



**GEO THERMAL DRILLING  
BROCHURE**

**2025**

## ABOUT GTD

At GTD Desco, we specialize in manufacturing advanced geothermal drilling rigs engineered for **productivity, capability, and adaptability**. Our GT Series rigs are developed to meet the real-world challenges of geothermal drilling across North America, offering high-speed rotary performance, robust torque delivery, and fast transitions between drilling methods. Built with our industry-leading rod handling system—the benchmark for operational safety and efficiency—these rigs set a new standard in geothermal drilling.

Unlike suppliers offering one-size-fits-all solutions, or adapting and rebranding non-geothermal rigs to try and bridge the gaps, **GTD provides a scalable, standardized platform** that enables fleet growth, simplifies operator training, and improves uptime and safety across operations.

In addition to the rigs, **GTD isn't just a drill rig manufacturer**. We understand that successful geothermal drilling isn't just about the rig itself — it's about the complete package. The support equipment surrounding the rig is equally critical to performance, safety, and efficiency. That's why GTD has developed and partnered with trusted manufacturers to supply fully integrated solutions — from solids control systems to mud pumps, casing handling, and data infrastructure. With decades of hands-on experience, we help you avoid trial and error by recommending systems that are proven to work together in the field.

GTD is the **largest supplier of geothermal drilling rigs in North America**, trusted by over 20 active clients, all of whom have placed repeat orders or currently have rigs in production. This consistent trust is a direct reflection of our equipment's reliability and our commitment to post-sale service.

We maintain **multiple North American service hubs and parts stores**. We welcome the opportunity to support your geothermal projects with high-performance rigs and equipment, responsive service, and scalable solutions tailored to your future growth.

**DIGGING DEEP FOR YOUR SUCCESS  
— WE'RE HERE TO POWER YOUR  
GEOTHERMAL FUTURE.**





**WOULD THE OWNERS  
OF ANY OTHER  
MANUFACTURER  
SHOW UP ON SITE AND  
DRILL WITH YOU?**

**WE DO. REGULARLY.**

## WHY TRUST IN THE GTD TEAM?

At GTD, your success drives everything we do. **If you're not productive, we're not successful.** That's why we don't just sell rigs — we partner with you to optimize performance, maximize efficiency, and ensure you have the right equipment for the job.

We're **invested in your investment.** This industry is too specialized for a sell-it-and-forget-it approach. When you work with GTD, you deal directly with the people who design, build, and drill. We're not just manufacturers — **WE ARE DRILLERS.**

We live and breathe geothermal, with **boots on the ground** across North America, Europe, Asia, and Australasia. Our rigs are shaped by real-world experience — not theory. **WE GO TO SITE. WE DRILL. WE LISTEN. WE EVOLVE.**

Our finger is on the pulse. When you partner with GTD, you're not just buying a machine — you're becoming **part of the team** that's shaping the future of geothermal drilling

We've seen where our rigs and others fall short — in design, performance, and long-term productivity. That's why every recommendation we make is grounded in one goal: helping you succeed. We take the time to understand your needs, assess the job, and **offer honest, experience-based advice** — even if it means telling you what you don't want to hear.

**THAT'S NOT ARROGANCE; IT'S RESPECT.**

We know what works—because we've done it. GTD rigs and crews have drilled geothermal wells in more places, under tougher conditions, than anyone else in the industry. Our advice comes from experience, not theory—built on lessons we've learned, so you don't have to.

