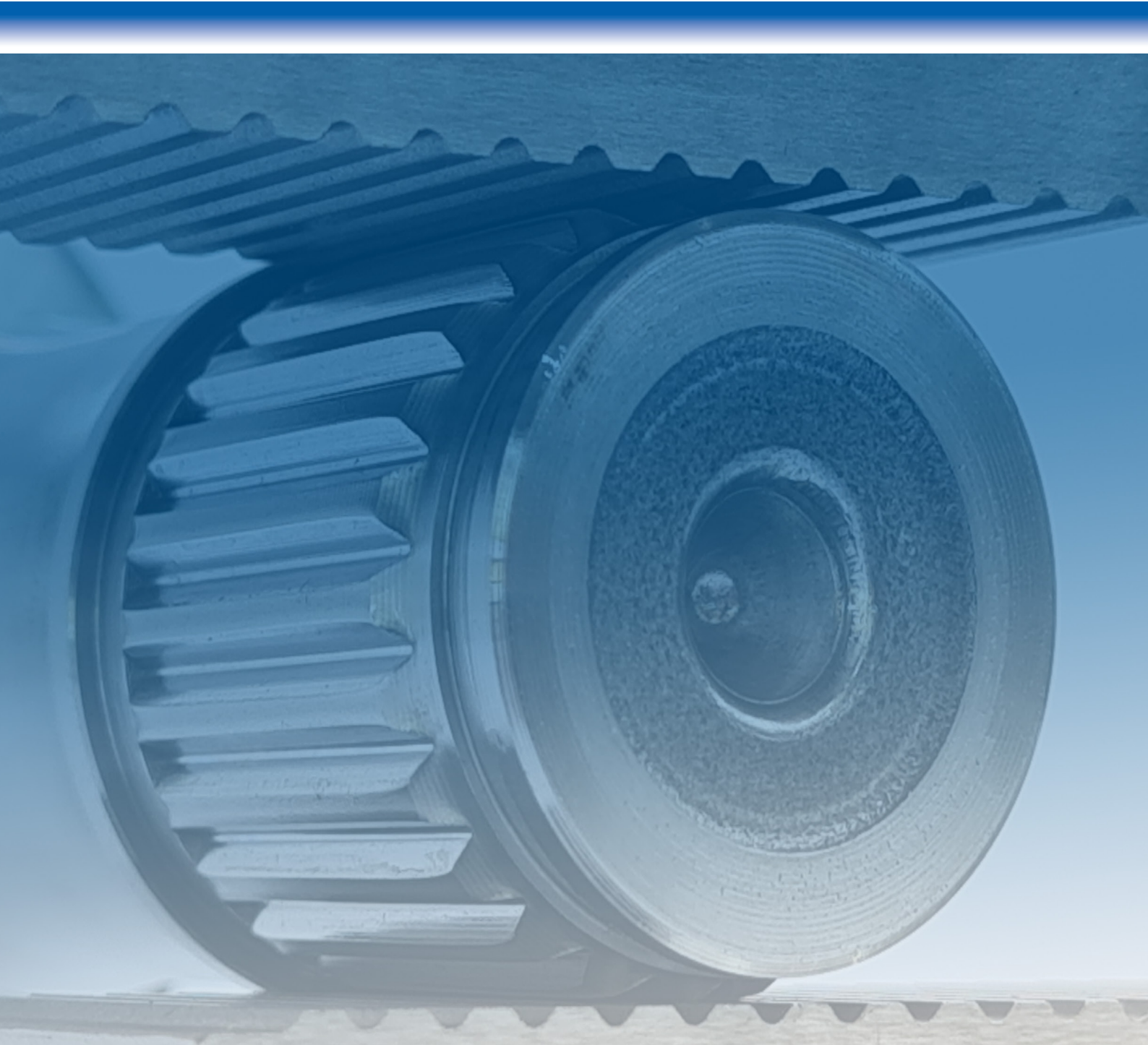




# OSG EX-CELL-O

## SPLINE ROLLING



ROLLING INVOLUTE SPLINES, OIL GROOVES,  
KNURLS AND THREADS

# OSG EX-CELL-O - THE INNOVATION COMPANY

OSG relies on its own strengths, from development to the finished product! The entire added value takes place in-house. Leading all process chains and technologies is our guarantee on success and ensures continuous growth in knowledge and experience.

