

# CooperTools



**PNEUMATIC ASSEMBLY TOOLS**

**COOPER** Tools

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CooperTools Division has attained ISO 9001 Quality System Certification for seven of our facilities. The driving force behind the implementation of the Quality System is the commitment "to provide our customers with the **best value delivered** by offering only products and services **that meet or exceed their expectations**".



Lexington, South Carolina



Dayton, Ohio



Hicksville, Ohio



Springfield, Ohio



Braunschweig, Germany



Westhausen, Germany



Ozoir-la-Ferrière, France



| Model         | Page | Model       | Page    | Model        | Page    | Model            | Page    |
|---------------|------|-------------|---------|--------------|---------|------------------|---------|
| 8RNO-10BQ     | .23  | 8SA-7BQ     | .15     | H30NDR08H18  | .57     | • TCI-150RA-3/8" | .84     |
| • 8RNO-20BQ   | .23  | BH-100A     | .78     | H30NDR08H20  | .57     | TVP-110-15-D     | .26, 66 |
| 8RNO-7BQ      | .23  | BH-45A      | .78     | H30NDR08H25  | .57     | TVP-110-15-P     | .26, 66 |
| 8RNP-10BQ     | .23  | BH-60B      | .78     | H30NR12H15   | .56     | TVP-110-15-S     | .26, 66 |
| 8RNP-20BQ     | .23  | BH-70A      | .78     | H30NR12H16   | .56     | • TVP-110-15-U   | .26, 66 |
| • 8RSA-10     | .15  | BH-80A      | .78     | H30NR12H18   | .56     | TVP-110-30-D     | .26, 66 |
| • 8RSA-10BQ   | .15  | BH-90A      | .78     | H30NR12H20   | .56     | TVP-110-30-P     | .26, 66 |
| • 8RSA-20     | .15  | • BL-2A     | .25, 78 | H30NR12H25   | .56     | TVP-110-30-S     | .26, 66 |
| • 8RSA-20BQ   | .15  | • BL-4A     | .25, 78 | H30NR12H29   | .56     | • TVP-110-30-U   | .26, 66 |
| 8RSA-30       | .15  | • BL-6A     | .78     | H30NR20H15   | .56     | W-2109-8         | .75     |
| • 8RSA-30BQ   | .15  | • BL-8A     | .78     | H30NR20H16   | .56     | W-2120-12        | .75     |
| 8RSA-40       | .15  | BLL-6A      | .78     | H30NR20H18   | .56     | • WL-200-3       | .74     |
| 8RSA-40BQ     | .15  | • BLL-8A    | .78     | H30NR20H20   | .56     | • WL-200-4       | .74     |
| • 8RSA-5BQ    | .15  | BM-13A      | .78     | H30NR20H25   | .56     | WL-200-BQ        | .74     |
| • 8RSA-7BQ    | .15  | BM-18A      | .78     | H30NR20H29   | .56     | • WP-200-3       | .74     |
| • 8RSAL-10BQ  | .15  | BM-25A      | .78     | H30NR20H37   | .56     | • WP-200-4       | .74     |
| 8RSAL-20      | .15  | BM-35A      | .78     | MP-15        | .26     | • WP-200-BQ      | .74     |
| • 8RSAL-20BQ  | .15  | BM-45A      | .78     | MP-2B        | .26     | • WP-2049-6      | .74     |
| • 8RSAP-10BQ  | .20  | BML-13A     | .78     | P-15         | .26     | • WP-2050-6      | .74     |
| • 8RSAP-20BQ  | .20  | CPBA-12-AH  | .32     | P-2B         | .26     | • WP-2059-6      | .74     |
| 8RSAP-7BQ     | .20  | CPBA-18     | .32     | PBA-12       | .33     | • WP-2059-8      | .74     |
| 8RSAPT-10B    | .20  | CPBA-18-AH  | .32     | • PBA-12-AH  | .33     | WP-2059-8-6E     | .74     |
| • 8RSAPT-10BQ | .20  | CPBA-30     | .32     | PBA-12-WM    | .33     | • WP-2060B-6     | .74     |
| • 8RSAPT-20BQ | .20  | CPBA-30-AH  | .32     | PBA-18       | .33     | • WP-2060B-8     | .74     |
| 8RSAPT-40BQ   | .20  | CSBA-12-AH  | .32     | PBA-18-18-AH | .33     | • WP-2109B-8     | .74     |
| 8RSAPT-5B     | .20  | CSBA-18     | .32     | • PBA-18-AH  | .33     | WP-2110B-8       | .74     |
| 8RSAPT-5BQ    | .20  | CSBA-18-AH  | .32     | PBA-24       | .33     | • WP-455-4P      | .74     |
| • 8RSAPT-7BQ  | .20  | CSBA-24     | .32     | PBA-24-AH    | .33     | • WP-455-4R      | .74     |
| • 8RSATP-10BQ | .20  | CSBA-30     | .32     | PBA-30-AH    | .33     | WPS-2109B        | .74     |
| 8RSATP-20BQ   | .20  | CSBA-30-AH  | .32     | PBA-30-WM    | .33     | WS-2119          | .75     |
| 8RSATP-30BQ   | .20  | ESBA-12-AH  | .30     | PL-12A       | .25, 78 | • WT-2109-8      | .75     |
| 8RSATP-5BQ    | .20  | ESBA-18-AH  | .30     | SBA-12       | .33     | WT-2109-8-6E     | .75     |
| • 8RSATP-7BQ  | .20  | ESBA-24-AH  | .30     | • SBA-12-AH  | .33     | • WT-2110-8      | .75     |
| 8RSCH-10BQ    | .22  | ESBA-30-AH  | .30     | SBA-18       | .33     | • WT-2119-12     | .75     |
| 8RSCH-20      | .22  | H16NDR09H15 | .57     | • SBA-18-AH  | .33     | WT-2120-12       | .75     |
| 8RSCH-20BQ    | .22  | H16NDR09H20 | .57     | SBA-24-AH    | .33     | • WTS-2109       | .75     |
| 8RSCH-7BQ     | .22  | H16NR13H15  | .56     | SBA-30-AH    | .33     | • WTS-2119       | .75     |
| 8RSCL-10      | .22  | H16NR13H16  | .56     | SBA-30-WM    | .33     | WTS-2120         | .75     |
| 8RSCL-10BQ    | .22  | H16NR13H18  | .56     | • TA4-05B-1  | .26     |                  |         |
| 8RSCL-20BQ    | .22  | H16NR13H20  | .56     | TA4-05B-2    | .26     |                  |         |
| 8RSCL-7BQ     | .22  | H16NR13H25  | .56     | • TA4-05F-1  | .26     |                  |         |
| 8RSCO-10BQ    | .22  | H16NR25H15  | .56     | TA4-05F-2    | .26     |                  |         |
| 8RSCO-20B     | .22  | H16NR25H16  | .56     | • TA4-10B-1  | .26     |                  |         |
| 8RSCO-20BQ    | .22  | H16NR25H20  | .56     | TA4-10B-2    | .26     |                  |         |
| 8SA-10        | .15  | H16NR25H25  | .56     | • TA4-25F-1  | .26     |                  |         |
| • 8SA-10BQ    | .15  | H30NDR08H15 | .57     | TA4-25F-2    | .26     |                  |         |
| 8SA-20BQ      | .15  | H30NDR08H16 | .57     | • TCI-150FRN | .84     |                  |         |

### Warranty

Cooper warrants products and parts sold by it, insofar as they are of its own manufacture, against defects of material and workmanship, under normal use and service in accordance with its written instructions, recommendations, and ratings for installation, operation, maintenance, and service of products, for a period of **ONE YEAR FROM THE DATE OF INITIAL USE, BUT IN NO EVENT SHALL THE WARRANTY EXCEED 24 MONTHS FROM DATE OF DELIVERY TO DISTRIBUTOR.** Proof of Purchase with shipment date must be furnished by the user to validate the warranty. This warranty applies only to products manufactured by Cooper and specifically excludes products manufactured by others. Products not manufactured by Cooper are warranted only to the extent and in the manner warranted to Cooper by the manufacturer

and then only to the extent Cooper is able to enforce such warranty. Cooper's warranty with respect to products manufactured by it is limited to the repair or replacement, as Cooper may elect, of any defective part regarding which the Distributor has given 5 days written notice from the discovery of such defect. Installation and transportation costs are not included. Cooper shall have the option of requiring the return to it of the defective material, transportation prepaid, for inspection. No allowance will be made for repairs without Cooper's approval. **COOPER MAKES NO OTHER WARRANTY OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, AND HEREBY DISCLAIMS ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**

### Lubrication Products

CooperTools' products are classified as non-hazardous manufactured items, defined in the OSHA 1910.1200 Hazard Communication Standard as "Articles". These products, under conditions of normal use, do not release or cause exposure to a hazardous chemical.

Under normal conditions of use, lubrication products sold separately for or used within these tools should not cause an exposure hazard. Refer to the Material Safety Data Sheet (M.S.D.S.) for Safety and Disposal Information. M.S.D.S. sheets are available upon request from CooperTools.

Cooper is also aware of, and complies with, the

provisions of section 611 amendments to the Clean Air Act of 1990. No ozone depleting chemicals have been used in the manufacture of our products. If you resell or distribute these products, you have the responsibility for ensuring that the Material Safety Data Sheets are provided to the purchaser.

Proper lubrication is essential to the economical operation of pneumatic and electric tools. CooperTools perform better and their life is extended by using the recommended lubricants. All lubricants that are listed in the accessory section of this catalog have undergone extensive testing and are recommended for use with CooperTools products.

### Fastener Selection

The suggested fasteners listed in this catalog are determined by matching a tool's maximum rated load to Society of Automotive Engineers (SAE) Grade 5 and International Organization of Standardization (ISO) Grade 9.8 fasteners. The torque capabilities for SAE Grade 5 fasteners are from SAE Manual, SAE J429 (Mechanical and Material Requirement for Externally Threaded Fasteners). The torque capabilities for ISO Grade 9.8 fasteners are from ISO 898-1 (Mechanical Properties of Fasteners). All values selected are based on lubricated fasteners.

The suggested fasteners listed in this catalog are advisory only, and CooperTools recommends that you further consult other technical references before final tool selection. Reliance on the accuracy of this catalog data for any purpose by anyone is at the sole risk of that person. CooperTools is not responsible for any loss, claim, or damage arising from improper tool selection.

The torque values listed under the headings "TORQUE" are tested on an ISO 5393 soft joint rate test fixture unless otherwise stated by a special note.

## Cleco®

The Cleco family of tools is one of the most diverse in the portable tool industry. With a broad selection of clutches and motors, this line of tools covers a wide range of torque at several speeds. Coupled with a diverse line of attachments and throttles, these tools are suitable for an indefinite number of applications.

### Tools that perform

Improving production rates and decreasing costs are critical to the success of today's manufacturer. Cleco assembly tools have been specially designed to run down the broadest range of threaded fasteners, while providing accurate torque. Whether an application is a "soft" or "hard" joint, these tools are fast, consistent and reliable. When it comes to performance and reliability, there is no doubt as to why manufacturers around the world have come to rely on Cleco tools.



### Tools of the highest quality

When we say our tools are built well, we really mean it. CooperTools manufacturing processes are ISO 9001 certified ... that means the Cleco brand is manufactured to the highest standard.

### Tools that are flexible

Many of the inline and pistol grip screwdrivers and nutsetters are equipped with an array of quick-change chucks, slip chucks and square drivers. Likewise, many of the angle head tools are equipped with optional square drive sizes. Bit and finder combinations, insert bit holders, socket adapters and many other accessories are available.

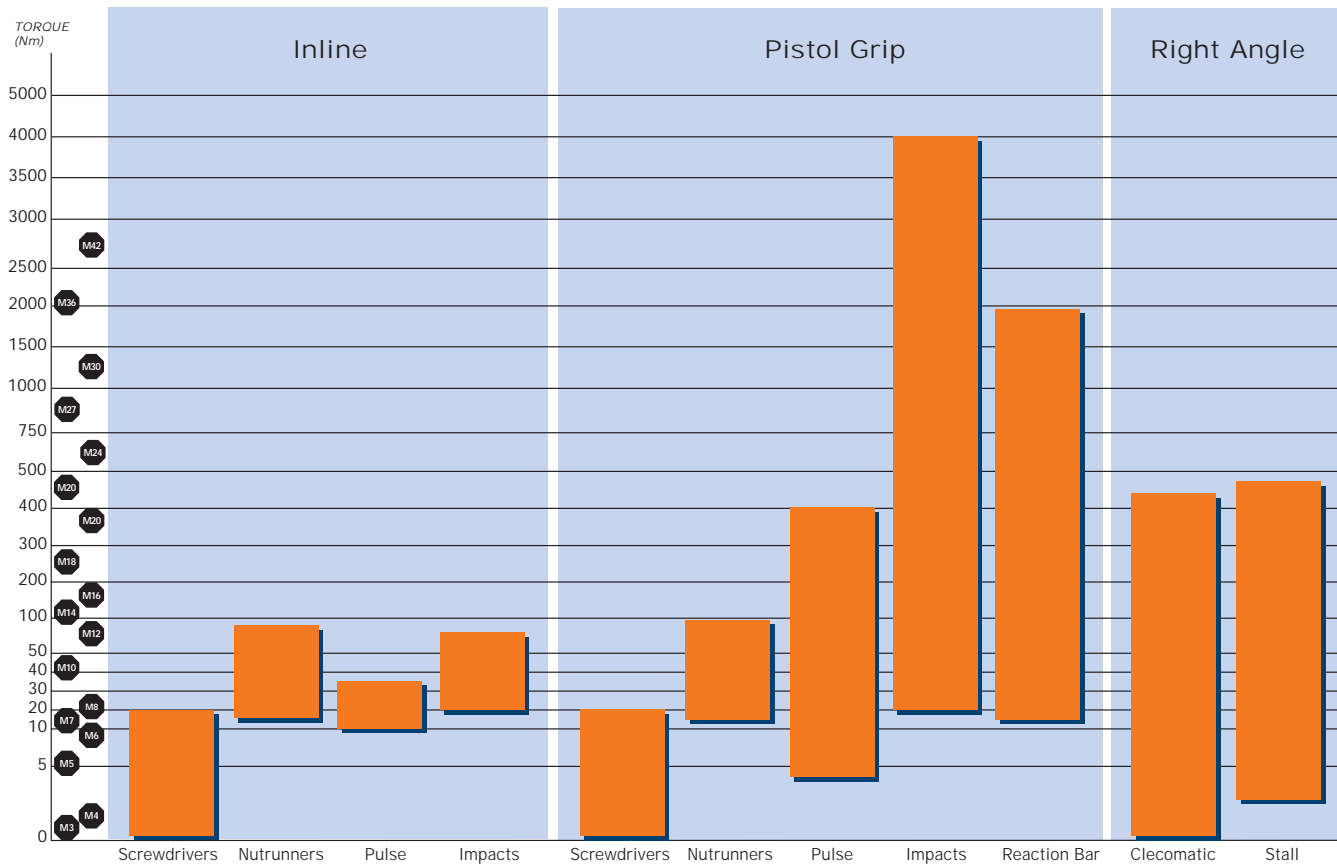
### Tools that work with the operator

It is simple...give an operator a tool that is comfortable to use and the operator will work better. That is why the science of human engineering is integral in the design of every Cleco tool. The weight and shape of a particular tool are carefully designed to maximize control, ease of handling and tool balance. Special attention has been placed on housing grips. Housings are shaped to fit hand contours, and many have additional comfort grips to isolate the operator from temperature and vibration.



### Tools that run quietly

Special attention is given to the design of the exhaust system of every tool. The motor noise is efficiently muffled to insure that the user will have the most quiet working conditions possible.



### Rapid Select means fast delivery

Models indicated with the **RAPID SELECT** icon represent our most popular tools, and are available for fast delivery on limited quantities.

### Tool Certification

We now offer in-house certification service for all of our assembly tools. Standard turnaround time is five (5) days from receipt of tool. Let our trained technicians repair your tools. Contact your local Cleco representative.



# Cleco®

## A tradition of quality is built into every screwdriver.

Cleco screwdrivers have long been recognized as the assembly tool standard against which all other brands are measured. With over 100 years of precision manufacturing experience built into each tool, Cleco screwdrivers provide users the ultimate in light and medium duty assembly tool performance.

Designed to withstand the demanding requirements of today's modern, high repetition assembly lines, Cleco's direct no nonsense approach to overcoming even the most complicated application requirements, has made Cleco the world's #1 choice for assembly tool technology.

Cleco's long standing tradition of service to the customer has led us to develop an extensive line of screwdrivers with configurations to suit a broad range of applications. Options including multiple reversing methods, four different clutch styles, numerous handle alternatives, and a wide variety of accessories provide the building blocks for tool configurations designed to meet our customers' unique assembly application requirements.

The Cleco 2 series of inline, Clecomatic screwdrivers offer dependable repetitive torque accuracy from 8 to .5 in.-lbs, ideal for miniature assemblies often found in extra light-duty electronics assembly using #0 to #5 screws. In the light to medium duty

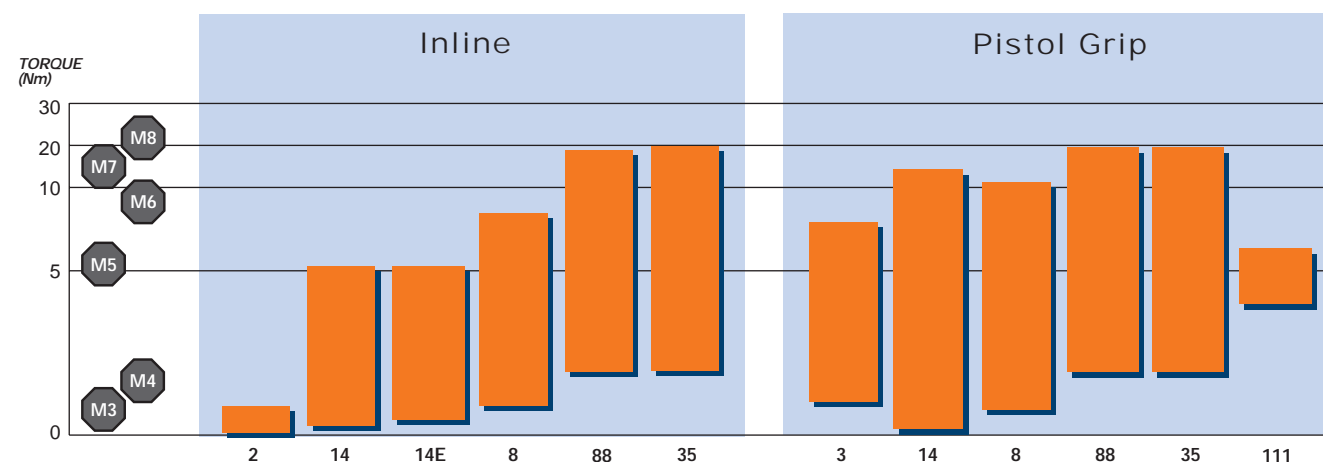
assembly tool market, the new ergonomically designed Cleco 14 series screwdrivers are the ultimate tools for an infinite range of applications including computer, electronics, and appliance assembly.

With a torque range of 7 to 180 in.-lbs (.8 to 20Nm), the 8 & 88 series Cleco screwdrivers cover the gamut of medium duty assembly applications ranging from lawn and garden equipment to small

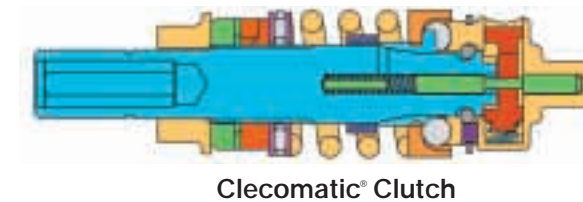


recreational vehicles, and even automotive. Capable of running down fasteners as large as 5/16 (M6), the Cleco 35 series screwdrivers are the true workhorses of the medium to heavy-duty screw assembly market. For applications requiring fast rundown, the Cleco 111 series screwdrivers turn at speeds of up to 4000 rpm, making these great tools for driving large wood screws and lag bolts.

Finally, the durable Cleco 3 series cordless screwdriver combines the versatility and portability of battery operation with the accuracy and repeatability of a torque shutoff clutch.

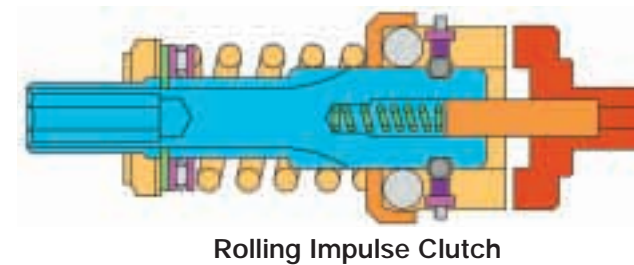


## Choose the right Cleco clutch to match your application.



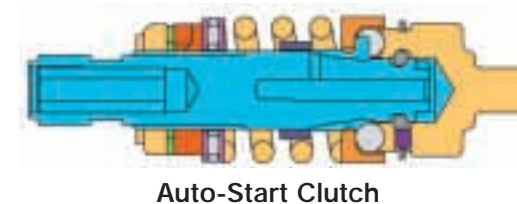
### Clecomatic® Clutch

A Clecomatic tool starts when the bit is depressed and stops the instant preset torque is reached on the fastener. This feature and the patented clutch mechanism help assure consistent repetition of torque settings over a long period of time, which means better quality in the finished product. Since the tool does not dwell on the fastener, production can be boosted 10% or more. The short cycle time of a Clecomatic screwdriver results in less tool wear and fewer replacement parts. The life of a Clecomatic tool is up to five times longer than that of a lever-operated, ratcheting clutch screwdriver.



### Rolling Impulse Clutch

The Rolling Impulse series has two sets of clutch jaws: one set has positive jaw engagement or disengagement so that the bit rotates only when forward pressure is applied to the tool. The second set features large spherical detents and oversize steel balls for a smooth rolling action that insures maximum clutch face life, reduces shock loading and vibration, and improves torque control. All Rolling Impulse tools are lever- or trigger-operated.



### Auto-Start Clutch

Auto-Start screwdrivers feature a unique rolling action clutch. Like the Clecomatic screwdriver, Auto-Start screwdrivers start when the bit is depressed; the tools stops however, only when removed from the work. Excellent tools for triggerless applications, they provide an ideal alternative to the fully automatic Clecomatic screwdriver.



### Stall Type

In the Stall type series, the driving spindle is coupled to the motor without an intermediate clutch. Torque output of this type tool may be controlled within fairly reasonable limits with an air pressure regulator. Stall type tools are also trigger operated.

| CLUTCH SELECTION GUIDE FOR COMMON FASTENING APPLICATIONS |             |   |   |   |   |                  |
|--|-------------|---|---|---|---|------------------|
| CLUTCH TYPE  | APPLICATION | STANDARD BOLT & NUT                             | SHEET METAL SCREW                               | STANDARD BOLT & NUT                             | SELF-TAPPING SCREW  | SELF-LOCKING NUT |
| Clecomatic®  |             | EXCELLENT                                       | FAIR  | EXCELLENT                                       | EXCELLENT<br><small>Where seating torque exceeds tapping torque</small> | EXCELLENT        |
| Rolling Impulse  |             | VERY GOOD                                       | VERY GOOD                                       | VERY GOOD                                       | GOOD  | GOOD             |
| Auto-Start   |             | VERY GOOD                                       | VERY GOOD                                       | VERY GOOD                                       | GOOD  | GOOD             |
| Stall Drive  |             | FAIR<br><small>Under certain conditions</small> | GOOD<br><small>Under certain conditions</small> | FAIR<br><small>Under certain conditions</small> | FAIR<br><small>Under certain conditions</small>                         | FAIR             |

# Cleco®

## Clecomatic screwdrivers improve productivity, operator performance and finished product quality.

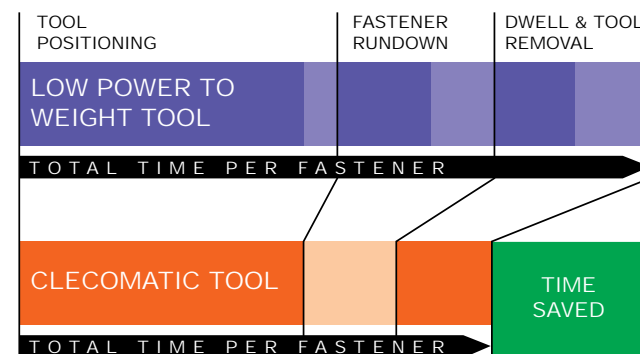
Every Clecomatic product feature is designed for higher production and increased productivity.

With high power-to-weight ratios, Clecomatic screwdrivers reduce cycle time from fastener to fastener, and operators prefer the lighter, more powerful tool. On many applications, a higher speed tool can be used for faster rundown and, because of the automatic shut-off feature, will provide consistent torque repeatability.

Clecomatic screwdrivers allow the operator to remove the tool from the fastener instantly after shut-off

because no dwell time is needed to reach torque thereby increasing productivity by as much as 10%. The automatic stop feature also prevents unnecessary bit rotation and extends bit life up to 25 times or longer than the average life of bits used in ratcheting tools.

Other benefits provided by quality Clecomatic screwdrivers are lower scrap, improved product quality, reduced warranty claims and costly rework.

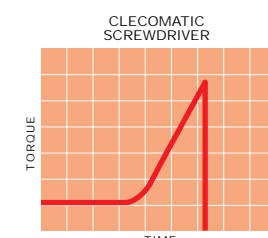
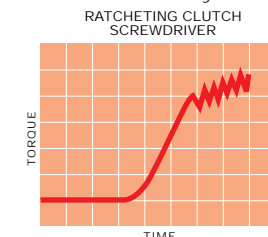


## Clecomatic tools improve operator performance, reduce operator fatigue.

Clecomatic tools have been designed from the inside out to make your operators more efficient and productive, while helping to minimize the fatigue associated with high volume assembly operations.

Reduced torque reaction, absence of vibration, quieter operation, ease of starting, compact size, high power-to-weight ratio, better tool feel and balance and greater reliability are some of the benefits Clecomatic tools provide for operators.

Couple these advantages with more power per pound, which reduces operator fatigue, along with a tool that is easy to handle and more efficient.



Because Clecomatic tools do not ratchet, the operator is not subjected to tiring shock, vibration and excessive torque reaction. The TORQUE/ TIME graphs at left illustrate how Clecomatic tools reduce the length of time an operator spends counteracting the ratcheting effect of other screwdrivers.

Operators using Clecomatic tools are exposed to far less tool noise, providing an improvement in their working environment. The automatic start/stop feature means that the tool runs only while the fastener is being tightened. When the tool shuts off, the fastener is accurately seated and there is virtually no clutch ratcheting, reducing the operator's exposure to tool noise by as much as 80%.

| TYPE OF SCREWDRIVER       | MOTOR NOISE DURING POSITIONING OF TOOL | MOTOR NOISE WHILE DRIVING FASTENER | MOTOR AND CLUTCH NOISE DURING DWELL |
|---------------------------|--|------------------------------------|-------------------------------------|
| Clecomatic                | NONE                                   | Smooth wave                        | NONE                                |
| Push-to-Start Ratcheting  | NONE                                   | Smooth wave                        | Jagged wave                         |
| Lever-Operated Ratcheting | Small wave                             | Smooth wave                        | Jagged wave                         |

## Reduce energy costs as much as 85%.

Clecomatic screwdrivers save energy costs. Time studies on air consumption conducted with several types of screwdrivers have shown that the time a tool is using air can be decreased from 4.0 seconds to .6 seconds per fastener cycle, lowering the cost of compressed air by 85% over lever operated ratcheting screwdrivers.

## 60 MONTH WARRANTY

### Cleco® 14 & 8 Series Clecomatic® Screwdrivers

CooperTools warrants the 14 and 8 series Clecomatic screwdrivers and parts to be free from defects in workmanship and material of the life of the tool. The clutch assemblies are warranted for SIXTY MONTHS against failure or wear causing malfunction.

CooperTools' obligation under this warranty is to repair or replace, without charge to the original purchaser, any part which does not meet the warranty outlined above during the active commercial production of this tool. This tool is to be returned to the factory with carrying charges prepaid.

This warranty shall not apply to any product that has been fixture mounted or subjected to misuse, negligence or accident; or in which parts not made or supplied by CooperTools shall have been used; or which shall have been altered or repaired by other than CooperTools personnel in a manner which in the determination of CooperTools shall have affected its operation.

THIS WARRANTY CONSTITUTES THE ENTIRE OBLIGATION OF THE COMPANY RELATING TO THE SALE AND USE OF SUCH PRODUCT AND ITS MAXIMUM LIABILITY IS LIMITED TO THE PURCHASE PRICE OF SUCH PRODUCT. IN NO EVENT SHALL THE COMPANY BE LIABLE FOR CONSEQUENTIAL, INDIRECT, INCIDENTAL OR SPECIAL DAMAGES OF ANY NATURE ARISING FROM THE SALE OF USE OF SUCH PRODUCT.

The cost saved in reduced air consumption alone can easily cover the cost of a Clecomatic screwdriver over its service life.

## Up to five times longer life, fewer replacement parts and lower service costs make Clecomatic screwdrivers a true value in quality.

The major benefit offered by Clecomatic screwdrivers is their extremely long service life. As with other quality products, their cost should be measured in terms of years of service, maintenance costs for parts and labor, and on-the-job performance.

Measurably longer life of Clecomatic screwdrivers has been achieved through simplicity of design requiring fewer moving parts, coupled with the smooth rolling action of large diameter clutch balls that increase load bearing surfaces for longer clutch life. Also, the use of fewer parts allows the size and wall thickness of the vital components to be beefed up for greater strength and durability.

These patented design features, along with high quality, close tolerance motors and rugged gear components, extend the interval between service and reduce replacement parts cost.

The warranty covering the 14 and 8 series Clecomatic screwdrivers is further proof that these Cleco tools last longer.

## Clecomatic Clutch Operation

### PRE-START

In the pre-start position, air pressure forces the shutoff valve forward and seated, preventing live air from reaching the motor. In turn, the clutch assembly is forced forward to the front of the clutch housing by the trip rod.

### RUNDOWN

As the operator pushes the tool against the workpiece, the clutch is forced back into the clutch housing, unseating the shutoff valve, and allowing live air to reach the motor. During rundown, spring force holds balls within the clutch assembly firmly down in valleys between lobes of the clutch cam, causing the motor, gear train, and clutch assembly to rotate as one unit to tighten the fastener.

### SHUTOFF

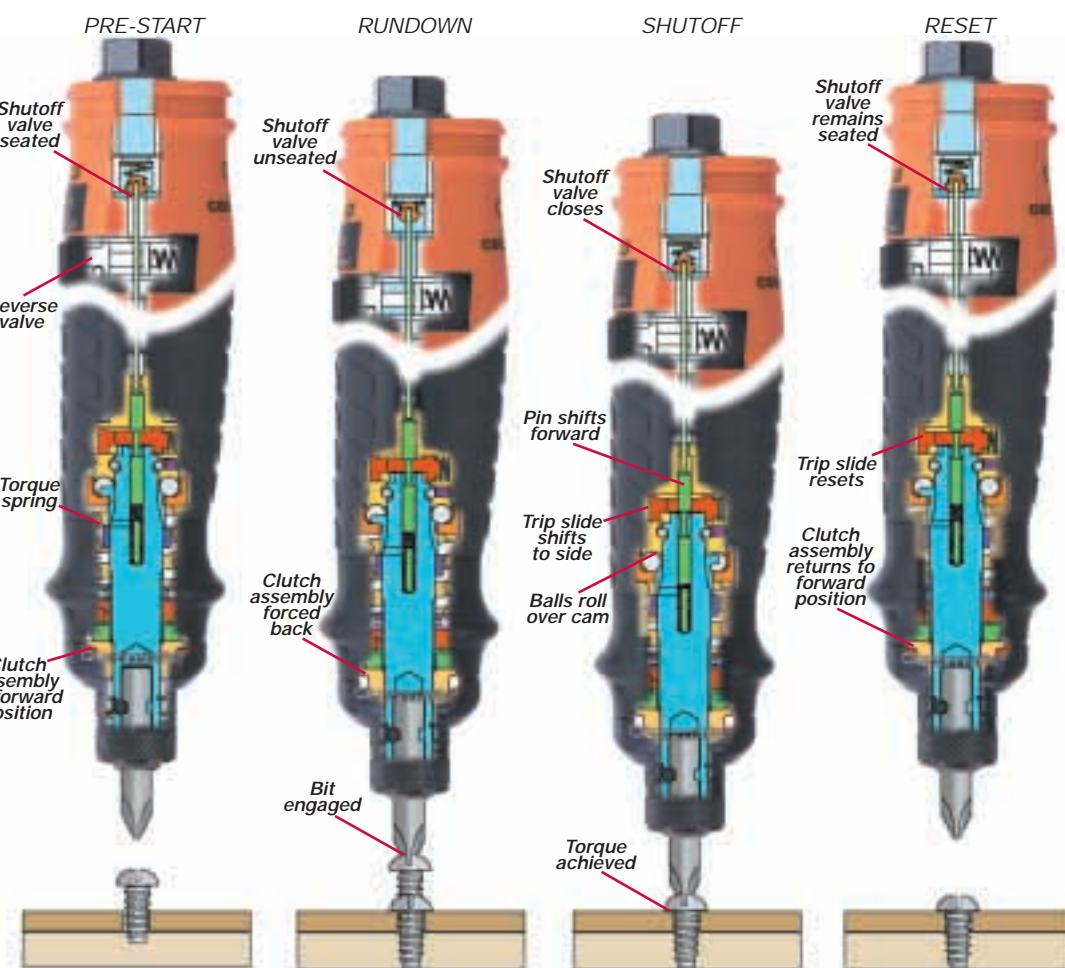
The torque at which the clutch shuts the tool off is determined by the amount of compression force exerted by the torque spring. This torque is preset, and can be adjusted externally by either compressing or relaxing the torque spring in order to increase or decrease torque output.

At the critical moment that the desired output torque on the fastener is reached, two things happen:

1. The balls roll over the top of the cam lobes, disengaging the spindle from the motor, reducing the influence of inertia from the spinning motor.
2. The clutch spindle cam forces the trip slide far enough to the side to allow a dowel pin to move forward through a hole in the trip slide. This allows the shutoff valve to seat, shutting off the tool.

### RESET

When the tool is removed from the workpiece the clutch moves forward in the housing, and two small springs reverse the linear motion of the previous step, allowing the trip slide to return to its operating position.





## Inline Screwdrivers

14 Series Clecomatic Clutch

# Cleco®

### Introducing the Cleco 14 Series Inline Screwdrivers... the new industry standard

Cooper Tools has made the Cleco #5 – now to be called the Cleco 14 Series – even better, by re-engineering the ergonomics for greater comfort, reduced fatigue and enhanced productivity.

We've also reduced the noise level and added a few innovative new features: (1) a rear overhose option to help decrease noise levels and exhaust contaminants (2) one-handed reverse actuation (3) torque signal capability for use with qualifiers.



Overhose available for exhaust deflection and noise reduction.

Composite housing reduces temperature and vibration transfer to improve operator comfort.

Soft, oval-shaped housing fits the natural contour of the hand providing maximum operator comfort and grip.

Time-proven clutch assembly and planetary gears are interchangeable with Cleco #5 screwdrivers. Clutch is warranted for 5 full years.



Single lever action for increased productivity

Soft, oval-shaped housing fits the natural contour of the hand providing maximum operator comfort and grip.

Torque Signal capability kit available.

Model number indicates maximum torque value.

Hidden, but easy to access, torque adjustment reduces on line tampering. (Shown in open position.)



Single lever action for increased productivity

Comfort grip tapered to indicate tool direction.

### The Things We Changed

The new Cleco 14S inline screwdrivers deliver a number of significant improvements over the industry-standard Cleco #5, as well as competing tools:

- Dramatically redesigned ergonomics enable the tool to run cooler in the hand, promote operator comfort and improve productivity.
- One-hand actuation of the reverse mode results in improved fastening speeds and higher productivity levels.
- The rear exhaust can be fitted with an optional overhose, which helps to reduce noise levels and improve operator performance.
- Lower noise levels enhance operator comfort and relieve fatigue.
- Torque signal capability for use with qualifiers for process control.



Multiple handle configurations for improved flexibility and operator comfort.

### The Things We Didn't Change

The Cleco #5 was such a great tool, there were a lot of things we didn't change in the design of the new Cleco 14S:

- The heart of the Cleco 14S is still the time-honored, time-proven Clecomatic clutch, which assures you of greater consistency and repeatability in a wide variety of fastening applications.
- Both push-to-start and lever push-to-start options are available to suit operator preferences.
- High power-to-weight ratios and automatic start/stop mechanism help reduce cycle time from fastener to fastener and improve productivity.
- More than 90% of your Cleco #5 parts will be interchangeable with the Cleco 14S, resulting in substantial cost savings for spare parts. Retrofit kits for the Cleco #5 are also available.





2, 14 Series

Torque Range:  
.06 – 5.1 Nm  
0.5 – 45 In. Lbs

Screw Size:  
M2.5 – M4  
#4 – #10

- Push button and sliding knob reverse
- Push-to-start and Push & Lever start
- External torque adjustment
- Bit & finder and quick change chuck



| Model Number   |               | Screw Size |         | Free Speed | Torque Range |          | Length*  |       | Weight |      |      |
|--|---------------|------------|---------|------------|--------------|----------|----------|-------|--------|------|------|
|  |               | Gr. 5      | Gr. 9.8 |            | in.          | Nm       | in.      | mm    | lbs.   | kg   |      |
| 1/4" Quick Change  | Bit & Finder* | in.        | mm      | RPM        | in.-lbs.     | Nm       | in.      | mm    | lbs.   | kg   |      |
| <b>Push-to-Start - Push Button Reverse – Clecomatic Clutch</b> |               |            |         |            |              |          |          |       |        |      |      |
|  | 2RSA-10B      | #4         | M2.5    | 1000       | 8 - .5       | .9 - .06 | 7.60     | 194   | 0.5    | 0.20 |      |
|  | 2RSA-10SB**   | #4         | M2.5    | 1000       | 8 - .5       | .9 - .06 | 6.40     | 162   | 0.5    | 0.20 |      |
| <b>Push-to-Start - Reversible – Clecomatic Clutch</b>          |               |            |         |            |              |          |          |       |        |      |      |
|  | 14SPA02Q      | 14SPA02B   | #6      | M3.5       | 2800         | 4 - 19   | .5 - 2.1 | 9.05  | 230    | 1.4  | 0.63 |
|  | 14SPA03Q      | 14SPA03B   | #8      | M3.5       | 1900         | 4 - 26   | .5 - 2.9 | 9.25  | 235    | 1.4  | 0.64 |
|  | 14SPA04Q      | 14SPA04B   | #10     | M4         | 1100         | 3 - 40   | .4 - 4.5 | 9.05  | 230    | 1.3  | 0.61 |
|  | 14SPA05Q      | 14SPA05B   | #10     | M4         | 660          | 2 - 45   | 2 - 5.1  | 9.45  | 240    | 1.5  | 0.67 |
|  | 14SPA06Q      | 14SPA06B   | #10     | M4         | 260          | 2 - 45   | 2 - 5.1  | 9.45  | 240    | 1.5  | 0.68 |
| <b>Lever Push-to-Start - Reversible – Clecomatic Clutch</b>    |               |            |         |            |              |          |          |       |        |      |      |
|  | 14SCA02Q      | 14SCA02B   | #6      | M3.5       | 2800         | 4 - 19   | .5 - 2.1 | 9.80  | 249    | 1.5  | 0.69 |
|  | 14SCA03Q      | 14SCA03B   | #8      | M3.5       | 1900         | 4 - 26   | .5 - 2.9 | 10.00 | 254    | 1.5  | 0.70 |
|  | 14SCA04Q      | 14SCA04B   | #10     | M4         | 1100         | 3 - 40   | .4 - 4.5 | 9.80  | 249    | 1.5  | 0.66 |
|  | 14SCA05Q      | 14SCA05B   | #10     | M4         | 660          | 2 - 45   | 2 - 5.1  | 10.20 | 259    | 1.6  | 0.73 |
|  | 14SCA06Q      | 14SCA06B   | #10     | M4         | 260          | 2 - 45   | 2 - 5.1  | 10.20 | 259    | 1.6  | 0.74 |

\*Add .63" (16mm) for bit & finder models  
\*\* Short housing  
**GENERAL:**  
Air Inlet: 1/8" NPT  
Minimum Hose Size: 3/16"  
Tool performance rated at 90 psi (620kPa) air pressure.

**STANDARD EQUIPMENT:**  
Operating instructions & service manual.  
Suspension bail.  
All torque springs required to meet indicated torque specification.  
Lever Push-to-Start models include kit to convert to lever only.

**OPTIONAL EQUIPMENT:**  
Bits & finders.  
Non-Reverse Kit: 207030  
Torque Signal Kit: 301106 (lever only)  
Overhose: 207019  
Refer to Page 7 for description of Rapid Select



8, 88 Series

Torque Range:  
0.8 – 19 Nm  
7.0 – 170 In. Lbs

Screw Size:  
M3.5 – M6  
#8 – 5/16

- Bit and finder, quick change and square drive
- Short stroke button reverse
- External torque adjustment (Quick change)



| Model Number                                      |                       |                   | Screw Size  |         | Free Speed | Torque Range |        | Length* |      | Weight |     |     |
|---|-----------------------|-------------------|-------------|---------|------------|--------------|--------|---------|------|--------|-----|-----|
| Bit & Finder                                      | 1/4" Hex Quick Change | 3/8" Square Drive | Gr. 5       | Gr. 9.8 |            | in.-lbs.     | Nm     | in.     | mm   | lbs.   | kg  |     |
| <b>Push-to-Start - Push Button Reverse</b>        |                       |                   |             |         |            |              |        |         |      |        |     |     |
|   | 8RSA-40               | 8RSA-40BQ         | #8          | M3.5    | 3200       | 25-7         | 2.8-.8 | 8.9     | 241  | 2.1    | 1.0 |     |
|   | 8RSA-30               | 8RSA-30BQ         | #10         | M4      | 2500       | 30-7         | 3.4-.8 | 8.9     | 241  | 2.1    | 1.0 |     |
|   | 8RSA-20               | 8RSA-20BQ         | #10         | M4      | 1800       | 40-7         | 4.5-.8 | 8.9     | 241  | 2.1    | 1.0 |     |
|   | 8RSA-10               | 8RSA-10BQ         | #10         | M5      | 800        | 65-7         | 7.3-.8 | 9.6     | 260  | 2.4    | 1.1 |     |
|   |                       | 8RSA-7BQ          | 1/4         | M5      | 550        | 75-7         | 8.5-.8 | 9.6     | 260  | 2.4    | 1.1 |     |
|   |                       | 8RSA-5BQ          | 1/4         | M5      | 400        | 75-7         | 8.5-.8 | 9.6     | 260  | 2.4    | 1.1 |     |
|   |                       | 88RSA-7CQ         | 88RSA-7C-3  | 1/4     | M6         | 550          | 95-15  | 10-2    | 9.5  | 241    | 2.6 | 1.2 |
|   |                       | 88RSA-5CQ         | 88RSA-5C-3  | 5/16    | M6         | 400          | 160-15 | 18-2    | 9.5  | 241    | 2.6 | 1.2 |
| <b>Push-to-Start - Non-Reversible</b>             |                       |                   |             |         |            |              |        |         |      |        |     |     |
|   |                       | 8SA-20BQ          | #10         | M4      | 2000       | 42-7         | 4.7-.8 | 8.5     | 232  | 2.0    | 0.9 |     |
|   | 8SA-10                | 8SA-10BQ          | #10         | M5      | 1000       | 67-7         | 7.6-.8 | 9.1     | 251  | 2.3    | 1.0 |     |
|   |                       | 8SA-7BQ           | 1/4         | M5      | 650        | 75-7         | 8.5-.8 | 9.1     | 251  | 2.3    | 1.0 |     |
|   |                       | 88SA-7CQ          | 1/4         | M6      | 650        | 100-15       | 11-2   | 9.1     | 232  | 2.5    | 1.1 |     |
|   |                       | 88SA-5CQ          | 88SA-5C-3   | 5/16    | M6         | 500          | 170-15 | 19-2    | 9.1  | 232    | 2.5 | 1.1 |
| <b>Push and Lever Start - Push Button Reverse</b> |                       |                   |             |         |            |              |        |         |      |        |     |     |
|   | 8RSAL-20              | 8RSAL-20BQ        | #10         | M4      | 1800       | 38-7         | 4.3-.8 | 10.5    | 282  | 2.6    | 1.2 |     |
|   |                       | 8RSAL-10BQ        | #10         | M5      | 800        | 60-7         | 6.8-.8 | 11.3    | 302  | 2.9    | 1.3 |     |
|   |                       | 88RSAL-5CQ        | 88RSAL-5C-3 | 5/16    | M6         | 400          | 160-15 | 18-2    | 11.1 | 282    | 3.1 | 1.4 |

\* Add .63" (16mm) for bit & finder models  
**GENERAL:**  
Air Inlet: 1/4" NPT  
Minimum Hose Size: 1/4"  
Tool performance rated at 90 psi (620kPa) air pressure.  
Length and weight of finder type tools includes standard length bit & finder.  
Weight does not include dead handle.

