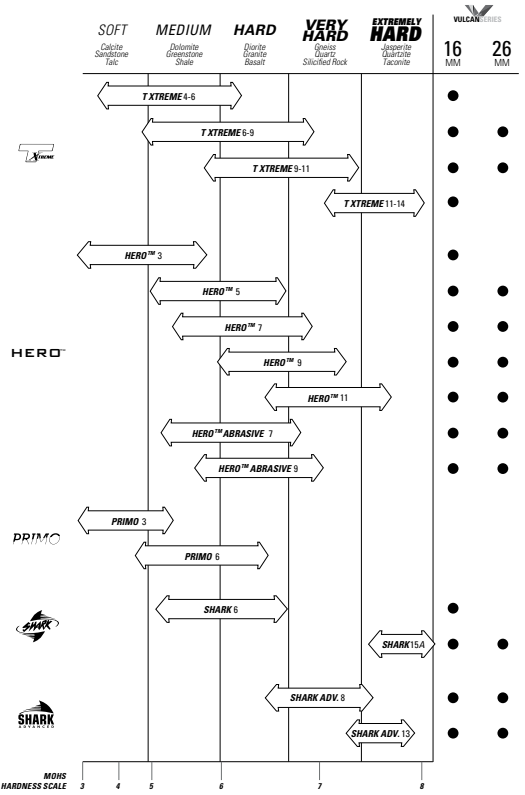
FORDIA

TECHNICAL BOOK

MATRIX CHART SELECTION



GENERAL IDENTIFICATION

Name _____

Address _____

Postal Code _____

Phone _____

Business Name _____

Address _____

Postal Code _____

Phone _____

Email _____

EMERGENCY

Contact _____

Relationship _____

Phone _____

Doctor _____

Phone _____

Allergies _____

Blood Type _____

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WEBSITE

Our ***NEW*** website has been completely redesigned to make it easier for you to find what you need - whether you're at the office or on the road.

FORDIA.COM

MISSION AND VALUES

Fordia's goal is simple - to develop and distribute the best diamond tools, equipment and accessories to small and large businesses specializing in core drilling for the mineral exploration and geotechnical industries.

THAT IS OUR MISSION

How we live it is our strength. We provide exceptional service, demonstrated daily by our worldwide representatives. Our distribution network ensures Fordia products can be delivered globally, right on schedule. We are highly committed to quality and innovation.

OUR VALUES

Our mission is based on our fundamental values and principles, which guide our policies and actions. Our values guide our employees and the relationships that we develop with our clients.

- Teamwork
- Respect
- Excellence
- Comunication
- Responsible Wealth Creation
- Innovation

ISO CERTIFICATION

Fordia has always been at the forefront of excellence in the mining industry and our ISO 9001: 2008 certification is a key element of this commitment to total quality.

At Fordia, quality means providing products and services that comply with our customers' specific requirements, on time, at competitive prices. To achieve this, every employee strives to reach quality, the first time and all the time.

ISO 9001: 2008 is an internationally recognized quality standard that reflects the high level of commitment that leading companies such as ours maintain. Manufacturing methods, business management, employee training and development and the continuous improvement of products and procedures all reflect this commitment.

Fordia takes great pride in its ISO 9001: 2008 certification and its dedication to total quality. In order to maintain these high standards, not only does Fordia continuously invest in the development of its management system, but it ensures that all of its employees are involved in this constant improvement.

FORDIA BELIEVES IN TOTAL QUALITY PRODUCTS, BECAUSE OUR CUSTOMERS DESERVE NOTHING LESS.

RESEARCH AND DEVELOPMENT

AT FORDIA, INNOVATION IS AT THE HEART OF OUR CORPORATE VALUES.

Our product development sets us apart, showing that we are dedicated to understanding and meeting the needs of our clients. We strive to exceed our customers' expectations by creating products and tools they need.

We aim to optimize our development process in order to manufacture products that continue to increase our clients' operational efficiency, including:

- High quality products that conform to your expectations
- Products that are simple and efficient for the user
- Concrete solutions in terms of productivity and employee safety

DRILLING PARAMETERS

RPM

Many factors can affect the choice of the speed or rotation.
These factors include:

1. Penetration speed
2. Diameter of the bit
3. Depth of the hole
4. Vibration

The RPM must be measured using a tachometer (Chart no.1). If the rpm is too high, this will cause polishing of the bit. If the rpm is too slow, this will cause premature wear of the bit.

Chart no.1

SIZE	RPM (in relation with penetration) 4 inch/min or less
AWL	950-1,050
BWL	850-950
NWL	750-900
HWL	650-750
PWL	600-700

BIT PRESSURE

While drilling, the force applied by the drill and the weight of the rods must be as low as possible. It is important to maintain a sufficient speed of penetration in order to prevent the polishing of the diamonds.

The consequences of pressure that is too elevated are variable.
These include:

1. Premature wear of the mechanical components of the drill, the rods and the core barrel
2. Premature wear of the bit
3. A greater probability of deviation of the hole

WATER FLOW

The water flow should be as high as possible but must be related to the bit size and the type of rock to be drilled. For example, in soft or fractured rock, the water flow must be high.

However in very hard and competent rock, where the speed of penetration is low, the water flow must be reduced to enable the cutting of the rock and diminish the risk of polishing the diamonds.

