

(54)

(22)

(10)

(52)

(20)

(40)

1

가

가

가

가

가

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, 가

, , 가

가

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, 가

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1

2

3

4

5

1 , (10) , (12) 4, 6, 8, 12, 16

24 , ()

가 , ,

(10) , () , (12) , (22) (20) (24) (28) (22) (20) (30) 가 (28) (26) 가 (28) (ROM)(32), (RAM)(34), (keep - alive memory)(KAM)(36) 가 (22)

PROM, EPROM, EEPROM,

가 (28) (12), (22) (24) (20)

(38) / (40) (42) (40) (44) (46)가

(48)가 (50) (22) 가 (28)

(52) (20) , (12) 가 (22) 가 (52) (40) (42) 가 (52) (60) _2 (62) (54), (56), (58), (20) _2 (62) (64) (52)

가 ,
.

((54, 56, 58, 60 62)) , (22) (20, 64)
/ (12)
, (22) Detroit Diesel Corporation(Detroit, Michigan) 가 DDEC
. 5,477,827 5,445,128

DDEC

가 ,

2 , (22) (70)
(22) (52) (40)
(54) (54)
(fault code)
가 , 가

(22) (72)
, , X (54)
가 , (72) r
rpm (Z) , 1 (Y) ,

pm
2 (X)

(74) (74)
, , 2 1 P Q ,
, (72) , " " 가 ,
() ,

(56) (58) (58)

가 (80) (Y) (X)

(54) (56, 58) X

Y 가

(60) " add" (four

quart low mark) rpm (off)(

가 (82) (X)

_2, (62) 3/4

3/4 가 (가) (_1 (64))

(22) (62) 가 " dry" 가 /

(22) (22)

(62) (64)

56, 58, 60 62)(1) (84) 가 (54,

(20)

2 (52) (22) (72, 74, 80, 82,84)

(76) (78) (44)

가

/ 가

(90) (92) (90)

(92)

가 (90) (92)

(44)가 (78) (50), 1)

(48)(1) (44)

가

3 100

가 (100)

4) () 가 (10

가 rpm (72, 1) (106) 가

가 " go/no " go" 가

4 가 (110) 가 (110)

(LED) () 8 (114)

(112) , ECM () (124)

(126)

(128)

가 2

(110) 가 3 , 가 5 , 5

5 , (140)가 . , 가 , (144), (146) " on" (142), (150) (152)가 (148)가 .

DDEC

SAE J1708 SAE J1587

(ECM)

LED , 가 (configure) , 가

가 (

가 가 go/no go

가 (power down) ,

PM . 가 ,

1 , 1 , 가 ,

가 , 가 , 가 ,

가 , 가 , 가 ,

가 (,

가 , 3

가
 (blank)
) 2Hz (flash)
 가 10
 가

SAE J1587

PART IDENTIFICATIO

N(PID)

DataPID

Air Filter Restriction 107

Coolant level 111

Fuel Fileter Restriction 95

Oil Filter Restriction 99

Oil Level 98

Fault Codes 194/192

ECM Sensor configuration ID#66

ECM Reports Data ID#67

가 1 ECM

가 (10)

ECM 가 ECM

가

, 4

ECM Unique ID 66

Bit 8 - 6: Set to 0

Bit 5: Air Filter Restriction Configured

1= configured

Bit 4 2nd Collant Level Sensor Configured

Bit 3: Fuel Filter Restriction Sensor Configured

1=Configured

Bit 2: Oil Level Sensor Configured

1 =Configured

Bit1: Oil Level Sensor Configured

1= Configured

ECM unique ID

X 254 128 0 Y [0 Q]

X MID,

Y ECM ID,

Q , ECM ID

ECM ID 66 67 ,

128 254 Z 66 V 67 W

Z MID , EMC Unique ID MID , V W 가

() , LED ECM LED 가

LED , LED

LED1, " Ign Key On"

가 가 ,

LED

RED - ().

OFF - +5 ().

LED 2, " Oil Level"

LED

RED - PID 98 FMI().

