DIABIT

GK11C

THE COMPLETELY BALANCED DRILLING SYSTEM IN OVERBURDEN DRILLING

SUPER MAXBIT

Two wing type

Three wing type

MITSUBISHI

MITSUBISHI MATERIALS

SUPER MAXBIT

PATENTED

Japan	Pat.No.1676072
U.S.A.	Pat.No.5,113,954 / No.5,139,099
E.P.C.	Pat.No.0444682 / 0468515
Australia	Pat.No.62910 / 644195
South Africa	Pat.No.91/1493 / 91/5804
Finland	Pat.No.91551 / 94891

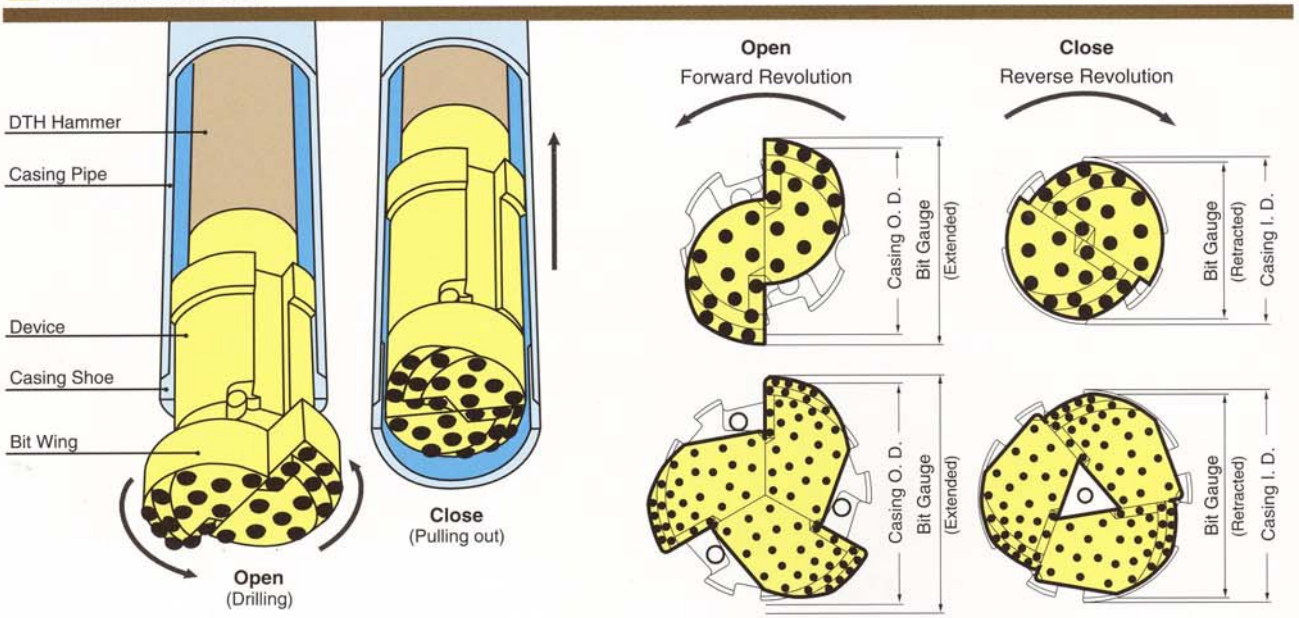
★Patent Pending in 3 countries

The SUPER MAXBIT achieves a stable and balanced drilling system for various 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 Down The Hole Hammer. The bit wings are 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.

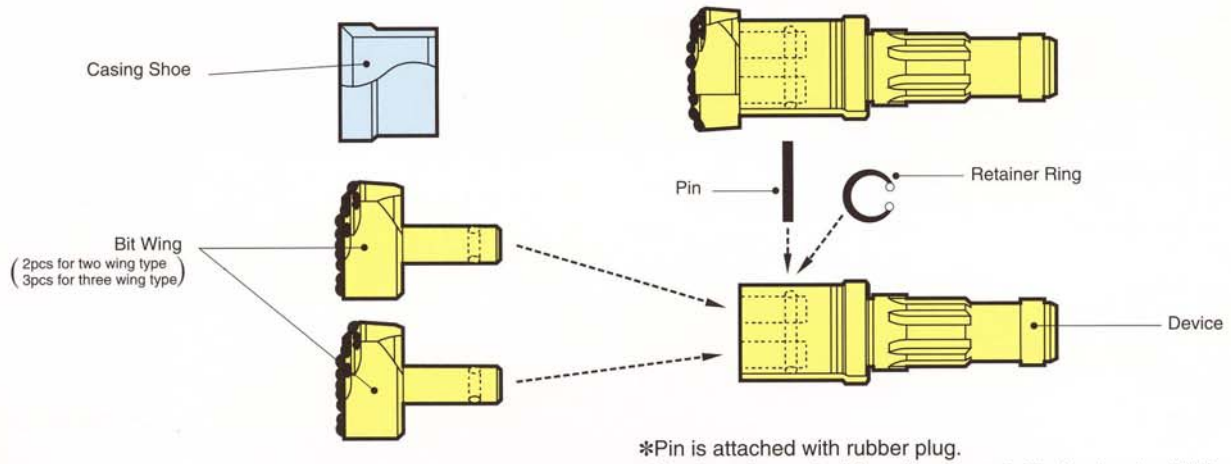
The SUPER MAXBIT has a following advantages:

