

Customers about powRgrip®

Version E 111208

Test results of customers using powRgrip®
for their applications



REGO-FIX®

Cutting tools manufacturing Walter AG, Germany

Task: Replace Weldon a. o. by toolholding system with high torques, excellent precision and slim design

Competition: Heat shrink, milling chuck, powRgrip®

Decision made in favor of powRgrip®

„Today we work using approx. 2000 REGO-FIX Holders. If we had gone for heat shrink, we would have required one separate holder for every diameter.“

„By clamping tools with powRgrip® without heat, I can use the tool without delay. This saves us a lot of time and money.“

Quotes: Mr. Rainer Rosskopf, Group Coordinator / Standard Tools Manufacturing, WALTER AG, Tübingen





REGO-FIX®



Production of blood test equipment, Turnamatic USA

More than 340% increase in productivity



Application:
Complete machining
from Aluminium block
to delicate wall thickness
at μ precision

Machine: Mitsubishi
machining center
Tool: 1" endmill
3 flutes

Before:
Various
Toolholders



Now:
powRgrip®
Toolholder

Results: See next page



REGO-FIX®

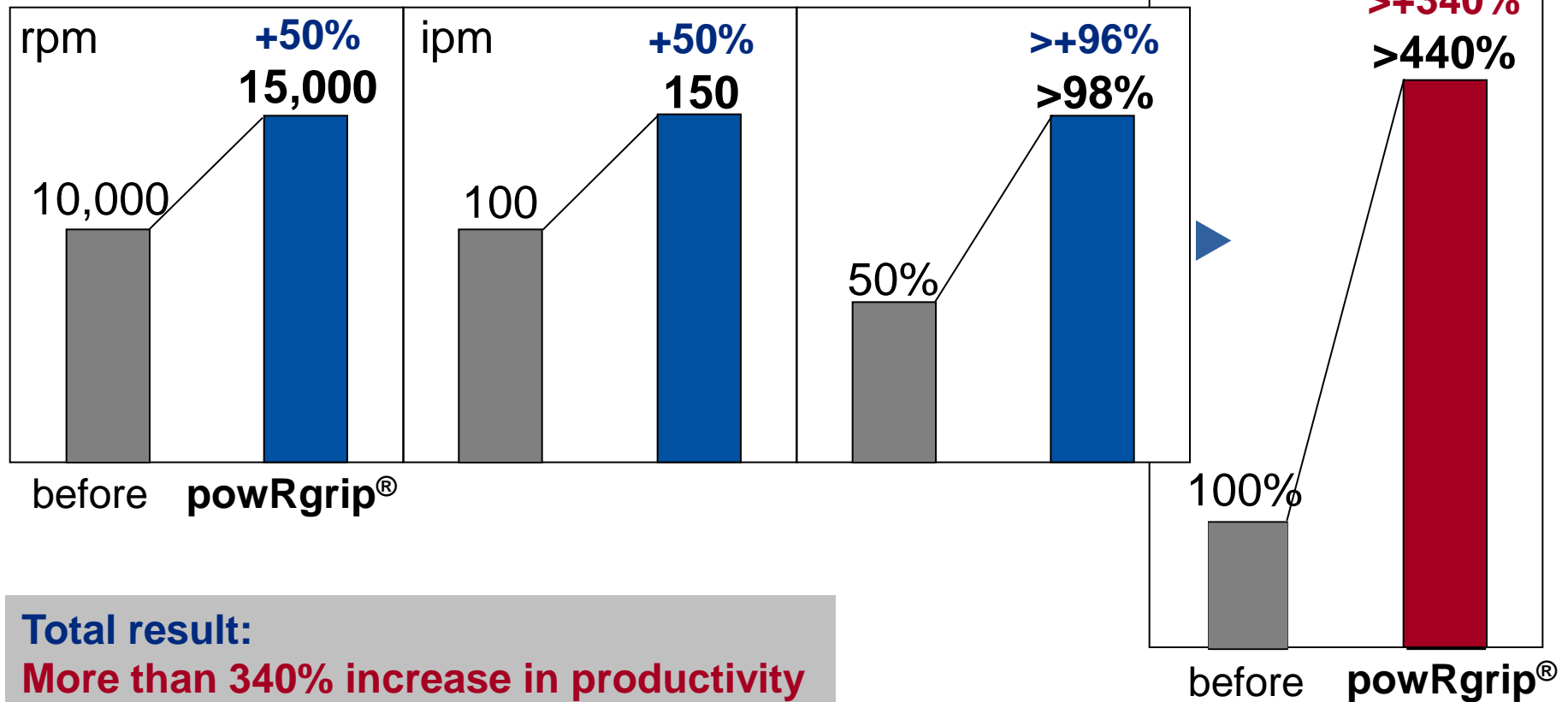
Turnamatic application results

