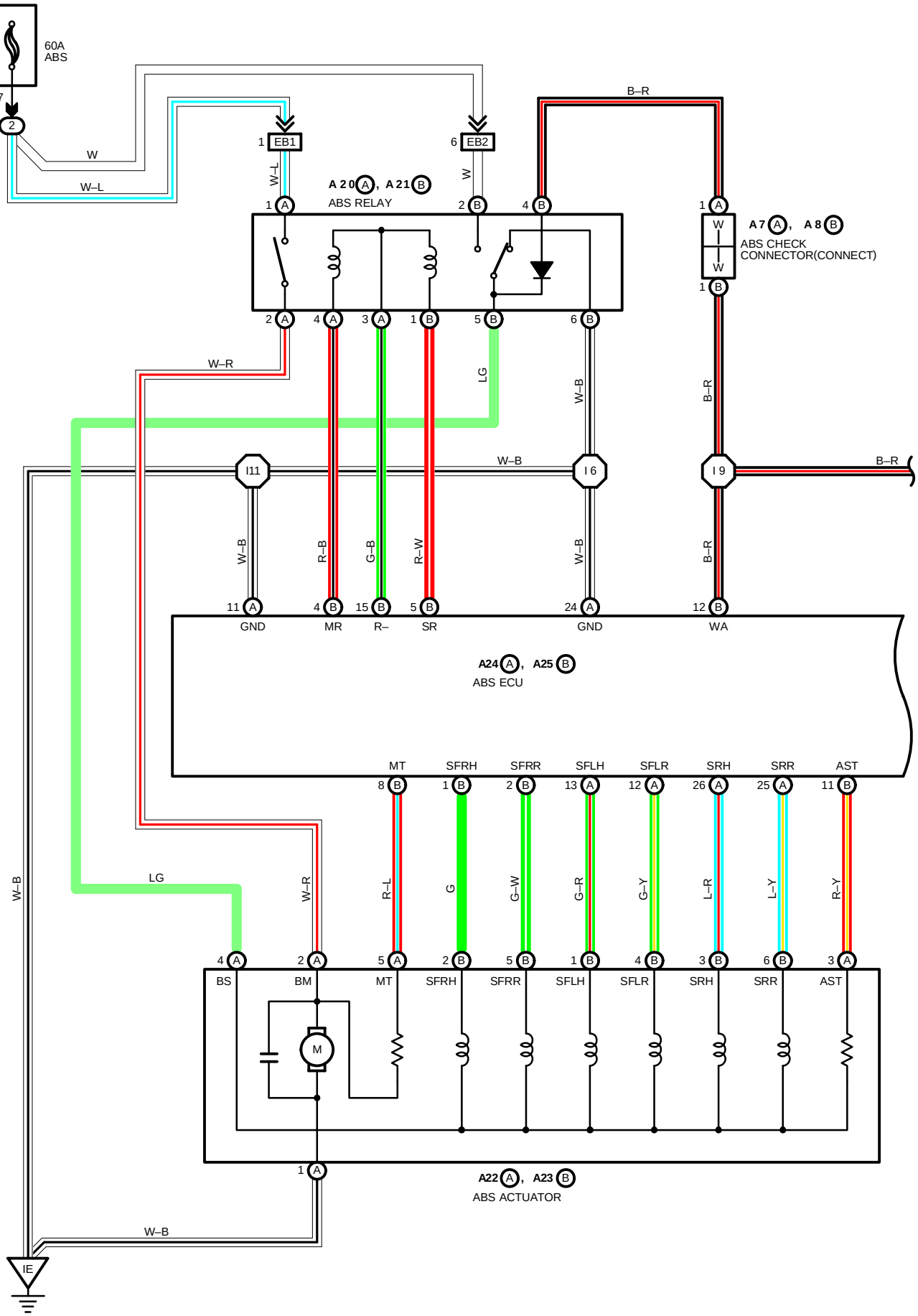
