SECTION WW
WIPER, WASHER & HORN

CONTENTS

SERVICE INFORMATION

PRECAUTION

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000001719251

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted.
Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SRS section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

FRONT WIPER AND WASHER SYSTEM

Component Parts and Harness Connector Location

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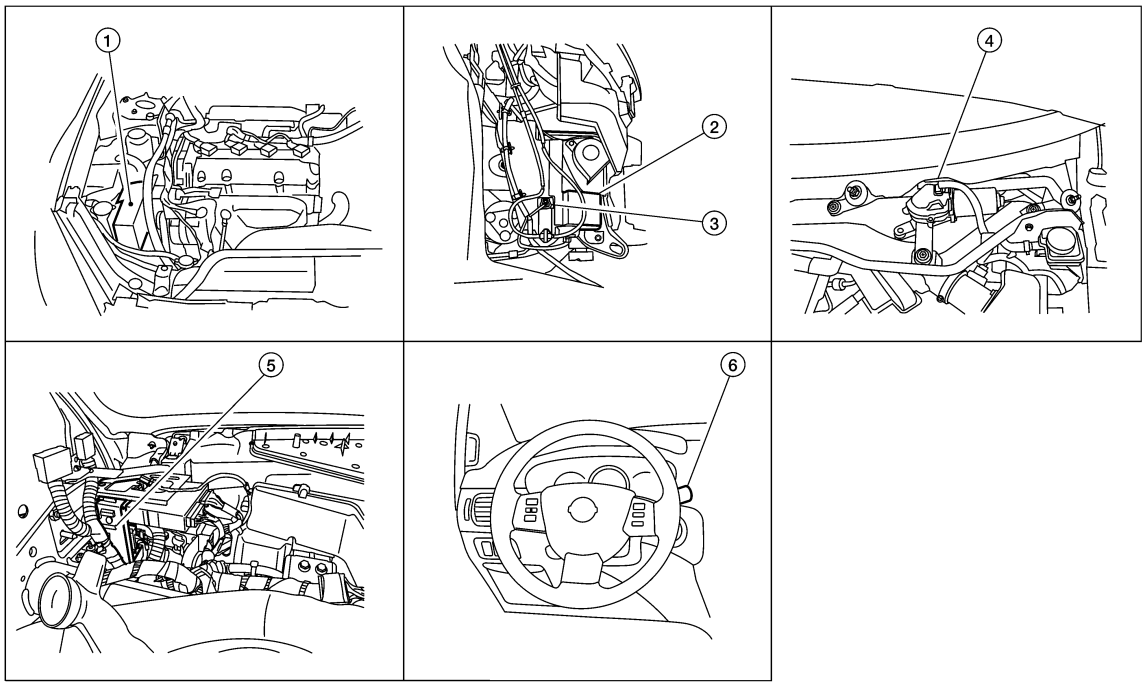

WKIA5246E

*1	IPDM E/R E118, E119, E120, E121, E122, E123, and E124	*2	Washer fluid reservoir (view with right fender protector RH removed)	*3	Front and rear washer motor E105 (view with right fender protector RH removed)
*4	Front wiper motor E23 (view with cowl top cover removed)	*5	BCM M18, M19, and M20 (view with instrument panel removed)	*6	Combination switch (wiper switch) M28

System Description

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- Both front wiper relays are located in the IPDM E/R (intelligent power distribution module engine room).
- Wiper switch (combination switch) is composed of a combination of 5 output terminals and 5 input terminals. Terminal combination status is read by BCM (body control module) when switch is turned ON.
- BCM controls front wiper LO, HI, and INT (intermittent) operation.
- IPDM E/R operates the wiper motor according to CAN communication signals from the BCM.

Power is supplied at all times

- through 50A fusible link (letter **j**, located in the fuse and fusible link box)
- to BCM terminal 70, and
- to ignition relay, and
- through 15A fuse (No. 34, located in the IPDM E/R)
- to CPU (central processing unit) of IPDM E/R, and
- through 15A fuse (No. 41, located in the IPDM E/R)
- to CPU (central processing unit) of IPDM E/R, and
- through 30A fuse (No. 39, located in the IPDM E/R)
- to front wiper relay, located in the IPDM E/R.

With the ignition switch in ON or START position, power is supplied

- to ignition relay, and
- through 10A fuse [No. 16, located in the fuse block (J/B)]
- to BCM terminal 38, and
- through 10A fuse (No. 47, located in the IPDM E/R)
- through IPDM E/R terminal 44

• to combination switch terminal 14.
Ground is supplied
• to BCM terminal 67 and
• to combination switch terminal 12
• through grounds M57, M61 and M79, and
• to IPDM E/R terminals 38 and 60 and
• to front wiper motor terminal 1
• through grounds E9, E15 and E24.

LOW SPEED WIPER OPERATION

When the ignition switch is in the ON or START position, and the front wiper switch is turned to low position, the BCM detects a low speed wiper ON signal by BCM wiper switch reading function.
BCM then sends front wiper (low) request signal over CAN communication lines
• from BCM terminals 39 and 40
• to IPDM E/R terminals 48 and 49.
When IPDM E/R receives front wiper (low) request signal, it supplies ground to energize the front wiper relay.
With the front wiper relay energized, power is supplied
• through front wiper relay
• to front wiper high relay
• through IPDM E/R terminal 21
• to front wiper motor terminal 3.
With power and ground supplied, the front wiper motor operates at low speed.

HI SPEED WIPER OPERATION

When the ignition switch is in the ON or START position, and the front wiper switch is turned to high position, the BCM detects a high speed wiper ON signal by BCM wiper switch reading function.
BCM then sends front wiper (high) request signal over CAN communication lines
• from BCM terminals 39 and 40
• to IPDM E/R terminals 48 and 49.
When IPDM E/R receives front wiper (high) request signal, it supplies ground to energize the front wiper and the front wiper high relays.
With the front wiper and the front wiper high relays energized, power is supplied
• through front wiper relay
• to front wiper high relay
• through IPDM E/R terminal 31
• to front wiper motor terminal 2.
With power and ground supplied, the front wiper motor operates at high speed.

INTERMITTENT OPERATION

Wiper intermittent operation delay interval is determined from the combination of the intermittent wiper dial position inputs and vehicle speed. During each intermittent operation delay interval, the BCM sends a front wiper request signal to the IPDM E/R to operate the wipers.
When the ignition switch is in ON or START position, and the front wiper switch is turned to intermittent position, the BCM detects a front wiper (intermittent) ON signal by BCM wiper switch reading function.
BCM then sends front wiper (intermittent) request signal over CAN communication lines
• from BCM terminals 39 and 40
• to IPDM E/R terminals 48 and 49.
When BCM determines that combination switch status is front wiper intermittent ON, it performs the following operations.
• BCM detects ON/OFF status of intermittent wiper dial position.
• BCM calculates operation interval from wiper dial position and vehicle speed signal received through CAN communications.
• BCM sends front wiper request signal (INT) to IPDM E/R at calculated operation interval.
When IPDM E/R receives front wiper request signal (INT), it supplies ground to energize the front wiper relay. It then sends auto-stop signal to BCM, and conducts intermittent front wiper motor operation.

AUTO STOP OPERATION

When the wiper arms are not located at the base of the windshield, and the wiper switch is turned OFF, the wiper motor will continue to operate until the wiper arms reach windshield base. When wiper arms reach base of windshield, front wiper motor terminals 1 and 4 are connected.
Ground is supplied
• to IPDM E/R terminal 32

- through front wiper motor terminal 4
- through front wiper motor terminal 1
- through grounds E9, E15 and E24.

The IPDM E/R sends auto stop operation signal to BCM through CAN communication lines.
When BCM receives auto stop operation signal, BCM sends wiper stop signal to IPDM E/R with CAN communication lines. The IPDM E/R then de-energizes the front wiper relay.
Wiper motor will then stop wiper arms at the STOP position.

FRONT WASHER OPERATION

When the ignition switch is in the ON or START position, and the front and rear washer switches are OFF, the front and rear washer motor is supplied power

- through 10A fuse (No. 47, located in the IPDM E/R)
- through IPDM E/R terminal 44
- through combination switch (wiper switch) terminal 14
- through combination switch (wiper switch) terminal 13
- to front and rear washer motor terminal –.

When front wiper switch is in front washer position, BCM detects front washer signal by BCM wiper switch reading function. Combination switch ground is supplied

- to front and rear washer motor terminal +
- through combination switch (wiper switch) terminal 11
- through combination switch (wiper switch) terminal 12
- through grounds M57, M61 and M79.

With ground supplied, the front and rear washer motor is operated in the front direction.
When BCM detects that front washer motor has operated for 0.4 seconds or longer, BCM uses CAN communication and sends wiper request signal to IPDM E/R for low speed operation of wipers.
When BCM detects that washer switch is OFF, low speed operation cycles approximately 3 times and then stops.

MIST OPERATION

When the wiper switch is temporarily placed in the mist position, wiper low speed operation cycles once and then stops.
For additional information about wiper operation under this condition, refer to "LOW SPEED WIPER OPERATION".
If the switch is held in the mist position, low speed operation continues.

FAIL-SAFE FUNCTION

BCM includes fail-safe function to prevent malfunction of electrical components controlled by CAN communications if a malfunction in CAN communications occurs.
BCM uses CAN communications to stop output of electrical components it controls.
Until ignition switch is turned off, front wiper remains in same status as just before fail-safe control was initiated. (If wiper was in low speed operation just before fail-safe, it continues low speed operation until ignition switch is turned OFF.)
When fail-safe status is initiated, BCM remains in standby until normal signals are received.
When normal signals are received, fail-safe status is canceled.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "System Description".

CAN Communication System Description

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Refer to LAN-3, "CAN Communication System".

Schematic

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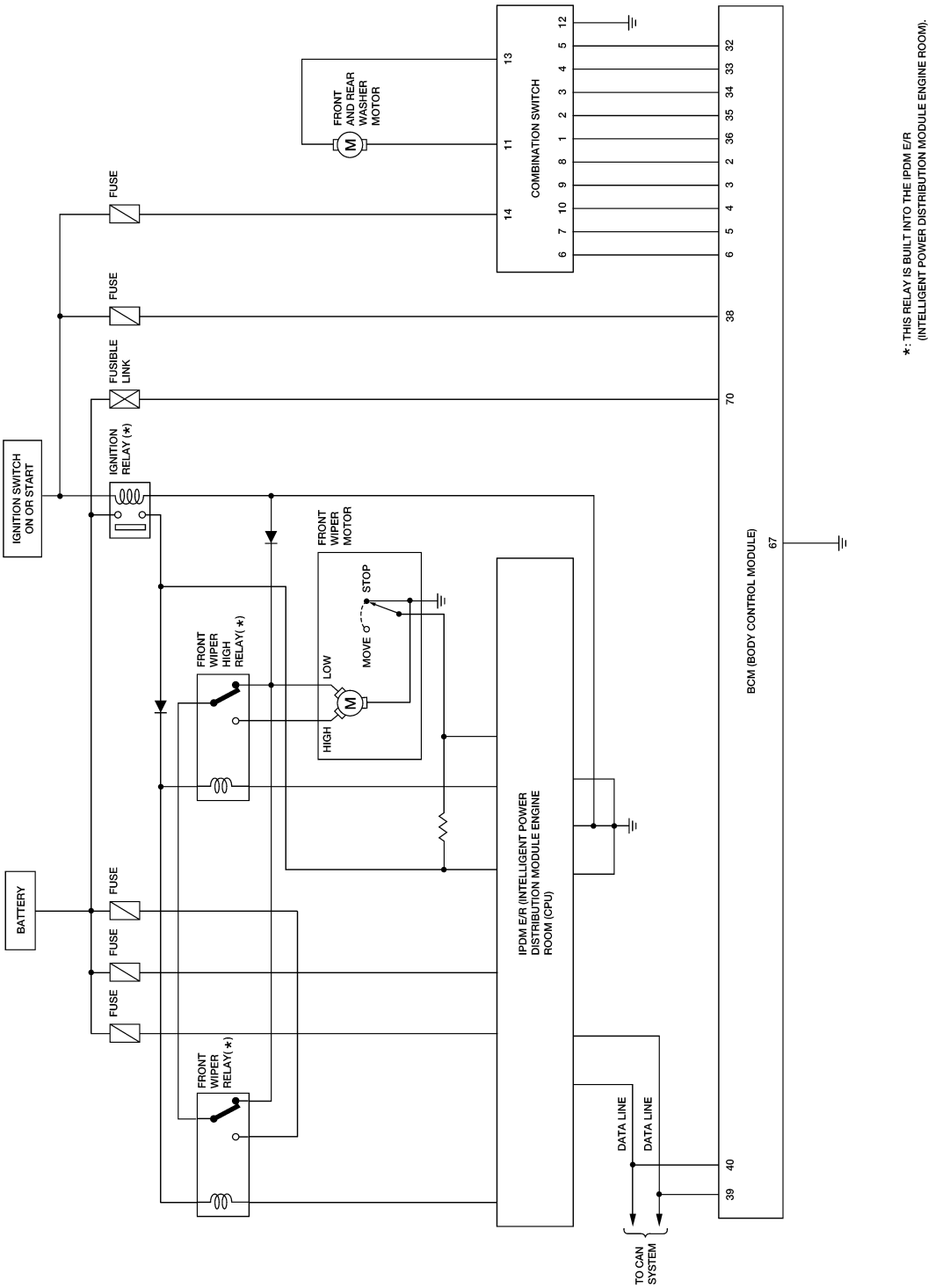