Spindle speed

Feed speed

Yield

Productivity



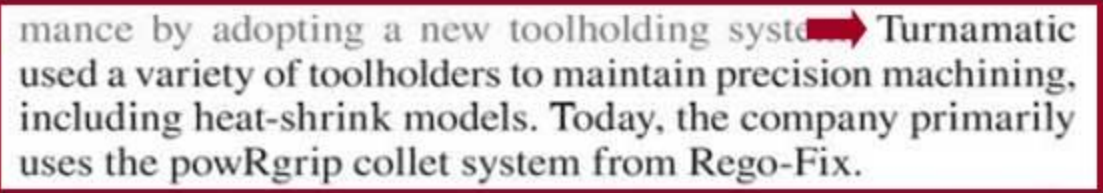
Total result:

More than 340% increase in productivity with powRgrip®



„Turnamatic used a variety of toolholders to maintain precision machining, including heat-shrink models.

Today, the company primarily uses the powRgrip collet system from REGO-FIX.“





REGO-FIX®



Innovative Turbine Blisk manufacturing with powRgrip®



Target:

Increased profitability

- Increased productivity
- Reduced tool cost

Methods:

- Innovative machining program for constant high MRR
- Choice of high-efficiency tools and toolholder to bear the load

Critical points in toolholding:
Vibrations, tool pullout,
lifetime of tools and holders



**Choice after trials:
powRgrip® against
hydrochucks and
heat shrink**



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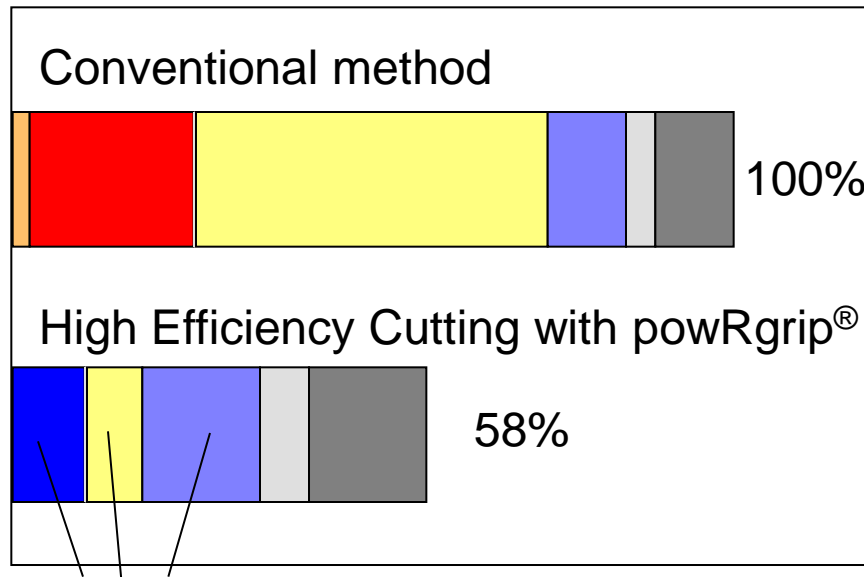


REGO-FIX®

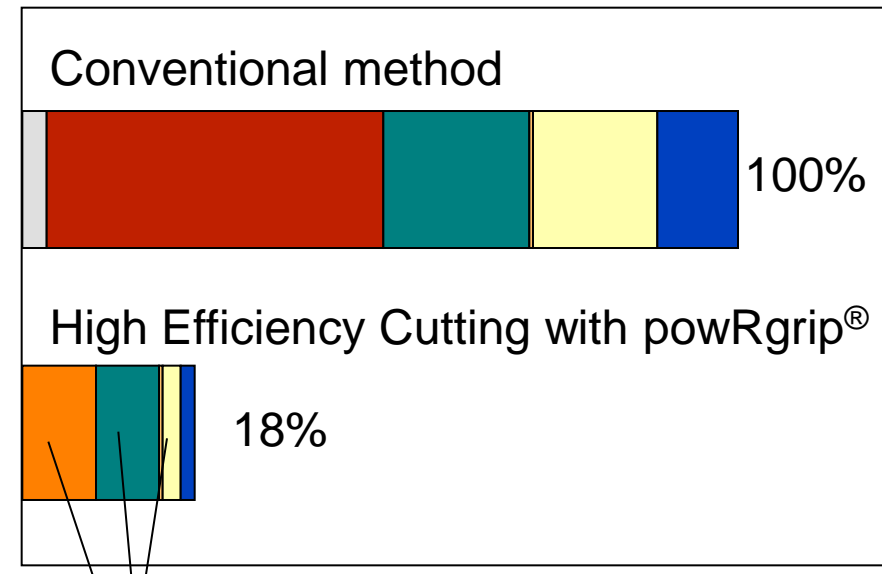


Achievement: Reduction in cycle time by 42%

Cycle time per piece



Consumed tools per piece



Customer quote: "REGO-FIX powRgrip® toolholders play a major role in the success of innovative machining strategies for Blisk manufacturing"



