

TEST REPORT

Report No.: B1377.01-602-44

Rendered to:

PROFORMANCE MANUFACTURING, INC
Lone Rock, Wisconsin

PRODUCT TYPE: 44 x 75 Fiberglass Double Hung Window
SERIES/MODEL: ProStar/ECOSTAR Double Hung

SPECIFICATION: AAMA/WDMA/CSA 101/I.S.2/A440-08, *NAFS - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*
and
AAMA/WDMA/CSA 101/I.S.2/A440-05, *Standard/Specification for Windows, Doors, and Unit Skylights.*

Title	Summary of Results
Primary Product Designator AAMA/WDMA/CSA 101/I.S.2/A440-08	Class LC-PG45 Size Tested: 1118 x 1905 (44 x 75)-H
AAMA/WDMA/CSA 101/I.S.2/A440-05	H-LC45 1118 x 1905 (44 x 75)
Design Pressure	±2160 Pa (±45.11 psf)
Air Infiltration	1.0 L/s/m ² (0.20 cfm/ft ²)
Canadian Air Infiltration/Exfiltration Level	A2
Water Penetration Resistance Test Pressure	360 Pa (7.52 psf)

Test Completion Date: 07/08/2011

Reference must be made to Report No. B1377.01-602-44, dated 08/08/11 for complete test specimen description and detailed test results.

1.0 Report Issued To: Proformance Manufacturing, Inc.
P.O. Box 58/750 North County Line Road
Lone Rock, Wisconsin 53556

2.0 Test Laboratory: Architectural Testing, Inc.
5906 Saxon Avenue
Schofield, Wisconsin 54476
715-241-8624

3.0 Project Summary:

3.1 Product Type: 44 x 75 Fiberglass Double Hung Window

3.2 Series/Model: ProStar/ECOSTAR Double Hung

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test method(s). The specimen tested successfully met the performance requirements for a **Class LC-PG45 Size Tested: 1118 x 1905 (44 x 75)-H and H-LC45 1118 x 1905 (44 x 75)** rating.

3.4 Test Dates: 07/07/2011 - 07/08/2011

3.5 Test Location: Architectural Testing, Inc. test facility in Schofield, Wisconsin.

3.6 Test Sample Source: The test specimen was provided by the client.

3.7 Drawing Reference: The test specimen drawings have been reviewed by Architectural Testing and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Architectural Testing per the drawings located in Appendix C. Any deviations are documented herein or on the drawings.

3.8 List of Official Observers:

<u>Name</u>	<u>Company</u>
Jerry Beranek	Proformance Manufacturing, Inc
Jeff Zibton	Architectural Testing, Inc.
Eric Jehn	Architectural Testing, Inc.

4.0 Test Specification(s):

AAMA/WDMA/CSA 101/I.S.2/A440-08, *NAFS - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*

AAMA/WDMA/CSA 101/I.S.2/A440-05, *Standard/Specification for Windows, Doors, and Unit Skylights.*

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 2.1 m ² (22.9 ft ²)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	1118	44	1905	75
Exterior sash	1016	40	924	36-3/8
Interior sash	1041	41	932	36-11/16
Screen	1021	40-3/16	1810	71-1/4

5.2 Frame Construction:

Frame Member	Material	Description
Head, sill and jambs	Pultruded fiberglass	White interior and exterior

	Joinery Type	Detail
All corners	Mitered	The corner keys were adhered in place with Nova Gard 900-200 2-part bonding adhesive. Each miter employed silicone sealant.

5.3 Sash Construction:

Sash Member	Material	Description
Sash stop	ABS	White interior and exterior
Interlock	ABS	White interior and exterior
Top rail, bottom rail and stiles	Pultruded fiberglass	White interior and exterior
Interlock rails	Pultruded fiberglass	6" long pultruded fiberglass at ends of interior sash at both meeting rails.

	Joinery Type	Detail
All corners	Mitered	The corners were adhered in place with Nova Gard 900-200 2-part bonding adhesive.

5.0 Test Specimen Description:

5.4 Weatherstripping:

Description	Quantity	Location
0.187" wide backed 0.270" high pile with fin	1 Row	Interior perimeter of both sash
0.187" wide backed 0.270" high pile with fin	1 Row	Exterior perimeter of both sash
0.187" wide backed 0.270" high pile with fin	1 Row	Exterior side of sill stop and head stop
0.187" wide backed 0.270" high pile with fin	1 Row	At interlock on both sash

5.5 Glazing:

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
19.1 mm (3/4") IG	12.7 mm (1/2") steel spacer system	3.2 mm (1/8") annealed	3.2 mm (1/8") annealed	The glass was set from the exterior against glazing tape with ABS glazing beads applied at the exterior.

Location	Quantity	Daylight Opening		Glass Bite
		Millimeters	Inches	
Exterior Sash	1	913 x 819	35-15/16 x 32-1/4	5/8"
Interior Sash	1	940 x 827	37 x 32-9/16	5/8"

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Slot	0.250" x 1.375"	2	Frame sill at ends of interior sash track
Slot	0.250" x 1.375"	2	Frame sill 1-1/2" from ends
Hole	0.250"	3	Sill exterior track 4-1/2" from frame ends and at center
Hole	0.250"	2	Bottom rail of both sash 3-7/16" from ends.

5.0 Test Specimen Description:

5.7 Hardware:

Description	Quantity	Location
Sweep lock	2	4-1/2" from ends of meeting rail on interior sash
Keeper	2	Adjacent to lock on exterior sash
Pivot pin	4	Ends of bottom rail on both sash
Tilt latch	4	Ends of top rail on each sash

5.8 Reinforcement: No reinforcement was utilized.

5.9 Screen Construction:

Frame Material	Corner Construction	Mesh Type	Mesh Attachment Method
Aluminum	Mitered and corner keyed	Fiberglass	Rubber screen spline

6.0 Installation:

The specimen was installed into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 1/4" shim space. The exterior perimeter of the window was sealed with silicone.

Location	Anchor Description	Anchor Location
Frame perimeter	3/4" x 3/4" blind stop	Frame perimeter at interior and exterior profiles
Jambs	#8 x 2" screw	4-3/4" from top and bottom and approximately 39" from the sill at each jamb

7.0 Test Results: The temperature during testing was 24°C (75°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Operating Force, per ASTM E 2068	Initiate motion: 80 N (18 lbf) Maintain motion: 98 N (22 lbf) Locks: 22 N (5 lbf)	Report Only 180 N (40 lbf) max. 100 N (22.5 lbf) max.	
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	1.0 L/s/m ² (0.20 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Air Leakage, Exfiltration per ASTM E 283 at 75 Pa (1.57 psf)	1.0 L/s/m ² (0.20 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Canadian Air Infiltration/Exfiltration Level	A2	N/A	
Water Penetration, per ASTM E 547	N/A	N/A	3
Uniform Load Deflection, per ASTM E 330	N/A	N/A	3
Uniform Load Structural, per ASTM E 330	N/A	N/A	3
Forced Entry Resistance, per ASTM F 588, Type: A - Grade: 10	Pass	No entry	
Deglazing, per ASTM E 987 Operating direction, 320 N (70 lbf) Remaining direction, 230 N (50 lbf)	Pass Pass	Meets as stated Meets as stated	
Optional Performance			
Water Penetration, per ASTM E 547 at 360 Pa (7.52 psf)	Pass	No leakage	2

7.0 Test Results: (Continued)

Title of Test	Results	Allowed	Note
Optional Performance			
Uniform Load Deflection, per ASTM E 330 taken at meeting rail +2160 Pa (+45.11 psf) -2160 Pa (-45.11 psf) taken at sash stile +2160 Pa (+45.11 psf) -2160 Pa (-45.11 psf)	3.6 mm (0.14")	Report Only	4, 5, 6
	2.0 mm (0.08")	Report Only	
	2.8 mm (0.11")	Report Only	
	0.8 mm (0.03")	Report Only	
Uniform Load Structural, per ASTM E 330 taken at meeting rail +3240 Pa (+67.67 psf) -3240 Pa (-67.67 psf) taken at sash stile +3240 Pa (+67.67 psf) -3240 Pa (-67.67 psf)	0.3 mm (0.01")	4.1 mm (0.16") max.	5, 6
	<0.3 mm (<0.01")	4.1 mm (0.16") max.	
	0.5 mm (0.02")	3.8 mm (0.15") max.	
	0.3 mm (0.01")	3.8 mm (0.15") max.	

Note 1: The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440 for air leakage resistance.

Note 2: With and without insect screen.

Note 3: The client opted to start at a pressure higher than the minimum required. Test results are reported under Optional Performance.

Note 4: The deflections reported are not limited by AAMA/WDMA/CSA 101/I.S.2/A440 for this product designation. The deflection data is recorded in this report for special code compliance and information only.

Note 5: Loads were held for 10 seconds.

Note 6: Tape and film were used to seal against air leakage during structural testing. In our opinion, the tape and film did not influence the results of the test.

The service life of this report will expire on the stated Test Record Retention End Date, at which time such materials as drawings, data sheets, samples of test specimens, copies of this report, and any other pertinent project documentation, shall be discarded without notice.

If test specimen contains glazing, no conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen(s) can be made. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen(s) tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, Inc.

Eric J. Jehn
Technician

Jeffrey M. Zibton
Project Manager

EJJ;asm

Attachments (pages): This report is complete only when all attachments listed are included.

Appendix-A: Alteration Addendum (1)

Appendix-B: Photographs (1)

Appendix-C: Drawings (23)

Appendix A

Alteration Addendum

***Note:** No alterations were required.*

Appendix B
Photographs



Photo #1
Structural loading of double hung.

