

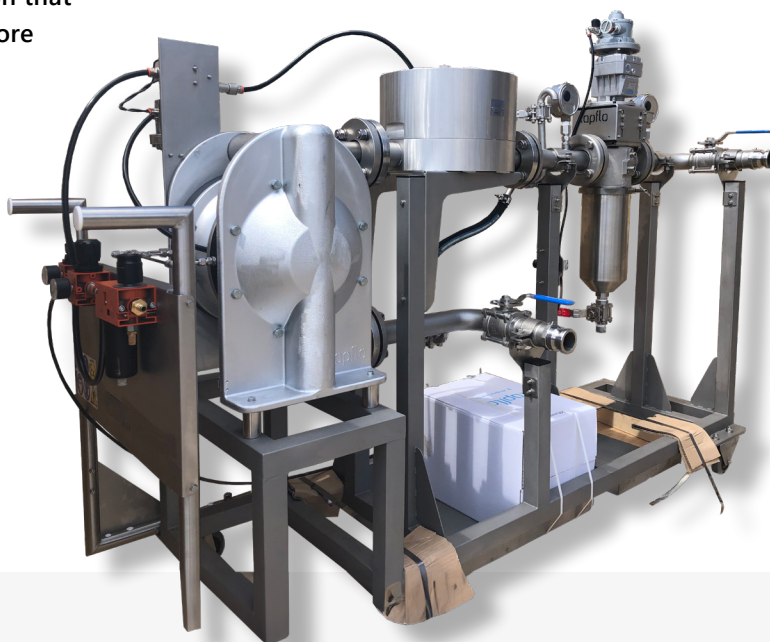
» MOBILE PAINT FILTRATION SYSTEM

The End User, a paint manufacturer, wanted an ATEX Rated Self-Priming, Pneumatically Operated, Mobile Paint Filtration Skid with a Self-Cleaning Filter which could be used for transferring various types of solvent and water-based paint from their mobile mixing vessels onto their filling lines. Over the years they had tried various combinations of gear pumps with different types of filters however had run into problems with dry-running, filter clogging and priming problems.

We were approached by a trusted and long-standing distributor to come up with a Diaphragm Pump Driven solution that provided the customer with a controllable, safe, more reliable pump solution that would enable them to improve their filling capabilities, reduce their downtime as well as meantime before failures. A tough ask but, as always, Tapflo were up to the challenge!

Proposed Solution:

- ✓ 1 x ATEX Rated, Mobile, Manually Operated, Air Driven, Self-Cleaning Paint Filtration System



Technical details:

- ✓ 1 x TXB420 ATS-3ZA4TLT8VV – 2" ATEX Rated Barrier Pump (Aluminium / PTFE / AISI 316) w/ CAM Lock Connections
- ✓ 1 x DTX420 AT-3ZA – 2" ATEX Rated Active Pulsation Dampener (Aluminium / PTFE) w/ CAM Lock Connections
- ✓ 1 x PDFM-420 – Diaphragm Rupture Monitoring System
- ✓ 1 x Air Treatment & Control Set: Manual On / Off Valve + Filter Regulator + Needle Valve + Connecting Elements
- ✓ 1 x Airpel Celeros 2" Self-Cleaning Filter, Viton Seals, 150 Micron Wedge Wire Element w/ ATEX Rated Pneumatic Drive fitted & supplied with 2 x Differential Pressure Gauges, 1 x Manual Drain Valve & Recommended Spares
- ✓ 2 x ATEX Rated AISI 316 Suction & Discharge Isolation Valves (2")
- ✓ 3 x ATEX Rated AISI 316 Drain / Vent Valves (¾")
- ✓ 1 x Set of AISI 304 Connecting Pipes + AISI 316 Suction &
- ✓ Discharge CAM Lock Connectors
- ✓ 1 x AISI 304 Support Frame
- ✓ 2 x AISI 304 Trolley Handles
- 1 x Set of Anti-Static Wheels (2 x Swivel w/ Brakes + 2 x Fixed), Thermoplastic w/ AISI 304 Supports
- ✓ Mechanical & Automation Engineering
- ✓ Assembly
- In-House Tests (Hydrostatic & Performance INCLUDED) Welding Tests & Certification are EXCLUDED

