

GROUP Z
CENTRAL LUBRICATION
SYSTEM

Group Z – Central Lubrication System

| Assy.-No. | Designation of Procedures | Page |
|-----------|---|------|
| | Central Lubrication System | 231 |
| Z 1 | Removal and Installation of Central Lubrication Pump | 233 |
| Z 2 | Disassembly and Repair of Central Lubrication Pump | 233 |
| Z 5 | Removal and Installation of Distributor | 234 |

GROUP Z – CENTRAL LUBRICATION SYSTEM

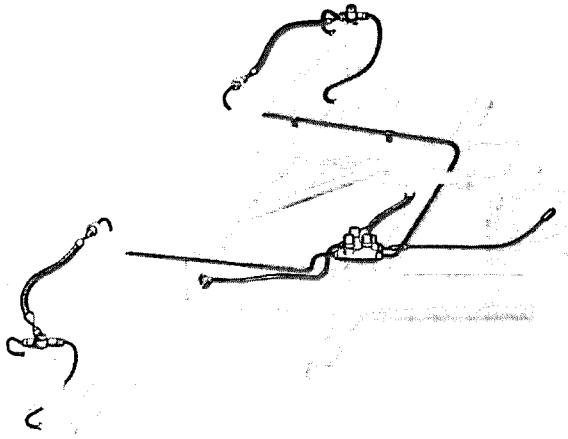


Fig. Z/00



Fig. Z/01

There are two types of central lubrication pumps to be installed:

a) Central lubrication pump of Messrs. Willi Vogel (Fig. Z/02).

b) Central lubrication pump of Messrs. Neue Argus-Gesellschaft (Fig. Z/03).

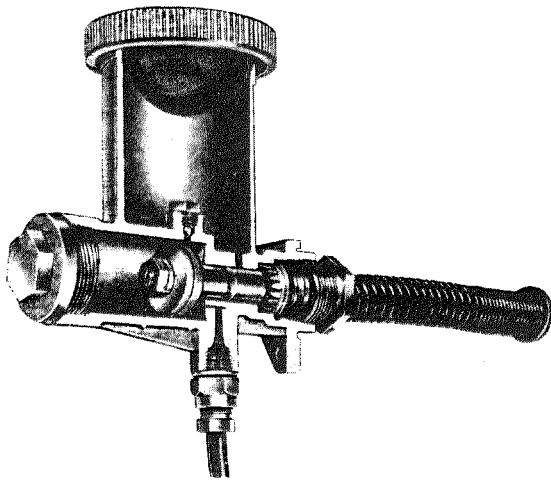


Fig. Z/02

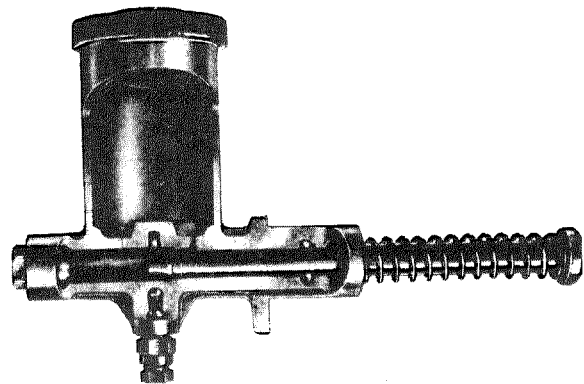


Fig. Z/03

Operation of both pumps is based on the principle of a displacement pump. Method of operation of the central lubrication pump can be divided into 3 different stages.

I. Pump and distributor in released position. Oil line from pump cylinder to distributor is closed,

- a) by the closely fitting sleeve (make Vogel),
- b) by the nonreturn valve (Argus).

A ball at the bottom of outlet of oil container releases flow of oil from oil container to pump cylinder.

In the distributor, valves close oil intake to the individual air chambers (Fig. Z/04).

