



OVERBURDEN DRILLING SYSTEMS

MINERAL EXPLORATION
ENVIRONMENTAL
GEOTECHNICAL
GEOTHERMAL
ROTARY
SONIC
HDD



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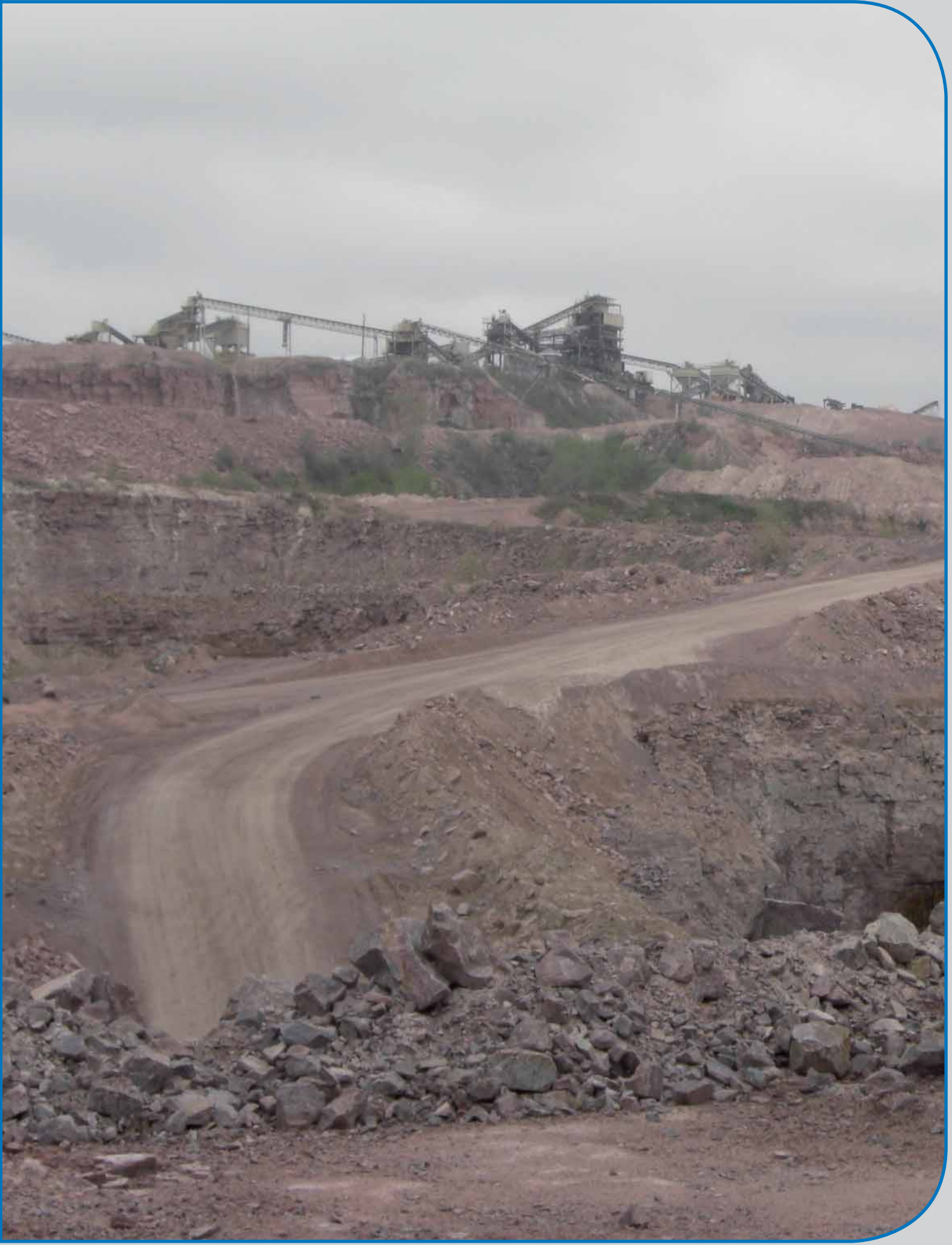
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OVERBURDEN DRILLING SYSTEMS



Hole Products offers a wide range of overburden drilling systems from leading manufacturers including Mincon, Mitsubishi, Sandvik, and more.

Casing advancement systems are available in a wide range of sizes and styles, for use in a variety of overburden drilling applications.

Casing hammers, extractors, jacks, and a complete offering of spare parts are available in a variety of sizes and styles on request.

