

**ROTAX**<sup>®</sup>  
**RACING**



**New ROTAX Cylinder**

**Single Core Technology – Promotion Material, Oct 2017**

# Parity - Rotax MAX Cylinder

Customers demands are:

- Parity of engine performance (same for all).
- Keep high level of durability as expected from a Rotax MAX engine.
- Low cost of ownership.

→ ROTAX is convinced that a [Nikasil coated aluminum cylinder](#) is the ONLY technology to fulfill these demands!

→ The production tolerances of the cylinder have been optimized with no major product change!



# Why a Nikasil coated aluminum cylinder...

|                                      | Nikasil           | Iron Sleeve  |
|--------------------------------------|-------------------|--|
| Piston change (thermal load)         | 😊 Up to 50 h      | Up to 10h  |
| Step liner to cylinder (performance) | 😊 No step         | Casting tolerance  |
| Timing tolerance (performance)       | Casting tolerance | 😊 Machined sleeve  |
| Seizure risk level                   | 😊 Very low        | High risk because of high piston clearance and lower heat transfer |
| Wear of cylinder liner               | 😊 No wear         | Wear, could be compensated with repair piston – high effort        |
| Product cost                         | 😊 Low             | High because of very complex manufacturing                         |



# Two steps to improve production process of ROTAX cylinder

**A) Improved Casting Process** – increase stability because of “3D printed one piece sand core”:

- **Before:** 4 parts “glued” to one piece

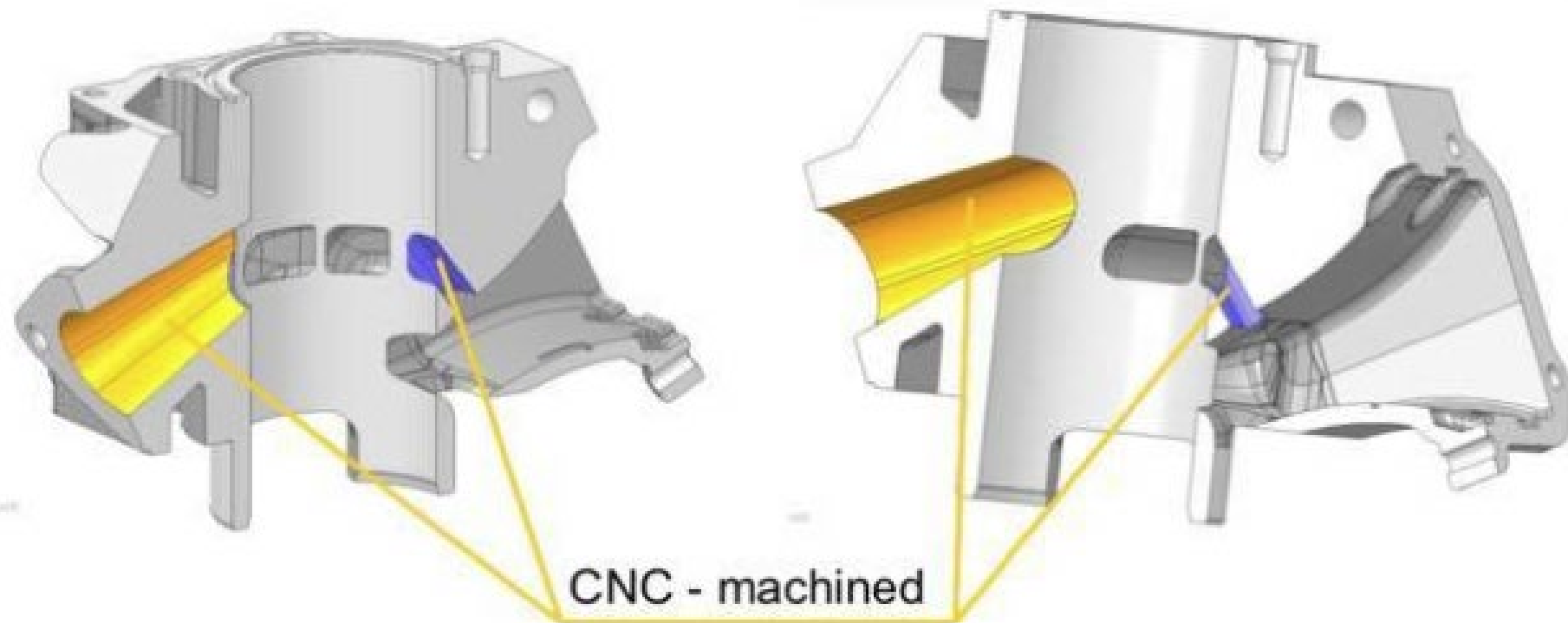


- **Now:** 1 part, 3D digital print



## Two steps to improve production process of ROTAX cylinder

B) Machine the significant ports – full CNC machining of exhaust port PLUS boost port.



## Parity - Rotax MAX Cylinder – Tolerance Fix 2017

**2017**

**Rotax started to prove  
the parity increase  
with the Junior  
cylinder**



**2018 Rotax will have applied same technology on Senior and DD2!!**

