

LONE STAR



LONE STAR DRILLS

SHALLOW WATER WELL DRILLING EQUIPMENT



# L O N E S T A R

## Contents

- 04 MECHANICAL RIGS
- 06 HYDRAULIC RIGS
- 08 SINGLE-AXLE TRAILER RIGS
- 12 TANDEM-AXLE TRAILER RIGS
- 16 MUD PUMPS
- 17 HYDRAULIC POWER PACK
- 18 DRILL BITS
- 19 DRILL PIPES
- 20 ACCESSORIES
- 21 DOWN-THE-HOLE HAMMERS
- 21 DRILL ADDITIVES
- 22 DRILL PACKAGES
- 24 CHOOSING THE RIGHT DRILL
- 26 STORIES FROM THE FIELD

# D R I L L S

## History

Harry Westmoreland had a vision and passion for drilling, and for people. He believed clean water saves lives, and with the right drills it's possible to get water to those who need it most.

Westmoreland, who had once searched for black gold, turned his passion and dedication to searching for pure, clean water. He founded Lone Star Bit and began developing water well drills that met the portability and operational challenges that come with drilling in underdeveloped countries.

In 2005, Little Beaver assumed Westmoreland's lofty mission when it acquired the drill rig division of Lone Star Bit. The company's professional engineering staff enhanced Westmoreland's designs and has continued to improve efficiency and usability over the years.

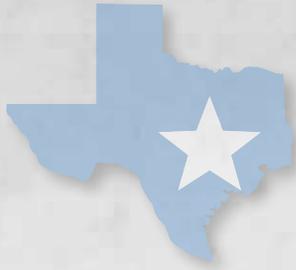
Lone Star Drills is proud to be moving Westmoreland's mission forward, and is proud of its role in meeting the challenges of a global water crisis that impacts billions of people each day.

Our passion for clean water runs deep, and it's not limited by geographical boundaries. We have designed Lone Star Drills for power, portability and to stand up to the most rugged demands so drillers can access some of the most remote locations on earth. They're tough, tried and tested, and we build them so they're ready to drill anywhere, any time.

Quality isn't just in our drills and parts; it's in our people, too. Little Beaver is a family-owned company in Livingston, Texas, built on three generations of drilling expertise. Our team not only has the experience to design and build the best, easiest to use and most reliable drills available, but is also devoted to client service and accurately filling every drill order, large or small.

**We share your mission. Let's Drill.**





## LONE STAR DRILLS

### LS100

Whether new to water well drilling or bringing years of experience, users will quickly get up and running using the LS100 mechanical drill for their clean water mission. The LS100 is simple to operate, portable and compact with a footprint just 12 inches wide and 24 inches long, making it ideal for use in remote locations. It can be used with 1-1/4-inch drill pipe to drill 6-inch boreholes down to 100 feet in sandy and clay soils. In addition to water well drilling, it also can be used for soil sampling, geotechnical testing and auger drilling.

### LS200

Drill deeper through sand, clay and gravel soils with the easy-to-use LS200 mechanical drill. The drill's powerful mud pump and larger drill pipe enable it to drill to depths of 200 feet. At just 12 inches wide and 24 inches long, it fits into a 2,000-pound crate for easy shipping to remote locations. The compact drill also is simple to set up and comes equipped with all of the tools needed to get a clean water mission moving. When applications call for more than water, the drill also can be used for soil sampling, geotechnical testing and auger drilling.

### ENGINE

A 5.5-horsepower Honda gas engine equipped with a 25:1 reduction gearbox for optimal drilling speed powers the LS100 and LS200 mechanical drills. The engine also features a push/pull throttle with fine Vernier control for precise adjustment of the engine speed.

### FEATURES

**QUICK & SIMPLE SETUP.** Get your clean water mission going quickly with all the assembly tools.

**LIGHTWEIGHT.** The drills' compact size and light weight allow for easy maneuverability.

**POWERFUL.** Quickly and efficiently drill up to 200 feet with the 5.5-horsepower mud pump.

**FAST DRILLING.** Quickly power through clay and sandy soil with 5.5-horsepower mud pump.

**ENHANCED DURABILITY.** The heavy-duty welded steel frame stands up to rugged applications.

**SAVE TIME.** Save time when changing drill pipes with the 3-way ball valve that diverts mud flow to the mixer.

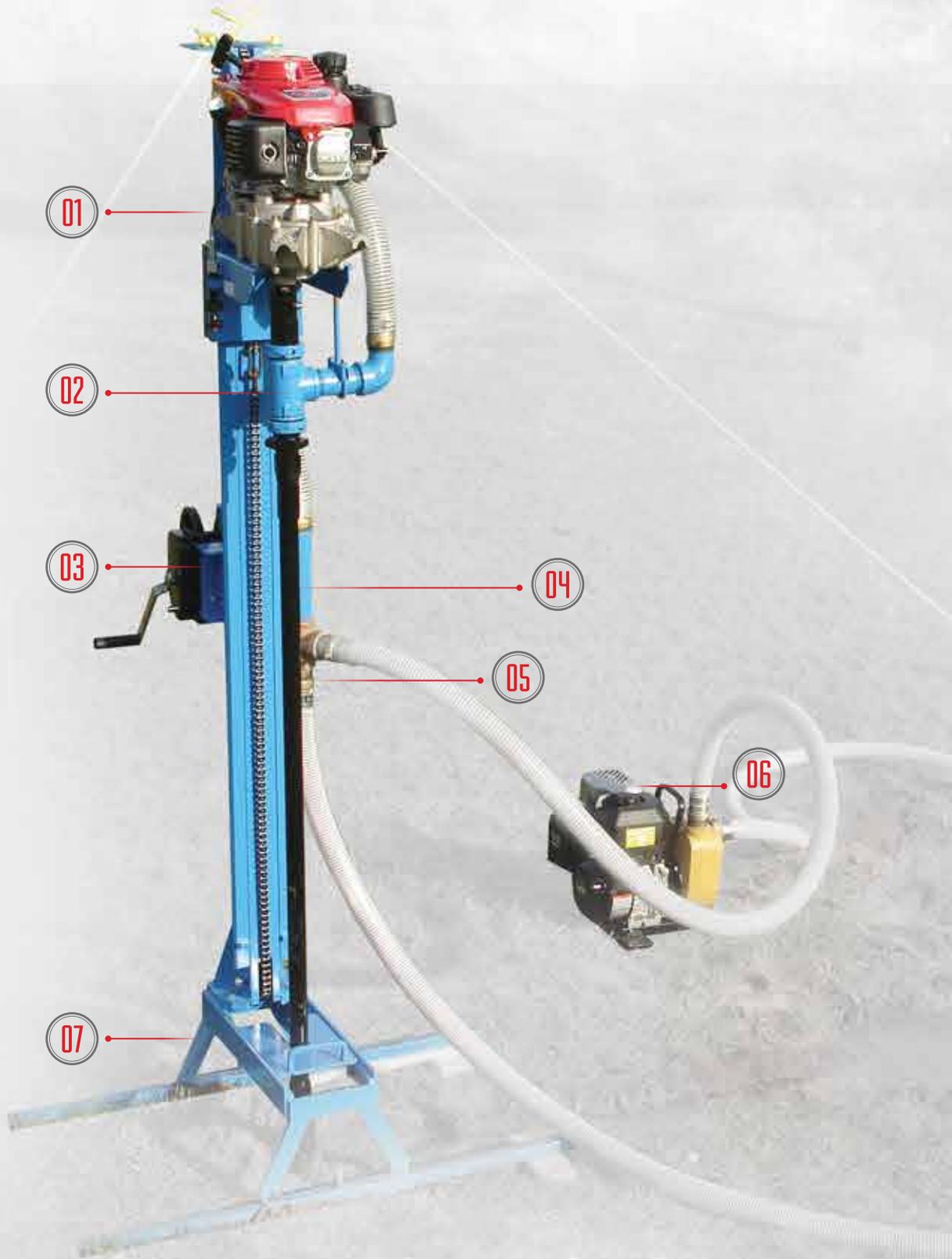
**EASY ACCESS.** Gain fast and easy access to the borehole with a swivel that swings the rotary out of the way.

