

"Apollo"® Valves

backflow prevention



catalog

aalberts-ips.us

customer service 704.841.6000



integrated
piping systems

PRODUCT CATALOG

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	TYPE	MODEL NUMBER	PART NUMBER	SIZE	PAGE	FLOW CURVE
1/2" - 2" TESTABLE	Double Check Valve Assembly	DC 4A, DCLF 4A	4A-100, 4ALF-100	1/2"- 2"	9	58
		DC/DCLF 4AST	4A100-ST	1-1/2"- 2"	9	58
		DC 4AY, DCLF 4AY	4AY-100, 4AYLF-100	3/4" - 1"	10	60
	Double Check Valve Detector Assembly	DCDA2/DCDA2LF 4AST	4A600-ST	1-1/2"- 2"	11	60
	Reduced Pressure Principle	RP 4A, RPLF 4A	4A-200, 4ALF-200	1/2"- 2"	12	58
		RP/RPLF 4AST	4A200-ST	1-1/2"- 2"	12	59
		RP 4AFHB	4A-200FHB	1"	13	59
	Reduced Pressure Detector Assembly	RPDA2/RPDA2LF 4AST	4A700-ST	1-1/2"- 2"	14	59
	Pressure Vacuum Breaker	PVB 4A, PVBLF 4A	4A-500, 4ALF-500	1/2"- 2"	15	70
	Spill Resistant Pressure Vacuum Breaker	SVB 4A, SVBLF 4A	4A-900, 4ALF-900	3/4"- 1"	16	69
2-1/2" - 12" TESTABLE	Double Check Valve Assembly	DCLF 4A	4ALF-100	2-1/2"- 12"	18-19	60
		DCLF4SG	4SGLF-100	2-1/2"- 6"	20-21	62
		DC4SG	4SG-100	8"	20-21	63
		DC 4S	4S-100	10"	20-21	63
		DCLF 4An	4AnLF-100	2-1/2"- 12"	22-23	61
	Double Check Valve Detector Assembly	DCDALF/DCDA2LF 4A	4ALF-600	2-1/2"- 12"	24-25	63
		DCDA 4SG	4SG-600	2-1/2"- 8"	26-27	62
		DCDA 4S	4S-600	10"	26-27	62
		DCDALF/DCDA2LF 4An	4AnLF-600	2-1/2"- 12"	28-29	64
	Reduced Pressure Principle	RPLF4A	4ALF-200	2-1/2"- 12"	30-31	65
		RPLF4An	4AnLF-200	2-1/2"- 12"	32-33	66
	Reduced Pressure Detector Assembly	RPDALF/RPDA2LF 4A	4ALF-700	2-1/2"- 12"	34-35	67
		RPDALF/RPDA2LF 4An	4AnLF-700	2-1/2"- 12"	36-37	68
1/2" - 2" NON-TESTABLE	Atmospheric Type Vacuum Breaker	AVB1, AVBLF1, AVB2	38-100/38LF-100/200	1/4"- 2"	40	69
	Dual Check w/Atmospheric Port	DCAP, DCAPLF	4A-400, 4ALF-400	1/2"- 3/4"	41	71
	Dual Check Valve	DUC 4ALF	4ALF-300	3/8" - 1-1/4"	42	71
		DUC4FP	DUC4FP	1" - 1-1/4"	43	72
	Carbonated Beverage Backflow Preventer	CBBP-A	4C-100A	1/4", 3/8"	44	72
	Hose Connection Vacuum Breaker	HBV2	38-300	3/4"	45	-
	Anti-Freeze Hose Connection Vacuum Breaker	HBVAF2	38-400	3/4"	45	-
	Hose Connection Dual Check	HBDUC	38-300	3/4"	46	73
	Lab Faucet Dual Check	LFDUC	38LF-500	1/4"-3/8"	46	73
PARTS & ACCESSORIES	Freeze Protection Valve	FPV, FPVLF	40-000	1/4"	47	-
	"Y" Strainers	YB, YBLF, YSCF	59/59LF & YCF	1/4"-12"	48-49	-
	Thermal Expansion Relief Valve	EXV, EXVLF	78-RV, RVLF	3/4" - 1"	50	-
	Expansion Tanks for Potable Systems	EXP	40-XT	2-10 Gallon	50	-
	Test Kits	TK	40-200-TK	3 Valve / 5 Valve	51	-
	Air Gap Drains	AGD	AGD 4A	1/4"-12"	52	74 (Discharge Rates)
	Backflow Shut-Off Valves	-	-	1/2" - 12"	53-55	-
	Valve Setters	4An	4An-000	2-1/2" - 12"	56	-



WATERWORKS
RP 4AN SERIES



PLUMBING
RP 4A SERIES



FIRE PROTECTION
DCDA 4A SERIES



IRRIGATION
PVB 4A SERIES

TYPE OF DEVICE	SERIES	APPLICATION				
		BACK SIPHONAGE	BACK PRESSURE		AESTHETIC HAZARD	HEALTH HAZARD
DOUBLE CHECK VALVE	DCLF 4A DCLF 4AY DCLF 4An DCLF 4SG, DCLF 4S	X	X	X	X	
DOUBLE CHECK DETECTOR ASSEMBLY	DCDALF 4A DCDALF 4An DCDA 4SG, DCDA 4S	X	X	X	X	
REDUCED PRESSURE PRINCIPLE	RPLF 4A	X	X	X	X	X
REDUCED PRESSURE PRINCIPLE (n & V Flow)	RPLF 4An	X	X	X	X	X
REDUCED PRESSURE DETECTOR ASSEMBLY	RPDALF 4A RPDALF 4An	X	X	X	X	X
ATMOSPHERIC VACUUM BREAKER	AVB1, AVB1LF AVB2	X			X	X
PRESSURE VACUUM BREAKER	PVB 4A, PVBLF 4A	X		X	X	X
SPILL RESISTANT PRESSURE VACUUM BREAKER	SVB 4A, SVB 4ALF	X		X	X	X
DUAL CHECK	DUC 4ALF DUC 4FP DUC40, DUCLF40	X	X	X	X	
DUAL CHECK w/ ATMOSPHERIC PORT	DCAP 4A, DCAP 4ALF	X	X	X	X	
CARBONATED BEVERAGE BACKFLOW PREVENTER	CBBP-A	X	X	X	X	
HOSE CONNECTION VACUUM BREAKER	HBV2, HBV2LF	X	X*		X	X
ANTI FREEZE HOSE CONN. VACUUM BREAKER	HBVAF2, HBVAF2LF	X	X*		X	X
HOSE CONNECTION BACKFLOW PREVENTER	HBDUC, HBDUCLF	X	X*		X	X
LAB FAUCET VACUUM BREAKER	LFDUCLF	X	X		X	

* Limited back pressure to 10' head

** Check with local authorities having jurisdiction



HOW TO ORDER

APOLLO BACKFLOW PREVENTERS MODEL NUMBERS

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



APOLLO BACKFLOW PREVENTERS PART NUMBERS

Example: **4A LF 62A**



- OR -

	MODEL NUMBERS	PART NUMBERS
BACKFLOW DEVICE	SERIES	
Double Check Valve Assemblies (DC)	DC 4A (LF)	4A 10X (4ALF)
	DC 4AY (LF)	4AY 10X (4AYLF)
	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		
Standard. "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 NUMBERS	PART NUMBERS
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 Flanged X Flanged	NF	2
NRS Flanged X Grooved	NFG	12
NRS Grooved X Grooved	NG	11
OS&Y Flanged X Flanged	OF	3
OS&Y Flanged X Grooved	OFG	7
OS&Y Grooved X Grooved	OG	8
Flanged OS&Y X Butterfly Grooved	OFBG	4
Flanged OS&Y X Post Indicator Flanged	OFPIF	6
Flanged OS&Y X Post Indicator Grooved	OFPIG	5
Grooved Butterfly X Butterfly Grooved	BG	9
Grooved Butterfly X Post Indicator Flanged	BGPIF	15
Flanged Ball Valve X Ball Valve Flanged	FBV	5
Flanged Post Indicator X Butterfly Grooved	PIFBG	13
Flanged Post Indicator X Post Indicator Flanged	PIFPIF	14
Flanged Post Indicator X OSY Grooved	PIFOG	17
Grooved OS&Y x Post Indicator Grooved	OGPIG	18
Grooved Butterfly x Post Indicator Grooved	BVGPIG	19
Flanged Post Indicator x OS&Y Flanged	PIFOF	20
Grooved Post Indicator x OS&Y Grooved	PIGOF	21
Grooved Post Indicator x Butterfly Grooved	PIGBG	22
Grooved Butterfly x OS&Y Flanged	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	FBSP	F
CHROME PLATING OPTIONS (SELECTED MODELS)		
Rough Chrome	RC	03
Satin Chrome	SC	CS
Polished Chrome	PC	06

TYPE OF DEVICE	MODEL NUMBER	PART NUMBER	SIZE	APPROVALS						
				FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH AT THE UNIVERSITY OF SOUTHERN CALIFORNIA	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
	DCLF 4A	4ALF 100	1/2" - 2"	Yes	1015	B64.5	Yes	Yes	3/4" - 2"	N/A
	DC 4AY	4AY 100	3/4" - 1"	Yes	1015	B64.5	Yes	N/A	N/A	N/A
	DCLF 4AY	4AYLF 100	3/4" - 1"	Yes	1015	B64.5	Yes	N/A	N/A	N/A
	DC 4AST***	4A100-ST	1-1/2" - 2"	Yes	1015	B64.5	N/A	Yes	Yes	N/A
	DCLF 4A	4ALF 100	2-1/2" - 12"	Yes	1015	B64.5	Yes	Yes	Yes	Yes
	DCLF 4An	4AnLF 100	2-1/2" - 12"	Yes	1015	B64.5	Yes	Yes	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
	RPLF 4A	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
	RPLF 4A	4ALF 200	2-1/2" - 12"	Yes	1013	B64.4	Yes	Yes	Yes	Yes
	RPLF 4An	4AnLF 200	2-1/2" - 12"	Yes	1013	B64.4	Yes	Yes	Yes	Yes
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	PVBLF 4A	4ALF 500	3/4" - 1"	N/A	1020	B64.1.2	Yes	N/A	N/A	N/A
	PVB 4A	4A 500	1/2" - 2"	Yes	1020	B64.1.2	Yes	N/A	N/A	N/A
Spill-Resistant SVB	SVB	4A 900	1/4" - 1/2"	Pending	1056	Pending	Pending	N/A	N/A	N/A
Double Check Detector Assembly	DCDALF 4A DCDA2LF 4A	4ALF 600	2-1/2" - 12"	Yes	1048	B64.5	N/A	N/A#	Yes	Yes
	DCDALF 4An DCDA2LF 4An	4AnLF 600	2-1/2" - 12"	2 1/2"-8 Type 1, 10"-12" Type 2	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	10"	Yes	1048	N/A	N/A	N/A#	Yes	Yes
Reduced Pressure Detector Assembly	RPDALF 4A RPDA2LF 4A	4ALF 700	2-1/2" - 12"	Yes	1047	B64.4	N/A	N/A#	Yes	Yes
	RPDA2LF4An	4AnLF 700	2-1/2" - 12"	2 1/2"-8 Type 1, 10"-12" Type 2	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.	CBBP-A	4C 100A	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	HBDUC	38 304 02	3/4"	N/A	1052	B64.2	N/A	N/A	N/A	N/A
Anti-Freeze Hose Con.	HBVB	38 404	3/4"	N/A	1011	B64.2	Yes	N/A	N/A	N/A
Lab Faucet Dual Check	LFDUC	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

*** Slow Close Tamper Switched

Detector assemblies are not addressed by AWWA.

† 4SGLF is Lead Free 2-1/2" - 6" only

SIZE	DESCRIPTION	APOLLO MODEL NO.	APOLLO PART NO.	WATTS	WILKINS	AMES	FEBCO	BACKFLOW DIRECT	CASH ACME
BACKFLOW PREVENTERS						CHECK SPEC SHEET FOR APPROVALS, SOME SIZES/OPTIONS ARE NOT FULLY APPROVED		BUTTERFLY UNIBODY OPTION DOES NOT HAVE REPLACEABLE BUTTERFLY SHUT OFF VALVES	
1/2" - 2"	Reduced Pressure Bronze (RP)	RPLF 4A (1/2"-2") RP4A (1/2"-2")	4ALF-200, 4A-200	009, LF009, 909, LF909, 919, LF919	975XL, 975XL2, 375, 375XL	4000B	860, 825Y, 825YA, LF860, LF825Y, LF825YA	Deringer 40 (2" butterfly option only)	RPZE
1/2" - 2"	Reduced Pressure Bronze (RP) Bronze Strainer	RP 4A YS (1/2"-2") RPLF 4A YS (1/2"-2")	4A-210, 4ALF-210	009-S, 909-S, 919-S	975XLS, 975XL2S, 375S, 375XLS				
1/2" - 2"	Reduced Pressure Bronze (RP) Locking Handles	RP 4A LL(1/2"- 2"), RPLF 4A LL(1/2"- 2")	4A-200LL, 4ALF-200LL	009-LH, 909-LH, 919-LH	975XL-BVLK, 975XL2-BVLK, 375- BVLK, 375XL-BVLK				
3/4" - 2"	Reduced Pressure Bronze (RP) Union Ball Valves	RP 4A UB RPLF 4A UB	4A-200-A4, 4ALF200-A4	U009, U909, U919	975XLU		860U, LF860U		
2 1/2" - 12"	Reduced Pressure - Stainless Steel (2 1/2"-8"), Epoxy Ductile (10", 12")	RPLF 4A	4ALF-200	009, LF009, 909, LF909, 994, 957 (no 12" option)	375, 375A, 375AST (no 12" option)	4000SS, C400, M400 (no 12" option)	LF860	Deringer 40/40X/40G (2 1/2" - 8")	RPZ (no 12")
2 1/2" - 12"	Reduced Pressure - Stainless Steel (2 1/2"-8"), Epoxy Ductile (10", 12")	RPLF 4An	4AnLF-200	957N, 957Z (no 12" option)	475/475ST (no 12" option)	C400N (no 12" option)	LF880V		
2 1/2" - 12"	Reduced Pressure Detector - Stainless Steel (2 1/2" - 8") Reduced Pressure Detector -Epoxy Ductile Iron (10", 12")	RPDALF 4A	4ALF-700	909RPDA, 994RPDA, 957RPDA (no 12" option)	375DA/375ADA /375ASTDA (no 12" option)	4000SS, C400, M400, D50 (no 12" option)	LF866	Deringer 50/50X/50G (2 1/2" - 8")	
2 1/2" - 12"	Reduced Pressure DA npattern - Stain- less Steel (2 1/2" - 8") Reduced Pressure DA npattern -Epoxy Ductile Iron (10", 12")	RPDALF 4An	4AnLF-700	957NRPDA (no 12" option)	475DA/475DAST (4"-10"only)	C500N, M500N (no 12" option)	LF886V		
1/2" - 2"	Pressure Vacuum Breaker (PVB) (FR included no charge)	PVB 4A, PVB 4A	4A-500, 4ALF 500	800, LF800 (no FR)	720A (no LF), 710 (3/4"/1" only no LF) (no FR)		765 (no LF option)		PVB
1/2" - 2"	Pressure Vacuum Breaker (PVB) Freeze Resistant	PVB 4A, PVB 4AF	4A-500 , 4ALF 500	800FR	420, 420XL		LF767FR		
3/4" - 1"	Spill Resistant Vacuum Breaker (SVB)	SVB 4A/4ALF	4A-900 / 4ALF-900	008QT, LF008	460, 460XL				
3/4"	Hose Connection VB (HBV)	HBV2	38LF-314-AS, 38-314-AS	8, LF8	BFP-8				V-3
3/4"	Hose Connection VB (HBV) Locking	HBV2	38LF-314-AS, 38-314-AS	8A, LF8A, 8B, LF8B	BFP-8				V-3
3/4"	Hose Connection VB Draining Style	HBVAF2	38-414	NF8, LFN8	BFP-8F				VB-222
3/4"	Hose Connection Dual Check W/ Vent	HBDUC	38-304-02	N9-CD					
1/2", 3/4"	Dual Check Atmospheric Port (DCAP)	DCAP4A	4ALF- 400M/H, 4A-400M/A	9D	760				BFP
3/8"	Vacuum Breaker - Lab Faucet	LFUC	38-502	NLF-9	730				V-14L
1/4" - 2"	Atmospheric Vacuum Breaker	AVB1, AVB 2 (1/4"-1/2")	38-100, 38LF-100, 38-200	288A, LF288	35		710/715		V-101
3/8" - 1 1/4"	Dual Check Valves (DuC)	DuC4A, DuC4N	4ALF-300, 4NLF-300	7, LF7, LF7R	700				BF
1" - 1 1/4"	Dual Check Valves - (DuC) Fire Protection	DUC4FP	4FP-300	07S	700FP				
1/2" - 1"	Dual Check Valves (DuC) nline Serviceable	DUC40	40LF-300, 40-300						
1/4", 3/8"	Dual Check - (CBBP) Carbonated Beverage (new 200PSI option, no equal)	CBBP	4C-100	SD-3	740				-

DC 4A / DCLF 4A SERIES

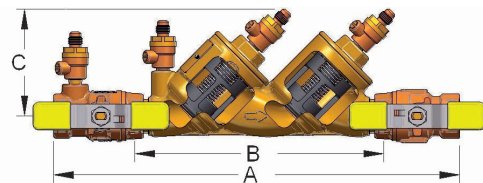
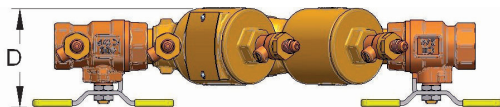
DOUBLE CHECK VALVE BACKFLOW PREVENTER ASSEMBLY



The Apollo Model DC 4A or 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 modular check valve 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.



SLOW CLOSE WITH MONITOR SWITCHES
T2ST OPTION (1-1/2" AND 2" ONLY)
SEE SS1396 FOR DIMENSIONS

Flow Curves - Page 57

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
- Chloramine-Resistant Elastomers
- **Designed, Cast, Machined, Assembled and Tested in the USA**

PERFORMANCE RATING

- Maximum Working Pressure: 175 psi
- Temperature Range: 33° to 180°F

APPROVALS

- Horizontal and Vertical Up Approvals
- 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
- NSF/ANSI/CAN 61 - Water Quality (4ALF only)
- NSF/ANSI 372 - Lead Free (4ALF only)

STANDARD MATERIALS LIST

BODY, CAPS	Bronze C84400/LF
BV SHUT-OFFS TEST COCKS	Bronze C84400 or LF C87800
CHECK VALVES	Glass-Filled PPO
SPRINGS	300 Series Stainless Steel
SEAT DISCS	Chloramine-Resistant
O-RINGS	Chloramine-Resistant
BV HANDLES	Stainless Steel

PART NUMBER MATRIX

4A X	1 X	X	XX	X
	Y-STRAINER	SIZE	SHUT-OFF VALVES	OPTIONS (CAN BE
4A - Standard	0 - Standard	3 - 1/2"	A2 - w/ Ball Valves (Standard)	F - SAE Threaded Test Cocks (Standard 1/2"
4ALF - Lead Free	1 - w/ Y-strainer (Shipped Loose)	4 - 3/4"	A4 - w/ Union Ball Valves (3/4" -	LL - SS Locking Lever Handles
		5 - 1"		PR - Press Connections (Factory Installed)
		6 - 1-1/4"		P - Push Connections (Factory Installed) (3/4"
		7 - 1-1/2"		
		8 - 2"		

EXAMPLE: 4A 104 A4LL = 3/4" double check valve assembly with union ball valves with locking lever handles

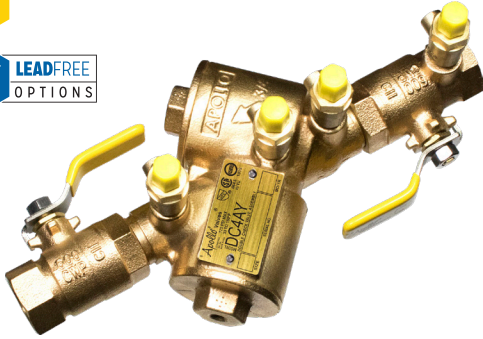
DIMENSIONS

MODEL NO, PART NO. SIZE	4A 103 A2F DC 4A 12 1/2"	4A 103 A2F DC 4A 12 15 MM.	4A 104 A2F DC 4A 34 3/4"	4A 104 A2F DC 4A 34 20 MM.	4A 105 A2F DC 4A 1 1"	4A 105 A2F DC 4A 1 25MM.	4A 106 A2F DC 4A 114 1-1/4"	4A 106 A2F DC 4A 114 32 MM.	4A 107 A2F DC 4A 112 1-1/2"	4A 107 A2F DC 4A 112 40 MM.	4A 108 A2 DC 4A 2 2"	4A 108 A2 DC 4A 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	LB.	KG.	LB.	KG.	LB.	KG.	LB.	KG.	LB.	KG.	LB.	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.

DC 4AY / DCLF 4AY SERIES

Y-PATTERN DOUBLE CHECK VALVE BACKFLOW PREVENTER ASSEMBLY



The Apollo Model DC 4AY Double Check Valves are designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are objectionable to the potable water supply, but non-health hazards. The modular check valve cartridges provide captured springs, replaceable seats, and reversible silicone seat discs. This Made in America assembly features Apollo ball valves with stainless steel handles and nuts as standard and carries the five-year Apollo factory warranty.

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 Stainless Steel Springs
- Compact Yet Easy to Maintain
- Ball Valve Shut-offs w/ SS Handles & Nuts Standard
- Threaded Testcock Protectors
- Corrosion Resistant
- No Special Tools Required
- Chloramine-Resistant Elastomers
- 5 Year Warranty
- **Designed, Cast, Machined, Assembled and Tested in the USA**

PERFORMANCE RATING

- Maximum Working Pressure: 175 psi
- Temperature Range: 33° to 180°F

APPROVALS

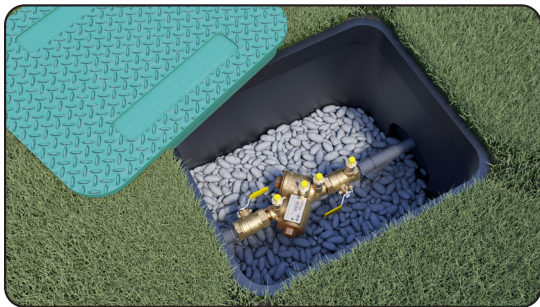
- Horizontal and Vertical Up Approvals
- ASSE 1015
- IAPMO
- CSA
- NSF/ANSI/CAN 61 - Water Quality (4AYLF only)

STANDARD MATERIALS LIST

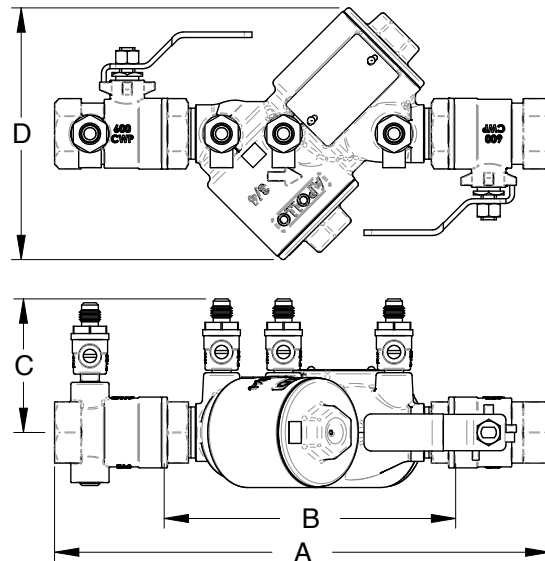
BODY, CAPS	Bronze C84400 or C89836 Lead Free*
BV SHUTOFFS, TEST COCKS	Bronze C84400 or C87800 Lead Free*
CHECK VALVE CARTRIDGES	Glass-Filled PPO
SPRINGS	300 Series Stainless Steel
SEAT DISCS	Chloramine-Resistant Silicone

DIMENSIONS

PART NUMBER	SIZE	DIMENSIONS (IN.)				WT. (LB.)
		A	B	C	D	
	3/4"	10.2	6	2.8	5.2	6.5
	1"	12.2	7.1	3	6.2	8.7



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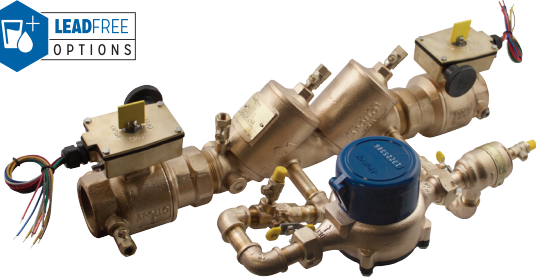


PART NUMBER MATRIX

4A [X]	1X	X	X X	X B
	Y-STRAINER	SIZE	SHUT-OFF VALVES	OPTIONS (CAN BE COMBINED)
4AY - Standard	0 - Standard	4 - 3/4"	A2 - w/ Ball Valves (Standard)	F - SAE Threaded Test Cocks (Standard 1/2" - 2")
4AYLF - Lead Free	1 - w/ Y-strainer (Shipped Loose)	5 - 1"	A4 - w/ Union Ball Valves (3/4" - 2")	L - Lever Handle (Standard 3/4" & 1" Only)
				PR - Press Connections (Factory Installed)
				P - Push Connections (Factory Installed) (3/4" - 1")

EXAMPLE: 4AY 105 A4FB = 1" Double Check Backflow Preventer, Union Ball Valves and Locking Lever Handles

DCDA2LF 4AST SERIES DOUBLE CHECK DETECTOR BACKFLOW PREVENTER ASSEMBLY



The Apollo Model DCDA2LF 4AST 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.

STANDARD MATERIALS LIST

BODY, CAPS, BALL VALVE SHUTOFFS, TEST COCKS	Bronze 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

SIZE (IN.)	DIMENSIONS (IN.)				WT. (LB.)
	A	B	C	D	
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

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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
- 5 Year Warranty

PERFORMANCE RATING

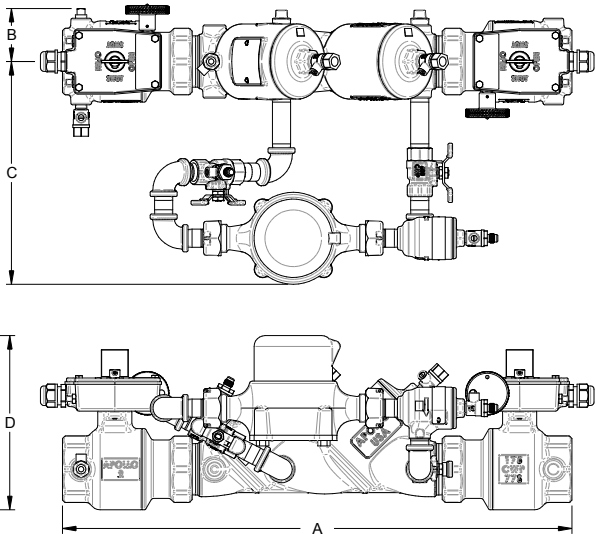
- Maximum Working Pressure: 175 psi
- Temperature Range: 33° to 140°F
- Hydrostatic Test Pressure: 350 psi

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)
- NSF/ANSI/CAN 61 - Water Quality (4ALF only)
- NSF/ANSI 372 - Lead Free (4ALF only)

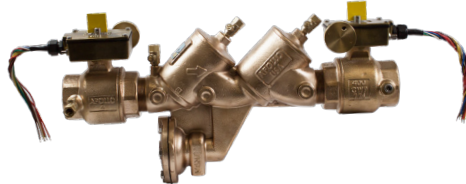
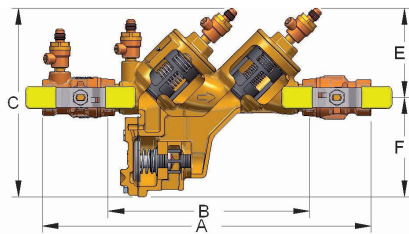
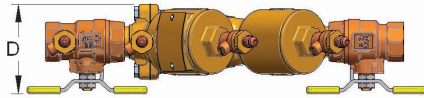
PART NUMBER MATRIX

4A X	6 X	X	X 2ST F
	BYPASS SIDE	SIZE	METER OPTION
4ALF 62 8 E 2ST	2-Bypass Line on Right Side	7 - 1-1/2"	C - Cubic ft/min
4ALF - Lead Free	(Standard - as Shown)	8 - 2"	E - GPM
	4 - Bypass Line on Left Side		G - No Meter
EXAMPLE: 4ALF 62 8 E 2ST = 2" double check detector, right side bypass with GPM meter.			



