TEST REPORT

ASTM E331
ASTM E330

REPORT NO.: 2087.01-105-11-R1

RENDERED TO: GAMCO CORPORATION
Flushing, New York

PRODUCT TYPE: Aluminum Outswing Entry Door

SERIES / MODEL: D200

Test	Summary of Results
Design Pressure	±1440 Pa (±30.08 psf)
Water Penetration Resistance Test Pressure	0 Pa (0 psf)

Test Completion Date: 1/13/2020

Reference must be made to Report No. 2087.01-105-11-R1, revised date 7/31/2020 for complete test specimen description and detailed test results.

CLIENT INFORMATION: GAMCO CORPORATION
131-10 Maple Avenue
Flushing, New York 11355

TEST LABORATORY: Molimo, LLC
1410 Eden Road
York, Pennsylvania 17402
717-900-6034

PROJECT SUMMARY:

PRODUCT TYPE: Aluminum Outswing Entry Door

SERIES/MODEL: D200

PROJECT SUMMARY:

Molimo, LLC was contracted to perform testing on the above referenced product. The results are tested values and were secured by using the designated test methods.

PROJECT DETAILS:

Test Dates: 1/6/2020 – 1/13/2020

Test Record Retention End Date: 1/13/2024

Test Location: Molimo, LLC test facility in York, Pennsylvania.

Test Specimen Source: The test specimen was provided by the client. Representative samples of the test specimen will be retained by Molimo for a minimum of four years from the test completion date.

Drawing Reference: The test specimen drawings were supplied by the client. The test specimen construction was verified by Molimo and was found to be representative of the product tested. Test specimen drawings are located in Appendix C of this report.

WITNESSES:

The following representatives witnessed all or part of the testing.

Name	Company
Michael D. Stremmel, P.E.	Molimo, LLC
Joseph W. Enriquez	Molimo, LLC

TEST METHODS:

ASTM E330/E330M-14 – *Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference*

ASTM E331-00(16) – *Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference*

TEST SPECIMEN DESCRIPTION:

PRODUCT SIZES:

Overall Size:	1016 mm x 2184 mm (40" x 86")
Overall Area:	2.22 m^2 (23.88 ft^2)
Leaf Size:	889 mm x 2096 mm (35" x 82-1/2")

FRAME CONSTRUCTION:

Material:	Extruded aluminum
Corner Details:	Square-cut and butted and mechanically fastened.
Head/Jamb Corners:	Secured with two #12 x 1" pan head screws per corner
Sill/Jamb Corners:	Secured using an extruded aluminum block under the threshold, using two #8 x 1-1/2" screws into the jamb and one #10 x 1/2" flat head screw into the block
Other Details:	The jambs and head were constructed of two pieces of aluminum framing, snap-fit to each other The head and jambs utilized a snap-in aluminum panel stop.

LEAF CONSTRUCTION:

Material:	Extruded aluminum
Corner Details:	Square-cut and butted, secured with one 3/8" threaded rod through the top and bottom rail with washers and nuts in each stile. An aluminum shear block was secured at each intersection with one #8 x 1" flat head screw.

REINFORCEMENT: No reinforcement was utilized.

TEST SPECIMEN DESCRIPTION: (Continued)

GLAZING DETAILS: *No conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen can be made.*

Description	Detail
Glass Type	1" IG
Glazing Construction (Exterior to Interior)	1/4" Thick tempered glass 1/2" Aluminum box type spacer system 1/4" Thick tempered glass
Glazing Method	Channel glazed using interior and exterior snap-in glazing beads, with bulb gasket against the glass
Glazing Bite	1/2"
Daylight Opening:	673 mm x 1880 mm (26-1/2" x 74")

WEATHERSTRIPPING:

Description	Quantity	Location
1/4" Diameter hollow bulb gasket	1 Row	Head, jambs, and threshold
0.290" High polypile	2 Rows	Leaf bottom rail

DRAINAGE: No drainage was utilized.

HARDWARE:

Description	Quantity	Location
Full length, piano style hinge	1	Hinge stile
Lock assembly	1	Lock stile, 38" from the bottom rail
Interior and exterior pull handle	1	38" From the bottom rail

INSTALLATION: The specimen was installed into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 1/8" shim space. The exterior perimeter of the specimen was sealed with sealant.

Location	Anchor Description	Anchor Spacing
Head and Jambs	1" x 2", 0.050" thick, 3" long aluminum clips, secured to the door frame with one #8 x 1/2" screw and secured to the wood buck with one #8 x 1-1/2" wood screw	3" from each end and spaced 16" on center

TEST RESULTS: The temperature during testing was 19 °C (66.5 °F).

WATER PENETRATION TESTING: (per ASTM E 331)

Test	Results	Allowable
0 Pa (0 psf)	Pass	No Leakage

UNIFORM LOAD TESTING: (per ASTM E 330)

Design Pressure Test	Results	Allowable
Deflection measured at the panel lock stile		
+1440 Pa (+30.08 psf)	2.5 mm (0.10")	
-1440 Pa (-30.08 psf)	19.3 mm (0.76")	Report Only

Structural Test	Results	Allowable
Permanent Set measured at the panel lock stile		
+2160 Pa (+45.12 psf)	<0.3 mm (<0.01")	10.4 mm (0.41")
-2160 Pa (-45.12 psf)	0.8 mm (0.03")	10.4 mm (0.41")

Note #1: All loads were held for 10 seconds.

Note #2: Tape and film were used to seal against air leakage. In our opinion, the tape and film did not influence the results of the test.

Note #3: Measurements were made on a cantilever span on the lock stile. Lock to corner measurement of 51" (102" overall span) was utilized for all deflection/permanent set measurements. Permanent set allowable is based on 0.04% of the measured span.

***General Note**: All testing was performed in accordance with reference test methods.*

A copy of this report, detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation will be retained by Molimo, LLC for the entire test record retention period. At the end of this retention period, the service life of this report will expire.

Results obtained are tested values and were secured by using the designated test methods. This test 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 permission of Molimo, LLC.

For MOLIMO, LLC:

Joseph W. Enriquez dro

Joseph W. Enriquez
Project Manager

Michael D. Stremmel, P.E.
Senior Project Engineer

MDS:dro

Attachments (pages): This report is complete only when all attachments listed are included.
- Appendix-A: Alteration Addendum (1)
- Appendix-B: Air Seal Location (1)
- Appendix-C: Drawings (13)

Revision Log

Rev. #	Date	Page(s)	Revision(s)
1	07/31/2020	2, 6, Appendix C	Added drawings to report

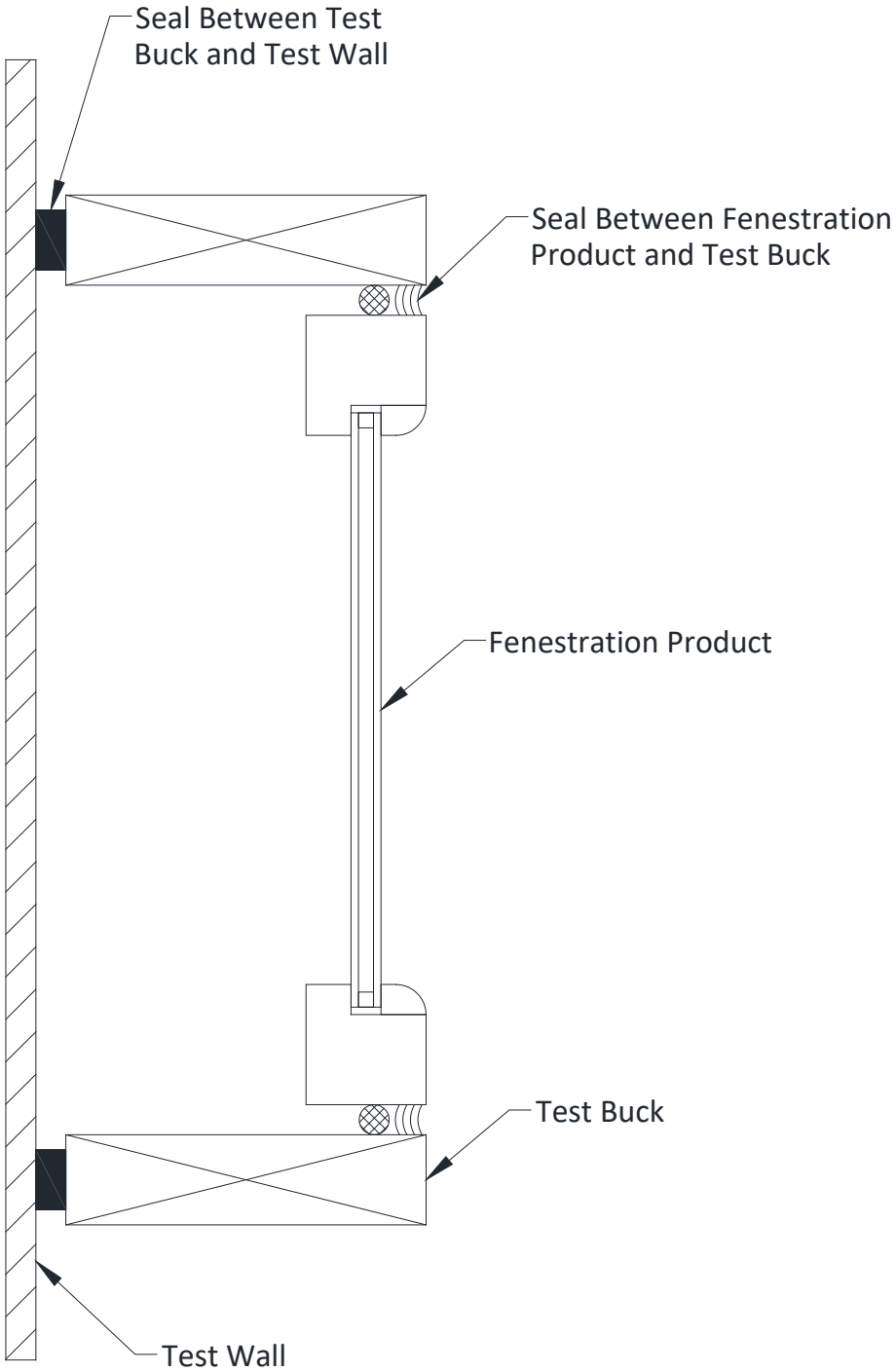
Appendix A

Alteration Addendum

No alterations were performed.

