

CASING PRODUCTS

WATER WELL & CONSTRUCTION

SMB & SMB-G | UMB | DTH HAMMER & BITS

Rock Tools

DIA  EDGE

 **MITSUBISHI MATERIALS U.S.A.**

SMB SMB-G CASING ADVANCE SYSTEM

Hole Straightness

High speed and straight drilling in a wide range of ground conditions.

The SMB and SMB-G model devices have a smoother operation than eccentric devices.

Our devices have:

- 2 to 3 cutting edges (guides)
- Drills on all sides at all times
- Smoother and faster penetration rate

Eccentric devices have:

- One cutting reamer
- Cuts one side only
- Rougher drilling
- Slower penetration rate

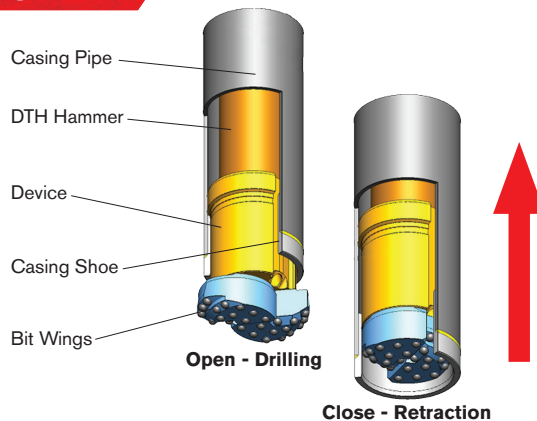


SMB - Super Max Bit



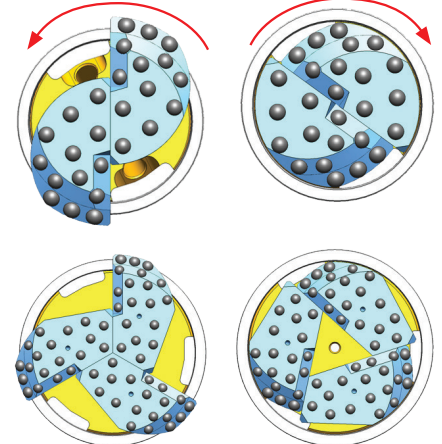
SMB-G - Super Max Bit G-Model

SMB

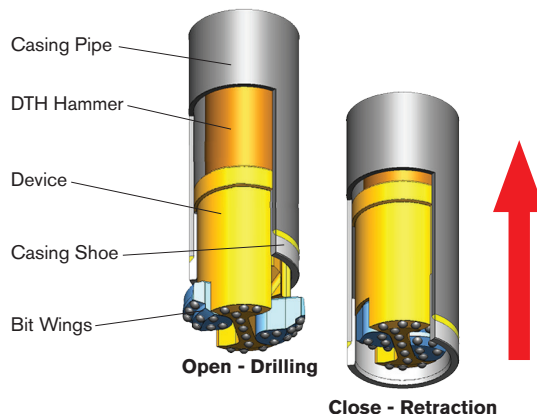


Open - Forward

Close - Reverse

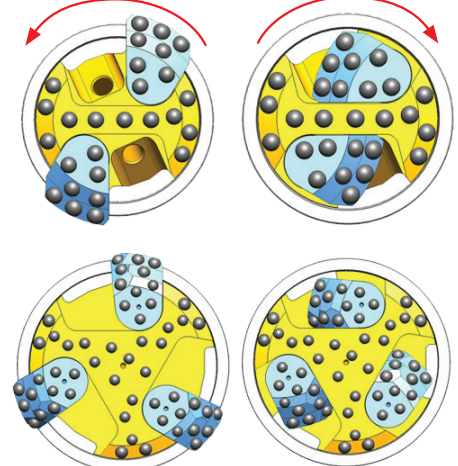


SMB-G



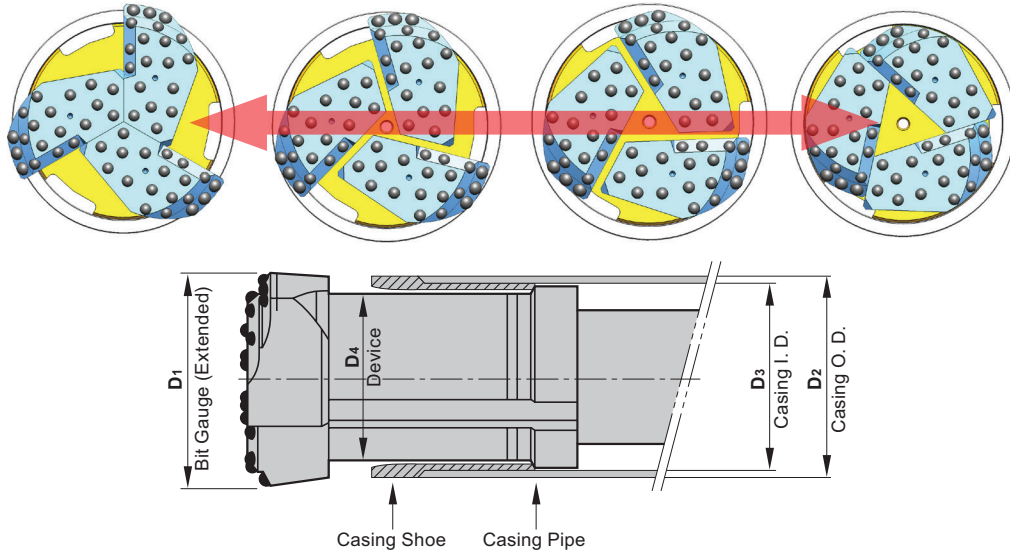
Open - Forward

Close - Reverse



Smoother extending and retracting

SMB has better extending and retracting reliability with fewer performance troubles do to simultaneous wing bits support.



Type	Two Wing	Three Wing	Bit Gauge				Applicable Casing Pipe			Device O. D. D ₄	Hammer Size	*	1	*	2	*	3	*	4	*	5
			Extended D ₁		Retracted		Max. O.D. D ₂	Min. I.D. D ₃	Nominal Size												
			mm	in.	mm	in.	mm	mm	in.	mm	in.										
90	●		125	4.92	91	3.58	114.3	102.3	4"	92	3"										
115	●		152	5.98	114	4.49	141.3	126.6	5"	115	4"										
140	●		185	7.28	140	5.51	165.2	153.2	6"	141	5"										
165	●		215	8.46	166	6.54	190.7	178.7	7"	167	6"										
187	●		237	9.33	186	7.32	216.3	202.3	8"	187	6"										
215	●	●	272	10.71	217	8.54	254.0	241.0	9"	218	8"										
240		●	290	11.42	232	9.13	273.1	254.5	10"	240	8"										
280		●	340	13.39	281	11.06	318.5	301.7	12"	283	10"										
315		●	373	14.69	314	12.36	355.6	336.6	14"	316	12"										
365		●	425	16.73	363	14.29	406.4	387.4	16"	365	12"										
410		●	478	18.82	412	16.22	457.2	435.0	18"	414	15"										
460		●	530	20.87	461	18.15	508.0	482.6	20"	463	15" 18"										
510		●	580	22.83	509	20.04	558.8	533.4	22"	511	15" 18"										
560		●	630	24.80	559	22.01	609.6	584.2	24"	561	18"										
600		●	685	26.97	600	23.62	660.4	631.8	26"	603	20"										

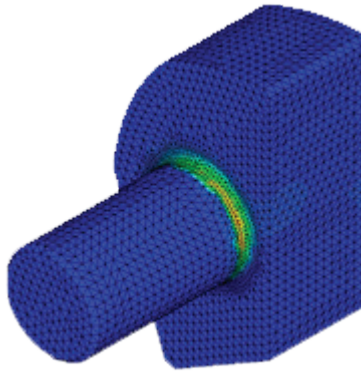
* When ordering, information about casing diameters (O.D. and I.D.) is necessary.
* Order made bits can be manufactured upon request.

