

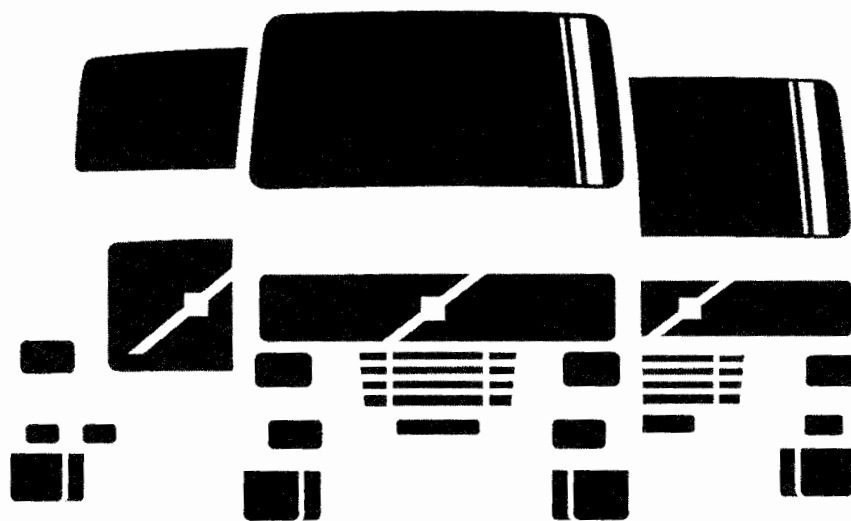
Service Manual Trucks

Group **37**

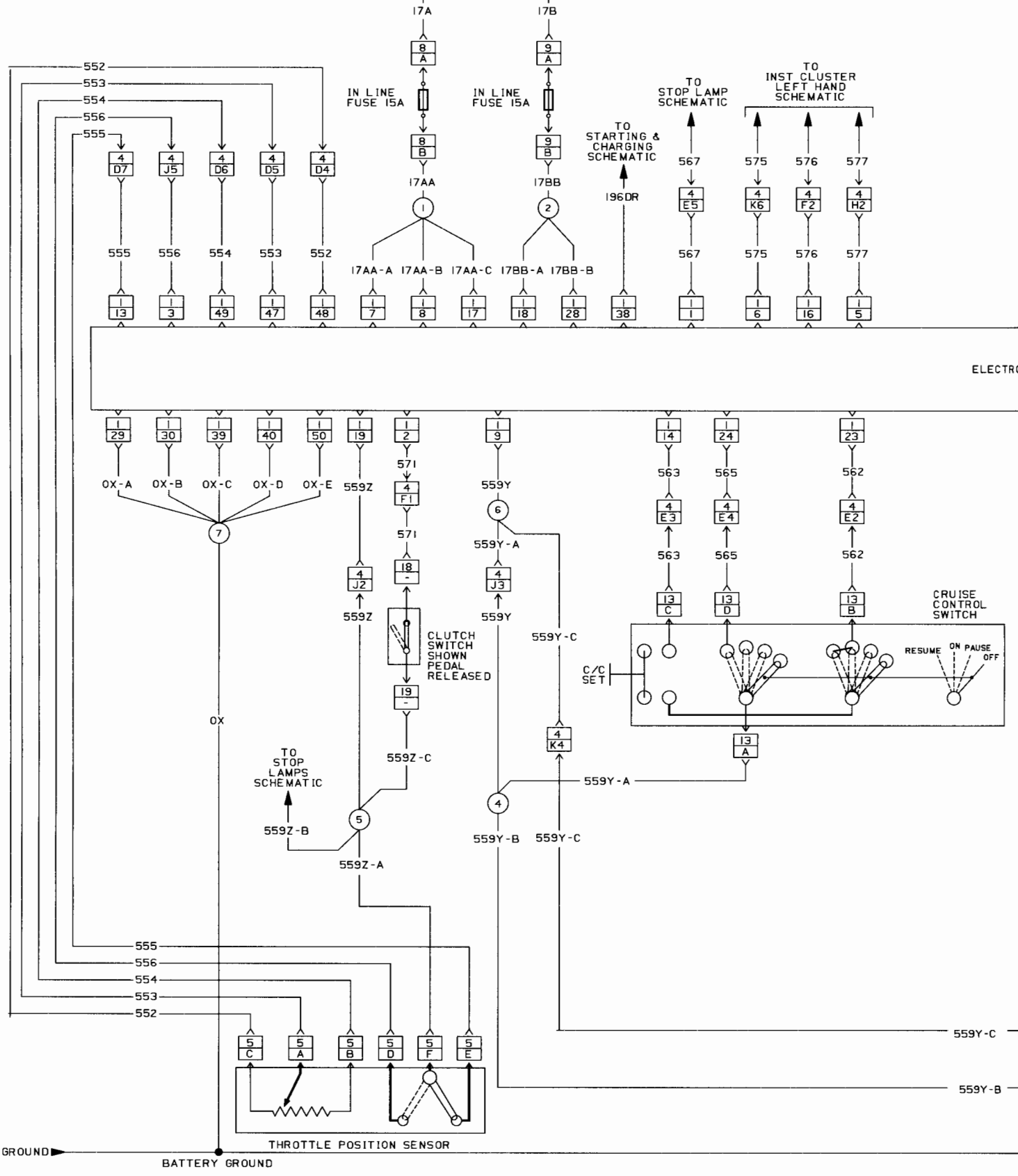
Electrical Schematic:
Engine ECU, Cummins ISM

