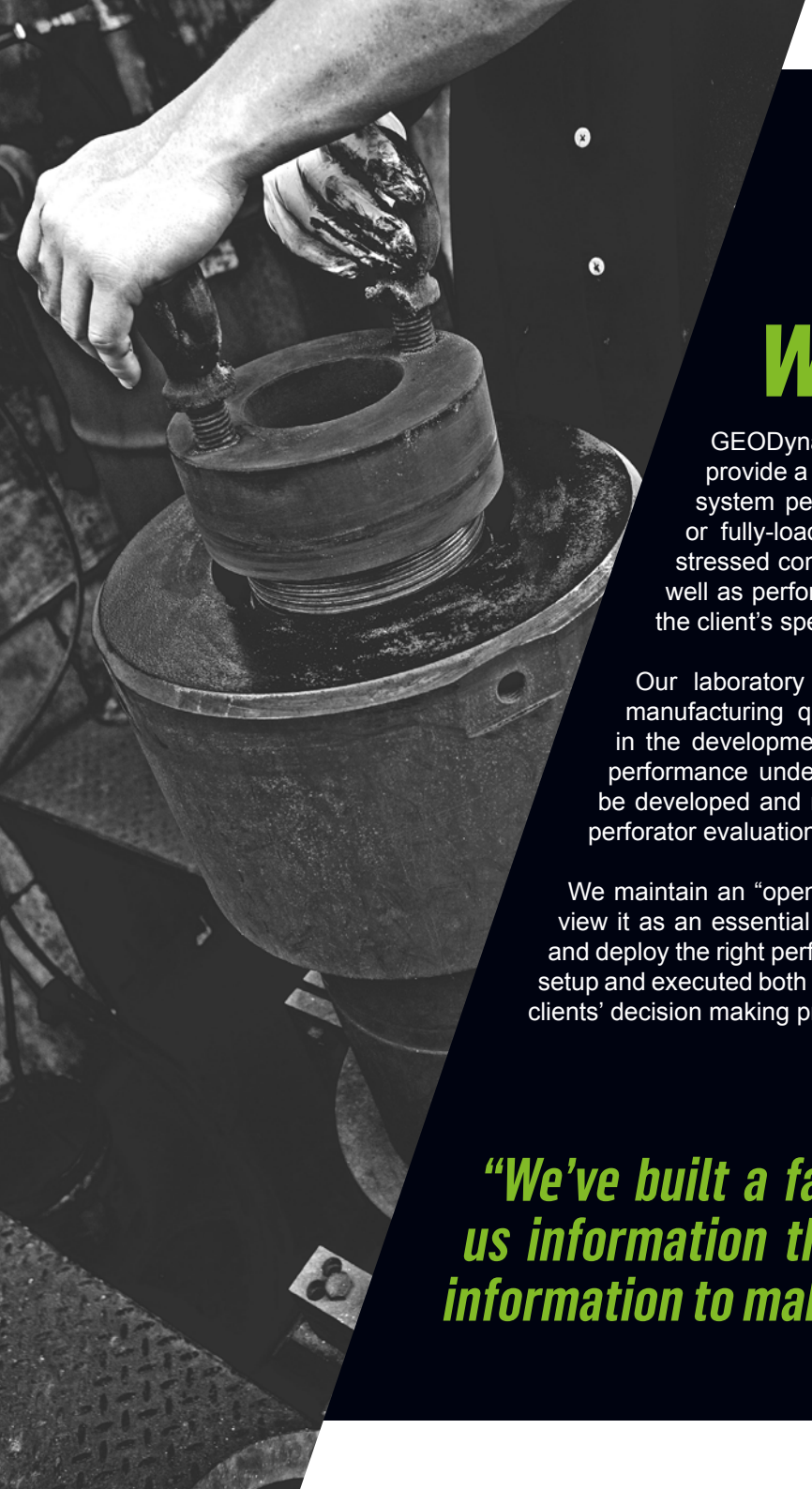

GTEC
TM
GEODYNAMICS' TECHNOLOGY EVALUATION CENTER

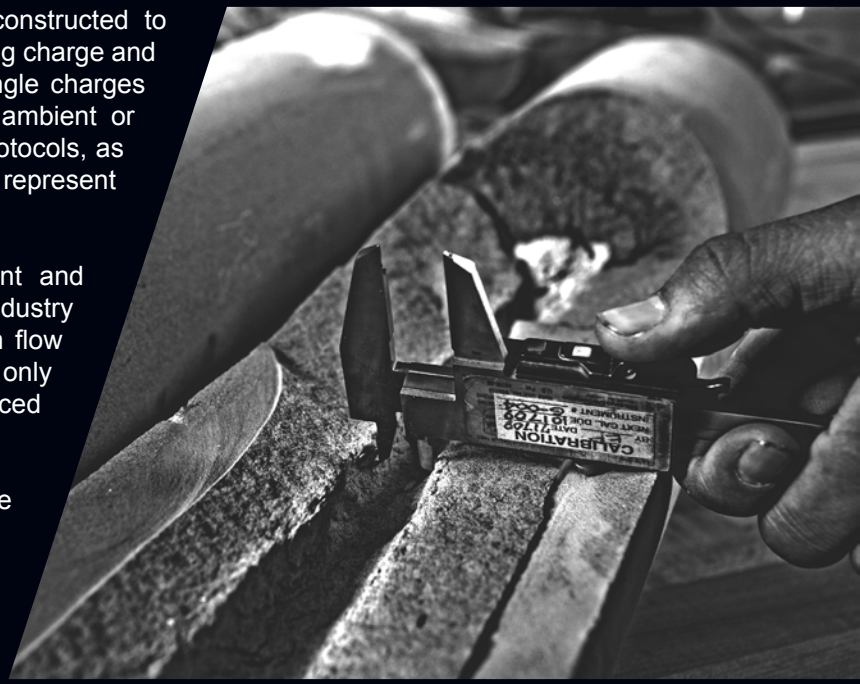


WORLD CLASS CAPABILITY

GEODynamics' engineering laboratory has been constructed to provide a consistent, reliable assessment of perforating charge and system performance. Tests can be carried out on single charges or fully-loaded systems. Targets can be shot under ambient or stressed conditions. We follow industry standard test protocols, as well as performing custom-designed tests engineered to represent the client's specific downhole situation.

Our laboratory facility supports both charge development and manufacturing quality control. GEODynamics leads the industry in the development of perforating systems yielding optimum flow performance under downhole conditions. Such systems can only be developed and manufactured with the support of an advanced perforator evaluation facility.

We maintain an "open doors" policy at our laboratory because we view it as an essential tool in helping our clients develop, identify, and deploy the right perforating systems for their wells. Tests can be setup and executed both economically and efficiently, supporting the clients' decision making processes and de-risking their operations.



"We've built a facility that is the best of its kind in the world. It gives us information that we have no other way of getting, and we use that information to make things that haven't been made before."

- John Hardesty (Director of Mechanical Engineering)

SERVICES OFFERED

Charge Development and Optimization
Custom-designed, fit-for-purpose shaped charge solutions, developed from scratch or by enhancing an existing, proven product. Fastest turnaround time in the industry.

Charge Performance Benchmarking
Comparative performance evaluation of alternative perforating products, typically carried out in compliance with American Petroleum Institute test protocols.

