BD004 – R.C. HAMMER

Compatibility – RE004, SR740

Black Diamond Drilling offers a complete range of reverse circulation hammers along with fully integrated R.C. Bits and Shrouds that have been designed to provide a world-class sampling system. Precision engineering enables our R.C. Hammers to excel in maintaining an efficient and smooth flow of drill cuttings to the surface, ensuring cleaner, more accurate samples. This leads to more reliable data for exploration and better overall hole quality.

SPECIFICATIONS

Item	Diameter Ø	
	mm	inch
Hammer	107	4 ¼
Bit	112 - 127	4 3/8 - 5
Suits medium to hard ground conditions		

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BD004 – R.C. HAMMER

Compatibility – RE004, SR740

Black Diamond
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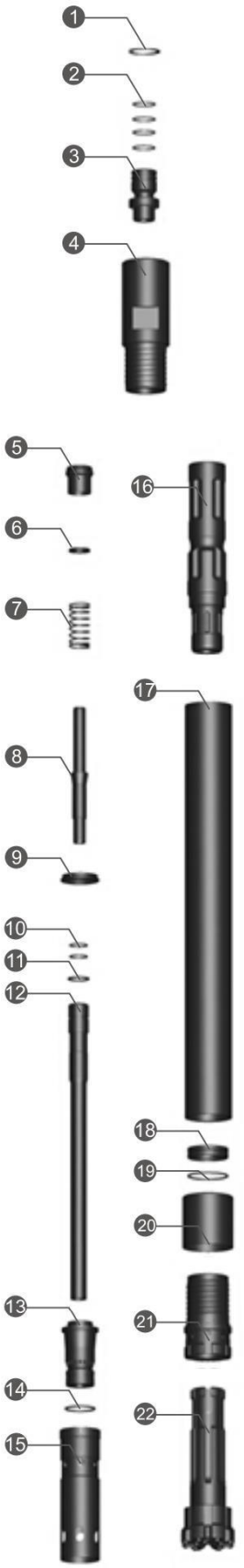
Top Sub Assembly

	Product Code	Description	Amt	Compatibility
A	Top Sub Assembly Remet 3.5”			
1	BD004-CIRCLIP	Circlip	1	41-D1300-0680
2	BD004-SK-ASCREEN3.5	O Ring (Adaptor Tube Remet 3.5)	4	20-035-R30
3	BD004-ASCREEN-R3.5	Adaptor Tube Remet 3.5”	1	-
4	BD004-TSUB-R3.5	Top Sub-Remet 3.5”	1	33-004-R35
B	Top Sub Assembly Remet 4”			
1	BD004-CIRCLIP	Circlip	1	41-D1300-0680
2	BD004-SK-ASCREENR4	O Ring (Adaptor Tune Remet 4")	4	20-004-R40
3	BD004-ASCREEN-R4	Adaptor Tube Remet 4"	1	-
4	BD004-TSUB-R4	Top Sub Remet 4"	1	33-004-R40
C	Top Sub Assembly Metzke 4”			
1	BD004-CIRCLIP	Circlip	1	41-D1300-0680
2	BD004-SK-ASCREENM4	O Ring (Adaptor Metzke 4")	4	20-004-MR40
3	BD004-ASCREEN-M4/54 BD004-ASCREEN-M4/57	Adaptor Tube Metzke 4"	1	-
4	BD004-TSUB-M4	Top Sub-Metzke 4"	1	33-004-M40

Hammer Assembly

	Product Code	Description	Amt	Compatibility
5	BD004-CVALVE	Check Valve/Plunger	1	25-004-000
6	BD004-SK-CVALVE	Y Ring (Check Valve)	1	-
7	BD004-SPRING	Spring	1	22-004-000
8	BD004-STUBE-U	Sample Tube Upper	1	37-004-00U
9	BD004-MUR-STEEL	Make Up Ring, Steel	1	24-004-000
10	BD004-SK-STUBE1	O Ring (Sample Tube)	2	38-004-000
11	BD004-SK-STUBE2	O Ring (Sample Tube)	1	38-004-000
12	BD004-STUBE	Sample Tube Lower	1	37-004-00L
13	BD004-DIST	Distributor	1	29-004-000
14	BD004-SK-DIST	O Ring Distributor	1	38-004-000
15	BD004-ICYL	Inner Cylinder	1	31-004-000
16	BD004-PISTON	Piston	1	36-004-000
17	BD004-ECYL	External Cylinder	1	35-004-000
18	BD004-SRING	Bit Stop Ring	1	27-004-000
19	BD004-SK-SRING	O Ring (Bit Stop Ring)	1	38-004-000
20	BD004-SHROUD-115/113DB	Shroud	1	40-004-407
21	BD004-DSUB	Drive Sub	1	16-004-000
22	BD004-115DC-TPD	Drill bit	1	62-004-408DC



