

Types of Drilling Bits (Coring & Non-Coring)

Diamond Core Bit & Reamer – Surface & Impregnated

Diamond Bit Size & Thread

Diamond Bit Selection Chart for Impregnated Matrix

Diamond Thin Wall Coring Bit

Diamond Bit Drilling Guidelines & Trouble Shooting

Polycrystalline Diamond (PCD) Bit

Drag Bit

Kenclaw & Auger Bit

Tricone Roller Bit (Steel Tooth)

Tricone Roller Bit (Tungsten Carbide Insert)

Tricone Roller Bit Size & Detail

Reconditioned Tricone Roller Bit

Reconditioned Tricone Cut-Cones & Stabilizer

Down-The-Hole (DTH) Button Bit Profile



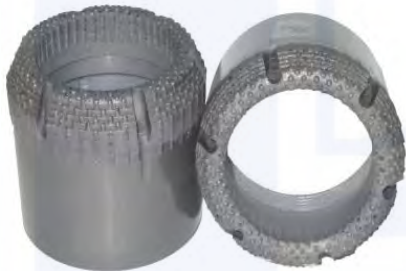
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DIAMOND / TUNGSTEN CARBIDE CORE BIT AND REAMER

Diamond Core Bit



Surface Set Step Type

Reamer

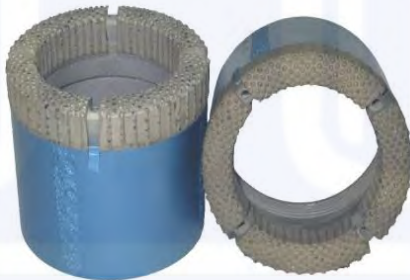


RIB Surface Set

Tungsten Carbide Core Bit



2 Steps Profile (Arrow Tips)



Semi-Round-Crow (SRC)



Neo Tungsten



Saw Tooth Profile (Hex Tips)



Impregnated



Impregnated



Flat Face Profile (Square Tips)

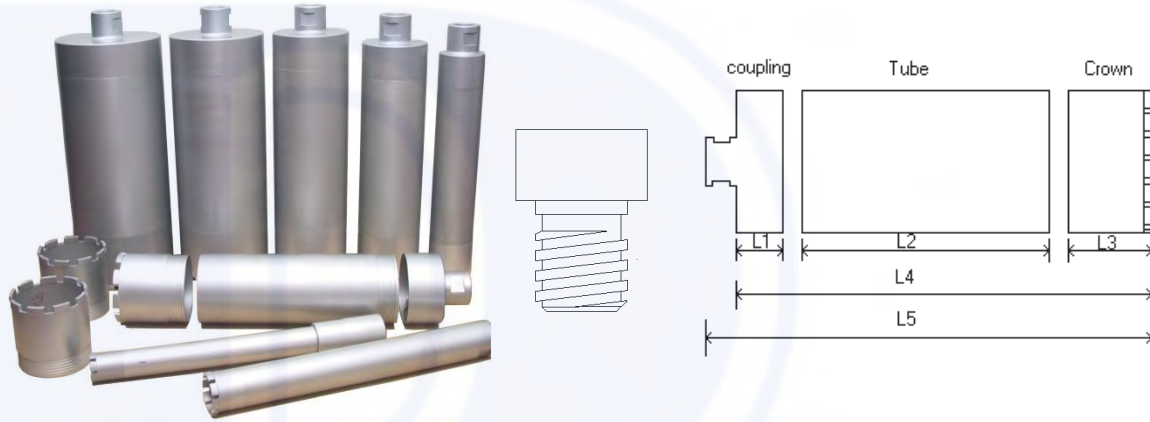
BSI, CDDA, DCDMA and WIRELINE STANDARD CORE BITS and REAMERS

Core Barrel Type	Core Bits				Reaming Shells	
	O.D.	O.D.	I.D.	I.D.	O.D.	O.D.
	mm	inch	mm	inch	mm	inch
XRT (RWG)	29.3	1.150	18.7	0.740	29.8	1.175
EX, EWL, EWM	37.3	1.470	21.5	0.845	37.7	1.485
EXT	37.3	1.470	23.0	0.905	37.7	1.485
AMLC	47.6	1.875	27.0	1.062	48.0	1.890
AQ	47.6	1.875	27.0	1.062	48.0	1.890
AX, AWL, AWM	47.6	1.875	30.1	1.185	48.0	1.890
AXT	47.6	1.875	32.5	1.281	48.0	1.890
BMLC	59.6	2.345	35.2	1.390	59.9	2.360
BQ	59.6	2.345	36.4	1.433	59.9	2.360
BQ-3	59.6	2.345	33.5	1.320	59.9	2.360
TBW	59.6	2.345	45.2	1.778	59.9	2.360
BX B/W (BWG)	59.6	2.345	42.0	1.655	59.9	2.360
BWL, BWM	59.6	2.345	42.0	1.655	59.9	2.360
BY	59.6	2.345	40.0	1.575	59.9	2.360
NMLC	75.3	2.965	51.2	2.045	75.7	2.980
NQ	75.3	2.965	47.6	1.875	75.7	2.980
NQ-3	75.3	2.965	45.1	1.775	75.7	2.980
NX B/W (NWG)	75.3	2.965	54.7	2.155	75.7	2.980
NWL NWM	75.3	2.965	54.7	2.155	75.7	2.980
HMLC	98.4	3.875	63.5	2.500	98.4	3.906
HQ	95.6	3.762	63.5	2.500	96.1	3.783
HQ-3	95.6	3.762	61.1	2.405	96.1	3.783
HWF, HWG	95.6	3.762	76.2	3.000	96.1	3.783
PQ	122.1	4.805	85.0	3.345	122.6	4.827
PQ-3	122.1	4.805	83.0	3.270	122.6	4.827
NQ-3PM (Wireline Triple Tube)	75.5	2.972	50.8	2.000	76.5	3.012