VN

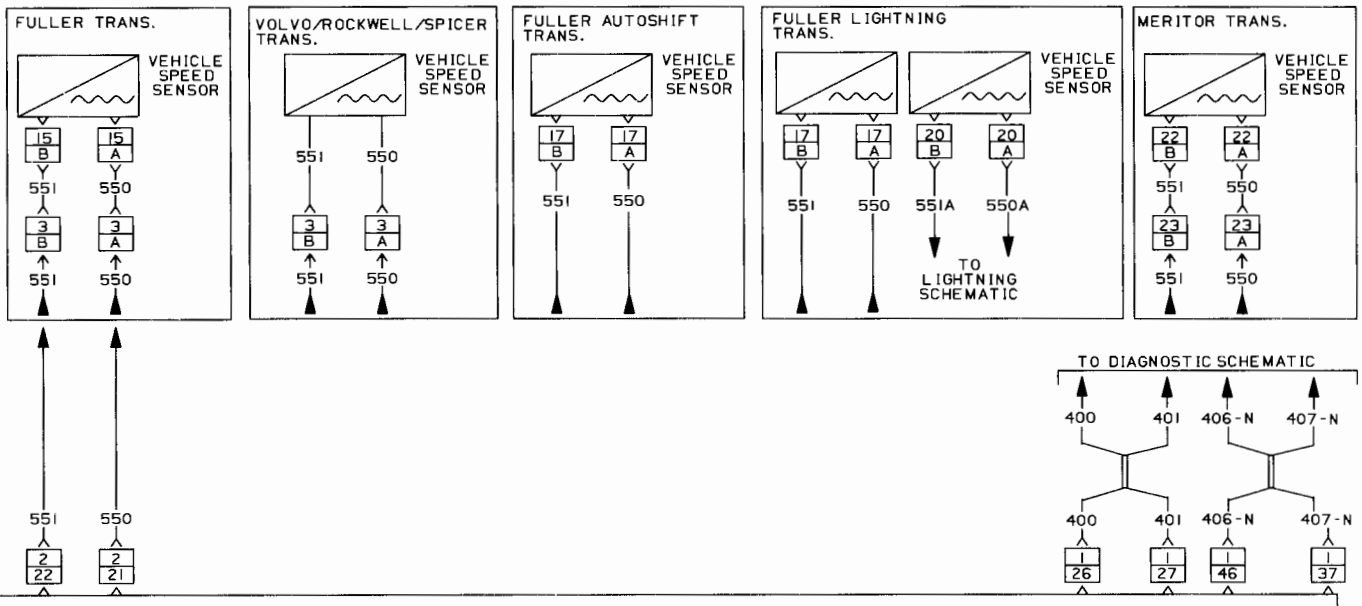
From Build Date 5.99



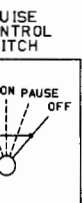
