

WARNING: Practice safety! Wear safety glasses or goggles and appropriate hearing protection.

#### YOU WILL NEED TO SUPPLY

Flat bladed screwdriver

Phillips screwdriver

Putty knife

Right hand gear assembly (or left hand)

Right hand sequential lock(s) (or left hand)

Note: two on sizes larger than 48"

New screen channel for sequential lock side of the sash

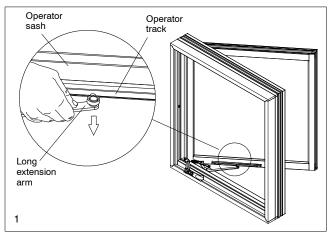
Right hand sash bracket (or left hand)

Right hand hardware cover (or left hand)

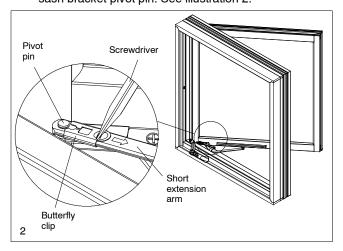
Note: Remove the screen if there is one.

## **Dual Arm Roto-gear Operator**

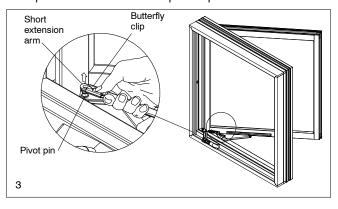
- Crank open the sash until the nylon roller on the long extension arm is positioned under the arrow on the operator track. (The operator track is located on the bottom of the operating sash.)
- Disconnect the long extension arm from the track by pushing the roller down through the opening which is in line with the arrow. See illustration 1.



 Using a screwdriver snap back the butterfly clip which locks the roto-gear short extension arm to the operator sash bracket pivot pin. See illustration 2.

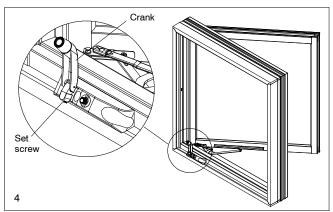


4. Disconnect short extension arm by lifting it off the pivot pin. See illustration 3. Skip to step 7.

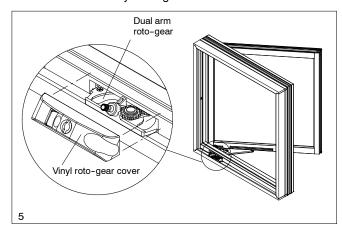


# **Dyad Operator**

- Crank open the sash. Using a screwdriver snap back the butterfly clip which locks the dyad operator extension arm to the operator bracket pivot pin.
- 6. Disconnect the extension arm by lifting it off the pivot pin.
- Loosen the set screw in the roto-gear crank handle and remove. See illustration 4.

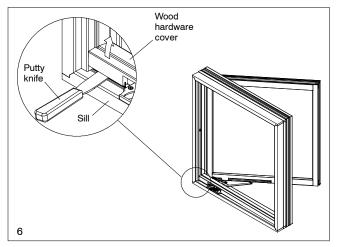


8. Remove the vinyl roto-gear cover. See illustration 5.

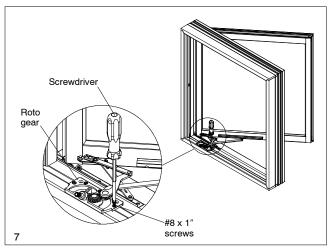




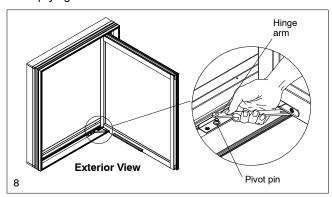
Pry off the wood hardware cover with a putty knife. See illustration 6.



Remove the roto-gear or dyad operator from the sill.
See illustration 7.

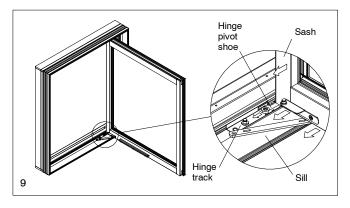


11. With the sash open 90 degrees remove the bottom hinge arm from the hinge track pivot pin. Some models have a snap ring on the pin, these arms can be disconnected by prying off with a screwdriver. See illustration 8.

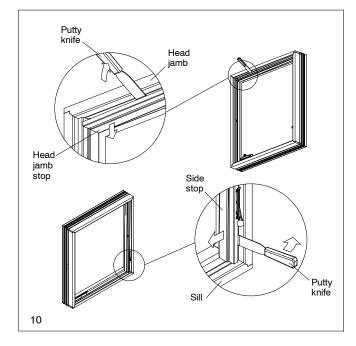


12. Repeat step 10 above for the top hinge. The sash is now free to swing so care must be taken to prevent damage.

 Remove the sash by sliding hinge pivot shoes toward the pivot pins until they disengage from the hinge track. See illustration 9.

