


# TM017 Setting Cut Length on Saw

This module guides the engineer on how to correctly set the cut lengths on Stuga saws

 Difficulty **Medium**

 Duration **60 minute(s)**

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Comments


## Introduction

The engineer will need a reasonable mechanical knowledge, and a working knowledge of the operation of the machine.

The following steps are taken to set the saw lengths correctly:

- Scaling / calibration
- Ensure cut length consistency
- Set saw blade kerf
- Set blade offsets / and \
- Check mitre / mitre cuts

## Items

 150mm Rule

## Step 1 - Scaling / Calibration

If this process is to be carried out on a flowline, it is very important for the full scaling procedure to be followed, to ensure accuracy across both machines

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## Step 2 - Ensure Cut Length Consistency

It is important to ensure that the cut lengths are consistent before any changes are made. An inconsistent result could throw all accuracy adjustments out, and will not find the root cause of the problem.

1. Cut 19 off 300mm pieces [ ] from a 6m length.
2. Mark each piece as it is cut
3. Check lengths of each one, measure across the **BOTTOM** of the profile
4. Check each cut for squareness
5. To pass, all cut lengths must be within **0.5mm**

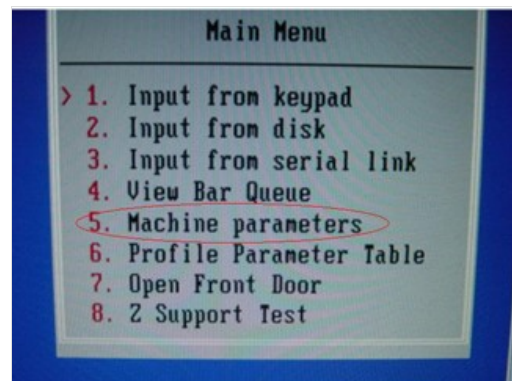
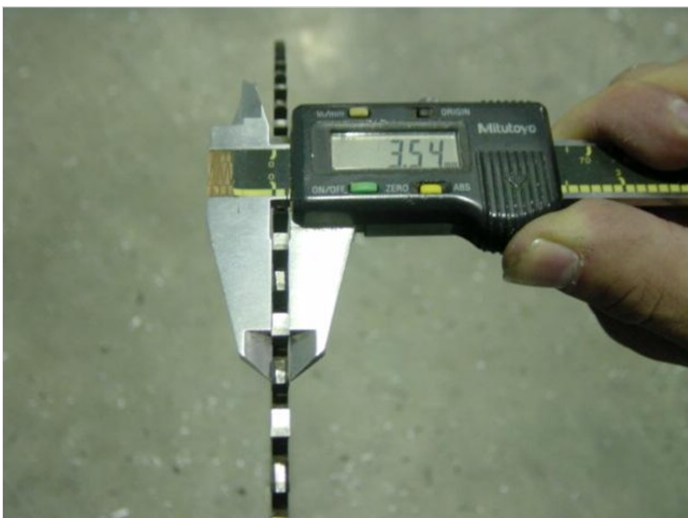
Factors affecting cut length consistency:

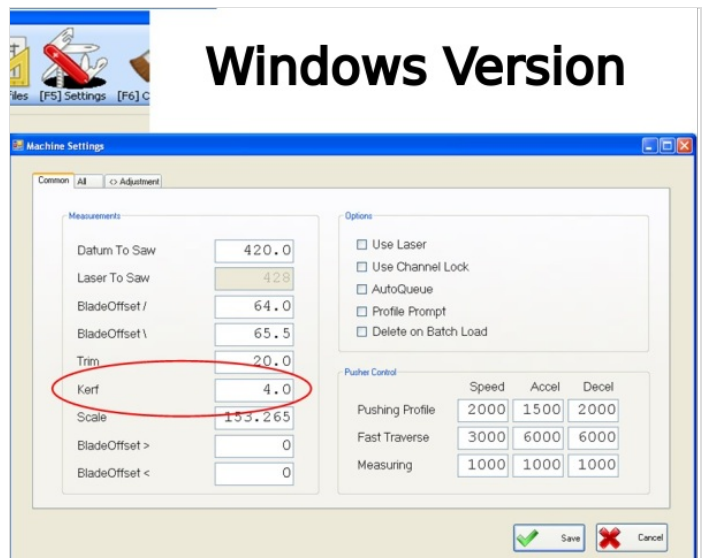
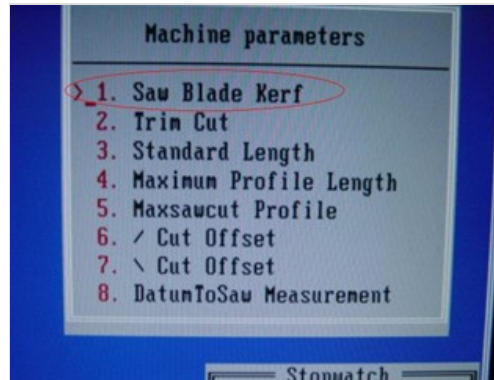
<i>Possible Cause</i>	<i>Solution</i>
Backlash in saw pusher	Mesh the pinion into the rack tighter
Profile "jumping" because a pneumatic function is jogging the profile	Smooth the motions with flow control valves and lock off with pliers.
Profile jumping on Eject Clamp	Fit flow control to eject clamp down stroke
Alignment / level of saw infeed	Check alignment with laser level Saw infeed is forward of saw backfence
High / Low Clamp pressure sticking on high	Faulty valve or pressure regulator; electrical fault
On standalone saw: Slack Chain	Tension chain
Pusher disappearing inside profile	Infeed tables raised

