FLEXO
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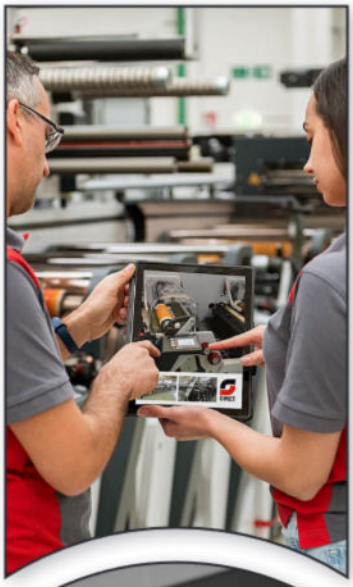
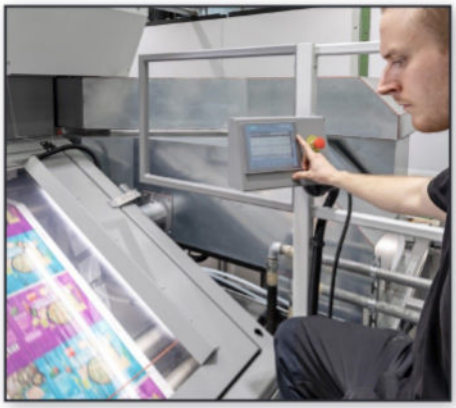
THE FLEXOGRAPHIC TECHNOLOGY SOURCE



NEW AGE PRESSES, NEXT GENERATION OPERATORS

Clamping Mechanisms

CONTRIBUTE TO BEST POSSIBLE PRESSRUNS

SWT Services

The clamping area between the printing press cylinder and carbon fiber adapter can decisively influence the flexographic printing image, the setup times when changing adapters, and process reliability of the entire system.

Let's look into why.

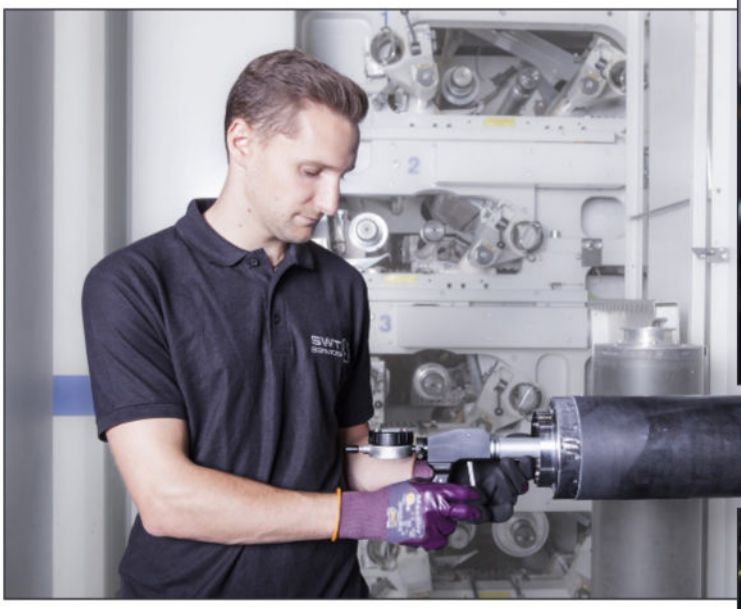
When the operator is changing jobs in the flexo printing machine, he maneuvers the clamping screw of a hydraulic cylinder—usually without knowing it. The hydraulic cylinder is a high precision clamping mechanism. Externally hard to recognize, the clamping screw moves the expansion piston located internally in the printing cylinder, which compresses hydraulic oil in the expansion chamber.

The increase in pressure in the chamber causes an expansion of the sleeve on the base body. This procedure precisely clamps the carbon fiber adapter within its inner clamping surface. To ensure a perfect run, both the clamping surface of the cylinder and the clamping diameter of the carbon fiber adapter is precision ground.

