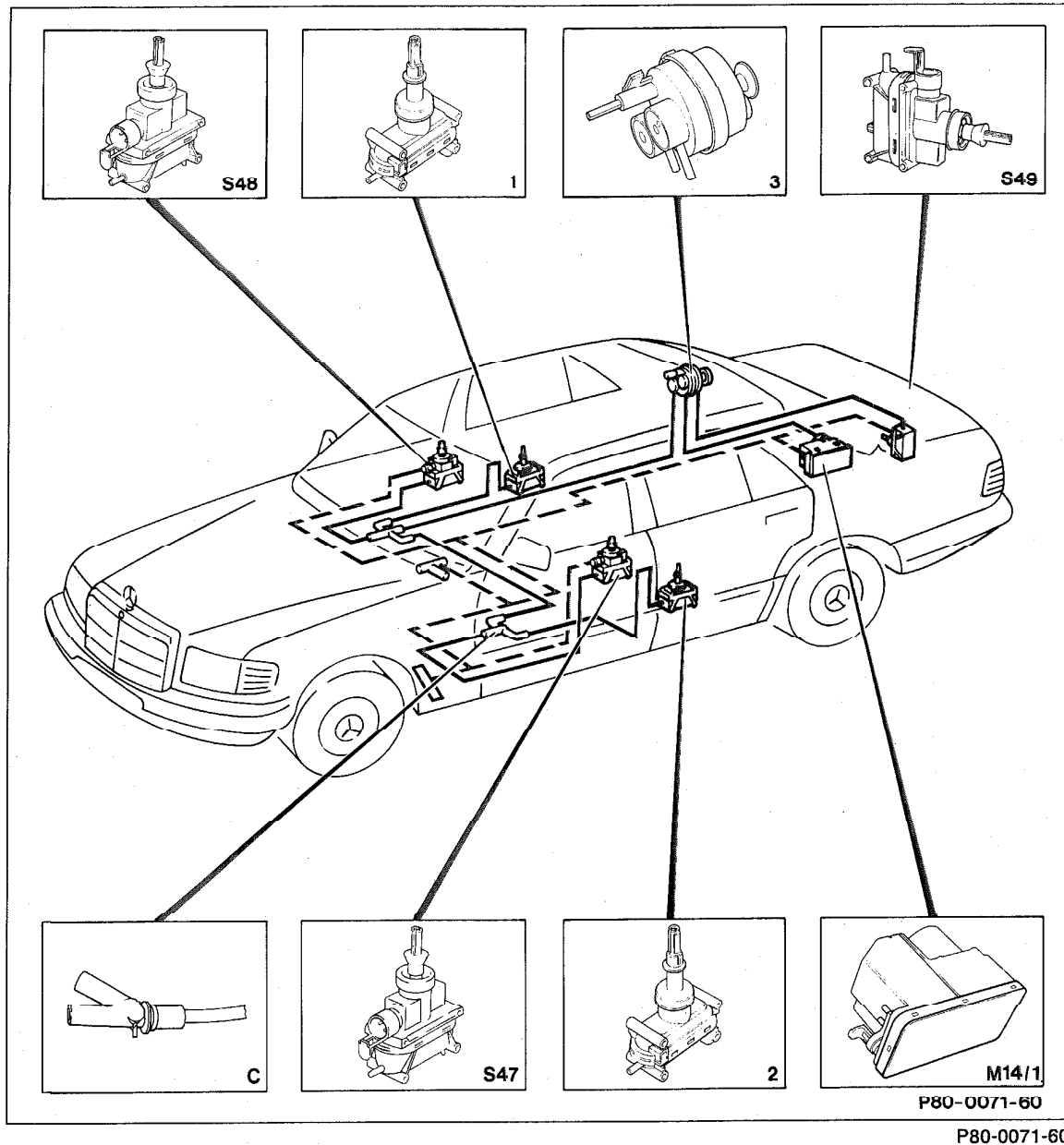


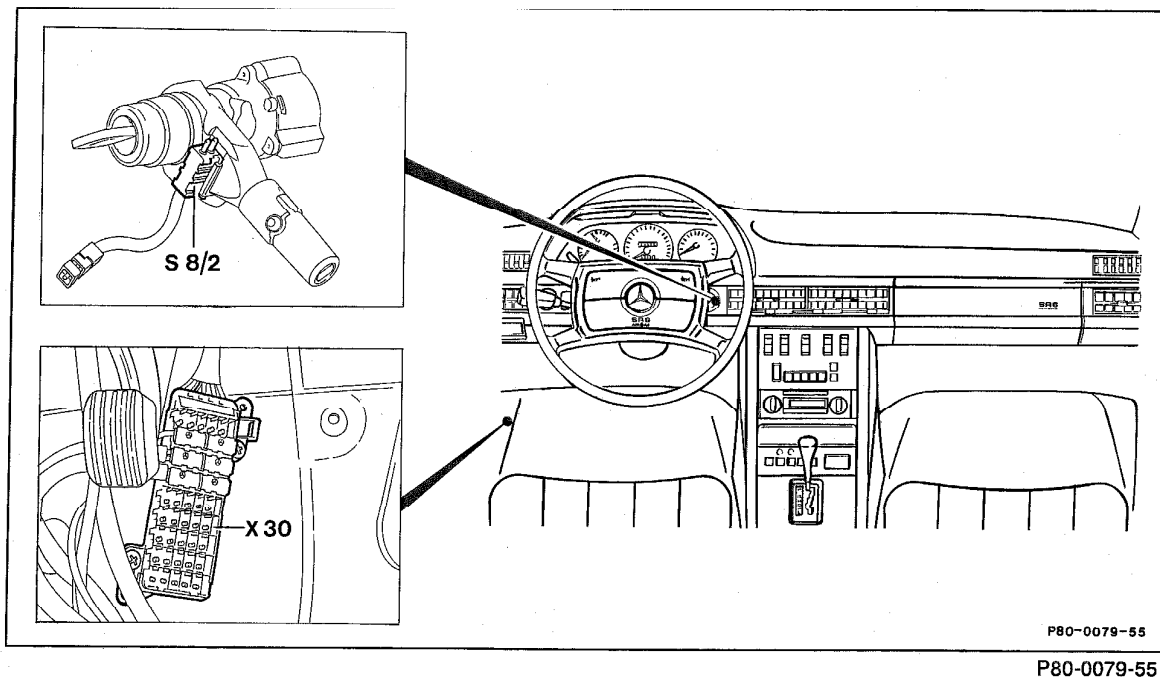
A. General



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- | | | | |
|------|--------------------------|-------|--|
| 1 | Element, rear door right | M14/1 | Supply pump central locking system |
| 2 | Element, rear door left | S47 | Control and working element, driver's door left |
| 3 | Element, tank flap | S48 | Control and working element, driver's door right |
| C | Distribution fitting | S49 | Control and working element, trunk lid lock |
| ---- | Electrical cable | — | Pneumatic pipe |

80-010 Functional description



- S 8/2 Warning buzzer contact lighting/central locking system
X30 Connector optional equipment block

The multi-point controlled central locking system is based on the central locking system with single-door control. Central locking or unlocking is possible from the driver's door and front passenger door as well as from the trunk lid by actuating the key or the locking pin. All doors, the trunk lid and the tank flap are incorporated into the central locking system.

B. Operation

Driver's door

With the driver's door closed, the central locking system can always be operated. From the outside by means of the key, (locking by turning fully to the right, unlocking by turning fully to the left), from the inside by pressing the locking pin or pulling the handle in the door lining.

Front passenger door

The central locking system can be operated from the closed or opened front passenger door by means of the key, the locking pin or handle (similar to the driver's door).