REGO-FIX®



Job shop Samuel Werder AG Switzerland

Task: Replace collet and Weldon holders
by high precision toolholding system

Competition: Heat shrink, powRgrip®, (polygonal holder too weak)

Decision made in favor of powRgrip®

„At all applications we have been able to increase
tool life and precision.“

„The most important benefits of powRgrip® are the
good TIR and the high clamping forces that allow
to use it flexibly throughout our production.“

„A big advantage is also the simple and safe
operation... in our three shifts operation“

Quotes: Mr. Claude Werder, CEO, Samuel Werder AG





REGO-FIX®



Automobile Engine Production Daewoo Auto & Technology, Korea

„We didn't find any problems
after using powRgrip®
at the line for engine block
processing.

So, we are examining to apply the REGO-FIX
toolholding system for engine head processing at
this time.“

Quote: Customer's reference letter



Next project has
been realized.



REGO-FIX®

DUNIYA MEIN JIYO
TOH **DELUXE LIFE** PYARE



Presenting new
HERO HONDA
CD Deluxe
Live Deluxe. Ride Deluxe!

Motorcycle production, Hero Honda India

Up to 150% extension in tool life

Application: Contour milling
Cast aluminum cylinder block
2,200 rpm, feed speed 1500
mm/min, DOC 0.5 mm/cycle

Trials on 4 manufacturing lines
Machines: FANUC CNC VMC
Tool: Kennametal
10 mm solid carbide endmill

Before:

Nikken collet holder
BT 30 x SK 10



Trial:

powRgrip® toolholder BT30 /
PG25x080 and PG15x070

Result:

Tool life before resharpening:
1,200-1,800 finished parts
per endmill (different for
ea. line)



Result:

Tool life before resharpening: 2'200-3'250
finished parts per endmill (different for ea.
line) **100-150% extension in tool life with
powRgrip®**

[illegible]

Original customer test report



REGO-FIX®



Application in aerospace manufacturing in USA

Window openings of aircraft body



- Replacement of previous tool holding system => 600% longer tool life
- Increasing of feed rate by 150% (critical point were vibrations)
Increasing of tool life at 500%



REGO-FIX®



Machine bed production, PMT India

289% increase in productivity

Application:
Complete machining
Cast iron GG20

Machine: Mazak
previously FMS HMC,
for trial HMC FPH4800
Various tools



Past:
Colletholders, Weldon,
Hydraulic holders



Trial:
powRgrip® Toolholder BT40 /
PG15x120, PG25x080, PG25x160

Result:
70 minutes cycle time



Result:
18 minutes cycle time
**74% saving of processing time
with powRgrip®**



REGO-FIX®



Job shop Robert Ott AG, Switzerland

Task: Replace Weldon and collet holders
by high precision toolholding system

Competition: Heat shrink, polygonal holder, powRgrip®

Decision made in favor of powRgrip®

„The high precision and ease of operation have convinced
us from beginning of our inhouse tests.“

„When roughing, we could switch over from HSS to Solid
Carbide, so machining is up to three times faster.“

„When finishing, we can run higher feed speeds and get a
better surface finish now.“

Quotes: Mr. Robert Ott, CEO, Robert Ott AG





REGO-FIX®

Electrodes production for die&mold, FILDAN Austria

Tool life better than heat shrink

**Application: 50% Roughing
/ 50% finishing**

Electrode copper
30,000 rpm, feed speed
600/400 mm/min, DOC 0.1 mm

Machine: Primacon

Tool: 1 mm Solid carbide endmill, 3 mm
shaft, Moisture lubrication,
22 minutes trial / endless slope

Trial 1:

Shrink fit holder



Trial 2:

powRgrip® toolholder HSK32-25 /
PG15x58H, collet PG 10/3

Result:

Tool life 392 minutes
After one year, toolholders
exchanged (bad TIR)



Result:

Tool life 451 minutes
>15% increase in tool life with powRgrip®
Since March 2004, everything still works fine



REGO-FIX®

Machine Part Manufacturer Deicken & Engels, Germany

Task: Transition of new machines and tooling technology

- New generation milling cutters and drillings
- Carbide and fast-running tools with many cutting edges
- Extreme transfer forces
- Achieve economical machining results
- Precise runout

Competition: Heat shrink, hydro chuck, powRgrip®

Decision made in favor of powRgrip®

"If your work is machining and you want to be successful, but haven't implemented the powRgrip® system, you have only to blame yourself!"

