

# HEATER SYSTEM

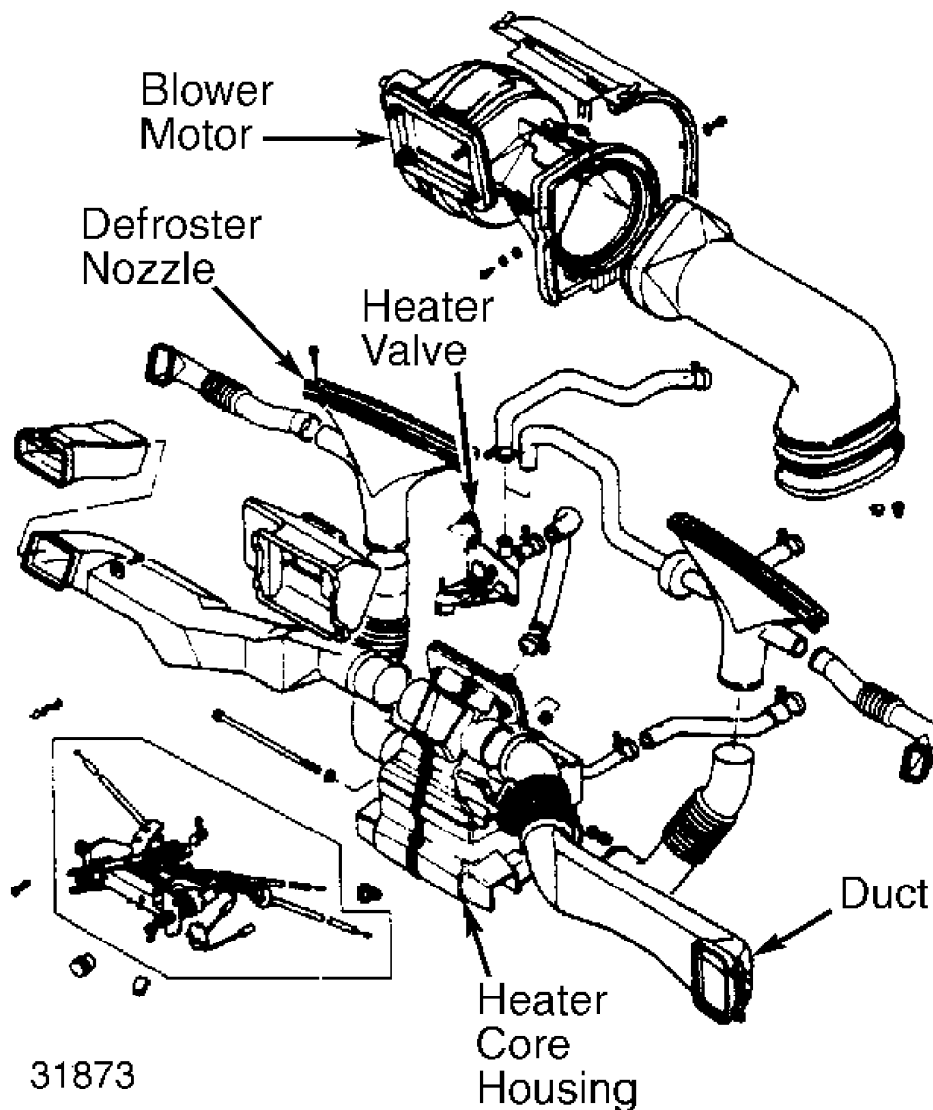
1986 Isuzu Trooper II

1986 Heater Systems  
ISUZU

I-Mark, P'UP, Trooper II

## DESCRIPTION

The Isuzu heater system is a system in which outside air is forced into the heater unit assembly, heated, and then distributed into the passenger compartment. The system consists of a blower and air inlet assembly, heater assembly, heater control assembly and heater valve assembly.