RP 4A / RPLF 4A SERIES

REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER ASSEMBLY



**SLOW CLOSE WITH MONITOR SWITCHES
T2ST OPTION (1-1/2" AND 2" ONLY)
SEE SS1397 FOR DIMENSIONS**

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The Apollo Series RP 4A or RPLF 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 test cocks 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
- Lead Free Option
- Standard with Full Port Ball Valves with Stainless Steel Handles
- Corrosion Resistant
- Optional Air Gap Drain
- **Designed, Cast, Machined, Assembled and Tested in the USA**
- 5 Year Warranty

STANDARD MATERIALS LIST

BODY, CAPS	Bronze (C84400/LF)
BV SHUT-OFFS, TEST COCKS	Bronze (C84400/LF C87800)
SPRINGS	300 Series SS
SEAT DISCS	Chloramine-Resistant

PERFORMANCE RATING

- Maximum Working Pressure: 175 psi
- Operating Temperature Range: 33° to 180°F

APPROVALS

- ASSE 1013
- CSA B64.4
- Federal Public Law 111-380
- 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
- Horizontal Installation Approvals on 1/2" thru 2"
- NSF/ANSI/CAN 61 - Water Quality (4ALF only)
- NSF/ANSI 372 - Lead Free (4ALF only)

DIAPHRAGM	Nitrile and Nylon
CHECK MODULES	Glass-Filled PPO
O-RINGS	Chloramine-Resistant
BALL VALVE HANDLES	Stainless Steel

PART NUMBER MATRIX

4A X	2 X	X	XX	X
	Y-STRAINER	SIZE	SHUT-OFF VALVES	OPTIONS (CAN BE COMBINED)
4A - Standard	0 - Standard	3 - 1/2"	A2 - w/ Ball Valves (Standard)	F - SAE Threaded Test Cocks (Standard 1/2")
4ALF - Lead Free	1 - w/ Y-Strainer (Shipped Loose)	4 - 3/4"	A4 - w/ Union Ball Valves (3/4" - 2")	L - Lever Handle (3/4" & 1" Only)
		5 - 1"	T2ST - Tamper Gear Operated Ball Valves (1-1/2" - 2")	LL - Locking Lever Handles
		6 - 1-1/4"		P - Push Connection (Factory Installed)
		7 - 1-1/2"		PR - Press Connection (Factory Installed) (3/4" & 1" Only)
		8 - 2"		

EXAMPLE: 4A 215 A4LL = 1" reduced pressure backflow preventer with strainer, union ball valves and locking lever handles

DIMENSIONS

MODEL NO. PART NO. SIZE	RP4A12 4A 203 A2F 1/2"	RP4A12 4A 203 A2F 15 MM.	RP4A34 4A 204 A2F 3/4"	RP4A34 4A 204 A2F 20 MM.	RP4A1 4A 205 A2F 1"	RP4A1 4A 205 A2F 25MM.	RP4A114 4A 206 A2F 1-1/4"	RP4A114 4A 206 A2F 32 MM.	RP4A112 4A 207 A2F 1-1/2"	RP4A112 4A 207 A2F 40 MM.	RP4A2 4A 208 A2F 2"	RP4A2 4A 208 A2F 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	LB.	KG.	LB.	KG.	LB.	KG.	LB.	KG.	LB.	KG.	LB.	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.

RPFHB 4A SERIES
REDUCED PRESSURE PRINCIPLE FIRE HYDRANT BACKFLOW PREVENTER ASSEMBLY METER



SIZE 1"
CONTACT LOCAL WATER AUTHORITIES FOR
INSTALLATION/SERVICE REQUIREMENTS.

The Apollo Series RPFHB 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

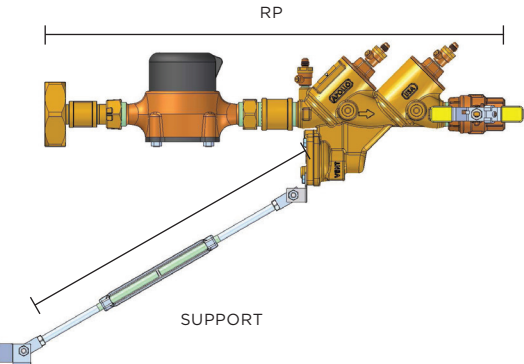
The Fire Hydrant Backflow Meter is connected directly to a fire hydrant with a 2-1/2" - 7-1/2" NST fire hose female swivel coupling. The device operates like a standard Reduced Pressure device except the flow through the device is measured by a Water Meter connected to the inlet of the backflow preventer. 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
- Tamper Proof 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, Cast, Machined, Assembled and Tested in the USA**
- 5 Year Warranty

DIMENSIONS

PART NUMBER	DIMENSION (IN.)		WEIGHTS (LB.)	
	RP	SUPPORT	NET WT.	SHIPPING WT.
4A205FHB (meter in cu. ft.)	25-1/8"	20" - 28"	24.1	27.6
4A205FHBG (meter in gallons)	25-1/8"	20" - 28"	24.1	27.6



RPDA2LF 4A SERIES

BRONZE REDUCED PRESSURE DETECTOR BACKFLOW PREVENTER ASSEMBLY



The Apollo Model 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.

STANDARD MATERIALS LIST

BODY, CAPS, BALL VALVE SHUTOFFS, TEST COCKS	Bronze 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

SIZE (IN.)	DIMENSIONS (IN.)				WT. (LB.)
	A	B	C	D	
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

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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

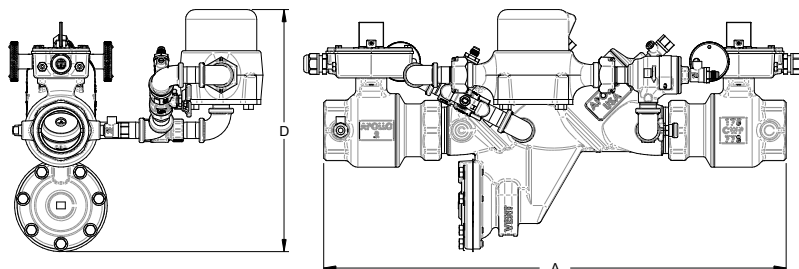
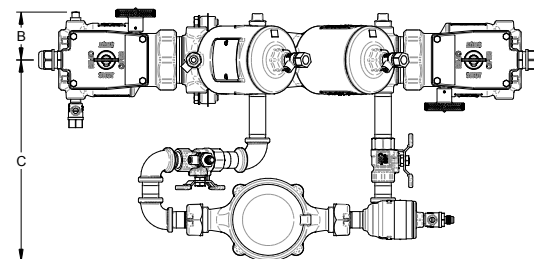
- Maximum Working Pressure: 175 psi
- Temperature Range: 33° to 140°F
- Hydrostatic Test Pressure: 350 psi

APPROVALS

- 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)
- NSF/ANSI/CAN 61 - Water Quality (4ALF only)
- NSF/ANSI 372 - Lead Free (4ALF only)

PART NUMBER MATRIX

4A X	7 X	X	X 2ST
	BYPASS SIDE	SIZE	METER OPTION
4ALF 72 8 E 2ST	2 - Bypass Line on Right Side	7 - 1-1/2"	C - Cubic ft/min
4ALF - Lead Free	4 - Bypass Line on Left Side	8 - 2"	E - GPM
			G - No Meter
EXAMPLE: 4ALF 72 8 E 2ST = 2" reduced pressure detector, right side bypass			





PVB 4A / PVBLF 4A SERIES

FREEZE RESISTANT PRESSURE VACUUM BREAKER BACKFLOW PREVENTER



The Apollo Model PVB 4A or PVBLF 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

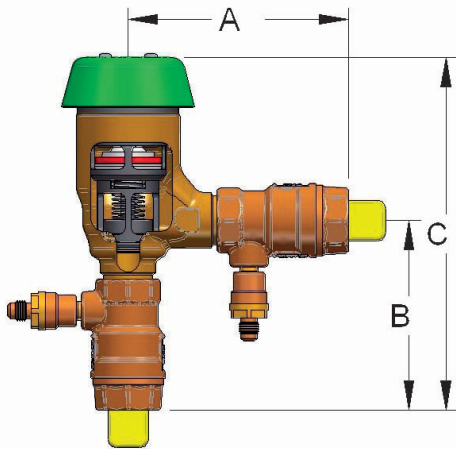
- Modular Captured Spring Cartridge Check Valve
- Low Pressure Loss
- Easy Maintenance
- Built-In Freeze Resistant Relief Valve
- Compact Yet Easy to Maintain
- Ball Valves w/SS Handles & Nuts Standard
- Testcocks Located for Easy Draining
- Threaded Testcock Protectors
- Corrosion Resistant
- 5 Year Warranty
- No Special Tools Required
- Lead Free Option (3/4" - 1")
- Unique Canopy Detachment

PERFORMANCE RATING

- Maximum Operating Pressure: 150 psi
- Design Pressure: 300 psi
- Temperature Range: 33° to 140°F

APPROVALS

- 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
- NSF/ANSI 372 - Lead Free (4ALF only)



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DIMENSIONS

PART NUMBER.	MODEL NUMBER	DIMENSIONS (IN.) (MM)				WEIGHT	
		SIZE	A	B	C	LB.	KG.
4A-503-A2	PVB4A12	1/2" (15)	4-1/2 (114)	3-3/4 (95)	7-1/4 (184)	2.9	1.3
4A-504-A2	PVB4A34	3/4" (20)	4-3/4 (121)	4-1/8 (105)	7-5/8 (194)	3.0	1.4
4A-505-A2	PVB4A1	1" (25)	5-3/8 (135)	4-5/8 (194)	8-3/8 (211)	4.2	1.9
4A-506-A2	PVB4A114	1-1/4" (32)	7 (178)	5-1/4 (133)	9-7/8 (250)	4.4	2.0
4A-507-A2	PVB4A112	1-1/2" (40)	7-1/4 (184)	5-5/8 (143)	10-1/8 (257)	7.3	3.3
4A-508-A2	PVB4A2	2" (50)	8-1/2 (216)	6-3/8 (161)	11-1/2 (292)	8.9	4.0

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",
4ALF - Lead Free (3/4" -	4 - 3/4"	4 - w/ Union Ball Valves	LL - Locking Lever Handles (3/4" - 2")
	5 - 1"	(3/4" and 1" Only)	
	6 - 1-1/4"		
	7 - 1-1/2"		
	8 - 2"		

EXAMPLE: 4ALF 505 A4 LL = 1" pressure vacuum breaker with union ball valves and locking levers

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.



SVB 4A / SVBLF 4A SERIES
SPILL RESISTANT VACUUM BREAKER BACKFLOW PREVENTER



The Apollo Series SVB 4A or SVBLF 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.

FEATURES

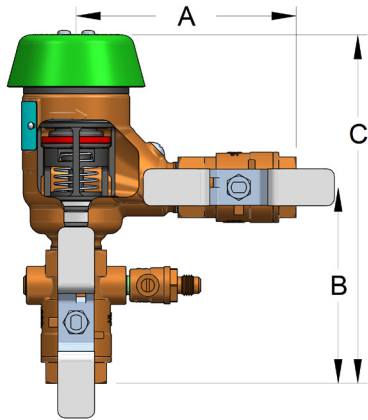
- Modular Captured Spring Check Valve
- Shut-Off Valves w/ Stainless Steel Handles and Nuts
- Threaded Testcock Protectors
- Designed For Easy Maintenance
- Lead-Free Options
- Low Head Loss
- Corrosion Resistant
- 5 Year Warranty
- Unique Canopy Detachment
- No Special Tools Required
- **Designed, Manufactured, Assembled and Tested in the USA**

PERFORMANCE RATING

- Maximum Operating Pressure: 150 psi
- Temperature Range: 33° to 180°F

APPROVALS

- ASSE 1056-2011
- NSF/ANSI 372 - Lead Free (4ALF only)



STANDARD MATERIALS LIST

BODY	Bronze C84400 or C89836 Lead
BALL VALVES, TEST COCKS	Bronze C84400 or C87800 Lead
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 PPO
O-RINGS	Chloramine-Resistant EPDM

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DIMENSIONS

PART NUMBER	LEAD FREE PART NO.	MODEL NUMBER	LEAD FREE MODEL NO.	DIMENSIONS (IN.) (MM)				WEIGHT	
				SIZE	A	B	C	LB.	KG.
4A-904-A2F	4ALF-904-A2F	SVB4A34	SVBLF4A34	3/4" (20)	4-1/2 (121)	4 (105)	7-1/4 (194)	3.0	1.4
4A-905-A2F	4ALF-905-A2F	SVB4A1	SVBLF4A1	1" (25)	5-3/8 (135)	4-3/4 (194)	8-1/8 (211)	4.2	1.9

PART NUMBER MATRIX

4A [XX]	90 X	XX	X
	SIZE	SHUT-OFF VALVES	
4A - Non-Lead Free	4 - 3/4"	A2 - w/ Ball Valves (Standard)	F - SAE Threaded Test Cocks
4ALF - Lead Free*	5 - 1"	A4 - w/ Union Ball Valves	LL - Locking Lever Handles
EXAMPLE: 4ALF 904 A4 LL = 3/4" spill resistant vacuum breaker with union ball valves and locking			

"Apollo"® Valves

large backflow preventers



DCLF 4A SERIES

DOUBLE CHECK VALVE BACKFLOW PREVENTER ASSEMBLY



2-1/2" - 8"
304 STAINLESS
STEEL BODY



10" - 12"
FDA EPOXY
COATED DUCTILE
IRON BODY



TRIFORCE™
CHECK



STANDARD MATERIALS LIST

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

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
- US Patent Nos.: 6,443,184; 7,025,085; 7,533,699
- **Designed, Assembled and Tested in the USA**
- 5 Year Warranty

PERFORMANCE RATING

- Maximum Working Pressure: 175 psi
- Temperature Range: 33° to 140°F, 180°F Intermittent

APPROVALS

- 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" - 12")
- AWWA C-510 (2-1/2" - 12")
- IAPMO
- UL, ULC Classified
- FM Approved
- NSF/ANSI/CAN 61 - Water Quality
- NSF/ANSI 372 - Lead Free

Flow Curves - Page 60

PART NUMBER MATRIX

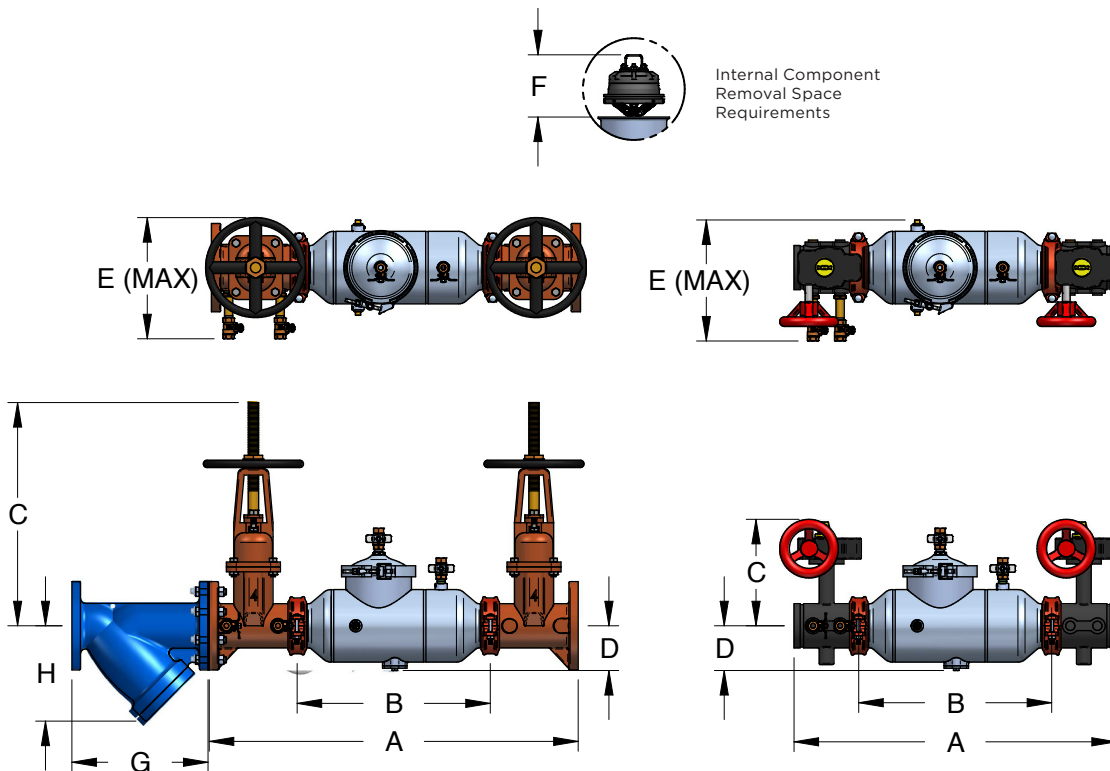
4ALF	1 X	X	XX	XX
	Y-STRAINER	SIZE	SHUT-OFF VALVES (INLET x OUTLET)	OPTIONS
4ALF - Lead Free Stan-	0 - Standard	9 - 2-1/2"	02 - NRS Flange x NRS Flange	D - Domestic Assembly
	1 - w/ Y-strainer	0 - 3"	03 - OS&Y Flange x OS&Y Flange	
	(shipped loose)	A - 4"	04 - OS&Y Flange x Monitored (Mon.) Butterfly Valve Groove [†]	
		C - 6"	06 - OS&Y Flange x Post indicator Flange**	
		E - 8"	07 - OS&Y Flange x OS&Y Groove	
		G - 10"	08 - OS&Y Groove x OS&Y Groove	
		H - 12"	09 - Mon. Butterfly Valve Groove x Mon. Butterfly Valve	
			10 - OS&Y Flange x Post Indicator Groove**	
			11 - NRS Groove x NRS Groove	
			12 - NRS Flange x NRS Groove	
			13 - Post Indicator Flange x Mon. Butterfly Valve Groove [†]	
			14 - Post Indicator Flange x Post Indicator Flange	
			16 - Mon Butterfly Valve Groove x Post Indicator Flange [†]	
			17 - Post Indicator Flange x OS&Y Groove	
			18 - OS&Y Groove x Post Indicator Groove	
			19 - Mon. Butterfly Valve Groove x Post Indicator Groove	
			20 - Post Indicator Flange x OS&Y Flange	
			21 - Post Indicator Groove x OS&Y Groove	
			22 - Post Indicator Groove x Mon. Butterfly Valve Groove	
			23 - Mon. Butterfly Valve Groove x OS&Y Flange	

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

[†] Butterfly valves not available in 12" size.

DCLF 4A SERIES

DOUBLE CHECK VALVE BACKFLOW PREVENTER ASSEMBLY



DRAWING SHOWN DEPICTS 2-1/2" - 8" ASSEMBLIES.
SEE SUBMITTAL SS1271 FOR DETAILED DRAWINGS FOR EACH SIZE.

DIMENSIONS

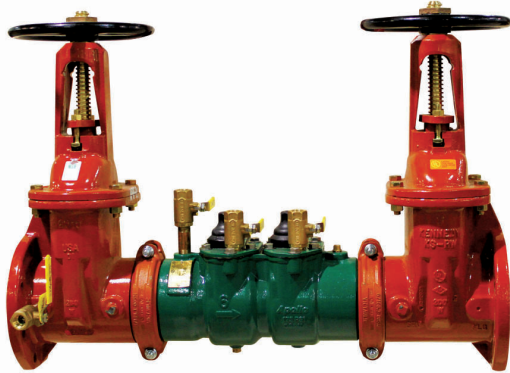
Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances ($\pm 1/8"$ (3 mm) per joint)

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	838	38.5	978	46	1168	52	1321	N/A	N/A
A (Gate Valves)	31	787	32	813	37.6	955	45.5	1156	53.1	1349	62.3	1582	65.4	1661
B (Less Shut-off Valves)	16	406	16	406	19.8	503	24.5	622	30	762	36	914	37	940
C (Butterfly Valves)	8.6	218	9.6	244	10.9	277	13	330	16.5	419	19	483	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)	16.4	417	20.5	521	22.8	579	27.3	693	37.8	960	45.8	1163	53.1	1349
D (Centerline to Bottom)	3.9	99	3.9	99	4.6	117	5.9	150	8.3	211	11.1	282	11.4	290
E (Max w/Gate or Butterfly)	11	279	11.3	287	12.4	315	14.5	368	19.3	490	21.9	556	21.9	556
F (Check Removal Clearance)	4.8	122	4.8	122	6.5	165	7.5	191	7.5	191	10	254	10	254
G (Strainer Length)	10.9	277	11.6	295	14	356	18.6	472	25.5	648	26.1	663	30.1	765
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"	15	1/2"	15	1/2"	15	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 Valves)	22	10	23	10	39	18	75	34	208	94	702	318	805	365
Net Wt. (w/ Butterfly Valves)	84	38	90	41	116	53	176	80	386	175	921	418	N/A	N/A
Net Wt. (w/ NRS Gate Valves)	76	34	94	43	137	62	258	117	525	238	1209	548	1665	755
Net Wt. (w/ OS&Y Gate Valves)	94	43	110	50	165	75	317	144	600	272	1324	601	1780	807

Internal body connections are grooved on 2-1/2" to 10" sizes.
Internal body connections are flanged on 12" size.
Strainer option only available for flanged-end shut-off options.

DC 4SGLF / 4SG / 4S SERIES

DOUBLE CHECK VALVE BACKFLOW PREVENTER ASSEMBLY



STANDARD MATERIALS LIST

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

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
- US Patents Nos.: 5,711,341 and 6,343,618
- 5 Year Warranty
- **Assembled and Tested in the USA**

PERFORMANCE RATING

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

APPROVALS

- 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
- NSF/ANSI 372 - Lead Free (4SGLF only)

Flow Curves - Page 62

PART NUMBER MATRIX

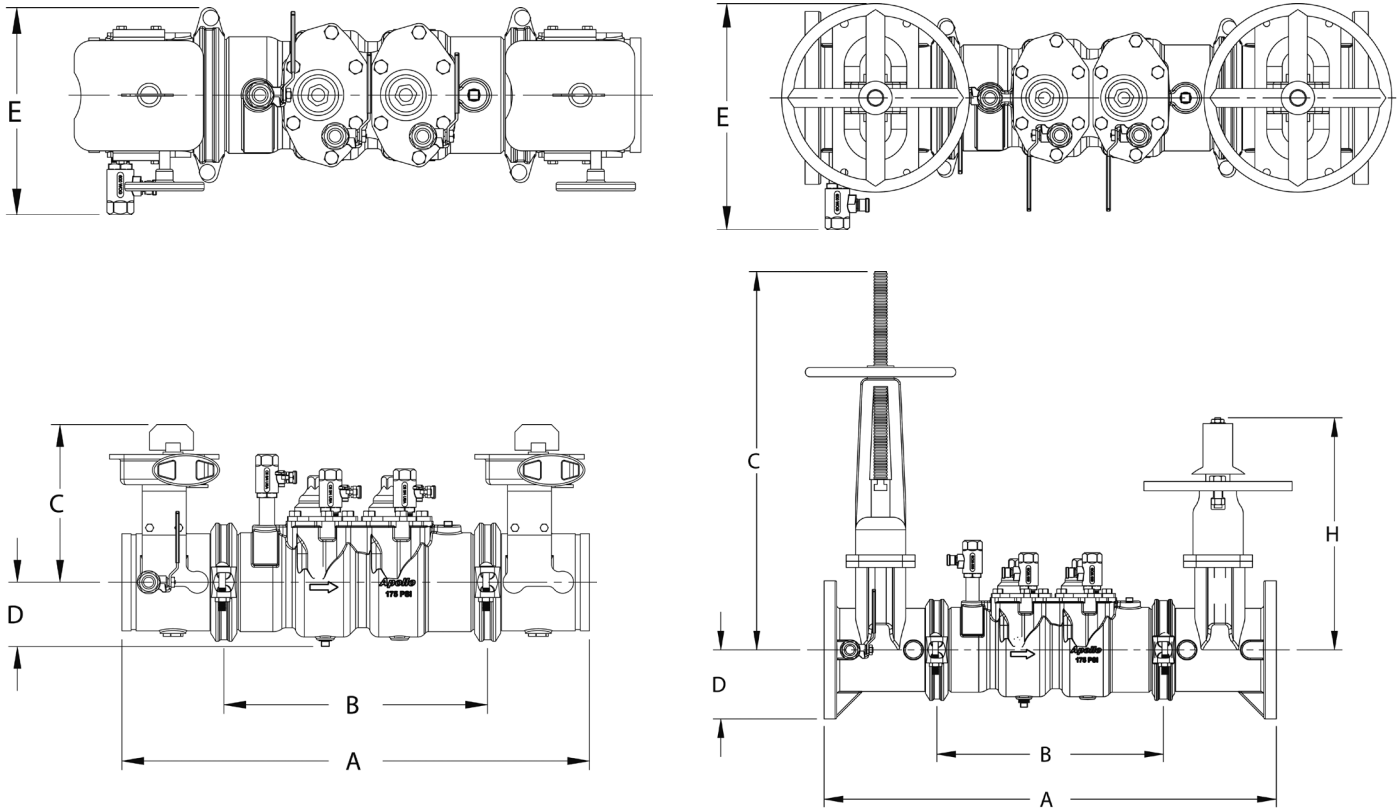
4S XXX	1 X	X	XX	X
	Y-STRAINER	SIZE	SHUT-OFF VALVES (INLET x	OPTIONS
4SG LF- Lead Free (2-1/2"-6" Only)	0 - None (Standard)	9 - 2-1/2"	02 - NRS Flange x NRS Flange	D - Domestic Assembly
4SG - 8" Only	1 - With Y-Strainer (Flanged Only, Shipped	0 - 3"	03 - OS&Y Flange x OS&Y Flange	
4S - 10" Only		A - 4"	04 - OS&Y Flange x Monitored Butterfly Valve Groove	
		C - 6"	06 - OS&Y Flange x Flange Post Indicator	
		E - 8"	07 - OS&Y Flange x OS&Y Groove	
		G - 10"	08 - OS&Y Groove x OS&Y Groove	
			09 - Mon. Butterfly Valve Groove x Mon. Butterfly Valve	
			10 - OS&Y Flange x Groove Post Indicator	

EXAMPLE: 4SGLF 10A 07 = 4" size lead free double check valve assembly with OS&Y flanged inlet x OS&Y grooved outlet

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

DC 4SGLF / 4SG / 4S SERIES

DOUBLE CHECK VALVE BACKFLOW PREVENTER ASSEMBLY



DIMENSIONS

MODEL NUMBER PART NUMBER 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 MM	DC4S10 4S-10G 10"	DC4S10 4S-10G 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	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	LB.	KG.	LB.	KG.	LB.	KG.	LB.	KG.	LB.	KG.	LB.	KG.
Net Wt. (Less Shutoff Valves)	53	24	53	24	53	24	60	27	375	170	470	N/A
Ship Wt. (Less Shutoff Valves)	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/ Post Indicator)	67	30	124	56	148	67	208	95	692	315	997	453
Ship Wt. (w/ Post Indicator)	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

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

DCLF 4An SERIES

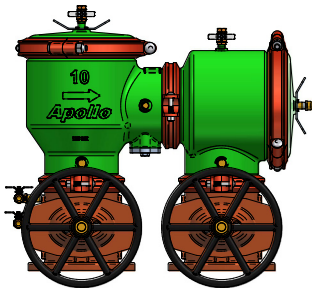
n STYLE DOUBLE CHECK VALVE BACKFLOW PREVENTER ASSEMBLY



n FLOW
2-1/2" - 8"
304 STAINLESS
STEEL BODY



n FLOW
10" - 12"
FDA EPOXY
COATED DUCTILE
IRON BODY



STANDARD MATERIALS LIST

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

Flow Curves - Page 61

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
- Optional Valve Setters Eliminate Need for Thrust Blocks
- US Patent Nos.: 6,443,184; 7,025,085; 7,533,699
- 5 year warranty
- **Designed, assembled and tested in the USA**

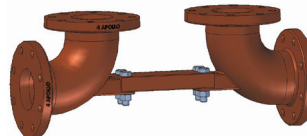
PERFORMANCE RATING

- Maximum Working Pressure: 175 psi
- Temperature Range: 33° to 140°F, 180°F Intermittent

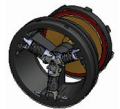
APPROVALS

- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California (2-1/2" - 12")
- ASSE 1015-2011
- AWWA C-510 (2-1/2" - 12")
- UL, ULC Classified
- FM Approved
- CSA B64.5
- NSF/ANSI/CAN - 61 Water Quality
- NSF/ANSI 372 - Lead Free

OPTIONAL
VALVE SETTER



TRIFORCE™
CHECK



PART NUMBER MATRIX

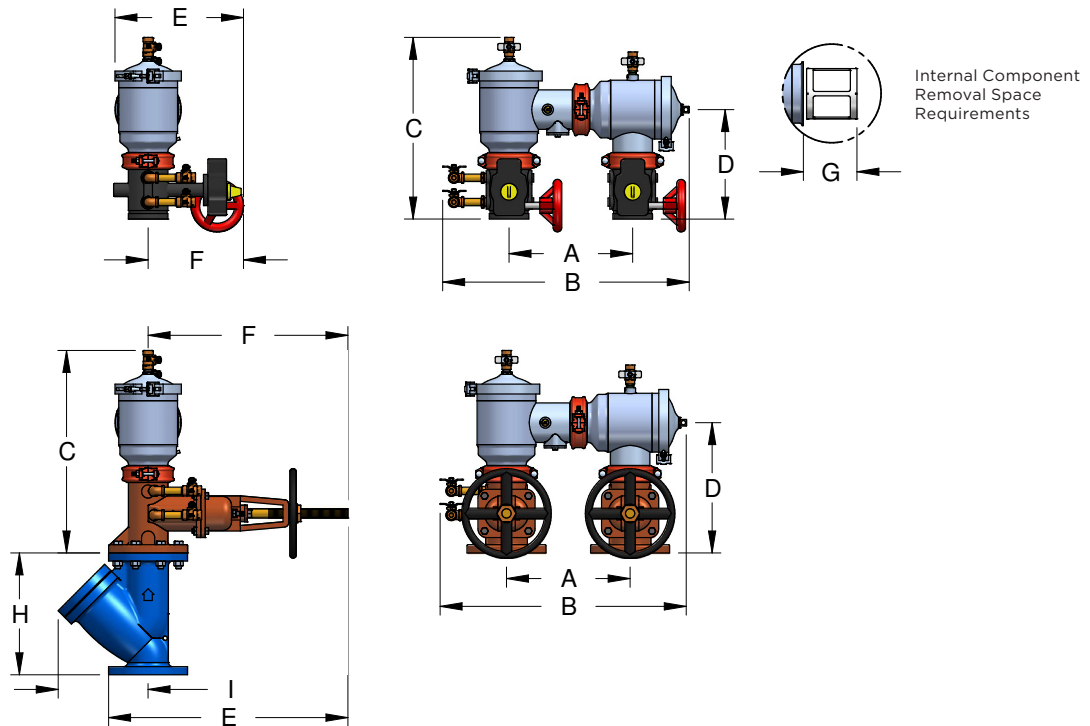
4ANLF	1 X	X	XX	X
	Y-STRAINER	SIZE	SHUT-OFF VALVES (INLET x	OPTIONS
4AnLF - Lead Free Standard	0 - Standard	9 - 2-1/2"	02 - NRS Flange x NRS Flange	D - Domestic Assembly
	1 - w/ Y-strainer	0 - 3"	03 - OS&Y Flange x OS&Y Flange	
	(Shipped Loose)	A - 4"	04 - OS&Y Flange x Monitored (Mon.) Butterfly Valve Groove	
		C - 6"	06 - OS&Y Flange x Post indicator Flange	
		E - 8"	07 - OS&Y Flange x OS&Y Groove	
		G - 10"	08 - OS&Y Groove x OS&Y Groove	
		H - 12"	09 - Mon. Butterfly Valve Groove x Mon. Butterfly Valve	
			10 - OS&Y Flange x Post Indicator Groove	
			11 - NRS Groove x NRS Groove	
			12 - NRS Flange x NRS Groove	
			13 - Post Indicator Flange x Mon. Butterfly Valve Groove	
			14 - Post Indicator Flange x Post Indicator Flange	
			16 - Mon Butterfly Valve Groove x Post Indicator Flange	
			17 - Post Indicator Flange x OS&Y Groove	
			18 - OS&Y Groove x Post Indicator Groove	
			19 - Mon. Butterfly Valve Groove x Post Indicator Groove	
			20 - Post Indicator Flange x OS&Y Flange	
			21 - Post Indicator Groove x OS&Y Groove	
			22 - Post Indicator Groove x Mon. Butterfly Valve Groove	
			23 - Mon. Butterfly Valve Groove x OS&Y Flange	

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

*Butterfly valves not available in 12" size.

