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Industrial Tools for Professional Users



Table of contents

Apex Tool Group – Brief Overview of Power Tools 4

Airetool

Airetool Tube Rolling System	5
Airetool Heat Exchanger & Condenser Tube Expanders	6
Airetool Accessories	8
Airetool Tube Cutters	10
Airetool Tube Removal Tools	11

Apex

Apex Sockets and Bits	12
Apex µ-Guard	16
Apex Sockets & Universal Joints	18
Bitte Apex WSK Adapterkits	21

Dotco & Cleco

Dotco Sanders Overview	23
Dotco Precision Grinders	24-25
Dotco Inline Grinders	26-27
Dotco Inline Extended Grinders	28-29
Dotco Right Angle Grinders	30-31
Dotco Belt Sanders	32-33
Dotco Grinding Attachments	34
Dotco Grinders	34
Dotco Buffers/Polishers	35-36
Cleco Industrial Grinders Heritage Series	37-40
Cleco Vertical Grinders	41-43
Cleco Angle Grinders	44-46
Dotco Drills Overview	47
Dotco Drills - Advantages	48
Dotco Drills	49-50
Dotco Right Angle Drills	51-52
Dotco Accessories for Drills	53
Dotco Venturi X	54

Master Power

Master Power Sanders	55-57
Master Power Die Grinders	58
Master Power Pencil Grinders	59
Master Power Drills	60-61
Master Power Impact Drivers	62
Master Power Impact Wrenches	62

Cleco

Select Your Cleco Nutrunner	67
Cleco 19er Series Pneumatic Assembly Tools	68-69
Cleco Pneumatic Assembly Tools	70-79
Cleco Pneumatic Assembly Tool Accessories	80
Cleco H Series Pulse Nutrunners	81-87
Cleco WP & WT Series Impact Wrenches	88-89
Cleco Impact Wrenches	90
New Cleco Impact Wrenches comparison	91
Cleco Impact Wrenches CWC Series	92
Cleco Impact Wrenches CWM Series	93
Cleco Impact Wrenches CV-Series	94
Cleco Torque Verifiers	95-97
Cleco Balancer BL Series	98-99
Cleco Balancer BM-Series	100-101
Cleco Balancer BH-Series	102
Cleco / Dotco Pneumatic Power Tools	103-105
Cleco Electrical Assembly Tools	106-109
Cleco Global Controller	110-111
Cleco Corded Right Angle Nutrunners	112-125
Cleco Current Control Right Angle Nutrunners	126-129
Accessories for Electrical Nutrunner	130-131















The New LiveWire 2

Right Angle Nutrunners	132-133
Modular Fastening Systems with Cordless LiveWire Tools	134-137
Improved Angle Heads and Accessory Platform	138
Mini-Spindles	139
New LiveWire 2 Right Angle Nutrunners	140
Cordless Right Angle Nutrunners with Transducer	141
Cordless Pistol Grip Nutrunners with Transducer	142
Cordless Tube Nutrunners with Transducer	143
Cordless Crowfoot Nutrunners with Transducer	144
Power Supply, Batteries, Charger	145
Power Module, Controllers and Software	146
Accessories for Cordless Live Wire Fastening Technology	147-149

Live Wire I-Wrench 150-155

Repair and After Sales Service 156-157

Full Catalogues Available Online 158-159

Section		Page
	Brief Overview of the Power Tool Brands of the Apex Tool Group	4
	Airetool Rolling Motors, Tube Expanders, Tube Pullers & Accessories	5
	Apex Sockets, Bits, Universal Joints & μ -Guard	12
	Dotco Grinders, Polishers, Drills, Venturi X & Accessories	23
	Master Power Sanders, Drills, Impact Wrenches & Accessories	55
	Cleco Pneumatic Assembly Tools & Accessories	67
	Cleco Pulse Nutrunners & Accessories	81
	Cleco Torque Verifiers & Accessories	95
	Cleco Balancers	98
	Cleco Pneumatic Power Motors	103
	Cleco Electrical Assembly Tools Overview	106
	Cleco Global Controller Overview	110
	Cleco Corded Assembly Tools	112
	Cleco Current Control Assembly Tools	126
	Cleco LiveWire Cordless Tools, LiveWire I-Wrench & Accessories	132
	Service, Repair & After Sales Service	154

Brief Overview

Cleco®

Assembly tools and material removal tools. With more than 100 years of experience in precision manufacturing, Cleco is the first choice worldwide especially for discerning demands in hand-held assembly tool technologies.



DOTCO® Airetool®

Tube cleaner- and tube expander technology as well as rolling motors. Wellknown machines and tools in the industry applied for manufacturing and maintenance of heat exchangers, coolers, condensers or vessels.



DOTCO®

Material removal tools, drills, grinders, polishers. Ergonomically designed tools for discerning material removal applications. Dotco is well-known for durable and reliable tools and accessories.



MP Master Power

Assembly, material removal and finishing tools. More than 70 years of experience are integrated into the high quality pneumatic tools for industrial fastening, drilling, cutting, grinding and finishing applications.



APEX

Bits, sockets and universal joints. One of the leading and most comprehensive product lines for sockets, bits, extensions and protective covers up to universal joints for industrial applications.





Model DAS-100-TRS

Rolling systems for workbench mounting and for applications with 1/4" to 5/8" tube outside diameter

- Robust design
- Trigger start for each cycle
- Makes it possible to align the expander
- Absorbs the torque
- Supports up to 3 kg
- Increases productivity
- Lower force application due to ergonomic design
- Developed for usage with the series 800, 900 and 1300 tube rollers

Operation

Air cylinders provide the counterweight to the arm. To ease operation, the pressure can be adjusted to suit the weight of the tool. The modified 720 Airetool rolling motors are switched on using a trigger start. Once the tube expander is positioned in the tube, the motor starts to expand the tube in a forward direction with gentle forward pressure. As soon as the torque set is reached, the motor switches automatically to counter clockwise and the tube expander can be removed from the tube.

