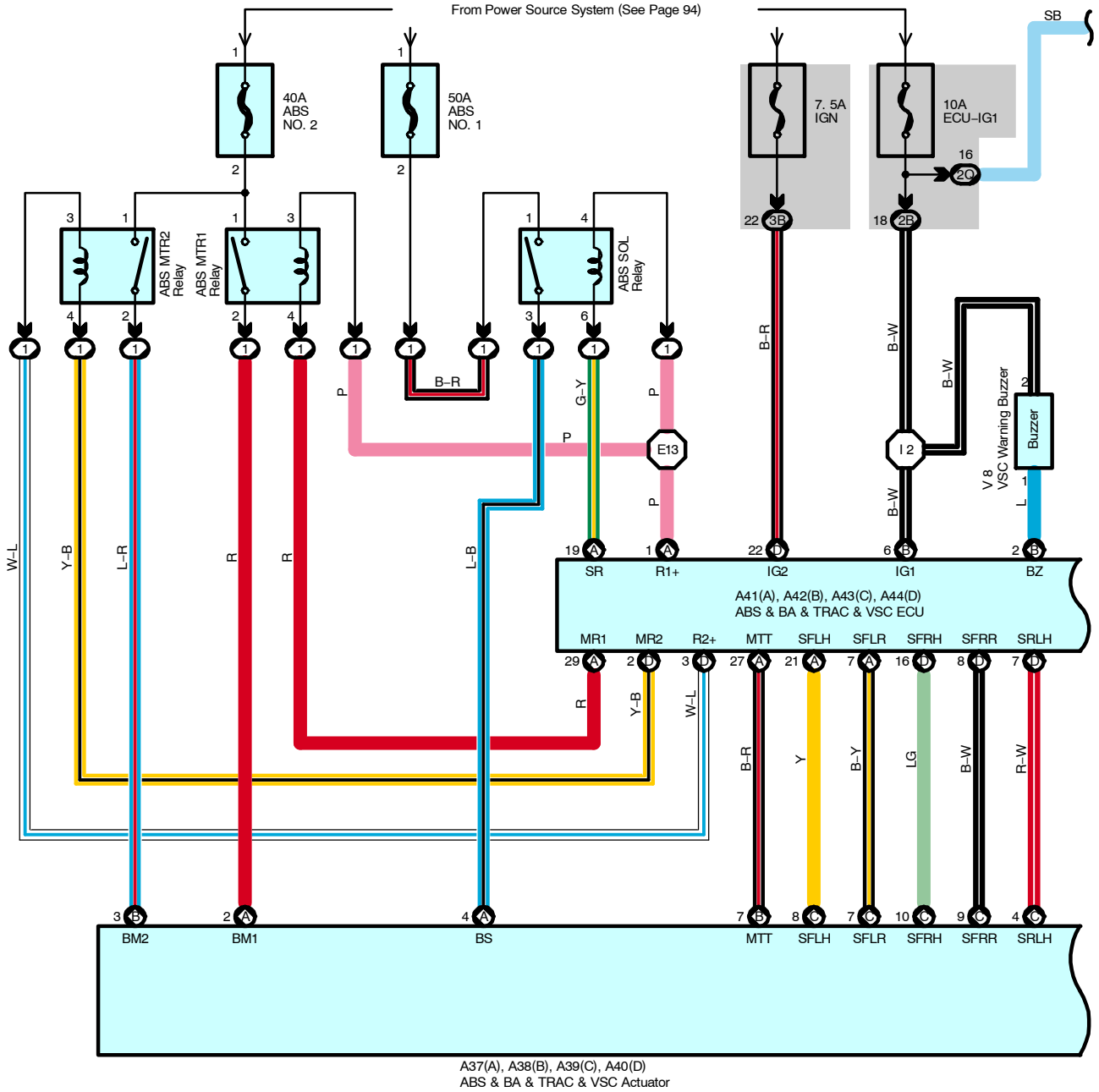
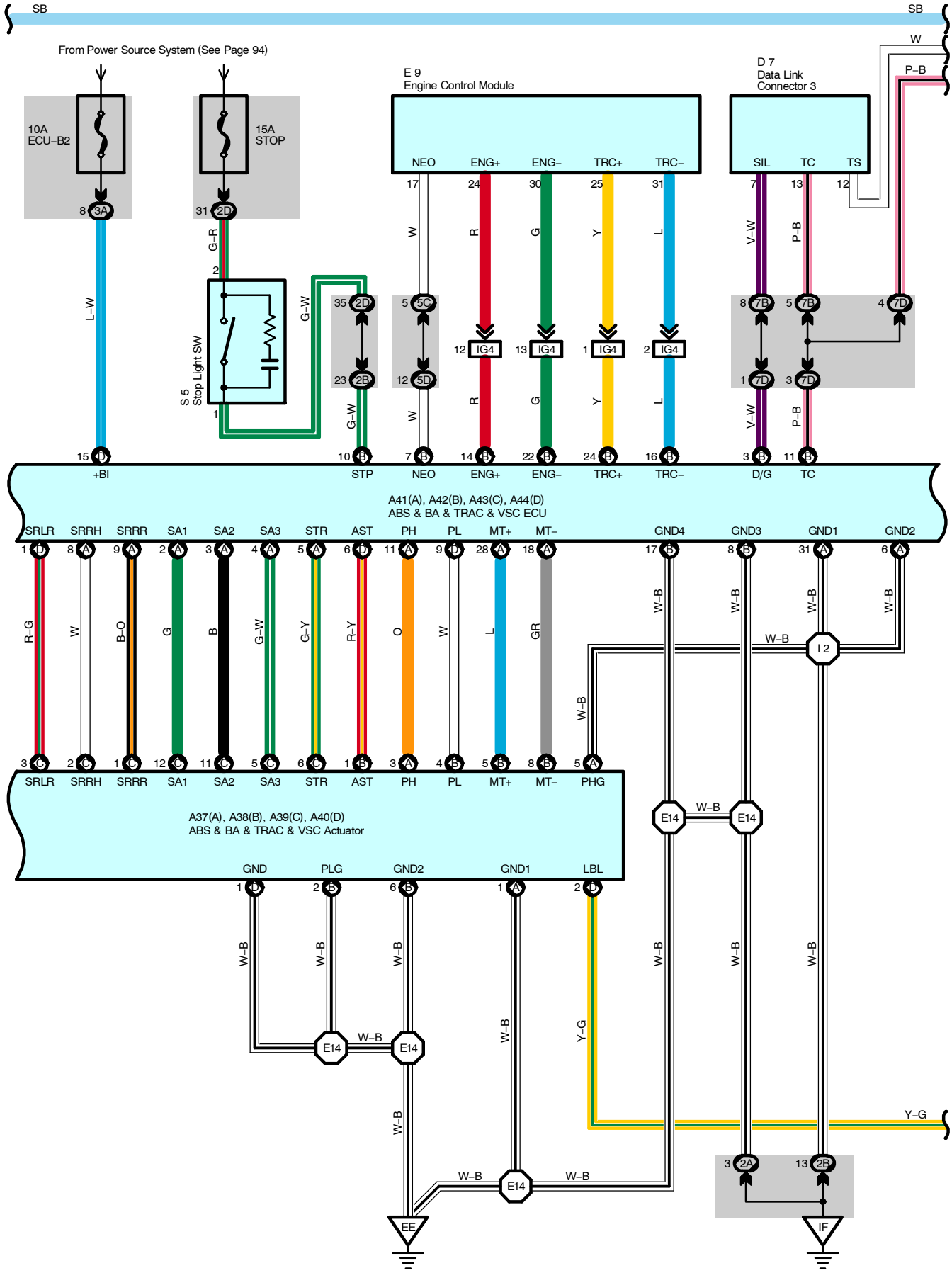
