

---

# HORN

|                                |             |                                               |             |
|--------------------------------|-------------|-----------------------------------------------|-------------|
| <b>GENERAL INFORMATION</b>     | <b>43-3</b> |                                               |             |
| <b>General</b>                 | <b>43-3</b> |                                               |             |
| Description                    | 43-3        | Troubleshooting steps for abnormal horn sound | 43-6        |
| Specifications                 | 43-3        | Check horn fuse                               | 43-7        |
| Tool                           | 43-4        | Check horn relay                              | 43-7        |
| Circuit Diagram                | 43-5        | Check horn ground points                      | 43-7        |
| <b>DIAGNOSIS &amp; TESTING</b> | <b>43-6</b> | <b>ON-VEHICLE SERVICE</b>                     | <b>43-8</b> |
| <b>Diagnostic Content</b>      | <b>43-6</b> | <b>Horn</b>                                   | <b>43-8</b> |
| Problem Symptoms Table         | 43-6        | Removal                                       | 43-8        |
| Horn System Inspection         | 43-6        | Inspection                                    | 43-9        |
|                                |             | Installation                                  | 43-9        |

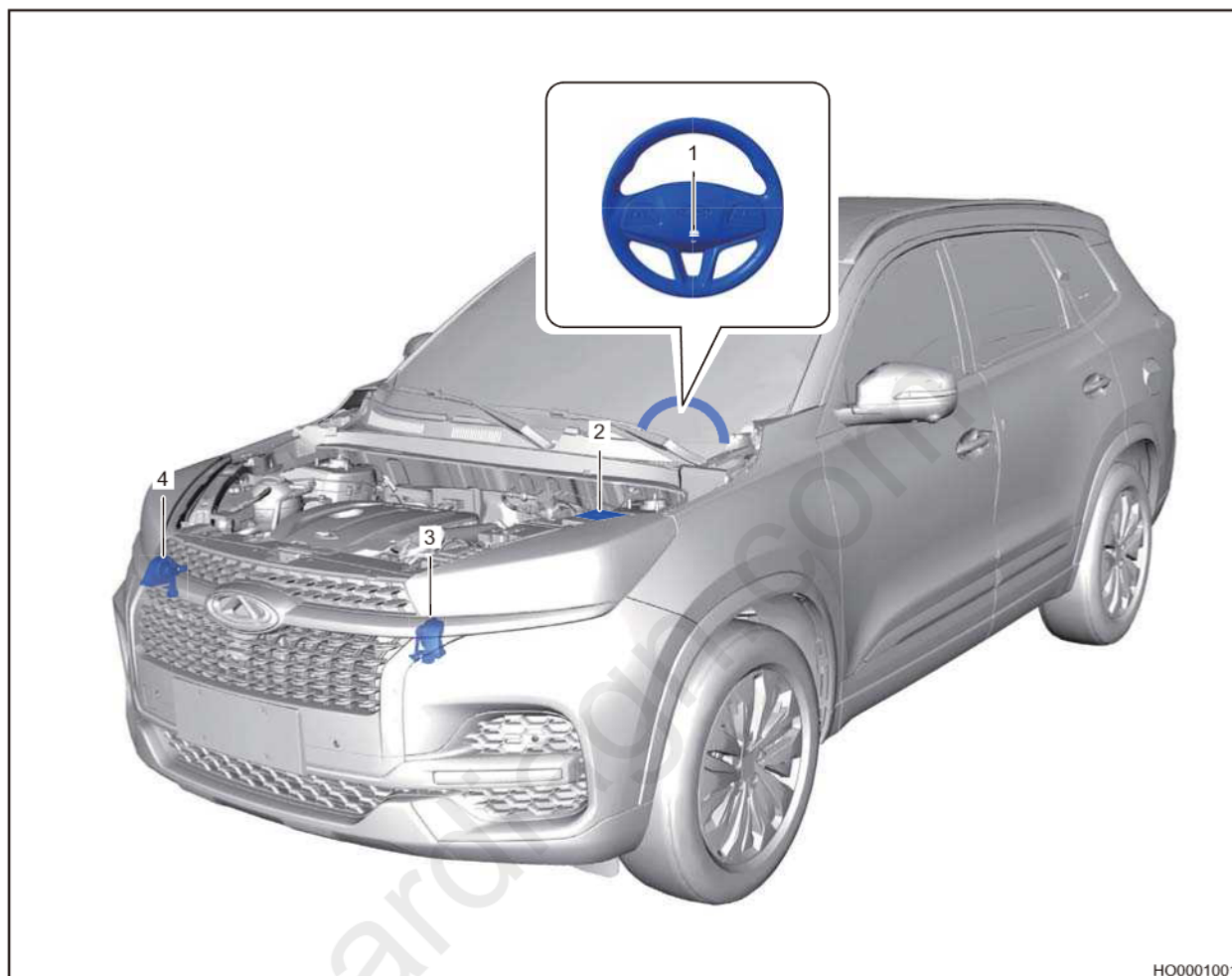


cardiagn.com

## GENERAL INFORMATION

### General

#### Description



HO0001001

43

|                       |                                           |
|-----------------------|-------------------------------------------|
| 1 - Horn Switch       | 2 - Engine Compartment Fuse and Relay Box |
| 3 - High Pitched Horn | 4 - Low Pitched Horn                      |

This vehicle is equipped with high pitched and low pitched electronic horn system. Horn system consists of the following components:

- Horn: High pitched horn is installed in groove of front bumper crossmember left mounting plate, and low pitched horn is installed in groove of front bumper crossmember right mounting plate.
- Horn switch: Horn switch is installed on steering wheel.
- Horn fuse: Horn fuse is located in engine compartment fuse and relay box.
- Horn relay: It is located in engine compartment fuse and relay box.

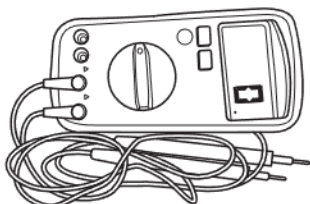
### Specifications

#### Torque Specifications

| Description             | Torque (N·m) |
|-------------------------|--------------|
| Horn Bracket Fixing Nut | 16 ± 2       |

Tool

General Tool

|                           |                                                                                               |
|---------------------------|-----------------------------------------------------------------------------------------------|
| <p>Digital Multimeter</p> |  <p>002</p> |
|---------------------------|-----------------------------------------------------------------------------------------------|



## DIAGNOSIS & TESTING

### Diagnostic Content

#### Problem Symptoms Table

##### Hint:

Use symptoms table below to help determine cause of problem. Check each suspected area in sequence. Repair or adjust faulty components, or replace as necessary.

