NEW YORK STATE DEPARTMENT OF HEALTH OFFICE OF PUBLIC HEALTH CENTER FOR ENVIRONMENTAL HEALTH TECHNICAL REFERENCE	ITEM NO: PWS-14 DATE: 9/1/04 Bureau of Water Supply Protection SUBJECT: Approved Backflow Prevention Assemblies Page 1 of 11

PURPOSE

The purpose of this Technical Reference is to provide a list of approved backflow prevention assemblies for containing potential contamination as required by Section 5-1.31 of the State Sanitary Code. This list is made available to regulatory agencies, water purveyors, consulting engineers, manufacturers, certified testers, contractors and the general public.

POLICY

1. The New York State Department of Health, Bureau of Water Supply Protection (BWSP) will approve only those backflow prevention assemblies that have been evaluated in accordance with **either** of the following evaluation procedures:

   a. Laboratory and Field Evaluation

      Each make, model and size of assembly shall successfully complete the Laboratory and Field Evaluation phases of the Foundation for Cross Connection Control and Hydraulic Research (FCCC&HR) approval program. Upon completion of the evaluation, the manufacturer shall submit a copy of the Certificate of Approval issued by the FCCC&HR.

   b. Laboratory Evaluation Only

      Each make, model and size of assembly shall undergo a laboratory evaluation by a qualified independent testing laboratory and shall comply with the latest editions of **each** of the following standards, as applicable:

      - FCCC&HR Manual of Cross-Connection Control, Section 10 - Specifications of Backflow Prevention Assemblies.

      - American Society of Sanitary Engineering (ASSE) Standards:
        i. 1013 - Reduced Pressure Principle Backflow Preventer
        ii. 1015 - Double Check Backflow Prevention Assembly
        iii. 1047 - Reduced Pressure Detector Assembly Backflow Preventer
        iv. 1048 - Double Check Detector Assembly Backflow Preventer

      - American Water Works Association (AWWA) Standards:
        i. C510 - Double Check Valve Backflow Prevention Assembly
        ii.C511 - Reduced Pressure Principle Backflow Prevention Assembly

        Upon completion of the evaluation, the manufacturer shall submit copies of the Laboratory Evaluation Report, ASSE Certificate of Authorization and AWWA Certificate of Compliance.

In addition to the requirements of 1a or 1b above, the manufacturer shall submit copies of the sales literature and installation/maintenance literature for each model and size assembly. Sample or cutaway units may also be requested for small diameter assemblies.

All information shall be submitted to the following address:

New York State Department of Health
Bureau of Water Supply Protection - Design Section
Flanigan Square
547 River Street, 4th Floor
Troy, NY 12180-2216
(518) 402-7676

2. All approved assemblies must include resilient seated, full-flow shut off valves integral to the assembly. Unless otherwise approved by the BWSP, these shut off valves shall be mounted directly to the assembly and shall be supplied by the assembly manufacturer.

3. All approved assemblies are designed for horizontal installation. Certain assemblies on this list are also specifically designed with provisions for vertical inlet/outlet piping in accordance with the manufacturers recommendations.

   To be approved for vertical installation, where vertical refers to the device orientation, the assembly must undergo testing in a vertical position in accordance with the requirements of 1a or 1b above. Those assemblies that are approved for vertical installation are appropriately designated on the attached list.

4. The BWSP maintains and periodically updates the list of Approved Backflow Prevention Assemblies. Pages 4-11 reflect currently approved assemblies as of the date of printing. This list supersedes all previous approvals.

5. Previously approved assemblies that are out of production or for which only spare parts are available may not appear on this list. Where such assemblies are currently installed, however, they may remain in service provided that they are appropriate for the degree of hazard. When these assemblies demonstrate repeated test failures, require frequent maintenance or if spare parts cannot be readily obtained, they must be replaced by a currently approved assembly.

6. The BWSP reserves the right to remove from the list any assembly that demonstrates deficient or unsatisfactory operation.