### OPTIONS

**WHEEL KIT.** Quickly move from one site to the next with the optional wheel kit.

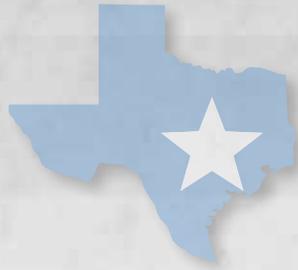
**ANCHOR KIT.** Achieve greater push down force with the anchor kit for faster drilling through tough soils.

**MUD PUMPS.** Drill deeper with 13-horsepower mud pumps.



## LS100 & LS200

- 01 5.5-HP ROTARY
- 02 2-INCH SWIVEL
- 03 3,500-LB. HEAVY-DUTY WINCH
- 04 RUGGED STEEL FRAME
- 05 3-WAY BALL VALVE
- 06 5.5-HP MUD PUMP
- 07 TABLE BASE



## LONE STAR DRILLS

### LS200H & LS200H+

The hydraulic LS200H easily powers through sand, clay, gravel and soft rock formations with 2,500 pounds of push down and pullback force. It's simple to operate, and you'll be able to drill 6-inch boreholes through tough soils to depths of 200 feet. But for the even more challenging soils like medium rock, you'll want the LS200H+ that's just as easy to operate, but features a more powerful hydraulic system to deliver up to 5,000 pounds of pushdown and pullback forces when anchored.

### LS300H & LS300H+

When the mission requires deeper digging, you need the LS300H. With its powerful mud pump and up to 2,500 pounds of pushdown and pullback forces, you'll be able to go deeper faster. In fact, the LS300H effectively and efficiently drills 6-inch boreholes to depths of 300 feet through all types of soil, including sand, clay, gravel and soft rock formations. For even greater power to drill through the toughest soils more quickly and easily, use the LS300H+ that delivers more horsepower and offers 5,000 pounds of pushdown and pullback forces when anchored.

## Hydraulic Systems

Lone Star hydraulic drills can be powered by an 11-horsepower Honda gas engine or a 10-horsepower Yanmar diesel engine with a maximum pressure of 2,500 psi. For deeper drilling or to get through tough soil conditions, the 20-horsepower Honda gas engine provides up to 3,000 psi of maximum pressure. There are also diesel options that deliver the same capabilities. Powered by a 23-horsepower Kohler liquid-cooled diesel engine, these units deliver a rotary speed as fast as 60 rpm at 6 gpm or 95 rpm at 10 gpm.

## FEATURES

**QUICK & SIMPLE SETUP.** Get your clean water mission going quickly with the included assembly tools.

**POWERFUL.** Quickly and efficiently drill to 200 feet with the 8-horsepower mud pump and to 300 feet with the 10- or 13-horsepower mud pump.

**SAVE TIME.** Save time when changing drill pipes with the 3-way ball valve that diverts mud flow to the mixer.

**EASY ACCESS.** Gain fast and easy access to the borehole with a hinged mount that lets you swing the rotary out of the way.

**EFFICIENT.** Hydraulic push down quickly drills through tough soil conditions when used with the anchor kit.

**ENHANCED DURABILITY.** The heavy-duty welded steel frame and reinforced table base stand up to rugged applications.

## OPTIONS

**WHEEL KIT.** Quickly move from one site to the next with the optional wheel kit.

**ANCHOR KIT.** Quickly push through difficult soil conditions with the anchor kit.

**DOWN-THE-HOLE HAMMERS.** Drill through medium to hard rock formations with 2- or 3-inch down-the-hole hammers.

**DRILL COLLARS & TRICONE BITS. (LS200H+ & LS300H+)**  
Power through tough soil condition with drill collars and tricone bits.



# LS200H, LS200H+, LS300H & LS300H+

- 01 RUGGED STEEL FRAME
- 02 D100 TOP DRIVE SWIVEL
- 03 HYDRAULIC POWER UNIT
- 04 CONTROL VALVES
- 05 8-HP GAS MUD PUMP  
13-HP GAS MUD PUMP  
10-HP DIESEL MUD PUMP
- 06 3-WAY BALL VALVE
- 07 TABLE BASE & ANCHOR KIT



# LONE STAR DRILLS

## LST1 & LST1+

### SINGLE-AXLE TRAILER-MOUNTED

Tackle water well drilling in remote locations like central America or the farthest corner of your ranch with Lone Star's LST1 and LST1+ trailer-mounted drill rigs.

