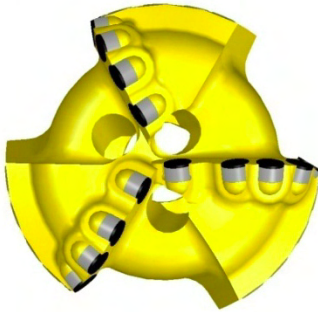


# Dirt Digger D513 Series PDC Bits



5-7/8" D313

## Applications:

- Cost effective PDC drill bit ideally suited for mining, construction, fiber optic, water well, geothermal and shallow oil & gas drilling
- Tapered parabolic profile design offers an optimal combination of cutter protection and ROP capabilities for a variety of formations and drilling conditions
- PDC bit advantages over a traditional roller cone bit include longer bit life, smoother drilling operations and increased penetration rates

## Design Features:

- 3D designed one-piece 4140 alloy steel body is CNC machined to exact design specifications for maximum blade and body strength
- Optimized cutter distribution profile for blade count, cutter quantity, drilling conditions and bit stability
- Force-balanced PDC cutter locations minimize bit whirl and drill a precise round hole
- Asymmetrical blade layout reduces drilling harmonics

Bit Size	Pin Connections Available	Number of 13mm Cutters	Port Count and Size	TFA
5-5/8"	3-1/2" API Reg	18	5 @ 20/32	1.53 in <sup>2</sup>
5-7/8"	3-1/2" API Reg	20	5 @ 21/32"	1.69 in <sup>2</sup>
6"	3-1/2" API Reg	21	5 @ 21/32"	1.69 in <sup>2</sup>
6-1/8"	3-1/2" API Reg	21	5 @ 21/32"	1.69 in <sup>2</sup>
6-1/4"	3-1/2" API Reg	22	5 @ 21/32"	1.69 in <sup>2</sup>
6-1/2"	3-1/2" API Reg	23	5 @ 22/32"	1.86 in <sup>2</sup>
6-3/4"	3-1/2" API Reg	24	5 @ 22/32"	1.86 in <sup>2</sup>
7-7/8"	4-1/2" API Reg	28	5 @ 23/32"	2.03 in <sup>2</sup>
8-1/2"	4-1/2" API Reg	32	5 @ 24/32"	2.21 in <sup>2</sup>
8-3/4"	4-1/2" API Reg	33	5 @ 24/32"	2.21 in <sup>2</sup>
9-7/8"	6-5/8" API Reg	37	5 @ 25/32"	2.40 in <sup>2</sup>
10-5/8"	6-5/8" API Reg	39	5 @ 26/32"	2.59 in <sup>2</sup>
11"	6-5/8" API Reg	41	5 @ 27/32"	2.80 in <sup>2</sup>
12-1/4"	6-5/8" API Reg	47	5 @ 28/32"	3.01 in <sup>2</sup>

# Dirt Digger PDC Bits

## 5-5/8" D513

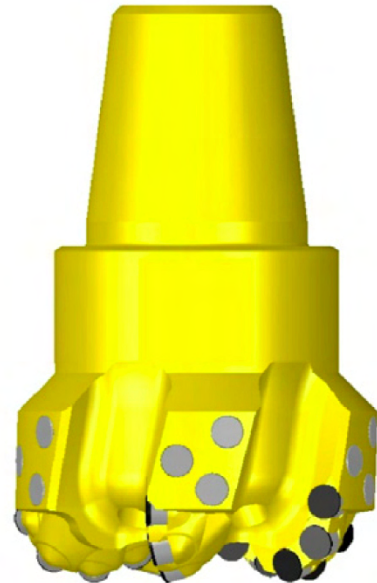
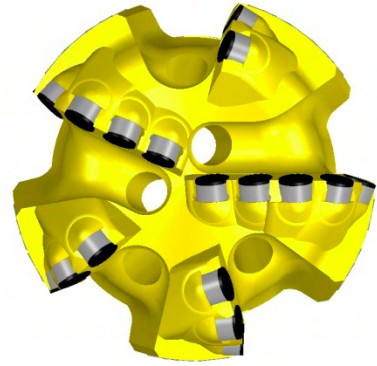
Adding value through performance

### Applications:

- Cost effective PDC drill bit ideally suited for mining, construction, fiber optic, water well, geothermal and shallow oil & gas drilling
- Tapered parabolic profile design offers an optimal combination of cutter protection and ROP capabilities for a variety of formations and drilling conditions
- PDC bit advantages over a traditional roller cone bit include longer bit life, smoother drilling operations and increased penetration rates

### Design Features:

- 3D designed one-piece 4140 alloy steel body is CNC machined to exact design specifications for maximum blade and body strength
- Optimized cutter distribution profile for blade count, cutter quantity, drilling conditions and bit stability
- Force-balanced PDC cutter locations minimize bit whirl and drill a precise round hole
- Asymmetrical blade layout reduces drilling harmonics



## Product Specifications:

### General Data:

- Body Type	One-piece Steel
- Gage Length	1.50 in / 38.10 mm
- Overall Length	8.85 in / 224.79 mm
- Shipping Weight	TBD
- Product Number	91002862

### Cutting Structure:

- Face Cutters	18 @ 13 mm PDC
- Back-Up Cutters	N/A
- Gage Cutters	N/A

### Connection:

- Pin Connection	3-1/2" API Reg Pin
- Fishneck Diameter	4.375 in / 111.13 mm
- Fishneck Length	1.875 in / 47.625 mm
- Make-Up Length	5.16 in / 131.14 mm
- Make-Up Torque	6,300-8,400 ft-lbs

