CORE MATRIX™
by Di-Corp

DIAMOND DRILL BITS

RUGGED TO THE CORE™

In drilling, there's a lot riding on the smallest part of the drill string. Choosing the right core bit for your conditions can mean the difference between reaching your shift target or lost productivity.

CoreMatrix™ bits from Di-Corp have been re-engineered for enhanced bit life and faster penetration rates across every ground condition to get you downhole faster and stay there longer.

With 21 matrices to choose from and a comprehensive matrix selection chart to guide you, it is easier than ever to find the perfect CoreMatrix bit for your drilling conditions. Bit numbers are clearly identified to cover different rock formations within the Mohs Hardness Scale, with three waterway configurations and several specialty options for Abrasive conditions, Extended life, and Free-cutting matrices.

These bits are designed and built in Canada by technical experts with decades of experience. Di-Corp's Drillers Edge team, led by many years of metallurgical expertise, engineered each matrix to optimize performance and meet the demands of today's driller.

Drilling is tough work. Get rugged to the core with CoreMatrix bits by Di-Corp Drillers Edge.

1.800.661.2792 | www.di-corp.com | info@di-corp.com

DI-CORP

AVAILABLE MATRICES

Each matrix is made up of premium components (diamonds, powders, and alloys) to achieve maximum performance and withstand the demands of modern drilling — including high penetration, load, and torque.

All matrices are designed to target a specific rock formation. The **CoreMatrix line** is engineered to perform in different drilling conditions, depending on rock hardness, rock abrasiveness, required bit life, and penetration rate.

A few options of matrix selection are available:

- **General-purpose matrices** — perfect starting matrix with ideal balance between penetration rate and bit life.
- **"A" matrices for Abrasive formations** — ideal for abrasive rock formations.
- **"E" matrices for Extended bit life** — ideal solution when extended bit life is required.
- **"F" matrices for Freer cutting matrices** — ideal solution for drilling at high penetration rates.

2A

- Mohs Hardness Scale: 1-4
- Tough matrix suited for coarse grain, very abrasive, and broken formations.
- For use with high bit weight and high-powered drill rigs.

5

- Mohs Hardness Scale: 3-5
- Tough matrix suited for coarse grain, abrasive, competent and/or broken formations.
- For use with high bit weight and high-powered drill rigs.

6 SERIES (6, 6A, 6E)

- Mohs Hardness Scale: 4-6
- Tough, freer cutting matrix suited for mid-coarse grain, abrasive/slightly abrasive, competent and/or broken formations.
- For use with medium to high bit weight and medium to high torque.

7 SERIES (7, 7A, 7E)

- Mohs Hardness Scale: 5-7
- Tough, freer cutting matrix suited for mid-coarse grain, abrasive/slightly abrasive, competent and/or moderately fractured formations.
- For use with medium to high bit weight and medium to high torque.

8 SERIES (8, 8A, 8E)

- Mohs Hardness Scale: 6-8
- Soft, free-cutting matrix suited for mid-grain, abrasive/slightly abrasive, competent and/or moderately fractured formations.
- For use with medium bit weight and medium torque.
- Most popular hard rock bit covering the largest range of conditions.

9 SERIES (9, 9A, 9E)

- Mohs Hardness Scale: 7-9
- Soft, free-cutting matrix suited for fine-mid grain, slightly abrasive, competent and/or moderately fractured formations.
- For use with medium-low bit weight and medium-low torque.
- High penetration rates.

10

- Mohs Hardness Scale: 8-9
- Soft, free-cutting matrix suited for fine grain, slightly abrasive, competent and/or moderately fractured formations.
- For use with medium-low bit weight and medium-low torque.
- High penetration rates.

11 SERIES (11, 11A, 11F)

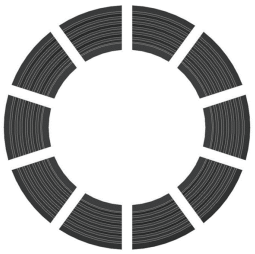
- Mohs Hardness Scale: 9-10
- Soft, free-cutting matrix suited for fine grain, slightly abrasive, competent formations.
- For use with low bit weight and low torque.

