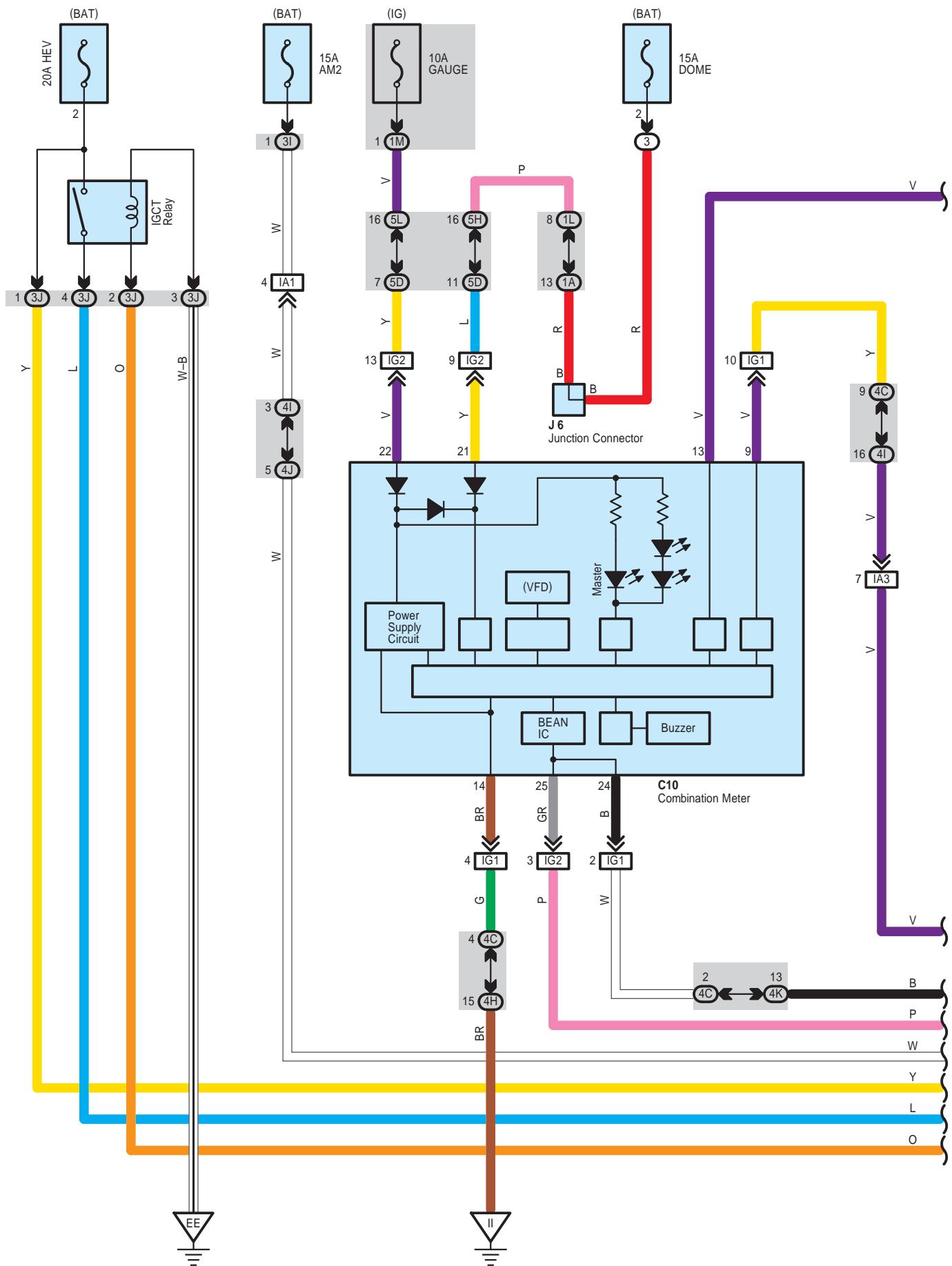
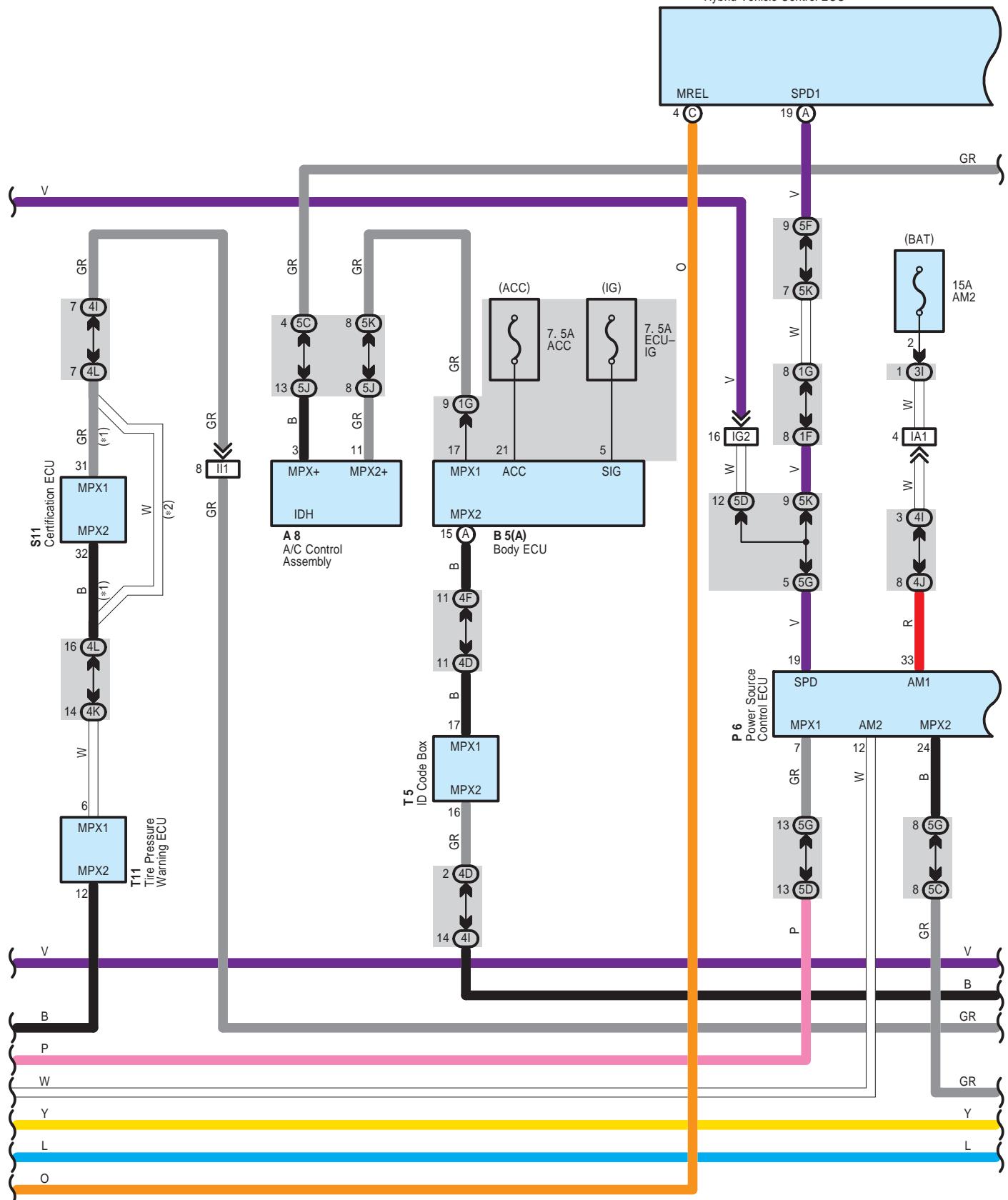


