



Technical Manual

Window Hardware

2023-2024



**EXCLUSIVE
CONTENT**



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About us

A FAMILY STORY

Radisson Industries is a family business specializing in designing and manufacturing innovative door and window hardware components.

In 1996, after 40 years of experience in processing metals for the construction industry, we put our knowledge and expertise to work to serve door and window manufacturers.

Now, more than 25 years later, we've established ourselves as a major player in the window industry.

OUR VISION

«We are the leading innovative solution provider to the window and door industry in North America.»

OUR MISSION

«Working with our trusted partners, we deliver innovative solutions that maximize profitability for our clients.»

OUR VALUES

INNOVATION

Radisson encourages people to be bold, take risks, create and innovate.

ATTITUDE

We have winning attitudes. We encourage our colleagues, celebrate success, and are positive and uplifting.

RESPECT

Radisson Industries respects people for who they are—for their expertise, skills, and experience, both as individuals and as members of a team.

COMMITMENT

Our team is fully invested in our performance and goes the distance to exceed expectations.



5500 Series Washability Hinges

The washability feature allows end users to easily clean opened sash, inside and out, directly from the interior.



AAMA 904.14 | MAXIMUM HINGES LOAD TESTED
Maximum load capacity of 130lb.*

* Maximum load permitted for the AAMA hardware load test. Refer to the chart on page 5, section 4.0 for the maximum weight recommended by Radisson Industries to ensure ease of operation.

Features

- High performance slider with a deeper interlocking track, for superior results on impact and load testing
- Integrated snubber for extra security and superior strength in blow out and impact testing
- Extra fixing holes to prevent bending and increase heavy sash stability
- Adjustable eccentric track rivets for easy on- an off-the-field adjustment (see page 6)
- Fast and secure snap-on attachment
- Available in standard 430 grade stainless steel or optional austenitic 304
- Heavy duty stainless steel track (0.040" | 1.02mm of thickness)
- Same hole configurations as industry standards
- Available in both 10- and 13-inch versions



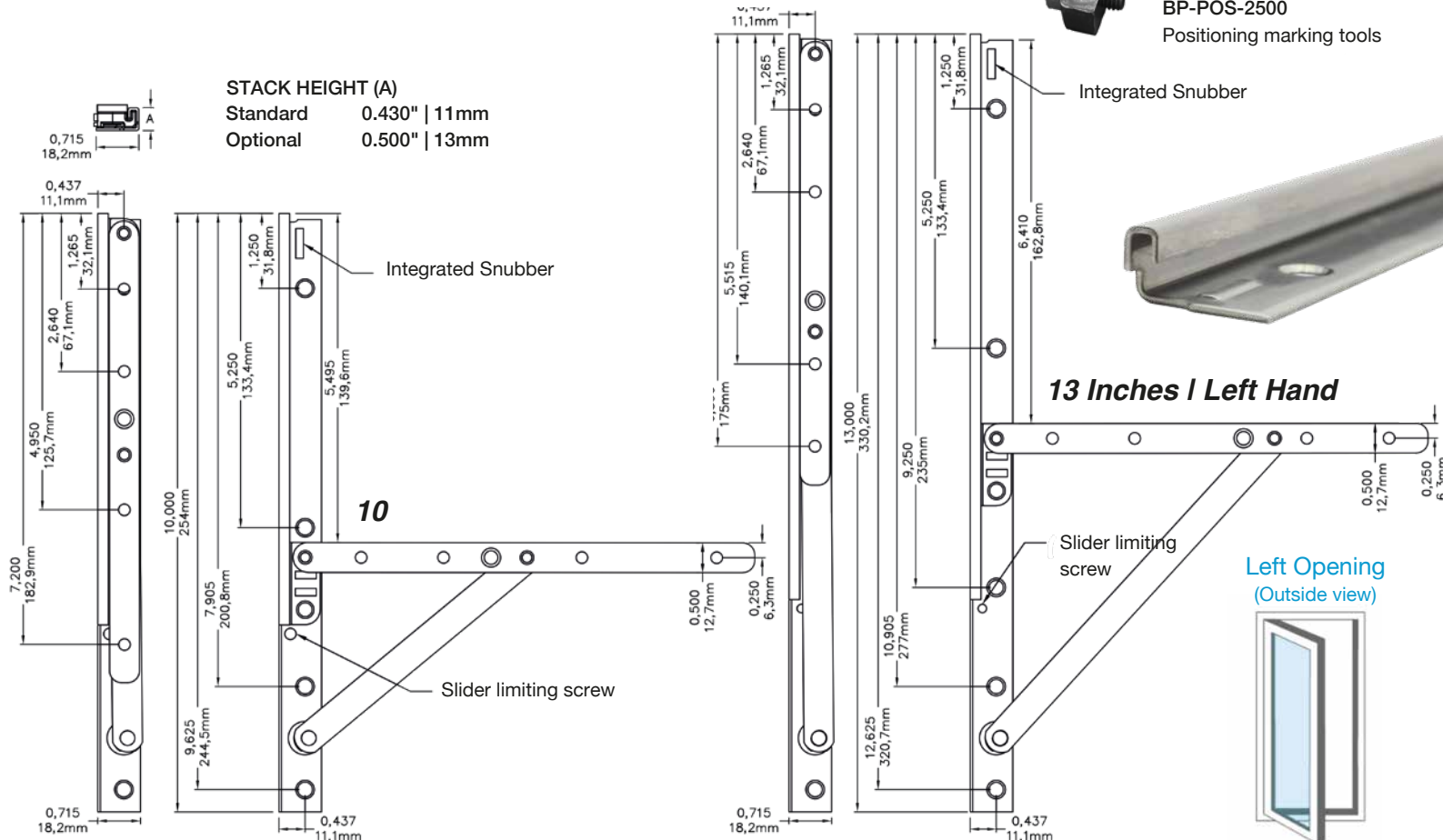
Options

- Available pre-assembled for cost and time savings on production lines
- 0.500" | 12.7mm stack height to accommodate custom extrusions
- Positioning marking tools

1.0 5500 | Specifications



BP-POS-2500
Positioning marking tools

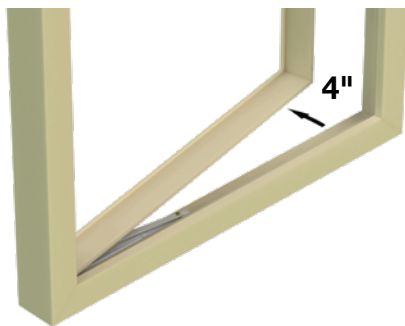


Recommended screw : Stainless steel Quadrex wood screw 10-12, undercut, head #7

2.2 Cavity Fit Restrictor | Installation

Step 1

Open sash so that the window opening is less than 4 inches / 102mm.



Step 2

Place keeper on the window sill. Line up screw holes with screw line.



Step 3

Hook restrictor arm to the keeper.



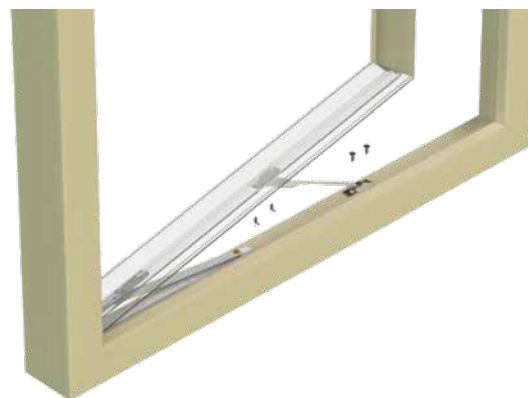
Step 4

With the restrictor arm fully sprung, place base of the arm on the sash, and slide assembly towards the window hinges until both parts are in line with their respective screw lines. Mark the locations of the holes.



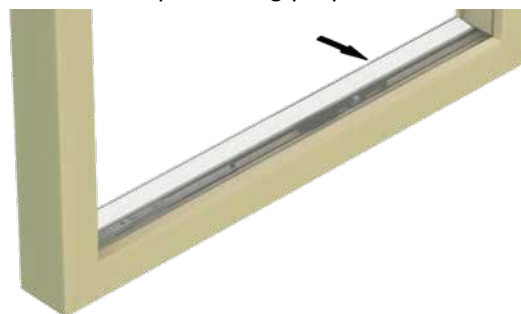
Step 5

Fix the restrictor arms and keeper to the sash and frame.



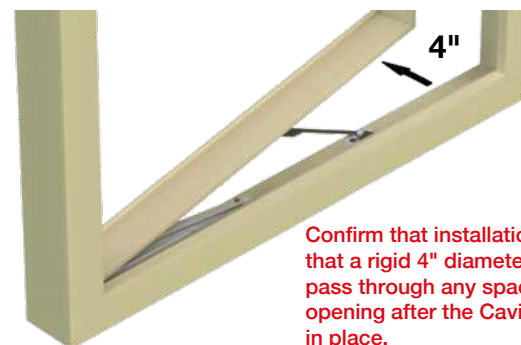
Step 6

Close the window completely to ensure there are no interferences preventing proper weather sealing.



Step 7

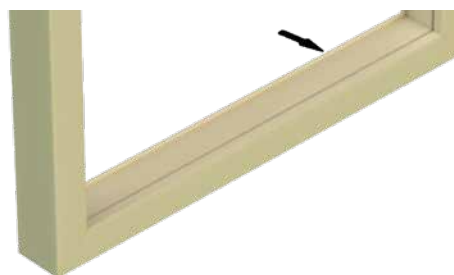
- 7.1 Push operate window open
- 7.2 Observe operation of the Cavity Fit Restrictor
- 7.3 Ensure that restrictor arm engages with strike



Confirm that installation of device so that a rigid 4" diameter sphere does not pass through any space in the window opening after the Cavity Fit Restrictor is in place.

Step 8

Fully close and lock the window.



5100 Series

Awning Hinges

Our line of adjustable awning hinges can easily accommodate sash as large as 60 inches* and provide ease of operation.

*Subject to maximum weight limitations. Please refer to Maximum Frame Height & Sash Weight for AWNING Hinges on page 5.

Features

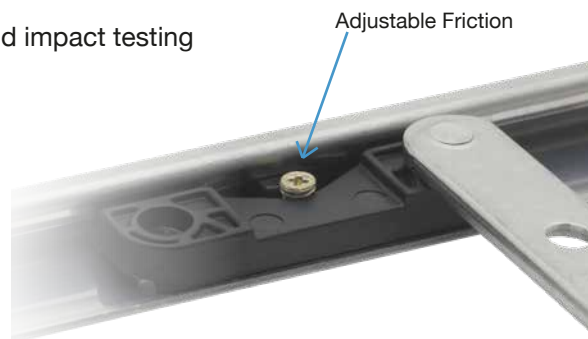
- Adjustable friction slider shoe to prevent sash rattling
- Adjustable eccentric track rivets for and easy on- an off-the-field adjustment (see page 6)
- Clip-on feature for strongly securing the sash to the frame
- Integrated snubber for extra security and superior strength in blow out and impact testing
- Extra fixing holes to prevent bending and increase heavy sash stability
- Available in a range of 10- to 26-inch versions
- Available in standard 430 grade stainless steel or optional austenitic 304
- Heavy duty stainless steel track (0.040" | 1.02mm of thickness)
- Same hole configurations as industry standards

Options

- Available pre-assembled for cost and time savings on production lines
- 0.500" | 12.7mm stack height to accomodate custom extrusions
- Heavy duty slider limiter for enhanced security
- Positioning marking tools



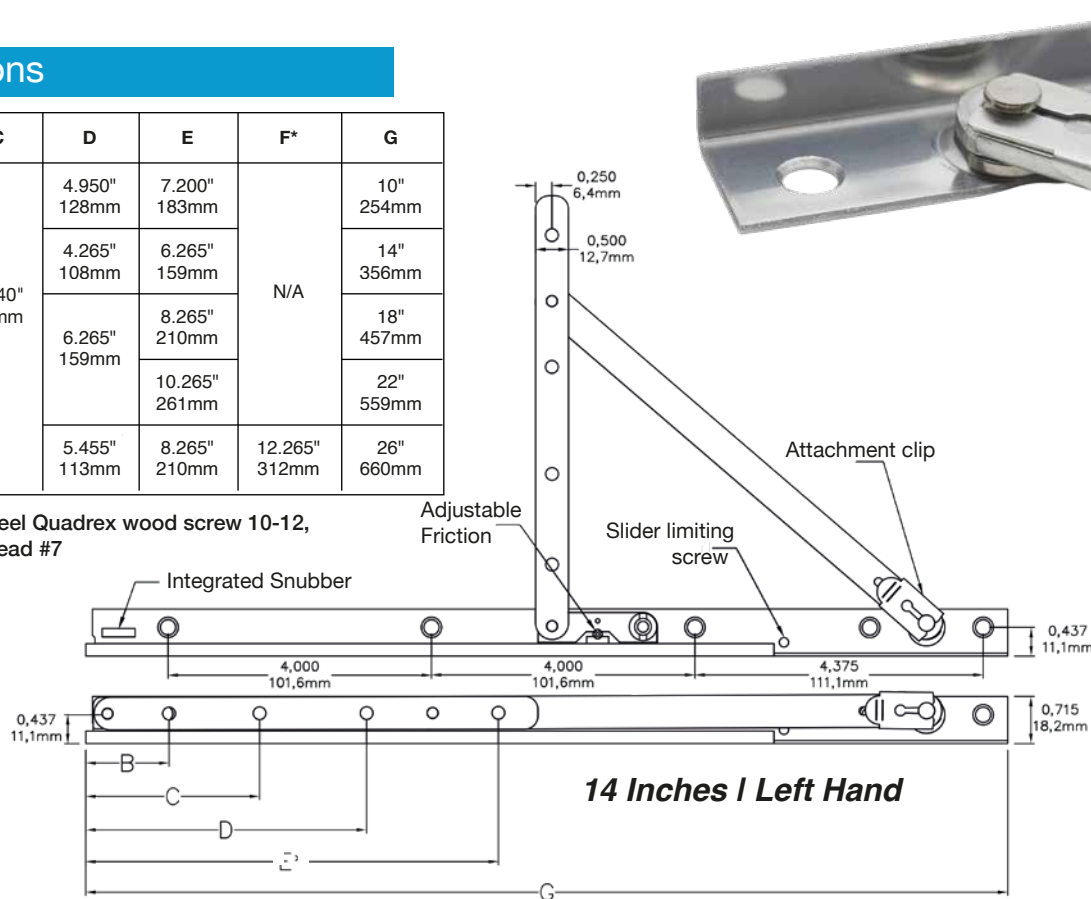
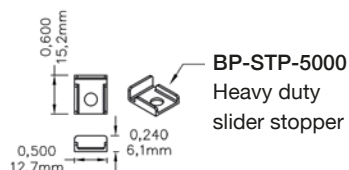
Attachment clip is required on awning window hinges. Under no circumstances should a casement hinge with a snap-on stud be used on awning windows. Due to the rotational forces applied by an awning sash, the snap stud can work its way apart, allowing the sash to fall out and cause a serious threat of injury to individuals below.



3.0 5100 | Specifications

PART NUMBER	B	C	D	E	F*	G
BPRP-5100-10D/G	1.265" 32mm	2.640" 67mm	4.950" 128mm	7.200" 183mm	N/A	10" 254mm
BPRP-5100-14D/G			4.265" 108mm	6.265" 159mm		14" 356mm
BPRP-5100-18D/G			6.265" 159mm	8.265" 210mm		18" 457mm
BPRP-5100-22D/G				10.265" 261mm		22" 559mm
BPRP-5100-26D/G			5.455" 113mm	8.265" 210mm	12.265" 312mm	26" 660mm

Recommended screw : **Stainless steel Quadrex wood screw 10-12, undercut, head #7**



4.0 Maximum Frame Size & Sash Weight

Hardware Comparison: NAFS Casement Window Hardware Load Test (North American Fenestration Standard)



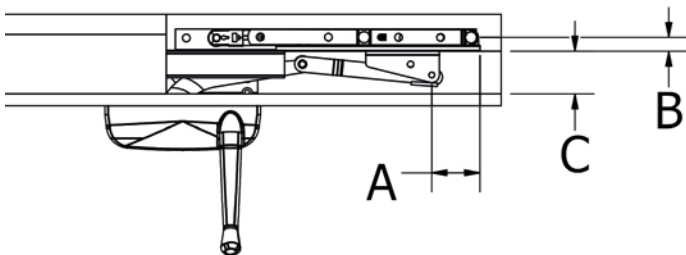
Many factors in addition to the hardware dictate maximum casement window size. These include sash and frame stiffness and strength, screw holding strength, sash sag, weathertightness, and weatherstrip drag. For this reason, we recommend careful evaluation of the entire window before producing units as large as this matrix suggests.

STANDARD					EGRESS			
BPS-5500-10D/G BPRPS-5600-10D/G		BPS-5500-13D/G BPRPS-5600-13D/G		BPS-5200-10D/G BPRPS-5300-10D/G		BPS-5200-13D/G BPRPS-5300-13D/G		
Max Frame (Width x Height)		Max Weight (With Glass)	Max Frame (Width x Height)	Max Weight (With Glass)	Max Frame (Width x Height)	Max Weight (With Glass)	Max Frame (Width x Height)	Max Weight (With Glass)
4.1 Dyad arm								
OPS-30601D/G OPS-30602D/G	24" x 60" (609mm x 1524mm)	45 lb. (20 kg)	24" x 60" (609mm x 1524mm)	55 lb. (25 kg)	NOT RECOMMENDED			
OPS-30608D/G	24" x 72" (609mm x 1828mm)	53 lb. (24 kg)	24" x 72" (609mm x 1828mm)	53 lb. (24 kg)	24" x 72" (609mm x 1828mm)	53 lb. (24 kg)	24" x 72" (609mm x 1828mm)	53 lb. (24 kg)
4.2 Dual arm								
OPS-30603D/G OPS-30604D/G	32" x 72" (812mm x 1828mm)	83 lb. (38 kg)	40" x 84" (1016mm x 2133mm)	110 lb. (50 kg)	32" x 68" (812mm x 1724mm)	69 lb. (31 kg)	32" x 68" (812mm x 1724mm)	69 lb. (31 kg)
OPS-30605D/G	24" x 84" (609mm x 2133mm)	70 lb. (32 kg)	NOT RECOMMENDED		28" x 78" (711mm x 1981mm)	69 lb. (31 kg)	28" x 78" (711mm x 1981mm)	69 lb. (31 kg)
OPS-30615D/G	24" x 84" (609mm x 2133mm)	70 lb. (32 kg)	24" x 84" (609mm x 2133mm)	85 lb. (38 kg)	NOT RECOMMENDED			
4.3 Straight arm								
OP-30621D/G OP-30681D/G	NOT RECOMMENDED				22" x 63" (559mm x 1600mm)	42 lb. (19 kg)	22" x 63" (559mm x 1600mm)	42 lb. (19 kg)
OP-30622D/G OP-30682D/G	24" x 62" (609mm x 1575mm)	19 lb. (9 kg)	NOT RECOMMENDED		24" x 65" (609mm x 1651mm)	48 lb. (22 kg)	24" x 65" (609mm x 1651mm)	48 lb. (22 kg)
OP-30623D/G OP-30683D/G	26" x 69" (660mm x 1753mm)	41 lb. (18 kg)	NOT RECOMMENDED		26" x 65" (660mm x 1651mm)	52 lb. (24 kg)	26" x 65" (660mm x 1651mm)	52 lb. (24 kg)

STANDARD									
		BPRP-5100-10D/G	BPRP-5100-14D/G	BPRP-5100-18D/G	BPRP-5100-22D/G	BPRP-5100-26D/G			
		Max Sash Height (Width x Height)	Max Weight (With Glass)	Max Sash Height (Width x Height)	Max Weight (With Glass)	Max Sash Height (Width x Height)	Max Weight (With Glass)	Max Sash Height (Width x Height)	Max Weight (With Glass)
4.4 Awning									
OP-30609 OP-30606		10" - 14" (254mm - 355mm)	7 lb. (3 kg)	14" - 19" (355mm - 482mm)	20 lb. (9 kg)	19" - 26" (482mm - 660mm)	38 lb. (17 kg)	26" - 34" (660mm - 864mm)	50 lb. (22 kg)
								34" - 42" (864mm - 1067mm)	61 lb. (28 kg)



Attachment clip is required on awning window hinges. Under no circumstances should a casement hinge with a snap-on stud be used on awning windows. Due to the rotational forces applied by an awning sash, the snap stud can work its way apart, allowing the sash to fall out and cause a serious threat of injury to individuals below.



The table 4.1 & 4.2 assumes the following typical mounting positions:

A - Stud bracket position 1.750"

B - Hinge position 0.437"

C - Operator position 1.938"

Larger dimensions than these typical positions will not be able to support windows as large as the ones shown in this table.

Smaller dimensions may be able to support larger windows.



AAMA 904.14 | MAXIMUM HINGES LOAD TESTED

Maximum load capacity of 130lb.*


* Maximum load permitted for the AAMA hardware load test. Refer to the chart above for the maximum weight recommended by Radisson Industries to ensure ease of operation.

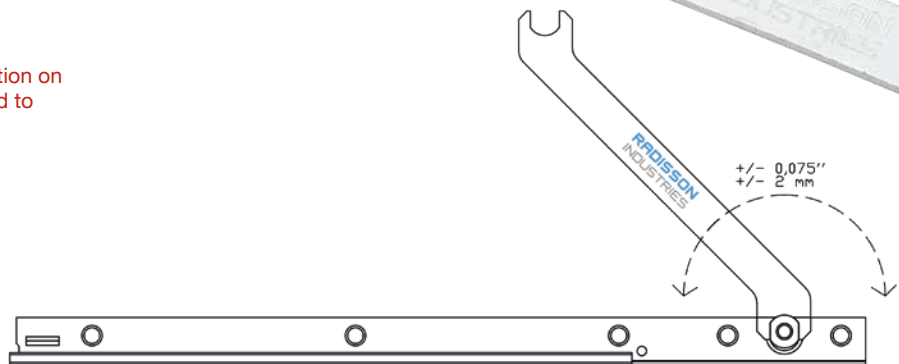


5.0 Hinge track adjustment

Sash adjustments can be easily made with the slim wrench tool BP-TLS-5500-01. (sold separately)

1. Fully open the window
2. Slide the wrench onto the eccentric adjustable rivet
3. Turn the adjustable stud to the left or right to square the sash. The maximum sash drag adjustment is reached when the adjustable stud is turned 90° from the neutral position

 This procedure is intended for window installation on construction sites only. It should never be used to square the sash on a window assembly line.



5.1 Ordering information

*The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.

Casement hinges

Part Number	Description	Box/Qty.	
BPS-52XY-1ZDSS	Stainless Steel adjustable EGRESS snap on hinge right hand	100	Replace the variable X with the desired value to specify stack height : 0 = Standard 0.430" (10.9 mm) 1 = 0.500" (12.7 mm)
BPS-52XY-1ZGSS	Stainless Steel adjustable EGRESS snap on hinge left hand	100	
BPS-55XY-1ZDSS	Stainless Steel adjustable WASHABILITY hinge snap on right hand	100	Replace the variable Y with the desired value to specify material : 0 = Standard 430 stainless steel 1 = Optional 304 austenitic stainless steel (coastal applications)
BPS-55XY-1ZGSS	Stainless Steel adjustable WASHABILITY hinge snap on left hand	100	
RPS-560Y-1ZDSS	Stainless Steel adjustable snap on track right hand	100	Replace the variable Z with the desired value to specify length : 0 = Ten inches 3 = Thirteen inches
RPS-560Y-1ZGSS	Stainless Steel adjustable snap on track left hand	100	

Awning hinges

Part Number	Description	Box/Qty.	
BP-51XY-ZZDSS	Stainless Steel adjustable AWNING 2 bar hinge standard right hand	100	Replace the variable ZZ with the desired value to specify length : -10 -14 -18 -22 -26
BP-51XY-ZZGSS	Stainless Steel adjustable AWNING 2 bar hinge standard left hand	100	
RP-510Y-ZZDSS	Stainless Steel adjustable AWNING track right hand	100	
RP-510Y-ZZGSS	Stainless Steel adjustable AWNING track left hand	100	

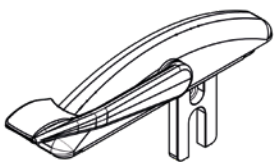
6.0 2500 Series

Standard LTS

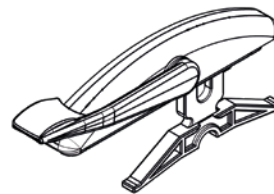
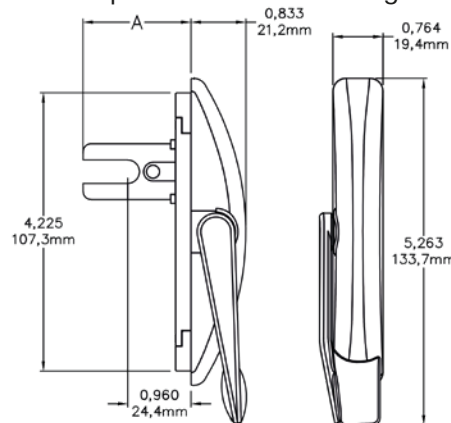
Features

- Timeless handle design
- Pre-installed gasket and optimized sealed housing to reduce water and air infiltration
- Easy transition

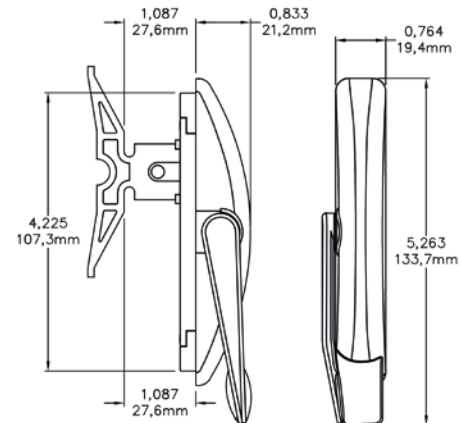
	STANDARD	LONG FORK	SHORT FORK
2500 Series	1.640" 41.7mm	1.890" 48mm	1.390" 35.3mm
3000 Series	1.734" 44mm	N/A	1.545" 37.8mm



Multipoint handle



Single point handle



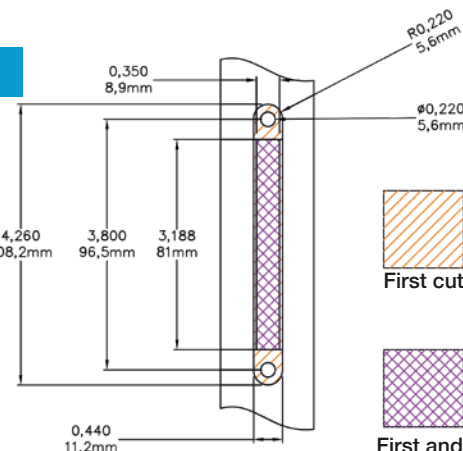
Recommended screw : 10-24 Phillips pan head thread cutting

6.2 3000 Series

Contemporary

Features

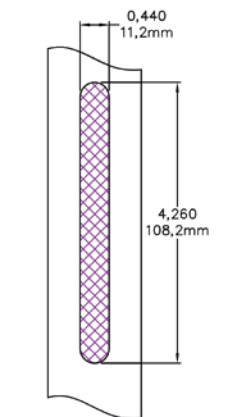
- Low profile handle design
- Appealing contemporary look, both when locked or unlocked
- Requires less strength to operate thanks to the improved lever mechanism
- Pre-installed gasket and optimized sealed housing to reduce water and air infiltration
- Easy transition



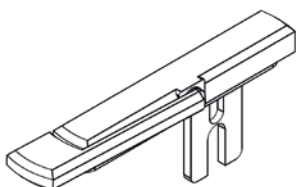
Cut-out using second wall as attachment

First cut

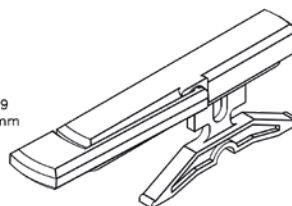
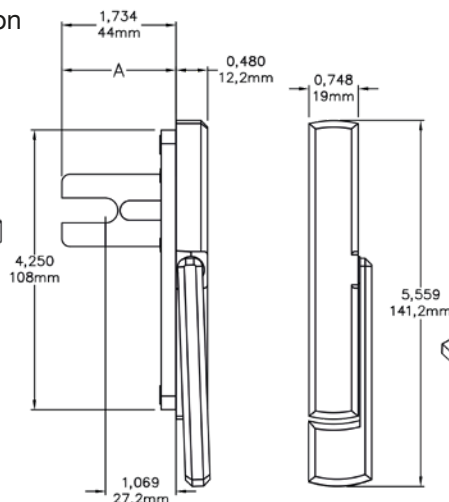
First and second wall cut



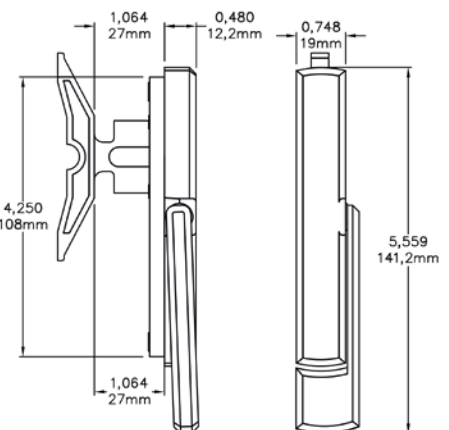
Cut-out requiring use of a backer plate



Multipoint handle



Single point handle

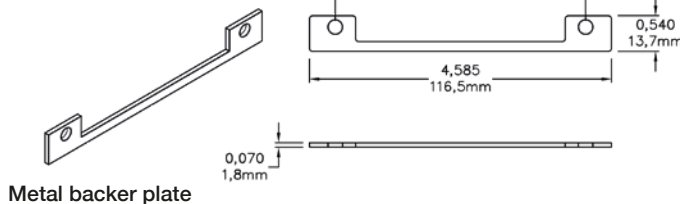
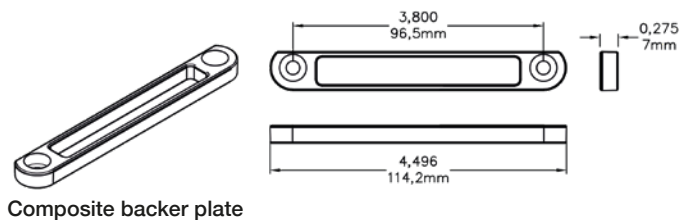
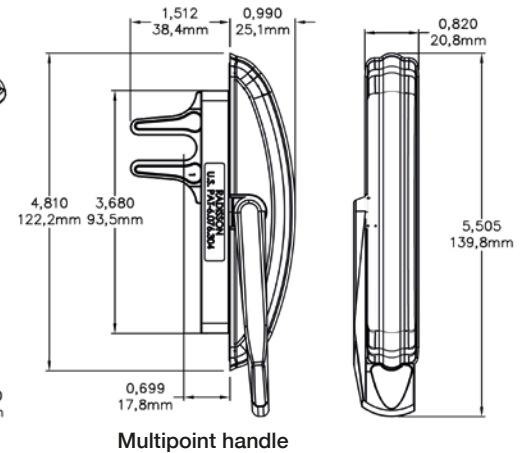
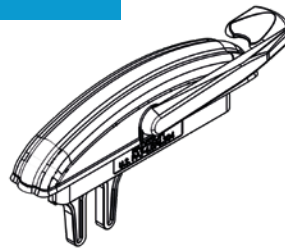


Recommended screw : 10-24 Phillips pan head thread cutting

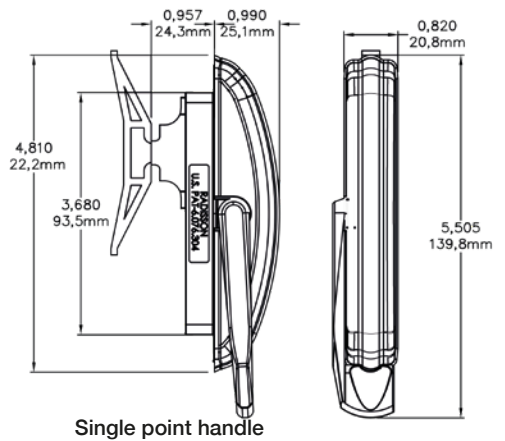
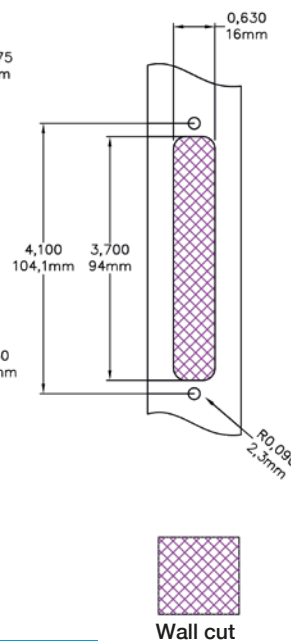
7.0 2340 Series

Colonial Features

- Versatile and elegant handle design
- Progressive locking mechanism
- Heavy duty gear mechanism
- Optional sealing gasket



Recommended screw : 8-32 Phillips truss head



7.1 Colors and finishes



The perception of colors by the human eye varies from one individual to another. Colors and finishes shown below are for illustrative purposes only and should be used solely for general guidance.

Actual colors and finishes may vary depending on the shape of the product, its composition, and the brightness of the light to which it is exposed. Contact a Radisson Industries representative for an actual sample and stock availability.

Powder-Coated Finishes



Decorative Finishes



8.0 Ordering information

**The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.*

Locking Handles

Part Number	Description	Box/Qty.
PO-X2501-YYY	Multipoint or Single point Standard locking handle	50
PO-X3000-YYY	Multipoint or Single point Contemporary locking handle	50
PO-X2340-YYY	Multipoint or Single point Colonial locking handle	50

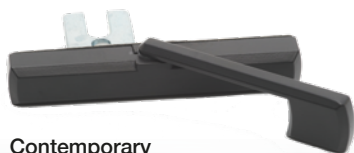
Replace the variable **X** with the desired value to specify handle type :

Blank = Multipoint locking handle
A = Optional single point locking handle (Awning application)

Replace the variable **YYY** with the desired value to specify colors or finishes (see page 8)

Accessories

Part Number	Description	Box/Qty.
PO-BP-2401-00	Flat metal backer plate for locking handle	500
PO-BP-2401-01	Offset metal backer plate for locking handle	500
PO-BP-3000-00	Flat composite backer plate for locking handle	500



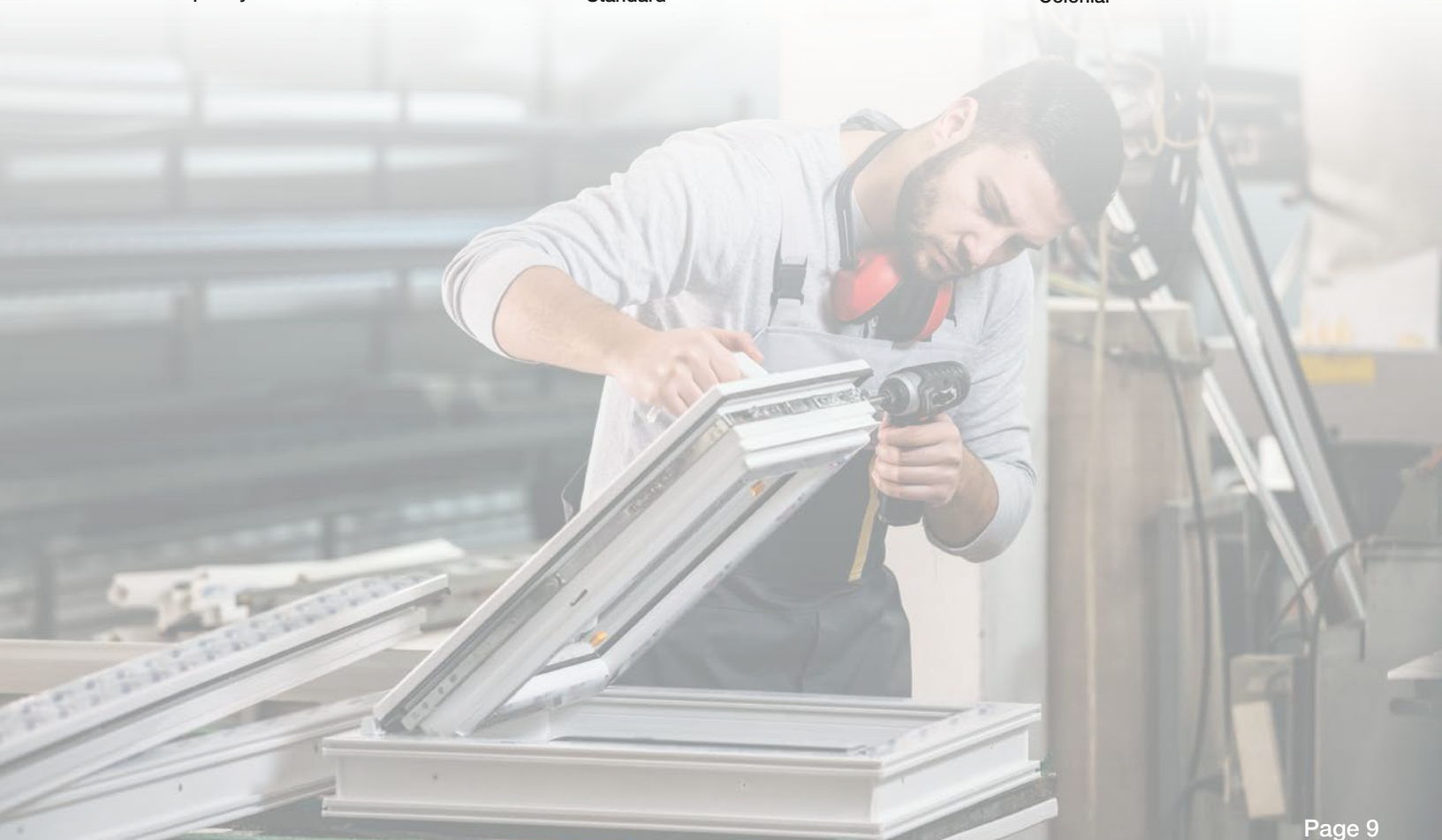
Contemporary



Standard

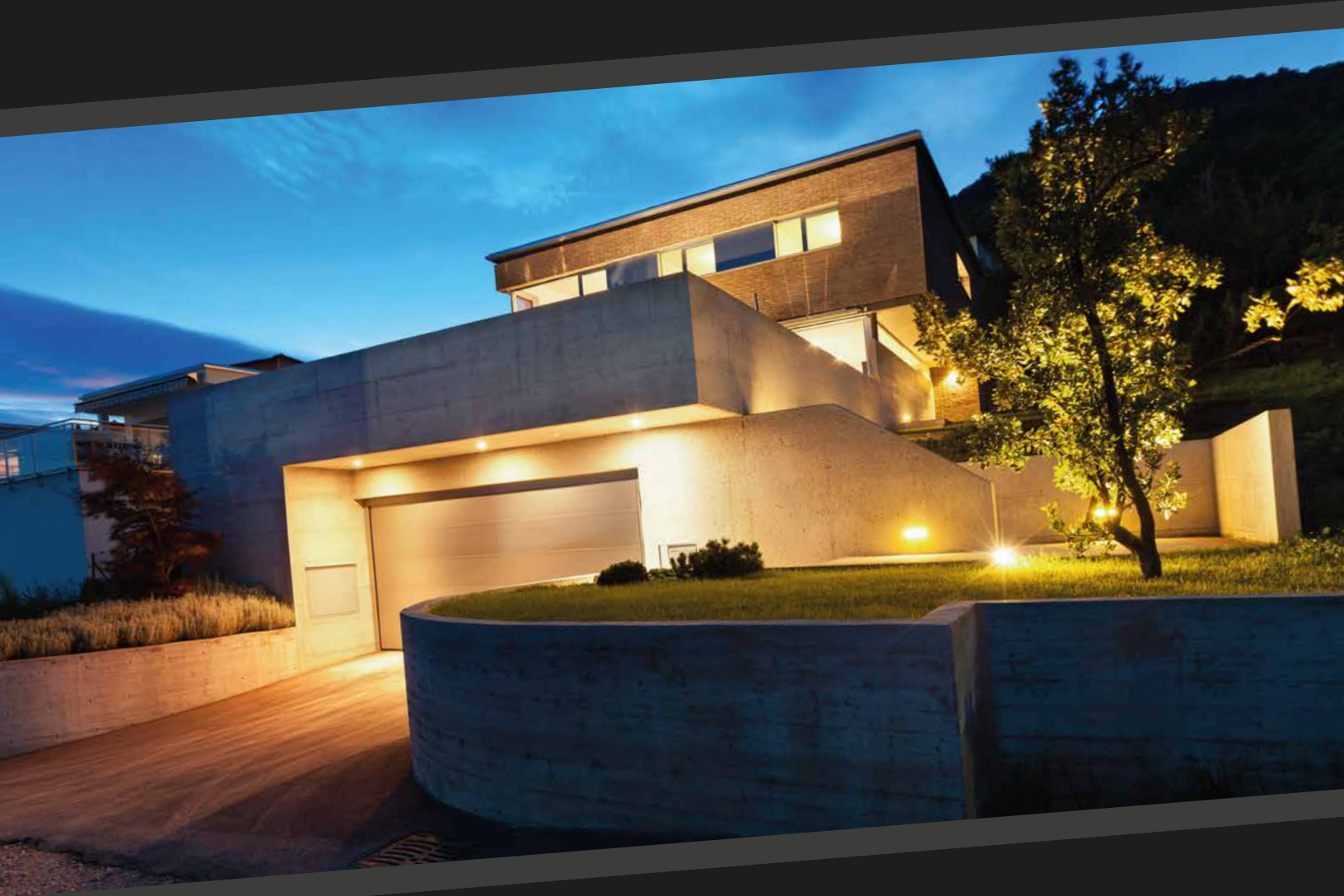


Colonial



Window Operators & Tie Bar

PHANTOM Series



We are proud to present our innovative line of premium window operators:

- Short Dyad
- Dual
- Washability Short Dual
- ILA20

All are available in standard powder-coated and 304 austenitic stainless steel.

EXCLUSIVE
INNOVATION

PHANTOM Series

This recent innovation reinvents and revolutionizes the locking system for casement and awning windows. Gone are the days of using the latch to lock the window. Now the locking and opening mechanisms are both integrated into the operator.



ELIMINATES LOCKING HANDLE

Completely eliminates the need for traditional locking handles that are usually located on the frame. Benefit of a minimalist contemporary look without any interferences to blind or curtain.

REDUCE TOOLING COSTS

Save time and money by removing the need of locking handle cut out and installation.

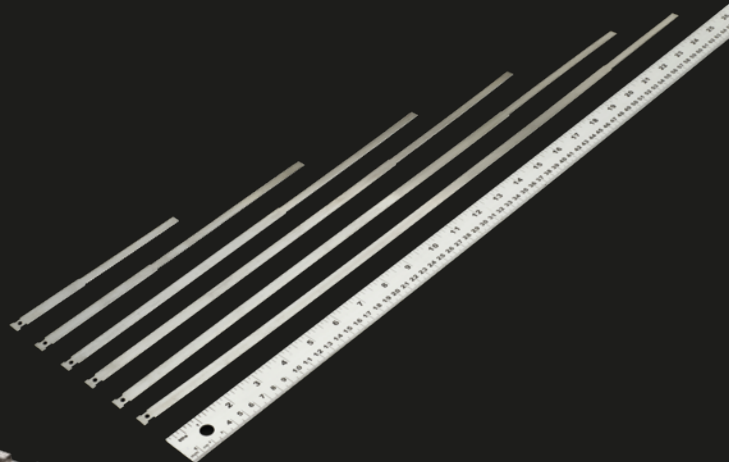
EASY TRANSITION

Available in the same sizes and configurations as mechanisms previously used in the market

INCREASED LOCK TRAVEL

A two inches lock travel for maximum «zipper effect» and smoothness of operation helping you to meet the ADA regulation.

SCAN AND
WATCH



402 Phantom Series Short Dyad Arm

Designed for frames in widths from 16. to 19 inches.

Features

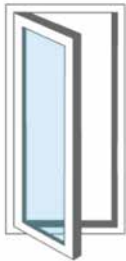
- Eliminates traditional locking handle
- Optimized precision mechanism thanks to the innovative patented design
- Snap-on cover allows for free installation and reduces inventory costs
- Snap-on feature for fast and secure operator attachment with sashes
- Optimized gear ratio to make operation easier and help meet ADA requirements
- Pre-installed gasket and optimized sealed housing to reduce risks of water and air infiltration
- Available in powder-coated steel or optional 304 austenitic stainless steel for coastal applications



Left hand shown

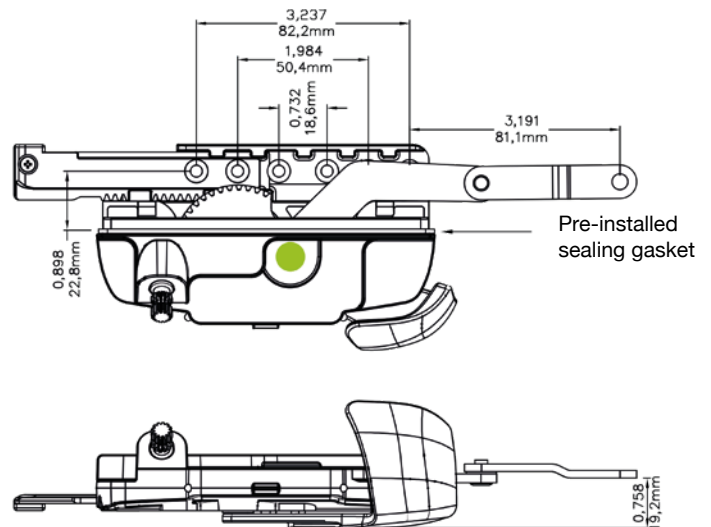
9.0 Short Dyad | Specifications

Left Opening (Outside view)

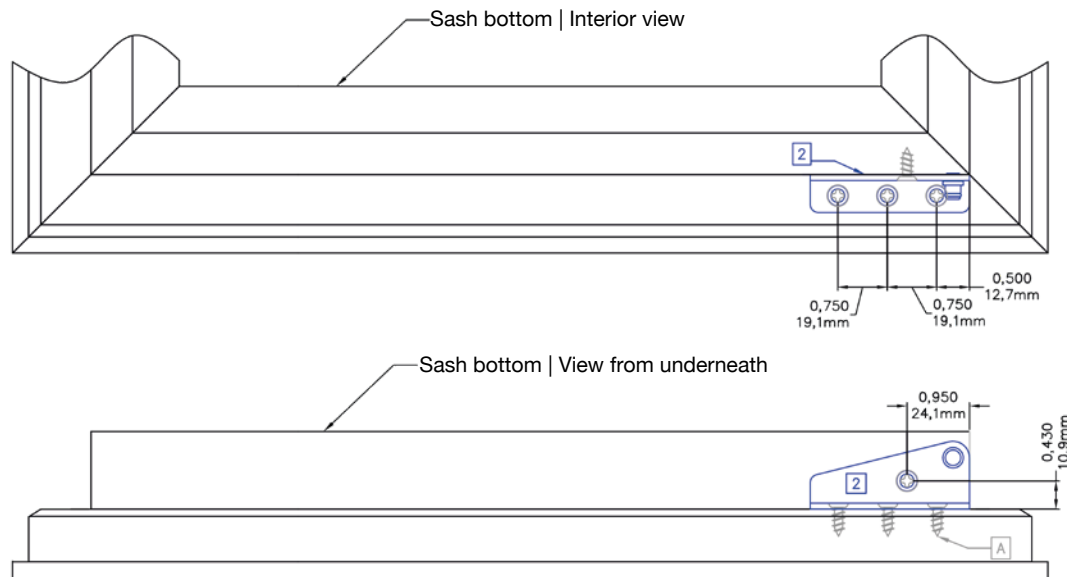
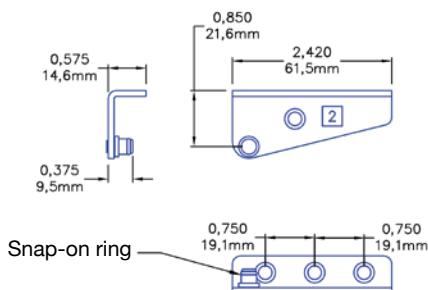


Left Hand Shown

Operator handing is determined by the hinge side when looking at the window from the outside.



