4
2"	23-3/4	2-5/8	10	12-3/8		51.4

PART NUMBER MATRIX

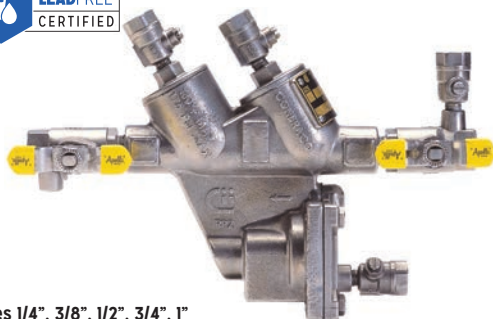
4A [LF]	7 X	X	X 2ST
	BYPASS SIDE	SIZE	METER OPTION
4A - Standard	<input type="checkbox"/> 2- Bypass line on right side (standard - as shown)	<input type="checkbox"/> 7- 1-1/2"	<input type="checkbox"/> C - ft ³ /min
4ALF - Lead Free	<input type="checkbox"/> 4- Bypass line on left side	<input type="checkbox"/> 8- 2"	<input type="checkbox"/> E - gpm <input type="checkbox"/> G - no meter



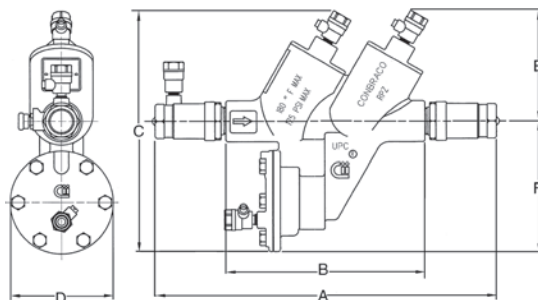


RP 40S SERIES

STAINLESS STEEL REDUCED PRESSURE PRINCIPLE



Sizes 1/4", 3/8", 1/2", 3/4", 1"



See Page 52 for Air Gap Drain Information

The Apollo® Series RP 40S Stainless Steel Reduced Pressure Principle Backflow Preventer is designed to give maximum protection against backflow caused by either backpressure or back-siphonage from a cross-connection wherein a contaminant hazard exists (i.e. a health hazard), or a pollutant hazard exists (i.e. a non-hazard). The assembly is composed of two spring-loaded poppet type check valves and a mechanically independent, hydraulically dependent pressure differential relief valve set in an integral stainless steel body. Three of the testcocks are mounted at the top to assure easy access during repair and maintenance when unit is installed in tight places.

OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. The relief valve is held shut by supply pressure acting through the internal sensing passage, on the relief valve diaphragm. In the area between the check valves, called the zone, the pressure is maintained at approximately 7 psi lower than supply pressure. Should a back-pressure or back-siphonage condition occur, the second check valve will seal, prohibiting the backflow of water. Should the second check valve become fouled, the pressure in the zone will increase causing the differential relief valve to open to atmosphere. This will maintain the pressure in the zone at least 2 psi lower than supply pressure.

FEATURES

- Stainless Steel Body and Covers
- Easy to Install and Repair
- Internal Sensing Passage
- Low Head Loss
- Reversible/Removable Seat Discs
- Replaceable Seats
- Comes Standard with Apollo® Stainless Steel Full Port Ball Valves with Stainless Steel Handles
- Lead-Free Standard
- Maximum Working Pressure: 175 psig
- Temperature Range: 33°F-180°F
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California
- ASSE 1013
- CSA
- Designed, Cast, Manufactured, Assembled and Tested in South Carolina, USA
- 5 Year Warranty

STANDARD MATERIALS LIST

BODY, COVERS	316 Stainless Steel (CF8M)
SPRINGS	Stainless Steel
FASTENERS	Stainless Steel
POPPETS	Glass-Filled Celcon®

SEAT DISCS	Silicone Rubber
DIAPHRAGM, O-RINGS	FDA Fluorocarbon
REPLACEABLE SEATS	Glass-Filled PPO
TEST COCKS & HANDLES	Stainless Steel

PART NUMBER MATRIX

40 2 X	X	T X	S X
Y-STRAINER	SIZE	SHUT-OFF VALVES	OPTIONS (CAN BE COMBINED)
0 = Standard 1 = w/SS Y-strainer (shipped loose)	1 = 1/4" 2 = 3/8" 3 = 1/2" 4 = 3/4" 5 = 1"	1 = Less ball valves (UL classified-3/4",1") 2 = w/SS ball valves, w/SS Tee Handles (Standard)	LL = Locking lever handles

DIMENSIONS

See Page 61 For Flow Curves

(X = SHUT-OFF VALVE CONFIGURATION)

Model No. Factory No.	RP40S14 40 201 TxS	RP40S14 40 201 TxS	RP40S38 40 202 TxS	RP40S38 40 202 TxS	RP40S12 40 203 TxS	RP40S12 40 203 TxS	RP40S34 40 204 TxS	RP40S34 40 204 TxS	RP40S1 40 205 TxS	RP40S1 40 205 TxS
Size	1/4"	6 mm.	3/8"	10 mm.	1/2"	12 mm.	3/4"	20 mm.	1"	25 mm.
A	10-1/2	267	10-1/2	267	10-1/2	267	13-1/2	343	15-1/4	387
B	5-3/4	146	5-3/4	146	5-3/4	146	7-15/16	202	7-15/16	202
C	6-7/8	175	6-7/8	175	6-7/8	175	9	229	9	229
D	2-5/8	68	2-5/8	68	2-5/8	68	4-1/16	103	4-1/16	103
E	3-3/16	81	3-3/16	81	3-3/16	81	4-3/8	111	4-3/8	111
F	3-3/4	95	3-3/4	95	3-3/4	95	5-1/8	130	5-1/8	130
Test Cocks	1/8 x 1/4 NPT	1/8 x 1/4 NPT	1/8 x 1/4 NPT	1/8 x 1/4 NPT	1/8 x 1/4 NPT	1/8 x 1/4 NPT	1/8 x 1/4 NPT	1/8 x 1/4 NPT	1/8 x 1/4 NPT	1/8 x 1/4 NPT
WEIGHTS	lbs.	kg.	lbs.	kg.	lbs.	kg.	lbs.	kg.	lbs.	kg.
Net Wt. (w/o Ball Valves)	4.3	2.0	4.3	2.0	4.1	1.9	8.1	3.8	8.1	3.7
Net Wt. (with Ball Valves)	5.5	2.5	5.5	2.5	5.4	2.4	10.8	4.9	11	5.0
Shpg. Wt. (w/o Ball Valves)	5.2	2.4	5.1	2.3	5	2.3	9.8	4.4	9.6	4.3
Shpg. Wt. (with Ball Valves)	6.4	2.9	6.4	2.9	6.3	2.8	12.3	5.6	12.8	5.8





RPLF 4A SERIES

REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER



Sizes 2-1/2"-12"



TriForce™ Check

The Apollo[®] MODEL RPLF 4A Reduced Pressure Principle Backflow Preventers consist of two independently acting, TriForce™ center stem guided check valves with a differential pressure relief valve located between the check valves. The unit is designed to give maximum protection against backflow of health or non-health hazard fluids by either back-pressure or back-siphonage. The durable domestic stainless steel units (2-1/2"-8") and the FDA epoxy coated ductile iron units (10" and 12") are easily maintained in the line without any special tools. The TriForce™ check valves operate with a spring assist in the flowing condition to provide excellent flow rates which are documented by an independent laboratory.

OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. The relief valve is held shut by supply pressure acting through the sensing tube on the relief valve diaphragm. In the area between the check valves, called the zone, the pressure is maintained approximately 7 psi lower than supply pressure. Should a back-pressure or back-siphonage condition occur, the second check valve will seal, prohibiting the backflow of water. Should the second check valve become fouled, the pressure in the zone will increase causing the differential relief valve to open to atmosphere. This will maintain the pressure in the zone at least 2 psi lower than supply pressure.

FEATURES

- Domestic Stainless Steel Body: 2-1/2"-8"
- FDA Epoxy Coated Ductile Iron Body: 10" & 12"
- Easy Maintenance: No Special Tools Required
- Snap-In Check Retainers: 2-1/2"-6"
- Bolted-in Checks: 8"-12"
- Modular Captured Spring Relief Valve
- Low Pressure Loss as Documented by an Independent Approval Laboratory
- Center Stem Guided TriForce™ Check Valves
- Approved for Horizontal Flow
- Chloramine-Resistant Elastomers
- Made in the USA (D Option)
- Lead-Free Standard
- ASSE 1013
- CSA B64.4
- AWWA C-511
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California (2-1/2" - 8")
- UL, ULC Classified
- FM Approved
- Maximum Working Pressure: 175 psi
- Temperature Range: 33°F - 140°F, 180°F intermittent
- US Patent Nos. 6,443,184; 7,025,085; 7,533,699
- Optional Air Gap Drains (See Page 51 for Details and Discharge Rates)
- 5 Year Warranty

STANDARD MATERIALS LIST

BODY (2-1/2" - 8")	304 Stainless Steel
BODY (10" & 12")	FDA Epoxy Coated Ductile Iron
COVERS (2-1/2" - 6")	Glass Filled PPO/SS
COVERS (8")	304 Stainless Steel
COVERS (10" & 12")	FDA Epoxy Coated Ductile Iron
RELIEF VALVE	LF C89836
CHECK VALVES	Bronze/Glass-filled PPO/SS
SPRINGS	Stainless Steel
SEAT DISCS	Chloramine-Resistant Silicone

PART NUMBER MATRIX

4ALF	2 X	X	0 X	XX
	Y-STRAINER	SIZE	SHUT-OFF VALVES	OPTIONS
4ALF = Lead Free Standard	0 = Standard 1 = w/ Y-strainer (shipped loose)	9 = 2-1/2" 0 = 3" A = 4" C = 6" E = 8" G = 10" H = 12"	1 = Less Shut-off Valves 2 = NRS Flg x NRS Flg 3 = OS&Y Flg x OS&Y Flg 4 = OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv [†] 6 = OS&Y Flg x Post indicator Flg 7 = OS&Y Flg x OS&Y Grv 8 = OS&Y Grv x OS&Y Grv 9 = Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv [†] 10 = OS&Y Flg x Post Indicator Grv 11 = NRS Grv x NRS Grv 12 = NRS Flg x NRS Grv 13 = Post Indicator Flg x Mon. Butterfly Vlv Grv [†] 14 = Post Indicator Flg x Post Indicator Flg 16 = Mon Butterfly Vlv Grv x Post Indicator Flg [†] 17 = Post Indicator Flg x OS&Y Grv 18 = OS&Y Grv x Post Indicator Grv 19 = Mon. Butterfly Vlv Grv x Post Indicator Grv 20 = Post Indicator Flg x OS&Y Flg 21 = Post Indicator Grv x OS&Y Grv 22 = Post Indicator Grv x Mon. Butterfly Vlv Grv [†] 23 = Mon. Butterfly Vlv Grv x OS&Y Flg	D= Domestic Assembly R1= Retrofit* R2= Retrofit* R3= Retrofit* *Custom length retrofit orders must be accompanied with signed form #0FBFRETRO with exact length required.

EXAMPLE:

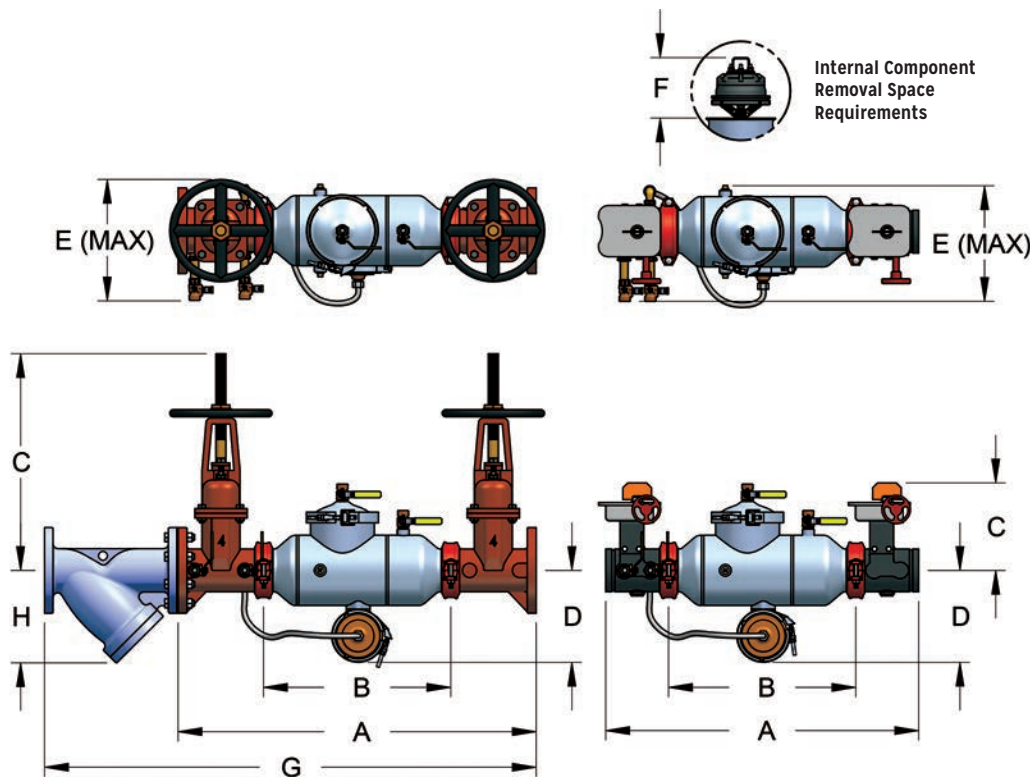
4ALF 20A 07 = 4" size Lead Free Reduced Pressure Assembly with OS&Y flanged inlet x OS&Y grooved outlet shut-off valves.

† Butterfly valves not available in 12" size.



RPLF 4A SERIES

REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER



DIMENSIONS See Page 62 For Flow Curves

Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances ($\pm 1/8"$ (3 mm) per joint)

DIMENSIONS	2-1/2"	60 mm.	3"	75 mm.	4"	100 mm.	6"	150 mm.	8"	200 mm.	10"	250 mm.	12"	300 mm.
A (Butterfly Valves)	28	711	28.5	724	33.3	⁸⁴⁶	38.9	988	46.4	1179	52.3	1328	N/A	N/A
A (Gate Valves)	³¹	787	32	813	38	965	45.9	1166	53.4	1356	62.3	1582	65.5	¹⁶⁶⁴
B (less Shut-off Valves)	15.9	404	15.9	404	19.6	498	24.5	622	30	762	36	914	37	940
C (Butterfly Valves)	8	203	8.4	213	9.1	231	10.1	257	12	305	13.4	340	N/A	N/A
C (NRS/PI Gate Valves)	11.8	300	13	330	14	356	17.8	452	21	533	24.5	622	30	762
C (OS&Y Open)	18.8	478	20.3	515	22.1	562	29.4	747	36.8	934	45.2	1147	52.2	1326
D (Centerline to Bottom)	9.6	244	9.6	244	10.4	264	11.6	295	15.6	396	21	533	21	533
E (Width Max)	11.5	292	12	305	12.5	318	14.4	366	17.6	447	21	533	22	559
F (Check Removal Clearance)	4.8	122	4.8	122	6.5	165	7.5	191	7.5	191	10	254	10	254
G (With Strainer)	41.9	1064	43.6	1107	52	1321	64.5	1638	78.9	2004	88.4	2245	95.6	2428
H (Strainer Clearance)	8	203	8.8	224	9.5	241	12.6	320	16.4	417	19	483	22	559
Test Cocks (NPT)	1/2"	13	1/2"	13	1/2"	13	3/4"	20	3/4"	20	3/4"	20	3/4"	20
WEIGHTS	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg
Net Wt. (Less Shutoff's)	31	14	32	15	48	22	84	38	228	104	762	346	865	393
Ship Wt. (Less Shutoff's)	61	28	62	28	78	35	144	65	328	149	952	433	1055	480
Net Wt. (W/ Butterfly Valves)	58	26	62	28	92	42	152	69	359	163	980	445	N/A	N/A
Ship Wt. (W/ Butterfly Valves)	142	65	146	66	177	80	240	109	507	230	1170	532	N/A	N/A
Net Wt. (W/ NRS Valves)	85	39	103	47	143	65	267	121	545	248	1269	577	1725	784
Ship Wt. (W/ NRS Valves)	169	77	187	85	228	104	355	161	693	315	1459	663	1915	870
Net Wt. (W/ OS&Y Valves)	103	47	119	54	174	79	327	149	620	282	1384	629	1840	836
Ship Wt. (W/ OS&Y Valves)	187	85	203	92	259	118	415	189	176	80	1574	715	2030	923

1. Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances (1/8" per joint).
2. Internal body connections are grooved on 2 1/2" – 10" sizes.
3. Internal body connections are flanged on 12" size.
4. Strainer option only available for flanged-end shut-off options.



RPLF 4An SERIES

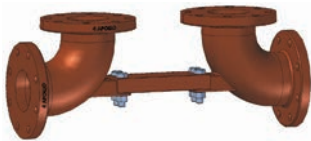
REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER



n Flow
Sizes 2-1/2"-12"



Vertical Up Flow



Optional Valve Setter
(see page 49)



TriForce™ Check

The Apollo® MODEL RPLF 4An Reduced Pressure Principle Backflow Preventer consists of two independently acting, TriForce™ center stem guided check valves with a differential pressure relief valve located between the check valves. The unit is designed to give maximum protection against backflow of health or non-health hazard fluids by either back-pressure or back-siphonage. The normally vertical up/vertical down oriented body incorporates an internal swivel connection providing the ability to pivot the second check 180° to a vertical up/vertical up flow. The durable domestic stainless steel units (2-1/2" to 8") and the FDA epoxy coated ductile iron units (10" and 12") are easily maintained in the line without any special tools. The TriForce™ check valves operate with a spring assist in the flowing condition to provide excellent flow rates which are documented by an independent laboratory.

OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. The relief valve is held shut by supply pressure acting through the sensing tube on the relief valve diaphragm. In the area between the check valves, called the zone, the pressure is maintained approximately 7 psi lower than supply pressure. Should a back-pressure or back-siphonage condition occur, the second check valve will seal, prohibiting the backflow of water. Should the second check become fouled, the pressure in the zone will increase causing the differential relief valve to open to atmosphere. This will maintain the pressure in the zone at least 2 psi lower than supply pressure.

FEATURES

- Domestic Stainless Steel Body: 2-1/2"-8"
- FDA Epoxy Coated ductile Iron Body: 10" & 12"
- Easy Maintenance: No Special Tools Required
- Drop-In Check Retainers: 2-1/2"-6"
- Bolted-In Checks: 8"-12"
- Low Pressure Loss as Documented by an Independent Approval Laboratory
- Center Stem Guided TriForce™ Check Valves
- Modular Captured Spring Relief Valve
- Optional Air Gap Drains (See Page 51 for Details and Discharge Rates)
- Small Installation Space Required - Small Footprint
- Approved for n-Flow and Vertical Up Flow
- Chloramine-Resistant Elastomers
- Lead-Free Standard
- ASSE 1013
- CSA B64.4
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California (2-1/2" - 8")
- AWWA C-511
- UL, ULC Classified
- FM Approved
- Maximum Working Pressure: 175 psi
- Temperature Range: 33°F - 140°F, 180°F intermittent
- Optional Valve Setters Eliminate need for Thrust Blocks Between Elbows
- US Patent Nos. 6,443,184; 7,025,085; 7,533,699
- Made in the USA (D Option)
- 5 Year Warranty

STANDARD MATERIALS LIST

BODY (2-1/2" - 8")	304 Stainless Steel
BODY (10" & 12")	FDA Epoxy Coated Ductile Iron
COVERS (2-1/2" - 6")	Glass Filled PPO/SS
COVERS (8")	304 Stainless Steel
COVERS (10" & 12")	FDA Epoxy Coated Ductile Iron
RELIEF VALVE	Bronze (C84400/LF C89836)
CHECK VALVES	Bronze/Glass-Filled PPO/SS
SPRINGS	Stainless Steel
SEAT DISCS	Chloramine-Resistant Silicone

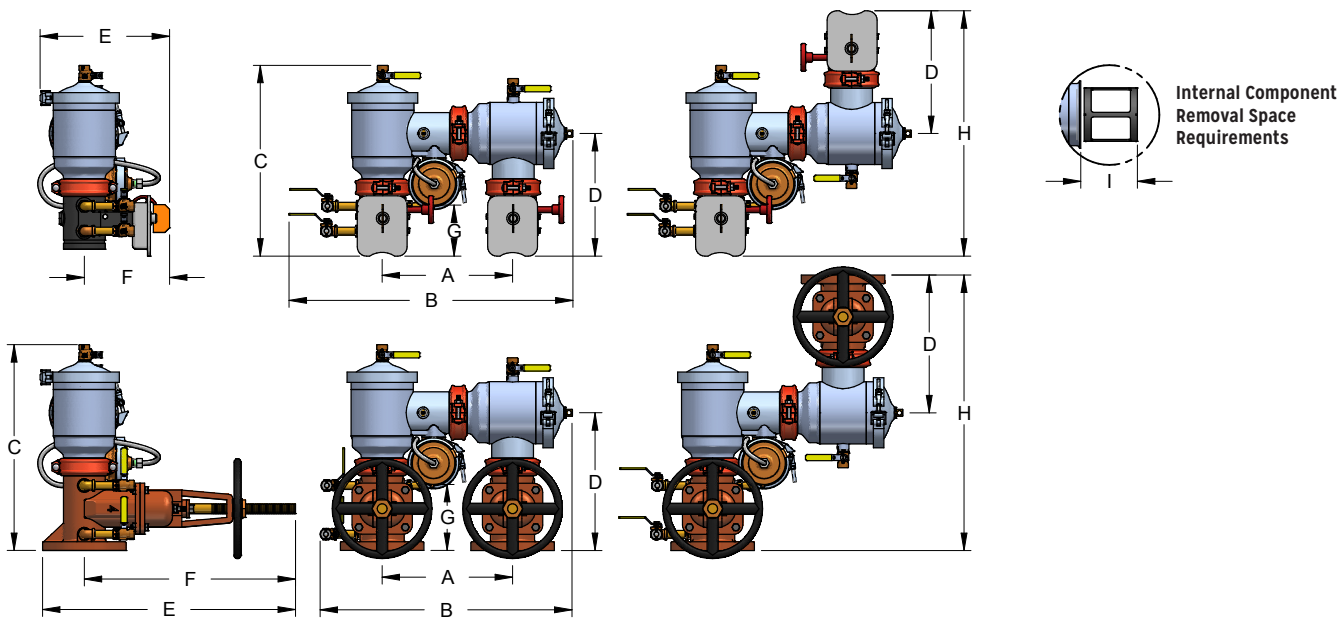
PART NUMBER MATRIX

4AnLF	2 X	X	0 X	X
	Y-STRAINER	SIZE	SHUT-OFF VALVES	OPTIONS
4AnLF= Lead Free	0 = Standard 1 = w/Y-strainer (shipped loose)	9 = 2-1/2" 0 = 3" A = 4" C = 6" E = 8" G = 10" H = 12"	1 = Less Shut-off Valves 2 = NRS Flg x NRS Flg 3 = OS&Y Flg x OS&Y Flg 4 = OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv† 6 = OS&Y Flg x Post indicator Flg 7 = OS&Y Flg x OS&Y Grv 8 = OS&Y Grv x OS&Y Grv 9 = Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv† 10 = OS&Y Flg x Post Indicator Grv 11 = NRS Grv x NRS Grv 12 = NRS Flg x NRS Grv 13 = Post Indicator Flg x Mon. Butterfly Vlv Grv† 14 = Post Indicator Flg x Post Indicator Flg 16 = Mon Butterfly Vlv Grv x Post Indicator Flg† 17 = Post Indicator Flg x OS&Y Grv 18 = OS&Y Grv x Post Indicator Grv 19 = Mon. Butterfly Vlv Grv x Post Indicator Grv 20 = Post Indicator Flg x OS&Y Flg 21 = Post Indicator Grv x OS&Y Grv 22 = Post Indicator Grv x Mon. Butterfly Vlv Grv† 23 = Mon. Butterfly Vlv Grv x OS&Y Flg	D = Domestic Assembly
<p>EXAMPLE: 4AN 20A 07- 4" size Reduced Pressure Assembly with OS&Y flanged inlet x OS&Y grooved outlet shut-off valves</p>				
<p>† Butterfly valves not available in 12" size.</p>				



RPLF 4An SERIES

REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER



DIMENSIONS See Page 63 For Flow Curves

Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances ($\pm 1/8"$ (3 mm) per joint)

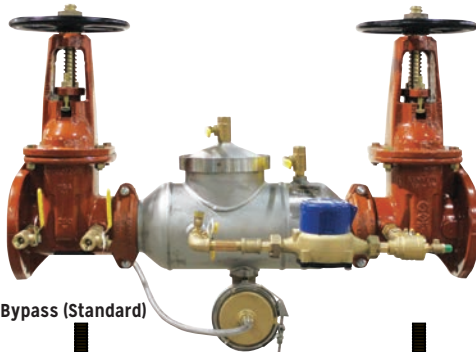
DIMENSIONS	2-1/2"	60mm	3"	75mm	4"	100mm	6"	150mm	8"	200mm	10"	250mm	12"	300mm
A (Centerline to Centerline)	12.5	318	12.5	318	14	356	16	406	18.5	470	21	533	26.8	681
B (Lay Length Space - Butterfly Valves)	27.5	699	27.5	699	30.8	782	36	914	37.4	950	43	1092	N/A	N/A
B (Lay Length Space - Gate Valves)	24.5	622	24.5	622	27	686	32	813	40.8	1036	49	1245	55.8	1417
C (Butterfly Valves - Flange to Top)	18.3	465	18.5	470	20	508	24.8	630	28.5	724	37	940	N/A	N/A
C (Gate Valves - Flange to Top)	19.6	498	20	508	22.5	572	27.8	706	32.1	815	40	1016	44	1118
D (Centerline to bottom Butterfly Valves)	11.5	292	11.8	300	12.5	318	14.5	368	17.9	455	19.8	503	N/A	N/A
D (Centerline to bottom Gate Valves)	13	330	13.5	343	14.9	378	18	457	21.4	544	24.8	630	28.8	732
E (Maximum Width - Butterfly Valves)	11.5	292	12.1	307	12.9	328	15.9	404	22.3	566	23.1	587	N/A	N/A
E (Maximum Width - NRS/PI Gate Valves)	15.6	396	16.9	429	18.6	472	23.8	605	29.1	739	36.3	922	40	1016
E (Maximum Width - OS&Y Valves Open)	22.7	575	24.2	614	26.6	679	34.4	875	44.9	1140	57.9	1471	61.9	1572
F (Centerline to Width - Butterfly Valves)	8	203	8.4	213	9	229	10.9	277	12.9	328	13.5	343	N/A	N/A
F (Centerline to Width - NRS/PI Gate Valves)	11.8	300	13	330	14	356	17.8	452	21	533	24.5	622	30	762
F (Centerline to Width - OS&Y Valves Open)	18.8	478	20.3	515	22.1	562	29.4	747	36.8	934	45.2	1147	52.2	1326
G (Relief Valve to SOV - Butterfly Valves)	4.1	104	4.5	114	4.4	112	6.5	165	5.3	135	4	102	N/A	N/A
G (Relief Valve to SOV - Gate Valves)	5.5	140	6	152	6	152	9	229	9	229	9	229	N/A	N/A
H (Flange to flange Vertical Up Butterfly VlvS)	23	584	23.5	597	25	635	29	737	35.8	909	N/A	N/A	N/A	N/A
H (Flange to flange Vertical Up Gate VlvS)	26	660	27	686	29.8	757	36	914	42.8	1087	N/A	N/A	N/A	N/A
I (Check Removal Clearance)	6	152	6	152	6	152	8	203	8.5	216	12	305	12	305
Test Cocks (NPT)	1/2"	13	1/2"	13	1/2"	13	3/4"	20	3/4"	20	3/4"	20	3/4"	20
WEIGHTS	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg
Net Wt. (Less Shutoff Valves)	39	18	39	18	48	22	83	38	325	148	841	382	966	439
Ship Wt. (Less Shutoff Valves)	100	45	69	31	78	35	163	74	460	209	1031	469	1156	525
Net Wt. (W/ Butterfly Valves)	66	30	69	31	92	42	151	69	456	207	1019	463	N/A	N/A
Ship Wt. (W/ Butterfly Valves)	127	58	130	59	153	70	231	105	591	269	1209	550	N/A	N/A
Net Wt. (W/ NRS/Post Indicator Valves)	93	42	110	50	143	65	266	121	642	292	1348	613	1826	830
Ship Wt. (W/ NRS/Post Indicator Valves)	154	70	171	78	204	93	346	157	777	353	1538	699	2016	916
Net Wt. (W/ OS&Y Valves)	111	50	126	57	174	79	326	148	717	326	1463	665	1941	882
Ship Wt. (W/ OS&Y Valves)	172	78	187	85	135	61	406	185	852	387	1653	751	2131	969

1. Internal body connections are grooved on 2-1/2" to 10" sizes.
2. Internal body connections are flanged on 12" size.

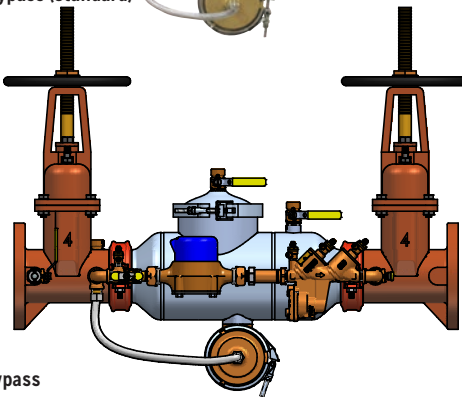


RPDALF 4A SERIES

REDUCED PRESSURE DETECTOR ASSEMBLY



Type 2 Bypass (Standard)



Type 1 Bypass
Sizes 2-1/2"-12"



TriForce™ Check

The Apollo® MODEL RPDALF 4A Reduced Pressure Detector Assembly consists of two independently acting, TriForce™ center stem guided check valves with a differential pressure relief valve located between the check valves. The unit is designed to give maximum protection against backflow of health or non-health hazard fluids by either back-pressure or back-siphonage and at the same time detect leakage or unauthorized use of water from fire or automatic sprinkler systems. The durable domestic stainless steel units (2-1/2" to 8") and the FDA epoxy coated ductile iron units (10" and 12") are easily maintained in line without any special tools. The TriForce™ check valves operate with a spring assist in the flowing condition to provide low flow rates which are documented by an independent laboratory.