Shift Control System



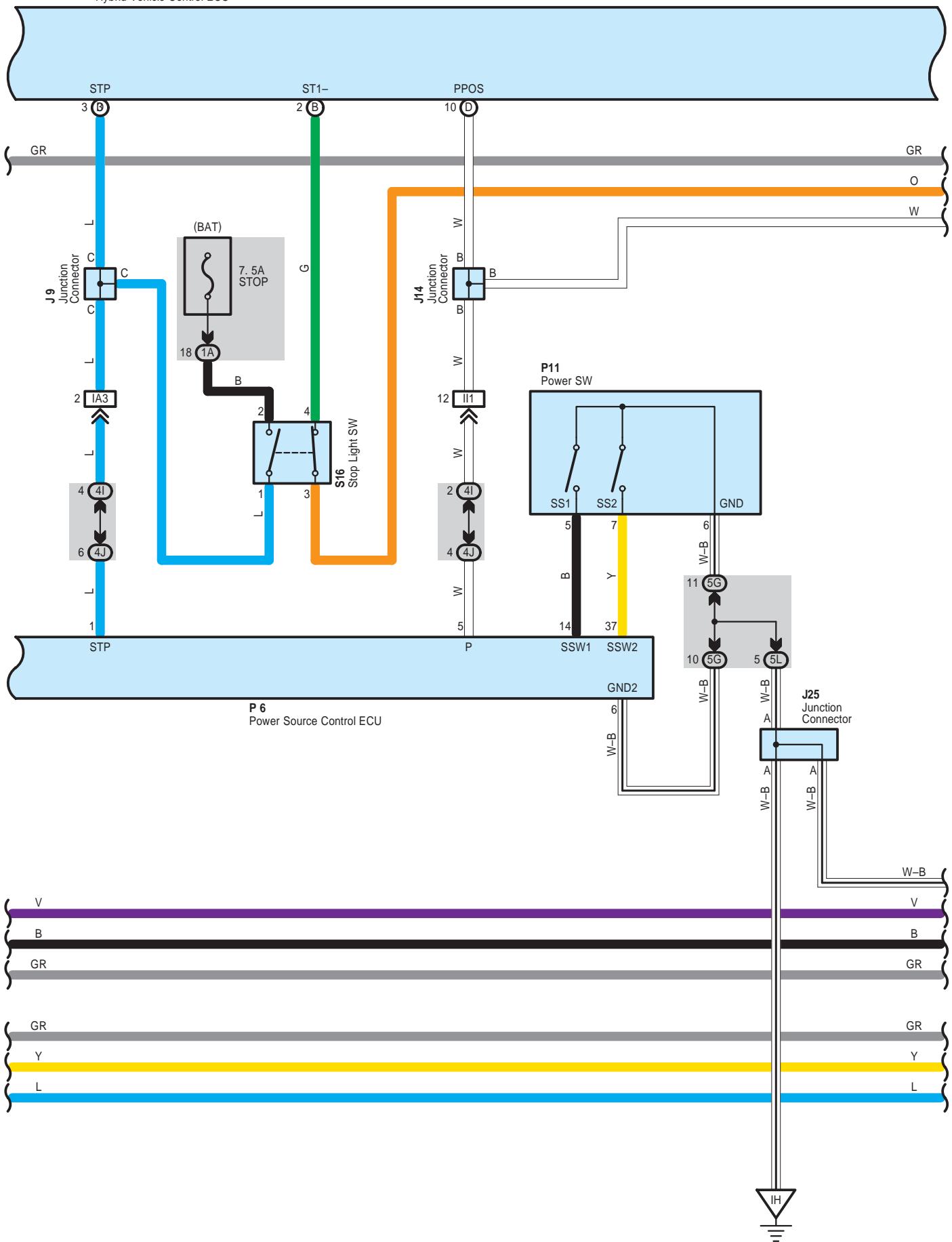
- * 1 : w/ Smart Key System
- * 2 : w/o Smart Key System