DIAMOND BIT SELECTION CHART

SERIES	MATRIX	GROUND CONDITIONS	TYPICAL ROCK TYPES
SERIES 2	EXTRA HARD	HIGHLY ABRASIVE FRACTURED BROKEN FORMATION	MEDIUM HARD LIMESTONE SHALE
SERIES 4	MEDIUM HARD	ABRASIVE GROUND MEDIUM TO COARSE GRAIN	SOFT, SCHIST, SANDY LIMESTONE GRAVEL, HIGHLY DECOMPOSITED
SERIES 6	MODERATELY HARD	MODERATELY HARD, FINE TO MEDIUM GRAINED SOLID, SLIGHTLY ABRASIVE FORMATION	QUARTZ, GABBROS HARD SHALE, ALLUVIAL DEPOSITS NORITES, GRANITES ANDESITE
SERIES 7	MEDIUM HARD	HARD TO MEDIUM FORMATION SLIGHTLY ABRASIVE FORMATION	HARD SCHIST MARBLE
SERIES 8	MEDIUM	HARD TO MEDIUM FORMATION	GRANITE
SERIES 9	MEDIUM TOUGH	HARD SLIGHTLY ABRASIVE FORMATIONS	GRANITE CHERT
SERIES 10	MEDIUM SOFT	HARD TO VERY HARD, MEDIUM TO FINE GRAINED SOLID TO SLIGHTLY ABRASIVE	QUARTZ, CHERT, JASPER BASALT
SERIES 12	SOFT	VERY HARD FORMATION MEDIUM TO FINE GRAINED SOLID SLIGHTLY ABRASIVE	SILICIFIED FINE GRAINED CHERT GLASSY QUARTZITE RHYOLITE, GABBRO
SERIES 14	EXTRA SOFT	EXTREMELY HARD VERY FINE GRAINED SOLID NON ABRASIVE	CONGLOMERATE, TACONITE ABRASIVE QUARTIZE
SERIES 15	EXTREMELY SOFT	ULTRA HARD ROCK	ROCK WITH PYRITE BANDED HEMATITE

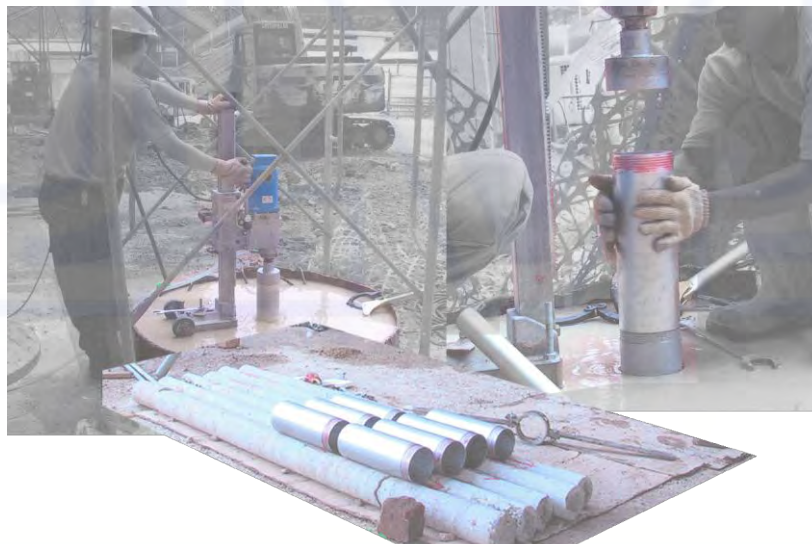
THIN WALL CORING BIT



Singapore Origin. For Japanese made Core Drill: Shibuya, Hakken

Specifications:

Size		Coupling L1	Tube L2	Crown L3	Working Length L4	Total Length L5
1"	28.1mm	55mm	270mm	30mm	355mm	400mm
1-1/4"	34mm	55mm	270mm	35mm	360mm	405mm
1-1/2"	40.8mm	55mm	270mm	35mm	360mm	405mm
1-3/4"	47mm	55mm	270mm	35mm	360mm	405mm
2"	53mm	55mm	270mm	40mm	365mm	410mm
2-1/2"	64.5mm	55mm	270mm	40mm	365mm	410mm
3"	77.8mm	55mm	270mm	40mm	365mm	410mm
3-1/2"	90.3mm	55mm	270mm	40mm	365mm	410mm
4"	110mm	55mm	270mm	70mm	395mm	440mm
5"	128.5mm	55mm	270mm	90mm	415mm	460mm
6"	160mm	55mm	270mm	90mm	415mm	460mm
7"	180.8mm	55mm	270mm	90mm	415mm	460mm
8"	205mm	55mm	270mm	90mm	415mm	460mm
9"	230.5mm	55mm	270mm	90mm	415mm	460mm
10"	254.2mm	55mm	270mm	90mm	415mm	460mm



DRILLING GUIDELINES

Impregnated Diamond Bits

This section of the catalog is intended to provide you with some guidelines which may assist in maximizing the performance of your Boart Longyear® bit.

