SECTION WW
WIPER, WASHER & HORN

CONTENTS

PRECAUTIONS

PFP:00001

Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

EKS0035H

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 harness connectors.**

Wiring Diagrams and Trouble Diagnosis

EKS0035I

When you read wiring diagrams, refer to the following:

- GI-13, "How to Read Wiring Diagrams"
- PG-8, "POWER SUPPLY ROUTING"

When you perform trouble diagnosis, refer to the following:

- GI-9, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES"
- GI-25, "How to Perform Efficient Diagnosis for an Electrical Incident"

Check for any Service bulletins before servicing the vehicle.

FRONT WIPER AND WASHER

PFP:28810

System Description

EKS0035K

WIPER OPERATION

Models Without Intermittent Wipers

The front wiper switch is controlled by a lever built into the combination switch.
There are two front wiper switch positions:

- LO speed
- HI speed

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

- through 20A fuse [No. 6, located in the fuse block (J/B)]
- to front wiper motor terminal B.

Low and High Speed Wiper Operation

Ground is supplied to front wiper switch terminal 17 through body grounds E12 and E54.
With the front wiper switch in the LO position, ground is supplied

- to front wiper motor terminal L
- through front wiper switch terminal 14.

With power and ground supplied, the front wiper motor operates at low speed.
With the front wiper switch in the HI position, ground is supplied

- to front wiper motor terminal H
- through front wiper switch terminal 16.

With power and ground supplied, the front wiper motor operates at high speed.

Auto Stop Operation

When the front wiper switch is turned OFF, the front wiper motor will continue to operate at low speed until wiper blades reach windshield base.
When wiper blades are not located at base of windshield with front wiper switch OFF, ground is supplied

- to front wiper motor terminal L
- through front wiper switch terminal 14
- through front wiper switch terminal 13
- through front wiper motor terminal P
- through front wiper motor terminal E
- through body grounds E12 and E54.

Models With Intermittent Wipers

The front wiper switch is controlled by a lever built into the combination switch.
There are three front wiper switch positions:

- LO speed
- HI speed
- INT (Intermittent)

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

- through 20A fuse [No. 6, located in the fuse block (J/B)]
- to front wiper motor terminal B and
- to front wiper switch terminal 15.

Low and High Speed Wiper Operation

Ground is supplied to front wiper switch terminal 17 through body grounds E12 and E54
With the front wiper switch in the LO position, ground is supplied

- to front wiper motor terminal L
- through front wiper switch terminal 14.

With power and ground supplied, the front wiper motor operates at low speed.
With the front wiper switch in the HI position, ground is supplied

- to front wiper motor terminal H
- through front wiper switch terminal 16.

With power and ground supplied, the front wiper motor operates at high speed.

Auto Stop Operation

When the front wiper switch is turned OFF, the front wiper motor will continue to operate at low speed until wiper blades reach windshield base.

When wiper blades are not located at base of windshield with front wiper switch OFF, ground is supplied

- to front wiper motor terminal L
- through front wiper switch terminal 14
- through front wiper switch terminal 13
- through front wiper motor terminal P
- through front wiper motor terminal E
- through body grounds E12 and E54.

When wiper blades reach base of windshield, front wiper motor terminals B and P are connected instead of terminals P and E.

Battery power is then supplied

- through front wiper motor terminal P
- to front wiper switch terminal 13.

With battery voltage supplied to front wiper switch terminal 13, the front wiper switch will stop the front wiper motor with the wiper blades at the PARK position.

Intermittent Operation

The wiper blades perform a single wiping operation, followed by a delay interval which is adjustable from approximately 3 to 13 seconds, after which the cycle repeats. This feature is controlled by the front wiper switch.

When the front wiper switch is placed in the INT position, ground is supplied intermittently

- to front wiper motor terminal L
- through front wiper switch terminal 14
- through front wiper switch terminal 17
- through body grounds E12 and E54.

The delay interval time is controlled by the wiper switch.

The wiper motor operates at low speed at the desired delay interval.

WASHER OPERATION

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

- through 20A fuse [No. 6, located in the fuse block (J/B)]
- to front washer motor terminal +.

When the lever is pulled to the WASH position, ground is supplied

- to front washer motor terminal –
- from front wiper switch terminal 18
- through front wiper switch terminal 17
- through body grounds E12 and E54.

With power and ground supplied, the front washer motor operates.

