

Secoroc Rock Drilling Tools

HORIZONTAL DIRECTIONAL DRILLING

Product catalogue

Atlas Copco



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ATLAS COPCO SECOROC HORIZONTAL DIRECTIONAL DRILLING

Atlas Copco has been in the mining and construction market for many years and is committed to innovative, productive, market leading solutions.

Atlas Copco Secoroc has over the years set the standard on many Horizontal Directional Drilling projects involving hard rock and difficult conditions. You can rely on our technical expertise – any time – anywhere.

Our products are the result of decades of drilling research and development and are manufactured in our world class manufacturing facility.

THE HORIZONTAL DIRECTIONAL DRILLING METHOD

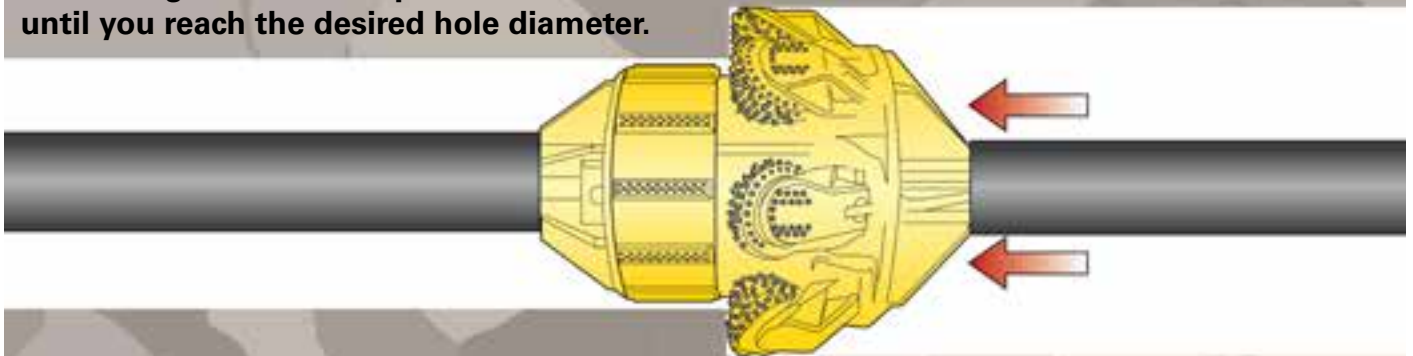
Step 1 – Drill a pilot hole with Rotary.



Step 2 – Ream back through the same hole with a HDD hole opener.



Step 3 – Ream back through the same hole with a larger HDD hole opener and so on until you reach the desired hole diameter.





HORIZONTAL DIRECTIONAL DRILLING PRODUCTS

Atlas Copco Secoroc has a broad range of horizontal directional drilling (HDD) products that are specifically designed and matched for any type of drilling condition. The product's versatility match the drilling needs to optimize the customer's productivity.

- A pilot bits range from 3 7/8-inch milled tooth for soft formations to 17 1/2-inch TCI pilot bits for medium hard formations.
- HDD cutters and bit thirds have the industry's highest quality, consequently making them the industry's top performers.

- The hole openers are specially designed and manufactured to outperform any hole opener in any type of drilling condition.

HDD MILLED TOOTH PILOT BITS



Atlas Copco has a large selection of milled tooth pilot bits for soft and unconsolidated ground formations. The pilot bits have an optimized shirrtail protection, hard metal on the bevel, and inner rows of the cones to withstand the harsh drilling conditions that are typically encountered in the HDD application.

The milled tooth pilot bits are designed with a compensation system to allow for deep drilling without adding pressure to the internal sealing components.

The bearing system is a greased frictional bearing that allows drillers to apply higher loads at higher rotational speeds without damaging the internal components.

Features	Benefits
Full armor protection	Wear protection for bit body and sealing components.
Hard metal on teeth	Longer lasting cutting structure for more drilling.
Compensation system	Allows to drill deeper without damaging grease seals.
Frictional bearing	Higher load bearing capacity.
Greased bearing	Higher rotation speed bearing capacity.
Competitive pricing	High productivity at low cost.

3 7/8"– 6 3/4" HDD MILLED TOOTH PILOT BITS

Bit Diameter		Product Code	IADC	Product	Special Features	Nozzle Type	Weight Estimate		Pin Connection	Operating Suggestions WOB	
Inch	mm						lbs	kg		lbs	RPM
3 7/8	98	110-0098-21-FD-1A-06	2-1-6	F21J	Conventional Gage Tooth, Armor	Threaded	9.2	4,2	2 3/8 API	5,800-13,600	60-140
3 7/8	98	110-0098-11-FD-1A-06	1-1-6	F11J	Conventional Gage Tooth, Armor	Threaded	9.2	4,2	2 3/8 API	5,800-11,400	60-140
4	102	110-0102-11-FD-1A-06	1-1-6	F11J	Conventional Gage Tooth, Armor	Threaded	9.5	4,3	2 3/8 API	5,800-11,400	60-140
4 1/2	114	110-0114-11-FD-1AG-07	1-1-7	F11J	Conventional Gage Tooth, Armor, Gage Bevel	Threaded	12.1	5,5	2 3/8 API	4,750-15,800	60-140
4 5/8	117	112-0117-11-FD-1AG-07	1-1-7	F11J	Conventional Gage Tooth, Armor, Gage Bevel	Threaded	13.2	6	2 7/8 API	4,750-16,200	60-140
4 3/4	121	112-0121-11-FD-1AG-07	1-1-7	F11J	Conventional Gage Tooth, Armor, Gage Bevel	Threaded	8.8	4	2 7/8 API	4,750-19,000	70-140
4 3/4	121	112-0121-21-FD-1A-06	2-1-6	F21J	Conventional Gage Tooth, Armor	Threaded	9.9	4,5	2 7/8 API	7,125-21,375	70-120
4 3/4	121	112-0121-21-FD-1AG-07	2-1-7	F21J	Conventional Gage Tooth, Armor, Gage Bevel	Threaded	9.9	4,5	2 7/8 API	7,125-21,375	70-120
5 1/2	140	112-0140-11-FD-1AG-07	1-1-7	F11J	Conventional Gage Tooth, Armor, Gage Bevel	Threaded	22.4	10,2	2 7/8 API	7,125-21,375	70-120
5 1/2	140	112-0140-21-FD-1AG-07	2-1-7	F21J	Conventional Gage Tooth, Armor, Gage Bevel	Threaded	22.4	10,2	2 7/8 API	7,125-21,375	70-120
6	152	114-0152-11-FD-1AG-07	1-1-7	F11J	Conventional Gage Tooth, Armor, Gage Bevel	Threaded	27.5	12,5	3 1/2 API	6,000-24,000	70-140
6 1/8	156	114-0156-11-FD-1AG-07	1-1-7	F11J	Conventional Gage Tooth, Armor, Gage Bevel	Threaded	28.6	13	3 1/2 API	6,125-24,500	70-140
6 1/4	159	114-0159-11-FD-1AG-07	1-1-7	F11J	Conventional Gage Tooth, Armor, Gage Bevel	Threaded	25.3	11,5	3 1/2 API	6,250-25,000	70-140
6 1/2	165	114-0165-11-FD-1AG-07	1-1-7	F11J	Conventional Gage Tooth, Armor, Gage Bevel	Threaded	31.2	14,2	3 1/2 API	6,500-26,000	70-140
6 3/4	171	114-0171-11-FD-1AG-07	1-1-7	F11J	Conventional Gage Tooth, Armor, Gage Bevel	Threaded	34.1	15,5	3 1/2 API	6,750-27,000	70-140