The tube expander is spring mounted and therefore remains in its retracted position to ease insertion in the tube. The expander holder also prevents the tube spinning during the expanding process.

Three models are available:

- DAS 100 TRS 720 2500 for tube sizes 1/4" outside diameter.*
 - DAS 100 TRS 720 1800 for tube sizes 3/8" – 1/2" outside diameter.*
 - DAS 100 TRS 720 550 for tube sizes 1/2" – 5/8" outside diameter.*
- Post height: 29"
 Total horizontal length: 77"
 Total vertical length: 14.5"

Model Number	Part Number	Speed & Torque at 6.2 bar Air Pressure*					CFM	Chuck	
		Speed (rpm)	Max. Torque		Min. Torque			Incl.	Opt.
			in. lbs.	Nm	in. lbs.	Nm			
DAS 100 TRS 720 2500B	5525242	2.500	20	2,29	2	0,23	17	1/4"	3/8"
DAS 100 TRS 720 1800B	5525243	1.800	27	3,05	2	0,23	17	1/4"	3/8"
DAS 100 TRS 720 550B	5525244	550	75	8,47	2	0,23	17	3/8"	1/4"

*Varies with tube material, gauge and bore size of the tube sheet.

Airetool Heat Exchanger & Condenser Tube Expanders Overview



The World Standard for Tube Expanders

Airetool heat exchanger and condenser tube expanders have long been recognised as the standard against which all other brands are measured. The additional time we invest in the manufacturing of our expanders results in the consistent performance and incredible durability as expected by heat exchanger OEMs.

Tube Expanders

Tube expanding is the art of cold forming the ends of tubes to provide close contact with the metal of the surrounding tube bores to form a tight mechanical seal and/or connection. In other words it is a mechanical method for creating a mechanical connection between a tube and a tube bore.

Airetool manufactures condenser, heat exchanger, boiler and furnace expanders as well as a large number of expanders for special applications.

Tube expanders comprise:

Mandrel: A conical pin in the centre that presses the rolls against the tube when it is driven forward.

Rolls: A set of three or more conical cylindrical parts that are driven by the mandrel and that are in contact with the tube walls to be expanded. The taper on the rolls is in the opposite direction and is half the taper on the mandrel on a parallel roller.

Cage: This is the housing of the expander, as it fixes the mandrel and the rolls. The recesses that contain the rolls also have a feed angle that draws in the mandrel to provide the expansion of the rolls.

Mandrel, rolls and cage are three components you will find in all expanders. Other parts classify the expander model.

Thrust assembly: This assembly sits on the cage and permits the adjustment of the expansion depth. The thrust collar remains stationary at the tube sheet or at the end of the tube while the cage, mandrel and rolls expand the tube. You will find the thrust assembly on condenser, heat exchanger, some furnace and special application expanders.



Series G-900

Outside diameter: 1/4" – 3/8" (6,3 – 9,5 mm)

- Expander with 3/4" (19.0 mm) long rolls, accommodates tube sheet thicknesses from 1/4" to 3/4" (6.3 to 19.0 mm)
- Expander with 1-1/4" (31.7 mm) long rolls, accommodates tube sheet thicknesses from 3/4" to 1-1/4" (19.0 to 31.7 mm)
- These expanders accommodate a large range of tube sheet thicknesses.



Series G-1300

Outside diameter: 3/8" (9,5 mm)

- Expander with 3/4" (19.0 mm) long rolls, accommodates tube sheet thicknesses from 3/4" to 3" (19.0 to 76.2 mm)
- Expander with 1-1/4" (31.7 mm) long rolls, accommodates tube sheet thicknesses from 1-1/4" to 3-1/2" (31.7 to 88.9 mm)
- These expanders accommodate a large range of tube sheet thicknesses.



Serie G-800 – 3-rolls

Outside diameter: 1/2" – 1-1/2" (12,7 – 38,1 mm)

- Expander with 1-1/2" (38.1 mm) long rolls, accommodates tube sheet thicknesses from 1/2" to 1-1/2" (12.7 to 38.1 mm)
- Expander with 2-1/4" (57.1 mm) long rolls, accommodates tube sheet thicknesses from 1-1/4" to 2-1/4" (31.7 to 57.1 mm)
- New reversible thrust collar design: One expander provides fl ush and 1/8" recess tube rolling.



Series G-1200 – 3-rolls

Outside diameter: 1/2" – 1-1/2" (12,7 – 38,1 mm)

- Expander with 1-1/2" (38.1 mm) long rolls, accommodates tube sheet thicknesses as follows:
 - STD. version 1/2" – 5" (12.7 to 127.0 mm)
 - "A" version 1/2" – 7" (12.7 to 177.8 mm)
 - "C" version 7/8" – 11" (22.2 to 279.4 mm)
- Expander with 2-1/4" (57.1 mm) long rolls, accommodates tube sheet thicknesses as follows:
 - STD. version 1-1/4"–5-3/4" (31.7 to 146.0 mm)
 - "A" version 1-1/4" – 7-3/4" (31.7 to 196.8 mm)
 - "C" version 1-5/8" – 11-3/4" (41.3 to 298.4 mm)
- New reversible thrust collar design: One expander allows fl ush and 1/8" recess tube rolling.

NOTE: Step expanding is necessary if the tube sheet thickness exceeds the length of the rolls. Longer reaches are available on demand in 6" (50.8 mm) steps. Information on tube sizes not mentioned will be provided on request.

Airetool Accessories

Cleco® Drills Series 15DP

Can be used with Airetool tube end facers and push-type tube cutters.



Model Number	Speed (rpm)	Chuck Capacity		Weight
		mm		
15DP-1.6B	160	13		0,27
15DP-4B	400	13		2,5
15DP-8B	800	13		2,5
15DP-14B	1.400	10		2,0

Cleco® Drills Series 135DPV

Variable torque controlled drill. One tool for a large number of applications. Can be used with Airetool tube end facers and push-type tube cutters.