*1 : Water Well
*2 : Piling, Foundation
*3 : Pipe Roof, Water Service, Water Remove, Anchoring
*4 : Geothermal, Oil Well
*5 : Fore Piling

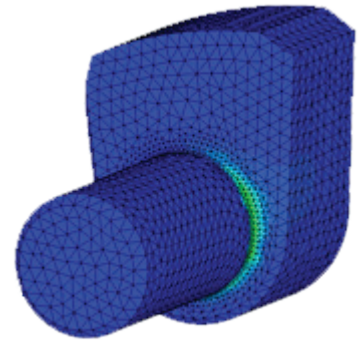
SMB-G

Stronger wing bits shaft

The SMB-G wing bits have a larger contact area with the device, compared with SMB, which allows for the wing bits shaft to be stronger for more durability.



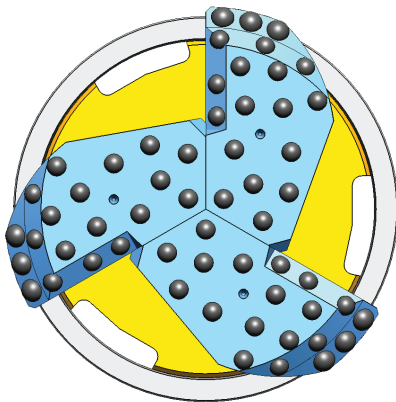
SMB Wing bits shaft



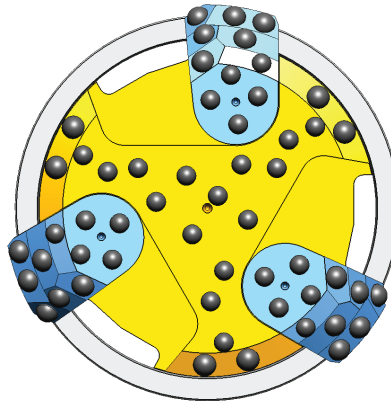
SMB-G Wing bits shaft

For larger cutting diameter and thicker casing

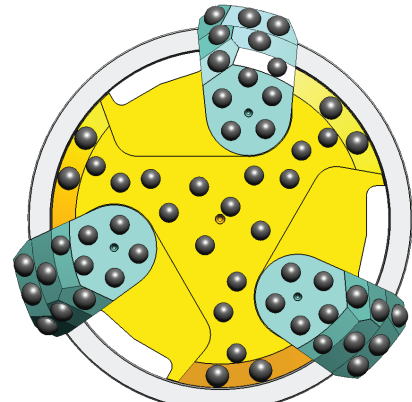
SMB-G model allows for multiple borehole size cuts to accept larger casing, ring shoes (for Dual Rotary) and drive shoes, at a lower cost for a better ROI.



SMB



SMB-G

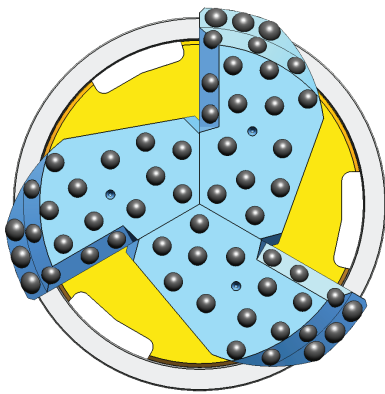


SMB-G for larger borehole sizes

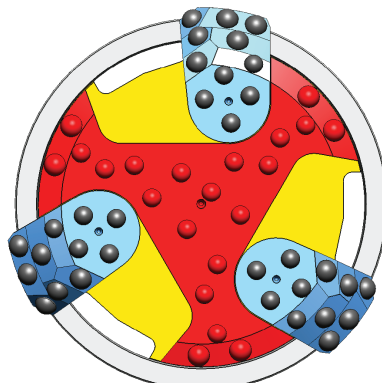


Faster penetration for hard rock conditions

SMB-G was designed to drill in hard and harsh rock conditions to improve striking impact and transmit force directly into the rocks.



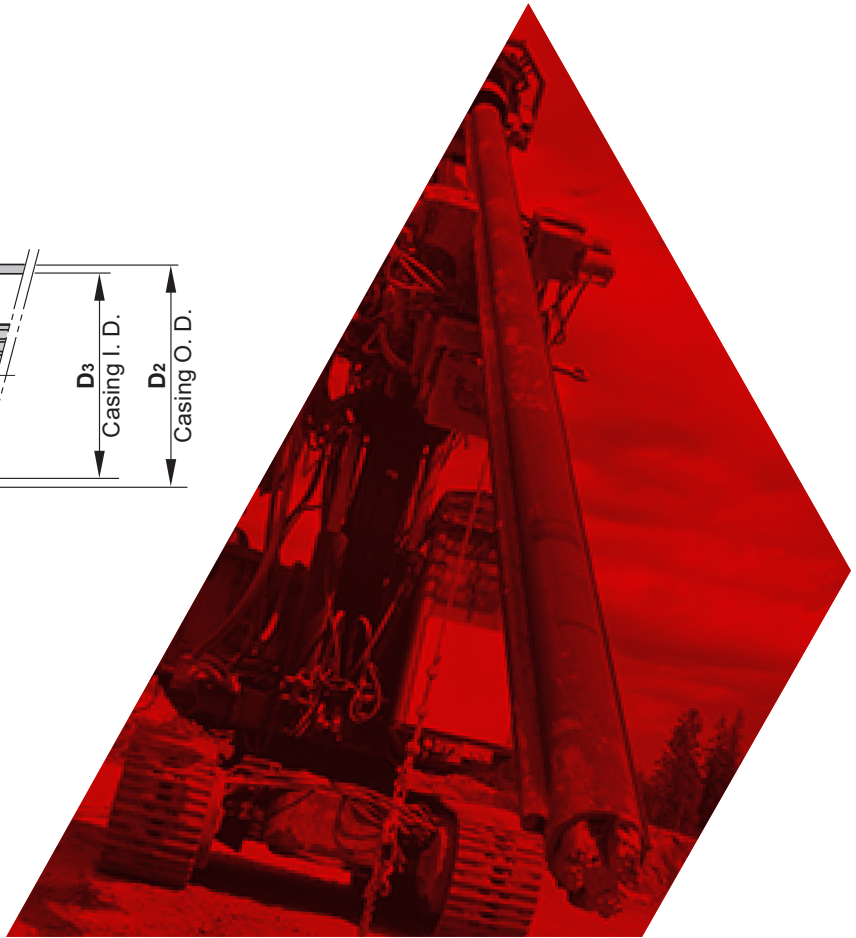
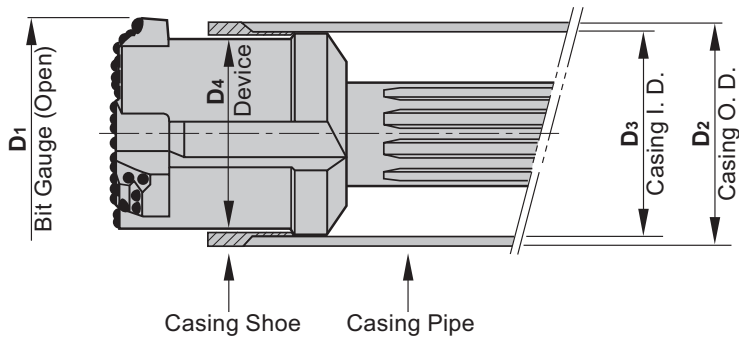
SMB



