

INNOZL™ 3D PRINTED

GRINDING-NOZZLES

MADE OF TITANIUM



INNOZL™ CD (Customer design)

INNOZL™ STL (Standard line)



INNOZL™ in cooperation with
technologies **Hirt®**
LINE

INNOZL™ Cooling nozzles are designed for precision grinding and at the same time for stable series production.

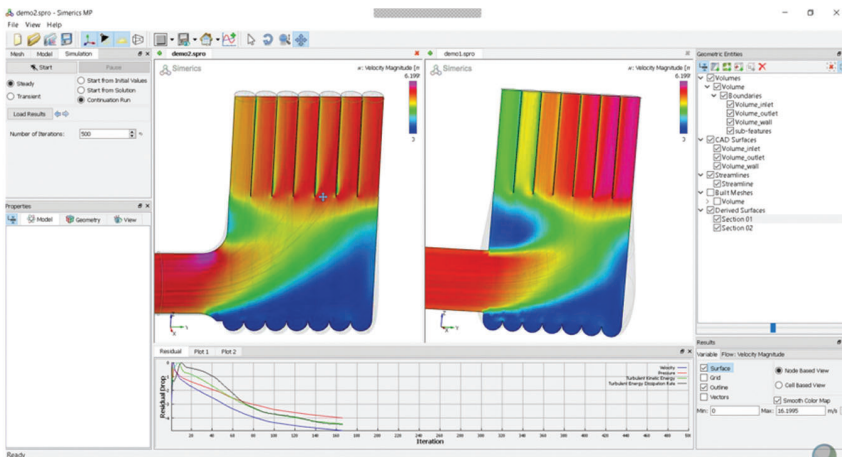
Why INNOZL™?

INNOZL™ Nozzles prevent grinding burns by discharging the coolant directly to the contact zone at the same flow rate and speed per nozzle outlet to maximize the lubricant effect.

INNOZL™ Nozzles are equipped with an internal flow channel geometry that maintains flow velocity and direction for complex and high quality grinding processes.

INNOZL™ Nozzles are very compact and can be easily mounted to existing machine cooling systems as a one-piece accessory.

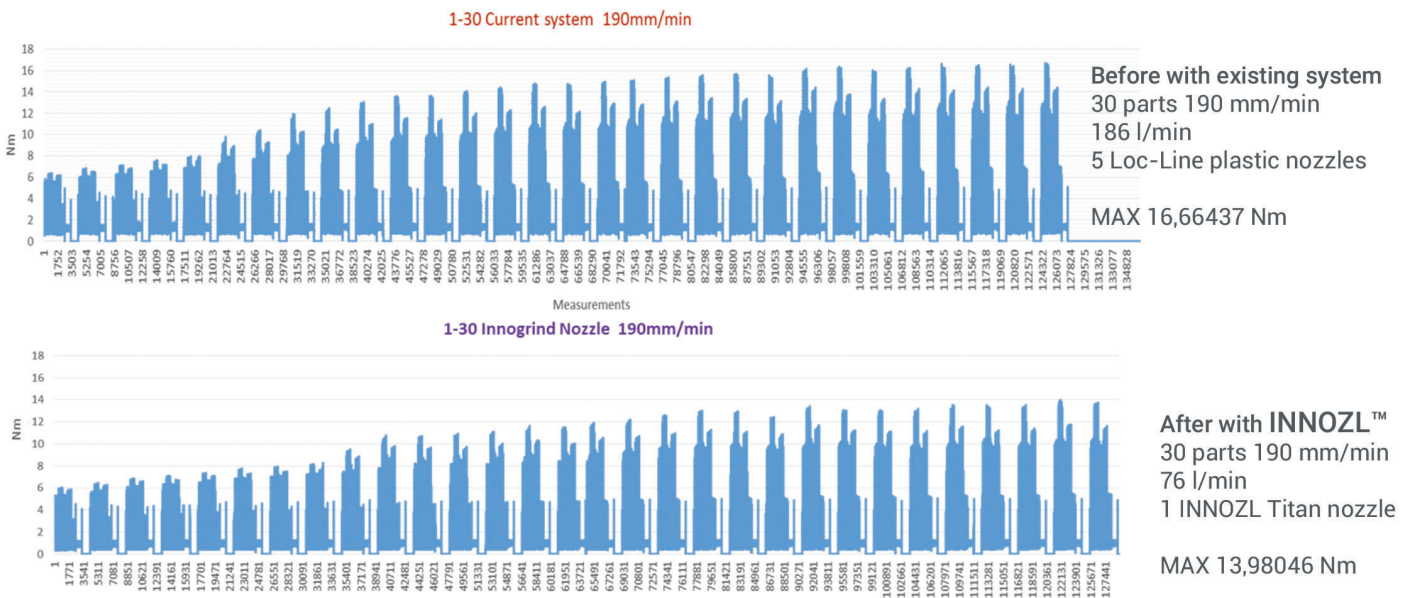
INNOZL™ Nozzles are tested in a flow analysis for the entire nozzle width for uniform coolant outlet!