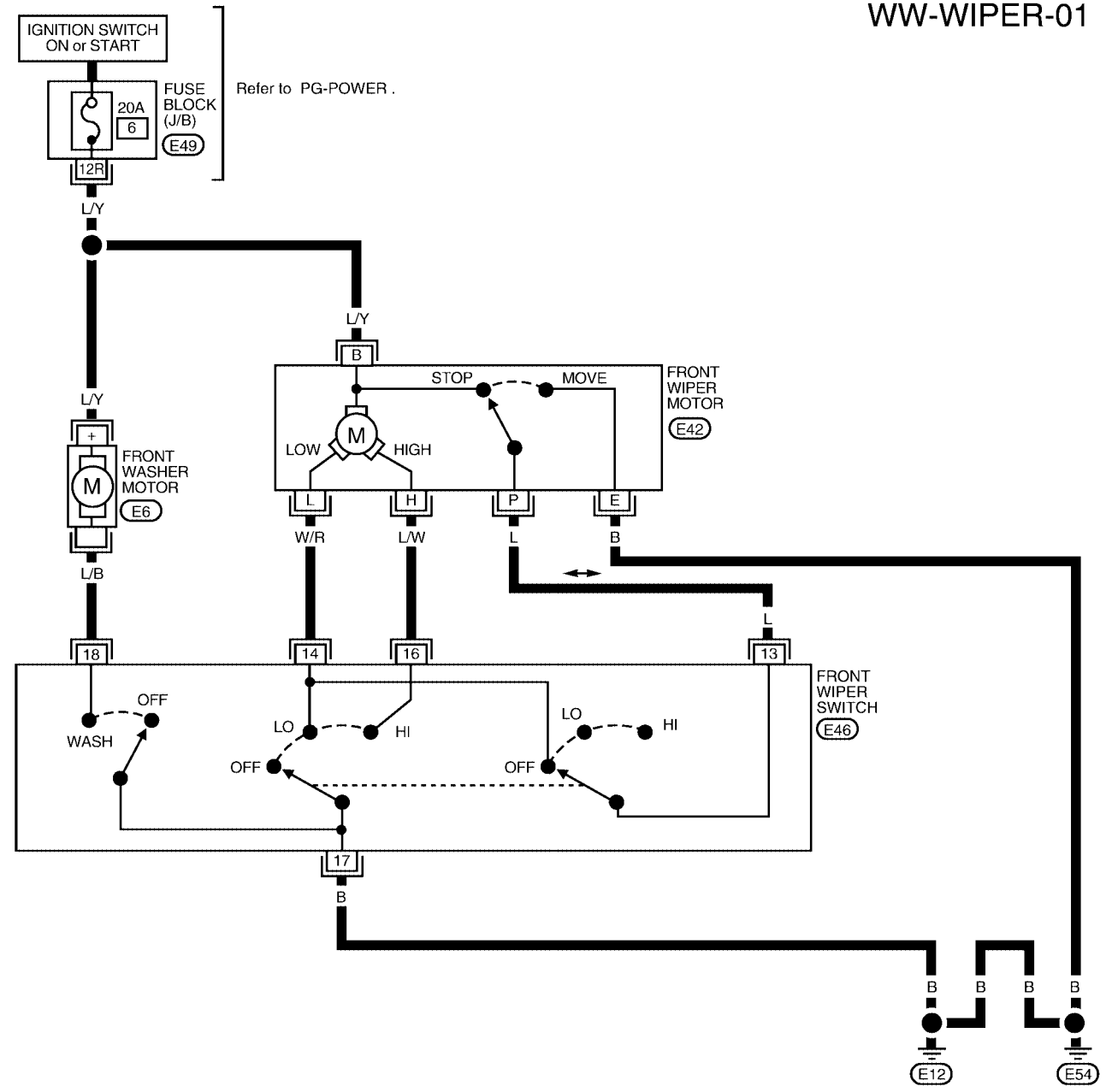
Models With Intermittent Wipers

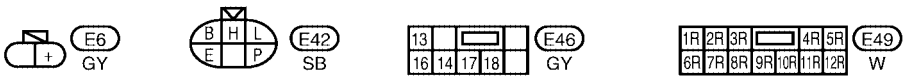
When the lever is pulled to the WASH position for one second or more, the wiper motor operates at low speed for approximately 3 seconds to clean windshield. This feature is controlled by the wiper switch in the same manner as the intermittent operation.

Wiring Diagram — WIPER —

EKS0035L

MODELS WITHOUT INTERMITTENT WIPERS

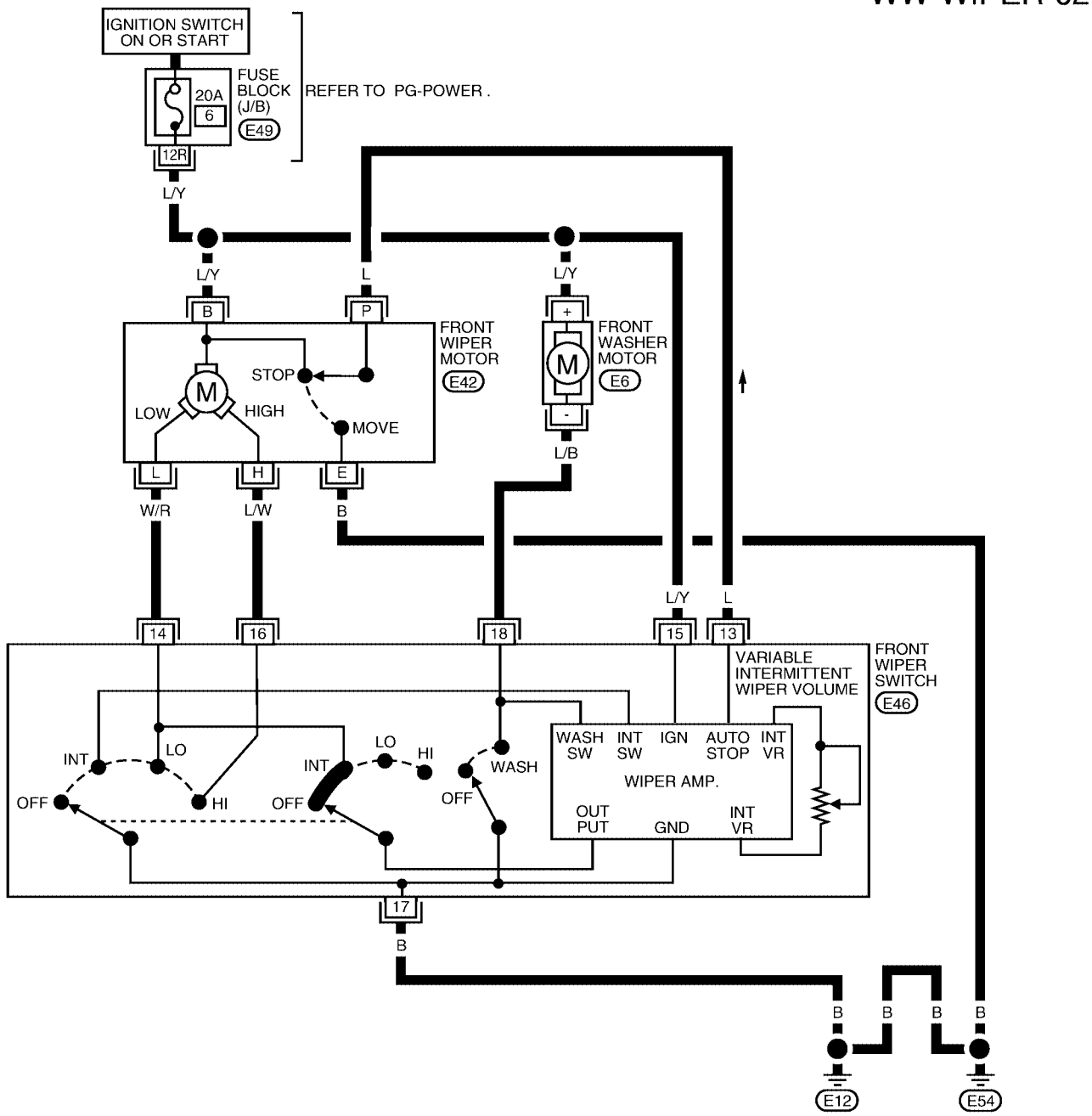


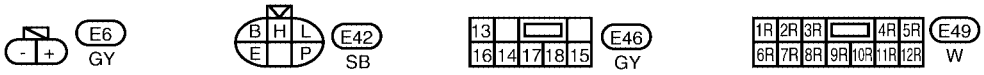


WKWA1380E

MODELS WITH INTERMITTENT WIPERS

WW-WIPER-02





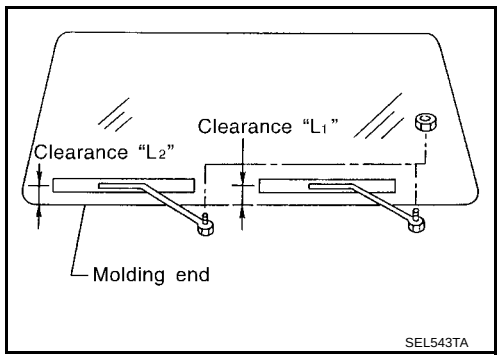
WKWA1381E

Removal and Installation

EKS0035M

WIPER ARMS

1. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it “OFF” (Auto Stop).
2. Lift the blade up and then set it down onto glass surface to set the blade center to clearance “L_1 ” and “L_2 ” immediately before tightening nut.
3. Eject washer fluid. Turn on wiper switch to operate wiper motor and then turn it “OFF”.
4. Ensure that wiper blades stop within clearance “L_1 ” and “L_2 ”.