7. The following is a partial list of typical manufacturers abbreviations that may appear with the approved model/series designation:
   - AG, AGD, AGF - air gap, drain, fitting
   - B - full port, resilient seated ball valves
   - BB - bronze body
   - BF - butterfly valves
   - EL - vent elbow
   - FAE - flanged adapter ends
   - FDA - FDA epoxy coating
   - FS - flanged strainer
   - FSC - FDA epoxy coated flanged strainer
   - HW - hot water unit with stainless steel check valves
   - M - manifold, modification
   - NRS - non-rising stem shutoffs
   - OS&Y - outside stem and yoke shutoffs
   - QT - quarter turn resilient seated ball valves
   - R, RW - resilient seated or resilient wedge shutoffs
   - S - strainer
   - SS - stainless steel
   - U - union connections
   - V - approved for vertical installation in accordance with manufacturers instructions
   - XL - high temperature service with removable plastic check seats
   - N-Shape - See diagram below for an example (please note that this diagram is not intended to represent any specific manufacturer or device)

   - Z-Shape - See diagram below for an example (please note that this diagram is not intended to represent any specific manufacturer or device)

The BWSP should be contacted with any questions regarding this list.

REDUCED PRESSURE PRINCIPLE ASSEMBLIES

Company	Model/Series	Size (In Inches)
AMES	4000-RP	4.0, 6.0, 8.0, 10.0
	4000 SS	0.75, 1.0, 1.5, 2.0, 2.5, 3.0, 4.0, 6.0
	4000B	0.5, 0.75, 1.0, 1.25, 1.5, 2.0
	4000BM2	1.0
	Colt 400	2.5, 3.0, 4.0
	Maxim 400	2.5, 3.0
	Colt 400N	2.5 (↑i↓o), 3.0 (↑i↓o), 4.0 (↑i↓o)
	Colt 400Z	2.5 (↑i↑o), 3.0 (↑i↑o), 4.0 (↑i↑o)
	Maxim 400N	2.5 (↑i↓o), 3.0 (↑i↓o)
	Maxim 400Z	2.5 (↑i↑o), 3.0 (↑i↑o)
BUCKNER	24000	0.75, 1.0, 1.25, 1.5, 2.0
CLA-VAL	RP-2	0.75, 1.0, 1.25, 1.5
	RP-4	2.0, 2.5, 3.0, 4.0, 6.0, 8.0, 10.0
	RP4V	4.0
	RP6LW	0.75, 1.0, 1.25, 1.5, 2.0
	RP6VW	0.75, 1.0, 1.5, 2.0
	RP7L (W/Y)	2.5, 3.0, 4.0, 6.0, 8.0, 10.0
	RP8L (W/Y)	2.0, 3.0, 4.0, 6.0, 8.0, 10.0
	RP8N (W/Y) - N Shape	2.5, 3.0, 4.0, 6.0, 8.0, 10.0
	RP8V (W/Y) - Z Shape	2.5, 3.0, 4.0, 6.0, 8.0, 10.0
CONBRACO	40-200	0.25, 0.375, 0.5, 0.75, 1.0, 1.25, 1.5, 2.0, 2.5, 3.0, 4.0, 6.0, 8.0, 10.0
	40-200-A2S	0.75, 1.0
FEBCO	825Y	0.75, 1.0, 1.25, 1.5, 2.0
	825YA	0.75, 1.0, 1.5, 2.0
	825YD	2.5, 3.0, 4.0, 6.0, 8.0, 10.0
	845	0.75, 1.0
	860	0.5, 0.75, 1.0, 1.25, 1.5, 2.0, 2.5, 3.0, 4.0, 6.0, 8.0
	880 - N Shape	2.5, 3.0, 4.0, 6.0, 8.0, 10.0
	880V - Z Shape	2.5, 3.0, 4.0, 6.0, 8.0, 10.0

NOTE: All assemblies are approved for horizontal installation. The following symbols denote devices which are also approved for vertical installation (where vertical refers to the orientation of the device rotated 90 degrees (up or down) from the horizontal) or with vertical inlet/outlet piping:

↑ - vertical up only
↓ - vertical down only
↑ ↓ - vertical up and down
↑i↓o - vertical up inlet and vertical down outlet
↑i↑o - vertical up inlet and vertical up outlet