The standard Type 2 bypass uses the first check of the mainline assembly as the first check of the bypass. The second check of the bypass is a single check valve with a model number and serial number for test recording. This arrangement complies with the National Backflow Standards. The arrangement provides the same level of protection as the Type 1 bypass and the testing procedure is the same.

FEATURES

- Domestic Stainless Steel Body: 2-1/2"-8"
- FDA Epoxy Coated Ductile Iron Body: 10" & 12"
- Easy Maintenance: No Special Tools Required
- Snap-In Check Retainers: 2-1/2"-6"
- Bolted-In Checks: 8"-12"
- Low Pressure Loss as Documented by an Independent Approval Laboratory
- Center Stem Guided TriForce™ Check Valves
- Modular Captured Spring Relief Valve
- Approved for Horizontal Flow
- ASSE 1047 (with Meter)
- Optional Air Gap Drains (see Page 51 for Details and Discharge Rates)
- Lead-Free Standard
- CSA B64.4
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California (2-1/2" - 6") (Type 1 Bypass)
- UL, ULC Classified
- FM Approved
- Maximum Working Pressure: 175 psi
- Temperature Range: 33°F - 140°F, 180°F intermittent
- US Patent Nos. 6,443,184; 7,025,085; 7,533,699
- Made in the USA (D Option)
- 5 Year Warranty
- Optional Mounting of Bypass on either Side for Ease of Installation

STANDARD MATERIALS LIST

BODY (2-1/2"-8")	304 Stainless Steel
BODY (10" & 12")	FDA Epoxy Coated Ductile Iron
COVERS (2-1/2"-6")	Glass Filled PPO/SS
COVERS (8")	304 Stainless Steel
COVERS (10" & 12")	FDA Epoxy Coated Ductile Iron
CHECK VALVES	Bronze/Glass-Filled PPO/SS
SPRINGS	Stainless Steel
SEAT DISCS	Chloramine-Resistant Silicone

PART NUMBER MATRIX

4ALF	7 X	X	X	[X]	XX
	BY-PASS SUB-ASSEMBLY OPTIONS	SIZE	METER OPTION	SHUT-OFF VALVES (Inlet x Outlet)	OPTIONS
4ALF = Lead Free Standard	0 = Type 1 w/ 1/2" Reduced Pressure 2 = Type 2 w/ 1/2" Single Check 3 = Type 1 w/ bypass on left* 4 = Type 2 w/ bypass on left*	9 = 2-1/2" 0 = 3" A = 4" C = 6" E = 8" G = 10" H = 12"	C = Cubic feet/min E = Gallons/min G = Less meter	1 = Less Shut-off Valves 3 = OS&Y Flg x OS&Y Flg 4 = OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv† 6 = OS&Y Flg x Post indicator Flg 7 = OS&Y Flg x OS&Y Grv 8 = OS&Y Grv x OS&Y Grv 9 = Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv† 10 = OS&Y Flg x Post Indicator Grv 13 = Post Indicator Flg x Mon. Butterfly Vlv Grv† 14 = Post Indicator Flg x Post Indicator Flg 16 = Mon Butterfly Vlv Grv x Post Indicator Flg† 17 = Post Indicator Flg x OS&Y Grv 18 = OS&Y Grv x Post Indicator Grv 19 = Mon. Butterfly Vlv Grv x Post Indicator Grv 20 = Post Indicator Flg x OS&Y Flg 21 = Post Indicator Grv x OS&Y Grv 22 = Post Indicator Grv x Mon. Butterfly Vlv Grv† 23 = Mon. Butterfly Vlv Grv x OS&Y Flg	D= Domestic Assembly R1= Retrofit* R2= Retrofit* R3= Retrofit* *Custom length retrofit orders must be accompanied with signed from #OFBRETRO with exact length required.

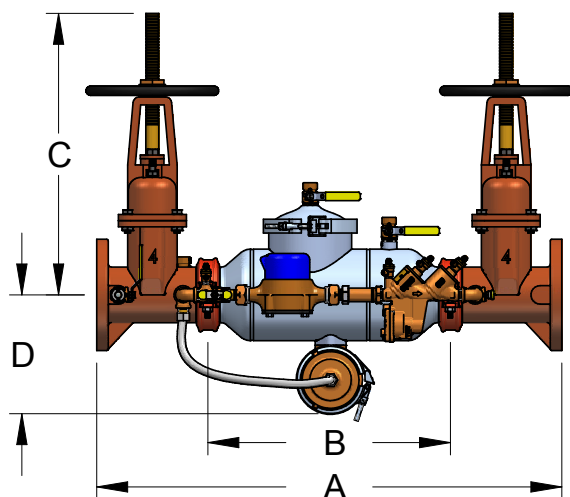
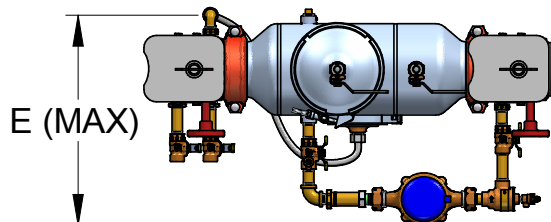
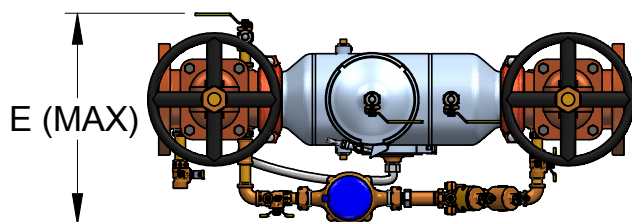
EXAMPLE:
4ALF 72A E3 = 4" size Lead Free Reduced Pressure Detector Assembly with OS&Y flanged inlet x OS&Y flanged outlet shut-off valves Type 2 Bypass w/ meter in gallons

*Orientation of bypass looking downstream. Standard is right hand side. Left hand is on opposite side
†Butterfly valves not available in 12" size.

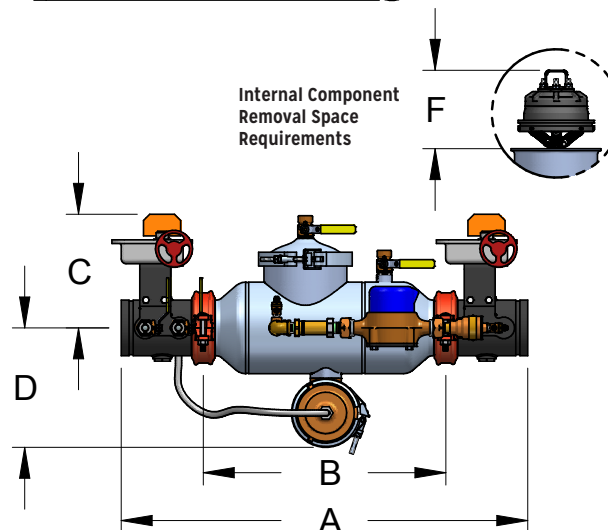


RPDALF 4A SERIES

REDUCED PRESSURE DETECTOR ASSEMBLY



Type 1 Bypass



Type 2 Bypass

DIMENSIONS See Page 64 For Flow Curves

Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances ($\pm 1/8"$ [3 mm] per joint)

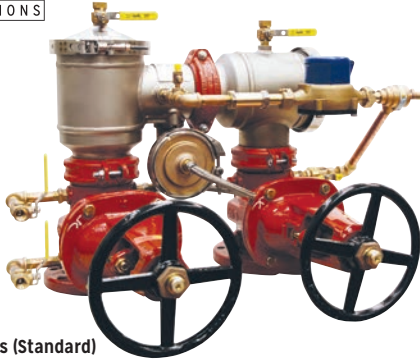
DIMENSIONS	2-1/2"	60mm	3"	75mm	4"	100mm	6"	150mm	8"	200mm	10"	250mm	12"	300mm
A (Butterfly Valves)	28	711	28.5	724	33.3	846	38.9	988	46.4	1179	52.3	1328	N/A	N/A
A (Gate Valves)	31	787	32	813	38	965	45.9	1166	53.4	1356	62.3	1582	65.5	1664
B (less Shut-off Valves)	15.9	404	15.9	404	19.6	498	24.5	622	30	762	36	914	37	940
C (Butterfly Valves)	8	203	8.4	213	9.1	231	10.1	257	12	305	13.4	340	N/A	N/A
C (NRS/PI Gate Valves)	11.8	300	13	330	14	356	17.8	452	21	533	24.5	622	30	762
C (OS&Y Open)	18.8	478	20.3	515	22.1	562	29.4	147	36.8	934	45.2	1147	52.2	1326
D (Centerline to Bottom)	9.6	244	9.6	244	10.4	264	11.6	295	15.6	396	21	533	21	533
E (Width Max)	17	432	17	432	17	432	20	508	21.5	546	26.5	673	27.5	699
F (Check Removal Clearance)	4.8	122	4.8	122	6.5	165	7.5	191	7.5	191	10	254	10	254
Test Cocks (NPT)	1/2"	13	1/2"	13	1/2"	13	3/4"	20	3/4"	20	3/4"	20	3/4"	20
WEIGHTS	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg
Net Wt. (W/ Butterfly Valves)	75	34	79	36	109	50	169	77	376	171	1005	457	N/A	N/A
Ship Wt. (W/ Butterfly Valves)	159	72	163	74	194	88	257	117	524	238	1995	907	N/A	N/A
Net Wt. (W/ Post Ind. Valves)	102	46	120	55	160	73	284	129	562	255	1294	588	1750	795
Ship Wt. (W/ Post Ind. Valves)	186	85	204	93	245	111	372	169	710	323	1484	675	1940	882
Net Wt. (W/ OS&Y Valves)	120	55	136	62	191	87	344	156	637	290	1404	638	1865	848
Ship Wt. (W/ OS&Y Valves)	204	93	220	100	276	125	432	196	785	357	1595	725	2055	934

1. Internal body connections are grooved on 2-1/2" to 10" sizes.
2. Internal body connections are flanged on 12" size.



RPDALF 4An SERIES

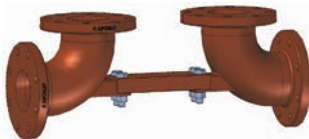
n STYLE REDUCED PRESSURE DETECTOR ASSEMBLY



Type 2 Bypass (Standard)
Sizes 2-1/2"-12"



Type 2 Bypass (Standard)



Optional Valve Setter
(see page 49)



TriForce™ Check

The Apollo® MODEL RPDALF 4An Reduced Pressure Detector Assembly consists of two independently acting, TriForce™ center stem guided check valves with a differential pressure relief valve located between the check valves. The unit is designed to give maximum protection against backflow of health or non-health hazard fluids by either back-pressure or back-siphonage and at the same time detect leakage or unauthorized use of water from fire or automatic sprinkler systems. The normally vertical up/vertical down oriented body incorporates an internal swivel connection providing the ability to pivot the second check 180° to a vertical up/vertical up flow. The durable domestic stainless steel units (2-1/2" to 8") and the FDA epoxy coated ductile iron units (10" and 12") are easily maintained in the line without any special tools. The TriForce™ check valves operate with a spring assist in the flowing condition to provide low flow rates which are documented by an independent laboratory.

The standard Type 2 bypass uses the first check of the mainline assembly as the first check of the bypass. The second check of the bypass is a single check valve with a model number and serial number for test recording. This arrangement complies with the National Backflow Standards. The arrangement provides the same level of protection as the Type 1 bypass and the testing procedure is the same.

FEATURES

- Domestic Stainless Steel Body: 2-1/2"-8"
- FDA Epoxy Coated Ductile Iron Body: 10" & 12"
- Easy Maintenance: No Special Tools required
- Drop-In Check Retainers: 2-1/2"-6"
- Bolted-In Checks: 8"-12"
- Low Pressure Loss as Documented by an Independent Approval Laboratory
- Center Stem Guided TriForce™ Check Valves
- Modular Captured Spring Relief Valve
- Optional Air Gap Drains (See Page 51)
- Small Installation Space Required - Small Footprint
- Approved for n-Flow and Vertical Up Flow
- Chloramine-Resistant Elastomers
- Made in the USA (D Option)
- Lead-Free Standard
- CSA B64.4 Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California (2-1/2"-6") (Type 1 Bypass)
- ASSE 1047 (with Meter)
- UL, ULC Classified
- FM Approved
- Maximum Working Pressure: 175 psi
- Temperature Range: 33°F - 140°F, 180°F intermittent
- Optional Valve Setters Eliminate Need for Thrust Blocks Below Grade
- US Patent Nos. 6,443,184; 7,025,085; 7,533,699
- 5 Year Warranty
- Optional Mounting of Bypass on Either Side for Ease of Installation

STANDARD MATERIALS LIST

BODY (2-1/2"-8")	304 Stainless Steel
BODY (10 & 12")	FDA Epoxy Coated Ductile Iron
COVERS (2-1/2"-6")	Glass Filled PPO/SS
COVERS (8")	304 Stainless Steel
COVERS (10" & 12")	FDA Epoxy Coated Ductile Iron
RELIEF VALVE	Bronze (LF C89836)
CHECK VALVES	Bronze/Glass-Filled PPO/SS
SPRINGS	Stainless Steel
SEAT DISCS	Chloramine-Resistant Silicone

PART NUMBER MATRIX

4AnLF	7 X	X	X	X [X]	X
	BY-PASS SUB-ASSEMBLY OPTIONS	SIZE	METER OPTION	SHUT-OFF VALVES (Inlet x Outlet)	OPTIONS
4AnLF = Lead Free Standard	0 = Type 1 w/ 1/2" Reduced Pressure 2 = Type 2 w/ 1/2" Single Check 3 = Type 1 w/ bypass on left* 4 = Type 2 w/ bypass on left*	9 = 2-1/2" 0 = 3" A = 4" C = 6" E = 8" G = 10" H = 12"	C = Cubic feet/min E = Gallons/min G = Less meter	1 = Less Shut-off Valves 3 = OS&Y Flg x OS&Y Flg 4 = OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv† 6 = OS&Y Flg x Post indicator Flg** 7 = OS&Y Flg x OS&Y Grv 8 = OS&Y Grv x OS&Y Grv 9 = Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv† 10 = OS&Y Flg x Post Indicator Grv** 13 = Post Indicator Flg x Mon. Butterfly Vlv Grv† 14 = Post Indicator Flg x Post Indicator Flg 16 = Mon Butterfly Vlv Grv x Post Indicator Flg† 17 = Post Indicator Flg x OS&Y Grv 18 = OS&Y Grv x Post Indicator Grv 19 = Mon. Butterfly Vlv Grv x Post Indicator Grv 20 = Post Indicator Flg x OS&Y Flg	D= Domestic Assembly

EXAMPLE:

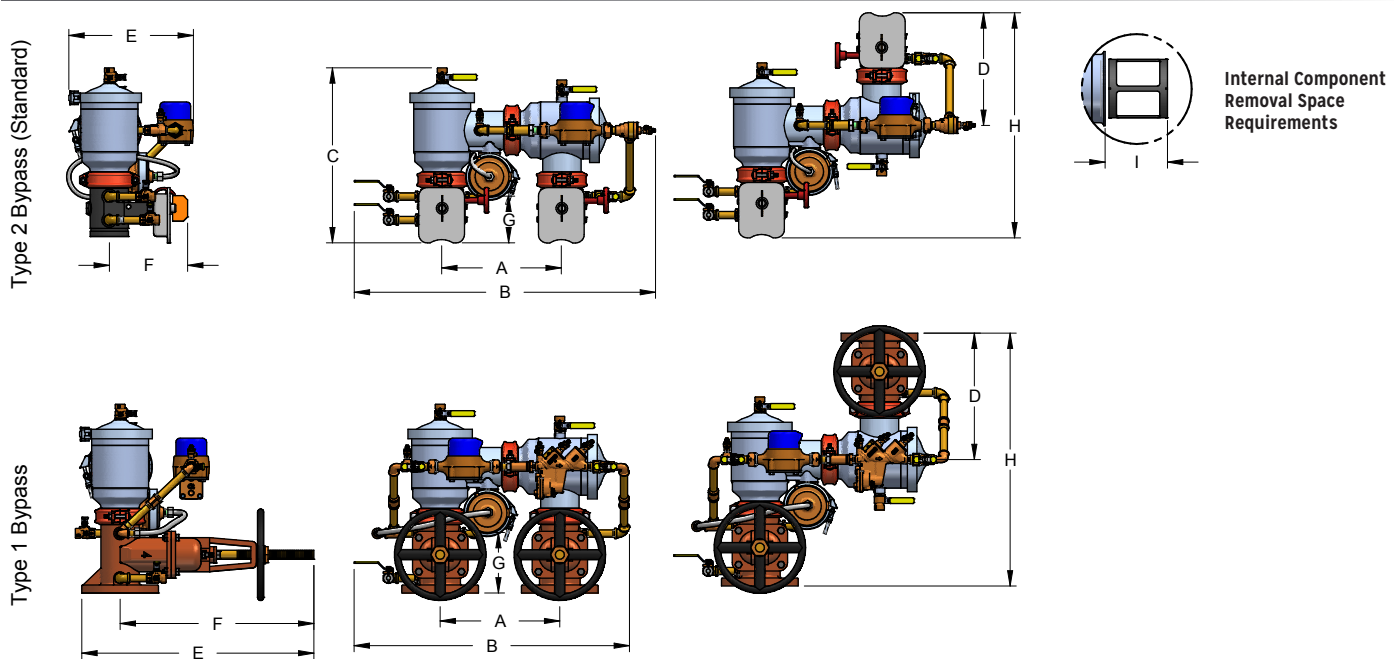
4ANLF 70A E3 = 4" size Lead Free Reduced Pressure Detector Assembly with meter in GPM and OS&Y flanged inlet x OS&Y flanged outlet shut-off valves.

*Orientation of bypass looking downstream. Standard is right hand side. Left hand is on opposite side
†Butterfly valves not available in 12" size.



RPDALF 4An SERIES

n STYLE REDUCED PRESSURE DETECTOR ASSEMBLY



DIMENSIONS See Page 65 For Flow Curves

Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances ($\pm 1/8"$ (3 mm) per joint)

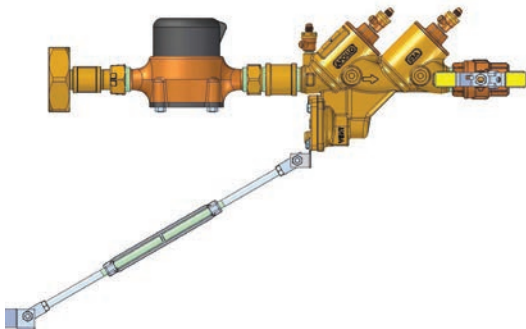
DIMENSIONS	2-1/2"	60mm	3"	75mm	4"	100mm	6"	150mm	8"	200mm	10"	250mm	12"	300mm
A (Centerline to Centerline)	12.5	318	12.5	318	14	356	16	406	18.5	470	21	533	26.8	681
B (Lay Length Space - Butterfly Valves)	32.8	833	32.8	833	35.5	902	40	1016	44	1118	54	1372	N/A	N/A
B (Lay Length Space - Gate Valves)	31	787	31	787	31.8	808	36.8	935	41.5	1054	49	1245	55.8	1417
C (Butterfly Valves - Flange to Top)	18.3	465	18.5	470	20	508	24.8	630	28.5	724	37	940	N/A	N/A
C (Gate Valves - Flange to Top)	19.6	498	20	508	22.5	572	27.8	706	32.1	815	40	1016	44	1118
D (Centerline to bottom Butterfly Valves)	11.5	292	11.8	300	13.3	338	15.6	396	17.9	455	19.8	503	N/A	N/A
D (Centerline to bottom Gate Valves)	13	330	13.5	343	14.9	378	18	457	21.4	544	24.8	630	28.8	732
E (Maximum Width - Butterfly Valves)	11.5	292	12.1	307	12.9	328	15.9	404	22.3	566	23.1	587	N/A	N/A
E (Maximum Width - NRS/PI Gate Valves)	15.6	396	16.9	429	18.6	472	23.8	605	29.1	739	36.3	922	40	1016
E (Maximum Width - OS&Y Valves Open)	22.7	575	24.2	614	26.6	679	34.4	875	44.9	1140	57.9	1471	61.9	1572
F (Centerline to Width - Butterfly Valves)	8	203	8.4	213	9	229	10.9	277	12.9	328	13.5	343	N/A	N/A
F (Centerline to Width - NRS/PI Gate Valves)	11.8	300	13	330	14	356	17.8	452	21	533	24.5	622	30	762
F (Centerline to Width - OS&Y Valves Open)	18.8	478	20.3	515	22.1	562	29.4	747	36.8	934	45.2	1147	52.2	1326
G (Relief Valve to SOV Flg - Butterfly Valves)	4.1	104	4.5	114	4.4	112	6.5	165	5.3	135	4	102	N/A	N/A
G (Relief Valve to SOV Flg - Gate Valves)	5.5	140	6	152	6	152	9	229	9	229	9	229	N/A	N/A
H (Flange to flange Vertical Up Butterfly VlvS)	23	584	23.5	597	25	635	29	737	35.8	909	N/A	N/A	N/A	N/A
H (Flange to flange Vertical Up Gate VlvS)	26	660	27	686	29.8	757	36	914	42.8	1087	N/A	N/A	N/A	N/A
I (Check Removal Clearance)	6	152	6	152	6	152	8	203	8.5	216	12	305	12	305
Test Cocks (NPT)	1/2"	13	1/2"	13	1/2"	13	3/4"	20	3/4"	20	3/4"	20	3/4"	20
WEIGHTS	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg
Net Wt. (W/ Butterfly Valves)	85	39	88	40	92	42	151	69	456	207	1039	472	N/A	N/A
Ship Wt. (W/ Butterfly Valves)	146	66	149	68	153	70	231	105	591	269	1229	559	N/A	N/A
Net Wt. (W/ NRS/Post Indicator Valves)	112	51	129	59	155	70	266	121	642	292	1368	622	1847	840
Ship Wt. (W/ NRS/Post Indicator Valves)	173	79	190	86	216	98	346	157	777	353	1558	708	2137	971
Net Wt. (W/ OS&Y Valves)	130	59	142	65	186	85	326	148	717	326	1483	674	1962	892
Ship Wt. (W/ OS&Y Valves)	191	87	203	92	247	112	406	185	852	387	1673	760	2152	978

1. Internal body connections are grooved on 2-1/2"-10" sizes.
2. Internal body connections are flanged on 12" size.



RPFHB 4A SERIES

FIRE HYDRANT BACKFLOW METER



Size 1"
Contact local water authorities for installation/service requirements.

The Apollo® Series RP 4A Fire Hydrant Backflow Meter shall measure potable water flow from a fire hydrant or other non-permanent installation. At the same time it shall protect against backflow by either back-pressure or back-siphonage from a cross-connection between potable water system and substances that are non-health and health hazards. The unit shall consist of a 3/4" Short Water Meter, 1" 4A-205 RP device, 1" resilient-seated full port ball valve with locking device, 2 1/2"-7 1/2" NST threaded hose couplings, strainer on inlet of meter and adjustable support rod assembly.

