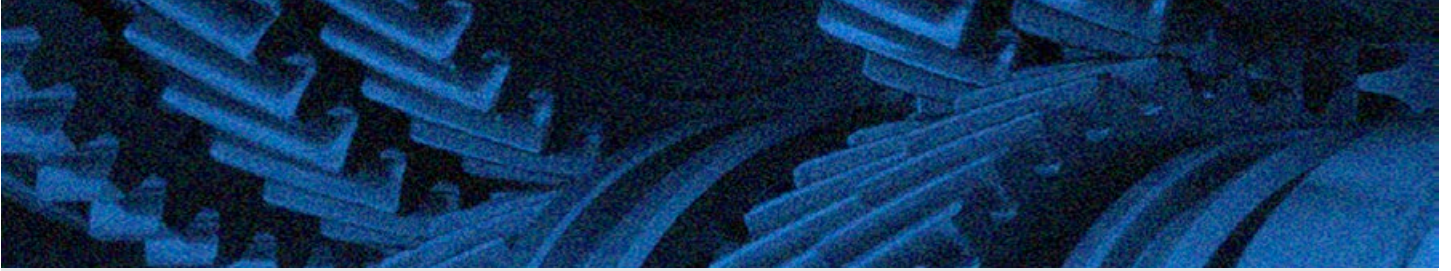


**FILTER**  
TECHNOLOGY

cleaner fluids mean better business



# capability statement

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## Background

**Filter Technology Australia Pty Limited (FTA)** is a privately owned Australian company with its Head Office located at Thornton, in the State of NSW, Australia. Thornton is an industrial area close to the sixth largest city in Australia – Newcastle – which is located approximately 140 kilometres (100 miles) north of Sydney.

The Shareholders of FTA are experienced operators of a range of industrial businesses involving coal mining, transport, quarrying, minerals refining, property, and construction engineering. All of these businesses depend on the operation of industrial plant and equipment.

Through the continued involvement in these businesses by the Shareholders, considerable focus was applied in lowering operating costs, reducing unplanned stoppages of equipment and improving equipment performance generally. In operating these businesses in harsh environments they learnt that poor oil and fuel condition was a significant factor in accelerating component wear in the equipment.

In a drive to achieve their goals of lowering operating costs, reducing the incidences of unplanned stoppages and improving equipment performance they turned their focus to improving filtration systems. This led to the acquisition of the original depth filtration patent and the subsequent refinement of the filtration methods, manufacturing processes and commercialisation of the ensuing products.

The products developed by FTA have since been installed in the various operating businesses of the Shareholders with resounding success.

Hundreds of test programs have been conducted in various industrial applications with demonstrable improvements in filtration performance.

Filter Technology Australia products are manufactured to the highest standards in a quality controlled environment.



## Core Business

The core business of FTA is the design and manufacture of 'ultra-fine' filtration systems for applications in industrial processes and equipment operation. Installation, service and ongoing support for FTA products is provided by a network of appointed dealers.

### **Why oil/fuel cleanliness is important for your equipment**

Contaminants in lubricating oils and fuels generate wear and if not removed will contribute to accelerated component wear. Correct filtration is important to maintain targeted cleanliness levels. Extensive research shows that even oil delivered 'new' can be unacceptable to machine longevity and performance.