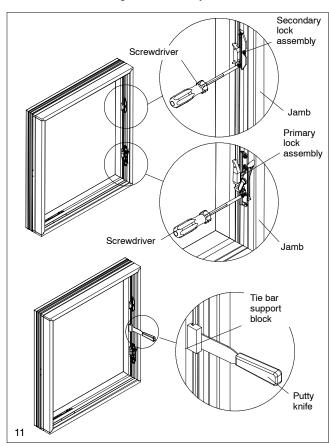


14. To remove the interior wood stop, slide a stiff putty knife between the interior wood stop and the interior jamb of the unit. Gently pry out the wood stop, being careful not to mar the interior finish of the jamb. See illustration 10.

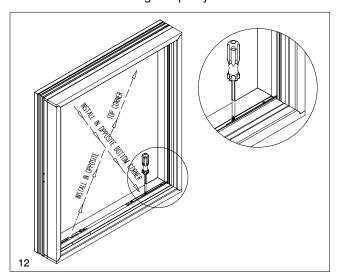




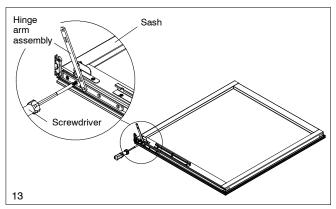
 Remove the sequential lock(s), tie bar support blocks (if applicable) and the sash snubber (if applicable) centered on the gear side of the jamb. See illustration 11.



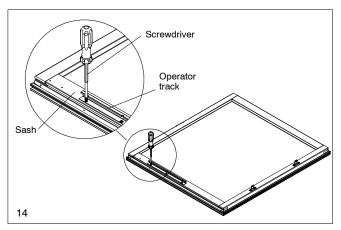
16. Place hinge tracks on the opposite side of the frame using the former top hinge on the bottom and the former bottom hinge on the top. On clad units it will be necessary to pre-drill for the hinge screws. Use a 7/64" bit and drill for the hinge screws. See illustration 12. Clad metal will have to be countersunk to allow the screw to become flush with the hinge track. See old holes as an example. Fill the holes with a good quality caulk.



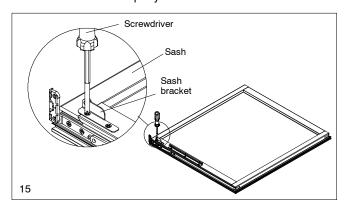
17. Lay the sash on a clean flat surface. Unscrew top and bottom hinge arm assemblies from sash and place them on the other side of the sash using the former top hinge arm assembly on the bottom and the former bottom hinge arm assembly on the top. See illustration 13. Use template #6 and #7.



18. Remove operator track and position it carefully on the opposite side of the sash using template #5 or measure old screw holes to determine placement from the edge of the sash. See illustration 14.

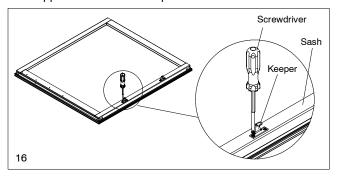


19. Install the new right hand (or left hand) sash bracket on the opposite side of the sash at the same distance from the edge and bottom as the sash bracket removed earlier. Determine placement by measuring old screw holes or using operator track template #5 (holes for bracket placement are marked). Fill remaining screw holes with wood putty. See illustration 15.

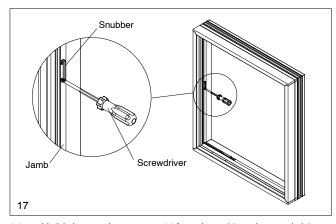




 Remove the sequential lock keeper and install it on the other side of the sash in the same position from which it was removed, using template #15, #16 and/or #17. See illustration 16. Remove the sash snubber and install on opposite side. Use template #3.



- 21. Determine the position of the new roto-gear on the opposite side of the frame using template #1 or #2 or measure the old screw holes. If you use the template, remember to hold the screen channel in position while indexing. Install the new roto-gear.
- 22. Position and install the sash snubber (if applicable) on the other side of the frame. Use old screw holes for a measuring guide for exact location. the snubber should hold the sash in position but should not be so tight that the sash binds on the snubber. See illustration 17.



23. Hold the sash open at 90° and position the sash hinge shoes on the hinge track close to the pivot pins. Engage the shoes with the track flange and slide into installed position (away from the pins). Be sure both shoes have engaged the track before releasing hold of the sash.