However, central locking is only possible if the ignition key has been removed or, after it has been removed, is inserted again but not actuated (key position 0 in the steering lock). This procedure prevents an inadvertent locking-out in key positions 1 and 2 via the front passenger door.

Trunk lid

The central locking system can be operated with the key while the trunk lid is open or closed.

Unlocking:

Fully turn the key to the left and remove in vertical position.

Locking:

Fully turn the key to the right and remove in vertical position.

Additional locking:

Fully turn the key to the right and remove in the horizontal position. The trunk lid remains locked even with central unlocking of the doors.

Note

If the trunk lid is unlocked with the centrally locked vehicle, all doors and the tank flap are also unlocked. After closing the trunk lid, the vehicle must again be centrally locked.

C. Function

Functional procedure using example of unlocking vehicle via driver's door

When turning key in lock cylinder counterclockwise, the electric switch in control and operating elements are switched over by way of a linkage. This switch directs then a positive voltage to supply pump by way of its control line.

The supply pump starts and provides an excess pressure, which is guided to all pneumatic elements by way of a line system. The diaphragms in the elements are forced up and actuate and release the locks via linkages. The tank flap element unlocks the flap directly. Simultaneously, the electric switches of the control and operating elements in the front passenger door and the trunk lid are also switched over by means of the pneumatic section of the elements and also direct a positive voltage to the supply pump just like the mechanically actuated switch in control and operating element of the driver's door.

