

# Cleco®

Pneumatic Assembly Tools





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## 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.

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, 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 .5 to 8 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 ergonomically designed Cleco 19 series screwdrivers, with a torque range of 0.6 to 130 in.-lbs., are the ultimate tools for an infinite range of applications including electronics, automotive, aerospace, appliance and general assembly.

With a torque range of 15 to 180 in.-lbs (1.7 to

#### 60 MONTH WARRANTY

##### Cleco® 19 & 8 Series Clecomatic® Screwdrivers

Apex Tool Group warrants the 19 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.

Apex Tool Group's 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 Apex Tool Group shall have been used; or which shall have been altered or repaired by other than Apex Tool Group personnel in a manner which in the determination of Apex Tool Group 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.

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 aerospace.

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.





Choose the right tool to match your application.



New Clecomatic® Clutch

Clecomatic® Clutch

When tightening a fastener, torque is transmitted through the Clecomatic clutch to the fastener until the clutch can no longer transmit the increasing torque. The clutch then “slips”, which allows an internal mechanism to seal off air to the air motor, shutting off the tool at the user-adjusted preset torque level. This type of torque control allows maximum RPM from the tool for increased productivity. Since the tool doesn’t dwell on the fastener as with a stall tool, tool wear and fatigue to the operator is reduced. The life of a Clecomatic tool is up to five times longer than that of a lever-operated, ratcheting clutch screwdriver.



Stall Type

Stall Type

The stall tool doesn’t use a clutch but rather the output spindle is coupled to the last stage of gearing. Torque output from a stall tool may be controlled within fairly reasonable limits with an air pressure regulator. Stall type tools are also trigger activated.

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

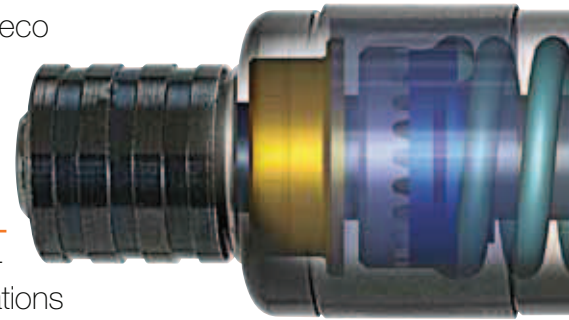
# Accuracy. Durability.

## Built by your expertise and our experience

Your productivity is our greatest influence. The development of the Cleco 19 Series is driven by experts—you, the very people that have depended on Cleco assembly products for over a century.

## Whatever your application, consider it done

We set out to design the most accurate, longest-lasting, most user-friendly screwdriver family on the market. Our widespread configurations and applications ensure that you will find the ideal screwdriver or nutrunner.



## Designed for the most demanding jobs

Continuously improving end-product quality is evermore critical. The Cleco 19 Series is engineered for the most demanding fastening applications where accuracy, repeatability, and durability are held to the strictest standard. Imagine what the Cleco 19 Series can do for you.

## Adding value to your business

With a new powertrain design, the Cleco 19 Series tools have reached a new milestone in performance and accuracy. This, combined with legendary Cleco reliability, means you will have the sustained power to get it right the first time, every time.

## Designed with the operator in mind

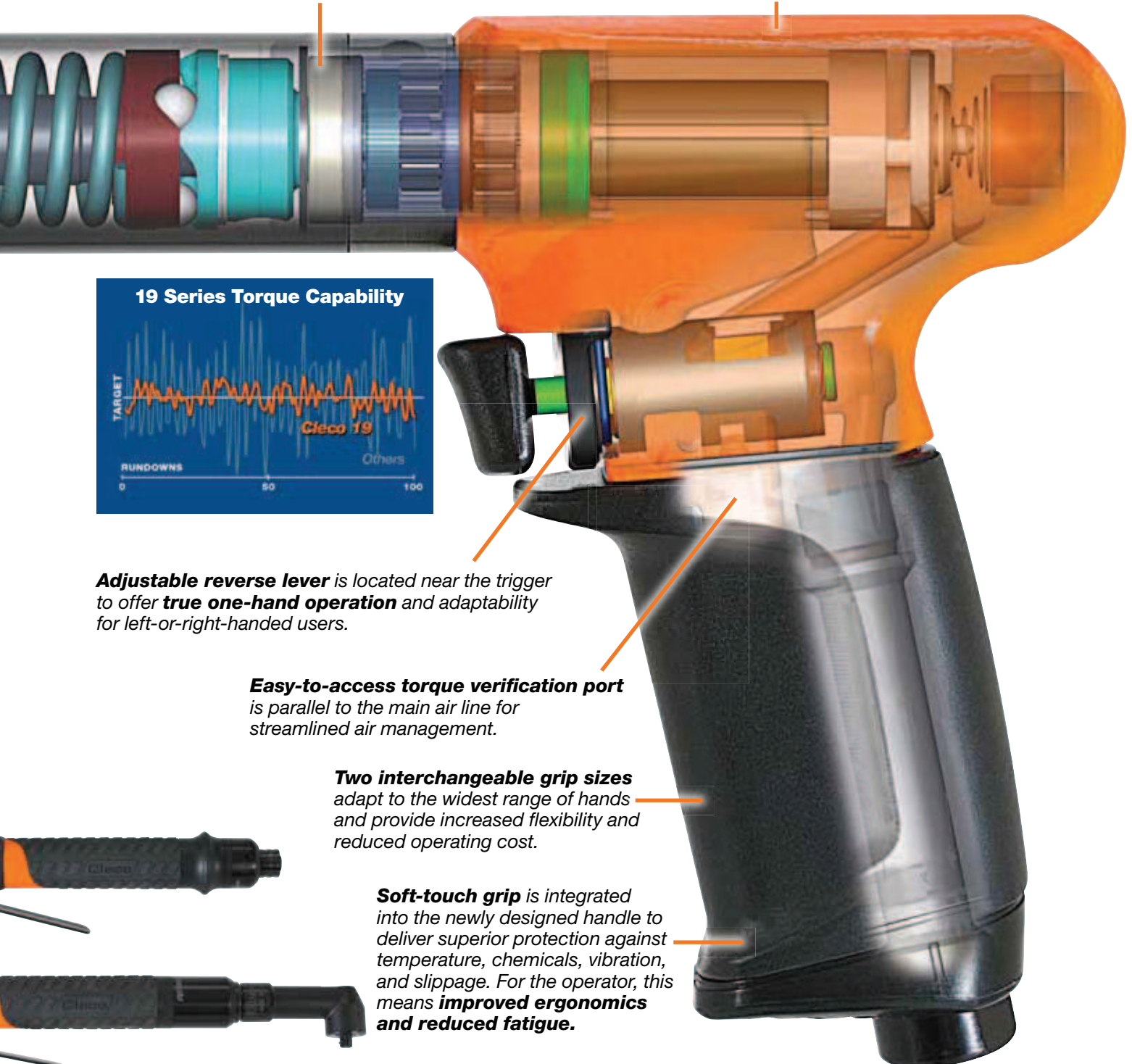
A soft-touch grip is integrated into the new handle design to provide superior protection from temperature, chemicals, vibration, and slip. What's more, Cleco 19 Series pistol tools offer two interchangeable handle sizes to bring comfort to a wider array of operators. These features, plus reduced weight and a balanced design, will raise productivity, tool flexibility, and reduce maintenance costs.



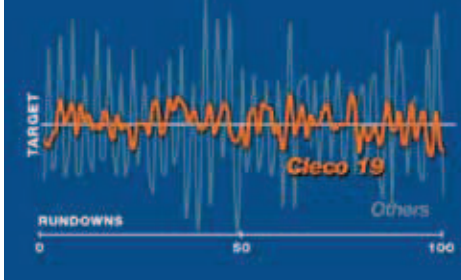
# ility. Productivity.

Completely re-engineered **Clecomatic®** clutch delivers **best-in-class accuracy**, exceeding a Cm of 2.0 with a tolerance of  $\pm 10\%$ .

New design and advanced materials yield up to **19% weight reduction** based on configuration, at no loss of balance or durability.



## 19 Series Torque Capability



**Adjustable reverse lever** is located near the trigger to offer **true one-hand operation** and adaptability for left-or-right-handed users.

**Easy-to-access torque verification port** is parallel to the main air line for streamlined air management.

**Two interchangeable grip sizes** adapt to the widest range of hands and provide increased flexibility and reduced operating cost.

**Soft-touch grip** is integrated into the newly designed handle to deliver superior protection against temperature, chemicals, vibration, and slippage. For the operator, this means **improved ergonomics and reduced fatigue**.

# Inline Screwdrivers

2, 19, 8, 88, 35 Series Clecomatic Clutch

## Cleco®

### 2 Series

**Torque Range:** .06 - .9 Nm 0.5 - 8 In. Lbs.

- Push-to-start
- Push button reverse
- External torque adjustment
- 1/4" quick change chuck

### 19 Series

**Torque Range:** 0.6 - 14.7 Nm 5 - 130 In. Lbs.

- Push-to-start and Push & Lever start
- External torque adjustment
- Bit & Finder & 1/4" quick change chuck

### 8 Series

**Torque Range:** 1.7 - 8.5 Nm 15.0 - 75 In. Lbs.

- Push button reverse and non-reversible
- Push-to-start and Push & Lever start
- Bit & Finder and Quick change

### 88 Series

**Torque Range:** 1.7 - 19 Nm 15 - 170 In. Lbs.

- Push button reverse and non-reversible
- Push-to-start and Push & Lever start
- Quick change & 3/8" square drive

### 35 Series

**Torque Range:** 1.7 - 20 Nm 15 - 180 In. Lbs.

- Quick change and square drive
- Short stroke button reverse
- External torque adjustment (Quick change models)



| Model Number                        |                   | Torque Range |           |                  |           | Free Speed | Length* |     | Weight |      | Air Consumption |                |      |
|-------------------------------------|-------------------|--------------|-----------|------------------|-----------|------------|---------|-----|--------|------|-----------------|----------------|------|
|                                     |                   | Tool Range   |           | With Std. Spring |           |            |         |     |        |      | Air Inlet NPT   | Min. Hose I.D. | SCFM |
| Bit & Finder*                       | 1/4" Quick Change | in.-lbs.     | Nm        | in.-lbs.         | Nm        | RPM        | in.     | mm  | lbs.   | kg   |                 |                |      |
| Push-to-Start - Push Button Reverse |                   |              |           |                  |           |            |         |     |        |      |                 |                |      |
| 2RSA-10B                            |                   |              |           | 0.5 - 8          | .06 - 0.9 | 1000       | 7.6     | 194 | 0.5    | 0.20 | 1/8"            | 3/16"          | 6    |
| 2RSA-10SB**                         |                   |              |           | 0.5 - 8          | .06 - 0.9 | 1000       | 6.4     | 162 | 0.5    | 0.20 | 1/8"            | 3/16"          | 6    |
| 19BPA02Q                            |                   | 5 - 19       | 0.6 - 2.1 | 5 - 19           | 0.6 - 2.1 | 2300       | 9.1     | 230 | 1.4    | 0.63 | 1/8"            | 3/16"          | 11   |
| 19BPA03Q                            |                   | 5 - 26       | 0.6 - 2.9 | 5 - 19           | 0.6 - 2.1 | 1600       | 9.3     | 235 | 1.4    | 0.64 | 1/8"            | 3/16"          | 11   |
| 19BPA04Q                            |                   | 10 - 40      | 1.1 - 4.5 | 10 - 38          | 1.1 - 4.3 | 920        | 9.1     | 230 | 1.3    | 0.61 | 1/8"            | 3/16"          | 11   |
| 19BPA05Q                            |                   | 10 - 45      | 1.1 - 5.1 | 10 - 38          | 1.1 - 4.3 | 560        | 9.5     | 240 | 1.5    | 0.67 | 1/8"            | 3/16"          | 11   |
| 19BPA06Q                            |                   | 10 - 45      | 1.1 - 5.1 | 10 - 38          | 1.1 - 4.3 | 220        | 9.5     | 240 | 1.5    | 0.68 | 1/8"            | 3/16"          | 11   |

#### Push-to-Start - Collar Reverse

|          |          |         |           |         |           |      |     |     |     |      |      |       |    |
|----------|----------|---------|-----------|---------|-----------|------|-----|-----|-----|------|------|-------|----|
| 19SPA02B | 19SPA02Q | 5 - 19  | 0.6 - 2.1 | 5 - 19  | 0.6 - 2.1 | 2800 | 9.1 | 230 | 1.4 | 0.63 | 1/8" | 3/16" | 11 |
| 19SPA03B | 19SPA03Q | 5 - 26  | 0.6 - 2.9 | 5 - 19  | 0.6 - 2.1 | 1900 | 9.3 | 235 | 1.4 | 0.64 | 1/8" | 3/16" | 11 |
| 19SPA04B | 19SPA04Q | 10 - 40 | 1.1 - 4.5 | 10 - 38 | 1.1 - 4.3 | 1100 | 9.1 | 230 | 1.3 | 0.61 | 1/8" | 3/16" | 11 |
| 19SPA05B | 19SPA05Q | 10 - 45 | 1.1 - 5.1 | 10 - 38 | 1.1 - 4.3 | 660  | 9.5 | 240 | 1.5 | 0.67 | 1/8" | 3/16" | 11 |
| 19SPA06B | 19SPA06Q | 10 - 45 | 1.1 - 5.1 | 10 - 38 | 1.1 - 4.3 | 260  | 9.5 | 240 | 1.5 | 0.68 | 1/8" | 3/16" | 11 |

#### Lever Push-to-Start - Collar Reverse

|          |          |         |           |         |           |      |      |     |     |      |      |       |    |
|----------|----------|---------|-----------|---------|-----------|------|------|-----|-----|------|------|-------|----|
| 19SCA02B | 19SCA02Q | 5 - 19  | 0.6 - 2.1 | 5 - 19  | 0.6 - 2.1 | 2800 | 9.8  | 249 | 1.5 | 0.69 | 1/8" | 3/16" | 11 |
| 19SCA03B | 19SCA03Q | 5 - 26  | 0.6 - 2.9 | 5 - 19  | 0.6 - 2.1 | 1900 | 10.0 | 254 | 1.5 | 0.70 | 1/8" | 3/16" | 11 |
| 19SCA04B | 19SCA04Q | 10 - 40 | 1.1 - 4.5 | 10 - 38 | 1.1 - 4.3 | 1100 | 9.8  | 249 | 1.5 | 0.66 | 1/8" | 3/16" | 11 |
| 19SCA05B | 19SCA05Q | 10 - 45 | 1.1 - 5.1 | 10 - 38 | 1.1 - 4.3 | 660  | 10.2 | 259 | 1.6 | 0.73 | 1/8" | 3/16" | 11 |
| 19SCA06B | 19SCA06Q | 10 - 45 | 1.1 - 5.1 | 10 - 38 | 1.1 - 4.3 | 260  | 10.2 | 259 | 1.6 | 0.74 | 1/8" | 3/16" | 11 |

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

\*\* Short housing

#### General:

90 psi (620kPa) required for maximum rated torque.

#### Standard Equipment:

Operating instructions & service manual.  
Suspension bail.

All torque springs required to meet indicated torque.

Lever Push-to-Start models include kit to convert to lever only. (301409)

#### Optional Equipment:

Additional accessories: Pages 12-13  
Bits & finders: Page 12

Non-Reverse Kit: 207030

Torque Signal Kit: 301106 (lever only)  
Overhose: 207019

| Model Number |                       |                   | Torque Range |    | Free Speed | Length* |    | Weight |    | Air Consumption |                |      |
|--------------|-----------------------|-------------------|--------------|----|------------|---------|----|--------|----|-----------------|----------------|------|
| Bit & Finder | 1/4" Hex Quick Change | 3/8" Square Drive | in.-lbs.     | Nm |            | in.     | mm | lbs.   | kg | Air Inlet NPT   | Min. Hose I.D. | SCFM |
|              |                       |                   |              |    | RPM        |         |    |        |    |                 |                |      |

**Push-to-Start - Push Button Reverse**

|         |           |            |          |           |     |     |     |     |     |      |      |    |
|---------|-----------|------------|----------|-----------|-----|-----|-----|-----|-----|------|------|----|
| 8RSA-10 | 8RSA-10BQ |            | 15 - 65  | 1.7 - 7.3 | 800 | 9.6 | 260 | 2.4 | 1.1 | 1/4" | 1/4" | 19 |
|         | 8RSA-7BQ  |            | 15 - 75  | 1.7 - 8.5 | 550 | 9.6 | 260 | 2.4 | 1.1 | 1/4" | 1/4" | 19 |
|         | 8RSA-5BQ  |            | 15 - 75  | 1.7 - 8.5 | 400 | 9.6 | 260 | 2.4 | 1.1 | 1/4" | 1/4" | 19 |
|         | 88RSA-7CQ | 88RSA-7C-3 | 15 - 95  | 1.7 - 10  | 550 | 9.5 | 241 | 2.6 | 1.2 | 1/4" | 1/4" | 19 |
|         | 88RSA-5CQ | 88RSA-5C-3 | 15 - 160 | 1.7 - 18  | 400 | 9.5 | 241 | 2.6 | 1.2 | 1/4" | 1/4" | 19 |

#### Push-to-Start - Non-Reversible

|  |          |           |          |          |     |     |     |     |     |      |      |    |
|--|----------|-----------|----------|----------|-----|-----|-----|-----|-----|------|------|----|
|  | 88SA-7CQ |           | 15 - 100 | 1.7 - 11 | 650 | 9.1 | 232 | 2.5 | 1.1 | 1/4" | 1/4" | 19 |
|  | 88SA-5CQ | 88SA-5C-3 | 15 - 170 | 1.7 - 19 | 500 | 9.1 | 232 | 2.5 | 1.1 | 1/4" | 1/4" | 19 |

#### Push and Lever Start - Push Button Reverse

|  |            |             |          |           |     |      |     |     |     |      |      |    |
|--|------------|-------------|----------|-----------|-----|------|-----|-----|-----|------|------|----|
|  | 8RSAL-10BQ |             | 15 - 60  | 1.7 - 6.8 | 800 | 11.3 | 302 | 2.9 | 1.3 | 1/4" | 1/4" | 19 |
|  | 88RSAL-5CQ | 88RSAL-5C-3 | 15 - 160 | 1.7 - 18  | 400 | 11.1 | 282 | 3.1 | 1.4 | 1/4" | 1/4" | 19 |

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

|  |           |            |          |          |      |      |     |     |     |      |       |    |
|--|-----------|------------|----------|----------|------|------|-----|-----|-----|------|-------|----|
|  | 35RSA-20Q |            | 15 - 60  | 1.7 - 7  | 1250 | 9.6  | 244 | 2.5 | 1.1 | 1/4" | 5/16" | 24 |
|  | 35RSA-10Q | 35RSA-10-3 | 15 - 110 | 1.7 - 12 | 620  | 10.4 | 264 | 2.8 | 1.2 | 1/4" | 5/16" | 24 |
|  | 35RSA-7Q  |            | 15 - 160 | 1.7 - 18 | 410  | 10.4 | 264 | 2.8 | 1.2 | 1/4" | 5/16" | 24 |
|  | 35RSA-5Q  | 35RSA-5-3  | 15 - 180 | 1.7 - 20 | 300  | 10.4 | 264 | 2.8 | 1.2 | 1/4" | 5/16" | 24 |

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

#### General:

90 psi (620kPa) required for maximum rated torque.

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 models above 100 in.lbs. torque cap.

All torque springs required to meet indicated torque

#### Standard Equipment if Specified:

One bit, finder, and finder spring (bit & finder models)

Grip Sleeve (202346; Push-to-Start models only)

Dead handle (861006)

#### Optional Equipment:

Additional accessories: Pages 12-13

Bits & finders: Page 12

Torque Springs: Page 13

# Pistol Grip Screwdrivers

19 Series Clecomatic Clutch

## Cleco®

### 19 Series

**Torque Range: 0.6-14.7 Nm 5.0-130 In. Lbs.**

- Class-leading accuracy and repeatability
- Adjustable reverse lever for true one-hand – left-handed or right-handed – operation
- External torque adjustment
- 1/4" hex quick change drive
- "P" and "T" style handles
- 2 interchangeable soft-touch grip sizes
- Streamlined torque signal ports
- Trigger and Push & Trigger start

*The renowned Clecomatic® clutch is re-engineered to provide class-leading accuracy/repeatability and improve the already legendary durability.*



**NEW!**

*The "T" handle is best for applications that are pre-threaded and the grip on the tool is required to simply guide the tool as the fastener is being tightened.*

19TTA02Q  
"T" Handle

**NEW!**



19PTA05Q  
"P" Handle



*The "P" handle is best suited for thread cutting fasteners where force must be exerted against the ergonomically shaped "P" handle during the process.*

| Model Number      | Torque Range |    |                  |    | Free Speed | Length |    | Weight |    | Air Consumption |                |      |
|-------------------|--------------|----|------------------|----|------------|--------|----|--------|----|-----------------|----------------|------|
|                   | Tool Range   |    | With Std. Spring |    |            |        |    |        |    | Air Inlet NPT   | Min. Hose I.D. | SCFM |
| 1/4" Quick Change | in.-lbs.     | Nm | in.-lbs.         | Nm | RPM        | in.    | mm | lbs.   | kg |                 |                |      |

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

|          |         |           |         |           |      |     |     |      |     |      |      |    |
|----------|---------|-----------|---------|-----------|------|-----|-----|------|-----|------|------|----|
| 19TCA02Q | 5 - 19  | 0.6 - 2.1 | 5 - 19  | 0.6 - 2.1 | 2800 | 8.0 | 202 | 1.44 | 0.7 | 1/4" | 3/8" | 11 |
| 19TCA03Q | 5 - 26  | 0.6 - 2.9 | 5 - 19  | 0.6 - 2.1 | 1900 | 8.2 | 207 | 1.54 | 0.7 | 1/4" | 3/8" | 11 |
| 19TCA04Q | 10 - 40 | 1.1 - 4.5 | 10 - 38 | 1.1 - 4.3 | 1100 | 8.0 | 202 | 1.54 | 0.7 | 1/4" | 3/8" | 11 |
| 19TCA05Q | 10 - 45 | 1.1 - 5.1 | 10 - 38 | 1.1 - 4.3 | 660  | 8.4 | 212 | 1.54 | 0.7 | 1/4" | 3/8" | 11 |
| 19TCA06Q | 10 - 45 | 1.1 - 5.1 | 10 - 38 | 1.1 - 4.3 | 260  | 8.4 | 212 | 1.54 | 0.7 | 1/4" | 3/8" | 11 |
| 19TCA07Q | 15 - 60 | 1.7 - 6.8 | 24 - 60 | 2.7 - 6.8 | 660  | 8.4 | 212 | 1.54 | 0.7 | 1/4" | 3/8" | 11 |
| 19TCA09Q | 15 - 79 | 1.7 - 8.9 | 24 - 60 | 2.7 - 8.9 | 470  | 9.3 | 235 | 1.73 | 0.8 | 1/4" | 3/8" | 11 |

**Trigger Start - T Handle - Clecomatic Clutch**

|          |          |            |          |            |      |     |     |      |     |      |      |    |
|----------|----------|------------|----------|------------|------|-----|-----|------|-----|------|------|----|
| 19TTA02Q | 5 - 19   | 0.6 - 2.1  | 5 - 19   | 0.6 - 2.1  | 2800 | 7.9 | 199 | 1.44 | 0.7 | 1/4" | 3/8" | 11 |
| 19TTA03Q | 5 - 26   | 0.6 - 2.9  | 5 - 19   | 0.6 - 2.1  | 1900 | 8.1 | 204 | 1.54 | 0.7 | 1/4" | 3/8" | 11 |
| 19TTA04Q | 10 - 40  | 1.1 - 4.5  | 10 - 38  | 1.1 - 4.3  | 1100 | 7.9 | 199 | 1.54 | 0.7 | 1/4" | 3/8" | 11 |
| 19TTA05Q | 10 - 45  | 1.1 - 5.1  | 10 - 38  | 1.1 - 4.3  | 660  | 8.3 | 210 | 1.54 | 0.7 | 1/4" | 3/8" | 11 |
| 19TTA06Q | 10 - 45  | 1.1 - 5.1  | 10 - 38  | 1.1 - 4.3  | 260  | 8.3 | 210 | 1.54 | 0.7 | 1/4" | 3/8" | 11 |
| 19TTA07Q | 15 - 60  | 1.7 - 6.8  | 24 - 60  | 2.7 - 6.8  | 660  | 8.3 | 210 | 1.54 | 0.7 | 1/4" | 3/8" | 11 |
| 19TTA09Q | 15 - 79  | 1.7 - 8.9  | 24 - 79  | 2.7 - 8.9  | 470  | 9.3 | 235 | 1.73 | 0.8 | 1/4" | 3/8" | 11 |
| 19TTA15Q | 45 - 130 | 5.1 - 14.7 | 45 - 130 | 5.1 - 14.7 | 260  | 9.6 | 243 | 1.94 | 0.9 | 1/4" | 3/8" | 11 |

**General:**

Tool performance rated at 90 psi (620kPa) air pressure.

**Standard Equipment:**

Operating instructions & service manual  
Suspension bail

Dead handle on models above 100 in.-lbs. torque cap.

All torque springs required to meet indicated torque specification

**Optional Equipment:**

Additional accessories: Pages 12-13

Torque Springs: Page 13

Torque Signal Kit: 302021PT

(Trigger w/Clecomatic clutch only)

Overhose: 207107

Push-only Conversion Kit: 301121

| Model Number      | Torque Range |    |                  |    | Free Speed | Length |    | Weight |    | Air Consumption |                |      |
|-------------------|--------------|----|------------------|----|------------|--------|----|--------|----|-----------------|----------------|------|
|                   | Tool Range   |    | With Std. Spring |    |            |        |    |        |    | Air Inlet NPT   | Min. Hose I.D. | SCFM |
| 1/4" Quick Change | in.-lbs.     | Nm | in.-lbs.         | Nm | RPM        | in.    | mm | lbs.   | kg |                 |                |      |

**Push and Trigger Start - P Handle - Clecomatic Clutch**

|          |         |           |         |           |      |     |     |      |     |      |      |    |
|----------|---------|-----------|---------|-----------|------|-----|-----|------|-----|------|------|----|
| 19PCA02Q | 5 - 19  | 0.6 - 2.1 | 5 - 19  | 0.6 - 2.1 | 2800 | 8.1 | 206 | 1.41 | 0.6 | 1/4" | 3/8" | 11 |
| 19PCA03Q | 5 - 26  | 0.6 - 2.9 | 5 - 19  | 0.6 - 2.1 | 1900 | 8.3 | 211 | 1.51 | 0.7 | 1/4" | 3/8" | 11 |
| 19PCA04Q | 10 - 40 | 1.1 - 4.5 | 10 - 38 | 1.1 - 4.3 | 1100 | 8.1 | 206 | 1.41 | 0.6 | 1/4" | 3/8" | 11 |
| 19PCA05Q | 10 - 45 | 1.1 - 5.1 | 10 - 38 | 1.1 - 4.3 | 660  | 8.5 | 216 | 1.51 | 0.7 | 1/4" | 3/8" | 11 |
| 19PCA06Q | 10 - 45 | 1.1 - 5.1 | 10 - 38 | 1.1 - 4.3 | 260  | 8.5 | 216 | 1.51 | 0.7 | 1/4" | 3/8" | 11 |
| 19PCA07Q | 15 - 60 | 1.7 - 6.8 | 24 - 60 | 2.7 - 6.8 | 660  | 8.5 | 216 | 1.51 | 0.7 | 1/4" | 3/8" | 11 |
| 19PCA09Q | 15 - 79 | 1.7 - 8.9 | 24 - 60 | 2.7 - 8.9 | 470  | 9.8 | 248 | 1.65 | 0.7 | 1/4" | 3/8" | 11 |

**Trigger Start - P Handle - Clecomatic Clutch**

|          |          |            |          |            |      |     |     |      |     |      |      |    |
|----------|----------|------------|----------|------------|------|-----|-----|------|-----|------|------|----|
| 19PTA02Q | 5 - 19   | 0.6 - 2.1  | 5 - 19   | 0.6 - 2.1  | 2800 | 8.0 | 204 | 1.41 | 0.6 | 1/4" | 3/8" | 11 |
| 19PTA03Q | 5 - 26   | 0.6 - 2.9  | 5 - 19   | 0.6 - 2.1  | 1900 | 8.2 | 209 | 1.51 | 0.7 | 1/4" | 3/8" | 11 |
| 19PTA04Q | 10 - 40  | 1.1 - 4.5  | 10 - 38  | 1.1 - 4.3  | 1100 | 8.0 | 204 | 1.41 | 0.6 | 1/4" | 3/8" | 11 |
| 19PTA05Q | 10 - 45  | 1.1 - 5.1  | 10 - 38  | 1.1 - 4.3  | 660  | 8.4 | 214 | 1.51 | 0.7 | 1/4" | 3/8" | 11 |
| 19PTA06Q | 10 - 45  | 1.1 - 5.1  | 10 - 38  | 1.1 - 4.3  | 260  | 8.4 | 214 | 1.51 | 0.7 | 1/4" | 3/8" | 11 |
| 19PTA07Q | 15 - 60  | 1.7 - 6.8  | 24 - 60  | 2.7 - 6.8  | 660  | 8.4 | 214 | 1.51 | 0.7 | 1/4" | 3/8" | 11 |
| 19PTA09Q | 15 - 79  | 1.7 - 8.9  | 24 - 79  | 2.7 - 8.9  | 470  | 9.8 | 248 | 1.65 | 0.7 | 1/4" | 3/8" | 11 |
| 19PTA15Q | 45 - 130 | 5.1 - 14.7 | 45 - 130 | 5.1 - 14.7 | 260  | 9.7 | 247 | 1.91 | 0.9 | 1/4" | 3/8" | 11 |

**General:**

Tool performance rated at 90 psi (620kPa) air pressure.

**Standard Equipment:**

Operating instructions & service manual  
Suspension bail

Dead handle on models above 100 in.-lbs. torque cap.

All torque springs required to meet indicated torque specification

**Optional Equipment:**

Additional accessories: Pages 12-13

Torque Springs: Page 13

Torque Signal Kit: 302021PT

(Trigger w/Clecomatic clutch only)

# Pistol Grip Screwdrivers

88 & 35 Series Clecomatic Clutch

## Cleco®

### 88 Series

**Torque Range: 1.7 – 20 Nm 15 – 180 In. Lbs.**

- Quick change and square drive
- Reversible
- Trigger and Push & Trigger start

### 35 Series

**Torque Range: 1.7 – 20 Nm 15 – 180 In. Lbs.**

- Pistol grip
- Quick change and square drive
- Reversible
- Trigger, Push-to-Start and Push & Trigger start



| Model Number                                         |                   | Torque Range |          | Free Speed | Length |     | Weight |     | Air Consumption |                |      |
|------------------------------------------------------|-------------------|--------------|----------|------------|--------|-----|--------|-----|-----------------|----------------|------|
| 1/4" Hex Quick Change                                | 3/8" Square Drive |              |          |            |        |     |        |     | Air Inlet NPT   | Min. Hose I.D. | SCFM |
|                                                      |                   | in.-lbs.     | Nm       | RPM        | in.    | mm  | lbs.   | kg  |                 |                |      |
| <b>Push and Trigger Start - Sliding Knob Reverse</b> |                   |              |          |            |        |     |        |     |                 |                |      |
| 88RSAPT-7CQ                                          |                   | 15 - 95      | 1.7 - 10 | 550        | 9.0    | 229 | 3.1    | 1.4 | 1/4"            | 1/4"           | 19   |
| 88RSAPT-5CQ                                          | 88RSAPT-5C-3      | 15 - 160     | 1.7 - 18 | 400        | 9.0    | 229 | 3.1    | 1.4 | 1/4"            | 1/4"           | 19   |
| 88RSAPT-2CQ                                          |                   | 15 - 180     | 1.7 - 20 | 200        | 9.8    | 248 | 3.4    | 1.5 | 1/4"            | 1/4"           | 19   |
| <b>Trigger Start - Sliding Knob Reverse</b>          |                   |              |          |            |        |     |        |     |                 |                |      |
| 88RSATP-7CQ                                          | 88RSATP-7C-3      | 15 - 95      | 1.7 - 10 | 550        | 8.9    | 225 | 3.1    | 1.4 | 1/4"            | 1/4"           | 19   |
| 88RSATP-5CQ                                          | 88RSATP-5C-3      | 15 - 160     | 1.7 - 18 | 400        | 8.9    | 225 | 3.1    | 1.4 | 1/4"            | 1/4"           | 19   |
| 88RSATP-2CQ                                          | 88RSATP-2C-3      | 15 - 180     | 1.7 - 20 | 200        | 9.6    | 245 | 3.4    | 1.5 | 1/4"            | 1/4"           | 19   |

**General:**

Tool performance rated at 90 psi (620kPa).  
Weight does not include dead handle

**Standard Equipment:**

Operating instructions & service manual  
Dead handle on all models above 100 in.lbs. torque  
All torque springs required to meet indicated torque

**Standard Equipment if Specified:**

Dead handle (861006)

**Optional Equipment:**

Additional accessories: Pages 12-13  
Bits & finders: Page 12  
Torque Springs: Page 13

| Model Number                                         |                   | Torque Range |        | Free Speed | Length |     | Weight |     | Air Consumption |                |      |
|------------------------------------------------------|-------------------|--------------|--------|------------|--------|-----|--------|-----|-----------------|----------------|------|
| 1/4" Hex Quick Change                                | 3/8" Square Drive |              |        |            |        |     |        |     | Air Inlet NPT   | Min. Hose I.D. | SCFM |
|                                                      |                   | in.-lbs.     | Nm     | RPM        | in.    | mm  | lbs.   | kg  |                 |                |      |
| <b>Push-to-Start - Sliding Knob Reverse</b>          |                   |              |        |            |        |     |        |     |                 |                |      |
| 35RSAP-10Q                                           |                   | 15 - 110     | 2 - 12 | 770        | 9.9    | 251 | 3.4    | 1.5 | 1/4"            | 5/16"          | 24   |
| 35RSAP-7Q                                            |                   | 15 - 160     | 2 - 18 | 510        | 9.9    | 251 | 3.4    | 1.5 | 1/4"            | 5/16"          | 24   |
| <b>Push and Trigger Start - Sliding Knob Reverse</b> |                   |              |        |            |        |     |        |     |                 |                |      |
| 35RSAPT-7Q                                           |                   | 15 - 160     | 2 - 18 | 500        | 9.9    | 251 | 3.4    | 1.5 | 1/4"            | 5/16"          | 24   |
| 35RSAPT-5Q                                           |                   | 15 - 180     | 2 - 20 | 350        | 9.9    | 251 | 3.4    | 1.5 | 1/4"            | 5/16"          | 24   |
| <b>Trigger Start - Sliding Knob Reverse</b>          |                   |              |        |            |        |     |        |     |                 |                |      |
| 35RSATP-20Q                                          |                   | 15 - 60      | 2 - 7  | 1500       | 9.0    | 229 | 3.1    | 1.4 | 1/4"            | 5/16"          | 24   |
| 35RSATP-10Q                                          | 35RSATP-10-3      | 15 - 110     | 2 - 12 | 750        | 9.8    | 248 | 3.4    | 1.5 | 1/4"            | 5/16"          | 24   |
| 35RSATP-7Q                                           |                   | 15 - 160     | 2 - 18 | 500        | 9.8    | 248 | 3.4    | 1.5 | 1/4"            | 5/16"          | 24   |
| 35RSATP-5Q                                           | 35RSATP-5-3       | 15 - 180     | 2 - 20 | 350        | 9.8    | 248 | 3.4    | 1.5 | 1/4"            | 5/16"          | 24   |

**General:**

Tool performance rated at 90 psi (620kPa).  
Weight does not include dead handle

**Standard Equipment:**

Operating instructions & service manual  
Dead handle on all models above 100 in.lbs. torque  
All torque springs required to meet indicated torque

**Standard Equipment if Specified:**

Dead handle (861006)

**Optional Equipment:**

Additional accessories: Pages 12-13  
Torque Springs: Page 13

## Cleco®

### 19 Series Stall

**Torque Range: 2.1 – 7.9 Nm 19 – 70 In. Lbs.**

- 1/4" hex quick change drive
- Trigger start
- "P" and "T" style handles (19 series)
- 2 interchangeable soft-touch grip sizes (19 Series)
- Adjustable reverse lever for true one-hand - left or right - operation (19 series)
- Sliding knob or push button reverse (8 series)



| Model Number                                           | Torque Range |     | Free Speed | Length |     | Weight |     | Air Consumption |           |      |
|--------------------------------------------------------|--------------|-----|------------|--------|-----|--------|-----|-----------------|-----------|------|
|                                                        |              |     |            |        |     |        |     | Air Inlet       | Min. Hose | SCFM |
| 1/4" Quick Change                                      | in.-lbs.     | Nm  | RPM        | in.    | mm  | lbs.   | kg  | NPT             | I.D.      |      |
| <b>Trigger Start - T Handle - Sliding Knob Reverse</b> |              |     |            |        |     |        |     |                 |           |      |
| 19TTS02Q                                               | 19           | 2.1 | 2800       | 5.8    | 146 | 1.19   | 0.5 | 1/4"            | 3/8"      | 11   |
| 19TTS03Q                                               | 26           | 2.9 | 1900       | 6.1    | 154 | 1.19   | 0.5 | 1/4"            | 3/8"      | 11   |
| 19TTS04Q                                               | 40           | 4.5 | 1100       | 5.8    | 146 | 1.19   | 0.5 | 1/4"            | 3/8"      | 11   |
| 19TTS05Q                                               | 45           | 5.1 | 660        | 6.1    | 154 | 1.19   | 0.5 | 1/4"            | 3/8"      | 11   |
| 8RNP-20BQ                                              | 44           | 5.0 | 1800       | 5.4    | 137 | 2.1    | 1.0 | 1/4"            | 1/4"      | 19   |
| 8RNP-10BQ                                              | 70           | 7.9 | 800        | 6.1    | 156 | 2.4    | 1.1 | 1/4"            | 1/4"      | 19   |
| <b>Trigger Start - P Handle - Sliding Knob Reverse</b> |              |     |            |        |     |        |     |                 |           |      |
| 19PTS02Q                                               | 19           | 2.1 | 2800       | 5.9    | 150 | 1.16   | 0.5 | 1/4"            | 3/8"      | 11   |
| 19PTS03Q                                               | 26           | 2.9 | 1900       | 6.1    | 155 | 1.16   | 0.5 | 1/4"            | 3/8"      | 11   |
| 19PTS04Q                                               | 40           | 4.5 | 1100       | 5.9    | 150 | 1.16   | 0.5 | 1/4"            | 3/8"      | 11   |
| 19PTS05Q                                               | 45           | 5.1 | 660        | 6.1    | 155 | 1.16   | 0.5 | 1/4"            | 3/8"      | 11   |

**General:**

Tool performance rated at 90 psi (620kPa).