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Wiring Diagram - WIPER -

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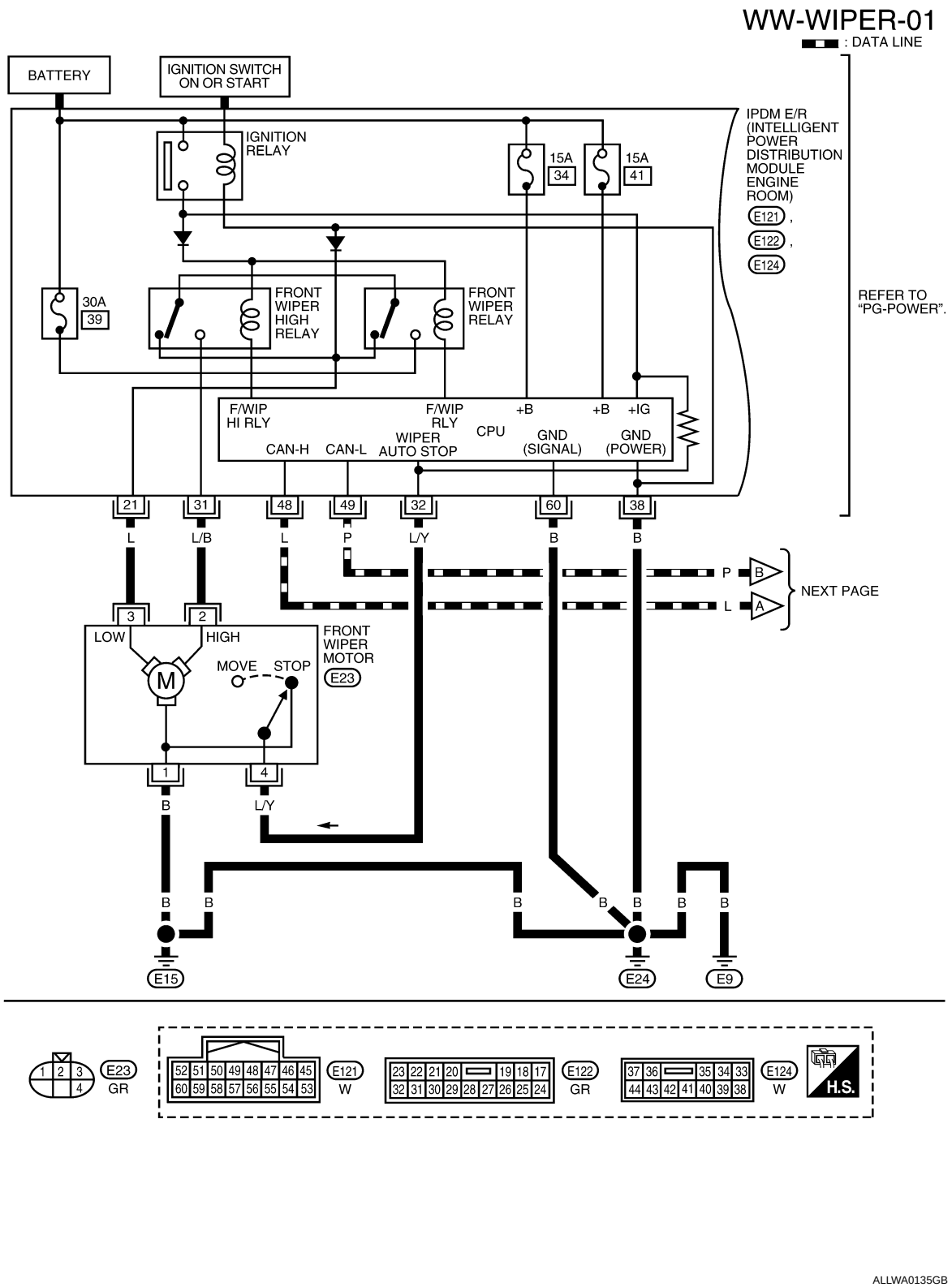

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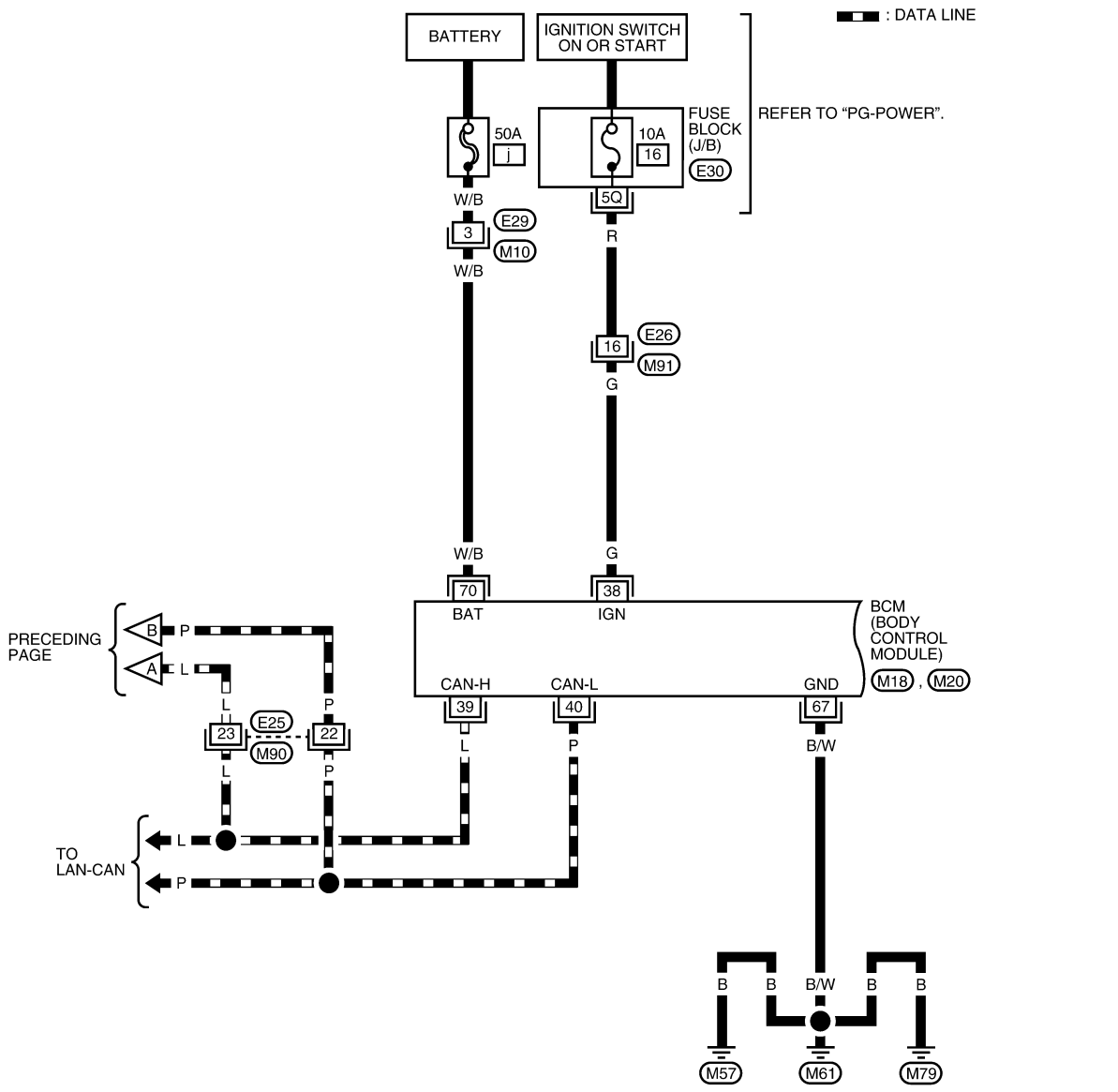

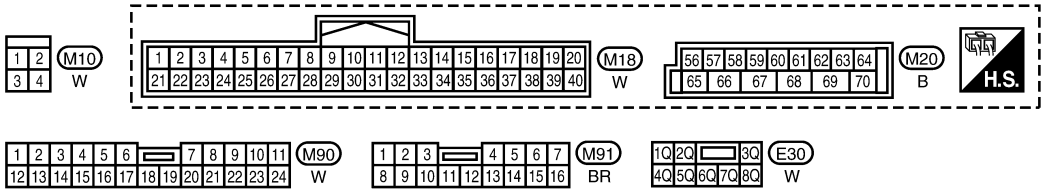

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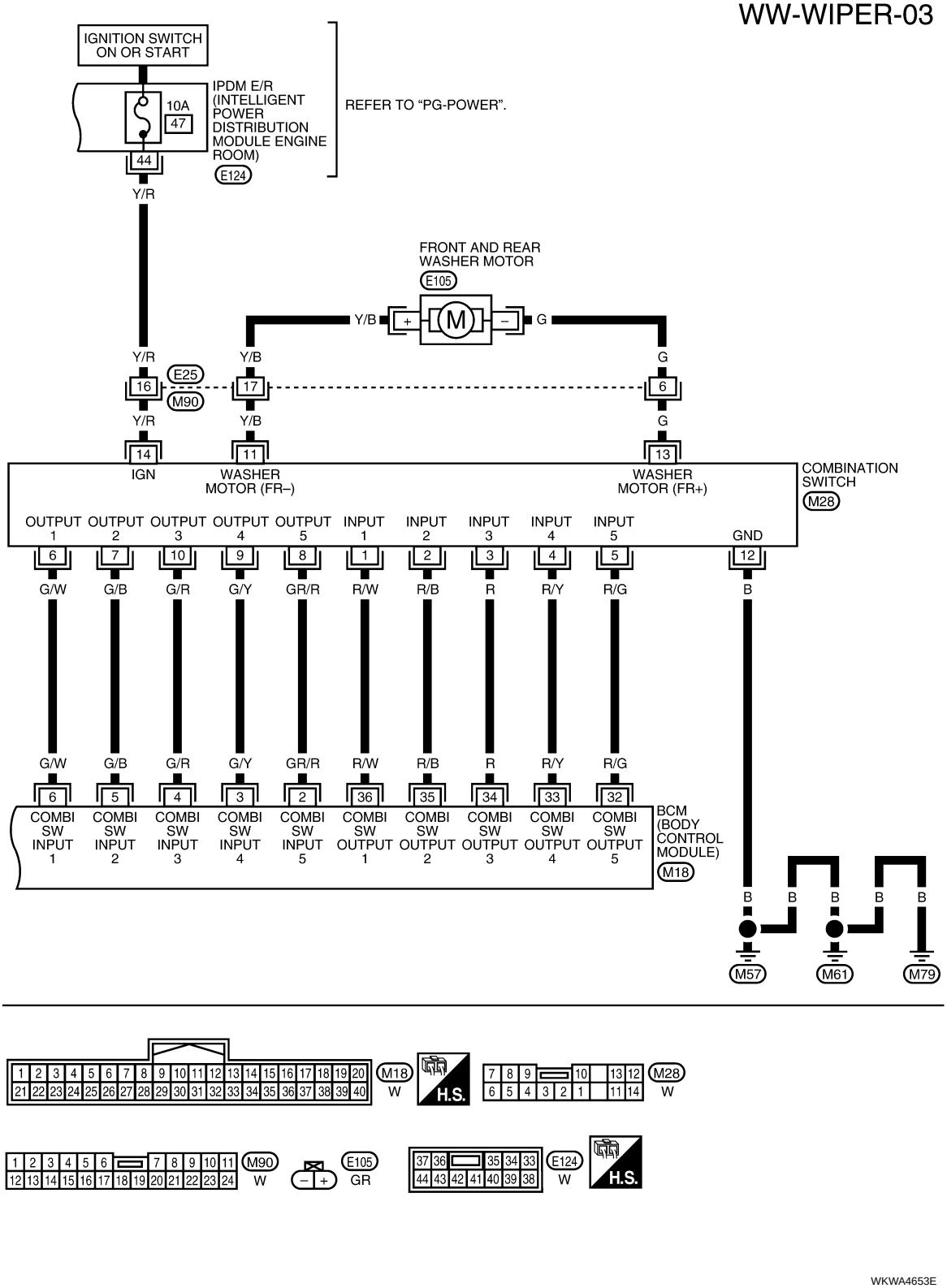

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Terminal and Reference Value for BCM

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Refer to BCS-11, "Terminal and Reference Value for BCM".

Terminal and Reference Value for IPDM E/R

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Refer to PG-24, "Terminal and Reference Value for IPDM E/R".

Work Flow

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1. Confirm the symptom or customer complaint.
2. Understand the system description, refer to WW-3, "System Description".
3. Perform preliminary inspection, refer to WW-10, "BCM Power Supply and Ground Circuit Inspection".
4. Check symptom and repair or replace the cause of malfunction.
5. Does wiper function operate normally? If it operates normally, GO TO 6. If not, GO TO 4.
6. Inspection End.

BCM Power Supply and Ground Circuit Inspection

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Refer to BCS-15, "BCM Power Supply and Ground Circuit Inspection".

CONSULT-III Function (BCM)

INFOID:0000000001719261

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

WORK SUPPORT

Operation Procedure

1. Touch "WIPER" on the "SELECT TEST ITEM" screen.
2. Touch "WORK SUPPORT" on the "SELECT DIAG MODE" screen.
3. Touch "WIPER SPEED SETTING" on the "SELECT WORK ITEM" screen.
4. Touch "START".
5. Touch "CHANGE SETT".
6. The setting will be changed and "CUSTOMIZING COMPLETED" will be displayed.
7. Touch "END".

Work Support Setting Item

Item	Description	CONSULT-III
WIPER SPEED SETTING	When wiper switch is at INTERMITTENT, front wiper intermittent time can be selected according to vehicle speed. • ON (Operated)/OFF[NOTE] (Not operated)	ON/OFF

NOTE:
Factory setting

DATA MONITOR

Operation Procedure

1. Touch "WIPER" on the "SELECT TEST ITEM" screen.
2. Touch "DATA MONITOR" on the "SELECT DIAG MODE" screen.
3. Touch either "ALL SIGNALS" or "SELECTION FROM MENU" on the "SELECT MONITOR ITEM" screen.

ALL SIGNALS	Monitors all the items.
SELECTION FROM MENU	Selects and monitors the individual item selected.

4. Touch "START".
5. When "SELECTION FROM MENU" is selected, touch items to be monitored. When "ALL SIGNALS" is selected, all the items will be monitored.
6. Touch "RECORD" while monitoring to record the status of the item being monitored. To stop recording, touch "STOP".

Display Item List

Monitor item name "OPERATION OR UNIT"		Contents
IGN ON SW	"ON/OFF"	Displays "IGN Position (ON)/OFF, ACC Position (OFF)" status as judged from ignition switch signal.
IGN SW CAN	"ON/OFF"	Displays "IGN switch ON (ON)/Other OFF or ACC (OFF)" status as judged from CAN communications.
FR WIPER HI	"ON/OFF"	Displays "Front Wiper HI (ON)/Other (OFF)" status as judged from wiper switch signal.
FR WIPER LOW	"ON/OFF"	Displays "Front Wiper LOW (ON)/Other (OFF)" status as judged from wiper switch signal.
FR WIPER INT	"ON/OFF"	Displays "Front Wiper INT (ON)/Other (OFF)" status as judged from wiper switch signal.
FR WASHER SW	"ON/OFF"	Displays "Front Washer Switch (ON)/Other (OFF)" status as judged from wiper switch signal.
INT VOLUME	(1 - 7)	Displays intermittent operation dial position setting (1 - 7) as judged from wiper switch signal.
FR WIPER STOP	"ON/OFF"	Displays "Stopped (ON)/Operating (OFF)" status as judged from the auto-stop signal.
VEHICLE SPEED	"0.0 km/h"	Displays vehicle speed as received from CAN communication.

ACTIVE TEST

Operation Procedure

1. Touch "WIPER" on the "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on the "SELECT DIAG MODE" screen.
3. Touch item(s) to be tested and check operation of the selected item(s).
4. During the operation check, touching "BACK" deactivates the operation.

Display Item List

Test item	Display on CONSULT-III screen	Description
Front wiper HI output	FR WIPER (HI)	Front wiper HI can be operated by any ON-OFF operation.
Front wiper LO output	FR WIPER (LO)	Front wiper LO can be operated by any ON-OFF operation.
Front wiper INT output	FR WIPER (INT)	Front wiper INT can be operated by any ON-OFF operation.

CONSULT-III Function (IPDM E/R)

INFOID:0000000001719262

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

IPDM E/R diagnostic Mode	Description
SELF-DIAG RESULTS	Displays IPDM E/R self-diagnosis results.
DATA MONITOR	Displays IPDM E/R input/output data in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.