SOFT ROCK FORMATIONS

- Low RPM's
- Large diamonds/cutters
- Large waterways for better flushing and higher GPM flow rates
- Hard matrix for longer bit life

HARD ROCK FORMATIONS

- High RPM's
- Small diamonds/cutters
- Small waterways
- Soft matrix to expose more cutting elements

ROTATIONAL SPEEDS

Most drillers adopt the practice of choosing the rpm and bit weight they wish to use and then adjust the fine feed control to maintain this particular weight as minor variations in the formation are encountered.

As a rule, impregnated diamond bits require higher rotational speeds to achieve penetration rates comparable with those of surface set bits. This is simply because the diamond exposure (protrusion of the diamond) is less with an impregnated bit and consequently penetration per revolution is less.

With impregnated bits, Boart Longyear recommends a quite different approach in which penetration rates are controlled with a fairly narrow range for a given rpm and the bit weight is of secondary importance. This procedure is known as the rpi (r/cm) method of drilling.

Courtesy of BOART LONGYEAR

TROUBLE SHOOTING



NEW CONDITION



IDEAL WEAR PATTERN

The face wear pattern of an impregnated bit should be relatively flat with slightly chamfered sides. Bit feels sharp, comet tails have formed to support diamonds. Diamonds release from matrix as they are worn. Gauge stays within tolerance.



NORMAL RETIREMENT

Full depth of impregnation evenly consumed. Gauge stays within tolerance.



CONCAVE FACE WEAR (rounded to ID)

Cause: (A) Often caused by excessive penetration rate for the rpm used — rpi (r/cm) too low. Also can be caused by core grinding, overdrilling.



CONCAVE FACE WEAR (rounded to OD)

Cause: (A) Insufficient water flow — Check pump and rod string for leaks; increase pump output.



GAUGE LOSS ID

Cause: (A) Overfeeding — Increase rpi (r/cm); (B) Broken formations — Cement or change to a lower bit; (C) Drilling over lost core — Check core barrel/core lifter/core lifter case; (D) Insufficient drilling fluid — Check inner tube length adjustment; check pump and rod string for leaks — increase pump output.

Courtesy of BOART LONGYEAR

TROUBLE SHOOTING



GAUGE LOSS OD

Cause: (A) Lack of circulation – increase coolant flow rate. (B) Bit being reamed down under-size hole – Check reamer shell gauge and replace if under-sized. (C) Vibration – alter rpm.



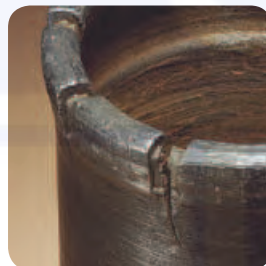
EXCESSIVE DIAMOND EXPOSURE

Matrix abrades away before diamonds have worn sufficiently, resulting in high diamond exposure and low bit life. Caused by overfeeding/over drilling – Increase rpi (r/cm), change to a lower series bit or reduce bit weight rpm.



FACE GLAZED (Diamond polished and metal bound)

Bit does not feel sharp; diamonds flush w matrix; no significant “comet tails” behind each diamond. Sand blast face or use other recommended methods to re-expose diamond. Try again with rpi (r/cm) in the 200/250 (80/100) range. If the face glazes repeatedly, change to a higher bit.



CRACKED WATERWAYS (diamonds polished)

Cause: (A) Excessive bit load; dropped rods; free fall of (wireline) inner tube in dry hole; (B) bit crushed by rod holder, foot clamp or pipe wrench; (C) Pushed down an undersized hole (i.e., reaming shell worn out).



BURNT

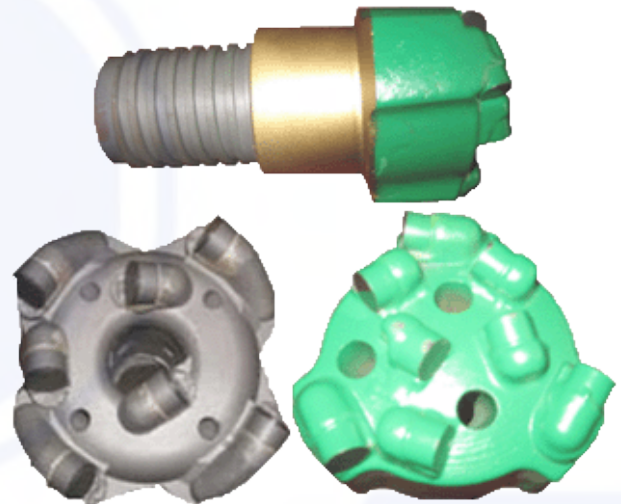
Cause: (A) Lack of fluid. (B) Too high a bit weight being used. – Check pump and rod string for leaks, check inner tube adjustment. Maintain coolant flow rates.

