

Customer & Market Due Diligence Of Industrial Filtration Equipment Manufacturer: Establishing Demand Outlook In Light Of Automotive Powertrain Electrification

The Challenge: Our client, a leading private equity firm, was looking to acquire a filtration equipment manufacturer serving automotive manufacturers. Our client was attracted by the target's leading position in the market and its well-established presence with the top automotive OEMs. Filtration equipment demand/requirements in automotive plants were primarily driven by machining operations for powertrain (engine and transmission) components. As the push towards electrification of automotive powertrain was impacting engine and transmission manufacturing, our client wanted clarity on the impact of electrification on filtration equipment requirements, as well as understanding on where the target's customers were in their filtration equipment investment cycle. As such, our client asked Gotham to conduct a 2-week customer & market due diligence of the target with the following objectives: (1) understand the type and replacement frequency of filtration equipment; (2) establish the impact of electrification on the demand for filtration equipment; and (3) pin down the equipment- and system-level competitive landscape.

Automotive Powertrain Electrification Impact Assessment: To address our client's due diligence objectives, Gotham undertook a multi-pronged approach, including:

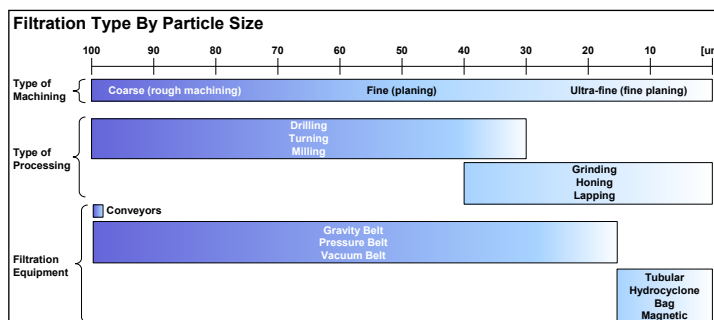
- Conducted interviews with decision makers at the Big Three Auto Manufacturers and foreign transplants, as well as with key competitors to: establish filtration requirements and whether they use centralized systems or decentralized systems; determine the drivers of equipment replacement and the impact of EVs on powertrain plants; assess the recession impact on filtration equipment investment; identify the key filtration equipment selection criteria; and pin down the target's competitive positioning
- Established filtration equipment need by mapping filtration processes for different production process, materials, and end-products and identified the filtration technologies used for each scenario
- Conducted research to determine the overall impact of electrification on automotive powertrain manufacturing and to pin down plant-level electrification plans for major automotive manufacturers
- Built a database of industrial filtration equipment manufacturers and equipment to pin down the competitive landscape.

EV Shift Expected To Reduce Scope Of Machining Operations

As part of their carbon neutrality goals, most of the major automotive OEMs have made commitments to end production of Internal Combustion Engine (ICE)-powered vehicles by sometime in the 2030s. This powertrain electrification is driving fresh investment to increase EV and battery production while scaling back engine and transmission plant investments, including shutting down ICE powertrain plants or converting some to electric powertrain manufacturing. Despite overall reduction, there are still some fresh investments in ICE plants because of capacity expansion for pickup trucks and for hybrid powertrain vehicles as the latter still require ICE engines, although smaller. This electrification shift is reducing machining requirements as ICE has more mechanical components compared to an electric motor, which has many more electric components that do not require precise machining. As a result, the filtration requirement at these new facilities is at a smaller scale, translating to a ~50% reduction.

Filtration Equipment Varies By Material Machining Process, Material, And Design Preferences

Customers must choose between centralized and decentralized filtration systems while setting up machining operations, with the choice a function of flexibility vs. efficiency. Centralized filtration systems put the entire system into downtime during maintenance with no flexibility to vary filtration quality or capacity – but they do allow manufacturers to achieve cost-efficient operations. The Big Three Auto Manufacturers prefer centralized filtration as they value shop floor efficiency, while transplants use decentralized systems for expansion flexibility and reliability. Within these systems, filtration equipment can range from a simple conveyor to a multi-step filtration with vacuum filtration, rotary drum filtration, bag filter, and magnetic separator, all determined by type of machining (ultra-fine, very fine, fine, or coarse), type of engine, and type of material (cast iron, steel, aluminium, plastics). For example, a magnetic separator is only used to filter out ferrous fines. Since a typical filtration system can last 20-25 years, when auto manufacturers retool for new car models, they typically end up using the same filtration systems to avoid the capital expense of a new system. Customers only change specific filtration equipment in cases when small systems need to be replaced with larger ones, or the plant layout is changing from underground to overhead piping, or the filtration tolerance is becoming tighter. In such cases, attempts are made to repurpose the equipment elsewhere in the plant.



Customers only change specific filtration equipment in cases when small systems need to be replaced with larger ones, or the plant layout is changing from underground to overhead piping, or the filtration tolerance is becoming tighter. In such cases, attempts are made to repurpose the equipment elsewhere in the plant.

Target Is The Market Leader With Strong Presence At Key Automotive OEMs

The filtration equipment industry is segmented into players specializing in centralized filtration systems or decentralized systems, with the availability of filtration technology varying by the manufacturer. The target is the leading supplier of centralized systems with presence at the key automotive OEMs. Partly a result of consolidation carried out by the target, the industry is heavily consolidated with only a handful of key players. Customers primarily purchase based on price, however, relationship also plays an important role. Customers use filtration systems from one manufacturer across their plants as equipment selection is made by central manufacturing engineering group. Customers also value service, with the target performing well on this front.

The Outcome: Gotham's deep-dive into filtration requirements allowed our client to gain clarity on the impact of powertrain electrification on filtration equipment demand and how this might affect the target. With a clear picture of demand outlook and the target's competitive positioning, our client was able to incorporate the impact on electrification in its valuation of the target.