

SHIFT LOCK SYSTEM

1993 Toyota Celica

AUTOMATIC TRANSMISSIONS
Toyota Shift Lock System

APPLICATION

APPLICATION

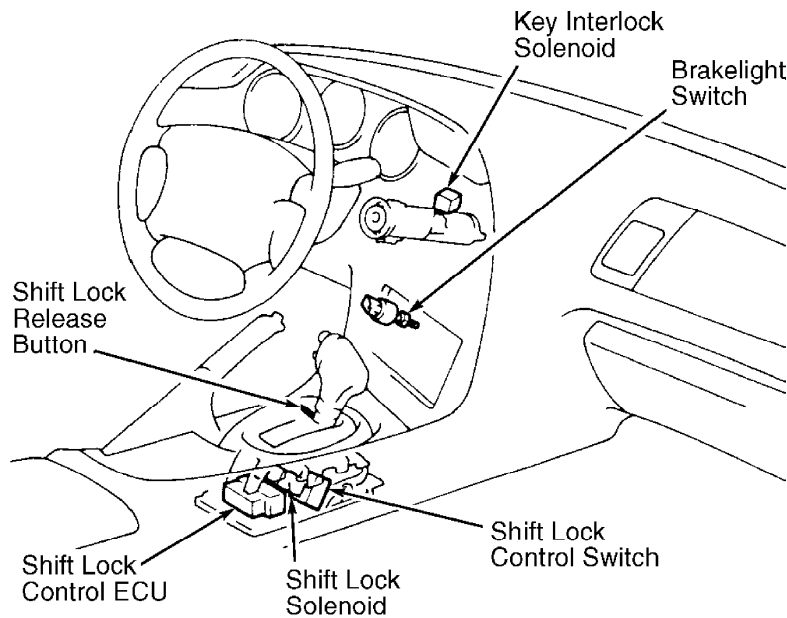
Application	Model
Lexus	ES300, GS300, LS400, SC300 & SC400
Toyota	Camry, Celica, Corolla, Land Cruiser, MR2, Paseo, Pickup, Supra, Tercel & 4Runner

DESCRIPTION

Transmission is equipped with a electronically controlled shift lock and key lock system. See Fig. 1. Shift lock system prevents shift lever from being moved from Park unless brake pedal is depressed. In case of a malfunction, shift lever can be released by depressing shift lock override button, located near shift lever. Key lock system prevents ignition key from being moved from ACC to LOCK position on ignition switch unless shift lever is in Park.

The system consists of a brakelight switch, key interlock solenoid, shift lock control switch, shift lock Electronic Control Unit (ECU), shift lock solenoid and shift lock override button. See Fig. 1.

NOTE: Shift lock Electronic Control Unit is referred to as ECU.



95J20536
Fig. 1: Shift & Key Lock System (Typical)
Courtesy of Toyota Motor Sales, U.S.A., Inc.

OPERATION

SHIFT LOCK SYSTEM

With ignition on, when brake pedal is depressed, an input signal is sent from brakelight switch to the ECU. With shift lever in Park, an input signal from shift control switch is input to ECU, indicating shift lever is in Park. The ECU then operates shift lock solenoid, so shift lever can be moved from Park.

KEY LOCK SYSTEM

With ignition in ON or ACC position and shift lever in Park, shift lock control switch opens and voltage from ECU to key interlock solenoid is turned off. When key interlock solenoid is turned off, ignition key can be turned from ACC to LOCK position on ignition switch.

NOTE: If ignition is left in ACC or ON position with shift lever in any gear range except Park for about one hour, ECU then operates to release the lock mechanism.

TESTING

ELECTRONIC CONTROL UNIT (ECU)

Access ECU. See Fig. 1. The ECU is mounted under the center console, in front or back of shifter. Turn ignition on. Backprobing ECU harness connector with DVOM, check voltage between designated terminals. Voltage should be as specified. Refer to the appropriate SHIFT LOCK SYSTEM PIN VOLTAGES table. For circuit identification, see appropriate wiring diagram in WIRING DIAGRAMS.

NOTE: Ground (GND) terminal is also referred to as "E" terminal.

SHIFT LOCK SYSTEM PIN VOLTAGES

SHIFT LOCK SYSTEM PIN VOLTAGES (CAMRY, CELICA, COROLLA, ES300, GS300, LAND CRUISER, PASEO & TERCEL)

Measure Between Terminals:	Description	Voltage
ECU		
ACC-GND	Ignition Switch In ACC Position	10-14
IG-GND	Ignition Switch In ON Position	10-14
STP-GND	Depress Brake Pedal	10-14
KLS-GND	Ignition Switch In ACC, Shifter In "P"	0
	Ignition Switch In ACC, Shifter Except "P"	10-14
	(1) Ignition Switch In ACC, Shifter Except "P"	6-9
Shift Lock Solenoid		
SLS+-SLS- ..	Ignition Switch In ACC, Shifter In "P"	0
	Depress Brake Pedal	8-13.5
	Depress Brake Pedal (After 20 Seconds)	5.5-9.5
	Ignition Switch In ACC, Shifter Except "P"	0
Shift Lock Control Switch		
P1-P	Ignition Switch In ON Position, Shifter In "P", Depress Brake Pedal	0
	Ignition Switch In ON, Shifter Except "P"	9-13.5
P2-P	Ignition Switch In ACC, Shifter In "P"	9-13.5
	Ignition Switch In ACC, Shifter Except "P"	0

(1) - Voltage measurement after 1 second.

SHIFT LOCK SYSTEM PIN VOLTAGES (LS400, SC300, SC400 & SUPRA)

Measure Between Terminals:	Description	Voltage
ECU		
ACC-GND	..... Ignition Switch In ACC Position	10-14
IG-GND	..... Ignition Switch In ON Position	10-14
STP-GND	..... Depress Brake Pedal	10-14
KLS-GND	.... Ignition Switch In ACC, Shifter In "P"	0
	Ignition Switch In ACC, Shifter Except "P"	7.5-11
	(1) Ignition Switch In ACC, Shifter Except "P"	6-9.5
Shift Lock Solenoid		
SLS+-SLS-	.. Ignition Switch In ACC, Shifter In "P"	0
	Depress Brake Pedal	8-13.5
	Depress Brake Pedal (After 20 Seconds)	5.5-9.5
	Ignition Switch In ACC, Shifter Except "P"	0
Shift Lock Control Switch		
P1-P	..... Ignition Switch In ON Position, Shifter In "P", Depress Brake Pedal	0
	Ignition Switch In ON, Shifter Except "P"	9-13.5
P2-P	..... Ignition Switch In ACC, Shifter In "P"	9-13.5
	Ignition Switch In ACC, Shifter Except "P"	0

(1) - Voltage measurement after 1 second.

SHIFT LOCK SYSTEM PIN VOLTAGES (MR2)

Measure Between Terminals:	Description	Voltage
ECU		
ACC-GND	..... Ignition Switch In ACC Position	10-14
IG-GND	..... Ignition Switch In ON Position	10-14
STP-GND	..... Depress Brake Pedal	10-14
KLS-GND	.... Ignition Switch In ACC, Shifter In "P"	0
	Ignition Switch In ACC, Shifter Except "P"	7.5-11
	(1) Ignition Switch In ACC, Shifter Except "P"	6-9
Shift Lock Solenoid		
SLS+-GND	... Ignition Switch In ACC, Shifter In "P"	0
	Depress Brake Pedal	8-13.5
	Ignition Switch In ACC, Shifter Except "P"	0
Shift Lock Control Switch		
P1-P	..... Ignition Switch In ON Position, Shifter In "P", Depress Brake Pedal	0
	Ignition Switch In ON, Shifter Except "P"	9-13.5
P2-P	..... Ignition Switch In ACC, Shifter In "P"	0-13.5

(1) - Voltage measurement after 1 second.

