



Scroll manufacturing using
«rotomilling» on standard machines

LM
Processes

Preloaded
Gear Drive

2024

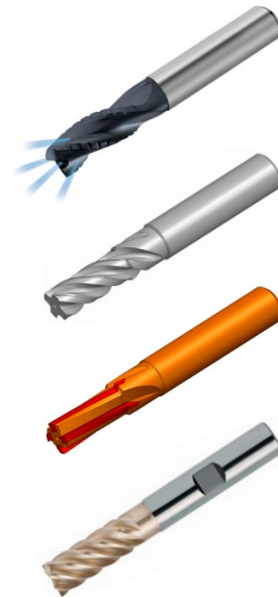
**Scroll «roto-
milling»**

4-2024 | EN

- Line shape $<25\mu$
- 4 x more productive
- also for CO2 scroll
(EU Directive 517_2014)



Scroll application with pL LEHMANN
PGD rotary table EA-510v: THE cost-effective alternative
with «rotomilling» on standard machines



Example: Comparison of finishing with 4032 T6 (>7% Si) material

**Circular interpolation carried
out X/Y**

Other machine concept
with pL-DT

rotomilling X/C

1 pc. / min.

at **71 to 91 sec** / workpiece
(finishing, Orbit)
(Production 2 pc. / cycle + machine,
but with single-spindle finishing only)



1 spindle performs finishing

1 5AX double-spindle machine,
made in Germany,
investment approx. EUR 550'.



**Same
investment amount in EUR**

4 pc. / min.

at **76 sec** / workpiece
(finishing, Orbit)
(Production usually 1 pc. / cycle +
machine)

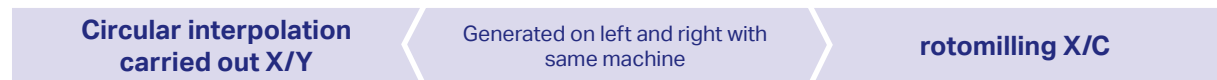


4 spindles perform finishing

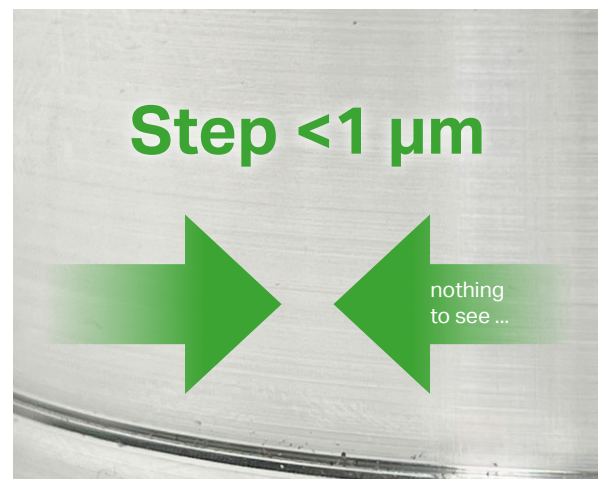
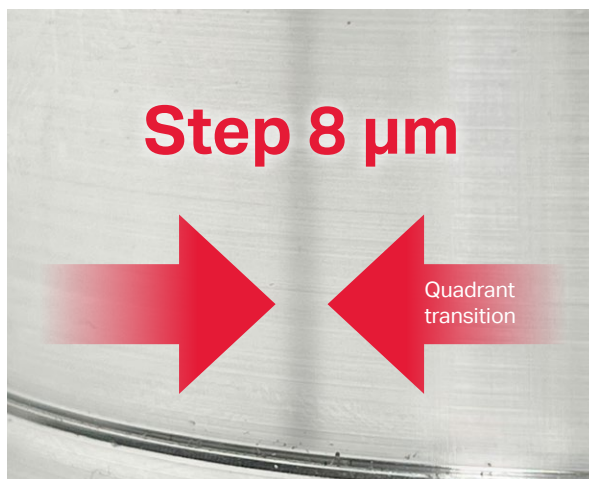
4 identical 3AX vertical centers
with pL rotary table,
investment approx. EUR 400' to 520'
(4x approx. EUR 100' to 130').