SMALL TO MEDIUM DIAMETER PILOT BITS



Atlas Copco also has a complete line of TCI pilot bits specially designed for medium hard formations, which is the most widely used for utility applications drillings with tricones. These products are strategically designed and manufactured for the utility application, making them competitive without having to break your pocket.

Feature	Benefit
Full armor protection	Wear protection for sealing components.
Large selection of cutting structures	Optimum matching for every ground condition.
Compensation system	Allows to drill deeper without damaging grease seals.
Frictional bearing	Higher load bearing capacity.
Greased bearing	Higher rotation speed bearing capacity.
Competitive pricing	High productivity at low cost.
Fluid nozzles	Capacity of handling application with high fluid flows.

3 7/8"–6 3/4" HDD TCI PILOT BITS

Bit Diameter		Product Code	IADC	Product	Special Features	Nozzle Type	Weight Estimate		Pin Connection	Operating Suggestions WOB	
Inch	mm						lbs	kg		lbs	RPM
3 7/8	98	110-3098-52-FD-FA-07	5-2-7	F52J	Chisel Inserts, HDD Armor	Threaded	9.5	4,3	2 3/8 API	5,800-13,600	60-140
4 1/4	108	110-3108-53-FD-FA-07	5-3-7	F53J	Chisel Inserts, HDD Armor	Threaded	10.6	4,8	2 3/8 API	6,000-25,000	50-90
4 3/4	121	112-3121-52-FD-FA-07	5-2-7	F52J	Chisel Inserts, HDD Armor	Threaded	14.3	6,5	2 7/8 API	14,250-26,125	60-90
4 7/8	124	112-3124-52-FD-FA-07	5-2-7	F52J	Chisel Inserts, HDD Armor	Threaded	19.8	9	2 7/8 API	14,625-26,800	60-90
5 1/8	130	112-3130-52-FD-FA-07	5-2-7	F52J	Chisel Inserts, HDD Armor	Threaded	20.9	9,5	2 7/8 API	15,375-28,200	60-90
5 1/4	133	112-3133-52-FD-FA-07	5-2-7	F52J	Chisel Inserts, HDD Armor	Threaded	23.1	10,5	2 7/8 API	15,750 -28,875	60-90
5 1/2	140	112-3140-52-FD-FA-07	5-2-7	F52J	Chisel Inserts, HDD Armor	Threaded	22.4	10,2	2 7/8 API	16,500 - 30,250	60-90
5 7/8	149	112-3149-52-FD-FA-07	5-1-7	F52J	Chisel Inserts, HDD Armor	Threaded	27.5	12,5	3 1/2 API	17,625-32,300	60-90
6	152	112-3152-52-FD-FA-07	5-2-7	F52J	Chisel Inserts, HDD Armor	Threaded	27.9	12,7	2 7/8 API	18,000-33,000	60-90
6	152	114-3152-52-FD-FA-07	5-2-7	F52J	Chisel Inserts, HDD Armor	Threaded	29	13,2	3 1/2 API	18,000-33,000	60-90
6 1/8	156	114-3156-52-FD-FA-07	5-2-7	F52J	Chisel Inserts, HDD Armor	Threaded	30.6	13,9	3 1/2 API	18,375-36,750	50-90
6 1/4	159	114-3159-51-FD-CA-07	5-1-7	F51J	Conical Inserts, HDD Armor	Threaded	31.5	14,3	3 1/2 API	15,625-34,375	70-100
6 1/4	159	114-3159-53-FD-CA-07	5-3-7	F53J	Chisel Inserts, HDD Armor	Threaded	31.5	14,3	3 1/2 API	18,750-37,500	50-90
6 1/2	165	114-3165-52-FD-FA-07	5-2-7	F52J	Chisel Inserts, HDD Armor	Threaded	32	14,7	3 1/2 API	19,500-35,750	60-90
6 1/2	165	114-3165-53-FD-FA-07	5-3-7	F53J	Chisel Inserts, HDD Armor	Threaded	32.3	14,7	3 1/2 API	19,500-35,750	60-90
6 3/4	171	114-3171-52-FD-FA-07	5-2-7	F52J	Chisel Inserts, HDD Armor	Threaded	32.8	14,9	3 1/2 API	20.250-37,125	60-90

**Nozzles sold separately - Requires three nozzles per bit - see Size chart for available Jet sizes

MEDIUM TO LARGE DIAMETER PILOT BITS



At Atlas Copco Secoroc engineers have combined the hard rock cutting structures, strongest shirttail wear protection and the leading edge bearing and seal package technology to create a pilot bit specifically designed for the HDD market. The result is the direct shot (DS) product line which drills faster and longer at lower total drilling cost per operation.

