



You need nearly three FM600s to out perform an MP600



Lubricating oil is an important aspect in many business sectors and cleaning this oil through an effective filtration system is paramount.

With this in mind a next generation of pressure-driven oil centrifuges have now been developed to revolutionize a product design that has not changed in more than 50 years.



There are three weaknesses that have been discovered in existing centrifuges currently available.



The top of the centrifuge doesn't have an oil seal.

Under pressure, this provides one of the three weak points where dirty oil can leak into the cleaned oil housing.



There is also no oil seal at the base of the filler stand tube.

This is another weak point that could cause cross contamination issues.



Thirdly, contaminated oil has to travel almost to the top of the centrifuge to enter it.

This can create back pressure in the inlet neck putting pressure on another unsealed joint.

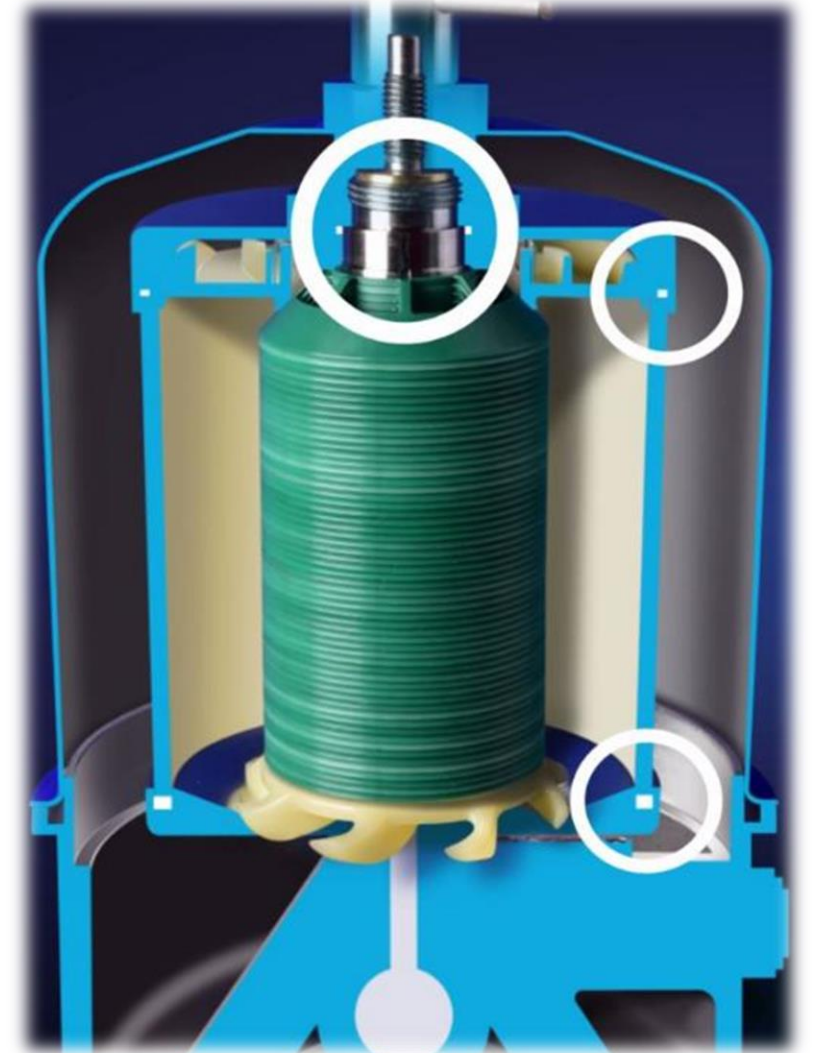




So what has been done to improve the existing technology?

The centrifuges are completely closed. At the bottom of the centrifuge there is an O-ring that seals the dirty oil inlet and at the top there is an O-ring that seals the cleaned oil outlet.

This improved seal between the two ensures minimal cross-contamination. Clean oil is therefore kept clean as it emerges from the nozzles at the top of the centrifuge.



Cup disc technology is usually associated with much larger units, being used in all major Alfa-Laval, Westfalia and Mitsubishi separators.

Therefore, these are the only centrifuges of their size that use a cup disc stack.

