# KEYLESS ENTRY SYSTEM

N74zGWAA

The radio wave remote control type keyless entry system has been adopted. The system is similar to the one introduced on the 1993 3000GT. It allows all the doors to be locked and unlocked by remote control. (Option)

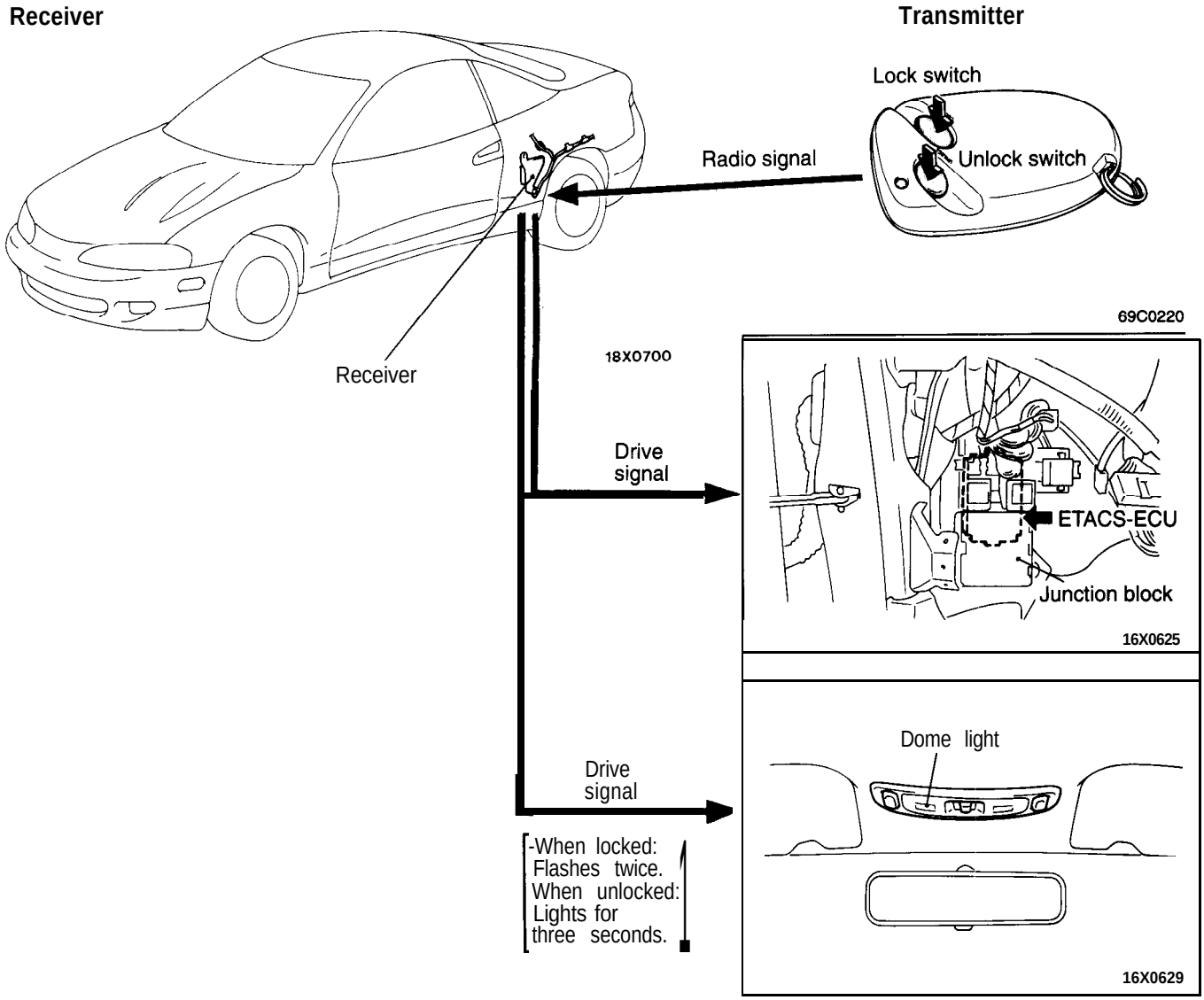
The system consists of a transmitter and receiver added to the conventional central door lock mechanism. Even if the keyless entry system fails, the doors can be locked and unlocked by the key.

The system offers the following features.

