



WASHABILITY: When you are in need of venting a large casement window, Truth's #14.97

Washability Casement Hinge, in combination with Truth's Maxim Dual Arm Operator, is just the answer. This model will allow the sash to move 6-1/2" to provide washability access. The hinge provides 1.5" more "washability" area than Truth's standard #14.75 Casement Hinge, which makes it much easier for the homeowner to clean their windows from inside the home. Able to support a 40"x 84" frame size window (96 lb. Sash), the #14.97 Hinge has been rated to meet an average of 225 lbs. per hinge in negative air testing.

EGRESS: Truth's #14.12 Egress Casement Hinge is designed specifically to work with Truth's Maxim Dual Arm Operator, in order to achieve egress access in required situations. The hinge arms are made of heavy gage steel to give sash weight carrying capability of up to 69 lb. sash.

FIELD SERVICE SOLUTIONS:

Field service problems can be easily corrected with our simple adjustment feature built right into the hinge. Often times a window may be installed out of square, or sash sag may occur which needs to be remedied. Now, without having to disconnect the sash, the window can be re-aligned by simply turning the "adjustment stud" with our Maxim Hinge Adjustment Wrench (#31887).

See Figure #13 and Truth Tip #9 for adjustment procedures.

DESIGN: These hinges have a notched track to clear corner welds in vinyl window frames, and has a .080" screw head clearance under the slide shoe. Hinges fit into existing hinge cavities of Truth's #14 series hinges (see drawings for optional 1/2" stack-height models). Both hinges meet an average of 225 lbs. per hinge, in negative air testing. The hinge arms are made of heavy gage steel to give sash weight carrying capability of up to a 69 lb. (#14.12), and 96 lb. (#14.97) sash when used with the Maxim Dual Arm Operator.

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

MATERIAL: Non-magnetic stainless steel track, heavy gauge steel arms, brass stud and stainless steel reinforced insert in plastic shoe. Non-magnetic stainless steel arms are also available.

CORROSION RESISTANCE:

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 coastal applications, Truth also has stainless steel arms available (See Tech Note #7).

ORDERING INFORMATION:

1. Specify "standard" or "coastal" hinge.
2. Order Casement Hinge part number:
 - #14.97 (washability)
 - #14.12 (egress)
3. Hinges can be ordered assembled or K.D. (knocked down). K.D. hinges allow track and arms to be purchased separately for greater efficiency when hardware is applied to the sash and frames in separate locations.
 1. Specify left - or right-hand (handing determined by the hinge side when looking at the window from the outside).
A pair of hinges are required per window (1 left hand & 1 right hand).
 2. #31887 - Maxim Hinge Adjustment Wrench (sold separately).

RECOMMENDED SCREWS:

Coating compatibility between the screws and the hinge is very important in order to maintain the optimum in corrosion resistance performance. Refer to drawings for complete information on screw type and quantity needed (sold separately). For additional information regarding screw selection - see Truth Tips and Tech Note #11.

TRUTH TIPS:

1. Truth recommends that when designing a casement window the sash width should be limited to no greater than 66% of the sash height. A sash width that exceeds 66% could develop sash sag over the life of the window.

Refer to Tech. Note #3 for more information dealing with sash sag prevention.

2. 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.
3. The Washability Hinge with snap stud attachment was designed to be used on a casement window only. Under no circumstances should a casement hinge with a snap stud attachment be used on an awning window.
4. Screw heads will be raised above the track when installed. Truth's slide shoe is bridged (.080" high) to clear screw heads.
5. For accurate hardware placement, pre-drilling of the screw holes in the window profile is recommended.
6. 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.
7. For metal window profiles Truth recommends machine screws however, in most applications sheet metal screws will provide adequate holding power.
8. A standard 7/16" wrench can be used to adjust a hinge equipped with the adjustable stud, however this will require detaching the support arms from the track. To adjust this hinge without detaching the support arms it is necessary to use Truth's Maxim Hinge Adjustment Wrench #31887.
9. On some window designs, binding can be experienced on the hinge side of the window between the outermost edge of the sash and the jamb. This problem often occurs when switching from a standard hinge to an "Egress" hinge. If a window system is designed to work with an "Egress" hinge, the window system will work with all other Truth Concealed Casement Hinges. When binding is encountered, three solutions are available: a) move hinge location toward outside of sash,

b) increase the clearance between the sash and jamb, and c) adding a radius to outside corner of the sash.