| Symptom                          | Suspected Area               | See page |
|----------------------------------|------------------------------|----------|
| Low pitched horn does not sound  | Low pitched horn is damaged  | 43-8     |
|                                  | Wire harness is open         | 43-9     |
|                                  | Connector is loosen          | 43-9     |
| High pitched horn does not sound | High pitched horn is damaged | 43-8     |
|                                  | Wire harness is open         | 43-9     |
|                                  | Connector is loosen          | 43-9     |
| Horn does not sound              | Horn fuse (blown)            | 43-7     |
|                                  | Horn relay                   | 43-7     |
|                                  | Horn switch (damaged)        | 30-55    |
|                                  | Spiral cable (damaged)       | 30-69    |
|                                  | Wire harness (short or open) | 43-7     |

#### Horn System Inspection

Press and release horn button

| Treatment                     | Normal Result                                                                                         | Abnormal Result                                       |
|-------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Press and release horn button | When the horn button is pressed, horn sounds<br>When the horn button is released, horn stops sounding | The horn cannot operate<br>The horn sound is abnormal |

The horn cannot operate or horn sound is abnormal

43

| Trouble Symptom                                              | Diagnostic Troubleshooting                                                                                                                                                                        |
|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Horn sound is hoarse                                         | Check the battery or power supply circuit                                                                                                                                                         |
| Only high pitched horn or low pitched horn sounds            | Check and repair wire harness of horn that does not sound or replace horn                                                                                                                         |
| High pitched horn and low pitched horn do not sound          | Check horn fuse or relay box                                                                                                                                                                      |
| Button horn sounds, but wireless door locking does not sound | Check if the audio setting is "only fortify light", and reset it to "fortify horn + light" if it is possible.<br>If setting is correct and the fault still exists, check and repair BCM and line. |
| Button horn does not sound, but wireless door locking sounds | Check and repair horn button and line                                                                                                                                                             |