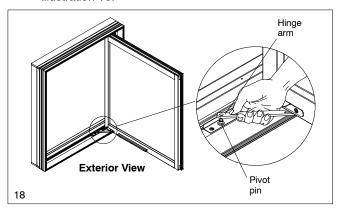
**Installation Tip:** To seat butterfly clips or hinge arms push on the clip or arm until you feel or hear it click into place. To check to see if the clip or arm is properly attached gently pull up on the arm, if it detaches, reattach the arm and reseat.



WARNING! Check all hardware, clips and retainers to ensure all parts are secure and properly seated. Failure to properly install the sash may result in the sash disengaging

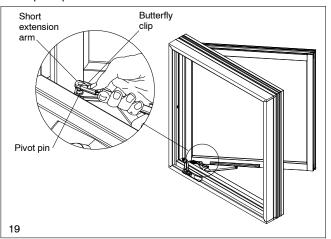
from the frame, causing potential damage to the sash and/or personal injury.

 Attach the top hinge arm to the track pivot pin by reversing the removal procedure. Tap the arm over the snap ring. Repeat procedure for bottom hinge. See illustration 18.

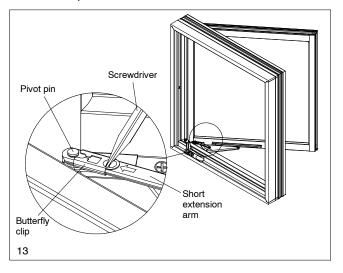


## **Dual Arm Operator**

 Snap the short extension arm onto the sash bracket pivot pin. See illustration 19.



26. Using a flat screwdriver, return the butterfly clip to the locked position. See illustration 20.



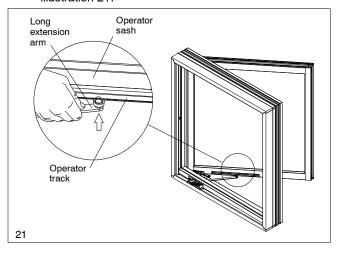


## **Dyad Operator**

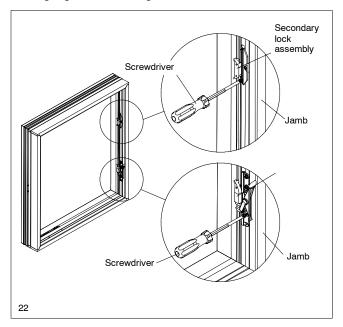
 Snap the dyad roto-gear extension arm onto the sash bracket pivot pin. Using a flat screwdriver, return the butterfly clip to the locked position.

### **Dual Arm Operator**

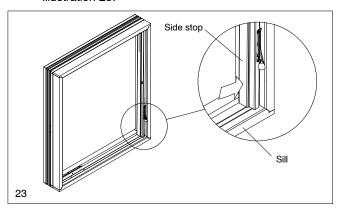
- Crank open the roto-gear arms until the nylon roller on the long extension arm is positioned under the arrow on the operator track.
- Center the nylon roller under the opening and pull it up through the opening in the operator track. See illustration 21.



30. Install the sequential lock(s) in the frame. Use template #15, #16 and/or #17 or measure the old holes. The outside edge of the lock should line up with the outside frame surface, just inside the frame weatherstrip. See illustration 22. Use the appropriate screen channel as a gauge for exact height location.

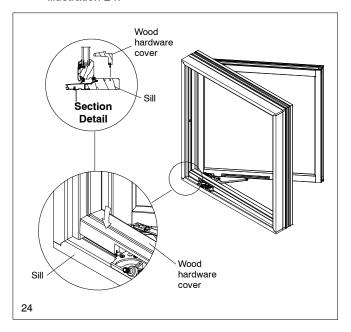


- Close and lock the sash. Check to be sure the sequential lock(s) line up and lock with the keepers; adjust if necessary.
- 32. Install the screen channels, starting with the jamb stops first. The length of the bottom stops on the sequential lock side may have to be adjusted according to the exact installation location of the sequential locks. Hold the stops in position, away from the sash slightly, as this will allow the sash to maintain good gasket contact. See illustration 23.



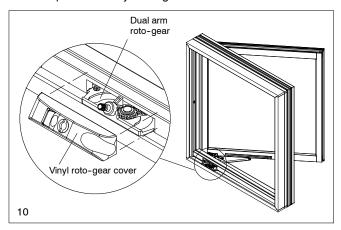
Note: The bottom of the screen channel on the sequential lock side of Casemasters with a daylight opening of 14 1/2" and under, should be notched for correct operation of the roto-gear as shown in illustration 8.

Install the wood hardware cover, using. See illustration 24.





34. Replace the vinyl roto-gear cover. See illustration 25.



35. Replace the handle and tighten the set screw. See illustration 26.

