

# Parameters Dictionary

Dictionary of parameters in Stuga machines


## Contents



Comments

| Stuga Parameter Dictionary |   |                     |                  |                |               |   |
|----------------------------|---|---------------------|------------------|----------------|---------------|---|
| Parameter Name             | Description   | Software            | Machine          | Value Range    | Default value | Notes   |
| loadOffsetX                | Distance the gripper has to move after measuring finished to clear the grip finger.   |                     | Autoflow         |                |               | See Autoflow Loading Offset Parameters  |
| stopCylindertZeroX         | Distance from zero to the stop cylinder   |                     | Autoflow         |                |               | See Autoflow Loading Offset Parameters  |
| infeedToZeroX              | Distance from Zero to the material side of the loading fence  |                     | Autoflow         |                |               | See Autoflow Loading Offset Parameters  |
| measureStartPosX           | GX Position to start length measuring   |                     | Autoflow         |                |               | See Autoflow Loading Offset Parameters  |
| useGripRelease             | Switch on sensor to detect if gripper is off  | winMulti 3.63.0.0   | Autoflow         | 0 or 1         | 0             |   |
| useSawInfeedTopToggle      | set true to toggle off / on saw infeed top clamp on last cut  | winMulti 3.64.0.0   | Autoflow         | 0 or 1         | 0             | Requested by GF at Thermaseal A2008   |
| ejectStrokeLength          | Distance that eject cylinder pulls profile out of machine   | winMulti            | Autoflow         | 0-600          | 600           | <a href="https://stuga.dokit.app/wiki/TB0247_Safety_Gate_Distances_c">https://stuga.dokit.app/wiki/TB0247_Safety_Gate_Distances_c</a>   |
| outfeedSize                | Size of outfeed table from where a square-ended bar is ejected to to the safety gate  | winMulti            | Autoflow         | 1850-6000      | 2900          | <a href="https://stuga.dokit.app/wiki/TB0247_Safety_Gate_Distances_c">https://stuga.dokit.app/wiki/TB0247_Safety_Gate_Distances_c</a>   |
| parkpositionR              | Park position in degrees for R axis on power down   | winmulti 3.72.0.0   | Autoflow         | 0-360          | 0             | Requested by GF at Glazerite A2009  |
| shortestPieceAvoidEnd      | Avoid using pieces shorter than this at end of bar. Optimiser forces a mechanical prep at the end depending on sawFeedDir. Switch off with 0.   | winmulti 3.75.0.0   | All              | 0-1000         | 0             | DISABLED form 4.13.0.0 because optimising adversely affected  |
| useUnclampSawOnReverse     | default True. Switch off side and top saw clamps on autoflow on x axis reversing  | winmulti 3.73.0.0   | Autoflow         | 0 or 1         | 1             | Requested by GF at Thermaseal A2008   |
| firstCutOverHeight         | the extra height added for first cut on the bar. Stops the first trim cut from hanging around due to profile tape not cutting properly          | winMulti 3.79.0.0   | Autoflow         | 0 to 50        | 0             | tested using fixed 50 at Thermaseal A2008, then added as para Framemaker visit A2006  |
| sawBacklashMove            | Use a backlash compensation   | winMulti 3.91       | Autoflow         | 0 or 1         |               | Not implemented or used   |
| useBlowerForEndPiece       | Utilises a blower to remove the last tricky offcut on Autoflow  | winMulti 3.95.0.0   | Autoflow         | 0 or 1         | 0             | Needs a blower upgrade fitted to ensure enough air flow (R001)  |
| throwawayChunkSize         | defines piece size that offcuts<throwaway are chopped into until smallest grip is left  | winMulti 3.95.0.0   | Autoflow         | 25-90          | 60            | Should be defined by distance between saw blade and rear saw jam ups  |
| houseKeepingStock          | Days to retain bars used data   | winMulti 3.96.0.0   | All              | 7-720          | 365           | <a href="https://stuga.dokit.app/wiki/Throwaway_Chutewidth_and_Sm">https://stuga.dokit.app/wiki/Throwaway_Chutewidth_and_Sm</a>   |
| houseKeepingPieces         | Days to retain pieces cut data  | winMulti 3.96.0.0   | All              | 7-180          | 62            |   |
| houseKeepingRunning        | Days to retain efficiency data  | winMulti 3.96.0.0   | All              | 7-180          | 62            |   |
| disableOfConveyor          | Disable Outfeed Conveyor on Autoflow Mk A machines  | winMulti 3.97.0.0   | Autoflow MkA     | 0 or 1         | 0             | First done at Astraframe A2002. Machine works better without  |
| houseKeepingEntryLog       | Days to retain detailed io and axis data  | winMulti 3.103.0.0  | All              | Jan-30         |               |   |
| dbTickInterval             | Sample frequency for detailed diagnostic data   | winMulti 3.103.0.0  | All              | 100 to 2000    | 200           | May need to tweak if PC is slow or USB connection slow  |
| dbDumpInterval             | sample frequency to dump data to database   | winMulti 3.103.0.0  | All              | 1000 to 50000  | 5000          | May need to tweak if database / network connection is slow  |
