HAMMER & BIT MODELS
Large Conventional

MANUFACTURER OF DOWN HOLE HAMMERS AND BITS

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.

11 Global Drilling Industries

14+ Patents Pending

110+ 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.

Unrivaled 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

LARGE HAMMERS AND BITS

Drills holes from 9⅞" to 50½" (251 - 1283 mm)

- *Ten hammer models designed for unique applications*
- *Built for longevity and fast penetration rate*
- *Several high frequency/minimal air models available*
- *Exceptional performance against high heads of water*
- *Easy maintenance due to only 8 major hammer parts*
- *Exceptional bit strength & transfer of torque*
- *Increased spline life through durable plate drive system*

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 Large Hammer & Bit models include:

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

The Ultimate Rock Drilling Technology

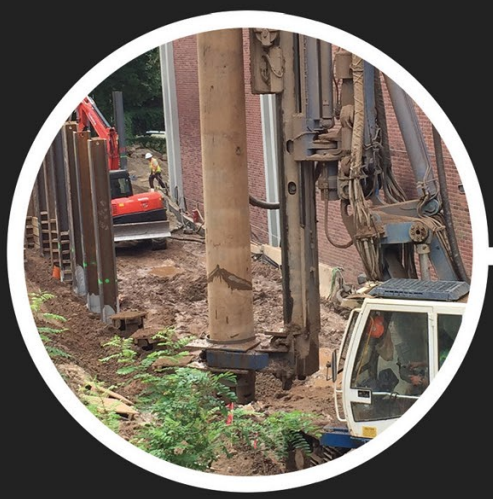
Join the growing list of Numa customers experiencing the highest value in products, performance, and service in the drilling industry.

- *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

- *Small Hammers and Bits*
- *Reverse Circulation Hammers & Bits*
- *HDD Hammers, Bits & Accessories*
- *Super Jaws® Overburden Drilling Systems*
- *Impact Ring Bits*
- *Retainers*
- *Lubrication Systems*
- *Enviro Lube*

Application
IN THE FIELD



Great Performance in a Difficult Environment

A leading construction drilling company was required to install 24″ OD x 23″ ID casing to replace a retaining wall that had collapsed. The job site presented many challenges with sloping and unstable conditions along with varied ground formations consisting of gravel, boulders, backfill, and rock pads. Numa's Patriot® 180 hammer and T580ND Super Jaws® Overburden Bits were used to flawlessly drill 59 holes to a depth of 20 feet (6 m) and another 38 holes to 30 feet (9 m). Instead of using a multi-step process of drilling, tripping out of the hole, and then casing, the Super Jaws bits allowed for simultaneously drilling and casing in one step. Saving significant time and money.

"We found Numa's large products to be the best method for drilling in loose, unconsolidated ground conditions. The Numa products did not disappoint, providing great performance in a difficult environment."

Drilling Deepest Hole on Record

Numa DTH products drilled the deepest hole on record in Finland – an amazing 15,092 feet (4,600 meters). The project utilized multi-stage, telescopic drilling methods consisting of Numa's Patriot 185 hammer and specially designed 26" (656 mm), 17.638" (445 mm), and 12" to 12.500" (305 to 318 mm retained bits with PCD carbide.

Overall, Numa's DTH products delivered an average rate of penetration of 33 to 82 feet (10-25 meters) per hour in some of the hardest rock formations (up to 520 MPa hardness) in Finland until reaching the final depth of 15,092 feet (4,600 meters). Drilling experts agreed it was estimated to take 70% less time drilling with the Numa products than comparable deep hole drilling methods used in the past.

"Successful deep hole drilling has been the forte of Numa products for many, many years. Whether it is drilling to 17,600 feet (5,300 meters) in West Texas or 15,092 feet (4,600 meters) in Finland, Numa has the DTH technology, expertise and service to get the job done right."

Hammer & Bit Specification Charts

DTH HAMMERS Large 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
Challenger 100	N100	9 ⅞ to 15	251 to 381	9	228.6	7.5	190.5	5.0	127.0	750	341	58.3	1480.0	65.3	1658.6	6 ⅝ API Reg Pin	4	1235 @ 250	1235 @ 17
Patriot 100	N100	9 ⅞ to 15	251 to 381	9	228.6	7.625	193.7	5.0	127.0	742	337	57.9	1470.7	64.9	1648.5	6 ⅝ API Reg Pin	4	1350 @ 250	1350 @ 17
Patriot 120	P120	11 ⅞ to 17 ½	302 to 445	10 ⅛	257.2	8.5	215.9	5.0	127.0	1067	485	66.7	1694.6	75.7	1923.2	6 ⅝ API Reg Pin	5	1300 @ 250	1300 @ 17
Patriot 120HD	P120	11 ⅞ to 17 ½	302 to 445	10 ¾	273.1	8.5	215.9	5.0	127.0	1236	562	66.7	1694.6	75.7	1923.2	6 ⅝ API Reg Pin	5	1300 @ 250	1300 @ 17
Patriot 125	P125	12 ¼ to 20	311 to 508	10 ¾	273.1	9.25	235.0	5.0	127.0	1155	525	66.8	1695.5	75.8	1924.1	6 ⅝ API Reg Pin	5	1150 @ 250	1150 @ 17
Patriot 126	P125	12 ¼ to 20	311 to 508	10 ¾	273.1	9.25	235.0	5.0	127.0	1151	523	66.8	1695.5	75.8	1924.1	6 ⅝ API Reg Pin	6	1151 @ 250	1151 @ 17
Patriot 180	P180	18 to 30	457 to 762	15 ½	393.7	13.25	336.6	4.5	114.3	2452	1115	65.5	1663.7	75.4	1915.2	8 ⅝ API Reg Pin	10	1100 @ 200	1100 @ 13.6
Patriot 185	P180	18 to 30	457 to 762	15 ½	393.7	13.25	336.6	5.0	127.0	2665	1211	70.6	1793.2	80.6	2047.2	8 ⅝ API Reg Pin	10	900 @ 200	900 @ 13.6
Patriot 240	P240	24 to 36	610 to 914	20	508.0	15.0	381.0	5.0	127.0	5156	2344	76.1	1933.6	90.1	2289.2	8 ⅝ API Reg Pin	12	925 @ 200	925 @ 13.6
Champion 330	C330	32 to 48	813 to 1219	28	711.2	20.0	508.0	5.0	127.0	12208	5549	89.5	2273.3	105.5	2679.7	10 BECO Pin	20	925 @ 200	925 @ 13.6

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”	1”			
10” Class	N100	9 ⅞ to 15	251 to 381	235 to 377	107 to 171	3	S			12 or 15				S	O		O	O	O
12”Class	P120	11 ⅞ to 20	302 to 508	337 to 748	153 to 339	3	S			12, 15 or 18				S	O		O	O	O
	P125	11 ⅞ to 20	302 to 508	417 to 803	189 to 364	3	S			12, 15 or 18				S	O	O	O	O	O
	112	11 ⅞ to 20	302 to 508	376 to 732	171 to 332	3	S			12, 15 or 18				S	O	O	O	O	O
18” Class	P180	18 to 30	457 to 762	1076 to 2362	488 to 1071	3	S			18				S	O	O	O	S	O
24” Class	P240	24 to 36	610 to 914	2174 to 3460	986 to 1569	6			S	30				S	O	O	O	S	O
33” Class	C330	32 to 48	813 to 1219	4697 to 9350	2131 to 4241	6			S	30				S	O	O	O	S	

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.

NUMA®

MANUFACTURER OF DOWN HOLE HAMMERS AND BITS

The World's Leading Drilling Technology

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