- Because of the radio wave remote control design, the operating range of the system is about 6 m (20 ft.) from the vehicle in all directions.
- The receiver has a built-in memorize/operation changeover switch (programming switch). Even if the transmitter is lost, the whole system need not be replaced. Just program a new transmitter to the receiver.
- The receiver can store two secret codes. Therefore, two transmitters can be used for a single vehicle.
- A timer lock function has been adopted so that even if the unlock switch of the transmitter is pressed by mistake, all the doors will be relocked unless any of the doors is opened within a period of 30 seconds after the unlock switch has been pressed.
- For confirmation of system operation at night, a confirming function flickers the dome light twice after the doors have been locked, and keeps the dome light lit for three seconds after the doors have been unlocked. (The dome light switch, however, must be in the “DOOR” position.)

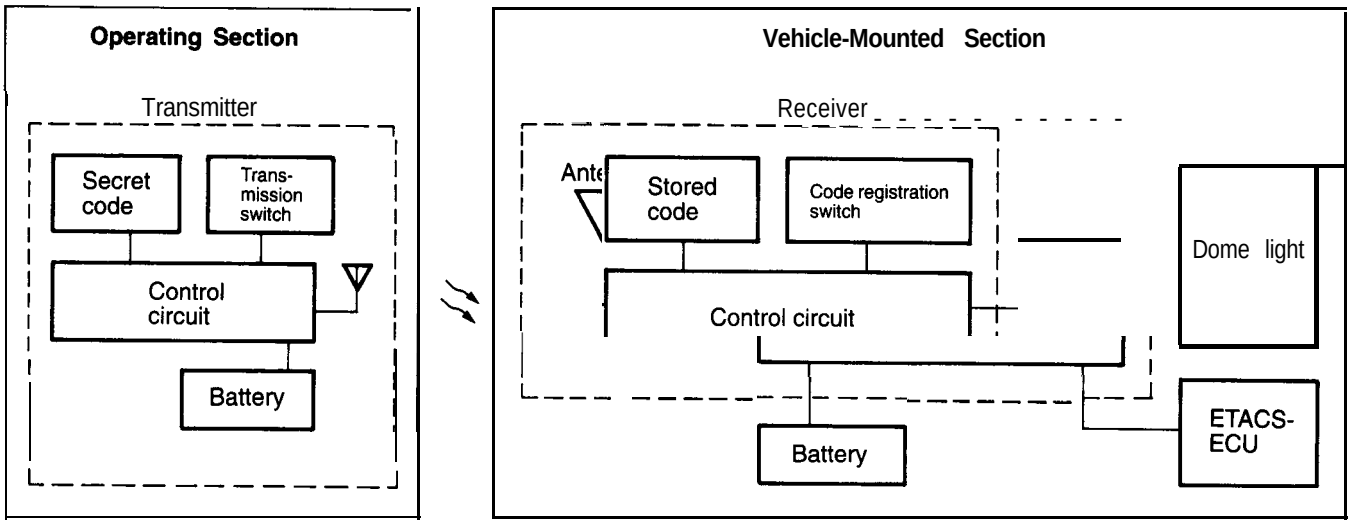
NOTE

The foot light also simultaneously flashes or lights with the dome light.



| Part name | Function |
|---|---|
| Transmitter | Sends its secret code by the radio wave signals. |
| Receiver | Switched over between the operation and memorizing modes by the code registration switch.<br>In the operation mode, the receiver compares the signal received from the transmitter by the built-in antenna with the code stored in the receiver and outputs the drive signal to the ETACS-ECU and dome light only when the signal coincides with the code.<br>In the registration (programming) mode, the receiver stores the signals from the transmitter in the EEPROM in the receiver as a new code. |

