

## Removal and Installation of Mechanism Inside Compressor

### Data

Designation	Frigidaire, 6-cylinder swash plate compressor, 206.5 ccm, model No. 59 10 763
Max. speed	6,400 rpm
Input at max. compressor speed	approx. 8.5 HP
Lubrication / type of oil	Refrigeration oil (for approved refrigeration oil types refer to pertinent instructions, page No. 361)

### Special Tools

Holding fixture for refrigerant compressor	109 589 00 31 00
Support block for internal mechanism	109 589 01 31 00

### Tightening Torque in kpm

Hex. nuts on studs	2.5 – 3.0
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### Removal

**1** Remove refrigerant compressor and clean outer surfaces (refer to Job No. 83.1–515).

**2** Remove oil plug (3) and drain refrigeration oil from compressor.

Turn compressor shaft several times to drain refrigeration oil more rapidly. **Do not use drained refrigeration oil again** (refer to Job No. 83.0–870, Fig. 1).

**3** Remove clutch plate, pulley, clutch coil and shaft seal assembly (refer to Job No. 83.0–885).

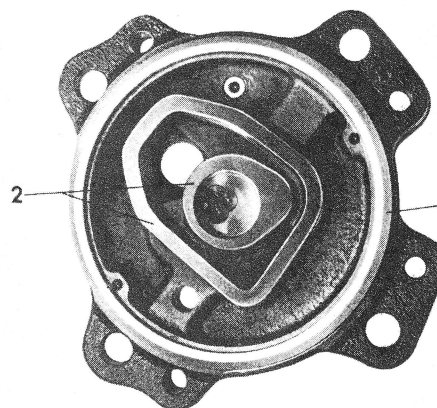
**4** Invert compressor in holding fixture with front end down. Remove hexagon nuts from compressor housing and remove rear headpiece. If headpiece is binding, tap uniformly around headpiece using rubber hammer (Fig. 2).

**5** Wipe refrigeration oil from gasket surfaces of rear headpiece and check gasket surfaces. If any damage is found, replace headpiece (Fig. 1).

**6** Remove suction screen, check and clean if required.

**7** Make identifying mark on exposed surfaces of (inner and outer oil pump gears, then remove gears Fig. 11).

**8** Remove sealing ring between headpiece and housing.



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Figure 1

1 Rear headpiece

2 Gasket surface

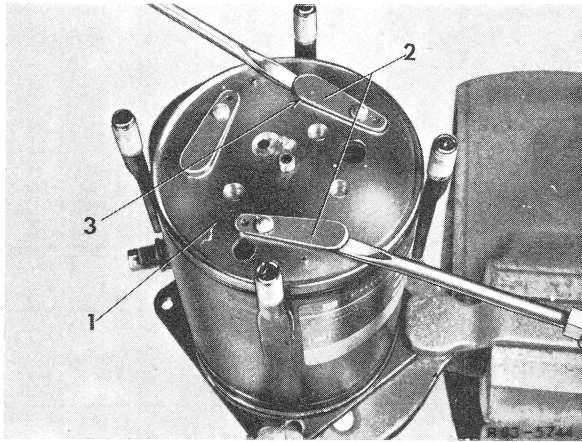


Figure 2 Removing rear discharge valve plate  
 1 Discharge valve plate      3 Discharge valve  
 2 Spring holder

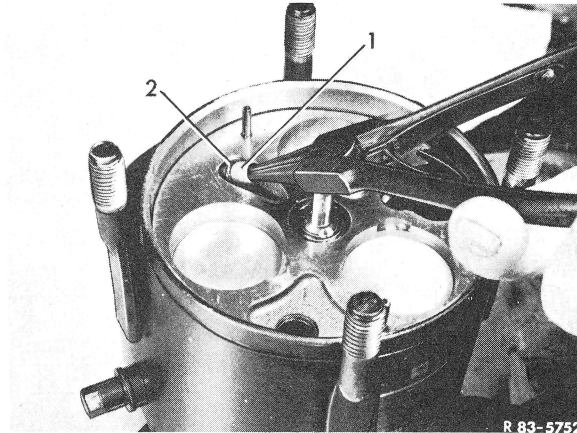


Figure 4 Removing oil intake pipe  
 1 Oil intake pipe      3 Remover  
 2 O-ring