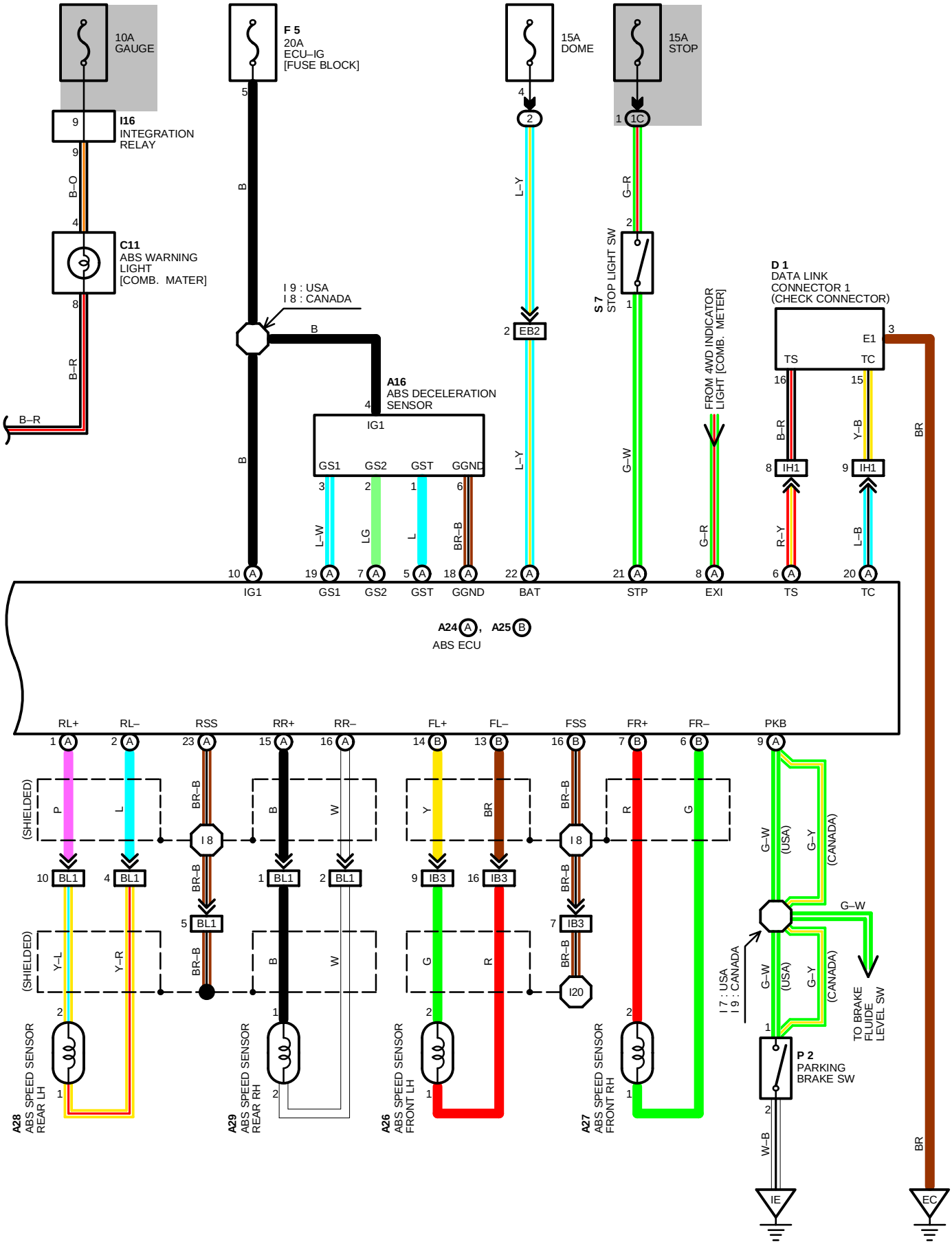