OPERATION

The Fire Hydrant Backflow Meter is connected directly to a fire hydrant with a 2 1/2"-7 1/2" NST fire hose female swivel coupling. The device operates like a standard Reduced Pressure device except the flow through the device is measured by a Water Meter connected to the inlet of the backflow preventer. Support rod assembly is adjustable to accommodate fire hydrants at different heights from the ground.

FEATURES

- Normal Operating Flow Range: 2-30 gpm
- Maximum Pressure Loss: 11.0 psi at 30 gpm
- Maximum Operating Pressure: 150 psi
- Trim and Casing Bolts are Stainless Steel
- Tamperproof Locking System Inside the Meter
- 2 1/2"-7 1/2" NST Fire Hose Swivel Couplings, Female Inlet, Male Outlet
- Maximum Rate Listed is for Intermittent Flow Only
- Maximum Continuous Flow Rate as specified by AWWA is 15 gpm
- Designed, Manufactured, Assembled and Tested in South Carolina, USA
- 5 Year Warranty

DIMENSIONS

Model No.	Dimension (in.)		Weights (lbs.)	
	RP	Support	Net Wt.	Shipping Wt.
4A-205-FHB (meter in cu. ft.)	25-1/8"	20"- 28"	24.1	27.6
4A-205-FHBG (meter in gallons)	25-1/8"	20"- 28"	24.1	27.6



AVB1/AVB2 SERIES

ATMOSPHERIC TYPE VACUUM BREAKERS



AVB1
Sizes 1/4", 3/8", 1/2", 3/4", 1", 1-1/4", 1-1/2", 2"



AVB2
Sizes 1/4", 3/8", 1/2", 3/4"
(Optional Polished Chrome Finish Shown)

The Apollo® Series Atmospheric Type Vacuum Breakers are designed to prevent back-siphonage of polluted water into a potable water system. They should only be installed in areas where spillage of water could not cause damage and where it can be accessible for periodic maintenance. These devices are not designed for continuous pressure application (maximum 12 hours in any 24 hour period). Should be installed a minimum of 6" above all downstream piping with no downstream shutoffs.

OPERATION

During flow conditions, the flow of water lifts the float disc and seals the atmospheric vent at all rates of flow, preventing leakage. When a negative pressure is created at the supply line or when the water supply valve upstream of the device is closed, the float disc will fall, thus opening the atmospheric vent. This prevents back-siphonage and creation of vacuum at the discharge line.

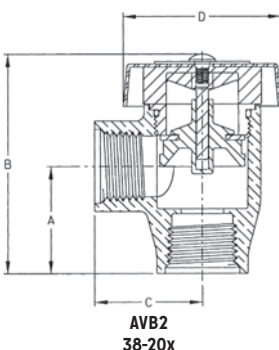
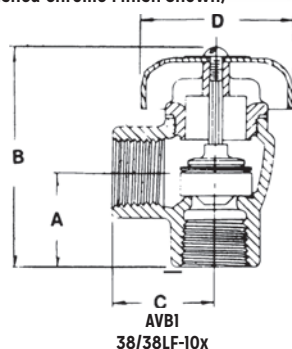
FEATURES

- Corrosion Resistant
- Bronze Body (AVB1)
- Forged Body (AVB2)
- Suitable for Hot or Cold Water Service:
 - (up to 212°F at 125 psig) for up to 1"
 - (up to 180°F at 125 psig) for 1-1/4" thru 2"
- Lead-Free Option (100 Series)
- Heat Resistant Silicone Seat Disc
- Rough Brass, Rough Chrome or Polished Chrome Finish
- Easy to Maintain
- Compact and Lightweight
- Durable
- ASSE1001

STANDARD MATERIALS LIST

VALVE BODY (AVB1)	Cast Bronze (LF C89836)
VALVE BODY (AVB2)	Forged Brass
SEAT DISC	Silicone
FLOAT & GASKET	Polypropylene
CANOPY	Powder Coated Steel
SCREW	Zinc-plated Steel

Contact local water authorities for installation/service requirements.



PART NUMBER MATRIX

38(LF) X	OX	OX
	SIZE	FINISH
1 = Bronze	1 = 1/4"	1 = Rough Brass
2 = Forged Brass (not available in LF)	2 = 3/8"	3 = Rough Chrome (1/4" - 1" only)
	3 = 1/2"	6 = Polished Chrome (AVB2 only)
	4 = 3/4"	
	5 = 1"	
	6 = 1-1/4"	
	7 = 1-1/2"	
	8 = 2"	

DIMENSIONS See Page 66 For Flow Curves

Factory No.	Model No.	Size In.	Size mm.	A (In.)	A (mm.)	B (In.)	B (mm.)	C (In.)	C (mm.)	D (In.)	D (mm.)	Wt. Lbs.	Wt. Kgs.
38(LF)-101	AVB114	1/4	6	29/32	23	2-3/8	60	1-1/32	26	1-13/16	46	50.96	23
38(LF)-102	AVB138	3/8	10	29/32	23	2-3/8	60	1-1/32	26	1-13/16	46	47.7	22
38-103	AVB112	1/2	15	1-3/32	28	2-1/2	65	1-3/16	30	1-3/16	30	54.7	25
38-104	AVB134	3/4	20	1-5/16	33	3-1/16	78	1-15/32	37	2-1/8	54	79.7	36
38-105	AVB11	1	25	1-3/4	45	4-1/16	103	1-7/8	48	2-7/8	73	174	79
38-106	AVB1114	1-1/4	32	2	50	4-3/8	111	2	50	3-3/4	95	316	143
38-107	AVB1112	1-1/2	40	2	50	4-3/8	111	2	50	3-3/4	95	289	131
38-108	AVB12	2	50	2-1/8	54	4-1/2	114	2-1/4	57	3-3/4	95	369	167



PVB 4A SERIES

FREEZE RESISTANT PRESSURE VACUUM BREAKER



Sizes 1/2", 3/4", 1", 1-1/4", 1-1/2", 2"

The Apollo® Model PVB 4A Pressure Vacuum Breakers are designed to prevent contamination of potable water due to back-siphonage. An integral relief valve serves to reduce the possibility of damage due to intermittent freezing conditions. The modular check valve cartridge has a replaceable seat and a reversible silicone seat disc. Ball valves with stainless steel handles and nuts are standard.

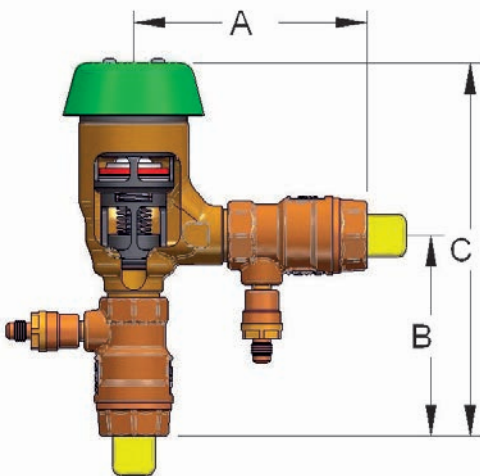
FEATURES

- Modular Captured Spring Cartridge Check Valve
- Low Pressure Loss
- Built-In Freeze Resistant Relief Valve
- Compact Yet Easy to Maintain
- Ball Valves w/SS Handles & Nuts Standard
- Testcocks Located for Easy Draining
- Threaded Testcock Protectors
- Corrosion Resistant
- 5 Year Warranty
- No Special Tools Required
- Lead-Free Option (3/4" - 1")
- Unique Canopy Detachment
- ASSE 1020
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California (1/2" - 2" Non Lead Free Only)
- CSA B64.1.2
- Easy Maintenance
- Maximum Operating Pressure: 150 psi
- Design Pressure: 300 psi
- Temperature Range: 33°F - 140°F

STANDARD MATERIALS LIST

BODY	Bronze (C84400/LF C89836)
BALL VALVES, TESTCOCKS	Bronze (C84800/LF C87800)
CANOPY	UV Resistant ABS
BONNET	Glass-Filled PPO
CHECK VALVE CARTRIDGE	Glass-Filled PPO
SPRINGS	Stainless Steel
SEAT DISCS	Chloramine-Resistant Silicone
FLOAT	Glass-Filled Polypropylene
O-RINGS	Chloramine-Resistant EPDM
BALL VALVE HANDLES	Stainless Steel

Contact local water authorities for installation/service requirements.



PART NUMBER MATRIX

4A [X]	50 X	A X	X
	SIZE	SHUT-OFF VALVES	OPTIONS (CAN BE COMBINED)
4A = Standard	3 = 1/2"	2 = w/ ball valves (standard)	F = SAE threaded test cocks (standard 1/2", 3/4", 1")
4ALF = Lead Free (3/4" - 1")	4 = 3/4"	4 = w/union ball valves (3/4" and 1" only)	LL = locking lever handles (3/4" - 2")
	5 = 1"		
	6 = 1-1/4"		
	7 = 1-1/2"		
	8 = 2"		

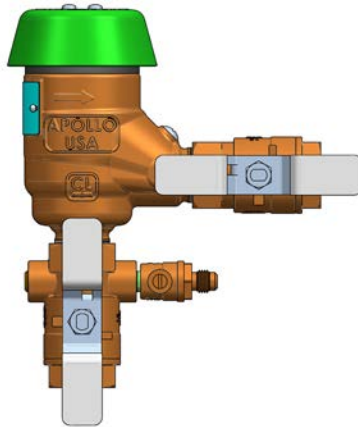
DIMENSIONS See Page 67 For Flow Curves

Factory No.	Model No.	Size In.	Size mm.	A (In.)	A (mm.)	B (In.)	B (mm.)	C (In.)	C (mm.)	Wt. Lbs.	Wt. Kgs.
4A-503-A2F	PVB4A12	1/2"	15	4-1/2	114	3-3/4	95	7-1/4	184	2.9	1.3
4A-504-A2F	PVB4A34	3/4"	20	4-3/4	121	4-1/8	105	7-5/8	194	3.0	1.4
4A-505-A2F	PVB4A1	1"	25	5-3/8	135	4-5/8	194	8-3/8	211	4.2	1.9
4A-506-A2F	PVB4A114	1-1/4"	32	7	178	5-1/4	133	9-7/8	250	4.4	2.0
4A-507-A2F	PVB4A112	1-1/2"	40	7-1/4	184	5-5/8	143	10-1/8	257	7.3	3.3
4A-508-A2F	PVB4A2	2"	50	8-1/2	216	6-3/8	161	11-1/2	292	8.9	4.0

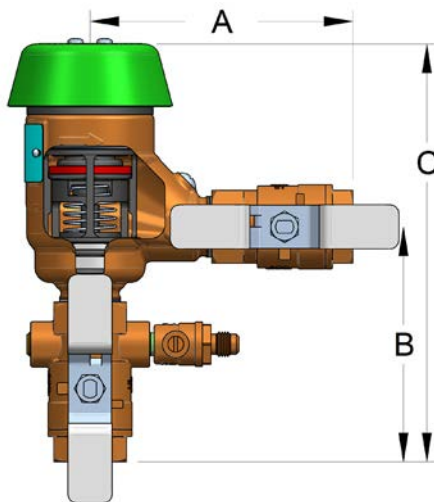


SVB 4A SERIES

SPILL RESISTANT VACUUM BREAKER BACKFLOW PREVENTER



Sizes 1/2", 3/4", 1"



The Apollo® Series SVB 4A Spill Resistant Vacuum Breaker is designed to prevent contamination of the potable water supply due to back-siphonage. The SVB is ideally suited for continuous pressure, indoor applications where water spillage is undesirable. The device has a straight through flow path for minimal head loss. All components are easily accessible for easy repair and maintenance. All components are made of corrosion resistant materials for years of reliable service. Should be installed 12" above all downstream piping.

OPERATION

During normal flow conditions, the check valve remains open and the atmospheric vent seals in the bonnet assembly. As the line pressure falls to 1 psi, the spring loaded atmospheric vent opens and the check valve closes, breaking the vacuum and thereby preventing back-siphonage. Water is not allowed to spill at any time during operation.

FEATURES

- Modular Captured Spring Check Valve
- Shut-Off Valves w/Stainless Steel Handles and Nuts
- Threaded Testcock Protectors
- Designed For Easy Maintenance
- Lead-Free Option
- Low Head Loss
- Maximum Working Pressure: 150 PSIG
- Operating Temperature Range: 33°F-140°F
- ASSE 1056
- CSA B64.1.2
- 5 Year Warranty

STANDARD MATERIALS LIST

BODY	Bronze (C84400/LF C89836)
SPRINGS	Stainless Steel
SEAT DISCS	Silicone Rubber
VALVE CANOPY	ABS Plastic
FASTENERS	Stainless Steel
BALL VALVE HANDLES	Stainless Steel

Contact local water authorities for installation/service requirements.

PART NUMBER MATRIX

4A [X]	90 X	A X	X
	SIZE	SHUT-OFF VALVES	OPTIONS (CAN BE COMBINED)
4A = Standard	3 = 1/2"	2 = w/ ball valves (standard)	F = SAE threaded test cocks (standard 1/2", 3/4", 1")
4ALF = Lead Free (3/4" - 1")	4 = 3/4"	4 = w/union ball valves (3/4" and 1" only)	LL = locking lever handles (3/4" - 1")
	5 = 1"		

DIMENSIONS See Page 66 For Flow Curves

Factory No.	Model No.	Size In.	Size mm.	A (In.)	A (mm.)	B (In.)	B (mm.)	C (In.)	C (mm.)	Wt. Lbs.	Wt. Kgs.
4A-903-A2F	SVB4A12	1/2"	15	4-1/2	114	3-3/4	95	7-1/4	184	2.9	1.3
4A-904-A2F	SVB4A34	3/4"	20	4-1/2	121	4	105	7-1/4	194	3.0	1.4
4A-905-A2F	StVB4A1	1"	25	5-3/8	135	4-3/4	194	8-1/8	211	4.2	1.9

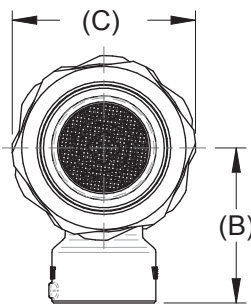
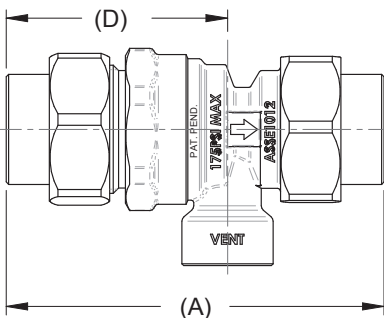


DCAP SERIES

DUAL CHECK WITH ATMOSPHERIC PORT BACKFLOW PREVENTER



Sizes 1/2", 3/4"



The Apollo® DCAP Series Backflow Preventer is designed to protect residential and commercial water supply lines from back-siphonage or back-pressure of non-potable (non-hazardous) substances. It has an intermediate atmospheric vent to insure protection from backflow conditions. It consists of two independently acting and spring-loaded check valves in a corrosion resistant material.

OPERATION

During normal flow operation, the vent valve is closed, and the two check valves are open allowing flow of water through the unit. Each check valve is designed to hold at least 1 psi in the direction of flow. When a back-siphonage condition occurs, both check valves close and the atmospheric vent opens to permit air to enter the intermediate zone. In the event of back-pressure and if the second check valve is prevented from closing tightly, leakage will be vented to the atmosphere through the vent port.

FEATURES

- Corrosion Resistant
- Low Head Loss
- Independently Acting Check Valves
- Ease of Repair and Installation
- Economical
- Suitable for Hot or Cold Water Service
- Durable
- Lead-Free Option
- Maximum Working Pressure: 175 psig
- ASSE 1012
- CSA B64.3
- Inlet Temperature Range: 33°F-210°F
- 5 Year Warranty
- Maximum backflow temperature: 250°F

STANDARD MATERIALS LIST

BODY	Forged Brass C87800
UNION NUT & TAILPIECES	Forged Brass C87800
SEAT DISCS	EPDM (FDA/NSF 6I)
SEAT STEM & RETAINER	Forged Brass C46500
SPRINGS	Stainless Steel

DIMENSIONS See Page 68 For Flow Curves

Part Number	Dimensions (in.)				Wt. (lbs.)
	A	B	C	D	
4ALF4A33A, 4ALF4A33AC	4.1	1.6	1.9	2.4	1.31
4ALF4H33H, 4ALF4H33HC	3.9	1.6	1.9	2.3	1.24
4ALF4A44A, 4ALF4A44AC	4.3	1.6	1.9	2.5	1.32
4ALF4H44H, 4ALF4A44HC	4.4	1.6	1.9	2.6	1.29

PART NUMBER MATRIX

4A [X]	4 X	X - X	X	X
	UNION INLET CONNECTION	INLET AND OUTLET SIZE	UNION OUTLET CONNECTION	OPTION
4A = Standard 4ALF = Lead Free	A = FNPT H = Solder joint	3 = 1/2" 4 = 3/4"	A = FNPT B = MNPT H = Solder joint	C = Canadian (discharge port not threaded)



DUCLF 4ALF SERIES DUAL CHECK VALVE



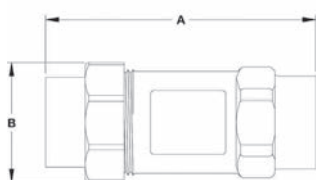
The Apollo® DUCLF-4ALF Series Dual Check Valve Backflow Preventer is designed to prevent cross-connections of non-potable water (non-hazardous) into safe drinking water systems. It is a compact and economical device that consists of two independently-acting, spring-loaded check valves in a corrosion-resistant material.

OPERATION

Each of the two spring-loaded check valves is designed to open at 1 psi differential in the direction of flow. The check valves will remain tightly closed until there is a demand for water downstream. If the downstream pressure of the device increases above the supply pressure or there is a reverse direction of flow, the check valves will close to prevent backflow. If the second check valve is prevented from closing tightly, the first check will close to provide protection from a backflow condition.

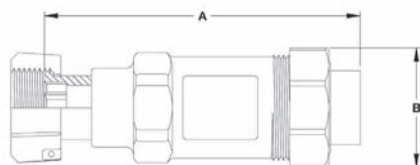
FEATURES

- Low Head Loss
- Independently-Acting Captured Spring Check Valves
- Compact and Lightweight
- Corrosion Resistant
- Replaceable Check Modules
- Industry Lay Lengths
- Lead-Free (NSF 372)
- Available in Standard and Swivel Types
- Maximum Working Pressure: 175 psi
- Operating Temperature Range: 33°F-180°F
- ASSE 1024
- CSA B64.6
- 5 Year Warranty



Union x NPT

1"



Meter Swivel x NPT

STANDARD MATERIALS LIST

BODY	Lead Free Bronze C87800
TAILPIECE	Lead Free Brass C46500
UNION NUT	Brass C36000
CHECK MODULES	Acetal (3/4"-1")
SPRINGS	Stainless Steel
SEAT DISCS	Buna-N (3/4"-1")

Contact local water authorities for installation/service requirements.

METER THREAD SIZING

5/8" METER	3/4"
3/4" METER	1"
1" METER	1-1/4"

DIMENSIONS See Page 68 For Flow Curves

Size	Dimensions (in.)		Wt. (Lbs.)
	A	B	
3/4"	4.375	2	1.40
3/4" Meter Swivel	4.75	2	1.60
1"	4.375	2	1.40
1" Meter Swivel	4.75	2	1.75

PART NUMBER MATRIX

4ALF [X]	3 X	X X	X	X
	UNION INLET CONNECTION ^{1,2}	INLET AND OUTLET SIZE	OUTLET CONNECTION ^{1,2}	FINISH
4ALF = Lead Free	A = FNPT B = MNPT C = Female Meter Thread S = Female Meter Swivel	4 = 3/4" 5 = 1" 6 = 1-1/4" (Meter Thread sizing for 1" meter swivel)	A = FNPT B = MNPT	Blank = Satin Brass

1. For meter threads, order one size larger than meter size. (i.e.- 4ALF3S54A = 1" Female Meter Swivel Inlet (for connection to 3/4" meter) x 3/4" FNPT outlet)
 2. Not all inlet and outlet combinations are available. Please contact Apollo Customer Service for availability.

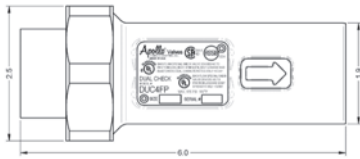
EXAMPLE:
4ALF 3S54A = Lead Free Dual Check with Female Swivel 1" Inlet (for 3/4" meter connection x 3/4" FNPT outlet)





DUC 4FP SERIES

DUAL CHECK BACKFLOW PREVENTER



The Apollo[®] DUC 4FP Series Dual Check Backflow Preventer for Residential Fire Sprinkler Systems prevents backflow by either backpressure or backsiphonage from a cross-connection between potable water lines and substances that are objectionable, but not health-hazards.

FEATURES

- Low Pressure Loss
- Corrosion Resistant
- Replaceable Check Modules
- Pressure Drop at 30 gpm is Less than 6 psi
- Complies With NFPA Standard 13D
- 5 Year Warranty
- Maximum Supply Pressure: 175 psi
- Temperature Range: 33°F - 180°F

- ASSE 1024
- UL Classified
- CSA B64.6
- Made in the USA
- NSF 372 (LF Only)

STANDARD MATERIALS LIST

BODY	Bronze (C84400)
UNION NUT & TAILPIECES	Brass
CHECK MODULES	Acetal/Nitrile/Stainless Steel
SPACER	Glass-Filled Noryl [®]
O-RING	Stainless Steel

Contact local water authorities for installation/service requirements.

PART NUMBER MATRIX See Page 69 For Flow Curves

4FP3 X	X	X	X
INLET CONNECTION ¹	INLET SIZE	OUTLET SIZE	OUTLET CONNECTION ¹
A = FNPT	5 = 1"	5 = 1"	A = FNPT
C = Female Meter Thread	6 = 1-1/4" (Meter thread sizing for 1" meter)	6 = 1-1/4" (Meter thread sizing for 1" meter)	B = MNPT
			E = Male Meter Thread

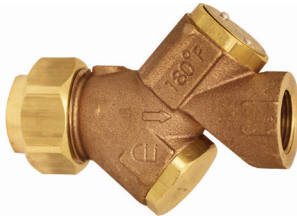
Notes:

¹ Not all inlet and outlet combinations are available. Please contact Conbraco Customer Service for availability.

EXAMPLE:
4FP3A55A = 1" Dual Check
FNPT Inlet x 1" FNPT outlet

DUC 40 SERIES

DUAL CHECK VALVE



Sizes 1/2", 3/4", 1"

The Apollo[®] Series DUC 40 Dual Check Valve prevents backflow by either backpressure or backsiphonage resulting from a cross-connection between potable water lines and substances that are objectionable, but not health-hazards.

FEATURES

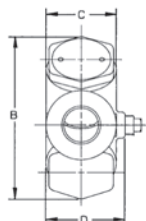
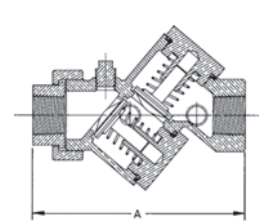
- In-Line Repairable
- Low Pressure Loss
- Corrosion Resistant
- Compact and Lightweight
- Independently-Acting Check Valves
- Lead-Free Option
- ASSE 1024
- CSA B64.6
- Available in Standard and Swivel Types
- Made in the USA
- 5 Year Warranty
- Maximum Operating Pressure: 175 psi
- Temperature Range: 33° F - 180° F
- ASSE 1024
- CSA B64.6

STANDARD MATERIALS LIST

BODY	Bronze (C84400 - LF C89836)
CAPS	Brass
SPRINGS	Stainless Steel
SEAT DISCS	EPDM

DIMENSIONS See Page 68 For Flow Curves

Size	DUC4012 40-3x3-3x	DUC4034 40-3x4-4x	DUC401 40-3x5-5x
A	4-3/8	4-3/8	4-3/8
B	3-1/2	3-1/2	3-1/2
C	1-1/2	1-1/2	1-1/2
Wt. (Lbs.)	2	2	2.1
Wt. (w/test cocks & ball valves)	4	4.6	6.4



PART NUMBER MATRIX

40 [X] 3	X	X	X	X
	INLET CONNECTION ^{1,2}	INLET AND OUTLET SIZE	OUTLET CONNECTION ^{1,2}	OPTIONS (CAN BE COMBINED)
40 = Standard	A = FNPT	3 = 1/2"	A = FNPT	TP = w/Test Ports Drilled, Tapped w/Plugs
40LF = Lead Free	C = Female Meter Thread	4 = 3/4"	C = Female Meter Thread	TC = w/3 1/8"x1/4" Test Cocks
	S = Female Meter Swivel	5 = 1"		

Notes:

¹ For meter threads, order one size larger than meter size.

² Not all inlet and outlet combinations are available. Please contact Conbraco Customer Service for availability.

* Standard body not drilled & tapped for testcocks.

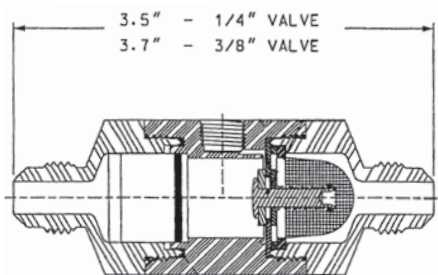
EXAMPLE:
40 3S5 4A = 1" Dual Check Female with Meter Swivel Inlet
(for connection to 3/4" meter) x 3/4"



CBBP SERIES CARBONATED BEVERAGE BACKFLOW PREVENTER



Sizes 1/4", 3/8"



The Apollo® CBBP Series Carbonated Beverage Backflow Preventer (CBBP) is designed to prevent the contamination of the potable water supply due to backflow when installed on water distribution lines serving beverage dispensing equipment. The device consists of two independently acting check valves biased to a normally closed position. A normally open atmospheric port is located between the check valves. During backflow conditions, the port vents gases and/or liquids. Additionally, the CBBP is equipped with a 100 mesh integral strainer screen at the inlet. All wetted areas of the device are non-toxic, corrosion resistant, and approved for use with potable water. The CBBP is suitable for supply pressures to 150 psig and water temperatures from 33° to 130° F.

OPERATION

Under static (non-flowing) conditions, the check valves remain in the closed position. When a valve is opened downstream (i.e. a beverage is delivered from the beverage dispensing unit), the check valves open and permit the flow of water. Under backflow conditions, the diaphragm seat on the first check lifts and permits flow through the atmospheric port located between the two check valves. The strainer insures debris does not enter the backflow preventer.