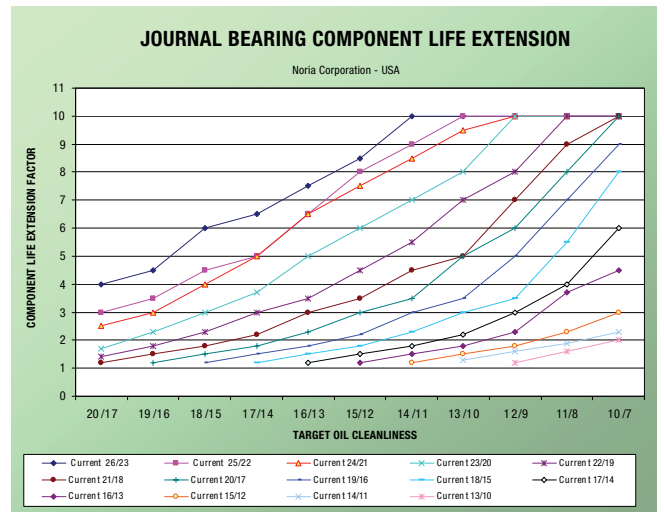
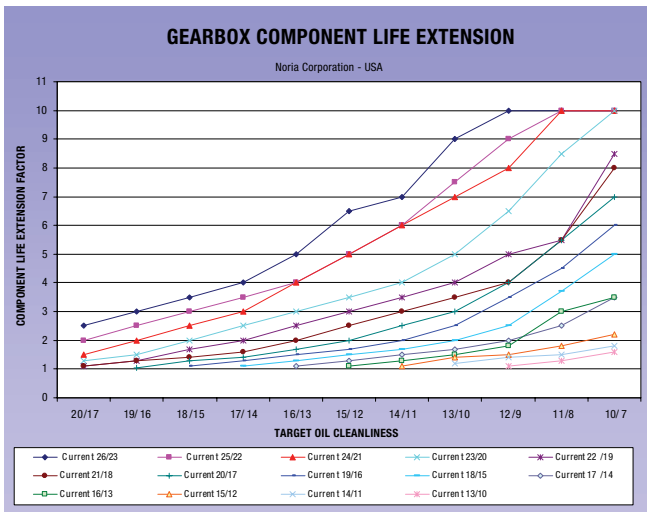
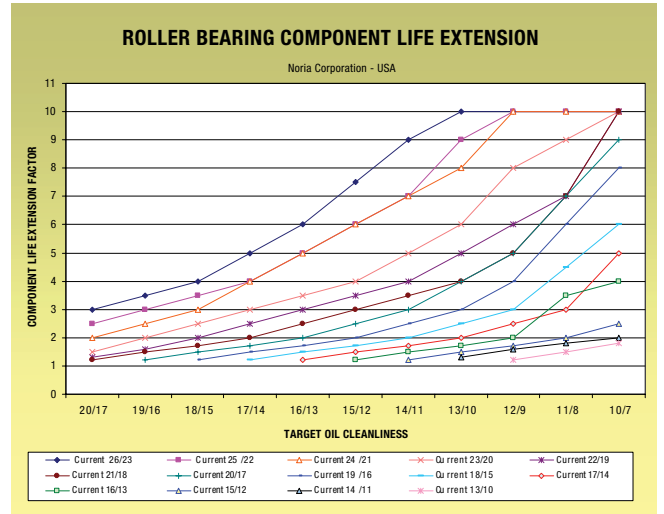
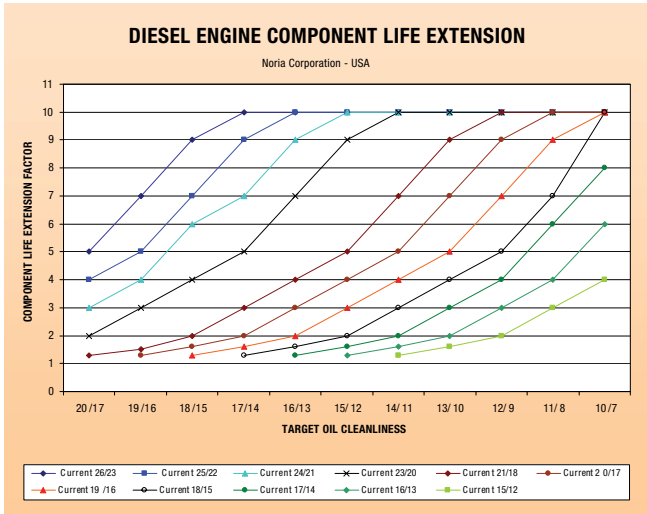
Cleanliness is determined by counting the amount and size of particles in the operating fluid. The ISO Solid Contaminant Code ISO 4406 is the single most widespread system for representing contaminant particles. The ISO system recognises an index such as 15/12. The first digit represents the total number of particles greater than 5 microns (in this example – 15) and the total number of particles larger than 15 microns (in this example – 12).