**TRUST US TO ACT IN YOUR BEST INTEREST. BECAUSE YOUR SUCCESS IS HOW WE MEASURE OURS.**



# AIR, MUD & HAMMER DRILLING: WHY YOU NEED ALL THREE

**HAMMER DRILLING IS FAST AND EFFICIENT IN HARD ROCK, USING LESS RIG POWER BY RELYING ON THE COMPRESSOR AND HAMMER. BUT FEW FORMATIONS SUIT HAMMER-ONLY WORK, MAKING IT RISKY TO BASE YOUR ENTIRE BUSINESS ON IT.**

**MUD DRILLING LETS YOU TACKLE SOFT, UNSTABLE, OR WET FORMATIONS WHERE AIR WON'T WORK—BUT IT NEEDS SERIOUS HORSEPOWER. A TYPICAL 4X3X13 CENTRIFUGAL OR PISTON MUD PUMP CAN REQUIRE 100–150 HP JUST TO OPERATE EFFECTIVELY, AND WITHOUT A PROPERLY SPEC'D PUMP AND RIG SUPPORT, MUD DRILLING SLOWS DOWN OR FAILS.**

**RELYING ON A RIG AND TEAM BUILT FOR ONLY ONE METHOD LIMITS YOUR RANGE AND ROI. TOP CONTRACTORS KNOW RIG SELECTION ISN'T ABOUT PERFECTION—IT'S ABOUT MINIMIZING COMPROMISE ACROSS THE WIDEST RANGE OF CONDITIONS.**





# THE RIG LINEUP »

## GT25

### SINGLE-HEAD RIG (EURODRILL RH10X + CHUCK OPTION)

The GT25 delivers big rig performance in a compact, easy-to-transport package. Its 192 hp Doosan engine—more powerful than any rig in its class—pairs with a **Eurodrill RH10X rotary head** for **strong torque** and **fast, reliable drilling**. Whether drilling geothermal loops with air or mud, the GT25's small footprint, quick setup, and full features help you stay on schedule and on budget.

**Most Powerful in Class** 192 hp Doosan DLO6 engine outpaces all rivals' standard offerings.

**Eurodrill RH10X Rotary Head** Up to 6,195 lb-ft at 100 rpm (8.4 kNm) and 3,097 lb-ft at 200 rpm (4.2 kNm).

**Ultra-Portable Design** Easily mobilized on a standard low-loader or Versatran 20 ton truck

**Deep-Reach Capacity** Holds up to 600 ft or 200 m of 3½ drill rod to cover most geothermal applications without re-spooling.

**ALL THE STANDARD FEATURES OF A BIGGER RIG IN A SMALLER PACKAGE**

**LOWER TRANSPORT, SETUP, AND FUEL COSTS COMBINE WITH GOOD DAILY FOOTAGE TO MAXIMIZE YOUR ROI.**

**HEAVY-DUTY BUILD AND PROVEN POWER-TRAIN FOR YEARS OF SERVICE.**

#### **Robust Derrick & Feed**

24,250 lb pull-back and 11,000 lb push-down, with an 18 (5.5 m) stroke

#### **Tier 4 Final Compliance**

Doosan DLO6 Tier 4 engine meets the strictest emissions standards



# GT35

## THE GEOTHERMAL RIG THAT NEEDS NO INTRODUCTION

The GT-35 is the benchmark rig for geothermal contractors worldwide, known for its reliability, performance, and value. **Decades of refinements** in hydraulics, cooling, and heavy-duty components have made it the standard others try to match. While no rig is perfect, the GT-35's **durability** and **proven versatility** help fleets **drill deeper, faster,** and more **cost-effectively**.

**Peak Performance** 290 hp Doosan DL08 Tier 4 (Stage 5) engine paired with a variable-twin Eaton rotary head for up to 6,195 lb-ft at 135 rpm and 3,097 lb-ft at 260 rpm

**Comfortably** Drills beyond 650ft (200 m) using mud, air, or hammer methods—proven to drill up to 420m/1,380ft

**Massive Onboard Rod Capacity** Holds 44 × 20 ft (6 m) lengths of 3½" rod (880 ft/264 without reloading)

**Robust Derrick & Feed** 35,274 lb pull-back and 14,330 lb push-down, with a 24' 7" (7.5 m) top-head stroke

**Dual Pump Capability** Standard 4×3×13 centrifugal plus 4.5×5.5 triplex piston pump delivering 264 gpm @ 580 psi—ensuring uninterrupted circulation and backup on demand

