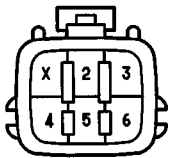


ABS (ANTI-LOCK BRAKE SYSTEM)

A 4 ⑥ GRAY



A 5 ③ GRAY



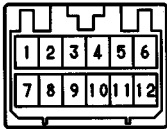
A 6 ① GRAY



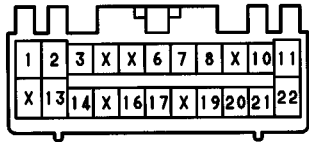
A 7, A 8 GRAY



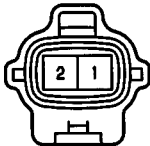
A22 ① DARK GRAY



A23 ⑥ DARK GRAY



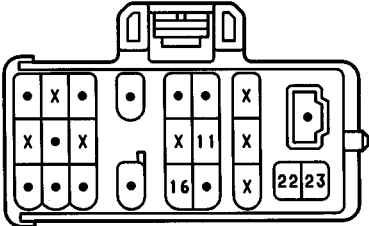
A30, A31 GRAY



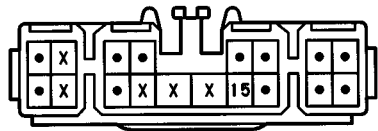
B 1 GRAY



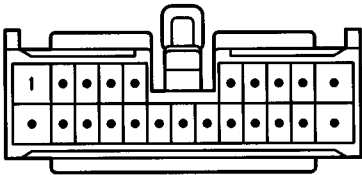
C 3



C13 ⑥



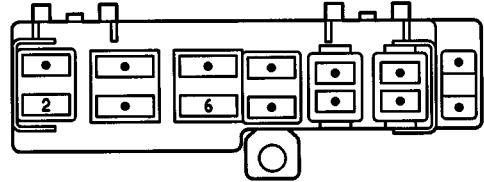
C14 ①



D 2 BLACK



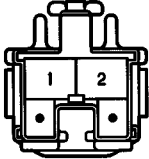
F 9 BLACK



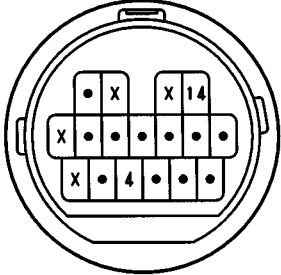
P 3



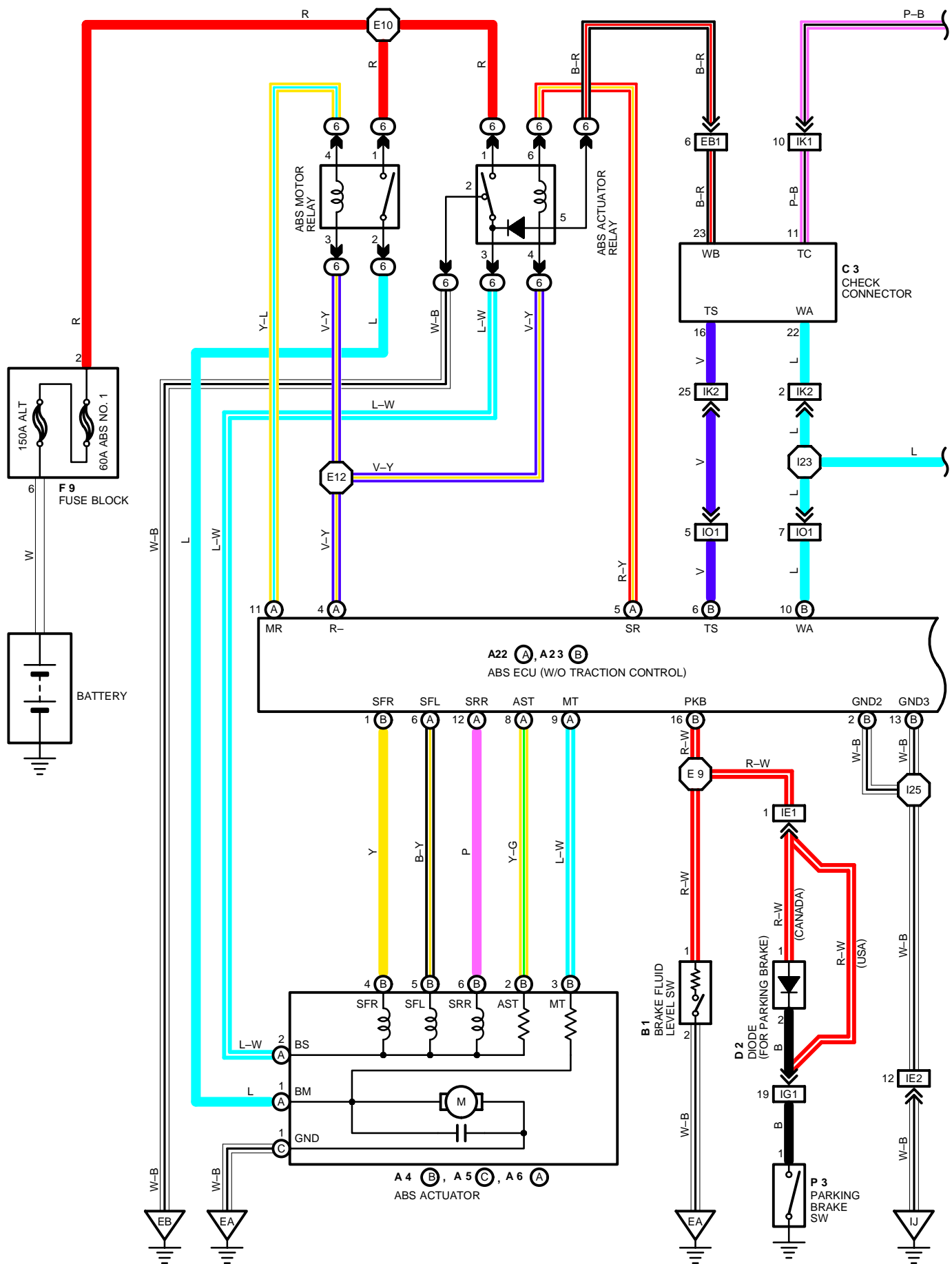