### Hydraulics:

- Nozzle Type	5 @ 20/32" Ports
- TFA	1.53 in <sup>2</sup>

### Recommended Operating Parameters:

- Weight on Bit (WOB)	3,000-15,000 lbs
- Rotary Speed (RPM)	60-150 RPM



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# Dirt Digger PDC Bits

## 5-7/8" D513

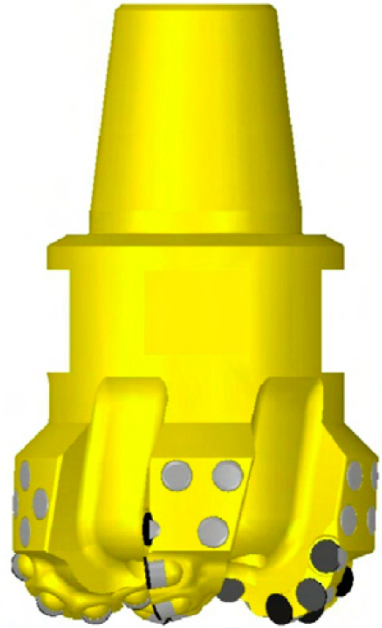
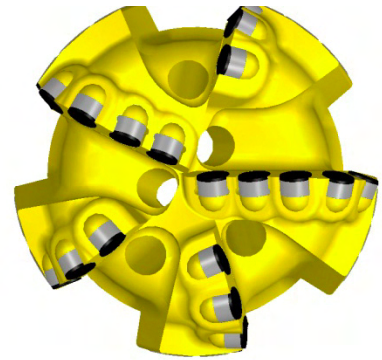
Adding value through performance

### Applications:

- Cost effective PDC drill bit ideally suited for mining, construction, fiber optic, water well, geothermal and shallow oil & gas drilling
- Tapered parabolic profile design offers an optimal combination of cutter protection and ROP capabilities for a variety of formations and drilling conditions
- PDC bit advantages over a traditional roller cone bit include longer bit life, smoother drilling operations and increased penetration rates

### Design Features:

- 3D designed one-piece 4140 alloy steel body is CNC machined to exact design specifications for maximum blade and body strength
- Optimized cutter distribution profile for blade count, cutter quantity, drilling conditions and bit stability
- Force-balanced PDC cutter locations minimize bit whirl and drill a precise round hole
- Asymmetrical blade layout reduces drilling harmonics



## Product Specifications:

### General Data:

- Body Type	One-piece Steel
- Gage Length	1.50 in / 38.10 mm
- Overall Length	9.93 in / 252.22 mm
- Shipping Weight	TBD
- Product Number	91002863

### Cutting Structure:

- Face Cutters	17 @ 13 mm PDC
- Back-Up Cutters	N/A
- Gage Cutters	3 @ 13 mm PDC

### Connection:

- Pin Connection	3-1/2" API Reg Pin
- Fishneck Diameter	4.75 in / 120.65 mm
- Fishneck Length	3.00 in / 76.20 mm
- Make-Up Length	6.24 in / 158.50 mm
- Make-Up Torque	6,300-8,400 ft-lbs

### Hydraulics:

- Nozzle Type	5 @ 21/32" Ports
- TFA	1.69 in <sup>2</sup>

### Recommended Operating Parameters:

- Weight on Bit (WOB)	3,000-15,000 lbs
- Rotary Speed (RPM)	60-150 RPM



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# Dirt Digger PDC Bits

## 6" D513

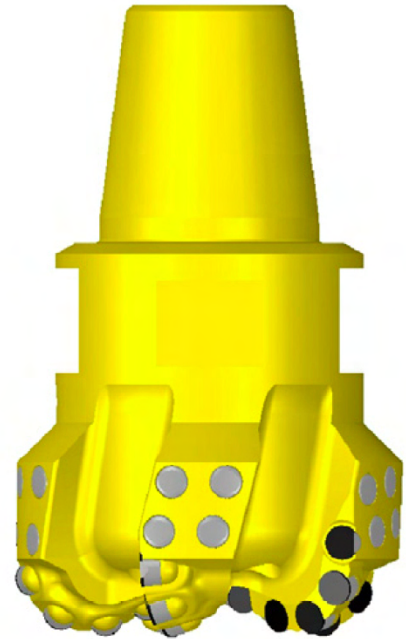
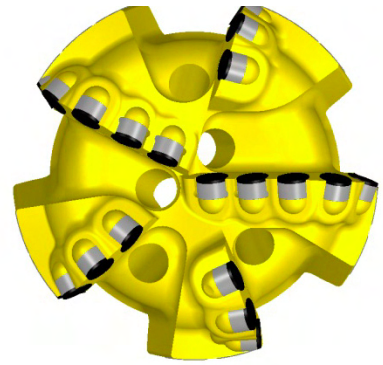
Adding value through performance

### Applications:

- Cost effective PDC drill bit ideally suited for mining, construction, fiber optic, water well, geothermal and shallow oil & gas drilling
- Tapered parabolic profile design offers an optimal combination of cutter protection and ROP capabilities for a variety of formations and drilling conditions
- PDC bit advantages over a traditional roller cone bit include longer bit life, smoother drilling operations and increased penetration rates