Courtesy of BOART LONGYEAR

POLYCRYSTALLINE DIAMOND (PDC) BITS (NON-CORING)



STEP TYPE



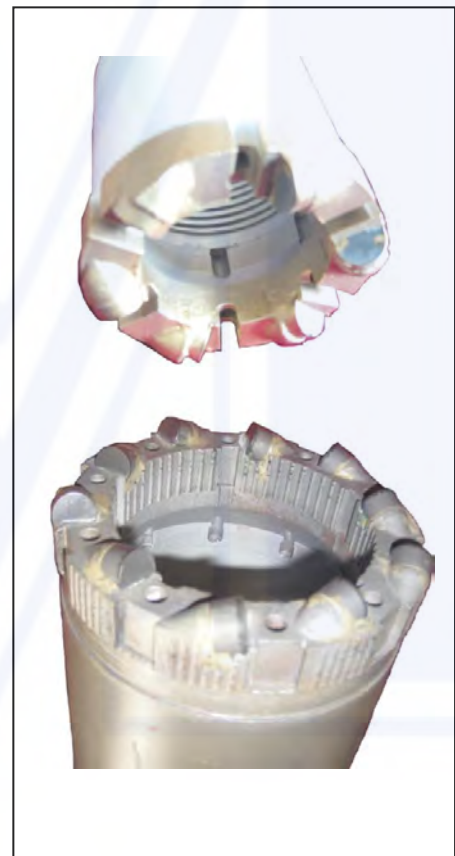
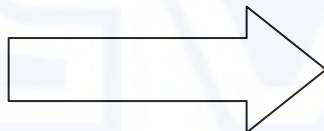
FLAT FACE TYPE



**TUNGSTEN CARBIDE
CORE BIT
(CASING SHOE)**



**POLYCRYSTALLINE
DIAMOND (PDC)
CORING BIT/SHOE**



DRAG BITS FROM USA



DRAG BIT 3-WING STEP

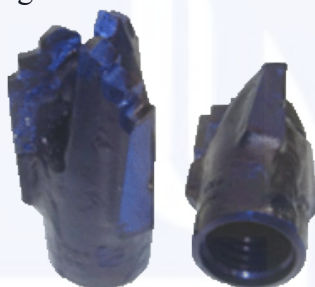
Drag Bits Step Type are ideal for drilling in soft to medium hard formations when conditions do not warrant the use of Tricone Roller Bits. Our Step Type Drag Bits are designed for a variety of applications including seismic exploration, soil sampling, mining and construction. We recommend the use of Drag Bits Step Type on shallow hole applications such as blast hole drilling.



DRAG BIT 3-WING CHEVRON TYPE HEAVY DUTY

Chevron-Type Drag Bits are suggested for drilling in medium to medium hard consolidated formations. Best suited for abrasive conditions, our Chevron-Type bits are available in sizes ranging from 1 7/8" thru 8". Additional weight may be required for effective operation.

The clean design, premium carbide and rugged construction of Carbide Insert Drag Bits ensure effective scraping action for maximum drilling performance in a variety of formations.



Smaller Size 3-Wing Drag Step Type with ARCO Box Thread

**Available Size in Singapore
 2 7/8" x AW Rod Pin**

SIZE	TYPE PIN	WEIGHT (LBS)	STOCK IN SINGAPORE
2 3/4" THRU 3 1/2"	4 THD N-ROD	3 1/2	2 7/8"
3 5/8" THRU 4 3/4"	2 3/8" API REG. PIN	5 1/2	3 1/2", 3 7/8", 4 1/4", 4 1/2", 4 3/4"
4 7/8" THRU 5 7/8"	2 3/8" API REG. PIN	7	5"
5 1/4" THRU 5 1/2"	2 3/8" API REG. PIN	8	Indent
5 5/8" THRU 6"	2 3/8" API REG. PIN	8	5 5/8", 6"
6 1/8" THRU 6 1/4"	2 3/8" API REG. PIN	8 1/2	Indent
6 1/2" THRU 6 3/4"	2 3/8" API REG. PIN	9	Indent
5 1/2" THRU 6 3/4"	3 1/2" API REG. PIN	22	5 5/8", 5 7/8", 6 5/8"
6 7/8" THRU 7 7/8"	3 1/2" API REG. PIN	23	7 1/2", 7 5/8", 7 7/8"
8" THRU 9"	3 1/2" API REG. PIN	24	8 1/2"
9 1/8" THRU 10 7/8"	3 1/2" API REG. PIN	25-30	9 1/2"
7 7/8" THRU 8 7/8"	4 1/2" API REG. PIN	40	Indent
9" THRU 9 7/8"	4 1/2" API REG. PIN	42	Indent
10" THRU 10 7/8"	4 1/2" API REG. PIN	45	Indent
11" THRU 12 1/4"	4 1/2" API REG. PIN	50	11 1/2"

KENCLAW & AUGER BITS

KENCLAW BITS FEATURES:

- Cut a variety of formations from clay to medium shale rock. (Up to 6,000 psi rock)
- Rapid penetration rates, cuts as fast as drag bit, is as tough as a soft formation rock bit
- Average cutter life ranges from 500 ft. to 2000 ft. depending on formations encountered
- Suitable for air or fluid drilling
- Replaceable bullet cutter to save cost
- Available sizes from 3¾" (95 mm) to 18" (457 mm)