Test Report No.: B1377.01-602-44
Report Date: 08/08/11
Test Record Retention End Date: 07/08/11

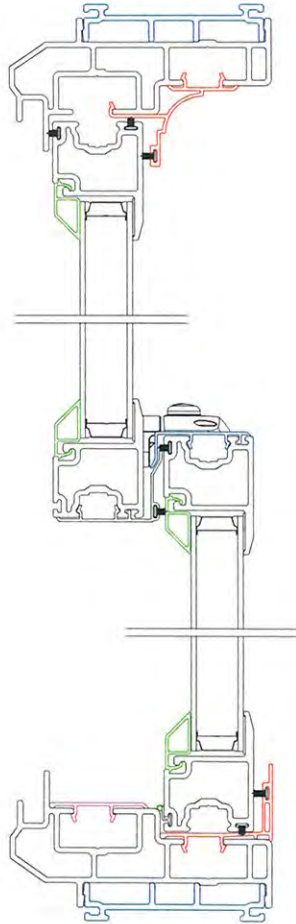
Appendix C

Drawings

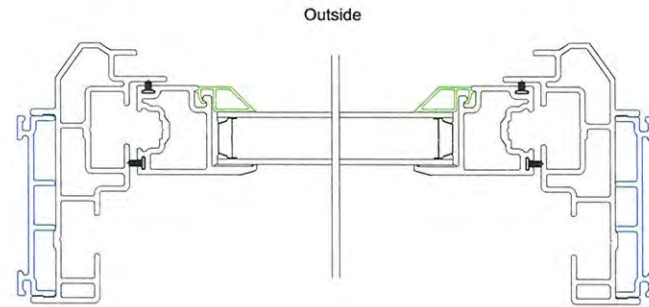
BOM for 44x56 Double Hung for AAMA testing

Description	Vendor	Part #	
Weep Doors	Ashland Hardware	64400-001	X
Locks (White)	Ashland Hardware	D1000AL-01	X
Keeper (White)	Ashland Hardware	14161-999-001	X
Lift Handle (White)	Ashland Hardware	13314-999-01-BG	X
Left Tilt Latches (White)	Ashland Hardware	80290	X
Right Tilt Latches (White)	Ashland Hardware	80291	X
Left Toggle tilt latches	Ashland Hardware	83100	X
Right Toggle tilt latches	Ashland Hardware	82100	X
Keys Sash	Flambeau	817710AE	X
Keys Frame	Flambeau	817711AE	X
Frame Material (White)	Teel Plastics	97097001	X
Sash Material (White)	Teel Plastics	97097002	X
Glazing Bead	Teel Plastics	P0136	X
Interlocks	Teel Plastics	P0135	X
Balance Covers	Teel Plastics	P0140	X
Weather strip	Ultra Fab	W33291NG	X
Chimney Blocks	Sureview	SV53	
Balance Shoes	Ashland Hardware	81003	X
Balance Holder	Ashland Hardware	14019	
Balances	Ashland Hardware		
Pivot Bars	Ashland Hardware	12310	X
Sash Stop	Teel Plastics	P131	X
Sill Stop	Teel Plastics	P0133	X
Head Stop	Teel Plastics	P0132	X

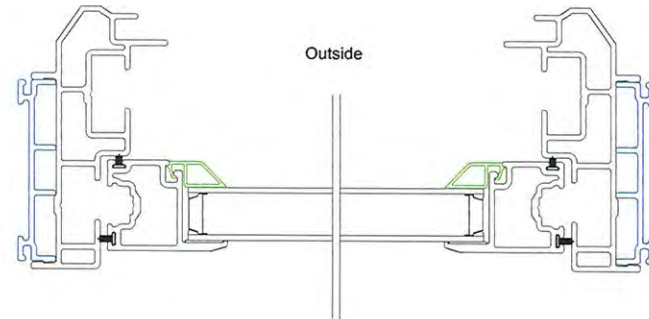

Architectural Testing
 Test sample complies with these details.
 Deviations are noted.
 Report# B1377.01
 Date 7/27/11 Tech EJ



PMI Fiberglass Double Hung Window End View. Cardinal Glass
366 XL Edge 95% argon



PMI Fiberglass Double Hung Top View (top sash)

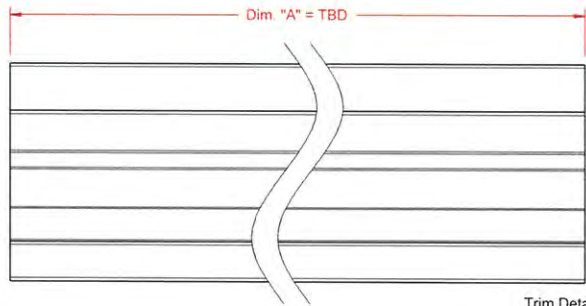


PMI Fiberglass Double Hung Top View (bottom sash)

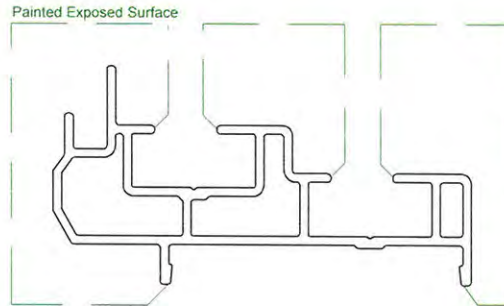


Test sample complies with these details.
Deviations are noted.

Report# B1377.01
Date 7/14/11 Tech EJ



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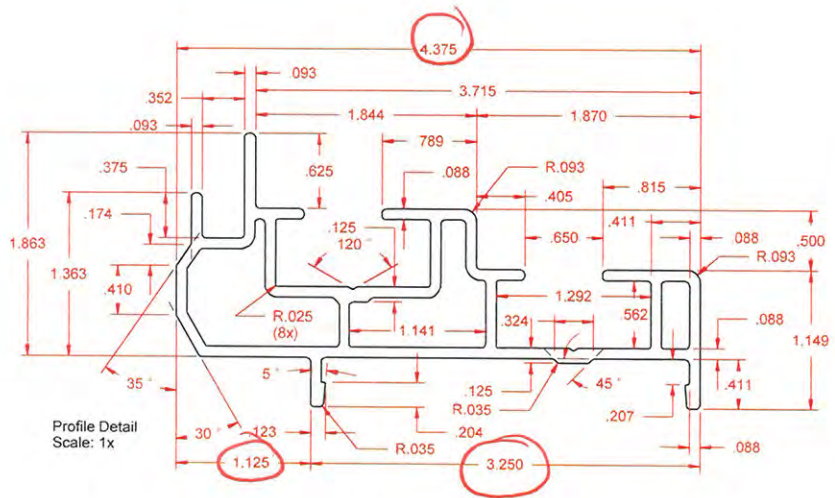
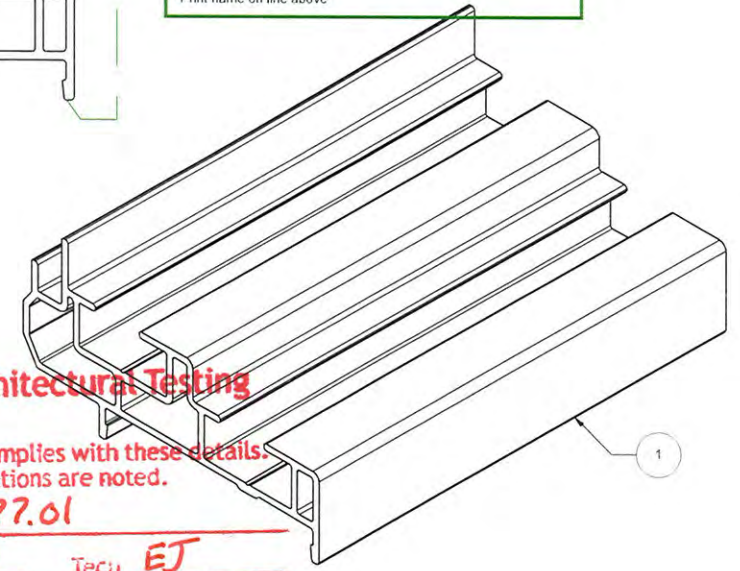


REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	.01	Final draft	11.17.2010	

Customer Approval

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Print name on line above _____



Architectural Testing

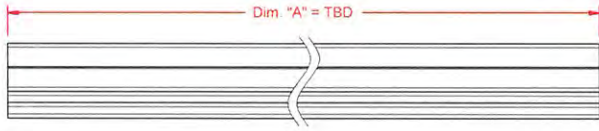
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Report# B1377.01
Date 7/15/11 Tech EJ

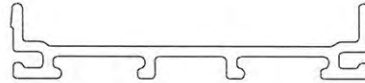
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	PMI Engineering	11.17.2010	
	CHECKED		
	GA		
MFG			
APPROVED			

SIZE	DWG NO	DWG Name	REV
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As Noted	NBO\PMI\Eng\Double Hung	1 of 1	



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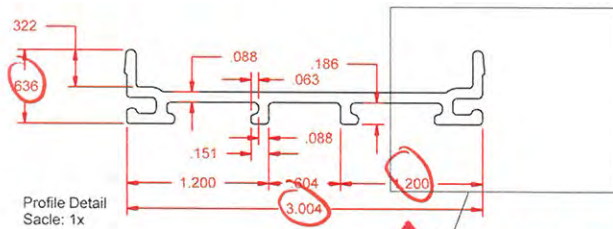


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	.01	Final draft	11.17.2010	

Customer Approval

Sign name on line above _____ Date _____

Print name on line above _____

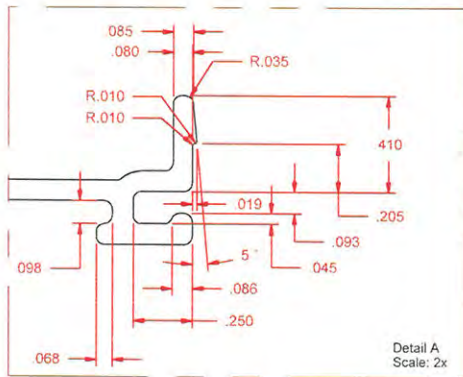
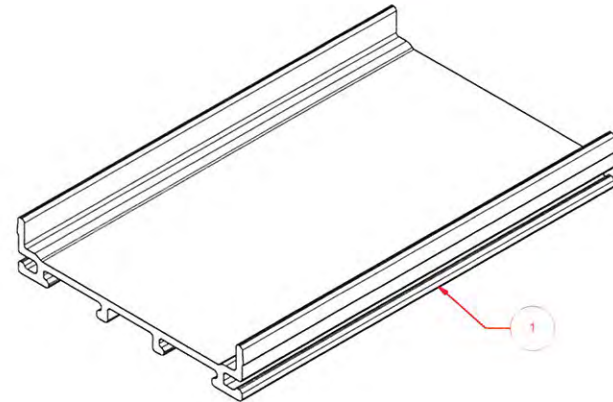