10. Truth recommends that Snubbers be used at the center of the hinge side of any casement window that has a tendency to bow outwardly at the center in the closed position. Adding Snubbers may increase the negative air pressure rating of a casement window.

11. For easy correction of out of square, or racked window installations, the use of Truth Jamb Jack III frame adjuster is recommended. Frame adjustment can improve both weather seal tightness and sash operation over the life of the window.

INCLUDE TRUTH SPECS IN YOUR NEXT WINDOW PROJECT

Low friction casement hinge for use on residential or commercial windows, which will be concealed between sash and frame for low maintenance and clean exterior aesthetics. The hinge must provide a washable space between sash and side jamb when open 90°.

OR The hinge must provide egress access when opened 90°.

Casement window hinges will be of slide and pivot design, which uses a low friction slide shoe and stainless steel track. The slide shoe must be constructed with a high bridge bottom for screw head clearance and a stainless

steel insert for strength. The hinge shall provide a snap-stud means of disconnection to allow easy sash removal. Sash arms are to be constructed of E-Gard® components to provide enhanced corrosion protection.

The hinges shall provide a means of adjustment for sash drag. This adjustment must be accomplished without loosening or removing the mounting screws.

Casement window hinges shall be 14 series Maxim® Hinge, as manufactured by Truth Hardware, Owatonna, MN.

Patents and Patents Pending Worldwide.