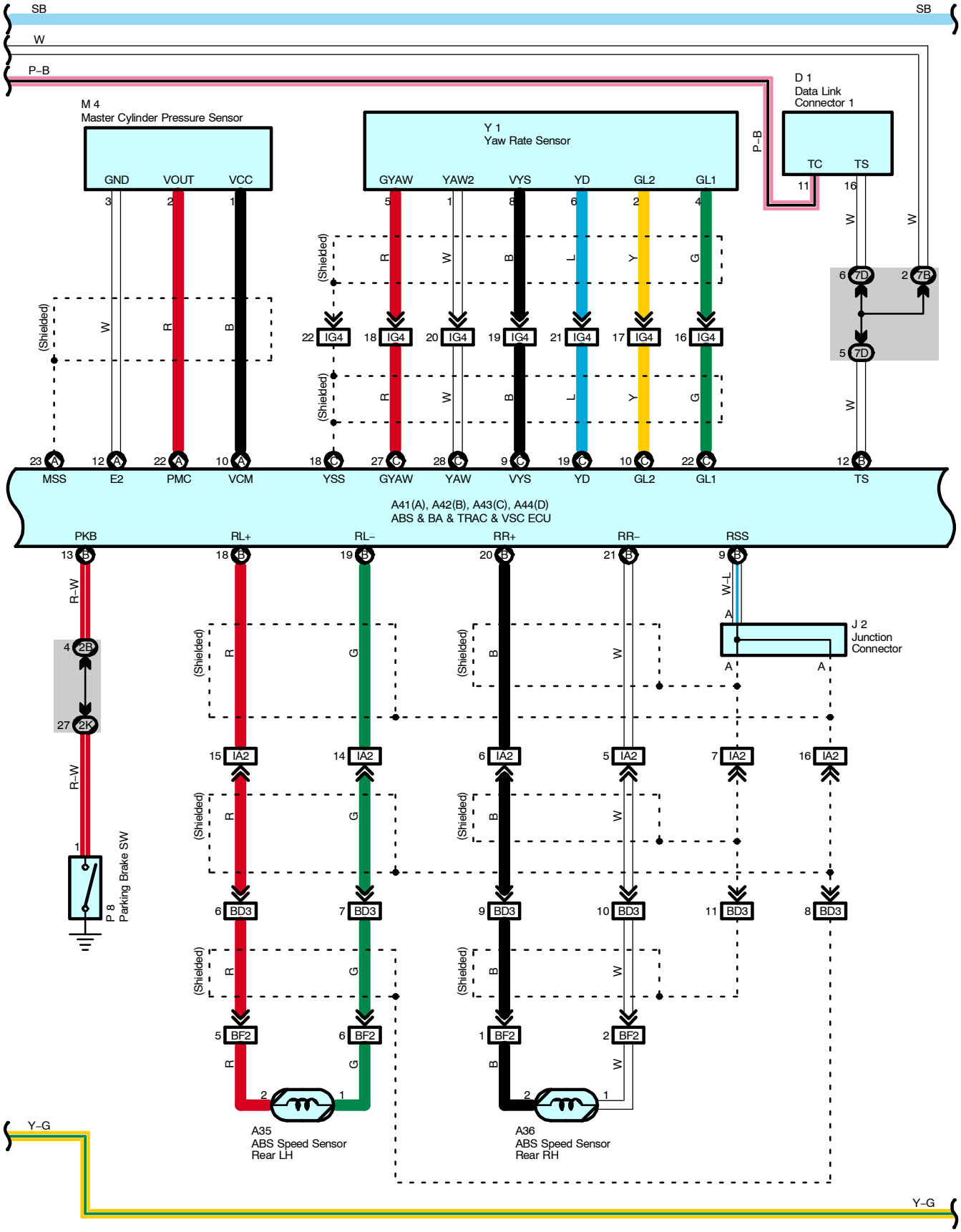