FLOMATIC	RPZ IIE	0.5, 0.75
	RPZE	0.75, 1.0, 1.5, 2.0
	RPZ	0.75, 1.0, 1.5, 2.0, 2.5, 3.0, 4.0, 6.0, 8.0
	RPZII	0.5, 0.75
HERSEY/GRINNELL (BEECO)	FRP-2	0.75, 1.0, 1.25, 1.5, 2.0
	6CM	2.5, 3.0, 4.0, 6.0, 8.0, 10.0
ORION	BRP	0.75, 1.0, 1.5, 2.0, 3.0, 4.0
WATTS	009	0.5, 0.75, 1.0, 1.25, 1.5, 2.0, 2.5, 3.0
	009QT	0.25, 0.375, 0.5
	U009A	0.75, 1.0, 1.5, 2.0
	U009AQT	0.75
	909	0.75, 1.0, 1.25, 1.5, 2.0, 2.5, 3.0, 4.0, 6.0, 8.0, 10.0
	909QT	0.75 (↑), 1.0 (↑)
	909M1QT	1.25, 1.5, 2.0
	990	4.0, 6.0, 8.0
	994	2.5, 3.0, 4.0, 6.0
	957	2.5, 3.0, 4.0
	995QT	0.5, 0.75, 1.0, 1.25, 1.5
	957N	2.5(↑i↓o), 3.0(↑i↓o), 4.0(↑i↓o)
	957Z	2.5(↑i↑o), 3.0(↑i↑o), 4.0(↑i↑o)
	U009M2AQT	1.0, 1.5, 2.0
	009M2QT	1.0, 1.25, 1.5, 2.0
	009M3QT	0.75
WILKINS	975XL	0.25, 0.375, 0.5, 0.75, 1.0, 1.25, 1.5, 2.0
	975	0.75, 1.0, 1.25, 1.5, 2.0, 2.5, 3.0, 4.0, 6.0, 8.0, 10.0
	975XLU	0.75, 1.0, 1.5, 2.0
	975XLMS	0.75, 1.0, 1.25, 1.5, 2.0
	975MS	2.5, 3.0, 4.0, 6.0, 8.0, 10.0
	975BMS	2.5, 3.0, 4.0, 6.0, 8.0, 10.0
	975XLBMS	0.75, 1.0, 1.25, 1.5, 2.0
	975XLSE	0.75 (↑i↓o), 1.0 (↑i↓o), 1.25 (↑i↓o), 1.5 (↑i↓o), 2.0 (↑i↓o)
	975XLSE	0.75 (↑i↑o), 1.0 (↑i↑o), 1.25 (↑i↑o), 1.5 (↑i↑o), 2.0 (↑i↑o)

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↑i↑o - vertical up inlet and vertical up outlet

WILKINS (cont.)	975XLSEU	0.75 (↑i↑o), 1.0 (↑i↑o), 1.25 (↑i↑o), 1.5 (↑i↑o), 2.0 (↑i↑o)
	375	2.5, 3.0, 4.0, 6.0, 8.0
	375A	4.0, 6.0, 8.0
	375DA	2.5, 3.0
	475	2.5 (↑i↓o), 3.0 (↑i↓o), 4.0 (↑i↓o), 6.0 (↑i↓o), 8.0(↑i↓o)
	475V	2.5 (↑i↑o), 3.0 (↑i↑o), 4.0 (↑i↑o), 6.0 (↑i↑o), 8.0 (↑i↑o)
	975XLV	0.75 (↑i↑o), 1.0 (↑i↑o)
	975XLV	0.75 (↑i↓o), 1.0 (↑i↓o),

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↑i↑o - vertical up inlet and vertical up outlet

