

Zero point mounting systems – news 2010

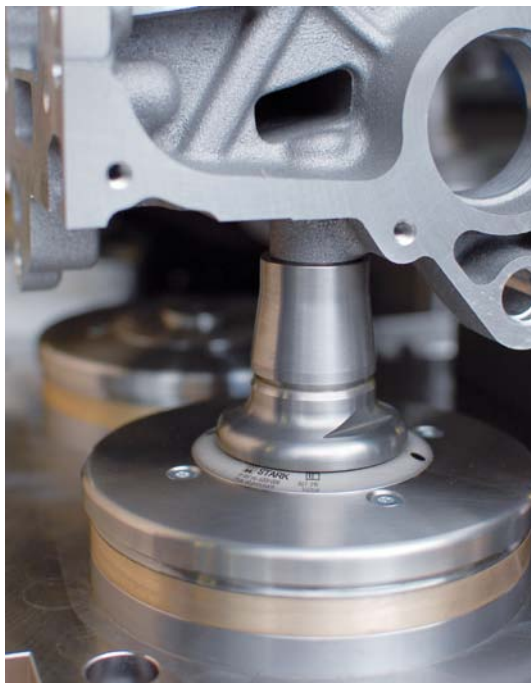
- Flexible position clamping element
- Retractable nipple with equaliser
- Booster
- Docking unit with media transfer

SPEEDY
hydratec **1**

Flexible position clamping element art.no. 6000 008



Workpiece with multiple clamping and support points



Flexible position clamping element in x/y/z direction

The newly developed, flexible position clamping element solves mounting situations where “adaptation to suit the workpiece” is required (patent-applied).

The “distortion” of workpieces is a sensitive topic during any mechanical machining process. It is now an issue in zero point mounting technology. While on pallets, plates and stable parts, overdetermination (multiple clamping and support points) can be accepted, in the case of thin-walled parts and direct workpiece clamping, the risk of “distortion” is very high.

Only optimum clamping using a 3-point support permits distortion-free clamping.

But what happens if stability suffers as a result? If further clamping and support points are necessary?

It is exactly here that the flexible position clamping element comes into play, clamping and support in one element

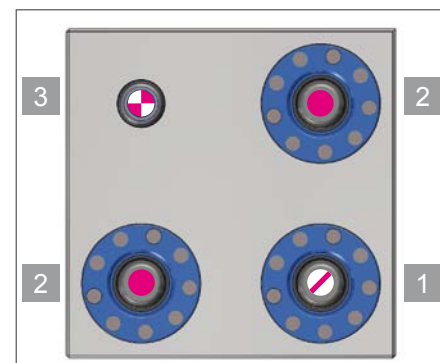
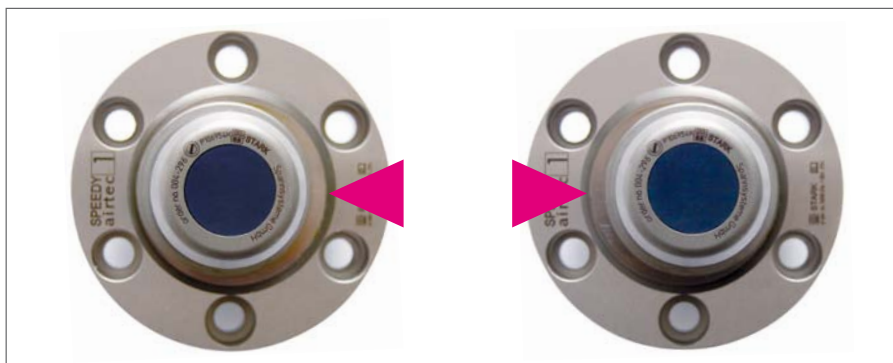
First the clamping force is applied to all clamping elements with up to 20kN. The 3 support points are fixed and pulled onto the supports during clamping. At the same time the flexible position clamping element is also moved into position at the 4th point and every further point. The flexible position element is then clamped in this position. The clamping force achieved depends on the hydraulic pressure.

Consult our specialists in zero point mounting technology!

Please request our main catalogue.

SPEEDY 1 **SPEEDY** 2 **SPEEDY** 3
airtec classic classic

Retractable nipple with equaliser ±1.5mm



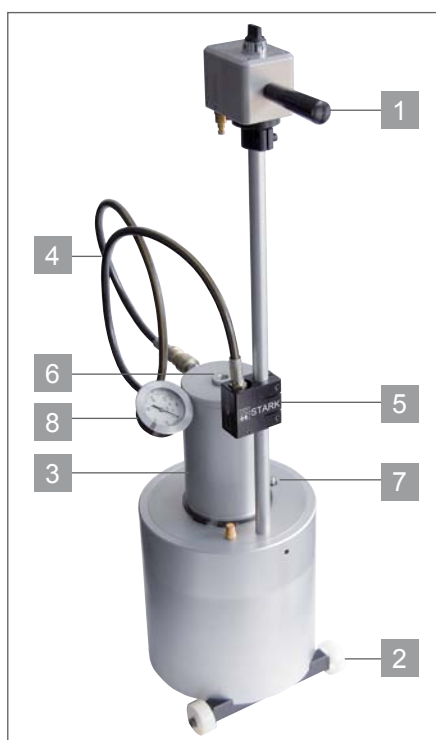
Flange retractable nipple with equaliser ±1.5mm in one axis

