

SERVICE BULLETIN



M-1001

January 15, 1991

FLTC/FLHTC ULTRA UPDATE

Purpose

The purpose of this Bulletin is to provide you with service procedures to correct customer problems related to the following five items:

1. CRUISE CONTROL IMPEDANCE LOWERING CIRCUIT

An impedance lowering circuit, Part No. 77144-90, was added to the Cruise Harness Assembly, Part No. 70314-90 on some 1990 models. For complete service information on the impedance lowering circuit, see below.

2. 1990 TLE-ULTRA SIDECAR SPEAKER HUM

The 1990 TLE-ULTRA Sidecar speakers may have alternator hum. A procedure to correct this problem is given in this Bulletin following the impedance lowering circuit procedure.

3. AM STATIC

If owners of 1989 through 1991 FLTC/FLHTC ULTRA's complain about static on AM stations, a radio noise suppression kit, Part No. 77040-90, containing a feedthrough filter capacitor, "hook-up" wire and an Instruction Sheet that provides installation instructions is available. This filter capacitor will filter out regulator noise that may be heard on AM stations. For warranty information on this kit, see page 3 of this Bulletin.

4. ACCELERATE AND DECELERATE FEATURE OF CRUISE CONTROL

On page 84 of the 1990 and 1991 Owner's Manual, the rate of acceleration or deceleration obtainable by holding the Resume/Set switch UP (accelerate) or DOWN (decelerate) is specified as ---"approximately 1 mph per second." Due to variables such as travel speed, road incline or decline and the time delays of 3/4 second in the accelerate mode and 1/2 second in the decelerate mode, the cruise system will capture the vehicle speed present when the Resume/Set switch is released. The captured SET speed may vary somewhat from the ideal of "1 mph per second" of switch actuation.

5. BIG TWIN THROTTLE CABLE BRACKET KIT, PART NO. 27327-83A (PRE CVH CARBURETOR)

A replacement throttle cable bracket fabricated from thicker material will be available (approximately 2-15-91) in a kit, Part No. 27327-83A. The kit will contain the new bracket and a longer mounting screw. **This new bracket should be used on motorcycles equipped with cruise control.** See page 3 of this bulletin for installation instructions.

Impedance Lowering Circuit (Z-Circuit), Part No. 77144-90

BACKGROUND

The impedance lowering circuit (hereafter referred to as the "Z-circuit") was installed to lower the input impedance of the cruise control module, Part No. 70958-90A, at the "SET/RESume" switch terminals. Without the Z-circuit, a water contaminated SET/RESume switch could cause a false input to the module without switch actuation.

Approximately the first two hundred 1990 Ultra's were built without Z-circuits. These motorcycles were recalled in Safety Recall Code 071 and the cruise control modules, Part No. 70958-90A, were replaced with Part No. 70958-90B modules. The impedance lowering circuit was incorporated in cruise control module, Part No. 70958-90B, and therefore these motorcycles do not require Z-circuits.

The next lot of ULTRA motorcycles (those built after the first 200 and until approximately March 1990) have the Part No. 70958-90A module and Z-circuit Part No. 77144-90.

The last half of 1990 ULTRA production used Part No. 70958-90B modules. The impedance lowering circuit was incorporated in cruise control module, Part No. 70958-90B, and therefore motorcycles built in the second half of the 1990 model year don't require a Z-circuit.

TROUBLESHOOTING THE Z-CIRCUIT

The Z-circuit is located under the seat and the circuitry is contained in a plastic clam shell fuse holder. If cruise will not "SET" or "RES"ume perform the following resistance and voltage tests. If the Z-circuit does not pass any of the tests, see the "REMOVAL AND INSTALLATION OF Z-CIRCUIT" paragraph on page 3 for replacement instructions.

Resistance Tests:

1. See Figure 1. Turn Cruise switch "OFF" and unplug 8-place connector 8A & B. With ohmmeter measure resistance between red lead at socket terminal on 8B and blue/yellow lead at pin connector ZA. Resistance must be 150 - 300 ohms. Any other resistance reading indicates Z-circuit is faulty and must be replaced.