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Architectural Testing

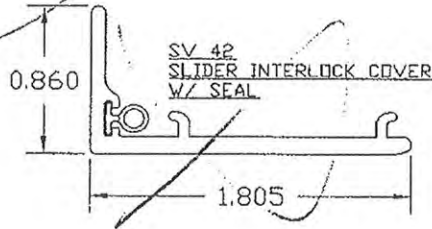
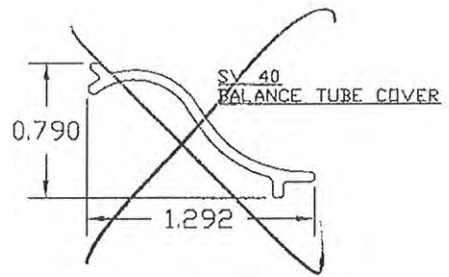
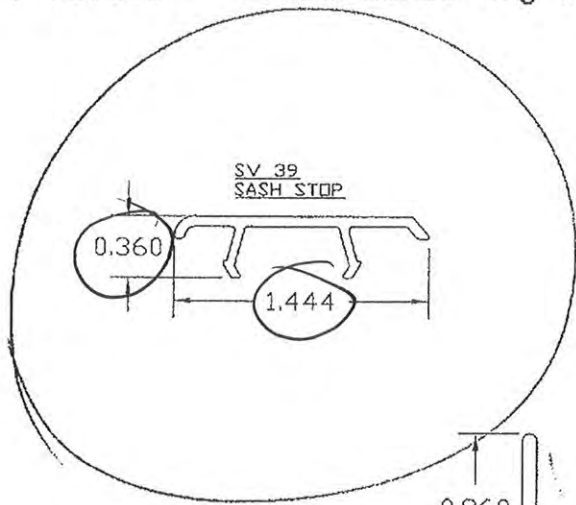
Test sample complies with these details.
Deviations are noted.

Report# B1377.01
Date 7/14/11 Tech ET



Detail A
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1	Frame Cap	Area: .462, Perimeter: 10.201		
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SIZE B	DWG NO PMI-003.01	DWG Name Frame Cap	REV .01	
SCALE As Noted	Directory NBO\PMI\Eng\Accessory\Frame		SHEET 1 of 1	



SureView

Fiberglass Window Systems

25101 Chagrin Boulevard
Suite 350
Cleveland, OH 44122

PROFILES - DOUBLE HUNG & SLIDERS

Issue Date:

AUGUST-2009

Page:

2.1.3



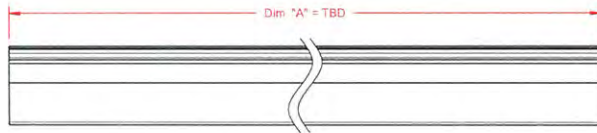
Architectural Testing

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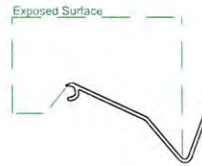
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Date 7/28/11

Tech EJ



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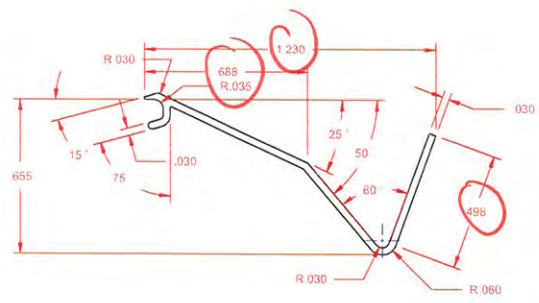
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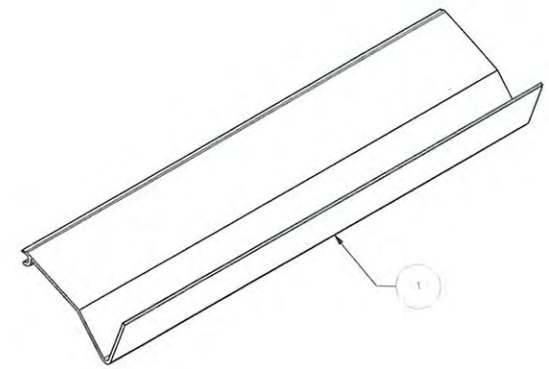
Customer Approval

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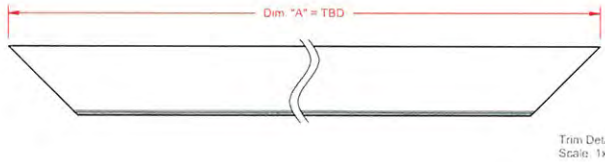
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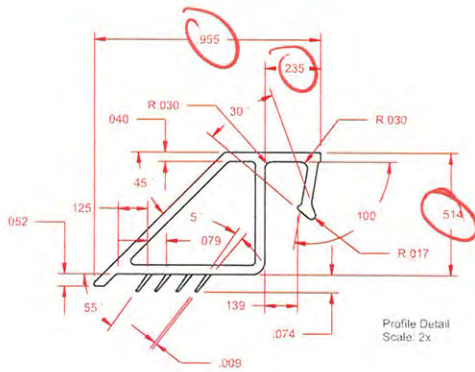


Item #	PMI Part Number	Part Name	Cost Center	Revision	Comment
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SIZE: B	DWG NO: PMI - 110	DWG Name: Balance Cover		REV:	
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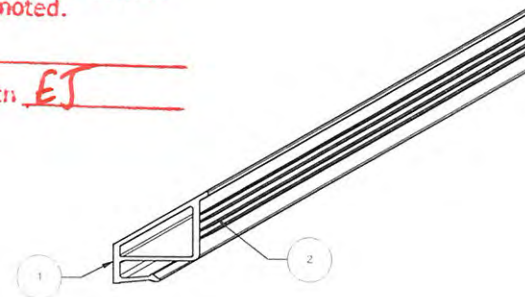


Test sample complies with these details.
Deviations are noted.

Report# B1377.01
Date 7/14/11 Tech. ET



DRAFT

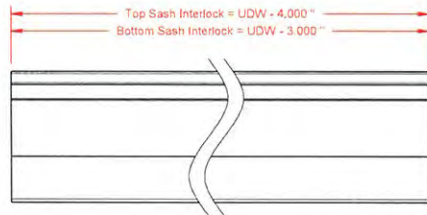


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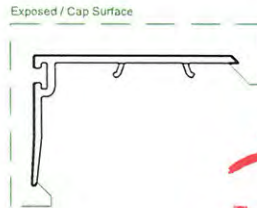
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1		Glazing Bead .726	Area: .099, Outer Perim: 3.116", Inner Perim: 1.655		All Dimensions include ca
2		Glazing Bead .726 Fle	Total Area: .0048, Total Perim: .848"		

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	CHECKED			
	QA			
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	Performance Manufacturing, Inc 750 North County Line Road Lone Rock, WI 53556 www.pmi-windows.com 608.583.7200 608.583.7060 Fax		
	SIZE B	DWG NO PMI-106	DWG Name Glazing Bead .726
SCALE As Noted	Directory PMI\Engineering\Accessory\Sash	SHEET 1 of 1	



Trim Detail
Scale 1x



REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	.01	Removed Flex. added 'T' Slot	01.25.2011	PMI
	.02	Added Cap Area	01.26.2011	Teel
	.03	Changed Barbs	03.18.2011	Teel



Test sample complies with these details.
 Deviations are noted.

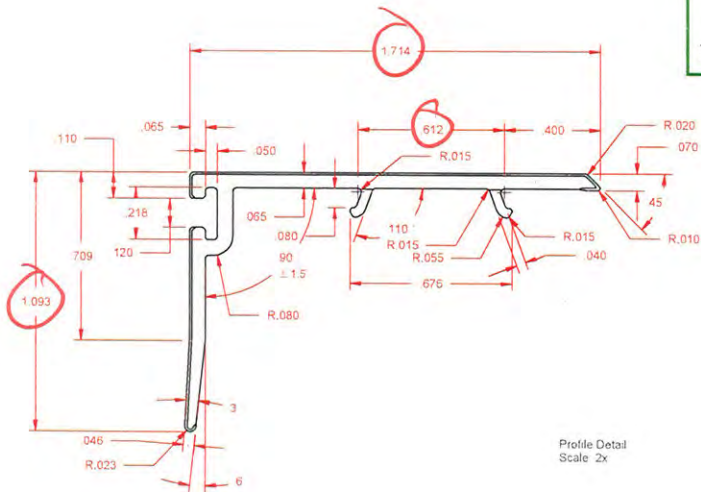
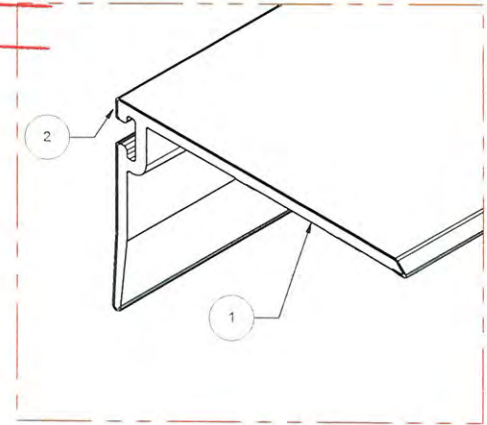
Report# B1377.01