GREEN - PID 98 . PID98. PID 98.YELLOW() -

OFF - FMI 0 PID98 OR .

LED 3," Filter"

LED .

RED - PID FMI 0().

GREEN - PID99 PID99

OFF - FMI0 PID OR .

LED4," Colant Level"

LED .

RED - PID 111FMI1().

GREEN - PID111 PID111.

OFF - FMI 1 PID111 OR .

LED5," Air Filter"

LED .

RED - PID 107 FMI 0().

GREEN - PID107 PID107.

OFF - FMI0 PID107 OR .

LED 6, " DDEC Codes" (Protection Faults)

ECM LED ECM .

ECM LED .

RED - MID128 .

YELLOW - MID128 .

GREEN - MID128 .

LED7, " Fuel Filter"

LED .

RED - 8, " DDEC Reports - PM" ()

ECM DDEC 3
 (preventative maintenance reminder)

ECM PM reminder / 가
 1 , 4 PM reminder(가 ECM) 가
 , ECM

ECM Unique ID 67

Bit 8,7:Not Defined - Set 11(Not Configured)

Bit 6,5:PM C

00 - Configured, No Service Needed

01 - Configured, Service Needed

11 - Not Configured.

Bit 4,3:PM B

00 - Configured, No Service Needed

01 - Configured, Service Needed.

11 - Not Configured

Bit 2,1:PM A

00 - Configured, No Service Needed

01 - Configured, Service Needed

11 - Not Configured

DDEC Reports LED

RED - PM reminder

GREEN - PM

OFF - PM Reminder

가

, 가 , , 가 , , 가 - 40 - 85 .

가

가 , 가 , 가

(57)

1.

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2.

1 , rpm .

3.

2 , rpm , 1 , 2 .

4.

1 , .

5.

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6.

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가

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7.

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7

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9.

8

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10.

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가

11.

10

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12.

가

가

13.

가

14.

13

15.

가

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16.

15 ,

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17.

15 ,

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18.

15 ,

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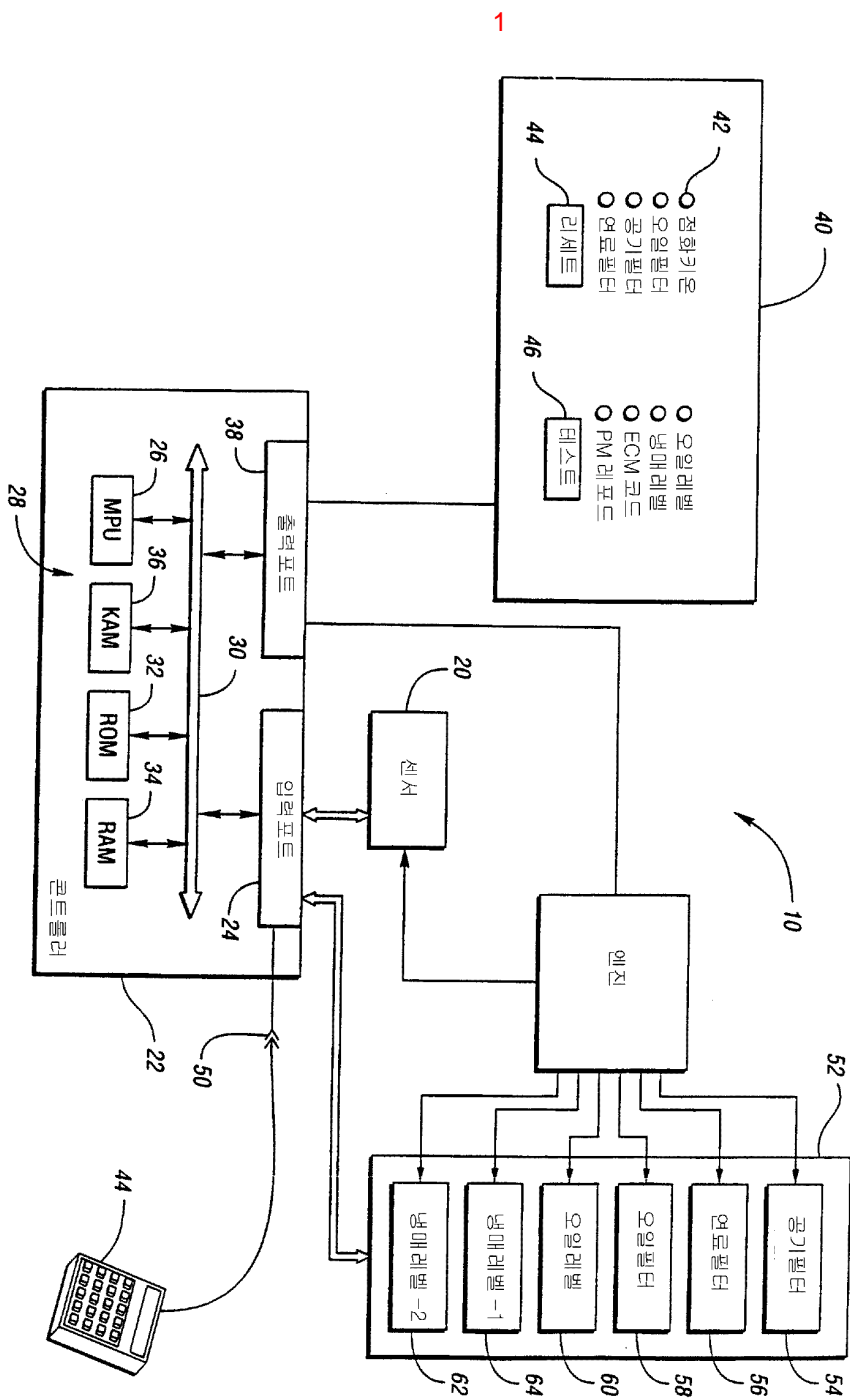
19.