DOUBLE CHECK VALVE ASSEMBLIES

Company	Model/Series	Size (In Inches)
AMES	2000-DCA	4.0, 6.0, 8.0, 10.0
	2000 SE	2.5, 6.0 (↑), 8.0 (↑)
	2000 SS	0.75 (↑), 1.0 (↑) 1.5, 2.0, 2.5 (↑), 3.0 (↑), 4.0(↑), 6.0 (↑), 8.0, 10.0
	2000B	0.5 (↑), 0.75 (↑) 1.0, 1.25 (↑), 1.5 (↑), 2.0 (↑)
	2000CIV	4.0, 6.0, 8.0, 10.0
	2001 SS	3.0 (↑), 4.0 (↑)
	Colt 200a	2.5 (↑), 3.0 (↑), 4.0 (↑)
	Maxim 200a	2.5 (↑), 3.0 (↑)
	Colt 200Na	2.5(↑i↓o), 3.0(↑i↓o), 4.0(↑i↓o)
	Maxim 200Na	2.5(↑i↓o), 3.0(↑i↓o)
BUCKNER	24100	0.75, 1.0, 1.25, 1.5, 2.0
CLA-VAL	D-2	0.75, 1.0, 1.25, 1.5
	D-4	2.0, 2.5, 3.0, 4.0, 6.0, 8.0, 10.0
	DC6LW	0.75 (↑), 1.0, 1.5, 2.0
	DC7L (W/Y)	2.5, 3.0 (↑), 4.0 (↑), 6.0 (↑), 8.0, 10.0
	DC8L (W/Y)	4.0 (↑), 6.0 (↑), 8.0 (↑)
	DC8N (W/Y) - N Shape	2.5, 3.0, 4.0 (↑), 6.0 (↑), 8.0
	DC8V (W/Y) - Z Shape	2.5, 3.0, 4.0, 6.0, 8.0
CONBRACO	40-100	0.75, 1.0, 1.5, 2.0, 2.5, 3.0, 4.0, 6.0, 8.0, 10.0
	DC (a/k/a 4S-100)	0.5 (↑), 2.5 (↑), 3.0 (↑), 4.0 0 (↑), 6.0(↑), 8.0 (↑),10.0 (↑)
	40-106-A2	1.25
	40-106-997	1.25
FEBCO	805Y	0.75 (↑), 1.0, 1.5, 2.0
	805YD	2.5, 3.0 (↑), 4.0 (↑), 6.0 (↑), 8.0, 10.0
	850	0.5 (↑), 0.75 (↑), 1.0 (↑), 1.25 (↑), 1.5 (↑), 2.0 (↑), 2.5 (↑), 3.0 (↑), 4.0 (↑), 6.0 (↑),
	851	8.0 (↑)
	870	4.0 (↑), 6.0 (↑), 8.0
	870V	4.0 (↑), 6.0 (↑), 8.0 (↑)
	870 - N Shape	2.5, 3.0, 10.0
	870V - Z Shape	2.5, 3.0

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↑i↑o - vertical up inlet and vertical up outlet

FLOMATIC	DCVE	0.75, 1.0, 1.5, 2.0
	DCV	0.75, 1.0, 1.5, 2.0, 2.5, 3.0, 4.0, 6.0, 8.0
HERSEY/GRINNELL	FDC	0.75, 1.5, 2.0
(BEECO)	HDC	0.75, 1.0, 1.5, 2.0
	No. 2	3.0, 4.0, 6.0, 8.0, 10.0
KENNEDY	1373	4.0, 6.0, 8.0, 10.0
ORION	BDC	0.75, 1.0, 1.5, 2.0, 3.0, 4.0
WATTS	007	0.50 (↑), 0.75 (↑ ↓), 1.0 (↑ ↓), 1.5 (↑ ↓), 2.0 (↑ ↓), 2.50 (↑ ↓), 3.0 (↑ ↓)
	007M1Qt	1.0(↑), 2.0 (↑)
	007M2Qt	1.25 (↑), 1.5 (↑)
	709	0.75 (↑ ↓), 1.0 (↑ ↓), 1.25 (↑ ↓), 1.5 (↑ ↓), 2.0 (↑ ↓), 2.5 (↑ ↓), 3.0 (↑ ↓), 4.0 (↑ ↓), 6.0 (↑), 8.0 (↑), 10.0 (↑)
	774	0.75, 1.0, 1.25, 1.5, 2.0, 2.5, 3.0, 4.0 (↑), 6.0 (↑),8.0(↑), 10.0
	774X	6.0 (↑), 8.0 (↑)
	775	3.0 (↑), 4.0 (↑)
	775QT	0.5 (↑) 0.75 (↑),1.0 (↑)), 1.25 (↑), 1.5 (↑), 2.0(↑)
	757a	2.5 (↑), 3.0(↑) , 4.0(↑), 6.0 (↑)
	757Na	2.5(↑i↓o), 3.0 (↑i↓o), 4.0 (↑i↓o), 6.0 (↑i↓o)
WILKINS	950	0.75, 1.0, 1.25, 1.5, 2.0, 2.5 (↑), 3.0(↑), 4.0 (↑), 6.0 (↑), 8.0 (↑), 10.0 (↑)
	950XL	0.75 (↑), 1.0, 1.25, 1.5, 2.0
	950XLT	0.75, 1.0
	950XLU	0.75, 1.0, 1.5, 2.0
	350	2.5(↑), 3.0 (↑), 4.0 (↑), 6.0 (↑), 8.0 (↑), 10.0 (↑)
	350A	4.0 (↑), 6.0 (↑), 8.0 (↑)
	350DA	2.5(↑), 3.0(↑), 8.0(↑), 10.0(↑)
	450	2.5(↑i↓o), 3.0(↑i↓o), 4.0 (↑i↓o), 6.1 (↑i↓o),8.0(↑i↓o), 10.0 (↑i↓o),

