

MAIN FEATURES OF SHAREATE INSERT BITS

I. CUTTING STRUCTURES

- 1. Tailored insert shapes and grades manufactured using state-of-the-art tungsten carbide technology for different formations having varied drillability and compressive strength, to provide an optimum match between inserts wear resistance and toughness.
- 2. By using computer simulation of the rock breaking at the bottom of the hole, Shareate's engineers are able to design the best inserts space to ensure the most balanced load on each insert. See Figure 1
- 3. Double rows of gage inserts
For better maintaining full gage hole.
See Figure 2



Figure 2

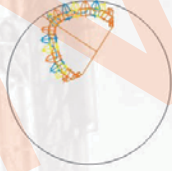


Figure 1 Rock Breaking At The Hole Bottom Design



II. ROLLER BEARINGS

Based on the calculating of the load distribution on the bearing components, all shareate bits incorporate bearings that have optimal geometry and load distribution designed to give maximum bearing life.

■ 1. Non-Sealed Bearings

Bearing Type: Roller-Ball-Roller-Thrust Button without seal. See Figure 3

■ 2. Sealed Bearings

Bearing Type: O-Ring Seal- Roller-Ball-Roller-Thrust Button See Figure 4

- The seal keeps the mud, cuttings, air and water outside the bearings.
- The bearing works in lubricant and friction conditions, this results in less bearing wear and longer bearing life.



Figure 3 Non-Sealed Bearings



Figure 4 Sealed Bearings

III. LUG AND SHIRTAIL ENHANCEMENT

■ 1. Conventional Shirtail Design

- See Figure 5
- This shirtail features a "terraced" design, which increases escape area and the bailing velocity and decreases cuttings regrind and wear on shirtail and shirtail lip.
- Hardmetal and wear resistant carbide were applied to shirtail and shirtail lip.

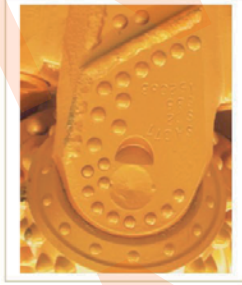


Figure 6

■ 2. Particular Shirtail Design

- See Figure 6
- This shirtail features a "terraced" design, which increases escape area and the bailing velocity and decreases cuttings regrind and wear on shirtail and shirtail lip.
- Hardmetal was applied to shirtail lip and lug. Wear resistant carbide on Shirtail lip and lug and around the "terrace" lower part of shirtail lug.



Patent number:201120169067.X
Figure 5

IV. SHAREATE INSERTS BITS IDENTIFICATION

A	Trademark
B	API License Number
C	API
D	Thread Connection
E	Bit Diameter & Type
F	Bit Serial Number
G	Inspectors Code

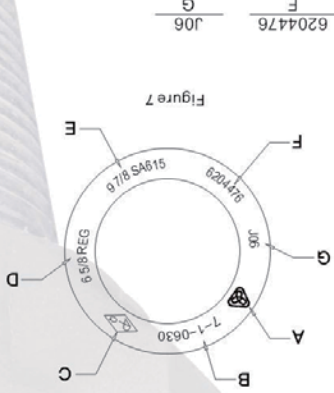


Figure 7

PRODUCT LINE

Bit Diameter	IADC	Applications	Special Features (Cutting Structure, Lug Protection)		PIN Conn.	Operating Suggestions	
			Weight	lbs		kg	WOB/RPM
6 1/4" 159mm	412	Very soft formations with high compressive strengths and high drillability.	Chisel on gage, conical on inner rows; Hardmetal on lug; Wear resistant carbide on shirtail lip and lug.	44	20	3 1/2" API	6,250–12,500lbs/ 120–90RPM
6 1/4" 159mm	732	Hard and abrasive formations with high compressive strengths.	Ovoid on gage, conical on inner rows; Hardmetal on lug; Wear resistant carbide on shirtail lip and lug.	44	20	3 1/2" API	25,000–43,750lbs/ 90–60RPM
6 3/4" 171mm	412	Very soft formations with low compressive strengths and high drillability.	Chisel on gage, conical on inner rows; Hardmetal on lug; Wear resistant carbide on shirtail lip and lug.	46	21	3 1/2" API	6750–13500lbs/ 120–90RPM
6 3/4" 171mm	532	Soft formations with low compressive strengths.	Conical on gage and inner rows; Hardmetal on lug; Wear resistant carbide on shirtail lip and lug.	46	21	3 1/2" API	13500–33750lbs/ 110–80RPM
6 3/4" 171mm	632	Medium–hard and abrasive formations with high compressive strengths.	Ovoid on gage, ogive on inner rows; Hardmetal on lug; Wear resistant carbide on shirtail lip and lug.	46	21	3 1/2" API	20250–40500lbs/ 100–60RPM
6 3/4" 171mm	732	Hard and abrasive formations with high compressive strengths.	Ovoid on gage, ogive on inner rows; Hardmetal on lug; Wear resistant carbide on shirtail lip and lug.	46	21	3 1/2" API	27000–47250lbs/ 90–60RPM
7 7/8" 200mm	412	Very soft formations with low compressive strengths and high drillability.	Chisel on gage, conical on inner rows; Hardmetal on lug; Wear resistant carbide on shirtail lip and lug.	75	34	4 1/2" API	7,880–15,750lbs/ 120–90RPM
7 7/8" 200mm	415	Very soft formations with low compressive strengths and high drillability.	Chisel on gage, conical on inner rows; Hardmetal on lug; Wear resistant carbide on shirtail lip and lug.	75	34	4 1/2" API	7,880–15,750lbs/ 120–90RPM
7 7/8" 200mm	535	Soft formations with low compressive strengths.	Chisel on gage, conical on inner rows; Hardmetal on lug; Wear resistant carbide on shirtail lip and lug.	75	34	4 1/2" API	15,750–39,380lbs/ 110–80RPM
7 7/8" 200mm	542	Medium–soft formations with low compressive strengths.	Conical on gage and inner rows; Hardmetal on lug; Wear resistant carbide on shirtail lip and lug.	75	34	4 1/2" API	15,750–39,380lbs/ 110–80RPM
7 7/8" 200mm	545	Medium–soft formations with low compressive strengths.	Conical on gage and inner rows; Hardmetal on lug; Wear resistant carbide on shirtail lip and lug.	75	34	4 1/2" API	15,750–39,380lbs/ 110–80RPM
7 7/8" 200mm	635	Medium–hard and abrasive formations with high compressive strengths.	Conical on gage, ogive on inner rows; Hardmetal on lug; Wear resistant carbide on shirtail lip and lug.	75	34	4 1/2" API	23,630–47,250lbs/ 100–60RPM
7 7/8" 200mm	735	Hard and abrasive formations with high compressive strengths.	Ovoid on gage, ogive on inner rows; Hardmetal on lug; Wear resistant carbide on shirtail lip and lug.	75	34	4 1/2" API	31,500–55,130lbs/ 90–60RPM

■ The above chart represents commonly available sizes and types. Shareate Tools Ltd. does produce other sizes and types of rock bits which do not appear on this list. Please consult your local representative or visit our web site. www.shareate.com

