Bulletin
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NOR'EAST™ CONTROLS

LOW-LEAKAGE BALANCED CAGE VALVES

SERIES 9500 MODEL 9501

ALLAGASH™ INTERNATIONAL GROUP, LLC

Previously manufactured by Dezurik® and Honeywell®

Description:

The Model 9501 is a low-leakage balanced cage valve featuring a unique “seal-less” patented trim. It provides low leakage without the use of an elastomeric O-ring, piston or any special seal rings. The upper seat of the metal plug contacts the upper seat of the cage slightly before the lower seat does. This upper seat is a tapered flexible metal design. When it flexes slightly, the lower seat of the plug makes solid contact with the lower cage seat. The 9501 is equipped with a Type 01 pneumatic diaphragm actuator. This actuator is a spring-type and can be furnished as either direct or reverse acting for air-to-close or air-to-open action as specified.

Accessories:

- Pneumatic and electro-pneumatic positioners
- Top- or side-mounted handwheel
- Micro Switch precision switches
- Solenoids
- Transducers
- Air sets
- Flushing connection (1/4” N.P.T)
- Drain connection:
  3/8” N.P.T. for 1-1.5” (50-40mm) valves
  1/2” N.P.T. for 2-8” (50-200mm) valves
  3/4” N.P.T. for 10-16” (250-300mm) valves

SPECIFICATIONS

Actuator

Type	Pneumatic, diaphragm-actuated type 01. Direct or reverse acting , spring type.
Construction	Pressed steel diaphragm case plates and heavy duty, cast iron yoke. Finished in blue corrosion-resistant enamel.
Diaphragm Material	Molded of Buna N with nylon insert. Ambient temperature range of -20° to 180°F (-29° to 82°C). Other materials available for higher or lower temperatures.
Spring	Totally enclosed. Ranges: 3 to 15 psig (21 to 100 kPa) standard. For other ranges, see actuator shutoff capabilities charts.
Air Pressure (Air-to-diaphragm)	Normal: 18, 35 or 50 psi (124, 241 or 344 kPa). Maximum: 50 psi (344 kPa). 35 psi (241 kPa) for size 24 actuator.
Air Connections	1/4” NPT.

Body

Type	Balanced, straight-through, cage type. Non reversible.
Material	Cast iron, carbon steel or stainless steel. Other alloys available as options.
Sizes	Threaded and socket welded ends: 1, 1.25, 1.5 and 2” (25, 32, 40 and 50mm). Flanged ends: 1, 1.25, 1.5, 2, 2.5, 3, 4, 6, 8, 10, 12 and 16” (25, 32, 40, 50, 65, 80, 100, 150, 200, 300 and 400mm). Butt welded ends: all sizes.
Ratings	Cast iron with threaded ends: 250 lb. ANSI B16.1 in 1, 1.25, 1.5 and 2” (25, 32, 40 and 50mm). Cast iron with flanged ends: 125 and 250 ib. ANSI B16.11 in all sizes. Carbon steel and stainless steel with threaded ends: 600 lb. ANSI B16.34 in 1, 1.25, 1.5 and 2” (25, 32, 40 and 50mm). Carbon steel and stainless steel with flanged ends: 150, 300 and 600 lb. ANSI B16.34 in all sizes. 900 lb ANSI B16.34 in 1.5, 2, 2.5, 3 and 4” (40, 50, 65, 80 and 100mm).

SPECIFICATIONS

Bonnet

Type	Plain: For process temperatures between 32° to 450°F (0° to 232°C). Die formed graphite packing can be used for temperatures up to 750°F (399°C). Extension Column: For process temperatures from -150° to -21°F (-101° to -29°C). Radiation Fin: For process temperatures to 750°F (399°C). Not furnished with cast iron bodies. Bellows seal: For process temperatures up to 750°F (399°C) with positive stem seal requirements.
Packing	Bolted Box: Spring-loaded PTFE v-ring standard, optional laminated graphite to 1050°F (566°C).

Trim

Material	17-4 PH hardened stainless steel plug and cage standard. Stellite* and other alloy trim available as options.
Plug-Stem Assembly	Welded assembly is standard up to 4" (100mm); threaded and pinned assembly is standard for 6-16" (150-600mm).
Cage	One piece with seat machined into cage. Available with either equal percentage or linear characterstics.
Reduced Trim	One piece and dimensionally the same as full capacity cages. Reduced Cvs are obtained with only a cage change.
Leakage	Maximum allowable leakage under factory testing is 0.01% of rated Cv ANSI B16.104 Class IV.