The critical contradiction of “stable mounting” and the necessary “movement” is ideally solved with the retractable nipple with equaliser. The retractable nipple with equaliser is used wherever large thermal expansion is to be expected. The compensation of ±1.5mm also contributes to simpler and cheaper manufacture of the pallets, as larger manufacturing tolerances are possible. In addition the flange on the retractable nipple can be used as a hardened, wear-free support.

Independent of the size of the pallet, you always have a fixed zero point also during machining. The decision as to where this point should be lies, of course, always with the customer.

- 1 Flange retractable nipple with equaliser ±1.5mm in one axis
- 2 Flange retractable nipple without zero point with equaliser in X and Y axis ±1.5mm
- 3 Retractable nipple with zero point

Booster - change pallets quickly and safely



The pressure booster is used for releasing single-acting mounting systems. The booster converts compressed air into hydraulic pressure and is suitable for ranges from 30 to 80 bar. A major advantage of the new booster is that pressure can be applied to significantly more SPEEDY classic at the same time.

- Handle for safe transport (1)
- 2 robust rollers and 1 foot for secure positioning (can be removed easily for stationary applications, 2)
- Pressure 40 bar with 1 litre oil capacity (3) for > 20 SPEEDY classic 2 (also available with 80 bar pressure)
- Hose available in various lengths also with self-sealing quick-release coupling (4)
- Storage space for coupling for safe transport and storage (5)
- Large oil filler (6)
- Oil dipstick (7)
- Hydraulic pressure gauge with maximum pressure marking (8)



Ergonomic control unit arranged at working height with air connection, pressure setting and safety valve

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Docking unit with media transfer

Minimise set-up times – relocate set-up times

These days significant cost-savings in manufacturing are increasingly only possible by shortening process times and especially by relocating set-up times away from the machine. Productivity can be significantly increased by using zero point mounting systems with the related time saving.

The docking unit places the machine pallets in position and at the same time supplies the pallets with oil and air for clamping/releasing, clearing or polling. This feature has several advantages at once:

- All the energy and supply lines are fed via the docking unit.
- Saving in expensive machine pallets reduces costs, storage space and weight.
- Automated solutions can also be realised using a simple range of machinery.



The example shows a mechanical jig. The exchangeable plate is equipped with a zero point mounting system SPEEDY classic 4

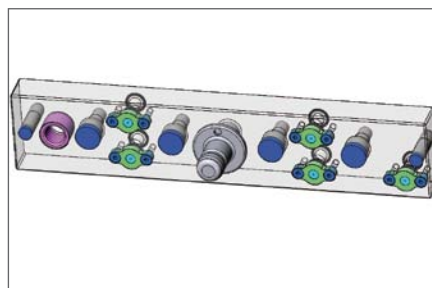
Effective protection of the mounting point is ensured by the central locking provided by the clamping elements SPEEDY classic 4. The raised supports and the central locking are cleaned using the integrated clearing nozzles. As a consequence automated, repetitively accurate mounting is possible. Thanks to the flexibility due to the usage of the zero point mounting system and the minimisation of the set-up times, processing times can be significantly reduced and enormous costs saved. It is only on the usage of these systems that unmanned, fully automated work shifts can be realised.

We at Stark will accompany you from the planning phase, through implementation, to subsequent on-site support. Once the advantages of a zero point mounting system have been recognised, work will become easier and you will also save money.



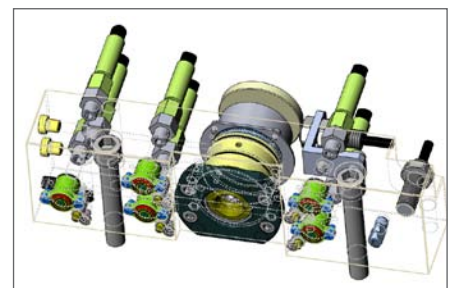
Pallet station with more than 50 jigs

Coupling unit comprising standard STARK components – energy supply for the automation, can be retrofitted easily and at low cost



Machine-side coupling unit with the lines:

- Clearing device
- System control
- Clamping check
- Clamping /releasing



External coupling unit with integrated clamping cylinder to absorb the coupling forces

You will find the detailed article at www.stark-inc.com

Please request our main catalogue.