## GEOMETRY


Crucial for stability and performance

The OSG Global Design and Tech Center design and fix the ideal tools geometry and develop the advanced manufacturing technology

## CUTTING MATERIAL

Important to hardness and toughness

OSG develops and produces its own raw materials! The result are new steels and hard metals.



Forming tools for highest expectations

## COATING

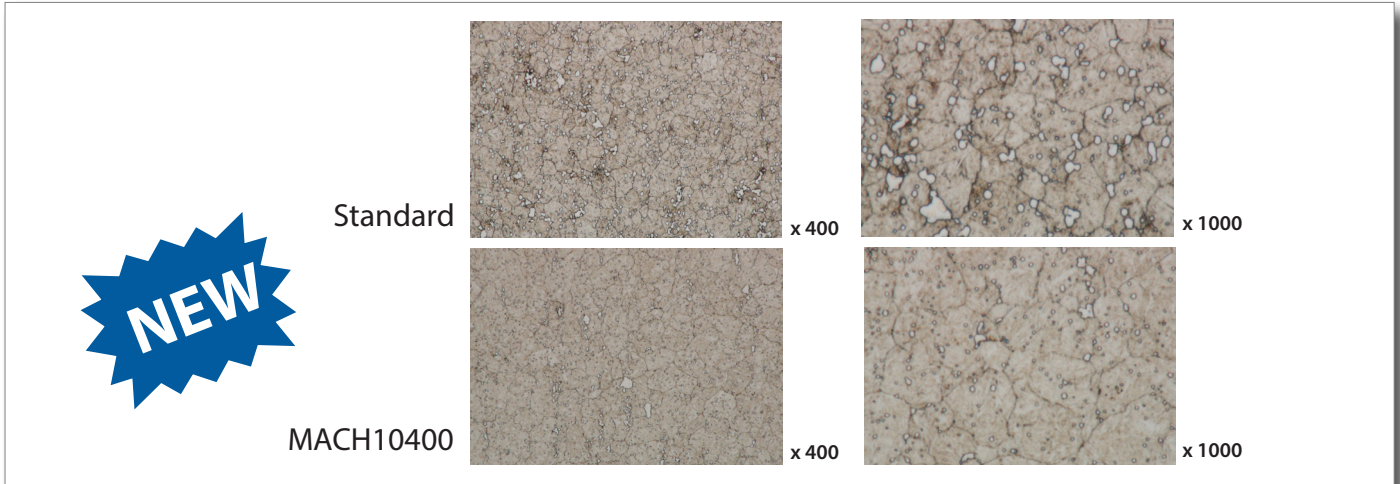
Important to stability and performance

SQT is a surface treatment specially designed for Cold Forming processes.

# TOOL LIFE IMPROVEMENTS WITH MACH10400!

For flat and rotary rolling dies, forming involute splines and threads!

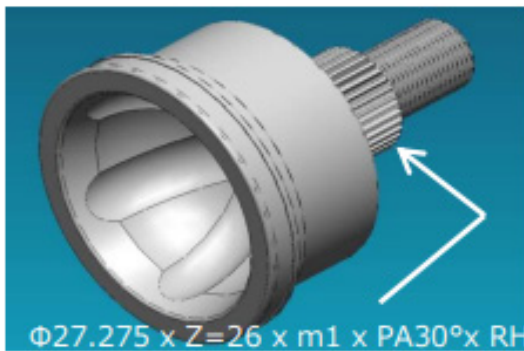
## Material metallurgical structure



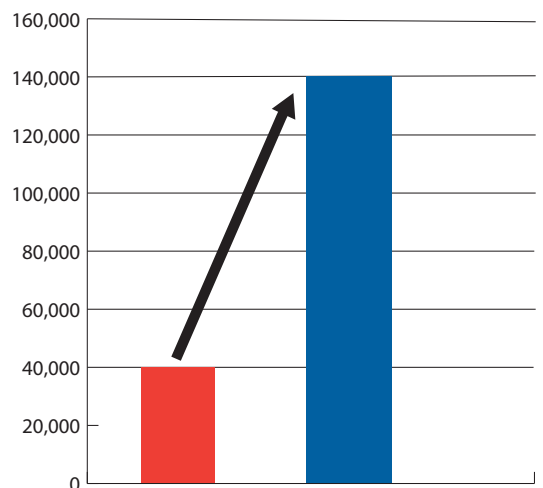
### OSG Advantage:

At higher hardness with toughness maintained will achieve the ultimate tool life.

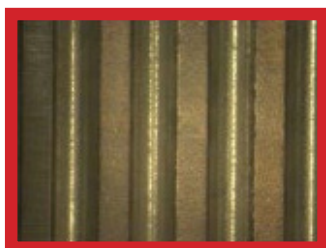
## Improved tool life - 3,5 times longer!



① Workpiece



② Problem  
Standard tool steel

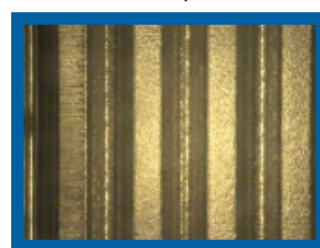


New

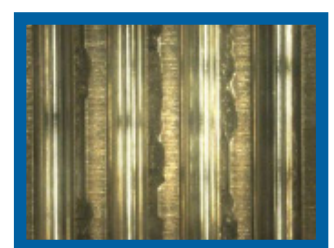


After 40.000 process cycles

③ Effect  
OSG Development MACH 10400



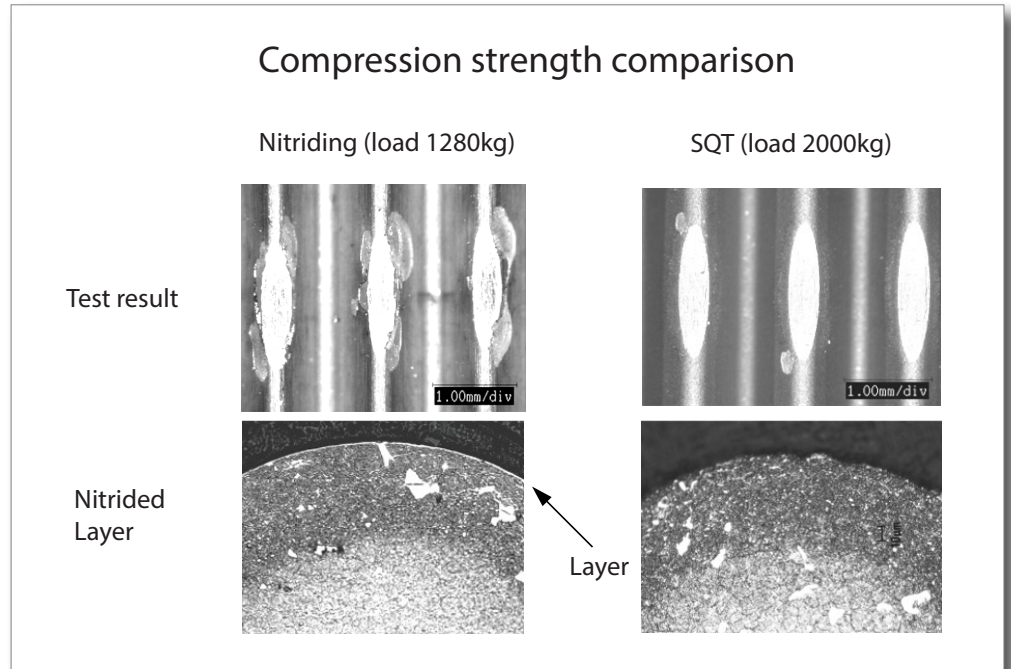
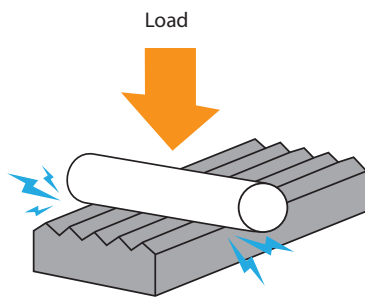
New



