

Surface improvement with mass finishing

Automatic cleaning and recycling of the process water saves time and costs

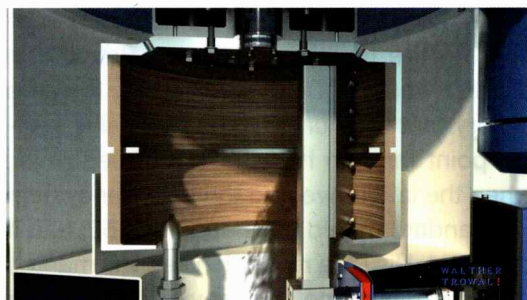
Integrated displacement-force measurement allows automatic machine setup

In conjunction with surface finishing operations for metallic work pieces the new automatic cleaning centrifuge ZA 04 practically eliminates manual setup operations and drastically reduces maintenance work. In addition, the new machine requires about 30 % less space than its predecessor model.

In surface finishing operations the process water coming from mass finishing machines is contaminated with fines from the work pieces and the processing media. In addition, it can contain oil and grease carried into the machine by the work pieces. Before the process water can be re-used in the finishing operation or charged to drain, it must be cleaned by removing all contaminants. To save water, in most mass finishing operations

the process water is re-used in a closed-loop recycling system. However, before it can be used again, the process water must be cleaned in a centrifuge. Centrifuges are equipped with a drum that rotates at high speeds. Due to the generated centrifugal force of the rotating drum the solids contained in the process water are deposited on the inner drum wall in the form of sludge. In case of higher sludge quantities that cannot be handled by manual emptying of the drum, so-called peeling centrifuges are utilized. These machines are equipped with a peeling knife that automatically discharges the sludge from the drum.

Walther Trowal has equipped the new, compact



The digitally controlled peeling knife removes the sludge from the inner wall of the rotating drum

peeling centrifuge ZA 04 with an integrated displacement-force measurement system that digitally controls the movement of the peeling knife. This ensures that – depending on the thickness of the sludge layer – the peeling knife always has the right distance to the inner drum wall. Moreover, it allows the automatic setup of the machine by practically eliminating mechanical calibration operations, which to date had to be done manually at regular time intervals. This reduces the workload and time requirements for the mechanical setup of the peeling knife and the required maintenance to practically zero. In the past the calibration of the peeling knife always required a manual procedure. This is now automatically done by the new machine.

Besides this innovative digital setup procedure the Walther Trowal engineers have made the new centrifuge more compact: It requires about 30 % less space than its predecessor model.

Moreover, all operational and maintenance elements can be accessed from one side. This saves not only valuable manufacturing space for the user but also provides a much greater degree of freedom for the placement of the machine on the manufacturing floor. Operation by touch screen with the typical “Look and Feel” feature of the Trowal equipment is intuitive. In addition, it is a valuable diagnostic tool.



The new peeling centrifuge runs automatically and has a very small footprint. All operational and maintenance elements can be accessed from one side



One peeling centrifuge (left) is cleaning and recycling the process water from two mass finishing rotary vibrators (right) (Pictures: Walther Trowal)

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