Check out this link to find more:

[Mobile Paint Filtration System](#)

Operation:

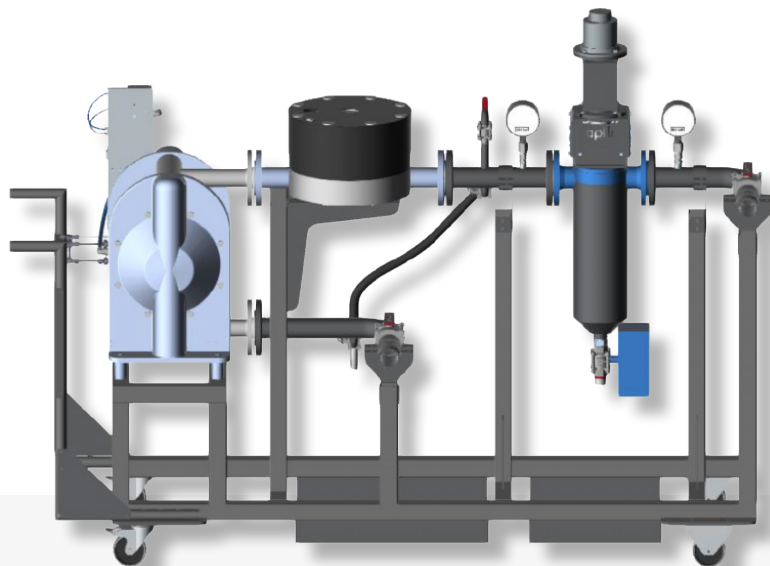
The On-Board Pneumatic & Self-Cleaning Filter is to be supplied with paint by an Air Operated Diaphragm Pump through an In-Line Active Flow Pulsation Dampener to provide filtered and near pulseless flow to the Paint Filling Machine.

The Diaphragm pump is built in our Barrier configuration with an external safety system called PDFM (Pneumatic Diaphragm Failure Monitor). On each side of the pump, there are 2 diaphragms (primary and backup diaphragms). In case of a breach in the primary diaphragm, the pump will be immediately stopped by the PDFM system. In such a situation, the pump still provides a hermetic seal and containment of the paint as the backup diaphragms seal it within the pump and prevent leakage through the muffler.

The operation of the pump is controlled by an air filter regulator (pressure regulation) and a needle valve (pumping speed regulation). The entire assembly is mounted on a stainless-steel trolley with 4 wheels (2 x swivel w/ brakes 2 x fixed). In addition, there is a piping system included with suction and discharge ball valves and additional drain and vent valves. There are also pressure gauges on suction and discharge pipes of the filter for monitoring the pressure drop and therefore filter cleanliness. The Self-Cleaning Filter is supplied with a Pneumatic Drive Unit. The Operator will monitor pressure drop on the filter.

When the screen of the filter is filled with particles, the pressure drop will increase, and the operator will manually perform a cleaning cycle. A drain valve on the filter will be opened and the drive unit on the filter will start the cleaning.

After removing the particles, the unit will be set back into normal operation by operating the valves. A fully automatic version is also available where the filter cleanliness is monitored via pressure switches which, upon reaching a pre-set value, will activate the cleaning cycle of the filter and operate autonomously.



tapflo®

Delivered Solution:

Tapflo successfully installed the mobile paint filtration skid system to the end-user as planned with a solid and robust assembly & suitable to operate in a Potentially Explosive Atmosphere (as per ATEX Directive) & certified to Ex II 2G IIB T4.

- ✓ **Delivery:** ~1-2 Working Weeks from EXW Availability
- ✓ **Project Specification Delivery Time:** 2-3 Working Weeks from order placement
- ✓ **Production Time:** 6-7 Working Weeks, EXW from final acceptance of Project Specification

Documentation:

- ✓ **Installation, Operation & Maintenance Manual (IOM)**
- ✓ **Declaration of Conformity (DOC) & ATEX Certification**
- ✓ **General Arrangement drawing (2 x paper copy & electronic copy)**

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www.tapflopumps.co.uk | sales@tapflopumps.co.uk 2