60A
ABS
7
2
W
W–L
1 EB1
6 EB2
W–L
W
A 20 A , A 21 B
ABS RELAY
B–R
1 A
2 B
4 B
1 A
W
W
1 B
A 7 A , A 8 B
ABS CHECK
CONNECTOR(CONNECT)
2 A
4 A
3 A
1 B
5 B
6 B
W–R
LG
W–B
B–R
I11
W–B
I 6
I 9
B–R
W–B
R–B
G–B
R–W
W–B
B–R
11 A
4 B
15 B
5 B
24 A
12 B
GND
MR
R–
SR
GND
WA
A24 A , A25 B
ABS ECU
MT
SFRH
SFRR
SFLH
SFLR
SRH
SRR
AST
8 B
1 B
2 B
13 A
12 A
26 A
25 A
11 B
W–B
LG
W–R
R–L
G
G–W
G–R
G–Y
L–R
L–Y
R–Y
4 A
2 A
5 A
2 B
5 B
1 B
4 B
3 B
6 B
3 A
BS
BM
MT
SFRH
SFRR
SFLH
SFLR
SRH
SRR
AST
M
1 A
A22 A , A23 B
ABS ACTUATOR
W–B
IE


10A
GAUGE
F 5
20A
ECU–IG
[FUSE BLOCK]
15A
DOME
15A
STOP
I16
INTEGRATION
RELAY
C11
ABS WARNING
LIGHT
[COMB. MATER]
I 9 : USA
I 8 : CANADA
A16
ABS DECELERATION
SENSOR
IG1
GS1
GS2
GST
GGND
S 7
STOP LIGHT SW
FROM 4WD INDICATOR
LIGHT [COMB. METER]
D 1
DATA LINK
CONNECTOR 1
(CHECK CONNECTOR)
TS
TC
E1
EB2
1C
IG1
GS1
GS2
GST
GGND
BAT
STP
EXI
TS
TC
A24 A, A25 B
ABS ECU
RL+
RL–
RSS
RR+
RR–
FL+
FL–
FSS
FR+
FR–
PKB
(SHIELDED)
BL1
IB3
I 8
I20
A28
ABS SPEED SENSOR
REAR LH
A29
ABS SPEED SENSOR
REAR RH
A26
ABS SPEED SENSOR
FRONT LH
A27
ABS SPEED SENSOR
FRONT RH
(USA)
(CANADA)
I 7 : USA
I 9 : CANADA
TO BRAKE
FLUIDE
LEVEL SW
P 2
PARKING
BRAKE SW
IE
EC

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, RIGHT REAR WHEEL AND LEFT REAR WHEEL 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 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.

(4) DECELERATION SENSOR SIGNAL
LATERAL ACCELERATION IS DETECTED AND INPUT TO THE ABS ECU.

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 IN CREASED.

HOLDING OF THE HYDRAULIC PRESSURE IS ALSO CONTROLLED BY THE ECU, 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 22(A), A 23(B) ABS ACTUATOR
(A)1–GROUND : ALWAYS CONTINUOUS
(B)1, **(B)**3, **(B)**2–GROUND : APPROX. **5.0** Ω
(B)4, **(B)**5, **(B)**6–GROUND : APPROX. **2.2** Ω

A26, A27 ABS SPEED SENSOR FRONT LH, RH
1–2: **0.92–1.22** KΩ (**20**˚C, **68**˚F)

A28, A29 ABS SPEED SENSOR REAR LH, RH
1–2: **0.89–1.29** KΩ (**20**˚C, **68**˚F)

A24(A), A25(B) ABS ECU
(A)10–GROUND : **10–14** VOLTS WITH IGNITION SW ON
(A)11, **(A)**24–GROUND : ALWAYS CONTINUOUS
(A)22–GROUND : ALWAYS **10–14** VOLTS
(A)12, **(A)**13, **(A)**25, **(A)**26, **(B)** 1, **(B)** 2–GROUND : **10–14** VOLTS WITH IGNITION SW ON
(A) 9–GROUND : CONTINUOUS WITH PARKING BRAKE LEVER PULLED UP
(A)21–GROUND : **10–14** VOLTS WITH STOP LIGHT SW ON (BRAKE PEDAL DEPRESSED)