Bit Diameter	IADC	Applications	Special Features (Cutting Structure, Lug Protection)		PIN Conn.	Operating Suggestions	
			Weight	lbs		kg	WOB/RPM
7 7/8" 200mm	845	Extremely hard and abrasive formations with high compressive strengths.	Ovoid on gage, ogive on inner rows; Hardmetal on lug; Wear resistant carbide on shirtail lip and lug.	75	34	4 1/2" API	39,380–63,000lbs/ 80–50RPM
8 1/2" 216mm	635	Medium–hard and abrasive formations with high compressive strengths.	Conical on gage, ogive on inner rows; Hardmetal on lug; Wear resistant carbide on shirtail lip and lug.	84	38	4 1/2" API	25500–51000lbs/ 100–60RPM
8 1/2" 216mm	735	Hard and abrasive formations with high compressive strengths.	Ovoid on gage, ogive on inner rows; Hardmetal on lug; Wear resistant carbide on shirtail lip and lug.	84	38	4 1/2" API	34000–59500lbs/ 90–60RPM
8 1/2" 216mm	835	Extremely hard and abrasive formations with high compressive strengths.	Ovoid on gage and inner rows; Hardmetal on lug; Wear resistant carbide on shirtail lip and lug.	84	38	4 1/2" API	42500–68000lbs/ 80–50RPM
9" 229mm	412	Very soft formations with low compressive strengths and high drillability.	Chisel on gage, conical on inner rows; Hardmetal on lug; Wear resistant carbide on shirtail lip and lug.	110	50	4 1/2" API	9,000–18,000lbs/ 120–90RPM
9" 229mm	415	Very soft formations with low compressive strengths and high drillability.	Chisel on gage, conical on inner rows; Hardmetal on lug; Wear resistant carbide on shirtail lip and lug.	110	50	4 1/2" API	9,000–18,000lbs/ 120–90RPM
9" 229mm	435	Very soft formations with low compressive strengths and high drillability.	Chisel on gage, conical on inner rows; Hardmetal and wear resistant carbide on shirtail lip and lug.	110	50	4 1/2" API	9,000–36,000lbs/ 120–90RPM
9" 229mm	545	Medium–soft formations with low inner rows; Hardmetal and wear resistant carbide on shirtail lip and lug.	Off-set chisel on gage, conical on inner rows; Hardmetal and wear resistant carbide on shirtail lip and lug.	110	50	4 1/2" API	18,000–45,000lbs/ 110–80RPM
9" 229mm	635	Medium–hard and abrasive formations with high compressive strengths.	Ovoid on gage, conical on inner rows; Hardmetal and wear resistant carbide on shirtail lip and lug.	110	50	4 1/2" API	27,000–54,000lbs/ 100–60RPM
9" 229mm	735	Hard and abrasive formations with high compressive strengths.	Ovoid on gage, ogive on inner rows; Hardmetal and wear resistant carbide on shirtail lip and lug.	110	50	4 1/2" API	36000–63000lbs/ 90–60RPM
9" 229mm	845	Extremely hard and abrasive formations with high compressive strengths.	Ovoid on gage and inner rows; Hardmetal and wear resistant carbide on shirtail lip and lug.	110	50	4 1/2" API	45000–72000lbs/ 80–50RPM
9 5/8" 244.5mm	635	Medium–hard and abrasive formations with high compressive strengths.	Conical on gage and inner rows; Hardmetal and wear resistant carbide on shirtail lip and lug.	132	60	6 5/8" API	28875–57750lbs/ 100–60RPM
9 5/8" 244.5mm	832	Extremely hard and abrasive formations with high compressive strengths.	Ovoid on gage and inner rows; Hardmetal and wear resistant carbide on shirtail lip and lug.	143	65	6 5/8" API	48125–77000lbs/ 80–50RPM

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PRODUCT LINE

Bit Diameter	IADC	Applications	Special Features (Cutting Structure, Lug Protection)			Weight	PIN Conn.	Operating Suggestions
			lbs	kg				
9 7/8" 251mm	415	Very soft formations with low compressive strengths and high drillability.	Chisel on gage, ogive on inner rows; Hardmetal and wear resistant carbide on shritail lip and lug.	143	65	6 5/8" API	9,880 - 19,750lbs/120-90RPM	
9 7/8" 251mm	435	Very Soft formations with low compressive strengths and high drillability.	Chisel on gage, ogive on inner rows; Hardmetal and wear resistant carbide on shritail lip and lug.	143	65	6 5/8" API	9,880 - 39,500lbs/120-90RPM	
9 7/8" 251mm	535	Soft formations with low compressive strengths.	Chisel on gage, conical on inner rows; Hardmetal and wear resistant carbide on shritail lip and lug.	143	65	6 5/8" API	19,750-49,380lbs/110-80RPM	
9 7/8" 251mm	615	Medium-hard formations with high compressive strengths.	Chisel on gage, conical on inner rows; Hardmetal and wear resistant carbide on shritail lip and lug.	143	65	6 5/8" API	29,630-49,380lbs/100-60RPM	
9 7/8" 251mm	635	Medium-hard and abrasive formations with high compressive strengths.	Conical on gage, conical on inner rows; Hardmetal and wear resistant carbide on shritail lip and lug.	143	65	6 5/8" API	29,630-59,250lbs/100-60RPM	
9 7/8" 251mm	715	Hard and abrasive formations with high compressive strengths.	Conical on gage, ogive on inner rows; Hardmetal and wear resistant carbide on shritail lip and lug.	143	65	6 5/8" API	39,500-59,250lbs/90-60RPM	
9 7/8" 251mm	725	Hard and abrasive formations with high compressive strengths.	Hardmetal and wear resistant carbide on shritail lip and lug.	143	65	6 5/8" API	39,500-59,250lbs/90-60RPM	
9 7/8" 251mm	735	Hard and abrasive formations with high compressive strengths.	Ovoid on gage, conical on inner rows; Hardmetal and wear resistant carbide on shritail lip and lug.	143	65	6 5/8" API	39,500-69,130lbs/90-60RPM	
9 7/8" 251mm	845	Extremely hard and abrasive formations with high compressive strengths.	Ovoid on gage and inner rows; Hardmetal and wear resistant carbide on shritail lip and lug.	143	65	6 5/8" API	49,375-79,000lbs/80-50RPM	
10 3/16" 258mm	635	Medium-hard and abrasive formations with high compressive strengths.	Conical on gage, ogive on inner rows; Hardmetal on lug; Wear resistant carbide on shritail lip and lug.	148	67	6 5/8" API	30,630-61,250lbs/100-60RPM	
10 3/16" 258mm	735	Hard and abrasive formations with high compressive strengths.	Conical on gage, ogive and ovoid on inner rows; Hardmetal on lug; Wear resistant carbide on shritail lip and lug.	148	67	6 5/8" API	40,752-71,316lbs/90-60RPM	
10 5/8" 270mm	415	Very soft formations with low compressive strengths and high drillability.	Off-set chisel on gage, conical on inner rows; Hardmetal and wear resistant carbide on shritail lip and lug.	163	74	6 5/8" API	10,630-21,250lbs/120-90RPM	
10 5/8" 270mm	422	Very soft formations with low compressive strengths and high drillability.	Off-set chisel on gage, conical on inner rows; Hardmetal on lug; Wear resistant carbide on shritail lip and lug.	163	74	6 5/8" API	10,630-21,250lbs/120-90RPM	