## Outline of the System

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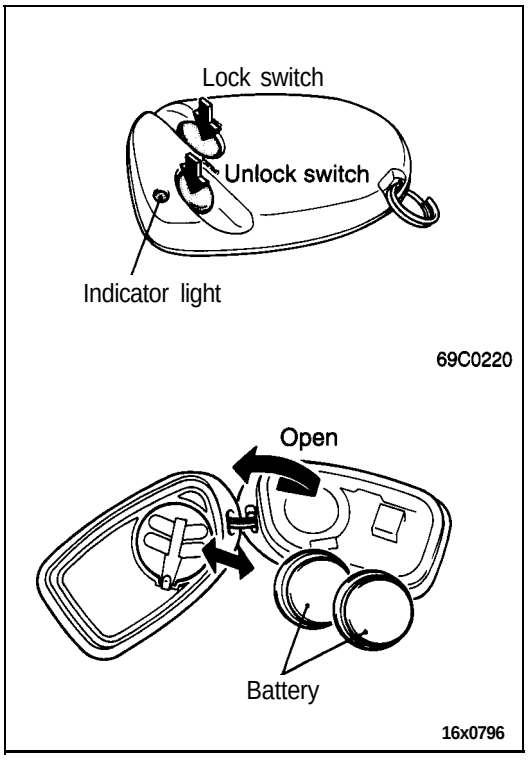
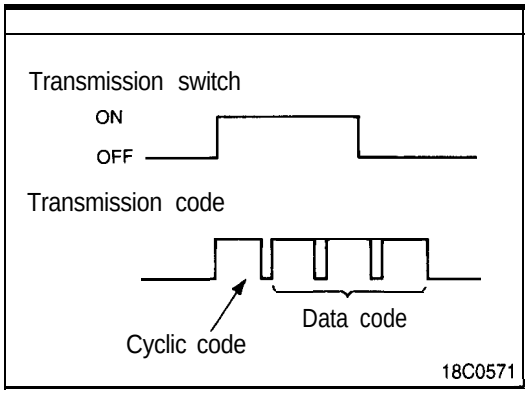



## STRUCTURE AND OPERATION

### TRANSMITTER

The transmitter is a key holder type independent of the master ignition key. The transmission switch comprises two switches which independently perform the lock and unlock functions. When the transmission switch is operated, the secret code unique to the transmitter is transmitted in radio form.
The transmitter has an indicator light which lights when the transmission switch is placed in the ON state. The light makes it possible to confirm switch operation and battery discharge. The battery comprises two lithium cells (CR2016) and offers a life expectancy of about two years at a rate of use of 10 times/day.




### Transmission Code

The illustration at left shows a code transmitted from the transmitter. When the switch is operated once, three data codes following the cyclic code are sent. One data code comprises a total of 51 bits, of which 21 bits are used to constitute **a** secret code for identification of the user, and the remaining 25 bits are used for system identification, etc. The secret code for user identification is a combination of "0S" and "1s". More than a million combinations are available.

## RECEIVER

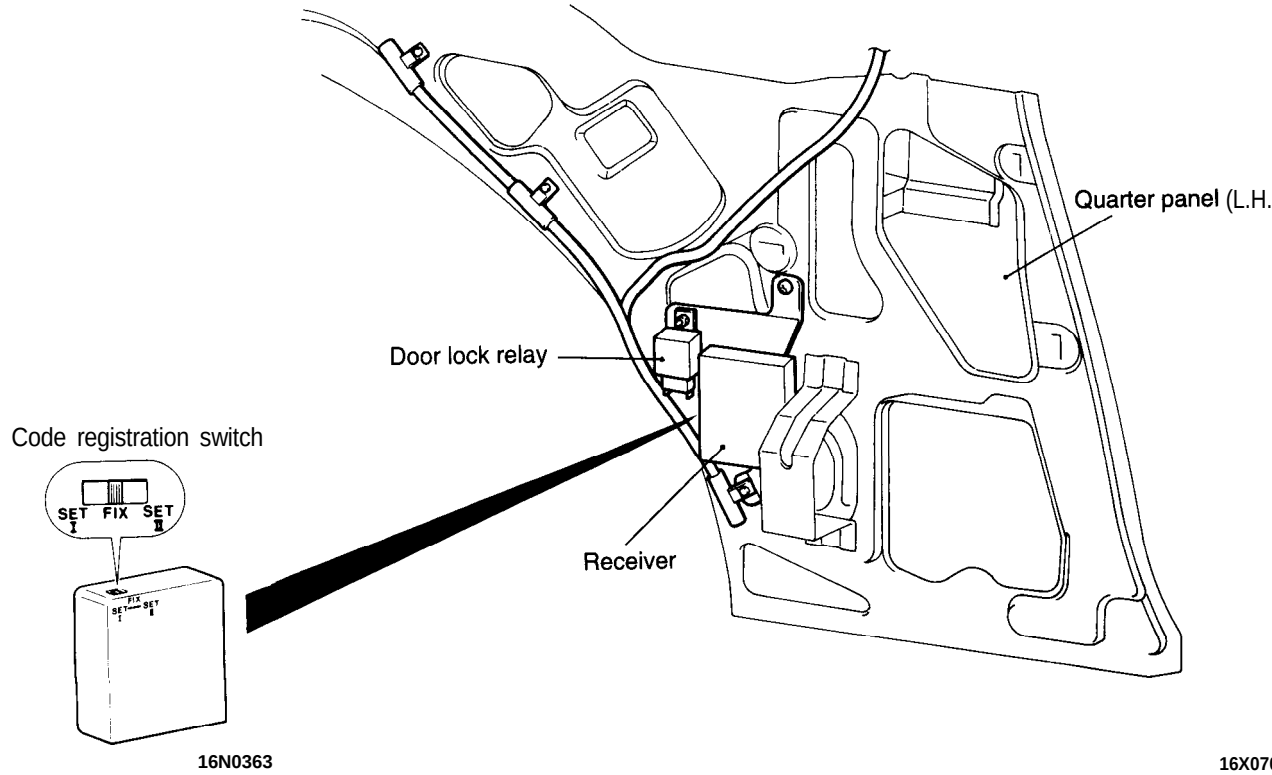
The receiver is mounted at the driver's side rear quarter panel. The receiver has a code registration switch by which the receiver is switched between the system operation mode and code registration mode.

