

About Us

DELIVERING RESULTS, RELIABILITY AND **ROCK SOLID DEPENDABILITY**

We are your one-stop shop for all your drilling project needs. Keystone Drill Services, Inc. has over a century of drilling expertise! Our reputation and experience has allowed us to represent the best manufacturers of drilling products in the world! Due to the large diversity of suppliers, we are able to respond to any drill related problem with unprecedented efficiency. In addition, we manufacture our own custom engineered products. From complete machine purchases to supplying the smallest part to keep you drilling, you will find experienced staff in each department willing and able to help.

Our customers rely on Keystone to assist them with selecting the right products/services for a specific application. Our Sales, Service, Parts and Rental Divisions are made up of highly skilled and knowledgeable employees with years of experience and expertise. Our employees work together to provide you with the best possible service. We are available today to assist you in reaching your project goals.

If you have any questions, just call us toll free at 800-221-0586. We look forward to serving you!

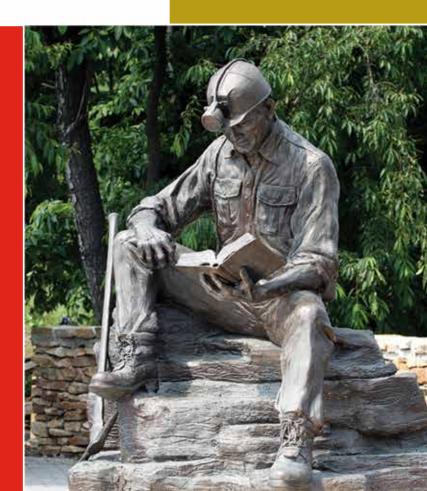


Industries we serve:

- Oil & Gas
- Foundation / Construction
- Transmission & Distribution
- Utility & HDD
- Water Well & Exploration
- Blast Hole
- Ground Engineering
- Horizontal Boring
- Directional Drilling
- Mining & Aggregate
- Tunnel & Underground
- Specialty
- Flevator Shaft
- Pipeline (Dewatering)

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Rebuilds

BOOSTERS, COMPRESSORS and AIR ENDS Ingersoll Rands



Booster Rebuild

- Reman Caterpillar engine
- Rebuild air end
- New RJ Link gearbox and drive coupling
- Convert to direct drive
- New operation panel
- Replace pressure relief valves
- Replace stage valves
- Replace all hoses and wire harnesses
- High pressure coolers retubed and tested
- Recertify bottles
- Radiator and compressor air cooler sent out for testing
- Sandblast all framework
- Customer color match paint

Air End Rebuild

- Air end disassembled
- Tolerances measured and checked
- Parts cleaned and inspected
- New drive coupling
- Updates to parts made
- Magnetic particle testing of housings
- Replace all seals, gaskets, bearings and o-rings
- Assemble to factory specifications
- Prime and paint





Before







After

Compressor Rebuild

- Unit removed from skid and fully disassembled to bare frame
- Frame sandblasted, primed and painted
- Air end housings magnetic particle inspected (magna-flux) for cracks
- Remanufactured air end using replacement parts (rebuilt in-house)
- New ASME safety relief valve
- New compressor oil thermostat and oil stop valve rebuilt
- New drive coupling
- Caterpillar factory remanufactured, Tier 3, ACERT engine installed
- Rebuilt cooling fan drive assembly with extended lube connection
- New engine radiator and cooling fan
- Heat exchangers flushed and inspected
- New literature pack provided (parts, O&M, engine & electronics manuals)
- Unit tested to same standards as new unit (test report provided with unit)
- Rigorous pre-ship inspection



Rebuilds

RIGS

All makes and models





Other Rebuilt Components:

- Rotary heads
- Compressors
- Hydraulic pumps
- Motors
- Valves
- Cylinders
- Gearboxes
- In and out box
- Water injection pumps
- Lubricators









Rebuilds

HAMMERS, BITS and DRIFTERS

In House Hammer Inspection Service:

• Repairs to all major manufacturers, models, sizes

TEYSTONE DRILL SERVICES

- Cleaning
- Inspection
- Measurement

Test firing



Disassembly





Measuring

Test Firing





In House Bit Repair Service:

- Repairs to all major manufacturers, models, sizes
- Individual broken carbide replacement
- Robotic arm dressing of worn carbide
- Total bit face reconstruction
- Recycling of diamond carbide



Top Hammer
Drifter Rebuilds
All makes and models



Rentals

KDS MAKES RENTING EASY

Keystone Drill Services, Inc. offers a wide variety of rental equipment for all types of drilling industries at prices that fit your budget. Give us a call today for current inventory and availability.

