Energy saving for the KTS pumps

ENERGY NOW

We determine your possible energy savings on-site

Guaranteed!

So far, not many customers opted for our energy saving PQ-Tronic control technology because the determination of the possible savings was too complex.

NOW the measuring process is fast and simple

KNOLL E-PASS

1. We can determine your energy-saving potential on site with a brief measurement, followed by a computer calculation. Afterwards, you receive your energy protocol.

2. Additionally, we provide you with an on-site cost/benefit appraisal, including your amortization analysis.

3. You then decide whether to go for a PQ-Tronic upgrade.

If you wish to obtain more detailed information, please contact us.

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Energy savings for the processing of a gearbox housing calculated from the energy required to supply cooling lubricant.

**Comparison of pressure regulation**

### Constant and unregulated pressure (pressure relief valve)

- Constant pressure e.g. 90 bar
- Constant rotational speed
- Valve setting constantly 90 bar

**Conclusion**
Greatest energy consumption, lowest purchase costs

![Graph: Energy consumption vs Time]

### Constant pressure and pressure-minimized discharge

- Fixed pressure e.g. 90 bar
- Constant speed
- Valve setting 90 bar, opened during pauses

**Conclusion**
Low energy savings, low purchase costs

![Graph: Energy consumption vs Time]

### Variable pressure and pressure-minimized discharge

- Constant pressure e.g. 30 / 60 / 90 bar
- Constant rotational speed
- Regulated pressure

**Conclusion**
Average energy savings, average purchase costs, short amortization time

![Graph: Energy consumption vs Time]

### Variable pressure with rotational speed adaptation (PQ-Tronic)

- Variable pressure e.g. 30 / 60 / 90 bar
- Variable rotational speed with frequency inverter

**Conclusion**
Highest energy savings, highest purchase costs, shortest amortization time

![Graph: Energy consumption vs Time]
KNOLL E-PASS
Measurement results

Cooling lubricant volumetric flow

PQ-Tronic-Pressure curve

Energy consumption (pump and cooler)

Amortisation (7,000 operating hours per year)
The KTS system for deep drilling using the PQ-Tronic KNOLL uses the data from the frequency inverter to identify predictive signs of tool breakage. Relevant signals are forwarded to the CNC control so that the operator or machine can intervene in the process early enough.

**Customer benefits**
- Increased feed
- Greater process reliability
- Lower reject rate
- Reduced tool costs
- Early identification of tool wear
- Greater system availability
- Energy savings
- Increased productivity

![Diagram of process monitoring with PQ-Tronic]