

# HORN SYSTEMS

# 3S

## INDEX

	Page
General	3S-1
Horn Adjustment	3S-2

	Page
Horn System Diagnosis and Repair	3S-1
Specifications	3S-2

## GENERAL

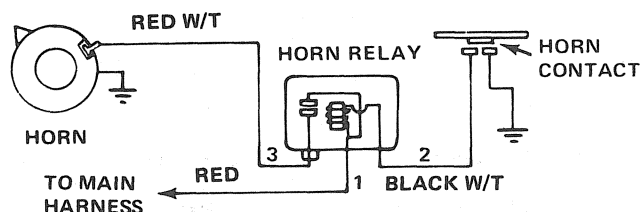
The horn circuit includes horn(s), horn relay, battery, steering column wiring harness, horn ring, and the body sheet metal.

Wagoneer, Cherokee and Truck model horns are located on the radiator grille face panel behind the plastic grille. The grille must be removed to gain access to the horns.

CJ model horns are located on the inner left wheelhouse.

A cadmium-plated ground screw is used to attach the horn(s) to the body. **Do not** substitute other types of ground screws as they may become corroded and cause a loss of ground.

To reduce the current flow through the horn ring contacts, a relay is used between the battery and horn. The horn relay consists of an electromagnet and a set of contacts arranged so that when the magnet is energized an armature is attracted and the contacts close. A spring keeps the contacts open when the unit is at rest. The horn-ring contacts carry only relay current, while the relay opens and closes the circuit between the horn and battery (fig. 3S-1).



80264

Fig. 3S-1 Horn Circuit Schematic

A fusible link is incorporated in the main wiring harness to furnish protection against major harness damage.

When a grounded circuit or overload occurs in the horn circuit, damage will be limited to the fusible link.

## HORN SYSTEM DIAGNOSIS AND REPAIR

In case of horn system failure, proceed as follows:

(1) Using a test light or voltmeter, check for battery voltage in the red lead to relay before individual components are tested or replaced.

(2) A lack of voltage indicates fusible link or harness is open and cause of failure must be determined and repaired prior to installing a replacement fusible link or other components.

(3) The replacement fusible link is supplied in the proper length with a terminal connector on one end.

(4) Inspect wiring between horn, relay and battery for loose connections, faulty insulation, corroded terminals, or improper ground connection at horn base.

**NOTE:** Be sure the clip on the horn mounting bracket cuts through the inner wheelhouse to ensure a good ground.

(5) If horn does not operate when ring or button is depressed, ground number 2 terminal (fig. 3S-1) of horn relay with a jumper lead. If horn operates, this indicates proper operation of horn and relay.

(6) Inspect horn ring switch and wire from switch to relay carefully for source of trouble.

**CAUTION:** Do not ground red lead.

(7) If horn does not operate, ground number 2 terminal and connect a jumper lead from horn relay terminals 1 to 3.

(8) If horn now operates, a faulty horn relay is indicated.

(9) If it does not operate, check wiring and connections between the horn relay terminal number 3 and horn for continuity.

## 3S-2 HORN SYSTEMS

(10) Connect a jumper lead from horn base to the vehicle chassis or engine and repeat the above tests.

(11) If horn now operates, remove attaching screw, horn and mounting bracket, clean mating surfaces.

(12) Install horn, mounting bracket and attaching screw, tightened screw to 15 foot-pounds (20 N•m) torque.

(13) If horn still does not operate, horn is inoperative and must be replaced.

(14) To check for bad component ground, place a voltmeter between component and ground. If a sizable voltage is shown on the meter, repair the poor ground connection.

(15) Continuous horn operation is usually caused by improper ground in horn ring or button wiring.

### HORN ADJUSTMENT

Adjust current by turning the adjusting screw counterclockwise to decrease the current until the specified current is reached. Current adjustment is very sensitive. Therefore, care must be taken not to turn the horn adjustment screw too far. Turn only 1/10 of a turn at one time.

(1) Check for normal battery voltage (about 12.6 volts).

(2) Connect ammeter in series between horn and battery and read current as shown in figure 3S-2.

(3) Adjust current to 4.5 amps.

**NOTE:** Do not stuff rags or other materials in the horn protector to muffle the sound while adjusting, as this changes the vibration frequency and would give a raise in current setting. When adjusting a set of horns, each horn should be connected and adjusted separately, then check for tone by operating as a pair.

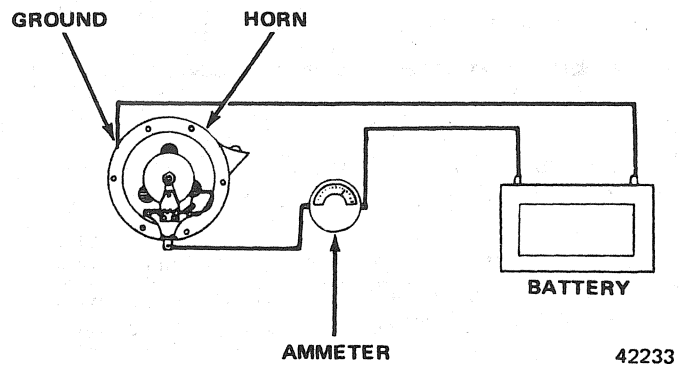


Fig. 3S-2 Connection for Horn Adjustment

## SPECIFICATIONS

### Electrical Specifications

Item	Current Flow
Horn	4-5 Amps

70446

### Torque Specifications

Service Set-To Torques should be used when assembling components. Service In-Use Recheck Torques should be used for checking a pre-torqued item.

	USA (ft-lbs)		Metric (N•m)	
	Service Set-To Torque	Service In-Use Recheck Torque	Service Set-To Torque	Service In-Use Recheck Torque
Horn Bracket Screw	15	8-17	20	11-23

All Torque values given in foot-pounds and newton-meters with dry fits unless otherwise specified.

70445