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Fig. 1: Exploded View of I-Mark Heating System

## OPERATION

## BLOWER & AIR INLET ASSEMBLY

The blower and air inlet assembly draws outside air through the outside air inlet grille located forward of the windshield and channels the air into the heater assembly. The operation of the blower motor is controlled by a fan switch on the heater control.

## HEATER ASSEMBLY

The heater assembly houses the heater core, diverter door and defroster door. The heater core's coolant flow is controlled by a heater valve which is located on the left side of the blower motor assembly.

## MODE LEVER

Mode lever controls air flow air doors (intake, blend-air, heat, defrost and ventilation).

## TEMPERATURE LEVER

This lever sets position of blend-air door to direct flow of air through heater core ("HOT" position), around heater core ("COLD" position), or mixture of both (modulated temperature between full "HOT" and full "COLD").

The lever also controls opening and closing of water valve. In any position except "COLD", water valve is open, allowing engine coolant into heater.

## AIR SOURCE SELECTOR LEVER

The air source selector lever in one position will recirculate interior air and in the other will obtain fresh air from the exterior.

## ROTARY KNOB

The rotary control knob has several positions which control the desired blower motor speeds.

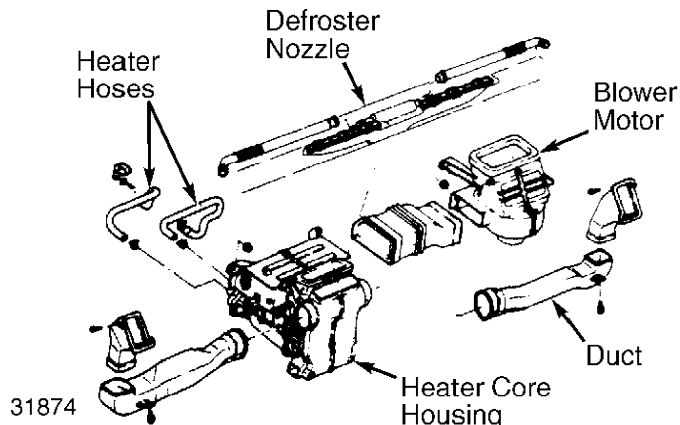


Fig. 2: Exploded View of Trooper II Heating System Components

## ADJUSTMENTS

NOTE: Adjustments listed are for I-Mark only. Specific procedures for heater-only equipped P'UP and Trooper models are not available from manufacturer. For more information, see "MANUAL A/C-HEATER SYSTEM -- ISUZU" in MANUAL A/C-HEATER SYSTEM section.

## SELECTOR LEVER

1) Position control lever at "DEF". On assist side of heater unit (in car), set actuating mechanism at position "A". See Fig. 3. Insert cable and install clip.

2) Check adjustment with selector lever. With mode lever in "DEF" position and actuating mechanism in position "A", air flows from defroster ducts. With mode lever in "FOOT" position and actuating mechanism in position "B", air flows from heater outlet. With mode lever in "FACE" or "BI-LEVEL" and actuating mechanism in position "C", air flows from vent outlets. See Fig. 3.