**Standard Equipment:**

Operating instructions & service manual

Suspension bail

All torque springs required to meet indicated torque

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

**Standard Equipment if Specified:**

Dead handle (861006; 8 series models)

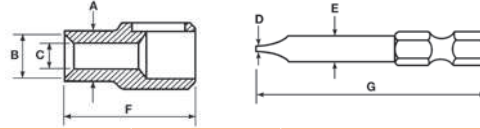
**Optional Equipment:**

Additional accessories: Pages 12-13

Bits: Page 12

# Screwdriver Accessories

## Standard and Extended Flat Bits and Finders



| Screw Size | Standard Length<br>(F=1 3/16 in.; G= 1 15/16 in.) |            | Finder Dimensions (in.) |      |      | Bit Dimensions (in.) |      | Extended Length<br>(F=2 1/4 in.; G= 3 in.) |            |
|------------|---------------------------------------------------|------------|-------------------------|------|------|----------------------|------|--------------------------------------------|------------|
|            | Bit No.                                           | Finder No. | A                       | B    | C    | D                    | E    | Bit No.                                    | Finder No. |
| 1F- 2R     | 849617                                            | 847299     | .22                     | .169 | .128 | .026                 | .122 | 849891                                     | 847481     |
| 2F- 3R     | 849843                                            | 863242     | .250                    | .196 | .140 | .028                 | .134 | 849879                                     | 847480     |
| 3F- 4R     | 849618                                            | 847300     | .285                    | .228 | .160 | .032                 | .154 | 849892                                     | 847482     |
| 4F- 5R     | 849153                                            | 847301     | .315                    | .259 | .193 | .034                 | .187 | 849893                                     | 847483     |
| 5F- 6R     | 849619                                            | 847302     | .345                    | .291 | .221 | .036                 | .215 | 849894                                     | 847484     |
| 6F- 8R     | 849154                                            | 847303     | .380                    | .323 | .256 | .038                 | .250 | 849895                                     | 847485     |
| 8F-10R     | 849620                                            | 847294     | .445                    | .386 | .281 | .042                 | .275 | 849896                                     | 847486     |
| 10F-12R    | 849155                                            | 847304     | .530                    | .431 | .318 | .046                 | .312 | 849897                                     | 847487     |
| 12F-14R    | 849156                                            | 847305     | .590                    | .513 | .366 | .050                 | .360 | 849898                                     | 847488     |

## Finder Springs

### Light Force

844000

### Medium Force

865728

## Phillips Bits and Support Bushings



| Phillips Bit Point Size                                                                             | Bit Body Diameter (in.) | Phillips Bit Part No. | Support Bushing* Part No. |
|-----------------------------------------------------------------------------------------------------|-------------------------|-----------------------|---------------------------|
| <b>Standard:</b> 1/4 in. Hex Shank Bit – 2 3/4 in. O.A. Length;<br>Bushing – 1 3/16 in. O.A. Length |                         |                       |                           |
| 1                                                                                                   | 3/16                    | 809451                | 847301                    |
| 2                                                                                                   | 1/4                     | 809470                | 847303                    |
| 3                                                                                                   | 5/16                    | 809471                | 847304                    |
| <b>Extended:</b> 1/4 in. Hex Shank Bit – 3 1/2 in. O.A. Length;<br>Bushing – 2 1/4 in. O.A. Length  |                         |                       |                           |
| 1                                                                                                   | 3/16                    | 809453                | 847483                    |
| 2                                                                                                   | 1/4                     | 809473                | 847485                    |
| 3                                                                                                   | 5/16                    | 809474                | 847487                    |

\*Bushing not required on Quick Change models.

## Bit Holders and Support Bushings



### 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

Fits all finder type tools except No. 2 Screwdriver

\*Bushing not required on Quick Change models.

## Screw Sizes & Types



| Screw Size | Approximate Thread Body Diameter (inches) | Maximum Head Diameter (inches) |           |           |                |          |              |            | Width of Slot Max. - Min. (inches) |
|------------|-------------------------------------------|--------------------------------|-----------|-----------|----------------|----------|--------------|------------|------------------------------------|
|            |                                           | Round Head                     | Flat Head | Oval Head | Fillister Head | Pan Head | Binding Head | Truss Head |                                    |
| 0          | .058                                      | .113                           | .119      | .119      | .096           | .116     | —            | .131       | .023 - .016                        |
| 1          | .071                                      | .138                           | .146      | .146      | .118           | .142     | —            | .164       | .026 - .019                        |
| 2          | .084                                      | .162                           | .172      | .172      | .140           | .167     | .181         | .194       | .031 - .023                        |
| 3          | .096                                      | .187                           | .199      | .199      | .161           | .193     | .208         | .226       | .035 - .027                        |
| 4          | .109                                      | .211                           | .225      | .225      | .183           | .219     | .235         | .257       | .039 - .031                        |
| 5          | .122                                      | .236                           | .252      | .252      | .205           | .245     | .263         | .289       | .043 - .035                        |
| 6          | .135                                      | .260                           | .279      | .279      | .226           | .270     | .290         | .321       | .048 - .039                        |
| 8          | .161                                      | .309                           | .332      | .332      | .270           | .322     | .344         | .384       | .054 - .045                        |
| 10         | .187                                      | .359                           | .385      | .385      | .313           | .373     | .399         | .448       | .060 - .050                        |
| 12         | .213                                      | .408                           | .438      | .438      | .357           | .425     | .454         | .511       | .067 - .056                        |
| 1/4        | .247                                      | .472                           | .507      | .507      | .414           | .492     | .513         | .573       | .075 - .064                        |
| 5/16       | .309                                      | .590                           | .635      | .635      | .518           | .615     | .641         | .698       | .084 - .072                        |

## Inline Screwdriver Clutch Torque Springs

| Spring Color  | Torque Range |         | Ordering No. |
|---------------|--------------|---------|--------------|
|               | In. Lbs.     | Nm      |              |
| 2 Series      |              |         |              |
| Blue          | 1.5-.5       | 17-.06  | 202870       |
| Green         | 8-1          | .9-.1   | 202869       |
| 19 Series     |              |         |              |
| Green         | 19-5         | --      | 207652PT     |
| White         | 38-10        | 4.3-1.1 | 207596PT     |
| Orange        | 45-15        | 5.1-1.7 | 207696PT     |
| 8 Series      |              |         |              |
| Blue          | 17-7         | 1.9-.8  | 869203       |
| Green         | 55-15        | 6.2-1.7 | 867938       |
| Red           | 75-35        | 8.5-4   | 867931       |
| 88, 35 Series |              |         |              |
| Green         | 55-15        | 6-2     | 202822       |
| Yellow        | 160-35       | 18-4    | 869306       |
| Red           | 180-60       | 20-7    | 869305       |

Note: Torque listed is immediately after the clutch and does not take into consideration torque multiplication after the clutch, such as additional planetary gears or right angle heads.

207019

## Exhaust Overhose & Adapter

869204

| Order No. | Description | Used On                                |
|-----------|-------------|----------------------------------------|
| 207019    | Overhose    | 19 series inline & right angle         |
| 869204    | Adapter     | 8, 88, 35 series inline, push-to-start |

## Piped Away Exhaust Hose Adapter

203632

| Order No. | Used On                           |
|-----------|-----------------------------------|
| 203632    | 5 series inline                   |
| 203808    | 8, 88, 35 series inline p-t-start |

## Dead Handle

| Ordering No. | Used On             |
|--------------|---------------------|
| 201770       | 5 series, 19 series |
| 861006       | 8, 88, 35 series    |



## Handle Grips

| Order No. | Grip Type            | Used On            |
|-----------|----------------------|--------------------|
| 202464    | Round inline         | 2 series           |
| 869734    | Round inline         | 5 series           |
| 203621    | Tri-roundular inline | 5 series           |
| 202346    | Round inline         | 8 series p-t-start |
| 203762    | Pistol grip          | 5 series           |
| 203833    | Pistol grip          | 8, 88, 35 series   |



## Suspension Bails

| Order No. | Used On                                                |
|-----------|--------------------------------------------------------|
| 931962    | 19 series                                              |
| 869168    | 2 series                                               |
| 865777    | 5 series inline & 8, 88 series inline push-to-start    |
| 412603    | 5 series pistol grip & 8, 88 series inline lever start |



## Torque Signal Kits

| Part No. | Tool Used On                                           |
|----------|--------------------------------------------------------|
| 301106   | 19SCA & 19RAA series (inline & right angle)            |
| 302021PT | 19TTA & 19PTA series (pistol "P" handle or "T" handle) |

## Portable Tool Balancers

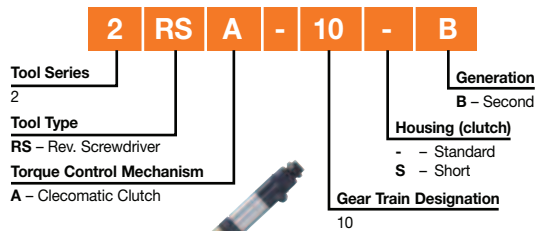
| Part Number | Capacity |        | Net Weight | Min. Distance Hook to Hook | Length of Working Cable |
|-------------|----------|--------|------------|----------------------------|-------------------------|
|             | Max.     | Min.   |            |                            |                         |
| 200427      | 2 lbs.   | 0 lbs. | 1.25 lbs.  | 10.8 in.                   | 5.0 ft.                 |
| 200428      | 4 lbs.   | 2 lbs. | 1.25 lbs.  | 10.8 in.                   | 5.0 ft.                 |
| 200429      | 5 lbs.   | 3 lbs. | 1.25 lbs.  | 10.8 in.                   | 5.0 ft.                 |
| PL-12A      | 12 lbs.  | 1 lbs. | —          | 6.8 in.                    | 4.6 ft.                 |
| BL-2A       | 2 lbs.   | 1 lbs. | 1.1 lbs.   | 10.4 in.                   | 5.2 ft.                 |
| BL-4A       | 4 lbs.   | 2 lbs. | 1.1 lbs.   | 10.4 in.                   | 5.2 ft.                 |



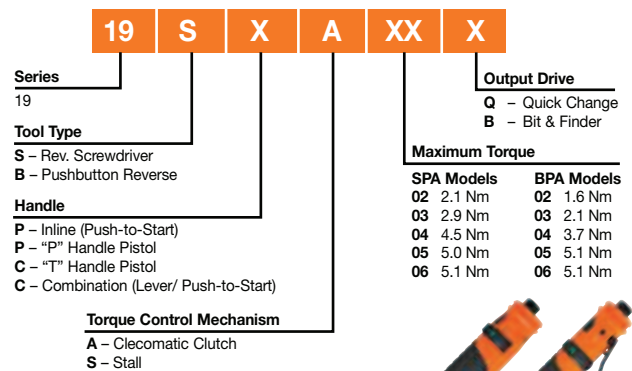
# Screwdrivers

Model Number Nomenclature

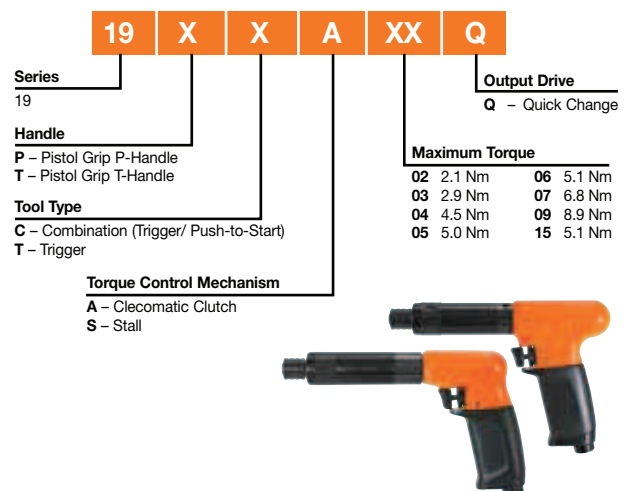
## Cleco 2 Series

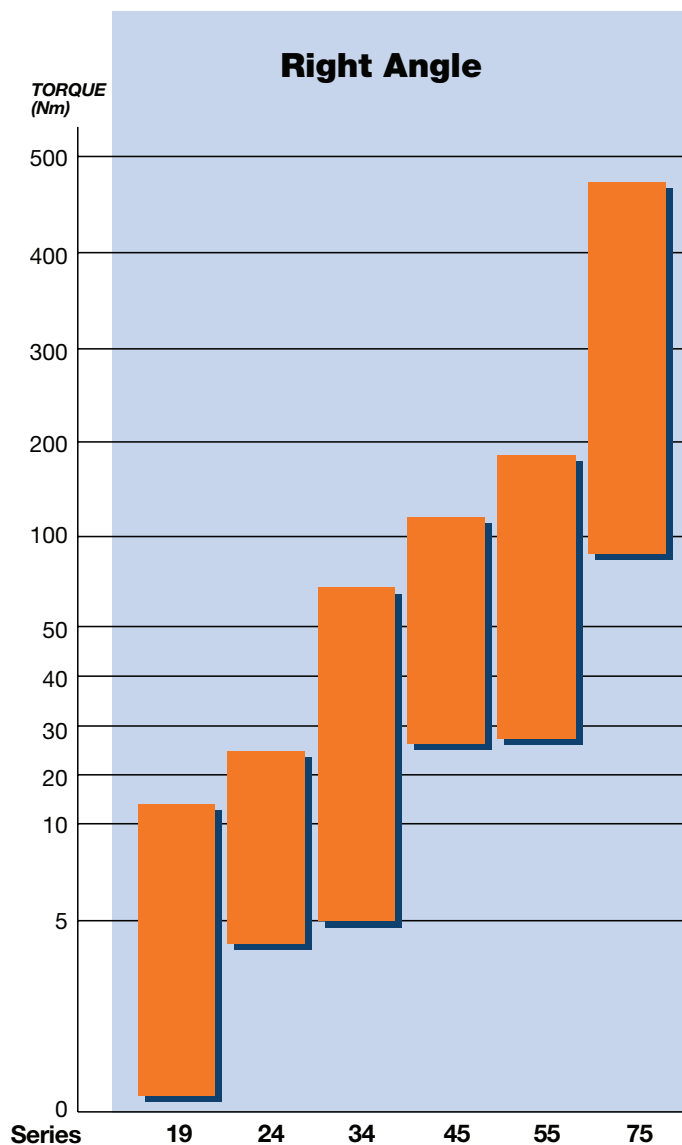


## Cleco 19 Series Inline



## Cleco 19 Series Pistol





## 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 in operation.

### Clean Operation

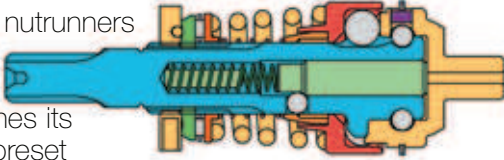
Many Cleco angle nutrunners are equipped with oilless blades. This is a very important feature where a clean assembly operation is critical.



# Angle Nutrunners

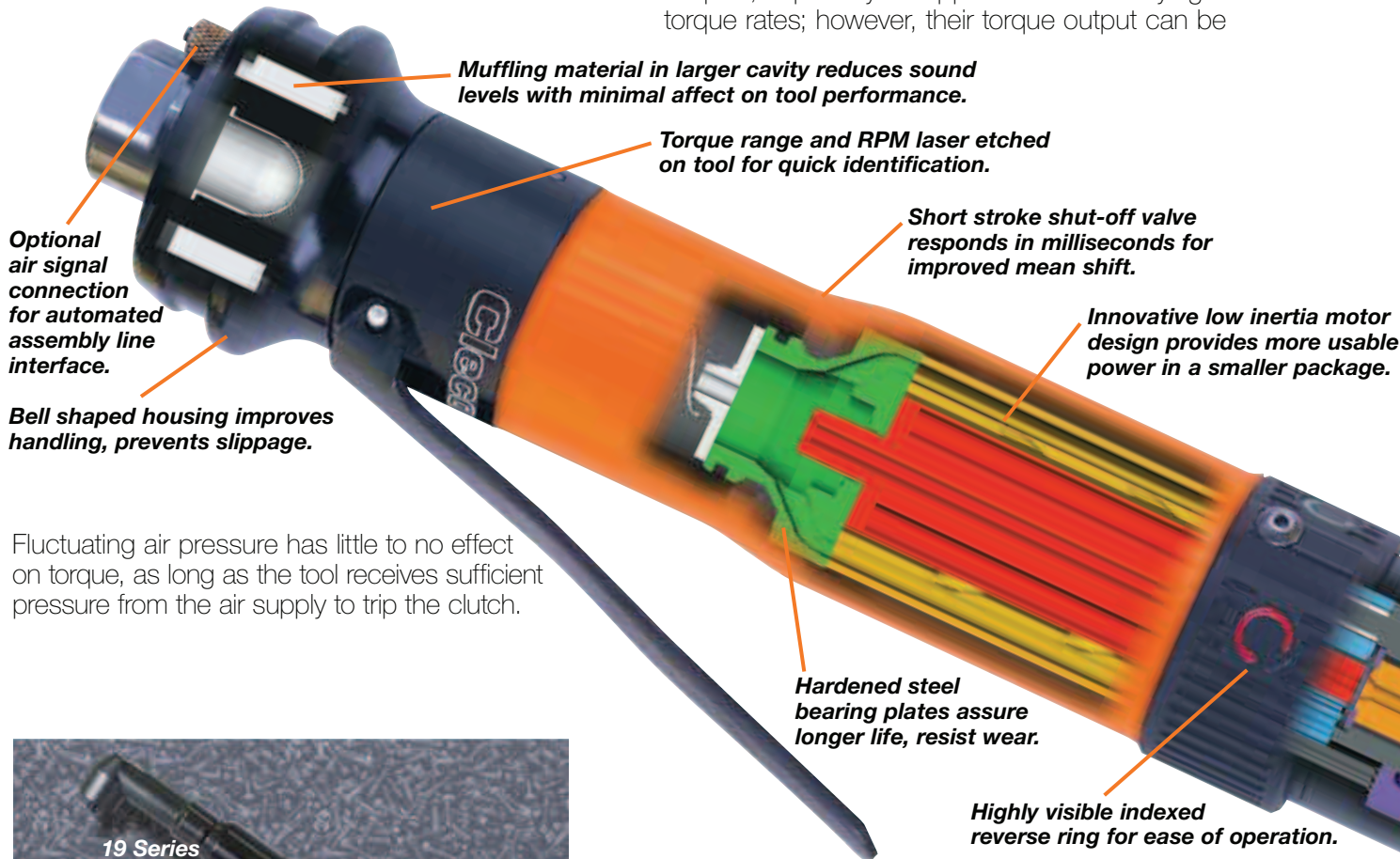
## Clecomatic Nutrunners

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.



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.

## The Cleco Right Angle Solution

The Cleco 19, 24 and 34 series pneumatic nutrunners are the most recent additions to our line of smaller, lighter and faster tools. These powerful 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.

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

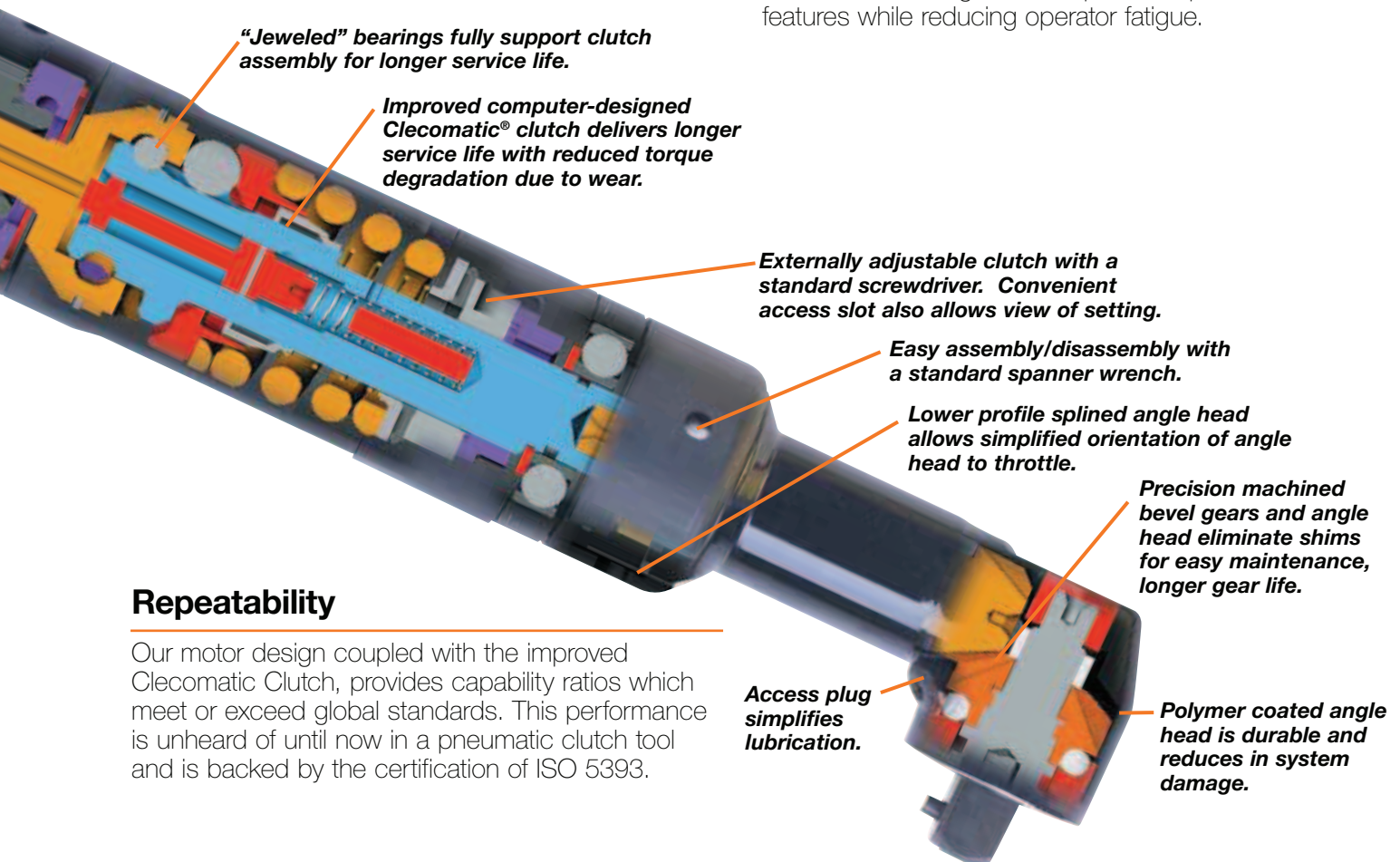
## Performance

The Cleco 19, 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.



## Flexibility

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. These durable heads are splined to allow indexing 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.



## Repeatability

Our motor design coupled with the improved Clecomatic Clutch, provides capability ratios which meet or exceed global standards. This performance is unheard of until now in a pneumatic clutch tool and is backed by the certification of ISO 5393.

# Angle Nutrunners

19, 24 & 34 Series Clecomatic Clutch

## Cleco®

### 19 Series

#### Torque Range:

0.5 – 11 Nm 4.0 – 100 In. Lbs.

- Class-leading accuracy and repeatability
- External torque adjustment
- Sliding knob reverse
- 1/4" & 3/8" square drive

### 24 Series

#### Torque Range:

4.0 – 23 Nm 3.0 – 17 Ft. Lbs.

- External torque adjustment
- 3/8" square drive
- Indexable anglehead
- One torque spring to meet specified torque
- Oilless blades 🔥

### 34 Series

#### Torque Range:

8.0 – 75 Nm 4.0 – 55 Ft. Lbs.

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



### Model Number Example

| 24     | R            | A | A               | 23 | A                           | M | 3                    |
|--------|--------------|---|-----------------|----|-----------------------------|---|----------------------|
| Series | Rotation     |   | Tool Style      |    | Torque Control              |   | Square Drive         |
| 19     | R-Reversible |   | A – Right Angle |    | A – Clecomatic              |   | 2 – 1/4" (AL only)   |
| 24     |              |   |                 |    | S – Stall                   |   | 3 – 3/8"             |
| 34     |              |   |                 |    | Maximum Torque Nm           |   | 4 – 1/2" (AZ only)   |
|        |              |   |                 |    | (Rounded to the nearest Nm) |   | Angle Head Size      |
|        |              |   |                 |    |                             |   | L – Light Duty       |
|        |              |   |                 |    |                             |   | M – Medium Duty      |
|        |              |   |                 |    |                             |   | H – Heavy Duty       |
|        |              |   |                 |    |                             |   | X – Extra Heavy Duty |
|        |              |   |                 |    |                             |   | Z – Super Heavy Duty |
|        |              |   |                 |    |                             |   | Tool Termination     |
|        |              |   |                 |    |                             |   | A Angle head         |

| Model Number                               |              | Torque Range* |            |                  |            | Free Speed | Length |     | Weight |     | Head Height |    | Side to Center |    | Air Consumption |                |      |
|--------------------------------------------|--------------|---------------|------------|------------------|------------|------------|--------|-----|--------|-----|-------------|----|----------------|----|-----------------|----------------|------|
|                                            |              | Tool Range    |            | With Std. Spring |            |            |        |     |        |     |             |    |                |    | Air Inlet NPT   | Min. Hose I.D. | SCFM |
| 1/4" Sq. Dr.                               | 3/8" Sq. Dr. | in.-lbs.      | Nm         | in.-lbs.         | Nm         | RPM        | in.    | mm  | lbs.   | kg  | in.         | mm | in.            | mm |                 |                |      |
| 19 Series - Reversible – Clecomatic Clutch |              |               |            |                  |            |            |        |     |        |     |             |    |                |    |                 |                |      |
| 19RAA02AM2                                 |              | 5 - 19        | 0.6 - 2.1  | 5 - 19           | 0.6 - 2.1  | 2400       | 11.9   | 303 | 1.7    | 0.8 | 1.06        | 27 | 0.36           | 9  | 1/8"            | 3/16"          | 11   |
| 19RAA02AH2                                 | 19RAA02AH3   | 6 - 21        | 0.7 - 2.4  | 6 - 21           | 0.7 - 2.4  | 2100       | 12.5   | 316 | 1.8    | 0.8 | 1.19        | 30 | 0.50           | 13 | 1/8"            | 3/16"          | 11   |
| 19RAA03AM2                                 |              | 5 - 27        | 0.6 - 3.1  | 5 - 21           | 0.6 - 2.4  | 1650       | 12.2   | 310 | 1.8    | 0.8 | 1.06        | 27 | 0.36           | 9  | 1/8"            | 3/16"          | 11   |
| 19RAA03AH2                                 | 19RAA03AH3   | 6 - 30        | 0.7 - 3.4  | 6 - 24           | 0.7 - 2.7  | 1450       | 12.7   | 321 | 1.8    | 0.8 | 1.19        | 30 | 0.50           | 13 | 1/8"            | 3/16"          | 11   |
| 19RAA04AM2                                 |              | 12 - 42       | 1.4 - 4.7  | 12 - 42          | 1.4 - 4.7  | 950        | 12.0   | 305 | 1.7    | 0.8 | 1.06        | 27 | 0.36           | 9  | 1/8"            | 3/16"          | 11   |
| 19RAA05AM2                                 |              | 12 - 50       | 1.4 - 5.7  | 12 - 42          | 1.4 - 4.7  | 570        | 12.4   | 316 | 1.8    | 0.8 | 1.06        | 27 | 0.36           | 9  | 1/8"            | 3/16"          | 11   |
| 19RAA06AH2*                                | 19RAA06AH3   | 13 - 53       | 1.5 - 6.0  | 13 - 48          | 1.5 - 5.4  | 850        | 12.5   | 316 | 1.8    | 0.8 | 1.19        | 30 | 0.50           | 13 | 1/8"            | 3/16"          | 11   |
| 19RAA07AH2*                                | 19RAA07AH3   | 13 - 60       | 1.5 - 6.8  | 13 - 48          | 1.5 - 5.4  | 500        | 12.9   | 326 | 1.9    | 0.9 | 1.19        | 30 | 0.50           | 13 | 1/8"            | 3/16"          | 11   |
| 19RAA09AH2*                                | 19RAA09AH3   | 18 - 75       | 2.0 - 8.5  | 30 - 75          | 3.4 - 8.5  | 500        | 12.9   | 326 | 1.9    | 0.9 | 1.19        | 30 | 0.50           | 13 | 1/8"            | 3/16"          | 11   |
| 19RAA11AH2*                                | 19RAA11AH3   | 18 - 100      | 2.0 - 11.3 | 30 - 100         | 3.4 - 11.3 | 340        | 12.3   | 312 | 2.1    | 1.0 | 1.19        | 30 | 0.50           | 13 | 1/8"            | 3/16"          | 11   |
| 19RAA12AH2*                                | 19RAA12AH3   | 18 - 100      | 2.0 - 11.3 | 30 - 100         | 3.4 - 11.3 | 200        | 12.9   | 326 | 1.9    | 0.9 | 1.19        | 30 | 0.50           | 13 | 1/8"            | 3/16"          | 11   |

\*Applications greater than 50 in.-lbs. may affect spindle/drive durability.

**General:**

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:**

Additional accessories: Page 36

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 AHQ

1/4" Magnetic Hex: Change AH3 to AHM

| Model Number                                      |              | Torque Range |       | Free Speed | Length |     | Weight |     | Head Height |      | Side to Center |      | Air Consumption |                |      |
|---------------------------------------------------|--------------|--------------|-------|------------|--------|-----|--------|-----|-------------|------|----------------|------|-----------------|----------------|------|
|                                                   |              |              |       |            |        |     |        |     |             |      |                |      | Air Inlet NPT   | Min. Hose I.D. | SCFM |
| 3/8" Sq. Dr.                                      | 1/2" Sq. Dr. | ft.-lbs.     | Nm    | RPM        | in.    | mm  | lbs.   | kg  | in.         | mm   | in.            | mm   |                 |                |      |
| <b>24 Series – Reversible – Clecomatic Clutch</b> |              |              |       |            |        |     |        |     |             |      |                |      |                 |                |      |
| 24RAA06AL3                                        |              | 3-4          | 4-5.5 | 2200       | 14.1   | 358 | 2.6    | 1.2 | 1.08        | 27.5 | .47            | 12.0 | 3/8"            | 5/16"          | 24   |
| 24RAA07AL3                                        |              | 3-5          | 5-7   | 1770       | 14.1   | 358 | 2.6    | 1.2 | 1.08        | 27.5 | .47            | 12.0 | 3/8"            | 5/16"          | 24   |
| 24RAA11AL3                                        |              | 5-8          | 7-11  | 1260       | 14.1   | 358 | 2.6    | 1.2 | 1.08        | 27.5 | .47            | 12.0 | 3/8"            | 5/16"          | 24   |
| 24RAA12AM3                                        |              | 5-9          | 6-12  | 1200       | 14.2   | 360 | 2.8    | 1.3 | 1.16        | 29.5 | .52            | 13.2 | 3/8"            | 5/16"          | 24   |
| 24RAA19AM3                                        |              | 7-14         | 10-19 | 700        | 15.0   | 380 | 3.2    | 1.4 | 1.16        | 29.5 | .52            | 13.2 | 3/8"            | 5/16"          | 24   |
| 24RAA23AM3                                        |              | 9-17         | 12-23 | 600        | 15.0   | 380 | 3.2    | 1.4 | 1.16        | 29.5 | .52            | 13.2 | 3/8"            | 5/16"          | 24   |
| <b>34 Series – Reversible – Clecomatic Clutch</b> |              |              |       |            |        |     |        |     |             |      |                |      |                 |                |      |
| 34RAA08AL3                                        |              | 4-6          | 8-5   | 2060       | 14.5   | 368 | 2.7    | 1.2 | 1.08        | 27.5 | .47            | 12.0 | 3/8"            | 5/16"          | 34   |
| 34RAA11AL3                                        |              | 5-8          | 7-11  | 1675       | 14.5   | 368 | 2.7    | 1.2 | 1.08        | 27.5 | .47            | 12.0 | 3/8"            | 5/16"          | 34   |
| 34RAA15AM3                                        |              | 7-11         | 9-15  | 1185       | 14.6   | 370 | 2.9    | 1.3 | 1.16        | 29.5 | .52            | 13.2 | 3/8"            | 5/16"          | 34   |
| 34RAA26AH3                                        |              | 10-19        | 13-26 | 710        | 15.4   | 390 | 3.2    | 1.5 | 1.22        | 31.0 | .57            | 14.4 | 3/8"            | 5/16"          | 34   |
| 34RAA28AH3                                        |              | 10-20        | 14-28 | 580        | 15.4   | 390 | 3.3    | 1.5 | 1.22        | 31.0 | .57            | 14.4 | 3/8"            | 5/16"          | 34   |
| 34RAA33AX3                                        |              | 12-24        | 17-33 | 545        | 15.5   | 393 | 3.5    | 1.6 | 1.36        | 34.5 | .67            | 17.1 | 3/8"            | 5/16"          | 34   |
| 34RAA37AX3                                        |              | 14-27        | 18-37 | 480        | 15.6   | 397 | 3.4    | 1.5 | 1.36        | 34.5 | .67            | 17.1 | 3/8"            | 5/16"          | 34   |
| 34RAA47AX3                                        |              | 17-35        | 24-47 | 385        | 15.6   | 397 | 3.4    | 1.5 | 1.36        | 34.5 | .67            | 17.1 | 3/8"            | 5/16"          | 34   |
| 34RAA68AZ3                                        |              | 25-50        | 34-68 | 255        | 16.2   | 411 | 3.7    | 1.7 | 1.60        | 41.0 | .70            | 18.0 | 3/8"            | 5/16"          | 34   |
| 34RAA75AZ3                                        |              | 28-55        | 38-75 | 155        | 17.0   | 431 | 3.9    | 1.8 | 1.60        | 41.0 | .70            | 18.0 | 3/8"            | 5/16"          | 34   |
|                                                   | 34RAA68AZ4   | 25-50        | 34-68 | 255        | 16.2   | 411 | 3.7    | 1.7 | 1.60        | 41.0 | .70            | 18.0 | 3/8"            | 5/16"          | 34   |
|                                                   | 34RAA75AZ4   | 28-55        | 38-75 | 155        | 17.0   | 431 | 3.9    | 1.8 | 1.60        | 41.0 | .70            | 18.0 | 3/8"            | 5/16"          | 34   |

**General:**

Tool performance rated at 90 psi (620kPa) air pressure.

