



Available in three different linkage configurations to address corner pull-in, this operator is designed to provide positive control of the sash in any position. A simple detach feature disengages the operator from the sash for quick window removal. An optional torsion bar is available on single-pull models to deflect the sash and improve the seal at the corners. A dual-pull model or Guide Bar attachment provides additional stability to a wide sash in the open position. Model #11.16 uses a guide bar attachment on the window sash which locates the closing force closer to the corners of the sash. Truth recommends you apply two sash locks for security and added control of windows weatherability features (see Casement & Awning Sash Locks).

PRODUCT APPLICATION

ASSISTANCE: If you are designing a new window profile, or are having difficulty selecting hardware for your window, please contact Truth. Our highly trained Technical Service Staff can assist you with the selection of the appropriate hardware to meet your performance requirements, as well as providing personalized application drawings.

LOGO OPTIONS: Have you considered personalizing your window with your company name or logo? All of Truth's operator handles are capable of accepting your own "signature." Contact Truth for further details.

WARRANTY: Protected under the terms of the Truth Warranty for Window and Door Manufacturers and Authorized Distributors. Refer to Truth's Terms and Conditions for further details.

MATERIAL: High-pressure die-cast zinc case, crank handle and knob. Hardened steel drive worm and gear arms. Guide bar for model #11.16 is extruded aluminum.

CORROSION PROTECTION:

Truth's E-Gard® Hardware has a multi-stage coating process that produces a superior physical and aesthetic finish. Plus, it is resistant to a wider range of corrosive materials, including industrial cleaning materials and environmental pollutants. This proprietary process has been tested to



be approximately three times better than common zinc plated finishes.

For the severe conditions associated with coastal areas, Truth has developed certain product lines utilizing either **CoastGard® Hardware**, or stainless steel hardware. See Tech Note #7 for further information about corrosion protection and these special hardware options.

FINISH: Electrostatically applied, durable coatings that provide excellent resistance to chipping, scratching and corrosion while maintaining color stability for years in direct sunlight. Please refer to Truth's Color Chart for examples of Truth's most popular finish options. Truth also offers a wide range of decorative "plated" finishes - contact Truth for additional information on availability of these finishes on specific product lines.

ORDERING INFORMATION:

1. Choose operator style desired (specify by part number).
2. Specify finish number.
3. Select mounting hardware (sold separately):
 - #11454 - Contour Handle (painted) or #10579 - Handle - shown above.

Optional handle styles, such as Truth's Folding Handle, are also available.

Sash Hook - three styles to choose from - refer to drawings for sizes and part numbers (1 each on models: #11.10, #11.12, #11.17, #11.30. 2 each on model #11.14).

 - #10005 - Shoe Studs (#11.16 requires 2).

#30568 - Guide Bar (#11.16 requires 1).

#31748 - Bottom cover plate.

#21306 - Protective red plastic spline cap (optional).

RECOMMENDED SCREWS:

Types of screws required determined by material of profile used. See Tech Note #11. Refer to drawings for complete information on screw type and quantity needed (sold separately).

TRUTH TIPS:

1. This Awning Operator can be used with all Truth 13 Series Awning Hinges. To insure maximum operator efficiency and avoid sash chatter, it is important that the operator, hinge, and sash height be properly matched. For more complete information on proper hinge sizing and how to overcome corner pull-in problems, see Truth Tech Note #2.
2. Butt Hinges can be used with the Awning Operator, however, some degree of sash chatter will usually occur. Chatter is caused by the weight of the window pushing the operator closed rather than the operator pulling the window closed.
3. It is important that the Awning Operator be mounted square to the sash. This is to insure equal pull-in of the arms at both corners.
4. When security and/or a tighter weather seal is desired, sash locks should be added to either the sill or side jambs.

TRUTH TIPS (con't):

5. A Truth Spline Cap (#21306) is available to protect the operator spline from dirt and damage during shipping, window installation, and final building construction.
6. Adding a Truth Snubber to the center of the top rail on an awning window may increase the negative air pressure rating of the window.
7. For accurate hardware placement in vinyl or metal applications, pre-drilling of the window profile is recommended.
8. For vinyl window applications, mounting screws should pass through two PVC walls, or one PVC wall and one insert wall. For this reason, it may be necessary to use a longer screw than is recommended.

