

Reverse Circulation Drilling Tools



CHANGSHA TIANHE DRILLING TOOLS
AND MACHINERY CO.,LTD



ADD: No.018, Yaojiapo Rd., Jinzhou New District, Ningxiang
county, Changsha City, Hunan, China
TEL: 0731-85853289
FAX: 0731-85853289
Email: sales@2002th.com
WEB: www.thdrillingtools.com
Zip code: 410600

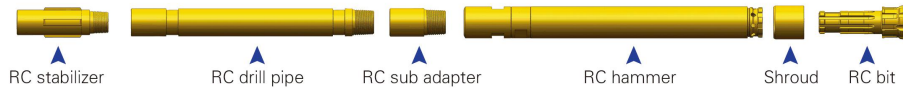
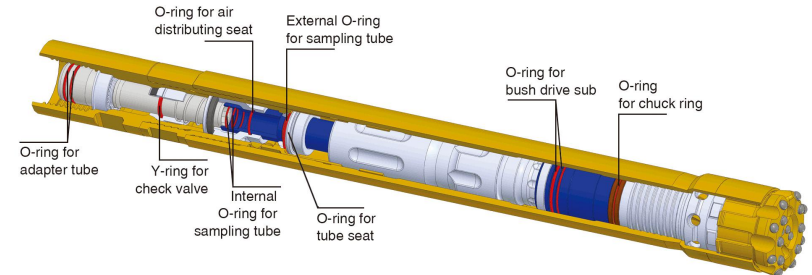
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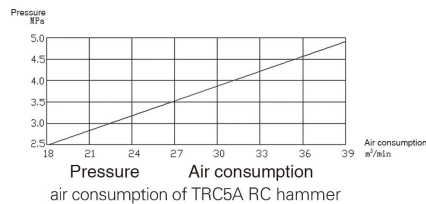
Advantages

- Accurate sampling;
- Environmental operation;
- Compared with conventional drilling tools, RC tools flush cuttings inside the pipe with small resistance to effect easy flushing;
- Special custom made alloy steel is adopted for sampling tube and shroud, and the surface of flushing pipe is hardened;
- Good quality sealing rings are selected as follows:



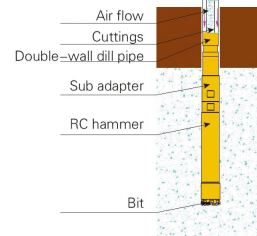
Reverse Circulation Drilling Tools——

A drilling system that flushes cuttings out from inside the pipe;
Low air consumption;
Drilling depth no more than 600m;
Each bit should be matched with corresponding shroud .



Operating mechanism——

Compressed air flows into the annular space of the double-wall drill pipe, then into the inner pipe from the drilling tools in the bottom of hole, and carries cuttings out to the ground through the inner pipe.

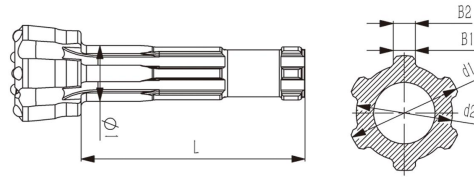


Applications

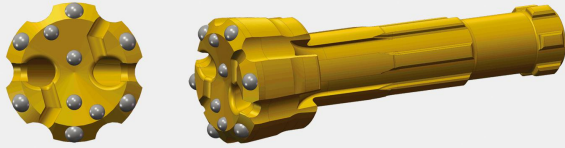
RC tools are used in geological exploration, water well drilling etc.



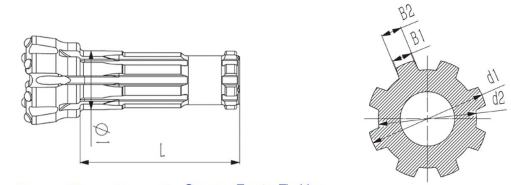
TRC3H RC bit



Shank model	Face and buttons configuration	Rec. hole size mm (inch)	Spline Nos.	L (mm)	φ1 (mm)	B1 (mm)	B2 (mm)	φd1 (mm)	φd2 (mm)	Gauge buttons	Front buttons	Flushing holes	Weight	Product code
TRC3H	Concave	90 (3 1/2)	6	203	52	10	10	51	43.5	φ12*6	φ10*4	2	8KG	61-A3HA1-090T1
	Drop center	95 (3 3/4)	6	203	52	10	10	51	43.5	φ12*6	φ10*4	2	8.5KG	61-A3HX1-095T1
	Drop center	102 (4)	6	203	52	10	10	51	43.5	φ12*6	φ10*4	2	9KG	61-A3HX1-102T1



