Volvo Aero Support has recently installed a new robotic blasting plant at its facility in Arboga, Sweden, based on a Vacu-Blast 3.5m x 3.5m x 3.5m blast enclosure featuring a “Waffle Floor” pneumatic media recovery system.

The plant is used on one of the company’s major process lines for the automatic surface preparation of a variety of Pratt & Whitney JT8D, JT9D, and PW100 aeroengine components prior to thermal spraying.

Using a fully programmable blast nozzle manipulated by a six-axis ABB 2000 robot, the plant produces a precise, consistently high quality surface finish to ensure optimum adhesion of the subsequent thermal spray. This is crucial to maximize engine life.

Components of up to 500Kg in weight are processed with aluminum oxide blast media on a variable speed 1500mm diameter powered turntable, which can be tilted between 0 and 90 degrees. Individual component programs determine the blast nozzle path, blasting duration and pressure.

The Vacu-Blast “Waffle-Floor” pneumatic media recovery system utilizes a continuous and uniform downdraught of air to direct spent media, dust and debris continuously through a series of “mini” hoppers situated under a perforated floor. This system also ensures excellent operator visibility.

Added to this, there are no mechanical parts to wear out and, because the Waffle-Floor design is only 200mm in height, the plant was installed directly onto the factory floor and no costly foundation work was needed.

Spent material is conveyed from the Waffle Floor through a common duct to a high-integrity reclaiming which automatically separates out reusable blast media and recycles it to the blast nozzle. Degraded material and debris is directed to a dust collector.

Volvo is a well established user of Vacu-Blast surface treatment systems and pioneered programmable abrasive blasting and shot peening techniques.

For example, in 1980 Volvo Aero Corporation was one of the first European aerospace companies to install a totally automated Vacu-Blast shot peening plant for process aeroengine parts.

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