SMB-G

Impact area ratio

	SMB	SMB-G
Directly	0%	53%
Indirectly	100%	47%



Type	Two Wings	Three Wings	Bit Gauge				Applicable Casing Pipe			Device O. D. D ₄	Hammer Size	*	1	*	2	*	3	*	4	*	5
			Open D ₁		Close		Max. O.D. D ₂	Min. I.D. D ₃	Normal Size												
			mm	in.	mm	in.	mm	mm	in.	mm	in.										
115	●		152	5.98	114	4.49	141.3	126.6	5"	115	4"										
140	●		185	7.28	140	5.51	165.2	153.2	6"	141	5"										
187		●	237	9.33	186	7.32	216.3	202.3	8"	187	6"										
215		●	272	10.71	217	8.54	254.0	241.0	9"	218	8"										
240		●	290	11.42	232	9.13	273.1	254.5	10"	240	8"										
280		●	340	13.39	281	11.06	318.5	301.7	12"	283	10"										
315		●	373	14.69	314	12.36	355.6	336.6	14"	316	12"										
365		●	425	16.73	363	14.29	406.4	387.4	16"	365	12"										
460		●	530	20.87	461	18.15	508.0	482.6	20"	463	15" 18"										
560		●	630	24.80	559	22.01	609.6	584.2	24"	561	18"										

* When ordering, information about casing diameters (O.D. and I.D.) is necessary.

* Order made bits can be manufactured upon request.

*1 : Water Well

*2 : Piling, Foundation

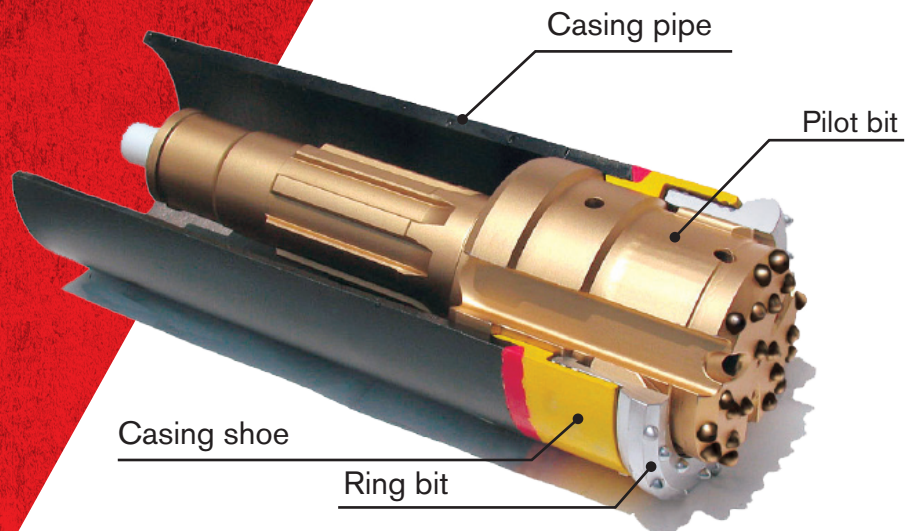
*3 : Pipe Roof, Water Service, Water Remove, Anchoring

*4 : Geothermal, Oil Well

*5 : Fore Piling

UMB CASING ADVANCE SYSTEM

“High speed straight drilling in a wide range of ground conditions”



Easy and Speedy Lock System

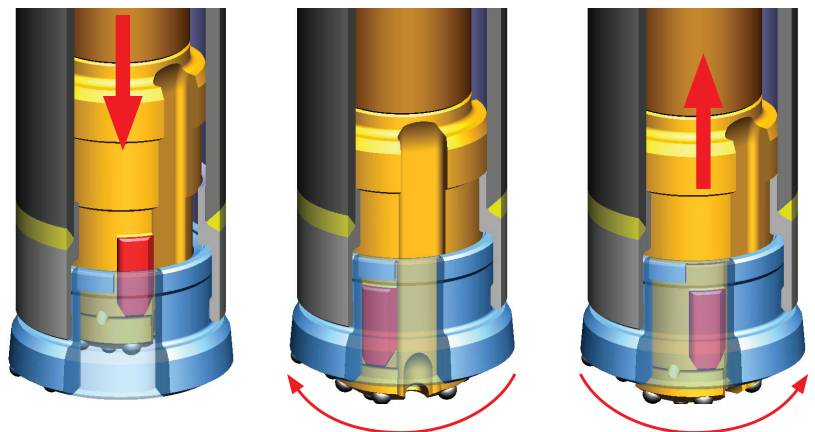
UMB EASY LOCK SYSTEM is designed with a male key on the pilot bit and a female key on the ring bit for a more consistent fit.

- Easy locking system to unlock and re-lock for flushing out cuttings.
- Cuttings will not stay in female key.



Female Key

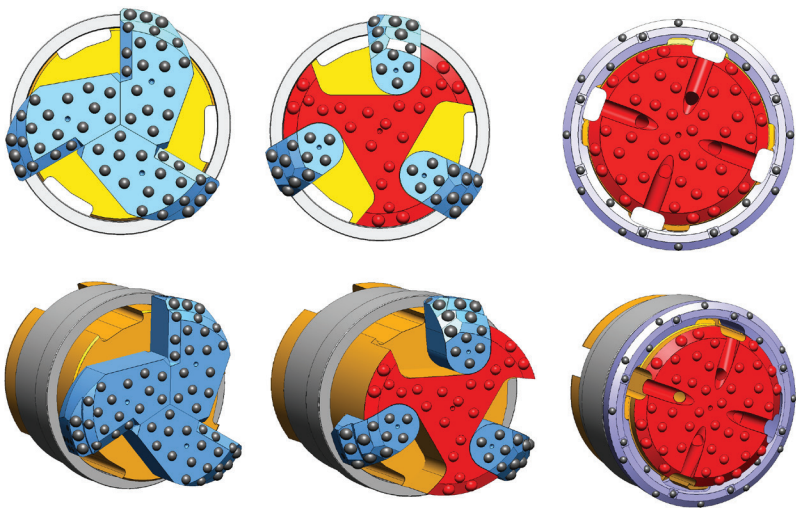
Male Key



- 1) Drive the pilot bit through the casing pipe
- 2) Connect to ring bit by rotating to the locked position
- 3) READY TO DRILL
- 4) Finish drilling by rotating the pilot bit in opposite direction and pulling it out

Faster penetration for tough rock conditions for straighter borehole drilling

UMB is designed for drilling in harsh rock conditions by providing a larger pilot bit surface to improve striking impact to transmit energy into rock directly.



