



GSE K GSE KS

Process modules
for thread forming / tapping



High-performance, compact and flexible

The GSE process modules for thread forming / tapping are perfectly designed for reliable serial production with very high cycle rates of up to 260 threads/min.

The compact modules offer amazing tool changing times in seconds, a wide range of applications and easy handling. They can be integrated into any production concept.

GSE K:

Flat design for use in presses and / or where tool installation height is low.

GSE KS:

Narrow design for use in restricted spaces.

GSE K / KS

Thread forming / tapping

Extremely low wear and short set-up times

The patented process modules have exceptionally low wear and extremely short set-up times. They do not require a mechanical pitch leader. The innovative principle reduces mechanical wear on tools significantly.

Free feed movement means programming is totally flexible. There is no longer any need to change mechanical components in the unit.

The GSE units are fitted with a rapid tool change system which can be pre-adjusted with the assembly jig and guarantees set-up times of only seconds.

Wide range of application

This practical design means the speed of the NC drive can be adjusted freely and hence cutting speed can be adapted freely to each type of material. The GSE can cut threads and tap both metric and inch threads in the diameter range M2 to M20.

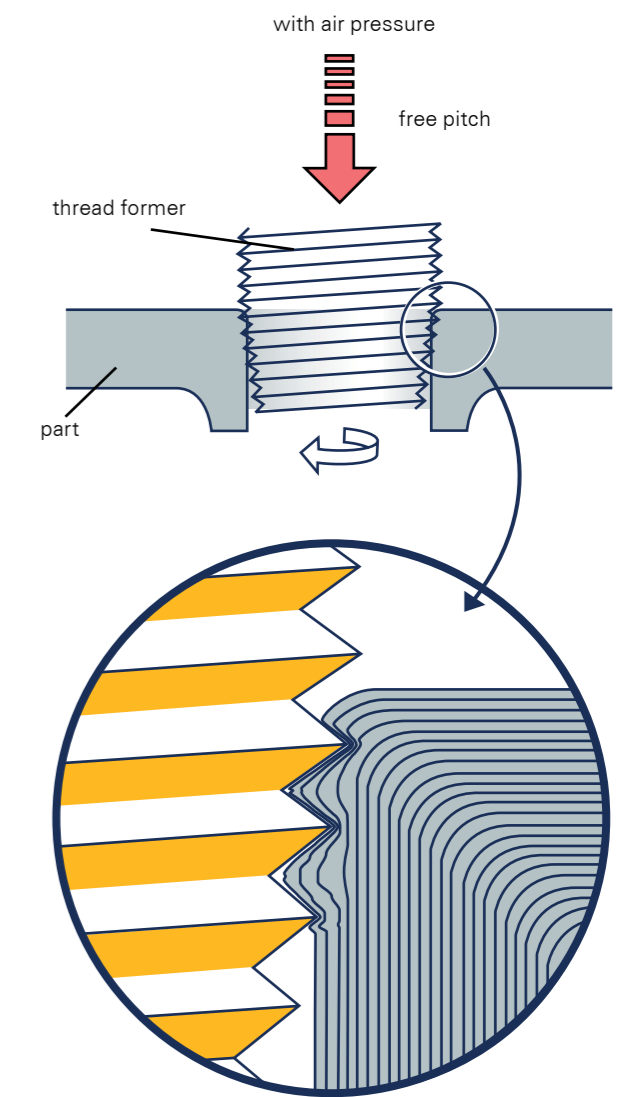
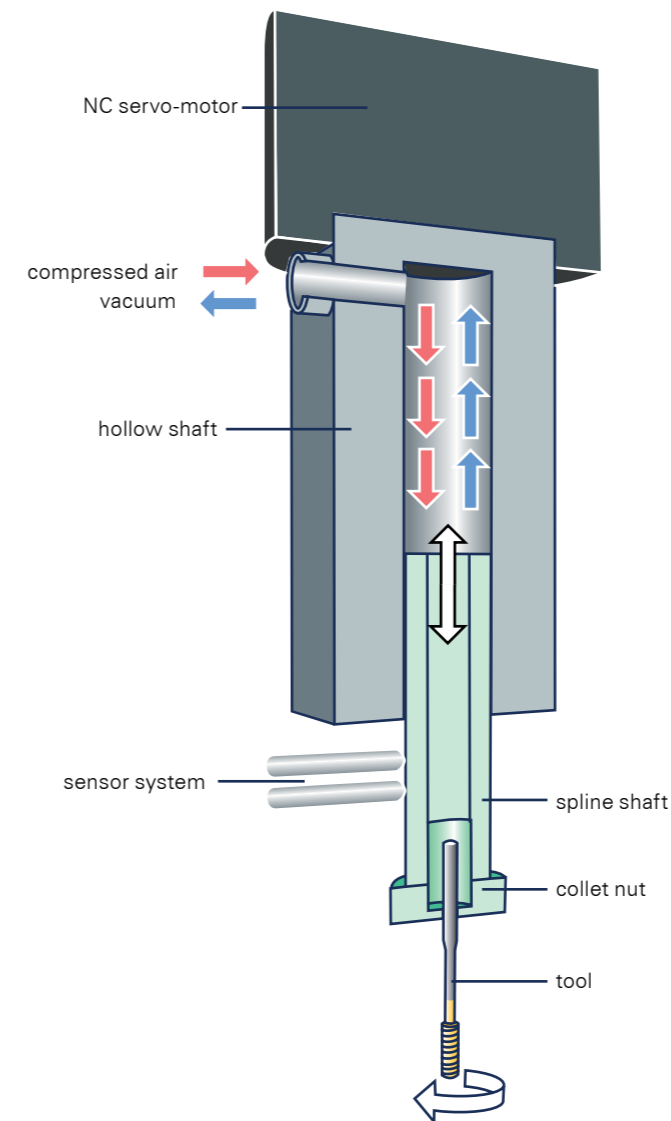
As an option, all units can be integrated in an adjustable 3-axis table for fast, flexible installation.