* Stellite is registered trademark of Stoody Deloro Stellite, Inc.

ORDERING DATA

Please Specify:

- Valve Model 9501
- Body material
- Size
- End connections
- Bonnet
- Packing
- Trim material
- Spring range
- Actuator size
- Action (air-to-close or air-to-open)
- Leakage requirement
- Accessories

FLOW COEFFICIENTS

Reduced and Full Capacity Trim, Cv/Kv Values

Valve Size	Equal Percentage			Linear Contoured		
	Full Port	1 Size Reduced	2 Sizes Reduced	Full Port	1 Size Reduced	2 Sizes Reduced
1" 25mm	16 14	13.6 11.8	8.5 7.4	17 15	13.6 11.8	7.5 6.5
1.25" 32mm	21 18	15.7 13.6	8.3 7.2	23 20	15.3 13.2	7.4 6.4
1.5" 40mm	34 29	25 22	18 16	36 31	25 22	16 14
2" 50mm	53 46	41 35	21 18	58 50	39 34	21 18
2.5" 65mm	90 78	58 50	33 29	89 77	60 52	33 29
3" 80mm	120 104	62 54	32 28	124 107	94 81	52 45
4" 100mm	188 163	100 87	51 44	202 175	110 95	56 48
6" 150mm	375 324	210 182	130 112	440 381	275 238	180 156
8" 200mm	680 588	422 365	275 238	780 675	500 433	320 277
10" 250mm	1025 887	516 446	360 311	1160 1000	710 614	470 407
12" 300mm	1400 1210	700 606	465 402	1550 1340	830 718	555 480
16" 400mm	1440 1250	700 606	465 402	2040 1760	830 718	555 480

Note: Cv values = Flow in GPM of water at 1 psi pressure drop.
Kv Values = Flow in M^3/hour of water at 100 kPa pressure drop.

VALVE SHUT-OFF CAPABILITIES

Air-to-Close (Spring-to-Open)

Valve Size	Valve Stem Size	Valve Body Rating lbs	Actuator Size	Travel	Actuator Spring Range psi kPa	Required Actuator Pressure psi kPa	Maximum Allowable Pressure Drop psi kPa	
							Closed	Open
1 125" 25mm 32mm	3/8" 10mm	125-600	9	3/4" 19mm	3-15 21-103	35 241	1480 10200	900 6200
1,5" 40mm	3/8 (7/16"*) 10mm (11mm)	125-600	11	1" 25mm	3-15 21-103	35 241	1480 10200	900 6200
2" 50mm	(7/16") (11mm)	125-600	11	1-1/8" 11mm	3-15 21-103	33 227	1480 10200	900 6200
2,5" 65mm	(7/16") (11mm)	125-600	13	1-1/2" 38mm	3-15 21-103	35 241	1480 10200	900 6200
3" 80mm	1/2" 13mm	125-300	13	1-1/2" 38mm	3-15 21-103	32 220	740 5100	740 5100
3" 80mm	3/4" 19mm	600	15	1-1/2" 38mm	3-15 21-103	30 207	1480 10200	900 6200
4" 100mm	1/2" 13mm	125-300	13	1-1/2" 38mm	3-15 21-103	36 248	740 5100	650 4480
					6-30 41-207	50 345	740 5100	740 5100
4" 100mm	3/4" 19mm	60	15	1-1/2" 38mm	3-15 21-103	30 207	1480 10200	900 6200
6" 150mm	3/4" 19mm	125-600	15	2" 51mm	3-15 21-103	45 310	1480 10200	500 3450
					3-17 21-117	50 345	1480 10200	600 4130
			185	2" 51mm	3-15 21-103	35 241	1480 10200	600 4130
8" 200mm	1 25mm	125-600	185	2-1/2" 64mm	3-15 21-103	45 310	1480 10200	225 1550
					3-18 21-124	50 345	1480 10200	280 1930
					3-27 21-186	50 345	1240 8540	450 9900
					3-30 21-207	50 345	920 6340	450 9900
					6-30 41-207	50 345	920 6340	450 9900
10" 250mm	1 25mm	125-600	18L	3-1/2" 89mm	3-15 21-103	50 345	1480 10200	100 600
					3-27 21-186	50 345	680 4600	200 1380
			24	3-1/2" 89mm	6-30 41-207	50 345	375 2580	200 1380
					3-14 21-96	35 241	1400 9650	150 1030
12" 300mm	1 25mm	125-600	18L	4" 102mm	3-15 21-103	50 345	1100 7580	90 620
					3-27 21-186	50 345	320 2200	180 1240
			24	4" 102mm	3-15 21-103	35 241	1000 6890	150 1030
					3-19 21-131	35 241	540 3720	200 1380
16" 340mm	Contact Nor'East							