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Bit Diameter	IADC	Applications	Special Features (Cutting Structure, Lug Protection)			Weight	PIN Conn.	Operating Suggestions
			lbs	kg				
10 5/8" 270mm	425	Very soft formations with low compressive strengths and high drillability.	Chisel on gage, conical on inner rows; Hardmetal on shritail lip; Wear resistant carbide on shritail lip and lug.	163	74	6 5/8" API	10,630-21,250lbs/120-90RPM	
10 5/8" 270mm	535	Soft formations with low compressive strengths.	Off-set chisel on gage, conical on inner rows; Hardmetal on lug; Wear resistant carbide on shritail lip and lug.	163	74	6 5/8" API	21,250-53,130lbs/110-80RPM	
10 5/8" 270mm	615	Medium-hard formations with high compressive strengths.	Conical on gage, ogive and conical on inner rows; Hardmetal on lug; Wear resistant carbide on shritail lip and lug.	163	74	6 5/8" API	31,880-53,130lbs/100-60RPM	
10 5/8" 270mm	645	Medium-hard and abrasive formations with high compressive strengths.	Conical on gage, ogive on inner rows; Hardmetal on lug; Wear resistant carbide on shritail lip and lug.	163	74	6 5/8" API	31,880-63,750lbs/100-60RPM	
10 5/8" 270mm	715	Hard and abrasive formations with high compressive strengths.	Conical on gage, ogive on inner rows; Hardmetal on lug; Wear resistant carbide on shritail lip and lug.	163	74	6 5/8" API	42,500-63,750lbs/90-60RPM	
11" 279mm	645	Medium-hard and abrasive formations with high compressive strengths.	Conical on gage, ogive on inner rows; Hardmetal and wear resistant carbide on shritail lip and lug.	163	74	6 5/8" API	33,000-66,000lbs/100-60RPM	
11" 279mm	835	Extremely hard and abrasive formations with high compressive strengths.	Ovoid on gage and inner rows; Hardmetal and wear resistant carbide on shritail lip and lug.	163	74	6 5/8" API	55,000-88,000lbs/80-50RPM	
12 1/4" 311mm	532	Soft formations with low compressive strengths.	Conical on gage, ogive on inner rows; Hardmetal on lug; Wear resistant carbide on shritail lip and lug.	216	98	6 5/8" API	24,500-61,250lbs/110-80RPM	
12 1/4" 311mm	632	Medium-hard and abrasive formations with high compressive strengths.	Conical on gage, ogive on inner rows; Hardmetal on lug; Wear resistant carbide on shritail lip and lug.	216	98	6 5/8" API	36,750-73,500lbs/100-60RPM	
12 1/4" 311mm	635	Medium-hard and abrasive formations with high compressive strengths.	Conical on gage, ogive on inner rows; Hardmetal on lug; Wear resistant carbide on shritail lip and lug.	216	98	6 5/8" API	36,750-73,500lbs/100-60RPM	
12 1/4" 311mm	742	Hard and abrasive formations with high compressive strengths.	Ovoid on gage, ogive and ovoid on inner rows; Hardmetal and wear resistant carbide on shritail lip and lug.	216	98	6 5/8" API	49,000-85,750lbs/90-60RPM	
12 1/4" 311mm	745	Hard and abrasive formations with high compressive strengths.	Ovoid on gage, ogive and ovoid on inner rows; Hardmetal and wear resistant carbide on shritail lip and lug.	216	98	6 5/8" API	49,000-85,750lbs/90-60RPM	
12 1/4" 311mm	832	Extremely hard and abrasive formations with high compressive strengths.	Ovoid on gage and inner rows; Hardmetal on lug; Wear resistant carbide on shritail lip and lug.	216	98	6 5/8" API	61,250-98,000lbs/80-50RPM	
13 3/4" 349mm	532	Soft formations with low compressive strengths.	Off-set chisel on gage, conical on inner rows; Hardmetal on lug; Wear resistant carbide on shritail lip and lug.	271	123	6 5/8" API	27,500-68,750lbs/110-80RPM	

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6 1/4" IADC412

CUTTING STRUCTURE

Chisel on gage, conical on inner rows.
Designed for very soft formations with low compressive strengths and high drillability such as shale, soft limestone, sandstone, conglomerate, soft dolomite and coal ore.
Application: 4,000–7,000Psi

SHIRTTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 412

Bearing Type: Roller–Ball–Roller–Thrust Button/Open Bearing

Cutting Structure:

–Inner and Nose Rows: Conical
–Gage Rows: Chisel

–Gage Bevel Protection: Round
Pin Connection: 3 1/2" API

Metric Bit Diameter: 159mm

Product Weight: 20kg

Weight on Bit: 6250–12500lbs

Rotary Speed: 120–90RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



6 1/4" IADC732

CUTTING STRUCTURE

Ovoid on gage, ogive on inner rows.
Designed for hard and abrasive formations with high compressive strengths such as granite, limestone, sandy sandstone, dolomite and chert.
Application: 43,000–52,000Psi

SHIRTTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 732

Bearing Type: Roller–Ball–Roller–Thrust Button/Open

Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Ogive
–Gage Rows: Ovoid

–Gage Bevel Protection: Round
Pin Connection: 3 1/2" API

Metric Bit Diameter: 159mm

Product Weight: 20kg

Weight on Bit: 25,000–43,750lbs

Rotary Speed: 90–60RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



6 3/4" IADC412

CUTTING STRUCTURE

Chisel on gage, conical on inner rows.
Designed for very soft formations with low compressive strengths and high drillability such as shale, soft limestone, sandstone, conglomerate, soft dolomite and coal ore.
Application: 4,000–7,000Psi

SHIRTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 412
Bearing Type: Roller–Ball–Roller–Thrust Button/Open Bearing
Circulation Type: Jet Air
Cutting Structure:
–Inner and Nose Rows: Conical
–Gage Rows: Chisel
–Gage Bevel Protection: Round
Pin Connection: 3 1/2" API
Metric Bit Diameter: 171mm
Product Weight: 21kg

Weight on Bit: 6750–13500lbs
Rotary Speed: 120–90RPM
Air Back Pressure: 0.2–0.4MPa

OPERATING SUGGESTIONS

Actual drilling parameters must be determined for specific applications.



6 3/4" IADC532

CUTTING STRUCTURE

Conical on gage and inner rows.
Designed for soft formations with low compressive strengths such as shale, soft limestone, dolomite with interlayers and coal ore.
Application: 15000–23000Psi

SHIRTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 532
Bearing Type: Roller–Ball–Roller–Thrust Button/Open Bearing
Circulation Type: Jet Air
Cutting Structure:
–Inner and Nose Rows: Conical
–Gage Rows: Conical
–Gage Bevel Protection: Round
Pin Connection: 3 1/2" API
Metric Bit Diameter: 171mm
Product Weight: 21kg

OPERATING SUGGESTIONS

Weight on Bit: 13500–33750lbs
Rotary Speed: 110–80RPM
Air Back Pressure: 0.2–0.4MPa

Actual drilling parameters must be determined for specific applications.