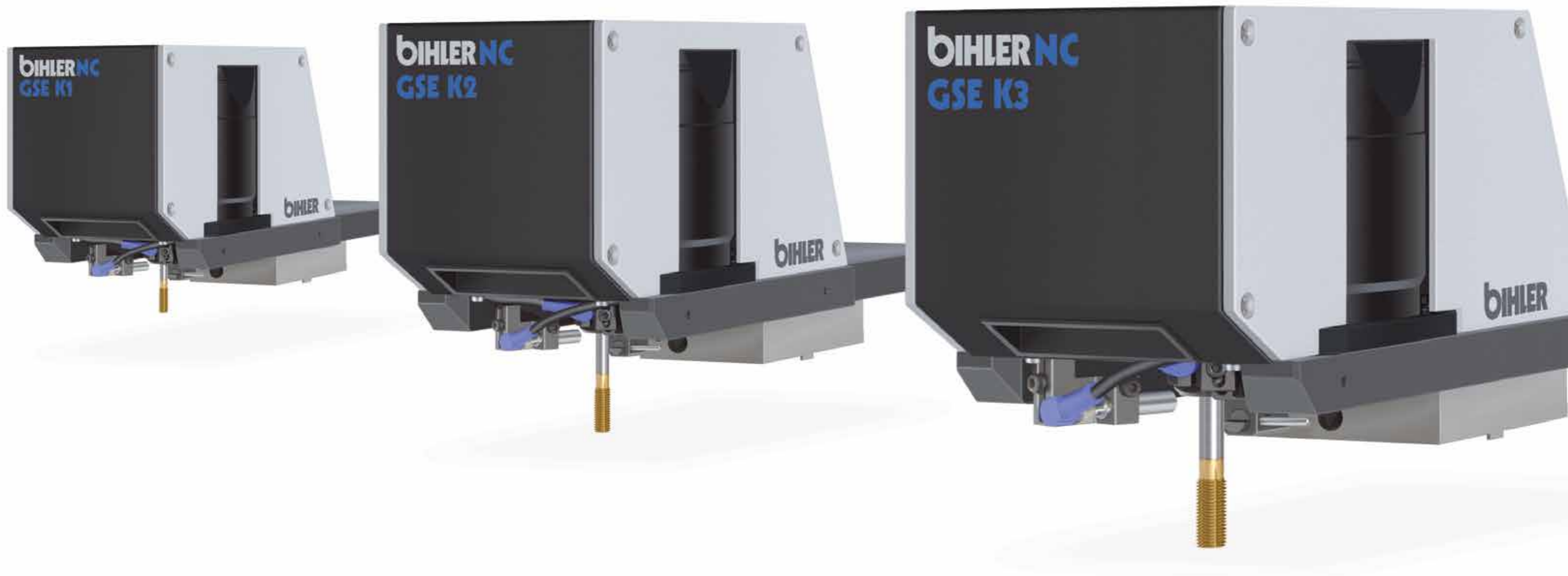
Operating principle

The working stroke is created by the spline shaft sliding inside the hollow shaft of the servo-motor. During the stroke, the sleeve is pressurised with compressed air. The return stroke is created by a vacuum. The spline shaft is fitted with a collet and union nut for changing the thread former. A second spline shaft can be mounted optionally for even faster tool changes.

100% process reliability

All GSE process modules are fitted with integrated sensors for monitoring final positioning and torque. Query parameters for sensor signals with regard to physical size, time and process range can be programmed freely. Monitoring