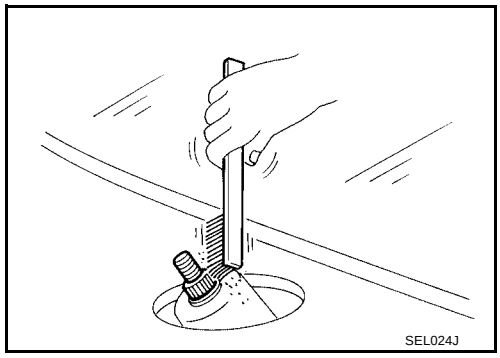
Clearance “L_1 ” : 25 mm (0.98 in)

Clearance “L_2 ” : 25 mm (0.98 in)

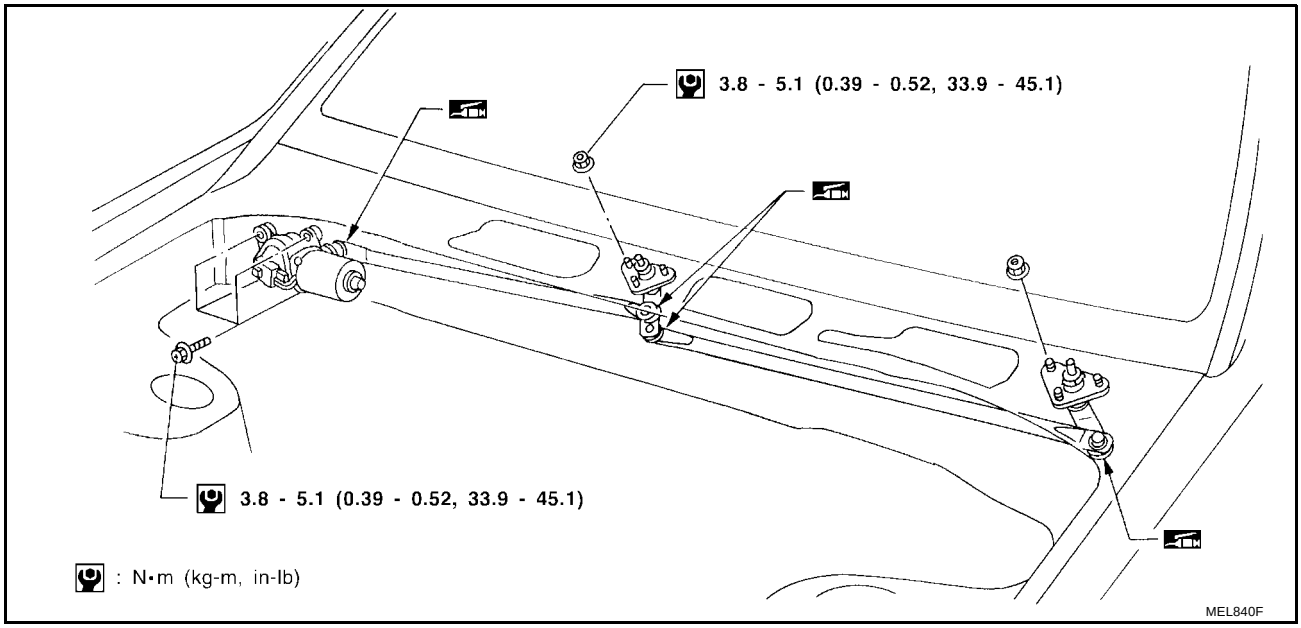
- Tighten wiper arm nuts to specified torque.

Front wiper : 13 - 18 N·m (1.3 - 1.8 kg-m, 9 - 13 ft-lb)

- **Before reinstalling wiper arm, clean the pivot area as illustrated. This will reduce possibility of wiper arm looseness.**



WIPER MOTOR AND LINKAGE



Removal

1. Remove wiper arms. Refer to WW-7, "WIPER ARMS" .
2. Remove cowl top grilles. Refer to EI-26, "Removal and Installation" .
3. Remove wiper motor linkage cover and disconnect linkage.

CAUTION:

Be careful not to break ball joint rubber boot.

4. Disconnect wiper motor harness connector.
5. Remove 4 bolts that secure wiper motor.

6. Detach wiper motor from wiper linkage at ball joint.
7. Remove nuts from wiper pivots and remove wiper linkage.

Installation

- Grease ball joint portion before installation.

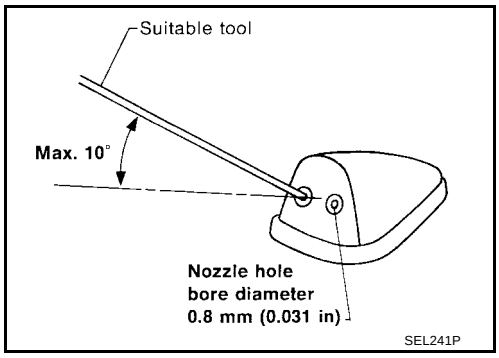
1. Installation is the reverse order of removal.

Washer Nozzle Adjustment

EKS0035N

- Adjust washer nozzle with suitable tool as shown.

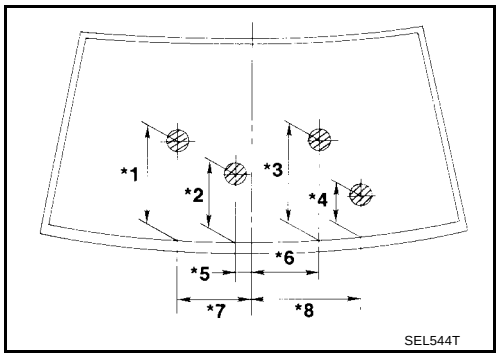
Adjustable range : ±10°



Unit: mm (in)