Both hydraulic drills are mounted on heavy-duty, lightweight single-axle trailers that can be towed from site to site with an ATV, BUV or truck. The LST1 is compact and lightweight, yet delivers impressive power for drilling 6-inch boreholes to depths of 300 feet in all types of soil, including sand, clay and rock formations. The LST1+ does the same, but boosts power and speed with a higher horsepower engine for the hydraulics. Either unit can be shipped fully assembled or taken apart and palletized for airfreight or ocean transport.

|       | Rotary                               | Mast                               | Power Source   |
|-------|--------------------------------------|------------------------------------|--|
| LST1  | 60 RPM at 6 GPM                      | Pull Back: 5,000 lbs. at 2,500 PSI | 13-HP Honda Gas<br>10-HP Yanmar Diesel               |
|       | 600 lb.-ft. max torque at 2,500 PSI  | Push Down: 5,000 lbs. at 2,500 PSI | 5 gal. Hydraulic Reservoir                           |
| LST1+ | 95 RPM at 10 GPM                     | Pull Back: 5,000 lbs. at 2,500 PSI | 20-HP Honda Gas<br>23-HP Kohler Liquid Cooled Diesel |
|       | 665 ft. lbs. max torque at 2,500 PSI | Push Down: 5,000 lbs. at 2,500 PSI | 5 gal. Hydraulic Reservoir                           |

## FEATURES

**QUICK & SIMPLE SETUP.** Get a clean water mission going quickly with all of the necessary assembly tools.

**POWERFUL.** Quickly and efficiently drill with a Gorman-Rupp mud pump. Gas and diesel power options are available.

**SAVE TIME.** Save time when changing drill pipes with the 3-way ball valve that diverts mud to the mixer.

**EASY ACCESS.** Gain fast and easy access to the borehole with a hinged mount that lets you swing the rotary out of the way.

**ENHANCED DURABILITY.** The heavy-duty welded steel frame and reinforced table base stand up to rugged applications.

**QUICK MANEUVERABILITY.** Move from site to site quickly with the heavy-duty, single-axle trailer.

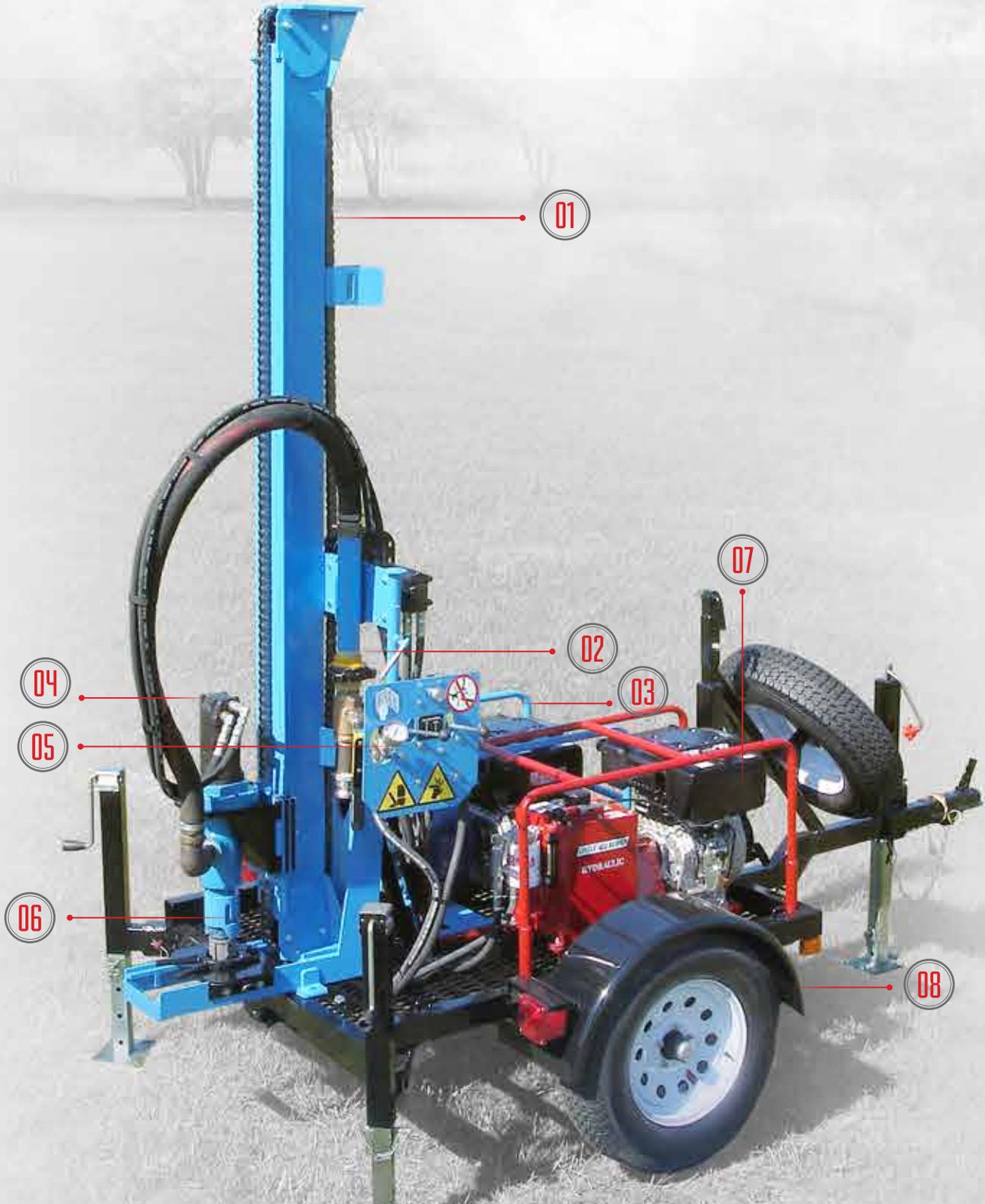
**BREAKOUT SLEEVE.** Eliminate the need for pipe wrenches when pulling pipe with the breakout sleeve.

**ANCHOR KIT.** Quickly push through difficult soil conditions with the anchor kit.

## OPTIONS

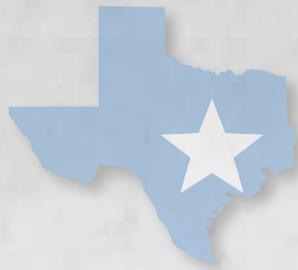
**DRILL COLLARS & TRICONE BITS.** Power through tough soil conditions with drill collars and tricone bits.

