ENGINE COOLING FAN

1996 Toyota Supra

1995-96 ENGINE COOLING
Toyota - Engine Cooling Fans

Supra

ELECTRIC COOLING FAN

NOTE: Electric cooling fan may be used for radiator or condenser on Turbo model. Electric cooling fan may be used for condenser on Non-Turbo model. To verify electric cooling fan location and application, see ELECTRIC COOLING FAN IDENTIFICATION table. For condenser cooling fan testing, see A/C-HEATER SYSTEM - MANUAL article in AIR CONDITIONING & HEAT section.

NOTE: Electric radiator cooling fan is not used on Non-Turbo model.

ELECTRIC COOLING FAN IDENTIFICATION TABLE

Application	Cooling Fan Identification
Condenser Cooling Fan	Driver's Side, Front Of Radiator
Radiator Cooling Fan	
Non-Turbo	(1)
Turbo	Driver's Side, Rear Of Radiator

(1) - No electric cooling fan is used.

RADIATOR COOLING FAN SYSTEM TESTING TEMPERATURE SPECIFICATIONS TABLE

Application	Step 1 Temp. °F (°C)	Step 2 Temp. °F (°C)
Turbo	196 (91)	212 (100)

RADIATOR COOLING FAN SYSTEM TEST (TURBO - 2JZ-GTE)

1) Ensure engine coolant temperature is less than 196°F (91°C). Turn ignition on. Ensure radiator cooling fan stops.

2) If radiator cooling fan stops, proceed to step 5). If radiator cooling fan continues to operate, check cooling fan relays No. 1 and 2 and Engine Coolant Temperature (ECT) switch. See COOLING FAN RELAY NO. 1, COOLING FAN RELAY NO. 2 and ENGINE COOLANT TEMPERATURE (ECT) SWITCH under COMPONENT TESTING.

NOTE: Cooling fan relay No. 1 may also be referred to as radiator fan relay. Cooling fan relay No. 2 may also be referred to as ABS TRAC relay.

3) If cooling fan relays No. 1 and 2, and ECT switch are okay, check for open circuit in wire between ECT switch and cooling fan relay No. 1. See WIRING DIAGRAMS.

4) Cooling fan relay No. 1 is located at driver's side front corner of engine compartment. See Fig. 1. The ECT switch is located in the lower driver's side of radiator.

5) With ignition on, disconnect electrical connector at

Engine Coolant Temperature (ECT) switch, located in lower driver's side of radiator. Ensure radiator cooling fan operates.

6) If radiator cooling fan operates, proceed to step 8). If radiator cooling fan does not operate, check cooling fan relays No. 1 and 2, radiator cooling fan and necessary fuses. See WIRING DIAGRAMS. See COOLING FAN RELAY NO. 1, COOLING FAN RELAY NO. 2 and RADIATOR COOLING FAN under COMPONENT TESTING.

7) If all components are okay, check for short circuit in wire between cooling fan relay No. 1 and ECT switch. See WIRING DIAGRAMS.

8) Install electrical connector on ECT switch. Start engine. Warm engine until coolant temperature is greater than 212°F (100°C). Ensure radiator cooling fan operates. Replace ECT switch if radiator cooling fan fails to operate. Retest system.