Feature	Benefit
Industry proven sealed bearing	Higher quality resulting in better performance.
Silver plated bearing surfaces	Longer lasting bearings at higher RPMs.
Proprietary carbide shapes and grades	Prolonged cutting structure and integrity.
Proprietary high load and pressure grease	Higher bearing capability in tough drilling conditions.
Full armor protection package	Optimum bit body protection for harsh horizontal drilling conditions.
Jet nozzle design	Capacity of handling application with high fluid flows.
Pressure compensated system	Allows to drill deeper without damaging grease seals.

6"-17 1/2" DIRECT SHOT PILOT BITS

Bit Diameter		Product Code	IADC	Product	Special Features	Nozzle Type	Weight Estimate		Pin Connection	Operating Suggestions WOB	
Inch	mm						lbs	kg		lbs	RPM
6	152	114-3152-53-DD-FA-07	5-3-7	DS53F	Chisel Inserts, HDD Armor	SF**	39	17,7	3 1/2 API	12.500-30,000	50-120
6	152	114-3152-61-DD-FA-07	6-1-7	DS61F	Chisel Inserts, HDD Armor	SF**	39	17,7	3 1/2 API	17.500-40,000	50-120
6 1/4	159	114-3159-61-DD-FA-07	6-1-7	DS61F	Chisel Inserts, HDD Armor	SF**	41	18,6	3 1/2 API	17.500-40,000	50-120
6 1/4	159	114-3159-63-DD-CA-07	6-3-7	DS63C	Conical Inserts, HDD Armor	SF**	41	18,6	3 1/2 API	17.500-40,000	50-120
6 1/2	165	114-3165-53-DD-FA-07	5-3-7	DS53F	Chisel Inserts, HDD Armor	SF**	47	21,4	3 1/2 API	17.500-37,500	50-120
6 1/2	165	114-3165-61-DD-FA-07	6-1-7	DS61F	Chisel Inserts, HDD Armor	SF**	47	21,4	3 1/2 API	20.000-45,000	50-120
6 3/4	171	114-3171-53-DD-FA-07	5-3-7	DS53F	Chisel Inserts, HDD Armor	SF**	49	22,3	3 1/2 API	17.500-42,500	50-150
6 3/4	171	114-3171-63-DD-CA-07	6-3-7	DS63C	Conical Inserts, HDD Armor	SF**	49	22,3	3 1/2 API	20.000-45,000	50-120
8 3/4	222	117-3222-53-DD-FA-07	5-3-7	DS53F	Chisel Inserts, HDD Armor	SK**	90	40,9	4 1/2 API	25.000-60,000	50-150
8 3/4	222	117-3222-61-DD-FA-07	6-1-7	DS61F	Chisel Inserts, HDD Armor	SK**	90	40,9	4 1/2 API	25.000-60,000	50-150
9 7/8	251	118-3251-53-DD-FA-07	5-3-7	DS53F	Chisel Inserts, HDD Armor	SK**	140	63,6	6 5/8 API	25.000-60,000	50-150
9 7/8	251	118-3251-63-DD-FC-07	6-3-7	DS63C	Chisel Inserts, HDD Armor	SK**	140	63,6	6 5/8 API	25.000-60,000	50-150
12 1/4	311	118-3311-53-DD-FA-07	5-3-7	DS53F	Chisel Inserts, HDD Armor	SK**	224	101,8	6 5/8 API	27.500-67,500	50-150
12 1/4	311	118-3311-63-DD-CA-07	6-3-7	DS63C	Conical Inserts, HDD Armor	SK**	224	102	6 5/8 API	30.000-75,000	50-150
15	381	132-3381-53-DD-CA-05	5-3-5	DS53C	Conical Inserts, HDD Armor	SK**	320	145	7 5/8 API	45,000-97,500	50-90
16	406	132-3406-53-DD-CA-05	5-3-5	DS53C	Conical Inserts, HDD Armor	SK**	381	173	7 5/8 API	48,000-1,04,500	50-80
17 1/2	445	132-3445-53-RB-C-05	5-3-5	DS53C	Conical Inserts, HDD Armor	SL**	592	269	7 5/8 API	52,000-1,13,750	60-150

**Nozzles sold separately - Requires three nozzles per bit - see Size chart for available Jet sizes

RANDOM BIT THIRD CUTTERS



TCl random bit thirds have cutting structures designed to outperform any cutter in the industry, their strategically placed inserts create optimum cutting size that can be easily cleaned and transported for faster drilling. Random cutting structures reduce the vibration on the machine and increase the rate of penetration removing more formation per revolution than any other cutter in the industry.

Feature	Benefit
Random cutting structure	Higher rates of penetration with lighter loads and smaller chip size generation easier to clean the hole.
Proprietary carbide grade and shapes	Prolonged cutting structure and bit integrity.
Industry proven seal packages	Higher quality resulting in better performance.
Pressure compensated	Allows to drill deeper without damaging grease seals.
Proprietary high load carrying grease	Prolonged bearing life.
Full armor protection	Optimum bit body protection for harsh horizontal drilling conditions.
Jet nozzle designs	Capacity of handling application with high fluid flows.