| useEntryLogging            | Switch on logging of detailed io and axis data  | winMulti 3.103.0.0  | All              | 0 or 1         | 0             |   |
| useToolBreakDetect         | Switch on tool break detect feature   | winMulti 3.103.0.0  | ZX               | 0 or 1         | 0             | Tool break detect only works on ultrasonic sensor and v3.30 m   |
| toolBreakRange             | range +/- for detection window of tool  | winMulti 3.103.0.0  | ZX               | 1 to 10        | 5             |   |
| toolBreakSpeed             | Speed of R axis on detection  | winMulti 3.103.0.0  | ZX               | 10 to 200      | 100           |   |
| skipThrowawayMitreCut      | Skip the leading mitre cut on last offcut   | winMulti 4.4.0.0    | Autoflow         | 0 or 1         | 0             | Needed on A2007 because gripper arm on top of profile under blockages   |
| reverseOptimisationOrder   | Reverse optimisation order  | winMulti 4.7.0.0    | All              | 0 or 1         | 0             | reflects the piece preps and gaps as sent to optimiser, then rear order. Looking to try to place short pieces at the start of the bar. Microline machines, as short bits at end create a big problem in |
| debugStepMode              | Debugging mode forcing a start to be pressed after each saw operation.  | winMulti 4.10.0.0   | Autoflow         | 0 or 1         | 0             | Intention is to extend this with different modes in future, perhaps recipe commands, etc  |
| throwaway                  | smallest waste piece that is able to be ejected onto the outfeed table  | winMulti and winSaw | Autoflow and Saw | 200 to 260mm   | 260           | See <a href="https://stuga.dokit.app/wiki/Throwaway_Chutewidth_and">https://stuga.dokit.app/wiki/Throwaway_Chutewidth_and</a>   |
| chutewidth                 | The largest size waste lump that would be pushed down the chute   | winMulti and winSaw | Autoflow and Saw | 120mm to 150mm | 130           | See <a href="https://stuga.dokit.app/wiki/Throwaway_Chutewidth_and">https://stuga.dokit.app/wiki/Throwaway_Chutewidth_and</a>   |
| smallestgrip               | the smallest waste piece at the very end of the bar that the clamping system (infeed side) is able to hold onto whilst a square cut takes place | winMulti and winSaw | Autoflow and Saw | 80-120mm       | 100           | See <a href="https://stuga.dokit.app/wiki/Throwaway_Chutewidth_and">https://stuga.dokit.app/wiki/Throwaway_Chutewidth_and</a>   |
| optimiserYieldLimit        | This will retest optimiser with increasing thresholds to get best yield   | winMulti 4.19.0.0   | All              | 0-95           | 0             | Leave at 0 to disable   |

|                        |  |                    |                         |           |                |  |
|------------------------|--|--------------------|-------------------------|-----------|----------------|--|
| use449ForStdLength     | Use length given in 449 file as standard length  | winMulti 4.23.0.0  | All                     | 0 or 1    | 0              | Relies on 449 file having ONLY std lengths in, not offcuts   |
| useMachineUpload       | regular upload of machine status data for logging by front end   | winMulti 4.24.0.0  | All                     | 0 or 1    | 0              | Needs Mint v3.38   |
| offcutShiftMin         | lower limit to kick in offcut shift to start   | winMulti 4.26.0.0  | Microline only          | 0 to 1000 | 0              |  |
| offcutShiftMax         | upper limit to kick in offcut shift to start   | winMulti 4.26.0.0  | Microline only          | 0 to 1000 | 0              |  |
| mlShortPieceSaveBarEnd | At bar end on Microline, position to move to to allow CLSOP to get under final piece                                     | winMulti 4.29.0.0  | Microline only          | 0 to 1200 | 0              | 0 means do not use. See CC-013479. Video available of issue  |
| decelDivisorGlobal     | Number to divide actual accel rate by at end of slots - helps stop the slot end from overshooting and giving poor finish | winMulti 4.30.0.0  | All                     | 1 to 10   | 10             | Implemented as a permanent fixture on Z041 Polyframe, but tlb be modified for performance reasons. Can also be modified loc speed command - decelDivisor=nn  |
| phaseScaling           | scaling the feedback from the phase monitor module   | winMulti 4.38.0.0  | Ring                    | 0.1 to 1  | 1              |  |
| minYNotchResidual      | Minimum residual amount allowed for Y notches on Autoflow  | winMulti 4.63.0.0  | Autoflow                | 5 to 50   | 20             | Following issues on CC-014201 Astraframe where notch too d   |
| psInfeedRollerLift     | Delay between infeed roller lifting and infeed belt starting   | winMulti 4.65.0.0  | Mk3 Infeed only         | 0 to 2000 | 1000           | As recommended by MV 04/12/15  |
| autoloadLength         | Lengths > autoloadLength will allow standalone saw autoloading to work, else load manually to backfence                  | winMulti 4.65.0.0  | Standalone Saw Mk5 Only | 4500-6000 | 5500           |  |
| yNotchStartGap         | Gap distance at start of bar for Y notching  | winMulti 4.65.0.0  | All                     | 0-350     | 270            | On Microline this beeds updated W_ESYF and W_ESYR mnd fil for this is 'y'. Used instead of 's+s' or 's+s+s', which were a work See YNotchStartGap Parameter  |