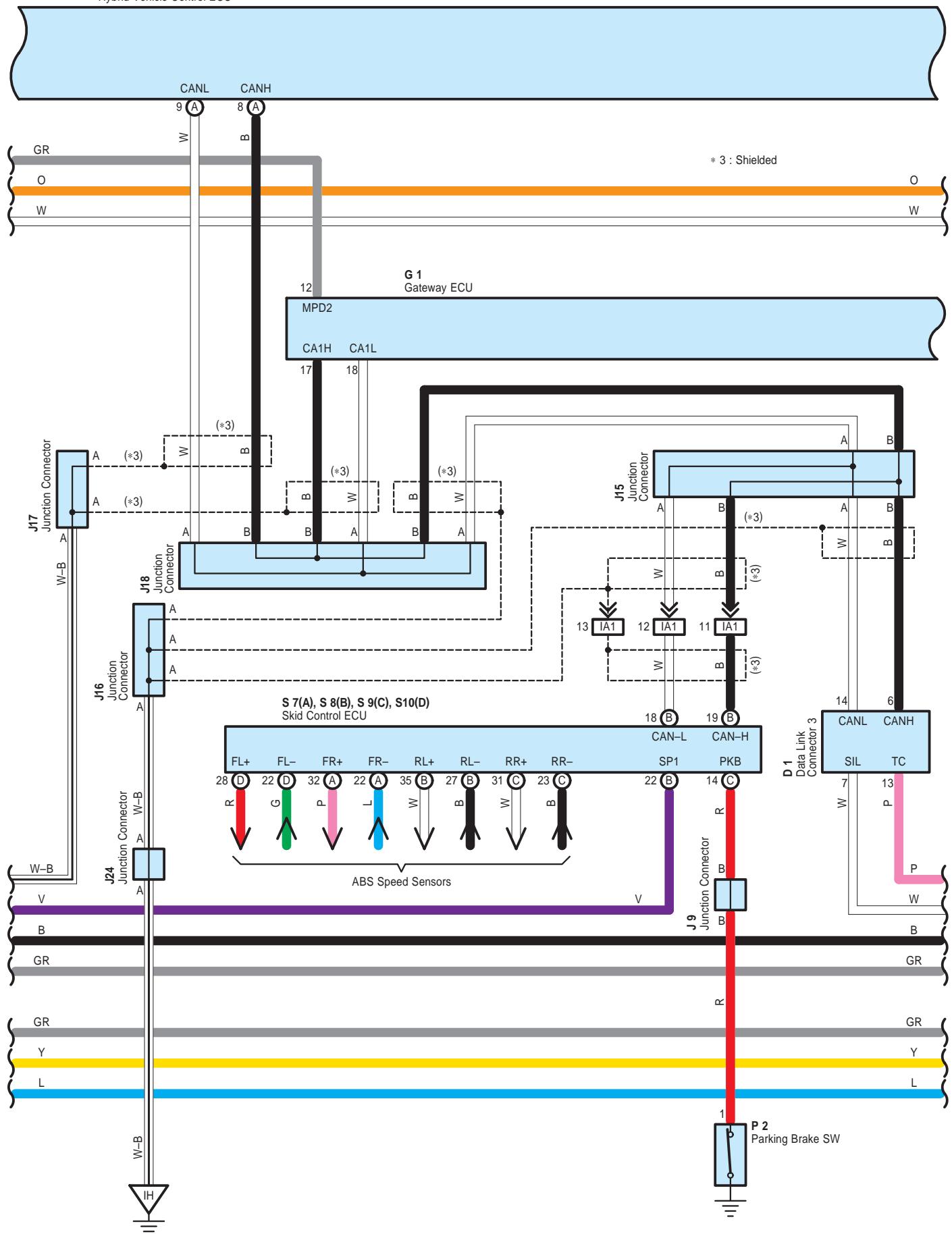
H14(A), H15(B), H16(C), H17(D) Hybrid Vehicle Control ECU



