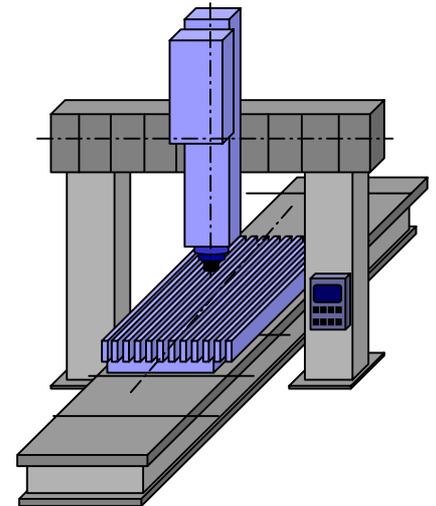
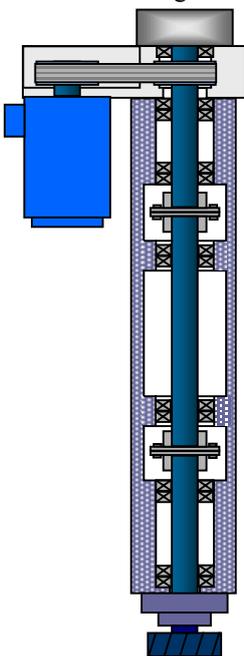


ROBA® -DS disk pack coupling in milling head drive of a gantry type milling machine centre

Gantry type milling machine centres are for machining large work pieces in the 3 directions X, Y and Z. The movement in X direction is done by moving the work piece, whereas the movements in Y and Z directions are performed by moving the milling head with the tool. The milling head is integrated in a housing with spindle motor, gear box, belt, connecting shaft and spindle.



Old Design



Problem:

The length of the milling head housing has to be dimensioned according the travel distance in Z direction. Therefore a relatively long distance between the spindle motor and the spindle has to be overcome. Torque and speed has to be transmitted over a wide distance. In conventional designs, this is done by a drive shaft, which has to be supported with several spindle bearings. To enable a reasonable speed with smooth running the housing with the bearing seats must be machined very precisely for coaxial position. This is difficult, costly and time consuming.

Solution:

We offered our ROBA®-DS disk pack coupling for such application to a German machine tool manufacturer. The distance from upper shaft to spindle shaft was 1600 mm, with a max. speed of 4800 rpm and a max. drive torque of 1500 Nm. The ROBA®-DS 300/951.003 with a torque capacity of 3000 Nm and tailor made length transmits now the power of 60 kW smooth and

reliable. The torsionally rigid disk packs compensate for any shaft displacements.

Benefit:

Compared to the original design the new concept provides several benefits:

- Four bearings with its bearing seats could get eliminated.
- The machining of the inner area of the housing is by far easier and less costly.
- Because of the high torsional rigidity of the ROBA®-DS coupling there are no problems concerning critical whirling speed.
- The torsional stiffness of the sleeve is five times higher than the primary shaft design.

➤ The **mayr®** ROBA®-DS saves costs

➤ The **mayr®** ROBA®-DS improves your quality

New Design

