General data and dimensions

Revision: Tables revised.

Finger-tip control hydraulic pump

Type	Delivery pressure valve adjustable atm	Savety valve atm	Delivery volume cc per rev.	Max. speed rpm
Hydraulic single piston pump	Stop left: 175 [1] Stop right: 200	260	0.625	6000

Oil pressure container

Type	Nitrogen filling pressure atm	Operating pressure max. atm	Volume liters	Resistance to cold °C
Diaphragm container (Bosch) up to chassis end No. 367	90 – 120	200	0.7	– 25
Piston container [2] (Teves) starting vehicle end No. 368 as from May 15, 1965			1.0	– 40

Closing power for power-assisted door lock and trunk lid lock

at preset operating pressure of:	175 atm	$120\ ^{+30}_{-10}$ N ($12\ ^{+3}_{-1}$ kp)
	200 atm	$110\ ^{+30}_{-10}$ N ($11\ ^{+3}_{-1}$ kp)

Adjusting speed for driver's seat and trunk lid

	Driver's seat from stop to stop	Trunk lid
Adjusting speed at 175 atm operating pressure	Longitudinal adjustment 3 – 4 secs. Height adjustment 1 – 2 secs. Back rest adjustment 5 – 8 secs.	Opening time: approx. 2 secs.

1) Factory setting
Initially, the hydraulic pumps also have a third pressure adjusting stage at 150 atm. However, at this pressure the hydraulic warning switch no longer operated perfectly due to its control lag (hysteresis), finally resulting in the elimination of this pressure adjusting stage.

2) The Teves piston container has already been installed in vehicles for countries with extremely low temperatures prior to its installation as standard equipment.

Warning switch [1]

If the operating pressure falls below 130 ± 5 atm, the orange-colored warning light on instrument cluster lights up.

Oil grade and capacity

Hydraulic oil	refer to "Specifications for Service Products" Page 343
Capacity	approx. 1.6 – 1.8 lits.

An accurate oil level checkup can be made only when the engine is running. Engine should run at least for 2 minutes prior to starting checkup. All elements actuated by the comfort-hydraulic system, such as windows, sliding roofs, door locks, etc. must be in closing position during checkup.

Color code of hydraulic system lines

red				Pressure line
blue				Return flow line
green				Control circuit
green				Control circuit driver's window left (right)
green	green			Control circuit rear window left (right)
green	green	green		Control circuit rear seat
green	red	green		Control circuit air conditioning system / From A/C KNOB
green	blue	green		Control circuit summer air
green	white			Control circuit shock absorbers
green	yellow			Control circuit driver's window right (left)
green	green	yellow		Control circuit rear window right (left)
green	yellow	yellow		Control circuit sliding roof
green	yellow	white		Control circuit center partition window
green	white	yellow		Control circuit trunk lid
green	white	white		Control circuit central side window (100.014)
green	white	green		Control circuit driver's seat adjustment vertical
green	green	white		Control circuit driver's seat adjustment horizontal
green	yellow	green		Control circuit driver's seat back rest adjustment
green	yellow	green	yellow	Control circuit pedal parking brake
green	yellow	white	yellow	Control circuit Landaulet top

Data in brackets are meant for right-hand steering vehicles.

Caution during assembly jobs – high pressure!

Prior to loosening a line connection, close shut-off valve in engine compartment or actuate all windows from driver's door several times for complete evacuation of pressure in system

1) Not in standard production starting chassis end No. 746 – except vehicles with chassis end No. 749, 751, 753 and 758, in which the warning switch is still in place.

Revision: Revised.

A. General

All model 600 cars are provided with a comfort (finger-tip) hydraulic control system, by means of which a number of actions requiring the use of muscular power or prolonged operating movements are automatically handled by means of lever pressure, by turning a switch or by electrical control, so that complete hydraulic operation or power assistance is available.