6 3/4"–17 1/2" RANDOM BIT THIRDS

Cutter Size		Product Code	IADC	Product	Special Features	Max. Cutting Radius		Nozzle Type	Weight Estimate		Maximum Operating Parameters WOB		
Inch	mm					Inch	mm		lbs	kg	lbs	t	RPM
6 3/4	171	CHN-00SB-FJS54	5-4-7	BIR54C	Conical Inserts, Random Pattern, HDD Armor	2.78	71	SF**	13	5,9	8,000	3.6	180
9	229	CHN-00SC-FJS54	5-4-7	BIR54C	Conical Inserts, Random Pattern, HDD Armor	3.16	80	SF**	42	20	10,000	4.5	180
12 1/4	311	CHN-00SD-FJS62	6-2-7	BIR62C	Conical Inserts, Random Pattern, HDD Armor	4.86	123	SK**	68	31	15,000	6.8	160
17 1/2	445	CHN-00SH-RJS62	6-2-5	BIR62C	Conical Inserts, Random Pattern, HDD Armor	8.25	210	SK**	192	87	25,000	11.3	250

**Nozzles sold separately - Require 1 nozzle per bit third - see Size chart for available Jet sizes

HDD BIT KITS



Bit kits are pilot bits that are used for building cutting tools, like hole openers, core barrels among others. The Atlas Copco bit kits are specially manufactured to have high quality bearing and cutting structures, without adding any unnecessary processes that might damage the vital features of the cutters.

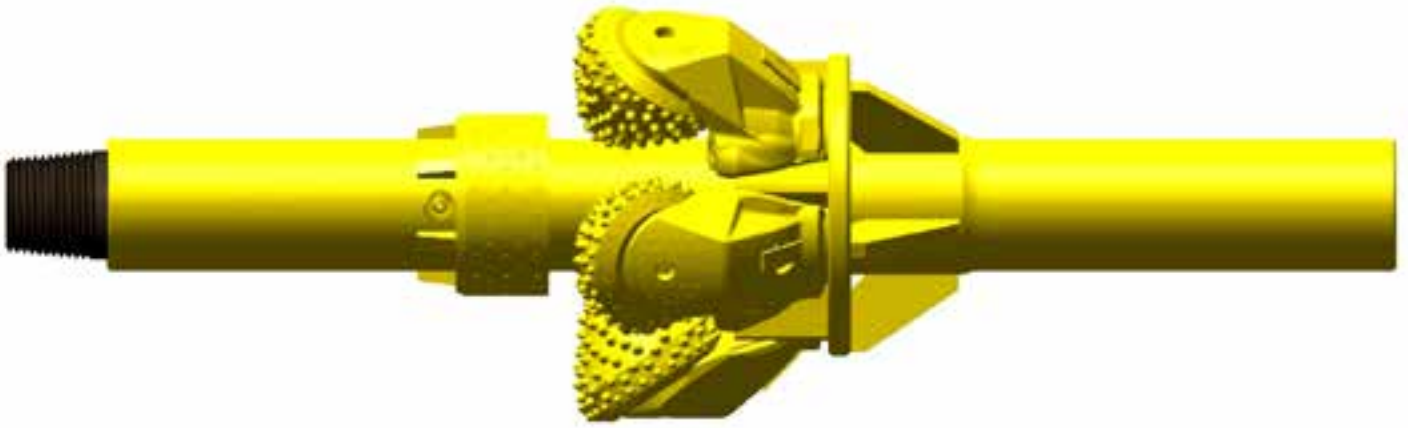
Feature	Benefit
Full armor protection	Wear protection for the sealing components.
Large selection of cutting structures	Optimum matching for every ground condition.
Compensation system	Allows to drill deeper without damaging grease seals.
Frictional bearing	Higher load bearing capacity.
Greased bearing	Higher rotation speed bearing capacity.
Competitive pricing	High productivity at low cost.
Fluid nozzles	Capacity of handling application with high fluid flows.

6 1/2"-12 1/4" BIT KITS

Cutter Size		Product Code	IADC	Product	Special Features	Nozzle Type	Weight Estimate		Maximum Operating Parameters WOB/Cutter		
Inch	mm						lbs	kg	lbs	t	RPM
6 1/2	165	1NT-3165-53-BK-FA-07	5-3-7	F53J	Chisel Inserts, HDD Armor	Threaded	39	17,5	13,000	5.9	90
7 7/8	200	1NT-3200-53-BK-C-07	5-3-7	F53J	Conical Inserts, HDD Armor	Threaded	62	28	15,750	7.1	90
8 1/2	216	1NT-3216-51-BK-FA-07	5-1-7	F51J	Chisel Inserts, HDD Armor	Threaded	86	39	15,583	7.1	90
9 7/8	251	1NT-3251-53-BK-F-07	5-1-7	F51J	Chisel Inserts,	Threaded	126	57	19,750	9	90
12 1/4	311	1NT-3311-53-BK-C-07	5-3-7	F53J	Conical Inserts	Threaded	209	95	26,500	12	90

**Nozzles sold separately - Requires 3 nozzles per bit - see Size chart for available Jet sizes

HOLE OPENERS



The Atlas Copco Secoroc Hole Openers are the first bit third type reamers designed specifically for the HDD industry. These hole openers utilize random cutting structure bit thirds, precisely positioned to assure equal load distribution and maximizing cutter count for hard rock applications.

Feature	Benefit
Random cutting structure	Higher rates of penetration with lighter loads and smaller chip size generation easier to clean the hole.
Proprietary carbide grade and shapes	Prolonged cutting structure and bit integrity.
Industry proven seal packages	Higher quality resulting in better performance.
Pressure compensated	Allows to drill deeper without damaging grease seals.
Proprietary high load carrying grease	Prolonged bearing life.
Full armor protection	Optimum bit body protection for harsh horizontal drilling conditions.
Jet nozzle designs	Capacity of handling application with high fluid flows.