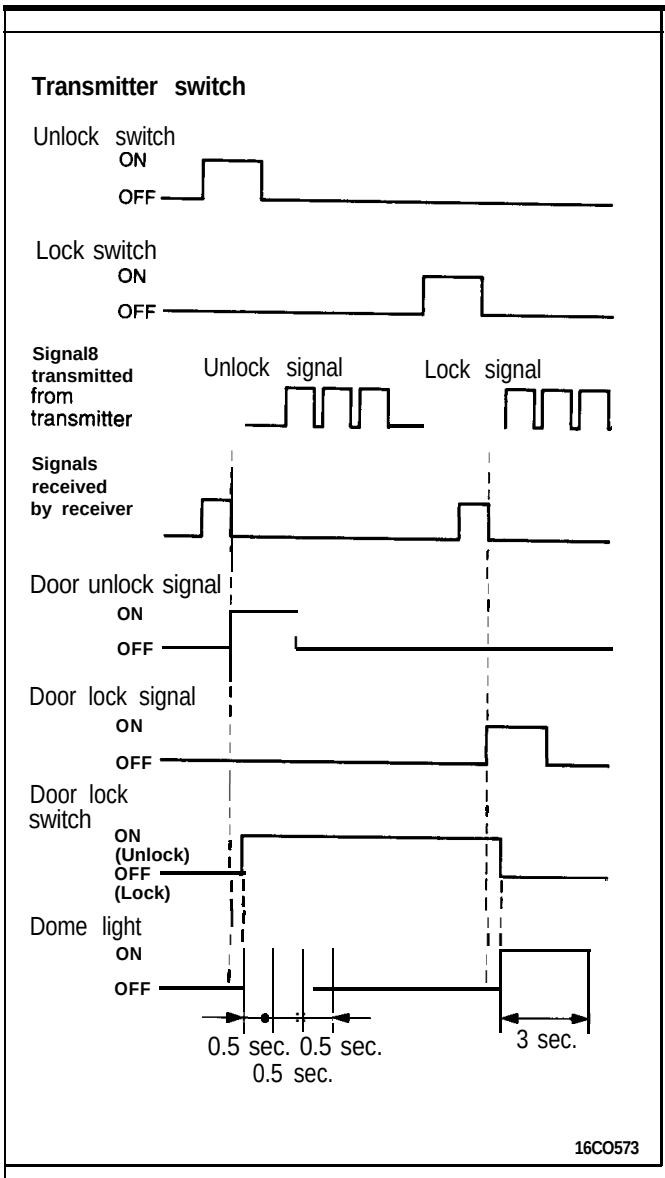
Normal keyless entry system operations are performed in the system operation mode. In the system operation mode, the signals transmitted from the transmitter are compared with the code stored in the EEPROM in the receiver. Only when the results are in agreement, a signal is output to the ETACS-ECU to lock or unlock the doors and cause the dome light to flash (when the doors are locked) or steadily light (when the doors are unlocked). (The dome light switch, however, must be in the "DOOR" position.)

When the transmitter or receiver is replaced, note that the secret code unique to the transmitter and the code stored in the EEPROM in the receiver will be out of agreement. To allow operation of the system, the code sent from the transmitter must coincide with the code stored in the receiver. For this purpose, place the receiver in the registration mode and write (transmit) the secret code assigned to the transmitter in the EEPROM in the receiver as a new code.

The EEPROM can store two codes. Since the user has only one transmitter at first, the EEPROM stores two identical codes at shipment. When the user wants to use one more transmitter, a maximum of two transmitters can be used by repeating the registration operation to the EEPROM.