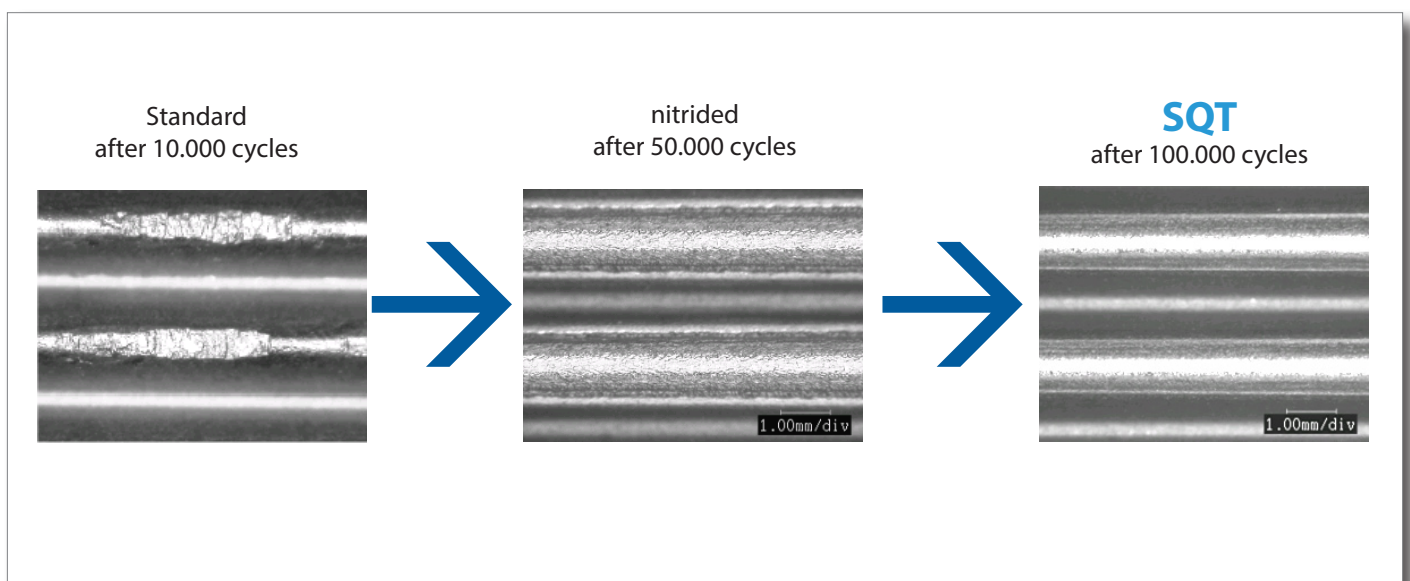
After 140.000 process cycles

# OSG EX-CELL-O - SQT SURFACE TREATMENT

## Comparison of standard and SQT surface treatment



## Application example



Method	Thread rolling
Size	M8 x 1,25

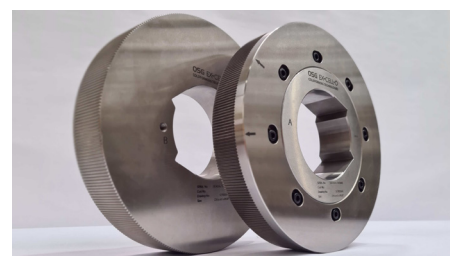
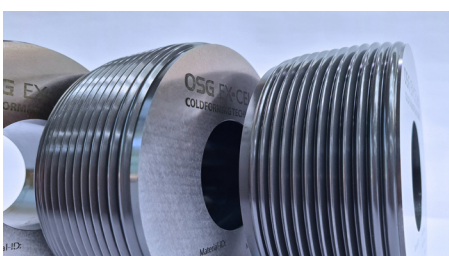
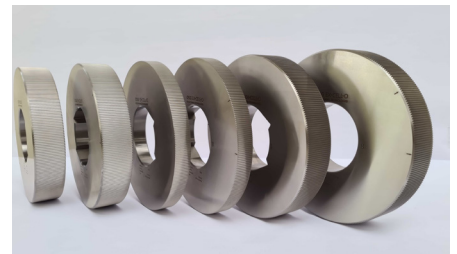
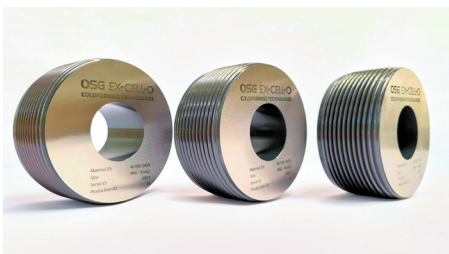
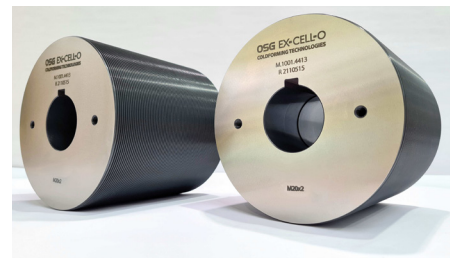


# SPLINE ROLLING DIES / THREAD ROLLING DIES USING MACH 10400!

The OSG Group is the largest global manufacturer of rolling dies. The excellent OSG engineers continuously develop new tool concepts for the most diverse manufacturing processes, machine technologies and forming applications. Let us prove to you with a demo that OSG EX-CELL-O cylindrical dies will improve your forming processes.