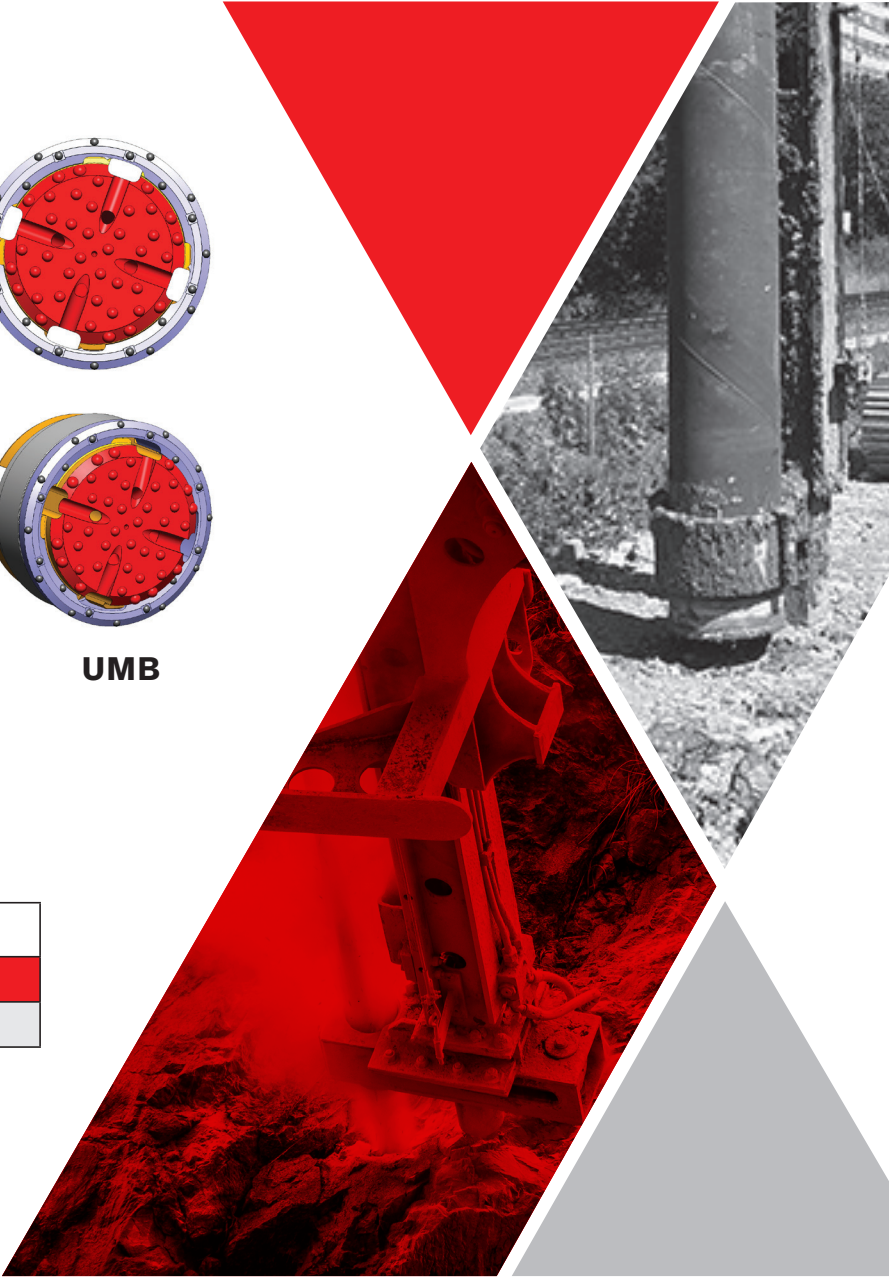
SMB

SMB-G

UMB

Impact area ratio

	SMB	SMB-G	UMB
Directly	0%	53%	64%
Indirectly	100%	47%	36%







For various applications and a wide range of ground conditions

The dual bit system provides vertical, horizontal, and even inclined drilling for a broader range of ground conditions such as sand, gravel, boulders, and rock.

Various Systems and Models

The ULTRA MAXBIT casing systems/models are available for a variety of applications. Check out the table below for the range of casing sizes and use for each casing system/model.

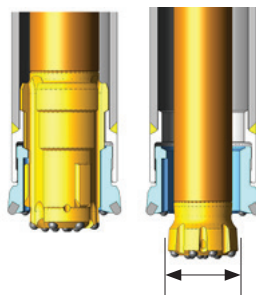
Standard DTH System Model	Connection	Suitable for	Casing Type	Application
Single Pass Model 	Thread	Soft ground Shallow hole	Permanent	Piling Construction
Normal Model 	Thread	Heavy duty Deep Hole	Permanent	Piling Construction Water Well / Geothermal
Multi Use Model  The groove makes the casing pipe pulled easily. Casing pipe and ring sets can be used repeatedly.	Inter Linked	Re-Using	Retrievable / Temporary	Anchoring, Foundation

Big Bore DTH System Model	Connection	Suitable for	Casing Type	Application
Big Bore Model 	Inter Linked	Larger Bore Drilling	Permanent	Water Well / Geothermal

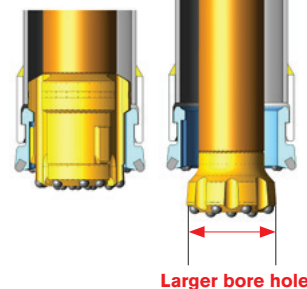
Larger Bore Hole


The Big-Bore DTH system provides larger borehole drilling compared with the standard system.

Standard System



Big-Bore System



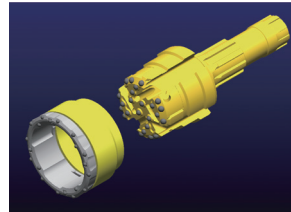
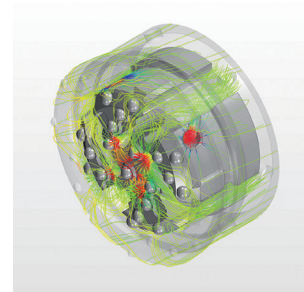
Top Hammer System Model	Connection	Suitable for	Casing Type	Application
Top Hammer Model 	Thread	Small Hole Funneling	Permanent	Piling Construction

VENTURI MODEL

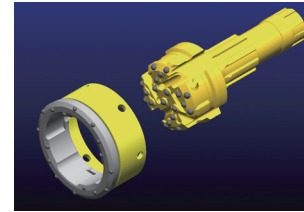
The VENTURI MODEL provides a variety of advantages and solution for sensitive ground drilling:

- The flushing air does not hit directly to the bottom of the borehole.
- Minimal air leakage into the formation to eliminate enlarging borehole.
- The reverse flushing causes a vacuum effect to remove the cuttings.
- Face groove designed by CAE simulation and analysis for more efficient flushing.
- Standard and Big Bore systems are available.

Air Flushing Simulation

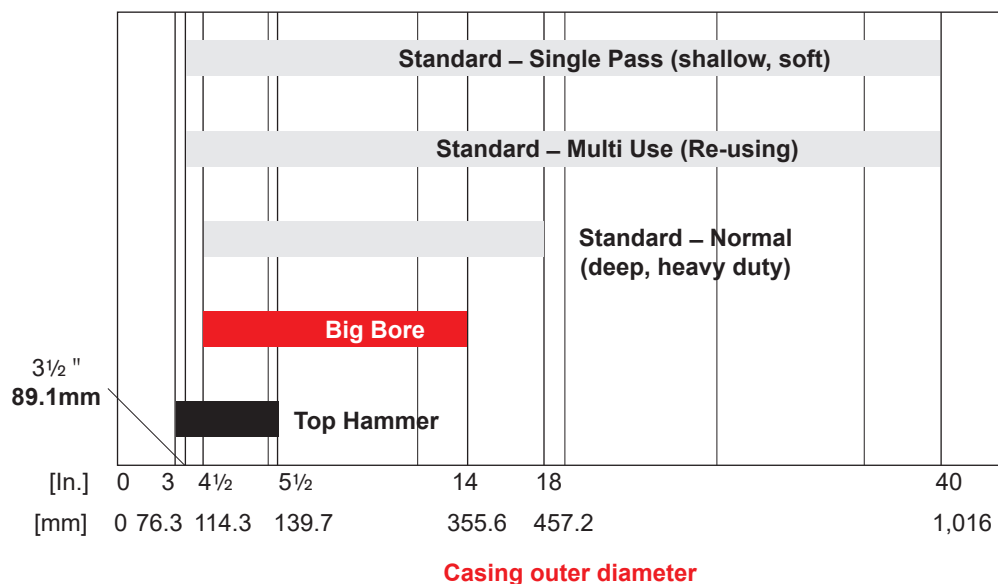


Standard System



Big Bore System

Casing sizes available for each systems and models



Various Applications

Permanent casing - Piling and Underpinning/ Foundation/Horizontal drilling

Soft ground conditions require a stable foundation during construction. DIAEDGE drilling system is ideal to drill through the overburden to the solid bedrock to fill with concrete.