Model Number	Speed (rpm)		Chuck Capacity	Weight
	No-Load	Governed		
135-DPV-7B-43	600	150 - 550	10	1,6
135-DPV-14B-51	1.250	400 - 1.200	8	1,5
135-DPV-28B-51	2.600	700 - 2.400	8	1,4

Tube End Facers



Tube Outside Diameter	Tool Number	Gauge	Spare Bits	
			Non-Ferrous or Carbon Steel	Stainless
9,5	TEF-375 (5519632)	16 - 20	TEF-376 (2987908)	TEF-376-SS (2991788)
12,7	TEF-500 (5332415)	16 - 20	TEF-506 (2662531)	TEF-506-SS (2983169)
15,8	TEF-625 (5332425)	14 - 18	TEF-626 (2662558)	TEF-626-SS (2983170)
19,0	TEF-750 (5332450)	10 - 18	TEF-756 (2662585)	TEF-756-SS (2983162)
22,2	TEF-875 (5332460)	14 - 18	TEF-876 (2662603)	TEF-876-SS (2983163)
25,4	TEF-1000 (5332475)	10 - 18	TEF-1006 (2662633)	TEF-1006-SS (2983164)

A set of gauges is supplied with the tube end facer tools given above. Other sizes are also available. Contact your distributor for further details.

Beading Tool*



Part Number	Stock Number	Radius	Shank Type
12-RM-9-5/32-R-01	2968677	5/32"	Type 01
12-RM-9-1/4-R-01	2968676	1/4"	(0,680" round x 2 3/8" long)

*Only available on quotation.

Belling and Flaring Tool



Belling tool: Pilot end fits in tube inside diameter with type 01 retainer.

State the tube outside diameter, gauge and radius in tube sheets.



Extensions with Quick-Change Chuck

Use different extension lengths for difficult to access tubes. The quick-change chuck enables the operator to change the expander quickly. State the size of the square drive and the extension length.

Quick-Change Extension Complete	Number	Square Drive Size Male/Female	Overall Length
			mm
•QC-375-6	5501200	3/8" (9,5 mm)	152
QC-375-8	5501600	3/8" (9,5 mm)	203
QC-375-12	5502000	3/8" (9,5 mm)	305
•QC-375-18	5503000	3/8" (9,5 mm)	457
QC-375-24	5504000	3/8" (9,5 mm)	610
QC-375-30	5504500	3/8" (9,5 mm)	762
QC-375-36	5505000	3/8" (9,5 mm)	915
QC-500-12	5507000	1/2" (12,7 mm)	305
QC-500-18	5508000	1/2" (12,7 mm)	457
•QC-500-24	5509000	1/2" (12,7 mm)	610
QC-500-30	5510000	1/2" (12,7 mm)	762
•QC-500-36	5511000	1/2" (12,7 mm)	915

Sleeve Type Extensions

Can be used where tubes are near to the shell of the condenser. The small diameter at the end permits access to these tubes.

Quick-Change Extension Complete	Stock Number	Square Drive Size Male/Female	Overall Length
			mm
3/8 x 12	5515758	3/8" (9,5 mm)	305
•3/8 x 18	5513774	3/8" (9,5 mm)	457
•3/8 x 24	5515759	3/8" (9,5 mm)	610
•3/8 x 36	5515761	3/8" (9,5 mm)	915
•1/2 x 12	5515733	1/2" (12,7 mm)	305
1/2 x 18	5513775	1/2" (12,7 mm)	457
1/2 x 24	5515734	1/2" (12,7 mm)	610
•3/4 x 12	5515735	3/4" (19,0 mm)	305
•3/4 x 18	5515736	3/4" (19,0 mm)	457
•3/4 x 24	5515737	3/4" (19,0 mm)	610

FT-515 – 60° Flaring Tool

Developed for flaring tubes with outside diameter 1/2" – 1-1/2" (12.7 – 38.1 mm). Available with 01 or 06 round shank, can be used with standard chisel hammers.





Universal Joints and Extensions

Can be used for difficult to access tubes, the universal joint operates smoothly and without binding. State the size of the square drive and the extension length.



Tube Expander Lubricant „LUBE-A-TUBE“

- A water-soluble lubricant, specially manufactured for usage with tube expanders.
- It prevents rust and acts as a coolant for longer service life and gentler rolling.

Universal Joints	Stock Number	Square Drive Size Female	Overall Length
			mm
3/8 x 3/8	2115300	3/8" (9,5 mm)	64
•1/2 x 1/2	2039800	1/2" (12,7 mm)	70
•3/4 x 3/4	2974913	3/4" (19,0 mm)	89

Universal Extensions	Stock Number	Square Drive Size Male/Female	Overall Length
			mm
GP-3/8 x 6	5514896	3/8" (9,5 mm)	152
•GP-3/8 x 12	5514898	3/8" (9,5 mm)	305
•GP-3/8 x 18	5514899	3/8" (9,5 mm)	457



GT Serrating Tools

- Compact design for extreme stability, increased bit life, less impact and improved accuracy
- Unique coolant system through the spindle offers excellent groove quality and unmatched bit service life
- New and improved bit design permits exactly positioned coolant
- Tool design permits simple bit replacement
- Carbide inserts remove burrs from the grooves, as a consequence additional de-burring is not necessary

