Exhaust oil mist filter service for PVR EM20/B vacuum pump

A very fine filter is fitted inside the exhaust cavity of the vacuum pump. (Position 34 on the exploded parts drawing following). In heavy use, with insufficient oil changes, or with contamination in the incoming air stream this filter may block. Blockage of the filter may show up in the following ways:

- Electric motor overload tripping out (especially on start-up)
- Oil becoming black and replacement oil discolouring rapidly.

Exhaust oil mist filter replacement
With reference to the exploded parts drawing following.

1. If the pump oil is dirty, first run the pump until hot - ideally about 1 hour. Stop the pump and drain the oil by removing the drain plug (#39), using a 22 mm (7/8") hex spanner.
2. To maximise oil drainage of dirty oil, lock the castors at the pump end of the machine and lift the handle side of the machine.
3. Barely loosen the four cap screws (#45) on the exhaust box cover plate (#43).
4. Give the cover (#43) a sharp sideways tap with a soft faced hammer to break the paint film over the gasket which seals the cover to the exhaust box casting. This will reduce the risk of breaking the gasket (#44) when the cover plate is removed.
5. Completely remove the 4 cap screws (#45.)
6. Remove the cover plate (#43), taking care not to damage the gasket.
7. Unscrew the oil mist filter element using a 10 mm AF Allen wrench.
8. Discard the old filter. (It is not cleanable.)
9. Fit a new exhaust oil mist filter and reverse the disassembly procedure.
10. If the oil has been previously drained, fill the pump with 0.5 litre (1 US pint) of clean oil as follows:

In ambient temperature range	Use oil viscosity grade
10^0C to 40^0C (50^0F to 100^0F)	ISO68 or SAE20

The machine should now be ready for use.

Regular oil changes important

Regular oil changes will help prolong the service life of the exhaust oil mist filter. The oil should be changed whenever it is noticeably discoloured, or every 500 hours, whichever is the sooner.

Gas ballast filter maintenance for PVR EM20/B vacuum pump

Mounted on top of the pump is a small external filter (item 47 on the exploded parts drawing). Its purpose is to introduce a small flow of filtered air into the pump to help discharge contaminating vapours such as water vapour and styrene vapour from the pump. In dusty atmospheres, this external filter may block. When the gas ballast filter becomes blocked the pump oil will contaminate more quickly. In most environments, the gas ballast filter should be cleaned annually. In very dusty atmospheres, more frequent cleaning may be necessary.

To clean the filter.

1. Using compressed air, first blow all loose dust from all external surfaces of the vacuum pump – including around the gas ballast filter.
2. Unscrew the gas ballast filter (#47).
3. Blow the filter clean with compressed air from the inside and check that air passes freely through the filter.
4. Replace the filter.