9.1 Short Dyad | Application



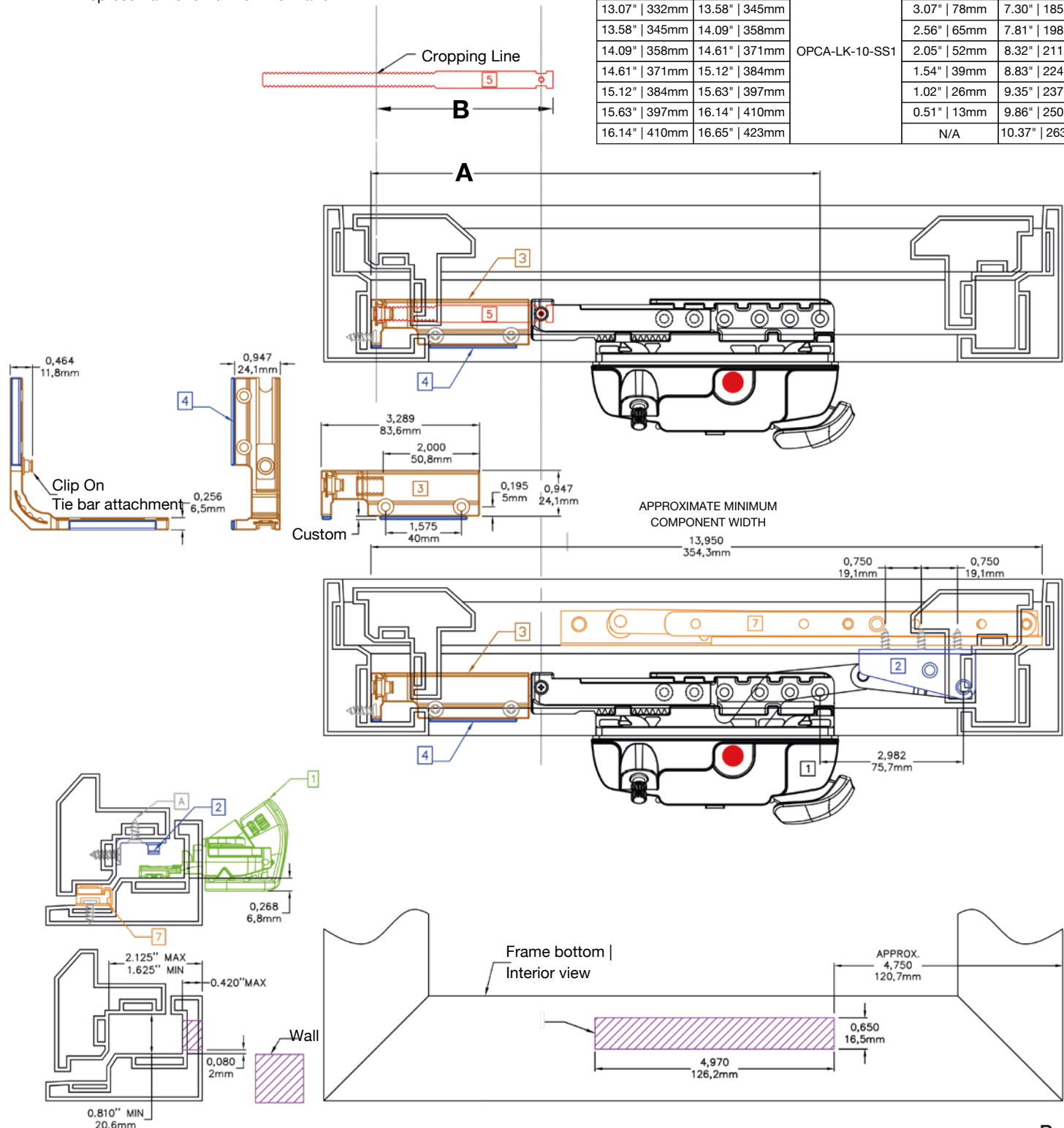
9.1 Short Dyad | Application (cont'd)



*Please note that the following drawings are only generic PVC drawings and that your actual application may vary depending on your extrusion profile. Contact a Radisson sales representative for further information.

SHORT DYAD ARM - LINK CUTTING CHART

DIMENSION A		LINK PART #	REMOVE LENGTH	DIMENSION B
From (Min)	To (Max)			
10.28" 261mm	10.79" 274mm	OPCA-LK-06-SS1	1.54" 39mm	4.50" 114.2mm
10.79" 274mm	11.30" 287mm		1.02" 26mm	5.01" 127.2mm
11.30" 287mm	11.81" 300mm		0.51" 13mm	5.52" 140.2mm
11.81" 300mm	12.32" 313mm		N/A	6.03" 153.2mm
12.32" 313mm	12.56" 319mm	OPCA-LK-10-SS1	4.09" 104mm	6.28" 159.4mm
12.56" 319mm	13.07" 332mm		3.58" 91mm	6.79" 172.4mm
13.07" 332mm	13.58" 345mm		3.07" 78mm	7.30" 185.4mm
13.58" 345mm	14.09" 358mm		2.56" 65mm	7.81" 198.4mm
14.09" 358mm	14.61" 371mm		2.05" 52mm	8.32" 211.4mm
14.61" 371mm	15.12" 384mm		1.54" 39mm	8.83" 224.4mm
15.12" 384mm	15.63" 397mm		1.02" 26mm	9.35" 237.4mm
15.63" 397mm	16.14" 410mm		0.51" 13mm	9.86" 250.4mm
16.14" 410mm	16.65" 423mm		N/A	10.37" 263.4mm



9.2 Short Dyad | Part list

- 1 OPCS-402-LG-CP | PHANTOM short dyad arm snap on operator left hand RD
- 2 OPS-10327 | "L" shape snap-on stud bracket for LH operator
- 3 OPCA-CD-400-070-LG | Corner drive with 0.070" positioning bumper for left hand PHANTOM operator
- 4 CD-SPC-070 | 0.070" corner drive plastic positioning bumper
- 5 OPCA-LK-06-SS1 | 6" link rod for PHANTOM operator
- 7 BPRPS-5600-10GSS | Adjustable 10" wash. hinge kit, snap-on LH
- A Recommended screw: 10-12 large thread, flat undercut #7

9.3 Short Dyad | Ordering

**The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.*

Part Number	Description	Box/Qty.
OPCA-402-RD-XXX-YYY	PHANTOM short dyad arm, right hand GREEN dot operator	20
OPCA-402-LG-XXX-YYY	PHANTOM short dyad arm, left hand RED dot operator	20
OPS-10326-ZZ	"L" shape snap-on stud bracket for right hand operator	200
OPS-10327-ZZ	"L" shape snap-on stud bracket for left hand operator	200
OPCA-LK-06-SS1	6" link rod for PHANTOM operator	50
OPCA-CD-400-AAA-LG	Corner drive for left hand PHANTOM operator	100
OPCA-CD-400-AAA-RD	Corner drive for right hand PHANTOM operator	100

Replace the variable **XXX** with the desired value to specify material:

CP = Standard powder-coated
SS1 = Optional 304 austenitic
(coastal applications)

Replace the variable **YYY** to specify colors or finishes. (See color chart on page 28)

Replace the variable **AAA** with the desired value to specify positioning bumper thickness.

Replace the variable **ZZ** with the desired value to specify material:

Blank = Standard powder-coated
SS = Optional 304 austenitic
(coastal applications)

403 Phantom Series Dual Arm

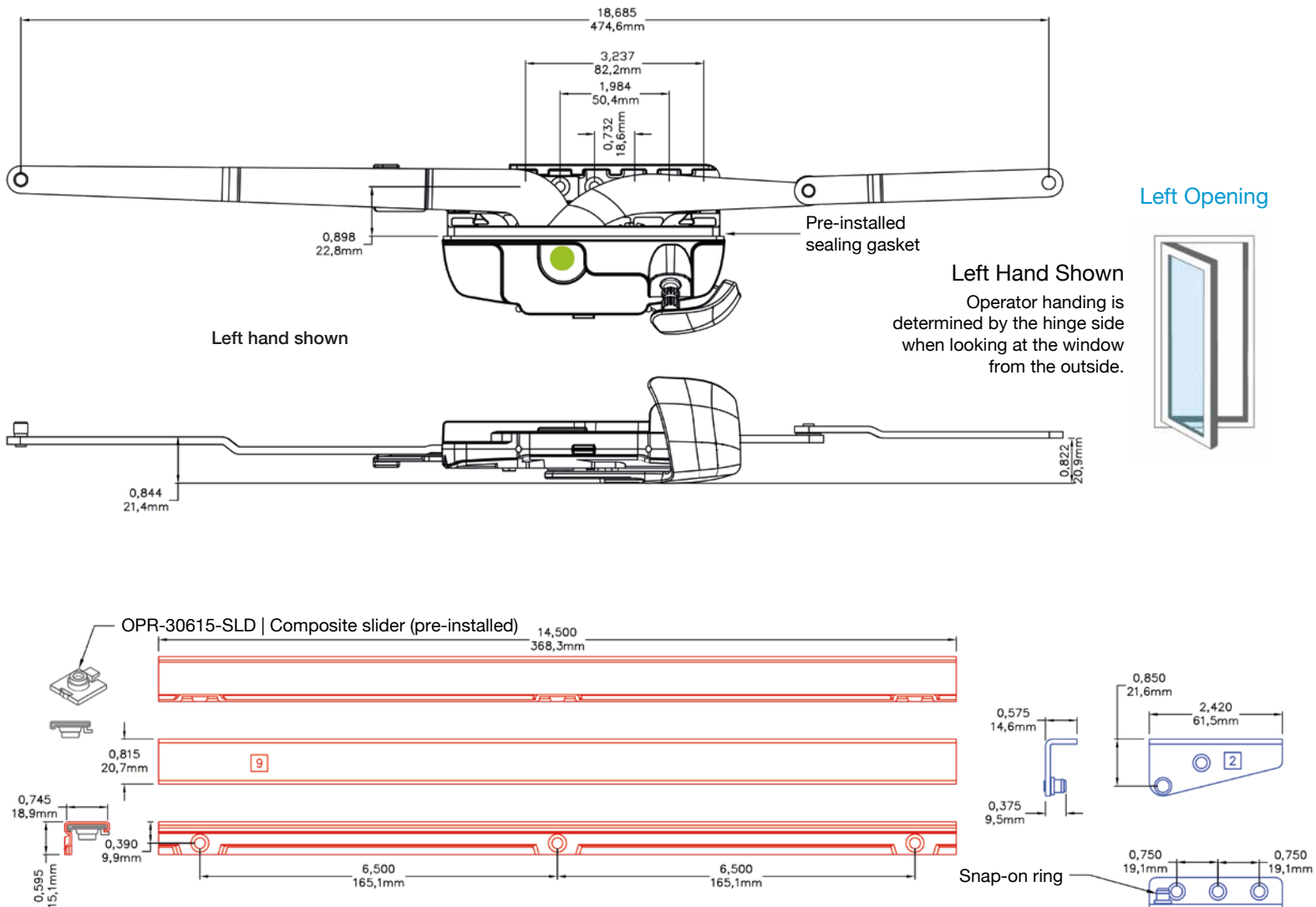
Designed for frames in widths from 24 inches and wider.

Features

- Eliminates traditional locking handle
- Optimized precision mechanism thanks to the innovative patented design
- Snap-on cover allows for free installation and reduces inventory costs
- Snap-on feature for fast and secure operator attachment with sashes
- Optimized gear ratio to make operation easier and help meet ADA requirements
- Pre-installed gasket and optimized sealed housing to reduce risks of water and air infiltration
- Available in powder-coated steel or optional 304 austenitic stainless steel for coastal applications



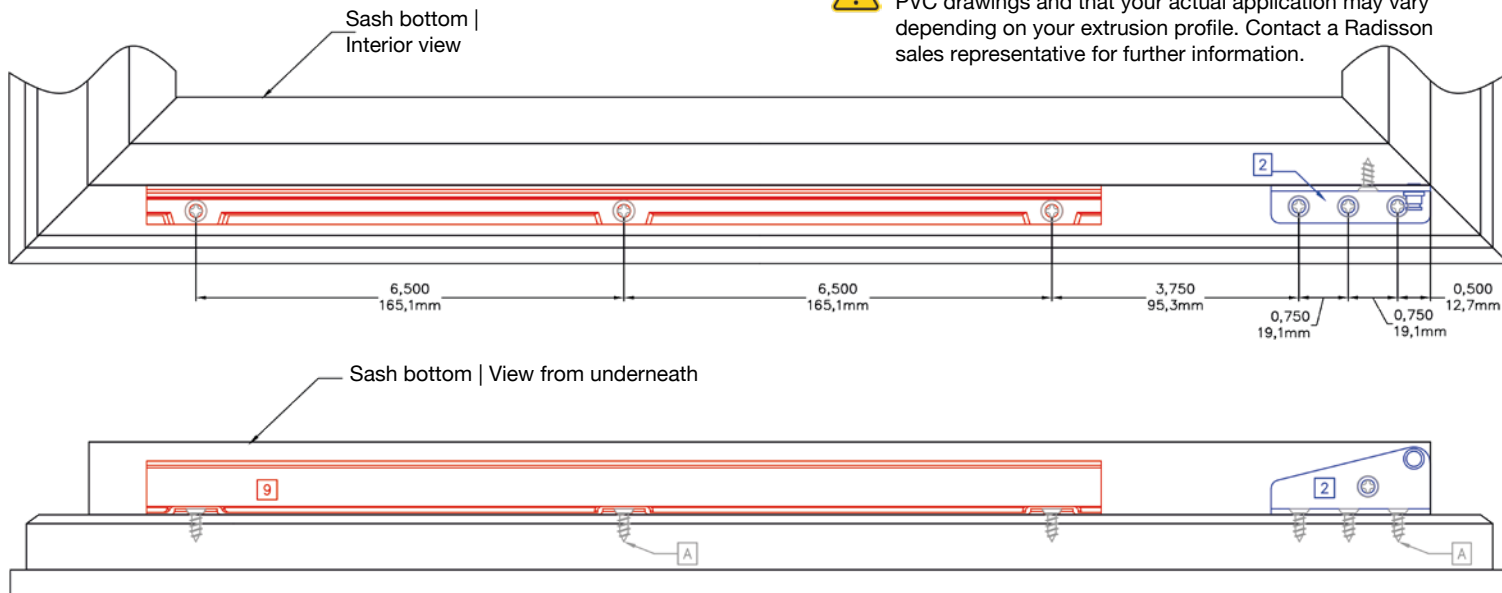
10.0 Dual | Specifications



10.1 Dual | Application



*Please note that the following drawings are only generic PVC drawings and that your actual application may vary depending on your extrusion profile. Contact a Radisson sales representative for further information.

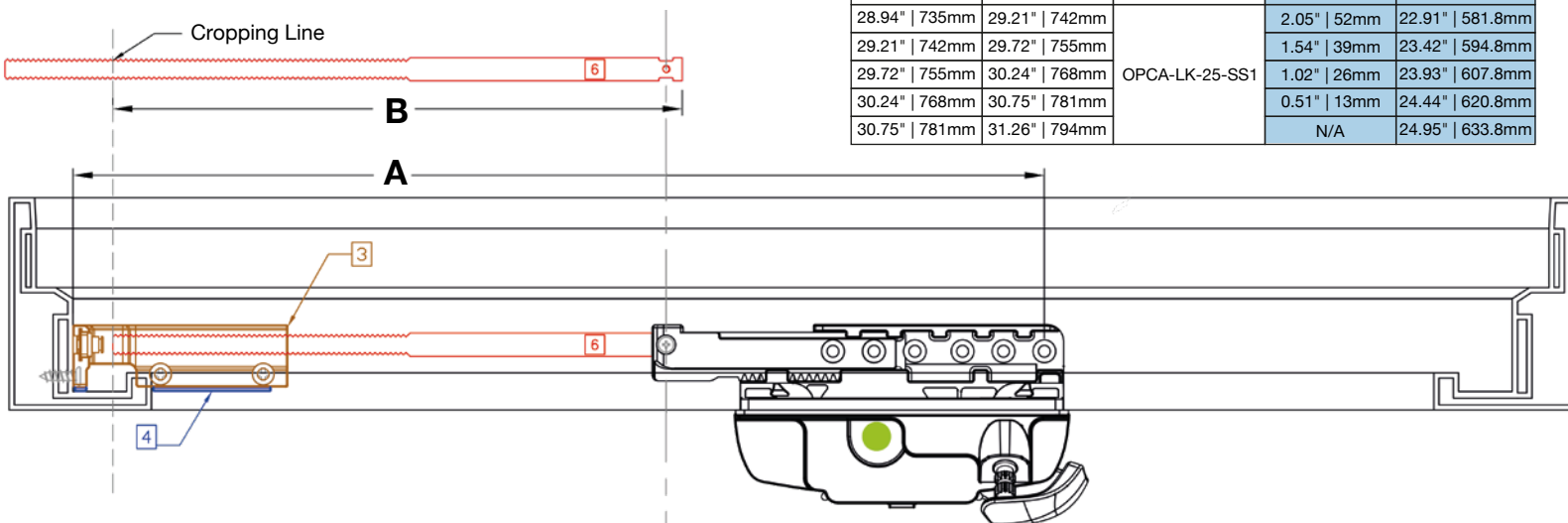


DUAL ARM - LINK CUTTING CHART

DIMENSION A		LINK PART #	REMOVE LENGTH	DIMENSION B
From (Min)	To (Max)			
14.61" 371mm	15.12" 384mm	OPCA-LK-10-SS1	1.54" 39mm	8.83" 224.4mm
15.12" 384mm	15.63" 397mm		1.02" 26mm	9.35" 237.4mm
15.63" 397mm	16.14" 410mm		0.51" 13mm	9.86" 250.4mm
16.14" 410mm	16.65" 423mm		N/A	10.37" 263.4mm
16.65" 423mm	16.73" 425mm	OPCA-LK-14-SS1	4.09" 104mm	10.45" 265.4mm
16.73" 425mm	17.24" 438mm		3.58" 91mm	10.96" 278.4mm
17.24" 438mm	17.76" 451mm		3.07" 78mm	11.47" 291.4mm
17.76" 451mm	18.27" 464mm		2.56" 65mm	11.98" 304.4mm
18.27" 464mm	18.78" 477mm		2.05" 52mm	12.50" 317.4mm
18.78" 477mm	19.29" 490mm		1.54" 39mm	13.01" 330.4mm
19.29" 490mm	19.80" 503mm		1.02" 26mm	13.52" 343.4mm
19.80" 503mm	20.31" 516mm		0.51" 13mm	14.03" 356.4mm
20.31" 516mm	20.83" 529mm		N/A	14.54" 369.4mm

DUAL ARM - LINK CUTTING CHART (cont'd)

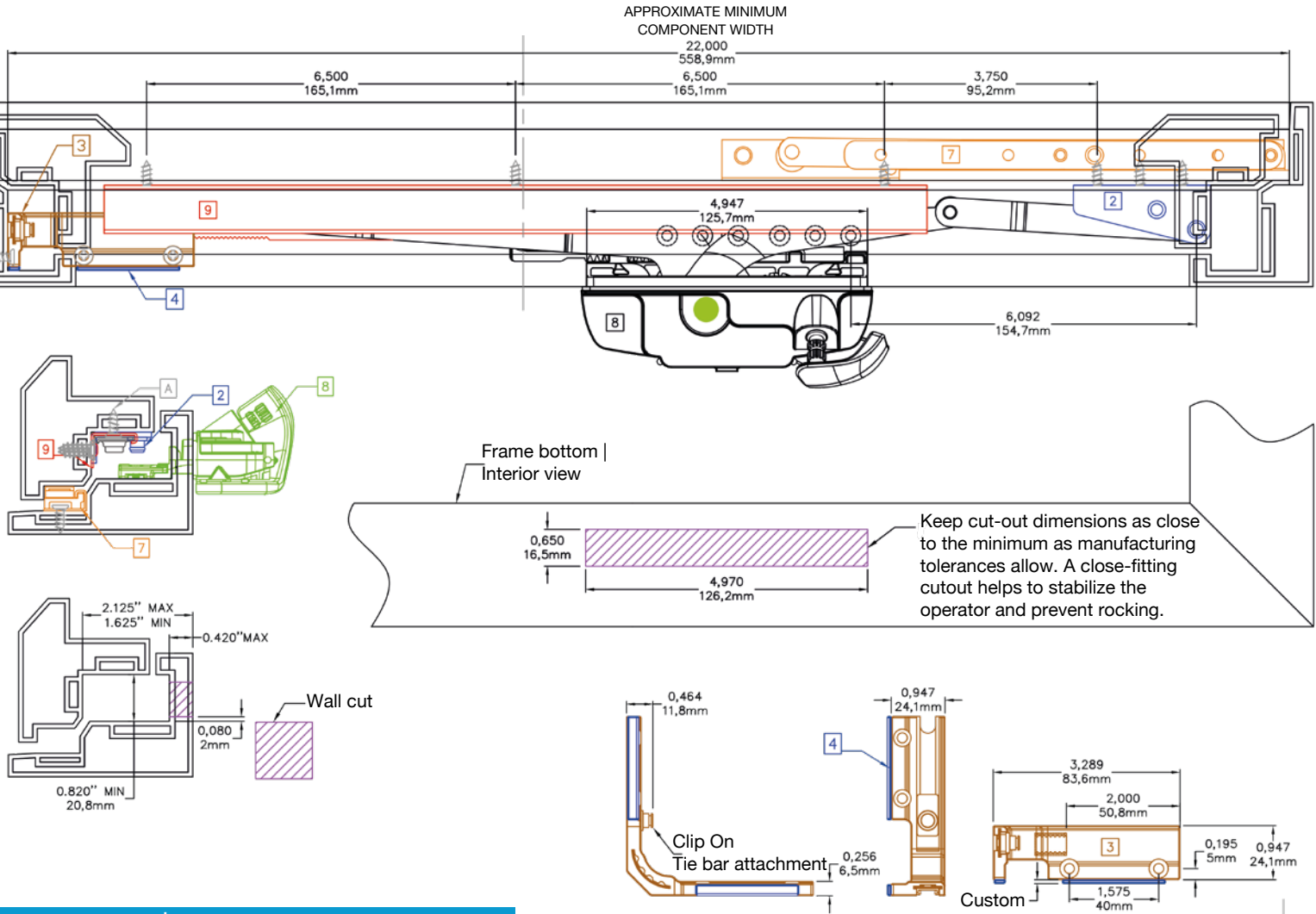
DIMENSION A		LINK PART #	REMOVE LENGTH	DIMENSION B
From (Min)	To (Max)			
20.33" 529mm	21.10" 536mm	OPCA-LK-18-SS1	3.58" 91mm	14.82" 376.4mm
21.10" 536mm	21.61" 549mm		3.07" 78mm	15.33" 389.4mm
21.61" 549mm	22.13" 562mm		2.56" 65mm	15.84" 402.4mm
22.13" 562mm	22.64" 575mm		2.05" 52mm	16.35" 415.4mm
22.64" 575mm	23.15" 588mm		1.54" 39mm	16.87" 428.4mm
23.15" 588mm	23.66" 601mm		1.02" 26mm	17.38" 441.4mm
23.66" 601mm	24.17" 614mm		0.51" 13mm	17.89" 454.4mm
24.17" 614mm	24.69" 627mm		N/A	18.40" 467.4mm
24.69" 627mm	24.84" 631mm	OPCA-LK-22-SS1	4.09" 104mm	18.56" 471.3mm
24.84" 631mm	25.35" 644mm		3.58" 91mm	19.07" 484.3mm
25.35" 644mm	25.87" 657mm		3.07" 78mm	19.58" 497.3mm
25.87" 657mm	26.38" 670mm		2.56" 65mm	20.09" 510.3mm
26.38" 670mm	26.89" 683mm		2.05" 52mm	20.60" 523.3mm
26.89" 683mm	27.40" 696mm		1.54" 39mm	21.11" 536.3mm
27.40" 696mm	27.91" 709mm		1.02" 26mm	21.63" 549.3mm
27.91" 709mm	28.43" 722mm		0.51" 13mm	22.14" 562.3mm
28.43" 722mm	28.94" 735mm	OPCA-LK-25-SS1	N/A	22.65" 575.3mm
28.94" 735mm	29.21" 742mm		2.05" 52mm	22.91" 581.8mm
29.21" 742mm	29.72" 755mm		1.54" 39mm	23.42" 594.8mm
29.72" 755mm	30.24" 768mm		1.02" 26mm	23.93" 607.8mm
30.24" 768mm	30.75" 781mm		0.51" 13mm	24.44" 620.8mm
30.75" 781mm	31.26" 794mm		N/A	24.95" 633.8mm



10.1 Dual | Application (cont'd)



*Please note that the following drawings are only generics PVC drawings and that your actual application may vary depending on your extrusion profile. Contact a Radisson sales representative for further information.



10.2 Dual | Part list

- | | |
|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 2 OPS-10327 "L" shape snap-on stud bracket for LH operator | 7 BPRPS-5600-10GSS Adjustable 10" wash. hinge kit, snap-on LH |
| 3 OPCA-CD-400-070-LG Corner drive with 0.070" positioning bumper for left hand PHANTOM operator | 8 OPCS-403-LG-CP PHANTOM dual arm snap on operator left hand GD |
| 4 CD-SPC-070 0.070" corner drive plastic positioning bumper | 9 OPR-30603 Dual arm operator track |
| 6 OPCA-LK-10-SS1 10" link rod for PHANTOM operator | A Recommended screw: 10-12 large thread, flat undercut #7 |

415 Phantom Series

Washability Short Dual Arm

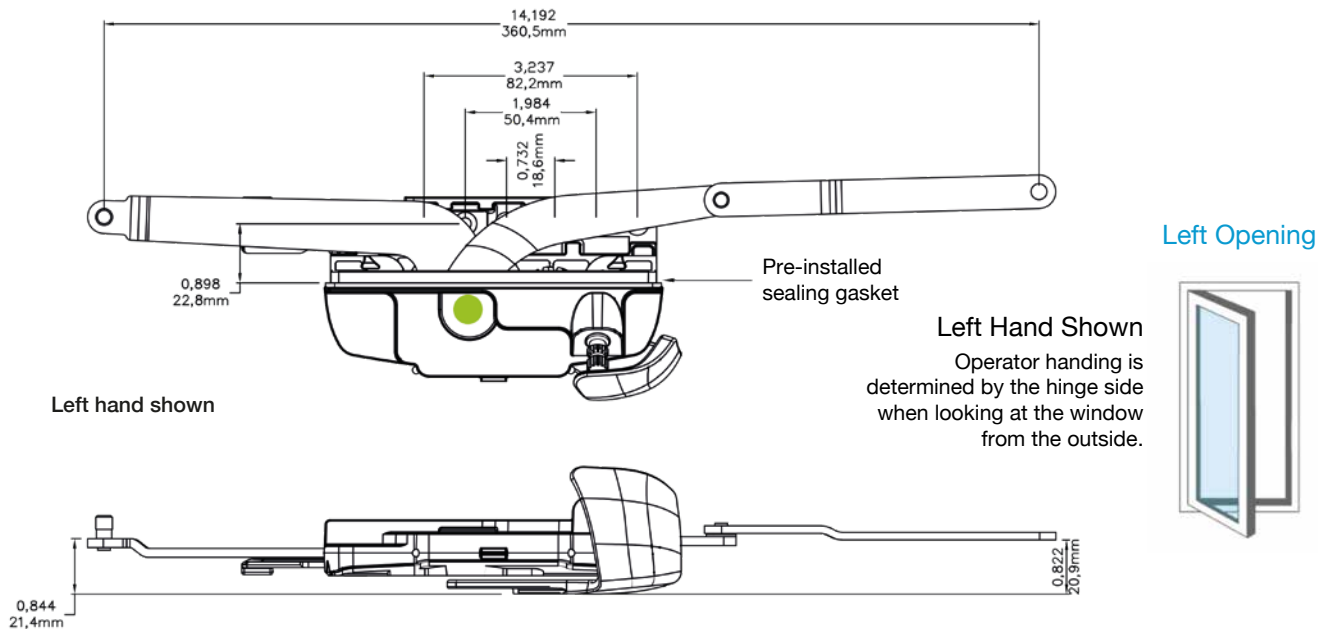
Designed for frames in widths from 19. to 24 inches.

Features

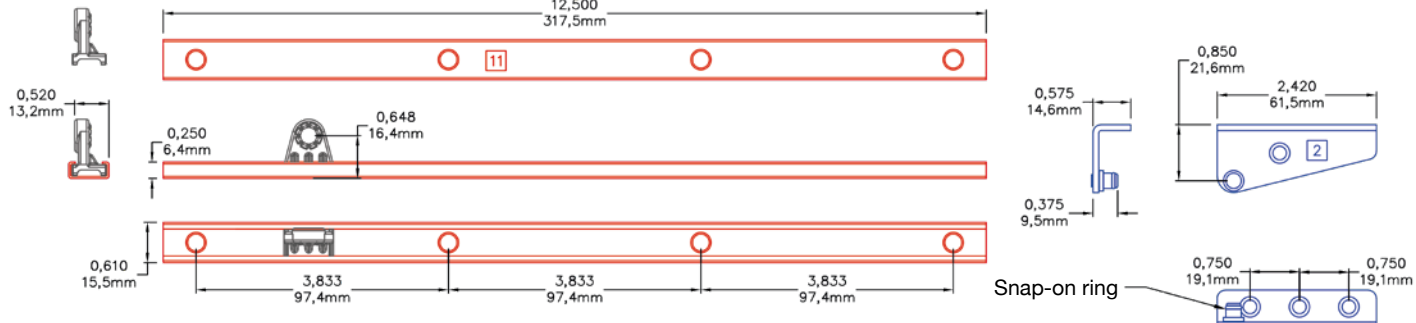
- Eliminates traditional locking handle
- Optimized precision mechanism thanks to the innovative patented design
- Snap-on cover allows for free installation and reduces inventory costs
- Snap-on feature for fast and secure operator attachment with sashes
- Optimized gear ratio to make operation easier and help meet ADA requirements
- Pre-installed gasket and optimized sealed housing to reduce risks of water and air infiltration
- Available in powder-coated steel or optional 304 austenitic stainless steel for coastal applications



11.0 Washability short dual | Specifications



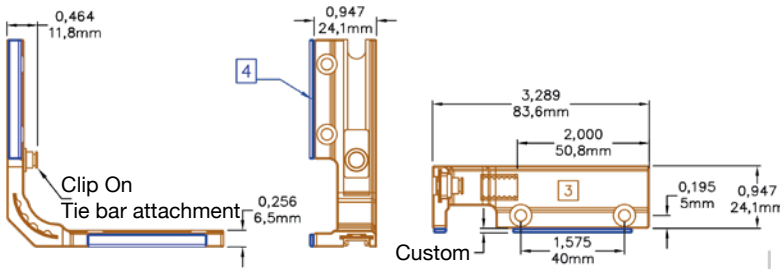
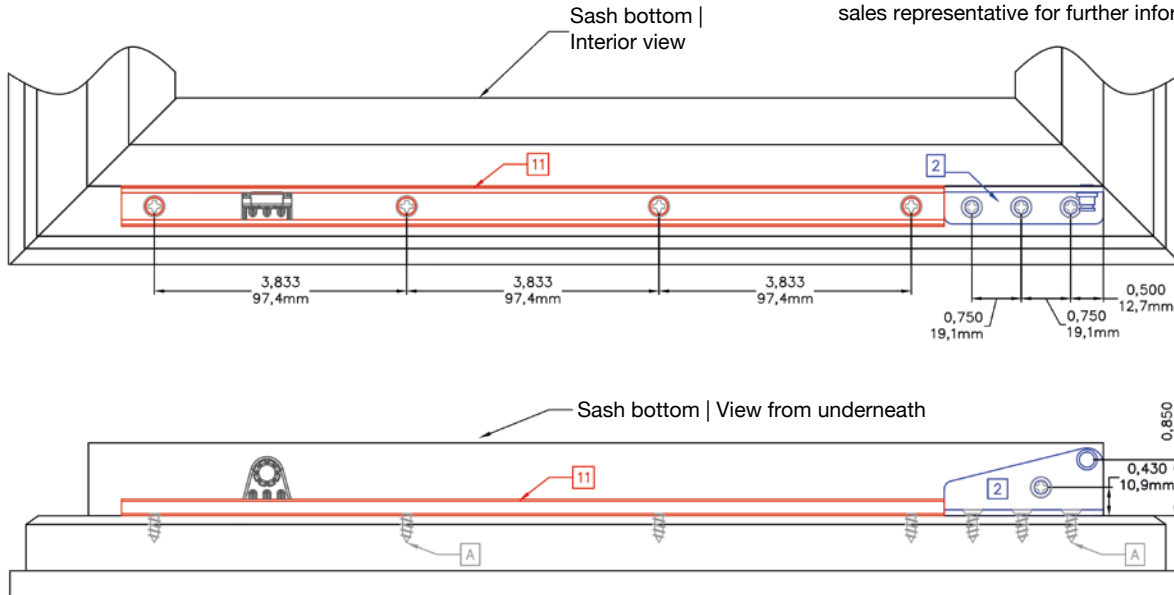
OPR-30615-SLD | Composite slider (pre-installed)



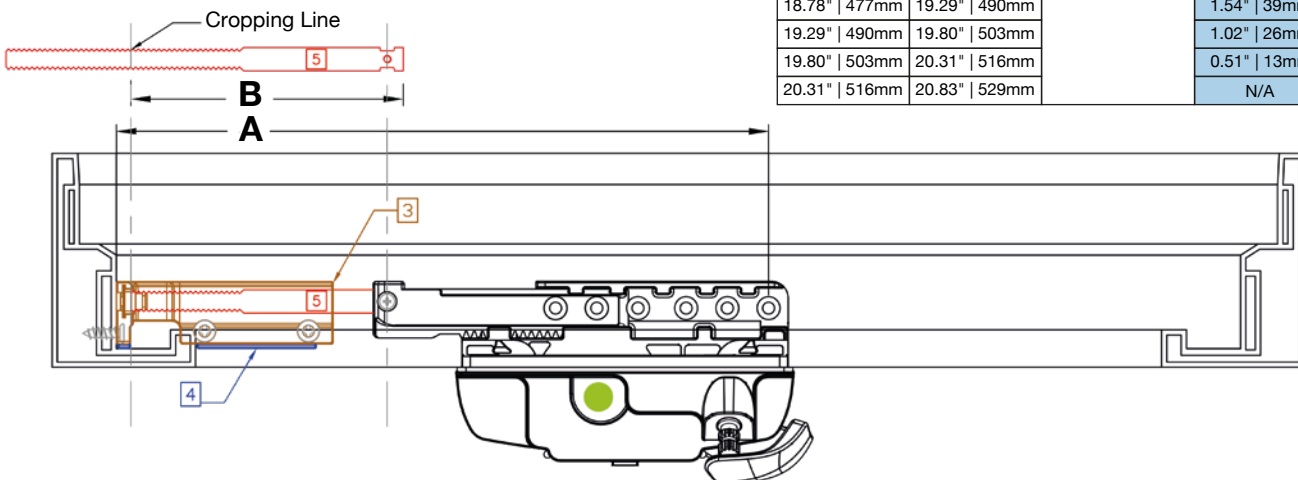
11.1 Washability short dual | Application



*Please note that the following drawings are only generic PVC drawings and that your actual application may vary depending on your extrusion profile. Contact a Radisson sales representative for further information.



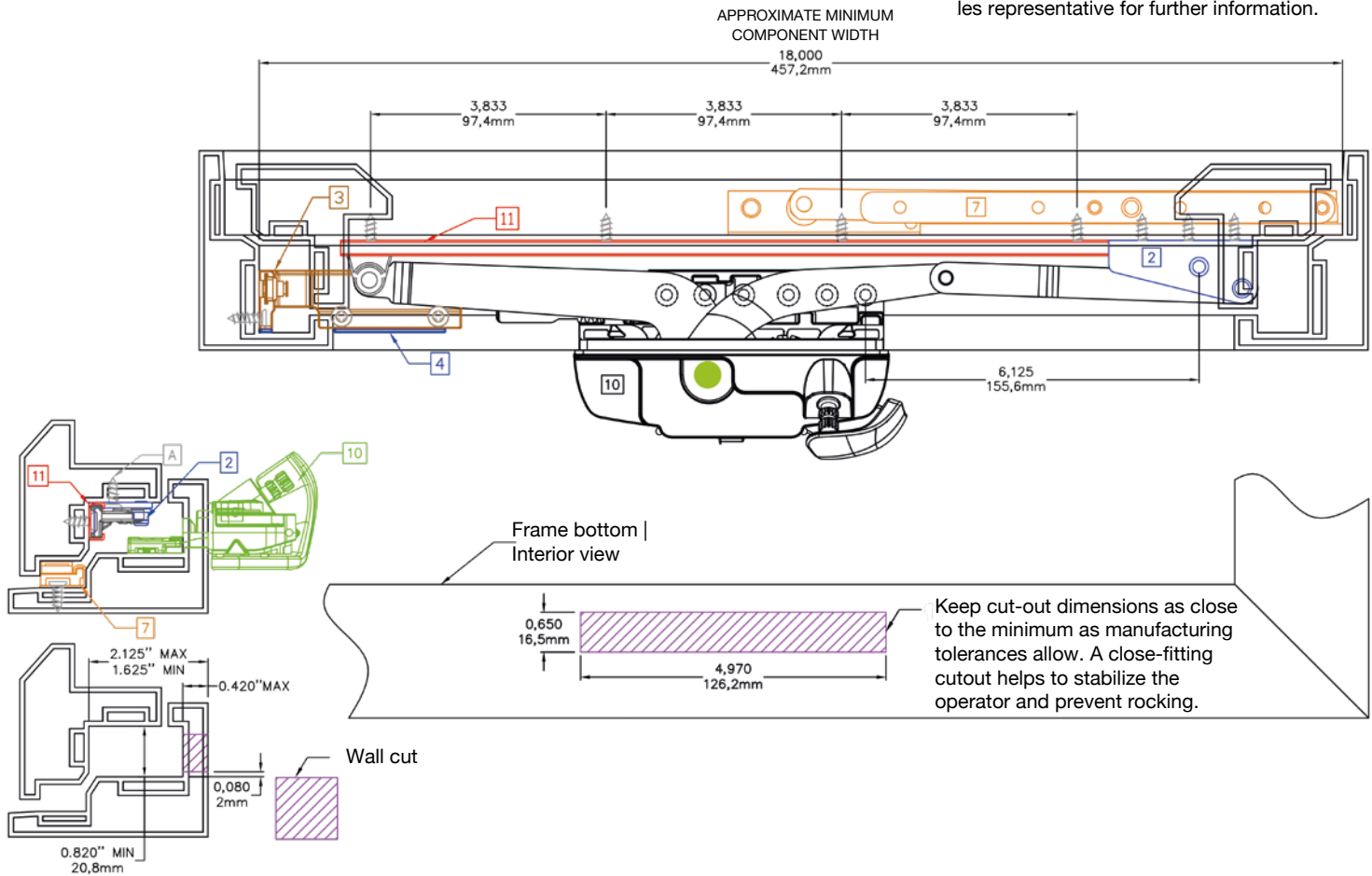
WASHABILITY SHORT DUAL ARM - LINK CUTTING CHART				
DIMENSION A		LINK PART #	REMOVE LENGTH	DIMENSION B
From (Min)	To (Max)			
14.61" 371mm	10.79" 384mm	OPCA-LK-06-SS1	1.54" 39mm	4.50" 114.2mm
15.12" 384mm	11.30" 397mm		1.02" 26mm	5.01" 127.2mm
15.63" 397mm	11.81" 410mm		0.51" 13mm	5.52" 140.2mm
16.14" 410mm	12.32" 313mm		N/A	6.03" 153.2mm
12.32" 313mm	12.56" 319mm	OPCA-LK-10-SS1	4.09" 104mm	6.28" 159.4mm
12.56" 319mm	13.07" 332mm		3.58" 91mm	6.79" 172.4mm
13.07" 332mm	13.58" 345mm		3.07" 78mm	7.30" 185.4mm
13.58" 345mm	14.09" 358mm		2.56" 65mm	7.81" 198.4mm
14.09" 358mm	14.61" 371mm		2.05" 52mm	8.32" 211.4mm
14.61" 371mm	15.12" 384mm		1.54" 39mm	8.83" 224.4mm
15.12" 384mm	15.63" 397mm		1.02" 26mm	9.35" 237.4mm
15.63" 397mm	16.14" 410mm		0.51" 13mm	9.86" 250.4mm
16.14" 410mm	16.65" 423mm	OPCA-LK-14-SS1	N/A	10.37" 263.4mm
16.65" 423mm	16.73" 425mm		4.09" 104mm	10.45" 265.4mm
16.73" 425mm	17.24" 438mm		3.58" 91mm	10.96" 278.4mm
17.24" 438mm	17.76" 451mm		3.07" 78mm	11.47" 291.4mm
17.76" 451mm	18.27" 464mm		2.56" 65mm	11.98" 304.4mm
18.27" 464mm	18.78" 477mm		2.05" 52mm	12.50" 317.4mm
18.78" 477mm	19.29" 490mm		1.54" 39mm	13.01" 330.4mm
19.29" 490mm	19.80" 503mm		1.02" 26mm	13.52" 343.4mm
19.80" 503mm	20.31" 516mm		0.51" 13mm	14.03" 356.4mm
20.31" 516mm	20.83" 529mm		N/A	14.54" 369.4mm



11.1 Washability short dual | Application (cont'd)



*Please note that the following drawings are only generic PVC drawings and that your actual application may vary depending on your extrusion profile. Contact a Radisson les representative for further information.



11.2 Washability short dual | Part list

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>2 OPS-10327 "L" shape snap-on stud bracket for LH operator</p> <p>3 OPCA-CD-400-070-LG Corner drive with 0.070" positioning bumper for left hand PHANTOM operator</p> <p>4 CD-SPC-070 0.070" corner drive plastic positioning bumper</p> <p>6 OPCA-LK-10-SS1 10" link rod for PHANTOM operator</p> | <p>7 BPRPS-5600-10GSS Adjustable 10" wash. hinge kit, snap-on LH</p> <p>8 OPCS-415-LG-CP PHANTOM Washability short dual arm snap on operator left hand GD</p> <p>9 OPR-30615 Dual arm operator track</p> <p>A Recommended screw: 10-12 large thread, flat undercut #7</p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

11.3 Dual arms | Ordering

*The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.

Operators





Part Number	Description	Box/Qty.
OPCA-403-RD- XXX-YYY	PHANTOM dual arm, right hand RED dot operator	20
OPCA-403-LG- XXX-YYY	PHANTOM dual arm, left hand GREEN dot operator	20
OPCA-415-RD- XXX-YYY	PHANTOM washability short dual arm, right hand RED dot operator	20
OPCA-415-LG- XXX-YYY	PHANTOM washability short dual arm, left hand GREEN dot operator	20

Replace the variable **XXX** with the desired value to specify material:

CP = Standard powder-coated
SS1 = Optional 304 austenitic
(coastal applications)

Replace the variable **YYY** to specify colors or finishes. (See color chart on page 28)

Accessories

Part Number	Description	Box/Qty.
OPR-30603-SS W	Stainless steel dual arm operator track 	100
OPR-30615-SS W	Stainless steel washability short dual arm operator track 	100
OPR-30603-SLD	Spare plastic shoe slider for dual and egress short dual arm operator track 	100
OPR-30615-SLD	Spare plastic shoe slider for washability short dual arm operator track 	100
OPCA-CD-400- AAA -LG	Corner drive for left hand PHANTOM operator	100
OPCA-CD-400- AAA -RD	Corner drive for right hand PHANTOM operator	100
OPCA-LK-06-SS1	6" link rod for PHANTOM operator	50
OPCA-LK-10-SS1	10" link rod for PHANTOM operator	50
OPCA-LK-14-SS1	14" link rod for PHANTOM operator	50
OPCA-LK-18-SS1	18" link rod for PHANTOM operator	50
OPCA-LK-22-SS1	22" link rod for PHANTOM operator	50
OPCA-LK-25-SS1	25" link rod for PHANTOM operator	50
OPS-10326- ZZ	"L" shape snap-on stud bracket for right hand operator	200
OPS-10327- ZZ	"L" shape snap-on stud bracket for left hand operator	200

Replace the variable **AAA** with the desired value to specify positioning bumper thickness.

Replace the variable **ZZ** with the desired value to specify material:

Blank = Standard powder-coated
SS = Optional 304 austenitic
(coastal applications)

Replace the variable **W** with the desired value to specify material:

2 = Standard 430 stainless steel
1 = Optional 304 austenitic stainless steel (coastal applications)

406 Phantom Series

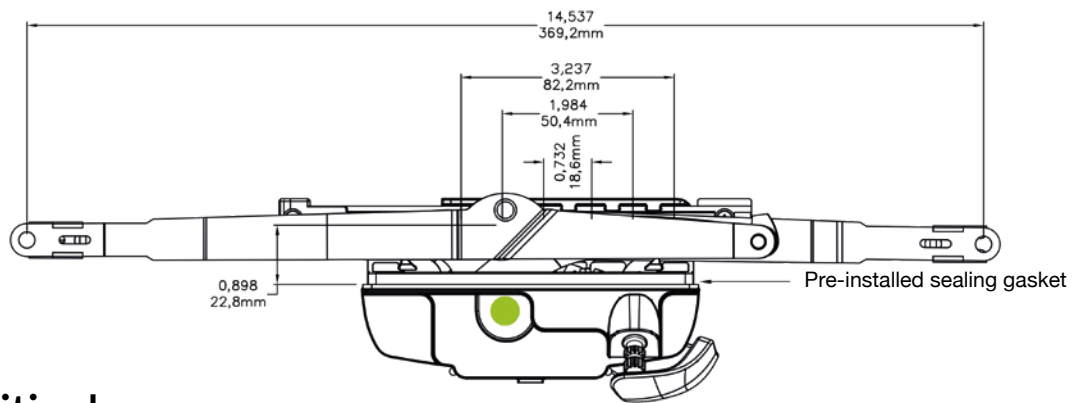
Awning

Designed for frames in widths from 20. to 60 inches.