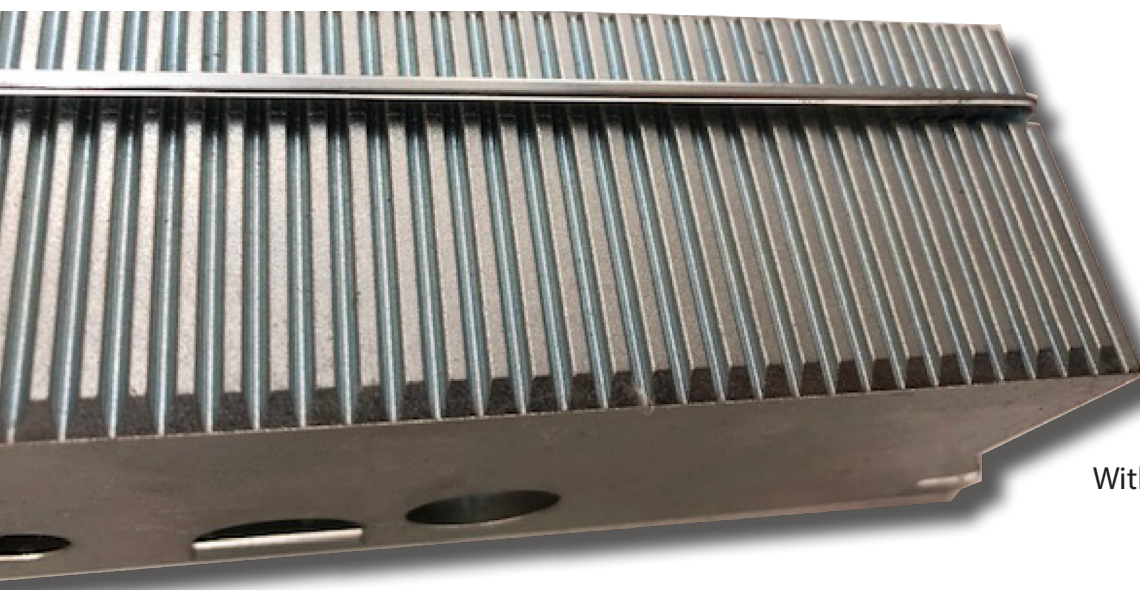


## Steel: MACH 10400



# RACK DIES OUT OF MACH 10400

## Rack dies in different lengths and designs



With ring-grooves clearance

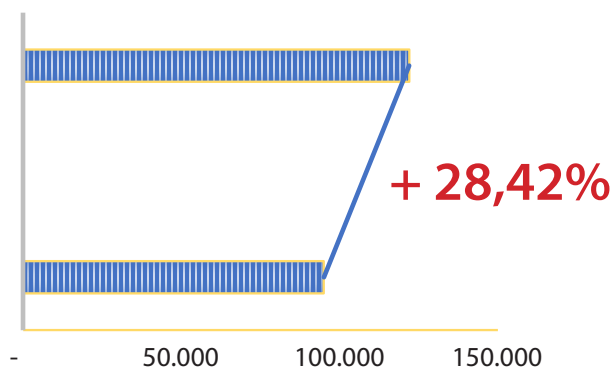
