

SECTION **WW**  
WIPER, WASHER & HORN

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# PRECAUTIONS

## PRECAUTIONS

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

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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. 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

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When you read wiring diagrams, refer to the following:

- [GI-13, "How to Read Wiring Diagrams"](#), and
- [PG-3, "POWER SUPPLY ROUTING"](#) for power distribution circuit.

When you perform trouble diagnosis, refer to the following:

- [GI-10, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES"](#), and
- [GI-26, "How to Perform Efficient Diagnosis for an Electrical Incident"](#).

Check for any Service bulletins before servicing the vehicle.

## FRONT WIPER AND WASHER

### System Description WIPER OPERATION

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

- LO speed
- HI speed
- INT (with intermittent operation)

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

- through 20A fuse [No. 25, located in the fuse block (J/B)]
- to wiper motor terminal B, and
- to front wiper switch terminal 15 (with intermittent operation).

### Low and High Speed Wiper Operation

Ground is supplied to wiper switch terminal 17 through body grounds E7 and E37.

When the wiper switch is placed in the LO position, ground is supplied:

- through terminal 14 of the wiper switch
- to wiper motor terminal L.

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

When the wiper switch is placed in the HI position, ground is supplied:

- through terminal 16 of the wiper switch
- to wiper motor terminal H.

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

### Auto Stop Operation

With the wiper switch turned OFF, the wiper motor will continue to operate until wiper arms reach windshield base.

When wiper arms are not located at base of windshield with wiper switch OFF, ground is provided:

- from terminal 14 of the wiper switch
- to wiper motor terminal L, in order to continue wiper motor operation at low speed.

Ground is also supplied:

- through terminal 13 of the wiper switch
- to wiper motor terminal P
- through terminal E of the wiper motor, and
- through body grounds E7 and E37.

When wiper arms reach base of windshield, wiper motor terminals P and B are connected instead of terminals P and E. Wiper motor will then stop wiper arms at the STOP position.

### Intermittent Operation

The wiper motor operates the wiper arms one time at low speed at a set interval of approximately 3 to 13 seconds. This feature is controlled by the wiper amplifier (INT SW) combined with wiper switch.

When the wiper switch is placed in the INT position, ground is supplied to wiper amplifier.

The desired interval time is input to wiper amplifier (INT VR) from wiper volume switch combined with wiper switch.

Then intermittent ground is supplied:

- to wiper motor terminal L
- from terminal 14 of wiper switch
- through wiper amplifier (OUTPUT).

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

### WASHER OPERATION

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

- through 20A fuse [No. 25, located in the fuse block (J/B)]
- to front washer motor terminal +.

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## FRONT WIPER AND WASHER

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

- to front washer motor terminal -
- from terminal 18 of the wiper switch
- through terminal 17 of the wiper switch, and
- through body grounds E7 and E37.

With power and ground supplied, the washer motor operates.

Without intermittent operation, the wiper motor operates while the lever is pulled to the WASH position.