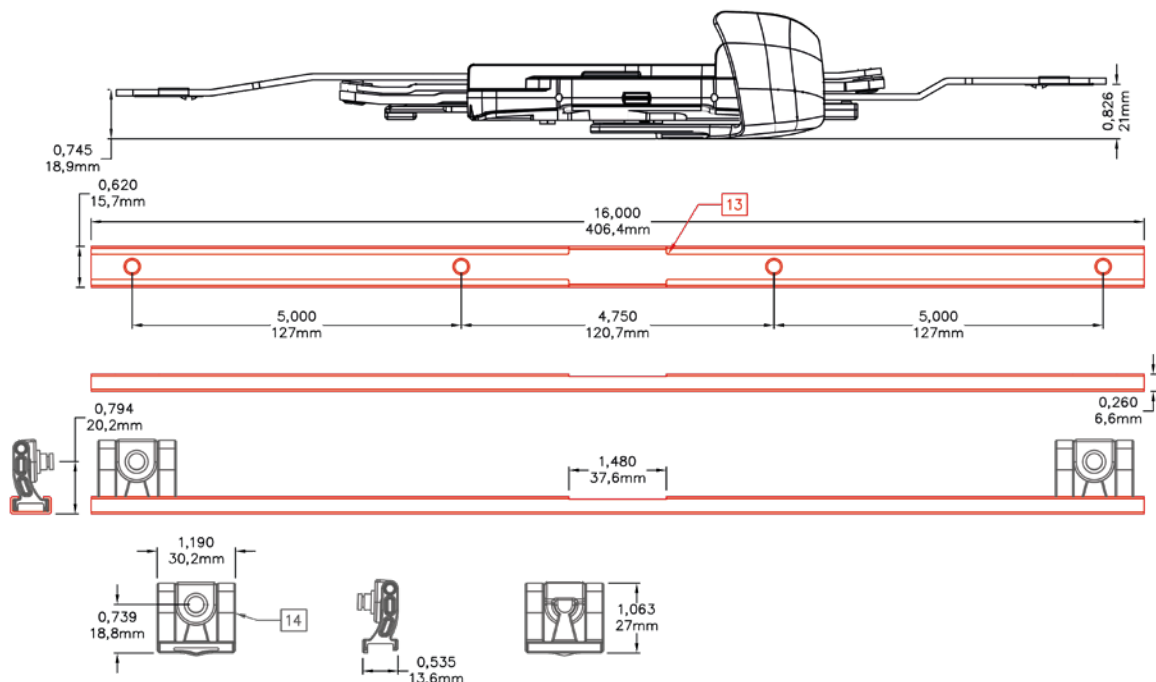
Features

- Eliminates traditional locking handle
- Optimized precision mechanism thanks to the innovative patented design
- Snap-on cover allows for free installation and reduces inventory costs
- Snap-on feature for fast and secure operator attachment with sashes
- Optimized gear ratio to make operation easier and help meet ADA requirements
- Pre-installed gasket and optimized sealed housing to reduce risks of water and air infiltration
- Available in powder-coated steel or optional 304 austenitic stainless steel for coastal applications

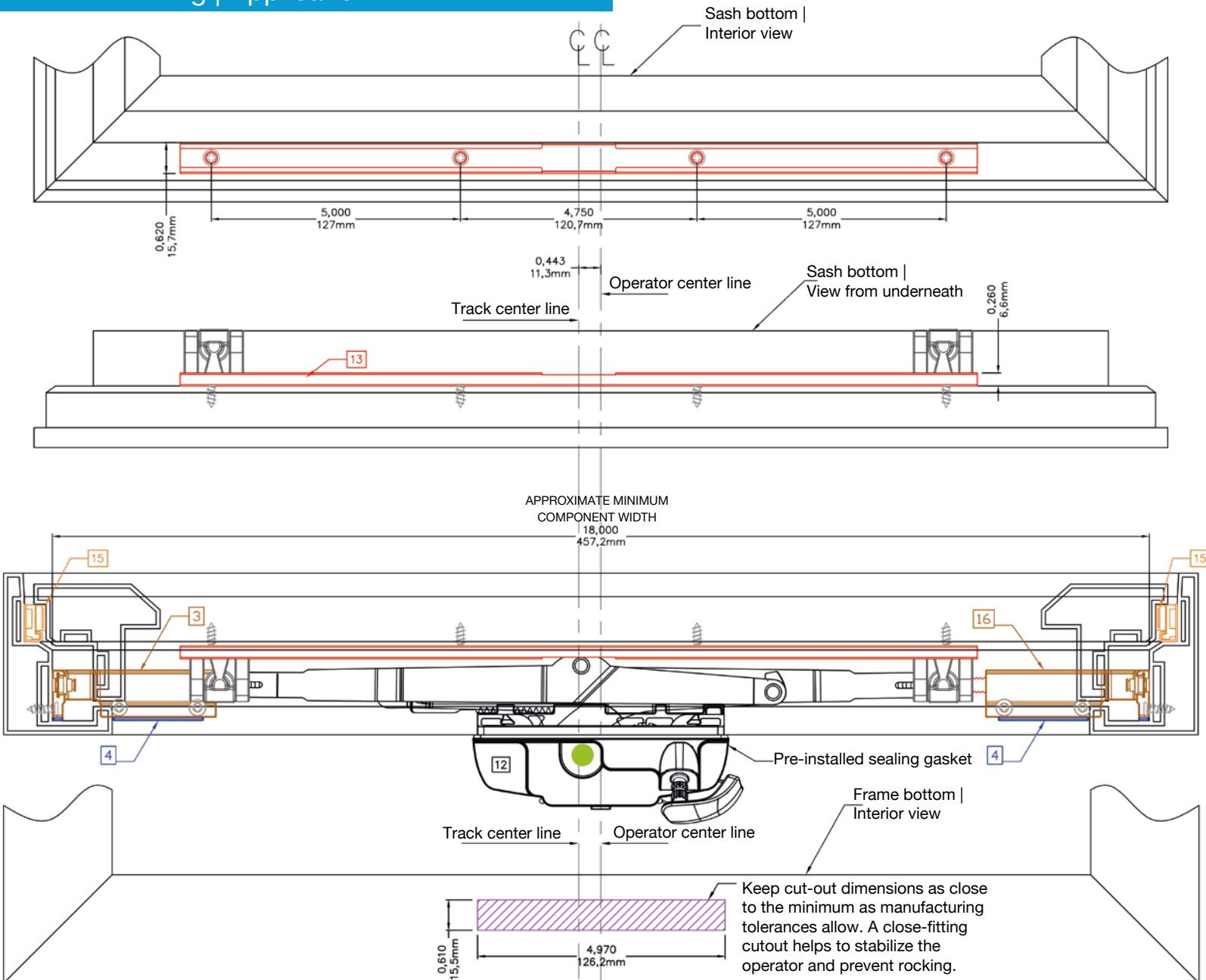
12.0 Awning | Specifications



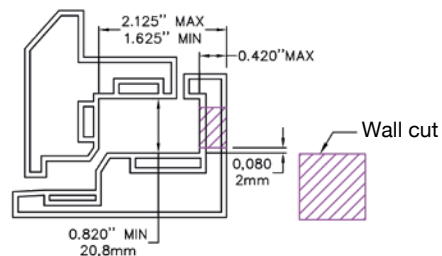
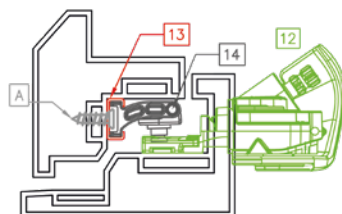
 **Easy Transition!**



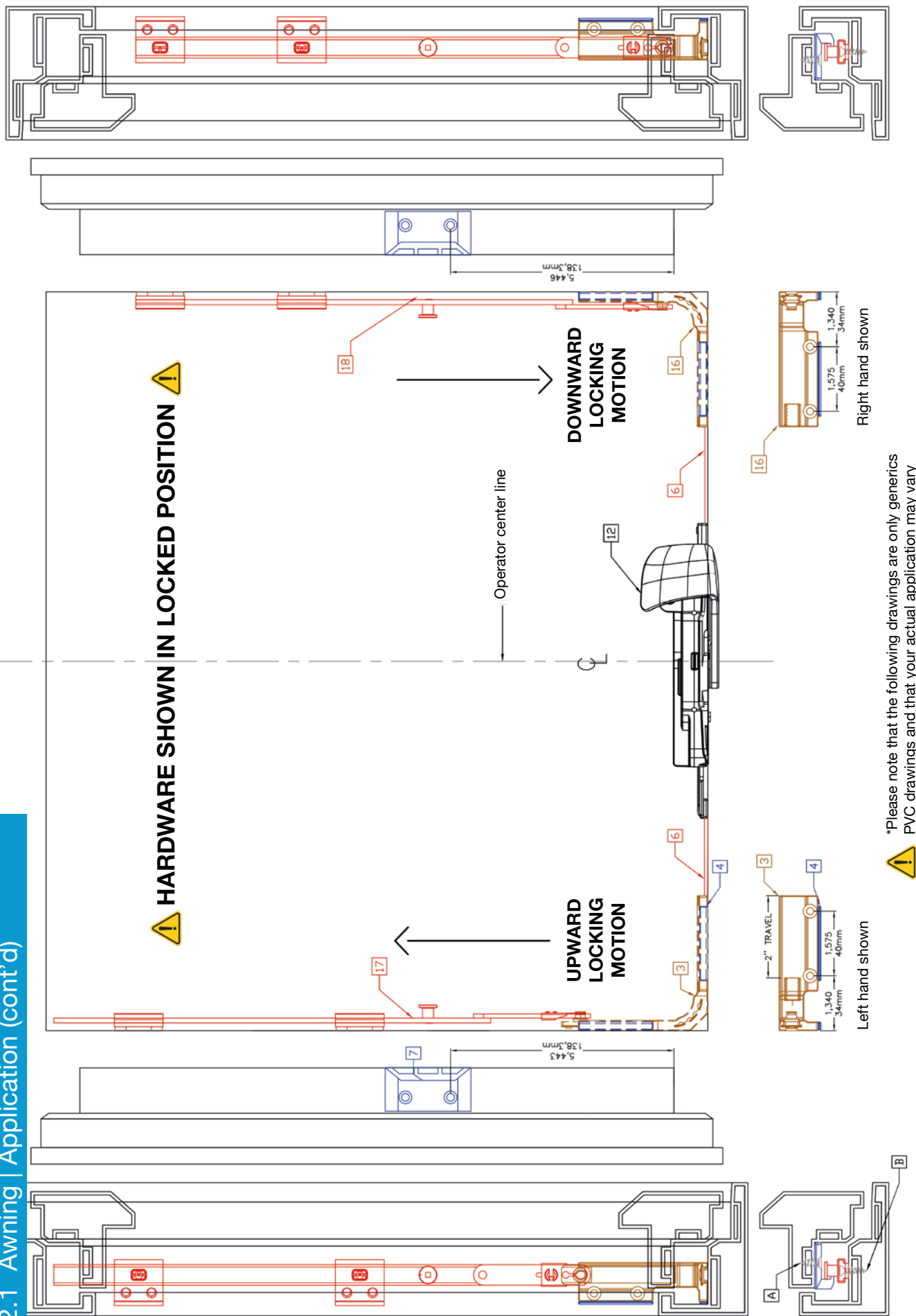
12.1 Awning | Application



*Please note that the following drawings are only generics PVC drawings and that your actual application may vary depending on your extrusion profile. Contact a Radisson sales representative for further information.



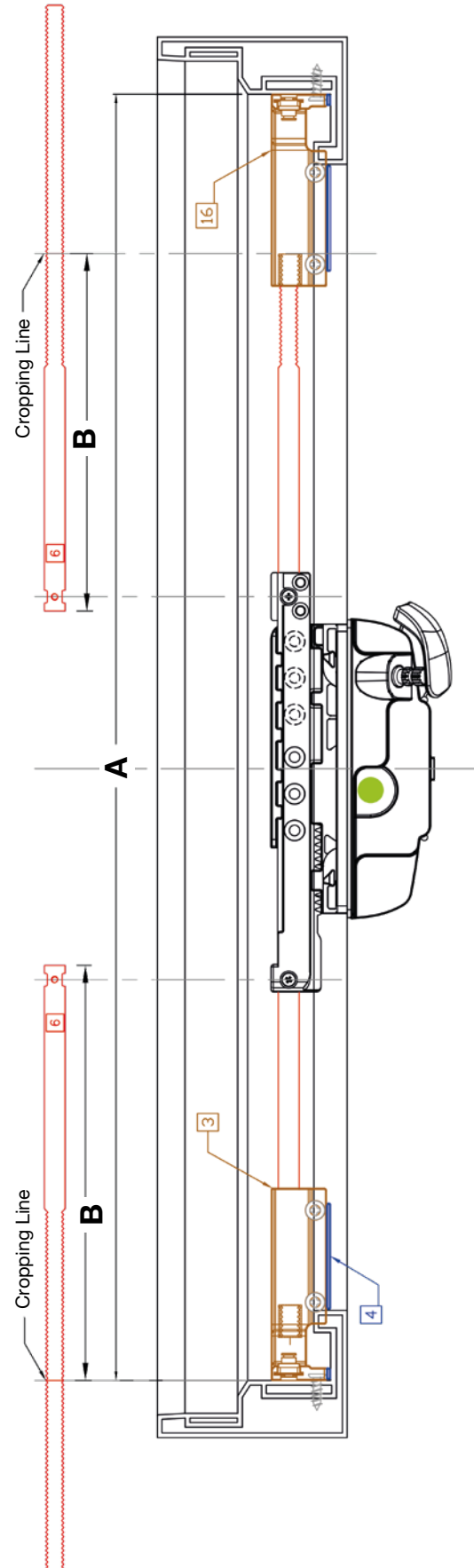
12.1 Awning | Application (cont'd)



! *Please note that the following drawings are only generics PVC drawings and that your actual application may vary depending on your extrusion profile. Contact a Radisson sales representative for further information.

12.1 Awning | Application (cont'd)

OPA-406 AWNING LINK CUTTING CHART						
DIMENSION A		LINK PART #	UPWARD MOTION		DOWNWARD MOTION	
From (Min)	To (Max)		REMOVE LENGTH	DIMENSION B	REMOVE LENGTH	DIMENSION B
17.99" 457mm	18.23" 463mm	OPCA-LK-06-SS1	1.02" 26mm	5.01" 127.2mm	2.24" 57mm	3.79" 96.2mm
18.23" 463mm	19.25" 489mm		0.51" 13mm	5.52" 140.2mm	1.73" 44mm	4.30" 109.2mm
19.25" 489mm	20.28" 515mm		N/A	6.03" 153.2mm	1.26" 32mm	4.77" 121.2mm
20.28" 515mm	20.75" 527mm	OPCA-LK-10-SS1	4.09" 104mm	6.28" 159.4mm	5.24" 133mm	5.13" 130.4mm
20.75" 527mm	21.77" 553mm		3.58" 91mm	6.79" 172.4mm	4.76" 121mm	5.61" 142.4mm
21.77" 553mm	22.80" 579mm		3.07" 78mm	7.30" 185.4mm	4.25" 108mm	6.12" 155.4mm
22.80" 579mm	23.82" 605mm		2.56" 65mm	7.81" 198.4mm	3.74" 95mm	6.63" 168.4mm
23.82" 605mm	24.84" 631mm		2.05" 52mm	8.32" 211.4mm	3.27" 83mm	7.10" 180.4mm
24.84" 631mm	25.87" 657mm		1.54" 39mm	8.83" 224.4mm	2.76" 70mm	7.61" 193.4mm
25.87" 657mm	26.89" 683mm		1.02" 26mm	9.35" 237.4mm	2.24" 57mm	8.13" 206.4mm
26.89" 683mm	27.91" 709mm		0.51" 13mm	9.86" 250.4mm	1.73" 44mm	8.64" 219.4mm
27.91" 709mm	28.94" 735mm		N/A	10.37" 263.4mm	1.26" 32mm	9.11" 231.4mm
28.94" 735mm	29.09" 739mm		4.09" 104mm	10.45" 265.4mm	5.24" 133mm	9.31" 236.4mm
29.09" 739mm	30.91" 785mm		3.58" 91mm	10.96" 278.4mm	4.76" 121mm	9.78" 248.4mm
30.91" 785mm	31.14" 791mm		3.07" 78mm	11.47" 291.4mm	4.25" 108mm	10.29" 261.4mm
31.14" 791mm	32.17" 817mm	OPCA-LK-14-SS1	2.56" 65mm	11.98" 304.4mm	3.74" 95mm	10.80" 274.4mm
32.17" 817mm	33.19" 843mm		2.05" 52mm	12.50" 317.4mm	3.27" 83mm	11.28" 286.4mm
33.19" 843mm	34.21" 869mm		1.54" 39mm	13.01" 330.4mm	2.76" 70mm	11.79" 299.4mm
34.21" 869mm	35.24" 895mm		1.02" 26mm	13.52" 343.4mm	2.24" 57mm	12.30" 312.4mm
35.24" 895mm	36.26" 921mm		0.51" 13mm	14.03" 356.4mm	1.73" 44mm	12.81" 325.4mm
36.26" 921mm	37.28" 947mm		N/A	14.54" 369.4mm	1.26" 32mm	13.28" 337.4mm
37.28" 947mm	37.83" 961mm		3.58" 91mm	14.82" 376.4mm	4.76" 121mm	13.64" 346.4mm
37.83" 961mm	38.86" 987mm	OPCA-LK-18-SS1	3.07" 78mm	15.33" 389.4mm	4.25" 108mm	14.15" 359.4mm
38.86" 987mm	39.88" 1013mm		2.56" 65mm	15.84" 402.4mm	3.74" 95mm	14.66" 372.4mm
39.88" 1013mm	40.91" 1039mm		2.05" 52mm	16.35" 415.4mm	3.27" 83mm	15.13" 384.4mm
40.91" 1039mm	41.93" 1065mm		1.54" 39mm	16.87" 428.4mm	2.76" 70mm	15.65" 397.4mm
41.93" 1065mm	42.95" 1091mm		1.02" 26mm	17.38" 441.4mm	2.24" 57mm	16.16" 410.4mm
42.95" 1091mm	43.98" 1117mm		0.51" 13mm	17.89" 454.4mm	1.73" 44mm	16.67" 423.4mm
43.98" 1117mm	45.00" 1143mm		N/A	18.40" 467.4mm	1.26" 32mm	17.14" 435.4mm
45.00" 1143mm	46.34" 1177mm	OPCA-LK-22-SS1	3.58" 91mm	19.07" 484.3mm	4.76" 121mm	17.89" 454.3mm
46.34" 1177mm	47.36" 1203mm		3.07" 78mm	19.58" 497.3mm	4.25" 108mm	18.40" 467.3mm
47.36" 1203mm	48.39" 1229mm		2.56" 65mm	20.09" 510.3mm	3.74" 95mm	18.91" 480.3mm
48.39" 1229mm	49.41" 1255mm		2.05" 52mm	20.60" 523.3mm	3.27" 83mm	19.38" 492.3mm
49.41" 1255mm	50.43" 1281mm		1.54" 39mm	21.11" 536.3mm	2.76" 70mm	19.89" 505.3mm
50.43" 1281mm	51.46" 1307mm		1.02" 26mm	21.63" 549.3mm	2.24" 57mm	20.41" 518.3mm
51.46" 1307mm	52.48" 1333mm		0.51" 13mm	22.14" 562.3mm	1.73" 44mm	20.92" 531.3mm
52.48" 1333mm	53.50" 1359mm		N/A	22.65" 575.3mm	1.26" 32mm	21.39" 543.3mm
53.50" 1359mm	54.02" 1372mm	OPCA-LK-25-SS1	2.05" 52mm	22.91" 581.8mm	3.27" 83mm	21.69" 550.8mm
54.02" 1372mm	55.04" 1398mm		1.54" 39mm	23.42" 594.8mm	2.76" 70mm	22.20" 563.8mm
55.04" 1398mm	56.06" 1424mm		1.02" 26mm	23.93" 607.8mm	2.24" 57mm	22.71" 576.8mm
56.06" 1424mm	57.09" 1450mm		0.51" 13mm	24.44" 620.8mm	1.73" 44mm	23.22" 589.8mm
57.09" 1450mm	58.11" 1476mm		N/A	24.95" 633.8mm	1.26" 32mm	23.69" 601.8mm



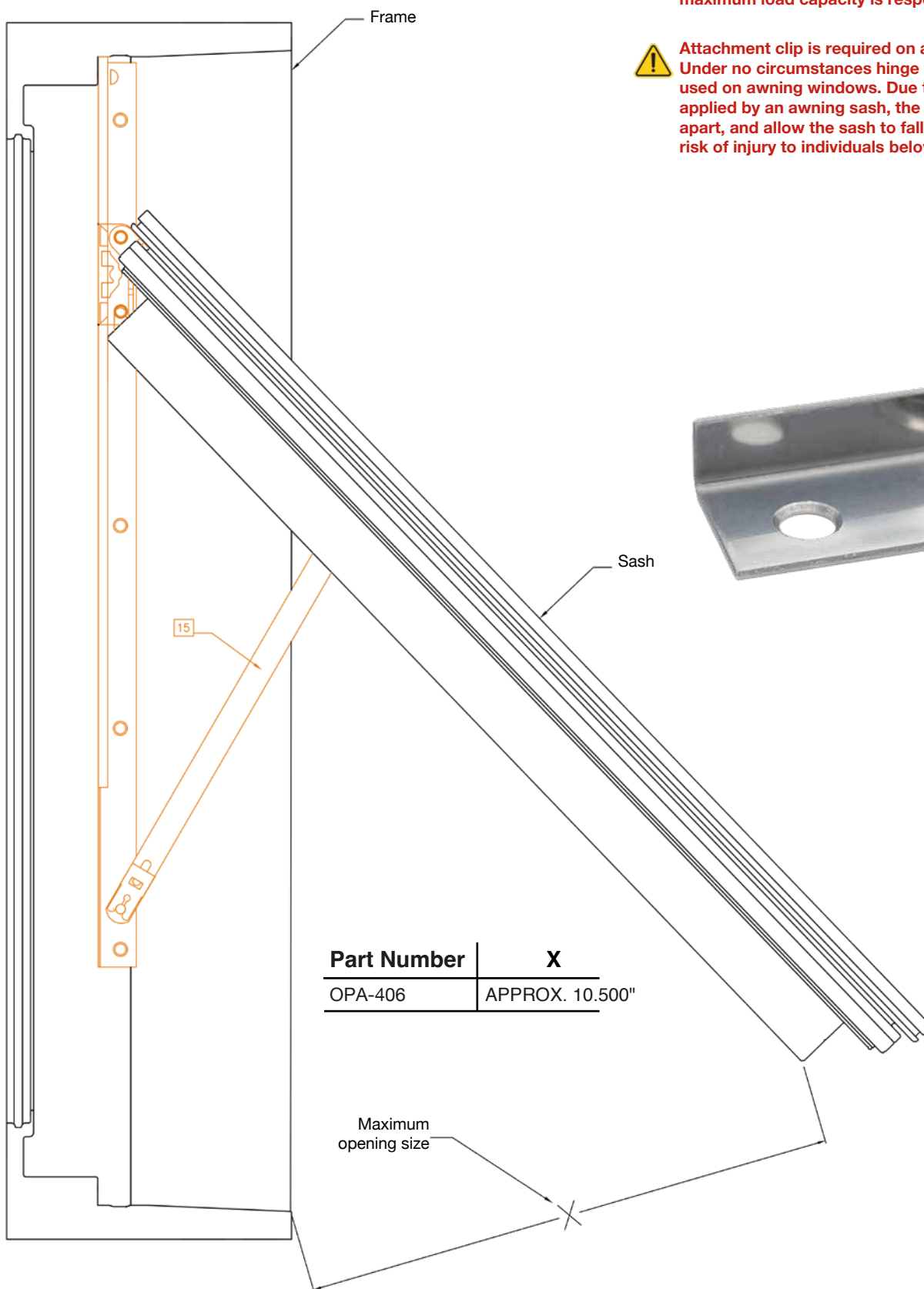
12.2 Awnings | Maximum opening



Please refer to awning hinge technical spec sheet to ensure proper hardware is used and recommended maximum load capacity is respected. (Page 34)



Attachment clip is required on awning window hinges. Under no circumstances hinge with a snap-on stud be used on awning windows. Due to the rotational forces applied by an awning sash, the snap stud can work its way apart, and allow the sash to fall out, representing a serious risk of injury to individuals below.



12.3 Awning | Part list

12	OPA-406-CP PHANTOM awning operator	4	CD-SPC-070 0.070" corner drive plastic positioning bumper
13	OPR-30606-SS2 Stainless steel awning operator track	6	OPCA-LK-10-SS1 10" link rod for PHANTOM operator
14	OPR-30606-SLD Plastic shoe slider for awning operator track	15	BPRP-5100-18 Awning 2-bar hinge kit, right and left hand
3	OPCA-CD-400-070-LG Corner drive with 0.070" positioning bumper for left hand PHANTOM operator	17	FM-ILA20-SS2-099LG Left hand awning tie bar
16	OPCA-CD-400-070-RD Corner drive with 0.070" positioning bumper for right hand PHANTOM operator	18	FM-IL20-SS2-099RG Right hand awning tie bar
A	Recommended screw: 10-12 large thread, flat undercut #7	B	Recommended screw: 6-10 x 5/8, wood screw, flat head

12.4 Awning | Ordering

**The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.*

Operators



Part Number	Description	Box/Qty.
OPCA-406-XXX-YYY	Awning PHANTOM GREEN dot operator	20

Replace the variable **XXX** with the desired value to specify material:

CP = Standard powder-coated
SS1 = Optional 304 austenitic
(coastal applications)

Replace the variable **YYY** to specify colors or finishes. (See color chart on page 28)

Accessories

Part Number	Description	Box/Qty.
OPR-30606-SSW	Stainless steel awning operator track 	100
OPR-30606-SLD	Plastic shoe slider for awning operator track 	200
OPCA-CD-400-AAA-LG	Corner drive for left hand PHANTOM operator	100
OPCA-CD-400-AAA-RD	Corner drive for right hand PHANTOM operator	100
OPCA-LK-06-SS1	6" link rod for PHANTOM operator	50
OPCA-LK-10-SS1	10" link rod for PHANTOM operator	50
OPCA-LK-14-SS1	14" link rod for PHANTOM operator	50
OPCA-LK-18-SS1	18" link rod for PHANTOM operator	50
OPCA-LK-22-SS1	22" link rod for PHANTOM operator	50
OPCA-LK-25-SS1	25" link rod for PHANTOM operator	50

Replace the variable **AAA** with the desired value to specify positioning bumper thickness.

Replace the variable **ZZ** with the desired value to specify material:

Blank = Standard powder-coated
SS = Optional 304 austenitic
(coastal applications)

Replace the variable **W** with the desired value to specify material:

2 = Standard 430 stainless steel
1 = Optional 304 austenitic stainless steel (coastal applications)

13.0 Cover and handle | Specifications

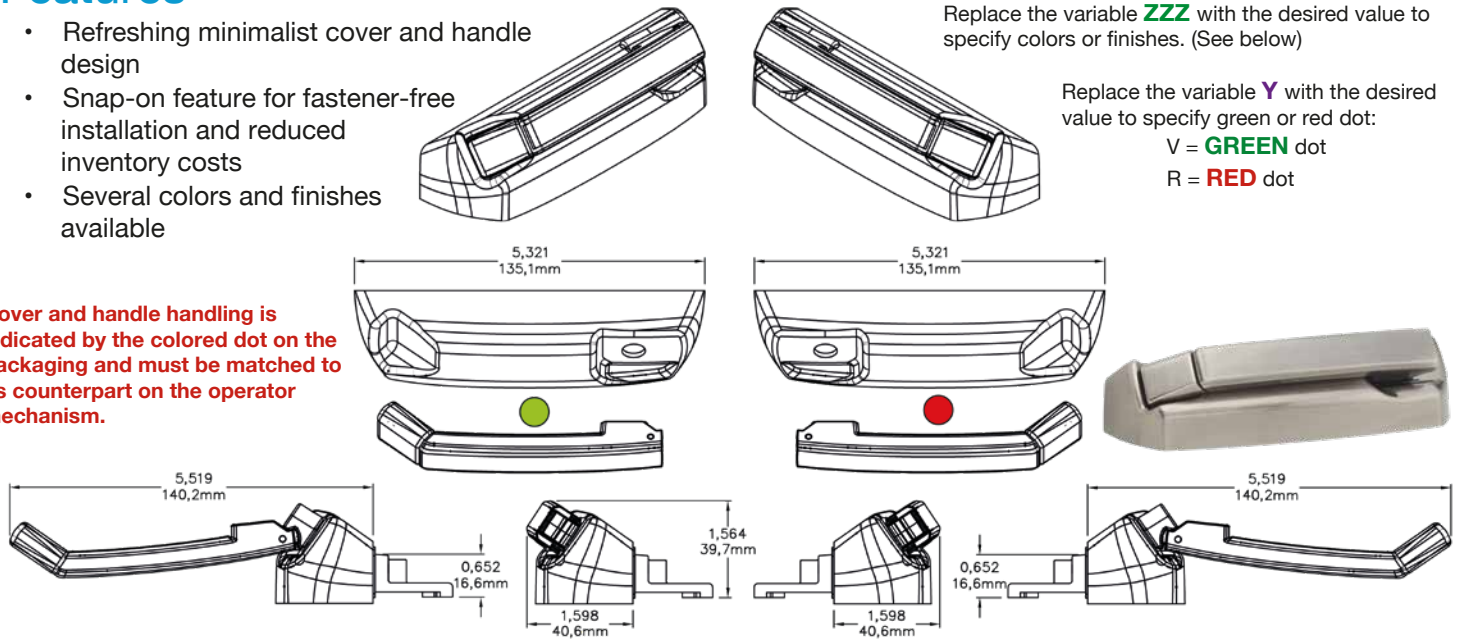
30720 Series

Contemporary Features

- Refreshing minimalist cover and handle design
- Snap-on feature for fastener-free installation and reduced inventory costs
- Several colors and finishes available



Cover and handle handling is indicated by the colored dot on the packaging and must be matched to its counterpart on the operator mechanism.



13.1 Cover and handle | Ordering

*The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.

Part Number	Description	Box/Qty.
OP-30730Y- ZZZ	Traditional plastic cover and handle for PHANTOM operator	100

Replace the variable **ZZZ** with the desired value to specify colors or finishes. (See below)

Replace the variable **Y** with the desired value to specify green or red dot:

V = **GREEN** dot

R = **RED** dot

13.2 Colors and finishes



The perception of colors by the human eye varies from one individual to another. Colors and finishes shown below are for illustrative purposes only and should be used solely for general guidance.

Actual colors and finishes may vary depending on the shape of the product, its composition, and the brightness of the light to which it is exposed. Contact a Radisson Industries representative for an actual sample and stock availability.

Powder-Coated Finishes

179 Blue White	101 Cocoa Brown	087 Gold Tone	114 Sandstone	FB Faux Oil Rubbed	300 West Coast White
152 Euro White	112 Bronze	105 Clay	122 Sahara Beige	310 West Coast Beige	131 Black
185 White	113 Chestnut Bronze	119 Silver	191 Beige	161 Coppertone	

Decorative Finishes

117 Satin Nickel	118 Antique Brass	120 Bright Brass
135 Polished Chrome	210 Brushed Silver	200 Brushed Nickel
		115 Brushed Chrome

14.0 PHANTOM link rod | Ordering

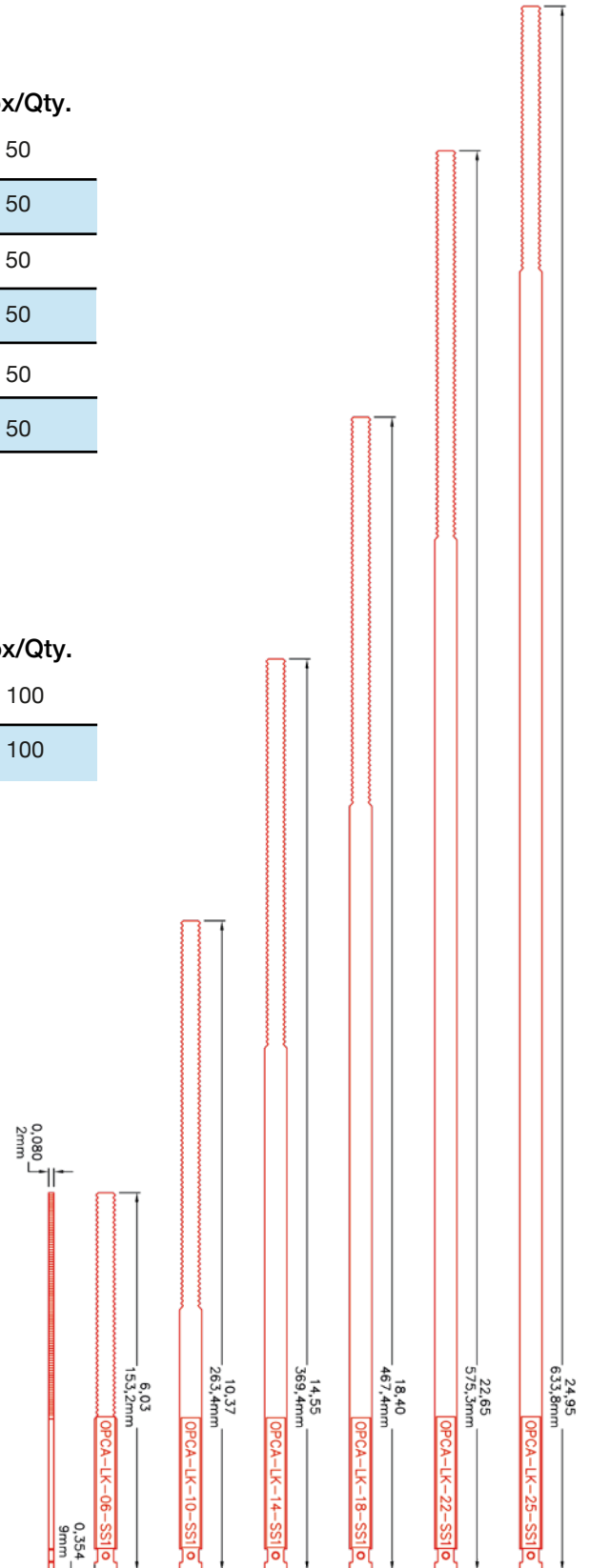
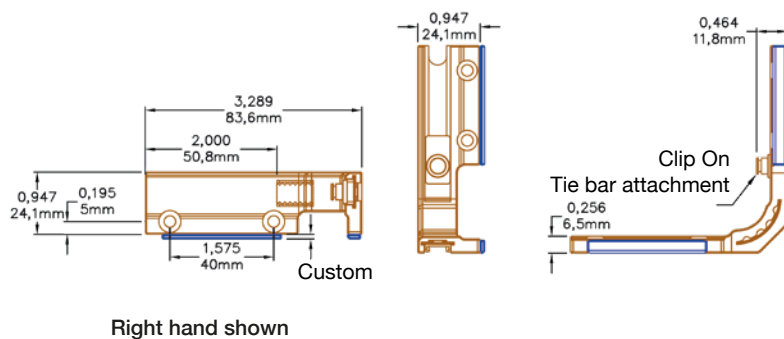
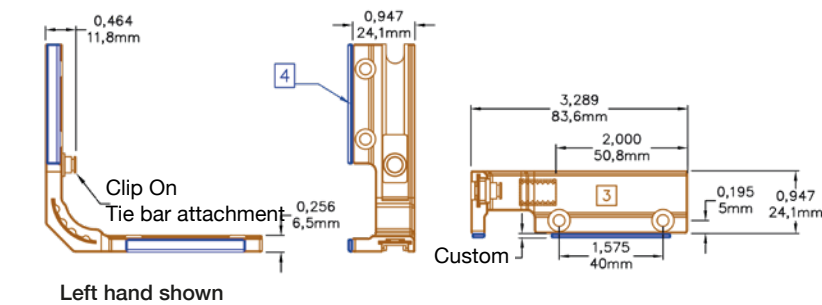
*The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.

Part Number	Description	Box/Qty.
OPCA-LK-06-SS1	6" link rod for PHANTOM operator	50
OPCA-LK-10-SS1	10" link rod for PHANTOM operator	50
OPCA-LK-14-SS1	14" link rod for PHANTOM operator	50
OPCA-LK-18-SS1	18" link rod for PHANTOM operator	50
OPCA-LK-22-SS1	22" link rod for PHANTOM operator	50
OPCA-LK-25-SS1	25" link rod for PHANTOM operator	50

14.1 PHANTOM Corner drive | Ordering

Part Number	Description	Box/Qty.
OPCA-CD-400- AAA -LG	Corner drive for left hand PHANTOM operator	100
OPCA-CD-400- AAA -RD	Corner drive for right hand PHANTOM operator	100

Replace the variable **AAA** with the desired value to specify positioning bumper thickness.

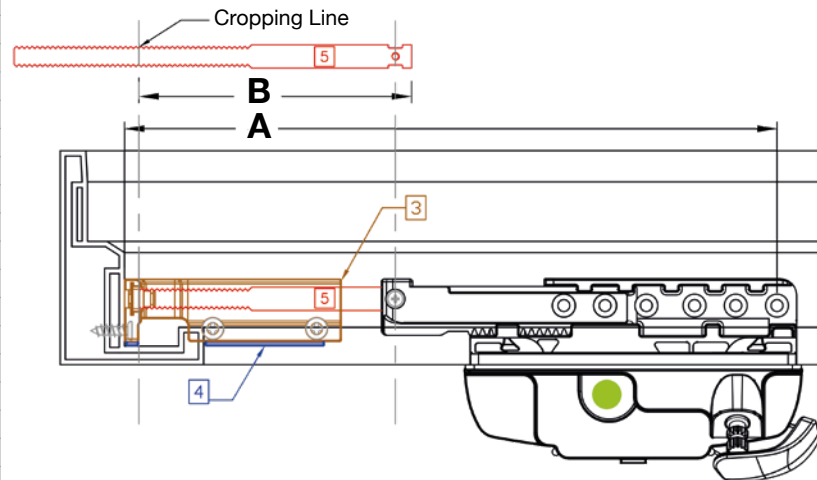


15.0 PHANTOM link rod cutting chart

OPCS-402 SHORT DYAD ARM - LINK CUTTING CHART				
DIMENSION A		LINK PART #	REMOVE LENGTH	DIMENSION B
From (Min)	To (Max)			
10.28" 261mm	10.79" 274mm	OPCA-LK-06-SS1	1.54" 39mm	4.50" 114.2mm
10.79" 274mm	11.30" 287mm		1.02" 26mm	5.01" 127.2mm
11.30" 287mm	11.81" 300mm		0.51" 13mm	5.52" 140.2mm
11.81" 300mm	12.32" 313mm		N/A	6.03" 153.2mm
12.32" 313mm	12.56" 319mm	OPCA-LK-10-SS1	4.09" 104mm	6.28" 159.4mm
12.56" 319mm	13.07" 332mm		3.58" 91mm	6.79" 172.4mm
13.07" 332mm	13.58" 345mm		3.07" 78mm	7.30" 185.4mm
13.58" 345mm	14.09" 358mm		2.56" 65mm	7.81" 198.4mm
14.09" 358mm	14.61" 371mm		2.05" 52mm	8.32" 211.4mm
14.61" 371mm	15.12" 384mm		1.54" 39mm	8.83" 224.4mm
15.12" 384mm	15.63" 397mm		1.02" 26mm	9.35" 237.4mm
15.63" 397mm	16.14" 410mm		0.51" 13mm	9.86" 250.4mm
16.14" 410mm	16.65" 423mm		N/A	10.37" 263.4mm

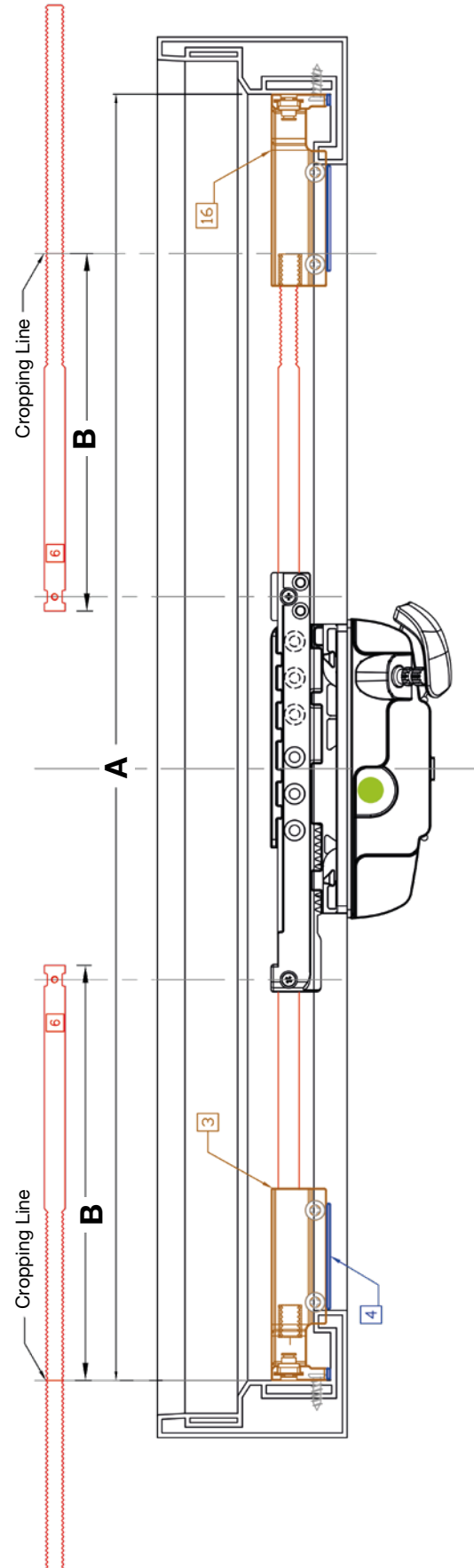
OPCS-403 DUAL ARM - LINK CUTTING CHART				
DIMENSION A		LINK PART #	REMOVE LENGTH	DIMENSION B
From (Min)	To (Max)			
14.61" 371mm	15.12" 384mm	OPCA-LK-10-SS1	1.54" 39mm	8.83" 224.4mm
15.12" 384mm	15.63" 397mm		1.02" 26mm	9.35" 237.4mm
15.63" 397mm	16.14" 410mm		0.51" 13mm	9.86" 250.4mm
16.14" 410mm	16.65" 423mm		N/A	10.37" 263.4mm
16.65" 423mm	16.73" 425mm	OPCA-LK-14-SS1	4.09" 104mm	10.45" 265.4mm
16.73" 425mm	17.24" 438mm		3.58" 91mm	10.96" 278.4mm
17.24" 438mm	17.76" 451mm		3.07" 78mm	11.47" 291.4mm
17.76" 451mm	18.27" 464mm		2.56" 65mm	11.98" 304.4mm
18.27" 464mm	18.78" 477mm		2.05" 52mm	12.50" 317.4mm
18.78" 477mm	19.29" 490mm		1.54" 39mm	13.01" 330.4mm
19.29" 490mm	19.80" 503mm		1.02" 26mm	13.52" 343.4mm
19.80" 503mm	20.31" 516mm		0.51" 13mm	14.03" 356.4mm
20.31" 516mm	20.83" 529mm		N/A	14.54" 369.4mm
20.83" 529mm	21.10" 536mm	OPCA-LK-18-SS1	3.58" 91mm	14.82" 376.4mm
21.10" 536mm	21.61" 549mm		3.07" 78mm	15.33" 389.4mm
21.61" 549mm	22.13" 562mm		2.56" 65mm	15.84" 402.4mm
22.13" 562mm	22.64" 575mm		2.05" 52mm	16.35" 415.4mm
22.64" 575mm	23.15" 588mm		1.54" 39mm	16.87" 428.4mm
23.15" 588mm	23.66" 601mm		1.02" 26mm	17.38" 441.4mm
23.66" 601mm	24.17" 614mm		0.51" 13mm	17.89" 454.4mm
24.17" 614mm	24.69" 627mm		N/A	18.40" 467.4mm
24.69" 627mm	24.84" 631mm	OPCA-LK-22-SS1	4.09" 104mm	18.56" 471.3mm
24.84" 631mm	25.35" 644mm		3.58" 91mm	19.07" 484.3mm
25.35" 644mm	25.87" 657mm		3.07" 78mm	19.58" 497.3mm
25.87" 657mm	26.38" 670mm		2.56" 65mm	20.09" 510.3mm
26.38" 670mm	26.89" 683mm		2.05" 52mm	20.60" 523.3mm
26.89" 683mm	27.40" 696mm		1.54" 39mm	21.11" 536.3mm
27.40" 696mm	27.91" 709mm		1.02" 26mm	21.63" 549.3mm
27.91" 709mm	28.43" 722mm		0.51" 13mm	22.14" 562.3mm
28.43" 722mm	28.94" 735mm		N/A	22.65" 575.3mm
28.94" 735mm	29.21" 742mm	OPCA-LK-25-SS1	2.05" 52mm	22.91" 581.8mm
29.21" 742mm	29.72" 755mm		1.54" 39mm	23.42" 594.8mm
29.72" 755mm	30.24" 768mm		1.02" 26mm	23.93" 607.8mm
30.24" 768mm	30.75" 781mm		0.51" 13mm	24.44" 620.8mm
30.75" 781mm	31.26" 794mm		N/A	24.95" 633.8mm

OPCS-415 WASHABILITY SHORT DUAL ARM - LINK CUTTING CHART				
DIMENSION A		LINK PART #	REMOVE LENGTH	DIMENSION B
From (Min)	To (Max)			
14.61" 371mm	10.79" 384mm	OPCA-LK-06-SS1	1.54" 39mm	4.50" 114.2mm
15.12" 384mm	11.30" 397mm		1.02" 26mm	5.01" 127.2mm
15.63" 397mm	11.81" 410mm		0.51" 13mm	5.52" 140.2mm
16.14" 410mm	12.32" 313mm		N/A	6.03" 153.2mm
12.32" 313mm	12.56" 319mm	OPCA-LK-10-SS1	4.09" 104mm	6.28" 159.4mm
12.56" 319mm	13.07" 332mm		3.58" 91mm	6.79" 172.4mm
13.07" 332mm	13.58" 345mm		3.07" 78mm	7.30" 185.4mm
13.58" 345mm	14.09" 358mm		2.56" 65mm	7.81" 198.4mm
14.09" 358mm	14.61" 371mm		2.05" 52mm	8.32" 211.4mm
14.61" 371mm	15.12" 384mm		1.54" 39mm	8.83" 224.4mm
15.12" 384mm	15.63" 397mm		1.02" 26mm	9.35" 237.4mm
15.63" 397mm	16.14" 410mm		0.51" 13mm	9.86" 250.4mm
16.14" 410mm	16.65" 423mm		N/A	10.37" 263.4mm
16.65" 423mm	16.73" 425mm	OPCA-LK-14-SS1	4.09" 104mm	10.45" 265.4mm
16.73" 425mm	17.24" 438mm		3.58" 91mm	10.96" 278.4mm
17.24" 438mm	17.76" 451mm		3.07" 78mm	11.47" 291.4mm
17.76" 451mm	18.27" 464mm		2.56" 65mm	11.98" 304.4mm
18.27" 464mm	18.78" 477mm		2.05" 52mm	12.50" 317.4mm
18.78" 477mm	19.29" 490mm		1.54" 39mm	13.01" 330.4mm
19.29" 490mm	19.80" 503mm		1.02" 26mm	13.52" 343.4mm
19.80" 503mm	20.31" 516mm		0.51" 13mm	14.03" 356.4mm
20.31" 516mm	20.83" 529mm		N/A	14.54" 369.4mm



15.1 PHANTOM link rod cutting chart

OPA-406 AWNING LINK CUTTING CHART						
DIMENSION A		LINK PART #	UPWARD MOTION		DOWNWARD MOTION	
From (Min)	To (Max)		REMOVE LENGTH	DIMENSION B	REMOVE LENGTH	DIMENSION B
17.99" 457mm	18.23" 463mm	OPCA-LK-06-SS1	1.02" 26mm	5.01" 127.2mm	2.24" 57mm	3.79" 96.2mm
18.23" 463mm	19.25" 489mm		0.51" 13mm	5.52" 140.2mm	1.73" 44mm	4.30" 109.2mm
19.25" 489mm	20.28" 515mm		N/A	6.03" 153.2mm	1.26" 32mm	4.77" 121.2mm
20.28" 515mm	20.75" 527mm	OPCA-LK-10-SS1	4.09" 104mm	6.28" 159.4mm	5.24" 133mm	5.13" 130.4mm
20.75" 527mm	21.77" 553mm		3.58" 91mm	6.79" 172.4mm	4.76" 121mm	5.61" 142.4mm
21.77" 553mm	22.80" 579mm		3.07" 78mm	7.30" 185.4mm	4.25" 108mm	6.12" 155.4mm
22.80" 579mm	23.82" 605mm		2.56" 65mm	7.81" 198.4mm	3.74" 95mm	6.63" 168.4mm
23.82" 605mm	24.84" 631mm		2.05" 52mm	8.32" 211.4mm	3.27" 83mm	7.10" 180.4mm
24.84" 631mm	25.87" 657mm		1.54" 39mm	8.83" 224.4mm	2.76" 70mm	7.61" 193.4mm
25.87" 657mm	26.89" 683mm		1.02" 26mm	9.35" 237.4mm	2.24" 57mm	8.13" 206.4mm
26.89" 683mm	27.91" 709mm		0.51" 13mm	9.86" 250.4mm	1.73" 44mm	8.64" 219.4mm
27.91" 709mm	28.94" 735mm		N/A	10.37" 263.4mm	1.26" 32mm	9.11" 231.4mm
28.94" 735mm	29.09" 739mm		4.09" 104mm	10.45" 265.4mm	5.24" 133mm	9.31" 236.4mm
29.09" 739mm	30.91" 785mm		3.58" 91mm	10.96" 278.4mm	4.76" 121mm	9.78" 248.4mm
30.91" 785mm	31.14" 791mm		3.07" 78mm	11.47" 291.4mm	4.25" 108mm	10.29" 261.4mm
31.14" 791mm	32.17" 817mm	OPCA-LK-14-SS1	2.56" 65mm	11.98" 304.4mm	3.74" 95mm	10.80" 274.4mm
32.17" 817mm	33.19" 843mm		2.05" 52mm	12.50" 317.4mm	3.27" 83mm	11.28" 286.4mm
33.19" 843mm	34.21" 869mm		1.54" 39mm	13.01" 330.4mm	2.76" 70mm	11.79" 299.4mm
34.21" 869mm	35.24" 895mm		1.02" 26mm	13.52" 343.4mm	2.24" 57mm	12.30" 312.4mm
35.24" 895mm	36.26" 921mm		0.51" 13mm	14.03" 356.4mm	1.73" 44mm	12.81" 325.4mm
36.26" 921mm	37.28" 947mm		N/A	14.54" 369.4mm	1.26" 32mm	13.28" 337.4mm
37.28" 947mm	37.83" 961mm		3.58" 91mm	14.82" 376.4mm	4.76" 121mm	13.64" 346.4mm
37.83" 961mm	38.86" 987mm	OPCA-LK-18-SS1	3.07" 78mm	15.33" 389.4mm	4.25" 108mm	14.15" 359.4mm
38.86" 987mm	39.88" 1013mm		2.56" 65mm	15.84" 402.4mm	3.74" 95mm	14.66" 372.4mm
39.88" 1013mm	40.91" 1039mm		2.05" 52mm	16.35" 415.4mm	3.27" 83mm	15.13" 384.4mm
40.91" 1039mm	41.93" 1065mm		1.54" 39mm	16.87" 428.4mm	2.76" 70mm	15.65" 397.4mm
41.93" 1065mm	42.95" 1091mm		1.02" 26mm	17.38" 441.4mm	2.24" 57mm	16.16" 410.4mm
42.95" 1091mm	43.98" 1117mm		0.51" 13mm	17.89" 454.4mm	1.73" 44mm	16.67" 423.4mm
43.98" 1117mm	45.00" 1143mm		N/A	18.40" 467.4mm	1.26" 32mm	17.14" 435.4mm
45.00" 1143mm	46.34" 1177mm	OPCA-LK-22-SS1	3.58" 91mm	19.07" 484.3mm	4.76" 121mm	17.89" 454.3mm
46.34" 1177mm	47.36" 1203mm		3.07" 78mm	19.58" 497.3mm	4.25" 108mm	18.40" 467.3mm
47.36" 1203mm	48.39" 1229mm		2.56" 65mm	20.09" 510.3mm	3.74" 95mm	18.91" 480.3mm
48.39" 1229mm	49.41" 1255mm		2.05" 52mm	20.60" 523.3mm	3.27" 83mm	19.38" 492.3mm
49.41" 1255mm	50.43" 1281mm		1.54" 39mm	21.11" 536.3mm	2.76" 70mm	19.89" 505.3mm
50.43" 1281mm	51.46" 1307mm		1.02" 26mm	21.63" 549.3mm	2.24" 57mm	20.41" 518.3mm
51.46" 1307mm	52.48" 1333mm		0.51" 13mm	22.14" 562.3mm	1.73" 44mm	20.92" 531.3mm
52.48" 1333mm	53.50" 1359mm		N/A	22.65" 575.3mm	1.26" 32mm	21.39" 543.3mm
53.50" 1359mm	54.02" 1372mm	OPCA-LK-25-SS1	2.05" 52mm	22.91" 581.8mm	3.27" 83mm	21.69" 550.8mm
54.02" 1372mm	55.04" 1398mm		1.54" 39mm	23.42" 594.8mm	2.76" 70mm	22.20" 563.8mm
55.04" 1398mm	56.06" 1424mm		1.02" 26mm	23.93" 607.8mm	2.24" 57mm	22.71" 576.8mm
56.06" 1424mm	57.09" 1450mm		0.51" 13mm	24.44" 620.8mm	1.73" 44mm	23.22" 589.8mm
57.09" 1450mm	58.11" 1476mm		N/A	24.95" 633.8mm	1.26" 32mm	23.69" 601.8mm



16.0 Maximum Frame Size & Sash Weight

Hardware Comparison: NAFS Casement Window Hardware Load Test (North American Fenestration Standard)



Many factors in addition to the hardware dictate maximum casement window size. These include sash and frame stiffness and strength, screw holding strength, sash sag, weathertightness, and weatherstrip drag. For this reason, we recommend careful evaluation of the entire window before producing units as large as this matrix suggests.

