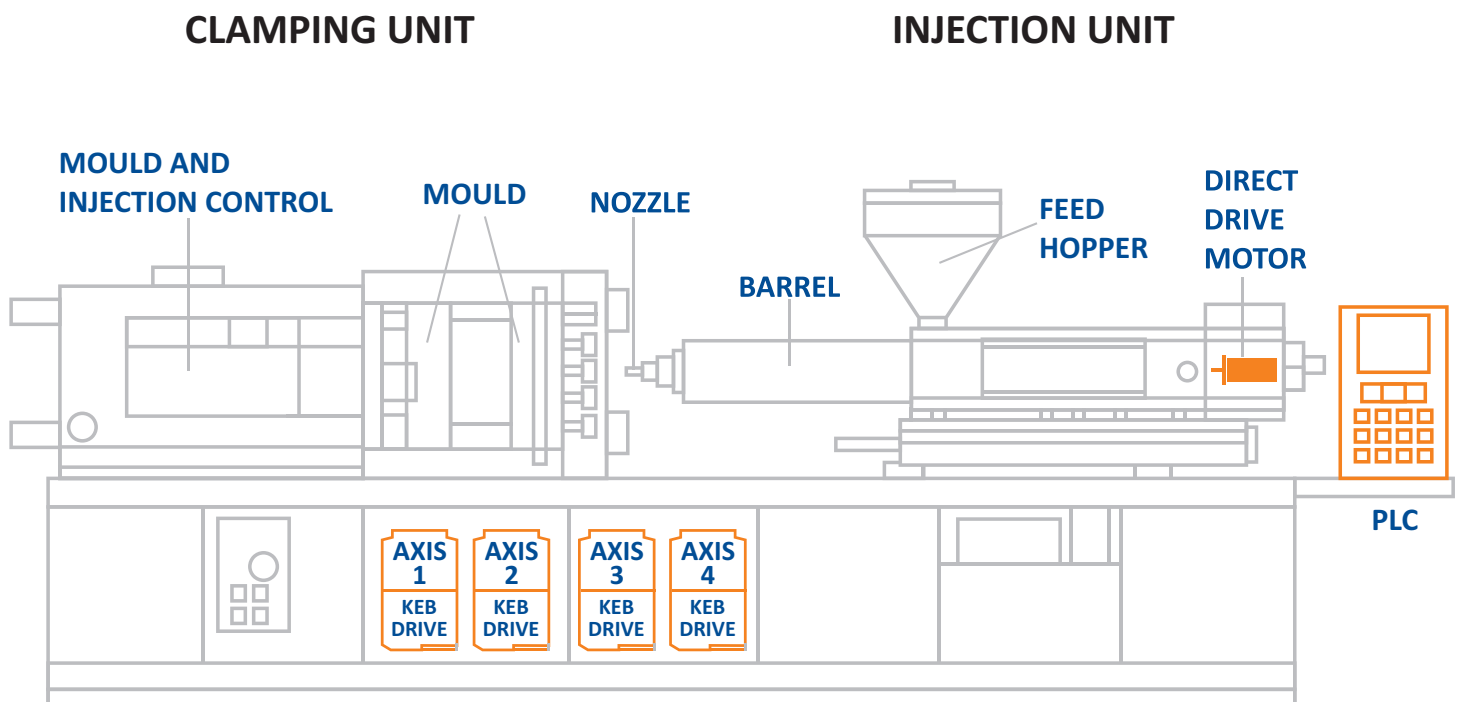


Servo Drive Solutions for All-Electric Plastic Injection Moulding Machines



All-electric plastic injection moulding machines are well established across applications and markets, and offer significant advantages over hydraulic and hybrid machines. As technology advances, these machines can affordably cater to increasingly higher clamping tonnages.

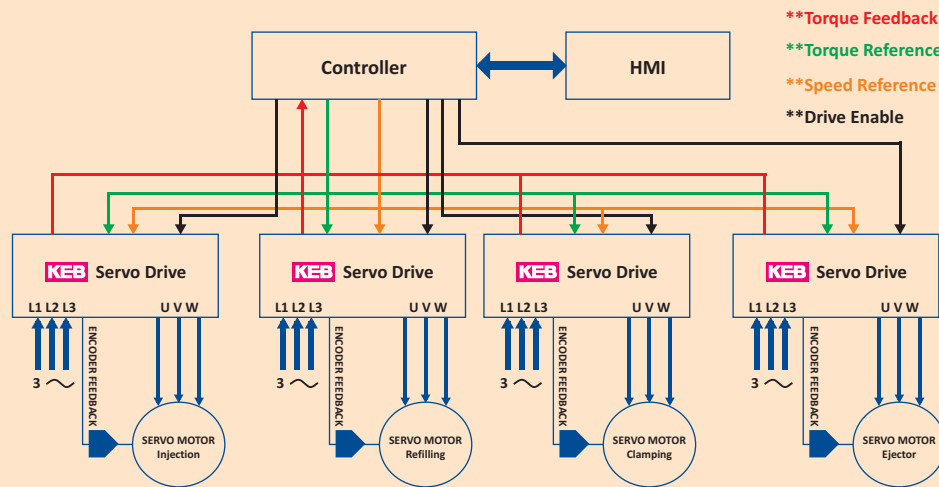
Rather than being driven by a hydraulic system, all-electric machines use digital controls and servo motors, with each axis being independently controlled for injection, extrusion, clamping and ejection. The result is shorter cycles, instant torque, accuracy, repeatability, cleanliness and lower energy costs.

Bharat Bijlee offers servo solutions for hydraulic and hybrid, as well as for all-electric machines. Superior technological features and application expertise combine to provide significant end-use benefits in all-electric models.

As the demand for injection moulded parts continue to grow across industrial and consumer sectors, there is also an opportunity to retrofit and refurbish an ageing installed base of all-electric machines with newer technology. Obstacles can include ready availability of key system components, and integration and commissioning expertise.

Bharat Bijlee's retrofit solution is flexible and economical, and offers superior technical features. Servo drives and / or motors can be provided for each axis. A standard hydraulic machine controller can be used to manage all four axes through a servo drive and a wide range of encoder options and communication protocols. The accuracy of the KEB drives enables precise torque and speed control - as well as operating torque and holding torque - using intelligent control of the drive even with the hydraulic machine controller.

Automation Scheme: KEB Servo Drive Solution for Retrofit of All-Electric Machines



End-use benefits in all-electric models

- Accuracy, precision and repeatability leading to consistency of production.
- Instant torque and high dynamic response.
- High degree of cleanliness: no oil leaks and lower maintenance.
- Energy savings of 30-70%.
- Lower downtime.
- Quieter operation.
- Rapid injection speeds (up to 800 mm/sec) and faster clamp motion.
- Faster cycle times resulting in improved productivity.
- High automation capabilities.

Key advantages of the retrofit solution for all-electric machines

- Sensor-less torque and load measurements.
- Better torque hold at zero speed.
- A standard hydraulic machine controller can be used.
- Position control can be achieved without encoder or resolver feedback using KEB's unique Sensor-less Closed Loop (SCL) motor control.
- Torque accuracy up to 0.1 Nm.
- Position accuracy up to the least scale value of the linear sensor.
- Mould safety without external torque sensor.
- Wide range of encoders and communication interfaces allows operation with any servo motor.
- Pan-India service support.
- Ready stock of servo drives with servo motors.

KEB Servo Drives support key field communication protocols:
EtherNet/IP | EtherNet TCP/IP | EtherCAT | Powerlink | PROFINET | PROFIBUS | CANopen | DeviceNet



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