The Leader in Torque Applications & Specialty Tooling

- Torque Verification Wrenches
- Dial & Adjustable Wrenches
- Interchangeable Drive Ends
- Preset Torque Wrenches
- Torque Limiters
- And More …

www.BELKNAPOOLS.com

2017
Why Should You Put Your Trust in Belknap?

• We are torque application specialists, dedicated to helping you achieve torque perfection.
• Our Interchangeable Drive Ends are the standard, and most reliable, in the industry.
• Our in-house engineers can customize most of our products to fit your application, and design specialty tooling for your specific requirements.
• Quality is built into every tool at every aspect of production.
• The tooling life of our tools generally outlive their required performance.
• The reputation and trust we have developed over the years is important to us and we intend to keep it that way.
• Our knowledgeable staff and extremely fast turnaround is unsurpassed in the industry.
• Industrial grade tooling which is consistently being used all over the world in places like Belgium, Czech Republic, India, South Korea, Mexico, Chile, Brazil, Australia and right here in the USA.
• Customers like Ford, GM, Chrysler, Caterpillar, Harley-Davidson, Cummins Engine, Detroit Diesel and John Deere, to name a few, rely on our quality products and tremendous turnaround time.
• From the first time you contact us with your tooling needs to the shipping of your order, our entire staff knows that you not only placed an order with us, but you have also placed your trust in Van F. Belknap Co., Inc.

Let Us Prove Why Your Trust in Belknap is Warranted and Justified.

BELKNAP is the ONLY company SOLELY DEDICATED to TORQUE TOOLING.

VAN F. BELKNAP CO., INC. was originally founded in 1936 in Detroit, Michigan USA as a small tool and die shop. In 1970, we became a major player in the automotive, heavy equipment, agricultural equipment, petro-chemical and aerospace industries by committing ourselves to supplying quality hand torque tooling, adapters and specialty application tooling. Today, we continue to do so with unequalled resources and commitment.

We guarantee our tools will perform the work for which they are designed, and will provide service for as long as is consistent with ordinary wear and usage. Any tools found defective in workmanship or material and returned to the factory for inspection will be replaced, repaired or credited, provided it has been used for the purpose for which the tool was designed. (And by the way, we do offer a one year warranty!)

OUR MISSION
To thoroughly understand the needs of our valued customers, provide the perfect solution of the highest quality tooling available, exceed all expectations and deliver in a timely manner.

Let Us Prove Why Your Trust in Belknap is Warranted and Justified.
VB Standard Interchangeable Drive Preset Torque Wrenches

Designed to withstand the abuse of modern, high production assembly companies while delivering thousands of accurate cycles.

There are 13 models ranging as low as 10 in. Lb. and as high as 1000 Ft. Lb., designed specifically to be used in conjunction with our Interchangeable Drive Ends found on page 7.

Belknap’s application-oriented sales and engineering staff are available to solve your application requirements and provide you with the right tools.

Call us and find out why Belknap has been and still is the leader in torque applications for over 40 years!

Key Features

- Torques in both left- and right-hand directions, others only operate in one direction.
- Loud audible and positive sensory “click” when calibrated torque is achieved.
- Accuracy is ± 4% in direction of calibration.
- High alloy steel.
- Most models include comfortable rubber grip.
- Scientifically heat treated.
- Torque values can be calibrated in English or Metric settings.
- Tamper-proof preset torque.
- Calibration can be quickly adjusted in calibration lab.

Why use the VB Standard Interchangeable Drive Preset Torque Wrench?

- With a loud audible and positive sensory “click” signal, and with 10° of travel after having reached the pre-calibrated torque, it is very difficult for the operator to ignore these signs. This provides you with a better result in your torque operations.
- Bi-directional functionality coupled with our 15° offset open drive end gives the operator the ability to “turn the wrench over” to apply torque in tight access areas. (One-directional torque wrenches take away this important benefit from the assembly line operator.)
- We stock all models and can perform individual calibrations with certifications as requested.

<table>
<thead>
<tr>
<th>Part#</th>
<th>Torque Range</th>
<th>Shank Size</th>
<th>Length</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In. Lb.</td>
<td>Ft. Lb.</td>
<td>Nm.</td>
<td>In.</td>
</tr>
<tr>
<td>VB2T-I**</td>
<td>10 - 24</td>
<td>.8 - 2</td>
<td>1.13 - 2.71</td>
<td>J</td>
</tr>
<tr>
<td>VB5T-I</td>
<td>10 - 50</td>
<td>.8 - 4.2</td>
<td>1.1 - 5.6</td>
<td>J</td>
</tr>
<tr>
<td>VB10T-I</td>
<td>3 - 9</td>
<td>4.07 - 12.20</td>
<td>7 - 25</td>
<td>J</td>
</tr>
<tr>
<td>VB10ST-I</td>
<td>7 - 25</td>
<td>9.49 - 33.90</td>
<td>J</td>
<td>6.125</td>
</tr>
<tr>
<td>VB10AT-I</td>
<td>7 - 25</td>
<td>9.49 - 33.90</td>
<td>J</td>
<td>7</td>
</tr>
<tr>
<td>VB50ST-I</td>
<td>10 - 50</td>
<td>13.56 - 67.79</td>
<td>J</td>
<td>9.125</td>
</tr>
<tr>
<td>VB50T-I</td>
<td>10 - 50</td>
<td>13.56 - 67.79</td>
<td>J</td>
<td>11</td>
</tr>
<tr>
<td>VB100ST-I</td>
<td>45 - 150</td>
<td>61.01 - 203.37</td>
<td>Y</td>
<td>14.5</td>
</tr>
<tr>
<td>VB100T-I</td>
<td>45 - 150</td>
<td>61.01 - 203.37</td>
<td>Y</td>
<td>19.25</td>
</tr>
<tr>
<td>VB200T-I</td>
<td>45 - 200</td>
<td>61.01 - 271.17</td>
<td>Y</td>
<td>23.25</td>
</tr>
<tr>
<td>VB300T-I</td>
<td>100 - 300</td>
<td>135.58 - 406.75</td>
<td>X</td>
<td>27.5</td>
</tr>
<tr>
<td>VB600T-I**</td>
<td>200 - 600</td>
<td>271.17 - 813.50</td>
<td>Z</td>
<td>54</td>
</tr>
<tr>
<td>VB1000T-I*</td>
<td>300 - 1000</td>
<td>406.75 - 1355.83</td>
<td>Z</td>
<td>62</td>
</tr>
</tbody>
</table>

* No rubber grip.
** No rubber grip and includes extension handle.