## Step 3 - Set blade kerf

1. Ensure batch is complete
2. If running on a flowline, make sure the machining centre program is exited to desktop
3. Measure the saw blade kerf with callipers
4. Input into "Machine Parameters" menu.
5. Cut [ ] 300mm, 1000mm, 2000mm and check lengths. An incorrect kerf will change the cut length by the same amount on each different length.

**i** ...If the calibration is incorrect, the length will grow or shrink, depending on the length of each piece cut. This will mean re-calibration before you can go any further



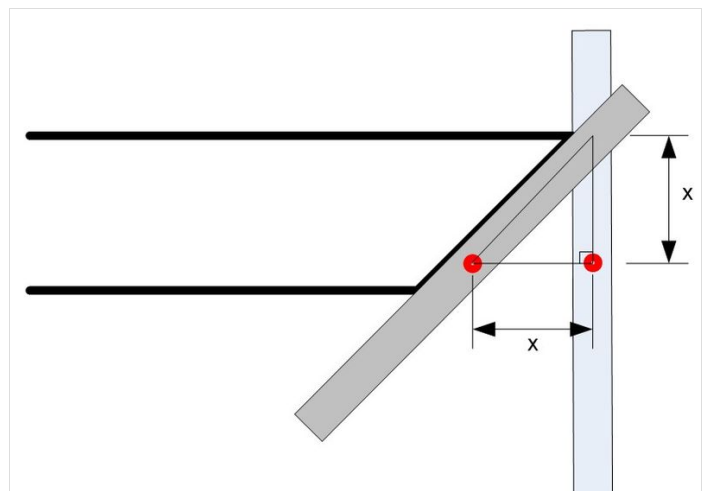


## Step 4 - Bladeoffset

The Bladeoffset parameters control how much the software moves the bar through to carry out a particular cut.

In the diagram, the red circles show the pivot point of the blade, and the blade in the 90 degree position and 45 degree position. Both 90 and 45 saw cuts would finish the piece off to the same length, but it is clear that a different position of the saw blade compared to the profile is required. This is demonstrated by the dimension  $x$ . Because the saw cut is 45 degrees, the distance  $x$  is equal to the distance of the pivot point to the backfence. This is our bladeoffset parameter /, and it tells the software to push the bar through further on a 45 degree cut.

The same applies to the cut \ on the opposite end



## Step 5 - Cut Bladeoffset tests

Cut a bar with:

300mm [ ]  
300mm [ ]  
300mm [ /  
300mm [ /  
300mm [ /  
300mm [ /  
300mm \ ]  
300mm \ ]  
300mm \ ]

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## Step 6 - Measure results

Using a [ ] 300mm +/- 0.1mm piece as a guide, offer it up to the [ / pieces. It is much easier to find the point of the mitre for measuring when the piece is pushed up against another.

Measure the difference between the two pieces with callipers. Check with the other [ / pieces to ensure there are no random inconsistencies

**i** ...If there are random inconsistencies, and the lengths vary by more than 0.25mm, there are other mechanical problems that will have to be resolved first



# Step 7 - Change bladeoffset parameters

Update the / Cut Offset parameter in "Machine Parameters" menu.  
This is named BladeOffset / and BladeOffset \ in the windows version

Condition	Change
[ / too long	Add to / Cut Offset
[ / too short	Subtract from / Cut Offset