Cup wheels are used to increase separation efficiency as they provide a larger surface area for dirty oil to travel through, removing significantly more small particles compared to other centrifuges available on the market.



To eliminate back pressure, a distributor impeller has been introduced.

As the oil is introduced at the base of the unit that has the greatest centrifugal force, the distributor impeller begins to drive the bowl, increasing the rotor speed.

The dirty oil then moves along the cup discs (and can only move upwards) until it reaches the upper turbine impeller, where the cleaned oil then exits from one of the four nozzles with optimal separation efficiency.

This technology reduces the risk of back pressure, eliminating the chance of cross-contamination of clean and dirty oil.



Customers at any one time can ensure that their centrifuge is in operation by reading the RPM available on the screen.

The remote monitoring provides operators and systems with valuable insights into speed, cleaning and service requirements, saving valuable personnel time.

When it's commissioned, you press the 'Speed Set' button. There is a designated RPM the centrifuge should run at based on pressure and flow rate. Therefore, at any one stage, you can see the oil centrifuge is running optimally as well as when the centrifuge needs cleaning.

As the sludge cake builds up, the centrifugal force begins to drop, becoming less efficient at removing the dirt, notifying via the SCU that it needs cleaning.

This ensures oil is kept at its optimal cleanliness.

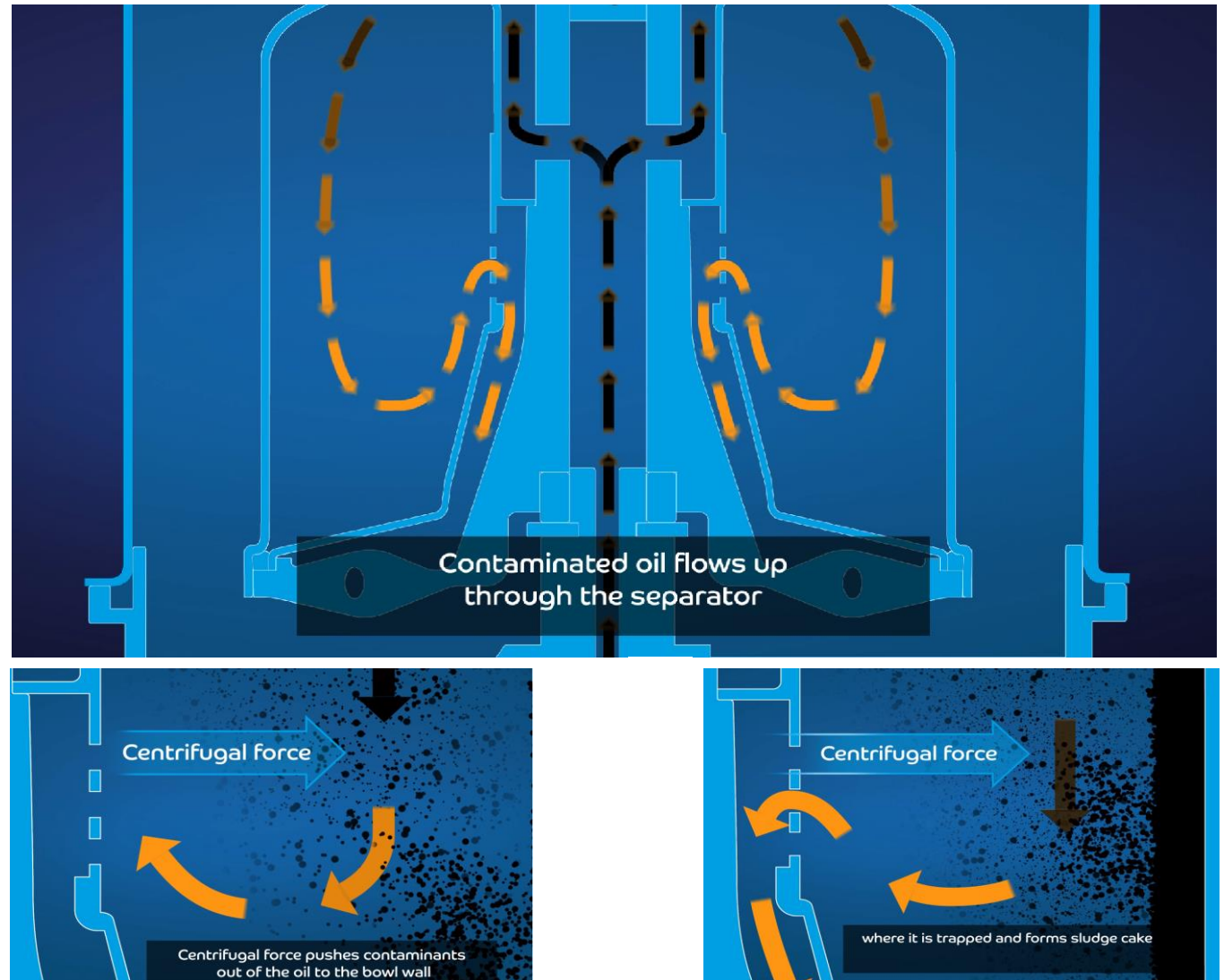




This diagram is the existing technology that's widely used.

Oil is introduced through the shaft about $\frac{3}{4}$ of the way as mentioned previously, entering the separation chamber $\frac{3}{4}$ of the way.

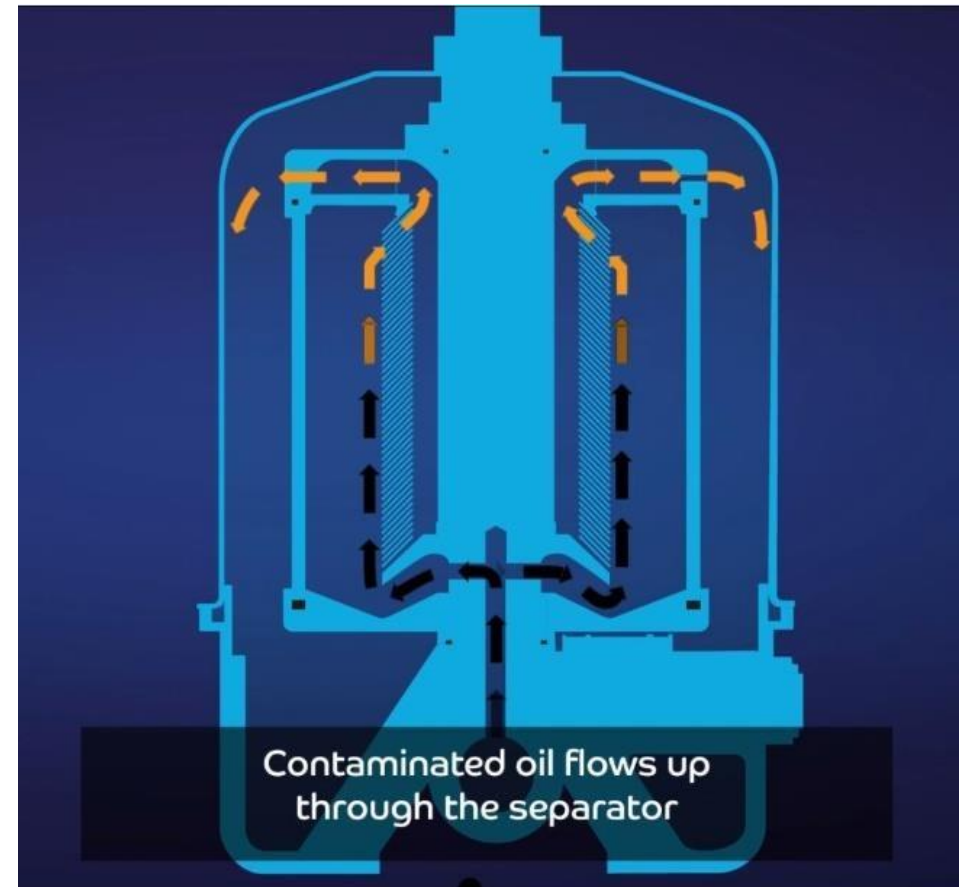
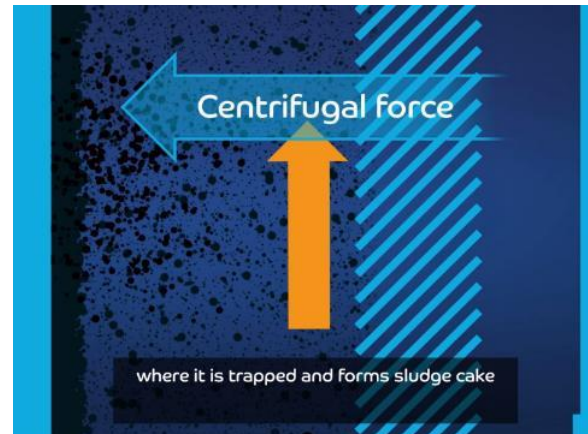
The oil then has to travel down the separation chamber and back up and out of the chamber where it's then deposited back into the sump.