### Design Features:

- 3D designed one-piece 4140 alloy steel body is CNC machined to exact design specifications for maximum blade and body strength
- Optimized cutter distribution profile for blade count, cutter quantity, drilling conditions and bit stability
- Force-balanced PDC cutter locations minimize bit whirl and drill a precise round hole
- Asymmetrical blade layout reduces drilling harmonics



## Product Specifications:

### General Data:

- Body Type	One-piece Steel
- Gage Length	1.50 in / 38.10 mm
- Overall Length	9.93 in / 249.3 mm
- Shipping Weight	TBD
- Product Number	91002864

### Connection:

- Pin Connection	3-1/2" API Reg Pin
- Fishneck Diameter	4.75 in / 120.65 mm
- Fishneck Length	2.8 in / 71.12 mm
- Make-Up Length	6.125 in / 155.58 mm
- Make-Up Torque	6,300-8,400 ft-lbs

### Cutting Structure:

- Face Cutters	18 @ 13 mm PDC
- Back-Up Cutters	N/A
- Gage Cutters	3 @ 13 mm PDC

### Hydraulics:

- Nozzle Type	5 @ 21/32" Ports
- TFA	1.69 in <sup>2</sup>

### Recommended Operating Parameters:

- Weight on Bit (WOB)	3,000-15,000 lbs
- Rotary Speed (RPM)	60-150 RPM



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# Dirt Digger PDC Bits

## 6-1/8" D513

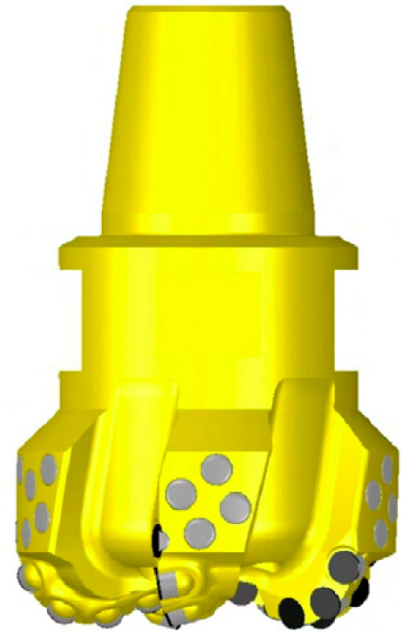
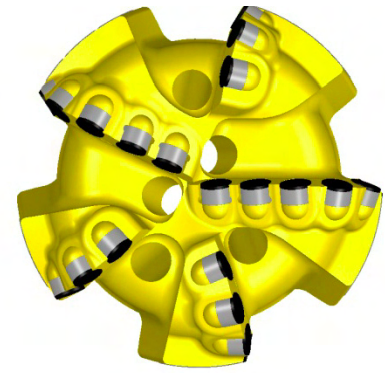
Adding value through performance

### Applications:

- Cost effective PDC drill bit ideally suited for mining, construction, fiber optic, water well, geothermal and shallow oil & gas drilling
- Tapered parabolic profile design offers an optimal combination of cutter protection and ROP capabilities for a variety of formations and drilling conditions
- PDC bit advantages over a traditional roller cone bit include longer bit life, smoother drilling operations and increased penetration rates

### Design Features:

- 3D designed one-piece 4140 alloy steel body is CNC machined to exact design specifications for maximum blade and body strength
- Optimized cutter distribution profile for blade count, cutter quantity, drilling conditions and bit stability
- Force-balanced PDC cutter locations minimize bit whirl and drill a precise round hole
- Asymmetrical blade layout reduces drilling harmonics



## Product Specifications:

### General Data:

- Body Type	One-piece Steel
- Gage Length	1.625 in / 14.28 mm
- Overall Length	9.98 in / 253.67 mm
- Shipping Weight	TBD
- Product Number	91002865

### Cutting Structure:

- Face Cutters	18 @ 13 mm PDC
- Back-Up Cutters	N/A
- Gage Cutters	3 @ 13 mm PDC

### Connection:

- Pin Connection	3-1/2" API Reg Pin
- Fishneck Diameter	4.75 in / 120.65 mm
- Fishneck Length	2.77 in / 70.23 mm
- Make-Up Length	6.3 in / 159.9 mm
- Make-Up Torque	6,300-8,400 ft-lbs

### Hydraulics:

- Nozzle Type	5 @ 21/32" Ports
- TFA	1.69 in <sup>2</sup>

### Recommended Operating Parameters:

- Weight on Bit (WOB)	3,000-15,000 lbs
- Rotary Speed (RPM)	60-150 RPM



# Dirt Digger PDC Bits

## 6-1/4" D513

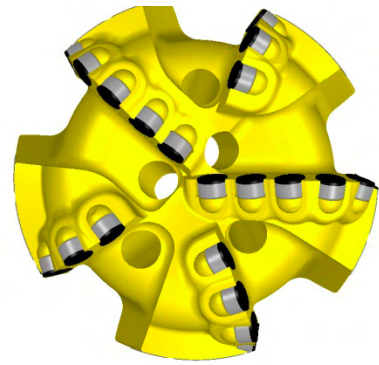
Adding value through performance

### Applications:

- Cost effective PDC drill bit ideally suited for mining, construction, fiber optic, water well, geothermal and shallow oil & gas drilling
- Tapered parabolic profile design offers an optimal combination of cutter protection and ROP capabilities for a variety of formations and drilling conditions
- PDC bit advantages over a traditional roller cone bit include longer bit life, smoother drilling operations and increased penetration rates