FIG. 1 APPLICATION OF 14.97 CONCEALED MAXIM WASHABILITY HINGE

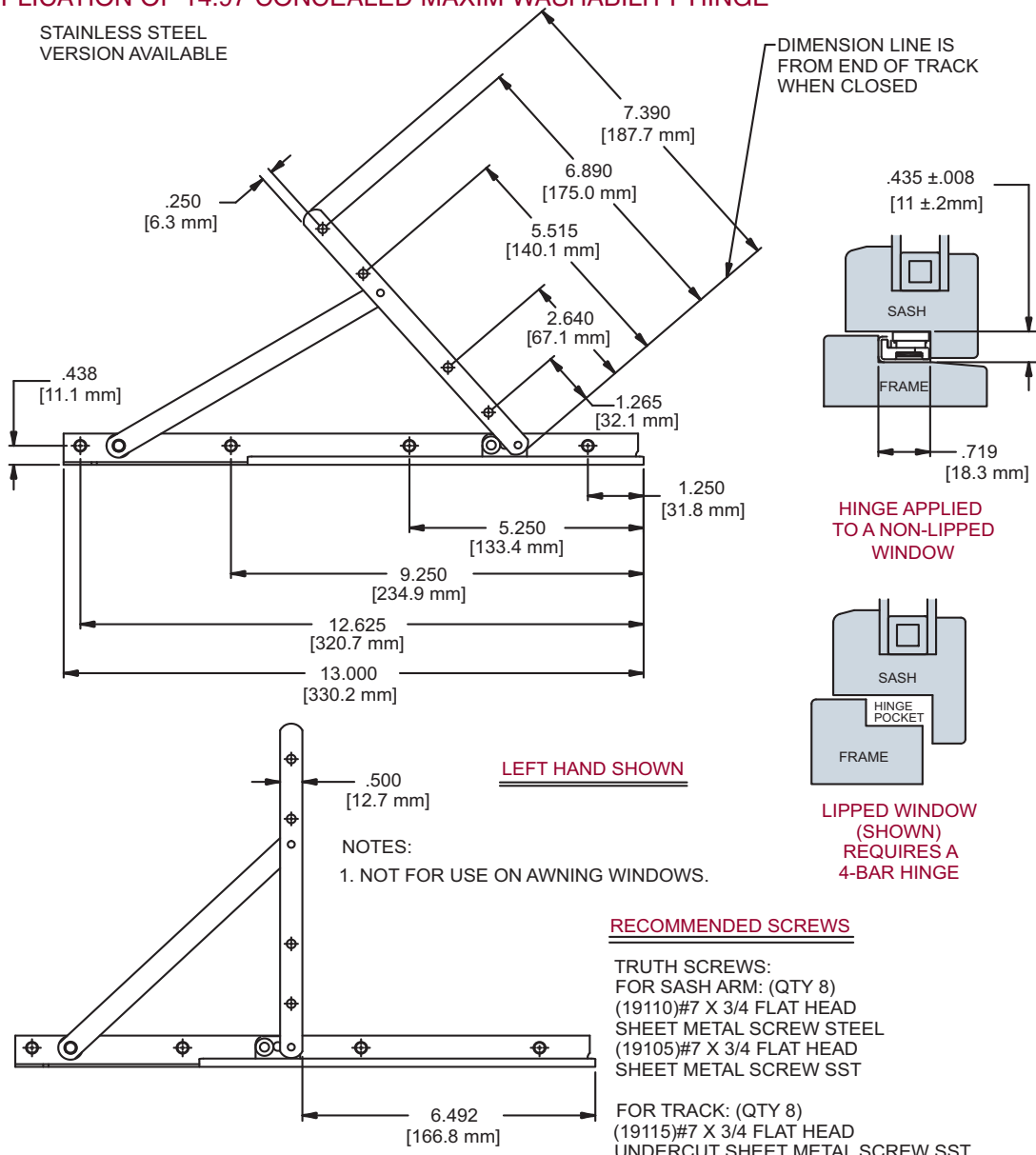
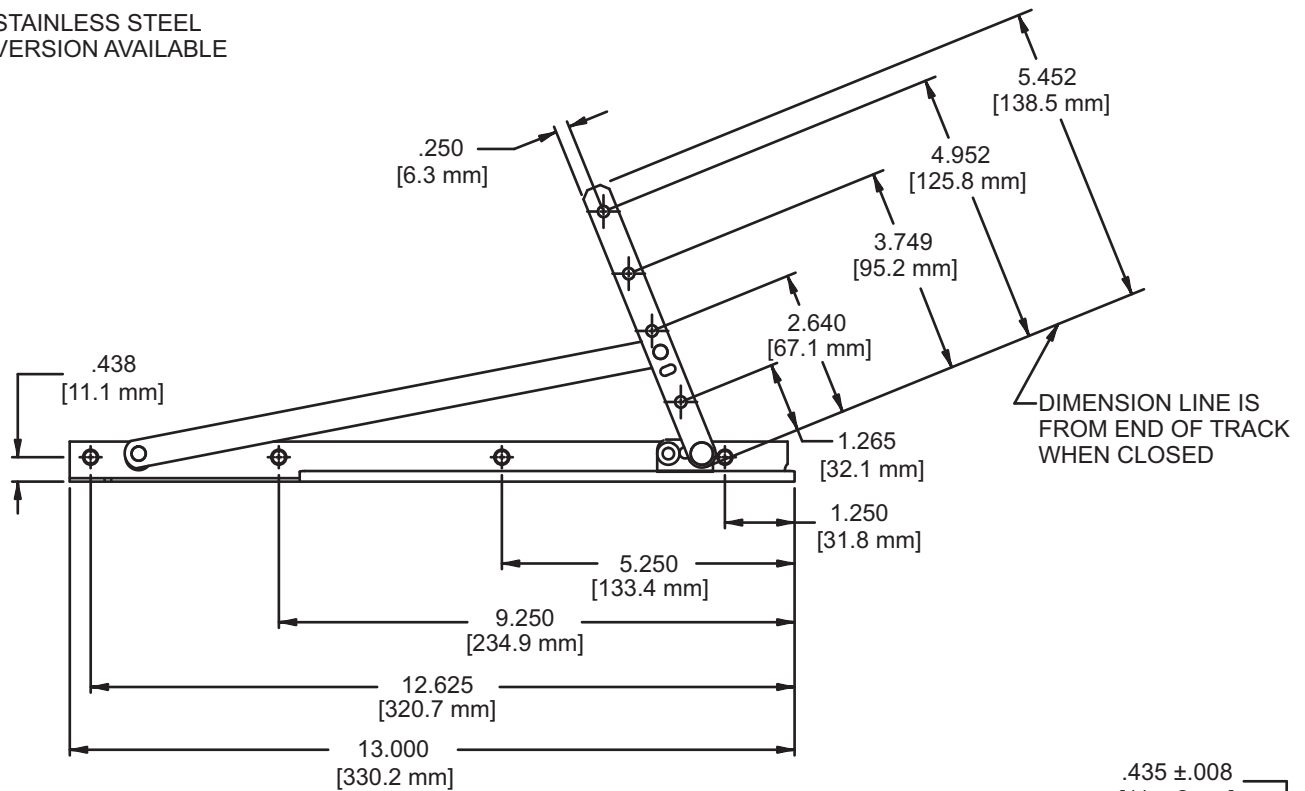