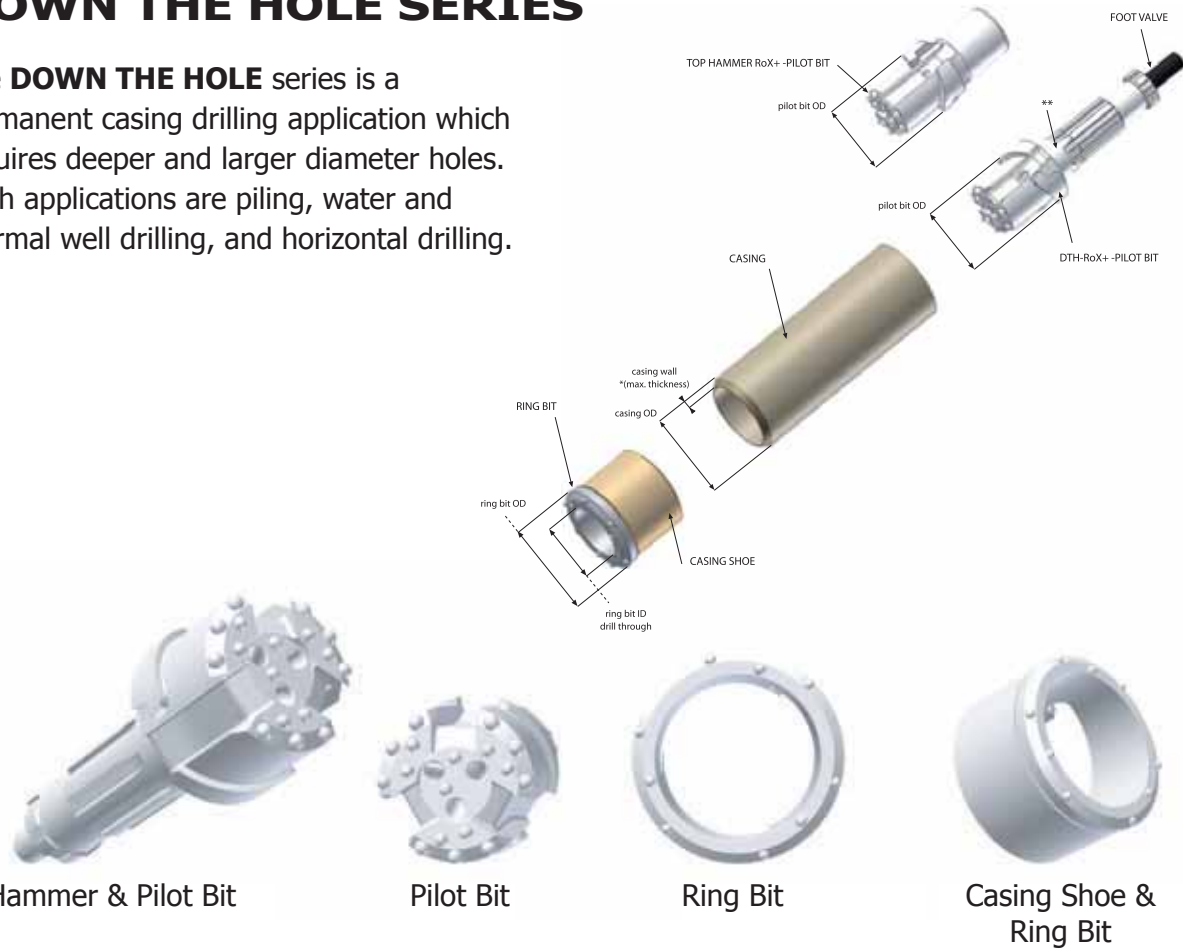
Our line of accessories includes everything successful drilling operations require for overburden drilling including casing shoes, dual rotary shoes, diverters, split wipers, and more.

Please contact your Hole Products representative for additional details.

Products listed in the catalog are representative of the most common industry sizes and styles. Please contact your Hole Products representative for additional product offerings.

MINCON® ROBIT® CASING ADVANCING SYSTEM DOWN THE HOLE SERIES

The **DOWN THE HOLE** series is a permanent casing drilling application which requires deeper and larger diameter holes. Such applications are piling, water and thermal well drilling, and horizontal drilling.