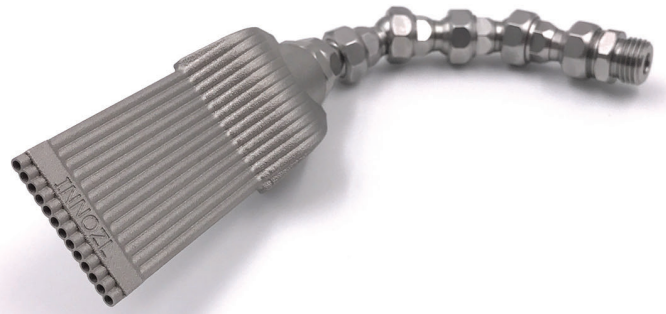


ADVANTAGES OF THE INNOZL™ NOZZLE

- Grinding burn almost impossible
- Higher product quality at lower production costs
- Increased product service life
- Reduced residual stress in the product
- Reduced spindle power consumption
- Higher grinding speeds allow a higher throughput
- Savings in energy costs for coolant preparation

Power consumption comparison

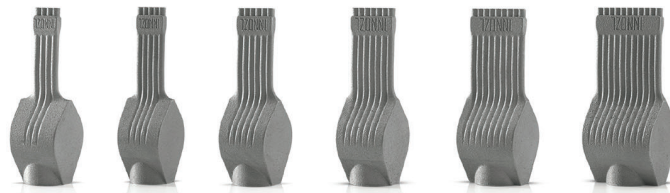




INNOZL™ STL-TI

For connection 3/8"

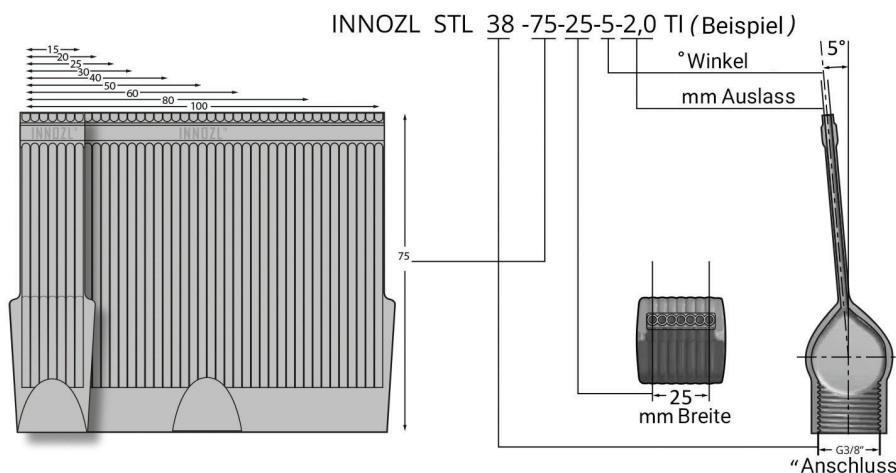
INNOZL STL38/75/15/5/2,0TI	(length 75mm, connection 3/8", width 15mm, angle 5°, outlet Ø2,0mm)
INNOZL STL38/75/20/5/2,0TI	(length 75mm, connection 3/8", width 20mm, angle 5°, outlet Ø2,0mm)
INNOZL STL38/75/25/5/2,0TI	(length 75mm, connection 3/8", width 25mm, angle 5°, outlet Ø2,0mm)
INNOZL STL38/75/30/5/2,0TI	(length 75mm, connection 3/8", width 30mm, angle 5°, outlet Ø2,0mm)
INNOZL STL38/75/40/5/2,0TI	(length 75mm, connection 3/8", width 40mm, angle 5°, outlet Ø2,0mm)
INNOZL STL38/75/50/5/2,0TI	(length 75mm, connection 3/8", width 50mm, angle 5°, outlet Ø2,0mm)
INNOZL STL38/75/60/5/2,0TI	(length 75mm, connection 3/8", width 60mm, angle 5°, outlet Ø2,0mm)
INNOZL STL38/75/80/5/2,0TI	(length 75mm, connection 3/8", width 80mm, angle 5°, outlet Ø2,0mm)
INNOZL STL38/75/100/5/2,0TI	(length 75mm, connection 3/8", width 100mm, angle 5°, outlet Ø2,0mm)