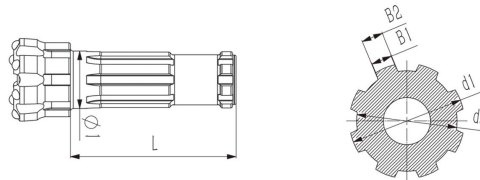
TRC4HA RC bit



Shank model	Face and buttons configuration	Rec. hole size mm (inch)	Spline Nos.	L (mm)	φ1 (mm)	B1 (mm)	B2 (mm)	φd1 (mm)	φd2 (mm)	Gauge buttons	Front buttons	Flushing holes	Weight	Product code
TRC4HA	Drop center	121 (4 3/4)	8	225	84	14.25	14.55	79.4	69.2	φ14*8	φ14*4+φ13*4	2	11KG	61-A4HX1-121T1
	Drop center	127 (5)	8	225	84	14.25	14.55	79.4	69.2	φ14*8	φ14*6+φ13*4	2	11.5KG	61-A4HX1-127T1
	Drop center	133 (5 1/4)	8	225	84	14.25	14.55	79.4	69.2	φ16*8	φ14*11	2	12KG	61-A4HX1-133T1



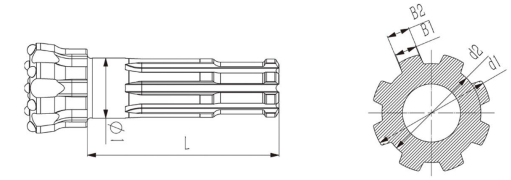
TRC4 RC bit



Shank model	Face and buttons configuration	Rec. hole size mm (inch)	Spline Nos.	L (mm)	φ1 (mm)	B1 (mm)	B2 (mm)	φd1 (mm)	φd2 (mm)	Gauge buttons	Front buttons	Flushing holes	Weight	Product code
TRC4	Drop center	115 (4 1/2)	8	225	78	14.3	14.6	77	68.2	φ14*8	φ14*4+φ13*2	2	10KG	61-A04X1-115T1
	Drop center	121 (4 3/4)	8	225	78	14.3	14.6	77	68.2	φ16*8	φ14*8	2	11KG	61-A04X1-121T1
	Drop center	127 (5)	8	225	78	14.3	14.6	77	68.2	φ16*8	φ14*8	2	12KG	61-A04X1-127T1



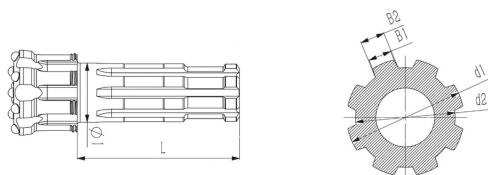
TRC5A RC bit



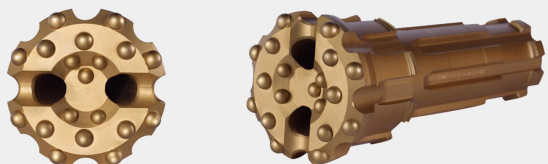
Shank model	Face and buttons configuration	Rec. hole size mm (inch)	Spline Nos.	L (mm)	φ1 (mm)	B1 (mm)	B2 (mm)	φd1 (mm)	φd2 (mm)	Gauge buttons	Front buttons	Flushing holes	Weight	Product code
TRC5A	Drop center	133 (5 1/4)	8	227	87	15.9	16.5	86.8	71.5	φ16*8	φ14*11	2	14KG	61-A05X1-133T1
	Drop center	137 (5 3/8)	8	227	87	15.9	16.5	86.8	71.5	φ16*8	φ14*11	2	14.5KG	61-A05X1-137T1
	Drop center	140 (5 1/2)	8	227	87	15.9	16.5	86.8	71.5	φ16*8	φ14*11	2	15KG	61-A05X1-140T1