DCLF 4An SERIES

n STYLE DOUBLE CHECK VALVE BACKFLOW PREVENTER ASSEMBLY



DRAWING SHOWN DEPICTS 2-1/2" - 8" ASSEMBLIES.
SEE SUBMITTAL SS1272 FOR DETAILED DRAWINGS FOR EACH SIZE.

DIMENSIONS

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)	25.5	648	25.6	651	28.1	714	33.3	845	38.1	968	46.0	1168	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)	18.8	476	19.0	483	20.8	527	25.0	635	29.5	749	34.8	883	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	298	12.5	318	14.6	371	17.9	454	19.8	502	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)	12.1	308	13.1	333	14.8	375	18.3	465	25.9	657	29.3	745	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)	8.6	219	9.6	244	10.9	276	12.5	318	16.5	419	18.1	460	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
H (Strainer Length)	10.9	277	11.6	295	14	356	18.6	472	25.5	648	26.1	663	30.1	765
I (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 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)	91.0	41	95.0	43	120.0	54	163.0	74	471.0	214	945.0	429	N/A	N/A
Ship Wt. (w/ Butterfly Valves)	152.0	69	156.0	71	181.0	82	243.0	110	606.0	275	1135.0	515	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

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

DCDALF 4A / DCDA2LF 4A SERIES

DOUBLE CHECK DETECTOR BACKFLOW PREVENTER ASSEMBLY



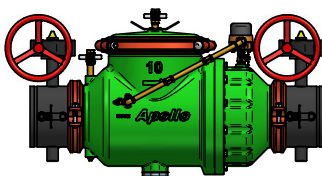
TYPE 1 BYPASS
2-1/2" - 8"
304 STAINLESS
STEEL BODY



TYPE 2 BYPASS
2-1/2" - 8"
304 STAINLESS
STEEL BODY



TYPE 2 BYPASS
10" - 12"
FDA EPOXY
COATED DUCTILE
IRON BODY



STANDARD MATERIALS LIST

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

Flow Curves - Page 63

PART NUMBER MATRIX

4ALF	6 X	X	X	X X	X
	BYPASS SUB-ASSEMBLY OPTIONS	SIZE	METER OPTION	SHUT-OFF VALVES (INLET x OUTLET)	
4ALF - Lead Free	0 - Type 1 w/ 1/2" Double Check	9 - 2-1/2"	C - Cubic ft/min	03 - OS&Y Flange x OS&Y Flange	D - Domestic Assem-
	2 - Type 2 w/ 1/2" Single Check	0 - 3"	E - Gallons/min	04 - OS&Y Flange x Monitored (Mon.) Butterfly Valve Groove'	
	3 - Type 1 w/ Bypass on Left*	A - 4"	G - Less Meter	06 - OS&Y Flange x Post indicator Flange	
	4 - Type 2 w/ Bypass on Left*	C - 6"		07 - OS&Y Flange x OS&Y Groove	
		E - 8"		08 - OS&Y Groove x OS&Y Groove	
	Type 2 & 4 only	G - 10"		09 - Mon. Butterfly Valve Groove x Mon. Butterfly Valve	
	Type 2 & 4 only	H - 12"		10 - OS&Y Flange x Post Indicator Groove	
				13 - Post Indicator Flange x Mon. Butterfly Valve Groove'	
				14 - Post Indicator Flange x Post Indicator Flange	
				16 - Mon Butterfly Valve Groove x Post Indicator Flange'	
				17 - Post Indicator Flange x OS&Y Groove	
				18 - OS&Y Groove x Post Indicator Groove	
				19 - Mon. Butterfly Valve Groove x Post Indicator Groove	
				20 - Post Indicator Flange x OS&Y Flange	
				21 - Post Indicator Groove x OS&Y Groove	
				22 - Post Indicator Groove x Mon. Butterfly Valve Groove'	
				23 - Mon. Butterfly Valve Groove x OS&Y Flange	

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

*Orientation of bypass looking downstream. Standard is right hand side. Left hand is on opposite side

†Butterfly valves not available in 12" size.

The Apollo Model DCDALF 4A / DCDA2LF 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.

Available in both Type 1 and Type 2 bypass configurations. The 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
- US Patent Nos.: 6,443,184; 7,025,085; 7,533,699
- **Designed, Assembled and Tested in the USA**
- 5 Year Warranty
- Optional Mounting of Bypass on Either Side for Ease of Installation

PERFORMANCE RATING

- Maximum Working Pressure: 175 psi
- Temperature Range: 33° to 140°F, 180°F Intermittent

APPROVALS

- ASSE 1048*, CSA B64.5, FM, UL*, cUL*
- NSF/ANSI/CAN - 61 Water Quality
- NSF/ANSI 372 - Lead Free
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California (2-1/2" - 8" Type 1 & Type 2, 10" & 12" + type 2 bypass only)

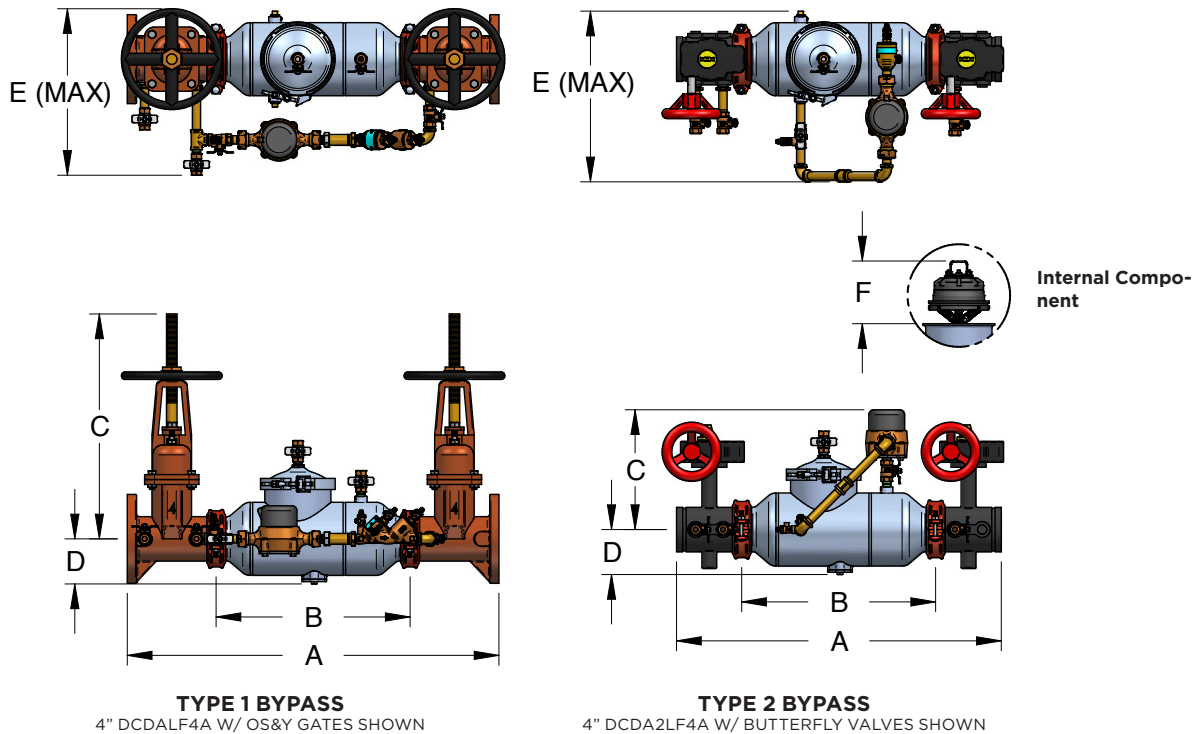
*ASSE, UL, and cUL installations must include indicating-type shut-off valves

TRIFORCE™
CHECK



DCDALF 4A / DCDA2LF 4A SERIES

DOUBLE CHECK DETECTOR BACKFLOW PREVENTER ASSEMBLY



DRAWING SHOWN DEPICTS 2-1/2" - 8" ASSEMBLIES.
SEE SUBMITTAL SS1328 FOR DETAILED DRAWINGS FOR EACH SIZE.

DIMENSIONS

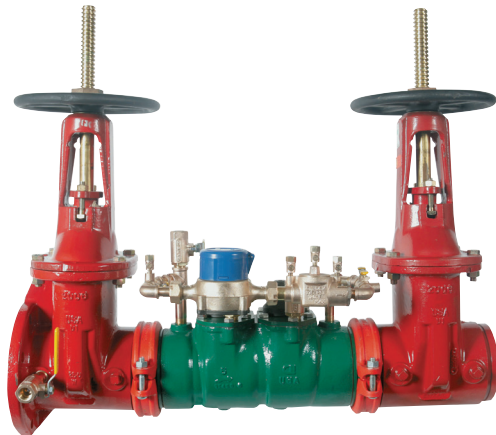
Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances ($\pm 1/8"$ (3 mm) per joint)

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	838	38.5	978	46	1168	52	1321	N/A	N/A
A (Gate Valves)	31	787	32	813	37.6	955	45.5	1156	53.1	1349	62.3	1582	65.4	1661
B (Less Shut-off Valves)	16	406	16	406	19.8	503	24.5	622	30	762	36	914	37	940
C (Butterfly Valves - Type 1)	8.6	218	9.6	244	10.9	277	13	330	16.5	419	N/A	N/A	N/A	N/A
C (Butterfly Valves - Type 2)	13.3	338	13.3	338	12.1	307	13.8	351	16.5	419	19	483	N/A	N/A
C (NRS/PI Gate Valves - Type 1)	11.8	300	13	330	14	356	17.8	452	21	533	N/A	N/A	N/A	N/A
C (NRS/PI Gate Valves - Type 2)	13.3	338	13.3	338	14	356	17.8	452	21	533	24.5	622	30	762
C (OS&Y Open)	16.4	417	20.5	521	22.8	579	27.3	693	37.8	960	45.8	1163	53.1	1349
D (Centerline to Bottom)	3.9	99	3.9	99	4.6	117	5.9	150	8.3	211	11.1	282	11.4	290
E (Max w/Gate or Butterfly Valves)	15.5	394	15.5	394	16.6	422	19.4	493	22.4	569	N/A	N/A	N/A	N/A
E (Max w/Gate or Butterfly Valves -	14.1	358	14.1	358	17.4	442	18.4	467	22	559	24.9	632	25	635
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"	15	1/2"	15	1/2"	15	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 Valves)	22	10	23	10	39	18	75	34	208	94	702	318	805	365
Net Wt. (w/ Butterfly Valves)**	96	44	102	46	128	58	189	86	399	181	985	447	N/A	N/A
Net Wt. (w/ NRS Gate Valves)**	94	43	109	49	149	68	273	124	540	245	1229	557	1685	764
Net Wt. (w/ OS&Y Gate Valves)**	109	49	125	57	180	82	333	151	615	279	1343	609	1800	816

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

DCDA 4SG SERIES

DOUBLE CHECK DETECTOR BACKFLOW PREVENTER ASSEMBLY



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
- US Patents Nos.: 5,711,341 and 6,343,618
- 5 Year Warranty
- **Assembled and Tested in the USA**

PERFORMANCE RATING

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

APPROVALS

- 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

STANDARD MATERIALS LIST

BODY (MAINLINE)	FDA Epoxy Coated Ductile
BYPASS DC	Bronze (C84400/LF)
COVERS (2-1/2" - 6")	FDA Epoxy Coated Steel
COVERS (8")	FDA Epoxy Coated Ductile
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

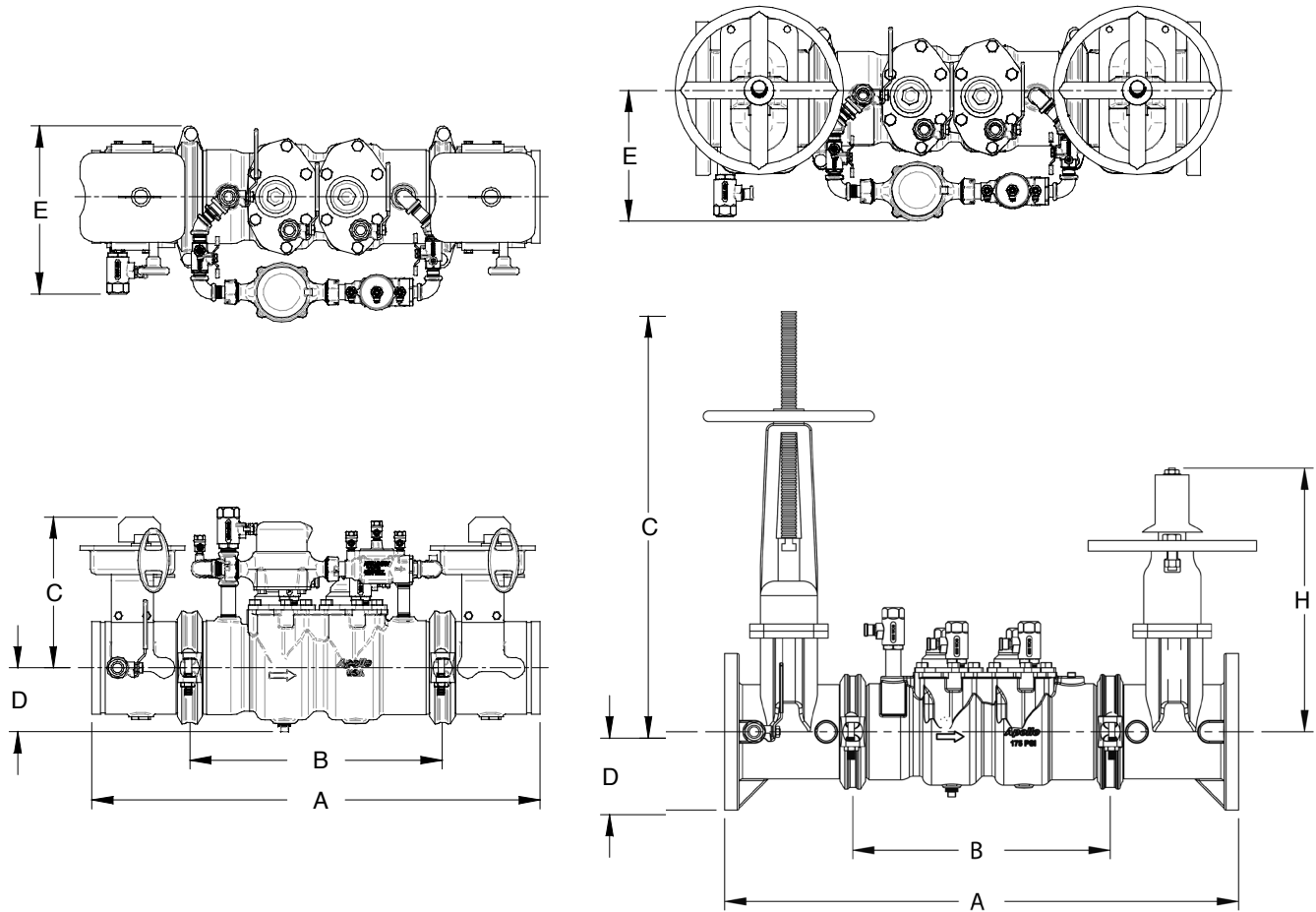
Flow Curves - Page 62

PART NUMBER MATRIX

4S X	60 X	X	XX	X
	SIZE	METER OPTION	SHUT-OFF VALVES (INLET X OUTLET)	OPTION
4SG - Standard (2-1/2" - 8"	9 - 2-1/2"	C - Cubic ft/min	03 - OS&Y Flange x OS&Y Flange	D - Domestic Assembly
4S - 10" Only	0 - 3"	E - Gallons/min	04 - OS&Y Flange x Monitored Butterfly Valve Groove	
	A - 4"	G - Less Meter	06 - OS&Y Flange x Flange Post Indicator	
	C - 6"		07 - OS&Y Flange x OS&Y Groove	
	E - 8"		08 - OS&Y Groove x OS&Y Groove	
	G - 10"		09 - Mon. Butterfly Valve Groove x Mon. Butterfly Valve	
			10 - OS&Y Flange x Groove Post Indicator	

DCDA 4SG SERIES

DOUBLE CHECK DETECTOR BACKFLOW PREVENTER ASSEMBLY



DIMENSIONS

MODEL NUMBER PART NUMBER 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 MM	DC4S10 4S-10G 10"	DC4S10 4S-10G 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	LB.	KG.	LB.	KG.	LB.	KG.	LB.	KG.	LB.	KG.	LB.	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/ Post Indicator)	119	54	136	62	160	73	255	116	712	324	997	453
Ship Wt. (w/ Post Indicator)	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

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

DCDALF 4An / DCDA2LF 4An SERIES

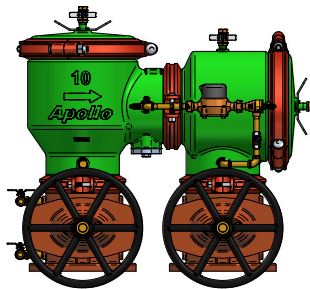
n STYLE DOUBLE CHECK DETECTOR BACKFLOW PREVENTER ASSEMBLY



n FLOW
TYPE 2 BYPASS
2-1/2" - 8"
304 STAINLESS
STEEL BODY



n FLOW
TYPE 2 BYPASS
10" - 12"
FDA EPOXY
COATED DUCTILE
IRON BODY



STANDARD MATERIALS LIST

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

Flow Curves - Page 64

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.

Available in both Type 1 and Type 2 bypass configurations. The 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
- 5 Year Warranty
- Small Installation Space Required - Small Footprint
- Chloramine-Resistant Elastomers
- Lead Free Standard
- Optional Valve Setters Eliminate Need for Thrust Blocks Below Grade
- US Patent Nos.: 6,443,184; 7,025,085; 7,533,699
- **Designed, Assembled and Tested in the USA**

- Optional Mounting of Bypass on either Side for Ease of Installation

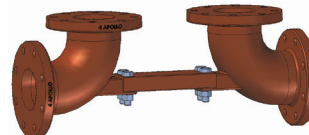
PERFORMANCE RATING

- Maximum Working Pressure: 175 psi
- Temperature Range: 33° to 140°F, 180°F intermittent

APPROVALS

- 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, 10"-12" Type 2)
- FM Approved
- NSF/ANSI/CAN 61 - Water Quality
- NSF/ANSI 372 - Lead Free

OPTIONAL
VALVE SETTER



TRIFORCE™
CHECK



PART NUMBER MATRIX

4ANLF	6 X	X	X	X [X]	X
	BYPASS SUB-ASSEMBLY OPTIONS	SIZE	METER OPTION	SHUT-OFF VALVES (INLET X OUTLET)	
4AnLF - Lead Free	0 - Type 1 w/ 1/2" Double Check	9 - 2-1/2"	C - Cubic ft/min	3 - OS&Y Flange x OS&Y Flange	D - Domes-
	2 - Type 2 w/ 1/2" Single Check	0 - 3"	E - Gallons/min	4 - OS&Y Flange x Monitored (Mon.) Butterfly Valve Groove'	tic
	3 - Type 1 w/ Bypass on Left*	A - 4"	G - Less Meter	6 - OS&Y Flange x Post indicator Flange	
	4 - Type 2 w/ Bypass on Left*	C - 6"		7 - OS&Y Flange x OS&Y Groove	
		E - 8"		8 - OS&Y Groove x OS&Y Groove	
	Type 2 & 4 only	G - 10"		9 - Mon. Butterfly Valve Groove x Mon. Butterfly Valve	
	Type 2 & 4 only	H - 12"		10 - OS&Y Flange x Post Indicator Groove	
				13 - Post Indicator Flange x Mon. Butterfly Valve Groove'	
				14 - Post Indicator Flange x Post Indicator Flange	
				16 - Mon Butterfly Valve Groove x Post Indicator Flange'	
				17 - Post Indicator Flange x OS&Y Groove	
				18 - OS&Y Groove x Post Indicator Groove	
				19 - Mon. Butterfly Valve Groove x Post Indicator Groove	
				20 - Post Indicator Flange x OS&Y Flange	
				21 - Post Indicator Groove x OS&Y Groove	
				22 - Post Indicator Groove x Mon. Butterfly Valve Groove'	
				23 - Mon. Butterfly Valve Groove x OS&Y Flange	

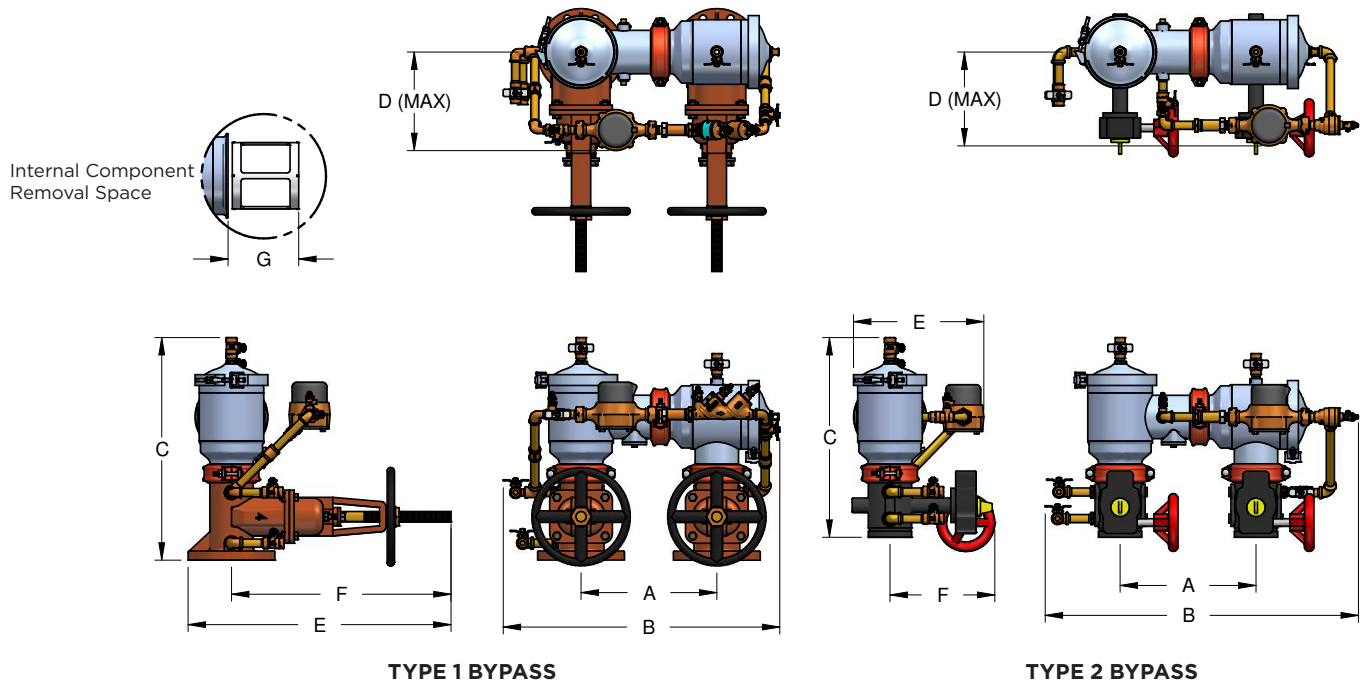
EXAMPLE: 4AnLF 62A E7 = 4" size Lead Free Double Check Detector Assembly with OS&Y flanged inlet x OS&Y grooved outlet shut-off valves with Type 2

*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 / DCDA2LF 4An SERIES

n STYLE DOUBLE CHECK DETECTOR BACKFLOW PREVENTER ASSEMBLY



DRAWING SHOWN DEPICTS 2-1/2" - 8" ASSEMBLIES.
SEE SUBMITTAL SS1330 FOR DETAILED DRAWINGS FOR EACH SIZE.

DIMENSIONS

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)	27.8	705	30.0	762	31.0	787	34.3	870	38.0	965	45.8	1162	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 - Top to Flange)	18.8	476	19.0	483	20.8	527	25.0	635	29.5	749	34.8	883	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	298	12.5	318	14.6	371	17.9	454	19.8	502	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)	13.1	333	13.1	333	15.3	389	16.1	410	23.5	597	24.3	618	15.3	389
F (Centerline Width - Butterfly Valves)	8.6	219	9.6	244	10.9	276	12.5	318	16.5	419	18.1	460	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)	108.4	49	113.4	51	138.4	63	196.4	89	489.0	222	1013.0	459	N/A	N/A
Ship Wt. (W/Butterfly Valves)	169.4	77	174.4	79	199.4	90	276.4	125	624.0	283	1203.0	546	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

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

RPLF 4A SERIES REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER ASSEMBLY



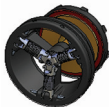
**2-1/2" - 8"
304 STAINLESS
STEEL BODY**



**10" - 12"
FDA EPOXY
COATED DUCTILE
IRON BODY**



**TRIFORCE™
CHECK**



STANDARD MATERIALS LIST

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

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 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
- Chloramine-Resistant Elastomers
- **Designed, Assembled and Tested in the USA**
- Lead Free Standard
- Optional Air Gap Drains
- 5 Year Warranty
- US Patent N
- os.: 6,443,184; 7,025,085; 7,533,699

PERFORMANCE RATING

- Maximum Working Pressure: 175 psi
- Temperature Range: 33° to 140°F, 180°F Intermittent

APPROVALS

- AWWA C511 (2-1/2" - 12")
- ASSE 1013-2011, CSA B64.4, FM, IAPMO, UL*, cUL*
- NSF/ANSI/CAN 61 - Water Quality
- NSF/ANSI 372 - Lead Free
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California (2-1/2" - 12")

***UL and cUL Installations Must Include Indicating-Type Shut-Off Valves**

Flow Curves - Page 65

PART NUMBER MATRIX

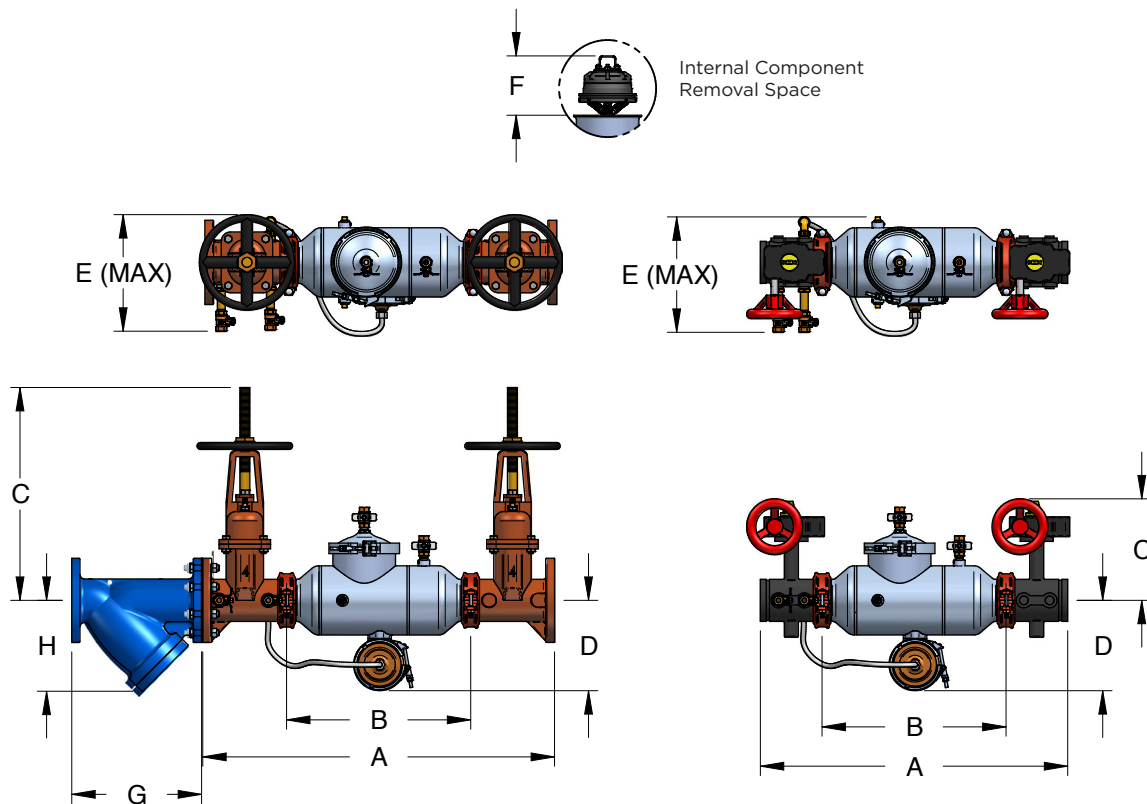
4ALF	2 X	X	XX	XX
	Y-STRAINER	SIZE	SHUT-OFF VALVES (INLET x	OPTIONS
4ALF - Lead Free (Stan-	0 - Standard	9 - 2-1/2"	02 - NRS Flange x NRS Flange	D - Domestic Assembly
	1 - w/ Y-Strainer	0 - 3"	03 - OS&Y Flange x OS&Y Flange	
	(Shipped Loose)	A - 4"	04 - OS&Y Flange x Monitored (Mon.) Butterfly Valve Groove*	
		C - 6"	06 - OS&Y Flange x Post indicator Flange	
		E - 8"	07 - OS&Y Flange x OS&Y Groove	
		G - 10"	08 - OS&Y Groove x OS&Y Groove	
		H - 12"	09 - Mon. Butterfly Valve Groove x Mon. Butterfly Valve	
			10 - OS&Y Flange x Post Indicator Groove	
			11 - NRS Groove x NRS Groove	
			12 - NRS Flange x NRS Groove	
			13 - Post Indicator Flange x Mon. Butterfly Valve Groove*	
			14 - Post Indicator Flange x Post Indicator Flange	
			16 - Mon Butterfly Valve Groove x Post Indicator Flange*	
			17 - Post Indicator Flange x OS&Y Groove	
			18 - OS&Y Groove x Post Indicator Groove	
			19 - Mon. Butterfly Valve Groove x Post Indicator Groove	
			20 - Post Indicator Flange x OS&Y Flange	
			21 - Post Indicator Groove x OS&Y Groove	
			22 - Post Indicator Groove x Mon. Butterfly Valve Groove*	
			23 - Mon. Butterfly Valve Groove x OS&Y Flange	

EXAMPLE: 4ALF 20A 07 = 4" size lead free reduced pressure assembly with OS&Y flanged inlet x OS&Y grooved

* Butterfly valves not available in 12" size.