**DOWN-THE-HOLE HAMMERS.** Efficiently drill through medium to hard rock formations with down-the-hole hammers.



## LST1 & LST1+

- 01 FOLD-DOWN MAST
- 02 3-WAY BALL VALVE
- 03 13-HP GAS MUD PUMP  
10-HP DIESEL MUD PUMP
- 04 HYDRAULIC ROTARY  
WITH D300 SWIVEL
- 05 CONTROL VALVES
- 06 SWIVEL WITH MANUAL J-LATCH
- 07 HYDRAULIC POWER UNIT
- 08 HEAVY-DUTY, SINGLE-AXLE  
TRAILER



# LONE STAR DRILLS

## LS300T+

### TANDEM-AXLE TRAILER-MOUNTED

The Lone Star LS300T+ fully hydraulic drill rig is available on a rugged tandem axle trailer with pipe racks, drop-leg leveling jacks and a tool box. This rig is capable of drilling a 6-inch borehole up to 300 feet deep in a variety of soils. The complete package includes 300 feet of drill pipe, a mud pump and hoses, 4-inch and 6-inch drag bits and reamers, casing flush tool, bailer and rig tool box. The 6-inch by 3-inch mast tube and #80 roller chain ensure years of dependable operation. The anchor kit allows pushing beyond weight of trailer, allowing effective use of roller cone bits in rock.

### LS300T+

#### Rotary

95 RPM at 10 GPM

665 ft. lbs. max torque  
at 2,500 PSI

#### Mast

Pull Back: 5,000 lbs.  
at 2,500 PSI

Push Down: 5,000 lbs.  
at 2,500 PSI

#### Power Source

20-HP Honda Gas  
23-HP Kohler Liquid Cooled  
Diesel

5 gal. Hydraulic Reservoir

## FEATURES

**QUICK & SIMPLE SETUP.** Get a clean water mission going quickly with all of the necessary assembly tools.

**POWERFUL.** Quickly and efficiently drill to 300 feet with a 10- or 13-horsepower mud pump.

**SAVE TIME.** Save time when changing drill pipes with the 3-way ball valve that diverts mud to the mixer.

**EASY ACCESS.** Gain fast and easy access to the borehole with a hinged mount that lets you swing the rotary out of the way.

**EFFICIENT.** Quickly drill through tough soil conditions with the anchor kit.

**ENHANCED DURABILITY.** The heavy-duty welded steel frame and reinforced table base stand up to rugged applications.

**QUICK MANEUVERABILITY.** Move from site to site quickly with the heavy-duty, tandem-axle trailer.

**COMPACT.** Enjoy the capabilities of a larger drill in a compact rig.

**BREAKOUT SLEEVE.** Eliminate the need for pipe wrenches when pulling pipe with the breakout sleeve.

**ANCHOR KIT.** Achieve 5,000 pounds of push down force with the optional anchor kit.

## OPTIONS

**DRILL COLLARS & ROLLER CONE BITS.** Power through tough soil condition with drill collars and roller cone bits.

**DOWN-THE-HOLE HAMMERS.** Efficiently drill through medium to hard rock formations with down-the-hole hammers.

# LS300T+



- 01 FOLD-DOWN MAST
- 02 3-WAY BALL VALVE
- 03 10- OR 13-HP MUD PUMP
- 04 HYDRAULIC POWER UNIT  
OPTIONS:  
20- TO 25-HP GAS OR DIESEL
- 05 CONTROL VALVES
- 06 J-LATCH SWIVEL & TABLE BASE
- 07 7,000-POUND CAPACITY,  
TANDEM-AXLE TRAILER



# LONE STAR DRILLS

## LS400T+

### TANDEM-AXLE TRAILER-MOUNTED

The LS400T+ is the largest water well drill in the Lone Star line. It boasts a 6-inch borehole with drill depths up to 400 feet. This rig easily adapts to down-the-hole hammer drilling. The drill is shipped fully assembled in a 20-foot container.

### LS400T+

| Rotary                   | Mast                         | Power Source                |
|--------------------------|------------------------------|-----------------------------|
| 0-65 variable RPM        | Max Pull Back:<br>15,000 lbs | 60-HP Perkins diesel engine |
| 2,200 ft. lbs max torque | Max Push Down:<br>9,000 lbs. | 30 gal. Hydraulic Reservoir |

## FEATURES

**QUICK & SIMPLE SETUP.** Get a clean water mission going quickly with all of the necessary assembly tools.

**POWERFUL.** Quickly and efficiently drill to 400 feet with a 60-HP Perkins diesel engine.

**SAVE TIME.** Save time when adding drill pipes with the 3-way ball valve that diverts mud to the mixer.

**EASY ACCESS.** Gain fast and easy access to the borehole with a hinged mount that lets you swing the rotary out of the way.

**EFFICIENT.** Quickly drill through tough soil conditions with the anchor kit.

**ENHANCED DURABILITY.** The heavy-duty welded steel frame and reinforced table base stand up to rugged applications.

**QUICK MANEUVERABILITY.** Move from site to site quickly with the heavy-duty, tandem-axle trailer.

**COMPACT.** Enjoy the capabilities of a larger drill in a compact rig.

## OPTIONS

**ANCHOR KIT.** Power through tough soil condition with drill collars and roller cone bits.

**DOWN-THE-HOLE HAMMERS.** Efficiently drill through medium to hard rock formations with down-the-hole hammers.

**DRILL BITS.** Power through tough soil conditions with optional bits up to 10 in. diameter.

# LS400T+



- 01 FOLD-DOWN MAST
- 02 60-HP PERKINS DIESEL ENGINE
- 03 10- OR 13-HP MUD PUMP
- 04 3-WAY BALL VALVE
- 05 EASY-TO-MAINTAIN SUPER SWIVEL MOUNTS ABOVE THE ROTARY
- 06 RINEER HYDRAULIC ROTARY WITH HYDRAULIC BREAK OUT
- 07 CONTROL VALVES
- 08 PIPE RACK
- 09 12,000-POUND CAPACITY, TANDEM-AXLE TRAILER

# MUD PUMPS

Lone Star Drills offers both gasoline- and diesel-powered mud pumps that provide up to 13-horsepower for achieving deeper depths.

---

## 5.5-HP HONDA

Featuring a 5.5-horsepower Honda engine, the standard gasoline mud pump is available with the LS100 drilling package and provides a maximum flow of 165 GPM. The centrifugal pump includes a 2-inch suction and discharge that produces a maximum head of 100 feet.



## 8-HP HONDA

As an alternative to the 5.5-horsepower Honda gasoline engine, the LS200H and LS200H+ drilling packages are paired with the Flomax mud pump powered by an 8-horsepower Honda gas engine. It provides a maximum flow of 200 GPM and produces a maximum head of 140 feet. This option is also available with the LS100 and LS200.



## 13-HP HONDA GORMAN RUPP

The LS300H, LS300H+ and Trailer-Mounted drilling packages require more horsepower for reaching depths of 300 feet. The 13-horsepower Honda gasoline engine powers the mud pump for a maximum flow of 200 GPM. It has a 2-inch suction and discharge that produces a maximum head of 190 feet.