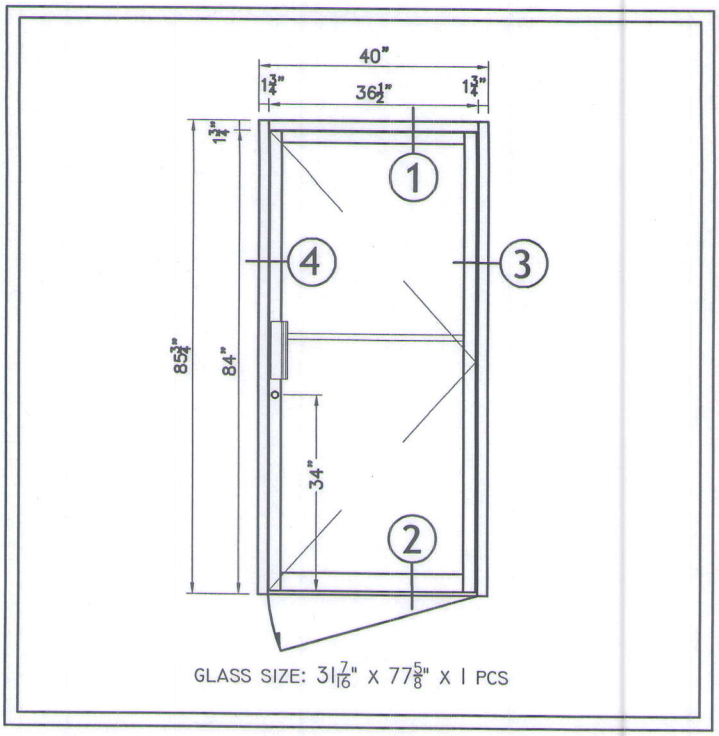
Appendix B

Air Seal Location



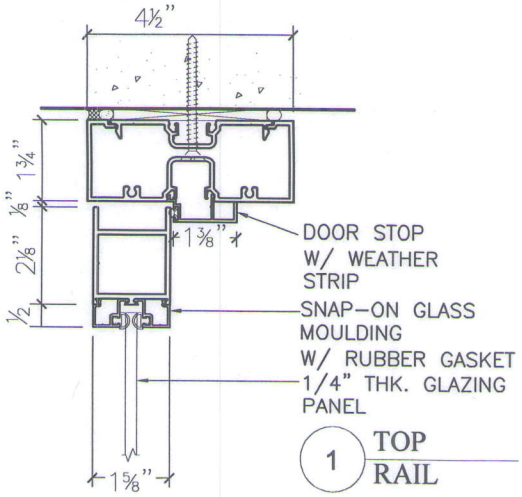
Appendix C

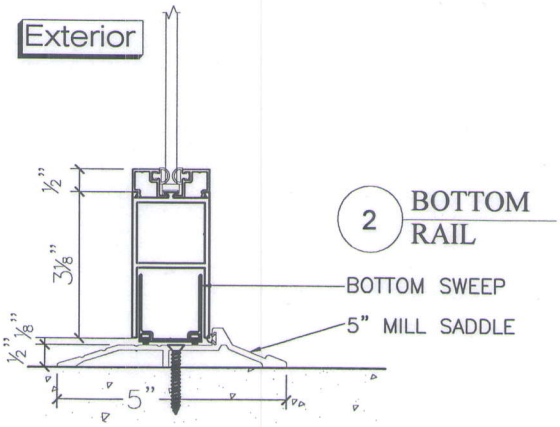
Drawings

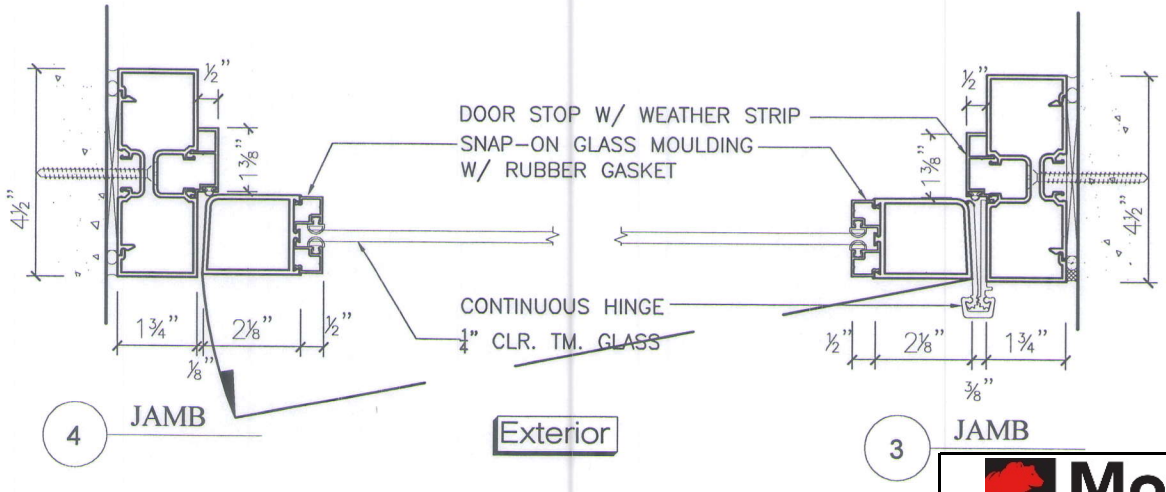


D200 NARROW STILE DOOR

¼" CLR. TM.







Molimo™ Architectural Product Testing

Report #:	2087.01-106-11
Date:	7/31/2020
By:	M. Stremmel

SHEET # D	Drawn by: Q.ZHANG	Customer	Revisions: No. / Date / Description
	Checked by: C.CHAN		
	Date: 02/25/2020	Project : D200 NARROW STILE DOOR	
	Scale: 3" : 12"		

GAMCO CORPORATION
MANUFACTURERS OF FENESTRATION PRODUCTS
131-10 MAPLE AVE. FLUSHING, N.Y.11355
TEL: (718)359-8833 FAX: (718)359-8661
info@gamcocorp.com www.gamcocorp.com