**STANDARD EQUIPMENT:**  
Operating instructions & service manual  
Suspension bail  
Dead handle on all models above 100 in.lbs. torque capacity  
All torque springs required to meet indicated torque specification  
**STANDARD EQUIPMENT IF SPECIFIED:**  
One bit, finder, and finder spring (bit & finder models only)

Grip Sleeve (202346: Push-to-Start models only)  
Dead handle (861006)  
**OPTIONAL EQUIPMENT:**  
Bits & finders: Page 20  
Additional accessories: Pages 20-22  
Torque Springs: Page 20  
Refer to Page 7 for description of Rapid Select

# Pistol Grip Screwdrivers

14 Series Clecomatic Clutch

## Cleco®

### Introducing the Cleco 14 Series Pistol Grip Screwdrivers... the new industry standard

Cooper Tools has made the Cleco #5 – now to be called the Cleco 14 Series – even better, by re-engineering the ergonomics for greater comfort, reduced fatigue and enhanced productivity.

We've also reduced the noise level and added a few



innovative new features: (1) a rear overhose option to help decrease noise levels and exhaust contaminants (2) one-handed reverse actuation (3) torque signal capability for use with qualifiers.

#### The Things We Changed

Like their inline counterparts, the new Cleco 14 series pistol grip screwdrivers deliver a number of improvements over the #5 and competing tools:

- Redesigned ergonomics enable the Cleco 14P and 14T to run cooler in the hand, promote operator comfort and improve productivity.
- Two handle styles are available to match the application requirements. "P" style handle is ergonomically designed for driving screws. The "T" handle design is best suited for small nut or bolt rundowns. In either case, the handle comfortably conforms to the hand.
- The bottom exhaust can be fitted with an optional

overhose, which helps to reduce noise levels and improve operator performance.

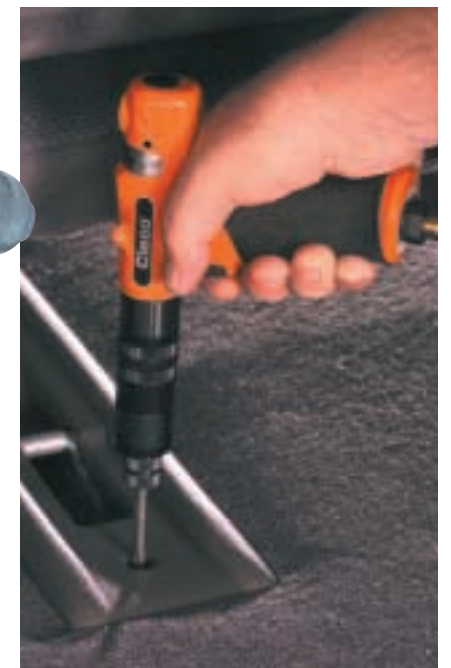
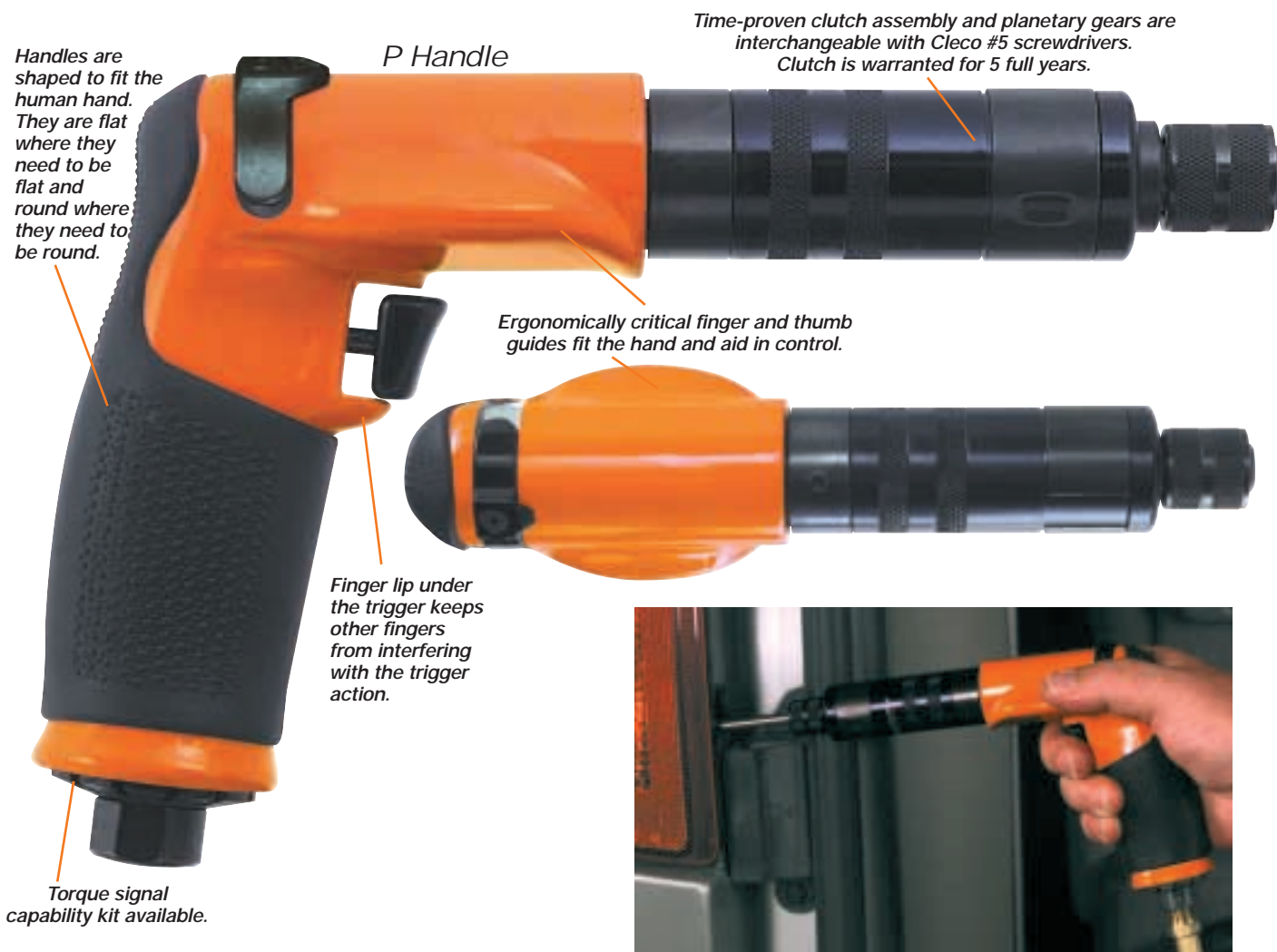
- Lower noise levels enhance operator comfort and relieve fatigue.
- Multiple air inlets (top, bottom, rear) on "T" handle.
- Torque signal capability for use with qualifiers for process control.

- High power-to-weight ratios and automatic start/stop mechanism help reduce cycle time from fastener to fastener and improve productivity.
- More than 90% of your Cleco #5 parts will be interchangeable with the Cleco 14, resulting in substantial cost savings for spare parts. Retrofit kits for the Cleco #5 are also available.

#### The Things We Didn't Change

The Cleco #5 was such a great tool, there were a lot of things we didn't change in the design of the new Cleco 14P and 14T:

- Both pistol grip tools are available with the time-honored, time-proven Clecomatic clutch or a stall clutch, which assures you of greater flexibility in a wide variety of fastening applications.
- Feathering trigger to allow for slow starts and controlled operation.



# Pistol Grip Screwdrivers

Clecomatic Clutch

## Cleco®

### 14 Series

Torque Range:  
0.2 - 14.7 Nm  
2.0 - 130 In. Lbs

Screw Size:  
M3.5 - M6  
#6 - 1/4"

- Sliding knob reverse
- External torque adjustment
- Convenient top, bottom and rear air inlet



# Pistol Grip Screwdrivers

Clecomatic Clutch

## Cleco®

### 14 Series

Torque Range:  
0.2 - 14.7 Nm  
2.0 - 130 In. Lbs

Screw Size:  
M3.5 - M6

- Sliding knob reverse
- External torque adjustment
- Quick change drive



| Model Number | Screw Size |         | Free Speed | Torque Range |    | Length* |    | Weight |    |
|--------------|------------|---------|------------|--------------|----|---------|----|--------|----|
|              | Gr. 5      | Gr. 9.8 |            | in.-lbs.     | Nm | in.     | mm | lbs.   | kg |

#### Push and Trigger Start - T Handle - Clecomatic Clutch

| Model Number | Screw Size | Free Speed | Torque Range     | Length* | Weight  |
|--------------|------------|------------|------------------|---------|---------|
| 14TCA02Q     | #6 M3.5    | 2800       | 4 - 19 0.5 - 2.1 | 8.4 214 | 1.8 0.8 |
| 14TCA03Q     | #8 M3.5    | 1900       | 4 - 26 0.5 - 2.9 | 8.6 219 | 1.9 0.8 |
| 14TCA04Q     | #10 M4     | 1100       | 3 - 40 0.3 - 4.5 | 8.4 214 | 1.9 0.8 |
| 14TCA05Q     | #10 M4     | 660        | 2 - 45 0.2 - 5.1 | 8.8 224 | 1.9 0.9 |
| 14TCA06Q     | #10 M4     | 260        | 2 - 45 0.2 - 5.1 | 8.8 224 | 1.9 0.9 |

#### Trigger Start - T Handle - Clecomatic Clutch

| Model Number | Screw Size | Free Speed | Torque Range        | Length*  | Weight  |
|--------------|------------|------------|---------------------|----------|---------|
| 14TTA02Q     | #6 M3.5    | 2800       | 4 - 19 0.5 - 2.1    | 8.3 211  | 1.8 0.8 |
| 14TTA03Q     | #8 M3.5    | 1900       | 4 - 26 0.5 - 2.9    | 8.5 216  | 1.9 0.8 |
| 14TTA04Q     | #10 M4     | 1100       | 3 - 40 0.3 - 4.5    | 8.3 211  | 1.9 0.8 |
| 14TTA05Q     | #10 M4     | 660        | 2 - 45 0.2 - 5.1    | 8.7 221  | 1.9 0.9 |
| 14TTA06Q     | #10 M4     | 260        | 2 - 45 0.2 - 5.1    | 8.7 221  | 1.9 0.9 |
| 14TTA07Q     | #10 M5     | 660        | 21 - 60 2.4 - 6.8   | 10.0 255 | 2.3 1.0 |
| 14TTA10Q     | 1/4" M5    | 400        | 30 - 87 3.4 - 9.8   | 10.2 260 | 2.3 1.1 |
| 14TTA15Q     | 1/4" M6    | 250        | 35 - 130 4.0 - 14.7 | 10.0 255 | 2.3 1.0 |

**GENERAL:**  
Air Inlet: 1/8" NPT  
Minimum Hose Size: 3/16"  
Tool performance rated at 90 psi (620kPa) air pressure.

**STANDARD EQUIPMENT:**  
Operating instructions & service manual  
Suspension ball

Dead handle on all models above 100 in.-lbs. torque capacity  
All torque springs required to meet indicated torque specification

**OPTIONAL EQUIPMENT:**  
Additional accessories: Pages 24-26  
Non-Reverse Kit: 207030  
Torque Signal Kit: 301118

(Trigger with Clecomatic clutch only)  
Overhose: 207107  
Push-only Conversion Kit: 301121  
Refer to Page 7 for description of Rapid Select

| Model Number | Screw Size |         | Free Speed | Torque Range |    | Length* |    | Weight |    |
|--------------|------------|---------|------------|--------------|----|---------|----|--------|----|
|              | Gr. 5      | Gr. 9.8 |            | in.-lbs.     | Nm | in.     | mm | lbs.   | kg |

#### Push & Trigger Start - P Handle - Clecomatic Clutch

| Model Number | Screw Size | Free Speed | Torque Range     | Length* | Weight  |
|--------------|------------|------------|------------------|---------|---------|
| 14PCA02Q     | #6 M3.5    | 2800       | 4 - 19 0.5 - 2.1 | 8.2 208 | 1.7 0.8 |
| 14PCA03Q     | #8 M3.5    | 1900       | 4 - 26 0.5 - 2.9 | 8.4 213 | 1.8 0.8 |
| 14PCA04Q     | #10 M4     | 1100       | 3 - 40 0.3 - 4.5 | 8.2 208 | 1.7 0.8 |
| 14PCA05Q     | #10 M4     | 660        | 2 - 45 0.2 - 5.1 | 8.6 218 | 1.8 0.8 |
| 14PCA06Q     | #10 M4     | 260        | 2 - 45 0.2 - 5.1 | 8.6 218 | 1.8 0.8 |

#### Trigger Start - P Handle - Clecomatic Clutch

| Model Number | Screw Size | Free Speed | Torque Range        | Length*  | Weight  |
|--------------|------------|------------|---------------------|----------|---------|
| 14PTA02Q     | #6 M3.5    | 2800       | 4 - 19 0.5 - 2.1    | 8.1 205  | 1.7 0.8 |
| 14PTA03Q     | #8 M3.5    | 1900       | 4 - 26 0.5 - 2.9    | 8.3 210  | 1.8 0.8 |
| 14PTA04Q     | #10 M4     | 1100       | 3 - 40 0.3 - 4.5    | 8.1 205  | 1.7 0.8 |
| 14PTA05Q     | #10 M4     | 660        | 2 - 45 0.2 - 5.1    | 8.5 215  | 1.8 0.8 |
| 14PTA06Q     | #10 M4     | 260        | 2 - 45 0.2 - 5.1    | 8.5 215  | 1.8 0.8 |
| 14PTA07Q     | #10 M5     | 660        | 21 - 60 2.4 - 6.8   | 9.8 249  | 2.2 1.0 |
| 14PTA10Q     | 1/4" M5    | 400        | 30 - 87 3.4 - 9.8   | 10.0 254 | 2.2 1.0 |
| 14PTA15Q     | 1/4" M6    | 250        | 35 - 130 4.0 - 14.7 | 9.8 249  | 2.2 1.0 |

**GENERAL:**  
Air Inlet: 1/8" NPT  
Minimum Hose Size: 3/16"  
Tool performance rated at 90 psi (620kPa) air pressure.

**STANDARD EQUIPMENT:**  
Operating instructions & service manual  
Suspension ball  
Dead handle on all models above 100 in.-lbs. torque capacity  
All torque springs required to meet indicated torque specification

**OPTIONAL EQUIPMENT:**  
Additional accessories: Pages 24-26  
Non-Reverse Kit: 301120  
Torque Signal Kit: 301119  
(Trigger with Clecomatic clutch only)  
Overhose: 1025685  
Refer to Page 7 for description of Rapid Select

# Pistol Grip Screwdrivers

Clecomatic Clutch

## Cleco®

### 8, 88 Series

Torque Range:  
0.8 – 20 Nm  
7.0 – 180 In. Lbs

Screw Size:  
M3.5 – M6  
#8 – 5/16"

- Bit and finder, quick change and square drive
- Reversible



| Bit & Finder | Model Number          |                   | Screw Size   |               | Free Speed<br>RPM | Torque Range |    | Length* |    | Weight |    |
|--------------|-----------------------|-------------------|--------------|---------------|-------------------|--------------|----|---------|----|--------|----|
|              | 1/4" Hex Quick Change | 3/8" Square Drive | Gr. 5<br>in. | Gr. 9.8<br>mm |                   | in.-lbs.     | Nm | in.     | mm | lbs.   | kg |

#### Push-to-Start - Sliding Knob Reverse

|  |            |     |    |      |      |       |     |     |     |     |
|--|------------|-----|----|------|------|-------|-----|-----|-----|-----|
|  | 8RSAP-20BQ | #10 | M4 | 1800 | 40-7 | 4.5-8 | 8.5 | 216 | 2.8 | 1.3 |
|  | 8RSAP-10BQ | #10 | M5 | 800  | 65-7 | 7.3-8 | 9.3 | 235 | 3.0 | 1.4 |
|  | 8RSAP-7BQ  | 1/4 | M5 | 550  | 75-7 | 8.5-8 | 9.3 | 235 | 3.0 | 1.4 |

#### Push and Trigger Start - Sliding Knob Reverse

|            |             |              |      |      |        |        |      |     |     |     |     |
|------------|-------------|--------------|------|------|--------|--------|------|-----|-----|-----|-----|
|            | 8RSAPT-40BQ | #8           | M3.5 | 3200 | 25-7   | 2.8-8  | 8.5  | 216 | 2.8 | 1.3 |     |
|            | 8RSAPT-20BQ | #10          | M4   | 1800 | 40-7   | 4.5-8  | 8.5  | 216 | 2.8 | 1.3 |     |
| 8RSAPT-10B | 8RSAPT-10BQ | #10          | M5   | 800  | 65-7   | 7.3-8  | 9.3  | 235 | 3.0 | 1.4 |     |
|            | 8RSAPT-7BQ  | 1/4          | M5   | 550  | 75-7   | 8.5-8  | 9.3  | 235 | 3.0 | 1.4 |     |
| 8RSAPT-5B  | 8RSAPT-5BQ  | 1/4          | M5   | 400  | 75-7   | 8.5-8  | 9.3  | 235 | 3.0 | 1.4 |     |
|            | 88RSAPT-7CQ | 1/4          | M6   | 550  | 95-15  | 10-2   | 9.0  | 229 | 3.1 | 1.4 |     |
|            | 88RSAPT-5CQ | 88RSAPT-5C-3 | 5/16 | M6   | 400    | 160-15 | 18-2 | 9.0 | 229 | 3.1 | 1.4 |
|            | 88RSAPT-2CQ | 5/16         | M6   | 200  | 180-15 | 20-2   | 9.8  | 248 | 3.4 | 1.5 |     |

#### Trigger Start - Sliding Knob Reverse

|  |             |              |      |      |      |        |      |     |     |     |     |
|--|-------------|--------------|------|------|------|--------|------|-----|-----|-----|-----|
|  | 8RSATP-30BQ | 10           | M4   | 2500 | 30-7 | 3.4-8  | 8.4  | 213 | 2.8 | 1.3 |     |
|  | 8RSATP-20BQ | 10           | M4   | 1800 | 40-7 | 4.5-8  | 8.4  | 213 | 2.8 | 1.3 |     |
|  | 8RSATP-10BQ | 10           | M5   | 800  | 65-7 | 7.3-8  | 9.1  | 232 | 3.0 | 1.4 |     |
|  | 8RSATP-7BQ  | 1/4          | M5   | 550  | 75-7 | 8.5-8  | 9.1  | 232 | 3.0 | 1.4 |     |
|  | 8RSATP-5BQ  | 1/4          | M5   | 400  | 75-7 | 8.5-8  | 9.1  | 232 | 3.0 | 1.4 |     |
|  | 88RSATP-7CQ | 88RSATP-7C-3 | 1/4  | M6   | 550  | 95-15  | 10-2 | 8.9 | 225 | 3.1 | 1.4 |
|  | 88RSATP-5CQ | 88RSATP-5C-3 | 5/16 | M6   | 400  | 160-15 | 18-2 | 8.9 | 225 | 3.1 | 1.4 |
|  | 88RSATP-2CQ | 88RSATP-2C-3 | 5/16 | M6   | 200  | 180-15 | 20-2 | 9.6 | 245 | 3.4 | 1.5 |

\* Add .63" (16mm) for bit & finder models

**GENERAL:**  
Air Inlet: 1/4" NPT  
Minimum Hose Size: 1/4"  
Tool performance rated at 90 psi (620kPa) air pressure.

Length and weight of finder type tools includes standard length bit & finder.  
Weight does not include dead handle

**STANDARD EQUIPMENT:**  
Operating instructions & service manual  
Dead handle on all models above 100 in.lbs. torque capacity  
All torque springs required to meet indicated torque specification

**STANDARD EQUIPMENT IF SPECIFIED:**  
One bit, finder, and finder spring (bit & finder models only)

Dead handle (861006)

**OPTIONAL EQUIPMENT:**  
Bits & finders: Page 20  
Additional accessories: Pages 20-22  
Torque Springs: Page 20

Refer to Page 7 for description of Rapid Select

# Screwdrivers

Clecomatic Clutch

## Cleco®

### 35 Series

Torque Range:  
2.0 – 20 Nm  
15 – 180 In. Lbs

Screw Size:  
M5 – M6  
#10 – 5/16"

- Inline and pistol grip
- Quick change and square drive
- Reversible



| 1/4" Hex Quick Change | 3/8" Square Drive | Model Number |               | Screw Size |    | Free Speed<br>RPM | Torque Range |    | Length |    | Weight |  |
|-----------------------|-------------------|--------------|---------------|------------|----|-------------------|--------------|----|--------|----|--------|--|
|                       |                   | Gr. 5<br>in. | Gr. 9.8<br>mm | in.-lbs.   | Nm |                   | in.          | mm | lbs.   | kg |        |  |

#### Inline - Push-to-Start - Push Button Reverse

|  |           |            |      |      |       |        |      |      |     |     |     |
|--|-----------|------------|------|------|-------|--------|------|------|-----|-----|-----|
|  | 35RSA-20Q | #10        | M5   | 1250 | 60-15 | 7-2    | 9.6  | 244  | 2.5 | 1.1 |     |
|  | 35RSA-10Q | 35RSA-10-3 | 1/4  | M6   | 620   | 110-15 | 12-2 | 10.4 | 264 | 2.8 | 1.2 |
|  | 35RSA-7Q  |            | 5/16 | M6   | 410   | 160-15 | 18-2 | 10.4 | 264 | 2.8 | 1.2 |
|  | 35RSA-5Q  | 35RSA-5-3  | 5/16 | M6   | 300   | 180-15 | 20-2 | 10.4 | 264 | 2.8 | 1.2 |

#### Pistol Grip - Push-to-Start - Sliding Knob Reverse

|  |            |      |    |      |        |      |     |     |     |     |
|--|------------|------|----|------|--------|------|-----|-----|-----|-----|
|  | 35RSAP-20Q | #10  | M5 | 1550 | 60-15  | 7-2  | 9.1 | 232 | 3.1 | 1.4 |
|  | 35RSAP-10Q | 1/4  | M6 | 770  | 110-15 | 12-2 | 9.9 | 251 | 3.4 | 1.5 |
|  | 35RSAP-7Q  | 5/16 | M6 | 510  | 160-15 | 18-2 | 9.9 | 251 | 3.4 | 1.5 |

#### Pistol Grip - Push and Trigger Start - Sliding Knob Reverse

|  |             |      |    |      |        |      |     |     |     |     |
|--|-------------|------|----|------|--------|------|-----|-----|-----|-----|
|  | 35RSAPT-20Q | #10  | M5 | 1500 | 60-15  | 7-2  | 9.1 | 232 | 3.1 | 1.4 |
|  | 35RSAPT-10Q | 1/4  | M6 | 750  | 110-15 | 12-2 | 9.9 | 251 | 3.4 | 1.5 |
|  | 35RSAPT-7Q  | 5/16 | M6 | 500  | 160-15 | 18-2 | 9.9 | 251 | 3.4 | 1.5 |
|  | 35RSAPT-5Q  | 5/16 | M6 | 350  | 180-15 | 20-2 | 9.9 | 251 | 3.4 | 1.5 |

#### Pistol Grip - Trigger Start - Sliding Knob Reverse

|  |             |              |      |      |       |        |      |     |     |     |     |
|--|-------------|--------------|------|------|-------|--------|------|-----|-----|-----|-----|
|  | 35RSATP-20Q | #10          | M5   | 1500 | 60-15 | 7-2    | 9.0  | 229 | 3.1 | 1.4 |     |
|  | 35RSATP-10Q | 35RSATP-10-3 | 1/4  | M6   | 750   | 110-15 | 12-2 | 9.8 | 248 | 3.4 | 1.5 |
|  | 35RSATP-7Q  |              | 5/16 | M6   | 500   | 160-15 | 18-2 | 9.8 | 248 | 3.4 | 1.5 |
|  | 35RSATP-5Q  | 35RSATP-5-3  | 5/16 | M6   | 350   | 180-15 | 20-2 | 9.8 | 248 | 3.4 | 1.5 |

**GENERAL:**  
Air Inlet: 1/4" NPT  
Minimum Hose Size: 5/16"  
Tool performance rated at 90 psi (620kPa) air pressure.  
Weight does not include dead handle

**STANDARD EQUIPMENT:**  
Operating instructions & service manual  
Dead handle on all models above 100 in.lbs. torque capacity  
Grip Sleeve (inline models only)  
All torque springs required to meet indicated torque specification

**STANDARD EQUIPMENT IF SPECIFIED:**  
Dead handle (861006)

**OPTIONAL EQUIPMENT:**  
Additional accessories: Pages 20-22  
Torque Springs: Page 20

Refer to Page 7 for description of Rapid Select

# Cleco®

## 5, 8 Series

Torque Range: 0.4 – 8.5 Nm  
4.0 – 75 In. Lbs  
Screw Size: M3.5 – M5  
#6 – 1/4"

- Inline, pistol and underslung pistol grip
- Reversible and non-reversible
- Bit and finder and quick change



# Cleco®

## 14, 8, Series

Torque Range: 2.1 – 12.4 Nm  
19 – 110 In. Lbs

Screw Size: M3 – M6  
#6 – 1/4"

- Pistol and underslung pistol grip
- 1/4" hex quick change drive
- Trigger start
- Convenient top, bottom and end air inlet (14 Series T handle)



| Model Number  |                   | Screw Size   |               | Free Speed<br>RPM | Torque Range |       | Length* |     | Weight |     |
|---|-------------------|--------------|---------------|-------------------|--------------|-------|---------|-----|--------|-----|
| Bit & Finder  | 1/4" Quick Change | Gr. 5<br>in. | Gr. 9.8<br>mm |                   | in.-lbs.     | Nm    | in.     | mm  | lbs.   | kg  |
| <b>Rolling Impulse - Inline - Lever Start - Push Button Reverse</b>             |                   |              |               |                   |              |       |         |     |        |     |
|   | 8RSCL-20BQ        | #10          | M4            | 1800              | 40-7         | 4.5-8 | 9.6     | 244 | 2.3    | 1.0 |
| 8RSCL-10  | 8RSCL-10BQ        | #10          | M5            | 800               | 65-7         | 7.3-8 | 10.4    | 264 | 2.5    | 1.1 |
|   | 8RSCL-7BQ         | 1/4          | M5            | 550               | 75-7         | 8.5-8 | 10.4    | 264 | 2.5    | 1.1 |
| <b>Rolling Impulse - Pistol Grip - Trigger Start - Push Button Reverse</b>      |                   |              |               |                   |              |       |         |     |        |     |
| 8RSCO-20B   | 8RSCO-20BQ        | #10          | M4            | 1800              | 40-7         | 4.5-8 | 9.1     | 232 | 2.6    | 1.2 |
|   | 8RSCO-10BQ        | #10          | M5            | 800               | 63-7         | 7.1-8 | 9.9     | 251 | 2.9    | 1.3 |
| <b>Auto-Start - Inline - Push-to-Start - Push Button Reverse</b>                |                   |              |               |                   |              |       |         |     |        |     |
| 5RSCH-17  | 5RSCH-17Q         | #8           | M3.5          | 1600              | 26-4         | 2.9-4 | 8.6     | 219 | 1.2    | 0.5 |
|   | 5RSCH-10BQ        | #8           | M3.5          | 920               | 26-4         | 2.9-4 | 8.6     | 213 | 1.1    | 0.5 |
| 8RSCH-20  | 8RSCH-20BQ        | #10          | M4            | 1800              | 40-7         | 4.5-8 | 8.9     | 225 | 2.1    | 1.0 |
|   | 8RSCH-10BQ        | #10          | M5            | 800               | 65-7         | 7.3-8 | 9.6     | 244 | 2.4    | 1.1 |
|   | 8RSCH-7BQ         | 1/4          | M5            | 550               | 75-7         | 8.5-8 | 9.6     | 244 | 2.4    | 1.1 |
| <b>Auto Start - Pistol Grip - Push and Trigger Start - Sliding Knob Reverse</b> |                   |              |               |                   |              |       |         |     |        |     |
|   | 5RSCHPT-17Q       | #8           | M3.5          | 1900              | 26-4         | 2.9-4 | 8.6     | 219 | 1.6    | 0.7 |
| <b>Auto Start - Pistol Grip - Trigger Start - Sliding Knob Reverse</b>          |                   |              |               |                   |              |       |         |     |        |     |
|   | 5RSCHTP-17Q       | #8           | M3.5          | 1900              | 26-4         | 2.9-4 | 8.5     | 210 | 1.6    | 0.7 |

\* Add .63" (16mm) for bit & finder models

**GENERAL:**  
Air Inlet: 1/8" NPT (inline 5 series models), 1/4" NPT (pistol grip)  
Minimum Hose Size: 3/16" (5 series models), 1/4" (8 series models)  
Tool performance rated at 90 psi (620kPa) air pressure.  
Length and weight of finder type tools includes standard length bit & finder.

**STANDARD EQUIPMENT:**  
Operating instructions & service manual  
Suspension ball (all models except 8 series pistol grip)  
Handle Grip (5 series pistol grip)

**STANDARD EQUIPMENT IF SPECIFIED:**  
One bit, finder, and finder spring (bit & finder models only)  
One of the following grip sleeves (as specified):  
Round (869734: 5 series inline models)

Tri-roundular (203621: 5 series inline models)  
Round (202346: 8 series inline Push-to-Start models)

**OPTIONAL EQUIPMENT:**  
Bits & finders: Page 20  
Additional accessories: Pages 20-22  
Refer to Page 7 for description of Rapid Select

| Model Number   |           | Screw Size   |               | Free Speed<br>RPM | Torque Range |      | Length* |     | Weight |     |
|--|-----------|--------------|---------------|-------------------|--------------|------|---------|-----|--------|-----|
| 1/4" Quick Change  |           | Gr. 5<br>in. | Gr. 9.8<br>mm |                   | in.-lbs.     | Nm   | in.     | mm  | lbs.   | kg  |
| <b>Trigger Start - T Handle - Sliding Knob Reverse</b>   |           |              |               |                   |              |      |         |     |        |     |
|  | 14TTS02Q  | #8           | M3.5          | 2800              | 19           | 2.1  | 6.5     | 166 | 1.6    | 0.7 |
|  | 14TTS03Q  | #10          | M4            | 1900              | 27           | 3.1  | 6.8     | 171 | 1.6    | 0.7 |
|  | 14TTS04Q  | #10          | M4            | 1100              | 40           | 4.5  | 6.5     | 166 | 1.6    | 0.7 |
|  | 14TTS05Q  | #10          | M4            | 660               | 45           | 5.1  | 6.9     | 175 | 1.8    | 0.8 |
|  | 8RNP-20BQ | #10          | M4            | 1800              | 44           | 5.0  | 5.4     | 137 | 2.1    | 1.0 |
|  | 8RNP-10BQ | #10          | M5            | 800               | 70           | 7.9  | 6.1     | 156 | 2.4    | 1.1 |
| <b>Trigger Start - P Handle - Sliding Knob Reverse</b>   |           |              |               |                   |              |      |         |     |        |     |
|  | 14PTS02Q  | #8           | M3.5          | 2800              | 19           | 2.1  | 6.3     | 161 | 1.5    | 0.7 |
|  | 14PTS03Q  | #10          | M4            | 1900              | 27           | 3.1  | 6.5     | 166 | 1.5    | 0.7 |
|  | 14PTS04Q  | #10          | M4            | 1100              | 40           | 4.5  | 6.3     | 161 | 1.5    | 0.7 |
|  | 14PTS05Q  | #10          | M4            | 660               | 45           | 5.1  | 6.7     | 170 | 1.7    | 0.8 |
| <b>Trigger Start - Pistol Grip - Push Button Reverse</b> |           |              |               |                   |              |      |         |     |        |     |
|  | 8RNO-20BQ | #10          | M4            | 1800              | 44           | 5.0  | 6.0     | 152 | 2.0    | 0.9 |
|  | 8RNO-10BQ | #10          | M5            | 800               | 70           | 7.9  | 6.8     | 171 | 2.3    | 1.0 |
|  | 8RNO-7BQ  | 1/4          | M6            | 550               | 110          | 12.4 | 6.8     | 171 | 2.3    | 1.0 |

**GENERAL:**  
Air Inlet: 1/8" NPT (14 Series), 1/4" NPT (pistol grip)  
Minimum Hose Size: 3/16" (14 Series), 1/4" (8 series models)  
Tool performance rated at 90 psi (620kPa) air pressure.

**STANDARD EQUIPMENT:**  
Operating instructions & service manual  
Suspension ball  
All torque springs required to meet indicated torque specification

Dead handle on all models above 100 in.lbs. torque capacity

**STANDARD EQUIPMENT IF SPECIFIED:**  
Dead handle (861006: 8 series models)

**OPTIONAL EQUIPMENT:**  
Bits & finders: Page 24  
Additional accessories: Pages 24-26  
Non-Reverse Kit:  
14 series T Handle: 207030  
14 series P Handle: 301120

Torque Signal Kit:  
14 series T Handle: 301118  
Overhose:  
14 series T Handle: 207107  
14 series P Handle: 1025685  
Push-only Conversion Kit:  
14 series T Handle: 301121  
Refer to Page 7 for description of Rapid Select

Accessories

Screwdrivers

Standard and Extended Flat Bits and Finders

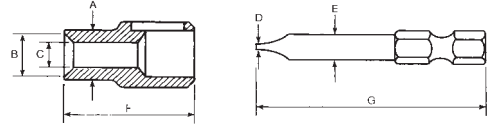
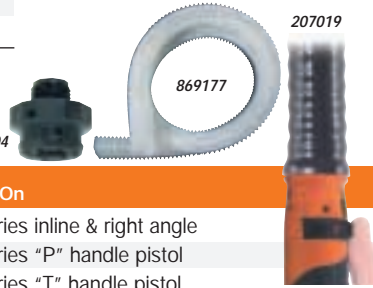


Table with columns: Screw Size, Standard Length (F = 1 1/2 in., G = 1 1/2 in.), Bit No., Finder No., Finder Dimensions (in.) A, B, C, Bit Dimensions (in.) D, E, Extended Length (F = 2 1/2 in., G = 3 in.), Bit No., Finder No.

Finder Springs

Light Force 844000

Medium Force 865728



Exhaust Overhose & Adapter

869204

Table with columns: Ordering No., Description, Used On. Rows include Overhose for 14 series inline & right angle, 14 series 'P' handle pistol, 14 series 'T' handle pistol, and Adapter for 8, 88, 35 series inline, push-to-start.



Square Drive Adapter

(1/4" hex drive sockets) Use with Quick Change and Bit & Finder Models, except as noted.

Table with columns: Part Number, 'A' Sq. Drive, 'B' in., mm, Bushing Number. Rows list various adapters and bushings.

\* Note: Required for bit and finder models.

Screwdrivers - Clutch Torque Springs

Table with columns: Spring Color, Torque Range (In. lbs., Nm), Ordering No.

2 Series: Blue 1.5-5, Green 8-1

14 Series: Blue 8-2, Purple 11-2, Green 19-5, White 38-10, Yellow 45-15

8 Series: Blue 17-7, Green 55-15, Red 75-35

88, 35 Series: Green 55-15, Yellow 160-35, Red 180-60

Accessories

Screwdrivers

Portable Tool Balancers



Table with columns: Part Number, Capacity (Max., Min.), Net Weight, Min. Dist. Hook to Hook, Length of Working Cable. Rows list balancer models and their specifications.

Dead Handle

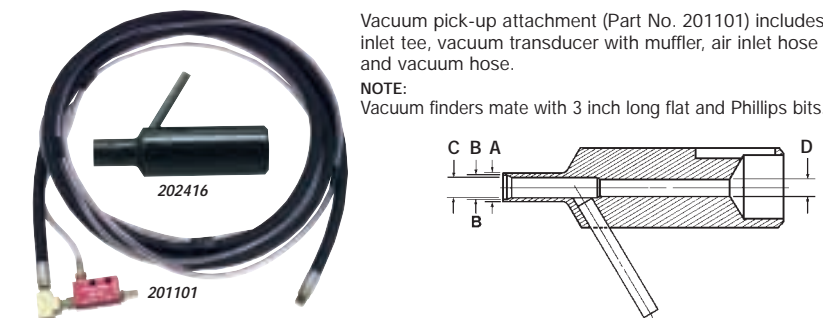
Table with columns: Ordering No., Used On. Rows list part numbers and compatible series.



Handle Grips

Table with columns: Ordering No., Grip Type, Used On. Rows list grip types and their application series.

Vacuum Finders and Pick-Up Attachment



Vacuum pick-up attachment (Part No. 201101) includes inlet tee, vacuum transducer with muffler, air inlet hose and vacuum hose.

NOTE: Vacuum finders mate with 3 inch long flat and Phillips bits.

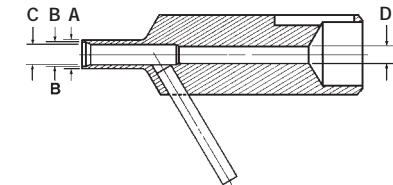


Table with columns: For Use with Cleco Series, Screw Size, Part Number, Dimensions (inches) A, B, C, D. Rows list compatible bit sizes and dimensions.

Suspension Bails

Table with columns: Ordering No., Used On. Rows list part numbers and compatible series.

Piped Away Exhaust Hose Adapter

Table with columns: Ordering No., Used On. Rows list part numbers and compatible series.

Phillips Bits and Support Bushings



Standard: 1/4 in. Hex Shank Bit - 2 3/4 in. O.A. Length; Bushing - 1 3/16 in. O.A. Length

Extended: 1/4 in. Hex Shank Bit - 3 1/2 in. O.A. Length; Bushing - 2 1/4 in. O.A. Length

\*Bushing not required on Quick Change models.

Bit Holders and Support Bushings



1/4" Hex Drive Nonmagnetic Bit Holder Part No. 490 (2 1/8" O.A. Length)

1/4" Hex Drive Magnetic Bit Holder Part No. 849325 (2 3/8" O.A. Length)

Magnetic Support Bushing\* Part No. 849621 Nonmagnetic Support Bushing\* Part No. 847245

Quick-Change Bushing Part No. 201203

\*Bushing not required on Quick Change models.

Insert Bits

Used with Bit Holders (all bits are 1.0" (25.4 mm) long)

Table with columns: Point Size, Part Number, Wood, Machine & Self tapping (Phillips, Pozi-Drive, Flat & Oval, Round, Flat, Oval & Pan, Fillister, Truss, Binding).

Screw Sizes & Types

Table with columns: Screw Size, Approximate Thread Body Diameter (inches), Maximum Head Diameter (inches) (Round Head, Flat Head, Oval Head, Fillister Head, Pan Head, Binding Head, Truss Head), Width of Slot Max.-Min. (inches).

Refer to Page 7 for description of Rapid Select

Torque Verifiers & Analyzers

Cleco 14E Series



**Cleco TVP-100 Series Torque Verifier**

- Verifies fastener installation with *OK/NOK* audio and visual indicators
- On screen verification of individual fastener assembly status with batch count
- VGA screen displays graph for each rundown
- Stores 1,000 rundowns
- Sequencing capability
- 8 parameter sets available for multiple applications
- "Auto Cal" permits fast and easy tool set up for any joint type
- Password protected
- Includes transducer kit and power cable

**Cleco TVP-100 Series Torque Verifier**

| Model Number |              | Language   | Weight |      | Width |     | Height |     | Depth |     |
|--------------|--------------|------------|--------|------|-------|-----|--------|-----|-------|-----|
| 115VAC       | 230VAC       |            | lbs.   | kg   | in.   | mm  | in.    | mm  | in.   | mm  |
| TVP-110-15-U | TVP-110-30-U | English    | 6      | 2.72 | 8.75  | 222 | 9.13   | 232 | 4.13  | 105 |
| TVP-110-15-D | TVP-110-30-D | German     | 6      | 2.72 | 8.75  | 222 | 9.13   | 232 | 4.13  | 105 |
| TVP-110-15-S | TVP-110-30-S | Spanish    | 6      | 2.72 | 8.75  | 222 | 9.13   | 232 | 4.13  | 105 |
| TVP-110-15-P | TVP-110-30-P | Portuguese | 6      | 2.72 | 8.75  | 222 | 9.13   | 232 | 4.13  | 105 |

All model numbers include power cable, air signal transducer, 25 foot cable to connect TVP to air signal transducer, and 8 foot air line to connect transducer to tool.

**NOTE:** Tool must be equipped with torque signal kit.

24 Volt Inputs/Outputs:

Inputs: Up to 8 Applications  
Reset  
Suspend

Outputs: Cycle Accept  
Batch Accept  
Reject

**TVP-100 Accessories**

**Torque Signal Kits**

| Part No. | Tool Used On           |
|----------|------------------------|
| 301106   | 14SCA and 14RAA series |
| 301118   | 14TTA series           |
| 301119   | 14PTA series           |
| 201900   | 24RAA and 34RAA series |
| 934918   | PTH series pulse tools |

**Phoenix Connector**

| Part No. | Description   |
|----------|---|
| 542892   | 24 Volt Input/Output Phoenix connector with strain relief |

**Utica TA4 Torque Analyzers**

| 110V Model | 220V Model | Torque Range   |                 | Square Dr. |      |
|------------|------------|----------------|-----------------|------------|------|
|            |            | English        | Metric          | In.        | mm   |
| TA4-05B-1  | TA4-05B-2  | 5-50 in.-lb.   | .56-5.64 Nm     | 1/4        | 6.35 |
| TA4-10B-1  | TA4-10B-2  | 10-100 in.-lb. | 1.13-11.29 Nm   | 1/4        | 6.35 |
| TA4-05F-1  | TA4-05F-2  | 5-50 ft.-lb.   | 6.78-67.79 Nm   | 3/8        | 9.53 |
| TA4-25F-1  | TA4-25F-2  | 25-250 ft.-lb  | 33.90-338.95 Nm | 1/2        | 12.7 |



**TA4 Accessories**

**Run Down Adapters\***

| Part No. | English        | Metric       | Sq. Drive |
|----------|----------------|--------------|-----------|
| 01-9232  | 5-50 in.-lb    | 56-564 cNm   | 1/4"      |
| 01-9233  | 10-100 in.-lb  | 112-1129 cNm | 1/4"      |
| 01-9240  | 5-50 ft.-lb.   | 6-67 Nm      | 3/8"      |
| 01-9242  | 25-250 ft.-lb. | 33-338 Nm    | 1/2"      |

Square drives conform to ASME B107 standards for proper fit with transducer.

**Power Supplies\***

| Part No. | Description                           |
|----------|---------------------------------------|
| 01-9201  | 110V power supply for all TA4 systems |
| 01-9202  | 220V power supply for all TA4 systems |

**Cables**

| Part No. | Description  |
|----------|--------------|
| 01-9205* | RS-232 Cable |

\*Each TA4 unit comes complete with the appropriate rundown adapter, power supply, RS-232 cable, an Excel add-in disc and case.

**Utica P-2 & P-15 Torque Analyzers**

| Model No.      | Graduations | Capacity      | Height |     | Width |     | Length |     | Weight |      | Ordering No. |
|----------------|-------------|---------------|--------|-----|-------|-----|--------|-----|--------|------|--------------|
|                |             |               | In.    | mm  | In.   | mm  | In.    | mm  | Lb.    | kg   |              |
| P-2B           | .5 in.-lbs. | 20-2 in.lbs.  | 5.6    | 143 | 7.3   | 184 | 12     | 305 | 18     | 8.2  | 810681       |
| MP-2B (metric) | .5 cm-kg    | 22-2 cm-kg    | 5.6    | 143 | 7.3   | 184 | 12     | 305 | 18     | 8.2  | 810682       |
| P-15           | 2 in.-lbs.  | 150-5 in.lbs. | 8      | 203 | 5     | 127 | 18     | 457 | 23     | 10.4 | 810002       |
| MP-15 (metric) | 5 cm-kg     | 180-5 cm-kg   | 8      | 203 | 5     | 127 | 18     | 457 | 23     | 10.4 | 810151       |

**GENERAL**

Drive Size: 1/4" male hex (P-2 series)  
5/16" male hex (P-15 series)

**OPTIONAL EQUIPMENT**

Calibration Kit (P-2 series) - 810629  
Calibration Kit (P-15 series) - 810080



**Cleco®**

**The Cleco 14E Series Plug-In Electric Screwdriver.**

Extreme fastening requirements demand extreme fastening technology.

And to meet the demands of today's sophisticated electronics assembly and other clean-room applications, Cleco is introducing the most extraordinary electric screwdriver ever made.

If you've always thought that an electric screwdriver couldn't be as good as a pneumatic, you were right - until now.

