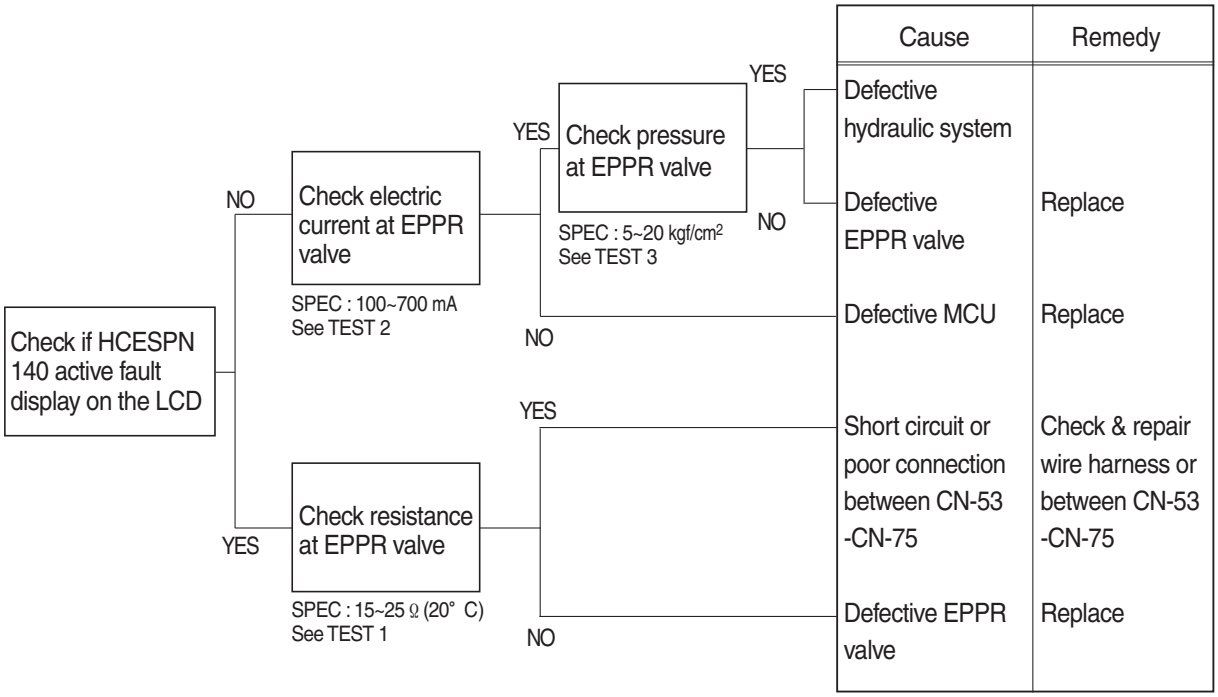
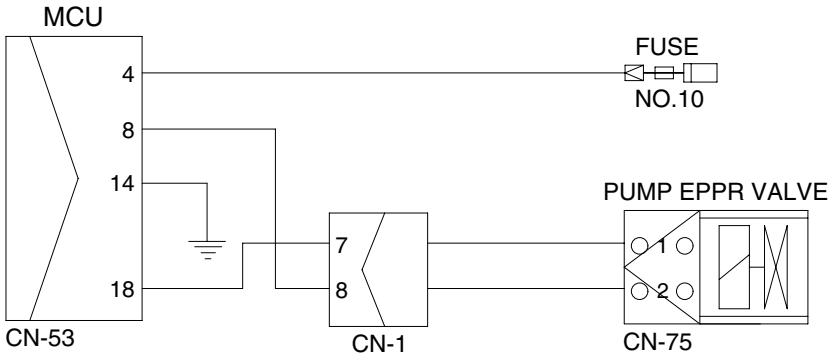
1. ALL ACTUATORS SPEED ARE SLOW

※ Boom, Arm, Grapple, Swing and travel speed are slow, but engine speed is good.
※ Spec : P-mode 1750 ± 50 rpm S -mode 1750 ± 50 rpm E-mode 1650 ± 50 rpm
※ Before carrying out below procedure, check all the related connectors are properly inserted and fault code on the cluster.

1) INSPECTION PROCEDURE



Wiring diagram



21096MS01

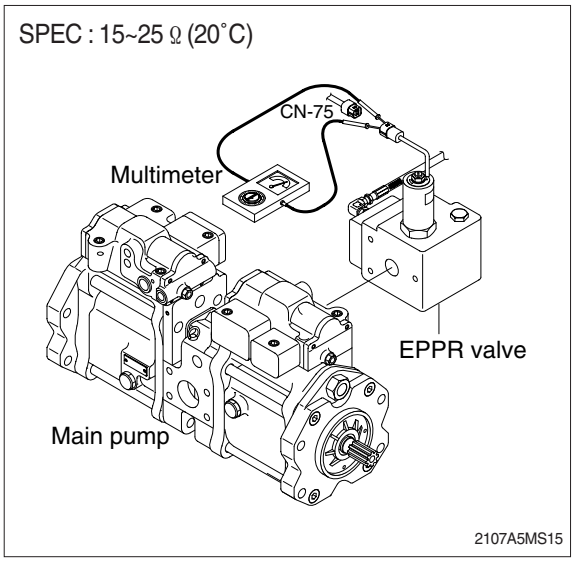
2) TEST PROCEDURE

(1) Test 1 : Check resistance at connector CN-75.

① Starting key OFF.

② Disconnect connector CN-75 from EPPR valve at main hydraulic pump.

③ Check resistance between 2 lines as figure.



(2) Test 2 : Check electric current at EPPR valve.

① Disconnect connector CN-75 from EPPR valve.

② Insert the adapter to CN-75 and install multimeter as figure.

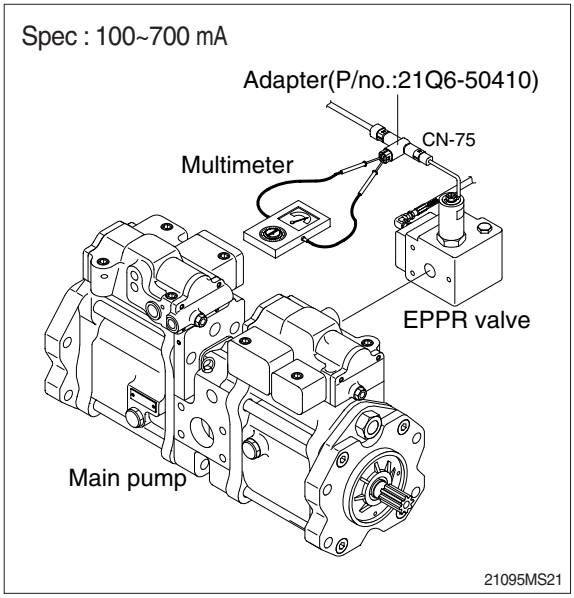
③ Start engine.

④ Set S-mode and cancel auto decel mode.

⑤ Position the accel dial at 10.

⑥ If rpm show approx 1750±50 rpm disconnect one wire harness from EPPR valve.

⑦ Check electric current at arm circuit relief position.



(3) Test 3 : Check pressure at EPPR valve.

① Remove plug and connect pressure gauge as figure.

・Gauge capacity : 0 to 50 kgf/cm² (0 to 725 psi)

② Start engine.

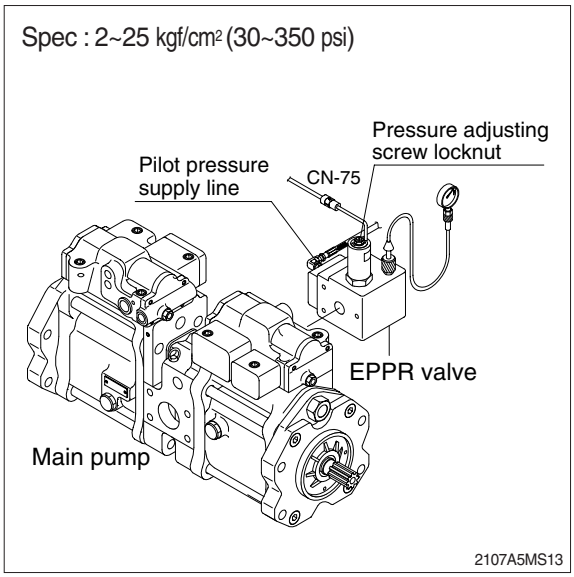
③ Set S-mode and cancel auto decel mode.

④ Position the accel dial at 10.

⑤ If rpm show approx 1750±50 rpm check pressure at relief position of arm circuit by operating arm control lever.

⑥ If pressure is not correct, adjust it.

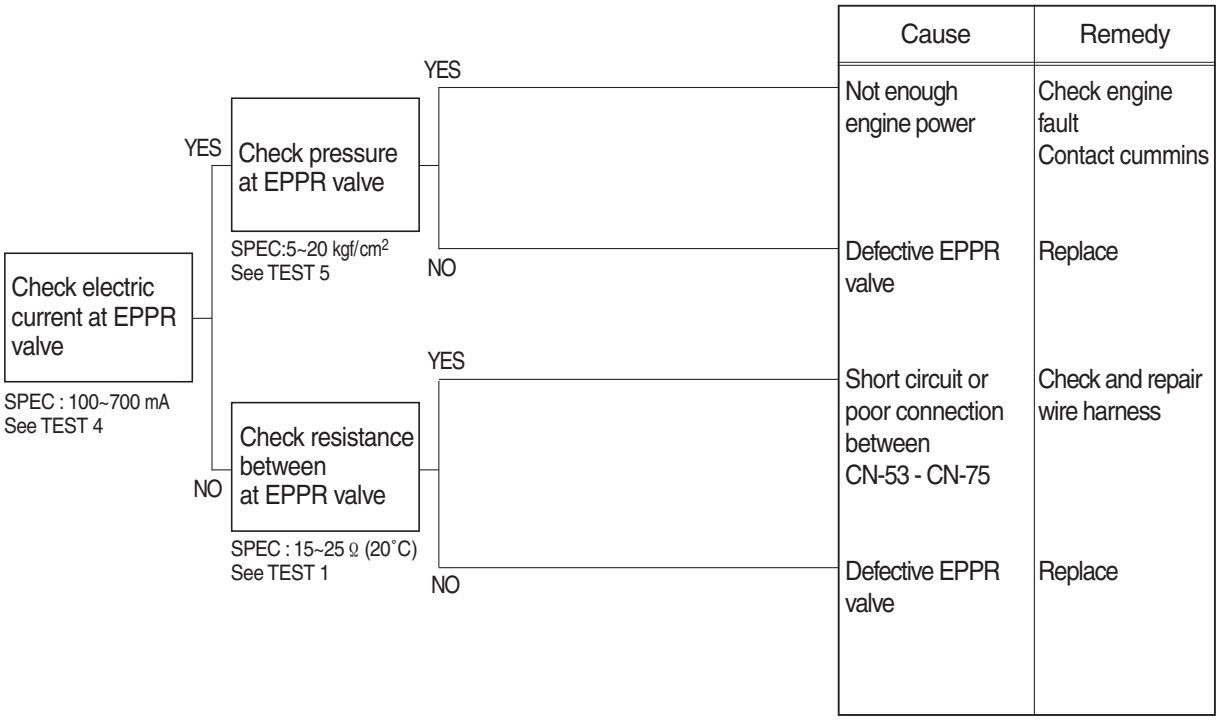
⑦ After adjust, test the machine.