DOWN THE HOLE CASING SYSTEM

CASING O.D	CASING WALL MAX	RING BIT		PILOT BIT O.D.	DTH HAMMER
		I.D .	O.D.		
4.500"	0.197"	3.583"	5.039"	4.016"	3.5"
4.500"	0.394"	3.071"	4.882"	3.642"	3.5"
5.500"	0.220"	4.567"	6.063"	5.020"	4"
5.500"	0.394"	3.701"	5.906"	4.626"	4"
6.625"	0.236"	5.591"	7.177"	6.102"	5"
6.625"	0.500"	4.764"	7.008"	5.512"	5"
7.625"	0.236"	6.575"	8.346"	7.087"	6"
7.625"	0.500"	5.827"	7.992"	6.575"	6"
8.625"	0.236"	7.323"	9.213"	8.071"	6"
8.625"	0.500"	6.575"	9.213"	7.520"	6"
10.750"	0.315"	9.134"	11.496"	10.039"	8"
10.750"	0.500"	8.622"	11.496"	9.685"	8"
12.750"	0.315"	11.063"	13.504"	12.047"	8"
12.750"	0.500"	10.630"	13.465"	11.693"	8"-10"
16.000"	0.500"	12.913"	16.946"	14.724"	10"-12"
24.000"	0.591"	20.197"	24.488"	22.441"	18"

MINCON® ROBIT® CASING ADVANCING SYSTEM MULTI USE SERIES

The **MULTI-USE** series is designed to be used several times due to its stronger and more durable composition. The ring bit is slightly bigger than the casing to facilitate easier recovery of the casings from the ground. This is a useful feature whenever there is a need for temporary casing.



ROBIT® CASING SYSTEM



Hammer & Pilot Bit



Pilot Bit



Ring Bit



Casing Shoe & Ring Bit

MULTI-USE CASING SYSTEM					
CASING O.D	CASING WALL MAX.	RING BIT		PILOT BIT O.D.	DTH HAMMER
		I.D.	O.D.		
4.500"	0.394"	3.071"	4.803"	3.642"	3.5"
5.500"	0.394"	4.094"	5.787"	4.626"	4"
6.625"	0.394"	5.079"	7.008"	5.748"	5"
7.625"	0.394"	6.063"	8.031"	6.772"	6"
8.625"	0.394"	6.772"	9.016"	7.717"	6"
16.000"	0.500"	12.913"	16.654"	14.724"	10"-12"
24.000"	0.591"	20.197"	25.079"	22.441"	18"

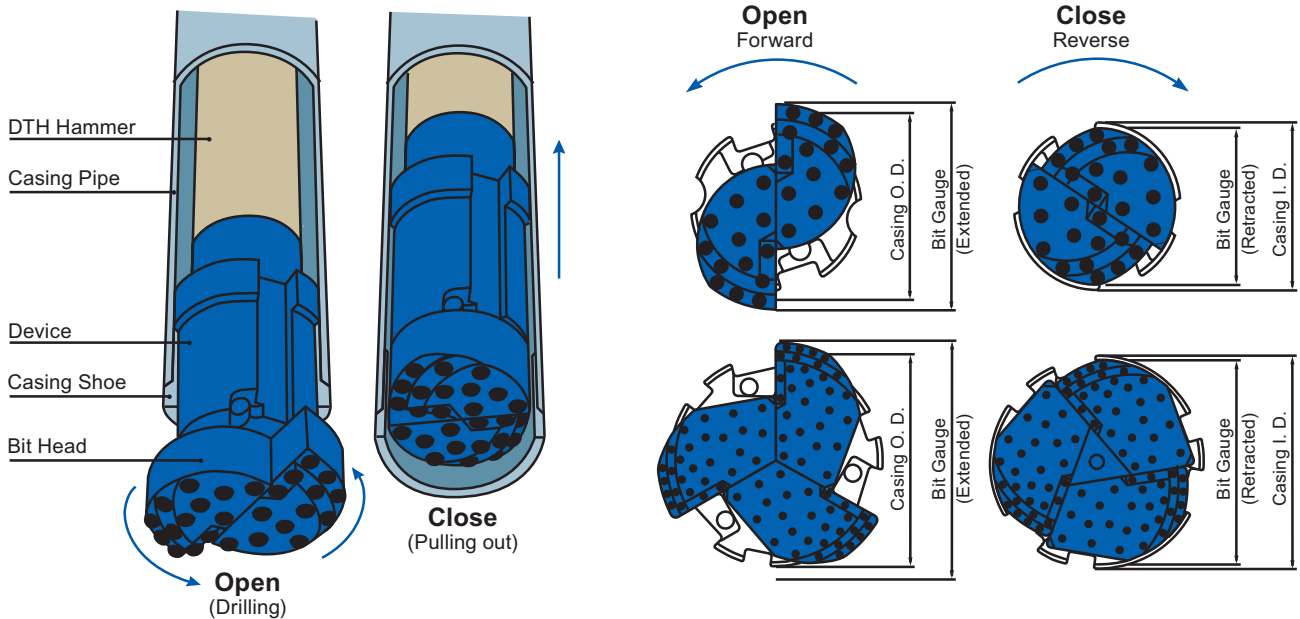
MITSUBISHI® SUPER MAXBIT UNDER REAMING SYSTEM