RPLF 4A SERIES

REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER ASSEMBLY



DRAWING SHOWN DEPICTS 2-1/2" - 8" ASSEMBLIES.
SEE SUBMITTAL SS1273 FOR DETAILED DRAWINGS FOR EACH SIZE.

DIMENSIONS

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	838	38.5	978	46	1168	N/A	N/A	N/A	N/A
A (Gate Valves)	31	787	32	813	37.6	955	45.5	1156	53.1	1349	62.3	1582	65.4	1661
B (Less Shut-Off Valves)	16	406	16	406	19.8	503	24.5	622	30	762	36	914	37	940
C (Butterfly Valves)	8.6	218	9.6	244	10.9	277	13	330	16.5	419	N/A	N/A	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)	16.4	417	20.5	521	22.8	579	27.3	693	37.8	960	45.8	1163	53.1	1349
D (Centerline to Bottom)	9	229	9	229	9.8	249	11	279	15.8	401	21	533	21.1	536
E (Max w/Gate or Butterfly)	11.9	302	12.5	318	13	330	15.4	391	19.4	493	21.5	546	21.8	554
F (Check Removal Clearance)	4.8	122	4.8	122	6.5	165	7.5	191	7.5	191	10	254	10	254
G (Strainer Length)	10.9	277	11.6	295	14	356	18.6	472	25.5	648	26.1	663	30.1	765
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"	15	1/2"	15	1/2"	15	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 Valves)	31	14	32	15	48	22	84	38	228	103	762	346	865	392
Net Wt. (w/ Butterfly Valves)	92.6	42	98.6	45	124.6	57	184.6	84	407	185	N/A	N/A	N/A	N/A
Net Wt. (w/ NRS Gate Valves)	85	39	103	47	143	65	267	121	545	247	1269	576	1725	782
Net Wt. (w/ OS&Y Gate Valves)	103	47	119	54	174	79	327	148	620	281	1384	628	1840	835

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

RPLF 4An SERIES

n STYLE REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER ASSEMBLY



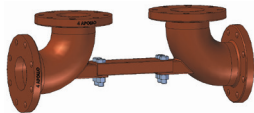
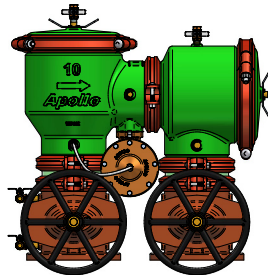
n FLOW
2-1/2" - 8"
304 STAINLESS
STEEL BODY



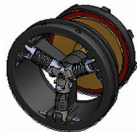
VERTICAL UP FLOW
2-1/2" - 8"
304 STAINLESS STEEL
BODY



n FLOW
10" - 12"
FDA EPOXY
COATED DUCTILE
IRON BODY



OPTIONAL VALVE SETTER



TRIFORCE™ CHECK

The Apollo 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
- Small Installation Space Required/Footprint
- Approved for n-Flow and Vertical Up Flow
- Chloramine-Resistant Elastomers
- Lead Free Standard
- Optional Valve Setters
- US Patent Nos.: 6,443,184; 7,025,085; 7,533,699
- **Designed, Assembled and Tested in the USA**
- 5 Year Warranty

PERFORMANCE RATING

- Maximum Working Pressure; 175 psi
- Temperature Range; 33° to 140°F, 180°F Intermittent

APPROVALS

- AWWA C511 (2-1/2" - 12")
- ASSE 1013-2011, CSA B64.4, FM, IAPMO, UL*, cUL*
- NSF/ANSI 61 Lead Free
- NSF/ANSI 372 Water Quality
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California (2-1/2" - 12")

***UL and cUL installations Must Include**

STANDARD MATERIALS LIST

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

Flow Curves - Page 66

PART NUMBER MATRIX

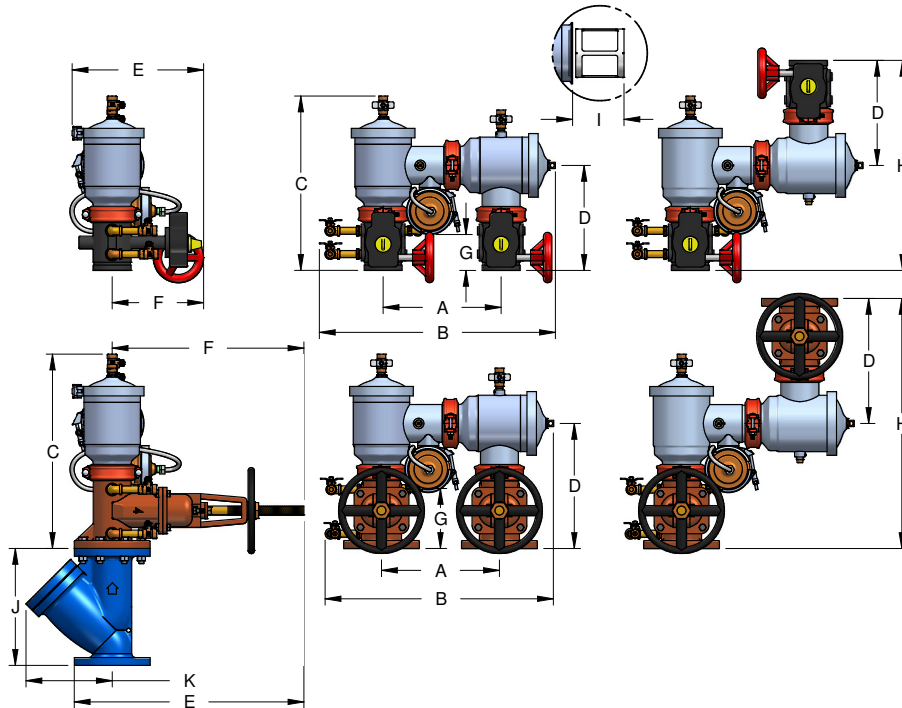
4ANLF	2 X	X	XX	X
	Y-STRAINER	SIZE	SHUT-OFF VALVES (INLET x OUTLET)	OPTIONS
4AnLF - Lead Free	0 - Standard	9 - 2-1/2"	02 - NRS Flange x NRS Flange	D - Domestic Assembly
	1 - w/ Y-Strainer (Shipped Loose)	0 - 3"	03 - OS&Y Flange x OS&Y Flange	
		A - 4"	04 - OS&Y Flange x Monitored (Mon.) Butterfly Valve Groove†	
		C - 6"	06 - OS&Y Flange x Post indicator Flange	
		E - 8"	07 - OS&Y Flange x OS&Y Groove	
		G - 10"	08 - OS&Y Groove x OS&Y Groove	
		H - 12"	09 - Mon. Butterfly Valve Groove x Mon. Butterfly Valve	
			10 - OS&Y Flange x Post Indicator Groove	
			11 - NRS Groove x NRS Groove	
			12 - NRS Flange x NRS Groove	
			13 - Post Indicator Flange x Mon. Butterfly Valve Groove†	
			14 - Post Indicator Flange x Post Indicator Flange	
			16 - Mon Butterfly Valve Groove x Post Indicator Flange†	
			17 - Post Indicator Flange x OS&Y Groove	
			18 - OS&Y Groove x Post Indicator Groove	
			19 - Mon. Butterfly Valve Groove x Post Indicator Groove	
			20 - Post Indicator Flange x OS&Y Flange	
			21 - Post Indicator Groove x OS&Y Groove	
			22 - Post Indicator Groove x Mon. Butterfly Valve Groove†	
			23 - Mon. Butterfly Valve Groove x OS&Y Flange	

EXAMPLE: 4ALF 20A 07 = 4" size lead free reduced pressure assembly with OS&Y flanged inlet x OS&Y grooved outlet shut-off

† Butterfly valves not available in 12" size.

RPLF 4An SERIES

n STYLE REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER ASSEMBLY



DRAWING SHOWN DEPICTS 2-1/2" - 8" ASSEMBLIES.
SEE SUBMITTAL SS1274 FOR DETAILED DRAWINGS FOR EACH SIZE.

DIMENSIONS

DIMENSIONS	2-1/2"	65MM	3"	80MM	4"	100MM	6"	150MM	8"	200MM	10"	250MM	12"	300MM
A (Centerline to Centerline)	12.5	318	12.5	318	14.0	356	16.0	406	18.5	470	21.0	533	26.8	679
B (Butterfly Valves)	25.5	648	25.6	651	28.1	714	33.3	845	38.1	968	N/A	N/A	N/A	N/A
B (Gate Valves)	24.5	622	24.5	622	27.0	686	32.0	813	40.8	1035	49.0	1245	55.8	1416
C (Butterfly Valves)	18.8	476	19.0	483	20.8	527	25.0	635	29.5	749	34.8	883	N/A	N/A
C (Gate Valves)	19.6	498	20.0	508	22.5	572	27.8	705	32.1	816	40.0	1016	44.0	1118
D (Butterfly Valves)	11.5	292	11.8	298	12.5	318	14.6	371	17.9	454	N/A	N/A	N/A	N/A
D (Gate Valves)	13.0	330	13.5	343	14.9	378	18.0	457	21.3	542	24.8	629	28.8	730
E (Butterfly Valves)	12.1	308	13.1	333	14.8	375	18.3	465	25.9	657	N/A	N/A	N/A	N/A
E (OS&Y Open)	21.9	556	23.9	606	25.6	651	35.5	902	45.1	1146	56.8	1441	62.8	1594
E (NRS/PI)	15.6	397	16.9	429	18.6	473	23.8	603	29.1	740	36.3	921	40.0	1016
F (Butterfly Valves)	8.6	219	9.6	244	10.9	276	12.5	318	16.5	419	N/A	N/A	N/A	N/A
F (OS&Y Open)	18.0	457	20.0	508	21.0	533	29.5	749	37.0	940	45.0	1143	53.1	1349
F (NRS/PI)	11.8	298	13.0	330	14.0	356	17.8	451	21.0	533	24.5	622	30.0	762
G (Butterfly Valves)	3.0	76	3.3	83	4.3	110	5.1	130	4.8	121	N/A	N/A	N/A	N/A
G (Gate Valves)	5.3	133	6.0	152	6.0	152	9.0	229	9.0	229	9.0	229	10.0	254
H (Butterfly Valves)	23.0	584	23.5	597	25.0	635	29.3	743	35.8	908	N/A	N/A	N/A	N/A
H (Gate Valves)	26.0	660	27.0	686	29.8	756	36.0	914	42.8	1086	N/A	N/A	N/A	N/A
I (Check Removal Clearance)	6.0	152	6.0	152	6.0	152	8.0	203	8.5	216	12.0	305	12.0	305
J (Strainer Length)	10.9	277	11.6	295	14.0	356	18.6	472	25.5	648	26.1	663	30.1	765
K (Strainer Clearance)	8.0	203	8.8	224	9.5	241	12.6	320	16.4	417	19.0	483	22.0	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. (w/ Butterfly Valves)	100.0	45	104.0	47	129.0	59	172.0	78	492.0	223	N/A	N/A	N/A	N/A
Ship Wt. (w/ Butterfly Valves)	161.0	73	165.0	75	190.0	86	252.0	114	627.0	284	N/A	N/A	N/A	N/A
Net Wt. (w/ NRS/Post Indicator)	125.0	57	150.0	68	197.0	89	322.0	146	788.0	357	1487.0	674	2103.0	954
Ship Wt. (w/ NRS/Post Indicator)	186.0	84	211.0	96	258.0	117	402.0	182	923.0	419	1677.0	761	2293.0	1040
Net Wt. (w/ OS&Y Valves)	135.0	61	160.0	73	203.0	92	332.0	151	802.0	364	1509.0	684	2157.0	978
Ship Wt. (w/ OS&Y Valves)	196.0	89	221.0	100	264.0	120	412.0	187	937.0	425	1699.0	771	2347.0	1065

Notes:

Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances.

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

Internal body connections are flanged on 12" size.

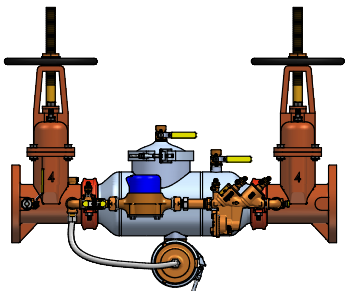
Strainer option only available for flanged-end shut-off options.

RPDALF 4A / RPDA2LF SERIES

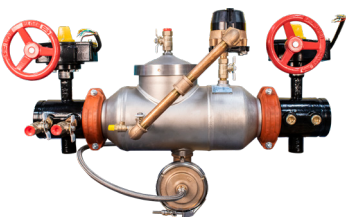
REDUCED PRESSURE DETECTOR BACKFLOW PREVENTER ASSEMBLY



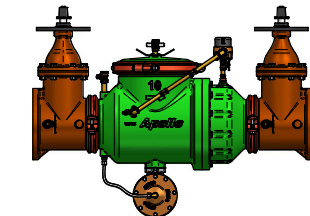
TYPE 1 BYPASS
2-1/2" - 8"
304 STAINLESS
STEEL BODY



TYPE 2 BYPASS
2-1/2" - 8"
304 STAINLESS
STEEL BODY



TYPE 2 BYPASS
10" - 12"
FDA EPOXY
COATED DUCTILE
IRON BODY



**TRIFORCE™
CHECK**



The Apollo Model RPDALF 4A / RPDA2LF 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.

Available in both Type 1 and Type 2 bypass configurations. The 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
- Optional Air Gap Drain
- Lead-Free Standard
- US Patent Nos.: 6,443,184; 7,025,085; 7,533,699
- **Designed, Assembled and Tested in the USA**
- 5 Year Warranty
- Optional Mounting of Bypass on Either Side for Ease of Installation

PERFORMANCE RATING

- Maximum Working Pressure: 175 psi
- Temperature Range: 33° to 140°F, 180°F Intermittent

APPROVALS

- ASSE 1047 (with Meter)
- CSA B64.4
- NSF/ANSI/CAN 61 - Water Quality
- NSF/ANSI 372 - Lead Free
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California (2-1/2" - 8" Types 1 & 2) 10" & 12" + type 2 bypass only
- UL, ULC Classified
- FM Approved

STANDARD MATERIALS LIST

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

Flow Curves - Page 67

PART NUMBER MATRIX

4ALF	7 X	X	X	XX	XX
	BYPASS SUB-ASSEMBLY OPTIONS	SIZE	METER OPTION	SHUT-OFF VALVES (INLET x OUTLET)	OPTIONS
4ALF - Lead Free (Stan-	0 - Type 1 w/ 1/2" Reduced Pressure	9 - 2-1/2"	C - Cubic ft/min	03 - OS&Y FLANGE x OS&Y FLANGE	D - Domestic Assem-
	2 - Type 2 w/ 1/2" Single Check	0 - 3"	E - Gallons/min	04 - OS&Y FLANGE x Monitored (Mon.) Butterfly VALVE	
	3 - Type 1 w/ Bypass on Left*	A - 4"	G - Less Meter	06 - OS&Y FLANGE x Post indicator FLANGE	
	4 - Type 2 w/ Bypass on Left*	C - 6"		07 - OS&Y FLANGE x OS&Y Groove	
		E - 8"		08 - OS&Y Groove x OS&Y Groove	
	Type 2 & 4 only	G - 10"		09 - Mon. Butterfly Valve Groove x Mon. Butterfly Valve	
	Type 2 & 4 only	H - 12"		10 - OS&Y FLANGE x Post Indicator Groove	
				13 - Post Indicator FLANGE x Mon. Butterfly Valve Groove†	
				14 - Post Indicator FLANGE x Post Indicator FLANGE	
				16 - Mon Butterfly VALVE Groove x Post Indicator FLANGE†	
				17 - Post Indicator FLANGE x OS&Y Groove	
				18 - OS&Y Groove x Post Indicator Groove	
				19 - Mon. Butterfly Valve Groove x Post Indicator Groove	
				20 - Post Indicator FLANGE x OS&Y FLANGE	
				21 - Post Indicator Groove x OS&Y Groove	
				22 - Post Indicator Groove x Mon. Butterfly Valve Groove†	
				23 - Mon. Butterfly Valve Groove x OS&Y FLANGE	

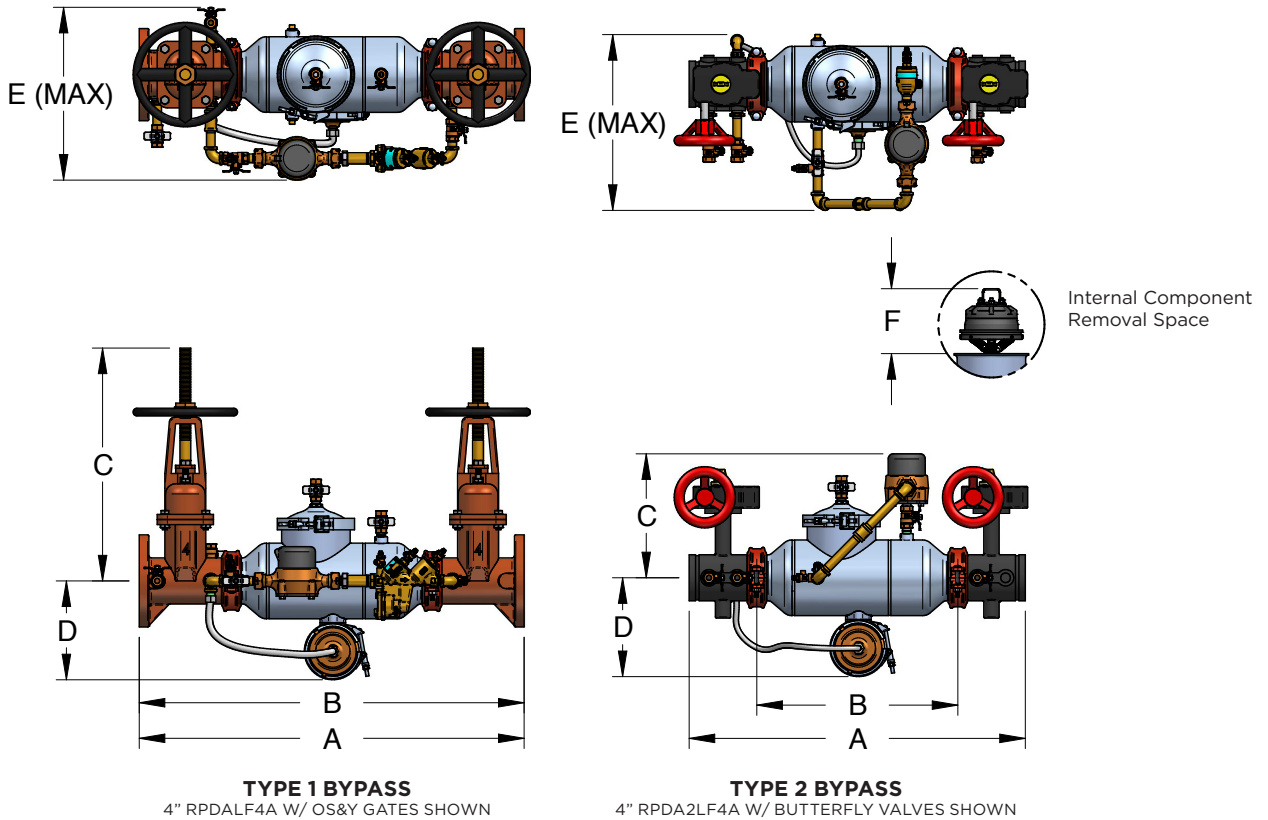
EXAMPLE: 4ALF 72A E3 = 4" size lead free reduced pressure detector assembly with OS&Y flanged inlet x OS&Y flanged outlet shut-off valves Type 2

*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 / RPDA2LF SERIES

REDUCED PRESSURE DETECTOR BACKFLOW PREVENTER ASSEMBLY



DRAWING SHOWN DEPICTS 2-1/2" - 6" ASSEMBLIES.
SEE SUBMITTAL SS1329 FOR DETAILED DRAWINGS FOR EACH SIZE.

DIMENSIONS

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	838	38.5	978	46	1168	52	1321	N/A	N/A
A (Gate Valves)	31	787	32	813	37.6	955	45.5	1156	53.1	1349	62.3	1582	65.4	1661
B (Less Shut-off Valves)	16	406	16	406	19.8	503	24.5	622	30	762	36	914	37	940
C (Butterfly Valves - Type 1)	8.6	218	9.6	244	10.9	277	13	330	16.5	419	N/A	N/A	N/A	N/A
C (Butterfly Valves - Type 2)	13.3	338	13.3	338	12.1	307	13.8	351	16.5	419	N/A	N/A	N/A	N/A
C (NRS/PI Gate Valves - Type 1)	11.8	300	13	330	14	356	17.8	452	21	533	N/A	N/A	N/A	N/A
C (NRS/PI Gate Valves - Type 2)	13.3	338	13.3	338	14	356	17.8	452	21	533	24.5	622	30	762
C (OS&Y Open)	16.4	417	20.5	521	22.8	579	27.3	693	37.8	960	45.8	1163	53.1	1349
D (Centerline to Bottom)	9	229	9	229	9.8	249	11	279	15.8	401	21	533	21.1	536
E (Max w/Gate or Butterfly Valves -	15.5	394	15.5	394	16.6	422	19.4	493	22.4	569	N/A	N/A	N/A	N/A
E (Max w/Gate or Butterfly Valves -	14.1	358	14.1	358	17.4	442	18.4	467	22	559	24.9	632	25	635
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"	15	1/2"	15	1/2"	15	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 Valves)	31	14	32	15	48	22	84	38	228	103	762	346	865	392
Net Wt. (w/ Butterfly Valves)**	105	48	111	50	137	62	198	90	420	191	N/A	N/A	N/A	N/A
Net Wt. (w/ NRS Gate Valves)**	103	47	118	54	158	72	282	128	561	254	1299	589	1755	796
Net Wt. (w/ OS&Y Gate Valves)**	118	54	134	61	189	86	342	155	636	288	1413	641	1870	848

Notes:

Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances.

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

Internal body connections are flanged on 12" size.

RPDALF 4An SERIES

n STYLE REDUCED PRESSURE DETECTOR BACKFLOW PREVENTER ASSEMBLY



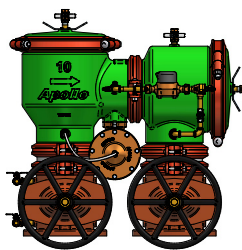
n FLOW
TYPE 2 BYPASS
2-1/2" - 8"
304 STAINLESS
STEEL BODY



VERTICAL UP FLOW
TYPE 2 BYPASS
2-1/2" - 8"
304 STAINLESS
STEEL BODY



n FLOW
TYPE 2 BYPASS
10" - 12"
FDA EPOXY
COATED DUCTILE
IRON BODY



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.

Available in both Type 1 and Type 2 bypass configurations. The 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
- Small Installation Space Required - Small Footprint
- Approved for n-Flow and Vertical Up Flow
- Chloramine-Resistant Elastomers
- **Designed, Assembled and Tested in the USA**
- Lead Free Standard
- 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

PERFORMANCE RATING

- Maximum Working Pressure: 175 psi
- Temperature Range: 33° to 140°F, 180°F intermittent

APPROVALS

- CSA B64.4
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California (2-1/2"-8" Type 1 Bypass, 10"-12" Type 2)
- ASSE 1047 (with Meter)
- UL, ULC Classified
- FM Approved
- NSF/ANSI/CAN 61 - Water Quality
- NSF/ANSI 372 - Lead Free

STANDARD MATERIALS LIST

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

Flow Curves - Page 64

PART NUMBER MATRIX

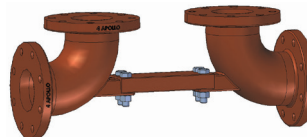
4ANLF	7 X	X	X	X X	X
	BYPASS SUB-ASSEMBLY OPTIONS	SIZE	METER OPTION	SHUT-OFF VALVES (INLET x OUTLET)	OPTIONS
4ANLF - Lead Free (Stan-	0 - Type 1 w/ 1/2" Reduced Pressure	9 - 2-1/2"	C - Cubic ft/	03- OS&Y Flange x OS&Y Flange	D - Domestic Assem-
	2 - Type 2 w/ 1/2" Single Check	0 - 3"	E - Gallons/	04- OS&Y Flange x Monitored (Mon.) Butterfly Valve	bly
	3 - Type 1 w/ Bypass on Left*	A - 4"	G - Less Meter	06- OS&Y Flange x Post indicator Flange	
	4 - Type 2 w/ Bypass on Left*	C - 6"		07- OS&Y Flange x OS&Y Groove	
		E - 8"		08- OS&Y Groove x OS&Y Groove	
		G - 10"		09- Mon. Butterfly Valve Groove x Mon. Butterfly Valve	
		H - 12"		10 - OS&Y Flange x Post Indicator Groove	
				13 - Post Indicator Flange x Mon. Butterfly Valve Groove†	
				14 - Post Indicator Flange x Post Indicator Flange	
				16 - Mon Butterfly Valve Groove x Post Indicator Flange†	
				17 - Post Indicator Flange x OS&Y Groove	
				18 - OS&Y Groove x Post Indicator Groove	

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

*Orientation of bypass looking downstream. Standard is right hand side. Left hand is on opposite side

†Butterfly valves not available in 12" size.

