

TROWAL CENTRIFUGAL FILTERS MODEL RANGE ZM AND ZA

Why effluent treatment?

After vibratory finishing the effluent (dirty process water) contains abrasive and metal fines, frequently also oil and metal in solution. For this reason the effluent must be cleaned before going to drain or being recycled back to the finishing process.

Centrifugal Filters

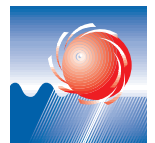
Abrasive and metal fines as well as trapped oil are separated from the process water by way of centrifugal force and can be removed as solid sludge. The cleaned process water can be re-used and is pumped back to the finishing machine.

Recycling is "in"...

The recycling of the process water from the finishing process does not only reduce the consumption of water (up to 98 %), but it also reduces the usage of compound (up to 90 %). In addition, it reduces the cost of waste disposal.



Deburring



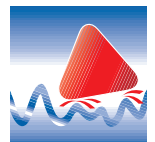
Ball burnishing



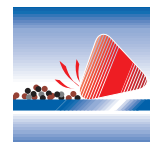
Radiusing



Degreasing



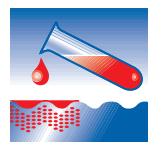
Surface smoothing



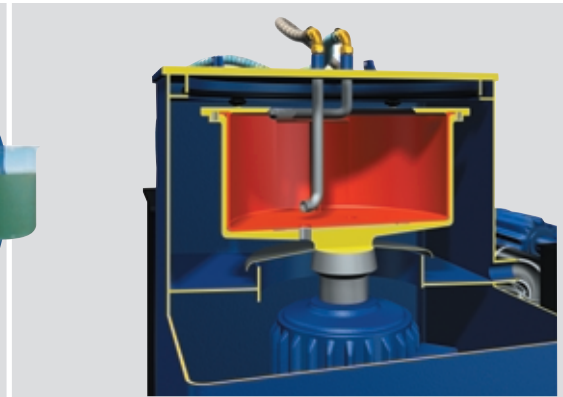
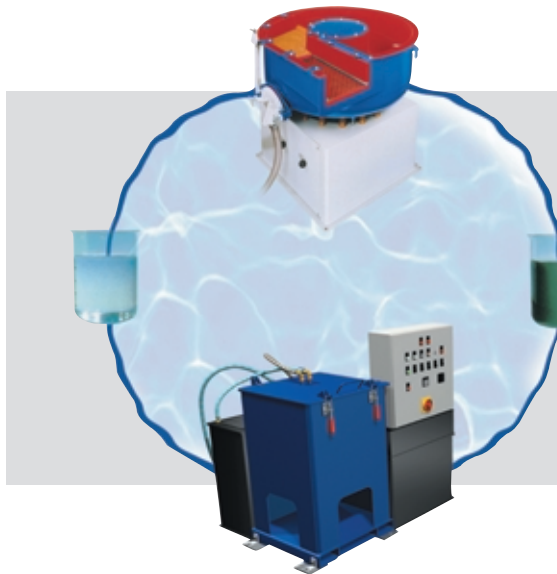
Surface cleaning



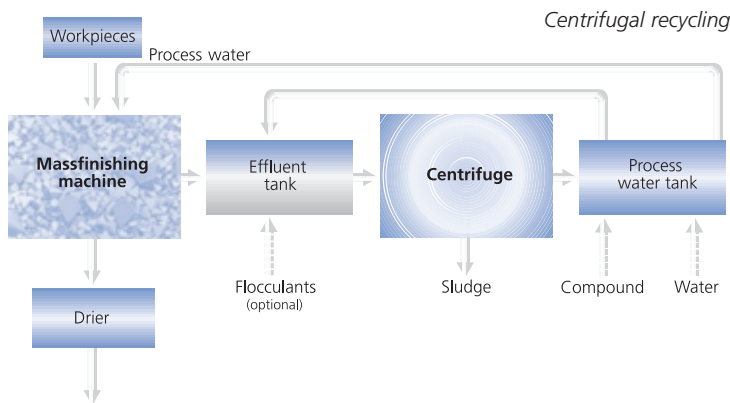
Surface polishing



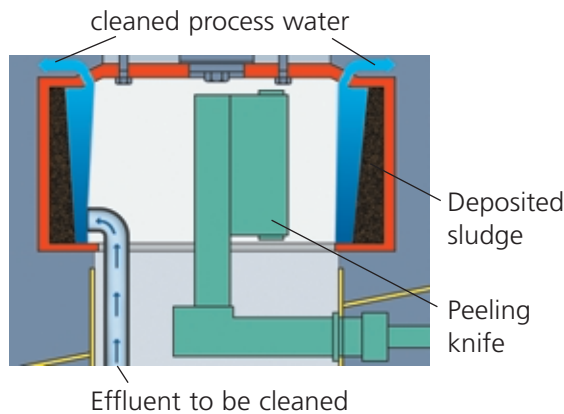
Pickling, descaling



Cutaway drawing of a ZM centrifuge



Centrifugal recycling



Functional sketch of a peeling centrifuge

Cleaning by centrifugal force

With the centrifugal filter technology solid fines are removed from the process water with a centrifugal force which is up to 2417 times higher than the gravity of the earth. Oil and/or extremely fine solids $< 1 \mu$ can be removed by adding flocculants. The compound utilized for the finishing operation remains largely in the process water for re-use in the finishing process.

Basket centrifuge ZM...

An easy to operate, robust system with manual removal of the sludge liner from the centrifuge. During one cycle 14 litres of solid sludge can be removed from the effluent.

Automatic centrifuges ZA...

The PLC controlled, automatic ZA systems can clean up to 2 m³ of effluent per hour. The sludge deposited on the wall of the rotating drum is automatically removed with a "peeling" knife and dropped into a sludge container according to preset time intervals.

Application limits

Not every mass finishing application is suitable for centrifugal filtering. Their use can be limited if the following special finishing operations apply:

- intensive rinsing of the parts after finishing
- multistage finishing, using more than one compound
- pickling with acid
- ball burnishing applications

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	ZM 03-ECO-1	ZM 03-FL	ZM 03-DO	ZA 04	ZA 06
Capacity:	ltr/h 1000	1000	2000	1000	2000
Sludge volume	(l) 14	14	2 x 14	14	28
Centrifugal rating	(g) 2012	2012	2012	1920	2417
Mud water tank	(l) 200	300	400	800	1500
Process water tank	(l) -	100	200	500	1000
Overall dimensions	1300 x 900	1300 x 1015	1200 x 2200	2100 x 1650	2500 x 2150
(L x W x H)	(mm) x 1400	x 1450	x 1300	x 2200	x 2300
Connected loads	(kVA) 6	6	9	10	13
Motor power-average	(kW) 1,5	1,5	2 x 1,5	3	5