ENERGY SAVING...

...with the NEW, sensational Torque motors


Torque motor 8000Nm with thrust bearing for direct mounting of extruder

Technical characteristics (with U-Drive)

- Very high motor-efficiency factor up to 99%

- Total efficiency up to 96,5% (Torquemotor and Controller „U-Drive" with a specially developed control mode)

- Total continuous torque from speed „0"on

- Short time overload capability up to 200%

- Decidedly high, almost constant efficiency factor in speed range 50 - 100%

- efficiency factor also at half torque still 96%

- Solid feed back by resolver

- Protection type in general at least IP54

- Motors with solid shaft, hollow shaft or for direkt mounting at Extruder-worm and -cylinder
  (in that case the motor is fitted with thrust bearing already)

- Inreased life cycle of the bearings because of plasma coated bearing seats and extremely big bearings

Typical efficiency diagram of Torquemotors with U-Drive at nominal Torque
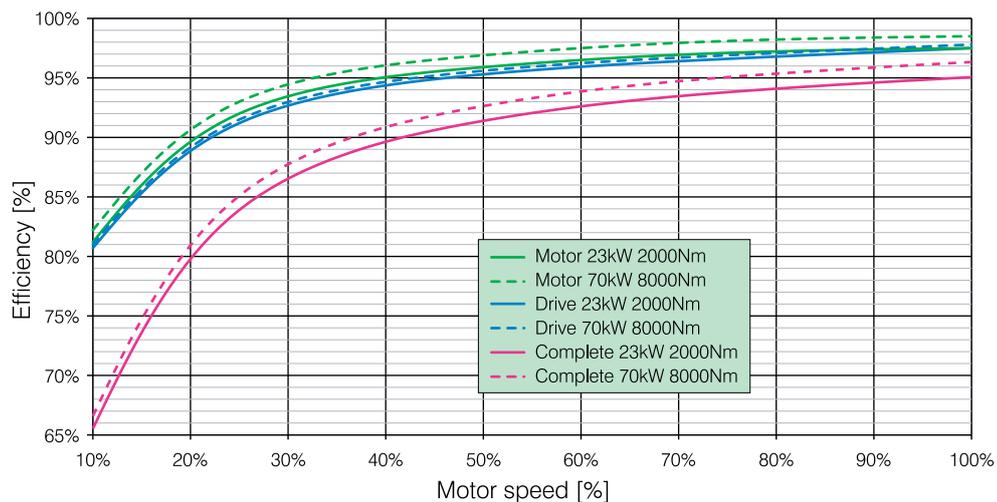
Cost savings

- With these torque motors you can save at least 12% of the energy costs compared with conventional torque motors

- Compared with a synchronous machine with gear box and belt drive at least 8%

- Compared with an asynchronmotor even cost savings of 15 - 20% are obtained

- By U-Drive the power factor range up to 0,96% is obtained in mains
  (at least 30% better than any other system)

The shaft power obtainable with our system (U-Drive and Torque motor) can easily be calculated with this formula:

$P_{shaft} =$ mains voltage x mains current x 1,73 x 0,9

Example: Mains voltage = 402V   Mains current = 46A

$P_{shaft} =$ 402 x 46 x 1,73 x 0,9 = 28,8kW shaft power

A comparison of energy cost saving and economical efficiency

Calculation basis: 70kW system, power consumption at 70% max. speed and 100% load, 24 hrs operation, equating shaft power of 49,0 kW, 6 days a week, 1 year = 7.500 operating hours

Operating costs: TAE Torque System with U-Drive

- Over-all efficiency 96%

  Total input power 51,0 kW
  51,0 kW x 7500 hrs. = 382.500 kWh
  So the energy costs at € 0,10 per kWh amount to ....   38.250,- €/ year

Operating costs: synchronous motor and Gear box

- Over-all efficiency 88%

  Total input power 55,7 kW
  55,7 kW x 7500 hrs. = 417.750 kWh
  So the energy costs at € 0,10 per kWh amount to ....   41.775,- €/ year

Operating costs: asynchronous motor and Gear box

- Over-all efficiency 83%

  Total input power 59,0 kW
  59,0 kW x 7500 hrs. = 442.500 kWh
  So the energy costs at € 0,10 per kWh amount to ....   44.250,- €/ year

Total saving:

TAE torque system / synchronous motor € 3525,00 / year - **saving in 3 years** .... 10.575,- €

TAE torque system / asynchronous motor € 6000,00 / year - **saving in 3 years** .... 18.000,- €