### Design Features:

- 3D designed one-piece 4140 alloy steel body is CNC machined to exact design specifications for maximum blade and body strength
- Optimized cutter distribution profile for blade count, cutter quantity, drilling conditions and bit stability
- Force-balanced PDC cutter locations minimize bit whirl and drill a precise round hole
- Asymmetrical blade layout reduces drilling harmonics



## Product Specifications:

### General Data:

- Body Type	One-piece Steel
- Gage Length	1.80 in / 45.72 mm
- Overall Length	10.01 in / 254.33 mm
- Shipping Weight	TBD
- Product Number	91002866

### Cutting Structure:

- Face Cutters	19 @ 13 mm PDC
- Back-Up Cutters	N/A
- Gage Cutters	3 @ 13 mm PDC

### Connection:

- Pin Connection	3-1/2" API Reg Pin
- Fishneck Diameter	4.75 in / 120.65 mm
- Fishneck Length	2.54 in / 64.41 mm
- Make-Up Length	6.33 in / 160.68 mm
- Make-Up Torque	6,300-8,400 ft-lbs

### Hydraulics:

- Nozzle Type	5 @ 21/32" Ports
- TFA	1.69 in <sup>2</sup>

### Recommended Operating Parameters:

- Weight on Bit (WOB)	3,000-15,000 lbs
- Rotary Speed (RPM)	60-150 RPM



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# Dirt Digger PDC Bits

## 6-1/2" D513

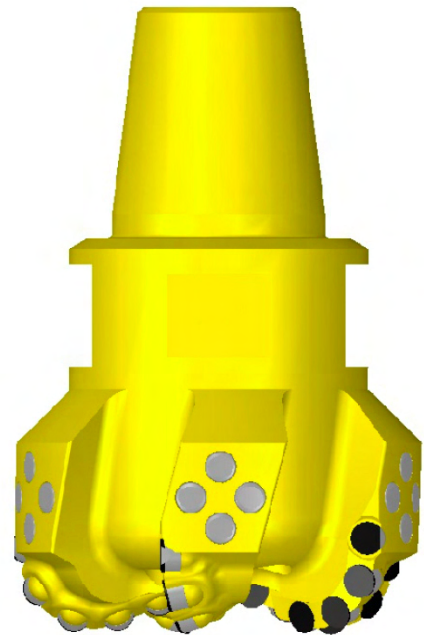
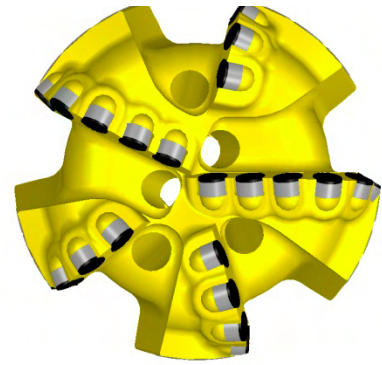
Adding value through performance

### Applications:

- Cost effective PDC drill bit ideally suited for mining, construction, fiber optic, water well, geothermal and shallow oil & gas drilling
- Tapered parabolic profile design offers an optimal combination of cutter protection and ROP capabilities for a variety of formations and drilling conditions
- PDC bit advantages over a traditional roller cone bit include longer bit life, smoother drilling operations and increased penetration rates

### Design Features:

- 3D designed one-piece 4140 alloy steel body is CNC machined to exact design specifications for maximum blade and body strength
- Optimized cutter distribution profile for blade count, cutter quantity, drilling conditions and bit stability
- Force-balanced PDC cutter locations minimize bit whirl and drill a precise round hole
- Asymmetrical blade layout reduces drilling harmonics



## Product Specifications:

### General Data:

- Body Type	One-piece Steel
- Gage Length	1.75 in / 44.45 mm
- Overall Length	10.03 in / 254.84 mm
- Shipping Weight	TBD
- Product Number	91002867

### Connection:

- Pin Connection	3-1/2" API Reg Pin
- Fishneck Diameter	4.75 in / 120.65 mm
- Fishneck Length	2.42 in / 61.47 mm
- Make-Up Length	6.35 in / 161.16 mm
- Make-Up Torque	6,300-8,400 ft-lbs

### Cutting Structure:

- Face Cutters	20 @ 13 mm PDC
- Back-Up Cutters	N/A
- Gage Cutters	6 @ 13 mm PDC

### Hydraulics:

- Nozzle Type	5 @ 22/32" Ports
- TFA	1.86 in <sup>2</sup>

### Recommended Operating Parameters:

- Weight on Bit (WOB)	3,000-15,000 lbs
- Rotary Speed (RPM)	60-150 RPM



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# Dirt Digger PDC Bits

## 6-3/4" D513

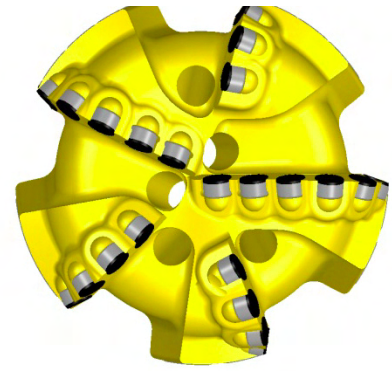
Adding value through performance

### Applications:

- Cost effective PDC drill bit ideally suited for mining, construction, fiber optic, water well, geothermal and shallow oil & gas drilling
- Tapered parabolic profile design offers an optimal combination of cutter protection and ROP capabilities for a variety of formations and drilling conditions
- PDC bit advantages over a traditional roller cone bit include longer bit life, smoother drilling operations and increased penetration rates