**FIELD-PROVEN UPTIME AND PERFORMANCE, BACKED BY  
CUSTOMER RESULTS.**

**VERSATILE FOR DEEP GROUND LOOPS IN ALL GEOLOGIES WITH  
MINIMAL COMPROMISE. COMPROMISE.**





# GT45

## SINGLE-HEAD RIG (EURODRILL RH16X + SK178 CHUCK OPTION)

The GTD45 is the **new go-to rig** and the **next generation**—an all-around workhorse designed for speed, simplicity, and consistent daily footage in almost all conditions. It shares the same compact footprint as the legendary GT35 but embodies over a decade of lessons learned and performance improvements.

**Compact footprint**, usable in urban and suburban environments as well as open commercial sites

Compatible with casing advancement tools like **ODEX/Symmetrix**

**Hands-free** and secure 20-ft rod handling system

**380hp Cummins L9 Stage V engine**

**Eurodrill RH16X rotary head** – 202 RPM / 11,897 lb-ft (16.13 kNm) of Torque

**Larger track** with more grunt but within the same footprint

Essential for any serious geothermal fleet: small enough to **transport easily** and maneuver into tight spots, yet **powerful enough** for **high productivity** at any depth, with any method, in any geology.

**AT GTD, WE RECOMMEND A 2:1 RATIO OF SINGLE-HEAD TO DOUBLE-HEAD RIGS. THIS KEEPS YOUR FLEET FLEXIBLE FOR MOST CONDITIONS WITH STANDARD ROTARY WHILE ENSURING DUAL-HEAD CAPACITY WHEN MANDATORY CASING OR PRODUCTIVITY DEMANDS IT.**



# GT45DD

## DOUBLE-HEAD RIG (EURODRILL RH12X + RH26 + SK178 CHUCK)

When you need to install casing directly — **fast and reliably** — the **GTD45DD is the answer**. With dual heads, it drills the inner string and rotates casing **simultaneously**, with no additional tools required.

**Engineered for optimal performance** in unstable and unconsolidated formations

**Accelerates** casing installation

**Hands-free 20-ft rod handling system** with dual heads

**A must-have solution for contractors** facing unpredictable or challenging ground condition

**Upper Head (RH12X – Rotary Drive):** 190 RPM / Torque: 8,850 lb-ft (12 kNm)

**Lower Head (RH26 – Casing Drive Head):** 125 rpm / Torque 14,976 lb-ft (20.3 kNm)

**FOR CONTRACTORS NEEDING FULL DRILLING AND CASING IN TIGHT SPACES, WITH FAST, CONTINUOUS DRILLING IN VARIABLE FORMATIONS.**





# GT60

## HEAVY-DUTY PRODUCTION RIG (EURODRILL RH24X + SK219 CHUCK OPTION)

The GTD60 is the big-brother workhorse—more power, more torque, pure production. Designed to reach depths beyond 2,600 ft with speed and ease, it delivers maximum daily footage, while still fitting through standard gates and driveways.