Date 7/17/11 Tech EJ

Customer Approval

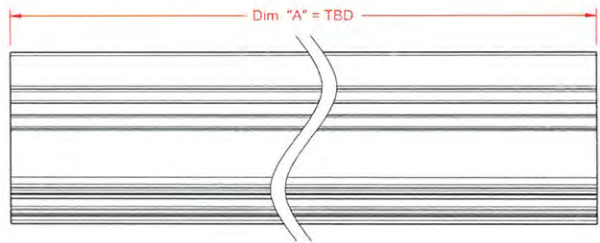
 Sign name on line above Date

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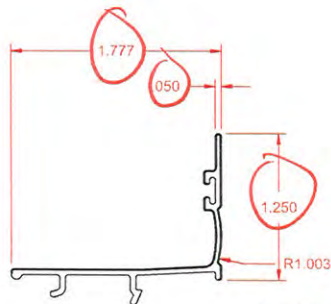
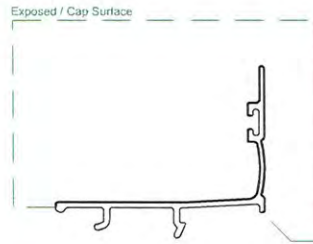


Item #	PMI Part Number	Part Name	Cost Center	Revision	Comment
1	P0135	Interlock	Area: 1.681 ", Perimeter: 6.236 "	.03	
2		Interlock Cap	Cap Area: .0282 ", Perim: 5.687 "		.010" Nominal Cap Wall Thickness

Note: Industry Standard Tolerances Unless Otherwise Specified.		DRAWN PMI Engineering	DATE 01.26.2010	<p>Performance Manufacturing, Inc 750 North County Line Road Lone Rock, WI 53556 www.pmi-windows.com 608.583.7200 608.583.7060 Fax</p>
The contents of this document or electronic media are confidential and proprietary information of Performance Manufacturing, Inc. Distribution or reproduction of this information without the express written consent of Performance Manufacturing, Inc. is prohibited. © 2010 PMI. All rights reserved.		CHECKED		
		QA		
		MFG		
		APPROVED		SIZE B DWG NO. PMI-105.03 DWG Name: Interlock REV .03 SCALE As Noted Directory NBO\PMI\Engineering\Accessory\Sash SHEET 1 of 1



Trim Detail
Scale 1x

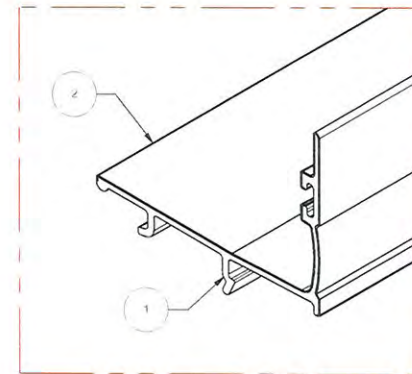


Profile Detail
Scale 1x

Customer Approval

Sign name on line above _____ Date _____

Print name on line above _____



REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	01	Added Cap Area	01.26.2011	Teel

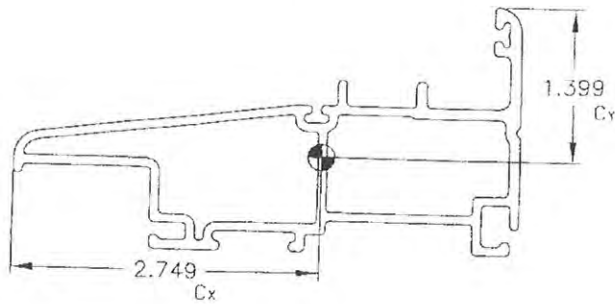


Architectural Testing
Test sample complies with these details.
Deviations are noted.

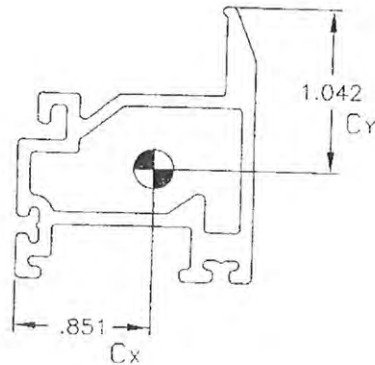
Report# B1377.01
Date 7/19/11 Tech: EJ

Item #	PMI Part #	Part Name	Cost Center	Rev.	Comment
1	P0133	Sill Stop	Area: 154 " Perimeter: 7 439 "	01	
2		Sill Stop Cap	Area: 042 " Perim: 8 497 "		010" Nominal Cap Wall Thickness

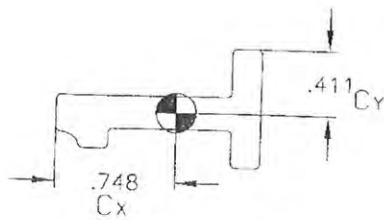
Note: Industry Standard Tolerances Unless Otherwise Specified. The contents of this document or electronic media are confidential and proprietary information of Performance Manufacturing, Inc. Distribution or reproduction of this information without the express written consent of Performance Manufacturing, Inc. is prohibited. © 2010 PMI. All rights reserved.	DRAWN	DATE		Performance Manufacturing, Inc 750 North County Line Road Lone Rock, WI 53556 www.pmi-windows.com 608.583.7200 608.583.7060 Fax
	PMI Engineering	.01.26.2011		
	CHECKED			
	QA			
MFG			SIZE B DWG NO. PMI-103.01 DWG Name Sill Stop REV .01	
APPROVED			SCALE As Noted Directory PMI\Eng\Accessory\Frames\Extruded SHEET 1 of 1	



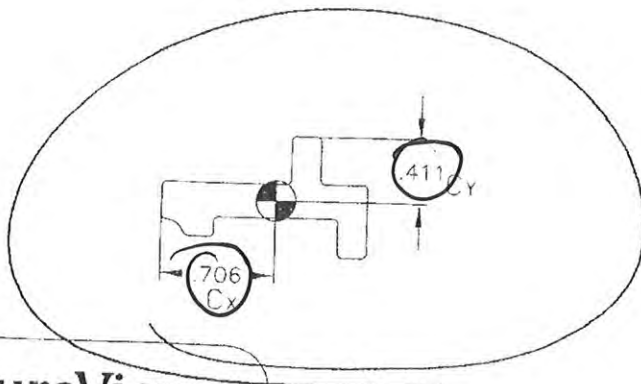
PART #		SV01
WEIGHT		1.0423 lb/ft
AREA		1.3029 in ²
PERIMETER		29.6477 in ²
MOMENT OF INERTIA	x:	0.3824 in ⁴
	y:	2.5210 in ⁴
RADIUS OF GYRATION	x:	0.5431 in
	y:	1.3910 in
SECTION MODULUS	x:	0.1398 in ³
	y:	1.8020 in ³



PART #		SV06
WEIGHT		0.4987 lb/ft
AREA		0.6234 in ²
PERIMETER		12.8810 in ²
MOMENT OF INERTIA	x:	0.1299 in ⁴
	y:	0.1743 in ⁴
RADIUS OF GYRATION	x:	0.4565 in
	y:	0.5287 in
SECTION MODULUS	x:	0.1526 in ³
	y:	0.1673 in ³



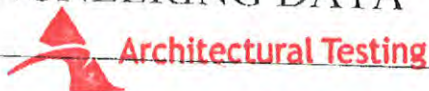
PART #		SV19
WEIGHT		0.3194 lb/ft
AREA		0.3992 in ²
PERIMETER		4.1427 in ²
MOMENT OF INERTIA	x:	0.0083 in ⁴
	y:	0.0686 in ⁴
RADIUS OF GYRATION	x:	0.1446 in
	y:	0.4146 in
SECTION MODULUS	x:	0.0111 in ³
	y:	0.1669 in ³



PART #		SV19a
WEIGHT		0.3194 lb/ft
AREA		0.3992 in ²
PERIMETER		4.1170 in ²
MOMENT OF INERTIA	x:	0.0083 in ⁴
	y:	0.0580 in ⁴
RADIUS OF GYRATION	x:	0.1446 in
	y:	0.3812 in
SECTION MODULUS	x:	0.0118 in ³
	y:	0.1411 in ³

SureView
 Fiberglass Window Systems
 25101 Chagrin Boulevard
 Suite 350
 Cleveland, OH 44122

ENGINEERING DATA



Test sample complies with these details.
 Deviations are noted.

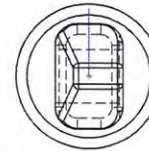
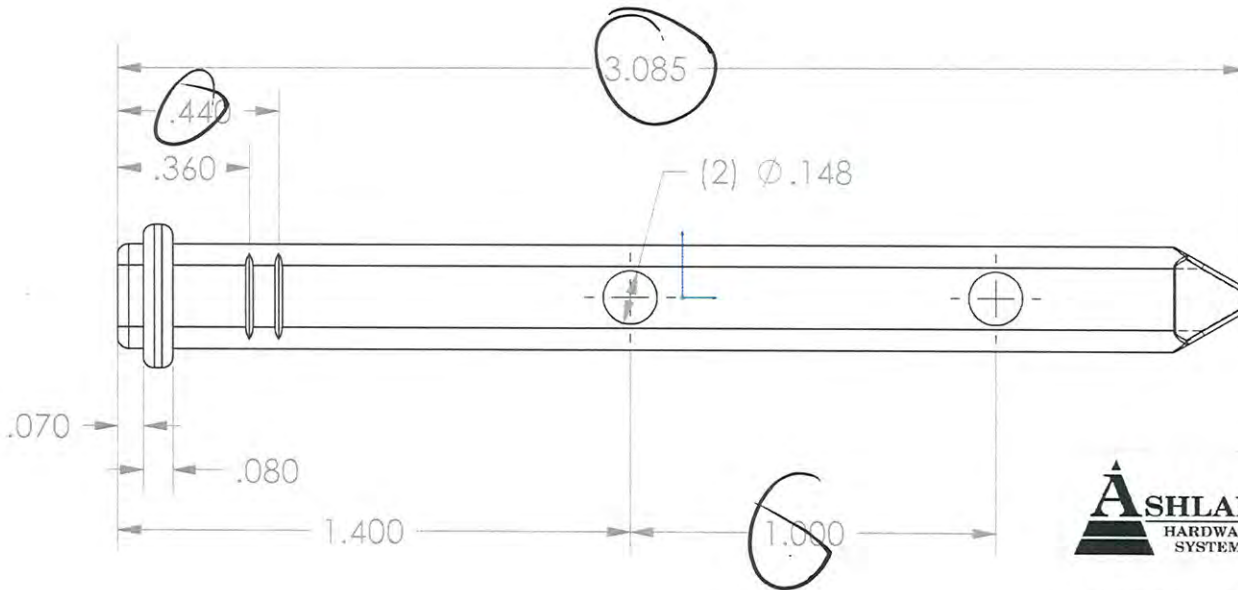
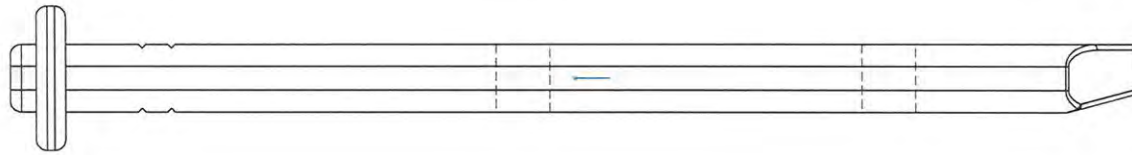
Issue Date:
 AUGUST-2009

Page
 1.9.2

Report# B1377.01

Date 3/27/11

Tech EJ



Test sample complies with these details.
Deviations are noted.

