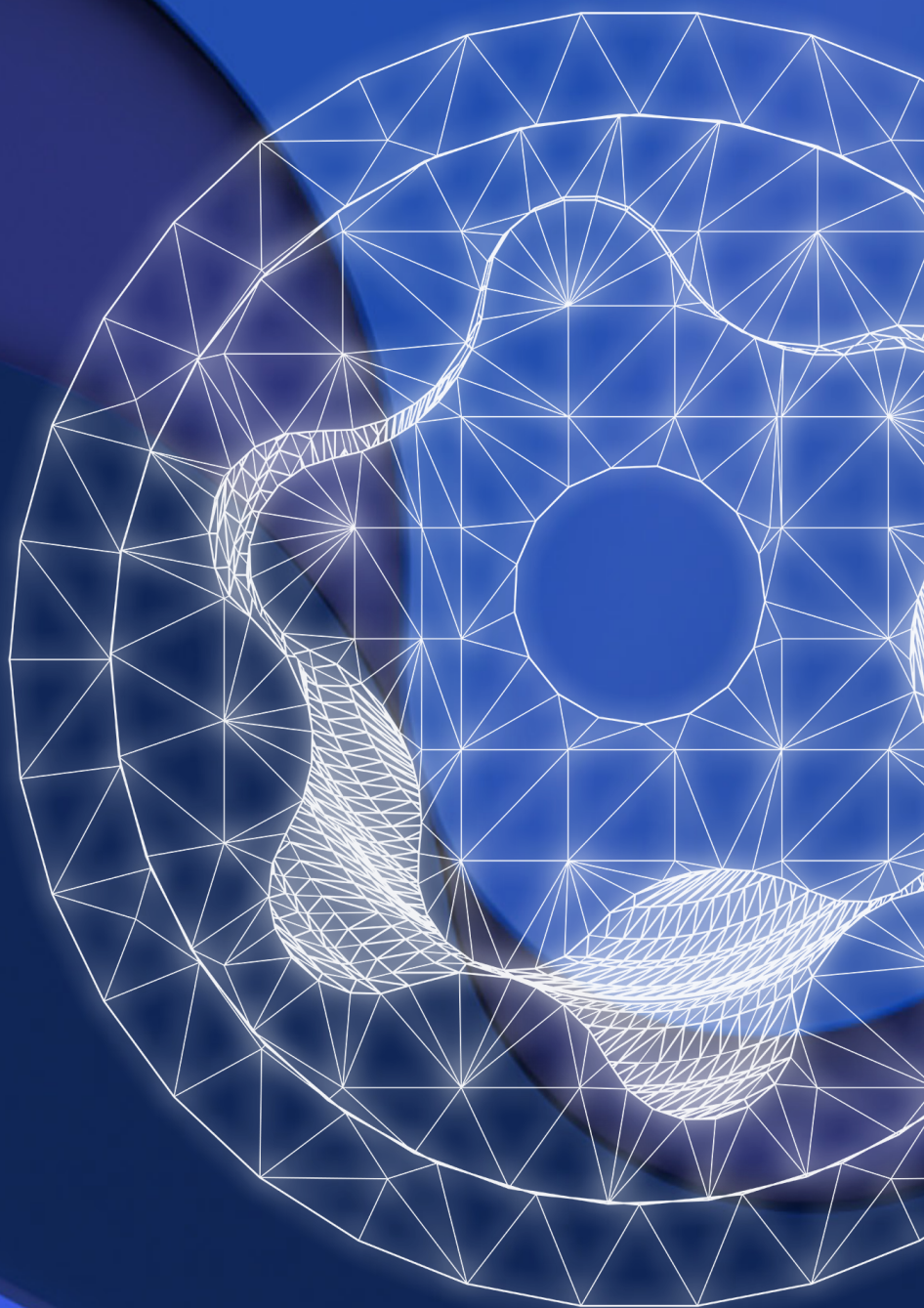




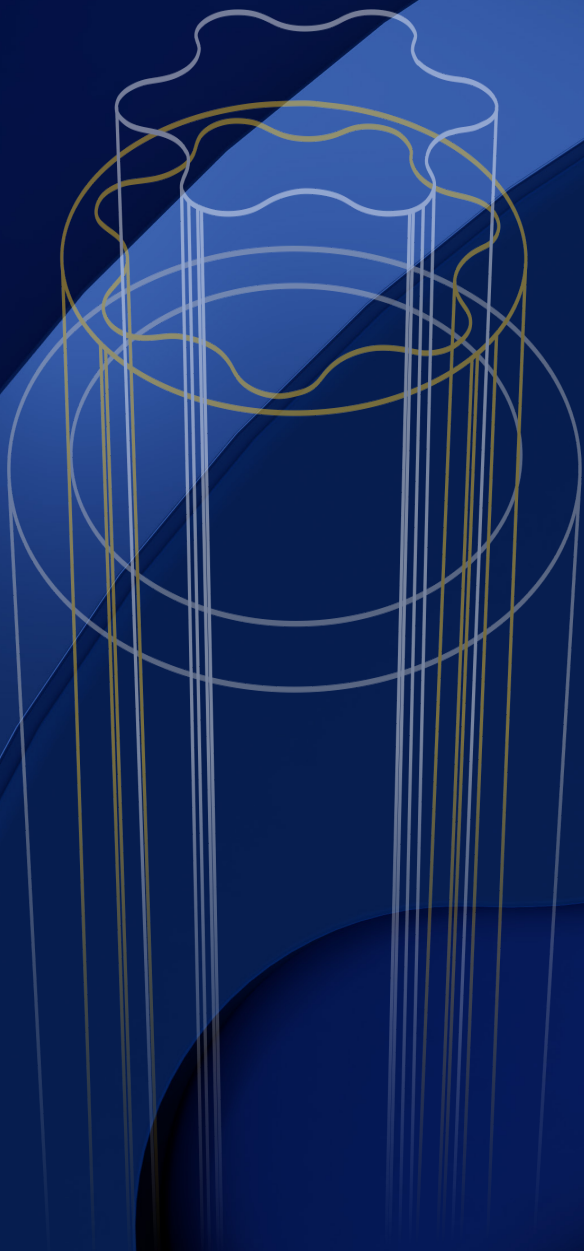
Nothing but **power**

We set the industry
benchmark in
power section
innovation, quality
and performance
that delivers—

Nothing but power



We are leading
power section
technology



Abaco
DRILLING TECHNOLOGIES

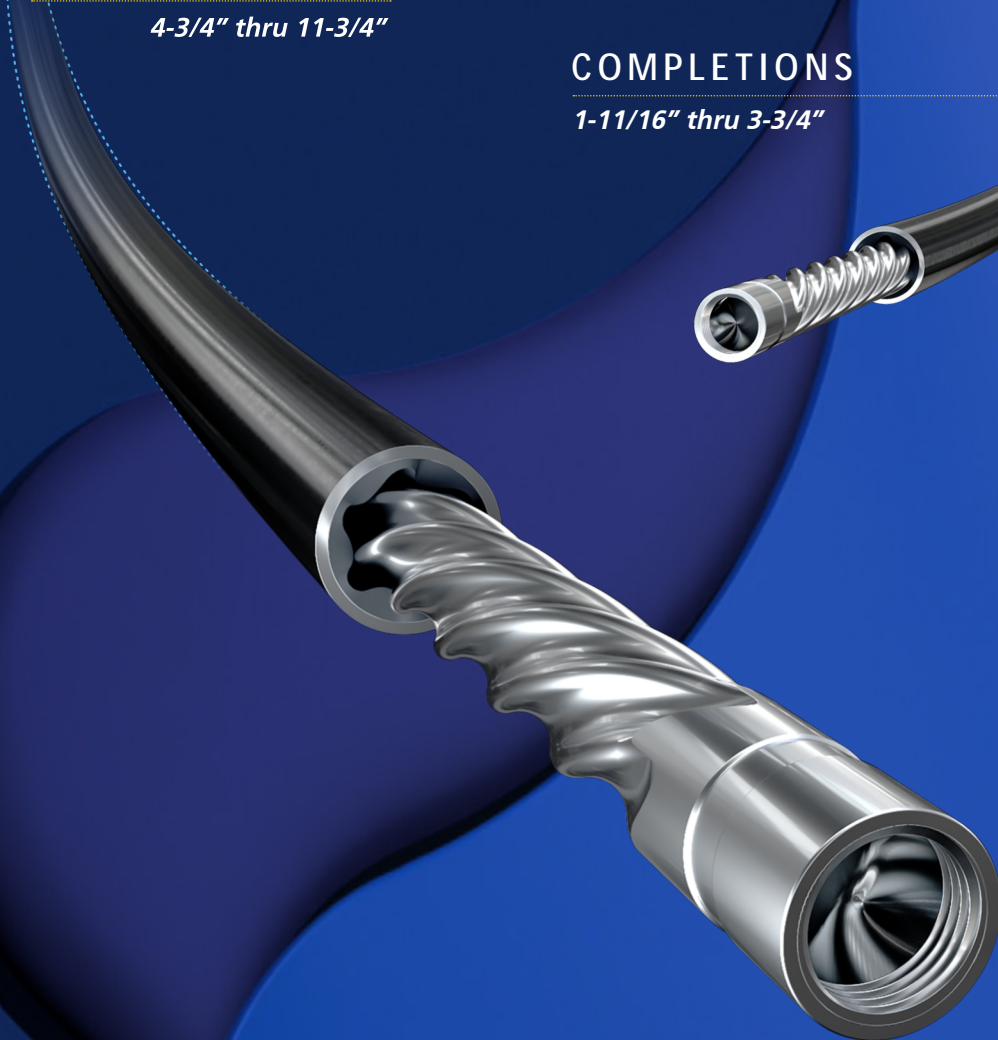
We design to the specific **operation**

DRILLING

4-3/4" thru 11-3/4"

COMPLETIONS

1-11/16" thru 3-3/4"



We specialize in Power Section **applications**



Conventional

Power Sections that offer cost effective solutions with fast and convenient relining services



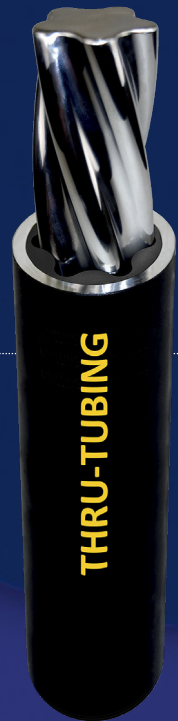
High Power Drilling

OPTIFIT® stators with deviated profiles deliver greater power section reliability at high power



