

Changeover made easy

Modular positioning systems offer flexibility for machine tool builders.



Everyone is talking about the high-flexibility factory: Particularly since the emergence of the buzzword “Industry 4.0”, growing attention has focused on developing factory concepts that enable manufacturers to create specific products for their customers with a minimum additional investment of time and money. From packaging to filling or woodworking: Every year, companies are facing growing pressure to be able to manufacture new formats at extremely short notice. The practical production implications are essentially identical for everyone from contract fillers, who have to adapt new package sizes continuously, to in-house production divisions of major groups such as Procter&Gamble or the Coca-Cola Company. It is a daily balancing act between the dual demands of flexibility and pressure from rising costs.

Successful machine tool builders have therefore recognized that their secondary core competence (alongside their primary function of building machines for packaging, filling, cutting, etc.) is to master the format changeover and conversion processes of their machines. This takes place on two different levels:

Level 1: Format changeovers in the customer’s manufacturing process

The machine must offer the flexibility required to manufacture all currently known formats at short notice and with

the maximum level of automation – and ideally all the possible future formats that the customer’s marketing department has not yet imagined.

Level 2: Conversion of the machine concept by the machine tool builder during the design process

The design produced by machine tool builders must be flexible enough to respond to the individual wishes of customers and the market. Once again, wherever possible, the goal is to flexibly cope with the familiar challenges of today and also with the unknown challenges of the future.

Consequently, components that assist machine tool builders on both these levels are of strategic importance. This applies especially to so-called positioning systems. These are intelligent drives, which are used in the implementation of automated format changeover systems. Equipped with a motor, gearbox, bus communication, and an absolute encoder, they automatically move guide rails, tools, or inspection cameras to the new position required for the new format. Positioning systems thus play a key role in the type of applications described under “Level 1”. “Level 2” sorts the wheat from the chaff. Some positioning systems require a proprietary bus coupler that allows them to be used with the many bus communication systems (fieldbuses) available on the market. This

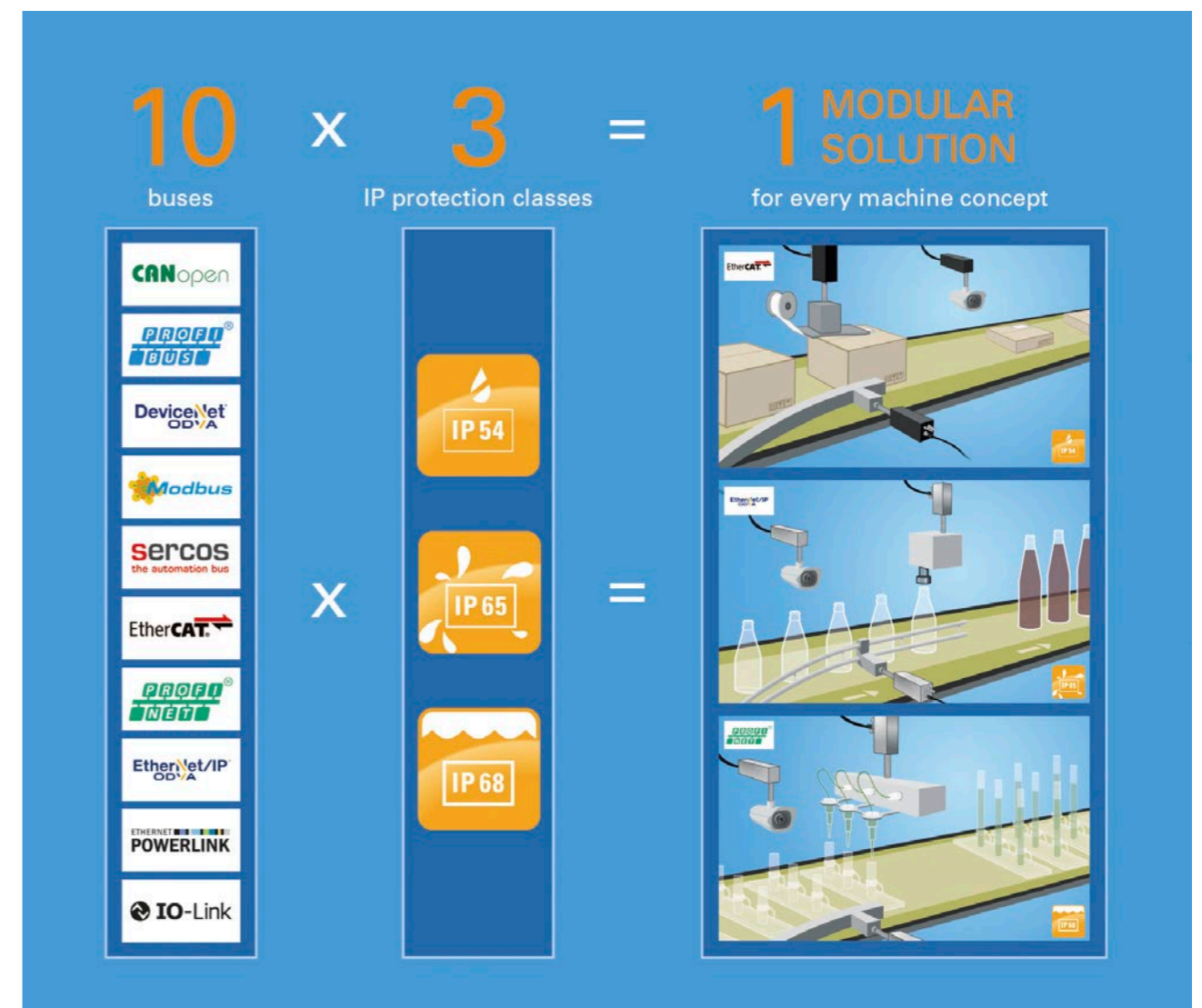
approach is less than ideal as it requires more space and generates greater costs – particularly as special cables are also required for connecting the proprietary bus coupler. Other systems integrate a position display directly on the device itself. This forces the designer to find some installation point, that enables the user to access the display, and severely restricts the modularity and flexibility of the machine design.

halstrup-walcher, one of the international market leaders of positioning systems, focuses on compact modules, which are available via an extensive modular set:

- Torques from 1 to 25 Nm
- Selection of IP protection classes: IP 54, IP 65, IP 68
- Selection of onboard bus communication protocols

The key advantage: When you change the IP protection class or the bus communication, all the relevant connection dimensions stay the same. This enables machine builders to “convert” an existing machine to their customer’s wishes extremely quickly.

The ability to change formats and convert machinery on both these levels will be a decisive factor in determining the competitiveness of machine tool builders over the coming years. Factors that once affected only major companies in the sector are increasingly becoming the focus of attention for medium-sized machine tool builders. To quote Albert Einstein: “Life is like riding a bicycle. If you stand still, you fall over.”



10 x 3 = 1 – the modular concept for positioning systems. For fast conversion of the machine to a wide range of applications.