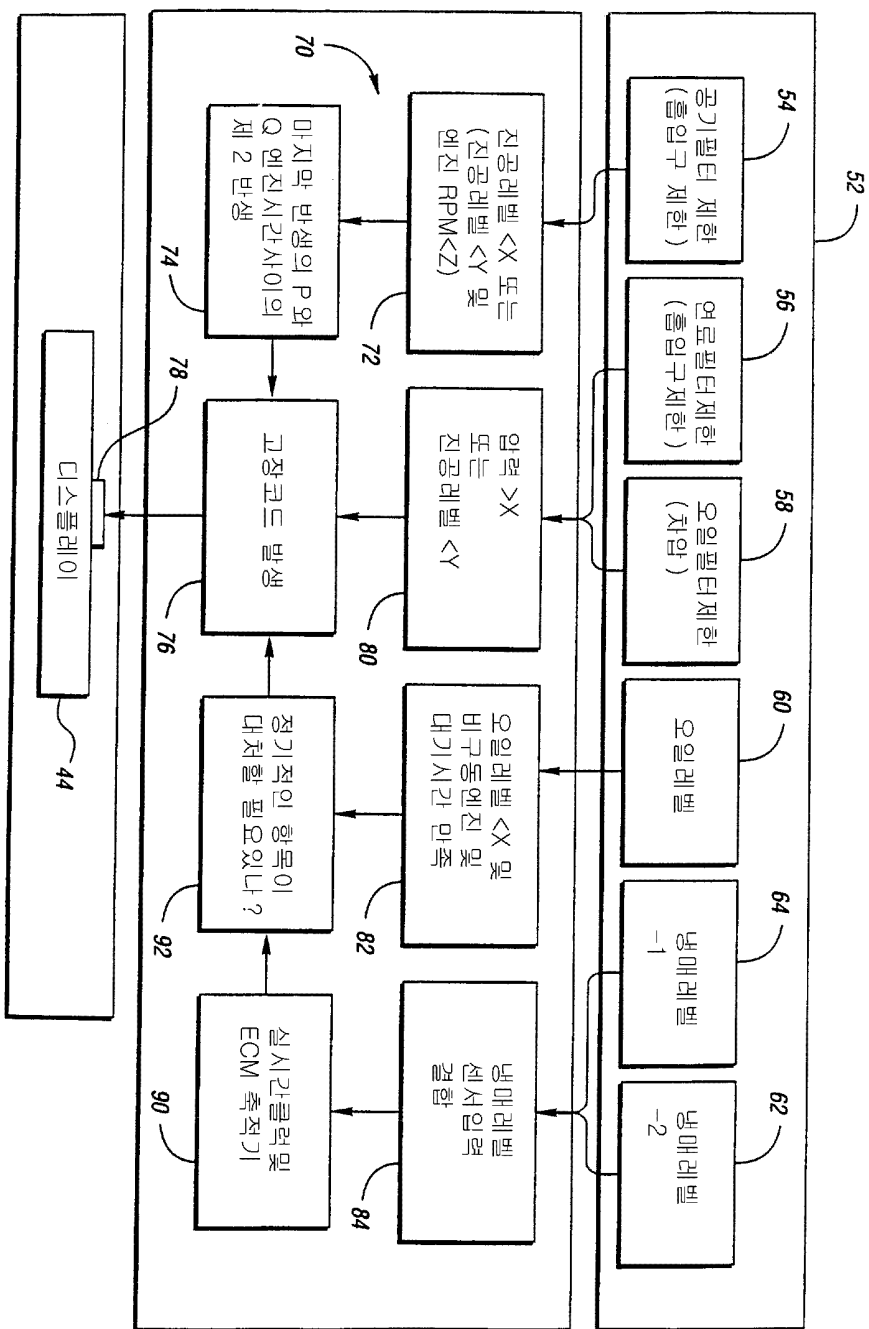
15 ,

