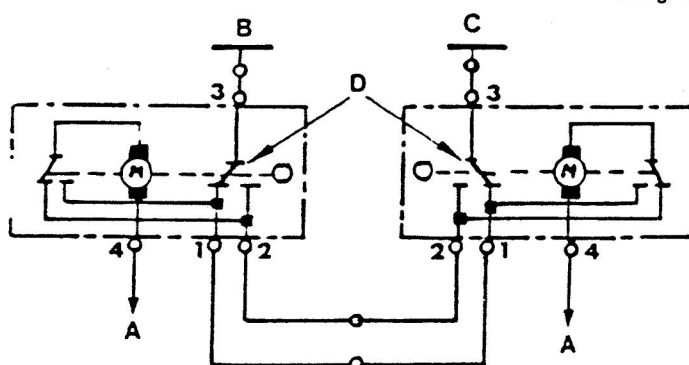


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Electrically operated door locks replace vacuum-operated locks on 1980 models. New system uses control unit at each door that includes electric motor, locking rod and switching element. Each switching element receives current through a 4-terminal connector with designations marked 1-2-3-4

Switch (D) in each door is connected to internal cutoff between (E) and motor, so both (D) switches flip over when motors reach final position. Thus, both doors can be unlocked or locked simultaneously by turning key in only one door. For safety, locking system operates only when ignition is off

Power to system passes through side window activating relay VI, terminal 87a



- A — to CES (central electrical system)
K 2 (terminal 30, red/white)
- B — to ground on steering bracket (brown)
- C — to ground on front of CES "
- D — key switch
- E — motor cutoff switch

Operating principle

When key is turned to lock door, locking rod transmits this motion to contact switching arm (D). Switching arm has a "neutral phase"; the control is activated only when the key is turned far enough to move a switching arm to next contact. When this is done, electric motor goes on and locks doors via the rod. Position of (D) now allows current to pass to the motor locking the other door. Switches (E) flip over when motors reach final positions.

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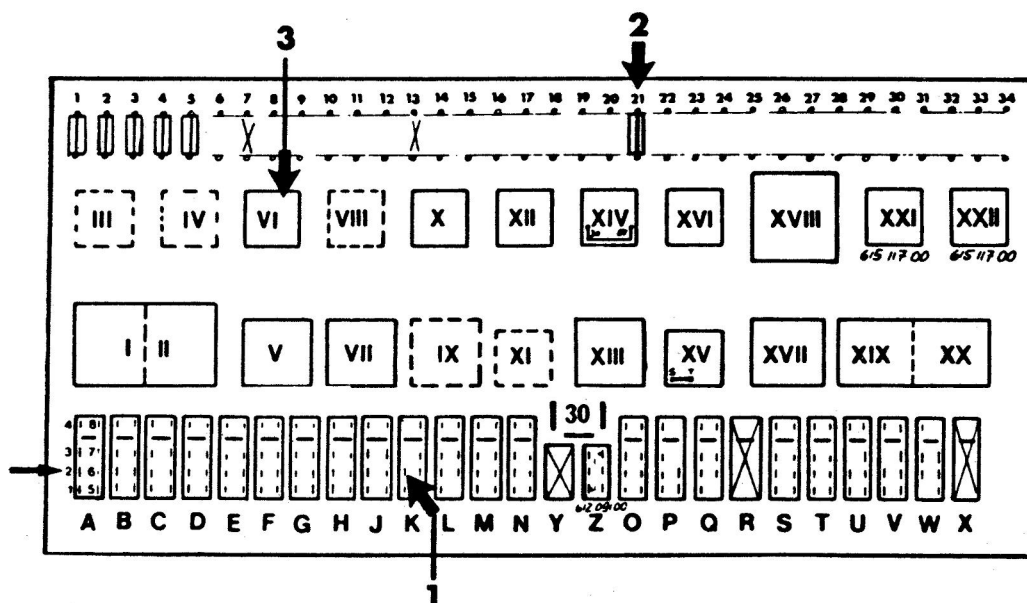
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Troubleshooting

