

SPECIALIST INFORMATION HIGH PRESSURE

# APPLICATION SCENARIOS

## COST SAVING POTENTIAL



- // Longer tool service life
- // Higher cutting speeds
- // Time saving and flexibility
- // Reduced energy consumption
- // Increased quality of output
- // Lower heat generation
- // Increased output
- // Perfect use of the available space

High pressure can be used on all machine types that cut metals and plastics, e.g. sliding or fixed headstock automatic lathes, single spindle lathes, machining centres, multispindle machines, etc.



## CUSTOMER SITUATIONS



### // Customer situation 1 (Germany):

- // Manurhin sliding headstock automatic lathe, without high pressure
- // *Long feeds damage workpieces*
- // *Very tough, gummy material (Aluminum alloy)*
- // *Chips don't break: snarl chips must be cleared at short intervals*

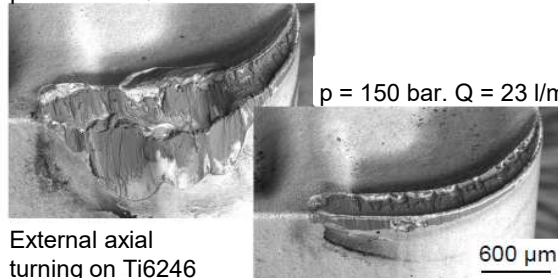
### // Customer situation 2 (retrofits in Germany):

- // Gildemeister Sprint 42, with 70 bar high pressure
- // *Machine was delivered with overdimensioned filtration ex works (filters must be changed twice a day)*
- // *Constant filter cleaning completely disrupts cutting process*
- // *Positive effects of high pressure were practically inverted by excessively frequent downtimes due to filter cleaning*



### Tool wear with HP CL supply

p = 80 bar. Q = 29 l/min.



External axial  
turning on Ti6246

600 µm

### // Customer situation 3 (France):

// Citizen Miyano fixed headstock automatic lathe, 20 bar medium pressure

// *Chips are very tough and wrap around turret and tools*

// *Machine must be stopped regularly for manual clearing*

// *Exclusively flood cooling with booster pump – but pressure buildup difficult due to inadequate coolant supply solution*

### // Customer situation 4 (Spain):

// Hwacheon TTC Horizontal, 4 bar low pressure pump

// *Large bar diameter*

// *Blind holes almost impossible with indexable insert drill because chips cannot be conveyed out*

// *Drills with very large apertures for internal coolant supply – virtually no buildup of pressure*

## APPROACHES AND USPS



Typical customer problems	Effects	Technical solution
Snarl chips	Interrupted process Time loss	Depending on their types, most chips can be broken quickly by pressures up to 50 bar.
Higher tool wear/fracture	Surface damage	High pressure in conjunction with additional medium filtration. 40 - 60 µm is adequate in most cases.
Overheated medium	Problems with tight tolerances Reject/defect parts	One solution is a greater quantity of medium from an additional tank. Clever planning can eliminate cooling.
Deep drilling not possible	Outsourcing	High-pressure system up to 130 bar solves the customer's problem. The part can be finished on the machine.

// Defined chip break – no nesting.  
Uninterrupted process

// Clean conditions and high quality surfaces

// Higher cutting speeds and total tool paths

// Deep drilling without clearing strokes

➤ **A step ahead of the competition**