Now the Cleco 14E Series combines the time-proven industry leadership of the Cleco #5, the leading-edge fastening technology we pioneered with our Cleco Tightening Manager system, and a powerful, proprietary electric motor that is so revolutionary its brushes never need replacing.

**Performs Like A Pneumatic**

The result is a remarkable electric tool that delivers the performance of a pneumatic. But the Cleco 14E Series is safe for use in electronics assembly and other clean-room applications, which require an electric tool.

Noise levels are also greatly reduced with an electric screwdriver. That is a critical factor, because electronics assembly is often performed in tighter quarters than a traditional open assembly line where there is already a high noise level.

Frankly, a screwdriver this good didn't exist, so we had to invent one.

And, although this is Cleco's first electric screwdriver, its designers were able to rely on more than 50 years of solid experience in electrical tool design and manufacture within the Cooper Tools family - including the experience we gained in the development of the Cleco Tightening Manager system, one of the most significant advancements in the history of fastening technology.





# Electric Screwdrivers

## Cleco 14E Series

### Features You Want

The Cleco 14E Series offers you a number of substantial advantages over other electric screwdrivers on the market.

- The Cleco 14E Series is equipped with brushes that never wear out. They are made of a proprietary material that outperforms the lifespan of other brushes.
- over-current and over-voltage protection within the circuit board
- surface-mounted chip technology
- the renowned Clecomatic clutch mechanism
- Bi-directional clutch shut-off
- modular design for easy and quick repairability
- heavy-duty clutch, gears and bearings that are interchangeable with Cleco #5

- push-to-start or lever-permit start options
- torque ranges from 3 to 45 in.-lbs.
- speeds up to 1900 RPM

In addition, two other features demand special mention.

#### ■ Electronic Brake System

We have designed the braking system to work in both forward and reverse modes, because there are critical safety and precision reasons why you want the tool to stop the split-second the operator releases the trigger.

*Smooth, easy-to-use, thumb-activated forward/reverse switch.*



*Threaded quick disconnect with heavy duty strain relief.*



*Over-current and over-voltage protection within the circuit board.*

## Clecomatic®

*Patented and time-proven clutch assembly and planetary gears that are interchangeable with existing Cleco pneumatic screwdrivers.*

*Removable nosepiece for easy torque adjustment.*

*Soft, textured overmold for comfortable, non-slip grip.*

*Bi-directional clutch for shut-off in both clockwise and counter-clockwise direction.*

*Three interchangeable nosepieces provided to accommodate different hand sizes.*

*1/4" Quick-change chuck for fast and easy bit changes.*

*No brush replacement indicator because brushes never wear out.*

*The first plug-in motor good enough to carry the Cleco name.*



#### ■ Three Grip Sizes

We have also designed the Cleco 14E Series to be ergonomically sound and feel good in the hand. But not all hands are created equal, so we made the nosepiece in three different sizes, and we ship each tool with all three nosepieces so it can easily be changed to fit the hand size of different operators.

### Benefits You Need

The people who design and manufacture the new Cleco 14E Series electric screwdriver are keenly aware that improving production rates and lowering costs are critical to the success of any manufacturing operation.

Accordingly, we are building every Cleco 14E Series to deliver:

- optimum speed
- torque accuracy
- consistency
- long-term reliability
- ease of maintenance
- reduced energy costs
- longer operating life
- fewer replacement parts
- sound ergonomics
- operator convenience
- significant power-to-weight ratios
- adaptability to a variety of applications
- the ultimate in flexibility

All of that boils down to better repeatability, fewer rejects, less operator fatigue, and reduced down time on the line, which translates into greater productivity and profit potential for you and your company.

Cleco 14E Series



14E Series

Torque Range: 0.4 – 5.1 Nm  
3.0 – 45 In. Lbs  
Screw Size: M3.5 – M5  
#6 – #10

- Inline
- Reversible
- Quick change
- Push-to-start or Push lever start
- 110V or 220V models



| Model Number |      | Screw Size |         | Free Speed | Torque Range |    | Length |    | Weight |    |
|--------------|------|------------|---------|------------|--------------|----|--------|----|--------|----|
|              |      | GR.5       | GR. 9.8 |            |              |    |        |    |        |    |
| 110V         | 220V | in         | mm      | RPM        | in.-lbs.     | Nm | in     | mm | lbs.   | kg |

Push-to-Start

|           |           |     |      |      |      |         |      |     |     |     |
|-----------|-----------|-----|------|------|------|---------|------|-----|-----|-----|
| 14E1SA02Q | 14E2SA02Q | #6  | M3.5 | 1900 | 16-3 | 1.8-0.4 | 12.9 | 328 | 2.0 | 0.9 |
| 14E1SA03Q | 14E2SA03Q | #8  | M4   | 1150 | 26-5 | 2.9-0.6 | 12.9 | 328 | 2.0 | 0.9 |
| 14E1SA04Q | 14E2SA04Q | #10 | M4   | 800  | 34-5 | 3.8-0.6 | 12.9 | 328 | 2.0 | 0.9 |
| 14E1SA05Q | 14E2SA05Q | #10 | M5   | 450  | 45-5 | 5.1-0.6 | 12.9 | 328 | 2.0 | 0.9 |

Push and Lever Start

|           |           |     |      |      |      |          |      |     |     |     |
|-----------|-----------|-----|------|------|------|----------|------|-----|-----|-----|
| 14E1CA02Q | 14E2CA02Q | #6  | M3.5 | 1900 | 16-3 | 1.8-0.4  | 12.9 | 328 | 2.0 | 0.9 |
| 14E1CA03Q | 14E2CA03Q | #8  | M4   | 1150 | 26-5 | 2.9-0.6  | 12.9 | 328 | 2.0 | 0.9 |
| 14E1CA04Q | 14E2CA04Q | #10 | M4   | 800  | 34-5 | 3.8-0.56 | 12.9 | 328 | 2.0 | 0.9 |
| 14E1CA05Q | 14E2CA05Q | #10 | M5   | 450  | 45-5 | 5.1-0.6  | 12.9 | 328 | 2.0 | 0.9 |

STANDARD EQUIPMENT:

10 foot power cord  
Operating instructions & service manual  
Clutch Adjustment Tool  
All torque springs required to meet indicated torque specification

Suspension Ball

Two additional nosepieces  
Voltage/speed selector and cable  
(220V models only)

OPTIONAL EQUIPMENT:

Voltage/speed selector: 205943  
Voltage/speed selector cable for 110V: 541683-01  
Refer to Page 7 for description of Rapid Select

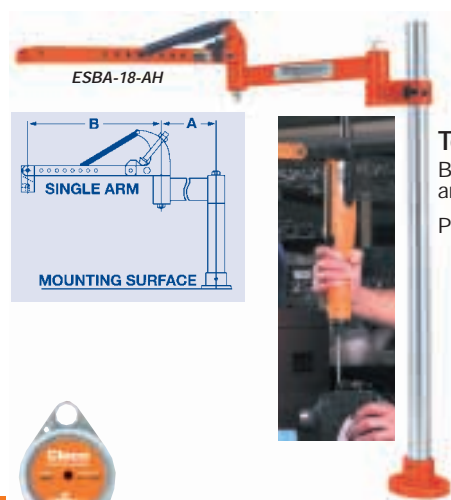
Balance Arms

| Single Arms |          | Dimensions |     |     |     | Post Height |     |
|-------------|----------|------------|-----|-----|-----|-------------|-----|
| Model No.   | Code No. | A          |     | B   |     | in.         | mm  |
|             |          | in.        | mm  | in. | mm  |             |     |
| ESBA-12-AH  | 240373   | 12         | 305 | 12  | 305 | 30          | 762 |
| ESBA-18-AH  | 240374   | 12         | 305 | 18  | 457 | 30          | 762 |
| ESBA-24-AH  | 240375   | 12         | 305 | 24  | 610 | 30          | 762 |
| ESBA-30-AH  | 240376   | 12         | 305 | 30  | 762 | 30          | 762 |

AH = Adjustable Height  
Tool weight capacity: 5 lbs. (2.3 kg)  
Torque capacity: 10 ft. lbs. (13.5 Nm)

STANDARD EQUIPMENT

Tool holder and hardware to attach electric screwdriver  
Operating Instructions and Service Manual.



Tool Bracket

Bracket for single arm as shown at left.  
Part No. 301083

Portable Tool Balancers

| Part Number | Capacity |       | Net Weight  | Min. Dist. Hook to Hook | Length of Working Cable |
|-------------|----------|-------|-------------|-------------------------|-------------------------|
|             | Max.     | Min.  |             |                         |                         |
| 200427      | 2 lb.    | 0 lb. | 1 lb. 4 oz. | 10 7/8 in.              | 5 ft.                   |



Voltage/Speed Selector Switch

Standard on 220V units and available as an option on 110V units.



Screwdriver balance arms absorb torque, support weight and improve productivity.

Cleco balance arms are engineered to deliver longer service life using durable components, rugged design and operator-sensitive features.

These arms absorb the torque produced by the screwdriver, eliminating torque reaction to the operator. Balanced by springs or air cylinders, the arm and not the operator supports the weight of the tool. By reducing the fatigue factors, the operator productivity is improved.

Tool movement and placement over the fastener is virtually effortless since most moving parts of the balance arm are mounted on ball bearings. Access to the tool is easily changeable by adjusting the springs or cylinder supporting the forearm.

Arm components and materials are selected for strength and rigidity. Precision aluminum sand castings used in the articulating arm section are light but sturdy.

Over 60 models of the Cleco screwdriver balance arms are available. Air cylinder models are capable of supporting tools weighing up to 10 lbs. (4.5 kg.). Spring models will support tools weighing up to 5 lbs. (2.3 kg.). Both styles have torque capacities of 10 ft. lbs. (13.5 Nm). Arms can be post mounted, wall mounted or mounted on an adjustable height post. Tool holders for all models will accommodate most major brands of air tools...straight and pistol.

Tool Holders

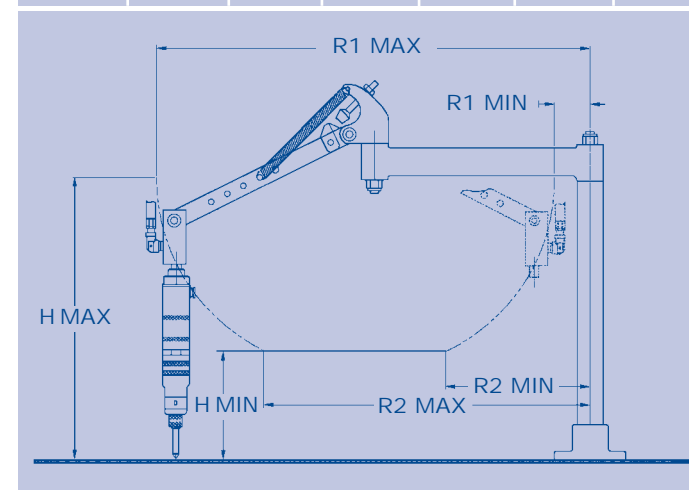
Selecting the proper tool holder for the tool used on Cleco balance arms enhances the ergonomic benefits of the arm. Tool holders allow the tool to swing, swivel and rotate, enabling the operator to work more comfortably and productively.

Standard and extended tool holders are available for parallel balance arms. Both models hold the tool perpendicular to the work, and are ideal for self-tapping and thread forming applications. Tool diameter capacity is up to 1 3/4 inch (45mm).

Manifold tool holders used on SBA and CSBA balance arms suspend the tool from the air inlet. They allow the tool to swing (or swivel when equipped with the optional swivel assembly) for ease of tool movement.

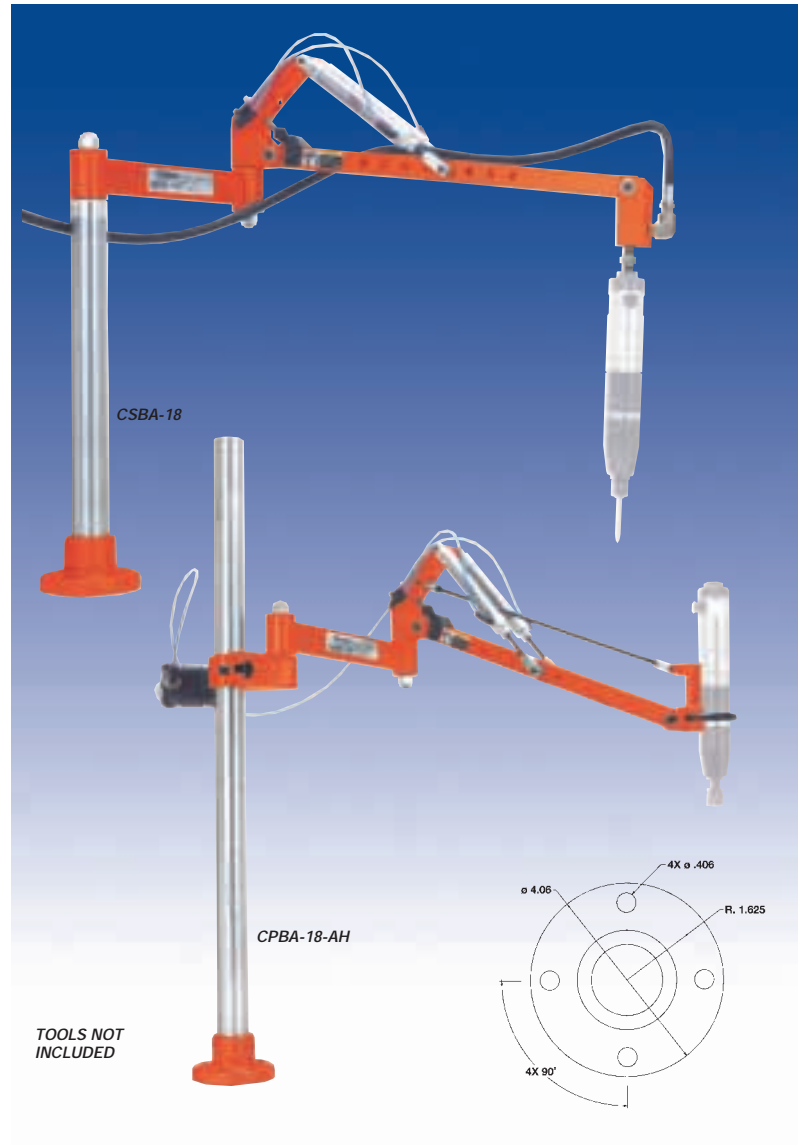
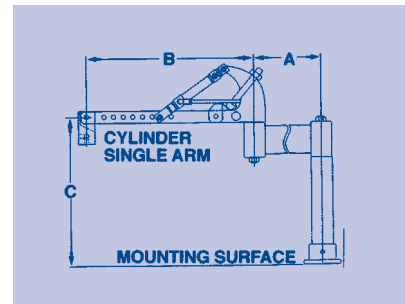
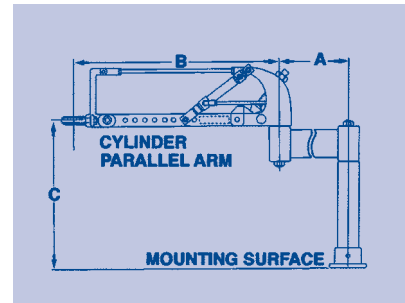
Balance Arm Operating Envelope

| MODEL  | R1 MAX |     | R1 MIN |     | R2 MAX |     | R2 MIN |     | H MAX |     | H MIN |     |
|--------|--------|-----|--------|-----|--------|-----|--------|-----|-------|-----|-------|-----|
|        | in.    | mm  | in.    | mm  | in.    | mm  | in.    | mm  | in.   | mm  | in.   | mm  |
| SBA-12 | 24     | 610 | 2      | 51  | 18     | 457 | 8      | 203 | 15    | 381 | 6     | 152 |
| SBA-18 | 30     | 762 | 6      | 152 | 20     | 508 | 7      | 178 | 15    | 381 | 0     | 0   |
| PBA-12 | 26     | 660 | 3      | 76  | 20     | 508 | 7      | 178 | 17    | 432 | 8     | 203 |
| PBA-18 | 32     | 813 | 8      | 203 | 22     | 559 | 6      | 152 | 17    | 432 | 2     | 51  |



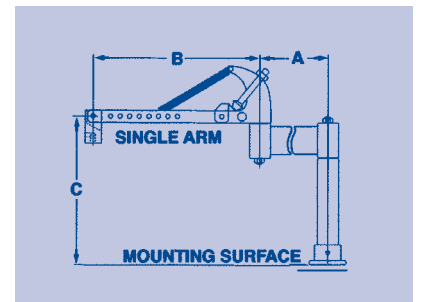
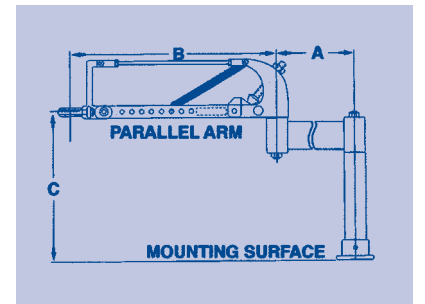
# Cleco®

- Ball bearing construction
- Supports tools weighing up to 10 lbs.
- Post, wall, or adjustable height post mounting
- Single or parallel arms



# Cleco®

- Ball bearing construction
- Supports tools weighing up to 5 lbs.
- Post, wall, or adjustable height post mounting
- Single or parallel arms



| Single Arms |          | Parallel Arms |          | Dimensions |     |     |     |     |     |             |     |
|-------------|----------|---------------|----------|------------|-----|-----|-----|-----|-----|-------------|-----|
| Model No.   | Code No. | Model No.     | Code No. | A          |     | B   |     | C   |     | Post Height |     |
|             |          |               |          | in.        | mm  | in. | mm  | in. | mm  | in.         | mm  |
| CSBA-18     | 520160   | CPBA-18       | 520170   | 12         | 305 | 18  | 457 | 18  | 457 | -           | -   |
| CSBA-24     | 520200   |               |          | 12         | 305 | 24  | 610 | 18  | 457 | -           | -   |
| CSBA-30     | 520201   | CPBA-30       | 520203   | 12         | 305 | 30  | 762 | 18  | 457 | -           | -   |
| CSBA-12-AH  | 520165   | CPBA-12-AH    | 520178   | 12         | 305 | 12  | 305 | -   | -   | 30          | 762 |
| CSBA-18-AH  | 520162   | CPBA-18-AH    | 520172   | 12         | 305 | 18  | 457 | -   | -   | 30          | 762 |
| CSBA-30-AH  | 520167   | CPBA-30-AH    | 520215   | 12         | 305 | 30  | 762 | -   | -   | 30          | 762 |
|             |          | CPBA-30-WM    | 520207   | 12         | 305 | 30  | 762 | -   | -   | -           | -   |

AH = Adjustable Height  
 WM = Wall Mounted  
 Tool weight capacity: 10 lbs. (4.6 kg)  
 Torque capacity: 10 ft. lbs. (13.5 Nm)

**STANDARD EQUIPMENT**  
 Operating Instructions and Service Manual.  
 Regulator for Air Cylinders.  
 Threaded Nipples for CSBA Models  
 1/4 NPT Hex Nipple: 204032-7  
 1/4 NPT x 1/8 NPT Hex Reducer  
 Nipple: 204137-4

**OPTIONAL EQUIPMENT**  
 Additional accessories: See page 30.

| Single Arms |          | Parallel Arms |          | Dimensions |     |     |     |     |     |             |     |
|-------------|----------|---------------|----------|------------|-----|-----|-----|-----|-----|-------------|-----|
| Model No.   | Code No. | Model No.     | Code No. | A          |     | B   |     | C   |     | Post Height |     |
|             |          |               |          | in.        | mm  | in. | mm  | in. | mm  | in.         | mm  |
| SBA-12      | 520001   | PBA-12        | 520007   | 12         | 305 | 12  | 305 | 18  | 457 | -           | -   |
| SBA-18      | 520004   | PBA-18        | 520010   | 12         | 305 | 18  | 457 | 18  | 457 | -           | -   |
|             |          | PBA-24        | 520045   | 12         | 305 | 24  | 610 | 18  | 457 | -           | -   |
| SBA-12-AH   | 520003   | PBA-12-AH     | 520009   | 12         | 305 | 12  | 305 | -   | -   | 30          | 762 |
| SBA-18-AH   | 520006   | PBA-18-AH     | 520012   | 12         | 305 | 18  | 457 | -   | -   | 30          | 762 |
| SBA-24-AH   | 520110   | PBA-24-AH     | 520047   | 12         | 305 | 24  | 610 | -   | -   | 30          | 762 |
| SBA-30-AH   | 520044   | PBA-30-AH     | 520050   | 12         | 305 | 30  | 762 | -   | -   | 30          | 762 |
|             |          | PBA-18-18-AH  | 520036   | 18         | 457 | 18  | 305 | -   | -   | 30          | 762 |
|             |          | PBA-12-WM     | 520008   | 12         | 305 | 12  | 305 | -   | -   | -           | -   |
| SBA-30-WM   | 520043   |               |          | 12         | 305 | 30  | 762 | -   | -   | -           | -   |

AH = Adjustable Height  
 WM = Wall Mounted  
 Tool weight capacity: 5 lbs. (2.3 kg)  
 Torque capacity: 10 ft. lbs. (13.5 Nm)

**STANDARD EQUIPMENT**  
 Operating Instructions and Service Manual.  
 Threaded Nipples for SBA Models  
 1/4 NPT Hex Nipple: 204032-7  
 1/4 NPT x 1/8 NPT Hex Reducer  
 Nipple: 204137-4

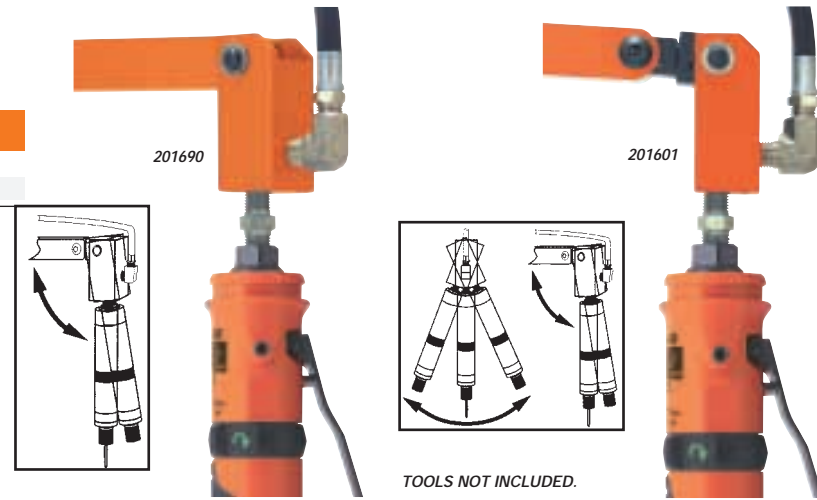
**OPTIONAL EQUIPMENT**  
 Additional accessories: See page 30.  
 Refer to Page 7 for description of Rapid Select

Balance Arms

Single Arm Tool Holders

| Part No. | Description                 |
|----------|-----------------------------|
| 201690*  | Manifold tool holder        |
| 201601*  | Swivel manifold tool holder |

\*Use of 201601 requires 201690.



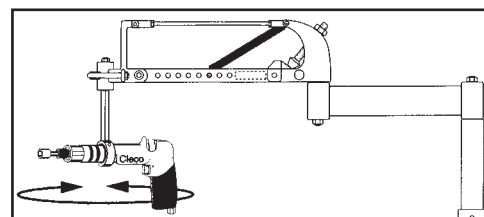
TOOLS NOT INCLUDED.

Parallel Arm Tool Holders

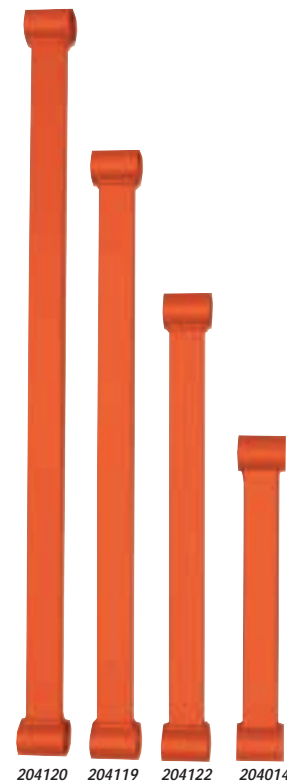
| Part No. | Description                   |
|----------|-------------------------------|
| 204015   | Parallel tool holder          |
| 204167   | Extended parallel tool holder |
| 201607   | Swivel tool holder (small)    |
| 201608   | Swivel tool holder (large)    |



TOOLS NOT INCLUDED.



Articulating Arm Extensions

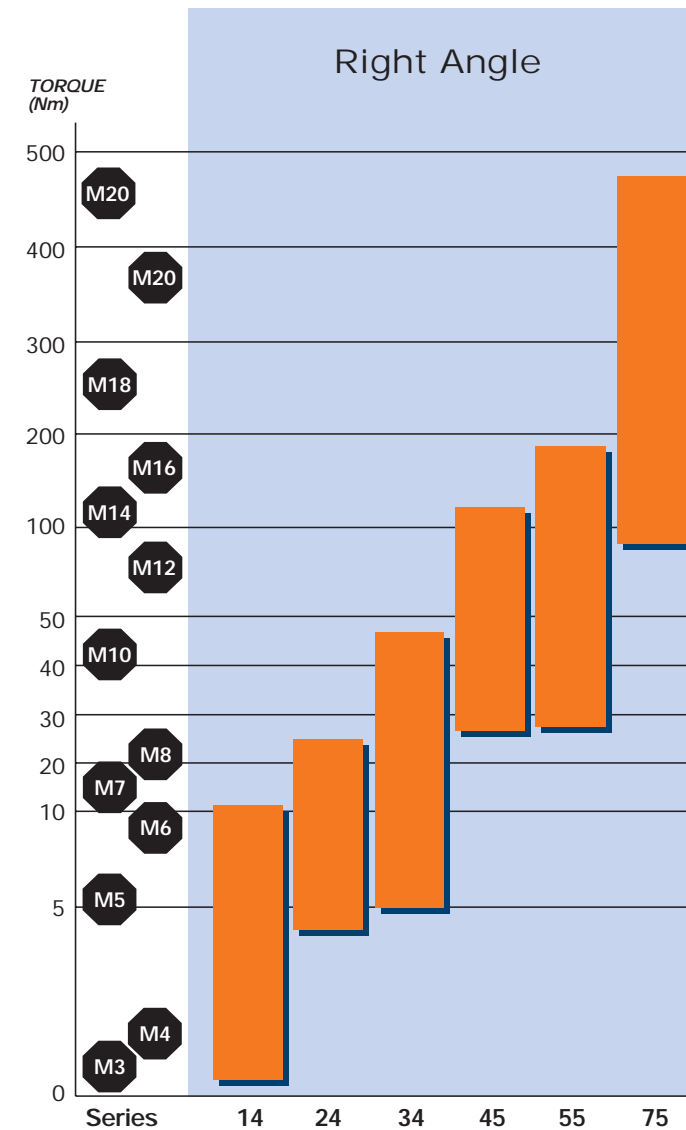


| Part No. | Length (in.) |
|----------|--------------|
| 204014   | 12           |
| 204122   | 18           |
| 204119   | 24           |
| 204120   | 30           |

Conversion Kits for Cleco Screwdriver Balance Arms

| To Convert Balance Arms |              | Part No. |
|-------------------------|--------------|----------|
| From                    | To           |          |
| SBA-12                  | PBA-12*      | 521041   |
| SBA-18                  | PBA-18*      | 521042   |
| Spring                  | Cylinder     | 201606   |
| SBA or PBA              | SBA or PBA   |          |
| Standard Duty           | Heavy Duty** | 521060   |

\* Conversion kits for -24 and -30 models are available upon request.  
 \*\* Has four springs to support heavier tools or longer arms.



Cleco®

Selecting Your Cleco Nutrunner

Cleco offers over 500 nutrunners, most of which can be equipped with a wide variety of drive options. This generates over 3,000 different nutrunner combinations, allowing the exact tool with precise features to be chosen for specific job applications.

The following items should be considered before selecting the tool: ergonomic factors associated with the man/tool/task relationship, torque and speed requirements, tool and fastener accessibility, fastener joint variations, operator skill level and air supply.

Tool performance can be affected by air supply. Plant air line pressure to the tool will vary widely due to several factors: distance of tool from compressor; size of transmission lines, air drops, manifolds, hose length and diameter, and fittings. All power tool specifications are based on the tool receiving air at 90 p.s.i.g. (6.2 bar) with adequate air flow volume while the tool is running.

Clean Operation

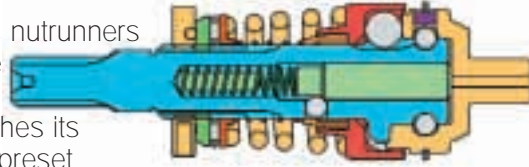
Many Cleco angle nutrunners are equipped with oilless blades. This is a very important feature where a clean assembly operation is critical.



# Angle Nutrunners

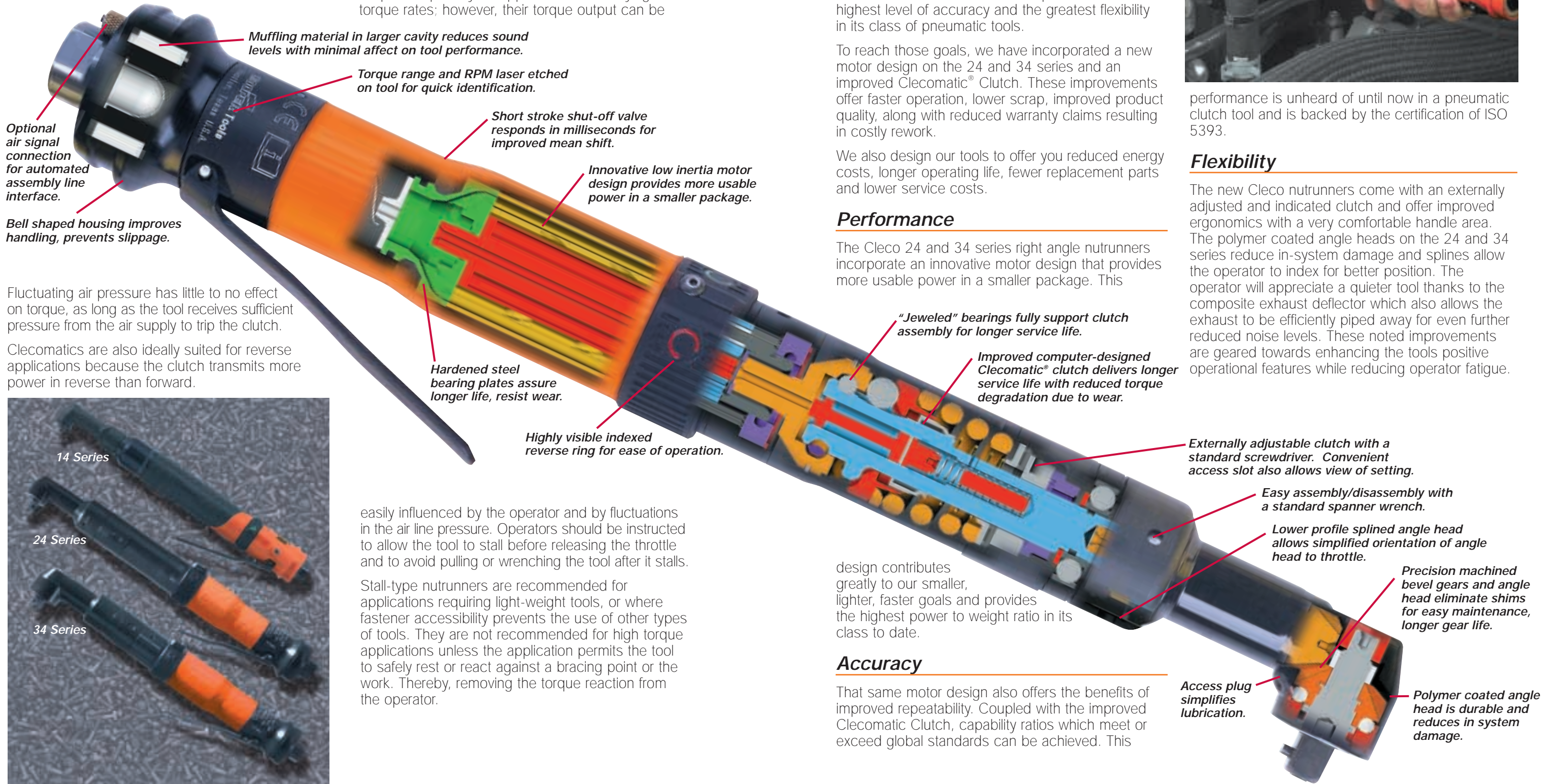
## Clecomatic Nutrunners

Clecomatic nutrunners shut off the instant the clutch reaches its adjustable preset torque. This action provides an accurate method of controlling torque without sacrificing tool speed.



## Stall Nutrunners

Stall-type nutrunners consist of an air motor connected to the output spindle by planetary gearing and angle heads. In operation, the tool runs down the fastener until the torque resistance in the fastener causes the tool to stall. When the tool stalls, the throttle is released by the operator and the tool is removed. Stall-type tools can produce accurate torques, especially on applications with varying torque rates; however, their torque output can be



Fluctuating air pressure has little to no effect on torque, as long as the tool receives sufficient pressure from the air supply to trip the clutch. Clecomatics are also ideally suited for reverse applications because the clutch transmits more power in reverse than forward.



easily influenced by the operator and by fluctuations in the air line pressure. Operators should be instructed to allow the tool to stall before releasing the throttle and to avoid pulling or wrenching the tool after it stalls.

Stall-type nutrunners are recommended for applications requiring light-weight tools, or where fastener accessibility prevents the use of other types of tools. They are not recommended for high torque applications unless the application permits the tool to safely rest or react against a bracing point or the work. Thereby, removing the torque reaction from the operator.

## The New Cleco Right Angle Solution

The Cleco 14, 24 and 34 series pneumatic nutrunners are the most recent additions to our line of smaller, lighter and faster tools. Designed for M3-M10 fasteners, these powerful new right angle clutch tools cover a wide torque range from .5 to 68 NM. We continue to drive our line into the best power to weight ratio of any other tool in the market, in a relentless effort to offer the most performance, the highest level of accuracy and the greatest flexibility in its class of pneumatic tools.



performance is unheard of until now in a pneumatic clutch tool and is backed by the certification of ISO 5393.

To reach those goals, we have incorporated a new motor design on the 24 and 34 series and an improved Clecomatic® Clutch. These improvements offer faster operation, lower scrap, improved product quality, along with reduced warranty claims resulting in costly rework.

We also design our tools to offer you reduced energy costs, longer operating life, fewer replacement parts and lower service costs.

## Flexibility

The new Cleco nutrunners come with an externally adjusted and indicated clutch and offer improved ergonomics with a very comfortable handle area. The polymer coated angle heads on the 24 and 34 series reduce in-system damage and splines allow the operator to index for better position. The operator will appreciate a quieter tool thanks to the composite exhaust deflector which also allows the exhaust to be efficiently piped away for even further reduced noise levels. These noted improvements are geared towards enhancing the tools positive operational features while reducing operator fatigue.

## Performance

The Cleco 24 and 34 series right angle nutrunners incorporate an innovative motor design that provides more usable power in a smaller package. This

design contributes greatly to our smaller, lighter, faster goals and provides the highest power to weight ratio in its class to date.

## Accuracy

That same motor design also offers the benefits of improved repeatability. Coupled with the improved Clecomatic Clutch, capability ratios which meet or exceed global standards can be achieved. This



## 14 Series

Torque Range: 0.5 – 11 Nm  
4.0 – 100 In. Lbs  
Screw Size: M3.5 – M6  
#8 – 1/4"

- External torque adjustment
- Lever start
- Sliding knob reverse



| Model Number      |                   | Bolt Size |        | Free Speed | Torque Range* |    | Length |    | Weight |    | Head Height |    | Side to Center |    |
|-------------------|-------------------|-----------|--------|------------|---------------|----|--------|----|--------|----|-------------|----|----------------|----|
| 1/4" Square Drive | 3/8" Square Drive | Gr.5      | Gr.9.8 |            | in.-lbs.      | Nm | in.    | mm | lbs.   | kg | in.         | mm | in.            | mm |

### Lever Start - Reversible – Clecomatic Clutch

|             |            |     |      |      |          |           |       |     |     |      |      |    |      |    |
|-------------|------------|-----|------|------|----------|-----------|-------|-----|-----|------|------|----|------|----|
| 14RAA02AM2  |            | #8  | M3.5 | 2400 | 4 - 19   | .5 - 2.1  | 11.68 | 297 | 1.7 | 0.77 | 1.06 | 27 | 0.36 | 9  |
| 14RAA02AH2  | 14RAA02AH3 | #8  | M3.5 | 2100 | 4 - 21   | .5 - 2.4  | 12.11 | 308 | 1.8 | 0.82 | 1.19 | 30 | 0.50 | 13 |
| 14RAA03AL2  |            | #8  | M3.5 | 570  | 4 - 25   | .5 - 2.8  | 12.04 | 306 | 1.8 | 0.82 | 0.94 | 24 | 0.31 | 8  |
| 14RAA03AM2  |            | #8  | M3.5 | 1650 | 4 - 27   | .5 - 3.0  | 11.88 | 302 | 1.8 | 0.82 | 1.06 | 27 | 0.36 | 9  |
| 14RAA03AH2  | 14RAA03AH3 | #10 | M4   | 1450 | 4 - 30   | .5 - 3.4  | 12.31 | 313 | 1.9 | 0.86 | 1.19 | 30 | 0.50 | 13 |
| 14RAA04AM2  |            | #10 | M4   | 950  | 4 - 43   | .5 - 4.8  | 11.68 | 297 | 1.7 | 0.77 | 1.06 | 27 | 0.36 | 9  |
| 14RAA05AM2  |            | #10 | M4   | 570  | 4 - 50   | .5 - 5.7  | 12.08 | 307 | 1.8 | 0.82 | 1.06 | 27 | 0.36 | 9  |
| 14RAA06AH2* | 14RAA06AH3 | #10 | M4   | 850  | 4 - 53   | .5 - 6.0  | 12.11 | 308 | 1.8 | 0.82 | 1.19 | 30 | 0.50 | 13 |
| 14RAA07AH2* | 14RAA07AH3 | #10 | M5   | 500  | 4 - 60   | .5 - 6.8  | 12.51 | 318 | 1.9 | 0.86 | 1.19 | 30 | 0.50 | 13 |
| 14RAA09AH2* | 14RAA09AH3 | 1/4 | M5   | 500  | 10 - 75  | 1.1 - 8.5 | 13.39 | 340 | 2.1 | 0.95 | 1.19 | 30 | 0.50 | 13 |
| 14RAA11AH2* | 14RAA11AH3 | 1/4 | M6   | 340  | 10 - 100 | 1.1 - 11  | 13.59 | 345 | 2.2 | 1.00 | 1.19 | 30 | 0.50 | 13 |
| 14RAA12AH2* | 14RAA12AH3 | 1/4 | M6   | 200  | 10 - 100 | 1.1 - 11  | 13.39 | 340 | 2.1 | 0.95 | 1.19 | 30 | 0.50 | 13 |

\*AH2 head max torque 50 in. lbs.

**GENERAL:**  
Air Inlet: 1/8" NPT  
Minimum Hose Size: 3/16"  
Tool performance rated at 90 psi (620kPa) air pressure.

**STANDARD EQUIPMENT:**  
Operating instructions & service manual.  
Suspension bail.  
All torque springs required to meet indicated torque specification.

**OPTIONAL EQUIPMENT:**  
Non-Reverse Kit: 207030  
Torque Signal Kit: 301106  
(Clecomatic clutch only)

Overhose: 207019  
Quick Change and 1/4" magnetic hex outputs available on AH3 models only.  
Quick Change: Change AH3 to AH0  
1/4" Magnetic Hex: Change AH3 to AHM  
Additional accessories: Page 61

Refer to Page 7 for description of Rapid Select



## 24, 34 Series

Torque Range: 4.0 – 75 Nm  
3.0 – 55 Ft. Lbs.

Bolt Size: M4 – M10  
#10 – 7/16"

- External torque adjustment
- 3/8" and 1/2" square drive
- Indexable anglehead
- One torque spring to meet specified range
- Oilless blades



| Model Number      |                   | Bolt Size |        | Free Speed | Torque Range* |    | Length |    | Weight |    | Head Height |    | Side to Center |    |
|-------------------|-------------------|-----------|--------|------------|---------------|----|--------|----|--------|----|-------------|----|----------------|----|
| 3/8" Square Drive | 1/2" Square Drive | Gr.5      | Gr.9.8 |            | in.           | mm | in.    | mm | lbs.   | kg | in.         | mm | in.            | mm |

### 24 Series Lever Start – Reversible

|            |  |      |    |      |      |       |      |     |     |     |      |      |     |      |
|------------|--|------|----|------|------|-------|------|-----|-----|-----|------|------|-----|------|
| 24RAA06AL3 |  | #10  | M4 | 2200 | 4-3  | 5.5-4 | 14.1 | 358 | 2.6 | 1.2 | 1.08 | 27.5 | .47 | 12.0 |
| 24RAA07AL3 |  | #10  | M5 | 1770 | 5-3  | 7-5   | 14.1 | 358 | 2.6 | 1.2 | 1.08 | 27.5 | .47 | 12.0 |
| 24RAA11AL3 |  | 1/4  | M6 | 1260 | 8-5  | 11-7  | 14.1 | 358 | 2.6 | 1.2 | 1.08 | 27.5 | .47 | 12.0 |
| 24RAA12AM3 |  | 1/4  | M6 | 1200 | 9-5  | 12-6  | 14.2 | 360 | 2.8 | 1.3 | 1.16 | 29.5 | .52 | 13.2 |
| 24RAA19AM3 |  | 5/16 | M6 | 700  | 14-7 | 19-10 | 15.0 | 380 | 3.2 | 1.4 | 1.16 | 29.5 | .52 | 13.2 |
| 24RAA23AM3 |  | 5/16 | M6 | 600  | 17-9 | 23-12 | 15.0 | 380 | 3.2 | 1.4 | 1.16 | 29.5 | .52 | 13.2 |

### 34 Series Lever Start – Reversible

|            |  |      |     |      |       |       |      |     |     |     |      |      |     |      |
|------------|--|------|-----|------|-------|-------|------|-----|-----|-----|------|------|-----|------|
| 34RAA08AL3 |  | 1/4  | M5  | 2060 | 6-4   | 8-5   | 14.5 | 368 | 2.7 | 1.2 | 1.08 | 27.5 | .47 | 12.0 |
| 34RAA11AL3 |  | 1/4  | M6  | 1675 | 8-5   | 11-7  | 14.5 | 368 | 2.7 | 1.2 | 1.08 | 27.5 | .47 | 12.0 |
| 34RAA15AM3 |  | 1/4  | M6  | 1185 | 11-7  | 15-9  | 14.6 | 370 | 2.9 | 1.3 | 1.16 | 29.5 | .52 | 13.2 |
| 34RAA26AH3 |  | 5/16 | M8  | 710  | 19-10 | 26-13 | 15.4 | 390 | 3.2 | 1.5 | 1.22 | 31.0 | .57 | 14.4 |
| 34RAA28AH3 |  | 5/16 | M8  | 580  | 20-10 | 28-14 | 15.4 | 390 | 3.3 | 1.5 | 1.22 | 31.0 | .57 | 14.4 |
| 34RAA33AX3 |  | 3/8  | M8  | 545  | 24-12 | 33-17 | 15.5 | 393 | 3.5 | 1.6 | 1.36 | 34.5 | .67 | 17.1 |
| 34RAA37AX3 |  | 3/8  | M8  | 480  | 27-14 | 37-18 | 15.6 | 397 | 3.4 | 1.5 | 1.36 | 34.5 | .67 | 17.1 |
| 34RAA47AX3 |  | 3/8  | M8  | 385  | 35-17 | 47-24 | 15.6 | 397 | 3.4 | 1.5 | 1.36 | 34.5 | .67 | 17.1 |
| 34RAA68AZ3 |  | 7/16 | M10 | 255  | 50-25 | 68-34 | 16.2 | 411 | 3.7 | 1.7 | 1.60 | 41.0 | .70 | 18.0 |
| 34RAA75AZ3 |  | 7/16 | M10 | 155  | 55-28 | 75-38 | 17.0 | 431 | 3.9 | 1.8 | 1.60 | 41.0 | .70 | 18.0 |
| 34RAA68AZ4 |  | 7/16 | M10 | 255  | 50-25 | 68-34 | 16.2 | 411 | 3.7 | 1.7 | 1.60 | 41.0 | .70 | 18.0 |
| 34RAA75AZ4 |  | 7/16 | M10 | 155  | 55-28 | 75-38 | 17.0 | 431 | 3.9 | 1.8 | 1.60 | 41.0 | .70 | 18.0 |

**GENERAL:**  
Air Inlet: 3/8" NPT  
Minimum Hose Size: 5/16"  
Tool performance rated at 90 psi (620kPa) air pressure.

**STANDARD EQUIPMENT:**  
Operating instructions & service manual  
Suspension bail  
Exhaust Overhose  
Clutch adjustment tool

**OPTIONAL EQUIPMENT:**  
Assembly wrench: 201898  
Torque signal kit: 201900  
Non-reversible kit: 204999  
Additional accessories: Page 61

Refer to Page 7 for description of Rapid Select



## 45 Series

Torque Range:  
28 – 115 Nm  
21 – 85 Ft. Lbs.