SHIFT LOCK SYSTEM PIN VOLTAGES (PICKUP & 4RUNNER)

Measure Between

Terminals:	Description	Voltage
ECU		
ACC-GND	..... Ignition Switch In ACC Position	10-14
IG-GND	..... Ignition Switch In ON Position	10-14
STP-GND	..... Depress Brake Pedal	10-14
KLS-GND	.... Ignition Switch In ACC, Shifter In "P"	0
	Ignition Switch In ACC, Shifter Except "P"	10-14
	(1) Ignition Switch In ACC, Shifter Except "P"	6-9
Shift Lock Solenoid		
SLS+-SLS-	.. Ignition Switch In ACC, Shifter In "P"	0
	Depress Brake Pedal	10-14
	Ignition Switch In ACC, Shifter Except "P"	0
Shift Lock Control Switch		
P1-P	..... Ignition Switch In ON Position, Shifter In "P", Depress Brake Pedal	0
	Ignition Switch In ON, Shifter Except "P"	10-14
P2-P	..... Ignition Switch In ACC, Shifter In "P"	10-14
	Ignition Switch In ACC, Shifter Except "P"	0

(1) - Voltage measurement after 1 second.

SHIFT LOCK SOLENOID

1) Disconnect electrical connector from shift lock solenoid. Using ohmmeter, measure resistance between electrical terminals of shift lock solenoid.

2) Replace shift lock solenoid if resistance is not within specification. See SHIFT LOCK SOLENOID RESISTANCE SPECIFICATIONS table.

3) Apply battery voltage between electrical terminals of shift lock solenoid. Replace shift lock solenoid if operating sound cannot be heard.

SHIFT LOCK SOLENOID RESISTANCE SPECIFICATIONS

Application	Ohms
Camry, Celica, ES300, GS300 & MR2	21-27
Corolla, Paseo & Tercel	30-35
Land Cruiser, LS400, Pickup, SC300, SC400, Supra & 4Runner	20-28
Pickup & 4Runner	29-36

KEY INTERLOCK SOLENOID

1) Disconnect electrical connector from key interlock solenoid. Using ohmmeter, measure resistance between electrical terminals of key interlock solenoid.

2) Replace key interlock solenoid if resistance is not 12-17 ohms. Apply battery voltage between electrical terminals of key interlock solenoid. Replace key interlock solenoid if operating sound cannot be heard.

SHIFT LOCK CONTROL SWITCH

NOTE: Testing for Land Cruiser not available from manufacturer.

Disconnect electrical connector from shift lock control

switch. Using ohmmeter, check continuity between specified terminals in relation to shift lever. See SHIFT LOCK CONTROL SWITCH CONTINUITY table. Replace switch if continuity is not as specified.

NOTE: Continuity must be checked in accordance with position of release button on shift lever and shift lever position.

SHIFT LOCK CONTROL SWITCH CONTINUITY

Shift Lever Position & Condition	Terminals
Park & Release Button Not Pushed	P & P1
Any Other Gear Except Park	P & P2

WIRING DIAGRAMS

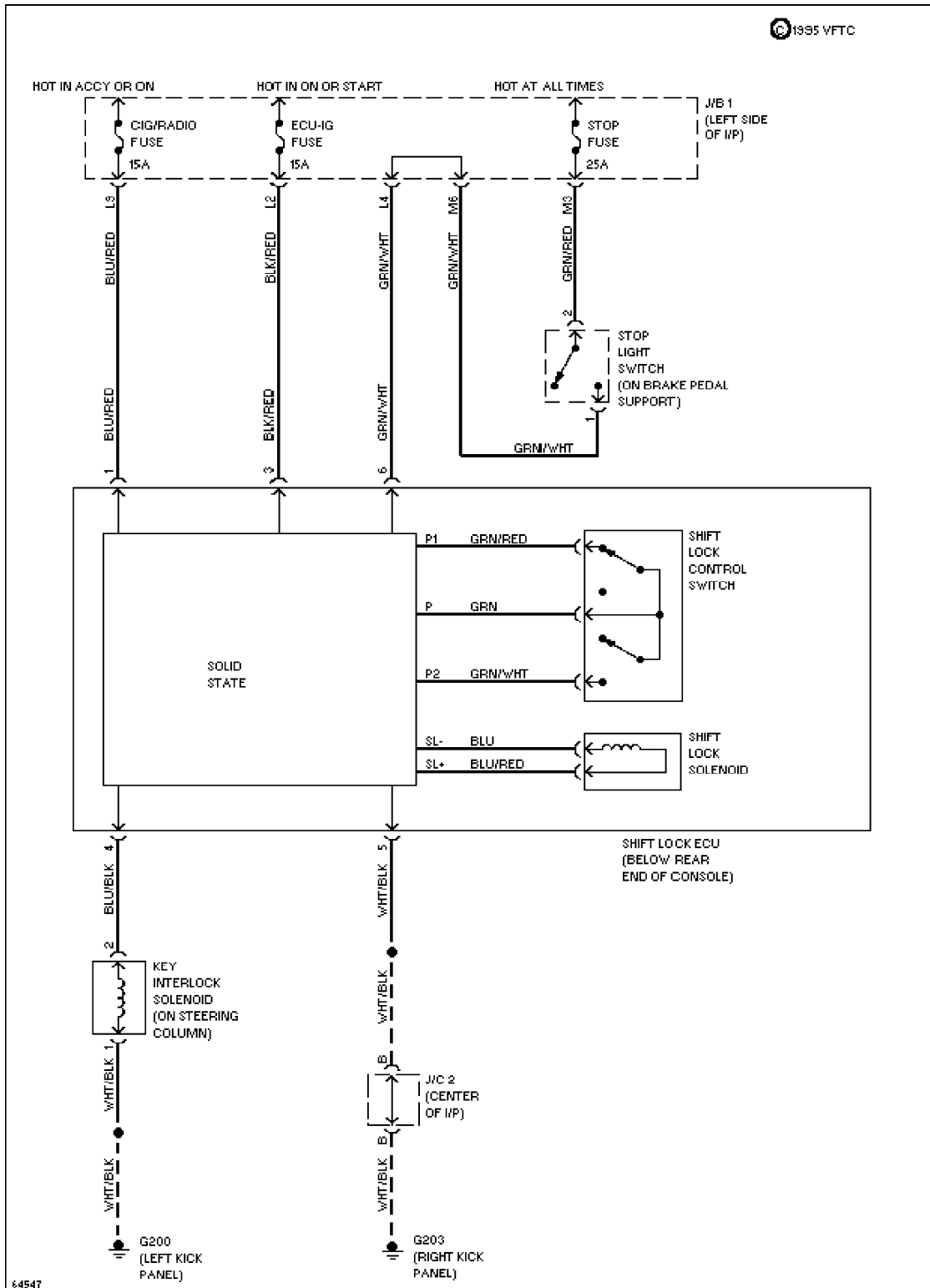


Fig. 2: Shift Interlock System Wiring Diagram (ES300)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