| gripPassPos            | G axis position when ejecting profile to transfer table  | winMulti 4.65.0.0  | Mk3 Outfeed only        | 0-100     | 75             |  |
| secondSawHeight        | Height of middle saw cut out sensor if fitted  | winMulti 4.70.0.0  | Saw Mk5                 | 0-100     | 0              | Used as the tipping point for the saw cut height when set on the feature is switched off   |
| overLengthMax          | amount that optimising system will allow an overlength before modifying stdLength for all following lengths              | winMulti 4.79.0.0  | Measuring infeeds       | 0-100     | 25             | If set too low, optimiser is able to reoptimise all bar lengths to ( to needing fewer bars on infeed table. This can lead to confusio  |
| optimiserVersion       | External optimiser version   | winMulti 4.79.0.0  | All                     | 1 to 2    | 1              | 1=std; 2=2016 version (requires optim2016.exe)   |
| useOffcutsDiagnostics  | log movement of offcuts in diagnostic file   | winMulti 4.79.2.0  | All                     | 0 or 1    | 0              | Only switch on if tracing problems, as it slows down the loading lots of offcuts   |
| flowlineAllInOne       | Switches oin second saw screen   | winMulti 5.0.0.0   | Flowline                | 0 or 1    | 0              | Activates control of saw side from one TwinCAT3 PC. Sperate because we could have Mk3, ZX3 or ZX4 with flowlineAllInOn   |
| psZTurret              | Z turret pulse delay (ms)  | winMulti 5.0.0.6   | Flowline                | 500-4000  | 1000           |  |
| frontToBackVersion     | Definition of interface between front end and back end controller  | winMulti 5.0.0.7   | All                     | 1 to 3    | 1              | Changes needed for flowlineAllInOne. This parameter keeps c versions. Detail of changes is in following sheets. 3 - uses ph parameters for output change - requires tcMulti3.4 REMOVED IN V6 as the front end reads the back end version |
| useUnderRoller         | useUnderRollerFlag - activates checking of underroller home sensors on X return  | winMulti 5.0.0.7   | ZX                      | 0 or 1    | 1              | Only used on ZX  |
| useComponentEntry      | activates component entry screen on manual input   | winMulti 5.0.0.8   | All                     | 0 or 1    | 0              | Specifically designed for BPS A2015  |
| transferType           | Transfert Table type   | winMulti 5.2.7.0   | Beckhoff control        | 0-2       | 0              | 0-LiftSlide; 1-LiftLoad; 2-Mk6   |
| componentDirectory     | Directory used to read componet information from   | winMulti 5.3.0.0   | All                     | text      | c:\components\ |  |
| invert300Hz            | Invert the 300Hz / 50Hz output   | winMulti 5.4.4.0   | All                     | 0 or 1    | 0              | Need to invert the output for Delta Inverters - set to 1   |
| allWasteAtStart        | Force all waste < minOffcut to be cut at start of bar  | winMulti 5.5.0.0   | Standalone saw only     | 0 or 1    | 0              | cut into throwawayChunkSize pieces.  |
| showCutPieceList       | displays a windows form with the last n pieces on  | winMulti 5.7.0.0   | All                     | 0-10      | 0              | Useful at BPS as they have no printer and were using the Bar E   |
| usePLCEstop            | Switches on compatibility with PLC TwinSafe safety systems   | winMulti 5.8.0.0   | TwinCAT3 only           | 0 or 1    | 0              | Configuration parameter - critical   |
| globalYDepthAdjustment | Value to offset ALL Y notch depths by to overcome differences in 3rd Party software output and actual welder values      | winMulti 5.9.1.0   | All                     | "-5 to 5" | 0              |  |
| liftingPusher          | Switches on lifting pusher capability  | winMulti 5.9.1.0   | a                       | 0 or 1    | 0              |  |
| useBarQueueIdentifier  | Switches on Bar identifier holes   | winMulti 5.13.0.0  | Flowline                | 0 or 1    | 0              | Uses IDENTIFY mnd file to create 1, 2 or 3 holes in each bar to  |
| useOnlyStdLengths      | Forces machine to measure and use only standard lengths. Measuring system just used to check                             | winMulti 5.14.5.0  | All                     | 0 or 1    | 0              | Used at BPS where they never use offcuts   |
| useReverseArrowHeads   | Reverse order of arrow head cutting so that chute is at front of machine on final cut                                    | winMulti 5.14.7.0  | All                     | 0 or 1    | 0              | Changes direction of small offcut triangles, helps with offcut di  |
| groupOpFootprint       | max area that the grouping can take place  | winMulti 5.14.9.0  | All                     | 0 to 6500 | 1000           | Equivalent to max reversing move on grouping.  |
| groupOpNeighbour       | max distance to nearest similar op   | winMulti 5.14.9.0  | All                     | 0 to 1000 | 0              | if closer than this distance it will group the operations. Set to 0  |
| useInfeedOnLargeOffcut | allows large offcut to be removed from infeed on standalone saw type machine   | winMulti 5.14.15.0 | Standalone Saw          | 0 or 1    | 0              | Emulates old style saw feature "hugeOffcutReversePusher"   |