Power supply, checking

Note

The electric door locks can only be operated when the ignition is off. If ignition is on, electric window relay will interrupt supply of electric power to operating motors. Thus, ignition must be turned off when checking for power to door lock system



Fuse/Relay Panel

Work sequence

- check fuse No. 21 (arrow 2) or relay VI (arrow 3) on fuse/relay panel, replacing if necessary.
- Terminal 2 (arrow 1) of plug 'K' must have voltage (approx. 12V)

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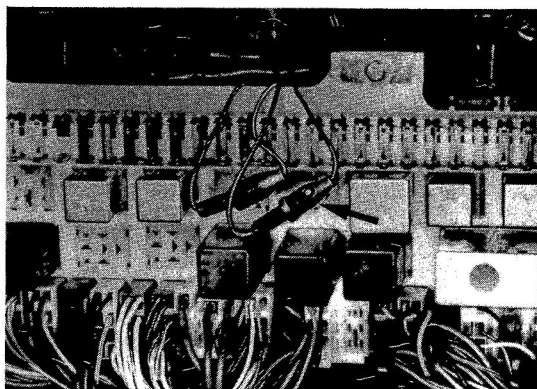
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- check in-line door-motor fuses (0.4 A time-delay) located in holders behind fuse/relay panel (they can be pulled forward)

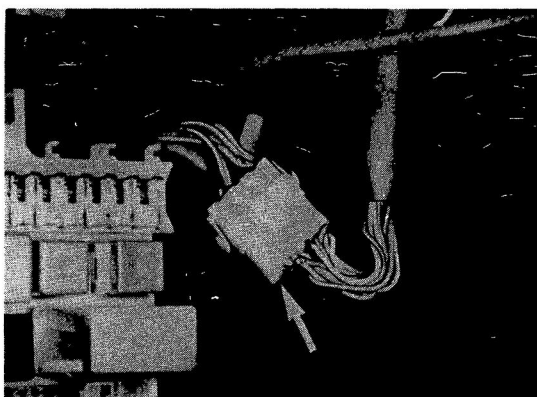
CAUTION

Never install fuses with different ratings

Isolating the trouble

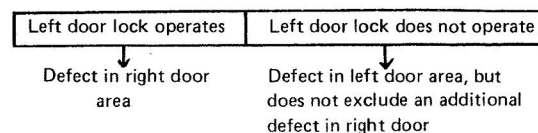
Note

Both door motors are interconnected electrically and could be influencing each other when defective. To isolate location of trouble,



- disconnect the multiple-pin plug for the right door's wire harness, at right hand side of the fuse/relay panel

- open left door and move locking pawl by hand to the "locked" position with help of a screw-driver (two steps required)
- with door still open, lock door with door key (ignition turned off)



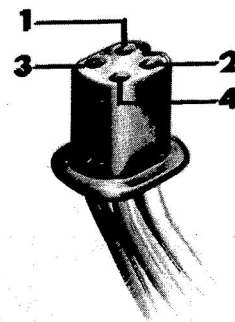
Note

Electric door locks can only operate properly when lock mechanism moves easily, is not impaired and lock cylinders are in perfect condition. Locking and unlocking mechanically with the key must not be hesitant or difficult

- reconnect multiple-pin plug for right door at fuse/relay panel

Diagnosis of trouble (defective door lock)

- take off door trim panel on defective side.
- pull off 4-prong socket on door-lock motor



- connect test lamp between terminal 4 (red/white) and terminal 3 (brown)
 - should light (with ignition key in OFF position)If OK, replace door-lock motor
- If not OK,
 - remove test lamp lead from terminal 3 (brown) and connect it to vehicle ground point
 - if test lamp lights, check ground wire (brown)