DATA MONITOR

Operation Procedure

1. Touch "WIPER" on the "SELECT TEST ITEM" screen.
2. Touch "DATA MONITOR" on the "SELECT DIAG MODE" screen.
3. Touch "ALL SIGNALS", "MAIN SIGNALS" or "SELECTION FROM MENU" on "SELECT MONITOR ITEM" screen.

ALL SIGNALS	Monitors all the items.
MAIN SIGNALS	Monitors predetermined items.
SELECTION FROM MENU	Selects and monitors the individual item selected.

4. Touch "START".
5. When "SELECTION FROM MENU" is selected, touch items to be monitored. When "ALL SIGNALS" is selected, all the items will be monitored. When "MAIN SIGNALS" is selected, predetermined items are monitored.
6. Touch “RECORD" while monitoring to record the status of the item being monitored. To stop recording, touch "STOP".

All Items, Main Items, Select Item Menu

Item name	CONSULT-III screen display	Display or unit	Monitor item selection			Description
			ALL SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
Front wiper request	FR WIP REQ	STOP/1LO/LO/HI	x	x	x	Signal status input from BCM.
Wiper auto stop	WIP AUTO STOP	ACT P/STOP P	x	x	x	Output status of IPDM E/R.
Wiper protection	WIP PROT	OFF/LS/HS/BLOCK	x	x	x	Control status of IPDM E/R.

NOTE:
Perform monitoring of IPDM E/R data with the ignition switch ON. When the ignition switch is at ACC, the display may not be correct.

ACTIVE TEST

Operation Procedure

1. Touch "WIPER" on the "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on the "SELECT DIAG MODE" screen.
3. Touch item(s) to be tested and check operation of the selected item(s).
4. During the operation check, touching "BACK" deactivates the operation.

Display Item List

Test item	CONSULT-III screen display	Description
Front wiper (HI, LO) output	FRONT WIPER	With a certain operation (OFF, HI, LO) front wiper relays can be operated.

Front Wiper Does Not Operate

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CAUTION:
During IPDM E/R fail-safe control, front wipers may not operate. Refer to PG-17, "System Description" to make sure that it is not in fail-safe status.

1.CHECK IPDM E/R TO FRONT WIPERS

With CONSULT-III
1. Select "IPDM E/R" with CONSULT-III, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.

Without CONSULT-III
1. Turn on front wipers using auto active test. Refer to PG-20, "Auto Active Test".
2. Confirm front wiper operation.

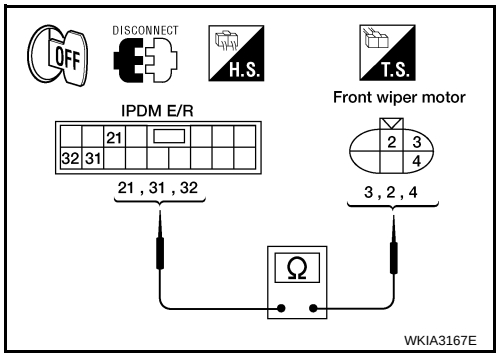
OK or NG

OK >> GO TO 4.
NG >> GO TO 2.

2. IPDM E/R TO FRONT WIPERS CIRCUIT INSPECTION

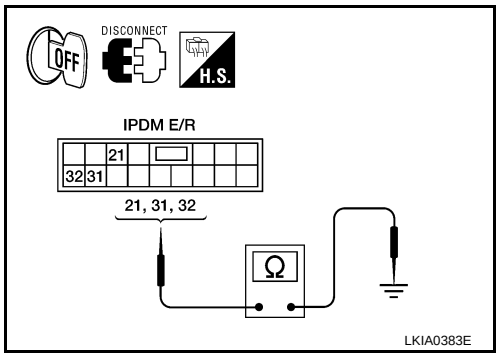
1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connectors and front wiper motor connector.
3. Check continuity between IPDM E/R harness connector terminals and front wiper motor harness connector terminals.

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E122	31	E23	2	Yes
	21		3	
	32		4	



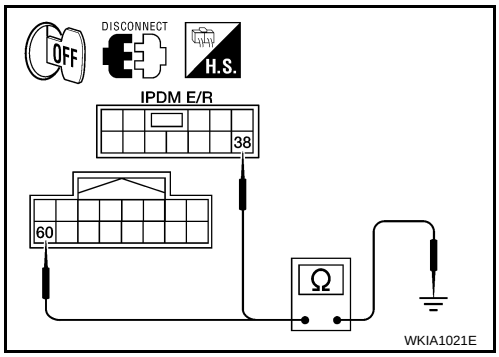
4. Check continuity between IPDM E/R harness connector terminals and ground.

IPDM E/R			Continuity
Connector	Terminal		
E122	31	Ground	No
	21		
	32		



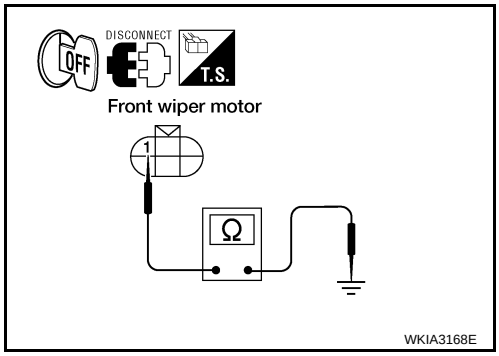
5. Check continuity between IPDM E/R harness connector terminal and ground.

IPDM E/R			Continuity
Connector	Terminal		
E121	60	Ground	Yes
E124	38		



6. Check continuity between front wiper motor harness connector terminal 1 and ground.

Front wiper motor			Continuity
Connector	Terminal		
E23	1	Ground	Yes



OK or NG

OK >> Connect connectors. GO TO 3.
NG >> Repair harness or connector.

3. IPDM E/R INSPECTION

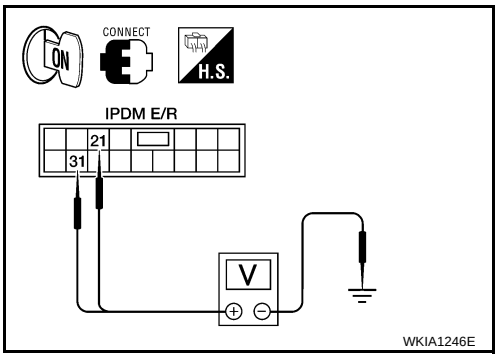
With CONSULT-III

1. Select "IPDM E/R" with CONSULT-III, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.

Without CONSULT-III

1. Turn on front wipers using the auto active test. Refer to PG-20, "Auto Active Test".

When front wiper relay and front wiper high relay are operating, check voltage between IPDM E/R terminals and ground.



IPDM E/R (+)		(–)	Condition	Voltage (Approx.)
Connector	Terminal			
E122	21	Ground	Stopped	0V
			LO operation	Battery voltage
	31		Stopped	0V
			HI operation	Battery voltage

OK or NG

OK >> Replace the front wiper motor. Refer to WW-19, "Wiper Motor and Linkage".
NG >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".

4. COMBINATION SWITCH TO BCM INSPECTION

Select "BCM" on CONSULT-III. With "WIPER" data monitor, check that "FR WIPER INT", "FR WIPER LOW" and "FR WIPER HI" turn ON-OFF according to operation of wiper switch.

OK or NG

OK >> GO TO 5.
NG >> Check wiper switch. Refer to BCS-3, "System Description".

5. BCM INSPECTION

Select "BCM" on CONSULT-III. Carry out self-diagnosis of BCM.

Displayed self-diagnosis results

NO DTC>> Replace the BCM. Refer to BCS-18, "Removal and Installation of BCM".
CAN COMM CIRCUIT>> Check CAN communication line of BCM. GO TO BCS-17, "CAN Communication Inspection Using CONSULT-III (Self-Diagnosis)".

Front Wiper Stop Position Is Incorrect

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1. CHECK IPDM E/R TO FRONT WIPER MOTOR

With CONSULT-III
Select "IPDM E/R" with CONSULT-III. With "DATA MONITOR", confirm that "WIP AUTO STOP" changes from "ACT P" to "STOP P" according to wiper operation.
Without CONSULT-III
GO TO 2.

OK or NG

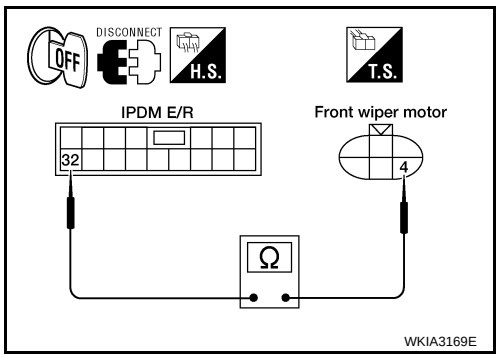
OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".
NG >> GO TO 2.

2. IPDM E/R TO FRONT WIPER MOTOR CIRCUIT INSPECTION

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front wiper motor connector.

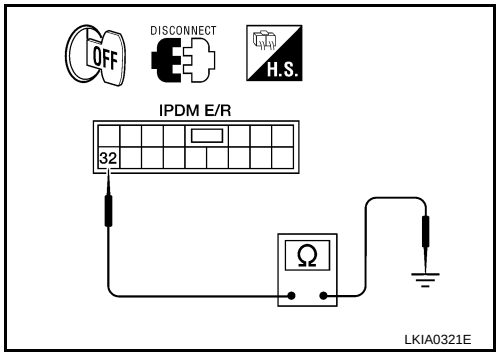
3. Check continuity between IPDM E/R harness connector and front wiper motor harness connector.

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E122	32	E23	4	Yes



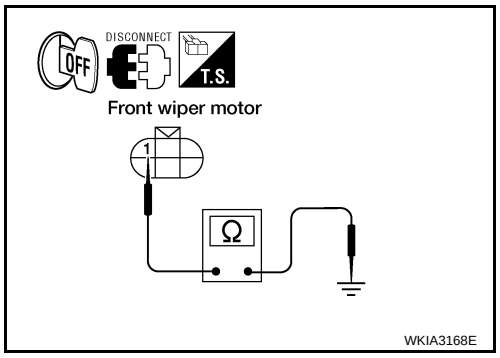
4. Check continuity between IPDM E/R harness connector terminal and ground.

IPDM E/R			Continuity
Connector	Terminal		
E122	32	Ground	No



5. Check continuity between front wiper motor harness connector terminal 1 and ground.

Front wiper motor			Continuity
Connector	Terminal		
E23	1	Ground	Yes



OK or NG

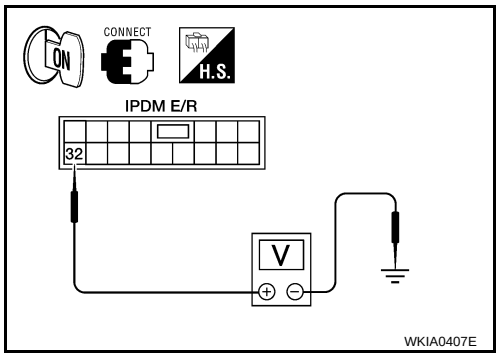
OK >> Connect connectors. GO TO 3.

NG >> • Check for short circuit or open circuit in harness between IPDM E/R and front wiper motor.
• Check for open circuit in harness between front wiper motor and ground.

3. IPDM E/R TO FRONT WIPER MOTOR AUTO STOP CIRCUIT INSPECTION

1. Turn ignition switch ON.
2. While front wiper motor is stopped and while operating, measure voltage between IPDM E/R terminal 32 and ground.

IPDM E/R		(–)	Condition	Voltage (Approx.)
(+)				
Connector	Terminal			
E122	32	Ground	Wiper operating	Battery voltage
			Wiper stopped	0V



OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".

NG >> Replace front wiper motor. Refer to WW-19, "Wiper Motor and Linkage".

Only Front Wiper Low Does Not Operate

INFOID:0000000001719265

Inspection Procedure

1. COMBINATION SWITCH TO BCM INSPECTION

Select "BCM" on CONSULT-III. With "WIPER" data monitor, check that "FR WIPER LOW" turns ON-OFF according to operation of wiper switch.

OK or NG

OK >> Replace BCM. Refer to BCS-18, "Removal and Installation of BCM".
NG >> Replace wiper switch. Refer to WW-23, "Wiper and Washer Switch".

Only Front Wiper High Does Not Operate

INFOID:0000000001719266

1.CHECK IPDM E/R TO FRONT WIPERS

With CONSULT-III
1. Select "IPDM E/R" with CONSULT-III, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.

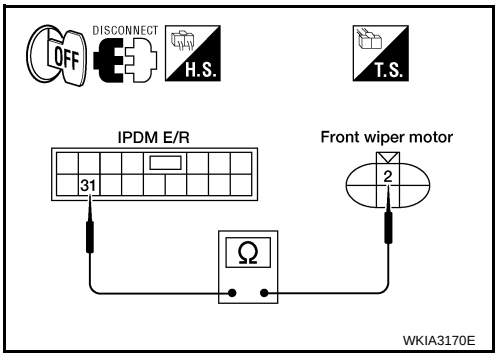
Without CONSULT-III
1. Turn on front wipers using auto active test. Refer to PG-20, "Auto Active Test".
2. Confirm front wiper operation.

OK or NG

OK >> GO TO 4.
NG >> GO TO 2.

2.IPDM E/R TO FRONT WIPERS CIRCUIT INSPECTION

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front wiper motor connector.
3. Check continuity between IPDM E/R harness connector terminal and front wiper motor harness connector terminal.



IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E122	31	E23	2	Yes

OK or NG

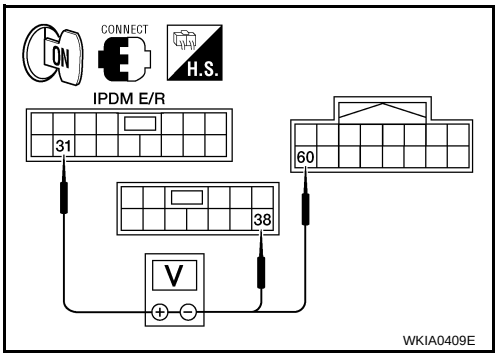
OK >> Connect connectors. GO TO 3.
NG >> Check for short circuit or open circuit in harness between IPDM E/R and front wiper motor.

3.IPDM E/R INSPECTION

With CONSULT-III
1. Select "IPDM E/R" with CONSULT-III, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
3. Select "HI" on "ACTIVE TEST" screen.

Without CONSULT-III
1. Turn on front wipers using the auto active test. Refer to PG-20, "Auto Active Test".

When front wiper high relay is operating, check voltage between IPDM E/R terminals.



IPDM E/R				Voltage (Approx.)
(+)		(–)		
Connector	Terminal	Connector	Terminal	
E122	31	E124	38	Battery voltage
		E121	60	

OK or NG

OK >> Replace the wiper motor. Refer to WW-19, "Wiper Motor and Linkage".
NG >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".

4.COMBINATION SWITCH TO BCM INSPECTION

Select "BCM" on CONSULT-III. With "WIPER" data monitor, check that "FR WIPER HI" turns ON-OFF according to operation of wiper switch.

OK or NG

OK >> Replace BCM. Refer to BCS-18, "Removal and Installation of BCM".
NG >> Replace wiper switch. Refer to WW-23, "Wiper and Washer Switch".