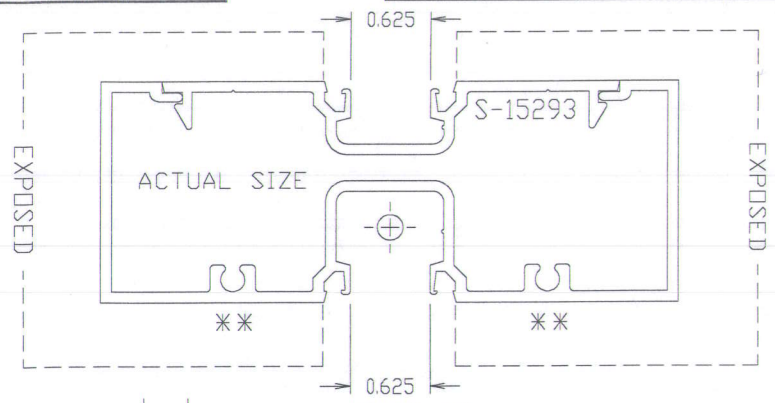
BOLSTER | Number | NS092

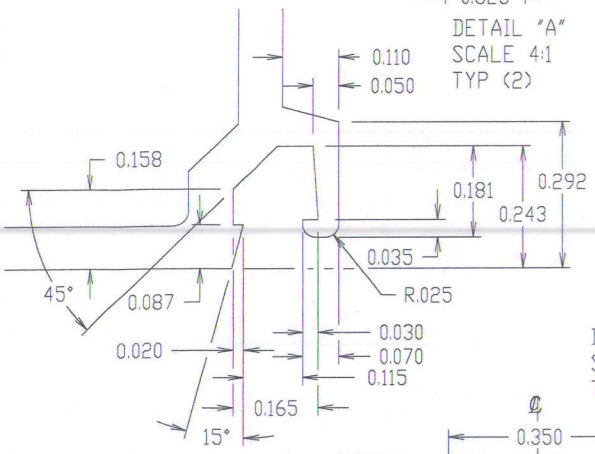
*	STRUCTURAL STREAKING IS EXPECTED

UNIFORM PAINT COVERAGE NOT EXPECTED IN THIS AREA

STANDARD COMMERCIAL TOLERANCES FOR EXTRUDED PRODUCTS APPLY UNLESS SPECIFIED OTHERWISE

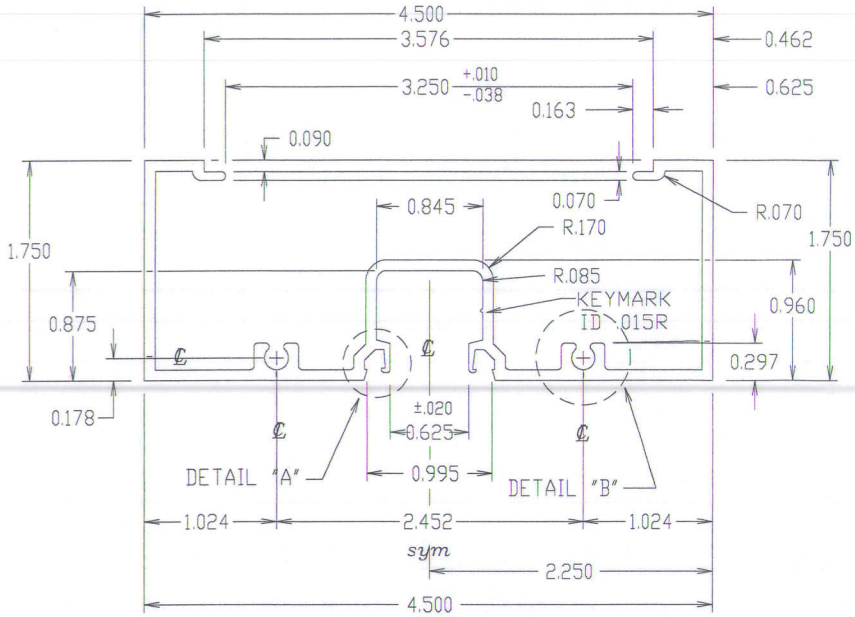
S-25167
Die Number
Design Number

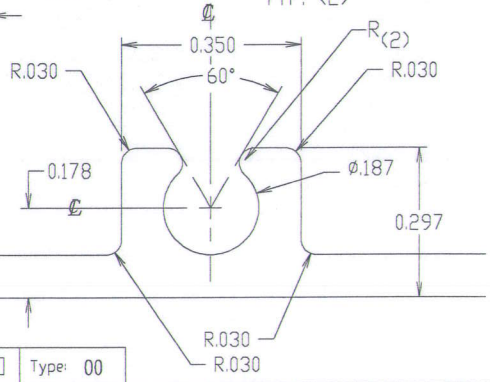




S-25167 MATES WITH:
S-07108
S-15293

FOR ASSEMBLY
REFER TO H-05416A





Molimo™ Architectural Product Testing

Report #: 2087.01-106-11
Date: 7/31/2020
By: M. Stremmel

KEYMARK CORPORATION
FONDA, NEW YORK
FAX ENG.(518)853-3435 SALES(518)853-3130
TEL. (518) 853-3421 E-MAIL engny@keymarkcorp.com

Sym.	Revisions	Date
1	PRINT REVISION	03-14-97

Unspecified Wall Thickness: .085 .015 Break All Corners Radius or as Noted

Customer: KEYMARK CORPORATION			Customer's Part Number: 050001
Job Name: FG-450			
Part Title: HEAD / VERTICAL			Scale: 1:1
Alloy: 6063	Est. Area: 1.011 In²	Finish Perimeter: 7.882 In	Date: 08-13-96
Temper: T-5	Est. Wt./Ft.: 1.213 Lbs	Est. Perimeter: 24.007 In	Drawn: M.F.W.
Cavity Size	Circle Size: 4.8 In	Exterior Perimeter: 24.007 In	Checked: S.J.S.

Estimated For Reference Only	I_x = 0.337	I_y = 2.544	Alodine ☐	Type: 00	Mill ☐	Ano. ☒	Drnr. ☒	Drcn. ☒	Solid ☒ Semi-hollow ☐ Class Hollow ☐ Class
	S_x = 0.290	S_y = 1.130	Crimp	Factor 20					

✳	STRUCTURAL STREAKING IS EXPECTED

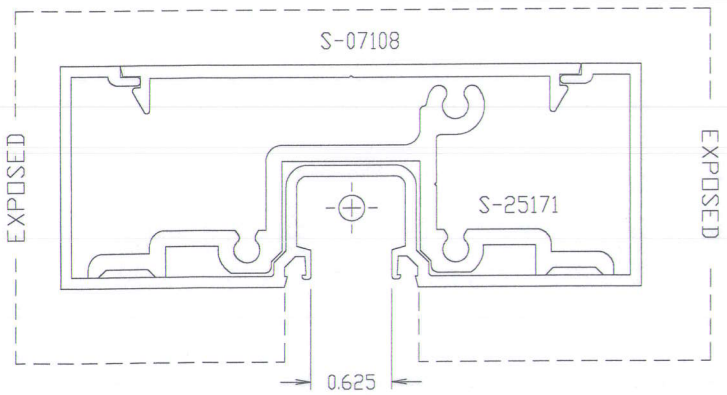
UNIFORM PAINT COVERAGE NOT EXPECTED IN THIS AREA →

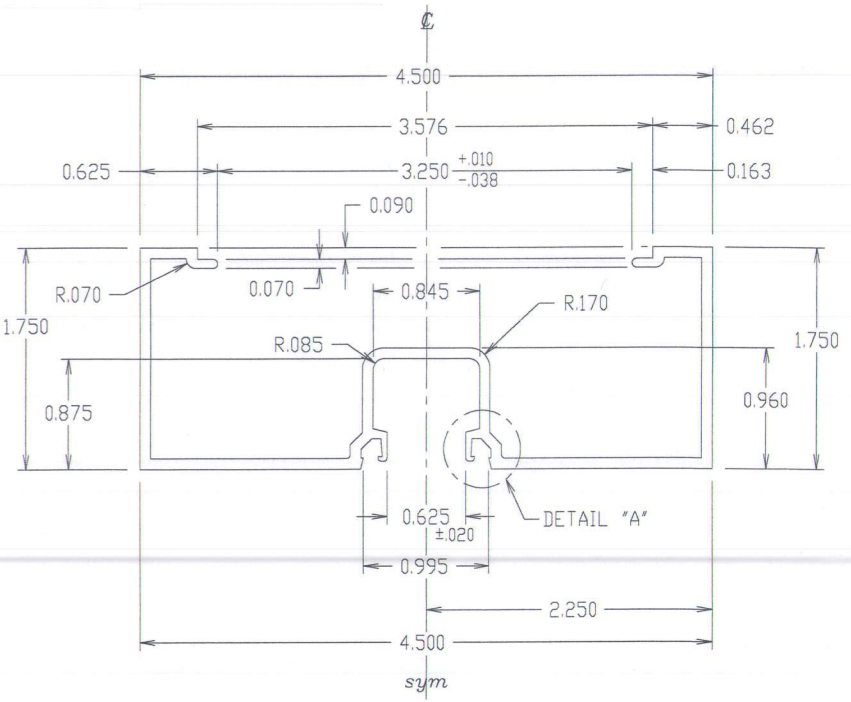
STANDARD COMMERCIAL TOLERANCES FOR EXTRUDED PRODUCTS APPLY UNLESS SPECIFIED OTHERWISE