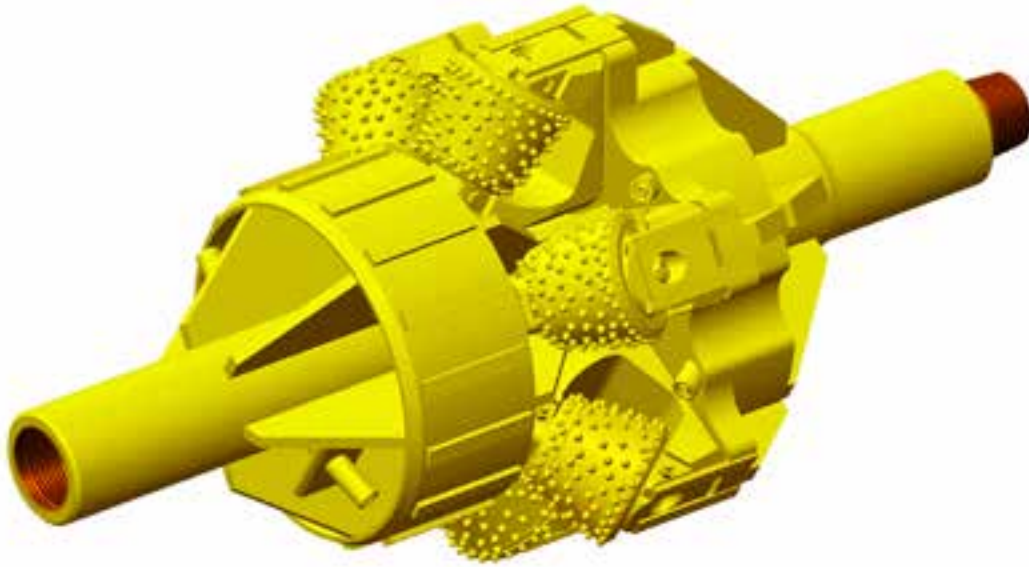
10"–20" HOLE OPENERS

Reamer Diameter		Pilot Bore		Product Code	Product	Bit Thirds			Stabilization			Connection			Weight Estimate	
Inch	mm	Inch	mm			Qty	Size	IADC	Type	Carbide Nozzles		Thread	Pull	Trail	lbs	kg
										Size	Qty					
10	254	4 3/4	121	HO-0254-0121-04B54-A-13B	DR54C	4	6 3/4	5-4-7	None	NA	NA	2 7/8" IF	Box	Pin	297	135
12 1/4	311	6	152	HO-0311-0152-04C54-A-13B	DR54C	4	9	5-4-7	None	NA	NA	2 7/8" IF	Box	Pin	329	150
14	356	8 1/2	216	HO-0356-0216-05C54-B-13B	DR54C	5	9	5-4-7	Hard Faced Blades	SF10	2	2 7/8" IF	Box	Pin	610	277
16	406	10	254	HO-0406-0254-06C54-H-13B	DR54C	6	9	5-4-7	TCI Ring	SK12	2	2 7/8" IF	Box	Pin	876	398
20	508	9 7/8	251	HO-0508-0251-05D62-B-41B	DR62C	5	12 1/4	6-2-7	Hard Faced Blades	SK12	2	4 1/2" IF	Box	Pin	1,037	471

24"–54" HOLE OPENERS

Reamer Diameter		Pilot Bore Diameter		Product Code	Product	Bit Thirds			Stabilization Type	Connection			Weight Estimate	
Inch	mm	Inch	mm			Qty	Size	IADC		Thread	Pull	Trail	lbs	kg
28	711	20	508	HO-0711-0508-04E62-K-88B	DR62C	4	17 1/2	6-2-5	Ring, Replaceable TCI Wear Pads	6 5/8" FH	Box	Pin	2,527	1149
32	813	20	508	HO-0813-0508-06E62-K-88B	DR62C	6	17 1/2	6-2-5	Ring, Replaceable TCI Wear Pads	6 5/8" FH	Box	Pin	3,700	1682
32	813	22	559	HO-0813-0559-06E62-K-88B	DR62C	6	17 1/2	6-2-5	Ring, Replaceable TCI Wear Pads	6 5/8" FH	Box	Pin	2,963	1343
34	864	28	711	HO-0864-0711-06E62-K-88B	DR62C	6	17 1/2	6-2-5	Ring, Replaceable TCI Wear Pads	6 5/8" FH	Box	Pin	3,859	1750
40	1016	32	813	HO-1016-0813-07E63-K-88B	DR62C	7	17 1/2	6-2-5	Ring, Replaceable TCI Wear Pads	6 5/8" FH	Box	Pin	4,346	1971
44	1118	32	813	HO-1118-0813-08E62-K-88B	DR62C	8	17 1/2	6-2-5	Ring, Replaceable TCI Wear Pads	6 5/8" FH	Box	Pin	4,992	2264
48	1219	40	1,016	HO-1219-1016-09E63-K-88B	DR62C	9	17 1/2	6-2-5	Ring, Replaceable TCI Wear Pads	6 5/8" FH	Box	Pin	6,989	3170
54	1372	44	1,118	HO-1372-1118-09E62-K-88B	DR62C	9	17 1/2	6-2-5	Ring, Replaceable TCI Wear Pads	6 5/8" FH	Box	Pin	7,683	3485

REPLACEABLE CUTTERS



Feature	Benefit
Load pin cutter and saddle	Fail safe mechanism to prevent losing cutters during operation.
Sealed bearing cutters	Proprietary high load carrying grease.
Pressure compensated	Allows to drill deeper without damaging grease seals.
Interchangeable cutting structures	Flexibility to use both milled tooth cutters and TCI cutters to maximize the tool use with minimal investment.
Random TCI cutting structures	Higher rates of penetration with lighter loads and smaller chip size generation easier to clean the hole.
Hard metal protection on milled tooth cutting structures	Longer lasting cutting structure for more meters performed.