ROUTING:	SERVICE MANAGER	SALES MANAGER	PARTS MANAGER	LEAD TECHNICIAN	TECHNICIAN NO. 1	TECHNICIAN NO. 2	TECHNICIAN NO. 3	TECHNICIAN NO. 4	RETURN THIS TO:
INITIAL HERE									

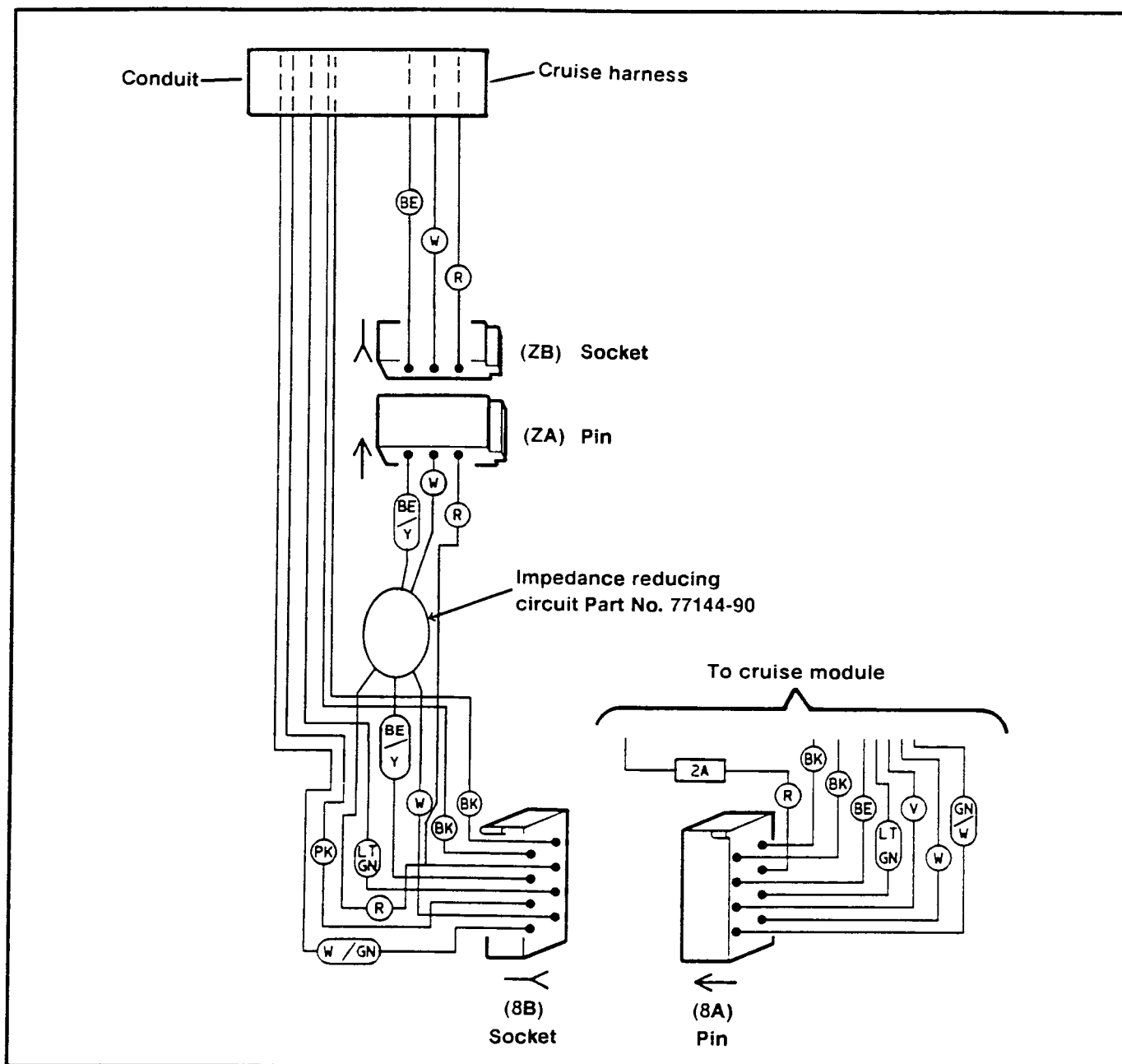


Figure 1. Wiring Diagram Of Impedance Reducing Circuit Installed In Cruise Harness

2. Repeat step 1, but check resistance between red lead at socket terminal 8B and white lead at pin connector ZA.
3. Place positive ohmmeter probe on white wire socket terminal at 8B and negative probe on white wire pin at 3-place connector ZA. Ohmmeter must indicate less than 1000 ohms (1 kilohm). Reverse probes - ohmmeter must indicate 1,000,000 ohms (1 megohm) minimum. If the preceding resistance values were not obtained, the circuit diode is bad and the Z-circuit must be replaced. (When using a diode tester, the readings should be 0.5 - 0.7 volt when checked in one direction, forward biased, and an open line voltage drop in the other direction, or reverse biased.)
4. Repeat step 3 on the blue/yellow wire of the Z-circuit.