Shift Control System

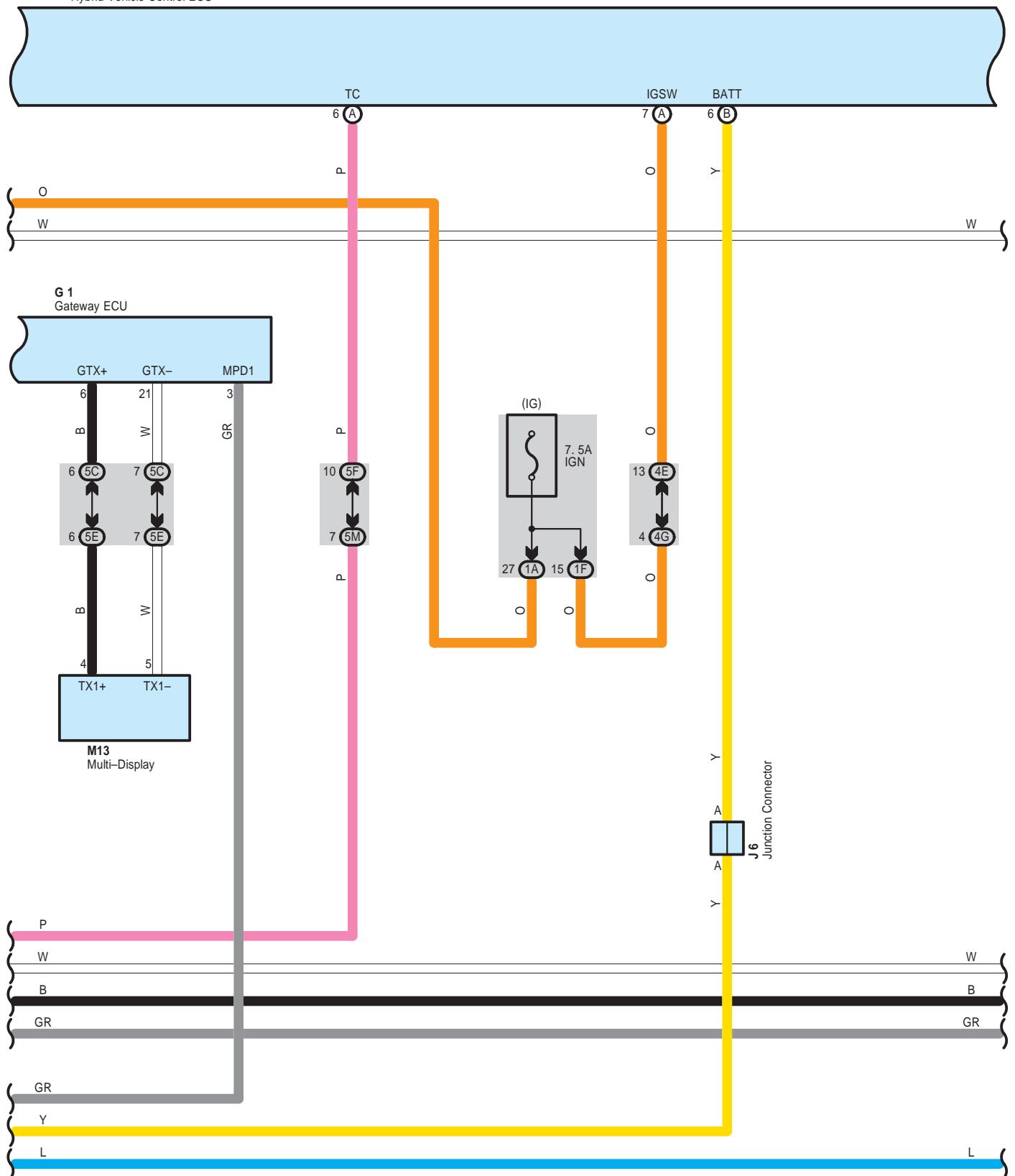
H14(A), H15(B), H16(C), H17(D) Hybrid Vehicle Control ECU