Typical scrolls with approx. $\varnothing$ 80 to 100 mm,
comparison of «with circular interpolation» and «rotomilling»

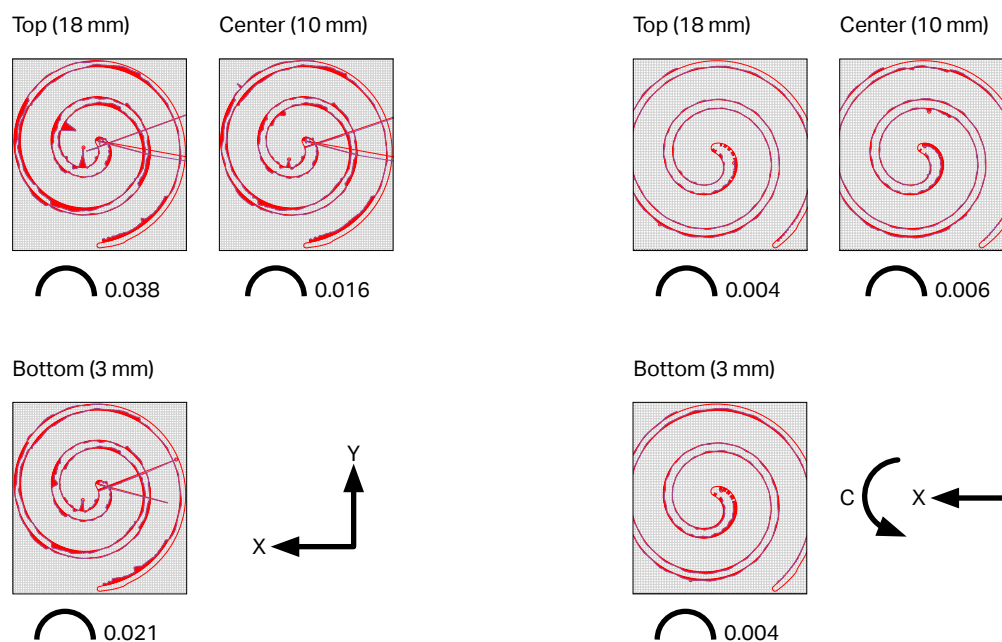
Expert statement: the more precise the sum of shape accuracy,
the better the surface, the higher the efficiency



Quadrant transitions (from practical example)



Linear shape accuracy (difference from highest point to lowest point)



Certified measurement laboratory confirms:

The measurement values indicate a very good and consistent result over all measuring points.

Excerpt from a measurement log (deviation from CAD model)