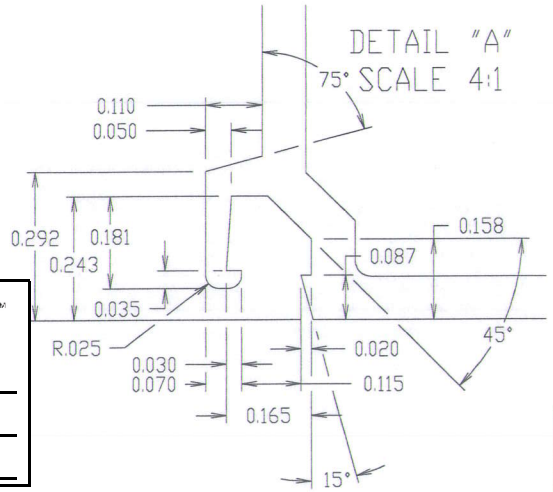
S-15405
Die Number
Design Number

ACTUAL SIZE

MATES WITH:
S-07108
S-25171







Molimo™ Architectural Product Testing

Report #: 2087.01-106-11

Date: 7/31/2020

By: M. Stremmel

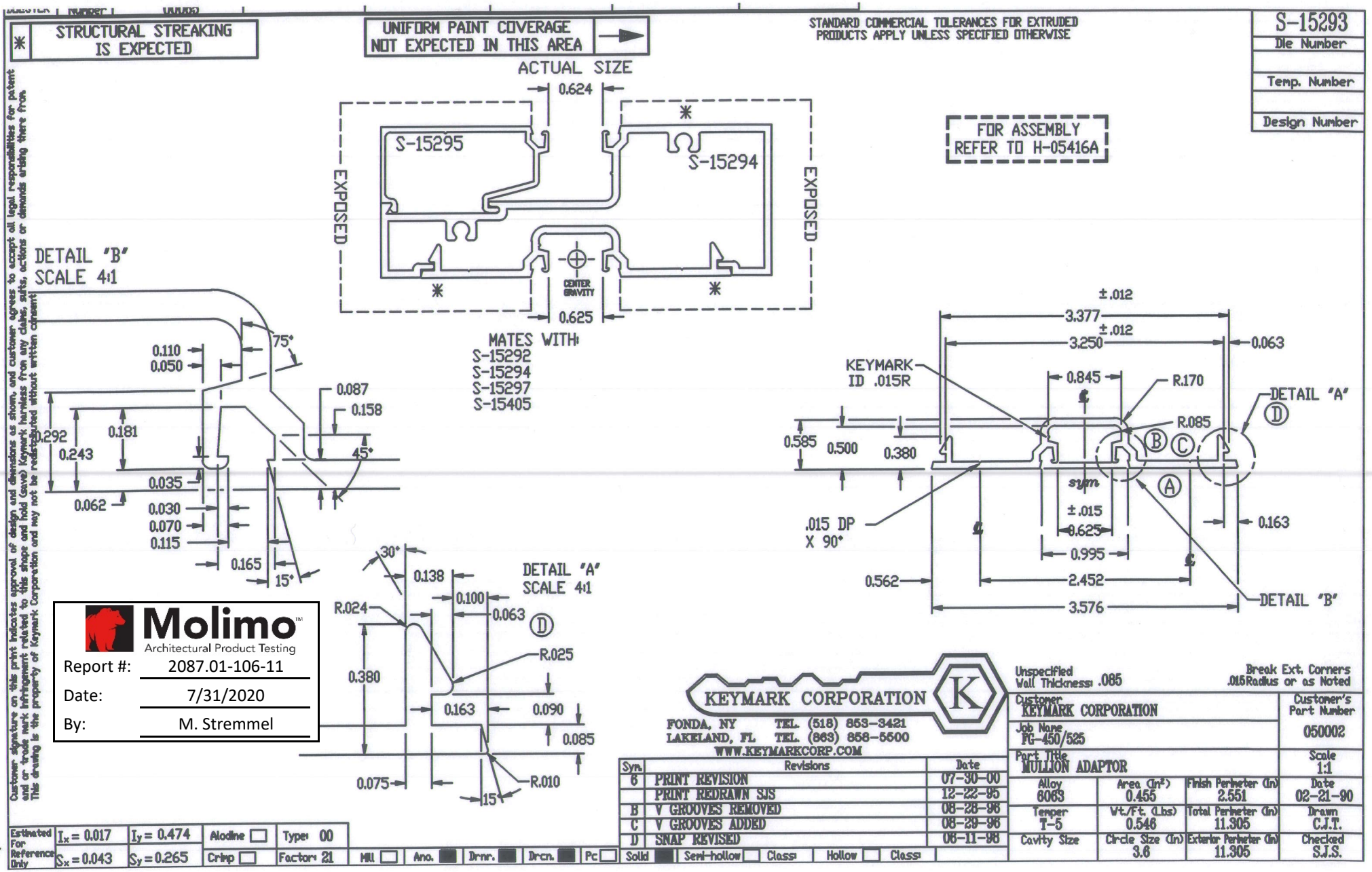
KEYMARK CORPORATION
FONDA, NEW YORK
FAX ENG.(518)853-3435 SALES(518)853-3130
TEL. (518) 853-3421 E-MAIL engny@keymarkcorp.com

Sym.	Revisions	Date
3	PRINT REVISION	08-24-04

Unspecified Wall Thickness: .085 .015 Break All Corners Radius or as Noted

Customer: KEYMARK CORPORATION			Customer's Part Number: 050012
Job Name: FG-450			
Part Title: HEAD / JAMB			Scale: 1:1
Alloy: 6063	Est. Area: 0.926 In²	Finish Perimeter: 7.882 In	Date: 02-22-90
Temper: T-5	Est. Wt./Ft.: 1.111 Lbs	Est. Perimeter: 22.426 In	Drawn: S.J.S.
Cavity Size:	Circle Size: 4.8 In	Exterior Perimeter: 22.426 In	Checked: S.J.S.

Estimated For Reference Only									
I_x = 0.322	I_y = 2.413	Alodine ☐	Type: 00						
S_x = 0.286	S_y = 1.073	Crimp	Factor 20	Mill ☐	Ano. ☒	Drnr. ☒	Drcn. ☒	Solid ☒	Semi-hollow ☐ Class	Hollow ☐ Class


* STRUCTURAL STREAKING IS EXPECTED
UNIFORM PAINT COVERAGE NOT EXPECTED IN THIS AREA
STANDARD COMMERCIAL TOLERANCES FOR EXTRUDED PRODUCTS APPLY UNLESS SPECIFIED OTHERWISE
S-15293
Die Number
Temp. Number
Design Number
ACTUAL SIZE
0.624
S-15295
S-15294
EXPOSED
EXPOSED
CENTER GRAVITY
0.625
FOR ASSEMBLY REFER TO H-05416A
MATES WITH:
S-15292
S-15294
S-15297
S-15405
DETAIL "B"
SCALE 4:1
0.110
0.050
75°
0.087
0.158
0.292
0.243
0.181
45°
0.035
0.062
0.030
0.070
0.115
0.165
15°
DETAIL "A"
SCALE 4:1
30°
0.138
0.100
0.063
R.024
R.025
0.380
0.163
0.090
0.085
0.075
R.010
15°
±.012
3.377
±.012
3.250
0.063
KEYMARK ID .015R
0.845
R.170
R.085
DETAIL "A"
0.585
0.500
0.380
sym
±.015
.015 DP X 90°
0.625
0.163
0.995
0.562
2.452
3.576
DETAIL "B"
Molimo
Architectural Product Testing
Report #: 2087.01-106-11
Date: 7/31/2020
By: M. Stremmel
KEYMARK CORPORATION
FONDA, NY TEL. (518) 853-3421
LAKELAND, FL TEL. (863) 858-5500
WWW.KEYMARKCORP.COM
Unspecified Wall Thickness: .085
Break Ext. Corners .015Radius or as Noted
Customer: KEYMARK CORPORATION
Customer's Part Number: 050002
Job Name: FG-450/525
Part Title: MULLION ADAPTOR
Scale: 1:1
Alloy: 6063
Area (in²): 0.455
Finish Perimeter (in): 2.551
Date: 02-21-90
Temper: T-5
Wt./Ft. (lbs): 0.546
Total Perimeter (in): 11.305
Drawn: C.J.T.
Cavity Size
Circle Size (in): 3.6
Exterior Perimeter (in): 11.305
Checked: S.J.S.
Sym. | Revisions | Date
6 | PRINT REVISION | 07-30-00
| PRINT REDRAWN SJS | 12-22-95
B | V GROOVES REMOVED | 08-28-96
C | V GROOVES ADDED | 08-29-96
D | SNAP REVISED | 08-11-98
Estimated For Reference Only
Ix = 0.017 Iy = 0.474
Sx = 0.043 Sy = 0.265
Alodine ☐ Type: 00
Crimp ☐ Factor: 21
Mill ☐ Ano. ■ Drnr. ■ Drcn. ■ Pc ☐
Solid ■ Semi-hollow ☐ Class: Hollow ☐ Class:
Customer signature on this print indicates approval of design and dimensions as shown, and customer agrees to accept all legal responsibilities for patent and or trade mark infringement related to this shape and hold (save) Keymark harmless from any claims, suits, actions or demands arising there from. This drawing is the property of Keymark Corporation and may not be redistributed without written consent.