6 3/4" IADC632

CUTTING STRUCTURE

Ovoid on gage, ogive on inner rows.
Designed for medium-hard and abrasive formations with high compressive strengths such as limestone, sandstone, dolomite and chert.
Application: 29,000–38,000Psi

SHIRTTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 632
Bearing Type: Roller-Ball-Roller-Thrust

Button/Open Bearing
Circulation Type: Jet Air

Cutting Structure:
-Inner and Nose Rows: Ogive

-Gage Rows: Ovoid
-Gage Bevel Protection: Round

Metric Bit Diameter: 171mm
Pin Connection: 3 1/2" API

Product Weight: 21kg
Weight on Bit: 20250–40500lbs

Rotary Speed: 100–60RPM
Air Back Pressure: 0.2–0.4MPa



Actual drilling parameters must be determined for specific applications.



6 3/4" IADC732

CUTTING STRUCTURE

Ovoid on gage, ogive on inner rows.
Designed for hard and abrasive formations with high compressive strengths such as granite, limestone, sandy sandstone, dolomite and chert.
Application: 43,000–52,000Psi

SHIRTTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 732
Bearing Type: Roller-Ball-Roller-Thrust

Button/Open Bearing
Circulation Type: Jet Air

Cutting Structure:
-Inner and Nose Rows: Ogive

-Gage Rows: Ovoid
-Gage Bevel Protection: Round

Metric Bit Diameter: 171mm
Pin Connection: 3 1/2" API

Product Weight: 21kg
Weight on Bit: 27000–47250lbs

Rotary Speed: 90–60RPM
Air Back Pressure: 0.2–0.4MPa



Actual drilling parameters must be determined for specific applications.



7 7/8" IADC412

CUTTING STRUCTURE

Chisel on gage, conical on inner rows.
Designed for very soft formations with low compressive strengths and high drillability such as shale, soft limestone, sandstone, conglomerate, soft dolomite and coal ore.
Application: 4,000–7,000Psi

SHIRTTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 412

Bearing Type: Roller-Ball-Roller-Thrust Button/Open Bearing

Cutting Structure:

–Gage Rows: Chisel
–Inner and Nose Rows: Conical

Pin Connection: 4 1/2" API
Metric Bit Diameter: 200mm

Product Weight: 34kg

Weight on Bit: 7,880–15,750lbs

Rotary Speed: 120–90RPM

Air Back Pressure: 0.2–0.4MPa



■ Actual drilling parameters must be determined for specific applications.



7 7/8" IADC415

CUTTING STRUCTURE

Chisel on gage, conical on inner rows.
Designed for very soft formations with low compressive strengths and high drillability such as shale, soft limestone, sandstone, conglomerate, soft dolomite and coal ore.
Application: 4,000–7,000Psi

SHIRTTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 415

Bearing Type: Roller-Ball-Roller-Thrust Button/Sealed Bearing

Cutting Structure:

–Inner and Nose Rows: Conical
–Gage Rows: Chisel

Pin Connection: 4 1/2" API
Metric Bit Diameter: 200mm

Product Weight: 34kg

Weight on Bit: 7,880–15,750lbs

Rotary Speed: 120–90RPM

Air Back Pressure: 0.2–0.4MPa



■ Actual drilling parameters must be determined for specific applications.



7 7/8" IADC535

CUTTING STRUCTURE

Chisel on gage, conical on inner rows.
Designed for soft formations with low compressive strengths such as shale, soft limestone, dolomite with interlayers and coal ore.

SHIRTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 535

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

-Inner and Nose Rows: Conical

-Gage Rows: Chisel

-Gage Bevel Protection: Round

Pin Connection: 4 1/2" API

Metric Bit Diameter: 200mm

Product Weight: 34Kg

OPERATING SUGGESTIONS

Weight on Bit: 15,750-39,380lbs

Rotary Speed: 110-80RPM

Air Back Pressure: 0.2-0.4MPa

■ Actual drilling parameters must be determined for specific applications.



7 7/8" IADC542

CUTTING STRUCTURE

Conical on gage and inner rows.
Designed for medium-soft formations with low compressive strengths such as shale, soft limestone, dolomite with interlayers and coal ore.

SHIRTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 542

Bearing Type: Roller-Ball-Roller-Thrust

Button/Open Bearing

Circulation Type: Jet Air

Cutting Structure:

-Inner and Nose Rows: Conical

-Gage Rows: Conical

-Gage Bevel Protection: Round

Pin Connection: 4 1/2" API

Metric Bit Diameter: 200mm

Product Weight: 34Kg

OPERATING SUGGESTIONS

Weight on Bit: 15,750-39,380lbs

Rotary Speed: 110-80RPM

Air Back Pressure: 0.2-0.4MPa

■ Actual drilling parameters must be determined for specific applications.



7 7/8" IADC545

CUTTING STRUCTURE

Conical on gage and inner rows.
Designed for medium-soft formations with low compressive strengths such as shale, soft limestone, dolomite with interlayers and coal ore.
Application: 18000–27000Psi

SHIRTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 545

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Conical

–Gage Rows: Conical

–Gage Bevel Protection: Round

Pin Connection: 4 1/2" API

Metric Bit Diameter: 200mm

Product Weight: 34kg

Weight on Bit: 15,750–39,380lbs

Rotary Speed: 110–80RPM

Air Back Pressure: 0.2–0.4MPa

OPERATING SUGGESTIONS

■ Actual drilling parameters must be determined for specific applications.



7 7/8" IADC635

CUTTING STRUCTURE

Conical on gage, ogive on inner rows.
Designed for medium-hard and abrasive formations with high compressive strengths such as limestone, sandstone, dolomite and chert.
Application: 29,000–38,000Psi

SHIRTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 635

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Ogive

–Gage Rows: Conical

–Gage Bevel Protection: Round

Pin Connection: 4 1/2" API

Metric Bit Diameter: 200mm

Product Weight: 34kg

Weight on Bit: 23,630–47,250lbs

Rotary Speed: 100–60RPM

Air Back Pressure: 0.2–0.4MPa

OPERATING SUGGESTIONS

■ Actual drilling parameters must be determined for specific applications.



7 7/8" IADC735

CUTTING STRUCTURE

Ovoid on gage, ogive on inner rows.
Designed for hard and abrasive formations with high compressive strengths such as granite, limestone, sandy sandstone, dolomite and chert.
Application: 43,000–52,000Psi

SHIRTTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 735
Bearing Type: Roller-Ball-Roller-Thrust

Cutting Structure:
Circulation Type: Jet Air
Button/Sealed Bearing
Bearing Type: Roller-Ball-Roller-Thrust

Weight on Bit: 31,500–55,130lbs
Rotary Speed: 90–60RPM
Air Back Pressure: 0.2–0.4MPa

OPERATING SUGGESTIONS



■ Actual drilling parameters must be determined for specific applications.