Performance Drilling

EVENTEK® stators with a one piece profile create more power and cost less per foot



Thru-Tubing

High flow capacity, equipped for technically challenging and demanding applications

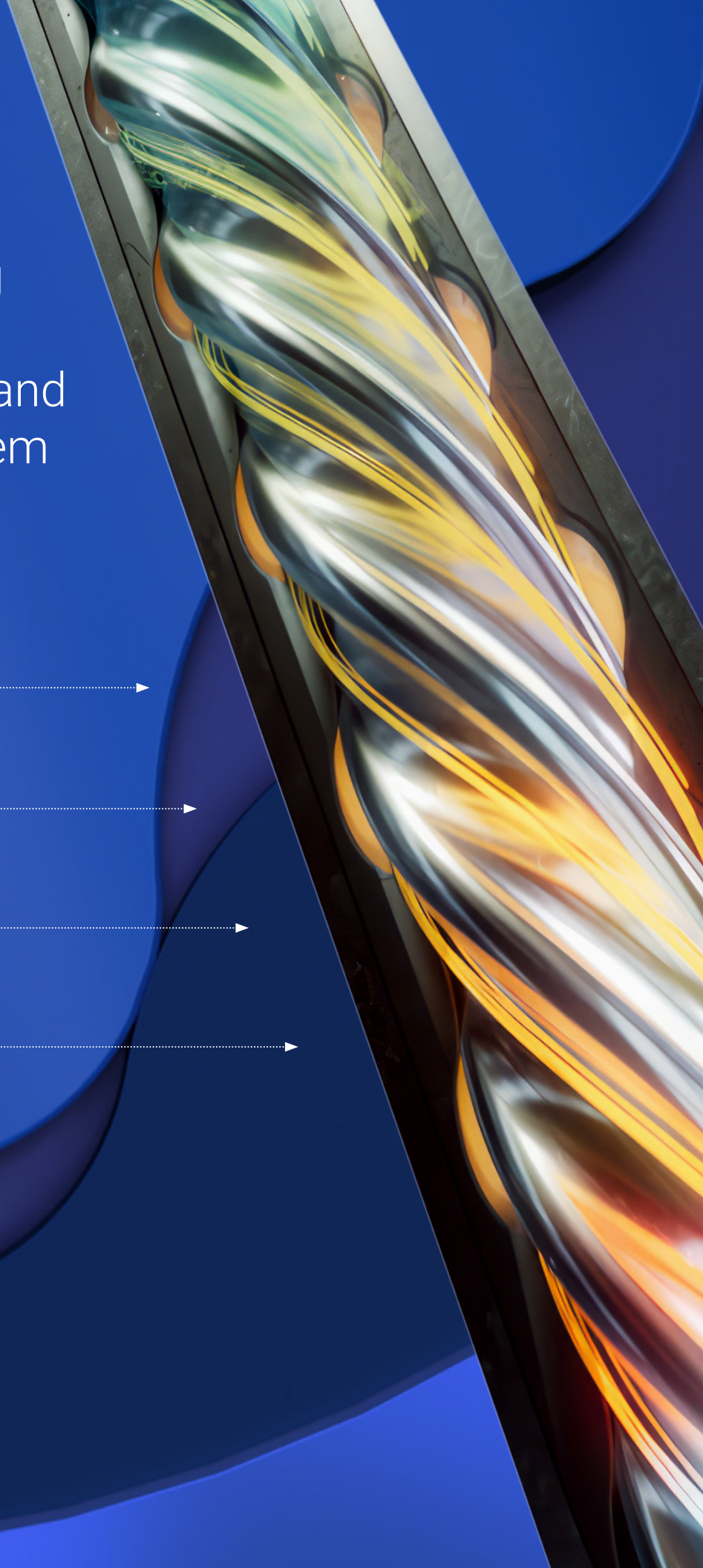
We understand
the complexities
of downhole drilling
environments and
specifically design and
build to address them

TORQUE

HEAT

WEAR

CORROSIVE



We engineer each **component**
for maximum reliability
in downhole operations



3D rendering of a mechanical assembly, likely a pumpjack or similar downhole tool. The assembly consists of three main components: a central rotor, a surrounding stator, and an elastomer. The rotor is a dark, polished, cylindrical component with a complex, multi-faceted top surface. The stator is a large, dark, cylindrical component that surrounds the rotor. The elastomer is a dark, flexible, ring-like component that fits between the rotor and the stator. The components are shown in a close-up, perspective view, highlighting their intricate shapes and textures. The background is a solid blue color.