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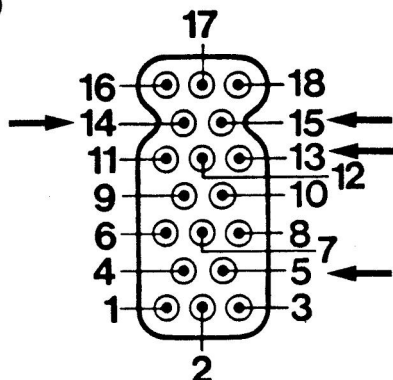
Subject: Troubleshooting Electric Door Locking System

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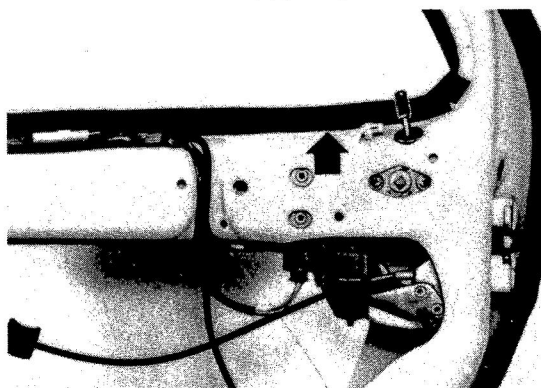
Note

The ground wire goes to the door courtesy light and from there to terminal 5 of the 18-pin plug (left and right, respectively, underneath instrument panel)



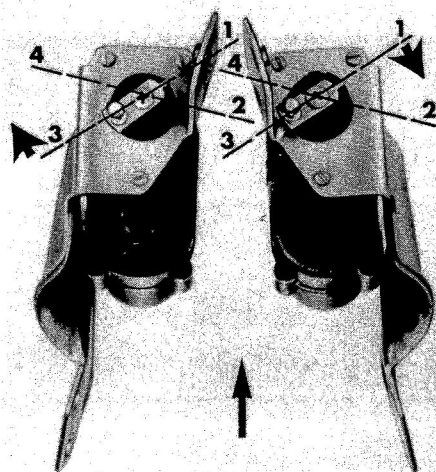
Rear view, 18-pin plug

- if test lamp does not come on, connect test lamp between vehicle ground point and terminal 13 of multi-pin plug. Test lamp should come on
- check continuity between corresponding terminals 1 and 2 on the two 4-pin sockets to the lock motors in the two doors
 - should be 0 ohms (approx.) in each case



If voltage and wires are okay,

- press off transmitting linkage on electric motor and connect electric plug
- pull up inside door recess seal (arrow) above electric motor to be able to observe motor operation
- turn ignition OFF



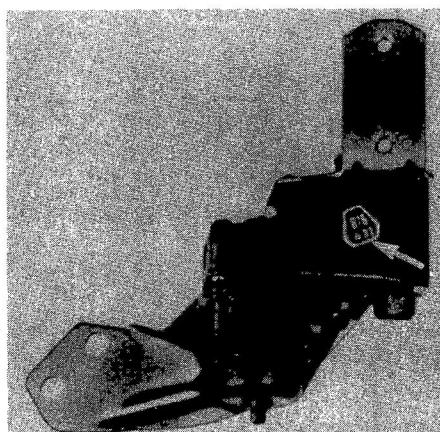
- turn crank clockwise by hand from 1 to 2. (It must not be hard moving). The motor must be switched on in position 2 and continue turning to 3
- turn crank further (3 to 4). The motor must switch on in position 4 and continue turning to 1

If not, replace the door-lock motor

If electrical connections check OK, problem must be mechanical

- remove electric motors and door locks (inner and outer locks) on both doors. Check parts as follows:

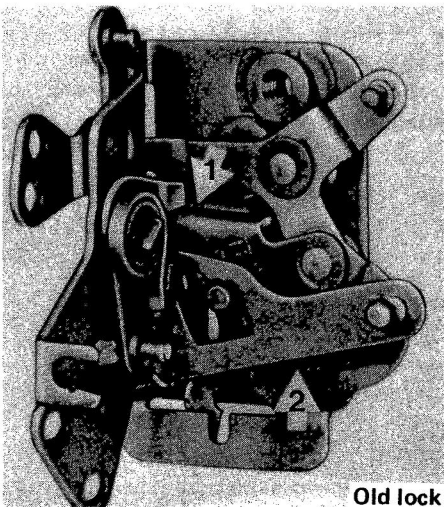
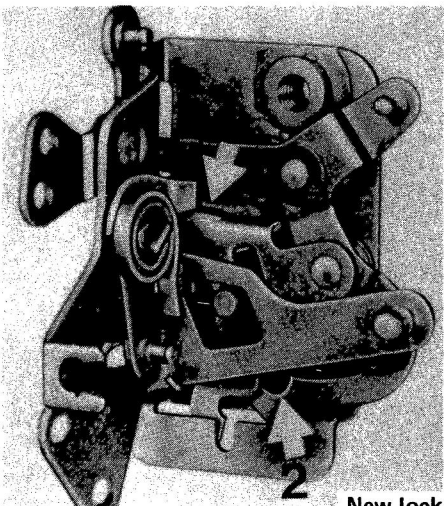
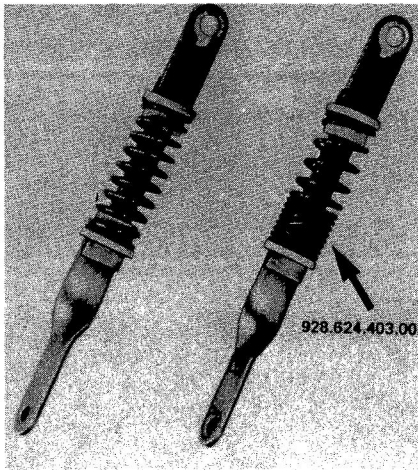
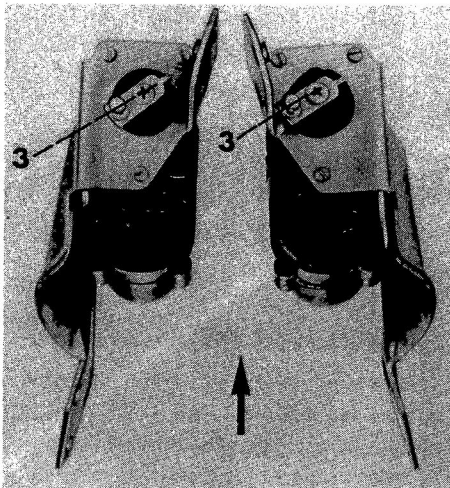
• Electric Motors



The motors received an electronic brake beginning with production date 3/81 stamped (arrow) on out-

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side of housing. If malfunctioning, replace electric motors manufactured prior to 3/81 with new type New Part No.: 928 624 401 02 left 928 624 402 02 right Door Inside Locks Several changes were made on the door inside locks to further improve the operational reliability: Addition of cam on operating lever bearing surface (arrow 1) and an opening in lower lock area (arrow 2). No change in part number was made  Old lock  New lock Only door inside locks with a cam and opening should be installed or reinstalled Transmitting Linkage  The transmitting linkage for the electric motor of the door inside lock has been equipped with new, progressive springs The new transmitting linkage, Part No. 928 624 403 00, can be installed to replace earlier version Parts, installing Installing and adjusting lock unit  The new electric motors are supplied in locked position. Contrary to previous instructions (Repair		
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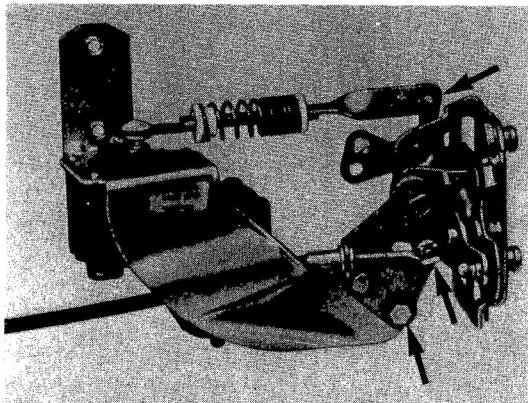
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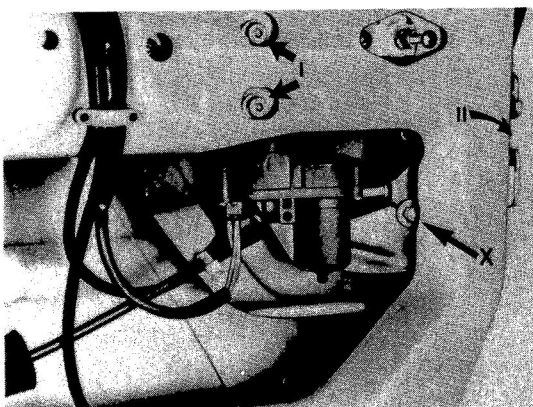
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Manual and Technical Information), adjustments should now be made in unlocked position (3)