### Design Features:

- 3D designed one-piece 4140 alloy steel body is CNC machined to exact design specifications for maximum blade and body strength
- Optimized cutter distribution profile for blade count, cutter quantity, drilling conditions and bit stability
- Force-balanced PDC cutter locations minimize bit whirl and drill a precise round hole
- Asymmetrical blade layout reduces drilling harmonics



## Product Specifications:

### General Data:

- Body Type	One-piece Steel
- Gage Length	2.0 in / 50.8 mm
- Overall Length	10.35 in / 262.81 mm
- Shipping Weight	TBD
- Product Number	91002868

### Connection:

- Pin Connection	3-1/2" API Reg Pin
- Fishneck Diameter	4.75 in / 120.65 mm
- Fishneck Length	2.27 in / 57.68 mm
- Make-Up Length	6.66 in / 169.16 mm
- Make-Up Torque	6,300-8,400 ft-lbs

### Cutting Structure:

- Face Cutters	21 @ 13 mm PDC
- Back-Up Cutters	N/A
- Gage Cutters	3 @ 13 mm PDC

### Hydraulics:

- Nozzle Type	5 @ 22/32" Ports
- TFA	1.86 in <sup>2</sup>

### Recommended Operating Parameters:

- Weight on Bit (WOB)	3,000-15,000 lbs
- Rotary Speed (RPM)	60-150 RPM



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# Dirt Digger PDC Bits

## 7-7/8" D513

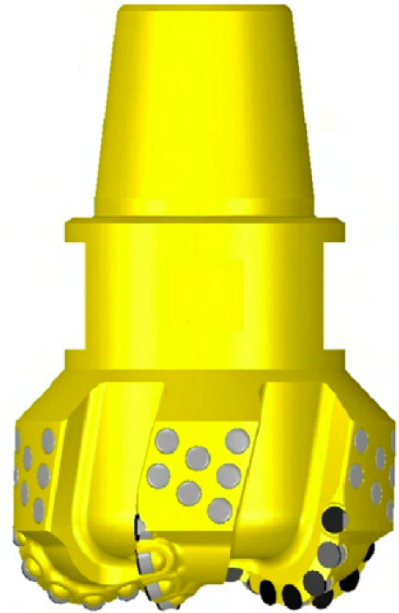
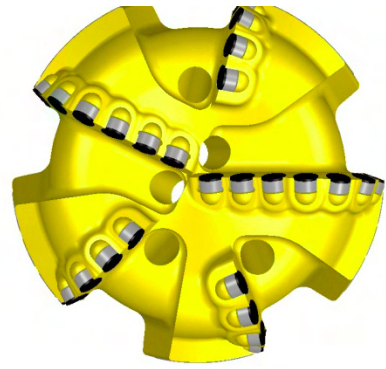
Adding value through performance

### Applications:

- Cost effective PDC drill bit ideally suited for mining, construction, fiber optic, water well, geothermal and shallow oil & gas drilling
- Tapered parabolic profile design offers an optimal combination of cutter protection and ROP capabilities for a variety of formations and drilling conditions
- PDC bit advantages over a traditional roller cone bit include longer bit life, smoother drilling operations and increased penetration rates

### Design Features:

- 3D designed one-piece 4140 alloy steel body is CNC machined to exact design specifications for maximum blade and body strength
- Optimized cutter distribution profile for blade count, cutter quantity, drilling conditions and bit stability
- Force-balanced PDC cutter locations minimize bit whirl and drill a precise round hole
- Asymmetrical blade layout reduces drilling harmonics



## Product Specifications:

### General Data:

- Body Type	One-piece Steel
- Gage Length	2.125 in / 53.975 mm
- Overall Length	11.94 in / 303.28 mm
- Shipping Weight	TBD
- Product Number	91002869

### Cutting Structure:

- Face Cutters	24 @ 13 mm PDC
- Back-Up Cutters	N/A
- Gage Cutters	4 @ 13 mm PDC

### Connection:

- Pin Connection	4-1/2" API Reg Pin
- Fishneck Diameter	5.75 in / 146.1 mm
- Fishneck Length	3.00 in / 76.20 mm
- Make-Up Length	7.75 in / 196.85 mm
- Make-Up Torque	14,600-19,200 ft-lbs

### Hydraulics:

- Nozzle Type	5 @ 23/32" Ports
- TFA	2.03 in <sup>2</sup>

### Recommended Operating Parameters:

- Weight on Bit (WOB)	4,000-20,000 lbs
- Rotary Speed (RPM)	60-150 RPM





# Dirt Digger PDC Bits

## 8-1/2" D513

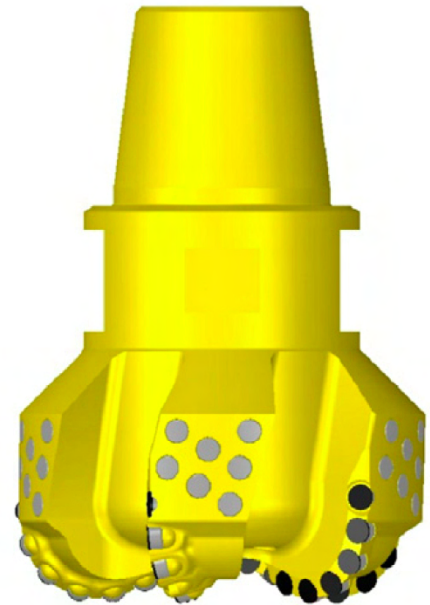
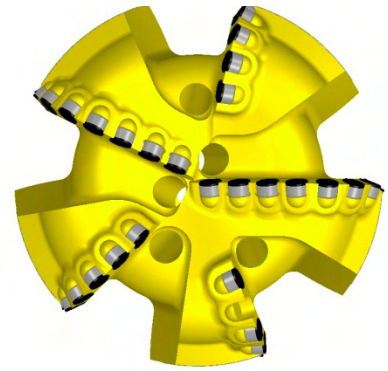
Adding value through performance