Voltage Tests:

1. Connect 8-place connector 8A to 8B. Turn Ignition and Cruise switches "ON". From back (wire) side of connector 8B, place voltmeter positive probe on Red wire socket at 8B and connect negative probe to the White wire socket at 8B. With SET/RESume switch open (not pressed) voltmeter should indicate more than 10 vdc. With RESume switch closed, the voltage should be less than 2 vdc. If voltmeter readings are not correct, the Z-circuit, SET/RESume switch or interconnecting wiring may be faulty. To check that SET/RESume switch is O.K. perform the SET/RESume switch continuity test that follows these voltage tests. If switch tests O.K., and Z-circuit passed resistance tests the interconnecting wiring is probably at fault. Use continuity checks to isolate the faulty wiring.

2. Repeat step 1 with negative probe connected to the Blue/yellow wire socket at 8B and pushing SET side of the SET/RESume switch.

Continuity Test Of SET/RESume Switch

1. Connect ohmmeter to light green wire socket at 8B and White wire at 3-place connector ZB. Actuate RESume switch and check that ohmmeter indicates 0.5 ohm or less.
2. Repeat step 1 to check "SET" portion of switch. Connect ohmmeter to light green wire socket at 8B and Blue/yellow wire at 3-place connector ZB.

NOTE

Do not connect both ohmmeter leads to leads at 8B when performing the above continuity test. An incorrect result will occur because the measurement will be made through the Z-circuit.

REMOVAL AND INSTALLATION OF Z-CIRCUIT

To replace Z-circuit remove the three pin terminals from connector ZA using PIN TERMINAL TOOL Part No. HD-97362-71 and remove the three socket terminals from connector 8B using Socket TERMINAL TOOL, Part No. HD-97364-71. Install new Z-circuit making certain terminals are connected as shown in Figure 1.

Z-Circuit Guidelines

- A Z-circuit must be used with module Part No. 70958-90A
- Module Part No. 70958-90B does not require a Z-Circuit; but, system will function properly with a Z-Circuit. **Don't remove Z-Circuit if a 70958-90B module is being installed.**

Parts Availability

The following tabulation lists part name, Part No. and status of Z-circuit and related components:

NAME	PART NO.	STATUS
Cruise Module	70958-90A	Obsolete, use 70958-90B
Cruise Harness Assembly for Module 70958-90B	70316-90	Available
Cruise Harness Assembly (includes Z-circuit)	70314-90 includes 77144-90	Available
Impedance lowering circuit	77144-90	Available

Alternator Hum (1990 TLE-ULTRA Sidecar Speakers Only)

See Figure 2. To reduce alternator hum, locate green/black wire that connects between connectors SC2 and SC3. Cut this wire and cover the wire ends with electrical tape.

Installation of Throttle Cable Bracket Kit, Part No. 27327-83A

1. Refer to the CRUISE CONTROL- THROTTLE CABLES-1989 procedure in Section 8 of the 1984 To 1990 FLT/FXR SERVICE MANUAL, Part No. 99483-90. If necessary, loosen the throttle and idle cables and disconnect cables from the throttle wheel.
2. See Figure 3. Remove screw (1) and remove "old" bracket (2).
3. Connect cables to throttle wheel, install cable sheath ends in new bracket, mount new bracket on carburetor and secure with longer screw from kit.
4. Check cable adjustment following the CABLE ADJUSTMENT procedure contained in the Service Manual referenced in step 1 above.

Warranty Information

Radio Noise Suppression Kit, Part No. 77040-90

Upon completion of the installation of the Radio Noise Suppression Kit, submit a properly completed Warranty Claim Form using Labor Code 6622. You will be credited for 0.3 hr. for all models in addition to a credit for the kit (Part No. 77040-90). **You will not be required to obtain prior approval for motorcycles out of warranty.**