Chart no.2 gives the water flow suggested for different standard sizes of core bits.

Chart no.2

TYPES	***RECOMMENDED WATER FLOW*** gal imp/min (L/min)				
	AWL	*BWL*	*NWL*	*HWL*	*PWL*
Very hard to extremely hard and competent	3-4 (14-18)	5-6 (23-27)	6-8 (27-36)	8-9 (36-41)	10-11 (45-50)
Hard to very hard and competent	4-5 (18-23)	6-8 (23-36)	8-9 (36-50)	10-12 (45-54)	12-13 (55-60)
Other	6-8 (27-36)	7-10 (32-45)	12-14 (56-64)	14-16 (64-73)	15-17 (68-77)

SHARPENING TECHNIQUES

While drilling in hard to extremely hard rock, the bit matrices can polish or become dull. Sharpening of the matrix is needed to expose new diamonds. This is a delicate operation because it can wear down too much of the matrix.

Here are different sharpening techniques.

1. Reduce water flow
2. Increase drilling pressure
3. Increase drilling pressure and reduce water flow
4. Reduce water flow and RPM

REAMER & CASING SHOE FUNCTIONS

REAMING SHELLS

The reaming shell is placed directly behind the core bit. It is used to keep the hole open at the right diameter and to stabilize the core barrel. Reaming shells are available in all dimensions. Special designs can also be manufactured upon request.

CASING SHOES

Casing shoes are generally used to drill in overburden or to start a hole in the rock (inside mines). Fordia casing shoes are built to be wear resistant while offering easy cutting in different rock formations, in overburden, or in the hole start-up directly in the rock.

Three kinds of shoes are offered as standard: V-Ring, Super V-Ring and Bit Crown V-Ring. These shoes are available in all dimensions.

TYPES OF SHOE	HEIGHT OF IMPREGNATION	TYPE OF GROUND
Standard V-Ring	5 mm	Easy
Super V-Ring	6 mm	Medium
Bit Crown V-Ring	8 mm	Difficult

MATRIX WEAR PROFILE ANALYSIS

WEAR OF MATRICES

Evaluate the wear profile of the bit crown and change different drilling parameters if necessary.

NEW IMPREGNATED BIT

IDEAL WEAR

Even wear, completed up to the carbide with the diamonds evenly worn.

USED BIT

Impregnated bit used perfectly and out of the hole.

DIAMOND OVERLY EXPOSED

Matrix wears before diamonds have worn out. Diamonds pop out prematurely, reducing bit life.

Caused by:
- Drilling pressure too high for the speed of rotation.
- Water flow is too low.
- Matrix used is too soft.

Solutions:
- Increase speed of rotation and reduce the drilling pressure.
- Increase the water flow.
- Change the bit for a lower series (harder matrix).

CORE BIT POLISHED OR GLAZED

Bit doesn't cut and diamonds appear polished.

Caused by:
- Drilling pressure too low for the speed of rotation
- Water flow too high.
- Matrix used is too hard.

Solutions:
- Sharpen the bit.
- Reduce the rotation speed and increase drilling pressure.
- Reduce water flow.
- Select a bit from a higher series (softer matrix).

BURNT

Matrix has completely melted, waterways are closed.

Caused by:
- Ran out of water.
- Operator forgot to open the water valve.

Solutions:
- Increase water flow.
- Check if the pump is working well.
- Check the rods for leaks in the joints.
- Confirm whether the inner tube is too long and adjust, if necessary.

CRACKS IN WATERWAYS

Cracks between the core bit segments.

Caused by:
- Too much weight on the bit.
- Dropped the rods.
- Inner tube dropped in a dry hole.
- Bit crushed by the foot clamp or rod holder.

Solutions:
- Take some weight off the bit (hold-back).
- If it is a "dry-hole", send the tube back with the wireline.

I.D. GAUGE LOSS

Wear of inside diameter and inside ringing.

Caused by:
- Drilling pressure too high.
- Very broken ground.
- Core left in the hole.
- Water flow too low.
- Matrix too soft.

Solutions:
- Increase rotation speed.
- Reduce drilling pressure.
- Change for a lower series core bit (harder matrix).
- Increase water flow.
- Check the length of inner tube.

O.D. GAUGE LOSS

Wear of outside diameter and outside ringing.

Caused by:
- Vibration.
- Rotation speed too high.
- Water flow too low.
- Cave in, the hole was reamed.

Solutions:
- Increase water flow.
- Reduce rotation speed.
- Check the diameter of reaming shell.
- Add drilling fluids (to reduce vibration).

INSIDE WEAR PATTERN

Inside of the bit has worn down before the outside, in a concave pattern.

Caused by:
- Drilling pressure too high for the rotation speed.
- Core left in the hole had to be drilled.
- Very broken ground.

Solutions:
- Decrease drilling pressure.
- Increase rotation speed.
- Check the core barrel.
- Add drilling fluids (fractured ground).

OUTSIDE WEAR PATTERN

Outside of the bit has worn down before the inside, in a convex pattern.

Caused by:
- Water flow too low.
- Loss of water by the rods.
- Hole "reamed".

Solutions:
- Increase the water flow.
- Check for leaks.
- Check the diameter of shell.

MINERAL EXPLORATION PRODUCTS

CORE BIT SELECTION

DEFINE ROCK HARDNESS

The simplest and most reliable way to determine rock hardness is to perform a scratch test using an etcher kit and compare the results with Mohs scale.