processes such as tool break detection, thread depth and torque (e.g. trigger process) are available at all times.





GSE K / KS

Thread forming / tapping

Product features

- Water cooling system for ultimate dynamics and applications at high ambient temperatures
- Completely maintenance-free units with central lubrication system
- Different pre-strokes, return strokes and speeds available with fully variable programming
- Can be used both horizontally and vertically
- Speed range up to 9,000 1/min

Rapid changeover system

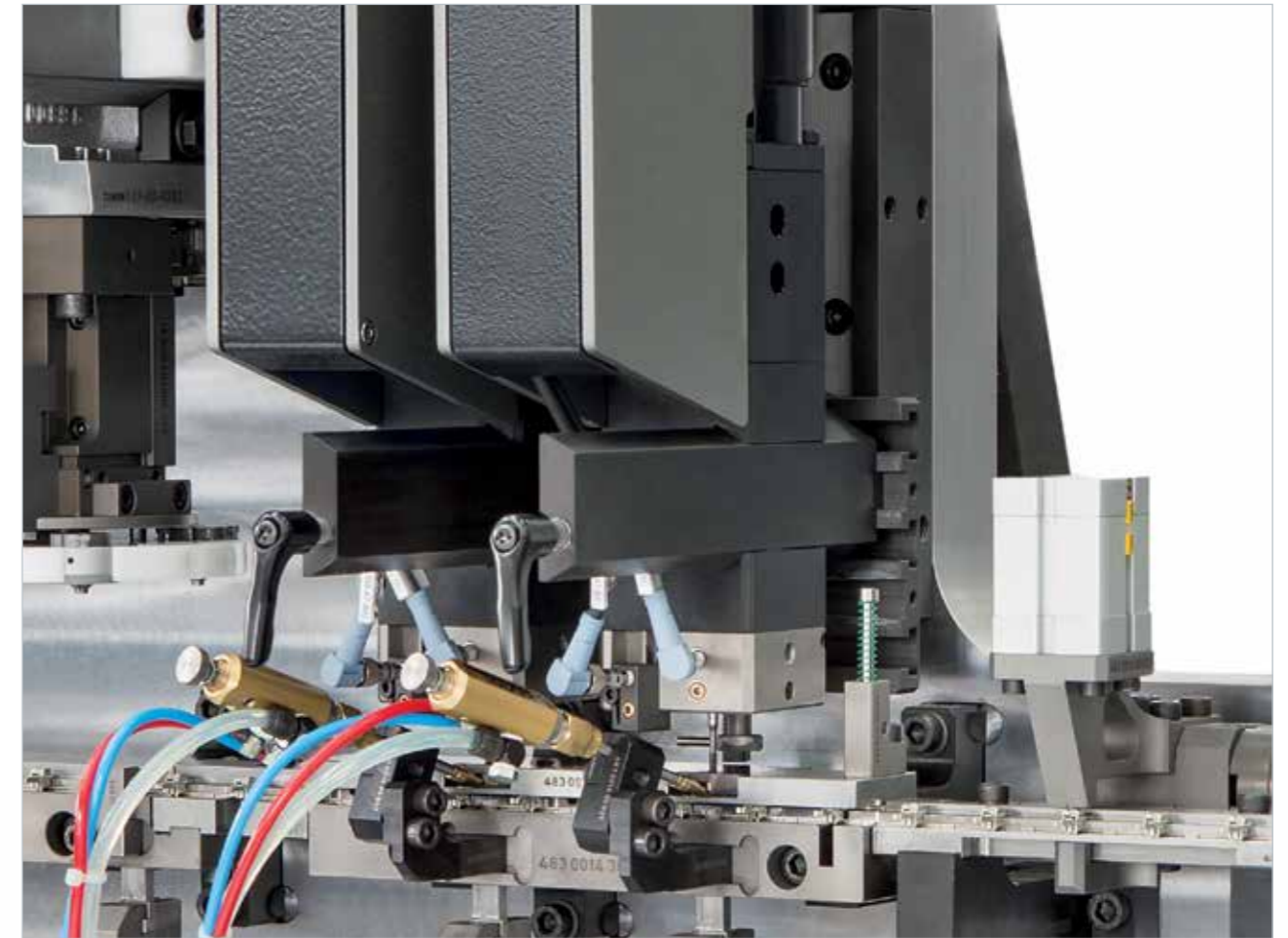
- Spindles with thread former can be changed in minutes
- Thread former size can be changed in minutes