Report# B1377.01

Date 7/27/11 Tech EJ



790 WEST COMMERCIAL AVENUE
LOWELL, INDIANA 46356
TELEPHONE NUMBER (219) 696-5950
24 HR. FAX (800) 626-1758

PIVOTTRUE PIVOTBAR

COLOR: -

MATERIAL: ZINC
CUSTOMER: AHS
DRAWN BY: JLA

DATE: - CK. BY: - DATE: -

USED IN ASSY: - PROJ #: - PROTO. #: -
CUBIC INCHES: - COMPONENT: - CAVITATION: -

~ NOTICE ~
THIS DRAWING IS THE PROPERTY OF ASHLAND HARDWARE SYSTEMS. DESIGN CONCEPT & INFORMATION MAY NOT BE REPRODUCED USED OR DISCLOSED WITHOUT WRITTEN PERMISSION FROM ASHLAND.

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMALS ±TOLERANCE
1 PLC. ~ .X .030
2 PLC. ~ .XX .015
3 PLC. ~ .XXX .005
±TOLERANCE GREATER THAN 1.000 AS SHOWN PER INCH

DO NOT SCALE DRAWING
SCALE = 2:1 SHEET: 1 of 1

ASHLAND PART NUMBER

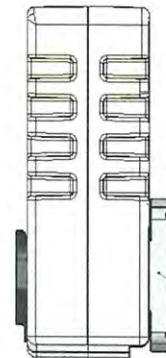
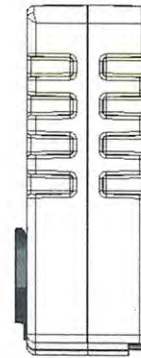
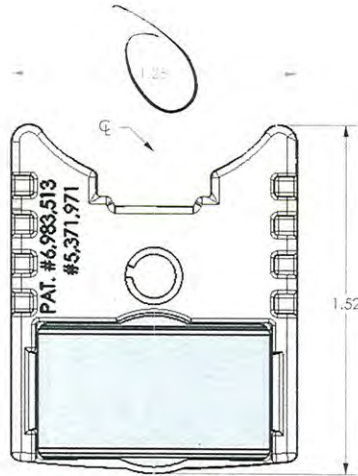
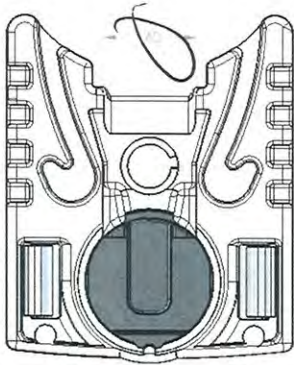
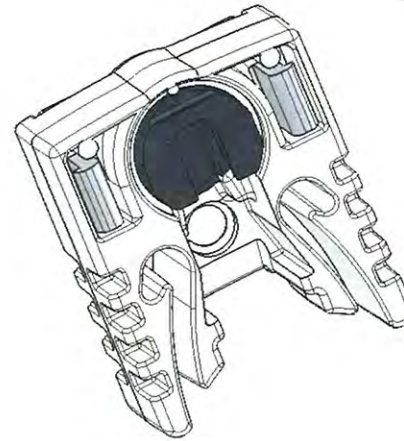
Q-12310-P-032-A

PRINT DATE: -

PATENT NUMBER: - STATUS: - INHERITED PATENTS: -

~ PATENT INFORMATION ~

NOTICE: We reserve the right to make design improvements without notice



121.58 - .000 OFFSET - BRAKE PAD

RETRACTED BRAKE PAD POSITION

ACTUATED BRAKE PAD POSITION



Test sample complies with these details.
Deviations are noted.

Report# B1377.01
Date 7/27/11 Tech EJ

NOTES:

- PART IS ϕ SYMMETRICAL.
- C-LEVEL PRINT FOR CUSTOMER REFERENCE ONLY; E-LEVEL PRINT TO CONTROL MANUFACTURING PROCESS
- SCALE 2.5:1

PATENT NUMBER:

STATUS:

NOTICE: We reserve the right to make design improvements without notice.

REGISTERED PATENTS PAT. #5,371,971

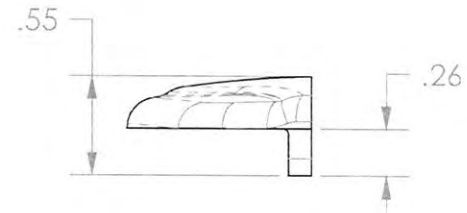
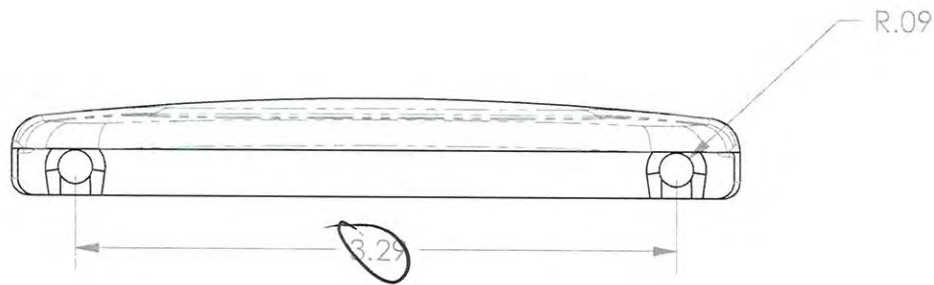
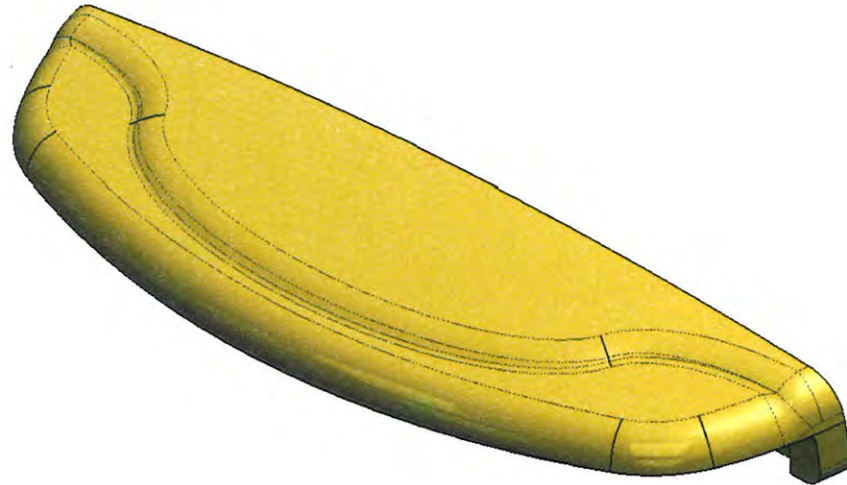
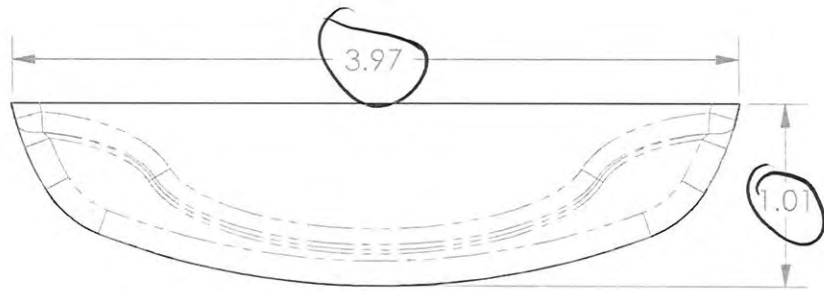
PATENT INFORMATION



790 WEST COMMERCIAL AVENUE
LOWELL, INDIANA 46356
TELEPHONE NUMBER (219) 696-5950
24 HR. FAX (800) 626-1758

G3 1/2" CONSTANT FORCE ASSEMBLY

MATERIAL VARIOUS BLEND - COLOR -
CUSTOMER ASHLAND
DRAWN BY MAT DATE 7/19/11 CK. BY - DATE -
CUBIC INCHES - NOTICE -
THE DRAWING IS THE PROPERTY OF ASHLAND HARDWARE SYSTEMS. DESIGN CONCEPT & INFORMATION MAY NOT BE REPRODUCED OR DISCLOSED WITHOUT WRITTEN PERMISSION FROM ASHLAND.
PROJ # - COMPONENT -
1 PLC - X
2 PLC - XX
3 PLC - XXX
TOLERANCES UNLESS OTHERWISE SPECIFIED:
DECIMALS - TOLERANCE
1 PLC - .X
2 PLC - .XX
3 PLC - .XXX
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED
SCALE = 2.5:1 SHEET 1 OF 1
ASHLAND PART NUMBER
C-81003-ANA
REVISED: 7-19-11



Test sample complies with these details.
Deviations are noted.