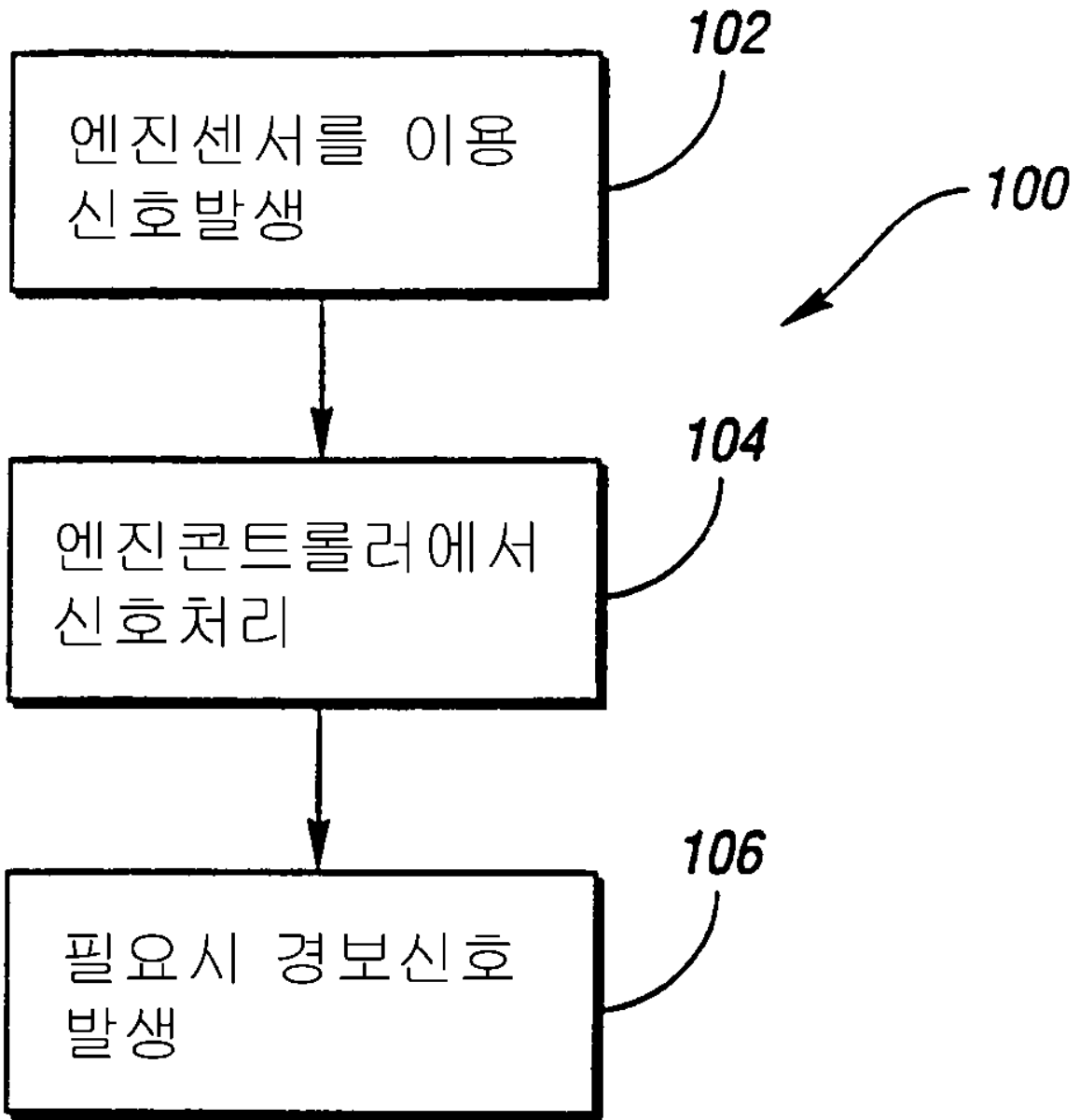
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