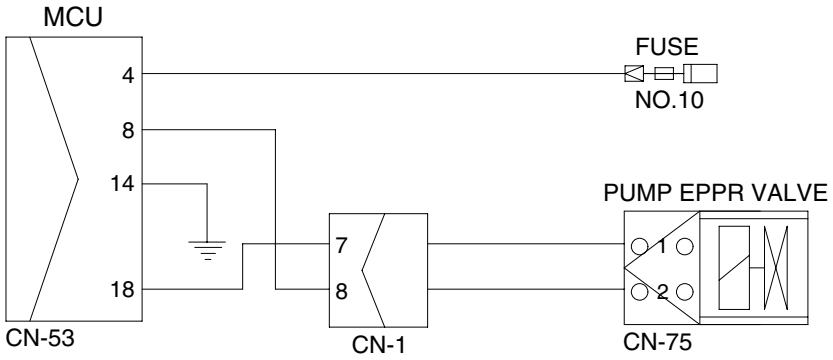
2. ENGINE STALL

※ Before carrying out below procedure, check all the related connectors are properly inserted.

1) INSPECTION PROCEDURE

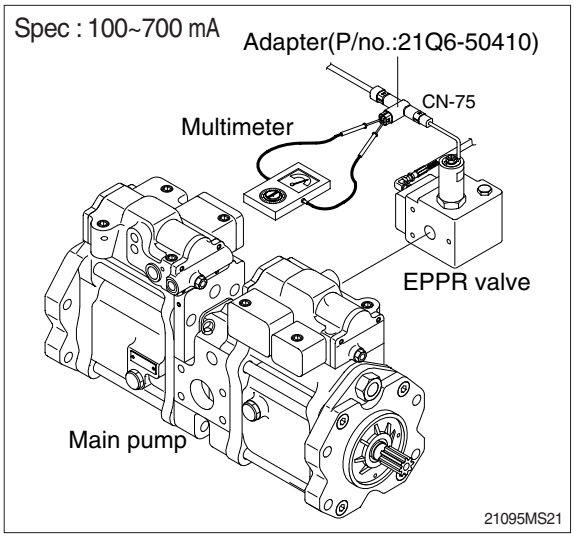


Wiring diagram



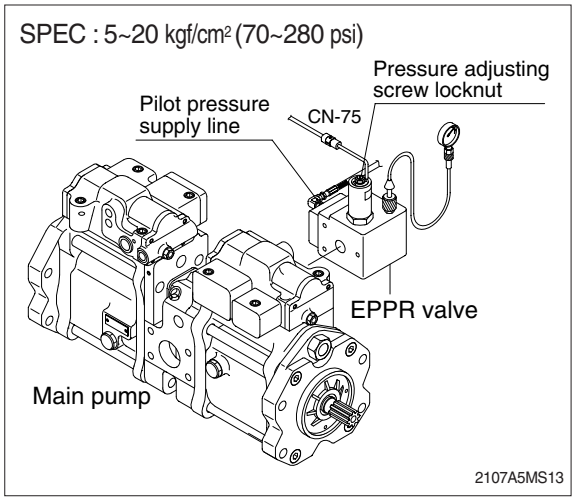
21096MS01

2) TEST PROCEDURE



(1) Test 4 : Check electric current at EPPR valve.

① Disconnect connector CN-75 from EPPR valve.
② Insert the adapter to CN-75 and install multimeter as figure.
③ Start engine.
④ Set S-mode and cancel auto decel mode.
⑤ Position the accel dial at 10.
⑥ If rpm show approx 1750±50 rpm disconnect one wire harness from EPPR valve.
⑦ Check electric current at arm circuit relief position.



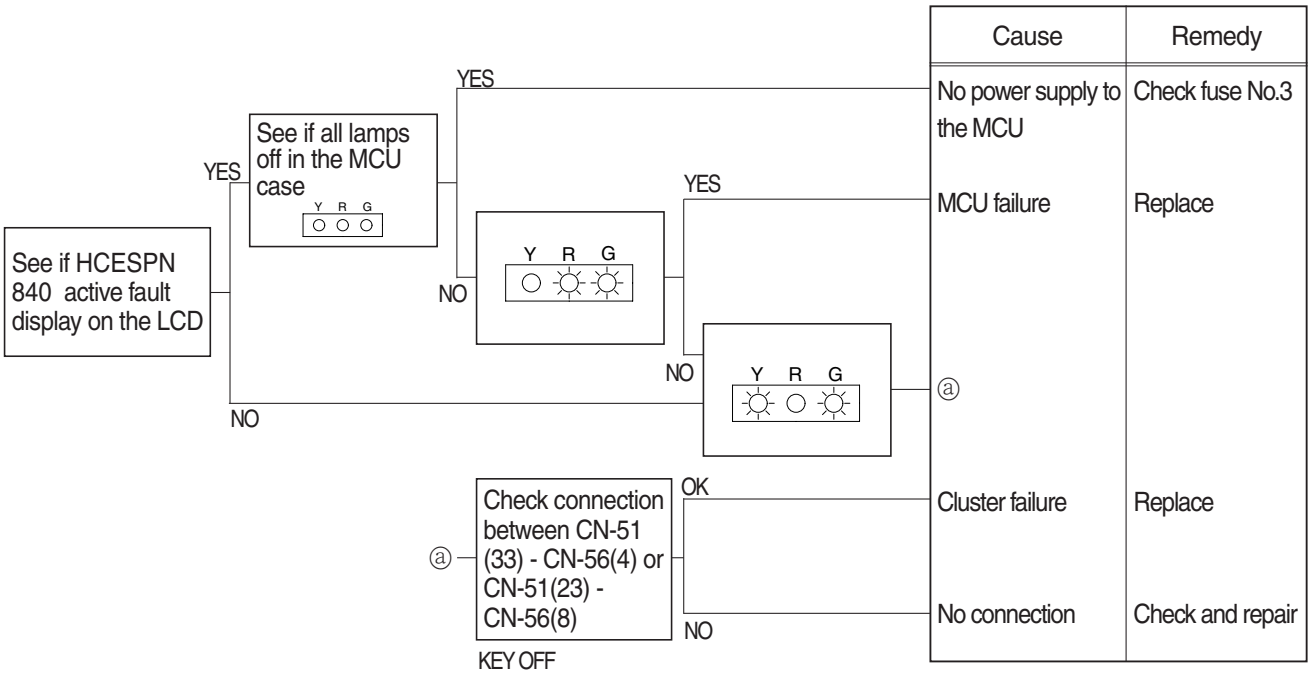
(2) Test 5 : Check pressure at EPPR valve.

① Remove plug and connect pressure gauge as figure.
 · Gauge capacity : 0 to 50 kgf/cm² (0 to 725 psi)
② Start engine.
③ Set S-mode and cancel auto decel mode.
④ Position the accel dial at 10.
⑤ If rpm show approx 1750±50 rpm check pressure at relief position of arm circuit by operating arm control lever.
⑥ If pressure is not correct, adjust it.
⑦ After adjust, test the machine.

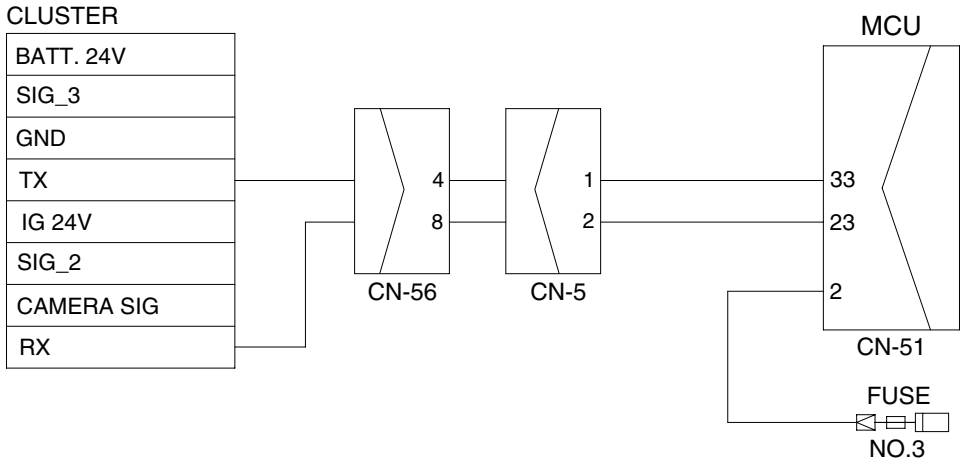
3. MALFUNCTION OF CLUSTER OR MODE SELECTION SYSTEM

※ Before carrying out below procedure, check all the related connectors are properly inserted.