Bolt Size:  
M10 – M12  
7/16 – 1/2"

- Button start
- Twist ring and non-reversible
- External torque adjustment



## 55, 75 Series

Torque Range:  
32 – 430 Nm  
24 – 320 Ft. Lbs.

Bolt Size:  
M10 – M16  
7/16 – 3/4"

- Lever start
- External torque adjustment
- Rotating exhaust deflector



| Model Number  | Bolt Size   |               | Free Speed<br>RPM | Torque Range |        | Length |     | Weight |     | Head Height |    | Side to Center |    | Angle Head |
|---|-------------|---------------|-------------------|--------------|--------|--------|-----|--------|-----|-------------|----|----------------|----|------------|
|   | GR.5<br>in. | GR. 9.8<br>mm |                   | ft.-lbs.     | Nm     | in.    | mm  | lb     | kg  | in.         | mm | in.            | mm |            |
| <b>Clecomatic – Button Start – Twist Ring Reverse</b> |             |               |                   |              |        |        |     |        |     |             |    |                |    |            |
| 45RNAB-4T-4   | 7/16        | M10           | 300               | 42-21        | 57-28  | 17.6   | 448 | 6.8    | 3.1 | 2.0         | 50 | 0.9            | 22 | T          |
| 45RNAB-3P-4   | 7/16        | M10           | 240               | 52-26        | 71-35  | 17.5   | 445 | 6.4    | 2.9 | 1.6         | 41 | 0.7            | 18 | P          |
| 45RNAB-3T-4   | 7/16        | M10           | 200               | 62-31        | 84-42  | 17.6   | 448 | 6.8    | 3.1 | 2.0         | 50 | 0.9            | 22 | T          |
| 45RNAB-2P-4   | 1/2         | M12           | 180               | 71-34*       | 96-46* | 17.5   | 445 | 6.4    | 2.9 | 1.6         | 41 | 0.7            | 18 | P          |
| 45RNAB-2T-4   | 1/2         | M12           | 150               | 85-37        | 115-50 | 17.6   | 448 | 6.8    | 3.1 | 2.0         | 50 | 0.9            | 22 | T          |
| <b>Clecomatic – Button Start – Non-Reversible</b>     |             |               |                   |              |        |        |     |        |     |             |    |                |    |            |
| 45NAB-3P-4  | 7/16        | M10           | 300               | 57-28        | 77-38  | 17.5   | 445 | 6.3    | 2.8 | 1.6         | 41 | 0.7            | 18 | P          |

\* Maximum torque of tool exceeds the maximum torque rating for the head, high maintenance should be expected when operated at the upper torque capacity range.

**GENERAL:**  
Air Inlet: 3/8" NPT  
Minimum Hose Size: 3/8"  
Tool performance rated at 90 psi (620kPa) air pressure.

**STANDARD EQUIPMENT:**  
Operating instructions & service manual  
All torque springs required to meet indicated torque specification

**OPTIONAL EQUIPMENT:**  
Additional accessories: Page 61

| Model Number                            |                   | Bolt Size    |               | Free Speed<br>RPM | Torque Range |         | Length   |      | Weight |      | Head Height |     | Side to Center |      | Angle Head |   |
|---|-------------------|--------------|---------------|-------------------|--------------|---------|----------|------|--------|------|-------------|-----|----------------|------|------------|---|
| 1/2" Square Drive                       | 3/4" Square Drive | GR. 5<br>in. | GR. 9.8<br>mm |                   | ft.-lbs.     | Nm      | in.      | mm   | lbs.   | kg   | in.         | mm  | in.            | mm   |            |   |
| <b>Lever Start – Twist Ring Reverse</b> |                   |              |               |                   |              |         |          |      |        |      |             |     |                |      |            |   |
|   | 55RNAL-6T-4       |              | 7/16          | M10               | 370          | 48-24   | 65-32    | 19.3 | 489    | 7.8  | 3.5         | 2.0 | 50             | 0.9  | 22         | T |
|   | 55RNAL-4P-4       |              | 7/16          | M10               | 330          | 54-26   | 73-35    | 19.1 | 486    | 7.4  | 3.3         | 1.6 | 41             | 0.7  | 18         | P |
|   | 55RNAL-4T-4       |              | 1/2           | M10               | 280          | 64-29   | 87-39    | 19.3 | 489    | 7.8  | 3.5         | 2.0 | 50             | 0.9  | 22         | T |
|   | 55RNAL-3P-4       |              | 1/2           | M12               | 220          | 80-36*  | 109-49*  | 19.1 | 486    | 7.4  | 3.3         | 1.6 | 41             | 0.7  | 18         | P |
|   | 55RNAL-3T-4       |              | 9/16          | M12               | 190          | 95-43   | 129-58   | 19.3 | 489    | 7.8  | 3.5         | 2.0 | 50             | 0.9  | 22         | T |
|   | 55RNAL-2T-4       |              | 5/8           | M14               | 140          | 125-50* | 170-68*  | 19.3 | 489    | 7.8  | 3.5         | 2.0 | 50             | 0.9  | 22         | T |
|   | 75RNAL-3V-4       |              | 5/8           | M14               | 175          | 140-70  | 190-95   | 21.9 | 556    | 13.3 | 6.0         | 2.5 | 64             | 1.1  | 28         | V |
|   | 75RNAL-2V-4       |              | 5/8           | M16               | 130          | 190-90* | 255-122* | 21.9 | 556    | 13.3 | 6.0         | 2.5 | 64             | 1.1  | 28         | V |
|   | 75RNAL-3X-6       |              | 3/4           | M16               | 110          | 225-110 | 305-150  | 22.6 | 575    | 15.0 | 6.8         | 2.8 | 70             | 1.4  | 37         | X |
|   | 75RNAL-2X-6       |              | 3/4           | M16               | 80           | 305-150 | 410-203  | 22.6 | 575    | 15.0 | 6.8         | 2.8 | 70             | 1.4  | 37         | X |
| <b>Lever Start – Non-Reversible</b>     |                   |              |               |                   |              |         |          |      |        |      |             |     |                |      |            |   |
|   | 55NAL-4P-4        |              | 7/16          | M10               | 480          | 57-28   | 77-28    | 19.1 | 486    | 7.3  | 3.3         | 1.6 | 41             | 72.0 | 18         | P |
|   | 55NAL-4T-4        |              | 1/2           | M12               | 400          | 69-33   | 93-39    | 19.3 | 489    | 7.6  | 3.5         | 2.0 | 50             | 0.9  | 22         | T |
|   | 55NAL-3P-4        |              | 1/2           | M12               | 320          | 84-39*  | 114-49*  | 19.1 | 486    | 7.3  | 3.3         | 1.6 | 41             | 72.0 | 18         | P |
|   | 55NAL-3T-4        |              | 9/16          | M12               | 270          | 100-45  | 136-58   | 19.3 | 489    | 7.6  | 3.5         | 2.0 | 50             | 0.9  | 22         | T |
|   | 55NAL-2T-4        |              | 5/8           | M14               | 200          | 130-55* | 176-68*  | 19.3 | 489    | 7.6  | 3.5         | 2.0 | 50             | 0.9  | 22         | T |
|   | 75NAL-2V-4        |              | 5/8           | M16               | 210          | 200-100 | 271-135  | 21.9 | 556    | 13.0 | 5.9         | 2.5 | 64             | 1.1  | 28         | V |
|   | 75NAL-2X-6        |              | 3/4           | M16               | 130          | 320-160 | 430-215  | 22.6 | 575    | 14.8 | 6.7         | 2.8 | 70             | 1.4  | 37         | X |

\* Maximum torque of tool exceeds the maximum torque rating for the head, high maintenance should be expected when operated at the upper torque capacity range.

**GENERAL:**  
Air Inlet: 1/2" NPT  
Minimum Hose Size: 1/2"  
Tool performance rated at 90 psi (620kPa) air pressure.

**STANDARD EQUIPMENT:**  
Operating instructions & service manual  
Torque Reaction Mounting Plate (75 series)  
All torque springs required to meet indicated torque specification

**OPTIONAL EQUIPMENT:**  
Additional accessories: Page 61  
Refer to Page 7 for description of Rapid Select

# Angle Nutrunners

Stall – Reversible

## Cleco®

14, 24, 34, 45, 55, 75 Series

Maximum Torque Range:  
3.2 – 440 Nm  
2 – 325 Ft. Lbs.

Bolt Size:  
M3.5 – M16  
#8 – 3/4"

- Button, lever start
- Sliding knob, twist ring and button reverse



# Angle Nutrunners

Stall – Non Reversible

## Cleco®

55, 75 Series

Maximum Torque Range:  
6.2 – 475 Nm  
4.6 – 350 Ft. Lbs.

Bolt Size:  
M4 – M16  
#10 – 3/4"

- Lever start



| Model Number | Square Drive<br>in. | Bolt Size   |              | Free Speed<br>RPM | Max. Torque |    | Length |    | Weight |    | Head Height |    | Side to Center |    |
|--------------|---------------------|-------------|--------------|-------------------|-------------|----|--------|----|--------|----|-------------|----|----------------|----|
|              |                     | GR.5<br>in. | GR.9.8<br>mm |                   | ft.-lbs.    | Nm | in.    | mm | lbs.   | kg | in.         | mm | in.            | mm |

### Button Start – Twist Ring Reverse

|            |     |      |     |     |    |     |      |     |     |     |     |    |     |    |
|------------|-----|------|-----|-----|----|-----|------|-----|-----|-----|-----|----|-----|----|
| 45RNB-4T-4 | 1/2 | 7/16 | M10 | 310 | 46 | 62  | 15.1 | 384 | 5.5 | 2.5 | 2.0 | 50 | 0.9 | 22 |
| 45RNB-3P-4 | 1/2 | 7/16 | M10 | 250 | 58 | 79  | 15.0 | 381 | 5.1 | 2.3 | 1.6 | 41 | 0.7 | 18 |
| 45RNB-3T-4 | 1/2 | 1/2  | M12 | 210 | 69 | 94  | 15.1 | 384 | 5.5 | 2.5 | 2.0 | 50 | 0.9 | 22 |
| 45RNB-2T-4 | 1/2 | 9/16 | M12 | 160 | 92 | 125 | 15.1 | 384 | 5.5 | 2.5 | 2.0 | 50 | 0.9 | 22 |

### Lever Start - Sliding Knob Reverse

|            |     |     |      |      |      |      |      |     |     |     |     |    |     |    |
|------------|-----|-----|------|------|------|------|------|-----|-----|-----|-----|----|-----|----|
| 14RAS03AM2 | 1/4 | #8  | M3.5 | 1700 | 2.3  | 3.2  | 11.4 | 289 | 1.3 | 0.6 | 1.1 | 27 | 0.4 | 9  |
| 14RAS04AH2 | 1/4 | #10 | M4   | 1250 | 2.7* | 3.6* | 11.2 | 284 | 1.4 | 0.6 | 1.2 | 30 | 0.5 | 13 |
| 14RAS05AM2 | 1/4 | #10 | M4   | 850  | 3.8  | 5.2  | 10.6 | 268 | 1.2 | 0.5 | 1.1 | 27 | 0.4 | 9  |
| 14RAS06AH3 | 3/8 | #10 | M4   | 880  | 4.6  | 6.2  | 11.0 | 279 | 1.3 | 0.6 | 1.2 | 30 | 0.5 | 13 |

### Lever Start – Twist Ring Reverse

|            |     |      |     |      |      |      |      |     |      |     |     |    |     |    |
|------------|-----|------|-----|------|------|------|------|-----|------|-----|-----|----|-----|----|
| 34RAS11AL3 | 3/8 | 1/4  | M5  | 1675 | 8.1  | 11   | 12.0 | 305 | 2.1  | 1.0 | 1.1 | 28 | 0.5 | 12 |
| 24RAS13AM3 | 3/8 | 1/4  | M6  | 1200 | 9.6  | 13   | 11.7 | 297 | 2.2  | 1.0 | 1.2 | 30 | 0.5 | 13 |
| 34RAS28AH3 | 3/8 | 5/16 | M8  | 710  | 20   | 28   | 12.9 | 328 | 2.6  | 1.2 | 1.2 | 31 | 0.6 | 14 |
| 34RAS36AX3 | 3/8 | 3/8  | M8  | 545  | 26   | 36   | 13.0 | 330 | 2.8  | 1.3 | 1.4 | 35 | 0.7 | 17 |
| 55RNL-7T-4 | 1/2 | 7/16 | M10 | 490  | 41   | 56   | 16.1 | 410 | 6.1  | 2.8 | 2.0 | 50 | 0.9 | 22 |
| 55RNL-3T-4 | 1/2 | 9/16 | M12 | 195  | 100* | 136* | 16.8 | 425 | 6.5  | 2.9 | 2.0 | 50 | 0.9 | 22 |
| 55RNL-2T-4 | 1/2 | 5/8  | M14 | 145  | 130* | 176* | 16.8 | 425 | 6.5  | 2.9 | 2.0 | 50 | 0.9 | 22 |
| 75RNL-3V-4 | 1/2 | 5/8  | M14 | 190  | 155  | 210  | 19.4 | 492 | 11.4 | 5.2 | 2.5 | 64 | 1.1 | 28 |
| 75RNL-3X-6 | 3/4 | 3/4  | M16 | 120  | 245  | 330  | 20.1 | 511 | 13.1 | 6.0 | 2.8 | 70 | 1.4 | 37 |
| 75RNL-2X-6 | 3/4 | 3/4  | M16 | 90   | 325  | 440  | 20.1 | 511 | 13.1 | 6.0 | 2.8 | 70 | 1.4 | 37 |

\* Maximum torque of tool exceeds the maximum torque rating for the head, high maintenance should be expected when operated at the upper torque capacity range.

#### GENERAL:

Air Inlet: 3/8" NPT (24, 34, 45 series);  
1/8" NPT (14 series); 1/2" NPT (55, 75 series)  
Minimum Hose: 3/8" (45 series); 3/16" (14 series);  
5/16" (24, 34 series); 1/2" (55, 75 series)  
Tool performance rated at 90 psi (620kPa)  
air pressure.

#### STANDARD EQUIPMENT:

Operating instructions & service manual  
Suspension ball (14 series)  
Torque reaction mounting plate (75 series)

#### OPTIONAL EQUIPMENT:

14 Series: Non-Reverse Kit: 207030  
Overhose: 207019  
Quick Change and 1/4" magnetic hex  
outputs available on AH3 models only.  
Quick Change: Change AH3 to AHQ  
1/4" Magnetic Hex: Change AH3 to AHM

24/34 Series: Assembly wrench: 201898  
Non-reverse kit: 204999  
Additional accessories: Page 61

Refer to Page 7 for description of Rapid Select

| Model Number | Square Drive<br>in. | Bolt Size   |              | Free Speed<br>RPM | Max. Torque |    | Length |    | Weight |    | Head Height |    | Side to Center |    |
|--------------|---------------------|-------------|--------------|-------------------|-------------|----|--------|----|--------|----|-------------|----|----------------|----|
|              |                     | GR.5<br>in. | GR.9.8<br>mm |                   | ft.-lbs.    | Nm | in.    | mm | lbs.   | kg | in.         | mm | in.            | mm |

### Lever Start

|           |     |      |     |     |      |      |      |     |      |     |     |    |     |    |
|-----------|-----|------|-----|-----|------|------|------|-----|------|-----|-----|----|-----|----|
| 55NL-3T-4 | 1/2 | 9/16 | M14 | 290 | 110* | 149* | 16.8 | 425 | 6.4  | 2.9 | 2.0 | 50 | 0.9 | 22 |
| 55NL-2T-4 | 1/2 | 5/8  | M16 | 210 | 150* | 203* | 16.8 | 425 | 6.4  | 2.9 | 2.0 | 50 | 0.9 | 22 |
| 75NL-3V-4 | 1/2 | 5/8  | M16 | 300 | 165  | 225  | 19.4 | 492 | 11.1 | 5.0 | 2.5 | 64 | 1.1 | 28 |
| 75NL-2V-4 | 1/2 | 3/4  | M16 | 230 | 220* | 298* | 19.4 | 492 | 11.1 | 5.0 | 2.5 | 64 | 1.1 | 28 |
| 75NL-2X-6 | 3/4 | 3/4  | M16 | 140 | 350  | 475  | 20.1 | 511 | 12.9 | 5.8 | 2.8 | 70 | 1.4 | 37 |

\* Maximum torque of tool exceeds the maximum torque rating for the head, high maintenance should be expected when operated at the upper torque capacity range.

#### GENERAL:

Air Inlet: 1/2" NPT (55, 75 series)

Minimum Hose Size: 1/2" (55, 75 series)  
Tool performance rated at 90 psi (620kPa)  
air pressure.

#### STANDARD EQUIPMENT:

Operating instructions & service manual  
Torque Reaction Mounting Plate (75 series)

#### OPTIONAL EQUIPMENT:

Additional accessories: Page 61



# Reaction Bar Nutrunners

## Smaller, Faster, Lighter

Cleco proudly introduces the new 64 Series Swingbar Nutrunners. For high torque applications where a small tool is necessary, for consistency in clamp load across joint types or for simply eliminating the maintenance needs of an angle tool, the new 64 Series tools provide the best solution for today's heavy assembly environment.

## Benefits of a Swingbar Tool

A swingbar tool includes a reaction bar that freely swings 360°. This allows the reaction bar to be moved to an appropriate bracing point without any disassembly or repositioning of a spline. Once positioned, the reaction bar absorbs the reaction forces of the tool.

Both prevailing torque and type of joint can limit the accuracy of a clutch or pulse tool. On softer joints, torque threshold is reached early in the fastening cycle resulting in long rundowns, especially difficult on pulse tools.

On a long rundown, a swingbar tool that is able to maintain a steady speed minimizes the time required to run down a fastener.

On a typical hard joint with prevailing torque, a torque spike will occur which can prematurely shut off a clutch or pulse tool. In tools with speed shifts, a torque spike will also cause the speed to shift down resulting in a slower rundown. The Cleco 64 Series Swingbar Nutrunners are not affected by torque spikes.



## Speed and Torque Tests for the New Cleco 64 Series Swingbar Nutrunners

The goal of any fastening application is to maintain a high degree of accuracy while minimizing the length of time required to perform the rundown. The new Cleco 64 Series Swingbar Nutrunners utilize a single powerful motor that limits speed shifts and offers a fast and accurate rundown regardless of joint type.

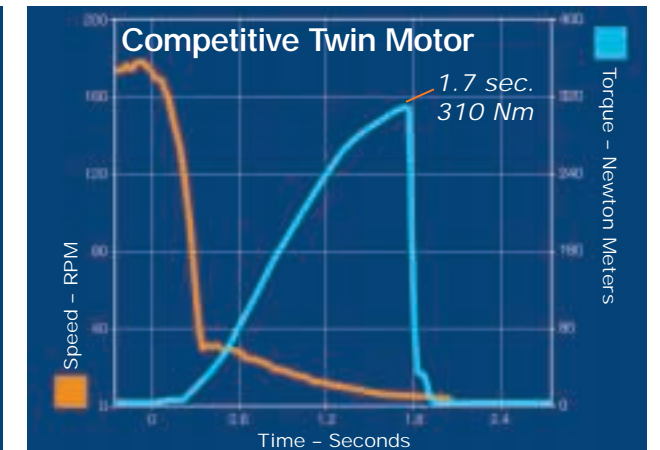
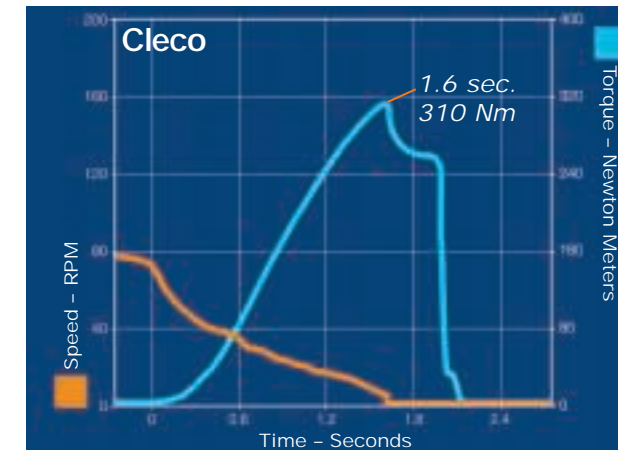
Competitive units with high RPM's quickly drop their speed at threshold resulting in an overall longer rundown period. This gap is multiplied when prevailing torque is present.

To read the graphs below, the orange line represents the tool speed while the blue line represents the torque generated throughout a rundown. Notice the correlation between speed and torque and its overall effect on rundown time.

The swingbar can instantly be positioned to absorb the torque reaction of the tool while maintaining a comfortable position with the trigger hand.

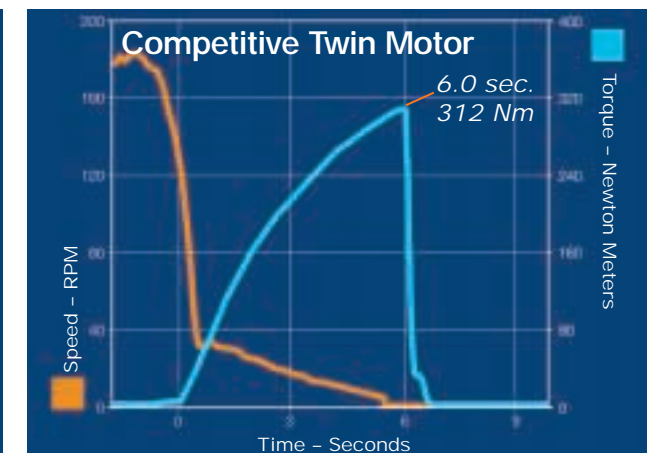
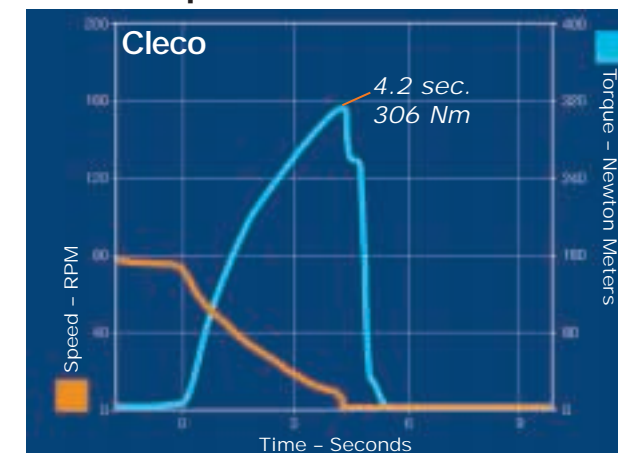


## Random Comparison on 120° Joint



Although the free speed of the Cleco tool is slower, tightening speed is faster which in this application results in almost equal overall times.

## Random Comparison on 720° Joint



Again the free speed of the Cleco tool is slower, however with its faster tightening speed the overall time is almost 2 seconds faster.

# Reaction Bar Nutrunners

Clecomatic Clutch & Stall

## Cleco®

45, 55 & 64 Series

Torque Range:  
14 – 3850 Nm  
10 – 2837 Ft. Lbs.

Bolt Size:  
M6 – M42  
5/16 – 1 3/4"

- Inline & Pistol Grip
- Reversible
- Lever, button and trigger start
- Swingbar (64 series)



# Reaction Bar Nutrunners

Selectork

## Cleco®

64 Series

Torque Range:  
26 – 3850 Nm  
19 – 2837 Ft. Lbs.

Bolt Size:  
M8 – M42  
3/8 – 1 3/4"

- Pistol Grip
- Reversible
- Swingbar
- Selectork adjustment



| Model Number | Drive Size | Suitable for Bolt Size |    | Free Speed<br>RPM | Torque Range |    | Length |    | Weight* |    |
|--------------|------------|------------------------|----|-------------------|--------------|----|--------|----|---------|----|
|              |            | in.                    | mm |                   | ft.-lbs.     | Nm | in.    | mm | lbs.    | kg |

**Inline – Clecomatic – Lever Start – Twist Ring Reverse**

|            |     |      |     |     |       |       |      |     |     |     |
|------------|-----|------|-----|-----|-------|-------|------|-----|-----|-----|
| 55RNAL-4-4 | 1/2 | 7/16 | M8  | 560 | 34-20 | 46-27 | 16.1 | 410 | 6.5 | 3.0 |
| 55RNAL-3-4 | 1/2 | 1/2  | M10 | 370 | 51-25 | 69-34 | 16.1 | 410 | 6.5 | 3.0 |
| 55RNAL-2-4 | 1/2 | 1/2  | M12 | 270 | 67-30 | 91-46 | 16.1 | 410 | 6.5 | 3.0 |

**Inline – Clecomatic – Button Start – Twist Ring Reverse**

|            |     |      |     |     |       |       |      |     |     |     |
|------------|-----|------|-----|-----|-------|-------|------|-----|-----|-----|
| 45RNAB-6-3 | 3/8 | 5/16 | M6  | 740 | 16-10 | 22-14 | 14.5 | 368 | 5.4 | 2.4 |
| 45RNAB-4-3 | 3/8 | 3/8  | M8  | 560 | 22-14 | 30-19 | 14.5 | 368 | 5.4 | 2.4 |
| 45RNAB-3-3 | 3/8 | 7/16 | M8  | 370 | 33-18 | 45-24 | 14.5 | 368 | 5.4 | 2.4 |
| 45RNAB-2-4 | 1/2 | 7/16 | M10 | 270 | 46-23 | 62-31 | 14.5 | 368 | 5.4 | 2.4 |

**Pistol - Stall Torque – Reversible – Swingbar**

|              |       |       |     |     |      |      |       |       |      |      |
|--------------|-------|-------|-----|-----|------|------|-------|-------|------|------|
| 64TTS34D4    | 1/2   | 3/8   | M8  | 725 | 25   | 34   | 11.5  | 290.8 | 6.1  | 2.8  |
| 64TTS44D4    | 1/2   | 7/16  | M8  | 570 | 32   | 44   | 11.5  | 290.8 | 6.1  | 2.8  |
| 64TTS55D4    | 1/2   | 7/16  | M10 | 445 | 41   | 55   | 11.5  | 290.8 | 6.1  | 2.8  |
| 64TTS75D4    | 1/2   | 1/2   | M12 | 340 | 55   | 75   | 11.5  | 290.8 | 6.1  | 2.8  |
| 64TTS90D4    | 1/2   | 1/2   | M12 | 270 | 66   | 90   | 11.5  | 290.8 | 6.1  | 2.8  |
| 64TTS110D4   | 1/2   | 9/16  | M12 | 225 | 81   | 110  | 11.5  | 290.8 | 6.1  | 2.8  |
| 64TTS125D4   | 1/2   | 9/16  | M12 | 200 | 92   | 125  | 11.5  | 290.8 | 6.1  | 2.8  |
| 64TTS140D4   | 1/2   | 5/8   | M14 | 180 | 103  | 140  | 11.5  | 290.8 | 6.1  | 2.8  |
| 64TTS150D6   | 3/4   | 5/8   | M14 | 160 | 111  | 150  | 12.5  | 316.2 | 8.0  | 3.6  |
| 64TTS175D6   | 3/4   | 5/8   | M14 | 135 | 129  | 175  | 12.5  | 316.2 | 8.0  | 3.6  |
| 64TTS205D6   | 3/4   | 5/8   | M16 | 115 | 151  | 205  | 12.5  | 316.2 | 8.0  | 3.6  |
| 64TTS255D6   | 3/4   | 3/4   | M16 | 95  | 188  | 255  | 12.5  | 316.2 | 8.0  | 3.6  |
| 64TTS345D6   | 3/4   | 3/4   | M20 | 70  | 254  | 345  | 12.5  | 316.2 | 8.0  | 3.6  |
| 64TTS425D6   | 3/4   | 7/8   | M20 | 55  | 313  | 425  | 12.5  | 316.2 | 8.0  | 3.6  |
| 64TTS570D6   | 3/4   | 1     | M22 | 42  | 420  | 570  | 12.9  | 328.9 | 8.4  | 3.8  |
| 64TTS640D8   | 1     | 1 1/8 | M22 | 32  | 472  | 640  | 15.9  | 404.1 | 14.3 | 6.5  |
| 64TTS750D8   | 1     | 1 1/8 | M24 | 27  | 553  | 750  | 15.9  | 404.1 | 14.3 | 6.5  |
| 64TTS930D8   | 1     | 1 1/4 | M27 | 22  | 686  | 930  | 15.9  | 404.1 | 14.3 | 6.5  |
| 64TTS1260D8  | 1     | 1 3/8 | M27 | 16  | 929  | 1260 | 15.91 | 404.1 | 14.3 | 6.5  |
| 64TTS1475D8  | 1     | 1 1/2 | M30 | 14  | 1088 | 1475 | 15.9  | 404.1 | 14.3 | 6.5  |
| 64TTS1820D8  | 1     | 1 3/4 | M33 | 11  | 1342 | 1820 | 15.9  | 404.1 | 14.3 | 6.5  |
| 64TTS1985D8  | 1     | 1 3/4 | M33 | 10  | 1464 | 1985 | 15.9  | 404.1 | 14.3 | 6.5  |
| 64TTS3850D12 | 1 1/2 | 1 3/4 | M42 | 5   | 2837 | 3850 | 21.5  | 546.1 | 32.0 | 14.5 |

**GENERAL:**  
Air Inlet: 3/8" NPT (45 button); 1/2" NPT (55 lever); 1/4" (64 series)  
Minimum Hose Size: 3/8" (45 button); 1/2" (55, 64 series)  
Tool performance rated at 90 psi (620kPa) air pressure.

**STANDARD EQUIPMENT:**  
Operating instructions & service manual  
Aluminum Torque Reaction Bar  
Steel Torque Reaction Bar (tools rated above 50 ft. lbs.)  
Slave Square Drive (64TTS3850D12)

**OPTIONAL EQUIPMENT:**  
Steel Torque Reaction Bar:  
45, 55 series: 869770  
64.....D4 series: 48047128  
Additional accessories: Page 61  
\* Weight without reaction bar.

| Model Number | Drive Size | Suitable for Bolt Size |    | Free Speed<br>RPM | Torque Range |    | Length |    | Weight* |    |
|--------------|------------|------------------------|----|-------------------|--------------|----|--------|----|---------|----|
|              |            | in.                    | mm |                   | ft.-lbs.     | Nm | in.    | mm | lbs.    | kg |

**Pistol – Selectork – Trigger Start – Reversible**

|              |        |       |     |     |           |           |      |       |      |      |
|--------------|--------|-------|-----|-----|-----------|-----------|------|-------|------|------|
| 64TTK34D4    | 1/2"   | 3/8   | M8  | 725 | 25-19     | 34-26     | 11.5 | 290.8 | 6.3  | 2.9  |
| 64TTK44D4    | 1/2"   | 7/16  | M8  | 570 | 32-24     | 44-33     | 11.5 | 290.8 | 6.3  | 2.9  |
| 64TTK55D4    | 1/2"   | 7/16  | M10 | 445 | 41-30     | 55-41     | 11.5 | 290.8 | 6.3  | 2.9  |
| 64TTK75D4    | 1/2"   | 1/2   | M12 | 340 | 55-41     | 75-56     | 11.5 | 290.8 | 6.3  | 2.9  |
| 64TTK90D4    | 1/2"   | 1/2   | M12 | 270 | 66-50     | 90-68     | 11.5 | 290.8 | 6.3  | 2.9  |
| 64TTK110D4   | 1/2"   | 9/16  | M12 | 225 | 81-61     | 110-83    | 11.5 | 290.8 | 6.3  | 2.9  |
| 64TTK125D4   | 1/2"   | 9/16  | M12 | 200 | 92-69     | 125-94    | 11.5 | 290.8 | 6.3  | 2.9  |
| 64TTK140D4   | 1/2"   | 5/8   | M14 | 180 | 103-77    | 140-105   | 11.5 | 290.8 | 6.3  | 2.9  |
| 64TTK150D6   | 3/4"   | 5/8   | M14 | 160 | 111-83    | 150-113   | 12.5 | 316.2 | 8.2  | 3.7  |
| 64TTK175D6   | 3/4"   | 5/8   | M14 | 135 | 129-97    | 175-131   | 12.5 | 316.2 | 8.2  | 3.7  |
| 64TTK205D6   | 3/4"   | 5/8   | M16 | 115 | 151-113   | 205-154   | 12.5 | 316.2 | 8.2  | 3.7  |
| 64TTK255D6   | 3/4"   | 3/4   | M16 | 95  | 188-141   | 255-191   | 12.5 | 316.2 | 8.2  | 3.7  |
| 64TTK345D6   | 3/4"   | 3/4   | M20 | 70  | 254-191   | 345-259   | 12.5 | 316.2 | 8.2  | 3.7  |
| 64TTK425D6   | 3/4"   | 7/8   | M20 | 55  | 313-235   | 425-319   | 12.5 | 316.2 | 8.2  | 3.7  |
| 64TTK570D6   | 3/4"   | 1     | M22 | 42  | 420-315   | 570-428   | 13.0 | 328.9 | 8.6  | 3.9  |
| 64TTK640D8   | 1"     | 1 1/8 | M22 | 32  | 472-354   | 640-480   | 15.9 | 404.1 | 14.5 | 6.6  |
| 64TTK750D8   | 1"     | 1 1/8 | M24 | 27  | 553-415   | 750-563   | 15.9 | 404.1 | 14.5 | 6.6  |
| 64TTK930D8   | 1"     | 1 1/4 | M27 | 22  | 686-514   | 930-698   | 15.9 | 404.1 | 14.5 | 6.6  |
| 64TTK1260D8  | 1"     | 1 3/8 | M27 | 16  | 929-697   | 1260-945  | 15.9 | 404.1 | 14.5 | 6.6  |
| 64TTK1475D8  | 1"     | 1 1/2 | M30 | 14  | 1088-816  | 1475-1106 | 15.9 | 404.1 | 14.5 | 6.6  |
| 64TTK1820D8  | 1"     | 1 3/4 | M33 | 11  | 1342-1007 | 1820-1365 | 15.9 | 404.1 | 14.5 | 6.6  |
| 64TTK1985D8  | 1"     | 1 3/4 | M33 | 10  | 1464-1098 | 1985-1489 | 15.9 | 404.1 | 14.5 | 6.6  |
| 64TTK3850D12 | 1 1/2" | 1 3/4 | M42 | 5   | 2837-2128 | 3850-2888 | 21.5 | 546.1 | 32.2 | 14.6 |

**GENERAL:**  
Air Inlet: 3/8" NPT  
Minimum Hose Size: 1/2"  
Tool performance rated at 90 psi (620kPa) air pressure.

**STANDARD EQUIPMENT:**  
Operating instructions & service manual  
Aluminum Torque Reaction Bar (tools rated below 50 ft. lbs.)  
Steel Torque Reaction Bar (tools rated above 50 ft. lbs.)  
Slave Square Drive (64TTK3850D12)

**OPTIONAL EQUIPMENT:**  
Steel Torque Reaction Bar: 64.....D4 series: 48047128  
Additional accessories: Page 61  
\* Weight without reaction bar.

# Flush Socket Nutrunners

Clecomatic Clutch & Stall



## 34 Series

### Torque Range

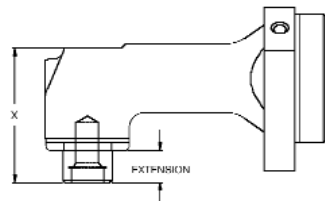
5 - 103 Nm 4 - 76 Ft. Lbs.

- External torque adjustment (Clecomatic models)
- Indexable anglehead
- One torque spring to meet specified range
- Oilless blades
- Reversible



### X Dimension For Flush Socket

| Head | Inches | Millimeters | Socket Size Range |
|------|--------|-------------|-------------------|
| F1   | 1.54   | 39          | 8-15mm            |
| F2   | 1.69   | 43          | 10-15mm           |
| F3   | 2.32   | 59          | 13-21mm           |



NOTE: Models listed are examples. Use chart on bottom of facing page for specific model required but not listed.

| Model Number                                 | Socket Size | Free Speed RPM | Torque   |       | Length |     | Weight |     | Anglehead  |    |                    |    |
|--|-------------|----------------|----------|-------|--------|-----|--------|-----|------------|----|--------------------|----|
|  |             |                | ft.-lbs. | Nm    | in.    | mm  | lbs.   | kg  | Height in. | mm | Side to Center in. | mm |
| <b>Clecomatic - Lever Start - Reversible</b> |             |                |          |       |        |     |        |     |            |    |                    |    |
| 34RAA09F1MD00                                | 10 mm       | 1825           | 7-4      | 9-5   | 17.0   | 432 | 3.7    | 1.7 | 1.54       | 39 | 0.55               | 14 |
| 34RAA16F1MD00                                | 10 mm       | 1055           | 12-7     | 16-9  | 17.0   | 432 | 3.7    | 1.7 | 1.54       | 39 | 0.55               | 14 |
| 34RAA28F1MG00                                | 13 mm       | 645            | 20-10    | 28-14 | 17.8   | 452 | 3.9    | 1.8 | 1.54       | 39 | 0.55               | 14 |
| 34RAA33F2MG00                                | 13 mm       | 540            | 24-12    | 33-17 | 18.8   | 478 | 4.7    | 2.1 | 1.69       | 43 | 0.67               | 17 |
| 34RAA47F2MG00                                | 13 mm       | 380            | 35-17    | 47-24 | 19.0   | 483 | 5.1    | 2.3 | 1.69       | 43 | 0.67               | 17 |
| 34RAA53F2MI00                                | 15 mm       | 265            | 39-17    | 53-24 | 19.0   | 483 | 5.1    | 2.3 | 1.69       | 43 | 0.67               | 17 |
| 34RAA67F3MI00                                | 15 mm       | 265            | 49-24    | 67-33 | 20.5   | 521 | 5.8    | 2.6 | 2.32       | 59 | 0.87               | 22 |
| 34RAA94F3ML00                                | 18 mm       | 185            | 69-35    | 94-47 | 20.5   | 521 | 5.8    | 2.6 | 2.32       | 59 | 0.87               | 22 |
| <b>Stall - Lever Start - Reversible</b>      |             |                |          |       |        |     |        |     |            |    |                    |    |
| 34RAS10F1MD00                                | 10 mm       | 1825           | 7        | 10    | 17.0   | 432 | 3.4    | 1.5 | 1.54       | 39 | 0.55               | 14 |
| 34RAS18F1MD00                                | 10 mm       | 1055           | 13       | 18    | 17.0   | 432 | 3.4    | 1.5 | 1.54       | 39 | 0.55               | 14 |
| 34RAS30F1MG00                                | 13 mm       | 645            | 22       | 30    | 17.8   | 452 | 3.5    | 1.6 | 1.54       | 39 | 0.55               | 14 |
| 34RAS40F2MG00                                | 13 mm       | 480            | 29       | 40    | 19.0   | 483 | 4.4    | 2.0 | 1.69       | 43 | 0.67               | 17 |
| 34RAS52F2MI00                                | 15 mm       | 380            | 38       | 52    | 19.0   | 483 | 4.4    | 2.0 | 1.69       | 43 | 0.67               | 17 |
| 34RAS58F3MI00                                | 15 mm       | 335            | 43       | 58    | 20.5   | 521 | 5.5    | 2.5 | 2.32       | 59 | 0.87               | 22 |
| 34RAS73F3MI00                                | 15 mm       | 265            | 54       | 73    | 20.5   | 521 | 5.5    | 2.5 | 2.32       | 59 | 0.87               | 22 |
| 34RAS103F3ML00                               | 18 mm       | 185            | 76       | 103   | 20.5   | 521 | 5.5    | 2.5 | 2.32       | 59 | 0.87               | 22 |

**GENERAL:**  
Air Inlet: 3/8" NPT  
Minimum Hose Size: 5/16"  
Tool performance rated at 90 psi (620kPa) air pressure.

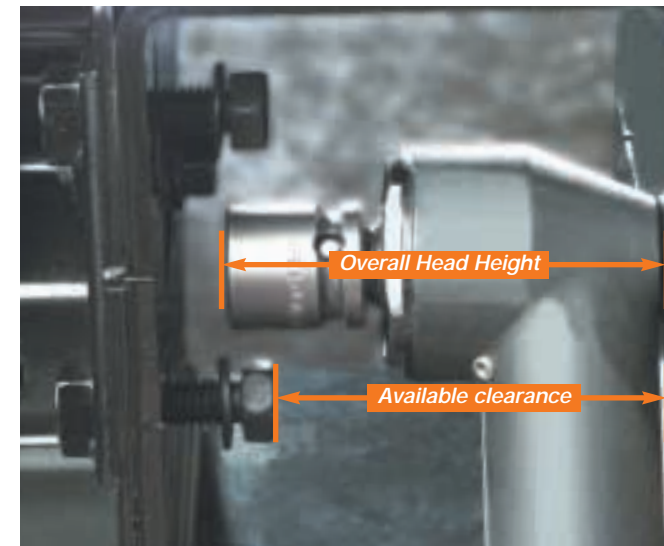
**STANDARD EQUIPMENT:**  
Operating instructions & service manual

Suspension bail  
Exhaust Overhose  
Clutch adjustment tool (Clecomatic tools)  
Mounting plate (F3 tools)

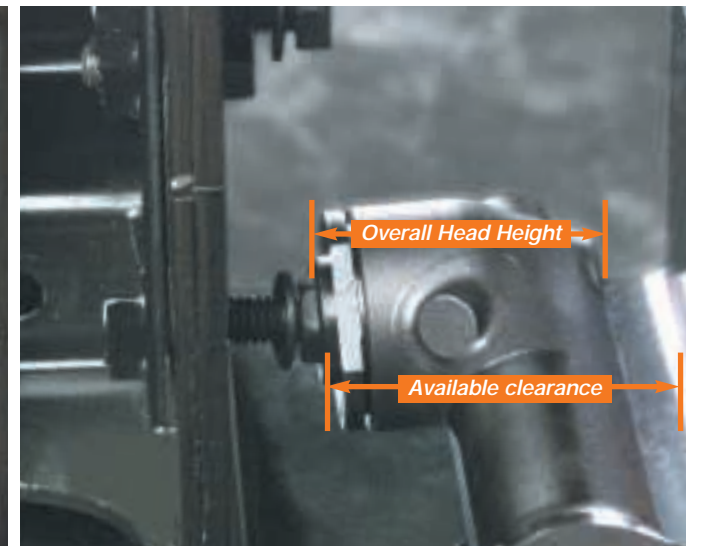
**OPTIONAL EQUIPMENT:**  
Assembly wrench: 201898  
Torque signal kit: 201900

Non-reversible kit: 204999  
Mounting plates: F1 tools 57217101  
F2 tools 57218103  
F3 tools 43287131

Additional accessories: Page 61



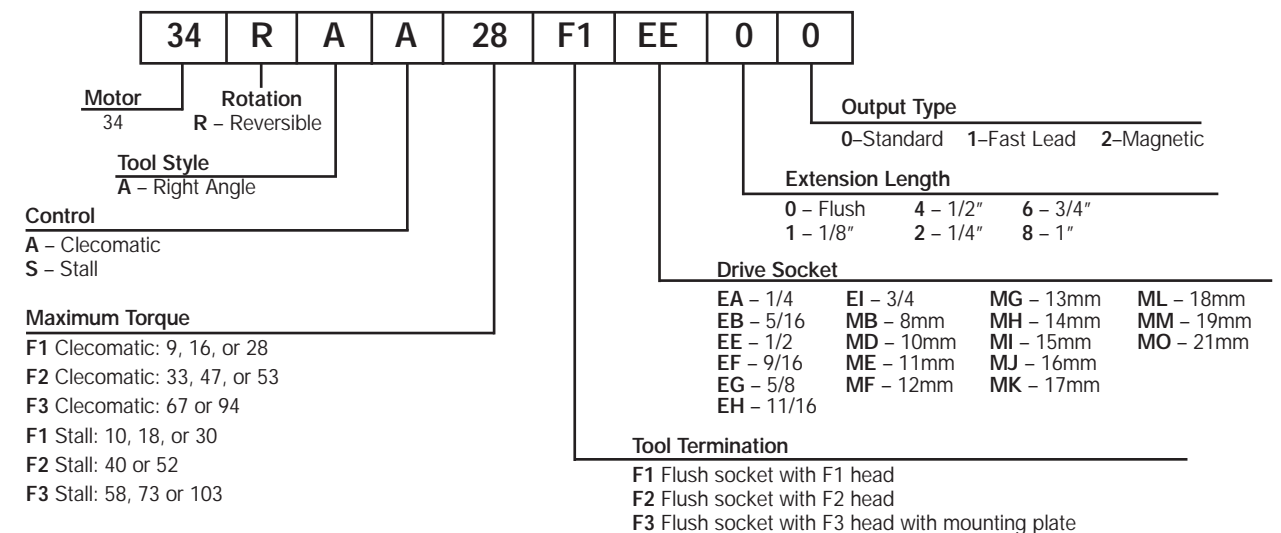
Tight clearance applications, once only accessible by the use of hand tools or crowfoot attachments, can now be tightened by the new family of Cleco Flush Socket Pneumatic Tools at a speed that maximizes productivity. Tools equipped with a Clecomatic clutch assure good torque repeatability.