*Extension Bonnet

VALVE SHUT-OFF CAPABILITIES

Air-to-Close (Spring-to-Open)

Valve Size	Valve Stem Size	Valve Body Rating lbs	Actuator Size	Travel	Actuator Spring Range psi / kPa	Required Actuator Pressure psi / kPa	Maximum Allowable Pressure Drop psi / kPa	
							Closed	Open
1 125" 25mm 32mm	3/8" 10mm	125-600	9	3/4" 19mm	15-34 103-234	40 276	685 4480	685 4480
			11	3/4" 19mm	13-38 90-282	40 276	1480 10200	900 6200
1,5" 40mm	3/8 (7/16"*) 10mm (11mm)	125-600	11	1" 25mm	18-34 124-234	40 276	1480 10200	900 6200
2" 50mm	(7/16") (11mm)	125-600	11	1-1/8" 11mm	16-35 110-241	40 276	750 5170	750 5170
			13		9-21 24-145	24 185	500 3450	500 3450
					12,5-21 86-145	35 241	1480 10200	900 6200
2,5" 65mm	(7/16") (11mm)	125-600	15	1-1/2" 38mm	9,5-28 85-103	31 214	1480 10200	900 6200
3" 80mm	1/2" 13mm	125-300	15	1-1/2" 38mm	9,5-28 85-103	31 214	740 5100	740 5100
3" 80mm	3/4" 19mm	600	15	1-1/2" 38mm	9,5-28 85-103	31 214	1200 8270	900 6200
				1-1/4" 32mm	11-27† 76-186†	30 207	1480 10200	900 6200
4" 100mm	1/2" 13mm	125-300	15	1-1/2" 38mm	9,5-28 85-103	31 214	500 3450	500 3450
					11-27 76-186	30 207	740 5100	740 5100
4" 100mm	3/4" 19mm	600	15	1-1/2" 38mm	9,5-28 85-103	31 214	500 3450	500 6200
				1-1/4" 32mm	11-27† 76-186†	30 207	1480 10200	900 6200
			186	1-1/2" 38mm	10-26 26-179	30 207	1480 10200	900 6200
6" 150mm	3/4" 19mm	125-600	186	2" 51mm	11,5-32 79-220	35 241	830 5720	600 4130
			18L		18-43 124-296	50 345	1480 10200	600 4130
					15,5-31,5 107-217	35 241	1480 10200	600 4130
8" 200mm	1 25mm	125-600	18L	2-1/2" 64mm	13-32 90-220	35 241	540 3720	325 2450
					15-45 103-310	50 345	850 5860	450 3100
					21-42 145-280	45 310	1480 10200	300 2070
10" 250mm	1 25mm	125-600	18L	3-1/2" 89mm	17-43 117-296	45 310	600 4130	200 1800
			24	3-1/2" 89mm	10-32,5 69-224	35 241	850 5860	300 2070
12" 300mm	1" 25mm	125-600	18L	4" 102mm	15-45 103-310	50 345	165 1140	165 1140
					8,5-35 59-241	35 241	300 2070	280 1930
			24		10-35‡ 89-241‡	35 241	580 4000	280 1930
					11,5-35** 79-241**	35 241	850 5860	280 1930
16" 340mm	Contact Nor'East							

*Extension Bonnet

† Short-Stroked to 1-1/4*(32mm)

‡ Short-Stroked to 3* (80mm)

