

CEMENT & CONCRETE

Saving a fortune in just one second...

Reducing the production cycle of machinery by just one second could increase the productivity of a company substantially, according to Africa's leading manufacturer of concrete block, brick and paving machinery, Pan Mixers South Africa.



The Ebeling brothers showing the first of two FIORI self loading Concrete Mixers imported by PMSA for the Southern African market.

Production management has been put under the spotlight by machinery experts, Pan Mixers, which claims that one second is all it takes for their clients to increase productivity by thousands of units per day.

Pan Mixers MD Walter Ebeling says that many of his customers don't realise just how much more productive their machines could be by simply eliminating stoppages and improving cycle times for maximum impact.

PRODUCTION LEVELS AS STANDARD

Just one second per 12 second cycle in a day could result in the production of thousands more units daily.

Walter explains: "The main problem is that many people accept their current machine production levels as standard, and we need to change this kind of thinking. Many years of experience in the industry has proven that production capacities between customers differ

dramatically on similar specified machines. By taking a closer look at daily production, and breaking it down into machine cycles, with timing attached to each process in the cycle, and 'refining' the operation to save time per cycle could literally enable you to produce thousands more products per shift."

Working on 12 seconds per cycle, five cycles of product would be produced per minute. Reducing the cycle to 11 seconds on a VB1X making 30 bricks per cycle would result in more than 6 000 additional bricks per day on the VB1X, and more than 12 000 additional bricks on the VB4X machine daily, for saving just one second per cycle - based on 9 hours and 90% of full production.

Walter adds that in addition to this, a closer a look at why a client's plant may be stopping during the day may also have a significant impact on productivity. For example, if the plant is stopping for around five minutes every hour - a total of 45 minutes - then at a 12 second cycle, an additional 225 pallets of product could have been manufactured, which would be 6 750 bricks on a VB1X machine, or 13 500 on a VB4X machine. If continuous operation can be achieved, then production and quality would remain consistent.

TIPS FOR REFINING CYCLE TIMES INCLUDE LOOKING AT:

- The speed of a clients' pallet feeder, and whether it is ejecting as fast as possible without damaging the product.
- Automation and control systems – newer control systems allow the machine's hydraulic functions to change their speed during the stroke of the hydraulic cylinder. The cylinder starts moving slowly, is made faster in the middle, and then slowed down again at the end of the stroke. Closed loop control systems using encoders and linear transducers allow the controller to track the position of the moving component continually, allowing the component to move even faster and more smoothly, as the hydraulic system proportionally compensates during the cylinder stroke to ensure that the cylinder is moving at the speed it is programmed to move at.
- Vibration compaction times and mould filling times - sometimes it is possible to improve concrete flow by refining the concrete mix design, or by using additives to make it flow better. The result is that the concrete in the mould would compact faster; thereby, improving cycle times.
- Regular preventative maintenance is extremely-important to reduce unforeseen downtime and ensure the accurate and smooth operation of the machine.
- Reliable continuous operation at a slower cycle time is often better than stop start production.

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Pan Mixers has already assisted a number of clients in improving cycle times. "Several of our clients are running at between 10 - 12 second cycles, setting new production standards for the Industry," Walter concludes.

To learn more about reducing cycle times, visit Pan Mixers' second annual product fair on 15 and 16 September 2010.

Visit www.panmixers.co.za or call 086 100 - PMSA (7672) for more information.

Right: Walter Ebeling on the Fiori DB460SL self loading concrete mixer, which has a 4 cubic meter loading capacity and can manufacture up to 16 cubic meters of concrete per hour. This mixer is fitted with an on board weighing system and printer to ensure consistent quality with a printed report of each batch produced.