The **SUPER MAXBIT** gives stability when drilling collapsing overburden formations. This is an advanced technology compared to the other eccentric drilling methods. It consists of two to three bit wings connected to the DTH Hammer. The bit head is extendable/retractable when the drill string rotates in the forward/reverse direction. Drilling and casing are possible simultaneously with the use of a casing shoe.

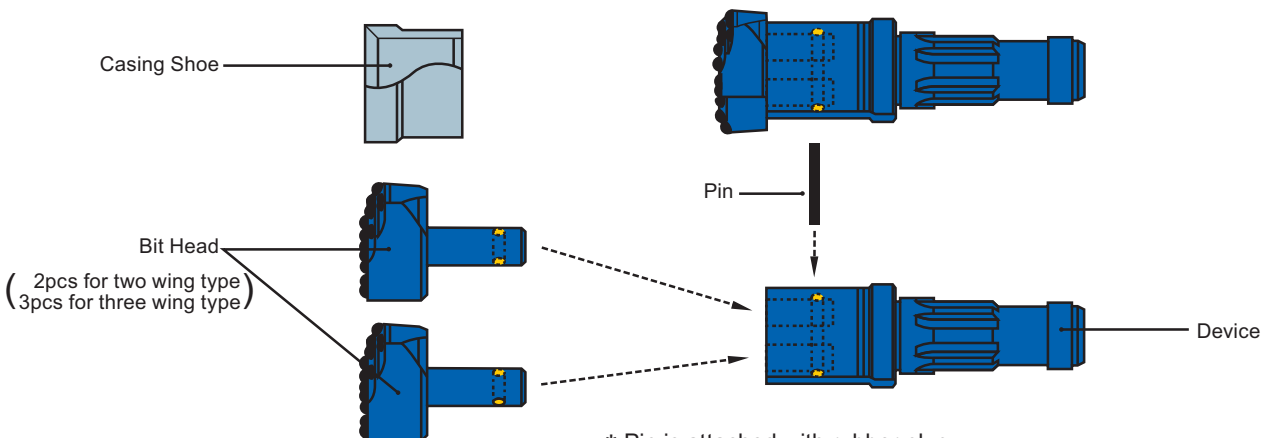
The **SUPER MAXBIT** has the following advantages:

- High-speed drilling similar to a standard DTH bit.
- Straight hole drilling.
- Uniform rotation while drilling of boulders, sand, and gravel.
- Reliability of extending and retracting proven by customer experiences.

MECHANISM

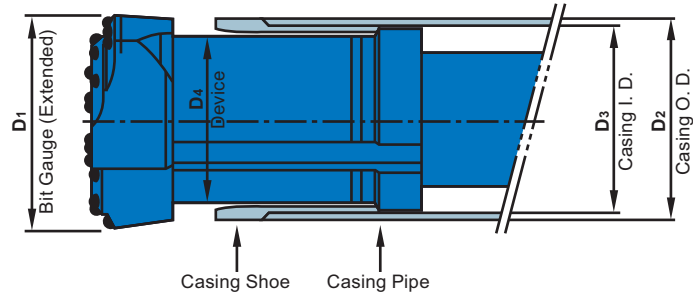


COMPONENTS



- * Pin is attached with rubber plug.
- * Retainer ring and rubber plug are not attached under 4" bit.
- * Please be careful not to get your finger snapped when assembling.

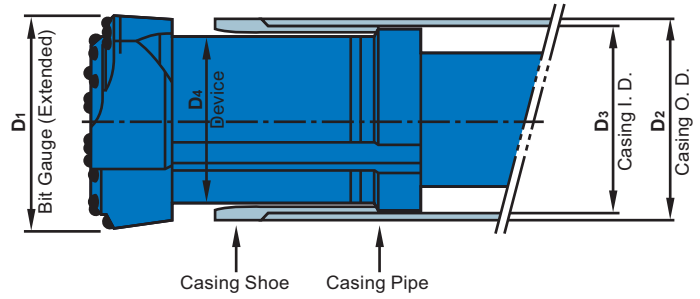
MITSUBISHI® SUPER MAXBIT UNDER REAMING SYSTEM



