



Through their quality, reliability, and features, Truth's Concealed Casement Hinges have become the standard by which others are measured in our industry. Here is why Truth has remained the industry leader.

STYLE & STRENGTH:

Truth's casement hinges provide tamper resistance and beautiful exterior sightlines to your windows. Being concealed these hinges can also reduce shipping problems with assembled windows. The sash and support arms are made from heavy gauge steel. Delrin shoe with stainless steel insert provides self-cleaning action in track for longer life.

OPTIONS & FEATURES:

Available in either assembled or K.D. (knocked down), which allows the support arm to be easily attached by using the snap-stud. This permits quick installation of the sash into the frame. Special stop feature on support arm prevents window from opening past 90° - refer to Truth Tip #4. The unique adjustable brass stud is antique plated for quick identification purposes in the field. All Truth Concealed Casement Hinge track is available with a standard flat bottom to help reduce "rocking" and an end notch to reduce corner cleaning on clad or welded vinyl windows. Optional models designed to provide "washability," or egress are also available.

ADJUSTMENTS MADE SIMPLE:

Truth also has a hinge model that helps make field adjustments to your windows to help reduce sash drag! Truth's Adjusta-Hinge with its easy to use adjustable stud. Truth's Adjusta-Hinge enables the manufacturer, or window installer, to quickly and precisely re-align the sash within the window frame without ever having to disconnect the support arms. Assembled with its specially designed stud in a centered position, the Adjusta-Hinge can be moved a full .062" (1.5mm) of an inch towards the outside of the sash, and .031" (0.8mm) towards the jamb. To obtain the full .062" (1.5mm) adjustment towards the jamb, the hinge must be mounted at least .031" (0.8mm) away from the jamb. Adjustments can be easily made while the hinge is fully assembled with the simple twist of Truth's slim-line



wrench #31887. See Figure #3 and Truth Tip #5 for adjustment procedures.

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: Non-magnetic stainless steel track, heavy gauge steel or non-magnetic stainless steel arms, brass stud (not available on stainless steel models) and stainless steel reinforcing insert in Delrin shoe.

FINISH: 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.

ORDERING INFORMATION:

1. Choose hinge style desired (specify by part number - see chart). 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.

2. Specify left- or right-hand (handing determined by the hinge side when looking at the window from the

outside).

3. Optional mounting hardware (sold separately): #21223 Sash Lifter (refer to Truth Tip #9) #31887 - Slim Line-Wrench.

RECOMMENDED SCREWS:

Types 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. 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 Truth Technical Note #3 for more information dealing with sash sag prevention.

2. The Concealed Casement 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.

3. With the flat bottom track, screw heads will be raised above the track when installed. Truth's Delrin shoe now has a higher bridge to clear screw heads (.060" high).

4. Truth recommends a hinge with a 90° stop be used on any casement window, which uses a Dyad Operator unless the window has a Limit Device to keep it from opening past 90°.
5. A standard 3/8" 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 slim-line Wrench #31887.
6. 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.
7. 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 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) decrease the thickness of the sash.
8. Truth recommends that a Snubber be used at the center of the hinge side of any casement window, which has a tendency to bow outwardly at the center in the closed position. Adding a Snubber may increase the negative air pressure rating of a casement window.

9. The #21223 Sash Lifter is a device inserted in the shoe on the bottom hinge in a casement window. It is sometimes necessary to maintain a constant reveal around the outside edge of the window. This is because the nature of a casement window places the window weight entirely on the bottom hinge causing it to slightly compress while slightly stretching the top hinge creating a difference in the window reveal between top and bottom. The heavier the window, the greater the potential for a window reveal difference. The Sash Lifter Button is not intended to correct sash sag.
10. For accurate hardware placement in vinyl or metal applications, pre-drilling of the window profile is recommended.
11. 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.
12. For metal window profiles Truth recommends machine screws however, in most applications sheet metal screws will provide adequate holding power.
13. 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