Only Front Wiper Intermittent Does Not Operate

INFOID:0000000001719267

1.COMBINATION SWITCH TO BCM INSPECTION

Select "BCM" on CONSULT-III. With "WIPER" data monitor, check that "FR WIPER INT" turns ON-OFF according to operation of wiper switch.

OK or NG

OK >> Replace BCM. Refer to BCS-18, "Removal and Installation of BCM".
NG >> Replace wiper switch. Refer to WW-23, "Wiper and Washer Switch".

Front Wiper Intermittent Operation Switch Position Cannot Be Adjusted

INFOID:0000000001719268

1.COMBINATION SWITCH TO BCM INSPECTION

Select "BCM" on CONSULT-III. With "WIPER" data monitor, check that "INT VOLUME" changes in order from 1 to 7 according to operation of the intermittent switch dial position.

OK or NG

OK >> Replace BCM. Refer to BCS-18, "Removal and Installation of BCM".
NG >> Replace wiper switch. Refer to WW-23, "Wiper and Washer Switch".

Wipers Do Not Wipe When Front Washer Operates

INFOID:0000000001719269

1.COMBINATION SWITCH TO BCM INSPECTION

Select "BCM" on CONSULT-III. With "WIPER" data monitor, check that "FR WASHER SW" turns ON-OFF according to operation of front washer switch.

OK or NG

OK >> Replace BCM. Refer to BCS-18, "Removal and Installation of BCM".
NG >> Replace wiper switch. Refer to WW-23, "Wiper and Washer Switch".

Front Wipers Operate for 10 Seconds, Stop for 20 Seconds, and After Repeating This Operation Five Times, They Become Inoperative

INFOID:0000000001719270

CAUTION:

- **When auto stop signal has not varied for 10 seconds or longer while IPDM E/R is operating front wipers, IPDM E/R considers front wipers locked and stops wiper output, which causes this symptom.**
- **This status can be checked by using IPDM E/R "DATA MONITOR". Under this condition, "WIP PROT" reads "BLOCK".**

1.CHECK IPDM E/R TO FRONT WIPER MOTOR

With CONSULT-III
Select "IPDM E/R" with CONSULT-III. With "DATA MONITOR", confirm that "WIP AUTO STOP" changes from "ACT P" to "STOP P" according to wiper operation.

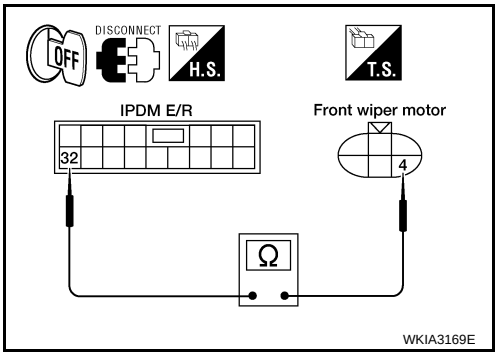
Without CONSULT-III
GO TO 2.

OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".
NG >> GO TO 2.

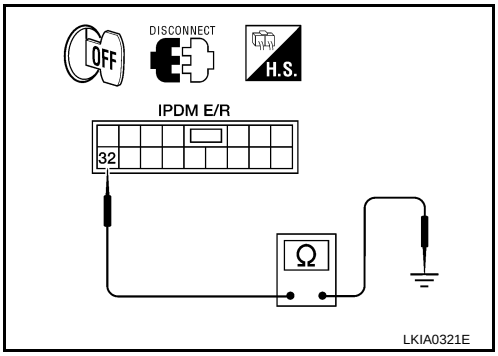
2.IPDM E/R TO FRONT WIPER MOTOR AUTO STOP CIRCUIT INSPECTION

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front wiper motor connector.
3. Check continuity between IPDM E/R harness connector terminal and front wiper motor harness connector terminal.



IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E122	32	E23	4	Yes

4. Check continuity between IPDM E/R harness connector terminal and ground.



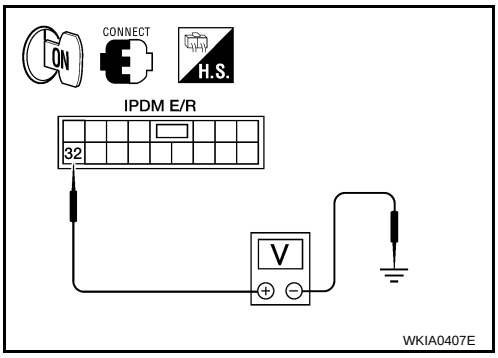
IPDM E/R			Continuity
Connector	Terminal		
E122	32	Ground	No

OK or NG

OK >> Connect connectors. GO TO 3.
NG >> Repair harness or connector.

3. IPDM E/R TO FRONT WIPER MOTOR AUTO STOP CIRCUIT VOLTAGE

1. Turn ignition switch ON.
2. While front wiper motor is stopped and while operating, measure voltage between IPDM E/R terminal 32 and ground.



IPDM E/R		(–)	Condition	Voltage (Approx.)
(+)				
Connector	Terminal			
E122	32	Ground	Wiper operating	Battery voltage
			Wiper stopped	0V

OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".
NG >> Replace front wiper motor. Refer to WW-19, "Wiper Motor and Linkage".

Front Wiper Arms

INFOID:0000000001719271

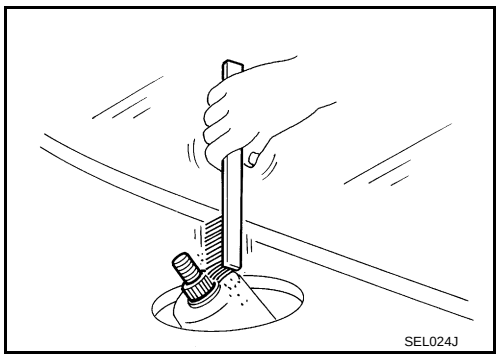
REMOVAL

1. Remove front wiper arm covers and front wiper arm nuts.
2. Remove front wiper arms.
3. Remove front wiper blades.

INSTALLATION

1. Operate front wiper motor one full cycle, then turn OFF (auto stop).

2. Clean up pivot area as shown. This will reduce the possibility of wiper arm looseness.



3. Install front wiper blades.
4. Install front wiper arms and front wiper arm nuts and tighten to specified torque.

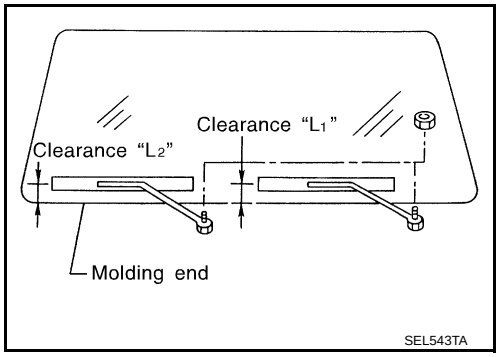
Front wiper arm nut 23.6 N·m (2.4 kg-m, 17 ft-lb)

5. Install front wiper arm covers.
6. Adjust wiper arms. Refer to "ADJUSTMENT AFTER INSTALLATION".

ADJUSTMENT AFTER INSTALLATION

1. Operate front windshield washer and front wiper motor one full cycle, then turn OFF (auto stop).
2. Lift the wiper blade up, then rest it onto glass surface to set clearance "L1" and "L2" as shown.

Clearance "L1" : 41.5 - 56.5 mm (1.634 - 2.224 in)
Clearance "L2" : 52.5 - 67.5 mm (2.067 - 2.657 in)



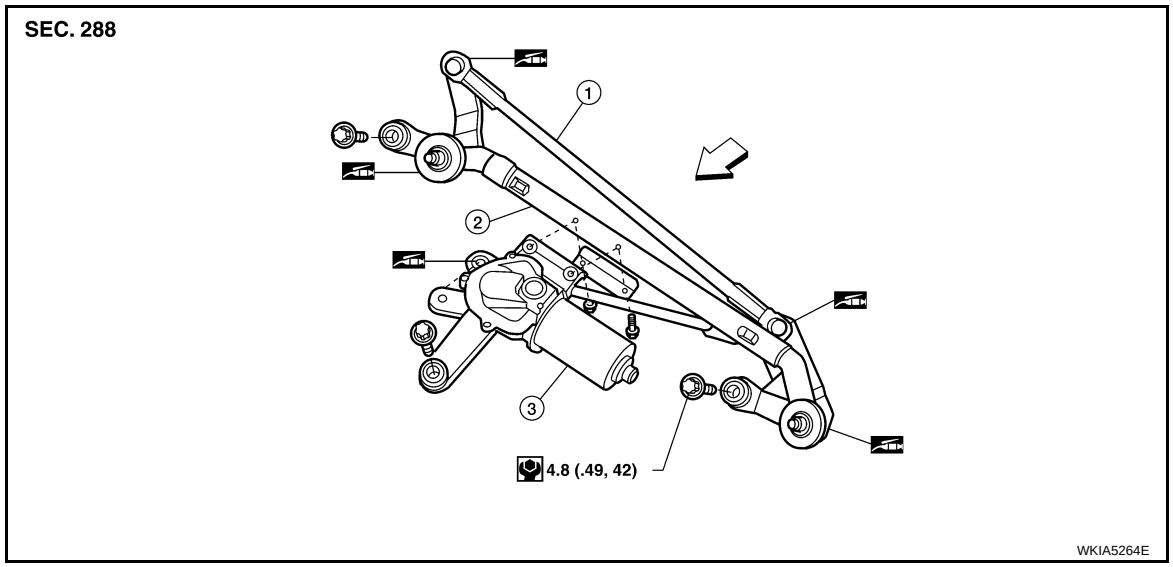
3. Remove front wiper arm covers and front wiper arm nuts.
4. Adjust the front wiper arms on the motor pivot shafts to obtain specified blade clearances "L1" and "L2".
5. Tighten front wiper arm nuts to specified torque, and install front wiper arm covers.

Front wiper arm nuts : 23.6 N·m (2.4 kg-m, 17 ft-lb)

Wiper Motor and Linkage

INFOID:0000000001719272

COMPONENTS

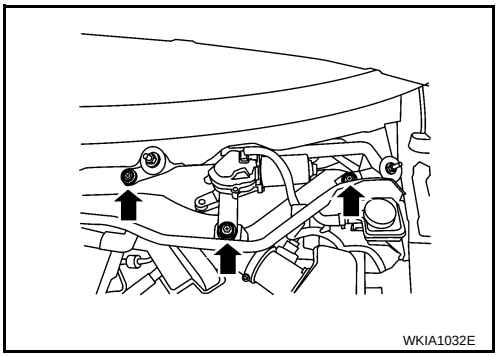


1. Wiper link
2. Wiper frame
3. Front wiper motor

⇐ Front

REMOVAL

1. Operate the front wiper motor, and stop it at the OFF (auto stop) position.
2. Remove the cowl top extension. Refer to EI-18, "Removal and Installation".
3. Disconnect front wiper motor electrical connector.
4. Remove wiper frame assembly bolts, and remove wiper frame assembly.



5. Remove front wiper motor from wiper frame assembly.

INSTALLATION

CAUTION:

- **Do not drop the wiper motor or cause it to contact other parts.**
- **Check the grease conditions of the motor arm and wiper link joint(s). Apply grease if necessary.**

1. Connect front wiper motor to electrical connector. Turn the wiper switch ON to operate front wiper motor, then turn the wiper switch OFF (auto stop).
2. Disconnect front wiper motor electrical connector.
3. Install front wiper motor to wiper frame assembly, and install assembly into the vehicle.
4. Connect front wiper motor electrical connector. Turn the wiper switch ON to operate the front wiper motor, then turn wiper switch OFF (auto stop).
5. Install cowl top extension. Refer to EI-18, "Removal and Installation".
6. Install wiper arms. Refer to WW-18, "Front Wiper Arms".

Washer Nozzle

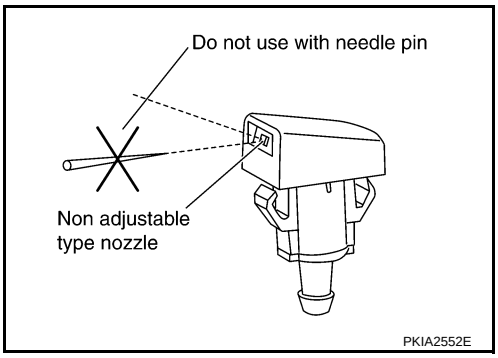
INFOID:0000000001719273

INSPECTION

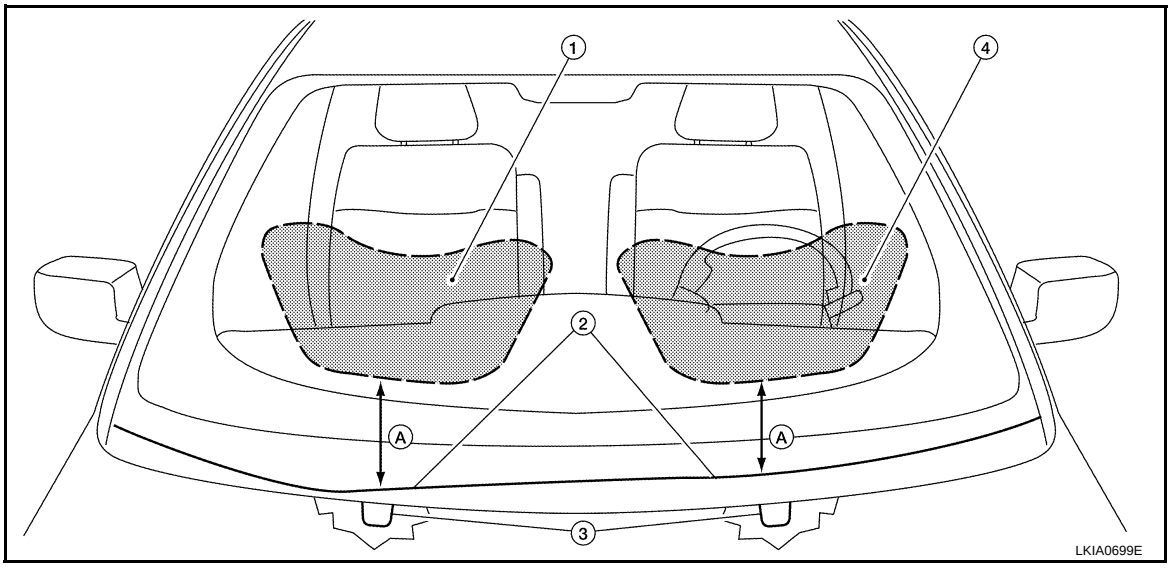
CAUTION:

Do not use needle pin to adjust washer nozzle.

- If not satisfied with washer fluid spray coverage, confirm that the washer nozzle is installed correctly.
- If the washer nozzle is installed correctly, and the washer fluid spray coverage is not satisfactory adjust washer nozzles. Refer to "ADJUSTMENT".