If you are in need of a specially designed tool, contact us to discuss your specific requirements.

Call (248) 348-7800 • Fax (248) 348-9821 • www.BelknapTools.com • Sales@BelknapTools.com
Signal Sending Interchangeable Drive Preset Torque Wrenches

The wired version of our VB Standard Interchangeable Drive Preset Torque Wrenches.

A 24-VDC switch is mounted internally and allows the torque wrench to be tied into any monitoring system for torque verification. (You supply the + voltage in one side, we will return it when the switch is made, torque achieved.)

They are designed specifically to be used in conjunction with our Interchangeable Drive Ends found on page 7. Various cables are available in different sizes and configurations to suit your application.

KEY FEATURES

- Torques in both left- and right-hand directions, others only operate in one direction.
- Loud audible and positive sensory “click” when calibrated torque is achieved.
- Accuracy is ± 4% in direction of calibration.
- High alloy steel.
- Scientifically heat treated.
- Torque values can be calibrated in English or Metric settings.
- Tamper-proof preset torque.
- Calibration can be quickly adjusted in calibration lab.

Maxi-Break Interchangeable Drive Preset Torque Wrenches

The Maxi-Break series extends the normal ten degree (10°) break to twenty degrees (20°). This torque wrench helps prevent over-torque on critical fasteners where specified torque is vital. The operator will definitely feel and see when torque is achieved.

They are designed specifically to be used in conjunction with our Interchangeable Drive Ends found on page 7.

The Maxi-Break series extends the normal ten degree (10°) break to twenty degrees (20°). This torque wrench helps prevent over-torque on critical fasteners where specified torque is vital. The operator will definitely feel and see when torque is achieved.

They are designed specifically to be used in conjunction with our Interchangeable Drive Ends found on page 7.

Various cables are available in different sizes and configurations to suit your application.

KEY FEATURES

- Breaks away 20° after preset torque is achieved.
- Torques in both left and right hand directions, others only operate in one direction.
- Loud audible and positive sensory “click” when calibrated torque is achieved.
- Accuracy is ± 4% in direction of calibration.
- High alloy steel.
- Scientifically heat treated.
- Torque values can be calibrated in English or Metric settings.
- Tamper-proof preset torque.
- Calibration can be quickly adjusted in calibration lab.

### Torque Range Shank Length Weight

<table>
<thead>
<tr>
<th>Part #</th>
<th>Torque Range</th>
<th>Shank Size</th>
<th>Length</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>VBEL10T-I</td>
<td>3 - 9</td>
<td>J</td>
<td>7</td>
<td>0.75</td>
</tr>
<tr>
<td>VBEL10AT-I</td>
<td>7 - 25</td>
<td>J</td>
<td>8</td>
<td>0.88</td>
</tr>
<tr>
<td>VBEL50T-I</td>
<td>10 - 50</td>
<td>J</td>
<td>12</td>
<td>1.5</td>
</tr>
<tr>
<td>VBEL100T-I</td>
<td>45 - 150</td>
<td>Y</td>
<td>20.5</td>
<td>2.5</td>
</tr>
<tr>
<td>VBEL200T-I</td>
<td>45 - 200</td>
<td>Y</td>
<td>25</td>
<td>2.6</td>
</tr>
<tr>
<td>VBMX10T-I</td>
<td>3 - 9</td>
<td>J</td>
<td>7.5</td>
<td>1</td>
</tr>
<tr>
<td>VBMX10AT-I</td>
<td>7 - 25</td>
<td>J</td>
<td>8.5</td>
<td>1.2</td>
</tr>
<tr>
<td>VBMX50T-I</td>
<td>10 - 50</td>
<td>J</td>
<td>12.5</td>
<td>1.6</td>
</tr>
</tbody>
</table>

If you are in need of a specially designed tool, contact us to discuss your specific requirements.

Call (248) 348-7800 • Fax (248) 348-3821 • www.BelknapTools.com • Sales@BelknapTools.com
Interchangeable Drive Adjustable Torque Wrenches

Field operators and repair technicians have the ability to adjust torque and change the Interchangeable Drive End as required on the job. When ordering an Interchangeable Drive End for these torque wrenches, you MUST specify the “YM” shank to achieve the proper connection and torque output. (See next page.)

KEY FEATURES

- Accuracy = ± 4% CW and ± 6% CCW of indicated value from 20% to full scale.
- Rugged, knurled metal handle for industrial use.
- Positive locking with pull-down lock ring.
- Loud audible and positive sensory “click” when torque is achieved.
- Molded plastic case (most models.)
- Easy to operate.
- Industrial strength.
- Exposed scale.
- Accepts a variety of Belknap Drive Ends with RYM shank.

Torque range Shank Length increments Weight

<table>
<thead>
<tr>
<th>Part #</th>
<th>Torque Range</th>
<th>Shank Length</th>
<th>Increments</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>150MFIMH</td>
<td>30 - 150 Ft. Lb.</td>
<td>34 - 197</td>
<td>1</td>
<td>2.7</td>
</tr>
<tr>
<td>250MFIMHS</td>
<td>50 - 250 Ft. Lb.</td>
<td>---</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

Example Requirement

Considering this example: You can use the charts to select the codes that will determine your part number.