7 7/8" IADC845

CUTTING STRUCTURE

Ovoid on gage, ogive on inner rows.
Designed for extremely hard and abrasive formations with high compressive strengths such as magnetite, quartzite, granite.
Application: 58,000–70,000Psi

SHIRTTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 845
Bearing Type: Roller-Ball-Roller-Thrust

Cutting Structure:
Circulation Type: Jet Air
Button/Sealed Bearing
Bearing Type: Roller-Ball-Roller-Thrust

Weight on Bit: 39,380–63,000lbs
Rotary Speed: 80–50RPM
Air Back Pressure: 0.2–0.4MPa

OPERATING SUGGESTIONS



■ Actual drilling parameters must be determined for specific applications.

8 1/2" IADC635

CUTTING STRUCTURE

Conical on gage, ogive on inner rows.
Designed for medium-hard and abrasive formations with high compressive strengths such as limestone, sandstone, dolomite and chert.
Application: 29,000–38,000Psi

SHIRTTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 635

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Ogive

–Gage Rows: Conical

–Gage Bevel Protection: Round

Pin Connection: 4 1/2" API

Metric Bit Diameter: 216mm

Product Weight: 38kg

OPERATING SUGGESTIONS

Weight on Bit: 25500–51000lbs

Rotary Speed: 100–60RPM

Air Back Pressure: 0.2–0.4MPa



Actual drilling parameters must be determined for specific applications.

8 1/2" IADC735

CUTTING STRUCTURE

Ovoid on gage, ogive on inner rows.
Designed for hard and abrasive formations with high compressive strengths such as granite, limestone, sandy sandstone, dolomite and chert.
Application: 43,000–52,000Psi

SHIRTTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 735

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Ogive

–Gage Rows: Ovoid

–Gage Bevel Protection: Round

Pin Connection: 4 1/2" API

Metric Bit Diameter: 216mm

Product Weight: 38kg

OPERATING SUGGESTIONS

Weight on Bit: 34000–59500lbs

Rotary Speed: 90–60RPM

Air Back Pressure: 0.2–0.4MPa



Actual drilling parameters must be determined for specific applications.



8 1/2" IADC835

CUTTING STRUCTURE

Ovoid on gage and inner rows.
Designed for extremely hard and abrasive formations with high compressive strengths such as magnetite, quartzite, granite.
Application: 55,000–66,000Psi

SHIRTTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 835

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Ovoid

–Gage Rows: Ovoid

–Gage Bevel Protection: Round

Pin Connection: 4 1/2" API

Metric Bit Diameter: 216mm

Product Weight: 38kg

OPERATING SUGGESTIONS

Weight on Bit: 42500–68000lbs
Rotary Speed: 80–50RPM
Air Back Pressure: 0.2–0.4MPa



■ Actual drilling parameters must be determined for specific applications.

9" IADC412

CUTTING STRUCTURE

Chisel on gage, conical on inner rows.
Designed for very soft formations with low compressive strengths and high drillability such as shale, soft limestone, sandstone, conglomerate, soft dolomite and coal ore.
Application: 4,000–7,000Psi

SHIRTTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 412

Bearing Type: Roller-Ball-Roller-Thrust

Button/Open Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Conical

–Gage Rows: Chisel

–Gage Bevel Protection: Round

Pin Connection: 4 1/2" API

Metric Bit Diameter: 229mm

Product Weight: 50Kg

OPERATING SUGGESTIONS

Weight on Bit: 9,000–18,000lbs
Rotary Speed: 120–90RPM
Air Back Pressure: 0.2–0.4MPa



■ Actual drilling parameters must be determined for specific applications.

9" IADC415

CUTTING STRUCTURE

Chisel on gage, conical on inner rows. Designed for very soft formations with low compressive strengths and high drillability such as shale, soft limestone, sandstone, conglomerate, soft dolomite and coal ore.

Application: 4,000–7,000Psi

SHIRTTAIL PROTECTION

Hardmetal on lug.
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 415

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Conical

–Gage Rows: Chisel

–Gage Bevel Protection: Round

Pin Connection: 4 1/2" API

Metric Bit Diameter: 229mm

Product Weight: 50kg

Weight on Bit: 9,000–18,000lbs

Rotary Speed: 120–90RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



9" IADC435

CUTTING STRUCTURE

Chisel on gage, conical on inner rows. Designed for very soft formations with low compressive strengths and high drillability such as shale, soft limestone, sandstone, conglomerate, soft dolomite and coal ore.

Application: 6,000–9,000Psi

SHIRTTAIL PROTECTION

Hardmetal on lug.
Hardmetal and wear resistant carbide on shirrtail lip

PRODUCT SPECIFICATION

IADC Code: 435

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Conical

–Gage Rows: Chisel

–Gage Bevel Protection: Round

Pin Connection: 4 1/2" API

Metric Bit Diameter: 229mm

Product Weight: 50kg

Weight on Bit: 9,000–36,000lbs

Rotary Speed: 120–90RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



9" IADC545

CUTTING STRUCTURE

Off-set chisel on gage, conical on inner rows. Designed for medium-soft formations with low compressive strengths such as shale, soft limestone, dolomite with interlayers and coal ore.

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 545

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

Inner and Nose Rows: Conical

Gage Rows: Off-set chisel

Gage Bevel Protection: Round

Pin Connection: 4 1/2" API

Metric Bit Diameter: 229mm

Product Weight: 50kg

Weight on Bit: 18,000-45,000lbs

Rotary Speed: 110-80RPM

Air Back Pressure: 0.2-0.4MPa

Actual drilling parameters must be determined for specific applications.



9" IADC635

CUTTING STRUCTURE

Off-set on gage, conical on inner rows. Designed for medium-hard and abrasive formations with high compressive strengths such as limestone, sandstone, dolomite and chert.

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 635

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

Inner and Nose Rows: Conical

Gage Rows: Ovoid

Gage Bevel Protection: Round

Pin Connection: 4 1/2" API

Metric Bit Diameter: 229mm

Product Weight: 50kg

Weight on Bit: 27,000-54,000lbs

Rotary Speed: 100-60RPM

Air Back Pressure: 0.2-0.4MPa

Actual drilling parameters must be determined for specific applications.



9" IADC735

CUTTING STRUCTURE

Ovoid on gage, ogive on inner rows.
Designed for hard and abrasive formations with high compressive strengths such as granite, limestone, sandy sandstone, dolomite and chert.
Application: 43,000–52,000PSI

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 735

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Ogive

–Gage Rows: Ovoid

–Gage Bevel Protection: Round

Pin Connection: 4 1/2" API

Metric Bit Diameter: 229mm

Product Weight: 50kg

OPERATING SUGGESTIONS

Weight on Bit: 36000–63000lbs

Rotary Speed: 90–60RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



9" IADC845

CUTTING STRUCTURE

Ovoid on gage and inner rows.
Designed for extremely hard and abrasive formations with high compressive strengths such as magnetite, quartzite, granite.
Application: 58,000–70,000PSI

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 845

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Ovoid

–Gage Rows: Ovoid

–Gage Bevel Protection: Round

Pin Connection: 4 1/2" API

Metric Bit Diameter: 229mm

Product Weight: 50kg

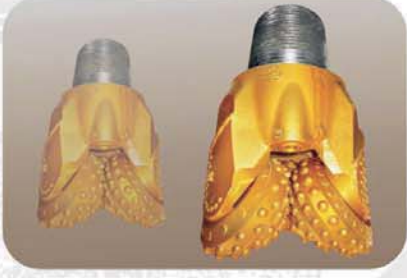
OPERATING SUGGESTIONS

Weight on Bit: 45000–72000lbs

Rotary Speed: 80–50RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



9 5/8" IADC635

CUTTING STRUCTURE

Conical on gage and inner rows.
Designed for medium-hard and abrasive formations
with high compressive strengths such as limestone,
sandstone, dolomite and chert.
Application: 29,000–38,000Psi

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip
and lug.