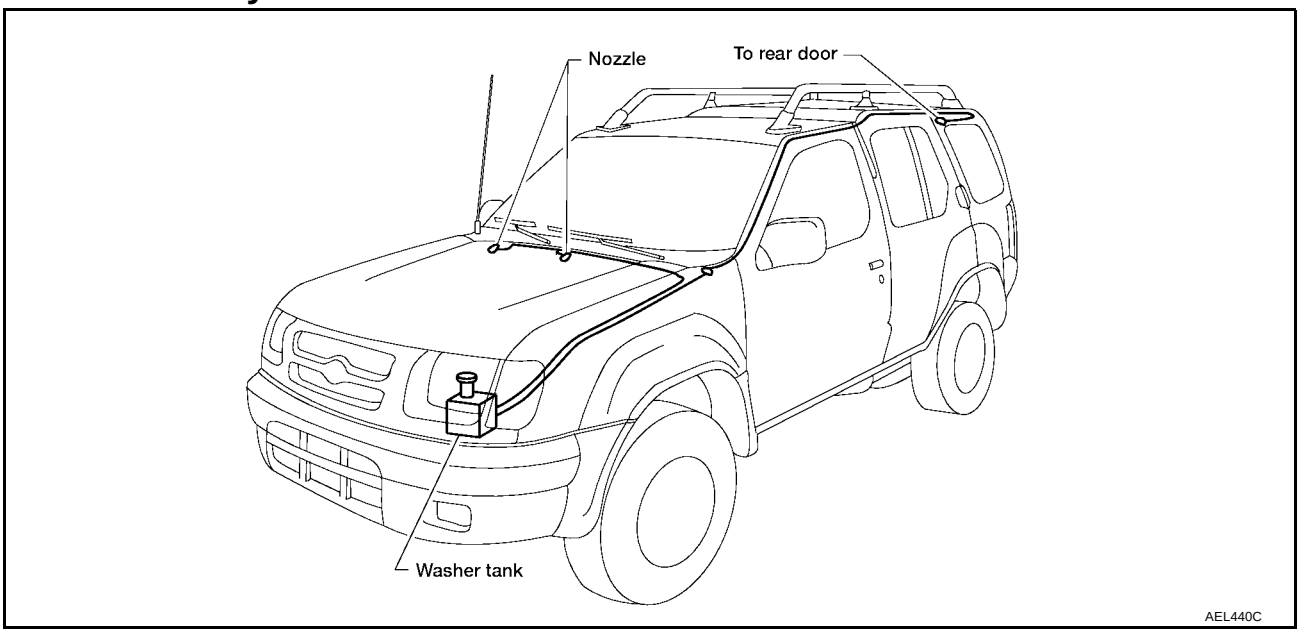
*1	390 (15.35)	*5	145 (5.71)
*2	160 (6.30)	*6	143 (5.63)
*3	379 (14.92)	*7	225 (8.86)
*4	140 (5.51)	*8	535 (21.06)

*: The diameters of these circles are less than 80 mm (3.15 in).



Washer Tube Layout

EKS0035O



REAR WIPER AND WASHER

PFP:28710

System Description

EKS0035P

POWER SUPPLY AND GROUND

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

- through 10A fuse [No. 10, located in the fuse block (J/B)]
- to rear wiper motor terminal 2, and
- to rear wiper amp terminal 5, and
- to rear washer motor terminal +.

Ground is supplied

- to rear wiper switch terminal 24
- through body grounds M14 and M68.

Ground is also supplied

- to rear wiper motor terminal 1, and
- to rear wiper amp terminal 3
- through body grounds D402 and D404.

WIPER OPERATION

With the rear wiper switch is turned ON, ground is supplied

- to rear wiper amp terminal 6
- through rear wiper switch terminals 22 and 24
- through body grounds M14 and M68.

Power is supplied

- to rear wiper motor terminal 2.

Ground is supplied

- to rear wiper motor terminal 3
- through rear wiper amp terminal 7 and 3
- through body grounds D402 and D404.

WASHER OPERATION

With the rear wiper switch turned to WASH position, ground is supplied

- to rear washer motor terminal –, and
- to rear wiper amp terminal 4 and 6
- through rear wiper switch terminal 24
- to body grounds M14 and M68.

With power and ground supplied, the rear washer motor operates.
When the rear wiper switch is turned to WASHER position for 0.4 seconds or more, the rear wiper motor operates approximately 3 times after the rear wiper switch is released.

INTERMITTENT OPERATION

The rear wiper motor operates the wiper arm at low speed approximately every 7 seconds.
When the rear wiper switch is turned to the INT position, ground is supplied

- to rear wiper amp terminal 1
- through rear wiper switch terminal 21 and 24
- through body grounds M14 and M68.

Power is supplied

- to rear wiper motor terminal 2.

Ground is supplied

- to rear wiper motor terminal 4
- through rear wiper amp terminal 2 and 3
- through body grounds D402 and D404.

With power and ground supplied the rear wiper operates in intermittent mode.