### Applications:

- Cost effective PDC drill bit ideally suited for mining, construction, fiber optic, water well, geothermal and shallow oil & gas drilling
- Tapered parabolic profile design offers an optimal combination of cutter protection and ROP capabilities for a variety of formations and drilling conditions
- PDC bit advantages over a traditional roller cone bit include longer bit life, smoother drilling operations and increased penetration rates

### Design Features:

- 3D designed one-piece 4140 alloy steel body is CNC machined to exact design specifications for maximum blade and body strength
- Optimized cutter distribution profile for blade count, cutter quantity, drilling conditions and bit stability
- Force-balanced PDC cutter locations minimize bit whirl and drill a precise round hole
- Asymmetrical blade layout reduces drilling harmonics



## Product Specifications:

### General Data:

- Body Type	One-piece Steel
- Gage Length	2.25 in / 57.15 mm
- Overall Length	12.37 in / 314.3 mm
- Shipping Weight	TBD
- Product Number	91002870

### Connection:

- Pin Connection	4-1/2" API Reg Pin
- Fishneck Diameter	5.75 in / 146.1 mm
- Fishneck Length	3.00 in / 76.20 mm
- Make-Up Length	8.31 in / 211.12 mm
- Make-Up Torque	14,600-19,200 ft-lbs

### Cutting Structure:

- Face Cutters	27 @ 13 mm PDC
- Back-Up Cutters	N/A
- Gage Cutters	5 @ 13 mm PDC

### Hydraulics:

- Nozzle Type	5 @ 24/32" Ports
- TFA	2.21 in <sup>2</sup>

### Recommended Operating Parameters:

- Weight on Bit (WOB)	4,000-20,000 lbs
- Rotary Speed (RPM)	60-150 RPM





# Dirt Digger PDC Bits

## 8-3/4" D513

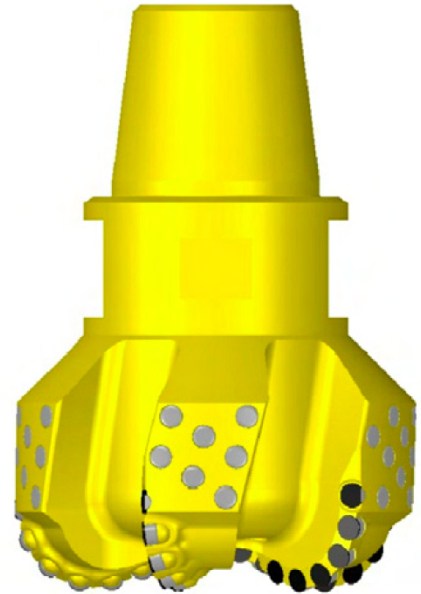
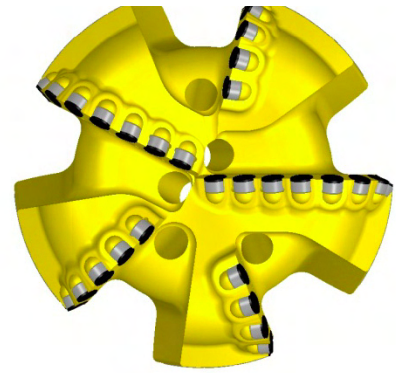
Adding value through performance

### Applications:

- Cost effective PDC drill bit ideally suited for mining, construction, fiber optic, water well, geothermal and shallow oil & gas drilling
- Tapered parabolic profile design offers an optimal combination of cutter protection and ROP capabilities for a variety of formations and drilling conditions
- PDC bit advantages over a traditional roller cone bit include longer bit life, smoother drilling operations and increased penetration rates

### Design Features:

- 3D designed one-piece 4140 alloy steel body is CNC machined to exact design specifications for maximum blade and body strength
- Optimized cutter distribution profile for blade count, cutter quantity, drilling conditions and bit stability
- Force-balanced PDC cutter locations minimize bit whirl and drill a precise round hole
- Asymmetrical blade layout reduces drilling harmonics



## Product Specifications:

### General Data:

- Body Type	One-piece Steel
- Gage Length	2.375 in / 60.325 mm
- Overall Length	12.8 in / 325.22 mm
- Shipping Weight	TBD
- Product Number	91002871

### Cutting Structure:

- Face Cutters	28 @ 13 mm PDC
- Back-Up Cutters	N/A
- Gage Cutters	5 @ 13 mm PDC

### Connection:

- Pin Connection	4-1/2" API Reg Pin
- Fishneck Diameter	5.75 in / 146.1 mm
- Fishneck Length	3.00 in / 76.20 mm
- Make-Up Length	8.616 in / 218.85 mm
- Make-Up Torque	14,600-19,200 ft-lbs