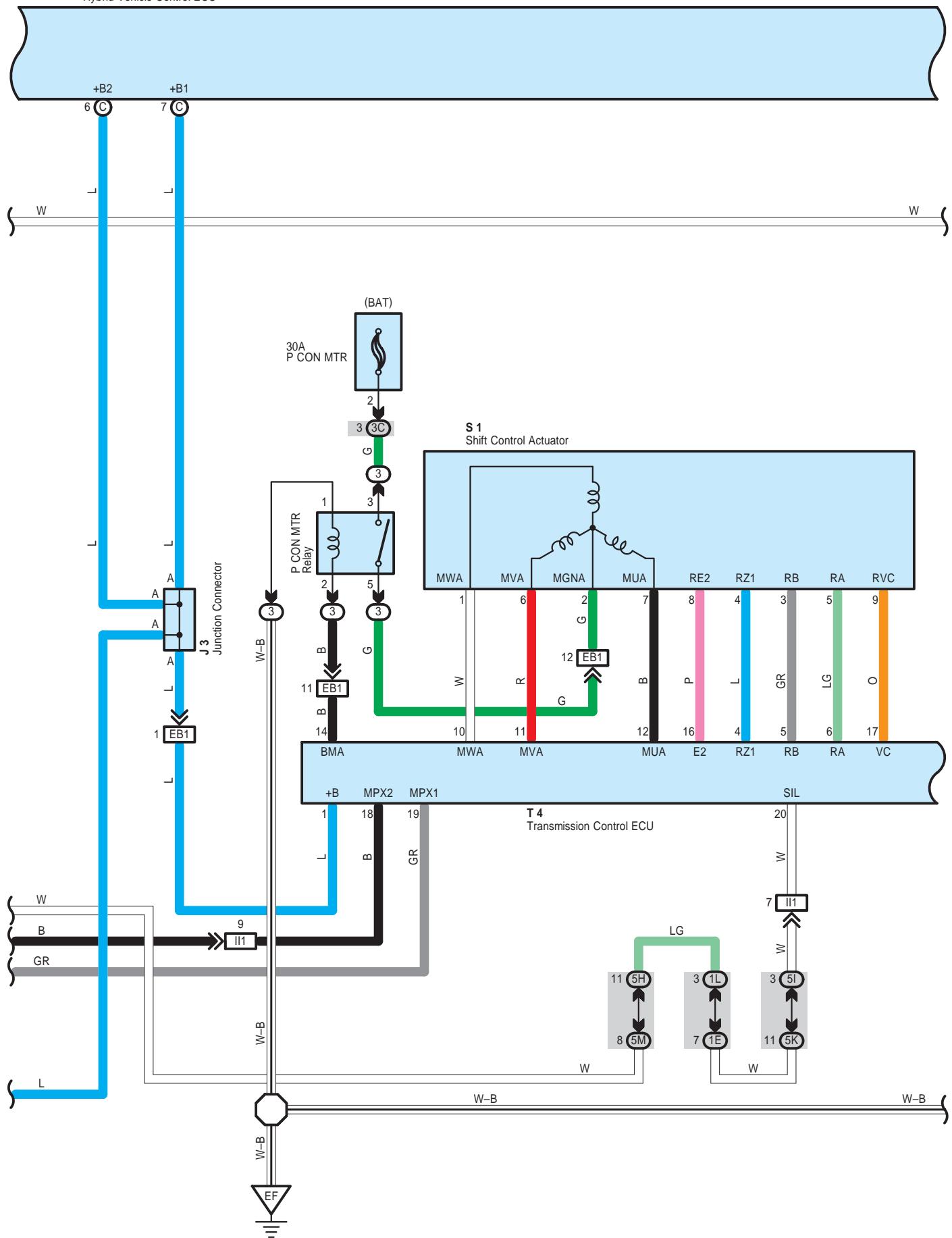




Shift Control System

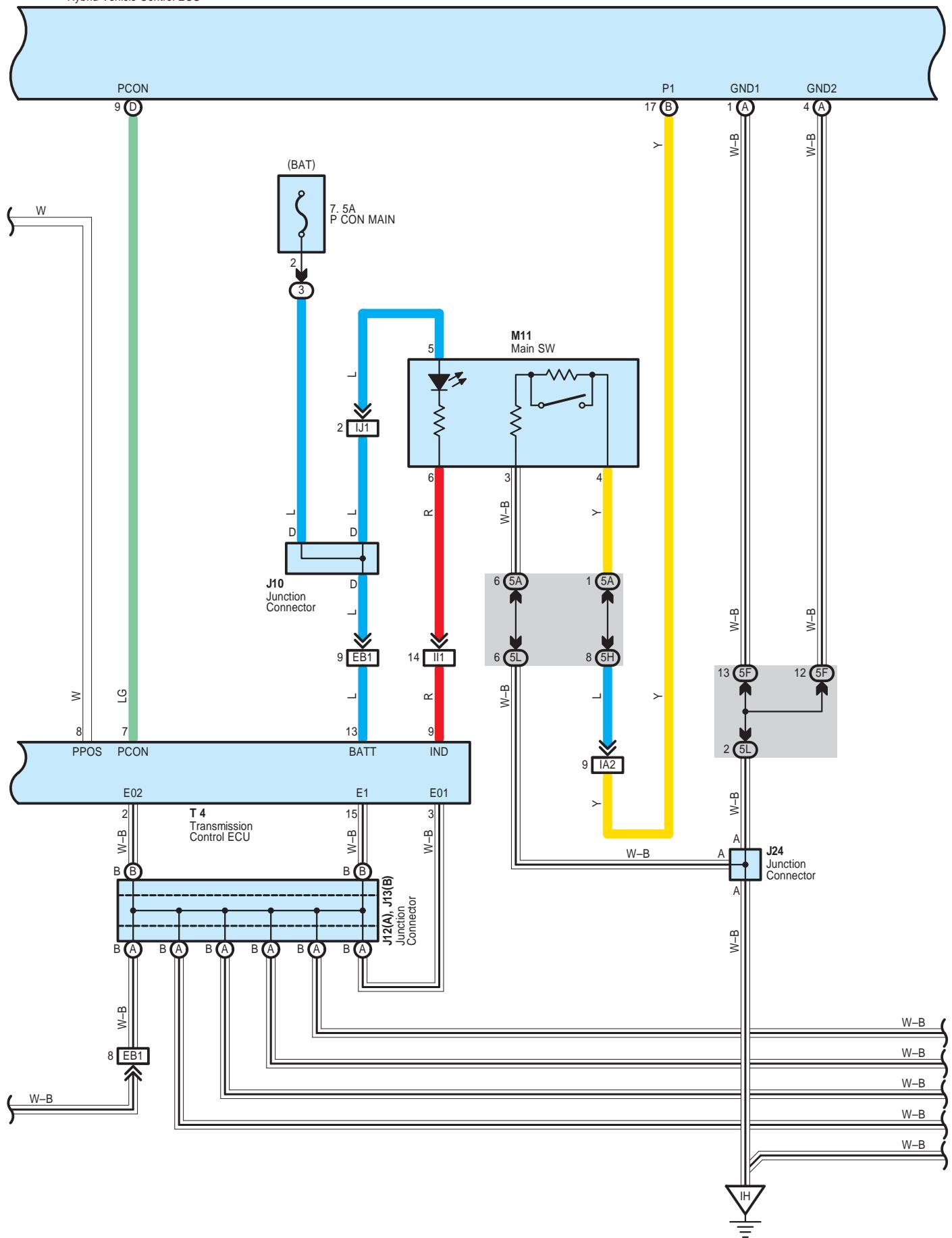
H14(A), H15(B), H16(C), H17(D)
Hybrid Vehicle Control ECU

