

Cleco®

Inline Floating Spindle Series

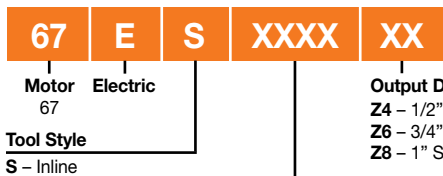
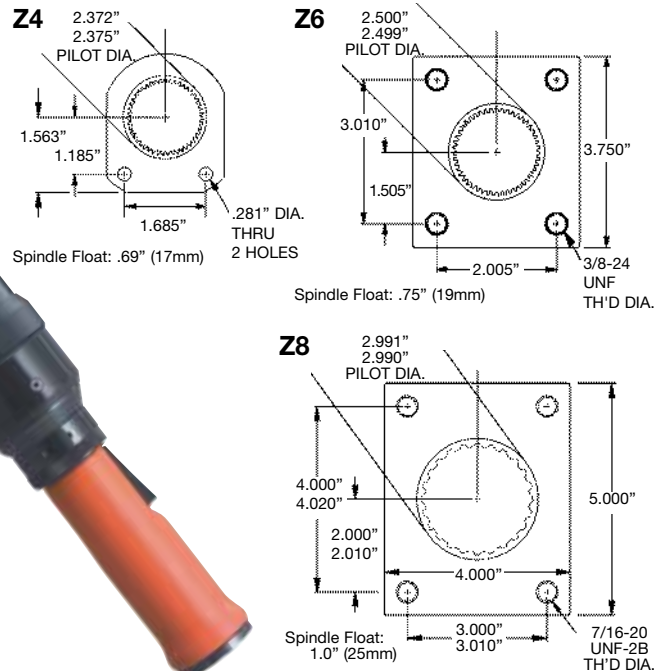
| | |
|---------------------|------------------|
| Torque Range | Bolt Size |
| 13 - 2060 Nm | M6 - M36 |
| 10 - 1520 Ft. Lbs. | 1/4" - 1 1/2" |

- Brushless precision
- Resolver control
- Transducer accuracy
- Memory intelligence



67ES2060Z8

67ES Base Plate Mounting Dimensions



Max Output Torque (Nm)
 Under 60 Nm, rounded up to the nearest 1 Nm.
 Over 60 Nm, rounded to the nearest 5 Nm.

| Inline Floating Spindle | Torque Range | | Max. Speed | Weight* | | Output Drive Size | Length | | Side to Center | |
|-------------------------|--------------|----------|------------|---------|-----|-------------------|--------|-----|----------------|----|
| | ft. lbs. | Nm | | lbs. | kg | | in. | mm | in. | mm |
| 67ES65BZ4 | 10-47 | 13-64 | 535 | 10.8 | 4.9 | 1/2 | 21.0 | 533 | 1.31 | 33 |
| 67ES105BZ4 | 15-77 | 21-104 | 330 | 10.8 | 4.9 | 1/2 | 21.0 | 533 | 1.31 | 33 |
| 67ES135BZ4 | 20-100 | 27-135 | 245 | 10.8 | 4.9 | 1/2 | 21.0 | 533 | 1.31 | 33 |
| 67ES190Z6 | 28-140 | 38-190 | 165 | 15.6 | 7.1 | 3/4 | 22.0 | 559 | 1.31 | 33 |
| 67ES285Z6 | 42-210 | 57-285 | 115 | 15.6 | 7.1 | 3/4 | 22.0 | 559 | 1.31 | 33 |
| 67ES385Z6 | 57-285 | 77-386 | 83 | 15.6 | 7.1 | 3/4 | 22.0 | 559 | 1.31 | 33 |
| 67ES475Z6 | 70-350 | 95-475 | 67 | 16.0 | 7.3 | 3/4 | 22.4 | 569 | 1.31 | 33 |
| 67ES610Z6 | 90-450 | 122-610 | 50 | 16.0 | 7.3 | 3/4 | 22.4 | 569 | 1.31 | 33 |
| 67ES850Z8 | 125-625 | 170-848 | 33 | 20.0 | 9.1 | 1 | 23.8 | 605 | 1.50 | 38 |
| 67ES1050Z8 | 155-775 | 210-1050 | 27 | 20.0 | 9.1 | 1 | 23.8 | 605 | 1.50 | 38 |
| 67ES1670Z8 | 246-1230 | 334-1668 | 17 | 20.0 | 9.1 | 1 | 23.8 | 605 | 1.50 | 38 |
| 67ES2060Z8 | 304-1520 | 412-2060 | 14 | 20.0 | 9.1 | 1 | 23.8 | 605 | 1.50 | 38 |

*Weights are without tool cable or reaction bar if so equipped.
General: All tools must be used with a approved Cooper Tools cable and controller.
Standard Equipment: Matrix Connector; 67ES series – Mounting plate.

Extra Equipment: Std. tool cable 542778-XX, RA swivel cable 544055-XX, Inline swivel cable 544056-XX, Extension cable 542779-XX.
Additional Accessories: (Pages 39-41)

Electric Nutrunners – Coded Transducer Control

Hold & Drive Tools

Cleco®

Hold & Drive Series

Torque Range
 11 - 227 Nm
 8.1 - 167.4 Ft. Lbs.

- Brushless precision
- Resolver control
- Transducer accuracy
- Memory intelligence



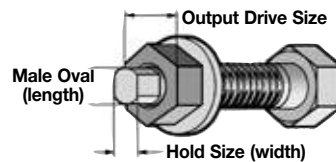
48EA115H

Hold & Drive Tool Nomenclature

| | | | | |
|---|------------------|-------------------------|---------------------|--|
| 48 | E | A | XXX | H |
| Motor 48 | Electric | Tool Style A - Angle | | Head Type H-Hold & Drive |
| Max Output Torque | | | | Retainer Shaft |
| <60 Nm, rounded up to the nearest 1 Nm. >60 Nm, rounded to the nearest 5 Nm. | | | | 3 - 3 1/2" 4 - 4" 5 - 5 3/8" 6 - 5 7/8" 9 - 9 1/2" |
| Drive Socket Sizes (surface drive) | | | | |
| EH - 11/16 | MG - 13mm | MM - 19mm (3/4") | MS - 25mm | |
| EJ - 13/16 | MH - 14mm | MN - 20mm | MT - 26mm | |
| EK - 7/8 | MI - 15mm | MO - 21mm | MU - 27mm (1 1/16") | |
| EM - 1 | MJ - 16mm (5/8") | MP - 22mm | MX - 30mm (1 3/16") | |
| EO - 1 1/8 | MK - 17mm | MQ - 23mm | MZ - 32mm (1 1/4") | |
| | ML - 18mm | MR - 24mm (15/16") | | |

Socket Nomenclature

| | | | | | |
|-----------------------------|--------------|-----------|----------|---|--|
| H | X | XX | X | XX | X |
| Head Type H-Hold & Drive | Hold & Drive | | | Socket Style | Oval Dim. (length) If socket style =0 (female oval) |
| | | | | F - Female Hex M - Male Hex T - Torx O - Female Oval | Hold Socket (width across flats) |
| | | | | | EA - 1/4 EC - 3/8 M5 - 5mm M6 - 6mm MA - 7mm MB - 8mm (5/16") MC - 9mm MD - 10mm |
| | | | | | ME - 11mm (7/16") MF - 12mm 15 - T15 20 - T20 25 - T25 30 - T30 40 - T40 45 - T45 50 - T50 |



| Hold & Drive Model Number | Torque Range | | Free Speed RPM | Length | | Weight* | | Head Height | | Side to Center | |
|---------------------------|--------------|----------|----------------|--------|-----|---------|------|-------------|----|----------------|----|
| | Ft.Lbs. | Nm | | in. | mm | lbs. | kg | in. | mm | in. | mm |
| 48EA53H | 8.1 - 39.1 | 11 - 53 | 850 | 20.2 | 512 | 7.9 | 3.60 | 2.40 | 61 | 1.06 | 27 |
| 48EA75H | 11.1 - 54.6 | 15 - 74 | 600 | 20.2 | 512 | 7.9 | 4.03 | 2.40 | 61 | 1.06 | 27 |
| 48EA110H | 17.0 - 82.6 | 23 - 112 | 400 | 20.2 | 512 | 8.9 | 4.03 | 2.40 | 61 | 1.06 | 27 |
| 48EA135H | 20.7 - 98.8 | 28 - 134 | 270 | 20.6 | 522 | 8.9 | 4.03 | 2.40 | 61 | 1.06 | 27 |
| 48EA230H | 34.7 - 167.4 | 47 - 227 | 150 | 22.2 | 563 | 10.6 | 4.79 | 2.40 | 61 | 1.06 | 27 |

*Weights are without tool cable and reaction bar.

General: All tools must be used with a approved Cooper Tools cable and controller.

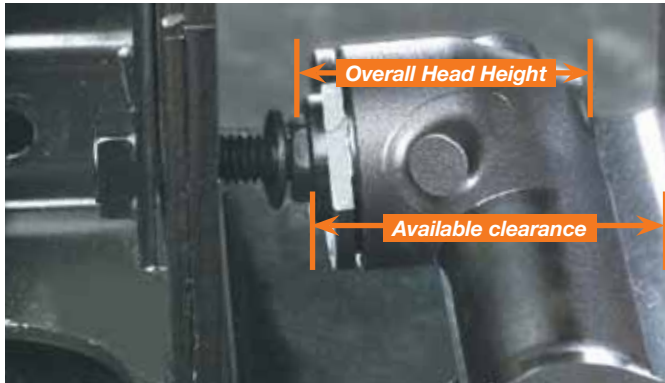
Standard Equipment: Matrix Connector. Retraction 1" standard for hold bit.

Extra Equipment: Std. tool cable 542778-XX, RA swivel cable 544055-XX, Inline swivel cable 544056-XX, Extension cable 542779-XX.

Additional Accessories: (Pages 39-41)

Electric Nutrunners – Corded Transducer Control

Flush Socket Tools



Flush socket tools have plenty of clearance to fit low clearance applications. Electric flush socket tools tighten with much higher accuracy than tools with crowfoot attachment.

Cleco®

Flush Socket Series

Torque Range
4.9 - 230 Nm
3.6 - 169.6 Ft. Lbs.

Bolt Size
M8 - M21
1/2" - 1 3/16"

- Brushless precision
- Resolver control
- Transducer accuracy
- Memory intelligence



Flush Socket Tool Nomenclature

XX E A XXX F

Motor
18
48

Electric

Tool Style
A - Right Angle

Flush Socket

Max Output Torque

F1 16, 23, 30 Nm **F3** 53, 75, 110 Nm
F2 37, 52 Nm **F4** 135, 230 Nm

<60 Nm, rounded up to the nearest 1 Nm. >60 Nm, rounded to the nearest 5 Nm.

Head Type

F1 Head 8-15mm socket capacity
F2 Head 10-15mm socket capacity
F3 Head 13-21mm socket capacity
F4 Head 13-21mm socket capacity

Socket Nomenclature

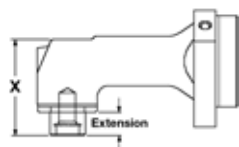
FX XX X X

Output Type
0-Standard 1-Fast Lead 2-Magnetic

Extension Length
0 - Flush 4 - 1/2" 8 - 1"
2 - 1/4" 6 - 3/4"

Socket Size

| | | |
|-------------------|-------------------------|-------------------------|
| EC - 3/8 | MB - 8mm (5/16) | MJ - 16mm (5/8") |
| EE - 1/2 | MD - 10mm | MK - 17mm |
| EF - 9/16 | ME - 11mm (7/16) | ML - 18mm |
| EH - 11/16 | MF - 12mm | MM - 19mm (3/4") |
| EJ - 13/16 | MG - 13mm | MN - 20mm |
| | MH - 14mm | MO - 21mm |
| | MI - 15mm | |



X Dimension For Flush Socket

| Head | in. | mm | Socket Size Range |
|-----------|------|----|-------------------|
| F1 | 1.54 | 39 | 8-15mm |
| F2 | 1.69 | 43 | 10-15mm |
| F3 | 2.32 | 59 | 13-21mm |
| F4 | 2.4 | 61 | 17-21mm |

| Flush Socket Model Number | Head Type | Torque Range | | Free Speed RPM | Weight* | | Length | | Anglehead | | | |
|------------------------------|-----------|--------------|--------|-------------------|---------|------|--------|-----|----------------|----|--------|----|
| | | ft. lbs. | Nm | | lbs. | kg | in. | mm | Side to Center | | Height | |
| | | | | | | | | | in. | mm | in. | mm |
| 18EA16F | F1 | 3.6-11.8 | 4.9-16 | 1225 | 4.4 | 2.00 | 16.0 | 406 | 0.55 | 14 | 1.54 | 39 |
| 18EA23F | F1 | 3.4-17.0 | 4.6-23 | 860 | 4.4 | 2.00 | 16.0 | 406 | 0.55 | 14 | 1.54 | 39 |
| 18EA30F | F1 | 4.4-22.1 | 6.0-30 | 655 | 4.4 | 2.00 | 16.0 | 406 | 0.55 | 14 | 1.54 | 39 |
| 48EA37F | F2 | 5.9-27.3 | 8.0-37 | 1225 | 5.4 | 2.43 | 18.7 | 474 | 0.67 | 17 | 1.69 | 43 |
| 48EA52F | F2 | 8.1-38.3 | 11-52 | 860 | 5.4 | 2.43 | 18.7 | 474 | 0.67 | 17 | 1.69 | 43 |
| 48EA53F | F3 | 8.1-39.0 | 11-53 | 850 | 6.0 | 2.74 | 20.0 | 509 | 0.87 | 22 | 2.32 | 59 |
| 48EA75F | F3 | 11.1-55.3 | 15-75 | 600 | 6.0 | 2.74 | 20.0 | 509 | 0.87 | 22 | 2.32 | 59 |
| 48EA110F | F3 | 17.0-81.1 | 23-110 | 400 | 7.4 | 3.38 | 20.5 | 521 | 0.87 | 22 | 2.32 | 59 |
| 48EA135F | F4 | 19.9-99.5 | 27-135 | 270 | 8.9 | 4.03 | 20.6 | 522 | 1.06 | 27 | 2.40 | 61 |
| 48EA230F | F4 | 34.7-169.6 | 47-230 | 150 | 10.6 | 4.79 | 22.2 | 563 | 1.06 | 27 | 2.40 | 61 |

*Weights are without tool cable or reaction bar if so equipped.
General: All tools must be used with an approved Cooper Tools cable and controller.
Standard Equipment: Air-LB Connector.

Extra Equipment: Std. tool cable 301866-XX, RA swivel cable 544055-XX, Inline swivel cable 544056-XX, Extension cable 301877-XX.
Additional Accessories: (Pages 39-41)

Electric Nutrunners – Corded Transducer Control

Tube Nut Tools

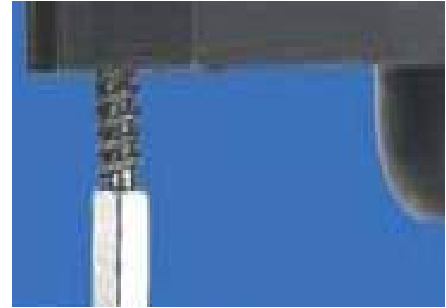
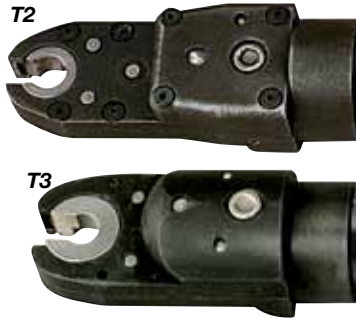


Tube Nut Series

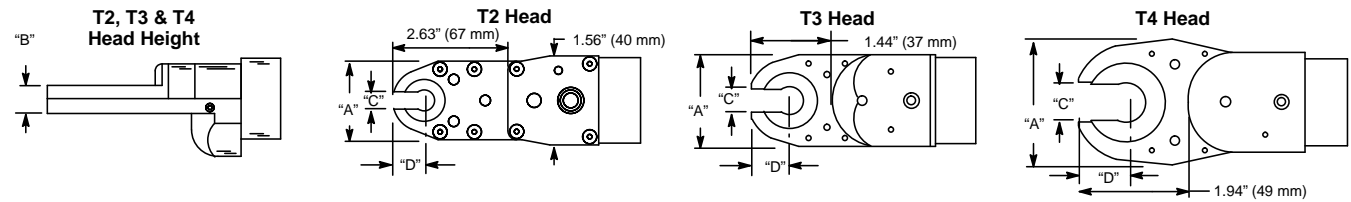
Torque Range
 10 - 40 Nm
 7.4 - 29.5 Ft. Lbs.

