

Wheelie Trap on ZX5 machines

How the saw software prevents a "Wheelie" of the profile

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Comments

A "wheelie" happens when

- the part of a bar left on the saw pusher is pushed down at the gripper end by the gripper pressure
- in an area where there is no support underneath
- there is no top clamping force the other end to balance this force.

During the main part of the saw cycle, the top clamp is maintained on at all times. The top clamp is switched off when the gripper approaches it at speed. This happens when the final cut puts the saw gripper under the top clamp - the clamp lifts to clear the way. If the piece left in the gripper is short, this will allow a wheelie to happen

The original ZX5 software had a trap for this situation, but it only applied to offcuts during eject. The trap involved adding a secondary x axis movement to a position just in front (+10mm) of the top clamp bar end position. This has the effect of ensuring the top clamp stays on until the gripper is over the saw bed and there is a "base" to the gripper. The final move to a position under the top clamp will not then cause a wheelie because the end of the bar is supported underneath.

During testing of Z073, this was also discovered to happen when the final piece on the bar was short (around 450mm).

This has probably come to light after a recent upgrade to the clamping control in the PLC (6.3030) to make the timings of the clamp lift more accurate.

Front end version release 6.4.45.0 will add the Wheelie trap to all movements that begin at a position < minWheeliePos parameter and end under the top clamp. Default setting for minWheeliePos is 2000mm