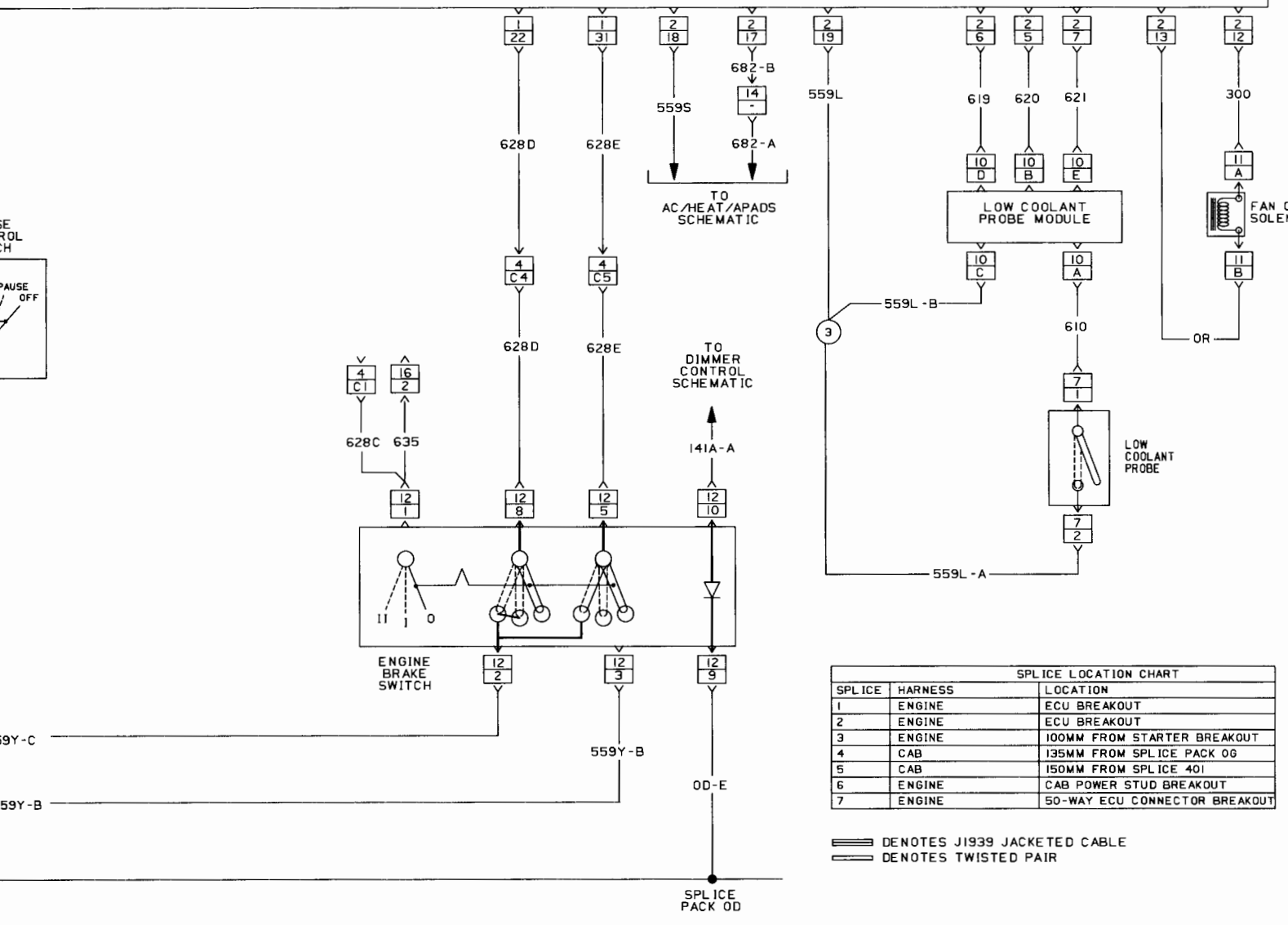
BATTERY 12 VOLT
 IGNITION 12 VOLT
 ACCESSORY 12 VOLT



