Case Study - Saw Jamming due to Y Notch at End Of Bar Offcut Length

Case study of profile jamming due to Y notch at the end of the bar

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Problem

The saw blade is jamming on the final offcut on the bar - in particular on a Y notch or arrow head

Video Samples

Machine	Description	Link
Z079 Andrew Wright	Arrow head at end	https://vimeo.com/748839932/9567816fbe
Z083 Window Warehouse	Y notch at end	https://vimeo.com/748839996/aacfaa8034

Solution

The AW and WW videos are different, in theat one is an arrow head and WW is a Y notch. However, they are similar because the problem happens after the first cut of a 2 cut sequence. This is another layer of complexity away from a minable cut.
On WW I think the problem would be solved by changing the gaps file so that the Y notch only wasted 40mm.

This is the original gaps file

```
gaps | SQ  \ MI  < AH  / IM  e ES  s mSQ m mMI a mAH i mIM f YF  r YR (Lead)
| SQ  k    j+v  w+j  j+v  t    k    j+v  w+j  j+v  k    k
\ MI  j+v  j+v  w+j  j+v  t    j+v  j+v  w+j+v j+v  j+v  j+v
> AH  k+x  j+v  j    j+v  t    k+x  j+v  j    j+v  k+x  k+x
/ IM  j+v  j+v  w+j+v j+v  t    j+v  j+v  w+j+v j+v  j+v  j+v
e ES  40   40   40   40   0    s    s    s    s    s    s
s mSQ k    j+v  w+j  j+v  e    k    j+v  w+j  j+v  40   40
m mMI j+v  j+v  w+j  j+v  e    j+v  j+v  w+j+v j+v  j+v  j+v
a mAH k+x  j+v  j    j+v  e    k+x  j+v  j    j+v  k+x  k+x
i mIM j+v  j+v  w+j+v j+v  e    j+v  j+v  w+j+v j+v  j+v  j+v
f YF  k    j+v  w+j  j+v  40   k    j+v  w+j  j+v  k+x  f
r YR  k    j+v  w+j  j+v  40   k    j+v  w+j  j+v  f    k+x
for version 6.63
09/02/15 Updated to s+s for Y notches at start. Stops issue with Xhold
30/07/15 Updated for correct gaps on YF and YR at start and end of bar
12/09/17 ZX5 type - can do Y notches at end of bar
11/10/17 Grip end 20mm for gripper system; E< 100 for saw handover
13/11/17 Y notch at end treated like arrow head
```

the 40 and 40 have been put in the wrong place - should be on the "e ES" line

```
gaps  | SQ  \ MI  < AH  / IM  e ES  s mSQ m mMI a mAH i mIM f YF  r YR (Lead)
| SQ  k    j+v  w+j  j+v  t    k    j+v  w+j  j+v  k    k
\ MI  j+v  j+v  w+j  j+v  t    j+v  j+v  w+j+v j+v  j+v  j+v
> AH  k+x  j+v  j    j+v  t    k+x  j+v  j    j+v  k+x  k+x
/ IM  j+v  j+v  w+j+v j+v  t    j+v  j+v  w+j+v j+v  j+v  j+v
e ES  40   40   40   40   0    s    s    s    s    40   40
s mSQ k    j+v  w+j  j+v  e    k    j+v  w+j  j+v  k    k
m mMI j+v  j+v  w+j  j+v  e    j+v  j+v  w+j+v j+v  j+v  j+v
a mAH k+x  j+v  j    j+v  e    k+x  j+v  j    j+v  k+x  k+x
i mIM j+v  j+v  w+j+v j+v  e    j+v  j+v  w+j+v j+v  j+v  j+v
f YF  k    j+v  w+j  j+v  40   k    j+v  w+j  j+v  k+x  f
r YR  k    j+v  w+j  j+v  40   k    j+v  w+j  j+v  f    k+x
for version 6.63
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13/11/17 Y notch at end treated like arrow head
12/09/22 Y notch at end bug - should be one line above
```

Thi is not the end of the story, though. The problem will reoccur if there is an operation in the minable zone, forcing the minable. To make things really complicated, the system cannot have both a Y notch and a minable together. The Y notch takes precident.

In summary,.
1. There is not a silver bullet solution to this
2. All gaps.saw files to Z088 are wrong for Y notch at the end of a bar.
3. There will be a problem with a minable **and** arrow head at the end of the bar
4. Install the latest gaps file if this problem is relevant