9. For metal window profiles Truth recommends machine screws. However, in most applications, sheet metal screws will provide adequate holding power.

10. To cover the bottom of the operator in elevated applications, Truth's **#31748** Bottom Cover Plate can be used to enclose the visible area of the operator's base.

11. When selecting mounting screws for Truth hardware, coating compatibility is one of the most important criteria. For best corrosion resistance the coating on the screws should be the same as the coating on the hardware. For more information see Tech Note #11.

12. This operator is intended for single vent applications only, and should not be used on multi-vent applications.

INCLUDE TRUTH SPECS ON YOUR NEXT WINDOW PROJECT

Window operators shall be provided which allow easy adjustment of window position. The mechanism should be crank operated and provide wide range of open positions. Connection to the movable sash must be easily detachable for window cleaning and maintenance.

Window operators will be of scissor arm design driven by hand crank. The operator must be constructed of E-Gard® components, hardened steel worm and gear arms and high pressure zinc alloy die castings.

Window Operators shall be 11 series Awning Operator as manufactured by Truth Hardware, Owatonna, MN.

FIG. 1 APPLICATION OF TRUTH ROTO GEAR AWNING OPERATOR

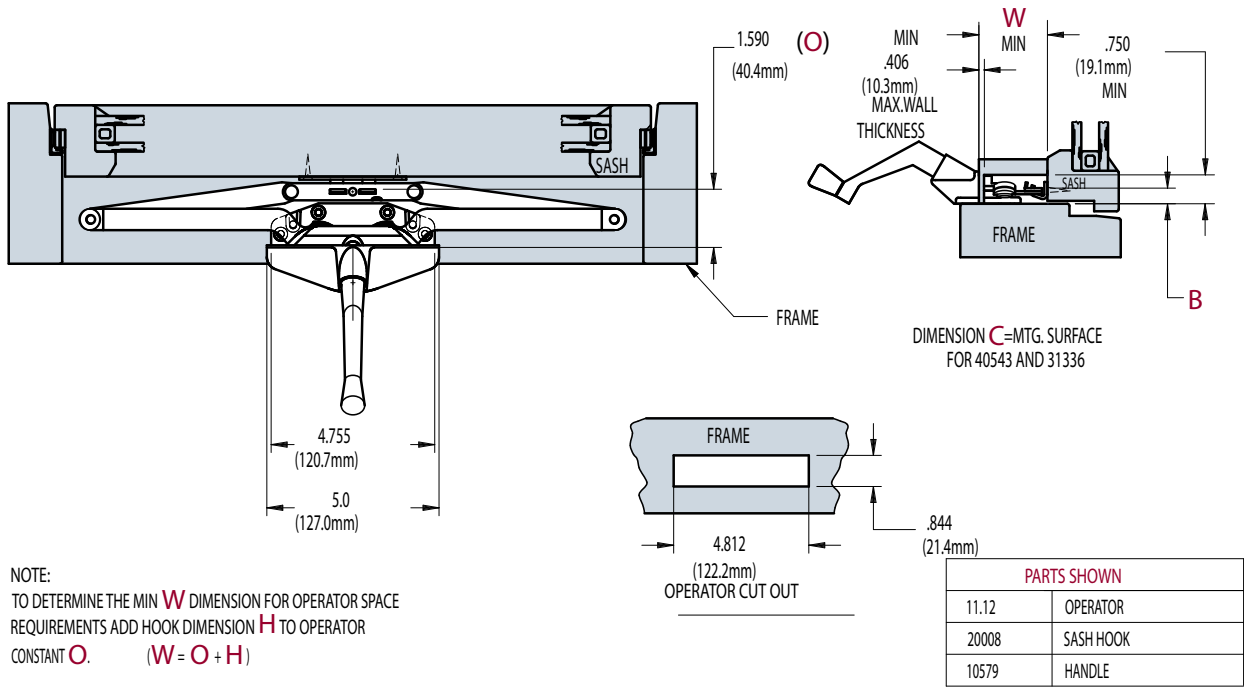
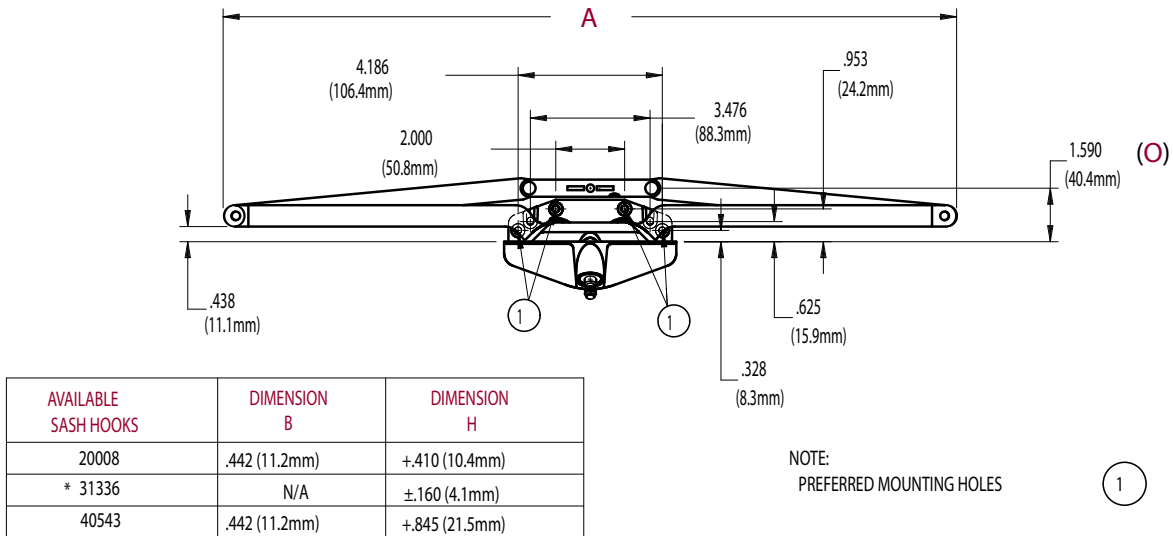