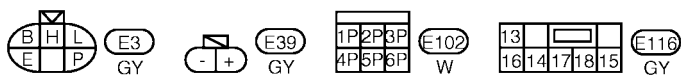
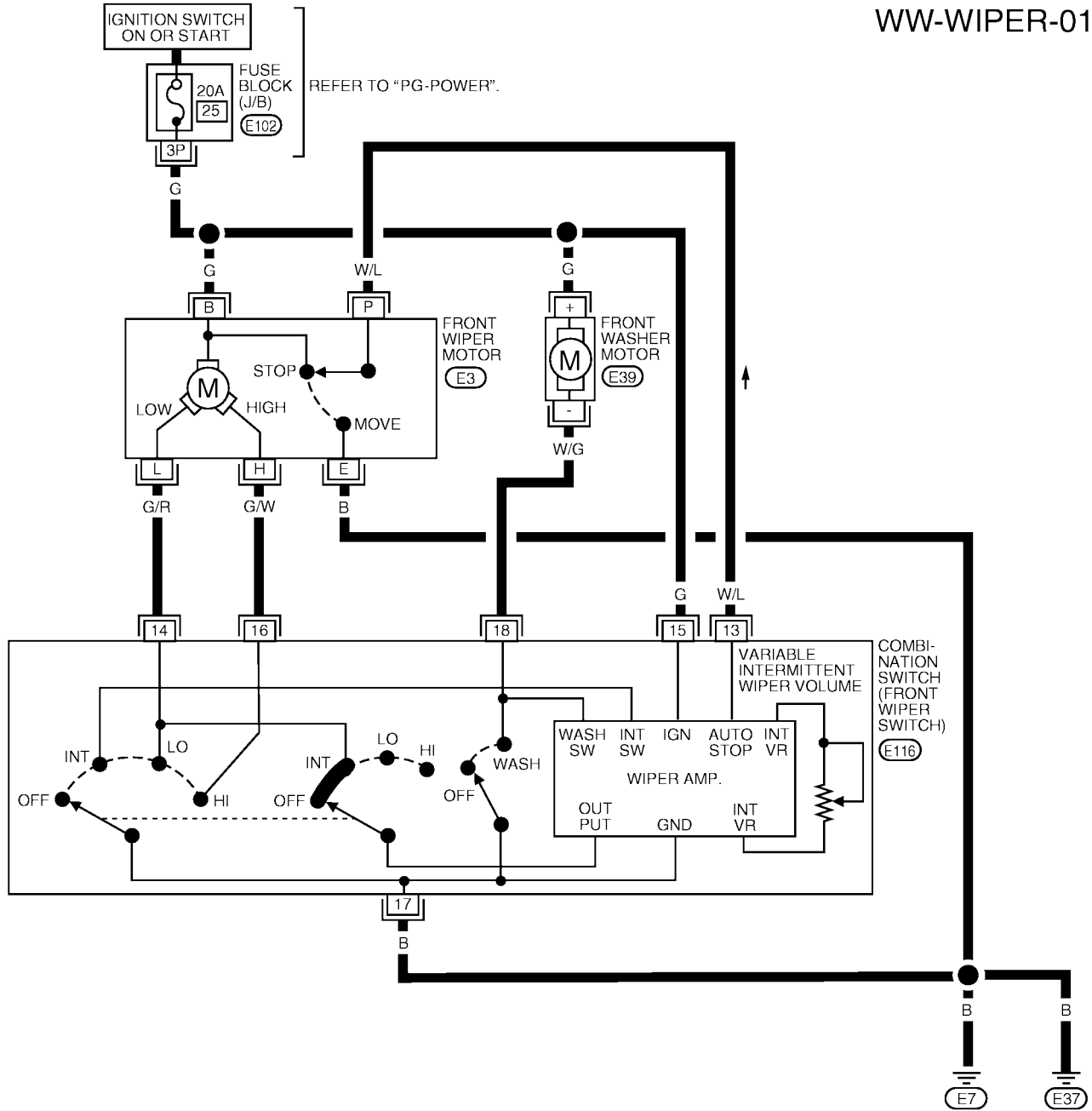
With intermittent operation, when the lever is pulled to the WASH position for one second or more, the wiper motor operates at low speed for approximately 3 seconds to clean windshield. This feature is controlled by the wiper amplifier in the same manner as intermittent operation.