ZEISS CALYPSO

7.4.16


units®
DIE EINHEIT FÜR ERFOLG

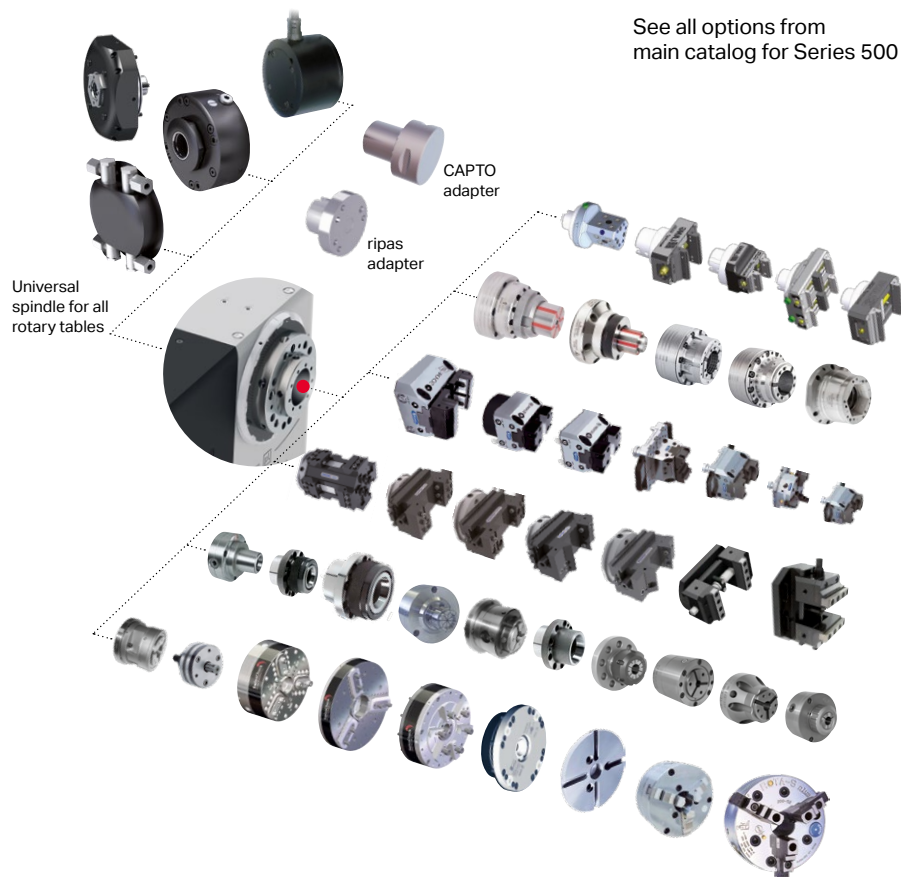
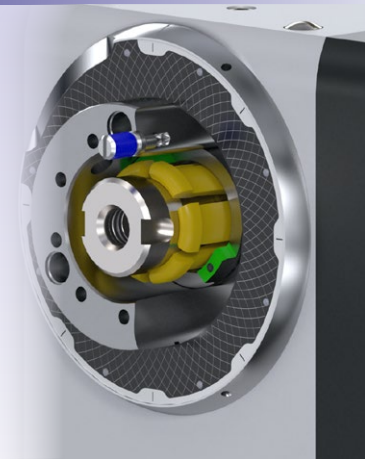
Bauteilname Scroll Eingebledete Punkte

Zeichnungsnummer: -
Zeichnungsindex: -
Auftragsnummer: AU2440114
Bemerkung: Kontrollmessung
Teile Ident: 510
Temp: 22,73 °C

Firma: units MITTELLAND
Prüfer: Vesel Qovanaj
Zeit: 22.04.2024
KMG-Typ: ACCURA_2
MPEE: 1.6+L/350

Name	Messwert	Nennmaß	+Tol	-Tol	Abweichung	+/-
^Temp. Werkst.	22,7					
Koeffizient 1/K	7,80					
Korrekturwert <μ/m> μ/m	-21,294004					
Linienform 2mm	0,0213	0,0000	0,0350	0,0000	0,0213	
Linienform 6mm	0,0214	0,0000	0,0350	0,0000	0,0214	
Position	0,0138	0,0000	0,0000	0,0000	0,0138	0,0138
Position.X	-0,0064	0,0000	0,0000	0,0000	-0,0064	-0,0064
Position.Y	0,0025	0,0000	0,0000	0,0000	0,0025	0,0025
Ebenheit Bezug D	0,0052	0,0000	0,0100	0,0000	0,0052	
Gruppe MP1						
MP1.1	0,0054	0,0000	0,0090	0,0000	0,0054	
MP1.2	0,0040	0,0000	0,0090	0,0000	0,0040	
MP1	0,0054	0,0000	0,0200	0,0000	0,0054	
R MP1.1	0,0056	0,0000	0,0150	0,0000	0,0056	
R MP1.2	0,0048	0,0000	0,0150	0,0000	0,0048	
Gruppe MP2						
MP2.1	0,0055	0,0000	0,0090	0,0000	0,0055	
MP2.2	0,0040	0,0000	0,0090	0,0000	0,0040	
MP2	0,0056	0,0000	0,0200	0,0000	0,0056	
R MP2.1	0,0060	0,0000	0,0150	0,0000	0,0060	
R MP2.2	0,0042	0,0000	0,0150	0,0000	0,0042	
Gruppe MP3						
MP3.1	0,0055	0,0000	0,0090	0,0000	0,0055	
MP3.2	0,0041	0,0000	0,0090	0,0000	0,0041	

Extremely wide assortment for workpiece clamping.
Standardized interface at front and rear:
Maximum universality



Depending on the clamping device, only reduced speeds are allowed for safety reasons. Please check with manufacturer.