* Large size quoted upon request



Kenclaw Bit



Auger Bit

KENCLAW Design Bit

Bits Sizes Ex- stock in Singapore		Tool Joint	Weight	Pilot Bit	No. of Bullet Cutters
5½"	143.0 mm	With 3½" API Reg Pin	8.2 kg	MMCPP18	4
6½"	165.1 mm	With 3½" API Reg Pin	9.5 kg	MMCPP18	5
7½"	190.5 mm	With 3½" API Reg Pin	12.7 kg	MMCPP18	7
9½"	241.3 mm	With 6⅝" API Reg Pin	23.1 kg	MMCPP18	9
11½"	292.1 mm	With 6⅝" API Reg Pin	40.8 kg	MMCPP18	14

AUGER Design Bit

Bits Sizes Ex- stock in Singapore		Tool Joint	Weight	Water Hole	No. of Bullet Cutters
7½"	190.5 mm	With 3½" API Reg Pin	9 kg	2 x 30 mm 1 x 12 mm	6
9½"	241.3 mm	With 4½" API Reg Pin	13 kg	2 x 30 mm 1 x 15 mm	8
11½"	292.1 mm	With 4½" API Reg Pin	16 kg	2 x 20 mm	10



TRICONE ROLLER BIT – ORIGIN USA (STEEL TOOTH- OPEN BEARING BIT)

IADC 1-2-1

SOFT TO MEDIUM FORMATIONS

This bit model is designed with long 'A' shaped teeth, widely spaced and fully hardfaced from crest to root for maximum penetration rates in formations that range from moderately soft to medium soft. This design is most effective in formations with compressive strengths under 5,000, such as shale, clay, red bed, medium limestone and unconsolidated formations. The bit also features the absence of deletions on the gage side of teeth on the heel row of the number two cone. This insures maximum gage life along with tooth life in more abrasive formations. Effective operating weights are from 1,000 to 3,000 pounds per inch of bit diameter with corresponding rotary speeds of 200 to 50 RPM.



IADC 2-1-1

MEDIUM TO MEDIUM HARD FORMATIONS

This bit offers the combination action of chipping, crushing, and gouging / scraping provided because of reduced cutter offset. The teeth are shorter 'A' shaped and more closely spaced teeth than those of bits designed for softer formations. Long crests in the outer row teeth have self-sharpening hardfacing applied for maximum penetration and longer bit life. This design will most economically drill medium and medium hard formations and was designed to replace the softer formation bits in strata where shale alternates with streaks of limestone and sandstone or where gypsum tends to ball up between the teeth. The most effective weight range varies from 1,000 to 5,000 pounds per inch of bit diameter, while rotary speeds of 150 to 50 RPM give best performance. Rotary speed should be decreased as weight as increased.

IADC 3-1-1

Hard Formations

The bits operates best in hard, abrasive formations such as hard sandy limestone, limestone interspersed with cherty streaks, broken shale, dolomite, granite, and abrasive sand. This bit is especially constructed to withstand the stresses imposed in drilling hard formations under heavy weights. The gage teeth are hard faced with tungsten carbide. There are no interruptions on the heel row teeth and the inner row teeth are short and closely spaced for maximum strength. Other features include balanced bearing design and extra thick cone shells. The most economical bit performance is obtained with weights of 3,000 to 8,000 pounds per inch of bit diameter. Corresponding rotary speed should range between 100 and 40 RPM. It is a recommended practice that the rotation speed should decrease when increasing drilling weight.



Cutting
Structures

Premium
Hard facing

Forged Teeth

Non-Sealed
Roller Bearing



TRICONE ROLLER BIT – ORIGIN USA

(TUNGSTEN CARBIDE INSERT – SEALED ROLLER BEARING BIT)



BIT TYPE	WEIGHT ON BIT (LBS/IN OF DIA)	ROTARY SPEED (REV/MIN)	BIT TYPE	WEIGHT ON BIT (LBS/IN OF DIA)	ROTARY SPEED (REV/MIN)
IADC 437	2000-4500	60-120	IADC 117	1500-5000	80-180
IADC 517	2500-5000	50-110	IADC 126	2000-6000	70-160
IADC 527	2500-5000	50-100	IADC 135	2500-5500	60-160
IADC 537	3000-5000	40-90	IADC 214	2500-6500	50-140
IADC 615	3500-5500	40-75	IADC 216	2500-7000	50-120
IADC 617	3000-5500	50-80	IADC 316	4000-7500	40-80
IADC 625	3000-6000	40-80	IADC 317	4000-7500	40-80
IADC 627	4000-7000	40-70			
IADC 637	3500-6500	40-70			
IADC 737	4000-7000	40-60			

Tungsten Carbide Insert (TCI) Tricone Roller Bits are designed for efficient drilling hard ground where as the Steel Tooth Tricone Roller Bits do not achieve the desired drilling output productivity depth.

- Soft to Medium profile (all chisel shaped inserts) bit is for shale, red bed, limestone and other strata of low compressive strength with hard streaks of abrasive properties.
- Medium Soft profile (all conical shaped inserts) bit is for shale, sandstone and alluvial deposits.
- Medium Hard profile (Gage rows conical inserts) bit is for hard, sandy limestone, shale, dolomite and limestone with cherty streaks.
- Hard profile (Gage rows with chisel shaped inserts) bit is for quartzite, granite cherty iron ores, and copper porphyry.