FEATURES

- Compact Design
- Lowest Head Loss
- Atmospheric Vent Provides Indication of Problems
- Integral Strainer for Equipment Protection
- Lead Free
- Available in SAE & NPT Connections
- Repairable Check Assemblies
- Non-Metallic Body for Corrosion Resistance
- CSA Certified to ANSI/NSF-61
- ASSE 1022
- 5 Year Warranty

STANDARD MATERIALS LIST

END CAP	Acetal
STRAINER	PVC/Stainless Steel
O-RING	Nitrile
UPSTREAM CHECK	Nitrile/Stainless Steel/Acetal
DOWNSTREAM CHECK	EPDM/Stainless
VALVE BODY	Acetal

Contact local water authorities for installation/service requirements.

DIMENSIONS See Page 69 For Flow Curves

CBBP Size	Connection Sizing		Wt./Ea
1/4"	7/16"-20 UNF	SAE Flare	.19
3/8"	5/8"-18 UNF	SAE Flare	.19
3/8"	3/8" NPT	Male NPT	.19

PART NUMBER MATRIX

4C10 X	X
SIZE	INLET AND OUTLET CONNECTION
1 = 1/4"	01 = Flare
2 = 3/8"	02 = MNPT (3/8" only)



HBV SERIES

3/4" HOSE CONNECTION VACUUM BREAKER



3/4"
Apollo International®
(Optional Satin Chrome Finish Shown)

The Apollo® HBV Hose Connection Vacuum Breakers are designed to prevent cross-connection caused by back-siphonage. They consist of a single check valve with atmospheric vacuum breaker vent. They feature a break-away set-screw for tamper-proof protection. They are not suitable for continuous pressure applications.

OPERATION

At no flow situations, the check disc seats against the diaphragm with the atmospheric vent open. This prevents back-siphonage or backflow of water. At flow conditions, the spring-loaded check disc opens, thus allowing flow of water through the device and at the same time the diaphragm seals the atmospheric vent.

INSTALLATION

It should only be installed in areas where spillage of water could not cause damage. For permanent installation, screw device directly into faucet, firmly hand tighten and turn set-screw in until head breaks off.

FEATURES

- Maximum Working Pressure: 125 psig
- Maximum Temperature: 180°F
- ASSE 1011
- CSA B64.2
- IAPMO

DIMENSIONS

Factory No.	Model No.	Finish	Wt./Ea
38LF-314-AS	HBVLF234	Satin Brass	.17
38LF-314-CS	HBVLC234	Satin Chrome	.17

38LF-314 shipped in 12 pcs./box

HBVB SERIES

3/4" FREEZE RESISTANT HOSE CONNECTION VACUUM BREAKER



3/4"
Apollo International®

The Apollo® Series HBVB Freeze Resistant Hose Connection Vacuum Breaker is especially designed to prevent back-siphonage on wall and yard hydrants. It features a break-away set-screw for tamper-proof protection and automatic drain for protection against freezing conditions when hose is removed. It is not suitable for continuous pressure applications.

OPERATION

The principle of operation is similar to the HCVB Series except it has an automatic draining feature. When the hose is removed, the internal mechanism opens to drain water from the unit and the hose bibb to help prevent water from freezing inside the unit.

INSTALLATION

It should only be installed in areas where spillage of water could not cause damage. For permanent installation, screw device directly into faucet, firmly hand tighten and turn set-screw in until head breaks off.

FEATURES

- Maximum Working Pressure: 125 psig
- Maximum Temperature: 180°F
- ASSE 1011

DIMENSIONS

Factory No.	Model No.	Finish	Wt./Ea
38LF-414-AS	HBVBLF2	Satin Brass	.37

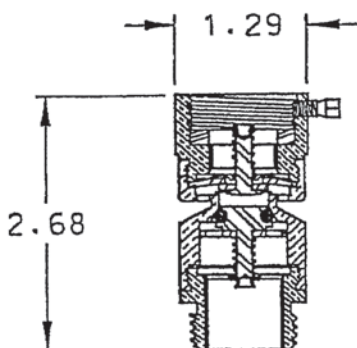


HBDUC SERIES

3/4" HOSE CONNECTION/LAB FAUCET DUAL CHECK



38-304-02
Size 3/4"



The Apollo® Series HBDUC is designed to provide an in-line testable hose connection that will prevent backflow due to back-siphonage or low head back-pressure. Each device consists of two independent checks, forced loaded in the closed position with an atmospheric vent between the checks. The device is threaded for hose connection at both the inlet and outlet with a break-away set screw on the inlet for tamper proof installations. These devices are not suitable for continuous pressure applications.

OPERATION

During initial pressurization, the inlet check shuttles forward to close the atmospheric vent. As flow is established, both the inlet and outlet check open to allow flow through the device. If a backflow condition is present, then both checks will close and the atmospheric vent opens to introduce air and break the siphon.

FEATURES

- Corrosion Resistant Body and Checks
- Low Head Loss
- Easy to Install With Break-Away Set Screw
- Protects Against Back Siphonage and Low Head Back Pressure
- ASSE 1052

STANDARD MATERIALS LIST

BODY	Brass
SEATS	EPDM
CHECK COMPONENTS	STAINLESS STEEL
CHECK GUIDE	Acetal

Contact local water authorities for installation/service requirements.

DIMENSIONS See Page 70 For Flow Curves

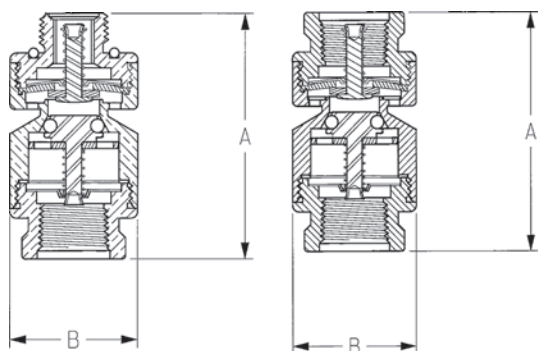
Factory No.	Model No.	Wt./Ea
38-304-02	HBDUC34	.46
38LF-304-02	HBDUCLF34	.46

LFDUC SERIES

LAB FAUCET DUAL CHECK BACKFLOW PREVENTER



Sizes 1/4", 3/8"



The Apollo® Series LFDUC is designed to provide protection against back-siphonage wherever a hose is connected to a faucet. The device consists of two independently acting checks with an intermediate relief port or vent. It is suitable for supply pressure up to 150 psig and a temperature range of 33°F-212°F. Not suitable for constant pressure conditions.

OPERATION

During normal flow conditions, the two checks are held off their seats, supplying water downstream. The vent is held shut by supply pressure acting on the diaphragm. If the supply pressure should fall below atmospheric, the second check will close due to internal spring pressure and the vent will open to introduce air into the supply line and break the siphon.

Note: This device should only be installed where spillage of water could not cause water damage.

FEATURES

- Corrosion Resistant
- Suitable for Hot or Cold Water Service up to 212°F and 125 psi
- Lead-Free Option
- Polished (-CP2 and -CP3 are Rough Brass Only)
- Easy to maintain
- Compact and Lightweight
- ASSE 1035

DIMENSIONS See Page 70 For Flow Curves

Factory No.	Model No.	Inlet	Outlet	A (In.)	B (In.)	Wt./Ea
38-502-01	LFUDCMF38	3/8" MNPSM*	3/8" FNPT	2.33	1.24	.50
38-502-02	LFUDCFF38	3/8" FNPT	3/8" FNPT	2.34	1.24	.50
38-502-03	LFUDCFM38	3/8" FNPT	3/8" MNPSM	2.33	1.24	.50
38-502-CP2**	LFUDCFF14	1/4" FNPT	1/4" FNPT	2.34	1.24	.50
38-502-CP3**	LFUDCFF38	3/8" FNPT	3/8" FNPT	2.34	1.24	.50

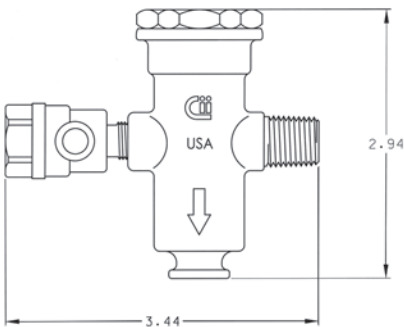
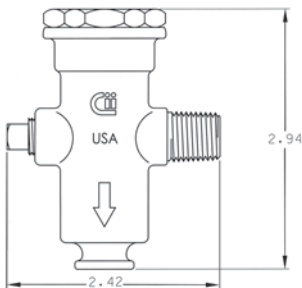
*American National Standard straight pipe thread for free-fitting mechanical joints (male)

**CP2 and -CP3 are non-approved devices with a rough brass finish for continuous pressure applications



FPV SERIES

FREEZE PROTECTION VALVE



The Apollo® Series FPV Freeze Protection Valve protects backflow preventers from freezing when installed in accordance with manufacturer's instructions. All internal parts of the Freeze Protection Valve are replaceable.

OPERATION

During flow conditions, the Freeze Protection Valve shall be drip-tight during above-freezing normal operating conditions. The Freeze Protection Valve shall be suitable for normal operating pressures of 20 to 175 psig.

FEATURES

- Installs Easily on All Backflow Preventers
- Ease of Repair with Available Repair Kit
- Corrosion Resistant
- 1/4" Male Pipe Thread Inlet Port
- Available With 1/8" M x 1/4" F testcock
- Discharge Port Accommodates 5/8" I.D. Hose
- Lead-Free Option
- Mechanical Operating Principle
- Nominal Start to Open Temperature of 35°F
- Maximum Operating Pressure: 175 psig
- Maximum temperature of 180°F
- Compact Design
- IAPMO listed
- US Patent #6,374,849
- 5 Year Warranty

STANDARD MATERIALS LIST

BODY	Bronze (C84400/LF C89836)
CAP	Brass
SPRING GUIDE	Brass
SPRING	Stainless Steel
CAP O-RING	Buna-N
GUIDE O-RING	Buna-N
THERMAL ELEMENT	Copper/Stainless Steel/EPDM

Contact local water authorities for installation/service requirements.

DIMENSIONS

Net Weight Each	Lbs.
Model 40-000-FPV1	.70
Model 40-000-FPV2	.77

MODEL NUMBERS

Model 40-000-FPV1
Model 40-000-FPV2 – w/test cock
Model 40LF-000-FPV1
Model 40LF-000-FPV2F – w/SAE testcock

PART NUMBER MATRIX

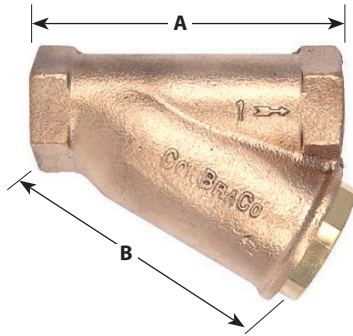
40 [X]	000	FPV X	OPTIONS
40	= Standard		1 = w/1/8" NPT plug
40LF	= Lead Free		2 = w/1/8" male x 1/4" female test cock
			2F = SAE test cock
			R = Repair kit* for FPV1 and FPV2

* Repair kit includes: Thermal element, spring, spring guide, two O-rings (all internal parts)



YB STRAINER SERIES

WYE STRAINER



FEATURES

- Maximum Protection Capability Against Foreign particles in Piping Systems and Process Equipment
- Cast Bronze Body (C84400/LF C89836)
- 304 Stainless Steel Screen
- Sizes 1/4 " thru 1/2" Comes Standard With 50 Mesh (0.009" Wire)
- Sizes 3/4" thru 2" Comes Standard With 20 Mesh (0.016" Wire)
- Lead-Free Option
- Other Screen Sizes Available (Contact Customer Service)
- Operating Pressure to 400 psig WOG
- Removable self-aligning screen
- 5 Year Warranty
- 400 Series is Female x Male NPT (3/4" & 1" Only)

DIMENSIONS

Factory No.	Model No.	Size In.	A (In.)	A (mm.)	B (In.)	B (mm.)	Cap Tapping Suffix -02	Wt. Lbs.	Wt. Kgs.
59-001-01	YB14	1/4 NPT	2	50	1-1/4	32	1/8 NPT	.42	.19
59-002-01	YB38	3/8 NPT	2-11/16	68	2	50	1/4 NPT	.79	.36
59-003-01	YB12	1/2 NPT	2-11/16	68	2	50	1/4 NPT	.75	.34
59-004-01	YB34	3/4 NPT	3-7/8	98	3-1/4	83	1/2 NPT	1.85	.84
59-005-01	YB1	1 NPT	4-3/4	121	4	100	3/4 NPT	2.76	1.25
59-006-01	YB114	1-1/4 NPT	5-1/8	130	4-1/4	108	3/4 NPT	3.58	1.62
59-007-01	YB112	1-1/2 NPT	5-3/4	146	5	127	1 NPT	5.41	2.45
59-008-01	YB2	2 NPT	6-3/4	171	6	150	1-1/4 NPT	7.47	3.39
59-404-01	YBM34	3/4 F x MNPT	5-3/8	136	3-1/4	83	1/2 NPT	2.0	.9
59-405-01	YBM1	1 F x MNPT	5-3/4	146	4	100	3/4 NPT	2.95	1.3
59LF-001-01	YB14LF	1/4 NPT	2	50	1-1/4	32	1/8 NPT	.42	.19
59LF-002-01	YB38LF	3/8 NPT	2-11/16	68	2	50	1/4 NPT	.79	.36
59LF-003-01	YB12LF	1/2 NPT	2-11/16	68	2	50	1/4 NPT	.75	.34
59LF-004-01	YB34LF	3/4 NPT	3-7/8	98	3-1/4	83	1/2 NPT	1.85	.84
59LF-005-01	YB1LF	1 NPT	1-3/4	121	4	100	3/4 NPT	2.76	1.25
59LF-006-01	YB114LF	1-1/4 NPT	5-1/8	130	4-1/4	108	3/4 NPT	3.58	1.62
59LF-007-01	YB112LF	1-1/2 NPT	5-3/4	146	5	127	1 NPT	5.41	2.45
59LF-008-01	YB2LF	2 NPT	6-3/4	171	6	150	1-1/4 NPT	7.47	3.39
59LF-404-01	YBM34LF	3/4 NPT x MNPT	5-3/8	136	3-1/4	83	1/2 NPT	2.0	.9
59LF-405-01	YBM1LF	1 NPT x MNPT	5-3/4	146	4	100	3/4 NPT	2.95	1.3

PART NUMBER MATRIX

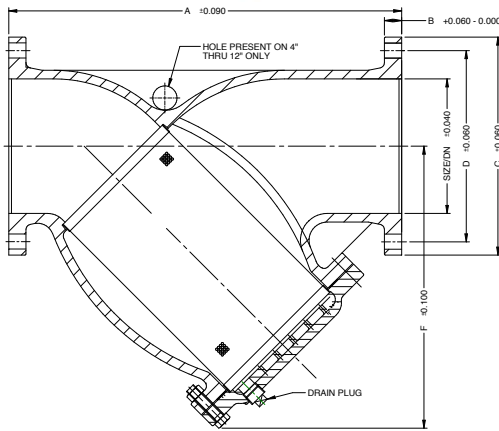
40 [X]	000	FPV X
		OPTIONS
40 = Standard		1 = w/1/8" NPT plug
40LF = Lead Free		2 = w/1/8" male x 1/4" female test cock
		2F = SAE test cock
		R = Repair kit* for FPV1 and FPV2

* Repair kit includes: Thermal element, spring, spring guide, two O-rings (all internal parts)



YCF SERIES

FLANGED, CLASS 125 WYE STRAINER



Apollo International™ YCF Strainers are designed to protect piping systems and process equipment from unwanted foreign particles with minimum pressure loss.

FEATURES

- Iron Strainers are Complete with Flat Face Flanges in Accordance with ASME B16.1.
- Strainer Body Meets Applicable ASME Standard
- One Piece Cast Body
- Strainers Equipped With Bolted Cover Flange That Utilize a Flat Gasket Seal
- Low Pressure Drop
- Upper and Lower Machined Seats
- 304 SS Perforated Screens are standard
- Drain/Blow-Off Connection Furnished with Plug as Standard
- 2-1/2" thru 3" Come Standard with .045 Perforated Screens
- 4" thru 12" Come Standard with .125 Perforated Screens

- Other Screen Sizes Available (Contact Customer Service)
- Generous Screen Area and Properly Proportioned Straining Chamber to Minimize Initial Pressure Drop While Maximizing Time Between Cleanings
- Compact End-to-End Dimension
- FDA Epoxy Coated and Lined
- Working Pressure (Non-Shock): CWP 200 psig @ 150° F
- NOT FOR STEAM SERVICE

STANDARD MATERIALS LIST

BODY	Carbon Steel (ASTM A126-B)
CAP/COVER	Carbon Steel (ASTM A126-B)
PLUG	Carbon Steel (ASTM 307)
BOLT/STUD/NUT	Carbon Steel (ASTM 307)
SCREEN	304 Stainless Steel
GASKET	Graphite
COATING	FDA Grade Epoxy

PART NUMBER MATRIX

YCF	XX	XXX(X)	E
	SIZE	SCREEN TYPE	COATING
YCF = Flat Faced, Flanged Connection	02 = 2" 25 = 2-1/2" 03 = 3" 04 = 4" 05 = 5" 06 = 6" 08 = 8" 10 = 10" 12 = 12"	M20 = 20 Mesh M40 = 40 Mesh M80 = 80 Mesh M100 = 100 Mesh P045 = .045 Perf P125 = .125 Perf	E = Epoxy Coating NSF Approved

DIMENSIONS

Part No.	Size/DN		A		B		C		D		E		F		Drain Plug		Weight	
	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	lbs.	kg.
YCF02P045E	2"	50	8.86	255	0.63	16	5.98	152	4.75	121	0.75	19	6.30	160	1/2"	4	23	11
YCF25P045E	2-1/2"	65	10.75	273	0.69	18	7.01	178	5.50	140	0.75	19	7.64	194	1"	4	34	15
YCF03P045E	3"	80	11.50	292	0.75	19	7.48	190	6.00	153	0.75	19	8.86	225	1"	4	47	21
YCF04P125E	4"	100	13.86	352	0.94	24	8.98	228	7.50	191	0.75	19	10.63	270	1-1/4"	8	72	33
YCF05P125E	5"	125	16.38	416	0.94	24	10.00	254	8.50	216	0.88	22	12.60	320	1-1/4"	8	111	50
YCF06P125E	6"	150	18.50	470	1.00	25	10.98	279	9.50	242	0.88	22	14.69	373	1-1/2"	8	150	68
YCF08P125E	8"	200	21.38	543	1.12	29	13.46	342	11.75	299	0.88	22	17.72	450	1-1/2"	8	235	107
YCF10P125E	10"	250	25.98	660	1.18	30	15.98	406	14.25	362	1.00	25	20.67	525	2"	12	369	168
YCF12P125E	12"	300	30.00	762	1.25	32	19.02	483	17.00	432	1.00	25	23.94	608	2"	12	552	250

1. All screens not available for all sizes.
2. For wire mesh screens, a P045 perf. liner is added to support the mesh screen.



78RV SERIES

THERMAL EXPANSION RELIEF VALVE



The Apollo® EXV Thermal Expansion Relief Valves are designed primarily to relieve excessive water pressure build-up caused by thermal expansion.

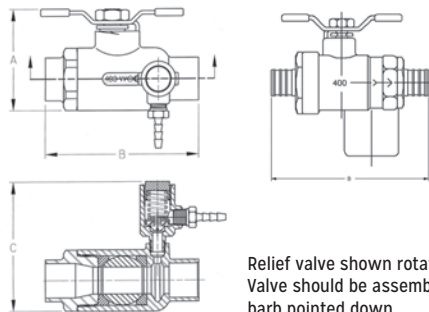
In a closed hot water piping system, as water is heated, thermal expansion occurs. The increase of pressure will exert unwarranted stress on the system components, which may reach harmful levels well before the emergency setting of the main relief valve is reached. By installing the Series EXV, it will control any amount of expanded water without causing pressure increase to exceed maximum setting.

FEATURES

- Prevents Excessive Pressure Build-Up
- Protects Plumbing Fixtures
- Extends Water Heater Life
- Compact and Lightweight Design
- Economical
- Lead-Free Option
- Easy to Install and Requires No Special Tools
- Corrosion Resistant
- 5 Year Warranty
- CSA B125.1 & B125.3
- City of Los Angeles

DIMENSIONS

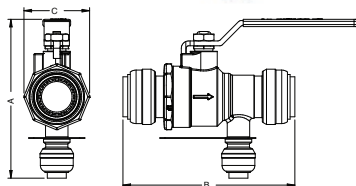
Part Number	Size (in.)	Dimensions (in.)			Wt. (lbs.)
		A	B	C	
78LF-300	3/4" Solder	4.0	3.9	3.3	.687
78LF-400	3/4" FNPT	3.9	2.8	3.3	.750
78LF-700	3/4" PEX	3.9	3.8	3.3	.750



Relief valve shown rotated 90°. Valve should be assembled w/hose barb pointed down.



PUSH Option



PART NUMBER MATRIX

78 / 78LF X	X	X RV
SIZE	PRESSURE SETTING	RELIEF VALVE CONNECTION
3 = 3/4" Solder	0 = 125 psig	4 = Hose Barb
4 = 3/4" NPT	1 = 100 psig	5 = PEX
7 = 3/4" PEX	2 = 80 psi	6 = Comp. Fitting
		7 = 1/2" NPT/SWT Fitting

DIMENSIONS PUSH OPTION

Size (in.)	Part Number	Dimensions (in.)			Port Dia. (in.)	Pressure
		A	B	C		
3/4" PUSH	78RV88P80	3.9	4.2	1.6	.750	80
3/4" PUSH	78RV88P100	3.9	4.2	1.6	.750	100
3/4" PUSH	78RV88P125	3.9	4.2	1.6	.750	125

EXPT SERIES

EXPANSION TANKS FOR POTABLE SYSTEMS



Apollo® Model EXPT expansion tanks are designed for use in domestic systems installations for sanitary hot water applications to absorb pressure increases from the heating process.

FEATURES

- Food quality chlorobutyl diaphragm
- Drawn Steel Construction
- Durable Triple Coated Almond Epoxy Finish
- Field Adjustable Pressure Setting
- Corrosion Resistant Liner Connection
- Lead Free Certified
- Maximum Pressure: 150 psi
- Maximum Temperature: 200°F
- Pre-Charge Pressure: 35 psig
- NSF 61
- IAPMO

Model Number	Part Number	Capacity (gal.)	Expansion Volume (gal.)	Connection Size (NPT)	Diameter (in.)	Height (in.)	Weight (lbs.)
EXPT2	40XT1-04	2.10	1.2	3/4	8.0	12.5	4.7
EXPT5	40XT3-04	4.50	3.2	3/4	11.0	15.5	8.0
EXPT10	40XT5-04	10.0	5.2	3/4	11.5	20.0	13.5



DIFFERENTIAL PRESSURE GAUGE TEST KIT



The Apollo® Backflow Preventer Test Kits are compact, lightweight and portable testing devices. They come equipped with a gauge, hoses (with integral filters) and all required adapter fittings. Also included is a flexible or adjustable strap for hanging the gauge, laminated test procedures and a molded plastic carrying case with foam inserts.

TK3

These are three-valve test kits used for testing all DCV, RPZ, PVB & SVB backflow preventers. Differential pressure type with a dual scale of 0-15 psid/0-100kPa differential pressure range with a ± 0.2 psig (Descending) accuracy. Maximum working pressure 200 psig.

TK5

This is a five-valve test kit used for testing all DCV, RPZ, PVB & SVB backflow preventers. The five valve test kit is similar to the three valve kit except it has two additional valves that make it possible to bleed lines without disconnecting hoses.

Factory No.	Model No.	Application	Wt./Ea	Wt./Case
40-200-TKU	TK3	ALL DCV, RPZ, PVB & SVB	6.1	9.5
40-200-TK5U	TK5	ALL DCV, RPZ, PVB & SVB	6.1	9.5

Brass fitting which installs onto Backflow Preventer Testcocks by hand. No tools required. No Teflon™ tape to deal with. Provides quicker testing. Sets of three fittings with o-rings for 1/4" SAE connections to the test kits. Packaged in a reclosable plastic bag.

Size	Factory No.	Model No.	Backflow Application
1/4" SAE x 1/4" NPT	40-000-TFK	TFK14	1/4" - 2"
1/4" SAE x 1/2" NPT	40-001-TFK	TFK12	2-1/2" - 6"
1/4" SAE x 3/4" NPT	40-002-TFK	TFK34	8" - 12"
Set of all 3 sizes	40-003-TFK	TFKSET	1/4" - 12"

HCPG SERIES

3/4" HOSE CONNECTION PRESSURE GAUGE



The Apollo® Hose Connection Pressure Gauge is designed to measure water pressure through a 3/4" hose thread connection. It consists of an indicator needle to determine maximum pressure.

Ordering No. - W807800 Model No. - HCPG

FEATURES

- 2-1/2" Face Dial
- 0 - 300 psig pressure Range
- Swivel Type 3/4" Hose Connection
- Adjustable Indicator Needle
- Temperature Range: 50°F - 130°F
- Wt./Ea. 46 lbs.

STI SERIES

SIGHT TUBE



The kit allows for visual inspection during testing, provides an extension to the check valve body and offers quick connection with the 90° elbow. Provides means to static test double check backflow preventers.

Ordering No. - 40-200-ST Model No. - STI

40 200 BV

BLEED VALVE

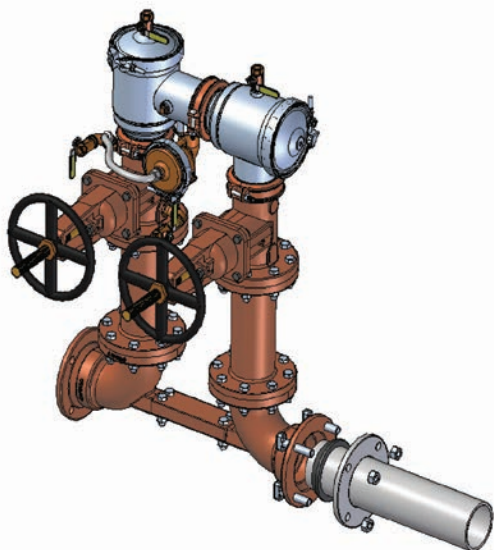


Test valve used to provide accurate readings in field test of the Double Check Valve backflow preventers. Benefits include quick connections, quick bleed off of testing lines and useful in tight locations.