Bolt Size
 M6 - M10
 1/4" - 3/8"

- Brushless precision
- Resolver control
- Transducer accuracy
- Memory intelligence



The 48ET tube nut wrench alternates the direction of rotation each time the lever is actuated. When rotating in reverse, the socket will stop at the open position.

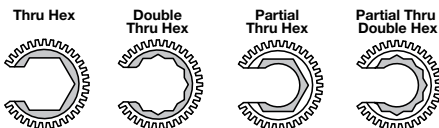


Tube Nut Tool Nomenclature

| | | | | |
|---|----------|---|----|----|
| XX | E | T | XX | XX |
| Motor 48 | Electric | | | |
| Tool Style | | | | |
| T - Tube Nut | | | | |
| Max Output Torque | | | | |
| <60 Nm, rounded up to the nearest 1 Nm. | | | | |
| Head Type | | | | |
| T2 - 20 Nm | | | | |
| T3 - 30 Nm | | | | |
| T4 - 40 Nm | | | | |

Socket Nomenclature

| | | | |
|--------------------------------|----------------|-----------|-----------------------------|
| KSX | XX | XX | X |
| Head Type | | | Output Type |
| KS2 - T2 | | | 0 - Partial Thru Hex |
| KS3 - T3 | | | 2 - Double Thru Hex |
| KS4 - T4 | | | 1 - Thru Hex |
| | | | 3 - Partial Thru Double Hex |
| Extension Length | | | |
| | | 0 - Flush | 4 - 1/2" |
| | | 2 - 1/4" | 6 - 3/4" |
| Maximum Hex Socket Size | | | |
| MG, EE | T2 Head Type | | |
| MM, 3/4" | T3 Head Type | | |
| MU, 1 1/16" | T4 Head Type | | |
| 00, ## (Specials) | All Head Types | | |



Note: To order individual sockets, use a "KS" prefix (i.e. KS2EA01 for a T2 1/4", Flush, Thru Hex socket.)

| Tube Nut | Max. Drive Size | Torque Range | | Free Speed | Weight* | Length | | Head | | | | | | | | | |
|--------------|-----------------|--------------|-------|------------|---------|--------|------|------|---------|-----|-------------|-----|-----------|-----|-------------|-----|----|
| | | Ft.Lbs. | Nm | | | RPM | lbs. | kg | A Width | | B Blade Ht. | | C Opening | | D End/Cntr. | | |
| Model Number | | | | | | | | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm |
| 48ET20T2 | 1/2" | 7.4-14.8 | 10-20 | 1425 | 4.4 | 2.0 | 16.9 | 430 | 1.42 | 36 | 0.55 | 14 | 0.28 | 7 | 0.53 | 13 | |
| 48ET30T3 | 3/4" | 11.1-22.1 | 15-30 | 1030 | 4.5 | 2.0 | 16.6 | 422 | 1.65 | 42 | 0.59 | 15 | 0.475 | 13 | 0.73 | 19 | |
| 48ET40T4 | 1 1/16" | 14.8-29.5 | 20-40 | 770 | 5.3 | 2.3 | 17.9 | 454 | 2.36 | 60 | 0.59 | 15 | 0.675 | 18 | 0.93 | 24 | |

*Weights are without tool cable and reaction bar.

General: All tools must be used with an approved Cooper Tools cable and controller.
Standard Equipment: Matrix Connector.

Extra Equipment: Std. tool cable 542778-XX, RA swivel cable 544055-XX, Inline swivel cable 544056-XX, Extension cable 542779-XX.
Additional Accessories: (Pages 39-41)

Cleco®

Crowfoot Series

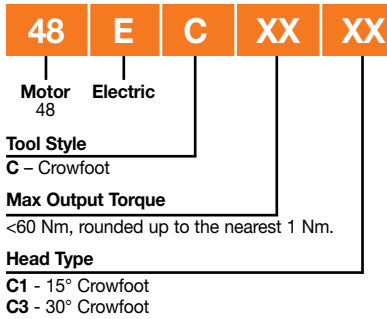
Torque Range
7 - 30 Nm
5 - 22 Ft. Lbs.

Bolt Size
M6 - M8
#10 - 3/8"

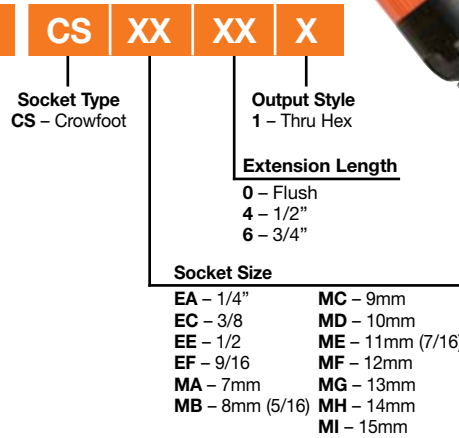
- Brushless precision
- Resolver control
- Transducer accuracy
- Memory intelligence



Crowfoot Tool Nomenclature

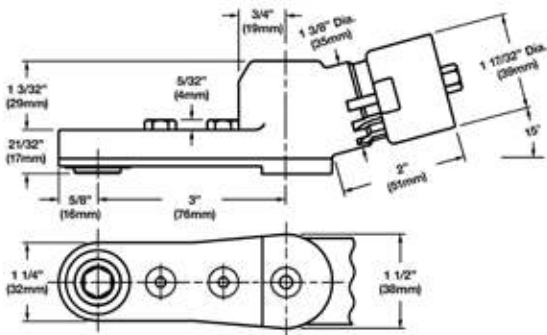


Socket Nomenclature



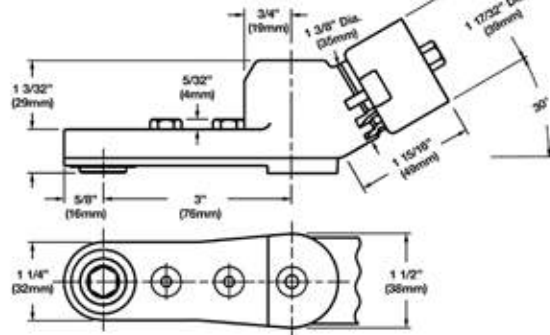
15° Head (Part No. 301071)

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



30° Head (Part No. 301072)

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



| Crowfoot | | Torque Range | | Free Speed | Weight* | | Length | |
|--------------|----------|--------------|---------|------------|---------|-----|--------|-----|
| Model Number | | ft. lbs. | Nm | RPM | lbs. | kg | in. | mm |
| 15° Head | 30° Head | | | | | | | |
| 48EC30C1 | 48EC30C3 | 5.2-22.1 | 10.5-30 | 860 | 5.5 | 2.3 | 20.5 | 521 |

*Weights are without tool cable and reaction bar.

General: All tools must be used with a approved Cooper Tools cable and controller.
Standard Equipment: Matrix Connector.

Extra Equipment: Std. tool cable 542778-XX, RA swivel cable 544055-XX, Inline swivel cable 544056-XX, Extension cable 542779-XX.
Additional Accessories: (Pages 39-41)

To order individual sockets, use "CS" prefix before the required socket. (i.e. CSEA01 for a 1/4", flush, thru hex socket.)

Electric Nutrunners – Coded Transducer Control

Right Angle Floating Spindle Tools



Right Angle Floating Spindle Series

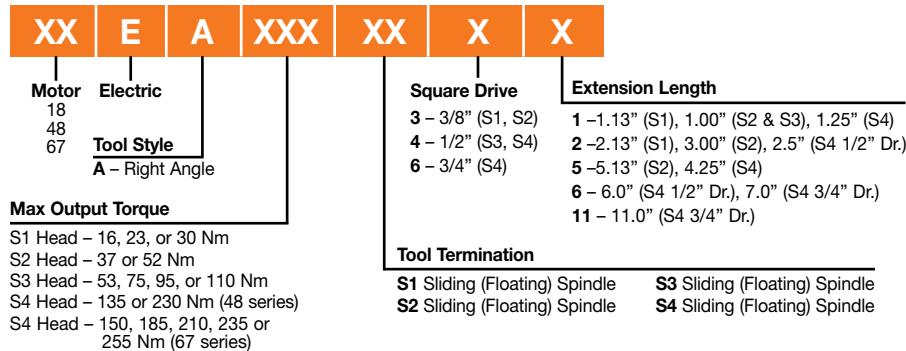
Torque Range
 5.1 - 255 Nm
 3.7 - 188.1 Ft. Lbs.

Bolt Size
 M7 - M18
 1/4" - 3/4"

- Brushless precision
- Resolver control
- Transducer accuracy
- Memory intelligence



Right Angle Floating Spindle Tool Nomenclature



| Right Angle Floating Spindle Model Number | Torque Range | | Max. Speed RPM | Weight* | | Output Drive Size | Length | | Side to Center | |
|--|--------------|--------|-------------------|---------|------|-------------------|--------|-----|----------------|----|
| | ft. lbs. | Nm | | lbs. | kg | | in. | mm | in. | mm |
| 18EA16S131 | 3.7-11.8 | 5.1-16 | 1225 | 4.4 | 2.00 | 3/8" | 16.0 | 406 | 0.55 | 14 |
| 18EA23S131 | 5.3-16.9 | 7.2-23 | 860 | 4.4 | 2.00 | 3/8" | 16.0 | 406 | 0.55 | 14 |
| 18EA30S131 | 4.4-22.1 | 6.0-30 | 655 | 4.4 | 2.00 | 3/8" | 16.0 | 406 | 0.55 | 14 |
| 48EA37S231 | 5.9-27.2 | 8.0-37 | 1225 | 5.4 | 2.43 | 3/8" | 18.7 | 474 | 0.67 | 17 |
| 48EA52S231 | 8.1-38.3 | 11-52 | 860 | 5.4 | 2.43 | 3/8" | 18.7 | 474 | 0.67 | 17 |
| 48EA53S341 | 8.1-39.1 | 11-53 | 850 | 6.0 | 2.74 | 1/2" | 20.0 | 509 | 0.87 | 22 |
| 48EA75S341 | 11.0-55.3 | 15-75 | 600 | 6.0 | 2.74 | 1/2" | 20.0 | 509 | 0.87 | 22 |
| 48EA95S341 | 14.7-70.0 | 20-95 | 460 | 7.4 | 3.38 | 1/2" | 20.5 | 521 | 0.87 | 22 |
| 48EA110S341 | 16.9-81.1 | 23-110 | 400 | 7.4 | 3.38 | 1/2" | 20.5 | 521 | 0.87 | 22 |
| 48EA135S461 | 20.6-99.5 | 28-135 | 270 | 8.9 | 4.03 | 3/4" | 20.6 | 522 | 1.06 | 27 |
| 48EA230S461 | 34.6-169.6 | 47-230 | 150 | 10.6 | 4.79 | 3/4" | 22.2 | 563 | 1.06 | 27 |
| 67EA150S461 | 22.1-110.6 | 30-150 | 210 | 12.9 | 5.90 | 3/4" | 25.8 | 655 | 1.03 | 26 |
| 67EA185S461 | 27.3-136.3 | 37-185 | 170 | 12.9 | 5.90 | 3/4" | 25.8 | 655 | 1.03 | 26 |
| 67EA210S461 | 31.0-154.8 | 42-210 | 155 | 12.9 | 5.90 | 3/4" | 25.8 | 655 | 1.03 | 26 |
| 67EA235S461 | 33.9-169.6 | 46-230 | 135 | 12.9 | 5.90 | 3/4" | 25.8 | 655 | 1.03 | 26 |
| 67EA255S461 | 40.6-188.1 | 55-255 | 115 | 12.9 | 5.90 | 3/4" | 25.8 | 655 | 1.03 | 26 |

*Weights are without tool cable and mounting plate.

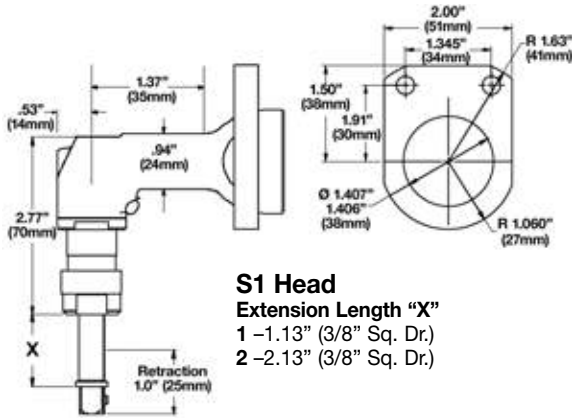
General: All tools must be used with an approved Cooper Tools cable and controller.

Standard Equipment: Matrix Connector; Mounting plate.

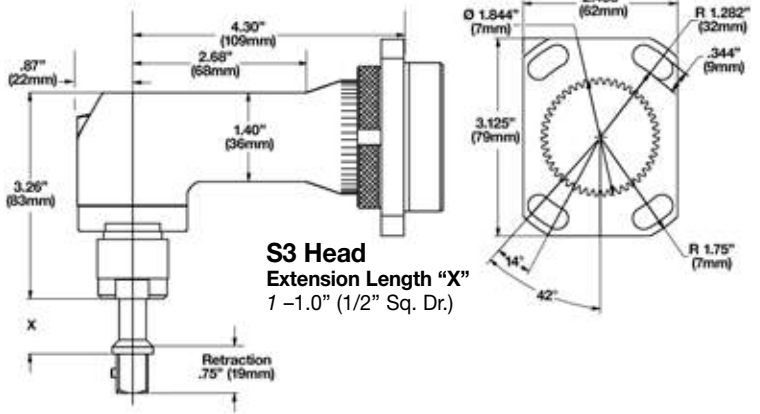
Extra Equipment: Std. tool cable 542778-XX, RA swivel cable 544055-XX, Inline swivel cable 544056-XX, Extension cable 542779-XX.