1) INSPECTION PROCEDURE



Wiring diagram

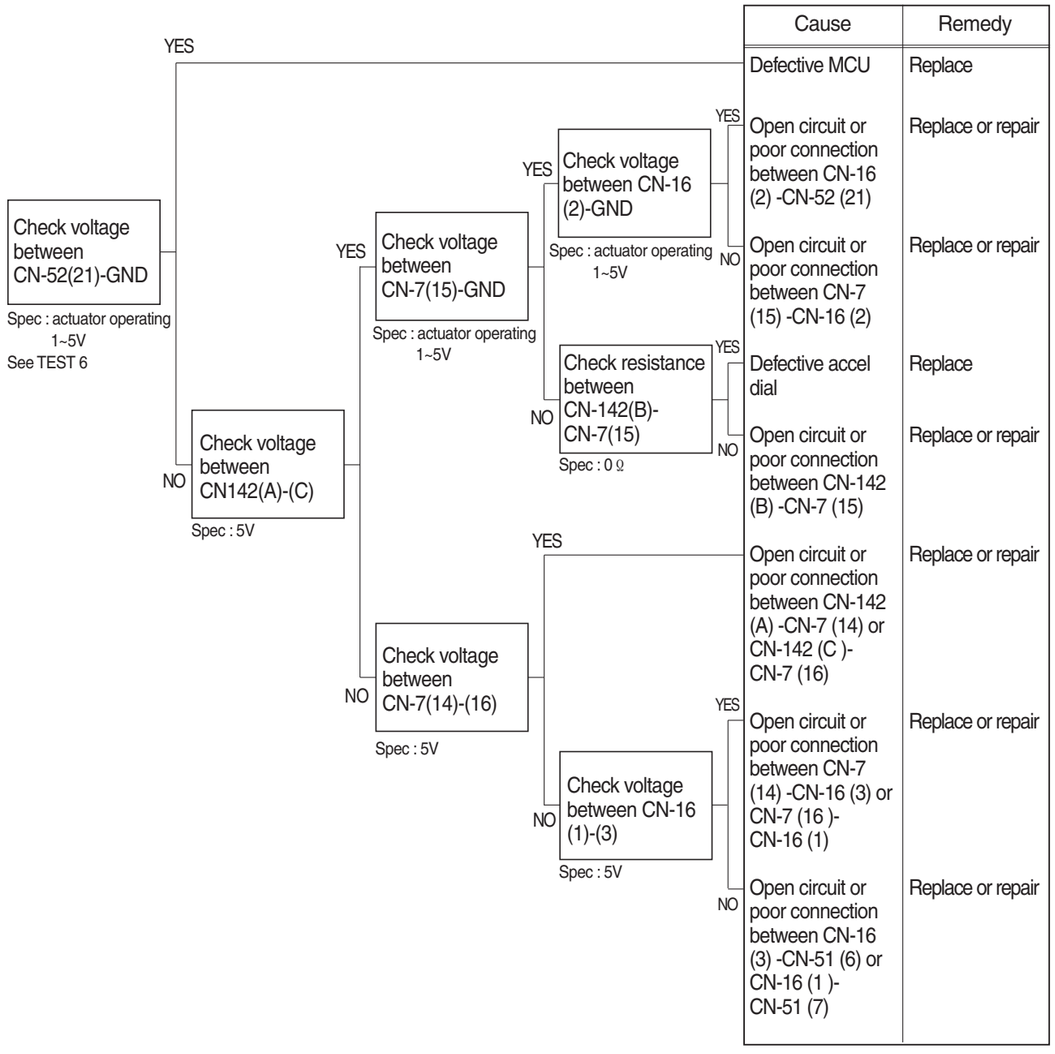


21096MS03

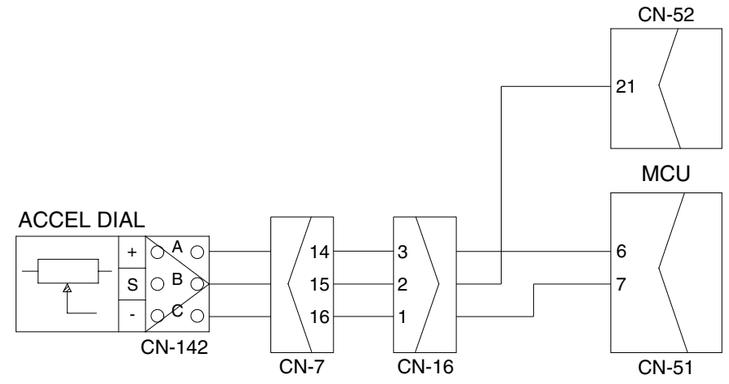
4. MALFUNCTION OF ACCEL DIAL

※ Before carrying out below procedure, check all the related connectors are properly inserted.

1) INSPECTION PROCEDURE



Cause	Remedy
Defective MCU	Replace
Open circuit or poor connection between CN-16 (2) -CN-52 (21)	Replace or repair
Open circuit or poor connection between CN-7 (15) -CN-16 (2)	Replace or repair
Defective accel dial	Replace
Open circuit or poor connection between CN-142 (B) -CN-7 (15)	Replace or repair
Open circuit or poor connection between CN-142 (A) -CN-7 (14) or CN-142 (C)- CN-7 (16)	Replace or repair
Open circuit or poor connection between CN-7 (14) -CN-16 (3) or CN-7 (16)- CN-16 (1)	Replace or repair
Open circuit or poor connection between CN-16 (3) -CN-51 (6) or CN-16 (1)- CN-51 (7)	Replace or repair



21096MS04

2) TEST PROCEDURE

(1) Test 6 : Check voltage at CN-52(21) and ground.

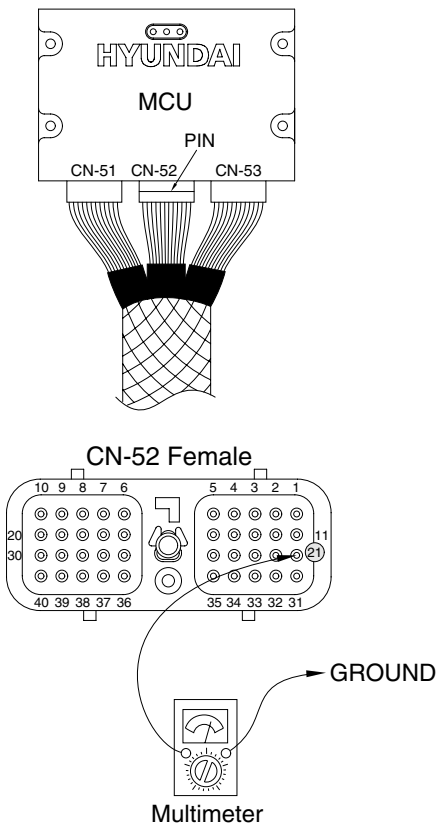
① Prepare 1 piece of thin sharp pin, steel or copper.

② Insert prepared pin to rear side of connectors : One pin to (21) of CN-52.

③ Starting key ON.

④ Check voltage as figure.

SPEC : Actuator operating : 1~5 V



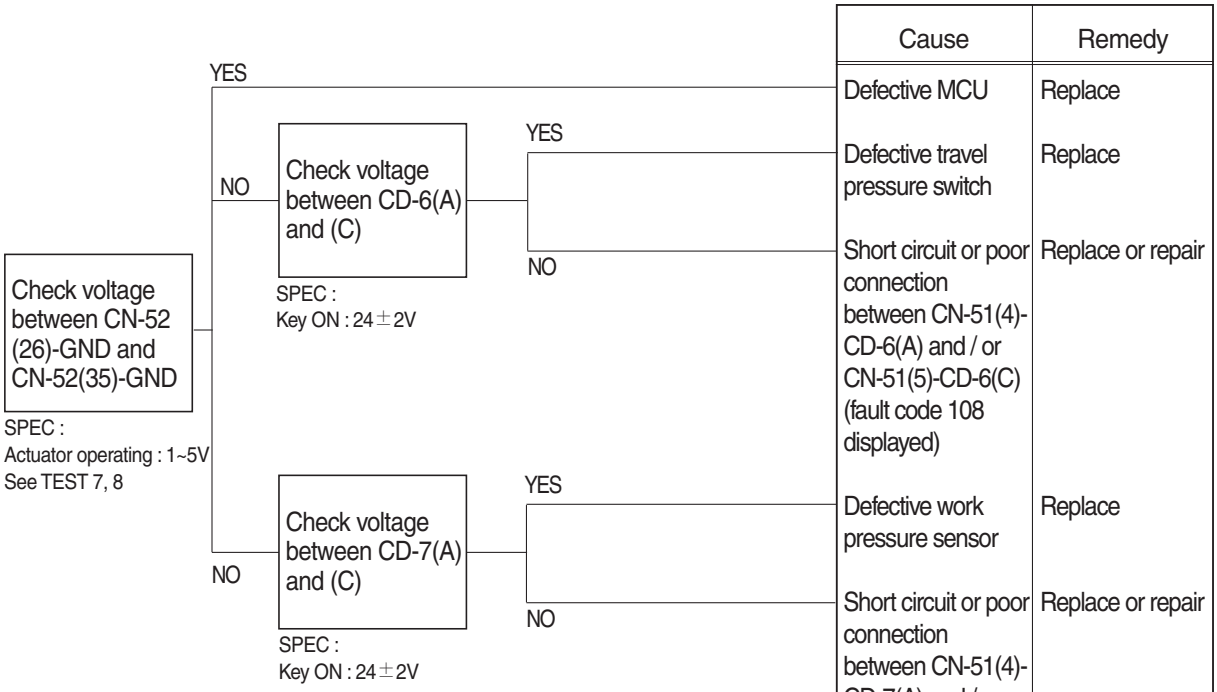
21096MS04A

5. AUTO DECEL SYSTEM DOES NOT WORK

· Fault code : HCESPN 105, FMI 0~4 (work pressure sensor)
HCESPN 108, FMI 0~4 (travel oil pressure sensor)

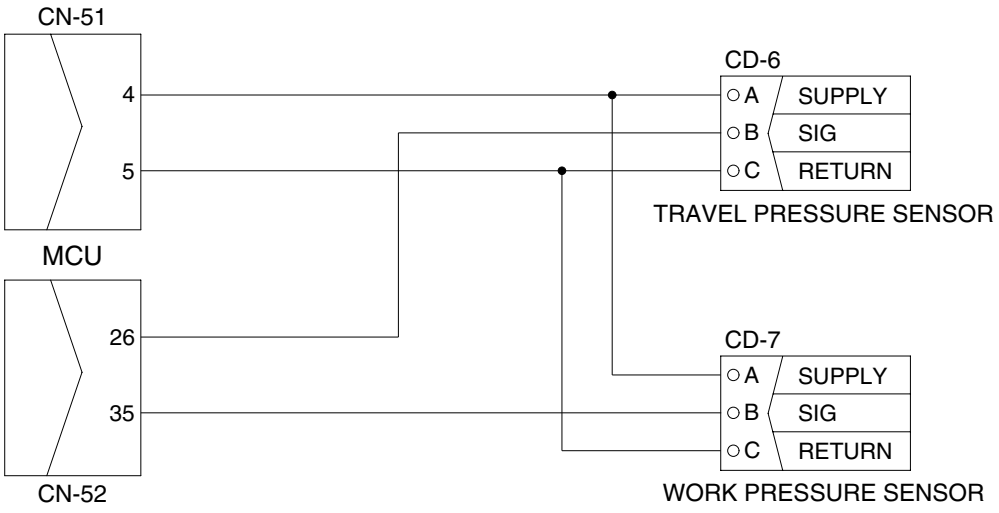
※ Before carrying out below procedure, check all the related connectors are properly inserted.

1) INSPECTION PROCEDURE



Cause	Remedy
Defective MCU	Replace
Defective travel pressure switch	Replace
Short circuit or poor connection between CN-51(4)-CD-6(A) and / or CN-51(5)-CD-6(C) (fault code 108 displayed)	Replace or repair
Defective work pressure sensor	Replace
Short circuit or poor connection between CN-51(4)-CD-7(A) and / or CN-51(5)-CD-7(C) (fault code 105 displayed)	Replace or repair

Wiring diagram



21096MS05

2) TEST PROCEDURE

(1) Test 7 : Check voltage at CN-52(26) and ground.

① Prepare 1 piece of thin sharp pin, steel or copper.

② Insert prepared pin to rear side of connectors : One pin to (26) of CN-52.

③ Starting key ON.

④ Check voltage as figure.

(2) Test 8 : Check voltage at CN-52(35)and ground.

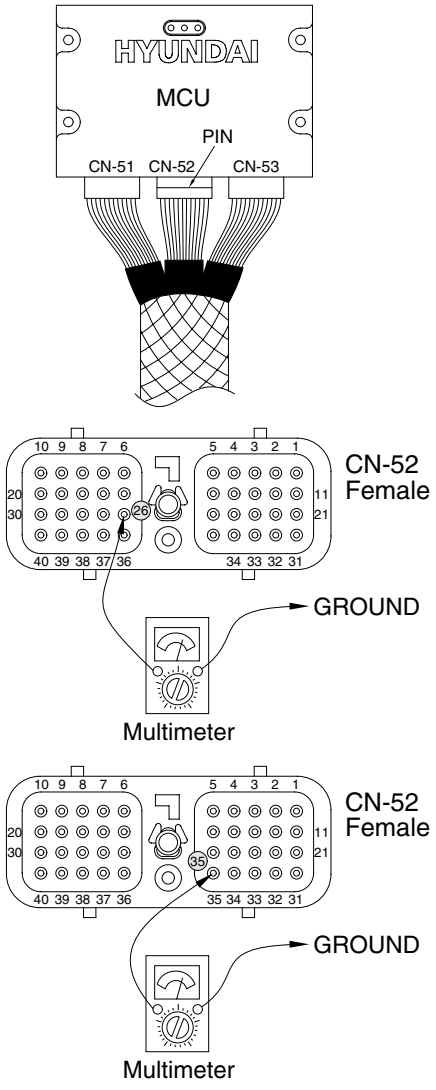
① Prepare 1 piece of thin sharp pin, steel or copper

② Insert prepared pin to rear side of connectors : One pin to (35) of CN-52.

