

HAMMER & BIT MODELS

Small Conventional



The World's **Leading**
Drilling Technology



Down The Hole Hammers and Bits

Numa is the world's leading drilling technology provider, dedicated to ongoing product innovation and results-oriented consistency. We've built a strong legacy of high quality, U.S. made DTH hammers and bits for drilling holes 3½ -50½ inches (89 -1283 mm) in diameter.



**Global Drilling
Industries**



**Patents
Pending**



**Hammer &
Bit Models**



**Millions of
Feet Drilled**

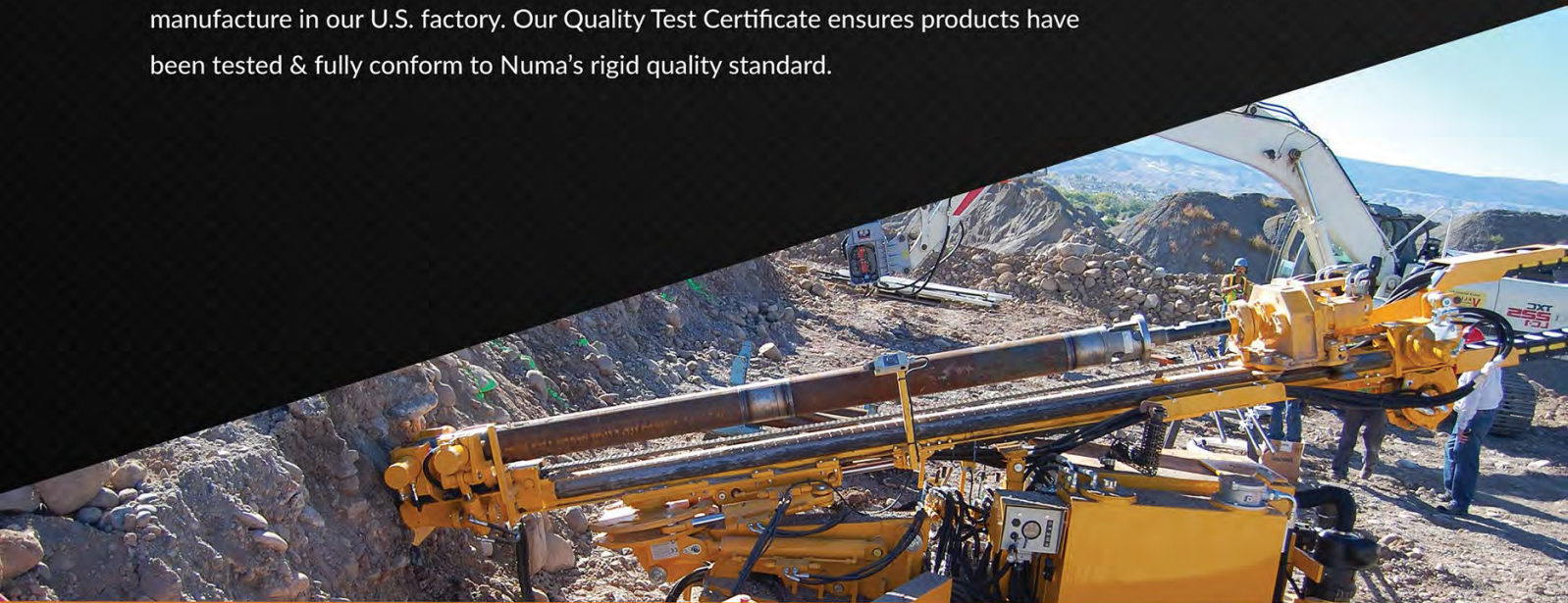
CUSTOMER FOCUSED, INNOVATIVE & RELIABLE

Numa provides our customers with the highest value in quality DTH products, performance, and service available in the drilling industry.

Unparalleled Customer Support by our highly-trained technicians who provide expert, factory-direct technical and product support when and where it is needed most.

Unrivalled Innovation and Configuration options designed to optimize products for drilling in the toughest rock formations in the world. Because all manufacturing is done in-house, we are nimble and can adapt to your unique project needs.

Unmatched Quality and Consistency in each and every product we design and manufacture in our U.S. factory. Our Quality Test Certificate ensures products have been tested & fully conform to Numa's rigid quality standard.



1000+



Years of
Combined DTH
Experience

105+



Countries
Served

30+



Years of
Unparalleled
Customer Service

2



Of the
Deepest Holes
Ever Drilled



SMALL HAMMERS AND BITS

Drills holes from 3 ½" to 10" (89 - 254 mm)

- Twelve hammer models designed for unique applications
- Hundreds of bit configurations for diverse drilling conditions
- Built for longevity and fast penetration rate
- Drill at high frequency and requires minimal air
- Exceptional performance against high heads of water
- Easy maintenance due to only 8 major hammer parts

DTH PRODUCTS BUILT FOR YOUR NEEDS

Numa provides unparalleled customer support before, during and after your drilling project. Our years of experience working directly with customers on job sites means we consider your needs for every product we design. Some of the many benefits Numa customers enjoy from our Small Hammer & Bit models include:



- Mining & Quarry: Reliable performance in various formations and conditions
- Water Well: Consistent and fast drilling, day in and day out
- Oil & Gas: Tough, dependable, proven deep hole drilling
- Construction: Configurable designs for specific needs
- Geothermal: Fast penetration rates in deep, hot drilling applications
- Horizontal: Efficient hard rock borehole drilling
- And many more...