SERIES 12 CUTTERS

Product Number	Product Code	IADC	Product	Special Features	Kerf Length		Suggested Bore Diameters		Weight Estimate		Maximum Operating Parameters		
					Inch	mm	Inch	mm	lbs	kg	WOB		RPM
											lbs	t	
91000636	CET-2-RJS12	1-2-4	S8 M1-X	Milled Tooth High Durability Hardfacing	4.04	103	24-47	610-1194	42	19	6,000	2.7	250
91000637	CET-3-RJS12	1-2-4	S8 M2-X	Milled Tooth High Durability Hardfacing	4.04	103	24-47	610-1194	40	18	6,000	2.7	250
91000638	CEN-00-RJS63	6-3-5	S8 HH1X	Random Cutting Structure	4.25	108	24-47	610-1194	53	24	10,000	4.5	250
91000634	CLT-3N-RLS13	1-2-4	S12 M1-X	Milled Tooth High Durability Hardfacing	6.24	158	47-120	1194 - 3048	150	68	20,000	9.1	200
91000635	CLT-3G-RLS13	1-2-4	S12 M2-X	Milled Tooth High Durability Hardfacing	6.24	158	47-120	1194 - 3048	150	68	20,000	9.1	200
91000632	CLN-00-RMS61	6-2-5	S12 RDM	Random Cutting Structure	7.28	185	47-120	1194 - 3048	161	73	20,000	9.1	200
91002085	CLH-4-RMS	---	S12 KC-4G	4 Kerf Rows	7.3	185	47-120	1194 - 3048	141	64	20,000	9.1	200
91002086	CLH-4-RMS	---	S12 KC-4N	4 Kerf Rows	7.3	185	47-120	1194 - 3048	134	61	20,000	9.1	200
91002087	CLH-3-RMS	---	S12 KC-3	3 Kerf Rows	7.3	185	47-120	1194 - 3048	130	59	20,000	9.1	200

ACCESSORIES

Product Number	Product Code	Description	Angle	Weight Estimate	
				lbs	kg
91000730	ACS-8708122	Series 8 Gage	35	46	21
91000731	ACS-8708123	Series 8 Inner	12.5	40	18
91000732	ACS-8708124	Series 12 Gage	35	150	68
91000733	ACS-8708125	Series 12 Inner	10	150	68
91000614	ACS-5001518	Series 8 Fastener Kit	N/A	5	2,15
91000616	ACS-5001531	Series 12 Fastener Kit	N/A	16	7,26



NOZZLE SELECTION GUIDE

Select Nozzle bore size based on the available fluid volume and pressure limitations.

For Fluid rates less than 50 GPM (189 LPM)
– select Steel nozzles.

For Fluid rates more than 50 GPM (189 LPM) –
select Carbide nozzles.

JET NOZZLES

Size	Material	Product No.	Bore		
			Size	Inch	mm
SB-06S	Steel	91000106	6/32	0.188	4,76
SB-08S	Steel	45100748	8/32	0.250	6,35
SB-10S	Steel	45100749	10/32	0.313	7,94
SF-06S	Steel	91000102	6/32	0.188	4,76
SF-08S	Steel	45100750	8/32	0.250	6,35
SF-10S	Steel	91001238	10/32	0.313	7,94
SF-10C	Carbide	91000779	10/32	0.313	7,938
SF-12S	Steel	91001239	12/32	0.375	9,53
SF-12C	Carbide	91000883	12/32	0.375	9,53
SK-10C	Carbide	91000889	10/32	0.313	7,94
SK-12C	Carbide	91000890	12/32	0.375	9,53
SK-14C	Carbide	91000891	14/32	0.438	11,13
SK-16C	Carbide	91000892	16/32	0.5	12,70
SK-18C	Carbide	91000893	18/32	0.563	14,29
SK-20C	Carbide	91000894	20/32	0.625	15,88

ACCESSORIES

Type	Snap ring P/N	O-ring P/N
SB	91000122	91000121
SF	91001395	91001688
SK	91001077	91001078



THREADED CARBIDE NOZZLES

Bit Size Range Nozzle OD x L	Part No.	Product code	Diam. mm	Tool
4 3/4" - 6 3/4" ø 20.4 X 14 mm	93008085	NF-C204-04	4,0	Nozzle, Fluid
	93008086	NF-C204-05	4,8	Nozzle, Fluid
	93008087	NF-C204-06	5,6	Nozzle, Fluid
	93008088	NF-C204-06	6,4	Nozzle, Fluid
	93008089	NF-C204-07	7,1	Nozzle, Fluid
	93008090	NF-C204-08	8,0	Nozzle, Fluid
	93008091	NF-C204-09	8,7	Nozzle, Fluid
	93008092	NF-C204-09	9,5	Nozzle, Fluid
	93008093	NF-C204-10	10,3	Nozzle, Fluid
	93008094	NF-C204-11	11,1	Nozzle, Fluid
	93008095	NF-C204-12	12,0	Nozzle, Fluid
	93008096	NF-C204-13	12,7	Nozzle, Fluid
	93008097	NF-C204-13	13,5	Nozzle, Fluid
	Threaded cap	93008009		
O-ring	93008012			

THREADED HARDENED NOZZLES

Bit Size Range Nozzle OD x L	Part No.	Product code	Diam. mm	Tool	
4 3/4" - 6 3/4" ø 20.4 X 14 mm	93008057	NF-F204-00	----	Nozzle, Fluid	
	93008058	NF-F204-04	4,0	Nozzle, Fluid	
	93008059	NF-F204-05	4,8	Nozzle, Fluid	
	93008060	NF-F204-06	5,6	Nozzle, Fluid	
	93008061	NF-F204-06	6,3	Nozzle, Fluid	
	93008062	NF-F204-07	7,0	Nozzle, Fluid	
	93008063	NF-F204-08	8,0	Nozzle, Fluid	
	93008064	NF-F204-09	8,7	Nozzle, Fluid	
	93008065	NF-F204-09	9,5	Nozzle, Fluid	
	93008066	NF-F204-10	10,3	Nozzle, Fluid	
	93008067	NF-F204-11	11,0	Nozzle, Fluid	
	93008016	NF-F204-12	12,0	Nozzle, Fluid	
	93008069	NF-F204-13	12,7	Nozzle, Fluid	
	93008070	NF-F204-13	13,5	Nozzle, Fluid	
	Threaded cap	93008009			
	O-ring	93008012			