③ Starting key ON.

④ Check voltage as figure.

SPEC : Actuator operating : 1~5 V



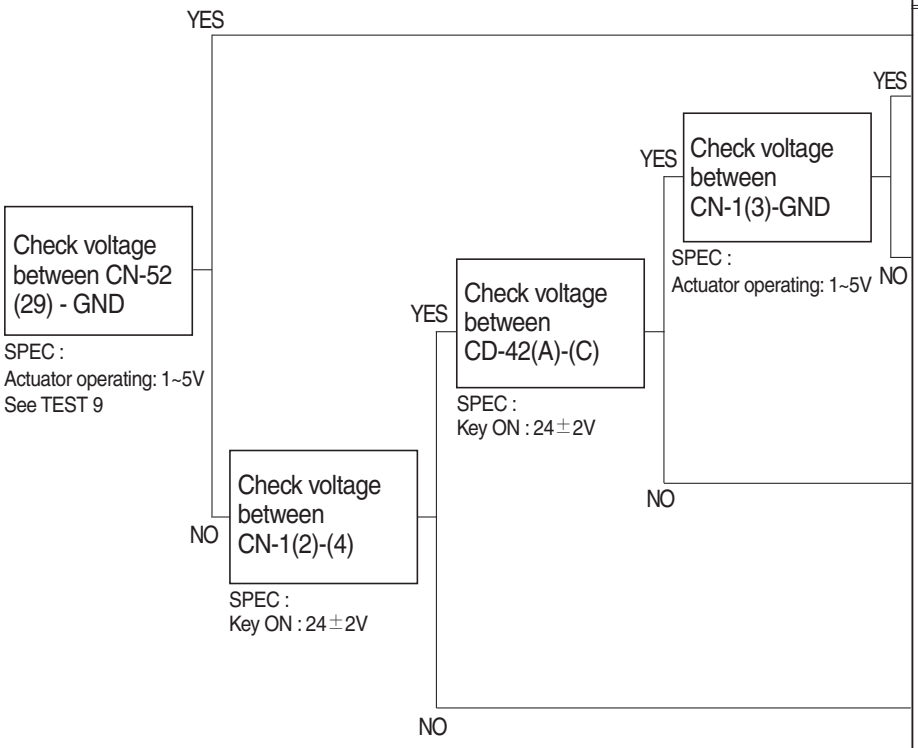
21096MS05A

6. MALFUNCTION OF PUMP 1 PRESSURE SENSOR

· Fault code : HCESPN 120, FMI 0~4

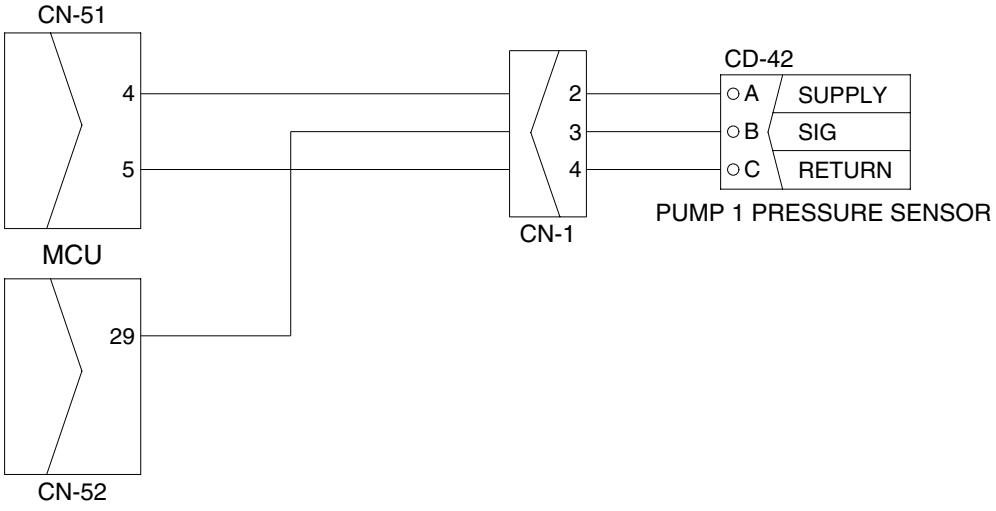
※ Before carrying out below procedure, check all the related connectors are properly inserted.

1) INSPECTION PROCEDURE



Cause	Remedy
Defective MCU	Replace
Short circuit or poor connection between CN-52-(29)-CN-1(3)	Replace or repair
Detective P1 pressure sensor	Replace or repair
Short circuit or poor connection between CN-1(3)-CD-42(B)	Replace or repair
Short circuit or poor connection between CD-42(A)-CN-1(2) or CD-42(C)-CN-1(4)	Replace or repair
Short circuit or poor connection between CN-1(2)-CN-51(4) or CN-1 (4) - CN-51(5)	Replace or repair

Wiring diagram



21096MS06

2) TEST PROCEDURE

(1) Test 9 : Check voltage at CN-52(29) and ground.

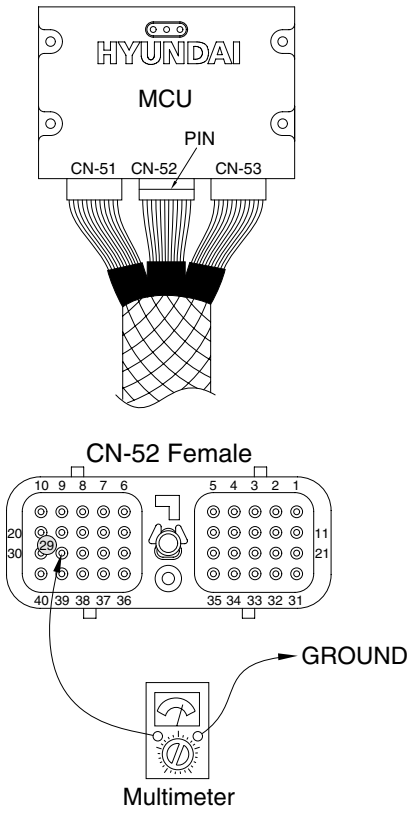
① Prepare 1 piece of thin sharp pin, steel or copper.

② Insert prepared pin to rear side of connectors : One pin to (29) of CN-52.

③ Starting key ON.

④ Check voltage as figure.

SPEC : Actuator operating : 1~5 V



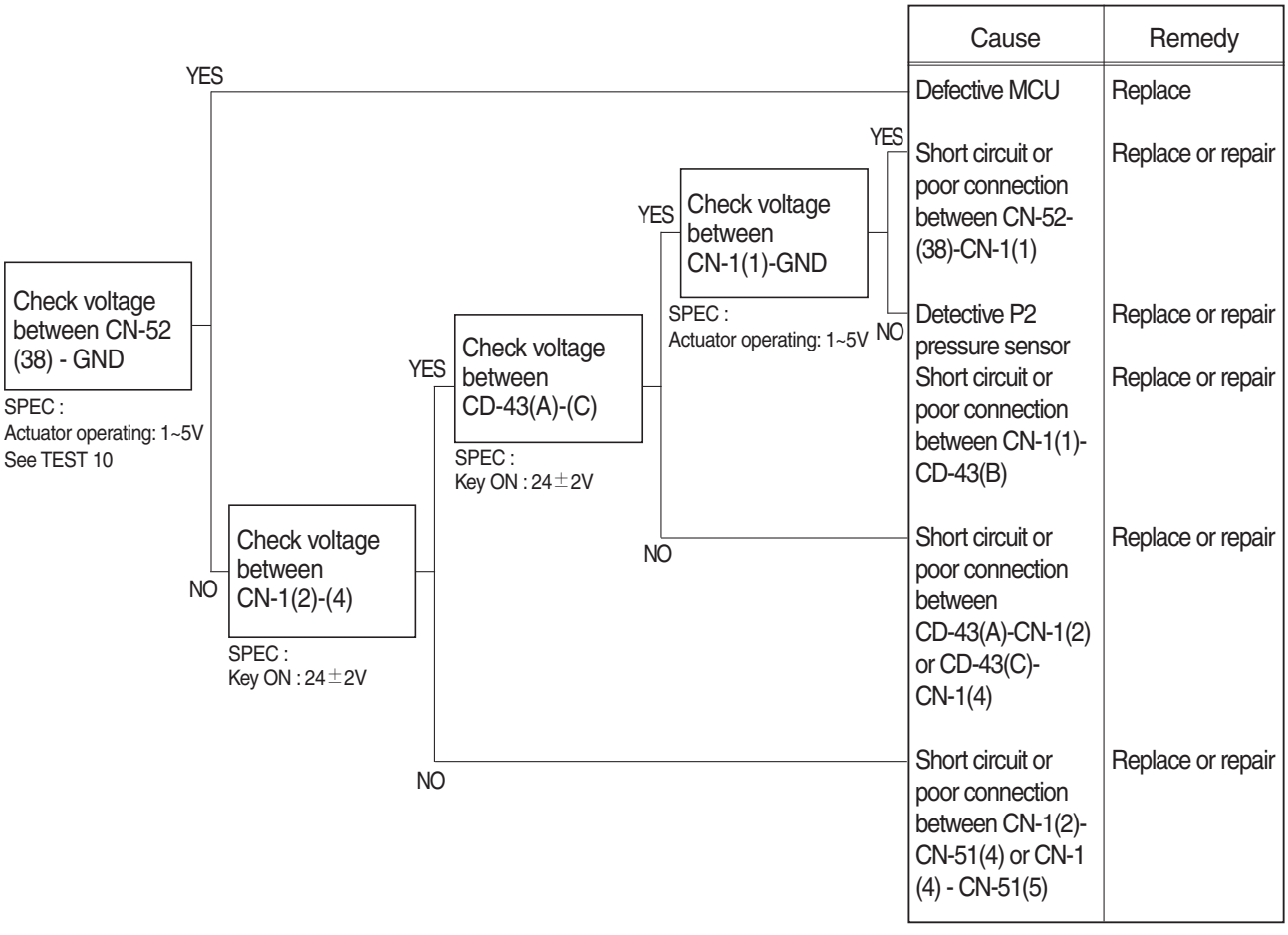
21096MS06A

7. MALFUNCTION OF PUMP 2 PRESSURE SENSOR

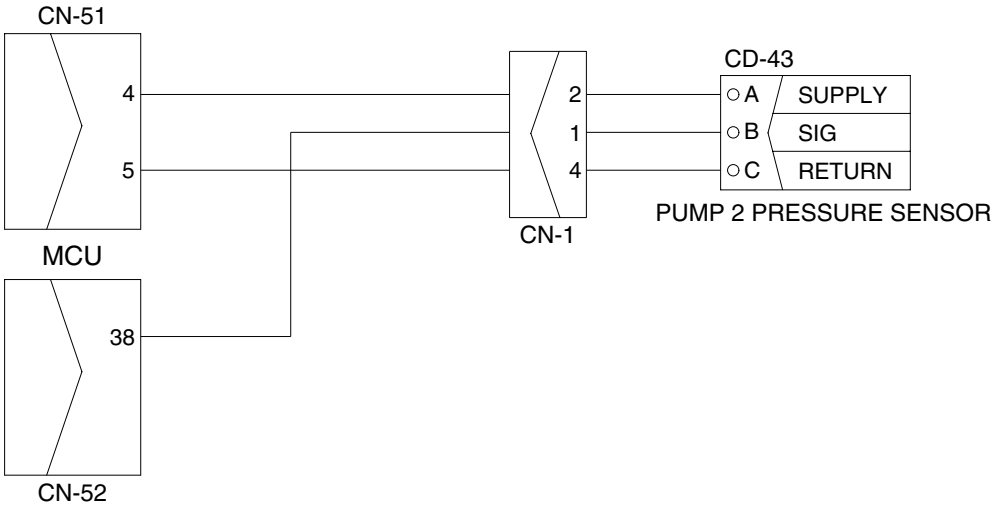
· Fault code : HCESPN 121, FMI 0~4

※ Before carrying out below procedure, check all the related connectors are properly inserted.