SHANK CODES

<table>
<thead>
<tr>
<th>Torque Range</th>
<th>Shank Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-24 In. Lb.</td>
<td>VB2T-I J</td>
</tr>
<tr>
<td>15-60 In. Lb.</td>
<td>VB5T-I J</td>
</tr>
<tr>
<td>10-50 Ft. Lb.</td>
<td>VB50T-I J</td>
</tr>
<tr>
<td>45-150 Ft. Lb.</td>
<td>VB100T-I Y</td>
</tr>
<tr>
<td>45-200 Ft. Lb.</td>
<td>VB200T-I Y</td>
</tr>
<tr>
<td>100-300 Ft. Lb.</td>
<td>VB300T-I X</td>
</tr>
<tr>
<td>300-1000 Ft. Lb.</td>
<td>VB1000T-I Z</td>
</tr>
</tbody>
</table>

STYLE CODES

<table>
<thead>
<tr>
<th>Drive End Names with Style Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 Pt. 15° Box (B)</td>
</tr>
<tr>
<td>12 Pt. Reversible Box (BR)</td>
</tr>
<tr>
<td>12 Pt. Straight Box (BS)</td>
</tr>
<tr>
<td>12 Pt. 45° Box (BR)</td>
</tr>
<tr>
<td>6 Pt. Flare Nut (C)</td>
</tr>
<tr>
<td>Ratchet Drive (D)</td>
</tr>
<tr>
<td>V-Bottom (E)</td>
</tr>
<tr>
<td>Formax (F)</td>
</tr>
<tr>
<td>Keel-Tra (K)</td>
</tr>
<tr>
<td>Plain Drive (P)</td>
</tr>
<tr>
<td>12 Pt. Flare Nut (R)</td>
</tr>
<tr>
<td>Speeder (S)</td>
</tr>
<tr>
<td>U-Bottom (UE)</td>
</tr>
</tbody>
</table>

Signal Sending

- SAFETY PRECAUTION — The torque CAPACITY of a Drive End is LIMITED by its opening or square drive size, NOT by the shank size or the torque wrench. See our website for recommended MAX torque values. Please check your requirements with us.

How to Determine a Drive End Part Number

Example Requirement

Target Torque to be Applied: 7 Ft. Lb.

Determine the “Shank Code” (J)

Drive End Style Choice: V-Bottom

Determines the “Style Code” (E)

Fastener Size (across the flats): 9/16”

Determine the “Size Code” (9)
Marking Preset Torque Wrenches

Designed for FINAL TORQUE VERIFICATION ONLY and are not intended to be used for running down the fastener. They will leave a positive mark (ink or indentation) for torque verification only when torque is achieved. THEY WILL NOT MARK ACCIDENTALLY.

INK MARKING

KEY FEATURES
• Accuracy is ± 4%.
• Only marks in CW direction.
• Manually operated.
• Non-coagulating ink.
• Includes two ink cartridges.
• Available ink colors are: Red, Blue, Yellow, Green and White.
• Felt tip left uncovered after long periods of time may require minimal priming.
• Approximate ink cartridge cycles: 350-400 (dependent upon the operator/application).
• Cannot mark any type of screws (but may be able to mark adjacent areas.)
• Minimum Torque: 4 Ft. Lb.
• Maximum Torque: Please inquire.

INk MARKING

ALL MARKING WRENCHES ARE CUSTOM-MADE
Since all marking torque wrenches are custom-made to suit most applications, we must receive from you the following information:
1. Hex size of fastener (across the flats).
2. Target torque to be applied.
3. Engaging fastener from Top or Side:
   TOP (with a socket)— We must know Application Type and Dimensions.
   See diagram below.
   SIDE (with an open end)
4. Picture of your application.

PUNCH MARKING

KEY FEATURES
• Accuracy is ± 4%.
• Only marks in CW direction.
• Requires 90 psi standard, non-lubricated shop air.
• Replaceable striking pins will eventually become a bit dull and will need to be re-sharpened on a belt sander.
• Approximate striking pin cycles are application dependent. In our lab tests, we obtained a minimum of 300 punches before sharpening and 10 resharpenings before replacing.
• Cannot mark any type of screws (but may be able to mark adjacent areas.)
• Minimum Torque: 4 Ft. Lb.
• Maximum Torque: Please inquire.
### Fixed Head Preset Torque Wrenches

**VB Standard Interchangeable Drive Preset Torque Wrenches**

With a ratcheting or non-ratcheting (plain) interchangeable Square Drive End permanently attached. Ratcheting square drive ends are industrial grade double pawl. Non-ratcheting (plain) square drive ends meet industrial requirements and government specifications.

See page 18 for Crowfoot Adapters that are commonly used with these torque wrenches when a socket will not fit the application.

#### KEY FEATURES
- Torques in both left- and right-hand directions, others only operate in one direction.
- Loud audible and positive-sensory “click” when calibrated torque is achieved.
- Accuracy is ± 4% in direction of calibration.
- High alloy steel.
- Most models include comfortable rubber grip.
- Scientifically heat treated.
- Torque values can be calibrated in English or Metric settings.
- Tamper-proof preset torque.
- Calibration can be quickly adjusted in calibration lab.

### RATCHETING Fixed Head Torque Wrenches

<table>
<thead>
<tr>
<th>Part #</th>
<th>Torque Range</th>
<th>Length</th>
<th>Square Drive Size</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>VB2T-1R*</td>
<td>10 - 24</td>
<td>.8 - 2</td>
<td>1.13 - 2.71</td>
<td>6</td>
</tr>
<tr>
<td>VB5T-2R</td>
<td>10 - 50</td>
<td>.8 - 4.2</td>
<td>1.1 - 5.6</td>
<td>8.5</td>
</tr>
<tr>
<td>VB10T-2R</td>
<td>3 - 9</td>
<td>4.07 - 12.20</td>
<td>8.5</td>
<td>0.375</td>
</tr>
<tr>
<td>VB10AT-2R</td>
<td>7 - 25</td>
<td>9.49 - 33.90</td>
<td>9.25</td>
<td>0.375</td>
</tr>
<tr>
<td>VB50T-2R</td>
<td>10 - 50</td>
<td>13.56 - 67.79</td>
<td>13.25</td>
<td>0.375</td>
</tr>
<tr>
<td>VB50T-3R</td>
<td>10 - 50</td>
<td>13.56 - 67.79</td>
<td>13.5</td>
<td>0.5</td>
</tr>
<tr>
<td>VB100T-3R</td>
<td>45 - 200</td>
<td>61.01 - 271.17</td>
<td>26.375</td>
<td>0.5</td>
</tr>
<tr>
<td>VB300T-4R</td>
<td>100 - 300</td>
<td>135.58 - 406.75</td>
<td>31.25</td>
<td>0.75</td>
</tr>
<tr>
<td>VB600T-4R**</td>
<td>200 - 600</td>
<td>271.17 - 813.50</td>
<td>60.25</td>
<td>0.75</td>
</tr>
<tr>
<td>VB1000T-5R**</td>
<td>300 - 1000</td>
<td>406.75 - 1355.83</td>
<td>68</td>
<td>1</td>
</tr>
</tbody>
</table>

* No rubber grip.