Standard right angle head with square drive and separate socket will not fit on tight clearance applications. The overall head height is greater than the available clearance.

Flush socket tools have plenty of clearance to fit on the same application. Clecomatic flush socket tools tighten with much higher accuracy than tools with crowfoot attachment. The overall head height is less than the available clearance.

### Model Number Example



# Crowfoot Nutrunners


Clecomatic Clutch & Stall

## Cleco®

34 Series

Torque Range

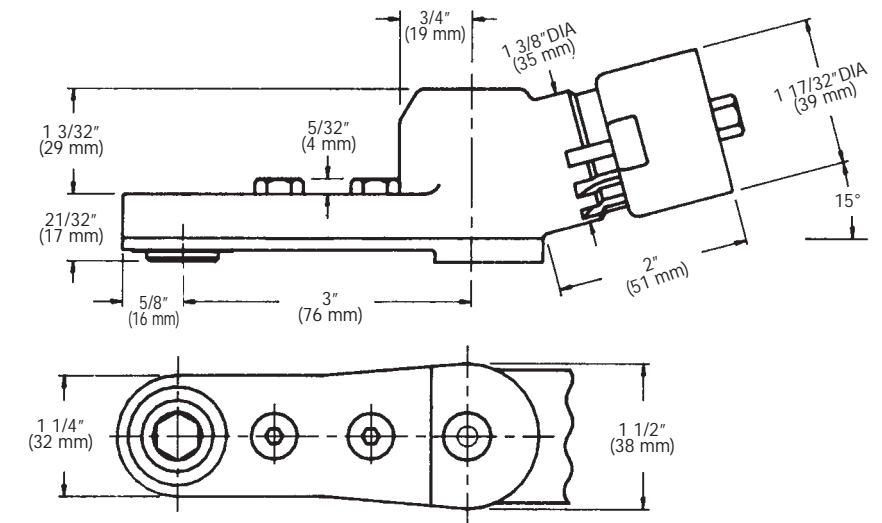
14 - 30 Nm 10 - 22 Ft. Lbs.

- External torque adjustment (Clecomatic models)
- Indexable anglehead
- One torque spring to meet specified range
- Oilless blades 
- Reversible



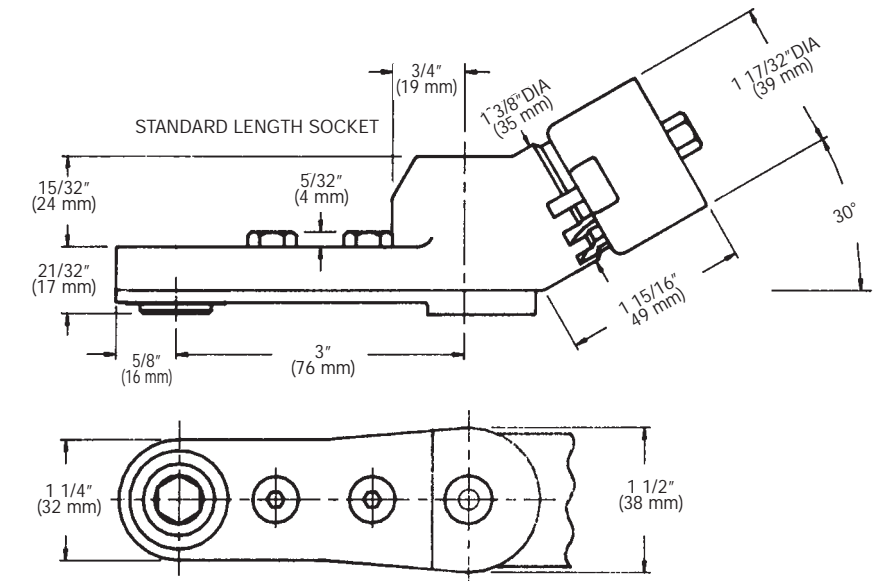
### 15° HEAD

Maximum Recommended Torque: 22 ft. lb. (30 Nm)



### 30° HEAD

Maximum Recommended Torque: 22 ft. lb. (30 Nm)



NOTE: Models listed are examples. Use chart on bottom of facing page for specific model required but not listed.

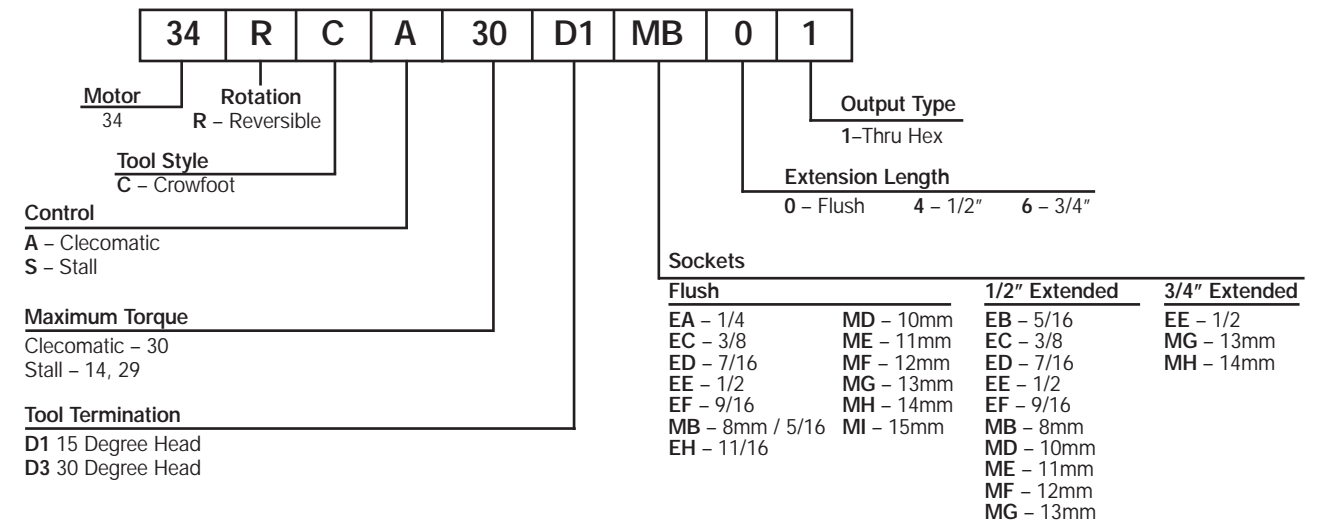
| Model Number                                 |                | Free Speed | Torque Range |       | Socket Size |    | Length |     | Weight |     |
|--|----------------|------------|--------------|-------|-------------|----|--------|-----|--------|-----|
| 15 Degree Head                               | 30 Degree Head | RPM        | ft.-lbs.     | Nm    | in.         | mm | in.    | mm  | lbs.   | kg  |
| <b>Clecomatic - Lever Start - Reversible</b> |                |            |              |       |             |    |        |     |        |     |
| 34RCA30D1MB01                                | 34RCA30D3MB01  | 425        | 22-11        | 30-15 | 5/16        | 8  | 20.0   | 507 | 4.7    | 2.2 |
| 34RCA30D1MG01                                | 34RCA30D3MG01  | 425        | 22-11        | 30-15 | -           | 13 | 20.0   | 507 | 4.7    | 2.2 |
| <b>Stall - Lever Start - Reversible</b>      |                |            |              |       |             |    |        |     |        |     |
| 34RCS29D1MB01                                | 34RCS29D3MB01  | 490        | 21           | 29    | 5/16        | 8  | 19.6   | 497 | 4.5    | 2.1 |
| 34RCS29D1MG01                                | 34RCS29D3MG01  | 490        | 21           | 29    | -           | 13 | 19.6   | 497 | 4.5    | 2.1 |
| 34RCS14D1MB01                                | 34RCS14D3MB01  | 980        | 10           | 14    | 5/16        | 8  | 18.8   | 478 | 4.3    | 1.9 |
| 34RCS14D1MG01                                | 34RCS14D3MG01  | 980        | 10           | 14    | -           | 13 | 18.8   | 478 | 4.3    | 1.9 |

**GENERAL:**  
Air Inlet: 3/8" NPT  
Minimum Hose Size: 5/16"  
Tool performance rated at 90 psi (620kPa) air pressure.

**STANDARD EQUIPMENT:**  
Operating instructions & service manual  
Suspension ball  
Exhaust Overhose  
Clutch adjustment tool (Clecomatic tools)

**OPTIONAL EQUIPMENT:**  
Assembly wrench: 201898  
Torque signal kit: 201900  
Non-reversible kit: 204999  
Additional accessories: Page 61

### Model Number Example



# Hold & Drive Nutrunners


Clecomatic Clutch & Stall

## Cleco®

### 34 Series

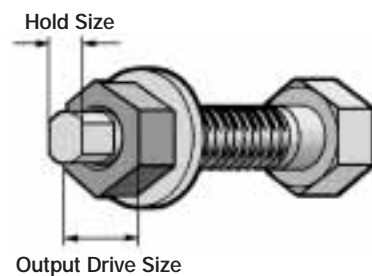
Torque Range

24 - 103 Nm 17 - 76 Ft. Lbs.

- External torque adjustment (Clecomatic models)
- Indexable anglehead
- One torque spring to meet specified range
- Oilless blades 
- Reversible



34RAA67



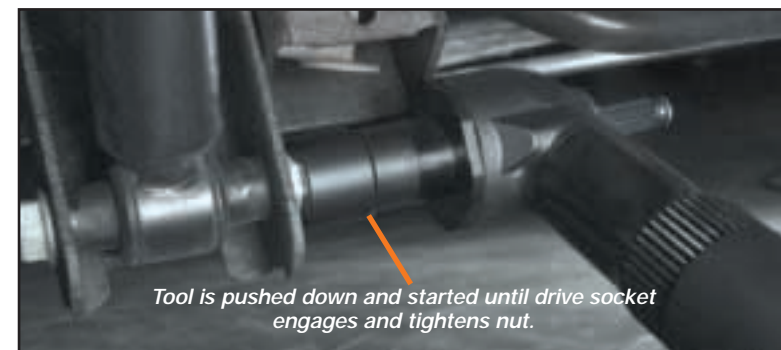
NOTE: Models listed are examples. Use chart on bottom of facing page for specific model required but not listed.

| Model Number                                 | Output Drive Size | Hold Size       | Free Speed RPM | Torque   |       | Length |     | Weight |     | Anglehead  |    |                    |    |
|--|-------------------|-----------------|----------------|----------|-------|--------|-----|--------|-----|------------|----|--------------------|----|
|  |                   |                 |                | ft.-lbs. | Nm    | in.    | mm  | lbs.   | kg  | Height in. | mm | Side to Center in. | mm |
| <b>Clecomatic - Lever Start - Reversible</b> |                   |                 |                |          |       |        |     |        |     |            |    |                    |    |
| 34RAA53H3MGFM5                               | 13mm              | 5mm Female Hex  | 335            | 39-17    | 53-24 | 20.7   | 526 | 8.0    | 3.5 | 2.4        | 61 | 1.06               | 27 |
| 34RAA67H3MIFMA                               | 15mm              | 7mm Female Hex  | 265            | 49-24    | 67-33 | 20.7   | 526 | 8.0    | 3.5 | 2.4        | 61 | 1.06               | 27 |
| 34RAA94H3MLFMB                               | 18mm              | 8mm Female Hex  | 185            | 69-35    | 94-47 | 20.7   | 526 | 8.0    | 3.5 | 2.4        | 61 | 1.06               | 27 |
| <b>Stall - Lever Start - Reversible</b>      |                   |                 |                |          |       |        |     |        |     |            |    |                    |    |
| 34RAS58H3MGFM5                               | 13mm              | 5mm Female Hex  | 335            | 43       | 58    | 20.7   | 526 | 7.7    | 3.5 | 2.4        | 61 | 1.06               | 27 |
| 34RAS73H3MJT30                               | 16mm              | T30 Torx        | 265            | 54       | 73    | 20.7   | 526 | 7.7    | 3.5 | 2.4        | 61 | 1.06               | 27 |
| 34RAS103H3MOFMD                              | 21mm              | 10mm Female Hex | 185            | 76       | 103   | 20.7   | 526 | 7.7    | 3.5 | 2.4        | 61 | 1.06               | 27 |

**GENERAL:**  
Air Inlet: 3/8" NPT  
Minimum Hose Size: 5/16"  
Tool performance rated at 90 psi (620kPa) air pressure.

**STANDARD EQUIPMENT:**  
Operating instructions & service manual  
Suspension ball  
Exhaust Overhose  
Clutch adjustment tool (Clecomatic tools)  
Mounting Plate

**OPTIONAL EQUIPMENT:**  
Assembly wrench: 201898  
Torque signal kit: 201900  
Non-reversible kit: 204999  
Additional accessories: Page 61



Sometimes called shock absorber tools, "Hold-n-Drive" bolts are used with these tools in automotive and truck frame applications. They reduce assembly handling to one person working from one side of the workpiece. The bolt is held stationary by the tool while the nut is tightened from the same side. This also eliminates reaction bars since the bolt absorbs the torque.



### Model Number Example

| Motor  |   |                         |   |                            |   |   | Drive Sockets    |   | Hold Sockets  |   |  |
|--|---|-------------------------|---|----------------------------|---|---|------------------|---|---|---|--|
| 34   | R | A                       | A | 53                         | H | X | XX               | X | XX  | X   |  |
| Motor 34   |   | Rotation R - Reversible |   | Tool Style A - Right Angle |   |   |                  |   |   | Second Oval Dimension<br>Utilize the unit of measure from longer oval dimension to identify shorter dimension |  |
| Control  |   |                         |   |                            |   |   |                  |   | Hold Socket   |   |  |
| A - Clecomatic<br>S - Stall  |   |                         |   |                            |   |   |                  |   | EA - 1/4" ME - 11mm<br>EB - 5/16" MF - 12mm<br>EC - 3/8" MG - 13mm<br>ED - 7/16" MH - 14mm<br>EE - 1/2" 15 - T15<br>EF - 9/16" 20 - T20<br>EG - 5/8" 25 - T25<br>M5 - 5mm 30 - T30<br>M6 - 6mm 40 - T40<br>MA - 7mm 45 - T45<br>MB - 8mm<br>MC - 9mm<br>MD - 10mm |   |  |
| Max Output Torque  |   |                         |   |                            |   |   | Tool Termination |   | Retainer Shaft  |   |  |
| Torque ratings are:<br>Clecomatic: 53, 67, 94<br>Stall: 58, 73, 103  |   |                         |   |                            |   |   | H Hold-n-Drive   |   | 3 3 1/2" 5 5 3/8"<br>4 4" 6 5 7/8"  |   |  |
| Drive Socket   |   |                         |   |                            |   |   |                  |   | Socket Style  |   |  |
| EE - 1/2" EM - 1" MJ - 16mm MR - 24mm<br>EF - 9/16" EN - 1 1/16" MK - 17mm MS - 25mm<br>EG - 5/8" EO - 1 1/8" ML - 18mm MT - 26mm<br>EH - 11/16" EP - 1 3/16" MM - 19mm MU - 27mm<br>EI - 3/4" EQ - 1 1/4" MN - 20mm XX - Special<br>EJ - 13/16" MG - 13mm MO - 21mm<br>EK - 7/8" MH - 14mm MP - 22mm<br>EL - 15/16" MI - 15mm MQ - 23mm |   |                         |   |                            |   |   |                  |   | F - Female Hex<br>M - Male Hex<br>T - Torx<br>O - Female oval   |   |  |

# Double End Nutrunners

Clecomatic Clutch & Stall

## Cleco®

34 Series

Torque Range

5 - 103 Nm 4 - 76 Ft. Lbs.

Bolt Size

M5 - M36 #10 - 1 1/2"

External torque adjustment (Clecomatic models)

Indexable anglehead

One torque spring to meet specified range

Oilless blades

Reversible



34RAA33D24

| Model Number                                 | Square Drive | Free Speed RPM | Torque   |       | Length |     | Weight |     | Anglehead  |    |                    |    |
|--|--------------|----------------|----------|-------|--------|-----|--------|-----|------------|----|--------------------|----|
|  |              |                | ft.-lbs. | Nm    | in.    | mm  | lbs.   | kg  | Height in. | mm | Side to Center in. | mm |
| <b>Clecomatic - Lever Start - Reversible</b> |              |                |          |       |        |     |        |     |            |    |                    |    |
| 34RAA09D24                                   | 1/2"         | 1825           | 7-4      | 9-5   | 17.8   | 452 | 4.5    | 2.0 | 1.69       | 43 | 0.67               | 17 |
| 34RAA16D24                                   | 1/2"         | 1055           | 12-7     | 16-9  | 17.8   | 452 | 4.5    | 2.0 | 1.69       | 43 | 0.67               | 17 |
| 34RAA28D24                                   | 1/2"         | 645            | 20-10    | 28-14 | 18.8   | 478 | 4.7    | 2.1 | 1.69       | 43 | 0.67               | 17 |
| 34RAA33D24                                   | 1/2"         | 540            | 24-12    | 33-17 | 18.8   | 478 | 4.7    | 2.1 | 1.69       | 43 | 0.67               | 17 |
| 34RAA47D24                                   | 1/2"         | 380            | 35-17    | 47-24 | 19.0   | 483 | 5.1    | 2.3 | 1.69       | 43 | 0.67               | 17 |
| 34RAA53D24                                   | 1/2"         | 265            | 39-17    | 53-24 | 19.0   | 483 | 5.1    | 2.3 | 1.69       | 43 | 0.67               | 17 |
| 34RAA67D34                                   | 1/2"         | 265            | 49-24    | 67-33 | 20.5   | 521 | 5.8    | 2.6 | 2.32       | 59 | 0.87               | 22 |
| 34RAA94D34                                   | 1/2"         | 185            | 69-35    | 94-47 | 20.5   | 521 | 5.8    | 2.6 | 2.32       | 59 | 0.87               | 22 |
| <b>Stall - Lever Start - Reversible</b>      |              |                |          |       |        |     |        |     |            |    |                    |    |
| 34RAS10D24                                   | 1/2"         | 1825           | 7        | 10    | 17.8   | 452 | 4.2    | 1.9 | 1.69       | 43 | 0.67               | 17 |
| 34RAS18D24                                   | 1/2"         | 1055           | 13       | 18    | 17.8   | 452 | 4.2    | 1.9 | 1.69       | 43 | 0.67               | 17 |
| 34RAS30D24                                   | 1/2"         | 645            | 22       | 30    | 18.8   | 478 | 4.4    | 2.0 | 1.69       | 43 | 0.67               | 17 |
| 34RAS40D24                                   | 1/2"         | 480            | 29       | 40    | 19.0   | 483 | 4.4    | 2.0 | 1.69       | 43 | 0.67               | 17 |
| 34RAS52D24                                   | 1/2"         | 380            | 38       | 52    | 19.0   | 483 | 4.4    | 2.0 | 1.69       | 43 | 0.67               | 17 |
| 34RAS58D34                                   | 1/2"         | 335            | 43       | 58    | 20.5   | 521 | 5.5    | 2.5 | 2.32       | 59 | 0.87               | 22 |
| 34RAS73D34                                   | 1/2"         | 265            | 54       | 73    | 20.5   | 521 | 5.5    | 2.5 | 2.32       | 59 | 0.87               | 22 |
| 34RAS103D34                                  | 1/2"         | 185            | 76       | 103   | 20.5   | 521 | 5.5    | 2.5 | 2.32       | 59 | 0.87               | 22 |

**GENERAL:**  
Air Inlet: 3/8" NPT  
Minimum Hose Size: 5/16"  
Tool performance rated at 90 psi (620kPa) air pressure.

**STANDARD EQUIPMENT:**  
Operating instructions & service manual  
Suspension bail  
Exhaust Overhose  
Clutch adjustment tool (Clecomatic tools)

**OPTIONAL EQUIPMENT:**  
Assembly wrench: 201898  
Torque signal kit: 201900  
Non-reversible kit: 204999  
Mounting plates: D2 tools 43287131  
D3 tools 49098103

Additional accessories: Page 61

# Ratchet Wrenches

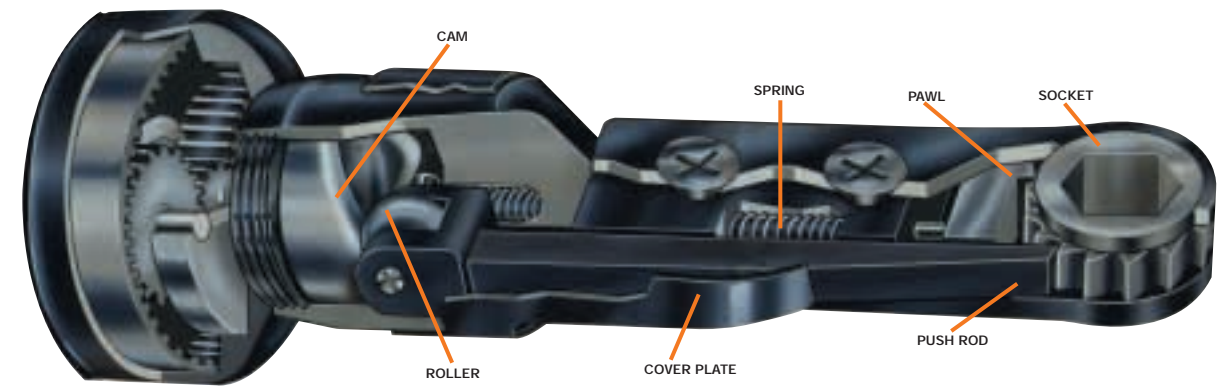
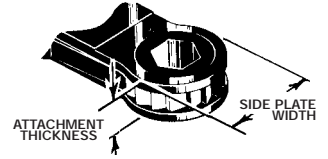
## GARDNER-DENVER®

### The Close Clearance Tool

Modern design practices cause many threaded fasteners to be located in such a way as to be practically inaccessible to power tools. The only modern production tool for accurate torquing of these "hidden fasteners" is the versatile ratchet wrench with its flat, narrow attachment and wide variety of sockets.

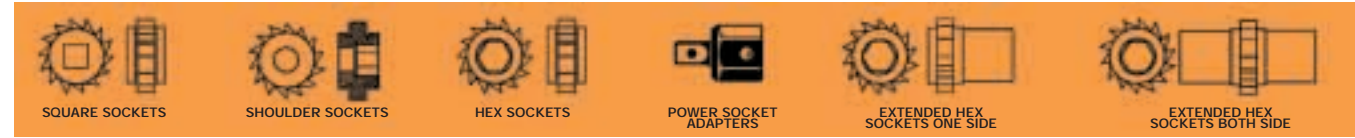
High performance, lightweight air motors are used in Gardner-Denver Ratchet Wrenches. Stall-type and clutch actuated air shut-off features provide a motor selection that can be matched to meet job requirements. Reverse rotation of the fastener is accomplished by simply turning the tool over.

To accommodate various size diameter sockets, several side plate widths are offered for each motor size, thus providing a wide range of available torques.



### Sockets

Gardner-Denver ratchet wrenches can be supplied with sockets for almost every fastening application. Hex and double hex plus open end are available in inch and millimeter sizes. Special sockets such as square, double square, extended, partial broached (allowing socket to ride with fastener) and grooved socket (to adapt commercial ball-type socket drivers) are available on request at extra cost. Power socket adapters are available for adapting grooved socket to standard square drive for use with conventional square drive sockets.



# Ratchet Wrenches

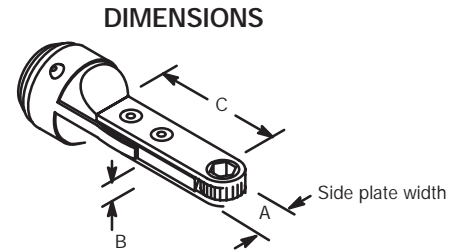
Stall Types

## GARDNER-DENVER®

H16, H30, 41 Series

Torque Range:  
up to 95Nm  
up to 70 Ft. Lbs

- Stall type
- Non-Reversible



| Model Number | Free Speed |          | Maximum Torque |       | Maximum Socket Size |         | "A"  |      | "B"  |      | "C"  |      | Weight |      | Length |  |
|--------------|------------|----------|----------------|-------|---------------------|---------|------|------|------|------|------|------|--------|------|--------|--|
|              | RPM        | Ft. Lbs. | Nm             | in.   | mm                  | in.     | mm   | in.  | mm   | in.  | mm   | lbs. | kg     | in.  | mm     |  |
| H16NR25H15   | 375        | 8.7      | 11.8           | 1/2   | 13                  | 15/16   | 23.8 | 9/16 | 14.2 | 3.13 | 79.5 | 3.3  | 1.5    | 11.5 | 291    |  |
| H16NR13H15   | 190        | 11.6     | 15.7           | 1/2   | 13                  | 15/16   | 23.8 | 9/16 | 14.2 | 3.13 | 79.5 | 3.6  | 1.6    | 12.7 | 323    |  |
| H30NR20H15   | 300        | 23.0     | 31.2           | 1/2   | 13                  | 15/16   | 23.8 | 9/16 | 14.2 | 3.13 | 79.5 | 3.6  | 1.6    | 13.5 | 343    |  |
| H30NR12H15   | 175        | 25.8     | 34.9           | 1/2   | 13                  | 15/16   | 23.8 | 9/16 | 14.2 | 3.13 | 79.5 | 4.0  | 1.8    | 14.4 | 366    |  |
| H16NR25H16   | 350        | 9.8      | 13.3           | 5/8   | 16                  | 1       | 25.4 | 9/16 | 14.2 | 3.13 | 79.5 | 3.3  | 1.5    | 11.5 | 291    |  |
| H16NR13H16   | 175        | 13.7     | 18.6           | 5/8   | 16                  | 1       | 25.4 | 9/16 | 14.2 | 3.13 | 79.5 | 3.6  | 1.6    | 12.7 | 323    |  |
| H30NR20H16   | 275        | 24.8     | 33.6           | 5/8   | 16                  | 1       | 25.4 | 9/16 | 14.2 | 3.13 | 79.5 | 3.6  | 1.6    | 13.5 | 343    |  |
| H30NR12H16   | 160        | 27.1     | 36.8           | 5/8   | 16                  | 1       | 25.4 | 9/16 | 14.2 | 3.13 | 79.5 | 4.0  | 1.8    | 14.4 | 366    |  |
| H16NR13H18   | 160        | 14.2     | 10.3           | 5/8   | 16                  | 1-18    | 28.6 | 9/16 | 14.2 | 3.13 | 79.5 | 3.7  | 1.7    | 12.7 | 323    |  |
| H30NR20H18   | 260        | 24.8     | 33.6           | 5/8   | 16                  | 1-1/8   | 28.6 | 9/16 | 14.2 | 3.13 | 79.5 | 3.6  | 1.6    | 13.5 | 343    |  |
| H30NR12H18   | 150        | 30.8     | 41.7           | 5/8   | 16                  | 1-1/8   | 28.6 | 9/16 | 14.2 | 3.13 | 79.5 | 4.0  | 1.8    | 14.4 | 366    |  |
| 41NCR130H18  | 170        | 52.0     | 70.0           | 5/8   | 16                  | 1-1/8   | 28.6 | 9/16 | 14.2 | 3.13 | 79.5 | 5.8  | 2.6    | 18.1 | 460    |  |
| H16NR25H20   | 305        | 11.0     | 14.9           | 3/4   | 19                  | 1-1/4   | 31.8 | 9/16 | 14.2 | 3.13 | 79.5 | 3.3  | 1.5    | 11.5 | 291    |  |
| H16NR13H20   | 150        | 14.9     | 20.2           | 3/4   | 19                  | 1-1/4   | 31.8 | 9/16 | 14.2 | 3.13 | 79.5 | 3.7  | 1.7    | 12.7 | 323    |  |
| H30NR20H20   | 240        | 28.9     | 39.2           | 3/4   | 19                  | 1-1/4   | 31.8 | 9/16 | 14.2 | 3.13 | 79.5 | 3.6  | 1.6    | 13.6 | 344    |  |
| H30NR12H20   | 140        | 34.8     | 47.2           | 3/4   | 19                  | 1-1/4   | 31.8 | 9/16 | 14.2 | 3.13 | 79.5 | 4.0  | 1.8    | 14.4 | 366    |  |
| 41NCR130H20  | 160        | 56.0     | 76.0           | 3/4   | 19                  | 1-1/4   | 31.8 | 9/16 | 14.2 | 3.13 | 79.5 | 5.8  | 2.6    | 18.1 | 460    |  |
| H16NR25H25   | 220        | 14.9     | 20.2           | 15/16 | 24                  | 1-9/16  | 39.7 | 9/16 | 14.2 | 3.25 | 82.5 | 3.4  | 1.5    | 11.6 | 294    |  |
| H16NR13H25   | 110        | 22.1     | 29.9           | 15/16 | 24                  | 1-9/16  | 39.7 | 9/16 | 14.2 | 3.25 | 82.5 | 3.8  | 1.7    | 12.9 | 326    |  |
| H30NR20H25   | 175        | 32.1     | 43.5           | 15/16 | 24                  | 1-9/16  | 39.7 | 9/16 | 14.2 | 3.25 | 82.5 | 3.7  | 1.7    | 13.6 | 346    |  |
| H30NR12H25   | 105        | 38.5     | 52.3           | 15/16 | 24                  | 1-9/16  | 39.7 | 9/16 | 14.2 | 3.25 | 82.5 | 4.1  | 1.8    | 14.0 | 370    |  |
| 41NCR130H25  | 115        | 70.0     | 95.0           | 15/16 | 24                  | 1-9/16  | 39.7 | 9/16 | 14.2 | 3.25 | 82.5 | 5.9  | 2.6    | 18.2 | 463    |  |
| H30NR20H29   | 160        | 33.4     | 45.3           | 1-1/8 | 29                  | 1-13/16 | 46.0 | 5/8  | 16.0 | 3.50 | 88.9 | 4.0  | 1.8    | 13.9 | 354    |  |
| H30NR12H29   | 95         | 40.9     | 55.4           | 1-1/8 | 29                  | 1-13/16 | 46.0 | 5/8  | 16.0 | 3.50 | 88.9 | 4.4  | 2.0    | 14.9 | 377    |  |
| H30NR20H37   | 135        | 37.0     | 50.1           | 1-5/8 | 41                  | 2-11/32 | 59.5 | 5/8  | 16.0 | 3.75 | 95.3 | 4.3  | 2.0    | 14.1 | 358    |  |

**GENERAL:**  
Air Inlet: 1/4" NPT (H16, H30 series),  
3/8" NPT (41 series)  
Tool performance rated at 90 psi (620kPa)  
air pressure.

**STANDARD EQUIPMENT:**  
H16, H30: Suspension ball, hex socket  
41 Series: Hex socket

**SOCKET SELECTION:**  
See pages 58-60

# Ratchet Wrenches

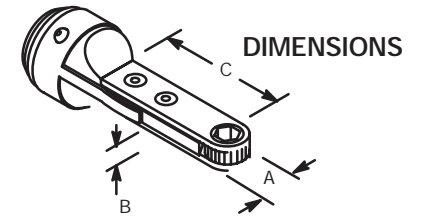
Clutch Type

## GARDNER-DENVER®

H16, H30, 41, 60 Series

Torque Range:  
up to 415 Nm  
up to 306 Ft. Lbs

- Clutch Actuated Air Shut-Off  
(H16, H30 & 60 series)  
Air Shut-Off (41 series)
- Non-Reversible



| Model Number | Free Speed |          | Maximum Torque |         | Maximum Socket Size |        | "A"  |      | "B"  |      | "C"   |      | Weight |      | Length |  |
|--------------|------------|----------|----------------|---------|---------------------|--------|------|------|------|------|-------|------|--------|------|--------|--|
|              | RPM        | Ft. Lbs. | Nm             | in.     | mm                  | in.    | mm   | in.  | mm   | in.  | mm    | lbs. | kg     | in.  | mm     |  |
| H16NDR09H15  | 130        | 10.0     | 13.5           | 1/2     | 13                  | 15/16  | 23.8 | 9/16 | 14.2 | 3.13 | 79.5  | 4.3  | 2.0    | 18.9 | 480    |  |
| H30NDR08H15  | 120        | 12.0     | 16.2           | 1/2     | 13                  | 15/16  | 23.8 | 9/16 | 14.2 | 3.13 | 79.5  | 4.9  | 2.2    | 20.6 | 523    |  |
| 41NDR236H15  | 360        | 23.0     | 31.1           | 1/2     | 13                  | 15/16  | 23.8 | 9/16 | 14.2 | 3.13 | 79.5  | 5.7  | 2.6    | 17.7 | 449    |  |
| 41NDR172H15  | 265        | 32.0     | 43.3           | 1/2     | 13                  | 15/16  | 23.8 | 9/16 | 14.2 | 3.13 | 79.5  | 5.7  | 2.6    | 17.7 | 449    |  |
| 41NDR130H15  | 200        | 42.0     | 56.9           | 1/2     | 13                  | 15/16  | 23.8 | 9/16 | 14.2 | 3.13 | 79.5  | 6.1  | 2.8    | 18.8 | 478    |  |
| H30NDR08H16  | 110        | 13.0     | 17.6           | 5/8     | 16                  | 1      | 25.4 | 9/16 | 14.2 | 3.13 | 79.5  | 4.9  | 2.2    | 20.6 | 523    |  |
| 41NDR236H16  | 335        | 25.0     | 33.8           | 5/8     | 16                  | 1      | 25.4 | 9/16 | 14.2 | 3.13 | 79.5  | 5.7  | 2.6    | 17.7 | 449    |  |
| 41NDR172H16  | 245        | 34.0     | 46.0           | 5/8     | 16                  | 1      | 25.4 | 9/16 | 14.2 | 3.13 | 79.5  | 5.7  | 2.6    | 17.7 | 449    |  |
| 41NDR130H16  | 185        | 45.0     | 60.9           | 5/8     | 16                  | 1      | 25.4 | 9/16 | 14.2 | 3.13 | 79.5  | 6.1  | 2.8    | 18.8 | 478    |  |
| H30NDR08H18  | 105        | 18.0     | 24.3           | 5/8     | 16                  | 1-1/8  | 28.6 | 9/16 | 14.2 | 3.13 | 79.5  | 4.9  | 2.2    | 20.7 | 526    |  |
| 41NDR236H18  | 315        | 29.0     | 39.2           | 5/8     | 16                  | 1-1/8  | 28.6 | 9/16 | 14.2 | 3.13 | 79.5  | 5.8  | 2.6    | 17.7 | 449    |  |
| 41NDR130H18  | 170        | 52.0*    | 70.4           | 5/8     | 16                  | 1-1/8  | 28.6 | 9/16 | 14.2 | 3.13 | 79.5  | 6.1  | 2.8    | 18.8 | 478    |  |
| H16NDR09H20  | 110        | 16.0     | 21.6           | 3/4     | 19                  | 1-1/4  | 31.8 | 9/16 | 14.2 | 3.13 | 79.5  | 4.4  | 2.0    | 19.1 | 485    |  |
| H30NDR08H20  | 100        | 19.0     | 25.7           | 3/4     | 19                  | 1-1/4  | 31.8 | 9/16 | 14.2 | 3.13 | 79.5  | 4.9  | 2.2    | 20.8 | 528    |  |
| 41NDR172H20  | 215        | 42.0     | 56.9           | 3/4     | 19                  | 1-1/4  | 31.8 | 9/16 | 14.2 | 3.13 | 79.5  | 5.8  | 2.6    | 17.7 | 449    |  |
| 41NDR130H20  | 160        | 56.0*    | 75.8           | 3/4     | 19                  | 1-1/4  | 31.8 | 9/16 | 14.2 | 3.13 | 79.5  | 6.1  | 2.8    | 18.8 | 478    |  |
| 60NDR092HD24 | 95         | 122.0    | 165.3          | 3/4     | 19                  | 1-1/2  | 38.1 | 7/8  | 22.4 | 6.19 | 157.2 | 16.9 | 7.7    | 27.4 | 697    |  |
| H30NDR08H25  | 70         | 22.0     | 29.8           | 15/16   | 24                  | 1-9/16 | 39.7 | 9/16 | 14.2 | 3.25 | 82.5  | 5.0  | 2.3    | 21.0 | 533    |  |
| 41NDR172H25  | 155        | 53.0*    | 71.8           | 15/16   | 24                  | 1-9/16 | 39.7 | 9/16 | 14.2 | 3.25 | 82.5  | 5.8  | 2.6    | 17.8 | 452    |  |
| 41NDR130H25  | 115        | 70.0*    | 94.8           | 15/16   | 24                  | 1-9/16 | 39.7 | 9/16 | 14.2 | 3.25 | 82.5  | 6.1  | 2.8    | 18.9 | 481    |  |
| 60NDR092HD40 | 60         | 212.0    | 287.2          | 1-1/2   | 38                  | 2-1/2  | 63.5 | 7/8  | 22.4 | 6.69 | 169.9 | 17.2 | 7.8    | 28.4 | 722    |  |
| 60NDR092HD48 | 50         | 252.0    | 341.4          | 1-15/16 | 49                  | 3      | 76.2 | 1    | 25.4 | 6.94 | 176.3 | 17.7 | 8.0    | 28.9 | 735    |  |
| 60NDR092HD56 | 40         | 306.0    | 415.0          | 2-3/8   | 60                  | 3-1/2  | 88.9 | 1    | 25.4 | 7.25 | 184.2 | 18.0 | 8.2    | 29.5 | 749    |  |

**GENERAL:**  
Air Inlet: 1/4" NPT (H16, H30),  
3/8" NPT (41), 1/2" NPT (60)  
Tool performance rated at 90 psi (620kPa)  
air pressure.

**STANDARD EQUIPMENT:**  
H16, H30: Suspension ball, hex socket  
41: Hex socket  
60: Hex socket, reaction bar collar  
(1/2" hex opening for reaction bar)

**SOCKET SELECTION:**  
See pages 58-60  
\*WARNING: these terminations are not recommended  
for applications over 50 Ft. Lbs. (68 Nm) torque.







# Tube Nut Wrenches

Clecomatic Clutch

## Cleco®

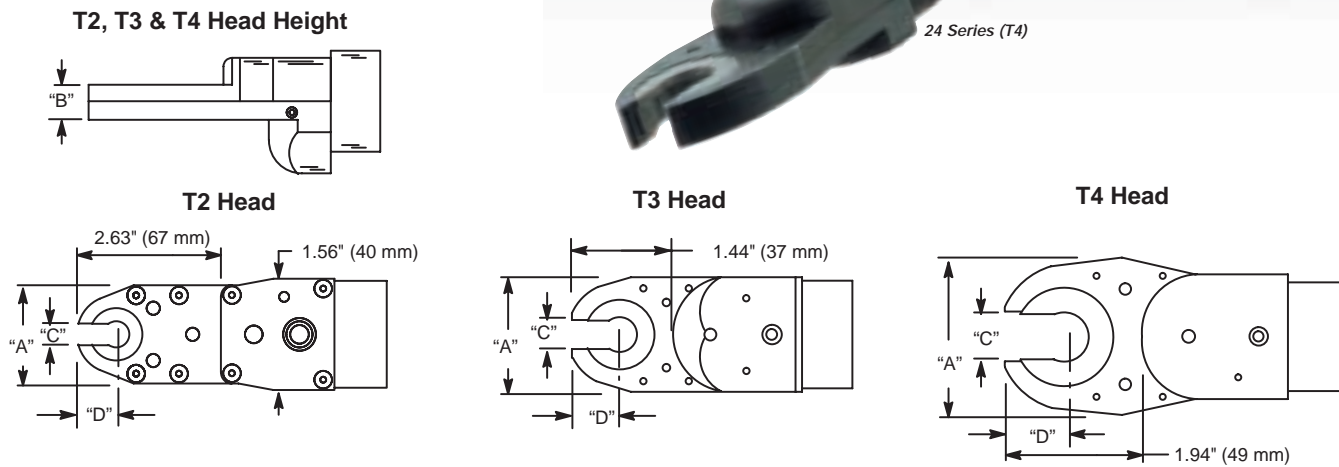
### 24 Series

Torque Range:  
14 – 40 Nm  
19 – 54 Ft. Lbs

- One hand two position throttle
- External torque adjustment
- Self Aligning Socket



### TERMINATION



NOTE: Models listed are examples. Use chart on bottom of facing page for specific model required but not listed.

| Model Number         | Free Speed<br>RPM | Torque Range |         | Weight |     | Length |     | Socket Size |    | "A"  |    | "B"  |    | "C"  |     | "D"  |      |
|----------------------|-------------------|--------------|---------|--------|-----|--------|-----|-------------|----|------|----|------|----|------|-----|------|------|
|                      |                   | Max - Min    | Nm      | lbs.   | kg  | in.    | mm  | in.         | mm | in.  | mm | in.  | mm | in.  | mm  | in.  | mm   |
| <b>Self Aligning</b> |                   |              |         |        |     |        |     |             |    |      |    |      |    |      |     |      |      |
| 24RTA20T2ED00        | 240               | 27 – 19      | 20 – 14 | 4.3    | 2.0 | 16.8   | 426 | 7/16        | —  | 1.42 | 36 | 0.55 | 14 | 0.28 | 7.0 | 0.53 | 13.5 |
| 24RTA20T2MD00        | 240               | 27 – 19      | 20 – 14 | 4.3    | 2.0 | 16.8   | 426 | —           | 10 | 1.42 | 36 | 0.55 | 14 | 0.28 | 7.0 | 0.53 | 13.5 |
| 24RTA20T2MG00        | 240               | 27 – 19      | 20 – 14 | 4.3    | 2.0 | 16.8   | 426 | —           | 13 | 1.42 | 36 | 0.55 | 14 | 0.28 | 7.0 | 0.53 | 13.5 |
| 24RTA30T3EF00        | 175               | 41 – 26      | 30 – 20 | 4.5    | 2.0 | 16.7   | 426 | 9/16        | —  | 1.65 | 42 | 0.59 | 15 | 0.51 | 13  | 0.73 | 18.5 |
| 24RTA30T3MG00        | 175               | 41 – 26      | 30 – 20 | 4.5    | 2.0 | 16.7   | 426 | —           | 13 | 1.65 | 42 | 0.59 | 15 | 0.51 | 13  | 0.73 | 18.5 |
| 24RTA30T3MM00        | 175               | 41 – 26      | 30 – 20 | 4.5    | 2.0 | 16.7   | 426 | —           | 19 | 1.65 | 42 | 0.59 | 15 | 0.51 | 13  | 0.73 | 18.5 |
| 24RTA40T4EK00        | 130               | 54 – 35      | 40 – 26 | 5.1    | 2.3 | 17.7   | 449 | 7/8         | —  | 2.36 | 60 | 0.59 | 15 | 0.71 | 18  | 0.93 | 23.5 |
| 24RTA40T4EM00        | 130               | 54 – 35      | 40 – 26 | 5.1    | 2.3 | 17.7   | 449 | 1           | —  | 2.36 | 60 | 0.59 | 15 | 0.71 | 18  | 0.93 | 23.5 |
| 24RTA40T4MR00        | 130               | 54 – 35      | 40 – 26 | 5.1    | 2.3 | 17.7   | 449 | —           | 24 | 2.36 | 60 | 0.59 | 15 | 0.71 | 18  | 0.93 | 23.5 |
| 24RTA40T4MU00        | 130               | 54 – 35      | 40 – 26 | 5.1    | 2.3 | 17.7   | 449 | —           | 27 | 2.36 | 60 | 0.59 | 15 | 0.71 | 18  | 0.93 | 23.5 |

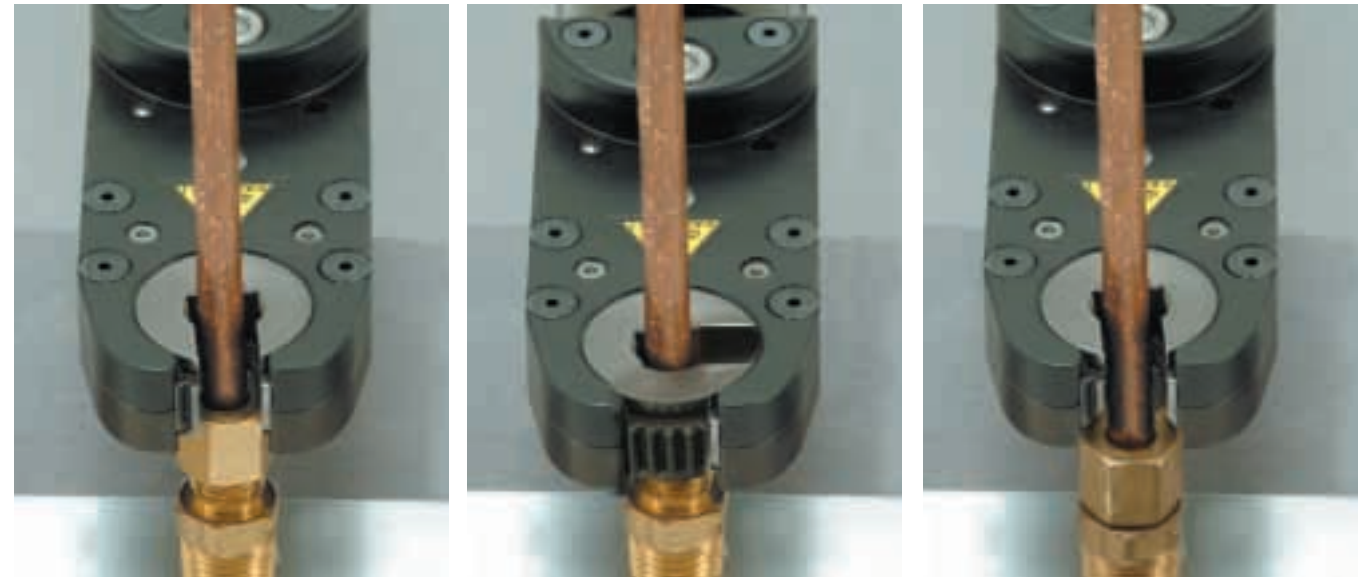
GENERAL:  
Air Inlet: 1/4" NPT  
Tool performance rated at 90 psi (620kPa)  
air pressure.