Engine ECU, Cummins ISM - VN



ELECTRONIC CONTROL UNIT



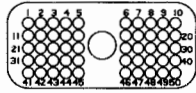
SPlice LOCATION CHART		
SPlice	HARNESS	LOCATION
1	ENGINE	ECU BREAKOUT
2	ENGINE	ECU BREAKOUT
3	ENGINE	100MM FROM STARTER BREAKOUT
4	CAB	135MM FROM SPlice PACK 0G
5	CAB	150MM FROM SPlice 401
6	ENGINE	CAB POWER STUD BREAKOUT
7	ENGINE	50-WAY ECU CONNECTOR BREAKOUT

DENOTES J1939 JACKETED CABLE
 DENOTES TWISTED PAIR

CONNECTOR AND SPLICE INFORMATION CONNECTORS VIEWED FROM CABLE ENTRY

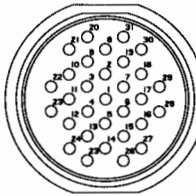
CONNECTOR 1 ENGINE ECU

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
1	567	SERVICE BREAK RELEASED
2	571	CLUTCH SWITCH INPUT TO ECU
3	556	OFF IDLE
5	577	MAINTENANCE LAMP ON
6	575	STOP LAMP ON
7	17AA-A	ECU POWER SUPPLY
8	17AA-B	ECU POWER SUPPLY
9	559Y	DASHBOARD RETURN 2
13	555	ON IDLE
14	563	CRUISE SET TO ECU
16	576	WARNING LAMP ON
17	17AA-C	ECU POWER SUPPLY
18	17BB-A	ECU POWER SUPPLY
19	559Z	CAB RETURN
22	628D	OI FEED
23	562	CRUISE ON TO ECU
24	565	CRUISE RESUME TO ECU
26	400	POS DATA LINK SAE J1708
27	401	NEG DATA LINK SAE J1708
28	17BB-B	ECU POWER SUPPLY
29	OX-A	ECU GROUND
30	OX-B	ECU GROUND
31	628E	OI FEED
37	407-N	DATA LINK LOW SAE J1939
38	196DR	KEY ON
39	OX-C	ECU GROUND
40	OX-D	ECU GROUND
46	406-N	DATA LINK HIGH SAE J1939
47	553	CAB THROTTLE POSITION
48	552	THROTTLE +5V SUPPLY
49	554	THROTTLE +5V RETURN
50	OX-E	ECU GROUND



CONNECTOR 2 ELECTRONIC CONTROL MODULE FEED

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
5	620	COOLANT DETECTED
6	619	COOLANT NOT DETECTED
7	621	COOLANT LEVEL +5V SUPPLY
12	300	FAN SOLENOID FEED
13	OR	FAN SOLENOID GROUND
17	682-B	AC PRESSURE NOT HIGH
18	559S	AC PRESSURE RETURN
19	559L	COOLANT LEVEL RETURN
21	550	VEHICLE SPEED (+)
22	551	VEHICLE SPEED (-)



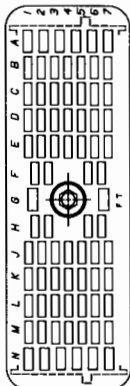
CONNECTOR 3 SPEED SENSOR

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
A	550	VEHICLE SPEED INPUT
B	551	VEHICLE SPEED RETURN



CONNECTOR 4 ENGINE HARNESS PASS THROUGH

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
C1	628C	O0I FEED
C4	628D	OI FEED
C5	628E	IO FEED
D4	552	THROTTLE POS. SENSOR SUPPLY
D5	553	THROTTLE POS. SENSOR INPUT
D6	554	THROTTLE POS. SENSOR RETURN
D7	555	IDLE VALIDATION
E2	562	CRUISE ON TO ECU
E3	563	CRUISE SET TO ECU
E4	565	CRUISE RESUME TO ECU
E5	567	SERVICE BRAKE RELEASED
F1	571	INPUT TO ENGINE ECU
F2	576	CAUTION LAMP
H2	577	ENGINE FLUIDS LAMP
J2	559Z	ECU GROUND
J3	559Y	ECU GROUND
J5	556	THROTTLE VALIDATION INPUT
K4	559Y-C	ECU GROUND
K6	575	STOP ENGINE WARNING LAMP



CONNECTOR 5 THROTTLE POSITION SENSOR

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
A	553	THROTTLE POSITION INPUT
B	554	THROTTLE POSITION RETURN
C	552	THROTTLE POSITION SUPPLY
D	556	THROTTLE VALIDATION INPUT
E	555	IDLE VALIDATION
F	559Z-A	THROTTLE POS. SENS. GROUND