1) INSPECTION PROCEDURE



Wiring diagram



21096MS07

2) TEST PROCEDURE

(1) Test 10 : Check voltage at CN-52(38) and ground.

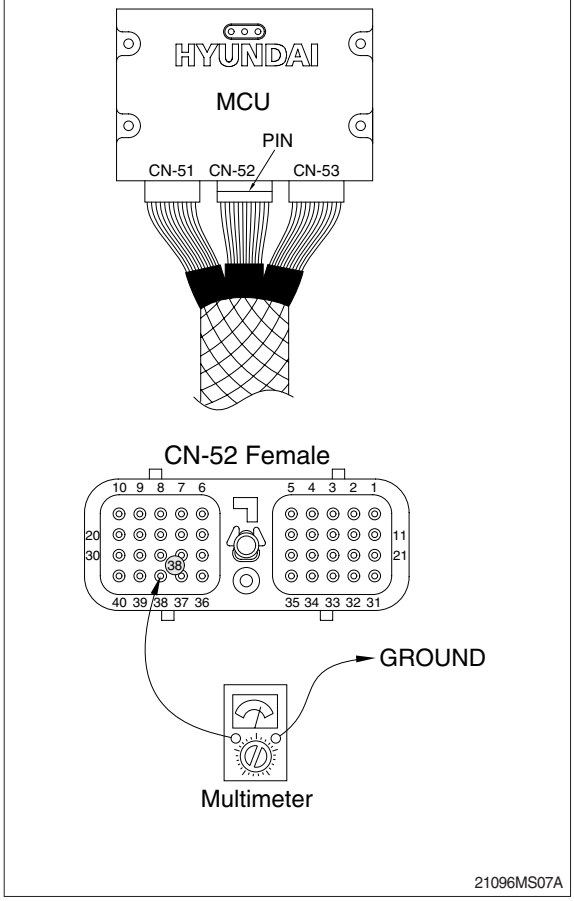
① Prepare 1 piece of thin sharp pin, steel or copper.

② Insert prepared pin to rear side of connectors : One pin to (38) of CN-52.

③ Starting key ON.

④ Check voltage as figure.

SPEC : Actuator operating : 1~5 V

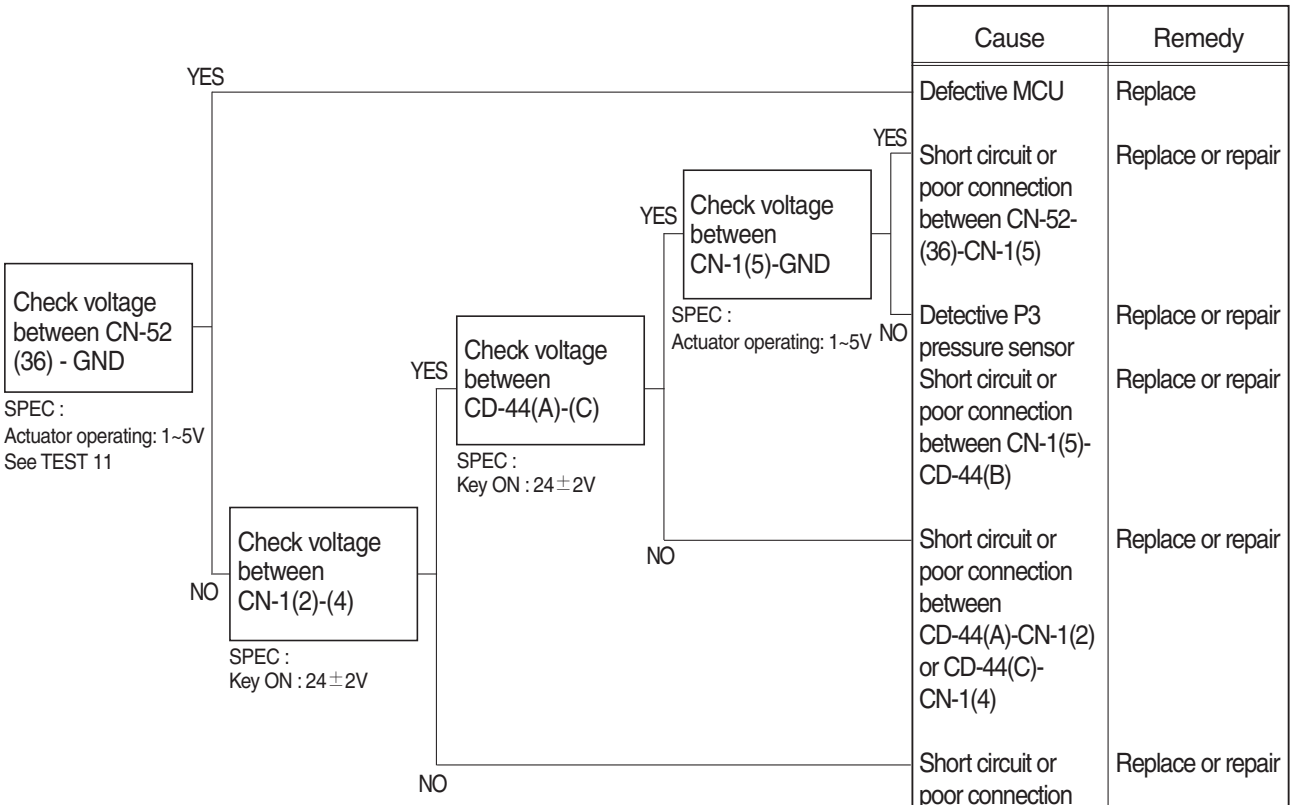


8. MALFUNCTION OF PUMP 3 PRESSURE SENSOR

· Fault code : HCESPN 125, FMI 0~4

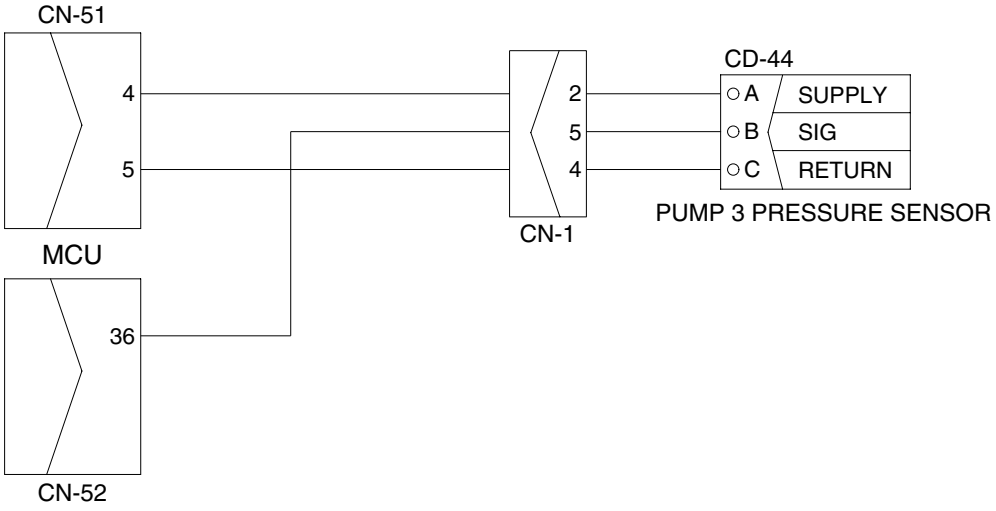
※ Before carrying out below procedure, check all the related connectors are properly inserted.

1) INSPECTION PROCEDURE



Cause	Remedy
Defective MCU	Replace
Short circuit or poor connection between CN-52-(36)-CN-1(5)	Replace or repair
Detective P3 pressure sensor	Replace or repair
Short circuit or poor connection between CN-1(5)-CD-44(B)	Replace or repair
Short circuit or poor connection between CD-44(A)-CN-1(2) or CD-44(C)-CN-1(4)	Replace or repair
Short circuit or poor connection between CN-1(2)-CN-51(4) or CN-1 (4) - CN-51(5)	Replace or repair

Wiring diagram



21096MS08

2) TEST PROCEDURE

(1) Test 11 : Check voltage at CN-52(36) and ground.

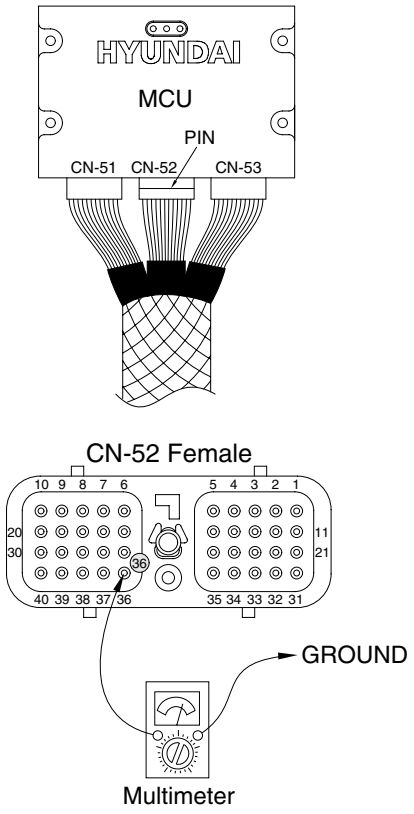
① Prepare 1 piece of thin sharp pin, steel or copper.

② Insert prepared pin to rear side of connectors : One pin to (36) of CN-52.

③ Starting key ON.

④ Check voltage as figure.