#### Troubleshooting steps for abnormal horn sound

- If the abnormal horn sound is obvious, perform the following routine inspection:
  - Check if the terminal is connected poorly; repair any poor connections that have been found;
  - Check the ground circuit; if there is poor contact, correct it;
  - Ensure that the horn assembly fixing bolt is tightened appropriately;
  - Ensure that the horn assembly does not contact with any other object; if it contacts with other objects, relocate the position of other object; bend the horn assembly bracket if necessary, operate the horn to determine whether that situation still exists.
- If it still exists, perform the following specific inspection:
  - Determine the type of horn sound quality;
    - Low pitch

- (2) Sharp pitch
- (b) If it is obvious low pitch, it indicates that the current is too high and the horn assembly must be replaced;
- (c) If it is obvious sharp pitch, foreign matters may adhere to horn, remove horn assembly and check if foreign substances exist;
- (d) Remove any adhered foreign matter, and reinstall horn assembly;

**Warning:**

If no foreign matter is found, or the foreign matter cannot be removed, replace horn assembly.

**Check horn fuse**

1. Identify the horn fuse on engine compartment fuse and relay box.
2. Check the horn fuse.
  - (a) Using a fuse puller, remove the horn fuse EF25 (15 A).
  - (b) Check if fuse is blown. Replace the fuse if it is blown.

**Caution:**

- Use a fuse with the same specification as original fuse to avoid affecting the normal usage of electrical equipment.



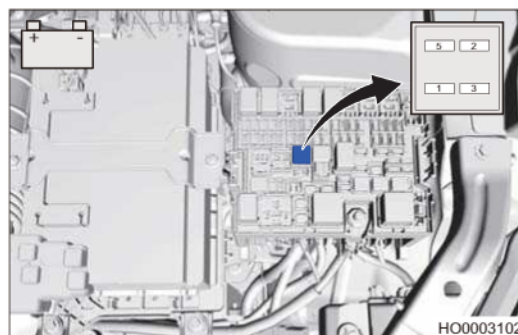
HO0003002

**Check horn relay**

1. Identify the horn relay on engine compartment fuse and relay box.
2. Check horn relay
  - (a) Remove the horn relay ERLY (11).

| Multimeter Connection   | Condition                                                             | Specified Condition |
|-------------------------|-----------------------------------------------------------------------|---------------------|
| Terminal 3 - Terminal 5 | When battery voltage is not applied between terminal 2 and terminal 1 | $\infty$            |
| Terminal 3 - Terminal 5 | When battery voltage is applied between terminal 2 and terminal 1     | $\leq 1 \Omega$     |

If result is not as specified, replace the relay.



HO0003102

**Check horn ground points**

Ground position of horn is located in steering wheel, which is grounded through steering column and body, and the resistance cannot be greater than  $1 \Omega$ .



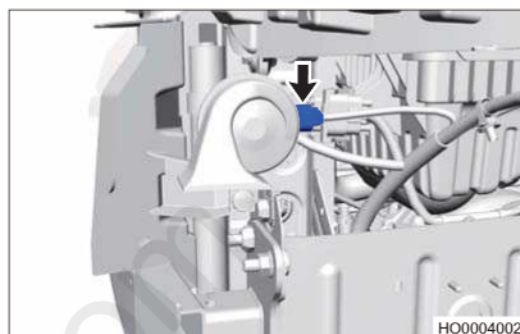
## ON-VEHICLE SERVICE

### Horn

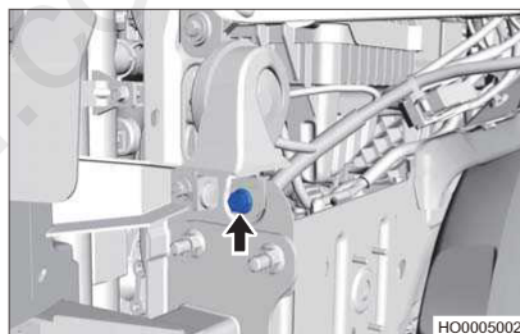
#### Removal

1. Turn ENGINE START STOP switch to OFF.
2. Disconnect the negative battery cable.
3. Remove the front bumper assembly (See page 50-6).
4. Remove the low pitched horn.