Report# B1377.01
Date 7/27/11 Tech ES

790 WEST COMMERCIAL AVENUE
LOWELL, INDIANA 46356
TELEPHONE NUMBER (219) 696-5950
24 HR. FAX (800) 626-1758

SASH LIFT, AHS DESIGN

MATERIAL: ZAMAK 3
DRAWN BY: -
CUBIC INCHES: -
~ NOTICE ~

CUSTOMER: -
DATE: 1/10/02
COMPONENT: - PROJ #: -

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WITHOUT WRITTEN
PERMISSION FROM ASHLAND

TOLERANCES UNLESS
OTHERWISE SPECIFIED
DECIMALS ±TOLERANCE
1 PLC. - .XXX .030
2 PLC. - .XXX .015
3 PLC. - .XXX .005
*TOLERANCE GREATER THAN 1.000
AS SHOWN PER INCH

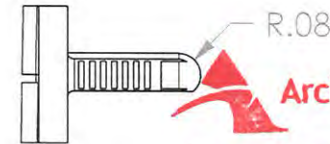
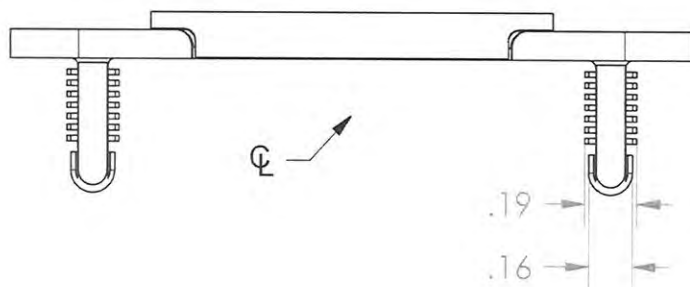
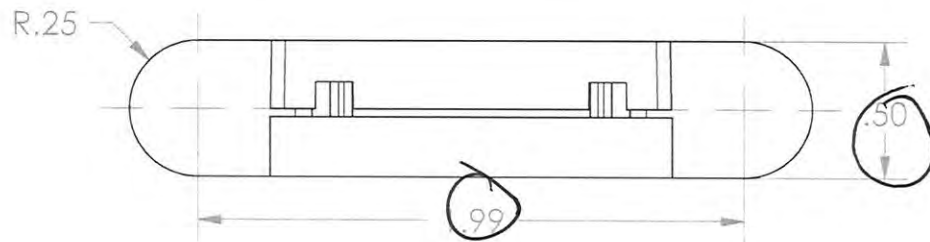
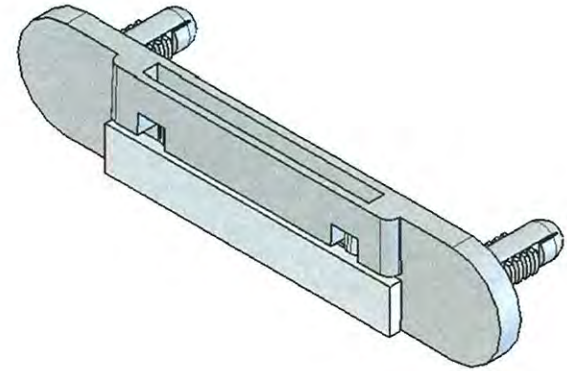
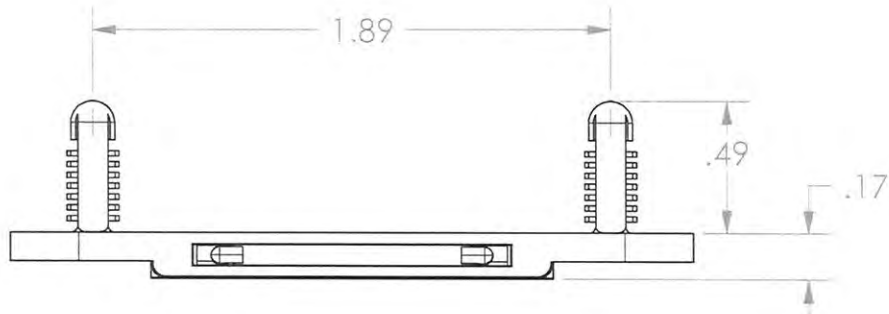
DIMENSIONS ARE IN INCHES
UNLESS OTHERWISE
SPECIFIED ON DRAWING
DO NOT SCALE DRAWING

SCALE = 1:1 SHEET: 1 of 1

ASHLAND PART NUMBER

Q-13314-P-034

PRINT DATE: -



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# B1377.01

Date 7/27/11 Tech EJ



790 WEST COMMERCIAL AVENUE
LOWELL, INDIANA 46356
TELEPHONE NUMBER (219) 696-5950
24 HR. FAX (800) 626-1758

WEEP HOUSING & FLAP ASSEMBLY

MATERIAL: NYLON 6

COLOR: -

CUSTOMER: -

DRAWN BY: MAT DATE: 9-14-09

CK. BY: - DATE: -

USED IN ASSY: -

PROJ #: -

PROTO. #: -

CUBIC INCHES: -

COMPONENT: -

CAVITATION: -

~ NOTICE ~
THIS DRAWING IS THE
PROPERTY OF ASHLAND
HARDWARE SYSTEMS. DESIGN
CONCEPT & INFORMATION
MAY NOT BE REPRODUCED
USED OR DISCLOSED WITHOUT
WRITTEN PERMISSION FROM
ASHLAND.

TOLERANCES UNLESS
OTHERWISE SPECIFIED
DECIMALS ±TOLERANCE
1 PLC. ~ .X .030
2 PLC. ~ .XX .015
3 PLC. ~ .XXX .005
±TOLERANCE GREATER THAN 1.000
AS SHOWN PER INCH

DIMENSIONS ARE IN INCHES
UNLESS OTHERWISE
SPECIFIED ON DRAWING
DO NOT SCALE DRAWING

SCALE = 1:1 SHEET: 1 of 1

ASHLAND PART NUMBER

C-64400

PRINT DATE: 9-14-09

NOTES:

1. C-LEVEL PRINT FOR CUSTOMER REFERENE ONLY, E-LEVEL PRINT TO CONTROL MANUFACTURING PROCESS.
2. PART IS ϕ SYMMETRIC

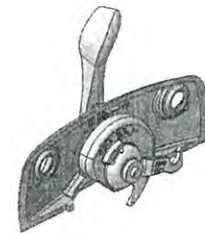
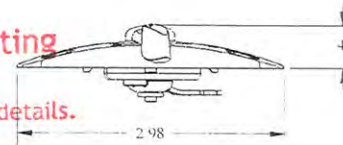
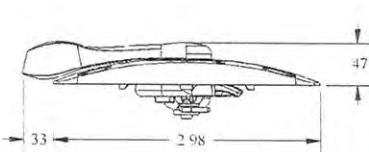
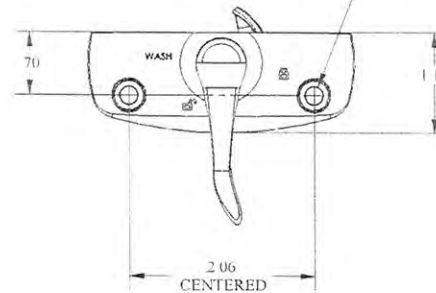
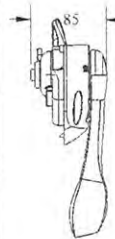
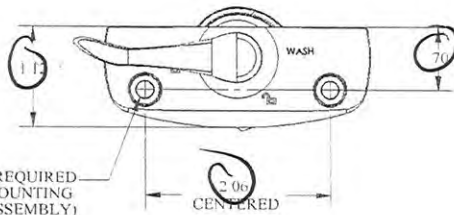
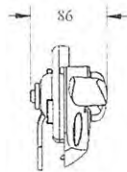
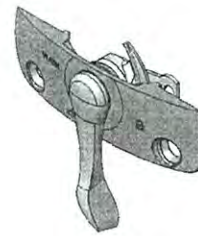
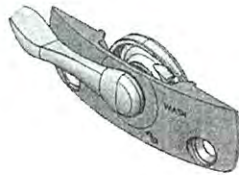
PATENT NUMBER: - STATUS: - INHERITED PATENTS: -

~ PATENT INFORMATION ~

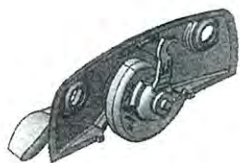
NOTICE: We reserve the right to make design improvements without notice

PART/DWG NO D1000AL-D1000AR-064-C		REV. A
ISSUE DATE	FILE NO.	

ECO#	REV	REVISION DESCRIPTION	INITIALS	DATE
-	-	RELEASED CUSTOMER DRAWING	ECF	09/19/2007
E9827	A	SEE ECN	ECF	6/25/09



RIGHT HAND
D1000AR
(UNLOCKED POSITION SHOWN)



LEFT HAND
D1000AL
(LOCKED POSITION SHOWN)

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# B1377.01

Date 7/28/11 Tech EJ

APPLICABLE SPECIFICATIONS	DRAWN JAS	DATE 9/17/07	TITLE FLUSH MOUNT LOCK ASSEMBLY, LH & RH, CUSTOMER
AES or AFR	CHECKED	DATE	SCALE 1:1.33333
<small>This document and the information and designs thereon are proprietary and confidential and shall not be reproduced or disclosed to unauthorized personnel. Use of this document is limited strictly to the purposes for which the document has been furnished.</small>	APPROVED FOR TOOLING	DATE	ACTUAL MODEL WEIGHT Wgt. LBS.
Ashland ROCKFORD, ILLINOIS 61125-7018	APPROVED FOR PRODUCTION	DATE	PERMISSIBLE TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR .X = ± .030 .XX = ± .015 .XXX = ± .005 / ANGULAR X = ± 1° X.X = ± .5°
			EXPERIMENTAL NO. XB-
			SIZE B
			SHEET 1 OF 1
			PART NO D1000AL-D1000AR-064-C
			REV A

FART/DWG. NO.
80290-80291-064-C
ISSUE DATE
9/14/2007

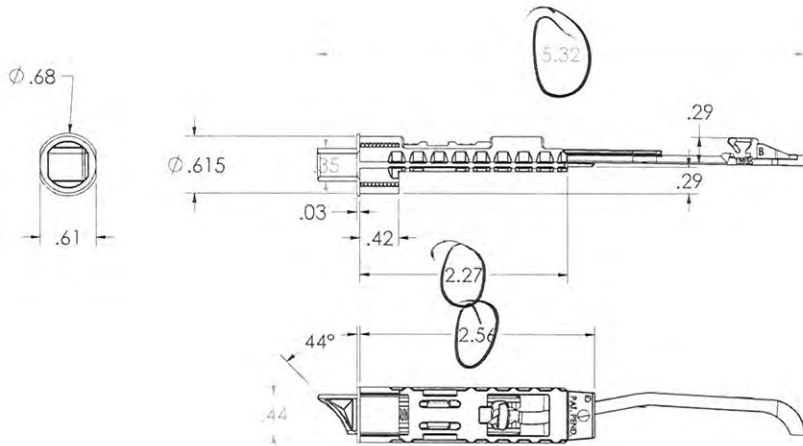
REV.
-

FILE NO.