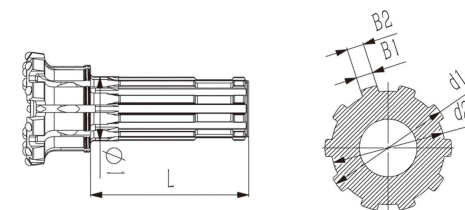
TRC5HA RC bit



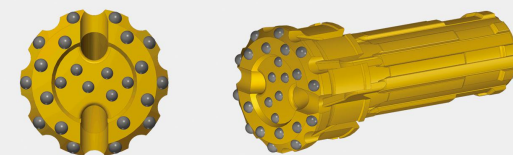
Shank model	Face and buttons configuration	Rec. hole size mm (inch)	Spline Nos. (mm)	L (mm)	φ1 (mm)	B1 (mm)	B2 (mm)	φd1 (mm)	φd2 (mm)	Gauge buttons	Front buttons φ16*6 +φ14*5	Flushing holes	Weight	Product code
TRC5HA	Drop center	140 (5 1/2)	8	260.5	95.2	18.8	19.5	95	80	φ16*8	φ16*6 +φ14*5	2	17.7KG	61-A5HX1-140T1
	Drop center	146 (5 3/4)	8	260.5	95.2	18.8	19.5	95	80	φ16*8	φ16*6 +φ14*5	2	19.2KG	61-A5HX1-146T1
	Drop center	152 (6)	8	260.5	95.2	18.8	19.5	95	80	φ16*8	φ16*6 +φ14*5	2	20KG	61-A5HX1-152T1



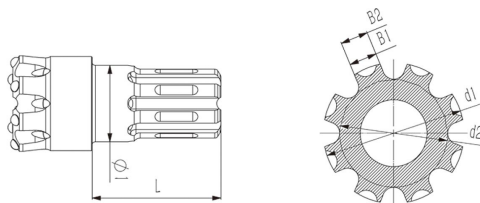
TRC8 RC bit



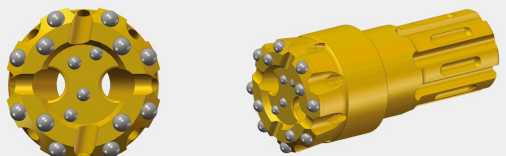
Shank model	Face and buttons configuration	Rec. hole size mm (inch)	Spline Nos. (mm)	L (mm)	φ1 (mm)	B1 (mm)	B2 (mm)	φd1 (mm)	φd2 (mm)	Gauge buttons	Front buttons φ18*8 +φ16*6 +φ16*8	Flushing holes	Weight	Product code
TRC8	Drop center	203 (8)	10	335	136	16	16	134	120	φ18*10	φ18*8 +φ16*6 +φ16*8	2	45KG	61-A08X1-203T1
	Drop center	210 (8 1/4)	10	335	136	16	16	134	120	φ18*10	φ18*8 +φ16*6 +φ16*8	2	48KG	61-A08X1-210T1
	Drop center	216 (8 1/2)	10	335	136	16	16	134	120	φ19*10	φ18*8 +φ16*8	2	52KG	61-A08X1-216T1



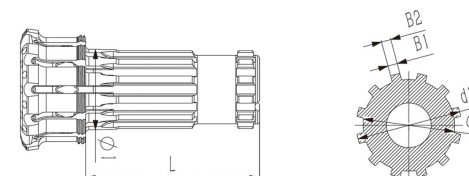
TRC6 RC bit



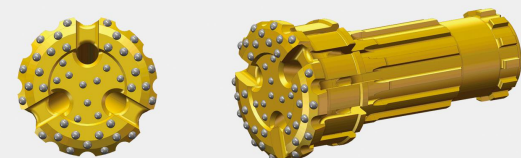
Shank model	Face and buttons configuration	Rec. hole size mm (inch)	Spline Nos. (mm)	L (mm)	φ1 (mm)	B1 (mm)	B2 (mm)	φd1 (mm)	φd2 (mm)	Gauge buttons	Front buttons φ16*8 φ18*4 +φ16*4	Flushing holes	Weight	Product code
TRC6	Drop center	152 (6)	8	185	110	20	20	101	77.6	φ16*8	φ16*8	2	20KG	61-A06X1-152T1
	Drop center	159 (6 1/4)	8	185	110	20	20	101	77.6	φ16*8	φ16*8	2	22KG	61-A06X1-159T1
	Drop center	165 (6 1/2)	8	185	110	20	20	101	77.6	φ18*8	φ18*4 +φ16*4	2	25KG	61-A06X1-165T1