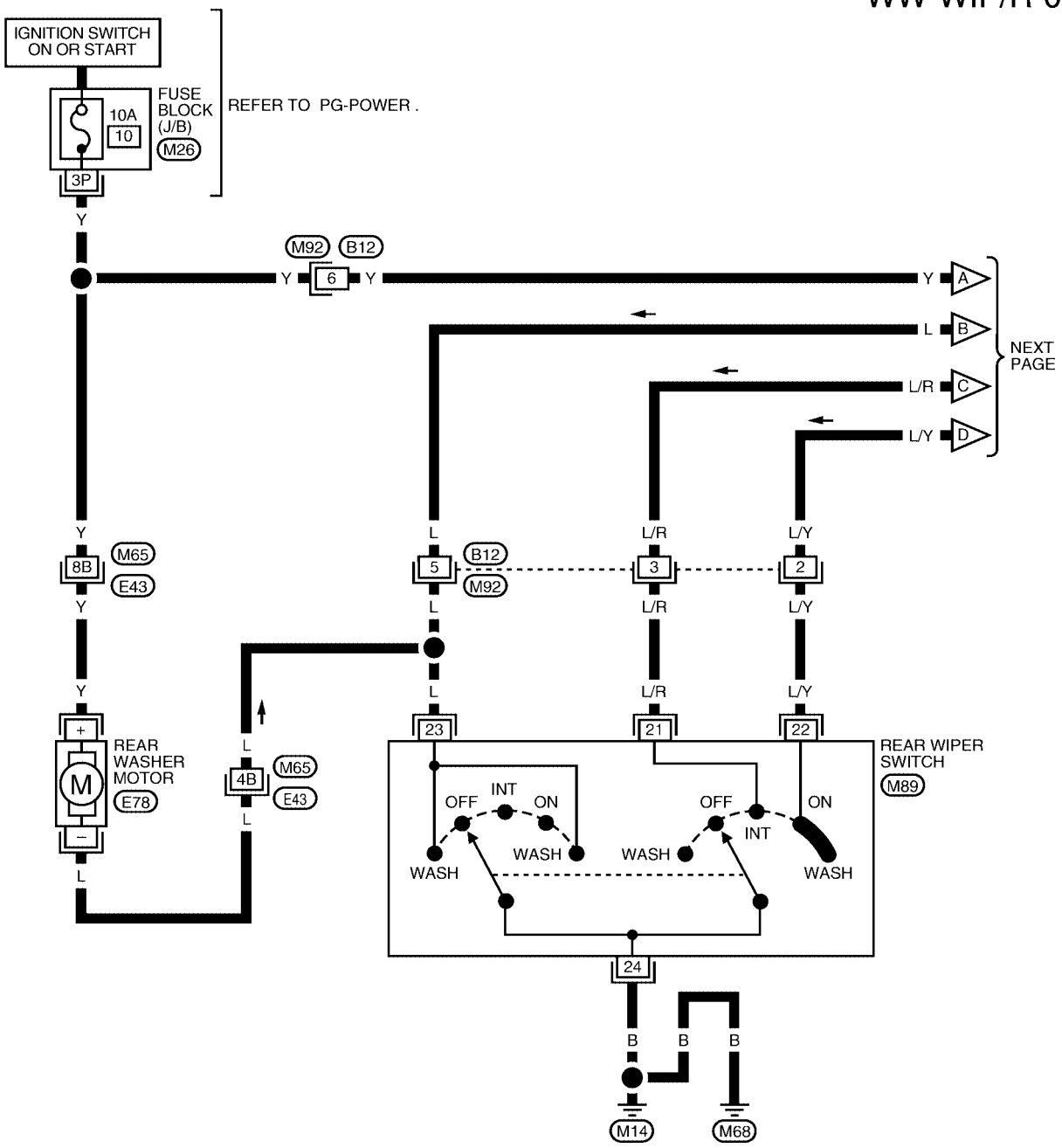
AUTO STOP OPERATION

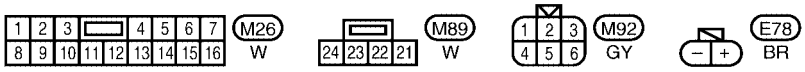
When the rear wiper switch is placed in the OFF position, the rear wiper motor will continue to operate until the rear wiper blade reaches the park position.
Ground is supplied through rear wiper motor terminal 1 to body grounds D402 and D404. This allows the rear wiper motor to operate until the rear wiper blade reaches the park position. When the rear wiper blade reaches the park position, the rear wiper motor ground is interrupted and the rear wiper motor stops.

Wiring Diagram — WIP/R —

EKS0035Q

WW-WIP/R-01

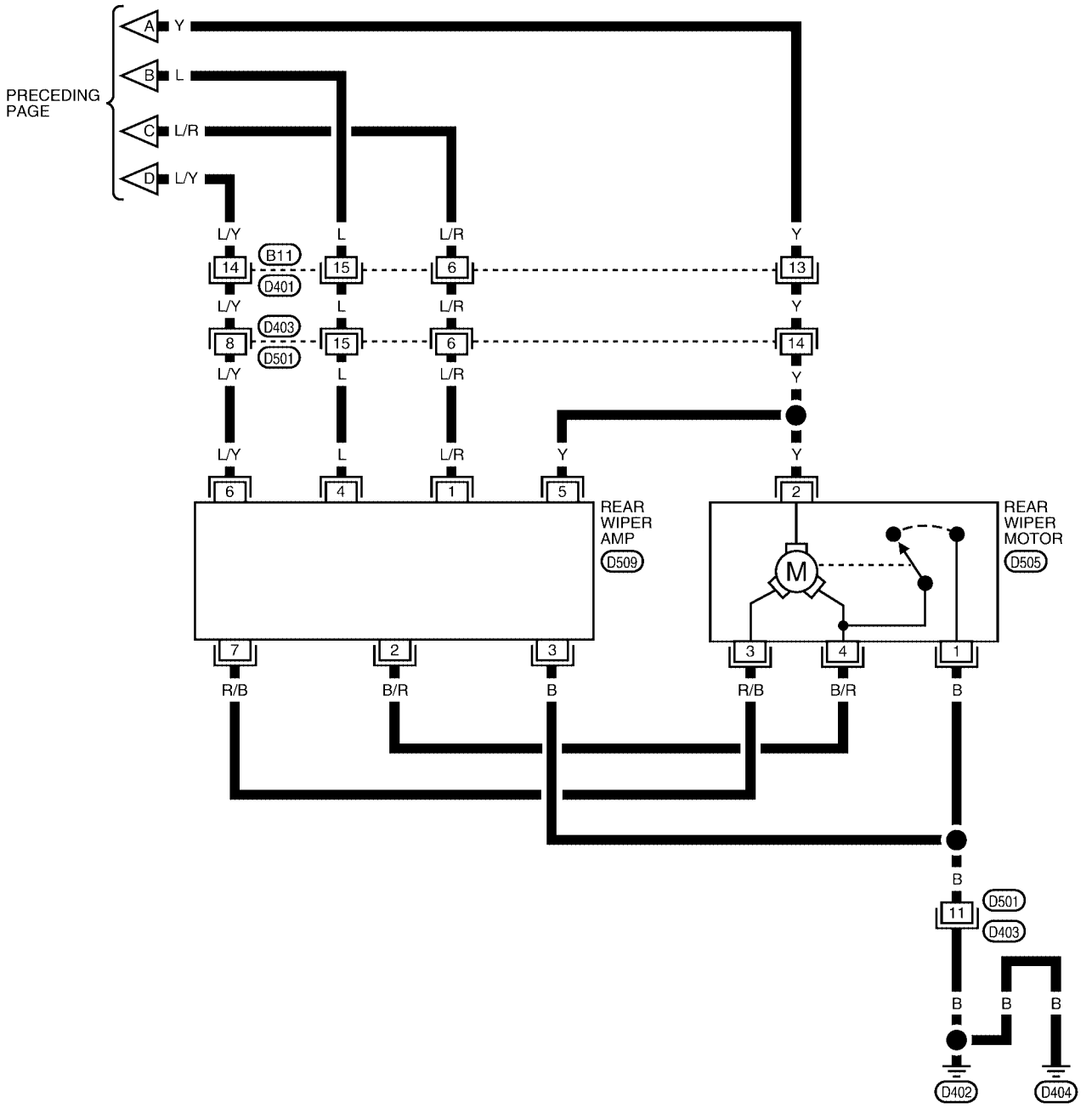


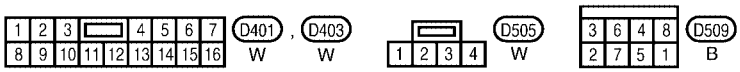


REFER TO THE FOLLOWING.
E43 - SUPER MULTIPLE JUNCTION (SMJ)