**Standard Equipment:**

Operating instructions & service manual  
Suspension bail  
Clutch adjustment tool

**Optional Equipment:**

Assembly wrench: 201898  
Torque signal kit: 301937PT  
Non-reversible kit: 204999  
Exhaust Overhose: 204978  
Additional accessories: Page 36

## Cleco®

### 45 Series

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

- Button start
- Reversible & non-reversible
- External torque adjustment
- 1/2" square drive

### 55 Series

**Torque Range:**  
32 – 176 Nm 24 – 130 Ft. Lbs.

- Lever start
- Reversible & non-reversible
- External torque adjustment
- Rotating exhaust deflector
- 1/2" square drive

### 75 Series

**Torque Range:**  
95 – 430 Nm 70 – 320 Ft. Lbs.

- Lever start
- Reversible & non-reversible
- External torque adjustment
- Rotating exhaust deflector
- 1/2" & 3/4" square drive



### 45, 55 & 75 Model Number Example

| 55 R N A L - XX X - X                               |  |                                                     |  |                  |  |                                              |  |                                                      |
|-----------------------------------------------------|--|-----------------------------------------------------|--|------------------|--|----------------------------------------------|--|------------------------------------------------------|
| <b>Series</b><br>45, 55, 75                         |  | <b>Rotation</b><br>N-Non Reversible<br>R-Reversible |  | <b>Nutrunner</b> |  | <b>Start Type</b><br>L – Lever<br>B – Button |  | <b>Sq. Drive</b><br>3 – 3/8"<br>4 – 1/2"<br>6 – 3/4" |
| <b>Torque Control</b><br>A – Clecomatic<br>-- Stall |  |                                                     |  |                  |  | <b>Angle Head</b><br>P, T, V, X              |  | <b>Gear Train</b><br>2, 3, 4, 6, 7, 10               |

| Model Number                                                | Torque Range |          | Free Speed | Length |     | Weight |      | Head Height |     | Side to Center |     | Angle Head | Air Consumption |               |                |
|-------------------------------------------------------------|--------------|----------|------------|--------|-----|--------|------|-------------|-----|----------------|-----|------------|-----------------|---------------|----------------|
|                                                             | 1/2" Sq. Dr. | ft.-lbs. | Nm         | RPM    | in. | mm     | lbs. | kg          | in. | mm             | in. |            | mm              | Air Inlet NPT | Min. Hose I.D. |
| 45 Series – Clecomatic Clutch – Button Start – Reversible   |              |          |            |        |     |        |      |             |     |                |     |            |                 |               |                |
| 45RNAB-4T-4                                                 | 21 - 42      | 28 - 57  | 300        | 17.6   | 448 | 6.8    | 3.1  | 2.0         | 50  | 0.9            | 22  | T          | 3/8"            | 3/8"          | 33             |
| 45RNAB-3P-4                                                 | 26 - 52      | 35 - 71  | 240        | 17.5   | 445 | 6.4    | 2.9  | 1.6         | 41  | 0.7            | 18  | P          | 3/8"            | 3/8"          | 33             |
| 45RNAB-3T-4                                                 | 31 - 62      | 42 - 84  | 200        | 17.6   | 448 | 6.8    | 3.1  | 2.0         | 50  | 0.9            | 22  | T          | 3/8"            | 3/8"          | 33             |
| 45RNAB-2P-4                                                 | 34 - 71*     | 46 - 96* | 180        | 17.5   | 445 | 6.4    | 2.9  | 1.6         | 41  | 0.7            | 18  | P          | 3/8"            | 3/8"          | 33             |
| 45RNAB-2T-4                                                 | 37 - 85      | 50 - 115 | 150        | 17.6   | 448 | 6.8    | 3.1  | 2.0         | 50  | 0.9            | 22  | T          | 3/8"            | 3/8"          | 33             |
| 45 Series Clecomatic Clutch – Button Start – Non-Reversible |              |          |            |        |     |        |      |             |     |                |     |            |                 |               |                |
| 45NAB-3P-4                                                  | 28 - 57      | 38 - 77  | 300        | 17.5   | 445 | 6.3    | 2.8  | 1.6         | 41  | 0.7            | 18  | P          | 3/8"            | 3/8"          | 33             |

\* 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:**  
Tool performance rated at 90 psi (620kPa) air pressure.

**Standard Equipment:**  
Operating instructions & service manual.  
All torque springs required to meet indicated torque

**Optional Equipment:**  
Additional accessories: Page 36

| Model Number                                  |              | Torque Range |            | Free Speed | Length |     | Weight |     | Head Height |    | Side to Center |    | Angle Head | Air Consumption |                |      |
|-----------------------------------------------|--------------|--------------|------------|------------|--------|-----|--------|-----|-------------|----|----------------|----|------------|-----------------|----------------|------|
| 1/2" Sq. Dr.                                  | 3/4" Sq. Dr. | ft.-lbs.     | Nm         | RPM        | in.    | mm  | lbs.   | kg  | in.         | mm | in.            | mm |            | Air Inlet NPT   | Min. Hose I.D. | SCFM |
| 55 & 75 Series – Lever Start – Reversible     |              |              |            |            |        |     |        |     |             |    |                |    |            |                 |                |      |
|                                               |              | 24 - 48      | 32 - 65    | 370        | 19.3   | 489 | 7.8    | 3.5 | 2.0         | 50 | 0.9            | 22 | T          | 1/2"            | 1/2"           | 55   |
|                                               |              | 26 - 54      | 35 - 73    | 330        | 19.1   | 486 | 7.4    | 3.3 | 1.6         | 41 | 0.7            | 18 | P          | 1/2"            | 1/2"           | 55   |
|                                               |              | 29 - 64      | 39 - 87    | 280        | 19.3   | 489 | 7.8    | 3.5 | 2.0         | 50 | 0.9            | 22 | T          | 1/2"            | 1/2"           | 55   |
|                                               |              | 36 - 80*     | 49 - 109*  | 220        | 19.1   | 486 | 7.4    | 3.3 | 1.6         | 41 | 0.7            | 18 | P          | 1/2"            | 1/2"           | 55   |
|                                               |              | 43 - 95      | 58 - 129   | 190        | 19.3   | 489 | 7.8    | 3.5 | 2.0         | 50 | 0.9            | 22 | T          | 1/2"            | 1/2"           | 55   |
|                                               |              | 50 - 125*    | 81 - 170*  | 140        | 19.3   | 489 | 7.8    | 3.5 | 2.0         | 50 | 0.9            | 22 | T          | 1/2"            | 1/2"           | 55   |
|                                               |              | 70 - 140     | 95 - 190   | 175        | 21.9   | 556 | 13.3   | 6.0 | 2.5         | 64 | 1.1            | 28 | V          | 1/2"            | 1/2"           | 70   |
|                                               |              | 90 - 190*    | 122 - 255* | 130        | 21.9   | 556 | 13.3   | 6.0 | 2.5         | 64 | 1.1            | 28 | V          | 1/2"            | 1/2"           | 70   |
|                                               | 75RNAL-3X-6  | 110 - 225    | 150 - 305  | 110        | 22.6   | 575 | 15.0   | 6.8 | 2.8         | 70 | 1.4            | 37 | X          | 1/2"            | 1/2"           | 70   |
|                                               | 75RNAL-2X-6  | 150 - 305    | 203 - 410  | 80         | 22.6   | 575 | 15.0   | 6.8 | 2.8         | 70 | 1.4            | 37 | X          | 1/2"            | 1/2"           | 70   |
| 55 & 75 Series – Lever Start – Non-Reversible |              |              |            |            |        |     |        |     |             |    |                |    |            |                 |                |      |
|                                               |              | 28 - 57      | 38 - 77    | 480        | 19.1   | 486 | 7.3    | 3.3 | 1.6         | 41 | 72.0           | 18 | P          | 1/2"            | 1/2"           | 55   |
|                                               |              | 33 - 69      | 39 - 93    | 400        | 19.3   | 489 | 7.6    | 3.5 | 2.0         | 50 | 0.9            | 22 | T          | 1/2"            | 1/2"           | 55   |
|                                               |              | 39 - 84*     | 49 - 114*  | 320        | 19.1   | 486 | 7.3    | 3.3 | 1.6         | 41 | 72.0           | 18 | P          | 1/2"            | 1/2"           | 55   |
|                                               |              | 45 - 100     | 58 - 136   | 270        | 19.3   | 489 | 7.6    | 3.5 | 2.0         | 50 | 0.9            | 22 | T          | 1/2"            | 1/2"           | 55   |
|                                               |              | 55 - 130*    | 68 - 176*  | 200        | 19.3   | 489 | 7.6    | 3.5 | 2.0         | 50 | 0.9            | 22 | T          | 1/2"            | 1/2"           | 55   |
|                                               |              | 100 - 200    | 135 - 271  | 210        | 21.9   | 556 | 13.0   | 5.9 | 2.5         | 64 | 1.1            | 28 | V          | 1/2"            | 1/2"           | 70   |
|                                               | 75 NAL-2X-6  | 160 - 320    | 215 - 430  | 130        | 22.6   | 575 | 14.8   | 6.7 | 2.8         | 70 | 1.4            | 37 | X          | 1/2"            | 1/2"           | 70   |

\* 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.

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

**Optional Equipment:**  
Additional accessories: Page 36

**General:**  
Tool performance rated at 90 psi (620kPa) air pressure.

# Angle Nutrunners

19, 24, 34, 45, 55 & 75 Series Stall – Reversible & Non-Reversible

## Cleco®

### 19 Series Reversible

Torque Range:  
3.2 – 6.2 Nm 2.3 – 4.6 Ft. Lbs.

- Lever start
- Sliding knob reverse

### 24 Series Reversible

Torque Range:  
13 Nm 9.6 Ft. Lbs.

- Lever start
- Twist ring reverse

### 34 Series Reversible

Torque Range:  
11 - 36 Nm 8.1 - 26 Ft. Lbs.

- Lever start
- Twist ring reverse

### 45 Series Reversible

Torque Range:  
62 - 125 Nm 46 - 92 Ft. Lbs.

- Button start
- Twist ring reverse

### 55 Series Reversible & Non-Reversible

Torque Range:  
56 - 203 Nm 41 - 150 Ft. Lbs.

- Lever start
- Reversible & non-reversible

### 75 Series Reversible & Non-Reversible

Torque Range:  
210 - 475 Nm 155 - 350 Ft. Lbs.

- Lever start
- Reversible & non-reversible



| Model Number | Max. Torque |    | Square Drive | Free Speed | Length |    | Weight |    | Head Height |    | Side to Center |    | Air Consumption |                |      |
|--------------|-------------|----|--------------|------------|--------|----|--------|----|-------------|----|----------------|----|-----------------|----------------|------|
|              | ft.-lbs.    | Nm |              |            | in.    | mm | lbs.   | kg | in.         | mm | in.            | mm | Air Inlet NPT   | Min. Hose I.D. | SCFM |

### 19 Series – Reversible – Stall

|            |      |      |     |      |      |     |     |     |      |    |      |    |      |       |    |
|------------|------|------|-----|------|------|-----|-----|-----|------|----|------|----|------|-------|----|
| 19RAS03AM2 | 2.3  | 3.2  | 1/4 | 1700 | 11.4 | 290 | 1.3 | 0.6 | 1.06 | 27 | 0.36 | 9  | 1/8" | 3/16" | 11 |
| 19RAS04AH2 | 2.6* | 3.6* | 1/4 | 1500 | 11.2 | 284 | 1.4 | 0.6 | 1.19 | 30 | 0.5  | 13 | 1/8" | 3/16" | 11 |
| 19RAS05AM2 | 3.8  | 5.2  | 1/4 | 850  | 10.6 | 269 | 1.2 | 0.5 | 1.06 | 27 | 0.36 | 9  | 1/8" | 3/16" | 11 |
| 19RAS06AH3 | 4.6  | 6.2  | 3/8 | 880  | 11.0 | 279 | 1.3 | 0.6 | 1.19 | 30 | 0.5  | 13 | 1/8" | 3/16" | 11 |

### 45 Series – Reversible – Stall

|            |    |     |     |     |      |     |     |     |     |    |     |    |      |      |    |
|------------|----|-----|-----|-----|------|-----|-----|-----|-----|----|-----|----|------|------|----|
| 45RNB-4T-4 | 46 | 62  | 1/2 | 310 | 15.1 | 384 | 5.5 | 2.5 | 2.0 | 50 | 0.9 | 22 | 3/8" | 3/8" | 33 |
| 45RNB-3P-4 | 58 | 79  | 1/2 | 250 | 15.0 | 381 | 5.1 | 2.3 | 1.6 | 41 | 0.7 | 18 | 3/8" | 3/8" | 33 |
| 45RNB-3T-4 | 69 | 94  | 1/2 | 210 | 15.1 | 384 | 5.5 | 2.5 | 2.0 | 50 | 0.9 | 22 | 3/8" | 3/8" | 33 |
| 45RNB-2T-4 | 92 | 125 | 1/2 | 160 | 15.1 | 384 | 5.5 | 2.5 | 2.0 | 50 | 0.9 | 22 | 3/8" | 3/8" | 33 |

### 24, 34, 55 & 75 Series – Reversible – Stall

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

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

#### General:

Tool performance rated at 90 psi (620kPa) air pressure.

#### Standard Equipment:

Operating instructions & service manual  
Suspension ball (19 series)  
Torque reaction mounting plate (75 series)

#### Optional Equipment:

19 Series: Non-Reverse Kit:  
Overhose:

207030  
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:  
Non-reverse kit  
Additional accessories: Page 36

201898  
204999

| Model Number | Max. Torque |    | Square Drive | Free Speed | Length |    | Weight |    | Head Height |    | Side to Center |    | Air Consumption |                |      |
|--------------|-------------|----|--------------|------------|--------|----|--------|----|-------------|----|----------------|----|-----------------|----------------|------|
|              | ft.-lbs.    | Nm |              |            | in.    | mm | lbs.   | kg | in.         | mm | in.            | mm | Air Inlet NPT   | Min. Hose I.D. | SCFM |

### 55 & 75 Series Non-Reversible – Stall

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

\* 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:

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 36  
Safety Lever: 201638

### 19, 24, & 34 Model Number Example

|                                                         |   |   |   |                                                                                                                               |   |   |   |
|---------------------------------------------------------|---|---|---|-------------------------------------------------------------------------------------------------------------------------------|---|---|---|
| 24                                                      | R | A | S | 23                                                                                                                            | A | M | 3 |
| <b>Series</b><br>19, 24, 34                             |   |   |   | <b>Square Drive</b><br>2 – 1/4" (AL only)<br>3 – 3/8"<br>4 – 1/2" (AZ only)                                                   |   |   |   |
| <b>Rotation</b><br>R-Reversible                         |   |   |   | <b>Angle Head Size</b><br>L – Light Duty<br>M – Medium Duty<br>H – Heavy Duty<br>X – Extra Heavy Duty<br>Z – Super Heavy Duty |   |   |   |
| <b>Tool Style</b><br>A – Right Angle                    |   |   |   | <b>Tool Termination</b><br>A Angle head                                                                                       |   |   |   |
| <b>Torque Control</b><br>A – Clecomatic<br>S – Stall    |   |   |   |                                                                                                                               |   |   |   |
| <b>Maximum Torque Nm</b><br>(Rounded to the nearest Nm) |   |   |   |                                                                                                                               |   |   |   |

### 45, 55 & 75 Model Number Example

|                                                     |  |  |  |  |  |                                                      |  |  |  |
|-----------------------------------------------------|--|--|--|--|--|------------------------------------------------------|--|--|--|
| <b>55 R N A L - XX X - X</b>                        |  |  |  |  |  |                                                      |  |  |  |
| <b>Series</b><br>45, 55, 75                         |  |  |  |  |  | <b>Sq. Drive</b><br>3 – 3/8"<br>4 – 1/2"<br>6 – 3/4" |  |  |  |
| <b>Rotation</b><br>N-Non Reversible<br>R-Reversible |  |  |  |  |  | <b>Angle Head</b><br>P, T, V, X                      |  |  |  |
| <b>Nutrunner</b>                                    |  |  |  |  |  | <b>Gear Train</b><br>2, 3, 4, 6, 7, 10               |  |  |  |
| <b>Torque Control</b><br>A – Clecomatic<br>-- Stall |  |  |  |  |  | <b>Start Type</b><br>L – Lever<br>B – Button         |  |  |  |

# Swingbar Nutrunners

## Cleco®

### Smaller, Faster, Lighter

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 Cleco 64 Series provides the best solution for today's heavy assembly environment.

### Benefits of a Swingbar Tool

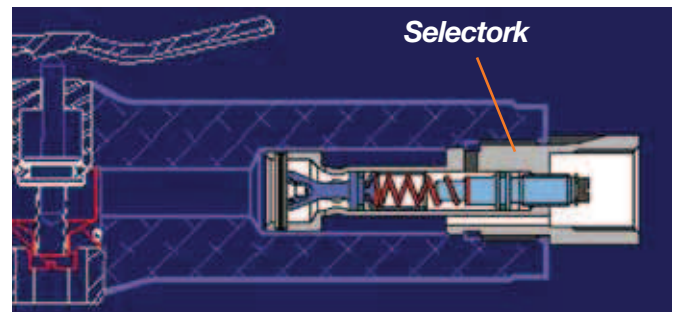
A swingbar tool includes a reaction bar that freely swings 360°. This allows the reaction bar to be moved to an appropriate bracing point without any disassembly or repositioning of a spline. Once positioned, the reaction bar absorbs the reaction forces of the tool.

### Selectork

Output torque from a stall tool is achieved by adjusting the air pressure to the tool. If the tool is

moved from location to location or if other tools requiring full line pressure use the same air line, the tool will require a dedicated air pressure regulator.

The Cleco Selectork feature in the 64 Series tools is a small pressure regulator that takes the place of the standard air inlet bushing and eliminates the need to have a separate pressure regulator installed in the plant floor system. Because of the small size of the Selectork there is a limited pressure adjustment range of from 60 to 90 psi. To order this option on the Cleco 64TTS Swingbar tools replace the "S" in the model number with a "K" (64TTS...to a 64TTK...).



#### Reversible

*A simple to use and convenient slide reverse lever improves productivity by allowing for the loosening of fasteners without changing tools.*

#### Improved Ergonomics

*Top and bottom air inlets help customize the 64 Series Reaction Bar Nutrunners to the operator's work area.*

#### Improved Ergonomics

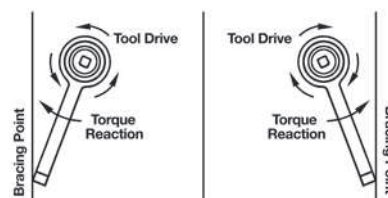
*Comfort molded handles and lighter weights reduce operator fatigue and improve productivity*

#### Selectork

*for optimal in-tool air pressure regulation.*

#### Ergonomics

*Infinite-position reaction bar can quickly be moved to an appropriate brace point, eliminating reaction forces of the rundown.*



Torque Bar Opposes Rotation of Tool



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

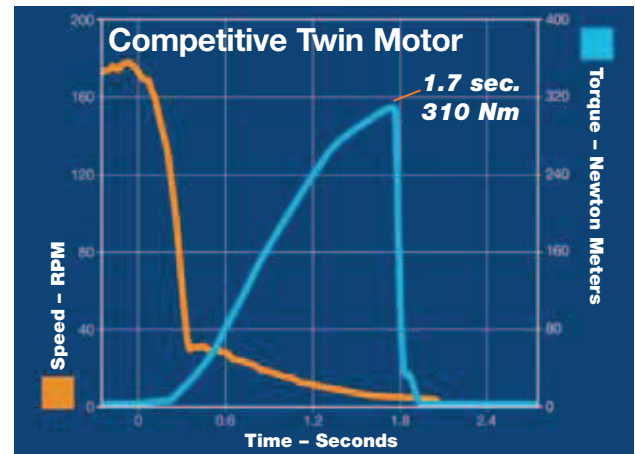
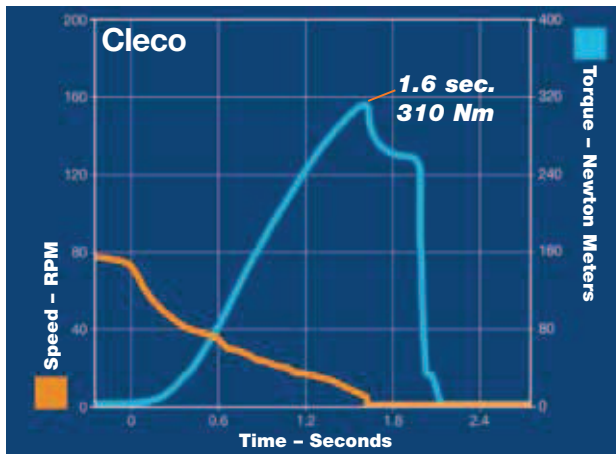
The goal of any fastening application is to maintain a high degree of accuracy while minimizing the length of time required to perform the rundown. The Cleco 64 Series Swingbar Nutrunners utilize a single powerful motor that limits speed shifts and offers a fast and accurate rundown regardless of joint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

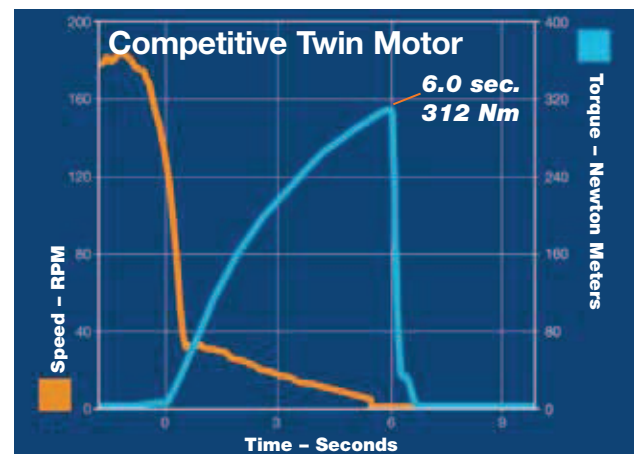
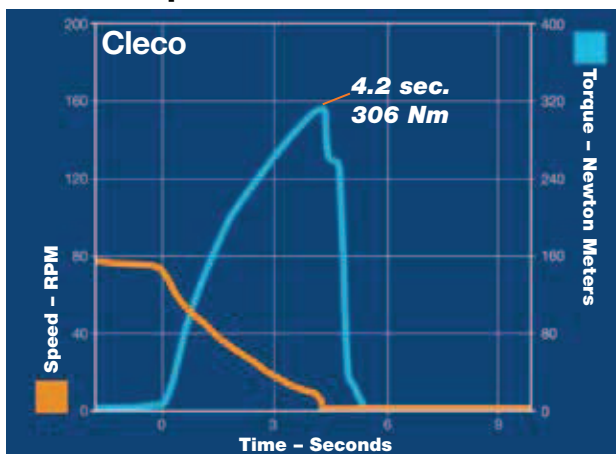
To read the graphs below, the orange line represents the tool speed while the blue line represents the torque generated throughout a rundown. Notice the correlation between speed and torque and its overall effect on rundown time.

*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



### 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.

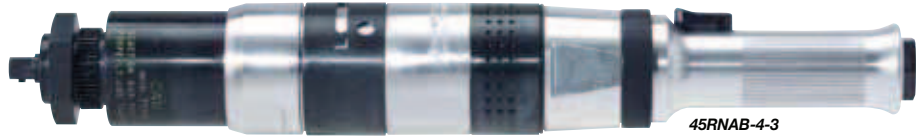
# Reaction Bar & Swingbar Nutrunners

## Cleco®

### 45 Series Inline

**Torque Range:**  
14 - 62 Nm 10 - 46 Ft. Lbs.

- Button start
- Twist ring reverse



### 55 Series Inline

**Torque Range:**  
27 - 91 Nm 20 - 67 Ft. Lbs.

- Lever start
- Twist ring reverse



### 64 Series Pistol

**Torque Range:**  
34 - 3850 Nm 25 - 2837 Ft. Lbs.

- Trigger start
- Sliding knob reverse
- Swingbar



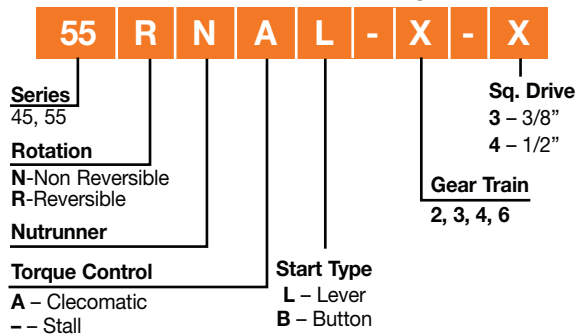
### Selectork 64 Series

**Torque Range:**  
26 - 3850 Nm 19 - 2837 Ft. Lbs.

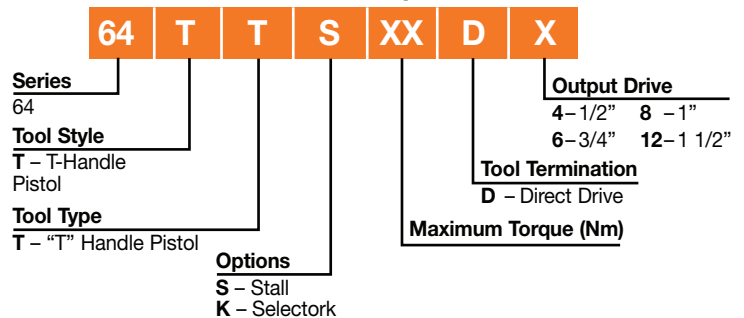
- Pistol grip
- Reversible
- Swingbar
- Selectork adjustment allows air pressure regulation at the tool for individual performance from a common air line



#### 45 & 55 Model Number Example



#### 64 Model Number Example



| Model Number                                                        | Torque Range |         | Drive Size | Free Speed | Length |     | Weight* |     | Air Consumption |                |      |
|---------------------------------------------------------------------|--------------|---------|------------|------------|--------|-----|---------|-----|-----------------|----------------|------|
|                                                                     | ft.-lbs.     | Nm      |            | RPM        | in.    | mm  | lbs.    | kg  | Air Inlet NPT   | Min. Hose I.D. | SCFM |
| 45 Series – Inline – Clecomatic – Button Start – Twist Ring Reverse |              |         |            |            |        |     |         |     |                 |                |      |
| 45RNAB-6-3                                                          | 10 - 16      | 14 - 22 | 3/8        | 740        | 14.5   | 368 | 5.4     | 2.4 | 3/8"            | 3/8"           | 33   |
| 45RNAB-4-3                                                          | 14 - 22      | 19 - 30 | 3/8        | 560        | 14.5   | 368 | 5.4     | 2.4 | 3/8"            | 3/8"           | 33   |
| 45RNAB-3-3                                                          | 18 - 33      | 24 - 45 | 3/8        | 370        | 14.5   | 368 | 5.4     | 2.4 | 3/8"            | 3/8"           | 33   |
| 45RNAB-2-4                                                          | 23 - 46      | 31 - 62 | 1/2        | 270        | 14.5   | 368 | 5.4     | 2.4 | 3/8"            | 3/8"           | 33   |
| 55 Series – Inline – Clecomatic – Lever Start – Twist Ring Reverse  |              |         |            |            |        |     |         |     |                 |                |      |
| 55RNAL-4-4                                                          | 20 - 34      | 27 - 46 | 1/2        | 560        | 16.1   | 410 | 6.5     | 3.0 | 1/2"            | 1/2"           | 55   |
| 55RNAL-3-4                                                          | 25 - 51      | 34 - 69 | 1/2        | 370        | 16.1   | 410 | 6.5     | 3.0 | 1/2"            | 1/2"           | 55   |
| 55RNAL-2-4                                                          | 30 - 67      | 46 - 91 | 1/2        | 270        | 16.1   | 410 | 6.5     | 3.0 | 1/2"            | 1/2"           | 55   |

\* Weight without reaction bar.

**General:**

Tool performance rated at 90 psi (620kPa) air pressure

**Standard Equipment:**

Operating instructions & service manual  
Aluminum Torque Reaction Bar

**Optional Equipment:**

Steel Torque Reaction Bar: 869770  
Additional accessories: Page 36

| Model Number                        |              | Torque Range |             | Drive Size | Free Speed | Length |       | Weight* |      | Air Consumption |                |      |
|-------------------------------------|--------------|--------------|-------------|------------|------------|--------|-------|---------|------|-----------------|----------------|------|
| Non-Selectork                       | Selectork    |              |             |            |            |        |       |         |      | Air Inlet NPT   | Min. Hose I.D. | SCFM |
|                                     |              | ft.-lbs.     | Nm          |            | RPM        | in.    | mm    | lbs.    | kg   |                 |                |      |
| Pistol – Trigger Start – Reversible |              |              |             |            |            |        |       |         |      |                 |                |      |
| 64TTS34D4                           | 64TTK34D4    | 19 - 25      | 26 - 34     | 1/2"       | 725        | 11.5   | 290.8 | 6.3     | 2.9  | 3/8"            | 1/2"           | 60   |
| 64TTS44D4                           | 64TTK44D4    | 24 - 32      | 33 - 44     | 1/2"       | 570        | 11.5   | 290.8 | 6.3     | 2.9  | 3/8"            | 1/2"           | 60   |
| 64TTS55D4                           | 64TTK55D4    | 30 - 41      | 41 - 55     | 1/2"       | 445        | 11.5   | 290.8 | 6.3     | 2.9  | 3/8"            | 1/2"           | 60   |
| 64TTS75D4                           | 64TTK75D4    | 41 - 55      | 56 - 75     | 1/2"       | 340        | 11.5   | 290.8 | 6.3     | 2.9  | 3/8"            | 1/2"           | 60   |
| 64TTS90D4                           | 64TTK90D4    | 50 - 66      | 68 - 90     | 1/2"       | 270        | 11.5   | 290.8 | 6.3     | 2.9  | 3/8"            | 1/2"           | 60   |
| 64TTS110D4                          | 64TTK110D4   | 61 - 81      | 83 - 110    | 1/2"       | 225        | 11.5   | 290.8 | 6.3     | 2.9  | 3/8"            | 1/2"           | 60   |
| 64TTS125D4                          | 64TTK125D4   | 69 - 92      | 94 - 125    | 1/2"       | 200        | 11.5   | 290.8 | 6.3     | 2.9  | 3/8"            | 1/2"           | 60   |
| 64TTS140D4                          | 64TTK140D4   | 77 - 103     | 105 - 140   | 1/2"       | 180        | 11.5   | 290.8 | 6.3     | 2.9  | 3/8"            | 1/2"           | 60   |
| 64TTS150D6                          | 64TTK150D6   | 83 - 111     | 113 - 150   | 3/4"       | 160        | 12.5   | 316.2 | 8.2     | 3.7  | 3/8"            | 1/2"           | 60   |
| 64TTS175D6                          | 64TTK175D6   | 97 - 129     | 131 - 175   | 3/4"       | 135        | 12.5   | 316.2 | 8.2     | 3.7  | 3/8"            | 1/2"           | 60   |
| 64TTS205D6                          | 64TTK205D6   | 113 - 151    | 154 - 205   | 3/4"       | 115        | 12.5   | 316.2 | 8.2     | 3.7  | 3/8"            | 1/2"           | 60   |
| 64TTS255D6                          | 64TTK255D6   | 141 - 188    | 191 - 255   | 3/4"       | 95         | 12.5   | 316.2 | 8.2     | 3.7  | 3/8"            | 1/2"           | 60   |
| 64TTS345D6                          | 64TTK345D6   | 191 - 254    | 259 - 345   | 3/4"       | 70         | 12.5   | 316.2 | 8.2     | 3.7  | 3/8"            | 1/2"           | 60   |
| 64TTS425D6                          | 64TTK425D6   | 235 - 313    | 319 - 425   | 3/4"       | 55         | 12.5   | 316.2 | 8.2     | 3.7  | 3/8"            | 1/2"           | 60   |
| 64TTS570D6                          | 64TTK570D6   | 315 - 420    | 428 - 570   | 3/4"       | 42         | 13.0   | 328.9 | 8.6     | 3.9  | 3/8"            | 1/2"           | 60   |
| 64TTS640D8                          | 64TTK640D8   | 354 - 472    | 480 - 640   | 1"         | 32         | 15.9   | 404.1 | 14.5    | 6.6  | 3/8"            | 1/2"           | 60   |
| 64TTS750D8                          | 64TTK750D8   | 415 - 553    | 563 - 750   | 1"         | 27         | 15.9   | 404.1 | 14.5    | 6.6  | 3/8"            | 1/2"           | 60   |
| 64TTS930D8                          | 64TTK930D8   | 514 - 686    | 698 - 930   | 1"         | 22         | 15.9   | 404.1 | 14.5    | 6.6  | 3/8"            | 1/2"           | 60   |
| 64TTS1260D8                         | 64TTK1260D8  | 697 - 929    | 945 - 1260  | 1"         | 16         | 15.9   | 404.1 | 14.5    | 6.6  | 3/8"            | 1/2"           | 60   |
| 64TTS1475D8                         | 64TTK1475D8  | 816 - 1088   | 1106 - 1475 | 1"         | 14         | 15.9   | 404.1 | 14.5    | 6.6  | 3/8"            | 1/2"           | 60   |
| 64TTS1820D8                         | 64TTK1820D8  | 1007 - 1342  | 1365 - 1820 | 1"         | 11         | 15.9   | 404.1 | 14.5    | 6.6  | 3/8"            | 1/2"           | 60   |
| 64TTS1985D8                         | 64TTK1985D8  | 1098 - 1464  | 1489 - 1985 | 1"         | 10         | 15.9   | 404.1 | 14.5    | 6.6  | 3/8"            | 1/2"           | 60   |
| 64TTS3850D12                        | 64TTK3850D12 | 2128 - 2837  | 2888 - 3850 | 1 1/2"     | 5          | 21.5   | 546.1 | 32.2    | 14.6 | 3/8"            | 1/2"           | 60   |

\* Weight without reaction bar.