STANDARD					EGRESS			
BPS-5500-10D/G BPRPS-5600-10D/G		BPS-5500-13D/G BPRPS-5600-13D/G			BPS-5200-10D/G BPRPS-5300-10D/G		BPS-5200-13D/G BPRPS-5300-13D/G	
Max Frame (Width x Height)	Max Weight (With Glass)	Max Frame (Width x Height)	Max Weight (With Glass)		Max Frame (Width x Height)	Max Weight (With Glass)	Max Frame (Width x Height)	Max Weight (With Glass)
OPCS-402-RD/ LG	24" x 60" (609mm x 1524mm)	45 lb. (20 kg)	24" x 60" (609mm x 1524mm)	55 lb. (25 kg)	NOT RECOMMENDED			

16.1 Dyad arm

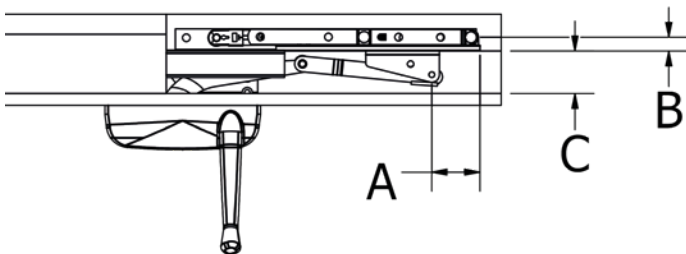
OPCS-403-RD/ LG	32" x 72" (812mm x 1828mm)	83 lb. (38 kg)	40" x 84" (1016mm x 2133mm)	110 lb. (50 kg)	32" x 68" (812mm x 1724mm)	69 lb. (31 kg)	32" x 68" (812mm x 1724mm)	69 lb. (31 kg)
OPCS-415-RD/ LG	24" x 84" (609mm x 2133mm)	70 lb. (32 kg)	24" x 84" (609mm x 2133mm)	85 lb. (38 kg)	NOT RECOMMENDED			

16.2 Dual arm

		STANDARD									
		BPRP-5100-10D/G		BPRP-5100-14D/G		BPRP-5100-18D/G		BPRP-5100-22D/G		BPRP-5100-26D/G	
16.3 Awning		Max Sash Height (Width x Height)	Max Weight (With Glass)	Max Sash Height (Width x Height)	Max Weight (With Glass)	Max Sash Height (Width x Height)	Max Weight (With Glass)	Max Sash Height (Width x Height)	Max Weight (With Glass)	Max Sash Height (Width x Height)	Max Weight (With Glass)
	OPA-406	10" - 14" (254mm - 355mm)	7 lb. (3 kg)	14" - 19" (355mm - 482mm)	20 lb. (9 kg)	19" - 26" (482mm - 660mm)	38 lb. (17 kg)	26" - 34" (660mm - 864mm)	50 lb. (22 kg)	34" - 42" (864mm - 1067mm)	61 lb. (28 kg)



Attachment clip is required on awning window hinges. Under no circumstances should a casement hinge with a snap-on stud be used on awning windows. Due to the rotational forces applied by an awning sash, the snap stud can work its way apart, allowing the sash to fall out and cause a serious threat of injury to individuals below.



The table 21.1 & 21.2 assumes the following typical mounting positions:

A - Stud bracket position 1.750"

B - Hinge position 0.437"

C - Operator position 1.938"

Larger dimensions than these typical positions will not be able to support windows as large as the ones shown in this table.

Smaller dimensions may be able to support larger windows.



AAMA 904.14 | MAXIMUM HINGES LOAD TESTED

Maximum load capacity of 130lb.*

* Maximum load permitted for the AAMA hardware load test. Refer to the chart above for the maximum weight recommended by Radisson Industries to ensure ease of operation.

17.0 Interlock ILA20 | Specifications

ILA20 Series

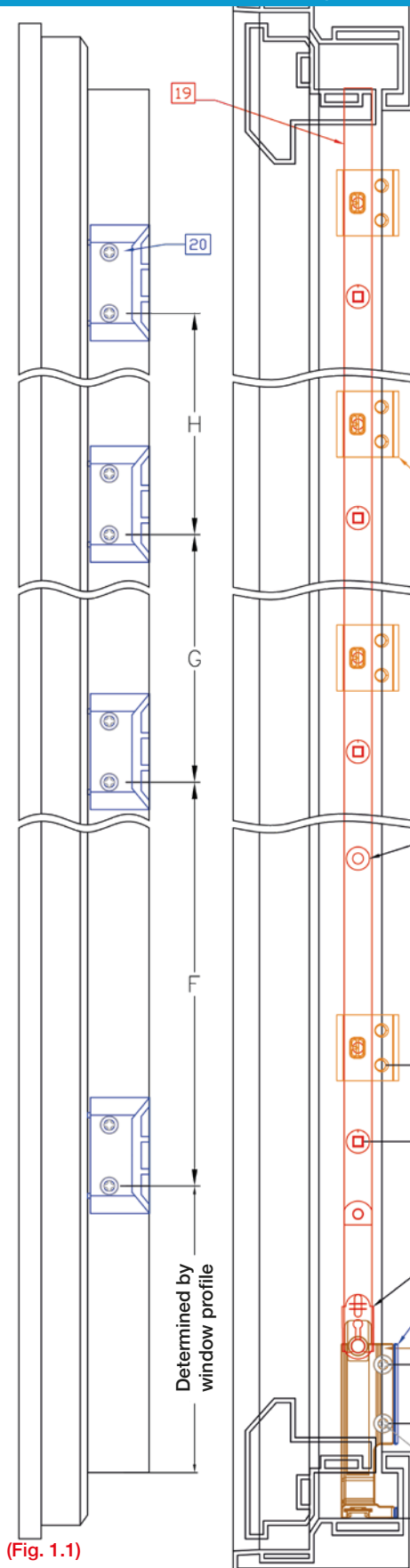
PHANTOM TIE BAR SYTEM

Standard lengths from 13" to 73" | 330mm to 1854mm

Features

- Pre-punched positioned holes and guides allow for direct application as well as cost and time savings during installation
- Full cam adjustability allows for in-field and off-site adjustment, while maintaining optimal locking operation
- A complete range of security keepers combined with customizable heavy duty guides allows you to meet the highest impact test ratings
- Available in standard powder coated finish or optional 304 austenitic stainless steel for coastal applications
- Available in the same configurations as other commonly used systems to allow for easy transition
- Customizable up to 5 locking points

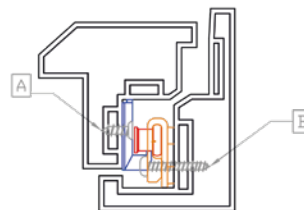
 **Easy Transition!**



(Fig. 1.1)

Safety pin

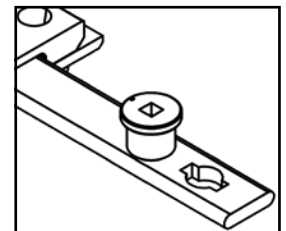
Clip on attachment



(Fig. 1.2)



Made in



Use Robertson square drive #3 for cam adjustment

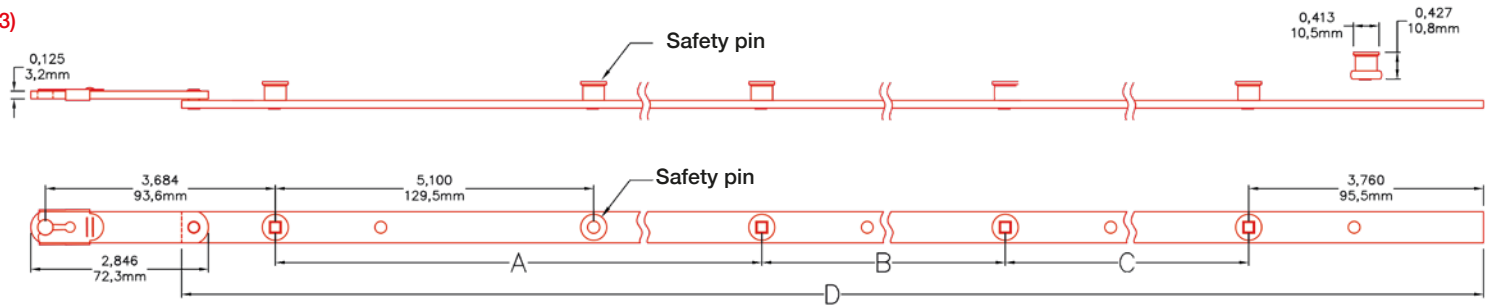
Recommended minimum frame height

X



Added value

(Fig. 1.3)



Recommended screw :

Zinc-plated 8-10 Quadrex wood screw, coarse thread, pan head

RECOMMENDED MINIMUM FRAME HEIGHT (Fig. 1.2)

		TIE BAR LENGTH		Cam positions <small>(Fig. 1.3)</small>			Suggested Keeper Positioning <small>(Fig. 1.1)</small>			MINIMUM FRAME HEIGHT <small>(Fig. 1.2)</small>
Part #	D	A	B	C	F	G	H	X		
2 CAMS	FM-ILA20-XX-101	15.045" 382.1mm	09.785" 248.5mm			10.285" 261.2mm			16" 406.4mm	
	FM-ILA20-XX-110	19.045" 483.7mm	13.785" 350.1mm			14.285" 362.8mm			21" 533.4mm	
	FM-ILA20-XX-120	23.045" 585.3mm	17.785" 451.7mm			18.285" 464.4mm			25" 635mm	
	FM-ILA20-XX-130	27.045" 686.9mm	21.785" 553.3mm			22.285" 566mm			29" 736.6mm	
	FM-ILA20-XX-140	31.045" 788.5mm	25.785" 654.9mm			26.285" 667.6mm			34" 863.6mm	
	FM-ILA20-XX-150	35.045" 890.1mm	29.785" 756.5mm			30.285" 796.2mm			38" 965.2mm	
3 CAMS	FM-ILA20-XX-121	23.045" 585.3mm	09.145" 232.3mm	8.640" 219.5mm		09.395" 238.6mm	8.890" 225.8mm		25" 635mm	
	FM-ILA20-XX-131	27.045" 686.9mm	11.145" 283.1mm	10.640" 270.3mm		11.395" 289.4mm	10.890" 276.6mm		29" 736.6mm	
	FM-ILA20-XX-141	31.045" 788.5mm	13.145" 333.9mm	12.640" 321.1mm		13.395" 340.2mm	12.890" 327.4mm		34" 863.6mm	
	FM-ILA20-XX-151	35.045" 890.1mm	15.145" 384.7mm	14.640" 371.9mm		15.395" 391mm	14.890" 378.2mm		38" 965.2mm	
	FM-ILA20-XX-160	39.045" 991.7mm	17.145" 435.5mm	16.640" 422.7mm		17.395" 441.8mm	16.890" 429mm		42" 1066.8mm	
	FM-ILA20-XX-170	43.045" 1093.3mm	19.145" 486.3mm	18.640" 473.5mm		19.395" 492.6mm	18.890" 479.8mm		47" 1193.8mm	
	FM-ILA20-XX-180	47.045" 1194.9mm	21.145" 537.1mm	20.640" 524.3mm		21.395" 543.4mm	20.890" 530.6mm		51" 1295.4mm	
	FM-ILA20-XX-190	51.045" 1296.5mm	23.145" 587.9mm	22.640" 575.1mm		23.395" 594.2mm	22.890" 581.4mm		56" 1422.4mm	
	FM-ILA20-XX-200	55.045" 1398.1mm	25.145" 638.7mm	24.640" 625.9mm		25.395" 645mm	24.890" 632.2mm		60" 1524mm	
	FM-ILA20-XX-210	59.045" 1499.7mm	27.145" 689.5mm	26.640" 676.7mm		27.395" 695.8mm	26.890" 683mm		64" 1625.6mm	
	FM-ILA20-XX-220	63.045" 1601.3mm	29.145" 740.3mm	28.640" 727.5mm		29.395" 746.6mm	28.890" 733.8mm		69" 1752.6mm	
	FM-ILA20-XX-230	67.045" 1702.9mm	31.145" 791.1mm	30.640" 778.3mm		31.395" 797.4mm	30.890" 784.6mm		73" 1854.2mm	
FM-ILA20-XX-240	71.045" 1804.5mm	33.145" 841.9mm	32.640" 829.1mm		33.395" 848.2mm	32.890" 835.4mm		77" 1955.8mm		
4 CAMS	FM-ILA20-XX-171	43.045" 1093.3mm	12.470" 316.7mm	12.820" 325.6mm	12.655" 321.4mm	12.560" 319mm	13.070" 332mm	12.655" 321.4mm	47" 1193.8mm	
	FM-ILA20-XX-181	47.045" 1194.9mm	13.630" 346.2mm	14.150" 359.4mm	14.005" 355.7mm	13.880" 352.6mm	14.040" 356.6mm	14.005" 355.7mm	51" 1295.4mm	
	FM-ILA20-XX-191	51.045" 1296.5mm	14.950" 379.7mm	15.480" 393.2mm	15.355" 390mm	15.200" 386.1mm	15.730" 399.5mm	15.355" 390mm	56" 1422.4mm	
	FM-ILA20-XX-201	55.045" 1398.1mm	16.270" 413.3mm	16.810" 427mm	16.705" 424.3mm	16.520" 419.6mm	17.060" 433.3mm	16.705" 424.3mm	60" 1524mm	
	FM-ILA20-XX-211	59.045" 1499.7mm	17.590" 446.8mm	18.140" 460.8mm	18.055" 458.6mm	17.840" 453.1mm	18.390" 467.1mm	18.055" 458.6mm	64" 1625.6mm	
	FM-ILA20-XX-221	63.045" 1601.3mm	18.920" 480.6mm	19.470" 494.5mm	19.405" 492.9mm	19.170" 486.9mm	19.720" 500.9mm	19.405" 492.9mm	69" 1752.6mm	
	FM-ILA20-XX-231	67.045" 1702.9mm	20.230" 513.8mm	20.800" 528.3mm	20.755" 527.2mm	20.480" 520.2mm	21.050" 534.7mm	20.755" 527.2mm	73" 1854.2mm	
	FM-ILA20-XX-241	71.045" 1804.5mm	21.550" 547.4mm	22.130" 562.1mm	22.105" 561.5mm	21.800" 553.7mm	22.380" 568.5mm	22.105" 561.5mm	77" 1955.8mm	

17.1 Interlock Roller | Ordering

*The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.

Replace the variable **X** with the desired value to specify material:

CP = Standard powder-coated steel
SS1 = Optional 304 austenitic stainless steel (coastal applications)

Box/Qty.
25
Units

17.2 Interlock Roller | Part list

19	FM-ILA20-CP-181 46.9" PHANTOM interlock roller tie bar - 4 points
20	GA-2390-09 Composite interlock keeper
21	FM-TGW-MD2-400-075 Heavy duty tie bar guide
3	OPCA-CD-400-070-LG Left hand corner drive for PHANTOM sys.
4	CD-SPC-070 0.070" corner drive plastic positioning bumper

30601 Evolution Series Dyad Arm

Designed for frames in widths from 16. to 24 inches.



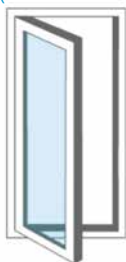
Left hand shown

Features

- Optimized precision mechanism thanks to the innovative patented design
- Snap-on cover allows for free installation and reduces inventory costs
- Snap-on feature for fast and secure operator attachment with sashes
- Optimized gear ratio to make operation easier and help meet ADA requirements
- Pre-installed gasket and optimized sealed housing to reduce risks of water and air infiltration
- Available in powder-coated steel or optional 304 austenitic stainless steel for coastal applications

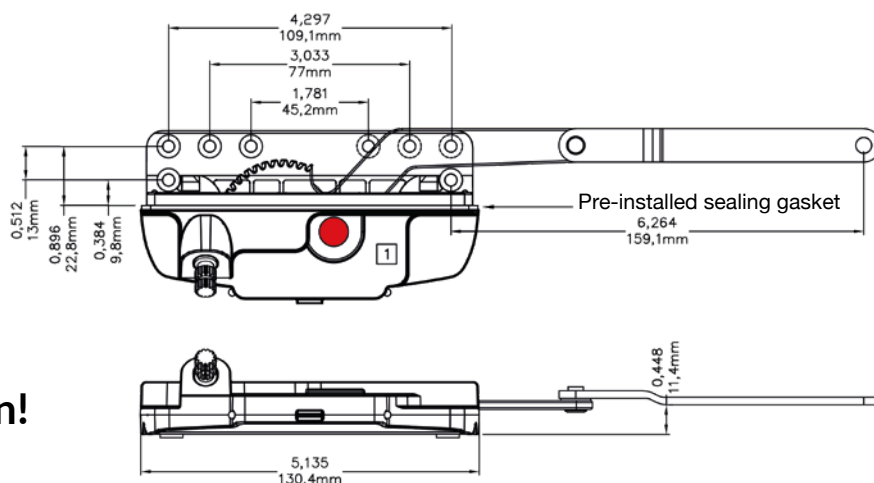
18.0 Dyad | Specifications

Left Opening
(Outside view)



Left Hand Shown

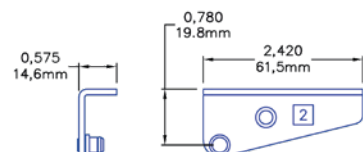
Operator handing is determined by the hinge side when looking at the window from the outside.



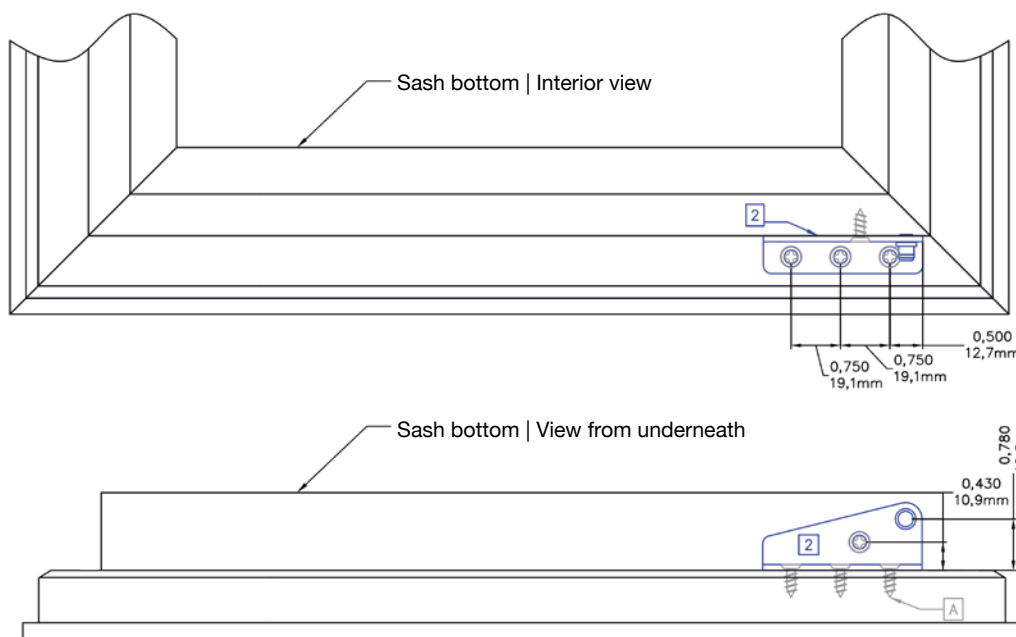
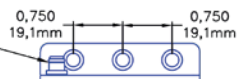
18.1 Dyad | Application

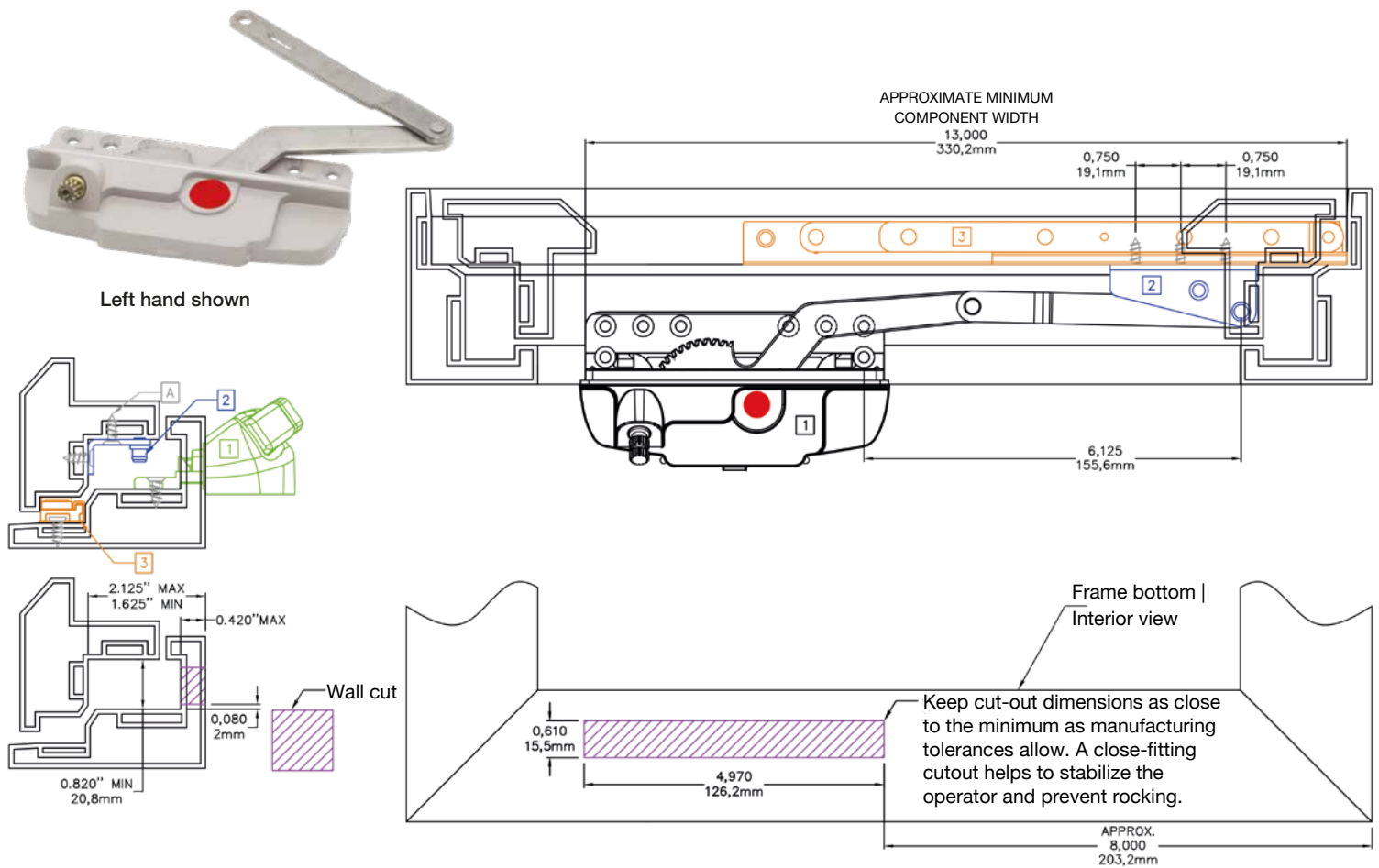


*Please note that the following drawings are only generic PVC drawings and that your actual application may vary depending on your extrusion profile. Contact a Radisson sales representative for further information.



Snap-on ring:





18.2 Dyad | Part list

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <div style="border: 1px solid black; padding: 2px; display: inline-block;">1</div> OPS-30601G Evolution left hand RD dot dyad arm operator | <div style="border: 1px solid black; padding: 2px; display: inline-block;">A</div> Recommended screw: 10-12 large thread, flat undercut #7 |
| <div style="border: 1px solid black; padding: 2px; display: inline-block;">2</div> OPS-10327 "L" shape snap-on stud bracket for LH operator | |
| <div style="border: 1px solid black; padding: 2px; display: inline-block;">3</div> BPRPS-5600-10GSS Adjustable 10" wash. hinge kit, snap on LH | |

18.3 Dyad | Ordering

**The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.*

Part Number	Description	Box/Qty.
OPS-30601D-XX	Evolution Dyad arm, right hand GREEN dot operator	20
OPS-30601G-XX	Evolution Dyad arm, left hand RED dot operator	20
OPS-10326-XX	"L" shape snap-on stud bracket for right hand operator	200
OPS-10327-XX	"L" shape snap-on stud bracket for left hand operator	200



Replace the variable **XX** with the desired value to specify material:

Blank = Standard powder-coated
 SS = Optional 304 austenitic stainless steel (coastal applications)

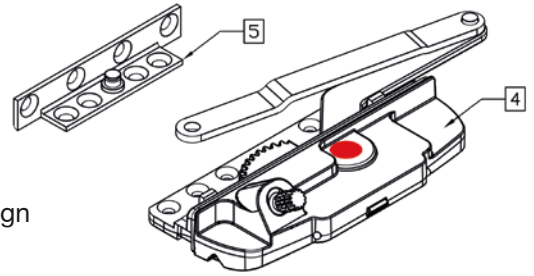


30608 Evolution Series

Reverse Dyad Arm

Designed for narrow frames in widths down to 12 inches.

Depending upon the thickness of the frame.



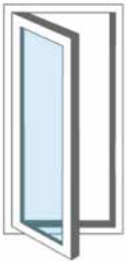
Left hand shown

Features

- Optimized precision mechanism thanks to the innovative patented design
- Snap-on cover allows for free installation and reduces inventory costs
- Snap-on feature for fast and secure operator attachment with sashes
- Optimized gear ratio to make operation easier and help meet ADA requirements
- Pre-installed gasket and optimized sealed housing to reduce risks of water and air infiltration
- Available in powder-coated steel or optional 304 austenitic stainless steel for coastal applications

19.0 Reverse dyad | Specifications

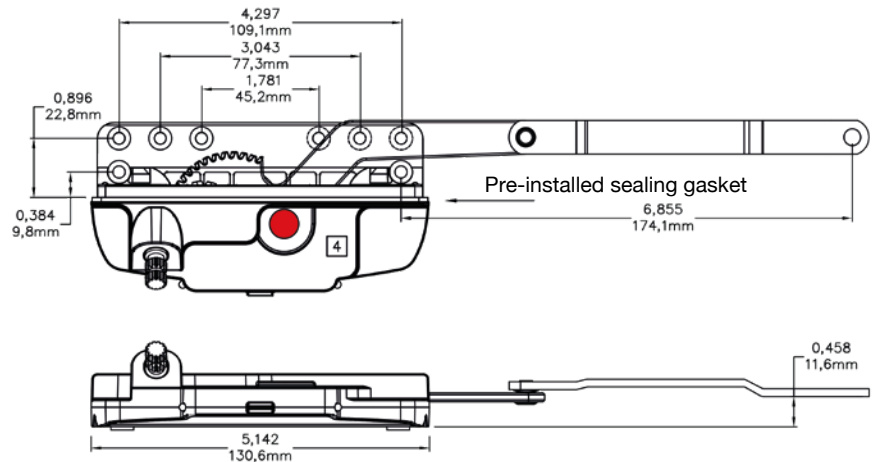
Left Opening
(Outside view)



Left Hand Shown

Operator handing is determined by the hinge side when looking at the window from the outside.

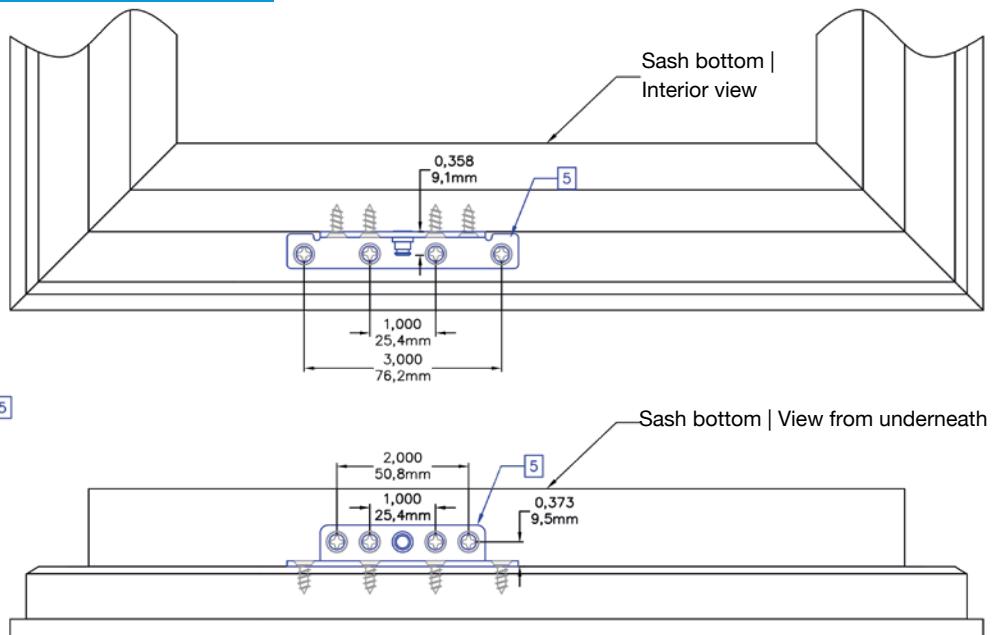
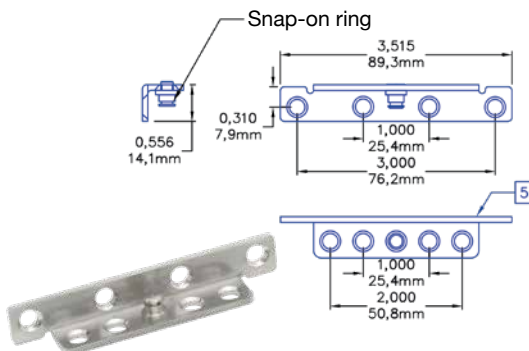
 **Easy Transition!**

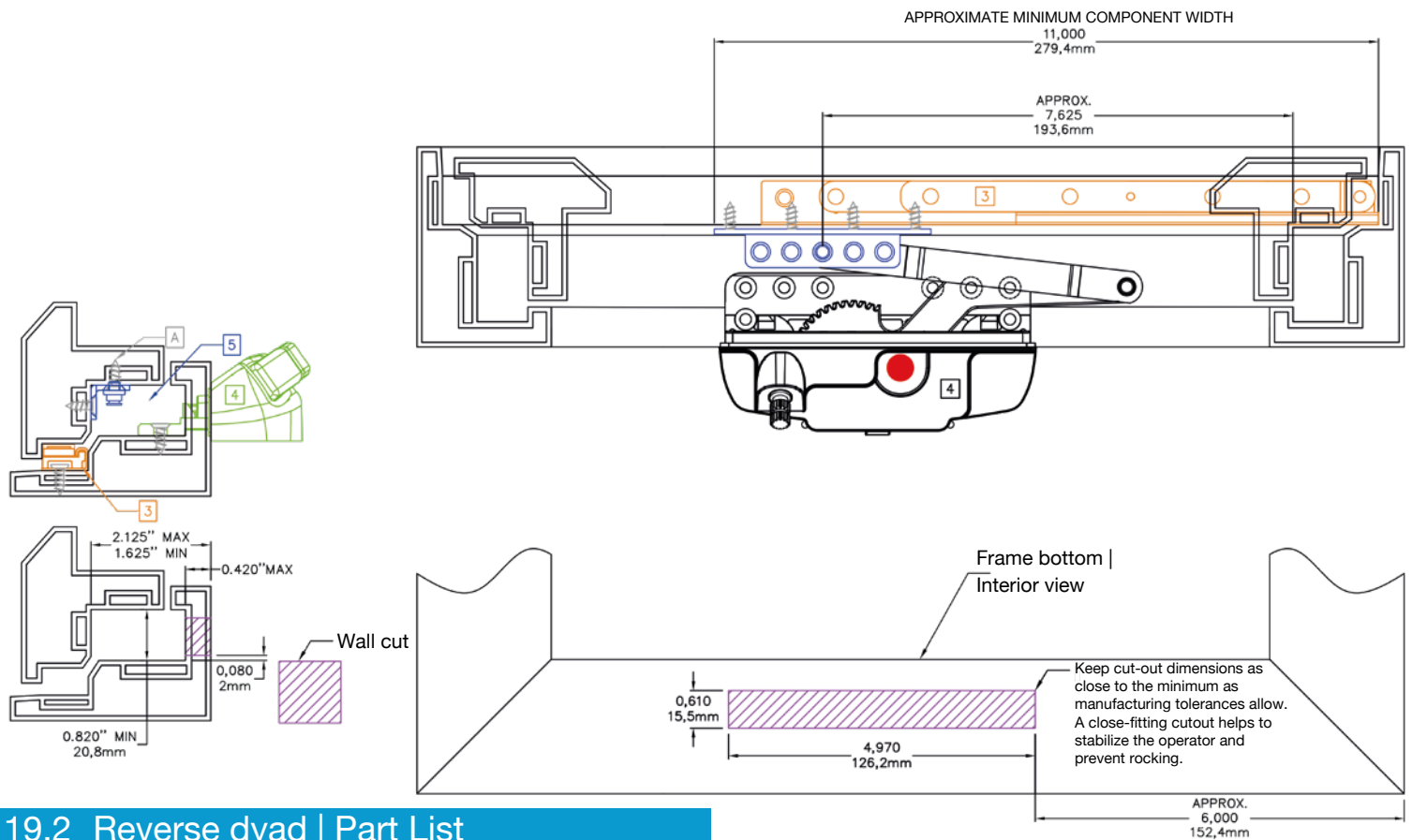


19.1 Reverse dyad | Application



*Please note that the following drawings are only generic PVC drawings and that your actual application may vary depending on your extrusion profile. Contact a Radisson sales representative for further information.





19.2 Reverse dyad | Part List

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>3 BPRPS-5600-10GSS Adjustable 10" wash. hinge kit, snap-on LH</p> <p>4 OPS-30608G Evolution left hand RD dot reverse dyad arm operator</p> | <p>5 OPS-30223 Straight snap-on stud bracket for reverse dyad operator</p> <p>A Recommended screw: 10-12 large thread, flat undercut #7</p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|

19.3 Reverse dyad | Ordering

**The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.*

Part Number	Description	Box/Qty.
OPS-30608D-XX	Evolution Reverse Dyad arm, right hand GREEN dot operator	20
OPS-30608G-XX	Evolution Reverse Dyad arm, left hand RED dot operator	20
OPS-30223-XX	Straight snap-on stud bracket for reverse dyad operator	200



Replace the variable **XX** with the desired value to specify material:

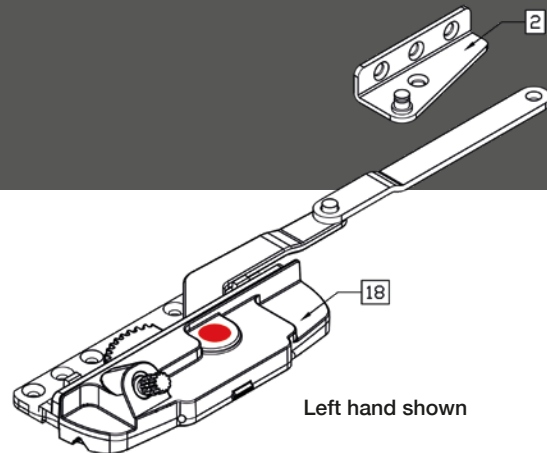
Blank = Standard powder-coated
 SS = Optional 304 austenitic stainless steel (coastal applications)

30602 Evolution Series

Low Profile Dyad Arm

Designed for low height cavity frames in widths from 16. to 24 inches.

Minimum cavity heights of 15 mm or 0,625 inches

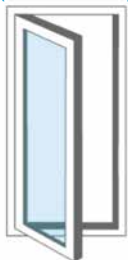


Features

- Optimized precision mechanism thanks to the innovative patented design
- Snap-on cover allows for free installation and reduces inventory costs
- Snap-on feature for fast and secure operator attachment with sashes
- Optimized gear ratio to make operation easier and help meet ADA requirements
- Pre-installed gasket and optimized sealed housing to reduce risks of water and air infiltration
- Available in powder-coated steel or optional 304 austenitic stainless steel for coastal applications

20.0 Low profile dyad | Specifications

Left Opening
(Outside view)

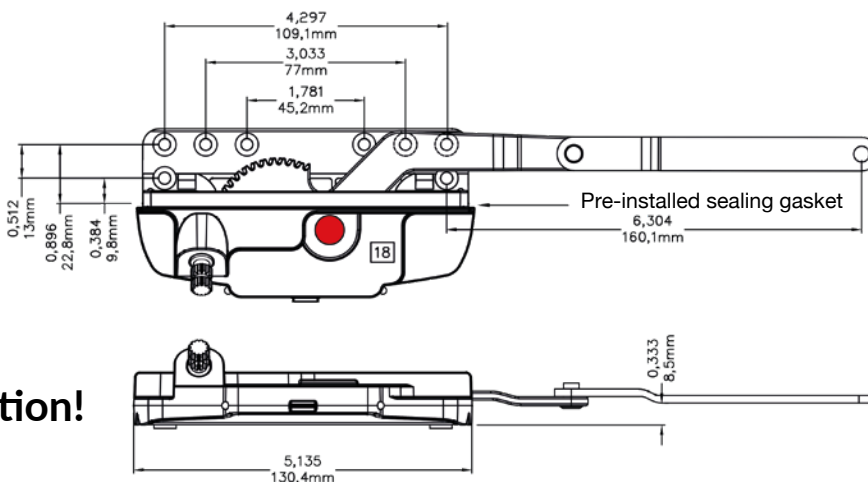


Left Hand Shown

Operator handing is determined by the hinge side when looking at the window from the outside.



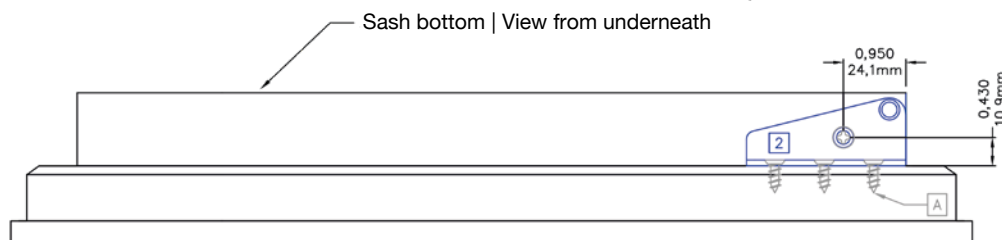
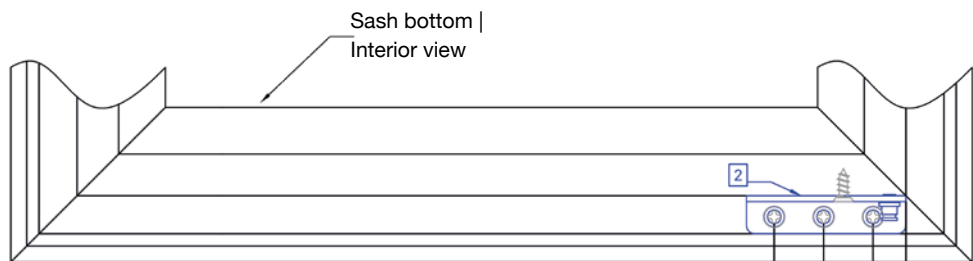
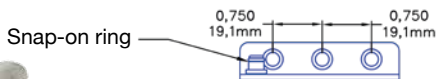
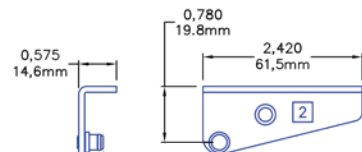
Easy
Transition!

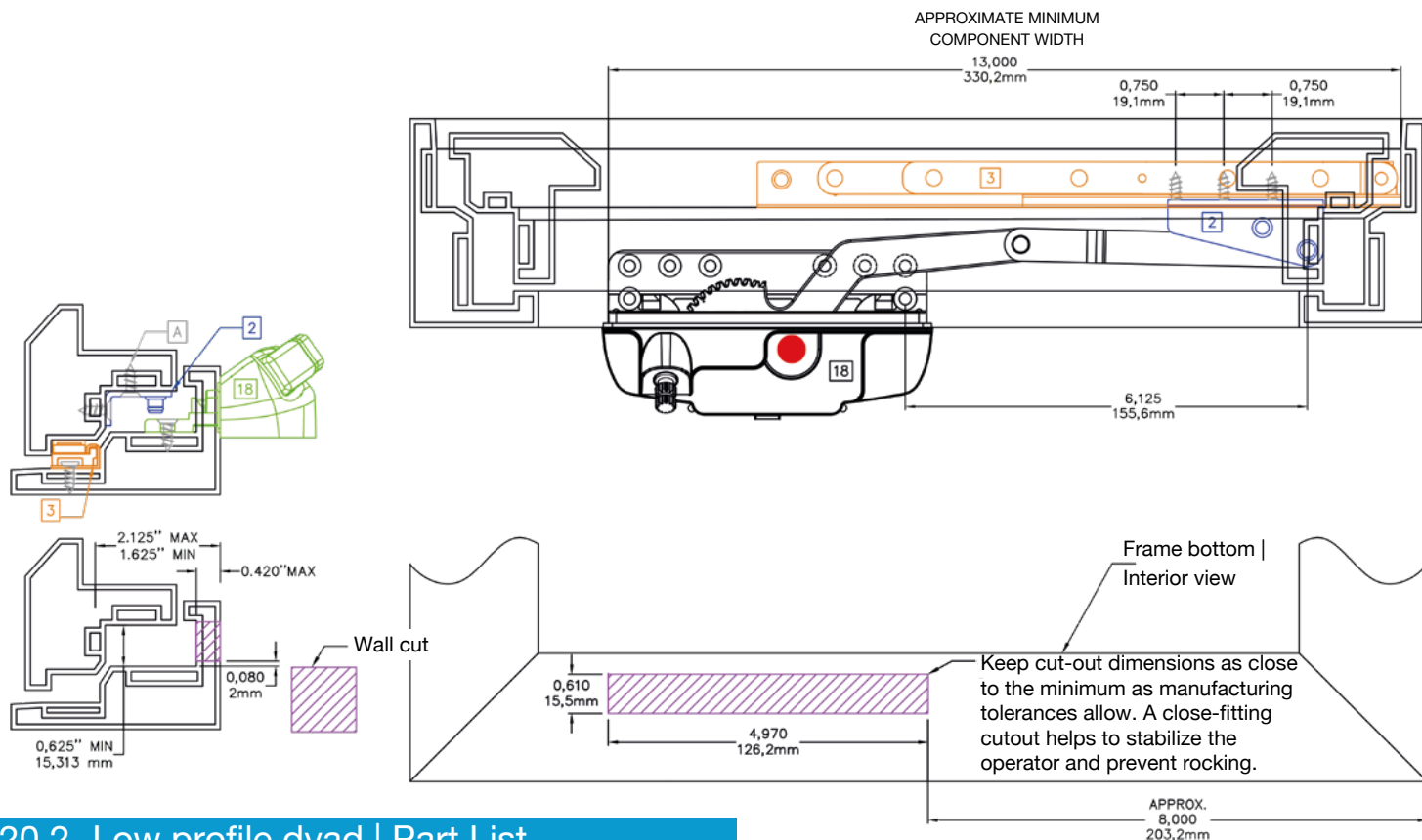


20.1 Low profile dyad | Application



*Please note that the following drawings are only generic PVC drawings and that your actual application may vary depending on your extrusion profile. Contact a Radisson sales representative for further information.





20.2 Low profile dyad | Part List

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>3 BPRPS-5600-10GSS Adjustable 10" wash. hinge kit, snap-on LH</p> <p>18 OPS-30602G Evolution left hand RD dot low profile dyad arm operator</p> | <p>5 OPS-10327 "L" shape snap-on stud bracket for LH operator</p> <p>A Recommended screw: 10-12 large thread, flat undercut #7</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|

20.3 Low profile dyad | Ordering

*The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.

Part Number	Description	Box/Qty.
OPS-30602D-XX	Evolution low profile Dyad arm, right hand GREEN dot operator	20
OPS-30602G-XX	Evolution low profile Dyad arm, left hand RED dot operator	20
OPS-10326-XX	"L" shape snap-on stud bracket for right hand operator	200
OPS-10327-XX	"L" shape snap-on stud bracket for left hand operator	200

Replace the variable **XX** with the desired value to specify material:

Blank = Standard powder-coated
SS = Optional 304 austenitic stainless steel (coastal applications)





Left hand shown

30603 Evolution Series Dual Arm

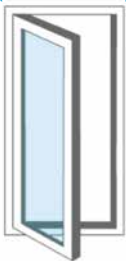
Designed for frames in widths from 24. to 40 inches

Features

- Optimized precision mechanism thanks to the innovative patented design
- Snap-on cover allows for free installation and reduces inventory costs
- Snap-on feature for fast and secure operator attachment with sashes
- Optimized gear ratio to make operation easier and help meet ADA requirements
- Pre-installed gasket and optimized sealed housing to reduce risks of water and air infiltration
- Available in powder-coated steel or optional 304 austenitic stainless steel for coastal applications

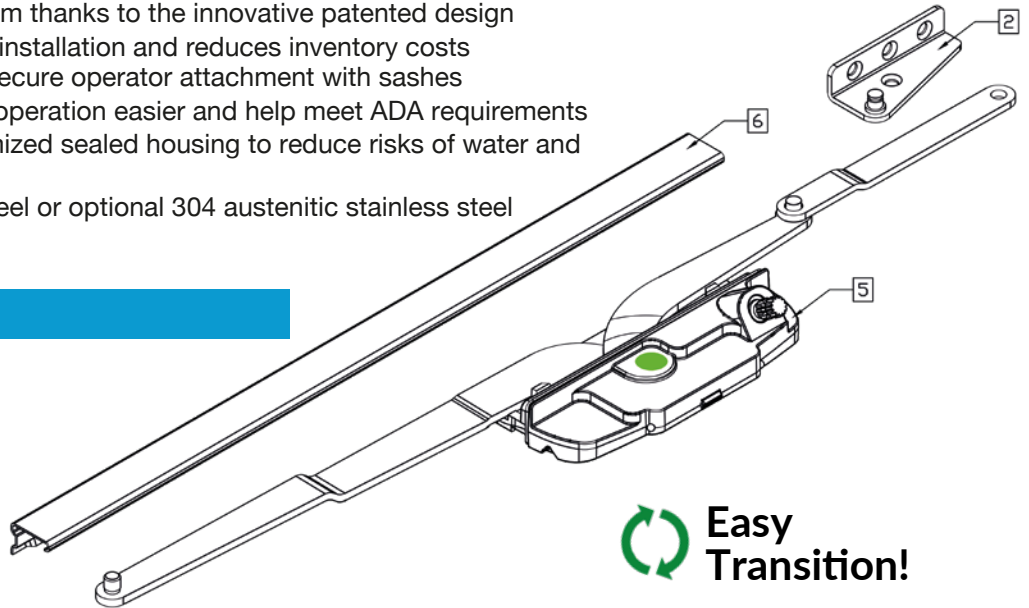
21.0 Dual | Specifications

Left Opening
(Outside view)

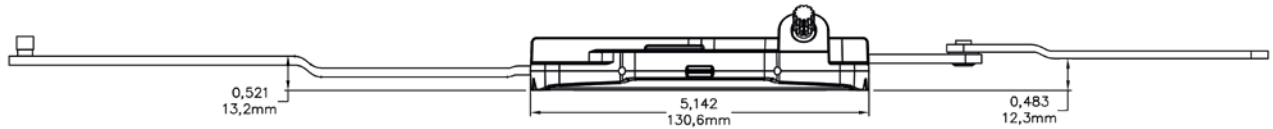
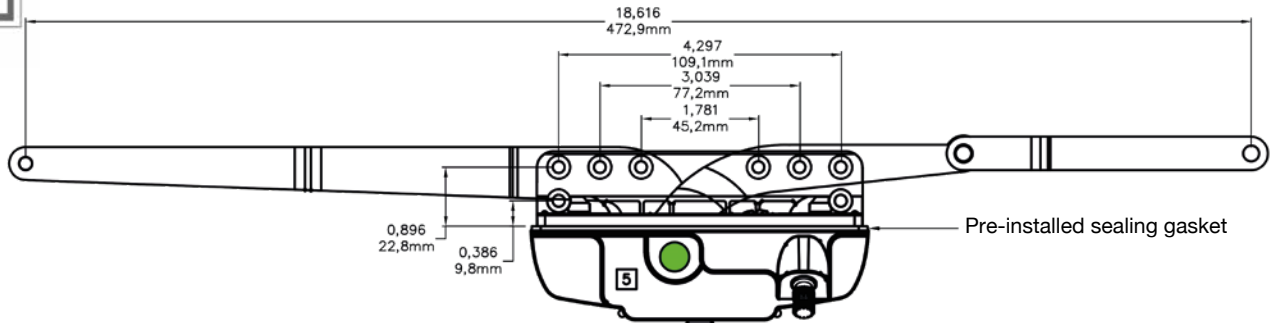


Left Hand Shown

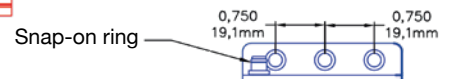
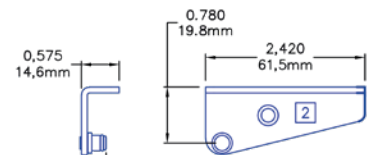
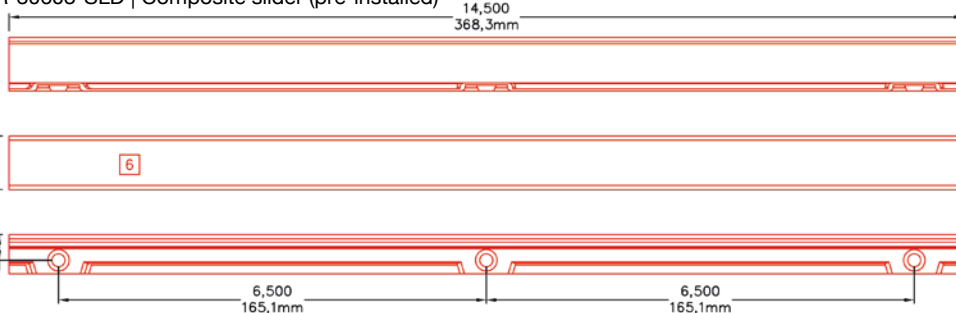
Operator handing is determined by the hinge side when looking at the window from the outside.