- connect new electric motors on the electric plugs in the doors (ignition off). Then turn crank on one motor clockwise by hand until the motors switch on and continue turning to position 3 = the unlocked position



- connect cable for door inside operation on door inside lock
- screw electric motor on door inside lock (do not tighten screws)
- connect transmitting linkage on inside lock and press in clips (arrows)



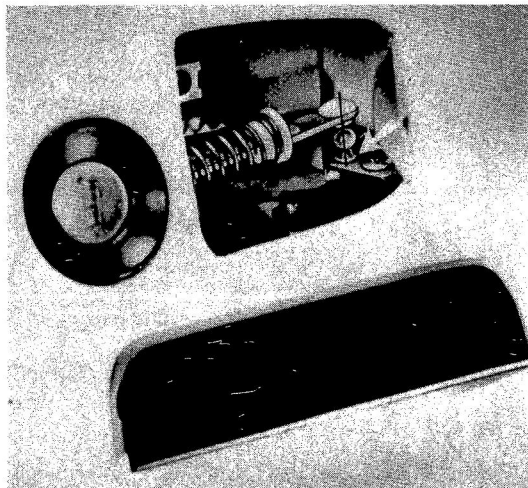
- place entire lock unit into door and screw together with the outside lock. Only insert screws for electric control/door inside panel (I). Tighten screws on lock unit (II)
- in case of unfavorable tolerances, it may be

necessary to modify the door inner sheet metal in the area of the screws (see arrow X)

CAUTION

Screw electric motors on door inside panel with M 6 x 8 screws. Never use longer screws, otherwise, clearance required for the crank will be insufficient

- pull up inside door recess seal above the electric motor, so that the position of crank to transmitting linkage on an installed electric motor can be observed from above



- press the crank on the electric motor (in unlocked position) lightly against stop in direction of lock (counterclockwise)

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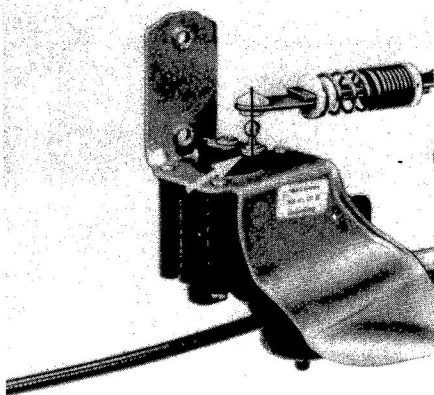
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- hold ball socket of transmitting linkage over ball end of bolt in crank.
If ball socket and ball end are not aligned, adjust electric motor in mounting bores slightly, until ball socket and ball end are aligned exactly. Transmitting linkage must not have tension to reach this setting.
If size of bores is not sufficient, they can be made larger with a file