Additional Accessories: (Pages 39-41)

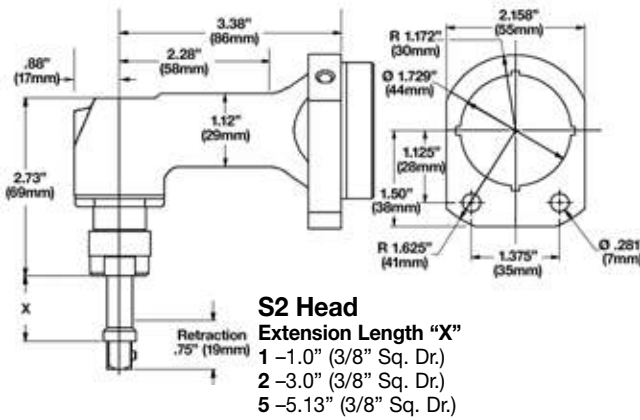
18EA, 48EA & 67EA Floating Spindle Angle Heads



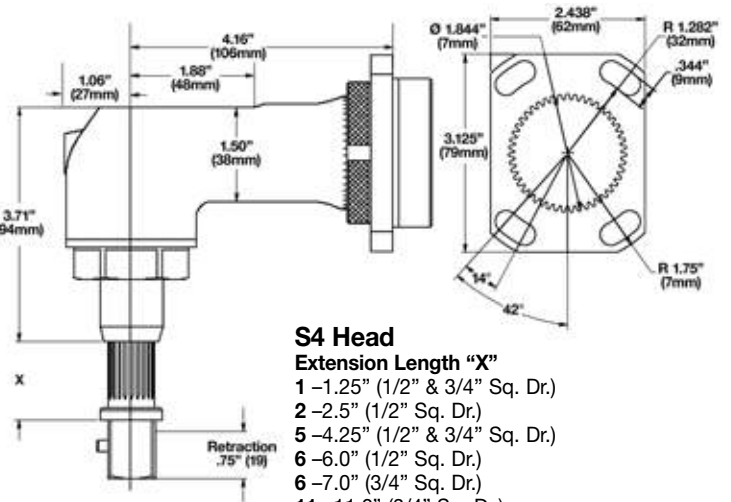
S1 Head
 Extension Length "X"
 1 -1.13" (3/8" Sq. Dr.)
 2 -2.13" (3/8" Sq. Dr.)



S3 Head
 Extension Length "X"
 1 -1.0" (1/2" Sq. Dr.)



S2 Head
 Extension Length "X"
 1 -1.0" (3/8" Sq. Dr.)
 2 -3.0" (3/8" Sq. Dr.)
 5 -5.13" (3/8" Sq. Dr.)



S4 Head
 Extension Length "X"
 1 -1.25" (1/2" & 3/4" Sq. Dr.)
 2 -2.5" (1/2" Sq. Dr.)
 5 -4.25" (1/2" & 3/4" Sq. Dr.)
 6 -6.0" (1/2" Sq. Dr.)
 6 -7.0" (3/4" Sq. Dr.)
 11 -11.0" (3/4" Sq. Dr.)

Tightening Manager™ Controllers

The Controllers

The heart of the system is the Cleco Tightening Manager Controller. These controllers use technology that is both user-friendly and technically advanced.

Cleco Tightening Manager Controllers are available in three configurations – single-channel TME, 2-channel TME, and the TMEM controller, also known as the "Mini" TME.

Cleco Tightening Manager Controllers are capable of handling a broad array of tools ranging in torque from 2 to 4000 Nm, and include 9 different tool configurations. The controllers incorporate the most intuitive user interface available today – everything you need to operate the controller is right on the screen.

Common tool cables and I/O connections further simplify the product offering, interface, and error-proofing capabilities.

The Cleco TMEM is a less expensive, streamlined version of the larger TME controller. Programming access is done locally, or through a remote network connection.

Cleco Tightening Manager controllers allow for monitoring and evaluation of the production process



Shown above are the Cleco TME and the TMEM "Mini" Tightening Manager Controllers.

through the use of unique graphic displays. The on-board oscilloscope allows a thorough analysis of the torque and rotation relationship for every rundown.

All of the controllers offer fully configurable inputs and outputs to ensure compatibility with in-plant error proofing systems.

Workcell is an ingenious way to program one controller from another. This functionality comes standard in all TME and TMEM controllers with an Ethernet connector. Up to 20 controllers can be configured in a workcell, giving the programmer remote access without a PC or laptop through the LAN (local area network).



Cleco Tightening Manager Controllers incorporate the most intuitive graphic user interface available today. As shown on the typical screens above, everything you need to operate the controller is right on the screen.



Up to 20 Cleco Tightening Manager Controllers with an Ethernet connector can be configured in a workcell.



Cleco®

TM-200 Series Tightening Manager Controller

- Single or 2-channel
- Graphics interface
- Fully programmable
- Local storage of 5,000 cycles
- LAN capable
- Fieldbus options available



| | | | | | | |
|-------------------------------------|-----------------------|------------------------------|----------|---|----------|----------|
| TME | 2 | X | X | XX | X | X |
| Tightening Manager Electric | Series 2 - 200 | Servo 1 - TMH | | Special configuration | | |
| Number of channels | | Input voltage | | Language | | |
| 1 - Single channel 2 - 2 channel | | 15 - 115 VAC 30 - 230 VAC | | ED - DeviceNet EP - Profibus U - English D - German S - Spanish P - Portuguese | | |

| Model Number | | Features | Weight | | Width | | Height | | Depth | |
|---------------------------|------------------|----------------------|--------|------|-------|-------|--------|-------|-------|-------|
| 115VAC | 230VAC | | lbs. | kg | ins. | mm | ins. | mm | ins. | mm |
| TME Single Channel | | | | | | | | | | |
| TME-211-15-* | TME-211-30-* | Ethernet | 87 | 39.5 | 16.5 | 419.1 | 17.5 | 444.5 | 12.3 | 312.4 |
| TME-211-15- *-ED | TME-211-30- *-ED | Ethernet & DeviceNet | 87 | 39.5 | 16.5 | 419.1 | 17.5 | 444.5 | 12.3 | 312.4 |
| TME-211-15- *-EP | TME-211-30- *-EP | Ethernet & Profibus | 87 | 39.5 | 16.5 | 419.1 | 17.5 | 444.5 | 12.3 | 312.4 |
| TME 2-Channel | | | | | | | | | | |
| TME-221-15-* | TME-221-30-* | Ethernet | 103 | 46.8 | 16.5 | 419.1 | 17.5 | 444.5 | 14.1 | 358.1 |
| TME-221-15- *-ED | TME-221-30- *-ED | Ethernet & DeviceNet | 103 | 46.8 | 16.5 | 419.1 | 17.5 | 444.5 | 14.1 | 358.1 |
| TME-221-15- *-EP | TME-221-30- *-EP | Ethernet & Profibus | 103 | 46.8 | 16.5 | 419.1 | 17.5 | 444.5 | 14.1 | 358.1 |

*Languages offered: D-German, P-Portuguese, S-Spanish, U-English

Standard Equipment: 3.5" floppy drive, 24 volt I/O, Ethernet, 2 USB connectors, 2 serial connectors, printer connector, PS2 keyboard connector.
TM-COM1M software included.

Tightening Manager™ Controllers

TMEM “Mini” Series



TMEM “Mini” Series Tightening Manager Controller

- Single channel
- Economical
- Remote programming
- Local storage of 5,000 cycles
- LAN capable
- Fieldbus options available



| | | | | | | | |
|------------------------------------|------------------------------|---|---|---|--|----------|----------|
| TME | M | 1 | X | X | XX | X | X |
| Tightening Manager Electric | “Mini” Series 1 – 100 | Number of channels 1 – Single channel | Servo 4 – STMHE Input voltage 15 – 115 VAC 30 – 230 VAC | Language U – English D – German S – Spanish P – Portuguese | Special configuration IO – Ethernet EP – Profibus | | |



| Model Number | | Features | Weight | | Width | | Height | | Depth | |
|--------------------|--------------------|---------------------|--------|------|-------|-------|--------|-------|-------|-------|
| 115VAC | 230VAC | | lbs. | kg | ins. | mm | ins. | mm | ins. | mm |
| TMEM “Mini” | | | | | | | | | | |
| TMEM-114-15- * | TMEM-114-30- * | - | 42 | 19.1 | 7.9 | 200.7 | 16.2 | 411.5 | 12.7 | 322.6 |
| TMEM-114-15- * -IO | TMEM-114-30- * -IO | Ethernet IO | 42 | 19.1 | 7.9 | 200.7 | 16.2 | 411.5 | 12.7 | 322.6 |
| TMEM-114-15- * -EP | TMEM-114-30- * -EP | Ethernet & Profibus | 42 | 19.1 | 7.9 | 200.7 | 16.2 | 411.5 | 12.7 | 322.6 |

*Languages offered: D-German, P-Portuguese, S-Spanish, U-English
Standard Equipment: 24 volt I/O, Ethernet, 2 serial connectors. TM-COM1M software included.

Tool Cables

| Model Number | | Swivel | | Length | |
|--------------|------------|-------------|------------|--------|--------|
| Tool | Extension | Right Angle | Inline | Feet | Meters |
| 542778-1M* | 542779-1M | 544055-1M* | 544056-1M* | 3 | 1 |
| 542778-2M* | 542779-2M | 544055-2M* | 544056-2M* | 6 | 2 |
| 542778-3M | 542779-3M | 544055-3M | 544056-3M | 9 | 3 |
| 542778-6M | 542779-6M | 544055-6M | 544056-6M | 19.5 | 6 |
| 542778-8M | 542779-8M | 544055-8M | 544056-8M | 26 | 8 |
| 542778-10M | 542779-10M | 544055-10M | 544056-10M | 33 | 10 |
| 542778-15M | 542779-15M | 544055-15M | 544056-15M | 49 | 15 |
| | 542779-20M | | | 66 | 20 |
| | 542779-25M | | | 82 | 25 |
| | 542779-30M | | | 96 | 30 |
| | 542779-40M | | | 131 | 40 |
| 542778-50M | 542779-50M | 544055-50M | 544056-50M | 164 | 50 |

Maximum cable length 100M 115VAC/20M 230VAC.

Overall minimum cable length 3M.

*Must be used with 542779 extension cable.



8 Position Remote Parameter Switch



| Description | Part Number |
|---|-------------|
| Remote Parameter Switch (with 25' integrated cable) | 542979 |
| Remote Parameter Switch (with 50' integrated cable) | 542979-50 |

Direct Connect Cables

Connects controller direct to PC

| Part No. | Description | Length | |
|-----------|--------------------------|--------|---|
| | | ft. | m |
| 543446-7 | Ethernet crossover cable | 7 | 2 |
| 543490-10 | Serial cable null modem | 10 | 3 |

Phoenix Connectors

| Part No. | Description |
|----------|----------------------------------|
| 542892 | Input Phoenix connector |
| 542893 | Output Phoenix connector |
| 939348 | Hood/strain TME I/O cable relief |

Accessory Cables

| Controller to Input Accessory | Input Acc. to Input Acc. | Controller to Synch Box | Controller to 1 Spindle Annunciator | Controller to 2 Spindle Annunciator | Synch Box to Input Accessory | Synch Box to Annunciators (2/more spindles) | Length | |
|-------------------------------|--------------------------|-------------------------|-------------------------------------|-------------------------------------|------------------------------|---|--------|-----|
| | | | | | | | ft. | m |
| 542985-3 | 542986-3 | 576058-3 | 542989-3 | 543451-3 | 542987-3 | 542988-3 | 3 | 1 |
| 542985-9 | 542986-9 | 576058-9 | 542989-9 | 543451-9 | 542987-9 | 542988-9 | 9 | 3 |
| 542985-25 | 542986-25 | 576058-25 | 542989-25 | 543451-25 | 542987-25 | 542988-25 | 25 | 7.5 |
| 542985-50 | 542986-50 | 576058-50 | 542989-50 | 543451-50 | 542987-50 | 542988-50 | 50 | 15 |



Tightening Manager Upgrade Kits

| Part Number | Description |
|-------------|---|
| 543481 | Upgrades a Standard TMEM to a TMEM I/O |
| 543334-EN | Upgrades a Standard TME with a 6 character serial number to an Ethernet TME |
| 543334J-EN | Upgrades a Standard TME with a serial number having a J as the seventh character to an Ethernet TME |
| 543335-ED | Upgrades a Standard TME with a 6 character serial number to a DeviceNet TME |
| 543335J-ED | Upgrades a Standard TME with a serial number having a J as the seventh character to a DeviceNet TME |
| 543941 | Upgrades a Standard TME 200-U to -EP (Ethernet & Profibus TME) |
| 543942 | Upgrades a Standard TME 200-U to -ED (Ethernet & DeviceNet TME) |

Special Adapter Cable



| Part No. | Description |
|----------|--|
| 542916-1 | Adapter cable for Rotor resolver tools |

Tool & Cable Tester

| Part No. | Description |
|----------|---|
| 961024 | Tool & cable tester tool memory programming |
| 542991 | Tool & cable tester |



Lever Extension Kits

| Description | Part No. |
|----------------------------------|----------|
| Lever Extension Kit (non-swivel) | 541757 |
| Lever Extension Kit (swivel) | 543414 |

Note: Models for standard tool cable (non-swivel) and swivel cable.



Suspension Bail

| Description | Part No. |
|----------------------|----------|
| Tool suspension bail | 1110909 |



Test Fixture

| Part Number |
|-------------|
| 536185 |

Medium to Hard Torque
 Belleville Washer Test Fixture is clamped in a vise and used to test tools (10 In. Lbs. – 100 Ft. Lbs., 1.13Nm – 135.6Nm). Washers can be rearranged to simulate “hard” or “soft” joints.



Electric Controller

Accessories

Input Accessories

Torque Selector Switches

| Torque Selector | Part Number |
|-----------------|-------------|
| 8 Select | 542977-8 |
| 16 Select | 542977-16 |
| 32 Select | 542977-32 |
| 64 Select | 542977-64 |



Annunciators

| Spindles | Part Number |
|----------|-------------|
| 1 | 542976-1 |
| 2 | 542976-2 |
| 3 | 542976-3 |
| 4 | 542976-4 |
| 5 | 542976-5 |
| 6 | 542976-6 |



Start/Stop Switches

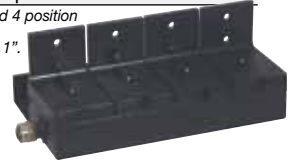
| Description | Part No. |
|--------------------|----------|
| Start Box | 542972 |
| Stop Box | 542973 |
| Start/Stop Box | 542974 |
| Start/Stop/Reverse | 542975 |



Socket Trays

| Part No. | Description |
|----------|----------------|
| 542978-4 | Four position |
| 542978-8 | Eight position |

Notes: Up to 16 linked 4 position trays maximum.
Minimum socket O.D. 1".
Maximum O.D. 2.25".



Patch Cables

Connects Ethernet switches to controller or PC

| Part Number | Length | |
|-------------|--------|--------|
| | Feet | Meters |
| 543445-7 | 7 | 2 |
| 543445-50 | 50 | 15 |
| 543445-100 | 100 | 30 |

Synch Boxes

| Spindles | Part No. |
|----------|----------|
| 2 | 576060-2 |
| 3 | 576060-3 |
| 4 | 576060-4 |
| 5 | 576060-5 |
| 6 | 576060-6 |



115VAC Ethernet Switches

| Part Number | Ports | | | Approx. Dimensions | | Approx. Weight | |
|-------------|-------|----|-----|--------------------|------------|----------------|-----|
| | Total | In | Out | Inches | mm | lbs. | kg |
| 543444-8 | 8 | 1 | 7 | 6.5x4.5x1.5 | 160x110x35 | 0.6 | 0.3 |
| 543444-16 | 16 | 1 | 15 | 7x6x2.5 | 185x150x65 | 1.1 | 0.5 |
| 543444-24 | 24 | 1 | 23 | 10.5x7x2 | 270x170x50 | 3.0 | 1.3 |

Socket Trays

| Part No. | Description |
|----------|----------------------------|
| 960645 | Four position w/10m cable |
| 960646 | Eight position w/10m cable |

Maximum socket diameter 1.125".



Replacement Inserts

| Part Number |
|-------------|
| S970716 |

For use with 960645 & 960646 socket trays.