WKWA1382E

WW-WIP/R-02

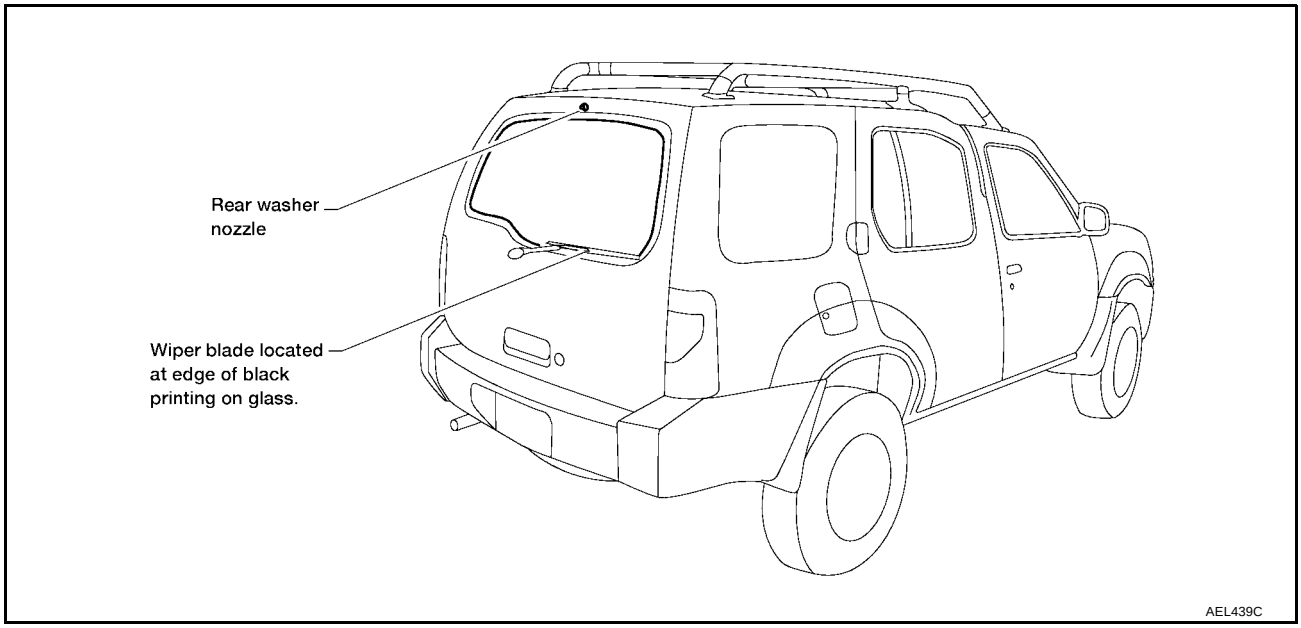


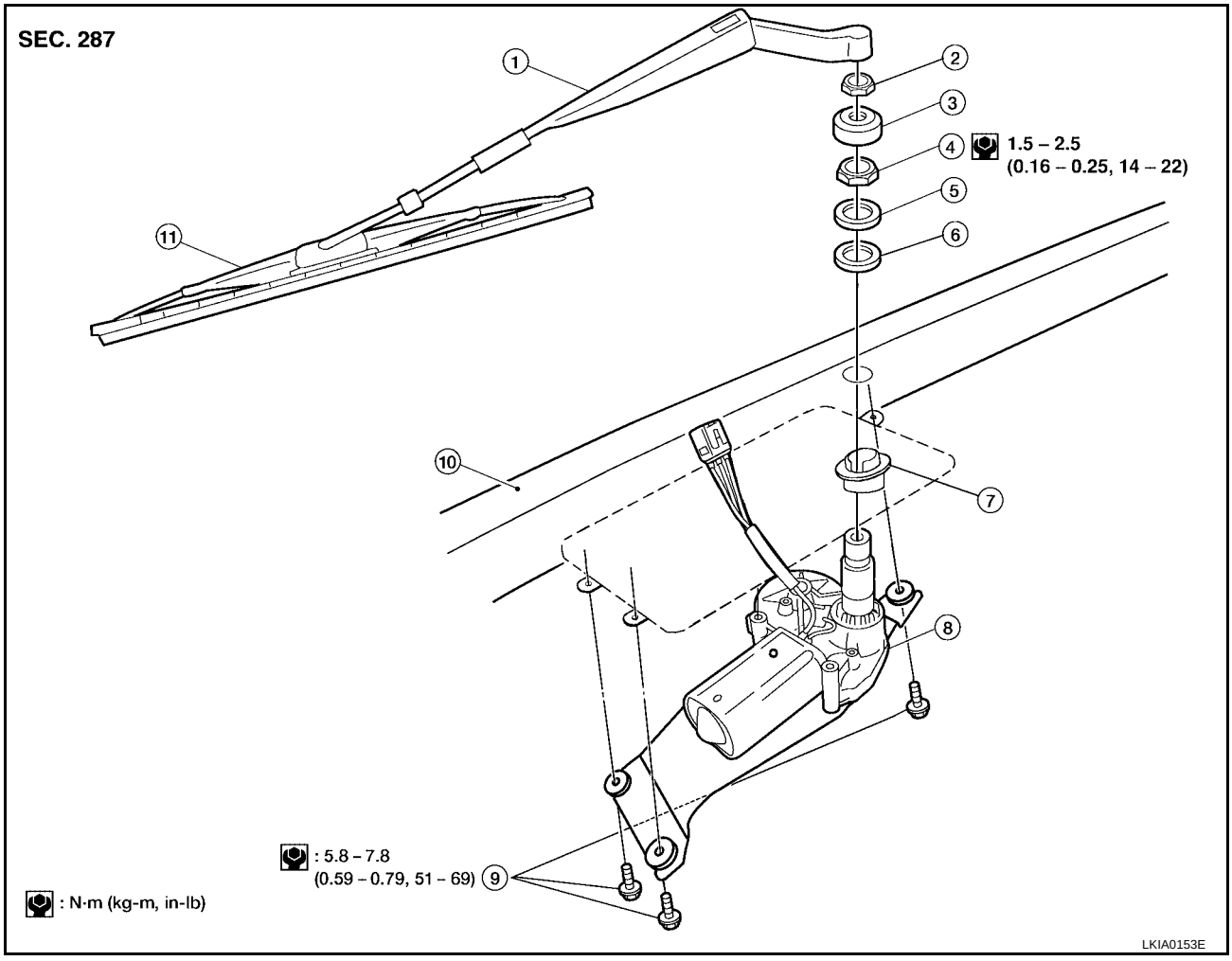


WKWA1138E

Removal and Installation

EKS0035R





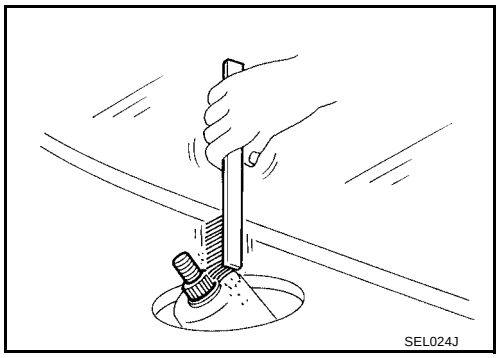
1. Rear wiper arm
2. Rear wiper arm nut
3. Pivot shaft cover
4. Pivot shaft nut
5. Outer collar
6. Seal
7. Pivot
8. Rear wiper motor
9. Mounting bolts
10. Back door
11. Rear wiper blade

WIPER ARM

1. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it “OFF” (Auto Stop).
2. Install wiper arm so that wiper blade is parallel to the ground and tighten wiper arm nut to specification.

