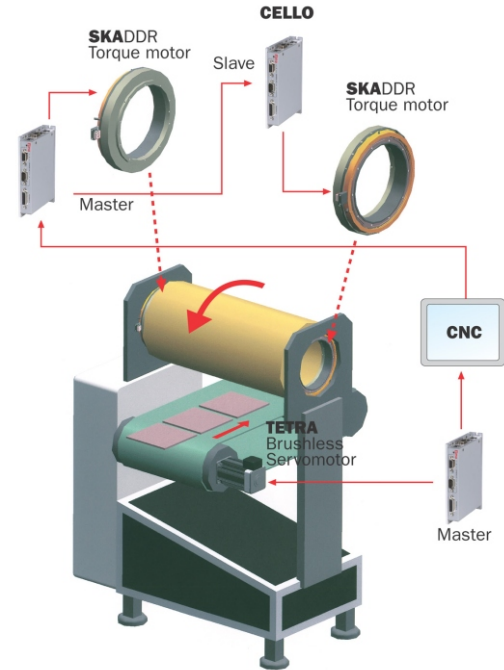


Focus On

- No mechanical transmission components;
- Low maintenance;
- Distributed intelligence architecture, making modular machines extremely versatile ("multi-head" solution);
- Lightened mechanical structure.

**The demand**

Use of SKA DDR direct drive torque motors paves the way for new technological prospects for rotary screen-printing machines. Thanks to Motor Power Company, innovations have been achieved for a rotary screen-printing machine that was previously driven by a brushless motor and a conventional kinematic chain comprising a gear, belts and timing pulleys. As it produces direct drive, the SKA DDR torque motor completely does away with all these components as it acts straight on the load that needs to be driven, i.e. the screen-printing roller in this particular case.

The solution

Software engineering skills and use of smart drives have allowed Motor Power Company to come up with a solution that gets the most out of the axis control built into the drive. The system uses a PC that communicates with the "intelligent" part of the drives via CANopen, plus software that has been specifically developed for the application. This has allowed the CNC typically used in the architecture to be eliminated, with evident savings as well as optimizing the use of the resources in the logic of the distributed intelligence. There are even more evident advantages in this type of architecture when it is used for "multi-head" machines as "nodes" need merely be added to the CANopen network without changing the actual architecture itself.

Advantages

One of the advantages is a tangible improvement in the precision with which the screen-print is centered on the tile. This is because all the mechanical backlash created by drive transmission has been eliminated and an extremely accurate transducer has been used. But the production cycle is also much faster, thus achieving an undoubtedly attractive precision-performance ratio that is one of the most well known features of direct drive technology. Since the kinematic chain is eliminated, unexpected results can be achieved when it comes to automation in the ceramic industry. Moreover, the general servicing operations required by the machines are also different. Elimination of the drive transmission components not only speeds up servicing times, but also saves on the cost of the components themselves, subject to considerable wear owing to heavy duty work with screen-printing enamels, which are often corrosive. The SKA DDR torque motor provides high-level protection against the majority of the erosive substances in the environment. The standard version features IP 65 protection. Even the final aspect of the machine is more attractive when the torque motor is installed, as it becomes more compact, uncluttered and even smaller in size after all the unnecessary components have been eliminated. A smart digital drive featuring a sin/cos encoder with resolution from 500,000 ppr governs the application architecture.

Direct drive torque servomotors SKA DDR

Direct drive technology gets the most out of rotary motion in SKA DDR torque servomotors. Featuring a remarkable rated and peak torque capacity plus high acceleration and deceleration values, these servomotors achieve efficiencies and precision positioning that are difficult to obtain with conventional systems. Natural evolution of direct coupling between the motor and driven load, the conventional components of the kinematic chain have been totally eliminated from these servomotors. Besides doing away with backlash and mechanical elasticity in the drive transmission, this type of configuration drastically speeds up servicing work and keeps maintenance costs down while achieving appreciable energy savings thanks to the improved overall efficiency.

Two versions are available for the SKA DDR series: Frameless, with the stator and rotor parts alone, and the Power Pack version, a perfect example of Motor Power Company's skills in the electrical and mechanical spheres.

Features

- "Multipolar" permanent magnets synchronous brushless motor
- 1.9 Nm to 770 Nm stall torque
- Thermal protector (clixon)
- Class F insulation
- IP65 protection (PP version)
- Vast range of transducers
- Version with "hollow" shaft or "male" shaft
- Power supply voltage 145 Vac, 230 Vac, 460 Vac
- The Power Pack version includes the SKA DDR torque motor with mounting flange, bearings and transducer, aluminium cover case and specific connections
- CE certified

