

Selecting the right hammer

The optimum range of hole size for blast hole drilling with DTH is 90 mm to 254 mm (3 ½"–10"). Smaller blast holes are generally drilled using top hammer, and larger holes generally use rotary machines.

As a rule of thumb, the smallest hole diameter a DTH hammer can drill is its nominal size. A 4 inch hammer will drill a 4 inch (102 mm) hole. The limiting factor is the outside diameter of the hammer, because, as hole diameter reduces, airflow is restricted. Maximum hole size for production drilling is the nominal hammer size plus 1 inch, so for a 4 inch hammer the maximum hole size is 5 inch (127–130 mm).

Choosing the right hammer is largely determined by hole size and type of rock formation. Ideally, the size of the hammer should match the required hole dimension as closely as possible, leaving just enough space for cuttings to evacuate the hole.

Epiroc hammers are purpose-matched for all rock types and applications. Where high performance is the main criterion, Epiroc COP Gold hammers or the new COP M hammer are recommended

in blast hole drilling and Epiroc QLX hammers in deep hole drilling applications. The QLX hammer has proven superior performance and adaptability to different air requirements thanks to the Air Select System.

Where proven technology is required, the Epiroc COP and QL hammers are known for their reliability and longevity. They are practically bullet proof, making them useful for production drilling in quarries, shallow water well drilling, and underground blasthole drilling.

QM is similar to Standard, but with heavy duty chuck and wear sleeve, and a top sub fitted with tungsten carbide buttons for wear protection in harsh and abrasive conditions. These also protect the top sub from excessive wear when rotating out of the hole through broken rock.



Guide to hammer features

Other hammer executions

			Thread connections available		
STD	Standard	Standard hammer	HC	Hydro Cyclone	Reduces 90% of injected media (water etc.)
QM	Quarry Mining	Designed for mining, back reaming buttons and thick casing	"Slim"	Reduced OD	Reduced OD to allow smaller bit diameter
DH	Deep Hole	Designed for deep hole drilling	S	Super	Oversized chuck
BO	Break out washers	Equipped with breakout washers in both ends	HF	High Flow	Designed for higher volume of air flow
			FH	Frequency High	For softer rock, reduced impact