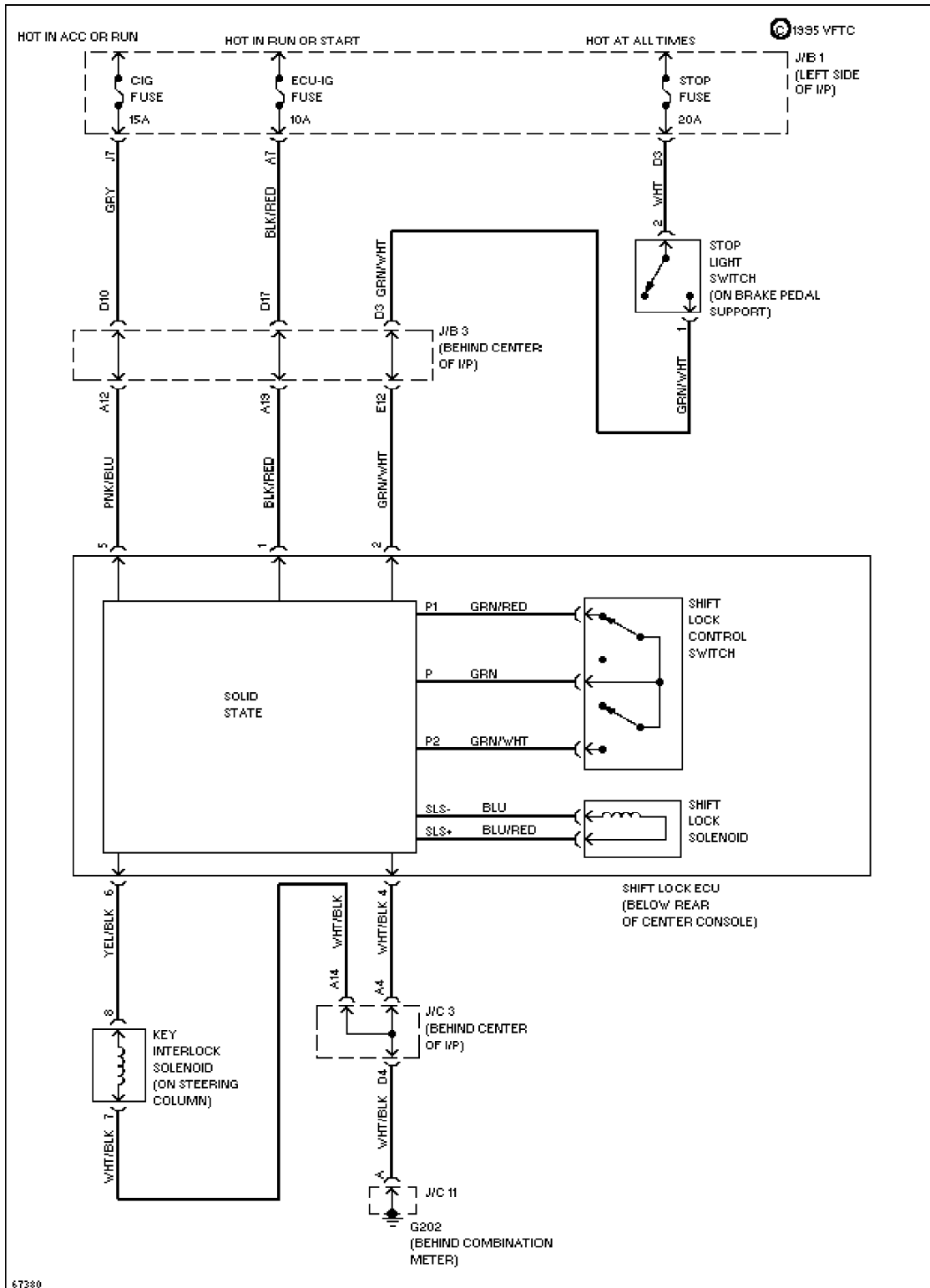


Fig. 3: Shift Interlock System Wiring Diagram (GS300)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

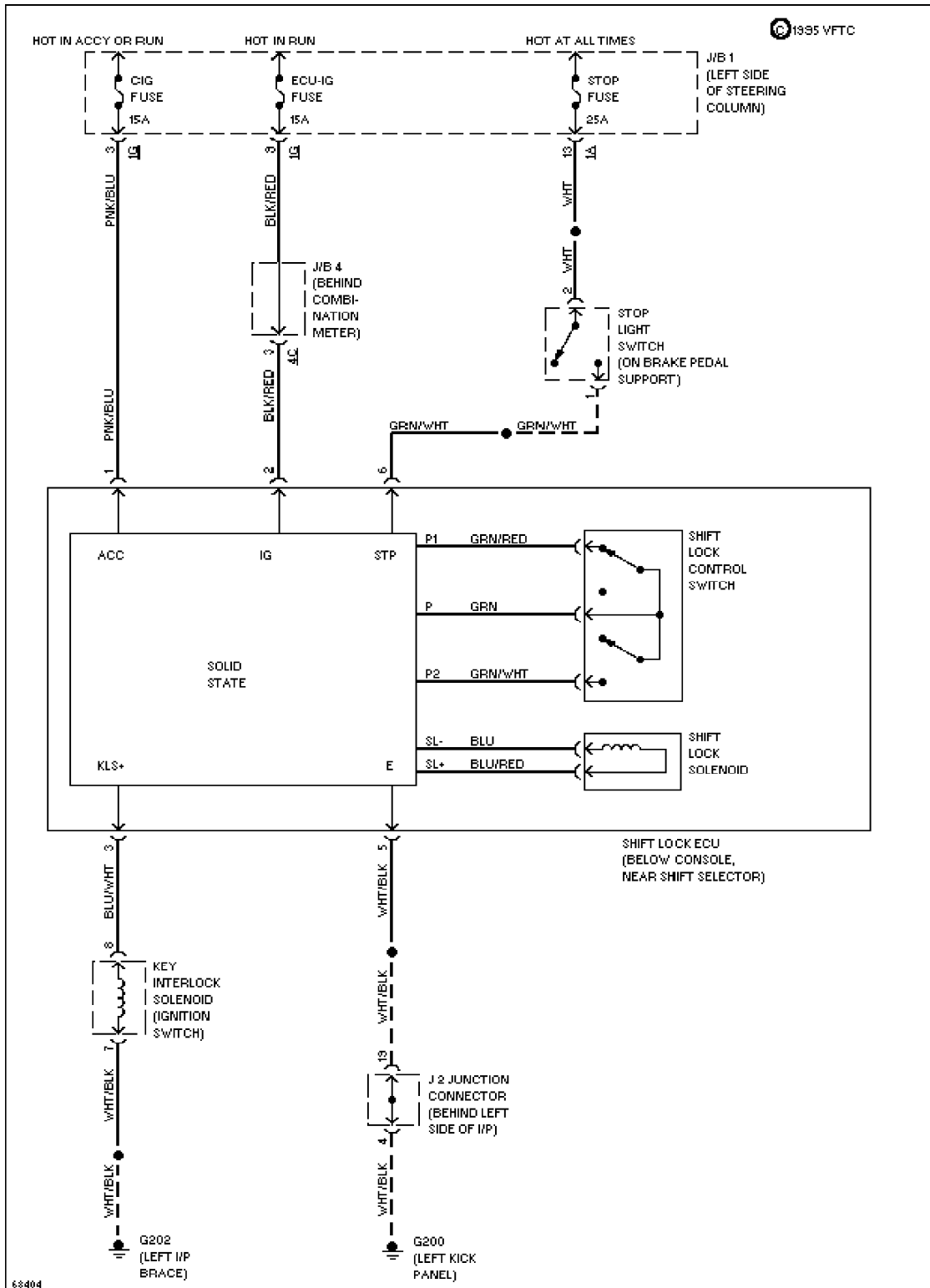


Fig. 4: Shift Interlock System Wiring Diagram (LS300)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