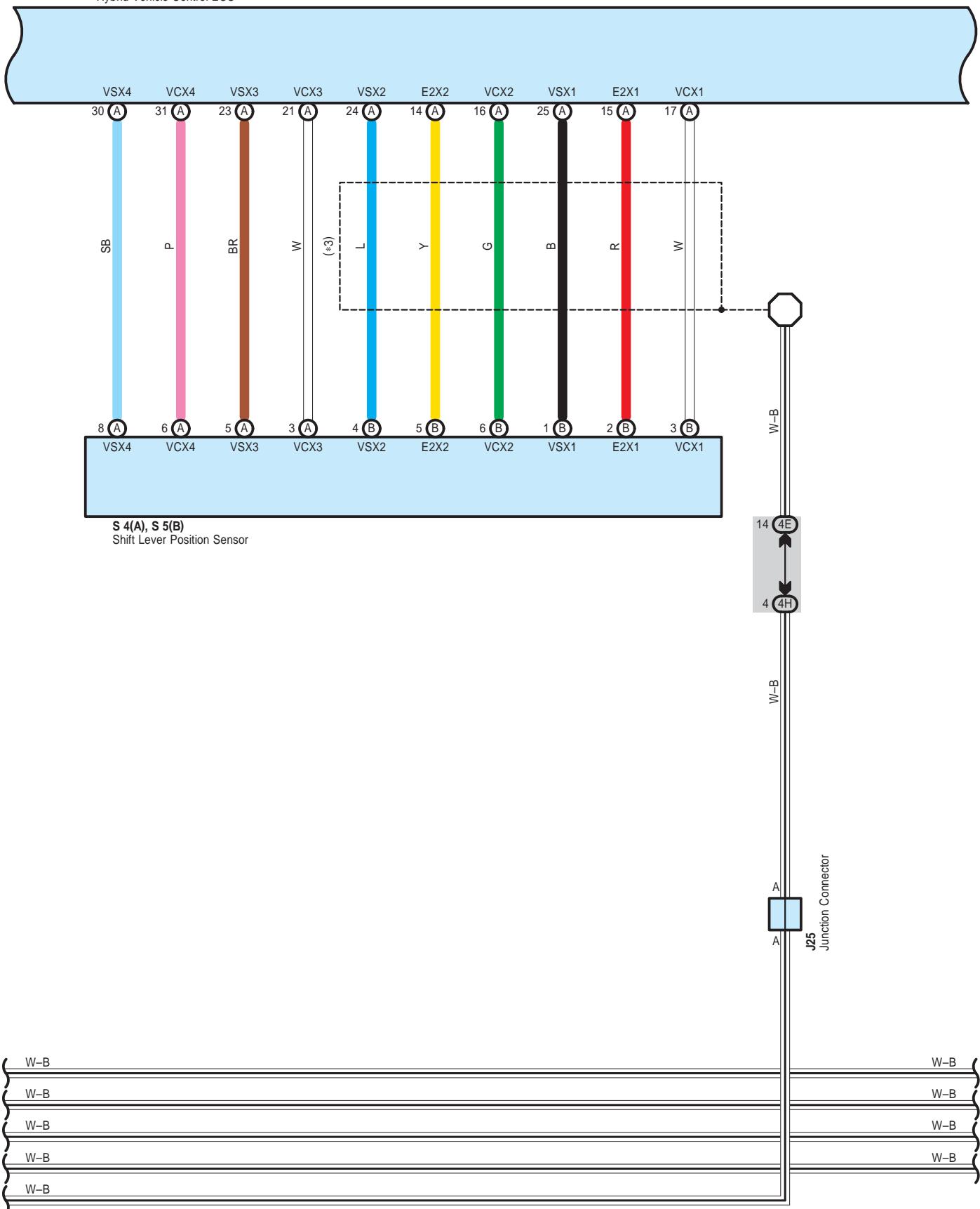




Shift Control System

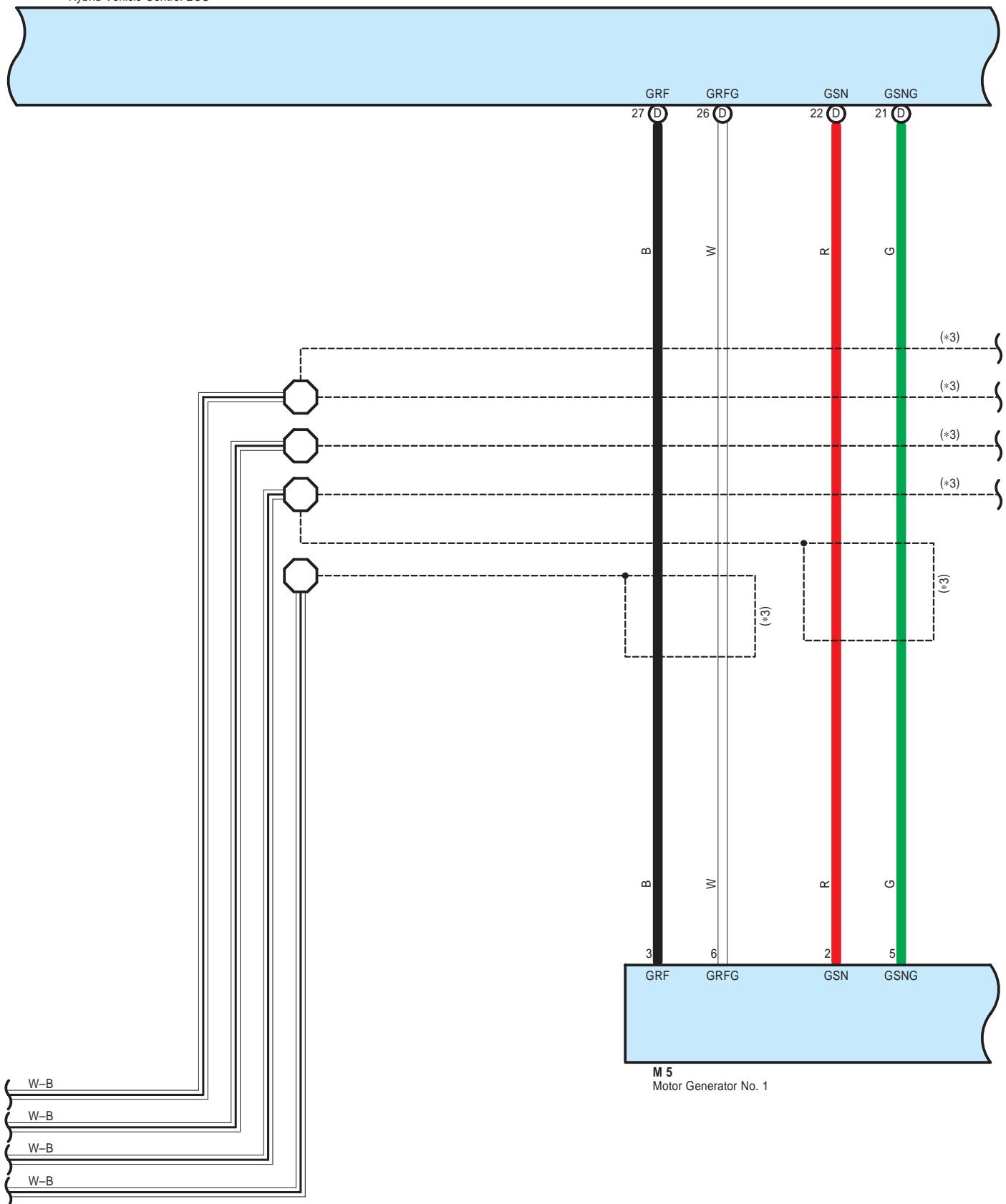
H14(A), H15(B), H16(C), H17(D)
Hybrid Vehicle Control ECU

