CFT
Centrifugal Filtration Technology

RAM 4x4 FILTERS

Our Revolutionary New 4x4 Filter Extends The Life of Your Filter Media By Between 7 to 9 Times.

The benefits of the 4×4 CFT system include:

- Extended Filter Life
- Reduced Silica Levels In Engine Oil
- Reduce Possible Mistakes During Filter Replacements
- Reduced Downtime
- Reduced Maintenance/Operational Costs
- No Moving Parts

Why do you need the RAM 4 x 4 Pre-Filter?

By fitting this pre-filter, the dust load onto the engine's air filter is reduced 8-10 times, reducing costly air filter changes and therefore reducing maintenance.

How does the RAM 4 x 4 Pre-Filter work?

Inside the housing, is a cassette, consisting of 2 aluminium plates, sealed off with a shroud in the middle and a plastic dustbowl at the bottom that is kept in place with a spring-loaded wire. This cassette contains 16 or 30 axial patented cyclone tubes.

These 16 or 30 tubes are identical and consist of 3 parts:
1.) Vortex generator.
2.) Tube.
3.) Mouthpiece.

The vortex generator and the mouthpiece are fitted in the tube aligning them perfectly. As engine sucks air through the inlet Snorkel and fitted RAM 4 x 4 Pre-filter, dust-laden air is forced to follow the curves of the 4 bladed vortex generator, this induces a swirl and due to centrifugal force, the dust particles are forced to rotate close to the inner wall of the tube.

Due to the axial flow through the tube, the dust keeps on rotating close to the inner wall as it moves to the back of the tube where the smaller diameter mouthpiece is situated. Being of smaller diameter than the tube, most of the dust particles bypass the mouthpiece to be ejected at the end of the tube at a scavenge opening by the centrifugal force.

Once they are out of the tube, they are subjected to gravity and falls through the cassette, to be collected in the clear dust bowl. With an average efficiency of 93% (based on SAE Coarse dust) the dust load on the air filter is reduced dramatically, resulting in extended life.

Can the RAM 4 x 4 Pre-Filter be fitted to any "Snorkel" system?

It can be fitted to any inlet with the following provisions:
1.) The inlet must be of the circular type with an outside diameter of 101 mm or 89 mm.
2.) The inlet must be vertical.

What maintenance is required on the RAM 4 x 4 Pre-Filter?

The product has no moving parts that can "wear out". The dust bowl has to be emptied when the dust level reaches the maximum level as indicated by the red sticker on the bowl.

Fitment of your 4x4 Pre-Filter

Before attempting to fit the 4x4 pre-filter on the vehicle inlet. Confirm that the stack pipe diameter corresponds with that of the inlet. This will ensure an airtight fit, necessary for optimum air filter life. It is preferable that the unit faces forward into the air to harness the dynamic air pressure created by the forward motion of the vehicle. The 4x4 pre-filter should be fitted in such a way that the axial cyclones are in a horizontal plane. A slight deviation won't matter as long as dust is able to gravitate into the dustbowl.

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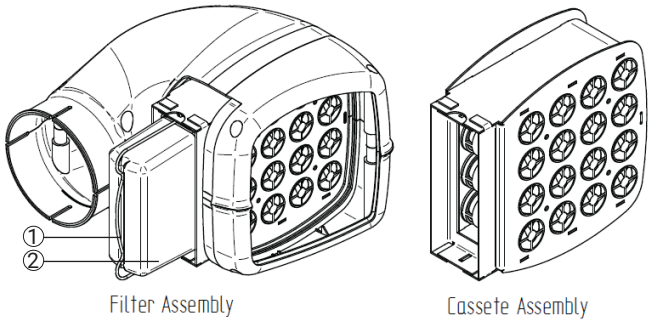

What daily or weekly maintenance is required?

The 4x4 pre-filter have no moving parts and therefore need very little maintenance, except the dustbowl that needs to be manually emptied once the dust level reaches the "full level". This should be done daily or even twice a day, depending on the atmospheric dust conditions. In adverse rainy conditions, it would be advisable to turn the inlet away or even backwards from the driving direction in order to avoid excessive water ingress.

Is it easy to empty the dustbowl?

The dustbowl is easily unclipped to allow you to empty the dustbowl regularly.

Do I need to clean the inlet screen.

The inlet screen is designed to keep foreign objects like insect, pieces of cloth etc, from entering the cyclones and clogging the system. To clean the inlet screen, gently clean with a hair brush. If it is severely clogged, the 4x4 pre-filter should be removed and submerged in a mild soap solution. The dustbowl must then be removed and all cavities be sprayed with a garden hose in order to remove all clogging. Once completely dried, the dustbowl fitted, it can be refitted.

TEST CASE - 4×4 Pre-Filters On a Coal Mine

Coal mining creates an exceptionally dusty environment, because of this-this mine has experienced a number of vehicle breakdowns where standard air filters block up very quickly in the pit. These blockages cause filter media to tear allowing dust into vehicle engines.

A South African coal mine decided to test the new CFT 4×4 pre-filter. The test was to establish if the pre-filter could extend the life of their existing air filters and eliminate potentially catastrophic failures. The CFT pre-filter was fitted along with a snorkel to one of their Toyota Hilux vehicles.

With the harsh conditions in the pit, dust tends to hover in the air just above ground level. Although vehicle manufacturers say an air filter should be changed every 20000 km, the filters, in fact, had to be replaced at about 7000km to cope with the excessively dusty conditions.

The CFT air intake is elevated on a snorkel moving it away from where the majority of the dust is situated, thus reducing the dust load on the filters. The CFT high-efficiency pre-filter catches most of the dust before it gets to the air filter, thus extending the life of the air filter. The CFT system has a dust trap that is easily emptied and cleaned, it does not have any filters that need to be replaced.

The CFT test unit installed is currently on over 47 000km, thus extending the life of the air filter so far more than 7 times.

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