** No rubber grip and includes extension handle.

### NON-RATCHETING Fixed Head Torque Wrenches

<table>
<thead>
<tr>
<th>Part #</th>
<th>Torque Range</th>
<th>Length</th>
<th>Square Drive Size</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>VB2T-1P*</td>
<td>10 - 24</td>
<td>.8 - 2</td>
<td>1.13 - 2.71</td>
<td>4.5</td>
</tr>
<tr>
<td>VB5T-2P</td>
<td>10 - 50</td>
<td>.8 - 4.2</td>
<td>1.1 - 5.6</td>
<td>675</td>
</tr>
<tr>
<td>VB10T-2P</td>
<td>3 - 9</td>
<td>4.07 - 12.20</td>
<td>7</td>
<td>0.375</td>
</tr>
<tr>
<td>VB10AT-2P</td>
<td>7 - 25</td>
<td>9.49 - 33.90</td>
<td>7.5</td>
<td>0.375</td>
</tr>
<tr>
<td>VB50T-2P</td>
<td>10 - 50</td>
<td>13.56 - 67.79</td>
<td>11.5</td>
<td>0.375</td>
</tr>
<tr>
<td>VB100T-3P</td>
<td>45 - 150</td>
<td>61.01 - 203.37</td>
<td>20.375</td>
<td>0.5</td>
</tr>
<tr>
<td>VB200T-3P</td>
<td>45 - 200</td>
<td>61.01 - 271.17</td>
<td>24.375</td>
<td>0.5</td>
</tr>
<tr>
<td>VB300T-4P</td>
<td>100 - 300</td>
<td>135.58 - 406.75</td>
<td>28.75</td>
<td>0.75</td>
</tr>
<tr>
<td>VB600T-4P**</td>
<td>200 - 600</td>
<td>271.17 - 813.50</td>
<td>56</td>
<td>0.75</td>
</tr>
<tr>
<td>VB1000T-5P**</td>
<td>300 - 1000</td>
<td>406.75 - 1355.83</td>
<td>64</td>
<td>1</td>
</tr>
</tbody>
</table>

* No rubber grip.

** No rubber grip and includes extension handle.
Electronic Dial Torque Wrenches

The most accurate, durable and easy to use electronic torque wrenches on the market. A significant advantage that these torque wrenches have over others, is that it will sample the inputted torque more often per second, allowing for a more accurate peak reading; the operator may pull at a normal rate without losing the actual peak torque.

Determining when target torque value has been reached is as easy as looking at the display, watching for the LED lights or listening for the buzzer.

THREE MODES OF OPERATION:

TRACK Display will track up and down as torque is applied.
PEAK HOLD Display will hold the highest torque applied.
AUTO CLEAR Display will automatically clear when wrench starts new torque application.

Computer downloading capability via RS232 available on models whose part numbers end with “-P”, (includes cable, transformer, and a rechargeable battery.)

See page 18 for Crowfoot Adapters that are commonly used with these torque wrenches when a socket will not fit the application.

KEY FEATURES
- Accuracy is ± 1% CW and CCW of indicated value from 10-100%.
- Equally accurate in both left- and right-hand directions.
- NIST certificate of calibration is included.
- 360° rotating bezel design is made of high impact nylon.
- Large, easy to read high contrast, non-glare scale.
- Torque readings can be displayed in ln. Lb., Ft. Lb., or Nm.
- Ergonomic handle.
- Electric lights and buzzer on all models.
- High Alloy TORSION drive design for non-length dependent application of torque (accurate no matter where you apply force on the handle).
- Molded plastic case.
- Computer downloading capability on “-P” models.
- Automatically powers off after 30 minutes of non-use.

Electronic dial Torque Wrenches

The most accurate, durable and easy to use electronic torque wrenches on the market. A significant advantage that these torque wrenches have over others, is that it will sample the inputted torque more often per second, allowing for a more accurate peak reading; the operator may pull at a normal rate without losing the actual peak torque.

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- Molded plastic case.
- Computer downloading capability on “-P” models.
- Automatically powers off after 30 minutes of non-use.
**Dial Indicating Torque Wrenches**

Enables the operator to view the torque as it is being applied and record it via the memory needle. These state of the art tools have an exclusive torsion beam designed to provide long life, accuracy and reliability demanded during use. See page 18 for Crowfoot Adapters that are commonly used with these torque wrenches when a socket will not fit the application.

**KEY FEATURES:**
- Accuracy is ± 4% CW and CCW of indicated value from 20-100%.
- Secure bezel design is made of high impact nylon.
- Large, easy to read high contrast, non-glare scale.
- Dual scale.
- Ergonomic handle.
- Memory needle is standard on every wrench.
- Equally accurate in both left- and right-hand directions.
- Certification traceable to National Institute of Standards and Technology (NIST) available upon request.
- Molded plastic case (most models.)

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**USING ADAPTERS OR EXTENSIONS**

Adapters or extensions should only be used in line with the wrench, as opposed to being at an angle, and the actual torque applied (TA) will be greater than the torque reading shown.

Determine the actual torque applied by using the formula to the right:

\[ TW = \frac{(TA \times L)}{(A + L)} \]

* Our online Extensions Calculator does all the calculating for you with real-time updates.