SUPER MAXBIT UNDER REAMING SYSTEM

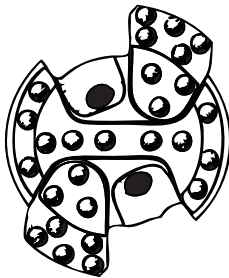
APPROPRIATE CASING AND HAMMER TYPE															
TYPE	TWO WING	THREE WING	BIT GAUGE				APPLICABLE CASING PIPE						DEVICE O.D. (D4)	HAMMER TYPE	
			EXTENDED (D1)		CLOSED		MAX. O.D. (D2)		MIN. I.D. (D3)		NORMAL SIZE				
			IN	MM	IN	MM	IN	MM	IN	MM	IN	MM			
90	●		4.9"	125	3.6"	91	4.5"	114.3	4.0"	102.3	4"	101.6	3.6"	92	DHD3.5, COP32
115	●		6.0"	152	4.5"	114	5.6"	141.3	5.0"	126.6	5"	127.0	4.5"	115	SD-4, DHD340, COP42
140	●		7.3"	185	5.5"	140	6.5"	165.2	6.0"	153.2	6"	152.4	5.6"	141	SD-5, DHD350
165	●		8.5"	215	6.5"	166	7.5"	190.7	7.0"	178.7	7"	177.8	6.6"	167	SD-6, DHD360, QL60
187	●		9.3"	237	7.3"	186	8.5"	216.3	8.0"	202.3	8"	203.2	7.4"	187	SD-6, DHD360, QL60
215	●		10.7"	272	8.5"	217	10.0"	254.0	9.5"	241.0	9"	228.6	8.6"	218	SD-8, DHD380, QL80
240		●	11.4"	290	9.4"	238	10.8"	273.1	10.0"	254.5	10"	254.0	9.4"	240	SD-8, DHD380, QL80
280		●	13.4"	340	11.1"	281	12.5"	318.5	11.9"	301.7	12"	304.8	11.1"	283	SD-10
315		●	14.7"	373	12.5"	318	14.0"	355.6	13.3"	336.6	14"	355.6	12.6"	320	SD-12, DHD112, N120
365		●	16.7"	425	14.3"	363	16.0"	406.4	15.3"	387.4	16"	406.4	14.4"	365	SD-12, DHD112, N120
410		●	18.8"	478	16.2"	412	18.0"	457.2	17.1"	435.0	18"	457.2	16.3"	414	SD-15, DHD112S, N120S
460		●	20.9"	530	18.1"	461	20.0"	508.0	19.0"	482.6	20"	508.0	18.2"	463	SD-15, DHD112S, N120S, SD-18
510		●	22.8"	580	20.0"	509	22.0"	558.8	21.0"	533.4	22"	558.8	20.1"	511	SD-15, DHD112S, SD-18, N180
560		●	24.8"	630	22.0"	559	24.0"	609.6	23.0"	584.2	24"	609.6	22.1"	561	SD-18, DHD120A, N180