# FRONT WIPER AND WASHER

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## Wiring Diagram — WIPER — WITH INTERMITTENT WIPERS

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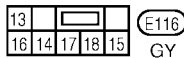
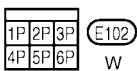
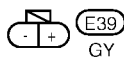
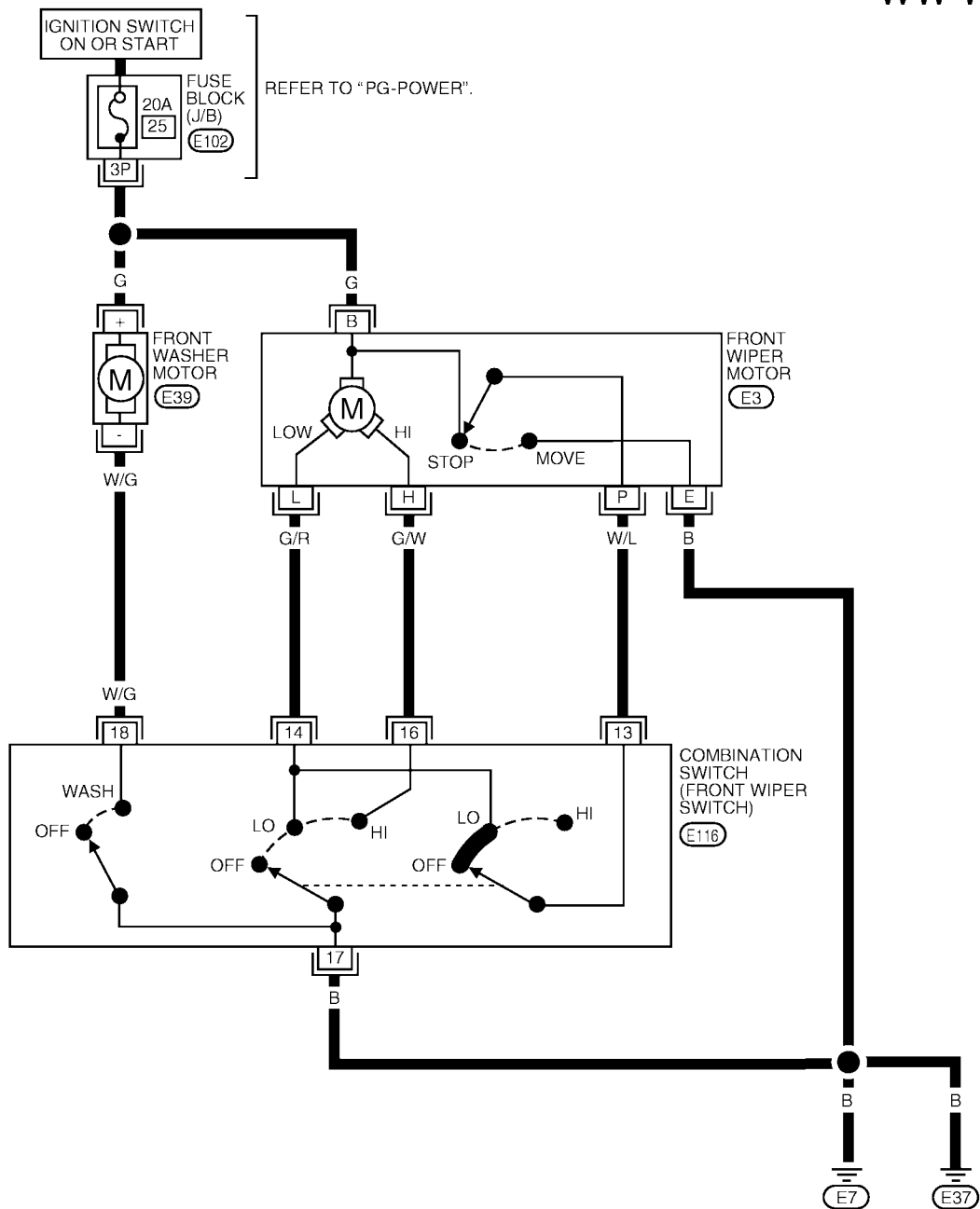
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# FRONT WIPER AND WASHER

## WITHOUT INTERMITTENT WIPERS

WW-WIPER-02



# FRONT WIPER AND WASHER

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## Removal and Installation

### 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 approximately 100 mm (3.94 in) and then set it down onto glass surface to set the blade center to clearance "L1" & "L2" 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 "L1" & "L2".