PRODUCT SPECIFICATION

IADC Code: 635

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Conical

–Gage Rows: Conical

–Gage Bevel Protection: Flat-top

Pin Connection: 6 5/8" API

Metric Bit Diameter: 244.5mm

Product Weight: 60kg

OPERATING SUGGESTIONS

Weight on Bit: 28875–57750lbs

Rotary Speed: 100–60RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



9 5/8" IADC832

CUTTING STRUCTURE

Ovoid on gage and inner rows.
Designed for extremely hard and abrasive formations
with high compressive strengths such as magnetite
quartzite, quartzite, granite.
Application: 55,000–66,000Psi

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip
and lug.

PRODUCT SPECIFICATION

IADC Code: 832

Bearing Type: Roller-Ball-Roller-Thrust

Button/Open Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Ovoid

–Gage Rows: Ovoid

–Gage Bevel Protection: Flat-top

Pin Connection: 6 5/8" API

Metric Bit Diameter: 244.5mm

Product Weight: 65kg

OPERATING SUGGESTIONS

Weight on Bit: 48125–77000lbs

Rotary Speed: 80–50RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



9 7/8" IADC415

CUTTING STRUCTURE

Chisel on gage, ogive on inner rows.
Designed for very soft formations with low compressive strengths and high drillability such as shale, soft limestone, sandstone, conglomerate, soft dolomite and coal ore.
Application: 4,000–7,000Psi

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 415

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Ogive

–Gage Rows: Chisel

–Gage Bevel Protection: Round

Pin Connection: 6 5/8" API

Metric Bit Diameter: 251mm

Product Weight: 65kg

OPERATING SUGGESTIONS

Weight on Bit: 9,880–19,750lbs

Rotary Speed: 120–90RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



9 7/8" IADC435

CUTTING STRUCTURE

Chisel on gage, ogive on inner rows.
Designed for very soft formations with low compressive strengths and high drillability such as shale, soft limestone, sandstone, conglomerate, soft dolomite and coal ore.
Application: 6,000–9,000Psi

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 435

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Ogive

–Gage Rows: Chisel

–Gage Bevel Protection: Round

Pin Connection: 6 5/8" API

Metric Bit Diameter: 251mm

Product Weight: 65kg

OPERATING SUGGESTIONS

Weight on Bit: 9,880–39,500lbs

Rotary Speed: 120–90RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



9 7/8" IADC535

CUTTING STRUCTURE

Chisel on gage, conical on inner rows. Designed for medium-soft formations with low compressive strengths such as shale, soft limestone, dolomite with interlayers and coal ore.

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 535

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

-Inner and Nose Rows: Conical

-Gage Rows: Chisel

-Gage Bevel Protection: Round

Pin Connection: 6 5/8" API

Metric Bit Diameter: 251 mm

Product Weight: 65kg

OPERATING SUGGESTIONS

Weight on Bit: 19,750-49,380lbs

Rotary Speed: 110-80RPM

Air Back Pressure: 0.2-0.4MPa

■ Actual drilling parameters must be determined for specific applications.



9 7/8" IADC615

CUTTING STRUCTURE

Chisel on gage, conical on inner rows. Designed for medium-hard and abrasive formations with high compressive strengths such as limestone, sandstone, dolomite and chert.

Application: 23,000-30,000PSi

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 615

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

-Inner and Nose Rows: Conical

-Gage Rows: Chisel

-Gage Bevel Protection: Round

Pin Connection: 6 5/8" API

Metric Bit Diameter: 251 mm

Product Weight: 65kg

OPERATING SUGGESTIONS

Weight on Bit: 29,630-49,380lbs

Rotary Speed: 100-60RPM

Air Back Pressure: 0.2-0.4MPa

■ Actual drilling parameters must be determined for specific applications.



9 7/8" IADC635

CUTTING STRUCTURE

Conical on gage, conical on inner rows.
Designed for medium-hard and abrasive formations
with high compressive strengths such as limestone,
sandstone, dolomite and chert.
Application: 29,000-38,000Psi

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip
and lug.

PRODUCT SPECIFICATION

IADC Code: 635

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

-Inner and Nose Rows: Conical

-Gage Rows: Conical

-Gage Bevel Protection: Flat-top

Pin Connection: 6 5/8" API

Metric Bit Diameter: 251mm

Product Weight: 65kg

OPERATING SUGGESTIONS

Weight on Bit: 29,630-59,250lbs

Rotary Speed: 100-60RPM

Air Back Pressure: 0.2-0.4MPa

Actual drilling parameters must be determined for specific applications.



9 7/8" IADC645

CUTTING STRUCTURE

Conical on gage, conical on inner rows.
Designed for medium-hard and abrasive formations
with high compressive strengths such as shales,
limestones, dolomites and chert.
Application: 29000-38000Psi

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip
and lug.

PRODUCT SPECIFICATION

IADC Code: 645

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

-Inner and Nose Rows: Conical

-Gage Rows: Conical

-Gage Bevel Protection: Flat-top

Pin Connection: 6 5/8" API

Metric Bit Diameter: 251mm

Product Weight: 65kg

OPERATING SUGGESTIONS

Weight on Bit: 29625-59250lbs

Rotary Speed: 100-60RPM

Air Back Pressure: 0.2-0.4MPa

Actual drilling parameters must be determined for specific applications.



9 7/8" IADC715

CUTTING STRUCTURE

Conical on gage, ogive on inner rows.
Designed for hard and abrasive formations with high compressive strengths such as granite, limestone, sandy sandstone, dolomite and chert.
Application: 37,000–44,000PSi

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 715

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Ogive

–Gage Rows: Conical

–Gage Bevel Protection: Round

Pin Connection: 6 5/8" API

Metric Bit Diameter: 251mm

Product Weight: 65kg

OPERATING SUGGESTIONS

Weight on Bit: 39,500–59,250lbs

Rotary Speed: 90–60RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



9 7/8" IADC725

CUTTING STRUCTURE

Conical on gage, ogive on inner rows.
Designed for hard and abrasive formations with high compressive strengths such as granite, limestone, sandy sandstone, dolomite and chert.
Application: 40,000–48,000PSi

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 725

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Ogive

–Gage Rows: Conical

–Gage Bevel Protection: Round

Pin Connection: 6 5/8" API

Metric Bit Diameter: 251mm

Product Weight: 65kg

OPERATING SUGGESTIONS

Weight on Bit: 39,500–59,250lbs

Rotary Speed: 90–60RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



9 7/8" IADC735

CUTTING STRUCTURE

Ovoid on gage, conical on inner rows.
Designed for hard and abrasive formations with high compressive strengths such as granite, limestone, sandy sandstone, dolomite and chert.