ROTOR

STATOR

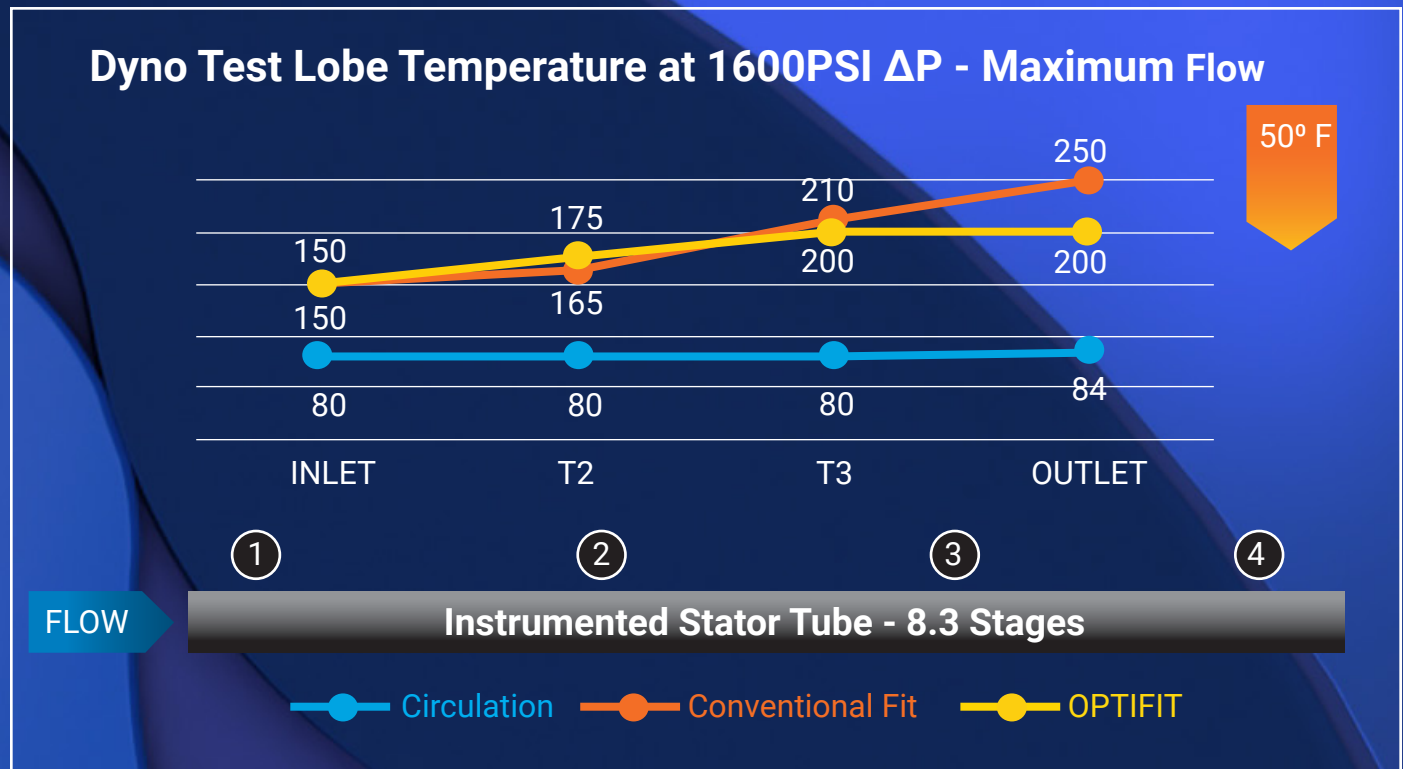
ELASTOMER

We offer a wide range of
stator diameters to best
suit drilling or completion
applications

The image shows three concentric circular stator diameters, each represented by a thick, metallic-looking ring. The rings are arranged vertically, with the largest at the top, a medium-sized one in the middle, and the smallest at the bottom. They are set against a dark blue background with lighter blue curved shapes. A yellow text box is centered within the largest ring.

1-11/16" – 11-3/4"

OPTIFIT[®] Stators Increase Temperature Window



Instrumented Dyno testing has verified the reduction in maximum stator lobe temperature

When operated at maximum power rating on extended length models, a 50°-70°F temperature reduction

Stator Features

Abaco stators are a great option for most drilling distances

- Temperatures up to 220° C with HPT
- Excellent power and reliability with most fluid types
- OPTIFIT® Stators extend temperature window and reliability

