



Reverse Circulation Hammer & Bits



CATALOGUE GUIDE

CASING TUBES & CASING SHOE

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The Characteristics Of RC Hammers

RC series reverse circulation DTH Hammer is the latest developed product of our company, it is mainly used for deep exploration drilling and stope ore grade control.

It has the following characteristics:

- ◆ Based on previous experience of ordinary hammers, combined with the features of reverse circulation hammer, optimized internal structure and ideal energy transfer, thus ensuring the series of hammers drilling with fast, smooth and continuous sampling.
- ◆ The internal structure is very simple with components of high rigidity, thus ensuring long life and easy maintenance of the hammer.
- ◆ The collection tube adopts an integrative design and can be replaced without disassembling the hammer. With carburizing treatment, it has good abrasive resistance.
- ◆ Equipped with bits designed with patent, simply by replacing the drill bit, the same hammer can drill holes of different sizes ensuring that the sample is not contaminated.
- ◆ In difficult conditions such as loose soil, hard rock and plenty of water exists, sampling can be done well.

Explanation of The characteristics of HRC Hammers

For Example :RC3-E531

- ◆ RC-Reverse Circulation DTH Hammer
- ◆ 3-Hammer item number
- ◆ E531-Drill Bits item number

Introduction of R.C. Drilling and R.C. DTH Hammers

It has the following characteristics:

- ◆ R.C. Drilling, referred to as "Center Sample Recovery" or "Dual Wall Drilling", employs a Dual Wall Pipe where the drilling medium, normally high pressure air, is passed between the outer and inner tubes down to the face of the drilling bit where it is returned up the centre tube along with the sample cut by the drill bit.

The use and the advantages of the R.C. DTH Hammers:

◆ No contamination

The R.C. System collects sample through the recovery holes in the face of the drill bit immediately as the cuttings or sample is formed. The drilled sample does not have to travel the length of the hammer where contamination and loss of sample takes place.

◆ Higher Production

In broken and fractured ground conditions, the R.C. will often out perform the conventional hammer in terms of penetration rates.

◆ Dry Sample

Even in certain water bearing stratas it is still possible to collect a dry sample because the cuttings(sample) are collected as they formed through the face of the drill bit.

◆ Higher Sample Recovery

Because the sample is collected through the face of the drill bit there is no loss of sample when drilling through broken or fractured ground. And since the bit matched to the chuck size, there is very little bypass of sample and recovery rates of up to 98% are generally achievable.

RC4.5-E542 R.C. HAMMER

4.5"R.C. Hammers		Item Description	Weight (Kg)	Part Number
	1	Circlip	0.04	RC4.5-E542-01
	2	Adaptor Screen	2.55	RC4.5-E542-02
	3	"O" Ring	0.02	RC4.5-E542-03
	4	Top Sub	8.52	RC4.5-E542-04
	5	Sample Sub	3.50	RC4.5-E542-05
	6	"O" Ring	0.02	RC4.5-E542-06
	7	Circlip	0.04	RC4.5-E542-07
	8	Airscreen	0.02	RC4.5-E542-08
	9	Distributor Nozzle	0.56	RC4.5-E542-09
	10	"O" Ring	0.02	RC4.5-E542-10
	11	Plunger	0.50	RC4.5-E542-11
	12	"Y" Ring	0.02	RC4.5-E542-12
	13	Spring	0.08	RC4.5-E542-13
	14	Mount Sample Tube	0.86	RC4.5-E542-14
	15	"O" Ring	0.02	RC4.5-E542-15
	16	Inner Cylinder	7.26	RC4.5-E542-16
	17	"O" Ring	0.02	RC4.5-E542-17
	18	Piston	11.64	RC4.5-E542-18
	19	Piston Case	19.17	RC4.5-E542-19
	20	Bush Drive Sub	2.35	RC4.5-E542-20
	21	"O" Ring	0.02	RC4.5-E542-21
	22	Piston Retaining Ring	0.05	RC4.5-E542-22
	23	Bit Retaining Ring	0.26	RC4.5-E542-23
	24	"O" Ring	0.02	RC4.5-E542-24
	25	Shroud	2.21	RC4.5-E542-25
	26	Drive Sub	2.94	RC4.5-E542-26
	27	Drill Bit	10.96	RC4.5-E542-27