OPTIONAL
VALVE SETTER

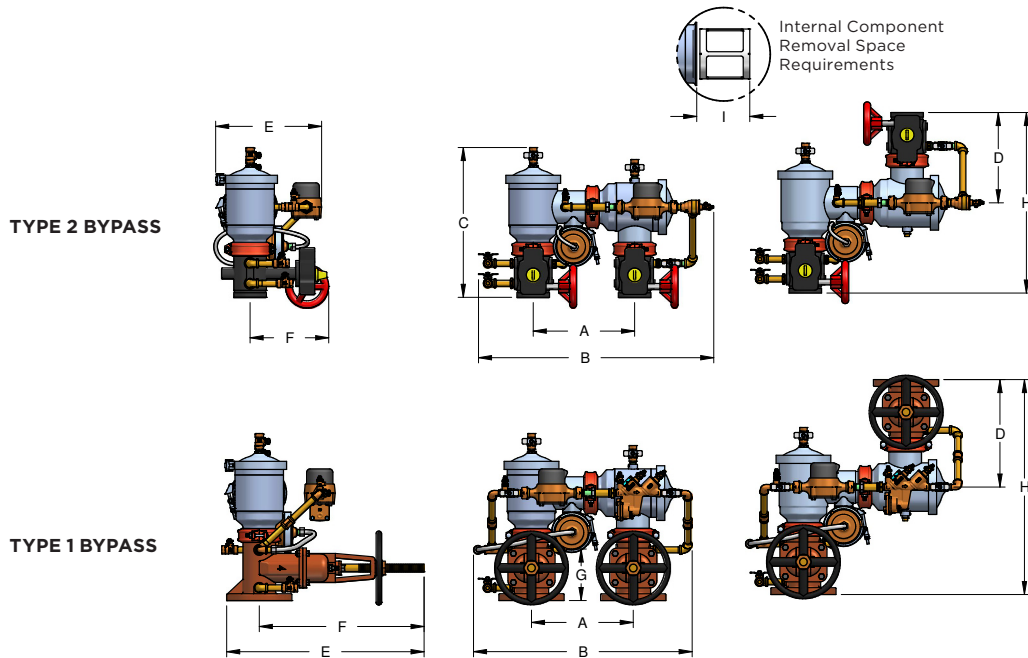


TRIFORCE™
CHECK



RPDALF 4An SERIES

n STYLE REDUCED PRESSURE DETECTOR BACKFLOW PREVENTER ASSEMBLY



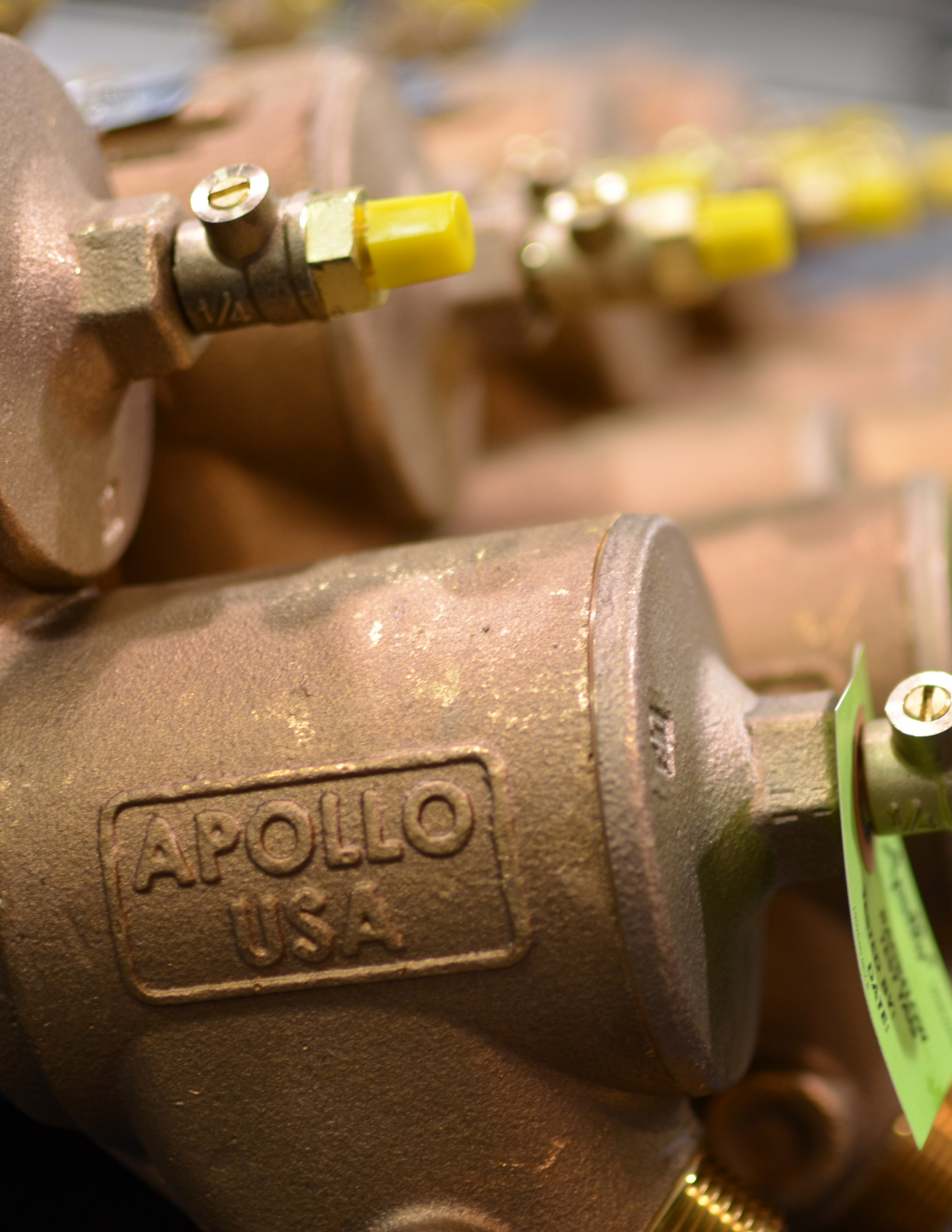
DIMENSIONS

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)	27.8	705	30.0	762	31.0	787	34.3	870	38.0	965	N/A	1162	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)	18.8	476	19.0	483	20.8	527	25.0	635	29.5	749	N/A	883	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	N/A	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)	13.1	333	13.1	333	15.3	389	16.1	410	23.5	597	N/A	618	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)	8.6	219	9.6	244	10.9	276	12.5	318	16.5	419	N/A	460	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 Flange - Butterfly)	3.0	76	3.3	83	4.3	110	5.1	130	4.8	121	N/A	156	N/A	N/A
G (Relief Valve to SOV Flange - 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)	23.0	584	23.5	597	25.0	635	29.3	743	35.8	908	N/A	1003	N/A	N/A
H (Flange to Flange Vertical Up Gate Valves)	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)	117.0	53	122.0	55	147.0	67	205.0	93	510.0	231	N/A	491	N/A	N/A
Ship Wt. (w/ Butterfly Valves)	178.0	81	183.0	83	208.0	94	285.0	129	645.0	293	N/A	577	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

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

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

Internal body connections are flanged on 12" size.



APOLLO
USA

"Apollo"® Valves

backflow devices & accessories



AVB1/AVB2 SERIES

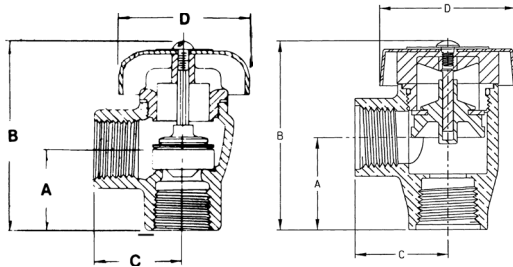
ATMOSPHERIC TYPE VACUUM BREAKER BACKFLOW PREVENTER



38-100 SERIES AVB1



38-200 SERIES AVB2 SIZES 1/4", 3/8, 1/2", 3/4" (OPTIONAL POLISHED CHROME FINISH SHOWN)



AVB1
38/38LF-10X

AVB2
38-20X

Flow Curves - Page 69

The Apollo International™ 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)
- 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

PERFORMANCE RATING

- 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"

APPROVALS

- ASSE 1001
- NSF/ANSI 372 - Lead Free (38LF only)

STANDARD MATERIALS LIST

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

Contact local water authorities for installation/service

PART NUMBER MATRIX

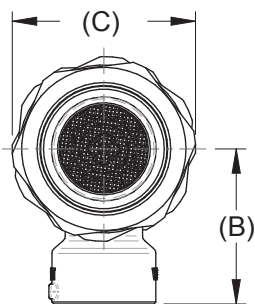
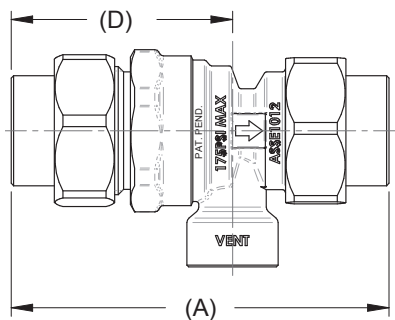
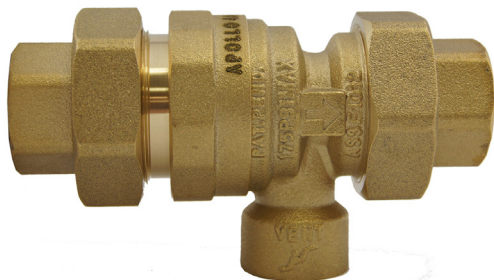
38(LF) X	OX	OX
	SIZE	FINISH
1 - Bronze	1 - 1/4"	1 - Rough Brass
2 - Forged Brass (Not Available in	2 - 3/8"	3 - Rough Chrome (1/4" - 1"
	3 - 1/2"	6 - Polished Chrome (AVB2
	4 - 3/4"	
	5 - 1"	
	6 - 1-1/4"	
	7 - 1-1/2"	
	8 - 2"	

DIMENSIONS

PART NO.	MODEL NO.	SIZE (IN.) (MM)	DIMENSIONS (IN.) (MM)				WEIGHT (LB.) (KG)
			A	B	C	D	
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 (46)	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)
38-201	AVB214	1/4 (6)	1-3/32 (28)	2-5/16 (59)	1-1/32 (26)	21/32 (17)	50.6 (23)
38-202	AVB238	3/8 (10)	1-3/32 (28)	2-5/16 (59)	1-1/32 (26)	21/32 (17)	47.7 (22)
38-203	AVB212	1/2 (15)	1-9/32 (33)	2-5/8 (67)	1-9/32 (33)	1-7/8 (48)	54.7 (25)
38-204	AVB234	3/4 (20)	1-15/32 (37)	3 (80)	1-15/32 (37)	2 (50)	63.1 (29)

DCAP SERIES

DUAL CHECK WITH ATMOSPHERIC PORT BACKFLOW PREVENTER



The Apollo International™ 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

PERFORMANCE RATING

- Maximum Working Pressure: 175 psig
- Inlet Temperature Range: 33° to 210°F
- Maximum Backflow Temperature: 250°F

APPROVALS

- ASSE 1012
- CSA B64.3
- NSF/ANSI 372 - Lead Free (4ALF only)

STANDARD MATERIALS LIST

BODY	Forged Brass C87800
UNION NUT & TAILPIECES	Forged Brass C87800
SEAT DISCS	EPDM (FDA/NSF 61)
SEAT STEM & RETAINER	Forged Brass C46500
SPRINGS	Stainless Steel

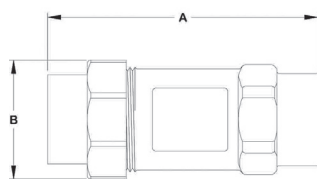
DIMENSIONS

PART NUMBER	DIMENSIONS (IN.)				WT. (LB.)
	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

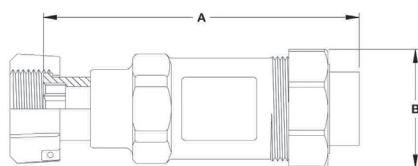
Flow Curves - Page 71

PART NUMBER MATRIX

DUCLF 4A SERIES DUAL CHECK VALVE BACKFLOW PREVENTER



UNION X NPT



METER SWIVEL X NPT

Flow Curves - Page 71

The Apollo International™ DUCLF 4A 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
- Available in Standard and Swivel Types

PERFORMANCE RATING

- Maximum Working Pressure: 175 psi
- Operating Temperature Range: 33° to 180°F

APPROVALS

- ASSE 1024
- CSA B64.6
- NSF/ANSI 372 - Lead Free (4ALF only)

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.

DIMENSIONS

SIZE (IN.)	DIMENSIONS (IN.)		WT. (LB.)
	A	B	
1/2"	4.38	2.00	1.40
3/4"	4.38	2.00	1.40
3/4" Meter Swivel	4.75	2.00	1.60
1"	4.38	2.00	1.40
1" Meter Swivel	4.75	2.00	1.75

METER THREAD SIZING

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

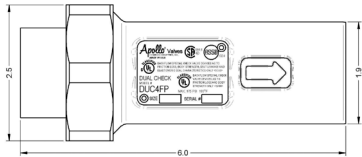
PART NUMBER MATRIX

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	3 - 1/2"	A - FNPT	Blank - Satin Brass
	B - MNPT	4 - 3/4"	B - MNPT	
	C - Female Meter Thread	5 - 1"		
	S - Female Meter Swivel	6 - 1-1/4" (Meter Thread sizing for 1" meter swivel)		
EXAMPLE: 4ALF 3S54A = Lead Free Dual Check with Female Swivel 1" Inlet (for 3/4" meter connection x 3/4" FNPT outlet)				

¹For 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)



DUC 4FP SERIES
DUAL CHECK VALVE 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
- **Made in the USA**

PERFORMANCE RATING

- Maximum Operating Pressure: 175 psi
- Temperature Range: 33° to 180°F

APPROVALS

- ASSE 1024
- UL Classified
- CSA B64.6
- NSF/ANSI 372 - Lead Free (4FPLF only)

Flow Curves - Page 72

STANDARD MATERIALS LIST

BODY	Bronze (C84400)	SPACER	Glass-Filled Noryl ¹
UNION NUT & TAILPIECES	Brass	O-RING	Stainless Steel
CHECK MODULES	Acetal/Nitrile/Stainless		

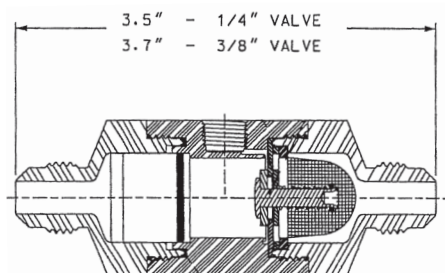
Contact local water authorities for installation/service requirements.

PART NUMBER MATRIX

4FP [XX]	3 X	X	X	X
	INLET	INLET SIZE	OUTLET SIZE	OUTLET
4FP - Standard	A - FNPT	5 - 1"	5 - 1"	A - FNPT
4FPLF - Lead Free	C - Female Meter Thread	6 - 1-1/4"	6 - 1-1/4"	B - MNPT
		(Meter Thread Sizing for 1" Meter)	(Meter Thread Sizing for 1" Meter)	E - Male Meter Thread
EXAMPLE: 4FP3A55A = 1" Dual Check FNPT Inlet x 1" FNPT outlet				

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

CBBP-A SERIES CARBONATED BEVERAGE BACKFLOW PREVENTER



STANDARD MATERIALS LIST

END CAP	Noryl/GFN2
STRAINER	PVC/Stainless Steel
O-RING	EPDM
UPSTREAM CHECK	EPDM/Stainless Steel
DOWNSTREAM CHECK	EPDM/Stainless Steel, Acetal
VALVE BODY	Noryl/GFN2
VENT TUBE	Polypropylene

Contact local water authorities for installation/service

Flow Curves - Page 72

The Apollo CBBP-A Series Carbonated Beverage Backflow Preventer (CBBP) is designed to help 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-A 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-A is suitable for supply pressures up to 200 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 ensures 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
- 5 Year Warranty
- Available in SAE & NPT Connections
- Repairable Check Assemblies
- Non-Metallic Body for Corrosion Resistance

APPROVALS

- CSA
- NSF/ANSI/CAN 61 - Water Quality
- ASSE 1022
- IAPMO® Listed

PART NUMBER MATRIX

4C10	XX A
SIZE	INLET AND OUTLET
1 - 1/4"	01 - Flare
2 - 3/8"	02 - MNPT (3/8" only)

DIMENSIONS

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



HBV SERIES
3/4" HOSE CONNECTION VACUUM BREAKER BACKFLOW PREVENTER



3/4"
(OPTIONAL SATIN CHROME
FINISH SHOWN)

The Apollo International™ 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.

- PERFORMANCE RATING**

 - Maximum Working Pressure: 125 psig
 - Maximum Temperature: 180° F
- APPROVALS**

 - ASSE 1011
 - CSA B64.2
 - IAPMO

DIMENSIONS			
PART NUMBER	MODEL NUMBER	FINISH	WT./EA
38LF314AS	HBVLF234	Satin Brass	.17
38LF314CS	HBVLC234	Satin Chrome	.17

38LF-314 shipped in 12 pcs./box

HBVB SERIES
3/4" FREEZE RESISTANT HOSE CONNECTION VACUUM BREAKER



3/4"

The Apollo International™ 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.

- PERFORMANCE RATING**

 - Maximum Working Pressure: 125 psig
 - Maximum Temperature: 180° F
- APPROVALS**

 - ASSE 1011

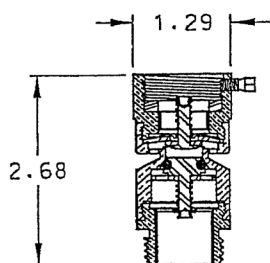
DIMENSIONS			
PART NUMBER	MODEL NUMBER	FINISH	WT./EA
38LF414AS	HBVBLF2	Satin Brass	.37

HBDUC SERIES

3/4" HOSE CONNECTION/LAB FAUCET DUAL CHECK BACKFLOW PREVENTER



38-304-02
3/4"



Flow Curves - Page 73

The Apollo International™ 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

STANDARD MATERIALS LIST

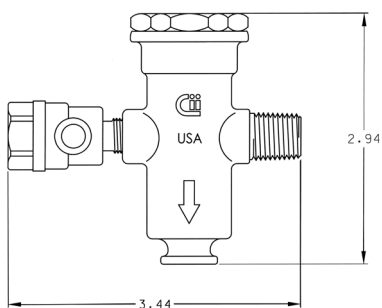
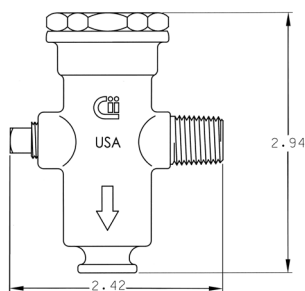
BODY	Brass
SEATS	EPDM
CHECK COMPONENTS	Stainless Steel
CHECK GUIDE	Acetal

Contact local water authorities for installation/service requirements.

DIMENSIONS

PART NUMBER	MODEL NUMBER	WT./EA
3830402	HBDUC34	.46
38LF30402	HBDUCLF34	.46

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
- Compact Design
- IAPMO Listed
- US Patent #6,374,849
- 5 Year Warranty

PERFORMANCE RATING

- Nominal Start to Open Temperature of 35°F
- Maximum Operating Pressure: 175 psig
- Maximum Temperature of 180°F

APPROVALS

- NSF/ANSI 372 - Lead Free (40LF only)

STANDARD MATERIALS LIST

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

Contact local water authorities for installation/service requirements.

WEIGHTS

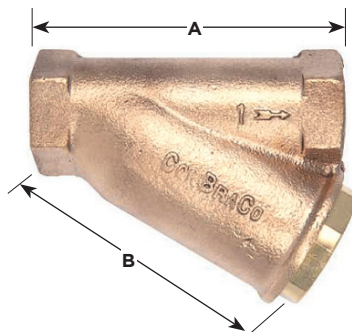
PART NUMBER	NET WEIGHT (LB.)
40-000-FPV1	.70
40-000-FPV2	.77

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 SERIES WYE STRAINERS



Heavy pattern design with large area screens ensures excellent protection against foreign particles in your fluid system. Corrosion-resistant bronze body and stainless steel screens provide years of service.

FEATURES

- Blow-Off Ball Valve Option (3/4" - 2")
- Replaceable Self-Aligning Screen
- Large Net Flow Area for Longer Maintenance Intervals
- 59-400 Series is Female x Male NPT (3/4" & 1" Only)
- Several Screen and Cap Options
- **Made in USA, ARRA Compliant**

PERFORMANCE RATING

- Working Pressure:
CWP: 400 psi (up to 3")
SWP: 125 psi
- Maximum Temperature: 350° F

APPROVALS

- NSF/ANSI 372 - Lead Free (59LF)
- CRN-OE 8959.5

DIMENSIONS

PART NUMBER	MODEL NUMBER	SIZE IN.	DIMENSIONS				CAP TAPPING SUFFIX -02	WEIGHT	
			A (IN.)	A (MM.)	B (IN.)	B (MM.)		LB.	KG.
5900101	YB14	1/4 NPT	2	50	1-1/4	32	1/8 NPT	.42	.19
5900201	YB38	3/8 NPT	2-11/16	68	2	50	1/4 NPT	.79	.36
5900301	YB12	1/2 NPT	2-11/16	68	2	50	1/4 NPT	.75	.34
5900401	YB34	3/4 NPT	3-7/8	98	3-1/4	83	1/2 NPT	1.85	.84
5900501	YB1	1 NPT	4-3/4	121	4	100	3/4 NPT	2.76	1.25
5900601	YB114	1-1/4 NPT	5-1/8	130	4-1/4	108	3/4 NPT	3.58	1.62
5900701	YB112	1-1/2 NPT	5-3/4	146	5	127	1 NPT	5.41	2.45
5900801	YB2	2 NPT	6-3/4	171	6	150	1-1/4 NPT	7.47	3.39
5940401	YBM34	3/4 F x MNPT	5-3/8	136	3-1/4	83	1/2 NPT	2.0	.9
5940501	YBM1	1 F x MNPT	5-3/4	146	4	100	3/4 NPT	2.95	1.3
59LF00101	YB14LF	1/4 NPT	2	50	1-1/4	32	1/8 NPT	.42	.19
59LF00201	YB38LF	3/8 NPT	2-11/16	68	2	50	1/4 NPT	.79	.36
59LF00301	YB12LF	1/2 NPT	2-11/16	68	2	50	1/4 NPT	.75	.34
59LF00401	YB34LF	3/4 NPT	3-7/8	98	3-1/4	83	1/2 NPT	1.85	.84
59LF00501	YB1LF	1 NPT	1-3/4	121	4	100	3/4 NPT	2.76	1.25
59LF00601	YB114LF	1-1/4 NPT	5-1/8	130	4-1/4	108	3/4 NPT	3.58	1.62
59LF00701	YB112LF	1-1/2 NPT	5-3/4	146	5	127	1 NPT	5.41	2.45
59LF00801	YB2LF	2 NPT	6-3/4	171	6	150	1-1/4 NPT	7.47	3.39
59LF40401	YBM34LF	3/4 NPT x	5-3/8	136	3-1/4	83	1/2 NPT	2.0	.9
59LF40501	YBM1LF	1 NPT x MNPT	5-3/4	146	4	100	3/4 NPT	2.95	1.3

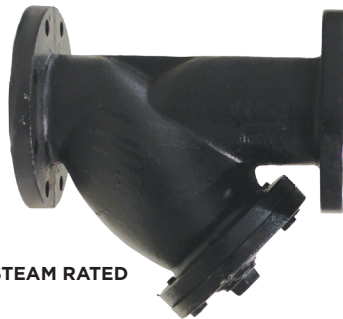


YCF SERIES

CLASS 125 CAST IRON WYE STRAINER



LEAD FREE



STEAM RATED

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

FEATURES

- Iron Strainer with Flat Face Flanges Conforms to ASME/ANSI 16.1 Class 125
- One Piece Cast Body Meets ASME Standard
- Epoxy Coating Models conform to FDA CFR21, Section 175.300 and NSF/ANSI 372 Lead Free
- Equipped with Bolted Cover Employing Flat Gasket Seal
- Upper and Lower Machined Seats for Screen for Self-Aligning Screen Design
- 304 SS Perforated Screens are Standard (P045 STD 2"-3", P125 STD 4"-12")
- Tapped Blow Off Connection with Plug
- 100% Factory Pressure Tested

PERFORMANCE RATING (LEAD FREE)

- Working Pressure:
CWP: 200 psi @ 150° F
- *not for steam service.**

PERFORMANCE RATING (STEAM RATED)

- Working Pressure:
CWP 200 PSIG
SWP 125 PSIG @ 352°F

STANDARD MATERIALS LIST

BODY	Cast Iron, ASTM A126-B
CAP/COVER	Cast Iron, ASTM A126-B
PLUG	Carbon Steel, ASTM A307
BOLT/STUD/NUT	Carbon Steel, ASTM A307
SCREEN	304 Stainless Steel
GASKET	Graphite
COATING (LEAD FREE ONLY)	Epoxy, FDA Approved

DIMENSIONS

PART NUMBER STEAM RATED	PART NUMBER LEAD FREE	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	LB.	KG.
YCF02P045	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
YCF25P045	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
YCF03P045	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
YCF04P125	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
YCF05P125	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
YCF06P125	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
YCF08P125	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
YCF10P125	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
YCF12P125	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

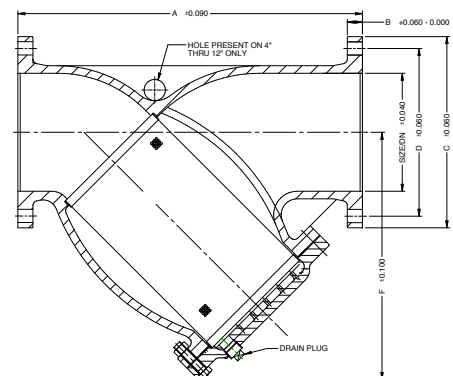
PART NUMBER MATRIX

YCF	XXX	XXX[X]	X
	CONNECTION	SCREEN	OPTION
YCF (Flat Face)	F02 - Flanged 2"	M20 - 20 Mesh	E - Epoxy Coating, FDA Approved
	F25 - Flanged 2.5"	M40 - 40 Mesh	LEAD FREE ONLY, NOT FOR
	F03 - Flanged 3"	M80 - 80 Mesh	
	F04 - Flanged 4"	M100 - 100 Mesh	
	F05 - Flanged 5"	P045 - .045" PERF	
	F06 - Flanged 6"	P125 - .125" PERF	
	F08 - Flanged 8"		
	F10 - Flanged 10"		
	F12 - Flanged 12"		

*All mesh screens include liner:
.045" Perf on 3" and smaller
.125" Perf on 4" and larger

**All screens not available for all sizes.

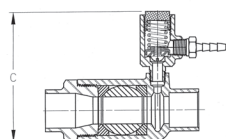
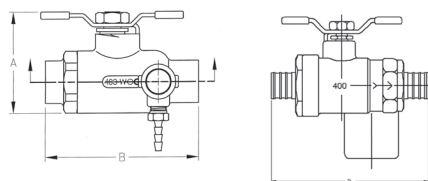
***Limited screen options available for non-lead free steam rated version.





78RV SERIES

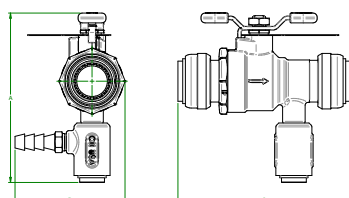
THERMAL EXPANSION RELIEF VALVE



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



PUSH OPTION



The Apollo 78RV combines thermal expansion protection and water heater shut-off in a single, simple installation. They're space saving and a less costly alternative to large expansion tanks. Made in the USA, featuring lead free dezincification resistant brass materials.

FEATURES

- 3/4" Solder, NPT, and PEX Ball Valve Connections
- Corrosion Resistant, Heavy Pattern, Forged Brass, Materials
- Chrome-Plated Ball
- Thermal Relief Valve is Factory Preset and Sealed
- Relief Valve Features Soft Seat and Stainless Steel Spring
- Relief Valve Available with Hose Barb, 1/2" PEX, 3/8" Compression or 1/2" Combination Solder/Thread Fitting

- Multiple Relief Pressure Kit Options
- Easily Identifiable White Handle Grip and Blue "Lead Free" Hang Tag
- EZ-Solder™ Lead Free Brass

PERFORMANCE RATING

- Maximum Temperature: 210°F

APPROVALS

- IAPMO IGC 128-2008
- City of Los Angeles Registered
- CSA B125.1 & B125.3

DIMENSIONS

PART NUMBER	SIZE (IN.)	DIMENSIONS (IN.)			WT. (LB.)
		A	B	C	
78LF300	3/4" Solder	4.0	3.9	3.3	.687
78LF400	3/4" FNPT	3.9	2.8	3.3	.750
78LF700	3/4" PEX	3.9	3.8	3.3	.750

PART NUMBER MATRIX

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

DIMENSIONS - PUSH OPTION

PART NUMBER	SIZE (IN.)	DIMENSIONS (IN.)			PORT DIA. (IN.)	PRESSURE
		A	B	C		
78RV88P80	3/4" Push	3.9	4.2	1.6	.750	80
78RV88P100	3/4" Push	3.9	4.2	1.6	.750	100
78RV88P125	3/4" Push	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

PERFORMANCE RATING

- Maximum Pressure: 150 psi
- Maximum Temperature: 200°F
- Pre-Charge Pressure: 35 psig

APPROVALS

- NSF/ANSI/CAN 61 - Water Quality
- IAPMO

MODEL NUMBER	PART NUMBER	CAPACITY (GAL.)	EXP. VOLUME (GAL.)	CONNECTION SIZE (NPT)	DIAMETER (IN.)	HEIGHT (IN.)	WEIGHT (LB.)
EXTP2	40XT1-04	2.10	0.9	3/4	8.0	12.5	4.7
EXTP5	40XT3-04	4.5	2.5	3/4	11.0	15.0	8
EXTP10	40XT5-04	10	5.2	3/4	11.5	20	13.5

Maximum expansion volume is based on 35 psi.

TK SERIES

DIFFERENTIAL PRESSURE GAUGE TEST KITS



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.

PART NO.	MODEL NO.	APPLICATION	WT./EA (LB.)	WT./CASE (LB.)
40200TKU	TK3	ALL DCV, RPZ, PVB & SVB	6.1	9.5
40200TK5U	TK5	ALL DCV, RPZ, PVB & SVB	6.1	9.5

TEST KIT ADAPTER FITTINGS

Brass fitting which installs onto backflow preventer testcocks by hand to provide quicker testing. Sets of three fittings with o-rings for 1/4" SAE connections to the test kits. Packaged in a resealable plastic bag.

PART NO.	MODEL NO.	SIZE	BACKFLOW APPLICATION
40000TFK	TFK14	1/4" SAE x 1/4" NPT	1/4" - 2"
40001TFK	TFK12	1/4" SAE x 1/2" NPT	2-1/2" - 6"
40002TFK	TFK34	1/4" SAE x 3/4" NPT	8" - 12"
40003TFK	TFKSET	Set of All 3 Sizes	1/4" - 12"

4A, 4AN AND RPS 40 SERIES AIR GAP DRAIN



For installation with all 4A, 4AN and RPS 40 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.