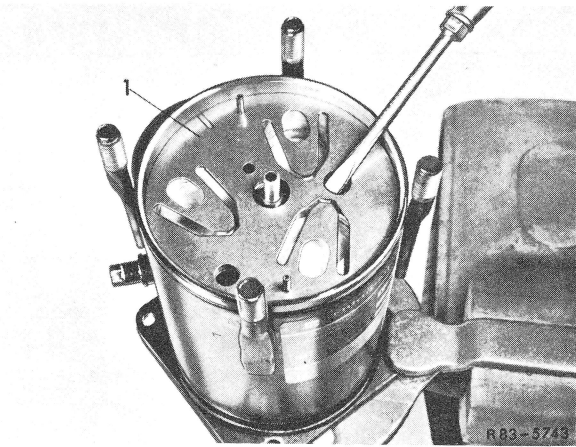


Figure 3 Removing rear suction valve plate  
 1 Suction valve plate

**9** Carefully remove rear valve plates. For this purpose, position two screw drivers under valve holders — not between spring and spring seat — and pry out valve plates (Fig. 2).

**10** Check valve springs and valve seats. In the event of damage, replace entire valve plate assembly.

**11** Remove rear suction valve plate by means of two screw drivers, do not pry up on leaf spring valves (Fig. 3).

**12** Check leaf springs of valve plate for damage and replace, if required.

**13** Remove oil intake pipe (1) and take sealing ring from oil inlet (Fig. 4).

**14** Loosen compressor from holding fixture, place internal assembly support block (109 589 01 31 00) over oil pump shaft. Lift compressor from holding fixture, invert, and position on bench with internal assembly support block resting on bench.

**15** Lift off front headpiece and compressor housing, leaving internal mechanism on support block.

**Caution!** Do not tap on end of compressor shaft to remove internal mechanism. If mechanism will not slide out of compressor housing, tap on front headpiece with a plastic hammer.

**16** Rest compressor housing with front headpiece on its side and push front headpiece through compressor housing, making sure that the sealing surfaces on inside of front headpiece are not damaged.

**17** Wipe refrigeration oil from sealing surface of front headpieces and check sealing surface. If any damage is observed, replace headpiece.

**18** Remove front discharge valve plate and front suction valve plate. Check leaf springs and their seats. Replace necessary parts.

**19** Examine internal mechanism for damage. If major damage is observed (for example seizure marks on cylinder liner) due to loss of refrigerant or oil it is recommended to install a reconditioned or new compressor.

## Installation

- 20** Place internal mechanism on support block (109 589 01 31 00) (Fig. 5).
- 21** Install new dowel pins (2) in front cylinder half, if they were previously removed (Fig. 5).
- 22** Install front suction valve plate (1) on front cylinder half. Align with dowel pins (2), oil return slot and overflow pipe (Fig. 5).

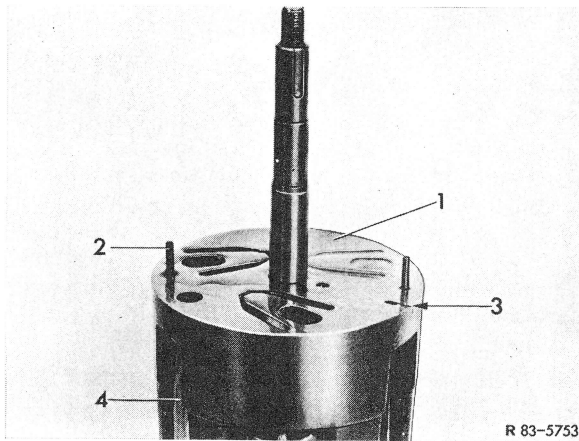


Figure 5  
Installing front suction valve plate

1 Suction valve plate	3 Oil return slot
2 Dowel pins	4 Overflow pipe

- 23** Install front discharge valve plate, aligning holes in valve plate with dowel pins (Fig. 6).

**Note:** The front discharge valve plate (1) can be identified by a large diameter hole in center of plate (Fig. 7).

- 24** Coat sealing surfaces on webs of front headpiece with refrigeration oil.