**513 HP Cummins X12 Stage V engine**

**53 GPM (2000 LPM) Piston Pump**

**High Pressure Multi-Stage Centrifugal**

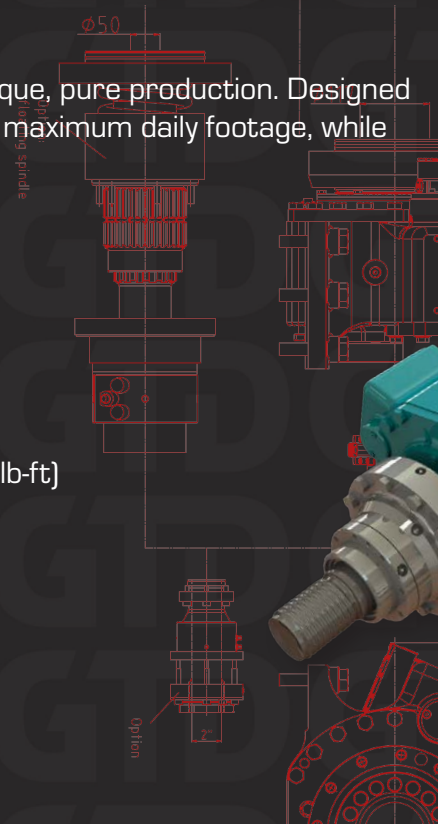
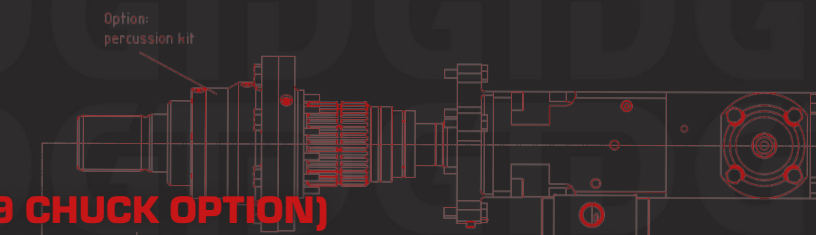
**Eurodrill RH24X rotary:** 200 RPM / Torque: 24 kNm (17,700 lb-ft)

**25 ft (7.62 m) drill rods** for speed and deep-hole capacity  
Pull-back: 55,000–66,000 lb | Push-down: 26,455 lb

**Rod capacity** of 1,200 ft of 95mm (3.75") rods X 48

**Solar 130 crawler** capable of heavy-lift traction in tough terrain

**IDEAL FOR LARGE-SCALE GEOTHERMAL PROJECTS  
REQUIRING NONSTOP PRODUCTION, EXTREME DEPTH, AND  
HIGH-SPEED CYCLE TIMES—WHERE BIG-RIG PERFORMANCE IS  
ESSENTIAL.**



Option:  
percussion kit

# GTD60DD

## DUAL-HEAD PRODUCTION & CASING RIG (RH24X + RH40X + SK219 CHUCK)

When production speed and in-hole casing are mission-critical, the GTD60DD merges **two powerhouse heads into one** ultimate footprint. Drill the pilot string and spin the casing simultaneously to serious depths, **slashing non-productive time**.

### Dual Eurodrill heads:

Rotary Head **(RH24X)**: 200 RPM / Torque: 24 kNm (17,700 lb-ft)

Casing Head **(RH40X)**: 180 RPM / 29,500 lb-ft (40 kNm)

**513 HP Cummins X12 Tier 4 engine** for consistent torque delivery

**Pull-back** of 55,000–66,000 lb

**Push-down** of 26,455 lb

**Rod/Casing Capacity** of 960 ft (48× 95mm (3.75))

**Head Tip-out system** for rapid rod & casing handling

**BUILT FOR HIGH-VOLUME CONTRACTORS: FAST CASING  
INSTALLS, DEEP PILOT HOLES, AND NONSTOP PRODUCTION  
IN THE TOUGHEST GROUND—BECAUSE EVERY HOUR SAVED  
BOOSTS YOUR BOTTOM LINE.**





# MG500 “MUD GUZZLER”

At GTD, we've seen companies upgrade their fleet only to be hamstrung by weak mud systems. That's why we offer the MG500 Tracked Mud Recycling System—the “Mud Guzzler”—as a fully integrated component of your drilling package.

**Process Surge Flows** up to 400–500 gpm (1,500–2000 lpm) to match modern demands.

**Fine Solids Removal** down to 15  $\mu\text{m}$  for cleaner fluid, longer bit life, and reduced consumable costs.

**Dominate** tight sites and slopes with tracked mobility, keeping pace with your rig at up to 2.5 mph, even on urban pads and steep grades.