## 10-HP YANMAR DIESEL GORMAN RUPP

Lone Star Drills also offers a 10-horsepower Yanmar diesel engine for the LS200H, LS200H+, LS300H, LS300H+ and Trailer-Mounted drilling packages. The 10-horsepower Yanmar diesel engine powers the mud pump for a maximum flow of 200 GPM. It has a 2-inch suction and discharge that produces a maximum head of 190 feet.



# STANDARD COMMERCIAL HYDRAULIC POWER SOURCE

COMPATIBLE WITH LS200H+, LS300H+, LST1+ AND LS300T+

Broaden capabilities with a commercial hydraulic power source. It's versatile, stable, easy to use and can power a broad range of hydraulic tools, including breakers, chain saws, concrete saws and tampers. The Power Source can be mounted in the back of a truck or on an optional three-wheeled carriage for hassle-free maneuverability in remote locations. It features an oil cooler with a 10-inch fan and a 5-gallon fuel tank for dependable, all-day operation.



## FEATURES

**POWERFUL OPERATIONS.** Power through the toughest jobs with a high-horsepower hydraulic drive combination that consistently delivers more torque.

**REMARKABLE VERSATILITY.** Connect a Lone Star Drill or other attachment to the Power Source and get the job done easier and faster. Choose from gas or diesel engine options.

**EXCEPTIONAL PORTABILITY.** Gain access to hard-to-reach areas in remote locations with the unit's compact design, swiveling front wheels and easy-to-handle three-wheeled carriage. Or choose the four wheeled carriage for greater maneuverability over rough terrain.

**COOLING SYSTEM.** Run your drill all day long thanks to the oil cooler with a 10-inch fan.

**INCREASED RELIABILITY.** Keep your hydraulic system running clean and free of contaminants with the standard 10-micron return filter.

# DRILL BITS

From sandy soil to hard rock, drilling conditions can vary greatly from site to site. Lone Star Drills offers a variety of bits to keep any drilling mission going smoothly.

## STEP DRAG BITS

Drill pilot holes quickly with three-wing, three-step drag bits that are carbide-faced to cut through soft to medium formations. For opening holes, pair the bits with reamers that are available in several sizes.



### STEP DRAG

| Bit Size | Reamers |
|----------|---------|
| 3        | 5 7/8   |
| 4 1/2    | 7       |
| 5 7/8    | 8       |
| 7        | 9       |
|          | 10      |

## ROLLER CONE BITS

Quickly drill through tough soil and rock with roller cone bits that feature durable tungsten carbide inserts for increased longevity and productivity.



### ROLLER CONE

|       |     |
|-------|-----|
| 3 7/8 | n/a |
| 5 7/8 |     |

## POLYCRYSTALLINE DIAMOND COMPACT (PDC) BITS

PDC bits feature polycrystalline diamond cutters for enhanced durability and superior productivity. The cutters are asymmetrically force balanced to drill precise round holes and reduce bit whirl. The PDC bits are designed to minimize plugging and can achieve high penetration rates even in medium rock formations.



### PDC

|       |     |
|-------|-----|
| 3 7/8 | n/a |
| 5 7/8 |     |

## CLAW BITS

To reduce over-torqueing and stalling in hard clay formations, the claw bit features three fingers that dig in and loosen tough soil. The bit is designed for durability and longevity, and fingers can be replaced once worn.



### CLAW

|       |     |
|-------|-----|
| 3 7/8 | n/a |
| 5 7/8 |     |

# DRILL PIPES

Whether it's 100 or 400 feet, Lone Star Drills offers several diameters of drill pipe that provide fluid or air to the bit to keep it going through all types of soil conditions.

## M50

Drill 6-inch boreholes to depths of 100 feet with using a M50 drill pipe. It has an inside diameter of 1.25 inches and is available in 5-foot sections with straight thread tool joints and breakout lugs. The pipe is compatible with every bit and reamer Lone Star Drills offers.

## M250

M250 drill pipe has an inside diameter of 2 inches and is available in 5-foot sections with straight edge thread tool joints and breakout lugs. The heavier weight of pipe allows users to drill 6-inch boreholes down to 300 feet. It also enables the drills to achieve higher push down and pullback forces.

## M350

M350 drill pipe has flush tool joint connections for more efficient operation when drilling with a 5 or 6-inch DTH hammer. Designed to run pin up, this 3.16 inch OD drill pipe features 2 3/8 IF tool joints with a tapered thread and a breakout section at the pin end. Standard 5-foot lengths (also available in 10-foot sections) come with the drill.

## MAYHEW JR.

Lone Star Drills offers Mayhew Jr. drill pipe that has an inside diameter of 2 inches and is available in 5 foot sections (also available in 2 meter, 7 foot and 10 foot lengths). The pipe has taper thread tool joints and enables the drill to achieve up to 5,000 pounds of push down and pullback force.

|            | Drill   |
|------------|---|
| M50        | LS100   |
| M250       | LS200   |
|            | LS200H  |
|            | LS300H  |
|            | LS200H+   |
|            | LS300H+   |
| M350       | Optional for LS300T+ (5 ft) and LS400T+ (10 ft) |
| Mayhew Jr. | LST1  |
|            | LST1+   |
|            | LS300T+   |
|            | LS400T+   |

# ACCESSORIES & DEVELOPMENT TOOLS

---

## 4-INCH CASING SLIPS

Set 4-inch casings quickly and easily.

## PVC BAILER

We supply a cylindrical PVC Bailer with all of our drilling packages. It is 3 inches in diameter and 40 inches long to effectively capture generous amounts of cuttings or water and take it to the surface.

## HOIST BRACKET ASSEMBLY

Lift drill pipe out of the borehole with less hassle.

## TOOL BOX

Each Lone Star Drill package comes equipped with its own toolbox that contains everything needed for quick adjustments or repairs, including a grease gun, O-rings, pipe joint lubricant and wrenches.

## BAILER TRIPOD ASSEMBLY

Achieve greater stability when raising and lowering the bailer.

## 1/4-INCH HOLLOW BRAID ROPE

Raise and lower the bailer with minimal effort.

## 4-INCH CASING FLUSH TOOL

Use the casing flush tool to quickly clear mud and cuttings from the borehole for clean water.



# DOWN-THE-HOLE HAMMERS

To achieve higher penetration rates in medium to hard rock formations, Lone Star Drills offers several sizes of DTH hammers that operate with a percussive motion for efficient drilling down to 300 feet.