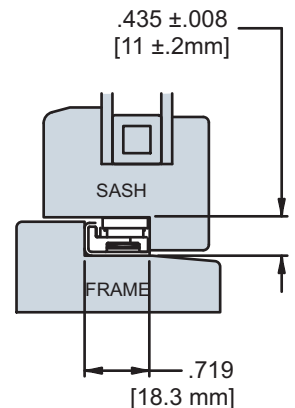
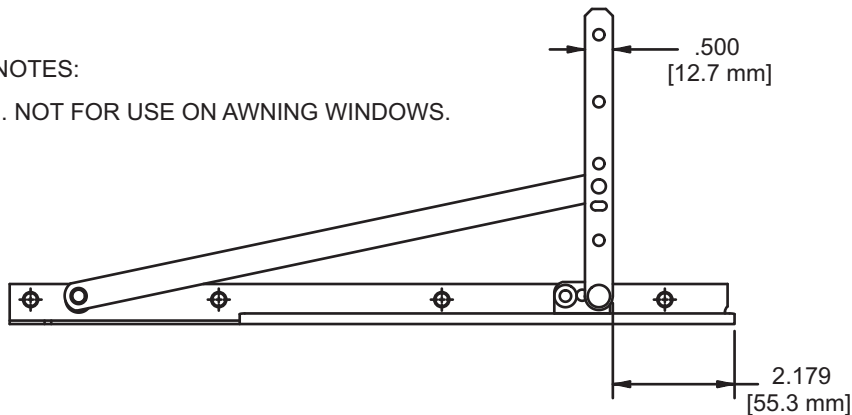
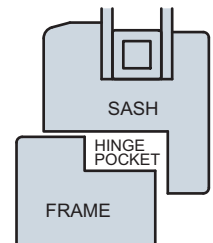