- ●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



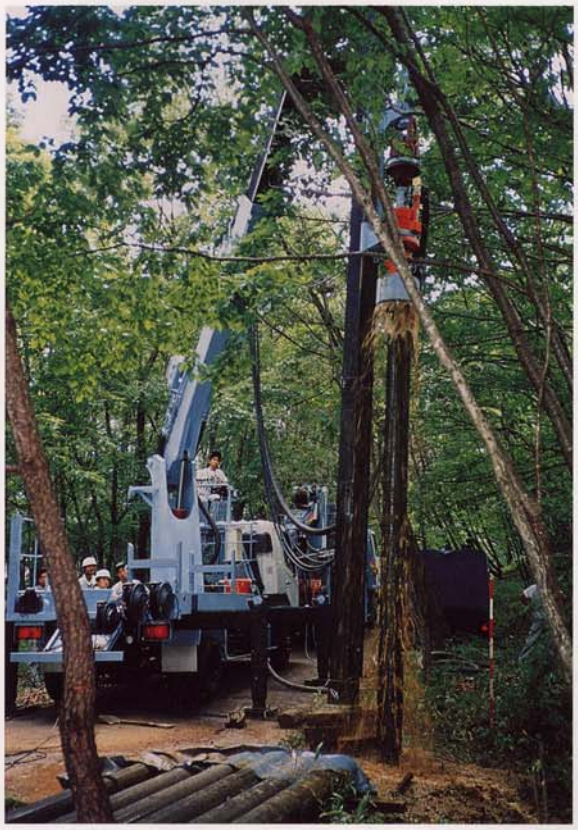
✻Pin is attached with rubber plug.
✻Retainer ring and rubber plug are not attached under 4" bit.
✻Please be careful not to get your finger snapped when assembling.

APPLICATIONS

The SUPER MAXBIT is designed for drilling in gravel, clay, sand mixture, boulders and easy collapsing overburden. The system is applicable for the various intentions with the combination of appropriate rig and drill.

Piling

After casing through the collapsing overburden, insert a H-steel, then pull up the casing.



Water Well

Drilling water wells down to 50～250m in depth.

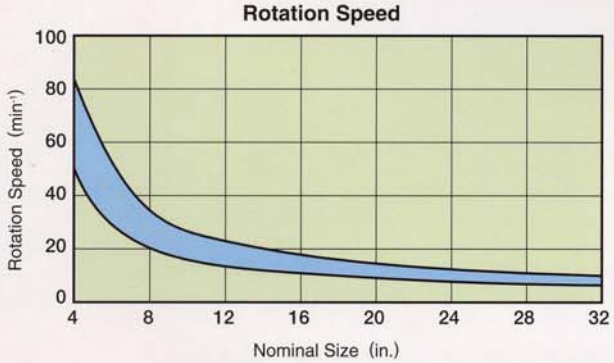
Foundation

Foundational construction of buildings and bridges up to 32"(Ø800) of casing diameter.

OTHERS

Rotation Speed

Target external rotation speed to 15～20m/min. Please refer to the following figure for more details.
Establish the parameters to achieve uniformed drilling.