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↑ - vertical up only
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↑ ↓ - vertical up and down
↑i↓o - vertical up inlet and vertical down outlet
↑i↑o - vertical up inlet and vertical up outlet

DOUBLE CHECK DETECTOR ASSEMBLIES

Company	Model/Series	Size (In Inches)
AMES	3000 DCDA	4.0, 6.0, 8.0, 10.0
	3000 SE	2.5, 6.0(↑), 8.0(↑)
	3000 SS	2.5 (↑),, 3.0 (↑), 4.0 (↑), 6.0 (↑), 8.0, 10.0
	3000B	2.0
	3000CIV	4.0 (↑), 6.0 (↑), 8.0 (↑), 10.0 (↑)
	3001 SS	3.0 (↑), 4.0 (↑)
CLA-VAL	DD7LY	3.0, 4.0 (↑), 6.0 (↑), 8.0, 10.0
	DD8LY	4.0 (↑), 6.0 (↑), 8.0 (↑)
	DD8NY - N Shape	4.0 (↑), 6.0 (↑), 8.0
	DD8VY - Z Shape	4.0, 6.0, 8.0
CONBRACO	40-600	3.0, 4.0, 6.0, 8.0, 10.0
	DCDA (a/k/a 4S-600)	2.5 (↑), 3.0 (↑), 4.0 (↑), 6.0 (↑), 8.0(↑), 10.0(↑)
FEBCO	806YD	3.0, 4.0 (↑), 6.0 (↑), 8.0, 10.0
	856	2.5, 3.0, 4.0 (↑), 6.0 (↑), 8.0 (↑)
	876	2.5, 3.0, 4.0 (↑), 6.0 (↑), 8.0, 10.0
	876V	2.5, 3.0, 4.0 (↑), 6.0 (↑), 8.0 (↑)
HERSEY/GRINNELL (BEECO)	DDC-II	3.0, 4.0, 6.0, 8.0, 10.0
WATTS	007 DCDA	2.0 (↑), 2.5 (↑), 3.0
	709 DCDA	3.0 (↑ ↓), 4.0 (↑ ↓), 6.0 (↑), 8.0 (↑), 10.0 (↑)
	774 DCDA	3.0, 4.0 (↑), 6.0 (↑), 8.0, 10.0
	774 XDCDA	6.0 (↑), 8.0 (↑)
	775 DCDA	3.0 (↑), 4.0 (↑)
	757a - DCDA - BF	2.5 (↑), 3.0 (↑), 4.0 (↑)
	757a - DCDA - GV	2.5 (↑), 3.0 (↑), 4.0 (↑)

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↑i↑o - vertical up inlet and vertical up outlet

WILKINS	950DA	2.5 (↑), 3.0 (↑), 4.0 (↑), 6.0 (↑), 8.0 (↑), 10.0 (↑)
	350DA	4.0 (↑), 6.0 (↑)
	350ADA	4.0 (↑), 6.0 (↑), 8.0 (↑)
	450DA	4.0 (↑i↓o), 6.0 (↑i↓o)

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↑i↑o - vertical up inlet and vertical up outlet

REDUCED PRESSURE DETECTOR ASSEMBLIES

Company	Model/Series	Size (In Inches)
AMES	5000 CIV	2.5, 3.0, 4.0, 6.0, 8.0, 10.0
	5000 RPDA	4.0, 6.0, 8.0, 10.0
CLA-VAL	18	10.0
	RD7LY	2.5, 3.0, 4.0, 6.0, 8.0, 10.0
CONBRACO	40-700	3.0, 4.0, 6.0, 8.0, 10.0
FEBCO	826YD	2.5, 3.0, 4.0, 6.0, 8.0, 10.0
HERSEY/GRINNELL (BEECO)	6CM-RPDA	4.0, 6.0, 8.0, 10.0
WATTS	909 RPDA	2.5, 3.0, 4.0, 6.0, 8.0, 10.0
WILKINS	375DA	4.0, 6.0, 8.0
	375ADA	4.0, 6.0, 8.0
	475DA	4.0 (↑i↓o), 6.0 (↑i↓o)
	475DAV	4.0 (↑i↑o), 8.0 (↑i↑o)
	975DA	2.5, 3.0, 4.0, 6.0, 8.0, 10.0
	975MS	8.0, 10.0

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↑i↓o - vertical up inlet and vertical down outlet
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