(EEPROM: Electrical Erasable & Programmable ROM which allows data to be electrically erased and rewritten)





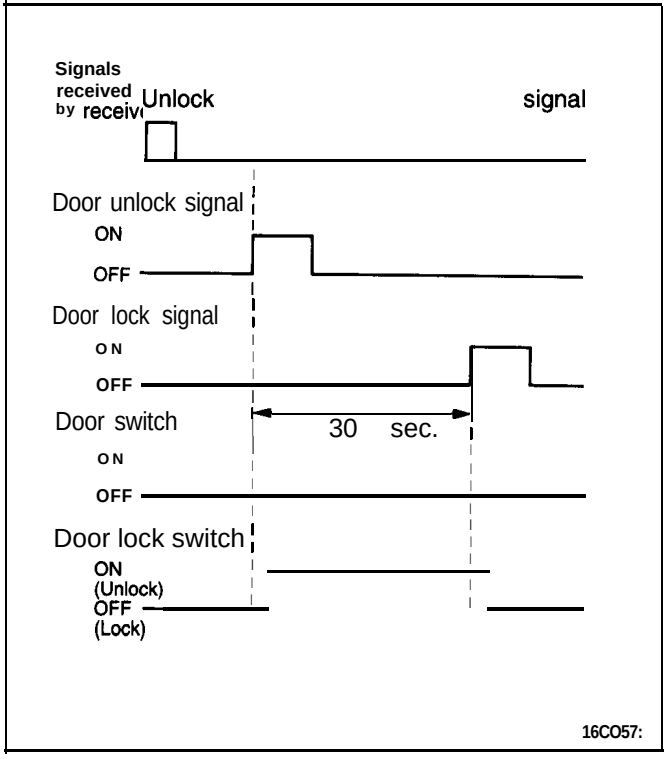

## OPERATION IN SYSTEM OPERATION MODE

When the transmission switch is pressed once, three identical codes are transmitted from the transmitter.& The secret code is decrypted by the comparator circuit in the receiver which compares the code with the code stored in the receiver. When the transmitted code coincides with the stored code, the receiver sends a door unlock signal or door lock signal to the ETACS-ECU.

In response to the signal, the doors are locked or unlocked. When the door lock switch in the door lock actuator is caused to be ON (unlock) or OFF (lock), the receiver causes the dome light to flash or steadily light (operation confirmation function).

NOTE

The receiver determines that the codes are in agreement when any of the three codes transmitted from the transmitter coincides with the code stored in the receiver.




## TIMER LOCK FUNCTION

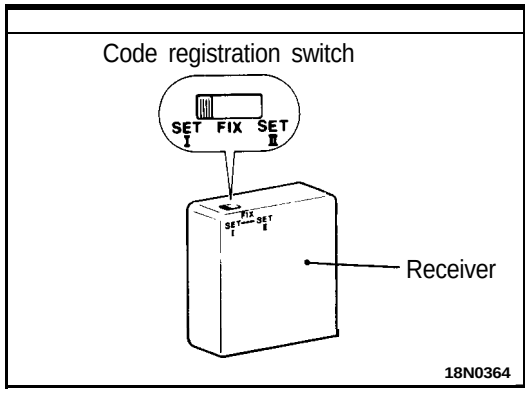
If none of the doors is opened in less than 30 seconds after the doors have been unlocked by the keyless entry system, the receiver will automatically output a door lock signal to the ETACS-ECU to re-lock the doors.

This function prevents accidental unlocking of the doors that may be caused by an unintentional operation of the transmitter.

### Operation Inhibit Conditions

In the following cases, operation of the system is inhibited.