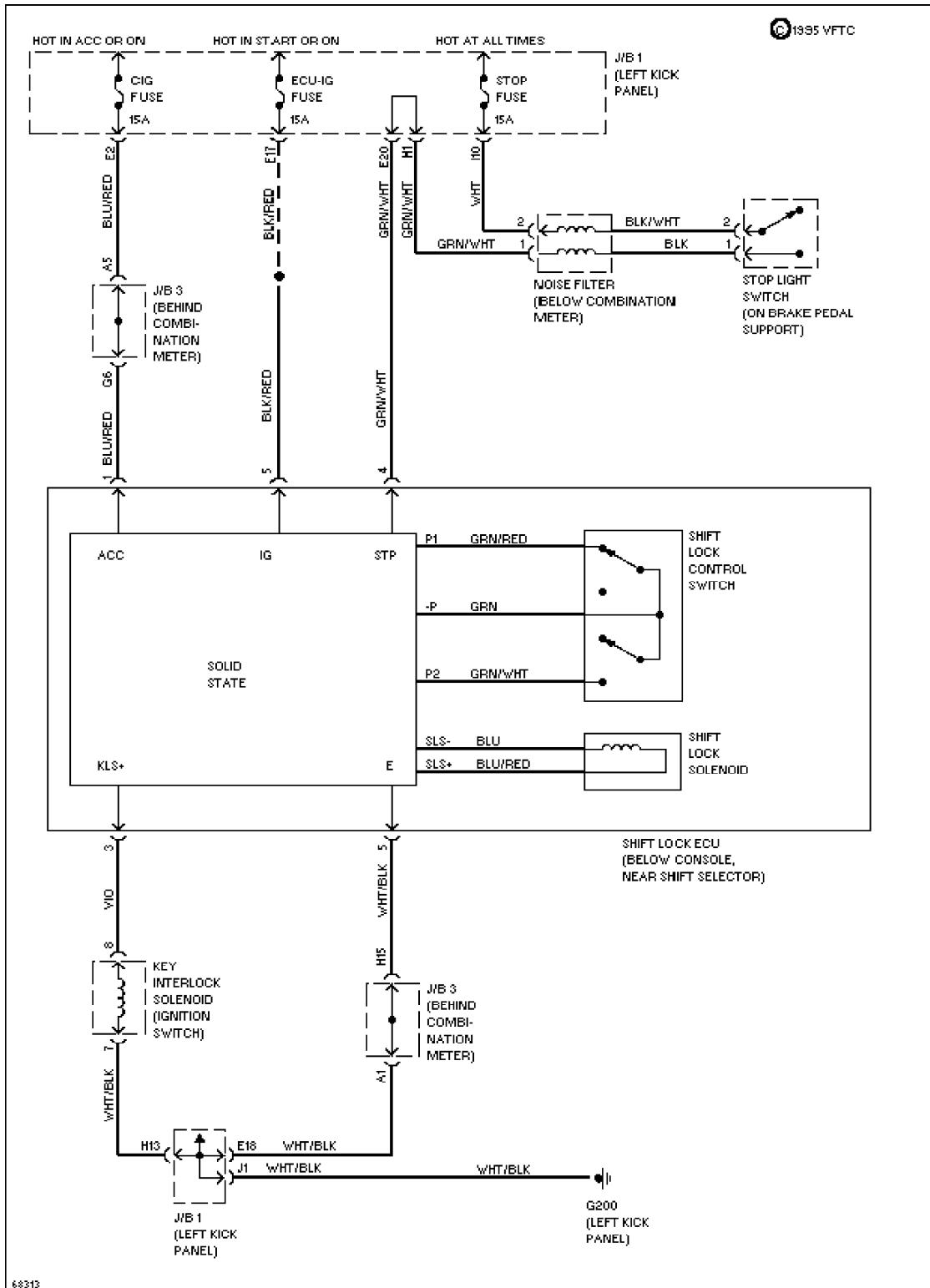


Fig. 5: Shift Interlock System Wiring Diagram (SC300 & SC400)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

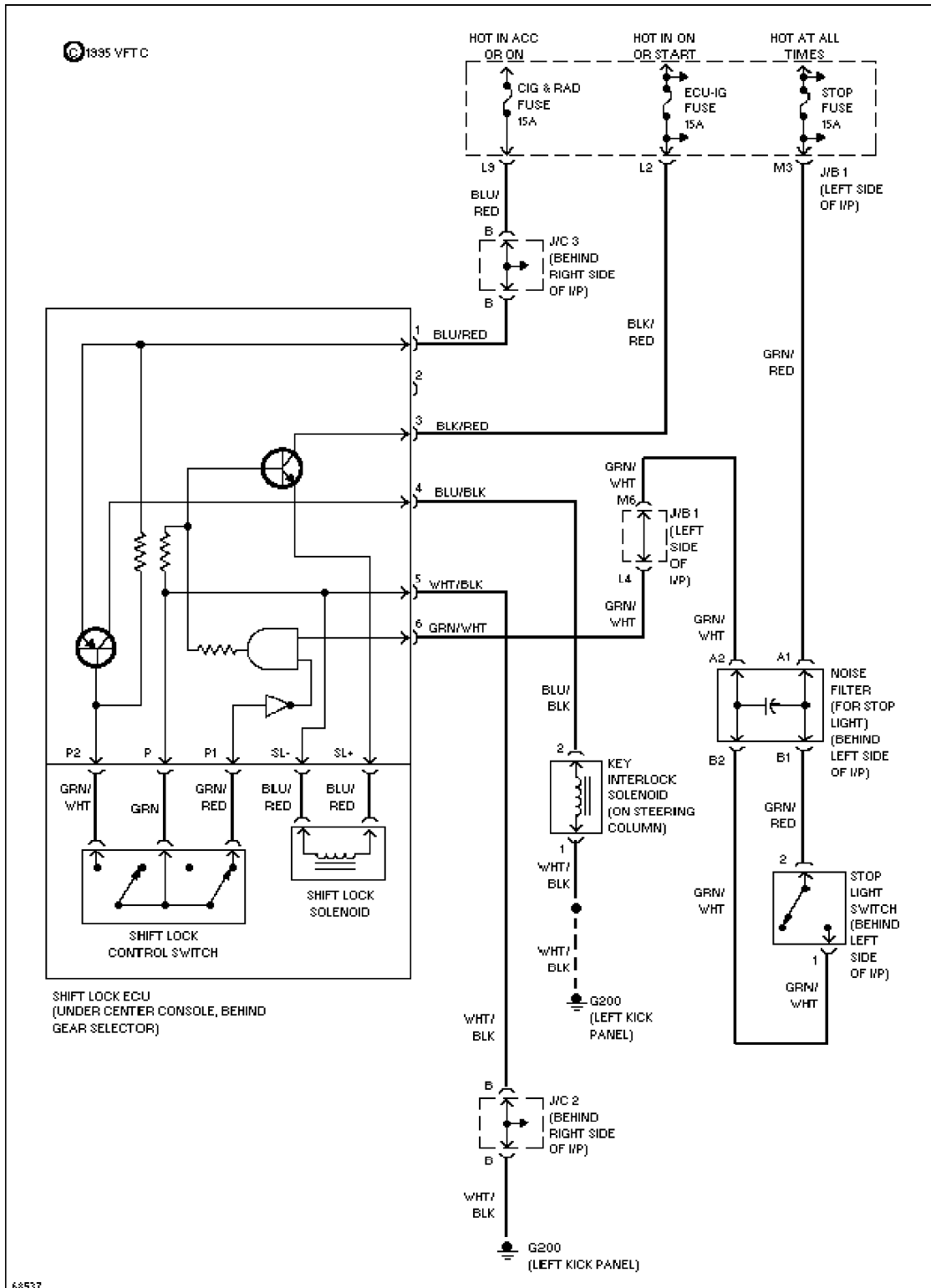


Fig. 6: Shift Interlock System Wiring Diagram (Camry)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