Technical Date

Length(Less bit)	Weight(Less bit)	External diameter	Bit Shank	Hole Range	Connection Thread
1191mm	51.0Kg	ø109.5mm	RE542	ø113-ø130	3.5"-4"Remet 4"Metzke
Working Pressure	Impact rate at 2.4Mpa	Recommended rotation speed	Air Consumption		
			1.7Mpa	2.4Mpa	3.0Mpa
1.5-3.5Mpa	35HZ	25-40r/min	12m ³ /min	18m ³ /min	26m ³ /min

RC4.5-E543 R.C. HAMMER

4.5"R.C. Hammers	Item Description	Weight (Kg)	Part Number	
	1	Circlip	0.04	RC4.5-E543-01
	2	Adaptor Screen	2.55	RC4.5-E543-02
	3	"O" Ring	0.02	RC4.5-E543-03
	4	Top Sub	8.52	RC4.5-E543-04
	5	Sample Tube	3.50	RC4.5-E543-05
	6	"O" Ring	0.02	RC4.5-E543-06
	7	Circlip	0.04	RC4.5-E543-07
	8	Airscreen	0.02	RC4.5-E543-08
	9	Distributor Nozzle	0.56	RC4.5-E543-09
	10	"O" Ring	0.02	RC4.5-E543-10
	11	Plunger	0.50	RC4.5-E543-11
	12	"Y" Ring	0.02	RC4.5-E543-12
	13	Spring	0.08	RC4.5-E543-13
	14	Mount Sample Tube	0.86	RC4.5-E543-14
	15	"O" Ring	0.02	RC4.5-E543-15
	16	Inner Cylinder	7.26	RC4.5-E543-16
	17	"O" Ring	0.02	RC4.5-E543-17
	18	Piston	11.64	RC4.5-E543-18
	19	Piston Case	19.17	RC4.5-E543-19
	20	Bush Drive Sub	2.35	RC4.5-E543-20
	21	"O" Ring	0.02	RC4.5-E543-21
	22	Piston Retaining Ring	0.05	RC4.5-E543-22
	23	Bit Retaining Ring	0.26	RC4.5-E543-23
	24	"O" Ring	0.02	RC4.5-E543-24
	25	Shroud	2.21	RC4.5-E543-25
	26	Drive Sub	2.94	RC4.5-E543-26
	27	Drill Bit	10.96	RC4.5-E543-27

Technical Date

Length(Less bit)	Weight(Less bit)	External diameter	Bit Shank	Hole Range	Connection Thread
1191mm	62.0Kg	ø116mm	RE543	ø120-ø135	3.5"-4"Remet 4"Metzke
Working Pressure	Impact rate at 2.4Mpa	Recommended rotation speed	Air Consumption		
			1.7Mpa	2.4Mpa	3.0Mpa
1.5-3.5Mpa	35HZ	25-40r/min	12m ³ /min	18m ³ /min	26m ³ /min

RC5-E545 R.C. HAMMER

4.5"R.C. Hammers	Item Description	Weight (Kg)	Part Number	
	1	Circlip	0.04	RC5-E545-01
	2	"O" Ring	0.02	RC5-E545-02
	3	Adaptor Screen	2.95	RC5-E545-03
	4	"O" Ring	0.02	RC5-E545-04
	5	Top Sub	6.98	RC5-E545-05
	6	Sample Tube	4.61	RC5-E545-06
	7	"O" Ring	0.02	RC5-E545-07
	8	Circlip	0.04	RC5-E545-08
	9	Airscreen	0.02	RC5-E545-09
	10	Distributor Nozzle	0.48	RC5-E545-10
	11	"O" Ring	0.02	RC5-E545-11
	12	Plunger	0.53	RC5-E545-12
	13	"Y" Ring	0.02	RC5-E545-13
	14	Spring	0.12	RC5-E545-14
	15	"O" Ring	0.02	RC5-E545-15
	16	Inner Cylinder	10.20	RC5-E545-16
	17	Piston	15.10	RC5-E545-17
	18	Piston Case	17.20	RC5-E545-18
	19	Bush Drive Sub	2.95	RC5-E545-19
	20	"O" Ring	0.02	RC5-E545-20
	21	Piston Retaining Ring	0.04	RC5-E545-21
	22	Bit Retaining Ring	0.23	RC5-E545-22
	23	"O" Ring	0.02	RC5-E545-23
	24	Shroud	1.60	RC5-E545-24
	25	Drive Sub	3.41	RC5-E545-25
	26	Drill Bit	12.6	RC5-E545-26