Sheet Hole mm	INCH Tool Number	Shank	Standard Bit 1/8 x 1/4 x 1/8	Opt. Bit 1/8 x 3/8 x 1/8	Metric Tool Number	Shank	Standard Bit 3 x 6 x 3	Opt. Bit 3 x 10 x 3
12,7	GT 500 1270 (5526083)	3MT	GT 5003 S (2902039)	GT 5003 (2902030)	GT 500 1270M (5526115)	3MT	GT 50 363 (2902091)	GT 50 3103 (2902117)
15,8	GT 625 1588 (5525886)	3MT	GT 5003 S (2902039)	GT 5003 (2902030)	GT 625 1588M (5526116)	3MT	GT 50 363 (2902091)	GT 50 3103 (2902117)
19,05	GT 750 1905 (5525756)	3MT	GT 7503 S (2901403)	GT 7503 (2900686)	GT 750 1905M (5526117)	3MT	GT 75 363 (2902092)	GT 75 3103 (2902118)
22,2	GT 875 2223 (5525587)	3MT	GT 7503 S (2901403)	GT 7503 (2900686)	GT 875 2223M (5526118)	3MT	GT 75 363 (2902092)	GT 75 3103 (2902118)
25,4	GT 1000 2540 (5525706)	3MT	GT 7503 S (2901403)	GT 7503 (2900686)	GT 1000 2540M (5526119)	3MT	GT 75 363 (2902092)	GT 75 3103 (2902118)
19,05	GT 750 1905 1SP (5526137)	1" Rd	GT 7503 S (2901403)	GT 7503 (2900686)	GT 750 1905M 1SP (5526164)	1" Rd	GT 75 363 (2902092)	GT 75 3103 (2902118)
25,4	GT 1000 2540 1SP (5526138)	1" Rd	GT 7503 S (2901403)	GT 7503 (2900686)	GT 1000 2540M 1SP (5526165)	1" Rd	GT 75 363 (2902092)	GT 75 3103 (2902118)

• Only available on quotation.

Airetool Tube Cutters

Airetool RCM One Revolution tube cutters are suitable for inch and metric tube sizes. For cutting tubes in heat exchangers, condensers and boilers.

Available in standard reaches of 6" (152 mm) and 10" (254 mm), longer reaches are available in 10" (254 mm) steps on request. These tube cutters were developed for manual use in conjunction with a ratchet or a hand wrench. Series RCM tube cutters are also excellent tools for puncturing faulty tubes prior to tube plugging, preventing a pressure build-up in plugged tubes.



Outside Diameter	BWG	Tube Inside Diameter	Tool Number	Bit
1/2"	18 - 19	0,400" - 0,420" 10,2 - 10,7 mm	RCM-105 5522994	RC-500-2 2993368
1/2"	20	0,430" - 0,450" 11,0 - 11,3 mm	RCM-110 5522929	RC-500-2 2993368
5/8"	14	0,450" - 0,470" 11,4 - 11,9 mm	RCM-115 5522995	RC-625-2 2993372
5/8"	15 - 16	0,472" - 0,510" 12,0 - 12,9 mm	RCM-120 5522930	RC-625-2 2993372
5/8"	17 - 18	0,500" - 0,531" 12,7 - 13,5 mm	RCM-130 5522931	RC-625-2 2993372
5/8"	19 - 20	0,531" - 0,560" 13,5 - 14,2 mm	RCM-135 5522932	RC-625-2 2993372
5/8"	22	0,550" - 0,580" 14,0 - 14,7 mm	RCM-140 5522932	RC-625-2 2993372
3/4"	12 - 13	0,530" - 0,560" 13,5 - 14,2 mm	RCM-135-3/4 5523115	RC-750-2A 2995865
3/4"	14 - 15	0,580" - 0,610" 14,7 - 15,5 mm	RCM-150 5522933	RC-750-2 2993374
3/4"	16	0,600" - 0,630" 15,2 - 16,0 mm	RCM-155 5522997	RC-750-2 2993374
3/4"	17 - 18	0,625" - 0,650" 15,9 - 16,5 mm	RCM-160 5522934	RC-750-2 2993374
3/4"	19 - 20	0,660" - 0,690" 16,7 - 17,5 mm	RCM-170 5522934	RC-750-2 2993374
7/8"	14 - 15	0,700" - 0,730" 17,8 - 18,5 mm	RCM-180 5522936	RC-875-2 2993384
7/8"	16 - 17	0,740" - 0,770" 18,8 - 19,5 mm	RCM-190 5522937	RC-875-2 2993384
7/8"	18	0,760" - 0,790" 19,3 - 20,0 mm	RCM-195 5522998	RC-875-2 2993384
7/8"	19 - 20	0,780" - 0,810" 19,8 - 20,6 mm	RCM-200 5522938	RC-875-2 2993384
1"	12	0,760" - 0,790" 19,3 - 20,0 mm	RCM-195 5522998	RC-875-2 2993384
1"	14	0,820" - 0,850" 20,8 - 21,6 mm	RCM-210 5522939	RC-1000-2 2993394
1"	15	0,840" - 0,870" 21,3 - 22,1 mm	RCM-215 5522999	RC-1000-2 2993394
1"	16 - 17	0,860" - 0,890" 21,8 - 22,6 mm	RCM-220 5522940	RC-1000-2 2993394

Outside Diameter	BWG	Tube Inside Diameter	Tool Number	Bit
1"	18 - 19	0,890" - 0,910" 22,6 - 23,1 mm	RCM-230 5522941	RC-1000-2 2993394
1"	22	0,940" - 0,970" 23,9 - 24,6 mm	RCM-240 5522942	RC-1000-2 2993394
1-1/4"	12	1,020" - 1,050" 25,9 - 26,7 mm	RCM-260 5523000	RC-1250-2 2993404
1-1/4"	13 - 14	1,050" - 1,080" 26,7 - 27,4 mm	RCM-270 5523001	RC-1250-2 2993404
1-1/4"	15 - 16	1,100" - 1,130" 27,9 - 28,7 mm	RCM-280 5523002	RC-1250-2 2993404
1-1/4"	17 - 19	1,130" - 1,160" 28,7 - 29,6 mm	RCM-290 5523003	RC-1250-2 2993404
1-3/8"	13 - 14	1,180" - 1,210" 30,0 - 30,7 mm	RCM-300 5523709	RC-1500-2 2993417
1-1/2"	12 - 13	1,280" - 1,310" 32,5 - 33,3 mm	RCM-330 5523004	RC-1500-2 2993417
1-1/2"	14 - 15	1,330" - 1,360" 33,8 - 34,5 mm	RCM-340 5523005	RC-1500-2 2993417
1-1/2"	16 - 17	1,360" - 1,390" 34,5 - 35,3 mm	RCM-350 5523006	RC-1500-2 2993417
1-1/2"	18 - 19	1,390" - 1,420" 35,3 - 36,1 mm	RCM-360 5523007	RC-2000-2 2993427
2"	12 - 13	1,770" - 1,810" 45,0 - 46,0 mm	RC-2012 5521677	RC-2000-2 2993427
2"	14 - 15	1,820" - 1,860" 46,2 - 47,2 mm	RC-2014 5521678	RC-2000-2 2993427
2"	16 - 17	1,860" - 1,900" 46,2 - 48,2 mm	RC-2016 5521679	RC-2000-2 2993427
2"	18 - 19	1,890" - 1,930" 48,0 - 49,0 mm	RC-2018 5521680	RC-2000-2 2993427
2-1/2"	12 - 13	2,270" - 2,310" 57,6 - 58,6 mm	RC-2512 5521680	RC-2000-2 2993427
2-1/2"	14 - 15	2,320" - 2,360" 58,9 - 60,0 mm	RC-2514 5521682	RC-2000-2 2993427
2-1/2"	16 - 17	2,360" - 2,400" 60,0 - 61,0 mm	RC-2516 5521683	RC-2000-2 2993427
2-1/2"	18 - 19	2,390" - 2,430" 60,7 - 61,7 mm	RC-2518 5521684	RC-2000-2 2993427