QL - series

Description	Prod no.	Prod code	Thread connection	Outside diam		Recom hole size		Shank style	Working pressure		Length w/o bit		Weight w/o bit		
				mm	Inch	mm	Inch		bar	psi	mm	Inch	kgs	lbs	
4"															
QL 340 STD	92050412	9704-QL-00-10P-34-000	API 2 3/8 Reg Pin	100	3 15/16	110 - 130	45/16-51/8	DHD 340	6 - 25	87-363	994	39 1/8	49	108	
5"															
QL 50.2 STD	89012283	9705-QL-00-14P-25-000	API 3 1/2 Reg Pin	117	4 5/8	130 - 152	5 1/8 - 6	QL 50	6 - 24	87-350	1067	42	60	132	
QL 50.2 HF	89012280	9705-QL-HF-14P-25-000	API 3 1/2 Reg Pin	117	4 5/8	130 - 152	5 1/8 - 6	QL 50	6 - 24	87-350	1067	42	60	132	
QL 55.2 QM	89012281	9705-QL-00-14P-25-HB0	API 3 1/2 Reg Pin	124	4 7/8	134 - 152	5 1/4 - 6	QL 50	6 - 24	87-350	1067	42	74	163	
6"															
QL 60 STD	52324258	9706-QL-00-14P-26-000	API 3 1/2 Reg Pin	138	5 7/16	152 - 191	523	QL 60	6 - 24	87-350	1132	44 9/16	91	201	
QL 60 HF	52310604	9706-QL-HF-14P-26-000	API 3 1/2 Reg Pin	138	5 7/16	152 - 191	6 - 7 1/2	QL 60	6 - 24	87-350	1132	44 9/16	91	201	
QL 65 QM	52324266	9706-QL-00-14P-26-HB0	API 3 1/2 Reg Pin	146	5 3/4	165 - 191	6 1/2 - 7 1/2	QL 60	6 - 24	87-350	1132	44 9/16	111	245	
QL65 QM	52315215	9706-QL-00-B1P-26-HB0	BECO 3 1/2 Pin	146	5 3/4	165 -191	6 1/2 - 7 1/2	QL60	6 - 24	87-350	1132	44 9/16	111	245	
8"															
QL 80 STD	52083623	9708-QL-00-17P-29-000	API 4 1/2 Reg Pin	181	7 1/8	200 - 305	7 7/8 - 12	QL 80	6 - 24	87-350	1461	57 1/2	203	446	
QL 80 STD	52083631	9708-QL-00-B3P-29-000	BECO 4 1/2 Pin	181	7 1/8	200 - 305	7 7/8 - 12	QL 80	6 - 24	87-350	1461	57 1/2	203	446	
QL 80 HF	52313426	9708-QL-HF-17P-29-000	API 4 1/2 Reg Pin	181	7 1/8	200 - 305	7 7/8 - 12	QL 80	6 - 24	87-350	1461	57 1/2	203	446	
QL 80 STD	52083649	9708-QL-00-B2P-29-000	BECO 4 Pin	181	7 1/8	200-305	7 7/8 - 12	QL80	6 -24	87-350	1461	57 1/2	203	446	
QL 80 STD	52353588	9708-QL-00-17P-29-0FO	API 4 1/2 Reg Pin	181	7 1/8	200-305	7 7/8 - 12	QL80	6-24	87-350	1461	57 1/2	203	446	
QL 85 QM	89010016	9708-QL-00-17P-29-HFO	API 4 1/2 Reg Pin	194	7 5/8	216 - 305	8 1/2 - 12	QL 80	6 - 24	87-350	1461	57 1/2	250	551	
QL 85 QM	89010244	9708-QL-00-B3P-29-HFO	BECO 4 1/2 Pin	194	7 5/8	216 - 305	8 1/2 - 12	QL 80	6 - 24	87-350	1461	57 1/2	250	551	
QL 85 QM 1400 cfm	89010444	9708-QL-HP-17P-29-HDW	API 4 1/2 Reg Pin	194	7 5/8	216 - 305	8 1/2 - 12	QL 80	6 - 24	87-350	1461	57 1/2	250	551	
QL 85 QM 1400 cfm	89010425	9708-QL-HP-B3P-29-HDW	BECO 4 1/2 Pin	194	7 5/8	216 - 305	8 1/2 - 12	QL 80	6 - 24	87-350	1461	57 1/2	250	551	
QL 85 QM	89010346	9708-QL-00-B0P-29-HD0	BECO 5 1/4 Pin	194	7 5/8	216-305	8 1/2 - 12	QL80	6 - 24	87-350	1461	57 1/2	250	551	

QLX & TD - series

Description	Prod no.	Prod code	Thread connection	Outside diam		Recom hole size		Shank style	Working pressure		Length w/o bit		Weight w/o bit		
				mm	Inch	mm	Inch		bar	psi	mm	Inch	kgs	lbs	
3,5"															
QLX 35	89001572	9703-QX-00-10P-35-000	API 2 3/8 Reg Pin	79	3 1/8	90 - 105	39/16 - 41/8	DHD 3.5	6 - 30	87-432	799	31 7/16	30	66	
4"															
QLX 40	89010117	9704-QX-00-10P-64-000	API 2 3/8 Reg Pin	101.6	4	115 - 130	41/2 - 51/8	TD 40	6 - 35	87-508	897	35 5/16	46	100	
5"															
QLX 50	89010092	9705-QX-00-14P-25-000	API 3 1/2 Reg Pin	121.9	4 13/16	134 - 152	5 1/4 - 6	QL 50	6 - 35	87-508	1061	41 3/4	69.5	153	
QLX 55 QM	89010093	9705-QX-00-14P-25-HB0	API 3 1/2 Reg Pin	129	5 1/16	140 - 152	5 1/2 - 6	QL 50	6 - 35	87-508	1061	41 3/4	80.9	178	
6"															
QLX 60	52352465	9706-QX-00-14P-26-000	API 3 1/2 Reg Pin	142	5 9/16	152 - 191	6 - 7 1/2	QL 60	6 - 35	87-508	1091	42 15/16	93.2	205	
QLX 65 QM	52352473	9706-QX-00-14P-26-HB0	API 3 1/2 Reg Pin	149	5 7/8	165 - 191	6 1/2 - 7 1/2	QL 60	6 - 35	87-508	1091	42 15/16	104.8	235	
8"															
TD 80	52328127	9708-QT-00-17P-29-000	API 4 1/2 Reg Pin	181	7 1/8	200 - 305	7 7/8 - 12	QL 80	6 - 24	87-350	1466	57 11/16	216	476	
TD 90	52329414	9709-QT-00-17P-63-000	API 4 1/2 Reg Pin	197	7 3/4	222 - 305	8 3/4 - 12	TD 90	6 - 24	87-350	1410	55 1/2	239	527	