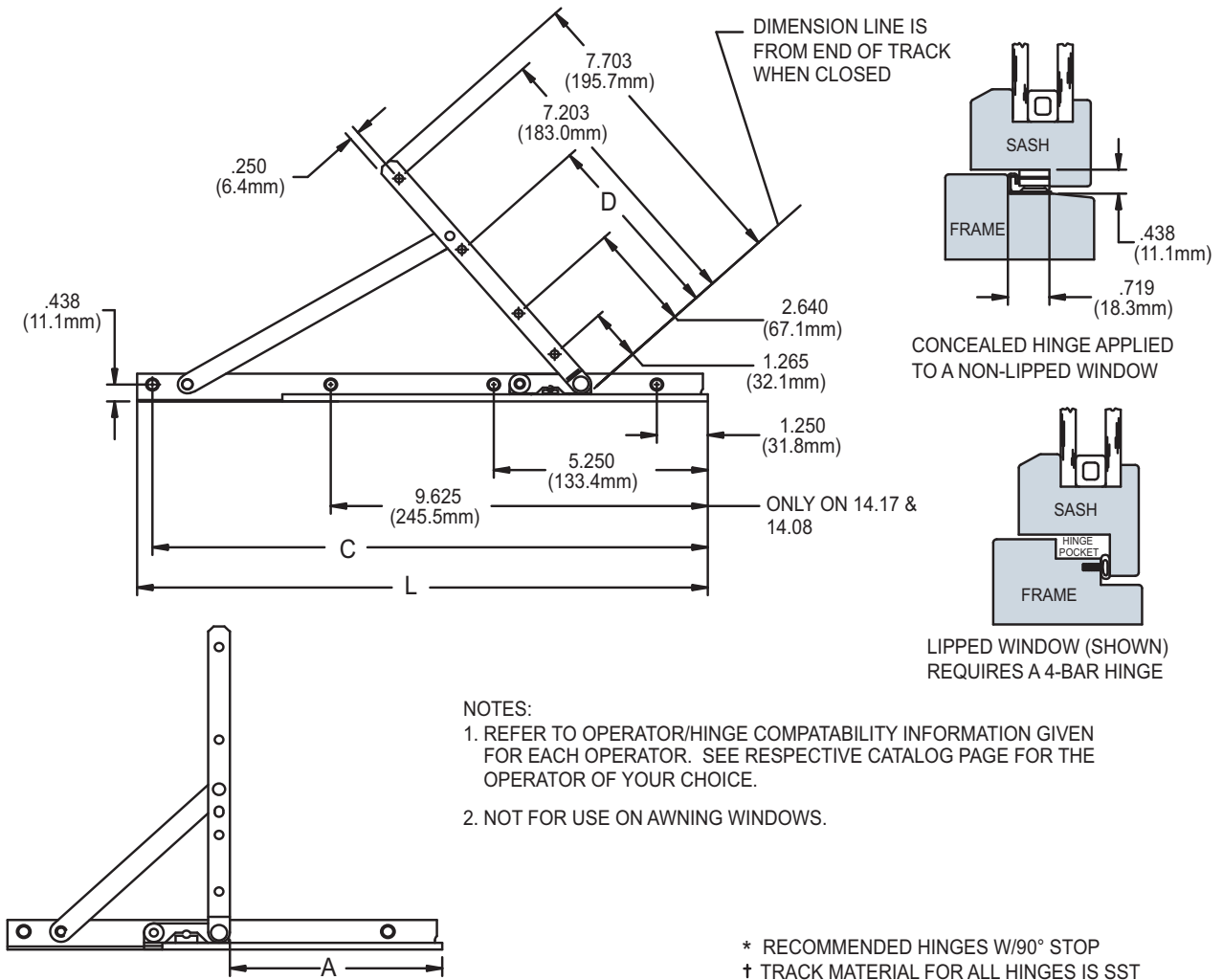
Low friction casement hinge for use on residential or commercial windows, which will be concealed between sash and frame for low maintenance and clean exterior aesthetics.

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 an easy means of disconnection to allow easy sash removal. Sash arms are to be constructed of E-Gard® components to provide enhanced corrosion protection.

Only On Adjustable Hinge Models:
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 hinge, as manufactured by Truth Hardware, Owatonna, MN.