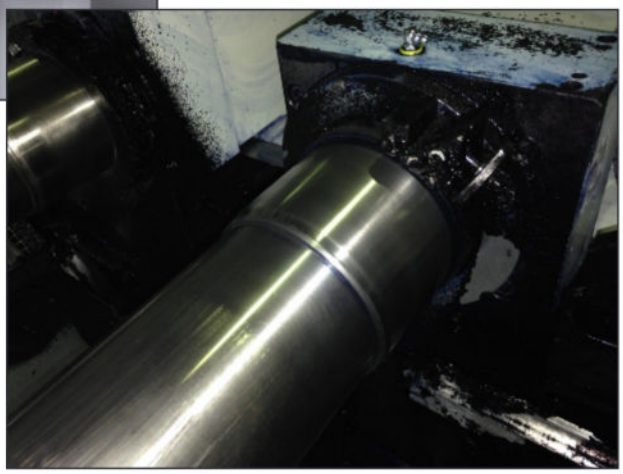
Hydraulic expansion solutions, such as those used in flexo printing presses, as well as in machine tools, are among the most precise clamping technology available. They are always used when frequent changing procedures and minimum changeover have to be permanently maintained with high precision.

The oil-filled expansion chamber and the expansion sleeve, when in operation in the printing process, act to dampen vibration and absorb peak load. Assuming the system does not get dirty or damaged, it ensures—even after several thousand cycles—perfect concentricity, which is the basis for flexo to achieve a clean print and high process reliability.

Clamping shafts and carbon fiber adapters should permanently form a high precision system.
PHOTOS COURTESY OF SWT SERVICES



Cleaned, moped and measured, the adapters can be easily joined and clamped with high precision.



FORCE & TORQUE

By the time carbon fiber adapters have to be removed from the printing cylinders by being struck with rubber hammers or blocks of wood, alarm bells should be ringing in the head of the operating manager," says Oliver Pfeiffer, managing director at SWT Services. "Properly adjusted, cleaned and maintained, the adapter has to fit on to the printing cylinder very easily." A sluggish adapter exchange is almost always an indication of problems in the entire system.

The reasons differ: frequent job changes under time pressure, improper operation and surrounding influences and a host of other factors that lead partly to enormous loads for the high precision interface. In a gradual process:

- Dirt and surface damages build on the clamping cylinder causing clamping diameter changes
- Deformation damage happens to the expansion parts
- Oil leakage occurs in the clamping device

The impact can be wide ranging: If the clamping force is too low, for example because the expansion rate of the cylinder size is not sufficient, the torque cannot completely be transferred to the adapter. This affects the printed image. Errors occur. Reproducibility decreases.

Sometimes, there is even a complete machine failure, all because the clamping surfaces are soiled or damage. Outside influences, such as high temperatures in the press or in the hall, can affect the clamping force and concentricity of the printing cylinders.

