

New Shrink Fit Unit US 1100 TubeChiller™

Diebold offers a completely renewed range of shrinking machines together with shrink tool holders that cover the whole range of shrinking applications. Our latest innovation is the Pyrometer technology where the shrink temperature is measured by a Pyrometer through the TempControl coil directly at the shrink fit holder nose part. We offer High Tech shrink units for every user application and every budget. With this equipment line, we are the technological world market leader for shrink technology.



US 1100 horizontal

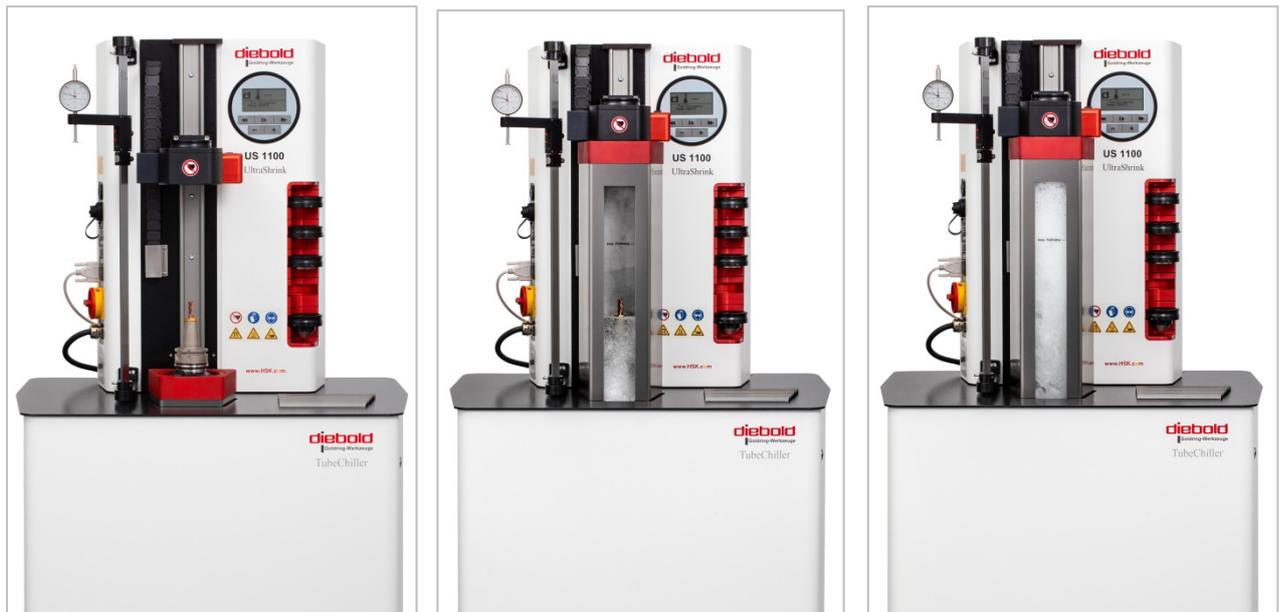


US 1100 vertikal

Diebold's shrink units are equipped with state-of-the-art inductive technology. All devices use a control with parameters for the shrinking processes where tool holder contour, cutter size and the required energy for the shrink process can be selected. Diebold shrink units can shrink all tool shafts, whether carbide, HSS or stainless steel.

Shrink Unit US 1100 TubeChiller™

For innovative shrinking and automatic cooling of shrink fit tool holders we offer our newest technology called „TubeChiller™“. This technology was developed to combine our shrink unit series US 1100 with automatic cooling. The units work fully automatic and after the shrink fit process, tool holders are cooled down automatically so that it is impossible for operators to touch hot tools.



