



# ***Bit Threaded Retention System***

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# **OPERATIONS MANUAL**

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- Do not discard this manual.
- Keep manual readily available for reference during operation or when servicing product.
- Before operation and maintenance, read and comprehend operations manual content.
  
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Patents: 6,883,618 7,442,074 10,612,310 11,085,242 EP 3 803 032 B1 KR-101340351 EP-2029325  
CN-101448608 BR-P10711711 AU2007254317 AU2007254317 WO2007/136658



## TABLE OF CONTENTS

<b>Section I - Description and Features .....</b>	<b>1</b>
<b>Section II - Functional Description .....</b>	<b>2</b>
Bit Cut for Numa Threaded Retainer .....	2
Threaded Retainer.....	2
Chuck Cut for NTR.....	2
Pin.....	2
<b>Section III - Assembly and Operation.....</b>	<b>3</b>
Assembly .....	3
Operation .....	4
<b>Section IV - Shank &amp; Bit Sizes .....</b>	<b>5</b>

## WARRANTIES AND REMEDIES

### LIMITED WARRANTY

Numa warrants that the Product will be new and free from defects in material and workmanship under normal use as contemplated by this Contract for a period of one (1) month from the date of shipment.

Except for the foregoing warranty, Numa disclaims all warranties and representations wherever made, including warranties of merchantability, durability, length of service, or fitness for a particular purpose.

Any alteration or modification of the original product without the express written consent of Numa will void the warranty.

### REMEDY

If, during such warranty period, Buyer promptly notifies Numa in writing of any defect and establishes that the above warranty is not met, Numa shall either repair or replace the Product or credit the customer, as it deems necessary to meet the warranty.

Such repair, replacement, or credit of Product shall constitute complete fulfillment of Numa's obligation under this warranty, and upon the expiration of the original warranty period, all of Numa's obligations hereunder shall terminate.

### LIMITATION OF LIABILITY

Numa shall not be liable to Buyer whether in contract, in tort (including negligence and strict liability), under any warranty or otherwise, for any special, indirect, incidental or consequential loss or damage whatsoever, including (without limitation) loss arising from delay, cost or capital and loss of profits or revenues. The remedies set forth in this Contract are exclusive, and the total cumulative liability of Numa under this Contract or for any act or omission in connection therewith or related thereto, whether in contract, in tort (including negligence and strict liability), under any warranty or otherwise, is limited to the price paid by Buyer for the Product.

The *WARNINGS*, *CAUTIONS* and *NOTES* used throughout the text of this instruction book are defined as follows:

<b>WARNING</b>	A specific procedure or practice that must be strictly followed, or a specific condition that must be met, to prevent possible bodily harm.
<b>CAUTION</b>	A specific procedure or practice that must be strictly followed, or a specific condition that must be met, to prevent damage to the equipment.
<b>NOTE</b>	Important supplemental information.

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## SECTION I DESCRIPTION

### GENERAL DESCRIPTION

NUMA Threaded Bit Retention Systems utilize a single internally threaded retainer sleeve, assembled over a specially configured bit head and chuck, to provide the safety and confidence of being able to retain and retrieve a bit head, in the unlikely event of a bit shank failure.

The Retainer itself is comprised of two basic components. A single sleeve that is internally threaded on one end and that threads over the top portion of a Bit head that has a corresponding external thread. This sleeve has an internal undercut, so that once it is threaded over the top portion of the Bit head it has a limited free up and down travel. This sleeve is mounted on a specially machined hammer chuck, and the entire unit (Bit, Retainer, and Chuck) is assembled to the Down Hole Hammer.

A Pin key is provided to lock the Retainer Sleeve with the Chuck to prevent the separate rotation of these assemblies.

### FEATURES

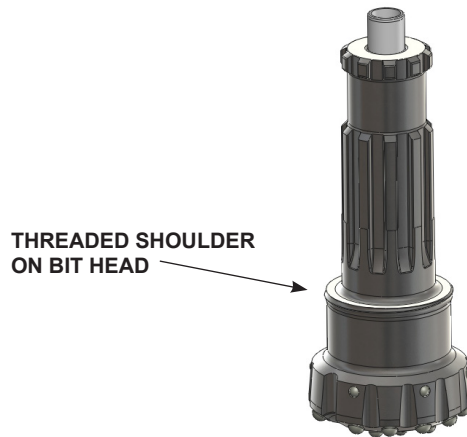
- Simple easily assembled design.
- Robust and durable
- No cams or teeth to fit or damage.