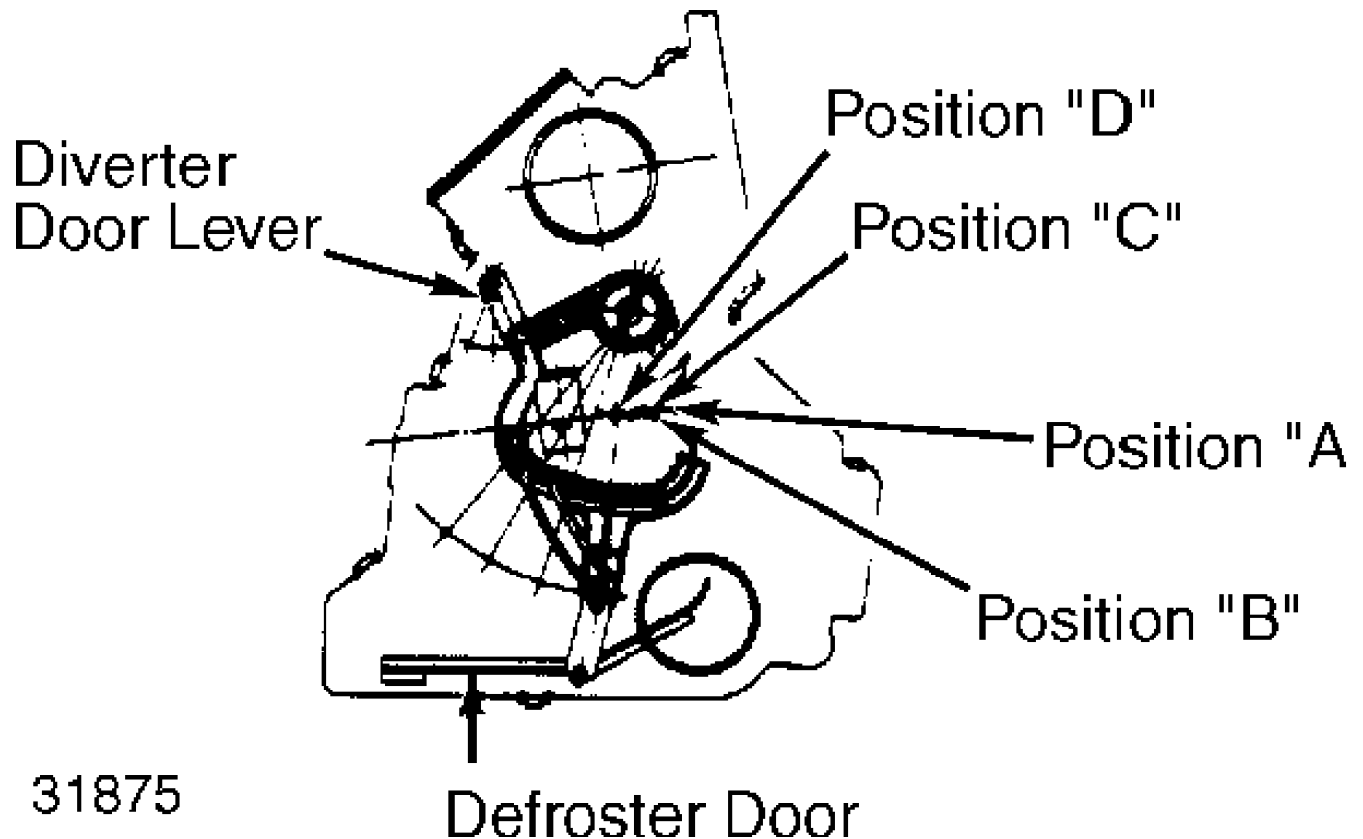


Fig. 3: Actuating Mechanism Positions

## FRESH AIR INLET DOOR

Position control lever at "CIRC". On blower unit (engine compartment) shut fresh air inlet door. Connect cable and install clip. Door adjustment should be completely shut in "CIRC" position.

## TEMPERATURE CONTROL

Position control lever at "COLD". Position heater valve

shaft in full "COLD" position. Connect cable and install clip. Check to make sure valve opens fully with temperature lever in "HOT" position.

## TROUBLE SHOOTING

### BLOWER MOTOR INOPERATIVE

Check for burned, broken, or incorrect fuse. Check for loose connectors or broken wires. Visually inspect resistor assembly. Check for broken or melted coils. Test for continuity. Test for defective blower switch.

### INSUFFICIENT HEATING

Partially plugged heater core. Malfunctioning heater valve. Improperly adjusted temperature lever cable. Test engine thermostat for opening too soon, stuck open, or held open by foreign material. Visually inspect radiator coolant level and add if necessary. Check for pinched or plugged heater hose.