Socket Posts

For use with 542978-4 & 542978-8 socket trays.

| Part Number | Socket Post Size |
|-------------|------------------|
| 99249181 | .550/.540 |
| 99249169 | 1.062/1.052 |
| 99249165 | .590/.580 |
| 99249164 | .945/.935 |
| 99249163 | .827/.817 |
| 99249162 | .709/.699 |
| 99249161 | .625/.615 |
| 99249160 | .437/.432 |
| 99249159 | .812/.802 |
| 99249158 | .687/.677 |
| 99249157 | .875/.865 |
| 99249156 | 1.000/.990 |
| 99249148 | 1.125/1.115 |
| 99249147 | .938/.928 |
| 99249104 | .750/.740 |
| 99249103 | .669/.659 |
| 99249102 | .562/.552 |
| 99249101 | .500/.490 |

Note: Select socket post size within tolerance of socket used.

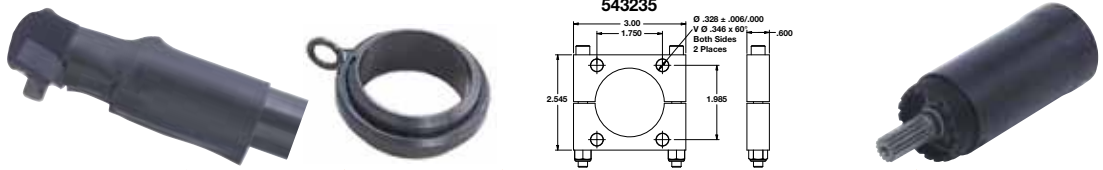
Lockout Washer

For use with 542978-4 & 542978-8 socket trays.

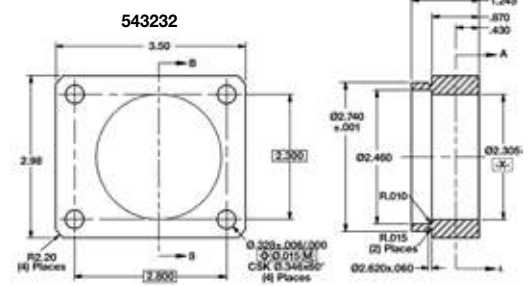
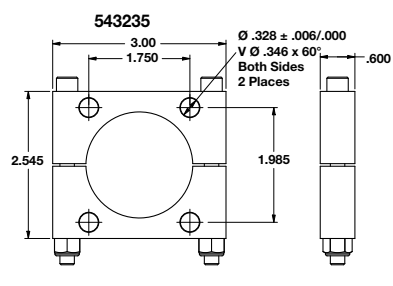
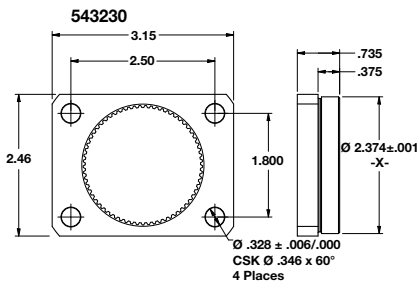
| Part Number | Note |
|-------------|--------------------------------|
| 99248150 | Vacant position lockout washer |

Electric Nutrunner

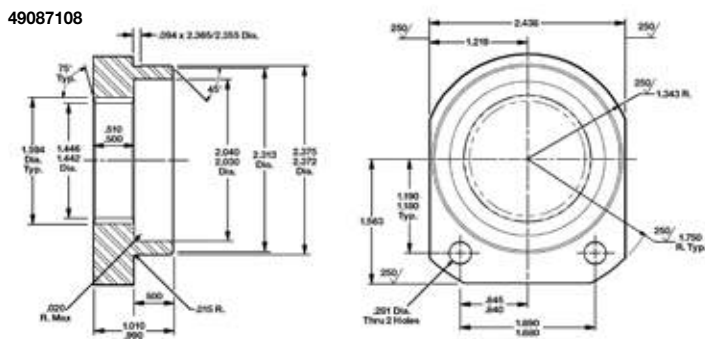
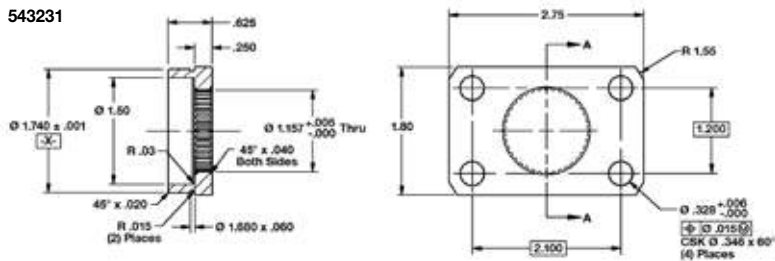
Accessories



| Tool Type | Model Number | Cover | Swivel Bail | Mounting Plate | Extension |
|---------------------|----------------------------|--------|-------------|--------------------------------------|-----------|
| Right Angle | 17/18EA...AL2 | 205832 | 541715-2 | ----- | ----- |
| | 17/18EA...AM3 | 205834 | 541715-2 | ----- | ----- |
| | 47EA...AM3/4 | 543070 | 541715-2 | 543235 | 542428 |
| | 47/48EA...AH4 | 543070 | 541715 | 543230 | 535833 |
| | 47/48EA135MH4 | 543071 | 541715 | 543230 | 535833 |
| | 47/48EA...AX6 | 205838 | 541715 | 543232 | 541860 |
| | 67EA...AL6 | 205838 | 35007004 | 49097101 (included with tool) | 48316033 |
| 67EA...AM6 | ----- | ----- | 48A17006 | 45017152 (included with tool) | ----- |
| Flush Socket | 17/18EA...F1... | ----- | 541715-2 | 57217101 (requires 57218103 screw) | ----- |
| | 47/48EA...F2... | ----- | 541715-2 | 43287131 | ----- |
| | 47/48EA...F3... | ----- | 541715-2 | 49097101 (requires 49098103 locknut) | ----- |
| | 47/48EA...F4... | 205838 | 541715 | 49097101 (requires 49098103 locknut) | 48316033 |
| Hold-N-Drive | 47/48EA ...H...over 100NM | 205838 | 541715 | 49097101 (requires 49098103 locknut) | 48316033 |
| | 47/48EA ...H...under 100NM | 205838 | 541715-2 | 49097101 (requires 49098103 locknut) | 48316033 |



Inline Tools Mounting Plates



Durability. Speed

Cost Effective Solution for Quality Critical Applications.

Cleco **CurrentControl** electric assembly tools provide an up-sell solution to quality critical applications presently specifying a pneumatic clutch tool and verifier combination. Cleco proprietary **CurrentControl** systems up-sell on superior productivity, error proofing and process flexibility.

Our Cleco controller systems are recognized globally for “best in class” software interface. This is accomplished through simple navigation, basic programming screens, visual programming graphics and real-time process feedback. Our latest innovation “Auto Program” takes the guesswork out of programming. Simply enter the application torque target and the software automatically compiles the program for production use.



Unrestricted Speed Control



Adjustable angle head allows flexible orientation



New Cleco TMEI Controller



Cleco[®]

ed. Ergonomics.

Why **CurrentControl** vs. Pneumatic Clutch?

Superior Productivity

- Up to 2–3X faster
- Unrestricted speed control
- Up to 25% less noise
- Cleaner operating environment
- Auto torque sequencing
- Proven production durability

Superior Error Proofing

- 96 position fastener count
- 9 tool LED operator feedback
- 8 configurable I/O
- Fieldbus ready
- 5,000 tightening cycle storage
- Advanced system diagnostics
- Barcode application select

Superior Process Flexibility

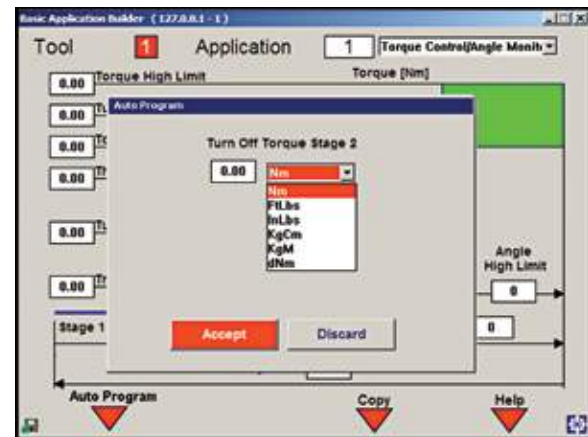
- 255 programmable tightening strategies
- 6 configurable stages per strategy
- Angle process control/monitoring
- Counter-clockwise process control/monitoring
- Less parts to maintain – no clutch
- 100M field cable lengths

Easy Setup 1-2-3-Go!

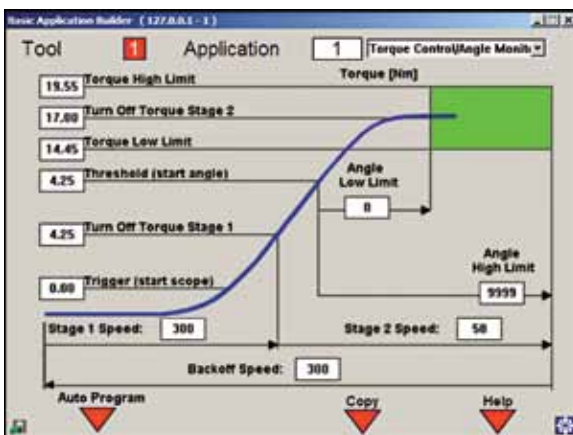
1. Select "Basic" from menu.



2. Enter final torque value.



3. Tool automatically programmed.



Go! Production ready.



Electric Nutrunners – Corded Current Control

Right Angle Tools

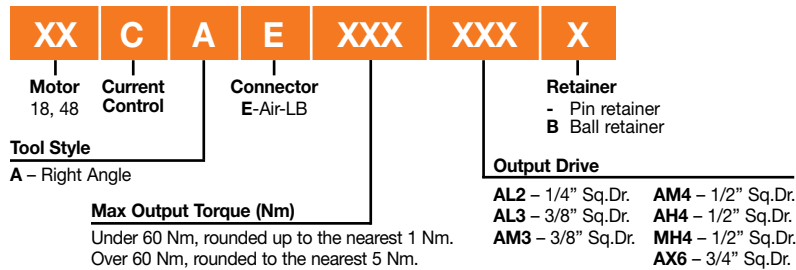
Cleco®

Right Angle Series

Torque Range
2 - 230 Nm
1.5 - 170 Ft. Lbs.

Bolt Size
M5 - M16
#10 - 5/8"

- Brushless precision
- Resolver control
- Memory intelligence



| Right Angle Model Number | Torque Range | | Max. Speed RPM | Weight* | | Output Drive Size | Length | | Anglehead | | | | | |
|-----------------------------|--------------|--------|-------------------|---------|-----|-------------------|--------|-----|----------------|----|--------|----|-----|----|
| | ft. lbs. | Nm | | lbs. | kg | | in. | mm | Side to Center | | Height | | | |
| | | | | | | | | | in. | mm | in. | mm | in. | mm |
| 18CAE08AL2 | 1.5-5.9 | 2-8 | 3000 | 2.9 | 1.3 | 1/4" | 13.6 | 345 | 0.51 | 13 | 1.4 | 36 | | |
| 18CAE15AM3 | 3.0-11.1 | 4-15 | 1300 | 3.3 | 1.5 | 3/8" | 14.8 | 376 | 0.59 | 15 | 1.6 | 41 | | |
| 18CAE22AM3 | 3.7-16.2 | 5-22 | 920 | 3.3 | 1.5 | 3/8" | 14.8 | 376 | 0.59 | 15 | 1.6 | 41 | | |
| 18CAE28AM3 | 4.4-20.7 | 6-28 | 700 | 3.3 | 1.5 | 3/8" | 14.8 | 376 | 0.59 | 15 | 1.6 | 41 | | |
| 48CAE15AL3 | 2.2-11.1 | 3-15 | 2855 | 3.8 | 1.7 | 3/8" | 15.7 | 398 | 0.59 | 15 | 1.6 | 41 | | |
| 48CAE28AL3 | 4.4-20.7 | 6-28 | 1300 | 4.1 | 1.9 | 3/8" | 16.2 | 410 | 0.59 | 15 | 1.6 | 41 | | |
| 48CAE41AM3 | 6.6-30.2 | 9-41 | 1090 | 4.3 | 2.0 | 3/8" | 17.3 | 440 | 0.75 | 19 | 1.9 | 48 | | |
| 48CAE58AM3 | 8.9-42.8 | 12-58 | 770 | 4.3 | 2.0 | 3/8" | 17.3 | 440 | 0.75 | 19 | 1.9 | 48 | | |
| 48CAE58AM4 | 8.9-42.8 | 12-58 | 770 | 4.3 | 2.0 | 1/2" | 17.3 | 440 | 0.75 | 19 | 1.9 | 48 | | |
| 48CAE90AH4 | 13.3-64.2 | 18-87 | 515 | 6.6 | 3.0 | 1/2" | 18.5 | 470 | 0.81 | 21 | 2.3 | 58 | | |
| 48CAE105AH4 | 15.5-76.7 | 21-104 | 340 | 6.6 | 3.0 | 1/2" | 18.5 | 470 | 0.81 | 21 | 2.3 | 58 | | |
| 48CAE135MH4 | 19.9-98.1 | 27-133 | 265 | 7.3 | 3.3 | 1/2" | 19.1 | 485 | 0.94 | 24 | 2.4 | 61 | | |
| 48CAE175AX6 | 26.6-129.8 | 36-176 | 190 | 10.2 | 4.6 | 3/4" | 21.6 | 549 | 1.06 | 27 | 2.7 | 69 | | |
| 48CAE230AX6 | 33.9-169.6 | 46-230 | 145 | 10.2 | 4.6 | 3/4" | 21.6 | 549 | 1.06 | 27 | 2.7 | 69 | | |

*Weights are without tool cable and reaction bar.

General: All tools must be used with a approved Cooper Tools cable and controller.

Standard Equipment: Air-LB Connector. Ball retainer optional.

Extra Equipment: Std. tool cable 301866-XX, RA swivel cable 301903-XX, Inline swivel cable 301904-XX, Extension cable 301877-XX. See page 57 for additional cables and accessories.

Electric Nutrunners – Corded Current Control

Inline Non-Floating Spindle Tools



Cleco®

Inline Non-Floating Series

Torque Range
2 - 150 Nm
1.5 - 113 Ft. Lbs.