MITSUBISHI® SUPER MAXBIT G-MODEL CASING SYSTEM

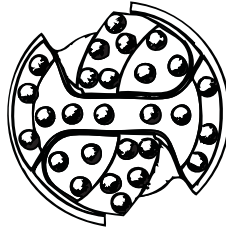


2 Wing Type

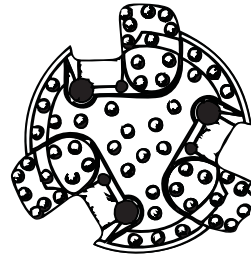
3 Wing Type



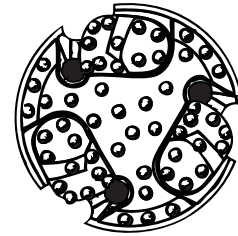
Open



Closed



Open



Closed

APPROPRIATE CASING AND HAMMER TYPE

TYPE	TWO WING	THREE WING	BIT GAUGE				APPLICABLE CASING PIPE						DEVICE O.D. (D4)	HAMMER TYPE	
			EXTENDED (D1)		CLOSED		MAX. O.D. (D2)		MIN. I.D. (D3)		NORMAL SIZE				
			IN	MM	IN	MM	IN	MM	IN	MM	IN	MM			IN
115	●		6.0"	152	4.5"	114	5.6"	141.3	5.0"	126.6	5"	127.0	4.5"	115	SD-4, DHD340, COP42, MACH 44, N4
140	●		7.3"	185	5.5"	140	6.5"	165.2	6.0"	153.2	6"	152.4	5.6"	141	SD-5, DHD350R, COP52, MACH50, QL50
187	●		9.3"	237	7.3"	186	8.5"	216.3	8.0"	202.3	8"	203.2	7.4"	187	SD-6, DHD360, DH-6, COP 62, QL60,
215	●		10.7"	272	8.5"	217	10.0"	254.0	9.5"	241.0	9"	228.6	8.6"	218	SD-8, DHD380, DHD380M, QL80
240		●	11.4"	290	9.4"	238	10.8"	273.1	10.0"	254.5	10"	254.0	9.4"	240	SD-8, DHD380M, DHD380, QL80
280		●	13.4"	340	11.1"	281	12.5"	318.5	11.9"	301.7	12"	304.8	11.1"	283	SD-10, DND310M, N100
315		●	14.7"	373	12.5"	318	14.0"	355.6	13.3"	336.6	14"	355.6	12.6"	320	SD-12, DHD112, N120
365		●	16.7"	425	14.3"	363	16.0"	406.4	15.3"	387.4	16"	406.4	14.4"	365	SD-12, DHD112, N120
460		●	20.9"	530	18.1"	461	20.0"	508.0	19.0"	482.6	20"	508.0	18.2"	463	SD-15, DHD112S, N120S, SD-18, N180
560		●	24.8"	630	22.0"	559	24.0"	609.6	23.0"	584.2	24"	609.6	22.1"	561	SD-18, DHD120A, N180

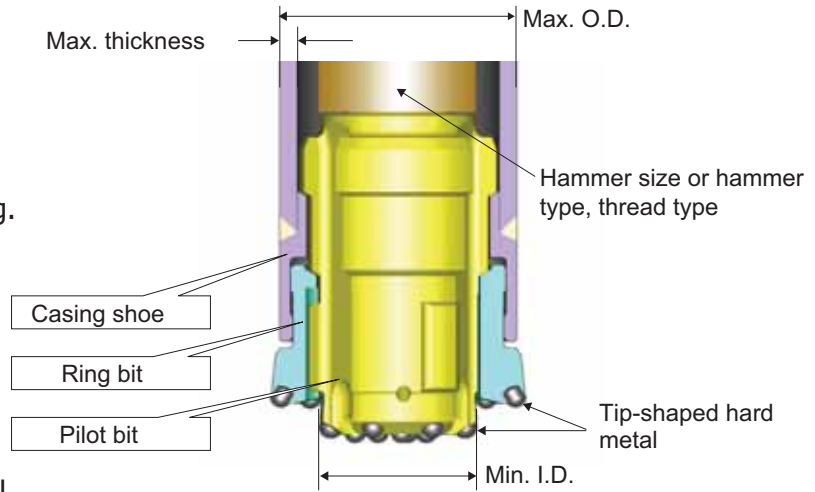
MITSUBISHI® ULTRA MAXBIT CASING SYSTEM

The ULTRA MAXBIT is used for simultaneous drilling and casing in unstable, soft ground formations. Ultra Maxbit can also be used in sand, gravel, boulders, and rock, and for vertical, horizontal, and diagonal drilling.







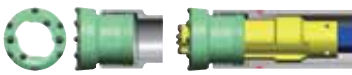

The ULTRA MAXBIT is composed of three components:

- (1) PILOT BIT
- (2) RING BIT
- (3) CASING SHOE

ULTRA MAXBIT are designed for several different casing pipe diameters.



OVERVIEW MAP

	Model	Pilot Bit	Casing Type	Casing Outer ø mm (in.)
Standard-DTH System	Single Pass Model <ul style="list-style-type: none"> • Suitable for relatively soft ground and short hole depth. • Leaving a casing pipe in the ground. • Thread connection ring set. 	For DTH Hammer  <ul style="list-style-type: none"> • Pilot Bit is manufactured in Single, Normal and Multi pass model as long as casing size is same. 	Permanent	89.1–1016 (3 1/2"–40")
	Normal Model <ul style="list-style-type: none"> • Suitable for heavy duty single pass and longer hole depth. • Leaving a casing pipe in the ground. • Thread connection ring set. 		Permanent or *1 Retrievable	114.3–457.2 (4 1/2"–8")
	Multi Use Model <ul style="list-style-type: none"> • Pulling force to remove casing is reduced. • This enables the casing pipe to be re-used. • Interlinked ring set. 		Retrievable	89.1–1016 (3 1/2"–40")
Big Bore-DTH System	Big Bore Model <ul style="list-style-type: none"> • Suitable for large bore drilling. • Interlinked ring set. 	For DTH Hammer 	Permanent	114.3–355.6 (4 1/2"–14")
Top Hammer System	Top Hammer Model <ul style="list-style-type: none"> • Suitable for small hole tunneling. • Thread connection ring set. 	For Top Hammer 	Permanent	76.3–139.7 (3"–5 1/2")