 **Easy Transition!**



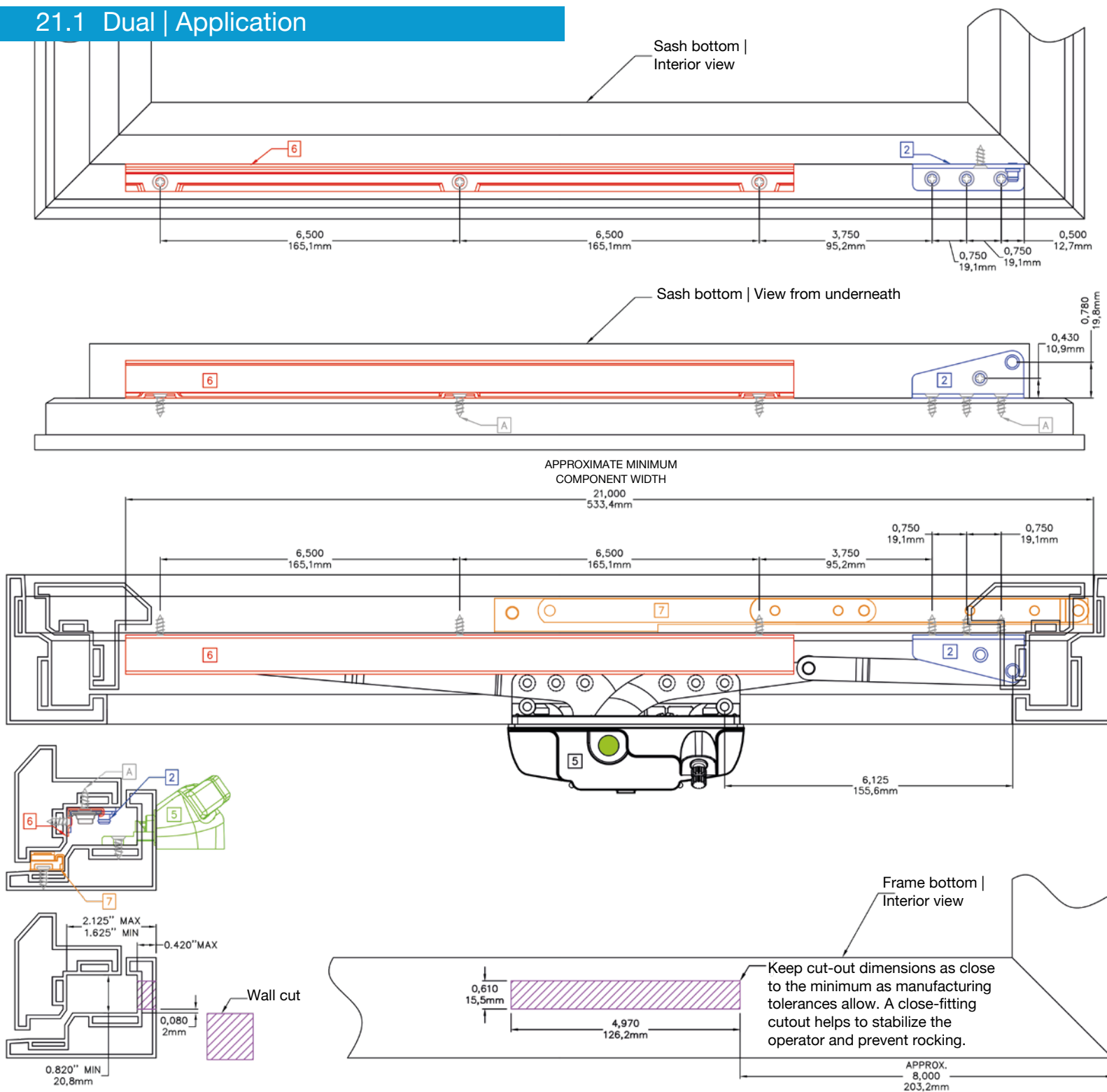
OPR-30603-SLD | Composite slider (pre-installed)





*Please note that the following drawings are only generic PVC drawings and that your actual application may vary depending on your extrusion profile. Contact a Radisson sales representative for further information.

21.1 Dual | Application



21.2 Dual | Part list

- | | | | |
|---|------------------------------------------------------------|---|---------------------------------------------------------------------|
| 2 | OPS-10327 "L" shape snap-on stud bracket for LH operator | 7 | BPRPS-5500-13GSS Adjustable 13" washability hinge kit, snap-on LH |
| 5 | OPS-30603G Evolution left hand RD dot dual arm operator | A | Recommended screw: 10-12 large thread, flat undercut #7 |
| 6 | OPR-30603 Dual arm operator track | | |

30605 Evolution Series

Egress Short Dual Arm

Designed for Egress frames in widths from 22. to 24 inches

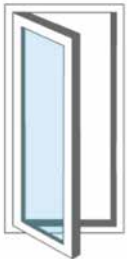
Features

- Optimized precision mechanism thanks to the innovative patented design
- Snap-on cover allows for free installation and reduces inventory costs
- Snap-on feature for fast and secure operator attachment with sashes
- Optimized gear ratio to make operation easier and help meet ADA requirements
- Pre-installed gasket and optimized sealed housing to reduce risks of water and air infiltration
- Available in powder-coated steel or optional 304 austenitic stainless steel for coastal applications

 **Easy
Transition!**

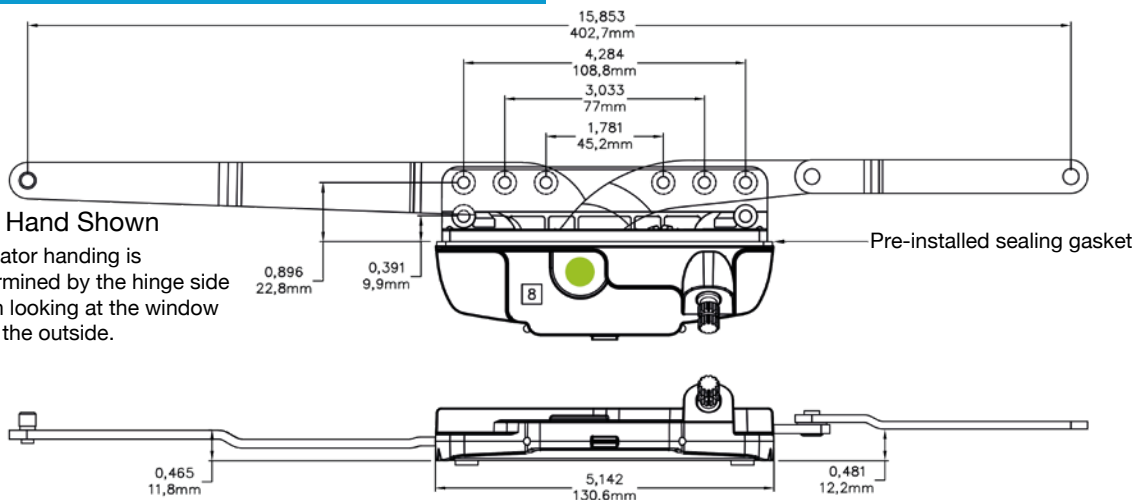
22.0 Egress short dual | Specifications

Left Opening
(Outside view)

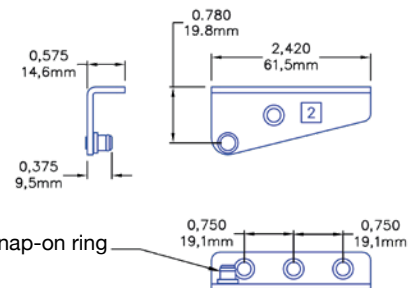
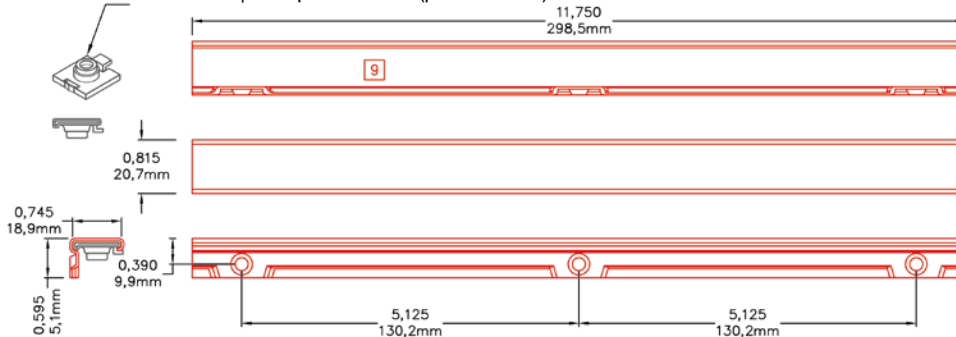


Left Hand Shown

Operator handing is determined by the hinge side when looking at the window from the outside.



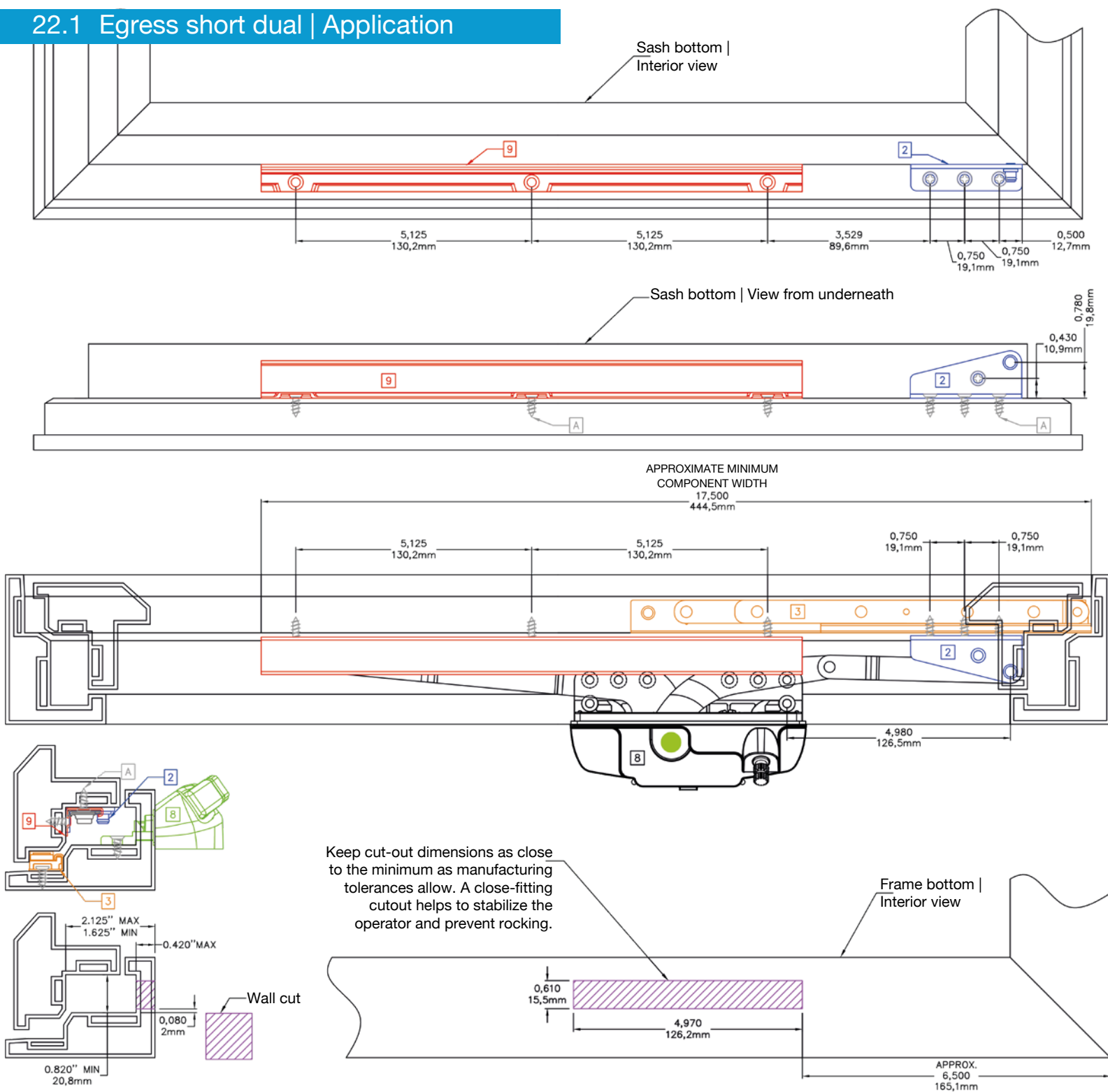
OPR-30603-SLD | Composite slider (pre-installed)





*Please note that the following drawings are only generic PVC drawings and that your actual application may vary depending on your extrusion profile. Contact a Radisson sales representative for further information.

22.1 Egress short dual | Application



22.2 Egress short dual | Part list

- | | | | |
|----------|-------------------------------------------------------------------------------|----------|---------------------------------------------------------|
| 2 | OPS-10327 "L" shape snap-on stud bracket for LH operator | 9 | OPR-30605 Short egress dual arm operator track |
| 3 | BPRPS-5600-10GSS Adjustable 10" wash. hinge kit snap-on LH | A | Recommended screw: 10-12 large thread, flat undercut #7 |
| 8 | OPS-30605G Evolution left hand GN dot Egress short dual arm operator | | |

EXCLUSIVE
INNOVATION



Left hand shown

30615 Evolution Series Washability Short Dual Arm

Designed for narrow frames in widths from 19. to 24 inches

Features

- **EXCLUSIVE** Benefit from regular dual arm operator features in narrow sashes
- Optimized precision mechanism thanks to the innovative patented design
- Snap-on cover allows for free installation and reduces inventory costs
- Snap-on feature for fast and secure operator attachment with sashes
- Optimized gear ratio to make operation easier and help meet ADA requirements
- Pre-installed gasket and optimized sealed housing to reduce risks of water and air infiltration
- Available in powder-coated steel or optional 304 austenitic stainless steel for coastal applications

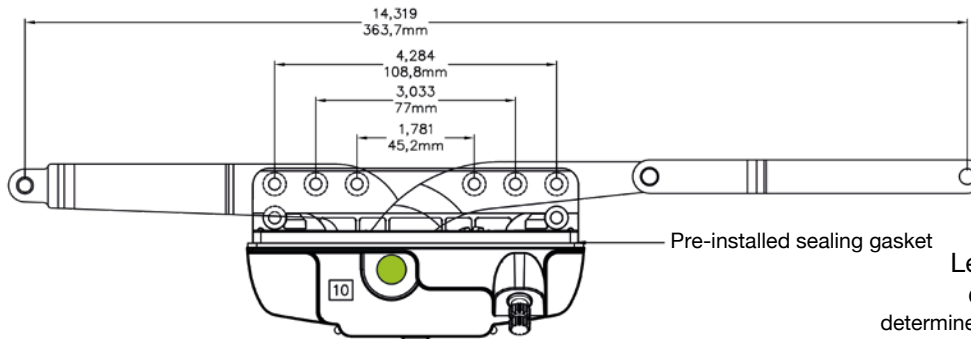


**Easy
Implementation!**



Added value

23.0 Washability short dual | Specifications

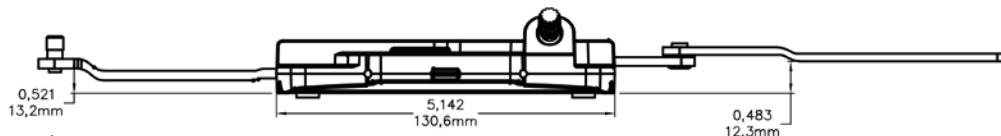
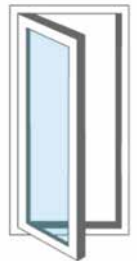


Pre-installed sealing gasket

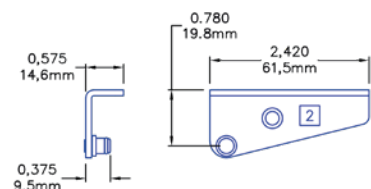
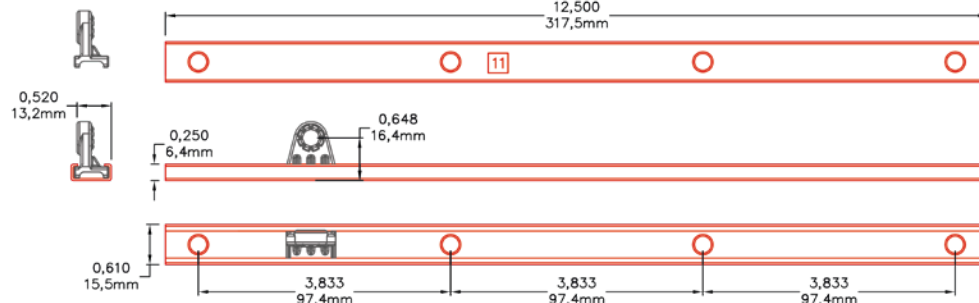
Left Opening

Left Hand Shown

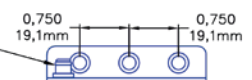
Operator handing is determined by the hinge side when looking at the window from the outside.



OPR-30615-SLD | Composite slider (pre-installed)



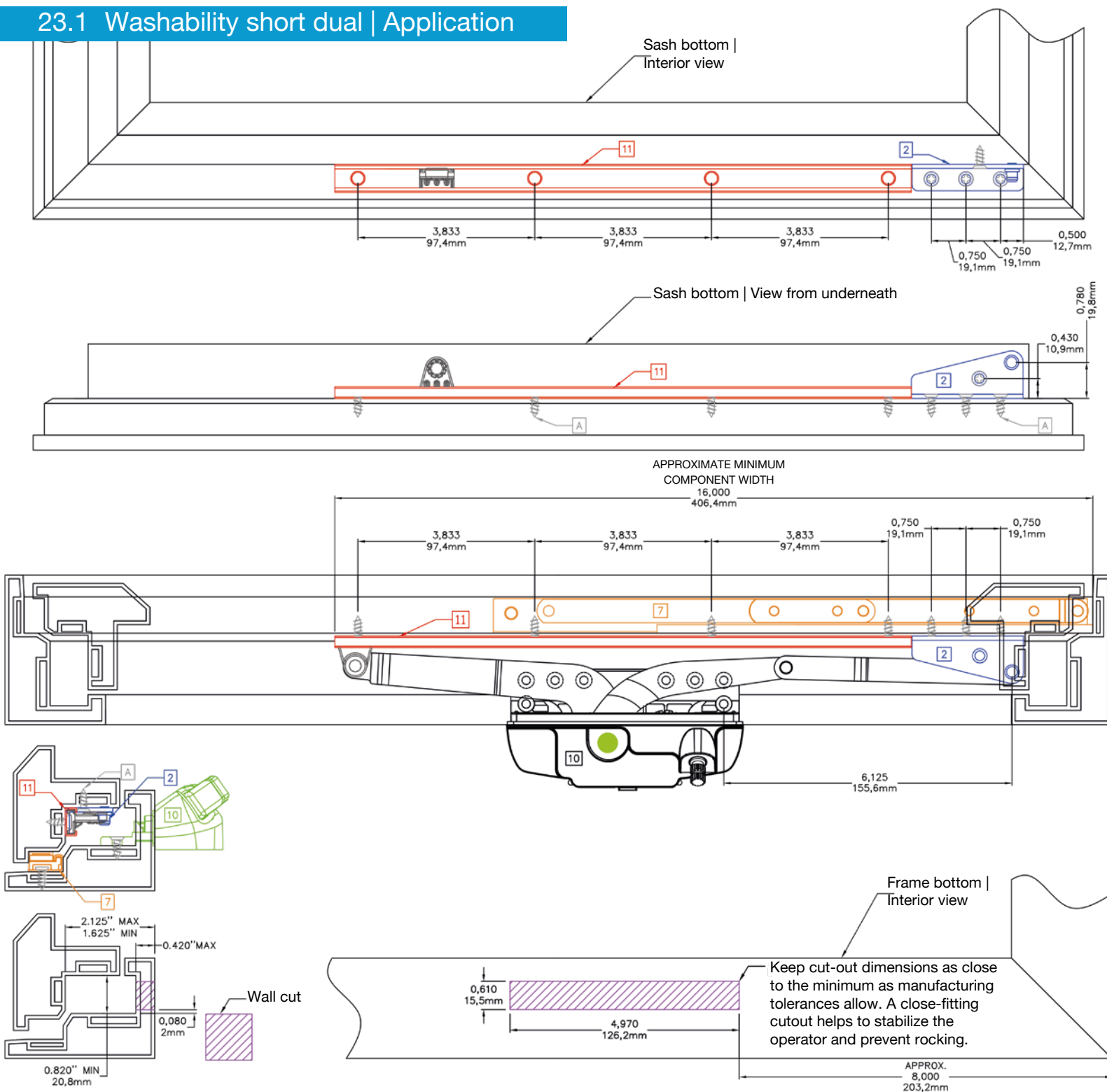
Snap-on ring





*Please note that the following drawings are only generic PVC drawings and that your actual application may vary depending on your extrusion profile. Contact a Radisson sales representative for further information.

23.1 Washability short dual | Application



23.2 Washability short dual | Part list

- | | | | |
|----|-----------------------------------------------------------------------------|----|---------------------------------------------------------|
| 2 | OPS-10327 "L" shape snap-on stud bracket for LH operator | 11 | OPR-30615 Washability short dual arm operator track |
| 7 | BPRPS-5600-13GSS Adjustable 13" wash. hinge kit snap-on LH | A | Recommended screw: 10-12 large thread, flat undercut #7 |
| 10 | OPS-30615G Evolution left hand GN dot washability short dual arm operator | | |



Left hand shown

30604 Evolution Series

Low Profile Dual Arm

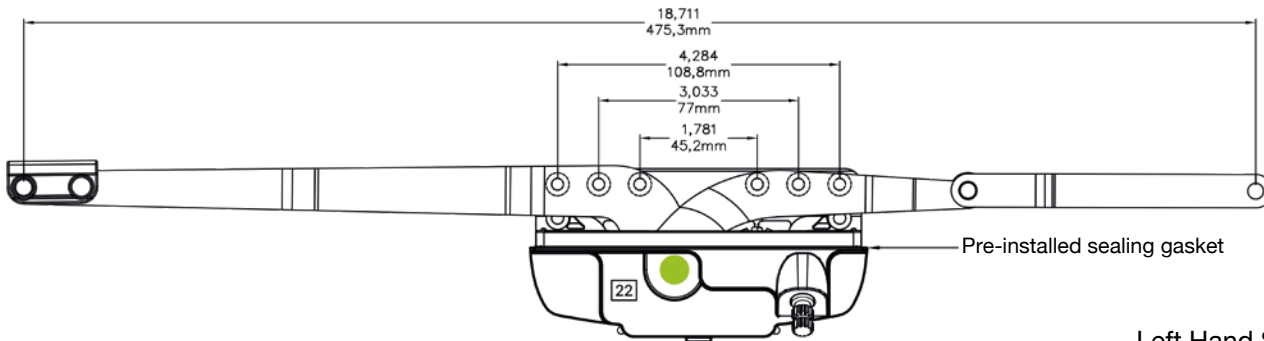
Designed for low profile frames in widths from 24. to 40 inches

Minimum cavity heights of 15 mm or 0,625 inches

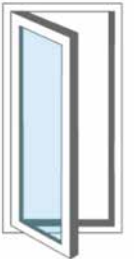
Features

- Optimized precision mechanism thanks to the innovative patented design
- Snap-on cover allows for free installation and reduces inventory costs
- Snap-on feature for fast and secure operator attachment with sashes
- Optimized gear ratio to make operation easier and help meet ADA requirements
- Pre-installed gasket and optimized sealed housing to reduce risks of water and air infiltration
- Available in powder-coated steel or optional 304 austenitic stainless steel for coastal applications

24.0 Low profile dual | Specifications

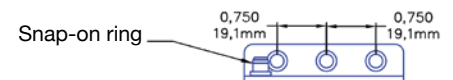
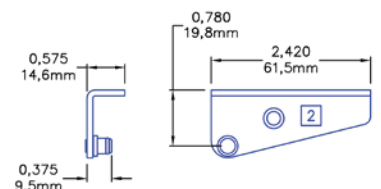
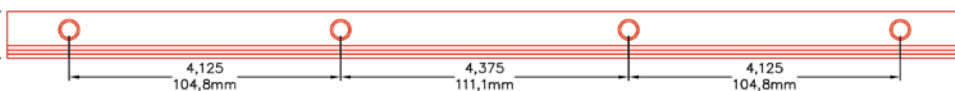
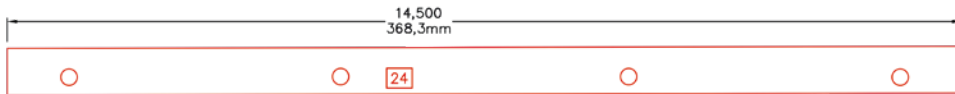
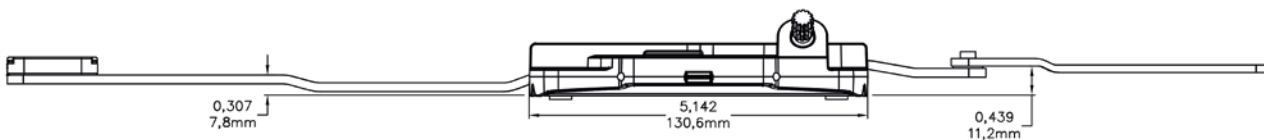


Left Opening
(Outside view)



Left Hand Shown

Operator handing is determined by the hinge side when looking at the window from the outside.

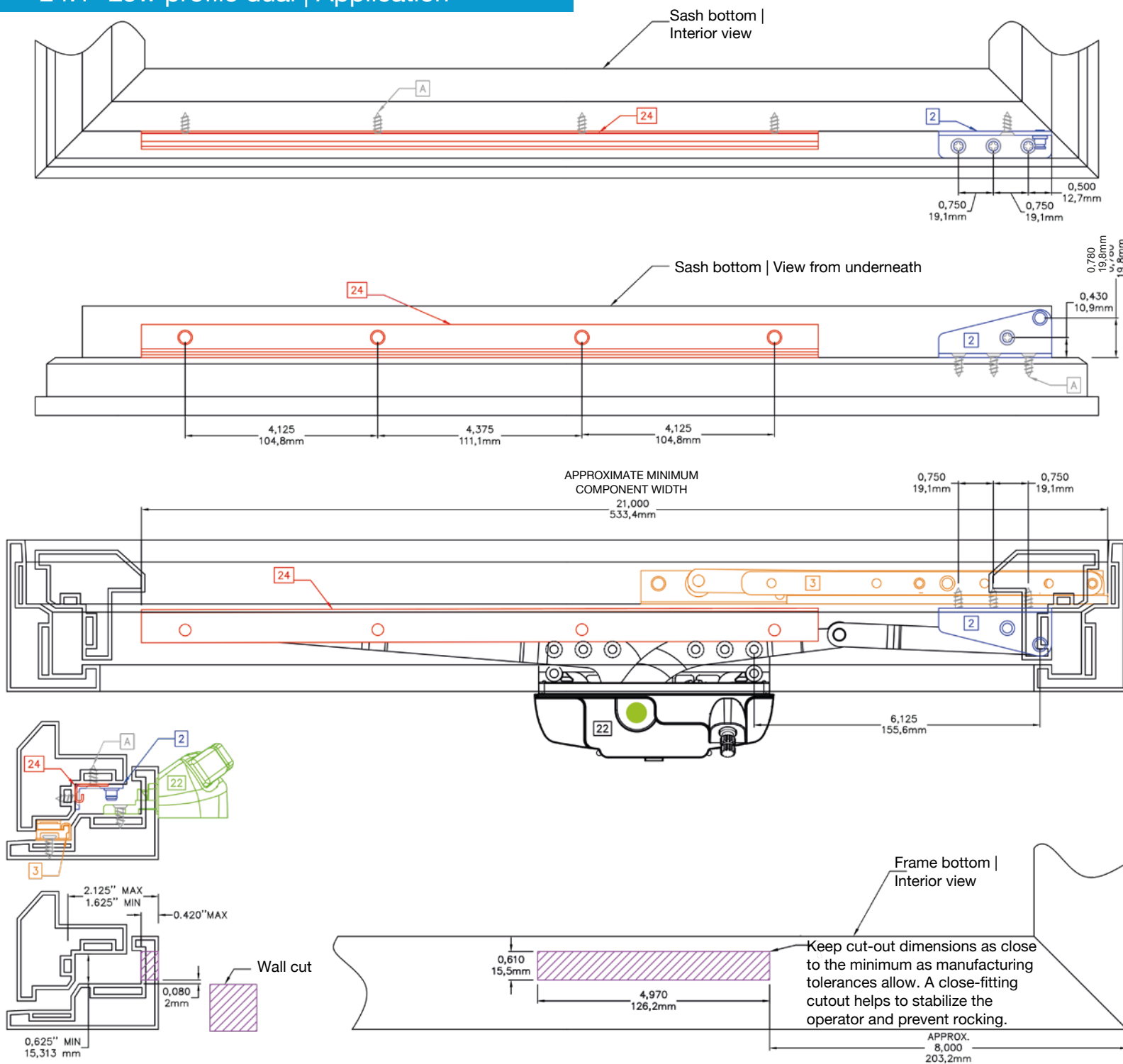


Snap-on ring



*Please note that the following drawings are only generic PVC drawings and that your actual application may vary depending on your extrusion profile. Contact a Radisson sales representative for further information.

24.1 Low profile dual | Application



24.2 Low profile dual | Part list

- | | | | |
|----|-----------------------------------------------------------------------------------|----|---------------------------------------------------------|
| 2 | OPS-10327 "L" shape snap-on stud bracket for LH operator | 24 | OPR-30680 14.5" Low profile operator track |
| 3 | BPRPS-5600-10GSS Adjustable 10" wash. hinge kit snap-on LH | A | Recommended screw: 10-12 large thread, flat undercut #7 |
| 22 | OPS-30604G Evolution left hand GN dot washability low profile dual arm operator | | |









24.3 Dual arms | Ordering

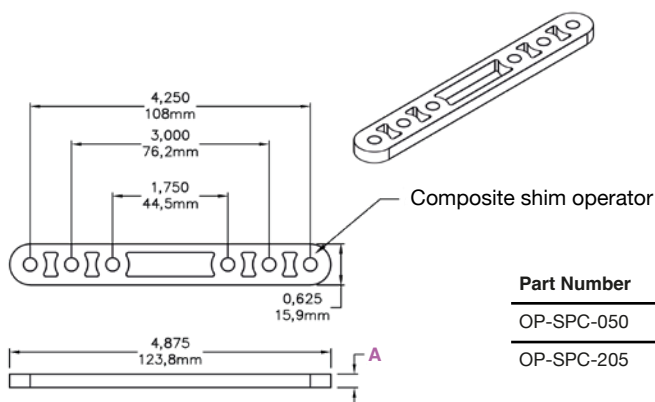
*The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.

Operators

Part Number	Description	Box/Qty.
OPS-30603D-XX	Evolution dual arm, right hand RED dot operator	20
OPS-30603G-XX	Evolution dual arm, left hand GREEN dot operator	20
OPS-30605D-XX	Evolution egress short dual arm, right hand RED dot operator	20
OPS-30605G-XX	Evolution egress short dual arm, left hand GREEN dot operator	20
OPS-30615D-XX	Evolution washability short dual arm, right hand RED dot operator	20
OPS-30615G-XX	Evolution washability short dual arm, left hand GREEN dot operator	20
OPS-30604D-XX	Evolution low profile dual arm, right hand RED dot operator	20
OPS-30604G-XX	Evolution low profile dual arm, left hand GREEN dot operator	20

Accessories

Part Number	Description	Box/Qty.
OPR-30603-SSW	Stainless steel dual arm operator track 	100
OPR-30605-SSW	Stainless steel egress short dual arm operator track 	100
OPR-30615-SSW	Stainless steel washability short dual arm operator track 	100
OPR-30603-SLD	Spare plastic shoe slider for dual and egress short dual arm operator track 	100
OPR-30615-SLD	Spare plastic shoe slider for washability short dual arm operator track 	100
OPR-30680-SSW	Stainless steel low profile dual arm operator track 	100
OP-SPC-050	1.3mm or 0.050" window operator shim 	200
OP-SPC-205	5.2mm or 0.205" window operator shim 	200
OPS-10326-XX	"L" shape snap-on stud bracket for right hand operator	200
OPS-10327-XX	"L" shape snap-on stud bracket for left hand operator	200



Part Number	A	Box/Qty.
OP-SPC-050	0.050"	200
OP-SPC-205	0.205"	200

Replace the variable **XX** with the desired value to specify material:

Blank = Standard powder-coated
SS = Optional 304 austenitic stainless steel (coastal applications)

Replace the variable **W** with the desired value to specify material:

2 = Standard 430 stainless steel
1 = Optional 304 austenitic stainless steel (coastal applications)



30606 Evolution Series Awning

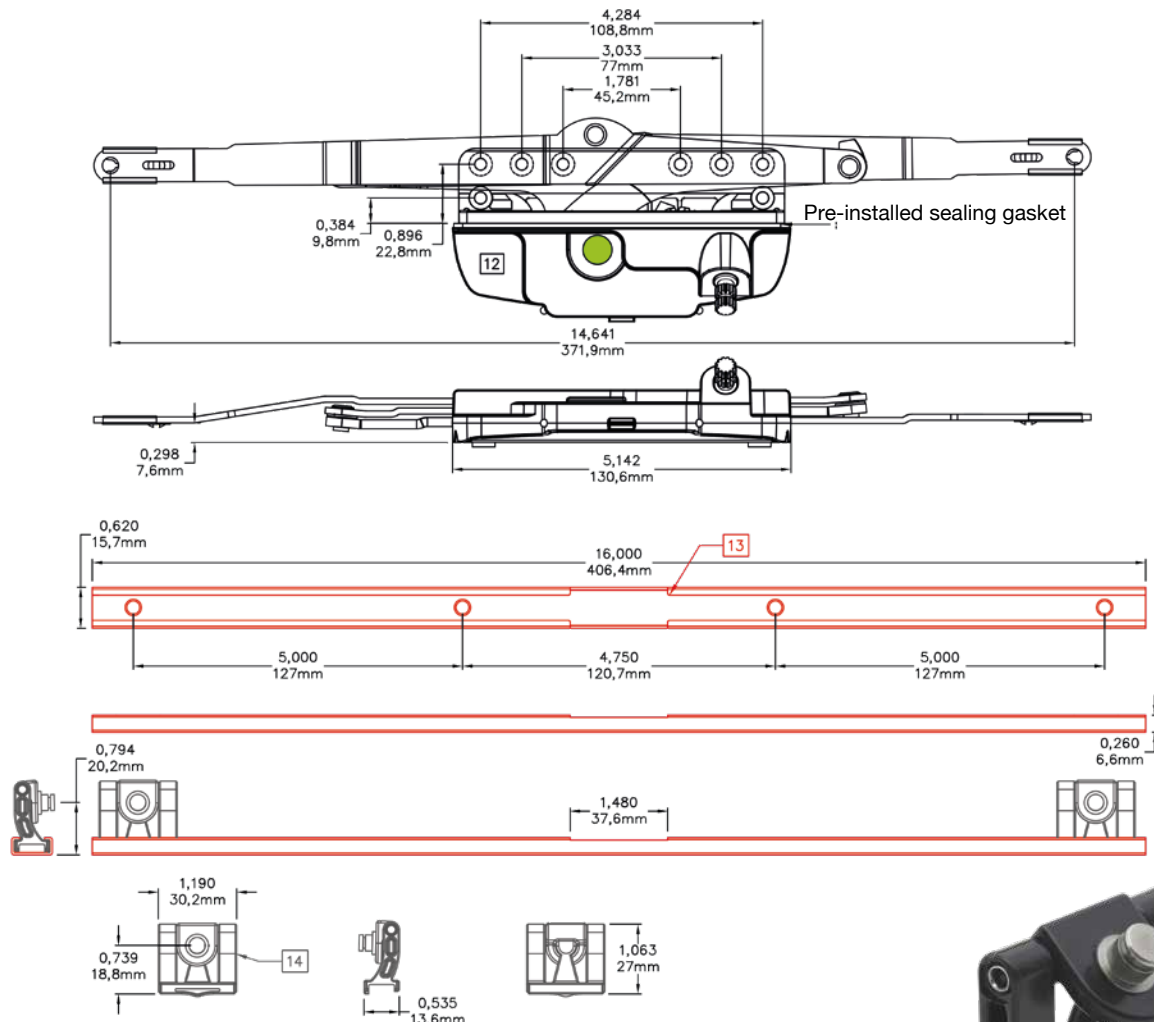
Designed for awning frames in widths from 20. to 60 inches

Features

- Optimized precision mechanism thanks to the innovative patented design
- Snap-on cover allows for free installation and reduces inventory costs
- Clip-on feature for fast and secure operator attachment with sashes
- Optimized gear ratio to make operation easier and help meet ADA requirements
- Pre-installed gasket and optimized sealed housing to reduce risks of water and air infiltration
- Available in powder-coated steel or optional 304 austenitic stainless steel for coastal applications

 **Easy
Transition!**

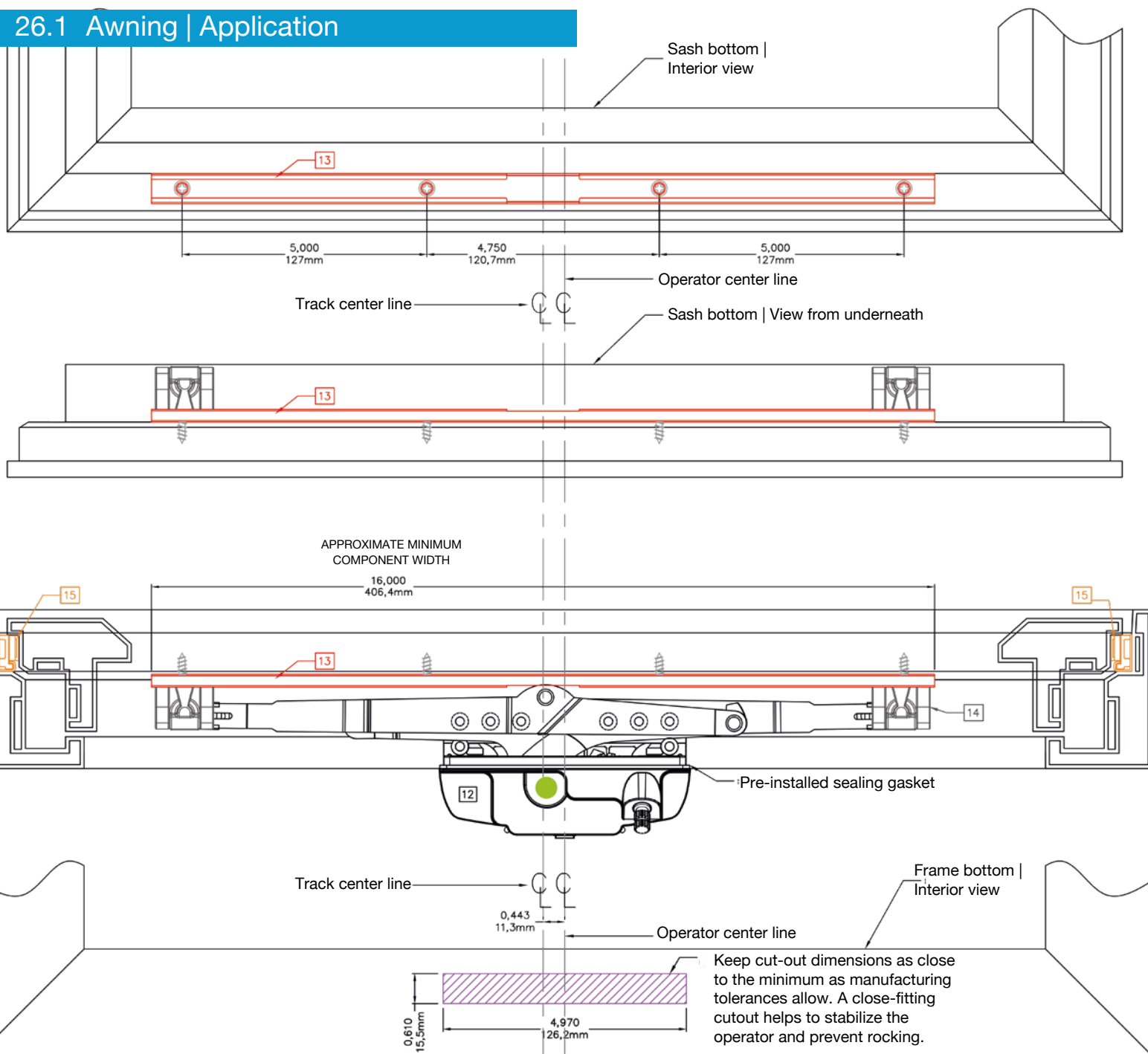
25.0 Awning | Specifications





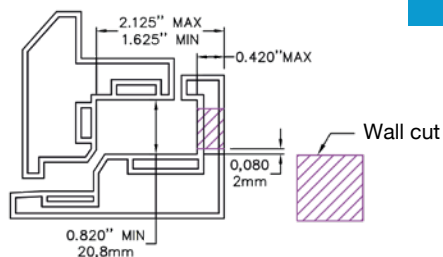
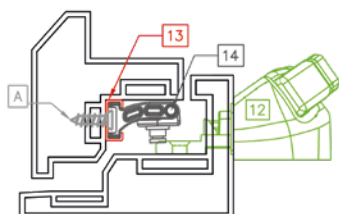
*Please note that the following drawings are only generic PVC drawings and that your actual application may vary depending on your extrusion profile. Contact a Radisson sales representative for further information.

26.1 Awning | Application



26.2 Awning | Part list

- | | |
|----|-----------------------------------------------------------------|
| 12 | OP-30606 Evolution GN dot scissor awning operator |
| 13 | OPR-30606 Track for scissor awning operator |
| 14 | OPR-30606-SLD Plastic slider shoe for scissor awning operator |
| 15 | BPRP-5100-18 Awning 2-bar hinge kit, right and left hand |
| A | Recommended screw: 10-12 large thread, flat undercut #7 |



30609 Evolution Series

Short Awning

Designed for awning frames in widths from 12. to 20 inches

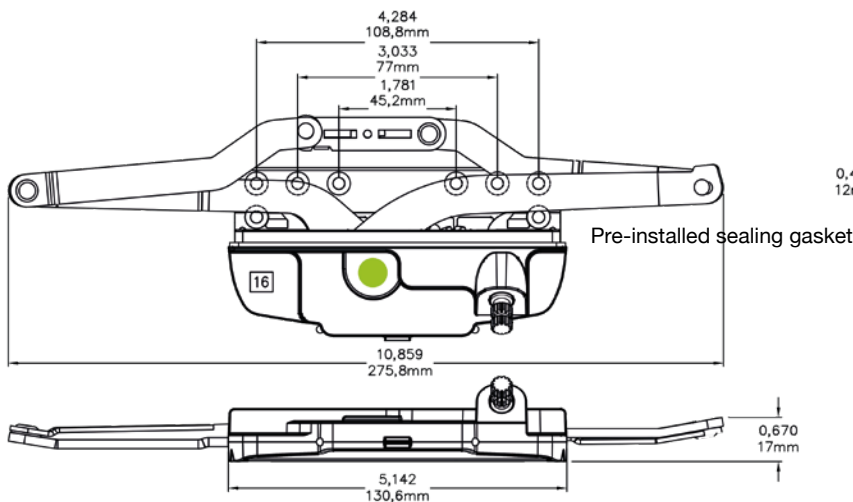
*The minimum recommended sash height is 16" (Depending on profile)

Features

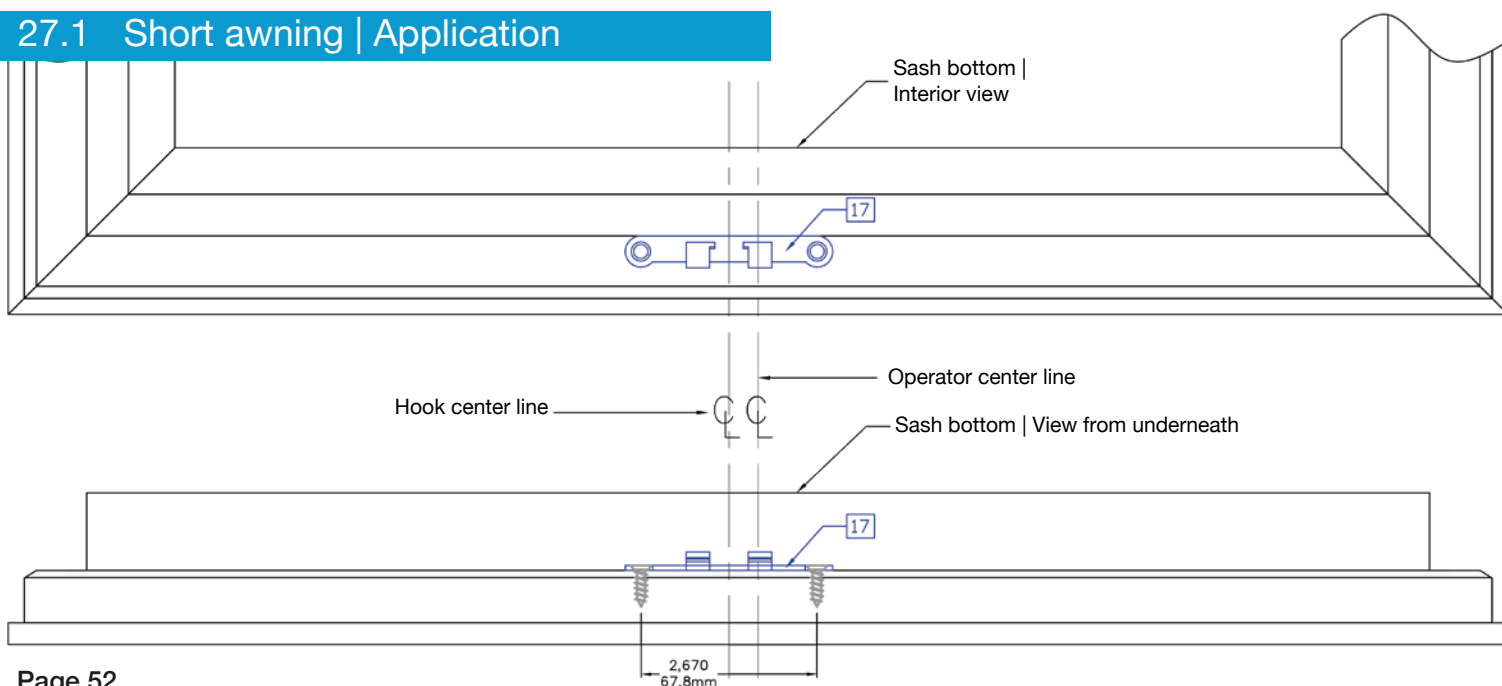
- Optimized precision mechanism thanks to the innovative patented design
- Snap-on cover allows for free installation and reduces inventory costs
- Locking lever feature for fast and secure operator attachment with sashes
- Optimized gear ratio to make operation easier and help meet ADA requirements
- Pre-installed gasket and optimized sealed housing to reduce risks of water and air infiltration
- Available in powder-coated steel or optional 304 austenitic stainless steel for coastal applications

 **Easy Transition!**

27.0 Short awning | Specifications



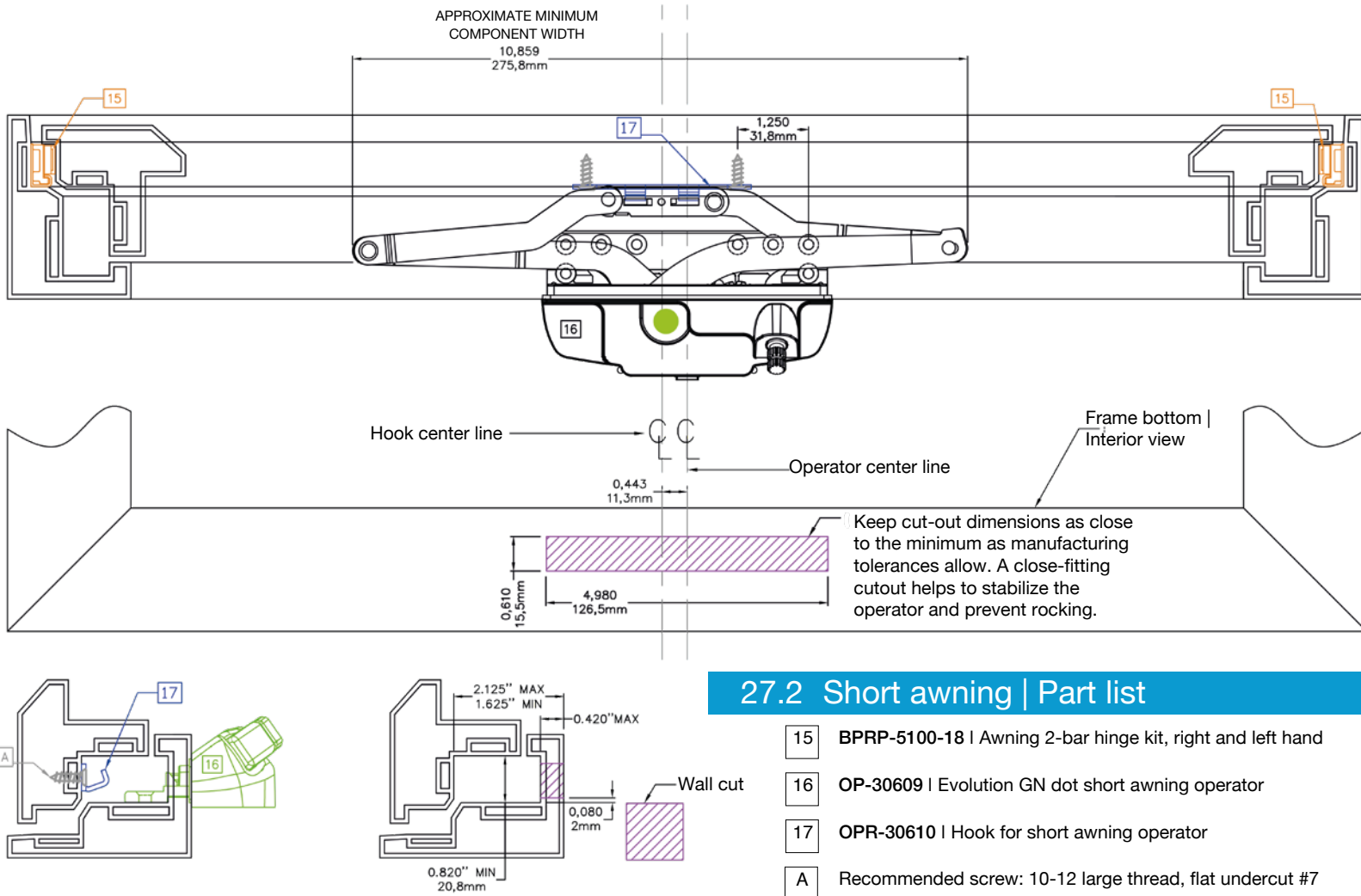
27.1 Short awning | Application





*Please note that the following drawings are only generic PVC drawings and that your actual application may vary depending on your extrusion profile. Contact a Radisson sales representative for further information.