**General:**

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 & 64TTK3850D12)

**Optional Equipment:**

Steel Torque Reaction Bar: 64.....D4 series: 48047128  
Additional accessories: Page 36

# Flush Socket Nutrunners

Clecomatic Clutch & StallStall

## Cleco®

### 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                          | Free Speed | Torque   |        | Length |     | Weight |     | Anglehead |    |                |    | Air Consumption |                |      |
|---------------------------------------|------------|----------|--------|--------|-----|--------|-----|-----------|----|----------------|----|-----------------|----------------|------|
|                                       | RPM        | ft.-lbs. | Nm     | in.    | mm  | lbs.   | kg  | Height    |    | Side to Center |    | Air Inlet NPT   | Min. Hose I.D. | SCFM |
| Clecomatic - Lever Start - Reversible |            |          |        |        |     |        |     |           |    |                |    |                 |                |      |
| 34RAA09F1                             | 1825       | 4-7      | 5-9    | 17.0   | 432 | 3.7    | 1.7 | 1.54      | 39 | 0.55           | 14 | 3/8"            | 5/16"          | 34   |
| 34RAA16F1                             | 1055       | 7-12     | 9-16   | 17.0   | 432 | 3.7    | 1.7 | 1.54      | 39 | 0.55           | 14 | 3/8"            | 5/16"          | 34   |
| 34RAA28F1                             | 645        | 10-20*   | 14-28* | 17.8   | 452 | 3.9    | 1.8 | 1.54      | 39 | 0.55           | 14 | 3/8"            | 5/16"          | 34   |
| 34RAA33F2                             | 540        | 12-24    | 17-33  | 18.8   | 478 | 4.7    | 2.1 | 1.69      | 43 | 0.67           | 17 | 3/8"            | 5/16"          | 34   |
| 34RAA47F2                             | 380        | 17-35    | 24-47  | 19.0   | 483 | 5.1    | 2.3 | 1.69      | 43 | 0.67           | 17 | 3/8"            | 5/16"          | 34   |
| 34RAA53F2                             | 265        | 17-39    | 24-53  | 19.0   | 483 | 5.1    | 2.3 | 1.69      | 43 | 0.67           | 17 | 3/8"            | 5/16"          | 34   |
| 34RAA67F3                             | 265        | 24-49    | 33-67  | 20.5   | 521 | 5.8    | 2.6 | 2.32      | 59 | 0.87           | 22 | 3/8"            | 5/16"          | 34   |
| 34RAA94F3                             | 185        | 35-69    | 47-94  | 20.5   | 521 | 5.8    | 2.6 | 2.32      | 59 | 0.87           | 22 | 3/8"            | 5/16"          | 34   |
| Stall - Lever Start - Reversible      |            |          |        |        |     |        |     |           |    |                |    |                 |                |      |
| 34RAS10F1                             | 1825       | 7        | 10     | 17.0   | 432 | 3.4    | 1.5 | 1.54      | 39 | 0.55           | 14 | 3/8"            | 5/16"          | 34   |
| 34RAS18F1                             | 1055       | 13       | 18     | 17.0   | 432 | 3.4    | 1.5 | 1.54      | 39 | 0.55           | 14 | 3/8"            | 5/16"          | 34   |
| 34RAS30F1                             | 645        | 22*      | 30*    | 17.8   | 452 | 3.5    | 1.6 | 1.54      | 39 | 0.55           | 14 | 3/8"            | 5/16"          | 34   |
| 34RAS40F2                             | 480        | 29       | 40     | 19.0   | 483 | 4.4    | 2.0 | 1.69      | 43 | 0.67           | 17 | 3/8"            | 5/16"          | 34   |
| 34RAS52F2                             | 380        | 38       | 52     | 19.0   | 483 | 4.4    | 2.0 | 1.69      | 43 | 0.67           | 17 | 3/8"            | 5/16"          | 34   |
| 34RAS58F3                             | 335        | 43       | 58     | 20.5   | 521 | 5.5    | 2.5 | 2.32      | 59 | 0.87           | 22 | 3/8"            | 5/16"          | 34   |
| 34RAS73F3                             | 265        | 54       | 73     | 20.5   | 521 | 5.5    | 2.5 | 2.32      | 59 | 0.87           | 22 | 3/8"            | 5/16"          | 34   |
| 34RAS103F3                            | 185        | 76       | 103    | 20.5   | 521 | 5.5    | 2.5 | 2.32      | 59 | 0.87           | 22 | 3/8"            | 5/16"          | 34   |

\* 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:

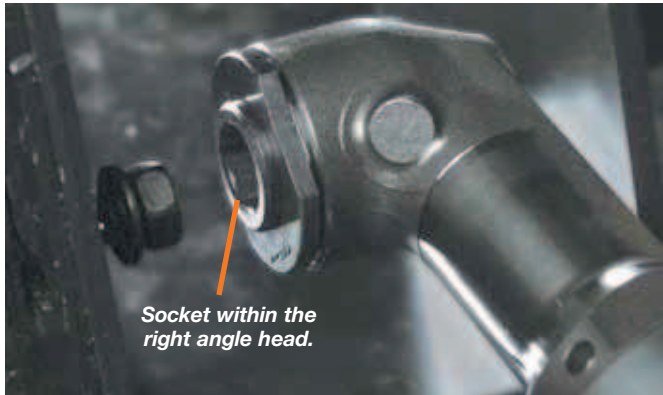
Tool performance rated at 90 psi (620kPa) air pressure.

#### Standard Equipment:

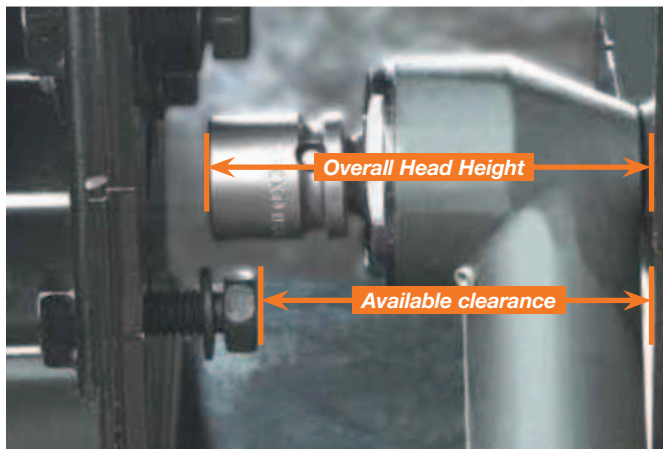
Operating instructions & service manual  
Suspension bail  
Exhaust Overhose  
Clutch adjustment tool (Clecomatic tools)  
Mounting plate (F3 tools)

#### Optional Equipment:

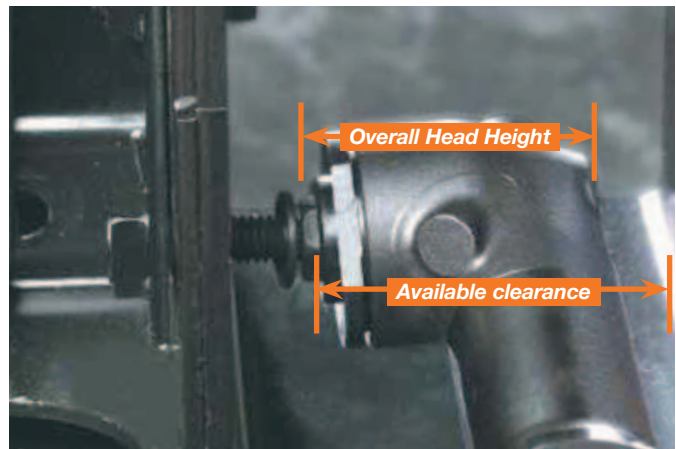
Assembly wrench: 201898  
Torque signal kit: 301937PT  
Non-reversible kit: 204999  
Mounting plates: F1 tools 57217101 57218103  
F2 tools 43287131  
Additional accessories: Page 36



Tight clearance applications, once only accessible by the use of hand tools or crowfoot attachments, can now be tightened by the 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

### Base Tool

|                                          |                   |                   |          |           |           |
|------------------------------------------|-------------------|-------------------|----------|-----------|-----------|
| <b>34</b>                                | <b>R</b>          | <b>A</b>          | <b>A</b> | <b>16</b> | <b>F1</b> |
| <b>Motor</b>                             | <b>Reversible</b> | <b>Tool Style</b> |          |           |           |
|                                          |                   | <b>A - Angle</b>  |          |           |           |
| <b>Control</b>                           |                   |                   |          |           |           |
| <b>A - Clutch</b>                        |                   |                   |          |           |           |
| <b>S - Stall</b>                         |                   |                   |          |           |           |
| <b>Maximum Torque Output</b>             |                   |                   |          |           |           |
| <b>F1 Clutch:</b> 9, 16, 28 Nm           |                   |                   |          |           |           |
| Stall: 10, 18, 30 Nm                     |                   |                   |          |           |           |
| <b>F2 Clutch:</b> 33, 47, 53 Nm          |                   |                   |          |           |           |
| Stall: 40, 52 Nm                         |                   |                   |          |           |           |
| <b>F3 Clutch:</b> 67, 94 Nm              |                   |                   |          |           |           |
| Stall: 58, 73, 103 Nm                    |                   |                   |          |           |           |
| <b>Flush Socket Head</b>                 |                   |                   |          |           |           |
| <b>F1 Head:</b> 8–15 mm socket capacity  |                   |                   |          |           |           |
| <b>F2 Head:</b> 10–15 mm socket capacity |                   |                   |          |           |           |
| <b>F3 Head:</b> 13–21 mm socket capacity |                   |                   |          |           |           |

### Socket No. (ordered with base tool)

|                          |          |           |          |          |
|--------------------------|----------|-----------|----------|----------|
| <b>FS</b>                | <b>1</b> | <b>MG</b> | <b>0</b> | <b>0</b> |
| <b>Flush Socket Head</b> |          |           |          |          |
| <b>1 - F1 Head</b>       |          |           |          |          |
| <b>2 - F2 Head</b>       |          |           |          |          |
| <b>3 - F3 Head</b>       |          |           |          |          |
| <b>Socket Type</b>       |          |           |          |          |
| <b>FS - Flush</b>        |          |           |          |          |
| <b>Output Type</b>       |          |           |          |          |
| <b>1-Thru Hex</b>        |          |           |          |          |
| <b>2-Magnetic</b>        |          |           |          |          |
| <b>Extension Length</b>  |          |           |          |          |
| <b>0 - Flush</b>         |          |           |          |          |
| <b>2 - 1/4"</b>          |          |           |          |          |
| <b>4 - 1/2"</b>          |          |           |          |          |
| <b>6 - 3/4"</b>          |          |           |          |          |
| <b>Socket Sizes</b>      |          |           |          |          |
| <b>EC - 3/8"</b>         |          |           |          |          |
| <b>ED - 7/16"</b>        |          |           |          |          |
| <b>EE - 1/2"</b>         |          |           |          |          |
| <b>EF - 9/16"</b>        |          |           |          |          |
| <b>MA - 7mm</b>          |          |           |          |          |
| <b>MB - 8mm</b>          |          |           |          |          |
| <b>MC - 9mm</b>          |          |           |          |          |
| <b>MD - 10mm</b>         |          |           |          |          |
| <b>ME - 11mm</b>         |          |           |          |          |
| <b>MF - 12mm</b>         |          |           |          |          |
| <b>MG - 13mm</b>         |          |           |          |          |
| <b>MH - 14mm</b>         |          |           |          |          |
| <b>MI - 15mm</b>         |          |           |          |          |
| <b>MM - 19mm</b>         |          |           |          |          |

**Note:** When ordering, specify the base tool and order the socket separately. The socket will be installed in the tool before shipment.

# 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



**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 |     | Air Consumption |       |      |
|----------------------------------------------|----------------|------------|--------------|-------|-------------|----|--------|-----|--------|-----|-----------------|-------|------|
| 15 Degree Head                               | 30 Degree Head | RPM        | ft.-lbs.     | Nm    | in.         | mm | in.    | mm  | lbs.   | kg  | NPT             | I.D.  | SCFM |
| <b>Clecomatic - Lever Start - Reversible</b> |                |            |              |       |             |    |        |     |        |     |                 |       |      |
| 34RCA30D1                                    | 34RCA30D3      | 425        | 11-22        | 15-30 | 5/16        | 8  | 20.0   | 507 | 4.7    | 2.2 | 3/8"            | 5/16" | 34   |
| <b>Stall - Lever Start - Reversible</b>      |                |            |              |       |             |    |        |     |        |     |                 |       |      |
| 34RCS29D1                                    | 34RCS29D3      | 490        | 21           | 29    | 5/16        | 8  | 19.6   | 497 | 4.5    | 2.1 | 3/8"            | 5/16" | 34   |

**General:**

Tool performance rated at 90 psi (620kPa) air pressure.

**Standard Equipment:**

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

**Extra Equipment:**

Specify socket from page 31

**Optional Equipment:**

Assembly wrench: 201898  
Torque signal kit: 301937PT  
Non-reversible kit: 204999  
Additional accessories: Page 36

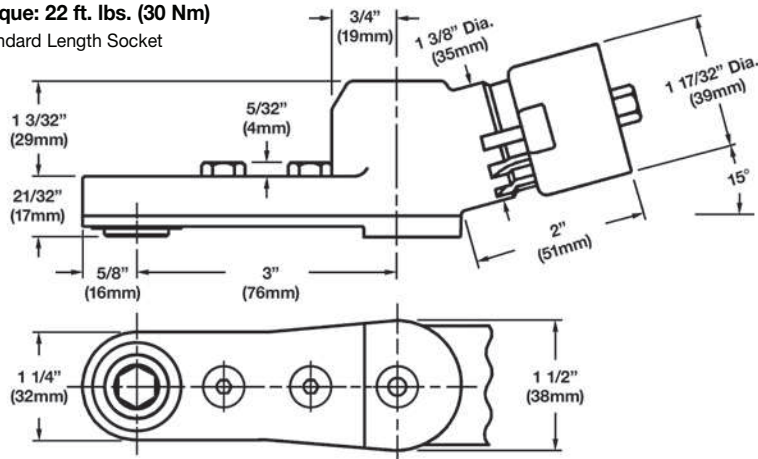
## 15° Head

Part Number: 301071

Maximum Recommended

Torque: 22 ft. lbs. (30 Nm)

Standard Length Socket



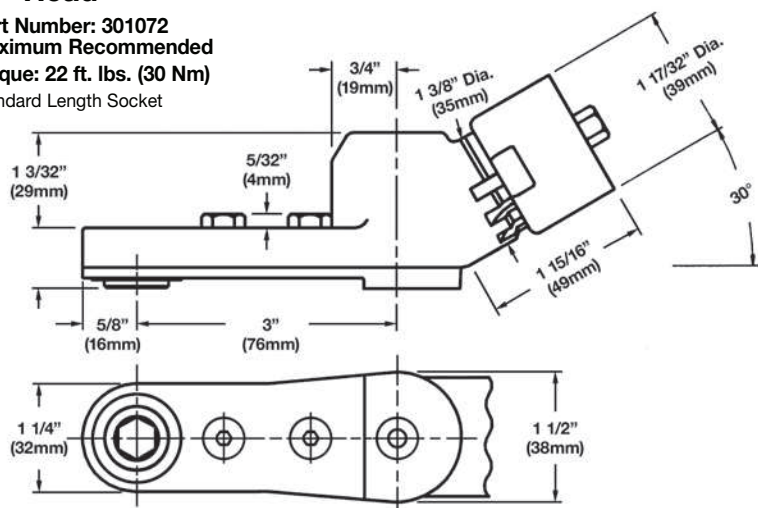
## 30° Head

Part Number: 301072

Maximum Recommended

Torque: 22 ft. lbs. (30 Nm)

Standard Length Socket



## Model Number Example

### Base Tool

**34 R C A 30 D1**

Motor

34

Rotation

R – Reversible

Tool Style

C – Crowfoot

Control

A – Clecomatic

S – Stall

Max Output Torque

Clecomatic: 30

Stall: 14, 29

Tool Termination

D1 15° Head

D3 30° Head

### Socket No. (ordered with base tool)

**CS XX X X**

Crowfoot  
Socket

Output Type

1 – Thru Hex

Extension Length

0 – Flush 4 – 1/2" 6 – 3/4"

### Sockets

#### Flush

EA – 1/4"  
EC – 3/8"  
ED – 7/16"  
EE – 1/2"  
EF – 9/16"  
MB – 8mm  
EH – 11/16"

MD – 10mm  
ME – 11mm  
MF – 12mm  
MG – 13mm  
MH – 14mm  
MI – 15mm

#### 1/2" Extended

EB – 5/16"  
EC – 3/8"  
ED – 7/16"  
EE – 1/2"  
EF – 9/16"  
MB – 8mm  
MD – 10mm  
ME – 11mm  
MF – 12mm  
MG – 13mm

#### 3/4" Extended

EE – 1/2"  
MG – 13mm  
MH – 14mm

# Hold & Drive Nutrunners

Clecomatic Clutch & Stall

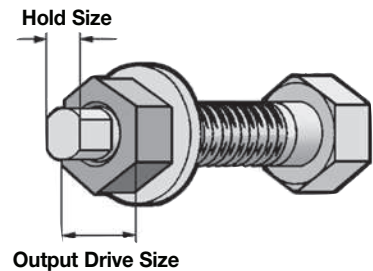
## Cleco®

### 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
- 1" retraction of hold spindle
- Oilless blades
- Reversible



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

| Model Number                                 | Hold Size       | Free Speed | Torque   |       | Length |     | Weight |     | Anglehead |                |      |    | Air Consumption |           |      |
|----------------------------------------------|-----------------|------------|----------|-------|--------|-----|--------|-----|-----------|----------------|------|----|-----------------|-----------|------|
|                                              |                 | RPM        | ft.-lbs. | Nm    | in.    | mm  | lbs.   | kg  | Height    | Side to Center |      |    | NPT             | Hose I.D. | SCFM |
|                                              |                 |            |          |       |        |     |        |     | in.       | mm             | in.  | mm |                 |           |      |
| <b>Clecomatic - Lever Start - Reversible</b> |                 |            |          |       |        |     |        |     |           |                |      |    |                 |           |      |
| 34RAA53H3                                    | 5mm Female Hex  | 335        | 17-39    | 24-53 | 20.7   | 526 | 8.0    | 3.5 | 2.4       | 61             | 1.06 | 27 | 3/8"            | 5/16"     | 34   |
| 34RAA67H3                                    | 7mm Female Hex  | 265        | 24-49    | 33-67 | 20.7   | 526 | 8.0    | 3.5 | 2.4       | 61             | 1.06 | 27 | 3/8"            | 5/16"     | 34   |
| 34RAA94H3                                    | 8mm Female Hex  | 185        | 35-69    | 47-94 | 20.7   | 526 | 8.0    | 3.5 | 2.4       | 61             | 1.06 | 27 | 3/8"            | 5/16"     | 34   |
| <b>Stall - Lever Start - Reversible</b>      |                 |            |          |       |        |     |        |     |           |                |      |    |                 |           |      |
| 34RAS58H3                                    | 5mm Female Hex  | 335        | 43       | 58    | 20.7   | 526 | 7.7    | 3.5 | 2.4       | 61             | 1.06 | 27 | 3/8"            | 5/16"     | 34   |
| 34RAS73H3                                    | T30 Torx        | 265        | 54       | 73    | 20.7   | 526 | 7.7    | 3.5 | 2.4       | 61             | 1.06 | 27 | 3/8"            | 5/16"     | 34   |
| 34RAS103H3                                   | 10mm Female Hex | 185        | 76       | 103   | 20.7   | 526 | 7.7    | 3.5 | 2.4       | 61             | 1.06 | 27 | 3/8"            | 5/16"     | 34   |

#### General:

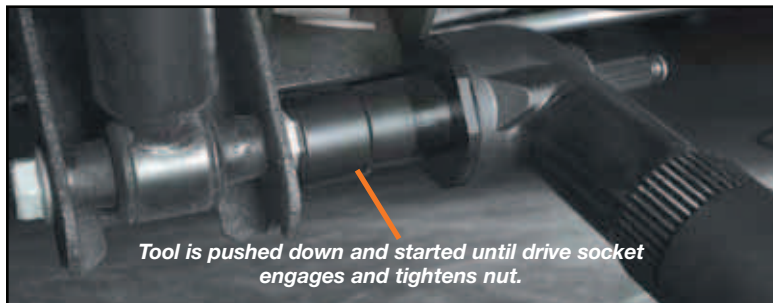
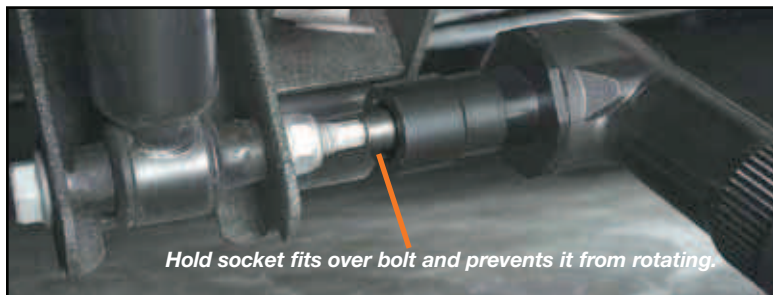
Tool performance rated at 90 psi (620kPa) air pressure.

#### Standard Equipment:

Operating instructions & service manual  
Suspension bail  
Exhaust Overhose  
Clutch adjustment tool (Clecomatic tools)  
Mounting Plate

#### Optional Equipment:

Assembly wrench: 201898  
Torque signal kit: 301937PT  
Non-reversible kit: 204999  
Additional accessories: Page 36



"Hold & 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.



## Model Number Example

| Base Tool             |            |   |   |    |   | Drive Socket    |    | Hold Socket |    |           |  |              |  |
|-----------------------|------------|---|---|----|---|-----------------|----|-------------|----|-----------|--|--------------|--|
| 34                    | R          | A | A | 53 | H | H3              | ML | O           | M6 | B         |  |              |  |
| Motor                 | Reversible |   |   |    |   |                 |    |             |    |           |  |              |  |
|                       |            |   |   |    |   |                 |    |             |    |           |  |              |  |
| Tool Style            |            |   |   |    |   |                 |    |             |    |           |  |              |  |
|                       |            |   |   |    |   |                 |    |             |    |           |  |              |  |
| A – Angle             |            |   |   |    |   |                 |    |             |    |           |  |              |  |
| Control               |            |   |   |    |   |                 |    |             |    |           |  |              |  |
| A – Clutch            |            |   |   |    |   |                 |    |             |    |           |  |              |  |
| S – Stall             |            |   |   |    |   |                 |    |             |    |           |  |              |  |
| Maximum Torque Output |            |   |   |    |   |                 |    |             |    |           |  |              |  |
| Clutch: 53, 67, 94 Nm |            |   |   |    |   |                 |    |             |    |           |  |              |  |
| Stall: 58, 73, 103 Nm |            |   |   |    |   |                 |    |             |    |           |  |              |  |
| Tool Termination      |            |   |   |    |   |                 |    |             |    |           |  |              |  |
| H – Hold & Drive      |            |   |   |    |   |                 |    |             |    |           |  |              |  |
| Retainer Shaft Length |            |   |   |    |   |                 |    |             |    |           |  |              |  |
| 3 – 3 1/2"            |            |   |   |    |   |                 |    |             |    |           |  |              |  |
| 4 – 4"                |            |   |   |    |   |                 |    |             |    |           |  |              |  |
| 5 – 5 3/8"            |            |   |   |    |   |                 |    |             |    |           |  |              |  |
| 6 – 5 7/8"            |            |   |   |    |   |                 |    |             |    |           |  |              |  |
| 9 – 9"                |            |   |   |    |   |                 |    |             |    |           |  |              |  |
| Drive Socket Size     |            |   |   |    |   |                 |    |             |    |           |  |              |  |
| EE – 1/2"             |            |   |   |    |   | EK – 7/8"       |    | EQ – 1 1/4" |    | ML – 18mm |  | MR – 24mm    |  |
| EF – 9/16"            |            |   |   |    |   | EL – 15/16"     |    | MG – 13mm   |    | MM – 19mm |  | MS – 25mm    |  |
| EG – 5/8"             |            |   |   |    |   | EM – 1"         |    | MH – 14mm   |    | MN – 20mm |  | MT – 26mm    |  |
| EH – 11/16"           |            |   |   |    |   | EN – 1 1/16"    |    | MI – 15mm   |    | MO – 21mm |  | MU – 27mm    |  |
| EI – 3/4"             |            |   |   |    |   | EO – 1 1/8"     |    | MJ – 16mm   |    | MP – 22mm |  | XX – Special |  |
| EJ – 13/16"           |            |   |   |    |   | EP – 1 3/16"    |    | MK – 17mm   |    | MQ – 23mm |  |              |  |
| Hold Socket Style     |            |   |   |    |   |                 |    |             |    |           |  |              |  |
| F – Female Hex        |            |   |   |    |   | T – Torx        |    |             |    |           |  |              |  |
| M – Male Hex          |            |   |   |    |   | O – Female oval |    |             |    |           |  |              |  |
|                       |            |   |   |    |   |                 |    |             |    |           |  |              |  |
|                       |            |   |   |    |   |                 |    |             |    |           |  |              |  |
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|                       |            |   |   |    |   |                 |    |             |    |           |  |              |  |
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# 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
- Auto alignment socket



24 Series (T2)

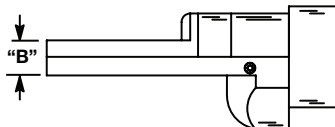
24 Series (T3)

24 Series (T4)

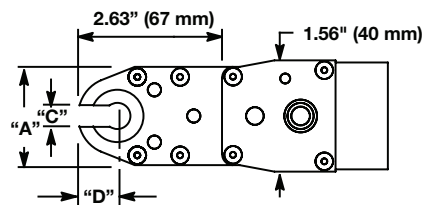
24 Series Power Unit  
With Auto Alignment

### Termination

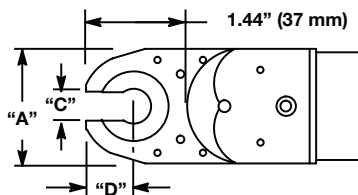
T2, T3 & T4 Head Height



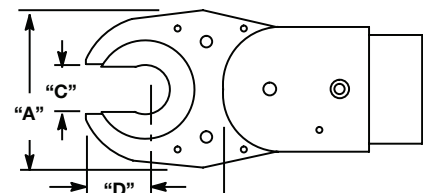
T2 Head



T3 Head



T4 Head



**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 |           | Weight |     | Length |     | Socket Size |    | “A”  |    | “B”  |    | “C”* |      | “D”  |      |
|-----------------|------------|--------------|-----------|--------|-----|--------|-----|-------------|----|------|----|------|----|------|------|------|------|
|                 |            | Ft. Lbs.     | Nm        |        |     |        |     |             |    |      |    |      |    |      |      |      |      |
|                 | RPM        | Min - Max    | Min - Max | lbs.   | kg  | in.    | mm  | in.         | mm | in.  | mm | in.  | mm | in.  | mm   | in.  | mm   |
| Power Unit Only |            |              |           |        |     |        |     |             |    |      |    |      |    |      |      |      |      |
| 24RTA12         | 670        | 3.6 - 8.9    | 5 - 12    | 2.7    | 1.2 | 12     | 305 | NA          | NA | NA   | NA | NA   | NA | NA   | NA   | NA   | NA   |
| Self Aligning   |            |              |           |        |     |        |     |             |    |      |    |      |    |      |      |      |      |
| 24RTA20T2       | 240        | 10.4 - 14.7  | 14 - 20   | 4.3    | 2.0 | 16.8   | 426 | 7/16        | —  | 1.42 | 36 | 0.55 | 14 | 0.28 | 7.0  | 0.53 | 13.5 |
| 24RTA30T3       | 175        | 14.7 - 22.1  | 20 - 30   | 4.5    | 2.0 | 16.7   | 426 | 9/16        | —  | 1.65 | 42 | 0.59 | 15 | 0.47 | 11.9 | 0.73 | 18.5 |
| 24RTA40T4       | 130        | 19.2 - 29.5  | 26 - 40   | 5.1    | 2.3 | 17.7   | 449 | 7/8         | —  | 2.36 | 60 | 0.59 | 15 | 0.67 | 17.0 | 0.93 | 23.5 |

\* Varies by socket dimension.

#### General:

Air Inlet: 1/4" NPT

Tool performance rated at 90 psi (620kPa) air pressure.

#### Extra Equipment:

Specify socket from page 35

#### Optional Equipment:

Torque signal kit: 301937PT (see page 39)



## Auto Alignment Head

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.*

## Model Number Example

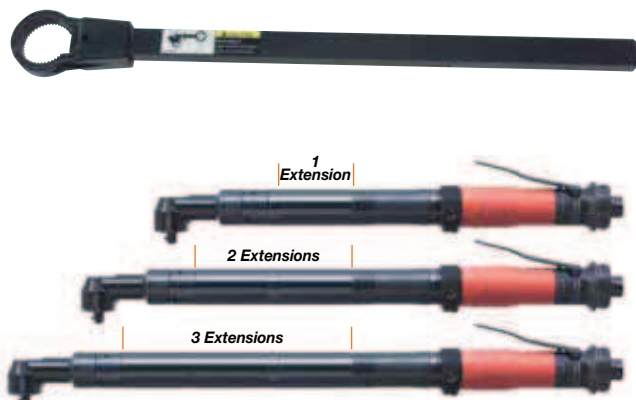
| Base Tool                                                                 |   |   |   |    |    | Socket (Order Separately)                            |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |
|---------------------------------------------------------------------------|---|---|---|----|----|------------------------------------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| 24                                                                        | R | T | A | 20 | T2 | KS2                                                  | ED | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0 |
| <b>Motor</b><br>24                                                        |   |   |   |    |    | <b>Head Type</b><br>KS2 - T2<br>KS3 - T3<br>KS4 - T4 |    | <b>Output Type</b><br>0 Partial Thru Hex<br>1 Thru Hex<br>2 Double Thru Hex<br>3 Partial Thru Double Hex                                                                                                                                                                                                                                                                                                                                                       |   |
| <b>Tool Style</b><br>R – Reversing mechanism for socket orientation       |   |   |   |    |    |                                                      |    | <b>Extension Length</b><br>0 Flush<br>2 1/4"<br>4 1/2"<br>6 3/4"                                                                                                                                                                                                                                                                                                                                                                                               |   |
| <b>Tool Type</b><br>T – Tube Nut                                          |   |   |   |    |    |                                                      |    | <b>Maximum Hex Socket Sizes</b><br>MG, 1/2"<br>MM, 3/4"<br>MU, 1 1/16"<br>00, ## (specials)                                                                                                                                                                                                                                                                                                                                                                    |   |
| <b>Torque Control</b><br>A – Clecomatic Clutch                            |   |   |   |    |    |                                                      |    | T2 Head Type<br>T3 Head Type<br>T4 Head Type<br>T3 Head Type                                                                                                                                                                                                                                                                                                                                                                                                   |   |
| <b>Max Torque (Nm)</b><br>T2 - 20 Nm<br>T3 - 30 Nm<br>T4 - 40 Nm          |   |   |   |    |    |                                                      |    | <b>Socket Sizes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                            |   |
| <b>Head Size</b><br>T2 - 20 Nm Max.<br>T3 - 30 Nm Max.<br>T4 - 40 Nm Max. |   |   |   |    |    |                                                      |    | EA – 1/4"<br>EC – 3/8"<br>ED – 7/16"<br>EE – 1/2"<br>EF – 9/16"<br>EH – 11/16"<br>EJ – 13/16"<br>EK – 7/8"<br>EL – 15/16"<br>EM – 1"<br>EO – 1 1/8"<br>M5 – 5mm<br>M6 – 6mm<br>MA – 7mm<br>MB – 8mm<br>MD – 10mm<br>ME – 11mm<br>MF – 12mm<br>MG – 13mm<br>MH – 14mm<br>MI – 15mm<br>MJ – 16mm (5/8")<br>MK – 17mm<br>ML – 18mm<br>MM – 19mm<br>MN – 20mm<br>MO – 21mm<br>MP – 22mm<br>MQ – 23mm<br>MR – 24mm<br>MS – 25mm<br>MT – 26mm<br>MU – 27mm (1 1/16") |   |

**Note:** When ordering, specify the base tool and order the socket separately. The socket will be installed in the tool before shipment.

