RC3.5 – R.C. HAMMER

Compatibility – RE035, AD620, SR710

BD Drill Black Diamond Drilling Services Australia

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	94	3 11/16
Bit	100 - 127	3 15/16 – 4 1/2
Suits medium to hard ground conditions		

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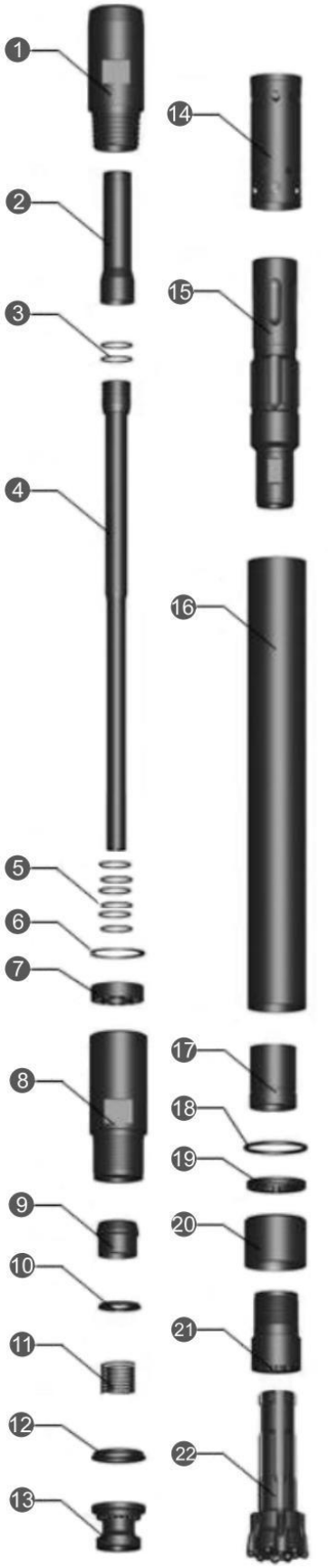
Top Sub Assembly

	Product Code	Description	Amt	Compatibility
1	RC3.5-TSUB-R3	Top Sub 3” Remet	1	33-035-R30
2	RC3.5-ASCREEN-R3	Adaptor Tube 3” Remet	1	20-035-R30
3	RC3.5-SK-ASCREEN-R3	O Ring	2	38-035-000

Hammer Assembly

	Product Code	Description	Amt	Compatibility
4	RC3.5-STUBE	Sample Tube	1	37-035-00U
5	RC3.5-SK-STUBE	O Ring (Sample Tube)	6	38-035-000
6	RC3.5-CIRCLIP	Circlip	1	-
7	RC3.5-DIST	Distributor	1	29-035-000
8	RC3.5-TBARREL	Top Barrel (Sub)	1	-
9	RC3.5-CVALVE	Check Valve/Plunger	1	25-035-000
10	RC3.5-SK-CVALVE	Y Ring (Check Valve)	1	38-035-000
11	RC3.5-SPRING	Spring	1	22-035-000
12	RC3.5-MUR-STEEL	Make Up Ring Steel	1	24-035-000
13	RC3.5-STUBE-MOUNT	Mount Sample Tube	1	37-035-00L
14	RC3.5-ICYL	Inner Cylinder	1	31-035-000
15	RC3.5-PISTON	Piston	1	36-035-000
16	RC3.5-ECYL	External Cylinder/Piston Case	1	35-035-000
17	RC3.5-BUSH	Bearing Bush	1	-
18	RC3.5-SK-SRING	O Ring (Bit Stop Ring)	1	38-035-000
19	RC3.5-SRING	Bit Stop Ring	1	27-035-000
20	RC3.5-SHROUD-104/102-DB	Shroud	1	40-035M-307-RE035
21	RC3.5-DSUB	Drive Sub	1	16-035-000
22	RC3.5-104DC-TPD	Drill Bit	1	63-035-400DC
23	BD531-DSUB	Seal Kit (3+5+10+18)	1	38-035-000



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Bit Selection Table

Bit Product Code	Diameter		Compatibility
	Metric	Imperial	
RC3.5-100DC-TPD	100mm	4”	63-035-400DC
RC3.5-104DC-TPD	104mm	4 1/8”	-
RC3.5-108DC-TPD	108mm	4 ¼”	-
RC3.5-114DC-TPD	114mm	4 ½”	-
RC3.5-127DC-TPD	127mm	5”	-

RC

Shroud Selection Table

	Diameter		
RC3.5-SHROUD-100/98-DB	100mm	3 15/16”	40-035-315
RC3.5-SHROUD-104/102-DB	104mm	4 1/8”	-
RC3.5-SHROUD-108/106-DB	108mm	4 ¼”	-
RC3.5-SHROUD-114/112-DB	114mm	4 ½”	-
RC3.5-SHROUD-127/125-DB	127mm	5”	-