The **Manual Tube Puller** offers an economical method for tube replacement.

- Easy to use – to insert the spear into the tube and remove you only need a hand wrench.
- No power supply required – the manual operation makes compressed air and electrical power unnecessary; for this reason the tube puller is ideal for applications in the field.
- Durable – key components have been manufactured using the highest quality steel and heat treated for an extra long service life.
- Easy to use in tight spaces – hex on the end of the spear permits attachment to the tube without dismantling the thrust mechanism.
- Clearly marked sizes, mandrel and thrust assembly are marked with tube sizes so that the tool can be quickly matched to the task.
- Large selection of sizes – specific pullers are made for tube outside diameter of 1/4", 3/8", 1/2", 5/8", 3/4", 7/8" and 1" and in this way cover the majority of common applications.

Tube Size				Tube Puller Complete		Spare Mandrel	
Outside Diameter	Gauge	Wall Thickness	Inside Diameter	Part Number	Stock Number	Part Number	Stock Number
mm		mm	mm				
6,35	18	1,24	3,86	JSP-250-18	5520136	JSP-1/4-18	2989364
9,52	16	1,65	6,22	JSP-375-16	5520914	JSP-3/8-16	2991563
9,52	18	1,24	7,04	JSP-375-18	5520030	JSP-3/8-18	2989016
9,52	20	0,88	7,75	JSP-375-20	5519932	JSP-3/8-20	2988750
12,7	14	2,11	8,48	JSP-500-14	5519689	JSP-1/2-14	2987297
12,7	16	1,65	9,40	JSP-500-16	5519690	JSP-1/2-16	2986892
12,7	18	1,24	10,21	JSP-500-18	5519070	JSP-1/2-18	2986893
12,7	20	0,88	10,92	JSP-500-20	5519691	JSP-1/2-20	2987298
15,88	14	2,10	11,66	JSP-625-14	5519692	JSP-5/8-14	2986894
15,88	16	1,65	12,57	JSP-625-16	5519693	JSP-5/8-16	2986895
15,88	18	1,24	13,39	JSP-625-18	5518868	JSP-5/8-18	2986771
15,88	20	0,88	14,10	JSP-625-20	5519694	JSP-5/8-20	2987182
19,05	14	2,10	14,86	JSP-750-14	5519695	JSP-3/4-14	2986896
19,05	16	1,65	15,75	JSP-750-16	5519696	JSP-3/4-16	2986897
19,05	18	1,24	16,56	JSP-750-18	5518804	JSP-3/4-18	2986364
19,05	20	0,88	17,27	JSP-750-20	5519697	JSP-3/4-20	2986769
22,22	14	2,10	18,01	JSP-875-14	5519698	JSP-7/8-14	2986898
22,22	16	1,65	18,92	JSP-875-16	5519699	JSP-7/8-16	2986899
22,22	18	1,24	19,74	JSP-875-18	5519071	JSP-7/8-18	2986900
22,22	20	0,88	20,45	JSP-875-20	5518700	JSP-7/8-20	2987534
25,4	14	2,10	21,18	JSP-1000-14	5519701	JSP-1-14	2986901
25,4	16	1,65	22,10	JSP-1000-16	5519702	JSP-1-16	2986902
25,4	18	1,24	22,91	JSP-1000-18	5519072	JSP-1-18	2986903
25,4	20	0,88	23,62	JSP-1000-20	5519703	JSP-1-20	2987209

Some parts are only available on quotation.

Other sizes are available. Contact your distributor for further details.

Quality Fastening Tools

For more than half a century Apex has had a leading position among the suppliers of industrial fastening tools. A large number of sockets, socket combinations and other attachments developed by Apex are now industry standards. Quality, service and the selection from Apex offer you unmatched benefits.

More Quality for Your Money

Apex quality starts with the selection of the raw materials. Only carefully selected high grade tool steel is used for Apex fastening tools. Each part is manufactured from bar material to the most demanding accuracy standards. You always have play-free, secure seating – seating that is not possible with pressed parts. Finally, each Apex fastening tool is hardened using our exclusive heat treatment process. During this step the level of hardness is selected to suit the application.

Quick Delivery

As stock items, all standard parts in the Apex catalogue are available for immediate delivery. If you should need assistance with your order, your Apex distributor will be pleased to answer all your questions.

Special Orders

Apex offers the largest available selection of fastening tools, from bits through sockets and universal joints to extensions, adapters and screwdrivers. Should you have a special application, please contact your Apex distributor. Maybe we have what you need in stock. Or we will develop and produce your special fastening tools for almost every application.