STEP 1: Drilling to bedrock

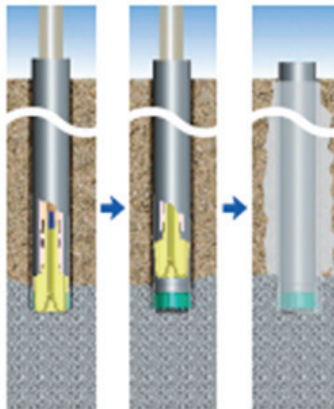
STEP 2: Pulling out pilot bit

STEP 3: Cementing

Recommendation

Soft ground / Shallow hole → Single pass

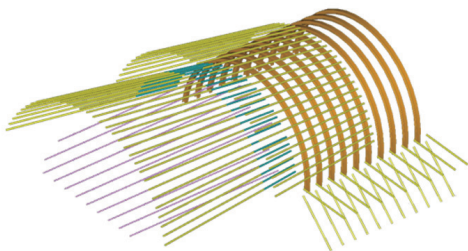
Heavy Duty / Deep hole → Normal



Permanent casing

Permanent casing - Tunneling / Forepoling

DIAEDGE Top Hammer products are ideal for forepoling or tube umbrella applications where relatively short holes are required, and casings are left in the ground.



Forepoling

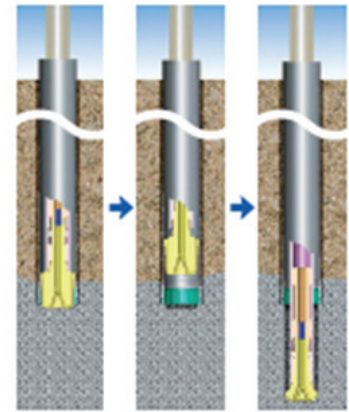
Permanent casing drill through - Water well / Geothermal

DIAEDGE casing advancement systems help in water and thermal well applications when casing is required for drilling in broken overburden and the casing pipe is left in the hole for stabilization. DIAEDGE Down-the-Hole bits are designed to drill through the bedrock to complete the well.

STEP 1: Drilling to bedrock

STEP 2: Pulling out pilot bit

STEP 3: Re-drilling bedrock by single DTH bit



Permanent casing drill through

Recommendation

Soft ground / Shallow hole → Single pass

Heavy Duty / Deep hole → Normal

For large bore drilling bedrock → Big Bore

Retrievable/Temporary casing- Anchoring, Foundation

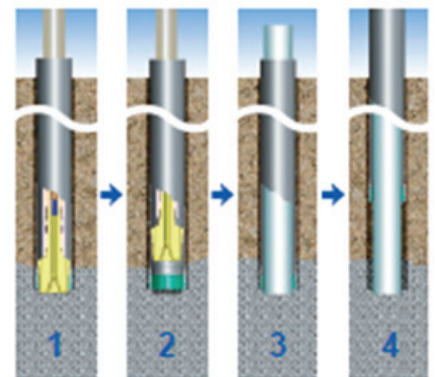
DIAEDGE Multi-Use Models are ideal when Retrievable / Temporary casings are needed. The groove and repeat use functionality of DIAEDGE's Multi-Use casing system makes pulling the casing pipe easy for overburden drilling applications when casing needs removing from the ground.

STEP 1: Drilling to bedrock

STEP 2: Pulling out pilot bit

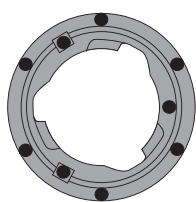
STEP 3: Set up structural object

STEP 4: Pulling out casing

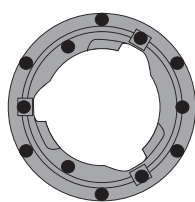


Retrievable casing

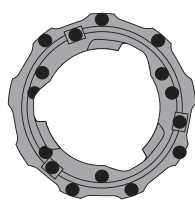
Standard DTH System



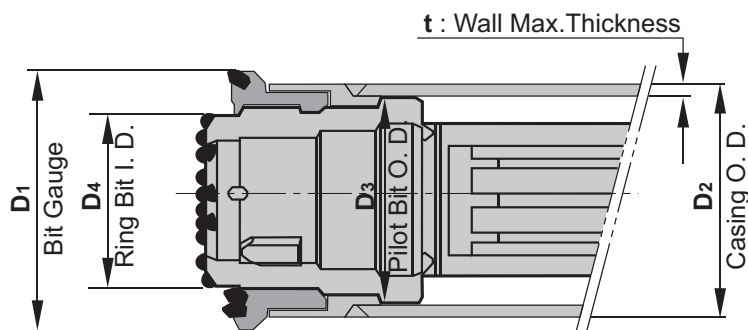
Single Pass



Normal



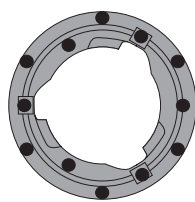
Multi Use



Unit: mm (Upper)
inch (Bottom)

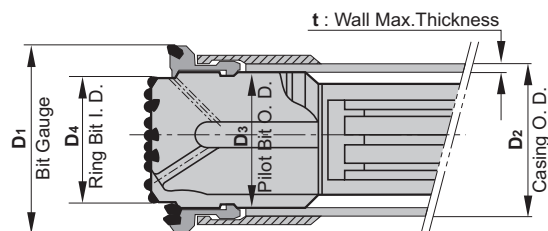
Casing Pipe		Type	Ring Bit			Pilot Bit			Ring Set (Ring Bit & Casing Shoe)	Compatible Part	System Part Number	
Outer Dia.	Wall Max. Thickness		Model	Inner Dia.	Outer Dia.	Outer Dia.	Hammer	Weight (kg)				Weight (kg)
D ₂	t			D ₄	D ₁	D ₃						
CASING PIPE ø89.1mm (3 1/2")												
89.1 (3 1/2")	6.3 (0.25")	056D	Single pass	56	100	74	DHD065	5.0	2.7		US056D-02-R-266	
				2.20"	3.94"	2.91"						
	7.0 (0.28")	059W	Multi use	59	99	73	DHD065	5.0	2.4		UM059W-02-R-240	
				2.32"	3.90"	2.87"						
CASING PIPE ø114.3mm (4 1/2")												
114.3 (4 1/2")	10.0 (0.39")	072A	Single pass	72	126	92	DHD3.5	8.5	4.7		US072A-03-BB-004 US072A-03-R-035	
				2.83"	4.96"	3.62"	COP34	9.1				
							COP32	8.5				
		072A	Normal	72	126	92	DHD3.5	8.5	4.7		UN072A-03-BB-005 UN072A-03-R-077	
				2.83"	4.96"	3.62"	COP34	9.1				
							COP32	8.5				
	072W	Multi use	72	122	92	DHD3.5	8.5	4.4	072A Pilot bit	UM072W-03-R-285		
			2.83"	4.80"	3.62"	COP34	9.1					
						COP32	8.5					
	8.0 (0.31")	072B	Single pass	72	126	95.5	DHD3.5	8.7	4.8		US072B-03-R-090	
				2.83"	4.96"	3.76"	COP34	9.3				
							COP32	8.7				
		072B	Normal	72	126	95.5	DHD3.5	8.7	4.8	072A Ring bit	UN072B-03-R-368	
				2.83"	4.96"	3.76"	COP34	9.3				
							COP32	8.7				
	072X	Multi use	72	122	95.5	DHD3.5	8.7	4.6	072B Pilot bit	UM072X-03-R-369		
			2.83"	4.80"	3.76"	COP34	9.3					
						COP32	8.7					
	6.5 (0.26")	078W	Multi use	78	124	98	DHD3.5	9.5	3.9		UM078W-03-R-239	
				3.07"	4.88"	3.86"	COP34	10.1				
							COP32	9.5				
		6.35 (0.25")	080A	Single pass	80	124	99.5	DHD3.5	9.7	3.9		US080A-03-R-341
					3.15"	4.88"	3.92"	COP34	10.3			
								COP32	9.7			
	080A		Normal	80	124	99.5	DHD3.5	9.7	4.0		UN080A-03-R-249	
				3.15"	4.88"	3.92"	COP34	10.3				
							COP32	9.7				
	080W	Multi use	80	128	99.5	DHD3.5	9.7	4.5	080A Pilot bit	UM080W-03-R-371		
			3.15"	5.04"	3.92"	COP34	10.3					
						COP32	9.7					
	6.0 (0.24")	082A	Single pass	82	126	100	DHD3.5	10.1	3.8		US082A-03-R-372	
				3.23"	4.96"	3.94"	COP34	10.7				
							COP32	10.1				
		082A	Normal	82	126	100	DHD3.5	10.1	3.9		UN082A-03-R-373	
				3.23"	4.96"	3.94"	COP34	10.7				
							COP32	10.1				
		082W	Multi use	82	128	100	DHD3.5	10.1	4.5	082A Pilot bit	UM082W-03-R-342	
				3.23"	5.04"	3.94"	COP34	10.7				
							COP32	10.1				