# Nutrunner Accessories

## Torque Reaction Bars & Slave Square Drives

| Part No. | Description        | Used On              |
|----------|--------------------|----------------------|
| 869770   | Steel Bar          | 45, 55 series inline |
| 48047128 | Steel Bar          | 64...D4 series       |
| 46037081 | Slave Square Drive | 64...D4 series       |
| 46177030 | Slave Square Drive | 64...D6 series       |
| 46607058 | Slave Square Drive | 64...D8 series       |

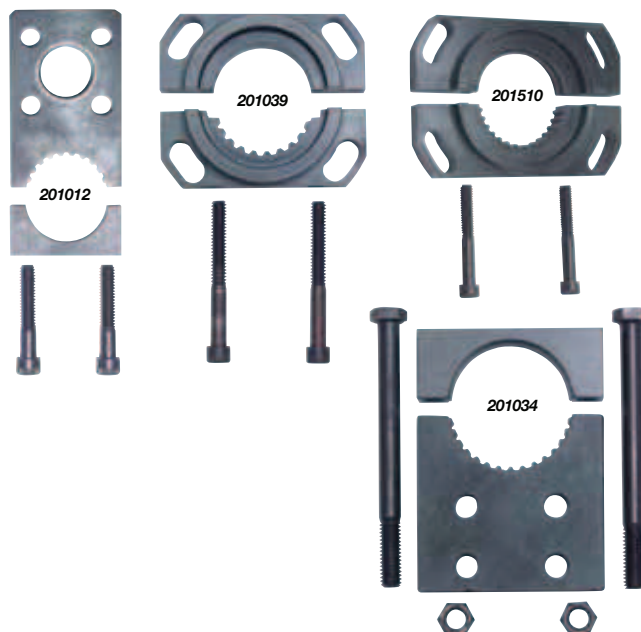


## Extension Kit (3.5")

| Part No. | Used On                       |
|----------|-------------------------------|
| 301081   | 34 series (37 Nm or higher)   |
| 301108   | 24/34 series (36 Nm or lower) |

## Mounting Brackets (right angle tools)

| Part No. | Description             | Used On              |
|----------|-------------------------|----------------------|
| 201012   | Torque reaction bracket | 45, 55 series        |
| 201039   | Fixed tooling bracket   | 45, 55 series        |
| 201510   | Torque reaction bracket | 75 series            |
| 201034   | Torque reaction bracket | 75 series (standard) |



## Anglehead Covers

| Part No. | Used On     |           |
|----------|-------------|-----------|
|          | Tool Series | Anglehead |
| 205831   | 24/34       | AH, AM    |
| 205833   | 24/34       | AX        |
| 205834   | 24/34       | AZ        |
| 205837   | 19          | AH        |
| 205839   | 45/55       | T         |
| 205835   | 45/55       | P         |
| 205838   | 75          | V         |



## Suspension Bail

| Part No. | Used On              |
|----------|----------------------|
| 867711   | 8, 35, 45, 55 series |
| 204987   | 24, 34 wire bail     |



## Swivel Suspension Bail

| Part No. | Used On         |
|----------|-----------------|
| 541715-5 | 24, 34 series   |
| 54397004 | 64...D4 series  |
| 46437006 | 64...D6 series  |
| 46607016 | 64...D8 series  |
| 46037036 | 64...D12 series |



## Torque Signal Kit

Air signal to indicate clutch shut-off.

| Part No. | Used On                      |
|----------|------------------------------|
| 201900   | 24/34 Clecomatic (old style) |
| 301937PT | 24/34 Clecomatic (new style) |
| 301106   | 14 Clecomatic                |



## Assembly Wrench

| Part No. | Used On      |
|----------|--------------|
| 201898   | Two required |



## Joint Simulator

| Description     | Torque Range |        | Width |     | Height |     | Length |     | Part No. |
|-----------------|--------------|--------|-------|-----|--------|-----|--------|-----|----------|
|                 | ft.-lbs.     | Nm     | in.   | mm  | in.    | mm  | in.    | mm  |          |
| Joint Simulator | 220-12       | 300-15 | 10.4  | 264 | 16     | 406 | 26     | 667 | 550006   |



550006



## The TVP-100 Series Torque Verifier provides low-cost assembly assurance for pneumatic screwdrivers, nutrunners and pulse tools.

The 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.



# Accessories

Cleco TVP-100 Series Torque Verifier

## 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
- Multiple languages



## 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 |

\*\* 230V units are CE compliant.

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      Outputs: Cycle Accept  
Reset                                      Batch Accept  
Suspend                                  Reject

## Accessories

### Torque Signal Kits

| Part No. | Tool Used On                                                  |
|----------|---------------------------------------------------------------|
| 301106   | 19SCA & 19RAA series                                          |
| 302021PT | 19TTA & 19PTA series                                          |
| 201900   | 24RAA and 34RAA <i>(old style)</i>                            |
| 301937PT | 24RAA and 34RAA <i>(new style)</i>                            |
| 934918   | PTH series pulse tools<br><i>("C" &amp; "D" vintage only)</i> |

### Phoenix Connector

| Part No. | Description                               |
|----------|-------------------------------------------|
| 542892   | 24 Volt Input/Output<br>Phoenix connector |
| 939348   | Strain relief for above<br>connector      |

### Cables

| Part No. | Description               |
|----------|---------------------------|
| 207237   | 115V Transducer and cable |
| 207238   | 230V Transducer and cable |

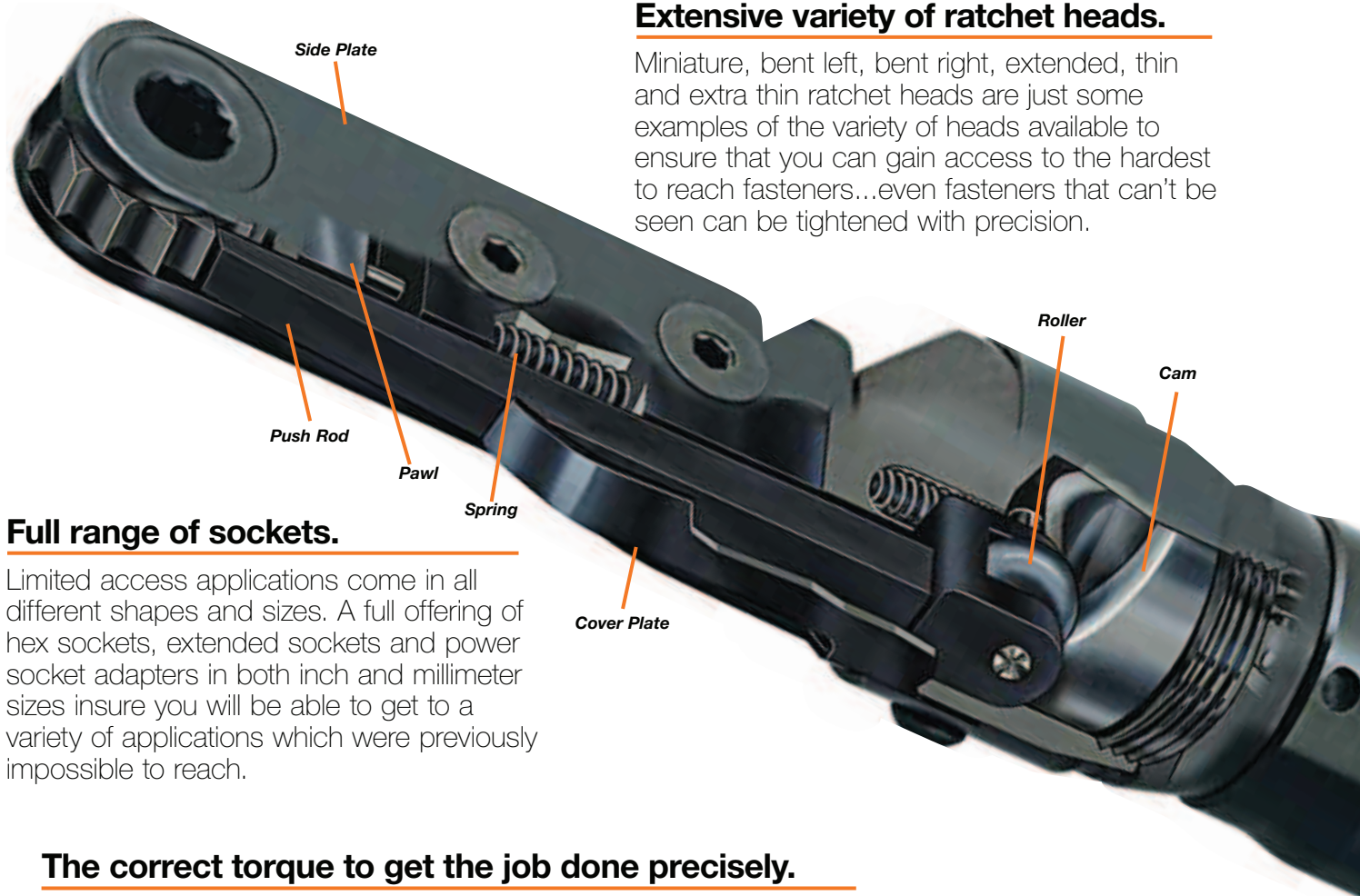
*\*115V and 230V transducer and cable assemblies have different connectors at the TVP end of the cable.*



## Cleco Ratchet Wrenches. For Applications That Are “Impossible” To Get To.

### Extensive variety of ratchet heads.

Miniature, bent left, bent right, extended, thin and extra thin ratchet heads are just some examples of the variety of heads available to ensure that you can gain access to the hardest to reach fasteners...even fasteners that can't be seen can be tightened with precision.



### Full range of sockets.

Limited access applications come in all different shapes and sizes. A full offering of hex sockets, extended sockets and power socket adapters in both inch and millimeter sizes insure you will be able to get to a variety of applications which were previously impossible to reach.

### The correct torque to get the job done precisely.

Cleco 24 and 34 series ratchet wrenches are available in sizes up to 50 Ft.Lbs. Several sizes of side plate widths and thicknesses are available to provide a wide range of torques without sacrificing size or durability.

### Success in simplicity.

By using a single direction stall motor the Cleco 24 and 34 series ratchet wrenches eliminate components that traditionally add cost and decrease service life. With this tool you truly get what you pay for. A very economical and dependable solution for the hardest to reach fasteners. Need a reversible tool? No problem, simply flip the tool over.

### **Gears that have stood up to the test of time.**

The key wear items in the ratchet head (gears, cams, and push rods) have remained unchanged from the previous H16 and H30 tools. Not only can you have confidence in their durability, you won't have to buy new replacement parts.



### **Improved motor for better performance.**

Innovative low inertia motor design provides more usable power in a smaller package size. The end result is a more ergonomic handle for a more productive tool. The same successful motor is used on Cleco flush socket, crowfoot, hold-and-drive and standard Clecomatic clutch shut-off nutrunners.

### **Ergonomic grip for operator comfort.**

Rubber coated motor housing helps isolate the operator from temperature changes.

**Cleco®**

*Easy assembly/disassembly  
with a standard spanner wrench.*

*Hardened steel bearing  
plates resist wear and  
assures longer life.*



# Ratchet Wrenches

Stall Type

## Cleco®

### 24 & 34 Series

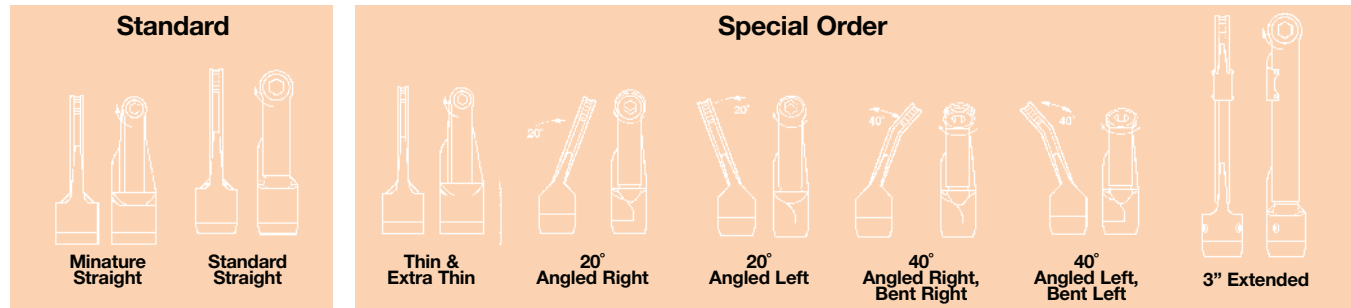
**Torque Range:**  
up to 68.3 Nm  
up to 50.4 Ft. Lbs

- Stall type
- Non-Reversible

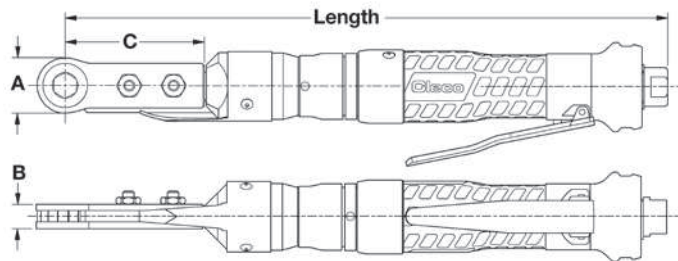


### Cleco 24/34 Series Model Number Nomenclature

|                       | 24                          | N | R                                 | S | XX               | H | XX           |  |
|-----------------------|-----------------------------|---|-----------------------------------|---|------------------|---|--------------|--|
| <b>Tool Series</b>    | 24<br>34                    |   | N<br>R                            |   | S<br>XX          |   | H<br>XX      |  |
|                       |                             |   |                                   |   |                  |   |              |  |
| <b>Tool Style</b>     | N – Non-reversible          |   | R – Lever throttle ratchet wrench |   | S – Standard     |   | XX – Thin    |  |
|                       |                             |   |                                   |   |                  |   |              |  |
| <b>Tool Type</b>      | N – Non-reversible          |   | R – Lever throttle ratchet wrench |   | S – Standard     |   | XX – Thin    |  |
|                       |                             |   |                                   |   |                  |   |              |  |
| <b>Torque Control</b> | (rounded to the nearest Nm) |   | S – Stall                         |   | XX – 3" Extended |   | H – Standard |  |
|                       |                             |   |                                   |   |                  |   |              |  |
| <b>Maximum Torque</b> | (rounded to the nearest Nm) |   | S – Stall                         |   | XX – 3" Extended |   | H – Standard |  |
|                       |                             |   |                                   |   |                  |   |              |  |
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|                       |                             |   |                                   |   |                  |   |              |  |
|                       |                             |   |                                   |   |                  |   |              |  |



Other head types are available. Contact your Cooper Power Tools sales representative.



| Model Number     | Free Speed | Maximum Torque |      | Maximum Socket Size |    | "A"     |      | "B"  |      | "C"  |      | Length |     | Weight |     |
|------------------|------------|----------------|------|---------------------|----|---------|------|------|------|------|------|--------|-----|--------|-----|
|                  | RPM        | Ft. Lbs.       | Nm   | in.                 | mm | in.     | mm   | in.  | mm   | in.  | mm   | in.    | mm  | lbs.   | kg  |
| <b>24 Series</b> |            |                |      |                     |    |         |      |      |      |      |      |        |     |        |     |
| 24NRS15A13       | 265        | 11.0           | 14.9 | 7/16                | 11 | 13/16   | 20.6 | 1/2  | 12.7 | 2.88 | 73.2 | 13.4   | 340 | 2.7    | 1.2 |
| 24NRS15A12       | 285        | 11.1           | 15.0 | 3/8                 | 10 | 3/4     | 19.0 | 1/2  | 12.7 | 2.88 | 73.2 | 13.4   | 340 | 2.7    | 1.2 |
| 24NRS20H15       | 305        | 14.8           | 20.1 | 1/2                 | 13 | 15/16   | 23.8 | 9/16 | 14.2 | 3.13 | 79.5 | 14.0   | 356 | 2.9    | 1.3 |
| 24NRS21H16       | 285        | 15.4           | 20.9 | 9/16                | 16 | 1       | 25.4 | 9/16 | 14.2 | 3.13 | 79.5 | 14.0   | 356 | 3.0    | 1.3 |
| 24NRS23A13       | 145        | 17.2           | 23.3 | 7/16                | 11 | 13/16   | 20.6 | 1/2  | 12.7 | 2.88 | 73.2 | 14.2   | 361 | 2.9    | 1.3 |
| 24NRS23H15       | 170        | 17.3           | 23.5 | 1/2                 | 13 | 15/16   | 23.8 | 9/16 | 14.2 | 3.13 | 79.5 | 14.8   | 376 | 3.1    | 1.4 |
| 24NRS23H20       | 250        | 17.5           | 23.7 | 3/4                 | 19 | 1 1/4   | 31.8 | 9/16 | 14.2 | 3.13 | 79.5 | 14.2   | 361 | 3.0    | 1.4 |
| 24NRS24H16       | 155        | 17.7           | 24.0 | 9/16                | 16 | 1       | 25.4 | 9/16 | 14.2 | 3.13 | 79.5 | 14.8   | 376 | 3.2    | 1.4 |
| 24NRS24H18       | 265        | 18.0           | 24.4 | 5/8                 | 16 | 1 1/8   | 28.6 | 9/16 | 14.2 | 3.13 | 79.5 | 14.1   | 358 | 3.0    | 1.4 |
| 24NRS24A12       | 155        | 18.3           | 24.8 | 3/8                 | 10 | 3/4     | 19.0 | 1/2  | 12.7 | 2.88 | 73.2 | 14.2   | 361 | 2.9    | 1.3 |
| 24NRS29H18       | 145        | 21.4           | 29.0 | 5/8                 | 16 | 1 1/8   | 28.6 | 9/16 | 14.2 | 3.13 | 79.5 | 14.9   | 378 | 3.2    | 1.5 |
| 24NRS29H25       | 180        | 21.5           | 29.1 | 15/16               | 24 | 1 9/16  | 39.7 | 9/16 | 14.2 | 3.25 | 82.5 | 14.4   | 366 | 3.1    | 1.4 |
| 24NRS30H20       | 135        | 22.0           | 29.8 | 3/4                 | 19 | 1 1/4   | 31.8 | 9/16 | 14.2 | 3.13 | 79.5 | 14.9   | 378 | 3.2    | 1.5 |
| <b>34 Series</b> |            |                |      |                     |    |         |      |      |      |      |      |        |     |        |     |
| 34NRS29H15       | 255        | 21.6           | 29.3 | 1/2                 | 13 | 15/16   | 23.8 | 9/16 | 14.2 | 3.13 | 79.5 | 16.0   | 406 | 3.7    | 1.7 |
| 34NRS31H16       | 240        | 22.9           | 31.0 | 9/16                | 16 | 1       | 25.4 | 9/16 | 14.2 | 3.13 | 79.5 | 16.0   | 406 | 3.7    | 1.7 |
| 34NRS35H20       | 210        | 25.9           | 35.1 | 3/4                 | 19 | 1 1/4   | 31.8 | 9/16 | 14.2 | 3.13 | 79.5 | 16.2   | 411 | 3.7    | 1.7 |
| 34NRS36H18       | 225        | 26.7           | 36.2 | 5/8                 | 16 | 1 1/8   | 28.6 | 9/16 | 14.2 | 3.13 | 79.5 | 16.1   | 409 | 3.7    | 1.7 |
| 34NRS36H15       | 155        | 26.8           | 36.3 | 1/2                 | 13 | 15/16   | 23.8 | 9/16 | 14.2 | 3.13 | 79.5 | 16.8   | 427 | 3.9    | 1.8 |
| 34NRS38H16       | 145        | 28.1           | 38.1 | 9/16                | 16 | 1       | 25.4 | 9/16 | 14.2 | 3.13 | 79.5 | 16.8   | 427 | 3.9    | 1.8 |
| 34NRS42H25       | 150        | 30.9           | 41.9 | 15/16               | 24 | 1 9/16  | 39.7 | 9/16 | 14.2 | 3.25 | 82.5 | 16.4   | 417 | 3.8    | 1.7 |
| 34NRS46H20       | 125        | 33.9           | 46.0 | 3/4                 | 19 | 1 1/4   | 31.8 | 9/16 | 14.2 | 3.13 | 79.5 | 17.0   | 432 | 4.0    | 1.8 |
| 34NRS46H18       | 135        | 34.1           | 46.2 | 5/8                 | 16 | 1 1/8   | 28.6 | 9/16 | 14.2 | 3.13 | 79.5 | 16.9   | 429 | 4.0    | 1.8 |
| 34NRS48H29       | 140        | 35.1           | 47.6 | 1 1/8               | 29 | 1 13/16 | 46.0 | 5/8  | 15.9 | 3.50 | 88.9 | 16.9   | 429 | 4.0    | 1.8 |
| 34NRS52H25       | 90         | 38.4           | 52.1 | 15/16               | 24 | 1 9/16  | 39.7 | 9/16 | 14.2 | 3.25 | 82.5 | 17.2   | 437 | 4.1    | 1.8 |
| 34NRS53H37       | 120        | 38.9           | 52.7 | 1 5/8               | 41 | 2 11/32 | 59.5 | 5/8  | 15.9 | 3.75 | 95.3 | 17.3   | 439 | 4.4    | 2.0 |
| 34NRS63H29       | 85         | 46.7           | 63.3 | 1 1/8               | 29 | 1 13/16 | 46.0 | 5/8  | 15.9 | 3.50 | 88.9 | 17.7   | 450 | 4.2    | 1.9 |
| 34NRS68H37       | 70         | 50.4           | 68.3 | 1 5/8               | 41 | 2 11/32 | 59.5 | 5/8  | 15.9 | 3.75 | 95.3 | 18.1   | 460 | 4.6    | 2.1 |

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

**Standard Equipment:**  
Suspension bail, hex socket

**Socket Selection:**  
See pages 45-47

# Ratchet Wrenches

Clutch Type

## Cleco®

### H16, H30, 41 & 60 Series

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

- Clutch activated 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:

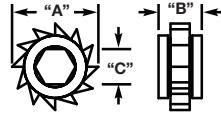
H16, H30: Suspension bail, hex socket  
41: Hex socket  
60: Hex socket, reaction bar collar  
(1/2" hex opening for reaction bar)

#### Socket Selection:

See pages 45-47

\*WARNING: these terminations are not recommended for applications over 50 Ft. Lbs. (68 Nm) torque.

## Standard Length 24, 34, H16, H30, 41 Series (No additional cost)



| Termination |      | 12                  | 13       | 15      | 16       | 18      | 20      | 25      | 29      | 37      |
|-------------|------|---------------------|----------|---------|----------|---------|---------|---------|---------|---------|
| "A"         |      | 3/4                 | 13/16    | 15/16   | 1        | 1 1/8   | 1 1/4   | 1 9/16  | 1 13/16 | 2 11/32 |
| "B"         |      | 1/2                 | 1/2      | 9/16    | 9/16     | 9/16    | 9/16    | 9/16    | 5/8     | 5/8     |
| "C"         |      | Socket Part Numbers |          |         |          |         |         |         |         |         |
| Hex*        |      |                     |          |         |          |         |         |         |         |         |
| 1/4"        | S.H. | 28000               | 28020PT  | 28048   | 28075PT  |         |         |         |         |         |
| 1/4"        | D.H. | 28001               | 28021PT  | 28051PT |          |         |         |         |         |         |
| 9/32"       | S.H. | 28012PT             |          |         |          |         |         |         |         |         |
| 5/16"       | S.H. | 28002PT             | 28022    | 28040PT | 28056    |         | 28101   | 28135   |         |         |
| 5/16"       | D.H. | 28003               | 28023    | 28052PT | 28078    |         | 28124PT |         |         | 30434   |
| 11/32"      | S.H. | 28004PT             | 28024PT  |         | 28074PT  | 28097PT | 28102   |         |         |         |
| 11/32"      | D.H. | 28005               |          |         |          |         |         |         |         |         |
| 3/8"        | S.H. | 28006               | 28026PT  | 28041   | 28057PT  | 28094PT | 28160PT |         |         |         |
| 3/8"        | D.H. | 28007PT             | 28027    | 28042PT | 28058PT  |         | 28123   | 28166PT |         |         |
| 7/16"       | S.H. | 28009PT†            | 28029PT  | 28043PT | 28060PT  | 28081PT | 28105PT | 28136PT | 28192PT | 30418PT |
| 7/16"       | D.H. | 28010†              | 28030    | 28044PT | 28061PT  | 28082PT | 28106PT | 28137   |         | 30435PT |
| 1/2"        | S.H. |                     | 28031PT† | 28046PT | 28063    | 28083PT | 28108   | 28139   | 28170   | 30423   |
| 1/2"        | D.H. |                     | 28032†   | 28047   | 28064    | 28084PT | 28109   | 28140PT |         |         |
| 9/16"       | S.H. |                     |          |         | 28066    | 28087   | 28111   | 28141   | 28171   | 30432   |
| 9/16"       | D.H. |                     |          |         | 28067PT  | 28088   | 28112   | 28142PT | 28189PT |         |
| 5/8"        | S.H. |                     |          |         | 28069PT† | 28090PT | 28115   | 28144PT | 28172   |         |
| 5/8"        | D.H. |                     |          |         | 28070†   | 28091   | 28116PT | 28145   | 28190PT | 30431PT |
| 11/16"      | S.H. |                     |          |         |          |         | 28118PT | 28146PT | 28173   | 30433   |
| 11/16"      | D.H. |                     |          |         |          |         | 28119   | 28147   |         |         |
| 3/4"        | S.H. |                     |          |         |          |         | 28121   | 28148PT | 28174   | 30429PT |
| 3/4"        | D.H. |                     |          |         |          |         | 28122PT | 28149PT | 28191PT |         |
| 13/16"      | S.H. |                     |          |         |          |         |         | 28150   | 28175   |         |
| 13/16"      | D.H. |                     |          |         |          |         |         | 28151PT |         |         |
| 7/8"        | S.H. |                     |          |         |          |         |         | 28154   | 28176PT | 30427PT |
| 7/8"        | D.H. |                     |          |         |          |         |         | 28155PT | 28177   |         |
| 15/16"      | S.H. |                     |          |         |          |         |         | 28156PT | 28179   | 30430   |
| 15/16"      | D.H. |                     |          |         |          |         |         | 28157PT | 28180PT | 30434   |
| 1"          | S.H. |                     |          |         |          |         |         |         | 28181   | 30428PT |
| 1"          | D.H. |                     |          |         |          |         |         |         | 28182PT |         |
| 1-1/16"     | S.H. |                     |          |         |          |         |         |         | 28183PT | 30436   |
| 1-1/16"     | D.H. |                     |          |         |          |         |         |         | 28184   |         |
| 1-1/8"      | S.H. |                     |          |         |          |         |         |         | 28185PT | 30417PT |
| 1-1/8"      | D.H. |                     |          |         |          |         |         |         | 28187   |         |
| 1-3/16"     | S.H. |                     |          |         |          |         |         |         |         | 30425PT |
| 1-1/4"      | S.H. |                     |          |         |          |         |         |         |         | 30419PT |
| 1-5/16"     | S.H. |                     |          |         |          |         |         |         |         | 30426   |
| 1-7/16"     | S.H. |                     |          |         |          |         |         |         |         | 30420   |
| 1-1/2"      | S.H. |                     |          |         |          |         |         |         |         | 30421   |
| 1-1/2"      | D.H. |                     |          |         |          |         |         |         |         | 30437   |
| 1-5/8"      | S.H. |                     |          |         |          |         |         |         |         | 30422PT |
| 6 mm        | S.H. | 28016PT             | 28033PT  | 28055PT |          |         |         |         |         |         |
| 7 mm        | S.H. | 28017PT             | 28034PT  | 530440  |          |         | 28126   | 28163   |         |         |
| 8 mm        | S.H. | 28002PT             | 28022    | 28040PT | 28056    |         |         |         |         |         |
| 8 mm        | D.H. | 28003               | 28023    |         | 28078    |         |         |         |         |         |
| 9 mm        | S.H. |                     |          |         | 28071    |         |         |         |         |         |
| 9 mm        | D.H. |                     | 28037    |         |          |         |         |         |         |         |
| 10 mm       | S.H. | 28008PT             | 28028    | 28054PT | 28059PT  | 28093   | 28104PT | 28164   |         |         |
| 11 mm       | S.H. | 28009PT†            | 28029PT  | 28043PT | 28060PT  | 28081PT |         | 28136PT | 530460  |         |
| 12 mm       | S.H. |                     |          | 28045   | 28062    |         | 28107   | 28138PT |         |         |
| 13 mm       | S.H. |                     | 28036    | 28053   | 28077PT  | 28096PT | 28125PT | 28161PT | 530461  |         |
| 14 mm       | S.H. |                     |          | 530441  | 28065PT  | 28086PT | 28110PT | 28159   |         |         |
| 15 mm       | S.H. |                     |          |         | 28068PT  | 28089   | 28113   | 28143   | 530462  | 532431  |
| 15 mm       | D.H. |                     |          |         | 28080PT  | 28095PT |         |         |         |         |
| 16 mm       | S.H. |                     |          |         | 28100PT  | 28099   |         | 28167   |         |         |
| 17 mm       | S.H. |                     |          |         | 543126   | 28092PT | 28117   | 28158   | 28193PT |         |
| 18 mm       | S.H. |                     |          |         |          |         | 28120   | 28165PT |         | 30439PT |
| 19 mm       | S.H. |                     |          |         |          |         | 28121   | 28148PT | 28174   | 30429PT |
| 19 mm       | D.H. |                     |          |         |          |         | 28122PT | 28149PT | 28191PT |         |
| 21 mm       | S.H. |                     |          |         |          |         |         | 28152   |         |         |
| 22 mm       | S.H. |                     |          |         |          |         |         | 28162   |         |         |
| 23 mm       | S.H. |                     |          |         |          |         |         |         | 28178PT |         |
| 24 mm       | S.H. |                     |          |         |          |         |         | 28168   |         |         |
| 29 mm       | S.H. |                     |          |         |          |         |         |         | 28188PT |         |

\* S.H. = Single Hex; D.H. = Double Hex

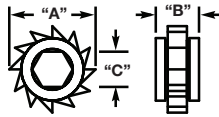
† FRAGILE: For light duty operations only.

# Ratchet Wrenches

## Hex Socket Selection Charts

### Standard Length

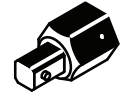
**60 Series** (No additional cost)



| Termination | 24    | 32                  | 40     | 48     | 56     |
|-------------|-------|---------------------|--------|--------|--------|
| "A"         | 1 1/2 | 2                   | 2 1/2  | 3      | 3 1/2  |
| "B"         | 7/8   | 7/8                 | 7/8    | 1      | 1      |
| "C"         | Hex*  | Socket Part Numbers |        |        |        |
| 1/2"        | S.H.  | 29015               | 29053  |        | 29121  |
| 1/2"        | D.H.  | 29016               |        |        |        |
| 9/16"       | S.H.  | 29017               |        |        |        |
| 9/16"       | D.H.  | 29018               |        |        |        |
| 5/8"        | S.H.  | 29019               | 29035  |        |        |
| 5/8"        | D.H.  | 29020               | 29036  |        |        |
| 11/16"      | S.H.  | 29021               | 29037  | 507159 |        |
| 11/16"      | D.H.  |                     | 29038  |        |        |
| 3/4"        | S.H.  | 29023               | 29039  | 507157 | 29115  |
| 3/4"        | D.H.  | 29024               | 29040  |        | 523737 |
| 13/16"      | S.H.  |                     | 29041  | 29055  |        |
| 13/16"      | D.H.  |                     | 29042  |        |        |
| 7/8"        | S.H.  |                     | 29043  | 29057  | 29150  |
| 7/8"        | D.H.  |                     | 29044  | 29058  |        |
| 15/16"      | S.H.  |                     | 29045  | 29059  | 29111  |
| 15/16"      | D.H.  |                     | 29046  | 29060  | 29112  |
| 1"          | S.H.  |                     | 29047  | 29061  | 29116  |
| 1"          | D.H.  |                     | 29048  | 29062  | 29147  |
| 1 1/16"     | S.H.  |                     | 29049  | 29063  | 29114  |
| 1 1/16"     | D.H.  |                     | 29050  | 29064  | 29146  |
| 1 1/8"      | S.H.  |                     | 29051† | 29065  | 29090  |
| 1 1/8"      | D.H.  |                     | 29052† | 29066  | 29091  |
| 1 3/16"     | S.H.  |                     |        | 29075  | 29118  |
| 1 1/4"      | S.H.  |                     |        | 29067  | 29092  |
| 1 1/4"      | D.H.  |                     |        | 29068  | 29093  |
| 1 5/16"     | S.H.  |                     |        | 29069  | 29094  |
| 1 5/16"     | D.H.  |                     |        | 29070  | 29095  |
| 1 3/8"      | S.H.  |                     |        |        | 29117  |
| 1 7/16"     | S.H.  |                     |        | 29071  | 29096  |
| 1 7/16"     | D.H.  |                     |        | 29072  | 29123  |
| 1 1/2"      | S.H.  |                     |        | 29073  | 29098  |
| 1 1/2"      | D.H.  |                     |        | 29074  | 29125  |
| 1 9/16"     | S.H.  |                     |        |        | 29152  |
| 1 5/8"      | S.H.  |                     |        |        | 29100  |
| 1 5/8"      | D.H.  |                     |        |        | 29101  |
| 1 11/16"    | S.H.  |                     |        |        | 29128  |
| 1 11/16"    | D.H.  |                     |        |        | 29129  |
| 1 3/4"      | S.H.  |                     |        |        | 29103  |
| 1 13/16"    | S.H.  |                     |        |        | 29108  |
| 1 13/16"    | D.H.  |                     |        |        | 29104  |
| 1 7/8"      | S.H.  |                     |        |        | 29131  |
| 1 15/16"    | S.H.  |                     |        |        | 29132  |
| 2"          | S.H.  |                     |        |        | 29133  |
| 2 1/16"     | S.H.  |                     |        |        | 29106  |
| 2 1/16"     | D.H.  |                     |        |        | 29110† |
| 2 3/16"     | S.H.  |                     |        |        | 29135  |
| 2 1/4"      | S.H.  |                     |        |        | 29137  |
| 2 3/8"      | S.H.  |                     |        |        | 29138  |
| 15 mm       | S.H.  | 29028               | 507135 |        | 29139  |
| 18 mm       | S.H.  | 29027               |        |        | 29141  |
| 21 mm       | S.H.  | 29029               | 507136 |        | 29143† |
| 22 mm       | S.H.  |                     | 507134 |        |        |
| 24 mm       | S.H.  |                     | 507132 | 507160 |        |
| 26 mm       | S.H.  |                     | 507133 | 507157 | 29119  |
| 29 mm       | S.H.  |                     | 507134 |        |        |
| 30 mm       | S.H.  |                     | 507137 | 507162 |        |
| 36 mm       | S.H.  |                     |        | 29079  | 523738 |

### Power Socket Adapters

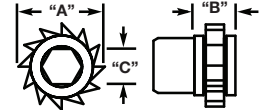
Adapts grooved sockets to square drive. Use with conventional square drive socket. (additional cost)



| Part Number | Hex Size | Square Drive | Overall Length |
|-------------|----------|--------------|----------------|
| A-312       | 3/8"     | 3/8"         | 0.94"          |
| A-314       | 7/16"    | 3/8"         | 0.94"          |
| A-514       | 7/16"    | 1/2"         | 1.09"          |
| A-516       | 1/2"     | 1/2"         | 1.16"          |
| A-518       | 9/16"    | 1/2"         | 1.16"          |
| A-520       | 5/8"     | 1/2"         | 1.13"          |
| A-524       | 3/4"     | 1/2"         | 1.13"          |

### Extended Length 24, 34, H16, H30, 41 Series

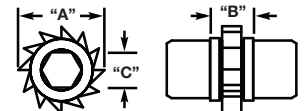
(Additional cost. Provides CCW tightening.)



| Termination | 12   | 13    | 15                  | 16       | 18    | 20     | 25     | 29      |
|-------------|------|-------|---------------------|----------|-------|--------|--------|---------|
| "A"         | 3/4  | 13/16 | 15/16               | 1        | 1 1/8 | 1 1/4  | 1 9/16 | 1 13/16 |
| "B"         | 1/2  | 1/2   | 9/16                | 9/16     | 9/16  | 9/16   | 9/16   | 5/8     |
| "C"         | Hex* | Ext.  | Socket Part Numbers |          |       |        |        |         |
| 5/16"       | S.H. | 1/2"  |                     | 501060   |       |        |        |         |
| 3/8"        | S.H. | 1/4"  | 20966               |          |       |        |        |         |
| 3/8"        | D.H. | 1/4"  |                     | 28652PT  |       |        |        |         |
| 7/16"       | S.H. | 1/4"  |                     | 28650PT  |       |        |        |         |
| 7/16"       | S.H. | 1/2"  |                     | 501056   |       |        |        |         |
| 1/2"        | S.H. | 1/4"  |                     | 28645PT  |       |        |        |         |
| 1/2"        | S.H. | 1/2"  |                     | 501059   |       |        |        |         |
| 1/2"        | S.H. | 5/8"  |                     |          |       | 501061 |        |         |
| 1/2"        | S.H. | 3/4"  |                     | 501054   |       |        |        |         |
| 9/16"       | S.H. | 3/8"  |                     | 501051   |       |        |        |         |
| 9/16"       | S.H. | 1/2"  |                     | 501053   |       |        |        |         |
| 9/16"       | S.H. | 7/8"  |                     | 28649PT  |       |        |        |         |
| 5/8"        | S.H. | 3/8"  |                     | 28648PT† |       |        |        |         |
| 1 3/16"     | S.H. | 3/4"  |                     |          |       | 501062 |        |         |
| 13 mm       | S.H. | 1/2"  |                     |          |       | 501063 |        |         |

### Double Extended 24, 34, H16, H30, 41 Series

(Additional cost)



| Termination | 12   | 13    | 15                  | 16      | 18      | 20     | 29      |
|-------------|------|-------|---------------------|---------|---------|--------|---------|
| "A"         | 3/4  | 13/16 | 15/16               | 1       | 1 1/8   | 1 1/4  | 1 13/16 |
| "B"         | 1/2  | 1/2   | 9/16                | 9/16    | 9/16    | 9/16   | 5/8     |
| "C"         | Hex* | Ext.  | Socket Part Numbers |         |         |        |         |
| 5/16"       | S.H. | 1/4"  | 10642               |         |         |        |         |
| 5/16"       | D.H. | 1/2"  |                     | 501222  |         |        |         |
| 3/8"        | S.H. | 3/8"  |                     | 501225  |         |        |         |
| 7/16"       | S.H. | 1/4"  | 18950               |         |         |        |         |
| 7/16"       | S.H. | 1/2"  |                     |         | 28787PT |        |         |
| 1/2"        | D.H. | 1/8"  |                     | 28654   |         |        |         |
| 1/2"        | S.H. | 1/4"  |                     | 28663   | 28789   |        |         |
| 1/2"        | S.H. | 7/16" |                     | 501221  |         |        |         |
| 1/2"        | D.H. | 1/2"  |                     | 28660PT |         |        |         |
| 9/16"       | S.H. | 1/8"  |                     | 28659PT |         |        |         |
| 9/16"       | D.H. | 1/8"  |                     | 28655PT |         |        |         |
| 9/16"       | S.H. | 1/4"  |                     | 28656PT |         |        |         |
| 9/16"       | D.H. | 3/8"  |                     | 28657PT |         |        |         |
| 9/16"       | S.H. | 1/2"  |                     |         | 28791   | 501230 |         |
| 9/16"       | D.H. | 1/2"  |                     |         |         | 501231 |         |
| 11/16"      | S.H. | 1/2"  |                     |         |         | 28793  |         |
| 3/4"        | D.H. | 3/8"  |                     |         |         | 28797† |         |
| 3/4"        | S.H. | 3/4"  |                     |         |         |        | 28661   |
| 13 mm       | S.H. | 1/4"  |                     | 501229  | 530024  |        |         |
| 13 mm       | S.H. | 3/8"  |                     | 501226  |         |        |         |
| 13 mm       | S.H. | 1/2"  |                     | 530741  | 530028  |        |         |
| 13 mm       | S.H. | 3/4"  |                     | 530742  | 531201  |        |         |
| 15 mm       | S.H. | 1/4"  |                     | 501227  | 530025  | 530002 | 501232  |
| 15 mm       | S.H. | 3/8"  |                     | 501228  |         | 530001 | 501233  |
| 15 mm       | S.H. | 1/2"  |                     |         | 530026  | 530003 | 501234  |
| 15 mm       | S.H. | 3/4"  |                     |         | 531200  | 530004 |         |

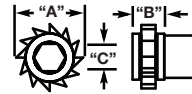
\* S.H. = Single Hex; D.H. = Double Hex

† FRAGILE: For light duty operations only.