Ordering No. - 40-200-BV



VALVE SETTERS



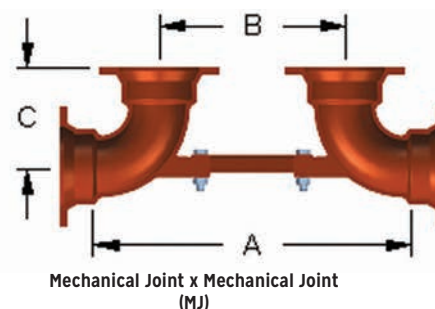
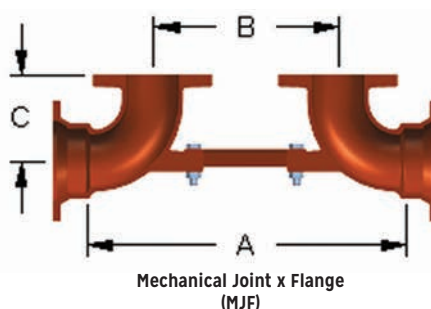
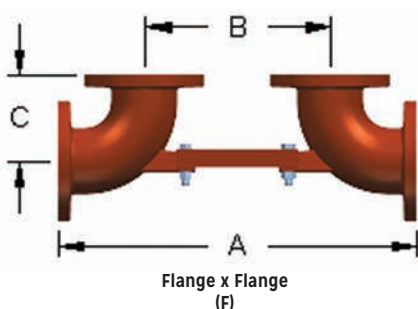
Apollo® 4An Setters are specifically designed to match the mounting dimensions of the 4An products. The three-piece configuration simplifies installation and eliminates the need for thrust blocks between the elbows. All hardware is stainless steel and the entire unit is FDA Epoxy coated inside and out. The mechanical joint connections are to AWWA C153 and the flanges are to ANSI B16.1 Class 125.

STANDARD MATERIALS LIST

SETTER BODY	Ductile Iron (ASTM A536)
SETTER CENTER BRACE	Hot Rolled Steel (ASTM A36)
SETTER BOLTS/NUTS	Stainless Steel
COATING	Fusion-Bonded FDA Grade Epoxy Internal & External

Contact local water authorities for installation/service requirements.

The Apollo® 4An Valve Setter is shown in a typical installation. It is shipped in three separate pieces along with four nuts and four bolts (for Center Brace). Mechanical Joint accessories such as those shown are for reference only and are not included with the 4An Valve Setter.



PART NUMBER MATRIX

4An 00 X	X
SIZE	TYPE
9 - 2-1/2"	F = Flange x Flange
0 - 3"	MJF = Mechanical Joint x Flange
A - 4"	MJ = Mechanical Joint x Mechanical Joint
C - 6"	
E - 8"	
G - 10"*	
H - 12"*	* Flange x Flange only

DIMENSIONS

Size	Model	A	B	C	Wt./Ea
2-1/2"	F	23-1/2	12-1/2	5-1/2	43.7
	F	23-1/2	12-1/2	5-1/2	50.4
3"	MJF	21-1/2	12-1/2	5-1/2	50.4
	MJ	21-1/2	12-1/2	7	50.7
4"	F	27	14	6-1/2	87.1
	MJF	24	14	6-1/2	71.1
6"	MJ	24	14	7-1/2	65.1
	F	32	16	8	147.5
8"	MJF	29	16	8	115.3
	MJ	29	16	9	107.1
10"	F	36-1/2	18-1/2	9	236.30
	MJF	33-1/2	18-1/2	9	216.40
12"	MJ	33-1/2	18-1/2	10	193.20
	F	43.0	21	11.0	388
	F	50-3/4	26-3/4	12	547



SHUT-OFF VALVES



Flange x Groove

NON-RISING STEM (NRS)

Size	Flange x Groove	Groove x Groove
2-1/2"	W286800	W287400
3"	W286900	W287500
4"	W287000	W287600
6"	W287100	W287700
8"	W287200	W287800
10"	W287300	W287900
12"		

AWWA



Flange x Groove

OUTSIDE STEM & YOKE (OS&Y)

Size	Flange x Groove	Groove x Groove
2-1/2"	W288700	W289300
3"	W288800	W289400
4"	W288900	W289500
6"	W289000	W289600
8"	W289100	W289700
10"	W289200	W289800
12"		

AWWA, UL Listed, ULC Listed, FM Approved

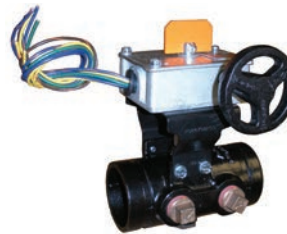


Flange x Groove

POST INDICATOR (PI)

Size	Flange x Groove	Groove x Groove
3"	W912500	W923600
4"	W912600	W923700
6"	W912700	W923800
8"	W912800	W923900
10"	W912900	

UL Listed, ULC Listed, FM Approved



MONITORED BUTTERFLY (BG)

Size	Groove x Groove
2-1/2"	W-5244-00
3"	W-5245-00
4"	W-5246-00
6"	W-5247-00
8"	W-5248-00
10"	W-5249-00

UL Listed, ULC Listed, FM Approved



FNPT x FNPT

77 SERIES BRONZE BALL VALVE (BV)

Size	Inlet FxFNPT	Outlet FxFNPT	Inlet FxFNPT	Outlet FxFNPT
4A Series		4ALF Series		
1/2"	77B-103-85	77C-103-A4	77BLF-103-85	77CLF-103-85
3/4"	77B-104-83	77C-104-83	77BLF-104-83	77CLF-104-83
1"	77B-105-83	77C-105-83	77BLF-105-83	77CLF-105-83
1-1/4"	77B-106-84	77C-106-84	77BLF-106-84	77CLF-106-84
1-1/2"	77B-107-84	77C-107-84	77BLF-107-84	77CLF-107-84
2"	77B-108-84	77C-108-84	77BLF-108-84	77CLF-108-84

Size	Inlet FxFNPT	Outlet FxFNPT	Inlet FxFNPT	Outlet FxFNPT
4A Series Union Ball Valves		4ALF Series Union Ball Valves		
1/2"	77B-303-85	77C-303-85	77BLF-303-85	77CLF-303-85
3/4"	77B-304-83	77C-304-83	77BLF-304-83	77CLF-304-83
1"	77B-305-83	77C-305-83	77BLF-305-83	77CLF-305-83
1-1/4"	77B-306-84	77C-306-84	77BLF-306-84	77CLF-306-84
1-1/2"	77B-307-84	77C-307-84	77BLF-307-84	77CLF-307-84
2"	77B-308-84	77C-308-84	77BLF-308-84	77CLF-308-84

91 SERIES BRONZE BALL VALVE (BV)

Size	Inlet FxFNPT	Outlet FxFNPT	Inlet FxFNPT	Outlet FxFNPT
4A A Series		4ALF A Series		
1/2"	91B-103-85	91C-103-85	91BLF-103-85	91CLF-103-85
3/4"	91B-104-83	91C-104-83	91BLF-104-83	91CLF-104-83
1"	91B-105-83	91C-105-83	91BLF-105-83	91CLF-105-83
1-1/4"	91B-106-84	91C-106-84	91BLF-106-84	91CLF-106-84
1-1/2"	91B-107-84	91C-107-84	91BLF-107-84	91CLF-107-84
2"	91B-108-84	91C-108-84	91BLF-108-84	91CLF-108-84

Size	Inlet FxFNPT	Outlet FxFNPT	Inlet FxFNPT	Outlet FxFNPT
4A A Series Union Ball Valves		4ALF A Series Union Ball Valves		
-	-	-	-	-
3/4"	91B-304-83	91C-304-83	91BLF-304-83	91CLF-304-83
1"	91B-305-83	91C-305-83	91BLF-305-83	91CLF-305-83
1-1/4"	91B-306-84	91C-306-84	91BLF-306-84	91CLF-306-84
1-1/2"	91B-307-84	91C-307-84	91BLF-307-84	91CLF-307-84
2"	91B-308-84	91C-308-84	91BLF-308-84	91CLF-308-84

TESTCOCKS

TESTCOCKS FOR SMALL BACKFLOW



Male x FNPT	LEAD FREE Male x FNPT
1/8" x 1/4" 78 290 01	1/8" x 1/4" 78LF 290 01
1/4" x 1/4" 78 291 01	1/4" x 1/4" 78LF 291 01
Male x SAE Flare	LEAD FREE Male x SAE Flare
1/8" x Flare 78 292 01	1/8" x Flare 78LF 292 01
1/4" x Flare 78 293 01	1/4" x Flare 78LF 293 01



LEAD FREE TESTCOCKS FOR LARGE BACKFLOW

2-1/2" to 4" SS Assemblies	
SS Cover Testcock	77CLF803A0
SS Body Testcock	77CLF80310
Shutoff Valves T/C	77CLF10310
6" SS Assemblies	
SS Cover Testcock	77CLF804A0
SS Body Testcock	77CLF80410
Shutoff Valves T/C	77CLF10410
8" SS Assemblies	
Cover & Body T/C	77CLF80410
Shutoff Valves T/C	77CLF10410
10" and 12" Assemblies	
All Testcocks	77CLF10410



AIR GAP DRAIN



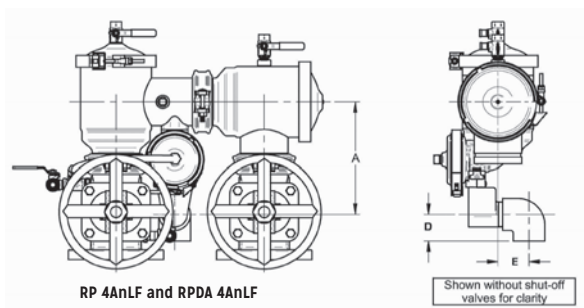
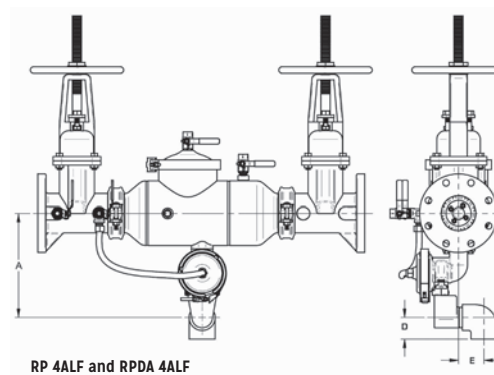
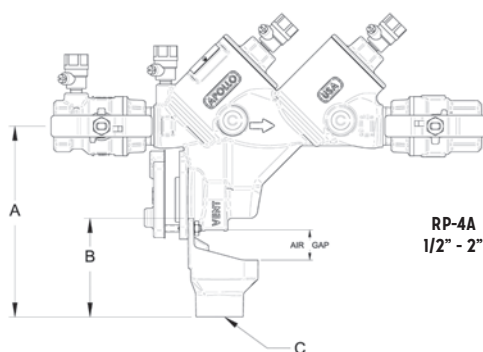
For installation with RP 4A, RPDA 4A, RP 4An, RPDA 4An, and RP 40S Series Reduced Pressure Principle backflow preventers.

The Apollo® Air Gap Drain (AGD) is designed to funnel minor relief valve discharges, due to line pressure fluctuations and /or minor check valve fouling, into the drainage system. Drain piping is easily attached to the drain's threaded bottom.

Note: The AGD is designed to collect expected minor discharges due to fouled checks or pressure fluctuations but not the full discharge capacity of the relief valve.

DIMENSIONS See Page 71 For Relief Valve Discharge Rates

RP4A Series	AGD4A Model No.	A (In.)	A (mm.)	B (In.)	B (mm.)	Exit Piping Threads C	OD of C	D (In.)	D (mm.)	E (In.)	E (mm.)	Wt. Lbs.	Wt. Kgs.
1/2", 3/4", 1"	AGD4A1	6.5	165	3.4	86	1" FNPT	1-1/4" Pipe					.1	.05
1-1/4" - 1-1/2"	AGD4A112	8.5	216	4.1	104	1-1/2" FNPT	2" Pipe					.20	.10
2"	AGD4A2	10.0	254	5.3	135	2" FNPT	2-1/2" Pipe					.35	.16
2-1/2"	AGD4A6	11.28	287			2" MNPT	2" FNPT	2.34	59	2.78	71	1.27	.58
3"	AGD4A6	11.28	287			2" MNPT	2" FNPT	2.34	59	2.78	71	1.27	.58
4"	AGD4A6	12.02	305			2" MNPT	2" FNPT	2.34	59	2.78	71	1.27	.58
6"	AGD4A6	13.32	338			2" MNPT	2" FNPT	2.34	59	2.78	71	1.27	.58
8"	AGD4A8	21.3	541	9.1	231	2-1/2" NPT	3" Pipe			1.05	.48		
10"	AGD4A12IN	26.3	668	7.8	198	3" NPT	4"					4.0	1.8
12"	AGD4A12IN	26.3	668	7.8	198	3" NPT	4"					4.0	1.8
RP4An Series													
2-1/2"	AGD4A6	10.87	276			2" MNPT	2" FNPT	2.34	59	2.78	71	1.27	.58
3"	AGD4A6	10.87	276			2" MNPT	2" FNPT	2.34	59	2.78	71	1.27	.58
4"	AGD4A6	10.51	267			2" MNPT	2" FNPT	2.34	59	2.78	71	1.27	.58
6"	AGD4A6	11.76	299			2" MNPT	2" FNPT	2.34	59	2.78	71	1.27	.58
8"	AGD4A8	19.1	485	9.1	231	2-1/2" NPT	3" Pipe			1.05	.48		
10"	AGD4A12IN	22.7	577	7.8	198	3" NPT	4"					4.0	1.8
12"	AGD4A12IN	23.3	591	7.8	198	3" NPT	4"					4.0	1.8





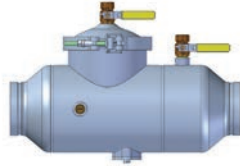
AVAILABLE ASSEMBLY SHUT-OFF VALVE OPTIONS

Part #
Option

Model #
Option

Less Shut-Off Valves

-01 -LS

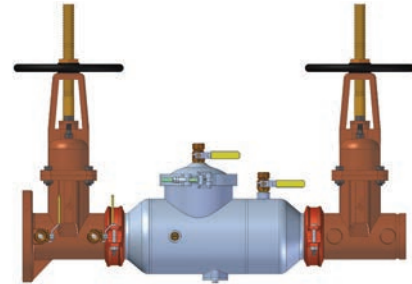


Part #
Option

Model #
Option

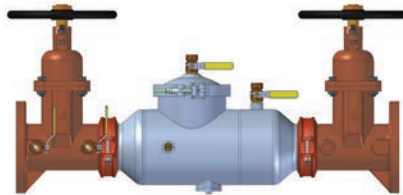
OS&Y Flange x OS&Y Groove

-07 -0FG



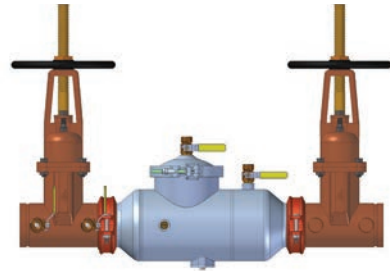
NRS Flange x NRS Flange

-02 -NF



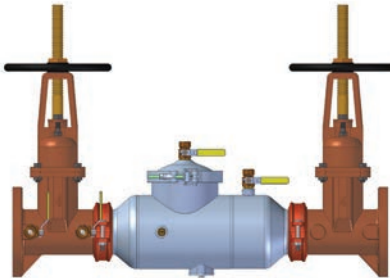
OS&Y Groove x OS&Y Groove

-08 -0G



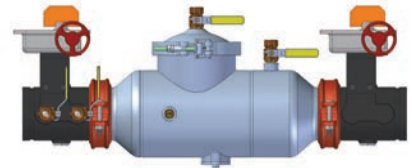
OS&Y Flange x OS&Y Flange

-03 -0F



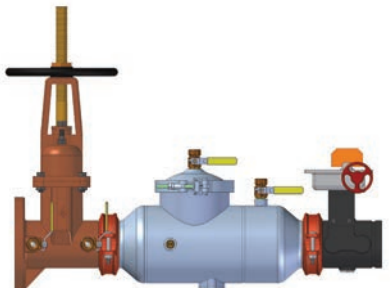
Monitored Butterfly Groove x Monitored Butterfly Groove

-09 -BG



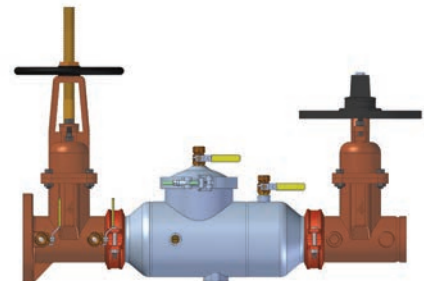
OS&Y Flange x Monitored Butterfly Grooved

-04 -0FBG



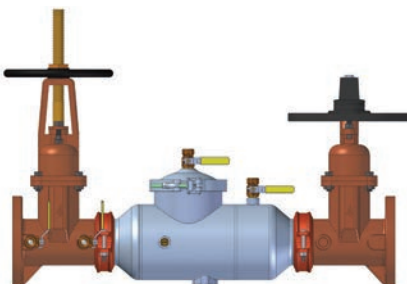
OS&Y Flange x Post Indicator Groove

-010 -0FIG



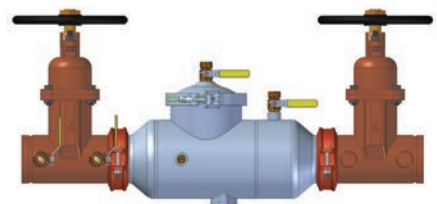
OS&Y Flange x Post Indicator Flange

-06 -0FPIF



NRS Groove x NRS Groove

-011 -NG



AVAILABLE ASSEMBLY SHUT-OFF VALVE OPTIONS



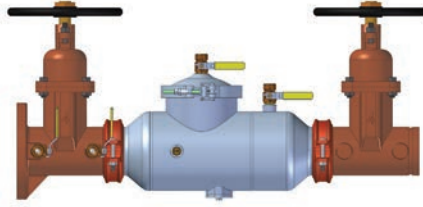
"Apollo" BACKFLOW PREVENTION

Part #
Option

Model #
Option

NRS Flanged x NRS Groove

-012 -NFG

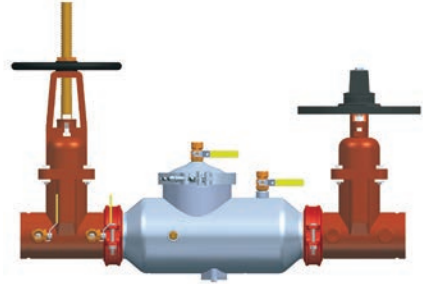


Part #
Option

Model #
Option

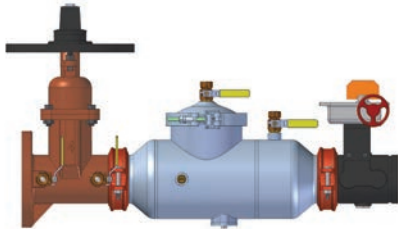
OS&Y Groove x Post Indicator Groove

-018 -09PIG



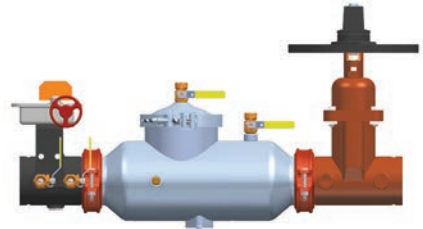
Post Indicator Flanged x Monitored Butterfly Groove

-013 -PIFBVG



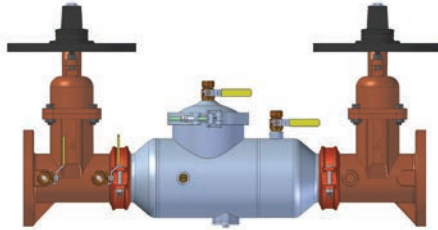
Monitored Butterfly Groove x Post Indicator Groove

-019 -BVGPIG



Post Indicator Flange x Post Indicator Flanged

-014 -PIF



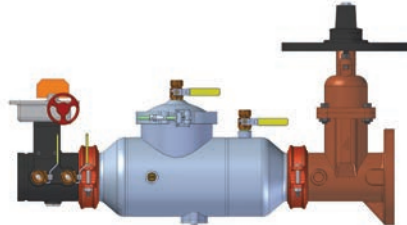
Post Indicator Flange x OS&Y Flange

-020 -PIFOF



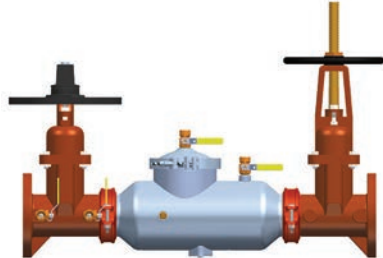
Monitored Butterfly Groove x Post Indicator Flange

-016 -BVGPIF



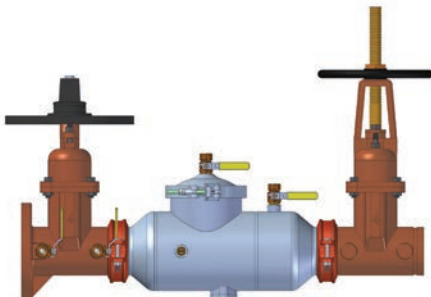
Post Indicator Groove x OS&Y Flange

-021 -PIGOF



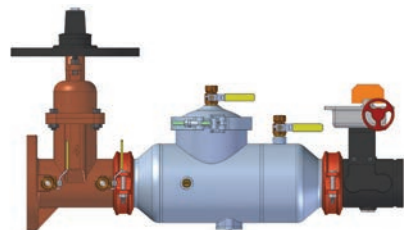
Post Indicator Flange x OS&Y Groove

-017 -FPIOG



Post Indicator Grooved x Monitored Butterfly Grooved

-022 -PIGBVG

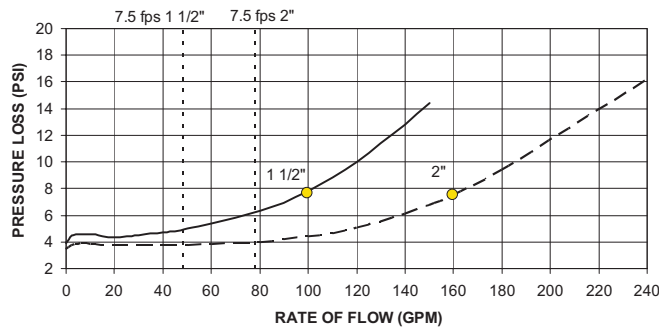
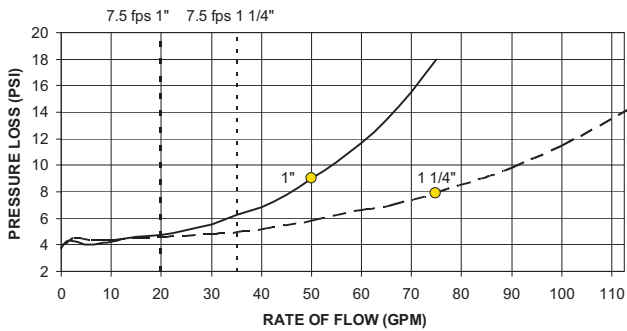
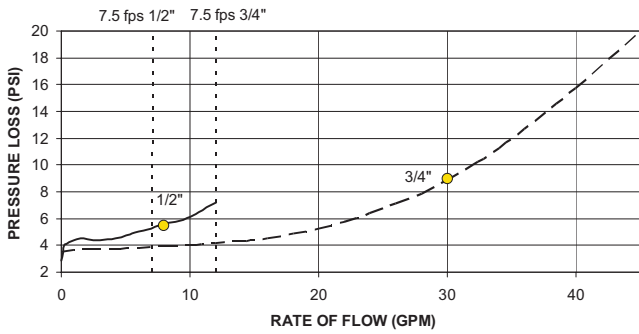




DC 4A / DCLF 4A

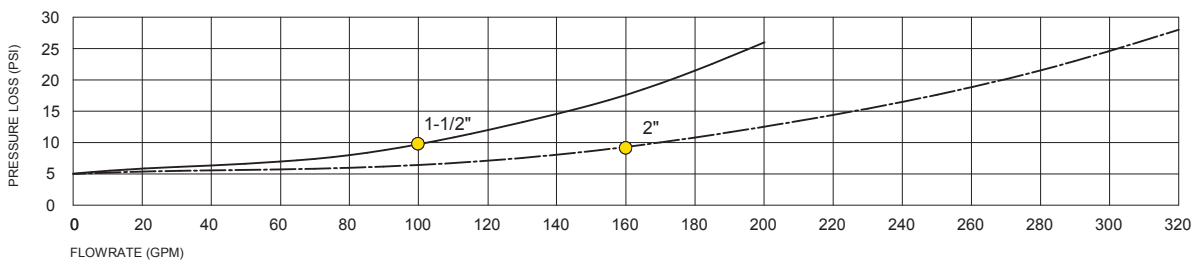
FLOW CURVES

Pressure loss versus flow data as determined by independent approval agencies.
(See Notes on page 70)