Bolt Size
M5 - M14
#10 - 5/8"

- Brushless precision
- Resolver control
- Memory intelligence



| | | | | | | |
|---------------------------------|------------------------|--------------------------------|---|---------------------|-----------|--|
| XX | C | S | E | XXX | XX | X |
| Motor 18, 48 | Current Control | Connector E – Air-LB | | Output Drive | | Retainer - Pin retainer B Ball retainer |
| Tool Style S – Inline | | | Max Output Torque (Nm) Under 60 Nm, rounded up to the nearest 1 Nm. Over 60 Nm, rounded to the nearest 5 Nm. | | | |
| | | | Q – Quick change D3 – 3/8" Sq.Dr. D2 – 1/4" Sq.Dr. D4 – 1/2" Sq.Dr. | | | |

| Inline Non-Floating Model Number | Torque Range | | Max. Speed RPM | Weight* | | Output Drive Size | Length | | Side to Center | |
|-------------------------------------|--------------|--------|-------------------|---------|-----|-------------------|--------|-----|----------------|----|
| | ft. lbs. | Nm | | lbs. | kg | | in. | mm | in. | mm |
| 18CSE06Q | 1.5-4.4 | 2-6 | 4000 | 2.5 | 1.1 | 1/4" Hex | 12.3 | 312 | 0.91 | 23 |
| 18CSE06D2 | 1.5-4.4 | 2-6 | 4000 | 2.5 | 1.1 | 1/4" | 11.8 | 300 | 0.91 | 23 |
| 18CSE12Q | 2.2-8.9 | 3-12 | 1820 | 2.7 | 1.2 | 1/4" Hex | 13.0 | 330 | 0.91 | 23 |
| 18CSE12D3 | 2.2-8.9 | 3-12 | 1820 | 2.7 | 1.2 | 3/8" | 12.4 | 315 | 0.91 | 23 |
| 18CSE17Q | 3.0-12.5 | 4-17 | 1290 | 2.7 | 1.2 | 1/4" Hex | 13.0 | 330 | 0.91 | 23 |
| 18CSE17D3 | 3.0-12.5 | 4-17 | 1290 | 2.7 | 1.2 | 3/8" | 12.4 | 315 | 0.91 | 23 |
| 18CSE22D3 | 3.7-16.2 | 5-22 | 985 | 2.7 | 1.2 | 3/8" | 12.4 | 315 | 0.91 | 23 |
| 18CSE31D3 | 5.2-22.9 | 7-31 | 695 | 2.7 | 1.2 | 3/8" | 12.4 | 315 | 0.91 | 23 |
| 48CSE12Q | 2.2-8.9 | 3-12 | 4000 | 3.0 | 1.4 | 1/4" Hex | 13.5 | 343 | 0.91 | 23 |
| 48CSE12D2 | 2.2-8.9 | 3-12 | 4000 | 3.0 | 1.4 | 1/4" | 13.0 | 330 | 0.91 | 23 |
| 48CSE25D3 | 4.4-18.4 | 6-25 | 1820 | 3.2 | 1.5 | 3/8" | 13.6 | 345 | 0.91 | 23 |
| 48CSE36D3 | 5.9-26.6 | 8-36 | 1290 | 3.2 | 1.5 | 3/8" | 13.6 | 345 | 0.91 | 23 |
| 48CSE48D3 | 7.4-35.4 | 10-48 | 985 | 3.3 | 1.5 | 3/8" | 13.8 | 351 | 0.91 | 23 |
| 48CSE65D4 | 9.6-47.9 | 13-65 | 750 | 5.3 | 2.4 | 1/2" | 16.6 | 420 | 1.13 | 29 |
| 48CSE90D4 | 14.0-66.4 | 19-90 | 510 | 5.6 | 2.5 | 1/2" | 17.1 | 435 | 1.13 | 29 |
| 48CSE125D4 | 19.2-92.2 | 26-125 | 360 | 5.6 | 2.5 | 1/2" | 17.1 | 435 | 1.13 | 29 |
| 48CSE150D4 | 22.9-110.6 | 31-150 | 240 | 5.6 | 2.5 | 1/2" | 17.1 | 435 | 1.13 | 29 |

*Weights are without tool cable and reaction bar.

General: All tools must be used with a approved Cooper Tools cable and controller.

Standard Equipment: Air-LB Connector; Dead Handle is included with 18CSE12Q and 18CSE12D3. Reaction bar is included with inline tools with output torques of 17-150 Nm. Ball retainer optional.

Extra Equipment: Std. tool cable 301866-XX, RA swivel cable 301903-XX, Inline swivel cable 301904-XX, Extension cable 301877-XX. Mounting Plates: 543231 - (all with exception of listed below) 543235 - 18ES06Q, 48ES12Q 49087108 - 48ES65D4, 48ES90D4, 48ES125D4, & 48ES150D4. See page 57 for additional cables and accessories.

Electric Nutrunners – Corded Current Control

Pistol Grip Tools

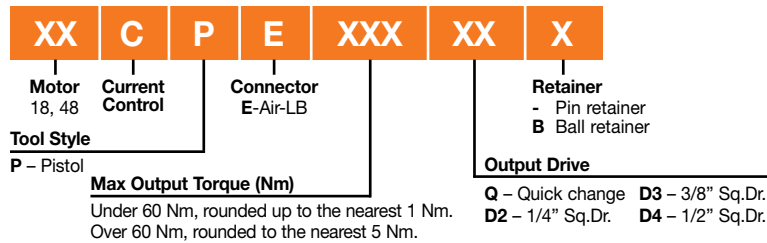
Cleco®

Pistol Grip Series

Torque Range
2 - 150 Nm
1.5 - 113 Ft. Lbs.

Bolt Size
M5 - M14
#10 - 5/8"

- Brushless precision
- Resolver control
- Memory intelligence



| Pistol Grip Model Number | Torque Range | | Max. Speed RPM | Weight* | | Output Drive Size | Length | | Side to Center | |
|-----------------------------|--------------|--------|-------------------|---------|-----|-------------------|--------|-----|----------------|----|
| | ft. lbs. | Nm | | lbs. | kg | | in. | mm | in. | mm |
| 18CPE06Q | 1.5-4.4 | 2-6 | 4000 | 2.2 | 1.0 | 1/4" Hex | 7.0 | 178 | 0.84 | 21 |
| 18CPE06D2 | 1.5-4.4 | 2-6 | 4000 | 2.2 | 1.0 | 1/4" | 6.5 | 165 | 0.84 | 21 |
| 18CPE12Q | 2.2-8.9 | 3-12 | 1820 | 2.4 | 1.1 | 1/4" Hex | 7.7 | 196 | 0.84 | 21 |
| 18CPE12D3 | 2.2-8.9 | 3-12 | 1820 | 2.4 | 1.1 | 3/8" | 7.2 | 183 | 0.84 | 21 |
| 18CPE17Q | 3.0-12.5 | 4-17 | 1290 | 2.4 | 1.1 | 1/4" Hex | 7.7 | 196 | 0.84 | 21 |
| 18CPE17D3 | 3.0-12.5 | 4-17 | 1290 | 2.4 | 1.1 | 3/8" | 7.2 | 183 | 0.84 | 21 |
| 18CPE22D3 | 3.7-16.2 | 5-22 | 985 | 2.4 | 1.1 | 3/8" | 7.2 | 183 | 0.84 | 21 |
| 18CPE31D3 | 5.2-22.9 | 7-31 | 695 | 2.4 | 1.1 | 3/8" | 7.2 | 183 | 0.84 | 21 |
| 48CPE12Q | 2.2-8.9 | 3-12 | 4000 | 2.7 | 1.2 | 1/4" Hex | 8.3 | 211 | 0.84 | 21 |
| 48CPE12D2 | 2.2-8.9 | 3-12 | 4000 | 2.7 | 1.2 | 1/4" | 7.7 | 196 | 0.84 | 21 |
| 48CPE25D3 | 4.4-18.4 | 6-25 | 1820 | 2.9 | 1.3 | 3/8" | 8.4 | 213 | 0.84 | 21 |
| 48CPE36D3 | 5.9-26.6 | 8-36 | 1290 | 2.9 | 1.3 | 3/8" | 8.4 | 213 | 0.84 | 21 |
| 48CPE48D3 | 7.4-35.4 | 10-48 | 985 | 3.0 | 1.4 | 3/8" | 8.6 | 218 | 0.84 | 21 |
| 48CPE65D4 | 9.6-47.9 | 13-65 | 750 | 5.0 | 2.3 | 1/2" | 10.8 | 274 | 1.1 | 28 |
| 48CPE90D4 | 14.0-66.4 | 19-90 | 510 | 5.3 | 2.4 | 1/2" | 11.3 | 287 | 1.1 | 28 |
| 48CPE125D4 | 19.2-92.2 | 26-125 | 360 | 5.3 | 2.4 | 1/2" | 11.3 | 287 | 1.1 | 28 |
| 48CPE150D4 | 22.9-110.6 | 31-150 | 240 | 5.3 | 2.4 | 1/2" | 11.3 | 287 | 0.9 | 23 |

*Weights are without tool cable and reaction bar.

General: All tools must be used with a approved Cooper Tools cable and controller.
Standard Equipment: Air-LB Connector; Suspension Bail; Dead Handle is included with 18CPE12Q & 18CPE12D3. Reaction bar is included with pistol tools with output torques of 17-150 Nm. Ball retainer optional.

Extra Equipment: Std. tool cable 301866-XX, RA swivel cable 301903-XX, Inline swivel cable 301904-XX, Extension cable 301877-XX.
 See page 57 for additional cables and accessories.

Electric Nutrunners – Corded Current Control

Push-to-Start Pistol Grip/Inline Tools



18CPE06QP



18CSE06QP

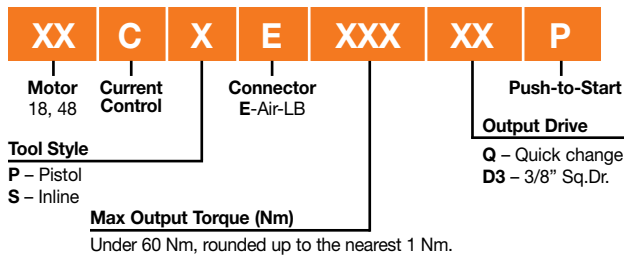
Cleco®

Push-to-Start Series

Torque Range
2 - 12 Nm
1.5 - 8.9 Ft. Lbs.

Bolt Size
M5 - M6
#10 - 1/4"

- Brushless precision
- Resolver control
- Memory intelligence



| Push-to-Start Model Number | Torque Range | | Max. Speed RPM | Weight* | | Output Drive Size | Length | | Side to Center | |
|-------------------------------|--------------|------|-------------------|---------|------|-------------------|--------|-----|----------------|----|
| | ft. lbs. | Nm | | lbs. | kg | | in. | mm | in. | mm |
| 18CPE06QP | 1.5-4.4 | 2-6 | 4000 | 2.66 | 1.19 | 1/4" Hex | 9.35 | 238 | 0.84 | 21 |
| 18CPE06D3P | 2.2-8.9 | 3-12 | 4000 | 2.66 | 1.19 | 3/8" | 8.8 | 224 | 0.84 | 21 |
| 18CPE12QP | 2.2-8.9 | 3-12 | 1820 | 2.83 | 1.27 | 1/4" Hex | 9.35 | 196 | 0.84 | 21 |
| 18CPE12D3P | 2.2-8.9 | 3-12 | 1820 | 2.83 | 1.27 | 3/8" | 8.8 | 224 | 0.84 | 21 |
| 18CSE06QP | 1.5-4.4 | 2-6 | 4000 | 2.93 | 1.31 | 1/4" Hex | 14.75 | 375 | 0.91 | 23 |
| 18CSE06D3P | 2.2-8.9 | 3-12 | 4000 | 2.93 | 1.31 | 3/8" | 14.20 | 360 | 0.91 | 23 |
| 18CSE12QP | 2.2-8.9 | 3-12 | 1820 | 3.10 | 1.40 | 1/4" Hex | 14.75 | 375 | 0.91 | 23 |
| 18CSE12D3P | 2.2-8.9 | 3-12 | 1820 | 3.10 | 1.40 | 3/8" | 14.20 | 360 | 0.91 | 23 |

*Weights are without tool cable and reaction bar.

General: All tools must be used with a approved Cooper Tools cable and controller.

Standard Equipment: Air-LB Connector; Suspension Bail on pistol models; Dead Handle (301857) is included with 18CPE12Q & 18CPE12D3.

Extra Equipment: Std. tool cable 301866-XX, RA swivel cable 301903-XX, Inline swivel cable 301904-XX, Extension cable 301877-XX. See page 57 for additional cables and accessories.

Electric Nutrunners – Corded Current Control

Inline Floating Spindle Tools

Cleco®

Inline Floating Spindle Series

Torque Range
2 - 248 Nm
1.5 - 182.9 Ft. Lbs.

Bolt Size
M5 - M16
#10 - 5/8"

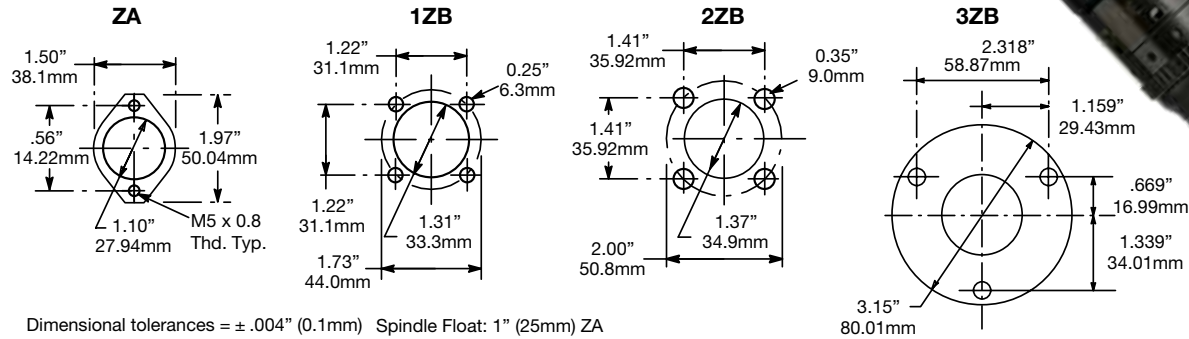
- Brushless precision
- Resolver control
- Memory intelligence



18CSE12ZA

| | | | | | |
|---------------------------------|------------------------|------------------------------|---|--|------------|
| XX | C | S | E | XXX | XXX |
| Motor 18, 48 | Current Control | Connector E-Air-LB | | Output Drive ZA – 1/4" Sq.Dr. 1ZB – 3/8" Sq.Dr. 2ZB – 1/2" Sq.Dr. 3ZB – 3/4" Sq.Dr. | |
| Tool Style S – Inline | | | Max Output Torque (Nm) Under 60 Nm, rounded up to the nearest 1 Nm. Over 60 Nm, rounded to the nearest 5 Nm. | | |

Base Plate Mounting Dimensions



| Inline Floating Spindle Model Number | Torque Range | | Max. Speed | Weight* | | Output Drive Size | Length | | Side to Center | |
|---|--------------|--------|------------|---------|-----|-------------------|--------|-----|----------------|----|
| | ft. lbs. | Nm | RPM | lbs. | kg | | in. | mm | in. | mm |
| 18CSE06ZA | 1.5-4.4 | 2-6 | 4000 | 3.0 | 1.4 | 1/4 | 15.5 | 394 | 0.91 | 23 |
| 18CSE12ZA | 2.2-8.9 | 3-12 | 1820 | 3.2 | 1.5 | 1/4 | 16.0 | 406 | 0.91 | 23 |
| 18CSE17ZA | 3.0-12.5 | 4-17 | 1290 | 3.2 | 1.5 | 1/4 | 16.0 | 406 | 0.91 | 23 |
| 48CSE12ZA | 2.2-8.9 | 3-12 | 4000 | 3.4 | 1.5 | 1/4 | 16.7 | 425 | 0.91 | 23 |
| 48CSE271ZB | 5.9-19.9 | 8-27 | 1820 | 5.8 | 2.6 | 3/8 | 22.0 | 559 | 0.92 | 23 |
| 48CSE361ZB | 5.2-26.6 | 7-36 | 1290 | 5.8 | 2.6 | 3/8 | 22.0 | 559 | 0.92 | 23 |
| 48CSE602ZB | 8.1-42.0 | 11-57 | 855 | 8.4 | 3.8 | 1/2 | 24.4 | 620 | 1.10 | 28 |
| 48CSE702ZB | 10.3-50.2 | 14-68 | 570 | 8.4 | 3.8 | 1/2 | 24.4 | 620 | 1.10 | 28 |
| 48CSE802ZB | 12.5-60.5 | 17-82 | 450 | 9.6 | 4.4 | 1/2 | 26.7 | 678 | 1.10 | 31 |
| 48CSE1152ZB | 18.4-84.8 | 25-115 | 320 | 9.6 | 4.4 | 1/2 | 26.7 | 678 | 1.10 | 31 |
| 48CSE1502ZB | 22.9-110.6 | 31-150 | 245 | 9.6 | 4.4 | 1/2 | 26.7 | 678 | 1.10 | 31 |
| 48CSE1653ZB | 24.3-121.7 | 33-165 | 220 | 14.6 | 6.6 | 3/4 | 28.6 | 726 | 1.57 | 40 |
| 48CSE2503ZB | 36.8-182.9 | 50-248 | 145 | 14.6 | 6.6 | 3/4 | 28.6 | 726 | 1.57 | 40 |

*Weights are without tool cable or reaction bar if so equipped.