13 SERIES (13, 13A, 13F)

- Mohs Hardness Scale: 9-10
- Soft, free-cutting matrix suited for finer grain, slightly or non-abrasive, competent formations.
- For use with low bit weight and low torque.
- High penetration rates. Self stripping.

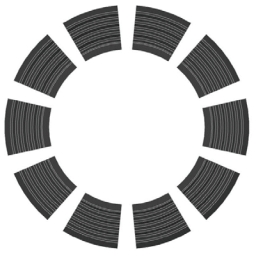
WATERWAY CONFIGURATIONS

Proper flushing of cuttings away from the bit face is critical to maximize its life and performance. Choosing the correct waterway configuration will help to ensure the bit wears evenly down the hole. To meet this need, Di-Corp has standardized on three waterway configurations – **Standard, Pie Shaped,** and **Turbo.**



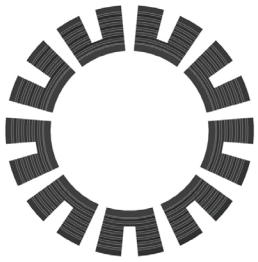
STANDARD

- General purpose design for competent, broken, abrasive and non-abrasive formations.
- Allows for maximum matrix volume and face contact area.
- Requires mid to high-power drill rigs to operate.
- Delivers maximum bit life.



PIE SHAPED

- Superior flushing capability.
- Suitable for mixed formations containing broken and competent zones.
- More difficult conditions requiring increased fluid flow (coarse-grained, fractured, and broken).
- Requires mid-power drill rigs to operate.
- Perfect balance between penetration rate and bit life.



TURBO

- High productivity — reduced contact area allows for increased penetration rates.
- High performance (free cutting) under low weight on the bit.
- Suitable for competent formations
- Requires low to mid-power drill rigs to operate.
- Delivers maximum penetration rate.

CROWN PROFILE SELECTION

		Torque	Bit Life	Penetration Rate
	STANDARD	✗✗✗✗	✗✗✗✗	✗✗
	PIE	✗✗✗	✗✗✗	✗✗✗
	TURBO	✗✗	✗✗	✗✗✗✗

For more difficult conditions, crown profiles are offered with additional configurations to meet special drilling requirements:

WIDE ID OPENING

- For Standard and Pie Shaped Waterway.
- More difficult conditions requiring increased fluid flow (coarse-grained, fractured and broken).
- Reduced contact area allows for increased penetration rates.

SUPERFLUSH (DEEP ID) OPENING

- For Standard, Pie Shaped, and Turbo Waterway.
- Conditions with unconsolidated/broken formations.
- Lost circulation conditions where heavier muds are required.
- Designed for improved water flow with minimized flushing of core sample.