Ordering Information

Apex products are marketed worldwide. For a catalogue of our range of Apex quality fastening tools or the address of your nearest Apex distributor, please visit our website

www.apexpowertools.eu



Registered trademarks: HI-TORQUE, Voi-Shan; TORX, Camcar Division of Textron; ACR, POZIDRIV, TORQ-SET and TRI-WING, Phillips International Co.; SUPADRIV, EIS (Fasteners) LTD.; SEL-O-FIT, FLIP-TIP, and Apex, Apex Tool Group, LLC.

Bits for all Screw Types



For all these fastening types:

- Phillips®
- Slotted
- Torx®
- Torx Plus®
- Torx® Tamper Resistant
- Torx Plus® Tamper Resistant
- Pozidriv®
- Sel-o-fit®
- Quadrex®
- Frearson
- B.N.A.E.
- Socket head
- Square recess
- Torq-Set®
- MorTorq®
- Tri-Wing®
- Hi-Torque®
- Triple square

Insert Bits (1/4" Hex) - metric

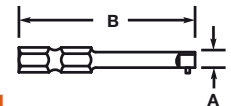
For internal hexagon and adjusting screws



Part Number	Size mm	Overall Length
		mm
185-1,5mm	1,5 mm	25
185-2mm	2 mm	25
185-2,5mm	2,5 mm	25
185-3mm	3 mm	25
185-4mm	4 mm	33
185-5mm	5 mm	33
185-6mm	6 mm	33
185-7mm	7 mm	32
185-8mm	8 mm	32
185-9mm	9 mm	32
185-10mm	10 mm	32

Square Drive Adapter (1/4" hex)

For use with quick-change chuck and guide sleeve models, as far as not otherwise stated.



Model Number	„A“ Sq. Dr.	„B“	Sleeve Number
		mm	
EX250-2	1/4	50,8	---
EX250-3	1/4	76,2	847295*
EX250-4	1/4	101,6	---
EX250-6	1/4	152,4	---
EX370	3/8	41,3	---
EX370-3	3/8	76,2	847295*
EX500-2	1/2	50,8	---
EX500-3	1/2	76,2	---

*Necessary for guide sleeve models.

Hex Extensions



Model Number	Hex (in.)	Type of Locking	Overall Length
			mm
Hex drive with 1/2" male square drive			
EX-501-3	7/16	Stift	76
EX-501-4	7/16	Stift	102
EX-501-6	7/16	Stift	152
Hex drive with 3/8" male square drive			
EX-371-3	7/16	Stift	76
EX-371-4	7/16	Stift	102
EX-371-6	7/16	Stift	152

Hex Power Drive



Part Number	Part Number Magnetic	Size	Overall Length	Socket Diameter
		mm		
6N-08-8M-3	M6N-08-8M-3	8	76	12,7
6N-08-8M-4	M6N-08-8M-4*	8	102	12,7
6N-08-8M-6	M6N-08-8M-6	8	152	12,7
6N-08-10M-3*	M6N-08-10M-3*	10	76	14,3
6N-08-10M-4*	M6N-08-10M-4*	10	102	14,3
6N-08-10M-6	M6N-08-10M-6*	10	76	14,3
6N-08-12M-3	M6N-08-12M-3	12	76	19,0
6N-08-12M-4	M6N-08-12M-4	12	102	19,0
6N-08-12M-6	M6N-08-12M-6*	12	152	19,0

*Marks a standard part that is either available in stock or that has a delivery time of approx. 4 - 6 weeks at the most. There is no minimum order quantity for these parts.

Philips Bits



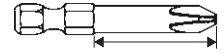
1/4" Hex Insert Bits



Part Number	Size	Overall Length		
		inch	mm	
440-1X	1	1	25	
440-115X	1	1 1/2	38	
440-12X	1	2	51	
440-125X	1	2 1/2	64	
440-13X	1	3	76	
440-2X	2	1	25	
440-2I	2	1	25	
440-215X	2	1 1/2	38	
440-22X	2	2	51	
440-225X	2	2 1/2	64	
440-23X	2	3	76	
440-24X	2	4	101	
440-255X	2	5 1/2	140	
440-26X	2	6	152	
440-27X*	2	1	25	For screws not recessed enough
440-3X	3	1	25	
440-3I	3	1	25	
440-3125X	3	1 1/4	32	
440-3BNX	3	1 1/4	32	Reinforced version
440-32X	3	2	51	
440-325X	3	2 1/2	64	
440-33X	3	3	76	
440-34X	3	4	101	
440-4X	4	1 5/16	33	



1/4" Hex Power Drive



Part Number	Size	Overall Length		Shank Diameter		Turned Length	
		inch	mm	inch	mm	inch	mm
4910X	0	1 15/16	49	1/8	3,2	1 1/4	32
4910-AX	0	2 3/4	70	1/8	3,2	2	51
4910-BX	0	3 1/2	89	1/8	3,2	2 3/4	70
4910-CX	0	6	152	1/8	3,2	2	51
491X	1	1 15/16	49	3/16	4,8	1 1/4	32
491-AX	1	2 3/4	70	3/16	4,8	2	51
491-BX	1	3 1/2	89	3/16	4,8	2 3/4	70
491-CX	1	6	152	3/16	4,8	2	51
491-CCX	1	6	152	3/16	4,8	5 1/4	133
492X	2	1 15/16	49	1/4	6,4	1 1/4	32
492I	2	1 15/16	49	1/4	6,4	1 1/4	32
492-AX	2	2 3/4	70	1/4	6,4	2	51
492-AI	2	2 3/4	70	1/4	6,4	2	51
492-BX	2	3 1/2	89	1/4	6,4	2 3/4	70
492-BI	2	3 1/2	89	1/4	6,4	2 3/4	70
492-CX	2	6	152	1/4	6,4	2	51
492-CI	2	6	152	1/4	6,4	2	51
492-200MM	2	7 13/16	200	1/4	6,4	7	178
SD-2052-8	2	8	203	9/32	7,1	7	178
SD-2052-10	2	10	254	9/32	7,1	9	229
492-CCX	2	6	152	1/4	6,4	5 1/4	133
492-27X*	2	1 15/16	49	1/4	6,4	1 1/4	32
492-A-27X*	2	2 3/4	70	1/4	6,4	2	51
492-B-27X*	2	3 1/2	89	1/4	6,4	2 3/4	70
492-C-27X*	2	6	152	1/4	6,4	2	51
492-CC-27X*	2	6	152	1/4	6,4	5 1/4	133
493X	3	1 15/16	49	5/16	7,9	1	25
493-AX	3	2 3/4	70	5/16	7,9	1 3/4	44
493-BX	3	3 1/2	89	5/16	7,9	2 1/2	64
493-CX	3	6	152	5/16	7,9	5	127
4930X	3	1 15/16	49	1/4	6,4	1 1/4	32
4930-AX	3	2 3/4	70	1/4	6,4	2	51
4930-BX	3	3 1/2	89	1/4	6,4	2 3/4	70
4930-CX	3	6	152	1/4	6,4	2	51
4930-CCX	3	6	152	1/4	6,4	5 1/4	133
494X	4	1 15/16	49	3/8	9,5	1	25