STANDARD EQUIPMENT:  
Specify socket from page 63  
OPTIONAL EQUIPMENT:  
Torque signal kit: 301106 (see page 66)



Tube and hose applications, once only accessible by the use of hand tools, can now be tightened by the Cleco family of Tube Nut Wrenches at a speed that maximizes productivity.

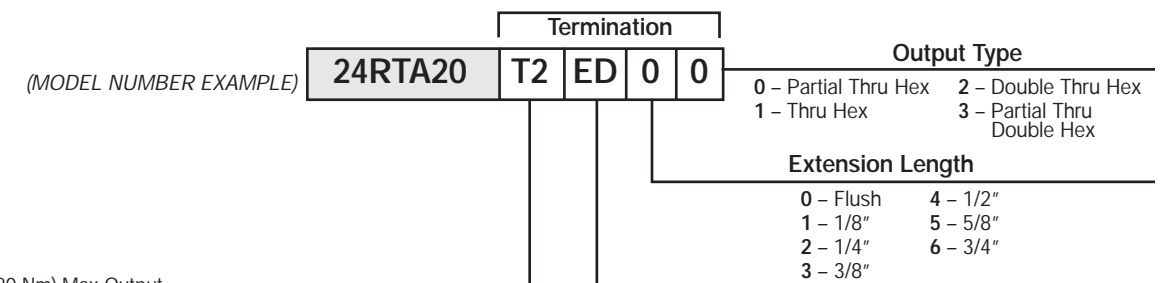
Torque repeatability is assured by the proven Clecomatic clutch and low inertia motor. These models use a single lever for the tightening of the fastener and the return of the socket to the open position. The flexibility coupled with the proven capabilities greatly increases the productivity rate of the assembly line.



Make sure that the socket is set to the open position. If not, push the throttle lever down half way to release the socket back to the open position.

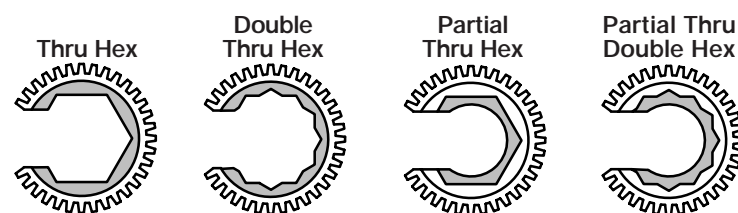
Slide the tool on the fastener and push the throttle lever down fully to run the fastener down.

To free the tool, slide the tool off the tightened fastener and operate the throttle lever halfway to release the socket back to the open position.



### Head Size

T2 – 15 Ft. Lbs. (20 Nm) Max Output  
T3 – 22 Ft. Lbs. (30 Nm) Max Output  
T4 – 30 Ft. Lbs. (40 Nm) Max Output



To order individual sockets, replace the "T" with "KS" before the socket required. (ie. KS2EA01 for T2, 1/4", flush, thru hex socket)

| T2 Sockets | T3 Sockets  | T4 Sockets  |           |
|------------|-------------|-------------|-----------|
| EA – 1/4"  | EC – 3/8"   | EE – 1/2"   | MG – 13mm |
| EB – 5/16" | ED – 7/16"  | EF – 9/16"  | MH – 14mm |
| EC – 3/8"  | EE – 1/2"   | EG – 5/8"   | MI – 15mm |
| ED – 7/16" | EF – 9/16"  | EH – 11/16" | MJ – 16mm |
| EE – 1/2"  | EG – 5/8"   | EI – 3/4"   | MK – 17mm |
| EA – 7mm   | EH – 11/16" | EJ – 13/16" | ML – 18mm |
| EB – 8mm   | EI – 3/4"   | EK – 7/8"   | MM – 19mm |
| EC – 9mm   | MD – 10mm   | EL – 15/16" | MN – 20mm |
| ED – 10mm  | ME – 11mm   | EM – 1"     | MO – 21mm |
| EE – 11mm  | MF – 12mm   |             | MP – 22mm |
| EF – 12mm  | MG – 13mm   |             | MQ – 23mm |
| EG – 13mm  | MH – 14mm   |             | MR – 24mm |
| EH – 15mm  | MI – 15mm   |             | MS – 25mm |
| EJ – 16mm  | MJ – 16mm   |             | MT – 26mm |
| EK – 17mm  | MK – 17mm   |             | MU – 27mm |
| EL – 18mm  | ML – 18mm   |             |           |
| EM – 19mm  | MM – 19mm   |             |           |

# Accessories

## Cleco TVP-100 Series Torque Verifier

### Introducing the new TVP-100 Series Torque Verifier from Cleco.

#### Low-cost assembly assurance for pneumatic screwdrivers, nutrunners and pulse tools.

The new Cleco TVP-100 verifier improves your assembly process by eliminating operator error caused by early trigger release, fastener cross-threading or re-hits.

The TVP-100 is designed for use with pneumatic clutch screwdrivers/nutrunners and Cleco shut-off pulse tools equipped with torque signal kits.

The TVP-100 provides visual and audio feedback for both individual fastener and batch parameters,

assuring that every fastener has been rundown to the capability of the tool.

Based on existing Cleco TME controller technology, the TVP-100 navigational screen allows for simple set-up and operation.

The TVP-100 works by reading the signature of a ported pneumatic assembly tool through its fastening cycle. Any deviation from the normal signature caused by re-hits, cross threads, early trigger release or a number of variables will elicit a **NOK** visual and audio signal from the verifier, notifying the operator of an error. Whereas a Cleco DC controller controls the tool and the fastening process, the TVP-100 is a cost-effective way of verifying torque by following the torque signature of a tool.

### Features

- Verifies fastener installation with **OK/NOK** audio and visual indicators
- On screen verification of individual fastener assembly status with batch count
- VGA screen displays graph for each rundown
- Stores 1,000 rundowns
- Sequencing capability
- 8 parameter sets available for multiple applications
- "Auto Cal" permits fast and easy tool set up for any joint type
- Password protected
- Includes transducer kit and power cable



Navigator Screen



Run Screen



AutoCal Screen



AutoCal Screen



Application Builder Screen

Cleco TVP-100 Series Torque Verifier

TVP-100 Series Torque Verifiers

| Model Number |              | Language   | Weight |      | Width |     | Height |     | Depth |     |
|--------------|--------------|------------|--------|------|-------|-----|--------|-----|-------|-----|
| 115VAC       | 230VAC       |            | lbs.   | kg   | in.   | mm  | in.    | mm  | in.   | mm  |
| TVP-110-15-U | TVP-110-30-U | English    | 6      | 2.72 | 8.75  | 222 | 9.13   | 232 | 4.13  | 105 |
| TVP-110-15-D | TVP-110-30-D | German     | 6      | 2.72 | 8.75  | 222 | 9.13   | 232 | 4.13  | 105 |
| TVP-110-15-S | TVP-110-30-S | Spanish    | 6      | 2.72 | 8.75  | 222 | 9.13   | 232 | 4.13  | 105 |
| TVP-110-15-P | TVP-110-30-P | Portuguese | 6      | 2.72 | 8.75  | 222 | 9.13   | 232 | 4.13  | 105 |

All model numbers include power cable, air signal transducer, 25 foot cable to connect TVP to air signal transducer, and 8 foot air line to connect transducer to tool.  
**NOTE:** Tool must be equipped with torque signal kit.

24 Volt Inputs/Outputs:

Inputs: Up to 8 Applications  
Reset  
Suspend

Outputs: Cycle Accept  
Batch Accept  
Reject

Accessories

Torque Signal Kits

| Part No. | Tool Used On                                 |
|----------|--|
| 301106   | 14SCA and 14RAA series                       |
| 301118   | 14TTA series                                 |
| 301119   | 14PTA series                                 |
| 201900   | 24RAA and 34RAA series                       |
| 934918   | PTH series pulse tools<br>(*C" vintage only) |

Phoenix Connector

| Part No. | Description   |
|----------|---|
| 542892   | 24 Volt Input/Output Phoenix connector with strain relief |



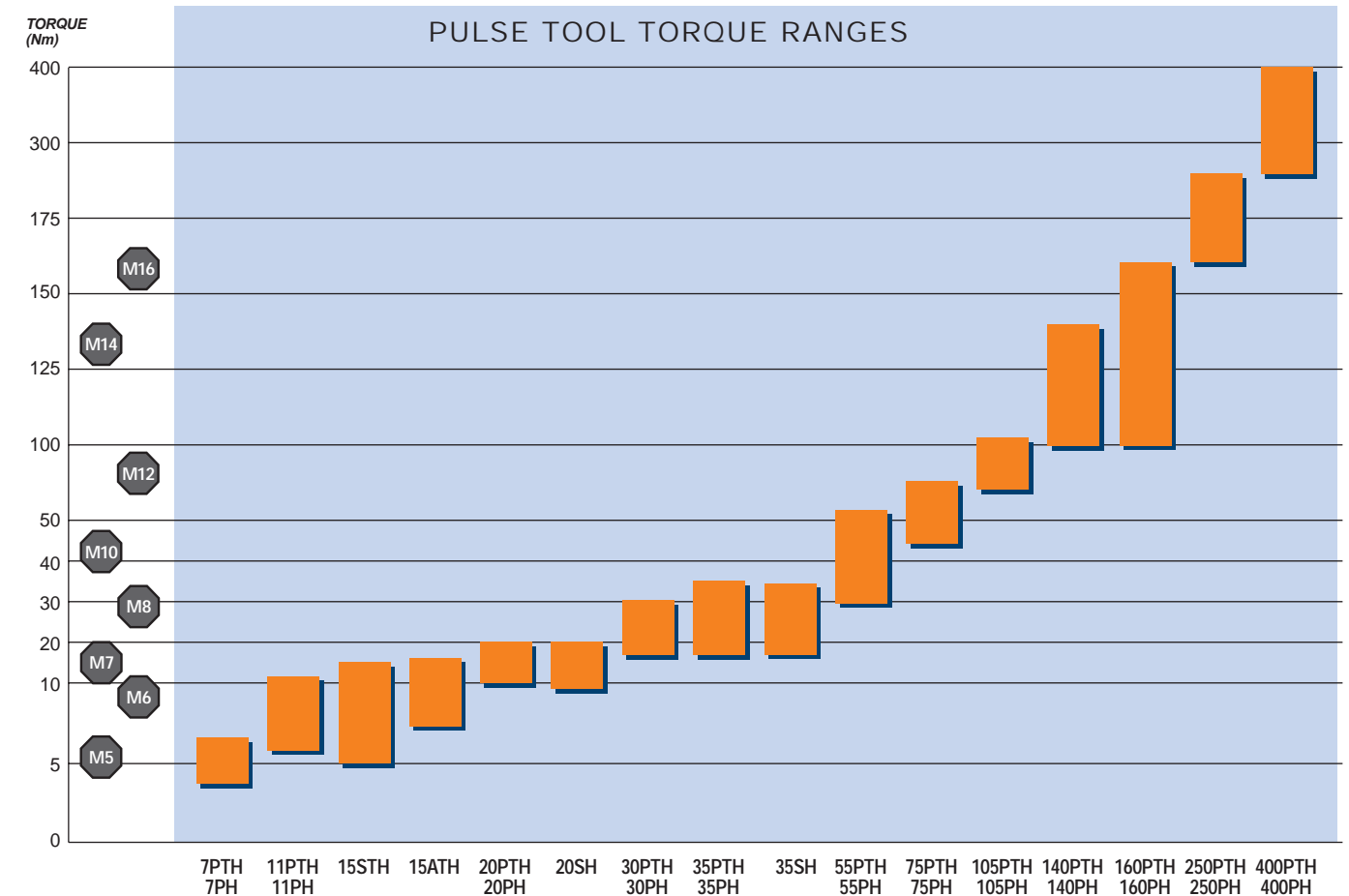
Cleco®

The New World Standard in Pulse Tools

There is no doubt that Cleco pulse tools are the new world standard in pulse tools. Specifically designed to assemble products where quality, high production and efficiency are paramount, these tools will prove their value over and over. Consistent performance, unmatched durability and ease of use and maintenance will make these tools the tools of choice for top-notch production facilities the world over.

Broad Tool Selection

With a variety of shut-off and nonshut-off pulse tools to choose from you're sure to find just the right Cleco pulse tool for the job. See the Cleco Pulse Tool Torque Range Chart below.



## Hydraulic Pressure Torque Sensing For Accurate Shut-Off

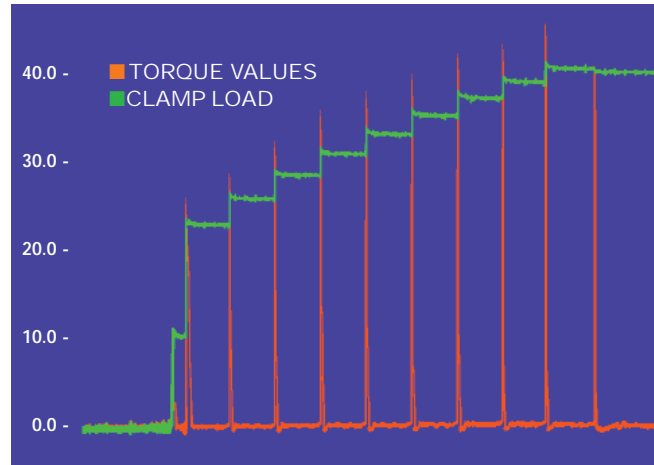
Torque is sensed as hydraulic pressure in this CooperTools patented system. As fastener resistance increases, hydraulic pressure increases. This pressure actuates the shutoff valve, stopping the motor at the desired torque. Trigger release automatically resets the tool for the next cycle.

## Simple External Torque Adjustment

A single external adjustment controls the torque setting. Once the torque is set it stays set. Newly designed torque set screw ensures better clamping to guarantee the torque you set is the torque you get.

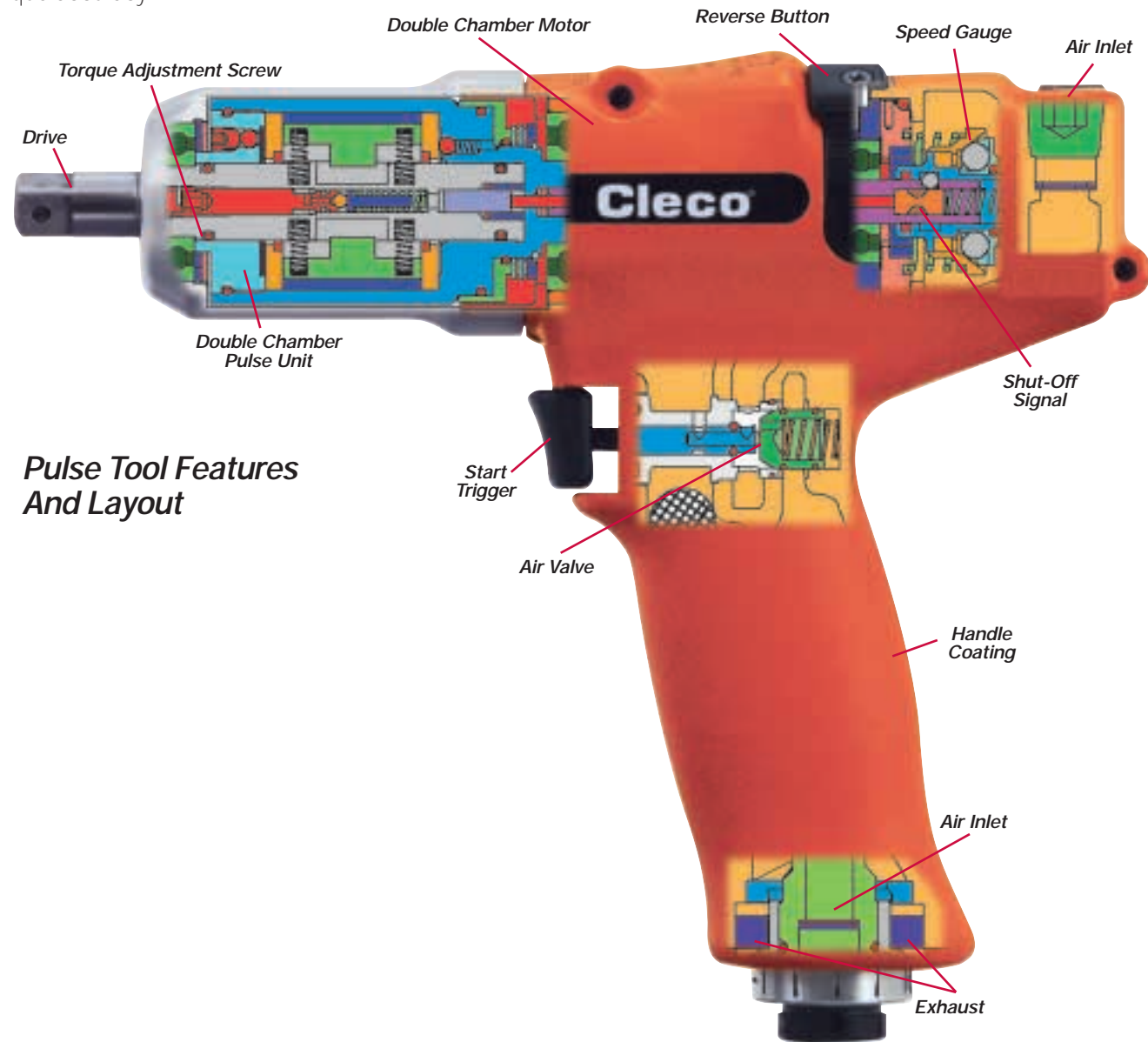
## Greater Torque Accuracy

Mechanical governor mechanism ensures that Cleco pulse tools maintain a controlled run-down speed. This will reduce the initial torque spike thereby providing more consistent tightening and greater torque accuracy.

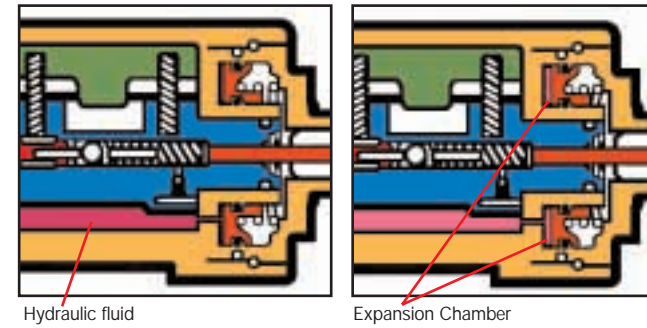


## Cleco Operation

The new Cleco Pulse Tools have oilless blades, where a clean assembly is critical.



**Pulse Tool Features And Layout**



## Patented Expansion Chamber Design

Due to our patented expansion chamber design, Cleco pulse tools have much greater tool life as compared to competitive tools.

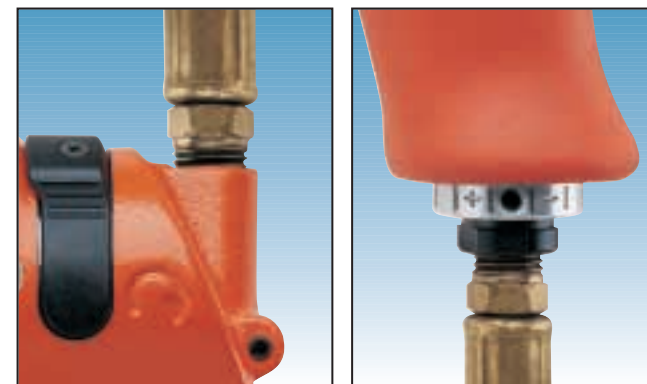
During tool use, the hydraulic fluid within the tool becomes warm and expands. Given room to expand, the life of the fluid, as well as that of the tool, are greatly extended.



## Operator Comfort is our top priority

Operator comfort is a major concern of today's assembly industry. At a very basic level, the tool must be comfortable to hold. Because grip capacity varies, we made the Cleco pulse tool in two handle, sizes to provide a more comfortable grip to a wider range of operators.

Top and bottom air inlets provide better customization of the operator's work area. (Pistol models)

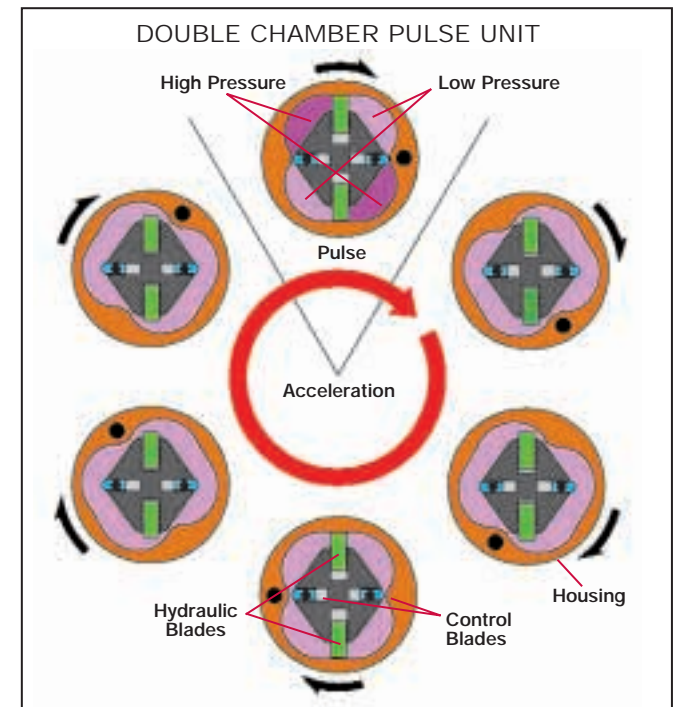


## Low Vibration Levels

Double chamber hydraulic units means extremely low vibration levels are achieved. This aids in preventing Cumulative Trauma Disorders (CTDs).

## Low Torque Reaction

The hydraulic pulse unit nearly absorbs all the torque reaction that is normally felt by an operator. Ultimately, worker productivity is improved.



## Low Noise Levels

Noise levels of these tools are well below standard air tools for an operator-friendly environment. There is no loud metallic hammering under load.

## Greater Performance, Less Air Usage

Our exclusive dual chamber air motor design uses 50% less compressed air than conventional motors and operates without lubrication. This design maintains a practical free speed, yet offers added performance for demanding production schedules. And, without lubrication!


| AIR MOTOR COMPARISON                             |  |
|--|--|
| DUAL CHAMBER MOTOR                               | STANDARD MOTOR                                   |
| AIR CONSUMPTION                                  |  |
| 14.1ft <sup>3</sup> /min 0.4 m <sup>3</sup> /min | 28.3ft <sup>3</sup> /min 0.8 m <sup>3</sup> /min |
| NOISE LEVEL                                      |  |
| <75 dB(A)  | <80 dB(A)  |

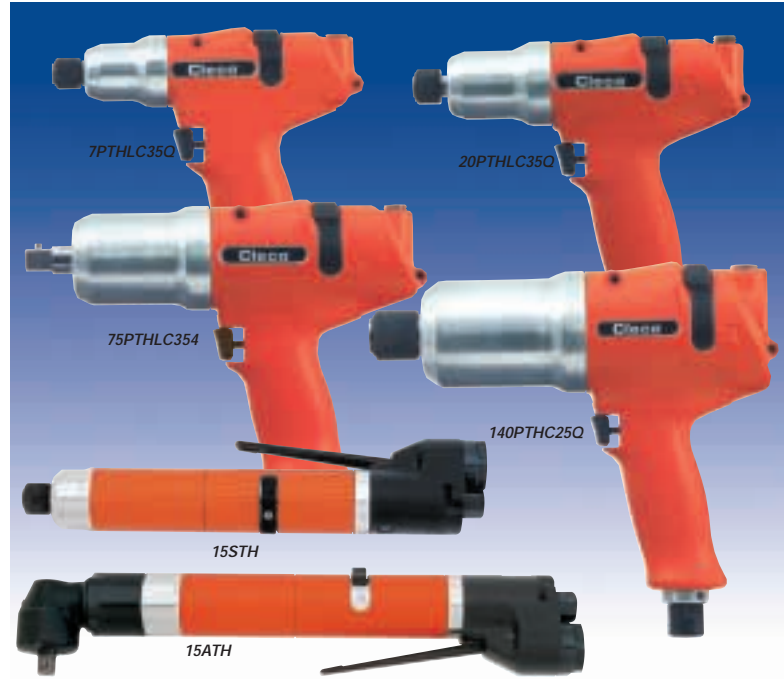
# Cleco®

## PTH, STH, ATH Series















Torque Range:  
2.6 – 400 Nm  
1.9 – 295 Ft. lbs



Bolt Size:  
M3 – M20  
#5 - 3/4"



- Hydraulic pulse air shut-off
- Motor governor equipped
- External torque adjustment
- External exhaust control
- Reversible
- Oilless blades 






| Model Number          |                        |               | Bolt Size |         | Free Speed | Torque Range |    | Length** |    | Weight** |    |
|-----------------------|------------------------|---------------|-----------|---------|------------|--------------|----|----------|----|----------|----|
| 1/4" Hex Quick Change | 7/16" Hex Quick Change | Square Drive* | Gr. 5     | Gr. 9.8 |            | Ft.-lbs.     | Nm | in.      | mm | lbs.     | kg |

| Pistol Grip – **Shut-off Models – Trigger Throttle                                  |   |   |      |     |      |         |         |     |     |     |     |
|---|---|---|------|-----|------|---------|---------|-----|-----|-----|-----|
|   | 7PTHLC35Q   |   | #10  | M5  | 3500 | 5.2-3.0 | 7-4     | 6.9 | 174 | 1.9 | 0.8 |
|  | 11PTHLC35Q  |   | 1/4  | M6  | 3500 | 8.1-4.4 | 11-6.0  | 7.2 | 182 | 2.0 | 0.9 |
|  | 20PTHLC35Q  |  | 5/16 | M8  | 3500 | 14-7.4  | 20-10   | 7.6 | 192 | 2.4 | 1.1 |
|  | 30PTHLC35Q  |   | 5/16 | M8  | 3500 | 22-12   | 30-17   | 8.0 | 202 | 2.6 | 1.2 |
|   |   |  | 5/16 | M10 | 3500 | 26-12   | 35-17   | 8.0 | 202 | 2.6 | 1.2 |
|   |  |  | 7/16 | M12 | 3500 | 40-23   | 55-30   | 8.7 | 216 | 3.7 | 1.7 |
|   |  |  | 1/2  | M12 | 3500 | 55-33   | 75-45   | 8.9 | 226 | 4.2 | 1.9 |
|   |  |  | 1/2  | M14 | 2500 | 77-52   | 105-70  | 8.9 | 226 | 5.3 | 2.4 |
|   |  |   | 5/8  | M16 | 2500 | 103-74  | 140-100 | 9.9 | 251 | 5.7 | 2.6 |
|   |   |  | 5/8  | M16 | 2500 | 118-74  | 160-100 | 9.8 | 245 | 5.7 | 2.6 |

| Pistol Grip – **Shut-off Models – Trigger Throttle – Frequency Adjustment |   |  |     |     |      |         |         |      |     |      |     |
|---|---|--|-----|-----|------|---------|---------|------|-----|------|-----|
|   |  |  | 5/8 | M16 | 2200 | 184-118 | 250-160 | 10.3 | 261 | 8.8  | 4.0 |
|   |  |  | 3/4 | M18 | 2000 | 295-185 | 400-250 | 11.0 | 279 | 11.7 | 5.3 |

| In-Line – Push-to-Start – Frequency Adjustment                                      |   |  |      |    |      |         |         |      |     |     |      |
|---|---|--|------|----|------|---------|---------|------|-----|-----|------|
|  | 7STHFA55Q   |  | #10  | M5 | 5500 | 4.9-1.9 | 6.6-2.6 | 8.8  | 224 | 1.8 | 0.83 |
|   | 35STHFA40Q  |  | 5/16 | M8 | 4000 | 26-12   | 35-15   | 10.6 | 270 | 3.1 | 1.4  |
|   |  |  | 5/16 | M8 | 4000 | 26-12   | 35-15   | 10.2 | 260 | 2.9 | 1.3  |


| In-Line – Lever – Frequency Adjustment  |   |   |      |    |      |         |         |      |     |     |      |
|---|---|---|------|----|------|---------|---------|------|-----|-----|------|
|  | 7STHF55Q  |   | #10  | M5 | 5500 | 4.9-1.9 | 6.6-2.6 | 10.3 | 262 | 2.1 | 0.93 |
|   | 15STHF30Q   |   | 1/4  | M6 | 3000 | 11-3.6  | 15-5.0  | 11.4 | 290 | 2.4 | 1.1  |
|   |  |   | 5/16 | M8 | 4000 | 26-12   | 35-15   | 12.2 | 310 | 3.3 | 1.5  |
|   |   |  | 5/16 | M8 | 4000 | 26-12   | 35-15   | 11.8 | 300 | 3.3 | 1.5  |

| In-Line – Lever – Non Frequency Adjustment |          |  |     |    |      |        |        |      |     |     |     |
|--|----------|--|-----|----|------|--------|--------|------|-----|-----|-----|
|  | 15STH30Q |  | 1/4 | M6 | 3000 | 11-3.6 | 15-5.0 | 11.4 | 290 | 2.4 | 1.1 |

| Angle – Lever – Frequency Adjustment |           |  |     |    |      |        |        |      |     |     |     |
|--------------------------------------|-----------|--|-----|----|------|--------|--------|------|-----|-----|-----|
|                                      | 15ATHF153 |  | 1/4 | M7 | 1550 | 12-5.2 | 17-7.0 | 13.6 | 345 | 3.6 | 1.6 |

(\*) Model #'s ending with 3 = 3/8" square drive; 4 = 1/2" square drive; 5 = 5/8" square drive; 6 = 3/4" square drive.  
(\*\*) Approximate values. Some variance may occur between square and Q drives. For 7-75 series models, a small handle (16mm shorter) can be ordered by substituting "S" for "L" in the model number.

**GENERAL:**  
Air Inlet: 1/8" NPT (7STH)  
3/8" NPT (105-400),  
1/4" NPT (All other models)  
Tool performance rated @ 87 psi (6 bar) air pressure.


**STANDARD EQUIPMENT:**  
Suspension bail and torque adjusting wrench.  
Torque signal port (pistol grip models only)  
**OPTIONAL EQUIPMENT:**  
Additional accessories: Page 77  
 Refer to Page 7 for description of Rapid Select

# Cleco®

## PH Series












Torque Range:  
4 – 400 Nm  
3 – 295 Ft. lbs

Bolt Size:  
M5 – M18  
#10 - 3/4"

- External exhaust control
- Reversible
- Oilless blades 




| Model Number          |                        |               | Bolt Size |         | Free Speed | Torque Range |    | Length** |    | Weight** |    |
|-----------------------|------------------------|---------------|-----------|---------|------------|--------------|----|----------|----|----------|----|
| 1/4" Hex Quick Change | 7/16" Hex Quick Change | Square Drive* | Gr. 5     | Gr. 9.8 |            | Ft.-lbs.     | Nm | in.      | mm | lbs.     | kg |

| Pistol Grip – **Non Shut-off Models – Trigger Throttle                                |   |   |      |     |      |         |          |     |     |     |     |
|---|---|---|------|-----|------|---------|----------|-----|-----|-----|-----|
|  | 7PHL90Q   |   | #10  | M5  | 9000 | 5.2-3.0 | 7.0-4.0  | 6.3 | 159 | 1.8 | 0.8 |
|  | 11PHL80Q  |   | 1/4  | M6  | 8000 | 8.1-4.4 | 11.0-6.0 | 6.6 | 167 | 1.9 | 0.9 |
|  | 20PHL70Q  |  | 5/16 | M8  | 7000 | 14-7.4  | 20-10    | 6.9 | 176 | 2.3 | 1.1 |
|  | 30PHL70Q  |   | 5/16 | M10 | 7000 | 22-13   | 30-17    | 7.2 | 183 | 2.6 | 1.2 |
|   |   |  | 5/16 | M10 | 7000 | 26-13   | 35-17    | 7.3 | 186 | 2.6 | 1.2 |
|   |  |  | 7/16 | M12 | 6000 | 40-22   | 55-30    | 7.9 | 201 | 3.7 | 1.7 |
|   | 75PHL50Q  |  | 1/2  | M12 | 5000 | 55-33   | 75-45    | 8.3 | 211 | 4.0 | 1.8 |
|   | 105PH55Q  |  | 1/2  | M14 | 5500 | 77-52   | 105-70   | 8.9 | 225 | 5.3 | 2.4 |
|   | 140PH45Q  |   | 5/8  | M16 | 4500 | 103-74  | 140-100  | 9.8 | 250 | 5.7 | 2.6 |
|   |   |  | 5/8  | M16 | 4500 | 118-74  | 160-100  | 9.8 | 250 | 5.7 | 2.6 |

| Pistol Grip – **Non Shut-off Models – Trigger Throttle – Frequency Adjustment |           |  |     |     |      |         |         |      |     |      |     |
|---|-----------|--|-----|-----|------|---------|---------|------|-----|------|-----|
|   | 250PHF406 |  | 5/8 | M16 | 4000 | 184-118 | 250-160 | 10.3 | 261 | 8.6  | 3.9 |
|   | 400PHF356 |  | 3/4 | M18 | 3500 | 295-184 | 400-250 | 11.0 | 279 | 11.5 | 5.2 |

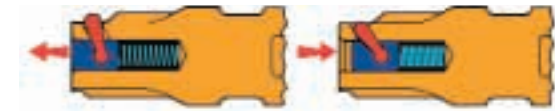
(\*) Model #'s ending with 2 = 1/4" square drive; 3 = 3/8" square drive; 4 = 1/2" square drive; 5 = 5/8" square drive; 6 = 3/4" square drive.  
(\*\*) Approximate values. Some variance may occur between square and Q drives. For 7-75 Series Models, small handle can be ordered by substituting "S" for "L" in model number

**GENERAL:**  
Air Inlet: 3/8" NPT (105-160),  
1/4" NPT (All other models).  
Tool performance rated @ 87 psi (6 bar) air pressure.

**STANDARD EQUIPMENT:**  
Suspension bail and torque adjusting wrench.  
**OPTIONAL EQUIPMENT:**  
Additional accessories: Page 77  
 Refer to Page 7 for description of Rapid Select

# Cleco®

## New Generation Telescopic Impact Wrenches



### Patented Positive Lock Socket Retainer

With the patented positive lock socket retainer (U.S. Pat 3, 890,051), sockets snap on...and stay on until released. Offered on spline drives, the retainer can be serviced without disassembling the tool.

### Exclusive through-bolt construction reduces replacement costs

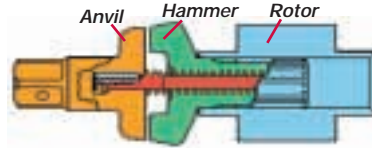
Steel front end/motor housing/handle are clamped together by four high-strength steel bolts. This exclusive feature provides better tool performance, eliminates stripped threads and loose inserts in motor housing.

### Positive oil-foam lubrication system reduces major cause of impact wrench maintenance.

Cleco impact wrenches feature a unique oil-foam bath that provides positive lubrication for the hammer, anvil and other working parts. The system is designed so that if the impact mechanism runs low on 30 wt. oil, the tool will stop running, thus eliminating one of the major causes of impact wrench failure ... lack of lubrication. By simply refilling the oil reservoir, the tool can be returned to service. Other impact wrenches soon throw off grease; run dry causing extra wear that shortens tool life and increases maintenance cost.

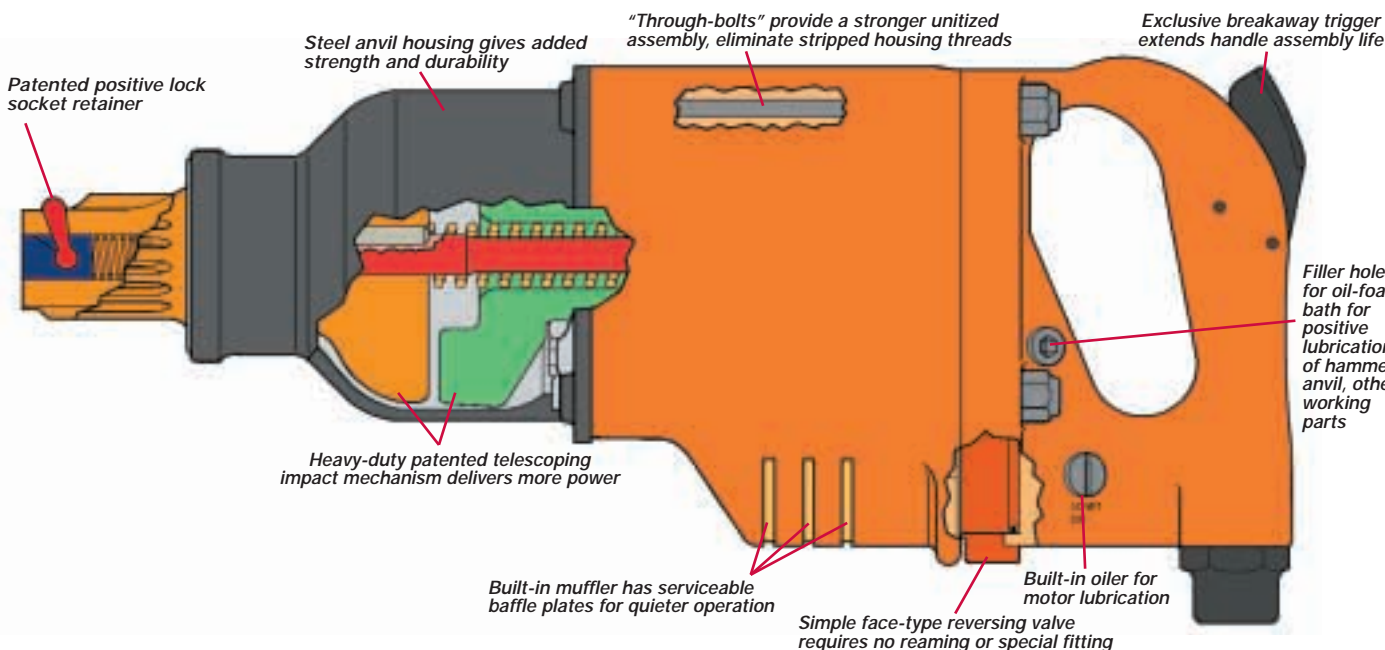
### Proven heavy-duty patented telescoping impact mechanism adds power...cuts weight...reduces shock to the operator.

The smooth-hitting Cleco telescopic impact mechanism is patented (U.S. Pat. 3,156,3340) and has only three major parts - hammer, anvil and rotor... providing more power directly to the fastener. The hammer is splined to the inside of the motor, which then impacts directly on the anvil, delivering more power per blow.



### Other important features include:

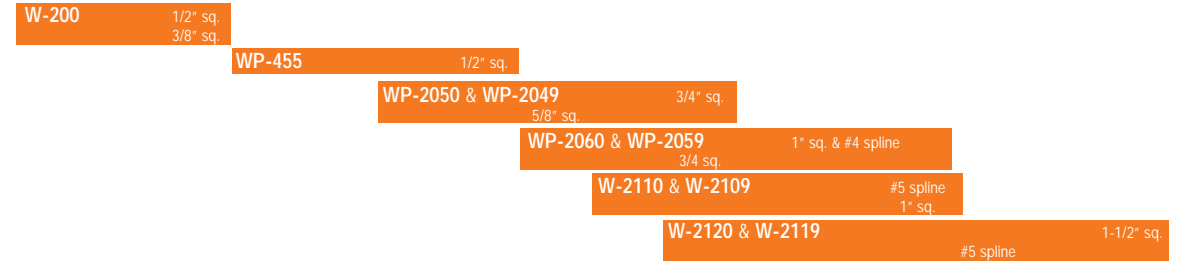
- Comfortable grip handle
- Outside, inside triggers and pistol grip models
- Multiposition dead handle, and spade type "D" handle available
- Throttle can be feathered for speed control
- Simple face-type reversing valve simplifies maintenance
- Forged hammer and anvil for greater durability
- Rotor bearings and steel motor end plates fit either end of motor, reducing spare parts inventory and repair time.



The Impact Wrench Bolt Selection Chart will assist you in selecting impact wrenches for specific applications. Torque and tension figures are based on 70% of the proof load of a given size and grade UNC bolt. Torque values are based on non-lubricated (dry) conditions. Bolt grades and sizes are those which are the most commonly secured with impact wrenches.

