



Exploration & Production THRIVE IN THE CHALLENGE

Arnold Magnetic Technologies

OIL & GAS

Reduce Risk & Boost Output in Demanding Environments

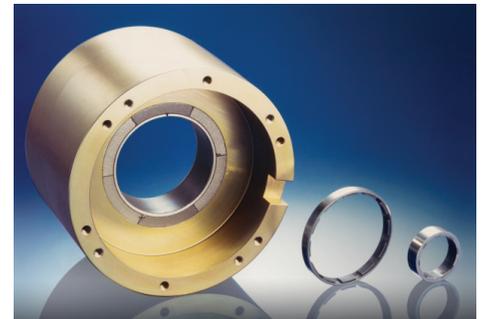
Arnold's high performance magnets and magnetic subsystems are capable of handling the most demanding environmental conditions, both on and off shore and from shallow wells to geothermal depths. Our design engineers are experts in designing both permanent magnet and electromagnetic components and systems optimized for demanding applications.

We provide high quality assemblies and magnets for applications such as:

- Down-hole power generation
- Steering and torque applications
- NMR exploration tools
- PM pumping technology
- Down-hole cleaning tools
- Casing collar locator applications
- Above-ground MFL inspection technologies
- Artificial lift systems
- Electrical submersible pump applications

With manufacturing and engineering expertise in North America, Europe and Asia, Arnold has the resources available to meet your requirements. Arnold magnetic materials and assemblies give you the power and reliable performance you need. Our proprietary RECOMA Samarium Cobalt operates in down-hole conditions up to 350 degrees Celsius.

Learn more at arnoldmagnetics.com or call us and speak with our engineers about your needs.



Magnetic Materials

RECOMA® Samarium Cobalt, Grades 18-35E
Neodymium-Iron-Boron Magnets
Alnico Magnets

Thin Gauge Materials

Arnokrome, Semi-hard permanent magnetic material
Arnavar, Corrosion resistant material
Moly Permalloy, Sensing / Shielding

Magnetic Assemblies

Rotor assemblies
Drive couplings, Pumps / Torque transfer
MFL assemblies
Position sensing
NMR assemblies
Work handling and holding
Seismic data acquisition

Applications

Artificial Lift Systems

Artificial lift is used on oil wells to increase pressure within the reservoir and encourage oil to the surface when the natural drive energy of the reservoir is not strong enough. Arnold Magnetic Technologies plays an important role in artificial lift by offering power dense RECOMA® Samarium Cobalt magnet material to operate in down-hole conditions up to 350°C.

Drive Couplings

Arnold builds driver and follower assemblies using both co-axial and face-to-face designs.

Magnetic materials include RECOMA SmCo and Neodymium-Iron-Boron (Neo). SmCo excels at higher temperatures and can be used up to 500°C.

Arnold is also capable of optimizing the mechanical design through 2D and 3D FEA modeling.

NMR/MRI Assemblies

NMR measures geological core samples to determine critical pore and fluid properties. RECOMA SmCo assemblies are used to evaluate the quantity of fluid in rock and sedimentary strata through borehole data acquisition. Generally considered a low field NMR spectrometer, the instruments are used for nuclear magnetic resonance analysis of the boreholes to estimate permeability from pore size distribution, measure rock porosity, and identify pore fluids.

MFL Assemblies / Pipeline Inspection Gauges

The safety and efficiency of long transferring pipelines is essential. Over time, the pipeline may experience corrosion, erosion, abrasion, and other damage, resulting in dangerous leakage situations. The MFL's sensor array can locate erosion degree, flaw size and the area of defects.

Down-hole Power Generation

Our specialty is highly engineered assemblies designed to tight magnetic and dimensional specifications for demanding applications. Whether you require sleeved rotors or specially shaped and fabricated magnets, Arnold can assist in your product build.

Debris Collection

Debris collection is a critical aspect of wellbore drilling operations and subsequent hole clearance. High strength rare earth magnets found in magnetic extraction assemblies maximizes wellbore production by removing high volume ferrous debris.

Position Sensing Magnets

From geophones to casing collar locators, we are experts in PM sensing applications.

