

## Metal-To-Metal Elastomer-less Power Sections (Patent Pending)

**RE|FLEX Premium Drilling Motors by InFocus** are a major advancement in PDM technology. All Metal Power sections are rated to **temperatures greater than 200°C (400°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.**



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## 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)

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.