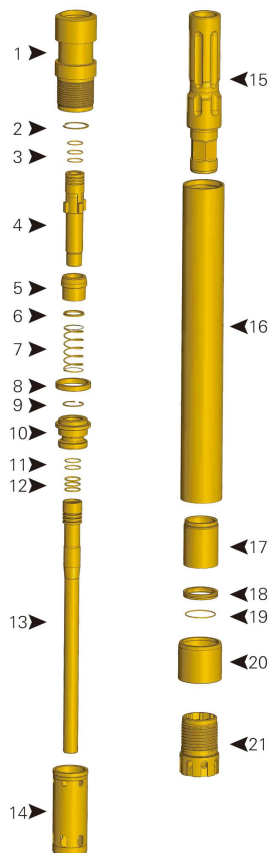
TRC12 RC bit



Shank model	Face and buttons configuration	Rec. hole size mm (inch)	Spline Nos. (mm)	L (mm)	φ1 (mm)	B1 (mm)	B2 (mm)	φd1 (mm)	φd2 (mm)	Gauge buttons	Front buttons φ19*9+ φ19*12+ φ16*10	Flushing holes	Weight	Product code
A12	Drop center	305 (12)	12	440	207	18	18	200	174	φ19*12	φ19*9+ φ19*12+ φ16*10	3	142KG	61-A12X3-305T1
	Drop center	313 (12 1/4)	12	440	207	18	18	200	174	φ19*12	φ19*9+ φ19*12+ φ16*10	3	145KG	61-A12X3-313T1
	Drop center	320 (12 5/8)	12	440	207	18	18	200	174	φ19*12	φ19*9+ φ19*12+ φ16*10	3	150KG	61-A12X3-320T1



TRC4 hammer

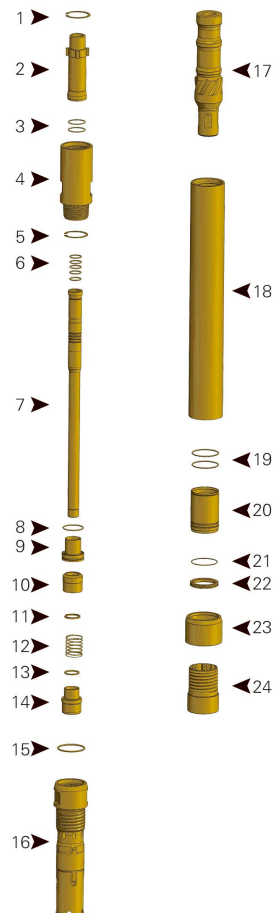


TRC4 hammer parts

No	Name	Product Code	Qty.	Weight
1	Top sub	B2-RC04A-R301-05	1	7.5
2	Hole ring	GB/T893.2=63	1	-
3	O-ring for adapter tube	38.7*2.65	3	-
4	Adapter tube	B2-RC04A-R301-09	1	1.8
5	Check valve	B2-RC04A-R301-30	1	0.6
6	Y-ring	B2-RC04A-R301-31	1	-
7	Spring	B2-RC04A-R301-10	1	-
8	Rubber ring	B2-RC04A-R301-12	1	-
9	Circlip	GB/T893.2 50	1	-
10	Air distributing seat	B2-RC04A-R301-20	1	1.2
11	Internal O-ring for sample tube	40*2.65	2	-
12	External O-ring for sample tube	38.7*3.55	3	-
13	Sample tube	B2-RC04A-R301-36	1	2.7
14	Inner cylinder	B2-RC04A-R301-32	1	1.8
15	Piston	B2-RC04A-R301-42	1	10
16	Outer cylinder	B2-RC04A-R301-40	1	16.2
17	Bush drive sub	B2-RC04A-R301-45	1	1.7
18	Chuck ring	B2-RC04A-R301-50	1	0.2
19	O-ring for chuck ring	77.5*2.65	1	-
20	Shroud	(Refer to the following table)	1	In followin table
21	Chuck sleeve	B2-RC04A-R301-58	1	3.2
Assembly		B2-RC04A-R301	1	48

No	Name	Product Code	Max.size (mm)	Weight (Kg)	Rec.bit size (mm)
		B2-RC04A-R301-64	113	1.4	115
20	Shroud	B2-RC04A-R302-64	119	2.2	121
		B2-RC04A-R303-64	125	3.3	127