| frameCountSource       | Select the source of the data that feeds the frame count   | winMulti 6.0.0.0   | All                     | 0-2       | 0              | 0=off; 1=SlotNumber; 2=trimmed id field  |
| pieceBitmapIdentifier  | Identifier lable on the piece picture in the bar queue   | winMulti 6.0.0.0   | All                     | 0-3       | 0              | 0=off; 1=PieceNumber; 2=SlotNo; 3=Trimmed Id field   |
| infeedScreenType       | Resolution of infeed screen  | winMulti 6.0.0.0   | All                     | 0-1       | 0              | 0=std; 1=WideHD  |
| sawSYType              | SY axis type   | winMulti 6.0.0.0   | All                     | 0-2       | 0              | 0=No SY Axis; 1=Full range, as autoflow; 2=Y-Drive about centi   |
| inverterOkHigh         | State of inverter OK signal  | winMulti 5.16.0.0  | All                     | 0 or 1    | 0              | 0=Low is ok, 1= high is OK   |

|                         |  |                   |                  |              |                    |  |
|-------------------------|--|-------------------|------------------|--------------|--------------------|--|
| safetyCctActiveLow      | Invert the TwinSAFE PLC safety input to make it active low                         | winMulti 5.18.0.0 | TwinSAFE systems | 0 or 1       | 0                  | 0 = Default, reads high signal when safety is reset.<br>1 = Safety circuit reads high when circuit is broken This parameter is used for TwinSAFE machines have an inverted safety input in the twinsafe machines. For other reasons, the output needs to be active high, so ES circuit Parameter not used v6 above |
| ps_PopUp                | Delay for popup cylinders in ms  | winMulti 6.0.0.0  | ZX5              | 0 to 1000    | 250                |  |
| ps_DDClampOn            | Delay for datum drill clamp cylinder On in ms                                      | winMulti 6.0.0.0  | ZX5              | 0 to 1000    | 500                |  |
| ps_DDClampOff           | Delay for datum drill clamp cylinder Off in ms                                     | winMulti 6.0.0.0  | ZX5              | 0 to 1000    | 250                |  |
| lengthMeasureScale      | Scaling for the length measuring laser   | winMulti 6.0.0.0  | ZX5              | -1 to 1      | -0.176829174       | Scaling factor for the analogue feedback from the laser in mm.   |
| lengthMeasureOffset     | Offset for the length measuring laser  | winMulti 6.0.0.0  | ZX5              | 5000 to 7000 | 6294.54            | Offset for laser position in mm. Adjust to correct offset length laser is +/- 10mm   |
| stdLenSensor1Pos        | Position of the std Length sensor 1 (shorter)                                      | 6.3.0.0           | ZX5              | 4000 to 7000 | 5950               |  |
| stdLenSensor2Pos        | Position of the std Length sensor 2 (longer)                                       | 6.3.0.0           | ZX5              | 4000 to 7000 | 6450               |  |
| sawDepthOffsetY**       | Depth offset for Y notches using saw head.   | 6.3.4.0           | ZX5              | -1 to 1      | 0                  | Allows tweaking of right and left Y notches if they are not the same. The fact that this has to be modified means the blade centre line is not in line with the SR axis of rotation as needed.   |
| ps_pushToBfDrill        | Channel B push to backfence for drill  | 6.3.4.0           | ZX5              | 0 to 6000    | 3000               |  |
| ps_pushToBfMod*         | Push to backfence time   | 6.3.4.0           | ZX5              | 0 to 6000    | 3000               |  |
| ps_crankOverrun*        | Crank overrun after sensor seen  | 6.3.4.0           | ZX5              | 0 to 5000    | 100                | Allows overrun where sensor comes on before end of crank travel  |
| ps_popUpFilter*         | Time filter for dog slot sensors   | 6.3.4.0           | ZX5              | 0 to 1000    | 100                | Used to filter spurious signals, sensor must be constantly active time before active   |
| ps_drillPIDDown         | Timeout for drill plunge to out sensor before error                                | 6.3.4.0           | ZX5              | 0 to 10000   | 5000               |  |
| ps_blowerPulse*         | Pulse time for blower in this module   | 6.3.4.0           | ZX5              | 0 to 10000   | 500                |  |
| ps_popUpOut*            | Time for popup to activate   | 6.3.4.0           | ZX5              | 0 to 1000    | 250                | Special case for Datum Drill - has longer popups   |
| ps_popUpDown*           | Time for popup to deactivate   | 6.3.4.0           | ZX5              | 0 to 1000    | 250                |  |
| ps_popUpEnd*            | Time delay for "end" pop up to activate  | 6.3.4.0           | ZX5              | 0 to 5000    | 0                  | Module D is 2000 by default to allow bar to clear first dog before   |
| ps_rollerDrop*          | Time for rollers to drop   | 6.3.4.0           | ZX5              | 0 to 2000    | 0                  | Module A is 500 by default   |
| ps_gripOn*              | Gripper teeth on timeout before teeth out error                                    | 6.3.4.0           | ZX5              | 0 to 2000    | 1000               |  |
| ps_gripOff*             | Delay allowed for gripper assembly off   | 6.3.4.0           | ZX5              | 0 to 2000    | 1000               |  |
| ps_gripHeight*          | Delay for gripper height to reach profile  | 6.3.4.0           | ZX5              | 0 to 5000    | 2000               |  |