As soon as a pressure of approx. 450 mbar is attained in system, the pressure switch disconnects the supply pump.

The pneumatic line system and the elements are then again vented by way of the supply pump – the system is no longer under pressure and the unlocking procedure is completed.

The locking procedure operates analog to unlocking procedure. However, the supply pump is activated with a negative control voltage, the direction of rotation of pump motor changes its polarity and thereby generates the vacuum required for locking.

The diagram illustrates the functional architecture of a central locking system, categorized by function type: mechanical (solid line), electric (dashed line), and pneumatic (dotted line).

- Key** (Mechanical) turns the **closing cylinder** counterclockwise.
- closing cylinder** (Mechanical) unlocks the **lock**.
- lock** (Mechanical) is unlocked by the **pneumatic element** of the **control and operating element driver's door**.
- control and operating element driver's door** contains an **electric switch** and a **pneumatic element**. The electric switch is actuated by the closing cylinder and informs the **electronic control**. The pneumatic element is actuated by the lock and the **supply pump**.
- supply pump for central locking system** contains an **electronic control** and a **pneumatic pump generates pressure**. The electronic control is informed by the driver's door switch and controls the pump. The pump generates pressure for the front passenger door lock.
- control and operating element front passenger door** contains an **electric switch** and a **pneumatic element**. The electric switch is informed by the driver's door switch and actuates the pneumatic element. The pneumatic element is actuated by the pump and unlocks the **lock**.
- control and operating element trunk lid** contains an **electric switch** and a **pneumatic element**. The electric switch is informed by the driver's door switch and actuates the pneumatic element. The pneumatic element is actuated by the pump and unlocks the **lock**.
- tank flap** (Mechanical) is unlocked by the **tank flap element** of the **control and operating element trunk lid**.

Legend:

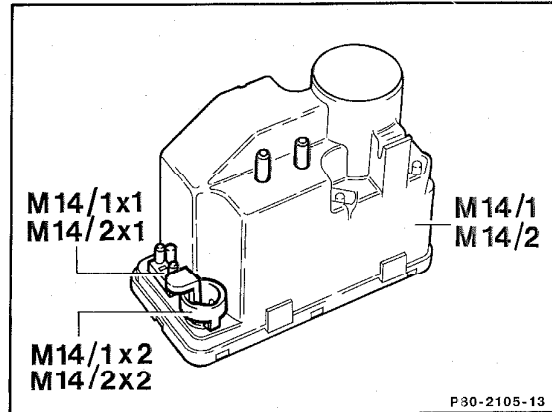
- Solid line: mechanical function
- Dashed line: electric function
- Dotted line: pneumatic function

D. Components

Supply pump (M14/1)

1st version, up to approx. 04/86.

The supply pump for multi-point control is provided with two electrical connections. Owing to the modified electronic switching function, this supply pump is not interchangeable with the previously known supply pump (single-door control).



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The 2-pole connector (M14/1x1, on vehicles with orthopedic driver's backrest, 3-pole M14/2x1) connects the supply pump with plus (terminal 30) and ground (terminal 31). Via the connector (M14/1x2) the supply pump receives a negative control voltage from the control and working elements during locking and a positive control voltage during unlocking.

The supply pump generates pressure for unlocking and vacuum for locking (approx. 500 mbar).

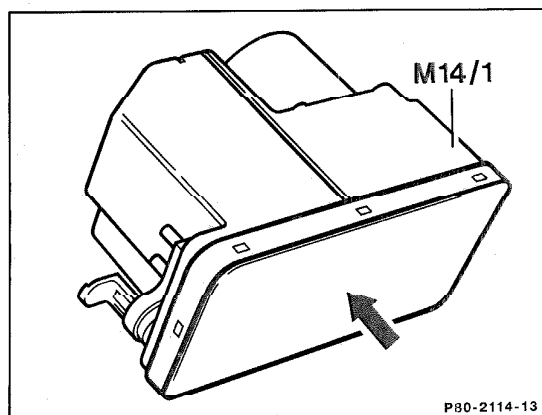
With severe leaks, the supply pump switches off after 25-150 s (safety switching time).

The electronic control is equipped with several logic functions which avoid wrong connections and faults.

2nd version as of approx. 05/86

The supply pump control is equipped with a "Full Customer IC".

