Beam Profiling 2.0

HGG set the new industry standard

“We did not reinvent the wheel, we set a new standard. Welcome to our world of freedom: an Entire Fabrication Shop in a Single Machine.”

Jack Kistemaker
Technical Director HGG

Why limit yourself when HGG can do it all?

Traditional
75%

RPC 2.0
100%
Beam Profiling 2.0

Our profiling evolution: combining 15 years of experience

Profile Cutting Line (PCL 600)
- 80% Market share
- 50% more productive
- 15 years robot experience
- 55 lines supplied

All Profile Cutter (APC 600)
- Proven vision technology
- Highly versatile
- Superior cutting routines
- 7 years operational @ HGG

Beam Profiling Line (RPC)

And it gets better the longer you own it: remote software and functionality upgrades.
Developed for **OFFSHORE INDUSTRY**
(welded connections)

Developed for **STRUCTURAL STEEL**
(bolted connections)
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An Entire Fabrication Shop in a Single Machine

Only 20% of the floor space required:
A single HGG Profiling machine replaces all traditional equipment such as: beam drill, bandsaw, angle line and marking machine.

Infeed/Outfeed conveyors

Precision machined rollers up to max. 12 metric ton

Built to last with oversized motors and steel frame
Beam Profiling 2.0
An Entire Fabrication Shop in a Single Machine

Superior accuracy and measurement
On the fly work piece positioning
No wear, tear and maintenance

We do not assume, we know.
Beam Profiling 2.0
An Entire Fabrication Shop in a Single Machine

Staubli industrial robot

No predetermined approach, our software is in control

Over 80 lines supplied with the same Staubli robot

Proven the highest accuracy in an industrial environment

A robot is just a device that moves the cutting torch, it is our extensive robotic experience which provides the freedom to cut without limitations.
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Let’s have a look under the hood

- 100% Freedom to design
- Streamlined CAD import
- Multi-industrial applications
- Grind reduction
- Perfect Hole™
- Marking
- Measurement
- Machine mode
- Cutting quality
- Plasma
- RHS/SHS
- 30% more productive and accurate than any other coping machine

"HGG: Back to them all up, when we make small difference"
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➢ 100% Freedom to design

HGG

Any other machine

DSTV file exactly as drawn/detailed in Tekla

HGG identifies shape and writes cutting routine

100% free shape technology

HGG identifies shape and writes cutting routine

DSTV file including machine limitations

Depending on availability of macros

HGG - Business Development Manager

“HGG has been our development partner for many years, it is no surprise to me that HGG works without limitations”

Saku Järvinen
Tekla - Business Development Manager
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- Streamlined CAD import
- 100% Freedom to design
- Multi-industrial applications

“80% means limitations in design, detailing and fabrication. We understand the definition of freedom and developed a machine that does it all = 100%”

Klaas Slagter
R&D Engineer

Free form .STEP* import

Direct import from Tekla

HGG’s free shape configurator

30+ HGG Software Engineers at your disposal for any other CAD interface.
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Maximum 10% material savings

- Optimised nesting
  - Nesting based on net part length
  - Nesting based on orientation
  - Nesting ‘reverse’ and ‘turnover’

RPC 1.0

RPC 2.0
Solid modeling programs, like Solidworks and Inventor, do not allow detailing. With HGG’s STEP work preparation module all weld preps and other detailing can be easily added.

HGG ProCAM applies the welding regulations based on predefined rules like beam size, wall thickness, connection style etc. The basic shape of the end-cut remains unchanged.
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“Instead of sacrificing 5 difficult to recruit, expensive craftsmen for tedious, boring and time consuming grinding work, we automated the job and rolled a 1000mm beam in just 4 minutes”

Vincent van Loon
Production Manager

Edge Rounding

EN ISO 12944-3 Avoidance of sharp edges

- Sharp Edge
- Chamfered Edge
- Rounded Edge

Edge Rounding Line (ERL 600 / 1200)

- Revolver
- Handling Conveyor
- Edge Rounding Unit
- Conveyor for In and Outfeed
- Aligning Rollers

11 times faster than manual
Continuous quality of radius
Predictable productivity
Only replace rollers annually
Silent and dust free process
We aimed to develop a profiling machine rather than a time consuming measuring machine, the outcome: the one and only machine that can guarantee 1mm (1/32”) accuracy within a maximum of 12 seconds.