- (a) Disconnect the low pitched horn wire harness connectors (arrow).

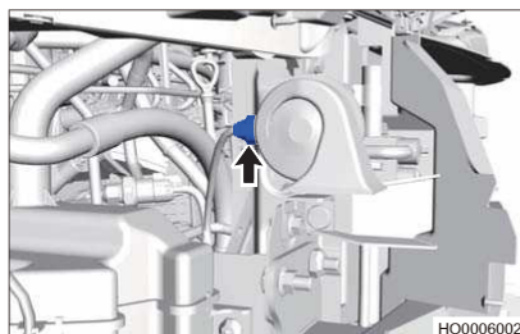


- (b) Remove the fixing nut (arrow) from low pitched horn bracket, and remove the low pitched horn.

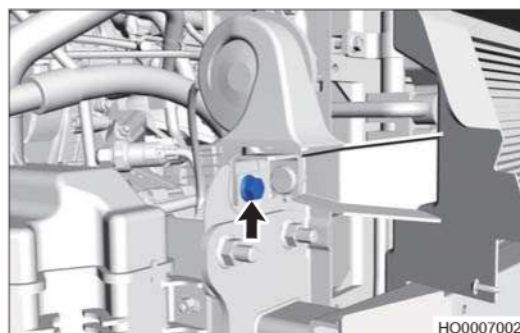


5. Remove the high pitched horn.

- (a) Disconnect the high pitched horn wire harness connector (arrow).



- (b) Remove fixing nut (arrow) from high pitched horn bracket, and remove pitched horn.



## Inspection

1. Check the high pitched horn.
  - (a) Apply battery voltage to high pitched horn and check the operation of high pitched horn.

| Measurement Condition             | Condition | Specified Condition |
|-----------------------------------|-----------|---------------------|
| Battery positive (+) → Terminal 1 | Always    | Horn sounds         |
| Battery negative (-) → Terminal 2 |           |                     |

**Hint:**

If result is not as specified, replace the high pitched horn.

2. Check the low pitched horn.

- (a) Apply battery voltage to low pitched horn and check the operation of low pitched horn.

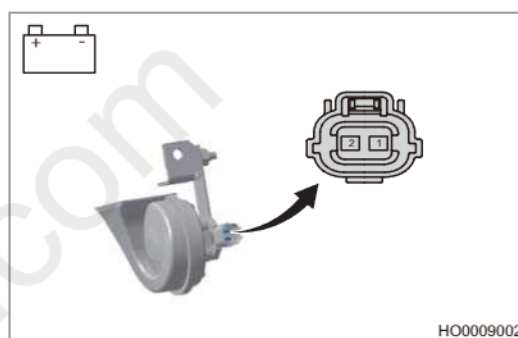
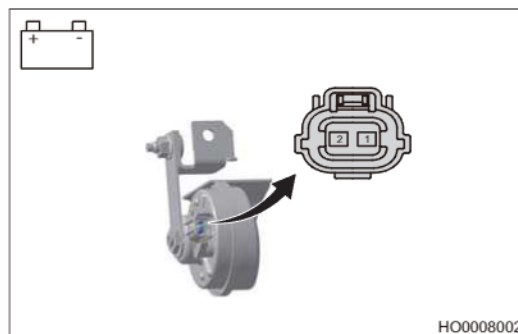
| Measurement Condition             | Condition | Specified Condition |
|-----------------------------------|-----------|---------------------|
| Battery positive (+) → Terminal 1 | Always    | Horn sounds         |
| Battery negative (-) → Terminal 2 |           |                     |

**Hint:**

If result is not as specified, replace the low pitched horn.

3. Check the wire harness.

Using a digital multimeter, check horn system wire harness for an open, short or ground failure. Replace them if necessary.



## Installation

1. Installation is in the reverse order of removal.

**Caution:**

- Tighten fixing nut to the specified torque.
- Install connector in place.

cardiagn.com