Besides the previous functions, this IC has the duty of recognizing faulty currents, in this way avoiding spontaneous functions due to creeping currents and switching off of the control inputs concerned. The supply pump can be identified by the light cover (arrow), previously black.



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80-010 Functional description

The electrical cable harness was revised at the same time. The ground cable of the control and working element for the trunk lid lock (S49) is now connected directly to the main grounding point (see electrical circuit diagrams 80-800); previously connected to the warning buzzer contact, lighting/central locking system (S8/2).

Production breakpoint: as of vehicle identification end No. A 252372.

In vehicles with lower vehicle identification end No.,
the modified supply pump may not be installed.
The previous version continues to be applicable to these vehicles.

3rd version as of approx. 10/88

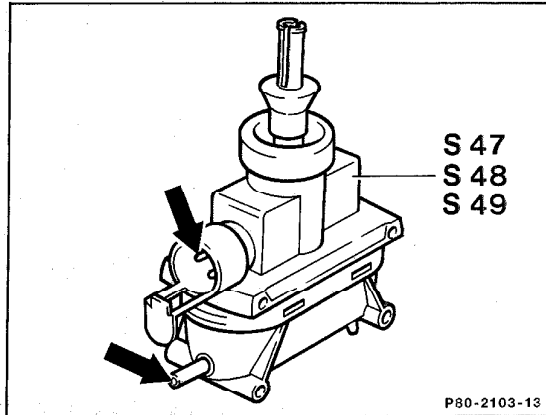
To improve comfort, the supply pump of the central locking system has been replaced by a version providing increased performance. This version can be exchanged to replace the former version. The differentiating characteristic of the pump with a black cover and the pump with a bright cover for all other models is not changed. Production breakpoint as of vehicle identification, end no.: A 443 217

Technical data for supply pump

		as of approx. 10/88	up to approx. 09/88
Pressure cutout point	(mbar)	approx. 650	approx. 500
Switching time	(s)	approx. 1	approx. 3
Safety switching time	(s)	25-30	25-150
Power input	(A)	max. 7.5	max. 3.5
Pressurizing time, venting time	(s)	approx. 10	approx. 10

Control and working element (S47, S48, S49)

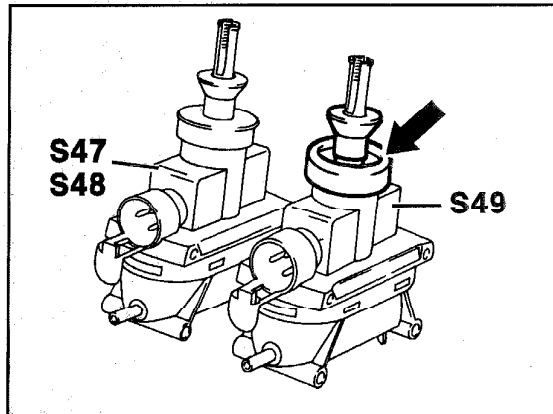
A combined control and working element is installed in the driver's and front passenger doors as well as in the trunk lid. This element is provided with an electrical and a pneumatic connection (arrows).



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The elements for the doors are of one color. The element for the trunk lid has a boot or sliding sleeve (arrow) deviating in color. During repairs ensure that the elements are not interchanged, as the trunk lid element is provided with a harder boot for locating the upper and lower end stop.



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S47 Control and working element, driver's door left
S48 Control and working element, driver's door right
S49 Control and working element, trunk lid lock

The electric and pneumatic functions of all control and working elements are identical. The electric switch in the upper part of the element is constantly connected to positive and ground. The changeover switch sends a positive control voltage to the supply pump for unlocking and a negative control voltage for locking.

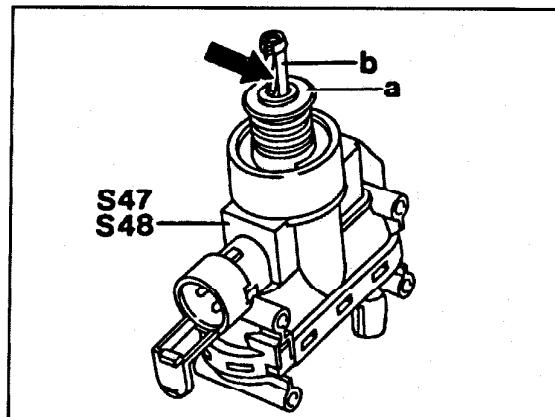
The lower chamber of the element is provided with pressure for unlocking and with vacuum for locking.