### Hydraulics:

- Nozzle Type	5 @ 24/32" Ports
- TFA	2.21 in <sup>2</sup>

### Recommended Operating Parameters:

- Weight on Bit (WOB)	4,000-20,000 lbs
- Rotary Speed (RPM)	60-150 RPM



# Dirt Digger PDC Bits

## 9-7/8" D513

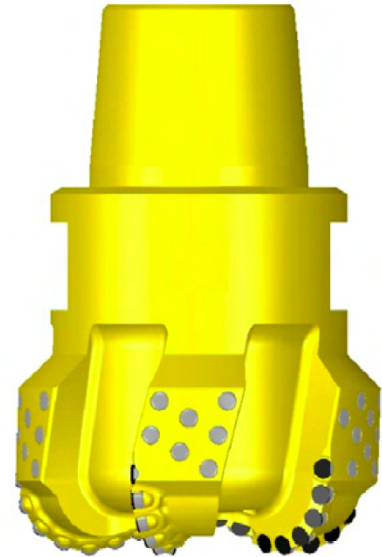
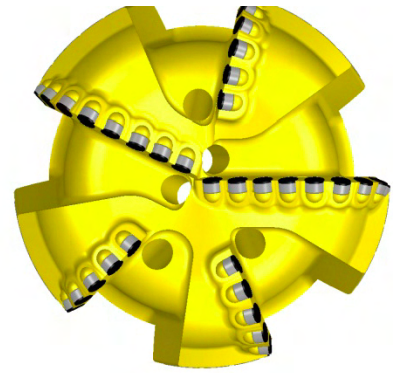
Adding value through performance

### Applications:

- Cost effective PDC drill bit ideally suited for mining, construction, fiber optic, water well, geothermal and shallow oil & gas drilling
- Tapered parabolic profile design offers an optimal combination of cutter protection and ROP capabilities for a variety of formations and drilling conditions
- PDC bit advantages over a traditional roller cone bit include longer bit life, smoother drilling operations and increased penetration rates

### Design Features:

- 3D designed one-piece 4140 alloy steel body is CNC machined to exact design specifications for maximum blade and body strength
- Optimized cutter distribution profile for blade count, cutter quantity, drilling conditions and bit stability
- Force-balanced PDC cutter locations minimize bit whirl and drill a precise round hole
- Asymmetrical blade layout reduces drilling harmonics



## Product Specifications:

### General Data:

- Body Type	One-piece Steel
- Gage Length	2.50 in / 63.5 mm
- Overall Length	14.87 in / 377.6 mm
- Shipping Weight	TBD
- Product Number	91002872

### Cutting Structure:

- Face Cutters	32 @ 13 mm PDC
- Back-Up Cutters	N/A
- Gage Cutters	5 @ 13 mm PDC

### Connection:

- Pin Connection	6-5/8" API Reg Pin
- Fishneck Diameter	8.0 in / 203.2 mm
- Fishneck Length	4.51 in / 114.58 mm
- Make-Up Length	9.93 in / 252.17 mm
- Make-Up Torque	38,600-51,500 ft-lbs

### Hydraulics:

- Nozzle Type	5 @ 25/32" Ports
- TFA	2.40 in <sup>2</sup>

### Recommended Operating Parameters:

- Weight on Bit (WOB)	5,000-25,000 lbs
- Rotary Speed (RPM)	60-150 RPM



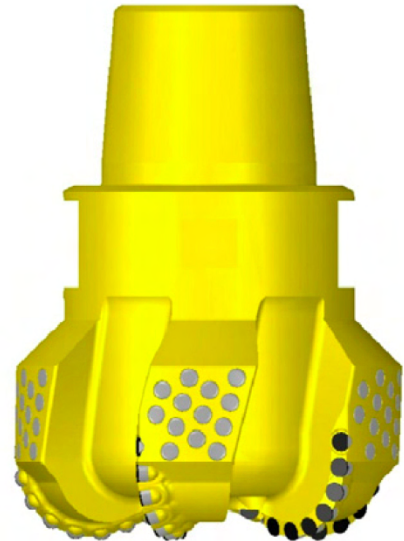
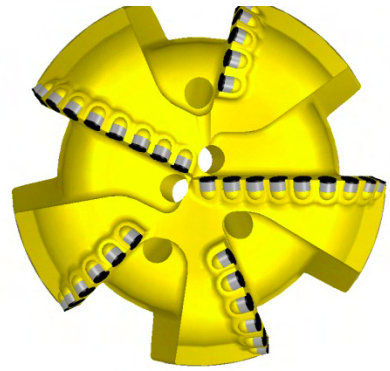
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# Dirt Digger PDC Bits

## 10-5/8" D513

Adding value through performance



### Applications:

- Cost effective PDC drill bit ideally suited for mining, construction, fiber optic, water well, geothermal and shallow oil & gas drilling
- Tapered parabolic profile design offers an optimal combination of cutter protection and ROP capabilities for a variety of formations and drilling conditions
- PDC bit advantages over a traditional roller cone bit include longer bit life, smoother drilling operations and increased penetration rates

### Design Features:

- 3D designed one-piece 4140 alloy steel body is CNC machined to exact design specifications for maximum blade and body strength
- Optimized cutter distribution profile for blade count, cutter quantity, drilling conditions and bit stability
- Force-balanced PDC cutter locations minimize bit whirl and drill a precise round hole
- Asymmetrical blade layout reduces drilling harmonics

## Product Specifications:

### General Data:

- Body Type	One-piece Steel
- Gage Length	2.625 in / 66.68 mm
- Overall Length	14.68 in / 372.87 mm
- Shipping Weight	TBD
- Product Number	91002873