FIG. 2 APPLICATION OF 14.12 CONCEALED MAXIM EGRESS HINGE

STAINLESS STEEL
VERSION AVAILABLELEFT HAND SHOWN

NOTES:

1. NOT FOR USE ON AWNING WINDOWS.

HINGE APPLIED
TO A NON-LIPPED
WINDOWLIPPED WINDOW
(SHOWN)
REQUIRES A
4-BAR HINGE

RECOMMENDED SCREWS FOR WOOD AND PVC APPLICATIONS:

(LENGTH AND THREAD TIE DETERMINED BY PROFILE)

TRUTH SCREWS:

FOR SASH ARM: (QTY 8)

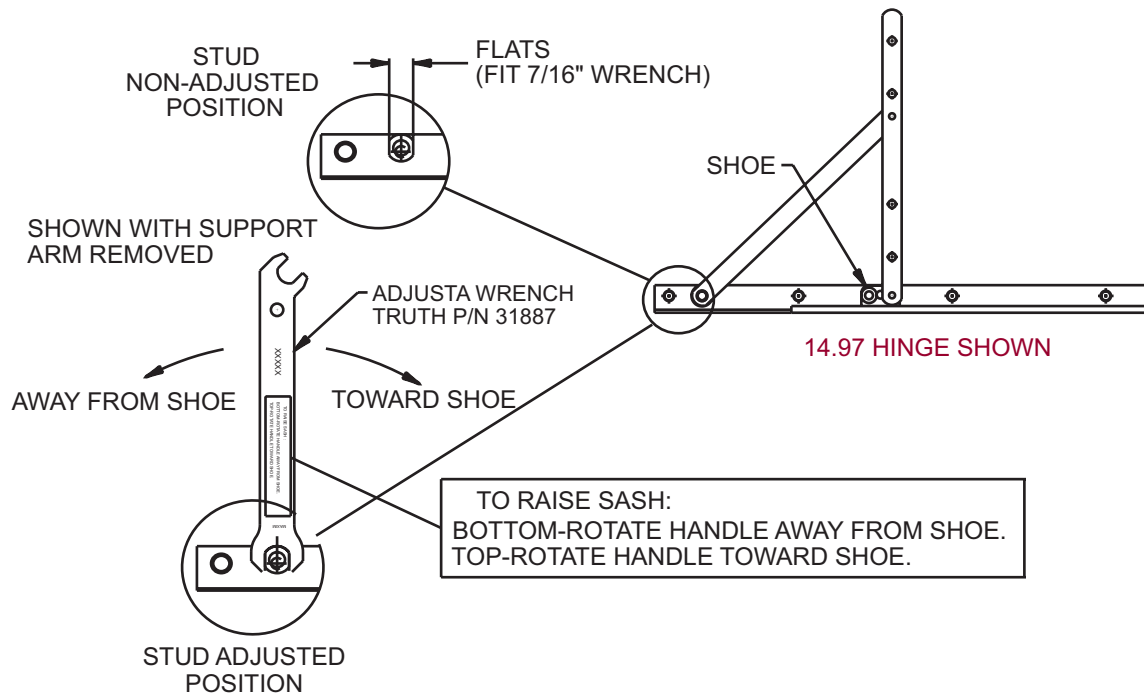
(19110)#7 X 3/4 FLAT HEAD SHEET METAL SCREW STEEL

(19105)#7 X 3/4 FLAT HEAD SHEET METAL SCREW SST

FOR TRACK: (QTY 8)

(19115)#7 X 3/4 FLAT HEAD UNDERCUT SHEET METAL SCREW SST

FIG. 3 INSTRUCTIONS FOR SASH ADJUSTMENT 14.12 AND 14.97 HINGES



INSTRUCTIONS FOR SASH ADJUSTMENT

1. THE AMOUNT OF SASH DRAG THAT THIS HINGE WILL CORRECT FOR, IS DEPENDENT ON THE RATIO OF THE SASH WIDTH VS. SASH HEIGHT. TO CALCULATE THE AMOUNT OF SASH DRAG ADJUSTMENT FOR ANY GIVEN WINDOW SIZE, TAKE THE RATIO OF THE WIDTH TO HEIGHT MULTIPLIED BY 1/16.