## SECTION II

### FUNCTIONAL DESCRIPTION

#### BIT CUT FOR NUMA THREADED RETAINER (NTR)

Bits manufactured for Retention Systems are made with an extended bit head, machined with an external catch lug for connecting with the Retainer.



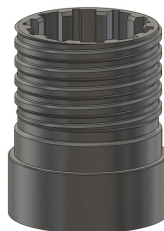
#### THREADED RETAINER

The Threaded Retainer is an internally threaded sleeve with an internal undercut and lug shoulder to fit on a Cut For Retainer Chuck.



#### CHUCK CUT FOR NTR

The Chuck has a collar OD specifically machined for the Threaded Retainer to fit over and shoulder against.



#### PIN

A Pin (key) is provided to lock the Retainer Assembly to the Chuck to prevent separate rotation.



## SECTION III

# ASSEMBLY AND OPERATION

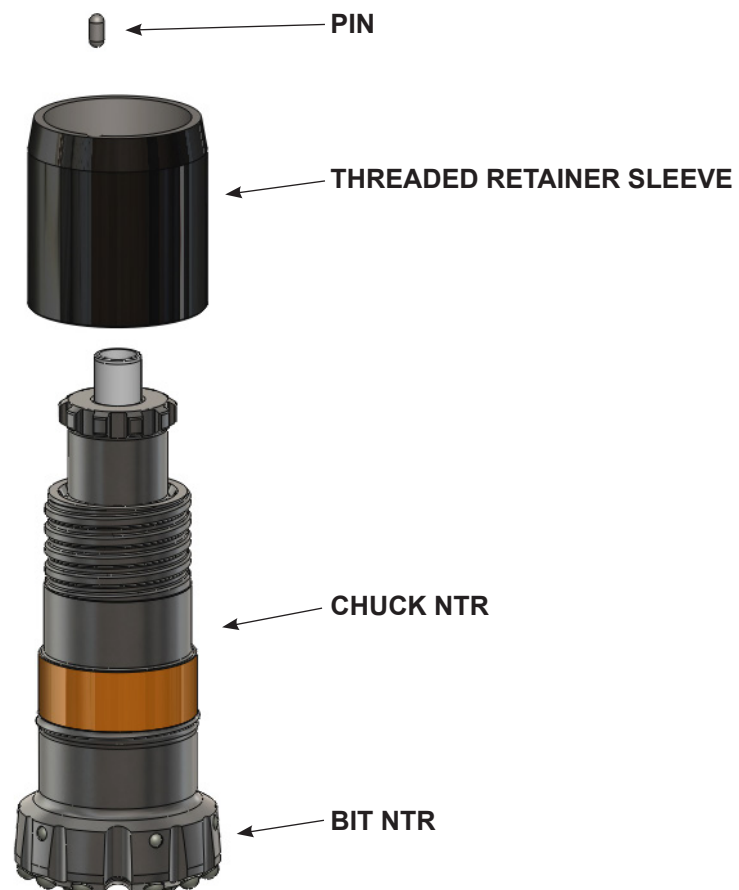
### ASSEMBLY

Assemble the (Cut for Threaded Retainer) Chuck over the (Cut for Threaded Retainer) Bit by fitting it down over the Bit shank in the usual fashion.

Slide the Threaded Retainer Sleeve downward over top of the Chuck. The internal lip in the Sleeve will be at the top, the internally threaded portion at the bottom. The Sleeve will slide over the Chuck, and come to rest against the top of the threaded portion of the Bit head. The Sleeve must then be threaded onto the Bit head. Once the threads have passed those on the Bit head, the Sleeve will fall down onto the Bit and come to rest on the shoulder of the Chuck. The Sleeve can then be rotated until the pin slots in the Sleeve and the Chuck line up. The Pin may then be installed in the key slot provided.

