

MANN+HUMMEL FM090 Oil Cleaning Centrifuge Maintenance Procedure

Applicable for the FM090-31 Centrifuge

The MANN+HUMMEL FM090 Oil Cleaning Centrifuge should be cleaned at regular intervals ensuring that the thickness of the dirt deposit inside the rotor does not exceed approximately 25mm. This operation is normally carried out after a specified period of operational use and may be combined with other maintenance procedures.

Maintenance Procedure

1. Stop the flow of oil to the centrifuge by either stopping the engine or isolating the centrifuge from the lubricating system by means of a valve. Ensure the centrifuge has come to a complete stop before proceeding.
2. Loosen the band clamp and remove the centrifuge cover. Examine the centrifuge cover O ring and replace if damaged (Kit N°. 6899720101).
3. Allow the oil to drain out of the rotor assembly. This may be assisted by raising the rotor on the spindle. Withdraw the rotor assembly vertically upwards from the spindle. The rotor should be removed and replaced on the spindle with care in order to ensure that the rotor bearings are not damaged.
4. Unscrew the rotor cover nut and separate the rotor cover from the rotor body.
5. Remove the standtube.
6. Remove sludge deposits from the inside of the rotor cover using a spatula. Clean the rotor components using a suitable cleaning fluid. Ensure that all rotor components (including the two nozzles located in the rotor body), are thoroughly cleaned and free from debris before reassembly.
7. Examine the rotor assembly O ring for damage and renew if necessary (Kit N°. 6899720101).
8. Fit a new paper insert (Part N°. 68903330101) into the rotor cover.
9. Reassemble the rotor assembly.
10. Replace the rotor on the spindle and check that the rotor spins freely.
11. Replace the filter cover and band clamp and fasten hand tight.
12. With the centrifuge running, check all joints for leaks.

Important Notes

The MANN+HUMMEL Oil Cleaning Centrifuge is designed to provide extended service without the need to replace major components. However, after extended periods of operation, wear and damage to the centrifuge spindle and rotor assembly may become evident. For this reason it is recommended that the centrifuge spindle and rotor assembly bearings are visually inspected for damage and wear during the cleaning process. If excessive wear or bearing play is evident, the rotor body assembly (Part N°. 6899514101) and/or the centrifuge body assembly should be replaced.

Most FM090 centrifuge assemblies are fitted with a cut off valve (C.O.V.), which is located in the centrifuge body. The C.O.V. is designed to protect the engine by stopping the supply of lube oil to the centrifuge at start-up and during periods when the oil pressure is below the C.O.V. rating. This item is intended to provide maintenance free operation for extended periods and should only be disassembled and inspected for damage if a problem becomes evident.

Installation

Mounting:

The centrifuge must be securely mounted on the engine, ensuring that the cleaned oil is able to drain back to the sump under gravity. A position should be selected that is affected as little as possible by transmitted vibration from the engine and ensuring that there is sufficient headroom for easy removal of the rotor from the spindle. The filter should be mounted vertically where possible; if an angle mounting is necessary, this should not be more than 15° from the vertical.

Oil Pressures:

Oil pressures should be no less than 2.2 bar and a maximum of 7 bar, the preferred range being 3.5 bar to 5.5 bar. An oil feed should be selected as close to the oil pump as possible and preferably before the oil cooler and full flow filter if fitted. The oil feed pipe should be at least Ø9.5mm and the oil drain pipe at least Ø38mm.

Maintenance Action

Every Oil Drain Interval:

- Clean rotor assembly / replace paper insert (Part N°. 6893330101)
- Inspect centrifuge cover O ring & rotor body O ring. Replace if damaged
- Inspect rotor bearings for wear and replace rotor body assembly if necessary
- Inspect spindle for wear and replace centrifuge body assembly if necessary