EXAMPLE: SASH SIZE EQUALS 24" X 36", WIDTH TO HEIGHT RATIO IS .667.
TOTAL ADJUSTMENT IS $.667 \times 1/16" = .042"$ (APPROX. 3/64")

2. TO ADJUST THE CASEMENT SASH, FIRST FULLY OPEN THE WINDOW. NEXT, SLIP THE ADJUSTMENT WRENCH (TRUTH PART NO. 31887) ONTO THE BASE OF THE STUD, FOUND BETWEEN THE SUPPORT ARM AND THE TRACK OF THE LOWER HINGE. SWINGING THE WRENCH TOWARD THE LOCK SIDE OF THE WINDOW WILL DECREASE THE AMOUNT OF SASH DRAG. THE MAXIMUM SASH DRAG ADJUSTMENT IS REACHED WHEN THE STUD FLATS ARE 45° TO THE TRACK.

NOTE: DO NOT TURN PAST 45° OR ARM WILL BIND ON TRACK.

3. FOR SEVERE SASH DRAG, A SIMILAR PROCEDURE CAN BE USED ON THE UPPER HINGE. UPPER HINGE ADJUSTMENT IS MADE BY SWINGING THE WRENCH AWAY FROM THE LOCK SIDE OF THE WINDOW. MAXIMUM ADJUSTMENT IS OBTAINED WHEN THE STUD FLATS ARE 45° TO THE TRACK.

NOTE: MAXIMUM ADJUSTMENT MAY CAUSE BINDING AS THE WINDOW IS CLOSED. PLEASE USE CAUTION.

4. STUD MAY BE ADJUSTED WITH 7/16" WRENCH IF SUPPORT ARM IS REMOVED BEFORE ADJUSTMENT.



These stainless steel Butt Hinges are designed to provide maximum egress opening. A majority of the hinge itself is concealed within the window's frame creating a more pleasing exterior appearance than is the case with most exposed hinge systems. Hinges provide tamper-resistance when the window is in the closed position by providing concealed mounting.

This hinge concept enables the window manufacturer to design a window that is not only easy to install, but is also relatively maintenance free.

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: Available in 300 Series stainless steel.

ORDERING INFORMATION:

1. Order by part number.
#29.10.00.102 LH Butt Hinge (includes one pair).
#29.10.00.103 RH Butt Hinge (includes one pair). Note: Two left-handed or two right-handed hinges are required per window. Specify when ordering.

RECOMMENDED SCREWS:

Type of screws required determined by material of profile being used. Refer to drawings for complete information on screw type and quantity needed (sold separately).

TRUTH TIPS:

1. Specify left- or right-hand, (determined by looking at hinge side of window from inside).
2. A Truth Single Arm Operator must be used with a Butt Hinge if an operator is required.
3. Truth Butt Hinges should be used where the shape of the window will not allow the use of a concealed hinge (i.e. round top, trapezoid).
4. Truth's Butt Hinges are not recommended for use on awning or hopper type windows.
5. For accurate hardware placement in vinyl or metal applications, pre-drilling of the window profile is recommended.
6. 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.

7. Truth recommends that stainless steel screws be used to fasten stainless steel components to the window. If steel screws were to be used, a corrosion problem would develop between the dissimilar metals of the screw and hinge through a galvanic reaction. The result can be rusting of the screw heads that can eventually break off.

