Case study

Upgrading a filtration system for the rapid and effective removal of Nitinol particles

Memry is a global market and technology leader in Nitinol, a metal alloy of nickel and titanium that is widely used for medical devices thanks to its excellent levels of biocompatibility. Memry itself is part of the SAES industries group of companies, a group of companies that focusses on the production of components and systems in advanced materials.

Memry have installed a second Vapormatt Profelis machine in their state-of-the art manufacturing centre in San Francisco, USA, to finish their Nitinol medical wire products to the very high ISO and FDA standards required. The first Profelis is installed in their Connecticut factory.

The Profelis has a highly effective filtration system consisting of hydrocyclones, S-Tanks and a cartridge filter. In the first instance the hydrocyclones separate good blast media from spent blast media, returning good media to the sump for reuse and spent media to the S-Tanks. The S-Tanks then remove the spent media from the water. Finally, the cartridge filter takes the clean water from the S-Tanks and makes it very clean for the Profelis' rinsing stage and window wash.

One of the great advantages of wet or vapor blasting is its ability to contain any loose particulate within the water, eliminating any dust and associated environmental, health and safety issues. Choosing the Profelis wet blasting machine for Nitinol wire finishing made a lot of sense as the SAES Group's safety data sheet states that the alloy can cause several negative health affects if it is inhaled or ingested.

With the standard S-Tank filtration system any excess Nitinol particles are filtered out of the water and remain at the bottom of the tanks for disposal. The cartridge filter is then the final part of the filtration system that ensures not even the tiniest particle of Nitinol ends up in the Profelis' rinsing or window wash system.

Memry wanted to adapt the filtration process to their unique requirements by completely removing all potentially harmful Nitinol particles immediately after the hydrocyclone stage. They approached Vapormatt to find out if their 'Vapormatt Upgrade' service could adapt the Profelis to meet their requirements. Yes, it could, and as a result they replaced their S-Tank filtration system with an automatic moving bed filtration system.

The automatic moving bed filtration system uses a moving bed of filter paper to capture all Nitinol particles, whilst the previous S-Tank system and cartridge filter would have removed all particles anyway, the moving bed filtration system made the removal of particles more immediate, safer and easier - boosting productivity as a result.

It's a great example of one of the almost infinite ways our 'Vapormatt Upgrade' service can help make our machines, no matter how old, even more suited to our customers surface finishing requirements.

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