7.0 THE VACUUM PUMP

7.1 USE

7.1.1 LUBRICATION

Before starting, ensure that the Vacuum Pump is filled with oil either for the interior lubrication system or gearbox (overdrive).

For internal lubrication, the min. oil level is stated by the mark at the lower end of the level (fig. 1) which is on manifold and consequently the max. level is at full reservoir.

MEC 6500 - 13500

Fig.1

MEC 6500 -13500

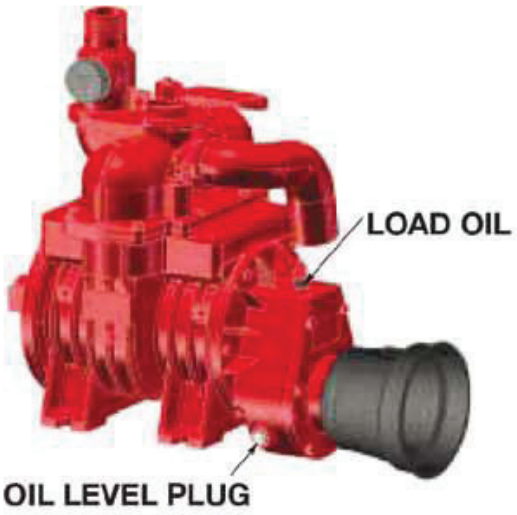


Fig.2

The reservoir capacity is stated on the following table:

Model	MEC 6500	MEC 8000	MEC 9000	MEC 1100	MEC 13500	Star 60	Star 72
Capacity L.	3.1	3.8	2	2.5	3	3.7	3.7

7.0 THE VACUUM PUMP (Con'd)

The overdrive has an oil level plug (Fig. 2 & 4) on the left side of the gearbox and indicates the level of oil to be maintained. For a right lubrication you have always to see the oil on the level.

SE 10000,12000 & Star 60,72

Fig.3

SE 10000,12000 & Star 60,72

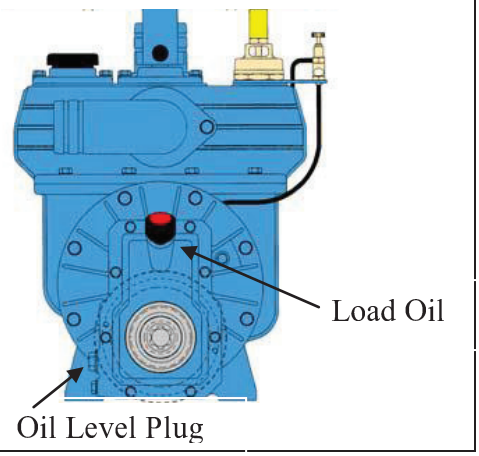


Fig.4

For internal lubrication, the min. oil level is stated by the total length of the cap with oil level (Fig. 3) which is on the rear reservoir and consequently the max. Level is at full reservoir.

7.1.2. OIL TO USE

Reservoir

- The recommended light oil for all seasons is SAE 30 Lawnmower Engine Oil
- Summer: mineral oil Engler viscosity at 50° SAE 20 3.30/6.60
- Winter: mineral oil Engler viscosity at 50° SAE low 2.30/3.30

Gearbox

- The recommended gear oil for all seasons is 80/W90 - approximate quantity in Mec 8000 pump is 0.25 litres!
  Mineral oil Engler viscosity at 50° SAE 60 w 20/26 or SAE 90
  Don't use hydraulic oil or a cleansing for lubrication.
  You can use Ecological oil but with the same specifications of the mineral oil suggested.

7.1.3 OIL QUANTITY FOR LUBRICATION

During work of the vacuum pump check that the regulator drops the following quantity of oil:

Mec 6500-8000	Mec 9000-13500	Star 60	Star 72
40-50 drops/Min	50-60 drops/Min	30-40 drops/Min	35-45 drops/Min

These are valid either for force feed or automatic lubrication.
When necessary, add only new and clean oil in the reservoir.
In the gearbox make a first oil change after 100 real working hours and the next one every 300 real working hours.