Technical data

These performance characteristics are intended as orientation for the maximum possible performance of the device. They are dependent on the exact composition of the material, the application and the data of the thread former manufacturer.

Product	Thread diameter* (mm)	Max. output** (1/min.)	Speed range (1/min.)	Max. stroke (mm)
GSE K1	M2 - M6	260	500 - 7000	24
GSE K2	M5 - M12	200	500 - 5000	27
GSE K3	M10 - M20	100	300 - 2500	32
GSE KS1	M2 - M5	260	500 - 9000	24
GSE KS2	M5 - M10	200	500 - 9000	27

*Or comparable inch threads **Device designed for maximum possible output with orientation value of $V_c = 80\text{m/min}$, expansion angle 270° , depending on thread pitch and depth, specifications of the thread former
2, 3 or 4 spindle systems depending on machine design and module dimensions on request possible



GSE KS

Process modules



GSE K / KS

Control system / performance charts



Control system

The GSE process modules can be fully integrated in the Bihler process control system VC 1. The separate FMC process control system is used for stand-alone applications. With this separate control system all production parameters can be programmed freely. Only the starting pulse of a superordinate control system is required.

Customised user menu

All necessary data can be programmed via the control system, using an integrated operator menu designed especially for the process. Process configuration comprises only five parameters. A second level offers fine-tuning for detailed optimisation, e.g. adaptation of acceleration rates within individual thread forming movements or differing pre-stroke and return stroke movements.