TRC4HA hammer

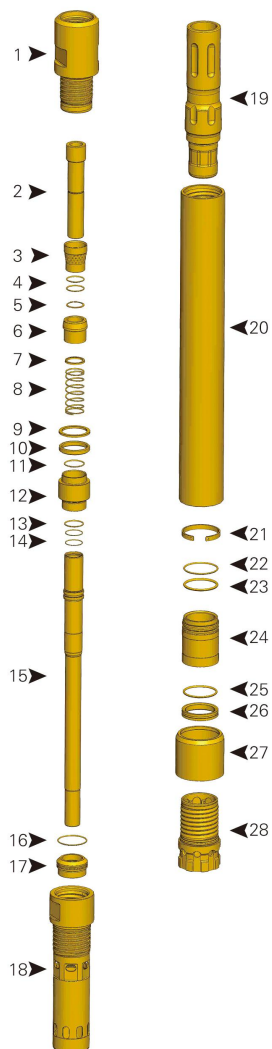


TRC4HA hammer parts

No	Name	Product Code	Qty	Weight
1	Hole ring	GB/T 893.2=78.8	1	-
2	Adapter tube	B2-RC4HA-M401-09	1	2.7
3	O-ring for adapter tube	60*3.1	2	-
4	Top sub	B2-RC4HA-M401-05	1	8.3
5	Hole ring for Inner cylinder	GB/T 893.2-78	1	-
6	O-ring for sample tube	34.5*3.55	5	-
7	Sample tube	B2-RC4HA-M401-36	1	2.9
8	O-ring for air screen	65*3.55	1	-
9	Air screen	B2-RC4HA-M401-34	1	0.6
10	Check valve	B2-RC4HA-M401-30	1	0.4
11	Y-ring	B2-RC4HA-M401-31	1	-
12	Spring	B2-RC4HA-M401-10	1	-
13	O-ring for tube seat	52*5	1	-
14	Tube seat	B2-RC4HA-M401-22	1	0.9
15	O-ring for inner cylinder	95*5	1	-
16	Inner cylinder	B2-RC4HA-M401-32	1	7.2
17	Piston	B2-RC4HA-M401-42	1	11.7
18	Outer cylinder	B2-RC4HA-M401-40	1	19.6
19	O-ring for bush drive sub	85*3.55	2	-
20	Bush drive sub	B2-RC4HA-M401-45	1	2.4
21	O-ring for chuck ring	85*2.65	1	-
22	Chuck ring	B2-RC4HA-M401-50	1	0.3
23	Shroud	Refer to the following table	1	In following table
24	Chuck sleeve	B2-RC4HA-M401-58	1	2.8
Assembly		B2-RC4HA-M401	1	61

No	Name	Product Code	Max.size (mm)	Weight (Kg)	Rec.bit size (mm)
		B2-RC4HA-M401-64	119.3	1.5	121
		B2-RC4HA-M402-64	125.5	2.2	127
23	Shroud	B2-RC4HA-M403-64	131.5	2.8	133
		B2-RC4HA-M404-64	137.5	3.9	139

TRC5A hammer

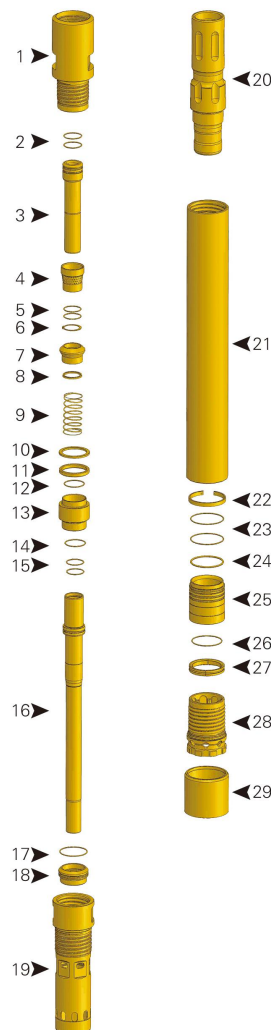


TRC5A hammer parts

No	Name	Product Code	Qty	Weight
1	Top sub	B2-RC05A-M401-05	1	10
2	Adapter tube	B2-RC05A-M401-09	1	1.5
3	Air screen	B2-RC05A-M401-34	1	0.3
4	O-ring for air screen	50*3.1	2	-
5	Axle ring for adapter tube	GB/T894.22=44.5	1	-
6	Check valve	B2-RC05A-M401-30	1	0.6
7	Y-ring	B2-RC05A-M401-31	1	-
8	Spring	B2-RC05A-M401-10	1	-
9	Up ring	B2-RC05A-M401-61	1	0.1
10	Rubber ring	B2-RC05A-M401-12	1	-
11	O-ring for air distributing seat	56*3.1	1	-
12	Air distributing seat	B2-RC05A-M401-20	1	1.3
13	External O-ring for sample tube	53*3.1	1	-
14	Internal O-ring for sample tube	48*2	2	-
15	Sample tube	B2-RC05A-M401-36	1	4.2
16	O-ring for Tube seat	81*3.1	1	-
17	Tube seat	B2-RC05A-M401-22	1	1
18	Inner cylinder	B2-RC05A-M401-32	1	7.1
19	Piston	B2-RC05A-M401-42	1	13.8
20	Outer cylinder	B2-RC05A-M401-40	1	5.2
21	Retaining ring	B2-RC05A-M401-48	1	0.1
22	O-ring for bush drive sub	95*3.1	1	-
23	O-ring for bush drive sub	95*4	1	-
24	Bush drive sub	B2-RC05A-M401-45	1	2.1
25	O-ring for chuck ring	92*3.1	1	-
26	Chuck ring	B2-RC05A-M401-50	1	0.4
27	Shroud	Refer to the following table	1	In following table
28	Chuck sleeve	B2-RC05A-M401-58	1	3.7
Assembly		B2-RC05A-M401	1	72.6