COP Std, COP Gold , COP M - series, COP W4 2.0

Description	Prod no.	Prod code	Thread connection	Outside diam		Recom hole size		Shank style	Working pressure		Length w/o bit		Weight w/o bit		
				mm	Inch	mm	Inch		bar	psi	mm	Inch	kgs	lbs	
2"															
COP 20	93501344	9702-CO-DS-40B-44-000	RD 50-6 Box	62	2 7/16	70 - 96	2 3/4 - 3 3/4	BR 2	6 - 12	87-175	810	31 7/8	135.5	29.8	
3.5"															
COP 35	52334307	9703-DH-00-10P-35-000	API 2 3/8 Reg Pin	79	3 1/8	88 - 105	3 7/16 - 4 1/8	DHD 3.5	6 - 25	87-363	902	35 1/2	30	65	
COP 35 Slim	92060241	9703-DH-00-10P-35-S00	API 2 3/8 Reg Pin	75.6	3	85 - 105	3 7/16 - 4 1/8	DHD 3.5	6 - 25	87-363	902	35 1/2	19.8	43.6	
4"															
COP 44 STD	89000482	9704-CO-00-10P-34-000	API 2 3/8 Reg Pin	98	3 7/8	110 - 125	4 5/16 - 4 15/16	DHD 340	6 - 25	87-363	1034	40 11/16	38.0	84.0	
COP 44 Gold	89001469	9704-CG-00-10P-64-000	API 2 3/8 Reg Pin	100	3 15/16	110 - 130	4 5/16 - 5 1/8	TD 40	6 - 35	87-508	1037.5	40 7/8	40.5	89.3	
COP 44 Gold	89001573	9704-CG-00-12P-64-000	API 2 7/8 Reg Pin	100	3 15/16	110 - 130	4 5/16 - 5 1/8	TD 40	6 - 35	87-508	1037.5	40 7/8	40.5	89.3	
COP 44 Gold	89001471	9704-CG-00-48P-64-000	CUBEX #24 Pin	100	3 15/16	110 - 130	4 5/16 - 5 1/8	TD 40	6 - 35	87-508	1037.5	40 7/8	40.5	89.3	
COP W4 2.0	5697000549	9704-WW-FE-10P-64-000	API 2 3/8 Reg Pin	101.6	4	110 - 130	4 5/16 - 5 1/8	TD 40	6 - 35	87-508	960.3	37 4/5	37.8	83.3	
COP W4 2.0	5697000550	9704-WW-LE-10P-64-000	API 2 3/8 Reg Pin	101.6	4	110 - 130	4 5/16 - 5 1/8	TD 40	6 - 35	87-508	960.3	37 4/5	37.8	83.3	
COP W4 2.0	5697001127	9704-WW-FE-12P-64-000	API 2 7/8 Reg Pin	101.6	4	110 - 130	4 5/16 - 5 1/8	TD 40	6 - 35	87-508	960.3	37 4/5	37.8	83.3	
5"															
COP 54 STD	89000477	9705-CO-00-10P-37-000	API 2 3/8 Reg Pin	120	4 3/4	134 - 152	5 1/4-6	DHD 350	6 - 25	87-363	1145	45 1/16	57	126	
COP 54 STD	89001228	9705-CO-00-12P-37-000	API 2 7/8 Reg Pin	120	4 3/4	134 - 152	5 1/4-6	DHD 350	6 - 25	87-363	1145	45 1/16	57	126	
COP 54 STD	89000481	9705-CO-00-14P-37-000	API 3 1/2 Reg Pin	120	4 3/4	134 - 152	5 1/4-6	DHD 350	6 - 25	87-363	1145	45 1/16	57	126	
COP 54 QM	89000565	9705-CO-00-14P-37-HB0	API 3 1/2 Reg Pin	126	4 15/16	134 - 152	5 1/4-6	DHD 350	6 - 25	87-363	1145	45 1/16	67	148	
COP 54 Gold "Slim"	89001354	9705-CG-00-14P-25-S00	API 3 1/2 Reg Pin	115	4 1/2	127 - 152	5-6	QL 50	6 - 30	87-435	1194	47	57	126	