Specifications:

STEEL TOOTH (ST)				
Diameter		Pin Size	Approx. WT	
inch	mm		lbs.	kg
2 ⁷ / ₈	73	N Rod	4	1.8
2 ¹⁵ / ₁₆	75	N Rod	4	1.8
3	76	N Rod	4	1.8
3 ¹ / ₈ - 3 ¹ / ₄	79 - 82	N Rod	4 ¹ / ₄	1.9
3 ¹ / ₂ - 3 ⁵ / ₈	89 - 92	2 ³ / ₈	9	4.1
3 ³ / ₄	95	2 ³ / ₈	9	4.1
3 ⁷ / ₈ - 4 ¹ / ₈	98 - 105	2 ³ / ₈	9	4.1
4 ¹ / ₄	108	2 ³ / ₈	10	4.5
4 ¹ / ₂	114	2 ⁷ / ₈	11	5
4 ⁵ / ₈	117	2 ⁷ / ₈	11	5
4 ³ / ₄	121	2 ⁷ / ₈	16	7.3
4 ⁷ / ₈ - 5	123 - 127	2 ⁷ / ₈	16	7.3
5 ¹ / ₈ - 5 ¹ / ₄	130 - 133	2 ⁷ / ₈	17	7.7
5 ¹ / ₂	140	2 ⁷ / ₈	17	7.7
5 ⁵ / ₈	143	3 ¹ / ₂	22	10
5 ³ / ₄	146	3 ¹ / ₂	22	10
5 ⁷ / ₈	149	3 ¹ / ₂	22	10
6	152	3 ¹ / ₂	26	11.8
6 ¹ / ₈	156	3 ¹ / ₂	26	11.8
6 ¹ / ₄	159	3 ¹ / ₂	29	13.2
6 ¹ / ₂ - 6 ⁵ / ₈	165 - 168	3 ¹ / ₂	29	13.2
6 ³ / ₄	171	3 ¹ / ₂	33	15
7 ³ / ₈	187	3 ¹ / ₂	62	28
7 ⁷ / ₈	200	4 ¹ / ₂	62	28
8 ¹ / ₂	216	4 ¹ / ₂	75	34
8 ³ / ₄	222	4 ¹ / ₂	75	34
9	228	4 ¹ / ₂	75	34
9 ⁷ / ₈	251	6 ⁵ / ₈	116	52
10 ⁵ / ₈	270	6 ⁵ / ₈	131	59
12 ¹ / ₄	311	6 ⁵ / ₈	180	82
13 ³ / ₄	349	6 ⁵ / ₈	292	133
14 ³ / ₄ - 15	375 - 381	6 ⁵ / ₈ or 7 ⁵ / ₈	336	152
17 ¹ / ₂	445	6 ⁵ / ₈ or 7 ⁵ / ₈	450	204
20	508	7 ⁵ / ₈	647	293
22	559	7 ⁵ / ₈	891	404
24	610	7 ⁵ / ₈	1125	510
26	660	7 ⁵ / ₈ or 8 ⁵ / ₈	1300	589
28	670	7 ⁵ / ₈ or 8 ⁵ / ₈	1300	589
36	914	8 ⁵ / ₈	3770	1710

TUNGSTEN CARBIDE INSERT (TCI)				
Diameter		Pin Size	Approx. WT	
inch	mm		lbs.	kg
2 ¹⁵ / ₁₆ - 3	75 - 76	N rod	8	3.6
3 ¹ / ₂	89	2 ³ / ₈	9	4.1
3 ³ / ₈	98	2 ³ / ₈	10	4.5
4	101	2 ³ / ₈	10	4.5
4 ¹ / ₈	105	2 ³ / ₈	10	4.5
4 ¹ / ₂	114	2 ³ / ₈	12	5.4
4 ³ / ₄	121	2 ⁷ / ₈	15	6.8
4 ⁷ / ₈	123	2 ⁷ / ₈	15	6.8
5 ¹ / ₈	130	2 ⁷ / ₈	17	7.7
5 ¹ / ₄	133	2 ⁷ / ₈	17	7.7
5 ⁵ / ₈	143	3 ¹ / ₂	27	12.2
5 ⁷ / ₈	149	3 ¹ / ₂	27	12.2
6	152	3 ¹ / ₂	36	16.3
6 ¹ / ₈	156	3 ¹ / ₂	39	17.7
6 ¹ / ₄	159	3 ¹ / ₂	36	16.3
6 ³ / ₄	171	3 ¹ / ₂	46	20.9
7 ³ / ₈	187	3 ¹ / ₂	58	26.5
7 ⁷ / ₈	200	4 ¹ / ₂	76	34.5
9	229	4 ¹ / ₂	94	42.5
9 ⁷ / ₈	251	6 ⁵ / ₈	145	65.8
10 ³ / ₈	270	6 ⁵ / ₈	157	71.2
11	279	6 ⁵ / ₈	190	86

RECONDITIONED TRICONE ROLLER BITS

Reconditioned Tricone Roller Bits are ideal for water well and foundation drilling, plus many other applications where premium quality bits are required at a very much cheaper cost.