27.1 Short awning | Application (cont'd)



27.2 Short awning | Part list

27.3 Awnings | Ordering

*The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.

Part Number	Description	Box/Qty.
OP-30606	Evolution awning, GREEN dot operator	20
OP-30609	Evolution short awning, GREEN dot operator	20
OPR-30606-XX	Scissor awning operator track 	100
OPR-30606-SLD	Plastic slider for scissor awning operator track 	200
OPR-30610-XX	Adjustable awning operator hook	100

Replace the variable **XX** with the desired value to specify material:

Blank = Standard powder-coated
SS = Optional 304 austenitic stainless steel (coastal applications)



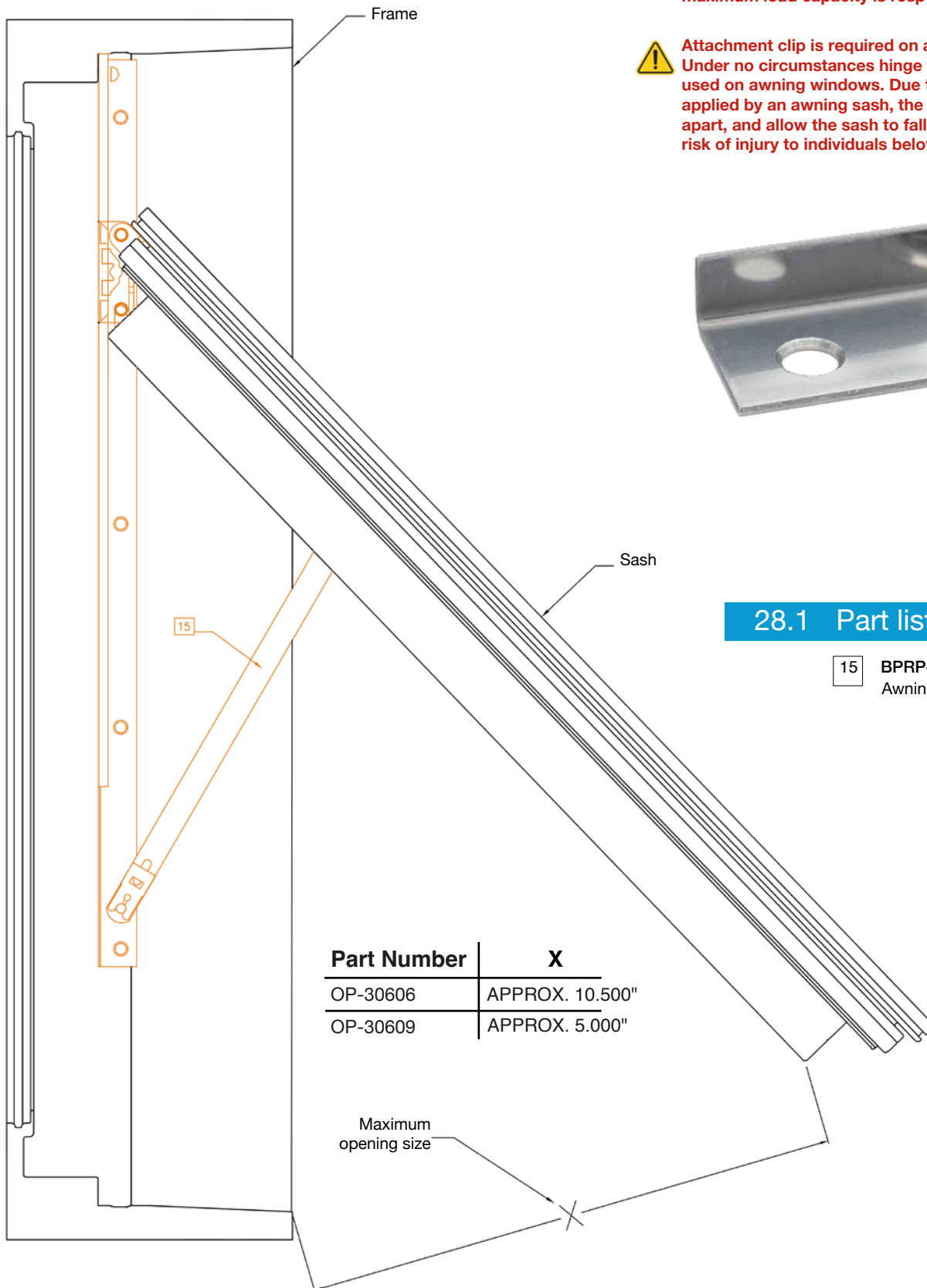
28.0 Awnings | Maximum opening



Please refer to awning hinge technical spec sheet to ensure proper hardware is used and recommended maximum load capacity is respected. (Page 34)



Attachment clip is required on awning window hinges. Under no circumstances hinge with a snap-on stud be used on awning windows. Due to the rotational forces applied by an awning sash, the snap stud can work its way apart, and allow the sash to fall out, representing a serious risk of injury to individuals below.



28.1 Part list

15

BPRP-5100-18DSS |
Awning 2-bar hinge kit, right hand



30620 Evolution Series Straight arm

Designed for frames in widths from 16. to 30 inches

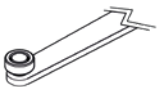
Features

- Optimized precision mechanism thanks to the innovative patented design
- Snap-on cover allows for free installation and reduces inventory costs
- Optimized gear ratio to make operation easier and help meet ADA requirements
- Pre-installed gasket and optimized sealed housing to reduce risks of water and air infiltration
- Available in powder-coated steel or optional 304 austenitic stainless steel for coastal applications

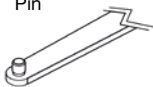


29.0 Straight arm | Specifications

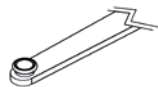
TYPE 01
Plastic Roller



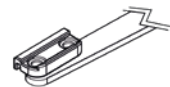
TYPE 02
Metal Snap On
Pin



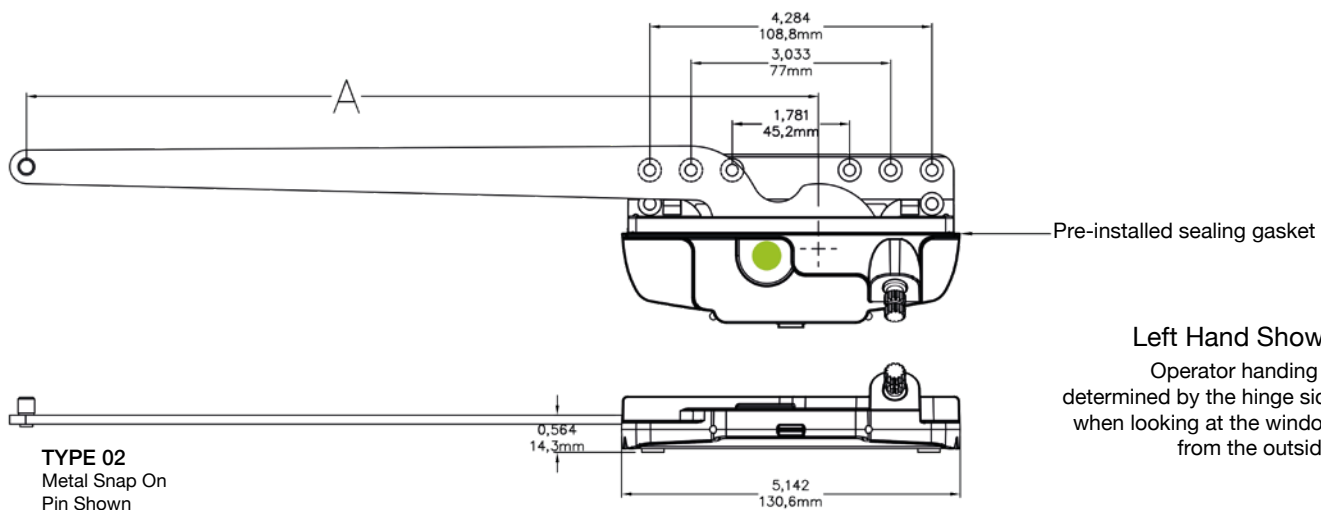
TYPE 03
Metal Roller



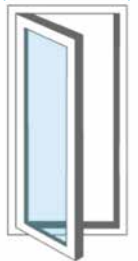
TYPE 04
Slider



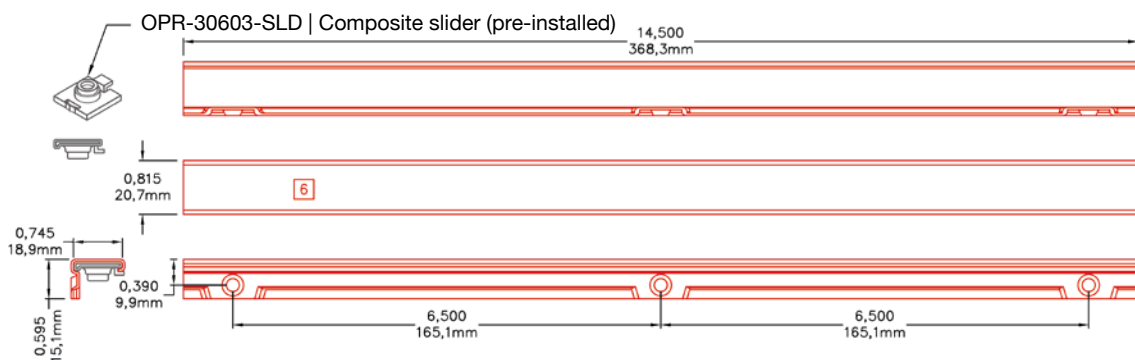
	ARM LENGTH A	APPROX. COMPONENT WIDTH B
OP-30621D/G	7.500 (190.5mm)	13.191 (330.2mm)
OP-30622D/G	9.500 (241.3mm)	16.709 (424.4mm)
OP-30623D/G	13.500 (342.9mm)	23.744 (584.2mm)



Left Opening
(Outside view)



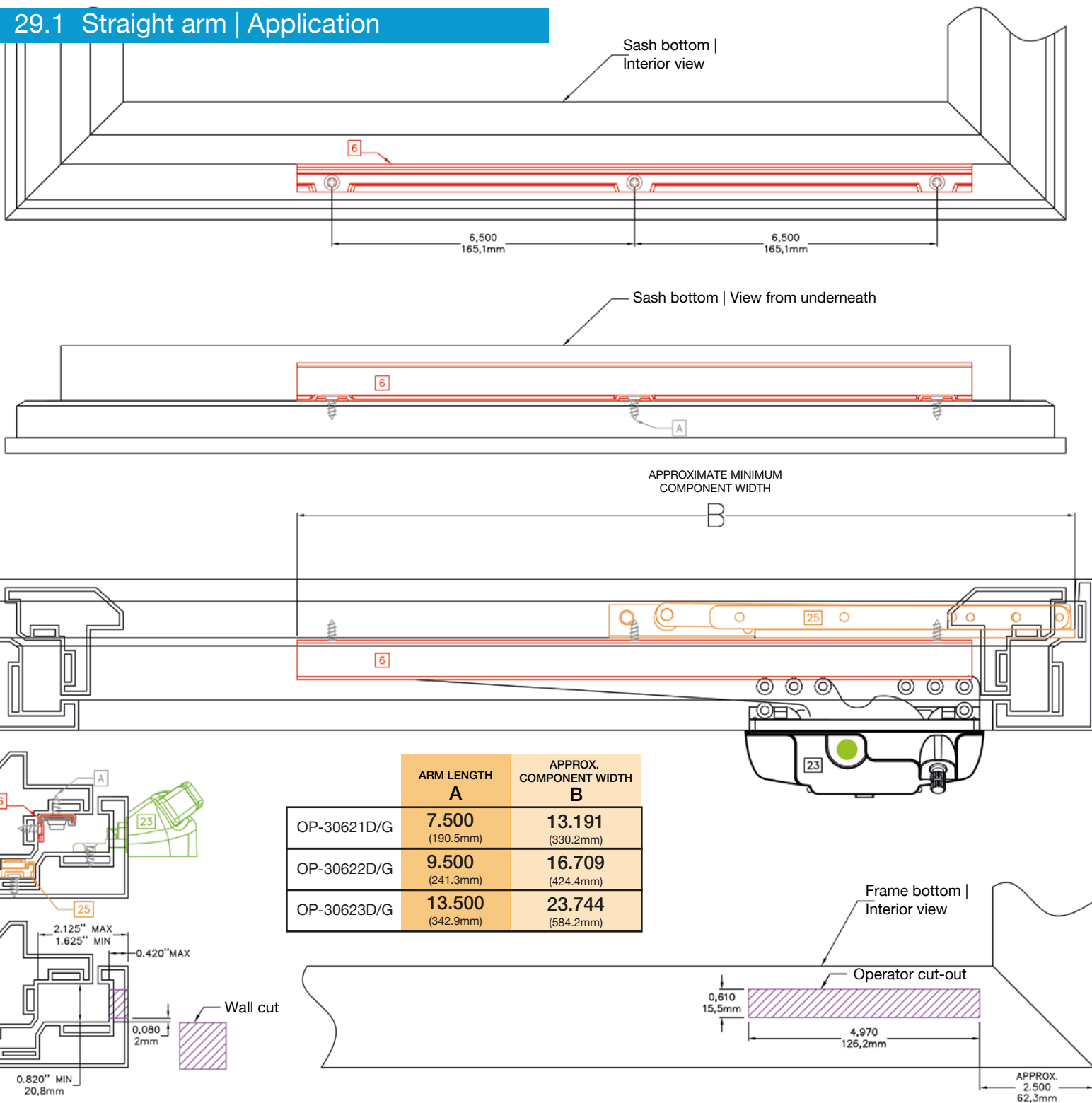
Left Hand Shown
Operator handing is determined by the hinge side when looking at the window from the outside.





*Please note that the following drawings are only generic PVC drawings and that your actual application may vary depending on your extrusion profile. Contact a Radisson sales representative for further information.

29.1 Straight arm | Application



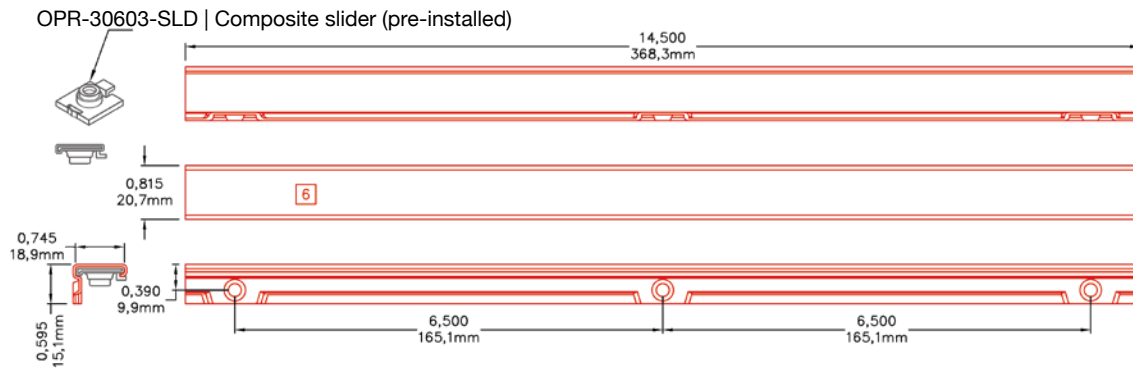
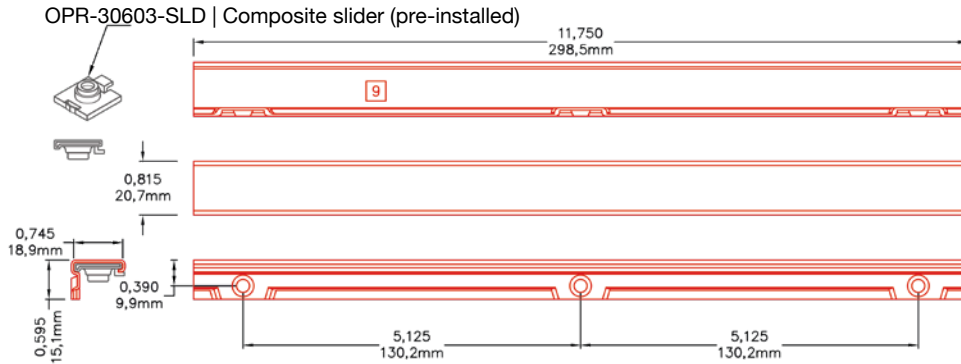
	ARM LENGTH A	APPROX. COMPONENT WIDTH B
OP-30621D/G	7.500 (190.5mm)	13.191 (330.2mm)
OP-30622D/G	9.500 (241.3mm)	16.709 (424.4mm)
OP-30623D/G	13.500 (342.9mm)	23.744 (584.2mm)

29.2 Straight arm | Part list

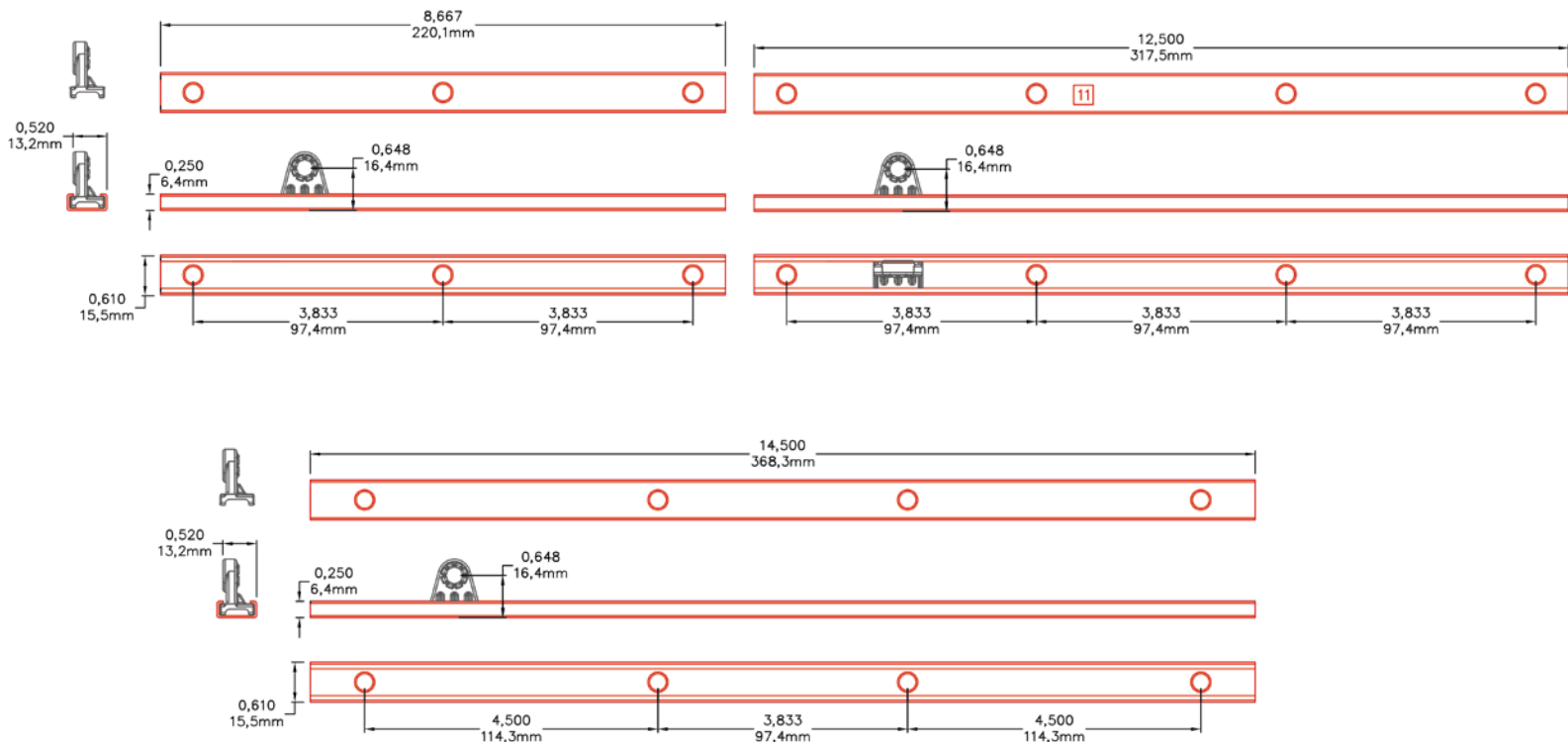
- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| <p>23 OP-30622G Evolution left hand GN dot, 9-1/2 inches straight arm operator</p> <p>25 BPRPS-5300-10GSS Adjustable 10" EGRESS hinge kit snap-on LH</p> | <p>6 OPR-30603 Operator track 14.5 - Type 02 L shape</p> <p>A Recommended screw: 10-12 large thread, flat undercut #7</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|

29.3 Straight arm | Track

Type 02 | L shape

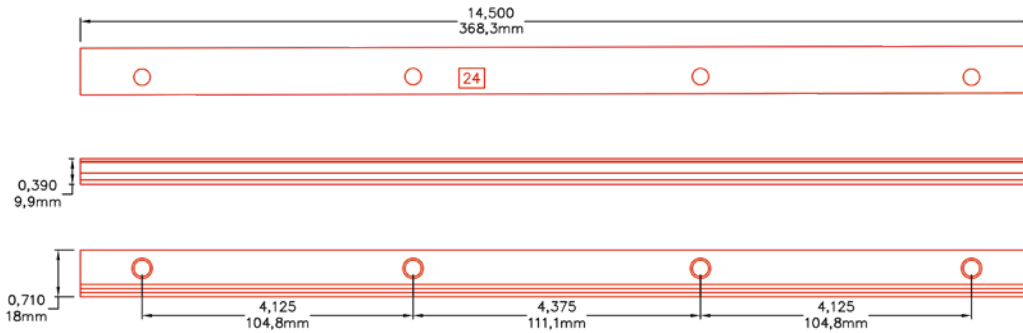


Type 02 | C Shape



29.3 Straight arm | Track

Type 04 | L shape

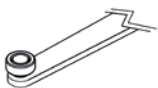


29.3 Straight arm | Ordering

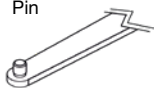
*The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.

Part Number	Description	Box/Qty.
OP-306Y1D-XX	Evolution right hand RED dot, 7-1/2 straight arm operator	20
OP-306Y1G-XX	Evolution left hand GREEN dot, 7-1/2 straight arm operator	20
OP-306Y2D-XX	Evolution right hand RED dot, 9-1/2 straight arm operator	20
OP-306Y2G-XX	Evolution left hand GREEN dot, 9-1/2 straight arm operator	20
OP-306Y3D-XX	Evolution right hand RED dot, 13-1/2 straight arm operator	20
OP-306Y3G-XX	Evolution left hand GREEN dot, 13-1/2 straight arm operator	20
OPR-30603-SSW	Operator track 14.5 - Type 02 L shape 🍁	100
OPR-30605-SSW	Operator track 11.75 - Type 02 L shape 🍁	100
OPR-30615-SSW	Operator track 14.5 - Type 02 C shape 🍁	100
OPR-30604-SSW	Operator track 12.5 - Type 02 C shape 🍁	100
OPR-30614-SSW	Operator track 8.5 - Type 02 C shape 🍁	100
OPR-30680-SSW	Operator track 14.5 - Type 04 L shape	100

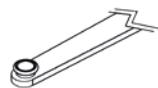
TYPE 01
Plastic Roller



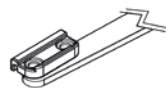
TYPE 02
Metal Snap On Pin



TYPE 03
Metal Roller



TYPE 04
Slider



Replace the variable **Y** with the desired value to specify attachment type:

- 1 = TYPE 01 - Plastic roller
- 2 = TYPE 02 - Snap On
- 3 = TYPE 03 - Stainless Steel roller
- 4 = TYPE 04 - Slider

Replace the variable **XX** with the desired value to specify material:

- Blank = Standard powder-coated
- SS = Optional 304 austenitic stainless steel (coastal applications)

Replace the variable **W** with the desired value to specify material:

- 2 = Standard 430 stainless steel
- 1 = Optional 304 austenitic stainless steel (coastal applications)

30.0 Cover and handle | Specifications

30630 Series

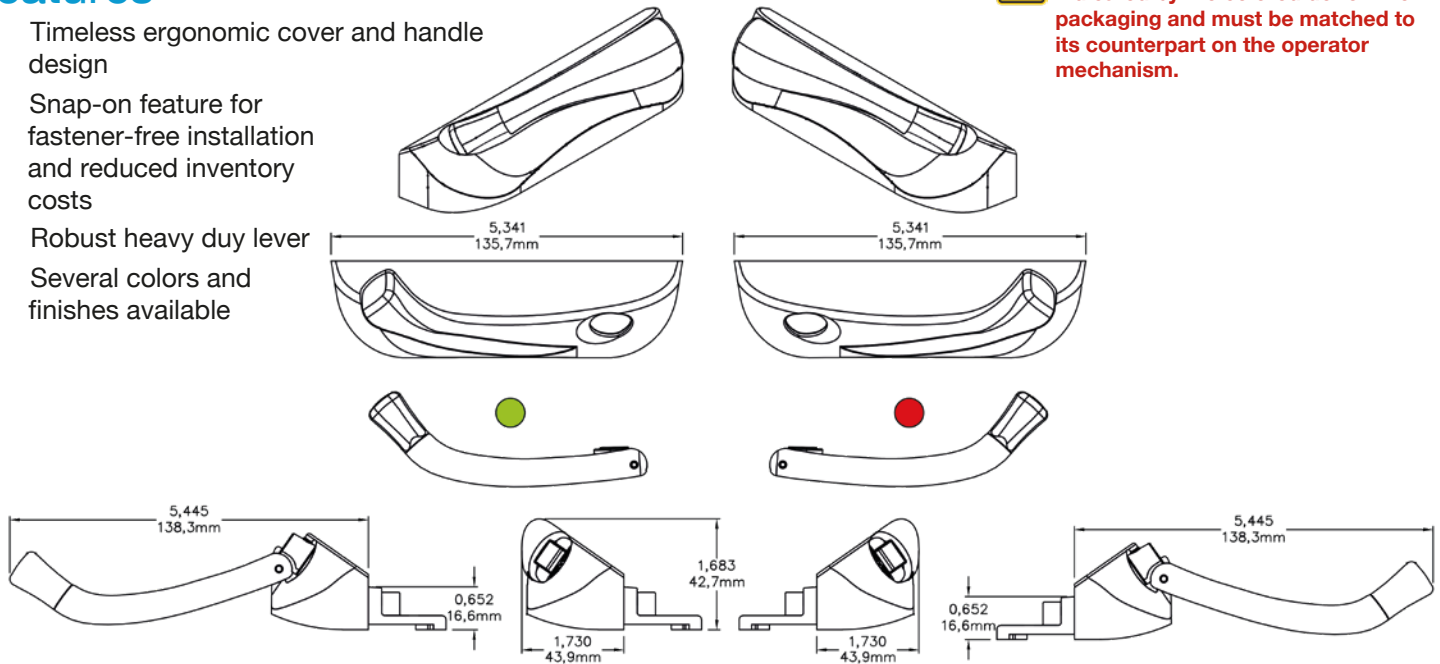
Traditional

Features

- Timeless ergonomic cover and handle design
- Snap-on feature for fastener-free installation and reduced inventory costs
- Robust heavy duty lever
- Several colors and finishes available



Cover and handle handling is indicated by the colored dot on the packaging and must be matched to its counterpart on the operator mechanism.



30720 Series

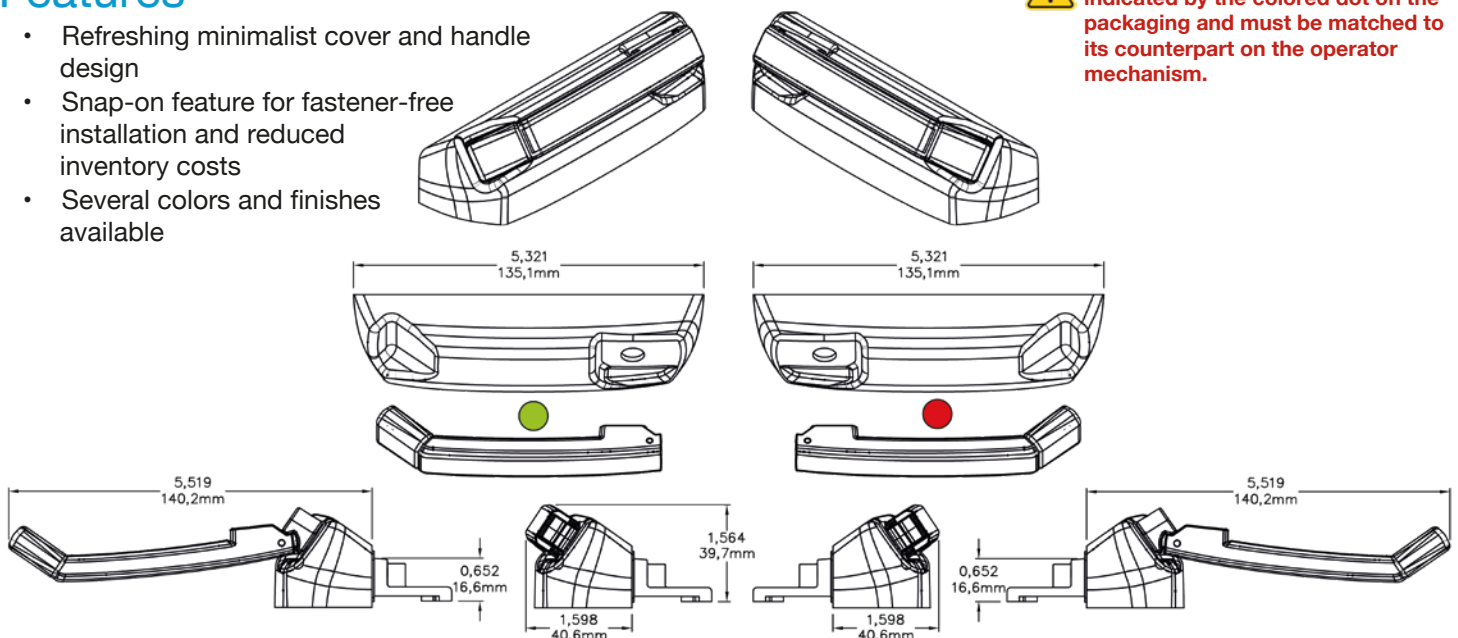
Contemporary

Features

- Refreshing minimalist cover and handle design
- Snap-on feature for fastener-free installation and reduced inventory costs
- Several colors and finishes available



Cover and handle handling is indicated by the colored dot on the packaging and must be matched to its counterpart on the operator mechanism.



30.1 Colors and finishes



The perception of colors by the human eye varies from one individual to another. Colors and finishes shown below are for illustrative purposes only and should be used solely for general guidance.

Actual colors and finishes may vary depending on the shape of the product, its composition, and the brightness of the light to which it is exposed. Contact a Radisson Industries representative for an actual sample and stock availability.

Powder-Coated Finishes



Decorative Finishes



30.2 Cover and handle | Ordering

**The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.*

Part Number	Description	Box/Qty.
OP-30630 Y - ZZZ	Traditional plastic cover and handle for Evolution operator	100
OP-30730 Y - ZZZ	Contemporary plastic cover and handle for Evolution operator	100

Replace the variable **Y** with the desired value to specify green or red dot:

V = **GREEN** dot

R = **RED** dot

Replace the variable **ZZZ** with the desired value to specify colors or finishes. (See above)

Contemporary design



Traditional design



31.0 Maximum Frame Size & Sash Weight

Hardware Comparison: NAFS Casement Window Hardware Load Test (North American Fenestration Standard)



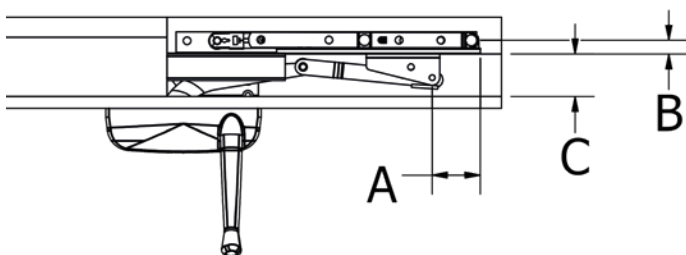
Many factors in addition to the hardware dictate maximum casement window size. These include sash and frame stiffness and strength, screw holding strength, sash sag, weathertightness, and weatherstrip drag. For this reason, we recommend careful evaluation of the entire window before producing units as large as this matrix suggests.

STANDARD					EGRESS				
		BPS-5500-10D/G BPRPS-5600-10D/G	BPS-5500-13D/G BPRPS-5600-13D/G			BPS-5200-10D/G BPRPS-5300-10D/G	BPS-5200-13D/G BPRPS-5300-13D/G		
		Max Frame (Width x Height)	Max Weight (With Glass)	Max Frame (Width x Height)	Max Weight (With Glass)	Max Frame (Width x Height)	Max Weight (With Glass)	Max Frame (Width x Height)	Max Weight (With Glass)
31.1 Dyad arm						NOT RECOMMENDED			
OPS-30601D/G OPS-30602D/G		24" x 60" (609mm x 1524mm)	45 lb. (20 kg)	24" x 60" (609mm x 1524mm)	55 lb. (25 kg)				
OPS-30608D/G		24" x 72" (609mm x 1828mm)	53 lb. (24 kg)	24" x 72" (609mm x 1828mm)	53 lb. (24 kg)	24" x 72" (609mm x 1828mm)	53 lb. (24 kg)	24" x 72" (609mm x 1828mm)	53 lb. (24 kg)
31.2 Dual arm									
OPS-30603D/G OPS-30604D/G		32" x 72" (812mm x 1828mm)	83 lb. (38 kg)	40" x 84" (1016mm x 2133mm)	110 lb. (50 kg)	32" x 68" (812mm x 1724mm)	69 lb. (31 kg)	32" x 68" (812mm x 1724mm)	69 lb. (31 kg)
OPS-30605D/G		24" x 84" (609mm x 2133mm)	70 lb. (32 kg)	NOT RECOMMENDED		28" x 78" (711mm x 1981mm)	69 lb. (31 kg)	28" x 78" (711mm x 1981mm)	69 lb. (31 kg)
OPS-30615D/G		24" x 84" (609mm x 2133mm)	70 lb. (32 kg)	24" x 84" (609mm x 2133mm)	85 lb. (38 kg)	NOT RECOMMENDED			
31.3 Straight arm									
OP-30621D/G OP-30681D/G		NOT RECOMMENDED				22" x 63" (559mm x 1600mm)	42 lb. (19 kg)	22" x 63" (559mm x 1600mm)	42 lb. (19 kg)
OP-30622D/G OP-30682D/G		24" x 62" (609mm x 1575mm)	19 lb. (9 kg)	NOT RECOMMENDED		24" x 65" (609mm x 1651mm)	48 lb. (22 kg)	24" x 65" (609mm x 1651mm)	48 lb. (22 kg)
OP-30623D/G OP-30683D/G		26" x 69" (660mm x 1753mm)	41 lb. (18 kg)	NOT RECOMMENDED		26" x 65" (660mm x 1651mm)	52 lb. (24 kg)	26" x 65" (660mm x 1651mm)	52 lb. (24 kg)

STANDARD									
		BPRP-5100-10D/G	BPRP-5100-14D/G	BPRP-5100-18D/G	BPRP-5100-22D/G	BPRP-5100-26D/G			
		Max Sash Height (Width x Height)	Max Weight (With Glass)	Max Sash Height (Width x Height)	Max Weight (With Glass)	Max Sash Height (Width x Height)	Max Weight (With Glass)	Max Sash Height (Width x Height)	Max Weight (With Glass)
31.4 Awning									
OP-30609 OP-30606		10" - 14" (254mm - 355mm)	7 lb. (3 kg)	14" - 19" (355mm - 482mm)	20 lb. (9 kg)	19" - 26" (482mm - 660mm)	38 lb. (17 kg)	26" - 34" (660mm - 864mm)	50 lb. (22 kg)
								34" - 42" (864mm - 1067mm)	61 lb. (28 kg)



Attachment clip is required on awning window hinges. Under no circumstances should a casement hinge with a snap-on stud be used on awning windows. Due to the rotational forces applied by an awning sash, the snap stud can work its way apart, allowing the sash to fall out and cause a serious threat of injury to individuals below.



The table 21.1 & 21.2 assumes the following typical mounting positions:

A - Stud bracket position 1.750"

B - Hinge position 0.437"

C - Operator position 1.938"

Larger dimensions than these typical positions will not be able to support windows as large as the ones shown in this table.

Smaller dimensions may be able to support larger windows.



AAMA 904.14 | MAXIMUM HINGES LOAD TESTED

Maximum load capacity of 130lb.*

* Maximum load permitted for the AAMA hardware load test. Refer to the chart above for the maximum weight recommended by Radisson Industries to ensure ease of operation.

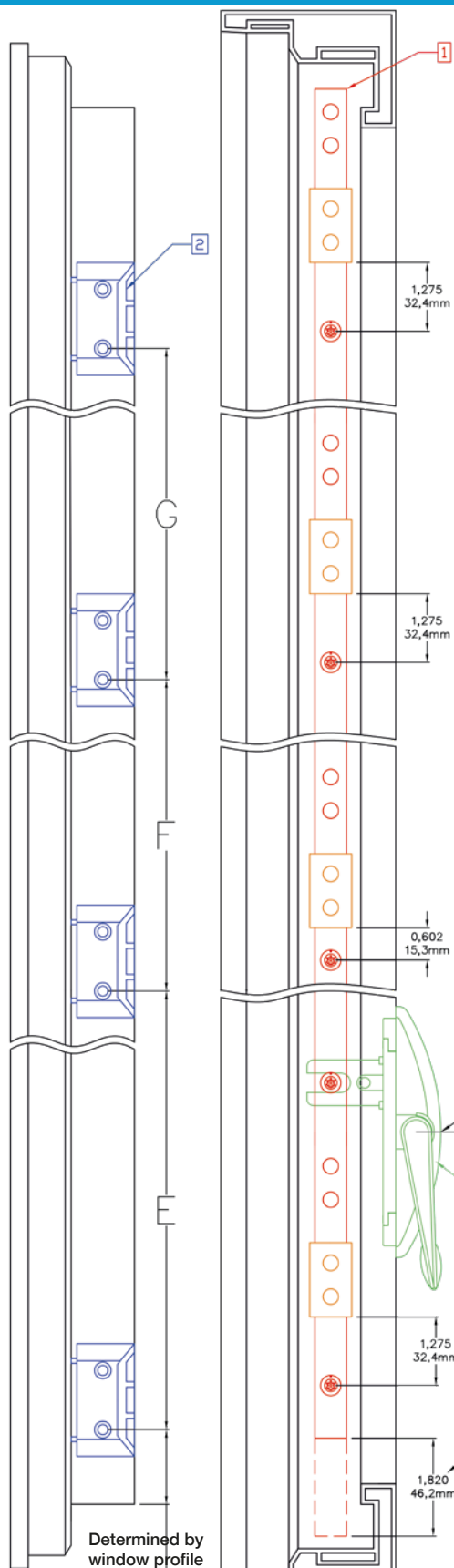
32.0 Trifecta | Specifications

30000 Series Trifecta

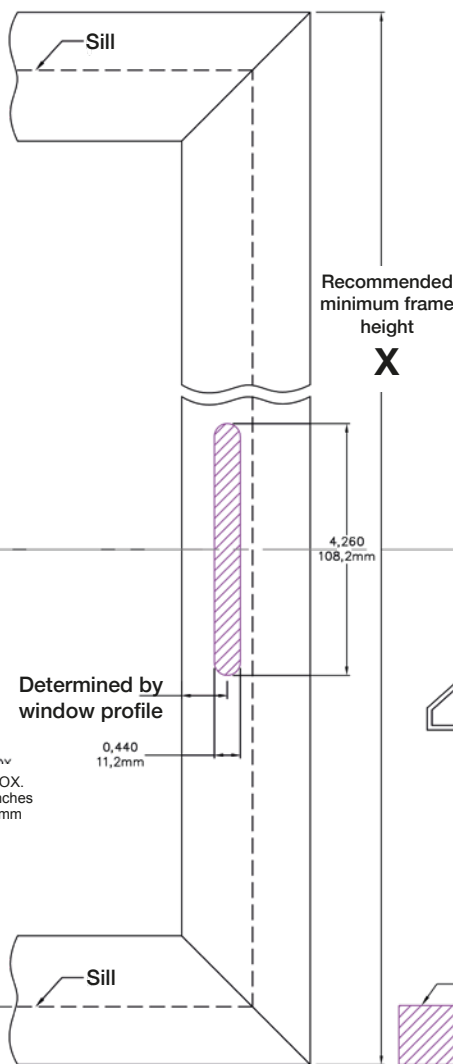
Standard lengths from 16" to 72" | 406mm to 1829mm

Features

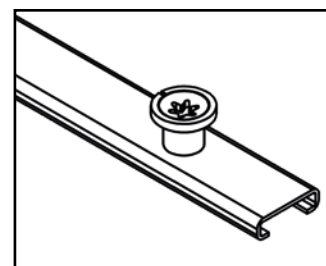
- Pre-installed guides allow for direct application as well as cost and time savings during installation
- Full cam adjustability allows for in-field and off-site adjustment, while maintaining optimal locking operation
- Available in standard 430 stainless steel or optional 304 austenitic stainless steel for coastal applications
- Available in the same configurations as other commonly used systems to allow for easy transition
- Customizable up to 5 locking points



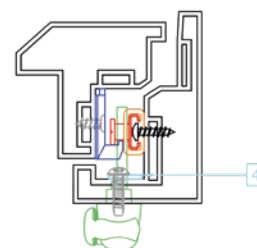
(Fig. 1.1)



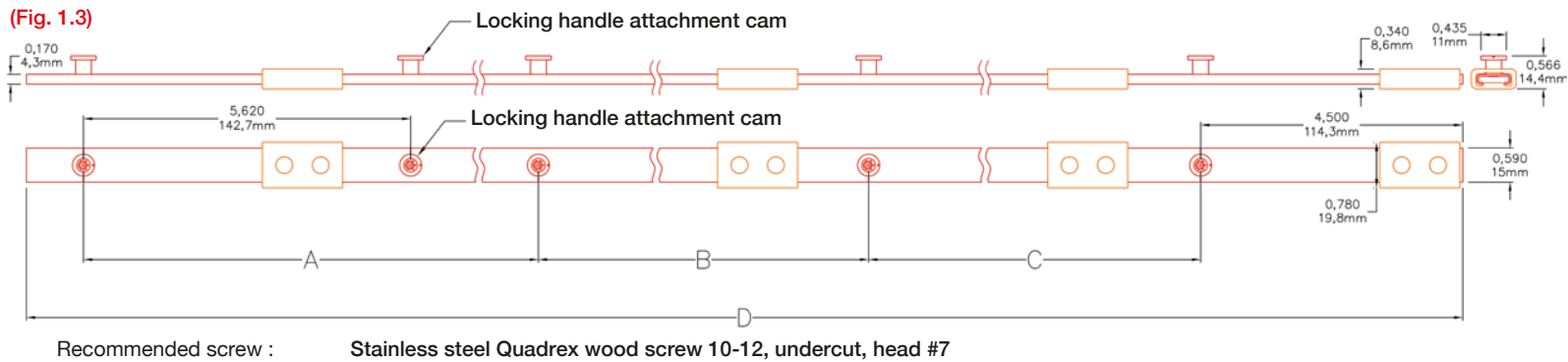
(Fig. 1.2)



Use Torx drive #25 for cam adjustment



(Fig. 1.3)



		Cam positions <small>(Fig. 1.3)</small>			Suggested keeper positioning <small>(Fig. 1.1)</small>			RECOMMENDED MINIMUM FRAME HEIGHT <small>(Fig. 1.2)</small>	
TIE BAR LENGTH									
Part #	D	A	B	C	E	F	G	X	
2 CAMS	FM-X015-J000	15.785" 400.9mm	10.305" 261.7mm			10.805" 274.4mm			18" 457.2mm
	FM-X020-J000	19.785" 502.5mm	14.305" 363.3mm			14.805" 376mm			22" 558.8mm
	FM-X025-J000	23.785" 604.1mm	18.305" 464.9mm			18.805" 477.6mm			26" 660.4mm
	FM-X030-J000	27.785" 705.7mm	22.305" 566.5mm			22.805" 579.2mm			31" 787.4mm
	FM-X035-J000	31.785" 807.3mm	26.305" 668.1mm			26.805" 680.8mm			35" 889mm
	FM-X040-J000	35.785" 908.9mm	30.305" 769.7mm			30.805" 782.4mm			39" 990.6mm
3 CAMS	FM-X026-J000	23.785" 604.1mm	9.665" 245.5mm	8.640" 219.9mm		9.915" 251.8mm	8.890" 225.8mm		26" 660.4mm
	FM-X031-J000	27.785" 705.7mm	11.665" 296.3mm	10.640" 270.3mm		11.915" 302.6mm	10.890" 276.6mm		31" 787.4mm
	FM-X036-J000	31.785" 807.3mm	13.665" 347.1mm	12.640" 321.1mm		13.915" 353.4mm	12.890" 327.4mm		35" 889mm
	FM-X041-J000	35.785" 908.9mm	15.665" 397.9mm	14.640" 371.9mm		15.915" 404.2mm	14.890" 378.2mm		39" 990.6mm
	FM-X045-J000	39.785" 1010.5mm	17.665" 448.7mm	16.640" 422.7mm		17.915" 455mm	16.890" 429mm		44" 1117.6mm
	FM-X050-J000	43.785" 1112.1mm	19.665" 499.5mm	18.640" 473.5mm		19.915" 505.8mm	18.890" 479.8mm		48" 1219.2mm
	FM-X055-J000	47.785" 1213.7mm	21.665" 550.3mm	20.640" 524.3mm		21.915" 556.6mm	20.890" 530.6mm		52" 1320.8mm
	FM-X060-J000	51.785" 1315.3mm	23.665" 601.1mm	22.640" 575.1mm		23.915" 607.4mm	22.890" 581.4mm		57" 1447.8mm
	FM-X065-J000	55.785" 1416.9mm	25.665" 651.9mm	24.640" 625.9mm		25.915" 658.2mm	24.890" 632.2mm		61" 1549.4mm
	FM-X070-J000	59.785" 1518.5mm	27.665" 702.7mm	26.640" 676.7mm		27.915" 709.9mm	26.890" 683mm		65" 1651mm
4 CAMS	FM-X075-J000	63.785" 1620.1mm	29.665" 753.5mm	28.640" 727.5mm		29.915" 759.8mm	28.890" 733.8mm		70" 1778mm
	FM-X080-J000	67.785" 1721.7mm	31.665" 804.3mm	30.640" 778.3mm		31.915" 810.6mm	30.890" 784.6mm		74" 1879.6mm
	FM-X085-J000	71.785" 1823.3mm	33.665" 855.1mm	32.640" 829.1mm		33.915" 861.4mm	32.890" 835.4mm		78" 1981.2mm
	FM-X051-J000	43.785" 1112.1mm	12.830" 325.9mm	12.820" 325.6mm	12.655" 321.4mm	12.080" 306.6mm	13.070" 332mm	12.655" 321.4mm	48" 1219.2mm
	FM-X056-J000	47.785" 1213.7mm	14.150" 359.4mm	14.150" 359.4mm	14.005" 355.7mm	14.400" 365.8mm	14.400" 365.8mm	14.005" 355.7mm	52" 1320.8mm
	FM-X061-J000	51.785" 1315.3mm	15.470" 392.9mm	15.480" 393.2mm	15.355" 390mm	15.720" 399.3mm	15.730" 399.5mm	15.355" 390mm	57" 1447.8mm
	FM-X066-J000	55.785" 1416.9mm	16.790" 426.4mm	16.810" 427mm	16.705" 424.3mm	17.040" 432.8mm	17.060" 433.3mm	16.705" 424.3mm	61" 1549.4mm
	FM-X071-J000	59.785" 1518.5mm	18.110" 460mm	18.140" 460.8mm	18.055" 458.6mm	18.360" 466.3mm	18.390" 467.1mm	18.055" 458.6mm	65" 1651mm
	FM-X076-J000	63.785" 1620.1mm	19.430" 493.5mm	19.470" 494.5mm	19.405" 492.9mm	19.680" 499.9mm	19.720" 500.9mm	19.405" 492.9mm	70" 1778mm
	FM-X081-J000	67.785" 1721.7mm	20.750" 527.1mm	20.800" 528.3mm	20.755" 527.2mm	21.000" 533.4mm	21.050" 534.7mm	20.755" 527.2mm	74" 1879.6mm
	FM-X086-J000	71.785" 1823.3mm	22.070" 560.6mm	22.130" 562.1mm	22.105" 561.5mm	23.320" 592.3mm	22.380" 568.5mm	22.105" 561.5mm	78" 1981.2mm

32.1 Trifecta | Ordering

*The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.