| ps_chanLockOn*          | Delay to allow channel locking device to activate                                  | 6.3.4.0           | ZX5              | 0 to 1000    | 250                |  |
| ps_chanLockOffOn*       | Time between channel off and lock on   | 6.3.4.0           | ZX5              | 0 to 1000    | 50                 | Increase to create a bigger gap for the saw infeed Module E change   |
| ps_crankTimeout         | Timeout for all cranks for home / out sensor made                                  | 6.3.4.0           | ZX5              | 0 to 10000   | 5000               |  |
| qDrawBarId              | Adds the bar ID to the bar picture instead of bar length                           | 6.3.6.0           | All              | 0 or 1       | 0                  | Helps track and diagnose bar queueing issues   |
| widthMeasureScale       | Scaling for the width measuring  | 6.3.10.0          | ZX5              | -1 to 1      | -0.030534          | Scaling factor for the analogue feedback from the width measuring laser. Beware of profile crushing  |
| widthMeasureOffset      | Offset for the width measuring   | 6.3.10.0          | ZX5              | -500 to 500  | 128.7              | Offset for width in mm. Adjust to correct width readings. Accurate 0.1mm. Beware of profile crushing   |
| useMitreOnStartWaste    | Use a mitre cut, not square cut on waste at start of bar                           | 6.3.10.0          | All              | 0 or 1       | 1                  | Stops offcut waste jamming bar push at beginning   |
| ps_InvAccelTime50Hz     | Delay between motor accel start and plunge start for 50Hz spindle                  | 6.3.11.0          | All              | 0 to 2000    | 500                | enable reduction in acceleration pause before plunging. On profile is immediate (effectively zero). It is possible to accelerate during but care must be taken to ensure the tool is up to speed before  |
| ps_InvAccelTime300Hz    | Delay between motor accel start and plunge start for 300Hz spindle                 | 6.3.11.0          | All              | 0 to 2000    | 200                | enable reduction in acceleration pause before plunging. On profile is immediate (effectively zero). It is possible to accelerate during but care must be taken to ensure the tool is up to speed before  |
| widthMeasureMode        | Mode of operation for width measuring  | 6.3.14.0          | ZX               | 0 to 6       | 0                  | Width measuring mode. 0=off; 1=profile recognition; 2=profile and tolerance  |
| zTurretSawType          | Turret Type used   | 6.3.20.0          | All              | 0 or 1       | 0                  | 0=Stuga; 1=Somatec   |
| productionRecipients    | List of email addresses to send production data to                                 | 6.3.46.0          | All              | text         | none               | Separated by semicolon   |
| productionEmailTime     | Time of day to send production email for previous shift                            | 6.3.46.0          | All              | text         | 09:00:00           |  |
| emailServer             | Email server used to send  | 6.3.47.0          | All              | text         | smtp.office365.com | }  |
| emailUser               | Email username on server   | 6.3.47.0          | All              | text         | [[1]]              | }  |
| emailPassword           | Email user password on server  | 6.3.47.0          | All              | text         | Wuzo4848           | } These parameters are the standard using the Stuga Email Service  |
| emailPort               | Email port number  | 6.3.47.0          | All              | 0 to 999     | 587                | }  |
| emailConnectType        | Email connection type on server  | 6.3.47.0          | All              | 0 to 4       | 1                  | } 0=Direct SSL; 1=SSLAUTO; 2=Normal; 3=StartTLS; 4=TryTLS  |
| infeedLaserRemeasure    | Length measured by laser below which the rear sensors are used.                    | 6.3.57.0          | ZX5              | 0 to 7500    | 2000               | Helps mis-measures on smaller size offcuts   |
| reverseGripHoles        | Reverse the hole order on grip location holes                                      | 6.3.58.0          | ZX5              | 0 or 1       | 0                  | Overcomes problem with Linier profile with a curved edge near rear then front; 1= front then rear  |
| maxOffsetFromCentreline | Maximum allowable offset for a Y notch from the centreline                         | 6.3.61.0          | ZX5              | 0 to 20      | 20                 | This is a limitation on Ydrive - it can only range +/-20mm from the centreline   |
| remakesPassword         | Separate Password for remakes screen   | 6.3.61.0          | All              | text         | none               | none will disable feature  |
| yGripHolePosition       | Gripper hole position in Y axis on ZX5 gripper                                     | 6.3.69.0          | ZX5              | 0 to 40      | 15                 | Needs to be 12 on ZO66   |
| useInverterAtZero       | Spindle off routing waits for X308 Inverter at Zero before releasing spindle relay | 6.4.1.0           | All              | 0 or 1       | 0                  | Needs Yaskawa inverter fitted. Will cause longer delay if Zero is not  |