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 735

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

—Inner and Nose Rows: Conical

—Gage Rows: Ovoid

—Gage Bevel Protection: Flat-top

Pin Connection: 6 5/8" API

Metric Bit Diameter: 251 mm

Product Weight: 65kg

OPERATING SUGGESTIONS

Weight on Bit: 39,500–69,130lbs

Rotary Speed: 90–60RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



9 7/8" IADC845

CUTTING STRUCTURE

Ovoid on gage and inner rows.
Designed for extremely hard and abrasive formations with high compressive strengths such as magnetite, quartzite, granite.

Application: 58,000–70,000Psi

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 845

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

—Inner and Nose Rows: Ovoid

—Gage Rows: Ovoid

—Gage Bevel Protection: Flat-top

Pin Connection: 6 5/8" API

Metric Bit Diameter: 251 mm

Product Weight: 65kg

OPERATING SUGGESTIONS

Weight on Bit: 49375–79000lbs

Rotary Speed: 80–50RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



10 3/16" IADC635

CUTTING STRUCTURE

Conical on gage, ogive on inner rows. Designed for medium-hard and abrasive formations with high compressive strengths such as limestone, sandstone, dolomite and chert. Application: 29,000–38,000Psi

SHIRTTAIL PROTECTION

Hardmetal on lug; Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 635

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Ogive

–Gage Rows: Conical

–Gage Bevel Protection: Round

Pin Connection: 5/8" API

Metric Bit Diameter: 258mm

Product Weight: 67Kg

Weight on Bit: 30563–61125lbs

Rotary Speed: 100–60RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



10 3/16" IADC735

CUTTING STRUCTURE

Conical on gage, ogive and ovoid on inner rows. Designed for hard and abrasive formations with high compressive strengths such as granite, limestone, sandy sandstone, dolomite and chert. Application: 43,000–52,000Psi

SHIRTTAIL PROTECTION

Hardmetal on lug; Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 735

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Ogive and ovoid

–Gage Rows: Conical

–Gage Bevel Protection: Round

Pin Connection: 5/8" API

Metric Bit Diameter: 258mm

Product Weight: 67Kg

Weight on Bit: 40752–71316lbs

Rotary Speed: 90–60RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



10 5/8" IADC415

CUTTING STRUCTURE

Off-set chisel on gage, conical on inner rows. Designed for very soft formations with low compressive strengths and high drillability such as shale, soft limestone, sandstone, conglomerate, soft dolomite and coal ore.

Application: 4,000–7,000PSi

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 415

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Conical

–Gage Rows: Off-set chisel

–Gage Bevel Protection: Round

Pin Connection: 6 5/8" API

Metric Bit Diameter: 270mm

Product Weight: 74kg

OPERATING SUGGESTIONS

Weight on Bit: 10,630–21,250lbs

Rotary Speed: 100–60RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



10 5/8" IADC422

CUTTING STRUCTURE

Off-set chisel on gage, conical on inner rows. Designed for very soft formations with low compressive strengths and high drillability such as shale, soft limestone, sandstone, conglomerate, soft dolomite and coal ore.

Application: 5,000–8,000PSi

SHIRTTAIL PROTECTION

Hardmetal on shirrtail lip; Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 422

Bearing Type: Roller-Ball-Roller-Thrust

Button/Open Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Conical

–Gage Rows: Off-set chisel

–Gage Bevel Protection: Round

Pin Connection: 6 5/8" API

Metric Bit Diameter: 270mm

Product Weight: 74kg

OPERATING SUGGESTIONS

Weight on Bit: 10,630–21,250lbs

Rotary Speed: 120–90RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



10 5/8" IADC425

CUTTING STRUCTURE

Chisel on gage, conical on inner rows. Designed for very soft formations with low compressive strengths and high drillability such as shale, soft limestone, sandstone, conglomerate, soft dolomite and coal ore.

Application: 5,000–8,000PSi

SHIRTTAIL PROTECTION

Hardmetal on shirrtail lip;
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 425

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Conical

–Gage Rows: Chisel

–Gage Bevel Protection: Round

Pin Connection: 6 5/8" API

Metric Bit Diameter: 270mm

Product Weight: 74kg

OPERATING SUGGESTIONS

Weight on Bit: 10,630–21,250lbs

Rotary Speed: 120–90RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



10 5/8" IADC535

CUTTING STRUCTURE

Off-set chisel on gage, conical on inner rows. Designed for medium-soft formations with low compressive strengths such as shale, soft limestone, dolomite with interlayers and coal ore.

Application: 15000–23000PSi

SHIRTTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 535

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Conical

–Gage Rows: Off-set chisel

–Gage Bevel Protection: Round

Pin Connection: 6 5/8" API

Metric Bit Diameter: 270mm

Product Weight: 74kg

OPERATING SUGGESTIONS

Weight on Bit: 21,250–53,130lbs

Rotary Speed: 110–80RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



10 5/8" IADC615

CUTTING STRUCTURE

Conical on gage, ogive and conical on inner rows. Designed for medium-hard and abrasive formations with high compressive strengths such as limestone, sandstone, dolomite and chert.

Application: 23,000–30,000PSI

SHIRTTAIL PROTECTION

Hardmetal on lug.
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 615

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Ogive and conical

–Gage Rows: Conical

–Gage Bevel Protection: Round

Pin Connection: 6 5/8" API

Metric Bit Diameter: 270mm

Product Weight: 74Kg

OPERATING SUGGESTIONS

Weight on Bit: 31,880–53,130lb

Rotary Speed: 100–60RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



10 5/8" IADC645

CUTTING STRUCTURE

Conical on gage, ogive on inner rows. Designed for medium-hard and abrasive formations with high compressive strengths such as limestone, sandstone, dolomite and chert.

Application: 32000–42000PSI

SHIRTTAIL PROTECTION

Hardmetal on lug.
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 645

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Ogive

–Gage Rows: Conical

–Gage Bevel Protection: Round

Pin Connection: 6 5/8" API

Metric Bit Diameter: 270mm

Product Weight: 74Kg

OPERATING SUGGESTIONS

Weight on Bit: 31,880–63,750lbs

Rotary Speed: 100–60RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



10 5/8" IADC715

CUTTING STRUCTURE

Conical on gage, ogive on inner rows.
Designed for hard and abrasive formations with high compressive strengths such as granite, limestone, sandy sandstone, dolomite and chert.
Application: 37,000–44,000Psi

SHIRTTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 715

Bearing Type: Roller–Ball–Roller–Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Ogive

–Gage Rows: Conical

–Gage Bevel Protection: Round

Pin Connection: 6 5/8" API

Metric Bit Diameter: 270mm

Product Weight: 74kg

Weight on Bit: 42,500–63,750lbs

Rotary Speed: 90–60RPM

Air Back Pressure: 0.2–0.4MPa



■ Actual drilling parameters must be determined for specific applications.