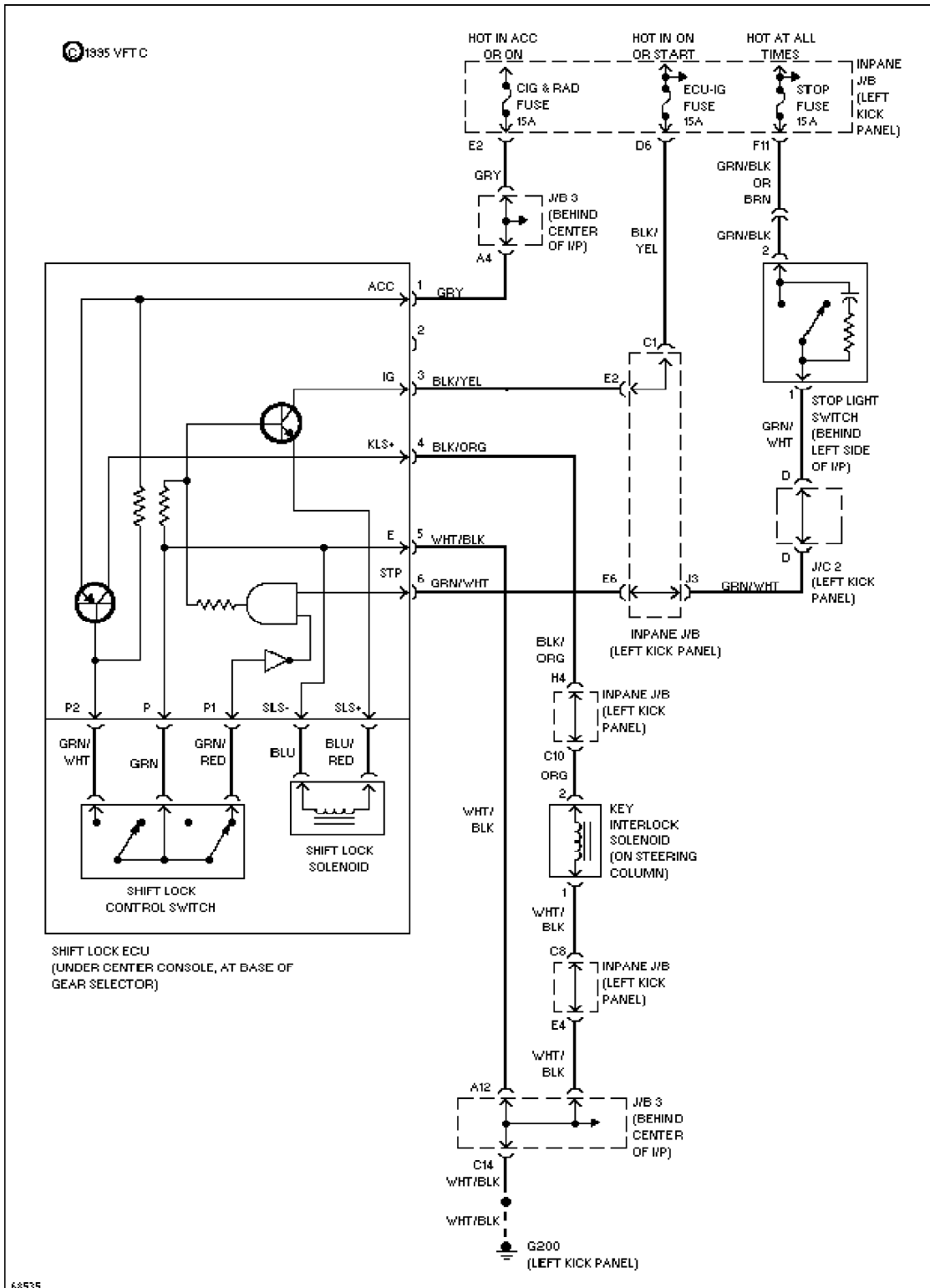


Fig. 7: Shift Interlock System Wiring Diagram (Celica)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

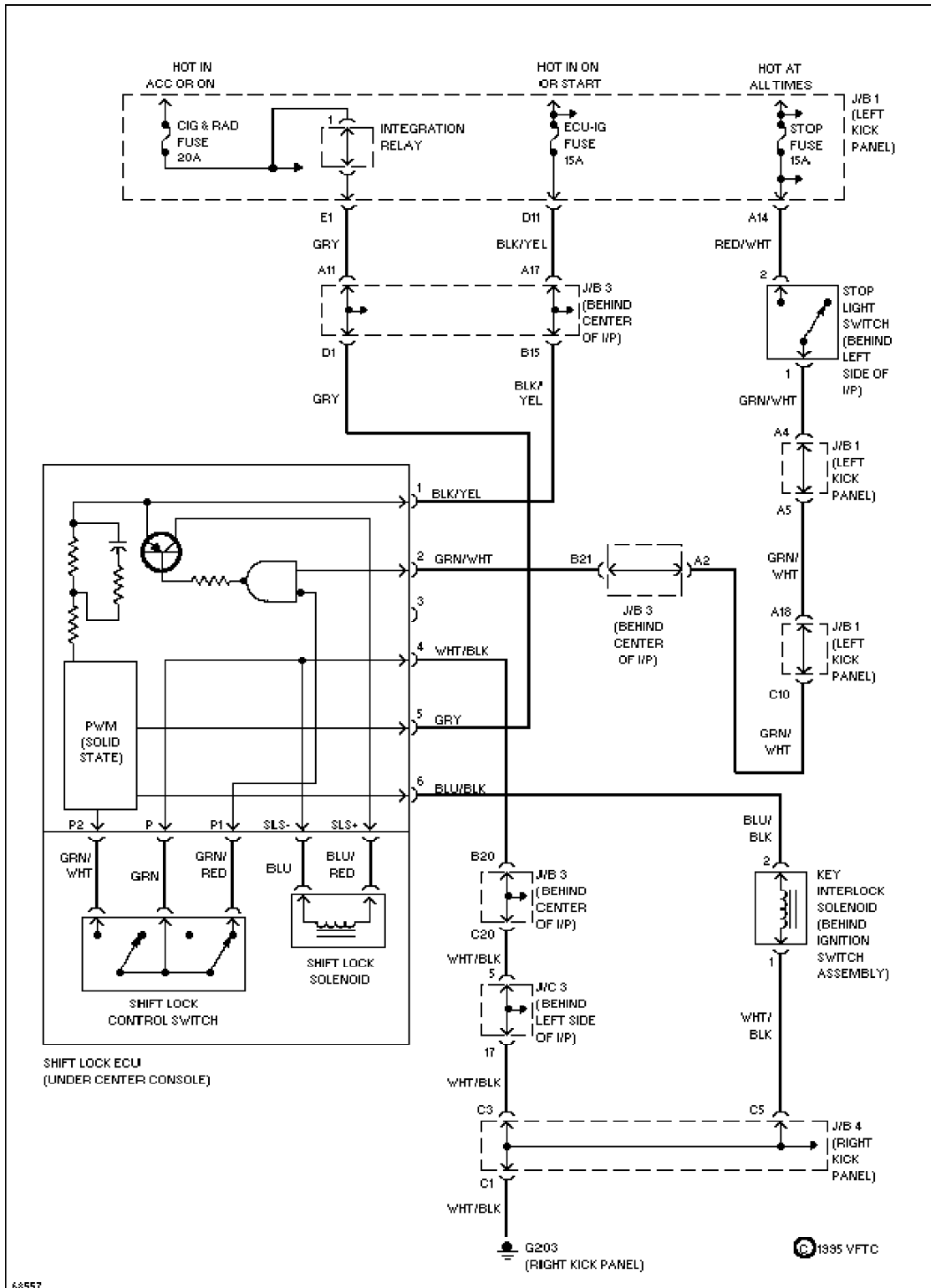


Fig. 8: Shift Interlock System Wiring Diagram (Corolla)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

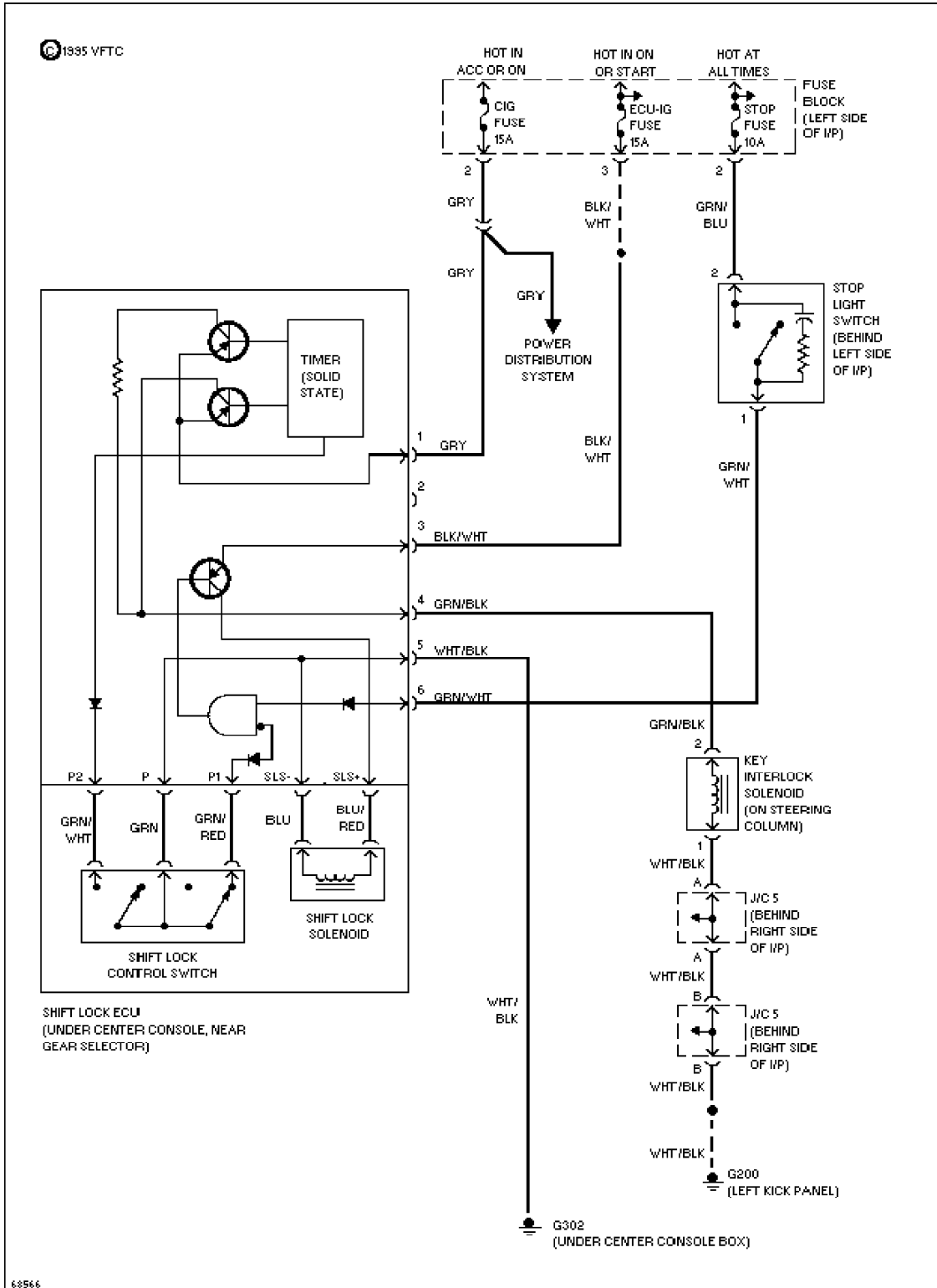


Fig. 9: Shift Interlock System Wiring Diagram (Land Cruiser)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