7.0 THE VACUUM PUMP (Con'd)

7.1.4 OIL REGULATION FOR LUBRICATION

To regulate the oil fall, as from the above mentioned table, on the pump with force feed lubrication it is sufficient to operate on the regulation unit nut "A" (Fig. 5) after having loosened the nut "B".

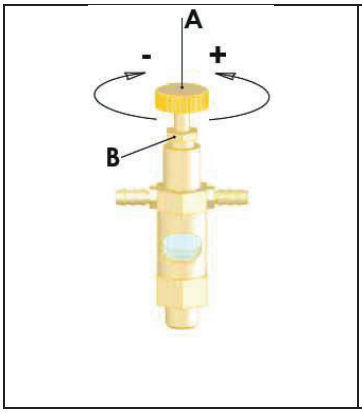


Fig.5

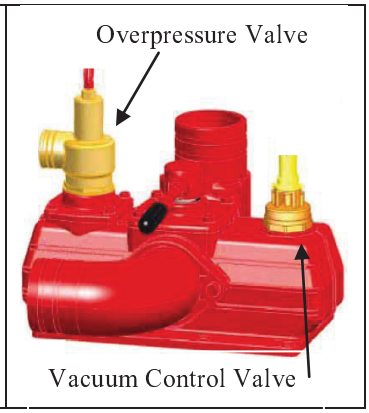


Fig.6

When the regulation is finished clasp again the nut"B".

Oil delivery regulation, on the automatic, lubrication is made in our factory during final test of the vacuum pump.

7.1.5. OVERPRESSURE AND VACUUM CONTROL VALVES

Pressure: The max. pressure allowed is 1.5 BAR on the pump.

To keep this valve and to obtain a lower max.pressure Abbey have fitted a dimensional overpressure valve to release the air capacity in excess of 0.5 BAR.

CAUTION: This valve is factory set but should be checked at regular intervals to ensure the max. pressure isn't exceeded. See section 8 for setting.

Vacuum: Too high a vacuum can cause ovalization and waving of the body or vane breakage. For this reason we suggest the use of a vacuum control valve.

7.1.6. RUNNING TIME

The max. running time we suggest is not over 6-8 minutes.

A longer utilisation time without interruption can cause overheating and also vane damage.

If the utilisation time is extended owing to the density of material to suck, it is necessary to thin or mix the material.

7.1.7. Hydraulic Drive oil flow rates

The oil flow requirement for an hydraulic driven Vacuum pump is:

- 64Ltr/min for Mec9,000 to reach 12000rpm
- 107Ltr/min for Mec11,000 & Mec13,500 to reach 1200rpm

7.0 THE VACUUM PUMP (Con'd).

7.2 MAINTENANCE

7.2.1 VALVES

Check periodically that float and safety valves placed on the tank are in perfect working order.

7.2.2VANES

Check the wear of the vanes placed on the vacuum pump and replace the complete set when the height is sensibly reduced (about 10-15% of the original height). Vane sizes for vacuum pumps.

In order to check the state of wear of the blades found in the Exhauster! Compressor, proceed as follows:

- remove threaded inspection plug
- rotate the rotor until a blade is aligned with the inspection hole;
- measure the distance between the external surface of the rotor and the external side of the blade;
- if this distance is greater than 10-15% of the original height of the blade, replace the complete set of blades.

IMPORTANT: before inserting the new blades, carefully check their size and, if necessary shorten them until they are the same length as the rotor.

Model	Blade Number	Dimensions
Mec 6500	7	370x46.5x6.3
Mec 8000	7	450x46.5x6.3
Mec 9000	5	300x60x6.5
Mec 1100	5	370x60x6.5
Mec 13500	5	460x60x6.5
Star 60/SE 10000	6	350x70x7.5
Star 72/SE 12000	6	400x70x7.5

7.23 WASHING

Washing of the pump internal with diesel oil is recommended during the working day. If slurry gets into the vacuum pump it is necessary to immediately wash the internal pump by sucking gas oil (approx. 1/2 litre) through the exhaust elbow with the pump handle on spread position. You have to make the same operation when the vacuum pump stops working for a long time.