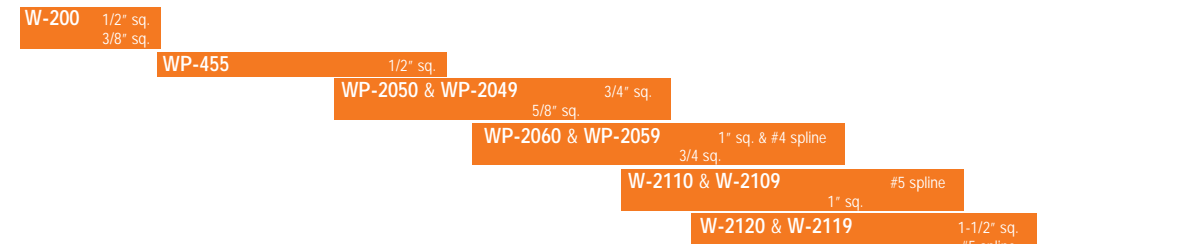
#### SAE Grade 1

| Bolt Diameter  | 1/4" | 5/16" | 3/8"  | 7/16" | 1/2"  | 9/16" | 5/8"  | 3/4"  | 7/8"   | 1"     | 1-1/8" | 1-1/4" | 1-3/8" | 1-1/2" | 1-5/8" | 1-3/4" |
|----------------|------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| Torque Ft.-lb. | 3    | 6     | 11    | 18    | 28    | 43    | 55    | 97    | 155    | 230    | 340    | 480    | 660    | 860    | -      | -      |
| Torque Nm      | 4.1  | 8.1   | 15    | 24    | 38    | 58    | 75    | 132   | 210    | 312    | 460    | 650    | 900    | 1,170  | -      | -      |
| Tension lb.    | 730  | 1,210 | 1,800 | 2,460 | 3,280 | 4,200 | 5,200 | 7,000 | 10,000 | 14,000 | 18,200 | 23,000 | 28,000 | 34,600 | -      | -      |
| Tension kN     | 3.24 | 5.38  | 8.0   | 10.9  | 14.6  | 18.7  | 23.1  | 31.1  | 47.1   | 62.3   | 81     | 102    | 126    | 154    | -      | -      |



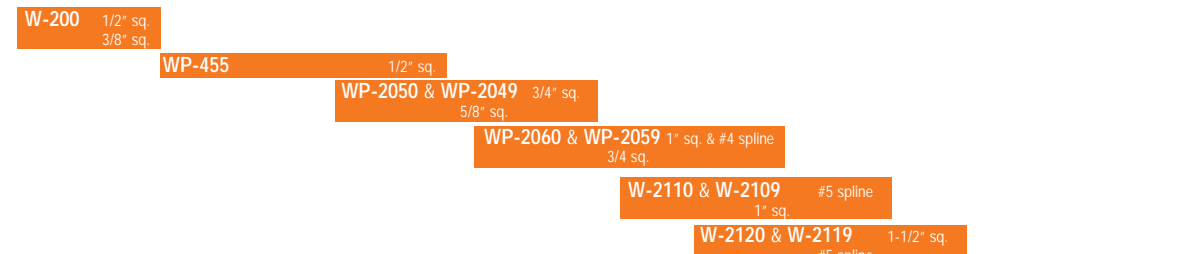
#### SAE Grade 5

| Bolt Diameter  | 1/4"  | 5/16" | 3/8"  | 7/16" | 1/2"  | 9/16"  | 5/8"   | 3/4"   | 7/8"   | 1"     | 1-1/8" | 1-1/4" | 1-3/8" | 1-1/2" | 1-5/8" | 1-3/4" |
|----------------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Torque Ft.-lb. | 8     | 16    | 28    | 46    | 70    | 110    | 140    | 250    | 405    | 600    | 770    | 1,080  | 1,470  | 1,950  | -      | -      |
| Torque Nm      | 10.8  | 21.7  | 38    | 62    | 95    | 149    | 190    | 340    | 550    | 810    | 1,040  | 1,460  | 1,930  | 2,640  | -      | -      |
| Tension lb.    | 1,900 | 3,100 | 4,600 | 6,350 | 8,450 | 10,900 | 13,500 | 20,000 | 27,400 | 36,000 | 41,000 | 52,000 | 64,000 | 77,000 | -      | -      |
| Tension kN     | 8.4   | 13.8  | 20.4  | 28.2  | 37.6  | 48.5   | 60     | 89     | 122    | 160    | 182    | 231    | 285    | 342    | -      | -      |



#### SAE Grade 8 / ASTM-A354 Grade BD

| Bolt Diameter  | 1/4"  | 5/16" | 3/8"  | 7/16" | 1/2"   | 9/16"  | 5/8"   | 3/4"   | 7/8"   | 1"     | 1-1/8" | 1-1/4" | 1-3/8"  | 1-1/2"  | 1-5/8" | 1-3/4" |
|----------------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|--------|--------|
| Torque Ft.-lb. | 11    | 23    | 40    | 65    | 99     | 159    | 198    | 350    | 566    | 848    | 1,245  | 1,750  | 2,375   | 3,135   | -      | -      |
| Torque Nm      | 14.9  | 31.2  | 54.2  | 88    | 134    | 216    | 268    | 475    | 767    | 1,150  | 1,690  | 2,370  | 3,220   | 4,250   | -      | -      |
| Tension lb.    | 2,740 | 4,400 | 6,510 | 8,930 | 11,920 | 15,290 | 18,980 | 28,050 | 38,800 | 50,900 | 66,360 | 84,000 | 103,570 | 125,330 | -      | -      |
| Tension kN     | 12.2  | 19.6  | 28.9  | 39.7  | 53     | 68     | 84.4   | 125    | 172    | 226    | 295    | 374    | 461     | 557     | -      | -      |



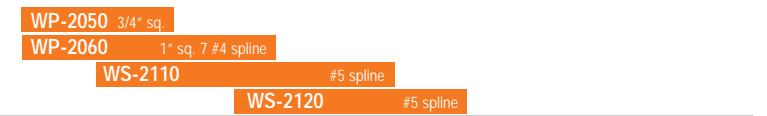
#### ASTM A325\*

| Bolt Diameter  | 1/4" | 5/16" | 3/8" | 7/16" | 1/2" | 9/16" | 5/8"   | 3/4"   | 7/8"   | 1"     | 1-1/8" | 1-1/4" | 1-3/8" | 1-1/2"  | 1-5/8" | 1-3/4" |
|----------------|------|-------|------|-------|------|-------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|
| Torque Ft.-lb. | 1    |       |      |       |      |       | 200    | 355    | 570    | 850    | 1,060  | 1,495  | 1,960  | 2,600   | -      | -      |
| Torque Nm      |      |       |      |       |      |       | 271    | 481    | 773    | 1,150  | 1,440  | 2,030  | 2,660  | 3,530   | -      | -      |
| Tension lb.    |      |       |      |       |      |       | 10,000 | 28,000 | 39,000 | 51,000 | 56,000 | 71,000 | 85,000 | 103,000 | -      | -      |
| Tension kN     |      |       |      |       |      |       | 44.5   | 124    | 173    | 227    | 249    | 316    | 378    | 458     | -      | -      |



#### ASTM A490\*

| Bolt Diameter  | 1/4" | 5/16" | 3/8" | 7/16" | 1/2" | 9/16" | 5/8"   | 3/4"   | 7/8"   | 1"     | 1-1/8" | 1-1/4"  | 1-3/8"  | 1-1/2"  | 1-5/8" | 1-3/4" |
|----------------|------|-------|------|-------|------|-------|--------|--------|--------|--------|--------|---------|---------|---------|--------|--------|
| Torque Ft.-lb. | 1    |       |      |       |      |       | 250    | 435    | 715    | 1,070  | 1,580  | 2,125   | 2,780   | 3,700   | -      | -      |
| Torque Nm      |      |       |      |       |      |       | 339    | 590    | 970    | 1,451  | 2,125  | 2,882   | 3,770   | 5,020   | -      | -      |
| Tension lb.    |      |       |      |       |      |       | 24,000 | 35,000 | 49,000 | 64,000 | 80,000 | 102,000 | 121,000 | 148,000 | -      | -      |
| Tension kN     |      |       |      |       |      |       | 107    | 156    | 218    | 285    | 356    | 454     | 538     | 658     | -      | -      |



\*Note: ASTM-325 and ASTM A490 bolts are used on structural steel applications. Torque and tension values are based on running the nut beyond the proof load of the bolt by the turn-of-the-nut method. For detailed information, consult the bolt manufacturer.

## Cleco®

Torque Range:  
20 – 2450 Nm  
15 – 1800 Ft. Lbs.

Bolt Size:  
M10 – M30  
7/16 – 1 1/2"

- Lever and trigger start
- Reverse or forward bias
- 6" extended and spline drives available



| Model Number | Bolt Size |         | Square Drive | Recommended Torque Range |    | Impacts Per Minute | Free Speed RPM | Length |    | Weight |    | Side to Center |    |
|--------------|-----------|---------|--------------|--------------------------|----|--------------------|----------------|--------|----|--------|----|----------------|----|
|              | GR. 5     | GR. 9.8 |              | ft.-lbs.                 | Nm |                    |                | in.    | mm | lbs.   | kg | in.            | mm |
|              | in        | mm      |              |                          |    |                    |                |        |    |        |    |                |    |

### Inline – Lever Start

|           |      |     |       |       |       |       |       |     |     |     |     |   |    |
|-----------|------|-----|-------|-------|-------|-------|-------|-----|-----|-----|-----|---|----|
| WL-200-BQ | 7/16 | M10 | 7/16* | 50-15 | 68-20 | 3,200 | 3,000 | 8.5 | 216 | 3.1 | 1.4 | 1 | 25 |
| WL-200-3  | 7/16 | M10 | 3/8   | 50-15 | 68-20 | 3,200 | 3,000 | 8.5 | 216 | 3.1 | 1.4 | 1 | 25 |
| WL-200-4  | 1/2  | M10 | 1/2   | 60-15 | 81-20 | 3,200 | 3,000 | 8.5 | 216 | 3.4 | 1.5 | 1 | 25 |

### Pistol Grip – Trigger Start

|              |       |     |       |          |           |       |       |     |     |      |     |     |    |
|--------------|-------|-----|-------|----------|-----------|-------|-------|-----|-----|------|-----|-----|----|
| WP-200-BQ    | 7/16  | M10 | 7/16* | 50-15    | 68-20     | 3,200 | 3,000 | 6.5 | 165 | 3.4  | 1.6 | 1   | 25 |
| WP-200-3     | 7/16  | M10 | 3/8   | 50-15    | 68-20     | 3,200 | 3,000 | 6.5 | 165 | 3.4  | 1.5 | 1   | 25 |
| WP-200-4     | 1/2   | M10 | 1/2   | 60-15    | 81-20     | 3,200 | 3,000 | 6.5 | 165 | 3.4  | 1.5 | 1   | 25 |
| WP-455-4R    | 1/2   | M20 | 1/2   | 370-37   | 502-50    | 1,400 | 6,500 | 7   | 176 | 5.3  | 2.4 | -   | -  |
| WP-455-4P*** | 1/2   | M20 | 1/2   | 370-37   | 502-50    | 1,400 | 6,500 | 7   | 176 | 5.3  | 2.4 | -   | -  |
| WP-2050-6    | 7/8   | M20 | 3/4   | 600-125  | 800-170   | 1,000 | 6,000 | 6.4 | 162 | 7.8  | 3.5 | 1.6 | 42 |
| WP-2060B-6   | 1 1/8 | M24 | 3/4   | 700-250  | 950-350   | 1,000 | 4,000 | 7.8 | 197 | 12   | 5.4 | 1.8 | 46 |
| WP-2060B-8   | 1 1/8 | M24 | 1     | 900-250  | 1200-350  | 1,000 | 4,000 | 7.8 | 197 | 12.1 | 5.5 | 1.8 | 46 |
| WP-2110B-8   | 1 3/8 | M30 | 1     | 1650-750 | 2250-1000 | 880   | 4,600 | 9.5 | 241 | 20.8 | 9.4 | 2.2 | 56 |

### Pistol Grip – Trigger Start – Biased Reverse Power\*\*\*\*

|                |       |     |           |          |           |       |       |      |     |      |     |     |    |
|----------------|-------|-----|-----------|----------|-----------|-------|-------|------|-----|------|-----|-----|----|
| WP-2049-6      | 7/8   | M20 | 3/4       | 550-125  | 750-170   | 1,000 | 6,200 | 6.4  | 162 | 7.8  | 3.5 | 1.6 | 42 |
| WP-2059-6      | 1 1/8 | M24 | 3/4       | 700-250  | 950-350   | 1,000 | 4,000 | 7.8  | 197 | 12   | 5.4 | 1.8 | 46 |
| WP-2059-8      | 1 1/8 | M24 | 1         | 800-250  | 1100-350  | 1,000 | 4,000 | 7.8  | 197 | 12.1 | 5.5 | 1.8 | 46 |
| WP-2059-8-6E** | 1 1/8 | M24 | 1         | 750-250  | 1000-350  | 1,000 | 4,000 | 13.8 | 350 | 14.3 | 6.5 | 1.8 | 46 |
| WP-2109B-8     | 1 3/8 | M30 | 1         | 1650-750 | 2250-1000 | 880   | 4,300 | 9.5  | 241 | 20.8 | 9.4 | 2.2 | 56 |
| WPS-2109B      | 1 3/8 | M30 | #5 SPLINE | 1800-750 | 2450-1100 | 880   | 4,300 | 9.8  | 248 | 21.3 | 9.6 | 2.2 | 56 |

\* Quick change chuck  
\*\* 6" Extended spindle  
\*\*\* Pin retainer  
\*\*\*\* Breakaway torque capacity in reverse:  
2049 Series: 750 ft.-lbs. (1000 Nm)  
2059 Series: 1200 ft.-lbs. (1600 Nm)  
2109 Series: 2500 ft.-lbs. (3400 Nm)

GENERAL:  
Air Inlet: 1/4" NPT (WL-200, WP-200, WP-455 series) 3/8" NPT (WP-2049, WP-2050, WP-2059, WP-2060 series) 1/2" NPT (WP-2109, WP-2110 series)  
Min. Hose Size: 1/4" (WL-200, WP-200, WP-455 series) 3/8" (WP-2049, WP-2050, WP-2059, WP-2060 series)  
Tool performance rated at 90 psi (620kPa) air pressure.

STANDARD EQUIPMENT:  
Operating instructions & service manual  
OPTIONAL EQUIPMENT:  
Additional accessories: Page 76  
Refer to Page 7 for description of Rapid Select

## Cleco®

Torque Range:  
1000 – 4000 Nm.  
750 – 3000 Ft. Lbs.

Bolt Size:  
M30 – M36  
1 3/8 – 1 1/2"

- Inside or outside lever
- Positive lock socket retainer (spline drive)
- Multiposition dead handle
- Oil foam bath
- Reverse or forward bias



| Model Number   |                 | Suitable for Bolt Size | Square Drive | Recommended Torque Range |    | Impacts Per Minute | Free Speed RPM | Length   |    | Weight |    | Side to Center |    |
|----------------|-----------------|------------------------|--------------|--------------------------|----|--------------------|----------------|----------|----|--------|----|----------------|----|
| Inside Trigger | Outside Trigger |                        |              | in.                      | Nm |                    |                | ft.-lbs. | Nm | in.    | mm | lbs.           | kg |

### Trigger Start - Spade handle

|            |           |       |     |           |           |           |     |       |      |     |      |      |     |    |
|------------|-----------|-------|-----|-----------|-----------|-----------|-----|-------|------|-----|------|------|-----|----|
| WT-2110-8  |           | 1 1/2 | M30 | 1         | 1650-750  | 2250-1000 | 880 | 4,600 | 12.9 | 327 | 21   | 9.5  | 2.2 | 56 |
| WTS-2120   |           | 1 1/2 | M36 | #5 Spline | 2800-1200 | 3800-1600 | 850 | 3,300 | 14.3 | 362 | 27.6 | 12.5 | 2.3 | 59 |
| WT-2120-12 | W-2120-12 | 1 1/2 | M36 | 1 1/2     | 3000-1200 | 4000-1600 | 850 | 3,300 | 14.3 | 362 | 27.6 | 12.5 | 2.3 | 59 |

### Trigger Start - Spade Handle - Biased Reverse Power\*\*

|               |          |       |     |           |           |           |     |       |       |     |      |      |     |    |
|---------------|----------|-------|-----|-----------|-----------|-----------|-----|-------|-------|-----|------|------|-----|----|
| WT-2109-8-6E* |          | 1 3/8 | M30 | 1         | 1550-750  | 2100-1000 | 880 | 4,300 | 18.9  | 479 | 24.6 | 11.2 | 2.2 | 56 |
| WT-2109-8     | W-2109-8 | 1 3/8 | M30 | 1         | 1650-750  | 2250-1000 | 880 | 4,300 | 12.9  | 327 | 21   | 9.5  | 2.2 | 56 |
| WTS-2109      |          | 1 3/8 | M30 | #5 Spline | 1800-800  | 2450-1100 | 880 | 4,300 | 13.1  | 333 | 21.5 | 9.8  | 2.2 | 56 |
| WT-2119-12    |          | 1 1/2 | M36 | 1 1/2     | 2600-1200 | 3500-1600 | 820 | 3,300 | 14.3  | 362 | 29   | 13.1 | 2.3 | 59 |
| WTS-2119      | WS-2119  | 1 1/2 | M36 | #5 Spline | 2500-1200 | 3400-1600 | 820 | 3,300 | 14.25 | 362 | 29   | 13.1 | 2.3 | 59 |

\* 6" Extended spindle  
\*\* Breakaway torque capacity in reverse:  
2109 Series: 2500 ft.-lbs. (3400 Nm)  
2119 Series: 3500 ft.-lbs. (4700 Nm)

GENERAL:  
Air Inlet: 1/2" NPT  
Min. Hose Size: 1/2" (WP-2109, WP-2110 series) 1/2" NPT (WP-2109, WP-2110 series)  
5/8" (WP-2119, WP-2120 series) Tool performance rated at 90 psi (620kPa) air pressure.

STANDARD EQUIPMENT:  
Operating instructions & service manual  
Dead handle bracket  
Dead Handle

OPTIONAL EQUIPMENT:  
Additional accessories: Page 76  
Refer to Page 7 for description of Rapid Select





6 Point Impact Sockets

| Part No.  | Hex Opening | Overall Length | Diameter Nose End | Diameter Drive End | Opening Depth |
|---|-------------|----------------|-------------------|--------------------|---------------|
| <b>3/8" Square Drive Sockets, SAE</b>               |             |                |                   |                    |               |
| 3112  | 3/8         | 1-1/4          | 19/32             | 3/4                | 1/4           |
| 3114  | 7/16        | 1-1/2          | 11/16             | 3/4                | 9/32          |
| 3116  | 7/16        | 1/2            | 1-1/2             | 13/16              | 11/32         |
| 3118  | 7/16        | 9/16           | 1-1/2             | 7/8                | 7/16          |
| <b>1/2" Square Drive Sockets, SAE</b>               |             |                |                   |                    |               |
| 5112  | 3/8         | 1-1/2          | 5/8               | 15/16              | 1/4           |
| 5114  | 7/16        | 1-1/2          | 11/16             | 15/16              | 9/32          |
| 5116  | 1/2         | 1-1/2          | 13/16             | 15/16              | 11/32         |
| 5120  | 5/8         | 1-1/2          | 1                 | 1                  | 7/16          |
| 5122  | 11/16       | 1-1/2          | 1-1/8             | 1-1/8              | 7/16          |
| 5124  | 3/4         | 1-1/2          | 1-1/8             | 1-1/8              | 15/32         |
| <b>3/4" Square Drive Sockets, SAE</b>               |             |                |                   |                    |               |
| 7128  | 7/8         | 2              | 1-1/2             | 1-1/2              | 9/16          |
| 7132  | 1           | 2              | 1-5/8             | 1-5/8              | 5/8           |
| 7136  | 1-1/8       | 2-1/8          | 1-3/4             | 1-3/4              | 3/4           |
| 7140  | 1-1/4       | 2-1/8          | 2                 | 1-3/4              | 13/16         |
| 7144  | 1-3/8       | 2-1/8          | 2-1/8             | 2-1/8              | 13/16         |
| 7148  | 1-1/2       | 2-1/4          | 2-1/4             | 2-1/8              | 1             |
| <b>1" Square Drive Sockets, SAE</b>                 |             |                |                   |                    |               |
| 8132  | 1           | 2-1/8          | 1-5/8             | 2                  | 13/16         |
| 8140  | 1-1/4       | 2-1/8          | 2-1/8             | 2-1/8              | 13/16         |
| 8144  | 1-3/8       | 2-1/8          | 2-1/8             | 2-1/8              | 13/16         |
| 8148  | 1-1/2       | 2-1/4          | 2-1/4             | 2-1/8              | 15/16         |
| 8156  | 1-3/4       | 2-3/8          | 2-5/8             | 2-5/8              | 11/16         |
| 8164  | 2           | 2-5/8          | 3                 | 2-5/8              | 1-3/16        |
| <b>1-1/2" Square Drive Sockets, SAE</b>             |             |                |                   |                    |               |
| 9156  | 1-3/4       | 2-7/8          | 2-7/8             | 3                  | 1-1/8         |
| 9160  | 1-7/8       | 3              | 3-1/8             | 3                  | 1-1/4         |
| 9164  | 2           | 3-1/8          | 3-1/4             | 3-1/4              | 1-3/8         |
| 9172  | 2-1/4       | 3-1/4          | 3-3/8             | 3-1/4              | 1-1/2         |
| <b>3/8" Square Drive Sockets, Metric</b>            |             |                |                   |                    |               |
| 12mm13  | 12          | 38.1           | 19.1              | 19.1               | 7.2           |
| 14mm13  | 14          | 38.1           | 22.2              | 22.2               | 11.1          |
| 16mm13  | 16          | 38.1           | 23.8              | 23.8               | 11.1          |
| <b>1/2" Square Drive Sockets, Metric</b>            |             |                |                   |                    |               |
| 16mm15  | 16          | 38.1           | 25.4              | 25.4               | 11.1          |
| 18mm15  | 18          | 38.1           | 28.6              | 28.6               | 11.1          |
| 20mm15  | 20          | 38.1           | 31.7              | 31.7               | 11.9          |
| 22mm15  | 22          | 38.1           | 33.3              | 33.3               | 14.3          |
| <b>5/8" Square Drive Sockets, Metric</b>            |             |                |                   |                    |               |
| 24mm16  | 24          | 51             | 38.1              | 38.1               | 15.9          |
| <b>3/4" Square Drive Sockets, Metric</b>            |             |                |                   |                    |               |
| 28mm17  | 28          | 54             | 44.4              | 44.4               | 19.1          |
| 30mm17  | 30          | 54             | 47.6              | 44.4               | 19.1          |
| 32mm17  | 32          | 54             | 50.8              | 44.4               | 20.6          |
| 34mm17  | 34          | 54             | 54.0              | 54.0               | 20.6          |
| 36mm17  | 36          | 57             | 57.1              | 54.0               | 23.8          |
| <b>1" Square Drive Sockets, Metric</b>              |             |                |                   |                    |               |
| 32mm18  | 32          | 54             | 54.0              | 54.0               | 20.6          |
| 34mm18  | 34          | 54             | 54.0              | 54.0               | 20.6          |
| 36mm18  | 36          | 57             | 57.1              | 54.0               | 23.9          |
| 38mm18  | 38          | 57             | 57.1              | 54.0               | 23.9          |
| 42mm18  | 42          | 60             | 63.5              | 54.0               | 23.9          |
| 46mm18  | 46          | 64             | 69.8              | 66.7               | 26.9          |
| <b>1-5/8" Spline Drive, SAE Hex Opening Sockets</b> |             |                |                   |                    |               |
| SPL-140   | 1-1/4       | 3-1/4          | 2-3/8             | 2-3/8              | 1-3/4         |
| SPL-148   | 1-1/2       | 3-3/8          | 2-3/8             | 2-3/8              | 1-1/2         |
| SPL-156   | 1-3/4       | 3-1/2          | 2-7/8             | 2-7/8              | 1-3/4         |
| SPL-164   | 2           | 3-5/8          | 3-1/4             | 3-1/4              | 21            |

Suspension Brackets and Bails



| Part Number | Description    | For use with Impact Wrench Model Number |
|-------------|----------------|---|
| 869910      | Bail           | WP-200                                  |
| 869909      | Hanger         | WL-200                                  |
| 867619      | End mount bail | WP-421D                                 |
| 869335      | Bracket        | WP-2049/2050                            |
| 869398      | Bracket        | WP-2059/2060                            |
| 865021*     | Bracket        | W-2109/2110                             |
| 867989      | Bracket        | W-2119/2120                             |

\* If used with Dead Handle, order one (1) 865007 Spacer.

Hex Extensions

| Part Number                                 | Hex Drive (In.) | Type of Lock | Overall Length |     |
|---|-----------------|--------------|----------------|-----|
|   |                 |              | In.            | mm  |
| <b>Male Hex Drive with 1/2" Male Square</b> |                 |              |                |     |
| EX-501-3                                    | 7/16            | Pin          | 3              | 76  |
| EX-501-4                                    | 7/16            | Pin          | 4              | 102 |
| EX-501-6                                    | 7/16            | Pin          | 6              | 152 |
| <b>Male Hex Drive with 3/8" Male Square</b> |                 |              |                |     |
| EX-371-3                                    | 7/16            | Pin          | 3              | 76  |
| EX-371-4                                    | 7/16            | Pin          | 4              | 102 |
| EX-371-6                                    | 7/16            | Pin          | 6              | 152 |

Hex Drive Nutsetters

| Part Number          | Size (In.) | Overall Length (In.) | Socket Nose Diameter (In.) |
|----------------------|------------|----------------------|----------------------------|
| <b>7/16" 6 Point</b> |            |                      |                            |
| 6N-1416-3            | 1/2        | 3                    | 13/16                      |
| 6N-1416-4            | 1/2        | 4                    | 13/16                      |
| 6N-1418-3            | 9/16       | 3                    | 7/8                        |
| 6N-1418-4            | 9/16       | 4                    | 7/8                        |
| 6N-1420-3            | 5/8        | 3                    | 1                          |
| 6N-1420-6            | 5/8        | 6                    | 1                          |

Pulse Tool Covers

| Part Number | Tool Series    |
|-------------|----------------|
| 542821-1    | 7 Series       |
| 542821-1    | 11 Series      |
| 542821-2    | 20 Series      |
| 542821-3    | 30/35 Series   |
| 542821-4    | 55 Series      |
| 542821-4    | 75 Series      |
| 542821-5    | 105 Series     |
| 542821-6    | 140/160 Series |



Rubber Tool Stand



| Part Number         | Tool Series      |
|---------------------|------------------|
| 931041 (one piece)  | 7PTH - 105PTH/PH |
| 930119 (two pieces) | 140/160PTH/PH    |

Hydraulic Oil

| Part Number | Container Size |
|-------------|----------------|
| 539317      | one quart      |



Torque Signal Kit

Air signal to indicate shut-off.

| Part Number | Used on                                   |
|-------------|---|
| 934918      | PTH series pulse tools ("C" vintage only) |

Square Drive Adapters



| Part Number                     | Length |      | Square Drive |       |
|---------------------------------|--------|------|--------------|-------|
|                                 | in.    | mm   | in.          | mm    |
| <b>For 1/4" Hex Slip Chuck</b>  |        |      |              |       |
| EX-250-2                        | 2.0    | 50.8 | 1/4          | 6.35  |
| EX-370                          | 2.0    | 50.8 | 3/8          | 9.53  |
| <b>For 7/16" Hex Slip Chuck</b> |        |      |              |       |
| EX-371                          | 2.0    | 50.8 | 3/8          | 9.53  |
| EX-5012                         | 2.0    | 50.8 | 1/2          | 12.70 |
| EX-620-3                        | 3.0    | 76.2 | 5/8          | 15.88 |

Hydraulic Filler Unit

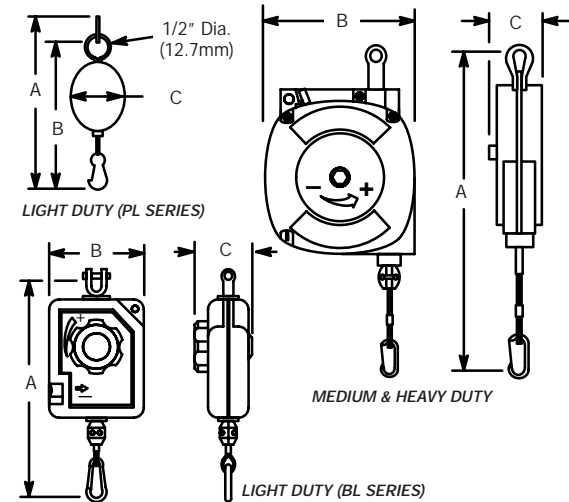


| Filler Unit Only | Part Number    |                      | Tool Series       |
|------------------|----------------|----------------------|-------------------|
|                  | Connector Only | Filler Unit Complete |                   |
| 928483           | 931968         | 928476               | 7/11PTH/PH/SH     |
| 928483           | 931968         | 928476               | 20/35PTH/PH/SH    |
| 928483           | 932072         | 928477               | 55/75PTH/PH       |
| 928483           | 932072         | 928477               | 105/140/160PTH/PH |

Ergonomic Tool Balancers

Capacity:  
0.5 – 45.5 kg  
1.0 – 100 Lbs

- External tension Adjustment
- 360° Swivel
- Retracting In-Line Cable



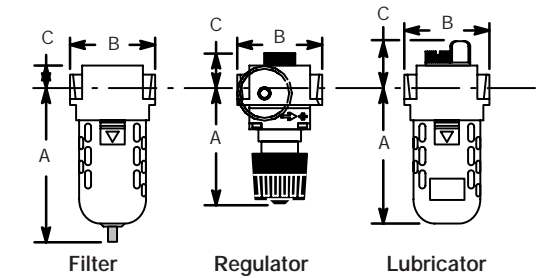
| Model Number                                    | Lock Feature      | Capacity |           | "A"  |     | "B" |     | "C" |     | Weight |     |
|---|-------------------|----------|-----------|------|-----|-----|-----|-----|-----|--------|-----|
|   |                   | lbs.     | kg        | in   | mm  | in  | mm  | in. | mm  | lbs.   | kg  |
| <b>Light Duty – 4.6 ft. (1.4m) Cable Travel</b> |                   |          |           |      |     |     |     |     |     |        |     |
| PL-12A  | -                 | 12.0-1.0 | 5.5-0.5   | 6.8  | 171 | 5.1 | 130 | 2.3 | 58  | -      | -   |
| <b>Light Duty – 5.0 ft. (1.5m) Cable Travel</b> |                   |          |           |      |     |     |     |     |     |        |     |
| 200427  | -                 | 2.0-0    | 9-0       | 10.9 | 277 | 4.4 | 112 | 1.6 | 41  | 1.3    | 0.6 |
| 200428  | -                 | 4.0-2.0  | 1.8-.9    | 10.9 | 277 | 4.4 | 112 | 1.6 | 41  | 1.3    | 0.6 |
| 200429  | -                 | 5.0-3.0  | 2.3-1.4   | 10.9 | 277 | 4.4 | 112 | 1.6 | 41  | 1.3    | 0.6 |
| <b>Light Duty – 5.2 ft. (1.6m) Cable Travel</b> |                   |          |           |      |     |     |     |     |     |        |     |
| BL-2A   | -                 | 2.0-1.0  | 0.9-0.5   | 10.4 | 263 | 4.0 | 102 | 2.2 | 56  | 1.1    | 0.5 |
| BL-4A   | -                 | 4.0-2.0  | 1.8-0.9   | 10.4 | 263 | 4.0 | 102 | 2.2 | 56  | 1.1    | 0.5 |
| <b>Light Duty – 6.7 ft. (2.0m) Cable Travel</b> |                   |          |           |      |     |     |     |     |     |        |     |
| BL-6A   | -                 | 6.0-4.0  | 2.7-1.8   | 12.9 | 327 | 5.5 | 140 | 3.1 | 79  | 3.3    | 1.5 |
| BLL-6A  | Ratchet           | 6.0-4.0  | 2.7-1.8   | 12.9 | 327 | 5.5 | 140 | 3.1 | 79  | 3.3    | 1.5 |
| BL-8A   | -                 | 8.0-6.0  | 3.6-2.7   | 12.9 | 327 | 5.5 | 140 | 3.1 | 79  | 3.3    | 1.5 |
| BLL-8A  | Ratchet           | 8.0-6.0  | 3.6-2.7   | 12.9 | 327 | 5.5 | 140 | 3.1 | 79  | 3.3    | 1.5 |
| <b>Medium Duty – 6.6ft. (2.0m) Cable Travel</b> |                   |          |           |      |     |     |     |     |     |        |     |
| BM-13A  | Automatic         | 13-9.0   | 5.9-4.1   | 13.8 | 350 | 6.9 | 175 | 4.5 | 114 | 9.0    | 4.1 |
| BML-13A   | Automatic/Ratchet | 13-9.0   | 5.9-4.1   | 13.8 | 350 | 6.9 | 175 | 4.5 | 114 | 9.0    | 4.1 |
| BM-18A  | Automatic         | 18-13    | 8.2-5.9   | 13.8 | 350 | 6.9 | 175 | 4.5 | 114 | 9.0    | 4.1 |
| <b>Medium Duty – 6.0ft. (1.8m) Cable Travel</b> |                   |          |           |      |     |     |     |     |     |        |     |
| BM-25A  | Automatic         | 25-18    | 11.4-8.2  | 20.7 | 527 | 7.8 | 197 | 6.6 | 169 | 19     | 8.6 |
| BM-35A  | Automatic         | 35-25    | 15.9-11.4 | 20.7 | 527 | 7.8 | 197 | 6.6 | 169 | 19     | 8.6 |
| BM-45A  | Automatic         | 45-35    | 20.5-15.9 | 20.7 | 527 | 7.8 | 197 | 6.6 | 169 | 19     | 8.6 |
| <b>Heavy Duty – 7.0ft. (2.1m) Cable Travel</b>  |                   |          |           |      |     |     |     |     |     |        |     |
| BH-45A  | Automatic         | 45-30    | 20.5-13.6 | 25.2 | 640 | 9.3 | 235 | 7.9 | 200 | 40     | 18  |
| BH-60B*   | Automatic         | 60-45    | 27.3-20.5 | 25.2 | 640 | 9.3 | 235 | 7.9 | 200 | 40     | 18  |
| BH-70A  | Automatic         | 70-60    | 31.8-27.3 | 25.2 | 640 | 9.3 | 235 | 7.9 | 200 | 40     | 18  |
| BH-80A  | Automatic         | 80-70    | 36.4-31.8 | 25.2 | 640 | 9.3 | 235 | 7.9 | 200 | 40     | 18  |
| BH-90A  | Automatic         | 90-80    | 40.9-36.4 | 25.2 | 640 | 9.3 | 235 | 7.9 | 200 | 40     | 18  |
| BH-100A   | Automatic         | 100-90   | 45.4-40.9 | 25.2 | 640 | 9.3 | 235 | 7.9 | 200 | 40     | 18  |

\*4.9 ft. cable travel

Refer to page 7 for description of Rapid Select.

Filters, Regulators, Lubricators

Modular Construction



| Model Number | NPT | Air Flow |      | Bowl Capacity |     | "A"   |     | "B" |     | "C" |     |
|--------------|-----|----------|------|---------------|-----|-------|-----|-----|-----|-----|-----|
|              |     | in.      | SCFM | m³/min        | oz. | liter | in. | mm  | in. | mm  | in. |

Filters

|       |     |     |      |     |      |     |     |     |    |     |    |
|-------|-----|-----|------|-----|------|-----|-----|-----|----|-----|----|
| F02-M | 1/4 | 35  | 9.9  | 5.0 | 0.15 | 5.6 | 142 | 3.0 | 76 | 0.9 | 23 |
| F03-M | 3/8 | 44  | 12.9 | 5.0 | 0.15 | 5.6 | 142 | 3.0 | 76 | 0.9 | 23 |
| F04-M | 1/2 | 138 | 39.1 | 10  | 0.30 | 6.4 | 163 | 3.4 | 86 | 1.0 | 25 |

Lubricators – Economist (Standard Mist)

|        |     |     |      |     |      |     |     |     |    |     |    |
|--------|-----|-----|------|-----|------|-----|-----|-----|----|-----|----|
| L02-EP | 1/4 | 28  | 3.7  | 5.0 | 0.15 | 4.8 | 122 | 3.0 | 76 | 1.6 | 41 |
| L03-EP | 3/8 | 48  | 6.2  | 5.0 | 0.15 | 4.8 | 122 | 3.0 | 76 | 1.6 | 41 |
| L04-EP | 1/2 | 102 | 13.6 | 10  | 0.30 | 5.4 | 137 | 3.4 | 86 | 1.6 | 41 |

Lubricators – Atomist (Fine Mist)

|        |     |     |      |     |      |     |     |     |    |     |    |
|--------|-----|-----|------|-----|------|-----|-----|-----|----|-----|----|
| L02-AP | 1/4 | 28  | 3.7  | 5.0 | 0.15 | 4.8 | 122 | 3.0 | 76 | 1.6 | 41 |
| L03-AP | 3/8 | 48  | 6.2  | 5.0 | 0.15 | 4.8 | 122 | 3.0 | 76 | 1.6 | 41 |
| L04-AP | 1/2 | 102 | 13.6 | 10  | 0.30 | 5.4 | 137 | 3.4 | 86 | 1.6 | 41 |

| Model Number | NPT | Air Flow |      | Maximum Pressure |     | "A" |    | "B" |    | "C" |    |
|--------------|-----|----------|------|------------------|-----|-----|----|-----|----|-----|----|
|              |     | in.      | SCFM | psig             | bar | in. | mm | in. | mm | in. | mm |

Regulators

|       |     |     |      |     |     |     |     |     |    |     |    |
|-------|-----|-----|------|-----|-----|-----|-----|-----|----|-----|----|
| R02-G | 1/4 | 80  | 10.8 | 125 | 8.5 | 3.9 | 99  | 3.0 | 76 | 1.3 | 33 |
| R03-G | 3/8 | 80  | 10.8 | 125 | 8.5 | 3.9 | 99  | 3.0 | 76 | 1.3 | 33 |
| R04-G | 1/2 | 195 | 26.1 | 125 | 8.5 | 5.6 | 142 | 3.4 | 86 | 1.4 | 36 |

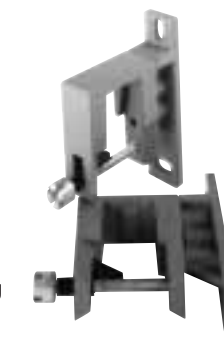
Modular Sleeve (with O-Ring)

**Model: MS101**  
Unique modular sleeve design easily and quickly connects one or more units and accessories together without pipe nipples. Hand tightening the threaded pin provides a tight seal between the units. Modular sleeves do not add length to combination assemblies, and make a more compact installation.



Modular Sleeve & Bracket (with O-Ring)

**Model: MS102**  
Combination sleeve/wall mounting bracket as shown. Designed for mounting a single unit or combination of units directly to the wall. The sleeve and mounting bracket can be ordered assembled at the factory, or just the mounting bracket alone to be used on existing modular sleeves.



Modular End Blocks (sold in pairs)

**Models:** EB-102 (1/4"); EB-103 (3/8"); EB-104 (1/2"); EB-106 (3/4")

The threaded End Blocks, together with the modular sleeve, allow a single unit or a combination of units to be piped into the air system in the modular mode. This feature allows ease of unit servicing or replacement without disturbing the airline connections. End blocks add 1.19" (30 mm) to each end of the unit where used.  
NOTE: The 3/4" end blocks are designed only to adapt to 3/4" piping systems and do not increase flow ratings listed for any unit.

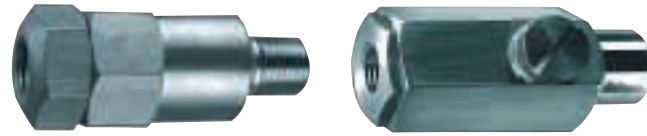


Automatic Drain

**Model: AD-101**  
Automatic Mechanical Drain is a float-type mechanism with a 1/8" NPT threaded drain port completely enclosed in the filter bowl. The float is constructed of rigid cellular rubber. The drain will operate automatically under air pressure ranging from 20 to 175 psig (1.5 to 12 bar).



**Airline Filter and Lubricator**



| Part Number | Description         | NPT in. | Air Flow |                     | Max. Pressure |     |
|-------------|---------------------|---------|----------|---------------------|---------------|-----|
|             |                     |         | SCFM     | m <sup>3</sup> /min | psig          | bar |
| 45-0211     | Filter w/cartridge* | 1/4     | 17       | 8.0                 | 100           | 6.9 |
| 45-0212     | Filter cartridge    | -       | -        | -                   | -             | -   |
| 45-0201     | Lubricator**        | 1/4     | 22       | 10                  | 100           | 6.9 |
| 45-0301     | Lubricator**        | 3/8     | 22       | 10                  | 100           | 6.9 |

GENERAL: Use where inconvenient for standard filter or lubricator.  
\* NOTE: Filter will not remove water.  
\*\* NOTE: One ounce reservoir good for an average eight hour shift.

**Air Hoses**



| Part Number | Hose I.D. |      | Fittings (NPT) |         | Length |      |
|-------------|-----------|------|----------------|---------|--------|------|
|             | in.       | mm   | in.            | mm      | ft.    | m    |
| A110026     | 3/16      | 4.7  | 1/8            | 3/8-24* | 6.0    | 1.8  |
| A139856     | 3/16      | 4.7  | 1/8            | 1/8     | 6.0    | 1.8  |
| 45-1307     | 3/16      | 4.7  | 1/8            | 1/4     | 7.0    | 2.1  |
| 45-1408     | 1/4       | 6.4  | 1/4            | 1/4     | 8.0    | 2.4  |
| 45-1409     | 1/4       | 6.4  | 1/8            | 1/4     | 8.0    | 2.4  |
| 45-1508     | 5/16      | 7.9  | 1/4            | 1/4     | 8.0    | 2.4  |
| 45-1610     | 3/8       | 9.5  | 3/8            | 3/8     | 10     | 3.0  |
| 45-1620     | 3/8       | 9.5  | 3/8            | 3/8     | 20     | 6.1  |
| 45-1630     | 3/8       | 9.5  | 3/8            | 3/8     | 30     | 9.1  |
| 45-1810     | 1/2       | 12.7 | 3/8            | 1/2     | 10     | 3.0  |
| 45-1812     | 1/2       | 12.7 | 1/2            | 1/2     | 12     | 3.7  |
| 45-1825     | 1/2       | 12.7 | 1/2            | 1/2     | 25     | 7.6  |
| 45-1850     | 1/2       | 12.7 | 1/2            | 1/2     | 50     | 15.2 |

GENERAL: 3/16" & 1/4" hoses have braided covers, all others have neoprene covers.  
\* NOTE: 3/8"-24 is a straight thread

**Steel Handle Bushings**

| Part Number | Size                       |
|-------------|----------------------------|
| 881276      | *1/4 in. MPT x 1/4 in. FPT |
| 841554      | †1/4 in. MPT x 1/4 in. FPT |
| 841553      | 3/8 in. MPT x 1/4 in. FPT  |
| 841552      | 3/8 in. MPT x 3/8 in. FPT  |
| 841551      | 1/2 in. MPT x 3/8 in. FPT  |
| 841555      | 1/2 in. MPT x 1/2 in. FPT  |
| 841556      | 3/4 in. MPT x 3/4 in. FPT  |

\* Light duty for rotary tools  
† Heavy duty for percussion tools.

**Swivel Hose Couplings**

| Part Number | NPT in. |
|-------------|---------|
| A20744      | 1/4     |
| A20741      | 3/8     |
| A20764      | 1/2     |



**Air Pressure Gage Kit**

| Part Number | Description              |
|-------------|--------------------------|
| A13157      | Gage, needle, cap & case |
| 13158       | Hypodermic needle (1)    |



**Quick Disconnect Fittings**

| Fitting Type* | NPT in. | Nominal Size |      |      |
|---------------|---------|--------------|------|------|
|               |         | 1/4"         | 3/8" | 1/2" |

| Coupler (male NPT) |         |         |         |  |
|--------------------|---------|---------|---------|--|
| 1/8                | 45-0710 | -       | -       |  |
| 1/4                | 45-0711 | 45-0713 | -       |  |
| 3/8                | 45-0712 | 45-0714 | 45-0716 |  |
| 1/2                | -       | 45-0715 | 45-0717 |  |

| Coupler (female NPT) |         |         |         |  |
|----------------------|---------|---------|---------|--|
| 1/8                  | 45-0730 | -       | -       |  |
| 1/4                  | 45-0731 | 45-0733 | -       |  |
| 3/8                  | 45-0732 | 45-0734 | 45-0736 |  |
| 1/2                  | -       | 45-0735 | 45-0737 |  |

| Nipple (male NPT) |         |         |         |  |
|-------------------|---------|---------|---------|--|
| 1/8               | 45-0720 | 45-0723 | -       |  |
| 1/4               | 45-0721 | 45-0724 | -       |  |
| 3/8               | 45-0722 | 45-0725 | 45-0726 |  |
| 1/2               | -       | -       | 45-0727 |  |

| Nipple (female NPT) |         |         |         |  |
|---------------------|---------|---------|---------|--|
| 1/8                 | 45-0740 | -       | -       |  |
| 1/4                 | 45-0741 | 45-0744 | -       |  |
| 3/8                 | 45-0742 | 45-0745 | 45-0746 |  |
| 1/2                 | -       | -       | 45-0747 |  |

| Nipple (with hose barbs) |         |         |         |  |
|--------------------------|---------|---------|---------|--|
| 1/4**                    | 45-0748 | 45-0750 | -       |  |
| 3/8**                    | -       | 45-0751 | 45-0752 |  |
| 1/2**                    | -       | -       | 45-0753 |  |

\* NOTE: Nipples of one size will not fit couplers of another size.  
\*\* NOTE: Indicates inside diameter of hose.  
NOTE: 1/4" nominal will pass 49 cfm free air @ 90 psi, but pressure drop exceeds 10 psi with air flow over 30 cfm.  
3/8" nominal will pass 90 cfm free air @ 90 psi, but pressure drop exceeds 10 psi with air flow over 53 cfm.  
1/2" nominal will pass 168 cfm free air @ 90 psi, but pressure drop exceeds 10 psi with air flow over 109 cfm.



**Activswivel**

| Part No. | NPT in. | Air Flow |                     | Max. Pressure |      | Weight |      |
|----------|---------|----------|---------------------|---------------|------|--------|------|
|          |         | SCFM     | m <sup>3</sup> /min | psig          | bar  | lbs.   | kg   |
| SW-102   | 1/4     | 25       | 7.1                 | 150           | 10.4 | 0.20   | 0.09 |
| SW-103   | 3/8     | 45       | 12.7                | 150           | 10.4 | 0.40   | 0.18 |
| SW-104   | 1/2     | 65       | 18.4                | 150           | 10.4 | 0.80   | 0.36 |
| SWR-102* | 1/4     | 25       | 7.1                 | 150           | 10.4 | 0.25   | 0.11 |

\* NOTE: Equipped with built-in flow regulator..