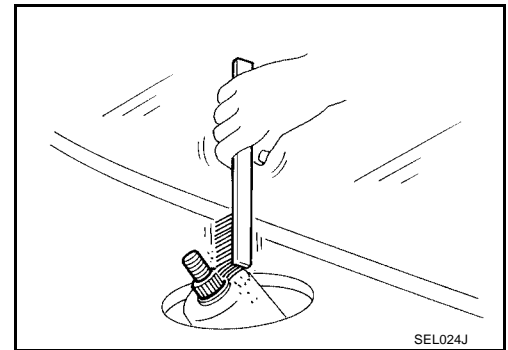
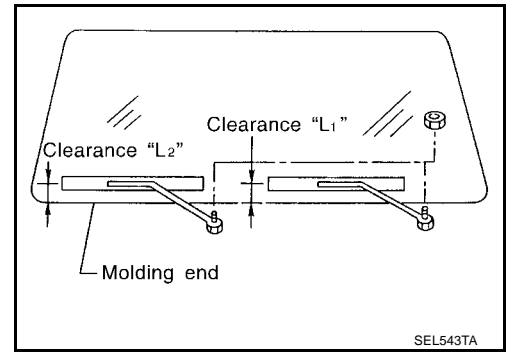
**Clearance "L1" : 27.5 - 42.5 mm (1.08 - 1.67 in)**

**Clearance "L2" : 34.5 - 49.5 mm (1.36 - 1.95 in)**

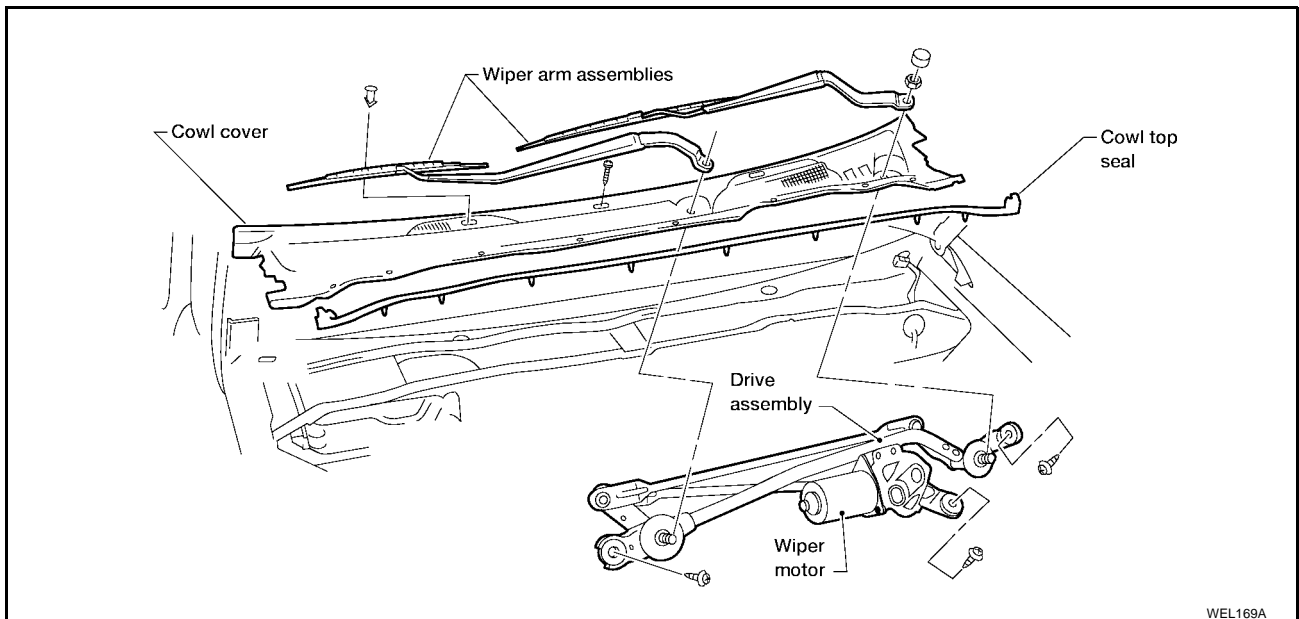
- Tighten wiper arm nuts to specified torque.

