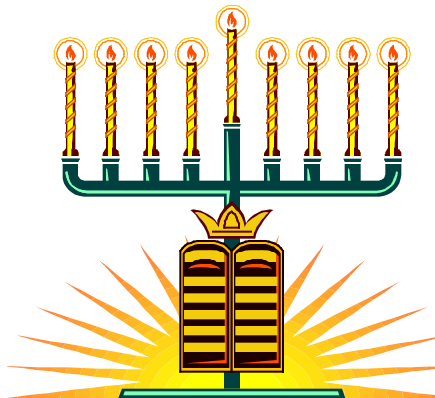


TECHNICAL

TIPS

December, 1998
TT #49

Season's Greetings



TECH TIPS #49

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1999 Speedo Malfunction

If a new style electronic speedometer fails to function properly, perform service manual diagnostic tests on speedometer and sensor per service manual. You also need to check the sensor in the transmission. Inspection of sensor may reveal debris on pick up. Remove debris and test for operation.

Speedometer Replacement Kits

Included in the 4" Speedometer Replacement Kit is an amber bulb cover. This should be placed over the bulb in the tachometer. This has not been added to the installation instructions. You will encounter the same situation on replacement of tachometers.

1999 Softail Service Manual

The 99 Softail manual wiring schematics have a misprint. On the speedometer pages the red and white wire locations are wrong (connector 39). Red should be position 8 and white should be position 9. The wall charts are correct.

Twin Cam E.F.I.

As most of you have noticed, there are a couple of scanalyzer screen changes for E.F.I. on Twin Cams. First, there is now a Bank Angle Sensor value in Data Monitor, last line. Second, the Map Sensor has replaced the BARO Sensor. The scanalyzer still displays this as a BARO sensor value.

The 99 E.F.I. system uses the engine temperature signal in a different manner than 98 and earlier. The ET signal is still used to determine pre-start throttle position and fuel mixture. However, once the engine is started, the ECM program initiates a timed sequence for warm-up. You may notice that the engine temperature at 0 steps on the ISC will be different from one start to the next. The ISC position is no longer directly linked to a specific temperature during warm-up as in the past.

The 99 FLT service manual shows the typical scan value for the throttle position incorrectly. This should be 3.6 degrees/0.47 volts. Also, the ET and IAT are shown in Celsius. You can write in 260° F for the ET and approximately 135° F for the IAT.

Warranty Job Times

There has been a change to Labor Code # 5705. It has been increased by 0.1 hour. This will cover time used to verify charging output to battery after battery replacement.

Coming soon is a correction page for the 1999 Dyna Glide service manual. Code 42 Flow Chart includes the wrong diagnostic condition/labor codes. Write these changes in your service manual in the interim: 7940 = 7941; 7945 = 7942; 7950 = 7943; 7955 = 7944; 7960 = 7946; 7965 = 7947; 7970 = 7948; 7969 = no change.

Included with this issue is a chart to indicate increases to speedometer replacement times. ***This is the only notification you will receive showing these increases.*** Add them to your warranty labor times for reference. These times have already been changed in our computer.

Cruise Control Chart

For your information, there is an application chart matrix for 89-98 cruise control kits and parts included with this issue.

Turn Signal Modules

It has come to our attention the turn signals may not self-cancel on 91-92 FLH models when the 89G turn signal module is installed. If you install a diode in the W/GN wire as close as possible to the radio harness, the self-cancel feature will be restored. Place the cathode (striped end) away from the radio. You can use an N4000 series diode found at any electronics supplier, such as Radio Shack.

Voltage Regulators

We continue to receive voltage regulators that have no internal problems found during testing. It is noticed that poor grounds remain the cause of malfunction. There is little or no paint disturbance in the mounting hole (old version) and the painted bracket (new version) where the ground wire attaches. It is recommended to carefully check the grounding of regulators before replacing them as failed.

Sidecars

For your information, the grease fittings found on sidecar mounts are smaller than those used on the motorcycle. The thread size is #10 x 32 and can be found at any large industrial bearing supplier. This is not found in Harley parts stock.

Brake Fluid

This is a heads-up to technicians everywhere. It seems there is another brake fluid being sold in the international market. It is labeled DOT 5.1. This fluid is not compatible with the current 5.0 silicone brake fluid. It is a form of petroleum based product and could cause DOT 5.0 to gel. Read labels carefully before using.

Cartridge Confusion?

Well here it is:

Scanalyzer Software Use Chart

SUFFIX	APPLICATION	COMMENTS
95	95-98 EFI Only	Pack away, can be used for emergencies
97	OBSOLETE!	DISCARD
95A	95-Present EFI and 97-Present XL 1200S	Pack away, can be used on all applications except 99 Dyna T.C.
95B	95-Present EFI 99 Dyna Twin Cam 97-Present XL 1200S	Present Day—All scan applications
PP5	Service Bulletin M-1067 Early 97 EFI as required	Potential battery discharge correction required for stage kit upgrade on early 97 models.

Radio

Pre 98 radios sent to RSI for repair are normally exchanged to provide a quicker turn around time for the customer. As these radios become older, there will be more cosmetic issues that some customers would object to. If this is a concern, you may specify the same radio be returned to you after repair. This will take approximately 2 weeks longer than the standard exchange procedure.

98-99 Radio

If you encounter a 98-99 radio with a “garbled” display, it may have water in it. We suggest you contact RSI for a replacement and submit a warranty claim for labor in the normal manner. RSI will send you a sealed radio to prevent the problem from recurring. Check for proper fairing seal to help prevent this as well.