First-class support at the touch of a button

Remote maintenance

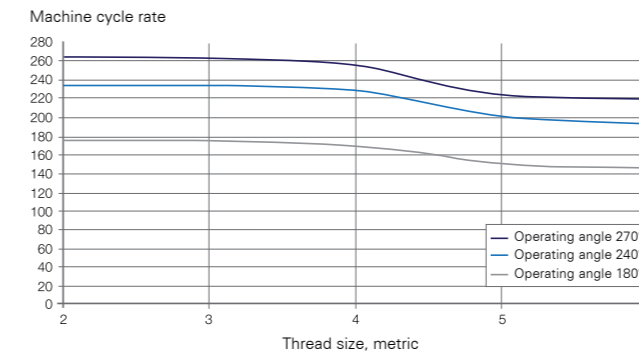
Unit dimensions

Product	Option 1* LxWxH (mm)	Option 2** LxWxH (mm)
GSE K1	240x117x215	259x117x150
GSE K2	256x152x232	290x152x167
GSE K3	325x221x230	340x221x165
GSE KS1	424x60x156	
GSE KS2	450x89x184	

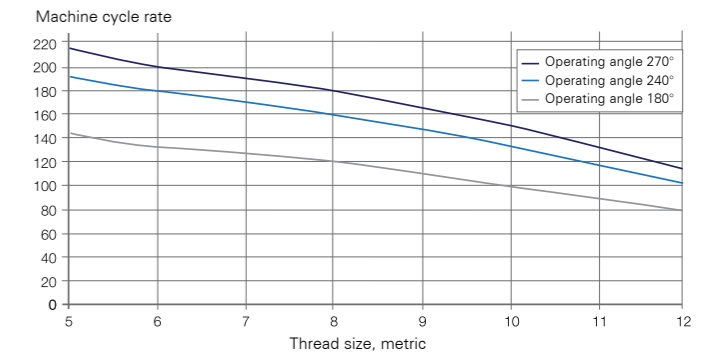
*e.g. connection to a Bihler machine; **e.g. installation in a press

Performance charts*

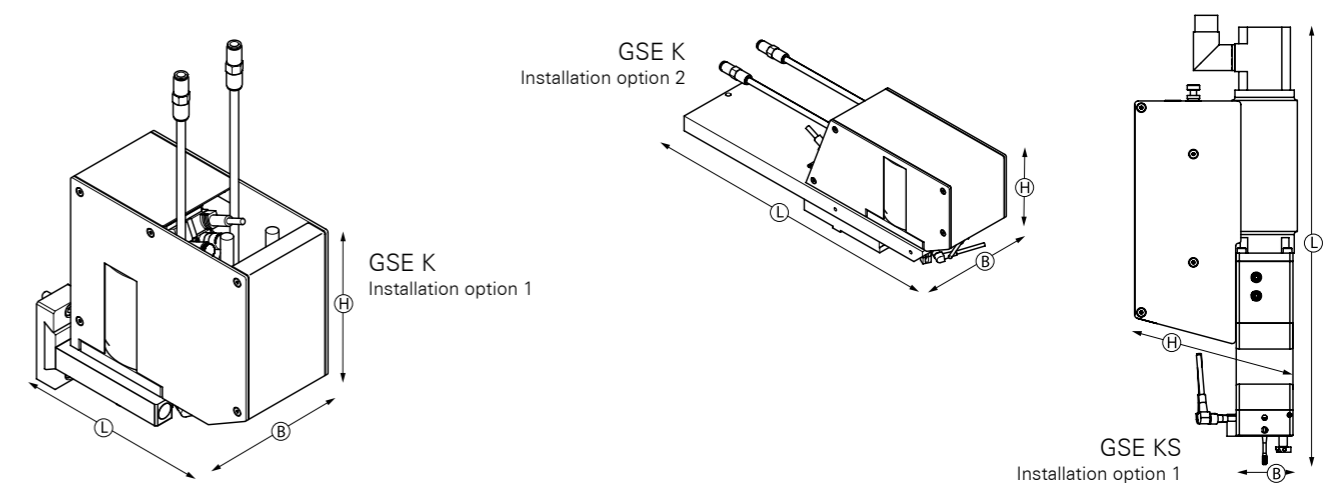
GSE K1/KS1
ST37 / brass



GSE K2/KS2**
ST37 / brass



* Assumed: thread depth = nominal diameter
Guidance value of Vc = 80m/min., expansion angle 270°
** GSE KS2 max. M10



(Subject to change without notice 05/15)



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