ADJUSTMENT



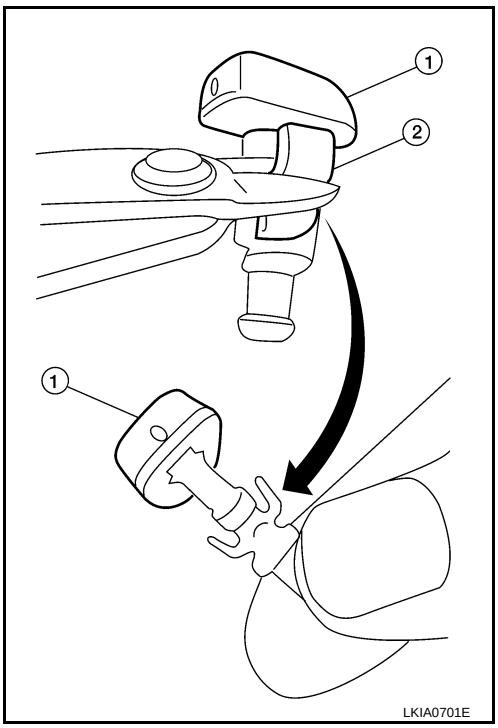
1. Passenger side washer fluid spray pattern
2. Washer nozzles
3. Rear edge of cowl
4. Driver side washer fluid spray pattern
A. Distance

1. Remove the front wiper arms. Refer to WW-18, "Front Wiper Arms".
2. Measure the distance from rear edge of cowl to lowest point of washer fluid spray coverage (distance A). Determine recommended washer nozzle shim (refer to chart).
NOTE:
If distance A is in the middle range then no adjustment is required.

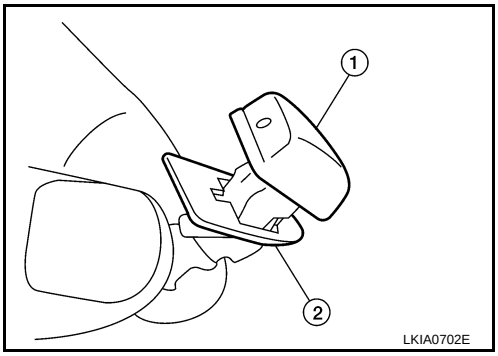
Washer spray coverage	Distance (A)	Recommended washer nozzle shim
High	300 mm (11.81 in) and higher	Down 1.25 mm
	250 - 300 mm (9.84 - 11.81 in)	Down 0.75 mm
Middle	210 - 250 mm (8.27 - 9.84 in)	No shim recommended
Low	170 - 210 mm (6.69 - 8.27 in)	Up 1.0 mm
	130 - 170 mm (5.12 - 6.69 in)	Up 2.25 mm
	90 - 130 mm (3.54 - 5.12 in)	Up 4.0 mm
	90 mm (3.54 in) and lower	Up 6.5 mm

3. Remove cowl top. Refer to EI-18, "Removal and Installation".
4. Disconnect washer tube from nozzle and remove washer nozzle from cowl top.

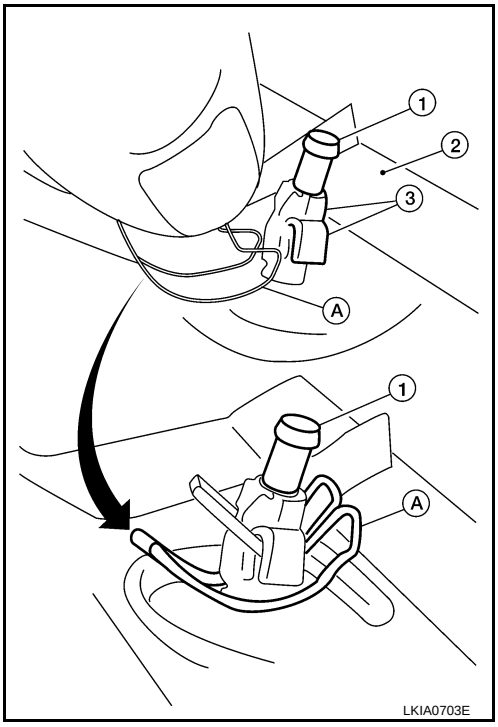
5. Cut off upper portion of spring legs (2) from washer nozzle (1) as shown.



6. Install the selected size washer nozzle shim (2) onto washer nozzle (1) as shown.



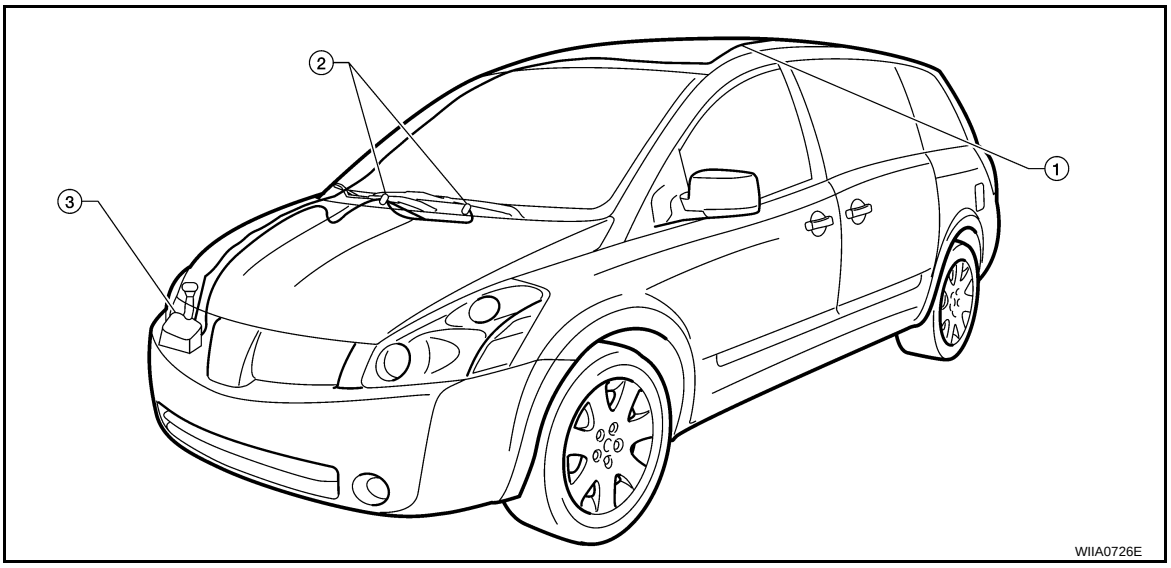
7. Install washer spray nozzle (1) into cowl top cover (2), then install spring clip (A) between spring legs (3) as shown.



8. Install cowl top. Refer to EI-18, "Removal and Installation".
9. Install wiper arms. Refer to WW-18, "Front Wiper Arms".
10. Recheck washer nozzle spray for correct spray pattern.

Washer Tube Layout

INFOID:0000000001719274



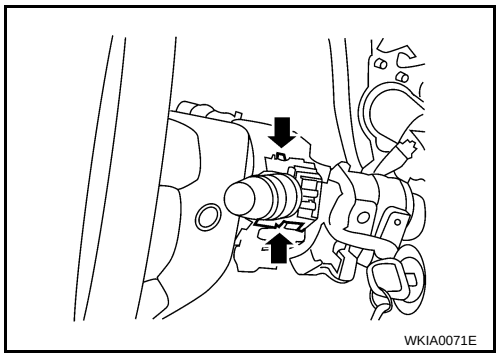
1. Washer fluid hose to back door
2. Washer nozzles
3. Washer fluid reservoir

Wiper and Washer Switch

INFOID:0000000001719275

REMOVAL

1. Remove steering column covers. Refer to IP-12, "Steering Column Cover".
2. Remove wiper washer switch electrical connector.
3. Pinch tabs at wiper and washer switch base and slide switch away from steering column to remove.



INSTALLATION

Installation is in the reverse order of removal.

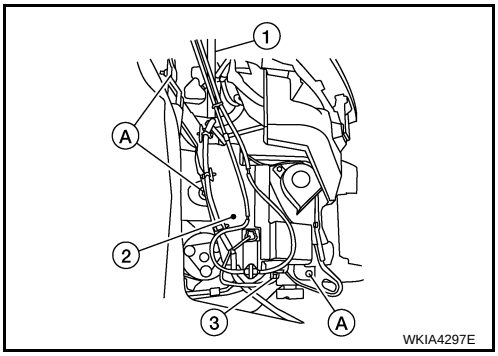
Washer Fluid Reservoir

INFOID:0000000001719276

REMOVAL

1. Remove fender protector. Refer to EI-21, "Removal and Installation".

2. Remove the washer fluid reservoir (2) from the vehicle.
   - Twist and pull out washer fluid reservoir inlet (1).
   - Remove front and rear washer motor electrical connector (3) and washer fluid level sensor electrical connector.
   - Remove washer fluid reservoir screws (A).
   - Remove front and rear washer hoses.



INSTALLATION

Installation is in the reverse order of removal.

Washer fluid reservoir screws 5.5 N·m (0.56 kg-m, 49 in-lb)

CAUTION:

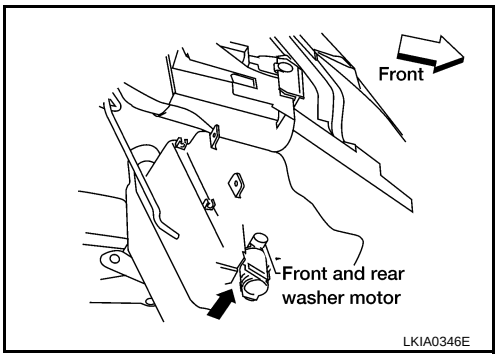
After installation, add water up to the upper level of the washer fluid reservoir inlet, and check for water leaks.

Washer Motor

INFOID:0000000001719277

REMOVAL

1. Remove fender protector. Refer to EI-21, "Removal and Installation".
2. Remove front and rear washer motor electrical connector and front and rear washer hoses.
3. Pull out front and rear washer motor in the direction of the arrow as shown, and remove the front and rear washer motor from the washer fluid reservoir.



INSTALLATION

Installation is in the reverse order of removal.

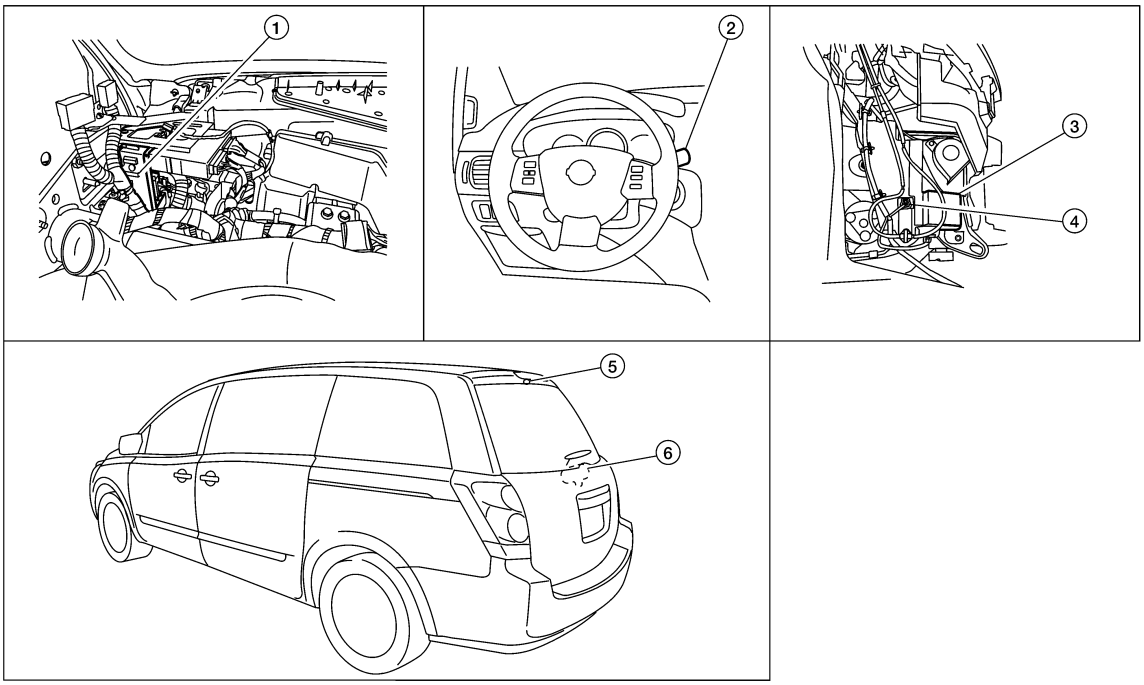
CAUTION:

When installing front and rear washer motor, there should be no packing twists, etc.

REAR WIPER AND WASHER SYSTEM

Component Parts and Harness Connector Location

INFOID:0000000001719278



WKIA5247E

*1	BCM M18, M19, and M20 (view with instrument panel removed)	*2	Combination switch (wiper switch) M28	*3	Washer fluid reservoir (view with right fender protector RH removed)
*4	Front and rear washer motor E105 (view with right fender protector RH removed)	*5	Rear washer nozzle	*6	Rear wiper motor D507

System Description

INFOID:0000000001719279

- Wiper switch (combination switch) is composed of a combination of 5 output terminals and 5 input terminals. Terminal combination status is read by BCM (body control module) when switch is turned ON.
- BCM controls rear wiper ON and INT (intermittent) operation.

Power is supplied at all times
- through 50A fusible link (letter **j**, located in fuse and fusible link box)
- to BCM terminal 70.

With the ignition switch in ON or START position, power is supplied
- through 10A fuse [No. 16, located in fuse block (J/B)]
- to BCM terminal 38, and
- through 10A fuse (No. 47, located in IPDM E/R)
- through IPDM E/R terminal 44
- to combination switch terminal 14.

Ground is supplied
- to BCM terminal 67 and
- to combination switch terminal 12
- through grounds M57, M61 and M79.

REAR WIPER OPERATION

When the ignition switch is in the ON or START position, and the rear wiper switch is in the ON position, the BCM detects a rear wiper ON signal by BCM wiper switch reading function.
When the BCM operates the rear wiper motor, power is supplied
- through BCM terminal 55

• to rear wiper motor terminal B.
Ground is supplied
• to rear wiper motor terminals E and G
• through grounds D403 and D404.
With power and ground supplied, the rear wiper operates.

INTERMITTENT OPERATION

The rear wiper motor operates the wiper arm at low speed approximately every 7 seconds.
When the wiper switch is in the rear wiper INT position, the BCM detects a rear wiper INT signal by BCM wiper switch reading function.
When BCM operates rear wiper motor, power supplied
• through BCM terminal 55
• to rear wiper motor terminal B.
Ground is supplied
• to rear wiper motor terminals E and G
• through grounds D403 and D404.
With power and ground supplied, the rear wiper operates in intermittent mode.

AUTO STOP OPERATION

When the rear wiper arm is not located at the base of the rear window, and the rear wiper switch is turned OFF, the rear wiper motor will continue to operate until the rear wiper arm is at the base of the rear window. When the rear wiper arm reaches the base, rear wiper motor terminals P and E are connected.
Ground is supplied
• to BCM terminal 44
• through rear wiper motor terminal P
• through rear wiper motor terminal E
• through grounds D403 and D404.