If you do not have such tools, you can still determine the hardness using a pocket knife or a metal saw, although results may not be as consistent.

If you are using a pocket knife, the average hardness of this tool is approximately 6.0 to 6.5 and if you are using a metal saw, it should be around 6.5 to 7.0 on Mohs scale. For more details on how to perform a scratch test, or to order a Fordia etcher kit, contact your sales representative.

EXAMPLE

Mike measured an average hardness of 5.5 after performing three scratch tests on samples of his latest project. As the ground is coarse grained and slightly abrasive, his representative suggests he should choose a T XTREME 6-9 bit.

After a couple hundred meters, Mike realizes that the penetration rate is too slow. His representative then suggests he should use a higher number matrix and sends him a couple of HERO 9 core bits.

A week later, the new bits have proven themselves. The penetration rate has improved and Mike has reached the productivity level he was hoping for.

CHOOSE AN APPROPRIATE BIT RANGE

According to the results obtained through the scratch test, select the appropriate bit range with Fordia's Matrix Selection Chart (see inside cover). You should be able to identify at least one matrix that fits your specific needs.

Note that more than one matrix may fit the bit range you are looking for. If the ground is made of a wide range of minerals and several hardness levels have been measured, choose the T Xtreme series. If the ground is relatively homogeneous, choose the HERO and Shark Advanced series.

EVALUATE RESULTS & MAKE ADJUSTMENTS

As every type of ground is unique, these rules of thumb may not always be enough to find the perfect bit on your first attempt. Abrasiveness, fractures or competence in rock formations are some other major considerations when it comes to choosing a bit.

Reviewing bit performance is important - it may provide critical information to help you find the right bit and to improve productivity.

For example, if the penetration rate is too slow, using a higher matrix could help solve the problem. However, if bit life is too short, try a lower number matrix. For personalized advice, please contact your sales representative.

Note : if you are drilling in deep hole applications, try a Vulcan configuration. The higher diamond impregnation provides greater lifespan and reduces pull-outs.

CORE BIT CONFIGURATIONS

Fordia offers a wide range of waterway configurations to provide you with the best drilling performance, no matter what type of work needs to be done. All of our configurations are available with different waterway widths and come in all matrix heights.

STANDARD

- Can be used on most impregnated core bits
- Great fluid circulation from the inside to the outside
- Available with wider and/or larger waterway configuration

TURBO PIE SHAPED (TPS)

- Greater ejection of fluids and cuttings
- Reduced contact area with the same flushing performance
- Recommended for higher rotation speeds
- Available with wider and/or larger waterway configuration

CYCLONE

- Designed with specific angled waterways
- Greater ejection of drilling fluids
- Works best in broken ground

PIE SHAPE

- Configuration designed with specific wedged waterways
- Pie-shaped openings ensure greater ejection of cuttings that may block waterways
- Recommended for higher rotation speeds

The ***VULCAN*** 16 mm and 26 mm are ideal for deep hole drilling. Their higher diamond impregnated crowns allows core bits to last longer which means they don't have to be replaced as often during drilling. The Vulcan series is designed with a patented bridge technology that reinforces the diamond sections.

PRIMO drill bits are your best choice when you need to get the most value for your dollar. They offer great penetration rates without compromising on durability so you still get the top quality for which Fordia is known. Suitable for a wider range of ground types, the PRIMO line represents an economical and safe choice.

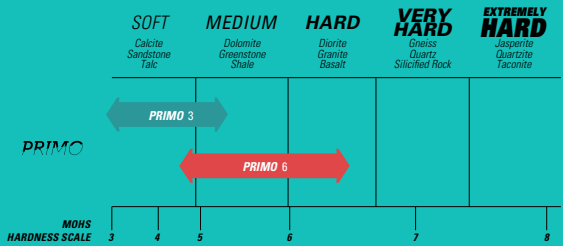
- Excellent price/performance ratio
- Versatile products that provide great penetration rates
- Available in 12 mm standard diamond height

CONFIGURATIONS AVAILABLE

PRIMO 3 & 6

	BWL	NWL	HWL
Diamond Height	12 mm	12 mm	12 mm
Configuration	Pie Shape	Pie Shape	Pie Shape
Waterways width	188" 6 WW	188" 8 WW	188" 10 WW

MATRIX CHART



Fordia's ***T XTREME*** core bits are designed to perform in various ground types, delivering greater flexibility. Each matrix covers a wide range of ground hardness, which is ideal for more complex rock formations. T XTREME core bits are manufactured using polycrystalline diamonds that are covered in titanium in order to protect the cutting abilities of the tool during the bit furnacing process.

- Excellent performance in a wide range of ground types
- Great wear resistance

The ***HERO™*** line of products is popular and well known for its outstanding penetration/lifespan ration. Each core bit in the series goes through a rigorous selection process and addresses specific performance requirements. Hero core bits are manufactured individually with a process that standardizes the consistency of the products.

- Standard diamond impregnation height of 13 mm
- Available in all standard diameters and waterway options
- Available in Vulcan configurations

Each and every ***SHARK*** or ***SHARK ADVANCED*** core bit has been designed to match specific needs when it comes to ground hardness. This series offers a wide range of matrices, all of which have a 12 mm diamond impregnation height, in order to meet all drilling needs.