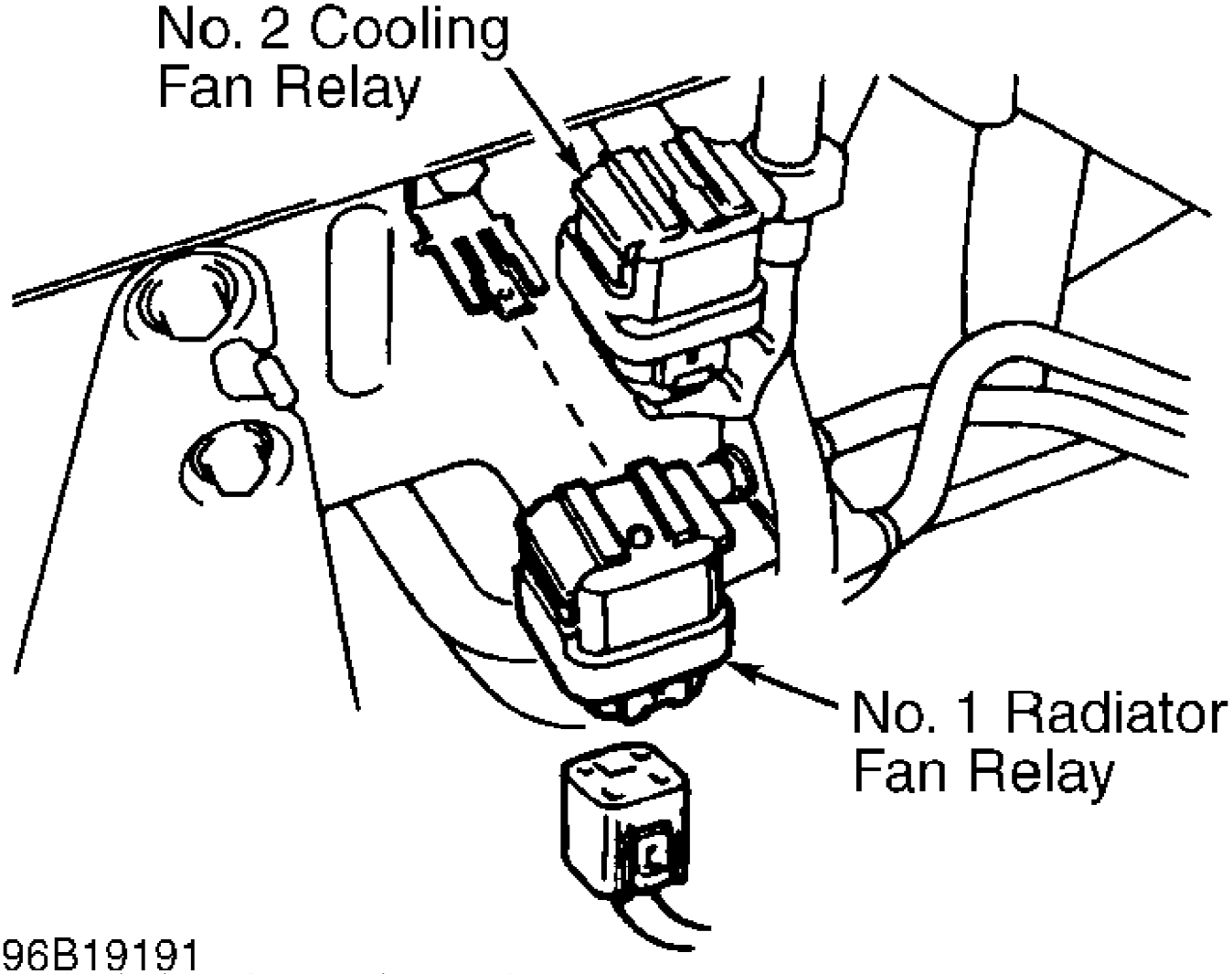


Fig. 1: Identifying Relay Locations (Turbo)
Courtesy of Toyota Motor Sales, U.S.A., Inc.

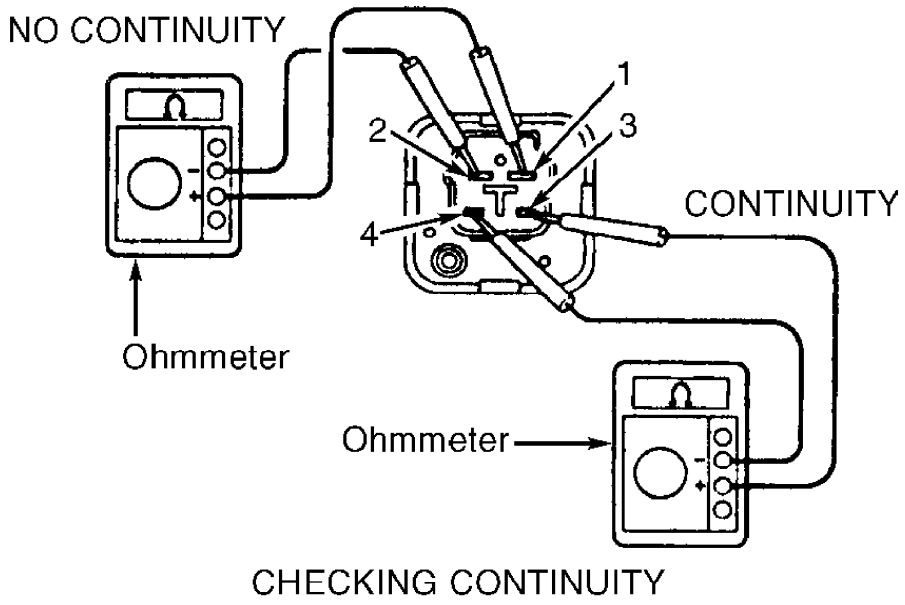
COMPONENT TESTING

CAUTION: When battery is disconnected, vehicle computer and memory systems may lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle.