- Late model/low hour equipment
- Complete jobsite packages
- Rent-to-own programs available

Air compressors
Drill rigs
Cluster drills
Cluster drill components
Air support modules
Lubricators
Manifolds
Downhole hammers

















Cluster Drills

KEYSTONE HP



MAKES THE **KEYSTONE HP** SUPERIOR FOR LARGE HOLE APPLICATIONS



Kelly Box

Change bits in the field

- Patented quick change technology allows bits to be replaced in the field



HP-RC REVERSE CIRCULATION

DESIGNED AND MANUFACTURED BY KEYSTONE DRILL

FOR THE FASTEST, MOST EFFICIENT WAY TO DRILL



Features

- Continuous rotation drilling
- No need to trip out of the hole
- Fastest, most efficient way to drill
- Specifically designed canister to route cuttings through tubes into interchange
- Requires RC interchange, pipe and swivel
- Complete containment and control of cuttings
- Perfect for flooded holes
- Use a conventional cluster drill in a reverse circulation application
- Add reverse circulation interchange/crossover
- Add sealing plate to direct cuttings into interchange
- All the benefits of RC without a specialized canister



Cluster Drills

COMPONENTS





Percussion Core Barrel

- Reduce number of compressors, bits and hammers to drill hole Example: 48" core barrel (3) bits/hammers
 - 48" cluster drill (7) bits/hammers
- 3 1/2' drilling depth until stub removal (greater depths are possible upon request)
- Integrated "ratchet" air inlet
- 10" wide kerf (48" core barrel leaves 28" stub)
- Same low height as traditional cluster drill
- Reduced overall weight
- Reduced overall weight on bit requirement
- Reduced operating torque
- Custom sizes available

Cluster Pole Drill

- Continuous rotation swivel drilling
- Mark VI, side inlet swivel included (4" NPT inlet)
- 4,700 lbs fully loaded (24")
- Approximately 9 1/2' tall
- Available in 24", 30" and 36" diameters
- Adapter to weld hex connection or kelly box (Keystone or customer supplied)
- 6' standard drilling depth
- Add custom pipe strings to increase drilling depth to your specification





Cluster Reamer

- Drill large diameter holes with less bits/hammers and air compressors
- Sizes up to 144" (consult factory for larger requirements)
- Cluster reamers have a guide ring designed to follow a smaller pilot hole
- Divide hole drilling into progressive steps with the same bits, hammers, and air requirements
- Cluster reamers are also available in reverse circulation canisters

Air Drilling

SUPPORT PRODUCTS





COMBINATION OF AIR MANIFOLD, LUBRICATOR AND WATER INJECTION ON A SINGLE PLATFORM

- Heavy duty frame with forklift pockets
- Single point lift
- Move all your accessories in one trip
- Eliminates 4" hose between manifolds and lubricator

NEW

Bluetooth Discharge Valve Operation

- Keystone Android app for operator control
- Manual bypass controls
- Modulating discharge valve (manual or remote)
- Bluetooth operations from over 150 feet away
- Emergency-close feature closes the discharge valve within 5 seconds (manual and remote)





5-Inlet Air Manifiold

- (5) 3" inlets with valves, (1) 4" outlet valve
- Can add a 6th inlet if required
- Reconfigurable for either a 6" outlet or 2" inlets
- Forklift pockets
- 600 psi relief valve (full flow)
- ASME Certified pressure vessel (National Board registered)



5-21 GPM Water Injection

- Silica dust control
- 8.4 hp Honda engine with electric start
- Flow/pressure control valve
- 500 psi relief valve



Lubricator

- Venturi style (no moving parts)
- Needle valve to adjust flow
- ASME Certified pressure vessel (National Board registered)
- 1000 psi relief valve
- 7, 17 & 33 Gallon 1000 psi
- Fits any drill rig
- Fill while you drill