Big Bore System



Single Pass

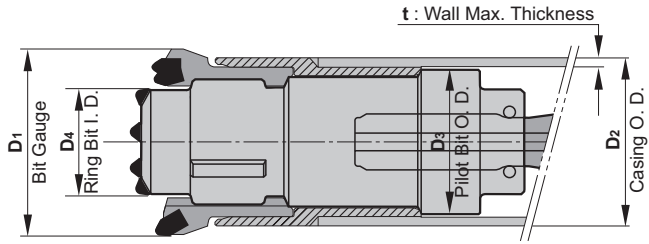
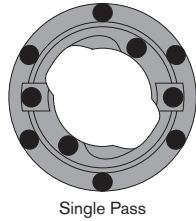
Normal

Unit: mm (Upper)
inch (Bottom)

Casing Pipe		Type	Ring Bit			Pilot Bit			Ring Set (Ring Bit & Casing Shoe)	Compatible Part	System Part Number	
Outer Dia.	Wall Max. Thickness		Model	Inner Dia.	Outer Dia.	Outer Dia.	Hammer	Weight (kg)				Weight (kg)
D ₂	t			D ₄	D ₁	D ₃						
CASING PIPE ø114.3mm (4 1/2")												
114.3 (4 1/2")	8.0 (0.31")	086L	Single pass for RD-pile	86	137	96	DHD3.5	6.9	4.8		UB086L-03-R-222	
				3.39"	5.39"	3.78"	COP34	7.5				
							COP32	6.9				
				5.6 (0.22")	092L	Large bore hole (Single pass)	86	137	96	W80	7.8	4.8
	3.39"	5.39"	3.78"									
	92	137	101.5				DHD3.5	8.6	4.4		UB092L-03-R-229	
	3.62"	5.39"	4.00"				COP34	9.2				
							COP32	8.6				
CASING PIPE ø139.7mm (5 1/2")												
139.7 (5 1/2")	10.0 (0.39")	106L	Single pass for RD-pile	106	166	118	DHD340	10.7	7.7		UB106L-04-R-223	
				4.17"	6.54"	4.65"	QL40	12.0				
							SD4	11.8				
				106	166	118	W100	10.7	7.7		UB106LW1034R226 *1	
	4.17"	6.54"	4.65"									
	5.6 (0.22")	116L	Large bore hole (Single pass)	116	161	127	DHD340	13.7	5.4		UB116L-04-R-230	
				4.57"	6.34"	5.00"	QL40	15.0				
							SD4	14.8				
		118L	Large bore hole (Single pass)	118	161	127	DHD340	14.0	5.3		UB118L-04-R-335	
				4.65"	6.34"	5.00"	QL40	15.3				
							SD4	15.1				
	CASING PIPE ø168.3mm (6 5/8")											
168.3 (6 5/8")	12.5 (0.49")	127L	Single pass for RD-pile	127	195	141	DHD350	20.0	9.7		UB127L-05-R-224	
				5.00"	7.68"	5.55"	QL50	19.5				
							SD5	19.4				
				127	195	141	W120	19.8	9.7		UB127LW1235R227 *1	
	5.00"	7.68"	5.55"									
	6.3 (0.25")	141M	Large bore hole (Single pass)	141	189	154	DHD350	24.5	6.7	141L Ring set	UB141M-05-R-247	
				5.55"	7.44"	6.06"	QL50	24.0				
					SD5	23.9						
		141M	Large bore hole (Single pass)	141	189	154	DHD350	24.5	7.0		UB141M-05-R-246	
				5.55"	7.44"	6.06"	QL50	24.0				
					SD5	23.9						
	5.6 (0.22")	141L	Large bore hole (Single pass)	141	189	155	DHD350	24.5	6.7		UB141L-05-R-231	
				5.55"	7.44"	6.10"	QL50	24.0				
					SD5	23.9						
		141L	Large bore hole (Single pass)	141	189	155	DHD350	24.5	6.7		UB141L-05-R-276	
				5.55"	7.44"	6.10"	QL50	24.0				
					SD5	23.9						
		143L	Large bore hole (Single pass)	143	189	155	DHD350	25.0	6.6		UB143L-05-R-336	
				5.63"	7.44"	6.10"	QL50	24.5				
						SD5	24.4					
CASING PIPE ø177.8mm (7")												
177.8 (7")	7.0 (0.28")	153L	Large bore hole (Normal)	153	200	162	DHD360	31.2	7.2		UB153L-06-R-244	
				6.02"	7.87"	6.38"	QL60	30.7				
					SD6	33.7						
		154L	Large bore hole (Normal)	154	200	162	DHD360	31.0	7.1		UB154L-06-R-260	
				6.06"	7.87"	6.38"	QL60	30.5				
							SD6	33.5				

*1 Actual hammer model.

