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# AIR CLEANING SYSTEM



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# AIR CLEANER

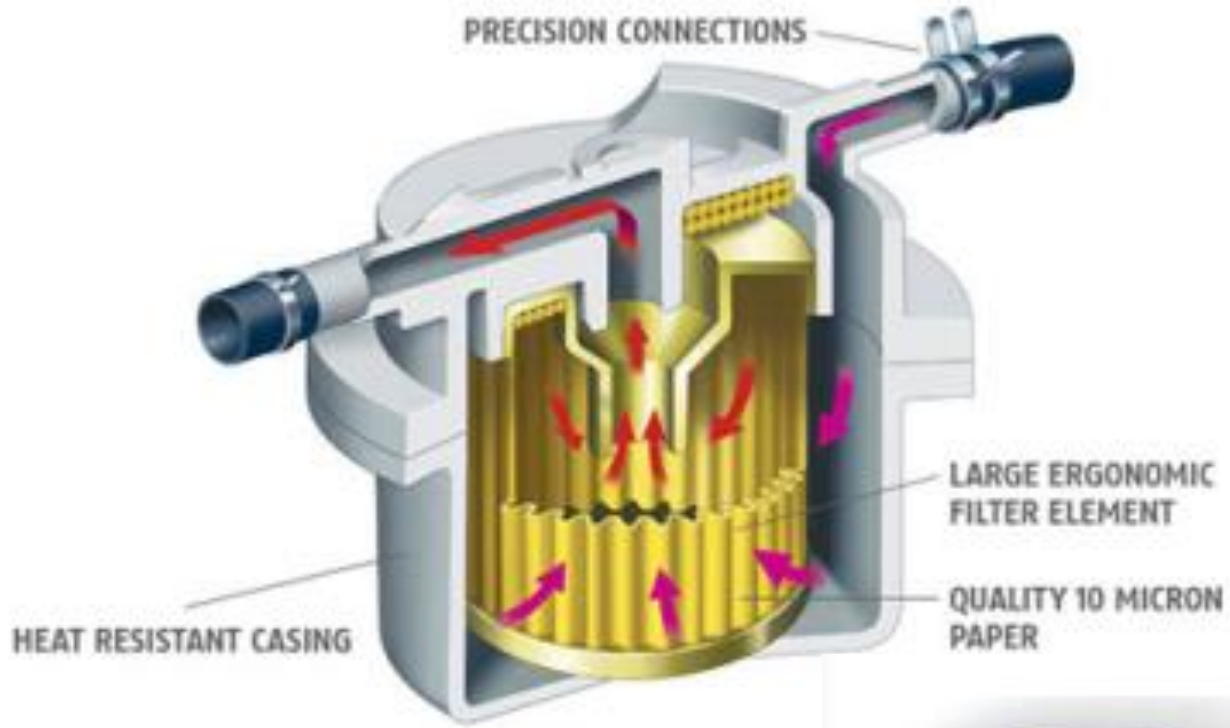
The operating efficiency, good performance and durability of an engine depend mainly upon its cleaner.

It is a device, which cleans and filters the air before entering the combustion chamber of an engine.

Unfiltered air may contain millions of particles of abrasive dust and other matter, which could cause rapid wear.

There are many types of air cleaners but the types commonly used in tractors are:

- (i) Oil wetted mesh type,
- (ii) Dry air type and
- (iii) Wet type or oil bath air cleaners





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## OIL WETTED MESH AIR CLEANER

It consists of a copper mesh or nylon wire wetted with oil to catch the dust particles from the air which are made to pass through it.

This type, however, gets clogged with dust quickly, thus, seriously affecting the air flow through it and rendering it inefficient in removing the fine particles of dust from the air.





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# DRY AIR CLEANER

This type of air cleaners contains three main parts, viz. pre-cleaner, main housing and cleaning element. These are sealed into one unit.

The main housing contains the cleaning element, usually of multi-wire netting, but some are made of nylon hair or paper.

The air from the atmosphere enters from the pre-cleaner, passes through the cleaning element and goes to the inlet manifold.



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The following are the advantages of the dry air cleaner:

1. Easy to service.
2. Good performance in gradient and in rough fields.
3. More efficient at high speeds.
4. Straw and chaff cause less restriction to air passage.

**Its main disadvantages are:**

1. It is costlier to maintain than an oil bath because the filter elements require replacements very often.
2. Sometimes, dust particles enter the cylinder.





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# OIL BATH AIR CLEANERS

The main difference between a dry and oil bath cleaner is that in the latter type, oil is used for cleaning air.

Water bath cleaners were also in use in earlier times. But now the oil bath cleaner have come into more common use.

This type of cleaner operates on the principle of having the air with dust enter the intake stack, pass down the inlet passage over the oil surface, where some of the oil is picked up, atomized and carried up into a separating screen.



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As the air passes through a screen (filter) most of the remaining dirt is attached to the oil wetted surfaces and drains back into the sump.

The air outlet is on the side through which the clean air enters the cylinders. In the bottom a removable cup is fitted for convenient cleaning and servicing.

Oil bath air cleaners are always mounted vertically to the engine, thus the oil remains in the cup at the bottom of the cleaner.

It is often mounted either in front of the radiator or by the side of the engine.





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