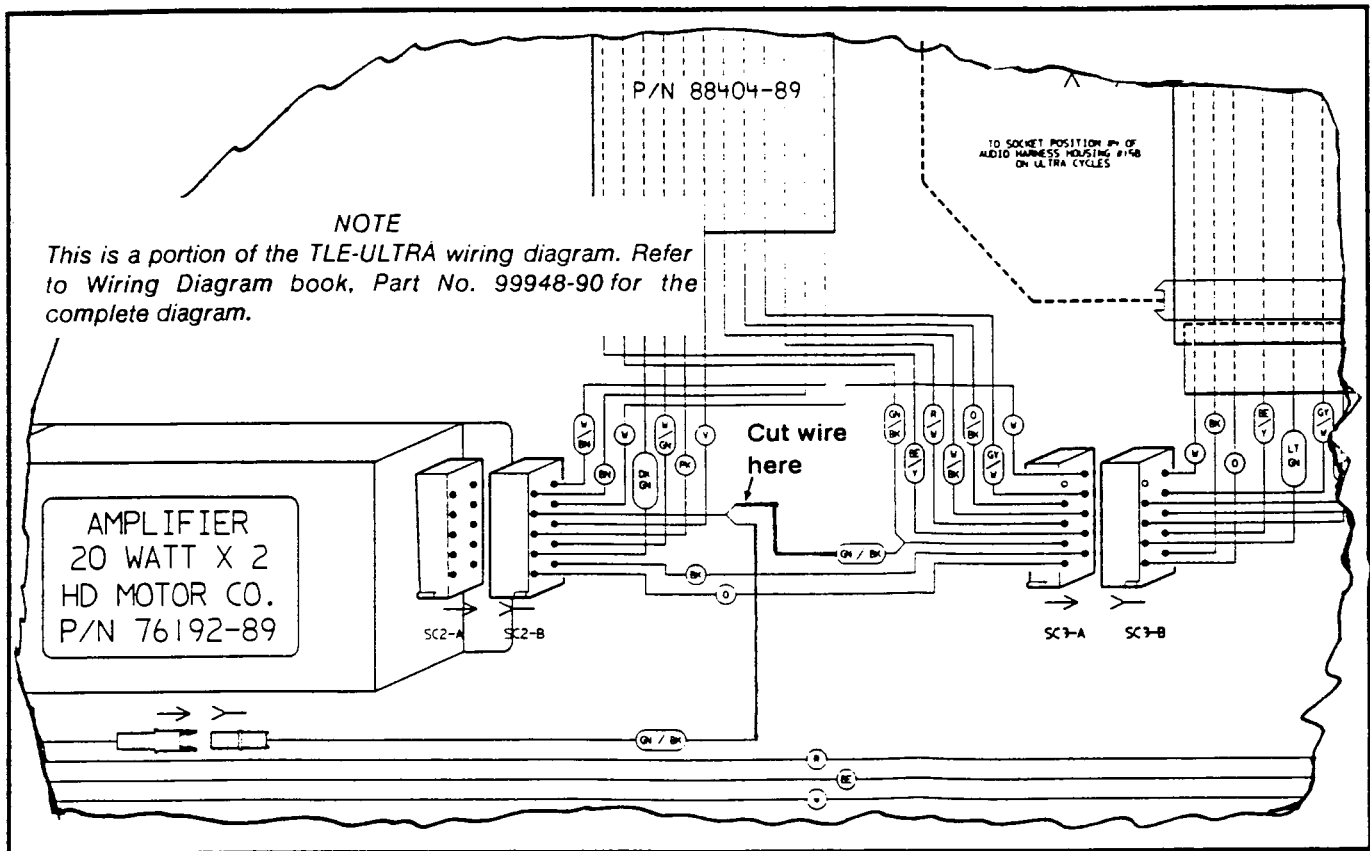


Figure 2. Cutting Green/Black Wire On 1990 TLE-ULTRA Sidecar Sound System

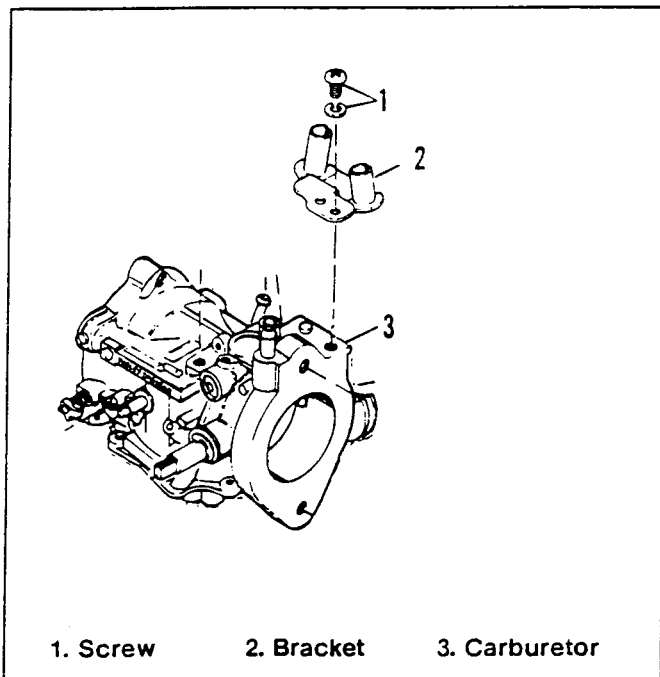


Figure 3. Throttle Cable Bracket Installation