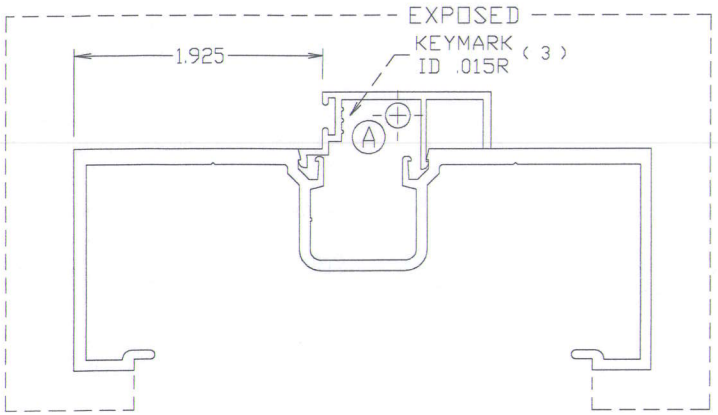
✳ STRUCTURAL STREAKING IS EXPECTED

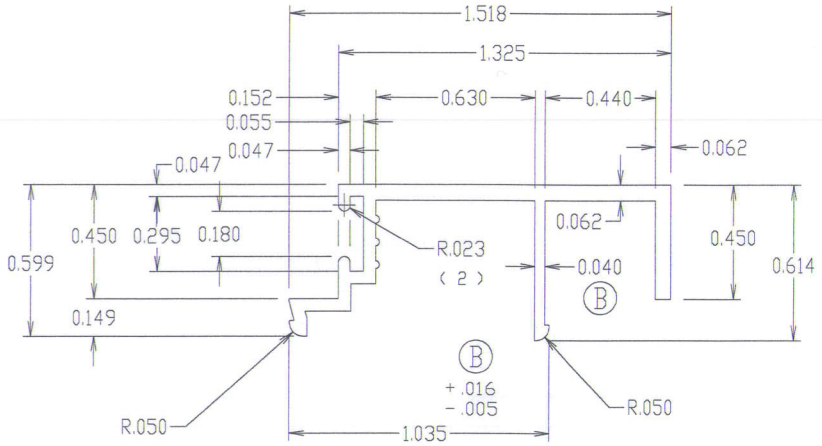
S-25160 MATES WITH: S-25163

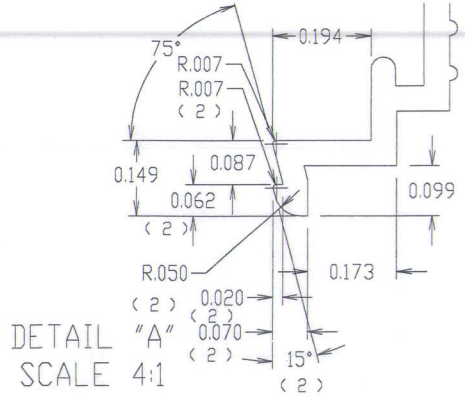
STANDARD COMMERCIAL TOLERANCES FOR EXTRUDED PRODUCTS APPLY UNLESS SPECIFIED OTHERWISE

S-25160
Die Number
Temp. Number
Design Number

ACTUAL SIZE







DETAIL "A"
SCALE 4:1

Molimo™ Architectural Product Testing	
Report #:	2087.01-106-11
Date:	7/31/2020
By:	M. Stremmel

KEYMARK CORPORATION
FONDA, NY TEL. (518) 853-3421
LAKELAND, FL TEL. (863) 858-5500
WWW.KEYMARKCORP.COM

Sym.	Revisions	Date
6	PRINT REVISION	04-25-11
A	ID BUMPS ADDED	06-12-03
B	.040 WAS .050/TOL. WAS +.021/-.000 (DSS)	04-25-11

Unspecified Wall Thickness: .050

Break Ext. Corners .015Radius or as Noted

Customer			Customer's Part Number
KEYMARK CORPORATION			050525
Job Name: FG-450/451/451T			
Part Title: DOOR STOP - 1/4" POCKET			Scale: 2:1
Alloy: 6063	Area (In²): 0.175	Finish Perimeter (In): 1.775	Date: 08-09-96
Temper: T-5	Wt./Ft. (Lbs): 0.210	Total Perimeter (In): 6.574	Drawn: S.J.S.
Cavity Size	Circle Size (In): 1.6	Exterior Perimeter (In): 6.574	Checked: S.J.S.

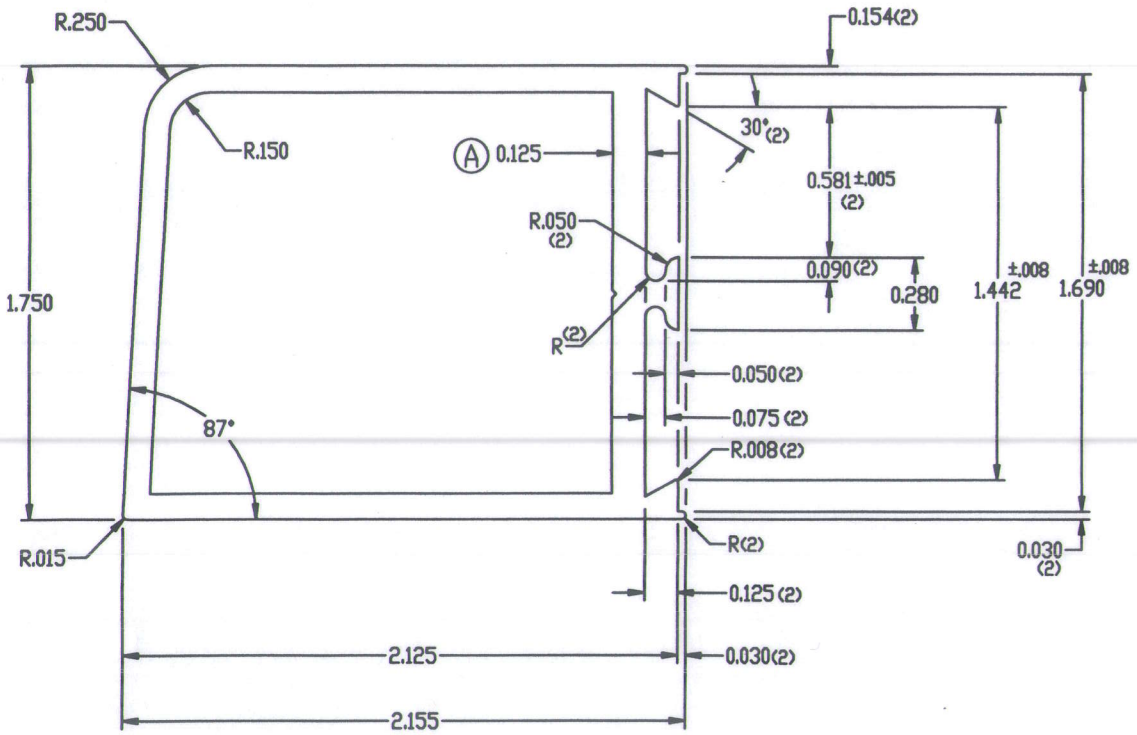
Estimated For Reference Only														
	I_x = 0.006	I_y = 0.041	Alodine ☐	Type: 00						Solid ☒	Semi-hollow ☐ Class:	Hollow ☐ Class:		
	S_x = 0.014	S_y = 0.052	Crimp ☐	Factor: 31	Mill ☐	Ano. ☒	Drnr. ☒	Drcn. ☒	Pc ☐					

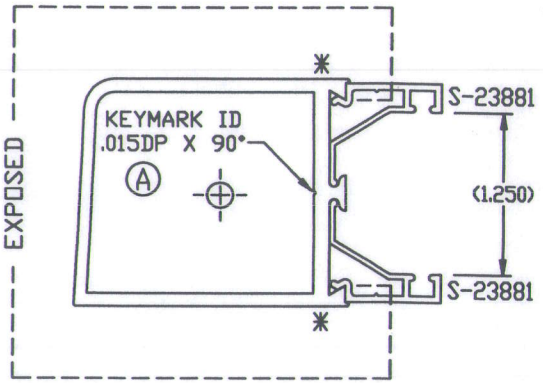
*	STRUCTURAL STREAKING IS EXPECTED

LIGHT PAINT COVERAGE EXPECTED IN THIS AREA →

STANDARD COMMERCIAL TOLERANCES FOR EXTRUDED PRODUCTS APPLY UNLESS SPECIFIED OTHERWISE

H-02885
Die Number
T-00000
Temp. Number
Design Number





ACTUAL SIZE ASSEMBLY

H-02885 MATES WITH:
S-14445
S-16367
S-16471
S-15439
S-23881
S-24205

Molimo™ Architectural Product Testing

Report #: 2087.01-106-11

Date: 7/31/2020

By: M. Stremmel

KEYMARK CORPORATION

FONDA, NY TEL. (518) 853-3421
LAKELAND, FL TEL. (863) 858-5500
WWW.KEYMARKCORP.COM

Syn.	Revisions	Date
1	PRINT REDRAWN (AH)	08-08-95
2	FACTOR CORRECTED (SJS)	08-18-99
A	.125 WAS .100 / ID GROOVE WAS BUMP (DSS)	04-21-11

Unspecified Wall Thickness .100

Break Ext. Corners .015 Radius or as Noted

Customer: GAMCO			Customer's Part Number
Job Name: ENTRY DOOR			
Part Title: HINGE / LOCK STILE			Scale: 2:1
Alloy: 6063	Area (in²): 0.786	Finish Perimeter (in): 6.222	Date: 06-01-89
Temper: T-5	Wt./Ft. (Lbs): 0.943	Total Perimeter (in): 15.085	Drawn: F.A.S.
Cavity Size	Circle Size (in): 2.7	Exterior Perimeter (in): 8.568	Checked: S.J.S.

