

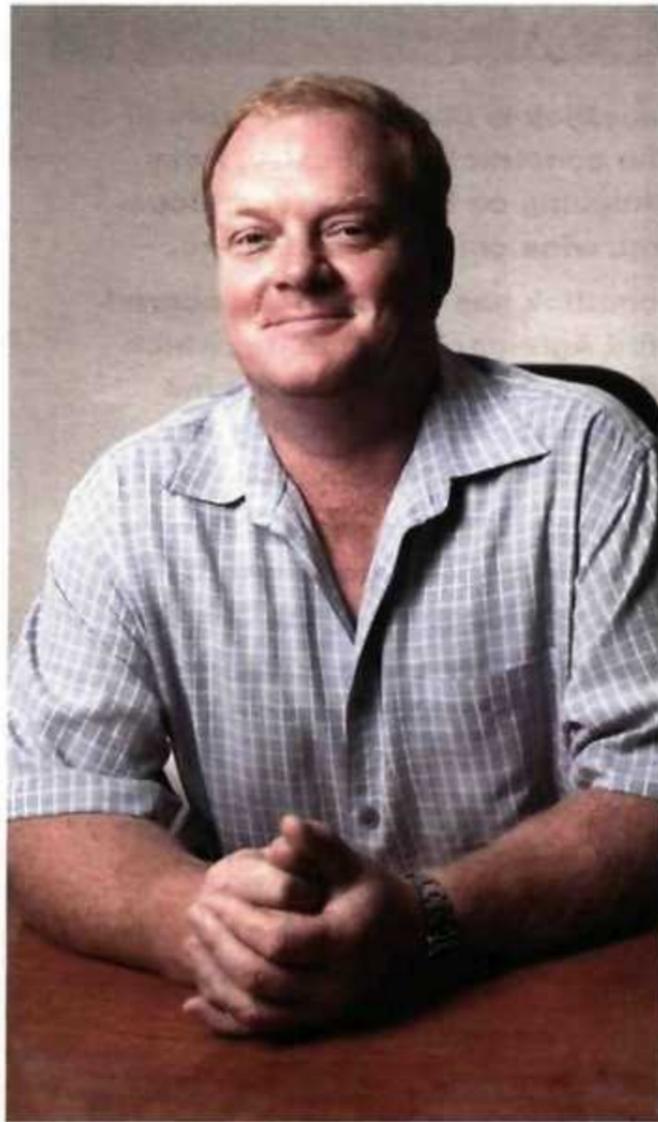


## PLANT EQUIPMENT

# Pan Mixers: New life for older plant

*The durability of Pan Mixers' equipment sees many customers using plant that is well over ten years old. However, in a move that brings new life to older machinery - while assisting customers through the tough economic climate, the company undertakes upgrades for customers wherever possible.*

**A**ccording to Pan Mixers director Robert Ebeling, the current trend in South Africa is to upgrade machinery rather than replacing, and the company is seeing an increasing number of clients opting for upgrades that bring older equipment up-to-speed.



Pan Mixers Director Walter Ebeling

"The past ten years has brought about massive advances in electronics and hydraulics, while the machinery design has largely remained the same. We can now control components and their movement more accurately than we could in the past," Robert says. "We do this by installing linear transducers and/or rotary encoders to moving components. We can then continually inform the programmable logic controller (PLC) in the machine on where the component is."

Knowing where the component is at any time means that clients can control the speed of the component accurately. "Once you have this accuracy of movement, you need to control the physical movement. This is done by using high resolution hydraulic controls," adds Pan Mixers co-director Walter Ebeling. The combination of the electronic sensing system and a hydraulic system that interacts through the PLC means that clients can start a component slowly so that it doesn't crash on takeoff.

"As it accelerates, clients can level off the speed at any point and slow it down; therefore, by the time it reaches the end of its movement, it doesn't have to stop suddenly," maintains Walter.

Sudden stops to the machine exert a force that increases wear and tear; however, because the system ensures proportional control, components do not have to be moved at a fixed speed. "This means that clients can make the speeds much faster because they can accelerate and decelerate progressively, resulting in faster cycle times, more productivity and lower maintenance. It's the dream solution," Walter adds.