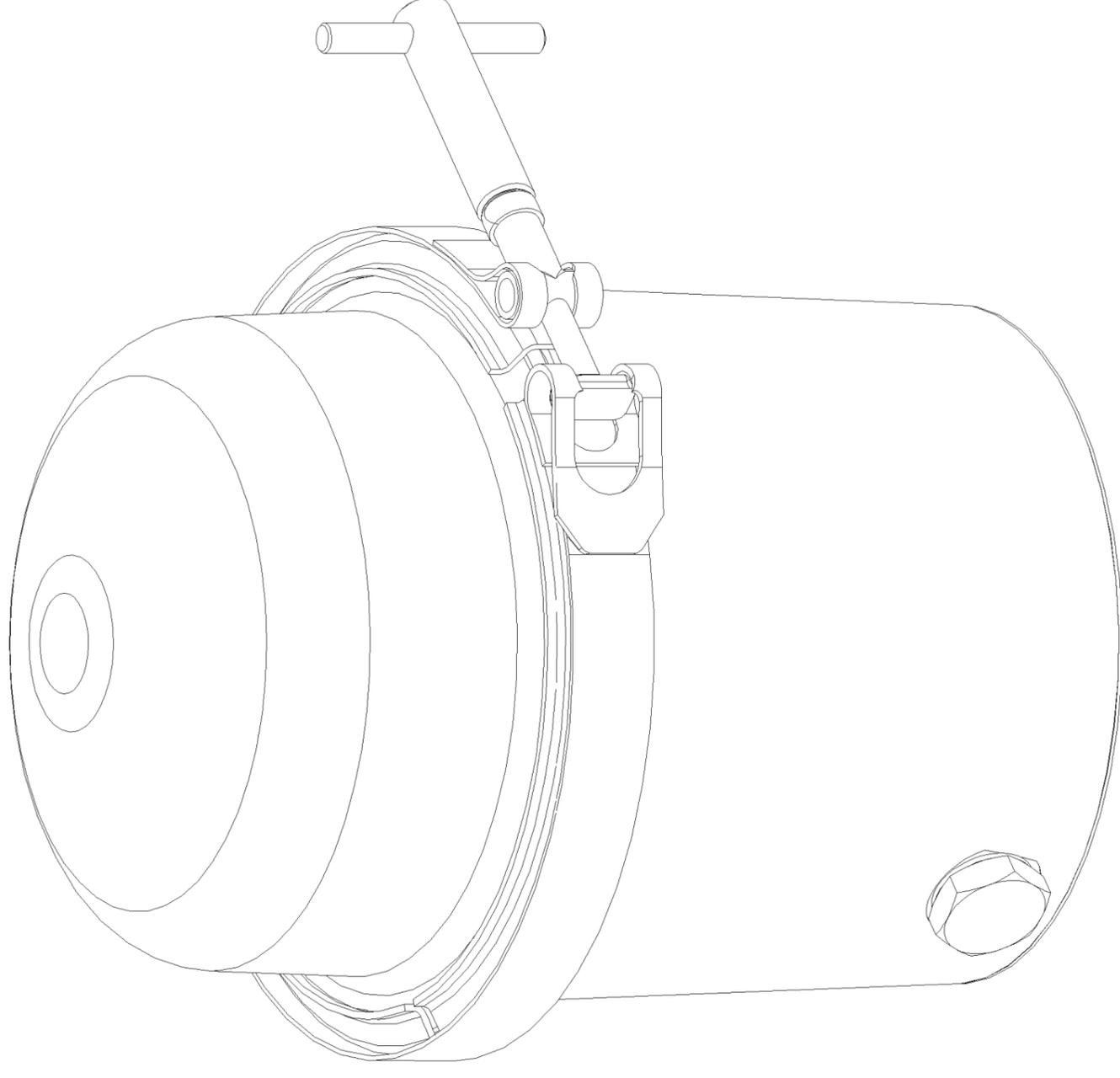
Engine Overhaul:

- Replace Centrifuge

Please note that this should be used as a guide only. Maintenance intervals for the centrifuge are dependant on a number of factors and differ with engine type and operational environment.

OIL CONDITIONING SYSTEMS SPARE PARTS LIST

MANN+
HUMMEL



FM090-31

Spare Parts List

FM090

PART No.	QTY	FM090-31 (6899142101)
CUT OFF VALVE RATING (BAR)		1.3
OIL INLET THREAD SPEC.		3/8" BSP

BODY ASSEMBLY

6899224301	1	●
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ROTOR ASSEMBLY