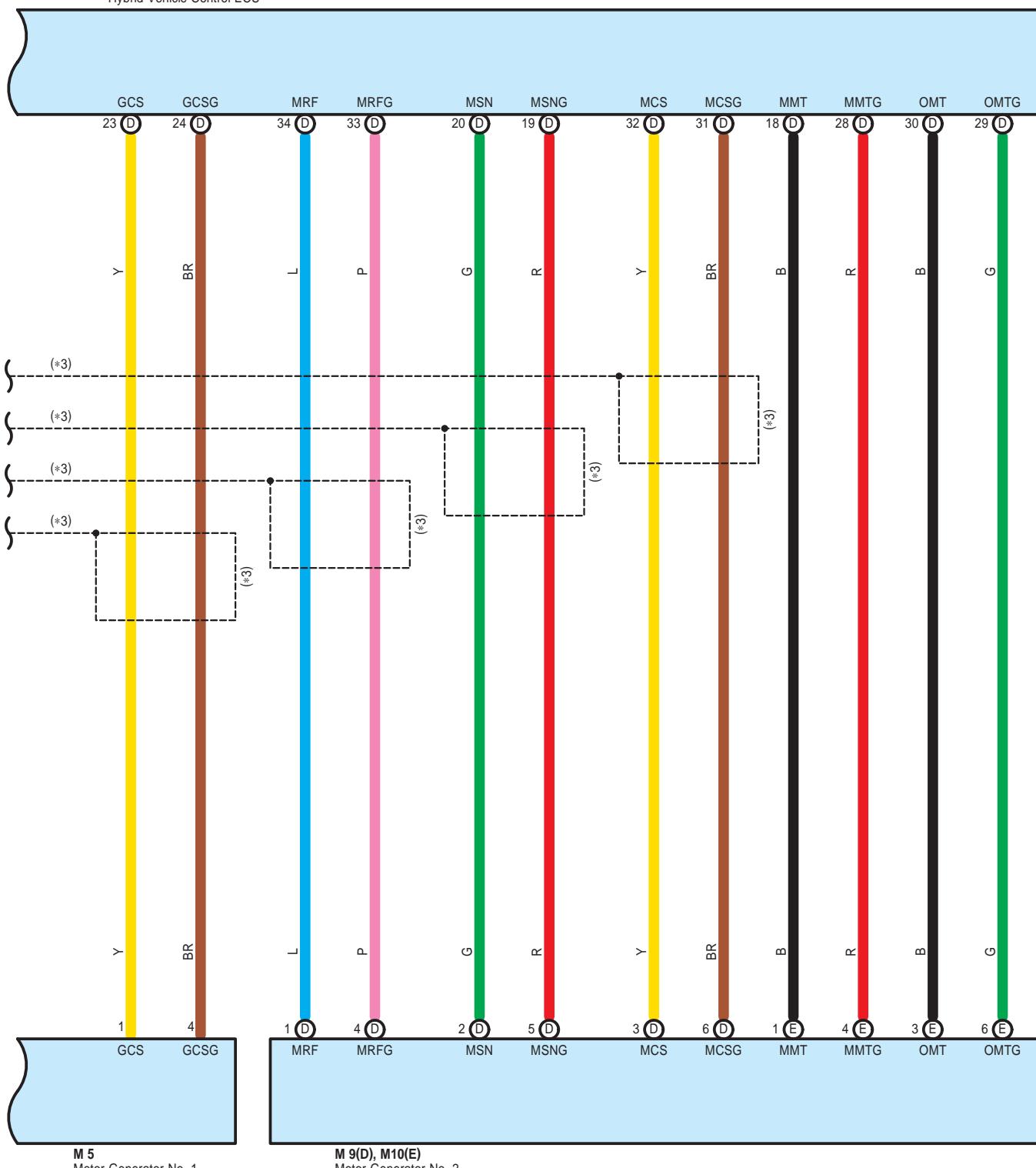




Shift Control System

H14(A), H15(B), H16(C), H17(D)
Hybrid Vehicle Control ECU





M 5
Motor Generator No. 1

M 9(D), M10(E)
Motor Generator No. 2

Shift Control System

System Outline

Under this system, operating signal of shift lever is sent to hybrid vehicle control ECU to control hybrid motor, which changes shift positions (R, N, D, B) electrically. When shift is put in P position, transmission control ECU receives operating signal from hybrid vehicle control ECU and activates parking lock electrically.

1. Shift Range Change Function

Gear can be shifted to any shift range under condition when vehicle can drive except when reject function is in operation. When vehicle cannot drive with power SW at IG ON position, gear can be shifted only to P and N position. When vehicle cannot drive with power SW at ACC ON position, gear can be shifted only to P position. When power SW is at OFF position, gear cannot be shifted to any position. When main SW is operated at vehicle stop after starting hybrid system, gear is automatically changed to P position from any other gear position and turns off power supply.

2. Reject Function

Changing gear may not effect to change position under certain vehicle condition. Under such condition, warning buzzer of combination meter sounds to show the rejection and call for driver's attention. Followings are shift operations and shift position conditions under which reject function is activated.

- * When gear is shifted from P position to other position without applying brake pedal, gear stays in P position.
- * Main SW cannot put gear in P position during driving but changes to N position.
- * Shift change to forward or backward during driving changes gear to N position.
- * When gear is changed from other position than D position to B position, gear is changed to N position automatically.

3. Combination Meter Indication

The combination meter shows present shift position. Other shift positions than D or B position are not shown in lighting in the combination meter. This is to avoid unnecessary shifting operation to B position from other shift position except D position.

4. Operation of Parking Lock

Operation signal from/to P position is sent from main SW or power SW to transmission control ECU through hybrid vehicle control ECU. At that time the transmission control ECU operates P CON MTR relay, activates parking lock actuator with appropriate control of electric current, and lights up main SW when shift is at P position. If the system has abnormality on parking lock operation, it tells the system abnormality to the driver by lighting up master warning light on combination meter, displaying warning of the system abnormality on the multi-display, and blinking indicator light of main SW.