Repeat for \ ] cuts

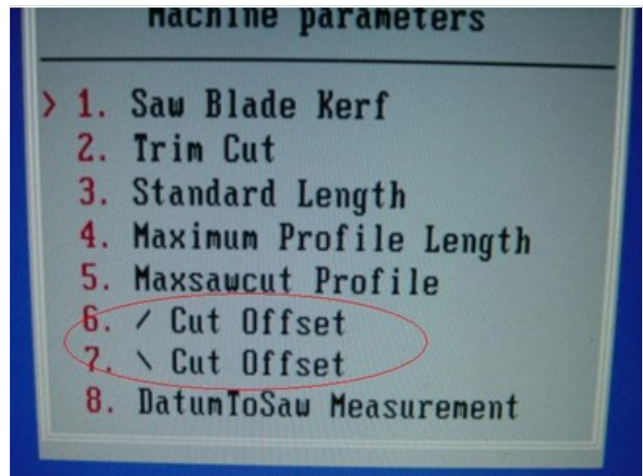
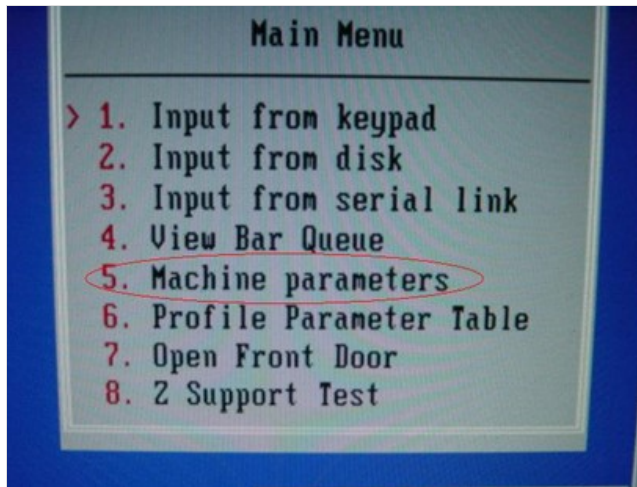
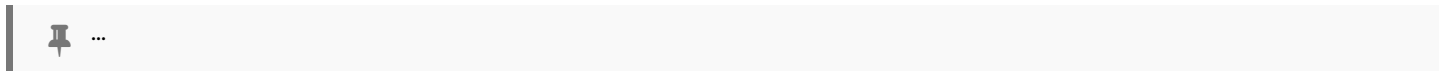
Condition	Change
\ ] too long	Subtract from \ Cut Offset
\ ] too short	Add to \ Cut Offset

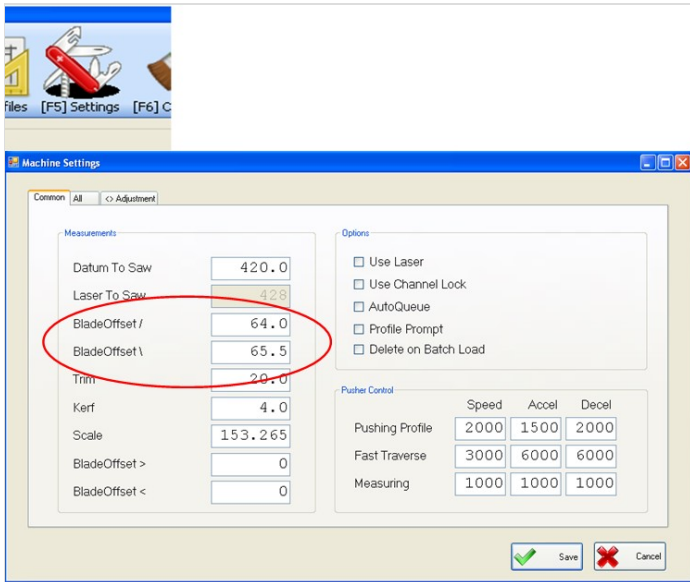
**NOTE:**

- Subtracting 0.5 from -65 gives -65.5 !!!!!
- On the older DOS Systems, one blade offset is positive, one is negative. Which is which depends on the handing of the machine:

Hand	/Cut Offset	\Cut Offset
Standard	+	-
Opposite	-	+

The newer Windows system has positive vales for both numbers, which makes it less confusing with the machine handing





## Step 8 - Run test again to check

Run the test again to check that the [ / and \ ] cuts align with the 300mm [ ] cut. This should be within 0.2mm



## Step 9 - Check Mitres \

The last step is to check that the mitre - mitre cuts are the correct length.

1. Cut 5 off 300mm \ / cuts
2. Compare all to the 300mm square - square.
3. The error should be within 0.2mm.
4. If there is a bigger error, something has been missed and the whole process needs to be checked again.

**i** ...Note: it is sometimes difficult to see the exact position of the corner of the mitre - it is much easier to compare with a known 300mm [ ] length.