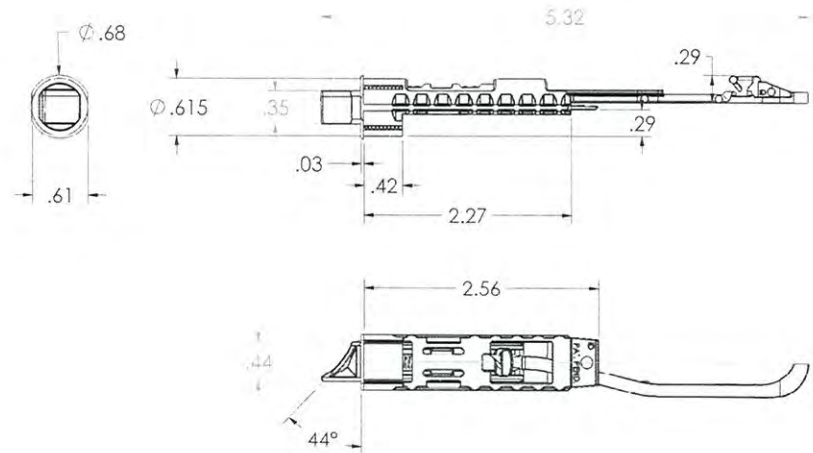
LT

CT

RT				
ECO#	LTR.	REVISION DESCRIPTION	INITIALS	DATE
/	/	RELEASE CUSTOMER DRAWING	ECF	3/9/2009



37



37



LEFT HAND
80290



Test sample complies with these details.
Deviations are noted.

Report# B1377.01
Date 3/27/11 Tech EJ

RIGHT HAND
80291

APPLICABLE SPECIFICATIONS
AES or AFR

DRAWN
ECF

DATE
3/09/09

TITLE
DUAL-TECH RADIUS CONCEALED SLIMLINE LATCH ASSY, LH & RH

CHECKED
DATE

SCALE
1:1

MATERIAL DESCRIPTION / TOOL INFORMATION

APPROVED FOR TOOLING
DATE

ACTUAL MODEL WEIGHT
Wgt. LBS

PERMISSIBLE TOLERANCES (UNLESS OTHERWISE SPECIFIED)

APPROVED FOR PRODUCTION
DATE

LINEAR .X = ± .030 .XX = ± .015 .XXX = ± .005 / ANGULAR X = ± 1° XX = ± 5°

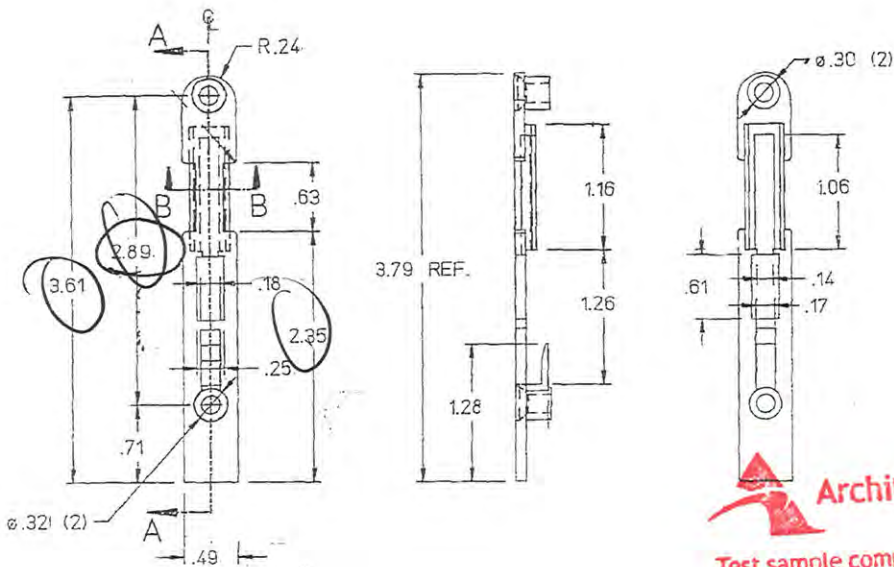
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XB-

SIZE SHEET PART NO
C 1 of 1 80290-80291-064-C-

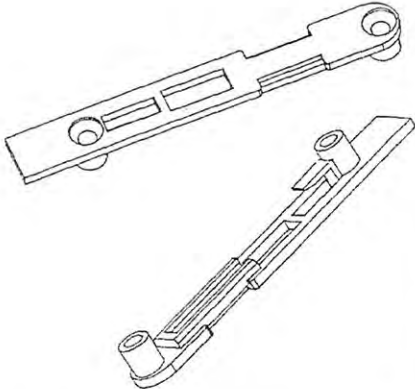
Ashland
ROCKFORD, ILLINOIS 61125-7018

RB

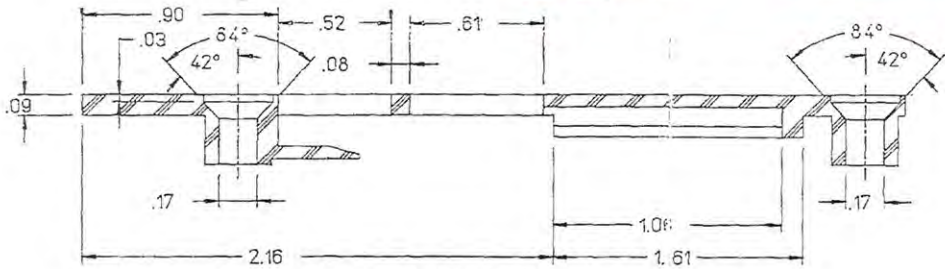
LATCH HOUSING USED IN ASSEMBLY 82100/83100



- NOTES:
1. PRINT TO BE USED FOR CUSTOMER REFERENCE ONLY.
 2. FULLY DIMENSIONED ASHLAND PRINT TO BE USED TO CONTROL MANUFACTURING PROCESS.



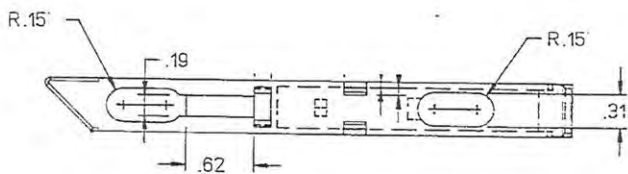
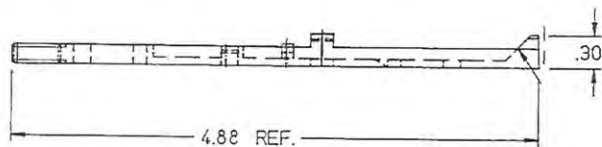
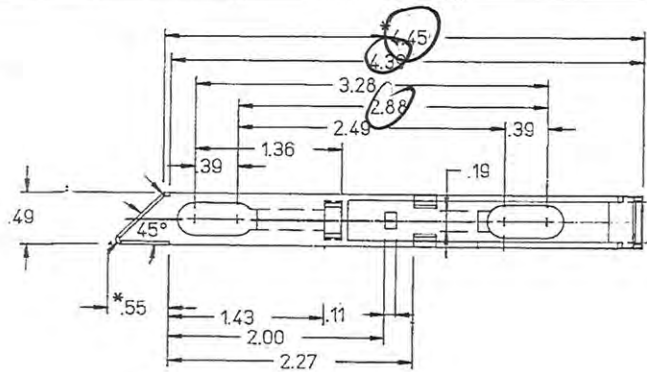
Architectural Testing
 Test sample complies with these details.
 Deviations are noted.
 Report# B1377.01
 Date 7/27/11 Tech EJ



SECTION AA
2X SCALE

ASHLAND PRODUCTS		
790 WEST COMMERCIAL AVENUE LOWELL, INDIANA 46356 TELEPHONE NUMBER (219) 696-5950 24 HR. FAX (800) 626-1758		
LATCH HOUSING		
MATERIAL: NYLON		
CUSTOMER:	PART NUMBER: C-117	
DRAWN BY: M.B.	DATE: 11-3-95	
RELEASED BY: -	DATE: -	
THIS DRAWING IS THE PROPERTY OF ASHLAND PRODUCTS. DESIGN CONCEPT & INFORMATION MAY NOT BE REPRODUCED OR DISCLOSED WITHOUT WRITTEN PERMISSION OF ASHLAND	TOLERANCES UNLESS OTHERWISE SPECIFIED:	
	DECIMALS	± TOL.
	X	.030
	XX	.015
XXX	.005	
SCALE: 1:1	DIMENSION IN INCHES UNLESS OTHERWISE SPECIFIED ON DRAWING	
SHEET 1 OF 1	DO NOT SCALE DRAWING ASHLAND PART NUMBER 12351 ©	

NOTICE: We reserve the right to make design improvements without notice.



NOTES:

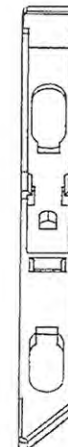
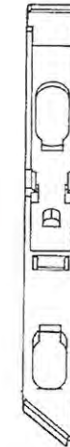
1. PRINT TO BE USED FOR CUSTOMER REFERENCE ONLY.
2. FULLY DIMENSIONED ASHLAND PRINT TO BE USED TO CONTROL MANUFACTURING PROCESS.

