

F&B case study's

UK Meat Trials

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ONE STEP AHEAD.

Meat Grinding Kit Stirchley Burger Company



Jamie Gowans
Uddeholm UK

Material

Part
design

Part
manuf.

Heat
treat.

Finish
mach.

Surface
treat.

Application:
Meat Grinding Kit mince for Burgers

Problem:
Extreme Abrasive wear on Hole plate &
Star Cutter Blade. Kit changed ever 2 days
in production.

Solution: Full machined & Coated Grinding
kit using Uddeholm Premium grades.

Performance:
102 days full production only slight wear
on star cutter & hole plate



Combi Cut kit

440c material tested @
40 HRC



Uddeholm Kit

Made using Uddeholm
Unimax & Vanadis 4
Extra

+ PVD variantic coating

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Stirchley Burgers Meat Grinding kit Trials

Customer type:

UK Burger Manufacturer

Mincing approx. 8ton. Per week over 5 shifts

Currently using a Wolf king machine

Customer problem in detail:

Fast wearing parts / Constantly changing kits every 2 days in production. Having to deal with current suppliers daily to arrange collection & re delivery of kits

Problem context:

No Legal issues with Combi Cut Patent on Kit after investigation 'pattern is pending' Plus we have made few design changes. Normpack certification needed which we have!

Solution in detail:

Uddeholm Unimax Pre cutter & Star Cutter Blade @ 54 – 56HRC

Uddeholm Vanadis 4 Extra Hole Plate 62 – 64 HRC

All components are Coated using PVD variantic coating. (Eifeler coating machines)

Alternative solutions considered:

We will look to make next Star cutter blade using Uddeholm Caldie @ 58 – 60 HRC. This is down to slight signs of wear on the current Unimax blade the extra 4-6 Rockwell points will increase blade life.

Why did the customer decide to go with this solution?

Stirchley burger are keen to Test and use latest / innovative products available in market. Customer was initially in disbelief with expected production lifetime

Stirchley Burgers Meat Grinding Kit

Additional information

- » After 60 days in production we were seeing wear signs on cutting edges of star cutter blade as per below. Day 61 customer changed blade to new Combi cut one they saw no differences in quality of product being produced day 62 they put Unimax blade back into production and still going.
- » As we want Star blade to match tool life of hole plate we are planning on manufacturing blade using Uddeholm Caldie @ 58 – 60HRC.
- » Also after 8 weeks in production customer had an issue with the Shaft misalignment which meant kit components were rubbing against each other which has caused coating to be removed on bottom half of hole plate.
- » Replacement shaft now in and working fine we have spoken to customer about including brushings in between components to stop this repeating itself.
- » Also original we increased thickness of hole plate from 25mm to 32mm this was to increase regrinds /tool life. This caused back pressure issues on machine and slowed production down. We re-ground plate back to 25mm.



Stirchley Burgers Meat Grinding Kit

Additional information

- » Pictures below are after 102 days in total production from period between August 2021 – February 2022.
- » After 92days production Stirchley Burger changed full kit back to a newly ground Combi Cut to see if output would improve they ran kit and again saw no major difference in production over the Uddeholm kit which was 92 day into production! They then put Uddeholm kit back in for last 8 day off production before trial was due to end
- » Coating on hole plate face & blade edge has worn away yet material has still kept its edge retention.



Stirchley Burgers Meat Grinding Kit

Additional information



- » After 102 days production Non working side on hole plate still in very good condition (coating helps against corrosion)

Stirchley Burgers Meat Grinding Kit

Additional information



- » Chop Plate After 102 production days. Again non working side in very good condition. Worn face due to star cutter blade rubbing against face. Bushing will help prevent this but customer needs the close contact between components. Like the Star cutter we may next time produce using Uddeholm Caldie @ increased hardness on 58-60hrc.

Stirchley Burgers Meat Grinding Kit

Additional information

- » During trial after cleaning kit after production customer coats kit in a lubricant then kit is left over night until production starts again in morning, this lubricant doesn't effect kit (corrosion). Fig 1
- » The last day of trial was on a Friday when the kit was taken out and cleaned the kit wasn't dried correctly and placed on top of each other which as caused corrosion marks on kit over weekend. This highlights importance of correct handling of kits to prevent corrosion out breaks. fig 2/3.



Stirchley Burgers Meat Grinding Kit

Metadata - INTERNAL USE ONLY

**Case study name:**

Stirchley Burgers Meat Grinding kit

Key words that could be used to find the case in a database:

Meat processing / Mining Kits / Grinding Kit / Hole plate / Pre cutter / Star Cutter

Case status (choose one):

Approved by F&B core team for content

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Confidentiality: (choose one):

- May be presented externally with customer name

Case team: Jamie Gowans

Do we have permission to use the pictures? Yes

Stirchley Burgers Meat Grinding kit

Document Management – INTERNAL USE ONLY

Version	Date	Author	Change note
1	08.12.2021	Gowans	First version
2	04.03.2022	Gowans	2nd version / trial end.



Thanks for Listening