This is the MP centrifuge diagram.

Unlike the existing technology, dirty oil is introduced at the very bottom of the bowl.

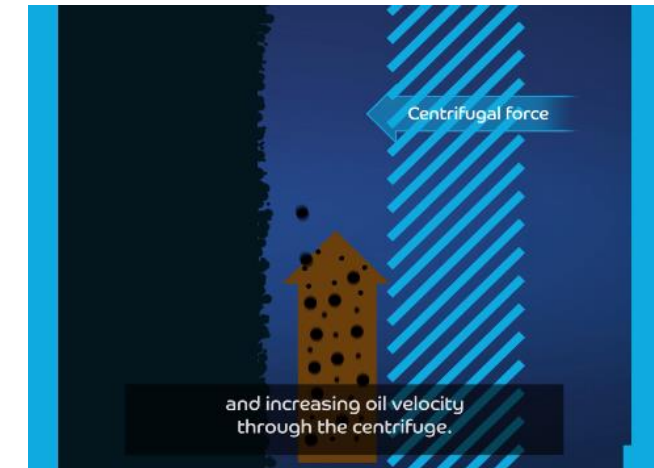
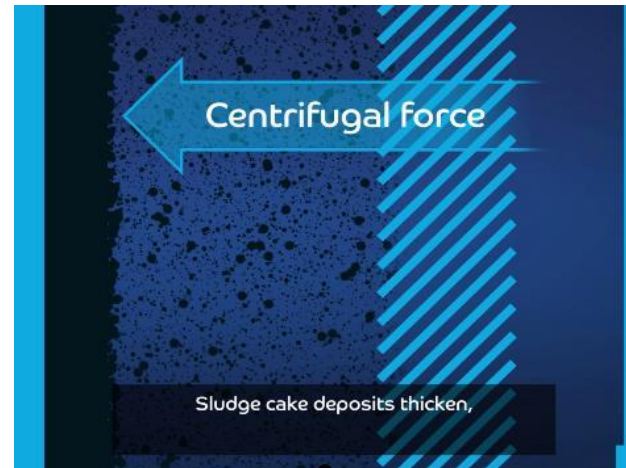
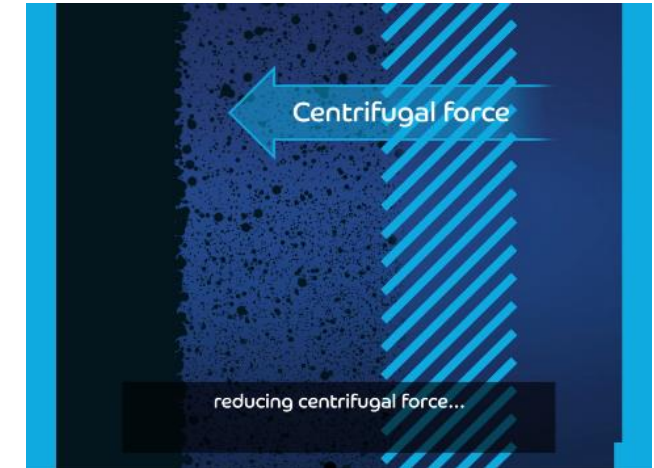
It then goes up through the discs and out via the nozzles at the top and back into the sump.



Both centrifuges work in the same fashion with regards to centrifugal force.

As dirt is removed and the sludge cake begins to build up, that's when the centrifugal force will begin to drop.

MP centrifuges work in the same way, but because of the patented technology inside of the bowl, and the way the oil is introduced and exits the bowl, more dirt is removed. They are the best performing pressure driven centrifuge in the world.