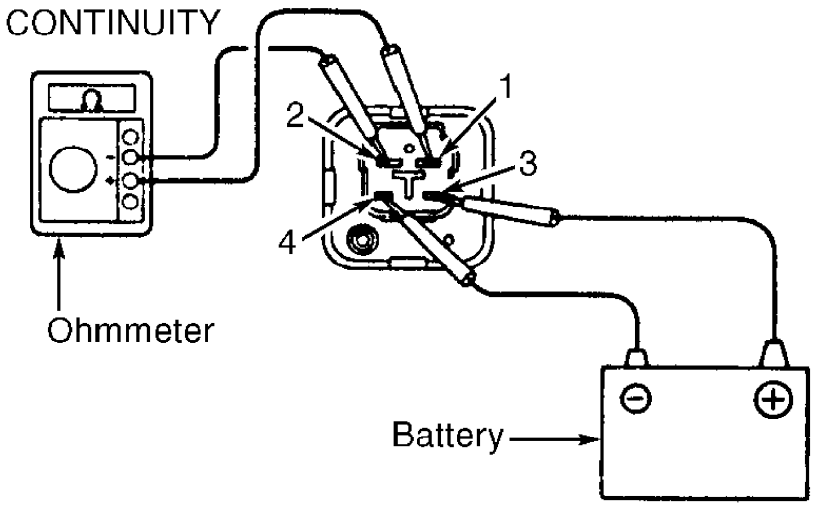
Cooling Fan Relay No. 1 (Turbo)

1) Disconnect negative battery cable. Remove cooling fan relay No. 1 from driver's side front corner of engine compartment. See Fig. 1. Using an ohmmeter, ensure continuity is as specified between specified terminals. See Fig. 2.

2) To check relay operation, connect battery voltage and ground to specified terminals of cooling fan relay No. 1. Using an ohmmeter, ensure continuity exists between specified terminals. See Fig. 2. Replace cooling fan relay No. 1 if defective.



CHECKING CONTINUITY



CHECKING OPERATION

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Fig. 2: Testing Cooling Fan Relay No. 1 (Turbo)
Courtesy of Toyota Motor Sales, U.S.A., Inc.

Cooling Fan Relay No. 2 (Turbo)

1) Disconnect negative battery cable. Remove cooling fan

relay No. 2 from driver's side front corner of engine compartment. See Fig. 1.

NOTE: Cooling fan relay No. 2 may also be referred to as ABS TRAC relay.

2) Using an ohmmeter, ensure continuity is as specified between specified terminals. See Fig. 3.

3) To check relay operation, connect battery voltage and ground to specified terminals of cooling fan relay No. 2. Using an ohmmeter, ensure continuity is as specified between specified terminals. See Fig. 3. Replace cooling fan relay No. 2 if defective.