AGD4A1 / AGD4A112 / AGD4A2 / AGD4A6 (1/2" - 6")

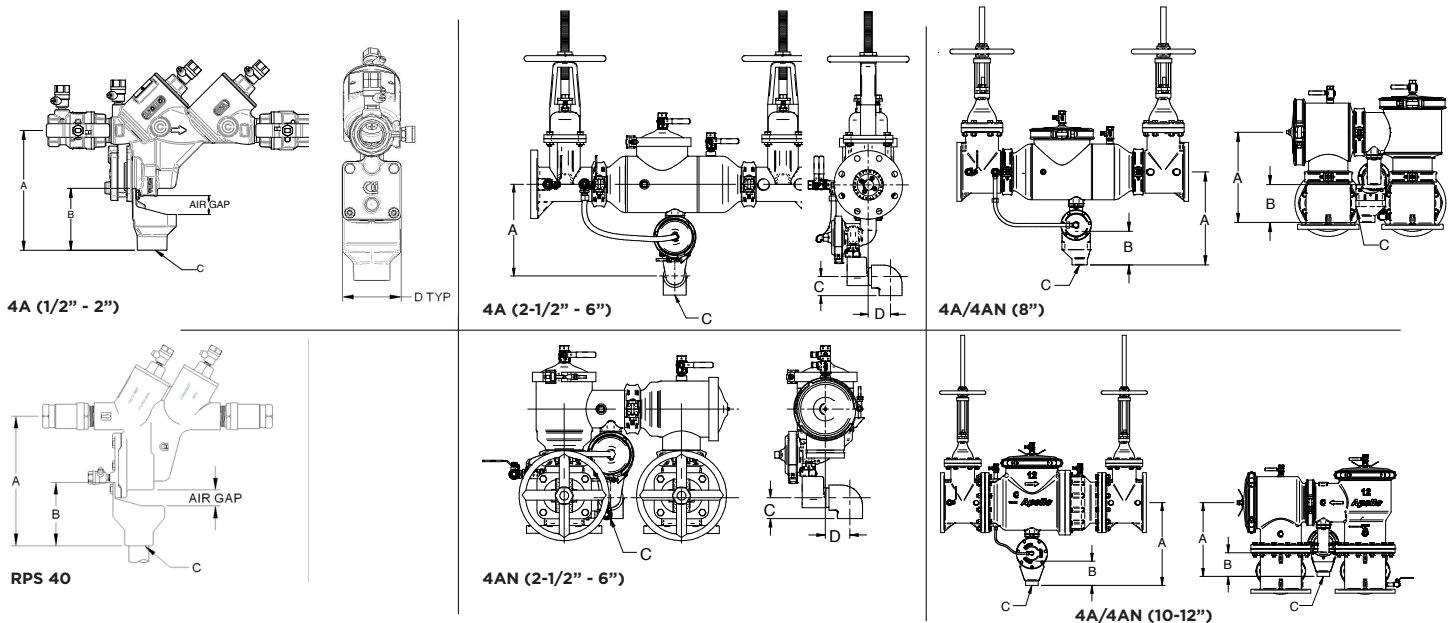
RP SIZE	AIR GAP PART NUMBER	DIMENSIONS (IN.)				OUTLET CONNECTION (FNPT)	WT. (LB.)
		A	B	C	D		
1/2"	AGD4A1	6-1/2	3-3/8	1" FNPT	2-5/8	1-1/4"	0.1
3/4"	AGD4A1	6-1/2	3-3/8	1" FNPT	2-5/8	1-1/4"	0.1
1"	AGD4A1	6-5/8	3-3/8	1" FNPT	2-5/8	1-1/4"	0.1
1-1/4" & 1-1/2"	AGD4A112	8-1/2	4-1/8	1-1/2" FNPT	3-1/2	2"	0.2
2"	AGD4A2	10	5-3/8	2" FNPT	4-1/4	2-1/2"	0.35
RP4A							
2-1/2"	AGD4A6	11.28	-	2.63	3.13	2"	0.7
3"	AGD4A6	11.28	-	2.63	3.13	2"	0.7
4"	AGD4A6	12.02	-	2.63	3.13	2"	0.7
6"	AGD4A6	13.32	-	2.63	3.13	2"	0.7
RP4AN							
2-1/2"	AGD4A6	-	10.87	2.63	3.13	2"	0.7
3"	AGD4A6	-	10.87	2.63	3.13	2"	0.7
4"	AGD4A6	-	10.51	2.63	3.13	2"	0.7
6"	AGD4A6	-	11.76	2.63	3.13	2"	0.7

AGD4A8 & AGD4A12IN (8" & 12")

RP STYLE	AIR GAP PART NUMBER	DIMENSIONS (IN.)		OUTLET PIPE SIZE	OUTLET CONNECTION (FNPT)	WT. (LB.)
		A	B			
RPLF4A	AGD4A8	21.3	9.1	3"	2-1/2"	1.5
RPLF4AN	AGD4A8	19.8	9.1	3"	2-1/2"	1.5
RPLF4A	AGD4A12IN	26.3	7.7	4"	3"	5
RPLF4AN	AGD4A12IN	23.4	7.7	4"	3"	5

AGD4A012 / AGD4A01 (3/8" - 1")

RPS SIZE	AIR GAP PART NUMBER	DIMENSIONS (IN.)				OUTLET CONNECTION (FNPT)	WT. (LB.)
		A	B	C	D		
3/8", 1/2"	AGD4012	6-1/2	3-3/8	1" FNPT	2-5/8	1-1/4"	0.1
3/4" & 1"	AGD401	8-1/4	4-1/8	1-1/2" FNPT	3-1/2	2"	0.2



SHUT-OFF VALVES



FLANGE X GROOVE

NON-RISING STEM (NRS)

SIZE	FLANGE X GROOVE	GROOVE X GROOVE	FLANGE X FLANGE
2-1/2"	W286800	W287400	-
3"	W286900	W287500	-
4"	W287000	W287600	-
6"	W287100	W287700	-
8"	W287200	W287800	-
10"	W287300	W287900	W-2866-00
12"	-	-	W-2867-00

AWWA



FLANGE X GROOVE

OUTSIDE STEM & YOKE (OS&Y)

SIZE	FLANGE X GROOVE	GROOVE X GROOVE	FLANGE X FLANGE
2-1/2"	W288700	W289300	-
3"	W288800	W289400	-
4"	W288900	W289500	-
6"	W289000	W289600	-
8"	W289100	W289700	-
10"	W289200	W289800	W-2885-00
12"	-	-	W-2886-00

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"	W524400
3"	W524500
4"	W524600
6"	W524700
8"	W524800
10"	W524900

UL Listed, ULC Listed, FM Approved



FNPT X FNPT

91 SERIES BRONZE BALL VALVE (BV)

SIZE	INLET F X F FNPT	OUTLET F X F FNPT	INLET F X F FNPT	OUTLET F X F FNPT
	4A A SERIES		4ALF A SERIES	
1/2"	91B10385	91C10385	91BLF10385	91CLF10385
3/4"	91B10483	91C10483	91BLF10483	91CLF10483
1"	91B10583	91C10583	91BLF10583	91CLF10583
1-1/4"	91B10684	91C10684	91BLF10684	91CLF10684
1-1/2"	91B10784	91C10784	91BLF10784	91CLF10784
2"	91B10884	91C10884	91BLF10884	91CLF10884

SIZE	INLET F X F FNPT	OUTLET F X F FNPT	INLET F X F FNPT	OUTLET F X F FNPT
	4A A SERIES UNION BALL VALVES		4ALF A SERIES UNION BALL VALVES	
-	-	-	-	-
3/4"	91B30483	91C30483	91BLF30483	91CLF30483
1"	91B30583	91C30583	91BLF30583	91CLF30583
1-1/4"	91B30684	91C30684	91BLF30684	91CLF30684
1-1/2"	91B30784	91C30784	91BLF30784	91CLF30784
2"	91B30884	91C30884	91BLF30884	91CLF30884

TESTCOCKS

TESTCOCKS

FOR SMALL BACKFLOW



MALE X FNPT	LEAD FREE - MALE X FNPT
1/8" x 1/4"	1/8" x 1/4"
78 290 01	78LF 290 01
1/4" x 1/4"	1/4" x 1/4"
78 291 01	78LF 291 01



MALE X SAE FLARE	LEAD FREE - MALE X SAE FLARE
1/8" x Flare*	1/8" x Flare
78 292 01	78LF 292 01
1/4" x Flare**	1/4" x Flare
78 293 01	78LF 293 01

* 1/8" - 1/4" devices
** 1-1/4" - 2" devices



LEAD FREE TESTCOCKS

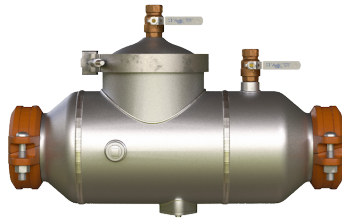
FOR LARGE BACKFLOW



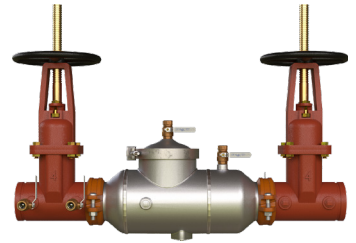
2-1/2" TO 4" SS ASSEMBLIES	
SS Cover Testcock	77CLF803A0
SS Body Testcock	77CLF80310
Shutoff Valves T/C	77CLF10310
6" SS ASSEMBLIES	
SS Cover Testcock	77CLF804A0
SS Body Testcock	77CLF80410
Shutoff Valves T/C	77CLF10410
8" SS ASSEMBLIES	
Cover & Body T/C	77CLF80410
Shutoff Valves T/C	77CLF10410
10" AND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

SHUT-OFF VALVE OPTIONS

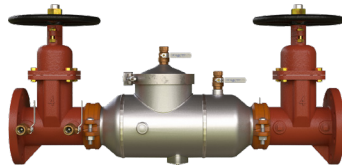
PART# OPTION	MODEL# OPTION
-01	-LS
LESS SHUTOFF VALVES	



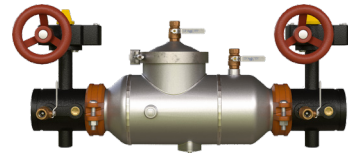
PART# OPTION	MODEL# OPTION
-08	-OG
OS&Y (GROOVED) x OS&Y (GROOVED)	



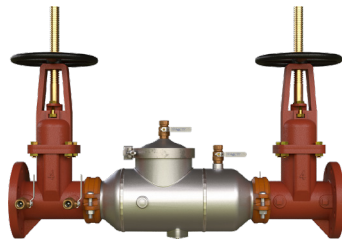
PART# OPTION	MODEL# OPTION
-02	-NF
NRS (FLANGED) x NRS (FLANGED)	



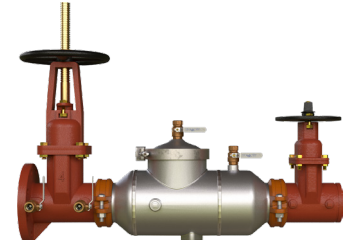
PART# OPTION	MODEL# OPTION
-09	-BG
MONITORED BUTTERFLY (GROOVED) x MONITORED BUTTERFLY	



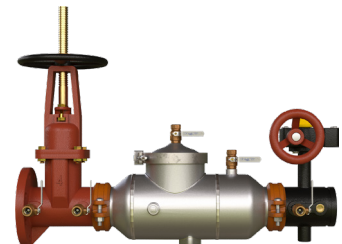
PART# OPTION	MODEL# OPTION
-02	-NF
OS&Y (FLANGED) x OS&Y (FLANGED)	



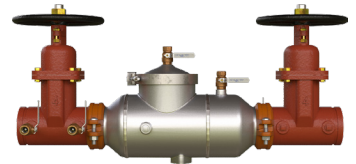
PART# OPTION	MODEL# OPTION
-010	-OFPIG
OS&Y (FLANGED) x POST INDICATOR (GROOVED)	



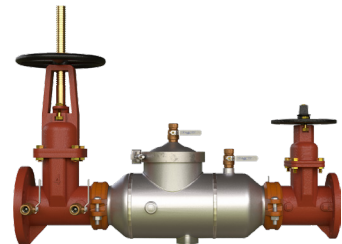
PART# OPTION	MODEL# OPTION
-04	-OFBG
OS&Y (FLANGED) x MONITORED BUTTERFLY (GROOVED)	



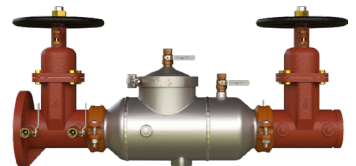
PART# OPTION	MODEL# OPTION
-011	-NG
NRS (GROOVED) x NRS (GROOVED)	



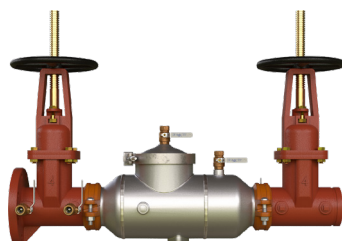
PART# OPTION	MODEL# OPTION
-06	-OFPIF
OS&Y (FLANGED) x POST INDICATOR (FLANGED)	



PART# OPTION	MODEL# OPTION
-012	-NFG
NRS (FLANGED) x NRS (GROOVED)	

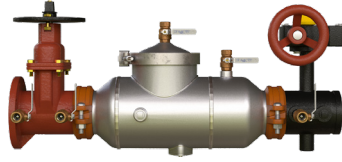


PART# OPTION	MODEL# OPTION
-07	-OFG
OS&Y (FLANGED) x OS&Y (GROOVED)	

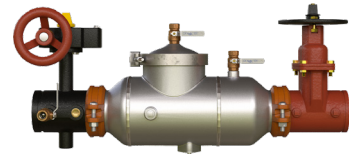


SHUT-OFF VALVE OPTIONS

PART# OPTION	MODEL# OPTION
-013	-PIFBVG
POST INDICATOR (FLANGED) x MONITORED BUTTERFLY (GROOVED)	



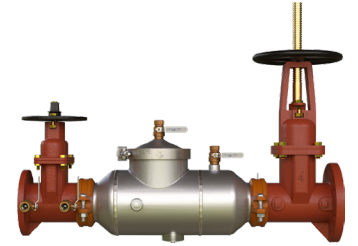
PART# OPTION	MODEL# OPTION
-019	-BVGPIG
MONITORED BUTTERFLY (GROOVED) x	



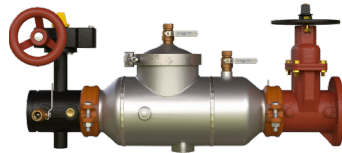
PART# OPTION	MODEL# OPTION
-014	-PIF
POST INDICATOR (FLANGED) x POST INDICATOR (FLANGED)	



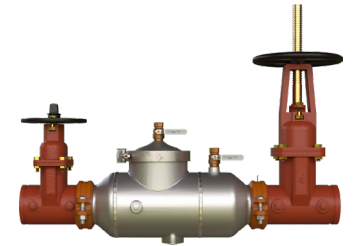
PART# OPTION	MODEL# OPTION
-020	-PIFOF
POST INDICATOR (FLANGED) x OS&Y (FLANGED)	



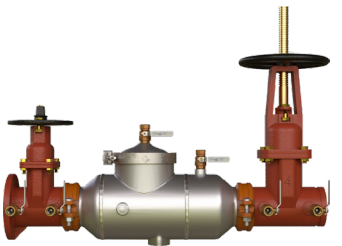
PART# OPTION	MODEL# OPTION
-016	-BVGPIF
MONITORED BUTTERFLY (GROOVED) x	



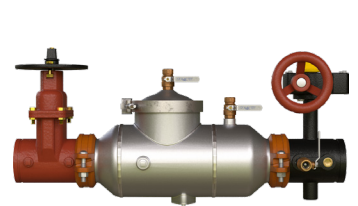
PART# OPTION	MODEL# OPTION
-021	-PIGOG
POST INDICATOR (GROOVED) x OS&Y (GROOVED)	



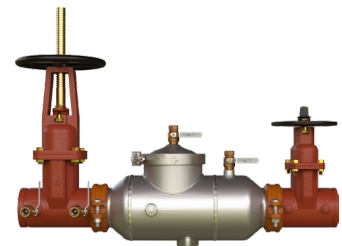
PART# OPTION	MODEL# OPTION
-017	-FPIOG
POST INDICATOR (FLANGED) x OS&Y (GROOVED)	



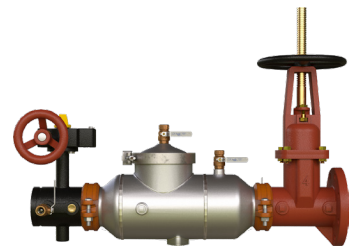
PART# OPTION	MODEL# OPTION
-022	-PIGBVG
POST INDICATOR (GROOVED) x MONITORED BUTTERFLY (GROOVED)	



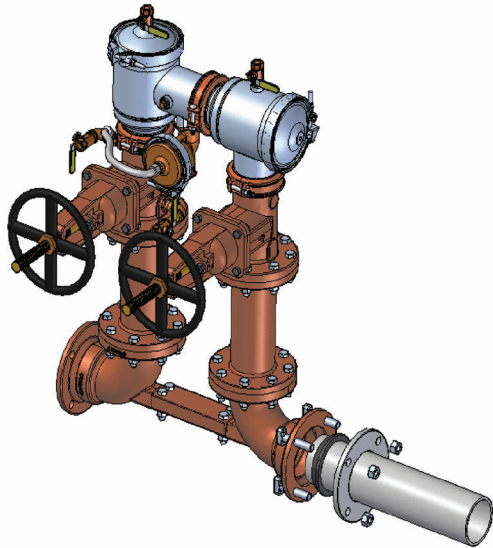
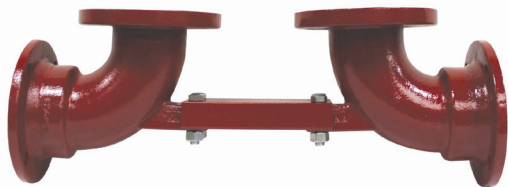
PART# OPTION	MODEL# OPTION
-018	-OGPIG
OS&Y (GROOVED) x POST INDICATOR (GROOVED)	



PART# OPTION	MODEL# OPTION
-023	-BVGoF
MONITORED BUTTERFLY (GROOVED) x	



4AN SERIES 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.

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
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

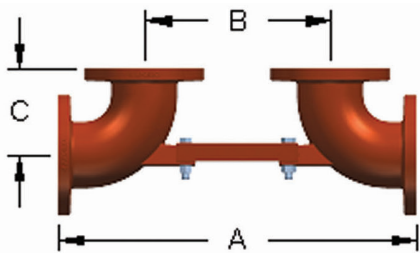
DIMENSIONS

SIZE	MODEL	DIMENSIONS (IN.)			WT./EA (LB.)
		A	B	C	
2-1/2"	F	23-1/2	12-1/2	5-1/2	43.7
3"	F	23-1/2	12-1/2	5-1/2	50.4
	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
	MJ	24	14	7-1/2	65.1
6"	F	32	16	8	147.5
	MJF	29	16	8	115.3
	MJ	29	16	9	107.1
8"	F	36-1/2	18-1/2	9	236.30
	MJF	33-1/2	18-1/2	9	216.40
	MJ	33-1/2	18-1/2	10	193.20
10"	F	43.0	21	11.0	388
12"	F	50-3/4	26-3/4	12	547

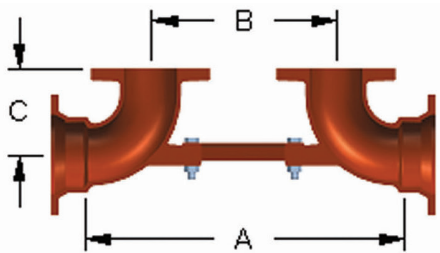
STANDARD MATERIALS LIST

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

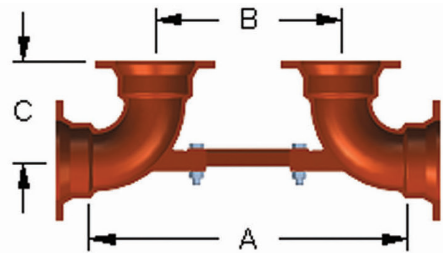
Contact local water authorities for installation/service



FLANGE X FLANGE
(F)



MECHANICAL JOINT X FLANGE
(MJF)



MECHANICAL JOINT X MECHANICAL JOINT
(MJ)

PRESSURE DROP Calculator

Apollo Backflow Preventers are designed to provide positive protection against backflow while also producing the lowest possible pressure drop at all flow rates.

Find accurate, 3rd party verified, pressure loss quickly & easily using the Apollo Backflow Pressure Drop Calculator.

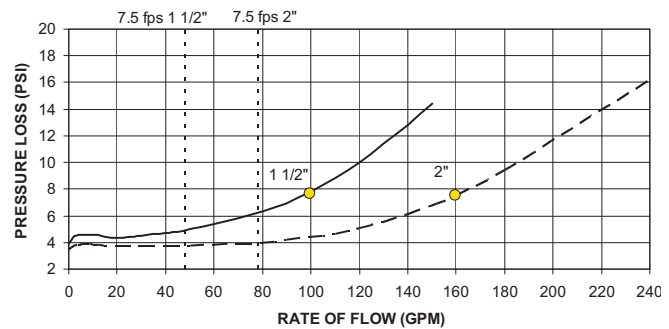
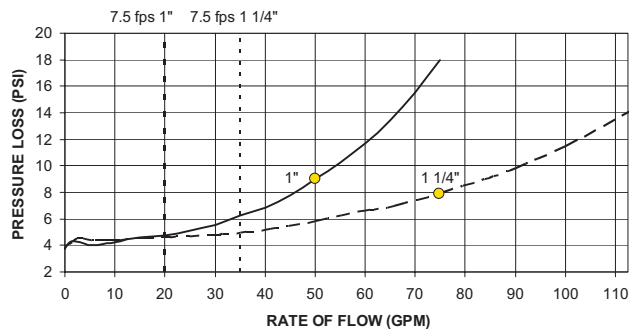
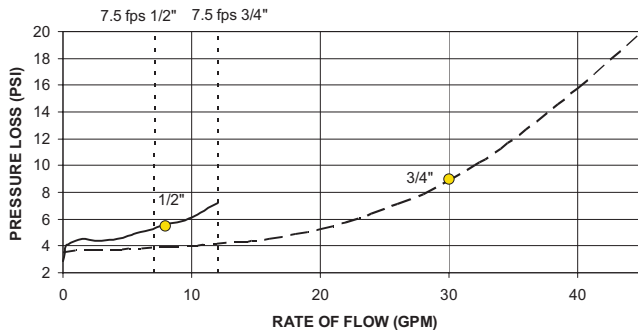
PDC.APOLLOVALVES.COM

PRESSURE LOSS CURVE NOTES:

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

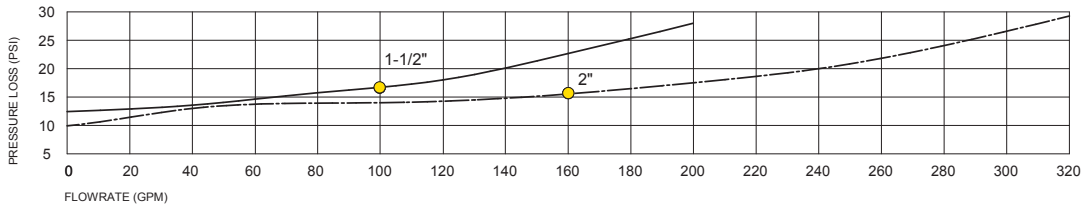
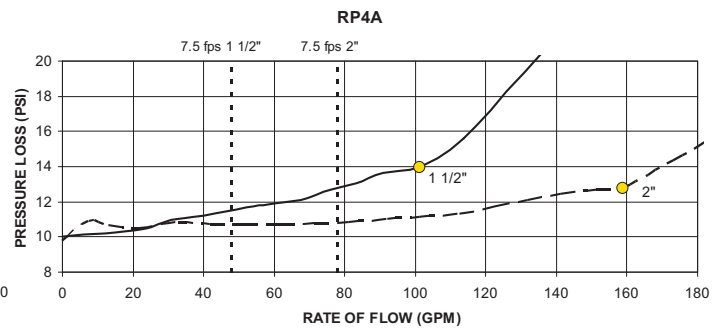
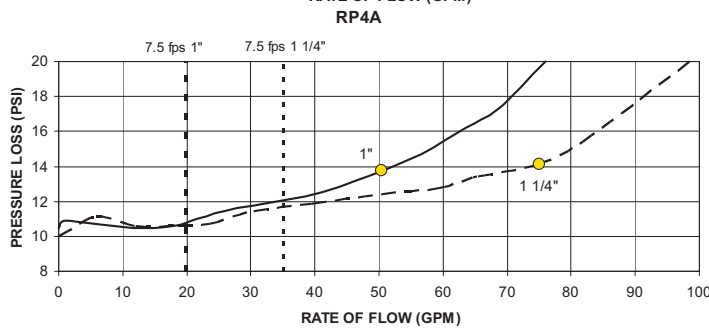
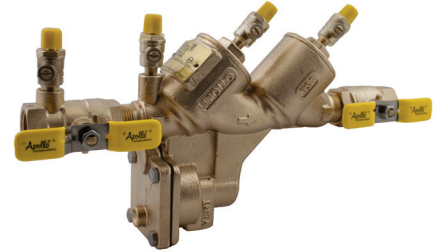
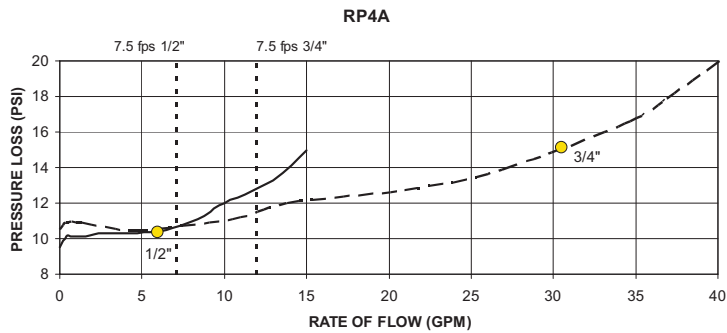
DC 4A / DCLF 4A & DC 4AST / DCLF 4AST (1-1/2" - 2") FLOW CURVES

Pressure loss versus flow data as determined by independent approval agencies.



● **METER RATED FLOW**

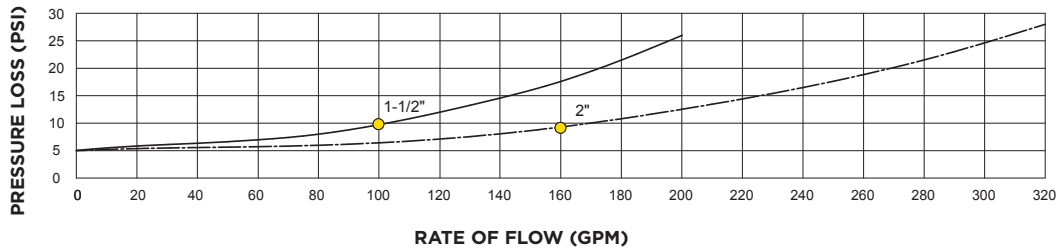
RP 4A / RPLF 4A & RP 4AST / RPLF 4AST (1-1/2" - 2")
FLOW CURVES



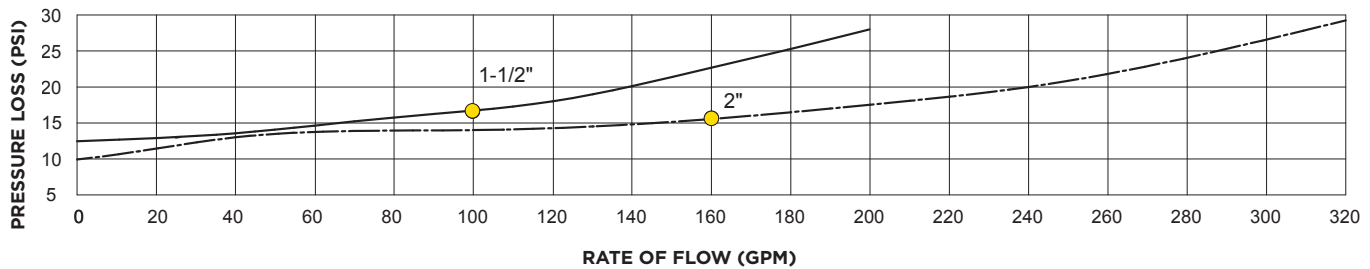
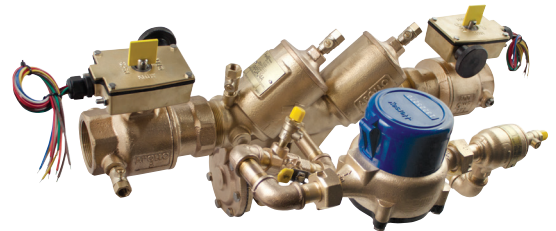
METER RATED FLOW

Pressure loss versus flow data as determined by independent approval agencies.