SPEC : Actuator operating : 1~5 V



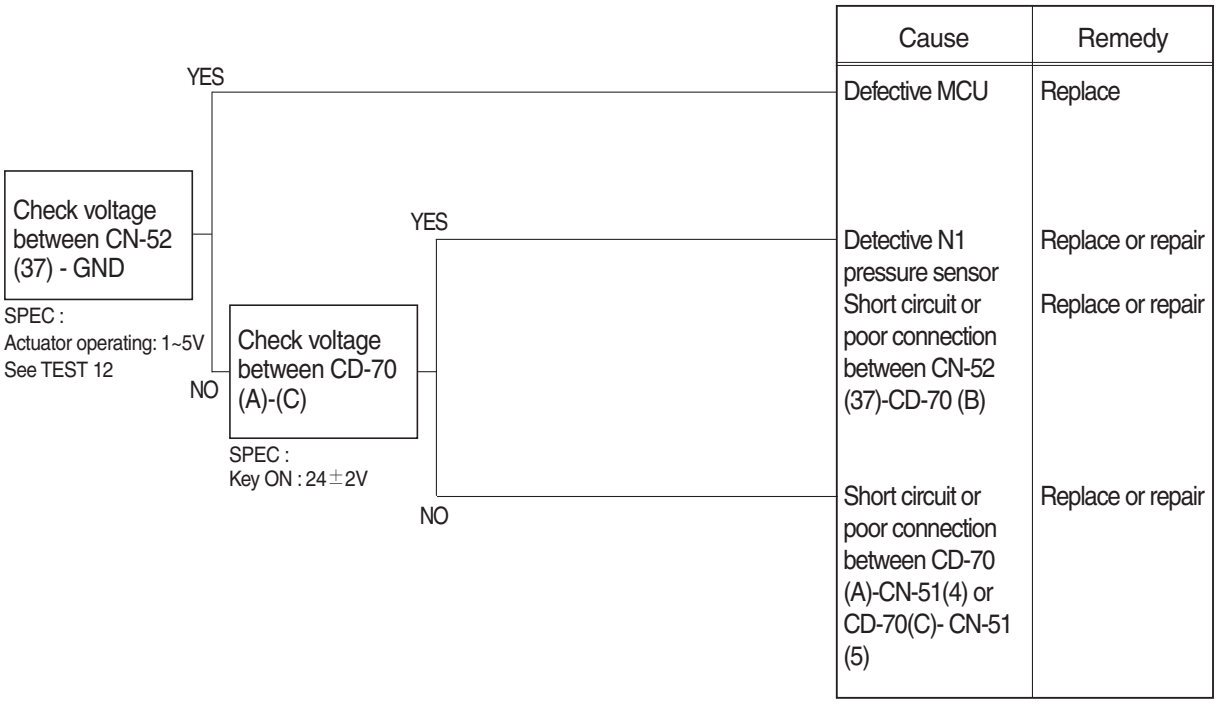
21096MS08A

9. MALFUNCTION OF NEGATIVE 1 PRESSURE SENSOR

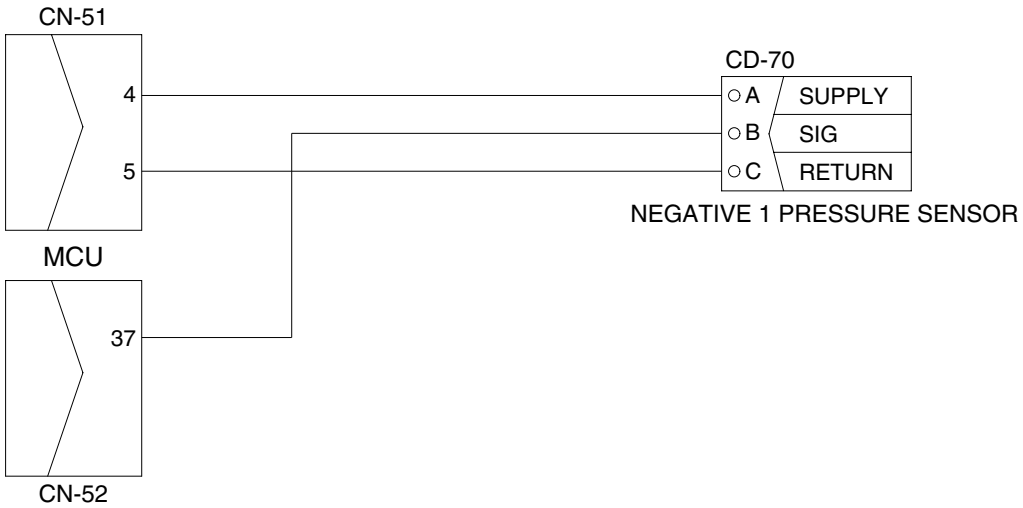
· Fault code : HCESPN 123, FMI 0~4

※ Before carrying out below procedure, check all the related connectors are properly inserted.

1) INSPECTION PROCEDURE



Wiring diagram



21096MS09

2) TEST PROCEDURE

(1) Test 12 : Check voltage at CN-52(37) and ground.

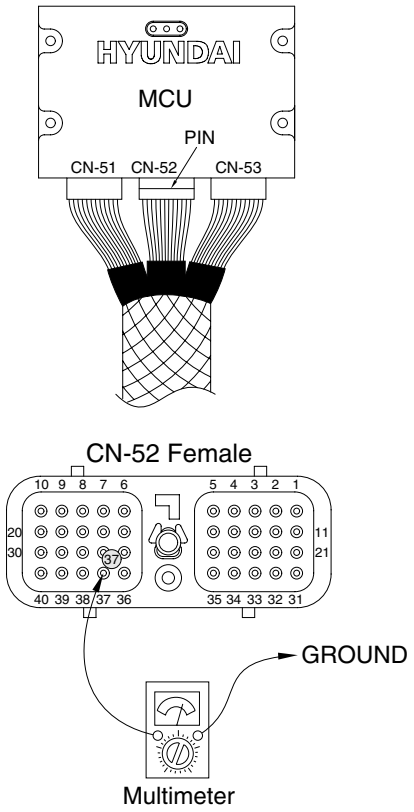
① Prepare 1 piece of thin sharp pin, steel or copper.

② Insert prepared pin to rear side of connectors : One pin to (37) of CN-52.

③ Starting key ON.

④ Check voltage as figure.

SPEC : Actuator operating : 1~5 V



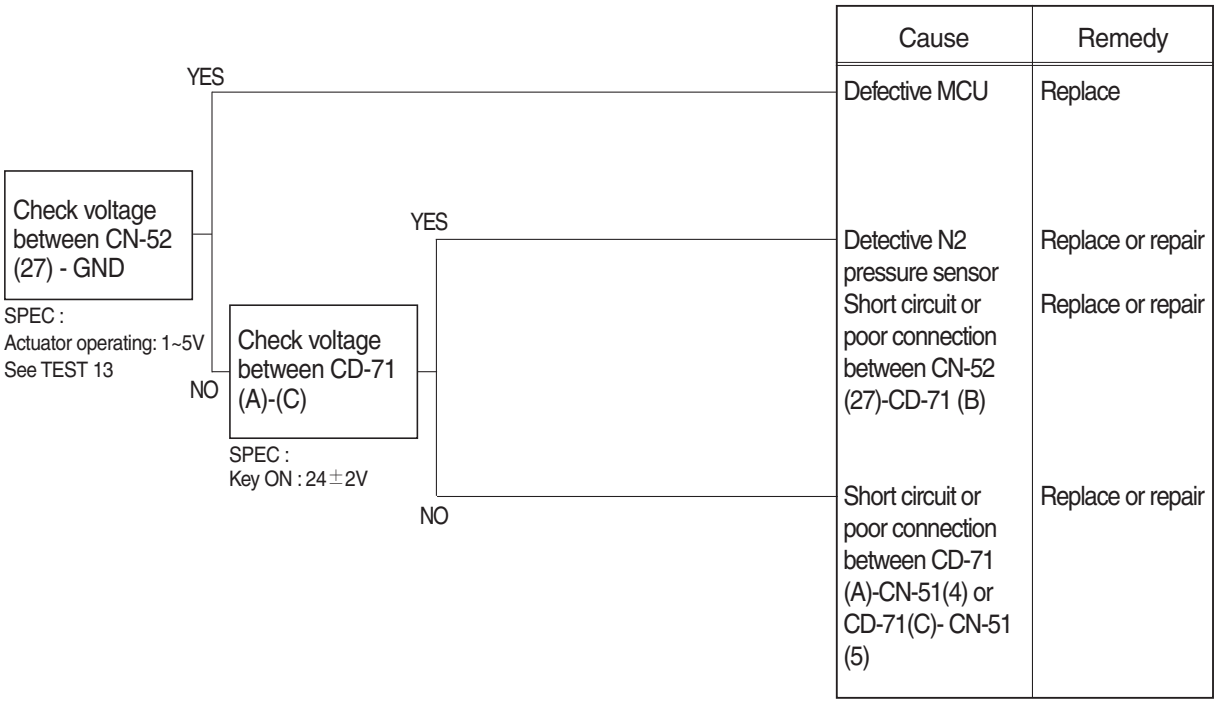
21096MS09A

10. MALFUNCTION OF NEGATIVE 2 PRESSURE SENSOR

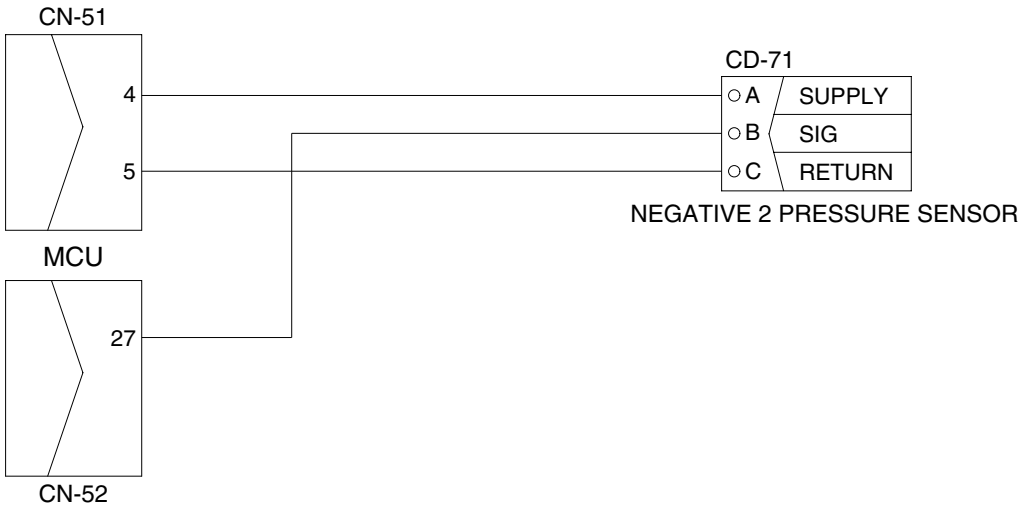
· Fault code : HCESPN 124, FMI 0~4

※ Before carrying out below procedure, check all the related connectors are properly inserted.

1) INSPECTION PROCEDURE



Wiring diagram



21096MS10

2) TEST PROCEDURE

(1) Test 13 : Check voltage at CN-52(27) and ground.