FIG. 2 ROTO GEAR AWNING OPERATOR (SINGLE PULL)



*31336 MAY ADD OR SUBTRACT FROM O

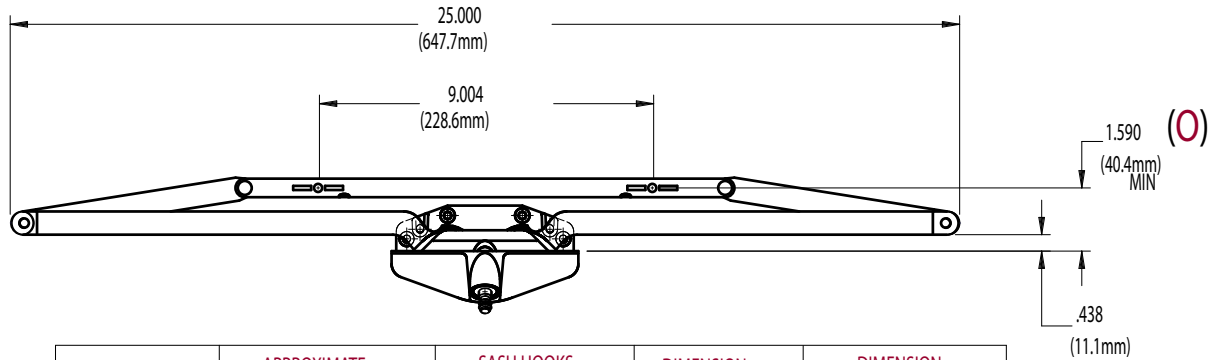
RECOMMENDED SCREWS:

WOOD: 4 (P/N 19380.XX) #10 X 1.0 PHILLIPS, FLAT HEAD, SHEET METAL SCREWS

PVC & METAL: 4 - #10 PHILLIPS, FLAT HEAD SCREWS (LENGTH AND THREAD TYPE DETERMINED BY PROFILE)