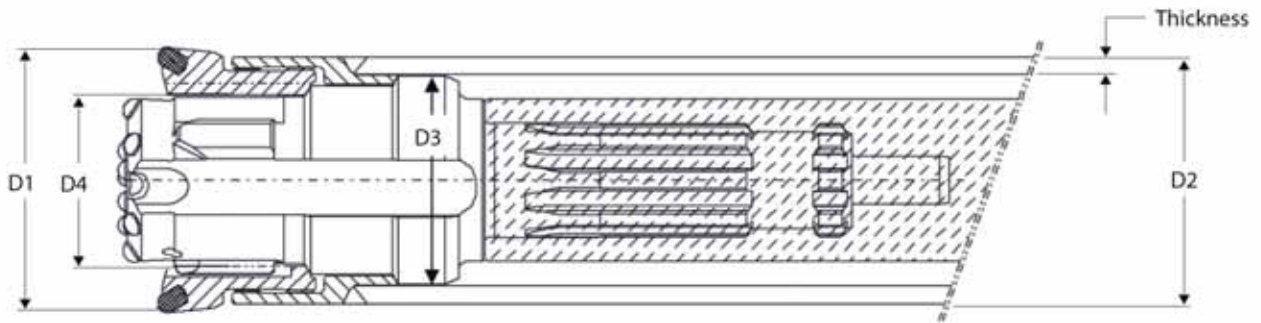
*1 Limited to shallow hole drilling only.

MITSUBISHI® ULTRA MAXBIT CASING SYSTEM

Ultra Maxbits are custom designed for specific formations and drilling conditions. Please refer to the chart options on page 9.

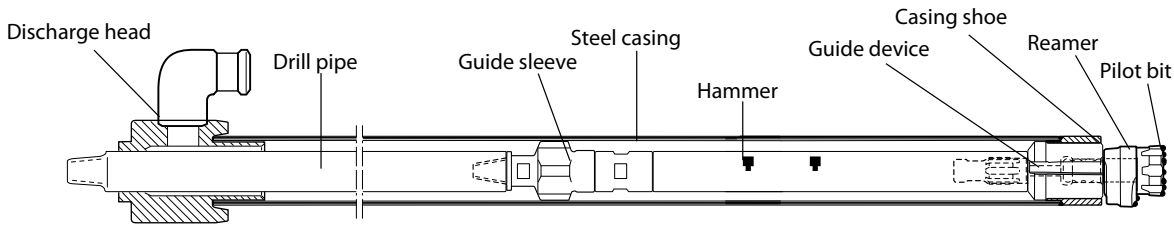
Please contact your Hole Products representative for additional details and assistance ordering Ultra Maxbits.

ULTRA MAXBIT ORDERING GUIDE					
Usage:					
DTH Model # or Thread Type:					
Rotation Direction at Drilling:	Right			Left	
Drilling Direction:	Vertical		Horizontal		Diagonal
Casing Pipe:	O.D. (D2)			Wall Thickness	
Ring Bit Model:	Single		Normal		Multi Use
Ring Bit O.D.: (D1)					
Ring Bit I.D.: (D4)					
Max. O.D. of Pilot Bit: (D3)					
Other Info.:					

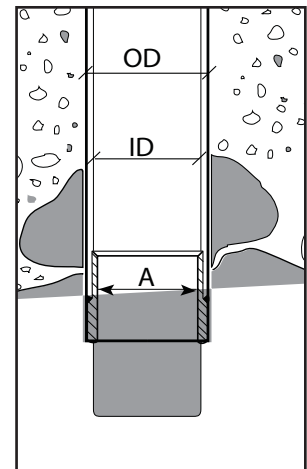


SANDVIK® TUBEX XL SYSTEMS

The Tubex XL eccentric drilling system is designed for simultaneous drilling and casing through overburden and loose rock formations. The Tubex XL system uses a pilot bit and an eccentric reamer. The reamer drills a hole large enough for the casing to follow. After advancing a few feet into the bedrock, the drill string is rotated in the opposite direction to fold the reamer in allowing the Tubex XL system to be retracted inside the casing. After changing to a conventional DTH bit, the drill string is lowered into the casing, and drilling into the bedrock can resume.