### INADEQUATE DEFROSTING

Partially plugged heater core. Malfunctioning heater valve. Improperly adjusted selector and/or temperature lever cable. Mispositioned defroster outlets and/or hoses. Obstructed defroster outlets and/or hoses. Visually inspect coolant level in radiator. Add coolant if necessary.

## REMOVAL & INSTALLATION

NOTE: The following procedures, with the exception of Rear Heater Unit, pertain to I-Mark models only. Specific procedures for heater-only equipped P'UP and Trooper models are not available from manufacturer. For more information, see "MANUAL A/C-HEATER SYSTEM -- ISUZU" in MANUAL A/C-HEATER SYSTEM section. An exploded view of the heater unit for P'UP and Trooper is provided for reference.

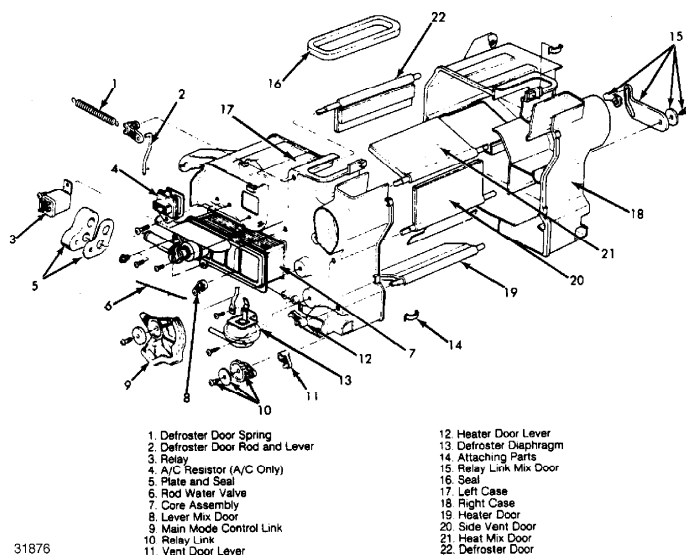


Fig. 4: Exploded View of Heater Unit P'UP and Trooper models only.

## HEATER VALVE

### Removal

Remove heater hoses and plug ends to prevent foreign material from entering. Disconnect temperature cable. Remove heater valve.

### Installation

To install, reverse removal procedure. Adjust temperature cable so that when temperature is cold, heater valve shaft is in full cold position. Idle engine with radiator cap off to allow any trapped air to escape from cooling system.

## BLOWER MOTOR

### Removal

Disconnect battery ground cable and wiring at blower motor. Remove retaining screws and pull out blower motor and squirrel cage. Remove retaining clip holding squirrel cage to motor and remove squirrel cage.

### Installation

To install, reverse removal procedure.

## RESISTOR ASSEMBLY

### Removal

Remove dash wall (diesel model only). Disconnect battery ground cable. Remove outer blower case cover. Disconnect resistor wiring harness. Remove 2 attaching screws and remove resistor.

### Installation

To install, reverse removal procedure.

## HEATER CONTROL PANEL

### Removal

1) Disconnect battery ground cable. Remove outer blower unit case cover and disconnect fresh air door cable. Disconnect temperature cable at heater valve.

2) Remove steering wheel. Remove instrument cluster and heater control face plate. Disconnect selector mode cable from assist side of heater unit assembly and remove 3 phillips screws retaining heater control panel.

3) Carefully pull temperature and fresh air door cables through cowl and remove control panel through cluster opening.

### Installation

To install, reverse removal procedures. Adjust cables as necessary.

## BLOWER SWITCH

Disconnect battery ground cable. Remove heater control panel. Remove blower switch from control unit. To install, reverse removal procedure.

## HEATER CORE

### Removal

1) Disconnect battery ground cable and drain radiator.

Disconnect heater hoses at core connections and plug core tubes to prevent spillage of coolant when removing heater assembly.

2) Remove outer blower unit case cover and disconnect fresh air door cable. Disconnect temperature cable at heater valve. Remove steering wheel. Remove instrument cluster. Disconnect wiring for console gauges. Remove console retaining screws and untie shift lever leather cover.