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

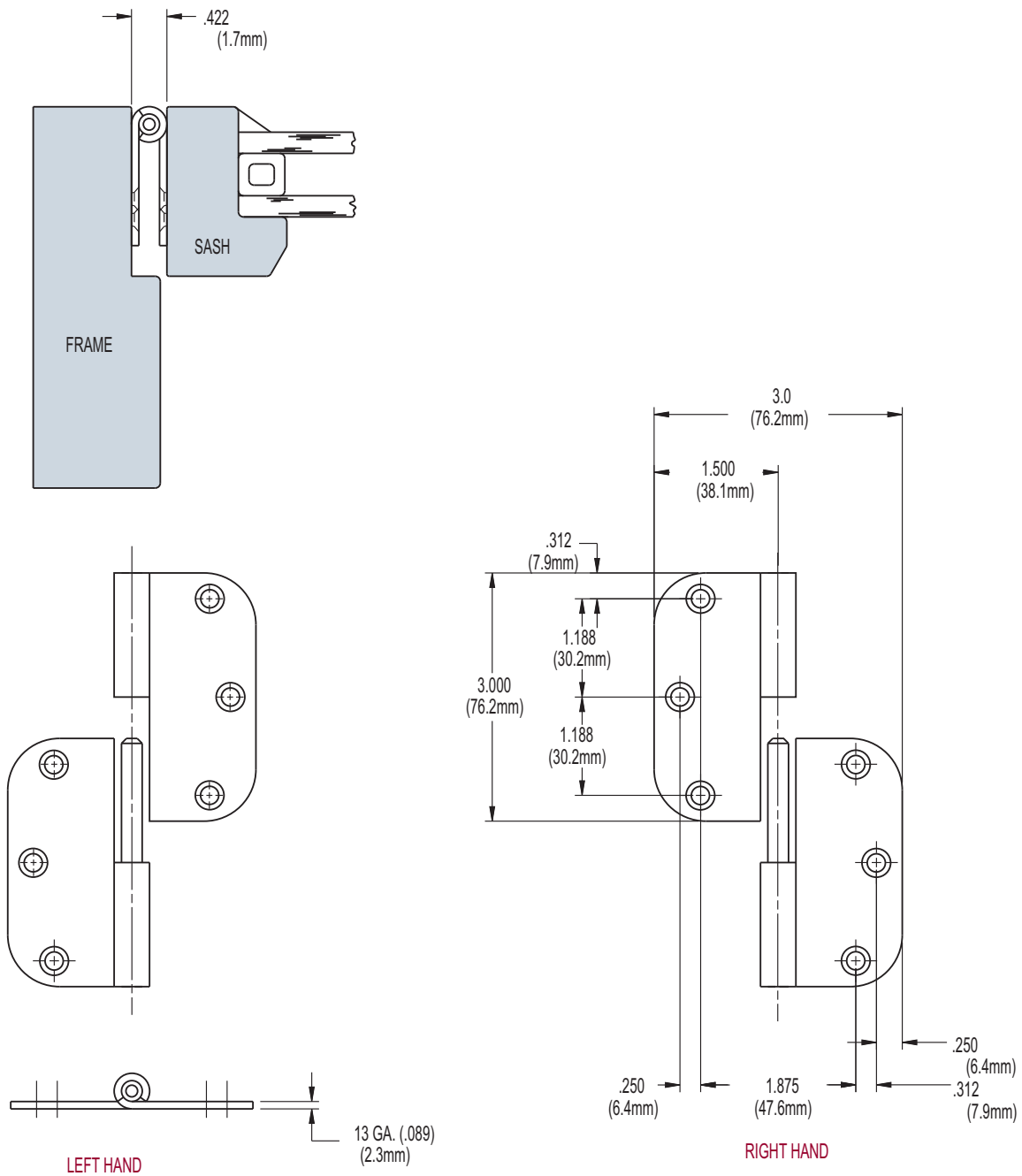
9. For easy correction of out of square, or racked window installations, the use of Truth Jamb Jack III frame adjusters is recommended. Frame adjustment can improve both weather seal tightness and sash operation over the life of the window.

INCLUDE TRUTH SPECS ON YOUR NEXT WINDOW PROJECT

Stainless steel butt hinge for use on casement, rounds top or trapezoid windows. This hinge system must allow easy installation/removal, and yet be tamper resistant in the closed position.

Butt Hinge shall be 29 series, as manufactured by Truth Hardware.

29.10 BUTT HINGE



RECOMMENDED SCREWS: 6 (P/N 19250) # 8 X 1.0 PHILLIPS, FLAT HEAD, STAINLESS STEEL
SHEET METAL SCREWS PER HINGE