Top Hammer System



Unit: mm (Upper)
inch (Bottom)

Casing Pipe		Type	Ring Bit			Pilot Bit			Ring Set (Ring Bit & Casing Shoe)	Compatible Part	System Part Number					
Outer Dia.	Wall Max. Thickness		Model	Inner Dia.	Outer Dia.	Outer Dia.	Thread	Weight (kg)				Weight (kg)				
D ₂	t			D ₄	D ₁	D ₃										
CASING PIPE ø76.3mm (3")																
76.3 (3")	8.0 (0.31")	042A	Single pass	42	86	58.5	R32	1.8	2.3		UT042AR32BBL370					
				1.65"	3.39"	2.30"										
CASING PIPE ø88.9mm (3 1/2")																
88.9 (3 1/2")	9.5 (0.37")	050B	Single pass	50	95	67.5	T38	3.3	2.9	050A Ring bit	UT050BM38BBL304					
				1.97"	3.74"	2.66"										
	050B	Single pass	50	100	67.5	T38	3.3	3.1		UT050BM38BBL168						
			1.97"	3.94"	2.66"											
	8.0 (0.31")	050A	Single pass	50	95	67.5	T38	3.3	2.9	050B Pilot bit	UT050AM38BBL323					
				1.97"	3.74"	2.66"										
	050A	Single pass	50	100	67.5	T38	3.3	3.1	050B Pilot bit 050B Ring bit	UT050AM38BBL324						
			1.97"	3.94"	2.66"											
	7.0 (0.28")	050C	Single pass	50	95	67.5	T38	3.3	3.0	050B Pilot bit 050A Ring bit	UT050CM38BBL305					
				1.97"	3.74"	2.66"										
				50	100	67.5						T38	3.3	3.2	050B Pilot bit 050B Ring bit	UT050CM38BBL303
				1.97"	3.94"	2.66"										
	056E	Single pass	56	100	73.5	T38	3.5	2.4		UT056EM38BBL268						
			2.20"	3.94"	2.89"											
	6.35 (0.25")	056B	Single pass	56	100	74	T38	3.6	2.6	056A Ring bit	UT056BM38BBL140					
				2.20"	3.94"	2.91"										
4.0 (0.16")	056A	Single pass	56	100	78	T38	3.5	2.6		UT056AM38BBL133						
			2.20"	3.94"	3.07"											
CASING PIPE ø101.6mm (4")																
101.6 (4")	10.0 (0.39")	060D	Single pass	60	114	79	T38	4.5	4.0	060A Pilot bit	UT060DM38BBL359					
				2.36"	4.49"	3.11"										
	9.5 (0.37")	060A	Single pass	60	114	81	T38	4.6	4.0		UT060AM38BBL306					
				2.36"	4.49"	3.19"										
	8.0 (0.31")	060B	Single pass	60	114	81	T38	4.6	4.1	060A Pilot bit 060A Ring bit	UT060BM38BBL307					
				2.36"	4.49"	3.19"										
7.0 (0.28")	060C	Single pass	60	114	81	T38	4.6	4.2	060A Pilot bit 060A Ring bit	UT060CM38BBL325						
			2.36"	4.49"	3.19"											
065A	Single pass	65	114	85	T38	5.3	3.6		UT065AM38BBL269							
		2.56"	4.49"	3.35"												

MD HAMMER DTH HAMMER & BITS



DTH Hammer

- ◆ Offers a valveless pneumatic percussion hammer for drilling in all rock formations
- ◆ Designed for water well, blast hole, and construction
- ◆ Simple design for easy maintenance
- ◆ Fast Penetration Rates for straighter holes in deeper depth
- ◆ Increased air cycle efficiency for improved performance
- ◆ Hardened internal parts to maximum service life and longevity
- ◆ Larger diameter holes
- ◆ Reversible sleeve

Size	Hammer	Bit Shank	Hole Size Range	Outside Diameter	Bore size	Overall Length	Operating length API shoulder to bit face	Piston Weight	Total Weight	Wrench Flats	Thread Connection	Minimum Air Volume Required	Maximum Operating Pressure
			inch mm	inch mm	inch mm	inch mm	inch mm	lbs kg	lbs kg	inch mm		cfm cmm	psi bar
3.5	HMDHD3.5	305 / MDD3.5	3 1/2 to 4 1/4 89 to 108	3.1 78.7	2.5 63.5	40 1016	40 1016	12 5.31	56 25.4	2.5 63.5	2 3/8" API Pin Up	150 4.5	500 34
			4 to 4 1/2 102 to 115	3.35 85.1	2.5 64	40 1016	40 1016	12 5.3	74 33.6	2.5 63.5		150 4.5	500 34
	HMDHD3.5H	305 / MDD3.5H	4 to 4 1/2 102 to 115	3.35 85.1	2.5 64	40 1016	40 1016	12 5.3	74 33.6	2.5 63.5	2 3/8" API Pin Up	150 4.5	500 34
			4 to 4 1/2 102 to 115	3.35 85.1	2.5 64	40 1016	40 1016	12 5.3	74 33.6	2.5 63.5		150 4.5	500 34
4	HMDHD340	340 / MDD340	4 to 5 102 to 127	3.63 92.2	2.95 75	43.6 1107	43.7 1110	20 8.5	83 38	3 76	2 3/8" API Pin Up	150 4.5	500 34
			4 to 5 102 to 127	3.63 92.2	2.95 75	43.6 1107	43.7 1110	20 8.5	83 38	3 76		150 4.5	500 34
	HMDHD345	340 / MDD345	4 1/2 to 5 1/8 114 to 130	4.1 104.14	3.3 83.3	40.7 1034	40.9 1039	22 10	112 50	3 76	2 3/8" API Pin Up	150 4.5	500 34
			4 1/2 to 5 1/8 114 to 130	4.1 104.14	3.3 83.3	40.54 1026	40.5 1029	22 10	112 50	3 76		150 4.5	500 34
4.5	HMDHQ45	Q40 / MDQ45	4 1/2 to 5 1/8 114 to 130	4.1 104.14	3.3 83.3	40.54 1026	40.5 1029	22 10	112 50	3 76	2 3/8" API Pin Up	150 4.5	500 34
			4 1/2 to 5 1/8 114 to 130	4.1 104.14	3.3 83.3	40.54 1026	40.5 1029	22 10	112 50	3 76		150 4.5	500 34
	HMDHQ50	QL5 / MDQ50	5 to 6 127 to 152	4.53 115	3.71 94.2	47.2 1199	47.1 1196	30 14	143 64.8	3.5 88.9	3 1/2" API Pin Up	150 4.5	500 34
			5 to 6 127 to 152	4.53 115	3.71 94.2	48.2 1222	48.1 1222	30 14	143 64.8	3.5 88.9		150 4.5	500 34
5	HMDHD350	350 / MDD350	5 to 6 127 to 152	4.53 115	3.71 94.2	48.2 1222	48.1 1222	30 14	143 64.8	3.5 88.9	3 1/2" API Pin Up	150 4.5	500 34
			5 to 6 127 to 152	4.53 115	3.71 94.2	48.2 1222	48.1 1222	30 14	143 64.8	3.5 88.9		150 4.5	500 34
	HMDHQ55	QL5 / MDQ55	5 1/2 to 6 139.7 to 152	5.1 129.5	4.1 104	44.7 1135	44.6 1143	30 14	148 67.1	3.5 88.9	3 1/2" API Pin Up	250 7	500 34
			5 1/2 to 6 139.7 to 152	5.1 129.5	4.1 104	44.7 1135	44.6 1143	30 14	148 67.1	3.5 88.9		250 7	500 34
6	HMDHQ60	QL6 / MDQ60	6 to 7 152 to 178	5.46 139	4.5 102	48.1 1222	48.5 1232	43 19.5	215 97.5	4 102	3 1/2" API Pin Up	450 13	500 34
			6 to 7 152 to 178	5.46 139	4.5 102	48.1 1222	48.5 1232	43 20	215 97.5	4 102		450 13	500 34
	HMDHQ60H	QL6 / MDQ60H	6 1/4 to 7 152 to 178	5.75 146	4.5 102	48.1 1222	48.5 1232	43 20	215 97.5	4 102	3 1/2" API Pin Up	450 13	500 34
			6 1/4 to 7 152 to 178	5.75 146	4.5 102	48.1 1222	48.5 1232	43 20	215 97.5	4 102		450 13	500 34
	HMDHD360	360 / MDD360	6 to 7 152 to 178	5.46 139	4.5 102	52.2 1325	52.6 1336	43 20	215 97.5	4 102	3 1/2" API Pin Up	450 13	500 34
			6 to 7 152 to 178	5.46 139	4.5 102	52.2 1325	52.6 1336	43 20	215 97.5	4 102		450 13	500 34
	HMDHD360H	360 / MD-D360H	6 1/4 to 7 158.75 to 178	5.75 146	4.5 102	52.2 1325	52.6 1336	43 20	250 97.5	4 102	3 1/2" API Pin Up	450 13	500 34
			6 1/4 to 7 158.75 to 178	5.75 146	4.5 102	52.2 1325	52.6 1336	43 20	250 97.5	4 102		450 13	500 34
	HMDHQ65	QL6 / MDQ65	6 1/4 to 7 158.75 to 178	5.75 146	4.75 121	46.8 1189	47.2 1198	45 20.4	251 113.8	4 102	3 1/2" API Pin Up	450 13	500 34
			6 1/4 to 7 158.75 to 178	5.75 146	4.75 121	46.8 1189	47.2 1198	45 20.4	251 113.8	4 102		450 13	500 34
	HMDHQ65H	QL6 / MDQ65H	6 1/2 to 7 165 to 178	5.9 150	4.75 121	46.8 1189	47.2 1198	45 20.4	268 121.5	4 102	3 1/2" API Pin Up	450 13	500 34
			6 1/2 to 7 165 to 178	5.9 150	4.75 121	46.8 1189	47.2 1198	45 20.4	268 121.5	4 102		450 13	500 34
6.5	HMDHQ80	QL8 / MDQ80	7 7/8 to 10 200 to 254	7.1 180	5.87 149	56.2 1427	57 1524	78 35	414 188	5.9 150	4 1/2" API Pin Up	900 26	500 34
			7 7/8 to 10 200 to 254	7.1 180	5.87 149	56.2 1427	57 1524	78 35	414 188	5.9 150		900 26	500 34
	HMDHD380	380 / MDD380	7 7/8 to 10 200 to 254	7.1 180	5.87 149	56.9 1445	57.7 1542	78 35	414 188	5.9 150	4 1/2" API Pin Up	900 26	500 34
			7 7/8 to 10 200 to 254	7.1 180	5.87 149	56.9 1445	57.7 1542	78 35	414 188	5.9 150		900 26	500 34