- Quality and dependability have been proven by the test of time
- Longtime customer favourite

High performance ***GATOR*** casing shoes are designed to reach the rock quickly so you can start work quickly. They are impregnated with diamonds and tungsten carbide and their internal and external diameters are reinforced to keep their same dimensions in abrasive conditions. GATOR is ideal for drilling through sand, boulders, gravel and even clay – all the way to the bedrock.

- Manufactured with the same quality synthetic diamonds used to manufacture core bits
- Available with flat surfaces or "V" crowns

WHITE RHINO reaming shells feature a highly durable matrix in which high-quality natural and synthetic diamonds are embedded. Made from friction-resistant tungsten carbide, they have a larger active surface which helps limit deviation.

- Complete coverage of ring with diamonds
- Combination of natural and synthetic embedded diamonds
- Reinforced arrow tip pattern at angle of attack provides additional TSP protection

For even better protection against drill hole deviation, try White Rhino long reaming shells, available in 10 inches (2 rings) and 18 inches (4 rings).

DRILLING ADDITIVES & LUBRICANTS

Fordia offers drilling additives from Matex, the leader in environmentally safe drilling fluids and lubricants. Specialized in drilling fluid systems for diamond, production and development drilling, Matex products help reduce drilling costs. The Matex product line includes a wide variety of drilling additives, such as polymers, foams, lubricants, and more. Please ask our representatives for more information on specific Matex products.

- Reduces re-drills
- Increases production
- Reduces drilling costs

VISCOSITY CONTROL

DD-2000

DD-955

ULTRAVIS

SAND DRILL

FLUID CONTROL

DD X-PAND

FORM-A-CORE

MAPAC

SLO-FREEZE ES

TORQUE REDUCER

TORQUELESS

VIBRA STOP

LUBRICANT

BIO-CUT PLUS

DD BIT-COOL

Available in regular and biodegradable versions, ***BLACK WIDOW*** is an extra-sticky drill rod grease that offers optimal performance even in the worst conditions. Drillers enjoy that it was developed to withstand all climates, from extremely hot to extremelycold temperatures.

- Excellent adhesive properties, even in difficult conditions
- Withstands all climates
- Protects rods with a residual film that lasts

MOBIL PIPE DOPE Z50 provides maximum protection of threads whenever an anti-seize compound is required.

- Prevents wear and galling
- Resistant to water washout, rust and corrosion

DOWN THE HOLE TOOLS

OWL STANDARD SURFACE HEAD ASSEMBLY

Fordia's ***OWL*** Standard Surface head assembly is a proven, foundational head assembly system that easily integrates into your existing projects and is the industry standard for versatile head assembly systems. Its interchangeable parts work with nearly all surface drilling systems, so parts can be switched out easily whenever required. What's more, the OWL Standard Coring System is sturdy, heavy duty, and tough enough to take on any of your surface drilling projects.

OWL STANDARD UNDERGROUND HEAD ASSEMBLY

The OWL Standard Underground head assembly is available in every diameter used in the industry. Known and chosen for its durability, it is ideal for drilling against gravity.

OWL V-LATCH SURFACE HEAD ASSEMBLY

OWL V-Latch Surface head assemblies suit every surface drilling condition, including the most difficult ones. What's more, it features a piston with less restriction when it comes to moving the latches. This mechanism reduces wear and down time and allows you to easily advance with drill rods of varying walls or in the presence of a very thick bentonite mix.

HUSKY drill rods and casing are quality-crafted in DCDMA standard sizes using USA 4130 grade steel, and provide a tight mechanical seal. The rods are heat treated for greater wear resistance and are manufactured in compliance with ISO:2008 certification standards.

DRILL RODS		
BWL	BTW	-
NWL	NTW	-
HWL	HTW	HWT

CASING	
BW	-
NW	-
HW	HWT

* Other sizes may be available. Please contact your sales representative.

Safely cross zones of high pressure and high flow groundwater during drilling operations and still obtain good core recovery with Fordia's ***AQUAGUARD***.

When inserted into the rods, its check valve partially limits water from the pressurized in-flow zone, making drilling operations safer and more efficient.

- Reduces operating time by up to 30%. Using AquaGuard is safer and more efficient when adding rods and changing the inner tube
- Allows increased recovery of core samples across groundwater in-flow zones
- Prevents the inner tube assembly from over-running the wireline while retrieving core
- Improves working conditions and improves drill site and mine water management

DRILL RIGS

The ***GOLDEN BEAR 1 400 S*** is a powerful and reliable drill rig for diamond drilling. Its modular design simplifies handling as well as assembly and it offers a drilling capacity of 1.4 km using NWL rods. If greater depth capacity is needed, the rig can be upgraded by changing the feed cylinder and the rotary engine. Efficient and built tough for durability, the GOLDEN BEAR 1 400 S is perfect for surface applications.

- Accommodates most drill rods, including P sizes
- Can be upgraded for even greater depth capacity

DATA EQUIPMENT

CORIENTR is a core orientation system developed by Fordia, which determines the original orientation of a core sample. As it provides a better understanding of how mineral veins and faults cross an area under exploration, as well as additional data for greater analytic precision, it is a great added value for geologists.

CORIENTR is available in a rental kit that includes all the accessories required to equip two core barrels. Easy to use and hassle-free, this tool integrates seamlessly with the inner tube assembly and involves no downtime.