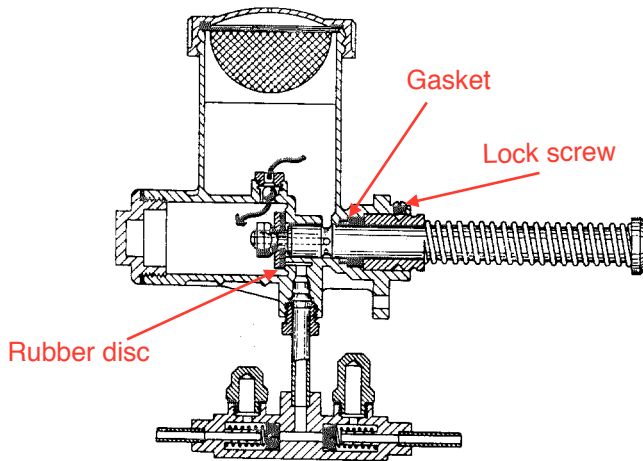


Fig. Z/04

II. Pump in working position.

By strong pressure on plunger the oil intake valve cuts off oil flow from oil container to pump cylinder.

- a) The sleeve of the pump (make Vogel) clears opening of distributor so that oil is forced into the individual oil chambers of distributor by the recuperator piston, thus opening intake valves to the chambers and simultaneously closing outlet openings to lubrication points. The air in the chambers will be compressed by that.
- b) With pump, make Argus, the oil discharge valve in pump cylinder is opened and the oil intake valve closed at the same time. The further procedure is the same as under a) (Fig. Z/05).

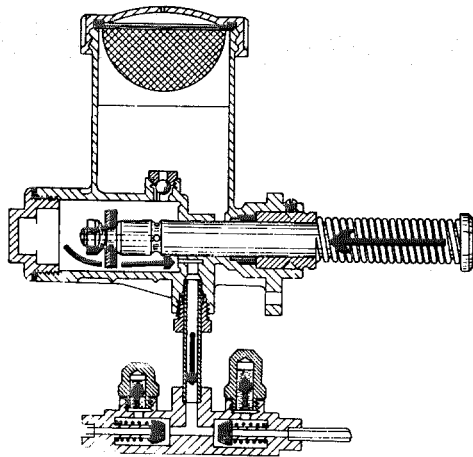


Fig. Z/05

III. When releasing the plunger the following will happen:

With the falling back of plunger a decrease in pressure to zero occurs in the pressure line between pump and distributor. The springloaded valves in the distributor cut off oil intake at once resp. return oil in air chambers to pump cylinder, and clear opening to lubrication points. The compressed air in the chambers forces now the individual lubrication points (Fig. Z/06).

It is useless to depress pump for several times, because the oil in the valve chambers needs some time to reach the lubricating points, and because with more frequently and short pumping the pump becomes hard, and the rubber valves in valve chambers will be damaged due to heavy pressure.

The content of the different screw plugs on distributor determines the oil quantities to the different lubrication points.

Modification of screw plugs is not advisable (Fig. Z/06).

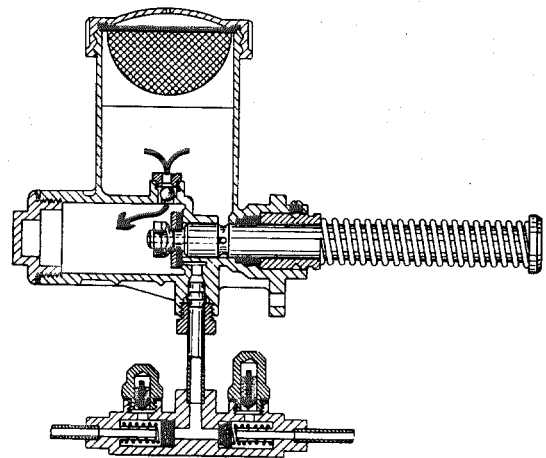


Fig. Z/06

Removal and Installation of Central Lubrication Pump

Types 170 V, Va, S, D and Da

| |
|-----------|
| Assy.-No. |
| Z 1 |

Procedure:

1. Drain oil container.
2. Screw off line.
3. Loosen attaching bolts at dashboard and remove pump.
4. Installation shall be done in reverse order.

Disassembly and Repair of Central Lubrication Pump

Types 170 V, Va, S, D and Da

(See Figures Z/02 and Z/03)

| |
|-----------|
| Assy.-No. |
| Z 2 |

Procedure:

a) Pump, make Vogel:

- 1a) Loosen screw plug. Loosen counternut at gland and remove gland.
- 2a) Screw off valve.
- 3a) Press piston forward and loosen counternut.
- 4a) Remove plunger to rear.
- 5a) Installation shall be done in reverse order. Tighten gland to such a degree only that the plunger automatically returns into its encasing due to spring tension.