6899416801	1	●
ROTOR BODY ASSEMBLY	1	●
ROTOR COVER	1	●
STAND TUBE	1	●
ROTOR COVER NUT	1	●
NOZZLE	2	●
PAPER INSERT	1	●

COVER ASSEMBLY

6899312901	1	●
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BAND CLAMP

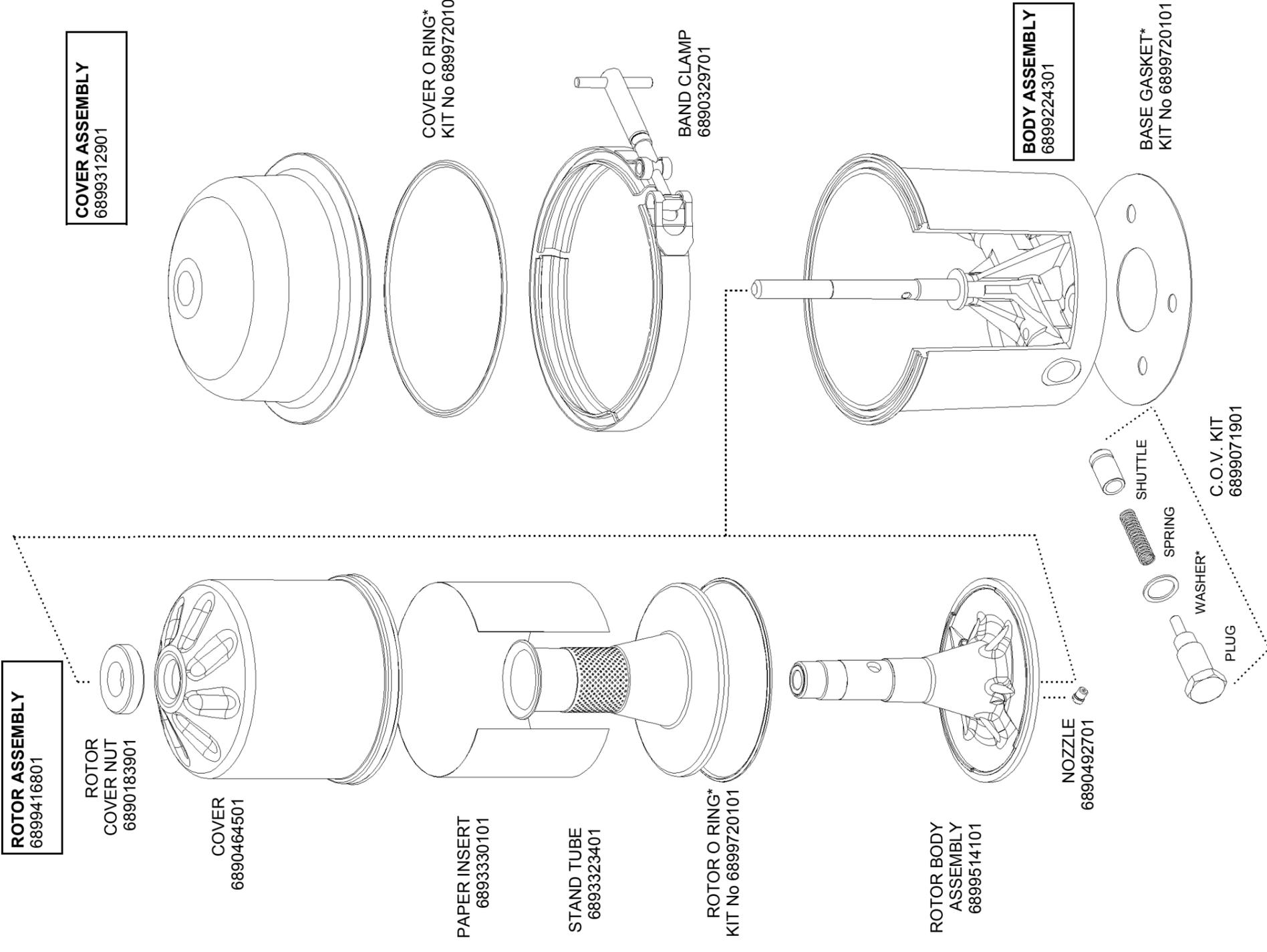
6890329701	1	●
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FM090 KITS

PART No.	QTY	FM090-31 (6899142101)
CUT OFF VALVE (C.O.V.) KIT	1	●
SEALS KIT	1	●

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* SEALS KIT 6899720101 COMPRISES OF: C.O.V. WASHER, COVER O RING, ROTOR O RING AND BASE GAS-