3) Remove center console, heater control and plate and glove box. Disconnect selector mode cable from drivers side of heater unit assembly. Carefully pull temperature and fresh air door cables through cowl and remove control panel through cluster opening.

4) Remove instrument panel assembly. Remove heater unit assembly through-bolt located at rear and bottom of heater unit assembly.

#### Installation

To install, reverse removal procedure. Adjust heater control cables.

### REAR HEATER UNIT

**NOTE:** The rear heater unit is under the rear seat. The seat must be removed prior to performing this procedure.

#### Removal (Trooper II Only)

Remove hose clamps fastening heater hoses to rear heater unit. Remove bolts fastening rear heater unit to body. Disconnect wiring harness at connectors. Remove rear heater assembly from vehicle. To expose heater core and blower motor, remove cover fastening screws and remove cover.

#### Installation

To install, reverse removal procedure.

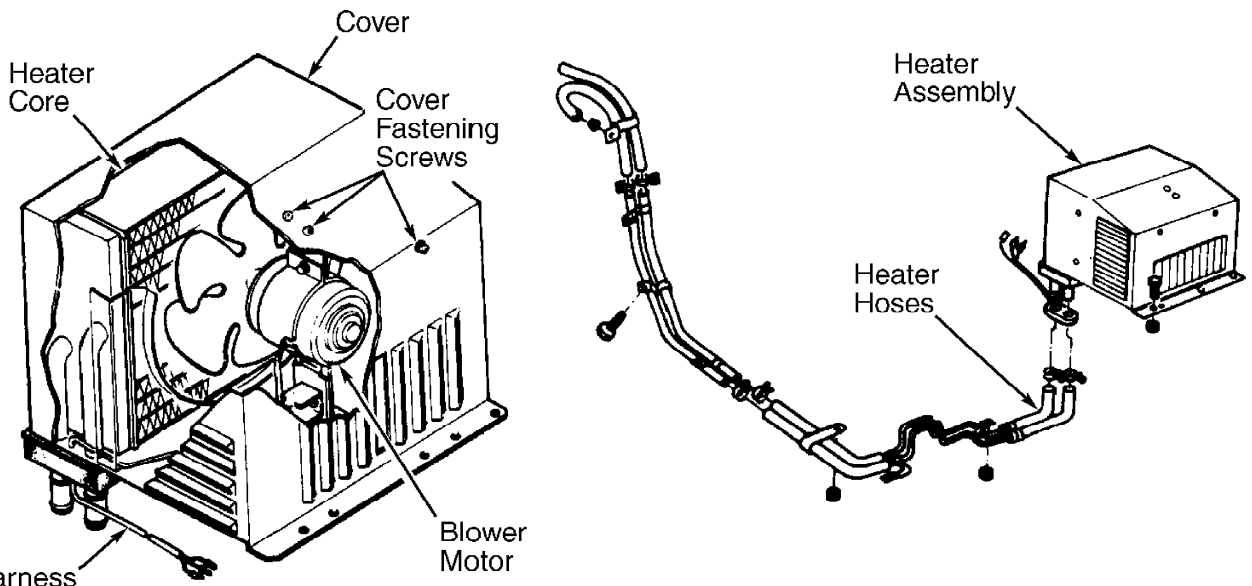


Fig. 5: View of Rear Heater Unit

### VENT CABLE

#### Removal & Installation

Disconnect battery ground cable. Remove heater control

panel. Remove cable from control panel. To install, reverse removal procedure.

### TEMPERATURE CABLE

#### Removal & Installation

Disconnect battery ground cable. Remove heater control panel. Remove cable from heater control panel. To install, reverse removal procedure and adjust cable.

### SELECTOR LEVER CABLE

#### Removal & Installation

Disconnect battery ground cable. Remove heater control panel. Remove cable from control panel. To install, reverse removal procedure and adjust cable.