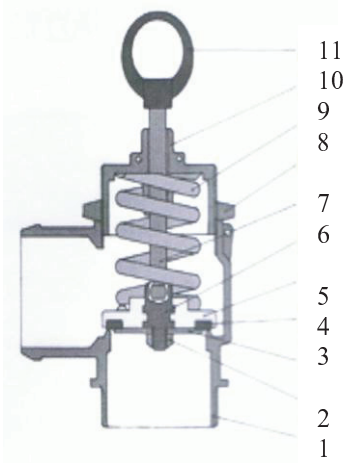
Item	How	When?
Check oil Adjustment	Inspect the level sight glasses	Daily
Check oil level on the tank	Use the oil level on outside of tank	Weekly
Check the blades wear	Remove threaded plug	Every 300 working hours
Check that the over-pressure and vacuum regulator valves are working correctly	Remove valves	Weekly
Oil Tank washing	Remove tank	Yearly
Wash body (Internally)	Put in oil + diesel oil (after washing lubricate with oil only)	Daily or whenever manure enters or when inactive for a long time

Wash lubrication pump	Use a brush and compressed air	Once a year or for prolonged inactivity
Check that the overflow valves are working correctly	Remove valves	Monthly
Lubricate the power take-off	Oil the P.T.O. with a brush and lubricating oil	Monthly
Wash and clean the valves	Remove valves	Monthly

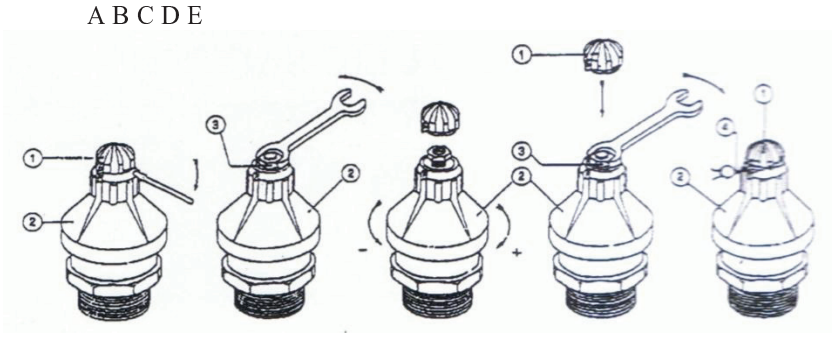
7.2.4 Setting of blow off valve/decompression valve

It is essential that the blow off valves are set to the correct pressure when the pumps are being tested.
The setting procedure is as follows:

- Loosen the locking collar (No. 8 in the diagram)
- For increased blow off pressure turn the threaded section (No.10 in the Diagram) in a clockwise direction.
- For decreased blow off pressure turn the threaded section (No.10 in the Diagram) in a anti-clockwise direction.
- Tighten the locking collar and check that the blow off pressure is correct.



PROCEDURE FOR THE SETTING OF THE DEPRESSION VALVE



A. Take off the cover (1) from the adjusting bell (2) by using the point of a screwdriver in the special incision.
B. Loosen the stop set nut (3) by holding firm the adjusting bell (2).
C. Regulate the pressure on the spring by turning the adjusting bell (2).Turn in clockwise for increasing the pressure and turn in anti-clockwise for reducing it. During this operation it is necessary to avoid the rotation of the stern acting with a screwdriver in the special incision that you find in the stem.
D. As soon as the regulation is completed, screw again the stop set nut (3) by holding firm the adjusting bell(2). The set nut must be screwed with a screwing torque of 10Nm (at least). Insert the cover (1) with pressure on the adjusting bell (2).
E. Put the setting-seal by tieing with a wire (4) the cover (1) and the adjusting bell (2), and finally apply the plumbing.