### **What benefits do I get from improved filtration?**

The British Hydromechanics Research Association (BHRA) conducted a three-year research program of 117 hydraulic machines that showed conclusively the correlation between the particle size of foreign material found in the hydraulic oils and the average hours between component breakdowns. It showed clearly that for a reduction in particle size (as measured by the ISO 4406 standard) the relative life of the machine could be dramatically increased. The research concluded by deriving factors that represent the increase in the average life between breakdowns, hence representative of component life.

Similarly, the Noria Corporation of USA has conducted in depth research into this correlation between oil cleanliness and component life. Through its research it has shown that by improving filtration from existing oil cleanliness conditions (determined by the ISO reading) life extension factors were derived. These are represented by the charts shown on page 2 for diesel engines, journal bearings in turbo machinery, roller bearings and gearboxes.

## Correlation between oil cleanliness and component life



All figures published by Noria Corporation of USA.

As can be seen the multiples involved in extending component life are very high, but conditional upon achieving higher levels of cleanliness of oils. This is where FTA products excel.

As a consequence of this research, and numerous other trials conducted, FTA has developed 'ultra-fine' filtration technology that has proven to easily reduce particle size down to 15/12 or below, thereby offering optimum protection for engines and mechanical components that use hydrocarbon fluids.

To capture the wide range of filtration applications for fuel and oils FTA have developed a series of products and services as shown on page 3:

## FTA Services

FTA dealers can inspect and test your existing equipment and/or industrial processes and make recommendations to improve the filtration and hence performance of the equipment.

After recommendations have been reviewed and agreed the follow up services include detailed design and installation of the optimum filtration system.

FTA has perfected a range of ultra-high filtration products:

## FTA Products

### Engine Fuel Filtration:

**FM3101** – are suitable for use on small diesel engines, typically used on forklifts (under 5t), trucks (2-4t) and agriculture equipment (less than 50HP).

**FM3102** – are suitable for small to medium sized trucks (4-8 ton), forklifts (5-12 ton) and agricultural or earthmoving equipment in the range of 50-200HP.

**FM3103** – similar to FM3102 but in the range of 200-500HP.

**FM3104** – are suitable for use in multiples of larger fuel installations that involve typically fuel pumps (bowsers).

### Engine Oil Filtration:

**FM3001** – are suitable for use on small diesel engines, light trucks, gearboxes, lubricating and hydraulic systems.

**FM3002** – are suitable for small to medium sized trucks, forklifts, agricultural equipment, earthmoving equipment and generating sets.

**FM3003** – are suitable for use on diesel engines in the range of 25-500HP in applications involving trucks, earthmoving equipment and generating sets.

**FM3004** – are suitable for use on gearboxes, lubricating systems of 100-200 litres capacity (22-44 gals) and hydraulic systems of 400-800 litres (88-176 gals) in injection moulding machines, crusher lubrication tanks and marine engines.

### Industrial Oil & Fuel Filtration:

**FM3201** – are suitable for use on backhoes, forklifts under 5 ton, trucks (2-4 ton), agricultural equipment up to 37 kW and hydraulic systems up to 100 litres.

**FM3202** – are suitable for agricultural or earthmoving equipment, forklifts (5-12 ton) and hydraulic systems 100 - 200 litre capacity.

**FM3203** – are suitable for agricultural or earthmoving equipment, and hydraulic systems 200 - 400 litre capacity.

**FM3204** – are suitable for agricultural or earthmoving equipment, and hydraulic systems 400 -800 litre capacity.

### Automotive oil and fuel:

**FM1 Series** – for use in fuel and oil filtration in automotive applications.

### High Capacity, High Flow Oil Filtration:

**FM40245** – used in crusher lubrication systems, gas turbine lubrication, injection and blow moulding machines up to 150litres.