Technical Date

Length(Less bit)	Weight(Less bit)	External diameter	Bit Shank	Hole Range	Connection Thread
1261mm	65.0Kg	ø117.5mm	RE545	ø122-ø135	4"-4.5"Remet 4"-4.5"Metzke
Working Pressure	Impact rate at 2.4Mpa	Recommended rotation speed	Air Consumption		
			1.7Mpa	2.4Mpa	3.0Mpa
1.5-3.5Mpa	35HZ	25-40r/min	16m ³ /min	22m ³ /min	28m ³ /min


RC5-P40 R.C. HAMMER

4.5"R.C. Hammers		Item Description	Weight (Kg)	Part Number
	1	Circlip	0.04	RC5-P40-01
	2	Adaptor Screen	1.51	RC5-P40-02
	3	"O" Ring	0.02	RC5-P40-03
	4	Top Sub	5.96	RC5-P40-04
	5	Sample Tube Upper	1.33	RC5-P40-05
	6	Top Sub	9.81	RC5-P40-06
	7	Airscreen Bottom Load	0.27	RC5-P40-07
	8	"O" Ring	0.02	RC5-P40-08
	9	Circlip	0.03	RC5-P40-09
	10	Plunger	0.63	RC5-P40-10
	11	"Y" Ring	0.02	RC5-P40-11
	12	Spring	0.12	RC5-P40-12
	13	Make Up Ring Steel	0.09	RC5-P40-13
	14	Viton Make Up Ring	0.06	RC5-P40-14
	15	"O" Ring	0.02	RC5-P40-15
	16	Distributor	1.34	RC5-P40-16
	17	"O" Ring	0.02	RC5-P40-17
	18	Sample Tube Lower	4.32	RC5-P40-18
	19	"O" Ring	0.02	RC5-P40-19
	20	Mount Sample Tube	0.97	RC5-P40-20
	21	Inner Cylinder	7.69	RC5-P40-21
	22	Piston	13.63	RC5-P40-22
	23	Piston Case	24.14	RC5-P40-23
	24	Piston Retaining Ring	0.15	RC5-P40-24
	25	Bush Drive Sub	1.96	RC5-P40-25
	26	"O" Ring	0.02	RC5-P40-26
	27	"O" Ring	0.02	RC5-P40-27
	28	Bit Retaining Ring	0.31	RC5-P40-28
	29	"O" Ring	0.02	RC5-P40-29
	30	Shroud	2.20	RC5-P40-30
	31	Drive Sub	3.67	RC5-P40-31
	32	Drill Bit	15.09	RC5-P40-32


Technical Date

Length(Less bit)	Weight(Less bit)	External diameter	Bit Shank	Hole Range	Connection Thread
1362mm	80.5Kg	ø120.5mm	PR40	ø124-ø142	3.5"-4.5"Remet 3.5"-4.5"Metzke
Working Pressure	Impact rate at 2.4Mpa	Recommended rotation speed	Air Consumption		
			1.7Mpa	2.4Mpa	3.0Mpa
1.5-3.5Mpa	35HZ	25-40r/min	16m ³ /min	22m ³ /min	28m ³ /min