Reduction in particles

Significant reduction in particles that pass through the primary filter

Primary filters last longer

Centrifugal oil separators clean lubricating oil in addition to the primary oil filter, helping the primary filter to last longer

Reduced engine wear

By reducing the amount of particles in the lubricating oil, you reduce the damage to critical engine components

Extend the life of lubricating oil

Reducing contaminants in the oil means that the oil will last longer (fewer oil changes)

Reduce costs for the end user

Parts, oil and filters last longer and costs for disposing used oil are reduced too







MP centrifuges removed 50% more solids than the old-style



and at 4 bar pressure
all MP centrifuges spin
20-40% faster
than the current market leaders



M/V BOKA ATLANTIS

Marine Auxiliary Engine

Case Study – MAN B&K 8L27/38



Remote Monitoring

Set speed, check operating status and log data



Increased Efficiency

44.41% more efficient than the market leader



Improved Lifespan

Increased the lifespan of lube oil and engine

Overview

The M/V Boka Atlantis Diving Support Vessel already had a standard MANN+HUMMEL FM600 centrifugal oil filter installed on its MAN B&K engine. To improve the reliability of the engine, an IOW Group MP600 centrifuge was fitted to see how it would compare during a trial run.

Results

After 500 run hours, the IOW Group MP600 centrifuge removed **1,776g** at a **3.52g per hour removal rate**. In comparison, the MANN+HUMMEL FM600 centrifugal oil cleaner removed 1,040g at a 2.08g per hour.

CELEC SACHA POWER PLANT

Generator/Power Plant

Case Study – Hyundai HIMSEN 9H21/32



Doubled the
oil change
intervals



Reduced engine
downtime and
labour rates



Total
Savings of
\$17,354

Overview

A Power Plant customer in Ecuador, South America, was interested in the potential cost savings an IOW Group centrifuge could provide compared to their existing MANN+HUMMEL FM600. For the trial period, the main objective was to increase the oil change intervals by maintaining insoluble levels (including soot) below 1% and to protect the Total Base Number (TBN) level of the oil.

Results

The IOW Group MP600 ran at a speed of approximately 4300rpm using the 4.4 bar pressure from the engine pump. After 200hrs operation on dirty oil, the MP600 had **removed 1730g** of contaminants at a **removal rate of 8.7g/hr**. The MP600 was then cleaned, and the oil changed to accurately assess the impact on the frequency needed for an oil service interval going forward.



CMA / ANL WANGARATTA

Marine Auxiliary Engine

Case Study – MAN 9L21/31 – GE No.2 Shanxi Diesel Build



Superior Efficiency

IOW Group's MP600 centrifuge significantly outperforms Mann+Hummel's FM600



Reduced Maintenance

Substantial reduction in particulates decreases engine wear, maintenance and costs.

Overview

A shipping company was eager to make cost efficiency savings on their container ship 'ANL WANGARATTA.' A trial period was agreed to upgrade the existing on-engine MANN+HUMMEL oil centrifuge to a new state-of-the-art IOW Group MP centrifuge filter, aiming to reduce the life cycle costs of their Auxiliary Engines.

Results

The **IOW Group MP600** centrifuge filter **removed 6 kg** of sludge within the first 136 operating hours. This was in comparison to the usual **2.5 kg** of sludge collected by the equivalent **MANN+HUMMEL FM600** centrifuge filter from the same number of running hours.



MP centrifuges – is it worth it?

The centrifugal oil separator save customers on maintenance costs through:

- ✓ Reduction in engine wear
- ✓ Reduction in use of lubrication oil
- ✓ Reduction in man hours in cleaning
- ✓ Reduced waste disposal costs
- ✓ Extended life of full-flow filters
- ✓ Extended service intervals



The centrifuge may be more expensive than other centrifuges on the market, but their superior performance and unrivalled technology means customers make their investment back in no time.

From the case studies, we've seen real-life applications and results from major customers who have reaped the benefits from upgrading to this new centrifuge.

By simply installing the MP centrifuge, customers save money through the reduction of engine wear, oil change intervals, waste disposal.....and the list goes on.

Questions?

Our 4TaKT Sales Team is ready to assist you.
Or send a request for a free quote