DCDA2 4A / DCDA2LF 4A

FLOW CURVES

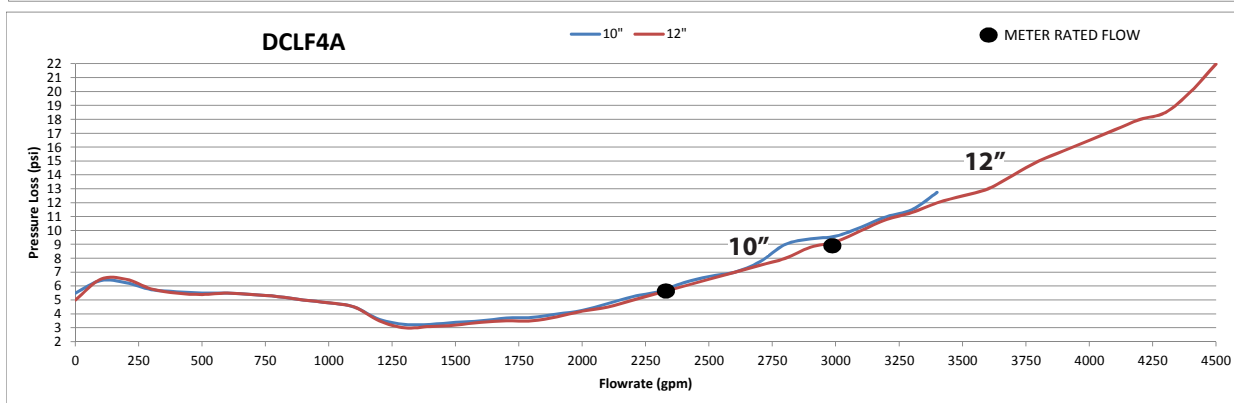
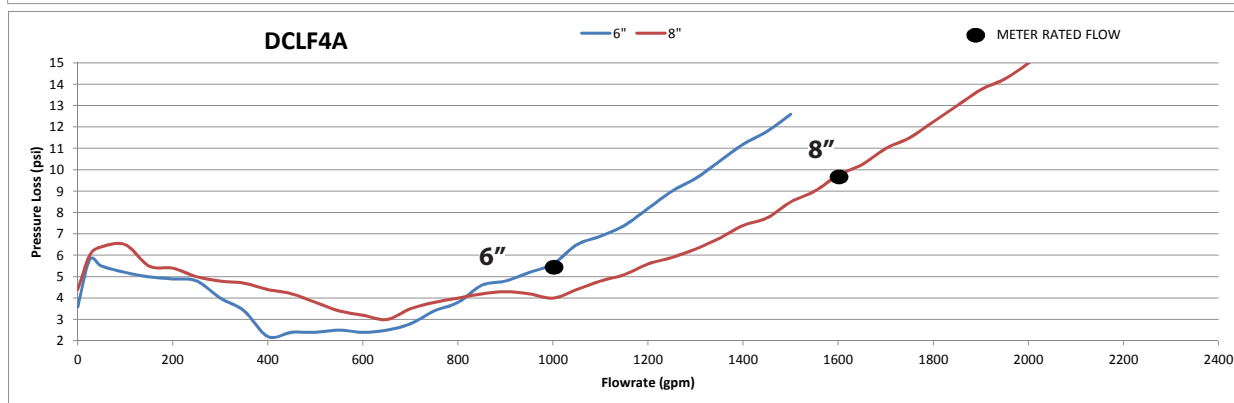
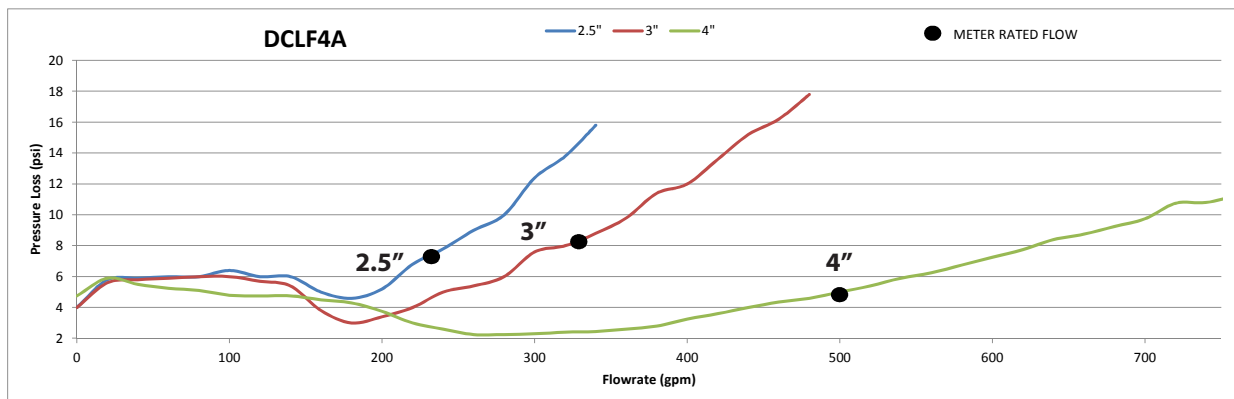


● Meter Rated Flow



DCLF 4A FLOW CURVES

Pressure loss versus flow data as determined by independent approval agencies. (See Notes on page 70)



● Meter Rated Flow

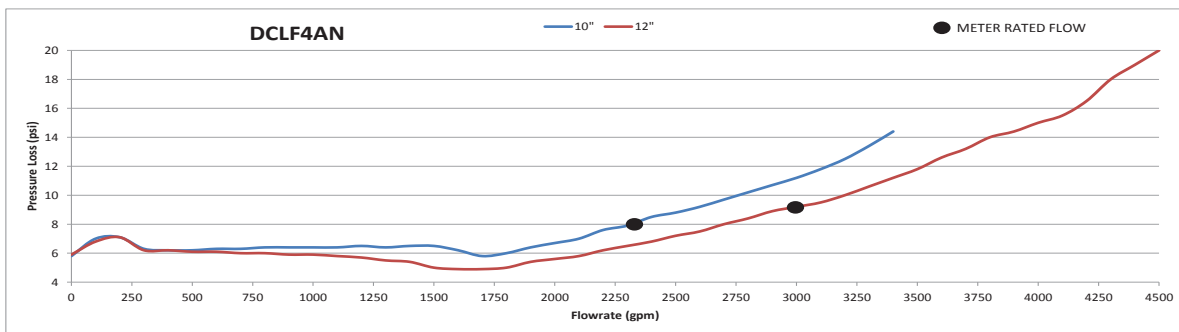
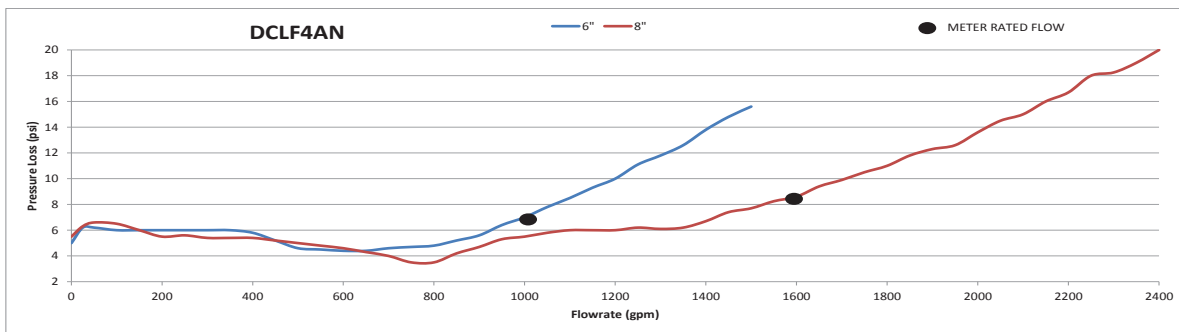
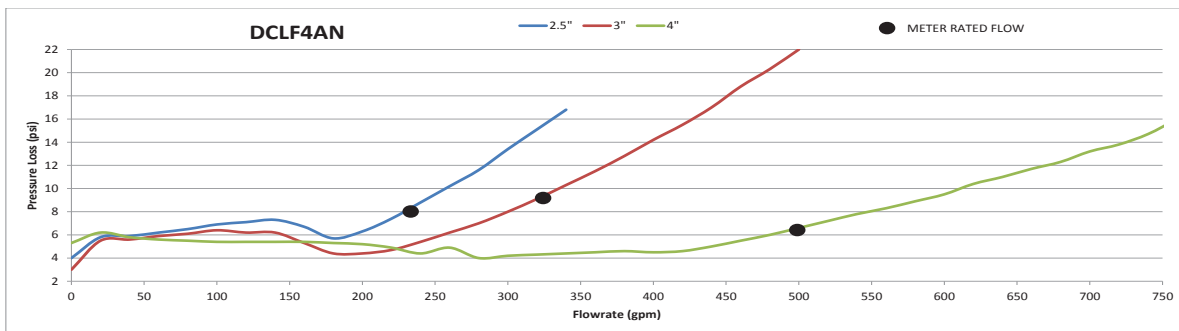




DCLF 4An

FLOW CURVES

Pressure loss versus flow data as determined by independent approval agencies.
(See Notes on page 70)

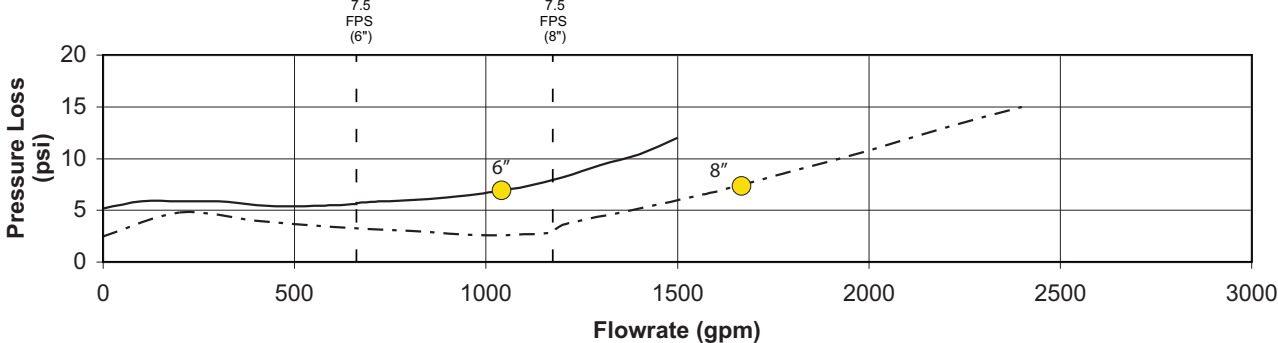
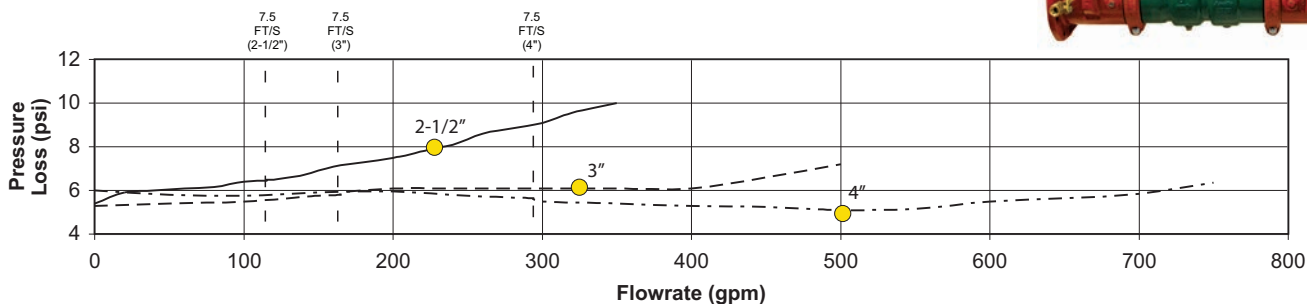
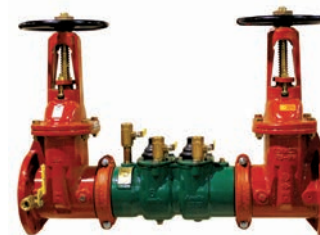


● Meter Rated Flow



DC 4SG / DCDA 4S FLOW CURVES

Pressure loss versus flow data as determined by independent approval agencies. (See Notes on page 70)

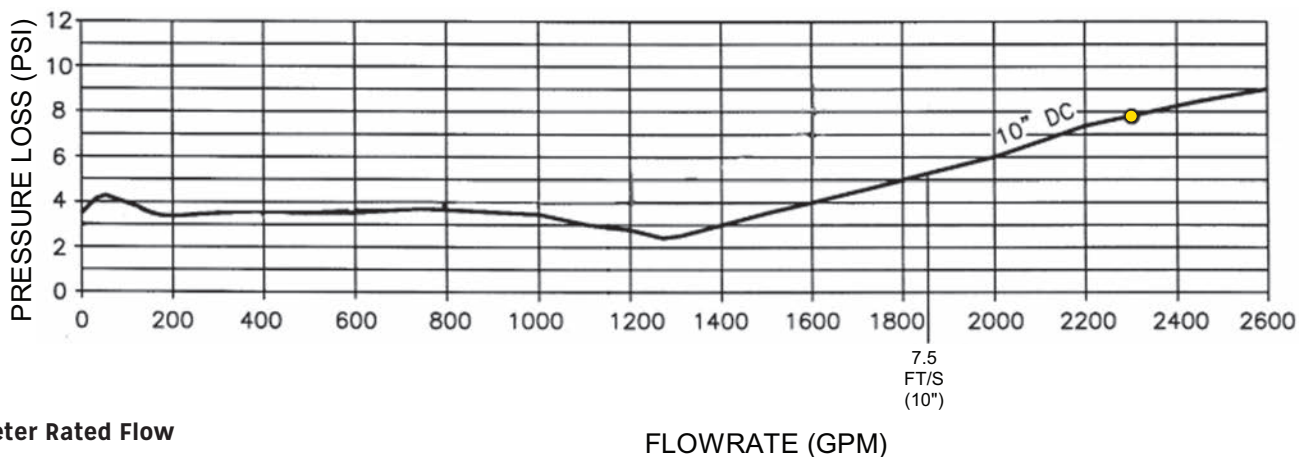


DC 4S / DCDA 4S FLOW CURVES

(DC 4S 10"- Flanged Internal Connections Only)



10"



● Meter Rated Flow

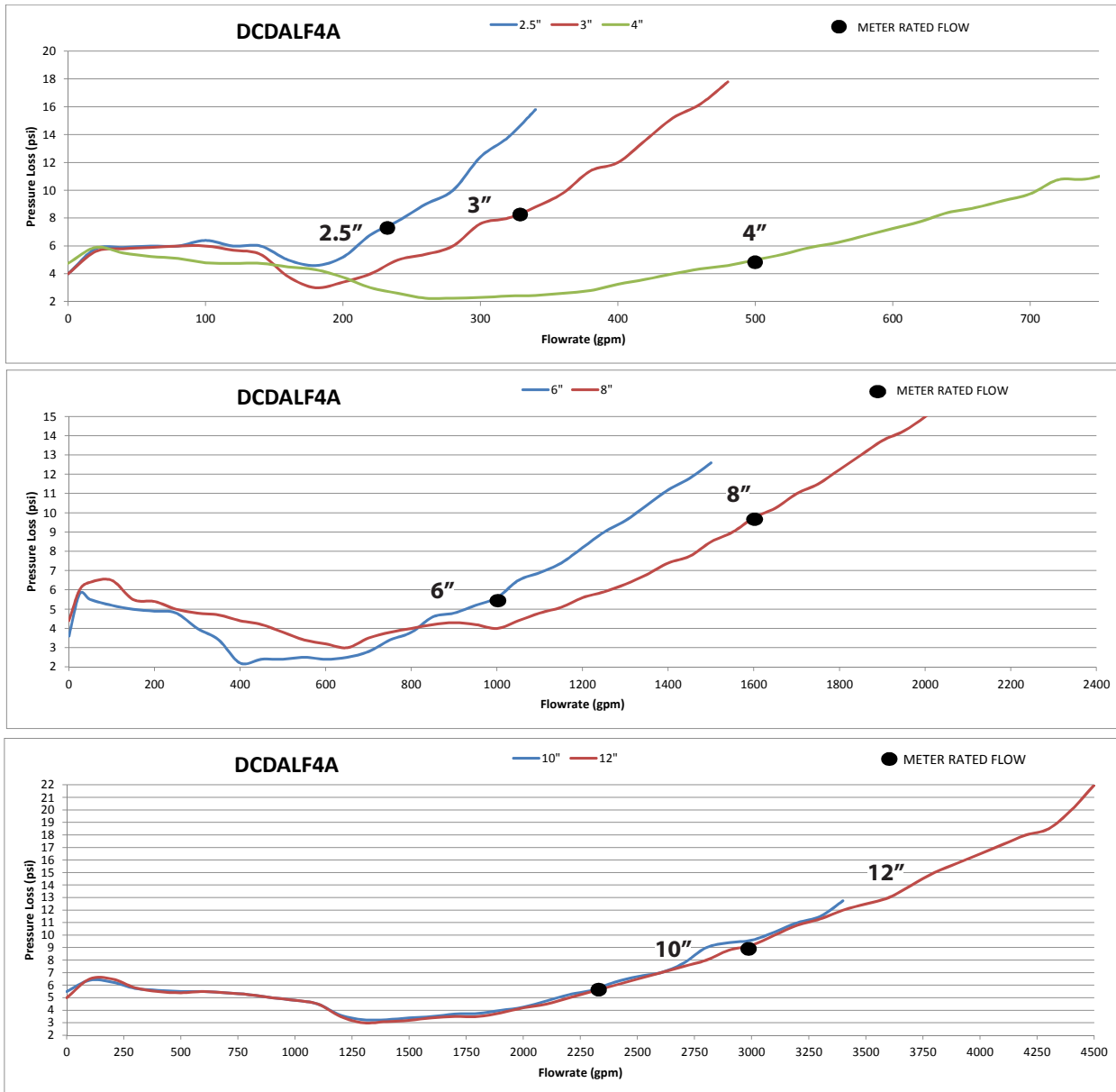




DCDALF 4A / DCDA2LF 4A

FLOW CURVES

Pressure loss versus flow data as determined by independent approval agencies.
(See Notes on page 70)

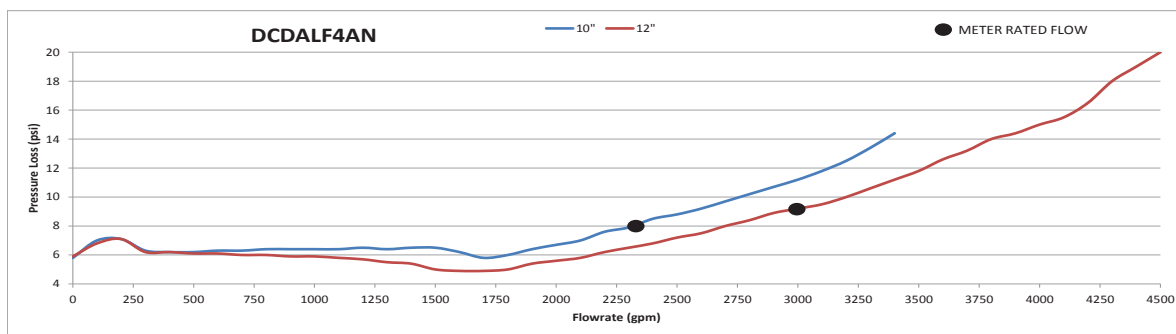
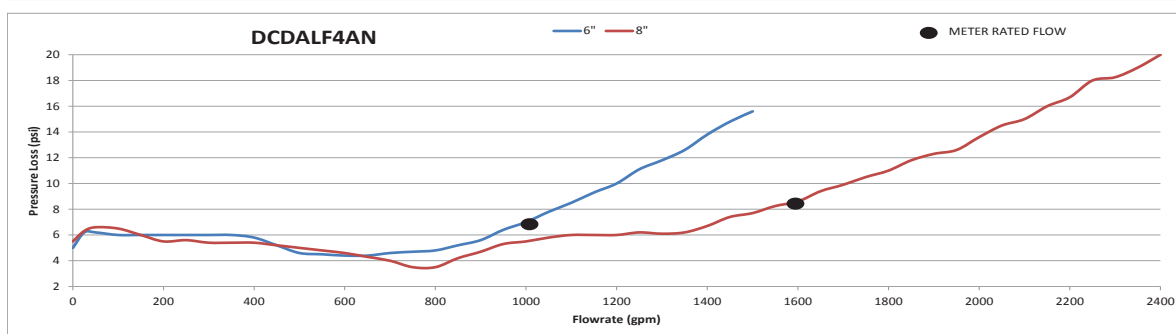
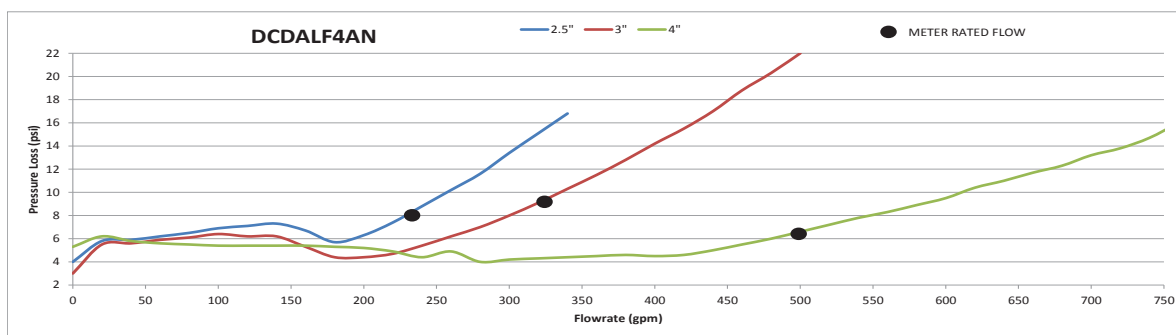


● Meter Rated Flow



DCDALF 4An / DCDA2LF 4An FLOW CURVES

Pressure loss versus flow data as determined by independent approval agencies.
(See Notes on page 70)

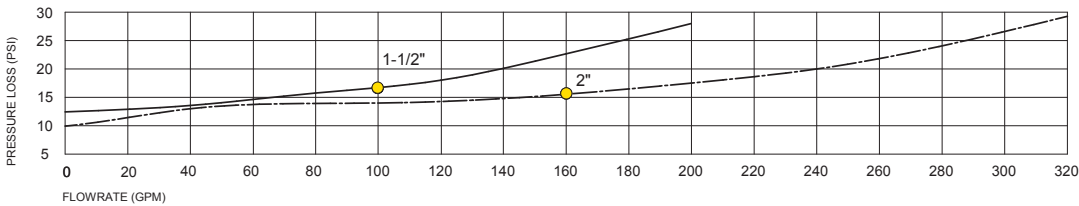
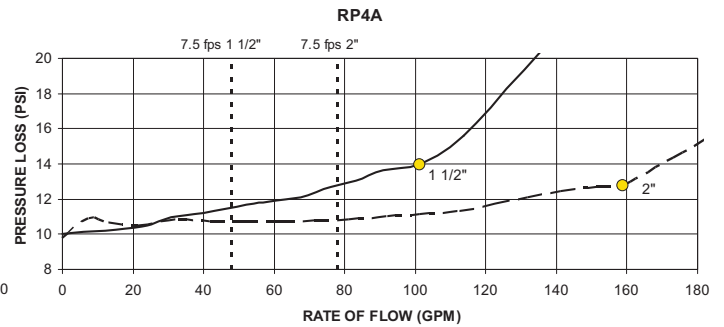
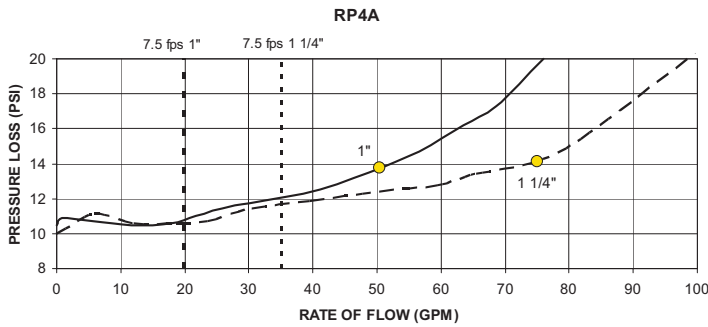
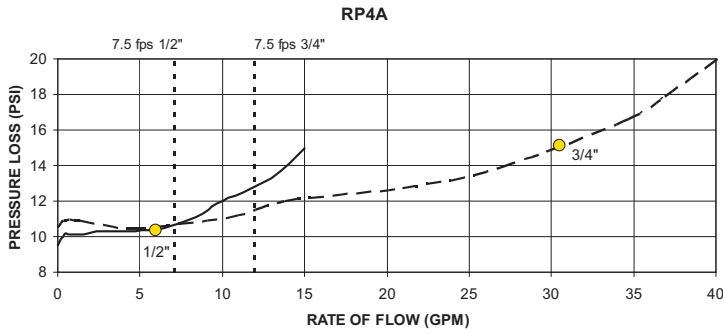


● Meter Rated Flow

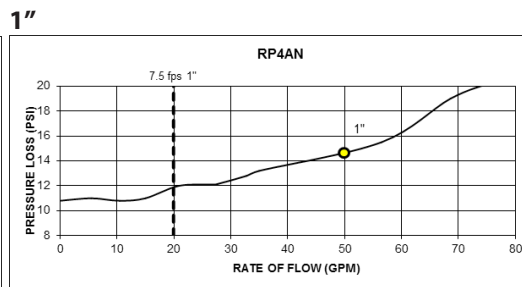
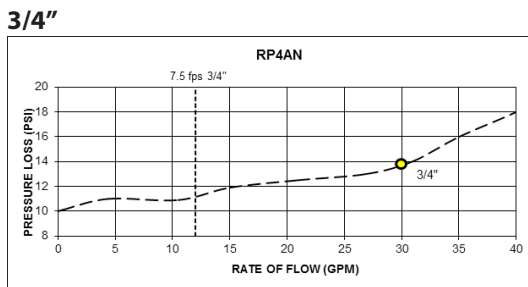


RP 4A / RPLF 4A FLOW CURVES

Pressure loss versus flow data as determined by independent approval agencies. (See Notes on page 70)



RP 4AN / RPLF 4AN FLOW CURVES



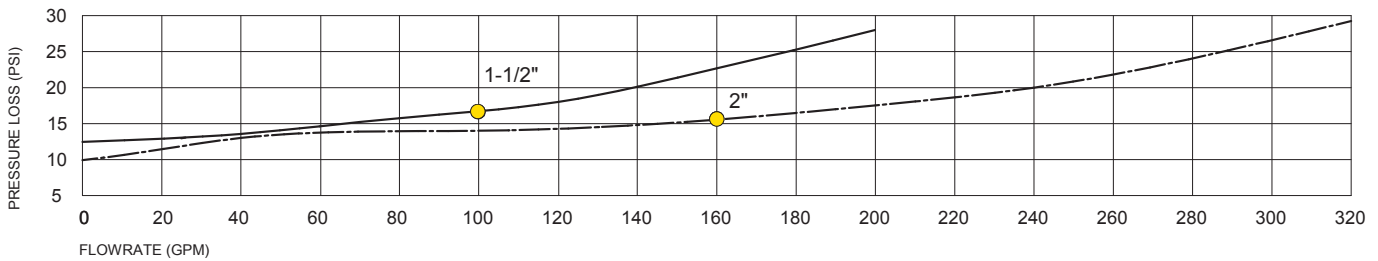
● Meter Rated Flow



RPDA2/RPDA2LF 4A SERIES

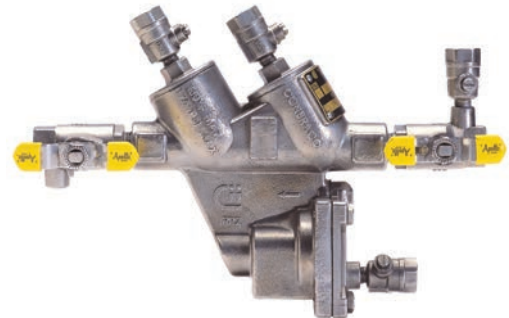
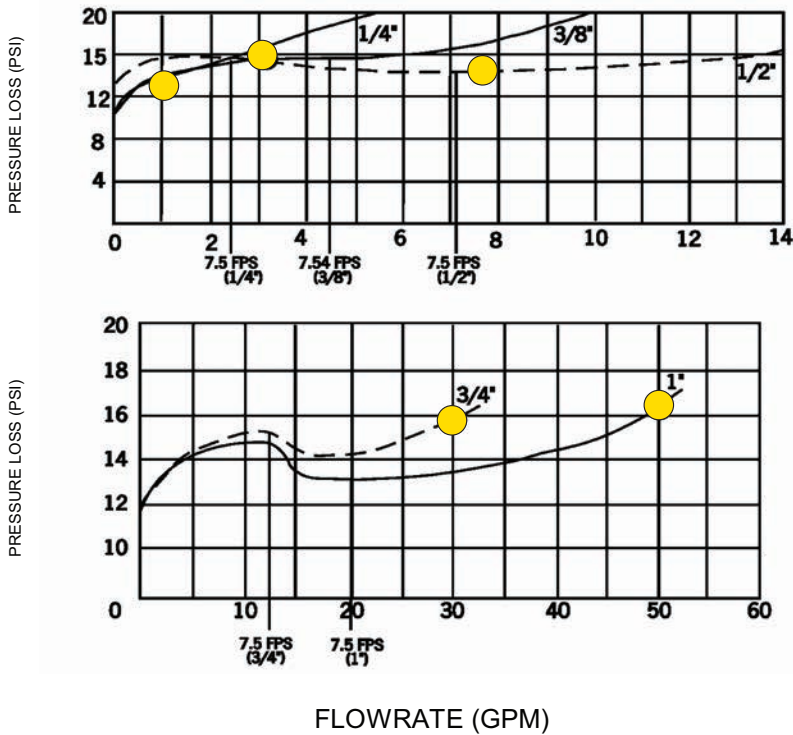
FLOW CURVES