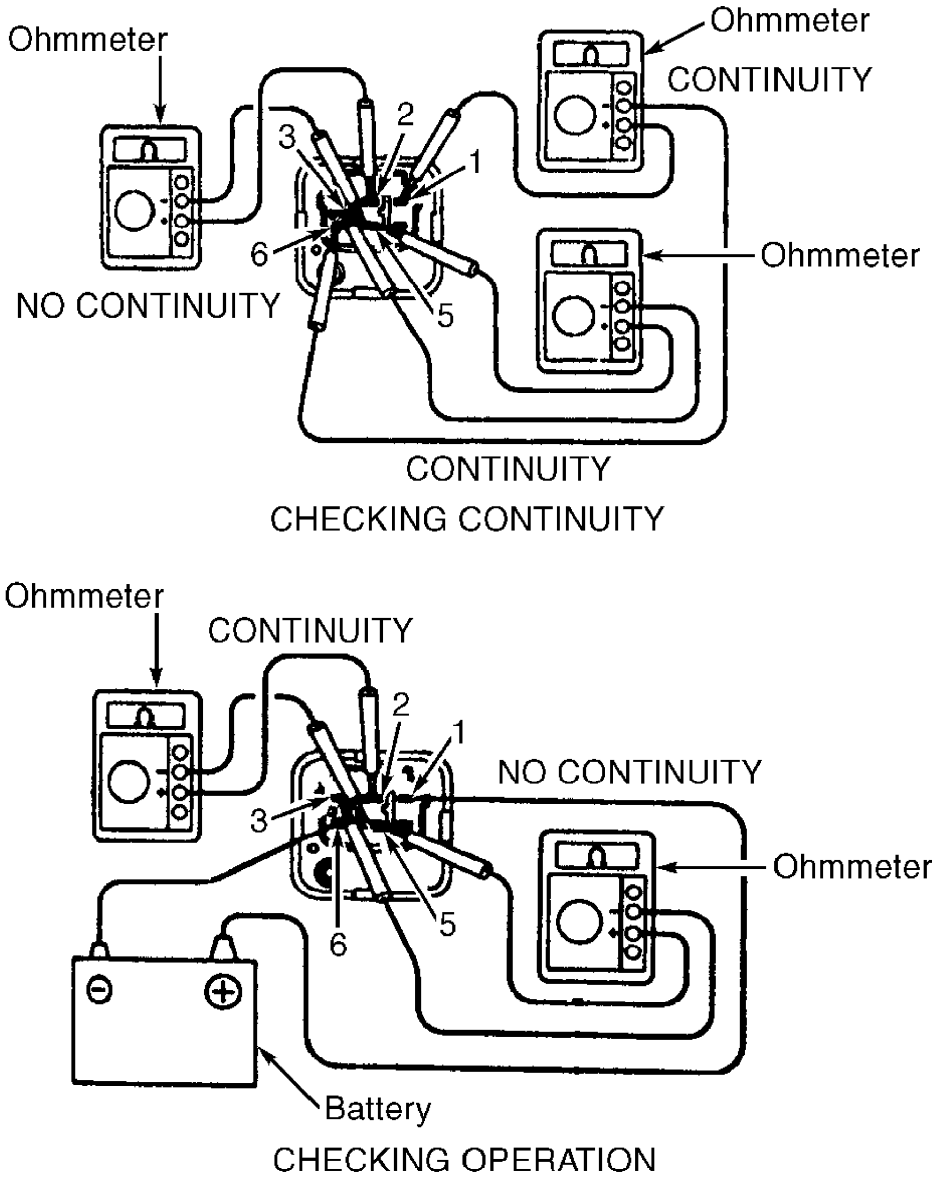

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Fig. 3: Testing Cooling Fan Relay No. 2 (Turbo)
Courtesy of Toyota Motor Sales, U.S.A., Inc.

Engine Coolant Temperature (ECT) Switch (Single Terminal)

1) Disconnect negative battery cable. Drain cooling system.

Disconnect electrical connector and remove ECT switch. See ECT SWITCH LOCATIONS table. Place probe end of ECT switch in container of water.

2) Using an ohmmeter, check for continuity between electrical terminal on ECT switch and switch body while heating water to specified temperatures. See ECT SWITCH CONTINUITY SPECIFICATIONS table. Replace ECT switch if continuity is not as specified. Reinstall switch and fill cooling system.

Engine Coolant Temperature (ECT) Switch (Dual Terminal)

1) Disconnect negative battery cable. Drain cooling system. Disconnect electrical connector and remove ECT switch. See ECT SWITCH LOCATIONS table. Place probe end of ECT switch in container of water.

2) Using an ohmmeter, check for continuity between electrical terminals on ECT switch while heating water to specified temperatures. See ECT SWITCH CONTINUITY SPECIFICATIONS table.

3) Replace ECT switch if continuity is not as specified. Reinstall ECT switch using NEW "O" ring (if equipped). Fill cooling system.

ECT SWITCH LOCATIONS TABLE

Application	Switch Location
Turbo	Bottom Left Side Of Radiator

ECT SWITCH CONTINUITY SPECIFICATIONS TABLE

Application	Temperature °F (°C)
Turbo	
Continuity	Less Than 196°F (91°C)
No Continuity	Greater Than 212°F (100°C)

Radiator Cooling Fan

1) Disconnect electrical connector from radiator cooling fan. Connect battery and ammeter to electrical connector on radiator cooling fan.

2) Radiator cooling fan should operate smoothly and amperage draw should be within specification. See RADIATOR COOLING FAN AMPERAGE DRAW SPECIFICATIONS table.

