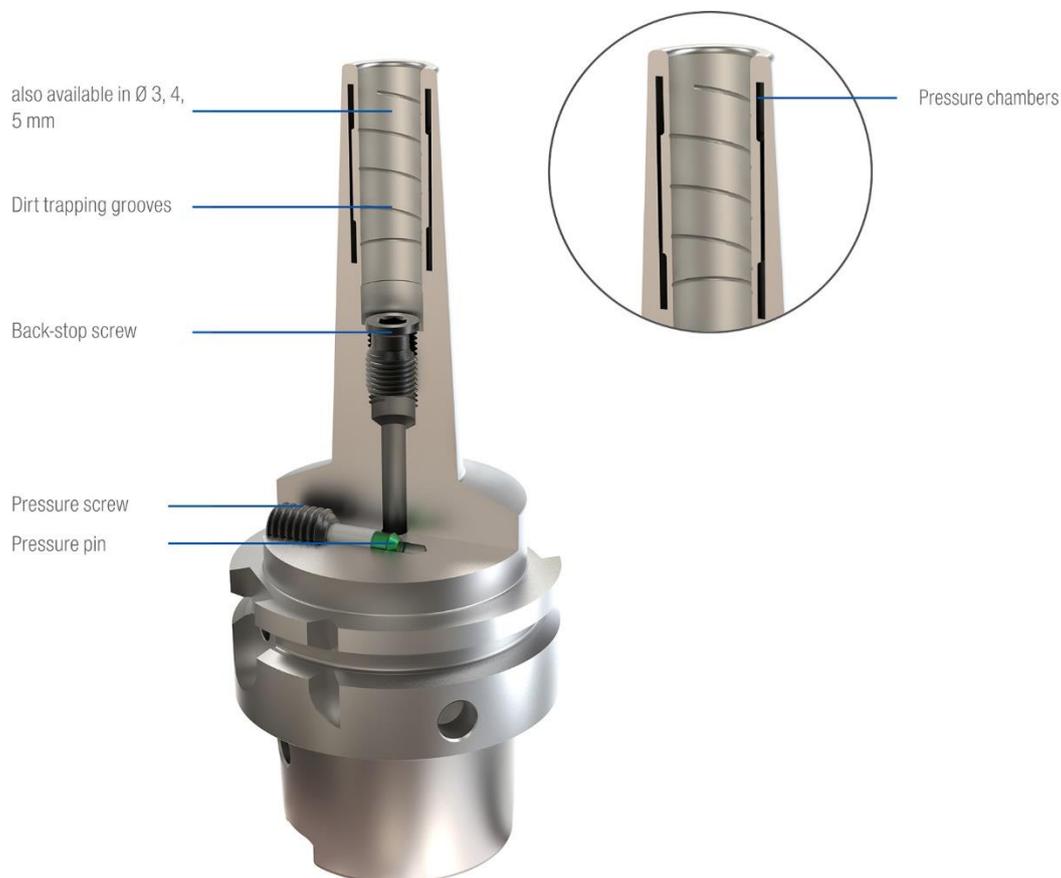


## Additive manufacturing helps WNT scale down high pressure hydraulic chuck technology

Precise gripping of small diameter cutters has been the domain of shrink fit for many years. Now, with the application of additive manufacturing techniques, WNT has developed a series of precision high pressure hydraulic chucks capable of gripping cutter shanks as small as 3mm diameter with improved process security and enhanced cutter performance.

The application of additive manufacturing techniques has enabled WNT to create the high pressure chamber that operates the hydraulic chuck directly into the stem of the toolholder. This eliminates the previous requirement to braze this chamber in place, which was impossible to achieve accurately at these small diameters. With availability for shank sizes of 3 mm, 4 mm and 5 mm, with the main body having a 3 degree inclination, hydraulically clamped tools can now be used in applications that were previously excluded to this type of tool holding.



The arrival of precision high pressure hydraulic chucks at these diameters brings productivity and financial benefits to users. With a hydraulic chuck tool set up time is around a third of that when using shrink fit, the tool is immediately available for use; all that is needed is to clamp, and measure. The chucks are suitable for both high speed steel and solid carbide cutters and can operate at temperatures up to 120 degrees Celsius, with the added benefit that as temperatures increase, so

does the gripping pressure. With the superior damping characteristics of high pressure hydraulic chucks it is possible to achieve improved surface finishes when compared to shrink fit holders, especially when increased stepovers are employed. Due to the high pressure clamping and increased damping and high torque capability provided by these chucks tool life is also increased, further reducing manufacturing costs. The WNT high Pressure hydraulic chucks are available with SK40, BT40 and KSK-A 63 spindle taper fitments able to accept tool shank diameters of 3, 4, 5, 6, 8, 10 and 12 mm.

“At WNT we are always looking to innovate in order to develop new solutions to issues faced by our customers. The clamping of small diameter cutters that require extended reach was one area that featured regularly in discussions. By embracing new technologies, such as additive manufacturing we are able to develop products such as this new range of toolholders. In doing so we will continue to provide cost-effective solutions and assist in improving cutter performance for our customers,” says Tony Pennington, Managing Director, WNT (UK).