CONNECTOR 7 LOW COOLANT PROBE

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
1	610	ENGINE COOLANT LEVEL FEED
2	559L-A	COOLANT PROBE GROUND



CONNECTOR 8 INLINE FUSE

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
A	17A	12 VOLT SUPPLY
B	17AA	12 VOLT SUPPLY



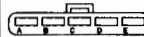
CONNECTOR 9 INLINE FUSE

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
A	17B	12 VOLT SUPPLY
B	17BB	12 VOLT SUPPLY



CONNECTOR 10 LOW COOLANT PROBE MODULE

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
A	610	ENG. COOLANT SWITCH SIGNAL
B	620	COOLANT LEVEL NORMAL
C	559L-B	COOLANT MODULE GROUND
D	619	COOLANT LEVEL LOW
E	621	COOLANT LEVEL MODULE FEED



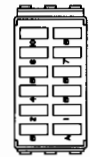
CONNECTOR 11 FAN ON/OFF SOLENOID

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
A	300	FAN SOLENOID FEED
B	OR	FAN SOLENOID GROUND



CONNECTOR 12 ENGINE BRAKE SWITCH

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
1	628C/635	O0I FEED
2	569Y-C	ECU GROUND
3	559Y-B	ECU GROUND
5	628E	IO FEED
8	628D	OI FEED
9	OD-E	ILLUMINATION GROUND
10	141A-A	SWITCH ILLUMINATION



CONNECTOR 13 CRUISE CONTROL SWITCH

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
A	559Y-A	ECU GROUND
B	562	CRUISE ON TO ECU
C	563	CRUISE SET TO ECU
D	565	CRUISE RESUME TO ECU



CONNECTOR 14 FAN OPTION CONNECTOR

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
-	682-B	HIGH REFRIG. PRES. SW. FEED



CONNECTOR 15 SPEED SENSOR

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
A	550	VEHICLE SPEED INPUT
B	551	VEHICLE SPEED RETURN



CONNECTOR 16 ENGINE BREAK MODE SELECT SWITCH

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
2	635	ILLUMINATION



CONNECTOR 17 SPEED SENSOR

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
A	550	VEHICLE SPEED INPUT
B	551	VEHICLE SPEED RETURN



CONNECTOR 18 CLUTCH SWITCH

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
-	571	CLUTCH SWITCH INPUT TO ECU