No	Name	Product Code	Max.size (mm)	Weight (Kg)	Rec.bit size (mm)
		B2-RC05A-M401-64	131	2.7	133
27	Shroud	B2-RC05A-M402-64	135	3.3	137
		B2-RC05A-M403-64	138	3.8	140

TRC5HA hammer

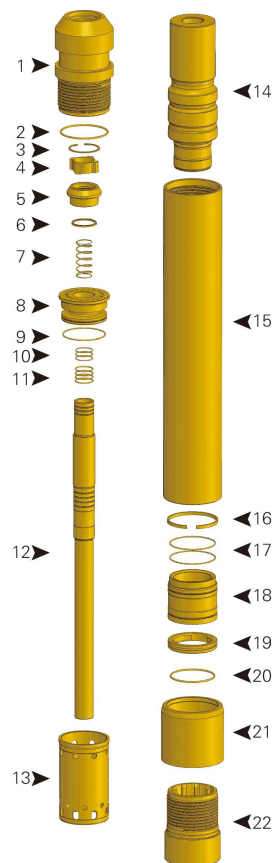


TRC5HA hammer parts

No	Name	Product Code	Qty	Weight
1	Top sub	B2-RC5HA-R501-05	1	12
2	O-ring for adapter tube	58*3.1	2	-
3	Adapter tube	B2-RC5HA-R501-09	1	2.4
4	Air screen	B2-RC5HA-R501-34	1	0.4
5	O-ring for air screen	56*3.1	2	-
6	Axle ring for adapter tube	GB/T894.2 50.8	1	-
7	Check valve	B2-RC5HA-R501-30	1	1
8	Y-ring	B2-RC5HA-R501-31	1	-
9	Spring	B2-RC5HA-R501-10	1	-
10	Up ring	B2-RC5HA-R501-61	1	0.1
11	Rubber ring	B2-RC5HA-R501-12	1	-
12	O-ring for air distributing seat	65*3.1	1	-
13	Air distributing seat	B2-RC5HA-R501-20	1	1.6
14	External O-ring for sample tube	66*3.1	1	-
15	Internal O-ring for sample tube	56*3.1	2	-
16	Sample tube	B2-RC5HA-R501-36	1	6.3
17	O-ring for tube seat	88*3.1	1	-
18	Tube seat	B2-RC5HA-R501-22	1	1
19	Inner cylinder	B2-RC5HA-R501-32	1	8.2
20	Piston	B2-RC5HA-R501-42	1	16.9
21	Outer cylinder	B2-RC5HA-R501-40	1	23.9
22	Retaining ring	B2-RC5HA-R501-48	1	0.2
23	O-ring for bush drive sub (small)	105*3.1	2	-
24	O-ring for bush drive sub (big)	105*5	1	-
25	Bush drive sub	B2-RC5HA-R501-45	1	2.5
26	O-ring for chuck ring	96*3.1	1	-
27	Chuck ring	B2-RC5HA-R501-50	1	0.4
28	Shroud	Refer to the following table	1	In following table
29	Chuck sleeve	B2-RC5HA-R501-58	1	3.9
Assembly		B2-RC5HA-R501	1	81.5

No	Name	Product Code	Max.size (mm)	Weight (Kg)	Rec.bit size (mm)
		B2-RC5HA-R501-64	138	2.2	140
28	Shroud	B2-RC5HA-R502-64	141.5	3	143
		B2-RC5HA-R503-64	144.5	3.6	146