LATCHES USED IN 82100 & 83100 ASSEMBLIES



Test sample complies with these details.
Deviations are noted.

Report# B1377.01
Date: 7/27/11 Tech EJ



RIGHT HAND LATCH
APCO #12354
USED IN 83100

LEFT HAND LATCH
APCO #12355
USED IN 82100

NOTES:

ASHLAND PRODUCTS		
790 WEST COMMERCIAL AVENUE LOWELL, INDIANA 46356 TELEPHONE NUMBER (219) 696-5950 24 HR. FAX (800) 626-1758		
INTERNAL TILT LATCH - RIGHT & LEFT		
MATERIAL: NYLON		
CUSTOMER: SPECTUS	PART NUMBER: C-118	
DRAWN BY: M.B.	DATE: 11-3-95	
RELEASED BY: -	DATE: -	
THIS DRAWING IS THE PROPERTY OF ASHLAND PRODUCTS. DESIGN CONCEPT & INFORMATION MAY NOT BE REPRODUCED USED OR DISCLOSED WITHOUT WRITTEN PERMISSION OF ASHLAND	TOLERANCES UNLESS OTHERWISE SPECIFIED	DIMENSION IN INCHES UNLESS OTHERWISE SPECIFIED ON DRAWING
	DECIMALS ± TOL	
	X .030	DO NOT SCALE DRAWING ASHLAND PART NUMBER
	XX .015	
XXX .005		
SCALE= 1:1	12354/55①	
	SHEET 1 OF 2	

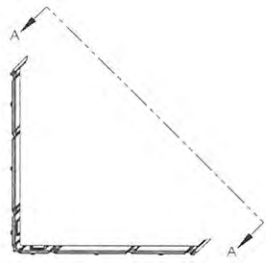
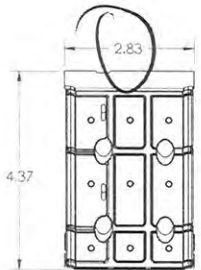
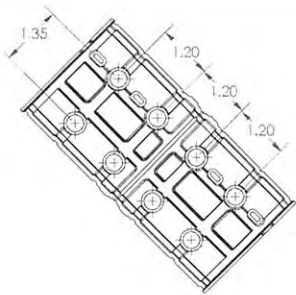
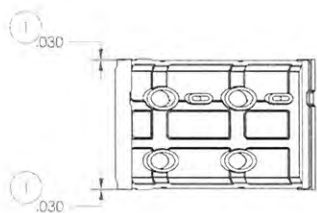
NOTICE: We reserve the right to make design improvements without notice.

4

3

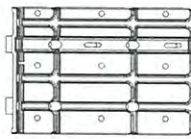
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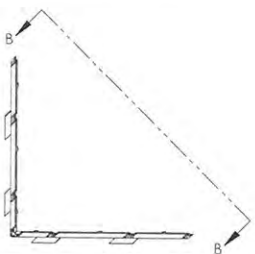
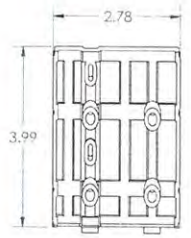


VIEW A-A

Double Hung Head Key - Part A (PN DH Head Part A)



VIEW B-B



Double Hung Head Key - Part B (PN DH Head Part B)

4

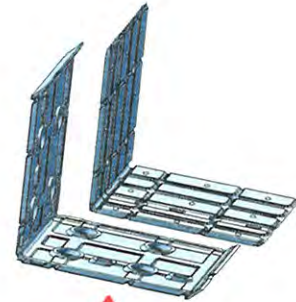
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2

1

Double Hung Head Key - Parts A & B Assembly

CUSTOMER SIGN-OFF	
Company	
Signature	
Printed Name	
Date	



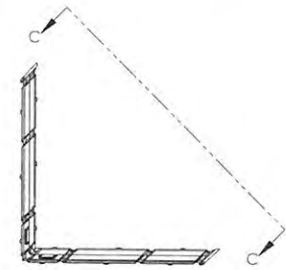
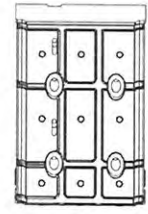
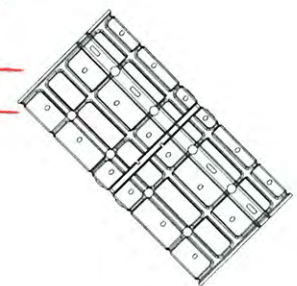
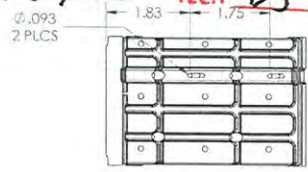
- Notes
1. Material: ABS
 2. Finish: EDM
 3. Color: Natural
 4. Nominal Wall Thickness: 0.080"
 5. Tooling Note: Radius corners up to 0.020 as needed except where it would cause interference between mating surfaces.



Test sample complies with these details.
Deviations are noted.

Reprt# B1377.01

Date 7/27/11 Tech. ET



VIEW C-C

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TOLERANCES UNLESS OTHERWISE SPECIFIED:
FRACTIONAL .125"
ANGULAR MATCH .1"
TWO PLACE DECIMAL .010
THREE PLACE DECIMAL .005
FOUR PLACE DECIMAL .002

SHT	1	Scale	1:2	BFI No	NA	Drawn By	RDL	Date	1.19.11
Matt		See Notes		Mold No	NA	FPN	DH Head		
OF		Description	Double Hung Head Key Assembly						
1		Customer	PMI	Part No	S-10341				

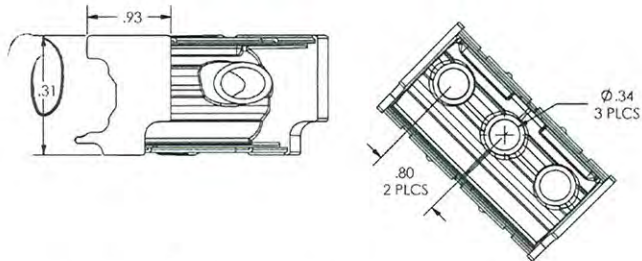
REV	ECR	DESCRIPTION	DATE	BY	APR
1		Added .030 bumps	5-20-11	RDL	
0		Released for Tooling	1-20-11	RDL	

4

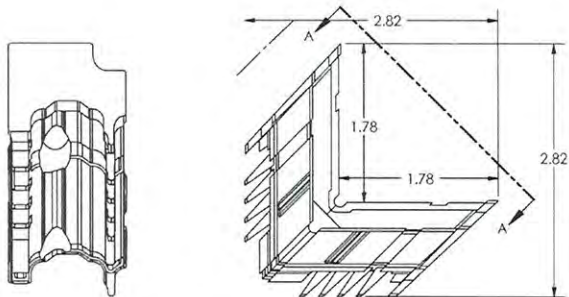
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2

1



VIEW A-A



Double Hung Sash Key - Part A (PN DH Sash Part A)

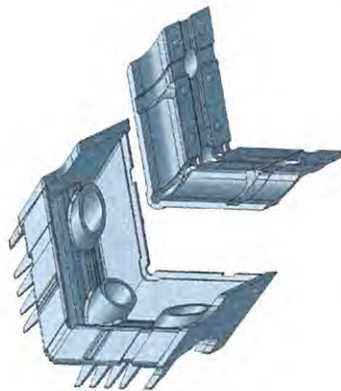
D

C

B

A

Double Hung Sash Key - Parts A & B Assembly



CUSTOMER SIGN-OFF	
Company	
Signature	
Printed Name	
Date	

Notes

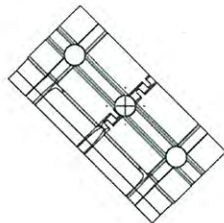
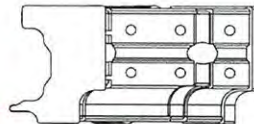
1. Material: ABS
2. Finish: EDM
3. Color: Natural
4. Nominal Wall Thickness: 0.080"
5. Tooling Note: Radius corners up to 0.020 as needed except where it would cause interference between mating surfaces.



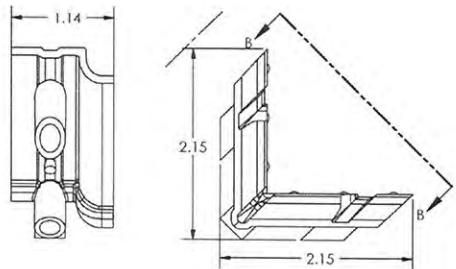
Test sample complies with these details. Deviations are noted.

Report# B13 77.01

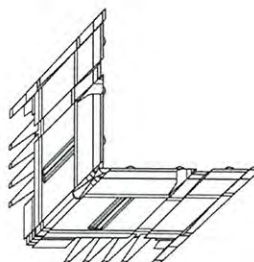
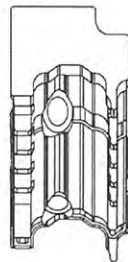
Date 7/27/11 Tech ES



VIEW B-B



Double Hung Sash Key - Part B (PN DH Sash Part B)



D

C

B

A

4

3

2

1

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UNFINISHED ARE IN CHES
 DIMENSIONS: 1/16" (1/16") 1/16"
 ANGULAR MATCH .01"
 TWO PLACE DECIMAL .0010
 THREE PLACE DECIMAL .0005
 FOUR PLACE DECIMAL .0001

SHT
1
OF
1

FLAMBEAU, INC.
 911 LYNN AVENUE BARABOO, WI 53813 PH: (608)356-5551

Scale: 1:1 BFI No.: NA Drawn By: RDL Date: 1.1X1.1
 Mat: See Notes Mold No.: NA FPN: DH Sash

Description: **Double Hung Sash Key Assembly**

Customer: **PMI** Dwg No: **S-10340**

0	...	Released for Tooling	1-20-11	RDL	
REV	ECR	DESCRIPTION	DATE	BY	APR
REVISIONS					