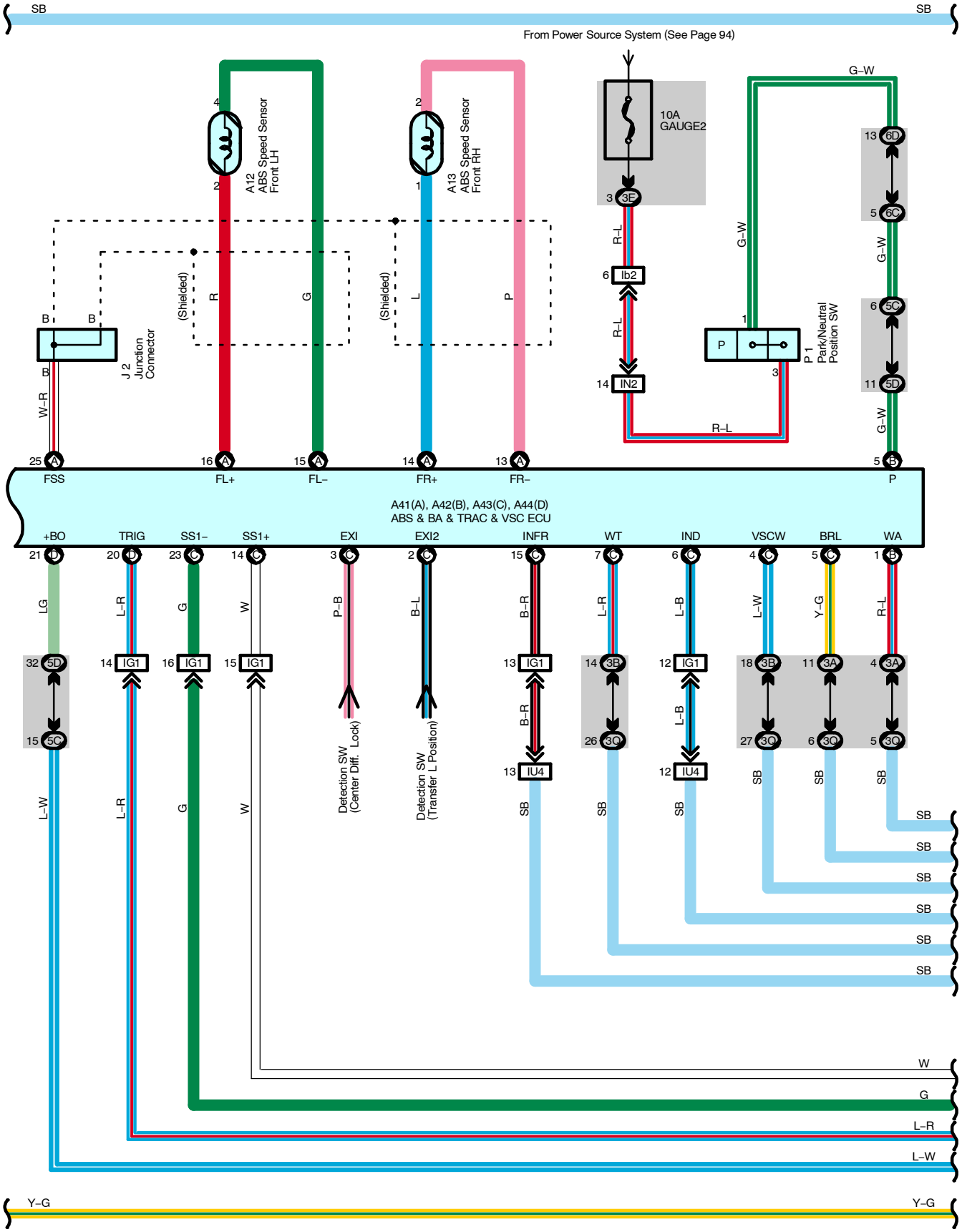
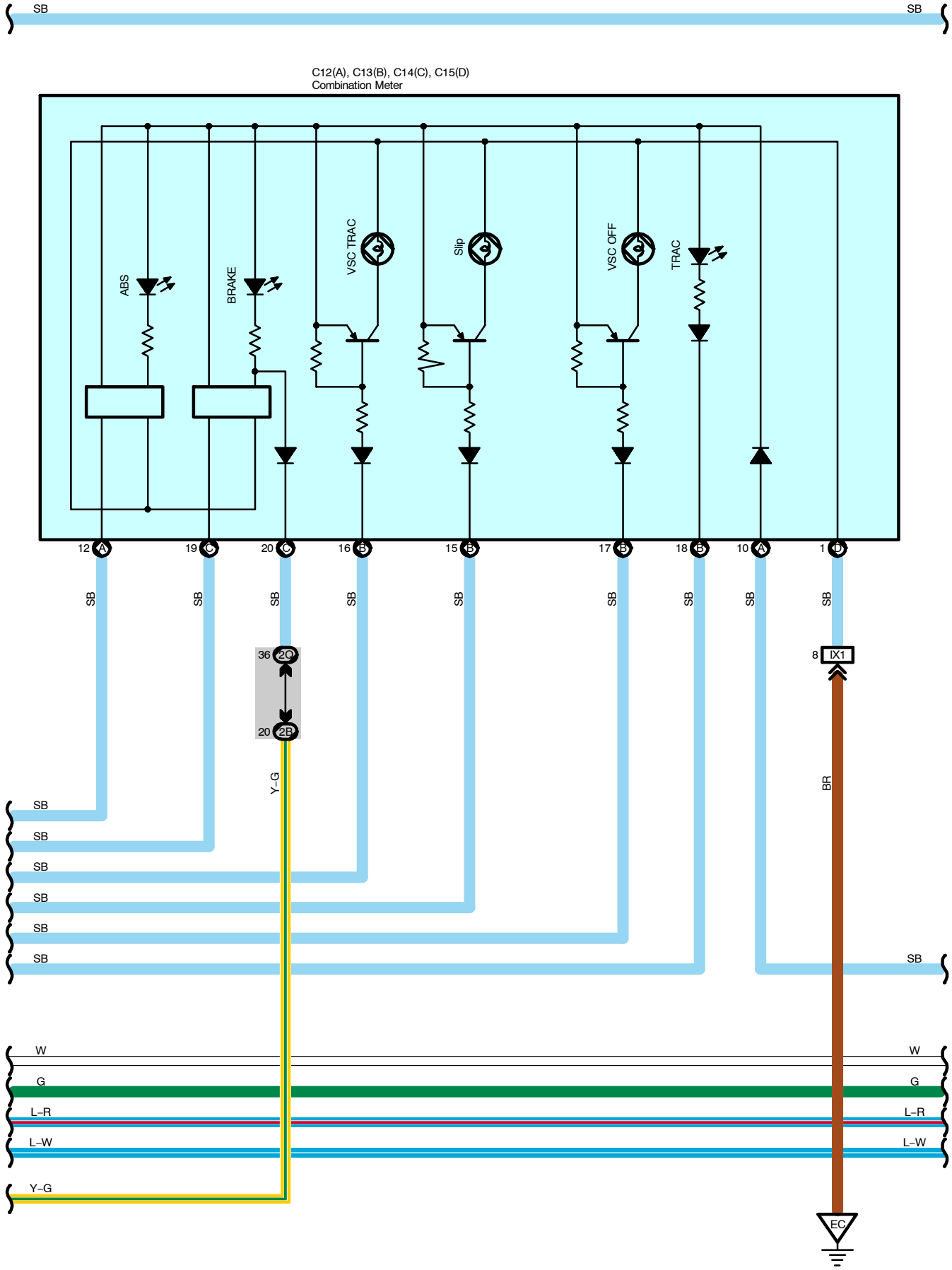