: 13 - 18 N·m (1.3 - 1.8 kg-m, 9 - 13 ft-lb)

- **Before reinstalling wiper arm, clean the pivot area as illustrated. This will reduce possibility of wiper arm looseness.**

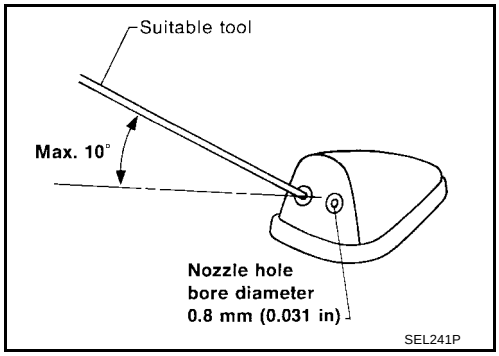


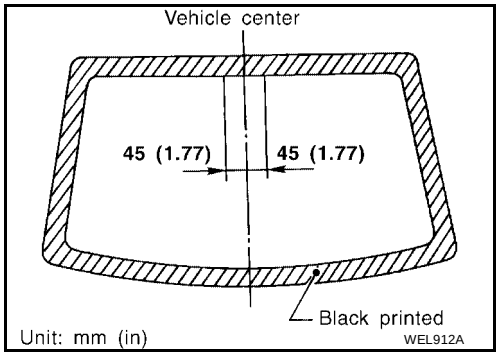
Washer Nozzle Adjustment

EKS0035S

- Adjust washer nozzle with suitable tool as shown.

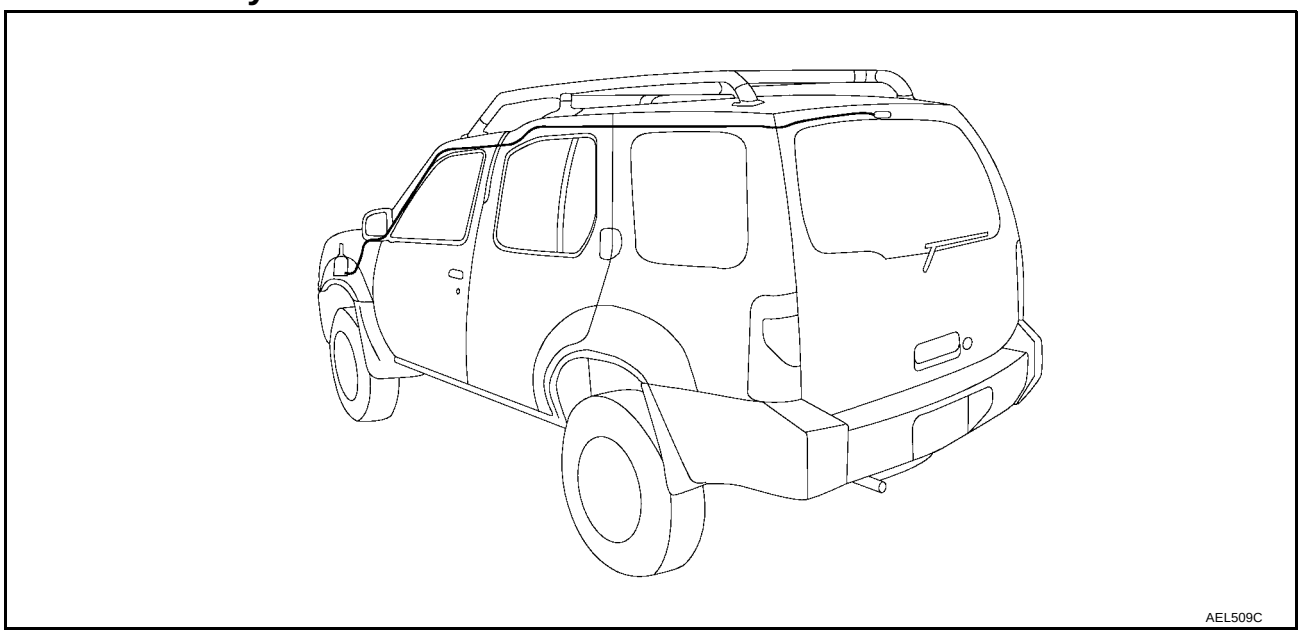
Adjustable range : ±10° (In any direction)





Washer Tube Layout

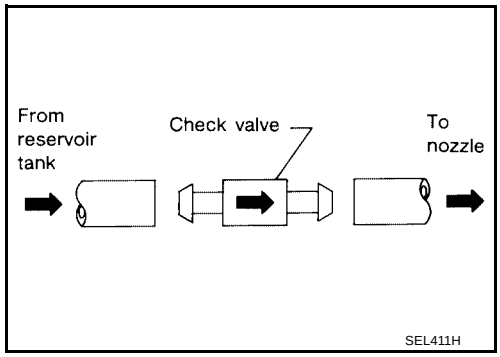
EKS0035T



Check Valve

EKS0035U

- A check valve is provided in the washer fluid line. Be careful not to connect check valve to washer tube in the wrong direction.