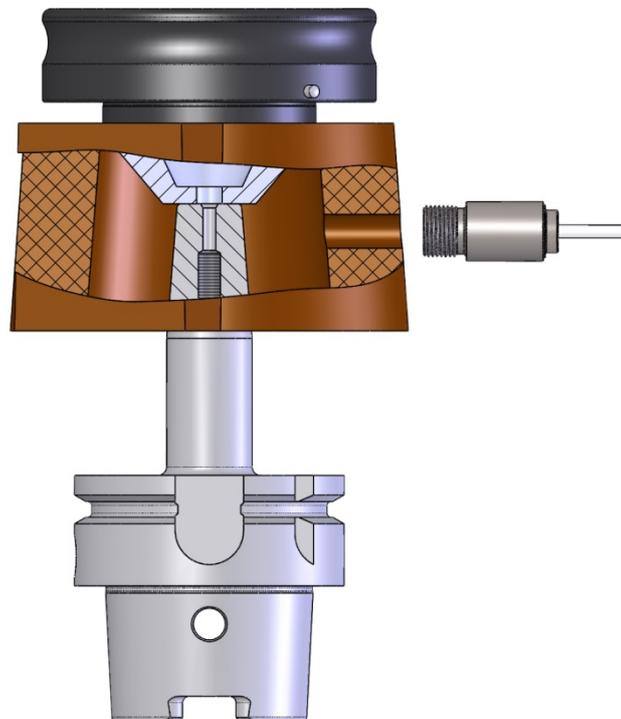
The TubeChiller™ Function

After the shrink process the tube of the chiller unit lifts automatically from the base. At the same time the tube is filled with coolant and it cools down the hot tool holder. While the tube is moving up, it moves the TempControl coil back in to the start position without the need of pneumatic or and mechanical accessories. The TubeChiller™ was developed based on the good experience we had for years with our patented chiller units FKS 04S where the tool holders have been moved from the shrink unit to the chiller unit manually. Now we have a fully automatic unit with the same cooling principle.



The new Pyrometer Technology

The Pyrometer technology was developed for an easy shrink fit process where the minimal temperature will be applied to the tool holder that is necessary to make the shrink process work. This prevents overheating of the tool holders, a well know problem in shrink fit technology. Highest energy input and high power of the shrink fit machine is not the right solution, only controlled temperature guarantees a smooth shrink fit process. All Diebold shrink units have fixed parameters for even shrinking of the tool holders, but with the Pyrometer technology we offer additional temperature control.



The right cooling process for shrink fit holders is very important



Chiller Unit FKS 04S

Kühlen der Werkzeuge ist nicht trivial

Cooling of the tool holders after the shrink process is an important step. If the holders are just "showered", then the cutting tools will bend. Although only a few microns, but we want to avoid this, especially when customers are using mini cutters with diameter .04 to .01 mm which are often used in high speed machining and micro production. For this purpose, Diebold has developed the patented chiller unit FKS 04. After placing the tool holder in the housing and the door securely closed, the cooling fluid is pressed upwards from the tank by compressed air and floats around the previously heated tool holder like a ring. This even coolant flow prevents bending of the tool. When all the coolant has reached the tower, air will flow through the unit, and the coolant is cooled to room temperature. Several tool holders can be cooled in the liquid cooler at the same time. Due to the air flow the coolant will always cool down even if more than one tool holders are cooled down at the same time. No additional cooling unit is necessary. A youtube video shows the chiller unit and the cooling process at <https://www.youtube.com/watch?v=6ho9MDoC6BM>.

Diebold Shrink Fit technology is well known in any industries all over the world. The users of high-speed machines are largely equipped with Diebold devices. In high-speed machining, micromachining and Tool & Die industry, small, generally long and slender, thin-walled, shrink-fit chucks are used. Therefore shrinking devices are required, which ensure a gentle shrinking process so that such sensitive tool holders are not overheated. We offer horizontal shrinking devices that allow easy manual handling of the cutting tools. Small tool holders are very sensitive and should not be cooled down with cooling sleeves over the nose part that may damage the cutter. Small cutters usually have shank diameters of 3mm, 4mm or a max-

imum of 6mm. The Diebold shrink units offer special advantages to shrink such small cutter shanks. Shrink chucks with a 3 mm bore are not easy to manufacture so that the shrinking process works reliably. Diebold is known for the exceptionally high quality of its products. The bestselling toolholders from the extensive range of holders are those shrink chucks with 3 mm diameter. Competitors obviously have problems to meet the accuracy of these bore diameters for process-reliable shrinking.



What is special about the Diebold Shrink Units?

1. New Pyrometer Technology
2. Vertical and horizontal shrink units cover any application
3. Parameters for shrinking are installed in all shrinking machines
4. Gentle shrinkage, no overheating of the shrink chuck, for long life of the shrink chucks
5. Patented opening cylinder for automatic shrinking
6. Diebold is the world market leader for HSK-E 40 tool holders.
7. The competitors have problems to produce these chucks with small diameters in reliable quality
8. We use the highest quality steel and special hardening processes for the production of our shrink chucks, thus the highest durability
9. Due to artificial aging of the material no growth of tolerances
10. Therefore better quality and longer usability of the high accuracy
11. Production in fully air-conditioned factory, quality control in CMM room class 2
12. Exact contact of the tool taper to the face of the spindles
13. No loss of clamping force against the face of the spindle because the tool tapers have lower tolerances than the standards allow