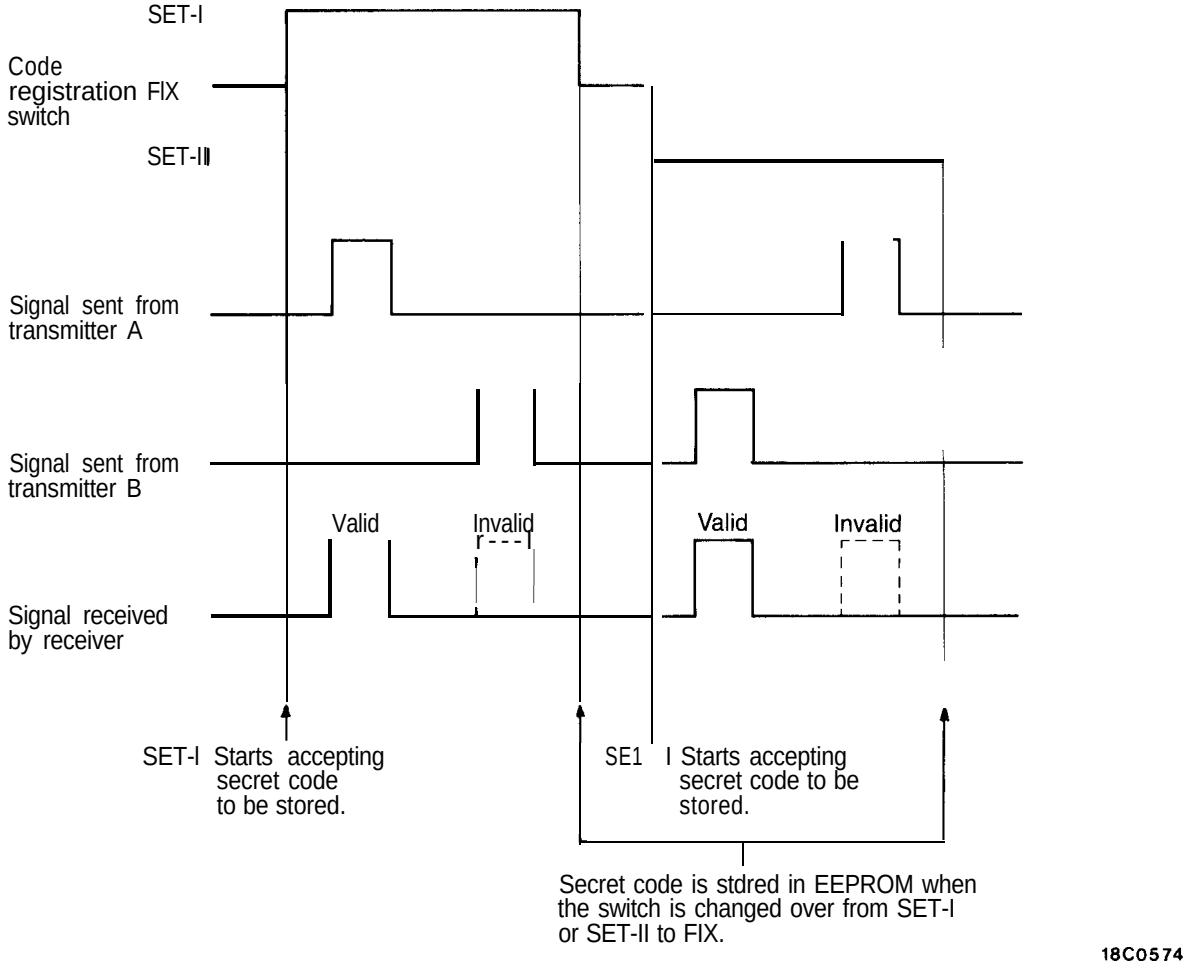
- When a code different from the one stored in the receiver is received 30 consecutive times in a minute, operation of the system is inhibited for 10 minutes.
- When the ignition key is in the ignition switch (detected by the key reminder switch)
- When any of the doors is not fully closed (door switch: ON)




**OPERATION IN CODE REGISTRATION MODE (PROGRAMMING)**

When the code registration switch is in the SETI or SETII position, the receiver enters the registration mode where it stores the first received secret code in the EEPROM.
Two different secret codes can be stored with the switch in the SETI and SETII positions. Therefore, the user can use two transmitters.

**Timing Chart**



# ELECTRIC SUNROOF

N74ZFOOAA

## SUNROOF CONTROL SYSTEM

The motor driven outer slide glass sunroof tilt-up mechanism is an option for all models. This glass sunroof provides a well-lighted, open environment even with the roof lid glass in the fully closed state. The sun roof provides the following features.

- To slide open or close the sunroof or tilt it up or down, you don't have to continue to press the switch like the conventional one. The sunroof operates at the touch of the switch.
- If motion of the roof lid glass is interrupted during a tilt-up operation, the tilt up operation does not stop until the roof lid glass reaches the fully tilted up state.
- If an obstruction interferes with the sliding open motion, the roof lid glass immediately stops.
- If an obstruction interferes with the sliding close or tilt down motion, the roof lid glass will automatically reverse.
- Even after the ignition switch has been placed at OFF, the sunroof can be operated for 30 seconds. When a door is opened during the period, the sunroof can be operated for another 30 seconds from that time.

### Components