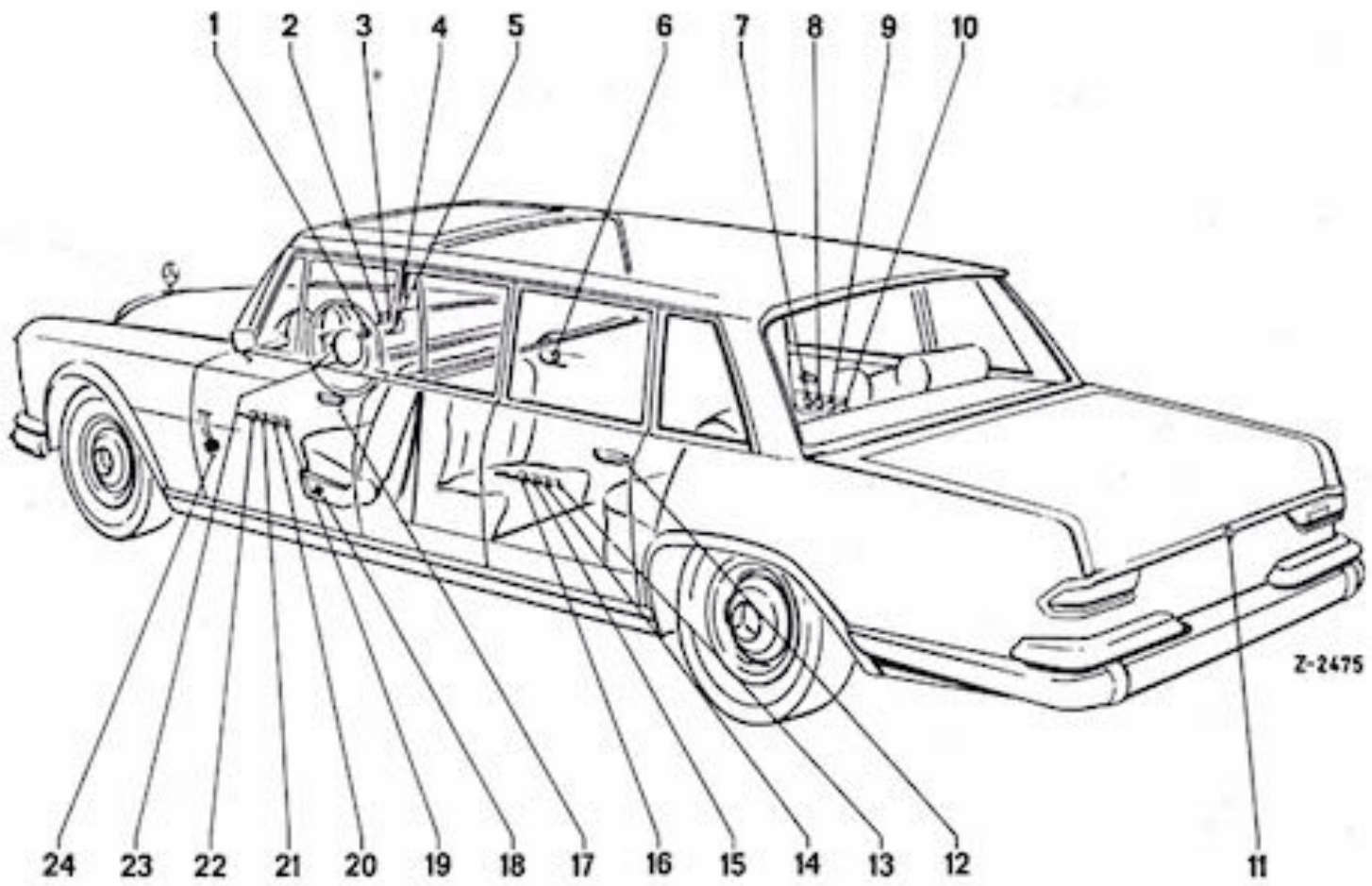

Fig. 80–1/1
Finger-tip hydraulic control operations

1 Temperature selector knob
2 Partition window
3 Sliding roof
4 Summer air flap
5 Air flow regulating lever
6 Driver's window right
7 Sliding roof
8 Central side window, right
9 Rear side window, right
10 Rear seat adjustment
11 Trunk lid lock
12 Rear door lock (left and right)
13 Rear seat adjustment
14 Rear side window, left
15 Central side window, left
16 Partition window
17 Driver's door lock (left and right)
18 Driver's seat adjustment (left and right)
19 Rear side window, right
20 Rear side window, left
21 Driver's window, right
22 Driver's window, left
23 Shock absorber adjustment
24 Parking brake

The front seats can be adjusted horizontally or vertically by appropriate operation of control knob on the seat at the door side. The slope of the seat changes as the height is altered. Turning of the control knob alters the inclination of the back rest.