### Steel: MACH 10400



### Tool life comparison

MACH 10400 SQT

Coated by  
competition

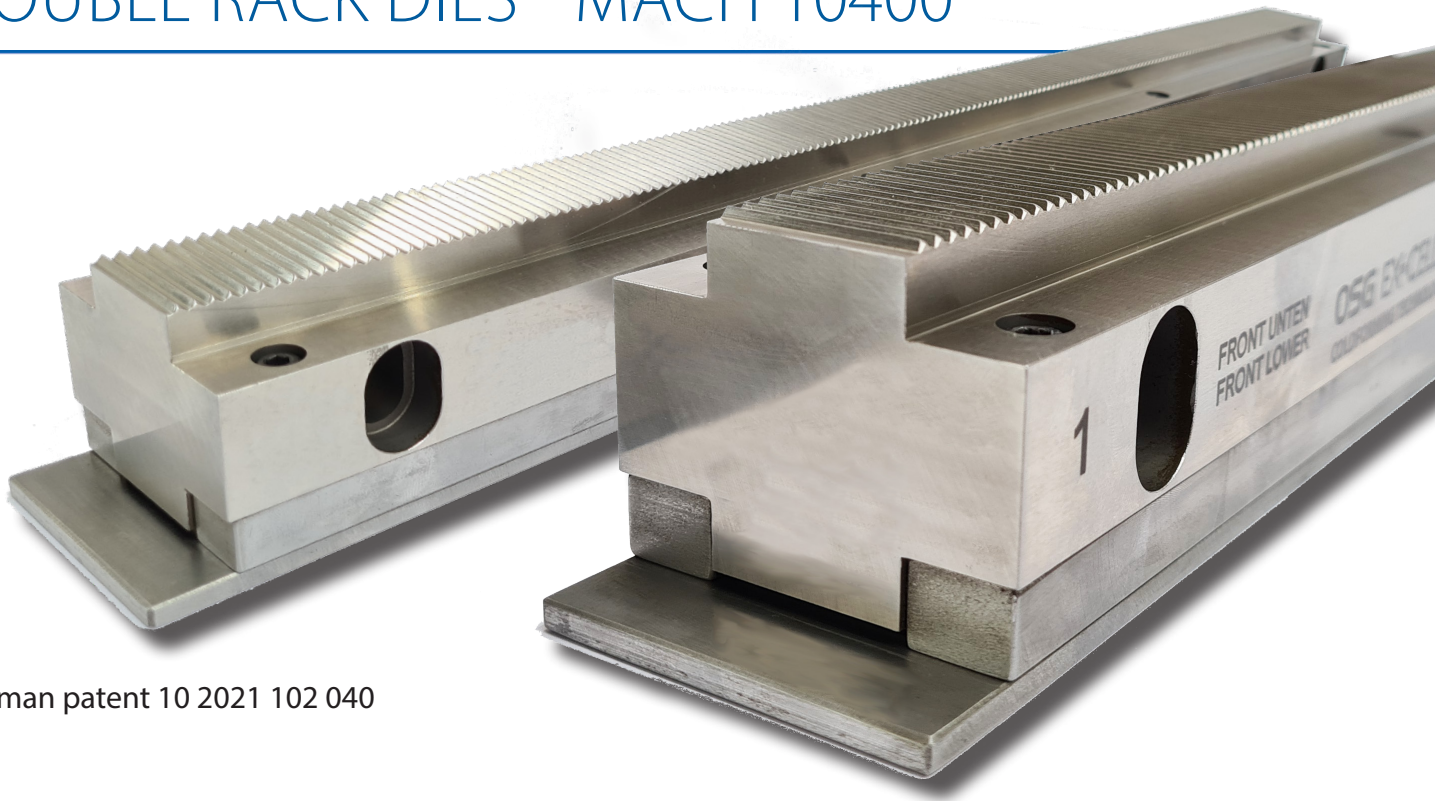


### Advantage OSG:

Rolling with clearance on pre-turned grooves technology, eliminates expensive post-processing