HDD PILOT BIT VS ROCK HARDNESS CHART

HDD Pilot Bit Vs Rock Hardness Chart		
Rock UCS [PSI]	Tricone Bit Series	Rock Type
0	Milled Tooth 2-1 to 3-1	Claystone Mudstone
4,000		Charlky Limestone
8,000	50 Series 5-1 to 5-4	Soft Shale
12,000		Loose Sandstones
16,000	60 Series 6-1 to 6-4	Limestone, Siltstone
20,000		Solid Sandstones
24,000	70 Series 7-1 to 7-4	Medium Shales
28,000		Tuff, Soft Schist
32,000	80 Series 8-1 to 8-4	Andesite, Rhyolite
36,000		Quartzite (Sand Silt)
40,000		Limestone, Marble
44,000		Monzonite, Granite
48,000		Gneiss
52,000		Diorite, Diabase
56,000		Hard Shale, Slate
60,000		Limestone, Dolomite
64,000		Basalt
68,000		Tactite, Skarn
Higher		Granodiorite
		Tacorite
		Quartzite
		Syenite
		Gabbro
		Banded Iron Formation
		Taconite
		Chert
		Quartzite
		Amphibolite
		Hornfels
		Hematite
		Lava, Basalt, Biwabic, Quartzite

Rock UCS Hardness (Unconfined Compressive Strength) is the only one factor that contributes to the drillability of any rock. Other factors strongly influencing drillability are:

- * Fracture toughness
- * Shear strength
- * Young's Modulus of Elasticity
- * Poisson's Ratio of Stress Vs. Strain
- * Internal angle of friction

Note: Any particular bit may be used in a harder or softer rock than this chart indicates

CODE KEYS

PILOT BITS – PRODUCT CODE: 118-3251-53-DD-FA-07

Example: 9 7/8-inch drill bit with a 6 5/8-inch regular API, 5-3 cutting structure, HDD pilot bit, chisel inserts with armor protection on the shirt tail, and sealed journal bearing gage Protected.

1	18	-	3	251	-	53	-	DD	-	FA	-	07
AC product	Thread		Bit type	Diameter		IADC Code		Product line		Features		Bearing type
1=Drill bit	10 = 2 3/8 API 12 = 2 7/8 API 14 = 3 1/2 API 17 = 4 1/2 API 18 = 6 5/8 API 31 = 5 1/2 API 32 = 7 5/8 API		0 = Milled tooth 3 = TCI	98 = 3 7/8 108 = 4 1/4 121 = 4 3/4 124 = 4 7/8 130 = 5 1/8 133 = 5 1/4 140 = 5 1/2 149 = 5 7/8 152 = 6 156 = 6 1/8 159 = 6 1/4 165 = 6 1/2 171 = 6 3/4 222 = 8 3/4 251 = 9 7/8 311 = 12 1/4 381 = 15 406 = 16 445 = 17 1/2		PILOT 11 = 1-1 12 = 1-2 13 = 1-3 14 = 1-4 21 = 2-1 22 = 2-2 23 = 2-3 24 = 2-4 31 = 3-1 32 = 3-2 33 = 3-3 34 = 3-4 41 = 4-1 42 = 4-2 43 = 4-3 44 = 4-4 51 = 5-1 52 = 5-2 53 = 5-3 54 = 5-4 61 = 6-1 62 = 6-2 63 = 6-3 64 = 6-4		EN = Engineering eH = Epsilon eM = Epsilon mag DD = HDD products RB = Raisebore pilot WO = Tooth work over bits WW = Water well bits FB = Focus blast hole FW = Focus water well FH = Focus hole opener FD = Focus HDD		C = Conical inserts N = Round top inserts O = Ogive inserts S = Superscoop inserts F = Chisel inserts 1 = Conventional gage mille tooth 2 = Taper gage tooth MT 3 = T gage tooth MT 4 = L gage tooth MT 5 = Web gage MT A = Armor B = Back reaming ST = Shirt tail protection on MT D = DSI lug K = Center jet equipped L = Stream line lug e R = Regular circulation P = Stabilization/ wear pads		01 = Standard roller fluid bearing 02 = Air bearing 03 = Roller bearing gage protected 04 = Sealed roller bearing 05 = Sealed roller bearing gage protected 06 = Sealed friction bearing 07 = Sealed journal bearing gage protected

BIT THIRDS AND CUTTERS – PRODUCT CODE: CHN-00SH-RJS62

Example: Cutter, HDD bit third weld on, Conical inserts, Random cuttings structure, 17-1/2", Roller bearing, Journal seal, Single compensation, 62 IADC Code.

C	D	B	-	04	NN	-	R	J	-	S	41
Product type	Cutter type A-Z	Tooth type		Number of cutting rows	Special design features AA-ZZ		Bearing type	Seal type		Compensation	IADC
C= Cutter	A = Stabilier roller cutter B = BH99 cutter C = C-cutter D = Down reamer E = Series 8 cutter G = Series 12 wedgelok cutter H = HDD bit third weld on J = HDD square lug weld on K = Disc cutter L = Series 12 load pin M = Magnum cutter N = Shaft center cutter B=Ballistic C=Round top chisel insert D=Steel disc H= Chisel insert N=Conical insert P=Scoop Insert S=Spherical insert T=Steel Tooth Z=No Teeth	B=Ballistic C=Round top chisel insert D=Steel disc H= Chisel insert N=Conical insert P=Scoop insert S=Spherical insert T=Steel tooth Z=No teeth		00 = Random 99 = No rows	AA = No special features GG = Cutter with 1" row spacing on gage used for cutter types with the same amount of carbide rows in a pair NN = Cutter with 1" row spacing on nose, used for cutter types with the same amount of carbide rows in a pair MM = Medium formation (for HDD cutters) HH = Hard formation (for HDD cutters) HF = Hard facing KK = Kerf rows GH = Gage cutter with harder carbide NH = Nose cutter with harder carbide SA = 5-1/4" SB = 6 3/4" SC = 9" SD = 12 1/4" SE = 13" SF = 15" SG = 17 1/2" SH = 17 1/2" SJ = 24"		F = Friction R = Roller T = Taper N = None	J = Journal seal E = Journal seal with excluder L = Lip M = Metal face seal N = None		D = Dual N = None S = Single P = PRV	00 = No IADC recorded