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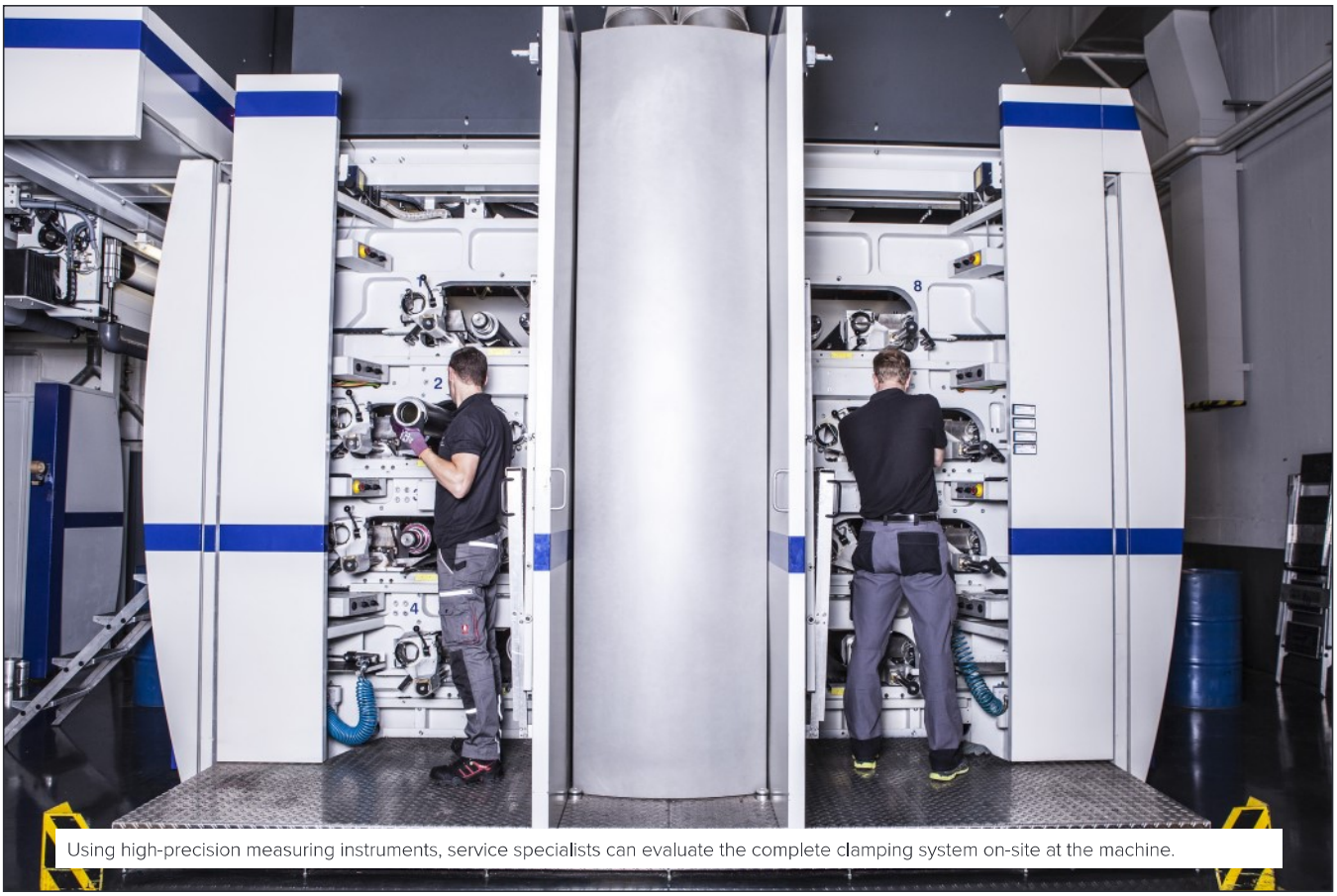

Using high-precision measuring instruments, service specialists can evaluate the complete clamping system on-site at the machine.

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MAINTENANCE & EVALUATION

Pfeiffer recommends regular servicing and maintenance in a cycle of 12 months. By using high-precision measuring instruments, service specialists evaluate the complete clamping system on-site at the machine. Both, the absolute dimension of the clamping diameter and the clamping cylinder, as well as the roundness and expansion rate of the clamping cylinder, are measured and checked using a special calculation program to compare the values of the adapter and clamping cylinder. Evaluation of the entire system ensures reliable and precise clamping of the adapter.

To permanently achieve the full potential of the clamping device, reduce unplanned machine downtime to a minimum and prevent damages to operators and machine; systematic clamping device monitoring and checking is essential. Using advanced technology, specialists can accurately balance toolholders, grinding wheels, crankshafts, rotors, impellers, pulleys, flanges, tools, and more—to nearly guarantee a perfect run.

ABOUT SWT SERVICES: *SWT Services specializes in the installation, training, maintenance, and repair of workholding/clamping and balancing tools. It offers a global, multi-vendor service for manual and power lathe chucks, zero-point clamping systems and hydraulic expansion solutions—including the clamping system of clamping cylinders and CFRP adapter for the flexographic printing process. Preventive inspection services are available and a full service program with comprehensive balancing services for toolholders, tools and finished parts, is offered. For additional information, visit www.swt-services.com.*