---

## 3-INCH

Use the 3-inch DTH hammer to drill 3-3/4-or 3-7/8-inch boreholes quickly and efficiently. The bit requires just 185 CFM to operate, but can be powered by 375 CFM for more efficient drilling.

## 5-INCH OR 6-INCH

Save time with the 5-Inch or 6-Inch DTH hammer that can be used with 3-1/2-inch drill pipe to drill through overburden and into hard rock. It requires 375-400 CFM and 175 PSI to operate.

# DRILLING ADDITIVES

Lone Star Drills offers several types of drilling fluid additives that are environmentally acceptable and help increase performance and productivity in a variety of applications.

---

## VISCOSIFIERS & POLYMERS

Achieve optimal suspension and transport abilities of drilling fluid with the addition of viscosifiers and polymers. Lone Star Drills offers several varieties for all types of applications and soil conditions.

## FOAMING AGENTS

Use foaming agents to drill more efficiently and create cleaner holes with down-the-hole hammers. The foam can be used with a foam pump to inject foam, or water and foam, into the air stream to quickly and effectively lift cuttings out of the hole. Foaming agents also help minimize dust that can be a health hazard.

## BENTONITE

Bentonite optimizes the flow and filtration of drilling fluids and delivers advanced swelling capabilities with low permeability for sealing wall casings. Lone Star Drills offers several varieties with various size particles to meet diverse drilling conditions.

|                 |         | Drill Rig Only  |  | Drill Pipe & Drag Bits  |  | Mud Pump & Hoses  |  |   |
|-----------------|---------|---|--|---|--|---|--|---|
| Mechanical      | LS100   | M50 Drill Pipe Slip   |  | M50 Drill Pipe / Breakout Lugs (20)   | <ul style="list-style-type: none"> <li>• 3 7/8" 3W STP On M250 Box - Bit (3)</li> <li>• 5 7/8" 3W STP On M250 Box - Bit</li> <li>• 5 7/8" 3W STP On M250 Box - Reamer</li> <li>• 7" 3W STP On M250 Box - Reamer</li> </ul>   | <ul style="list-style-type: none"> <li>• 2" Mud Pump with 5.5-HP Honda</li> <li>• 2" X 5' Down Hole Delivery Hose</li> <li>• 2" X 10' Discharge Hose (2)</li> <li>• 2" X 10' Suction Hose</li> <li>• 2" Mud Mixer Assembly</li> </ul> |  |   |
|                 | LS200   | M250 Drill Pipe Slip  | <ul style="list-style-type: none"> <li>• Reinforced Mast Weldment Assembly</li> <li>• Rotary Power Unit With 2" swivel - 5.5-HP Honda GXV160</li> <li>• Reinforced Table Base</li> <li>• Stabilizer Tubes (2)</li> </ul> | Sub, M50 Box To M250 Pin (Bit Sub) (2)  |  |   |  | M250 Drill Pipe / Breakout Lugs (40)  |
| Hydraulic       | LS200H  | <ul style="list-style-type: none"> <li>• Reinforced Mast Weldment Assembly - 90", Hydraulic, High Torque</li> <li>• Rotary Power Unit With D100 Swivel - Hydraulic, High Torque</li> <li>• 11-HP Honda Gas Hydraulic Power Source – Optional 10-HP Yanmar Diesel</li> </ul> |  | <ul style="list-style-type: none"> <li>• M250 Drill Pipe / Breakout Lugs (40 pcs for LS200H/LS200H+) (60 pcs for LS300H/LS300H+)</li> <li>• 3 7/8" 3W STP On M250 Box - Bit (3)</li> <li>• 5 7/8" 3W STP On M250 Box - Bit</li> <li>• 5 7/8" 3W STP On M250 Box - Reamer</li> <li>• 7" 3W STP On M250 Box - Reamer</li> </ul> |  | 2" Mud Pump with 8-HP Honda or optional 10-HP Yanmar Diesel   | <ul style="list-style-type: none"> <li>• 2" x 5' Down Hole Delivery Hose, Heavy Duty</li> <li>• 2" x 10' Suction Hose</li> <li>• 2" Mud Mixer Assembly</li> </ul>  |   |
|                 | LS300H  | <ul style="list-style-type: none"> <li>• Stabilizer Tubes (2)</li> <li>• Anchor Kit, LS200/LS300</li> <li>• M250 Drill Pipe Slip</li> </ul>   |  |   |  | 2" x 10' Discharge Hose (2)   |  | 13-HP Honda Gorman Rupp Mud Pump  |
|                 | LS200H+ | <ul style="list-style-type: none"> <li>• Reinforced Mast Weldment Assembly - 70", Hydraulic, High Torque</li> <li>• Rotary Power Unit With D100 Swivel - Hydraulic, High Torque</li> <li>• 20-HP Honda Gas Hydraulic Power Source – Optional 23-HP Kohler Diesel</li> </ul> |  |   |  | 2" x 12' Discharge Hose (2), 150 psi (2)  |  | 2" Mud Pump with 8-HP Honda or optional 10-HP Yanmar Diesel                           |
|                 | LS300H+ | <ul style="list-style-type: none"> <li>• Extension Hose Set With QD's, 10.5'</li> <li>• Stabilizer Tubes (2)</li> <li>• Anchor Kit, LS200/LS300</li> <li>• M250 Drill Pipe Slip</li> </ul>  |  |   |  | 2" x 10' Discharge Hose (2)   |  | 13-HP Honda Gorman Rupp Mud Pump or optional 10-HP Yanmar Diesel Gorman Rupp Mud Pump |
| Trailer-Mounted | LS T1   | 11-HP Honda Gas Hydraulic Power Source – Optional 10-HP Yanmar Diesel   | Trailer - Single Axle, 3,500 lb. Capacity  | 6" x 3" Hydraulic Mast Assembly, 100' With Side Mount Valves  | <ul style="list-style-type: none"> <li>• Mayhew Jr. Drill Pipe With Breakout Lugs, 5' Section (40 pcs for LST1, 60 pcs for LS T1 and LS 300T+)</li> <li>• 2 in. Mayhew Jr. Taper Thread Tool Joints, 10' Sections (30 pcs for LS400T+)</li> <li>• Sub, M250 Pin To Mayhew Jr. Box (Bit Sub) (2)</li> <li>• 3 7/8" 3W STP On M250 Box - Bit (3)</li> <li>• 5 7/8" 3W STP On M250 Box - Bit</li> <li>• 5 7/8" 3W STP On M250 Box - Reamer</li> <li>• 7" 3W STP On M250 Box - Reamer</li> </ul> |   | <ul style="list-style-type: none"> <li>• 13-HP Honda gas engine Gorman Rupp Mud Pump</li> <li>• 2" x 6" Down Hole Delivery Hose, Heavy Duty</li> <li>• 2" x 12' Discharge Hose, 150 psi (2)</li> <li>• 2" x 10' Suction Hose</li> <li>• 2" Mud Mixer Assembly</li> </ul> |   |
|                 | LS T1+  | 20-HP Honda Gas Hydraulic Power Source – Optional 10-HP Yanmar Diesel   | Trailer - Single Axle, 3,500 lb. Capacity  | Rotary Power Unit With J-Latch Swivel - Hydraulic, High Torque  |  |   |  |   |
|                 | LS300T+ |   | Trailer - Tandem Axle, 7,000 lb. Capacity  | Anchor Kit, LS Trailer  |  |   |  |   |
|                 | LS400T+ | 60-HP Perkins Diesel with 22 gal. Fuel Capacity   | Trailer - Tandem Axle, 12,000 lb. Capacity   | Hydraulic Drill Pipe Breakout   |  |   |  |   |