General: All tools must be used with a approved Cooper Tools cable and controller.

Standard Equipment: Air-LB Connector.

Tools have thru hole output.

Extra Equipment: Std. tool cable 301866-XX, RA swivel cable 301903-XX, Inline swivel cable 301904-XX, Extension cable 301877-XX.

See page 57 for additional cables and accessories.



Cleco®

Hold & Drive Series

Torque Range
 11 - 227 Nm
 8.1 - 167.4 Ft. Lbs.

- Brushless precision
- Resolver control
- Memory intelligence

Hold & Drive Tool Nomenclature

| | | | | | |
|---|--------------------|-------------------------|-----------------------------|--------------|----------|
| 48 | C | A | E | XXX | H |
| Motor 48 | Current Control | Connector E – Air-LB | Head Type H-Hold & Drive | Hold & Drive | |
| Tool Style | | | | | |
| A – Right Angle | | | | | |
| Max Output Torque | | | | | |
| <60 Nm, rounded up to the nearest 1 Nm. | | | | | |
| >60 Nm, rounded to the nearest 5 Nm. | | | | | |

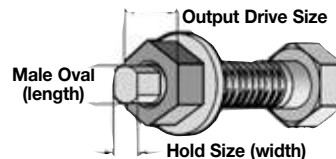
Socket Nomenclature

| | | | | | |
|----------------|----------|-----------|----------|-----------|----------|
| H | X | XX | X | XX | X |
| Retainer Shaft | | | | | |
| 3 - 3 1/2" | | | | | |
| 4 - 4" | | | | | |
| 5 - 5 3/8" | | | | | |
| 6 - 5 7/8" | | | | | |
| 9 - 9 1/2" | | | | | |

| | |
|---------------------|---|
| Socket Style | Oval Dim. (length) |
| F – Female Hex | If socket style =0 (female oval) |
| M – Male Hex | |
| T – Torx | |
| O – Female Oval | |
| | Hold Socket (width across flats) |
| | EA - 1/4 15 – T15 |
| | EC - 3/8 20 – T20 |
| | M5 - 5mm 25 – T25 |
| | M6 - 6mm 30 – T30 |
| | MA - 7mm 40 – T40 |
| | MB - 8mm (5/16") 50 – T50 |
| | MC - 9mm |
| | MD - 10mm |
| | ME - 11mm (7/16") |
| | MF - 12mm |

Drive Socket Sizes (surface drive)

| | | | |
|-------------------|-------------------------|---------------------------|----------------------------|
| EH – 11/16 | MH – 14mm | MN – 20mm | MS – 25mm |
| EJ – 13/16 | MI – 15mm | MO – 21mm | MT – 26mm |
| EK – 7/8 | MJ – 16mm (5/8") | MP – 22mm | MU – 27mm (1 1/16") |
| EM – 1 | MK – 17mm | MQ – 23mm | MX – 30mm (1 3/16") |
| EO – 1 1/8 | ML – 18mm | MR – 24mm (15/16") | MZ – 32mm (1 1/4") |
| MG – 13mm | MM – 19mm (3/4") | | |



| Hold & Drive Model Number | Torque Range | | Free Speed RPM | Length | | Weight* | | Head Height | | Side to Center | |
|------------------------------|--------------|----------|-------------------|--------|-----|---------|------|-------------|----|----------------|----|
| | Ft.Lbs. | Nm | | in. | mm | lbs. | kg | in. | mm | in. | mm |
| 48CAE53H | 8.1 – 39.8 | 11 – 54 | 850 | 20.2 | 512 | 7.9 | 3.60 | 2.40 | 61 | 1.06 | 27 |
| 48CAE75H | 11.1 – 56.8 | 15 – 77 | 600 | 20.2 | 512 | 7.9 | 4.03 | 2.40 | 61 | 1.06 | 27 |
| 48CAE110H | 17.0 – 85.6 | 23 – 115 | 400 | 20.2 | 512 | 8.9 | 4.03 | 2.40 | 61 | 1.06 | 27 |
| 48CAE135H | 20.7 – 101.8 | 28 – 135 | 270 | 20.6 | 522 | 8.9 | 4.03 | 2.40 | 61 | 1.06 | 27 |
| 48CAE230H | 34.7 – 169.6 | 47 – 230 | 150 | 22.2 | 563 | 10.6 | 4.79 | 2.40 | 61 | 1.06 | 27 |

*Weights are without tool cable or reaction bar if so equipped.

General: All tools must be used with a approved Cooper Tools cable and controller.
Standard Equipment: Air-LB Connector. Retraction 1" standard for hold bit.

Extra Equipment: Std. tool cable 301866-XX, RA swivel cable 301903-XX, Inline swivel cable 301904-XX, Extension cable 301877-XX.
 See page 57 for additional cables and accessories.

Electric Nutrunners – Corded Current Control

Flush Socket Tools



Flush Socket Series

Torque Range
4.9 - 234 Nm
3.6 - 172.6 Ft. Lbs.

Bolt Size
M8 - M21
1/2" - 1 3/16"

- Brushless precision
- Resolver control
- Memory intelligence

18CAE30F1



Flush Socket Tool Nomenclature

| | | | | | |
|--|--------------------|-------------------------|-----------------|------------|----------|
| XX | C | A | E | XXX | F |
| Motor 18, 48 | Current Control | Connector E - Air-LB | Flush Socket | | |
| Tool Style A - Right Angle | | | | | |
| Max Output Torque | | | | | |
| F1 16,23, 30 Nm | F3 53, 75, 110 Nm | F2 37, 52 Nm | F4 135, 230 Nm | | |
| <60 Nm, rounded up to the nearest 1 Nm. >60 Nm, rounded to the nearest 5 Nm. | | | | | |
| Head Type | | | | | |
| F1 Head 8-15mm socket capacity | | | | | |
| F2 Head 10-15mm socket capacity | | | | | |
| F3 Head 13-21mm socket capacity | | | | | |
| F4 Head 13-21mm socket capacity | | | | | |

Socket Nomenclature

| | | | |
|-------------------------|-------------------|------------------|--|
| FX | XX | X | X |
| | | | Output Type 0-Standard 1-Fast Lead 2-Magnetic |
| Extension Length | | | |
| 0 - Flush | 4 - 1/2" | 8 - 1" | |
| 2 - 1/4" | 6 - 3/4" | | |
| Socket Size | | | |
| EC - 3/8 | MB - 8mm (5/16") | MJ - 16mm (5/8") | |
| ED - 7/16 | MD - 10mm | MK - 17mm | |
| EE - 1/2 | ME - 11mm (7/16") | ML - 18mm | |
| EF - 9/16 | MF - 12mm | MM - 19mm (3/4") | |
| EH - 11/16 | MG - 13mm | MN - 20mm | |
| EJ - 13/16 | MH - 14mm | MO - 21mm | |
| | MI - 15mm | | |

X Dimension For Flush Socket

| Head | in. | mm | Socket Size Range |
|------|------|----|-------------------|
| F1 | 1.54 | 39 | 8-15mm |
| F2 | 1.69 | 43 | 10-15mm |
| F3 | 2.32 | 59 | 13-21mm |
| F4 | 2.4 | 61 | 17-21mm |

| Flush Socket | Head Type | Torque Range | | Free Speed | Weight* | | Length | | Anglehead | | | | |
|--------------|-----------|--------------|--------|------------|---------|------|--------|-----|-----------|----------------|------|--------|----|
| | | ft. lbs. | Nm | | RPM | lbs. | kg | in. | mm | Side to Center | | Height | |
| Model Number | | | | | | | | | | in. | mm | in. | mm |
| 18CAE16F | F1 | 3.6-11.8 | 4.9-16 | 1225 | 4.4 | 2.00 | 16.0 | 406 | 0.55 | 14 | 1.54 | 39 | |
| 18CAE23F | F1 | 3.4-17.0 | 4.6-23 | 860 | 4.4 | 2.00 | 16.0 | 406 | 0.55 | 14 | 1.54 | 39 | |
| 18CAE30F | F1 | 4.4-22.1 | 6.0-30 | 655 | 4.4 | 2.00 | 16.0 | 406 | 0.55 | 14 | 1.54 | 39 | |
| 48CAE37F | F2 | 5.9-27.3 | 8.0-37 | 1225 | 5.4 | 2.43 | 18.7 | 474 | 0.67 | 17 | 1.69 | 43 | |
| 48CAE52F | F2 | 8.1-38.3 | 11-52 | 860 | 5.4 | 2.43 | 18.7 | 474 | 0.67 | 17 | 1.69 | 43 | |
| 48CAE53F | F3 | 8.1-39.0 | 11-53 | 850 | 6.0 | 2.74 | 20.0 | 509 | 0.87 | 22 | 2.32 | 59 | |
| 48CAE75F | F3 | 11.1-55.3 | 15-75 | 600 | 6.0 | 2.74 | 20.0 | 509 | 0.87 | 22 | 2.32 | 59 | |
| 48CAE110F | F3 | 17.0-81.1 | 23-110 | 400 | 7.4 | 3.38 | 20.5 | 521 | 0.87 | 22 | 2.32 | 59 | |
| 48CAE135F | F4 | 19.9-99.5 | 27-135 | 270 | 8.9 | 4.03 | 20.6 | 522 | 1.06 | 27 | 2.40 | 61 | |
| 48CAE230F | F4 | 34.7-172.6 | 47-230 | 150 | 10.6 | 4.79 | 22.2 | 563 | 1.06 | 27 | 2.40 | 61 | |

*Weights are without tool cable or reaction bar if so equipped.
General: All tools must be used with a approved Cooper Tools cable and controller.
Standard Equipment: Air-LB Connector.

Extra Equipment: Std. tool cable 301866-XX, RA swivel cable 301903-XX, Inline swivel cable 301904-XX, Extension cable 301877-XX.
 See page 57 for additional cables and accessories.

Electric Nutrunners – Corded Current Control

Tube Nut Tools



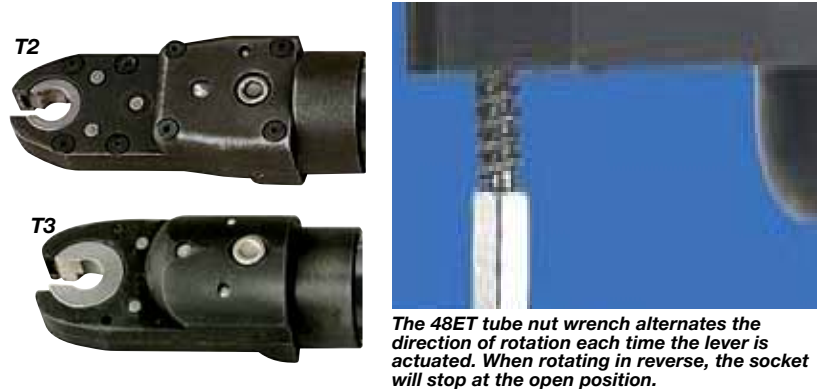
Cleco®

Tube Nut Series

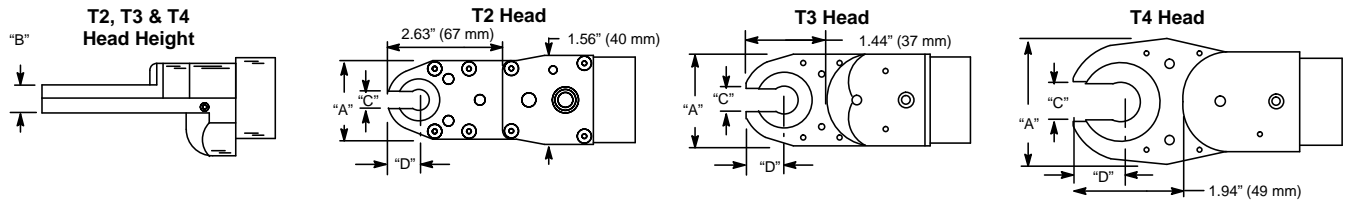
Torque Range
10 - 40 Nm
7.4 - 29.5 Ft. Lbs.

Bolt Size
M6 - M10
1/4" - 3/8"

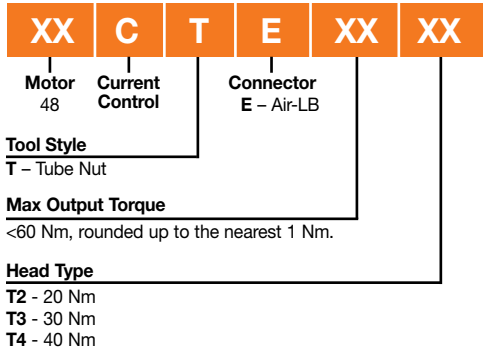
- Brushless precision
- Resolver control
- Memory intelligence



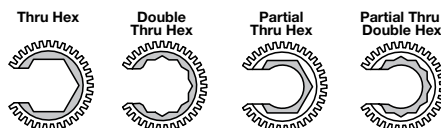
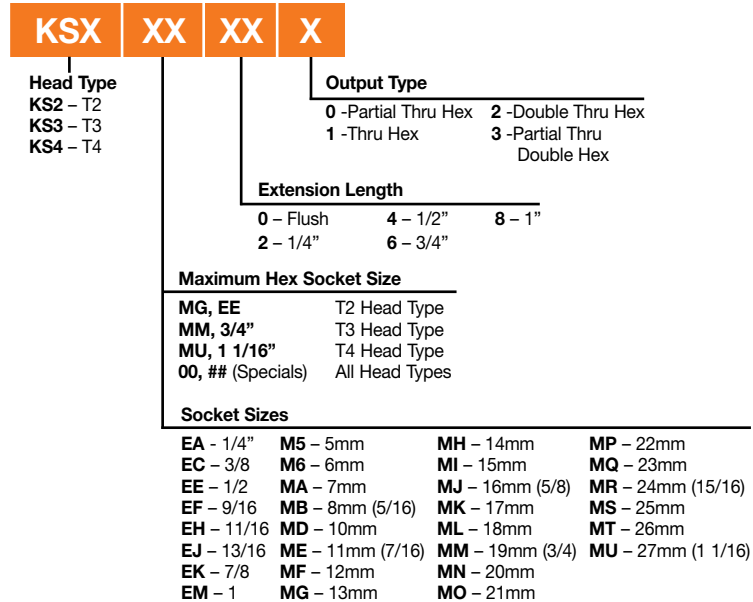
The 48ET tube nut wrench alternates the direction of rotation each time the lever is actuated. When rotating in reverse, the socket will stop at the open position.