## Extended Length H16, H30, 41 Series

(Additional cost. Provides CW tightening.)

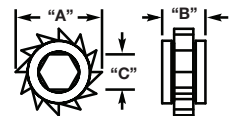
| Termination | 12        | 13    | 15                  | 16      | 18      | 20       | 25      | 29              |
|-------------|-----------|-------|---------------------|---------|---------|----------|---------|-----------------|
| "A"         | 3/4       | 13/16 | 15/16               | 1       | 1 1/8   | 1 1/4    | 1 9/16  | 1 13/16         |
| "B"         | 1/2       | 1/2   | 9/16                | 9/16    | 9/16    | 9/16     | 9/16    | 5/8             |
| "C"         | Hex*      | Ext.  | Socket Part Numbers |         |         |          |         |                 |
| 1/4"        | S.H. 1/4" |       | 28300PT             |         |         |          |         |                 |
| 1/4"        | D.H. 3/8" |       |                     | 508406  |         |          |         |                 |
| 1.4"        | D.H. 1/2" |       | 28314               |         |         |          |         |                 |
| 5/16"       | S.H. 1/4" |       | 28301               | 28331   |         | 28353PT  |         |                 |
| 5/16"       | D.H. 1/4" |       | 28316PT             |         |         | 28387PT  |         |                 |
| 5/16"       | S.H. 3/8" |       | 28302PT             | 28333   | 28338   |          |         |                 |
| 5/16"       | D.H. 3/8" |       |                     | 28335   | 28352   |          |         |                 |
| 5/16"       | S.H. 1/2" |       | 28320PT             |         | 28350PT | 516546   |         |                 |
| 5/16"       | S.H. 3/4" |       |                     |         |         | 28392PT  |         |                 |
| 5/16"       | S.H. 7/8" |       | 28313PT             |         |         |          |         |                 |
| 11/32"      | S.H. 1/4" |       | 28303               |         |         |          |         |                 |
| 11/32"      | S.H. 1/2" |       |                     | 28336PT |         |          |         |                 |
| 11/32"      | S.H. 3/4" |       | 28304PT             |         |         |          |         |                 |
| 3/8"        | D.H. 1/8" |       |                     |         | 28347PT | 28384PT  |         |                 |
| 3/8"        | S.H. 1/4" |       | 28305PT             | 28323   | 28339PT | 28354PT  |         |                 |
| 3/8"        | D.H. 1/4" |       | 28317               |         |         | 28386PT  |         |                 |
| 3/8"        | S.H. 3/8" |       | 28306               | 28324   |         | 28385PT  | 28407PT |                 |
| 3/8"        | S.H. 1/2" |       | 28307               |         |         | 28355PT  | 28441PT |                 |
| 3/8"        | D.H. 1/2" |       | 28308               |         |         |          |         |                 |
| 3/8"        | S.H. 5/8" |       | 28319               |         |         |          |         |                 |
| 3/8"        | D.H. 5/8" |       |                     | 28325PT |         |          |         |                 |
| 3/8"        | S.H. 3/4" |       | 28309PT             |         |         | 28356PT  | 28408PT |                 |
| 3/8"        | D.H. 3/4" |       |                     |         |         | 28389    |         |                 |
| 3/8"        | S.H. 7/8" |       |                     | 28326   |         |          |         |                 |
| 3/8"        | S.H. 1"   |       |                     |         | 28340   |          |         |                 |
| 3/8"        | D.H. 1"   |       |                     |         | 28351   |          |         |                 |
| 7/16"       | S.H. 1/8" |       |                     |         | 508399  |          |         |                 |
| 7/16"       | S.H. 1/4" |       | 28310PT†            | 28327   | 28341   | 28357    | 28439PT |                 |
| 7/16"       | D.H. 1/4" |       |                     | 28334PT | 28342   | 28358    |         |                 |
| 7/16"       | S.H. 3/8" |       | 28311†              | 28328PT |         | 28359    | 28409   |                 |
| 7/16"       | S.H. 1/2" |       | 28312PT             | 28329   | 28343PT | 28360    | 28405   | 28410PT         |
| 7/16"       | S.H. 5/8" |       |                     |         | 28344PT |          |         |                 |
| 7/16"       | D.H. 5/8" |       |                     |         | 508397  |          |         |                 |
| 7/16"       | S.H. 3/4" |       |                     |         |         | 28361PT  | 28411   |                 |
| 7/16"       | S.H. 7/8" |       |                     |         |         | 28362PT  |         |                 |
| 7/16"       | D.H. 1"   |       |                     |         | 508398  |          |         |                 |
| 1/2"        | S.H. 1/8" |       |                     |         | 508400  | 28363PT  |         |                 |
| 1/2"        | D.H. 1/8" |       |                     |         | 508404  |          |         |                 |
| 1/2"        | S.H. 1/4" |       |                     |         | 28345PT | 28364PT  | 28406PT | 28412PT         |
| 1/2"        | D.H. 1/4" |       |                     |         | 28348PT | 28365    |         |                 |
| 1/2"        | S.H. 3/8" |       | 28330               |         |         | 28366PT  | 28413PT | 28465PT 28469PT |
| 1/2"        | S.H. 1/2" |       |                     |         |         | 28367PT  | 28402PT | 28414PT 28478   |
| 1/2"        | D.H. 1/2" |       |                     |         | 28349PT | 28368    |         |                 |
| 1/2"        | S.H. 5/8" |       |                     |         |         | 28369PT  | 28401PT | 28466PT         |
| 1/2"        | D.H. 5/8" |       |                     |         | 28346   |          | 28437   |                 |
| 1/2"        | S.H. 3/4" |       |                     |         |         | 28370PT  | 28404PT | 28415PT         |
| 1/2"        | S.H. 7/8" |       |                     |         |         |          | 28416PT |                 |
| 1/2"        | S.H. 1"   |       |                     |         |         | 28371PT  |         |                 |
| 9/16"       | S.H. 1/8" |       |                     |         |         | 28372PT  |         |                 |
| 9/16"       | S.H. 1/4" |       |                     |         |         | 28373    | 28395PT | 28418PT 28471PT |
| 9/16"       | D.H. 1/4" |       |                     |         |         | 28374    |         |                 |
| 9/16"       | S.H. 3/8" |       |                     |         |         | 28375PT† | 28396PT |                 |
| 9/16"       | D.H. 3/8" |       |                     |         |         | 28376†   |         | 28440           |
| 9/16"       | S.H. 1/2" |       |                     |         |         | 28377†   | 28403   | 28419 28463PT   |
| 9/16"       | D.H. 1/2" |       |                     |         |         | 28378PT† | 28420   | 517065          |
| 9/16"       | S.H. 5/8" |       |                     |         |         | 28379PT† | 28397PT |                 |
| 9/16"       | S.H. 3/4" |       |                     |         |         | 28393PT† | 28421   | 28468PT         |
| 9/16"       | D.H. 3/4" |       |                     |         |         |          | 28444PT | 28464PT         |
| 9/16"       | S.H. 7/8" |       |                     |         |         | 28380PT† |         |                 |
| 9/16"       | D.H. 7/8" |       |                     |         |         | 516547   |         |                 |
| 9/16"       | S.H. 1"   |       |                     |         |         |          |         | 517061          |
| 5/8"        | S.H. 1/8" |       |                     |         |         |          | 28422   |                 |
| 5/8"        | S.H. 1/4" |       |                     |         |         | 28381PT† |         | 28452PT 28479PT |
| 5/8"        | D.H. 1/4" |       |                     |         |         |          | 28423   |                 |
| 5/8"        | S.H. 3/8" |       |                     |         |         | 28382PT† |         |                 |
| 5/8"        | S.H. 1/2" |       |                     |         |         | 28388PT† | 28399PT | 28424PT 28453PT |
| 5/8"        | S.H. 5/8" |       |                     |         |         |          |         | 28454PT         |
| 5/8"        | S.H. 3/4" |       |                     |         |         |          | 28400PT | 28426PT 28455   |



| Termination | 12        | 13     | 15                  | 16     | 18      | 20      | 25       | 29            |
|-------------|-----------|--------|---------------------|--------|---------|---------|----------|---------------|
| "A"         | 3/4       | 13/16  | 15/16               | 1      | 1 1/8   | 1 1/4   | 1 9/16   | 1 13/16       |
| "B"         | 1/2       | 1/2    | 9/16                | 9/16   | 9/16    | 9/16    | 9/16     | 5/8           |
| "C"         | Hex*      | Ext.   | Socket Part Numbers |        |         |         |          |               |
| 5/8"        | D.H. 1"   |        |                     |        |         |         | 28428PT  |               |
| 11/16"      | S.H. 1/4" |        |                     |        |         |         | 28438PT  |               |
| 11/16"      | D.H. 1/4" |        |                     |        |         |         | 28430PT  |               |
| 11/16"      | S.H. 3/8" |        |                     |        |         |         | 28431PT  | 28456PT       |
| 11/16"      | S.H. 1/2" |        |                     |        |         |         | 28432PT  | 514830        |
| 11/16"      | S.H. 1"   |        |                     |        |         |         |          | 517062        |
| 3/4"        | S.H. 1/4" |        |                     |        |         |         | 28433PT† |               |
| 3/4"        | S.H. 3/8" |        |                     |        |         |         |          | 28458PT       |
| 3/4"        | S.H. 1/2" |        |                     |        |         |         | 28434PT  |               |
| 3/4"        | S.H. 3/4" |        |                     |        |         |         | 28435PT  | 28459 28476   |
| 3/4"        | S.H. 1"   |        |                     |        |         |         | 28436    | 28470PT       |
| 7/8"        | S.H. 1/4" |        |                     |        |         |         |          | 517063        |
| 7/8"        | D.H. 5/8" |        |                     |        |         |         |          | 28461PT       |
| 7/8"        | S.H. 1"   |        |                     |        |         |         |          | 28462PT       |
| 15/16"      | S.H. 1/2" |        |                     |        |         |         |          | 28474         |
| 1"          | S.H. 1/2" |        |                     |        |         |         |          | 28472PT       |
| 1-1/8"      | S.H. 1/2" |        |                     |        |         |         |          | 28477         |
| 6 MM        | S.H. 1/4" | 530453 |                     |        |         |         |          |               |
| 6 MM        | S.H. 1/2" | 28321  |                     |        |         |         |          |               |
| 7 MM        | S.H. 1/4" | 530454 |                     |        | 516554  |         |          |               |
| 7 MM        | S.H. 1/2" | 28322  |                     |        | 516553  |         |          |               |
| 8 MM        | S.H. 1/4" | 530455 |                     |        | 516558  |         |          |               |
| 8 MM        | S.H. 1/2" | 530450 |                     |        | 516555  |         |          |               |
| 10 MM       | S.H. 1/4" | 530456 |                     |        | 516559  |         |          |               |
| 10 MM       | S.H. 3/8" |        | 533472              |        | 28390PT |         |          |               |
| 10 MM       | S.H. 1/2" | 530451 |                     | 508405 | 516556  |         |          |               |
| 11 MM       | S.H. 1/4" | 530457 |                     |        | 530515  |         |          |               |
| 11 MM       | S.H. 1/2" | 530452 |                     |        | 516557  |         |          |               |
| 12 MM       | S.H. 1.2" |        |                     |        | 530520  |         |          |               |
| 13 MM       | S.H. 1/8" |        |                     |        | 28391PT |         |          |               |
| 13 MM       | S.H. 1/4" |        |                     |        | 28394PT |         |          |               |
| 13 MM       | S.H. 3/8" |        |                     |        |         | 525137  |          |               |
| 13 MM       | S.H. 1/2" |        | 533471              |        | 516552  |         |          |               |
| 13 MM       | S.H. 1"   |        |                     |        | 530519  |         |          |               |
| 14 MM       | S.H. 1/4" |        |                     |        | 530516  |         | 28449PT  |               |
| 14 MM       | S.H. 1/2" |        |                     |        |         |         | 28417PT  | 517070        |
| 15 MM       | S.H. 1/4" |        |                     |        | 530517  |         | 28450PT  | 517067        |
| 15 MM       | D.H. 1/4" |        |                     |        | 530518  |         |          |               |
| 15 MM       | S.H. 3/8" |        |                     |        |         |         | 28451PT  |               |
| 15 MM       | D.H. 3/8" |        |                     |        | 28630   |         |          |               |
| 15 MM       | S.H. 1/2" |        |                     |        | 516551  |         | 28447PT  | 517066        |
| 15 MM       | D.H. 1/2" |        |                     |        | 516550  |         |          |               |
| 15 MM       | S.H. 3/4" |        |                     |        |         |         | 28446PT  |               |
| 17 MM       | S.H. 1/4" |        |                     |        |         |         | 28448PT  |               |
| 17 MM       | S.H. 3/8" |        |                     |        |         |         |          | 517068 514831 |
| 17 MM       | S.H. 1/2" |        |                     |        |         | 28429PT | 517060   | 514829        |
| 17 MM       | D.H. 1"   |        |                     |        |         | 28445PT |          |               |
| 18 MM       | S.H. 3/4" |        |                     |        |         |         | 543176   | 517069        |

## Grooved 24, 34, H16, H30, 41 Series

Use with Power Socket Adapters (Additional cost)



| Termination | 12   | 13      | 15                  | 16      | 20      | 25      | 29      |
|-------------|------|---------|---------------------|---------|---------|---------|---------|
| "A"         | 3/4  | 13/16   | 15/16               | 1       | 1 1/4   | 1 9/16  | 1 13/16 |
| "B"         | 1/2  | 1/2     | 9/16                | 9/16    | 9/16    | 9/16    | 5/8     |
| "C"         | Hex* | Ext.    | Socket Part Numbers |         |         |         |         |
| 1/4"        |      |         | 28741               |         |         |         |         |
| 5/16"       |      |         | 28740               |         |         |         |         |
| 3/8"        |      |         | 28739PT             |         |         |         |         |
| 7/16"       |      | 28742PT | 504772              | 28745PT | 28750   | 28751PT | 25737   |
| 1/2"        |      |         |                     | 28746   | 28748PT | 28752PT | 28766PT |
| 9/16"       |      |         |                     |         |         | 28753PT | 28768PT |
| 5/8"        |      |         |                     |         |         | 28754PT |         |
| 3/4"        |      |         |                     |         |         | 28755   | 28767PT |

\* S.H. = Single Hex; D.H. = Double Hex

† FRAGILE: For light duty operations only.

# Cleco®

**Durable.  
Economical.  
Low Maintenance.**

## Unbeatable Performance

We are constantly improving our products to guarantee you ideal productivity. The new Cleco H-Series pulse tools combine legendary durability with unmatched repeatability so that you will be able to complete every joint quickly and reliably.

### ■ Broad Tool Selection

With a variety of shut-off and non-shut-off pulse tools to choose from you are sure to find just the right Cleco pulse tool for the job.



### High Precision Shut-Off

mechanism ranges close to the characteristics of an electric tool at a tolerance of  $\pm 10\%$  at Six Sigma.

### Efficient 3-Chamber Air Motor

- Speed governor
- Reduces your tightening time with increased torque and a usable high-end dynamic.
- Unique design reduces blade wear.
- Less vibration for increased user comfort
- Reduced air consumption



3-Chamber Motor Housing

**Improved Tool End**  
with axial force protection

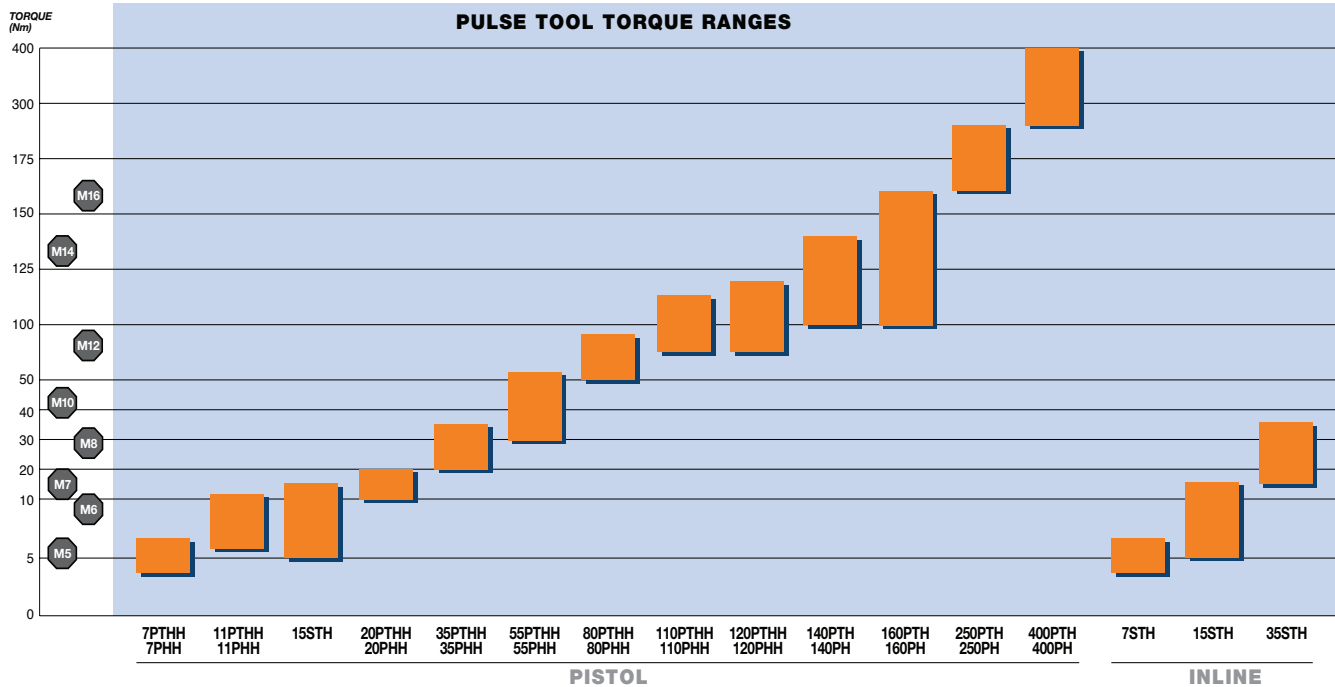
### Reduced Tool Maintenance

- New patented double chambered pulse unit with built-in automatic oil reserve
- Up to 500,000 tightening cycles before the first service

Expansion chamber



Pulse Unit



## 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.

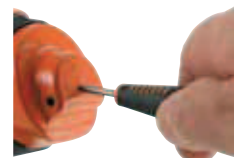
## Ships Ready For Error Proofing

- Works with existing TVP torque verifier
- Located near air inlet to maximize ergonomics



## Easy Set-Up

- Insert 2mm hex into rear port of tool
- Positive stops in both directions to prevent loss and/or damage



## Adjustable Motor Speed

- Easily adjustable motor speed to insure accuracy on hard joints
- Can be locked in place to prevent accidental adjustment



# Pulse Nutrunners

Hydraulic Pulse Shut-Off & Non Shut-Off

## Cleco®

### H-Series PTH

**Torque Range:** 4 - 120 Nm  
3.0 - 88.8 Ft. Lbs  
**Bolt Size:** M5 - M12  
#10 - 1/2"

- Inertia shut-off
- Motor governor equipped
- External torque adjustment
- External speed control
- Torque signal port
- Adjustable pulse unit volume simplifies maintenance
- Market-leading repeatability
- Reversible
- Oilless blades 



### C-Series PTHC & PTHFC

**Torque Range:** 100 - 400 Nm  
74 - 295 Ft. Lbs  
**Bolt Size:** M12 - M20  
1/2" - 3/4"

- Hydraulic pulse shut-off
- Motor governor equipped
- External torque adjustment
- External speed control
- Reversible
- Oilless blades 
- Torque signal port



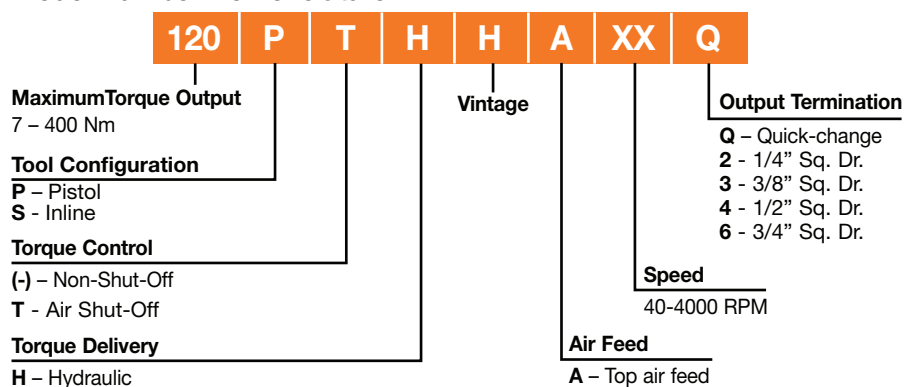
### C-Series STHFC & STHF

**Torque Range:** 2.6 - 35 Nm  
1.9 - 26 Ft. Lbs  
**Bolt Size:** M5 - M8  
#10 - 3/8"

- Hydraulic pulse shut-off
- Motor governor equipped
- External torque adjustment
- External speed control
- Reversible
- Oilless blades 
- Torque signal port



### Model Number Nomenclature



|                                     | Model Number                                                | Drive Type  | Torque Range |         | Free Speed | Weight |      | Air Consumption |           |      |
|-------------------------------------|-------------------------------------------------------------|-------------|--------------|---------|------------|--------|------|-----------------|-----------|------|
|                                     |                                                             |             | Ft.Lbs.      | Nm      | RPM        | lbs.   | kg   | NPT             | Hose I.D. | SCFM |
| S<br>H<br>U<br>T<br><br>O<br>F<br>F | H-Series – Pistol Grip – Shut-Off Models                    |             |              |         |            |        |      |                 |           |      |
|                                     | 7PTHH352                                                    | 1/4" Sq.Dr. | 3.0-5.1      | 4-7     | 3500       | 1.74   | 0.79 | 1/4"            | 3/8"      | 7.06 |
|                                     | 7PTHH35Q                                                    | 1/4" QC     | 3.0-5.1      | 4-7     | 3500       | 1.74   | 0.79 | 1/4"            | 3/8"      | 7.06 |
|                                     | 11PTHH352                                                   | 1/4" Sq.Dr. | 4.4-8.1      | 6-11    | 3500       | 1.81   | 0.82 | 1/4"            | 3/8"      | 7.06 |
|                                     | 11PTHH35Q                                                   | 1/4" QC     | 4.4-8.1      | 6-11    | 3500       | 1.87   | 0.85 | 1/4"            | 3/8"      | 7.06 |
|                                     | 11PTHH353*                                                  | 3/8" Sq.Dr. | 4.4-8.1      | 6-11    | 3500       | 1.83   | 0.83 | 1/4"            | 3/8"      | 7.06 |
|                                     | 20PTHH40Q                                                   | 1/4" QC     | 7.4-14.7     | 10-20   | 4000       | 1.92   | 0.87 | 1/4"            | 1/2"      | 8.7  |
|                                     | 20PTHH403*                                                  | 3/8" Sq.Dr. | 7.4-14.7     | 10-20   | 4000       | 1.90   | 0.86 | 1/4"            | 1/2"      | 8.7  |
|                                     | 35PTHH40Q                                                   | 1/4" QC     | 14.8-25.8    | 20-35   | 4000       | 2.31   | 1.05 | 1/4"            | 1/2"      | 15.9 |
|                                     | 35PTHH403*                                                  | 3/8" Sq.Dr. | 14.8-25.8    | 20-35   | 4000       | 2.31   | 1.05 | 1/4"            | 3/8"      | 15.9 |
|                                     | 55PTHH403*                                                  | 3/8" Sq.Dr. | 22.1-40.5    | 30-55   | 4000       | 2.54   | 1.15 | 1/4"            | 3/8"      | 15.9 |
|                                     | 80PTHH35Q                                                   | 7/16" QC    | 36.9-59.0    | 50-80   | 3500       | 3.20   | 1.45 | 1/4"            | 3/8"      | 19.4 |
| I<br>N<br>-<br>L<br>I<br>N<br>E     | 80PTHH354                                                   | 1/2" Sq.Dr. | 36.9-59.0    | 50-80   | 3500       | 3.10   | 1.40 | 1/4"            | 3/8"      | 19.4 |
|                                     | 110PTHH30Q                                                  | 7/16" QC    | 55.3-81.1    | 75-110  | 3000       | 3.75   | 1.70 | 3/8"            | 1/2"      | 19.4 |
|                                     | 120PTHH304                                                  | 1/2" Sq.Dr. | 55.3-88.8    | 75-120  | 3000       | 3.75   | 1.70 | 3/8"            | 1/2"      | 19.4 |
|                                     | C-Series – Pistol Grip – Shut-Off Models                    |             |              |         |            |        |      |                 |           |      |
|                                     | 140PTHC25Q                                                  | 7/16" QC    | 74-103       | 100-140 | 2500       | 5.7    | 2.6  | 3/8"            | 1/2"      | 25.4 |
|                                     | 160PTHC256                                                  | 3/4" Sq.Dr. | 74-118       | 100-160 | 2500       | 5.7    | 2.6  | 3/8"            | 1/2"      | 25.4 |
|                                     | C-Series – Pistol Grip – Shut-Off Models – Trigger Throttle |             |              |         |            |        |      |                 |           |      |
|                                     | 250PTHFC226                                                 | 3/4" Sq.Dr. | 118-184      | 160-250 | 2200       | 8.8    | 4.0  | 3/8"            | 1/2"      | 33.5 |
|                                     | 400PTHFC206                                                 | 3/4" Sq.Dr. | 185-295      | 250-400 | 2000       | 11.7   | 5.3  | 3/8"            | 1/2"      | 33.5 |
|                                     | In-Line – Push-to-Start                                     |             |              |         |            |        |      |                 |           |      |
|                                     | 7STHFA55Q                                                   | 1/4" QC     | 1.9-4.9      | 2.6-6.6 | 5500       | 1.8    | 0.83 | 1/8"            |           | 7.0  |
|                                     | 35STHFA40Q                                                  | 7/16" QC    | 12-26        | 15-35   | 4000       | 3.1    | 1.4  | 1/4"            | 3/8"      | 15.9 |
| 35STHFA404                          | 1/2" Sq.Dr.                                                 | 12-26       | 15-35        | 4000    | 2.9        | 1.3    | 1/4" | 3/8"            | 15.9      |      |
|                                     | C-Series – In-Line – Lever                                  |             |              |         |            |        |      |                 |           |      |
|                                     | 7STHFC55Q                                                   | 1/4" QC     | 1.9-4.9      | 2.6-6.6 | 5500       | 2.1    | 0.93 | 1/8"            |           | 7.0  |
|                                     | 15STHFC40Q                                                  | 1/4" QC     | 3.6-11       | 5.0-15  | 4000       | 2.4    | 1.1  | 1/4"            | 3/8"      | 16.5 |
|                                     | 35STHFC40Q                                                  | 7/16" QC    | 12-26        | 15-35   | 4000       | 3.3    | 1.5  | 1/4"            | 3/8"      | 15.9 |
|                                     | 35STHFC404                                                  | 1/2" Sq.Dr. | 12-26        | 15-35   | 4000       | 3.3    | 1.5  | 1/4"            | 3/8"      | 15.9 |
|                                     | 15STHC40Q                                                   | 1/4" QC     | 3.6-11       | 5.0-15  | 3000       | 2.4    | 1.1  | 1/4"            | 3/8"      | 16.5 |

PTHHA=Top Air Inlet

(\*) 7/16" Quick Change Chuck available separately as an accessory

**General:**

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 53



# Pulse Nutrunners

Hydraulic Pulse Non Shut-Off

## Cleco®

### H-Series PH Non-Shut-Off

**Torque Range:** 4 - 120 Nm  
2.9 - 88.5 Ft. Lbs  
**Bolt Size:** M5 - M12  
#10 - 1/2"

- External speed control
- Reversible
- Oilless blades 



| NON SHUT OFF                                  | Model Number                                 | Drive Type  | Torque Range |         | Free Speed | Weight |      | Air Consumption |           |      |
|-----------------------------------------------|----------------------------------------------|-------------|--------------|---------|------------|--------|------|-----------------|-----------|------|
|                                               |                                              |             | Ft.Lbs.      | Nm      | RPM        | lbs.   | kg   | NPT             | Hose I.D. | SCFM |
|                                               | H-Series – Pistol Grip – Non Shut-Off Models |             |              |         |            |        |      |                 |           |      |
|                                               | 7PHH602                                      | 1/4" Sq.Dr. | 2.9-5.2      | 4-7     | 6000       | 1.70   | 0.77 | 1/4"            | 3/8"      | 8.7  |
|                                               | 7PHH60Q                                      | 1/4" QC     | 2.9-5.2      | 4-7     | 6000       | 1.74   | 0.79 | 1/4"            | 3/8"      | 8.7  |
|                                               | 11PHH653*                                    | 3/8" Sq.Dr. | 4.4-8.1      | 6-11    | 6500       | 1.74   | 0.79 | 1/4"            | 3/8"      | 10.5 |
|                                               | 11PHH652                                     | 1/4" Sq.Dr. | 4.4-8.1      | 6-11    | 6500       | 1.72   | 0.78 | 1/4"            | 3/8"      | 10.5 |
|                                               | 11PHH65Q                                     | 1/4" QC     | 4.4-8.1      | 6-11    | 6500       | 1.76   | 0.80 | 1/4"            | 3/8"      | 10.5 |
|                                               | 20PHH753*                                    | 3/8" Sq.Dr. | 7.4-14.7     | 10-20   | 7500       | 1.85   | 0.84 | 1/4"            | 3/8"      | 17.3 |
|                                               | 20PHH75Q                                     | 1/4" QC     | 7.4-14.7     | 10-20   | 7500       | 1.90   | 0.86 | 1/4"            | 3/8"      | 17.3 |
|                                               | 35PHH653*                                    | 3/8" Sq.Dr. | 14.7-25.8    | 20-35   | 6500       | 2.25   | 1.02 | 1/4"            | 3/8"      | 19.4 |
|                                               | 35PHH65Q                                     | 1/4" QC     | 14.7-25.8    | 20-35   | 6500       | 2.29   | 1.03 | 1/4"            | 3/8"      | 15.9 |
|                                               | 55PHH603*                                    | 3/8" Sq.Dr. | 22.1-40.5    | 30-55   | 6000       | 2.47   | 1.12 | 1/4"            | 3/8"      | 22.9 |
|                                               | 80PHH604                                     | 1/2" Sq.Dr. | 36.9-59.0    | 50-80   | 6000       | 3.09   | 1.40 | 1/4"            | 3/8"      | 26.5 |
|                                               | 80PHH60Q                                     | 7/16" QC    | 36.9-59.0    | 50-80   | 6000       | 3.13   | 1.41 | 1/4"            | 3/8"      | 26.5 |
|                                               | 110PHH55Q                                    | 7/16" QC    | 55.3-81.1    | 75-110  | 5500       | 3.68   | 1.66 | 3/8"            | 1/2"      | 30.0 |
|                                               | 120PHH554                                    | 1/2" Sq.Dr. | 55.3-88.5    | 75-120  | 5500       | 3.64   | 1.65 | 3/8"            | 1/2"      | 30.0 |
| High Torque Pistol Grip – Non-Shut-Off Models |                                              |             |              |         |            |        |      |                 |           |      |
|                                               | 140PH45Q                                     | 7/16" QC    | 74-103       | 100-140 | 4500       | 5.7    | 2.6  | 3/8"            | 1/2"      | 31.7 |
|                                               | 160PH456                                     | 3/4" Sq.Dr. | 74-118       | 100-160 | 4500       | 5.7    | 2.6  | 3/8"            | 1/2"      | 31.7 |
|                                               | 250PHF406                                    | 3/4" Sq.Dr. | 118-184      | 160-250 | 4000       | 8.6    | 3.9  | 3/8"            | 1/2"      | 40.6 |
|                                               | 400PHF356                                    | 3/4" Sq.Dr. | 184-295      | 250-400 | 3500       | 11.5   | 5.2  | 3/8"            | 1/2"      | 42.3 |

PTHHA=Top Air Inlet

(\* 7/16" Quick Change Chuck available separately as an accessory.