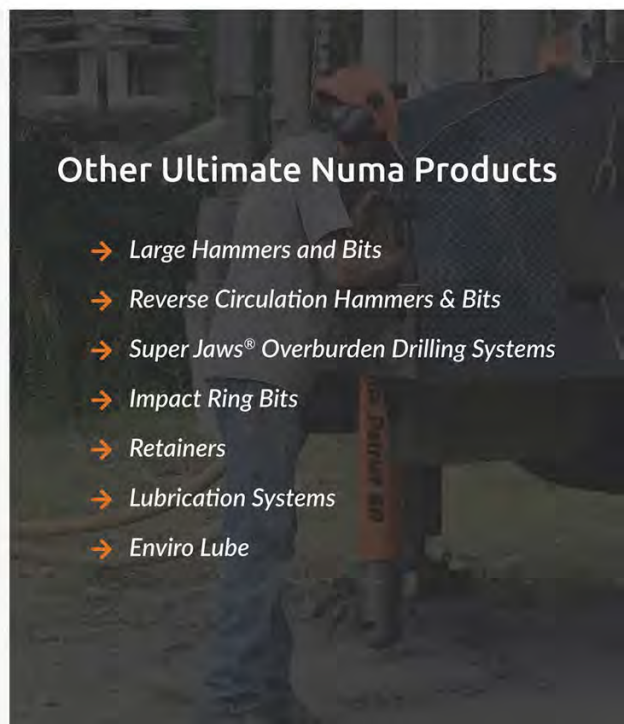
The Ultimate Rock Drilling Technology

Join the growing list of Numa customers experiencing the highest value in products, performance, and service in the drilling industry.

- Designs based upon 30+ years of experience with drillers
- Made in the USA quality and dependability
- Onsite and remote technical and product support
- Configurable DTH designs for every drilling need
- Dedicated, in-house engineering team
- Fully tested products that come with Numa's Quality Test Certificate

Other Ultimate Numa Products

- Large Hammers and Bits
- Reverse Circulation Hammers & Bits
- Super Jaws® Overburden Drilling Systems
- Impact Ring Bits
- Retainers
- Lubrication Systems
- Enviro Lube



Hammer & Bit Specification Charts

DTH HAMMERS Small Conventional Hammer Models

Hammer	Bit Shank	Hole Sizes		Diameter		Bore		Stroke		Weight		Length Shoulder to Shoulder		Length Shoulder to Bit Face		Thread Connection	Min Oil Required	Blows/Min	
		inch	mm	inch	mm	inch	mm	inch	mm	lbs	kg	inch	mm	inch	mm		Quart/Hour	psi	bar
Patriot 35A	3.5	3 1/2 to 4 1/8	89 to 105	3 1/8	79	2.5	63.5	3.1	79.4	44	20	28.6	727.1	31.1	790.6	2 3/8 API Reg Pin	1	1750 @ 350	1750 @ 23.8
Patriot 40	340A	4 1/4 to 5 1/4	108 to 133	3 3/4	95	3.1	77.5	4.0	101.6	78	35	36.1	917.6	39.4	1000.1	2 3/8 API Reg Pin	1	1960 @ 350	1960 @ 23.8
Patriot 40HD	340A	4 1/4 to 5 1/4	108 to 133	3 7/8	98	3.1	77.5	4.0	101.6	89	40	36.1	917.6	39.4	1000.1	2 3/8 API Reg Pin	1	1960 @ 350	1960 @ 23.8
DCS5	QL50	5 1/2 to 6 1/8	140 to 156	4 7/8	124	4.0	101.6	3.0	76.2	138	63	36.4	925.5	40.1	1019.2	3 1/2 API Reg Pin	2	2050 @ 350	2050 @ 23.8
DCS5HD	QL50	5 3/4 to 6 1/4	146 to 159	5	127	4.0	101.6	3.0	76.2	165	75	36.4	925.5	40.1	1019.2	3 1/2 API Reg Pin	2	2050 @ 350	2050 @ 23.8
Patriot 50	QL50	5 1/2 to 6 1/8	140 to 156	4 7/8	124	4.0	101.6	3.5	88.9	140	64	36.4	925.5	40.1	1019.2	3 1/2 API Reg Pin	2	1950 @ 350	1950 @ 23.8
Patriot 60	QL60	6 to 8 3/4	152 to 222	5 1/2	140	4.5	114.3	4.0	101.6	184	84	38.8	985.5	43.2	1097.3	3 1/2 API Reg Pin	2	1950 @ 350	1950 @ 23.8
Patriot 60HD	QL60	6 1/4 to 8 3/4	159 to 222	5 3/4	146	4.5	114.3	4.0	101.6	196	89	38.8	985.5	43.2	1097.3	3 1/2 API Reg Pin	2	1950 @ 350	1950 @ 23.8
Patriot 60W	360	6 to 8 3/4	152 to 222	5 1/2	140	4.5	114.3	4.0	101.6	204	93	43.2	1097.0	44.8	1138.2	3 1/2 API Reg Pin	2	1800 @ 350	1800 @ 23.8
Patriot 80	380	7 7/8 to 10	200 to 254	7 1/8	181	6.0	152.4	3.8	95.3	364	165	45.1	1146.2	49.9	1266.8	4 1/2 API Reg Pin	3	1850 @ 350	1850 @ 23.8
Patriot 85	380	7 7/8 to 10	200 to 254	7 1/8	181	6.0	152.4	3.8	95.3	419	190	52	1320.8	57.3	1455.4	4 1/2 API Reg Pin	3	1850 @ 350	1850 @ 23.8
Patriot 85Q	QL80	7 7/8 to 10	200 to 254	7 1/8	181	6.0	152.4	3.8	95.3	406	185	51.2	1300.5	56.0	1422.5	4 1/2 API Reg Pin	3	1850 @ 350	1850 @ 23.8