COP 54 Gold	89001333	9705-CG-00-12P-25-000	API 2 7/8 Reg Pin	120	4 3/4	134 - 152	5 1/4-6	QL 50	6 - 30	87-435	1194	47	66	146	
COP 54 Gold	89001243	9705-CG-00-14P-25-000	API 3 1/2 Reg Pin	120	4 3/4	134 - 152	5 1/4-6	QL 50	6 - 30	87-435	1194	47	66	146	
COP 54 Gold HD	89001271	9705-CG-00-12P-25-H00	API 2 7/8 Reg Pin	126	4 15/16	140 - 152	5 1/2-6	QL 50	6 - 30	87-435	1194	47	76	168	
COP 54 Gold QM	89001405	9705-CG-00-12P-25-HB0	API 2 7/8 Reg Pin	126	4 15/16	140 - 152	5 1/2-6	QL 50	6 - 30	87-435	1194	47	76	168	
COP 54 Gold QM	89001255	9705-CG-00-14P-25-HB0	API 3 1/2 Reg Pin	126	4 15/16	140 - 152	5 1/2-6	QL 50	6 - 30	87-435	1194	47	76	168	
6"															
COP 64 STD	89000486	9706-CO-00-14P-59-000	API 3 1/2 Reg Pin	142	5 9/16	156 - 178	6 1/8-7	DHD 360	6 - 25	87-363	1308	51 1/2	95	209	
COP 64 STD QM	89000498	9706-CO-00-14P-59-HB0	API 3 1/2 Reg Pin	146	5 3/4	165 - 178	6 1/2-7	DHD 360	6 - 25	87-363	1308	51 1/2	109	240	
COP 64 Gold	89000959	9706-CG-00-14P-26-000	API 3 1/2 Reg Pin	142	5 9/16	156 - 178	6 1/8-7	QL 60	6 - 30	87-435	1258	49 1/2	96	212	
COP 64 Gold QM	89000960	9706-CG-00-14P-26-HB0	API 3 1/2 Reg Pin	146	5 3/4	165 - 178	6 1/2-7	QL 60	6 - 30	87-435	1258	49 1/2	109	240	
COP M6 HF	89012344	9706-CM-HF-14P-01-HB0	API 3 1/2 in Reg Pin	146	5 4/5	165 - 178	6 1/2-7	COP M6	6 - 30	87-435	896	35 1/4	75.5	166	
COP M6 HF	89012346	9706-CM-HF-15P-01-HB0	API 3 1/2 in IF Pin	146	5 4/5	165 - 178	6 1/2-7	COP M6	6 - 30	87-435	896	35 1/4	78	172	
COP M6 HF	89012349	9706-CM-HF-50P-01-HB0	CUBEX #28 Pin	146	5 4/5	165 - 178	6 1/2-7	COP M6	6 - 30	87-435	896	35 1/4	78.5	173	
COP M6 HF	89012351	9706-CM-HF-B1P-01-HB0	BECO 3 1/2 in Pin	146	5 4/5	165 - 178	6 1/2-7	COP M6	6 - 30	87-435	896	35 1/4	76.8	169	
COP M6 LF	89012343	9706-CM-LF-14P-01-HB0	API 3 1/2 in Reg Pin	146	5 4/5	165 - 178	6 1/2-7	COP M6	6 - 30	87-435	896	35 1/4	75.5	166	
COP M6 LF	89012345	9706-CM-LF-15P-01-HB0	API 3 1/2 in IF Pin	146	5 4/5	165 - 178	6 1/2-7	COP M6	6 - 30	87-435	896	35 1/4	78	172	
COP M6 LF	89012348	9706-CM-LF-50P-01-HB0	CUBEX #28 Pin	146	5 4/5	165 - 178	6 1/2-7	COP M6	6 - 30	87-435	896	35 1/4	78.5	173	
COP M6 LF	89012350	9706-CM-LF-B1P-01-HB0	BECO 3 1/2 in Pin	146	5 4/5	165 - 178	6 1/2-7	COP M6	6 - 30	87-435	896	35 1/4	76.8	169	
7"															
COP M7 HF	89012640	9707-CM-HF-B2P-03-HB0	BECO 4 in PIN	175	6 8/9	191 - 229	7 1/2-9	COP M7	14 - 30	203-435	1217.3	47 8/9	177	259	
COP M7HF	89012558	9707-CM-HF-17P-03-HB0	API 4 1/2 in REGPIN	175	6 8/9	191 - 229	7 1/2-9	COP M7	14 - 30	203-435	1217.3	47 8/9	177	259	