Replace the variable **X** with the desired value to specify material:

3 = Standard 430 stainless steel

4 = Optional 304 austenitic stainless steel (coastal applications)

Box/Qty.
45
Units

32.2 Trifecta | Part list

- 1 FM-3061-J000 | 50.9" TRIFECTA tie bar system - 4 points
- 2 GA-2390-110 | Multipoint composite keeper #09 with 0.110" positioning pin
- 3 PO-2501 | LTS multipoint locking handle
- 4 PO-2401-BP-00 | LTS multipoint locking handle fixture backer plate

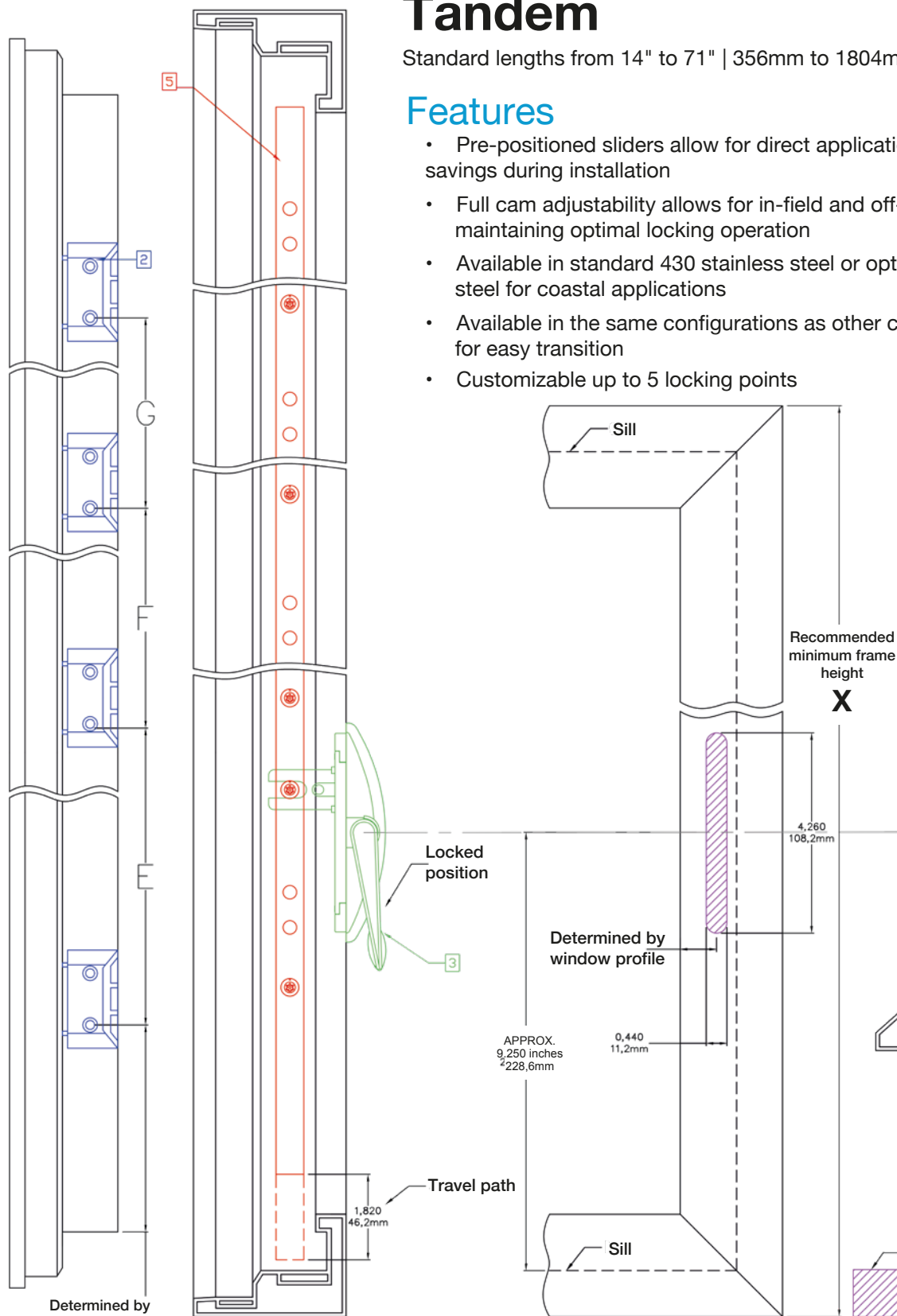
33.0 Tandem | Specifications

1500 Series Tandem

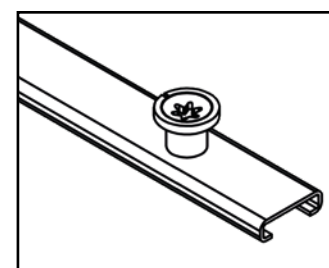
Standard lengths from 14" to 71" | 356mm to 1804mm

Features

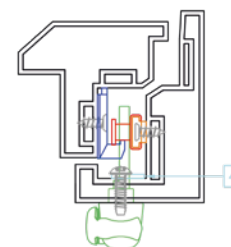
- Pre-positioned sliders allow for direct application as well as cost and time savings during installation
- Full cam adjustability allows for in-field and off-site adjustment, while maintaining optimal locking operation
- Available in standard 430 stainless steel or optional 304 austenitic stainless steel for coastal applications
- Available in the same configurations as other commonly used systems to allow for easy transition
- Customizable up to 5 locking points



(Fig. 2.1)



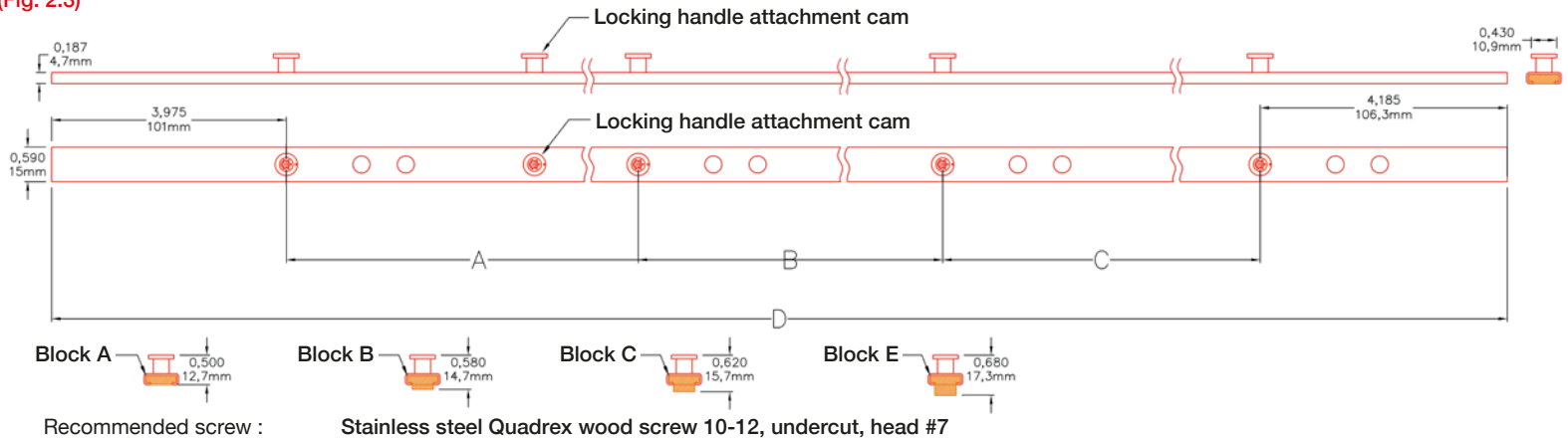
Use Torx drive #25 for cam adjustment



Wall cut

(Fig. 2.2)

(Fig. 2.3)



		Cam positions (Fig. 2.3)				Suggested keeper positioning (Fig. 2.1)			RECOMMENDED MINIMUM FRAME HEIGHT (Fig. 2.2)
TIE BAR LENGTH									
Part #	D	A	B	C	F	G	H	X	
2 CAMS	FM-1X09-Y	13.976" 355mm	5.816" 147.7mm			6.057" 153.8mm			16" 406.4mm
	FM-1X11-Y	17.244" 438mm	9.083" 230.7mm			9.583" 243.4mm			19" 482.6mm
	FM-1X12-Y	23.622" 600mm	15.460" 392.7mm			15.960" 405.4mm			26" 660.4mm
	FM-1X13-Y	27.559" 700mm	19.397" 492.7mm			19.897" 505.4mm			31" 787.4mm
	FM-1X14-Y	31.496" 800mm	23.334" 592.7mm			23.834" 605.4mm			35" 889mm
3 CAMS	FM-1X15-Y	35.433" 900mm	27.271" 692.7mm			27.771" 705.4mm			39" 990.6mm
	FM-1X16-Y	39.370" 1000mm	15.708" 399mm	15.501" 397.7mm	15.958" 405.3mm	15.750" 400mm			44" 1117.6mm
	FM-1X17-Y	43.307" 1100mm	17.677" 449mm	17.469" 443.7mm	17.927" 455.3mm	17.718" 450mm			48" 1219.2mm
	FM-1X18-Y	47.244" 1200mm	19.646" 499mm	19.473" 494.6mm	19.896" 505.4mm	19.687" 500mm			52" 1319.6mm
	FM-1X19-Y	51.181" 1300mm	21.615" 549mm	21.406" 543.7mm	21.865" 555.4mm	21.656" 550.1mm			56" 1422.4mm
	FM-1X20-Y	55.118" 1400mm	23.583" 599mm	23.374" 593.7mm	23.833" 605.4mm	23.623" 600mm			61" 1549.4mm
	FM-1X21-Y	59.055" 1500mm	25.552" 649mm	25.343" 643.7mm	25.802" 655.4mm	25.592" 650mm			65" 1650.9mm
	FM-1X22-Y	62.992" 1600mm	27.520" 699mm	27.311" 693.7mm	27.770" 705.4mm	27.560" 700mm			69" 1752.6mm
4 CAMS	FM-1X23-Y	66.929" 1700mm	29.489" 749mm	29.280" 743.7mm	29.740" 755.4mm	29.529" 750mm			74" 1879.6mm
	FM-1X24-Y	70.866" 1800mm	31.457" 799mm	31.248" 793.7mm	31.707" 805.4mm	31.497" 800mm			78" 1981.2mm
	FM-1X28-Y	47.244" 1200mm	11.773" 299mm	15.747" 400mm	11.564" 293.7mm	12.023" 305.4mm	15.996" 406.3mm	11.563" 293.7mm	52" 1319.6mm
	FM-1X29-Y	51.181" 1300mm	13.742" 349mm	15.747" 400mm	13.532" 343.7mm	13.992" 355.4mm	15.996" 406.3mm	13.531" 343.7mm	56" 1422.4mm
	FM-1X30-Y	55.118" 1400mm	15.710" 399mm	15.747" 400mm	15.501" 393.7mm	15.960" 405.4mm	15.996" 406.3mm	15.500" 393.7mm	61" 1549.4mm
	FM-1X31-Y	59.055" 1500mm	17.678" 449mm	15.747" 400mm	17.469" 443.7mm	17.929" 455.4mm	15.996" 406.3mm	17.469" 443.7mm	65" 1650.9mm
	FM-1X32-Y	62.992" 1600mm	19.647" 499mm	15.747" 400mm	19.438" 493.7mm	19.898" 505.4mm	15.996" 406.3mm	19.438" 493.7mm	69" 1752.6mm
	FM-1X33-Y	66.929" 1700mm	21.615" 549mm	15.747" 400mm	21.406" 543.7mm	21.867" 555.4mm	15.996" 406.3mm	21.407" 543.7mm	74" 1879.6mm
	FM-1X34-Y	70.866" 1800mm	23.584" 599mm	15.747" 400mm	23.375" 593.7mm	23.836" 605.4mm	15.996" 406.3mm	23.376" 593.8mm	78" 1981.2mm

33.1 Tandem | Ordering

*The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.

Replace the variable **X** with the desired value to specify material:

5 = Standard 430 stainless steel

2 = Optional 304 austenitic stainless steel (coastal applications)

Replace the variable **Y** with the desired value to specify required shim block

A-B-C-E (Refer to figure 2.3 above to select appropriate shim block thickness)

Box/Qty.

50
Units

33.2 Tandem | Part list

- FM-1529-B | 1300mm TANDEM B tie bar system - 4 points
- GA-2390-110 | Multipoint composite keeper #09 with 0.110" positioning pin
- PO-2501 | LTS multipoint locking handle
- PO-2401-BP-00 | LTS multipoint locking handle fixture backer plate

34.0 Interlock ILA | Specifications

ILA Series

Adjustable Interlock Roller

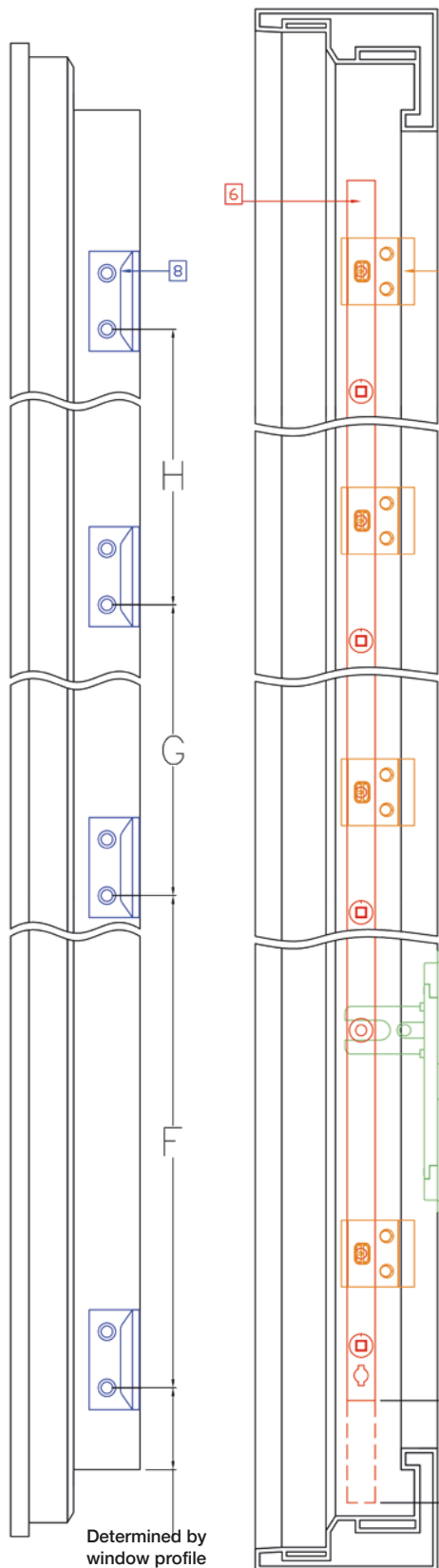
Standard lengths from 11" to 79" | 280mm to 2008mm

Features

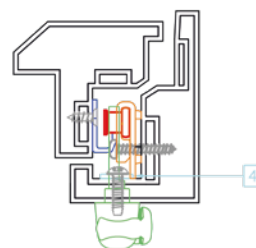
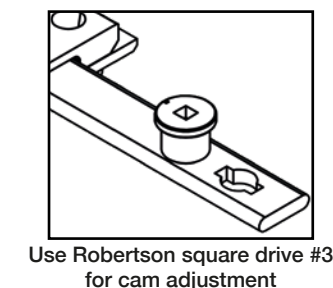
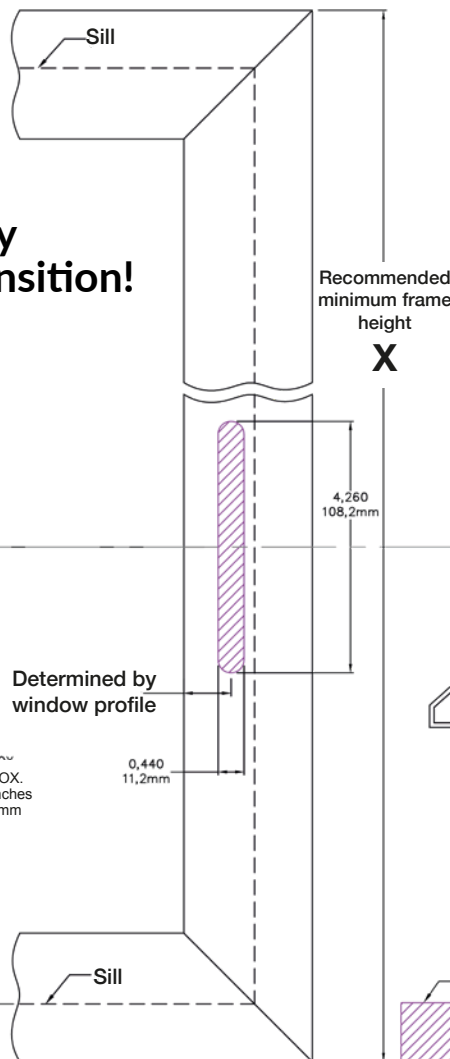
- Pre-punched positioned holes and guides allow for direct application as well as cost and time savings during installation
- Full cam adjustability allows for in-field and off-site adjustment, while maintaining optimal locking operation
- A complete range of security keepers combined with customizable heavy duty guides allows you to meet the highest impact test ratings
- Available in standard powder coated finish or optional 304 austenitic stainless steel for coastal applications
- Available in the same configurations as other commonly used systems to allow for easy transition
- Customizable up to 5 locking points



Easy Transition!

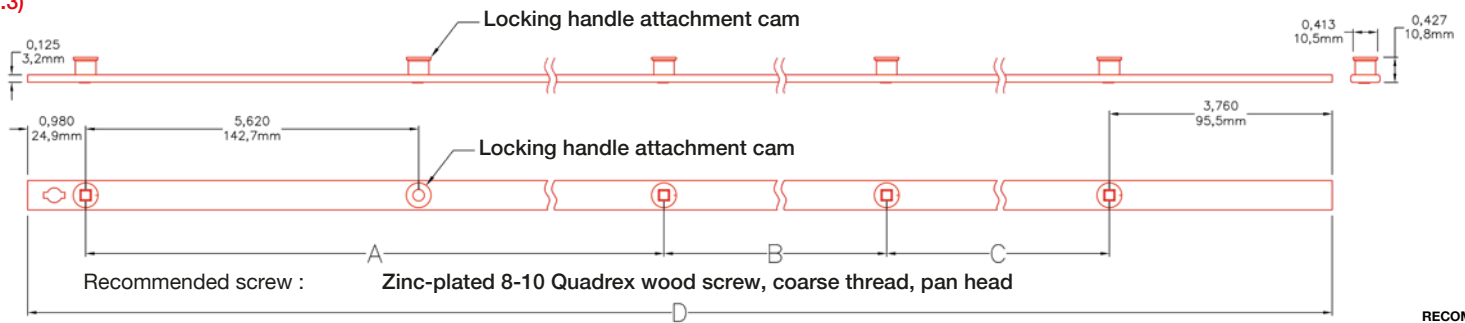


(Fig. 3.1)



(Fig. 3.2)

(Fig. 3.3)



RECOMMENDED
MINIMUM FRAME
HEIGHT
(Fig. 3.2)

Cam positions (Fig. 3.3) Suggested Keeper Positioning (Fig. 3.1)

TIE BAR LENGTH		Cam positions (Fig. 3.3)				Suggested Keeper Positioning (Fig. 3.1)			
Part #	D	A	B	C	F	G	H	X	
FM-ILA-16100-XX	11.045" 280.5mm								12" 304.8mm
FM-ILA-16101-XX	15.045" 382.1mm	10.305" 261.7mm							16" 406.4mm
FM-ILA-16110-XX	19.045" 483.7mm	14.305" 363.3mm							21" 533.4mm
FM-ILA-16120-XX	23.045" 585.3mm	18.305" 464.9mm							25" 635mm
FM-ILA-16130-XX	27.045" 686.9mm	22.305" 566.5mm							29" 736.6mm
FM-ILA-16140-XX	31.045" 788.5mm	26.305" 668.1mm							34" 863.6mm
FM-ILA-16150-XX	35.045" 890.1mm	30.305" 769.7mm							38" 965.2mm
FM-ILA-16121-XX	23.045" 585.3mm	9.665" 245.5mm	8.640" 219.5mm		9.915" 251.8mm	8.890" 225.8mm			25" 635mm
FM-ILA-16131-XX	27.045" 686.9mm	11.665" 296.3mm	10.640" 270.3mm		11.915" 302.6mm	10.890" 276.6mm			29" 736.6mm
FM-ILA-16141-XX	31.045" 788.5mm	13.665" 347.1mm	12.640" 321.1mm		13.915" 353.4mm	12.890" 327.4mm			34" 863.6mm
FM-ILA-16151-XX	35.045" 890.1mm	15.665" 397.9mm	14.640" 371.9mm		15.915" 404.2mm	14.890" 378.2mm			38" 965.2mm
FM-ILA-16160-XX	39.045" 991.7mm	17.665" 448.7mm	16.640" 422.7mm		17.915" 455mm	16.890" 429mm			42" 1066.8mm
FM-ILA-16170-XX	43.045" 1093.3mm	19.665" 499.5mm	18.640" 473.5mm		19.915" 505.8mm	18.890" 479.8mm			47" 1193.8mm
FM-ILA-16180-XX	47.045" 1194.9mm	21.665" 550.3mm	20.640" 524.3mm		21.915" 556.6mm	20.890" 530.6mm			51" 1295.4mm
FM-ILA-16190-XX	51.045" 1296.5mm	23.665" 601.1mm	22.640" 575.1mm		23.915" 607.4mm	22.890" 581.4mm			56" 1422.4mm
FM-ILA-16200-XX	55.045" 1398.1mm	25.665" 651.9mm	24.640" 625.9mm		25.915" 658.2mm	24.890" 632.2mm			60" 1524mm
FM-ILA-16210-XX	59.045" 1499.7mm	27.665" 702.7mm	26.640" 676.7mm		27.915" 709mm	26.890" 683mm			64" 1625.6mm
FM-ILA-16220-XX	63.045" 1601.3mm	29.665" 753.5mm	28.640" 727.5mm		29.915" 759.8mm	28.890" 733.8mm			69" 1752.6mm
FM-ILA-16230-XX	67.045" 1702.9mm	31.665" 804.3mm	30.640" 778.3mm		31.915" 810.6mm	30.890" 784.6mm			73" 1854.2mm
FM-ILA-16240-XX	71.045" 1804.5mm	33.665" 855.1mm	32.640" 829.1mm		33.915" 861.4mm	32.890" 835.4mm			77" 1955.8mm
FM-ILA-16250-XX	75.045" 1906.1mm	46.850" 1190mm	23.455" 595.8mm		35.915" 912.2mm	34.890" 886.2mm			82" 2082.8mm
FM-ILA-16260-XX	79.045" 2007.7mm	49.500" 1257.3mm	24.805" 630mm		37.915" 963mm	36.890" 937mm			86" 2184.4mm
FM-ILA-16171-XX	43.045" 1093.3mm	12.830" 325.9mm	12.820" 325.6mm	12.655" 321.4mm	12.080" 306.8mm	13.070" 332mm	12.655" 321.4mm		47" 1193.8mm
FM-ILA-16181-XX	47.045" 1194.9mm	14.150" 359.4mm	14.150" 359.4mm	14.005" 355.7mm	14.400" 365.8mm	14.040" 356.6mm	14.005" 355.7mm		51" 1295.4mm
FM-ILA-16191-XX	51.045" 1296.5mm	15.470" 392.9mm	15.480" 393.2mm	15.355" 390mm	15.720" 399.3mm	15.730" 399.5mm	15.355" 390mm		56" 1422.4mm
FM-ILA-16201-XX	55.045" 1398.1mm	16.790" 426.5mm	16.810" 427mm	16.705" 424.3mm	17.040" 432.8mm	17.060" 433.3mm	16.705" 424.3mm		60" 1524mm
FM-ILA-16211-XX	59.045" 1499.7mm	18.110" 460mm	18.140" 460.8mm	18.055" 458.6mm	18.360" 466.3mm	18.390" 467.1mm	18.055" 458.6mm		64" 1625.6mm
FM-ILA-16221-XX	63.045" 1601.3mm	19.430" 493.5mm	19.470" 494.5mm	19.405" 492.9mm	19.680" 499.9mm	19.720" 500.9mm	19.405" 492.9mm		69" 1752.6mm
FM-ILA-16231-XX	67.045" 1702.9mm	20.750" 527.1mm	20.800" 528.3mm	20.755" 527.2mm	21.000" 533.4mm	21.050" 534.7mm	20.755" 527.2mm		73" 1854.2mm
FM-ILA-16241-XX	71.045" 1804.5mm	22.070" 560.6mm	22.130" 562.1mm	22.105" 561.5mm	23.320" 592.3mm	22.380" 568.5mm	22.105" 561.5mm		77" 1955.8mm
FM-ILA-16251-XX	75.045" 1906.1mm	23.390" 594.1mm	23.460" 595.9mm	23.455" 595.8mm	24.640" 625.9mm	23.710" 602.2mm	23.455" 595.8mm		82" 2082.2mm
FM-ILA-16261-XX	79.045" 2007.7mm	24.710" 627.6mm	24.790" 629.7mm	24.805" 630mm	25.960" 659.4mm	25.040" 636mm	24.805" 630mm		86" 2184.4mm

34.1 Interlock Roller | Ordering

*The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.

Replace the variable **XX** with the desired value to specify material:

Leave blank = Standard powder-coated steel
SS = Optional 304 austenitic stainless steel (coastal applications)

Box/Qty.
25
Units

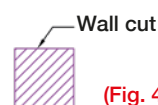
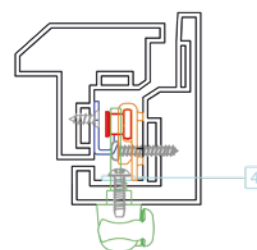
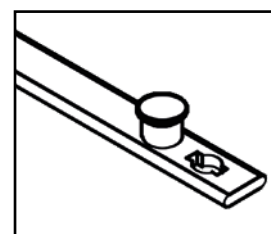
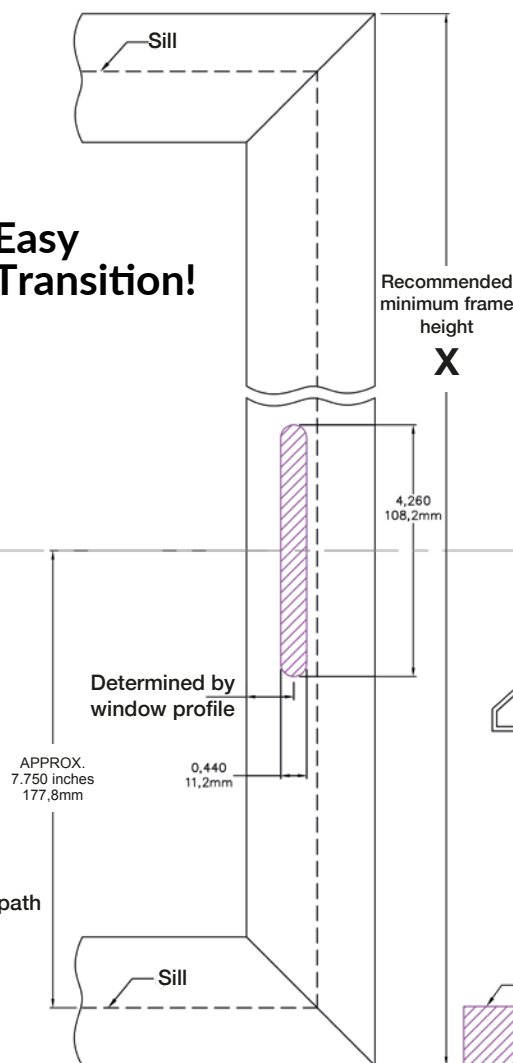
34.2 Interlock Roller | Part list

6	FM-ILA-16191 50.9" Adjustable interlock roller tie bar - 4 points
8	GA-ILF-006 Interlock roller keeper
3	PO-2501 LTS multipoint locking handle
4	PO-2401-BP-00 LTS multipoint locking handle fixture backer plate
7	FM-TGW-MD2-XXX-XXX Self-locating heavy duty tie bar guide

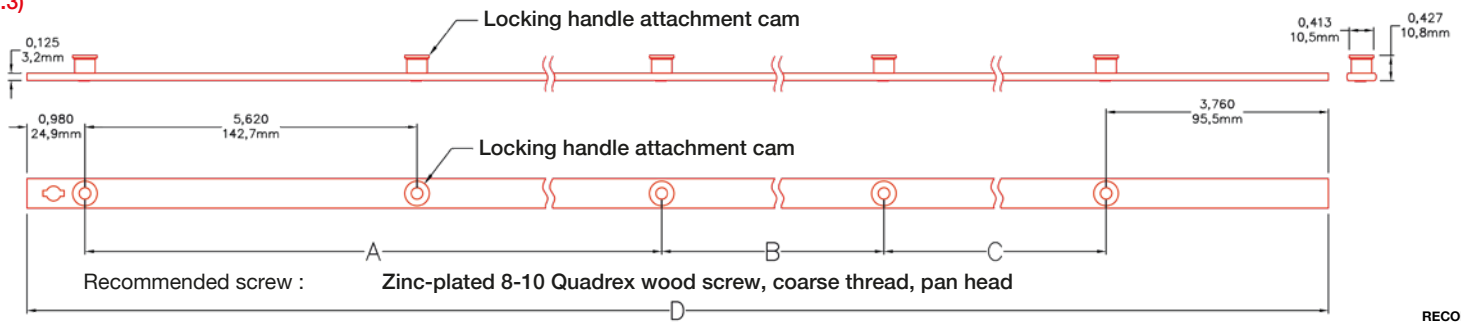
A diagram showing a long, thin rectangular beam resting on three small cylindrical rollers. The beam is tilted downwards from left to right. The rollers are positioned at the top-left, middle, and bottom-right of the beam. The background is split horizontally into a dark grey upper half and a white lower half.

Standard lengths from 11" to 79" | 280mm to 2008mm

- A complete range of security keepers combined with customizable heavy duty guides allows you to meet the highest impact test ratings
- Available in powder coated finish or optional 304 austenitic stainless steel for coastal applications
- Available in the same configurations as other commonly used systems to allow for easy transition
- Customizable up to 5 locking points



(Fig. 4.3)



RECOMMENDED
MINIMUM FRAME
HEIGHT
(Fig. 4.2)

Cam positions (Fig. 4.3) Suggested Keeper Positioning (Fig. 4.1)

TIE BAR LENGTH		Cam positions (Fig. 4.3)			Suggested Keeper Positioning (Fig. 4.1)				RECOMMENDED MINIMUM FRAME HEIGHT (Fig. 4.2)
Part #	D	A	B	C	F	G	H	X	
FM-13100-ILX	11.045" 280.5mm								12" 304.8mm
FM-13101-ILX	15.045" 382.1mm	10.305" 261.7mm							16" 406.4mm
FM-13110-ILX	19.045" 483.7mm	14.305" 363.3mm							21" 533.4mm
FM-13120-ILX	23.045" 585.3mm	18.305" 464.9mm							25" 635mm
FM-13130-ILX	27.045" 686.9mm	22.305" 566.5mm							29" 736.6mm
FM-13140-ILX	31.045" 788.5mm	26.305" 668.1mm							34" 863.6mm
FM-13150-ILX	35.045" 890.1mm	30.305" 769.7mm							38" 965.2mm
FM-13121-ILX	23.045" 585.3mm	9.665" 245.5mm	8.640" 219.5mm		9.915" 251.8mm	8.890" 225.8mm			25" 635mm
FM-13131-ILX	27.045" 686.9mm	11.665" 296.3mm	10.640" 270.3mm		11.915" 302.6mm	10.890" 276.6mm			29" 736.6mm
FM-13141-ILX	31.045" 788.5mm	13.665" 347.1mm	12.640" 321.1mm		13.915" 353.4mm	12.890" 327.4mm			34" 863.6mm
FM-13151-ILX	35.045" 890.1mm	15.665" 397.9mm	14.640" 371.9mm		15.915" 404.2mm	14.890" 378.2mm			38" 965.2mm
FM-13160-ILX	39.045" 991.7mm	17.665" 448.7mm	16.640" 422.7mm		17.915" 455mm	16.890" 429mm			42" 1066.8mm
FM-13170-ILX	43.045" 1093.3mm	19.665" 499.5mm	18.640" 473.5mm		19.915" 505.8mm	18.890" 479.8mm			47" 1193.8mm
FM-13180-ILX	47.045" 1194.9mm	21.665" 550.3mm	20.640" 524.3mm		21.915" 556.6mm	20.890" 530.6mm			51" 1295.4mm
FM-13190-ILX	51.045" 1296.5mm	23.665" 601.1mm	22.640" 575.1mm		23.915" 607.4mm	22.890" 581.4mm			56" 1422.4mm
FM-13200-ILX	55.045" 1398.1mm	25.665" 651.9mm	24.640" 625.9mm		25.915" 658.2mm	24.890" 632.2mm			60" 1524mm
FM-13210-ILX	59.045" 1499.7mm	27.665" 702.7mm	26.640" 676.7mm		27.915" 709mm	26.890" 683mm			64" 1625.6mm
FM-13220-ILX	63.045" 1601.3mm	29.665" 753.5mm	28.640" 727.5mm		29.915" 759.8mm	28.890" 733.8mm			69" 1752.6mm
FM-13230-ILX	67.045" 1702.9mm	31.665" 804.3mm	30.640" 778.3mm		31.915" 810.6mm	30.890" 784.6mm			73" 1854.2mm
FM-13240-ILX	71.045" 1804.5mm	33.665" 855.1mm	32.640" 829.1mm		33.915" 861.4mm	32.890" 835.4mm			77" 1955.8mm
FM-13250-ILX	75.045" 1906.1mm	46.850" 1190mm	23.455" 595.8mm		35.915" 912.2mm	34.890" 886.2mm			82" 2082.8mm
FM-13260-ILX	79.045" 2007.7mm	49.500" 1257.3mm	24.805" 630mm		37.915" 963mm	36.890" 937mm			86" 2184.4mm
FM-13171-ILX	43.045" 1093.3mm	12.830" 325.9mm	12.820" 325.6mm	12.655" 321.4mm	12.080" 306.8mm	13.070" 332mm	12.655" 321.4mm		47" 1193.8mm
FM-13181-ILX	47.045" 1194.9mm	14.150" 359.4mm	14.150" 359.4mm	14.005" 355.7mm	14.400" 365.8mm	14.040" 356.6mm	14.005" 355.7mm		51" 1295.4mm
FM-13191-ILX	51.045" 1296.5mm	15.470" 392.9mm	15.480" 393.2mm	15.355" 390mm	15.720" 399.3mm	15.730" 399.5mm	15.355" 390mm		56" 1422.4mm
FM-13201-ILX	55.045" 1398.1mm	16.790" 426.5mm	16.810" 427mm	16.705" 424.3mm	17.040" 432.8mm	17.060" 433.3mm	16.705" 424.3mm		60" 1524mm
FM-13211-ILX	59.045" 1499.7mm	18.110" 460mm	18.140" 460.8mm	18.055" 458.6mm	18.360" 466.3mm	18.390" 467.1mm	18.055" 458.6mm		64" 1625.6mm
FM-13221-ILX	63.045" 1601.3mm	19.430" 493.5mm	19.470" 494.5mm	19.405" 492.9mm	19.680" 499.9mm	19.720" 500.9mm	19.405" 492.9mm		69" 1752.6mm
FM-13231-ILX	67.045" 1702.9mm	20.750" 527.1mm	20.800" 528.3mm	20.755" 527.2mm	21.000" 533.4mm	21.050" 534.7mm	20.755" 527.2mm		73" 1854.2mm
FM-13241-ILX	71.045" 1804.5mm	22.070" 560.6mm	22.130" 562.1mm	22.105" 561.5mm	23.320" 592.3mm	22.380" 568.5mm	22.105" 561.5mm		77" 1955.8mm
FM-13251-ILX	75.045" 1906.1mm	23.390" 594.1mm	23.460" 595.9mm	23.455" 595.8mm	24.640" 625.9mm	23.710" 602.2mm	23.455" 595.8mm		82" 2082.2mm
FM-13261-ILX	79.045" 2007.7mm	24.710" 627.6mm	24.790" 629.7mm	24.805" 630mm	25.960" 659.4mm	25.040" 636mm	24.805" 630mm		86" 2184.4mm

35.1 Interlock Roller | Ordering

*The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.

Replace the variable **X** with the desired value to specify material:

- F = Standard powder-coated steel
- SS = Optional 304 austenitic stainless steel (coastal applications)

Box/Qty.
25
Units

35.2 Interlock Roller | Part list

6	FM-13191-ILF 50.9" Interlock roller tie bar - 4 points
8	GA-ILF-006 Interlock roller keeper
3	PO-2501 LTS multipoint locking handle
4	PO-2401-BP-00 LTS multipoint locking handle fixture backer plate
10	TGW-XXX-XXX Heavy duty tie bar guide

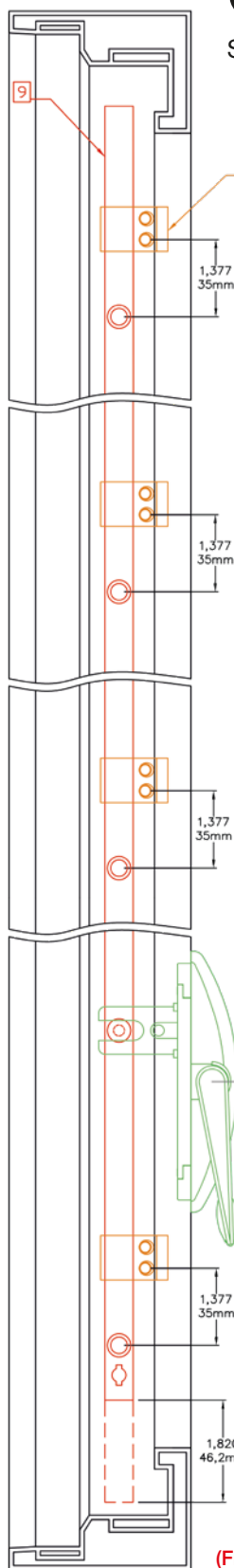
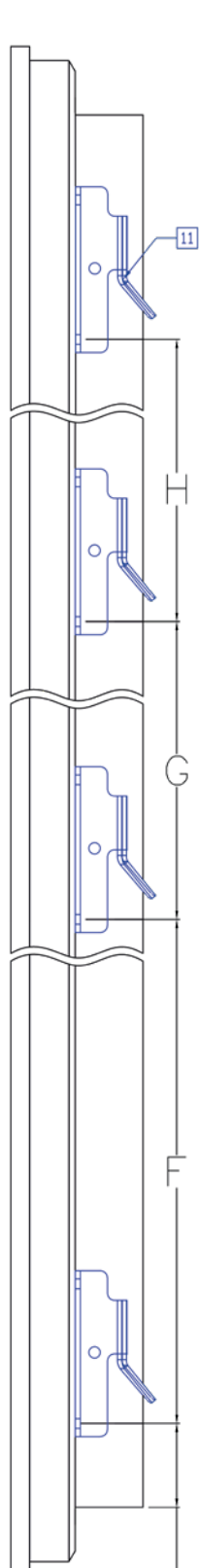
36.0 Cone Roller | Specifications

CR Series Cone Roller

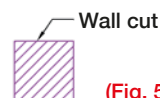
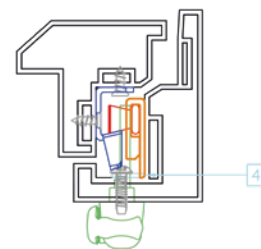
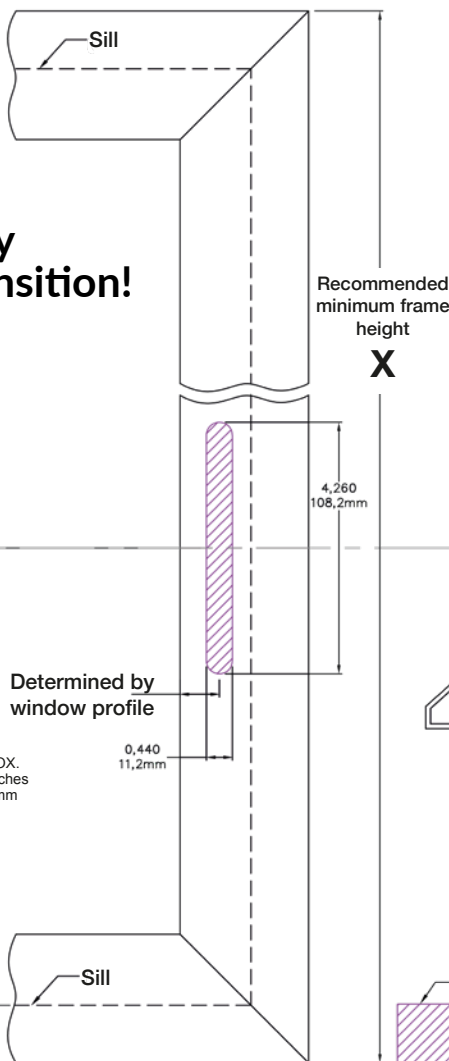
Standard lengths from 11" to 79" | 280mm to 2008mm

Features

- The conic shape of the roller cams extends keeper reach and provides strong progressive compression of the sash
- A complete range of security keepers combined with customizable heavy duty guides allows you to meet the highest impact test ratings
- Available in powder coated finish or optional 304 austenitic stainless steel for coastal applications
- Available in the same configurations as other commonly used systems to allow for easy transition
- Customizable up to 5 locking points



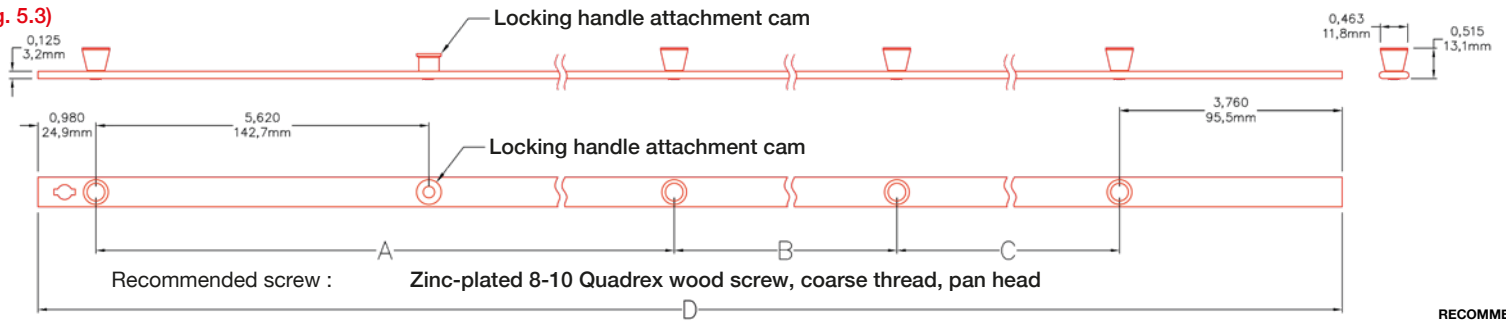
Easy Transition!