P 2 PARKING BRAKE SW
1–2: CLOSED WITH PARKING BRAKE LEVER PULLED UP

S 7 STOP LIGHT SW
1–2: CLOSED WITH BRAKE PEDAL DEPRESSED

: PARTS LOCATION

CODE		SEE PAGE	CODE		SEE PAGE	CODE	SEE PAGE
A 7	A	24 (3VZ–E)	**A24**	A	28	**D 1**	24 (3VZ–E)
A 8	B	24 (3VZ–E)	**A25**	B	28	**F 5**	28
A16		28	**A26**		24 (3VZ–E)	**I16**	28
A20	A	24 (3VZ–E)	**A27**		24 (3VZ–E)	**P 2**	28
A21	B	24 (3VZ–E)	**A28**		29	**S 7**	28
A22	A	24 (3VZ–E)	**A29**		29		
A23	B	24 (3VZ–E)	**C11**		28		

: RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)

: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EB1	30 (3VZ–E)	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
EB2	30 (3VZ–E)	
IB3	34	ENGINE ROOM MAIN WIRE AND COWL WIRE (LEFT KICK PANEL)
IH1	34	ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)
BL1	36	FRAME NO. 2 WIRE AND COWL WIRE (UNDER THE FRONT LH SEAT)

: GROUND POINTS

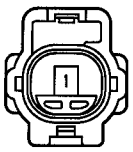
CODE	SEE PAGE	GROUND POINTS LOCATION
EC	30 (3VZ–E)	RH CYLINDER HEAD COVER REAR
IE	34	LEFT KICK PANEL

: SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I 6	34	COWL WIRE	**I 9**	34	COWL WIRE
I 7			**I11**		
I 8			**I20**	34	ENGINE ROOM MAIN WIRE

A 7 (A) GRAY

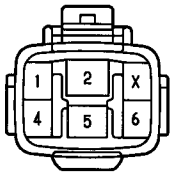
A 8 (B) GRAY



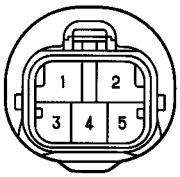
A16 GRAY

A20 (A) GRAY

A21 (B) GRAY

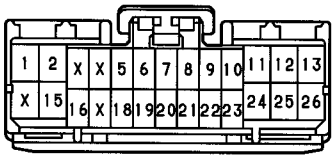


A22 (A) GRAY

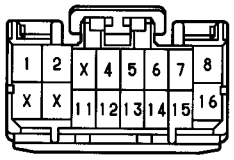


A23 (B) GRAY

A24 (A)

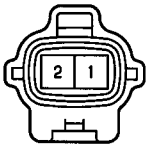


A25 (B)

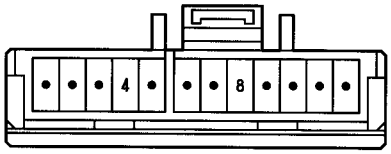


A26, A27, A28 GRAY

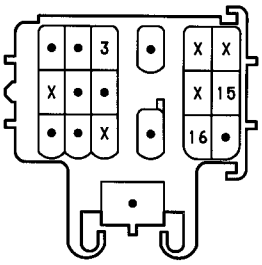
A29 GRAY



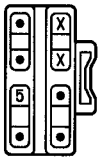
C11 BLUE



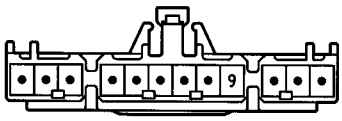
D 1 DARK GRAY



F 5

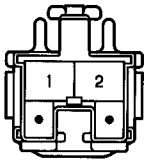


I16



P 2

(W/ CRUISE CONTROL) S 7



(W/O CRUISE CONTROL) S 7 BLACK