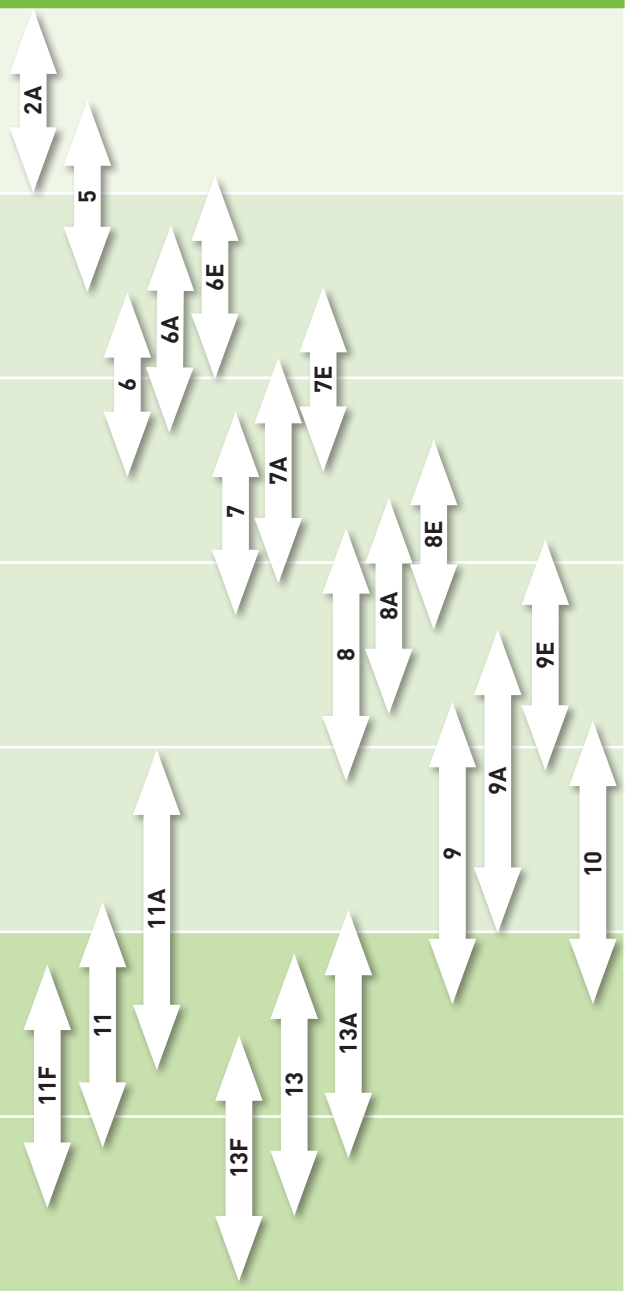
FACE DISCHARGE

- For Standard, Pie Shaped, and Turbo Waterway.
- Difficult conditions where the core sample is susceptible to washing.

DI-CORP

MATRIX SELECTION CHART

ROCK GROUP	FORMATION DESCRIPTION	ROCK TYPE	MATRIX SELECTION CHART
1-4	Soft To Medium Hard Extremely To Slightly Abrasive Extremely To Slightly Broken	Shale, Sandstone, Limestone,	
5	Medium Hard Abrasive Moderately To Slightly Broken	Limestone, Dolomite, Weathered Granite, Weathered Gneiss. Serpentinite, Metaperidotite,	
6	Medium Hard Moderately Abrasive Moderately To Slightly Broken	Diorite, Gabbro, Peridotite, Gneiss, Basalt Andesite,	
7	Medium Hard - Hard Moderately Abrasive Slightly Broken To Competent	Metabasalt, Amphibolite, Metamorphosed Diorite, Metamorphosed Gabbro, Diabase	
8	Hard Slightly/Abrasive Competent	Quartz-Rich Skam, Granite, Pegmatite	
9	Very Hard Slightly Abrasive Or Non-Abrasive Very Competent	Metamorphosed Granitic Rock, Quartz-Rich Gneiss	
10	Extremely Hard Non-Abrasive Fine Grained To Amolphous Very Competent	Chert Jasperite, Quartzite, Highly Metamorphosed Volcanics	



DRILLING PARAMETER GUIDE

	ROCK HARDNESS	BIT WEIGHT		BIT RPM	MIN WATER FLOW	
		kg	lb		L/MIN	US GAL/MIN
B	SOFT	1150 - 1600	2500 - 3500	1100 - 1400	30-35	8-10
	MEDIUM	1600 - 2000	3500 - 4500	1000 - 1300		
	HARD	2000 - 3000	4500-6500	900 - 1200		
N	SOFT	1600 - 2500	3500 - 5500	1000 - 1300	35-45	10-12
	MEDIUM	2500 - 3400	5500 - 7500	900 - 1200		
	HARD	3400 - 4300	7500 - 9500	800 - 1100		
H	SOFT	2500 - 3400	5500 - 7500	900 - 1000	50-60	13-16
	MEDIUM	3400 - 4300	7500 - 9500	800 - 900		
	HARD	4300 - 5200	9500 - 11500	700 - 800		
P	SOFT	3400 - 4300	7500 - 9500	700 - 750	75-85	20-22
	MEDIUM	4300 - 5200	9500 - 11500	650 - 700		
	HARD	5200 - 6150	11500 - 13500	600 - 650		