|                 |         | Accessories & Development Tools   |  | Recommended Tools & Miscellaneous Accessories  |  | Diesel Options  |  | Crating (L x W x H)   |                            |
|-----------------|---------|---|--|--|--|---|--|---|----------------------------|
| Mechanical      | LS100   | <ul style="list-style-type: none"> <li>• M50 Bailer Tripod Assembly</li> <li>• 4" Casing Flush Tool With M50 Box</li> <li>• 3/8" x 100' Hollow Braid Rope</li> </ul>  | 4" Casing Slips<br>3" x 40" PVC Bailer | LS100 - Rig Tool Box - Gas<br>12" C Spanner Pipe Tool (2)  | <ul style="list-style-type: none"> <li>• 18" Hex Wrench</li> <li>• 18" Pipe Wrench, Rigid</li> <li>• 24" Pipe Wrench, Rigid</li> <li>• Pipe Joint Compound</li> <li>• Safety Hat (4)</li> </ul>  | N/A   |  | 1,000 lbs. 91" x 24" x 29"  |                            |
|                 | LS200   | <ul style="list-style-type: none"> <li>• Hoist Bracket Assembly</li> <li>• M250 Hoist Plug Assembly</li> <li>• M250 Bailer Tripod Assembly</li> <li>• 4" Casing Flush Tool With M250 Box</li> <li>• 3/8" x 200' Hollow Braid Rope</li> </ul>  |  | LS200 - Rig Tool Box - Gas<br>LS200 Rig Information Package  |  |   |  | 1,900 lbs. 91" x 36" x 29"  |                            |
| Hydraulic       | LS200H  | <ul style="list-style-type: none"> <li>• Hoist Bracket Assembly</li> <li>• M250 Hoist Plug Assembly</li> <li>• 4" Casing Slips</li> <li>• 3" x 40" PVC Bailer</li> <li>• M250 Bailer Tripod Assembly</li> <li>• 4" Casing Flush Tool With M250 Box</li> <li>• 3/8" x 200" Hollow Braid Rope</li> </ul>                            |  | LS200H Hydraulic Rig Spare Parts - Gas   | <ul style="list-style-type: none"> <li>• LS200H/LS300 - Rig Tool Box - Hydraulic</li> <li>• 18" Pipe Wrench, Rigid</li> <li>• 24" Pipe Wrench, Rigid</li> <li>• Pipe Joint Compound</li> <li>• Safety Hat (4)</li> <li>• LS200 Rig Information</li> <li>• Package</li> </ul> | 10 HP Diesel Flomax 2" Mud Pump<br>LS200 Hydraulic Rig Spare Parts - Diesel<br>10-HP Yanmar Diesel Hydraulic Power Source |  | 370 lbs. 60" x 24" x 29"  |                            |
|                 | LS300H  |   |  | LS300H Hydraulic Rig Spare Parts - Gas   |  |   |  | 10-HP Diesel Gorman Rupp Mud Pump<br>LS300 Hydraulic Rig Spare Parts - Diesel         | 1,100 lbs. 82" x 30" x 36" |
|                 | LS200H+ |   |  | LS200H+ Hydraulic Rig Spare Parts - Gas  |  |   |  | 10 HP Diesel Flomax 2" Mud Pump<br>LS200H+ Hydraulic Rig Spare Parts - Diesel         | 570 lbs. 60" x 24" x 29"   |
|                 | LS300H+ |   |  | LS300H+ Hydraulic Rig Spare Parts - Gas  |  |   |  | 10-HP Diesel Gorman Rupp Mud Pump<br>LS300 Hydraulic Rig Spare Parts - Diesel         | 1,300 lbs. 82" x 30" x 36" |
| Trailer-Mounted | LS T1   | <ul style="list-style-type: none"> <li>• Hoist Bracket Assembly</li> <li>• Mayhew Jr Hoist Plug Assembly</li> <li>• 4" Casing Slips</li> <li>• 3" x 40" PVC Bailer</li> <li>• Bailer Tripod Assembly With 1 1/4" Pipe Legs</li> <li>• 4" Casing Flush Tool With Mayhew Jr Box</li> <li>• 3/8" x 300' Hollow Braid Rope</li> </ul> |  | <ul style="list-style-type: none"> <li>• LS300H - Rig Tool Box - Hydraulic, Trailer Rig</li> <li>• LS300H Trailer Rig Spare Parts - Gas</li> <li>• Camlock Hose Couplings, Rig Set</li> <li>• 18" Pipe Wrench, Rigid</li> <li>• 24" Pipe Wrench, Rigid</li> <li>• Pipe Joint Compound</li> <li>• Safety Hat (4)</li> <li>• LS200 Rig Information Package</li> <li>• LS400T+ Rig Information Package</li> </ul> | Yanmar Diesel Hydraulic Power Source (L100N), Skid Frame<br>23-HP Kohler Liquid-Cooled Diesel Hydraulic Power Source<br>23-HP Kohler Liquid-Cooled Diesel Hydraulic Power Source   | 10-HP Yanmar Diesel Gorman Rupp Mud Pump<br>LS300 Trailer Rig Spare Parts - Diesel  |  | 1,900 lbs. 64" x 36" x 24"<br>1,750 lbs. 74" x 74" x 47"<br>725 lbs. 108" x 23" x 36" |                            |
|                 | LS T1+  |   |  | 1,900 lbs. 64" x 36" x 24"<br>1,750 lbs. 74" x 74" x 47"<br>725 lbs. 108" x 23" x 36"  |  |   |  |   |                            |
|                 | LS300T+ |   |  | 4,750 lbs. 190"x82"x70"<br>20' Shipping Container  |  |   |  |   |                            |
|                 | LS400T+ |   |  | 7,800 lbs. 241"x84.2"x93"<br>20' Shipping Container  |  |   |  |   |                            |

# CHOOSING THE RIGHT DRILL

Fulfill the mission with Lone Star Drills and provide access to clean water for those who need it most. Water well drilling is a full-fledged process that, to be done efficiently and correctly, requires much more than just a drill. That's why we recommend the proactive approach and going through this list to make sure you're getting everything you need to get the job done.