CAUTION

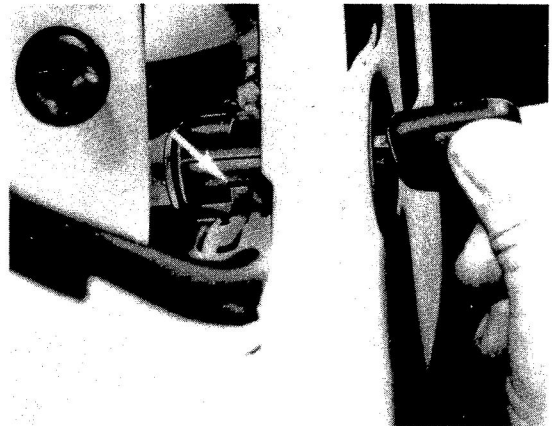
Never force electric motor to fit

- after completing adjustments, bolt electric motor plate on door inside panel
- connect transmitting linkage without changes in length
- after installing locks in both doors, connect electric motors and check operation

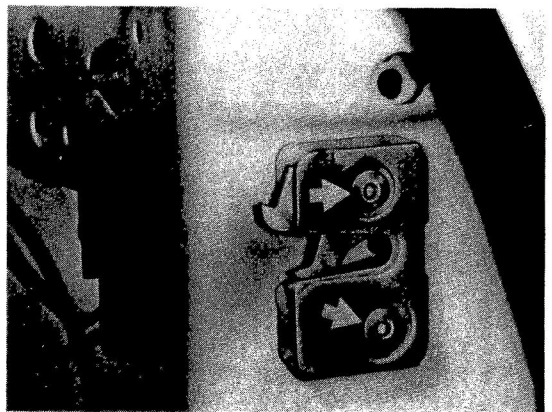


- re-install lock cylinders, if they had been removed

- connect lock cylinder/lock inside section operating rod, Part No. 928 537 111 04 (also refer to Repair Manual 928, Volume IV, page 57—15 and 57—25)



- turn door key completely to unlocking position and hold there. Observe stop on lock cylinder — drive dog (arrow). The clearance between drive dog and lock cylinder housing must be 1.0 mm min. and 2.5 mm max. (seen from above through door recess)



- if position of drive dog is wrong, loosen mounting bolts on lock outer section slightly and adjust lock unit accordingly
 - distance excessive: move up
 - distance insufficient: move down