SCORPION BREAK-OUT/ MAKE-UP DEVICE

- 80051 Model (2 3/8″- 11″ Working Range)
- 2000LRT Model (11" - 30" Working Range)



Compressors

BUILT TO HANDLE THE MOST DEMANDING APPLICATIONS

DOOSAN

Air Compressors

400 CFM/200 PSI 1170 CFM/350 PSI 1600 CFM/150 PSI 1170 CFM/365 PSI 750 CFM/350 PSI 1250 CFM/350 PSI

- Fuel efficient diesel engine/Tier 3 and Tier 4F
- Low & high pressure modules
- Mist pump 1600 PSI or 2100 PSI
- New compressor packages
- Custom built compressor packages
- Natural gas powered compressors
- Electric packages
- Foam unit packages
- Doosan factory remanufactured units
- Heavy duty oil field skid mounted
- Frame mounted
- Portable
- Two stage rotary screw
- Whisperized and non-whisperized
- Air cooled aftercooler

Also available:

- 24/7 service
- Compressor repairs
- Compressor overhaul
- Compressor parts
- Maintenance parts
- Compressor oil
- Training
- Startup supervision

- Air end rebuilds
- Aftercooler packages
- Precooler packages
- Filter packs
- Dryers
- Air hose

Authorized Caterpillar Level 2 ISD Dealer

for Warranty, Service and Maintenance



Air Ends

Air ends in stock:

- 900/350
- 1070/350
- 1170/350
- 1250/350











Epiroc ROC T15

Productivity in a Small Package

- Large boom coverage makes the rig suitable for a variety of construction applications
- Advanced rock drill design for great free air delivery capacity
- Excellent tramming stability for go-anywhere accessibility
- **Hole range** 29/32 in 1 ¾ in (23 45 mm)

Epiroc SmartROC T45

Smart and Precise Efficiency

- Uses up to 50% less fuel
- Increase productivity with hole navigation system technology
- Lower total cost of ownership
- Reduced carbon footprint with an annual savings of up to 260 tons of CO2
- 50% less hoses and 70% less couplings
- Easier to maintain
- Fixed or folding boom that works effectively in the toughest terrain
- Smaller environmental footprint
- Small rig design perfect for quarry and construction operations
- RCS technology increases safety and simplifies operations

Also available:

- Drill steel
- Stabilizers
- Subs
- Floating subs
- Adapters
- Drilling fluid

Epiroc SmartROC T35

World Champion of Fuel Efficiency

- Most fuel efficient drill rig in the world
- Entire system designed to minimize energy losses
- Integrated advanced technology with operator ease of use and safety
- 50% less hoses and 70% less couplings compared to similar rigs on market
- **Hole range** 2.5 in 4.5 in (64 115 mm) with T38, T45, or T51 rod



NEW AND USED MODELS AVAILABLE!

RENTALS AVAILABLE



Epiroc PowerROC D60 & D65

A Total Drilling Solution You Can Trust

- Productivity and flexibility beyond conventional mining and quarry drill rigs
- Maximizes your productivity and efficiency due to optimum DTH performance
- Enlarges your utilization thanks to greater flexibility and multitask capability
- Proven and rugged design ensures you get the job done
- Versatile and flexible for fast return of investment
- Cab designed for operator comfort
- **D60 hole range** 4 5/16 in 7 in (110 178 mm)
- **D65 hole range** 4 5/16 in 8 in (110 203 mm)



Epiroc SmartROC D60 & D65

The Mining Mastermind

- Leading edge automation technology
- Supports your ambitions in the total mining process
- Minimizes non-drilling time and improves precision
- Boosts operator productivity
- Consistent drilling control
- Minimizes consumable wear and the potential for breakdowns
- Fully automated drilling process
- Self-diagnostic capabilities

NEW AND USED MODELS AVAILABLE!