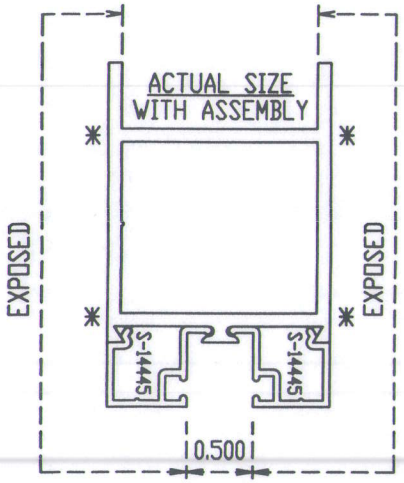
Estimated For Reference Only														
$I_x = 0.352$	$I_y = 0.462$	Alodine ☐	Type: 00											
$S_x = 0.394$	$S_y = 0.403$	Crimp ☐	Factor: 16	Mill ☐	Ano. ■	Drnr. ■	Drcn. ■	Pc ☐	Solid ☐	Semi-hollow ☐	Class:	Hollow ■	Class: 2	

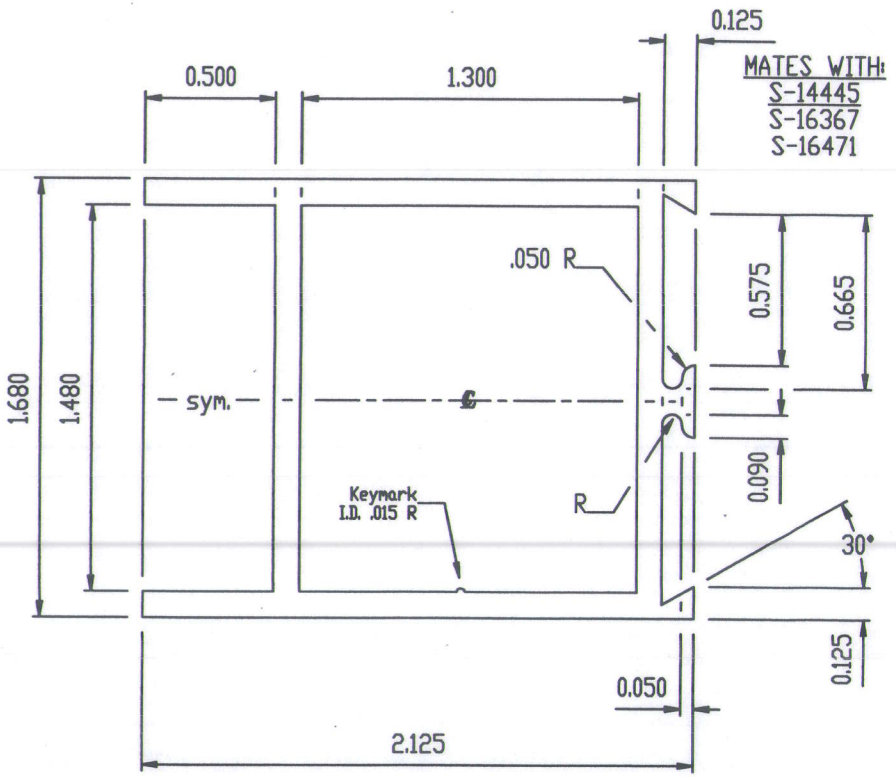
*	STRUCTURAL STREAKING IS EXPECTED

UNIFORM PAINT COVERAGE NOT EXPECTED IN THIS AREA →

STANDARD COMMERCIAL TOLERANCES FOR EXTRUDED PRODUCTS APPLY UNLESS SPECIFIED OTHERWISE

H-02883
Die Number





Molimo™
Architectural Product Testing

Report #: 2087.01-106-11
Date: 7/31/2020
By: M. Stremmel

KEYMARK CORPORATION
FONDA, NEW YORK
FAX ENG.(518)853-3435 SALES(518)853-3130
TEL. (518) 853-3421 E-MAIL keyeng@superior.net

Syn.	Revisions	Date
2	PRINT REVISION	06-18-99
	PRINT REDRAWN SJS	06-18-99

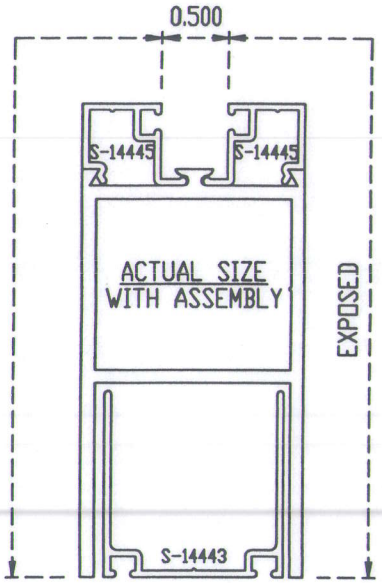
Unspecified Wall Thickness: .100
Break Ext. Corners .015 Radius or as Noted

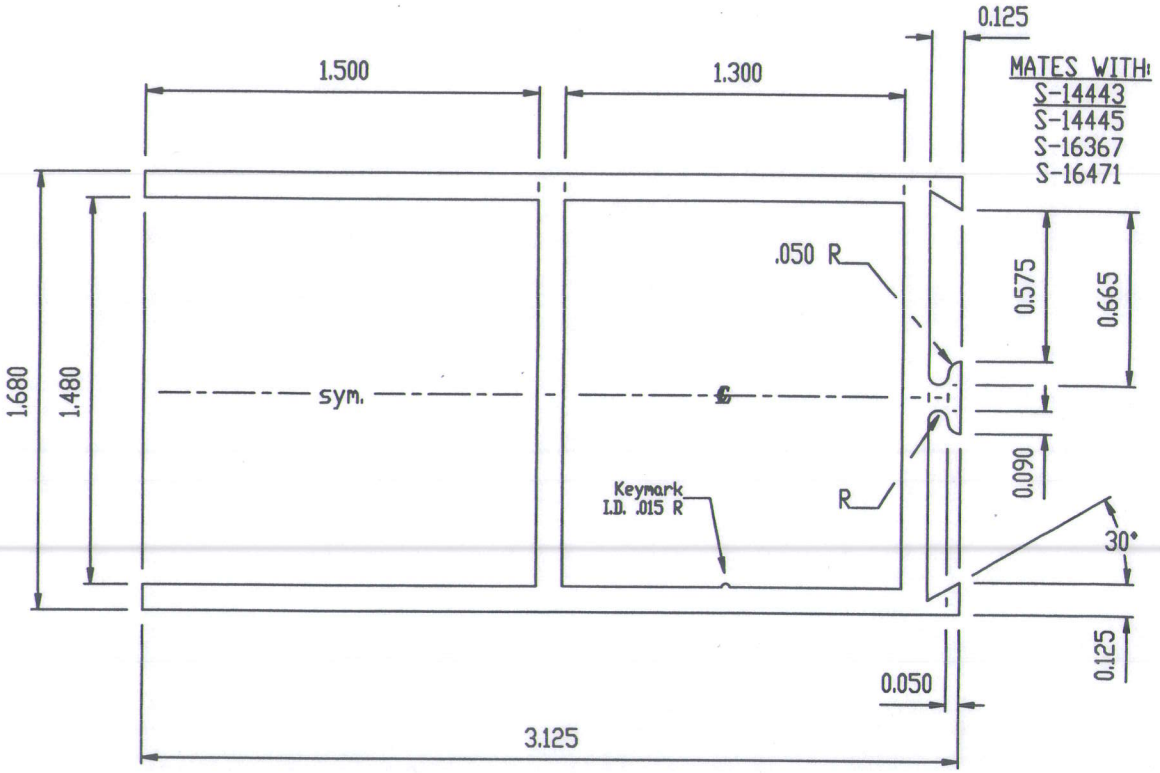
Customer: GAMCO				Customer's Part Number
Job Name				
Part Title: TOP RAIL				Scale: 2:1
Alloy: 6063	Est. Area: 0.740 In^2	Finish Perimeter: 4.450 In		Date: 06-01-89
Temper: T-5	Est. Wt./Ft.: 0.888 Lbs	Est. Perimeter: 15.123 In		Drawn: F.A.S.
Cavity Size	Circle Size: 2-3 In	Exterior Perimeter: 9.546 In		Checked: S.J.S.

Estimated For Reference Only				Type Of Finish			
I_x = 0.328	I_y = 0.318	Factor	Mill ☐	Ano. ■	Drnr. ■	Drcn. ■	
S_x = 0.282	S_y = 0.379	17	Solid ☐	Semi-hollow ☐ Class	Hollow ■ Class 2		

STANDARD COMMERCIAL TOLERANCES FOR EXTRUDED PRODUCTS APPLY UNLESS SPECIFIED OTHERWISE

H-02882
Die Number





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Sym.	Revisions	Date
2	PRINT REVISION	06-18-99
	PRINT REDRAWN SJS	06-18-99

Unspecified Wall Thickness: .100
Break Ext. Corners .015 Radius or as Noted

Customer: GAMCO
Customer's Part Number:
Job Name:
Part Title: BOTTOM RAIL
Scale: 2:1

Alloy	Est. Area	Finish Perimeter	Date
6063	0.940 In^2	6.250 In	06-01-89
Temper	Est. Wt./Ft.	Est. Perimeter	Drawn
T-5	1.128 Lbs	19.123 In	F.A.S.
Cavity Size	Circle Size	Exterior Perimeter	Checked
	3-4 In	13.546 In	S.J.S.