For temperatures greater than 220° C

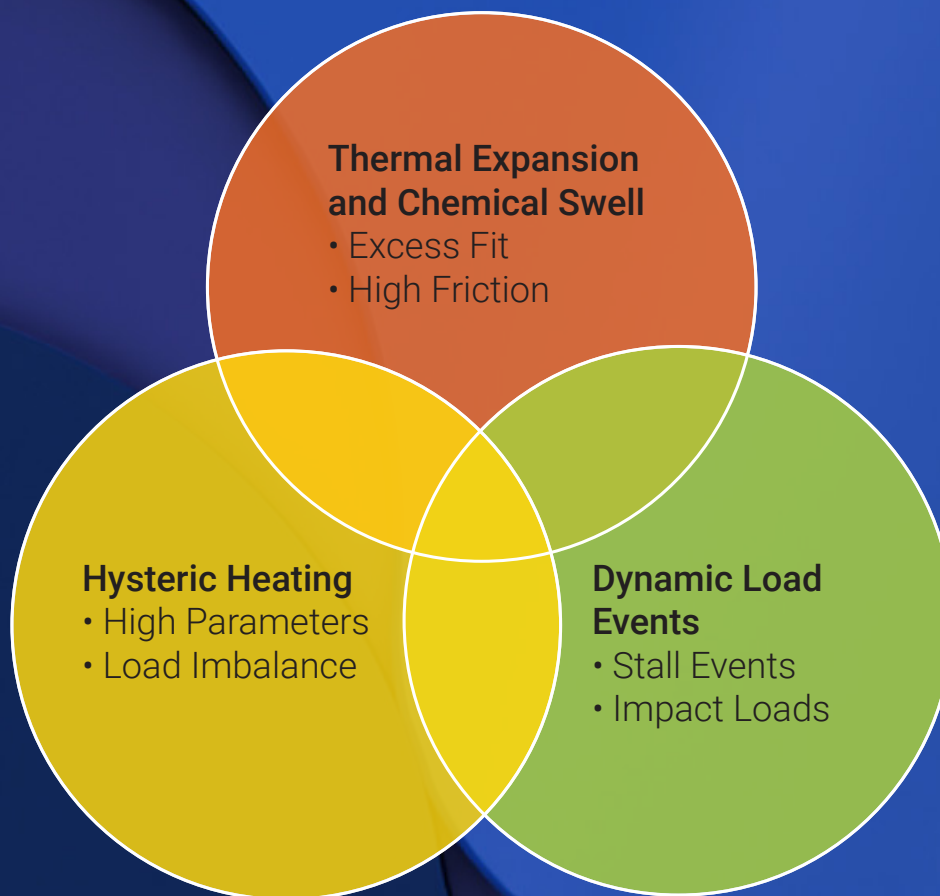
- Higher performance elastomers such as FFKM, requiring further development with respect to adhesion and injectability

OR

- Fluid cooling and insulated tubes

Stator Failure Root Causes

Stress, Thermal and **Chemical** factors determine time to chunking



Each factor increases temperature or stress in the elastomer

Abaco developed a series of laboratory tests to identify stator geometry that optimizes stress distribution and reduces friction

We extensively research and test to identify how **elastomer properties** will affect application performance



HPT

HPW

HPO

Elastomers and Temperature Ranges



Optimum Strength elastomer formulated for high torque and designed for increased reliability in high solids drilling applications



Maximum Wear elastomer designed to deliver increased durability and high torque in high performance drilling applications



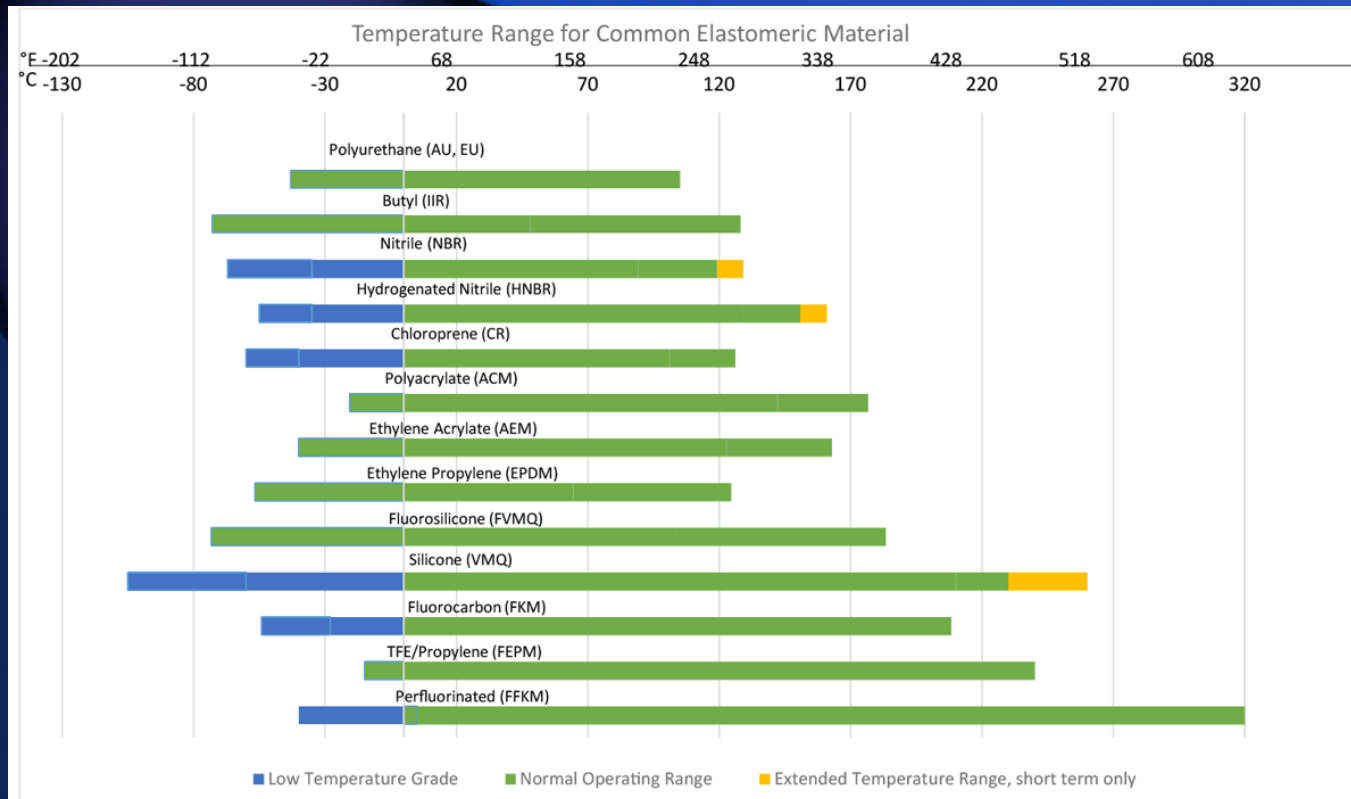
High Temperature elastomer for applications requiring high power output and excellent fatigue life at elevated downhole temperatures