**FM40345** – used in crusher lubrication systems, gas turbine lubrication, injection and blow moulding machines up to 400litres.

**FM40445** – used in crusher lubrication systems, gas turbine lubrication, injection and blow moulding machines up to 600litres.

### Fuel and Oil Reservoir Recycling Buggies:

**FM5 Series** – The FM5 Series of filtration units are designed to suit small to medium size compartments, up to approximately 1000L, across a wide range of fluids, from diesel and light hydraulic oils right up to high viscosity heavy gear oils at 1500 cst.

Designed to be well balanced and highly maneuverable for use in tight access, fixed plant and other applications, the FM5 series are easy to operate and maintain.

Custom built to suit the application, these units provide highly effective solutions to oil and fuel contamination problems ( 2 and 4 housings ).

**FM6 Series** – The FM6 Series of filtration units are designed for filtration of small to medium size compartments, up to approximately 1000L, across a wide range of oils up to 1500 cst.

Largely based on the successful FM5 Series, these units also include the following features :-

- Hose reels to carry and safely store longer hoses
- Able to provide higher flow rates through provision of more filter element housings ( 4, 6 and 8 housings ).

**FM7 Series** – A range of purpose built, heavy duty systems ( 10 housings or more ). These systems typically suit applications in heavy earthmoving and mining such as :-

- Mechanical drive diff and final drive systems
- Electric drive gear systems
- Other high volume, high viscous applications

### Haul Truck Engine Filtration:

**FM40430** – is a customised filtration unit consisting of four high capacity units mounted within a frame and set up for quick release and installation in mining dump trucks.

### Fuel Delivery Systems:

Fuel delivery rates ranging from 20 L/min (5.3 gpm) to 1000 L/min (265 gpm). Manufactured using multiples of FM3204 filtration units.

### Breather Systems:

For applications in:

- Small hydraulic systems or differential gearboxes.
- Automotive applications in trucks and differential gearboxes.
- Fuel storage, bulk oil tanks or large hydrocarbon storage systems.

### Cooking Oil Filtration:

A number of products are available specifically for the filtration of cooking oil, from portable units to fixed installations.

## Advantages of FTA Products

FTA products deliver high performance, with low physical space requirements. Improvements in filtration through the introduction of FTA products have seen particulate reductions of up to 90% in fuel systems and up to 70% in oil systems in one pass. This represents a massive improvement in cleanliness with corresponding improvements in equipment performance.

In particular FTA products offer four key advantages to operators of plant and equipment such as:

1. Lowering operating costs through extension in equipment component life and direct fuel and oil savings.
  - In truck tests conducted by FTA, using customer fleet equipment, direct fuel savings have been realised between 3-6% depending on the haul application.
  - The correlation between oil cleanliness and component life is now known. With FTA proven filtration performance they can offer this through low cost and easy to maintain systems, these systems are designed to suit the customer's needs.
2. Maximising equipment up-time by reducing the incidence of unplanned stoppages of equipment;
  - In tests conducted by Castrol filtration in hydraulic oils improved oil cleanliness by up to 6 ISO grades after less than 2 hours filtration. Removing unwanted particulate matter allows components to perform to design criteria, with less likelihood of failure.
3. Lowered exhaust emissions through improving engine efficiencies and savings in fuel.
  - In a series of tests conducted by the Toyota Corporation Nitric Oxide emissions were reduced by 50%; Carbon monoxide by 15% and carbon dioxide by 0.7%.
4. Reducing waste through oil recycling and lower oil disposal costs.
  - In tests conducted by FTA oil drains on engines can be extended by 300%.

## Technical Specifications

For more information about the technical capability and filtration performance for each product, please refer to our product manual, on our website:

[www.filtertechnology.com.au](http://www.filtertechnology.com.au)

## Production Capacity

The patented filtration systems are manufactured under a third party accredited quality controlled environment at the Head Office facility in Australia.

Production capacity of filter elements is currently a maximum of 1500 per day, with production rates of housings and fitments in compliance with customer delivery requirements.

All products are built under ISO 9002 License 12989 Standards Australia.



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