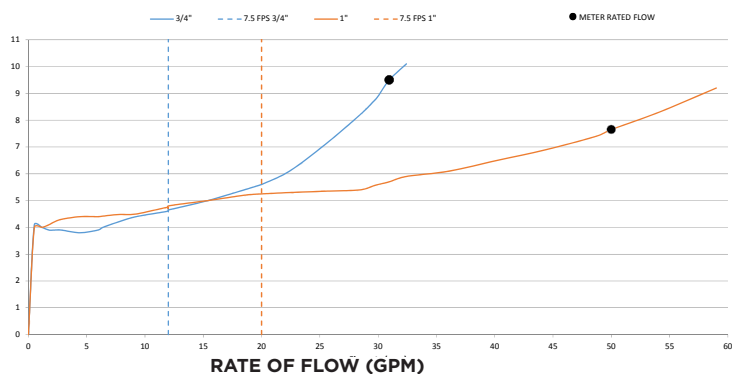
DCDA2 4A / DCDA2LF 4A FLOW CURVES



RPDA2/RPDA2LF 4A SERIES FLOW CURVES



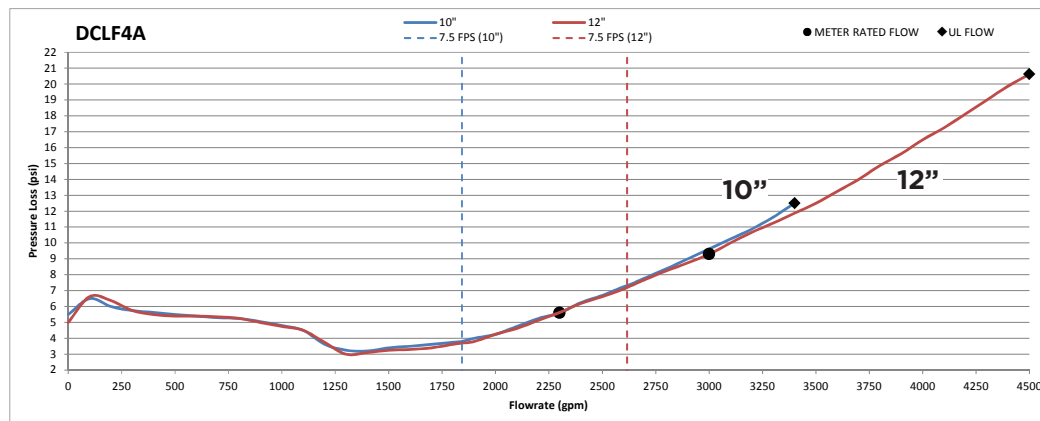
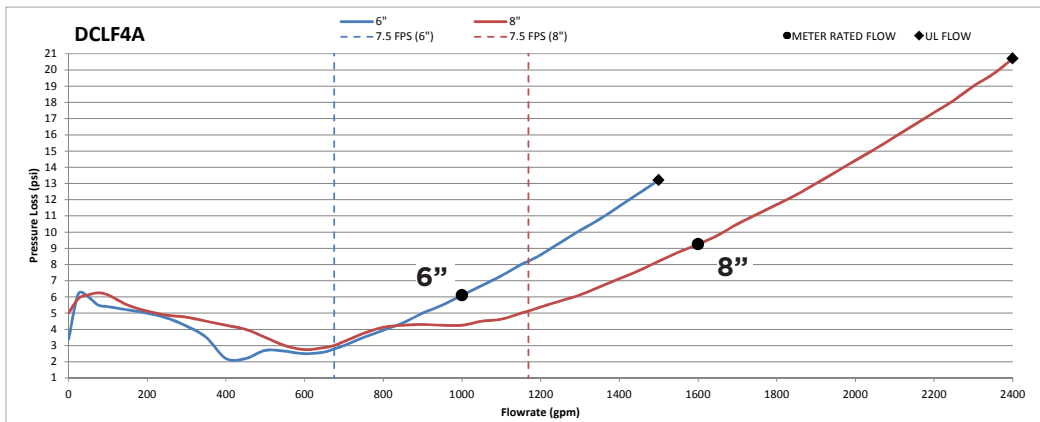
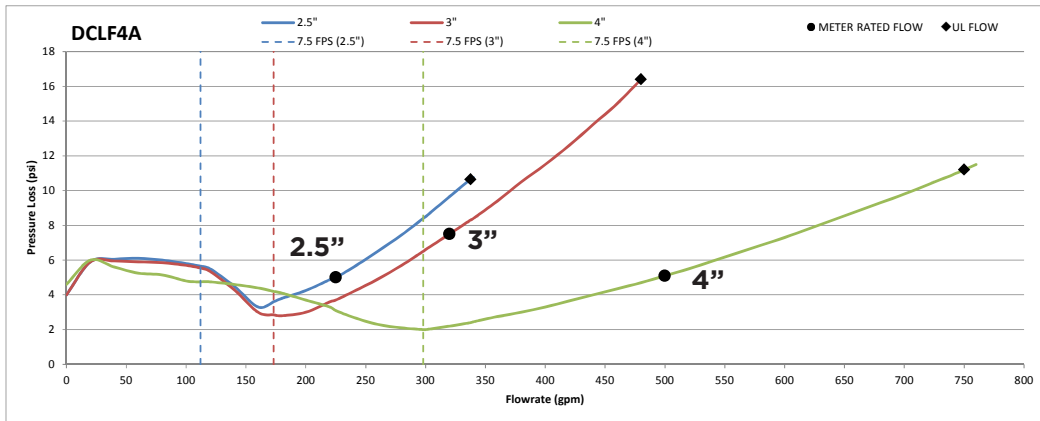
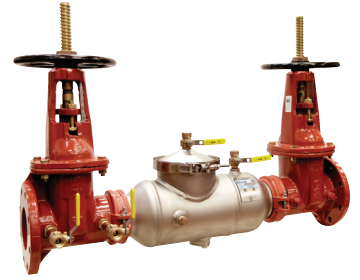
DC 4AY / DCLF 4AY FLOW CURVES



METER RATED FLOW

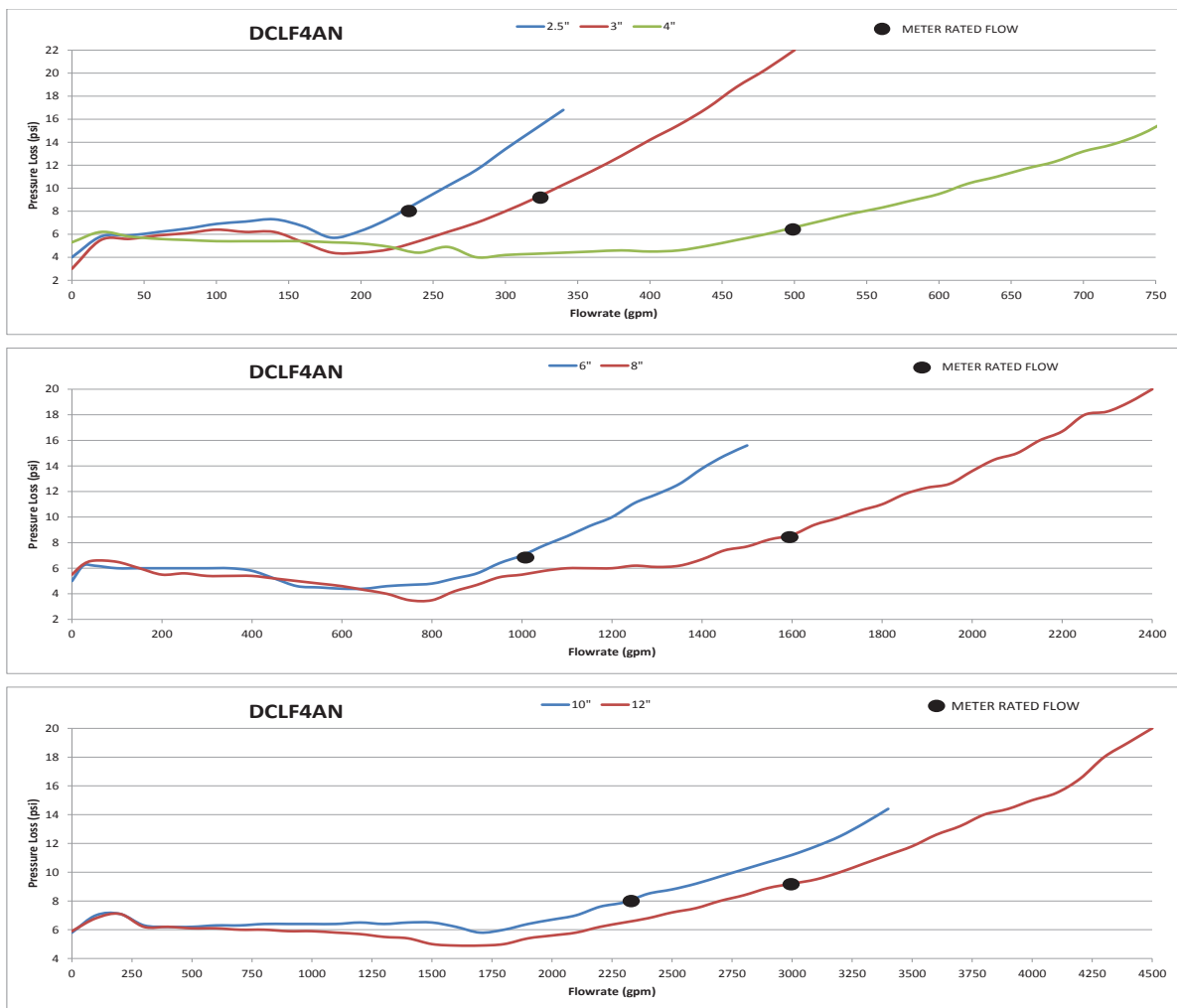
Pressure loss versus flow data as determined by independent approval agencies.

DCLF 4A FLOW CURVES



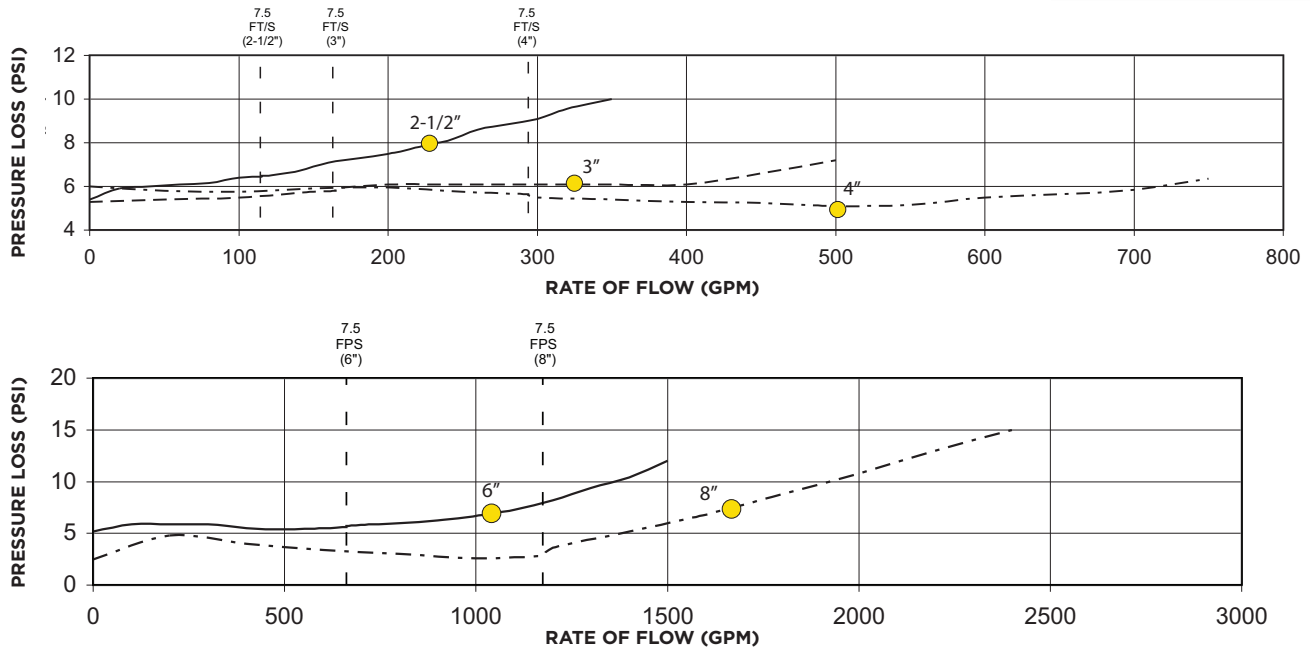
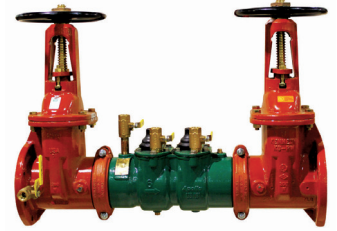
● **METER RATED FLOW**
Pressure loss versus flow data as determined by independent approval agencies.

DCLF 4AN
FLOW CURVES



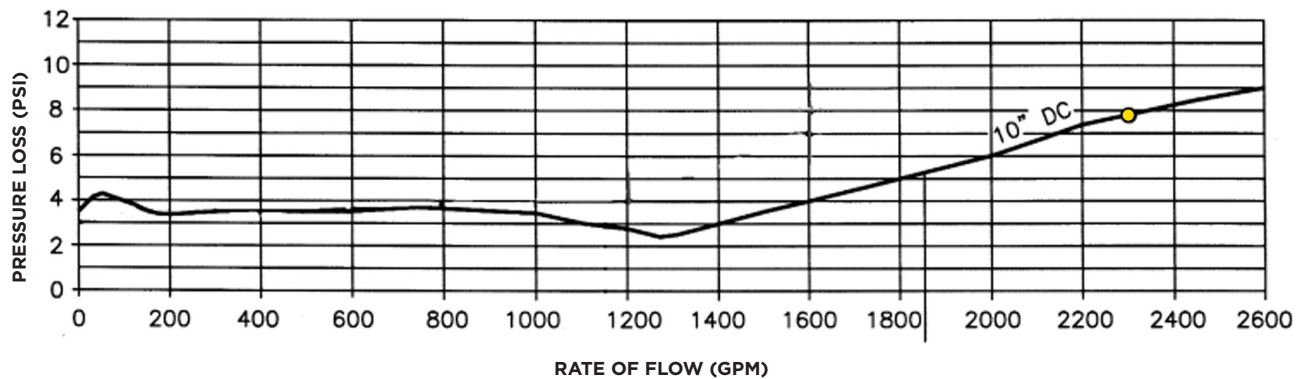
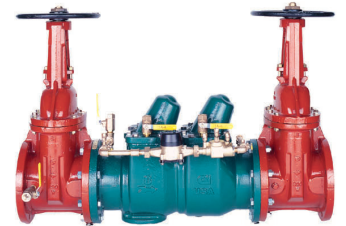
METER RATED FLOW
Pressure loss versus flow data as determined by independent approval agencies.

DC 4SGLF / DCDA 4SG
FLOW CURVES



DC 4S / DCDA 4S
FLOW CURVES

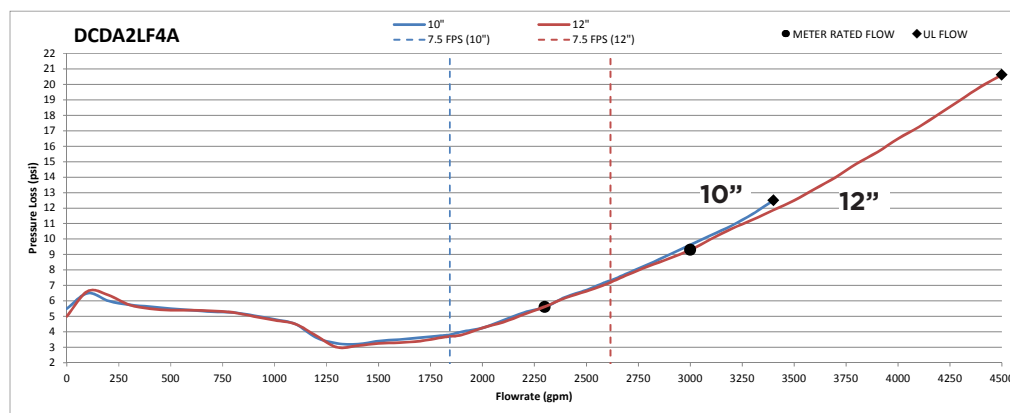
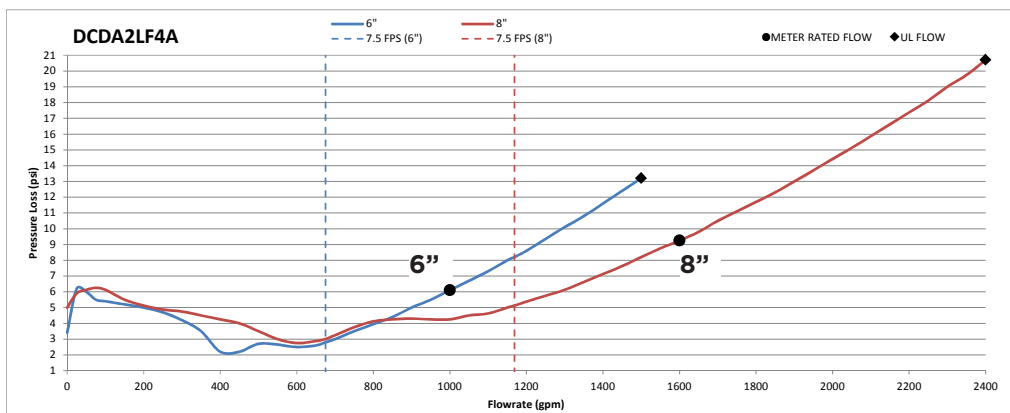
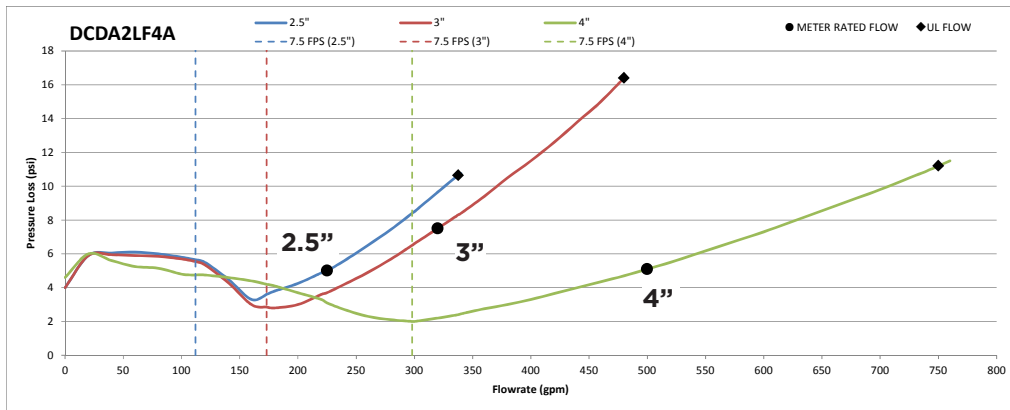
(DC 4S 10"- Flanged Internal Connections Only)



METER RATED FLOW

Pressure loss versus flow data as determined by independent approval agencies.

DCDALF 4A / DCDA2LF 4A
FLOW CURVES

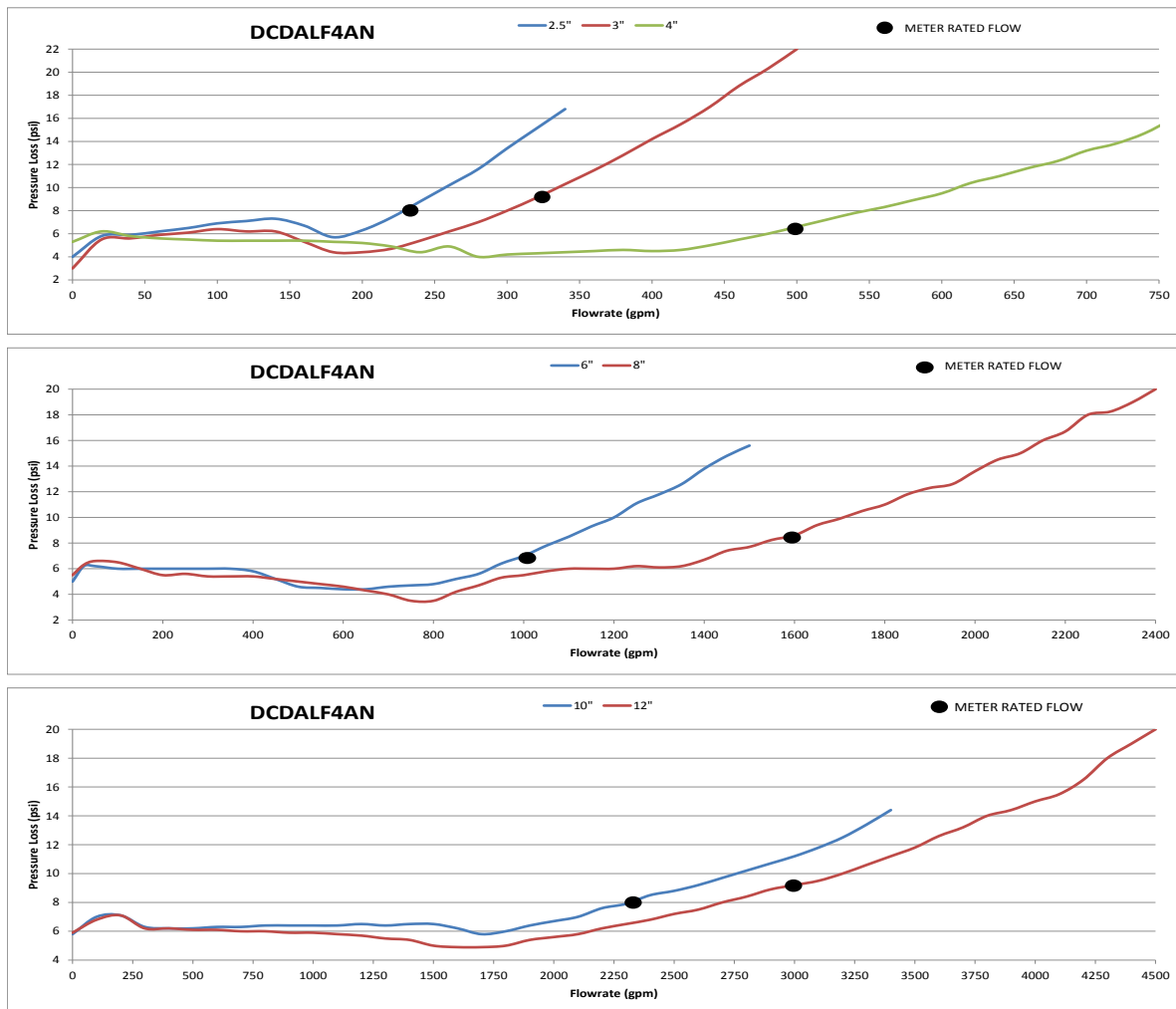


METER RATED FLOW

Pressure loss versus flow data as determined by independent approval agencies.

DCDALF 4AN / DCDA2LF 4AN
FLOW CURVES

Pressure loss versus flow data as determined by independent approval agencies.

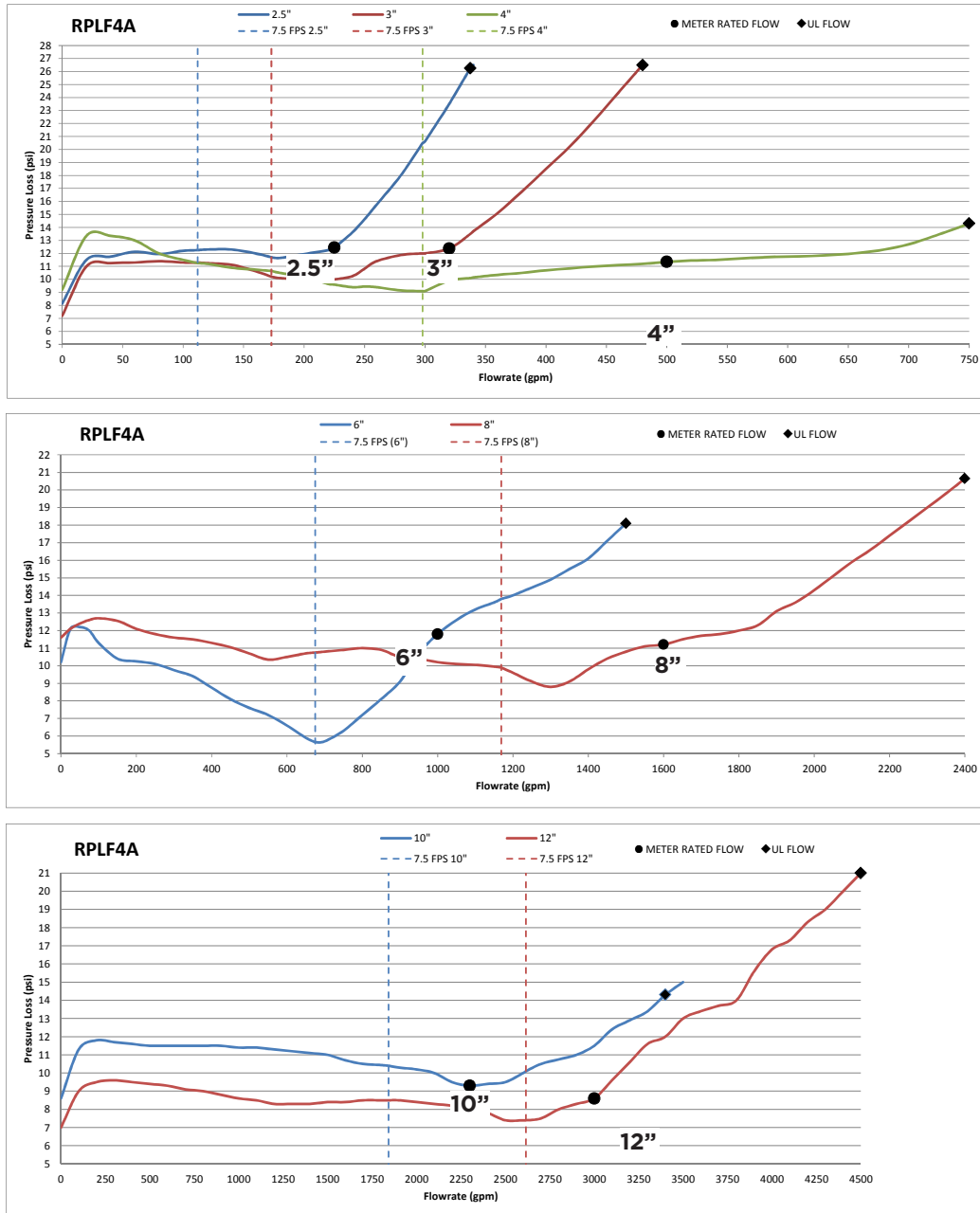


METER RATED FLOW

Pressure loss versus flow data as determined by independent approval agencies.

RPLF 4A
FLOW CURVES

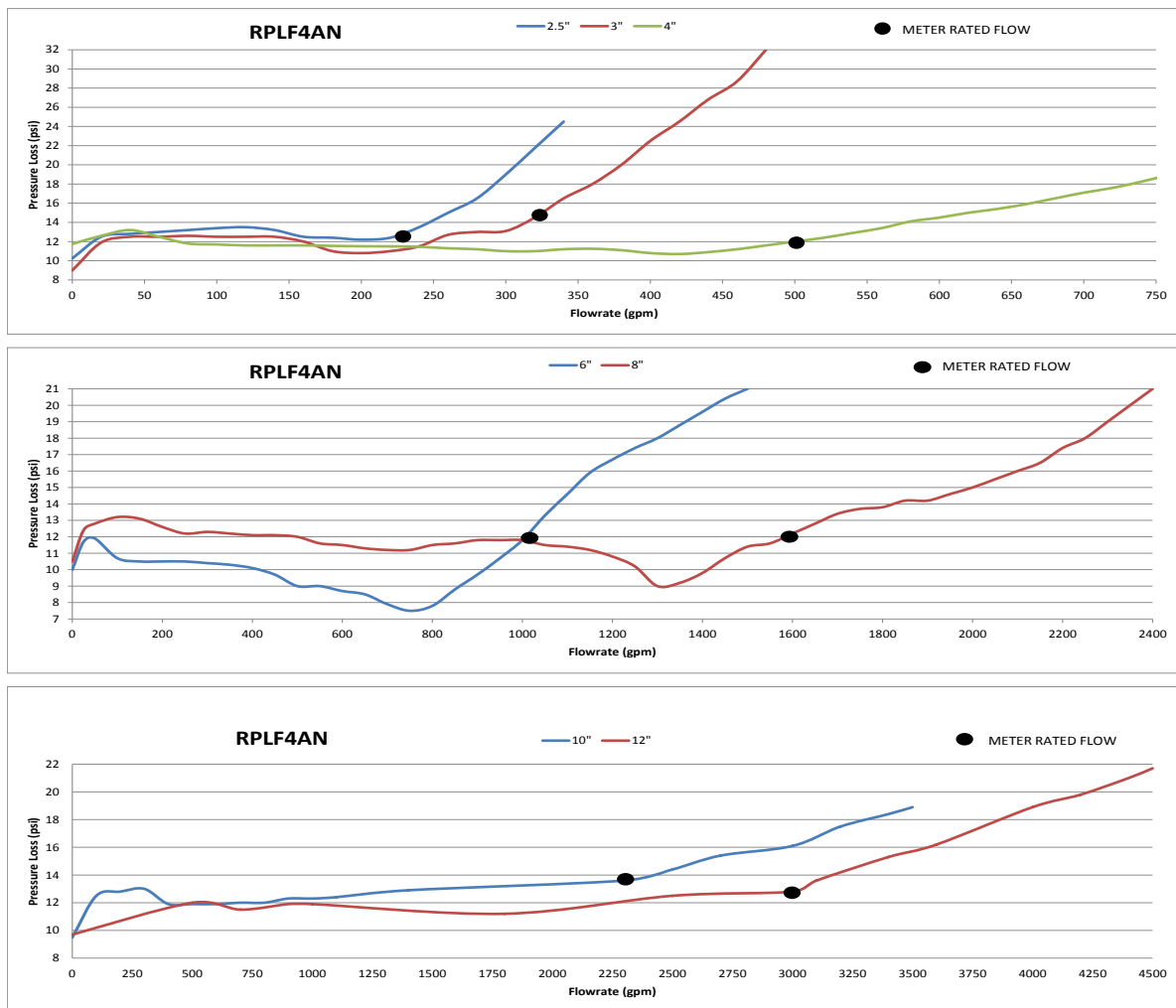
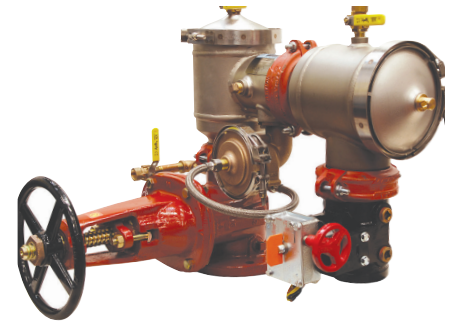
Pressure loss versus flow data as determined by independent approval agencies.



METER RATED FLOW
Pressure loss versus flow data as determined by independent approval agencies.

RPFL 4AN FLOW CURVES

Pressure loss versus flow data as determined by independent approval agencies.