REAR WASHER OPERATION

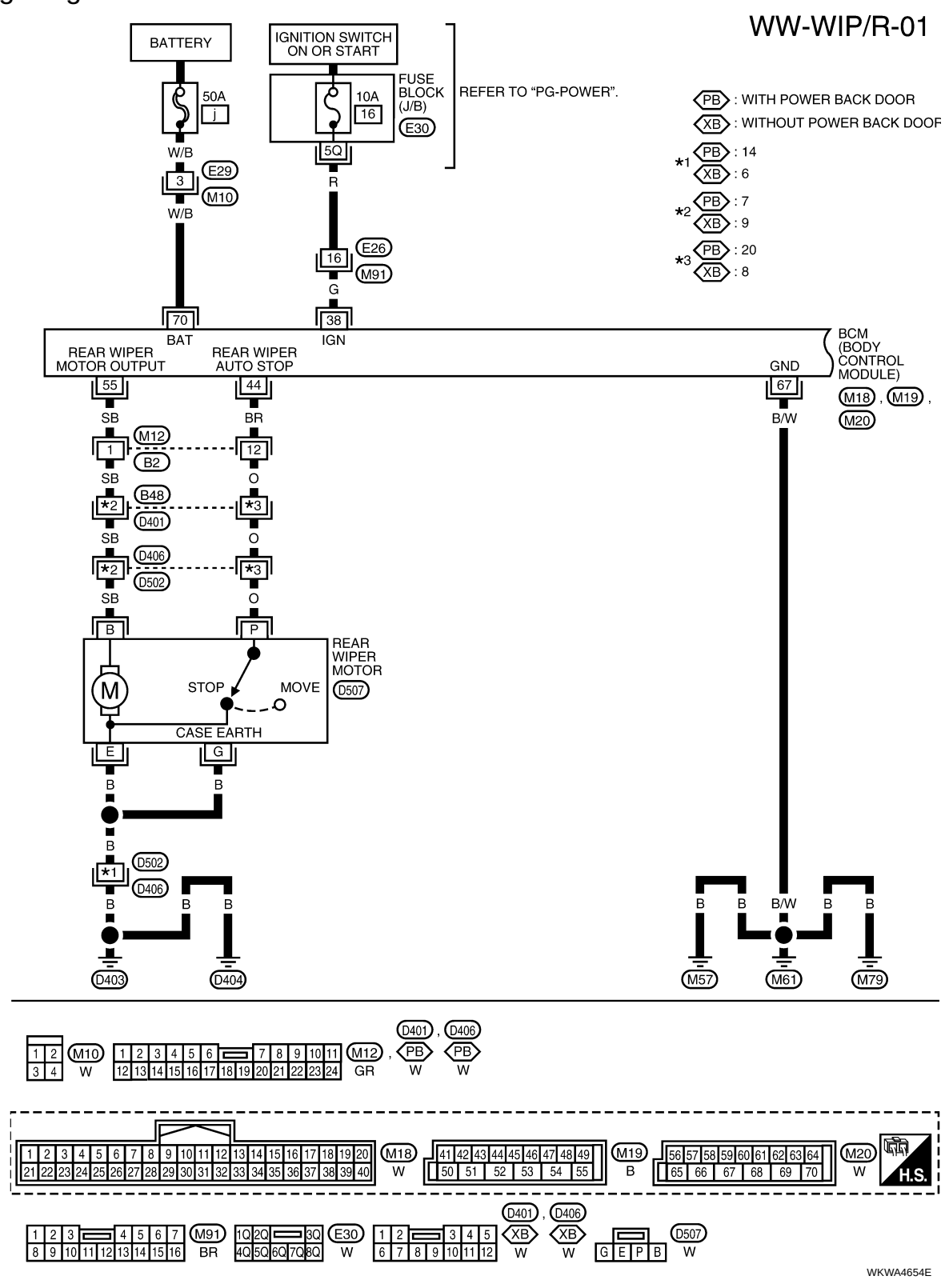
When the ignition switch is in the ON or START position, and the front and rear washer switches are OFF, the front and rear washer motor is supplied power
• through 10A fuse (No. 47, located in the IPDM E/R)
• through IPDM E/R terminal 44
• through combination switch (wiper switch) terminal 14
• through combination switch (wiper switch) terminal 11
• to front and rear washer motor terminal +.
When the rear wiper switch is in rear washer position, the BCM detects a rear washer signal by BCM wiper switch reading function. Combination switch ground is supplied
• to front and rear washer motor terminal –
• through combination switch (wiper switch) terminal 13
• through combination switch (wiper switch) terminal 12
• through grounds M57, M61 and M79.
With ground supplied, the front and rear washer motor is operated in the rear direction.
When the BCM detects that the rear washer motor has operated for 0.4 seconds or longer, BCM operates the rear wiper motor.
When the BCM detects that the rear washer switch is in OFF, the rear wiper motor cycles approximately 3 times and then stops.

BCM Wiper Switch Reading Function

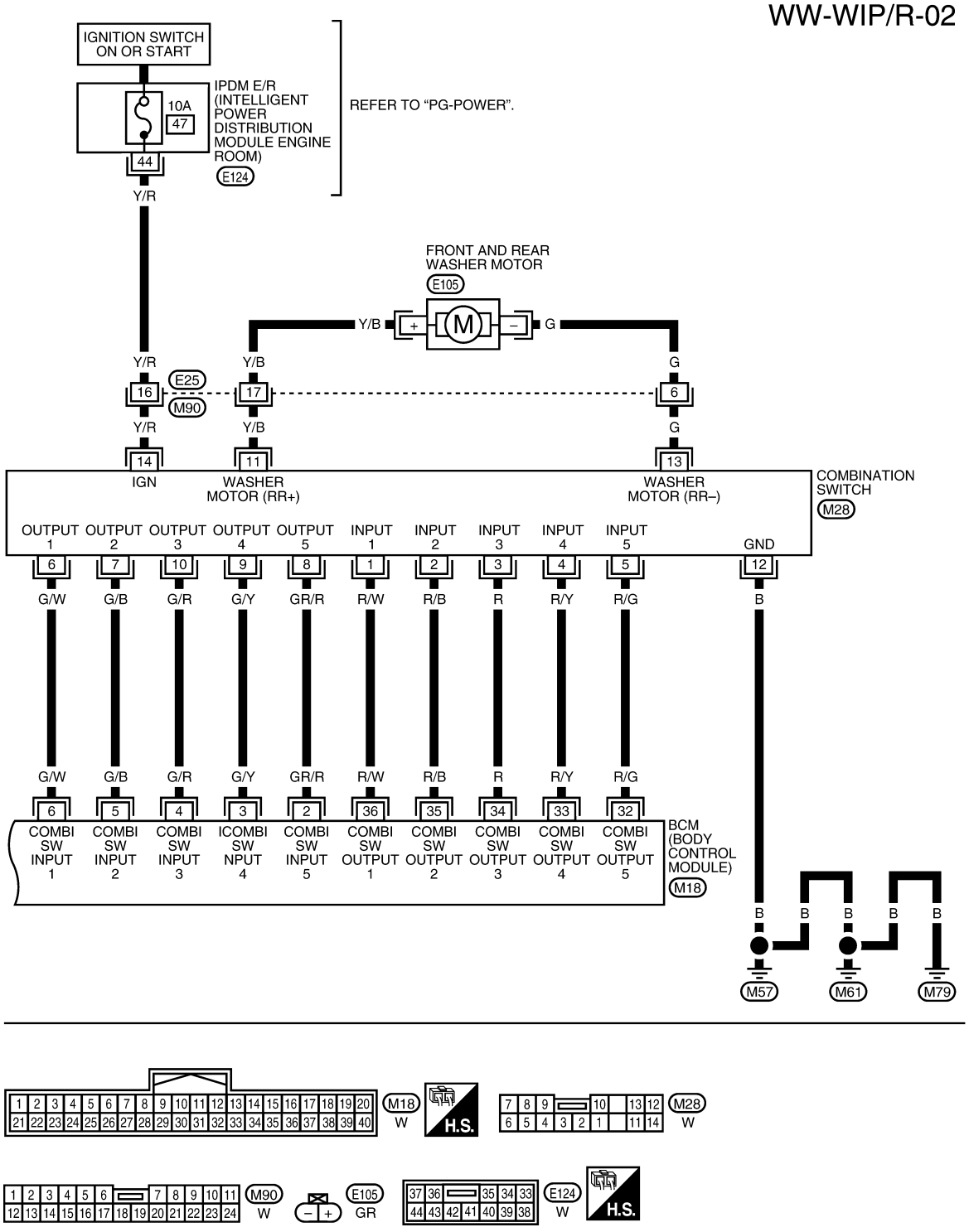
Refer to BCS-3, "System Description".

Wiring Diagram - WIP/R -

INFOID:0000000001719280



WW-WIP/R-02



WKWA4655E

Terminal and Reference Value for BCM

INFOID:0000000001719281

Refer to BCS-11, "Terminal and Reference Value for BCM".

Terminal and Reference Value for IPDM E/R

INFOID:0000000001719282

Refer to PG-24, "Terminal and Reference Value for IPDM E/R".

How to Proceed with Trouble Diagnosis

INFOID:0000000001719283

1. Confirm the symptoms and customer complaint.
2. Understand operation description and function description. Refer to WW-25, "System Description".
3. Perform the Preliminary Check. Refer to WW-29, "Preliminary Check".
4. Check symptom and repair or replace the cause of malfunction.
5. Does the rear wiper operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

INFOID:0000000001719284

BCM POWER SUPPLY AND GROUND CICUIT

Refer to BCS-15, "BCM Power Supply and Ground Circuit Inspection"

CONSULT-III Function (BCM)

INFOID:0000000001719285

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

DATA MONITOR

Operation Procedure

1. Touch "WIPER" on "SELECT TEST ITEM" screen.
2. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Touch either "ALL SIGNALS" or "SELECTION FROM MENU" on "SELECT MONITOR ITEM" screen.

ALL SIGNALS	Monitors all the items.
SELECTION FROM MENU	Selects and monitors the individual item selected.

4. Touch "START".
5. When "SELECTION FROM MENU" is selected, touch items to be monitored. When "ALL SIGNALS" is selected, all the items will be monitored.
6. Touch "RECORD" while monitoring, then the status of the monitored item can be recorded. To stop recording, touch "STOP".

Display Item List

Monitor item name "OPERATION OR UNIT"		Contents
IGN ON SW	"ON/OFF"	Displays "IGN Position (ON)/OFF, ACC Position (OFF)" status as judged from ignition switch signal.
IGN SW CAN	"ON/OFF"	Displays "IGN Position (ON)/OFF, ACC Position (OFF)" status as judged from ignition switch signal.
FR WIPER INT	"ON/OFF"	Displays "Front Wiper INT (ON)/Other (OFF)" status as judged from wiper switch signal.
FR WIPER LOW	"ON/OFF"	Displays "Front Wiper LOW (ON)/Other (OFF)" status as judged from wiper switch signal.

Monitor item name "OPERATION OR UNIT"		Contents
FR WIPER HI	"ON/OFF"	Displays "Front Wiper HI (ON)/Other (OFF)" status as judged from wiper switch signal.
FR WASHER SW	"ON/OFF"	Displays "Front Washer Switch (ON)/Other (OFF)" status as judged from wiper switch signal.
INT VOLUME	(1 - 7)	Displays intermittent operation dial position setting (1 - 7) as judged from wiper switch signal.
VEHICLE SPEED	"0.0 km/h"	Displays vehicle speed as received over CAN communication.
FR WIPER STOP	"ON/OFF"	Displays "Stopped (ON)/Operating (OFF)" status as judged from the auto stop signal.
RR WIPER INT	"ON/OFF"	Displays "Rear Wiper INT (ON)/Other (OFF)" status as judged from wiper switch signal.
RR WIPER ON	"ON/OFF"	Displays "Rear Wiper (ON)/Other (OFF)" status as judged from wiper switch signal.
RR WASHER SW	"ON/OFF"	Displays "Rear Washer Switch (ON)/Other (OFF)" status as judged from wiper switch signal.
RR WIPER STOP	"ON/OFF"	Displays "Stopped (OFF)/Operating (ON)" status as judged from the auto stop signal.

ACTIVE TEST

Operation Procedure

1. Touch "WIPER" on the "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on the "SELECT DIAG MODE" screen.
3. Touch item to be tested and check operation of the selected item.
4. During the operation check, touching "BACK" deactivates the operation.

Display Item List

Test item	Display on CONSULT-III screen	Description
Front wiper HI output	FR WIPER (HI)	Front wiper HI can be operated by any ON-OFF operation.
Front wiper LO output	FR WIPER (LO)	Front wiper LO can be operated by any ON-OFF operation.
Front wiper INT output	FR WIPER (INT)	Front wiper INT can be operated by any ON-OFF operation.
Rear wiper output	RR WIPER	Rear wiper can be operated by any ON-OFF operation.

Rear Wiper Does Not Operate

INFOID:0000000001719286

1.REAR WIPER ACTIVE TEST

1. Select "BCM" on CONSULT-III, and select "WIPER" on "SELECT TEST ITEM" screen.
2. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Select "RR WIPER" on "SELECT TEST ITEM" screen.
4. Make sure rear wiper operates.

Wiper should operate.

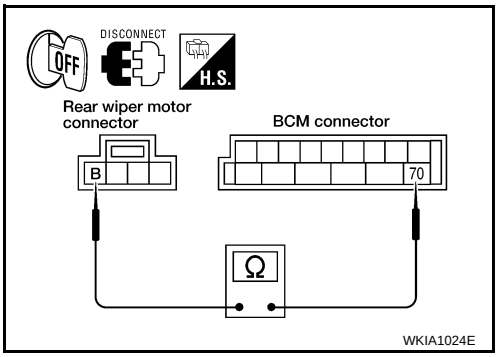
OK or NG

OK >> GO TO 6.
NG >> GO TO 2.

2.CHECK REAR WIPER MOTOR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and rear wiper motor connector.
3. Check continuity between BCM harness connector M20 terminal 70 and rear wiper motor harness connector D507 terminal B.

70 - B : Continuity should exist.



OK or NO

OK >> GO TO 3.
NO >> Repair harness or connector.

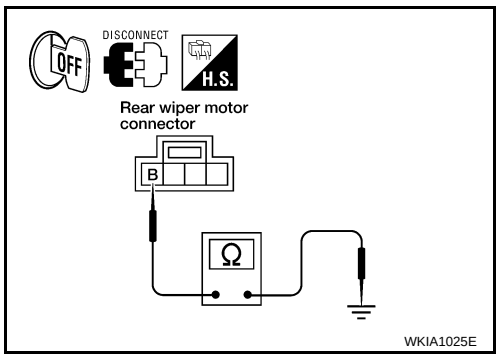
3. CHECK REAR WIPER MOTOR SHORT CIRCUIT

Check continuity between rear wiper motor harness connector D507 terminal B and ground.

B - Ground : Continuity should not exist.

OK or NG

OK >> GO TO 4.
NG >> After repairing harness, be sure to disconnect battery negative cable, and then reconnect it.



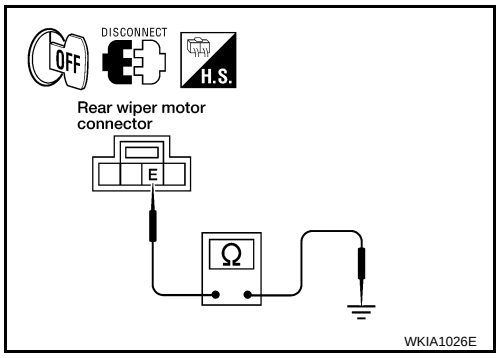
4. CHECK GROUND CIRCUIT

Check continuity between rear wiper motor harness connector D507 terminal E and ground.