Pressure loss versus flow data as determined by independent approval agencies.
(See Notes on page 70)



RP 40S

FLOW CURVES



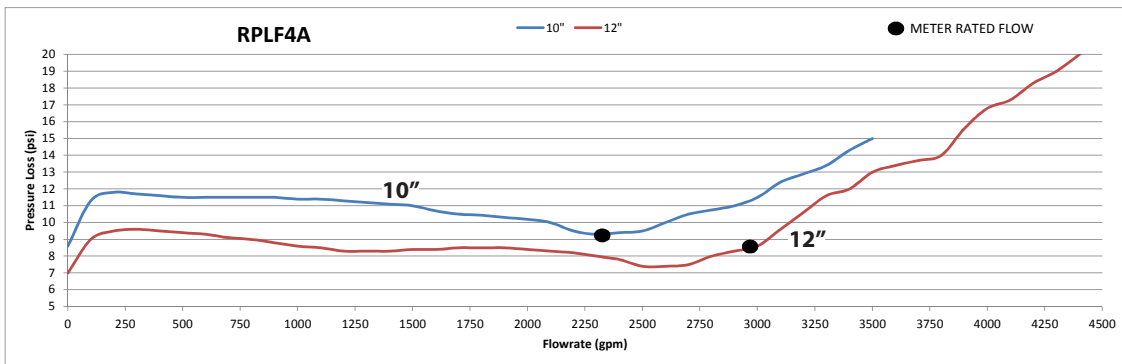
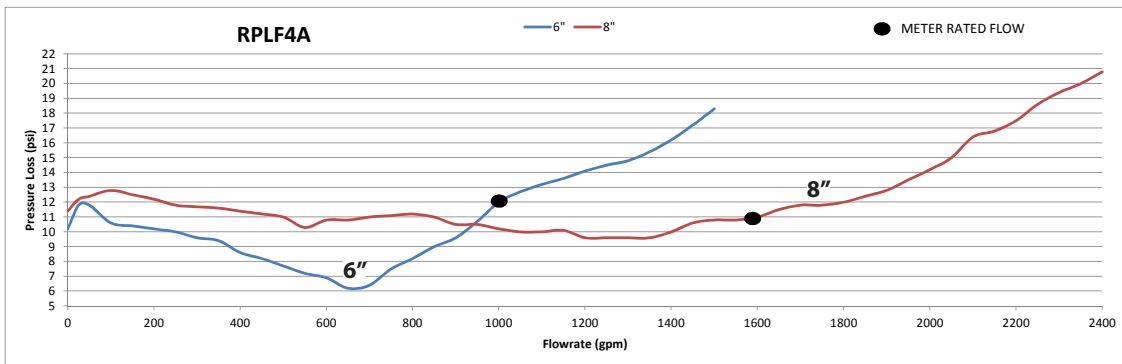
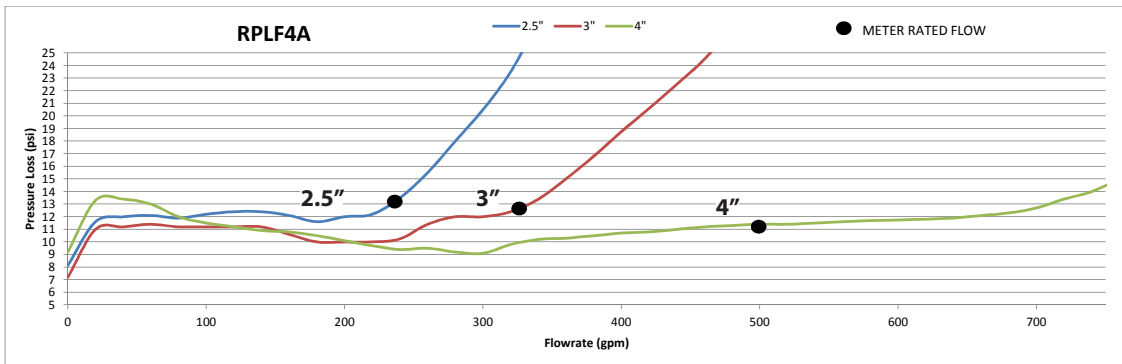
● Meter Rated Flow



RPLF 4A

FLOW CURVES

Pressure loss versus flow data as determined by independent approval agencies.
(See Notes on page 70)



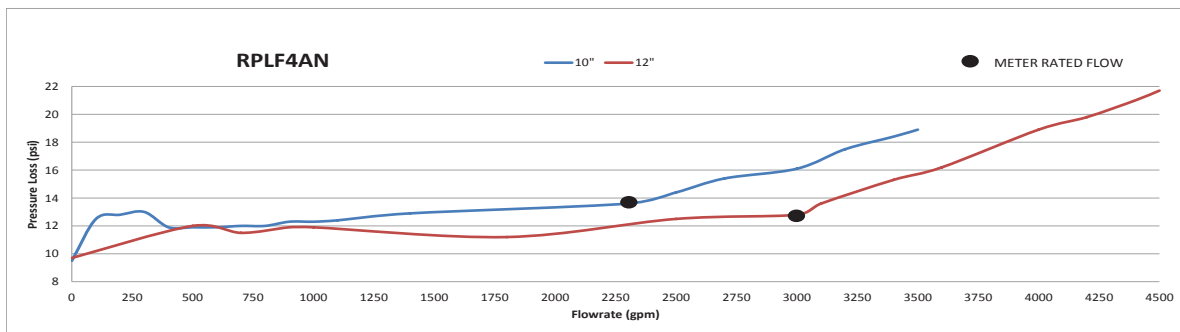
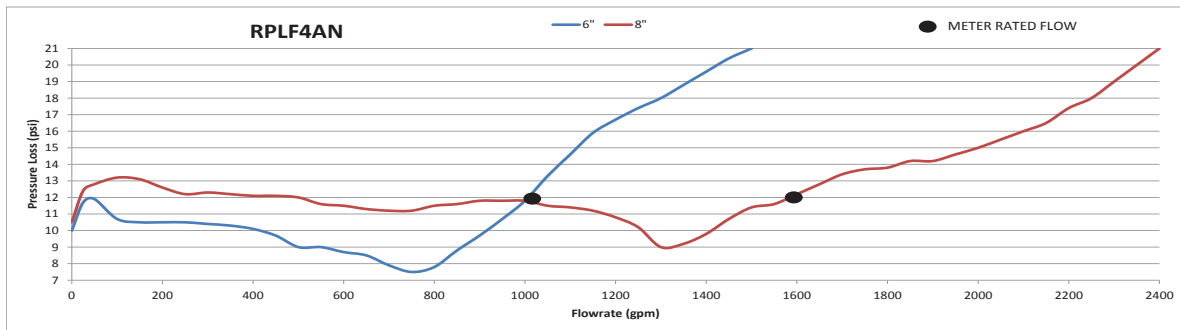
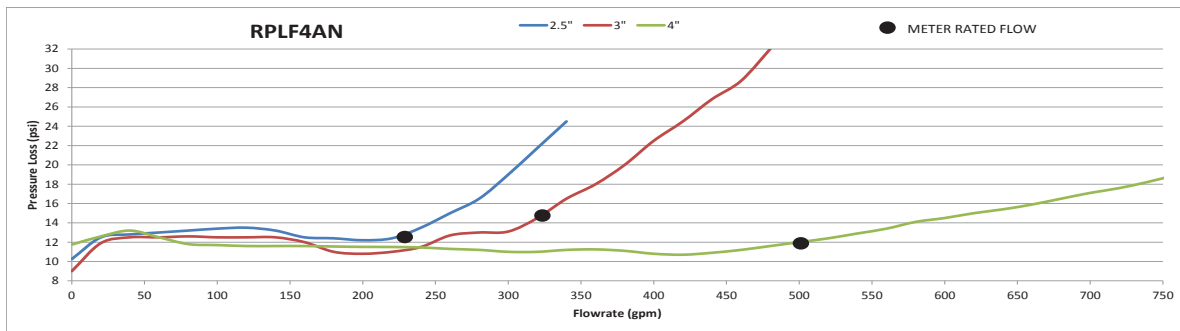
● Meter Rated Flow



RPFL 4An

FLOW CURVES

Pressure loss versus flow data as determined by independent approval agencies.
(See Notes on page 70)



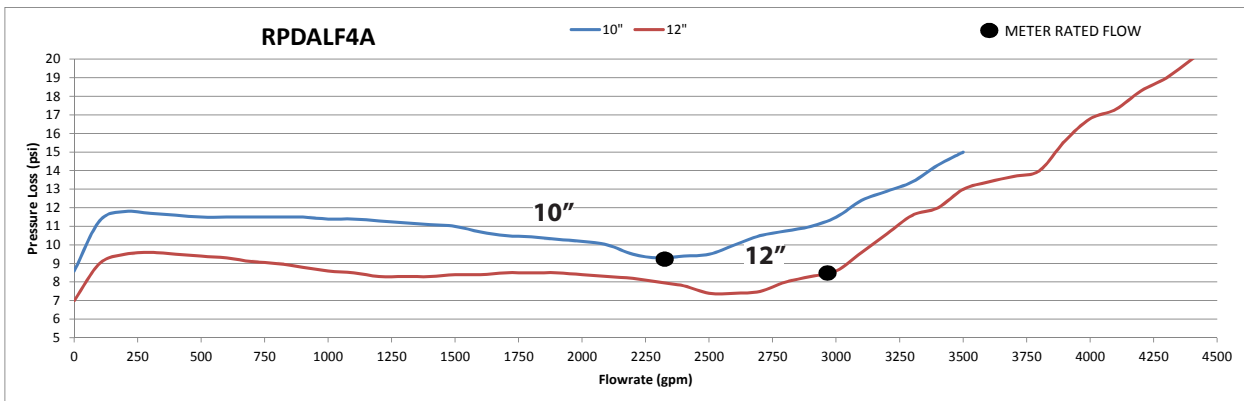
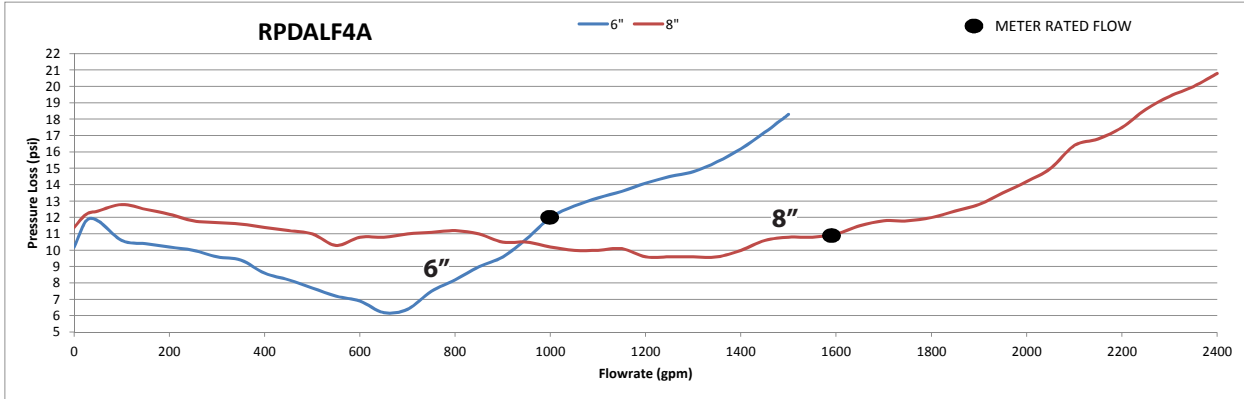
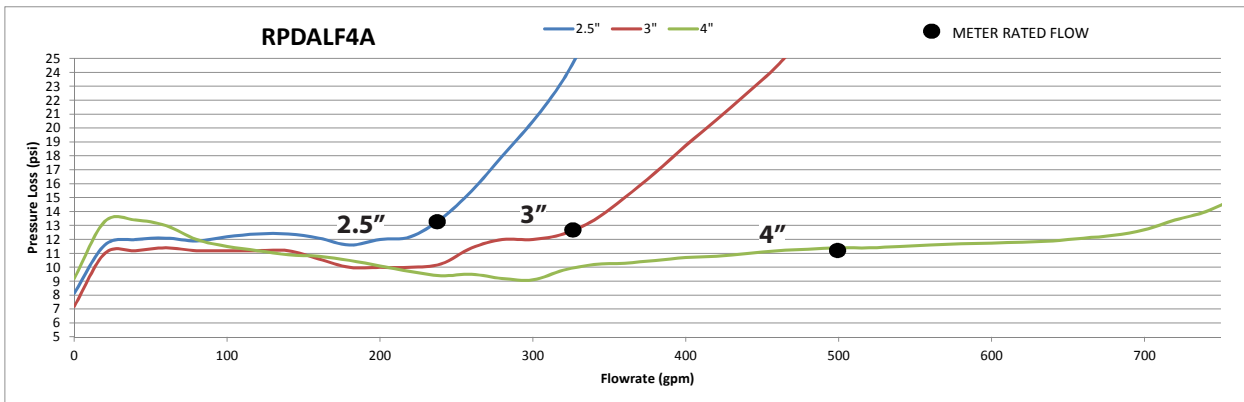
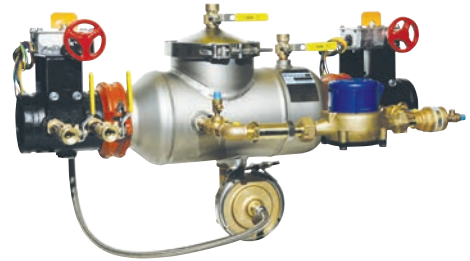
● Meter Rated Flow



RPDALF 4A / RPDA2LF 4A

FLOW CURVES

Pressure loss versus flow data as determined by independent approval agencies.
(See Notes on page 70)

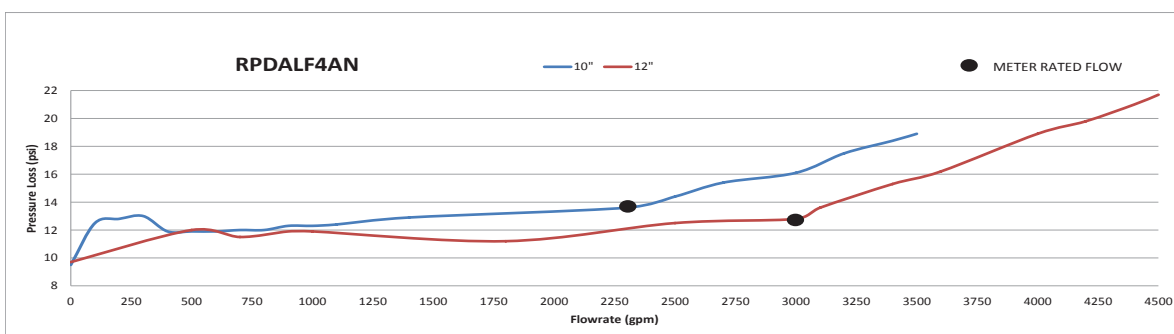
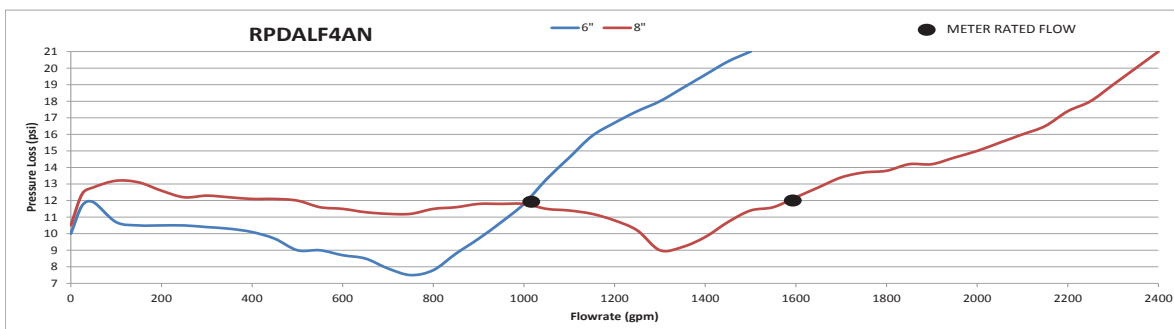
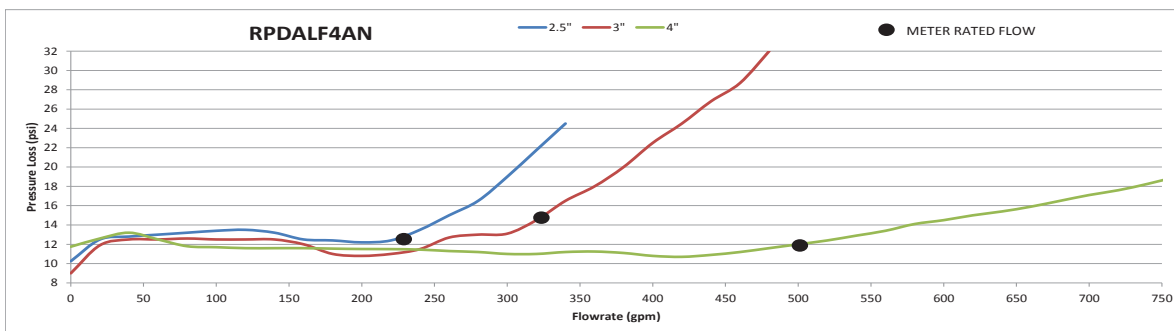


● Meter Rated Flow



RPDALF 4An / RPDALF 4An FLOW CURVES

Pressure loss versus flow data as determined by independent approval agencies. (See Notes on page 70)



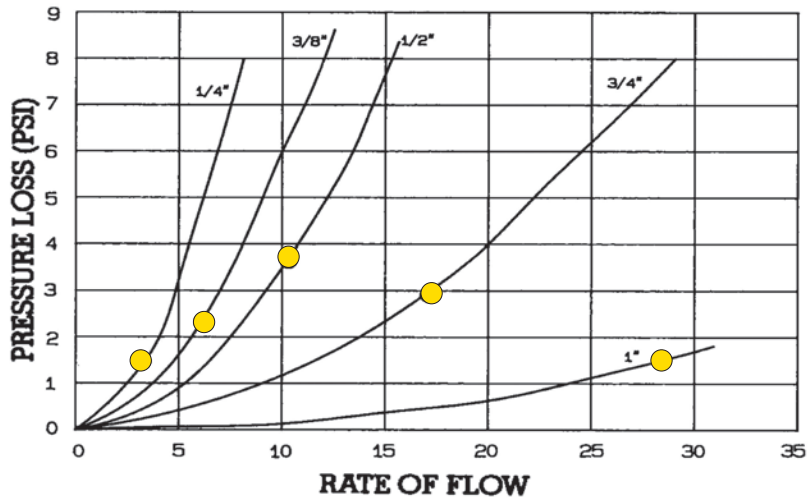
● Meter Rated Flow



AVBI/ABV2/AVBILF

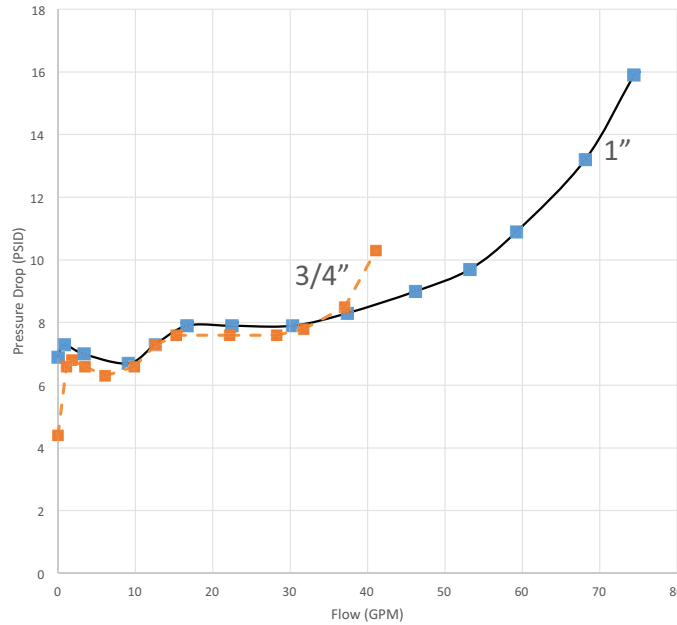
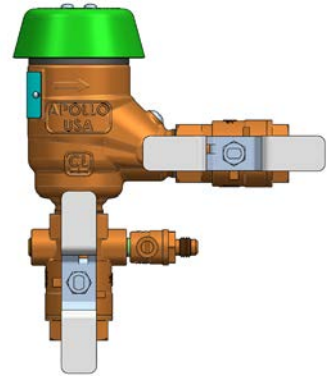
FLOW CURVES

Pressure loss versus flow data as determined by independent approval agencies.
(See Notes on page 70)



SVB 4A/SVB 4ALF

FLOW CURVES (PRELIMINARY)

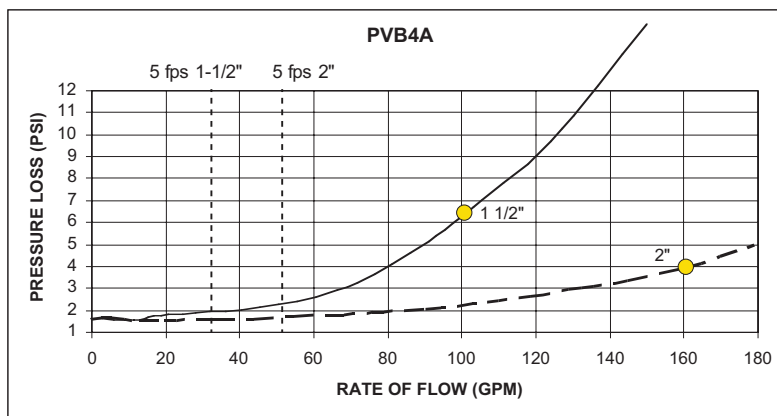
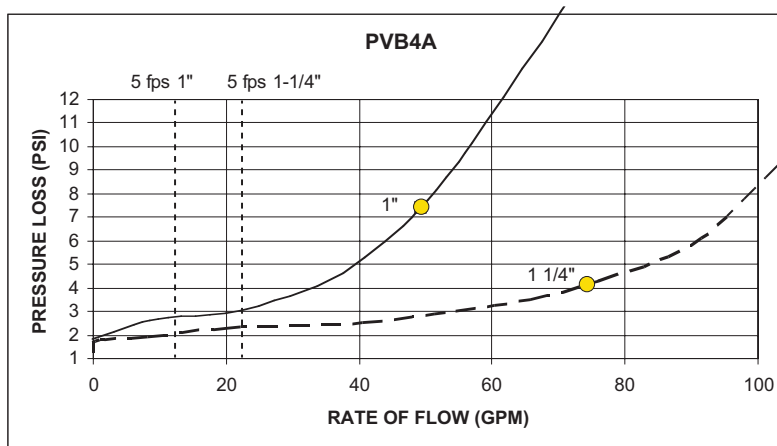
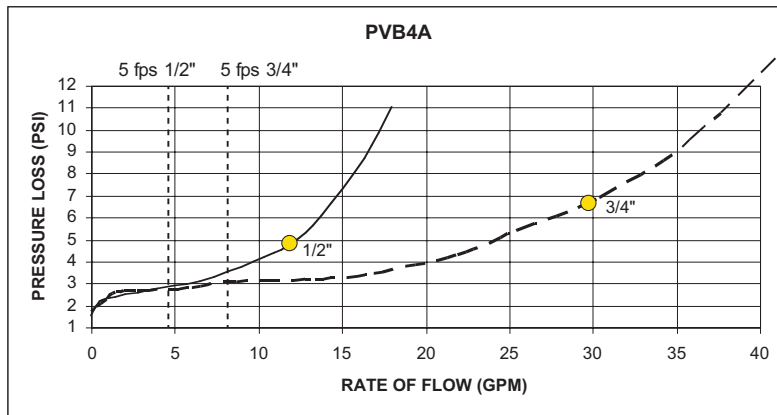


● Meter Rated Flow



PVB 4A / PVBLV 4A FLOW CURVES

Pressure loss versus flow data as determined by independent approval agencies.
(See Notes on page 70)



Note: 5 feet per second is the normal flow rate for irrigation systems (where majority of PVBs are used)

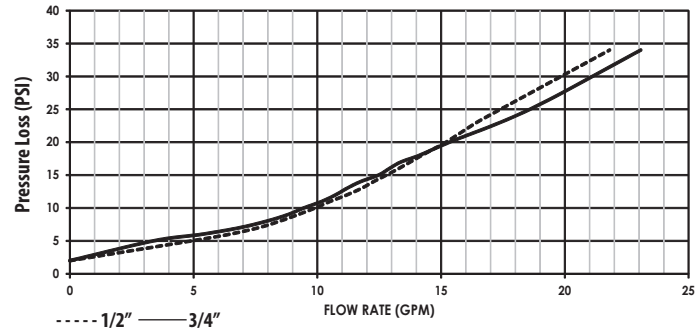
● Meter Rated Flow



DCAP / DCAP LF

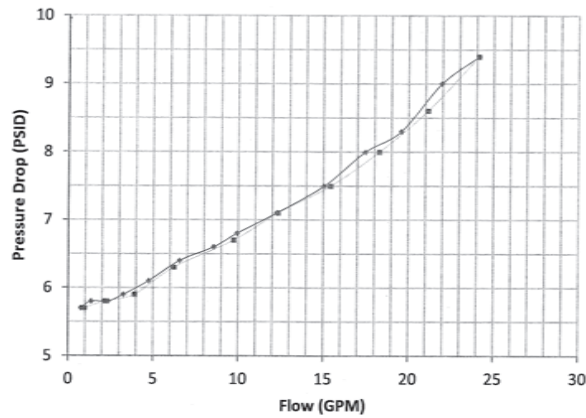
FLOW CURVES

Pressure loss versus flow data as determined by independent approval agencies.
(See Notes on page 70)