**Lubricants**

| Part Number    | Size          | Description           | M.S.D.S. No. |
|----------------|---------------|-----------------------|--------------|
| 540397         | 1 qt. plastic | Air line oil          | CPT-153      |
| 533485         | 1 gal. metal  | Air line oil          | CPT-153      |
| 536333         | 1 gal. metal  | High film strength    | CPT-154      |
| 45-0918        | 1 qt. plastic | Air line oil (Dotco)  | CPT-155      |
| 45-0919        | 1 gal metal   | Air line oil (Dotco)  | CPT-155      |
| 539317         | 1 qt. plastic | Hydraulic oil (Pulse) | CPT-157      |
| <b>Greases</b> |               |                       |              |
| 513156         | 18 oz. can    | Teflon grease         | CPT-145      |
| 540395         | 2 oz. tube    | Teflon grease         | CPT-145      |

NOTE: Under normal conditions of use, lubrication products sold separately for or used within these tools should not cause an exposure hazard. Refer to the Material Safety Data Sheet (M.S.D.S.) for Safety and Disposal information. M.S.D.S. sheets shown in the chart are available upon request from CooperTools.

**Push Type Grease Gun**

Part Number: 45-1982



**Service Tools**

**"T" Wrenches**

|         |                         |
|---------|-------------------------|
| 1021201 | 5/32" Hex socket screws |
| 1021202 | 3/16" Hex socket screws |

To remove and replace hex socket screws in tool housings.



**Hex Key Wrenches**

|         |       |
|---------|-------|
| 1008860 | 1/8"  |
| 1004341 | 5/32" |
| 106443  | 3/16" |

**Torx Torque Adjustment Keys**

|        |                      |
|--------|----------------------|
| 536633 | H10 series tools     |
| 535508 | H16/H30 series tools |

**Open End Wrenches**

|         |                          |
|---------|--------------------------|
| 1006626 | 3/6" & 5/16"             |
| 1011691 | 7/16"                    |
| 1014471 | 1/2"                     |
| 1004958 | 9/16" & 1-33/64" Hex Box |
| 1009950 | 19/32" & 1-7/16" Hex Box |
| 1014472 | 11/16"                   |
| 1010911 | 7/8"                     |
| 1010929 | 1"                       |
| 1016694 | 1-1/8"                   |
| 1008163 | 2-7/32"                  |

**Snap Ring Pliers**

|         |                             |
|---------|-----------------------------|
| 1008360 | External sizes 18 thru 23   |
| 1007488 | External sizes 25 thru 87   |
| 1008702 | External sizes 37 thru 93   |
| 1007487 | External sizes 106 thru 175 |



# General Accessories

## Apex Fastener Tools

### APEX®

### Quality Fastener Tools

For more than half a century Apex has maintained the position of world leader in industrial fastening tools. Many power and insert bits, socket combinations and other drivers/adapters pioneered by Apex have today become industry standards, while Apex quality, service and selection give you unsurpassed value.

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Apex quality starts with the selection of raw materials. Only carefully chosen, high grade tool steel is used to make Apex industrial fastener tools. Next, each tool is precision machined from solid bar stock to exacting standards of accuracy. You always get a snug, secure fit – a fit that is not possible from stamped tools.

Finally, each Apex fastener tool is tempered with our exclusive heat treating process. During this step the degree of hardness is determined based upon the application.

#### Fast Delivery

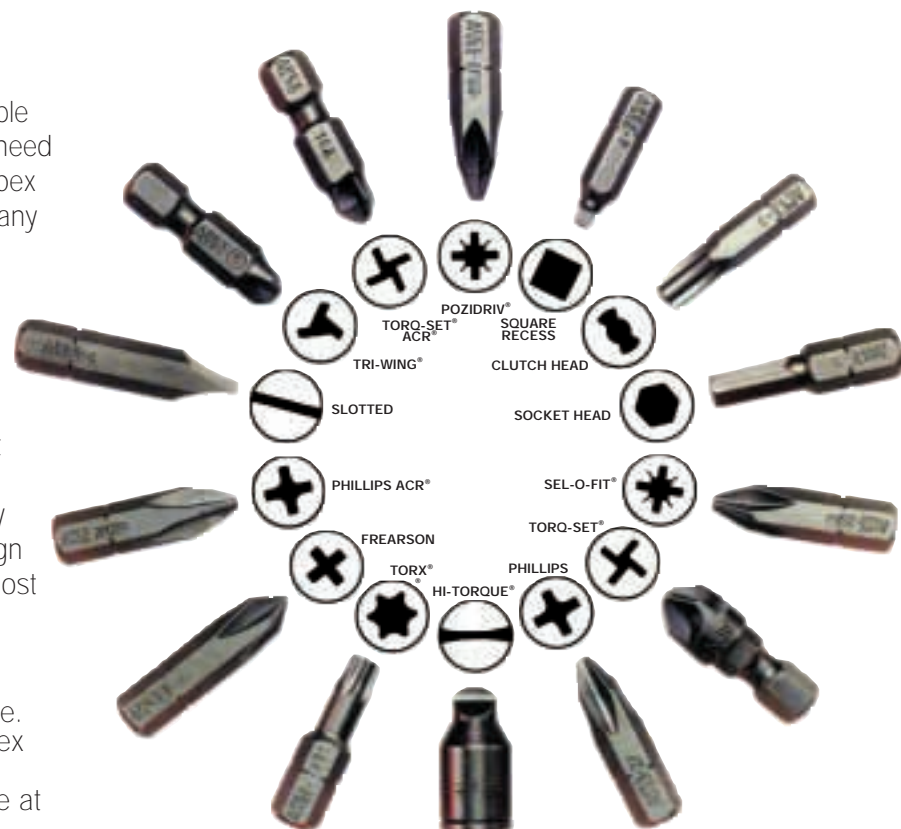
All Apex standard catalog items are available off-the-shelf for immediate delivery. If you need special assistance with your order, your Apex manufacturer's representative can handle any questions you may have.

#### Special Orders

Apex offers the broadest selection of screw driver and nut runner tools available, from bits, sockets and universal wrenches to extensions, adapters and nut setters. If you have a special application, contact your Apex representative. We may have what you need in stock, or can design and produce special fastener tools for almost any application.

#### Ordering Information

Apex products are distributed world-wide. For a catalog of the complete line of Apex quality fastener tools or to locate your nearest Apex distributor, visit our website at [www.coopertools.com](http://www.coopertools.com) or [www.apex-tools.com](http://www.apex-tools.com).



### Insert Bits

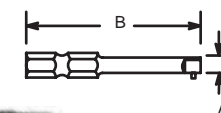
(1/4" hex for socket head cap screws and set screws)



| Part Number | Hex Size In. | "A"  |      | Cap Screw | Set Screw |
|-------------|--------------|------|------|-----------|-----------|
|             |              | In.  | mm   |           |           |
| 185-00      | 1/16         | 1.00 | 25.4 | 1         | 5.6       |
| 185-0       | 5/64         | 1.00 | 25.4 | 2.3       | 8         |
| 185-1       | 3/32         | 1.00 | 25.4 | 4.5       | 10        |
| 185-9       | 7/64         | 1.00 | 25.4 | 6         | —         |
| 185-2       | 1/8          | 1.00 | 25.4 | 8         | 1/4       |
| 185-10      | 9/64         | 1.00 | 25.4 | 8         | —         |
| 185-3       | 5/32         | 1.31 | 33.3 | 10        | 5/16      |
| 185-4       | 3/16         | 1.31 | 33.3 | 1/4       | 3/8       |
| 185-5       | 7/32         | 1.31 | 33.3 | —         | 7/16      |
| 185-6       | 1/4          | 1.31 | 33.3 | 5/16      | 1/2       |
| 185-7       | 5/16         | 1.25 | 31.8 | 3/8       | 5/8       |
| 185-8       | 3/8          | 1.25 | 31.8 | 7/16, 1/2 | 3/4       |

### Square Drive Adapter

(1/4" hex drive sockets) Use with Quick Change and Bit & Finder Models, except as noted.



| Part Number | "A" Sq. Drive | "B"  |       | Bushings No. |
|-------------|---------------|------|-------|--------------|
|             |               | In.  | mm    |              |
| EX250-2     | 1/4           | 2.00 | 50.8  | —            |
| EX250-3     | 1/4           | 3.00 | 76.2  | 847295*      |
| EX250-4     | 1/4           | 4.00 | 101.6 | —            |
| EX250-6     | 1/4           | 6.00 | 152.4 | —            |
| EX370       | 3/8           | 1.63 | 41.3  | —            |
| EX370-3     | 3/8           | 3.00 | 76.2  | 847295*      |
| EX500-2     | 1/2           | 2.00 | 50.8  | —            |
| EX500-3     | 1/2           | 3.00 | 76.2  | —            |

\* Note: Required for bit and finder models.

### Hex Extensions

| Part Number                                 | Hex Drive (In.) | Type of Lock | Overall Length |     |
|---|-----------------|--------------|----------------|-----|
|   |                 |              | In.            | mm  |
| <b>Male Hex Drive with 1/2" Male Square</b> |                 |              |                |     |
| EX-501-3                                    | 7/16            | Pin          | 3              | 76  |
| EX-501-4                                    | 7/16            | Pin          | 4              | 102 |
| EX-501-6                                    | 7/16            | Pin          | 6              | 152 |
| <b>Male Hex Drive with 3/8" Male Square</b> |                 |              |                |     |
| EX-371-3                                    | 7/16            | Pin          | 3              | 76  |
| EX-371-4                                    | 7/16            | Pin          | 4              | 102 |
| EX-371-6                                    | 7/16            | Pin          | 6              | 152 |

### Hex Drive Nutsetters

| Part Number | Size (In.) | Overall Length (In.) | Socket Nose Diameter (In.) |
|-------------|------------|----------------------|----------------------------|
|             |            |                      |                            |
| 6N-1416-3   | 1/2        | 3                    | 13/16                      |
| 6N-1416-4   | 1/2        | 4                    | 13/16                      |
| 6N-1418-3   | 9/16       | 3                    | 7/8                        |
| 6N-1418-4   | 9/16       | 4                    | 7/8                        |
| 6N-1420-3   | 5/8        | 3                    | 1                          |
| 6N-1420-6   | 5/8        | 6                    | 1                          |

### Insert Bits

Used with Bit Holders (all bits are 1.0" (25.4 mm) long)



| Point Size | Part Number |             | Wood        |       | Machine & Self-tapping |           |       |         |
|------------|-------------|-------------|-------------|-------|------------------------|-----------|-------|---------|
|            | Phillips    | Pozzi-Drive | Flat & Oval | Round | Flat, Oval & Pan       | Fillister | Truss | Binding |
| 0          | 446-0       | 446-1P2D    | 0.1         | 0.1   | 0.1                    | 0.1       | 0.1   | 0.1     |
| 1          | HPL-1       | 440-1PZD    | 2-4         | 2-4   | 2-4                    | 2-4       | 2-4   | 2-4     |
| 2          | HPI-2       | 440-2PZD    | 5-8         | 5-10  | 5-10                   | 5-10      | 6-10  | 5-10    |
| 3          | HPI-3       | 440-3PZD    | 10-16       | 12-16 | 12-16                  | 12-5/16   | 12-16 | 12-1/4  |

### 6 Point Sockets

| Part No.                              | Hex Opening | Overall Length | Diameter Nose End | Diameter Drive End | Opening Depth |
|---------------------------------------|-------------|----------------|-------------------|--------------------|---------------|
| <b>3/8" Square Drive Sockets, SAE</b> |             |                |                   |                    |               |
| 3112                                  | 3/8         | 1-1/4          | 19/32             | 3/4                | 1/4           |
| 3114                                  | 7/16        | 1-1/2          | 11/16             | 3/4                | 9/32          |
| 3116                                  | 7/16        | 1/2            | 1-1/2             | 13/16              | 11/32         |
| 3118                                  | 7/16        | 9/16           | 1-1/2             | 7/8                | 7/16          |
| <b>1/2" Square Drive Sockets, SAE</b> |             |                |                   |                    |               |
| 5112                                  | 3/8         | 1-1/2          | 5/8               | 15/16              | 1/4           |
| 5114                                  | 7/16        | 1-1/2          | 11/16             | 15/16              | 9/32          |
| 5116                                  | 1/2         | 1-1/2          | 13/16             | 15/16              | 11/32         |
| 5120                                  | 5/8         | 1-1/2          | 1                 | 1                  | 7/16          |
| 5122                                  | 11/16       | 1-1/2          | 1-1/8             | 1-1/8              | 7/16          |
| 5124                                  | 3/4         | 1-1/2          | 1-1/8             | 1-1/8              | 15/32         |

|                                       |       |       |       |       |        |
|---------------------------------------|-------|-------|-------|-------|--------|
| <b>3/4" Square Drive Sockets, SAE</b> |       |       |       |       |        |
| 7128                                  | 7/8   | 2     | 1-1/2 | 1-1/2 | 9/16   |
| 7132                                  | 1     | 2     | 1-5/8 | 1-5/8 | 5/8    |
| 7136                                  | 1-1/8 | 2-1/8 | 1-3/4 | 1-3/4 | 3/4    |
| 7140                                  | 1-1/4 | 2-1/8 | 2     | 1-3/4 | 13/16  |
| 7144                                  | 1-3/8 | 2-1/8 | 2-1/8 | 2-1/8 | 13/16  |
| 7148                                  | 1-1/2 | 2-1/4 | 2-1/4 | 2-1/8 | 1      |
| <b>1" Square Drive Sockets, SAE</b>   |       |       |       |       |        |
| 8132                                  | 1     | 2-1/8 | 1-5/8 | 2     | 13/16  |
| 8140                                  | 1-1/4 | 2-1/8 | 2-1/8 | 2-1/8 | 13/16  |
| 8144                                  | 1-3/8 | 2-1/8 | 2-1/8 | 2-1/8 | 13/16  |
| 8148                                  | 1-1/2 | 2-1/4 | 2-1/4 | 2-1/8 | 15/16  |
| 8156                                  | 1-3/4 | 2-3/8 | 2-5/8 | 2-5/8 | 11/16  |
| 8164                                  | 2     | 2-5/8 | 3     | 2-5/8 | 1-3/16 |

|   |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|
| <b>1-1/2" Square Drive Sockets, SAE</b> |       |       |       |       |       |
| 9156                                    | 1-3/4 | 2-7/8 | 2-7/8 | 3     | 1-1/8 |
| 9160                                    | 1-7/8 | 3     | 3-1/8 | 3     | 1-1/4 |
| 9164                                    | 2     | 3-1/8 | 3-1/4 | 3-1/4 | 1-3/8 |
| 9172                                    | 2-1/4 | 3-1/4 | 3-3/8 | 3-1/4 | 1-1/2 |

|  |    |      |      |      |      |
|--|----|------|------|------|------|
| <b>3/8" Square Drive Sockets, Metric</b> |    |      |      |      |      |
| 12mm13                                   | 12 | 38.1 | 19.1 | 19.1 | 7.2  |
| 14mm13                                   | 14 | 38.1 | 22.2 | 22.2 | 11.1 |
| 16mm13                                   | 16 | 38.1 | 23.8 | 23.8 | 11.1 |

|  |    |      |      |      |      |
|--|----|------|------|------|------|
| <b>1/2" Square Drive Sockets, Metric</b> |    |      |      |      |      |
| 16mm15                                   | 16 | 38.1 | 25.4 | 25.4 | 11.1 |
| 18mm15                                   | 18 | 38.1 | 28.6 | 28.6 | 11.1 |
| 20mm15                                   | 20 | 38.1 | 31.7 | 31.7 | 11.9 |
| 22mm15                                   | 22 | 38.1 | 33.3 | 33.3 | 14.3 |

|  |    |    |      |      |      |
|--|----|----|------|------|------|
| <b>5/8" Square Drive Sockets, Metric</b> |    |    |      |      |      |
| 24mm16                                   | 24 | 51 | 38.1 | 38.1 | 15.9 |

|  |    |    |      |      |      |
|--|----|----|------|------|------|
| <b>3/4" Square Drive Sockets, Metric</b> |    |    |      |      |      |
| 28mm17                                   | 28 | 54 | 44.4 | 44.4 | 19.1 |
| 30mm17                                   | 30 | 54 | 47.6 | 44.4 | 19.1 |
| 32mm17                                   | 32 | 54 | 50.8 | 44.4 | 20.6 |
| 34mm17                                   | 34 | 54 | 54.0 | 54.0 | 20.6 |
| 36mm17                                   | 36 | 57 | 57.1 | 54.0 | 23.8 |

# General Accessories

## Utica Torque Verification Tools



### Torque verification products for all your critical assembly applications

Utica products, ranging from torque screwdrivers, ratchets and dial wrenches to electronic torque analyzers offer high quality solutions for the many critical torque applications in today's assembly market. Utica products add value to the assembly process by enabling you to assess and control both critical joint values as well as the torque accuracy of production tools. Whether the electronic, automotive, aerospace or general industry, Utica provides a wide range of products for most any assembly application.



#### Quality

Our goal is to provide high quality torque tools that will maintain accuracy as long as possible. Each Utica tool is calibrated according to ASME B107.14M standards before leaving the plant, using test equipment traceable to NIST. Certification can be provided with each tool for a nominal charge. Cooper Tools manufacturing processes are ISO 9001 certified, which means that the Utica brand is manufactured to the highest standards.

#### Warranty

Torque products (excluding accessories) are warranted for:

**Product** – One (1) year from date of purchase to be free of defects in materials and workmanship.

**Calibration** – Ninety (90) days from date of purchase.

This warranty does not extend to any product, which has been altered or abused.

#### Ordering Information

Utica products are distributed world-wide. For a complete catalog or to locate your nearest Utica distributor, visit our website at [www.coopertools.com](http://www.coopertools.com) or [www.uticatools.com](http://www.uticatools.com).

### "Click" Type Torque Sensing Wrenches

- Torque accuracy is +/- 4% of setting right hand (clockwise) and +/- 6% of setting left hand (counterclockwise) within upper 80% of scale.
- Audible "click" and/or a few degrees of travel provide accurate torque verification.
- Ergonomic handle and slim, lightweight design reduces fatigue and facilitates use in confined work areas.



TCM-75R

#### Ratchet Head (Nm Graduations)

| Model No.   | Drive Size | Range  |     | Graduation | Length |     | Weight |    |
|-------------|------------|--------|-----|------------|--------|-----|--------|----|
|             |            | in.    | Nm  |            | in.    | mm  | lb.    | kg |
| TCM-75R     | 3/8        | 15-75  | .5  | 14.75      | 375    | 2.2 | 1.0    |    |
| TCM-75R-1/2 | 1/2        | 15-75  | .5  | 14.75      | 375    | 2.2 | 1.0    |    |
| TCM-150R    | 1/2        | 30-150 | 1.0 | 18.25      | 464    | 2.6 | 1.2    |    |

#### Ratchet Head (in.-lb. Graduations)

| Model No.      | Drive Size | Range   |          | Graduation | Length |     | Weight |         |
|----------------|------------|---------|----------|------------|--------|-----|--------|---------|
|                |            | in.-lb. | Nm       |            | in.    | mm  | lb.    | kg      |
| TCI-150RA-3/8" | 3/8        | 30-150  | 2.8-17.5 | 1.0        | .113   | 9.5 | 242    | 0.9 0.4 |

#### Ratchet Head (ft.-lb. Graduations)

| Model No.   | Drive Size | Range   |        | Graduation | Length |      | Weight |         |
|-------------|------------|---------|--------|------------|--------|------|--------|---------|
|             |            | ft.-lb. | Nm     |            | in.    | mm   | lb.    | kg      |
| TCI-150FRN* | 1/2        | 30-150  | 47-210 | 1.0        | 1.4    | 18.5 | 470    | 1.4 0.6 |

\*DualScale Model: Either in.-lb./Nm graduations, or ft.-lb./Nm graduations.

### Dial Indicating Torque Wrenches

- Torque accuracy of +/- 4% Indicated Value (from 20% to 100% capacity) in either clockwise or counterclockwise direction
- Nickel-plated handle for improved durability
- Memory indicator remains at maximum torque achieved for accurate torque verification
- Slim drive for tight work areas



DA-8

### Dial Wrench With Protective Cage (protects crystal and dial from damage)

| Model No.    | Drive Size (in.) | Range ft.-lb. | Graduations ft.-lb. | Weight |     |
|--------------|------------------|---------------|---------------------|--------|-----|
| DA4350FMPC*x | 3/4              | 0-350         | 10                  | 7.0    | 3.2 |

\*x includes extension bar.

Calibration certification may be provided with each tool for a nominal charge.

### Nm/in.-lb. Scale

| Model No. | Drive Size (in.) | Range  |         | Graduations |         | Weight |     |
|-----------|------------------|--------|---------|-------------|---------|--------|-----|
|           |                  | Nm     | in.-lb. | Nm          | in.-lb. | lb.    | kg  |
| DA-3      | 1/4              | 0-3.2  | 0-30    | 0.1         | 1.0     | 1.8    | 0.8 |
| DA-8      | 1/4              | 0-8.2  | 0-75    | 0.2         | 2.5     | 1.8    | 0.8 |
| DA-16     | 3/8              | 0-16.5 | 0-150   | 0.5         | 2.5     | 1.9    | 0.9 |
| DA-35     | 3/8              | 0-35.0 | 0-300   | 0.5         | 5.0     | 1.9    | 0.9 |
| DA-70     | 3/8              | 0-70.0 | 0-600   | 1.0         | 10.0    | 2.0    | 0.9 |

### Nm/ft.-lb. Scale

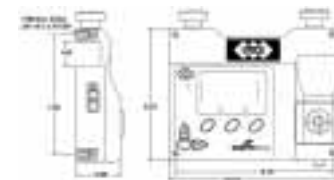
| Model No. | Drive Size (in.) | Range |         | Graduations |         | Weight |     |
|-----------|------------------|-------|---------|-------------|---------|--------|-----|
|           |                  | Nm    | ft.-lb. | Nm          | ft.-lb. | lb.    | kg  |
| DA-70F    | 3/8              | 0-70  | 0-50    | 1.0         | 1.0     | 2.0    | 0.9 |
| DA-140F   | 1/2              | 0-140 | 0-100   | 2.0         | 2.0     | 3.3    | 1.5 |
| DA-240F   | 1/2              | 0-240 | 0-175   | 5.0         | 5.0     | 6.7    | 3.0 |
| DA-320F*x | 1/2              | 0-320 | 0-250   | 10.0        | 5.0     | 5.5    | 2.5 |
| DA-480F*x | 3/4              | 0-480 | 0-350   | 10.0        | 10      | 12.4   | 5.6 |
| DA-820F*z | 3/4              | 0-820 | 0-600   | 20.0        | 10      | 11.0   | 5.0 |

\*x includes extension bar

\*z includes extension bar and helper bar

### TA4

| 110V Model | 220V Model | Torque Range   |                 | Square Dr. |      |
|------------|------------|----------------|-----------------|------------|------|
|            |            | English        | Metric          | In.        | mm   |
| TA4-05B-1  | TA4-05B-2  | 5-50 in.-lb.   | .56-5.64 Nm     | 1/4        | 6.35 |
| TA4-10B-1  | TA4-10B-2  | 10-100 in.-lb. | 1.13-11.29 Nm   | 1/4        | 6.35 |
| TA4-05F-1  | TA4-05F-2  | 5-50 ft.-lb.   | 6.78-67.79 Nm   | 3/8        | 9.53 |
| TA4-25F-1  | TA4-25F-2  | 25-250 ft.-lb. | 33.90-338.95 Nm | 1/2        | 12.7 |



\*Each TA4 unit comes complete with the appropriate rundown adapter, power supply, RS-232 cable, an Excel add-in disc and case.

### TA4 Accessories

#### Run Down Adapters\*

| Part No. | English        | Metric       | Sq. Drive |
|----------|----------------|--------------|-----------|
| 01-9232  | 5-50 in.-lb.   | 56-564 cNm   | 1/4"      |
| 01-9233  | 10-100 in.-lb. | 112-1129 cNm | 1/4"      |
| 01-9240  | 5-50 ft.-lb.   | 6-67 Nm      | 3/8"      |
| 01-9242  | 25-250 ft.-lb. | 33-338 Nm    | 1/2"      |

Square drives conform to ASME B107 standards for proper fit with transducer.

#### Power Supplies\*

| Part No. | Description                           |
|----------|---------------------------------------|
| 01-9201  | 110V power supply for all TA4 systems |
| 01-9202  | 220V power supply for all TA4 systems |

#### Cables

| Part No. | Description  |
|----------|--------------|
| 01-9205* | RS-232 Cable |

### P-2 & P-15 Torque Analyzers

| Model No.      | Graduations | Capacity       | Height | Width | Length | Weight |     | Ordering No. |    |      |        |
|----------------|-------------|----------------|--------|-------|--------|--------|-----|--------------|----|------|--------|
|                |             |                | In.    | mm    | In.    | mm     | In. |              | mm | Lb.  | kg     |
| P-2B           | .5 in.-lbs. | 20-2 in.-lbs.  | 5.6    | 143   | 7.3    | 184    | 12  | 305          | 18 | 8.2  | 810681 |
| MP-2B (metric) | .5 cm-kG    | 22-2 cm-kG     | 5.6    | 143   | 7.3    | 184    | 12  | 305          | 18 | 8.2  | 810682 |
| P-15           | 2 in.-lbs.  | 150-5 in.-lbs. | 8      | 203   | 5      | 127    | 18  | 457          | 23 | 10.4 | 810002 |
| MP-15 (metric) | 5 cm-kG     | 180-5 cm-kG    | 8      | 203   | 5      | 127    | 18  | 457          | 23 | 10.4 | 810151 |

#### GENERAL

Drive Size: 1/4" male hex (P-2 series)  
5/16" male hex (P-15 series)

#### OPTIONAL EQUIPMENT

Calibration Kit (P-2 series) – 810629  
Calibration Kit (P-15 series) – 810800



P-2

P-15

# Conversion Tables

## Millimeter – Decimal – Fraction

| mm    | Dec.  | in.   | mm     | Dec.  | in.   | mm     | Dec.  | in.   | mm     | Dec.  | in.   | mm     | Dec.  | in.   | mm     | Dec.   | in.   |
|-------|-------|-------|--------|-------|-------|--------|-------|-------|--------|-------|-------|--------|-------|-------|--------|--------|-------|
| 0.100 | .0039 |       | 5.159  | .2031 | 13/64 | 10.200 | .4016 |       | 15.300 | .6024 |       | 20.300 | .7992 |       | 25.400 | .8000  | 1/2   |
| 0.200 | .0079 |       | 5.200  | .2047 |       | 10.300 | .4055 |       | 15.400 | .6063 |       | 20.400 | .8031 |       | 25.500 | .8071  | 5/16  |
| 0.300 | .0118 |       | 5.300  | .2087 |       | 10.319 | .4063 | 13/32 | 15.478 | .6094 | 39/64 | 20.500 | .8071 |       | 25.600 | .8110  | 3/8   |
| 0.397 | .0156 | 1/64  | 5.400  | .2126 |       | 10.400 | .4094 |       | 15.500 | .6102 |       | 20.600 | .8110 |       | 25.638 | .8125  | 13/16 |
| 0.400 | .0157 |       | 5.500  | .2165 |       | 10.500 | .4134 |       | 15.600 | .6142 |       | 20.638 | .8125 | 13/16 | 25.700 | .8150  | 1/2   |
| 0.500 | .0197 |       | 5.556  | .2188 | 7/32  | 10.600 | .4173 |       | 15.700 | .6181 |       | 20.700 | .8150 |       | 25.800 | .8189  | 9/16  |
| 0.600 | .0236 |       | 5.600  | .2205 |       | 10.700 | .4219 |       | 15.800 | .6220 |       | 20.800 | .8189 |       | 25.900 | .8228  | 5/8   |
| 0.700 | .0276 |       | 5.700  | .2244 |       | 10.716 | .4219 | 27/64 | 15.875 | .6250 | 5/8   | 21.000 | .8268 |       | 26.000 | .8268  | 1/2   |
| 0.794 | .0313 | 1/32  | 5.800  | .2283 |       | 10.800 | .4252 |       | 15.900 | .6250 |       | 21.034 | .8182 | 53/64 | 26.100 | .8307  | 1/2   |
| 0.800 | .0315 |       | 5.900  | .2323 |       | 10.900 | .4291 |       | 16.000 | .6299 |       | 21.100 | .8307 |       | 26.200 | .8346  | 3/4   |
| 0.900 | .0354 |       | 5.953  | .2344 | 15/64 | 11.000 | .4331 |       | 16.100 | .6339 |       | 21.100 | .8307 |       | 26.300 | .8386  | 3/4   |
| 1.000 | .0394 |       | 6.000  | .2362 |       | 11.100 | .4370 |       | 16.200 | .6378 |       | 21.200 | .8346 |       | 26.400 | .8425  | 7/8   |
| 1.100 | .0433 |       | 6.100  | .2402 |       | 11.113 | .4375 | 7/16  | 16.272 | .6406 | 41/64 | 21.200 | .8346 |       | 26.500 | .8465  | 7/8   |
| 1.191 | .0469 | 3/64  | 6.200  | .2441 |       | 11.200 | .4409 |       | 16.300 | .6417 |       | 21.300 | .8386 |       | 26.600 | .8504  | 1     |
| 1.200 | .0472 |       | 6.300  | .2480 |       | 11.300 | .4449 |       | 16.400 | .6457 |       | 21.400 | .8425 |       | 26.700 | .8543  | 1     |
| 1.300 | .0512 |       | 6.350  | .2500 | 1/4   | 11.400 | .4488 |       | 16.500 | .6496 |       | 21.431 | .8438 | 27/32 | 26.800 | .8583  | 1     |
| 1.400 | .0551 |       | 6.400  | .2520 |       | 11.500 | .4528 |       | 16.600 | .6535 |       | 21.500 | .8465 |       | 26.900 | .8622  | 1     |
| 1.500 | .0591 |       | 6.500  | .2559 |       | 11.509 | .4531 | 29/64 | 16.669 | .6563 | 21/32 | 21.600 | .8504 |       | 27.000 | .8661  | 1     |
| 1.588 | .0625 | 1/16  | 6.600  | .2598 |       | 11.600 | .4567 |       | 16.700 | .6575 |       | 21.700 | .8543 |       | 27.100 | .8701  | 1     |
| 1.600 | .0630 |       | 6.700  | .2638 |       | 11.700 | .4606 |       | 16.800 | .6614 |       | 21.800 | .8583 |       | 27.200 | .8740  | 1     |
| 1.700 | .0669 |       | 6.747  | .2656 | 17/64 | 11.800 | .4646 |       | 16.900 | .6654 |       | 21.828 | .8594 | 55/94 | 27.300 | .8780  | 1     |
| 1.800 | .0709 |       | 6.800  | .2677 |       | 11.900 | .4685 |       | 17.000 | .6693 |       | 21.900 | .8622 |       | 27.400 | .8819  | 1     |
| 1.900 | .0748 |       | 6.900  | .2717 |       | 11.906 | .4688 | 15/32 | 17.066 | .6719 | 43/64 | 22.000 | .8661 |       | 27.500 | .8858  | 1     |
| 1.984 | .0781 | 5/64  | 7.000  | .2756 |       | 12.000 | .4724 |       | 17.100 | .6732 |       | 22.100 | .8701 |       | 27.600 | .8898  | 1     |
| 2.000 | .0878 |       | 7.100  | .2795 |       | 12.100 | .4764 |       | 17.200 | .6772 |       | 22.200 | .8740 |       | 27.700 | .8937  | 1     |
| 2.100 | .0827 |       | 7.144  | .2813 | 9/32  | 12.200 | .4803 |       | 17.300 | .6811 |       | 22.225 | .8750 | 7/8   | 27.800 | .8976  | 1     |
| 2.200 | .0866 |       | 7.200  | .2835 |       | 12.300 | .4843 |       | 17.400 | .6850 |       | 22.300 | .8780 |       | 27.900 | .9016  | 1     |
| 2.300 | .0906 |       | 7.300  | .2874 |       | 12.303 | .4844 | 31/64 | 17.463 | .6875 | 11/16 | 22.400 | .8819 |       | 28.000 | .9055  | 1     |
| 2.381 | .0938 | 3/32  | 7.400  | .2913 |       | 12.400 | .4882 |       | 17.500 | .6890 |       | 22.500 | .8858 |       | 28.100 | .9094  | 1     |
| 2.400 | .0945 |       | 7.500  | .2953 |       | 12.500 | .4921 |       | 17.600 | .6929 |       | 22.600 | .8898 |       | 28.200 | .9134  | 1     |
| 2.500 | .0984 |       | 7.541  | .2969 | 19/64 | 12.600 | .4961 |       | 17.700 | .6968 |       | 22.622 | .8906 | 57/64 | 28.300 | .9173  | 1     |
| 2.600 | .1024 |       | 7.600  | .2992 |       | 12.700 | .5000 | 1/2   | 17.800 | .7008 |       | 22.700 | .8937 |       | 28.400 | .9213  | 1     |
| 2.700 | .1063 |       | 7.700  | .3031 |       | 12.800 | .5039 |       | 17.859 | .7031 | 45/64 | 22.800 | .8976 |       | 28.500 | .9252  | 1     |
| 2.778 | .1094 | 7/64  | 7.800  | .3071 |       | 12.900 | .5079 |       | 17.900 | .7047 |       | 22.900 | .9016 |       | 28.600 | .9291  | 1     |
| 2.800 | .1102 |       | 7.900  | .3110 |       | 13.000 | .5118 |       | 18.000 | .7087 |       | 23.000 | .9055 |       | 28.700 | .9331  | 1     |
| 2.900 | .1142 |       | 7.938  | .3125 | 5/16  | 13.097 | .5156 | 33/64 | 18.100 | .7126 |       | 23.019 | .9063 | 29/32 | 28.800 | .9370  | 1     |
| 3.000 | .1181 |       | 8.000  | .3150 |       | 13.100 | .5157 |       | 18.200 | .7165 |       | 23.100 | .9094 |       | 28.900 | .9409  | 1     |
| 3.100 | .1220 |       | 8.100  | .3189 |       | 13.200 | .5197 |       | 18.256 | .7188 | 23/32 | 23.200 | .9134 |       | 29.000 | .9449  | 1     |
| 3.175 | .1250 | 1/8   | 8.200  | .3228 |       | 13.300 | .5236 |       | 18.300 | .7205 |       | 23.300 | .9173 |       | 29.100 | .9488  | 1     |
| 3.200 | .1260 |       | 8.300  | .3268 |       | 13.400 | .5276 |       | 18.400 | .7244 |       | 23.400 | .9213 |       | 29.200 | .9528  | 1     |
| 3.300 | .1299 |       | 8.334  | .3281 | 21/64 | 13.494 | .5313 | 17/32 | 18.500 | .7283 |       | 23.416 | .9219 | 59/64 | 29.300 | .9567  | 1     |
| 3.400 | .1339 |       | 8.400  | .3307 |       | 13.500 | .5315 |       | 18.600 | .7323 |       | 23.500 | .9252 |       | 29.400 | .9606  | 1     |
| 3.500 | .1378 |       | 8.500  | .3346 |       | 13.600 | .5354 |       | 18.653 | .7344 | 47/64 | 23.600 | .9291 |       | 29.500 | .9646  | 1     |
| 3.572 | .1406 | 9/64  | 8.600  | .3386 |       | 13.700 | .5394 |       | 18.700 | .7362 |       | 23.700 | .9331 |       | 29.600 | .9685  | 1     |
| 3.600 | .1417 |       | 8.700  | .3425 |       | 13.800 | .5433 |       | 18.800 | .7402 |       | 23.800 | .9370 |       | 29.700 | .9724  | 1     |
| 3.700 | .1457 |       | 8.731  | .3438 | 11/32 | 13.891 | .5469 | 35/64 | 18.900 | .7441 |       | 23.900 | .9409 |       | 29.800 | .9764  | 1     |
| 3.800 | .1496 |       | 8.800  | .3465 |       | 13.900 | .5472 |       | 19.000 | .7480 |       | 24.000 | .9449 |       | 29.900 | .9803  | 1     |
| 3.900 | .1535 |       | 8.900  | .3504 |       | 14.000 | .5512 |       | 19.050 | .7500 | 3/4   | 24.100 | .9488 |       | 30.000 | .9843  | 1     |
| 3.969 | .1563 | 5/32  | 9.000  | .3543 |       | 14.100 | .5551 |       | 19.100 | .7520 |       | 24.200 | .9528 |       | 30.100 | .9882  | 1     |
| 4.000 | .1575 |       | 9.100  | .3583 |       | 14.200 | .5591 |       | 19.200 | .7559 |       | 24.209 | .9531 | 61/64 | 30.200 | .9921  | 1     |
| 4.100 | .1624 |       | 9.128  | .3594 | 23/64 | 14.288 | .5625 | 9/16  | 19.300 | .7598 |       | 24.300 | .9567 |       | 30.300 | .9961  | 1     |
| 4.200 | .1654 |       | 9.200  | .3622 |       | 14.300 | .5630 |       | 19.400 | .7638 |       | 24.400 | .9606 |       | 30.400 | 1.0000 | 1     |
| 4.300 | .1693 |       | 9.300  | .3661 |       | 14.400 | .5669 |       | 19.447 | .7656 | 49/64 | 24.500 | .9646 |       |        |        |       |
| 4.366 | .1719 | 11/64 | 9.400  | .3701 |       | 14.500 | .5709 |       | 19.500 | .7677 |       | 24.600 | .9685 |       |        |        |       |
| 4.400 | .732  |       | 9.500  | .3740 |       | 14.600 | .5748 |       | 19.600 | .7717 |       | 24.606 | .9688 | 31/32 |        |        |       |
| 4.500 | .1772 |       | 9.525  | .3750 | 3/8   | 14.684 | .5781 | 37/64 | 19.700 | .7756 |       | 24.700 | .9724 |       |        |        |       |
| 4.600 | .1811 |       | 9.600  | .3780 |       | 14.700 | .5787 |       | 19.800 | .7795 |       | 24.800 | .9764 |       |        |        |       |
| 4.700 | .1850 |       | 9.700  | .3819 |       | 14.800 | .5827 |       | 19.844 | .7813 | 25/32 | 24.900 | .9803 |       |        |        |       |
| 4.763 | .1875 | 3/16  | 9.800  | .3858 |       | 14.900 | .5866 |       | 19.900 | .7835 |       | 25.000 | .9843 |       |        |        |       |
| 4.800 | .1890 |       | 9.900  | .3898 |       | 15.000 | .5906 |       | 20.000 | .7874 |       | 25.003 | .9844 | 63/64 |        |        |       |
| 4.900 | .1929 |       | 9.922  | .3902 | 25/64 | 15.081 | .5938 | 19/32 | 20.100 | .7913 |       | 25.100 | .9882 |       |        |        |       |
| 5.000 | .1969 |       | 10.000 | .3937 |       | 15.100 | .5945 |       | 20.200 | .7953 |       | 25.200 | .9921 |       |        |        |       |
| 5.100 | .2008 |       | 10.100 | .3976 |       | 15.200 | .5984 |       | 20.241 | .7969 | 51/64 | 25.300 | .9961 |       |        |        |       |

# Conversion Tables

## Torque – Air Pressure – Miscellaneous

| Torque Conversion – In. Lbs. (Nm) |     |     |      |     |      |
|-----------------------------------|-----|-----|------|-----|------|
| In.                               | Nm  | In. | Nm   | In. | Nm   |
| 5                                 | 0.6 | 50  | 5.7  | 140 | 15.8 |
| 10                                | 1.1 | 60  | 6.8  | 150 | 17.0 |
| 15                                | 1.7 | 70  | 7.9  | 160 | 18.1 |
| 20                                | 2.3 | 80  | 9.0  | 170 | 19.2 |
| 25                                | 2.8 | 90  | 10.2 | 180 | 20.3 |
| 30                                | 3.4 | 100 | 11.3 | 190 | 21.5 |
| 35                                | 4.0 | 110 | 12.4 | 200 | 22.6 |
| 40                                | 4.5 | 120 | 13.6 |     |      |
| 45                                | 5.1 | 130 | 14.7 |     |      |

| Torque Conversion – Ft. Lbs. (Nm) |      |          |       |          |       |
|-----------------------------------|------|----------|-------|----------|-------|
| Ft. Lbs.                          | Nm   | Ft. Lbs. | Nm    | Ft. Lbs. | Nm    |
| 1                                 | 1.36 | 43       | 58.3  | 85       | 115.3 |
| 2                                 | 2.7  | 44       | 60.0  | 86       | 117.0 |
| 3                                 | 4.1  | 45       | 61.0  | 87       | 118.0 |
| 4                                 | 5.4  | 46       | 62.4  | 88       | 119.3 |
| 5                                 | 6.8  | 47       | 63.7  | 89       | 121.0 |
| 6                                 | 8.1  | 48       | 65.1  | 90       | 122.0 |
| 7                                 | 9.5  | 49       | 66.4  | 91       | 123.4 |
| 8                                 | 10.9 | 50       | 67.8  | 92       | 125.0 |
| 9                                 | 12.2 | 51       | 69.2  | 93       | 126.1 |
| 10                                | 13.6 | 52       | 70.5  | 94       | 127.5 |
| 11                                | 14.9 | 53       | 71.9  | 95       | 129.0 |
| 12                                | 16.3 | 54       | 73.2  | 96       | 130.2 |
| 13                                | 17.6 | 55       | 74.6  | 97       | 131.5 |
| 14                                | 19.0 | 56       | 75.9  | 98       | 133.0 |
| 15                                | 20.3 | 57       | 77.3  | 99       | 134.2 |
| 16                                | 21.7 | 58       | 78.7  | 100      | 135.6 |
| 17                                | 23.1 | 59       | 80.0  | 110      | 149.2 |
| 18                                | 24.4 | 60       | 81.4  | 115      | 156.0 |
| 19                                | 25.8 | 61       | 82.7  | 120      | 163.0 |
| 20                                | 27.1 | 62       | 84.1  | 125      | 170.0 |
| 21                                | 28.5 | 63       | 85.4  | 130      | 176.3 |
| 22                                | 29.8 | 64       | 86.8  | 135      | 183.1 |
| 23                                | 31.2 | 65       | 88.1  | 140      | 190.0 |
| 24                                | 32.5 | 66       | 90.0  | 145      | 197.0 |
| 25                                | 33.9 | 67       | 90.9  | 150      | 203.4 |
| 26                                | 35.3 | 68       | 92.2  | 155      | 210.2 |
| 27                                | 36.6 | 69       | 93.6  | 160      | 217.0 |
| 28                                | 38.0 | 70       | 94.9  | 165      | 224.0 |
| 29                                | 39.3 | 71       | 96.3  | 170      | 231.0 |
| 30                                | 40.7 | 72       | 97.6  | 175      | 237.3 |
| 31                                | 42.0 | 73       | 99.0  | 180      | 244.1 |
| 32                                | 43.4 | 74       | 100.3 | 185      | 251.0 |

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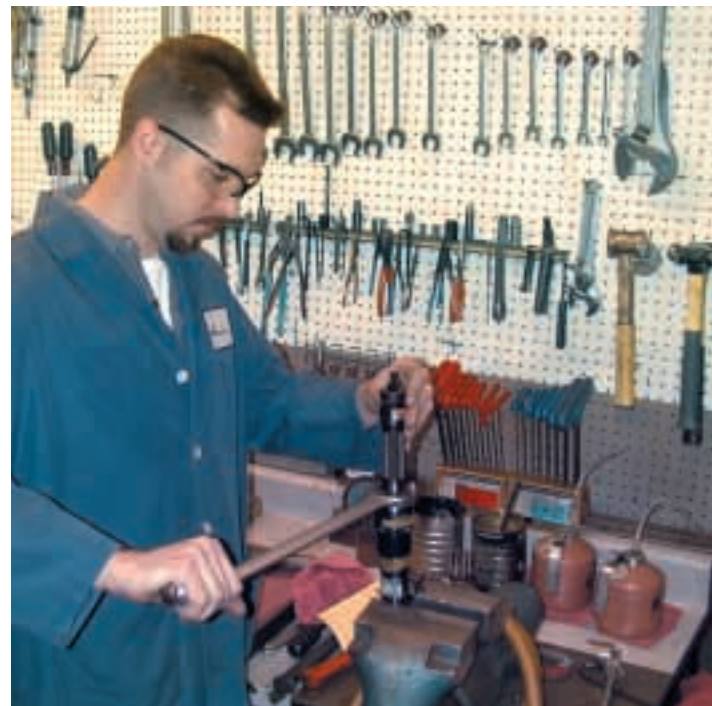
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Fax: 011 33 1 64 40 17 17

**Germany**

Cooper Power Tools  
GmbH & Co.  
Postfach 30  
D-73461 Westhausen  
Tel: +49 (0) 73 63-8 10  
Fax: +49 (0) 73 63-8 12 22

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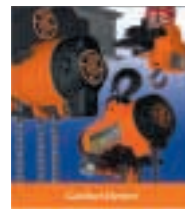
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USA  
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Fax: 803-808-6735  
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Cooper Power Tools GmbH & Co.  
Postfach 30  
D-73461 Westhausen  
Germany  
Phone: (49)7363-810  
Fax: (49)7363-81222