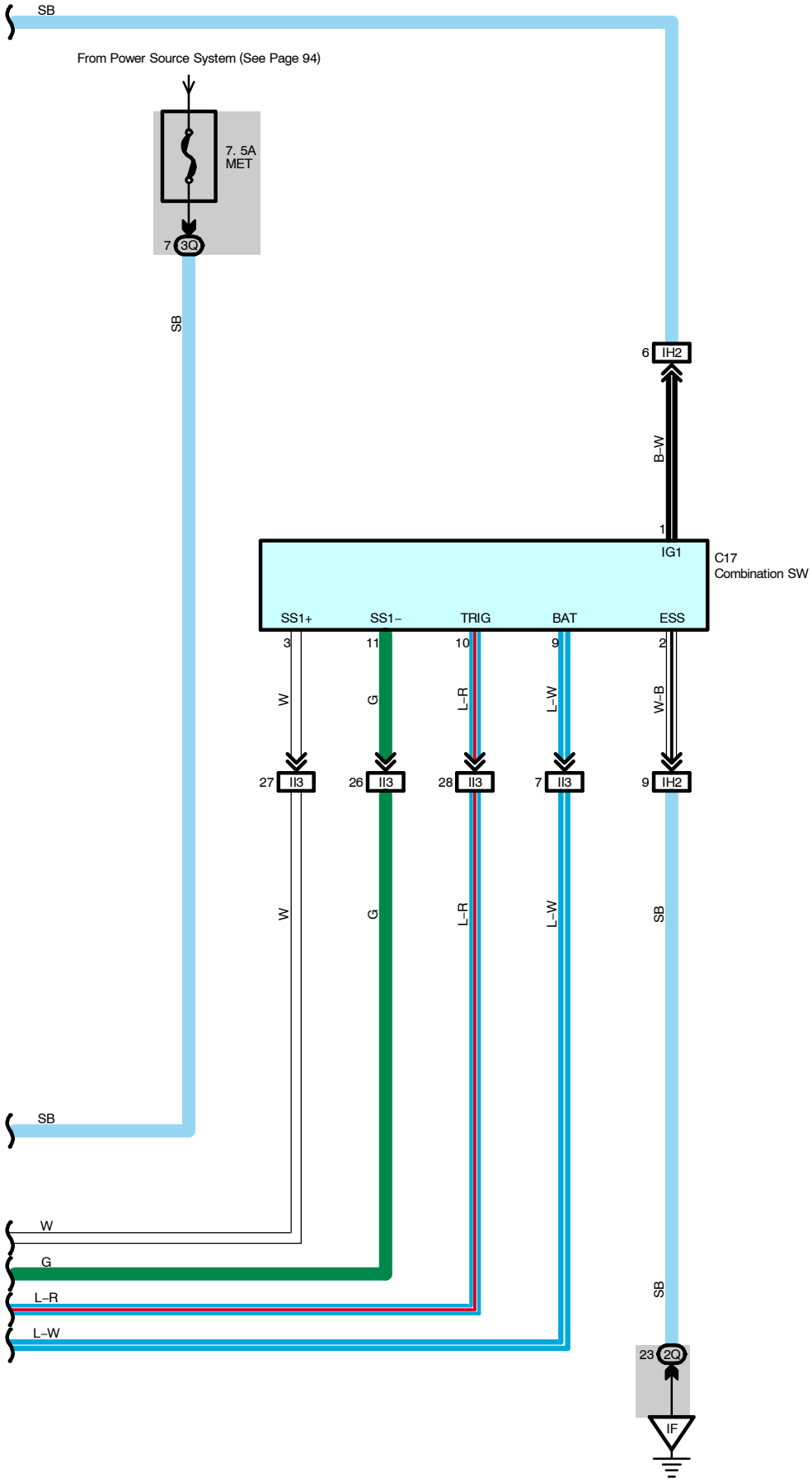