### Cutting Structure:

- Face Cutters	34 @ 13 mm PDC
- Back-Up Cutters	N/A
- Gage Cutters	5 @ 13 mm PDC

### Connection:

- Pin Connection	6-5/8" API Reg Pin
- Fishneck Diameter	8.0 in / 230.2 mm
- Fishneck Length	3.69 in / 93.7 mm
- Make-Up Length	9.74 in / 247.87 mm
- Make-Up Torque	38,600-51,500 ft-lbs

### Hydraulics:

- Nozzle Type	5 @ 26/32" Ports
- TFA	2.59 in <sup>2</sup>

### Recommended Operating Parameters:

- Weight on Bit (WOB)	4,000-20,000 lbs
- Rotary Speed (RPM)	60-150 RPM



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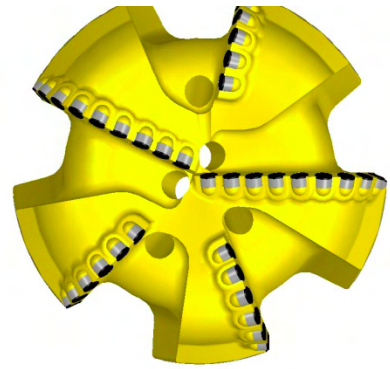




# Dirt Digger PDC Bits

## 11" D513

Adding value through performance



### Applications:

- Cost effective PDC drill bit ideally suited for mining, construction, fiber optic, water well, geothermal and shallow oil & gas drilling
- Tapered parabolic profile design offers an optimal combination of cutter protection and ROP capabilities for a variety of formations and drilling conditions
- PDC bit advantages over a traditional roller cone bit include longer bit life, smoother drilling operations and increased penetration rates

### Design Features:

- 3D designed one-piece 4140 alloy steel body is CNC machined to exact design specifications for maximum blade and body strength
- Optimized cutter distribution profile for blade count, cutter quantity, drilling conditions and bit stability
- Force-balanced PDC cutter locations minimize bit whirl and drill a precise round hole
- Asymmetrical blade layout reduces drilling harmonics

## Product Specifications:

### General Data:

- Body Type	One-piece Steel
- Gage Length	2.625 in / 66.675 mm
- Overall Length	14.94 in / 379.55 mm
- Shipping Weight	TBD
- Product Number	91002874

### Cutting Structure:

- Face Cutters	36 @ 13 mm PDC
- Back-Up Cutters	N/A
- Gage Cutters	5 @ 13 mm PDC

### Connection:

- Pin Connection	6-5/8" API Reg Pin
- Fishneck Diameter	8.0 in / 203.2 mm
- Fishneck Length	3.68 in / 93.47 mm
- Make-Up Length	10.0 in / 254.15 mm
- Make-Up Torque	38,600-51,500 ft-lbs

### Hydraulics:

- Nozzle Type	5 @ 27/32" Ports
- TFA	2.80 in <sup>2</sup>

### Recommended Operating Parameters:

- Weight on Bit (WOB)	5,000-25,000 lbs
- Rotary Speed (RPM)	60-150 RPM



# KEYS BIT

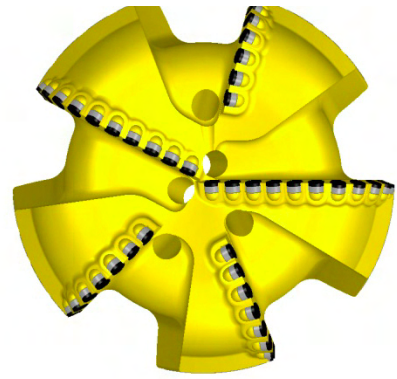
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Atlas Copco

# Dirt Digger PDC Bits

## 12-1/4" D513

Adding value through performance



### Applications:

- Cost effective PDC drill bit ideally suited for mining, construction, fiber optic, water well, geothermal and shallow oil & gas drilling
- Tapered parabolic profile design offers an optimal combination of cutter protection and ROP capabilities for a variety of formations and drilling conditions
- PDC bit advantages over a traditional roller cone bit include longer bit life, smoother drilling operations and increased penetration rates

### Design Features:

- 3D designed one-piece 4140 alloy steel body is CNC machined to exact design specifications for maximum blade and body strength
- Optimized cutter distribution profile for blade count, cutter quantity, drilling conditions and bit stability
- Force-balanced PDC cutter locations minimize bit whirl and drill a precise round hole
- Asymmetrical blade layout reduces drilling harmonics

## Product Specifications:

### General Data:

- Body Type	One-piece Steel
- Gage Length	2.75 in / 69.85 mm
- Overall Length	16.09 in / 408.69 mm
- Shipping Weight	TBD
- Product Number	91002875

### Cutting Structure:

- Face Cutters	47 @ 13 mm PDC
- Back-Up Cutters	N/A
- Gage Cutters	5 @ 13 mm PDC

### Connection:

- Pin Connection	6-5/8" API Reg Pin
- Fishneck Diameter	8.0 in / 203.2 mm
- Fishneck Length	3.83 in / 97.33 mm
- Make-Up Length	11.15 in / 283.29 mm
- Make-Up Torque	38,600-51,500 ft-lbs

### Hydraulics:

- Nozzle Type	5 @ 28/32" Ports
- TFA	3.01 in <sup>2</sup>

### Recommended Operating Parameters:

- Weight on Bit (WOB)	5,000-25,000 lbs
- Rotary Speed (RPM)	60-150 RPM