- No consumables
- No batteries
- No fragile electronic components
- No calibration

PUMPS

The ***ELEPUMP KF*** series comprises high-pressure water pumps designed for high demand drilling. Well adapted to diamond drilling requirements, ELEPUMP KF-40 and KF-30 are well known for their performance and easy maintenance, but they are mostly chosen for their outstanding durability.

	FLOW RATE		***PRESSURE***	
KF-40	170 L/min	45 GPM	110 bar	1600 psi
KF-30	106 L/min	28 GPM	200 bar	2890 psi

ELEPUMP water pumps are also available in diesel configurations. Each configuration includes a water pump and a diesel engine mounted on a skid for easier transportation.

HELIPORTABLE CONFIGURATION

- Elepump KF-30 and Yanmar® diesel engine, 10 HP
- Lightweight and compact configuration
- Heliportable certification

HEAVY-DUTY CONFIGURATION

- Elepump KF-40 and Yanmar® diesel engine, 30 HP
- Ultra-resistant configuration for superior performance and durability

GEOTECHNICAL AND ENVIRONMENTAL EQUIPMENT

GEOTECHNICAL DIAMOND TOOLS

Available in two different matrices to fit any type of ground, the ***GEO HAWK*** series features performance and excellent value for money. In order to meet various needs, these core bits are available in most standard sizes, in both metric and imperial.

RED GEO HAWK

Medium hard and abrasive ground require the red Geo Hawk matrix for effective drilling. These grounds contain rocks such as serpentine, dolomite, granite or shale. The red Geo Hawk matrix has the ideal durability for such terrain.

ORANGE GEO HAWK

Perfect for hard ground, the orange Geo Hawk includes all the required features for effectively drilling through granite, gabbro, diorite or hematite rock. It is a matrix of medium durability that is specifically designed for these types of ground.

High-performance ***GATOR*** casing shoes offered by Fordia are impregnated with diamonds and tungsten carbide. Their internal and external diameters are reinforced, which helps maintain constant dimensions, even in the most extremely abrasive ground. GATOR is ideal to drill through sand, boulders, gravel and even clay – all the way to the bedrock.

- Matrix impregnated with diamonds and tungsten carbide
- Reinforced internal and external diameters

ROTARY DRILL TOOLS

Fordia offers a wide range of rotary drill tools, tailored to each specific market and adapted to each of your destructive drilling needs.

TRICONES

Fordia offers a wide selection of ***TRICONE BITS*** that are suitable for all drilling needs including overburden, destructive and reverse circulation. With a choice of steel teeth or tungsten carbide inserts, our tricone bits come in different configurations for maximum performance during drilling in all types of ground hardness, from soft to very hard. Our wide selection includes cones and inserts for all diameters so that your needs are met and you get excellent quality for the price.

THREE WING BITS

These tools are offered in two types: chevron type or step type. Three wing bits allow injection blade drilling, which is particularly effective in very soft to soft grounds.

ADAPTOR COUPLINGS

We have the most common couplings in stock and can provide you with other special couplings upon request.

Contact your representative for more details and to place your order.

GEOTECHNICAL DRILL RIGS

We offer a complete range of drill rigs that are specifically designed for geotechnical use and provide you with flexibility when choosing drilling techniques. Offered in a variety of sizes, our powerful and versatile rigs come with all the latest features that ensure safe operation. All models are CE certified.

230

Fordia's ***230*** is a lightweight geotechnical drilling rig that is mounted on a variable width track. It is designed for shallow geotechnical investigation, rotary drilling, coring or continuous auger drilling for SPT. This basic yet rugged rig is easy to maintain and suitable for rough conditions.

The 230 offers a wide range of accessories including 4 hydraulic stabilization jacks and an air and water injection swivel.

OPTIMA

The versatile and powerful ***OPTIMA*** drilling rig is designed for geotechnical investigation and environmental and water well drilling. Powered with a 80 HP turbo-diesel engine, the OPTIMA offers you a wide range of accessories allowing you to use all possible drilling techniques including, down-the-hole rotary percussive hammer drilling, coring, injection drilling, auger drilling and more. Male and female double threading positioned under the injection swivel allows you to easily change drilling techniques without wasting time.

LÉGÈRE300

The ***LÉGÈRE300*** is a lightweight, track-mounted drilling rig that is designed for shallow investigation, rotary drilling, continuous auger drilling or shallow rotary percussive drilling. Thanks to its chase and low center of gravity, this product is easy to handle and can work on rough terrain. The LÉGÈRE300 comes with a remote controller so you can control it from a distance.

Go to ***FORDIA.COM/GEOTECHNICAL*** *for even more options.*

GEOTECHNICAL EQUIPMENT

STATIC PENETRATION TESTING EQUIPMENT

Fordia distributes all necessary tools and equipment for static penetration tests, including penetration points, cones and rings.

AUGER PARTS

Fordia distributes a whole selection of ***AUGER ACCESSORIES*** including auger bolts, U-pins, double cap adapters, auger pin adapters, etc.

HEAVY DUTY HOLLOW STEM AUGERS

Fordia's ***HEAVY DUTY HOLLOW STEM AUGERS*** are designed to last and are light enough for easy handling. They come in a variety of sizes.