OPERATOR	A OVERALL LENGTH	APPROXIMATE SASH OPENING
11.10	21.500 (546.1mm)	15.750 (400.1mm)
11.12	16.125 (409.6mm)	10.500 (266.7mm)
11.30	12.0 (304.8mm)	6.0 (152.4mm)

FIG. 3 ROTO GEAR AWNING OPERATOR (DUAL PULL)



OPERATOR	APPROXIMATE SASH OPENING	SASH HOOKS PART NUMBER	DIMENSION B	DIMENSION H
11.14	14.500 (368.3mm)	(2) 20008	.442 (11.2mm)	+ .410 (10.4mm)
		(2) 31336 *	N/A	±.160 (4.1mm)
		(2) 40543	.442 (11.2mm)	+ .845 (21.5mm)

RECOMMENDED SCREWS:

* 31336 MAY ADD OR SUBTRACT FROM O

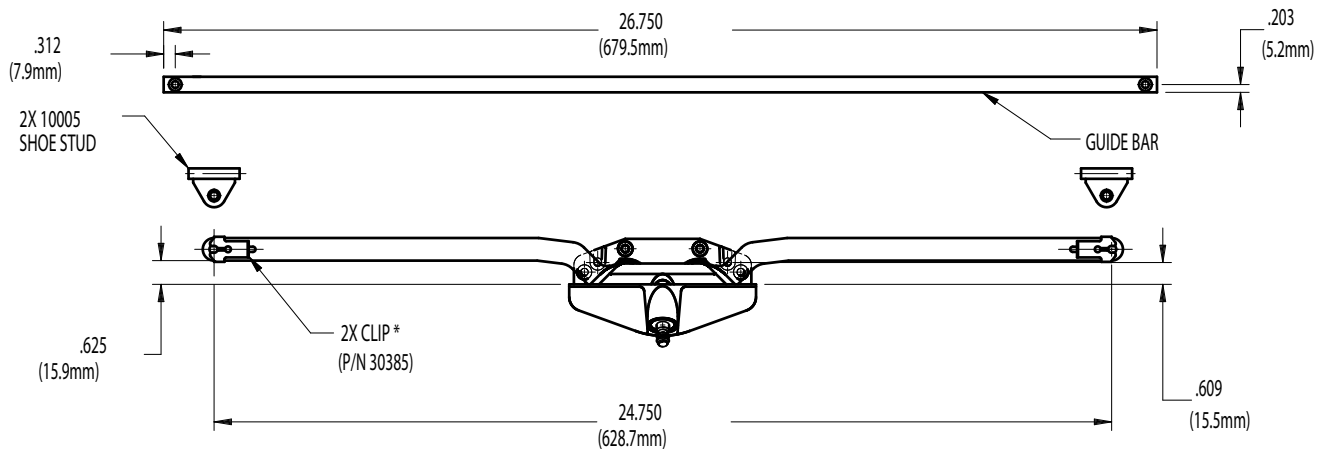
WOOD: 4 (P/N 19380.XX) #10 X 1.0 PHILLIPS, FLAT HEAD, SHEET METAL SCREWS

NOTE:

1. MOUNTING HOLE LOCATIONS SHOWN FIG 2

PVC & METAL: 4 - #10 PHILLIPS, FLAT HEAD SCREWS (LENGTH AND THREAD TYPE DETERMINED BY PROFILE)

FIG. 4 ROTO GEAR AWNING OPERATOR (GUIDE BAR)



RECOMMENDED SCREWS:

WOOD: 4 (P/N 19380.XX) #10 X 1.0 PHILLIPS, FLAT HEAD, SHEET METAL SCREWS

OPERATOR	GUIDE BAR	APPROXIMATE SASH OPENING	DIMENSION B	DIMENSION W MIN
11.16	30568	10.00 (254.0mm)	.568 (14.4mm)	2.00 (50.8mm)

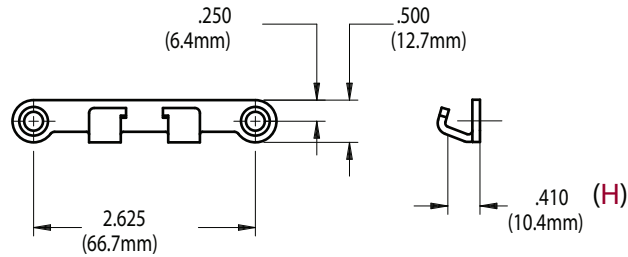
NOTE: 1. SHOE STUD AND GUIDE BAR MUST BE ORDERED SEPARATELY.