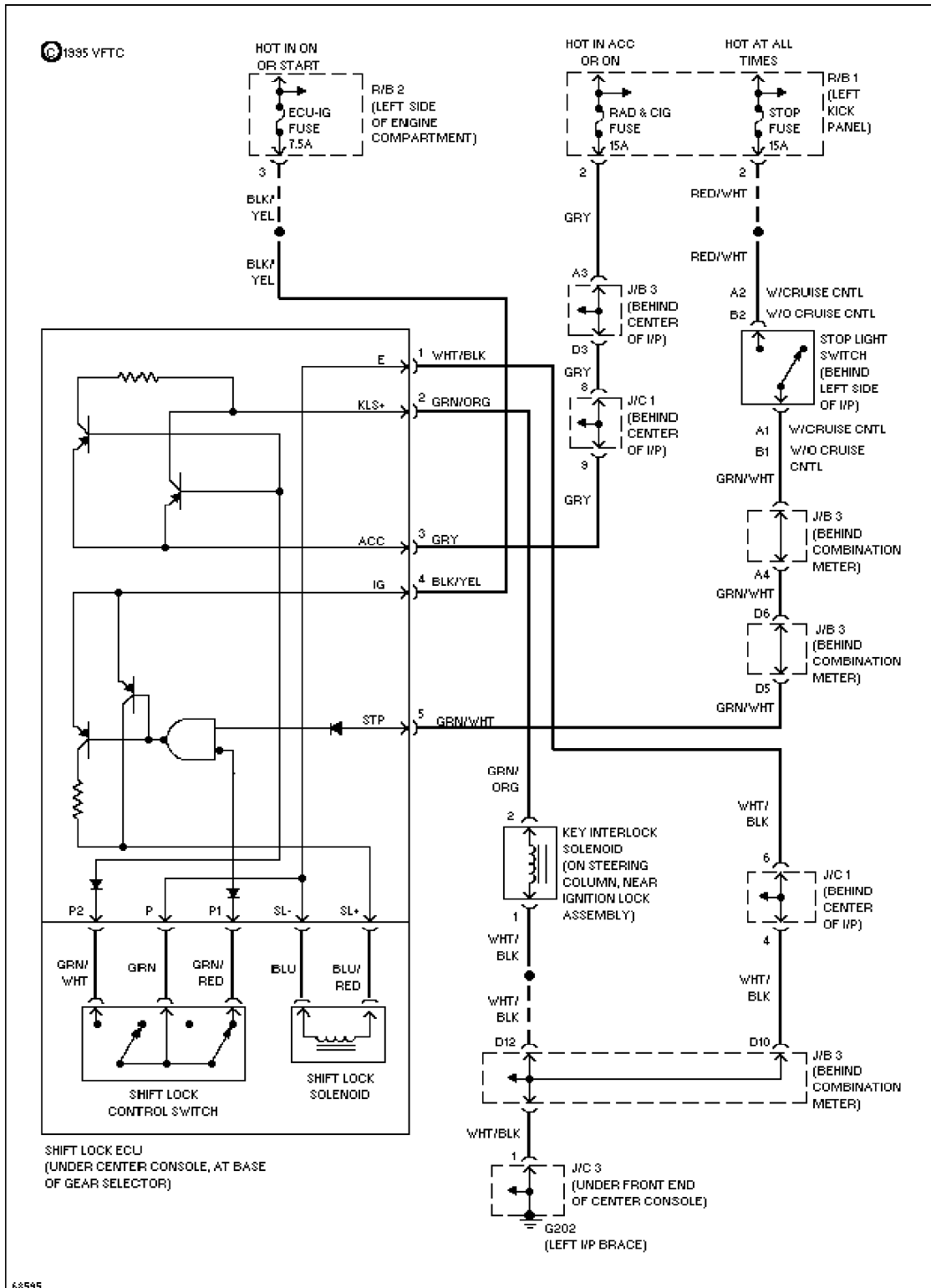


Fig. 10: Shift Interlock System Wiring Diagram (MR2)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

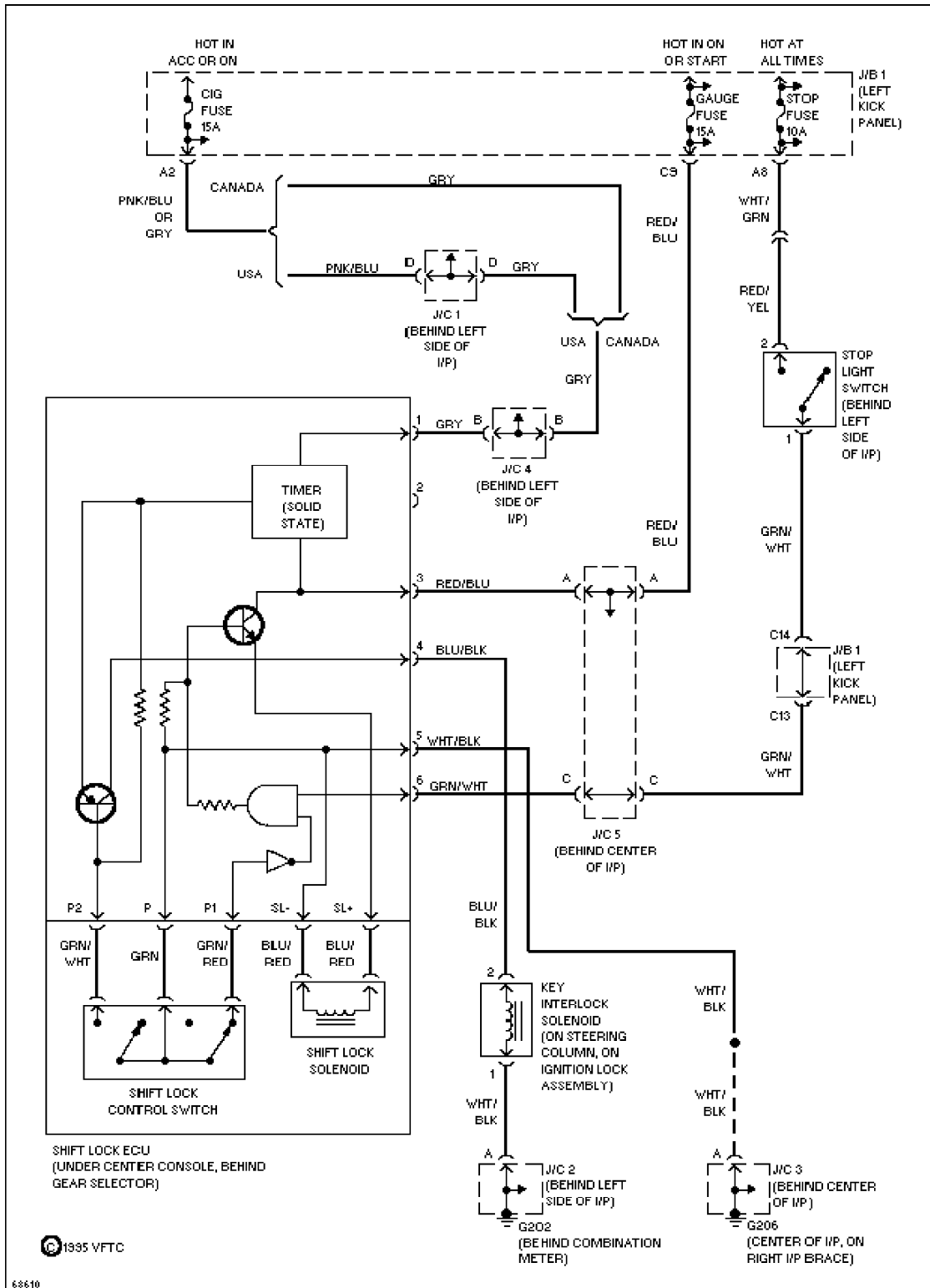


Fig. 11: Shift Interlock System Wiring Diagram (Paseo)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