RE 531 Reverse circulation drill bit and shroud

	Diameter		No × Button diameter, mm		Button angle°	Flushing holes	Shroud Diameter	Weight (Kg)	Part No
	mm	inch	Gauge Buttons	Front Buttons					
	86	2 1/4	6×12	4×12	35	2	84	4.2	RE531-86
	89	2 1/2	8×12	5×12	35	2	87	4.3	RE531-89
	95	2 3/4	8×12	6×12	35	2	93	4.6	RE531-95
	102	3	8×12	6×12	35	2	100	4.9	RE531-102


RE 004 Reverse circulation drill bit and shroud

	Diameter		No × Button diameter, mm		Button angle°	Flushing holes	Shroud Diameter	Weight (Kg)	Part No
	mm	inch	Gauge Buttons	Front Buttons					
	114	4 1/2	8×14	6×14	35	2	112	11.5	RE004-114
	118	4 5/8	8×14	6×14	35	2	116	11.7	RE004-118
	121	4 3/4	8×14	6×14	35	2	119	12	RE004-121
	127	5	8×14	8×14	35	2	125	12.4	RE004-127


RE 542 Reverse circulation drill bit and shroud

	Diameter		No × Button diameter, mm		Button angle°	Flushing holes	Shroud Diameter	Weight (Kg)	Part No
	mm	inch	Gauge Buttons	Front Buttons					
	121	4 3/4	8×14	6×14	35	2	119	10.6	RE542-121
	124	4 7/8	8×14	8×13	35	2	122	10.8	RE542-124
	127	5	8×14	8×14	35	2	125	11.0	RE542-127
	130	5 1/8	8×14	10×14	35	2	128	11.3	RE542-130


RE 543 Reverse circulation drill bit and shroud

	Diameter		No × Button diameter, mm		Button angle°	Flushing holes	Shroud Diameter	Weight (Kg)	Part No
	mm	inch	Gauge Buttons	Front Buttons					
	124	4 7/8	8×14	8×13	35	2	122	10.8	RE543 124
127	5	8×14	8×14	35	2	125	11	RE543 127	
130	5 1/8	8×14	10×14	35	2	128	11.3	RE543 130	
133	5 1/4	8×16	10×14	35	2	131	11.8	RE543 133	

RE 545 Reverse circulation drill bit and shroud

	Diameter		No × Button diameter, mm		Button angle°	Flushing holes	Shroud Diameter	Weight (Kg)	Part No
	mm	inch	Gauge Buttons	Front Buttons					
	124	4 7/8	8×14	8×13	35	2	122	13.3	RE545 124
127	5	8×14	8×14	35	2	125	13.5	RE545 127	
133	5 1/4	8×16	10×14	35	2	131	13.8	RE545 133	
136	5 3/8	8×16	6×16+3×14	35	2	134	14.2	RE545 136	