## CONSIDER THE DRILLING LOCATION

People all over the world need wells drilled, but their location can affect accessibility and resources to keep the project going. Be sure to consider these location factors prior to selecting a drill.

**TERRAIN:** Accessible by truck or trailer or by foot only

**SOIL CONDITIONS:** Sand, clay, medium to hard rock formations

**LOCAL RESOURCES:** Nearest store, town or place to get supplies



## DRILLING VERSATILITY

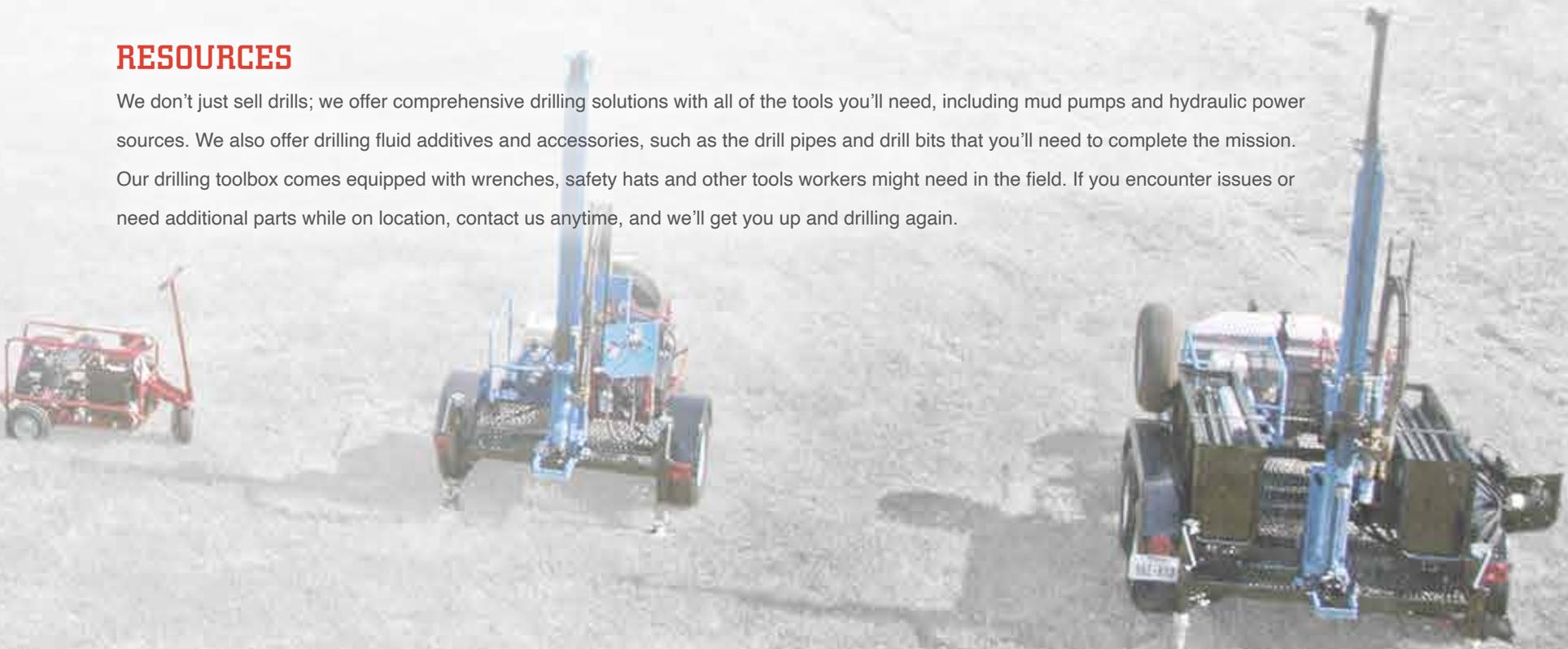
Once you know the characteristics of the location, you'll want to choose a drill that meets those needs. Lone Star Drills can achieve a range of drilling depths with a variety of bits to tackle the toughest conditions. Plus, they're portable enough to haul on utility vehicles or trailers, and some are light enough to carry to the drilling site. Whether you are drilling a water well in a remote village in central america or a cattle well in the south forty, Lone Star Drills can help.

## TRAINING

Learning how to operate the drill prior to arriving at the drilling location is essential. We offer a familiarization session at our factory to make sure you and your organization are comfortable with your new drill. Equip International offers training with LS100 drills. For instant training whenever and wherever, we offer LS100 and LST1+ training videos on the Lone Star Drills YouTube Channel.

## RESOURCES

We don't just sell drills; we offer comprehensive drilling solutions with all of the tools you'll need, including mud pumps and hydraulic power sources. We also offer drilling fluid additives and accessories, such as the drill pipes and drill bits that you'll need to complete the mission. Our drilling toolbox comes equipped with wrenches, safety hats and other tools workers might need in the field. If you encounter issues or need additional parts while on location, contact us anytime, and we'll get you up and drilling again.



# STORIES FROM THE FIELD

It's hard to imagine what life would be like without access to readily available water. But Lone Star Drills knows that's a harsh reality for thousands of people worldwide. Lone Star Drills recognizes that it takes more than the drill to make a water well project a success. It takes people too. Mission trips are a key to bringing clean water to those in need.

---



Using rigs from Lone Star Drills, volunteers have drilled more than 1,200 water wells in El Salvador, Guatemala, Honduras and Nicaragua.

**NICARAGUA** ●

**ECUADOR** ●

Lone Star Drills have been essential in bringing much-needed clean water to Central American villages in a timely manner.



1 in 10 PEOPLE



lack access to safe water



Joe Qua Qua, head driller, has nine years of experience operating the LS100 by Lone Star Drills. He and his team are drilling a well for a village near the Bensonville Highway in Liberia.

● LIBERIA

● TANZANIA





2009 South Houston Ave • Livingston TX 77351 ■ 800.227.7515 ■ [www.lonestardrills.com](http://www.lonestardrills.com)

Lone Star Drills are manufactured by Little Beaver, Inc.