Estimated For Reference Only				Type Of Finish			
$I_x = 0.780$	$I_y = 0.443$	Factor		Mill ☐	Ano. ■	Drnr. ■	Drcn. ■
$S_x = 0.431$	$S_y = 0.528$	17		Solid ☐	Semi-hollow ☐ Class	Hollow ■	Class 2

*	STRUCTURAL STREAKING IS EXPECTED

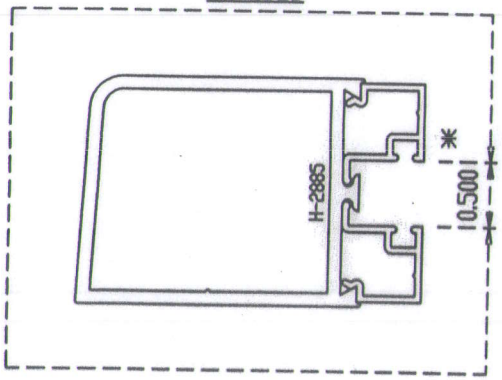
STANDARD COMMERCIAL TOLERANCES FOR EXTRUDED PRODUCTS APPLY UNLESS SPECIFIED OTHERWISE

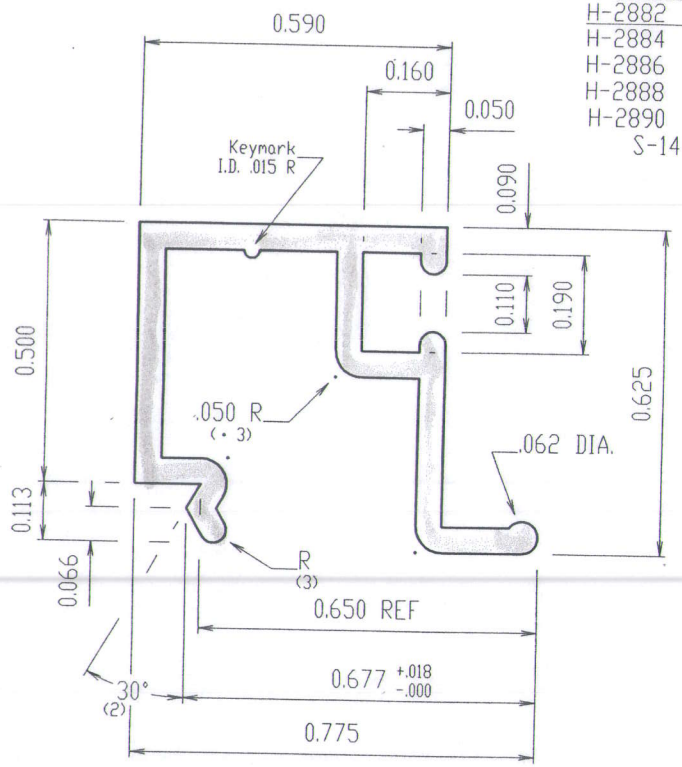
S-14445
Die Number

MATES WITH:
H-2882 H-2883
H-2884 H-2885
H-2886 H-2887
H-2888 H-2889
H-2890 H-2891
S-14446

ACTUAL SIZE
WITH ASSEMBLY

EXPOSED





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Sym.	Revisions	Date
2	PRINT REVISION	06-17-00
	PRINT REDRAWN SJS	10-21-96

Unspecified Wall Thickness: .050
Break Ext. Corners .015 Radius or as Noted

Customer: GAMCO				Customer's Part Number
Job Name				
Part Title: 1/4" GLAZING BEAD				Scale: 4:1
Alloy: 6063	Est. Area: 0.113 In^2	Finish Perimeter: 0.000 In		Date: 06-01-89
Temper: T-5	Est. Wt./Ft.: 0.135 Lbs	Est. Perimeter: 4.558 In		Drawn: F.A.S.
Cavity Size	Circle Size: 0-1 In	Exterior Perimeter: 4.558 In		Checked: S.J.S.

Estimated For Reference Only	I_x = 0.006	I_y = 0.005	Factor	Type Of Finish			
	S_x = 0.014	S_y = 0.014	34	Mill ☐	Ano. ■	Drnr. ■	Drcn. ■

Solid ■ Semi-hollow ☐ Class Hollow ☐ Class

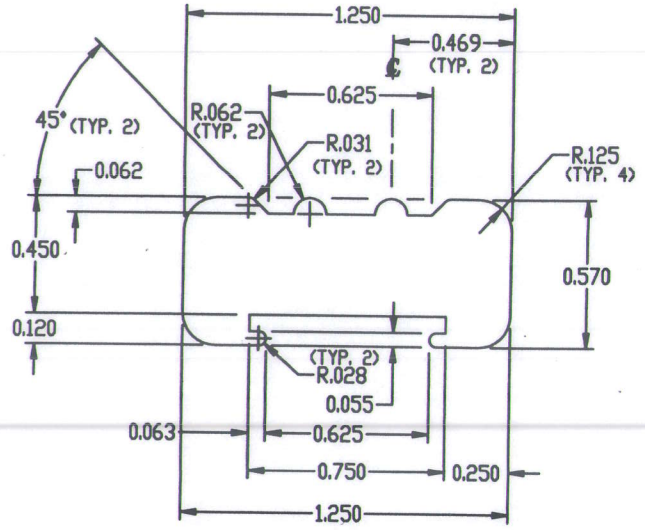
*	STRUCTURAL STREAKING IS EXPECTED

UNIFORM PAINT COVERAGE NOT EXPECTED IN THIS AREA →

STANDARD COMMERCIAL TOLERANCES FOR EXTRUDED PRODUCTS APPLY UNLESS SPECIFIED OTHERWISE

S-15827
Die Number

EXPOSED
ACTUAL SIZE



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FONDA, NEW YORK
FAX ENG.(518)853-3435 SALES(518)853-3130
TEL. (518) 853-3421 E-MAIL keyeng@superior.net

Sym.	Revisions	Date
1	PRINT REVISION	04-10-96
	PRINT REDRAWN SJS	04-10-96

Unspecified Wall Thickness: .570
Break Ext. Corners .015 Radius or as Noted

Customer: GAMCO
Customer's Part Number:
Job Name:
Part Title: PUSH BAR
Scale: 2:1

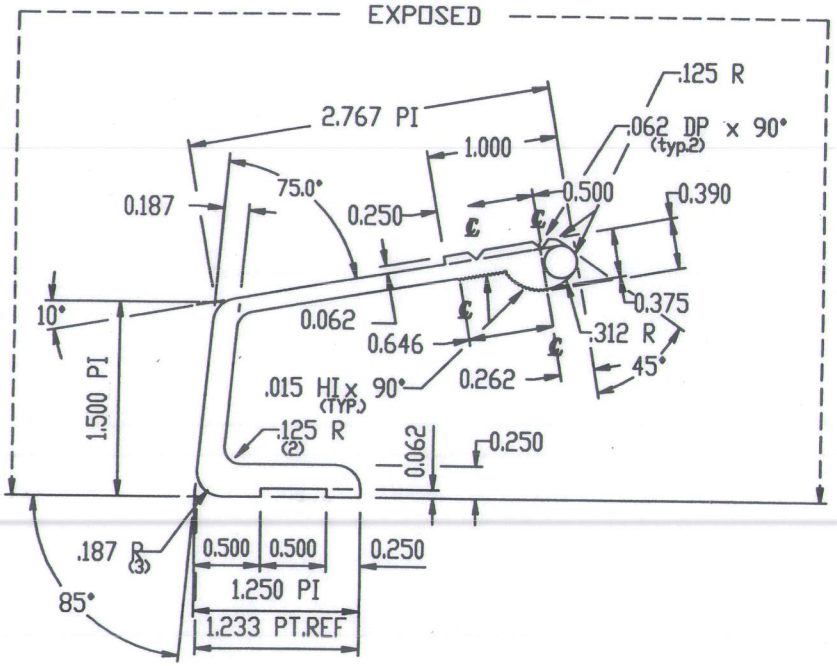
Alloy	Est. Area	Finish Perimeter	Date
6063	.585 In^2	0.000 In	05-08-90
Temper	Est. Wt./Ft.	Est. Perimeter	Drawn
T-5	.702 Lbs	4.058 In	S.J.S.
Cavity Size	Circle Size	Exterior Perimeter	Checked
	1-2 In	4.058 In	

Estimated For Reference Only	I_x =	I_y =	Factor	Type Of Finish
	S_x =	S_y =	6	Mill ☐ Ano. ■ Drnr. ■ Drcn. ■

Solid ■ Semi-hollow ☐ Class Hollow ☐ Class

STANDARD COMMERCIAL TOLERANCES FOR EXTRUDED PRODUCTS APPLY UNLESS SPECIFIED OTHERWISE

S-15696
Die Number



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FONDA, NEW YORK
FAX ENG.(518)853-3435 SALES(518)853-3130
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Sym.	Revisions	Date
3	PRINT REVISION	05-03-99
	PRINT REDRAWN SJS	03-07-97

Unspecified Wall Thickness: .125
Break Ext. Corners .015 Radius or as Noted

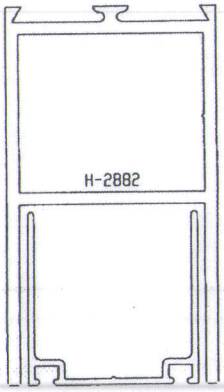
Customer: GAMCO			Customer's Part Number
Job Name			
Part Title: HANDLE			Scale: 1:1
Alloy: 6063	Est. Area: 0.953 In^2	Finish Perimeter: 9.951 In	Date: 05-08-90
Temper: T-5	Est. Wt./Ft.: 1.144 Lbs	Est. Perimeter: 11.121 In	Drawn: C.J.T.
Cavity Size	Circle Size: 3-4 In	Exterior Perimeter: 11.121 In	Checked: S.J.S.