The rear seat is operated by a switch in the bank of controls mounted in each of the rear doors. The seat can be moved horizontally backward or forward.

At the same time, the inclination of the back rest is altered, levelling out as the seat is moved forward.

Each of **the four side windows** is operated by a switch in the bank of controls of the respective door. In addition to this, all four windows can be individually operated from the driver's door.

The central side windows of model 600 long can also be operated individually by a switch on the bank of controls on the rear door.

The sliding roof (optional) is operated either from a switch on the instrument panel or from the right rear door.

The partition window (optional) is operated either from a switch on the instrument panel or from the left rear door.

The lock closures are hydraulically assisted to ensure silent closing of the doors and the trunk lid.

Opening and closing of the **trunk lid** is also hydraulically assisted.

The shock absorbers can be adjusted either to the hard or soft position by means of a small lever on the steering column jacket.

The finger-tip hydraulic control system also operates the **venting flaps** of the heating and ventilating system and release of the **foot-operated parking brake.**

B. Principles of Operation of Hydraulic System

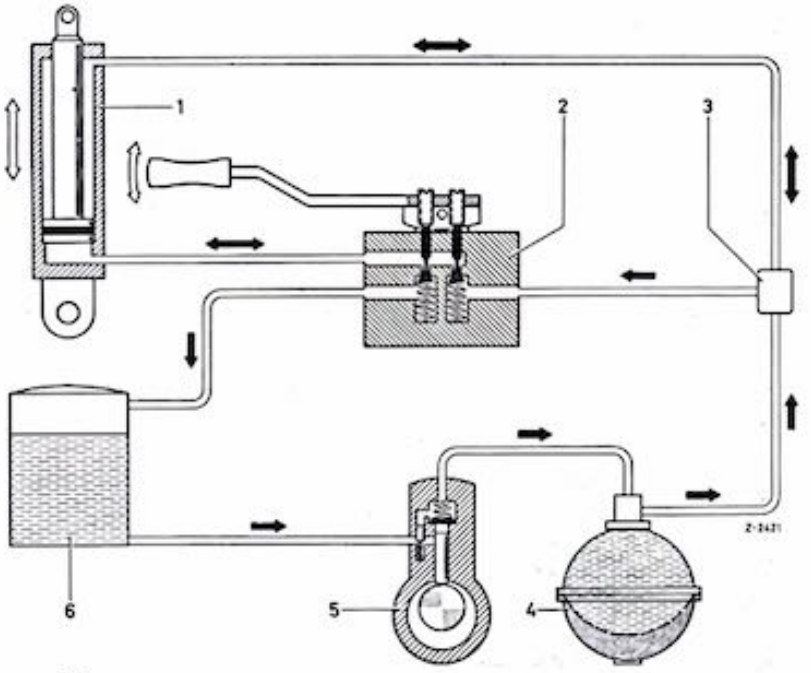

Fig. 80–1/2

Diagram of finger-tip hydraulic control system (system with diaphragm container)

1 Double-acting hydraulic element
2 Hydraulic switch
3 Distributor
4 Oil-pressure container (diaphragm container)
5 Finger-tip control hydraulic pump
6 Oil supply reservoir