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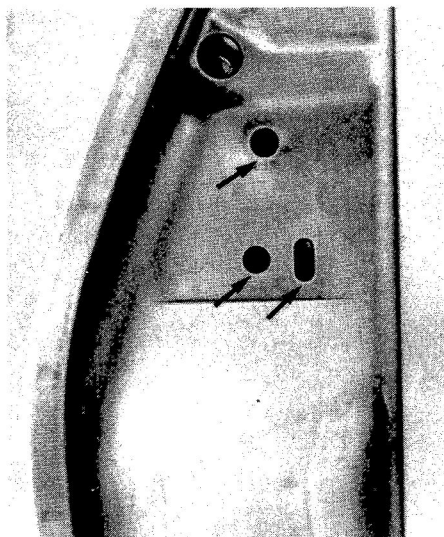
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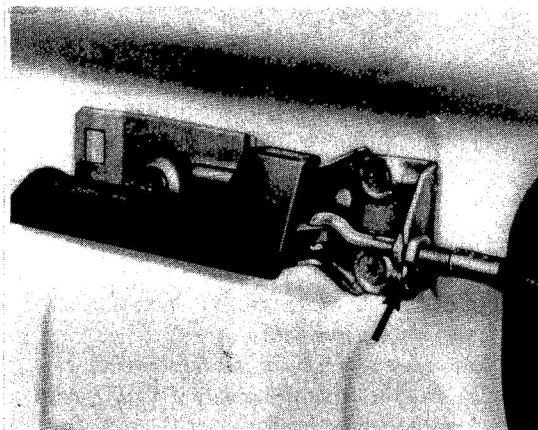
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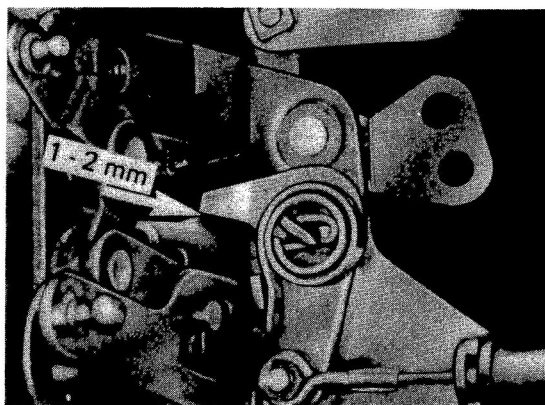
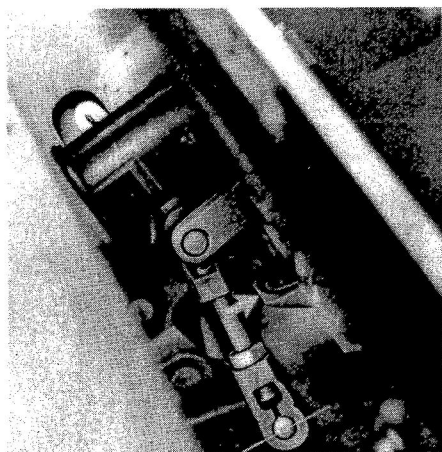
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(arrow) if necessary on mount for door outside handle



- if adjustment in bores is not sufficient, make openings in door for mounting of inside and outside locks (arrows) larger in downward direction by approx. 2 mm (with a file) before installing



- adjust cable for inside handle such that there is dead travel of approx. 1 to 2 mm (arrow) before operating lock

- adjust door outside handle/lock operating rod, so that it can be pressed into ball socket without stress
Check clearance of operating rod, filing off edge

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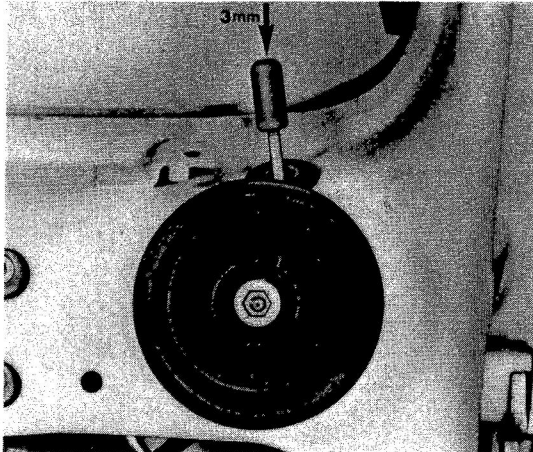
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- after finishing adjustments and checking operation, coat all lock and motor mounting screws with Loctite No. 221 (or equivalent)

Most important parts

Part No.

Electric motor, left	928 624 401 02
Electric motor, right	928 624 402 02
Motor fuse, 0.4 A	900 321 002 90
Door inside lock, left	928 537 053 05
Door inside lock, right	928 537 054 05
Transmitting linkage	928 624 403 00
Clips (ball socket)	928 624 941 00
Operating rod (lock cylinder/lock)	928 537 111 04

- check operation of electric door locks on both doors before completing assembly. It should be possible to press down the inside door catch button by at least 3 mm (or more) before electric motors start to run

Note

Doors can only be locked when doors on both sides are closed. If one door is still open while locking, locking mechanism will return to unlocked position

- install knob, checking knob bearing for easy movement. Do not screw on nut too tight

CAUTION

Part numbers are for reference only. Always check with your Parts Department for latest parts information

CAUTION

Only 10 mm long self-tapping screws, Part No. 900 143 058 02, may be used to mount knob bearing on door panel

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