MAZDA/FORD GF4A-EL

HARSH UPSHIFTS

(ELECTRICAL)

COMPLAINT: Vehicles equipped with GF4A-EL transmissions may exhibit harsh shifts, accompanied by a trouble code 56 or OBDII code P0710, Transmission Temperature Sensor Fault. ***NOTE: These trouble codes may or may not flash the M.I.L.***

CAUSE: The cause may be, a faulty Transmission Temperature Sensor. ***WHY:*** Vehicles equipped with GF4A-EL transmissions have a computer strategy that ***commands*** line pressure to be maximum when fluid temperature is at or below 10°F. Therefore if the temperature sensor is faulty it may indicate that temperature is at or below 10°F at all times.

CORRECTION: Refer to Figure 1 for the location of the Transmission Oil Temperature Sensor. Refer to Figure 2 for the Ohm value and testing procedure to check the sensor. Refer to Figure 3 for the testing procedure of the sensor at the 10 pin connector. Repair or replace temperature sensor as necessary.

SERVICE INFORMATION:

Transmission Oil Temperature Sensor (***MAZDA***)..... FU2B-19-012B

GF4A-EL TRANSMISSION OIL TEMPRATURE SENSOR LOCATION

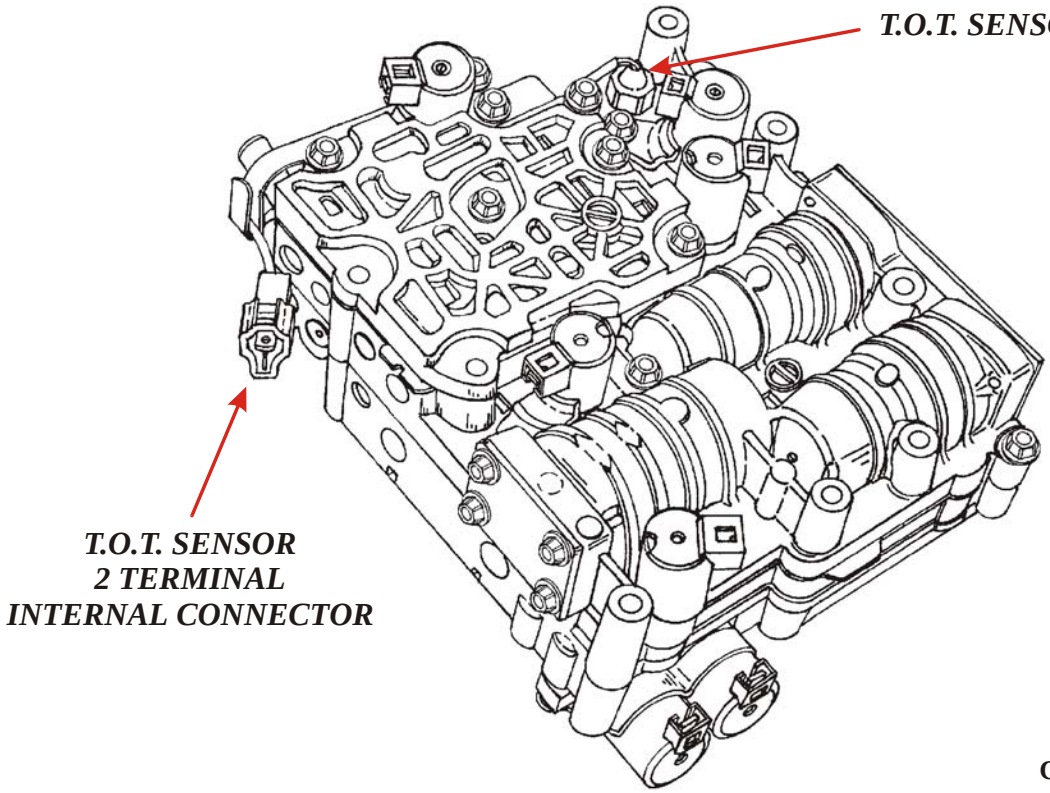
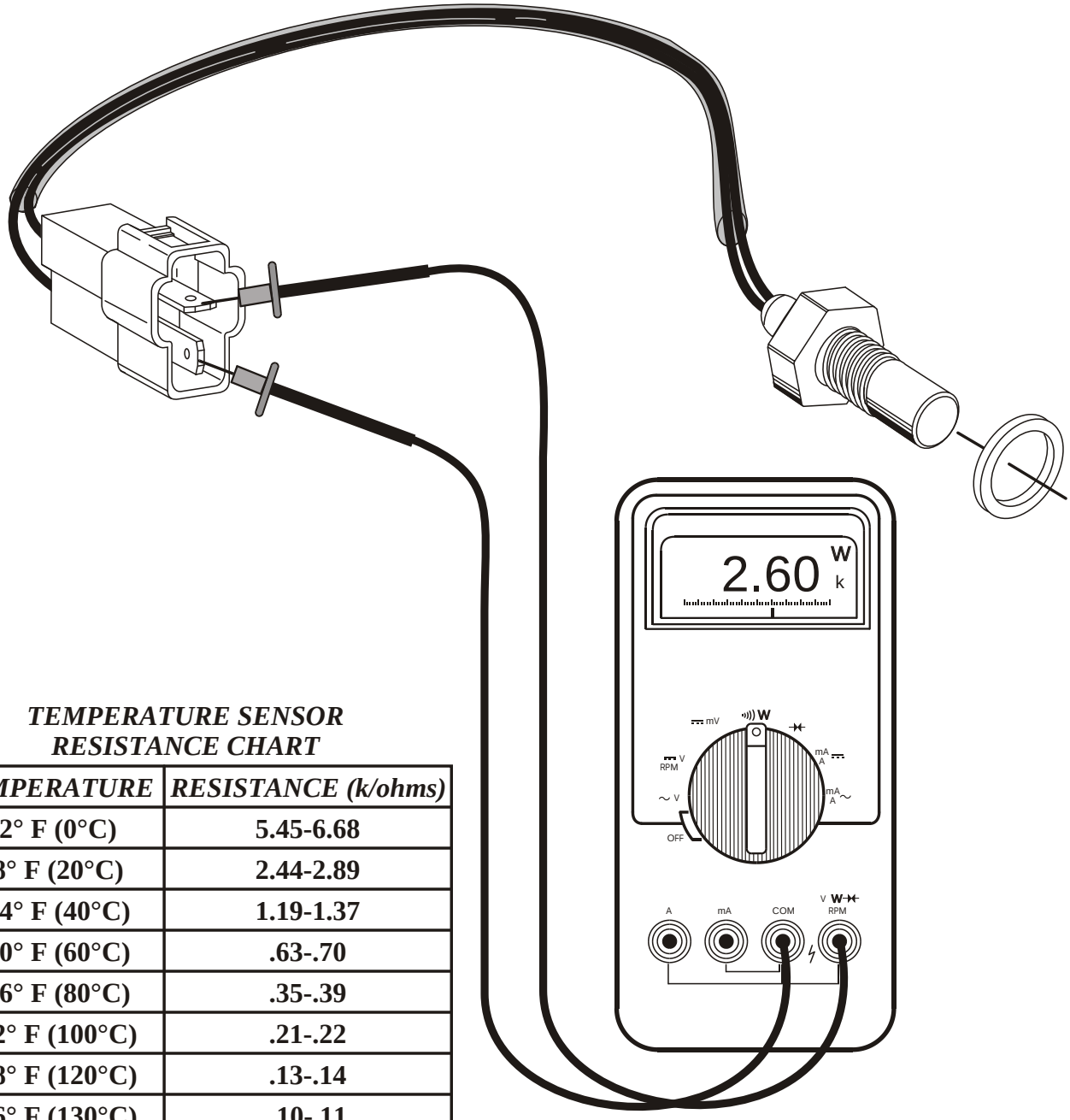