**Front wiper : 21 - 26 N-m (2.1 - 2.7 kg-m, 16 - 19 ft-lb)**

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



### WIPER LINKAGE



### Removal

1. Remove 4 bolts that secure wiper motor.
2. Detach wiper motor from wiper linkage at ball joint.
3. Remove wiper linkage.

**Be careful not to break ball joint rubber boot.**

### Installation

- Grease ball joint portion before installation.

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# FRONT WIPER AND WASHER

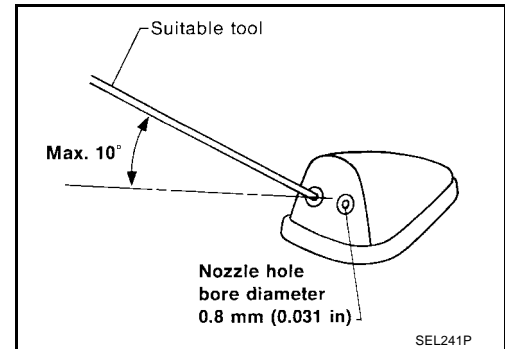
1. Installation is the reverse order of removal.

## Washer Nozzle Adjustment

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- Adjust washer nozzle with suitable tool as shown in the figure at left.

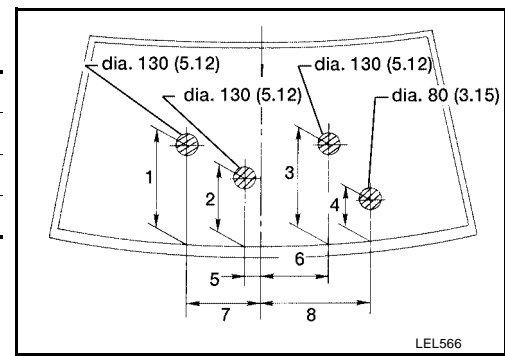
**Adjustable range** :  $\pm 10^\circ$



Unit: mm (in)

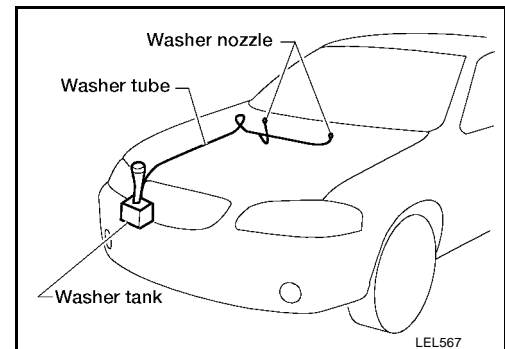
1	400 (15.75)	5	151 (5.94)
2	325 (12.80)	6	155 (6.10)
3	425 (16.73)	7	250 (9.84)
4	226 (8.90)	8	380 (14.96)