HPW / HPO – Many successful runs up to 175°C

HPT (*HNBR*) – Successful runs up to 220°C

HP-NEW (*New Elastomer*) – Can run up to 190°C

Elastomers - Common Temperature Ranges



Courtesy of Parker

High Temperature Material Challenges in Drilling Power Sections

Adhesion to metal tube

- Adhesive's temperature rating much lower than elastomer's
- Adhesion relatively good with Abaco's HNBR
- Adhesion relatively poor with fluoro-elastomers

Most fluoro-elastomers have very high viscosity

- Difficult to inject in long stator tubes

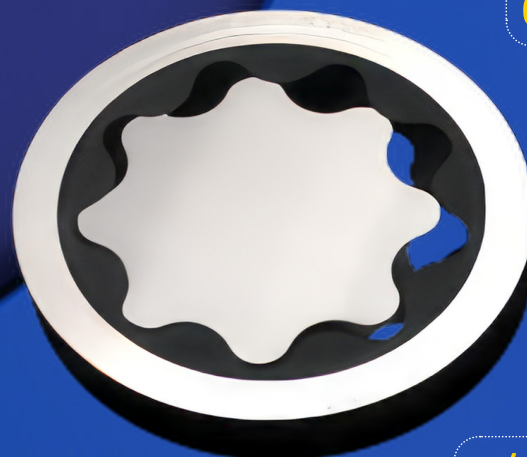
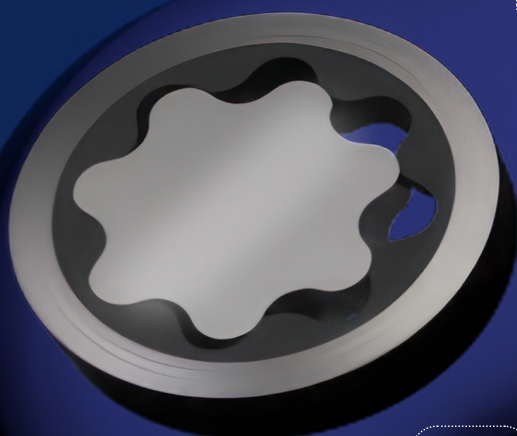
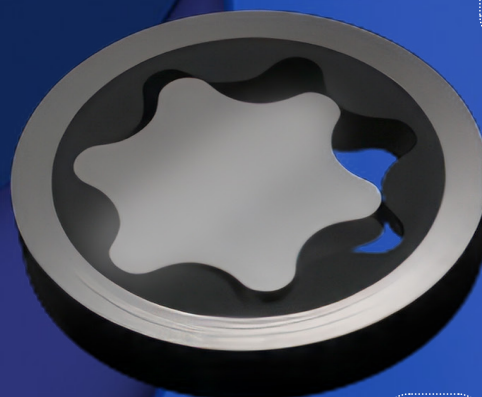
Very high-cost

- Relative to NBR's, HNBR's and other "standard" elastomers

Metal to Metal

- High wear with solids in fluid
- Large clearances so inefficient and more prone to stalls

