

Accuracy Diagnosis - External Factors

External Factors that can affect accuracy on Stuga Machines

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There are many external factors that can affect the accuracy of Stuga machines. it is incredibly important that these factors are all eliminated as potential root causes.

If you do suspect that one of these factors is potentially a problem, it is equally important to be able to prove and demonstrate your suspicions clearly.

External Factor	Description	Common Symptoms	Link to Page	Affected Machines
Temperature change	Profiles expand around 0.5-1.0mm per 10 degree in temperature change If the bar temperature changes between machining and sawing, the bar expands and accuracy is compromised	Operation position randomly out	Proving temperature change variance	Flowlines ZX3 / 4/ 5
Profile Width	Depth of front V and Y notches depends on the profile width Arrow head position depends on profile width (Autoflow, Microline only)	Depth of V notch incorrect on one profile only	Z Transom Width Measurement	All
Innaccurate welders	Finished Y notch depth depends heavily on reverse butt burn-off	Y notch depth correct before welding, incorrect after		Y Notching machines
Incorrect link data (Y notch codes)	Machine will cut to the depth that it is told	Y notch depth correct before welding, incorrect after		Y Notching machines
Profile symmetry	The profile has not been extruded properly and transom profile is not symmetrical	Arrow heads are out Arrow heads change depending on profile orientation T notches on transoms incorrect	Test T Transom Symmetry	All
Wet profile	Profile is not dry before running through machine	Cut lengths incorrect Loading problems		All
Profile left on TT overnight	Operator leaves profile on transfer table overnight - machined on one day and sawn on another. High chance there will be a temperature change	Operation position randomly out first thing in morning	Proving temperature change variance	Flowlines ZX3 / 4/ 5
Bowed profile	Profile is bowed outside of its tolerance range	Profile does not load correctly		All
Twisted profile	Profile is twisted outside of its profile range	Profile does not load correctly		All
Parallelism of profile faces	Profile faces are not parallel to each other. This causes havoc when reverse butt welding	Y notches incorrect		Y Notching machines

Cleanliness / Housekeeping	Machine has not been cleaned properly. Increased chance that swarf can create a problem Extraction systems turned off	V notch pattern not correct Loading problems and timeouts Incorrect operation positions		All
Blades / tooling	Blunt blades or tooling causing inaccuracies Non-Stuga tooling used V notch blade buckled or missing teeth	V notch pattern not correct Loading problems and timeouts Incorrect operation positions		All
Customer expectation	The customer expectation is too high - quoted accuracy is +/- 0.5mm	Cut lengths incorrect		All
Customer measuring equipment	No two tape rules are the same. Check consistency of tape rule	Cut lengths incorrect		All
Operator measuring method	Is the measuring method used accurate enough?	Cut lengths incorrect		All
Incorrect pos testing	Operator is blindly changing parameters based on only one test outcome Only change parameters if there is a consistent error MEASURE 3 TIMES ADJUST ONCE	Incorrect operation positions		All
Proper operator trained	Operator changing wrong parameters or abusing machine	Incorrect operation positions		All
Laser lens	Laser measuring system not kept clean or not set up properly	Incorrect operation positions		Flowlines ZX3 / 4 with laser
Skipping the laser	Operator is skipping laser measuring because of another problem on loading	Incorrect operation positions		Flowlines ZX3 / 4 with laser
Accuracy of cut pieces	Length of cut pieces into Ecoline will affect operation positions	Incorrect operation positions		Ecoline