DTH Bits

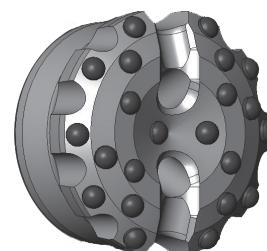
Shank	Head size range	Face Style
		C: Concave, F: Flat, V: Convex, K: Kavex
305/3.5	3 1/2"-4"	C.F.V
305/3.5	4"-4 1/4"	C.F.V
340	4"-4 7/8"	C.F.V
340	5"-5 1/8"	C.F.V
350	5"-5 7/8"	C.F.V
350	6"	C.F.V
350	5 3/4"-5 7/8"	K
350	6"	K
360	5 3/4"-6 3/8"	C.F.V
360	6 1/2"-7"	C.F.V
360	6"-7"	K(5/8" Gage)
360	6"-7"	K(3/4" Gage)
360	7 1/4"-7 3/4"	C.F.V
360	7 7/8"-8 7/8"	C.F.V
360	8 1/2"-8 7/8"	K(5/8" Gage)
380	7 5/8"-8 1/4"	C.F.V
380	8 1/2"-8 7/8"	C.F.V
380	9"	C.F.V
380	9 1/2"-10"	C.F.V
380	10 1/2"-11"	C.F.V
380	11 1/2"-12 1/4"	C.F.V
Q40	4 1/2"-4 7/8"	C.F.V
Q40	5"-5 1/8"	C.F.V
QL5	5"-5 7/8"	C.F.V
QL5	6"	C.F.V
QL5	5 3/4"-5 7/8"	K
QL5	6"	K
QL6	5 3/4"-6 3/8"	C.F.V
QL6	6 1/2"-7"	C.F.V
QL6	6"-7"	K(5/8" Gage)
QL6	6 3/4"	K(5/8" Gage)
QL6	7"	K(5/8" Gage)
QL6	6"-7"	K(3/4" Gage)
QL6	7 1/4"-7 3/4"	C.F.V
QL6	7 7/8"-8 7/8"	C.F.V
QL8	7 5/8"-8 1/4"	C.F.V
QL8	8 1/2"-8 7/8"	C.F.V
QL8	9"	C.F.V
QL8	9 1/2"-10"	C.F.V
QL8	10 1/2"-11"	C.F.V
QL8	11 1/2"-12 1/4"	C.F.V
QL8	11 1/2"-12 1/4"	C.F.V

High quality steel bodies are expertly machined and heated treated to precision standards to eliminate any bit body failures.

Our top-quality carbide buttons are formulated and sintered in house.

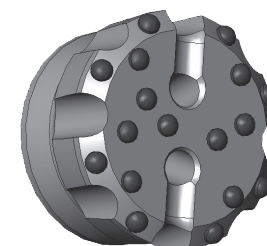
CONCAVE

The concave bit is the most common face style used in the market today. The dish typeface gives excellent penetration in medium and hard rock formations while maintaining a straight hole. This face has unique air flushing characteristics. Concave is the predominate face style for the majority of drilling conditions.



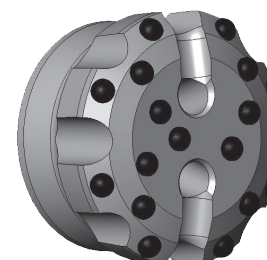
FLAT

The flat face bit, as the name implies, is flat across the bit front. This bit is very aggressive in drilling applications and is best suited for tough rock and hard rock with broken formation. The flat bit is used primarily in blast hole work; the bit tends to lead off in deep holes. Rock Tools flat face bits come with standard face slots to aid in keeping the cutting face clean.



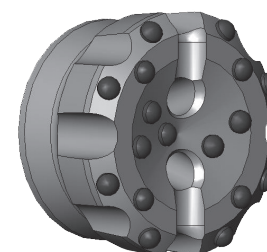
CONVEX

The convex face is used in tough drilling formations where the front of the bit tends to be prematurely worn away. The convex style tends to keep the drilling face intact longer by drilling with the two rows of buttons on the convex face. This face style gives good hole penetration.



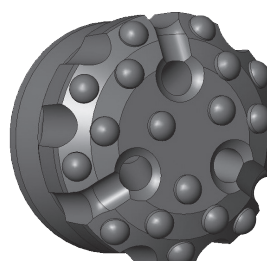
KAVEX

This kavex face bit is a combination of convex/concave. This type of face is recommended for abrasive formations in the hard and tough range where other bit faces wear away quickly. The kavex is designed to improve the cleaning of cuttings, thus reducing body wear. The concave center helps drill a straight hole.



WIDE GAUGE

The wide-gauge face is a convex but in a heavy-duty design. The buttons are larger, and the gauge row is set on a different angel. It has used in tough, abrasive drilling formations where the face and buttons prematurely wear away. The wide-gauge style keeps the drilling face intact longer by drilling with the two rows of (3/4) buttons on the wide-gauge face, which gives good hole penetration.



If you have any request for face designs, shanks, carbide sizes and configuration, please feel free to contact us.

For Your Safety

- Don't handle inserts and chips without gloves.
- Please machine within the recommended application range and exchange expired tools with new ones in advance of breakage.
- Please use safety covers and wear safety glasses.
- When using compounded cutting oils, please take fire precautions.
- When attaching inserts or spare parts, please use only the correct wrench or driver.
- When using rotating tools, please make a trial run to check run-out, vibration and abnormal sounds etc.



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