In upgrading older machinery, Pan Mixers uses variable speed drives (VSDs) on the vibrators, which has proved very successful. "VSDs also allow for acceleration and deceleration of the electric motors. The benefit of adding a brake resistor on the drive is that it can stop motors faster than ever before."

Robert says that machines without VSDs would have a braking time of anything up to 1.5 seconds. "With VSD, it's 0.3 of a second. The importance of this is that it greatly-improves quality. When vibration is stopped gradually, the vibrating force shakes the mould, which then degrades the concrete product that the customer has been trying to compact. Stopping vibration quickly means that the compaction stays intact, while the cycle time is also decreased by 11 or 12% - which immediately improves to the productivity of the machinery."

Pan Mixers been supplying VSD in its equipment for the past ten years, but is also able to install it on machinery older than that.



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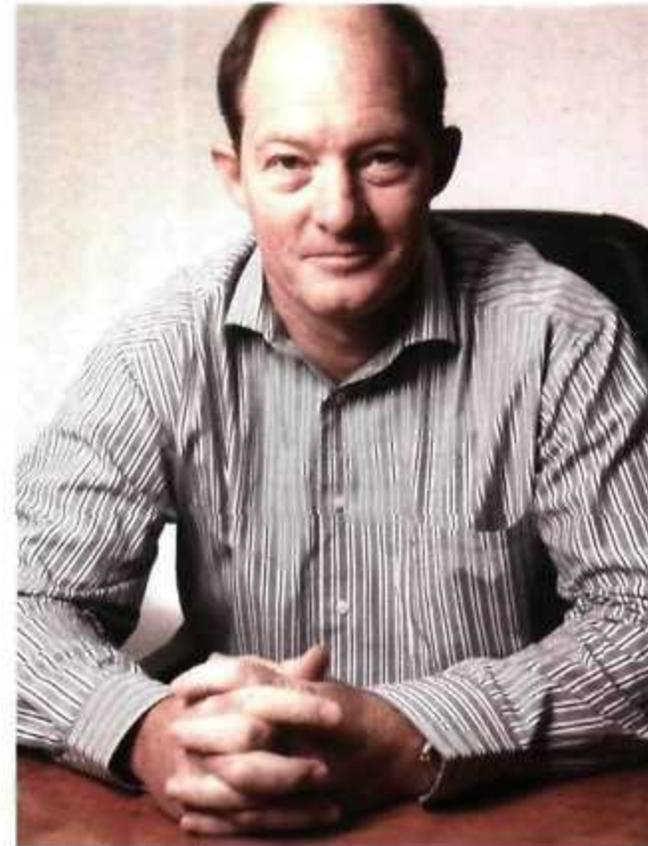
"Upgrading rather than replacing equipment works in many instances," Walter explains, citing another important progression in Pan Mixers' large RE1400 machines: Instead of using rubber mountings to control the vibrational force of the mould, Pan Mixers has replaced the rubbers that hold the mould down with air bellows.

"The air bellows respond much faster in movement to the vibration of the moulds than a rubber mounting can, so instead of holding the mould down with a semi-rigid component that can't respond to the movement of the vibration on your mould surface, the faster response time increases vibrational force."

Robert notes that customers have increased the compaction of their products dramatically by installing bellows on an existing plant – at a cost of around R20 000. "Producing a better product and using less cement offsets this relatively small cost."

With the new South African Bureau of Standards (SABS) directive for paving slabs being released in January 2010 and the economy unlikely to bounce back too quickly, Pan Mixers is ensuring that its clients are ready to meet the challenges of becoming more productive and more competitive in different markets.

"Pan Mixers continues to innovate according to changes in industry laws and the economic climate. We're working to assist our customers by making older machines more productive, while lowering maintenance costs. It really comes down to producing better products, quicker. That counts towards anyone's bottom line," Walter concludes.



*Pan Mixers Director Robert Ebeling*