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BD004 – R.C. HAMMER

Compatibility – RE004, SR740

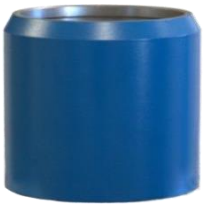
BD Drill Black Diamond Drilling Services Australia

Bit Selection Table

Bit Product Code	Diameter		Compatibility
	Metric	Imperial	
BD004-112DC-TPD	112mm	4 13/32”	63-004-407DC
BD004-115DC-TPD	115mm	4 ½”	63-004-408DC
BD004-118DC-TPD	118mm	4 5/8”	63-004-410DC
BD004-121DC-TPD	121mm	4 ¾”	63-004-412DC
BD004-127DC-TPD	127mm	5”	63-004-500DC

Shroud Selection Table

Shroud Product Code	Diameter		Compatibility
	Metric	Imperial	
BD004-SHROUD-112/110-DB	112mm	4 13/32”	40-004-407
BD004-SHROUD-115/113-DB	115mm	4 ½”	40-004-408
BD004-SHROUD-118/116-DB	118mm	4 5/8”	40-004-410
BD004-SHROUD-121/119-DB	121mm	4 ¾”	40-004-412
BD004-SHROUD-127/125-DB	127mm	5”	40-004-500



General Specifications

Description	Metric	Imperial
Piston Case OD	107mm	4 ¼”
Hammer length	1252mm	4’ 1 19/64”
Hammer Weight	52.0kg	114lb 9oz
Bit Size Range	112 – 127mm	4 7/16” – 5”
Drill Rod Diameter	102mm	4”
Spanner Flat Width – Inner Cylinder	-	-
Spanner Flat Width – Top Sub	50mm	2”

Air Consumption

Pressure		Consumption	
psi	bar	cfm	m^3/min
300	20.7	820	23.3
350	25.9	850	24
400	27.6	912	25.8
450	31.1	960	27.2
500	34.5	1000	28.3

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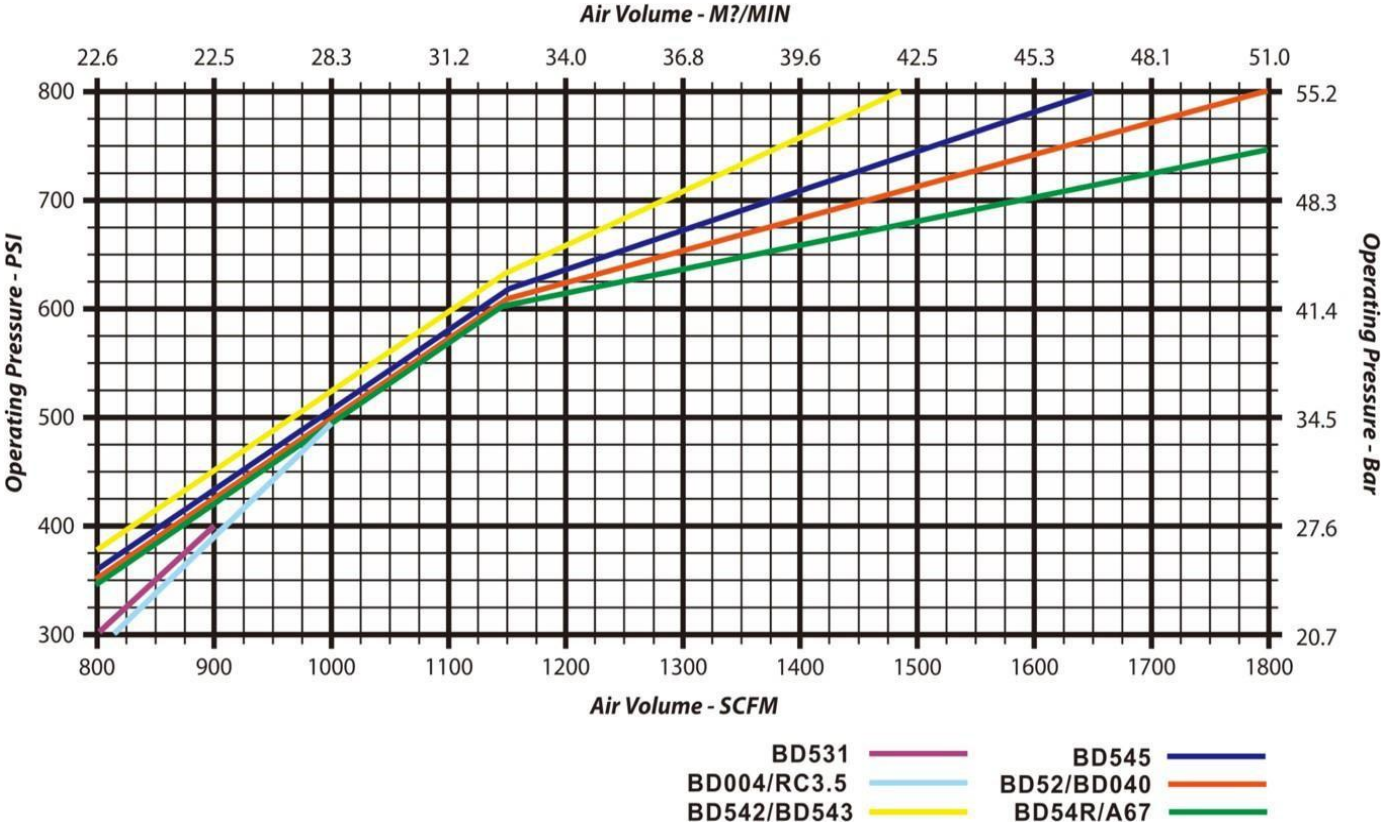
REVERSE CIRCULATION GENERAL SPECIFICATIONS