- 25** Determine exact position of headpiece (1) in relation to dowel pins (2) on internal assembly. Mark position of holes on outer side of front head. Carefully place front head into correct position, making sure that the sealing surface around the center bore of the front head does not touch the shaft (3) when the head (1) is lowered. Do not rotate head assembly to engage dowel pins, since otherwise the sealing surfaces will come into contact with the valve bores (Fig. 8).

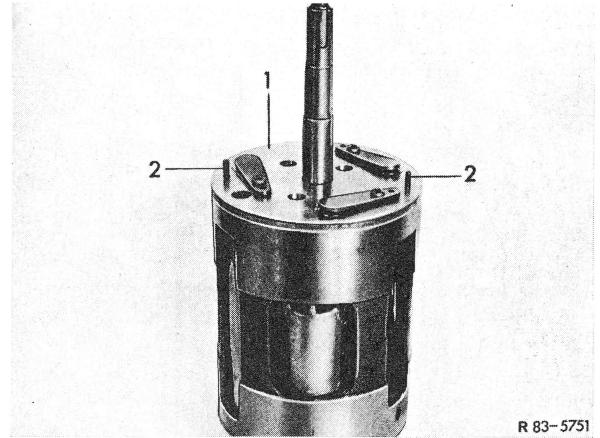


Figure 6  
Installation of front discharge valve plate

1 Discharge valve plate	2 Dowel pins
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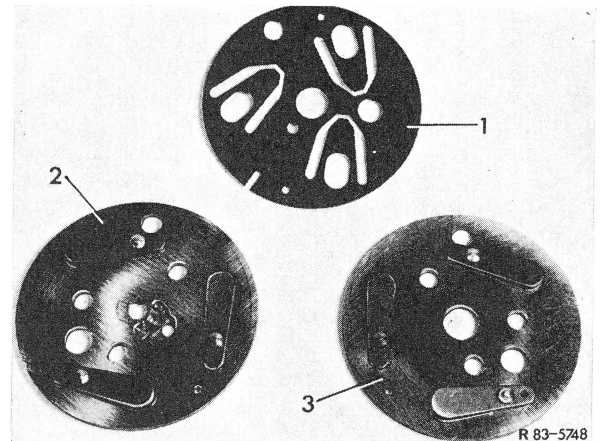


Figure 7

1 Suction valve plate
2 Discharge valve plate rear
3 Discharge valve plate front

- 26** Apply refrigeration oil generously to chamfered groove of lower end of headpiece (1) and insert new sealing ring (2) into groove (Fig. 9).

- 27** Coat inside surface of compressor housing with refrigeration oil and then slide housing over internal mechanism until it comes to rest on sealing ring (3) (Fig. 10).

- 28** Carefully press sealing ring (3) in around circumference of internal mechanism (2) until compressor housing (1) slides down over internal mechanism. Align oil sump (4) with bore (5) when housing slides down (Fig. 10).