AUGER CONNECTIONS

We offer a superior design ***SLIP FIT AUGER CONNECTION*** with a course spline and a 2-bolt coupling. The 2-bolt coupling creates a more durable connection for deep drilling situations. The coupling is made using a heat-treated alloy steel investment casting.

AUGER HEADS

Choose from a broad range of quality ***AUGER HEADS*** for auger drilling, including both auger finger type, conical, conical spade and more. Their standardized design can be easily adapted to all types of augers, to meet your needs.

CONTINUOUS SAMPLERS

Fordia provides ***CONTINUOUS SAMPLERS*** for collecting core samples in a choice of two sizes: 3-1/4 inch and 4-1/4 inch.

SOLID FLIGHT AUGERS

With a carbon steel body that keeps the weight down, our ***SOLID FLIGHT AUGERS*** provide maximum force and rigidity. They feature the high quality standards that are Fordia's hallmark. They come in a variety of sizes.

AUGER PILOTS

The cutter head design allows the ***AUGER PILOT*** to be positioned slightly ahead of the cutter head, allowing the pilot to empty the auger. This crucial component is available from Fordia in all standard diameters and replacement parts are available as well.

AUTOMATIC HAMMER

Get consistent and accurate SPT results with our 140 pound ***AUTOMATIC HAMMER***. With no ropes or cables to obstruct the free fall of the weight, it easily meets all ASTM-D-1586 requirements. All moving parts, along with the impact area, are enclosed for greater safety.

SIDE FEED WATER SWIVELS

Fordia side feed ***WATER SWIVELS*** are offered in different models in all standard sizes. All swivel ends are fitted with solid rotating joints to ensure maximum water pressure.

THIN-WALL SAMPLING TUBE

Fordia offers ***THIN WALL TUBE SAMPLERS*** that are ideal for drilling through asphalt and concrete and meet or exceed all steel requirements listed in the CSDA specifications.

SPT SPLIT SPOON SAMPLERS

SPT SPLIT SPOON SAMPLERS include a durable head, a split section made of high-grade 4130 grade steel and a heat-treated shoe. These products are available with 2", 2-1/2", 3" or PW diameter, with either a standard fine thread shoe (8 threads per inch) or a rapid thread shoe (4 threads per inch). Available lengths for these samplers are 18" or 24".

OTHER ACCESSORIES

Fordia offers the best drilling accessories that suit all your needs on the job. Increasing your productivity through our high quality accessories is our ultimate goal.

GREY SQUIRREL PLASTIC CORE BOXES are heat and damage resistant, making them an ideal choice when durability and cost are important. They offer a long lifespan and are lighter and easier to carry and stack.

WOOD CORE BOXES provide great durability and can be reused over and over. More resistant than cardboard boxes, they have been used in the industry for decades.

In addition to being economical, ***WAXED CARDBOARD CORE BOXES*** are foldable and take up very little space making them easy to transport and store.

DRILLERS HOSES

Fordia's hoses provide optimal durability and excellent value. Choose between regular or lay flat models.

DIAMOND SAW BLADES use fusion-welded technology for ultimate bonding between segment and steel core. Different matrices are available, providing the right combination of speed, life and value.

NOTE

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CORE BIT REPORT

DEPTH		TORQUE (PSI)		FEED PRESS. (PSI)	WATER PRESSURE/FLOW	PENETRATION IN/MIN OR IN/ROD	BIT SHARPENED NUMBER OF TIMES	ROCK FORMATION ROCK HARDNESS	COMMENTS
From	To	Free	True						

DEPTH		TORQUE (PSI)		FEED PRESS. (PSI)	WATER PRESSURE /FLOW	PENETRATION IN/MIN OR IN/ROD	BIT SHARPENED NUMBER OF TIMES	ROCK FORMATION ROCK HARDNESS	COMMENTS
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DEPTH		TORQUE (PSI)		FEED PRESS. (PSI)	WATER PRESSURE / FLOW	PENETRATION IN/MIN OR IN/ROD	BIT SHARPENED NUMBER OF TIMES	ROCK FORMATION ROCK HARDNESS	COMMENTS
From	To	Free	True						

DEPTH		TORQUE (PSI)		FEED PRESS. (PSI)	WATER PRESSURE/FLOW	PENETRATION IN/MIN OR IN/ROD	BIT SHARPENED NUMBER OF TIMES	ROCK FORMATION ROCK HARDNESS	COMMENTS
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DEPTH		TORQUE (PSI)		FEED PRESS. (PSI)	WATER PRESSURE /FLOW	PENETRATION IN/MIN OR IN/ROD	BIT SHARPENED NUMBER OF TIMES	ROCK FORMATION ROCK HARDNESS	COMMENTS
From	To	Free	True						

CONVERSION TABLES

IMPERIAL MEASUREMENTS

LENGTH

1 inch (in)		25.44 mm
1 foot (ft)	12 in	0.3048m
1 yard (yd)	3 ft	0.9144 m
1 mile	1,760 yd	1.60934 km
1 int. nautical mile	2,025.4 yd	1,852 m

AREA

1 sq inch (in^2)		645.16 mm^2
1 sq yard (yd^2)	9 ft^2	0.8361 m^2
1 acre	4,840 yd^2	4,046.86 m^2
1 sq mile ($mile^2$)	640 acres	2.590 km^2