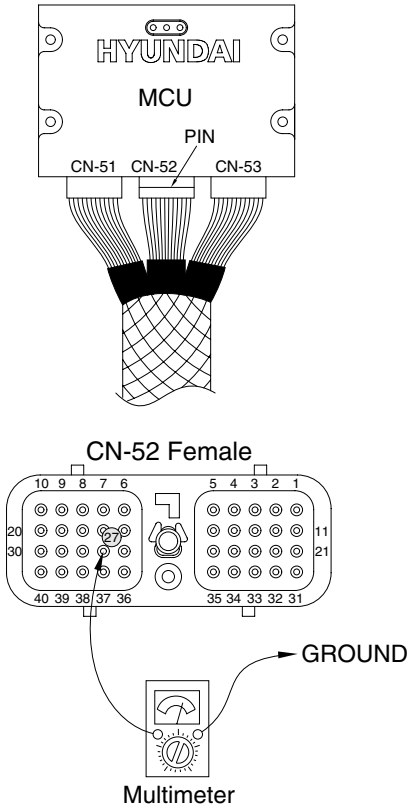
① Prepare 1 piece of thin sharp pin, steel or copper.

② Insert prepared pin to rear side of connectors : One pin to (27) of CN-52.

③ Starting key ON.

④ Check voltage as figure.

SPEC : Actuator operating : 1~5 V



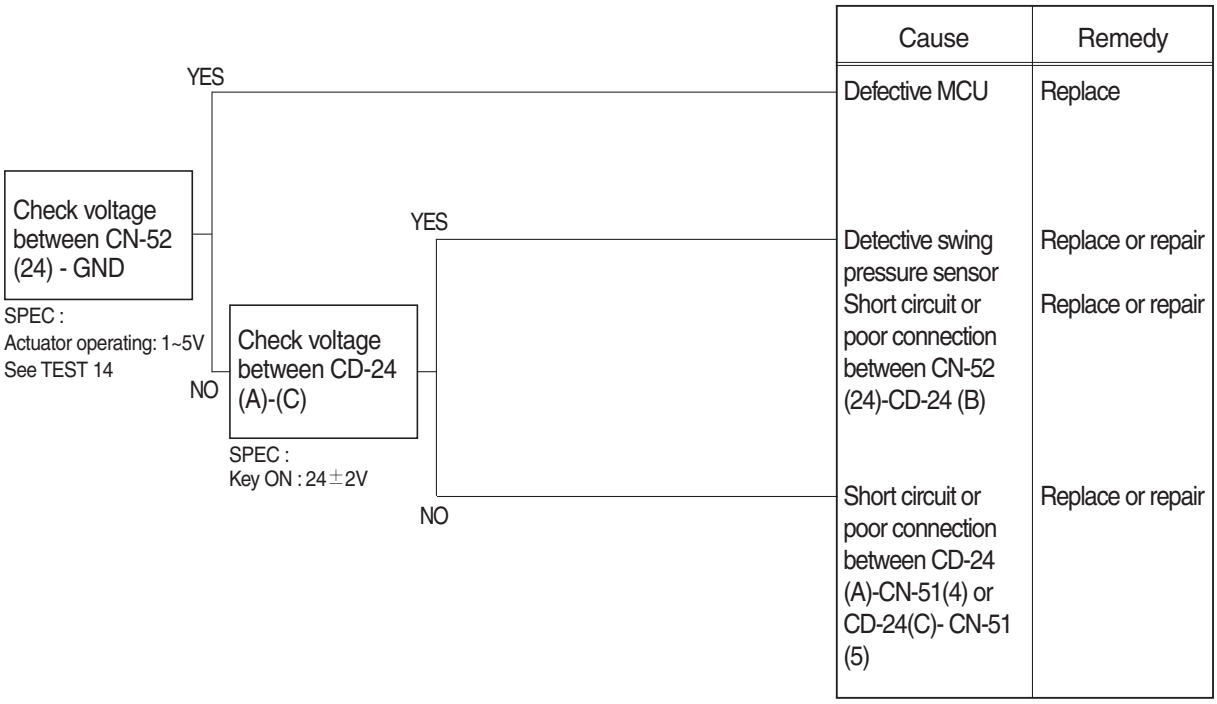
21096MS10A

11. MALFUNCTION OF SWING PRESSURE SENSOR

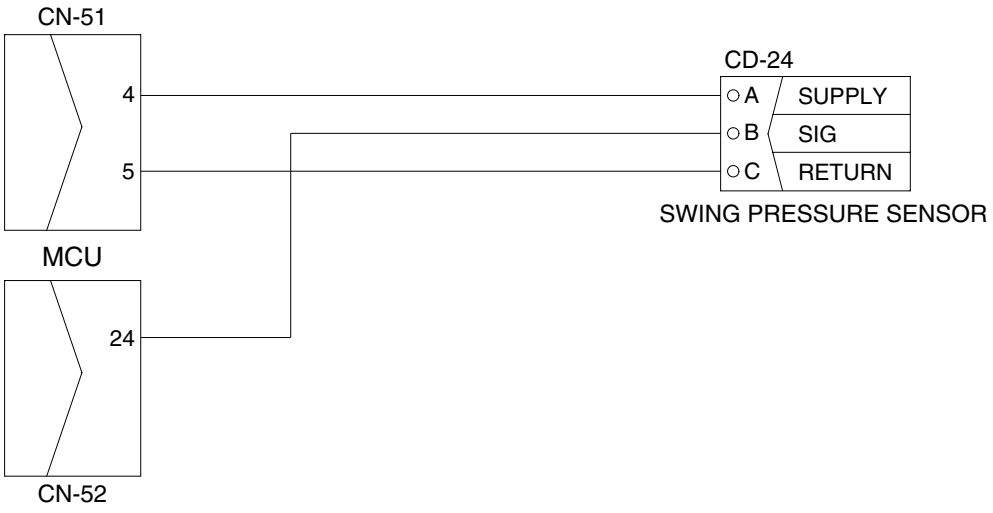
· Fault code : HCESPN 135, FMI 0~4

※ Before carrying out below procedure, check all the related connectors are properly inserted.

1) INSPECTION PROCEDURE



Wiring diagram



21096MS11

2) TEST PROCEDURE

(1) Test 14 : Check voltage at CN-52(24) and ground.

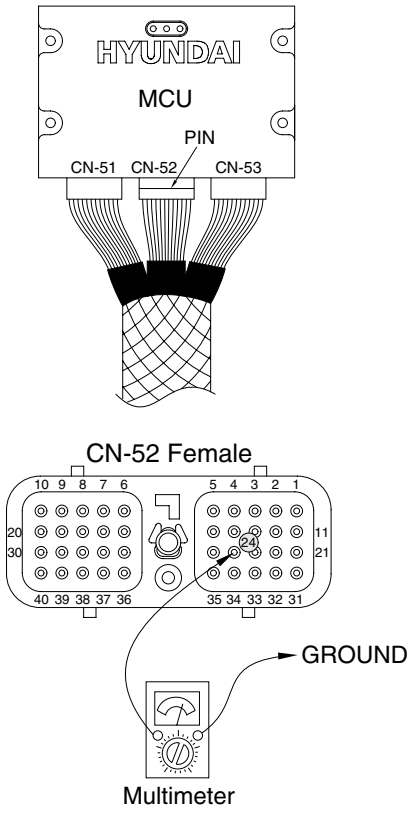
① Prepare 1 piece of thin sharp pin, steel or copper.

② Insert prepared pin to rear side of connectors : One pin to (24) of CN-52.

③ Starting key ON.

④ Check voltage as figure.

SPEC : Actuator operating : 1~5 V



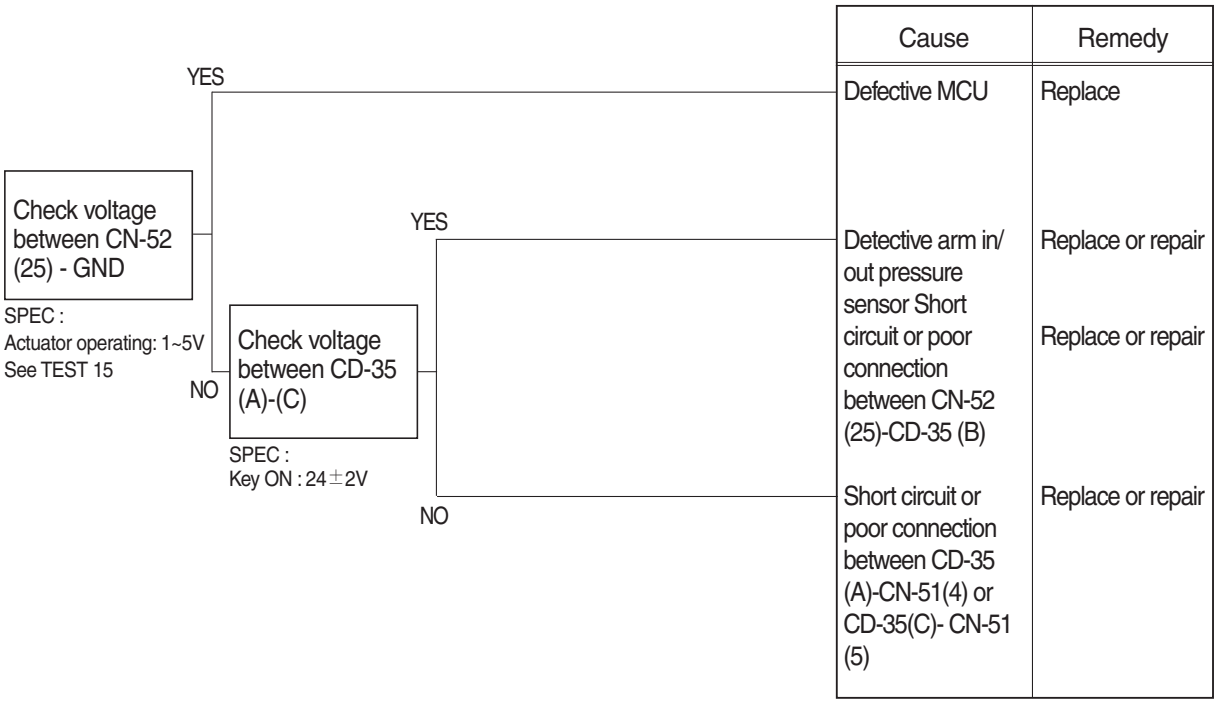
21096MS11A

12. MALFUNCTION OF ARM IN/OUT PRESSURE SENSOR

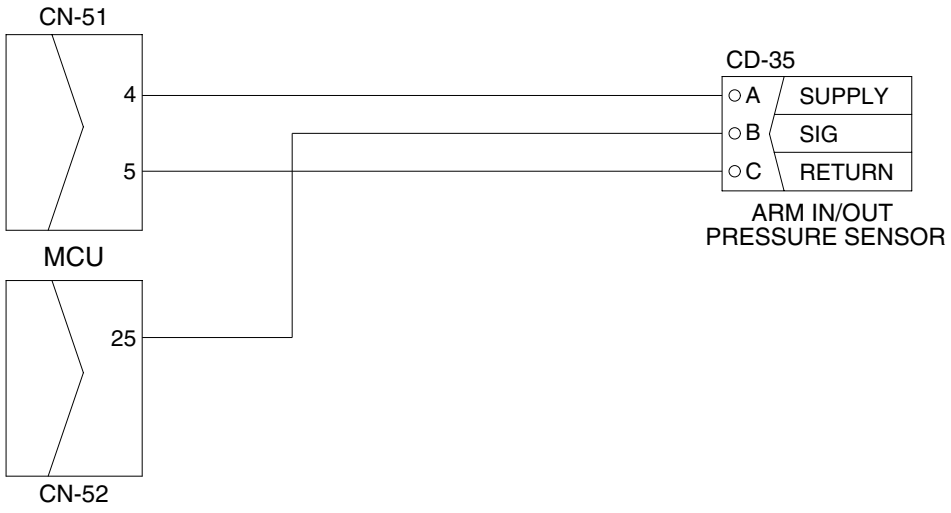
· Fault code : HCESPN 133, FMI 0~4

※ Before carrying out below procedure, check all the related connectors are properly inserted.

