

## High Pressure/High Temperature (HP/HT) Motors



### Kollmorgen Is Your Downhole Motion Expert

Kollmorgen created the first brushless motor for use in downhole drilling more than 30 years ago. Today, we're still working with the biggest names in oil and gas services to provide motors that can handle the toughest jobs, in extreme high-pressure/high-temperature environments. Pushing the limits of performance in the quest for energy, wherever it can be found.

Because reliable motion drives a productive and profitable operation.

### Why Take the Risk?

Pulling out ("tripping") a drill string to replace a motor that fails prematurely is hugely expensive in direct costs and downtime. As drillers tap new reserves in high-pressure, high-temperature formations miles below the surface, the costs rise rapidly.

Fracking, SAGD, deepwater, subsalt – all these extreme environments call for extreme equipment. Kollmorgen designs and builds the most reliable motors you can buy for the downhole environment – enduring ambient temperatures up to 240°C (464°F) and pressures up to 2,068 bar (30,000 psi).

Specify long-lasting motors that deliver the power density, speed and torque you need in a compact space – even at extreme pressures and temperatures. Choose motors from the company that helped make energy exploration and production possible in HP/HT environments: Kollmorgen.

### Applications

- Measurement and logging while drilling (MWD/LWD)
- Formation testing
- Completion tools
- Plug setting
- ROV thrusters
- Robotic manipulation
- Subsea torque tools

**Proprietary High-Performance Insulation System**

- -40°C to 240°C (-40°F to 464°F) motor winding temperature
- Reliable operation and increased torque at high ambient temperature
- Suitable for high-pressure environments up to 2,068 bar (30,000 psi)

**The Most Advanced Design for Extreme Oil and Gas Environments**

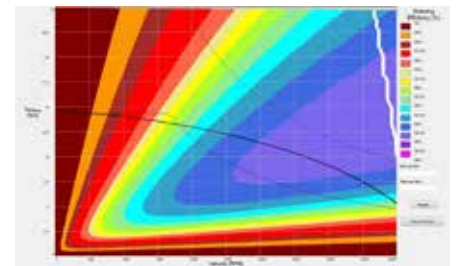
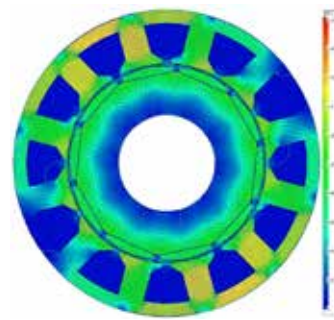
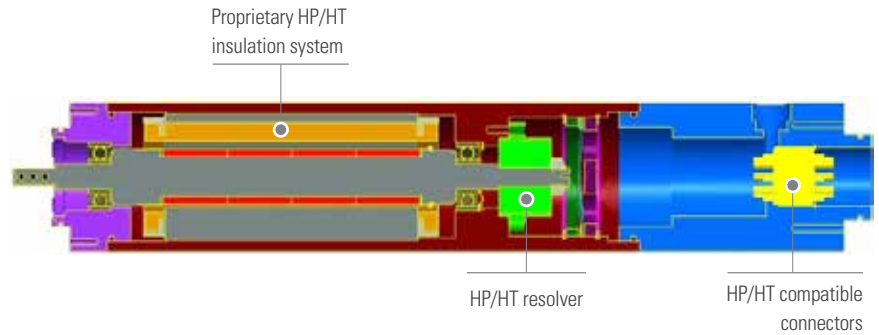
- Pressure compensation or flow-through oil designs
- Debris-tolerant design
- HP/HT compatible connectors
- Specialized alloys for enhanced corrosion and abrasion resistance

**Feedback Options**

- HP/HT resolver
- HP/HT Hall effect sensor
- Sensorless
- Customer-specified

**The Kollmorgen Difference**

- Kollmorgen has more than 30 years of experience in HP/HT oil and gas applications
- We're a large multinational corporation with manufacturing on three continents and global distribution
- Our customized solutions are designed with your collaboration to meet your unique needs
- We offer quick prototyping, production and delivery in volumes to supply all your sites and applications
- Our ruggedized designs increase tool life and minimize downtime
- Kollmorgen's innovative HP/HT motors let you drill deeper with confidence



Finite element analysis tools for optimized design efficiency

Learn more at [kollmorgen.com/HP-HT](http://kollmorgen.com/HP-HT)