TUBEX XL PRODUCT RANGE										
TUBEX TYPE	APPLICABLE CASING PIPE				MIN. WALL THK.		MAX. DRILL BIT DIAMETER (A)		REAMING DIAMETER	
	MAX. O.D.		MIN. I.D.							
	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM
90	4.5"	115	4.0"	102	.197"	5	3.5"	90	4.8"	123
115	5.6"	142	5.0"	128	.197"	5	4.5"	115	6.0"	152
140	6.7"	171	6.2"	157	.197"	5	5.5"	140	7.4"	187
165	7.7"	196	7.2"	183	.197"	5	6.5"	165	8.3"	212
180	8.6"	219	7.6"	194	.217"	5.5	7.1"	180	9.1"	232
190	8.7"	222	8.1"	205	.248"	6.3	7.5"	190	9.3"	237
215	10.1"	257	9.5"	241	.248"	6.3	8.5"	215	10.9"	278
230	10.6"	270	9.8"	250	.248"	6.3	9.1"	230	11.3"	286
240	10.7"	273	10.2"	260	.248"	6.3	9.5"	240	12.0"	306
280	12.9"	327	12.0"	305	.280"	7.1	11.0"	280	14.6"	370



DRIVE SHOES

Drive shoes are designed to protect the pipe or casing from splitting during casing advancement.

Hole Products offers drive shoes ranging in sizes from 2" - 60", cable tool, and rotary styles for weld on or threaded applications.

Please contact your Hole Products representative for availability of additional sizes and styles.

CABLE TOOL STYLE

Cable tool style drive shoes are standard design for cable tool drilling and are often used in rotary drilling. The outer surface of the shoe is straight with the bevel on the inside edge.



ROTARY STYLE

Rotary style drive shoes have an outside bevel above the cutting edge to ensure a good seat where driving may not be possible.



CABLE TOOL STYLE - WELD ON*		
PART #	CASING O.D.	SHOE O.D.
4550037	4 1/2"	5"
4550040	5 9/16"	6 1/20"
4550005	6 5/8"	7 3/8"
4550000	6 5/8"	7 5/8"
4550045	7"	7 21/32"
4550050	8 5/8"	9 5/8"
4550060	10 3/4"	11 3/4"
4550065	12 3/4"	14"
4550067	14"	15"
4550070	16"	17"
4550072	18"	19"
4550074	20"	21"
4550078	24"	25"

*Threaded cable tool style drive shoes available on request.

ROTARY STYLE - WELD ON*		
PART #	CASING O.D.	SHOE O.D.
4550038	4 1/2"	5"
4550043	5 9/16"	6"
4550015	6 5/8"	7 3/8"
4550026	6 5/8"	7"
4550045	7"	8"
4550055	8 5/8"	9"
4550061	10 3/4"	11"
4550066	12 3/4"	14"
4550068	14"	15"
4550069	16"	17"
4550072	18"	19"
4550074	20"	21"
4550078	24"	25"

*Threaded rotary style drive shoes available on request.

DUAL ROTARY SHOES

Dual rotary shoes are designed for use on dual rotary drilling operations. They are welded to the bottom casing section and feature carbide studs to cut through the overburden.

DUAL ROTARY SHOES		
PART #	CASING O.D.	SHOE O.D.
4850120	6 5/8"	7 5/8"
4850121	8 5/8"	9 5/8"
4850132	10 3/4"	11 3/4"
4850122	12 3/4"	13 5/8"
4850165	14"	15"
4850168	16"	16 5/8"



*Dual rotary shoes have the same I.D. as the casing I.D.

DIVERTERS

Diverters are used with casing advancement systems when drilling through overburden. The diverters slip over the top of the casing to direct cutting, and fluids away from the hole. A hose can be connected to the diverter outlet to further direct the flow away from the hole.



DIVERTERS			
PART #	CASING SIZE	THRU HOLE	OUTLET
4850130	6 5/8"	3 1/4"	6" MALE NPT
4850125	6 5/8"	4 1/4"	6" MALE NPT
4850131	6 5/8"	4 3/4"	6" MALE NPT

SPLIT RUBBER WIPERS

Split rubber wipers are designed to remove, soil, mud, and water from the drill string. They seal around the drill pipe and can be used with compression or pneumatic systems.

Additional sizes and styles are available on request.

SPLIT RUBBER WIPERS	
PART #	DESCRIPTION
4850142	3 1/2" ROD
4850138	4 1/2" ROD