TRC8 hammer

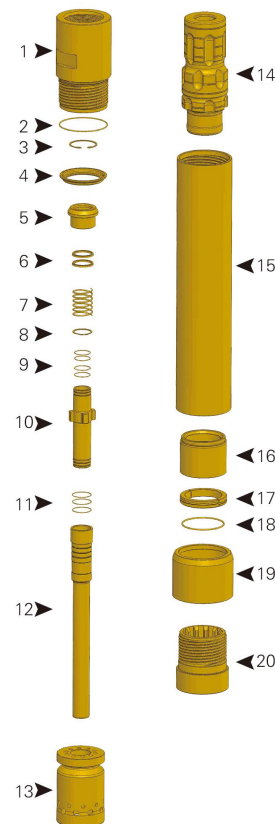


TRC8 hammer parts

No.	Name	Product Code	Qty.	Weight
1	Top sub	B2-RC08A-R501-05	1	32.5
2	O-ring for top sub	150*5.3	1	-
3	Hole ring	GB/T893.2 95	1	-
4	Air screen	B2-RC08A-R501-34	1	0.5
5	Check valve	B2-RC08A-R501-30	1	1
6	Y-ring	B2-RC08A-R501-31	1	-
7	Spring	B2-RC08A-R501-10	1	-
8	Air distributing seat	B2-RC08A-R501-20	1	6.1
9	O-ring for air distributing seat	136*3.55	1	-
10	O-ring for sample tube	54.5*2.65	3	-
11	External O-ring for sample tube	56*3.55	4	-
12	Sample tube	B2-RC08A-R501-36	1	9.8
13	Inner cylinder	B2-RC08A-R501-32	1	4.6
14	Piston	B2-RC08A-R501-42	1	46
15	Outer cylinder	B2-RC08A-R501-40	1	55
16	Retaining ring	B2-RC08A-R501-48	1	0.2
17	O-ring for	145*3.55	2	-
18	Bush drive sub	B2-RC08A-R501-45	1	6
19	Chuck ring	B2-RC08A-R501-50	1	1
20	O-ring for chuck ring	140*5.3	1	-
21	Shroud	Refer to the following table	1	In followin table
22	Chuck sleeve	B2-RC08A-R501-58	1	14.2
Assembly		B2-RC08A-R501	1	182

No	Name	Product Code	Max.size (mm)	Weight (Kg)	Rec.bit size (mm)
21	Shroud	B2-RC08A-R501-64	200	7.7	203

TRC12 hammer



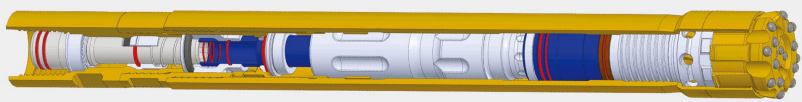
TRC12 hammer parts

No.	Name	Product Code	Qty.	Weight
1	Top sub	B2-RC12A-A801-05	1	124
2	O-ring for top sub	243*5.3	1	-
3	Hole ring	GB/T 893.1-1986 135	1	-
4	Shock ring	B2-RC12A-A801-12	1	2
5	Check valve	B2-RC12A-A801-30	1	5
6	Y-ring	Yx d90 JB/ZQ 4265-2006	2	-
7	Spring	150*103*6*23.5	1	-
8	Alxe ring	GB/T 894.1-1986 90	1	-
9	O-ring for adapter tube	80*3.55	4	-
10	Adapter tube	B2-RC12A-A801-09	1	9
11	O-ring for sample tube	95*3.55	3	-
12	Sample tube	B2-RC12A-A801-36	1	19.6
13	Inner cylinder	B2-RC12A-A801-32	1	39.7
14	Piston	B2-RC12A-A801-42	1	119
15	Outer cylinder	B2-RC12A-A801-40	1	164.3
16	Bush drive sub	B2-RC12A-A801-45	1	19.5
17	Chuck ring	B2-RC12A-A801-50	1	4.4
18	O-ring for chuck ring	212*7	1	-
19	Shroud	Refer to the following table	1	In following table
20	Chuck sleeve	B2-RC12A-A801-58	1	41
Assembly		B2-RC12A-A801	1	578

No	Name	Product Code	Max.size (mm)	Weight (Kg)	Rec.bit size (mm)
19	Shroud	B2-RC12A-A801-64	308.5	30.6	311



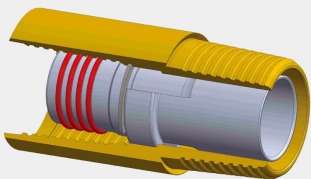
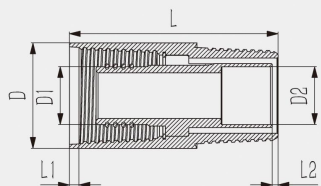
RC hammer specifications



Product model	Product code	O.D (mm)	Thread connection	Length (mm)	Weight (Kg)
TRC3H hammer	B2-RC3HA-R201	85	REMET3	823.5	25
TRC4 hammer	B2-RC04A-R301	108	REMET3.5	1100	48
TRC4HA hammer	B2-RC4HA-M401	116	METZKE4.0	1191	61
TRC5A hammer	B2-RC05A-M401	121	METZKE4.0	1284.5	72.6
TRC5HA hammer	B2-RC5HA-R501	130	REMET4.5	1294	81.5
TRC6 hammer	B2-RC06A-R501	148	REMET4.5	1204.5	120
TRC8 hammer	B2-RC08A-R501	188	REMET4.5	1415	182
TRC12 hammer	B2-RC12A-A801	280	API 8 5/8 REG	1869.5	578