The electric and pneumatic sections of the element can be separated by a sliding sleeve with detent, in order to allow lock operation even with the element subject to pressure or vacuum.

80-010 Functional description

Sliding sleeve lock (as of approx. 12/86 phased-in)

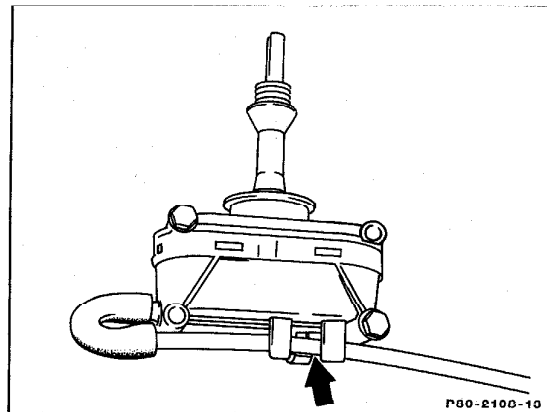
Inadvertent adjusting of the sliding sleeve (a) is avoided by means of an integrated support (arrow). When inserting the connecting rod to the lock the adjusting lock is cancelled. Consequently the element is in the installation position. Adjusting faults on the door elements are no longer possible.



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Rear door element (sedan only)

A pneumatic connection is provided on the rear door element. The lower chamber of the element is supplied with pressure for unlocking and with vacuum for locking.



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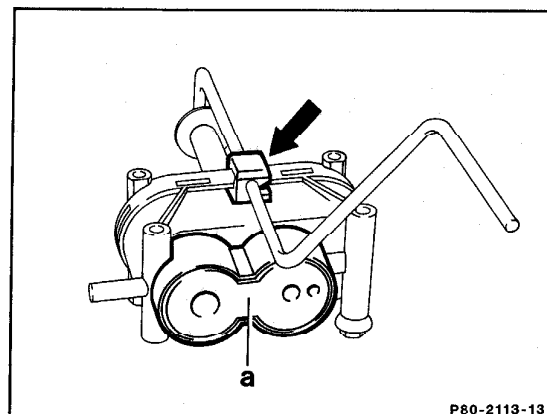
Tank flap element

1st version up to approx. 03/87

With regard to design and function, the element corresponds with the rear door element, but is provided with a harder boot for locating the upper and lower end stop. The distinguishing feature is the yellow sliding sleeve.

2nd version as of approx. 04/87 to approx. 06/87

Element similar to the 1st version, however with anti-theft protection (a) and linkage guide (arrow). The anti-theft device prevents manual unlocking of the element via the tank flap.

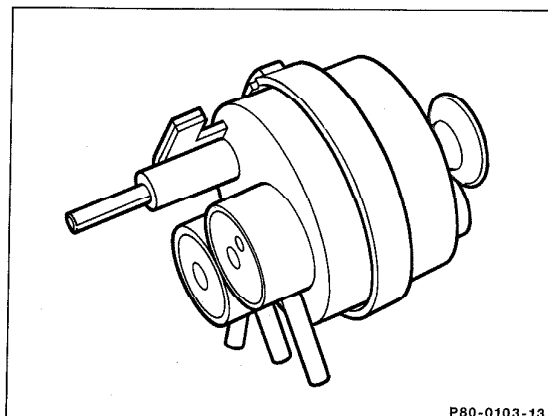


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3rd version as of approx. 07/87

Clip-type element with direct locking linkage, anti-theft device and emergency unlocking button.

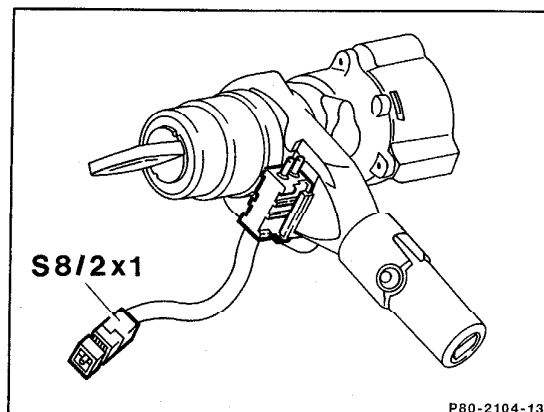


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Warning buzzer contact, lighting/central locking system (S8/2)

This switch on the steering lock interrupts the ground connection to the control and working element in the front door, right if the ignition key in the steering lock is in position 1 or 2. In addition, ground connection to the control and working element in the trunk lid lock is interrupted as of approx. 09/85 to approx. 04/86.



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