Figure 1

BENCH TESTING TEMPERATURE SENSOR



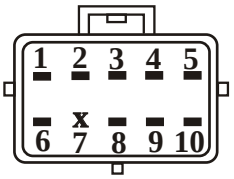
TEMPERATURE SENSOR RESISTANCE CHART

TEMPERATURE	*RESISTANCE (k/ohms)*
32° F (0°C)	5.45-6.68
68° F (20°C)	2.44-2.89
104° F (40°C)	1.19-1.37
140° F (60°C)	.63-.70
176° F (80°C)	.35-.39
212° F (100°C)	.21-.22
248° F (120°C)	.13-.14
266° F (130°C)	.10-.11

CONNECT OHM METER TO THE 2 TERMINALS SHOWN ABOVE AND VERIFY THAT THE RESISTANCE VALUES MATCH THE TEMPERATURE

Figure 2

10 PIN HARNESS CONNECTOR
TERMINAL IDENTIFICATION



TERMINAL	*IDENTIFICATION*	*INTERNAL WIRE COLOR*
1	TEMP.SENSOR	WHITE
2	LINE PRESSURE	BLUE
3	3-2 DOWNSHIFT	BLACK
4	3-4 SHIFT	BROWN
5	1-2 SHIFT	BLACK
6	TEMP.SENSOR	WHITE
7	N / A	N / A
8	LOCKUP	YELLOW
9	LOCKUP CONTROL	WHITE
10	2-3 SHIFT	GREEN

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RESISTANCE CHART

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DIS-CONNECT 10 PIN CONNECTOR AND CONNECT OHM METER TO TERMINALS 1 AND 6 TO VERIFY THAT RESISTANCE VALUES MATCH THE TEMPRATURES LISTED ABOVE

BACK PROBE TERMINALS 1 AND 6, WITH 10 PIN CONNECTOR CONNECTED, VOLT METER SET TO DC VOLTS, TO VERIFY VOLTAGE.
68°F (20°C) IS EQUAL TO APPROXIMATELY 3.5 VOLTS
266°F (130°C) IS EQUAL TO APPROXIMATELY 0.6 VOLTS

Figure 3