Large diameter RECONDITIONED ROTARY BITS are ideal for top hole applications. Standard size RECONDITIONED ROTARY BITS are suitable for deep hole drilling. Many of our RECONDITIONED ROTARY BITS feature sealed or journal bearings for extended drilling life.

Our RECONDITIONED Tricone Roller Bits are being salvaged from Middle East and Houston oil producing sites. With our vast experience from our USA factory, these bits are carefully selected, sorted according to the manufacturer's serial number identifying the bearing type, clean and refurbished the carbides. We put these bits into two categories for various budget demands.

OIL FIELD QUALITY (Blue Coded)

Featured with Sealed or Journal Bearings, bits are manufactured in USA.

WATER WELL QUALITY (Grey Coded)

Featured with Open Bearings, bits are manufactured in USA or featured with Sealed or Journal Bearings but bits are usually produced in third world countries

Consistent quality and low prices make RECONDITIONED ROTARY BITS economical alternatives to new bit.

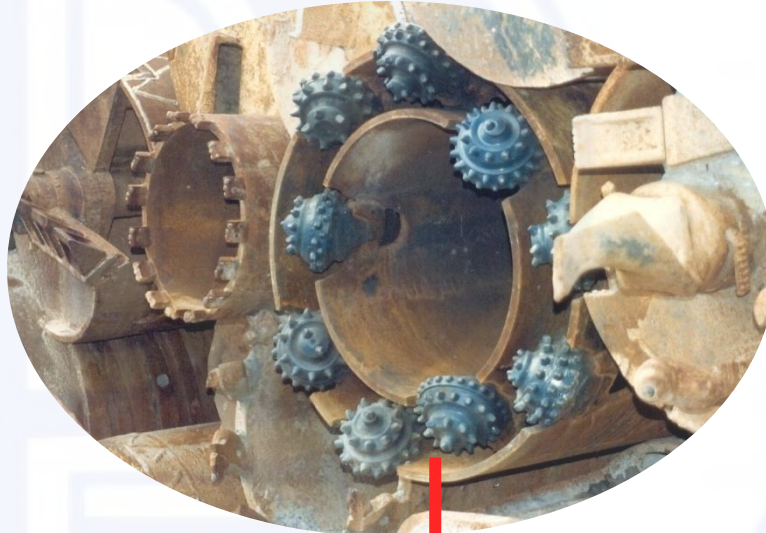
RECONDITIONED TRICONE ROLLER BIT SIZE AVAILABILITY (IN SINGAPORE)



Available Sizes	Ex-stock sizes in Singapore (T.C.I.)
5½" to 5⅞"	5⅞"
6" to 6¾"	6½"
7" to 7⅞"	7½", 7⅝", 7⅞"
8½" to 8¾"	8½"
9" to 9⅞"	9½", 9⅝", 9⅞"
10⅝" to 11"	10⅝" & 11"
12¼"	12¼"
14" to 30"	14¾"

Tricone Roller Bit (Additional Information)

Cut Section Cone Being Welded on 1.2 m Diameter DOUBLE CASING



Hole Opener



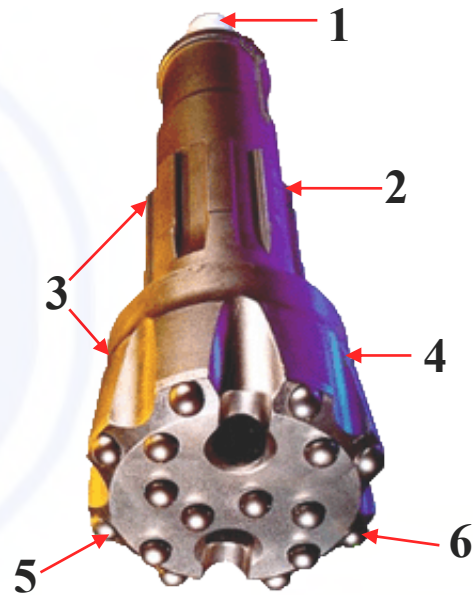
Cone *before* Assembly



Stabilizer

Down The Hole (DTH) Button/Hammer Bit

1. High quality, non-expansive Polymers used in the manufacture of exhaust tubes.
2. A combination of carburizing and shot peening is carried out to further enhance the mechanical strength of the shank.
3. 'In House' heat treatment is carried out under rigorous quality control to maximize the properties of mechanical strength.
4. Chip flushing grooves designed for optimum cutting removal.
5. Strategic placement of carbides to ensure efficient cutting and chip removal.
6. Carbides of various sizes, hardness and abrasion resistant qualities are available upon request.