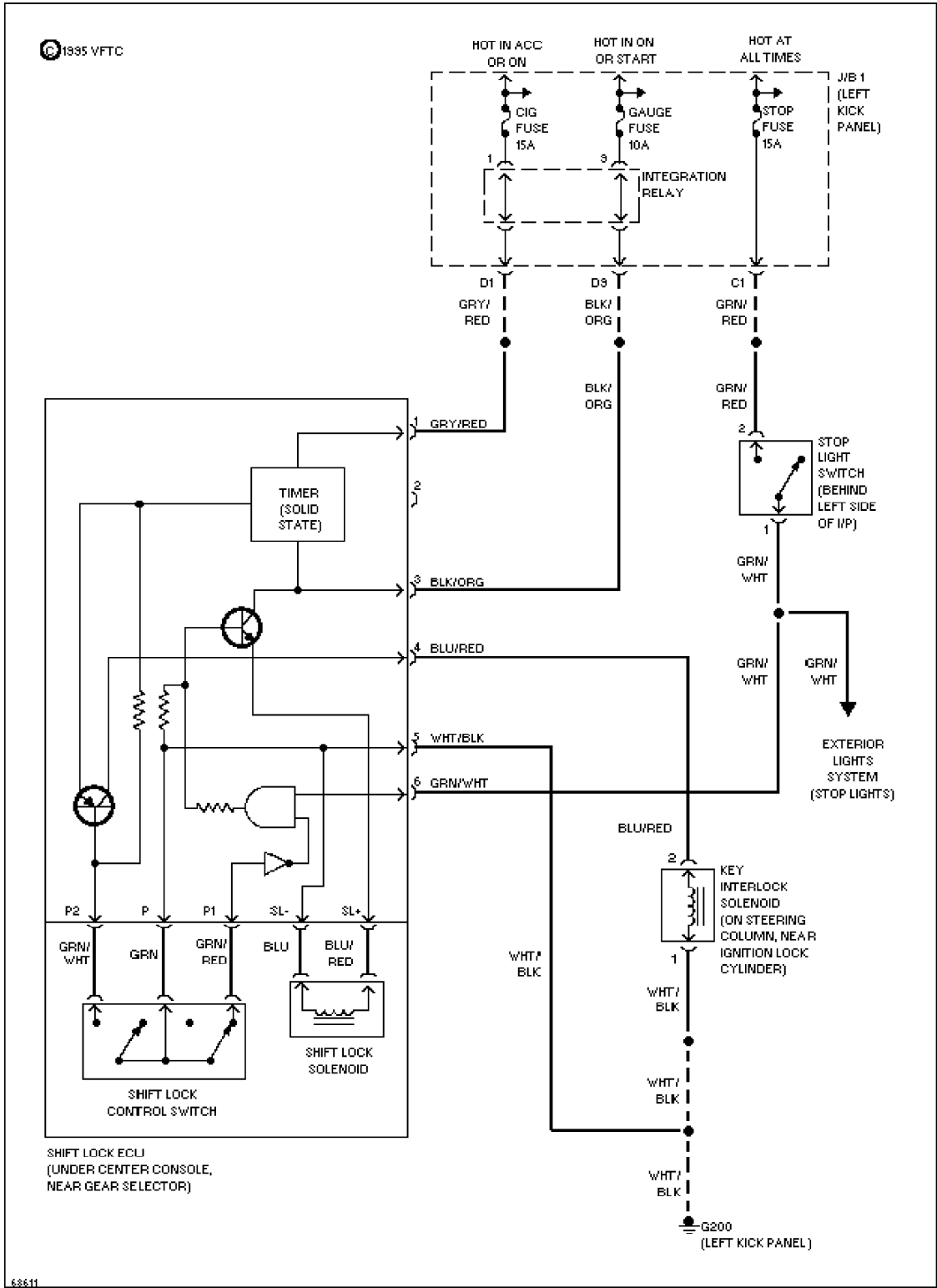


Fig. 12: Shift Interlock System Wiring Diagram (Pickup)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

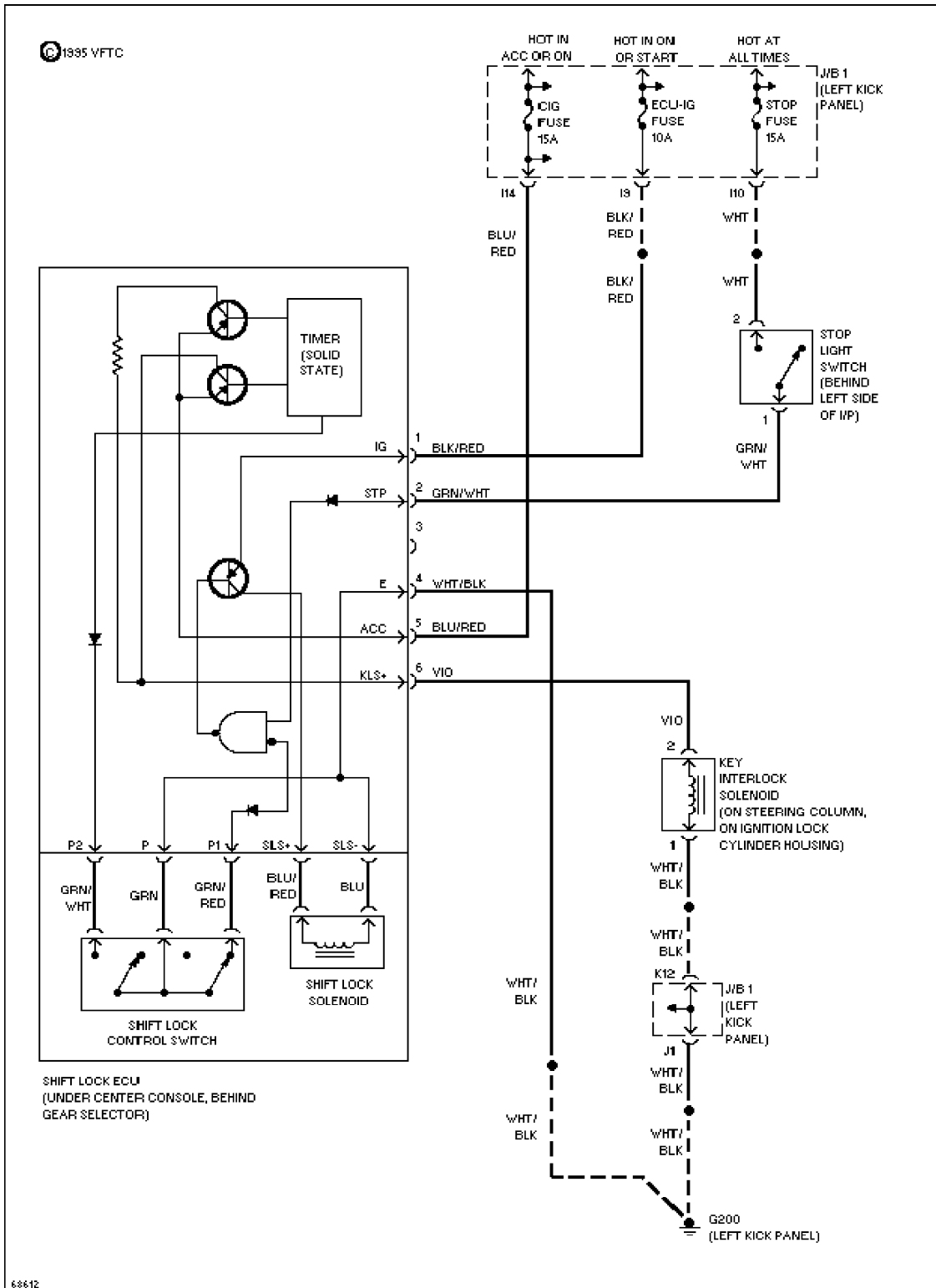


Fig. 13: Shift Interlock System Wiring Diagram (Supra)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