RENTALS AVAILABLE



Epiroc DM30 II



- A spacious one piece FOPS (Falling Object Protective Structure) rated cab
 with electric over hydraulic controls that are common with the DM series
 makes it easy to operate, especially for drillers who have experience in
 other DM series machines.
- The DM30 II is designed for mining and the structural components will hold up to the heavy duty cycles required in a mining drill.
- For single pass applications the DM30 II can achieve a clean hole depth of 7.9m (26 ft) and for multi pass depth can achieve depths of up to 44.5m (146 ft).
- The DM30 II compact design allows for easy transport between benches or even between mine properties.

Pulldown: 30,000 lbf (133 kN) **Rotation:** 5,400 ft-lb (7,321 N-m)

Air: 900 - 1050 cfm @ 110 psi • 900 - 1050 cfm @ 350 psi **Drill Pipe Size:** 30 ft / (9.1 m) x 4.5 in to 5.5 in / (114 to 140 mm)

Depth: 148 ft (45.1 m)

Hole Diameter: 5.5 in - 7-7/8 in (140 mm - 200 mm)



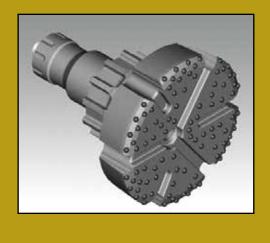








Downhole Drill Bits (37/8" - 48")



PDC Drill Bits (3" - 17 1/2")





Roller Cone Drill Bits

HDD Drill Bits



Klaw Drill Bits



Top Hammer Quarry/ Underground Drill Bits (1 1/2" - 6")



* MITSUBISHI MATERIALS U.S.A.



Brunner &Lay



New Drill Bits featuring:

- Diamond enhanced carbide
- Reclaimed diamond
- Dyanite carbide
- Standard carbide

Also available:

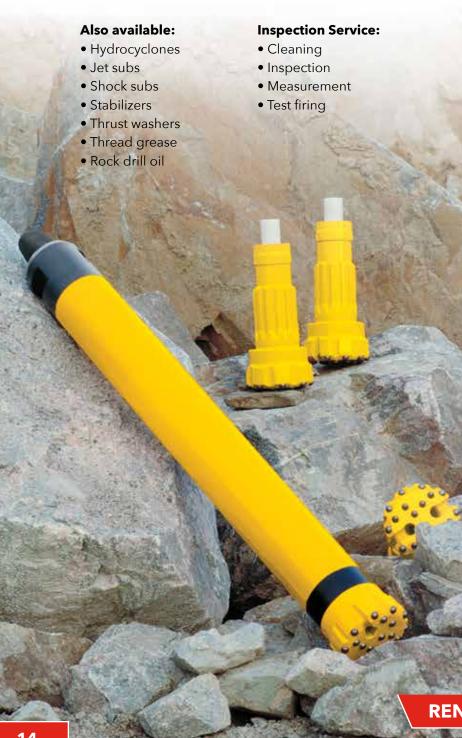
- Specialty drill bits
- Bit retrieval system
- Fishing tools
- Blow tubes
- Drive pins
- Pick teeth
- In house bit repair service







Choosing the right hammer is largely determined by the hole size and the type of rock formation. Our experienced sales personnel will guide you to the best solution for your application.



Featuring Secoroc:

Model/Hole Size Range

- COP (2 3/4" 7")
- COP Gold (4 5/16" 7")
- QL (4 5/16" 12")
- QLX (3 9/16" 6 1/2") and (9 7/8" 11")
- TD (7 7/8" 12")

Secoroc COP/COP Gold/QL hammers:

- Reliability
- Longevity
- Shallow water well drilling
- Production drilling in quarries
- Blasthole drilling

Secoroc QLX hammer:

- Deephole drilling
- Proven superior performance
- Adaptability to different air requirements

Secoroc TD hammer:

- Maximum productivity
- Better penetration rate
- Deephole drilling

RENTALS AVAILABLE

Mincon PRODUCTS



Mincon Group PLC was founded in 1977 in Shannon, Ireland. Mincon manufactures and distributes a range of precision engineered hard rock drilling tools for a variety of industries including Mining, Exploration, Waterwell, Geothermal, Construction, Horizontal Directional Drilling, Oil-Gas and Energy.