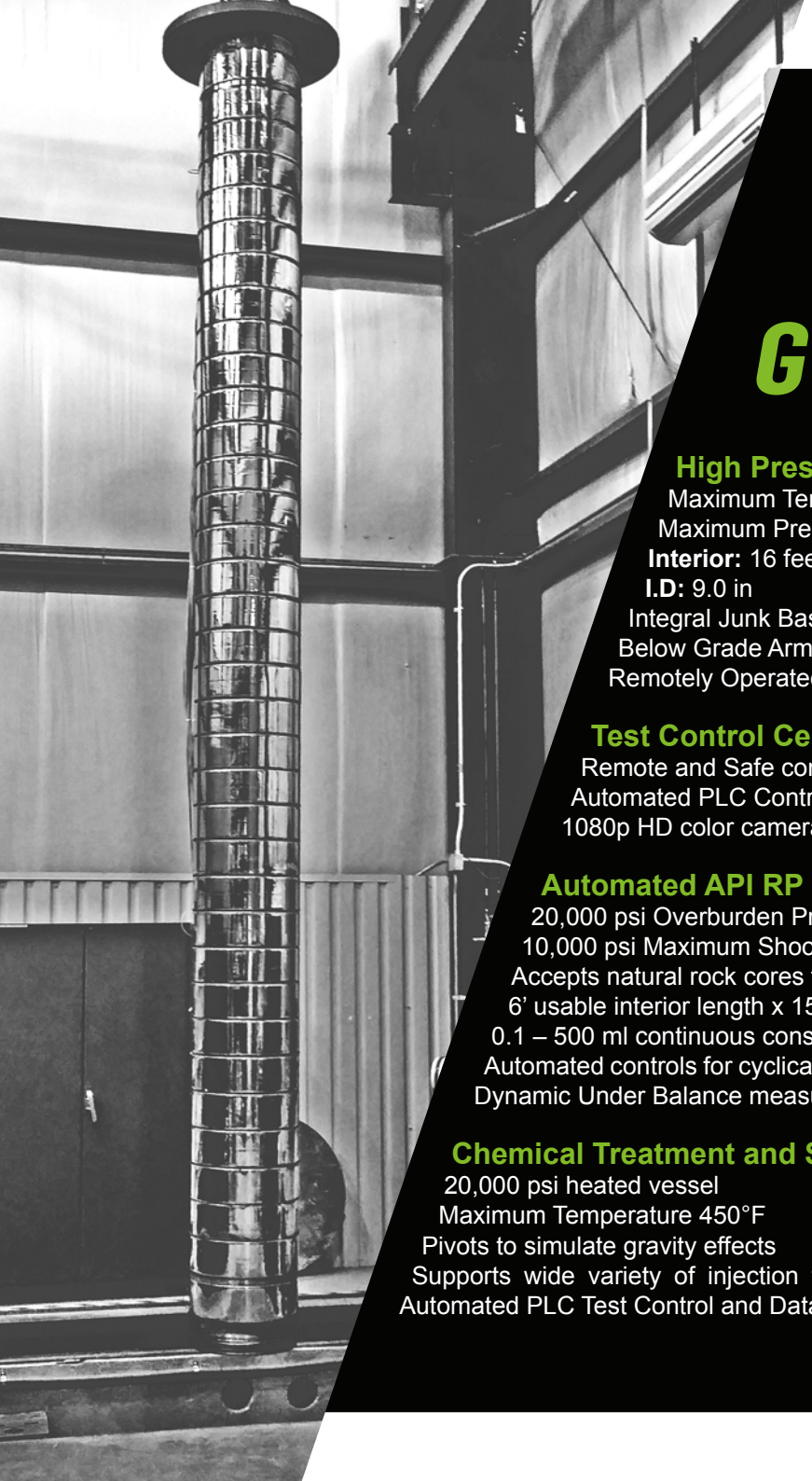
Perforating System Development
Engineering design, prototyping, and performance testing of gun systems and accessories. We feature a full range of guns built from a proprietary high-performance gun steel.

Customer Specific Tests
Evaluation of perforating products under specific conditions, typically representative of the actual downhole environment in which the product will be deployed. Allows the client to evaluate a perforating system before running it in a well, reducing risk and optimizing results.

Gun Collapse Testing
Testing to determine the maximum collapse resistance of various expendable carriers.

Completions Tools Test Programs:
FracDock™ SmartStart™

- Material Qualification Testing
- Function Testing
- High Temperature / High Pressure Testing
- Life Cycle Testing



GTEC CAPABILITIES

High Pressure/ High Temperature Vessel

Maximum Temperature: 500° F
Maximum Pressure: 40,000 psi @ Ambient / 35,000 psi @ 500° F
Interior: 16 feet of usable length
I.D: 9.0 in
Integral Junk Basket
Below Grade Armored Bunker
Remotely Operated from secure Control Center

Test Control Center: HTHP Controls and CCTV

Remote and Safe control of HTHP Tests
Automated PLC Controlled Pressure and Temperature Application
1080p HD color cameras record and provide remote viewing

Automated API RP 19B Section 4 Flow Lab

20,000 psi Overburden Pressure
10,000 psi Maximum Shooting Differential
Accepts natural rock cores from 4 to 12 inches diameter
6' usable interior length x 15" I.D.
0.1 – 500 ml continuous constant flow
Automated controls for cyclical testing, back pressure and overburden
Dynamic Under Balance measurement

Chemical Treatment and Sanding Lab

20,000 psi heated vessel
Maximum Temperature 450°F
Pivots to simulate gravity effects
Supports wide variety of injection fluids (KCl, HCl, etc…)
Automated PLC Test Control and Data Acquisition

Quick Development Cells

Hardware available for cores sizes 4”-5.25” natural targets
Rated for API RP 19B Section 2 testing
Maximum Overburden Pressure 6,000/10,000
Extremely fast load / unload operation
Capable of 20+ shot per shift
Patented Technology (US8627707)

Stimulation Cell

Accepts 5”-7” Natural targets
Maximum Temperature 500°F
Maximum Pressure 20,000 @ 450°F
Isolated Acid transfer system (15% HCl)
Vessel mounted on a pivot to allow for sanding studies in various orientations

Additional Test Capabilities

API RP 19B Section 1 Testing
API RP 19B Section 5 Debris Testing
Gun Survival Testing

“Whether maximizing productivity or the area open to flow, GEODynamics has the right completion technology to make more profitable wells..”

- Nathan Clark (Senior VP Perforating and Technology)

GEODynamics®

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