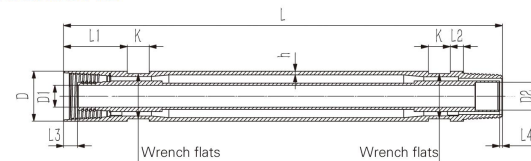
RC sub adapter specifications



Pinthread	Box thread	O.D (mm) D	Length (mm) L	Inner tube to end (mm)		Inner tube sealing face size (mm)		Product code	Weight (Kg)
				L1	L2	D1	D2		
REMET3.5	REMET4.0	102	225	35	9	57.2	49.5	C2-R3TR4-10201	5
REMET3.5	METZKE4.0	102	225	25.4	9	54	49.5	C2-R3TM4-10201	5
METZKE4.0	REMET4.0	102	204	35	3.1	57.2	54	C2-M4TR4-10201	5.6
REMET4.0	METZKE4.0	102	204	25.4	7.5	54	57.2	C2-R4TM4-10201	5.6
METZKE4.0	METZKE4.5	114	188	48.2	3.1	57.2	54	C2-M4TM5-11401	7
METZKE4.0	REMET4.5	116	200	31.5	3.1	63.5	54	C2-M4TR5-11601	8
REMET4.0	METZKE4.5	114	208	48.2	7.5	57.2	57.2	C2-R4TM5-11401	7.5
REMET4.0	REMET4.5	116	220	31.5	7.5	63.5	57.2	C2-R4TR5-11601	8
METZKE4.5	REMET4.5	116	250	31.5	0	63.5	57.4	C2-M5TR5-11601	10
REMET4.5	METZKE4.5	116	220	48.2	6.5	57.2	63.5	C2-R5TM5-11601	8

Other specifications can be made upon request

RC drill pipe specifications

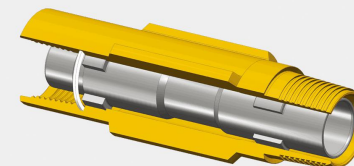
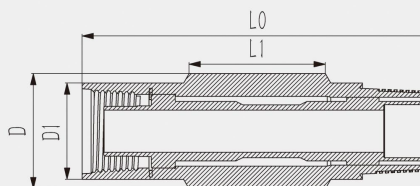


O.D (mm)	Wall thickness h (mm)	Thread	Wrench flats d (mm)	Flat width K (mm)	Flat location (mm)		Inner tube to end (mm)		Inner tube sealing face size (mm)		Length (mm)	Product code
					L1	L2	L3	L4	D1	D2	L	
φ89	6.5	REMET3.5	79	50	130	46	35	9	Φ49.5	Φ49.5	3000	D3-089R3-30065
	8.5	REMET3.5	79	50	130	46	35	9	Φ49.5	Φ49.5	3000	D3-089R3-30085
φ102	6.5	REMET4.0	91	50	104	30	35	7.5	Φ57.2	Φ57.2	3000	D3-102R4-30065
		METZKE4.0	91	50	104	30	25.4	3.1	Φ54	Φ54	3000	D3-102M4-30065
	8.5	REMET4.0	91	50	104	30	35	7.5	Φ57.2	Φ57.2	3000	D3-102R4-30085
		METZKE4.0	91	50	104	30	25.4	3.1	Φ54	Φ54	3000	D3-102M4-30085
φ114	8.5	REMET4.5	103	50	145	30	31.5	6.5	Φ63.5	Φ63.5	3000	D3-114R5-30085
		METZKE4.5	103	50	145	30	48.2	0	Φ57.2	Φ57.4	3000	D3-114M5-30085
φ127	8.5	REMET4.5	116	50	145	30	31.5	6.5	Φ63.5	Φ63.5	3000	D3-127R5-30085
		METZKE4.5	116	50	145	30	48.2	0	Φ57.2	Φ57.4	3000	D3-127M5-30085

Other specifications can be made upon request



RC stabilizer specifications



D D	Thread	Pipe dia. (mm) D1	Stabilizing length (mm) L1	Length (mm) L0	Rec. bit size		Product code
					mm	inch	
127	METZKE4.0	102	145	377	133	5 1/4	E2-102M4-12701
133	METZKE4.0	102	145	377	140	5 1/2	E2-102M4-13301
140	METZKE4.0	102	145	377	145	5 3/4	E2-102M4-14001

Other specifications can be made upon request