For 7-75 Series Models, small handle can be ordered by substituting "S" for "L" in model number.

#### General:

Tool performance rated @ 87 psi (6 bar) air pressure.

#### Standard Equipment:

Suspension bail and torque adjusting wrench.

#### Optional Equipment:

Additional accessories: Page 53

## Rubber Tool Stand



| Part Number         | Tool Series                                |
|---------------------|--------------------------------------------|
| 931041 (one piece)  | D & H Series 7PTH – 120PTH                 |
| 930119 (two pieces) | C Series 140/160PTH/PH/<br>250PTH / 400PTH |

## TVP-100 Torque Signal Kit

Air signal to indicate shut-off.

| Part Number | Tool Series                                               |
|-------------|-----------------------------------------------------------|
| 934918      | PTH series pulse tools<br>and vintage shut-off tools only |

## 7/16" Quick Change Chuck Adapter

| Part Number | Tool Series                                                              |
|-------------|--------------------------------------------------------------------------|
| 935472      | To convert 11/20/35/55PTHH/PTHHA/<br>PHH/PHHA to a<br>Quick-Change chuck |



## Vibration Absorber

| Part No. | Fits Model           |
|----------|----------------------|
| 935965   | 35/55PTHHA/PHHA      |
| 935966   | 80/110/120PTHHA/PHHA |

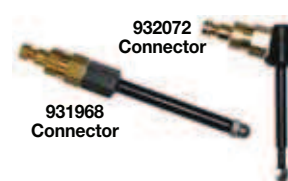


## Hydraulic Filler Unit

| Part Number          |                  |                | Tool Series          |
|----------------------|------------------|----------------|----------------------|
| Filler Unit Complete | Filler Unit Only | Connector Only |                      |
| 928477               |                  | 932072         | 140/160 PTHC../ PH.. |
| 928473               | 928483           | 928485         | 250/400 PTHC../ PH.. |
| 928475               |                  | 931663         | 35 STH..             |
| 928474               |                  | 928486         | 7 STH..              |
|                      |                  |                | 15 STH..             |



928483  
Filler Unit



932072  
Connector

931968  
Connector

## Reserve Oil Filling Set

Part No.

936695PT



## Hydraulic Oil

| Part Number | Container Size |
|-------------|----------------|
| 539317      | One Quart      |



## Covers

| Part No. | Fits Model                                    |
|----------|-----------------------------------------------|
| 937442PT | Protective cover for 7/11/20PTHHA/7/11/20PHHA |
| 937443PT | Protective cover for 35PTHHA/35PHHA           |
| 937444PT | Protective cover for 55PTHHA/55PHHA           |
| 937445PT | Protective cover for 80PTHHA/80PHHA           |
| 937446PT | Protective cover for 110/120PTHHA/110/120PHHA |
| 937447PT | Protective cover for 7/11/20PTHH/7/11/20PHH   |
| 937448PT | Protective cover for 35PTHH/35PHH             |
| 937449PT | Protective cover for 55PTHH/55PHH             |
| 937450PT | Protective cover for 80PTHH/80PHH             |
| 937451PT | Protective cover for 110/120PTHH/110/120PHH   |



## Cleco®

### Telescopic Impact Wrenches



#### Positive Lock Socket Retainer

With the positive lock socket retainer, 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.



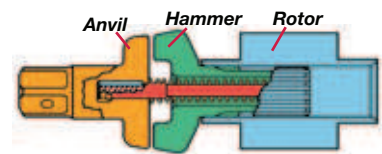
#### Positive oil-foam lubrication system reduces major cause of impact wrench maintenance.

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.



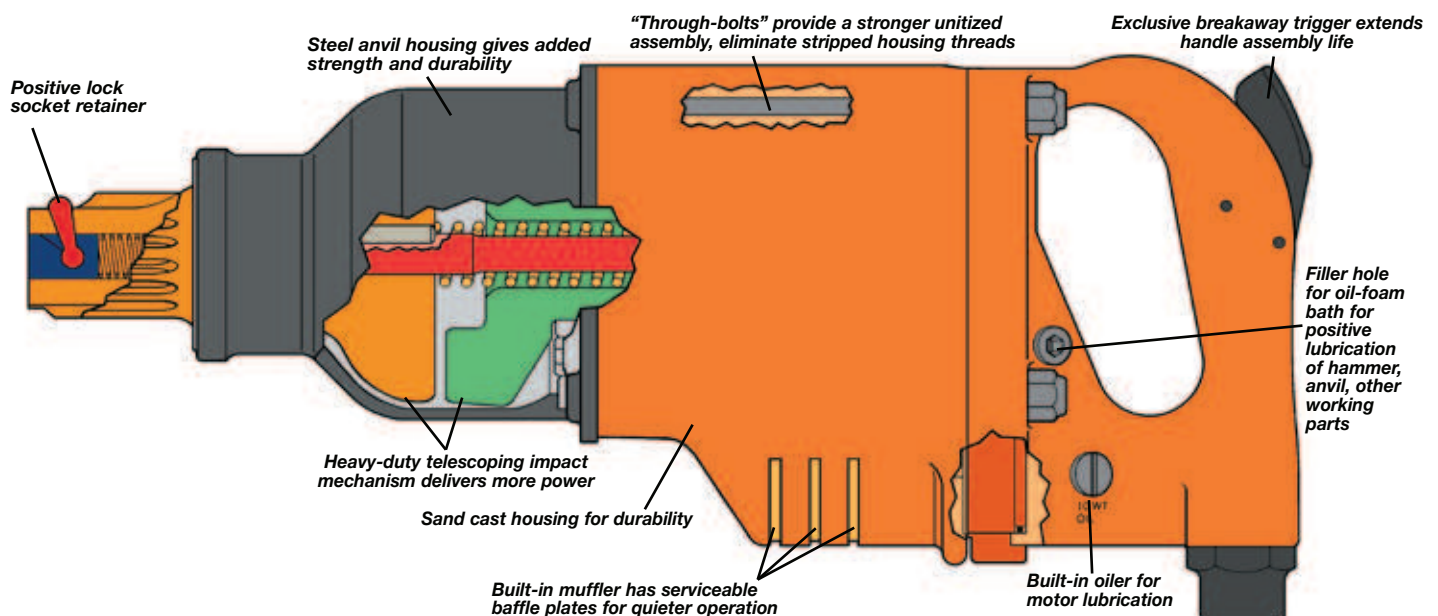
### Proven heavy-duty telescoping impact mechanism adds power...cuts weight... reduces shock to the operator.

The smooth-hitting Cleco telescopic impact mechanism has only three major parts - hammer, anvil and rotor... providing more power directly to the fastener. The hammer is splined directly 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.



# Bolt Selection Chart

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

W-200

1/2" sq.  
3/8" sq.

WP-455

1/2" sq.

WP-2050 & WP-2049

5/8" sq.

3/4" sq.

WP-2060 & WP-2059

3/4 sq.

1" sq. & #4 spline

W-2110 & W-2109

#5 spline  
1" sq.

W-2120 & W-2119

#5 spline

1-1/2" sq.

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

W-200

1/2" sq.  
3/8" sq.

WP-455

1/2" sq.

WP-2050 & WP-2049

5/8" sq.

3/4" sq.

WP-2060 & WP-2059

3/4 sq.

1" sq. & #4 spline

W-2110 & W-2109

#5 spline  
1" sq.

W-2120 & W-2119

1-1/2" sq.  
#5 spline

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

W-200

1/2" sq.  
3/8" sq.

WP-455

1/2" sq.

WP-2050 & WP-2049

5/8" sq.

3/4" sq.

WP-2060 & WP-2059

3/4 sq.

1" sq. & #4 spline

W-2110 & W-2109

#5 spline  
1" sq.

W-2120 & W-2119

1-1/2" sq.  
#5 spline

## 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.<br>Nm | 1    |       |      |       |      |       | 200<br>271     | 355<br>481    | 570<br>773    | 850<br>1,150  | 1,060<br>1,440 | 1,495<br>2,030 | 1,960<br>2,660 | 2,600<br>3,530 | -      | -      |
| Tension       | lb.<br>kN     |      |       |      |       |      |       | 10,000<br>44.5 | 28,000<br>124 | 39,000<br>173 | 51,000<br>227 | 56,000<br>249  | 71,000<br>316  | 85,000<br>378  | 103,000<br>458 | -      | -      |

WP-2050 3/4" sq.

WP-2060 1" sq. 7 #4 spline

WS-2110

#5 spline

WS-2120

#5 spline

## 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.<br>Nm | 1    |       |      |       |      |       | 250<br>339    | 435<br>590    | 715<br>970    | 1,070<br>1,451 | 1,580<br>2,125 | 2,125<br>2,882 | 2,780<br>3,770 | 3,700<br>5,020 | -      | -      |
| Tension       | lb.<br>kN     |      |       |      |       |      |       | 24,000<br>107 | 35,000<br>156 | 49,000<br>218 | 64,000<br>285  | 80,000<br>356  | 102,000<br>454 | 121,000<br>538 | 148,000<br>658 | -      | -      |

WP-2050 3/4" sq.

WP-2060 1" sq. 7 #4 spline

WS-2110

#5 spline

WS-2120

#5 spline

\*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.

# Impact Wrenches

Inline, Pistol Grip & Spade Handle

## Cleco®

### WL & WP Series

|                      |                   |
|----------------------|-------------------|
| <b>Torque Range:</b> | <b>Bolt Size:</b> |
| 20 - 2450 Nm         | M10 - M30         |
| 15 - 1800 Ft. Lbs    | 7/16" - 1 1/2"    |

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



WL-200-3



WP-255-3P



WP-455-4P



WP-2049-6

### WT Series Spade Handle

|                      |                   |
|----------------------|-------------------|
| <b>Torque Range:</b> | <b>Bolt Size:</b> |
| 1000 - 4000 Nm       | M30 - M36         |
| 750 - 3000 Ft. Lbs   | 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



WT-2109-8



WTS-2119

| Model Number | Bolt Size |         | Square Drive | Recommended Torque Range |    | Impacts per Minute | Free Speed RPM | Length |    | Weight |    | Side to Center |    | Air Consumption |           |      |
|--------------|-----------|---------|--------------|--------------------------|----|--------------------|----------------|--------|----|--------|----|----------------|----|-----------------|-----------|------|
|              | Gr. 5     | Gr. 9.8 |              |                          |    |                    |                |        |    |        |    |                |    | NPT             | Hose I.D. | SCFM |
|              | in.       | mm      |              | ft.-lbs.                 | Nm |                    |                | in.    | mm | lbs.   | kg | in.            | mm |                 |           |      |

### Inline – Lever Start

|          |      |     |     |       |       |       |       |     |     |     |     |   |    |      |      |    |
|----------|------|-----|-----|-------|-------|-------|-------|-----|-----|-----|-----|---|----|------|------|----|
| WL-200-3 | 7/16 | M10 | 3/8 | 15-50 | 20-68 | 3,200 | 3,000 | 8.5 | 216 | 3.1 | 1.4 | 1 | 25 | 1/4" | 1/4" | 18 |
| WL-200-4 | 1/2  | M10 | 1/2 | 15-60 | 20-81 | 3,200 | 3,000 | 8.5 | 216 | 3.4 | 1.5 | 1 | 25 | 1/4" | 1/4" | 18 |

### Pistol Grip – Trigger Start

|              |       |     |     |          |           |       |       |     |     |      |     |     |    |      |      |     |
|--------------|-------|-----|-----|----------|-----------|-------|-------|-----|-----|------|-----|-----|----|------|------|-----|
| WP-255-3P    | 7/16  | M10 | 3/8 | 60-75    | 80-100    | 1,150 | 9,500 | 5.7 | 145 | 2.6  | 1.2 | 1   | 25 | 1/4" | 1/4" | 30  |
| WP-455-4R    | 1/2   | M20 | 1/2 | 37-370   | 50-502    | 1,400 | 6,500 | 7   | 176 | 5.3  | 2.4 | –   | –  | 1/4" | 1/4" | 40  |
| WP-455-4P*** | 1/2   | M20 | 1/2 | 37-370   | 50-502    | 1,400 | 6,500 | 7   | 176 | 5.3  | 2.4 | –   | –  | 1/4" | 1/4" | 40  |
| WP-2050-6    | 7/8   | M20 | 3/4 | 125-600  | 170-800   | 1,000 | 6,000 | 6.4 | 162 | 7.8  | 3.5 | 1.6 | 42 | 3/8" | 3/8" | 45  |
| WP-2060B-6   | 1 1/8 | M24 | 3/4 | 250-700  | 350-950   | 1,000 | 4,000 | 7.8 | 197 | 12   | 5.4 | 1.8 | 46 | 3/8" | 3/8" | 60  |
| WP-2060B-8   | 1 1/8 | M24 | 1   | 250-900  | 350-1200  | 1,000 | 4,000 | 7.8 | 197 | 12.1 | 5.5 | 1.8 | 46 | 3/8" | 3/8" | 60  |
| WP-2110B-8   | 1 3/8 | M30 | 1   | 750-1650 | 1000-2250 | 880   | 4,600 | 9.5 | 241 | 20.8 | 9.4 | 2.2 | 56 | 1/2" | 3/8" | 100 |

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

|                |       |     |         |          |           |       |       |      |     |      |     |     |    |      |      |     |
|----------------|-------|-----|---------|----------|-----------|-------|-------|------|-----|------|-----|-----|----|------|------|-----|
| WP-2049-6      | 7/8   | M20 | 3/4     | 125-550  | 170-750   | 1,000 | 6,200 | 6.4  | 162 | 7.8  | 3.5 | 1.6 | 42 | 3/8" | 3/8" | 45  |
| WP-2059-6      | 1 1/8 | M24 | 3/4     | 250-700  | 350-950   | 1,000 | 4,000 | 7.8  | 197 | 12   | 5.4 | 1.8 | 46 | 3/8" | 3/8" | 60  |
| WP-2059-8      | 1 1/8 | M24 | 1       | 250-800  | 350-1100  | 1,000 | 4,000 | 7.8  | 197 | 12.1 | 5.5 | 1.8 | 46 | 3/8" | 3/8" | 60  |
| WP-2059-8-6E** | 1 1/8 | M24 | 1       | 250-750  | 350-1000  | 1,000 | 4,000 | 13.8 | 350 | 14.3 | 6.5 | 1.8 | 46 | 3/8" | 3/8" | 60  |
| WP-2109B-8     | 1 3/8 | M30 | 1       | 750-1650 | 1000-2250 | 880   | 4,300 | 9.5  | 241 | 20.8 | 9.4 | 2.2 | 56 | 1/2" | 3/8" | 100 |
| WPS-2109B      | 1 3/8 | M30 | #5 Spl. | 750-1800 | 1100-2450 | 880   | 4,300 | 9.8  | 248 | 21.3 | 9.6 | 2.2 | 56 | 1/2" | 3/8" | 100 |

\* 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:**  
 Tool performance rated at 90 psi (620kPa) air pressure.

**Standard Equipment:**  
 Operating instructions & service manual

**Optional Equipment:**  
 86909 Suspension bail for WL-200.  
 Additional accessories: Pages 63

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

### Trigger Start - Spade Handle

|            |           |       |     |         |           |           |     |       |      |     |      |      |     |    |      |      |     |
|------------|-----------|-------|-----|---------|-----------|-----------|-----|-------|------|-----|------|------|-----|----|------|------|-----|
| WT-2110-8  |           | 1 1/2 | M30 | 1       | 750-1650  | 1000-2250 | 880 | 4,600 | 12.9 | 327 | 21   | 9.5  | 2.2 | 56 | 1/2" | 1/2" | 100 |
| WTS-2120   |           | 1 1/2 | M36 | #5 Spl. | 1200-2800 | 1600-3800 | 850 | 3,300 | 14.3 | 362 | 27.6 | 12.5 | 2.3 | 59 | 1/2" | 5/8" | 105 |
| WT-2120-12 | W-2120-12 | 1 1/2 | M36 | 1 1/2   | 1200-3000 | 1600-4000 | 850 | 3,300 | 14.3 | 362 | 27.6 | 12.5 | 2.3 | 59 | 1/2" | 5/8" | 105 |

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

|            |          |       |     |         |           |           |     |       |      |     |      |      |     |    |      |      |     |
|------------|----------|-------|-----|---------|-----------|-----------|-----|-------|------|-----|------|------|-----|----|------|------|-----|
| WT-2109-8  | W-2109-8 | 1 3/8 | M30 | 1       | 750-1650  | 1000-2250 | 880 | 4,300 | 12.9 | 327 | 21   | 9.5  | 2.2 | 56 | 1/2" | 1/2" | 100 |
| WTS-2109   |          | 1 3/8 | M30 | #5 Spl. | 800-1800  | 1100-2450 | 880 | 4,300 | 13.1 | 333 | 21.5 | 9.8  | 2.2 | 56 | 1/2" | 1/2" | 100 |
| WT-2119-12 |          | 1 1/2 | M36 | 1 1/2   | 1200-2600 | 1600-3500 | 820 | 3,300 | 14.3 | 362 | 29   | 13.1 | 2.3 | 59 | 1/2" | 5/8" | 105 |
| WTS-2119   | WS-2119  | 1 1/2 | M36 | #5 Spl. | 1200-2500 | 1600-3400 | 820 | 3,300 | 14.3 | 362 | 29   | 13.1 | 2.3 | 59 | 1/2" | 5/8" | 105 |

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

**Standard Equipment:**  
 Operating instructions & service manual  
 Dead handle bracket  
 Dead Handle

**Optional Equipment:**  
 Additional accessories: Pages 63

**General:**  
 Tool performance rated at 90 psi (620kPa) air pressure.



### **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 25 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.





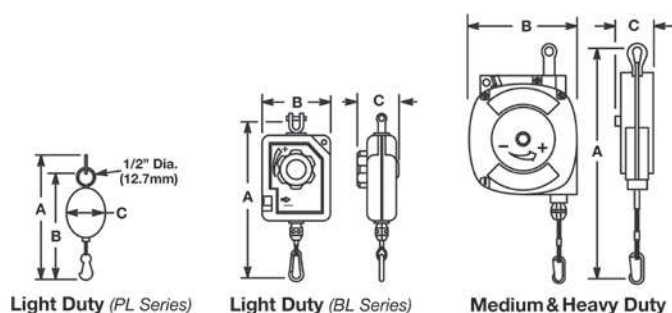
**Cleco®**

## Ergonomic Tool Balancers

**Capacity:**  
0.5 - 20.5 kg  
1.0 - 45 Lbs.

External tension adjustment

- 360° Swivel
- Retracting in-line cable



Light Duty (PL Series)

Light Duty (BL Series)

Medium & Heavy Duty

| Model Number                             | Lock Feature      | Capacity |           | “A”  |     | “B” |     | “C” |     | Weight |     |
|------------------------------------------|-------------------|----------|-----------|------|-----|-----|-----|-----|-----|--------|-----|
|                                          |                   | lbs.     | kg        | in.  | mm  | in. | mm  | in. | mm  | lbs.   | kg  |
| Light Duty – 4.6 ft. (1.4m) Cable Travel |                   |          |           |      |     |     |     |     |     |        |     |
| PL-12A                                   | –                 | 12.0-1.0 | 5.5-0.5   | 6.8  | 171 | 5.1 | 130 | 2.3 | 58  | –      | –   |
| Light Duty – 5.0 ft. (1.5m) Cable Travel |                   |          |           |      |     |     |     |     |     |        |     |
| 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 |
| Light Duty – 5.2 ft. (1.6m) Cable Travel |                   |          |           |      |     |     |     |     |     |        |     |
| 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                                    | –                 | 4.0-20   | 1.8-0.9   | 10.4 | 263 | 4.0 | 102 | 2.2 | 56  | 1.1    | 0.5 |
| Light Duty – 6.7 ft. (2.0m) Cable Travel |                   |          |           |      |     |     |     |     |     |        |     |
| 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 |
| Medium Duty – 6.6ft. (2.0m) Cable Travel |                   |          |           |      |     |     |     |     |     |        |     |
| 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 |
| Medium Duty – 6.0ft. (1.8m) Cable Travel |                   |          |           |      |     |     |     |     |     |        |     |
| 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 |

# General Accessories

Air Cylinder & Spring Balance Arms

## Cleco®

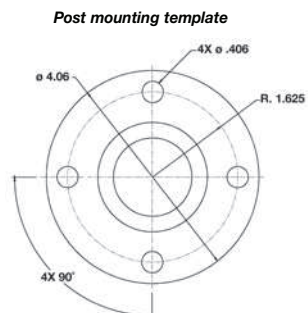
- Ball bearing construction
- Supports tools weighing up to 5 lbs. (spring models) or up to 10 lbs. (air cylinder models).
- Post, wall, or adjustable height post mounting
- Single or parallel arms

*Air Cylinder  
Single Arm Post  
CPBA-18*

*Air Cylinder  
Parallel Arm  
Adjustable Height  
CPBA-18-AH*

*Spring  
Parallel Arm Post  
PBA-18*

*Spring  
Single Arm  
Adjustable Height  
SBA-18-AH*



TOOLS NOT INCLUDED

| Single Arms |              | Parallel Arms |              | Dimensions |    |     |    |     |    |     |    |
|-------------|--------------|---------------|--------------|------------|----|-----|----|-----|----|-----|----|
| Model No.   | Ordering No. | Model No.     | Ordering No. | A          |    | B   |    | C   |    | D   |    |
|             |              |               |              | in.        | mm | in. | mm | in. | mm | in. | mm |

### Air Cylinder Models

|            |        |            |        |    |     |    |     |    |     |    |     |
|------------|--------|------------|--------|----|-----|----|-----|----|-----|----|-----|
| 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 | 520175 | 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  
1/4 NPT x 1/8 NPT Hex Reducer  
Nipple: 204137

**Optional Equipment**  
Additional accessories: See page 62.

| Single Arms |              | Parallel Arms |              | Dimensions |    |     |    |     |    |     |    |
|-------------|--------------|---------------|--------------|------------|----|-----|----|-----|----|-----|----|
| Model No.   | Ordering No. | Model No.     | Ordering No. | A          |    | B   |    | C   |    | D   |    |
|             |              |               |              | in.        | mm | in. | mm | in. | mm | in. | mm |

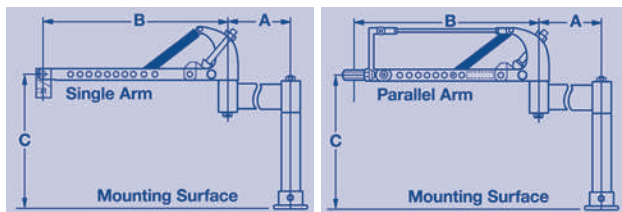
### Spring Models

|           |        |              |        |    |     |    |     |    |     |    |     |
|-----------|--------|--------------|--------|----|-----|----|-----|----|-----|----|-----|
| 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)

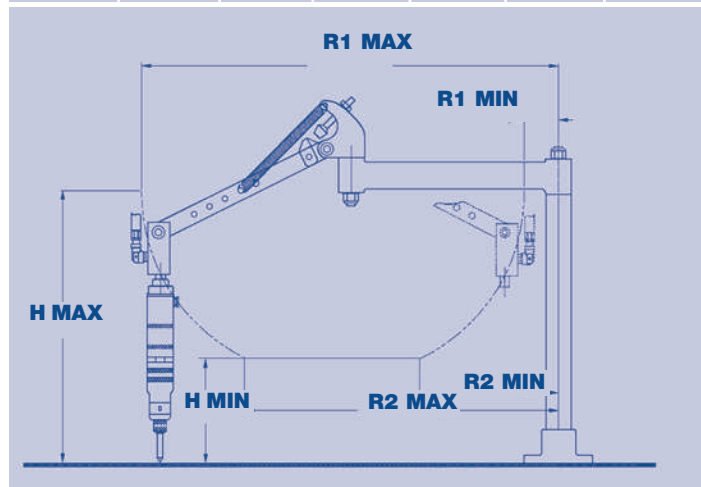
**Standard Equipment**  
Operating Instructions and Service Manual.  
Threaded Nipples for SBA Models  
1/4 NPT Hex Nipple: 204032  
1/4 NPT x 1/8 NPT Hex Reducer  
Nipple: 204137

**Optional Equipment**  
Additional accessories: See page 62.



### 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  |



| Series                          | XX | BA | - | XX | - | XX | - | XX |
|---------------------------------|----|----|---|----|---|----|---|----|
| CS - Air cylinder, single arm   |    |    |   |    |   |    |   |    |
| S - Spring, single arm          |    |    |   |    |   |    |   |    |
| CP - Air cylinder, parallel arm |    |    |   |    |   |    |   |    |
| P - Spring, parallel arm        |    |    |   |    |   |    |   |    |
| Tool Type                       |    |    |   |    |   |    |   |    |
| BA - Balance Arm                |    |    |   |    |   |    |   |    |

**Arm Extension**  
12" 24"  
18" 30"  
(12" unless specified)

**Mount**  
- Post  
AH - Adjustable Height  
WM - Wall Mount  
**Adjustable Arm Extension**  
12" 24"  
18" 30"

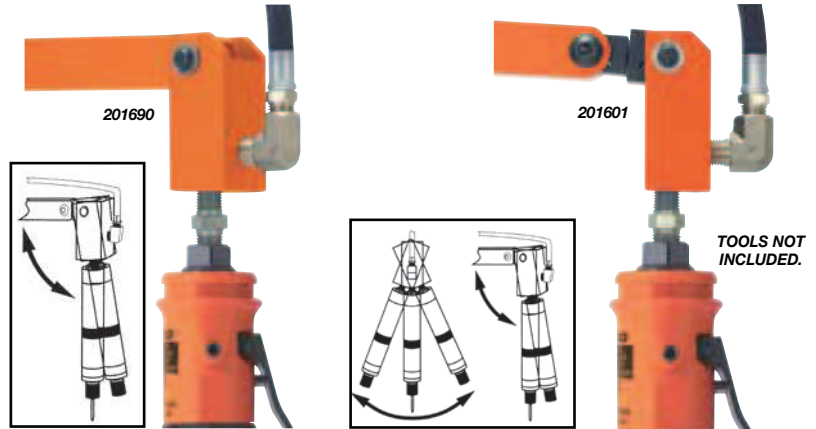
# General Accessories

Air Cylinder & Spring Balance Arm Accessories

## Single Arm Tool Holders

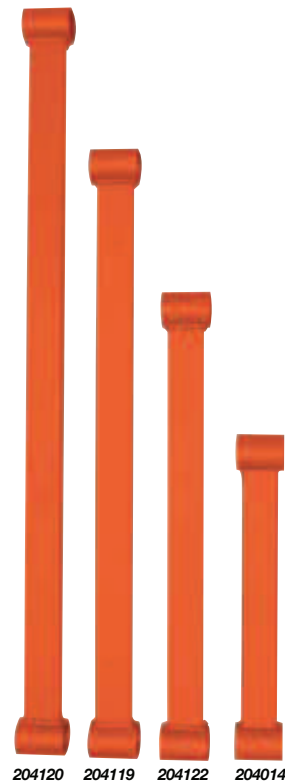
| Part Number | Description                 |
|-------------|-----------------------------|
| 201690*     | Manifold tool holder        |
| 201601*     | Swivel manifold tool holder |

\*Use of 201601 requires 201690.



## Parallel Arm Tool Holders

| Part Number | Description                   |
|-------------|-------------------------------|
| 201675      | Parallel tool holder          |
| 204167      | Extended parallel tool holder |
| 201607      | Swivel tool holder (small)    |
| 201608      | Swivel tool holder (large)    |



## Articulating Arm Extensions

| Part Number | Length (inches) |
|-------------|-----------------|
| 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 Standard Duty | SBA or PBA Heavy Duty** | 521060   |

\* Conversion kits for -24 and -30 models are available upon request.

\*\* Has four springs to support heavier tools or longer arms.

## Air Hoses

| Part Number | Hose I.D. |      | Fittings (NPT) |     | Length |     |
|-------------|-----------|------|----------------|-----|--------|-----|
|             | in.       | mm   | in.            | mm  | ft.    | m   |
| 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 |
| 45-1810     | 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 |

**General:** 3/16" & 1/4" hoses have braided covers, all others have neoprene covers.

**\*Note:** 3/8"-24 is a straight thread



## Activeswivel

| 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.

## Quick Disconnect Fittings

| Fitting Type*                                                                      | NPT<br>in. | Nominal Size |         |         |
|------------------------------------------------------------------------------------|------------|--------------|---------|---------|
|                                                                                    |            | 1/4"         | 3/8"    | 1/2"    |
| <b>Coupler (male NPT)</b>                                                          |            |              |         |         |
|  | 1/8        | 45-0710      | —       | —       |
|                                                                                    | 1/4        | 45-0711      | 45-0713 | —       |
|                                                                                    | 3/8        | 45-0712      | —       | —       |
|                                                                                    | 1/2        | —            | —       | 45-0717 |
| <b>Coupler (female NPT)</b>                                                        |            |              |         |         |
|  | 1/4        | —            | —       | —       |
|                                                                                    | 3/8        | 45-0732      | 45-0734 | 45-0736 |
| <b>Nipple (male NPT)</b>                                                           |            |              |         |         |
|  | 1/8        | 45-0720      | —       | —       |
|                                                                                    | 1/4        | —            | 45-0724 | —       |
|                                                                                    | 3/8        | 45-0722      | 45-0725 | 45-0726 |
|                                                                                    | 1/2        | —            | —       | 45-0727 |
| <b>Nipple (female NPT)</b>                                                         |            |              |         |         |
|  | 1/4        | —            | 45-0744 | —       |
|                                                                                    | 3/8        | 45-0742      | 45-0745 | 45-0746 |
|                                                                                    | 1/2        | —            | —       | 45-0747 |
| <b>Nipple (with hose barbs)</b>                                                    |            |              |         |         |
|  | 1/4**      | 45-0748      | —       | —       |
|                                                                                    | 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.

## Lubricants

| Part Number    | Size          | Description           | M.S.D.S. No. |
|----------------|---------------|-----------------------|--------------|
| <b>Oils</b>    |               |                       |              |
| 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      |
| 540394         | 2.8 oz. tube  | Teflon grease         | CPT-145      |
| 45-0983        | 2 oz. tube    | Dotco gear grease     | CPT-147      |
| 45-0980        | 2 oz. tube    | Dotco gear lube       | CPT-148      |

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 Cooper Tools.



**Push Type Grease Gun**

Part Number: 45-1982



## 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.

### More Quality For Your Money

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

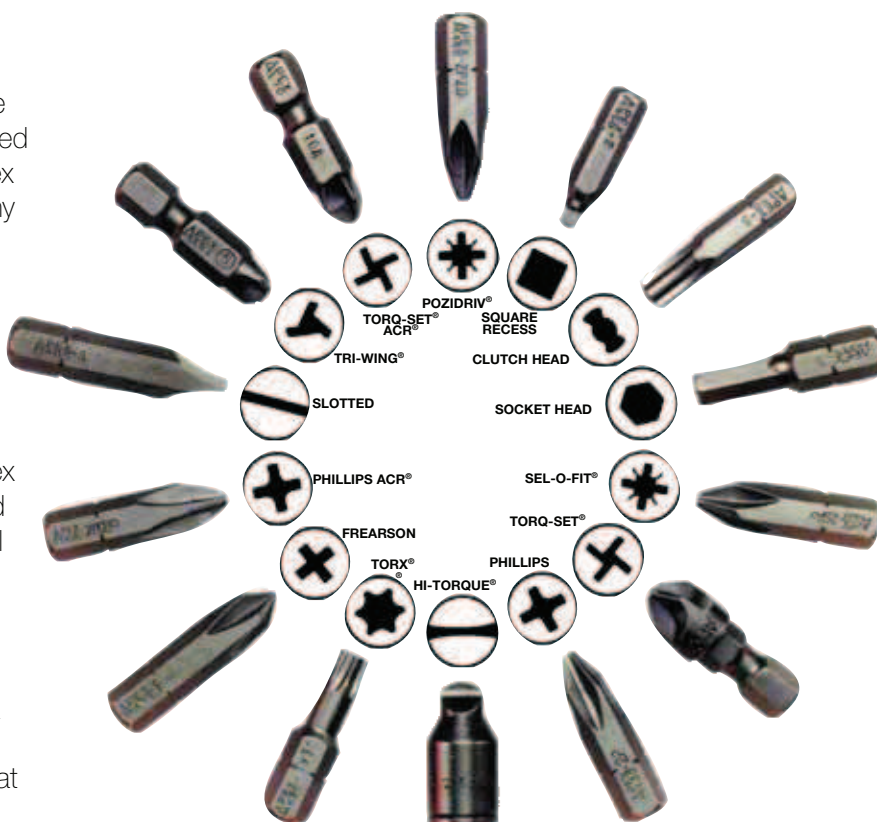
All Apex standard catalog items are available off-the-shelf for immediate delivery. If you need special assistance with your order, your Apex manufacturer's representative can handle any questions you may have.

### 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.

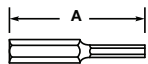
### Ordering Information

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.apex-tools.com](http://www.apex-tools.com).



## Insert Bits

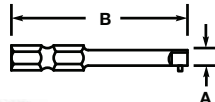
(1/4" hex for socket head cap screws and set screws)



| 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"  |       | Bushing Number |
|-------------|---------------|------|-------|----------------|
|             |               | 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 |

### Male Hex Drive with 1/2" Male Square

|          |      |     |   |     |
|----------|------|-----|---|-----|
| EX-501-3 | 7/16 | Pin | 3 | 76  |
| EX-501-4 | 7/16 | Pin | 4 | 102 |
| EX-501-6 | 7/16 | Pin | 6 | 152 |

### Male Hex Drive with 3/8" Male Square

|          |      |     |   |     |
|----------|------|-----|---|-----|
| 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.) |
|-------------|------------|----------------------|----------------------------|
|-------------|------------|----------------------|----------------------------|

### 7/16" 6 Point

|           |      |   |       |
|-----------|------|---|-------|
| 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    | Pozi-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          | HPL-2       | 440-2PZD   | 5-8         | 5-10  | 5-10                   | 5-10      | 6-10  | 5-10    |
| 3          | HPL-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 | Nose End Diameter | Drive End Diameter | Opening Depth |
|----------|-------------|----------------|-------------------|--------------------|---------------|
|----------|-------------|----------------|-------------------|--------------------|---------------|

### 3/8" Square Drive Sockets, SAE

|      |      |       |       |       |       |
|------|------|-------|-------|-------|-------|
| 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  |

### 1/2" Square Drive Sockets, SAE

|      |       |       |       |       |       |
|------|-------|-------|-------|-------|-------|
| 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 |

### 3/4" Square Drive Sockets, SAE

|      |       |       |       |       |       |
|------|-------|-------|-------|-------|-------|
| 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     |

### 1" Square Drive Sockets, SAE

|      |       |       |       |       |        |
|------|-------|-------|-------|-------|--------|
| 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 |

### 1 1/2" Square Drive Sockets, SAE

|      |       |       |       |       |       |
|------|-------|-------|-------|-------|-------|
| 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 |

### 3/8" Square Drive Sockets, Metric

|        |    |      |      |      |      |
|--------|----|------|------|------|------|
| 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 |

### 1/2" Square Drive Sockets, Metric

|        |    |      |      |      |      |
|--------|----|------|------|------|------|
| 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 |

### 5/8" Square Drive Sockets, Metric

|        |    |    |      |      |      |
|--------|----|----|------|------|------|
| 24mm16 | 24 | 51 | 38.1 | 38.1 | 15.9 |
|--------|----|----|------|------|------|

### 3/4" Square Drive Sockets, Metric

|        |    |    |      |      |      |
|--------|----|----|------|------|------|
| 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 |

### 1" Square Drive Sockets, Metric

|        |    |    |      |      |      |
|--------|----|----|------|------|------|
| 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 |



# APEX® $\mu$ -Guard™

## Quality Anti-Mar Fastener Tools Begin With Quality Fastener Tools.

Apex  $\mu$ -Guard™ provides a protective barrier between genuine Apex fastener tools and your finely finished workpiece. The free-spinning patent-pending design provides maximum protection for polished and highly sensitive surfaces.