FIG. 1 APPLICATION OF CONCEALED CASEMENT HINGE

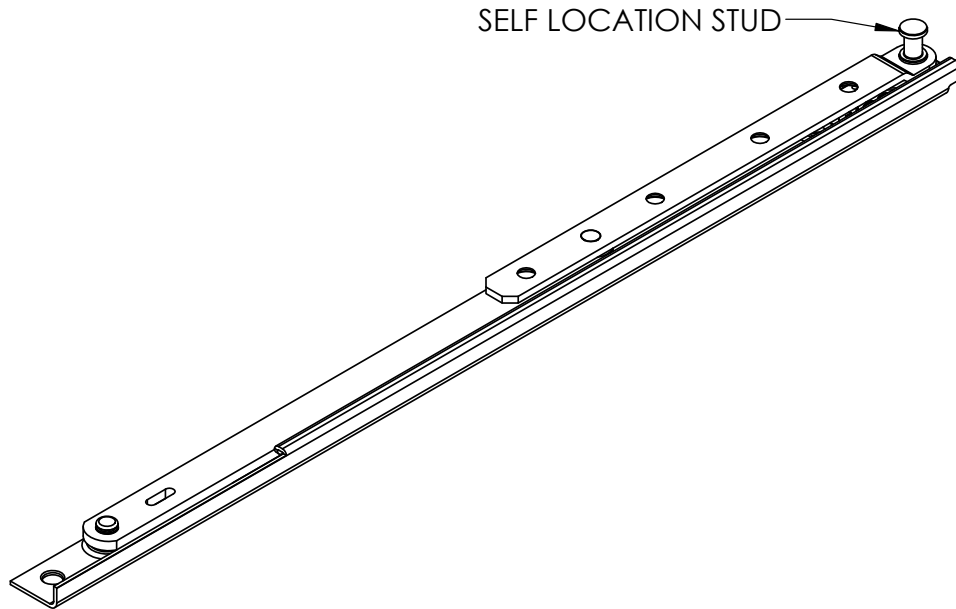


PART NO.	A	C	D	L	† ARM & RIVET	ATTACHMENT	SCREWS
* 14.05	4.906 (124.6mm)	9.625 (244.5mm)	4.953 (125.8mm)	10.000 (254.0mm)	STEEL	ADJUSTABLE BRASS SNAP STUD	A
* 14.06	5.531 (140.5mm)						C
14.08	6.938 (176.2mm)	13.625(346.1mm)	4.805(122.1mm)	14.000(355.6mm)			C
* 14.75	4.906 (124.6mm)	9.625 (244.5mm)	4.953 (125.8mm)	10.000 (254.0mm)		STANDARD BRASS SNAP STUD	A
* 14.76	5.531 (140.5mm)						A
Δ 14.77	2.281 (57.9mm)						C
14.17	6.938 (176.2mm)				13.625(346.1mm)	4.805(122.1mm)	14.000(355.6mm)
14.80	4.906 (124.6mm)	9.625 (244.5mm)	4.953 (125.8mm)	10.000 (254.0mm)	STAINLESS STEEL	STAINLESS STEEL SNAP STUD	B
14.91	5.531 (140.5mm)						B
Δ 14.93	2.281 (57.9mm)						B