From Power Source System (See Page 94)
40A ABS NO. 2
50A ABS NO. 1
7. 5A IGN
10A ECU–IG1
SB
ABS MTR2 Relay
ABS MTR1 Relay
ABS SOL Relay
B–R
B–W
G–Y
P
E13
V 8 VSC Warning Buzzer
Buzzer
W–L
Y–B
L–R
R
L–B
L
SR
R1+
IG2
IG1
BZ
A41(A), A42(B), A43(C), A44(D)
ABS & BA & TRAC & VSC ECU
MR1
MR2
R2+
MTT
SFLH
SFLR
SFRH
SFRR
SRLH
Y
B–Y
LG
R–W
BM2
BM1
BS
A37(A), A38(B), A39(C), A40(D)
ABS & BA & TRAC & VSC Actuator


SB
SB
W
P–B
From Power Source System (See Page 94)
10A
ECU–B2
15A
STOP
E 9
Engine Control Module
D 7
Data Link
Connector 3
NEO
ENG+
ENG–
TRC+
TRC–
SIL
TC
TS
L–W
G–R
G–W
S 5
Stop Light SW
V–W
P–B
+BI
STP
NEO
ENG+
ENG–
TRC+
TRC–
D/G
TC
A41(A), A42(B), A43(C), A44(D)
ABS & BA & TRAC & VSC ECU
SRLR
SRRH
SRRR
SA1
SA2
SA3
STR
AST
PH
PL
MT+
MT–
GND4
GND3
GND1
GND2
R–G
W
B–O
G
B
G–W
G–Y
R–Y
O
W
L
GR
W–B
I 2
PHG
A37(A), A38(B), A39(C), A40(D)
ABS & BA & TRAC & VSC Actuator
GND
PLG
GND2
GND1
LBL
E14
Y–G
EE
IF