**Reduced Downtime** by preventing pump and hose failures & controlling cuttings at source rather than chasing messes.

## SEAMLESS INTEGRATION & BENEFITS

**Pump-Back Capability:** Prime and boost your rig's mud pumps directly from the MG500.

**V-Shaped Tank Design:** Minimizes solids buildup and eases cleanup.

**Adjustable Shaker Angle** (+6°/–6°): Fine-tune to changing geology for optimal separation.

**Venturi Mixing Hopper:** Rapidly blend powdered additives without separate mixing vessels.

**API RP 13C Screens & Linear Motors:** Deliver industry-leading reliability and throughput.

**PAIRING THE MG500 WITH YOUR GTD45/45DD OR GTD60/60DD RIG ENSURES YOUR ENTIRE DRILLING SYSTEM IS PROPERLY SIZED AND ENGINEERED FOR MODERN GEOTHERMAL WORK, LEADING TO FEWER INTERRUPTIONS, LONGER COMPONENT LIFE, CLEANER SITES, AND HIGHER PROFITS.**



# OPERATING COST ESTIMATE

Geothermal rig operating costs vary with drilling method, crew, maintenance, and site conditions. This estimate offers a realistic, field-proven benchmark from GTD's North American experience, reflecting typical single- or double-head rig use in mixed ground with air and mud drilling.

## ASSUMPTIONS

ANNUAL OPERATING HOURS	FUEL COSTS	ENGINE	LABOR COSTS
1,000	\$4.50 USD per gallon	Cummins L9, 380 HP	Not included

## ESTIMATED ANNUAL OPERATING COSTS

COST CATEGORY	ESTIMATED ANNUAL COST (USD)	DETAILS
Fuel	\$33,750	7,500 gal/year × \$4.50/gal (Cummins L9, GTD45/GT445DD)
Routine Wear Parts	\$4,000	Year 1/2 Reduced cost due to GTD-supplied service kits
Hydraulic Oil & Filters	\$3,200	Based on 250–500 hr service intervals
Engine Filters & Maintenance	\$1,000	Filters largely covered in initial parts kit
Grease, Oils & Lubricants	\$1,300	Includes head oil, hydraulic oil, engine oil, grease
Unexpected Repairs/Contingency	\$3,000	Conservative, largely dependent on the operator/mishaps
Total Estimated Annual Cost	\$46,250	Exclusive of labor, trucking, or consumables such as mud pump rebuilds

**GTD RIGS ARE DELIVERED WITH EXTENSIVE SPARE PARTS KITS THAT INCLUDE SERVICE FILTERS, CLAMPS, SEALS, AND COMMON WEAR COMPONENTS.**

**THESE COVER THE FIRST 2,000 HOURS OF OPERATION AND SIGNIFICANTLY REDUCE FIRST-YEAR MAINTENANCE COSTS.**





# GT25 RANGER PACKAGE

**PAIR THE GT25 RANGER WITH THE  
VERSATRAN 20T RETRIEVER FOR  
UNMATCHED MOBILITY AND ON-SITE  
PERFORMANCE.**



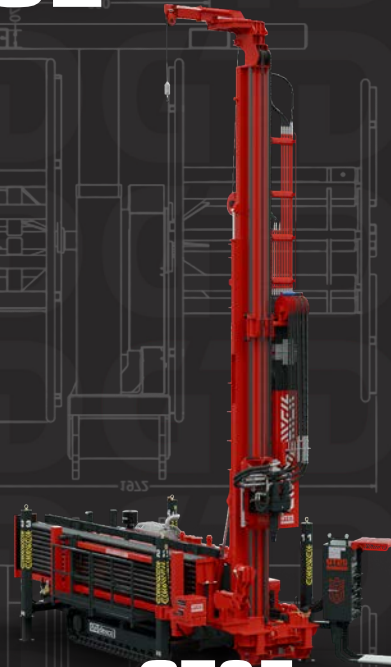
## VERSATRAN 20T RETRIEVER

Facilitates effortless transportation, enabling quick mobilization between sites.