**Short-Stroked to 3-1/2* (89mm)

DIMENSIONS

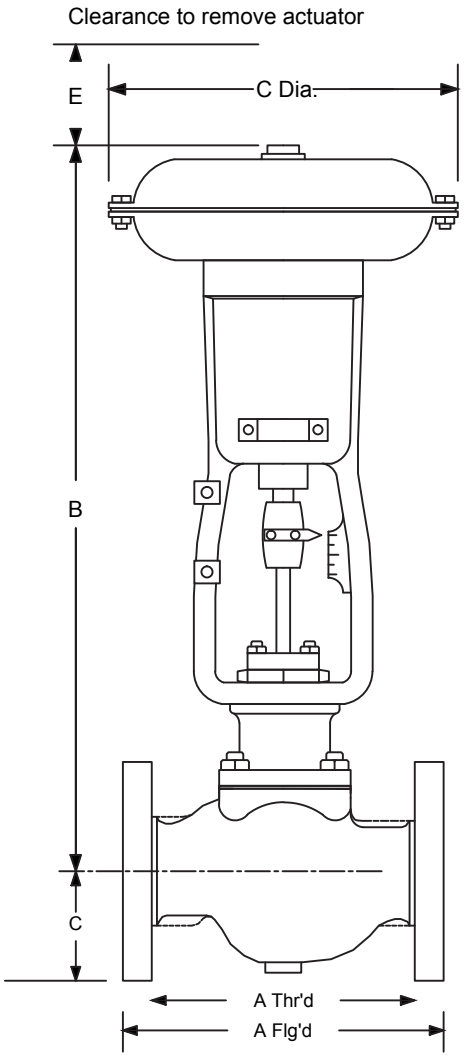
Threaded Ends

Valve Size	Actuator Size	A	B				C	D	E
			Air-to-Close		Air-to-Open				
		Iron 250 Steel 600	Plain Bonnet	All Other Bonnets	Plain Bonnet	All Other Bonnets		Iron 250 Steel 600	
1" / 25mm	9	6.0 / 152	21.0 / 533	26.38 / 670	22.63 / 575	28.75 / 730	10.5 / 267	2.13 / 54	4.25 / 108
1" / 25mm	11	6.0 / 152	–	–	25.75 / 654	31.88 / 810	12.75 / 324	2.13 / 54	4.25 / 108
1.25" / 32mm	9	7.5 / 191	21.25 / 540	26.63 / 676	22.88 / 581	29.0 / 737	10.5 / 267	2.44 / 62	4.25 / 108
1.25" / 32mm	11	7.5 / 191	–	–	26.0 / 660	32.13 / 816	12.75 / 324	2.44 / 62	4.25 / 108
1.5" / 40mm	11	7.5 / 191	23.38 / 594	31.13 / 791	26.75 / 679	34.50 / 876	12.75 / 324	2.56 / 65	4.25 / 108
2" / 50mm	11	9.0 / 229	25.25 / 641	31.88 / 810	–	–	12.75 / 324	3.31 / 84	4.25 / 108
2" / 50mm	13	9.0 / 229	27.75 / 705	34.38 / 873	30.25 / 768	37.25 / 945	15.0 / 381	3.31 / 84	4.25 / 108