Penetration Index - RPC (RPI)

This is a useful calculation to help assess if the bit is being optimized in relationship to RPM and ROP

RPC (RPI) = RPM/ROP

e.g. RPC = 1200 RPM / 15 cm = 80 rotations per centimeter
RPI = 1200 RPM / 6 inches = 200 rotations per inch

A good target is 80 - 100 RPC (200 - 250 RPI)

EDGE REAMING SHELLS

Di-Corp offers a range of high-quality Reaming Shells to maintain hole direction, hole gauge, and prevent premature wear of drilling tools due to vibration. The reaming shells come in diamond-impregnated and surface-set configurations available in all common DCDMA sizes.

EDGE Reaming Shells are available in industry standard lengths of 6" and 10" (18" available special order) as well as oversized OD and full-hole profiles. All reaming shells are reinforced with thermally stable polycrystalline (TSP) and high-quality diamonds for extended life in different drilling conditions.

FEATURES & BENEFITS

- High-quality natural and synthetic diamonds, depending on the configuration.
- Thermally stable polycrystalline (TSP) for additional ring protection.
- Wear-resistant matrix reinforced with carbide particles to minimize erosion.
- Manufactured to withstand difficult drilling conditions.
- Provide prolonged life in different rock formations.

EDGE RS CONFIGURATION — IMPREGNATED REAMING SHELLS

High-quality synthetic diamonds and thermally stable polycrystalline (TSP) for additional ring protection.

EDGE RX CONFIGURATION — SURFACE SET REAMING SHELLS

High-quality natural diamonds and thermally stable polycrystalline (TSP) for additional ring protection. **EDGE RX Reaming Shells** perfectly balance performance and value.

EDGE RSX CONFIGURATION

Di-Corp's most advanced design combines all the features of the EDGE RS and EDGE RX reaming shells.

EDGE RSX Reaming Shells feature high-quality natural and synthetic diamonds and thermally stable polycrystalline (TSP) for additional ring protection. **EDGE RSX Reaming Shells** deliver exceptional results in a wide range of rock formations. **EDGE RSX Reaming Shells** are designed to perform and provide unmatched lifespan in different drilling conditions.

1.800.661.2792 | www.di-corp.com | info@di-corp.com

A DRILLING PRODUCT SUPPLIER YOU CAN TRUST TO ENHANCE YOUR DRILLING OPERATIONS

As a leading supplier of innovative drilling solutions, Di-Corp has the products and supplies you need to ensure maximum productivity for your drilling operations, even in the most extreme conditions.

We've been sourcing the best and building it better since 1960 and have the knowledge and expertise to stand behind what we sell. Di-Corp is your one-stop source for all of the following drilling consumables, backed by decades of drilling experience, fluids engineering, and customer-focused 24/7 service:

- Drillers Edge™ Coring Rods
- CoreMatrix™ Diamond Tools
- Core Retrieval Tools, Adapter Subs & Accessories
- EarthPro™ Drilling Fluids & Greases

BEST-IN-CLASS DRILLING SUPPLIES & EQUIPMENT

Di-Corp knows drilling. With over 60 years of experience serving the drilling industry, we have the drilling Supplies, Tooling, Fluids, and Expertise to support your success.

Di-Corp manufactures and distributes more than 1000 products and component parts for the drilling and exploration process of mineral resources in Canada and around the world. Our product collection satisfies every mineral exploration drilling company's full-cycle project requirements.

1.800.661.2792 | www.di-corp.com | info@di-corp.com

DI-CORP

DOWN TO EARTH BUSINESS

1.800.661.2792 | www.di-corp.com | info@di-corp.com