Tube Nut Tool Nomenclature



Socket Nomenclature



Note: To order individual sockets, use a "KS" prefix (i.e. KS2EA01 for a T2 1/4", Flush, Thru Hex socket.)

| Tube Nut | Max. Drive Size | Torque Range | | Free Speed | Weight* | Length | | Head | | | | | | | | | |
|--------------|-----------------|--------------|-------|------------|---------|--------|------|------|------|-----|---------|-----|-------------|-----|-----------|-----|-------------|
| | | Ft.Lbs. | Nm | | | RPM | lbs. | kg | in. | mm | A Width | | B Blade Ht. | | C Opening | | D End/Cntr. |
| Model Number | | | | | | | | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm |
| 48CTE20T2 | 1/2" | 7.4-14.8 | 10-20 | 1425 | 4.4 | 2.0 | 16.9 | 430 | 1.42 | 36 | 0.55 | 14 | 0.28 | 7 | 0.53 | 13 | |
| 48CTE30T3 | 3/4" | 11.1-22.1 | 15-30 | 1030 | 4.5 | 2.0 | 16.6 | 422 | 1.65 | 42 | 0.59 | 15 | 0.475 | 13 | 0.73 | 19 | |
| 48CTE40T4 | 1 1/16" | 14.8-29.5 | 20-40 | 770 | 5.3 | 2.3 | 17.9 | 454 | 2.36 | 60 | 0.59 | 15 | 0.675 | 18 | 0.93 | 24 | |

*Weights are without tool cable and reaction bar.

General: All tools must be used with an approved Cooper Tools cable and controller.
Standard Equipment: Matrix Connector.

Extra Equipment: Std. tool cable 301866-XX, RA swivel cable 301903-XX, Inline swivel cable 301904-XX, Extension cable 301877-XX.
See page 57 for additional cables and accessories.

Electric Nutrunners – Corded Current Control

Crowfoot Tools

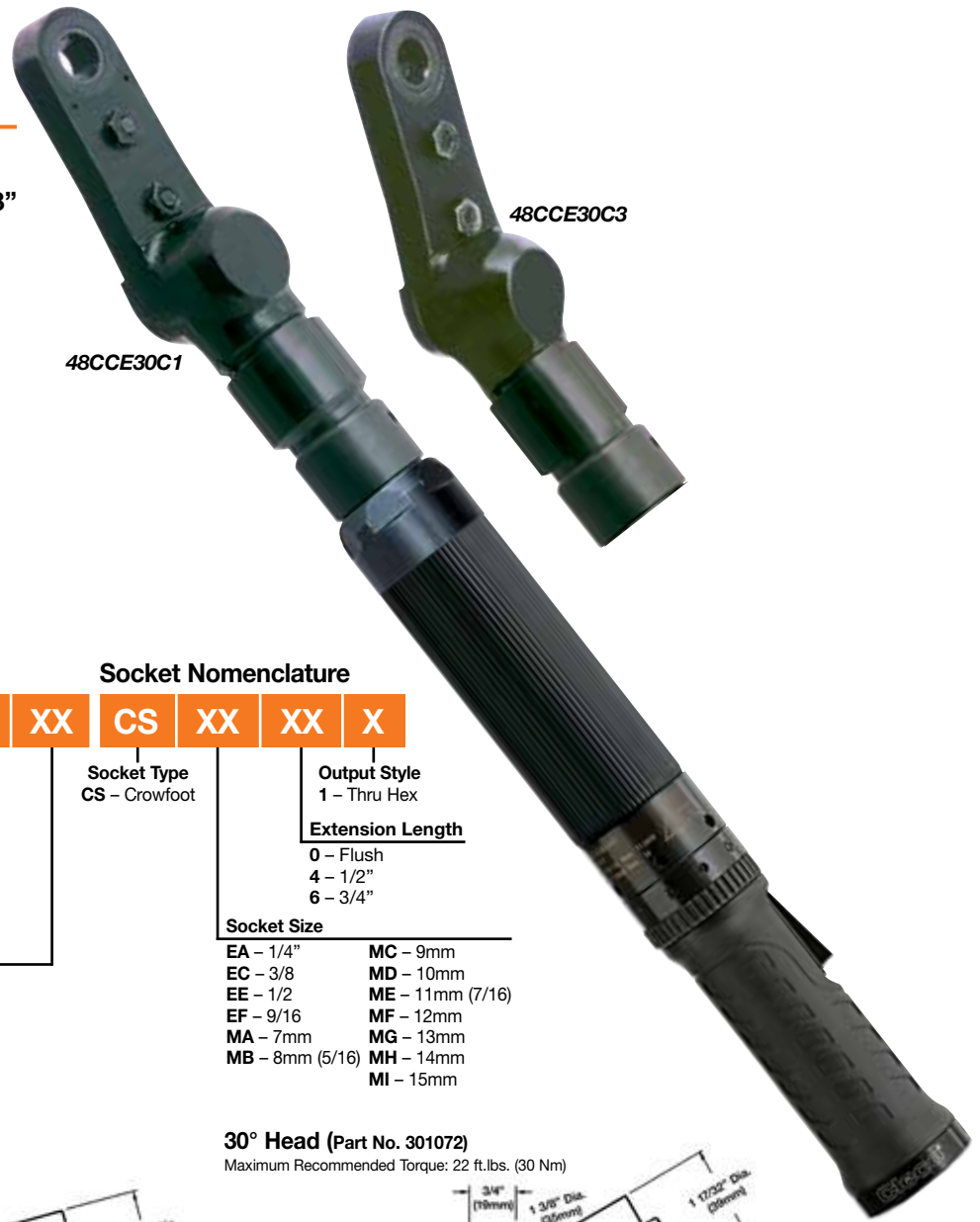


Crowfoot Series

Torque Range
7 - 30 Nm
5 - 22 Ft. Lbs.

Bolt Size
M6 - M8
#10 - 3/8"

- Brushless precision
- Resolver control
- Memory intelligence



Crowfoot Tool Nomenclature

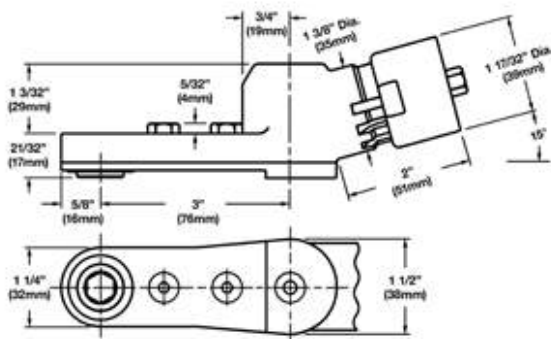
| | | | | | |
|---|--------------------|-------------------------|----------|-----------|-----------|
| 48 | C | C | E | XX | XX |
| Motor 48 | Current Control | Connector E – Air-LB | | | |
| Tool Style C – Crowfoot | | | | | |
| Max Output Torque <60 Nm, rounded up to the nearest 1 Nm. | | | | | |
| Head Type C1 – 15° Crowfoot C3 – 30° Crowfoot | | | | | |

Socket Nomenclature

| | | | |
|--|------------------------------|-----------|----------|
| CS | XX | XX | X |
| Socket Type CS – Crowfoot | Output Style 1 – Thru Hex | | |
| Extension Length 0 – Flush 4 – 1/2" 6 – 3/4" | | | |
| Socket Size | | | |
| EA – 1/4" | MC – 9mm | | |
| EC – 3/8" | MD – 10mm | | |
| EE – 1/2" | ME – 11mm (7/16) | | |
| EF – 9/16" | MF – 12mm | | |
| MA – 7mm | MG – 13mm | | |
| MB – 8mm (5/16) | MH – 14mm | | |
| | MI – 15mm | | |

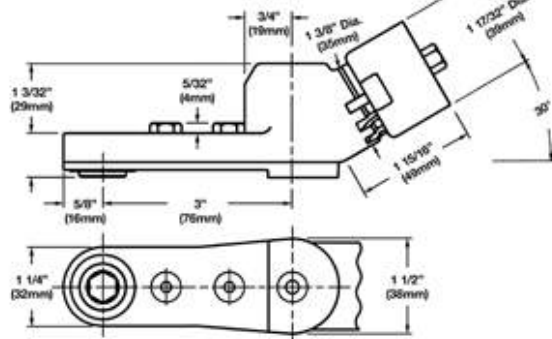
15° Head (Part No. 301071)

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



30° Head (Part No. 301072)

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



| Crowfoot | | Torque Range | | Free Speed | Weight* | | Length | |
|--------------|-----------|--------------|---------|------------|---------|-----|--------|-----|
| Model Number | | ft. lbs. | Nm | RPM | lbs. | kg | in. | mm |
| 15° Head | 30° Head | | | | | | | |
| 48CCE30C1 | 48CCE30C3 | 7.7-22.1 | 10.5-30 | 860 | 5.5 | 2.3 | 20.5 | 521 |

*Weights are without tool cable and reaction bar.

General: All tools must be used with a approved Cooper Tools cable and controller.

Standard Equipment: Matrix Connector.

Extra Equipment: Std. tool cable 301866-XX, RA swivel cable 301903-XX,

Inline swivel cable 301904-XX, Extension cable 301877-XX.

See page 57 for additional cables and accessories.

To order individual sockets, use a "CS" prefix before the required socket. (i.e. CSEA01 for a, 1/4", flush, thru hex socket.)

Electric Nutrunners – Corded Current Control

Right Angle Floating Spindle Tools



Right Angle Floating Spindle Series

Torque Range
5.1 - 230 Nm
3.7 - 169.6 Ft. Lbs.

Bolt Size
M7 - M18
1/4" - 3/4"

- Brushless precision
- Resolver control
- Memory intelligence



48CAE135S461

Right Angle Floating Spindle Tool Nomenclature

| | | | | | | | |
|---|------------------------|--------------------------------------|--------------------------------|------------|--|--|----------|
| XX | C | A | E | XXX | XX | X | X |
| Motor 18 48 | Current Control | Tool Style A – Right Angle | Connector E – Air-LB | | Square Drive 3 - 3/8" (S1,S2) 4 - 1/2" (S3,S4) 6 - 3/4" (S4) | Extension Length | |
| Max Output Torque | | | | | | 1 -1.13" (S1), 1.00" (S2 & S3), 1.25" (S4) 2 -2.13" (S1), 3.00" (S2), 2.5" (S4 1/2" Dr.) 5 -5.13" (S2), 4.25" (S4) 6 -6.0" (S4 1/2" Dr.), 7.0" (S4 3/4" Dr.) 11 -11.0" (S4 3/4" Dr.) | |
| S1 Head – 16, 23, or 30 Nm S2 Head – 37 or 52 Nm S3 Head – 53, 75, 95, or 110 Nm S4 Head – 135 or 230 Nm (48 series) | | | | | Tool Termination | | |
| | | | | | S1 Sliding (Floating) Spindle | S3 Sliding (Floating) Spindle | |
| | | | | | S2 Sliding (Floating) Spindle | S4 Sliding (Floating) Spindle | |

| Right Angle Floating Spindle Model Number | Torque Range | | Max. Speed RPM | Weight* | | Output Drive Size | Length | | Side to Center | |
|--|--------------|--------|-------------------|---------|------|-------------------|--------|-----|----------------|----|
| | ft. lbs. | Nm | | lbs. | kg | | in. | mm | in. | mm |
| 18CAE16S131 | 3.7-11.8 | 5.1-16 | 1225 | 4.4 | 2.00 | 3/8" | 16.0 | 406 | 0.55 | 14 |
| 18CAE23S131 | 5.3-16.9 | 7.2-23 | 860 | 4.4 | 2.00 | 3/8" | 16.0 | 406 | 0.55 | 14 |
| 18CAE30S131 | 4.4-22.1 | 6.0-30 | 655 | 4.4 | 2.00 | 3/8" | 16.0 | 406 | 0.55 | 14 |
| 48CAE37S231 | 5.9-27.2 | 8.0-37 | 1225 | 5.4 | 2.43 | 3/8" | 18.7 | 474 | 0.67 | 17 |
| 48CAE52S231 | 8.1-38.3 | 11-52 | 860 | 5.4 | 2.43 | 3/8" | 18.7 | 474 | 0.67 | 17 |
| 48CAE53S341 | 8.1-39.1 | 11-53 | 850 | 6.0 | 2.74 | 1/2" | 20.0 | 509 | 0.87 | 22 |
| 48CAE75S341 | 11.0-55.3 | 15-75 | 600 | 6.0 | 2.74 | 1/2" | 20.0 | 509 | 0.87 | 22 |
| 48CAE95S341 | 14.7-70.0 | 20-95 | 460 | 7.4 | 3.38 | 1/2" | 20.5 | 521 | 0.87 | 22 |
| 48CAE110S341 | 16.9-81.1 | 23-110 | 400 | 7.4 | 3.38 | 1/2" | 20.5 | 521 | 0.87 | 22 |
| 48CAE135S461 | 20.6-99.5 | 28-135 | 270 | 8.9 | 4.03 | 3/4" | 20.6 | 522 | 1.06 | 27 |
| 48CAE230S461 | 34.6-169.6 | 47-230 | 150 | 10.6 | 4.79 | 3/4" | 22.2 | 563 | 1.06 | 27 |

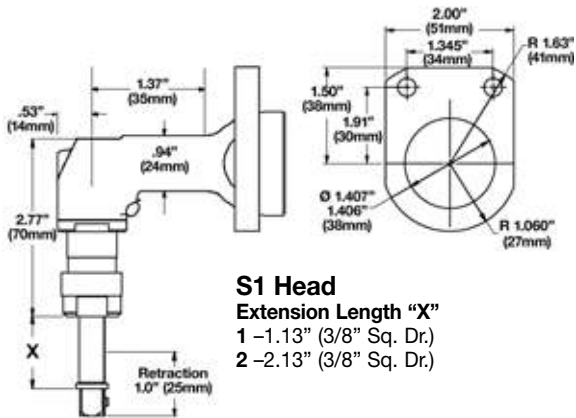
*Weights are without tool cable and mounting plate.

General: All tools must be used with an approved Cooper Tools cable and controller.

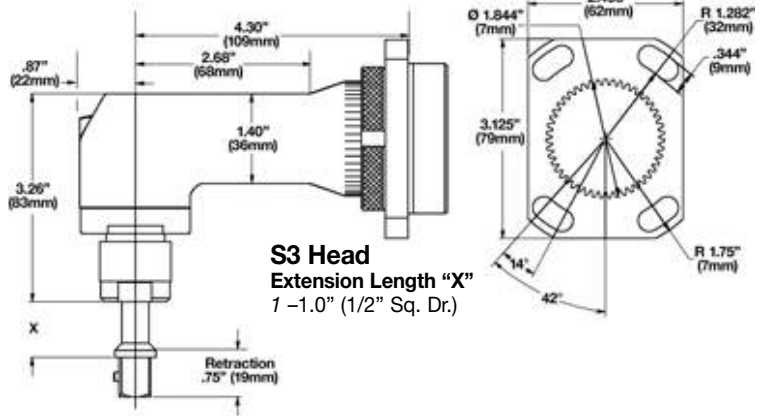
Standard Equipment: Matrix Connector; Mounting plate.

Extra Equipment: Std. tool cable 301866-XX, RA swivel cable 301903-XX, Inline swivel cable 301904-XX, Extension cable 301877-XX. See page 57 for additional cables and accessories.