- DTH hammers
- Rotary products
- DTH drill bits
- Drilling fluids
- RC Hammers
- Casing advance systems







Large Diameter

DOWNHOLE DRILLS



We have a variety of solutions that are ideal for large hole foundation/construction projects as well as utility and pole hole projects. These flexible hammers can be used in piling, footings, piers, caissons and oil & gas operations.

QL300 Hammer with 48" Bit



The Original Utility Pole Drill with 22" Bit

Also available:

Hydrocyclones

Inspection Service:

Cleaning



Featuring Secoroc:

Model/Hole Size Range

- PPD 120 Pole Drill (12" 24")
- QL120 (12 1/4" 24")
- QL200 (17 1/2" 36")
- QL300 (30" 48")

PPD 120

- Improved power
- 50% Increased penetration over DHD-112

QL120/QL200

- Unmatched reliability
- Symmetrix compatible
- Hydrocyclones
- Retrieval systems

QL300

- Proven technology
- No exhaust tubes in the bits
- Symmetrix compatible

Quecreek Mine Rescue 9 for 9



July 24 - 28, 2002

Actual QL200 downhole drill and 26" drill bit that drilled 129' down into the mine. On display at Quecreek Mine Rescue Foundation.

Symmetrix & Elemex

OVERBURDEN DRILLING SYSTEMS



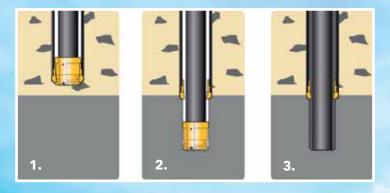
The new Elemex system is designed to minimize the air escape to the surrounding soil preventing overdrilling and damages to nearby structures.





Symmetrix product range is made to cover all drilling applications and has various solutions to suit different requirements.

- Permanent casing
- Retrievable casing
- Horizontal applications
- Drill through casing for rock sockets



System with drill through pilot bit

- 1. Casing is installed until seated into bedrock.
- 2. Drill through pilot bit is unlocked from ring bit and after that pilot bit drills a rock socket. Drill string is pulled out from the hole.
- 3. Reinforcement element is installed and concrete poured into the hole.

Permanent, retrievable and drill through solutions



THE CASINGTUBE

Depending on the use, it can be left down in the hole or retrieved. Both Symmetrix and Elemex systems offer the retrievable and permanent alternatives.



This is the cutting part of the drill string. The pilot is attached to any common DTH hammer shank or top hammer rod. Available in sizes from 76 mm to 1200 mm in diameter.



The role of the casing shoe is to transfer part of the impact to the casing tube. It is welded to the casing tube.



The separate ring bit is used to drill the void for the easing to advance down the hole.

THE RING BIT SET

It consists of the easing shoe and the ring bit that are attached together. It drills the void for the easing to advance down the hole.





- Safe
- Economical
- Precise
- Productive
- Simple design





Keystone Wing Bit & Drill King





Keystone Wing Bit

- Nothing left in the hole
- No reverse rotation needed! Bit wings retract inside the casing eliminating unscrewing problems
- Faster penetration rates large bit face area for transferring blow energy
- Rapid penetration/minimum drilling time bit used at full operating pressure of hammer
- Simultaneously drill and case wings extend out further than OD when bit reaches bottom
- Peak performance overburden and solid rock formations









Drill King





DK Casing Advance System

- The most efficient way of carrying casing down the hole
- Made of premium U.S. Steel for strength and durability
- Innovative, simple, yet proven design
- Available for most hammer shanks
- Superior technology for outstanding performance

DK SPLIT-RING Casing Advance System

The newest split-ring version of DK Casing Advance System means increased productivity, longer life, and straighter holes.

Casing 26.0" Diameter .50" Thick Wall





Casing Shoe 26.0" Diameter

Ring Bit 27.0" Head Diameter





Casing Size (in)	Casing Diameter (in)		Ring Bit Diameter (in)		Hammer Shanks
	OD	ID	OD	ID	
26	26	25	27	21.38	QL200

^{*}Above information per schedule 40 drill pipe. Pilot bit, ring bit and casing shoe assembly customizable to driller's specifications.

Everdigm



Rocky Hammer

Everdigm Rocky Hammer is a general purpose hammer suitable at a wide range of air pressures. The hammer has fewer parts than other hammers, thus allowing for easy maintenance and servicing.