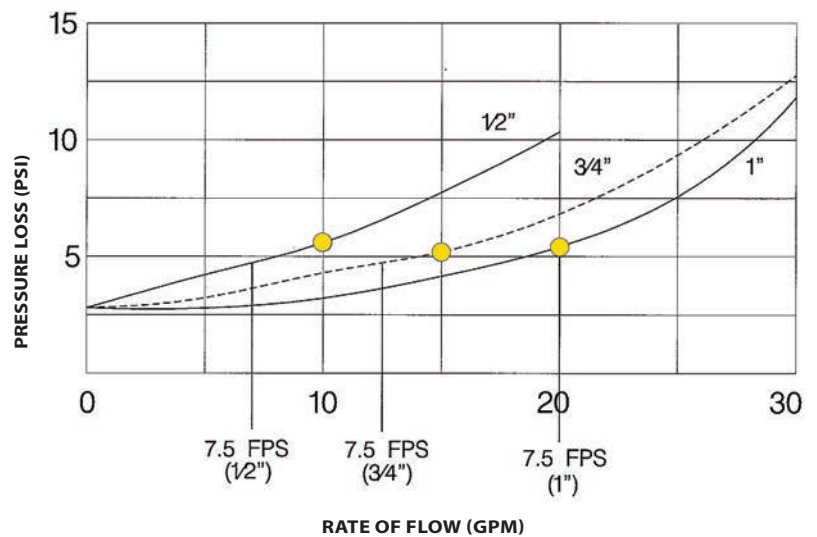
DuC 4A / DuCLF 4A

FLOW CURVES



DUC 40 / DuCLF 40

FLOW CURVES

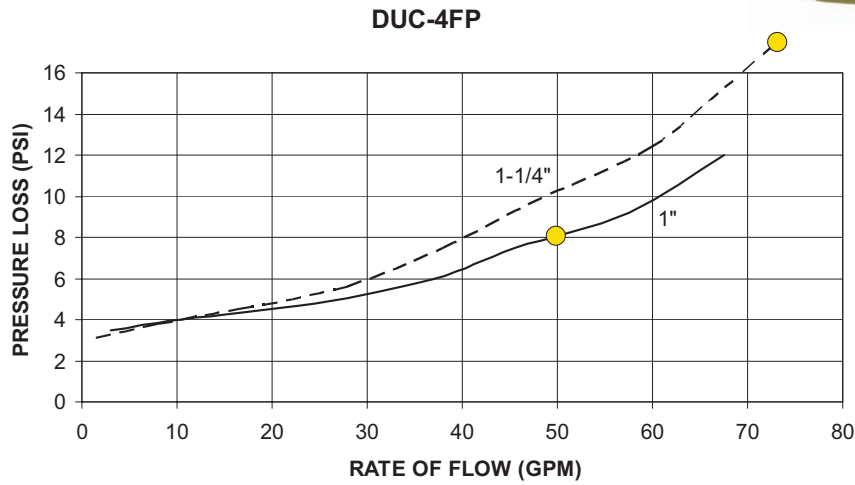


● Meter Rated Flow

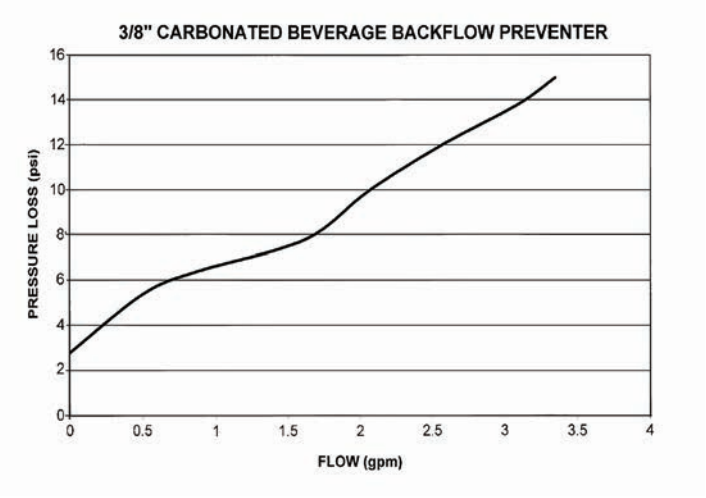
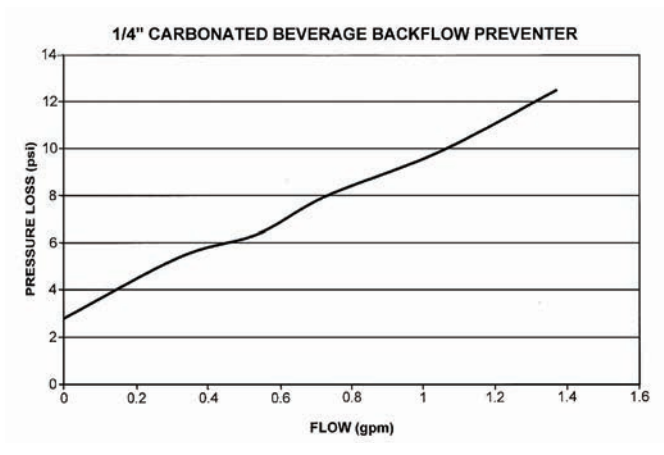


DUC 4FP FLOW CURVES

Pressure loss versus flow data as determined by independent approval agencies. (See Notes on page 70)



CBBP FLOW CURVES



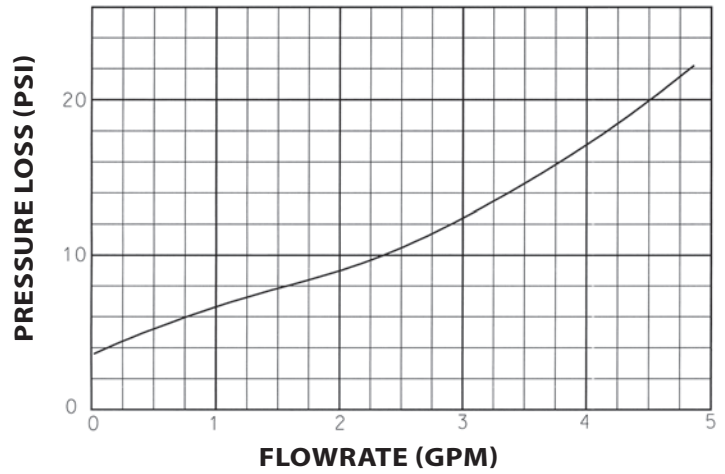
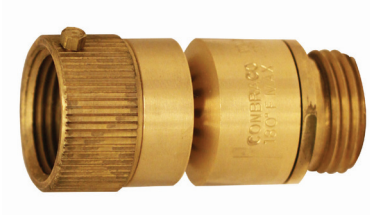
● Meter Rated Flow



HBDUC

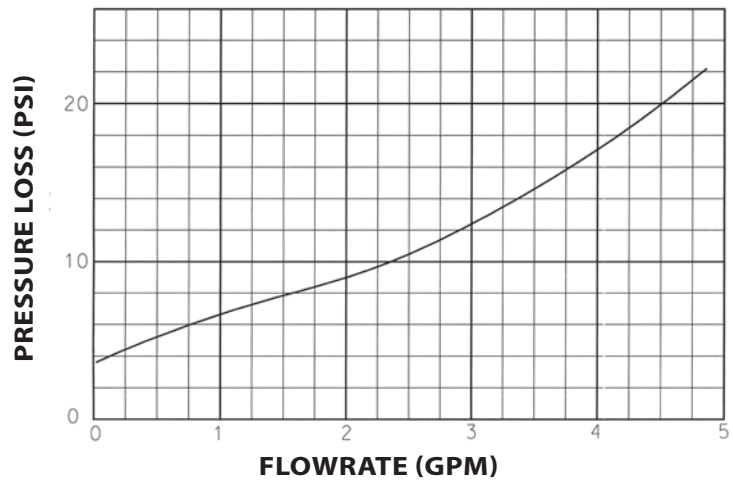
FLOW CURVES

Pressure loss versus flow data as determined by independent approval agencies.
(See Notes on page 70)



LFDUC

FLOW CURVES



● **Meter Rated Flow**

PRESSURE LOSS CURVE NOTES:

1. Flow curves directly reflect data collected by independent approval laboratories.
2. All data points are based on increasing flow data, from zero GPM to rated flow (opening curve).
3. For higher flow rates/pressure loss information - contact factory.

RELIEF VALVE DISCHARGE RATES



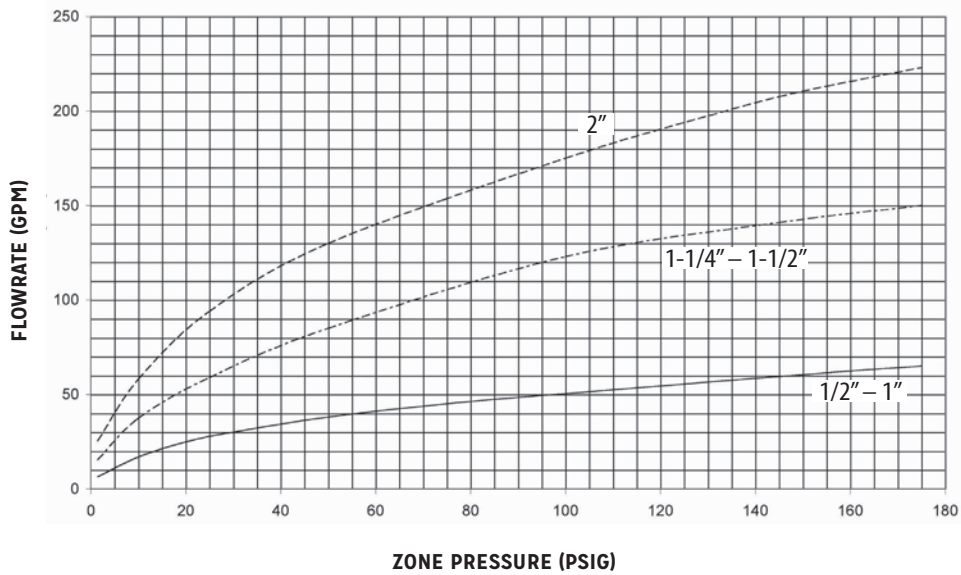
**"Apollo" BACKFLOW
PREVENTION**

RELIEF VALVE

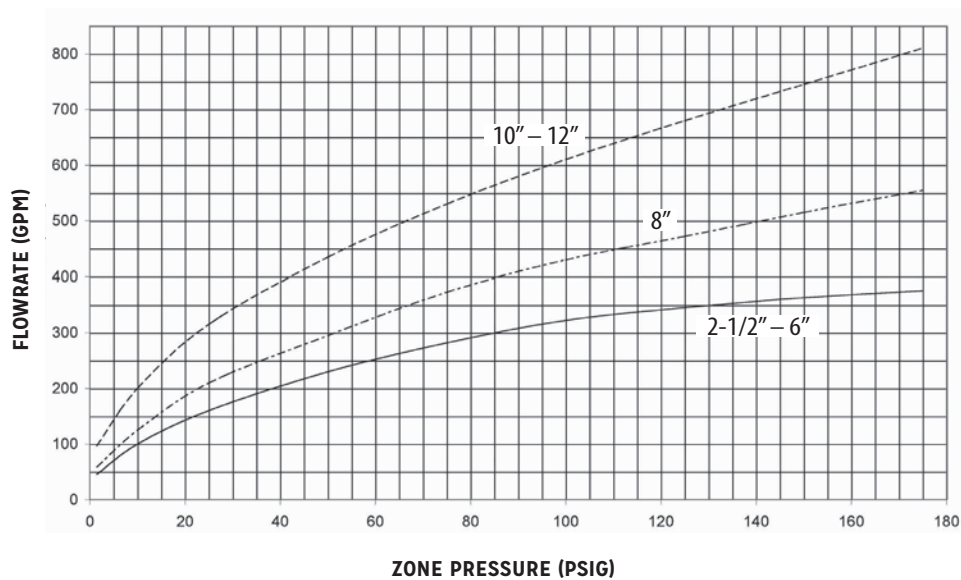
DICHARGE RATES



RV DISCHARGE RATES RP4A 1/2" TO 2"



RV DISCHARGE RATES RP4A 2-1/2" TO 12"





APOLLO® TESTABLE BACKFLOW PREVENTERS CROSS REFERENCE

Double Check Assemblies						
Size	Apollo Model Number	Apollo Factory Code	Watts	Ames	Wilkins	Febco
1/2" - 2"	DC 4A DC 4ALF	4A 10X 4ALF 10X	007, 719, LF 007, LF 719	200B, 2000B	950XL, 950XL2, 950XLT, 950XLT2, 350, 350XL	850
2-1/2" - 12"	DC 4ALF 4SG LF (2 1/2"-6") 4SG (10")	4ALF 10X 4SGLF 10X 4SG 10E	007, 709, 774, 757, LF 007, LF 709	C200, M200, 2000SS, 2000CI	350, 350A, 350AST	850
	DC 4AnLF	4An 10X, 4AnLF 10X			450	876
Double Check Detector Assemblies						
Size	Apollo Model #	Apollo Factory Code	Watts	Ames	Wilkins	Febco
2-1/2" - 12"	DCDA 4SG	4SG 60X	007DCDA, 709DCDA,	C300, M300,	350DA, 350ADA, 350ASTDA	856
	DCDA 4ALF, DCDA 4S (10")	4ALF 62X	774DCDA, 757DCDA	3000CI, 3000SS		
	DCDA 4AnLF	4AnLF 62X			450DA	876
Reduced Pressure Assembly						
Size	Apollo Model #	Apollo Factory Code	Watts	Ames	Wilkins	Febco
1/2" - 2"	RP 4A RPLF 4A	4A 20X, 4ALF 20X	009, 909, 919, LF 009, LF 909, LF 919	400B, 4000B	975XL, 975XL2, 375, 375XL	825Y, 860
3/4" - 1"	RP 4AN RPLF 4AN	4AN 20X, 4AnLF 20X	009AQT, 919AQT		975XL SE, 375XL SE	825YA
2-1/2" - 12"	RPLF 4A	4ALF 20X	009, 909, 957, 994, LF 009, LF 909	C400, M400, 4000CI, 4000SS	375, 375A, 375AST	860
	RPLF 4An	4An 20X, 4AnLF 20X			475	880
Reduced Pressure Detector Assembly						
Size	Apollo Model #	Apollo Factory Code	Watts	Ames	Wilkins	Febco
2-1/2" - 12"	RPDA 4ALF	4A 72X 4ALF 72X 40 70X	909RPDA, 957RPDA	C500, M500, 5000CI, 5000SS	375DA, 375ADA, 375ASTDA	LF866
	RPDA 4AnLF	4An 72X 4AnLF 72X			475DA	LF886Y
Pressure Vacuum Breaker						
Size	Apollo Model #	Apollo Factory Code	Watts	Ames	Wilkins	Febco
1/2" - 2"	PVB 4A	4A 50X	800M4QT		420, 720A	765, 765FR
3/4" - 1"	PVB 4ALF	4ALF 50X	LF008M4FR, LF008M4QT		420XL, 720AXL	765, 765FR
Spill Resistant Vacuum Breaker						
Size	Apollo Model #	Apollo Factory Code	Watts	Ames	Wilkins	Febco
1/2" - 3/4"	SVB 4W SVBLF 4W (1/4"-1/2")	4W 50X, 4WLF 50X	008PCQT LF008PCQT		460	



TYPE OF DEVICE	MODEL	FACTORY CODE	SIZE	APPROVALS						
				<small>Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California</small>	ASSE	CSA	IAPMO	AWWA	UL/cUL*	FM*
Double Check	DC 4A	4A 100	1/2"-2"	Yes	1015	B64.5	Yes	Yes	3/4" - 2"	N/A
	DC 4ALF	4ALF 100	1/2" - 2"	Yes	1015	B64.5	Yes	Yes	3/4" - 2"	N/A
	DC 4AST***	4A100-ST	1-1/2"-2"	Yes	1015	B64.5	N/A	Yes	Yes	N/A
	DC 4ALF	4ALF 100	2-1/2"-12"	2-1/2" - 8"	1015	B64.5	Yes	2-1/2" - 8"	Yes	Yes
	DC 4ANLF	4ANLF 100	2-1/2"-12"	2-1/2" - 8"	1015	B64.5	Yes	2-1/2" - 8"	Yes	Yes
	DC 4S	4S 100	10"	Yes	1015	B64.5	Yes	C-510	Yes	Yes
	DC 4SG, LF	4SG 100, LF	2-1/2"-8" †	Yes	1015	B64.5	Yes	C-510	Yes	Yes
Reduced Pressure	RP 4A	4A 200	1/2" - 2"	Yes	1013	B64.4	Yes	Yes	3/4" - 2"	N/A
	RP 4ALF	4ALF 200	1/2" - 2"	Yes	1013	B64.4	Yes	Yes	3/4" - 2"	N/A
	RP 4AST***	4A200-ST	1-1/2"-2"	Yes	1015	B64.4	N/A	Yes	Yes	N/A
	RP 4ALF	4ALF 200	2-1/2"-12"	2-1/2" - 8"	1013	B64.4	Yes	2-1/2" - 8"	Yes	Yes
	RP 4ANLF	4ANLF 200	2-1/2"-12"	2-1/2" - 8"	1013	B64.4	Yes	2-1/2" - 8"	Yes	Yes
	RP 40S	40 200 T2S	1/4"-1"	Yes	1013	B64.4	Yes	N/A	3/4"-1"	N/A
Dual Check	DUC 40	40 300	1/2"-1"	N/A	1024	B64.6	N/A	N/A	N/A	N/A
	DUC 4N	4N 300	3/8"-1"	N/A	1024	B64.6	N/A	N/A	N/A	N/A
Dual Check Atmospheric Port	DCAP	40 400	1/2"-3/4"	N/A	1012	B64.3	N/A	N/A	N/A	N/A
Dual Check Fire Protection	DUC 4FP	4FP 300	1" - 1-1/4"	N/A	1024	B64.6	N/A	N/A	Yes	N/A
Pressure Vacuum Breaker	PVB 4A	4A 500	1/2"-2"	Yes (Non LF Only)	1020	B64.1.2	Yes	N/A	N/A	N/A
Spill-Resistant SVB	SVB	4A 900	1/4"-1/2"		Pending	Pending	Pending	N/A	N/A	N/A
Double Check Detector Assembly	DCDA 4ALF	4ALF 600	2-1/2"-12"	2-1/2" - 8" Type 1	1048	B64.5	N/A	N/A#	Yes	Yes
	DCDA 4ANLF	4ANLF 600	2-1/2"-12"	2-1/2" - 8" Type 1	1048	B64.5	N/A	N/A#	Yes	Yes
	DCDA 4AST***	4A600-ST	1-1/2"-2"	Yes	1048	B64.5	N/A	N/A#	Yes	N/A
	DCDA 4SG	4SG 600	2-1/2"-8"	Yes	1048	B64.5	N/A	N/A#	Yes	Yes
	DCDA 4S	4S 600	2-1/2"-10"	Yes	1048	N/A	N/A	N/A#	Yes	Yes
Reduced Pressure Detector Assembly	RPDA 4ALF	4ALF 700	2-1/2"-12"	2-1/2" - 6" Type 1	1047	B64.4	N/A	N/A#	Yes	Yes
	RPDA 4ANLF	4ANLF 700	2-1/2"-12"	2-1/2" - 6" Type 1	1047	B64.4	N/A	N/A#	Yes	Yes
	RPDA 4AST***	4A700-ST	1-1/2"-2"	Yes	1047	B64.4	N/A	N/A#	Yes	N/A
Atmospheric Vacuum Breaker	AVB1	38 100	1/4"-2"	N/A	1001	B64.1.1	Yes	N/A	N/A	N/A
	AVB2	38 200	1/4"-3/4"	N/A	1001	B64.1.1	Yes	N/A	N/A	N/A
Carbonated Beverage Back. Prev	CBBP	4C 100	1/4"-3/8"	N/A	1022	B64.3.1	Yes	N/A	N/A	N/A
Hose Conn. Vacuum Breaker	HVB	38 304	3/4"	N/A	1011	B64.2	Yes	N/A	N/A	N/A
Hose Conn. Backflow Dual Check	HBDUC	38 304 02	3/4"	N/A	1052	B64.2	N/A	N/A	N/A	N/A
Anti-Freeze Hose Con. V.B	HBVB	38 404	3/4"	N/A	1011	B64.2	Yes	N/A	N/A	N/A
Lab Faucet Dual Check	LF Duc	38 500	1/4"-3/8"	N/A	1035	B64.7	Yes	N/A	N/A	N/A

Approved for horizontal and vertical installation - 4ANLF models VUVD and VUVU installation.

- * Must have indicating type shut-off valves
- ** Consult with factory for current approval details
- *** Slo Cloz Tamper Switched
- # Detector assemblies are not addressed by AWWA.
- † 4SGLF is Lead Free 2-1/2" - 6" only





WARRANTY AND LIMITATIONS OF LIABILITY



Conbraco Industries, Inc. warrants, to its initial purchaser only, that its products which are delivered to this initial purchaser will be of the kind described in the order or price list and will be free of defects in workmanship or material for a period of FIVE years from the date of delivery to you, our initial purchaser. This warranty applies to Apollo brand product with "Made in the USA" markings only.

Should any failure to conform to this warranty appear within **FIVE** years after the date of the initial delivery to our initial purchaser, Conbraco will, upon written notification thereof and substantiation that the goods have been stored, installed, maintained and operated in accordance with Conbraco's recommendations and standard industry practice, correct such defects by suitable repair or replacement at Conbraco's own expense.

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* It is the end user's responsibility to confirm that items intended for use satisfy local codes and standards.



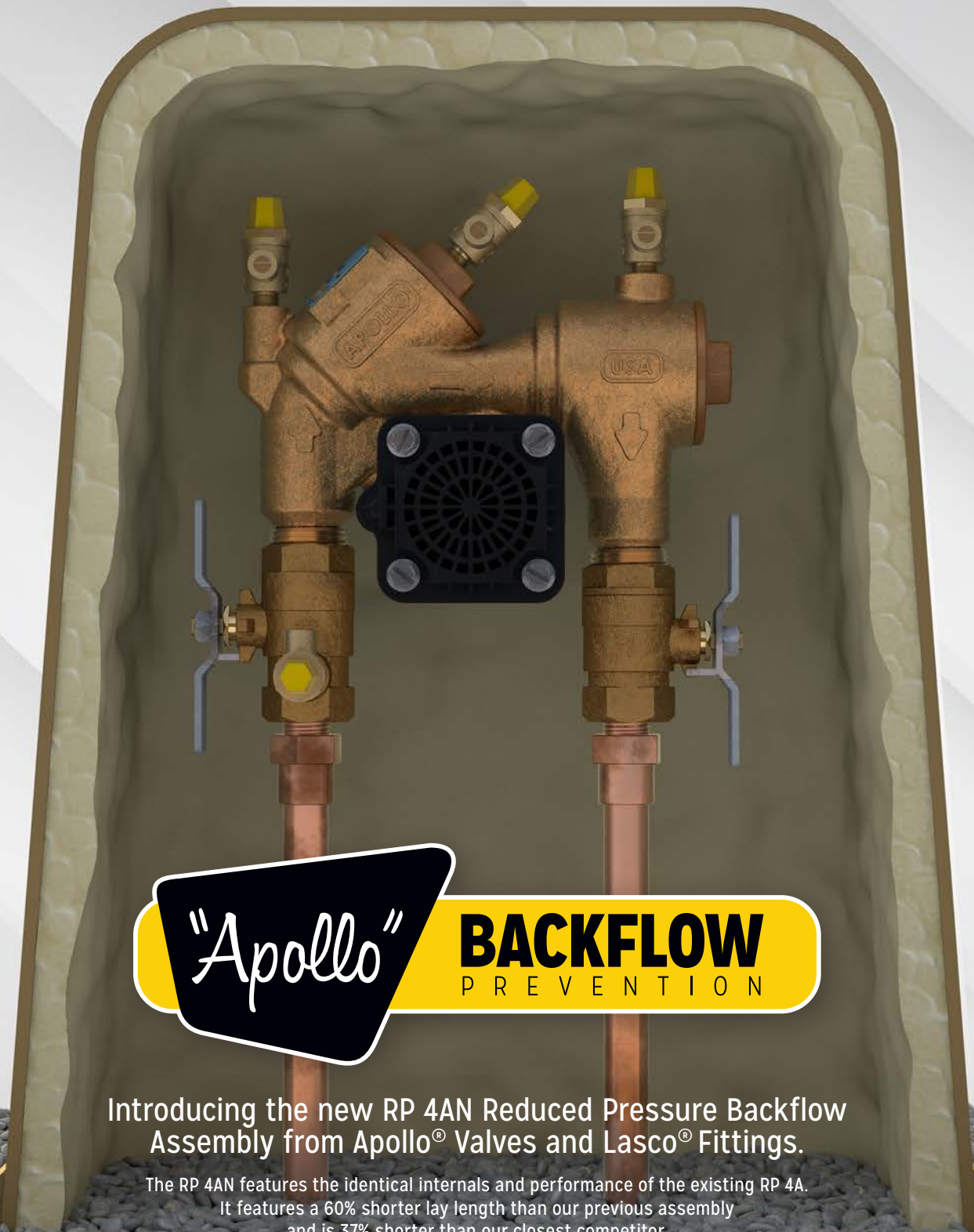
THROUGHOUT THIS CATALOG, PRODUCTS THAT ARE CERTIFIED LEAD FREE* OR HAVE A LEAD FREE* OPTION WILL BE IDENTIFIED WITH THESE LOGOS.

*LEAD FREE: The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with Federal Public Law 111-380. ANSI 3rd party approved and listed.

Conbraco Industries offers a wide range of Apollo® products for potable and non-potable applications. When the use of lead free valves is required by code, specification or legislation, it is the sole responsibility of our customers to ensure that only lead free Apollo® products are installed in systems intended for potable water service. Further information related to our product offering and the U.S. Safe Drinking Water Act (SDWA) is available at www.apollovalves.com/lead_free or by contacting Conbraco Customer Service.

**Any imported products will be clearly identified as "Apollo International™" or "Conbraco™ International".

Small in size,
big in performance.



"Apollo"

BACKFLOW
PREVENTION

Introducing the new RP 4AN Reduced Pressure Backflow Assembly from Apollo® Valves and Lasco® Fittings.

The RP 4AN features the identical internals and performance of the existing RP 4A. It features a 60% shorter lay length than our previous assembly and is 37% shorter than our closest competitor.

The new RP 4AN exemplifies that great things can come in small packages.

Phone: (704) 841-6000

Fax: (704) 841-6020

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now available online at:

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