

# GEM Auto-Stop Limit Switch Black(yellow) Plastic Top KFLS, KRLS AND KELS

KRLS KFLS KELS 5/27/14

## Step by Step Instillation Procedures

**NOTE:** Do not attach all metal limit switch units(1985-2003) mechanically until the lift is completely set up.

Attaching all metal units mechanically before the lift is set up can destroy these limit switch and can cause it to malfunction.

**Tools:** Phillips Screwdriver, Small Regular Screwdriver, wire strippers, wrench and socket set.

1. Turn off main power to dock. Strip both sets of limit switch wires red black and blue. Bypass the limit switch during initial setup by connecting the three receiver board limit switch wires together: red, blue and black(wire nut) inside the GEM box. **It is against code to sell or run an Auto-Stop unit without a limit switch attached.** If your limit switch did not have wires attached to it, call the company that sold you the unit (it is not a GEM) Only GEM limit switch systems, are covered under warranty and or product liability.
2. Turn on power to the GEM unit and see that the LEDs on the top of the unit flash.
3. If the Auto-Stop LED at the top of the face card is on then press the Auto-Stop button and the LED will turn off. You want it off at this time.
4. Check to see that the lift goes up for up and down for down (make sure the tail on the yellow face card is connected to the electronic board).
5. Get all motors level and running in the same direction. Adjust the lift one foot below the maximum desired up limit. The limit switch should be on the same side as motor #1 wires normally the "near motor." The level switch motor(the one that turns off when activating the level switch) should never be on the same side as limit switch. The limit switch side motor should never turn off.
6. If installing KFLS on a BHUS or BLUS lift check for clearance of the bolt(see next page). When mounting the limit switch, the fork must be parallel to the pipe(in the center). If the fork is not parallel, the limit switch could get damaged and malfunction. On a KFLS remove the two top bolts on the worm gear. Note the holes in the KFLS that match up to the bolts you are about to remove. If your unit has a white plastic backer that covers the nuts undue the top 2 guide pins on the motor cover this should give you more room to work. Some Flat Plate winches have an extra zerk fitting. You can remove them or drill an extra hole in the KFLS plate. For clearance for the motors and limit you might need to drill 2 holes in the top of the motor cover closer to the edge of your cover. Over the years these holes have gotten farther away from the edge and causing interference. Install other GEM limits as seen in pictures on the next page.
7. Remove limit's plastic top by removing the two screws (these will be very loose from GEM Remotes do not over tighten or lid will crack!)
8. Press up on the transmitter and watch the direction that the two cams turn. When your lift is at the maximum desired height release the button. The cams turn very very slowly put your finger on the cam to feel if it is moving.
9. Now remove the bypass wire nut and connect the wires from the limit switch to the GEM wires. (Black to Black, Red to Red & Blue to Blue). If you are hooking up to a 4 wire limit switch system from HiTide then you must join 2 wires to our GEM black: 1 from up limit and 1 from down limit (HiTide black and blue?) attach to the GEM Blk with a wire nut. Then attach the HT wire up (org?) and GEM blue. Then the HT wire down (red?) to the GEM red.

### Adjustment Procedures:

10. Your lift should be at the maximum desired height. Loosen retainer screw 1o( **3/4 TURN**) as shown in the picture below.
11. Adjust the upper limit using screw 2o-2(blue wire). Adjust the screw so the cam hits the micro switch roller arm in the direction that the cam was turning. You will hear a small click(microswitch). If the arm is already on the cam, back it away and move the lift then readjust.
12. Press the up button. The lift should not turn on. **Re-tighten retainer screw!!!(1o)**. Check to see that the Auto-Stop LED is flashing fast.
13. Now press the down button on the transmitter. Watch the cams to see that they travel away from the roller switch arm. If the down switch arm is on the down cam and the unit will not lower loosen #1o and adjust the lower cam away from the roller switch arm.
14. When the lift is at the lowest point to be able to launch your boat at a low tide, or before the lift hits bottom, or it has a minimum of 3 wraps of cable on the drive pipe, adjust the bottom cam screw (2o -1 red wire on micro switch) until you hear a click. Try pressing the down button on the transmitter. **The lift should not turn on**; check to see a slow flashing of the Auto-Stop LED above the button.