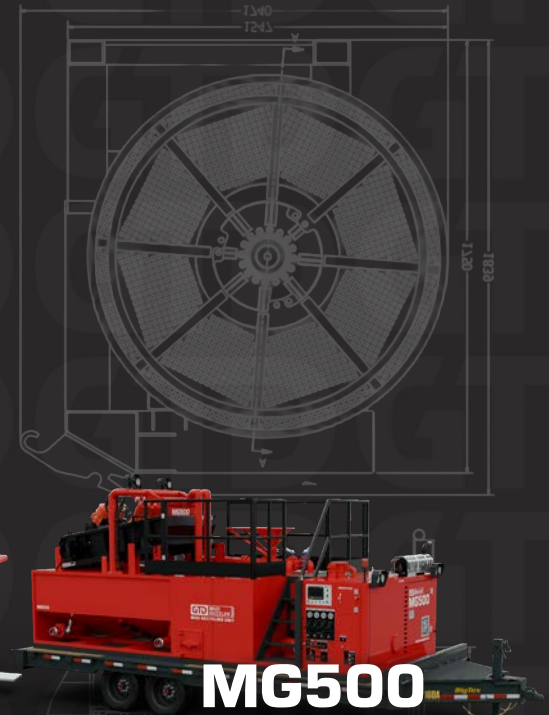
## ATLAS COPCO COMPRESSOR

Delivers high-performance air power tailored to meet diverse drilling requirements.



## GT25 RANGER

A compact, efficient track-mounted rig ideal for residential, and smaller-scale commercial projects.



## MG500 TRAILER

Provides simplified and effective mud management in a compact design.



# MOVE SMARTER. DRILL FASTER. STAY AHEAD.

# RODS & CASING



**PP52 TAPERED FLUSH THREAD DELIVERS MAXIMUM FLOW AND JOINT STRENGTH WITHOUT THE LIMITATIONS OF API DESIGNS, ENSURING FULL HYDRAULIC PERFORMANCE WITH LEAK-FREE CONNECTIONS.**



**PREMIUM FRICTION-WELDED JOINTS WITH EXTENDED, THICK TRANSITION ZONES REDUCE STRESS CONCENTRATIONS AND IMPROVE RESISTANCE TO CYCLIC FATIGUE UNDER HIGH TORQUE.**



**THICK-WALLED 3½" AND 3¾" RODS, ENABLED BY HANDS-FREE 25 FT LENGTH HANDLING, PROVIDE SUPERIOR IMPACT AND ABRASION RESISTANCE, WHILE INDUSTRY-STANDARD KLEMM THREADS CASING ENSURES FAST MAKE-UP, LEAK-TIGHT SEALS, AND FULL ACCESSORY COMPATIBILITY.**







# FULL LIFECYCLE SUPPORT



**RAPID SPARE PARTS  
REPLENISHMENT ACROSS THE  
USA AND CANADA**



**REMOTE DIAGNOSTICS AND  
ALERT CONFIGURATION THROUGH  
GTD'S INTEGRATED DATA SYSTEM**



**ONSITE COMMISSIONING,  
TRAINING, AND INSPECTIONS  
BY GTD NORTH AMERICA  
SERVICE TEAMS**



**MULTIPLE SERVICE HUBS  
AND PARTS STORES IN NEW  
HAMPSHIRE (USA) AND ONTARIO  
(CANADA)**



**COMPREHENSIVE SERVICE KIT  
COVERING THE FIRST 2,000+  
OPERATING HOURS**

**GTD DOESN'T JUST SELL RIGS — WE SUPPORT YOUR FLEET FOR LIFE.** Our North American field teams and global engineering group ensure your rigs stay productive, safe, and efficient year after year.