SB
SB
W
P–B
P–B
D 1
Data Link
Connector 1
TC
TS
11
16
M 4
Master Cylinder Pressure Sensor
GND
VOUT
VCC
Y 1
Yaw Rate Sensor
GYAW
YAW2
VYS
YD
GL2
GL1
(Shielded)
IG4
6 7D
2 7B
5 7D
MSS
E2
PMC
VCM
YSS
GYAW
YAW
VYS
YD
GL2
GL1
TS
A41(A), A42(B), A43(C), A44(D)
ABS & BA & TRAC & VSC ECU
PKB
RL+
RL–
RR+
RR–
RSS
J 2
Junction
Connector
IA2
BD3
BF2
P 8
Parking Brake SW
A35
ABS Speed Sensor
Rear LH
A36
ABS Speed Sensor
Rear RH
Y–G
Y–G


SB
SB
From Power Source System (See Page 94)
A12
ABS Speed Sensor
Front LH
A13
ABS Speed Sensor
Front RH
10A
GAUGE2
G-W
R-L
G-W
R-L
R-L
G-W
G-W
G-W
P
P 1
Park/Neutral
Position SW
J 2
Junction
Connector
(Shielded)
(Shielded)
R
G
L
P
W-R
B
B
B
Ib2
IN2
3E
6C
5C
5D
6D
FSS
FL+
FL-
FR+
FR-
P
A41(A), A42(B), A43(C), A44(D)
ABS & BA & TRAC & VSC ECU
+BO
TRIG
SS1-
SS1+
EXI
EXI2
INFR
WT
IND
VSCW
BRL
WA
LG
L-R
G
W
P-B
B-L
B-R
L-R
L-B
L-W
Y-G
R-L
IG1
IU4
3B
3Q
3A
Detection SW
(Center Diff. Lock)
Detection SW
(Transfer L Position)
SB
L-W
L-R
G
W
Y-G
Y-G