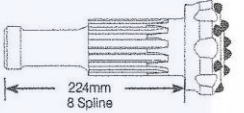
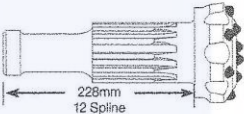
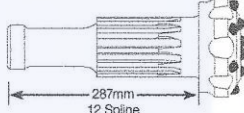
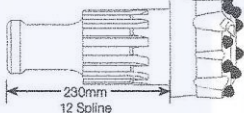
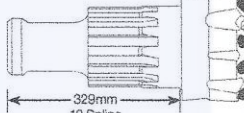
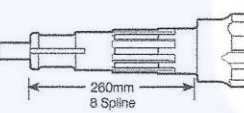
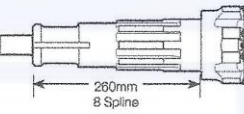
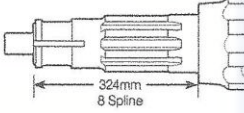
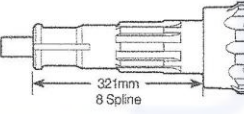
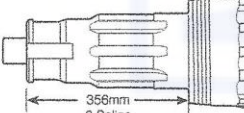
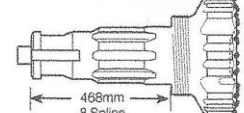
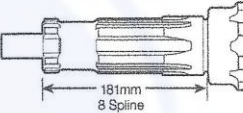
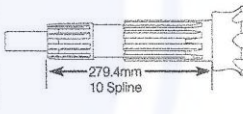
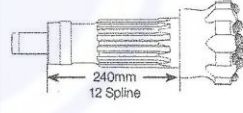
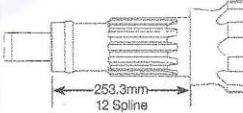
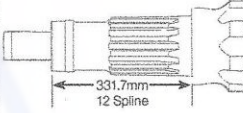
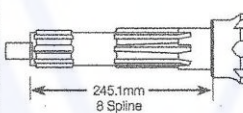
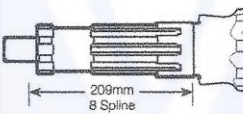
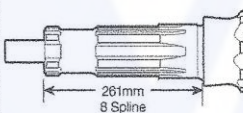
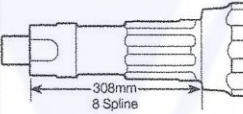
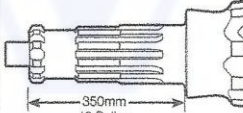
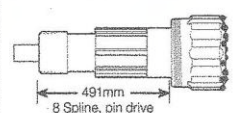


<i>"BIG CHIP"</i>	<i>Hard Formation</i>	<i>Drop Center</i>	<i>Concave</i>	<i>Flat Face</i>	<i>Double Gauge Row</i>
For reverse circulation. To maximise chip sample size in all formations	For reverse circulation in hard abrasive ground. Maximum hole deviation control	For soft to medium formations. Maximum hole deviation control.	For medium to hard formations. Good hole deviation control.	For hard formations.	For hard formations.

CONVENTIONAL DRILL BIT PRICE LIST

Bit Size	Carbide Size	Shank Type
Up to 4¼"		3015, 3415, D340
4½" to 4¾"		3415, D340
5" to 5¾"		4315, D350, SDS D125
6" to 6¾"	5/8" (16 mm) ¾" (19 mm)	5315, D360, QL6 SDS D125 & 150
7" to 8"	5/8" (16mm)	5315, D360, QL6, 6315 D380, SDS D150
8¼" to 9"		6315, D380 & QL8
9¼" to 10"		6315, D380 & QL8
10¼" above		D380, QL8 & A10015

DTH Drilling Products

Bit Shank Identification Chart	
Hammer brands with identical shank designs. (Note: Some hammers are built for different shanks, i.e, Halco often uses I-R shanks.)	
 224mm 8 Spline	MISSION 30
 228mm 12 Spline	MISSION 40
 287mm 12 Spline	MISSION 50/55
 230mm 12 Spline	MISSION 60/60W/65
 329mm 12 Spline	MISSION 85
 260mm 8 Spline	MISSION SD 4, Böhler LH96, Digger 4/42, Drillquip T4
 260mm 8 Spline	MISSION SD 5, Digger 5, Drillquip T50, Bulroc BR5V Stenuik ADEC 5M
 324mm 8 Spline	MISSION SD 6, Böhler LH136, Bulroc BR6V, Digger 6, Drillquip T36
 321mm 8 Spline	MISSION SD 8, Bulroc BR8V, Digger 7, Drillquip T17
 358mm 8 Spline	MISSION SD 10
 468mm 8 Spline	MISSION SD 12, Drillquip T1120A, Halco Mach120
 181mm 8 Spline	IR 3.5, Mincon 3.5
 270.4mm 10 Spline	Ingersoll-Rand QL-40
 240mm 12 Spline	Ingersoll-Rand QL-50
 253.3mm 12 Spline	Ingersoll-Rand QL-60, Mincon 6DH, Secoroc COP64
 331.7mm 12 Spline	Ingersoll-Rand QL-80
 245.1mm 8 Spline	Secoroc Cop 34
 209mm 8 Spline	Ingersoll-Rand 340, IR DH4, Secoroc COP44, NUMA 4, Mincon 4HR
 261mm 8 Spline	Ingersoll-Rand 350, Digger 5, NUMA 5, Secoroc COP54, Drillquip T35350, Mincon 5
 308mm 8 Spline	IR 360, IR SF6, Secoroc COP64, Digger 6, NUMA 6, Drillquip T36, Mincon 6BH360
 350mm 10 Spline	IR 380, Digger 8, NUMA 8, Drillquip T38
 491mm 8 Spline, pin drive	IR 112, Drillquip T1120-112, Epley 1200