5thAXIS.

EVARD
PRECISION
S.A.

HOFER
technics

NIEDERHAUSER
SPANNTECHNIK UND SYSTEME

ROEMHELD
HILMA ■ STARK

system 3R

AMF

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spanntechnik - robotik - engineering

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LANG
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hemo
SWISS
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MicroLoc

ripas

SwissChuck
Precision Workholding

YERLY

Scroll manufacturing using «rotomilling»: can be implemented immediately with various brands of machining centers

Here, an example with DMG M1 or Fanuc Robodril and pL EA-510v or T1-510520 TAP2 rotary table

What is «rotomilling»?

«Efficient scroll machining for maximum work-piece accuracy thanks to precision rotary table and very smooth operation»

Facts

- Extremely rigid bearing and gear unit
- Axial and radial run-out 2 to 3 μ
- Mass displacement takes place in one axis only
- Everything a constant feed motion all the way to the center

Investment amount – high scalability



6 investment reasons that count

- High-precision & fast rotary table ...
Excellent accuracy & surface
- Standard machine in stock ...
Quick availability
- Independent of machine brand ...
Wide product range for best results
- Quickly sold as a used machine ...
High value retention
- Manual or automated ...
No specialists necessary
- Easily scalable ...
Can be expanded in small steps

Call us. We will create a profitability analysis for you.



ROTARY SOLUTIONS › MACHINE TOOLS & METROLOGY

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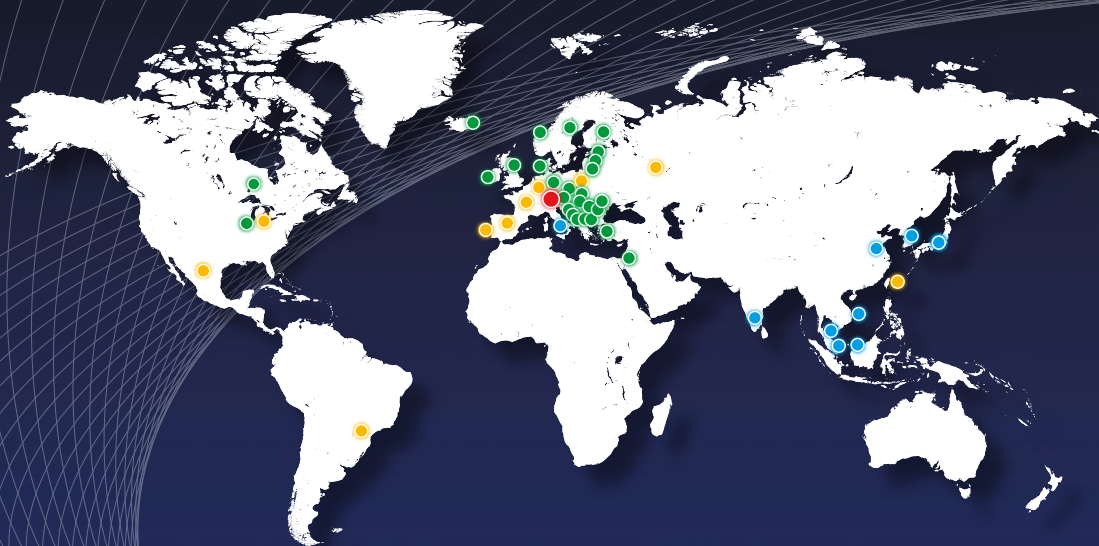
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More information (address, telephone number, etc.) at www.lehmann-rotary-tables.com