E - Ground : Continuity should exist.

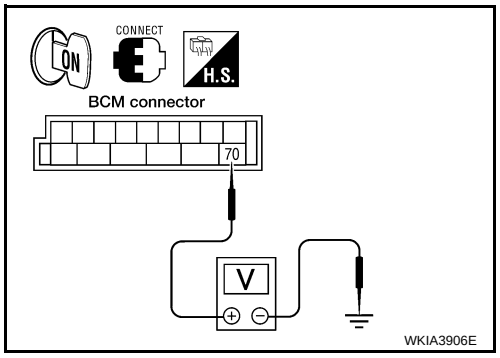
OK or NG

OK >> GO TO 5.
NG >> Repair harness or connector.



5. CHECK REAR WIPER OPERATING

1. Connect BCM connector and rear wiper motor connector.
2. Select "RR WIPER" during "ACTIVE TEST". Refer to WW-29, "CONSULT-III Function (BCM)". When rear wiper is operating, check voltage between BCM harness connector terminal and ground.



BCM (+)		(–)	Condition	Voltage (Approx.)
Connector	Terminal			
M20	70	Ground	Stopped	0V
			ON operation	Battery voltage

OK or NG

OK >> Replace rear wiper motor. Refer to WW-34, "Rear Wiper Motor".
NG >> Replace BCM. Refer to BCS-18, "Removal and Installation of BCM".

6. CHECK COMBINATION SWITCH INPUT SIGNAL

Select "BCM" on CONSULT-III. With "WIPER" data monitor, make sure "RR WIPER INT", "RR WIPER ON" turn ON-OFF according to operation of wiper switch.

When wiper switch is in INT position : RR WIPER INT ON

When wiper switch is in ON position : RR WIPER ON

OK or NG

OK >> Replace BCM. Refer to BCS-18, "Removal and Installation of BCM".
NG >> Check the wiper switch. Refer to BCS-3, "System Description".

Rear Wiper Stop Position Is Incorrect

INFOID:0000000001719287

1.CHECK COMBINATION SWITCH INPUT SIGNAL

Select "BCM" on CONSULT-III. With "WIPER" data monitor, make sure "RR WIPER STOP" turns ON-OFF according to wiper operation.

When wiper switch is in OFF position : RR WIPER STOP OFF

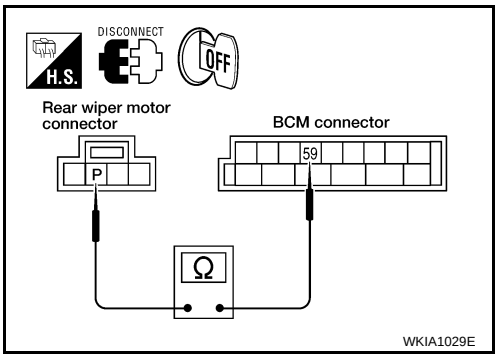
OK or NG

OK >> Replace BCM. Refer to BCS-18, "Removal and Installation of BCM".
NG >> GO TO 2.

2.CHECK REAR WIPER MOTOR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and rear wiper motor connector.
3. Check continuity between BCM harness connector M20 terminal 59 and rear wiper motor harness connector D507 terminal P.

59 - P : Continuity should exist.



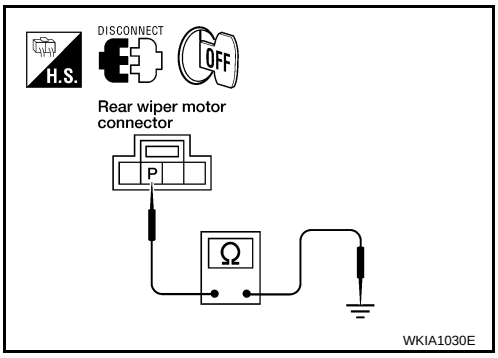
OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

3.CHECK REAR WIPER MOTOR SHORT CIRCUIT

Check continuity between rear wiper motor harness connector D507 terminal P and ground.

P - Ground : Continuity should not exist.



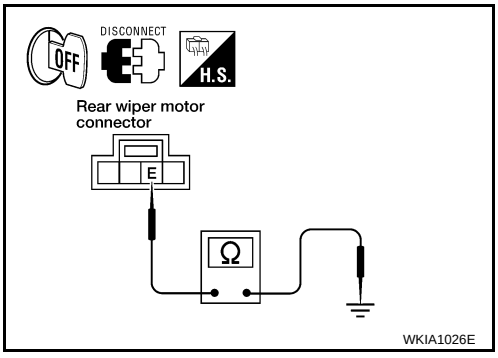
OK or NG

OK >> GO TO 4.
NG >> Repair harness or connector.

4.CHECK GROUND CIRCUIT

Check continuity between rear wiper motor harness connector D507 terminal E and ground.

E - Ground : Continuity should exist.

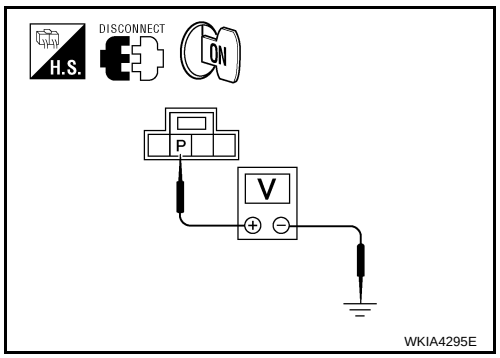


OK or NG

OK >> GO TO 5.
NG >> Repair harness or connector.

5.CHECK AUTO STOP SIGNAL

1. Connect BCM connector.
2. Turn ignition switch ON.
3. Check voltage between rear wiper motor harness connector D507 terminal P and ground.



P - Ground : Battery voltage should exist.

OK or NG

OK >> Replace BCM. Refer to BCS-18, "Removal and Installation of BCM".
NG >> Replace rear wiper motor. Refer to WW-34, "Rear Wiper Motor".

Only Rear Wiper Does Not Operate

INFOID:0000000001719288

1.CHECK COMBINATION SWITCH INPUT SIGNAL

Select "BCM" on CONSULT-III. With "WIPER" data monitor, make sure "RR WIPER ON" turns ON-OFF according to operation of wiper switch.

When rear wiper switch is in ON position : RR WIPER ON

OK or NG

OK >> Replace BCM. Refer to BCS-18, "Removal and Installation of BCM".
NG >> Check the wiper switch. Refer to BCS-3, "System Description".

Only Rear Wiper Intermittent Does Not Operate

INFOID:0000000001719289

1.CHECK COMBINATION SWITCH INPUT SIGNAL

Select "BCM" on CONSULT-III. With "WIPER" data monitor, make sure "RR WIPER INT" turns ON-OFF according to operation of wiper switch.

When rear wiper switch is in INT position : RR WIPER INT ON

OK or NG

OK >> Replace BCM. Refer to BCS-18, "Removal and Installation of BCM".
NG >> Check the wiper switch. Refer to BCS-3, "System Description".

Wiper Does Not Wipe When Rear Washer Operates

INFOID:0000000001719290

1.CHECK COMBINATION SWITCH INPUT SIGNAL

Select "BCM" on CONSULT-III. With "WIPER" data monitor, make sure "RR WASHER SW" turns ON-OFF according to operation of rear washer switch.

When rear wiper switch is in WASHER position : RR WASHER SW ON

OK or NG

OK >> Replace BCM. Refer to BCS-18, "Removal and Installation of BCM".
NG >> Check the wiper switch. Refer to BCS-3, "System Description".

Rear Wiper Arm

INFOID:0000000001719291

REMOVAL

1. Operate rear wiper motor one full cycle, then turn OFF (auto stop).
2. Remove wiper arm cover, remove wiper arm nut, then remove rear wiper arm.

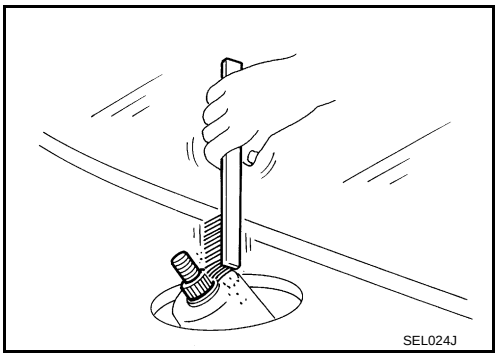
INSTALLATION

1. Prior to rear wiper arm installation, operate wiper motor one full cycle then turn OFF (auto stop).

- Operate wiper motor one full cycle, then turn OFF (auto stop).
- Using a suitable brush, clean pivot area as shown. This will reduce the possibility of wiper arm looseness.

2. Install rear wiper arm onto pivot and ensure wiper blade is parallel to the ground.
3. Tighten wiper arm nut to specification, install wiper arm cover.

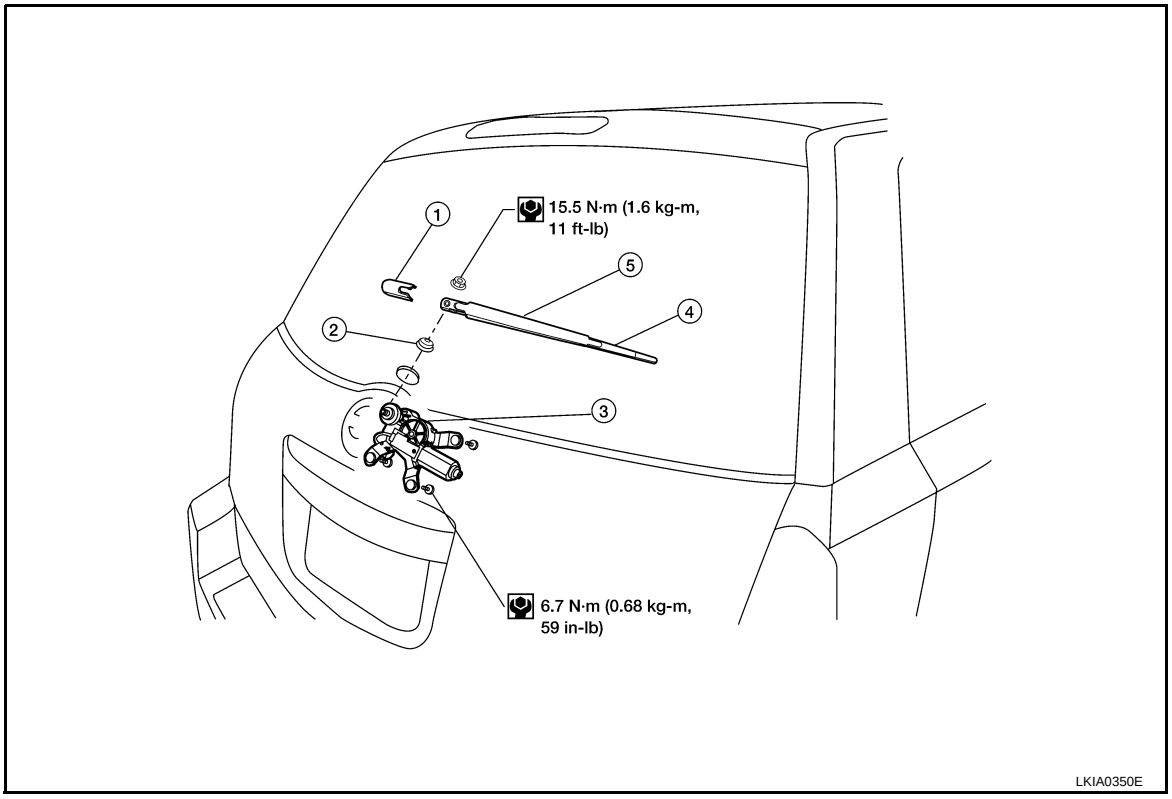
Wiper arm nut : 15.5 N·m (1.6 kg-m, 11 ft-lb)



Rear Wiper Motor

INFOID:0000000001719292

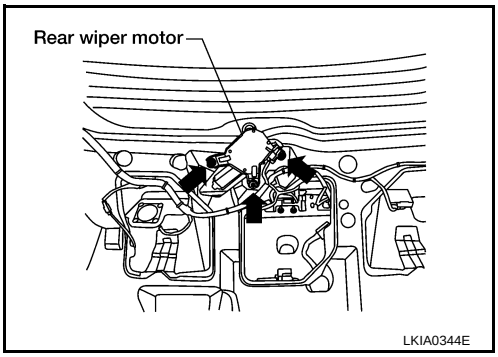
REMOVAL AND INSTALLATION



1. Wiper arm cover
2. Pivot cap
3. Rear wiper motor
4. Wiper blade
5. Rear wiper arm

Removal

1. Remove rear wiper arm. Refer to WW-33, "Rear Wiper Arm".
2. Remove pivot cap.
3. Remove back door lower finisher. Refer to EI-31, "Removal and Installation".
4. Disconnect rear wiper motor electrical connector.
5. Remove rear wiper motor bolts, and remove rear wiper motor.

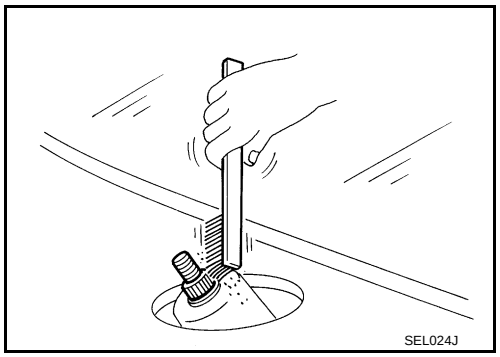


Installation

CAUTION:

- **Do not drop the wiper motor or cause it to contact other parts.**

1. Clean up the pivot area as shown. This will reduce possibility of wiper arm looseness.
2. Install rear wiper motor.
3. Attach pivot cap.
4. Connect rear wiper motor electrical connector.
5. Install back door finisher lower. Refer to EI-31, "Removal and Installation".
6. Attach rear wiper arm. Refer to WW-33, "Rear Wiper Arm".