Slotted Bits



1/4" Hex Insert Bits



Part Number	Screw size	Total Length		Blade Thickness		Blade Width	
		inch	mm	inch	mm	inch	mm
445-1X	4F-5R	1	25	,034	,86	3/16	4,8
445-2X	6F-8R	1	25	,040	1,02	7/32	5,6
445-3X	8F-10R	1	25	,042	1,07	1/4	6,4
445-4X	10F-12R	1	25	,046	1,17	9/32	7,1
445-1-15X	4F-5R	1 1/2	38	,034	,86	3/16	4,8
445-2-15X	6F-8R	1 1/2	38	,040	1,02	7/32	5,6
445-3-15X	8F-10R	1 1/2	38	,042	1,07	1/4	6,4
445-4-15X	10F-12R	1 1/2	38	,046	1,17	9/32	7,1
445-5X	12F-14R	1 1/2	38	,050	1,27	5/16	7,9
445-6X	14F-16R	1 1/2	38	,055	1,40	23/64	9,1

Slotted Power Bits with Guide Sleeves



1/4" Hex Power Drive



Part No. Complete	Part Number	Screw size	Length		Blade Thickness		Blade Width/ Shank Dia.	
			inch	mm	inch	mm	inch	mm
L-320X	320-LX	5F-6R	3 3/4	95	,036	,91	,193	4,90
M-320X	320-MX	6F-8R	3 3/4	95	,038	,97	,241	6,12
P-320X	320-PX	8F-10R	3 3/4	95	,042	1,07	,290	7,37
R-320X	320-RX	10F-12R	3 3/4	95	,046	1,17	,350	8,89
S-320X	320-SX	12F-14R	3 7/8	98	,050	1,27	,395	10,03
T-320X	320-TX	14F-16R	4 1/8	105	,055	1,40	,457	11,61

Triple Square Bits

1/4" Hex Power Drive



Part Number	Size	Overall Length	
		inch	mm
49-TSQ-4M	4mm	2	50
49-TSQ-5M	5mm	2	50
49-TSQ-6M	6mm	2	50
49-TSQ-8M	8mm	2	50
49-TSQ-10M	10mm	2	50
49-TSQ-12M	12mm	2	50

Tri-Wing®

1/4" Hex Insert Bits



Part Number	Size	Size Tension Head	Size Shear Head	Overall Length	
				inch	mm
TWD-0	0	0-80	-	1	25
TWD-1	1	2-56	4-40	1	25
TWD-2	2	4-40	6-32	1	25
TWD-3	3	6-32	8-32	1	25
TWD-4	4	8-32	10-32	1	25
TWD-5	5	10-32	1/4-28	1	25
TWD-6	6	1/4	5/16	1	25
TWD-7	7	5/16	3/8	1	25

Torx® Bits



1/4" Hex Power Drive

Part Number	Screwdriver Size	A	Shank Diameter		Overall Length	
			inch	mm	inch	mm
49-TX-05	T-5	,055	,119	3,0	1 15/16	49
49-A-TX-05	T-5	,055	,119	3,0	2 3/4	70
49-B-TX-05	T-5	,055	,119	3,0	3 1/2	89
49-TX-06	T-6	,065	,119	3,0	1 15/16	49
49-A-TX-06	T-6	,065	,119	3,0	2 3/4	70
49-TX-07	T-7	,077	,119	3,0	1 15/16	49
49-A-TX-07	T-7	,077	,119	3,0	2 3/4	70
49-B-TX-07	T-7	,077	,119	3,0	3 1/2	89
49-C-TX-07	T-7	,077	,119	3,0	6	152
49-TX-08	T-8	,090	,119	3,0	1 15/16	49
49-A-TX-08	T-8	,090	,119	3,0	2 3/4	70
49-B-TX-08	T-8	,090	,119	3,0	3 1/2	89
49-C-TX-08	T-8	,090	,119	3,0	6	152
49-TX-09	T-9	,097	,119	3,0	1 15/16	49
49-A-TX-09	T-9	,097	,119	3,0	2 3/4	70
49-B-TX-09	T-9	,097	,119	3,0	3 1/2	89
49-C-TX-09	T-9	,097	,119	3,0	6	152
49-TX-10	T-10	,107	,150	3,8	1 15/16	49
49-A-TX-10	T-10	,107	,150	3,8	2 3/4	70
SD-4693	T-10	,107	,150	3,8	3	75
49-B-TX-10	T-10	,107	,150	3,8	3 1/2	89
49-C-TX-10	T-10	,107	,150	3,8	6	152
49-TX-15	T-15	,128	,150	3,8	1 15/16	49
49-A-TX-15	T-15	,128	,150	3,8	2 3/4	70
49-B-TX-15	T-15	,128	,150	3,8	3 1/2	89
49-C-TX-15	T-15	,128	,150	3,8	6	152
49-TX-20	T-20	,151	,171	4,3	1 15/16	49
49-A-TX-20	T-20	,151	,171	4,3	2 3/4	70
49-B-TX-20	T-20	,151	,171	4,3	3 1/2	89
49-TX-20-5	T-20	,151	,171	4,3	5	127
49-C-TX-20	T-20	,151	,171	4,3	6	152
49-TX-25	T-25	,173	,193	4,9	1 15/16	49
49-A-TX-25	T-25	,173	,193	4,9	2 3/4	70
49-B-TX-25	T-25	,173	,193	4,9	3 1/2	89
49-C-TX-25	T-25	,173	,193	4,9	6	152
49-TX-27	T-27	,195	,215	5,5	1 15/16	49
49-A-TX-27	T-27	,195	,215	5,5	2 3/4	70
49-B-TX-27	T-27	,195	,215	5,5	3 1/2	89
49-C-TX-27	T-27	,195	,215	5,5	6	152
49-TX-30	T-30	,216	,236	6,0	1 15/16	49
49-A-TX-30	T-30	,216	,236	6,0	2 3/4	70
49-B-TX-30	T-30	,216	,236	6,0	3 1/2	89
49-C-TX-30	T-30	,216	,236	6,0	6	152
49-TX-40	T-40	,260	,309	7,8	1 15/16	49
49-A-TX-40	T-40	,260	,309	7,8	2 3/4	70
49-B-TX-40	T-40	,260	,309	7,8	3 1/2	89
49-C-TX-40	T-40	,260	,309	7,8	6	152

