Challenge

Bühler has several key processing machines with low speed and high torque requirements. Most older machine designs solve this task by using standard motor speeds (3000, 1500, 1000 rpm) and transmissions, generally belts or gears. For new generations of machines, direct drive concepts are evaluated and will be realized if a clear benefit is achievable.

With the usage of direct drives, power losses due to transmission should be eliminated and maintenance and wear parts for transmission are no longer necessary.

On the other hand a better food safety standard for our customers can be achieved by the eliminating dust from belts and lubrication from gears.

This innovation topic addresses manufacturers of torque motors and correspondent drives. Industrial torque motors are not standardized and many are niche products with low volume. Optimized solutions for specific application cases are more important than a broad motor.

Exact machine drive parameters will be provided in 2nd round if the general speed/torque range is matching.

Requirements

- Provide cost competitive solutions by using direct drive technology based on TCO comparison
- Show advantages of a direct drive for a concrete machine application
- Complete application range: 100 … 400 rpm, 100 … 50’000 Nm, (5 … 500 kW)
- Typical core ranges:
  - Medium speed / low torque: 300 … 500 rpm, 200 … 400 Nm
  - Low speed / high torque: 100 … 150 rpm, 10’000 … 50’000 Nm