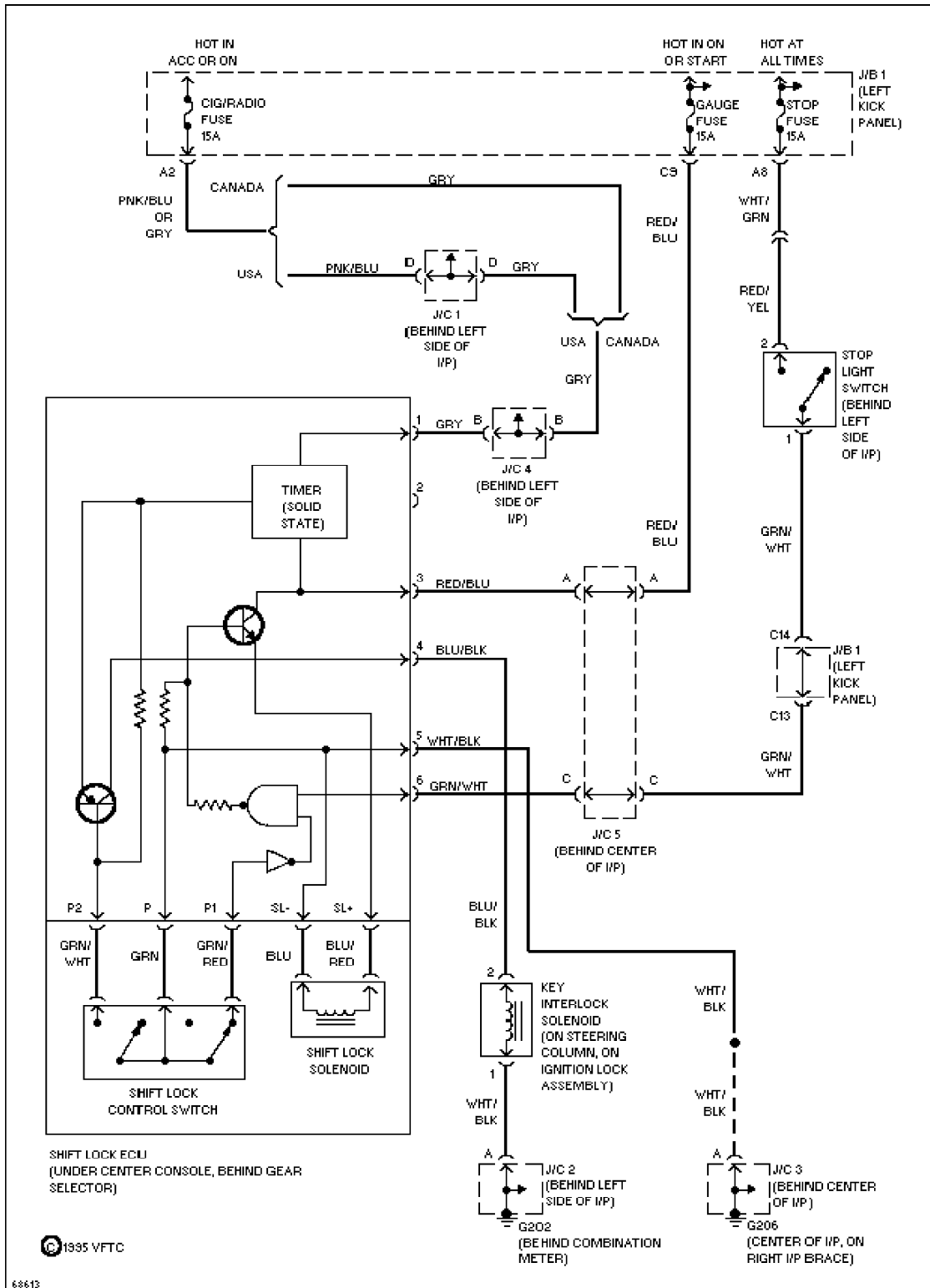


Fig. 14: Shift Interlock System Wiring Diagram (Tercel)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

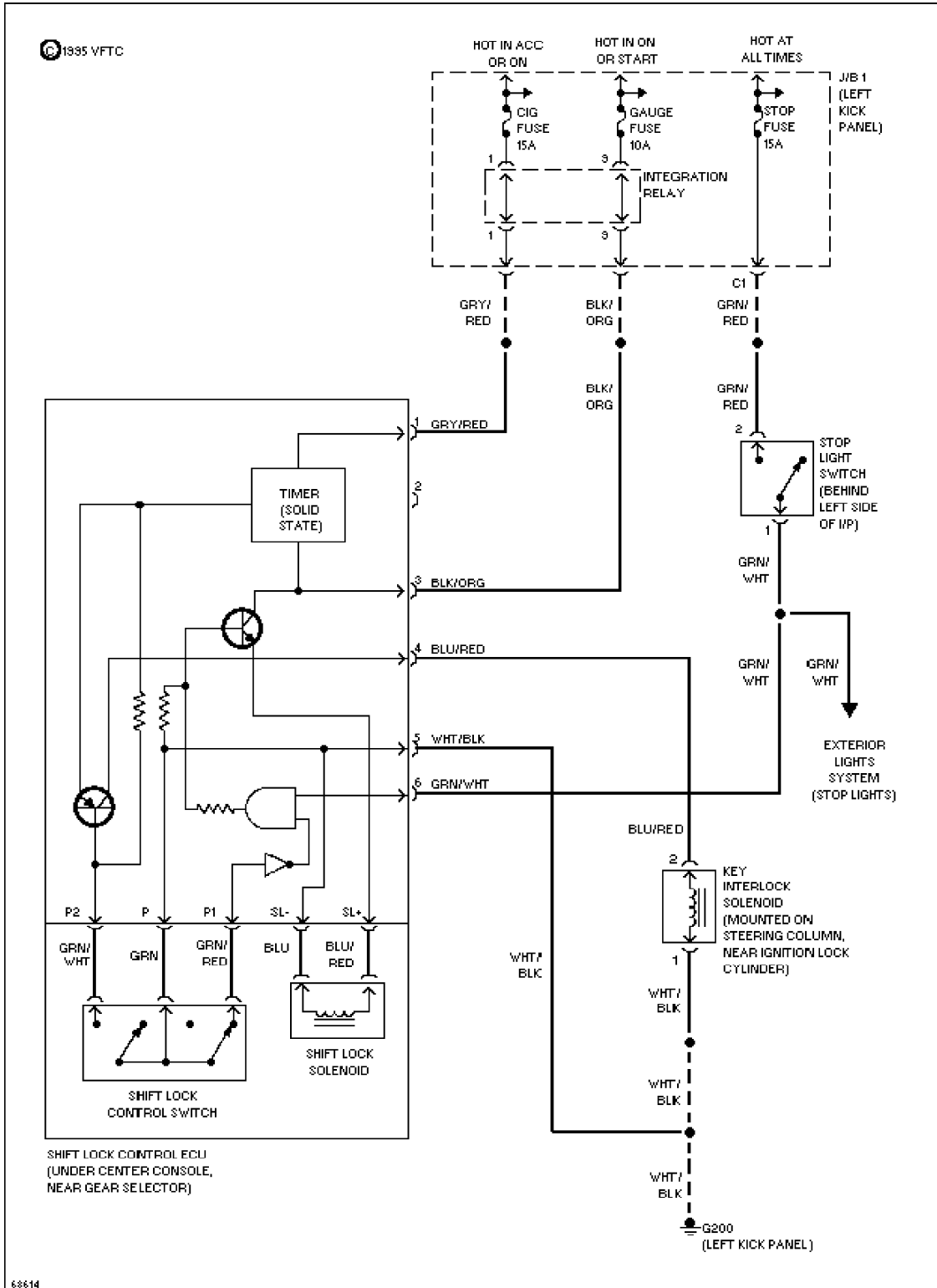


Fig. 15: Shift Interlock System Wiring Diagram (4Runner)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.