### Re-tighten the retainer screw (1o) before you activate the lift.

15. Press the Auto-Stop button (auto-stop LED turns on). The lift should now run continuously by pressing a direction once. Run the lift up a foot then press the stop button, and the lift should stop. Press down button (3 second delay when changing direction) make sure the lift stops at the lower limit, if not readjust the limit and test again. Check the up limit to ensure proper operation **check that the lift stops in both directions**. The new 2007 units have a 15 minute run time, if the lift runs for 15 minutes, the lift will stop. If you need more time just press the same button again and it will run for another 15 minutes. If you have a 4 motor lift the 59 to 1 limit switch (49 turns with a 2.4" diameter=30foot of cable) might not be enough due to 3 to 1 cable ratio. You might need to order an 85 to 1 limit switch and that gives you 69 usable turns (43foot/3= 14.4 foot of travel).

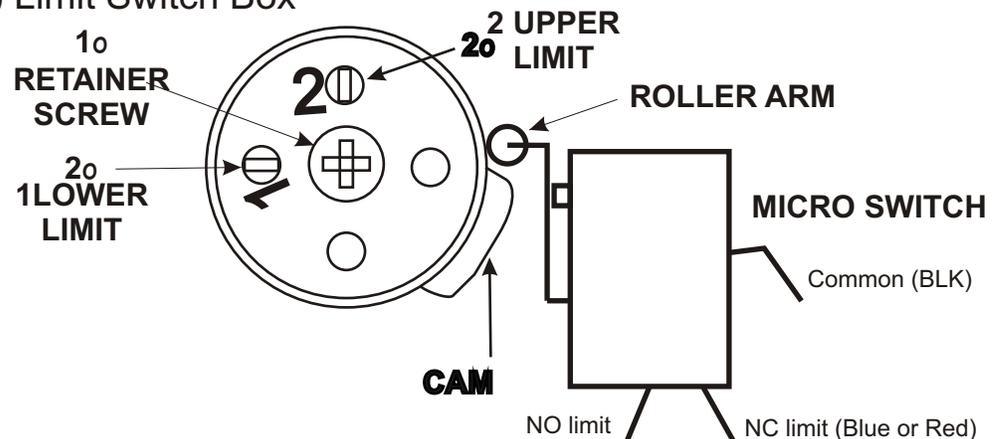
**FAILURE to follow these directions voids all warranties to equipment as written or implied. GEM will assume no responsibility to damages that were a result of improper installation or user error.**

**WARNING:** Failure to tighten the retainer screw might not allow the cams to move, therefore the **LIFT WILL NOT STOP**.

This could possibly cause damage to the limit switch, boat lift, boat, and/or the entire system.

**Read the instructions on the yellow face card. For maximum safety, we recommend that the GEM unit be turned off at the power source when not in use.**

### Inside the black(yellow) Limit Switch Box



# GEM REMOTES E-DRIVE LIMIT SWITCH INSTRUCTIONS

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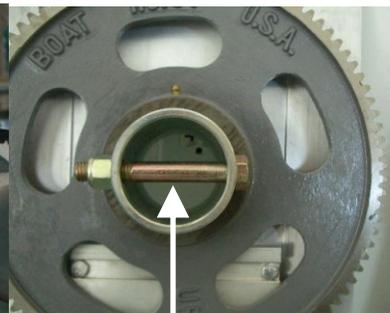
1. Mount the unit horizontally as shown in the pictures.  
Note: To prevent water from getting in make sure it is in this orientation.
2. See page 1 for adjustment instructions.



KELS

KFLS (2005)  
might not work on  
Boat Hoist US  
Boat Lift US  
due to extra long bolt  
check for clearance here  
Read instructions on  
the page 1 for  
installation

KFLS



KFLS

Install a KFLS limit switch when the bolt on the flat plate is horizontal.

Bolts for installing KFLS

# GEM REMOTE'S Rotary LIMIT SWITCH INSTRUCTIONS

Tools: Phillips Screwdriver, Small Regular Screwdriver, for KRLS units you might need a drill and 1/4 metal drill bit.

You may need to drill a hole in the drive pipe and attach the bolt that came with the limit switch make sure bolt clears beams.

Note: bolt past the bearing.



KRLS

Questions? Call  
GEM 239-642-0873