| useBarcodeReader        | Switches on barcode reading function for Ecoline                                   | 6.4.1.1           | Ecoline          | 0 or 1       | 0                  | Puts input window at bottom centre of screen   |
| ecoGripperDepth         | Required depth of gripper into profile   | 6.4.9.0           | Ecoline          | -30 to -10   | -18                |  |
| ecoGripperToSpindle     | Distance from gripping point to spindle centreline                                 | 6.4.9.0           | Ecoline          | 10 to 30     | 25                 |  |
| ecoInfeedOverrun        | Distance that infeed loader pushes profile past zero                               | 6.4.9.0           | Ecoline          | 20 to 50     | 40                 |  |

|                       |   |                      |                          |              |      |  |
|-----------------------|---|----------------------|--------------------------|--------------|------|--|
| ecoLaserAdjust        | Adjustment for laser position   | 6.4.9.0              | Ecoline                  | 0 to 10      | 6.2  |  |
| maxLoadLength         | Scales the bars on screen to maximum load length  | 6.4.10.0             | All                      | 2000 to 6600 | 6500 | Originally, scaling fixed to a 6500mm bar, but changed to allow shorter pieces to give a better operator view  |
| ecoSkipVPos           | Illegal area at each end of piece where V notch cannot happen   | 6.4.10.0             | Ecoline                  | 100 to 400   | 300  |  |
| ecoGripperLength      | Length of gripper - used to ensure a prep does not enter the gripper area                               | 6.4.10.0             | Ecoline                  | 0 to 100     | 80   | System automatically adds on depth created by mitre and G ax   |
| bladeCenAdjust        | tweak the difference between \f and f/ when there is a difference in bladeOffset/ and bladeOffset\      | 6.4.11.0             | ZX                       | -3 to +3     | 0    | See bladeCenAdjust Parameter   |
| ecoMitreAdjust        | Adjustment for difference of x position of operations on ecoline - mitre compared to square end cut     | 6.4.15.0             | Ecoline                  | -5 to +5     | 0    |  |
| ecoArrowAdjust        | Adjustment for difference of x position of operations on ecoline - arrowhead compared to square end cut | 6.4.15.0             | Ecoline                  | -5 to +5     | 0    |  |
| isAncilSaw            | Disables and enables parameters specific to an ancillary or cill saw                                    | 6.4.20.0             | Sawing Modules           | 0 or 1       | 0    |  |
| transferMHControl     | switches control of transfer table to MH side   | 6.4.32.0             | Flowline / ZX            | 0 or 1       | 0    | take care with stoppableOutputs and alarms as any transfer or rerouted<br>see <a href="https://stuga.dokit.app/wiki/Changing_Control_of_Transfer">https://stuga.dokit.app/wiki/Changing_Control_of_Transfer</a>  |
| exhausterVNotch       | switches on/off control of extractor when VMOT running  | 6.4.32.0             | Flowline / ZX            | 0 or 1       | 1    |  |
| throwawayMinChunk     | provide a "no-go" range for chunks cut to prevent lodging in backfence                                  | 6.4.32.0             | Sawing                   | 0-150        | 100  | See <a href="https://stuga.dokit.app/wiki/Throwaway_Chutewidth_and">https://stuga.dokit.app/wiki/Throwaway_Chutewidth_and</a>  |
| throwawayMaxChunk     | provide a "no-go" range for chunks cut to prevent lodging in backfence                                  | 6.4.32.0             | Sawing                   | 50-150       | 100  | See <a href="https://stuga.dokit.app/wiki/Throwaway_Chutewidth_and">https://stuga.dokit.app/wiki/Throwaway_Chutewidth_and</a>  |
| throwawayEjectAtStart | ejects throwaway pieces at start of the bar   | 6.4.33.0             | Sawing                   | 0 or 1       | 0    | See <a href="https://stuga.dokit.app/wiki/Throwaway_Chutewidth_and">https://stuga.dokit.app/wiki/Throwaway_Chutewidth_and</a>  |
| invertSlowdownInput   | Invert the input for slowing down the main axis (pusher on saw) when a gate open or lightbeam broken    | 6.4.35.0             | Sawing                   | 0 or 1       | 0    | Some machines are wired differently - this allows compatibility  |
| chuteWidthAtStart     | allows a longer waste cut at the start (possible on Autoflows)  | 6.4.37.0             | Autoflows                | 0 or 1       | 0    | See <a href="https://stuga.dokit.app/wiki/Throwaway_Chutewidth_and">https://stuga.dokit.app/wiki/Throwaway_Chutewidth_and</a>  |
| psToolRetract         | timer used when tool is switched off if tool home input is non-existent or switched off                 | 6.4.39.0             | All                      |              |      |  |
| screenMainX           | Parameters for screen position and size   | 6.4.40.0             | All                      |              | -1   |  |
| screenMainY           |   |                      |                          |              |      |  |
| screenMainH           |   |                      |                          |              |      |  |
| screenMainW           |   |                      |                          |              |      |  |
| screenSawX            |   |                      |                          |              |      |  |