3) Replace radiator cooling fan if fan fails to rotate smoothly or amperage draw is not within specification. Retest system.

RADIATOR COOLING FAN AMPERAGE DRAW SPECIFICATIONS TABLE

Application	Amps
Turbo (2JZ-GTE)	2.5-4.5

COOLING SYSTEM BLEEDING

No special cooling system bleeding procedure is required.

WIRING DIAGRAMS

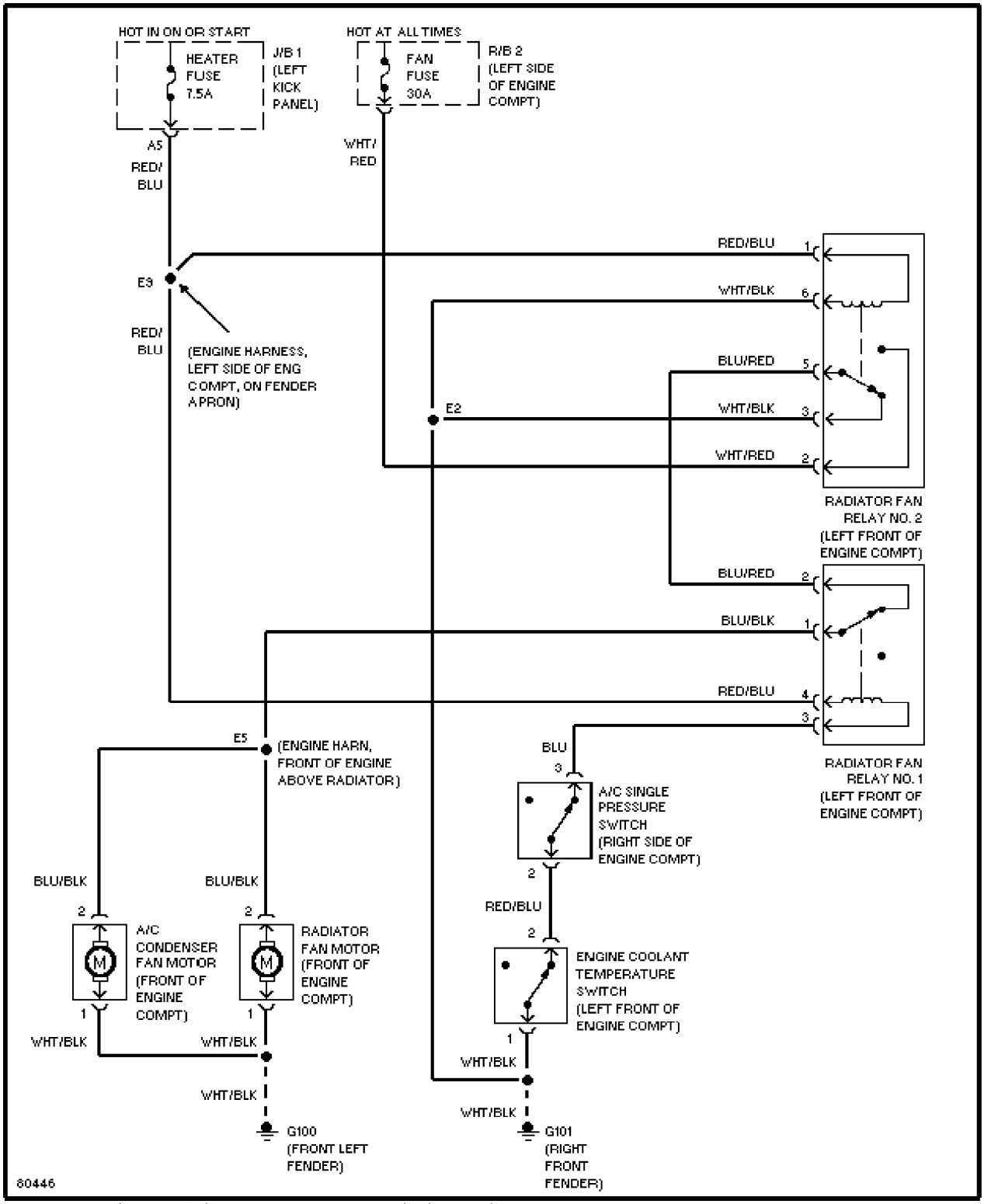

Fig. 4: Electric Cooling Fan System Wiring Diagram
Courtesy of Toyota Motor Sales, U.S.A., Inc.