Inch
Millimeter

Flanged Ends

Valve Size	Actuator Size	A			B				C	D			E
					Air-to-Close		Air-to-Open						
		Iron 125 Steel 150	Iron 250 Steel 300	Steel 600	Plain Bonnet	All Other Bonnets	Plain Bonnet	All Other Bonnets		Iron 125 Steel 150	Iron 250 Steel 300	Steel 600	
1" / 25mm	9	7.25 / 184	7.75 / 197	8.25 / 210	21.0 / 533	26.38 / 670	22.63 / 575	28.75 / 730	10.5 / 267	2.44 / 62	2.63 / 67	2.63 / 67	4.25 / 108
	11	7.25 / 184	7.75 / 197	8.25 / 210	–	–	25.75 / 654	31.88 / 810	12.75 / 324	2.44 / 62	2.63 / 67	2.63 / 67	4.25 / 108
1.25" / 32mm	9	7.88 / 200	8.38 / 213	9.0 / 229	21.25 / 540	28.63 / 727	22.88 / 581	29.0 / 737	10.5 / 267	2.44 / 62	2.63 / 67	2.63 / 67	4.25 / 108
	11	7.88 / 200	8.38 / 213	9.0 / 229	–	–	26.0 / 660	32.13 / 816	12.75 / 324	2.44 / 62	2.63 / 67	2.63 / 67	4.25 / 108
1.5" / 40mm	11	8.75 / 222	9.25 / 235	9.88 / 251	23.38 / 594	31.13 / 791	26.75 / 679	34.50 / 876	12.75 / 324	2.56 / 65	3.06 / 78	3.06 / 78	4.25 / 108
2" / 50mm	11	10.0 / 254	10.5 / 267	11.25 / 286	25.25 / 641	31.88 / 810	28.25 / 718	35.25 / 895	12.75 / 324	3.31 / 84	3.31 / 84	3.31 / 84	5.38 / 137
	13	10.0 / 254	10.5 / 267	11.25 / 286	27.75 / 705	34.38 / 873	30.25 / 768	37.25 / 946	15.0 / 381	3.31 / 84	3.31 / 84	3.31 / 84	5.38 / 137
2.5" / 65mm	13	10.88 / 276	11.5 / 292	12.25 / 311	28.88 / 734	34.38 / 873	37.13 / 943	43.5 / 1105	15.0 / 381	3.5 / 89	3.75 / 95	3.75 / 95	5.38 / 137
	15	10.88 / 276	11.5 / 292	12.25 / 311	33.38 / 848	39.88 / 1013	37.13 / 943	43.5 / 1105	17.5 / 445	3.5 / 89	3.75 / 95	3.75 / 95	5.38 / 137
3" / 80mm	13	11.75 / 298	12.5 / 318	13.25 / 337	28.88 / 734	35.25 / 895	–	–	15.0 / 381	3.75 / 95	4.13 / 105	4.13 / 105	5.38 / 137
	15	11.75 / 298	12.5 / 318	13.25 / 337	34.25 / 870	40.63 / 1032	38.0 / 965	44.38 / 1127	17.5 / 445	3.75 / 95	4.13 / 105	4.13 / 105	5.38 / 137
4" / 100mm	13	13.88 / 353	14.5 / 368	15.5 / 394	28.88 / 734	35.25 / 895	–	–	15.0 / 381	4.5 / 114	5.0 / 127	5.38 / 137	5.38 / 137
	15	13.88 / 353	14.5 / 368	15.5 / 394	34.25 / 870	40.63 / 1032	38.0 / 965	44.38 / 1127	17.5 / 445	4.5 / 114	5.0 / 127	5.38 / 137	5.38 / 137
	18S	13.88 / 353	14.5 / 368	15.5 / 394	–	–	43.25 / 1099	49.63 / 1261	20.5 / 521	4.5 / 114	5.0 / 127	5.38 / 137	5.5 / 140
6" / 150mm	15	17.75 / 451	18.63 / 473	20.0 / 508	38.25 / 972	45.88 / 1165	–	–	17.5 / 445	5.5 / 140	6.25 / 159	7.0 / 178	5.5 / 140
	18S	17.75 / 451	18.63 / 473	20.0 / 508	41.75 / 1060	49.38 / 1254	45.25 / 1149	52.88 / 1343	20.5 / 521	5.5 / 140	6.25 / 159	7.0 / 178	5.5 / 140
	18L	17.75 / 451	18.63 / 473	20.0 / 508	–	–	48.25 / 1226	55.88 / 1419	20.5 / 521	5.5 / 140	6.25 / 159	7.0 / 178	5.5 / 140
8" / 200mm	18S	21.38 / 543	22.38 / 568	24.0 / 610	43.0 / 1092	49.63 / 1261	–	–	20.5 / 521	6.75 / 171	7.5 / 191	8.25 / 210	5.5 / 140
	18L	21.38 / 543	22.38 / 568	24.0 / 610	–	–	49.5 / 1257	56.13 / 1426	20.5 / 521	6.75 / 171	7.5 / 191	8.25 / 210	5.5 / 140
10" / 250mm	18L	26.5 / 673	27.88 / 708	29.63 / 753	53.25 / 1353	58.75 / 1492	–	–	20.5 / 521	8.0 / 203	8.75 / 222	10.0 / 254	5.5 / 140
	24	26.5 / 673	27.88 / 708	29.63 / 753	64.75 / 1645	–	65.25 / 1657	–	27.0 / 686	8.0 / 203	8.75 / 222	10.0 / 254	5.5 / 140
12" / 300mm	18L	29.0 / 737	30.5 / 775	32.25 / 819	55.63 / 1413	61.75 / 1568	–	–	20.5 / 521	9.5 / 241	10.25 / 260	11.0 / 279	5.5 / 140
	24	29.0 / 737	30.5 / 775	32.25 / 819	64.38 / 1635	–	67.88 / 1724	–	27.0 / 686	9.5 / 241	10.25 / 260	11.0 / 279	5.5 / 140
16" / 400mm	18L	40.0 / 1016	41.63 / 1057	43.63 / 1108	76.88 / 1953	82.88 / 2105	77.5 / 1969	83.5 / 2121	20.5 / 521	14.5 / 368	14.5 / 368	14.5 / 368	5.5 / 140