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



## Washer Tube Layout

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# HORN

## HORN

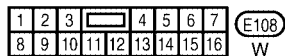
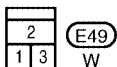
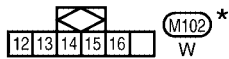
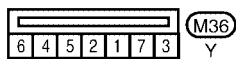
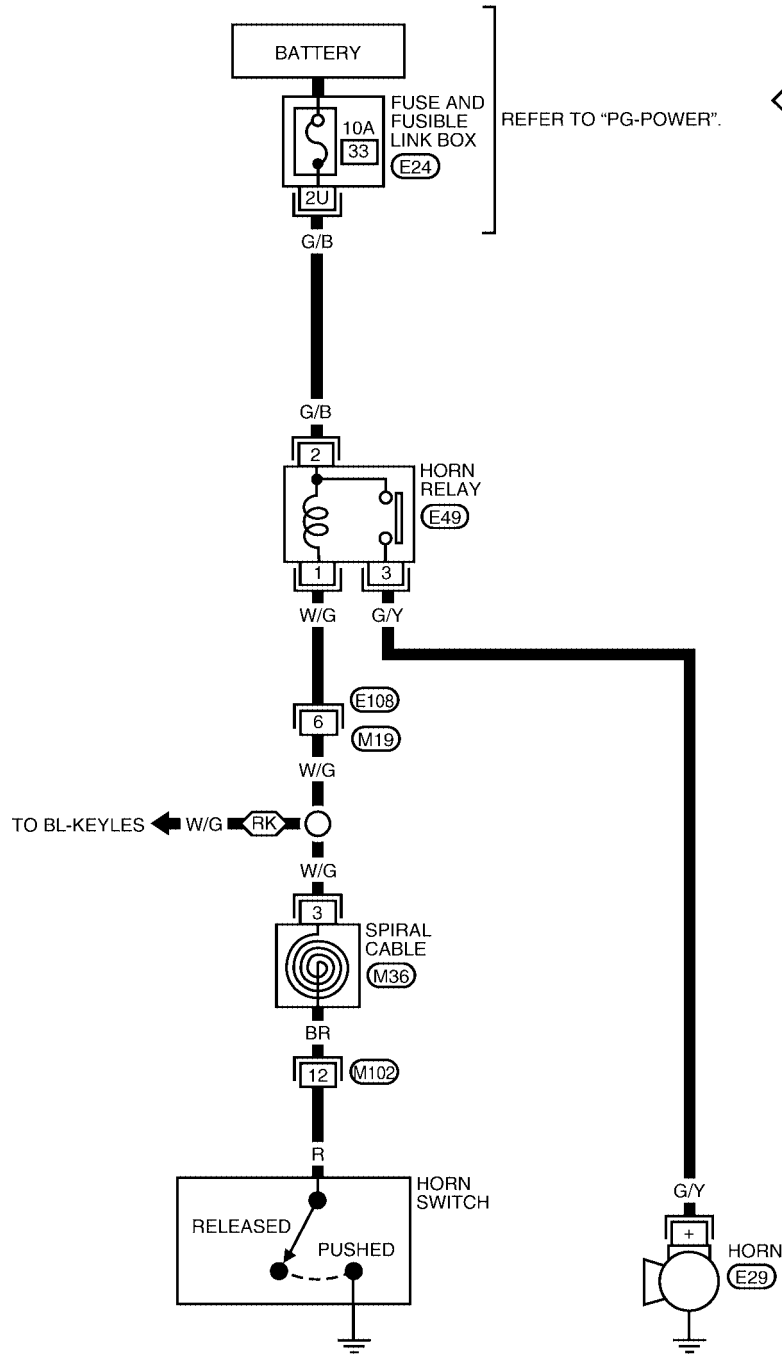
### Wiring Diagram — HORN —