CONNECTOR 19 CLUTCH SWITCH

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
-	559Z-C	ECU GROUND



CONNECTOR 20 SPEED SENSOR

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
A	550A	VEHICLE SPEED INPUT
B	551A	VEHICLE SPEED RETURN



CONNECTOR 22 SPEED SENSOR

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
A	550	VEHICLE SPEED INPUT
B	551	VEHICLE SPEED RETURN



CONNECTOR 23 SPEED SENSOR

TABLE OF CONTENTS		
CAVITY	CIRCUIT	FUNCTION
A	550	VEHICLE SPEED INPUT
B	551	VEHICLE SPEED RETURN



EFFECTIVE DATE	DESCRIPTION

SYMBOL DEFINITION

○ DENOTES MALE TERMINAL

□ DENOTES CONNECTOR

○ DENOTES CAVITY

□ DENOTES FEMALE TERMINAL

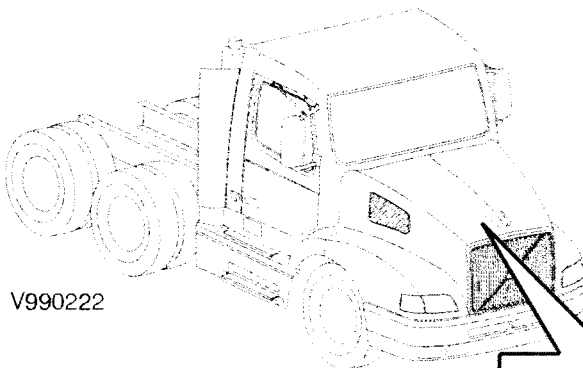
SYMBOL DEFINITION

○ DENOTES SPLICE

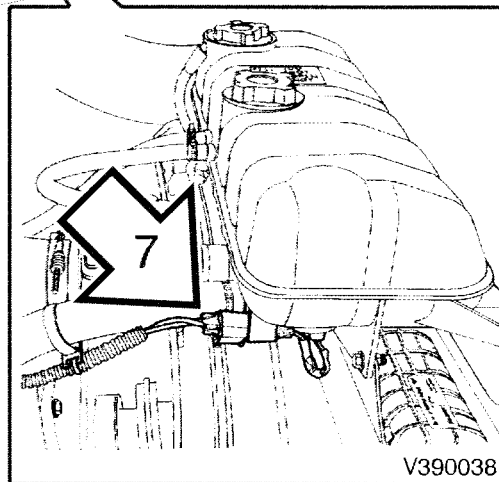
EXAMPLE SHOWN IS

CHANGE HISTORY

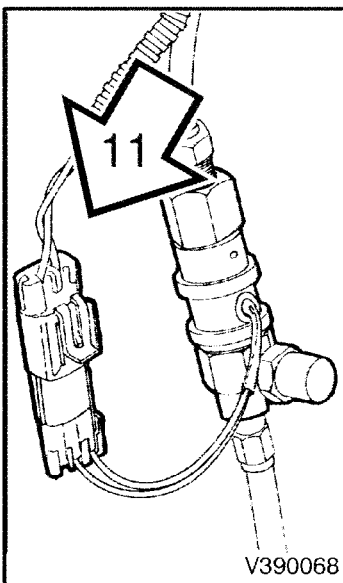
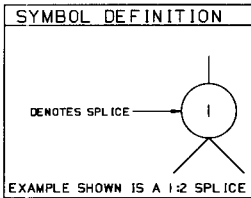
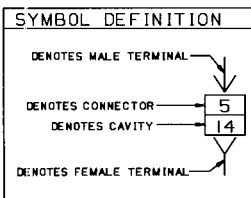
EFFECTIVE DATE	DESCRIPTION



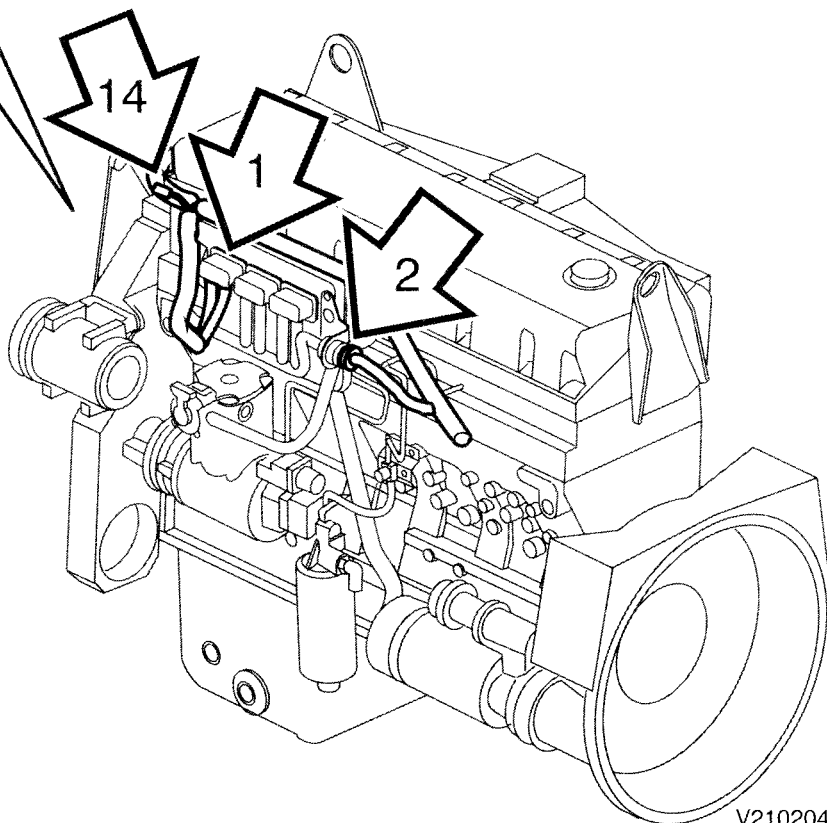
V990222



V390038



V390068



V210204