INNOZL™ STL-Mini TI

For connection 1/4"

INNOZL STL mini 14/56/5/5/1,6TI	(length 56mm, connection 1/4", width 5mm, angle 5°, outlet Ø1,6mm)
INNOZL STL mini 14/56/8/5/1,6TI	(length 56mm, connection 1/4", width 8mm, angle 5°, outlet Ø1,6mm)
INNOZL STL mini 14/56/10/5/1,6TI	(length 56mm, connection 1/4", width 10mm, angle 5°, outlet Ø1,6mm)
INNOZL STL mini 14/56/12/5/1,6TI	(length 56mm, connection 1/4", width 12mm, angle 5°, outlet Ø1,6mm)
INNOZL STL mini 14/56/15/5/1,6TI	(length 56mm, connection 1/4", width 15mm, angle 5°, outlet Ø1,6mm)
INNOZL STL mini 14/56/20/5/1,6TI	(length 56mm, connection 1/4", width 20mm, angle 5°, outlet Ø1,6mm)



Note!

For the adaptation of the INNOZL nozzles with our Hirt-Line system you need an additional adapter and a basic element.
 For Hirt-Line type 1 system you need for STL nozzles 1x 1-AD-38 + 1x 1-GE-DK or for STL Mini nozzles 1x 1-AD-14 + 1-GE-DK
 For Hirt-Line Type2 System you need for STL nozzles 1x 2-AD-38 + 1x 2-GE-DK, Type2 is not compatible with STL Mini nozzles

INNOZL™ CD



„Customer design“
Manufactured and tuned
for customer projects



**CD nozzles are
used for the following
Machines:**

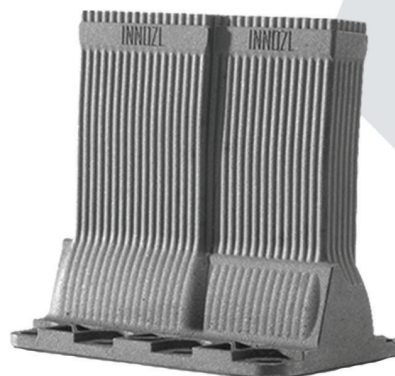
- Buderus
- Junker
- ELB
- EMAG
- Danobat
- Overbeck
- Studer
- Kellenberger
- Agathon
- EWAG



customers such as...

- Liebherr-Aerospace
- SMS Maschinenbau
- Punch Powertrain
- SECO tools
- AGCO Power
- Moventas
- VCST
- Fokker landing gear
- van Frankenhuyzen
- Stork Gears & Services
- Tsubaki Nakashima

**...use INNOZL™
CD nozzles**



Please contact us,
we help you!