| screenSawY            |   |                      |                          |              |      |  |
| screenSawH            |   |                      |                          |              |      |  |
| screenSawW            |   |                      |                          |              |      |  |
| minWheelieLength      | Minimum saw pusher position for activation of a "wheelie trap" move                                     | 6.4.45.0             | ZX5                      | 500 to 6000  | 2000 | See Wheelie Trap on ZX5  |
| ps_WheelToClamp       | Length of time (ms) that infeed wheel rotates for when pulling into machine                             | 6.4.59.0             | ZX5                      | 0 to 4000    | 2000 | Changes depending on the distance of the infeed table from the   |
| useAngleNotCharacter  | Use angle, not the prep character when deciding on angles   | 6.4.65.0 to 6.4.98.2 | All                      | 0 or 1       | 0    | Use the actual angle sent, not the / character on variable angle BM bug of the wrong ^<br> ...Changed to a profile specific parameter in 6.4.98.4 A<br><a href="https://stuga.dokit.app/wiki/Cutting_Incorrect_Profile">https://stuga.dokit.app/wiki/Cutting_Incorrect_Profile</a>  |
| gripperType           | Gripper Type  | 6.4.69.0             | Flowline                 | 0 or 1       | 0    | 0 - Standard<br>1 - Trueloc  |
| overOptimise          | Optimise error cushion  | 6.4.70.0             | All                      | 0 to 40      | 2    | See overOptimising issue   |
| useSXGripCheck        | Use the grip check pullback on Saw side loading   | 6.4.84.0             | ZX5 / Toothed Gripper    | 0 or 1       | 1    | On ZX5s without a channel bar (up to Z064) the gripper is somewhat properly so this feature to test if the gripper is engaged can be   |
| nosePushBack          | Distance of Push back on ZX5 toothed grip loading   | 6.4.84.0             | ZX5 / Toothed Gripper    | 0 to 10      | 5    | This addition of a 5mm push back in 6.3065 should help stabilise positions, but on some machines, this has caused a problem. See the loading cycle work pre- 6.3065 method of pushing up to the  |
| ringType              | Ring type parameter to control tooling sequence   | 6.4.91.0             | Machining Centres        | -1 to 5      | -1   | rtDefault = -1 - sets by default, changed on first loading<br>rtMk3 = 0 [one output per spindle motor and plunge together]<br>rtMk3DP = 1 [one output per spindle motor and plunge together]<br>rtZX = 2 [two outputs per spindle - motor first and plunge after]<br>rtAutoflow = 3 [two outputs per spindle - motor first and plunge]<br>rtTwoHeadNoPlunge = 4 [No plunge, motor stays on throughout]<br>rtThreeHead90 = 5 [Not used] |
| infeedBeamMode        | Control mode for an infeed light beam   | 6.4.91.0             | ZX5                      | 0 to 2       | 0    | Fitted to Z084 for compliance<br>see ZX5 Infeed Safety Additions 2021  |
| outfeedBeamMode       | Control mode for an outfeed light beam  | 6.4.91.0             | ZX5                      | 0 to 2       | 0    | Fitted to Z084 for compliance<br>see ZX5 Infeed Safety Additions 2021  |
| gripHoleSlotMode      | Toothed gripper hole slotting mode  | 6.4.93.0             | Toothed Gripper          | 0 to 2       | 0    | Allows elongation of the toothed gripper holes on all profiles, 0<br>This helps the gripper pins locate if a profile has rotated slightly<br>Slotting modes<br>0 - off<br>1 - On profiles where the flip parameter = 'D'<br>2 - On all Profiles  |
| gripHoleSlotSize      | Toothed gripper hole slot size  | 6.4.93.0             | Toothed Gripper          | -5 to 5      | 0    | Movement of Y axis to produce gripper slot in mm<br>Can be + or -<br>A negative value will elongate the hole towards the front of the most common as the profiles tend to roll back<br>A positive value will elongate holes towards rear<br>If elongation in both directions is needed, alter the yGripHoleP and elongate +/- from that position   |
| canSkipInitialise     | Flag software to skip the initialise function after estop and continue from where program was stopped   | 6.4.96.0             | All Beckhoff TC3controls | 0 or 1       | 0    | Switch on to improve recovery speed after an estop.<br>This parameter needed following machine compliance upgrade<br>wired into estop circuit  |

|                               |  |          |  |                   |          |   |
|-------------------------------|--|----------|--|-------------------|----------|---|
| ps_ejectpushMH                | Pause for eject push on MH side.   | 6.5.6.0  | Mk3 Flowline all-in-one                | 0 to 5000         | 3500     | This followed discovery of a bug which means MH side and saw<br>This delay is now used solely for MH side ejecting if there is no   |
| outfeedType                   | Type of outfeed table  | 6.5.7.0  | All                                    | 0 to 2            | 0        | 0-Standard<br>1 - Sturtz<br>2 - Soenen  |
| opBlipOn                      | Time for On "Blip" to warn operator that machine is idle                       | 6.5.8.0  | All                                    | 0 to 1000         | 0        | Set to zero to disable  |
| opBlipOff                     | Time between "Blips" to warn operator that machine is idle                     | 6.5.8.0  | All                                    | 0 to 10000        | 0        | Set to zero to disable  |