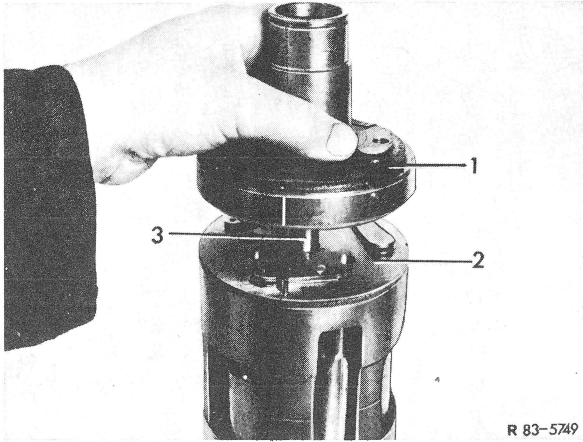


Figure 8  
Installing front headpiece

- 1 Front headpiece
- 2 Discharge valve plate
- 3 Shaft

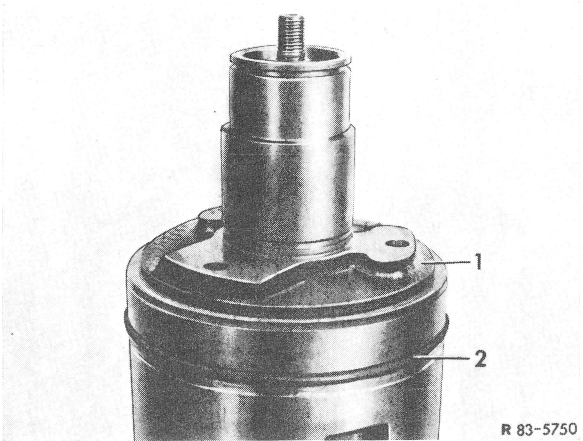


Figure 9

- 1 Front headpiece
- 2 Sealing ring

**29** Hold support block to invert compressor and place into holding fixture. Then remove support block (Fig. 2)

**30** Install new dowel pins in rear cylinder half, if they were previously removed.

**31** Install new sealing ring in bore of oil intake pipe.

**32** Lubricate oil intake pipe with refrigeration oil and install, rotating compressor mechanism until the oil intake pipe (1) is in alignment with hole in housing (Fig. 4).

**33** Install rear intake valve plate over dowel pins with oil return slot in direction of oil sump (Fig. 3).

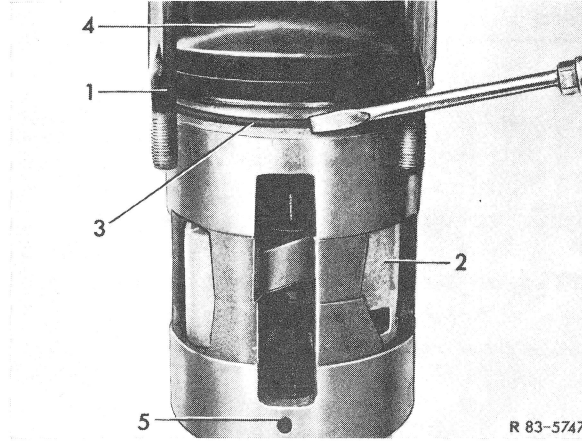


Figure 10  
Assembling compressor housing with internal mechanism

- 1 Housing
- 2 Internal mechanism
- 3 Sealing ring
- 4 Oil sump
- 5 Bore for oil intake pipe

**34** Install rear discharge valve plate over dowel pins (Fig. 11).

**35** Slide inner oil pump gear wheel (1) on shaft, with previously applied identification mark up (Fig. 11).

**36** Slide outer oil pump gear wheel (2) over inner gear wheel (1) with previously applied identification mark up (Fig. 11).

**37** Generously apply refrigeration oil to rear discharge valve plate and around outer diameter between housing and valve plate.

**38** Lubricate new sealing ring (3) between headpiece and housing with refrigeration oil and place on rear discharge valve plate or in housing (Fig. 11).

**39** Carefully install suction screen in rear headpiece. Caution! Do not damage screen.

**40** Coat sealing surface on webs of headpiece with refrigeration oil (Fig. 1).

**41** Install rear headpiece over studs, making sure that the screen does not fall from its seat and that the teflon seal is not damaged.

**Note:** If the rear headpiece will not engage the dowel pins, twist front headpiece and apply manual pressure.

42 Screw hex. nuts to studs and tighten uniformly.

43 Turn compressor around on holding fixture and install shaft seal, coupler, pulley and spring plate (for details refer to Job No. 83.0-885).

44 Fill new cold flowing oil into compressor (refer to Job No. 83.0-870).

45 Check Frigidaire refrigerant compressor for leaks (refer to Job No. 83.0-900).

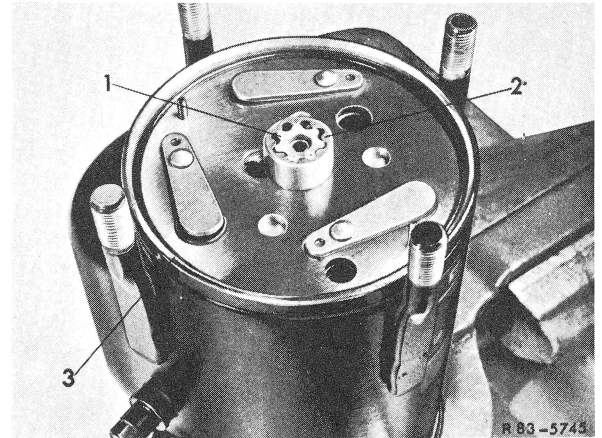


Fig. 11

- |              |                |
|--------------|----------------|
| 1 Inner gear | 3 Sealing ring |
| 2 Outer gear |                |