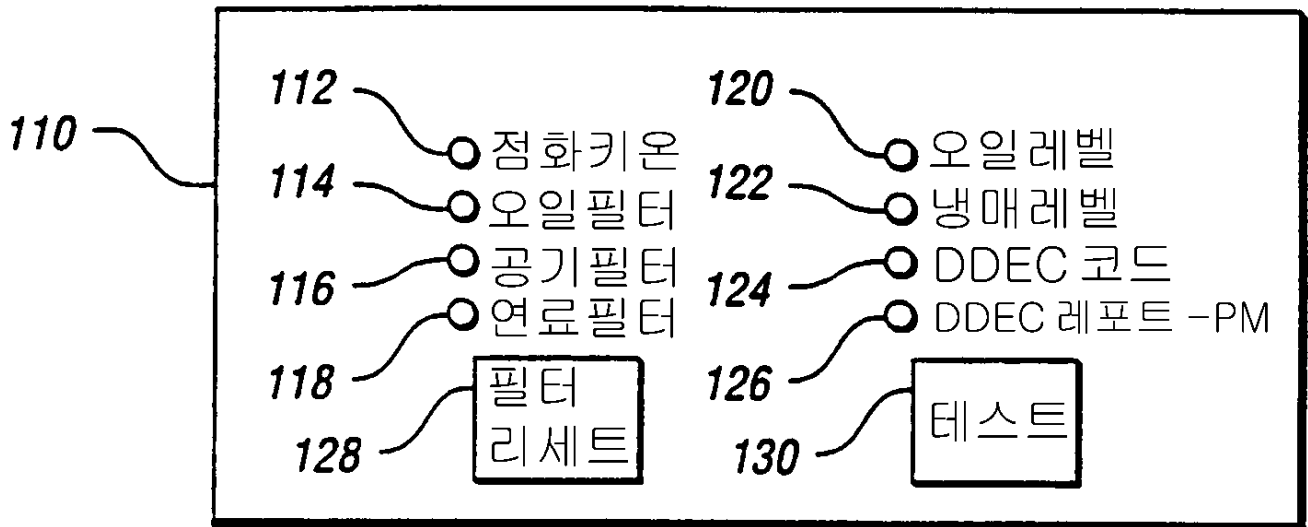
20.







4



5