VOLUME CAPACITY

1 cu foot (p^3)	1 728 in^3	28.317 dm^3
1 cu yard (v^3)	27 ft^3	0.765 m^3
1 US dry pint	0.9689 UK pt	0.55061 l
1 US bushel	1.244 ft^3	35.239 l
1 US liquid pint	0.8327 UK pt	0.4732 l
1 gallon	8 US liquid pint	3.7854 l
1 fluid ounce (fl oz)	1.0408 UK (fl oz)	29.574 cm^3

MASS

1 grain (gr)		64.7989 mg
1 ounce (oz)	437.5 gr	28.3495 g
1 pound (lb)	16 oz	0.45359 kg
1 short cwt	100 lb	45.359 kg
1 long cwt	112 lb	50.802 kg
1 short ton	20 short cwt	907.185 kg
1 long ton	20 long cwt	1,016.05 kg

METRIC MEASUREMENTS

LENGTH

1 millimetre (mm)		0.0394 in
1 centimetre (cm)	10 mm	0.3937 in
1 metre	100 cm	1.0936 yd
1 kilometre	1,000 m	0.62137 mile

AREA

1 sq cm (cm^2)	100 mm^2	0.1550 in^2
1 sq metre (m^2)	10,000 cm^2	1.1960 yd^2
1 hectare (ha)	10,000 m^2	2.471 acres
1 sq km (km^2)	100 ha	0.3861 $mile^2$

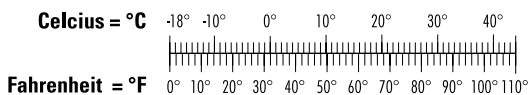
VOLUME CAPACITY

1 cu cm (cm^3)		0.0610 in^3
1 cu decimetre (dm^3)	1 litre	1.816 US dry pint
1 cu metre (m^3)	1,000 dm^3	1.3080 yd^3
1 litre (l)	1 dm^3	0.2642 US gal
1 hectolitre	100 l	2.8378 US bus

MASS

1 carat	0.2 g	3.086 gr
1 gram (g)	5 metric carat	0.03527 oz
1 kilogram (kg)	1,000 g	2.20462 lb
1 long ton (t)	2,240 lb	1.1023 short ton
1 short ton (t)	2,000 lb	0.984 long ton

TEMP. CONV. °C/°F



LENGTH

CM	CM/IN	INCHES	KM	KM/MI	MILES
2.54	1	0.394	1.609	1	0.621
5.08	2	0.787	3.216	2	1.243
7.62	3	1.181	4.828	3	1.864
10.16	4	1.575	6.437	4	2.485
12.7	5	1.969	8.047	5	3.107
15.24	6	2.362	9.656	5	3.728
17.78	7	2.756	11.265	7	4.350
20.32	8	3.150	12.875	8	4.971
22.86	9	3.543	13.484	9	5.592
25.40	10	3.937	16.093	10	6.214
50.80	20	7.874	32.187	20	12.427
76.20	30	11.811	48.280	30	18.641
101.60	40	15.748	63.374	40	24.855
127.00	50	19.685	80.467	50	31.069
152.40	60	23.622	96.561	60	37.282
117.80	70	27.559	112.654	70	43.496
203.20	80	31.496	128.748	80	49.710
228.60	90	35.433	144.841	90	55.923
254.00	100	39.370	160.934	100	62.137

AREA

HECTARES	HT/AC	ACRES
0.405	1	2.471
0.809	2	4.942
1.214	3	7.413
1.619	4	9.884
2.023	5	12.355
2.428	6	14.826
2.833	7	17.297
3.237	8	19.769
3.642	9	22.240
4.047	10	24.711
8.094	20	49.421
12.140	30	74.132
16.187	40	98.842
20.234	50	123.553
24.281	60	148.263
28.328	70	172.974
32.375	80	197.684
36.422	90	222.395
40.469	100	247.105

MASS

KG	KG/PDS	POUNDS	TON	T/T US	US TON
0.454	1	2.205	0.907	1	1.102
0.907	2	4.409	1.184	2	2.204
1.361	3	6.614	2.722	3	3.307
1.841	4	8.819	3.629	4	4.409
2.268	5	11.023	4.536	5	5.512
2.722	6	13.228	5.443	5	6.614
3.175	7	15.432	6.350	7	7.716
3.629	8	17.637	7.257	8	8.818
4.082	9	19.842	8.165	9	9.921
4.536	10	22.046	9.072	10	11.023
9.072	20	44.092	18.144	20	22.046
13.608	30	66.139	27.216	30	33.069
18.144	40	88.185	36.287	40	44.092
22.680	50	110.231	45.359	50	55.116
27.216	60	132.277	54.431	60	66.139
31.752	70	154.324	65.503	70	77.162
36.287	80	176.370	72.575	80	88.185
40.823	90	198.416	81.647	90	99.208
45.359	100	220.462	90.719	100	110.231

VOLUME CAPACITY

LITRES	L/IMP.GAL.	IMP.GALLONS
3.785	1	0.220
7.571	2	0.44
11.356	3	0.66
15.142	4	0.88
18.927	5	1.1
22.712	6	1.32
26.498	7	1.54
30.283	8	1.76
34.069	9	1.98
37.854	10	2.2
75.708	20	4.4
113.562	30	6.6
151.416	40	8.8
189.271	50	11
227.155	60	13.2
264.979	70	15.4
302.833	80	17.6
340.687	90	19.8
378.541	100	22