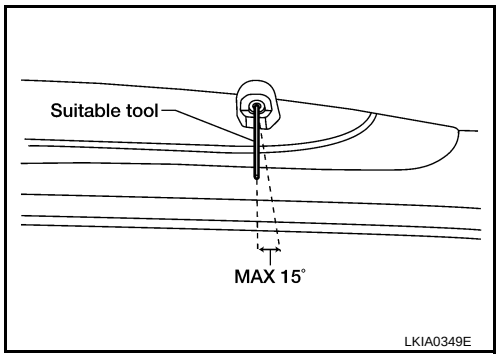


Rear Washer Nozzle Adjustment

INFOID:0000000001719293

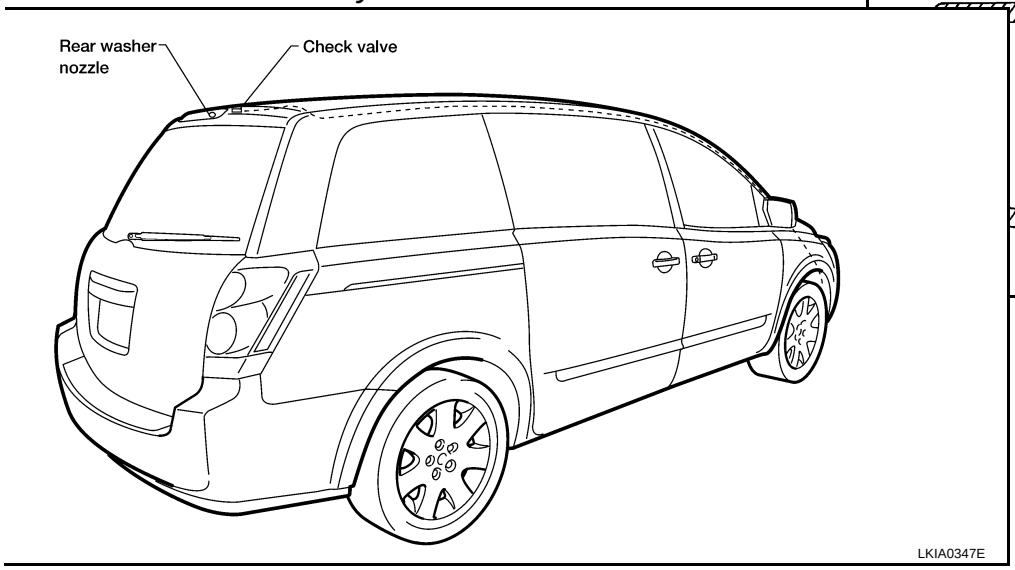
Adjust washer nozzle with suitable tool as shown.

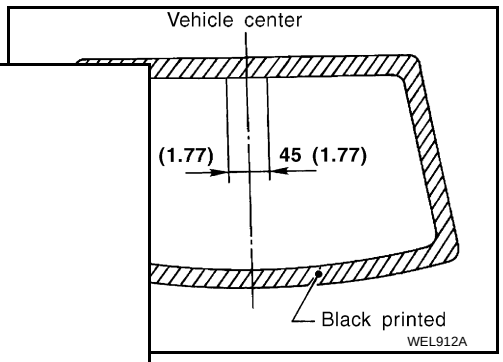
Adjustable range : ±15° (In any direction)



Rear Washer Tube Layout

INFOID:0000000001719294





Rear Washer Nozzle

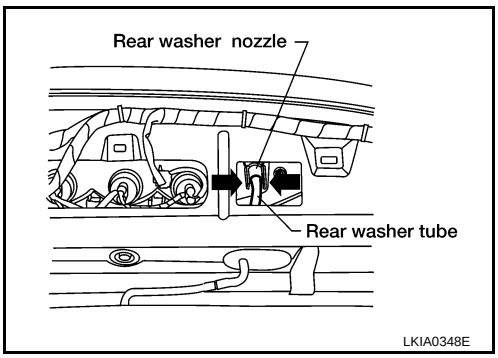
INFOID:0000000001719295

REMOVAL AND INSTALLATION

Removal

1. Remove back door upper finisher. Refer to EI-31, "Removal and Installation".

2. Remove rear washer tube from rear washer nozzle.
3. Release retaining clips and remove rear washer nozzle.



Installation
Installation is in the reverse order of removal.

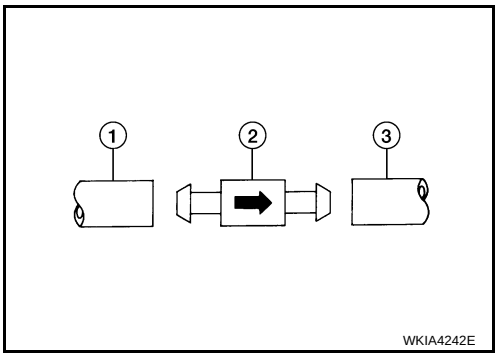
Check Valve

INFOID:0000000001719296

REMOVAL AND INSTALLATION

Connect the check valve (2) to the washer fluid reservoir tube (1) so that the directional arrow on the check valve (2) points towards the washer nozzle tube (3).

CAUTION:
Directional arrow on the check valve (2) must point in the direction of the washer fluid flow.



Rear Wiper and Washer Switch

INFOID:0000000001719297

Refer to WW-23, "Wiper and Washer Switch".

Washer Fluid Reservoir

INFOID:0000000001719298

Refer to WW-23, "Washer Fluid Reservoir".

Washer Motor

INFOID:0000000001719299

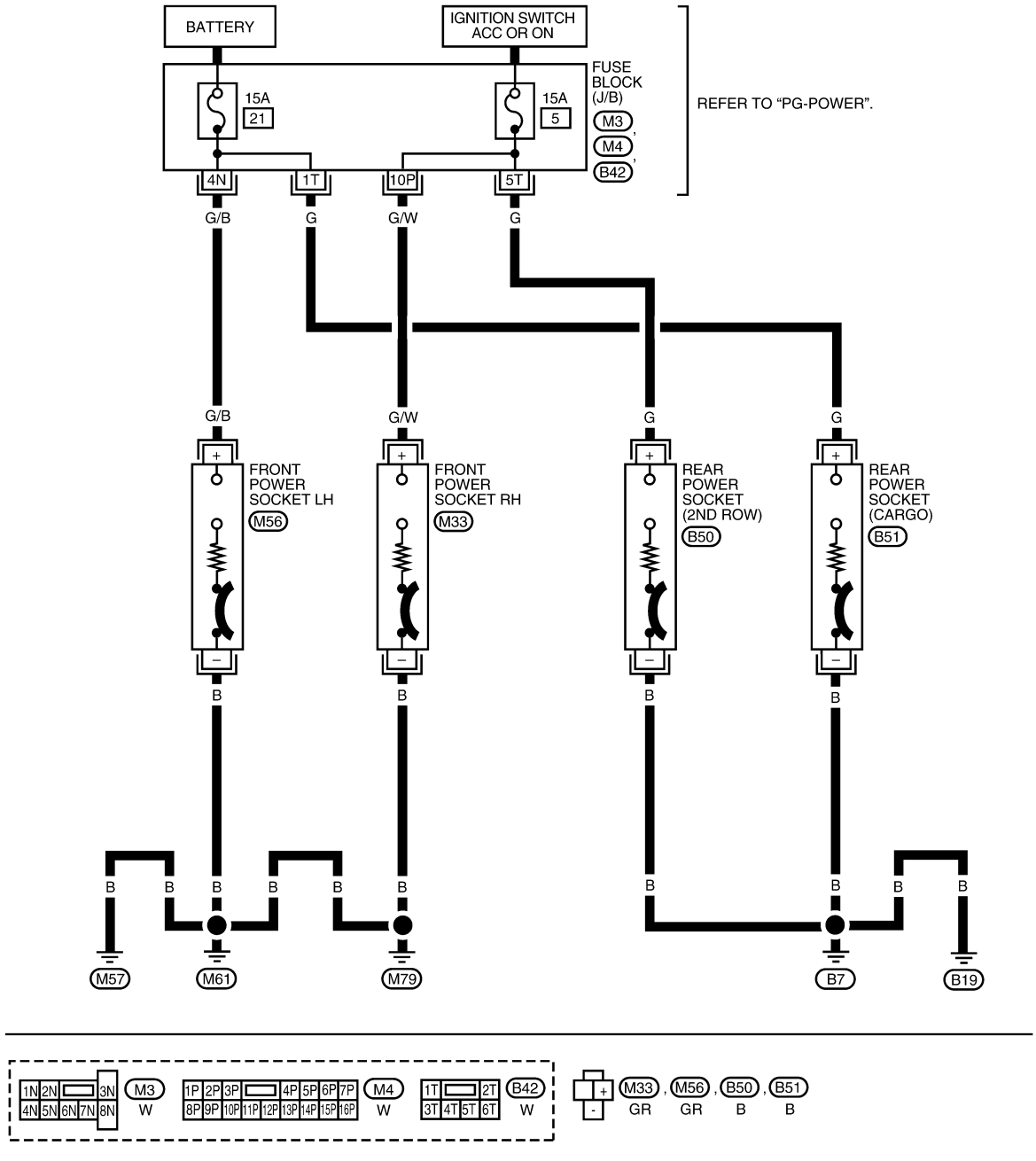
Refer to WW-24, "Washer Motor".

POWER SOCKET

Wiring Diagram - P/SCKT -

INFOID:0000000001719300

WW-P/SCKT-01



WKWA4656E

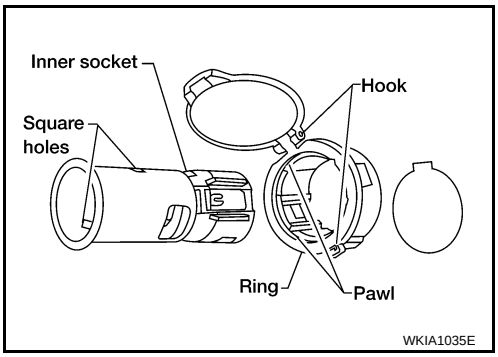
Front Power Socket - 1 (LH) and Rear Power Socket (Cargo)

INFOID:0000000001719301

REMOVAL AND INSTALLATION

Removal

1. Disconnect battery negative terminal.
2. Remove inner socket from ring, while pressing the hook on the ring out from square hole.
3. Disconnect power socket electrical connector.
4. Remove ring from power socket finisher while pressing pawls.



Installation
Installation is in the reverse order of removal.

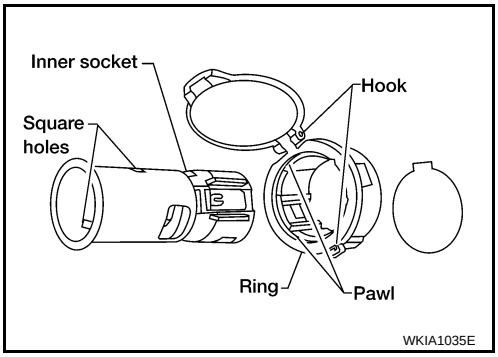
Front Power Socket - 2 (RH) and Rear Power Socket (2nd Row)

INFOID:0000000001719302

REMOVAL and INSTALLATION

Removal

1. Remove inner socket from ring, while pressing the hook on the ring out from square hole.
2. Disconnect power socket electrical connector.
3. Remove ring from power socket finisher while pressing pawls.



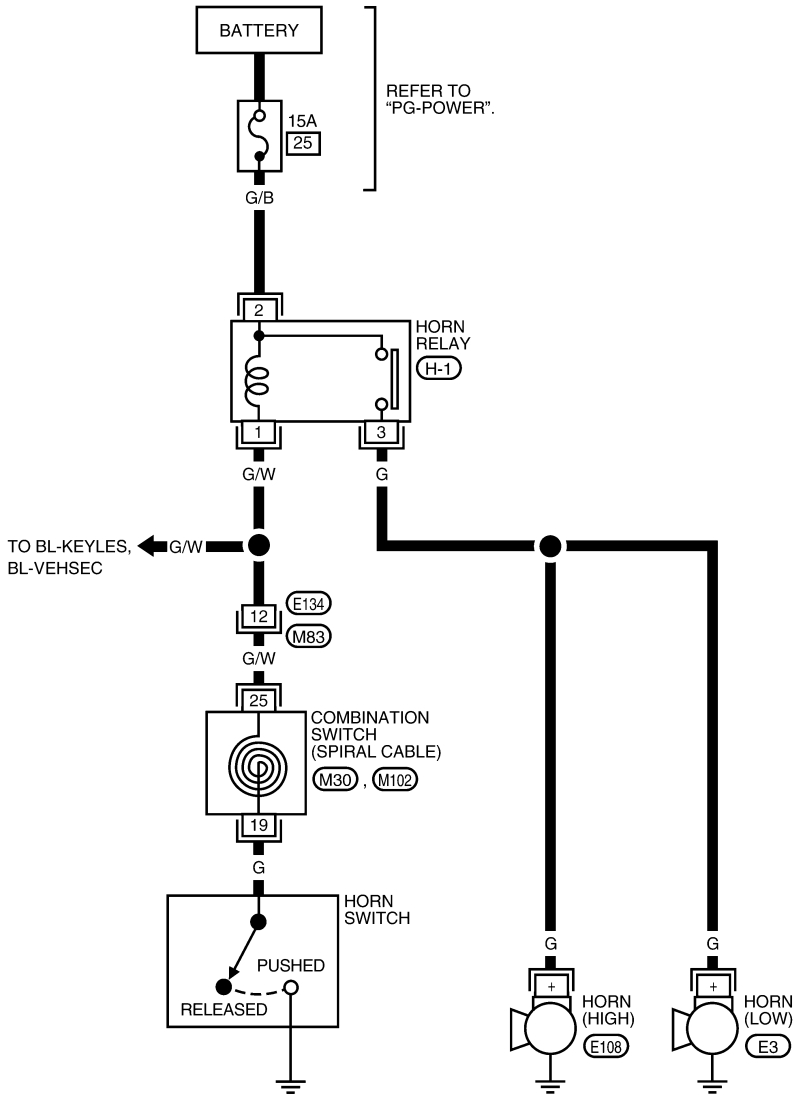
Installation
Installation is in the reverse order of removal.

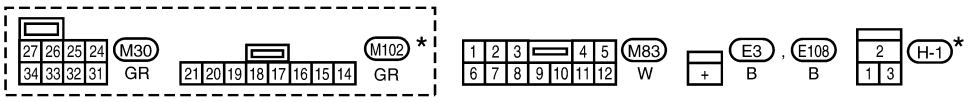
HORN

Wiring Diagram - HORN -

INFOID:0000000001719303

WW-HORN-01





*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

WKWA4953E

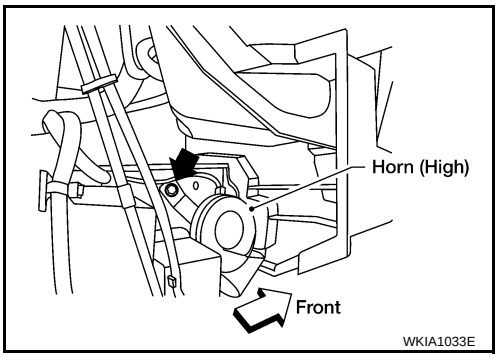
Horn

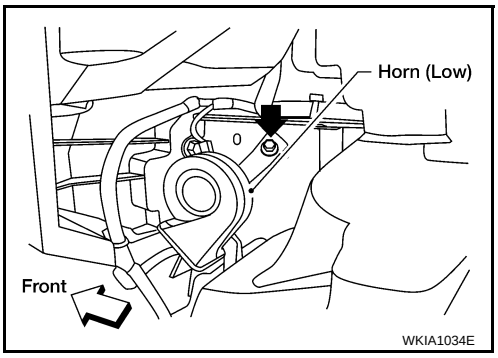
INFOID:0000000001719304

REMOVAL AND INSTALLATION

Removal

1. Remove the front bumper. Refer to EI-13, "Removal and Installation".
2. Disconnect horn electrical connector.
3. Remove horn bolt and remove horn from vehicle.





INSTALLATION

Installation is in the reverse order of removal.