SB
SB
C12(A), C13(B), C14(C), C15(D)
Combination Meter
ABS
BRAKE
VSC TRAC
Slip
VSC OFF
TRAC
12 A
19 C
20 C
16 B
15 B
17 B
18 B
10 A
1 D
SB
36 2C
20 2B
Y-G
8 IX1
BR
W
G
L-R
L-W
Y-G
EC


SB
From Power Source System (See Page 94)
7. 5A
MET
7
3Q
SB
6
IH2
B–W
1
IG1
C17
Combination SW
SS1+
SS1–
TRIG
BAT
ESS
3
11
10
9
2
W
G
L–R
L–W
W–B
27
II3
26
II3
28
II3
7
II3
9
IH2
W
G
L–R
L–W
SB
SB
SB
W
G
L–R
L–W
23
2Q
IF

System Outline

1. ABS Operation

If the brake pedal is depressed suddenly, the ABS controls the hydraulic pressure of the wheel cylinders for all the four wheels to automatically avoid wheel locking and ensure the directional and steering stability of the vehicle. If the brake pedal is depressed suddenly, the ABS & BA & TRAC & VSC ECU controls the solenoids in the actuators using the signals from the sensors to move the brake fluid to the reservoir in order to release the braking pressure applied to the wheel cylinder. If the ABS & BA & TRAC & VSC ECU detects that the fluid pressure in the wheel cylinder is insufficient, the ECU controls the solenoids in the actuators to increase the braking pressure.

2. Traction Control Operation

The traction control system controls the engine torque, the hydraulic pressure of the driving wheel cylinders, slipping of the wheels which may occur at start or acceleration of the vehicle, to ensure an optimal driving power and vehicle stability corresponding to the road conditions.

3. VSC Operation

Unexpected road conditions, vehicle speed, emergency situation, and any other external factors may cause large under− or over−steering of the vehicle. If this occurs, the VSC system automatically controls the engine power and wheel brakes to reduce the under− or over−steering.

To reduce large over−steering :

If the VSC system determines that the over−steering is large, it activates the brakes for the outer turning wheels depending on the degree of the over−steering to produce the moment toward the outside of the vehicle and reduce the over−steering.

To reduce large under−steering :

If the VSC system determines that the under−steering is large, it controls the engine power and activates the rear wheel brakes to reduce the under−steering.

VSC indicator light

If an error occurs in the VSC system, the VSC indicator lights up to warn the driver.

4. Traction Mode and VSC Function

When the center differential of the transfer is locked, the VSC function is turned off. At this time, the VSC OFF indicator light in the combination meter will come on, and informs the driver that the VSC function is OFF.

5. Mutual System Control

To efficiently operate the VSC system at its optimal level, the VSC system and other control systems are mutually controlled while the VSC system is being operated.

Engine throttle control

The engine power does not interfere with the VSC brake control by controlling the opening of the throttle and reducing the engine output.

Engine control and electronically controlled transmission control

The strong braking force does not interfere with the braking force control of the VSC system by turning off the accel. and reducing changes in the driving torque at shift−down.

VSC system operation indication

The slip indicator light flashes and the buzzer sounds intermittently to warn the driver that the current road is slippery, while the VSC system is being operated.

6. Fail Safe Function

If an error occurs in the ABS & BA & TRAC & VSC ECU, sensor signals, and/or actuators, the ABS & BA & TRAC & VSC ECU inhibits the brake actuator control and inputs the error signal to the engine control module. According to the error signal, the brake actuator turns off the solenoid and the engine control module rejects any electronically controlled throttle open request from the VSC system. As a result, the vehicle functions without the ABS, BA, TRAC, and VSC systems.