DRILL BITS Conventional Models

S= Standard O= Optional

Size Class	Bit Shank	Diameter Hole		Weight		Air Slots	Face			Gauge Buttons	Carbide Size					Diamond	Wear Protection	Retained
		inch	mm	lbs	kgs		CC	CV	F		7/16"	9/16"	5/8"	3/4"	7/8"			
3" Class	3.5	3 1/2 to 4 1/8	89 to 105	14 to 15	6 to 7	2		S	S	8	S							
4" Class	340A	4 1/4 to 5 1/4	108 to 133	18 to 22	8 to 10	2 or 3	S	S	S	8		S	O			O	O	
	TD40	4 1/4 to 5 1/4	108 to 133	21 to 24	10 to 11	2 or 3	S	S	S	8		S	O			O	O	
5" Class	QL50	5 1/2 to 6 1/8	140 to 156	33 to 36	15 to 16	2 or 3	S	S	S	8 or 10			S	O		O	O	O
6" Class	360	6 to 6 3/4	152 to 171	52 to 55	24 to 25	2	S	S	S	8, 9 or 10			S	O		O	O	O
	360	7 to 8 3/4	178 to 222	63 to 76	29 to 34	3	S		S	9			S	O		O	O	
	QL60	6 to 6 3/4	152 to 171	52 to 55	24 to 25	2 or 3	S	S	S	8, 9 or 10			S	O		O	O	O
	QL60	7 to 8 3/4	178 to 222	63 to 76	29 to 34	3	S		S	9			S	O		O	O	
8" Class	380	7 7/8 to 10	200 to 254	106 to 125	48 to 57	3	S			12				S	O	O	O	O
	QL80	7 7/8 to 10	200 to 254	107 to 127	49 to 58	3	S			12				S	O	O	O	O



FLAT

Provides good performance in medium to hard formations. The strongest face design producing durable, long lasting drilling.



CONCAVE

Provides consistent drilling in all formations. The cone shaped depression in the face has piloting effect to drill straighter holes.



CONVEX

Provides fast penetration rates in hard and abrasive formations. Face design allows for increased body support for gauge carbide.



SPHERICAL

Provides best overall performance in granite hard rock and granite formations. Known as the strongest carbide for deep hole drilling.



BALLISTIC

Provides fastest penetration rates in soft/medium, less abrasive formations. Produces larger spoils/cuttings.



DOUBLE DOME

Provides best performance in limestone and sandstone formations. Much stronger than ballistic and still performs when not sharpened.

Application IN THE FIELD



Natural Gas Exploration to Great Depths

Geological studies showed one of the world's leading natural gas producers that there were promising natural gas deposits in West Texas. The problem was that the natural gas was extremely deep – an estimated 17,600 feet (5364 m) below the surface. Due to this depth, the drilling contractor required a hammer that could provide continuous drilling without the incident of drill or bit failure and a costly restart. Inherent in the design of all Numa hammers is the ability to efficiently handle increased volume and back pressures.

Supplied with 4800 cfm (2266 l/sec) and drilling over 3 miles (5 km) below the surface, the Numa hammers were able to keep drilling where other hammers would have quit. The Numa DTH product line proved it has the muscle and longevity for even the most demanding drilling conditions.

Fast and Reliable Blast Hole Drilling

A top blast hole drilling company in Pennsylvania has seen all kinds of DTH equipment throughout the years. This experience allows them to quickly evaluate products to determine which ones will stand up to their demanding drilling environment. They found Numa's hammer to be fast and reliable. With its long lasting, easy to use characteristics, it has continued to help them to drill more footage, more consistently. With over 100 years of experience, take it from this top drilling company and use Numa hammers.

"Numa's hammer ran as well as advertised. It was fast, but what it really excelled at was how well it stood up against the hard elements we drill in every day. It is a work horse. Another big benefit was how easy the hammer tears down for maintenance and rebuild. Numa's hammer definitely saves us time and money."





The World's **Leading**
Drilling Technology

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MADE IN THE USA