PR 40 Reverse circulation drill bit and shroud

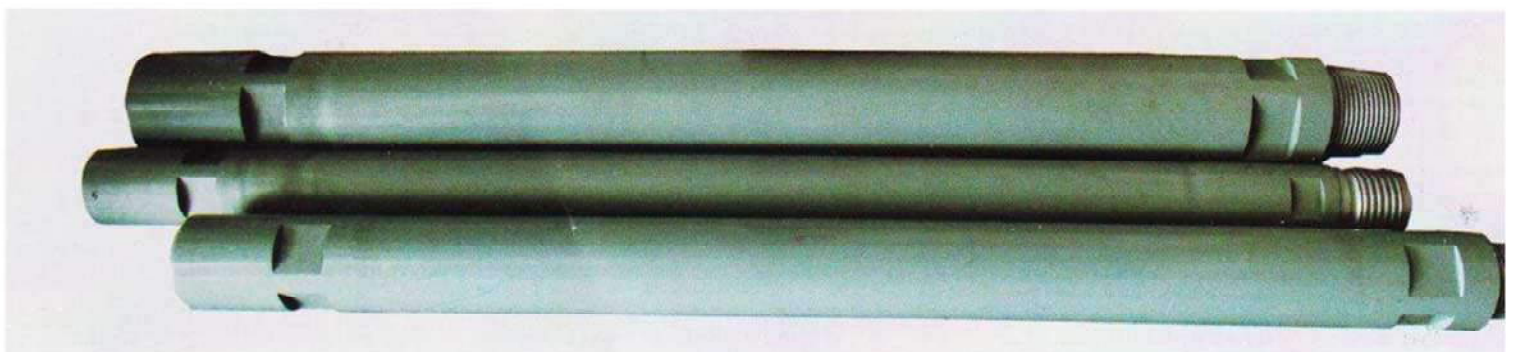
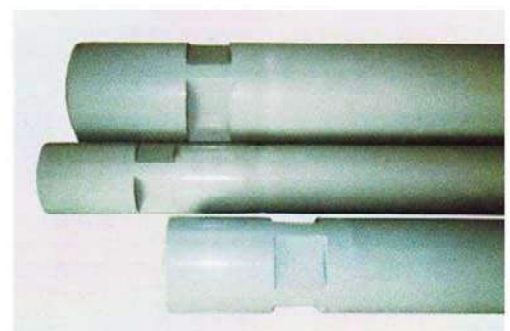
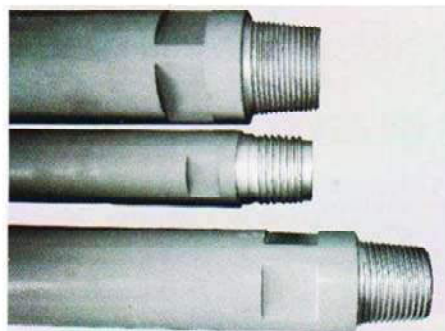
	Diameter		No × Button diameter, mm		Button angle°	Flushing holes	Shroud Diameter	Weight (Kg)	Part No
	mm	inch	Gauge Buttons	Front Buttons					
	124	4 7/8	8×14	8×13	35	2	122	14.3	PR40 124
127	5	8×14	8×14	35	2	125	14.7	PR40 127	
133	5 1/4	8×16	10×14	35	2	131	15.2	PR40 133	
138	5 4/9	8×16	6×16+3×14	35	2	136	15.8	PR40 138	

Reverse circulation pipes(dual wall drilling)

High pressure air transported into somewhere of the well along with air pip, via mixer to inject the high-pressure air into the pipe with liquid, due to the density of mixed liquor lower than the flushing liquor therefore a differential pressure occurred between pipe and sample tube that to make the mixed air and liquid follow up fleetly by the fluid column pressure and take the rock debris or power out to the ground from bottom of the hole continuously. By this drilling method will provide with advantages like high penetration rate, quality pore-forming and fewer hole collapse during drilling in loose formation.

This series reverse circulation pipes can increase penetration in lost-circulation formation, reduce drilling fluid consumption, protect reservoir stratum and save the cost of other consumption tools. In addition, the pipes can be worked in two direction circulation drilling ways to control the well drilling. By reverse circulation method to kill the well the heavy mud can be transferred directly to the bottom of the well, no periodic circulation and save time.

Type	external dia. of outer pipe (mm)	Inner dia. of inner pipe (mm)	thread of pipe	Length (mm)	sealing	Depth (m)	Marks
MD80/48	80×8	48×5	buttrass thread	1500-6000	dual o ring radial	300-800	
MD89/38	89×8.56	38×4	3"Remet/Metzke	1500-6000	dual o ring radial	300-800	
MD102/46	102×8.56	46×5	3"Remet/Metzke	1500-6000	dual o ring radial	300-1000	outer pipe R780 or DZ50(optional) inner pipe
MD108/46	108×8.56	46×5	3 1/2"Remet/Metzke	1500-6000	dual o ring radial	300-1200	
MD114/50	114×8.56	50×5.5	4"Remet/Metzke	1500-6000	dual o ring radial	300-1200	
MD120/60	127×8.56	60×7	4"Remet/Metzke	1500-6000	dual o ring radial	Less5000	
MD146/73	146×10	75	4 1/2"Remet/Metzke	1500-6000	dual o ring radial	Less5000	



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