Features and Benefits

- UPPER CHAMBER: Optimized cylinder chamber providing maximum hammer stroke and high impact power.
- PISTON DESIGN: Robust, simple piston design for strength and performance.
- DOWN CHAMBER: Efficient chamber volumes and cycle timing to give optimized performance.
- CHUCK: Intermediate frequency induction heating offering extra protection against wear and fatigue.
- BIT: Quality forged material providing outstanding performance and durability.

Durawing

DURAWING is a concentric overburden system designed for casing installation drilling range of 4" to 32" diameter hole, specialized through various formations into bedrock.

The wings are enclosed in the pocket area making it the most professional & efficient system in the market as it is free from clogging in loose overburden material while it goes down to bedrock. When the drilling starts, wing bits come out with unique cam sliding mechanism. The key feature of DURAWING is the self-actuating wing bit system that is reliable regardless of unpredictable ground conditions.

Features and Benefits

- Unique sliding mechanism leads to absolute workability
- Simple parts replacement
- Low running cost
- Same performance in horizontal drilling
- Prevent jamming with internal air exhaust







Oil Field

BOOSTERS and COMPRESSORS

- New Booster Packages
- Gardner Denver Single & Two Stage Packages
- Ariel Single & Two Stage Packages
- Diesel, Electric or Natural Gas
- Rebuilt Packages



Featuring:

- **Mounting:** rugged, heavy-duty oil field skid, frame, or trailer mounted
- Engine: conservative horsepower rating
- Coolers: ASME Certified and National Board registered
- **Gearbox**: heavy-duty gearbox with oil cooling on Gardner Denver/Joy models
- **Scrubber Bottles:** ASME Certified and National Board registered
- Pulsation Bottles: ASME Certified and National Board registered
- Piping:
 - Two stage units capable of single stage operation
- Booster bypass piping included
- Hydro tested
- **Engine:** includes all standard controls, instrumentation, and shutdowns
- **Booster:** complete booster controls including necessary temperature/pressure gauges & shutdowns
- Control Panel: Weatherproof (NEMA 4)

Also available:

- Booster parts
- Maintenance parts
- Aftercooler packages
- Precooler packages
- Filter packs
- Desicant dryers/ Coalescing filters
- Booster repairs
- Flow testing
- Routine maintenance
- Booster overhaul
- Training
- Startup supervision
- Air hose





Authorized Caterpillar Level 2 ISD Dealer for Warranty, Service and Maintenance

Gardner Denver Two Stage



Natural Gas or Electric



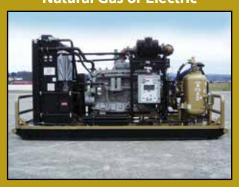
Ariel Two Stage



1170FCAT Compressor



Natural Gas or Electric





- The patented carriage feed system delivers a full 110,000 lb (50,000 kg) or 120,000 lb (54,500 kg) of pullback (depending on the model) while providing rapid feed speeds as well as precise weight and speed control.
- The tough, mobile, 8 x 4 or 10 x 6 carrier, depending on model, is completely self-contained.
- A 380 HP engine and drive train move the rig down the road at standard highway speeds while providing ample power for off-road maneuverability.
- The RD20 handles a wide range of drilling applications, including 3-inch (76 mm), 1,500 or 3,000 psi circulation piping.
- The RD20 handles Range II or Range III (depending on the model) casing with ease.
- RD20 II and RD20 III handles "RD20" style external flush drill pipe: 4 1/2 in OD x 30 ft length
- RD20 XC handles oilfield external upset "Bottleneck" drill pipe: 2 7/8 in to 4 1/2 in OD, Range II lengths



DH350 Drill Rig

- 21' from drill table to ground
- Walking system, capable of lifting full drill string load
- Travel width < 12'
- 2 sets of telescoping cylinders to raise mast and substructure
- Will be able to walk over wellhead: 4' clearance
- 48" clearance to catwalk side
- 30" clearance to powerpack side
- Estimated weight: 85,000 lbs
- Designed for 13-3/8, 10,000 psi BOP

Also available:

- Drill rod
- Stabilizers
- Subs
- Floating subs
- Adapters
- Drilling fluid