2. * 30385 CLIPS INCLUDED WITH OPERATOR.

3. MOUNTING HOLE LOCATIONS SHOWN IN FIG. 2

PVC & METAL: 4 - #10 PHILLIPS, FLAT HEAD SCREWS (LENGTH AND THREAD TYPE TO BE DETERMINED BY PROFILE)

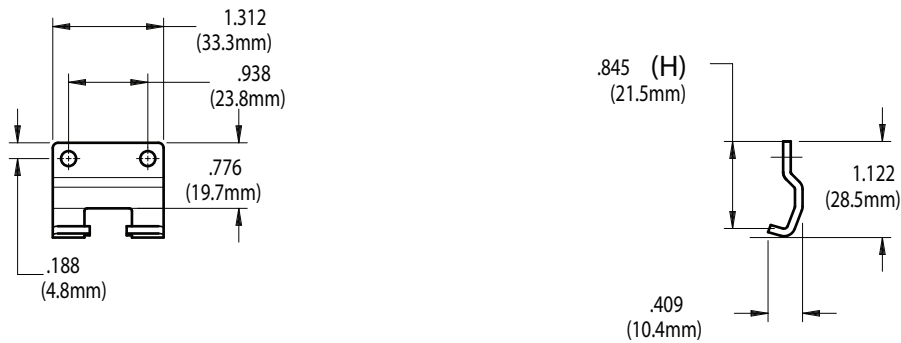
FIG. 5 SASH HOOK 20008.XX



RECOMMENDED SCREWS:

- WOOD: 2 (P/N 19240.XX) #8 X 1.0 PHILLIPS, FLAT HEAD, SHEET METAL SCREWS
- PVC & METAL: 2 - #8 PHILLIPS, FLAT HEAD SCREWS (LENGTH AND THREAD TYPE DETERMINED BY PROFILE)

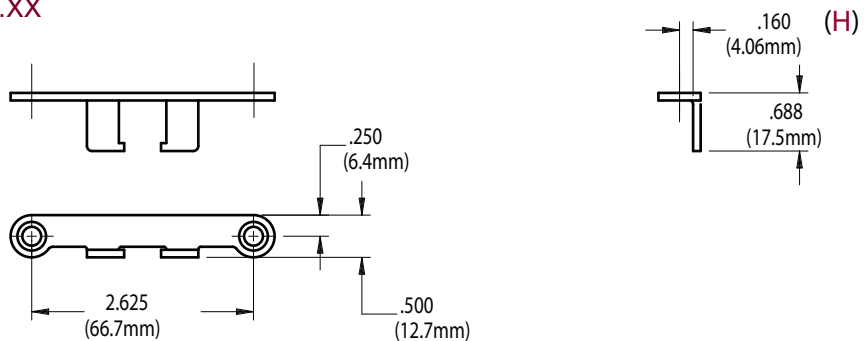
FIG. 6 SASH HOOK 40543.XX



RECOMMENDED SCREWS:

- WOOD: 2 (P/N 19230.XX) #8 X 1.0 PHILLIPS, PAN HEAD, SHEET METAL SCREWS
- PVC & METAL: 2 - #8 PHILLIPS, PAN HEAD SCREWS (LENGTH AND THREAD TYPE DETERMINED BY PROFILE)

FIG. 7 SASH HOOK 31336.XX



RECOMMENDED SCREWS:

- WOOD: 2 (P/N 19240.XX) #8 X 1.0 PHILLIPS, FLAT HEAD, SHEET METAL SCREWS
- PVC & METAL: 2 - #8 PHILLIPS, FLAT HEAD SCREWS (LENGTH AND THREAD TYPE DETERMINED BY PROFILE)



700 WEST BRIDGE STREET, OWATONNA, MN 55060 ■ 507.451.5620 800.866.7884 ■ TRUTH.COM