Estimated For Reference Only				Type Of Finish			
I_x = .472	I_y = .804	Factor	Mill ☐	Ano. ■	Drnr. ■	Drcn. ■
S_x = .441	S_y = .448	10	Solid ■	Semi-hollow ☐ Class	Hollow ☐ Class	

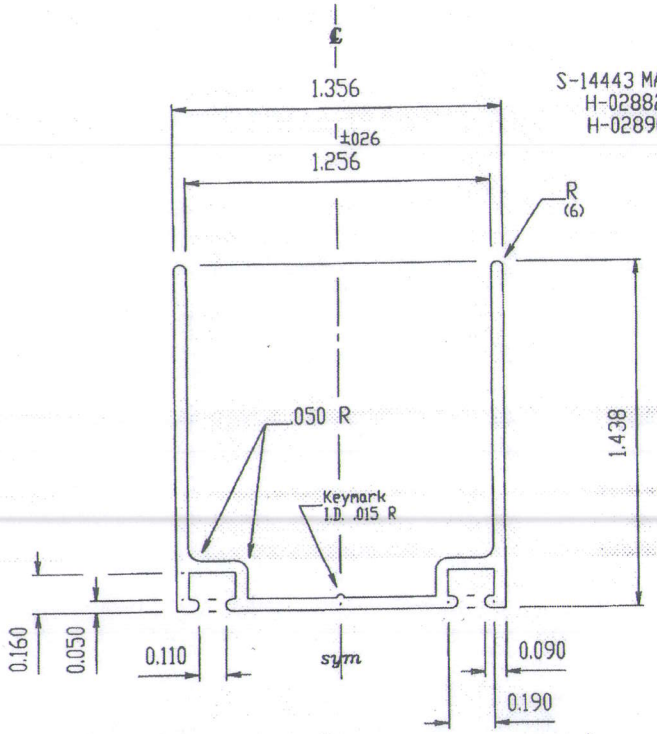
STANDARD COMMERCIAL TOLERANCES FOR EXTRUDED PRODUCTS APPLY UNLESS SPECIFIED OTHERWISE

S-14443
Die Number

ACTUAL SIZE
WITH ASSEMBLY



NO EXPOSED SURFACE



S-14443 MATES WITH:
H-02882
H-02890

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TEL. (518) 853-3421 E-MAIL keyeng@superior.net

Sym.	Revisions	Date
2	PRINT REVISION	04-07-97
	PRINT REDRAWN SJS	04-07-97

Unspecified Wall Thickness: .050
Break Ext. Corners .015 Radius or as Noted

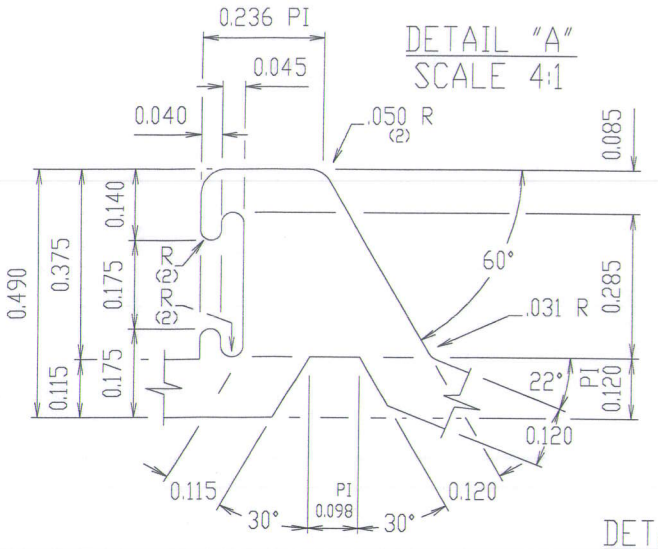
Customer: GAMCO			Customer's Part Number
Job Name			
Part Title: BOTTOM EXPANDER			Scale: 2:1
Alloy: 6063	Est. Area: .229 In^2	Finish Perimeter: 0.000 In	Date: 06-07-89
Temper: T-5	Est. Wt./Ft.: .275 Lbs	Est. Perimeter: 9.127 In	Drawn: F.A.S.
Cavity Size	Circle Size: 1-2 In	Exterior Perimeter: 9.127 In	Checked: S.J.S.

Estimated For Reference Only	I_x =	I_y =	Factor	Type Of Finish
	S_x =	S_y =	33	Mill ■ Ano. □ Drnr. □ Drcn. □

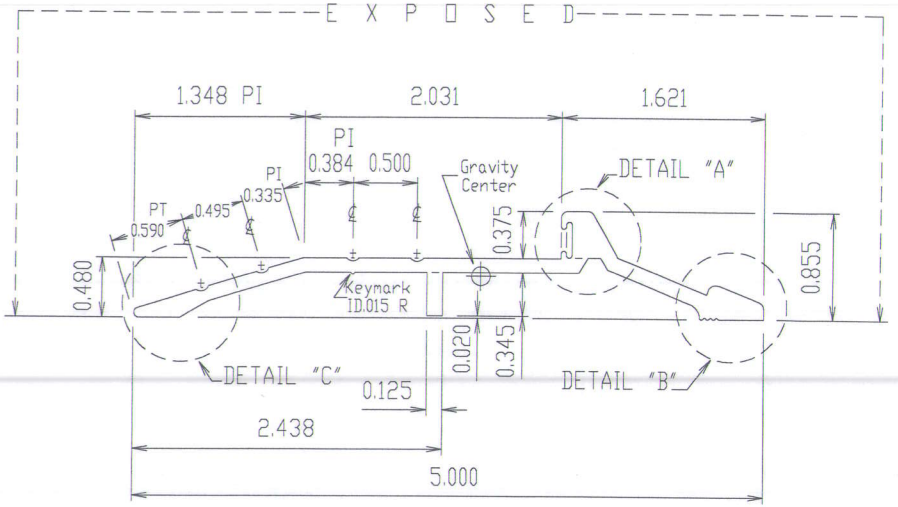
Solid ■ Semi-hollow □ Class Hollow □ Class

STANDARD COMMERCIAL TOLERANCES FOR EXTRUDED PRODUCTS APPLY UNLESS SPECIFIED OTHERWISE

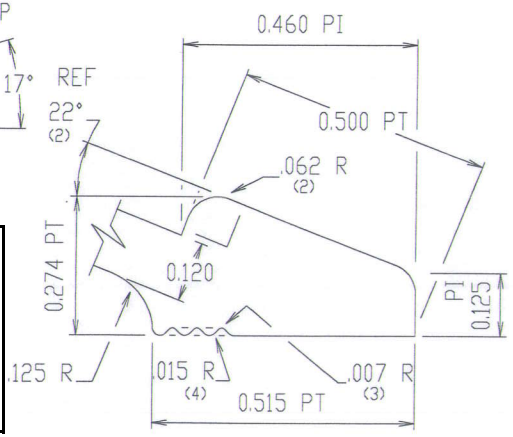
S-19599
Die Number



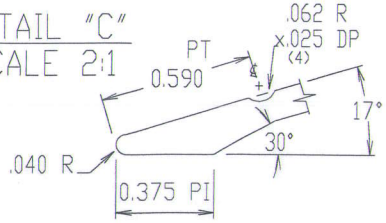
DETAIL "A"
SCALE 4:1



DETAIL "B"
SCALE 4:1



DETAIL "C"
SCALE 2:1



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FAX ENG.(518)853-3435 SALES(518)853-3130
TEL. (518) 853-3421 E-MAIL keyeng@superior.net

Sym.	Revisions	Date
2	PRINT REVISION	01-14-98
	PRINT REDRAWN SJS	09-10-96

Unspecified Wall Thickness: .115

Break All Corners .015 Radius or as Noted

Customer: KEYMARK CORPORATION				Customer's Part Number: 100508
Job Name: THRESHOLD - 100				
Part Title: 5" THRESHOLD W/STOP				Scale: 1:1
Alloy: 6063	Est. Area: .773 In^2	Finish Perimeter: 6.006 In		Date: 12-02-92
Temper: T-5	Est. Wt./Ft.: .928 Lbs	Est. Perimeter: 12.333 In		Drawn: R.D.S.
Cavity Size	Circle Size: 5-6 In	Exterior Perimeter: 12.333 In		Checked: S.J.S.

Estimated For Reference Only	I_x = .028	I_y = 1.555	Factor	Type Of Finish
	S_x = .054	S_y = .567	13	Mill ▨ Ano. ☐ Drnr. ☐ Drcn. ☐

Solid ▨ Semi-hollow ☐ Class Hollow ☐ Class