Setting Compressor

Pressure

- ◆Set between 0.7 to 1.0MPa (100～150psi)
- ◆Check the height of underground water when drilling through the layer.
  (In 30m depth, please add 3kg/cm² to the supplying compressor.)
- ◆Do not set over 1.5MPa (225psi)

Air Consumption

- ◆Set the air consumption using the following equation.

$$Q=\frac{V(D^2-d^2)}{1273500}$$

Q : Air consumption (m³/min)
D : Inside diameter of casing (mm)
d : Outside diameter of jacket or hammer (mm)
V : Cutting speed 1,100～1,500 (m/min)

Recommended Air Consumption

Nominal Size (in.)	Air Consumption (m³/min)	Air Consumption (cfm)
4	4～ 15	140～ 530
8	19～ 26	670～ 920
12	33～ 45	1,170～1,590
16	42～ 57	1,480～2,010
20	59～ 80	2,080～2,830
24	72～ 98	2,540～3,460
28	81～111	2,860～3,920
32	90～122	3,180～4,310

Geothermal · Oil Well

Surface drilling down to 50m in depth for geothermal and oill well.

Pipe Roof · Water Service · Water Remove · Anchoring

It achives excellent results for drilling of long holes and hard formations using the Down The Hole Hammer.
Top-Hammer applications are available.

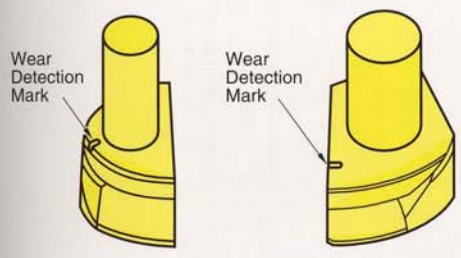
Fore Piling

For piling as a reinforced method of tunneling in collapsing overburden.

Exchange of components is necessary ;

Wings

1. When the wear detection mark on a wing disappears.
2. When the carbide wear is excessive.
3. When wing body wears and carbides pop out.

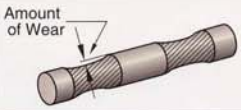


Device

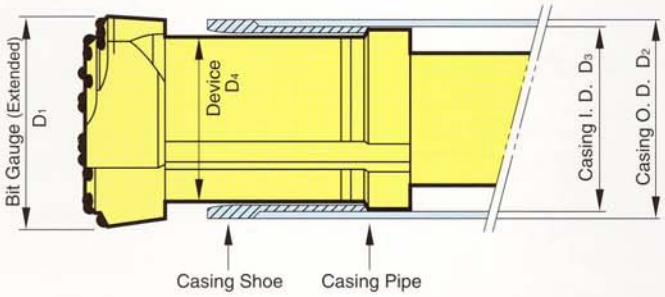
When the wear detection marks on the device end disappear.

Pin

When the wear attains the following value.
Please exchange the pin if you observe excessive wear.

	Two Wing Type	Three Wing Type
Amount of Wear (mm)	0.5～1.0	1.0～1.5
		

APPROPRIATE CASING AND HAMMER TYPE



Type	Two Wing	Three Wing	Bit gauge		Applicable casing pipe			Device O. D. D_4	Hammer type	※1	※2	※3	※4	※5
			Extended D_1	Retracted	Max. O. D. D_2	Min. I. D. D_3	Nominal Size							
			mm	mm	mm	mm	in.	mm						
90	●		125	91	114.3	102.3	4″	92	DHD3. 5, COP32, MACH33					
115	●		152	114	141.3	126.6	5″	115	SD-4, DHD340AP, COP42, MACH44, N4					
140	●		185	140	165.2	153.2	6″	141	SD-5, DHD350R, COP52, MACH50, N55					
165	●		215	166	190.7	178.7	7″	167	SD-6, DH-6, COP62, N6					
187	●		237	186	216.3	202.3	8″	187	SD-6, DH-6, COP62, N6					
215	●		272	217	254.0	241.0	9″	218	SD-8, DHD380M, N80					
240		●	290	238	273.1	254.5	10″	240	SD-8, DHD380M, N80					
280		●	340	281	318.5	301.7	12″	283	SD-10, DHD310M, N100					
315		●	373	318	355.6	336.6	14″	320	SD-12, DHD112, N120					
365		●	425	363	406.4	387.4	16″	365	SD-12, DHD112, N120					
410		●	478	412	457.2	435.0	18″	414	SD-15, DHD112S, N120S					
460		●	530	461	508.0	482.6	20″	463	SD-15, DHD112S, N120S, SD-18, N180					
510		●	580	509	558.8	533.4	22″	511	SD-15, DHD112S, SD18, N180					
560		●	630	559	609.6	584.2	24″	561	SD-18, DHD120A, N180					
600		●	685	600	660.4	631.8	26″	603	DHD120A, N240					
650		●	737	650	711.2	679.2	28″	652	DHD120A, N240					
695		●	789	695	762.0	730.0	30″	697	DHD126, N240, N240S					
745		●	842	744	812.8	780.8	32″	746	DHD126, N240S					

*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

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