5. Operation at Electric Power OFF

Under electric power OFF, transmission control ECU receives signal from power source control ECU by multi-communication, and sends shift position information to hybrid vehicle control ECU. The hybrid vehicle control ECU sends signal to power source control ECU to tell whether it is right or wrong condition to turn off electric power. Accepted conditions for electric power OFF are as follows;

- * When hybrid vehicle control ECU is not sending request signal for parking lock release with shift position in P position.
- * With shift position is at other position than P position, when hybrid vehicle control ECU is outputting signal that hybrid system is not running or request signal for parking lock.
- * When there is abnormal motor's not running condition with parking lock in operation, and hybrid system is not running and parking brake is being applied.

○ : Parts Location

Code	See Page	Code	See Page	Code	See Page		
A8	48	J13	B	50	P6	51	
B5	A	48	J14	50	P11	51	
C10	49	J15	50	S1	47		
D1	49	J16	50	S4	A	51	
G1	49	J17	50	S5	B	51	
H14	A	49	J18	50	S7	A	51
H15	B	49	J24	50	S8	B	51
H16	C	49	J25	50	S9	C	51
H17	D	49	M5	47	S10	D	51
J3	47	M9	D	47	S11	51	
J6	50	M10	E	47	S16	51	
J9	50	M11	50	T4	51		
J10	50	M13	50	T5	51		
J12	A	50	P2	51	T11	51	

: Relay Blocks

Code	See Page	Relay Blocks (Relay Block Location)
3	22	Engine Room R/B (Engine Compartment Left)

: Junction Block and Wire Harness Connector

Code	See Page	Junction Block and Wire Harness (Connector Location)
1A	30	Engine Room Main Wire and Driver Side J/B (Lower Finish Panel)
1E		
1F	30	Instrument Panel Wire and Driver Side J/B (Lower Finish Panel)
1G		
1L	31	
1M		
3C	23	
3I	24	Engine Room Main Wire and Engine Room J/B (Engine Compartment Left)
3J		
4C		
4D		
4E		
4F		
4G		
4H		
4I		
4J		
4K		
4L		
5A		
5C		
5D		
5E		
5F		
5G		
5H		
5I		
5J		
5K		
5L		
5M		

: Connector Joining Wire Harness and Wire Harness

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
EB1	56	Engine Wire and Engine Room Main Wire (Inside of the Engine Room R/B)
IA1		
IA2	58	Engine Room Main Wire and Instrument Panel Wire (Upper Parts of Front Body Pillar LH)
IA3		
IG1	59	Instrument Panel Wire and Instrument Panel No.2 Wire (Behind the Combination Meter)
IG2		
II1	59	Engine Wire and Instrument Panel Wire (Behind the Glove Box)
IJ1	59	Engine Room Main Wire and Instrument Panel Wire (Behind the Glove Box)

Shift Control System



: Ground Points

Code	See Page	Ground Points Location
EE		
EF	56	Left Side of the Suspension Tower
IH	58	Cowl Side Panel LH
II	58	Instrument Panel Brace LH