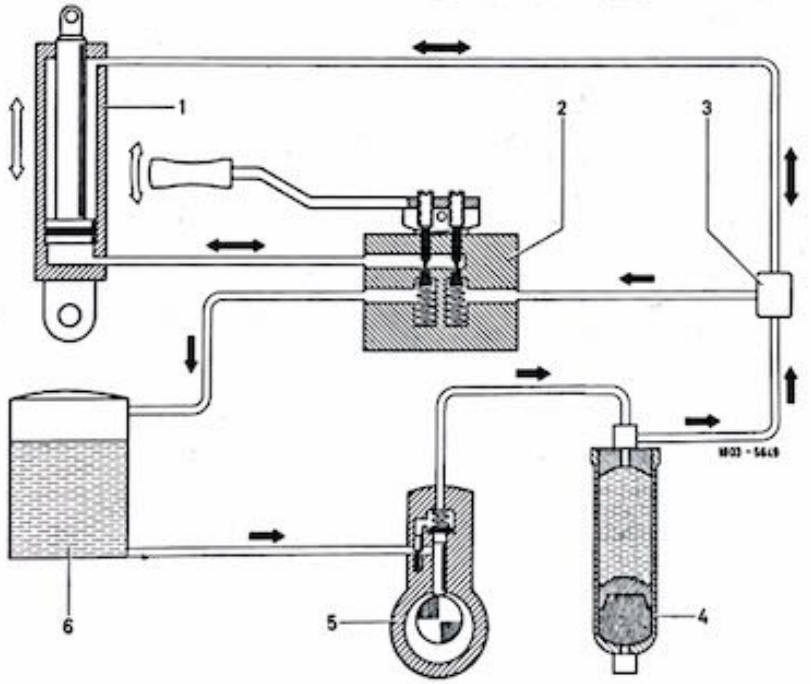

Fig. 80–1/3

Diagram of finger-tip hydraulic control system (system with piston container)

1 Double-acting hydraulic element
2 Hydraulic switch
3 Distributor
4 Oil-pressure container (piston container)
5 Finger-tip control hydraulic pump
6 Oil-supply reservoir

The finger-tip control hydraulic pump feeds oil from the oil supply reservoir to the oil pressure container. The piston rod side of the hydraulic element is connected with the oil pressure container via the pressure line and is therefore constantly under working pressure, with the result that the piston is forced against an oil cushion on the piston. The movement of the piston is controlled via a switch in such a way as to connect the piston side with the oil supply reservoir (piston rod moves inward) or the oil pressure container (piston rod moves outward). This latter situation occurs when the same pressure is applied to surfaces of different area. The surface area of the piston rod side is smaller than the piston side by the amount of the section of the piston rod.

The hydraulic system operates with an adjustable working pressure (refer to Job No. 80–0). The working medium is an extra-thin special quality oil. It is not necessary to bleed the system since any air that may happen to be enclosed dissolves under the high pressure of the oil and does not operate as an air cushion. Each individual consumer unit is connected to the hydraulic network which is installed throughout the vehicle by means of TEE-piece connections.

The pressure in the oil pressure container is sufficient to provide an adequate number of hydraulic operations even with the pump inoperative.

C. Circuit diagram of finger-tip hydraulic system

In the course of technological development the hydraulic controls for heating, venting and cooling were modified twice. The new circuit diagram shows the layout (a) of the first design stage.

1st design stage with layout (a)

Here, the fresh air flaps in front end, as well as the circulating air and distributor flaps at rear end are exclusively controlled by the temperature selector knob. In selector knob position "N" and across entire heating range, these flaps are open (with exception of the circulating air flap).

The 2nd and 3rd design stage are the result of the following modifications:

2nd design stage with layout (b)

Starting with chassis end No. 00 169 and the conversion to the 2nd design stage, the flaps in cross duct of front end mechanically actuated by the air volume regulating lever via Bowden wires were no longer installed. Instead of the Bowden wires, the air volume regulating lever is connected to a hydraulic switch, by means of which the fresh air flaps and the now additionally installed rear blower flap can be closed also in position "N" of the temperature selector knob by shifting the air volume regulating lever to position "0" (the lever is then completely at the right). This type of control, for which the same working elements can be acutated by two different hydraulic switches depending on the desired function of the air conditioner, required the installation of a hydraulic relay (refer to circuit diagram).

As a result, driving without the slightest draft, on the one hand, and the reliable elimination of any odors from outside on the other were made possible by means of a single operation.

3rd design stage with layout (c)

The installation of the new refrigerating system starting with chassis end No. 000 792 eliminated the need for a rear-end evaporator. Likewise, the circulating air flap and the distributor flap in rear heat exchanger housing were no longer required. The air flow at the rear is exclusively controlled by means of the rear blower flap already discussed for the 2nd design stage. Similar to the fresh air flaps in front end, the latter is closed when the temperature selector knob is switched to "cooling", so that the system is now operating under pure recirculating conditions. This in turn results in an increase in effectiveness of the refrigerating system.

Note: Landaulets are provided with two oil pressure containers.

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