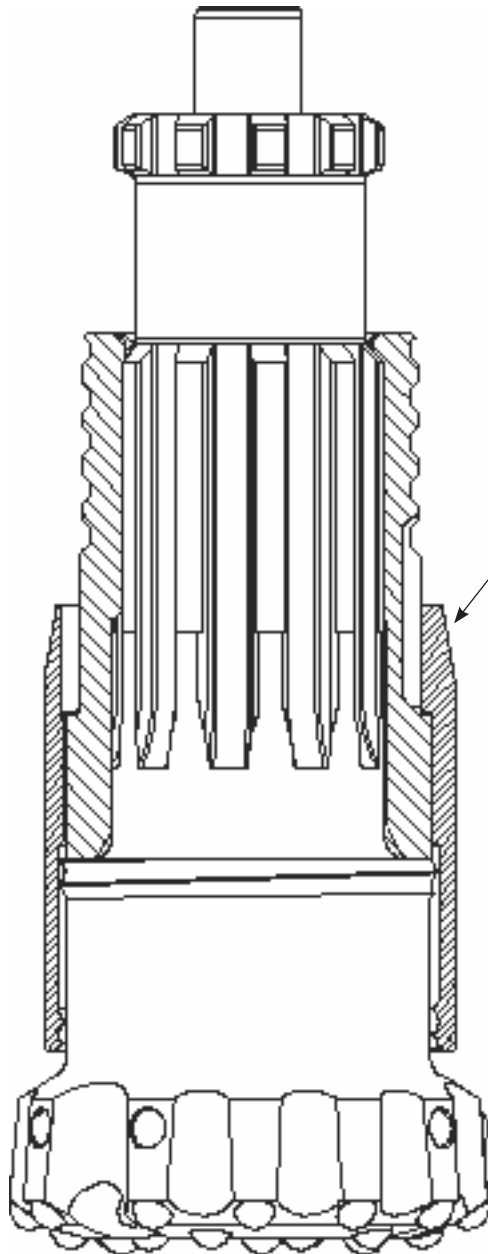
If used, install the Thrust Washer over the Chuck threads to seat on top of the Retainer Sleeve.

Bit Retaining Rings can then be fitted to the Bit, and the entire assembly fitted to the Down Hole Hammer.



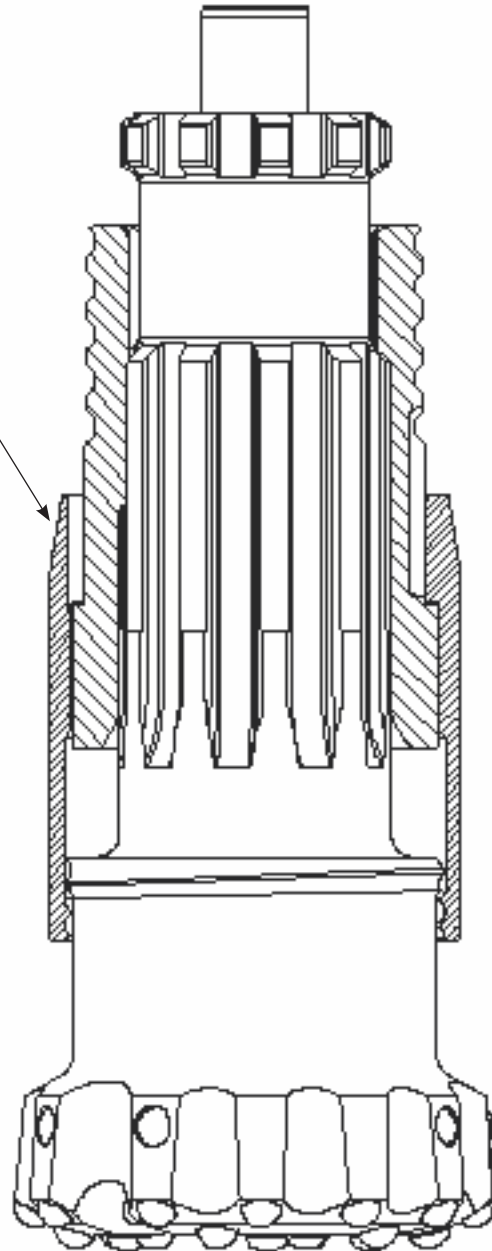
## SECTION III ASSEMBLY AND OPERATION

### OPERATION



**CLOSED DRILLING POSITION**

THREADED  
RETAINER  
SLEEVE



**OPEN IN STOP ACTION POSITION**

## SECTION IV SHANK & BIT SIZES for Numa Threaded Retention System

<b>Bit Shank</b>	<b>Bit Range (in)</b>	<b>Bit Range (mm)</b>
<b>360/QL60</b>	<b>6-1/4" - 6-3/4"</b>	<b>159 - 171 mm</b>
<b>380/QL80</b>	<b>7-7/8" - 8-7/8"</b>	<b>200 - 225 mm</b>
<b>N100</b>	<b>9-7/8" - 11"</b>	<b>251 - 279 mm</b>
<b>P125</b>	<b>12-1/4" - 20"</b>	<b>311 - 508 mm</b>
<b>P180</b>	<b>18" - 26"</b>	<b>457 - 660 mm</b>
<b>P240</b>	<b>24" - 34"</b>	<b>610 - 864 mm</b>

Special sizes and configurations may be available upon request and review.

## NOTES