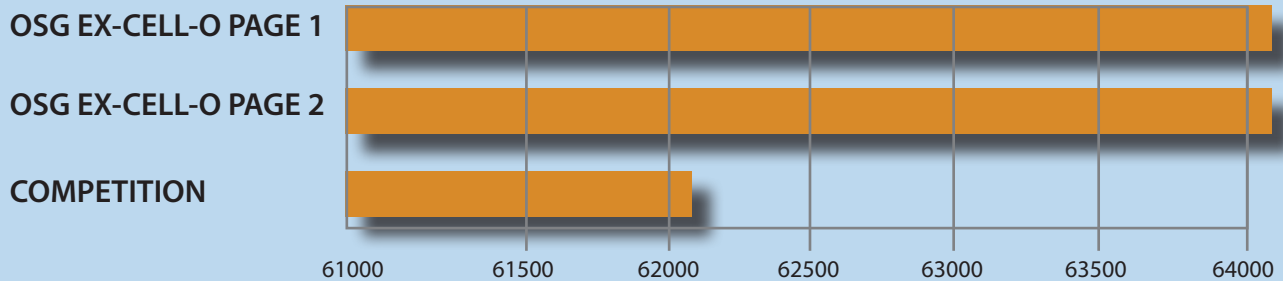


# DOUBLE RACK DIES - MACH 10400



German patent 10 2021 102 040

## Tool life comparison

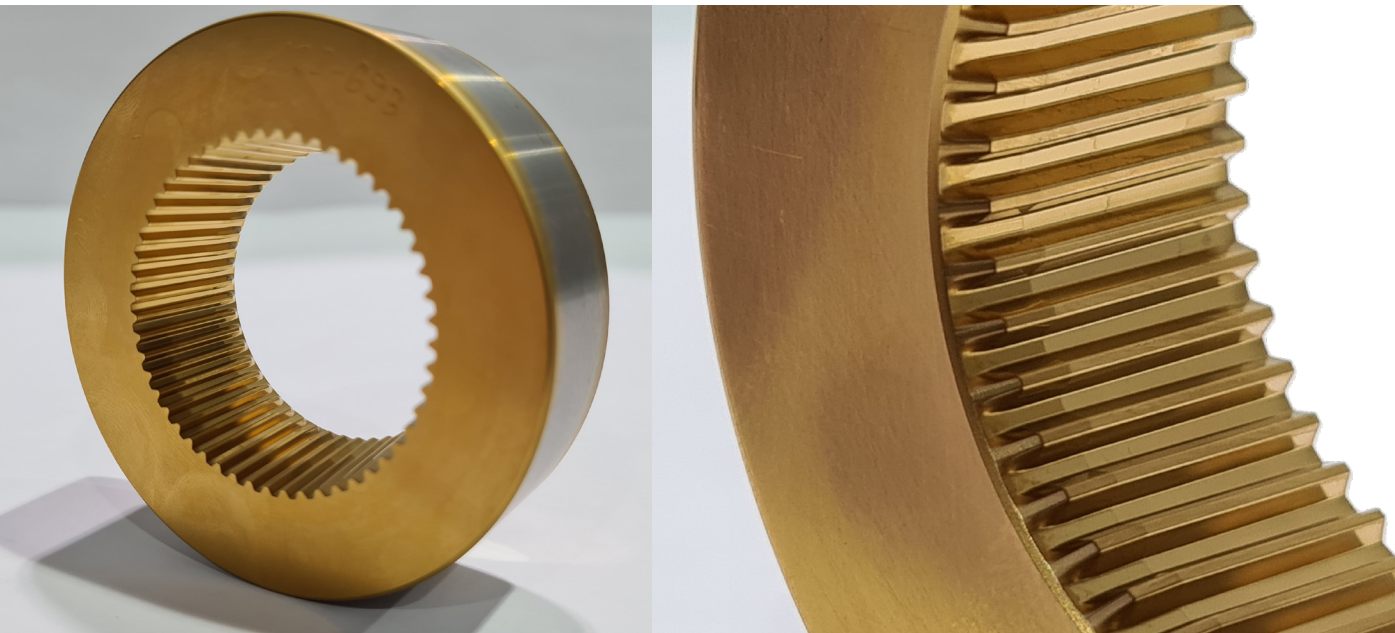


### Advantage OSG:

Lower tool costs per part, costless logistics, save resources, CO2 reduction, economic benefits, quick tool changeover

# SOLID CARBIDE MATRICES

## Forming tools for axial forming processes!



Cutting material and coating from the same supplier  
Mandatory for hardness & toughness

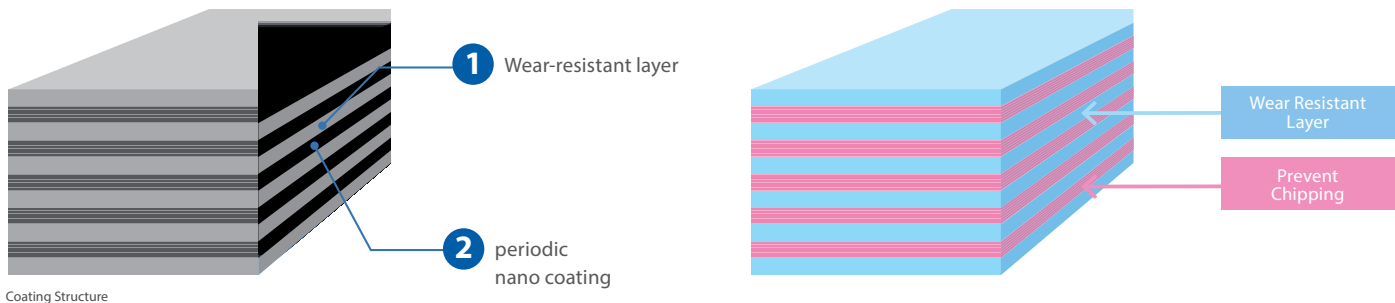
## EgiAS Coating

### Outstanding wear resistance & robustness

Low friction coating with nanostructure to prevent chipping

EgiAs

Coating structure



Coating color	Coating Structure	Hardness (HV)	Oxidation temperature (°C)	Heat-resistance	Adhesion strength	Wear resistance	Resistance against Overlays	Resilient
Rainbow colors	Multilayer	3.200	1.100	☉	☉	☉	☉	☉



# HOLLOW SHAFT TECHNOLOGY

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**With our newly developed hollow shaft rolling technologies we can manufacture them very efficiently.**



**OSG EX-CELL-O**  
COLDFORMING TECHNOLOGIES



- Very good spline quality at wall thicknesses down to 3-5mm
- Push- and Pull flanks are reversed over the whole spline length

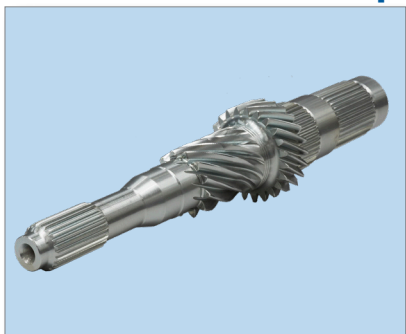
# APPLICATIONS

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## Engine components



## Transmission components



## Axle components



# OUR GLOBAL NETWORK

## Overview of the factories



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*shaping your dreams*



# OSG EX-CELL-O

## COLDFORMING TECHNOLOGIES

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