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## WW-HORN-01

 : WITH REMOTE KEYLESS ENTRY SYSTEM



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

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# CIGARETTE LIGHTER

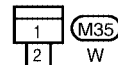
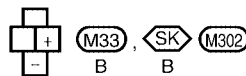
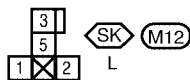
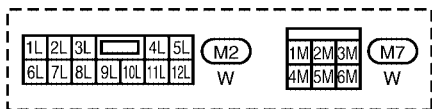
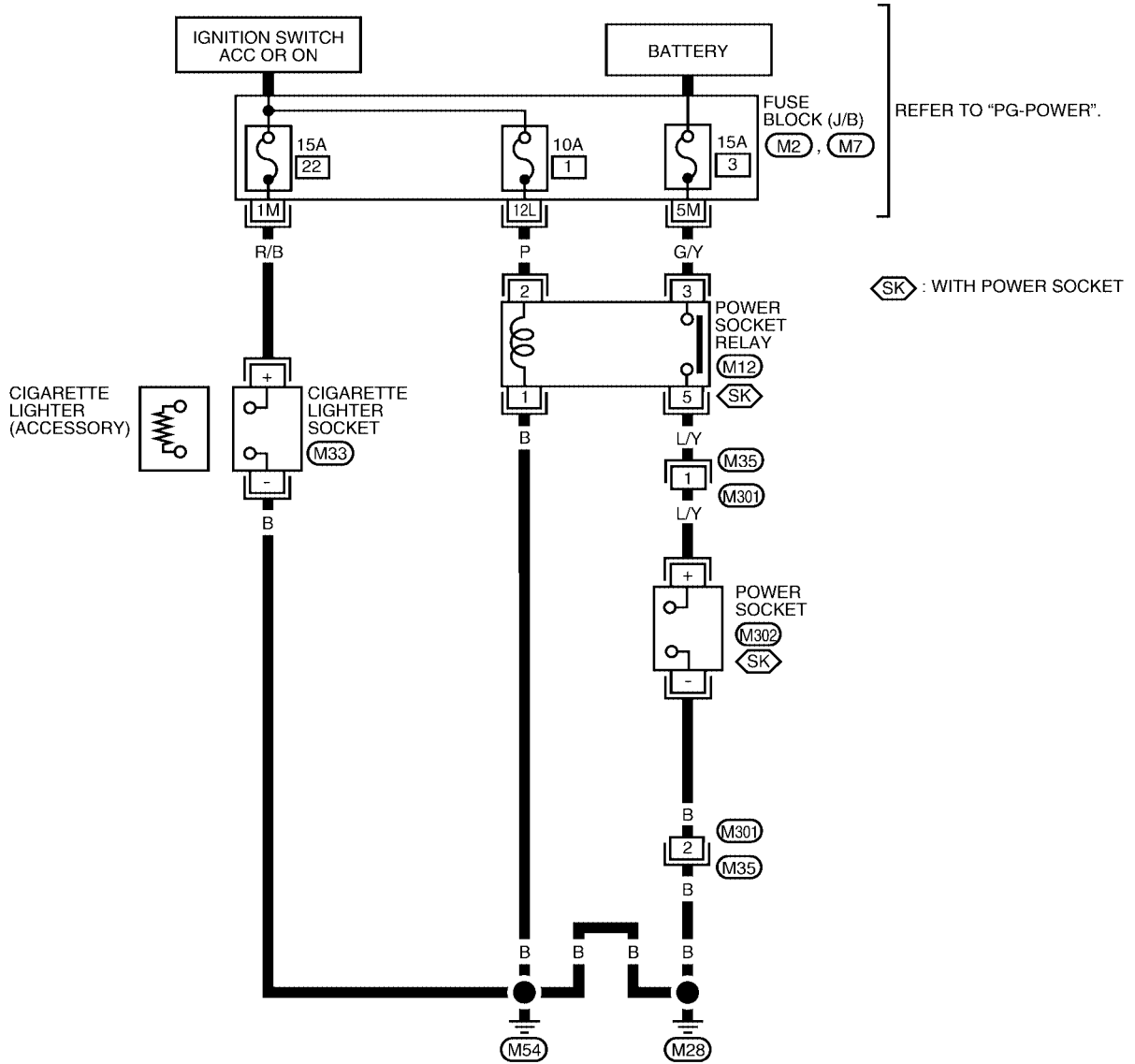
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## CIGARETTE LIGHTER

### Wiring Diagram — CIGAR —

WW-CIGAR-01



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