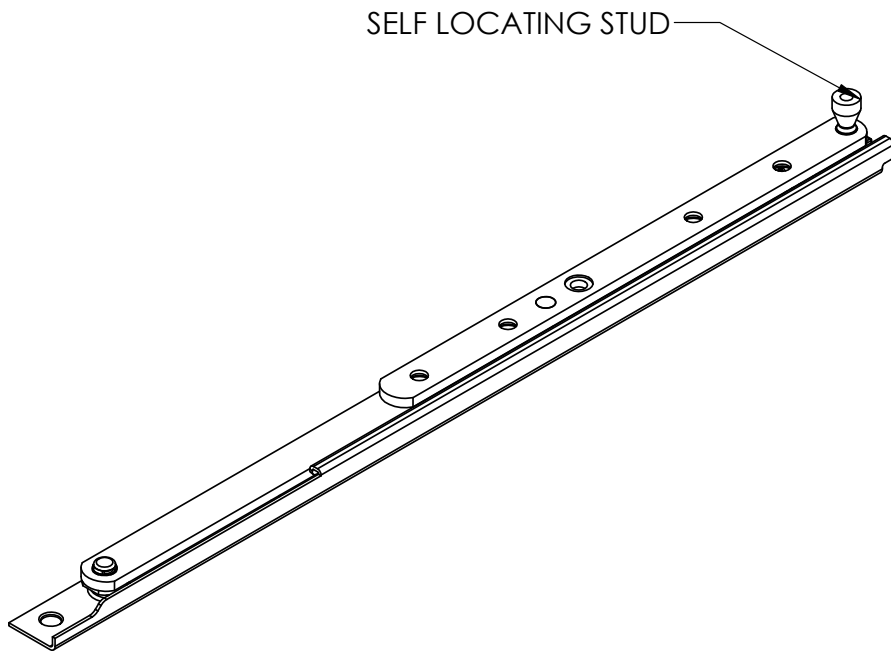
RECOMMENDED SCREWS: PER PAIR

- A - SASH ARM: 8(19110)#7X.750 PHILLIPS, FLAT HEAD, STEEL, SHEET METAL SCREW.
- TRACK: 6(19115)#7X.750 PHILLIPS, FLAT HEAD, UNDERCUT, SST, SHEET METAL SCREWS.
- B - SASH ARM: 8(19105)#7X.750 PHILLIPS, FLAT HEAD, SST, SHEET METAL SCREW.
- TRACK: 6(19115)#7X.750 PHILLIPS, FLAT HEAD, UNDERCUT, SST, SHEET METAL SCREWS.
- C - SASH ARM: 8(19110)#7X.750 PHILLIPS, FLAT HEAD, STEEL, SHEET METAL SCREW.
- TRACK: 8(19115)#7X.750 PHILLIPS, FLAT HEAD, UNDERCUT, SST, SHEET METAL SCREWS.

FIG. 2 SELF LOCATING HINGE OPTIONS

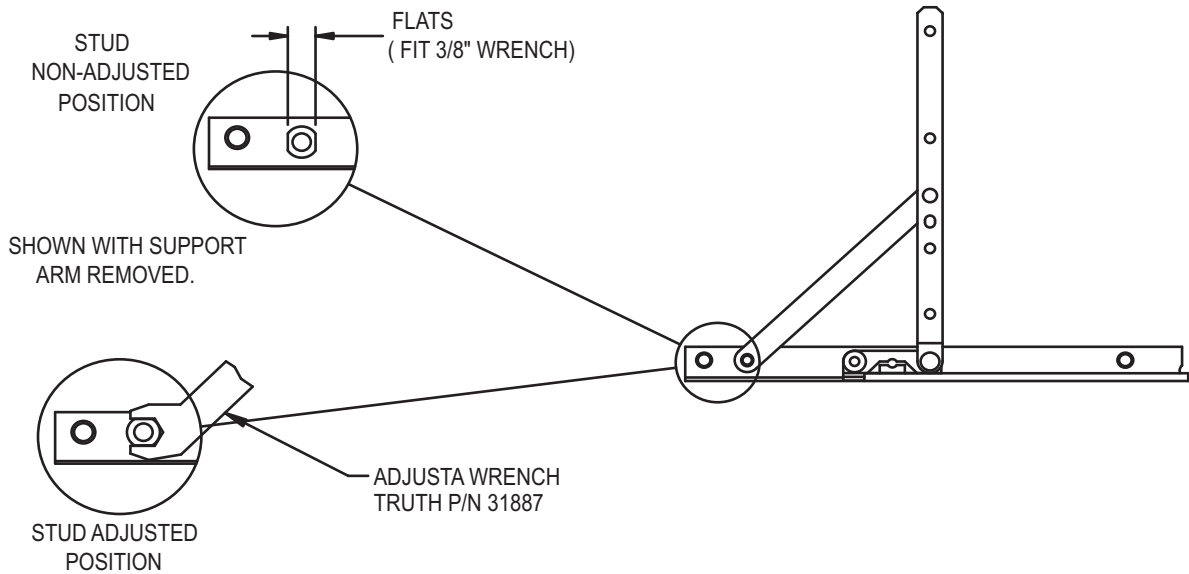


A SELF LOCATION STUD OPTION IS AVAILABLE ON THE FOLLOWING HINGES TO AIDE IN THE EASE OF INSTALLATION:
AWNING HINGES: 13.13 , 13.14 , 13.15 , 13.16 , 13.17 , AND 13.18
CASEMENT HINGES: 14.05 , AND 14.77



A SELF LOCATION STUD OPTION IS AVAILABLE ON THE FOLLOWING HINGES TO AIDE IN THE EASE OF INSTALLATION:
MAXIM HINGE: 14.12 AND 14.97

FIG. 3 INSTRUCTIONS FOR SASH ADJUSTMENT



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 AWAY FROM THE LOCK SIDE OF THE WINDOW WILL DECREASE THE AMOUNT OF SASH DRAG.

THE MAXIMIM SASH DRAG ADJUSTMENT IS REACHED WHEN THE STUD FLATS ARE PARALLEL TO THE TRACK. NOTE: TURNING THE STUD FLATS BEYOND PARALLEL WILL NOT INCREASE SASH DRAG CORRECTION.

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

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

4. STUD MAY BE ADJUSTED WITH 3/8" WRENCH OF SUPPORT ARM IS REMOVED BEFORE ADJUSTMENT*.