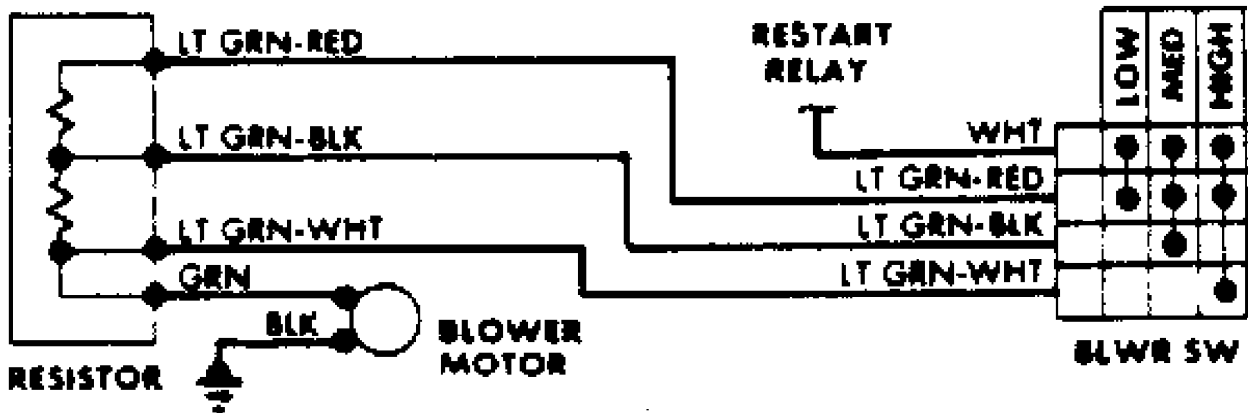


Fig. 6: Isuzu I-Mark Heater Wiring Diagram

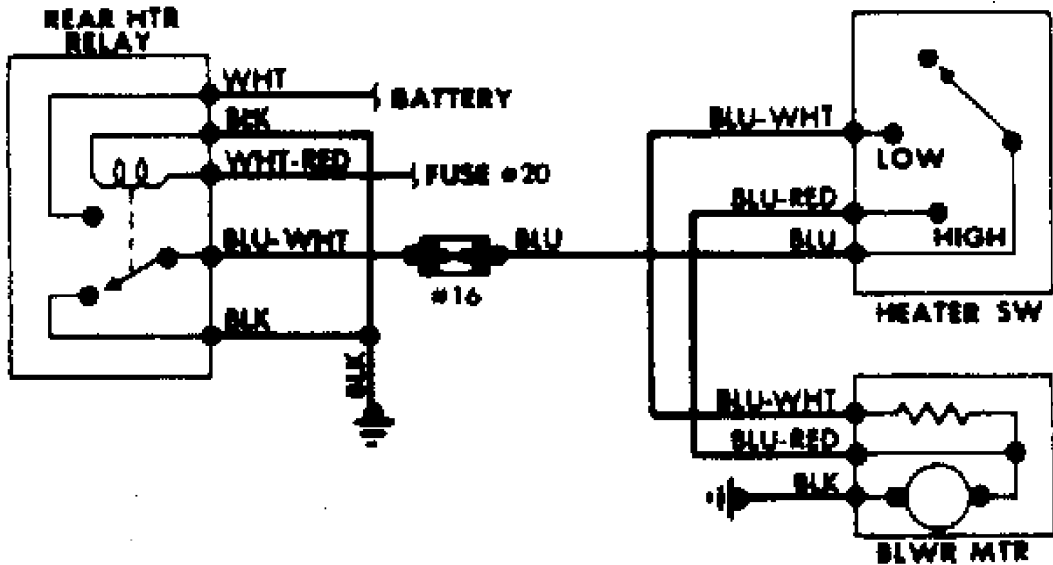


Fig. 7: Isuzu Trooper II Heater Wiring Diagram