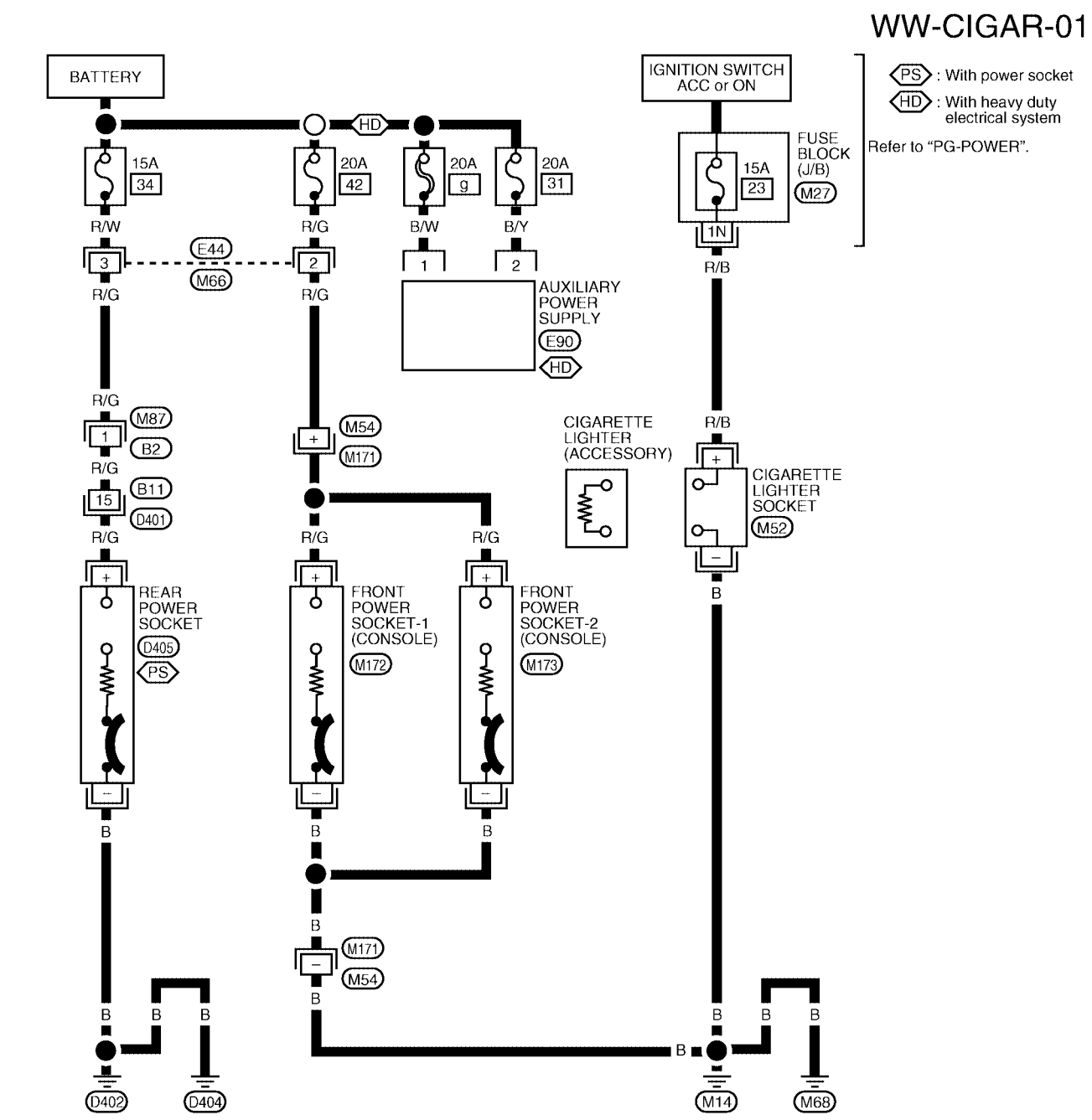


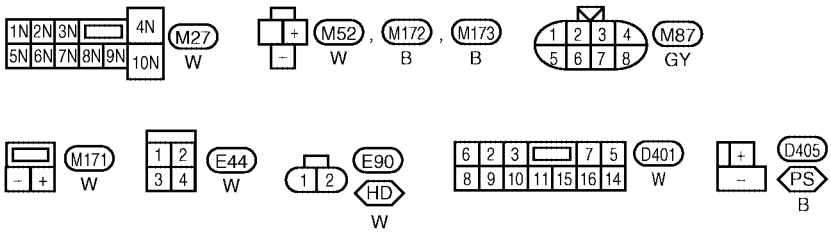
CIGARETTE LIGHTER

PFP:35330

Wiring Diagram — CIGAR —

EKS0037I





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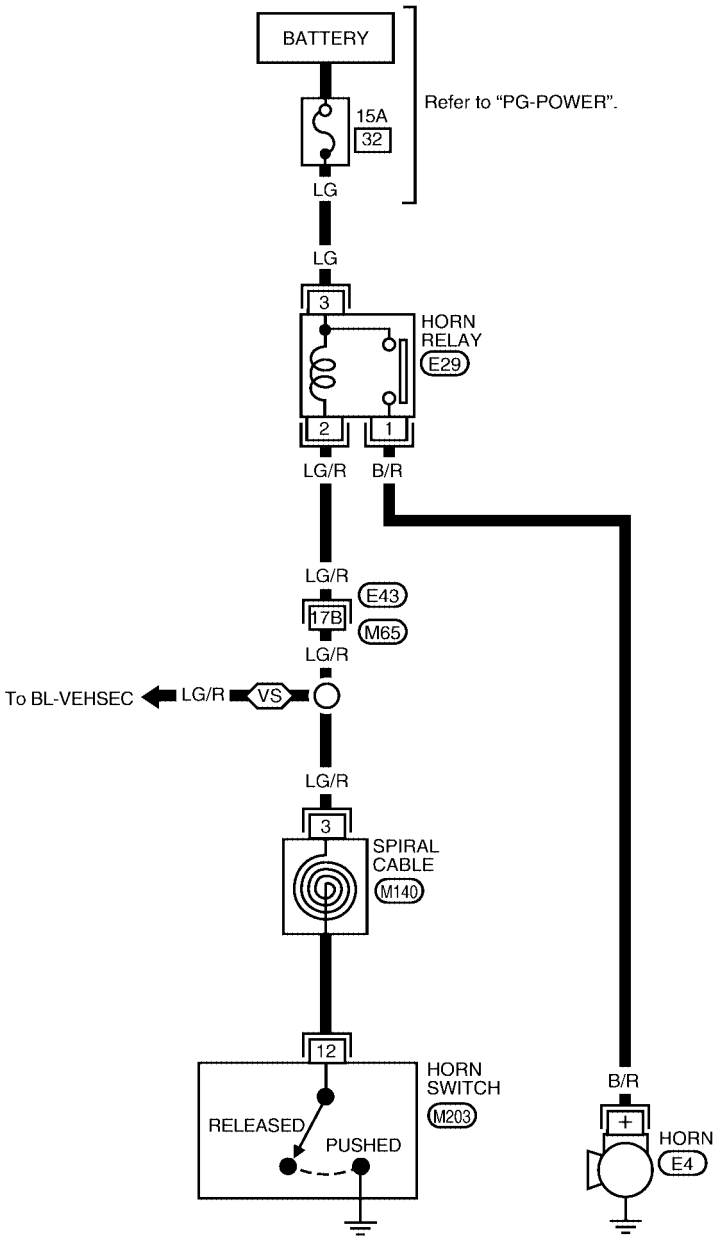
HORN

PFP:25610

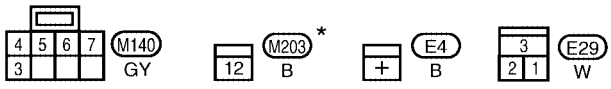
Wiring Diagram — HORN —

EKS0037J

WW-HORN-01



VS : WITH VEHICLE SECURITY SYSTEM



Refer to the following.
E43 - SUPER MULTIPLE JUNCTION (SMJ)

* : This connector is not shown in "HARNESS LAYOUT" of PG section.

WKWA0287E