| ejPosBladeClear               | Servo eject position to clear blade  | 6.5.12.0 | JX Axis                                | 0 to 1000         | 125      | Used when the eject is replaced with a servo drive for individual   |
| ejPosLabel1                   | Servo eject position for 1st Label application                                 | 6.5.12.0 | JX Axis                                | 0 to 1000         | 600      | Used when the eject is replaced with a servo drive for individual   |
| ejPosLabel2                   | Servo eject position for 2nd Label application                                 | 6.5.12.0 | JX Axis                                | 0 to 1000         | 700      | Used when the eject is replaced with a servo drive for individual   |
| ejPosOut                      | Servo eject position to eject out  | 6.5.12.0 | JX Axis                                | 0 to 1000         | 750      | Used when the eject is replaced with a servo drive for individual   |
| ejSpeed                       | Servo Eject Speed  | 6.5.12.0 | JX Axis                                | 0 to 2000         | 750      | Used when the eject is replaced with a servo drive for individual   |
| measureSensorPos1             | Autoflow gripper measure sensor 1 position                                     | 6.5.13.0 | Autoflow Mk4                           | 0 to 2000         | 1500     | Distance from gripper zero (nose pressed in) to sensor. Used to more accurately   |
| measureSensorPos2             | Autoflow gripper measure sensor 2 position                                     | 6.5.13.0 | Autoflow Mk4                           | 0 to 2000         | 1500     |   |
| useFirstConveyorForReinforced | Determines which conveyor to output reinforced pieces                          | 6.5.13.0 | Autoflow Mk4 with dual conveyor system | 0 or 1            | 1        |   |
| finalCutOffset                | offset to apply to the final cut of a bar                                      | 6.5.13.0 | All                                    | -1 to 1           | 0        | Applied on a cut less than 150mm from end, as this reflects cut go of the profile and leaves the clamping for cutting to the out predictable error that can be offset with this value<br><br> ...Only use this parameter if the error is consistent across many profiles |
| usePopupBackfenceZX5          | use the popup cylinders for a backfence on MH outfeed                          | 6.5.15.0 | ZX5                                    | 0 or 1            | 0        | Original software used the popups on Crank C as the backfence they were sometimes damaged by a wayward profile, ripping or<br><br>Following an update on Z083 Window Warehouse, some bars started indicating a slightly different setup or alignment. This parameter to the original process  |
| vsOffsetLead                  | Offset value for a vs profile for the vs tilted lead cut of the mitre pair [ ] | 6.5.22.0 | Autoflow VS                            | -5 to 5           | 0        | Allows a simple offset for inconsistencies with VS tilt cuts<br>See <a href="https://stugaltd.monday.com/boards/292796285/pulses/4385">https://stugaltd.monday.com/boards/292796285/pulses/4385</a>   |
| vsOffsetTail                  | Offset value for a vs profile for the vs tilted tail cut of the mitre pair [ / | 6.5.22.0 | Autoflow VS                            | -5 to 5           | 0        |  ...Should always try to solve with blade spacers first  |
| vsTiltTiltGap                 | Additional Gap added between two VS Square / square cuts with tilt             | 6.5.23.0 | Autoflow VS                            | 0 to 10           | 3        | Needed if the above vsOffset parameters are used which could situation, putting the cuts in the wrong order on the bar length exceed the maximum vsOffset   |
| ps_InfeedConvDecelTime        | Timer for the Infeed Conveyor decel time                                       | 6.5.27.0 | Autoflow Mk4                           | 0 to 5000         | 5000     | On Stuertz infeed, there is a electro-mechanical brake on the n time from switching off the inverter output to application of the issues when the inverter decel timer has not been set correctly because the decel of the conveyor is 0.5 seconds which is too long  |
| reminderText                  | Text to display at reminderTime  | 6.5.28.1 | All                                    | text              |          | See Setting Cleaning Reminders on winMulti software   |
| reminderTime1                 | 1st reminder time  | 6.5.28.1 | All                                    | 00:00:00-23:59:59 | 12:30:00 |   |
| reminderTime2                 | 2nd reminder time  |          |  |                   | 16:30:00 |   |
| invertChannelLock             | Invert the channel lock on saw loading   | 6.6.2.0  | Flowlines / ZX                         | 0 or 1            | 1        | By default, the lock should be inverted but many machine are n the output sense to be inverted  |
| holdOptimiserUntilLoaded      | Hold optimiser from starting until the entire batch is loaded                  | 6.7.0.0  | All                                    | 0 or 1            | 1        | Set to True to solve issue when crashing on loading with batch separate profiles (A&B Modus Batches)  |