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# Loadpoint Bearings Knowledge Base

*General Advice on Air Supplies and their Maintenance*

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## General Advice on Air Supplies and their Maintenance

The continued reliable performance of the spindle is dependent on its air supply. The following is Loadpoint's recommendations for the air supply equipment and maintenance. Please also refer to the drawing above.

### TYPICAL FILTER SETUP

We recommend a three filter arrangement as shown in the figure above.

The first filter we recommend is a pre-filter and regulator. This filter should be a maximum 5 um particle size. Finer filters can be used (1 um particle size) though it is important that any filter is maintained to stop clogging and therefore air starvation of the spindle. We normally fit an auto drain 5 um filter which has an indicator built into the top. The indicator changes color when the flow becomes low at which point the filter cartridge should be changed. Please note that we do not recommend the use of ceramic elements since they cause contamination if the elements are damaged in transit. The pressure regulator should be fitted to maintain 80 p.s.i. (5.5 bar) line pressure.

The second filter unit we recommend in sequence is an activated charcoal element type to absorb any remaining oil vapor in the air supply. It is important to remember that nothing will ruin air bearing spindles quicker than oil vapor condensing in the tiny air jets and so blocking the fine clearances in the spindle.

Air supplies are ideally taken from an oil free compressor or a rotary screw type unit with subsequent freeze drying into an expansion chamber. Air lines should ideally be new to avoid any possibility of contamination. Air line fittings should not use sealing tape, which can (if used carelessly) put tape particles into the downstream air supply, which could then block the vital air jets.

A pressure sensitive electric switch should be fitted between the filters and the spindle to sense any reduction in air pressure due to partial filter blockage. The pressure switch should be set to 70 p.s.i., the spindle drive will then be automatically turned off. This will protect the spindle by stopping its use on low air supply pressure. An audible or visual signal is also valuable to alert the machine operator to a malfunction.

In general, it is important to remember that the cleaner the air, the longer the air bearing spindle will last.