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**TORQUE EXTENSION CALCULATOR**

**Key:**
- TA: Torque applied at end of adapter
- TW: Torque wrench dial reading
- A: Length of adapter (Center to Center)
- Distance between square drive and hand position. Hand position should be in the middle of grip area.

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Micro-Adjustable Torque Wrenches

Offering versatility for applications that require more than one torque value. They feature a distinct breaking action when the set torque is reached. Simply pull down the spring-loaded lock ring and turn the handle to set your target torque value. The positive locking device cannot be jarred into an unlocked position.

Our own metrology lab tests have shown that repeatability and accuracy are maintained after thousands of cycles. Additionally, our customers over the years have proven our test reports through actual production line and maintenance use.

See page 18 for Crowfoot Adapters that are commonly used with these torque wrenches when a socket will not fit the application.

KEY FEATURES

- Standard industrial grade ratchet head.
- Accuracy is ± 4% CW and ± 6% CCW of indicated value from 20% to full scale.
- Easy to operate.
- Industrial strength.
- Easy to read, laser marked scale.
- Positive lock with spring loaded pull-down lock ring.
- Rugged, knurled metal handle for industrial use.
- English scale primary, Newton Meter scale secondary.
- Most models feature a quick release button which provides good socket retention and easy socket removal.
- Calibration certificate available upon request.
- Molded plastic case (most models.)

<table>
<thead>
<tr>
<th>Part #</th>
<th>Torque Range</th>
<th>Square Drive Size</th>
<th>Length</th>
<th>Weight</th>
<th>Ext. Handle</th>
</tr>
</thead>
<tbody>
<tr>
<td>501MRMH</td>
<td>10 - 50 1.4 - 5.4</td>
<td>.06 25 10</td>
<td>.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1501MRMH</td>
<td>30 - 150 2.8 - 16.4</td>
<td>1 .1 25 10</td>
<td>25 .85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2502MRMH</td>
<td>40 - 200 3.9 - 27.7</td>
<td>1 .1 .375 11</td>
<td>.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7502MRMH</td>
<td>75 - 450 14.1 - 81.9</td>
<td>5 .6 .375 15</td>
<td>15 .2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1002MRMH</td>
<td>200 - 1000 19.8 - 110.2</td>
<td>5 .6 .375 15</td>
<td>15 .2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25003MRMH</td>
<td>500 - 2500 39.6 - 276.8</td>
<td>10 1.2 .5 18</td>
<td>3.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>752MFRMH</td>
<td>15 - 75 10.2 - 98.3</td>
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<td>15 .2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1002MFRMH</td>
<td>20 - 100 16.9 - 132.2</td>
<td>.5 .7 .375 15</td>
<td>15 .2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1503MFRMH</td>
<td>30 - 150 34 - 197</td>
<td>1 1.5 .5 19</td>
<td>3.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2503MFRMH</td>
<td>50 - 250 47 - 332</td>
<td>1 1.5 .5 24.5</td>
<td>3.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6004MFRMH</td>
<td>120 - 600 169 - 779</td>
<td>5 6.8 .75 41</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10005MFRMH</td>
<td>200 - 1000 305 - 1322</td>
<td>5 6.8 1 70</td>
<td>25.1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>20005MFMMSS</td>
<td>400 - 2000</td>
<td>10 1 108.5</td>
<td>48.5</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

USING ADAPTERS OR EXTENSIONS

Adapters or extensions should only be used in line with the wrench, as opposed to being at an angle, and the actual torque applied (TA) will be greater than the torque reading shown.

Determine the actual torque applied by using the formula to the right:

* Our online Extensions Calculator does all the calculating for you with real-time updates.
CROWFOOT ADAPTERS Our engineers and machinists can make specialty adapters to suit your specific requirement.

ALL CROWFOOT ADAPTERS ARE CUSTOM-MADE

In order to better assist you, our engineers will need the following information:

1. Target torque to be applied.
2. Adapter style.
3. Hex nut size.
4. Center-to-Center.
5. Square drive size.
6. Special head thickness.
7. Photo of your application.
8. Any other special requirements (i.e. offset, angle or finish.)

TORQUE EXTENSION CALCULATOR* 

\[ TW = \frac{(TA \times L)}{(A + L)} \]

* Our online Extensions Calculator does all the calculating for you with real-time updates.

T-Handle Preset Torque Wrenches

An extremely universal and unique torque wrench because of its over-torque prevention ability and added "T" handle leverage. These features result in benefits of components being assembled faster, yet torqued accurately.

The standard square drives will accept standard sockets or can be adapted to accept most replaceable insert bits.

FOUR STYLES TO CHOOSE FROM:

- **Lock-Up**
  - CW: Slips when specified torque is achieved.
  - CCW: Locks up after 1 full turn and will back the fastener off (no slipping.)
  - *Except VB85T-2L.*

- **Back-Off**
  - CW: Slips when specified torque is achieved.
  - CCW: Slips at approximately 1.5 times the clockwise torque.

- **Ratchet**
  - CW: Slips when specified torque is achieved.
  - CCW: Ratchets with almost no torque.

- **Direct Drive**
  - CW: Slips when specified torque is achieved.
  - CCW: Slips when specified torque is achieved.

ACCURACY

10-25 in.lb. = ± 1 in.lb.
26-50 in.lb. = ± 2 in.lb.
51-Up in.lb. = ± 4 %
Preset Torque Screwdrivers

Particularly suited for high-volume use in assembly operations. A simple, cam-over design allows the tool to slip; therefore, preventing over-torque and possible damage to components. Preset Torque Screwdrivers may be ordered factory set or they may be easily set with any quality torque calibration system. The end cap removes for easy access to the 1/8” hex adjustment screw. A hex adjustment key is included with each new torque screwdriver.

**KEY FEATURES**
- Accuracy ± 6% CW of indicated value from 20-100% of full scale.
- Universal 1/4” hex bit holder with strong rare earth magnet.
- Cam-over torque limiting clutch.

