

# TROUBLESHOOTING AND TECHNICAL SUPPORT

## SHIFNOID

### SN5055B AND SN5055H

### ELECTRIC SHIFT KIT

**PROBLEM:** THERE ISN'T ENOUGH POWER TO PULL THE SHIFTER HANDLE ALL THE WAY BACK

IMPORTANT INFORMATION:



Be aware that the solenoid **THROWS** the shifter into gear. It does not **PULL** it fully into gear. Therefore, there is a difference between activating the solenoid by hand and electrically firing it. When testing by hand, if the ratchet bar only pulls the handle most of the way, be aware that it is probably fine when electrically activated. If the ratchet bar pulls the handle all the way into gear when activated manually, it may over shift when electrically activated. Please keep this in mind when doing all adjusting on this model.

#### **SOLUTION:**

To determine why the solenoid can't pull the shifter handle fully into the next gear, you must first determine if the solenoid cannot pull the handle or if the load on the solenoid is too great. Without proper testing equipment, the only way to determine this, is by process of elimination. Many times, there are multiple problems that total up to an inoperable system. You must verify and fix them all to correct this condition. Please follow all steps listed below.

**STEP ONE:** To confirm that the solenoid has full power, verify that the wire connected to post 87 on the interface relay is 12 gauge or larger, and runs directly to a suitable 12 volt power source, (i.e. master battery disconnect switch). This power source must be sufficient to supply a 25 - 30 amp draw. Do not connect this wire to any terminal or point that supplies other electrical devices.

**STEP TWO:** Confirm that the wire from post 30 on the interface relay to the solenoid is a 12 gauge or larger.

**STEP THREE:** The solenoid gets it's ground from the SHIFNOID bracket. The SHIFNOID bracket typically receives a sufficient ground by bolting it to your floor. Many times, because of paint, powder coating, or mounting (such as a pinned in pedestal), the bracket will not receive a sufficient ground. This would cause a solenoid to receive insufficient amperage to have full power. If in doubt, add a ground wire to your shifter or SHIFNOID bracket and to a good chassis ground.

**STEP FOUR:** The relationship of the hook or tooth on the ratchet bar you placed in the side of the shifter handle is critical. An electric solenoid is simply a large magnet that is trying to pull the plunger, (the gold hat shaped piece), back into the solenoid. If the plunger meets resistance too soon, the solenoid will have no power. Therefore, there must be a gap between the hook on the ratchet bar and the shoulder bolt of approximately 3/16 inch. This cannot be seen because of the large spacer and silver washer, but can be felt by pulling back on the plunger by hand. The plunger and, consequently, the ratchet bar should travel approximately 3/16 inch before it contacts the shoulder bolt and tries to move the shifter handle. This adjustment is achieved by sliding the entire SHIFNOID bracket forward or backward in relationship to your shifter. The tighter the load, the greater the gap will need to be, to a maximum of 1/4 inch. The lighter the load, the smaller the gap can be, never less than 1/8" inch. The preceding steps will verify that the SHIFNOID system is up to full power.

Next, you must check for an excessive load beyond what the SHIFNOID is capable of activating. If the SHIFNOID system is producing full power, and the handle is still not moving correctly, verify that there is not excessive shifter cable bind. There must be no bend or pressure on the first several inches of the cable. See shifter instructions. Cable routing must include large, gradual bends. Any tight bends or kinks will create a load greater that the SHIFNOID can pull.

**PROBLEM**

THE SOLENOID WILL ONLY SHIFT FROM 1ST TO 2ND

**SOLUTION**

The solenoid is a simple electrical appliance. It can only be turned on and off if activated and deactivated. It cannot stay on or turn off without your RPM switch or timer activating it. There are two possible reasons for this problem.

STEP ONE: The most common scenario is a car whose RPM's do not drop sufficiently between shift points. Most RPM switches require a drop of 400 to 500 rpms to turn off. Example: This means that if you shift at 6000 rpms, and because of clutch wear, tire spin, or your converter not locked up, the drive train (everything from the flex plate back), cannot drag the engine down because of slippage, the RPMs do not drop below 5500 and your RPM switch, in effect, tells the solenoid to stay on. This will result in the solenoid pulling the shifter handle from 1st to 2nd and locking back. Shifting before your converter is locked up is the most common problem. Converter stall speed is rarely where advertised. The following simple test may confirm this. Raise your shift point as high as you safely can. If this solves the problem, consider tightening the converter. If the problem persists, raising your shift point can cause transmission clutch slippage to worsen, if they are worn, and may even increase the problem. Some types of racing, such as mud, dirt, or sand drags, result in tire spin that cannot be eliminated. When this is the case, special electronic controllers are available to solve the problem. Please ask your SHIFNOID dealer for assistance.

STEP TWO: Another common problem is the electrical solenoid shifting from 1st to 2nd, the engine dropping the required RPMS to turn the solenoid off, and the RPMS returning to the shift point so fast that, although the solenoid technically was turned off, there was insufficient time for the shifter to re-cock itself for the next gear. The solution to this problem is the same as Step One.

**PROBLEM**

THE SOLENOID SHIFTS FROM 1ST DIRECTLY INTO 3RD

**SOLUTION**

First, verify that this is not a shifter problem. (Cable adjustment or improper shifter for the job). If the shifter is correct and the solenoid is shifting from 1st to 3rd, it may be doing it because it is told to or because the ratchet bar to shoulder bolt relationship is wrong. Next, verify the adjustment by confirming the gap between the ratchet bar tooth and shoulder bolt is approximately 3/16 inch. See Above. If the ratchet bar will not drop over the shoulder bolt in each gear, the gap will have to be increased by sliding the solenoid closer to the shifter. If the shifter is going from 1st to 2nd and 2nd to 3rd so fast that you perceive it as 1st to 3rd, this would result from drive train slippage. The slippage allows for the engine RPMS to tell the RPM switch to turn on-off, and on-off too fast. Solutions to this problem are the same as above. See STEP TWO.