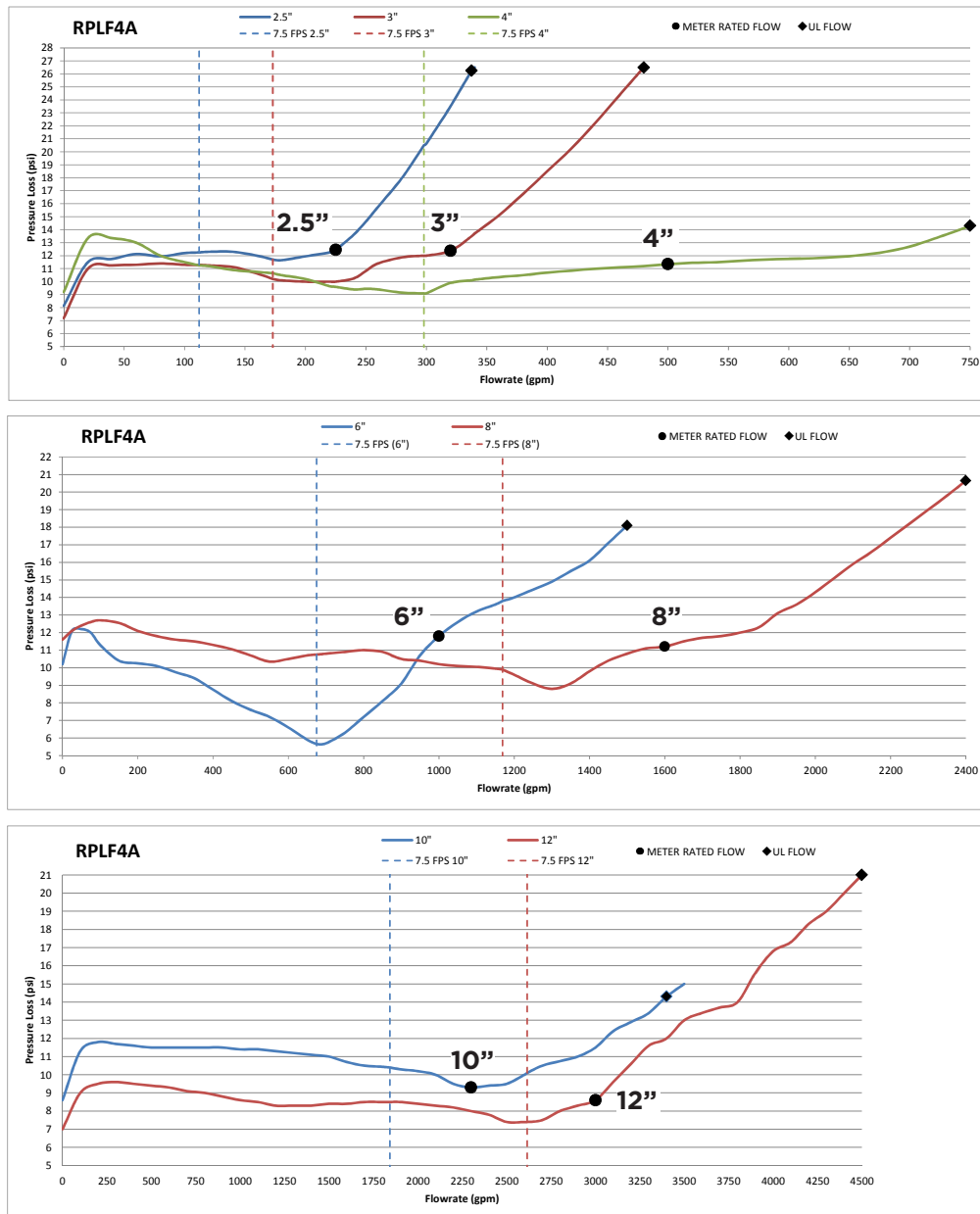


● METER RATED FLOW

Pressure loss versus flow data as determined by independent approval agencies.

RPDALF 4A / RPDA2LF 4A
FLOW CURVES

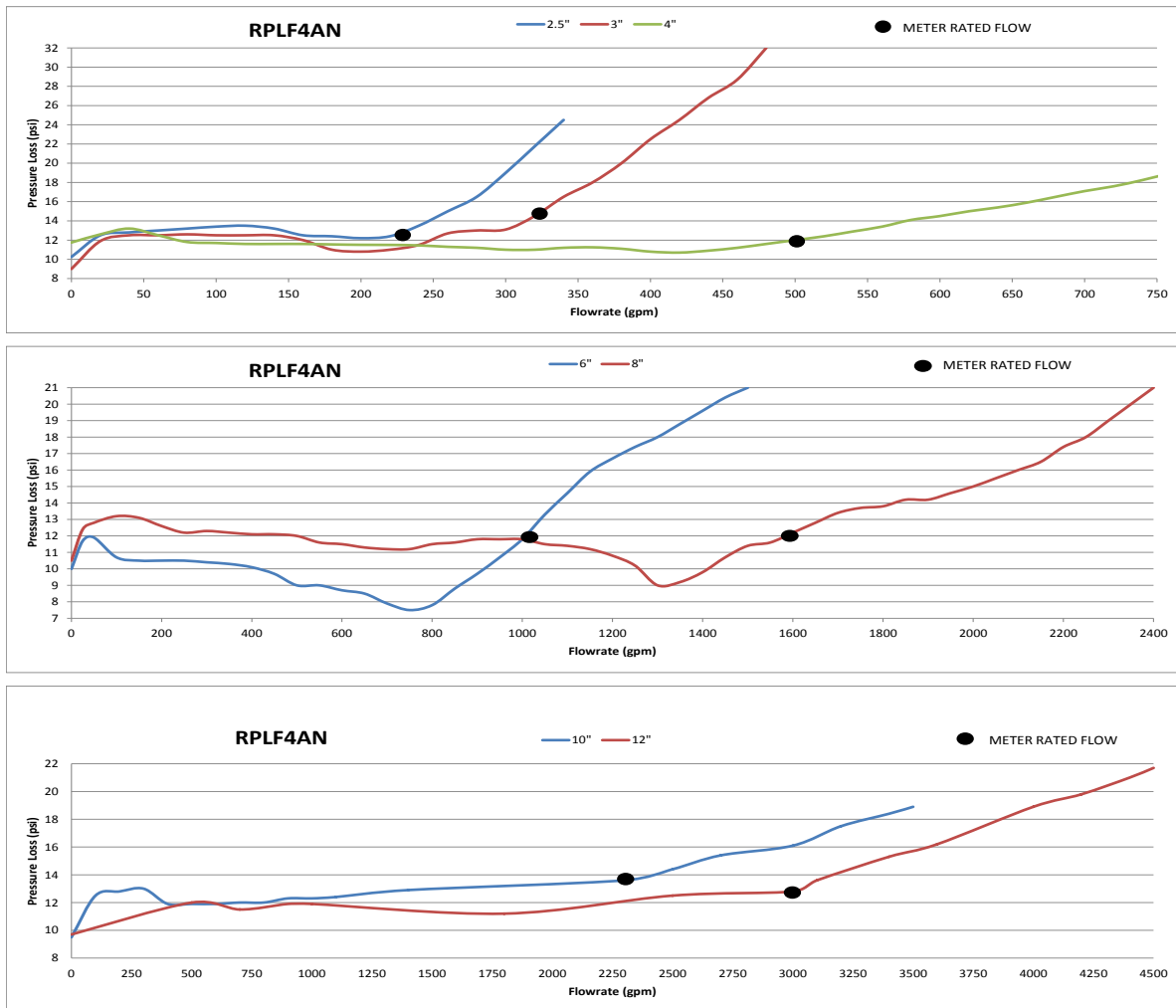
Pressure loss versus flow data as determined by independent approval agencies.



METER RATED FLOW

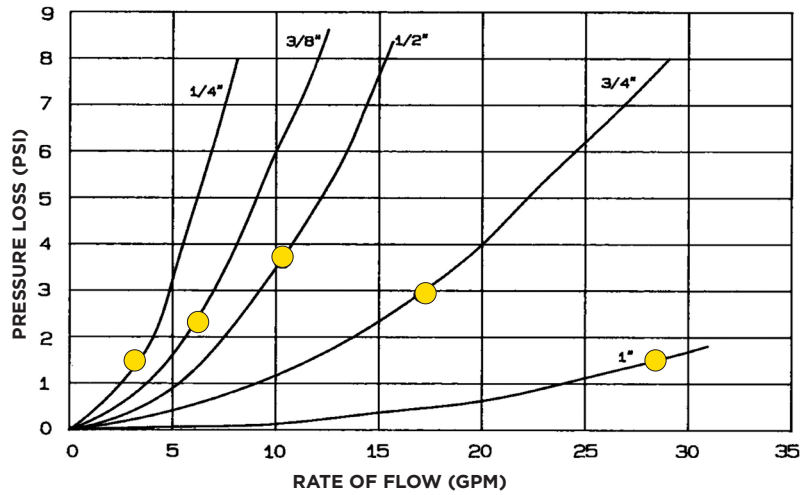
Pressure loss versus flow data as determined by independent approval agencies.

RPDALF 4AN / RPDA2LF 4AN
FLOW CURVES

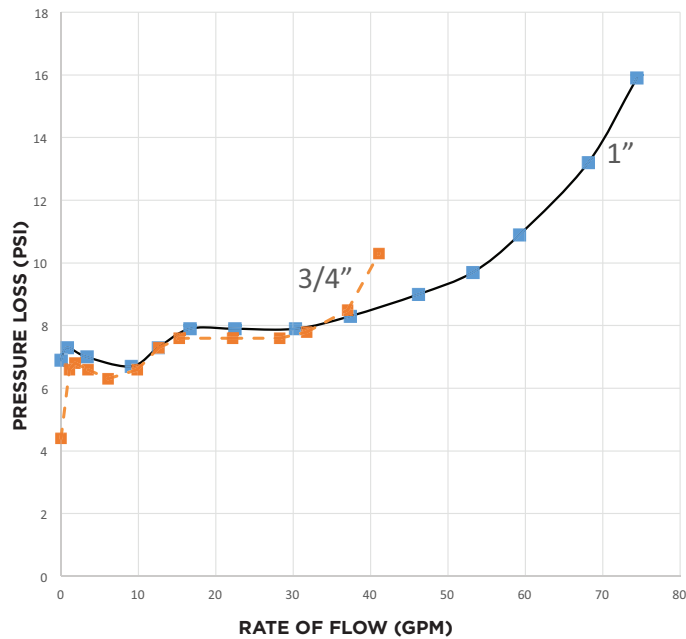


METER RATED FLOW
Pressure loss versus flow data as determined by independent approval agencies.

AVB1/ABV2/AVB1LF
FLOW CURVES



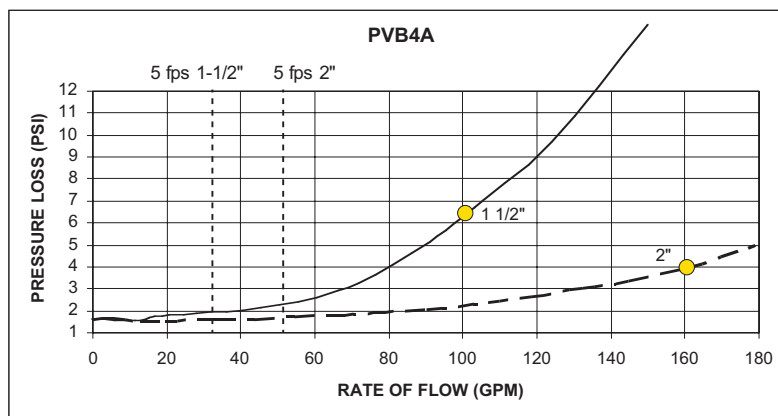
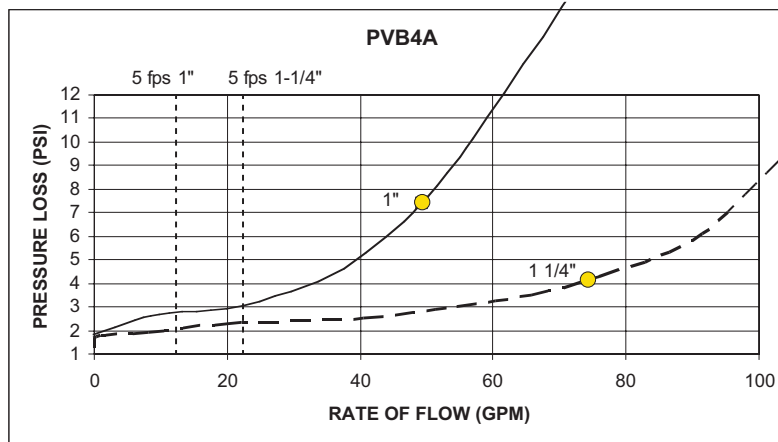
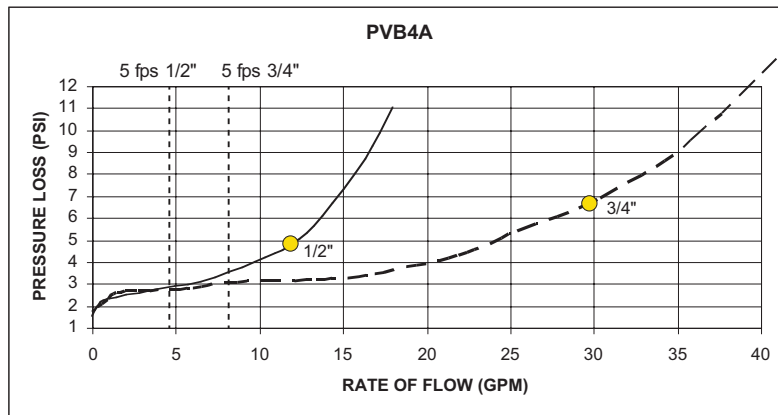
SVB 4A / SVBLF 4A
FLOW CURVES



METER RATED FLOW

Pressure loss versus flow data as determined by independent approval agencies.

PVB 4A / PVBLF 4A FLOW CURVES

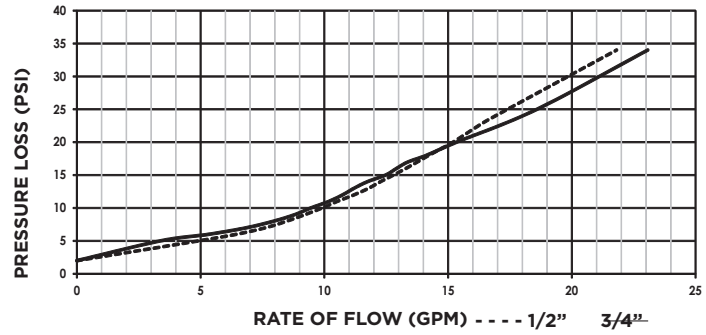


Note: 5 feet per second is the normal flow rate for irrigation systems (where majority of PVBs are used)

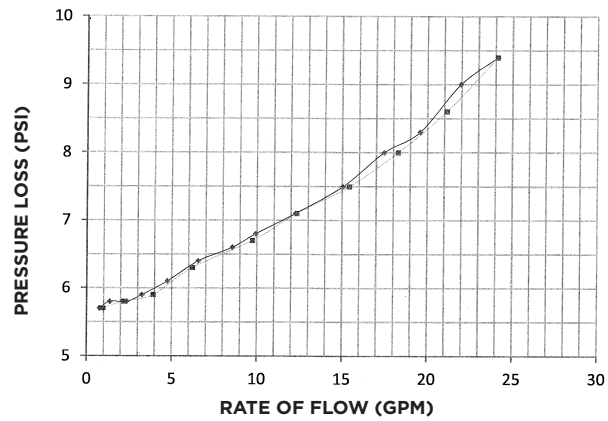
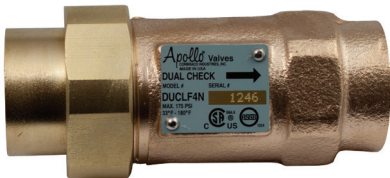
METER RATED FLOW

Pressure loss versus flow data as determined by independent approval agencies.

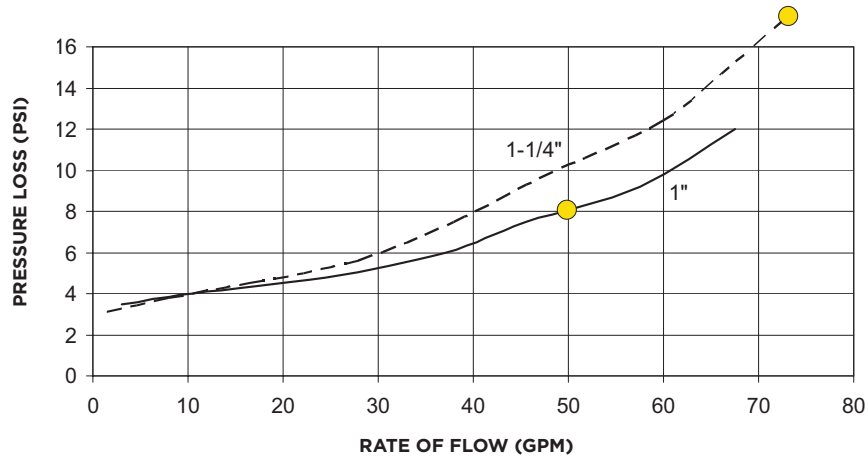
DCAP / DCAP LF
FLOW CURVES



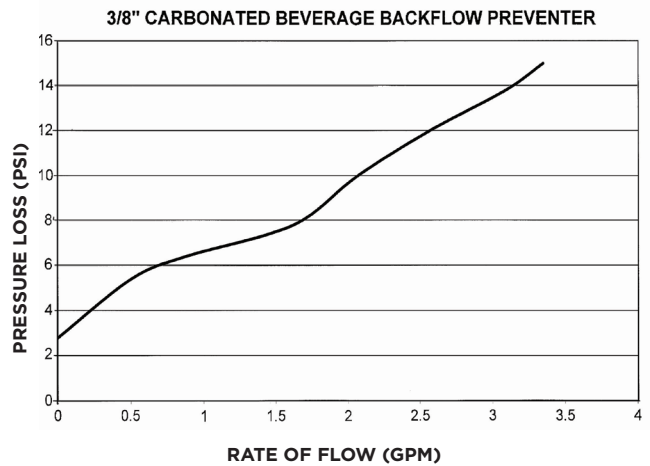
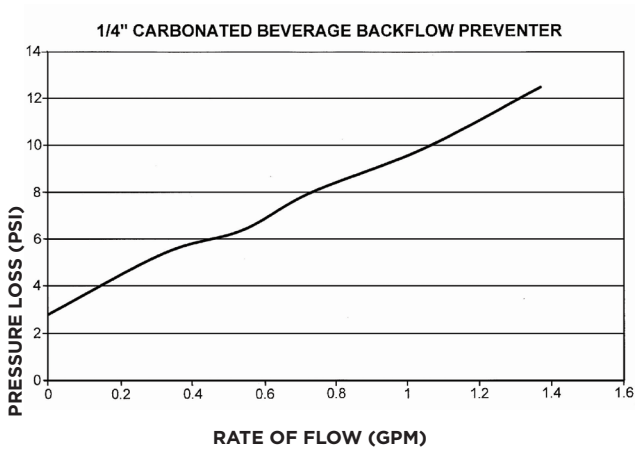
DUC 4A / DUCLF 4A
FLOW CURVES



DUC 4FP
FLOW CURVES



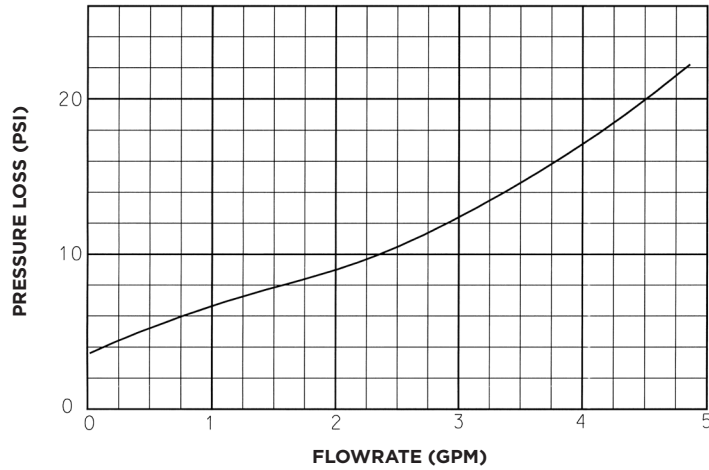
CBBP-A
FLOW CURVES



METER RATED FLOW

Pressure loss versus flow data as determined by independent approval agencies.

HBDUC
FLOW CURVES

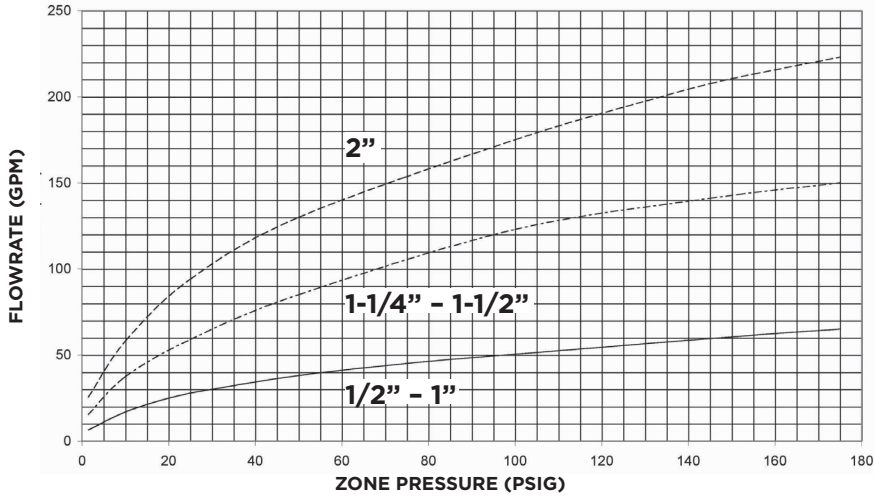


● **METER RATED FLOW**

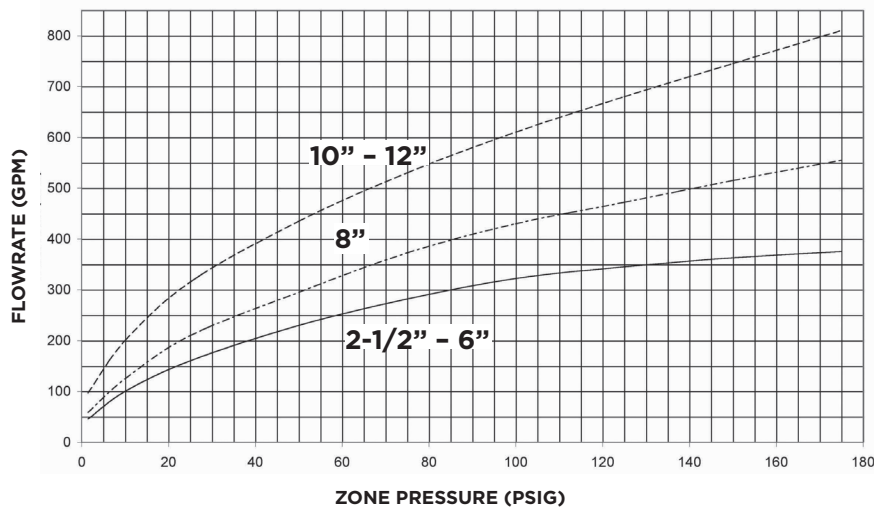
Pressure loss versus flow data as determined by independent approval agencies.

RELIEF VALVE DISCHARGE RATES

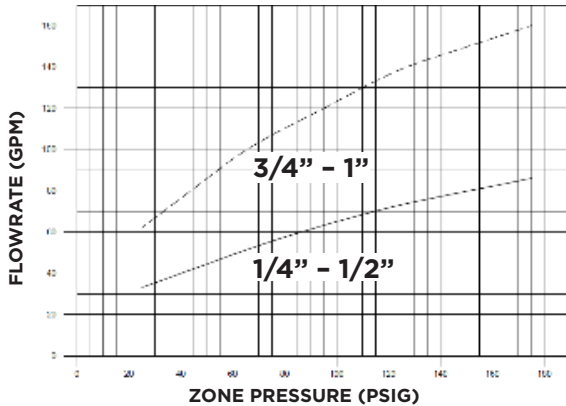
RV DISCHARGE RATES RP4A 1/2" TO 2"



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



RV DISCHARGE RATES RPS40





WARRANTY & TERMS AND CONDITIONS OF SALE



Aalberts integrated piping systems 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, Aalberts integrated piping systems will, upon written notification thereof and substantiation that the goods have been stored, installed, maintained and operated in accordance with Aalberts integrated piping systems' recommendations and standard industry practice, correct such defects by suitable repair or replacement at Aalberts integrated piping systems' own expense.

APOLLO INTERNATIONAL PRODUCTS: Aalberts integrated piping systems warrants its International products, to its initial purchaser only, that its international 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 TWO years from the date of delivery to you, our initial purchaser.

THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHER WARRANTY OF QUALITY, WHETHER EXPRESSED OR IMPLIED, EXCEPT THE WARRANTY OF TITLE AND AGAINST PATENT INFRINGEMENT. Correction of non-conformities, in the manner and for the period of time provided above, shall constitute fulfillment of all liabilities of Aalberts integrated piping systems to our initial purchaser, with respect to the goods, whether based on contract, negligence, strict tort or otherwise. It is the intention of Aalberts integrated piping systems that no warranty of any kind, whether expressed or implied shall pass through our initial purchaser to any other person or corporation.

LIMITATION OF LIABILITY: AALBERTS INTEGRATED PIPING SYSTEMS SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE FOR SPECIAL OR CONSEQUENTIAL DAMAGES SUCH AS, BUT NOT LIMITED TO, DAMAGES OR TO LOSS OF OTHER PROPERTY OR EQUIPMENT, LOSS OF PROFITS OR REVENUE, COST OF CAPITAL, COST OF PURCHASED OR REPLACEMENT GOODS, OR CLAIMS OF CUSTOMERS OF OUR INITIAL PURCHASER. THE REMEDIES OF OUR INITIAL PURCHASER, AND ALL OTHERS, SET FORTH HEREIN, ARE EXCLUSIVE, AND THE LIABILITY OF AALBERTS INTEGRATED PIPING SYSTEMS WITH RESPECT TO SAME SHALL NOT, EXCEPT AS EXPRESSLY PROVIDED HEREIN, EXCEED THE PRICE OF THE GOODS UPON WHICH SUCH LIABILITY IS BASED.

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

TERMS AND CONDITIONS OF SALE

- Payment: Net 30 days.
- All prices F.O.B. shipping point with freight allowed on shipments of \$6,000 net minimum to all shipping points within the United States excluding Alaska and Hawaii. No freight allowed on Air Freight or Parcel Post shipments. Claims for shortages must be made within 10 days of receipt of material. Our responsibility ends when a receipt is furnished us by the carrier.
- No Invoice Rendered For Less Than \$50.00.
- No freight will be allowed on Air Freight, Air Express, Parcel Post or U.P.S. shipments.
- All Aalberts integrated piping systems products may be combined to make sufficient weight for full freight allowance.
- Phone order quoted prices are subject to correction. Prices and designs are subject to change without notice.
- Orders for material or special design or specification are made to customer's order and are not subject to cancellation or return.
- All goods returned to us will not be accepted unless a full explanation has been made and our written authorized permission obtained in advance. All goods returned - if accepted - will be credited at invoice price, less 30% for service and rehandling charges, plus shipping expenses.
- We reserve the right to adjust orders to box quantities.



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.

Aalberts integrated piping systems 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 Aalberts integrated piping systems Customer Service.

** Any imported products will be clearly identified as "Apollo International™" or "Aalberts integrated piping systems™ International".



NOTES

Lined area for notes, consisting of horizontal ruling lines.



NOTES

Lined area for notes, consisting of multiple horizontal lines.

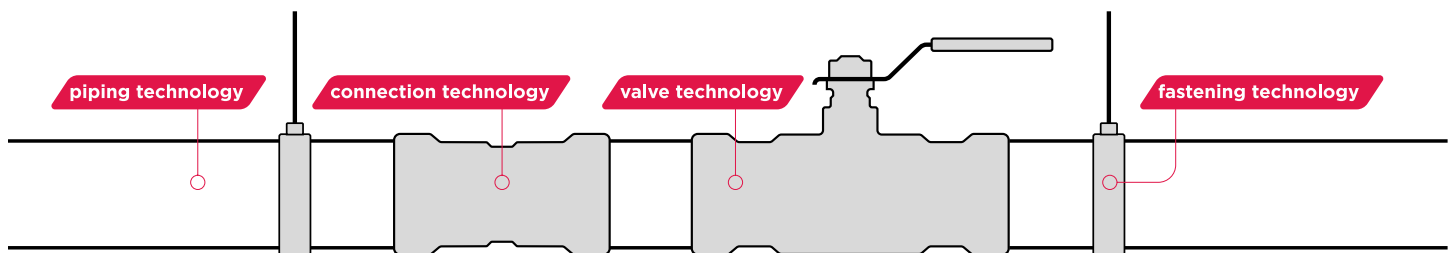
This image shows a full page of blank, lined paper. It features approximately 30 evenly spaced horizontal grey lines across its entire width, typical of notebook or composition paper. The lines are uniform in thickness and color, providing a guide for handwriting. There are no margins, text, or other markings present on the page.

Since the inception in 1975, Aalberts is where technology matters and real progress can be made - humanly, financially and environmentally. At Aalberts, we create mission-critical products surrounding valve and connection technology supporting our brand, "Apollo".

The manufacturing of Consolidated Brass Company (later called Conbraco) began in 1928, in Detroit, Michigan with a focus on ball cocks, air cocks and similar products. In 1955, the manufacturing operation moved to the Carolinas spanning North and South Carolina with 3 facilities. In 2010, Aalberts, a global Dutch company, purchased Conbraco. Today the "Apollo" brand is manufactured under the company name, Aalberts integrated piping systems, in 3 locations throughout South Carolina. Over the last 90 years the product portfolio has continued to grow to encompass ball valves, butterfly valves, safety relief valves, control valves, mixing valves and backflow preventors.

These systems are applicable for key verticals such as residential, commercial, industrial, and utility. Our products are designed and developed by our team of innovators and engineers. Our design services team can assist in helping you determine the best techniques for your application with our products. We are the only company that truly offers customers a complete solution every time that is made and sourced from the same organization.

Don't just buy products, buy solutions.



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Aalberts integrated piping systems

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