Hammer	BD351	RC3.5	BD004			BD542			BD543		BD545		BD040				BD52		BD54		A67
Top sub thread	R3"	R3"	R3.5"	R4"	M4"	R3.5"	R4"	M4"	R4"	M4"	M4.5	R4.5	M4"	R4"	M4.5"	R4.5"	m4.5"	R4.5"	M4.5"	R4.5	M4.5"
Package case size	(L)1100 (W)110 (H)120	(L)1230 (W)120 (H)150	(L)1300 (W)150 (H)180			(L)1230 (W)140 (H)170					(L)1260 (W)150 (H)180		(L)1300 (W)150 (H)180				(L)1300 (W)160 (H)190		(L)1300 (W)160 (H)190		(L)1330 (W)160 (H)190
Recommended bit size, mm	86-100	100-110	111-125			113-133					123-140		127-140				133-143		136-146		136-146
Bit shank	RE531	RC3.5	RE004			RE542			RE543		RE545		RE040				PR52		PR54		BD67
External diameter, mm	81	94	107			109.5			116		117.5		121				120.5		130		132
Length excl. thread, mm (Less bit)	1069	1184	1252			1191					1261		1210				1227		1294		1200
Hammer weight, Kg (Less bit)	29	44	52			57			63		65		53.8	47.5	69.8	69.4	68.5		84.5		81.8
Piston weight, Kg	4.8	8.3	10.5			11.6			11.6		13.5		13.6				14.3		16.8		17
Wrench flat, mm	No wrench flat	(L)82 (W)40	(L)90 (W)40	(L)90 (W)50	(L)90 (W)50	(L)95 (W)45	(L)95 (W)45	(L)95 (W)50	(L)95 (W)45	(L)95 (W)50	(L)102 (W)50	(L)102 (W)50	(L)94 (W)50	(L)94 (W)50	(L)94 (W)50	(L)94 (W)50	(L)94 (W)50	(L)94 (W)50	(L)100 (W)50	(L)100 (W)50	(L)95 (W)51
Drilling conditions and project specifications may require a larger air package to be used																					

AIR CONSUMPTION/OPERATING PRESSURE



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REVERSE CIRCULATION SERVICE GUIDE

When breaking a hammer down, avoid placing breakout tools in the mid-section of the cylinder (barrel). Recommended breakout points are 130mm from each end of cylinder. Wrap around chain breakouts are recommended (see diagram). When holding bits for breakout, use a secure plate or opt to grab the bit head, but never on the gauge row buttons.

This information is included with every Hammer purchase.

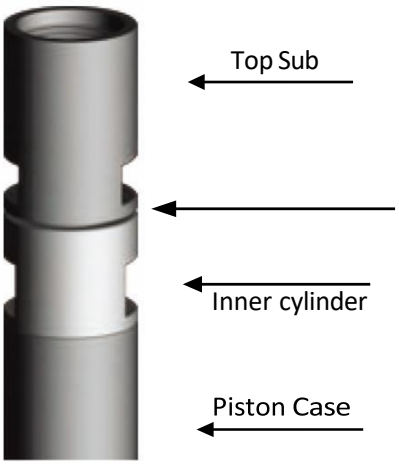
DO NOT APPLY HEAT OR DIRECT IMPACT TO HAMMER WHEN CRACKING JOINTS AS THIS TYPICALLY DAMAGES THE HAMMER.

Figure 1: Gripping Locations for BD DRILL Reverse Circulation Hammer

Lubrication: Correct lubrication is critical to performance and longevity.

Recommended:

- Oil Grade: SAE 320 Hammer Oil for most operating conditions
- Rate: 2 litre/hour minimum via automatic feeder
- Double the rate when injecting fluids such as water, foam & polymers
- Clean and relubricate the hammer each day after use to prevent corrosion and premature failure



Stand-off is the gap existing between the top sub and the inner cylinder when the hammer is assembled and hand tightened

Stand off
0.6mm to 1mm
0.024” to 0.04”

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