S12

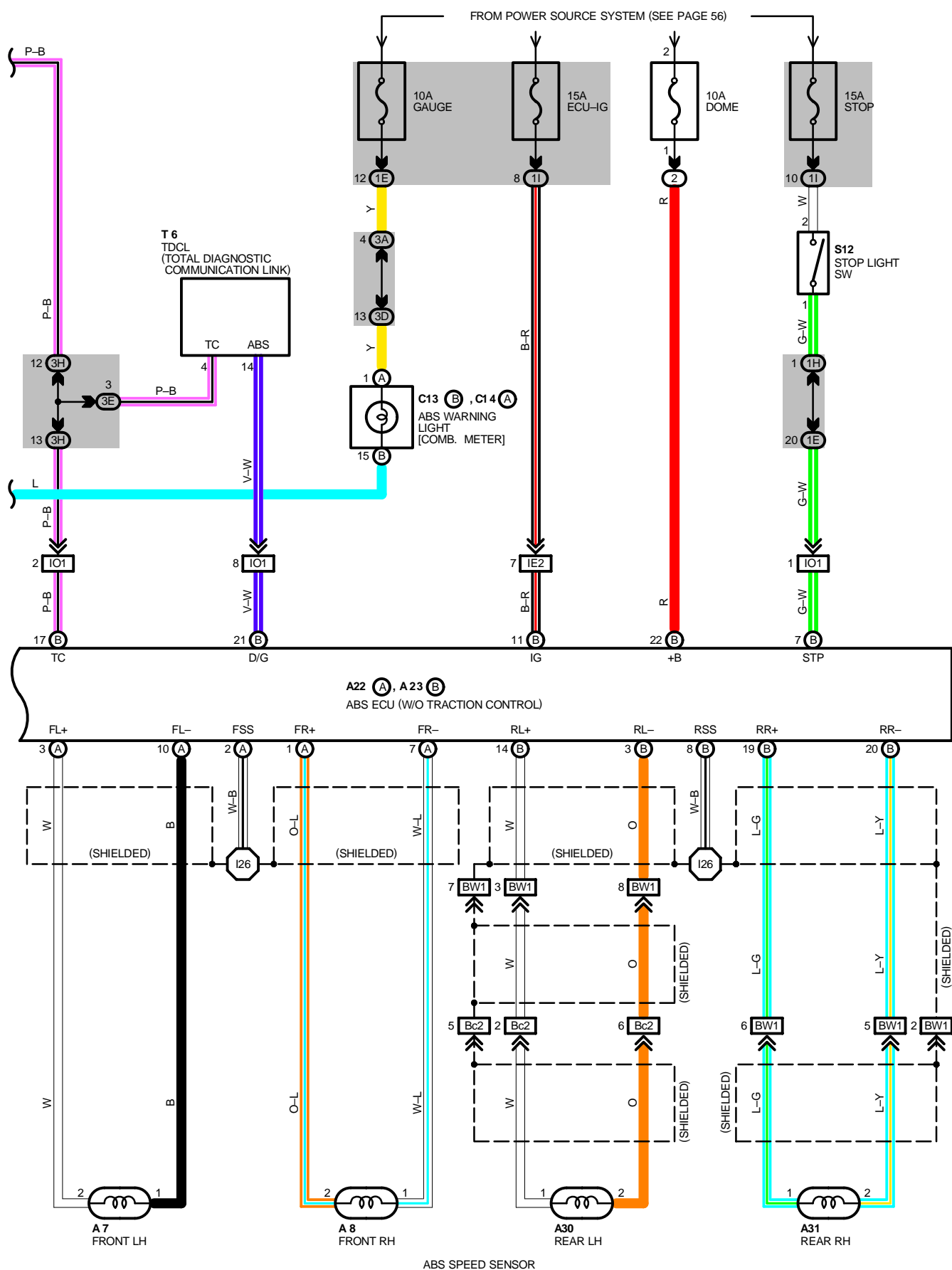


T 6 DARK GRAY



# ABS (ANTI-LOCK BRAKE SYSTEM)





# ABS (ANTI-LOCK BRAKE SYSTEM)

## SYSTEM OUTLINE

THIS SYSTEM CONTROLS THE RESPECTIVE BRAKE FLUID PRESSURES ACTING ON THE DISC BRAKE CYLINDERS OF THE RIGHT FRONT WHEEL, LEFT FRONT WHEEL AND REAR WHEELS WHEN THE BRAKES ARE APPLIED IN A PANIC STOP SO THAT THE WHEELS DO NOT LOCK. THIS RESULTS IN IMPROVED DIRECTIONAL STABILITY AND STEERABILITY DURING PANIC BRAKING.

### 1. INPUT SIGNALS

#### (1) SPEED SENSOR SIGNAL

THE SPEED OF THE WHEELS IS DETECTED AND INPUT TO **TERMINALS FL+, FR+, RL+ AND RR+** OF THE ABS ECU.

#### (2) STOP LIGHT SW SIGNAL

A SIGNAL IS INPUT TO **TERMINAL STP** OF THE ABS ECU WHEN THE BRAKE PEDAL IS OPERATED.

#### (3) PARKING BRAKE SW SIGNAL

A SIGNAL IS INPUT TO **TERMINAL PKB** OF THE ABS ECU WHEN THE PARKING BRAKE IS OPERATED.

### 2. SYSTEM OPERATION

DURING SUDDEN BRAKING, THE ABS ECU WHICH HAS SIGNALS INPUT FROM EACH SENSOR CONTROLS THE CURRENT FLOWING TO THE SOLENOID INSIDE THE ACTUATOR AND LETS THE HYDRAULIC PRESSURE ACTING ON EACH WHEEL CYLINDER ESCAPE TO THE RESERVOIR.

THE PUMP INSIDE THE ACTUATOR IS ALSO OPERATING AT THIS TIME AND IT RETURNS THE BRAKE FLUID FROM THE RESERVOIR TO THE MASTER CYLINDER, THUS PREVENTING LOCKING OF THE VEHICLE WHEELS.