Clearance to remove actuator
E
C Dia.
B
C
A Thr'd
A Flg'd

Guarantee

Products, auxiliaries and parts thereof, of Allagash International Group, LLC, a manufacturer of Nor' East Controls, are guaranteed for a period of one year from the date of shipment against defective workmanship and material only, when properly installed, operated and serviced in accordance with Allagash International Group, LLC recommendations. Replacement for items of Allagash International Group, LLC manufacture will be made free of charge if proved to be defective within such time. No claim for special or consequential damages, transportation, or labor shall be allowed. Purchaser shall be solely responsible for determining suitability for use and in no event shall Allagash International Group, LLC be liable in this respect. Equipment or parts manufactured by others but furnished by Allagash International Group, LLC will be repaired or replaced, only to the extent provided in the original manufacturer's warranty to Allagash International Group, LLC. Allagash International Group, LLC does not guarantee resistance to corrosion, erosion, abrasion or other sources of failure, nor does Allagash International Group, LLC guarantee a minimum length of service. Failure of the purchaser to give prompt written notice of any alleged defect under this guarantee forthwith upon its discovery, or use and possession thereof after an attempt has been made and completed by someone other than Allagash International Group, LLC or an authorized representative to remedy defects therein, or failure to return products or parts for replacement as herein provided, of failure to install, operate, and maintain said products or parts according to instructions provided by Allagash International Group, LLC, of failure to pay the entire contract price when due, shall be a waiver of all rights under these representations.

The foregoing guarantee shall be null and void, if, after shipment from our factory, the item is modified in any way or component of another manufacturer, such as but not limited to; an actuator is attached to the item by valves & controls other than a Allagash International Group, LLC.

Factory Service Personnel. All orders accepted shall be deemed accepted subject to this guarantee, which shall be exclusive of any other previous guarantee, and this shall be the only effective guarantee or warranty binding on Allagash International Group, LLC, anything to the contrary contained in the purchase order, or represented by any agent or employee of Allagash International Group, LLC, in writing or otherwise, notwithstanding, including but not limited to implied warranties.

THE FOREGOING OBLIGATIONS ARE IN LIEU OF ALL OTHER OBLIGATIONS AND LIABILITIES INCLUDING WARRANTIES OF FITNESS OR MERCHANTABILITY OR OTHERWISE, EXPRESSED OR IMPLIED IN FACT OR BY LAW, AND STATE NOR'EAST CONTROLS AND EXCLUSIVE LIABILITY AND PURCHASER'S EXCLUSIVE REMEDY FOR ANY CLAIM IN CONNECTION WITH THIS SALE OR FURNISHING OF SERVICES, GOODS, OR PARTS, THEIR OWN DESIGN, SUITABILITY FOR USE, INSTALLATION OR OPERATION.

Limitation of Liability

In no event shall Allagash International Group, LLC, a Manufacturer of Nor' East Controls be liable for any direct, indirect, special or consequential damages whatsoever, and Allagash International Group, LLC liability, under no circumstances, will exceed the contract price for the goods and/or services for which liability is claimed. Any action for breach of contract must be commenced within 1 year after the cause of the action has occurred.

ALLAGASH™
INTERNATIONAL GROUP, LLC

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Sales and Service

Allagash International Group, LLC representatives are located in major cities throughout the world.
For the name of the representative nearest you, email us: sales@allagashinternational.com

Allagash International, Group LLC reserves the right to incorporate our latest design and material changes without notice or obligation. Design features, materials of construction and dimensional data, as described in this bulletin, are provided for your information only and should not be relied upon unless confirmed in writing by Allagash International, Group LLC. Certified drawings are available upon request.