HOLE OPENERS – PRODUCT CODE: HO-0711-0311-05E62-K-88D

Example: 28 x 12 1/4-inch hole opener, 5 cutters 17 1/2-inch type , 6-2 cutting structure, TCI wear protection, 6 5/8 FH connection, and pin-box

HO	-	0711	-	0311	-	05	-	E	-	62	-	K	-	88	-	D
AC product		Dia-meter		Pilot diameter		Number of cutters		Cutter type		Cutting structure		Wear protection		Connection size		Connection style
HO= Hole opener		In mm		In mm				A = 5 1/4" third B = 6 3/4" third C = 9" third D = 12 1/4" third E = 17 1/2" third		First 2 digits of IADC code		See table below		10 = 2 3/8 API 11 = 2 3/8 IF 12 = 2 7/8 API 13 = 2 7/8 IF 14 = 3 1/2 API 15 = 3 1/2 IF 16 = 3 1/2 FH 19 = 4 IF 21 = 4 FH 17 = 4 1/2 API 20 = 4 1/2 FH 41 = 4 1/2 IF 31 = 5 1/2 API 22 = 5 1/2 FH 18 = 6 5/8 API 88 = 6 5/8 FH 97 = 6 5/8 IF 32 = 7 5/8 API"		A = BOX - BOX B = BOX - PIN C = PIN - PIN D = PIN - BOX

Wear Protection						
	Pilot Blades		Stabilizer Ring			
Code	Hardfacing	Rock Reamer	Hardfacing	Hardfacing Pads	TCI Integral	TCI Wear Pad
A						
B	✓					
C	✓	✓				
D			✓			
E		✓	✓			
F				✓		
G		✓		✓		
H					✓	
J		✓			✓	
K						✓
L		✓				✓

KLAW BITS AND HOLE OPENERS

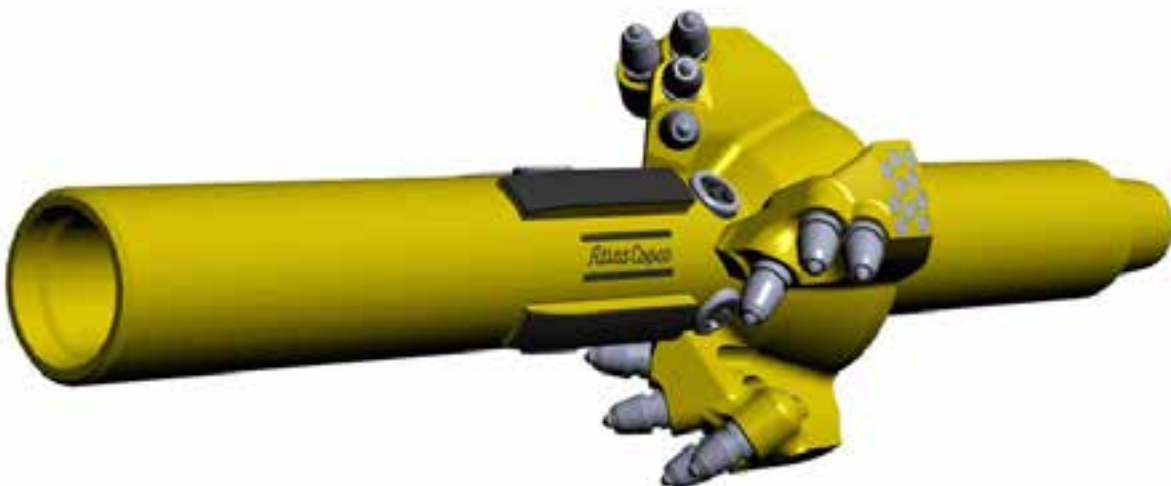


For drilling in soft rock, nothing beats the Atlas Copco Secoroc Klaw bit. The Klaw bit is built from a solid piece of high grade steel, and uses tungsten carbide picks as its cutting structure. It is easy to replace these picks in the field in just a few minutes, essentially renewing the bit back to the new drilling condition.

Klaw bits and hole openers are excellent tools for use in HDD, and can be designed in a variety of sizes and configurations to suit your needs.

KLAW BITS

Typical bit size		API Pin connection	Pick count	Blade count
inch	mm			
5 1/2, 5 5/8	139,7, 142,88	2 7/8" Reg	6	3
6, 6 1/4, 6 1/2, 6 3/4	152,4, 158,75, 165,1, 171,45	3 1/2" Reg	7, 8	3
7 7/8, 8 3/4, 9, 9 7/8, 10 5/8	200, 222,25, 228,6, 250,83, 269,87	4 1/2" Reg	9 - 14	3,4
9 7/8, 10 5/8, 11, 11 1/4, 11 3/4, 12 1/4, 13 1/2	250,83, 269,87, 279,4, 285,75, 298,45, 311,15, 342,9	6 5/8" Reg	12 - 20	3,4
17 1/2 - 36	444,5-914,4	7 5/8" Reg	38 and above	7 and above



PDC BITS



Atlas Copco Secoroc now offers HDD operators the same polycrystalline diamond compact (PDC) bits that deep hole oil and gas drillers have found successful. The Secoroc Dirt Digger Premium line of bits are durable, offer high rates of penetration, and can be easily repaired when required.

The Dirt Digger Premium HDD bits are manufactured from high grade steel and Atlas Copco's proprietary hard-facing formula. Dirt Digger Premium steel body bits have been proven in applications worldwide. Atlas Copco has been working with PDC bits since their early development and is happy to deliver that same drill bit technology to the HDD market.

Atlas Copco Secoroc can design and build fixed cutter PDC bits in sizes and configurations to fit nearly any HDD application, and currently carrying designs and sizes commonly used in the HDD market.

Time is money, and faster drilling saves the time. That is how PDC can make a difference in your next bore.

Sustainable Productivity

We stand by our responsibilities towards our customers,
towards the environment and the people around us.
We make performance stand the test of time.
This is what we call – Sustainable Productivity.

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