### Torque Range

<table>
<thead>
<tr>
<th>Part #</th>
<th>Torque Range</th>
<th>Length</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>21SP</td>
<td>6 - 32</td>
<td>4.5</td>
<td>.375</td>
</tr>
<tr>
<td>61SP</td>
<td>10 - 100</td>
<td>5.6</td>
<td>.438</td>
</tr>
<tr>
<td>151SP</td>
<td>1.5 - 15</td>
<td>5.6</td>
<td>.438</td>
</tr>
<tr>
<td>401SP</td>
<td>4 - 40</td>
<td>6.1</td>
<td>.6</td>
</tr>
</tbody>
</table>

Torky Preset Torque Wrenches

Right-angle torque wrenches designed for production applications where clamp load is vital. The 1/4” female hex (bit holder) allows for numerous types of bits to be used. Standard factory color is blue, but other colors may be available in larger quantities.

Torque value can be preset and sealed at the factory (or at your calibration lab.)

**KEY FEATURES**
- Accuracy ± 4% in direction of calibration.
- Torques in both left and right hand directions.
- Positive sensory “click” signals when desired torque is reached.
- Lever arm handle allows easy application of higher torque values.
- Industrial grade design has been proven through thousands of cycles of use in major auto manufacturer’s facilities.
- Aluminum body.
- Alloy steel internal components

### Torque Range

<table>
<thead>
<tr>
<th>Part #</th>
<th>Torque Range</th>
<th>Increments</th>
<th>W x L</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>VB1501TPA-B</td>
<td>30 - 150</td>
<td>3.9 x 16.95</td>
<td>5.0</td>
<td>6.8</td>
</tr>
</tbody>
</table>

Adjustable Torque Screwdrivers

Particularly suited for high-volume use in assembly operations. A simple, cam-over design allows the tool to slip; therefore, preventing over-torque and possible damage to components. These screwdrivers offer versatility for applications that require more than one torque value and are particularly suited for the electronics industry and for instrument assembly work.

Torque settings are easily and accurately changed with a unique adjusting knob and easy-to-read window scale. Positive locking knob makes accidental setting changes impossible. Automatic lock in counter-clockwise direction makes fastener removal a snap.

**KEY FEATURES**
- Accuracy ± 6% CW of indicated value from 20-100% of full scale.
- Universal 1/4” hex bit holder with strong rare earth magnet.
- Cam-over torque limiting clutch.
- Easy to read window scale.
- Rugged, lightweight aluminum body.
- Automatic lock in CCW direction.

### Torque Range

<table>
<thead>
<tr>
<th>Part #</th>
<th>Torque Range</th>
<th>Increments</th>
<th>W x L</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>61SM</td>
<td>20 - 100</td>
<td>1 in. Oz.</td>
<td>1.0 x 5.5</td>
<td>6.8</td>
</tr>
<tr>
<td>151SM</td>
<td>3 - 15 in.</td>
<td>.2 in. Lb.</td>
<td>1.1 x 6.25</td>
<td>8.0</td>
</tr>
<tr>
<td>401SM</td>
<td>5 - 40 in.</td>
<td>.5 in. Lb.</td>
<td>1.2 x 6.75</td>
<td>10.8</td>
</tr>
<tr>
<td>61NSM</td>
<td>10 - 80 cNm</td>
<td>1 cNm</td>
<td>1.1 x 5.5</td>
<td>6.8</td>
</tr>
<tr>
<td>151NSM</td>
<td>40 - 200 cNm</td>
<td>2 cNm</td>
<td>1.1 x 6.25</td>
<td>8.0</td>
</tr>
<tr>
<td>401NSM</td>
<td>50 - 450 cNm</td>
<td>5 cNm</td>
<td>1.2 x 6.75</td>
<td>10.8</td>
</tr>
</tbody>
</table>
Preset Slip-Torq Torque Limiters

A simple concept in precision torque control. It attaches to any driving tool, ratchet, t-handle or breaker bar to provide the ultimate in torque control. When the torque value is reached, the unit slips with an audible “click” and automatically resets itself. Force applied cannot exceed the setting.

The standard Slip-Torq tool is designed to be used as a torque limiter in either the CW or CCW direction. When the torque release setting is established in either direction, CW or CCW, the user may expect repeatability from release-to-release within ± 5% of setting. Generally, however, as you approach the mid-range or higher of any particular model, the repeatability percentage from release-to-release will improve.

The ONE-WAY SLIP-TORQ will “click” and slip in a CW direction, and lock-up in a CCW direction (after 1 or 2 turns) allowing for the backoff of the fastener.

KEY FEATURES
• Accuracy = ± 5% (in the direction in which it is calibrated.)
• NOTE: You must specify if you want the certification to show both CW and CCW directions.
• Tamper-proof torque value.
• Force applied cannot exceed torque setting.
• Most models torque in both CW and CCW direction.
• Impossible to over-torque.
• Torque is controlled within the capsule; lever length has no effect.
• Loud audible “click” when torque is achieved.
• Attaches to any driving tool, ratchet, t-handle or breaker bar.
• Lightweight, compact and rugged.
• All models are available with a “T” Handle.
• Not recommended for use with power tool.