(Fig. 5.1)

(Fig. 5.2)

(Fig. 5.3)



RECOMMENDED
MINIMUM FRAME
HEIGHT
(Fig. 5.2)

TIE BAR LENGTH

Cam positions

(Fig. 5.3)

Suggested Keeper Positioning

(Fig. 5.1)

Part #	D	A	B	C	F	G	H	X
FM-13100-CR ^X	11.045" 280.5mm							12" 304.8mm
FM-13101-CR ^X	15.045" 382.1mm	10.305" 261.7mm						16" 406.4mm
FM-13110-CR ^X	19.045" 483.7mm	14.305" 363.3mm						21" 533.4mm
FM-13120-CR ^X	23.045" 585.3mm	18.305" 464.9mm						25" 635mm
FM-13130-CR ^X	27.045" 686.9mm	22.305" 566.5mm						29" 736.6mm
FM-13140-CR ^X	31.045" 788.5mm	26.305" 668.1mm						34" 863.6mm
FM-13150-CR ^X	35.045" 890.1mm	30.305" 769.7mm						38" 965.2mm
FM-13121-CR ^X	23.045" 585.3mm	9.665" 245.5mm	8.640" 219.5mm		9.915" 251.8mm	8.890" 225.8mm		25" 635mm
FM-13131-CR ^X	27.045" 686.9mm	11.665" 296.3mm	10.640" 270.3mm		11.915" 302.6mm	10.890" 276.6mm		29" 736.6mm
FM-13141-CR ^X	31.045" 788.5mm	13.665" 347.1mm	12.640" 321.1mm		13.915" 353.4mm	12.890" 327.4mm		34" 863.6mm
FM-13151-CR ^X	35.045" 890.1mm	15.665" 397.9mm	14.640" 371.9mm		15.915" 404.2mm	14.890" 378.2mm		38" 965.2mm
FM-13160-CR ^X	39.045" 991.7mm	17.665" 448.7mm	16.640" 422.7mm		17.915" 455mm	16.890" 429mm		42" 1066.8mm
FM-13170-CR ^X	43.045" 1093.3mm	19.665" 499.5mm	18.640" 473.5mm		19.915" 505.8mm	18.890" 479.8mm		47" 1193.8mm
FM-13180-CR ^X	47.045" 1194.9mm	21.665" 550.3mm	20.640" 524.3mm		21.915" 556.6mm	20.890" 530.6mm		51" 1295.4mm
FM-13190-CR ^X	51.045" 1296.5mm	23.665" 601.1mm	22.640" 575.1mm		23.915" 607.4mm	22.890" 581.4mm		56" 1422.4mm
FM-13200-CR ^X	55.045" 1398.1mm	25.665" 651.9mm	24.640" 625.9mm		25.915" 658.2mm	24.890" 632.2mm		60" 1524mm
FM-13210-CR ^X	59.045" 1499.7mm	27.665" 702.7mm	26.640" 676.7mm		27.915" 709mm	26.890" 683mm		64" 1625.6mm
FM-13220-CR ^X	63.045" 1601.3mm	29.665" 753.5mm	28.640" 727.5mm		29.915" 759.8mm	28.890" 733.8mm		69" 1752.6mm
FM-13230-CR ^X	67.045" 1702.9mm	31.665" 804.3mm	30.640" 778.3mm		31.915" 810.6mm	30.890" 784.6mm		73" 1854.2mm
FM-13240-CR ^X	71.045" 1804.5mm	33.665" 855.1mm	32.640" 829.1mm		33.915" 861.4mm	32.890" 835.4mm		77" 1955.8mm
FM-13250-CR ^X	75.045" 1906.1mm	46.850" 1190mm	23.455" 595.8mm		35.915" 912.2mm	34.890" 886.2mm		82" 2082.8mm
FM-13260-CR ^X	79.045" 2007.7mm	49.500" 1257.3mm	24.805" 630mm		37.915" 963mm	36.890" 937mm		86" 2184.4mm
FM-13171-CR ^X	43.045" 1093.3mm	12.830" 325.9mm	12.820" 325.6mm	12.655" 321.4mm	12.080" 306.8mm	13.070" 332mm	12.655" 321.4mm	47" 1193.8mm
FM-13181-CR ^X	47.045" 1194.9mm	14.150" 359.4mm	14.150" 359.4mm	14.005" 355.7mm	14.400" 365.8mm	14.040" 356.6mm	14.005" 355.7mm	51" 1295.4mm
FM-13191-CR ^X	51.045" 1296.5mm	15.470" 392.9mm	15.480" 393.2mm	15.355" 390mm	15.720" 399.3mm	15.730" 399.5mm	15.355" 390mm	56" 1422.4mm
FM-13201-CR ^X	55.045" 1398.1mm	16.790" 426.5mm	16.810" 427mm	16.705" 424.3mm	17.040" 432.8mm	17.060" 433.3mm	16.705" 424.3mm	60" 1524mm
FM-13211-CR ^X	59.045" 1499.7mm	18.110" 460mm	18.140" 460.8mm	18.055" 458.6mm	18.360" 466.3mm	18.390" 467.1mm	18.055" 458.6mm	64" 1625.6mm
FM-13221-CR ^X	63.045" 1601.3mm	19.430" 493.5mm	19.470" 494.5mm	19.405" 492.9mm	19.680" 499.9mm	19.720" 500.9mm	19.405" 492.9mm	69" 1752.6mm
FM-13231-CR ^X	67.045" 1702.9mm	20.750" 527.1mm	20.800" 528.3mm	20.755" 527.2mm	21.000" 533.4mm	21.050" 534.7mm	20.755" 527.2mm	73" 1854.2mm
FM-13241-CR ^X	71.045" 1804.5mm	22.070" 560.6mm	22.130" 562.1mm	22.105" 561.5mm	23.320" 592.3mm	22.380" 568.5mm	22.105" 561.5mm	77" 1955.8mm
FM-13251-CR ^X	75.045" 1906.1mm	23.390" 594.1mm	23.460" 595.9mm	23.455" 595.8mm	24.640" 625.9mm	23.710" 602.2mm	23.455" 595.8mm	82" 2082.2mm
FM-13261-CR ^X	79.045" 2007.7mm	24.710" 627.6mm	24.790" 629.7mm	24.805" 630mm	25.960" 659.4mm	25.040" 636mm	24.805" 630mm	86" 2184.4mm

36.1 Cone Roller | Ordering

*The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.

Replace the variable ^X with the desired value to specify material:

Leave blank = Standard powder-coated steel
SS = Optional 304 austenitic stainless steel (coastal applications)

Box/Qty.
25
Units

36.2 Cone Roller | Part list

9	FM-13191-CR 50.9" Cone roller tie bar - 4 points
11	GA-CR-001R Right hand facemount cone roller keeper
3	PO-2501 LTS multipoint locking handle
4	PO-2401-BP-00 LTS multipoint locking handle fixture backer plate
10	TGW-XXX-XXX Standard tie bar guide

37.0 Cylindrical Roller | Specifications

GRF Series

Cylindrical Roller **EXCLUSIVE**

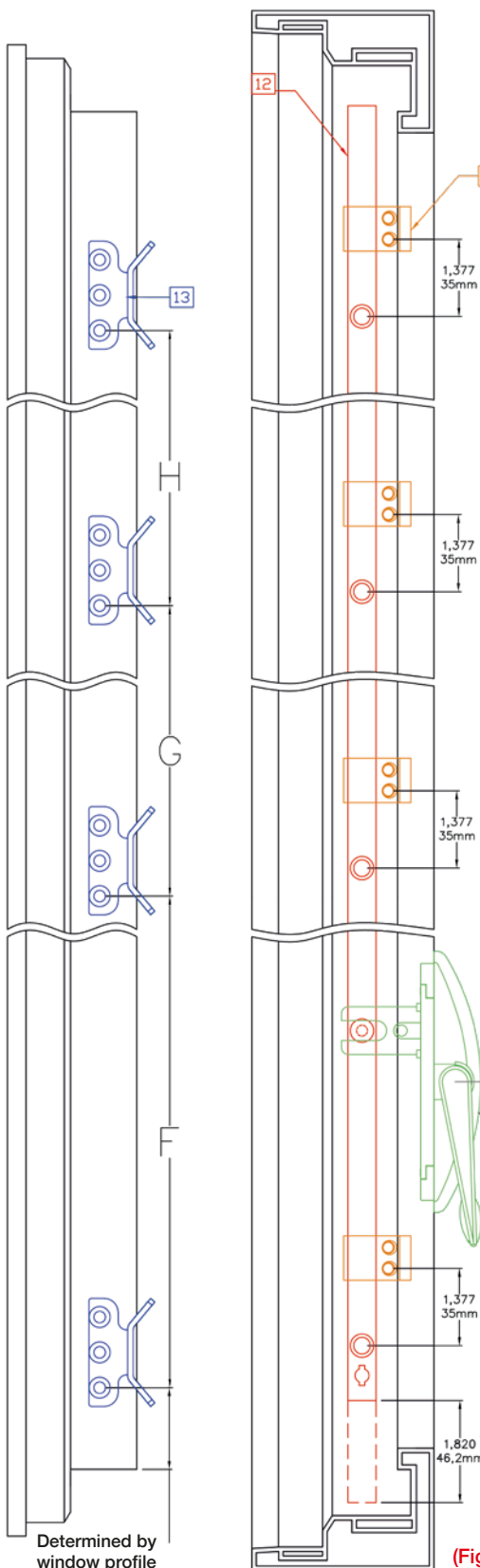
Standard lengths from 11" to 79" | 280mm to 2008mm

Features

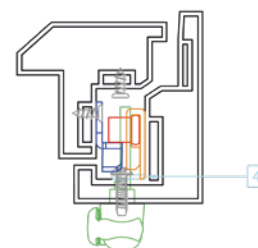
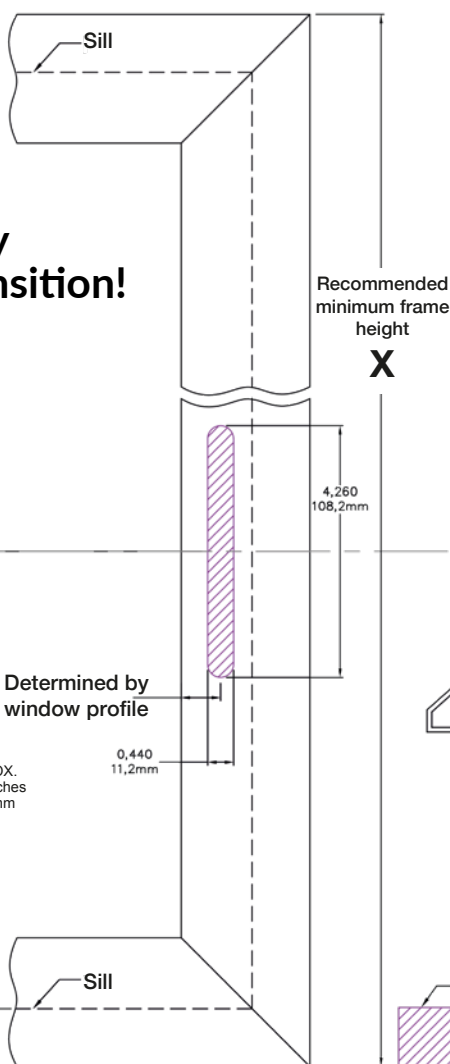
- The bigger cylindrical shape of the roller cams enhances smoothness of operation to help meet ADA requirements
- Non-handed keepers combined with customizable heavy guides allows you to reduce installation time
- Available in powder coated finish or optional 304 austenitic stainless steel for coastal applications
- Available in the same configurations as other commonly used systems to allow for easy transition
- Customizable up to 5 locking points



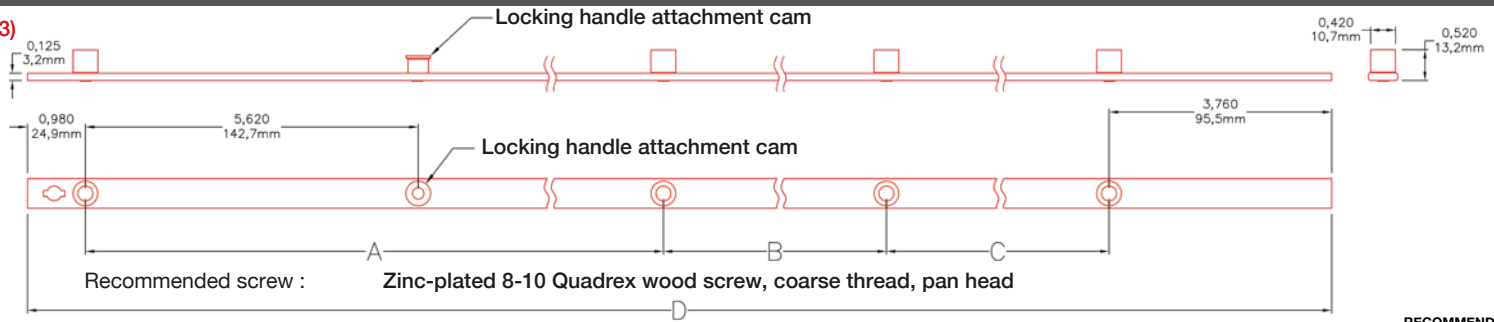
Made in



Easy Transition!



(Fig. 6.3)



RECOMMENDED
MINIMUM FRAME
HEIGHT
(Fig. 6.2)

TIE BAR LENGTH

Cam positions

(Fig. 6.3)

Suggested Keeper Positioning

(Fig. 6.1)

Part #

D

A

B

C

F

G

H

X

2 CAMS	FM-13100-GRX	11.045" 280.5mm							12" 304.8mm
	FM-13101-GRX	15.045" 382.1mm	10.305" 261.7mm						16" 406.4mm
	FM-13110-GRX	19.045" 483.7mm	14.305" 363.3mm						21" 533.4mm
	FM-13120-GRX	23.045" 585.3mm	18.305" 464.9mm						25" 635mm
	FM-13130-GRX	27.045" 686.9mm	22.305" 566.5mm						29" 736.6mm
	FM-13140-GRX	31.045" 788.5mm	26.305" 668.1mm						34" 863.6mm
	FM-13150-GRX	35.045" 890.1mm	30.305" 769.7mm						38" 965.2mm
3 CAMS	FM-13121-GRX	23.045" 585.3mm	9.665" 245.5mm	8.640" 219.5mm		9.915" 251.8mm	8.890" 225.8mm		25" 635mm
	FM-13131-GRX	27.045" 686.9mm	11.665" 296.3mm	10.640" 270.3mm		11.915" 302.6mm	10.890" 276.6mm		29" 736.6mm
	FM-13141-GRX	31.045" 788.5mm	13.665" 347.1mm	12.640" 321.1mm		13.915" 353.4mm	12.890" 327.4mm		34" 863.6mm
	FM-13151-GRX	35.045" 890.1mm	15.665" 397.9mm	14.640" 371.9mm		15.915" 404.2mm	14.890" 378.2mm		38" 965.2mm
	FM-13160-GRX	39.045" 991.7mm	17.665" 448.7mm	16.640" 422.7mm		17.915" 455mm	16.890" 429mm		42" 1066.8mm
	FM-13170-GRX	43.045" 1093.3mm	19.665" 499.5mm	18.640" 473.5mm		19.915" 505.8mm	18.890" 479.8mm		47" 1193.8mm
	FM-13180-GRX	47.045" 1194.9mm	21.665" 550.3mm	20.640" 524.3mm		21.915" 556.6mm	20.890" 530.6mm		51" 1295.4mm
	FM-13190-GRX	51.045" 1296.5mm	23.665" 601.1mm	22.640" 575.1mm		23.915" 607.4mm	22.890" 581.4mm		56" 1422.4mm
	FM-13200-GRX	55.045" 1398.1mm	25.665" 651.9mm	24.640" 625.9mm		25.915" 658.2mm	24.890" 632.2mm		60" 1524mm
	FM-13210-GRX	59.045" 1499.7mm	27.665" 702.7mm	26.640" 676.7mm		27.915" 709mm	26.890" 683mm		64" 1625.6mm
	FM-13220-GRX	63.045" 1601.3mm	29.665" 753.5mm	28.640" 727.5mm		29.915" 759.8mm	28.890" 733.8mm		69" 1752.6mm
	FM-13230-GRX	67.045" 1702.9mm	31.665" 804.3mm	30.640" 778.3mm		31.915" 810.6mm	30.890" 784.6mm		73" 1854.2mm
	FM-13240-GRX	71.045" 1804.5mm	33.665" 855.1mm	32.640" 829.1mm		33.915" 861.4mm	32.890" 835.4mm		77" 1955.8mm
	FM-13250-GRX	75.045" 1906.1mm	46.850" 1190mm	23.455" 595.8mm		35.915" 912.2mm	34.890" 886.2mm		82" 2082.8mm
	FM-13260-GRX	79.045" 2007.7mm	49.500" 1257.3mm	24.805" 630mm		37.915" 963mm	36.890" 937mm		86" 2184.4mm
4 CAMS	FM-13171-GRX	43.045" 1093.3mm	12.830" 325.9mm	12.820" 325.6mm	12.655" 321.4mm	12.080" 306.8mm	13.070" 332mm	12.655" 321.4mm	47" 1193.8mm
	FM-13181-GRX	47.045" 1194.9mm	14.150" 359.4mm	14.150" 359.4mm	14.005" 355.7mm	14.400" 365.8mm	14.040" 356.6mm	14.005" 355.7mm	51" 1295.4mm
	FM-13191-GRX	51.045" 1296.5mm	15.470" 392.9mm	15.480" 393.2mm	15.355" 390mm	15.720" 399.3mm	15.730" 399.5mm	15.355" 390mm	56" 1422.4mm
	FM-13201-GRX	55.045" 1398.1mm	16.790" 426.5mm	16.810" 427mm	16.705" 424.3mm	17.040" 432.8mm	17.060" 433.3mm	16.705" 424.3mm	60" 1524mm
	FM-13211-GRX	59.045" 1499.7mm	18.110" 460mm	18.140" 460.8mm	18.055" 458.6mm	18.360" 466.3mm	18.390" 467.1mm	18.055" 458.6mm	64" 1625.6mm
	FM-13221-GRX	63.045" 1601.3mm	19.430" 493.5mm	19.470" 494.5mm	19.405" 492.9mm	19.680" 499.9mm	19.720" 500.9mm	19.405" 492.9mm	69" 1752.6mm
	FM-13231-GRX	67.045" 1702.9mm	20.750" 527.1mm	20.800" 528.3mm	20.755" 527.2mm	21.000" 533.4mm	21.050" 534.7mm	20.755" 527.2mm	73" 1854.2mm
	FM-13241-GRX	71.045" 1804.5mm	22.070" 560.6mm	22.130" 562.1mm	22.105" 561.5mm	23.320" 592.3mm	22.380" 568.5mm	22.105" 561.5mm	77" 1955.8mm
	FM-13251-GRX	75.045" 1906.1mm	23.390" 594.1mm	23.460" 595.9mm	23.455" 595.8mm	24.640" 625.9mm	23.710" 602.2mm	23.455" 595.8mm	82" 2082.2mm
	FM-13261-GRX	79.045" 2007.7mm	24.710" 627.6mm	24.790" 629.7mm	24.805" 630mm	25.960" 659.4mm	25.040" 636mm	24.805" 630mm	86" 2184.4mm

37.1 Cylindrical Roller | Ordering

*The company has an ongoing development program and therefore reserves the right to make alterations without notice. Products that are not stocked items will be subject to longer lead times. Please confirm with your Radisson representative.

Replace the variable **X** with the desired value to specify material:

- F = Standard powder-coate steeld
- SS = Optional 304 austenitic stainless steel (coastal applications)

Box/Qty.

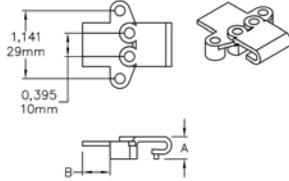
25
Units

37.2 Cylindrical Roller | Part list

12	FM-13191-GRF 50.9" Cylindrical roller tie bar - 4 points
13	GA-CRF-005 Cylindrical roller keeper
3	PO-2501 LTS multipoint locking handle
4	PO-2401-BP-00 LTS multipoint locking handle fixture backer plate
10	TGW-XXX-XXX Standard tie bar guide

38.0 Tie bar guide | Specifications & Ordering

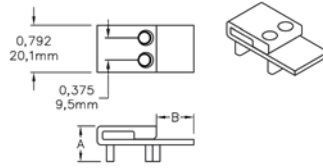
TG-AAA-BBB



	A	B*	Box/Qty.
TG-	300-	Custom	500
TG-	375-	Custom	500
TG-	430-	Custom	500
TG-	500-	Custom	500
TG-	600-	Custom	500
TG-	640-	Custom	500

*Maximum "B" length is 0.465" | 11.8mm

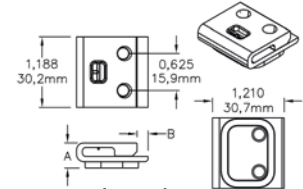
TGW-AAA-BBB



	A	B*	Box/Qty.
TGW-	320-	Custom	500
TGW-	390-	Custom	500
TGW-	437-	Custom	500
TGW-	500-	Custom	500
TGW-	600-	Custom	500
TGW-	640-	Custom	500

*Maximum "B" length is 0.465" | 11.8mm

FM-TGW-MD2-AAA-BBB



	A	B*	Box/Qty.
FM-TGW-MD2-	300-	Custom	1000
FM-TGW-MD2-	400-	Custom	1000
FM-TGW-MD2-	500-	Custom	1000

*Maximum "B" length is 0.500" | 12.7mm

Recommended screw : Zinc-plated 8-10 Quadrex wood screw, coarse thread, pan head

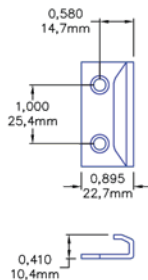
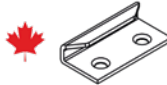
39.0 Metal keeper

Interlock

To be used with interlock tie bar systems

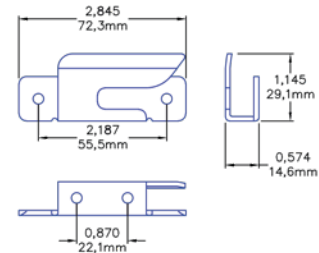
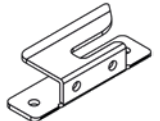
GA-ILF-006

Non-handed



GA-ILF-017

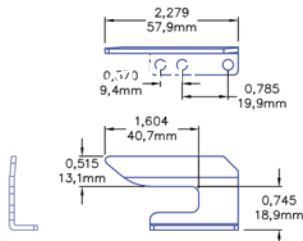
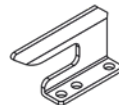
Left hand shown



39.1 Ordering | Metal keeper

GA-ILF-014

Left hand shown



Part Number	Description	Box/Qty.
GA-ILF-006-XX	Interlock roller keeper	500
GA-ILF-014L-XX	Interlock roller face mount keeper, left hand	500
GA-ILF-014R-XX	Interlock roller face mount keeper, right hand	500
GA-ILF-017L-XX	Interlock roller face mount keeper, left hand	500
GA-ILF-017R-XX	Interlock roller face mount keeper, right hand	500

Replace the variable **XX** with the desired value to specify material:

Blank = Standard powder-coated steel

SS = Optional 304 austenitic stainless steel (coastal applications)

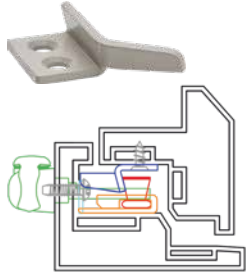
Recommended screw :

Stainless steel Quadrex wood screw 10-12, undercut, head #7

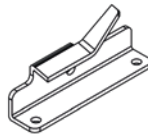
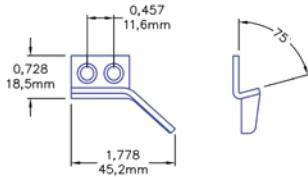
40.0 Metal keeper | Application (cont'd)

Cone Roller

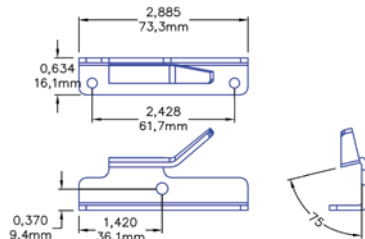
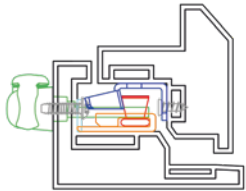
To be used with CR tie bar systems



GA-CR-007L 
Left hand shown

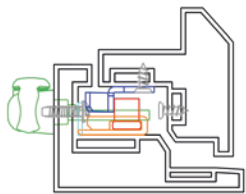


GA-CR-001L
Left hand shown

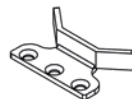
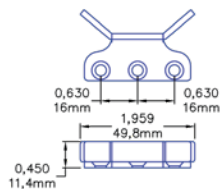


Cylindrical Roller

To be used with GRF tie bar systems



GA-GRF-001
Non-handed



40.1 Ordering | Metal keeper (cont'd)

Part Number	Description	Box/Qty.
GA-CR-007L-XX	Cone roller keeper, left hand	200
GA-CR-007R-XX	Cone roller keeper, right hand	200
GA-CR-001L-XX	Cone roller face mount keeper, left hand	200
GA-CR-001R-XX	Cone roller face mount keeper, right hand	200
GA-GRF-001-XX	Cylindrical roller keeper	500

Replace the variable **XX** with the desired value to specify material:

Blank = Standard powder-coated steel

SS = Optional 304 austenitic stainless steel (coastal applications)

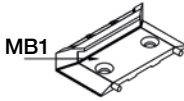
Recommended screw : Stainless steel Quadrex wood screw 10-12, undercut, head #7

41.0 Composite keeper

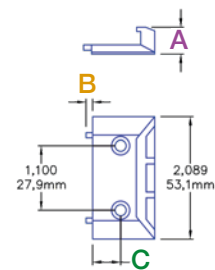
Composite hybride 2390

Can be used with the following tie bar systems:

- ILA
- Trifecta
- Tandem



Non handed



MB1 Models

XX	Dimension A	Dimension B*	Dimension C*
09	0.440" 11.2mm	CUSTOM Length range from 0.050" 1.2mm TO 0.275" 6.8mm (Rounded to 0.005")	CUSTOM MADE (Rounded to 0.005")
11	0.530" 13.5mm		
17	0.600" 15.2mm		
19	0.665" 15.9mm		

MA1 Models

XX	Dimension A	Dimension B*	Dimension C*
00	0.090" 2.2mm	N/A	CUSTOM MADE (Rounded to 0.005")
0	0.155" 3.8mm		
01	0.195" 4.8mm		
03	0.275" 6.8mm		
05	0.375" 9.2mm		
07	0.430" 10.5mm		

41.1 Ordering | Composite keeper

Part Number	Description	Box/Qty.
GA-2390-XX	Composite keeper	500

Replace the variable **XX** with the desired value to specify keeper model # corresponding to the desired dimensions of the above.



*It is mandatory to specify the required **B** and **C** dimensions when ordering. Otherwise, your order won't be processed and further delays may apply.

Recommended screw :

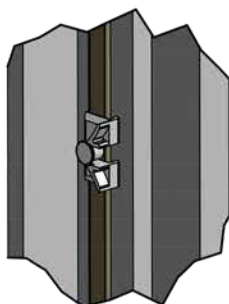
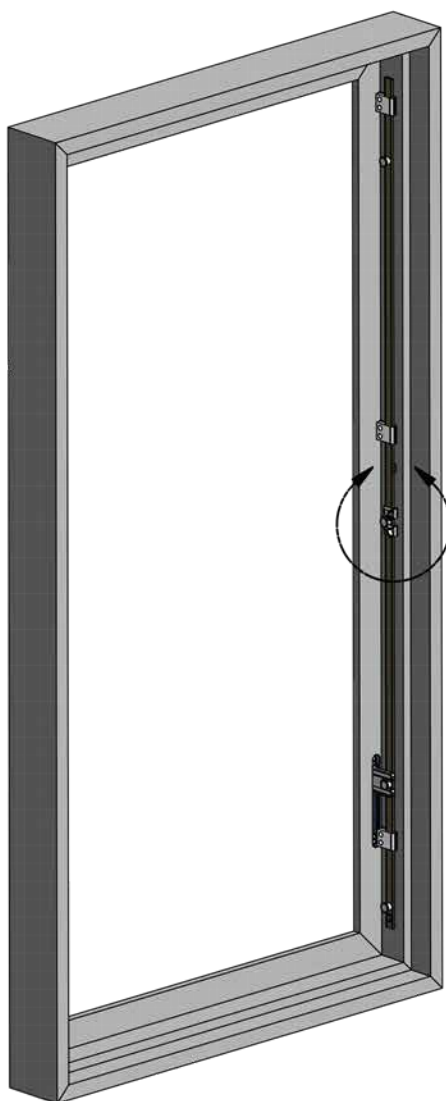
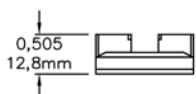
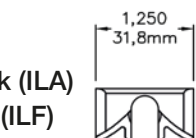
Stainless steel Quadrex wood screw 10-12, undercut, head #7

42.0 Accessories | Ramps

Tie bar ramp **EXCLUSIVE**

Can be used with the following tie bar systems:

- Trifecta
- Tandem
- Adjustable Interlock (ILA)
- Standard Interlock (ILF)



Features

- Provides approximately 0.500" | 12.3mm additional keeper reach, reducing the need to over-crank when closing the sash
- Snap-on feature for fastener free installation on and off-site
- Tie bar ramps are non-handed to ensure easy installation and reduce inventory costs
- A fast and easy solution for service calls concerning locking issues



Application

- 14" | 355mm to 34" | 900mm tie bar systems: install the ramp on the highest locking point.
- 38" | 1000mm to 70" | 1800mm tie bar systems: install the ramp on the second highest locking point.



**Fast and easy solution
for service calls**

42.1 Tie bar ramp | Ordering

Part Number	Description	Box/Qty.
FM-1300	Trifecta / Tandem tie bar ramp 	1000
FM-13000	Interlock tie bar ramp 	1000

Interlock tie bar systems on a 38" | 1000mm window

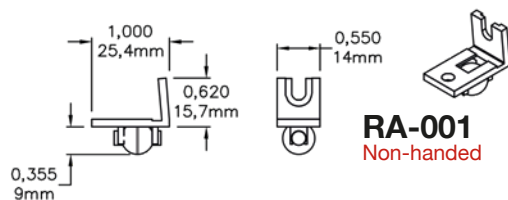
43.0 Accessories | Ramps (cont'd)

Sash ramp

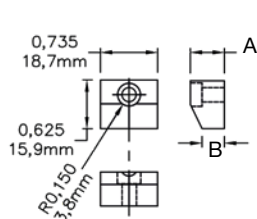
Can be used with any type of window

Features

- Prevents deformation of the sash
- Reduces the need to overcrank operator mechanisms as well as the locking handle when closing and locking the sash



RA-001
Non-handed



RA-002 / RA-003
Non-handed

43.1 Ramp | Ordering

Part Number	Description	Box/Qty.
RA-001*	Lift wheel casement window ramp	1000
RA-002	Fixed window ramp type 002 - A: 0.435" 11mm B : 0.300" 7.6mm	1000
RA-003	Fixed casement ramp type 003 - A: 0.390" 10mm B : 0.250" 6.4mm	1000

Recommended screw :

*Stainless steel Quadrex wood screw 6-10, coarse thread, pan head

**Stainless steel Quadrex wood screw 10-12, undercut, head #7

44.0 Accessories - Snubbers

Snubbers

Can be used with any type of window

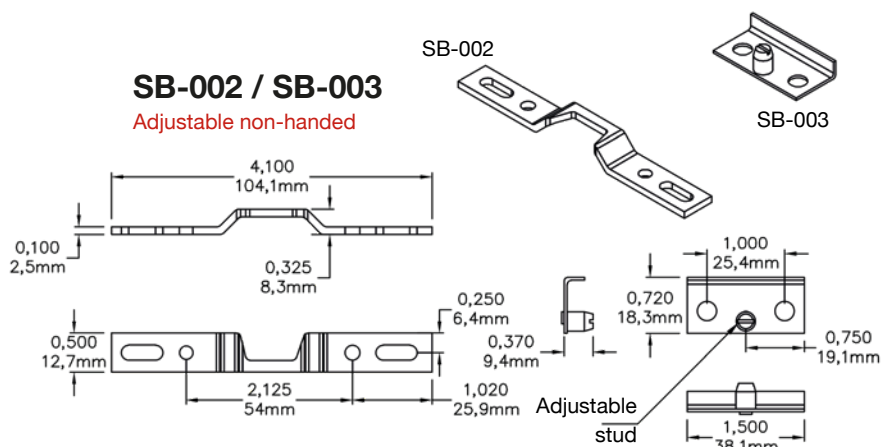
Features

- Prevents tall sashes from bowing
- Provides enhanced protection against home invasion
- Boots impact test performance ratings

44.0 Accessories | Snubbers (cont'd)

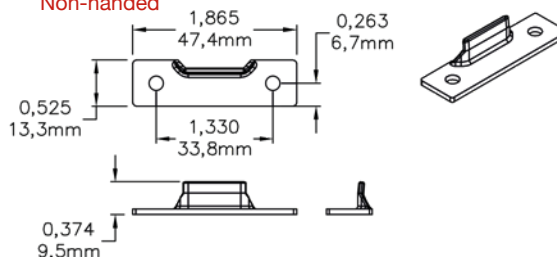
SB-002 / SB-003

Adjustable non-handed



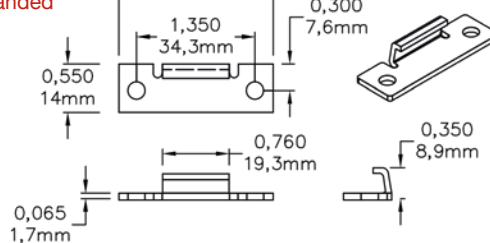
SB-500

Non-handed



SB-600

Non-handed



44.1 Snubbers | Ordering

Part Number	Description	Box/Qty.
SB-002-XX	Adjustable snubber (Sash part)	1000
SB-003-XX	Adjustable snubber (Frame part)	1000
SB-500-XX	Regular snubber 500 series	1000
SB-600-XX	Regular snubber 600 series	1000

Replace the variable **X** with the desired value to specify material :

Blank = Standard finish powder-coated or zinc-plated

SS = Optional 304 austenitic stainless steel
(coastal applications)

Recommended screw :

Stainless steel Quadrex wood screw 6-10, coarse thread, pan head

SASH COMPRESSION

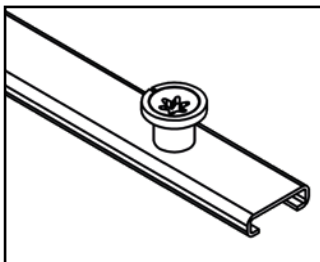
Adjustment

When installing tie bars, the rivet positioning should always be preset to the neutral position.

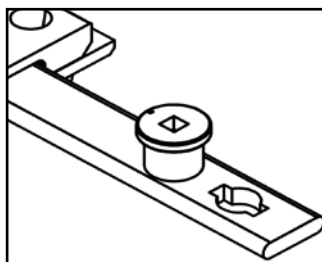
Upward marker = Neutral

To INCREASE sash compression to maximum:

Turn the eccentric rivet positioning marker 90° toward the home interior



Use Torx drive #25
for cam adjustment



Use Robertson
square drive #3 for
cam adjustment



MAINTENANCE

Window hardware

Introduction

Radisson Industries strongly recommends that customers clean and lubricate the window hardware at least 1 time per year, or as needed. Regular maintenance of the hardware parts will help extend the useful life, and to maintain the smoothness of operation.

Window hardware

Cleaning

Step 1

Use a soft cloth dampened with fresh water to clean exposed surfaces of the hardware.

Step 2

To remove the toughest stains, and to get rid of salt or grease deposits, it is recommended to use a soft mild soap. However, it is very important to always rinse the cleaned area with fresh water to avoid having soap residue on surfaces. This could alter the finish of the materials in the long term.

Lubrication

Step 1

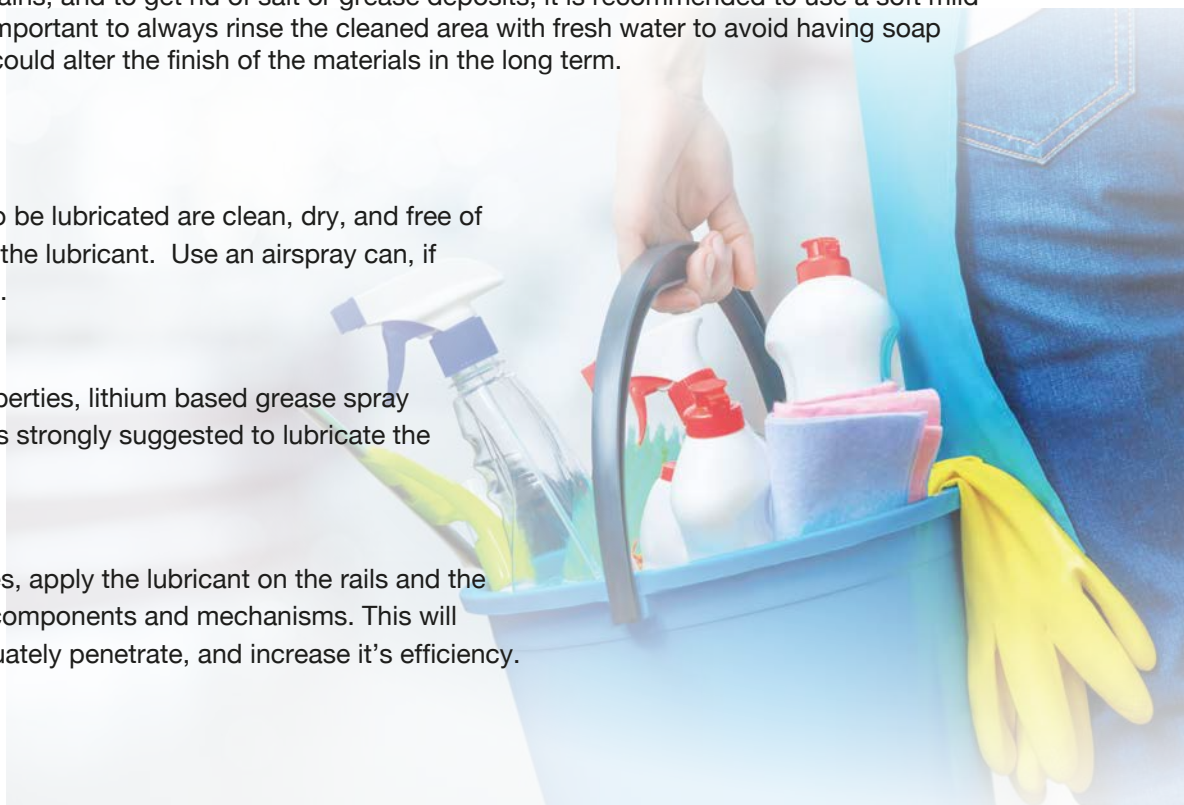
Make sure that the parts to be lubricated are clean, dry, and free of impurities before applying the lubricant. Use an airspray can, if necessary, to remove dust.

Step 2

Because of its sealing properties, lithium based grease spray (Jigg-A-Loo, WD-40 etc.) is strongly suggested to lubricate the hardware mechanisms.

Step 3

While operating the devices, apply the lubricant on the rails and the inner parts of the various components and mechanisms. This will allow the product to adequately penetrate, and increase its efficiency.



Vinegar, abrasive, acidic, citrus based cleaners, and gasoline are to be avoided completely. They could alter or damage the surfaces and finishes permanently.

For this reason, RADISSON INDUSTRIES strongly advises against the use of chemicals on its products. (See detailed document «Muriatic Acid» on page 56)

MAINTENANCE

Door handle sets



ATTENTION HOMEOWNERS, PAINTERS AND INSTALLERS! DO NOT USE ANY SOLVENTS, POLISHES, CLEANSERS OR ABRASIVES ON THE HARDWARE !

If the doors are to be painted, it is important to remove the hardware before doing so to prevent any overspray or spillage on the hardware. Warm mild soapy water and soft cloths are only to be used to clean the hardware after installation. No paint product of any kind is to come in contact with the hardware including the mechanisms.

POWDER-COATED FINISHES



IF YOU HAVE PURCHASED :

- POLISHED BRASS
- BRUSHED CHROME
- PEWTER
- BLACK
- ANTIQUE BRASS
- SATIN NICKEL
- WHITE
- O.R.B

The hardware's finish is protected with either a clear or solid, durable paint. Solvents, polishes, cleansers and abrasives will break down this protective coating and the brass will dull and turn dark.

TO CLEAN:

Use mild soapy water, rinse and dry with a soft cloth. Cleaned properly, it will last for years to come! For added protection, a carnauba car wax can be applied. Make sure it contains no abrasives and follow the manufacturer's directions.

PVD FINISHES



IF YOU HAVE PURCHASED ANY PVD FINISHES :

Because of various atmospheric and weather conditions (especially where the hardware is exposed to high concentrations of salt in the air), periodic care is needed for those finishes. If it is not cleaned **weekly**, the finish may look like it is tarnished or has failed. Your vehicle would look the same if not cleaned weekly. The salt, calcium, dirt and oil must be removed to maintain its original lustre.

TO CLEAN:

Regular cleaning with warm soapy water is necessary. For added protection, a carnauba car wax can be applied. Make sure it contains no abrasives and follow the manufacturer's directions.

FOR SEVERE BUILDUP

You will need a bottle of « CLR » which can be purchased at most home & garden or drug stores. Please follow the directions and safety precautions from the manufacturer. Remove the hardware from the fixture it is being used on. Rubber gloves and eye protection is necessary. Submerge each piece of hardware into the cleaner and wait about 1/2 hour. Remove hardware from solution and rinse with warm running water. Rub with a paper towel to remove the residue of the salt, calcium, dirt and oil. Repeat until all unwanted elements are removed. Apply a carnauba car wax, and re-install the hardware at its original position. Remember to clean and wax the hardware weekly as mentioned earlier so as not to have a large build up of unwanted elements. Doing so will make the hardware last for years to come.



LIFETIME LIMITED WARRANTY



Window hardware ONLY

Our products are warranted against all manufacturing defects and malfunctions of the material used during its fabrication.

Radisson Industries strongly recommends that customers clean and lubricate the window hardware at least twice a year, or as needed. Regular maintenance of the hardware parts will help extend the useful life, and to maintain the smoothness of operation. **(See maintenance instructions on page 52)**

10 YEAR MECHANICAL GUARANTEE

Multi-point Lockmaster



In the unlikely event that a Yale multi-point door lock product should fail within a ten year period from purchase date, due to defective materials or workmanship, Yale Door and Window Solutions, at its sole discretion, either replace the failed product or refund the original purchase price of the product.

CONDITIONS

- A. The customer must prove the date of purchase and installation of the product. The benefit of the guarantee cannot be assigned or transferred.
- B. This guarantee shall not apply, should the product have been incorrectly fitted, adjusted or operated, other than to the manufacturer's instructions.
- C. Radisson Industries / Yale will not guarantee the product should it be found to have failed due to abuse, vandalism, negligence or operating forces and stresses beyond recommended levels.
- D. Radisson Industries / Yale will not accept responsibility if the product has not been correctly maintained and lubricated at least twice a year. **(See maintenance instructions on page 52)**
- E. No claim can be considered until Radisson Industries / Yale has been provided with the opportunity to inspect the product on site.
- F. Radisson Industries / Yale reserves the right to recover any costs incurred from handling false claims.
- G. Radisson Industries / Yale will not accept responsibility for any claim where Radisson Industries / Yale has not been paid for their product or any other goods or services.
- H. This guarantee does not apply to decorative finishes* or to surface corrosion which does not impair the normal functioning of the product.

 ***(See detailed decorative finishes warranty on page 55)**



10 YEAR FINISH GUARANTEE

Door handle set and accessories



The solid brass handles and solid brass back plates with PVD® finish sold by Yale Ltd. (each a “Product,” together the “Products”) are warranted against tarnish for a 10 year period , as long as the product is owned by the original purchaser and used in the residence in which it was originally installed.

This Limited Warranty covers only residential applications and proof of original purchase or product registration is required to make a claim under this Limited Warranty. This Limited Warranty excludes a Product: (1) with scratches or abrasions; (2) that has been altered; improperly installed; abused and / or misused; (3) used in commercial applications; (4) that has been damaged by acts of nature; (5) that has undergone normal wear and tear; or (6) has not been properly maintained according to the manufacturer’s written specifications. This Limited Warranty is expressly limited to persons or entities that purchase the Product for resale or use in their ordinary course of business.

If a Product is found to be defective by Yale Ltd. in its reasonable judgment, Yale Ltd. will, at its sole option, either repair or replace the defective hardware. This Limited Warranty does not cover any labour charges to remove and / or reinstall a Product.

THE FORGOING LIMITED WARRANTY IS EXCLUSIVE AND YALE LTD. MAKES NO WARRANTY WITH RESPECT TO ITS PRODUCTS, EXPRESSED OR IMPLIED, EXCEPT AS SET FORTH HEREIN. ALL OTHER EXPRESSED WARRANTIES, AND ALL IMPLIED WARRANTIES (INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE), ARE HEREBY DISCLAIMED. YALE LTD.’S LIABILITY, WHETHER IN CONTRACT, NEGLIGENCE OR OTHER TORT, STRICT LIABILITY OR UNDER ANY OTHER LEGAL THEORY, ARISING OUT OF WARRANTIES, ACTIONS, OMISSIONS, REPRESENTATIONS, INSTRUCTIONS OR WARNINGS (OR LACK OR INADEQUACY THEREOF), DEFICIENCIES, FAILURES, OR DEFECTS OF ANY KIND OR FROM ANY CAUSE SHALL BE LIMITED SOLELY TO REPAIRING OR REPLACING DEFECTIVE PARTS PURSUANT TO THIS WARRANTY.

IN NO EVENT SHALL ANY CLAIM OR RECOVERY OF ANY KIND EXCEED THE PURCHASE PRICE OF THE PRODUCT WITH RESPECT TO WHICH SUCH CLAIM OR RECOVERY IS MADE AND IN NO EVENT SHALL YALE LTD. BE LIABLE FOR SPECIAL, INDIRECT, PUNITIVE, INCIDENTAL OR CONSEQUENTIAL DAMAGES, (INCLUDING, WITHOUT LIMITATION, LOST PROFITS) RESULTING FROM THE USE OR MAINTENANCE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY, OR FOR ANY OTHER REASON. ANY ORAL OR WRITTEN DESCRIPTION OF YALE LTD’S PRODUCTS IS FOR THE SOLE PURPOSE.



IMPORTANT NOTICE

Hydrochloric Acid (Muriatic Acid)

Introduction

Hydrochloric acid (also called muriatic acid) is a solution of hydrogen chloride in water. This mineral acid is commonly used in the construction industry, mainly to clean brick, mortar, cement, vinyl, glass, or any other masonry structures.

Stainless steel explained

HOW DOES STAINLESS STEEL RESIST CORROSION?

Although there are various types of stainless steel, with different metallurgical compositions and alloying and manufacturing processes, they all share one common characteristic:

A protective layer of chromium oxide also called: «Passivation layer»

Passivation is a process by which a passive film, made of chromium oxide, is formed on the surface by putting a chemical solution in contact with oxygen. This solution removes all contamination and protects the steel from the elements.

This process significantly improves resistance to corrosion. Nevertheless, stainless steel is not invincible and can still corrode if not properly maintained.

Acid corrosion

When stainless steel is exposed to a strong acid for an extended period of time, the protective chromium oxide layer formed on the surface dissolves rapidly.

The stainless steel is then no longer protected and the surface is completely exposed to the corrosive effects of the acid and/or other surrounding elements.

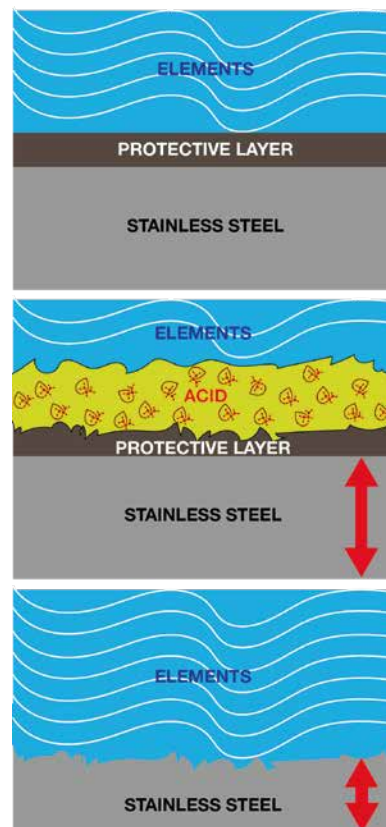
An irreversible build-up of red, brown, or black rust then appears, reducing the thickness of the steel and increasing the risk of component breakage.



For this reason, RADISSON INDUSTRIES strongly advises against the use of hydrochloric acids on its products.

In the event that acid must be used to clean masonry next to a window, ALWAYS be sure to cover the window and its components.

In such cases, RADISSON INDUSTRIES cannot be held responsible for any damage and reserves the right to revoke the warranty.



IMPORTANT NOTICE

300's Series Stainless Steel Magnetic Properties

Stainless Steel Magnetism

Why does stainless steel become magnetic?

Usually, the 300's series stainless steel is not magnetic except for a short period after it is freshly formed.

That being said, stainless steel alloy becomes magnetic after any cold work.

Cold work means the various stamping, cutting, forming, wire forming and surface polishing processes. These processes change the distribution of the alloy's chemical properties and, as a result, they can create magnetism that is atypical of stainless steel's properties.

In fact, steel's nickel and chromium content determines its quality. It must contain more than 18% nickel to be classified 304 grade stainless steel.

 **The magnet test is therefore not an effective way of verifying the integrity of a product made of stainless steel.** 

Surface Oxidation

Did you know?

It is also common for the different stamping dies used during steel processing to leave iron ion residues on the stainless steel surface.

These iron ion residues may create magnetism and eventually oxidize and cause minor rust to form on the surface of the product, but this does not affect product integrity.

Certifications

Testing and certifications



Testing & Certifications



ASTM B117-16 | CORROSION TESTED
Corrosion salt spray tested for over 312 hours



AAMA 904.14 | MAXIMUM HINGES LOAD TESTED
Maximum load capacity of 130lb.*

* Maximum load permitted for the AAMA hardware load test. Refer to the chart on page 5, section 4.0 for the maximum weight recommended by Radisson Industries to ensure ease of operation.



AAMA 901.16 | ROTARY & LINEAR OPERATOR
8,000 cycles without any compromise in performance



ASTM G155 | ACCELERATED WEATHERING
Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials, 300 hours (Plastics and composite parts only)



Contact us

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