DRILL RODS

SIZE	O.D.		I.D.		WEIGHT		THREADS	VOLUME	
	INCH	MM	INCH	MM	LB/10 FEET	KG/3 M	PER INCH	US GAL./100 FT	L/100 M
AWL	1.7500	44.5	1.3750	34.9	31.0	14.0	4.0	7.70	95.8
BWL	2.1875	55.6	1.8125	46.0	40.0	18.0	3.0	13.40	166.3
NWL	2.7500	69.9	2.3750	60.3	52.0	23.4	3.0	23.00	285.8
HWL	3.5000	88.9	3.0625	77.8	77.0	34.4	3.0	38.20	474.4
PWL	4.6250	117.5	4.0625	103.2	106*	47.2	3.0	67.40	836.6
ATW	1.7500	44.5	1.4370	36.5	26.0	11.8	4.6	8.40	104.5
BTW	2.2250	56.5	1.9090	48.5	34.5	15.8	4.6	14.80	184.5
NTW	2.8750	73.3	2.5250	64.2	50.0	27.7	4.0	26.00	323.0

FLUSH-JOINT CASING

SIZE	O.D.		I.D.		WEIGHT		THREADS	VOLUME	
	INCH	MM	INCH	MM	LB/10 FEET	KG/3 M	PER INCH	US GAL./100 FT	L/100 M
AW	2.750	57.1	1.805	48.4	38	17.2	4	14.80	184.1
BW	2.875	73.0	2.375	60.3	70	31.8	4	23.00	285.8
NW	3.500	88.9	3.000	76.2	86	38.4	4	36.70	455.7
HW	4.500	114.3	4.000	101.6	113	50.5	4	65.20	810.4
PW	5.500	139.7	5.000	127.0	140	64.3	3	102.00	1,266.6

REAMING SHELLS

SIZE	OUTSIDE DIAMETER TOLERANCE			
	MILIMETERS		INCHES	
	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
AWL	47.88	48.13	1.885	1.895
BWL	59.82	60.07	2.355	2.365
NWL	75.57	75.82	2.975	2.985
HWL	95.89	96.27	3.775	3.790
PWL	122.43	122.81	4.820	4.835
ATW	47.88	48.13	1.885	1.895
BTW	59.82	60.07	2.355	2.365
NTW	75.57	75.82	2.975	2.985
AWLTK	47.88	48.13	1.885	1.895
BWLTK	59.82	60.07	2.355	2.365

DIAMOND CORING BITS

SIZE	CORE DIAMETER			HOLE DIAMETER			HOLE VOLUME	
	DECIMAL	*FRACTIONAL*	*MM*	*DECIMAL*	*FRACTIONAL*	*MM*	*LITERS/100 M*	*LITERS/100 M*
AWL/AWL-U	1.062	1 1/16	27.0	1.890	1 57/64	48.0	14.60	181.0
BWL/BWL-U	1.432	1 7/16	36.5	2.360	2 23/64	60.0	22.70	282.2
NWL/NWL-U	1.875	1 7/8	47.6	2.980	2 63/64	75.7	36.30	451.0
HWL/HWL-U	2.500	2 1/2	63.5	3.782	3 25/32	96.0	58.30	724.4
PWL/PWL-U	3.345	3 11/32	85.0	4.827	4 53/64	122.6	95.10	1180.4
SWL/SWL-U	4.02	4 3/128	102.0	5.75	5 3/4	146.0	120.00	1266.8
BWL3	1.320	1 5/16	33.5	2.360	2 23/64	60.0	22.70	282.2
NWL3	1.775	1 25/32	45.0	2.980	2 63/64	75.7	36.30	451.0
HWL3	2.406	2 13/32	61.1	3.782	3 25/32	96.0	58.30	724.4
PWL3	3.270	3 9/32	83.0	4.827	4 53/64	122.6	95.10	1180.4
ATW	1.185	1 3/16	30.1	1.890	1 57/64	48.0	14.60	181.0
BTW	1.656	1 21/32	42.0	2.360	2 23/64	60.0	22.70	282.2
NTW	2.205	2 13/64	56.0	2.980	2 63/64	75.7	36.30	451.0
HTW	2.792	2 51/64	70.9	3.762	3 49/64	95.6	57.58	717.8
NWL2	1.990	1 63/64	50.5	2.980	2 63/64	75.7	36.30	451.0
AWLTK	1.200	1 13/64	30.5	1.890	2 57/64	48.0	14.60	181.0
BWLTK	1.602	1 19/32	40.7	2.360	2 23/64	60.0	22.70	282.2

CASING SHOES

SIZE	O.D./HOLE DIAMETER		I.D.		HOLE VOLUME	
	INCH	*MM*	*INCH*	*MM*	*US GALLONS/100 FT*	*LITERS/100 M*
EW	1.875	47.63	1.495	37.97	14.3	178.1
AW	2.345	59.56	1.900	48.26	22.4	278.6
BW	2.965	75.31	2.377	60.38	35.9	445.5
NW	3.615	91.82	3.000	76.20	53.3	662.2
HW	4.625	117.48	3.925	99.70	87.3	1,083.9
PW	5.650	143.51	4.853	123.27	130.2	1,617.5
HWT	4.625	117.48	3.980	101.09	87.3	1,083.9

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Name _____

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