IF THE ECU JUDGES THAT THE HYDRAULIC PRESSURE ACTING ON THE WHEEL CYLINDER IS INSUFFICIENT, THE CURRENT ACTING ON SOLENOID IS CONTROLLED AND THE HYDRAULIC PRESSURE IS INCREASED.

HOLDING OF THE HYDRAULIC PRESSURE IS ALSO CONTROLLED BY THE COMPUTER, BY THE SAME METHOD AS ABOVE. BY REPEATED PRESSURE REDUCTION, HOLDING AND INCREASE ARE REPEATED TO MAINTAIN VEHICLE STABILITY AND TO IMPROVE STEERABILITY DURING SUDDEN BRAKING.

## SERVICE HINTS

### A 4(B), A 5(C), A 6(A) ABS ACTUATOR

(A)1, (A)2-GROUND : ALWAYS APPROX. 12 VOLTS

(C)1-GROUND : ALWAYS CONTINUITY

(B)4, (B)5, (B)6-GROUND : APPROX. 1.15Ω (IGNITION SW OFF)

(B)2-GROUND : APPROX. 5Ω (IGNITION SW OFF)

### A 7, A 8, A30, A31 ABS SPEED SENSOR FRONT LH, RH, REAR LH, RH

1-2 : APPROX. 1.0KΩ (20°C, 68°F)

### A22(A), A23(B) ABS ECU

(B) 11-GROUND : APPROX. 12 VOLTS WITH IGNITION SW ON

(B)2, (B)13-GROUND : ALWAYS CONTINUITY

(B)22-GROUND : ALWAYS APPROX. 12 VOLTS

(B) 1, (A) 6, (A) 12-GROUND : APPROX. 12 VOLTS WITH IGNITION SW ON

(B) 16-GROUND : CONTINUITY WITH PARKING BRAKE LEVER PULLED UP

(B) 7-GROUND : APPROX. 12 VOLTS WITH STOP LIGHT SW ON

### P 3 PARKING BRAKE SW

1-GROUND : CLOSED WITH PARKING BRAKE LEVER PULLED UP

### S12 STOP LIGHT SW

1-2 : CLOSED WITH BRAKE PEDAL DEPRESSED

 : PARTS LOCATION

CODE		SEE PAGE	CODE		SEE PAGE	CODE		SEE PAGE
A 4	B	26	A23	B	28	C14	A	28
A 5	C	26	A30		30	D 2		28
A 6	A	26	A31		30	F 9		26
A 7		26	B 1		26	P 3		29
A 8		26	C 3		26	S12		29
A22	A	28	C13	B	28	T 6		29

 : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	19	ENGINE COMPARTMENT LEFT
6	24	

 : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1E	20	INSTRUMENT PANEL WIRE
1H	20	COWL WIRE
1I		
3A	23	INSTRUMENT PANEL WIRE
3D		
3E		
3H		

 : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EB1	34	ENGINE WIRE AND ENGINE ROOM MAIN WIRE (FRONT SIDE OF R/B NO. 2)
IE1	36	ENGINE WIRE AND COWL WIRE (R/B NO. 4)
IE2	38	ENGINE ROOM MAIN WIRE AND COWL WIRE (BEHIND GLOVE BOX)
IG1	36	INSTRUMENT PANEL WIRE AND COWL WIRE (R/B NO. 5)
IK1	36	ENGINE WIRE AND INSTRUMENT PANEL WIRE (RIGHT KICK PANEL)
IK2		
IO1	38	ENGINE ROOM MAIN WIRE AND INSTRUMENT PANEL WIRE (RIGHT KICK PANEL)
BW1	40	ENGINE ROOM MAIN WIRE AND FLOOR NO. 3 WIRE (RIGHT KICK PANEL)
Bc2	40	FLOOR NO. 3 WIRE AND FLOOR WIRE (UNDER THE LEFT SIDE OF REAR SEAT CUSHION)

 : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
EA	34	FRONT SIDE OF RIGHT FENDER
EB	34	FRONT SIDE OF LEFT FENDER
IJ	36	RIGHT KICK PANEL

 : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
E 9	34	ENGINE ROOM MAIN WIRE	I23	38	INSTRUMENT PANEL WIRE
E10			I25	38	ENGINE ROOM MAIN WIRE
E12			I26		