COP M7 HF	5697000006	9707-CM-HF-17P-03-HB2	API 4 1/2 in REGPIN	175	6 8/9	191 - 229	7 1/2-9	COP M7	14 - 30	203-435	1217.3	47 8/9	177.3	258.6	
COP M7 HF	89012559	9707-CM-HF-B3P-03-HB0	BECO 4 1/2 in PIN	175	6 8/9	191 - 229	7 1/2-9	COP M7	14 - 30	203-435	1217.3	47 8/9	177	259	
COP M7 HF	5697001338	9707-CM-HF-B3P-03-HB2	BECO 4 1/2 in PIN	175	6.89	191 - 229	7 1/2-9	COP M7	14 - 30	203-435	1217.3	47 8/9	177.3	258.6	
COP M7 LF	89012641	9707-CM-LF-B2P-03-HB0	BECO 4 in PIN	175	6 8/9	191 - 229	7 1/2-9	COP M7	14 - 30	203-435	1217.3	47 8/9	177	259	
COP M7 LF	89012625	9707-CM-LF-17P-03-HB0	API 4 1/2 in REGPIN	175	6 8/9	191 - 229	7 1/2-9	COP M7	14 - 30	203-435	1217.3	47 8/9	177	259	
COP M7 LF	89012643	9707-CM-LF-B3P-03-HB0	BECO 4 1/2 in PIN	175	6 8/9	191 - 229	7 1/2-9	COP M7	14 - 30	203-435	1217.3	47 8/9	177	259	
8"															
COP M8 HF	89012174	9708-CM-HF-B2P-02-HB0	BECO 4 in PIN	194	7 16/25	216 - 254	8 1/2-10	COP M8	14 - 30	203-435	1137.9	47 4/5	201	435	
COP M8 HF	89012175	9708-CM-HF-17P-02-HB0	API 4 1/2 in REGPIN	194	7 16/25	216 - 254	8 1/2-10	COP M8	14 - 30	203-435	1137.9	47 4/5	201	435	
COP M8 HF	89012176	9708-CM-HF-B3P-02-HB0	BECO 4 1/2 in PIN	194	7 16/25	216 - 254	8 1/2-10	COP M8	14 - 30	203-435	1137.9	47 4/5	201	435	
COP M8 HF	89012242	9708-CM-HF-B5P-02-HB0	BECO 5 1/4 in PIN	194	7 16/25	216 - 254	8 1/2-10	COP M8	14 - 30	203-435	1137.9	47 4/5	201	435	
COP M8 LF	89012710	9708-CM-LF-B2P-02-HB0	BECO 4 in PIN	194	7 16/25	216 - 254	8 1/2-10	COP M8	14 - 30	203-435	1137.9	47 4/5	201	435	
COP M8 LF	89012292	9708-CM-LF-17P-02-HB0	API 4 1/2 in REGPIN	194	7 16/25	216 - 254	8 1/2-10	COP M8	14 - 30	203-435	1137.9	47 4/5	201	435	
COP M8 LF	89012711	9708-CM-LF-B3P-02-HB0	BECO 4 1/2 in PIN	194	7 16/25	216 - 254	8 1/2-10	COP M8	14 - 30	203-435	1137.9	47 4/5	201	435	



Economy kits

In hard and abrasive drilling condition the external parts of DTH hammer is wearing out before the internal parts reaches their fatigue limits.

In these conditions the E-kit can serve as a tool to reduce the total drilling cost. With the E-kit the hammer can be rebuilt and the internal part re-used for another run. The cost saving can be substantial as the cost for an E-kit is only 50% of

a new hammer. An E-kit contains all the needed parts for a rebuild and will ease the logistic constrains as all needed parts can be ordered under one product number.