Mike Jongejan
Software Engineer
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“A continuous flow is the way to efficient production. Fixing just one production bottleneck will disclose the next one. With the Machine Mode selection we have the ability to setup the best mix to solve all cumulative effects.”

Vincent van Loon
Production Manager

Machine Mode

Practical example
Imperial: W18X60
Metric: W460x89

3 parts with each the following connections:
Left: Flange to Flange + rat-holes
Right: Straight end

RPC 1.0

Total throughput time: “20 Minutes”

RPC 2.0

<table>
<thead>
<tr>
<th>Machine mode</th>
<th>Ignitions</th>
<th>Profiling</th>
<th>Handling</th>
<th>Rework</th>
</tr>
</thead>
<tbody>
<tr>
<td>=&gt; Highest machine throughput</td>
<td>- 5%</td>
<td>- 20%</td>
<td>0%</td>
<td>+ 15%</td>
</tr>
<tr>
<td>=&gt; Lowest operational machine cost</td>
<td>- 40%</td>
<td>- 5%</td>
<td>0%</td>
<td>+ 7.5%</td>
</tr>
<tr>
<td>=&gt; Easy part handling and storage</td>
<td>+ 5%</td>
<td>+ 5%</td>
<td>- 40%</td>
<td>+ 10%</td>
</tr>
<tr>
<td>=&gt; Minimized rework</td>
<td>+ 15%</td>
<td>+ 10%</td>
<td>0%</td>
<td>- 99% (minimized rework)</td>
</tr>
</tbody>
</table>
Cutting Quality

“Full robot control means that we do away with unnecessary movements to avoid vibration, backlash and sway, which can lead to poor cut quality”

Klaas Slagter
R&D Engineer

And it gets better the longer you own it: remote software and functionality upgrades.
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Erik van Ewijk
RPC operator

“HGG tilts the torch, instantaneously changes speed, compensates the cutting angle (for divergence, melting, kerf width) producing the most accurate cuts without my involvement”

Why plasma?

- No pre-heating required
- Plasma = 3 times quicker
- No experienced operator required

Process flaws intelligently solved

Minimal torch to flange distance

0 to 5 mm
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- Only one robot
- No robot limitations
- 4 sided cutting
- Quick 4 sided local scanning

And it gets better the longer you own it: remote software and functionality upgrades.

Material deformation detection and compensation

SHS/RHS

RPC 1.0

RPC 2.0
Beam Profiling 2.0

➢ Grind Reduction or new rest concept

Traditional limitations  ➞  RPC 1.0 grind reduction  ➞  new rest concept  ➞  RPC 2.0

And it gets better the longer you own it: remote software and functionality upgrades.
"I have been looking for a machine which could do everything without compromises, after investigating the capabilities of all traditional coping machines, I identified the RPC as the machine best suited to our future needs."

Pasquale Tsingos
Technical Director
BRAFER
“We further optimised the True Hole (Hypertherm®) and Contour Cut (Kjellberg®) range by creating a perfect match between the technology and intelligent cutting routines, called: Perfect Hole™.”

Perfect Hole™: Using our sophisticated software we can cut bolt holes with an accuracy of 0.2mm. These bolt holes, along with other movements are achieved by our superior lead in – lead out routines.
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Marking directly exported from Tekla

HGG 3D view footprint marking

RPC Marking

Plasma Punch
Conclusion

Application benefits:

- An Entire Fabrication Shop in a Single Machine
- 30% more productive and accurate
- Whole throughput time with min. 30% reduced
- Only 20% floor space required
- Improved plant safety by minimised grinding
- No need for an experienced operator
- Quick delivery