Checking and Repair:

After cleaning pump parts thoroughly, the following parts should be checked:

- 6a) Check and, if necessary, replace spring. (Broken or insufficient tension).
- 7a) If pump is leaking tighten gland. Replace gland in case of further leaks and strong wear.
- 8a) If ball valve is leaking or sticking check ball for proper seat. Flush contaminations.
- 9a) Check sealing washer for closing oil intake to distributor. Replace if necessary.

b) Pump, make Argus:

- 1b) Loosen screw plug.
- 2b) Screw off cover of nonreturn valve, remove return spring together with ball.
- 3b) Knock out pin at end of plunger, remove washer and spring. Remove pump plunger to front.
- 4b) Remove ball.
- 5b) Remove gasket.
- 6b) Installation shall be done in reverse order. For installation of ball turn pump. Slide plunger carefully through gasket. When installing ball take care that spring is located under the ball.

Checking and Repair:

- 7b) After thorough cleaning of pump check seat of ball, and recondition if necessary.
- 8b) Check gasket and replace, if necessary.
- 9b) Take care that leakage channel behind gasket is free, otherwise leakage oil might drip into car interior.

Removal and Installation of Distributor

Types 170 V, Va, S, D and Da

The distributors of make Vogel and Argus differ only as to their valves. The valves of the Vogel distributor are spring-loaded rubber washers. When installing distributor take care that the rubber washer is pressed by the spring on the intake opening of supply line.

In the Argus distributor rubber valves according to Fig. Z 5/01 are installed. The open side of rubber valve is turned to discharge line. The cover nuts of distributor should not be exchanged.

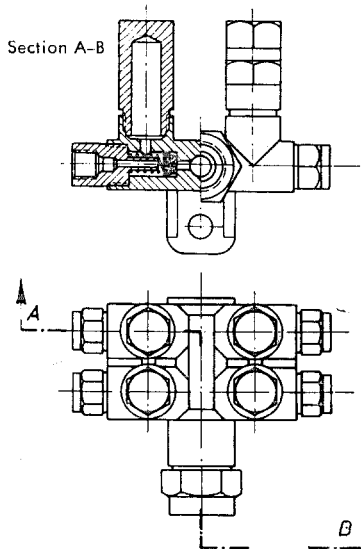


Fig. Z 5/00

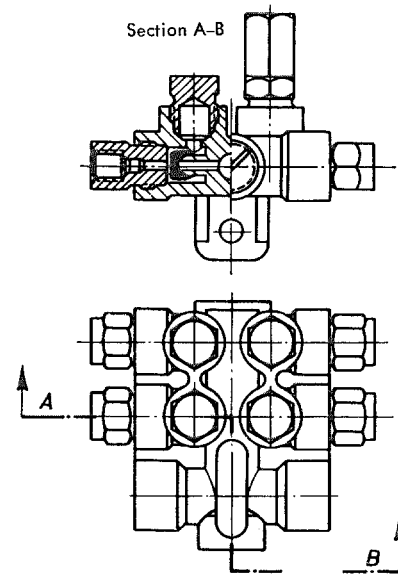


Fig. Z 5/01

Procedure:

1. Disconnect all lines to distributor, and remove distributor.
2. When installing distributor take care that connections will be connected as provided.
3. Actuate central lubrication pump after filling up oil container, and check whether oil reaches the lubrication points.

Note: The arrangement of the distributor in type 170 S can be seen from Fig. Z/01. Considering the lubrication of steering knuckles

and wishbones a distributor is mounted on the end of the right and left steering knuckle as well as in front of right and left frame each (Fig. Z 5/02).

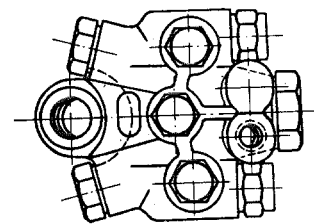


Fig. Z 5/02

If no oil reaches a lubrication point then the line branching off the lubrication point to distributor should be loosened at distributor. Actuate central lubrication pump, and check whether oil is drained at distributor. If so, clean thoroughly line between distributor and lubrication point. Under certain circumstances the connected threaded pin bolt must be disassembled and the oil channels be cleaned. Defective valves in distributor may also be the cause.

When replacing flexible hoses use only original hoses.

Check lines for leaking connections and damages, and eliminate defects, if any.

If the central lubrication oil container runs empty the defect is to be found at the central lubrication pump and at the distributor. In such a case remove pump and check. Remove distributor and replace.