SLIP-TORQ Torque Limiters

<table>
<thead>
<tr>
<th>Part #</th>
<th>Torque Range In Lb.</th>
<th>Square Drive Size In.</th>
<th>Direction</th>
<th>Diameter In.</th>
<th>Height In.</th>
<th>Weight Lb.</th>
</tr>
</thead>
<tbody>
<tr>
<td>38A-OW</td>
<td>24 - 180</td>
<td>0.375</td>
<td>CW</td>
<td>1.5</td>
<td>2.25</td>
<td>0.9</td>
</tr>
<tr>
<td>38A-1</td>
<td>24 - 180</td>
<td>0.375</td>
<td>CW &amp; CCW</td>
<td>1.5</td>
<td>2.25</td>
<td>0.8</td>
</tr>
<tr>
<td>38B-OW</td>
<td>60 - 300</td>
<td>0.375</td>
<td>CW</td>
<td>1.5</td>
<td>2.25</td>
<td>0.9</td>
</tr>
<tr>
<td>38B-2</td>
<td>60 - 300</td>
<td>0.375</td>
<td>CW &amp; CCW</td>
<td>1.5</td>
<td>2.25</td>
<td>0.8</td>
</tr>
<tr>
<td>12A-1</td>
<td>120 - 480</td>
<td>0.5</td>
<td>CW &amp; CCW</td>
<td>1.625</td>
<td>2.625</td>
<td>1.1</td>
</tr>
<tr>
<td>12B-2</td>
<td>240 - 600</td>
<td>0.5</td>
<td>CW &amp; CCW</td>
<td>1.625</td>
<td>2.625</td>
<td>1.1</td>
</tr>
<tr>
<td>12D-2</td>
<td>480 - 900</td>
<td>0.5</td>
<td>CW &amp; CCW</td>
<td>2.7</td>
<td>2.2</td>
<td>1.4</td>
</tr>
<tr>
<td>12E-OW</td>
<td>720 - 1440</td>
<td>0.5</td>
<td>CW</td>
<td>2.9</td>
<td>3</td>
<td>3.3</td>
</tr>
<tr>
<td>12E-2</td>
<td>720 - 1440</td>
<td>0.5</td>
<td>CW &amp; CCW</td>
<td>2.9</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

NOTE: Any of the Slip-Torq tools can be quoted as a T-Handle style.

T-HANDLE SLIP-TORQ Torque Limiters

<table>
<thead>
<tr>
<th>Part #</th>
<th>Torque Range In Lb.</th>
<th>Square Drive Size In.</th>
<th>Direction</th>
<th>Length In.</th>
<th>Height In.</th>
<th>Weight Lb.</th>
</tr>
</thead>
<tbody>
<tr>
<td>38AT</td>
<td>24 - 180</td>
<td>0.375</td>
<td>CW &amp; CCW</td>
<td>11</td>
<td>3.75</td>
<td>1.8</td>
</tr>
<tr>
<td>38BT</td>
<td>60 - 300</td>
<td>0.375</td>
<td>CW &amp; CCW</td>
<td>11</td>
<td>3.75</td>
<td>1.8</td>
</tr>
<tr>
<td>12AT</td>
<td>120 - 480</td>
<td>0.5</td>
<td>CW &amp; CCW</td>
<td>11</td>
<td>4.25</td>
<td>2.4</td>
</tr>
<tr>
<td>12BT</td>
<td>240 - 600</td>
<td>0.5</td>
<td>CW &amp; CCW</td>
<td>11</td>
<td>4.25</td>
<td>2.4</td>
</tr>
</tbody>
</table>

CAUTION: Not recommended for use with power tools.

Our online “Specialty Tools Gallery” features hundreds of our custom-made tools for special torque applications and assembly.

If you are in need of a specially designed tool, contact us to discuss your specific requirements.

Call (248) 348-7800 • Fax (248) 348-3821 • www.BelknapTools.com • Sales@BelknapTools.com
Our online "Specialty Tools Gallery" features hundreds of our custom-made tools for special torque applications and assembly.

Our in-house engineering and machining departments are at your service! We have designed and manufactured thousands of specialty tools to make your job easier. Our expert knowledge on torque dynamics, tool manufacturing, optimization, weight reduction and ergonomics, enables us to zero in on your specific needs and develop the exact tool you need.

**Sockets**
- Retaining Hex Socket with Square Drive and Nylon Sleeve
- Serrated Nut Driver with Square Drive
- Open Face Socket
- Tail Light Socket
- Heat Sensor Socket

**Drive Ends**
- Torx Offset Drive End
- Pipe Wrench Drive End
- Flare Nut Half Moon Drive End
- Spanner Drive End
- Allen Head Drive End

**Torque Wrenches**
- Torque Wrench with Spanner Drive End
- Glass Adjustment Torque Wrench
- Large Octal Nut Torque Wrench
- Torque Wrench with Hex Flare Offset Drive End
- Ratcheting Brake Bleeder

**Hose Clamp Tools**
- Looking Hose Clamp Tool with Interchangeable Tips
- Hand Hose Clamp Tool
- Pneumatic Hose Clamp Tool with Retainer
- Inverted Hose Clamp Tool

**Fixtures**
- Sunroof Height Gauge
- Drill Location Fixture
- Rear Axle Sway Bar Fixture
- Window Button Fixture
- Rear Axle Build-Up Table

**Material Handling**
- Deck Locating Pin
- Rear Axle Handling Hook
- Water Pump Holding Torque Wrench
- Automotive Instrument Panel Build-Up Fixture
- Front Axle Handling Hook

**Assembly & Installation**
- Freeze Plug Removal Tool
- Door Glass Adjust Tool
- Pneumatic Drum Handle Install Tool
- Scrivit Install Tool
- Tie Rod Adjusting Tool

If you are in need of a specially designed tool, contact us to discuss your specific requirements.
Hose Clamp Tools

Designed with ergonomic principles in mind and can be made to comply with your safety regulation needs.

Van F. Belknap Co., Inc. has been making hose clamp tools with superior quality, reliability, and longevity for thirty years.

KEY FEATURES of Pneumatic Hose Clamp Tools

- Uses standard, non-lubricated shop air.
- Recommended PSI = 85 minimum.
- Low maintenance.
- Lightweight.
- One-handed use.
- Operates only when lever is depressed.
- Can be reversed.
- No additional tool oil/lube required.
- Will not scratch or deform clamp.

HOSE CLAMP TOOLS CAN BE CUSTOMIZED

Each of our main styles of hose clamp tools can be customized to fit your application (in most cases.) In order to better assist you, please let us know the following:

1. Clamp style.
2. Orientation of clamp tips.
3. Provide size of clamp.
4. Provide a picture of your application(s).
5. Samples of the clamp may be required.

If your clamp style is not shown, please provide picture or drawing.

Torque Multiplier

Incomparable to any other tool. The multiplication is achieved through a planetary gear train at a ratio depending on the model. The precision gear train is totally enclosed.