**GTD'S COMMITMENT TO UPTIME DOESN'T END AT DELIVERY — IT BEGINS.** A well-maintained GTD rig delivers strong ROI, safer operations, and longer service intervals, ensuring expert support is always within reach, **wherever your operation is based.**



## NORTH AMERICAN FIELD TEAM

**OPTIONAL EXTENDED SERVICE  
CONTRACTS WITH SCHEDULED  
MAINTENANCE VISITS**

## GLOBAL ENGINEERING SUPPORT



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# **NORTH AMERICA**



**LOCAL STOCK.  
FAST DELIVERY.  
MINIMAL DOWNTIME.**

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75A BIRCH ROAD  
SWANZEY, NH 03446

**GTD DESCO CANADA**  
57 INGRAM DRIVE  
NORTH YORK, ON M6M 2L7

# INCLUDED IN YOUR PURCHASE



**GTD RIGS ARE DELIVERED AND COMMISSIONED WITH ON-SITE TRAINING INCLUDED, ENSURING YOUR TEAM IS CONFIDENT, CAPABLE, AND READY TO DRILL FROM DAY 1.**

**In-depth factory or field-based training sessions** for experienced teams

**Full PDF operator manuals** supplied with each rig

**Operator certification** if required by contractor or client

**Video tutorials** available for refresher learning

**Technical deep dives** for crew leads, service techs, or engineers

**Optional in-person refresher training**

**ENGINEERED FOR TODAY. DESIGNED FOR TOMORROW.  
GTD RIGS EVOLVE WITH YOU.**

As your rig count grows, we align **parts, support, and training** to keep your fleet running at peak performance

Uniform controls and layouts across models streamline operator training and fleet management.

**New features** driven by **your feedback**

**Lower costs. Faster onboarding.  
Consistent operations.**

Existing clients stay competitive with **retrofit kits, component upgrades, and training refreshers** for older units.





# DATA MONITORING SYSTEM

**TURN YOUR DRILL SITE INTO A SMART, CONNECTED SYSTEM WITH GTD. REAL-TIME DATA AND REMOTE ACCESS KEEP YOUR TEAM INFORMED AND IN CONTROL — REDUCING RISK, BOOSTING PERFORMANCE, AND CUTTING DOWNTIME.**

**Wireless sync** keeps your rig, MG500, and data logger in **constant communication**.

**Stay ahead with alerts** that predict maintenance and **catch anomalies early**.

**Live data** puts speed, torque, and fluid control at **your fingertips**.

**Cloud dashboards** keep your data within reach, **wherever you are**.



## MONITORED PARAMETERS: WHAT YOU CAN SEE

PARAMETER	PURPOSE/ INSIGHT
Rate of Penetration (ROP)	Tracks drilling progress; alerted drop identifies bit wear
Torque	Prevents overloading; flags formation changes or stuck pipe
RPM	Optimizes bit performance and drilling efficiency
Mud Pump Pressure & Flow	Ensures hole cleaning, formation stability, avoids stuck pipe
Mud Volume / Flow Rate	Monitors cement and fluid usage; supports environmental compliance
Hydraulic Oil Temperature	Prevents overheating; aligns with GTD's upgraded cooling systems
Fuel Consumption	Tracks rig efficiency vs. torque/RPM output (dashboards show \$/hr)
Vibration Levels	Identifies emerging mechanical issues before failure
WOB (Weight on Bit)	Refines ROP control; critical for bit and formation optimization
Depth & Drilling Time	Tracks progress; enables per-foot cost/performance KPIs
Mud Solids / Clearance	Monitors MG500 performance; helps adjust solids control automatically
Ambient & Mud Temperature	Useful in thermal drilling; aids in selecting correct fluids
System Diagnostics Log	Includes sensor health, alerts, and error messages

**BUILT FOR  
GEOTHERMAL.  
READY FOR THE FIELD.**

**CONTACT US ON:  
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