

# Setting GE Rotary Limit Switches

## Establish Rotation

- Remove limit switch cover.
- Drive winch in UP direction – note direction of cam stack rotation.
- Mark switch cover or cam stack to record cam stack rotation.
- **Use an insulated screwdriver** to adjust the limit – avoid contacting screw terminals on operating switches while winch system is on.

## Determine Travel

- Determine where load must stop to avoid damage/misalignment – set overtravel to stop short of this point.
- Determine what range of normal travel for load must be – set normal limits to stop load at these points.
- For each end of travel, set overtravel limit first, then set end-of-travel limit.
- Make sure that the operator can clearly see the entire load for its entire travel, or that spotters are in place to observe and clearly communicate with the operator.

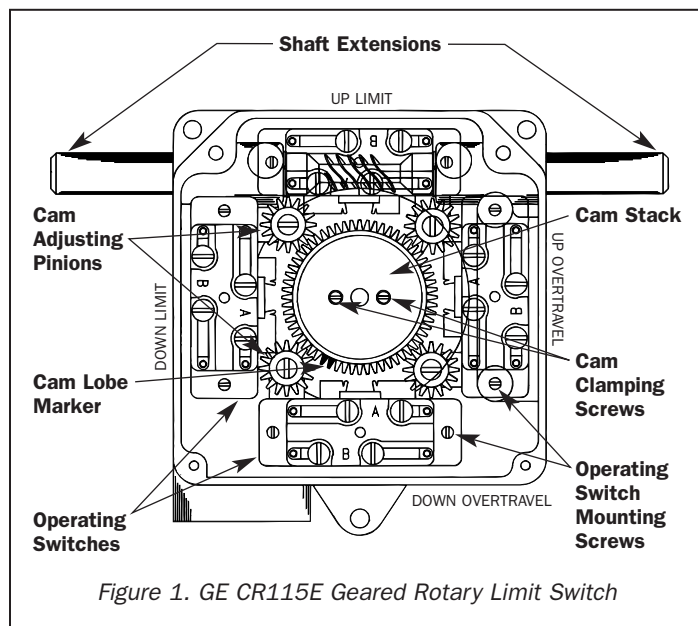


Figure 1. GE CR115E Geared Rotary Limit Switch

## Adjust Limit

- Drive the winch to the desired end of travel.
- Re-verify cam stack rotation (when the winch travels up, does the cam stack rotate clockwise or counterclockwise). Determine which side of the desired switch the limit cam must strike (i.e., if cam stack rotates clockwise when the winch travels down, and you are setting a down limit, the cam must actuate the down limit while moving in a clockwise direction).
- **Again – use an insulated screwdriver!**
- Loosen cam stack clamping screws (1/2 turn).
- Locate the cam adjusting pinion for the desired limit by referring to the switch labels and the indicating arrows on the insulation shields.

- Depress the cam adjusting pinion with an insulated screwdriver until the gears mesh.
- Rotate the pinion to adjust the limit cam lobe to a position where the selected limit switch is just actuated (audible click). Note that the pinion is a gear – it must turn counterclockwise (CCW) to rotate limit cam clockwise (CW), and the pinion turns CW to rotate limit cam CCW.
- Once the limit cam is at the proper place, tighten the cam stack clamping screws.

## Test Limit

- Drive winch away from limit until limit is cleared (use overtravel bypass switch to move winch off overtravel limit).
- Drive winch toward limit until limit stops motion.
- Assess stopping position (measurement vs. target).
- Drive winch off limit (use overtravel bypass switch to move winch off overtravel limit).

## Refine Limit Adjustment

- Repeat the **Adjust Limit** procedure, as outlined.
- Move cam lobe closer to switch to make switch trip sooner (decrease travel distance).
- Move cam lobe further from switch to make switch trip later (increase travel distance).
- Make sure to tighten cam stack clamping screws after each adjustment!
- Retest limit adjustment until winch stops at desired position.

## Adjust Remaining Limits

- Once overtravel limit is set, set normal limit at same end of travel.
- Check to ensure that there is sufficient distance between normal limit and overtravel limit – if the winch strikes both limits before stopping, increase the distance between the limit by moving the normal limit to stop the load sooner.
- Once all limits are set, check that cam stack clamping screws are tightened, then replace the limit switch cover.
- Once the limit switch cover is in place and tightened down, re-test the normal limits to ensure they have not been shifted by the cover.

## Special Considerations

- The limit switch cover has a socket which engages the top of the cam stack center post. On rare occasions, the position of the cover may affect the limit positions. Make sure that the cover is securely fastened in place, and that the limits have been re-tested after the cover is on.
- Occasionally a limit switch cam will not actuate an operating switch. This condition generally indicates that the operating switch has been shifted within the limit switch assembly, generally during field wiring. If this occurs, determine which operating switch is at fault. Loosen the two mounting screws that hold the switch in place, move the operating switch as close to the cam stack as possible, then re-tighten the mounting screws.