This torque multiplier is a silent partner to all operators. It provides ample power by multiplying the amount of torque applied with your torque wrench. Basically, you can tighten high torque fasteners by only applying a few foot pounds. Relatively small, torque multipliers may be used with practically all accessory tooling.

Use of a torque multiplier will vastly improve the overall efficiency of the operator. It is also an easier and safer way to achieve a high torque requirement.

CAUTION: Do not use with impact-type driving tools.

KEY FEATURES

- Alloy forged head.
- High grade alloy steel internal parts.
- General all-purpose tool.
- Provides ample torqueing power.
- Requires limited space for use.
- May be compounded for multiplied ratios.

<table>
<thead>
<tr>
<th>Part #</th>
<th>Capacity Ft Lb</th>
<th>Input Drive</th>
<th>Output Drive</th>
<th>Gear Ratio</th>
<th>Weight Lb</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>Length in</th>
<th>OAL in</th>
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<tr>
<td>LW750</td>
<td>1000</td>
<td>.5</td>
<td>.75</td>
<td>4.1</td>
<td>7</td>
<td>3.5</td>
<td>6</td>
<td>.5</td>
<td>.75</td>
<td>3.35</td>
<td>18</td>
<td>22</td>
</tr>
<tr>
<td>TD1000</td>
<td>2000</td>
<td>.75</td>
<td>1</td>
<td>4.1</td>
<td>14</td>
<td>3.75</td>
<td>6.6</td>
<td>.75</td>
<td>1</td>
<td>4.37</td>
<td>22</td>
<td>25</td>
</tr>
<tr>
<td>TD1500</td>
<td>4000</td>
<td>1</td>
<td>1.5</td>
<td>4.33:1</td>
<td>30</td>
<td>5.2</td>
<td>9.7</td>
<td>1</td>
<td>1.5</td>
<td>6.2</td>
<td>25</td>
<td>30</td>
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<td>TD2000</td>
<td>8000</td>
<td>1</td>
<td>1.5</td>
<td>4.33:1</td>
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<td>6.5</td>
<td>12.1</td>
<td>.75</td>
<td>1.87</td>
<td>3.75</td>
<td>24</td>
<td>32</td>
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<tr>
<td>TD2500</td>
<td>12000</td>
<td>1</td>
<td>2.5</td>
<td>6.1</td>
<td>78</td>
<td>8.5</td>
<td>11.5</td>
<td>1</td>
<td>2.25</td>
<td>7.25</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>
Electronic Torque Testers

Rugged with a small footprint. Designed to be placed on the factory floor or calibration lab to test and calibrate all types of torque wrenches. All steel construction with a durable no-break rotary neck that allows the display and keys to be rotated for easy viewing at all angles, from both sides. Each tester has a male square drive and comes standard with a female-to-female square drive adapter for the drive size.

**KEY FEATURES**
- Accuracy up to 1% of indicated value, CW and CCW, from 10% to 100%.
- Extremely user-friendly.
- Integral mounting bracket.
- Three units of measure: In. Lb., Ft. Lb., Nm.
- Three modes of operation: First Peak (for testing click wrenches), Track, and Peak.
- Quick target torque setting for PASS/FAIL prompting.
- Target Torque Pass/Fail “zone” can be quickly set with one button from ±1% to ±10% of target torque value.
- Three alerts for approaching, reaching and exceeding target torque: Display, Lights, Buzzer.
- Powered by a standard 9 volt battery, with life up to 50 hours.
- Turns itself off after 30 minutes without use.
- Software LCD contrast control.
- 2500 samples per second.
- Calibrated and certified, with an NIST traceable calibration certification.
- Meets ANSI Torque Tester Specs.
- “P” models have computer downloading capability via RS232 and includes 9 volt internal NiMh battery charger with 110 volt power adapter.

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### Torque Range

<table>
<thead>
<tr>
<th>Part #</th>
<th>Square Drive Size</th>
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Repair & Calibration Lab

Fully equipped with calibration arms, dead weights, mechanical loaders and torque testers to accommodate up to 2,000 foot pounds of torque.

All of our testing equipment is certified to the National Institute of Standards and Technology (NIST) with certifications on file.

We will overhaul and inspect, replace broken parts, calibrate and certify most brands and types of torque products, such as:

- Preset Torque Wrenches
- Dial Torque Wrenches
- Adjustable Torque Wrenches
- Electronic Torque Wrenches
- Torque Testers
- Screwdrivers
- Drive Ends

Not all brands are supported. Please contact us for further information.

Safety Guidelines for Torque Wrenches

The following precautions should always be taken when using torque wrenches:

- Read instruction manuals completely before using.
- Safety glasses or goggles should be worn at all times when using any hand tool.
- Always pull, DO NOT PUSH, to apply torque and adjust your stance to prevent a fall.
- A “cheater bar” should NEVER be used on a torque wrench when applying force.
- Never use a torque wrench to break fasteners loose.
- Never use at its maximum capacity or in excess thereof.
- Do not attempt to lubricate the internal torque mechanism.
- Do not use torque wrenches that show signs of wear or damage.

Warranty

VAN F. BELKNAP COMPANY, INC. (the “Company”) warrants to the original purchaser that the Company’s products are free from defects in workmanship and materials.

The Company will repair or replace products which fail to give satisfactory service due to defective workmanship or materials (excluding calibration) for 12 months from the date of original purchase. Products must be returned with proof of purchase, freight prepaid, to our facility for warranty evaluation.

The Company warrants “initial, out of box calibration” of each new, unused torque tool. The Company does not provide any warranty for products subjected to abnormal use. Abnormal use includes, but is not limited to, misuse, accident, modification, unreasonable use, neglect, lack of maintenance, use under extreme weather conditions, or use after the tool is significantly worn.

Agents/Representatives of the Company have no authority to make representations of any sort beyond those contained in this warranty.

In no event shall the Company be liable to the customer or anyone claiming through or against customer for any special damages (including, without limitation, personal injury, lost time of production, lost profits, lost sales, interruption of business, or loss of business information).

“NO OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, SHALL APPLY, AND ALL SUCH WARRANTIES ARE HEREBY EXPRESSLY EXCLUDED.”