11" IADC645

CUTTING STRUCTURE

Conical on gage, ogive on inner rows.
Designed for medium–hard and abrasive formations with high compressive strengths such as limestone, sandstone, dolomite and chert.
Application: 32000–42000Psi

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 645

Bearing Type: Roller–Ball–Roller–Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Ogive

–Gage Rows: Conical

–Gage Bevel Protection: Round

Pin Connection: 6 5/8" API

Metric Bit Diameter: 279mm

Product Weight: 74kg

Weight on Bit: 32000–66000lbs

Rotary Speed: 100–60RPM

Air Back Pressure: 0.2–0.4MPa



■ Actual drilling parameters must be determined for specific applications.

11" IADC835

CUTTING STRUCTURE

Ovoid on gage and inner rows.
Designed for extremely hard and abrasive formations with high compressive strengths such as magnetite, quartzite, granite.
Application: 55,000–66,000PSI

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 835

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Ovoid

–Gage Rows: Ovoid

–Gage Bevel Protection: Round

Pin Connection: 6 5/8" API

Metric Bit Diameter: 279mm

Product Weight: 74Kg

OPERATING SUGGESTIONS

Weight on Bit: 55000–88000lbs

Rotary Speed: 80–50RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



12 1/4" IADC532

CUTTING STRUCTURE

Conical on gage, ogive on inner rows.
Designed for medium-soft formations with low compressive strengths such as shale, soft limestone, dolomite with interlayers and coal ore.
Application: 15000–23000PSI

SHIRTTAIL PROTECTION

Hardmetal on lug.
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 532

Bearing Type: Roller-Ball-Roller-Thrust

Button/Open Bearing

Circulation Type: Jet Air

Cutting Structure:

–Inner and Nose Rows: Ogive

–Gage Rows: Conical

–Gage Bevel Protection: Round

Pin Connection: 6 5/8" API

Metric Bit Diameter: 311mm

Product Weight: 98Kg

OPERATING SUGGESTIONS

Weight on Bit: 24500–61250lbs

Rotary Speed: 110–80RPM

Air Back Pressure: 0.2–0.4MPa

■ Actual drilling parameters must be determined for specific applications.



12 1/4" IADC632

CUTTING STRUCTURE

Conical on gage, ogive on inner rows.
Designed for medium-hard and abrasive formations
with high compressive strengths such as limestone,
sandstone, dolomite and chert.
Application: 29000-38000Psi

SHIRTTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 632

Bearing Type: Roller-Ball-Roller-Thrust

Button/Open Bearing

Circulation Type: Jet Air

Cutting Structure:

-Inner and Nose Rows: Ogive

-Gage Rows: Conical

-Gage Bevel Protection: Round

Pin Connection: 6 5/8" API

Metric Bit Diameter: 311mm

Product Weight: 98kg

OPERATING SUGGESTIONS

Weight on Bit: 36750-73500lbs
Rotary Speed: 100-60RPM
Air Back Pressure: 0.2-0.4MPa



■ Actual drilling parameters must be determined for specific applications.

12 1/4" IADC635

CUTTING STRUCTURE

Conical on gage, ogive on inner rows.
Designed for medium-hard and abrasive formations
with high compressive strengths such as limestone,
sandstone, dolomite and chert.
Application: 29000-38000Psi

SHIRTTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 635

Bearing Type: Roller-Ball-Roller-Thrust

Button/Sealed Bearing

Circulation Type: Jet Air

Cutting Structure:

-Inner and Nose Rows: Ogive

-Gage Rows: Conical

-Gage Bevel Protection: Round

Pin Connection: 6 5/8" API

Metric Bit Diameter: 311mm

Product Weight: 98kg

OPERATING SUGGESTIONS

Weight on Bit: 36750-73500lbs
Rotary Speed: 100-60RPM
Air Back Pressure: 0.2-0.4MPa



■ Actual drilling parameters must be determined for specific applications.

12 1/4" IADC742

CUTTING STRUCTURE

Ovoid on gage, ogive and ovoid on inner rows. Designed for hard and abrasive formations with high compressive strengths such as granite, limestone, sandy sandstone, dolomite and chert.

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 742
Bearing Type: Roller-Ball-Roller-Thrust
Button/Open Bearing
Circulation Type: Jet Air
Cutting Structure:
-Inner and Nose Rows: Ogive and ovoid
-Gage Rows: Ovoid
-Gage Bevel Protection: Round
Pin Connection: 6 5/8" API
Metric Bit Diameter: 311 mm
Product Weight: 98kg

Weight on Bit: 49000-85750lbs
Rotary Speed: 90-60RPM
Air Back Pressure: 0.2-0.4MPa

OPERATING SUGGESTIONS

Actual drilling parameters must be determined for specific applications.



12 1/4" IADC745

CUTTING STRUCTURE

Ovoid on gage, ogive and ovoid on inner rows. Designed for hard and abrasive formations with high compressive strengths such as granite, limestone, sandy sandstone, dolomite and chert.

SHIRTTAIL PROTECTION

Hardmetal and wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 745
Bearing Type: Roller-Ball-Roller-Thrust
Button/Sealed Bearing
Circulation Type: Jet Air
Cutting Structure:
-Inner and Nose Rows: Ogive and ovoid
-Gage Rows: Ovoid
-Gage Bevel Protection: Round
Pin Connection: 6 5/8" API
Metric Bit Diameter: 311 mm
Product Weight: 98kg

OPERATING SUGGESTIONS

Weight on Bit: 49000-85750lbs
Rotary Speed: 90-60RPM
Air Back Pressure: 0.2-0.4MPa

Actual drilling parameters must be determined for specific applications.



12 1/4" IADC832

CUTTING STRUCTURE

Optimized for extremely hard and abrasive formations with high compressive strengths such as magnetite, quartzite, granite.
Application: 55,000–66,000PSi

SHIRTTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 832
Bearing Type: Roller-Ball-Roller-Thrust
Button/Open Bearing
Circulation Type: Jet Air
Cutting Structure:

–Inner and Nose Rows: Ovoid
–Gage Rows: Ovoid

–Gage Bevel Protection: Round
Pin Connection: 6 5/8" API

Metric Bit Diameter: 311mm
Product Weight: 98kg

Weight on Bit: 61250–98000lbs
Rotary Speed: 80–50RPM
Air Back Pressure: 0.2–0.4MPa



■ Actual drilling parameters must be determined for specific applications.



13 3/4" IADC532

CUTTING STRUCTURE

Optimized for medium-soft formations with low compressive strengths such as shale, soft limestone, dolomite with interlayers and coal ore.
Application: 15000–23000PSi

SHIRTTAIL PROTECTION

Hardmetal on lug;
Wear resistant carbide on shirrtail lip and lug.

PRODUCT SPECIFICATION

IADC Code: 532
Bearing Type: Roller-Ball-Roller-Thrust
Button/Open Bearing
Circulation Type: Jet Air
Cutting Structure:

–Inner and Nose Rows: Conical
–Gage Rows: Off-set chisel

–Gage Bevel Protection: Round
Pin Connection: 6 5/8" API

Metric Bit Diameter: 349mm
Product Weight: 123kg

Weight on Bit: 27500–68750lbs
Rotary Speed: 110–80RPM
Air Back Pressure: 0.2–0.4MPa



■ Actual drilling parameters must be determined for specific applications.