General Specifications

Description	Metric	Imperial
Piston Case OD	94mm	3 11/16”
Hammer length	1184mm	3’ 10 3/8”
Hammer Weight	44.0kg	97lb
Bit Size Range	100 – 127mm	3 15/16” – 5”
Drill Rod Diameter	89mm	3 1/2”
Spanner Flat Width – Inner Cylinder	-	-
Spanner Flat Width – Top Sub	40mm	1 9/16”

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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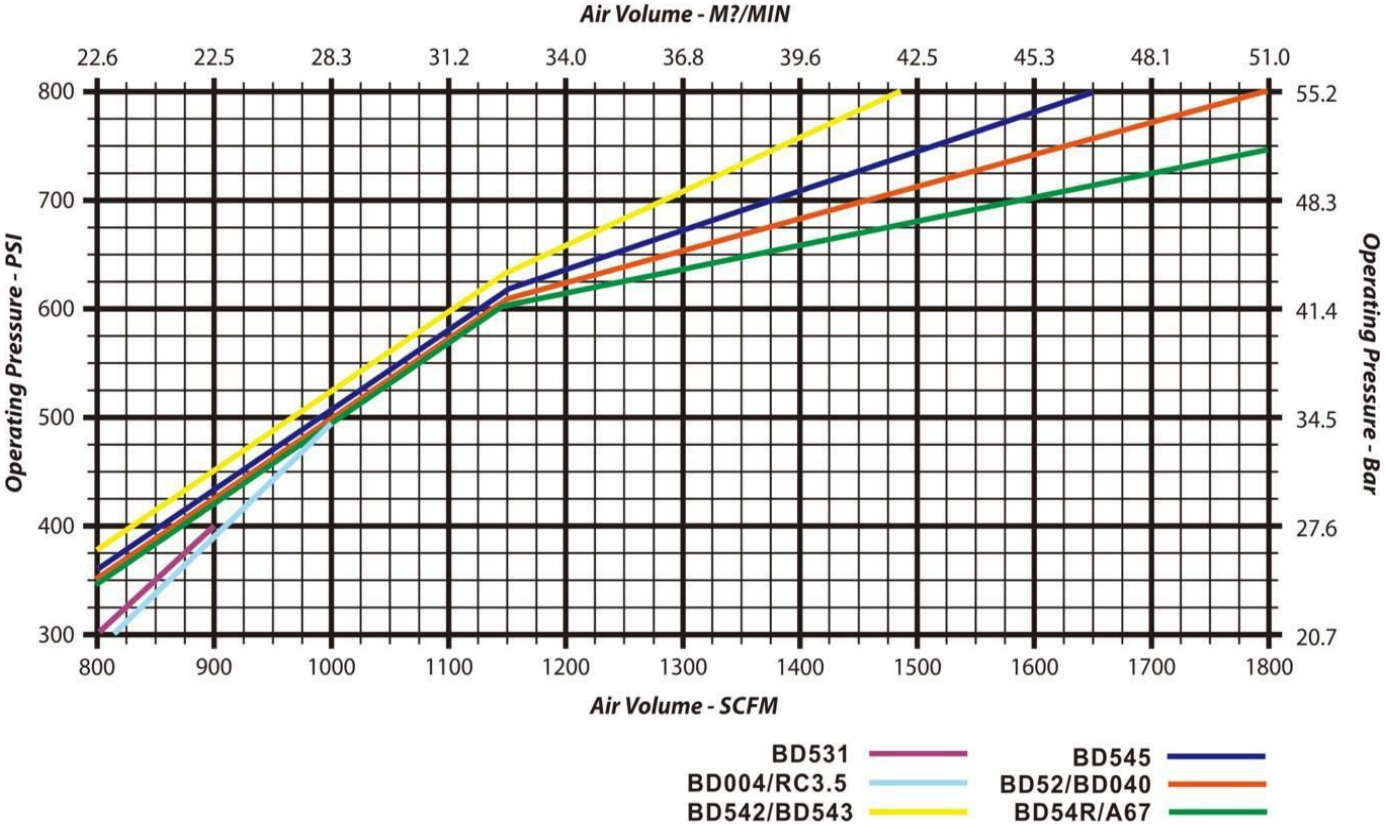
REVERSE CIRCULATION GENERAL SPECIFICATIONS

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.

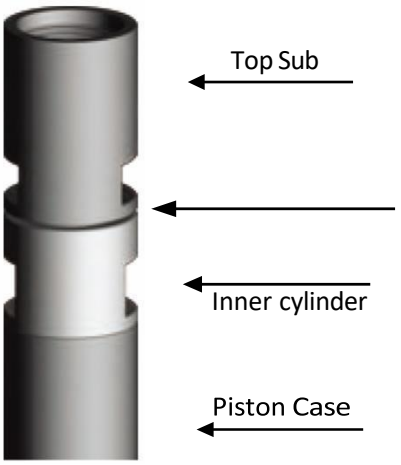
DO NOT APPLY HEAT OR DIRECT IMPACT TO HAMMER WHEN CRACKING JOINTS AS THIS TYPICALLY DAMAGES THE HAMMER.

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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