



### System set up

- ① Modular honing tool holder
- ② DAH® adapter with ring for correction of concentricity and angular position
- ③ KomTronic® head with servomotor to actuate the honing tool
- ④ Stator for wireless energy and data transmission
- ⑤ Possible interfaces: HSK-A63, HSK-A100, ISO40, ISO50, BT40, BT50 CAT40, CAT50 and PSC

## Honing on the machining centre with KomTronic® U-axis tools and Xstep® honing tools

This combination allows machining centres to be used for path-controlled honing, too. This has enormous economic and quality-related advantages.

Honing is a fine machining process for the high-precision machining of cylindrical or slightly out-of-round holes that must have optimum surface sliding properties. The material is removed with honing stones with an abrasive coating.

In order to do this extremely precisely, the honing stone retainer of the Xstep® honing tools, whose outer surface line reproduces the cylinder to be machined, are very finely adjusted mechanically to compensate for wear on the honing stone retainer and the required removal of material. The positioning measurement is determined by means of a measurement step following honing (post-process measurement), whereby the process itself is always terminated at the same end diameter and it is only necessary to compensate for the wearing of the honing stones.

It must be possible to set the adjustment speed to best suit the process at hand with regard to surface quality, wear, and measurement precision. This is achieved by the precision small drives integrated into the KomTronic® drive units.

The rotation of the motor shaft is converted into a pull movement for the adjustment of the honing stones. The concentricity of the honing stones can be set directly on the honing tool holder.

The pre-machining of the diameter to be honed should also be very accurate in order to avoid empty strokes. Manually adjustable fine spindle tools from the KOMET range can be used for this. Examples: MicroKom® M040 or MicroKom® BluFlex™. If tool adjustment is to be carried out automatically, a KomTronic® U-axis head can be used.

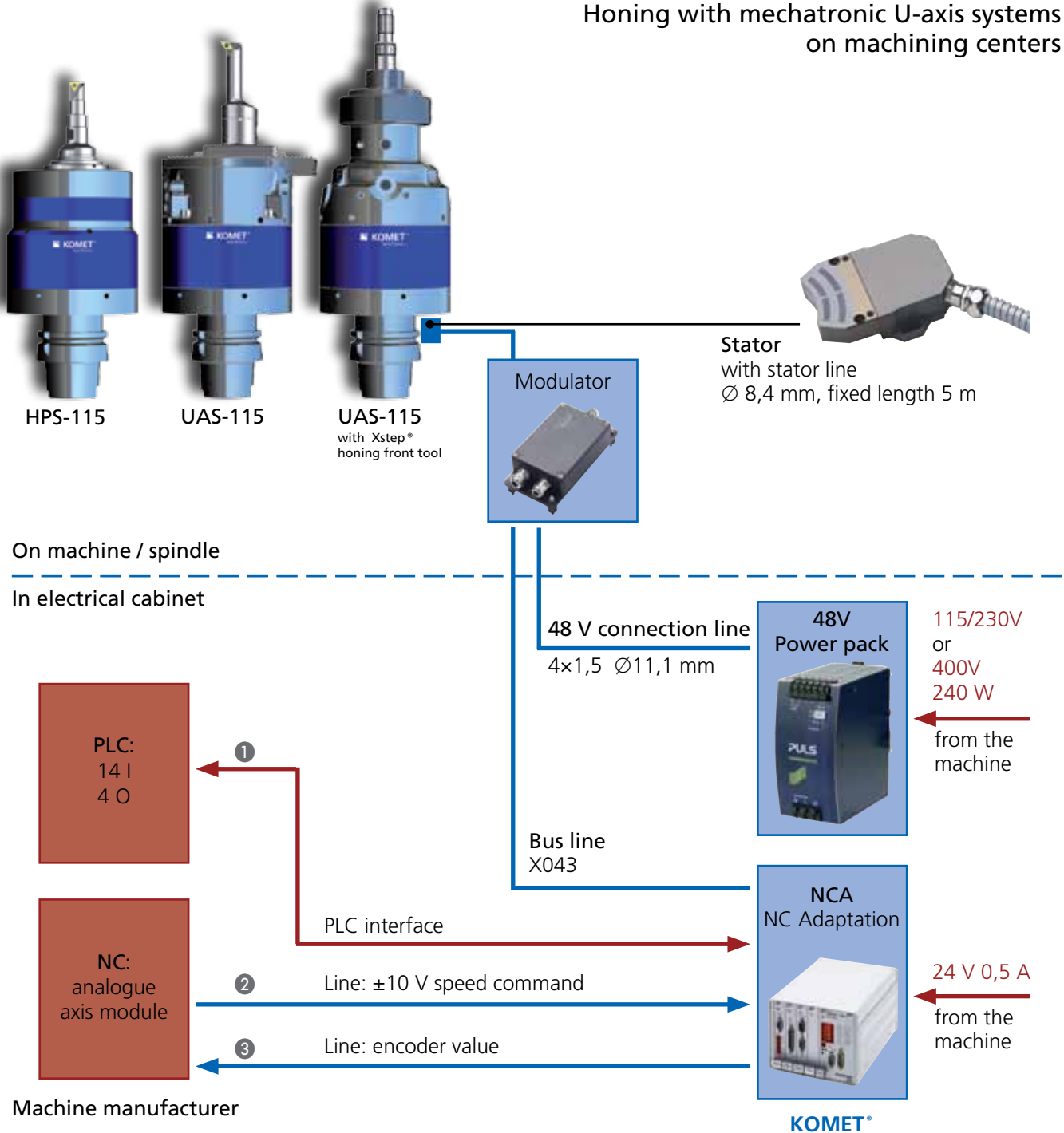
#### BENEFITS for you:

- Small and medium series can be finished and honed on the machining centre profitably
- Pre-machining and honing can take place in a single clamping operation: Only one clamping unit required, no loss of precision or time due to reclamping, short processing times (single set-up), smaller honing offsets required

Xstep is a DIAHON brand name

# Adaption into machine tool control and spindle

Honing with mechatronic U-axis systems  
on machining centers



- ① **PLC connection**  
14 inputs and 4 outputs are required on the PLC. 3 M-commands are required for selecting U-axis functions.
- ② **Nominal value requirement:** ±10 V nominal speed value from analogue axis module of NC control to the KOMET<sup>®</sup> NCA.
- ③ **Incremental actual position value:** The current position is transmitted from the KOMET<sup>®</sup> NCA to the analogue axis module for the NC control. The following signal forms are available
  - TTL level in acc. with RS 422, interpolated
  - 1 Vpp (1 V peak to peak)

The KomTronic<sup>®</sup> U-axis system does not need a power unit on the NC control.