Apex  $\mu$ -Guard™ covering is made of a thermo plastic urethane (TPU elastomer) which cushions against costly incidental side impacts. It offers the lowest coefficient of friction for maximum tool efficiency. It is also non-removable for tamper resistance.

With Apex  $\mu$ -Guard™ you get the proven Apex fastener tool fit and performance plus the best protection available against marring and in-system damage.

$\mu$ -Guard™ is your guard against the potential hazards caused by rotational friction.



*If it doesn't say Apex  
on the outside, how can  
you be sure of what's  
on the inside?*

### *Prevents Side Impact Damage*



### *Free-Spinning Design*



### *Virtually Damage Free*



## μ-Guard Sockets

(Includes socket and cover)



| Part Number  | Socket    | Drive End |        |     | Socket Length | Fastener End |      |     | Assembly Features |
|--------------|-----------|-----------|--------|-----|---------------|--------------|------|-----|-------------------|
|              |           | Size      | Type   | Sex |               | Size         | Type | Sex |                   |
| UGS-AB710    | 10MM21    | 1/4       | Square | F   | standard      | 10 mm        | Hex  | F   | FS                |
| UGS-AB710-01 | M-10MM21  | 1/4       | Square | F   | standard      | 10 mm        | Hex  | F   | FS, M             |
| UGS-AB710-02 | MB-10MM21 | 1/4       | Square | F   | standard      | 10 mm        | Hex  | F   | FS, M, B          |
| UGS-BA610    | 10MM13    | 3/8       | Square | F   | standard      | 10 mm        | Hex  | F   | FS                |
| UGS-BA610-01 | M-10MM13  | 3/8       | Square | F   | standard      | 10 mm        | Hex  | F   | FS, M             |
| UGS-BB710    | 10MM23    | 3/8       | Square | F   | long          | 10 mm        | Hex  | F   | FS                |
| UGS-BB710-01 | M-10MM23  | 3/8       | Square | F   | long          | 10 mm        | Hex  | F   | FS, M             |
| UGS-BB710-02 | MB-10MM23 | 3/8       | Square | F   | long          | 10 mm        | Hex  | F   | FS, M, B          |
| UGS-BB713    | 13MM23    | 3/8       | Square | F   | long          | 13 mm        | Hex  | F   | FS                |
| UGS-BB713-01 | M-13MM23  | 3/8       | Square | F   | long          | 13 mm        | Hex  | F   | FS, M             |
| UGS-BB713-02 | MB-13MM23 | 3/8       | Square | F   | long          | 13 mm        | Hex  | F   | FS, M, B          |
| UGS-CB713    | 13MM25    | 1/2       | Square | F   | long          | 13 mm        | Hex  | F   | FS                |
| UGS-CB713-03 | SF-13MM25 | 1/2       | Square | F   | long          | 13 mm        | Hex  | F   | FS, SF            |
| UGS-CB715    | 15MM25    | 1/2       | Square | F   | long          | 15 mm        | Hex  | F   | FS                |
| UGS-CB715-03 | SF-15MM25 | 1/2       | Square | F   | long          | 15 mm        | Hex  | F   | FS, SF            |
| UGS-CB718    | 18MM25    | 1/2       | Square | F   | long          | 18 mm        | Hex  | F   | FS                |
| UGS-CB718-03 | SF-18MM25 | 1/2       | Square | F   | long          | 18 mm        | Hex  | F   | FS, SF            |

If your tool is not shown in the table of representative products above, please contact your Apex representative.

## μ-Guard Extensions

(Includes extension and cover)



| Part Number | Extension | Drive End |        |     | Extension Length | Socket End |        |     | Assembly Features* |
|-------------|-----------|-----------|--------|-----|------------------|------------|--------|-----|--------------------|
|             |           | Size      | Type   | Sex |                  | Size       | Type   | Sex |                    |
| UGE-A2A     | EX-250-2  | 1/4       | Hex    | M   | 2                | 1/4        | Square | M   | FS                 |
| UGE-A4A     | EX-250-4  | 1/4       | Hex    | M   | 4                | 1/4        | Square | M   | FS                 |
| UGE-A6A     | EX-250-6  | 1/4       | Hex    | M   | 6                | 1/4        | Square | M   | FS                 |
| UGE-B2A     | EX-370-2  | 1/4       | Hex    | M   | 2                | 3/8        | Square | M   | FS                 |
| UGE-B4A     | EX-370-4  | 1/4       | Hex    | M   | 4                | 3/8        | Square | M   | FS                 |
| UGE-B6A     | EX-370-6  | 1/4       | Hex    | M   | 6                | 3/8        | Square | M   | FS                 |
| UGE-B3C     | EX-376-3  | 3/8       | Square | F   | 3                | 3/8        | Square | M   | FS                 |
| UGE-B6C     | EX-376-6  | 3/8       | Square | F   | 6                | 3/8        | Square | M   | FS                 |
| UGE-B12C    | EX-376-12 | 3/8       | Square | F   | 12               | 3/8        | Square | M   | FS                 |
| UGE-C4C     | EX-508-4  | 1/2       | Square | F   | 4                | 1/2        | Square | M   | FS                 |
| UGE-C8C     | EX-508-8  | 1/2       | Square | F   | 8                | 1/2        | Square | M   | FS                 |
| UGE-C12C    | EX-508-12 | 1/2       | Square | F   | 12               | 1/2        | Square | M   | FS                 |

If your tool is not shown in the table of representative products above, please contact your Apex representative.

## μ-Guard Bit Holders

(Includes bit holder and cover)



| Part Number | Bit Holder | Drive End |        |     | Socket Length | Fastener End |      |     | Assembly Features |
|-------------|------------|-----------|--------|-----|---------------|--------------|------|-----|-------------------|
|             |            | Size      | Type   | Sex |               | Size         | Type | Sex |                   |
| UGH-1NAA    | M-490      | 1/4       | Hex    | M   | 2 31/32       | 1/4          | Hex  | F   | FS, M, ET         |
| UGH-1AAA    | M-490-2    | 1/4       | Hex    | M   | 2             | 1/4          | Hex  | F   | FS, M, ET         |
| UGH-2NBG    | 838        | 3/8       | Square | F   | 1 1/2         | 1/4          | Hex  | F   | FS, ET            |
| UGH-1NBG    | M-838      | 3/8       | Square | F   | 2 5/8         | 1/4          | Hex  | F   | FS, M, ET         |
| UGH-2NBC    | 835        | 3/8       | Square | F   | 1 1/2         | 5/16         | Hex  | F   | FS, ET            |
| UGH-1NBC    | M-835      | 3/8       | Square | F   | 2 3/4         | 5/16         | Hex  | F   | FS, M, ET         |
| UGH-2NBD    | 855        | 1/2       | Square | F   | 1 1/2         | 5/16         | Hex  | F   | FS, ET            |
| UGH-1NBD    | M-855      | 1/2       | Square | F   | 2 3/4         | 5/16         | Hex  | F   | FS, M, ET         |
| UGH-2NCK    | QR-308     | 3/8       | Square | F   | 1 3/4         | 1/4          | Hex  | F   | FS, QR            |
| UGH-2NCF    | QR-508     | 1/2       | Square | F   | 2 1/8         | 1/4          | Hex  | F   | FS, QR            |
| UGH-2NCJ    | QR-314     | 3/8       | Square | F   | 2             | 7/16         | Hex  | F   | FS, QR            |
| UGH-2NCL    | QR-514     | 1/2       | Square | F   | 2 1/8         | 7/16         | Hex  | F   | FS, QR            |

If your tool is not shown in the table of representative products above, please contact your Apex representative.

### \*Features Abbreviations

**FS** Free Spinning Tool is able to rotate independently of Cover  
**M** Magnetic Tool includes magnet to hold the position of the fastener during fastening operation  
**B** Bolt Clearance Tool is spring-loaded to allow bolt or nut to retract into the socket body  
**SF** Surface Drive Tool has radiused corners to allow easier alignment and engagement of fastener  
**ET** Exposed Tip Cover extends beyond end of Bit Holder to shield the majority of a standard 1 inch long Insert Bit.

**QR** Quick Release Tip of Insert Bit will not be covered to allow easier fastener engagement. Tool has tension feature to allow quick & easy change between bits  
 Cover will not extend beyond end of Bit Holder

**Notes:** Reported lengths are based on uncovered tool length only for reference. Cover may extend beyond end of tool by 2 mm unless otherwise noted.

# 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 | 10.300 | .4055 |       | 15.400 | .6063 |       | 20.400 | .8031 |       |    |      |     |
| 0.200 | .0079 |       | 5.200  | .2047 |       | 10.319 | .4063 | 13/32 | 15.478 | .6094 | 39/64 | 20.500 | .8071 |       |    |      |     |
| 0.300 | .0118 |       | 5.300  | .2087 |       | 10.400 | .4094 |       | 15.500 | .6102 |       | 20.600 | .8110 |       |    |      |     |
| 0.397 | .0156 | 1/64  | 5.400  | .2126 |       | 10.500 | .4134 |       | 15.600 | .6142 |       | 20.638 | .8125 | 13/16 |    |      |     |
| 0.400 | .0157 |       | 5.500  | .2165 |       | 10.600 | .4173 |       | 15.700 | .6181 |       | 20.700 | .8150 |       |    |      |     |
| 0.500 | .0197 |       | 5.556  | .2188 | 7/32  | 10.700 | .4219 |       | 15.800 | .6220 |       | 20.800 | .8189 |       |    |      |     |
| 0.600 | .0236 |       | 5.600  | .2205 |       | 10.716 | .4219 | 27/64 | 15.875 | .6250 | 5/8   | 20.900 | .8228 |       |    |      |     |
| 0.700 | .0276 |       | 5.700  | .2244 |       | 10.800 | .4252 |       | 15.900 | .6250 |       | 21.000 | .8268 |       |    |      |     |
| 0.794 | .0313 | 1/32  | 5.800  | .2283 |       | 10.900 | .4291 |       | 16.000 | .6299 |       | 21.034 | .8182 | 53/64 |    |      |     |
| 0.800 | .0315 |       | 5.900  | .2323 |       | 11.000 | .4331 |       | 16.100 | .6339 |       | 21.100 | .8307 |       |    |      |     |
| 0.900 | .0354 |       | 5.953  | .2344 | 15/64 | 11.100 | .4370 |       | 16.200 | .6378 |       | 21.200 | .8307 |       |    |      |     |
| 1.000 | .0394 |       | 6.000  | .2362 |       | 11.113 | .4375 | 7/16  | 16.272 | .6406 | 41/64 | 21.200 | .8346 |       |    |      |     |
| 1.100 | .0433 |       | 6.100  | .2402 |       | 11.200 | .4409 |       | 16.300 | .6417 |       | 21.300 | .8386 |       |    |      |     |
| 1.191 | .0469 | 3/64  | 6.200  | .2441 |       | 11.300 | .4449 |       | 16.400 | .6457 |       | 21.400 | .8425 |       |    |      |     |
| 1.200 | .0472 |       | 6.300  | .2480 |       | 11.400 | .4488 |       | 16.500 | .6496 |       | 21.431 | .8438 | 27/32 |    |      |     |
| 1.300 | .0512 |       | 6.350  | .2500 | 1/4   | 11.500 | .4528 |       | 16.600 | .6535 |       | 21.500 | .8465 |       |    |      |     |
| 1.400 | .0551 |       | 6.400  | .2520 |       | 11.509 | .4531 | 29/64 | 16.669 | .6563 | 21/32 | 21.600 | .8504 |       |    |      |     |
| 1.500 | .0591 |       | 6.500  | .2559 |       | 11.600 | .4567 |       | 16.700 | .6575 |       | 21.700 | .8543 |       |    |      |     |
| 1.588 | .0625 | 1/16  | 6.600  | .2598 |       | 11.700 | .4606 |       | 16.800 | .6614 |       | 21.800 | .8583 |       |    |      |     |
| 1.600 | .0630 |       | 6.700  | .2638 |       | 11.800 | .4646 |       | 16.900 | .6654 |       | 21.828 | .8594 | 55/94 |    |      |     |
| 1.700 | .0669 |       | 6.747  | .2656 | 17/64 | 11.900 | .4685 |       | 17.000 | .6693 |       | 21.900 | .8622 |       |    |      |     |
| 1.800 | .0709 |       | 6.800  | .2677 |       | 11.906 | .4688 | 15/32 | 17.066 | .6719 | 43/64 | 22.000 | .8661 |       |    |      |     |
| 1.900 | .0748 |       | 6.900  | .2717 |       | 12.000 | .4724 |       | 17.100 | .6732 |       | 22.100 | .8701 |       |    |      |     |
| 1.984 | .0781 | 5/64  | 7.000  | .2756 |       | 12.100 | .4764 |       | 17.200 | .6772 |       | 22.200 | .8740 |       |    |      |     |
| 2.000 | .0878 |       | 7.100  | .2795 |       | 12.200 | .4803 |       | 17.300 | .6811 |       | 22.225 | .8750 | 7/8   |    |      |     |
| 2.100 | .0827 |       | 7.144  | .2813 | 9/32  | 12.300 | .4843 |       | 17.400 | .6850 |       | 22.300 | .8780 |       |    |      |     |
| 2.200 | .0866 |       | 7.200  | .2835 |       | 12.303 | .4844 | 31/64 | 17.463 | .6875 | 11/16 | 22.400 | .8819 |       |    |      |     |
| 2.300 | .0906 |       | 7.300  | .2874 |       | 12.400 | .4882 |       | 17.500 | .6890 |       | 22.500 | .8858 |       |    |      |     |
| 2.381 | .0938 | 3/32  | 7.400  | .2913 |       | 12.500 | .4921 |       | 17.600 | .6929 |       | 22.600 | .8898 |       |    |      |     |
| 2.400 | .0945 |       | 7.500  | .2953 |       | 12.600 | .4961 |       | 17.700 | .6968 |       | 22.622 | .8906 | 57/64 |    |      |     |
| 2.500 | .0984 |       | 7.541  | .2969 | 19/64 | 12.700 | .5000 | 1/2   | 17.800 | .7008 |       | 22.700 | .8937 |       |    |      |     |
| 2.600 | .1024 |       | 7.600  | .2992 |       | 12.800 | .5039 |       | 17.859 | .7031 | 45/64 | 22.800 | .8976 |       |    |      |     |
| 2.700 | .1063 |       | 7.700  | .3031 |       | 12.900 | .5079 |       | 17.900 | .7047 |       | 22.900 | .9016 |       |    |      |     |
| 2.778 | .1094 | 7/64  | 7.800  | .3071 |       | 13.000 | .5118 |       | 18.000 | .7087 |       | 23.000 | .9055 |       |    |      |     |
| 2.800 | .1102 |       | 7.900  | .3110 |       | 13.097 | .5156 | 33/64 | 18.100 | .7126 |       | 23.019 | .9063 | 29/32 |    |      |     |
| 2.900 | .1142 |       | 7.938  | .3125 | 5/16  | 13.100 | .5157 |       | 18.200 | .7165 |       | 23.100 | .9094 |       |    |      |     |
| 3.000 | .1181 |       | 8.000  | .3150 |       | 13.200 | .5197 |       | 18.256 | .7188 | 23/32 | 23.200 | .9134 |       |    |      |     |
| 3.100 | .1220 |       | 8.100  | .3189 |       | 13.300 | .5236 |       | 18.300 | .7205 |       | 23.300 | .9173 |       |    |      |     |
| 3.175 | .1250 | 1/8   | 8.200  | .3228 |       | 13.400 | .5276 |       | 18.400 | .7244 |       | 23.400 | .9213 |       |    |      |     |
| 3.200 | .1260 |       | 8.300  | .3268 |       | 13.494 | .5313 | 17/32 | 18.500 | .7283 |       | 23.416 | .9219 | 59/64 |    |      |     |
| 3.300 | .1299 |       | 8.334  | .3281 | 21/64 | 13.500 | .5315 |       | 18.600 | .7323 |       | 23.500 | .9252 |       |    |      |     |
| 3.400 | .1339 |       | 8.400  | .3307 |       | 13.600 | .5354 |       | 18.653 | .7344 | 47/64 | 23.600 | .9291 |       |    |      |     |
| 3.500 | .1378 |       | 8.500  | .3346 |       | 13.700 | .5394 |       | 18.700 | .7362 |       | 23.700 | .9331 |       |    |      |     |
| 3.572 | .1406 | 9/64  | 8.600  | .3386 |       | 13.800 | .5433 |       | 18.800 | .7402 |       | 23.800 | .9370 |       |    |      |     |
| 3.600 | .1417 |       | 8.700  | .3425 |       | 13.891 | .5469 | 35/64 | 18.900 | .7441 |       | 23.900 | .9409 |       |    |      |     |
| 3.700 | .1457 |       | 8.731  | .3438 | 11/32 | 13.900 | .5472 |       | 19.000 | .7480 |       | 24.000 | .9449 |       |    |      |     |
| 3.800 | .1496 |       | 8.800  | .3465 |       | 14.000 | .5512 |       | 19.050 | .7500 | 3/4   | 24.100 | .9488 |       |    |      |     |
| 3.900 | .1535 |       | 8.900  | .3504 |       | 14.100 | .5551 |       | 19.100 | .7520 |       | 24.200 | .9528 |       |    |      |     |
| 3.969 | .1563 | 5/32  | 9.000  | .3543 |       | 14.200 | .5591 |       | 19.200 | .7559 |       | 24.209 | .9531 | 61/64 |    |      |     |
| 4.000 | .1575 |       | 9.100  | .3583 |       | 14.288 | .5625 | 9/16  | 19.300 | .7598 |       | 24.300 | .9567 |       |    |      |     |
| 4.100 | .1624 |       | 9.128  | .3594 | 23/64 | 14.300 | .5630 |       | 19.400 | .7638 |       | 24.400 | .9606 |       |    |      |     |
| 4.200 | .1654 |       | 9.200  | .3622 |       | 14.400 | .5669 |       | 19.447 | .7656 | 49/64 | 24.500 | .9646 |       |    |      |     |
| 4.300 | .1693 |       | 9.300  | .3661 |       | 14.500 | .5709 |       | 19.500 | .7677 |       | 24.600 | .9685 |       |    |      |     |
| 4.366 | .1719 | 11/64 | 9.400  | .3701 |       | 14.600 | .5748 |       | 19.600 | .7717 |       | 24.606 | .9688 | 31/32 |    |      |     |
| 4.400 | .732  |       | 9.500  | .3740 |       | 14.684 | .5781 | 37/64 | 19.700 | .7756 |       | 24.700 | .9724 |       |    |      |     |
| 4.500 | .1772 |       | 9.525  | .3750 | 3/8   | 14.700 | .5787 |       | 19.800 | .7795 |       | 24.800 | .9764 |       |    |      |     |
| 4.600 | .1811 |       | 9.700  | .3819 |       | 14.800 | .5827 |       | 19.844 | .7813 | 25/32 | 24.900 | .9803 |       |    |      |     |
| 4.700 | .1850 |       | 9.800  | .3858 |       | 14.900 | .5866 |       | 19.900 | .7835 |       | 25.000 | .9843 |       |    |      |     |
| 4.763 | .1875 | 3/16  | 9.900  | .3898 |       | 15.000 | .5906 |       | 20.000 | .7874 |       | 25.003 | .9844 | 63/64 |    |      |     |
| 4.800 | .1890 |       | 9.922  | .3902 | 25/64 | 15.081 | .5938 | 19/32 | 20.100 | .7913 |       | 25.100 | .9882 |       |    |      |     |
| 4.900 | .1929 |       | 10.000 | .3937 |       | 15.100 | .5945 |       | 20.200 | .7953 |       | 25.200 | .9921 |       |    |      |     |
| 5.000 | .1969 |       | 10.100 | .3976 |       | 15.200 | .5984 |       | 20.241 | .7969 | 51/64 | 25.300 | .9961 |       |    |      |     |
| 5.100 | .2008 |       | 10.200 | .4016 |       | 15.300 | .6024 |       | 20.300 | .7992 |       | 25.400 | 1.000 | 1     |    |      |     |

# Conversion Tables

Torque – Air Pressure – Miscellaneous

| Torque Conversion Factors |               |             |
|---------------------------|---------------|-------------|
| To Convert                | Into          | Multiply By |
| Inch Pounds               | Foot Pounds   | 0.0835      |
| Inch Pounds               | Newton meters | 0.1130      |
| Inch Pounds               | Kg-meters     | 0.0115      |
| Inch Pounds               | Kg-Cm         | 1.1519      |
| Foot Pounds               | Inch Pounds   | 12.000      |
| Foot Pounds               | Newton meters | 1.3560      |
| Foot Pounds               | Kg-meters     | 0.1382      |
| Foot Pounds               | Kg-Cm         | 13.8240     |
| Newton Meters             | Inch Pounds   | 8.8440      |
| Newton Meters             | Foot Pounds   | 0.7370      |
| Newton Meters             | Kg-meters     | 0.1020      |
| Newton Meters             | Kg-Cm         | 10.2000     |
| Kg meters                 | Inch Pounds   | 86.8100     |
| Kg meters                 | Foot Pounds   | 7.2340      |
| Kg meters                 | Newton-meters | 9.8040      |
| Kg Cm                     | Inch Pounds   | 0.8681      |
| Kg Cm                     | Foot Pounds   | 0.0723      |
| Kg Cm                     | Newton-meters | 0.0980      |

| Torque Conversion – In. Lbs. (Nm) |     |          |      |          |      |          |    |
|-----------------------------------|-----|----------|------|----------|------|----------|----|
| In. Lbs.                          | Nm  | In. Lbs. | Nm   | In. Lbs. | Nm   | In. Lbs. | 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    | Ft. Lbs. | Nm    |
| 1                                 | 1.36 | 33       | 44.8 | 65       | 88.1  | 97       | 131.5 |
| 2                                 | 2.7  | 34       | 46.1 | 66       | 90.0  | 98       | 133.0 |
| 3                                 | 4.1  | 35       | 47.5 | 67       | 90.9  | 99       | 134.2 |
| 4                                 | 5.4  | 36       | 48.8 | 68       | 92.2  | 100      | 135.6 |
| 5                                 | 6.8  | 37       | 50.2 | 69       | 93.6  | 110      | 149.2 |
| 6                                 | 8.1  | 38       | 52.0 | 70       | 94.9  | 115      | 156.0 |
| 7                                 | 9.5  | 39       | 52.9 | 71       | 96.3  | 120      | 163.0 |
| 8                                 | 10.9 | 40       | 54.2 | 72       | 97.6  | 125      | 170.0 |
| 9                                 | 12.2 | 41       | 55.6 | 73       | 99.0  | 130      | 176.3 |
| 10                                | 13.6 | 42       | 57.0 | 74       | 100.3 | 135      | 183.1 |
| 11                                | 14.9 | 43       | 58.3 | 75       | 102.0 | 140      | 190.0 |
| 12                                | 16.3 | 44       | 60.0 | 76       | 103.1 | 145      | 197.0 |
| 13                                | 17.6 | 45       | 61.0 | 77       | 104.4 | 150      | 203.4 |
| 14                                | 19.0 | 46       | 62.4 | 78       | 105.8 | 155      | 210.2 |
| 15                                | 20.3 | 47       | 63.7 | 79       | 107.1 | 160      | 217.0 |
| 16                                | 21.7 | 48       | 65.1 | 80       | 108.5 | 165      | 224.0 |
| 17                                | 23.1 | 49       | 66.4 | 81       | 110.0 | 170      | 231.0 |
| 18                                | 24.4 | 50       | 67.8 | 82       | 111.2 | 175      | 237.3 |
| 19                                | 25.8 | 51       | 69.2 | 83       | 112.6 | 180      | 244.1 |
| 20                                | 27.1 | 52       | 70.5 | 84       | 114.0 | 185      | 251.0 |
| 21                                | 28.5 | 53       | 71.9 | 85       | 115.3 | 190      | 258.0 |
| 22                                | 29.8 | 54       | 73.2 | 86       | 117.0 | 195      | 264.4 |
| 23                                | 31.2 | 55       | 74.6 | 87       | 118.0 | 200      | 271.2 |
| 24                                | 32.5 | 56       | 75.9 | 88       | 119.3 | 225      | 305.1 |
| 25                                | 33.9 | 57       | 77.3 | 89       | 121.0 | 250      | 339.0 |
| 26                                | 35.3 | 58       | 78.7 | 90       | 122.0 | 275      | 373.0 |
| 27                                | 36.6 | 59       | 80.0 | 91       | 123.4 | 300      | 407.0 |
| 28                                | 38.0 | 60       | 81.4 | 92       | 125.0 | 350      | 475.0 |
| 29                                | 39.3 | 61       | 82.7 | 93       | 126.1 | 400      | 542.4 |
| 30                                | 40.7 | 62       | 84.1 | 94       | 127.5 |          |       |
| 31                                | 42.0 | 63       | 85.4 | 95       | 129.0 |          |       |
| 32                                | 43.4 | 64       | 86.8 | 96       | 130.2 |          |       |

## Inch Bolt Torque Table

SAE J429 and ASME 574

| Steel Grade     | SAE 5                                |       | SAE 8 |       | Socket Head Cap Screws |       |
|-----------------|--------------------------------------|-------|-------|-------|------------------------|-------|
| Nom Dia - Pitch | Torque in Pound Foot or (Pound Inch) |       |       |       |                        |       |
|                 | Dry                                  | Lubed | Dry   | Lubed | Dry                    | Lubed |
| 1/4-20          | (101)                                | (76)  | (143) | (107) | (168)                  | (120) |
| 1/4-28          | (116)                                | (87)  | (147) | (123) | (192)                  | (144) |
| 5/16-18         | (209)                                | (157) | (295) | (221) | (348)                  | (264) |
| 5/16-24         | (231)                                | (174) | (327) | (245) | (384)                  | (288) |
| 3/8-16          | (372)                                | (276) | 44    | 33    | 51                     | 38    |
| 3/8-24          | (420)                                | (312) | 49    | 37    | 58                     | 43    |
| 7/16-14         | 49                                   | 37    | 70    | 52    | 81                     | 61    |
| 7/16-20         | 55                                   | 41    | 78    | 58    | 91                     | 68    |
| 1/2-13          | 75                                   | 57    | 106   | 80    | 124                    | 93    |
| 1/2-20          | 85                                   | 64    | 120   | 90    | 140                    | 105   |
| 5/8-11          | 150                                  | 113   | 212   | 159   | 238                    | 179   |
| 5/8-18          | 170                                  | 127   | 240   | 180   | 270                    | 202   |
| 3/4-10          | 267                                  | 200   | 376   | 282   | 423                    | 317   |
| 3/4-16          | 297                                  | 223   | 420   | 315   | 472                    | 354   |
| 7/8-9           | 429                                  | 322   | 606   | 455   | 682                    | 511   |
| 7/8-14          | 474                                  | 355   | 669   | 502   | 752                    | 564   |
| 1-8             | 644                                  | 483   | 909   | 681   | 1022                   | 767   |
| 1-12            | 722                                  | 542   | 1020  | 765   | 1147                   | 860   |

## Metric Bolt Torque Table

ISO 898

| Property Class   | 8.8                         |       | 10.9 |       | 12.9 Socket Head Cap Screw |       |
|------------------|-----------------------------|-------|------|-------|----------------------------|-------|
|                  | Torque in Newton Meter - Nm |       |      |       |                            |       |
| Nom Size x Pitch | Dry                         | Lubed | Dry  | Lubed | Dry                        | Lubed |
| M5 x 0.80        | 6.1                         | 4.6   | 8.8  | 6.7   | 10.3                       | 7.7   |
| M6 x 1.00        | 10.4                        | 7.8   | 15   | 11.2  | 17.6                       | 13.1  |
| M7 x 1.00        | 17.6                        | 13.1  | 25.1 | 18.9  | 29.4                       | 22    |
| M8 x 1.25        | 25.4                        | 19.1  | 37.6 | 27.3  | 42.6                       | 32.1  |
| M10 x 1.50       | 50                          | 38    | 72   | 54    | 84                         | 64    |
| M12 x 1.75       | 88                          | 66    | 126  | 94    | 146                        | 110   |
| M14 x 2.00       | 141                         | 106   | 201  | 150   | 235                        | 176   |
| M16 x 2.00       | 218                         | 164   | 312  | 233   | 365                        | 274   |
| M18 x 2.50       | 301                         | 226   | 431  | 323   | 504                        | 378   |
| M20 x 2.50       | 426                         | 319   | 609  | 457   | 712                        | 534   |
| M22 x 2.50       | 580                         | 435   | 831  | 624   | 971                        | 728   |
| M24 x 3.00       | 736                         | 552   | 1052 | 789   | 1231                       | 923   |
| M27 x 3.00       | 1079                        | 809   | 1544 | 1158  | 1805                       | 1353  |
| M30 x 3.50       | 1463                        | 1097  | 2092 | 1570  | 2446                       | 1834  |
| M33 x 3.50       | 1990                        | 1493  | 2849 | 2137  | 3328                       | 2497  |
| M36 x 4.00       | 2557                        | 1918  | 3659 | 2744  | 4276                       | 3208  |

Lubed means cleaned dry bolts lubricated with a standard medium viscosity machine oil. Lubricate all contact areas of the bolts and washers. Lubricating the bolts is the suggested method.

| Miscellaneous Conversion Factors |             |             | Air Pressure Conversion |      |       |
|----------------------------------|-------------|-------------|-------------------------|------|-------|
| To Convert                       | Into        | Multiply By | PSI                     | kPa* | Bar** |
| Inches                           | Millimeters | 25.4000     | 85                      | 586  | 5.9   |
| Millimeters                      | Inches      | 0.0394      | 90                      | 620  | 6.2   |
| Pounds                           | Kilograms   | 0.4536      | 95                      | 655  | 6.6   |
| Kilograms                        | Pounds      | 2.2050      | 100                     | 690  | 6.9   |
| psi                              | bar         | 0.069       | 125                     | 860  | 8.6   |
| bar                              | psi         | 14.5        |                         |      |       |

\*Preferred: Approximate to the nearest 5 kPa.

\*\*Approximate to the nearest 0.5 Bar.

## Sales & Service Centers

Please note that all locations may not service all products. Please contact the nearest Apex Tool Group Sales & Service Center for the appropriate facility to handle your service requirements.

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## Warranty

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Apex Tool Group, LLC 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 Apex Tool Group and specifically excludes products manufactured by others. Products not manufactured by Apex Tool Group are warranted only to the extent and in the manner warranted to Apex Tool Group by the manufacturer

and then only to the extent Apex Tool Group is able to enforce such warranty. Apex Tool Group's warranty with respect to products manufactured by it is limited to the repair or replacement, as Apex Tool Group 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. Apex Tool Group 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 Apex Tool Group approval. **APEX TOOL GROUP 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

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Apex Tool Group 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 Apex Tool Group.

Apex Tool Group 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. Apex Tool Group 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 Apex Tool Group products.

## Fastener Selection

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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 Apex Tool Group 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. Apex Tool Group 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.

## General Safety Instructions

These Safety Instructions must be accessible to the operator at all times. They must be shown and made available to all people involved in the use of the tool.



The operator must understand the Safety Instructions and the Installation, Operation, and Adjustment Procedures provided in the Technical Manual (included with the tool). These Safety Instructions are not intended to be all inclusive. Study and comply with all applicable Federal, State, and Local Regulations. Contact your local distributor for assistance.



This symbol identifies the potential for a hazardous situation. If this warning is not followed, a serious injury could occur.



Always disconnect the tool from the air hose before adjusting or repairing.



Immediately shut off the tool in the case of unusual sound or vibration. Disconnect the tool from the air hose. Have a qualified person check the tool and repair before using.

When unpacking the tool, closely check for shipping damages and accuracy of the shipping documentation.



Do not wear loose clothing, jewelry, or rings. Injury may result from being caught in tools. Avoid direct contact with lubricants, grease or adhesives.

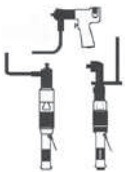


Safety glasses or face shield must be worn.



Wear gloves, ear protection and other protective equipment when required.

Do not modify the tool, any guard or accessory unless approved in writing by Apex Tool Group.



We recommend the use of a reaction bar to prevent an uncontrollable reaction of the tool. This use is dependant on the following factors: torque, joint, air pressure, form of the tool and the individual user. Consider the use of reaction bars to prevent possible injury.

Implement and follow a Safety Maintenance Program to provide inspection and maintenance of all phases of tool operation and air supply equipment.



Sockets and bits used with nutrunners and screwdrivers should be of the power tool or industrial type. Do not use hand tool sockets on a power tool. Hand tool sockets can break, resulting in a hazard of flying pieces. Worn sockets or bits reduce the power delivered to the fastener, cause drive wear and increase the chance for breakage. Inspect sockets, bits and drives for wear or damage and replace as necessary.

## Noise & Vibration

Refer to test data page included with tool.

## Intended Use

Air assembly tools are intended for tightening of threaded joints only. Tools must be used for their designated purpose. Do not use as a hammer, lever or other improper usage that can cause tool damage and lead to operator injury.

## Installation & Operation

Only qualified and trained operators should install, adjust or use air assembly tools.

Connect the tool to an air line with a maximum pressure of 6.2 bar (90 psig). Adjust the air line lubrication to a minimum to reduce possible contamination of the environment by the exhaust air. The work area must be well ventilated.



Inspect the air hose and fittings. Do not use damaged, frayed or deteriorated hoses. A hose rupture can cause injury.



When using right angle nutrunners, be sure the throttle is positioned relative to the angle head so the throttle will not become wedged against an adjacent object in the ON position due to torque reaction.

The angle head may be repositioned with respect to the lever to accommodate proper location for the task. If the tool is to be reversed, locate throttle lever in a neutral position that will prevent entrapment.

Keep the tool clean and dry to provide the best possible grip. The tool should be held in such a way to be safe and comfortable. Firmly grasp the handle of the tool and apply the socket to the joint before starting the tool.

## Adjusting Torque For Shut-Off Tools



Screwdrivers and nutrunners with clutches can stall rather than shut off if the clutch is adjusted over the maximum power output of the tool, or if there is a drop in the air pressure. Low or fluctuating air pressure can cause tool to fail to shut off! The user must be prepared to resist the torque until the throttle is released.

Expose clutch through movement of the clutch shield. Using the hex wrench supplied, turn clockwise for maximum torque or turn counterclockwise for minimum torque.

NOTE: For best results, start from "MIN" torque and adjust in "MAX" direction.

## Maintenance, Assembly & Disassembly

Inspect air assembly tools every 500 operating hours or every six months, whichever comes first. Replace worn parts using only genuine Apex Tool Group replacement parts.

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