1) INSPECTION PROCEDURE



Wiring diagram



4809MH6MS02

2) TEST PROCEDURE

(1) Test 15 : Check voltage at CN-52(25) and ground.

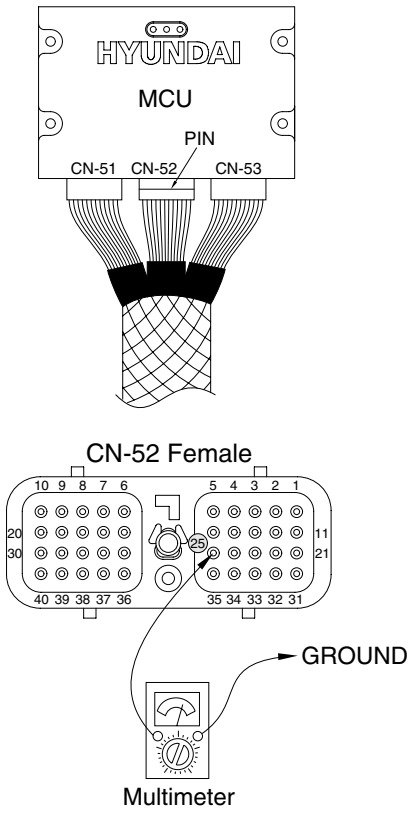
① Prepare 1 piece of thin sharp pin, steel or copper.

② Insert prepared pin to rear side of connectors : One pin to (25) of CN-52.

③ Starting key ON.

④ Check voltage as figure.

SPEC : Actuator operating : 1~5 V



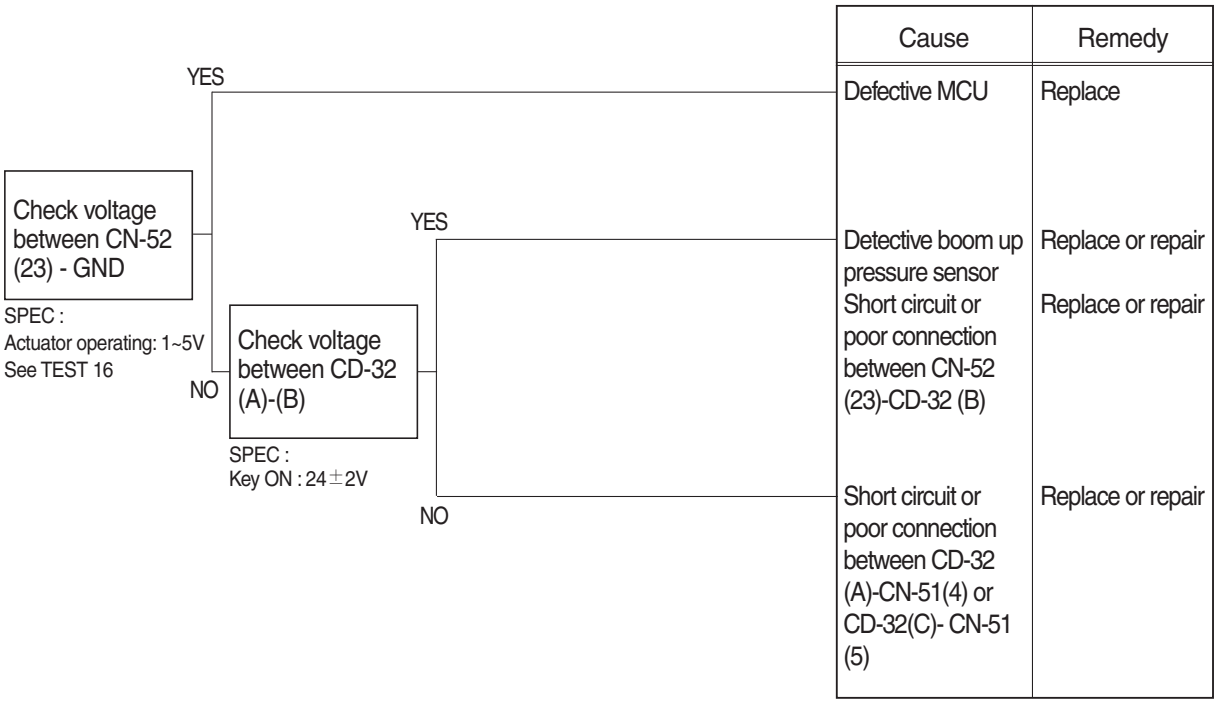
21096MS12A

13. MALFUNCTION OF BOOM UP PRESSURE SENSOR

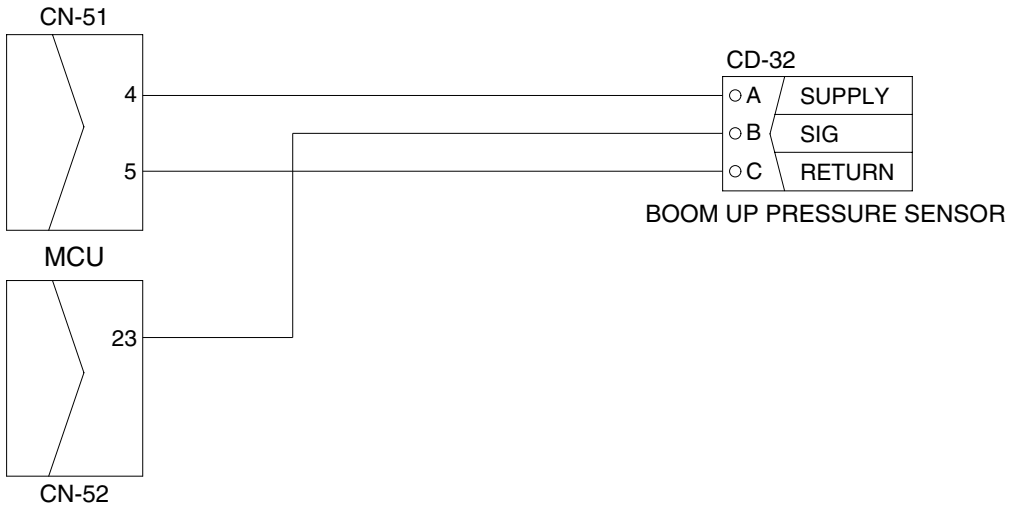
· Fault code : HCESPN 127, FMI 0~4

※ Before carrying out below procedure, check all the related connectors are properly inserted.

1) INSPECTION PROCEDURE



Wiring diagram



21096MS13

2) TEST PROCEDURE

(1) Test 16 : Check voltage at CN-52(23) and ground.

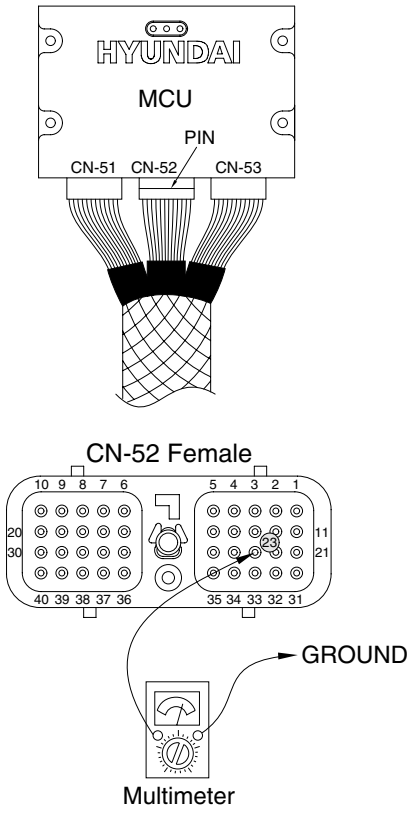
① Prepare 1 piece of thin sharp pin, steel or copper.

② Insert prepared pin to rear side of connectors : One pin to (23) of CN-52.

③ Starting key ON.

④ Check voltage as figure.

SPEC : Actuator operating : 1~5 V



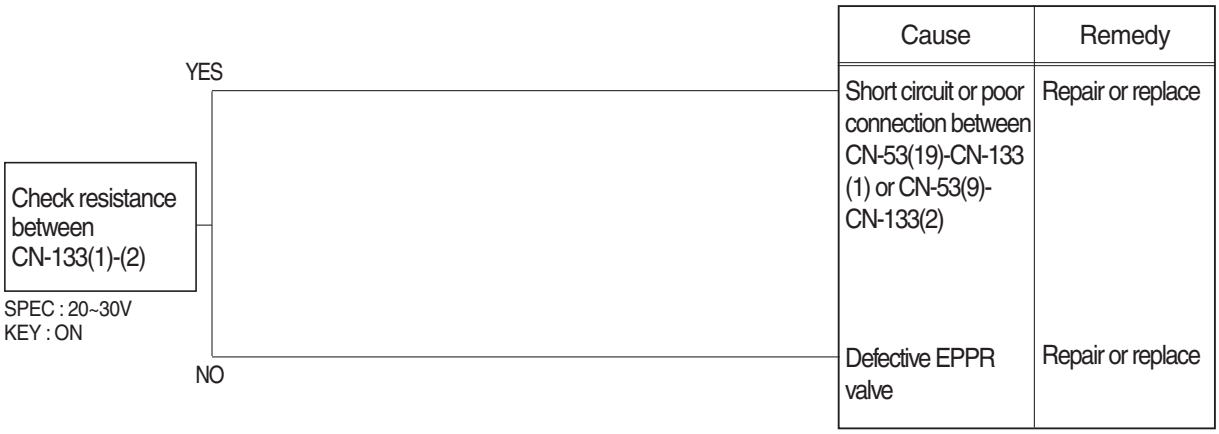
21096MS13A

14. MALFUNCTION OF BOOM PRIORITY EPPR VALVE

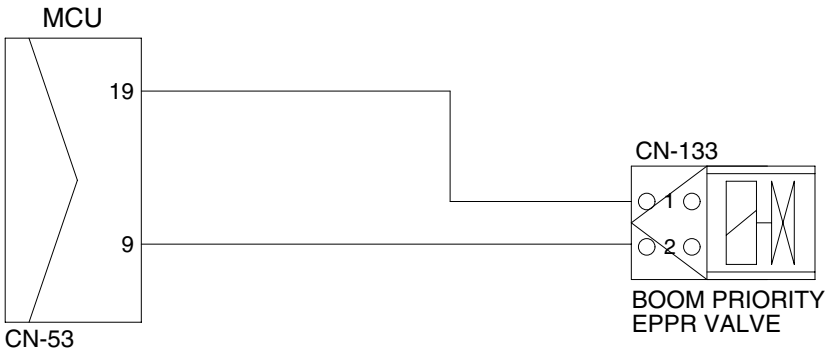
· Fault code : HCESPN 141, FMI 5 or 6

※ Before carrying out below procedure, check all the related connectors are properly inserted.

1) INSPECTION PROCEDURE



Wiring diagram



21096MS15