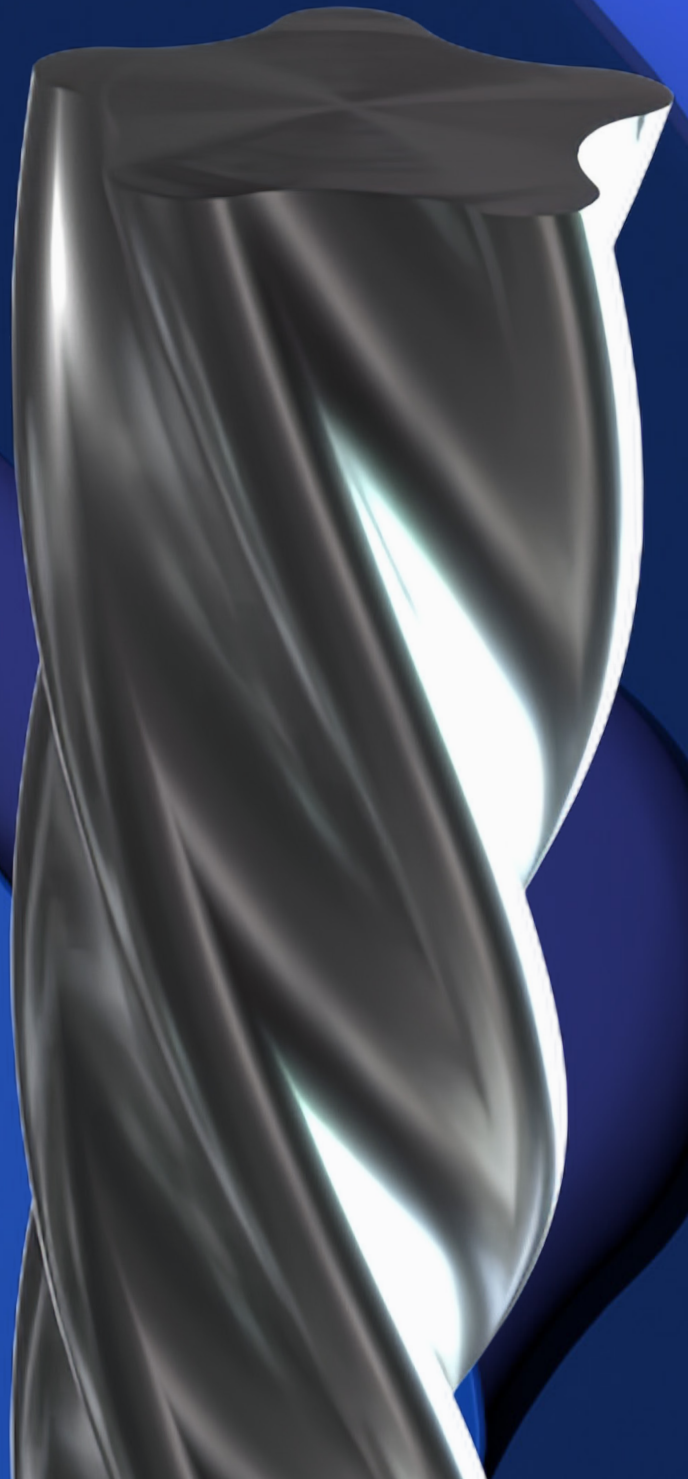
We design application specific
lobe profiles to maximize
drilling fluid performance



We CNC manufacture each **rotor**
to tolerances within $\pm 0.003''$
then polish and CMM measure
with accuracy down to $0.0001''$

TUNGSTEN CARBIDE

CHROME

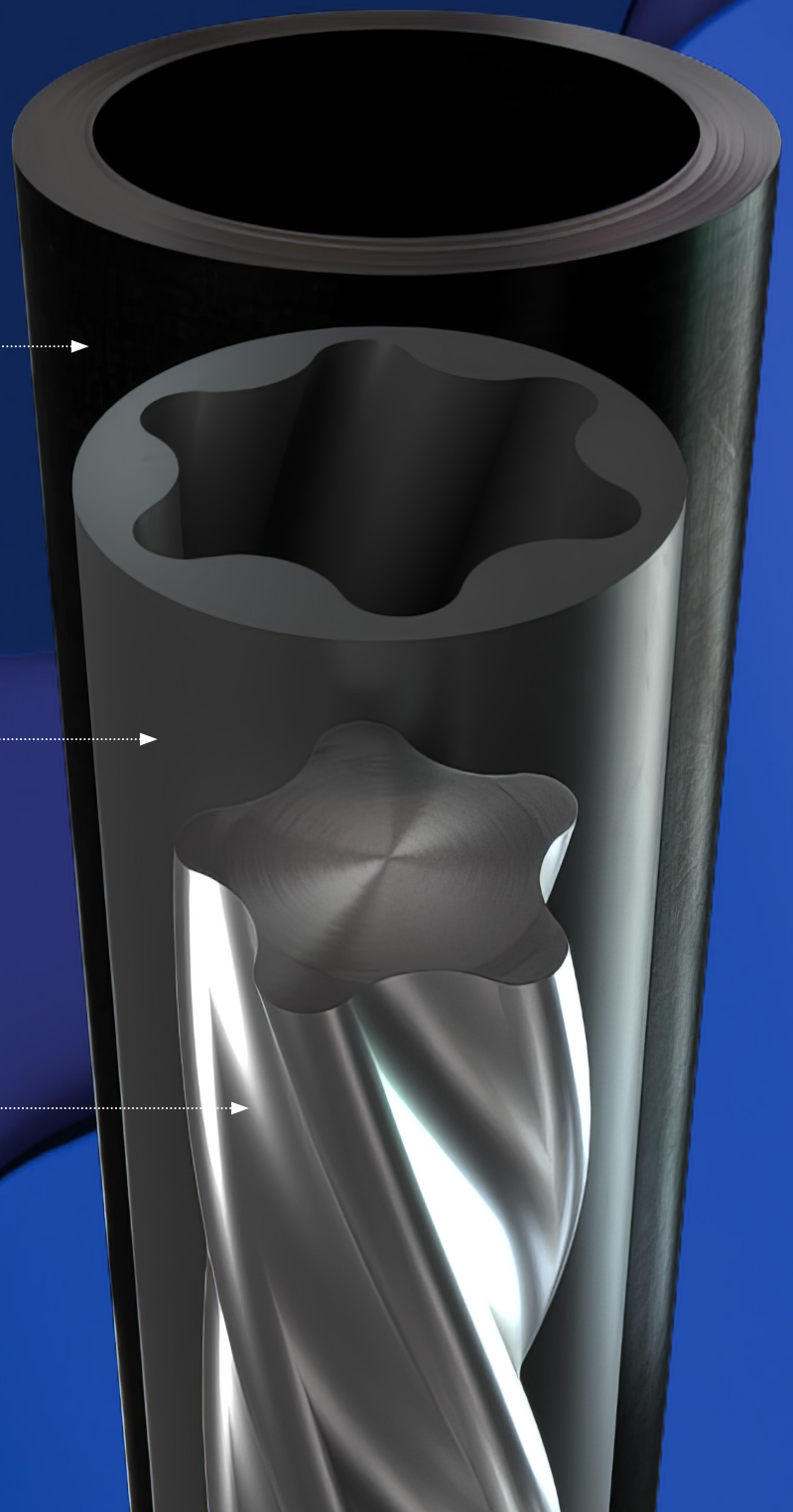


We utilize **leading edge** computer guided machinery and manufacturing expertise to deliver the highest quality precision components