Service Hints

A41 (A), A42 (B), A44 (D) ABS & BA & TRAC & VSC ECU

(D)15−Ground : Always approx. 12 volts
(B) 6−Ground : Approx. 12 volts with ignition SW at ON or ST position
(D)22−Ground : Approx. 12 volts with ignition SW at ON or ST position
(B)10−Ground : Approx. 12 volts with brake pedal depressed
(A) 6, (A) 31, (B) 8, (B) 17−Ground : Always continuity

A12 ABS Speed Sensor Front LH

2−4 : Approx. 1.07 kΩ (20 °C, 68 °F)

A13 ABS Speed Sensor Front RH

1−2 : Approx. 1.07 kΩ (20 °C, 68 °F)

A35, A36 ABS Speed Sensor Rear LH, RH

1−2 : Approx. 1.2 kΩ (25 °C, 77 °F)

: Parts Location

Code		See Page	Code		See Page	Code	See Page
A12		68	A42	B	70	D7	70
A13		68	A43	C	70	E9	70
A35		72	A44	D	70	J2	71
A36		72	C12	A	70	M4	69
A37	A	68	C13	B	70	P1	69
A38	B	68	C14	C	70	P8	73
A39	C	68	C15	D	70	S5	71
A40	D	68	C17		70	V8	71
A41	A	70	D1		68	Y1	71

: Relay Blocks

Code	See Page	Relay Blocks (Relay Block Location)
1	22	Engine Room R/B (Engine Compartment Left)

: Junction Block and Wire Harness Connector

Code	See Page	Junction Block and Wire Harness (Connector Location)
2A	28	Engine Room No.2 Wire and Cowl Side J/B LH (Left Kick Panel)
2B		
2D	28	Dash Wire and Cowl Side J/B LH (Left Kick Panel)
2K	28	Floor No.1 Wire and Cowl Side J/B LH (Left Kick Panel)
2Q	30	Instrument Panel Integration Wire and Cowl Side J/B LH (Left Kick Panel)
3A	40	Engine Room No.2 Wire and Cowl Side J/B RH (Right Kick Panel)
3B		
3E	40	Dash Wire and Cowl Side J/B RH (Right Kick Panel)
3Q	42	Instrument Panel Integration Wire and Cowl Side J/B RH (Right Kick Panel)
5C	56	Dash Wire and J/B No.5 (Behind the Combination Meter)
5D	56	Engine Room No.2 Wire and J/B No.5 (Behind the Combination Meter)
6C	60	Dash Wire and J/B No.6 (Behind the Grove Box)
6D	60	Engine Wire and J/B No.6 (Behind the Grove Box)
7B	64	Dash Wire and J/B No.7 (Behind the Grove Box)
7D	64	Engine Room No.2 Wire and J/B No.7 (Behind the Grove Box)

: **Connector Joining Wire Harness and Wire Harness**

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
IA2	78	Engine Room No.2 Wire and Floor No.1 Wire (Left Kick Panel)
IG1	78	Engine Room No.2 Wire and Dash Wire (Behind the Combination Meter)
IG4		
IH2	80	Instrument Panel Integration Wire and Column Wire (Near the Ignition SW)
II3	80	Dash Wire and Column Wire (Near the Ignition SW)
IN2	80	Engine Wire and Dash Wire (Behind the Glove Box)
IU4	82	Instrument Panel Integration Wire and Dash Wire (Behind the Glove Box)
IX1	82	Instrument Panel Integration Wire and Engine Wire (Behind the Glove Box)
Ib2	84	Dash Wire and Dash Wire (Behind the Combination Meter)
BD3	86	Floor No.3 Wire and Floor No.1 Wire (Left Rear Side Quarter Panel)
BF2	86	Frame Wire and Floor No.3 Wire (Left Side of Rear Floor Crossmember)

: **Ground Points**

Code	See Page	Ground Points Location
EC	76	Rear Bank of Right Cylinder Head
EE	76	Front Left Side of Fender Apron
IF	78	Set Bolt of Cowl Side J/B LH

: **Splice Points**

Code	See Page	Wire Harness with Splice Points	Code	See Page	Wire Harness with Splice Points
E13	76	Engine Room No.2 Wire	I2	80	Engine Room No.2 Wire
E14					