

## Elastomer-less Power Section

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Patent Pending in Canada

**RE|FLEX Premium Drilling Motors by InFocus** are a major advancement in PDM technology. All Metal Power sections are rated to **temperatures greater than 300°C (572°F)**, so they are not susceptible to extreme temperature and most mud-related issues seen with traditional PDM's.

All Metal Power (or metal-to-metal) means there is **absolutely no elastomer present** within the power section, **eliminating** the greatest risk currently known to drilling motor operations - elastomeric damage.

Metal-to-Metal contact translates into **much higher operating regimes**.



Stator elastomer (rubber) is susceptible to a number of failure modes related to downhole conditions including:

- **Rubber Chunking / Splitting** - The most common failure mode. Chunking can result from mechanical stress and strain, fluid incompatibility leading to material breakdown, uneven growth (internal heat build-up) or abnormal shrinking. Rubber curing (hardening) will also accelerate this failure method. Curing is accelerated greatly with heat and can even be introduced prematurely during the rubber injection process itself.
- **Blistering** - Seen as a reaction to certain lubricants and gases resulting in what known as explosive decompression.
- **De-bonding** - Primers / Glue reacting to fluid and lubricants incompatibility or poor application.
- **Seal (Performance) / Pressure Issues** - Poor fit from one or more of the above conditions.

## Say GOODBYE to Elastomer Issues

HELLO to Increased Utilization

### Fluid Types vs. Increased Reliability to a Traditional Power Section

Type	Increased Performance
<b>Acid</b>	Mild to Moderate
<b>Oil-Based Mud</b>	Excellent
<b>Water-Based Mud</b>	Mild
<b>H<sub>2</sub>S</b>	Mild
<b>Nitrogen</b>	Excellent *

\* provided that sufficient fluid is pumped to ensure sealing operation (I.e. will not spin on air alone)

\*\*Acids can be run, up to 15% concentration. Pumping acids can be performed safely with no risk to immediate damage to the AMP. Though exposure time should be minimized and or monitored, extended exposure can lead to pitting on the AMP rotor and stator. Following best practices such as flushing the motor with a large volume of fresh water immediately after displacing acid through the motor is optimal followed with a complete service will minimize the corrosive effects of the acid.



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