STATOR

ELASTOMER

ROTOR

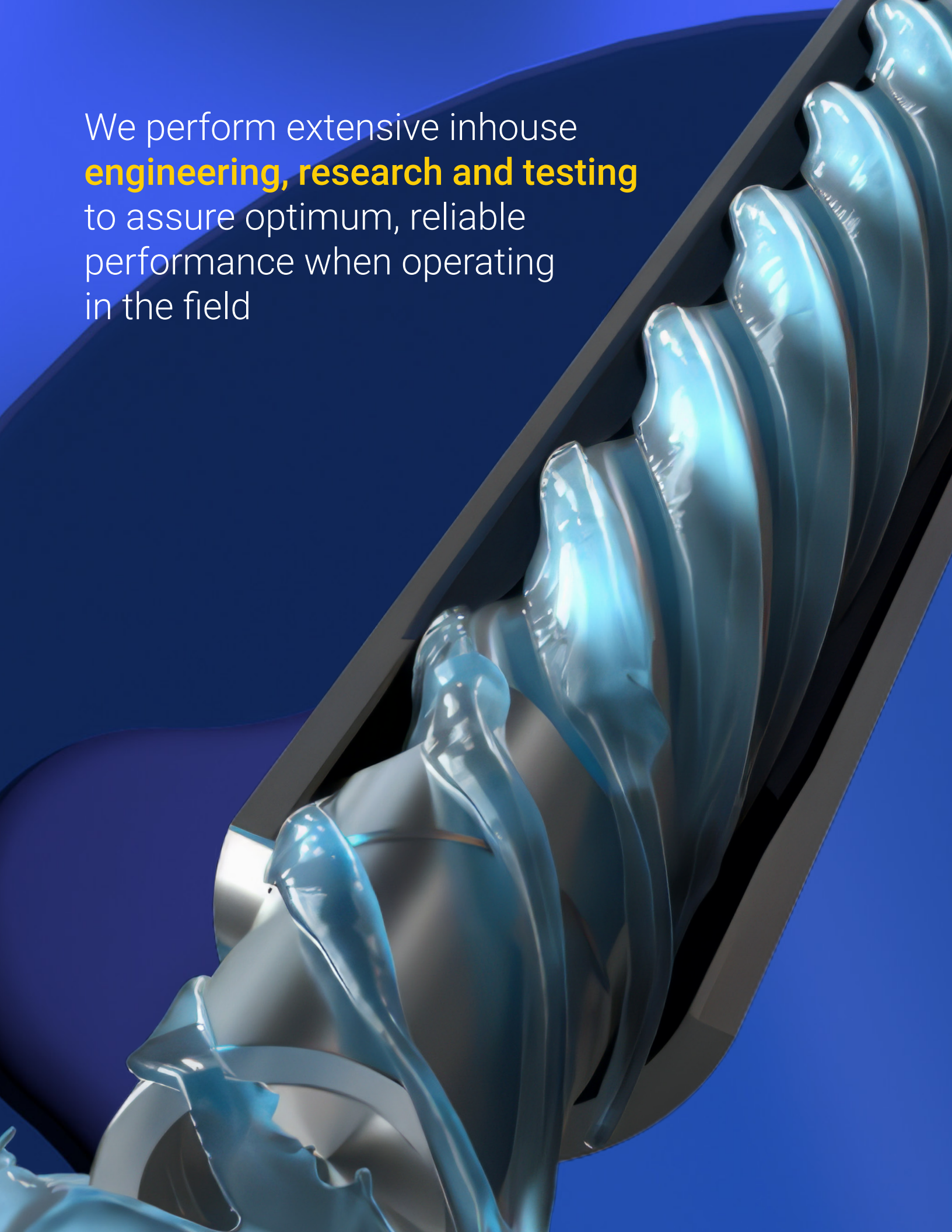


We employ
meticulous
quality control
to build to our
benchmark-setting
manufacturing
standards with
precise tolerances
down to 0.0001"



Abaco
DRILLING TECHNOLOGIES

We perform extensive inhouse
engineering, research and testing
to assure optimum, reliable
performance when operating
in the field



We deliver **nothing but power** worldwide



Leduc
Alberta
Canada

Houston
Texas
USA

Odessa
Texas
USA

Dubai
UAE

FACILITIES

Houston - 200,000 sq. ft.
Edmonton - 90,000 sq. ft.
Dubai 55,000 sq. ft.
Odessa - Staging

We deliver. . .
Nothing but **power.**