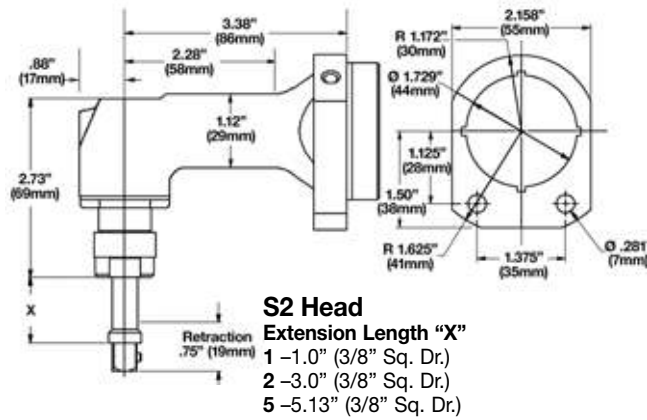
18CAE & 48CAE Floating Spindle Angle Heads



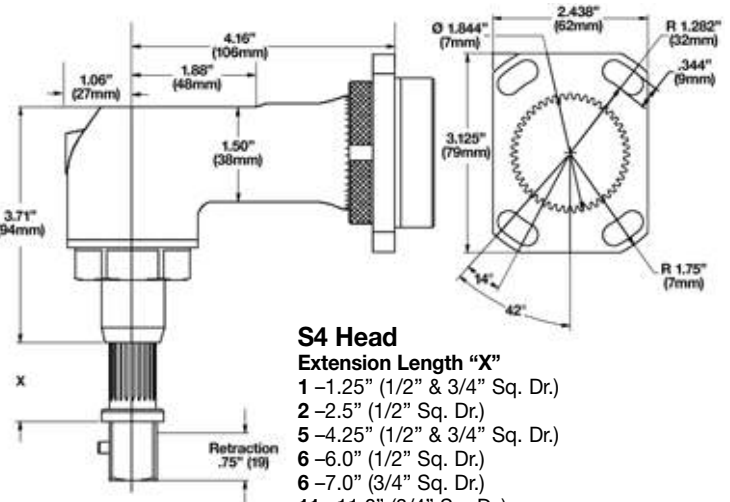
S1 Head
 Extension Length "X"
 1 -1.13" (3/8" Sq. Dr.)
 2 -2.13" (3/8" Sq. Dr.)



S3 Head
 Extension Length "X"
 1 -1.0" (1/2" Sq. Dr.)



S2 Head
 Extension Length "X"
 1 -1.0" (3/8" Sq. Dr.)
 2 -3.0" (3/8" Sq. Dr.)
 5 -5.13" (3/8" Sq. Dr.)



S4 Head
 Extension Length "X"
 1 -1.25" (1/2" & 3/4" Sq. Dr.)
 2 -2.5" (1/2" Sq. Dr.)
 5 -4.25" (1/2" & 3/4" Sq. Dr.)
 6 -6.0" (1/2" Sq. Dr.)
 6 -7.0" (3/4" Sq. Dr.)
 11 -11.0" (3/4" Sq. Dr.)

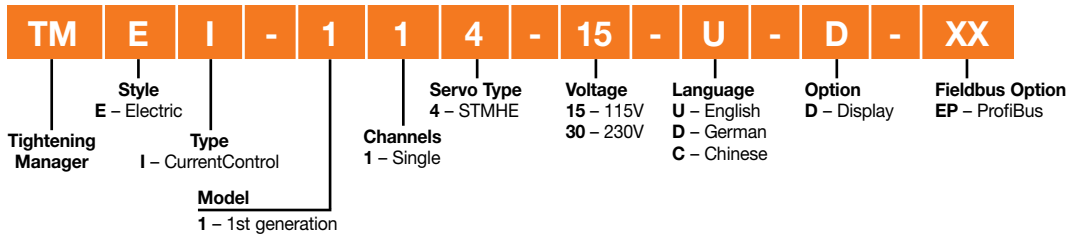
Tightening Manager Controller – Current Control

TMEI “Mini” Series



TMEI

- **Input Voltage:** 115/230VAC
- **Connections:** (1) Serial, (1) TM-COM, (1) Ethernet
- **Inputs/Outputs:** (8) 24V Inputs, (8) 24V Outputs
- **Fieldbus Option:** ProfiBus



| Model Number | | Features | Weight | | Width | | Height | | Depth | |
|--------------|--------|----------|--------|----|-------|----|--------|----|-------|----|
| 115VAC | 230VAC | | lbs. | kg | ins. | mm | ins. | mm | ins. | mm |

TMEI “Mini”

| | | | | | | | | | | |
|----------------------|----------------------|-----------------------------------|----|------|-----|-------|------|-------|------|-------|
| TMEI-114-15- * | TMEI-114-30- * | Ethernet - IO | 42 | 19.1 | 7.9 | 200.7 | 16.2 | 411.5 | 12.7 | 322.6 |
| TMEI-114-15- * -EP | TMEI-114-30- * -EP | Ethernet - IO - Profibus | 42 | 19.1 | 7.9 | 200.7 | 16.2 | 411.5 | 12.7 | 322.6 |
| TMEI-114-15- * -D | TMEI-114-30- * -D | Ethernet - IO - Display | 42 | 19.1 | 7.9 | 200.7 | 16.2 | 411.5 | 12.7 | 322.6 |
| TMEI-114-15- * -D-EP | TMEI-114-30- * -D-EP | Ethernet - IO - Profibus, Display | 42 | 19.1 | 7.9 | 200.7 | 16.2 | 411.5 | 12.7 | 322.6 |

Connectivity: (1) Serial, (1) TM-COM, (1) Ethernet, (8) 24V Inputs, (8) 24V Outputs.

*Languages offered: C-Chinese, D-German, U-English.

TM-COM1M included.

NOTE: 48 series tools require TMEI 230VAC.

See page 63 for available programming languages.

Electric Nutrunner & Controller – Current Control

Accessories



Tool Cables

| Model Number | | Swivel | | Length | |
|--------------|------------|-------------|------------|--------|--------|
| Tool | Extension | Right Angle | Inline | Feet | Meters |
| 301866-1M* | 301877-1M | 301903-1M* | 301904-1M* | 3 | 1 |
| 301866-2M* | 301877-2M | 301903-2M* | 301904-2M* | 6 | 2 |
| 301866-3M | 301877-3M | 301903-3M | 301904-3M | 9 | 3 |
| 301866-6M | 301877-6M | 301903-6M | 301904-6M | 19.5 | 6 |
| 301866-8M | 301877-8M | 301903-8M | 301904-8M | 26 | 8 |
| 301866-10M | 301877-10M | 301903-10M | 301904-10M | 33 | 10 |
| 301866-15M | 301877-15M | 301903-15M | 301904-15M | 49 | 15 |
| | 301877-20M | | | 66 | 20 |
| | 301877-25M | | | 82 | 25 |
| | 301877-30M | | | 96 | 30 |
| | 301877-40M | | | 131 | 40 |
| 301866-50M | 301877-50M | 301903-50M | 301904-50M | 164 | 50 |

Maximum cable length 100M 115VAC/20M 230VAC.
Overall minimum cable length 3M.
*Must be used with 301877 extension cable.



Swivel cable rotates 330° to absorb constant twisting and turning.



Swivel Cable

8 Position Remote Parameter Switch



| Description | Part Number |
|---|-------------|
| Remote Parameter Switch (with 25' integrated cable) | 542979 |
| Remote Parameter Switch (with 50' integrated cable) | 542979-50 |

Direct Connect Cables

Connects controller direct to PC

| Part No. | Description | Length | |
|-----------|--------------------------|--------|---|
| | | ft. | m |
| 543446-7 | Ethernet crossover cable | 7 | 2 |
| 543490-10 | Serial cable null modem | 10 | 3 |

Phoenix Connectors

| Part No. | Description |
|----------|----------------------------------|
| 542892 | Input Phoenix connector |
| 542893 | Output Phoenix connector |
| 939348 | Hood/strain TME I/O cable relief |



ACCESSORY CABLE

Accessory Cables

| Controller to Input Accessory | Input Acc. to Input Acc. | Controller to Synch Box | Controller to 1 Spindle Annunciator | Controller to 2 Spindle Annunciator | Synch Box to Input Accessory | Synch Box to Annunciators (2/more spindles) | Length | |
|-------------------------------|--------------------------|-------------------------|-------------------------------------|-------------------------------------|------------------------------|---|--------|-----|
| | | | | | | | ft. | m |
| 542985-3 | 542986-3 | 576058-3 | 542989-3 | 543451-3 | 542987-3 | 542988-3 | 3 | 1 |
| 542985-9 | 542986-9 | 576058-9 | 542989-9 | 543451-9 | 542987-9 | 542988-9 | 9 | 3 |
| 542985-25 | 542986-25 | 576058-25 | 542989-25 | 543451-25 | 542987-25 | 542988-25 | 25 | 7.5 |
| 542985-50 | 542986-50 | 576058-50 | 542989-50 | 543451-50 | 542987-50 | 542988-50 | 50 | 15 |

Input Accessories

Torque Selector Switches

| Torque Selector | Part Number |
|-----------------|-------------|
| 8 Select | 542977-8 |
| 16 Select | 542977-16 |
| 32 Select | 542977-32 |
| 64 Select | 542977-64 |



Annunciators

| Spindles | Part Number |
|----------|-------------|
| 1 | 542976-1 |
| 2 | 542976-2 |
| 3 | 542976-3 |
| 4 | 542976-4 |
| 5 | 542976-5 |
| 6 | 542976-6 |



Start/Stop Switches

| Description | Part No. |
|--------------------|----------|
| Start Box | 542972 |
| Stop Box | 542973 |
| Start/Stop Box | 542974 |
| Start/Stop/Reverse | 542975 |



Socket Trays

| Part No. | Description |
|----------|----------------|
| 542978-4 | Four position |
| 542978-8 | Eight position |

Notes: Up to 16 linked 4 position trays maximum.
Minimum socket O.D. 1".
Maximum O.D. 2.25".



Patch Cables

Connects Ethernet Switches to controller or PC

| Part Number | Length | |
|-------------|--------|--------|
| | Feet | Meters |
| 543445-7 | 7 | 2 |
| 543445-50 | 50 | 15 |
| 543445-100 | 100 | 30 |

Synch Boxes

| Spindles | Part No. |
|----------|----------|
| 2 | 576060-2 |
| 3 | 576060-3 |
| 4 | 576060-4 |
| 5 | 576060-5 |
| 6 | 576060-6 |



115VAC Ethernet Switches

| Part Number | Ports | | | Approx. Dimensions | | Approx. Weight | |
|-------------|-------|----|-----|--------------------|------------|----------------|-----|
| | Total | In | Out | Inches | mm | lbs. | kg |
| 543444-8 | 8 | 1 | 7 | 6.5x4.5x1.5 | 160x110x35 | 0.6 | 0.3 |
| 543444-16 | 16 | 1 | 15 | 7x6x2.5 | 185x150x65 | 1.1 | 0.5 |
| 543444-24 | 24 | 1 | 23 | 10.5x7x2 | 270x170x50 | 3.0 | 1.3 |

Socket Trays

| Part No. | Description |
|----------|----------------------------|
| 960645 | Four position w/10m cable |
| 960646 | Eight position w/10m cable |

Maximum socket diameter 1.125".



Replacement Inserts

| Part Number |
|-------------|
| S970716 |

For use with 960645 & 960646 socket trays.



Socket Posts

For use with 542978-4 & 542978-8 socket trays.

| Part Number | Socket Post Size |
|-------------|------------------|
| 99249181 | .550/.540 |
| 99249169 | 1.062/1.052 |
| 99249165 | .590/.580 |
| 99249164 | .945/.935 |
| 99249163 | .827/.817 |
| 99249162 | .709/.699 |
| 99249161 | .625/.615 |
| 99249160 | .437/.432 |
| 99249159 | .812/.802 |
| 99249158 | .687/.677 |
| 99249157 | .875/.865 |
| 99249156 | 1.000/.990 |
| 99249148 | 1.125/1.115 |
| 99249147 | .938/.928 |
| 99249104 | .750/.740 |
| 99249103 | .669/.659 |
| 99249102 | .562/.552 |
| 99249101 | .500/.490 |

Note: Select socket post size within tolerance of socket used.

Lockout Washer

For use with 542978-4 & 542978-8 socket trays.

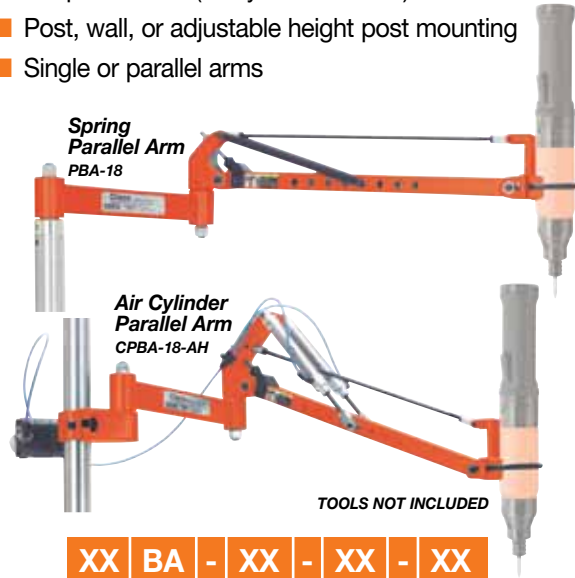
| Part Number | Note |
|-------------|--------------------------------|
| 99248150 | Vacant position lockout washer |

Electric Nutrunner Accessories

Balance Arms



- 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



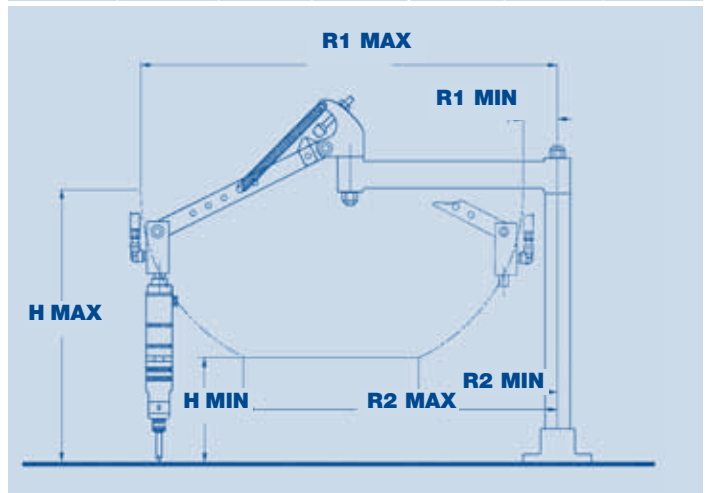
TOOLS NOT INCLUDED

XX BA - XX - XX - XX

| Series | Arm Extension | Mount | Adjustable Arm Extension |
|---------------------------------|------------------------|------------------------|--------------------------|
| CS - Air cylinder, single arm | 12" 24" | - Post | 12" 24" |
| S - Spring, single arm | 18" 30" | AH - Adjustable Height | 18" 30" |
| CP - Air cylinder, parallel arm | (12" unless specified) | WM - Wall Mount | |
| P - Spring, parallel arm | | | |
| Tool Type | | | |
| BA - Balance Arm | | | |

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 |



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

Air Cylinder Models

| | | | | | | | | | | | |
|------------|--------|------------|--------|----|-----|----|-----|----|-----|----|-----|
| CSBA18 | 520160 | CPBA-18 | 520170 | 12 | 305 | 18 | 457 | 18 | 457 | - | - |
| CSBA-24 | 520200 | | | 12 | 305 | 24 | 610 | 18 | 457 | - | - |
| CSBA-30 | 520201 | CPBA-30 | 520203 | 12 | 305 | 30 | 762 | 18 | 457 | - | - |
| CSBA-12-AH | 520165 | CPBA-12-AH | 520178 | 12 | 305 | 12 | 305 | - | - | 30 | 762 |
| CSBA-18-AH | 520162 | CPBA-18-AH | 520172 | 12 | 305 | 18 | 457 | - | - | 30 | 762 |
| CSBA-30-AH | 520167 | CPBA-30-AH | 520215 | 12 | 305 | 30 | 762 | - | - | 30 | 762 |
| | | CPBA-30-WM | 520207 | 12 | 305 | 30 | 762 | - | - | - | - |

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: 10 lbs. (4.6 kg) Air Cylinder models
 5 lbs. (2.3 kg) Spring models
 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 59.