## Components of Frigidaire Refrigerant Compressor

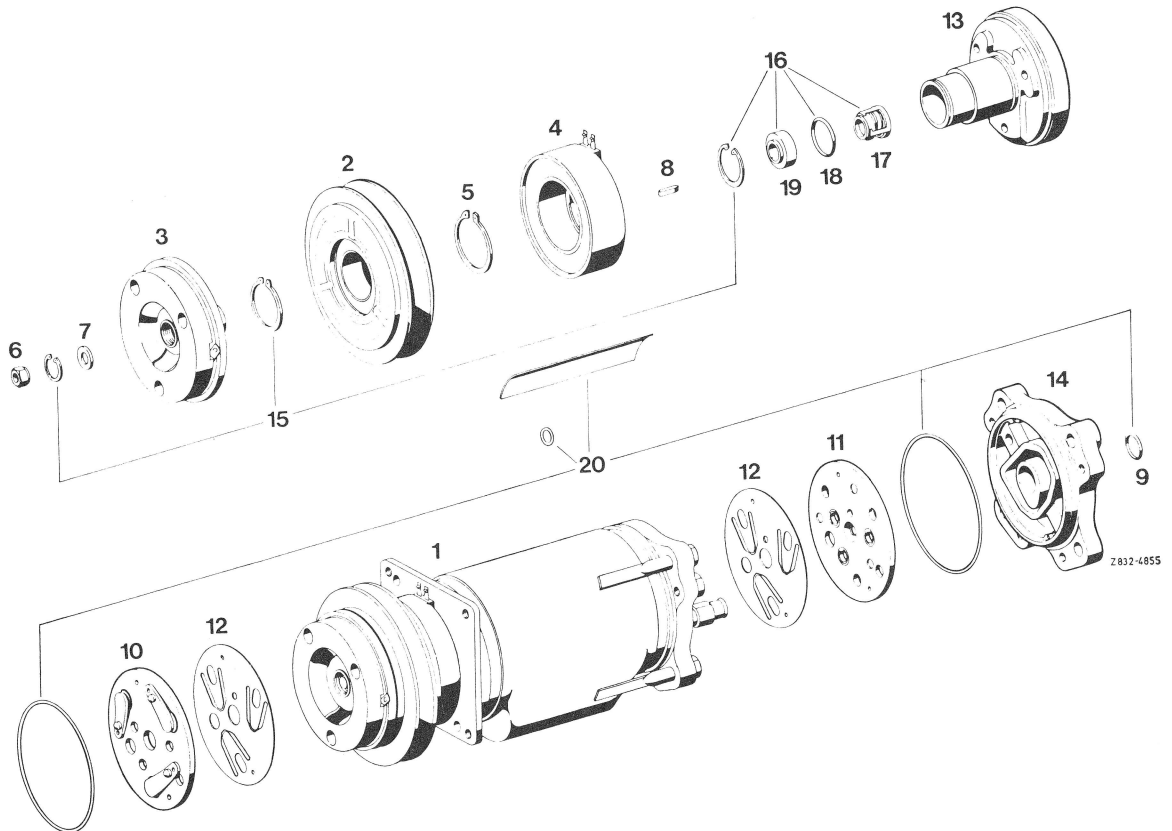


Fig. 12

- |                                     |                             |                       |
|-------------------------------------|-----------------------------|-----------------------|
| 1 Frigidaire refrigerant compressor | 8 Key                       | 15 Locking ring (set) |
| 2 Pulley                            | 9 O-ring                    | 16 Sealing set        |
| 3 Spring plate                      | 10 Outlet valve plate front | 17 Shaft seal         |
| 4 Coupler                           | 11 Outlet valve plate rear  | 18 O-ring             |
| 5 Locking ring                      | 12 Intake valve plate       | 19 Ceramic ring       |
| 6 Counter nut                       | 13 Head member front        | 20 Sealing set        |
| 7 Spacing washer                    | 14 Head member rear         |                       |