TIPS FROM THE FIELD

EVO ET Sensor Tool

You will find that Snap-On offers a 13/16” spark plug swivel socket #59704BFU which will aid in removing the EVO ET sensor from the head. If you remove the rubber from the inside of the socket, it will fit better over the head of the sensor. This idea was presented by Otto from Route 43 Harley-Davidson, Dealer #5631.

Engine Management Data Sheet

This form is for use on all single fire ignitions systems. It was formatted by Jan Pek and Zul Masoh from HD of Singapore, dealer #6616. Please use with all correspondence relating to all EFI and Ignition issues.

We at Harley-Davidson wish all of you and yours a very joyous holiday season!

ADD THESE TIMES TO EXISTING TIMES

	6003	6006	6020	6022	6024
95	XL .1 FXD .6	N/A	N/A	N/A	N/A
96	XL .1 XL 1200C .8 FXS .1 FXD .6	N/A	N/A	N/A	N/A
97	XL .8 FXS 1.0 FXD .6 FLHR .6	N/A	N/A	N/A	N/A
98	XL .8 FXS 1.0 FXD .6 FLHR .6	ADD TO ALL CODES ONLY FOR 98			

1989-98 CRUISE CONTROL Cable Replacement Matrix

Model Year	Model Usage	Kit Type	Replacement cable for corresponding cruise stepper motor by model & year	Corresponding Cruise stepper motor P.N.	Replacement cable for corresponding cruise stepper motor by model & year.	Corresponding Cruise stepper motor P.N.
1989	FLTC / FLHTCU	Retrofit	56385-93	70958-93A	56385-96	70989-98
1990-1992	FLTC / FLHTCU	Retrofit	56384-95	70958-93A	56384-96	70989-98
1993-1996	Retro For Carbs	S.P. Repl.	56354-93	70958-93A	56405-98	70989-98
1995-1996	Retro For EFI	S.P. Repl.	56372-95	70958-93A	56406-98	70989-98
1993	FLHTC	S.P. Acc.	56354-93	70958-93A	56405-98	70989-98
1994-1995	FLHT & FLHTC	S.P. Acc.	56354-93	70958-93A	56405-98	70989-98
1996	FLHT & FLHTC	S.P. Acc.	56354-93	70958-93A	56405-98	70989-98
1996	FLHTC-I	S.P. Acc.	56372-95	70958-93A	56406-98	70989-98
1997	FLHT & FLHTC	S.P. Acc.	56372-97	70955-97	56372-97	70989-98
1997	FLHTC-I	S.P. Acc.	56372-97	70955-97	56372-97	70989-98
RETROFIT KITS 1989-1992						
Model Year	Model Usage	New PN	PN Replaces	New Module	New Cable	New Bracket
1989	FLTC / FLHTCU	70958-89C	70958-89B	70989-98	56385-96	70182-95A
1990-1992	FLTC / FLHTCU	70958-90D	70958-90C	70989-98	56384-96	70182-95A

SERVICE PARTS REPLACEMENT KITS 1993-1996

Model Year	Model Usage	New PN	Replaces	New Module	New Cable	New Bracket
1993-1996	Retro For Carbs	70491-98	70958-93A	70989-98	56405-98	70183-98
1995-1996	Retro For EFI	70492-98	70958-93A	70989-98	56406-98	70183-98

SERVICE PARTS ACC. CRUISE KITS 1993-1998

Model Year	Model Usage	New PN	Replaces	New Module	New Cable	New Bracket
1993	FLHTC	77127-93C	77127-93B	70989-98	56405-98	70183-98
1994-1995	FLHT & FLHTC	77141-94A	77141-94	70989-98	56405-98	70183-98
1996	FLHT & FLHTC	77141-96A	77141-96	70989-98	56405-98	70183-98
1996	FLHTC-I	77140-96B	77140-96A	70989-98	56406-98	70183-98
1997	FLHT & FLHTC	77107-97A	77107-97	70989-98	56372-97	N/A
1997	FLHTC-I	77120-97A	77120-97	70989-98	56372-97	N/A
1998	FLTR & FLTRI	77164-98	N/A	70989-98	56372-98	N/A
1998	FLHT & FLHTC	77165-98	N/A	70989-98	56372-98	N/A
1998	FLHTCI	77166-98	N/A	70989-98	56372-98	N/A

ENGINE MANAGEMENT PERFORMANCE SHEET

License/Regist. Number		Technician:			
Model/Color		Dealer Number:			
Date of Purchase		Previous Repair Attempts			
		<u>Quantity:</u>	<u>Days:</u>		
VIN					
Mileage:					
Complaint:					
Condition Duplicated:	(RPM, Load, Temperature, *Record data monitor readings when condition exists)				
Fuel Pressure:					
Trouble Codes:	Current:	Historic:			
DATA MONITOR READINGS					
EFI:	Hot Idle	*Additional	CARB:	Hot Idle	*Additonal
RPM			RPM		
ISC POS			MAP in Hg/V		
ET Deg/V			ADVANCE Deg		
IAT Deg/V			Battery Volts		
TP Deg/V			DWELL		
INJ PW			BAS MODE		
ADVANCE Deg			BAS		
BARO in Hg/V			CHECK ENGINE		
Battery Volts					
ENGINE RUN					
IDLE/WOT					
IDLE TRIM					
BAS MODE					
Notes:					
(Performance modifications, compression, cylinder leakdown)					