Quotes: Andrew Engels, Owner and CEO Deicken & Engels Maschinenfabrik GmbH & Co. KG.





REGO-FIX®

Turboshaft and Gas Turbine Manufacturer Jakadofsky JetEngines, Austria

Task: delivering the required benefits and results
when used for machining super alloys:

- Absolute concentricity
- Problem-free functionality
- Ease of use

Competition: Heat shrink, powRgrip®

Decision made in favor of powRgrip®



„The bottom line for us is that the powRgrip® system paid for itself in just six months. I'm thoroughly convinced by the powRgrip®. I like simple solutions that work reliably.”

Quotes: CEO and Owner Jakadofsky JetEngines. He spent 17 years leading up to 2003 as an airline Pilot with Australian Airlines.





REGO-FIX®



Job Shop – Die Base Production, US



Finishing (HSC)

Material: 4140 (US) /
~1.7223 (DIN) / ~41CrMo4
20,000 r. p. m.

Machine: Makino, 20K spindle
Tool: special diamond coated
cutter, **USD 60.– ea.**
Feed 100 IPM, Overlap 0.05“,
Test duration 4.5 hrs. (2 parts)

Previous holder:

Collet holder (third party),
balanced to 20K



Tested holder: powRgrip®
CAT 40 PG 25, 6 mm collet,
balancing rings, assembly
balanced to 20K

Problem:

Runout, tool life –
0.5 parts per cutter



Result:

300% increase in tool life:
2 parts per cutter (we could have gone longer)
3 cutters saved per 2 parts = USD 90.– per part



REGO-FIX®



Medical industry, US

Roughing

Material: 1740 SS
(stainless steel)
1,600 r. p. m.

Previous holder:

Shrink fit (end mill holders)

Problem:

Tool pull-out on larger
end mills with shrink fit
holders.

Secure with end mill
holders, but short tool life
(4 cycles per end mill)

Machine: Mori Seiki SA 50
Tool: 3/4" 6 flute carbide end
mill, Feed 6-8 IPM, DOC 2.75"
deep x 0.050" side-loaded
Test duration 7 cycles

Tested holder: powRgrip®
CAT 40 PG 25, 3/4" collet

Result:

75% increase in tool life,
no tool pull-out.
7 cycles per end mill.





REGO-FIX®



Oil Field Instrumentation, US

Finishing

Material: Inconel 718 (Alloy)
650 r. p. m.

Machine: Okuma horiz.
Tool: 1/2" 5 flute end mill
Feed 30 SFM, DOC 0.250",
0.0015" chip load
Test duration 5 parts

Previous holder:
End mill holder



Tested holder: powRgrip®
CAT 40 PG 25, 1/2" collet.
Tool was shorter than min.
insertion depth + Weldon flat,
25% loss in clamping area

Problem:

Runout, tool life –
1 part per endmill



Result:

400% increase in tool life:
5 parts per endmill





REGO-FIX®



Automotive industry, US



Reaming

Material: Aluminum

850 r. p. m.

Machine: Fadal VMC

Tool: 1/2" 4 flute reamer

Feed 15 IPM,

Test duration ~3,000 parts

Previous holder:

Hydraulic holder



Tested holder: powRgrip®

CAT 40 PG 25, 1/2" collet

Problem:

Runout, tool life, uneven wear on cutter



Result:

Over 160% increase in tool life.

Even wear around the cutter.



REGO-FIX®



Automotive industry, US



Finishing (HSC)

Material: H13 (US) /
1.2344 (DIN) / X40CrMoV5
11,000 r. p. m.

Previous holder:

Various conventional holders

Problem:

Runout, tool breakage,
rigidity

Machine: Makino A55 Horiz.

Tool: 1/8" finisher

Feed 60 IPM, DOC 0.008",

Test duration 8 hrs.

Tested holder: powRgrip®

CAT 40 PG 25, 1/8" collet

Result:

Tool ran true, dimensional
tolerances held, less spindle
load than previous tested
tools, increased tool life, etc.

**Cost saving USD 200,000.–
p. a. estimated by customer**



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Test results and the features behind

Technical Properties



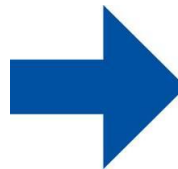
High
clamping force



Best T.I.R.



Excellent
vibration dampening



Application Test Results

Summary:

Tool life increased, thus cost savings realized.

HSC made work suitably, thus high productivity achieved.

Machining quality increased.

Tool pullout problems solved, thus productivity secured.



REGO-FIX®



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