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APEX® μ -Guard™

High Quality Product Protecting Fastening Tools are based on First Class Sockets.

Apex μ -Guard™ forms a protective barrier between the genuine Apex fastening tools and the surface of your product. The free-spinning patented sleeve design offers maximum protection for polished and delicate surfaces.

Apex μ -Guard™ comprise thermoplastic urethane (TPU elastomer) that softly captures side impacts and prevents expensive damage. They feature the lowest sustained coefficients of friction and maximum tool efficiency. The sleeve is not removable and prevents unauthorised removal.

With the Apex μ -Guard™ system you receive the proven accuracy of fit and performance of Apex tools and, in addition, the best protection for your product against manufacturing related damage available on the market. Apex μ -Guard™ is your protection against damage due to friction caused by rotation.



Apex μ -Guard™ – product protection.

Prevents Damage due to Side Impacts



Free Spinning Design



Practically Damage-Free



μ -Guard Sockets

(includes socket and sleeve)



Model number	Socket	Drive End			Socket Length	Fastener End			Assembly Features*
		Size	Type	Sex		Size	Type	Sex	
UG-10MM21	10MM21	1/4	Square	F	Standard	10 mm	Hex	F	FS
UG-M-10MM21	M-10MM21	1/4	Square	F	Standard	10 mm	Hex	F	FS, M
UG-MB-10MM21	MB-10MM21	1/4	Square	F	Standard	10 mm	Hex	F	FS, M, B
UG-10MM13	10MM13	3/8	Square	F	Standard	10 mm	Hex	F	FS
UG-M-10MM13	M-10MM13	3/8	Square	F	Standard	10 mm	Hex	F	FS, M
UG-10MM23	10MM23	3/8	Square	F	Long	10 mm	Hex	F	FS
UG-M-10MM23	M-10MM23	3/8	Square	F	Long	10 mm	Hex	F	FS, M
UG-MB-10MM23	MB-10MM23	3/8	Square	F	Long	10 mm	Hex	F	FS, M, B
UG-13MM23	13MM23	3/8	Square	F	Long	13 mm	Hex	F	FS
UG-M-13MM23	M-13MM23	3/8	Square	F	Long	13 mm	Hex	F	FS, M
UG-MB-13MM23	MB-13MM23	3/8	Square	F	Long	13 mm	Hex	F	FS, M, B
UG-13MM25	13MM25	1/2	Square	F	Long	13 mm	Hex	F	FS
UG-SF-13MM25	SF-13MM25	1/2	Square	F	Long	13 mm	Hex	F	FS, SF
UG-15MM25	15MM25	1/2	Square	F	Long	15 mm	Hex	F	FS
UG-SF-15MM25	SF-15MM25	1/2	Square	F	Long	15 mm	Hex	F	FS, SF
UG-18MM25	18MM25	1/2	Square	F	Long	18 mm	Hex	F	FS
UG-SF-18MM25	SF-18MM25	1/2	Square	F	Long	18 mm	Hex	F	FS, SF



μ -Guard Extensions

(includes extension and sleeve)



Model Number	Extension	Drive End			Extension Length	Fastening End			Features*
		Size	Type	Sex		Size	Type	Sex	
UG-EX-250-2	EX-250-2	1/4	Hex	M	2	1/4	Square	M	FS
UG-EX-250-4	EX-250-4	1/4	Hex	M	4	1/4	Square	M	FS
UG-EX-250-6	EX-250-6	1/4	Hex	M	6	1/4	Square	M	FS
UG-EX-370-2	EX-370-2	1/4	Hex	M	2	3/8	Square	M	FS
UG-EX-370-4	EX-370-4	1/4	Hex	M	4	3/8	Square	M	FS
UG-EX-370-6	EX-370-6	1/4	Hex	M	6	3/8	Square	M	FS
UG-EX-376-3	EX-376-3	3/8	Square	F	3	3/8	Square	M	FS
UG-EX-376-6	EX-376-6	3/8	Square	F	6	3/8	Square	M	FS
UG-EX-376-12	EX-376-12	3/8	Square	F	12	3/8	Square	M	FS
UG-EX-508-4	EX-508-4	1/2	Square	F	4	1/2	Square	M	FS
UG-EX-508-8	EX-508-8	1/2	Square	F	8	1/2	Square	M	FS
UG-EX-508-12	EX-508-12	1/2	Square	F	12	1/2	Square	M	FS



μ -Guard Bit Holders

(includes bit holder and sleeve)



Model Number	Bit Holder	Drive End			Bit Holder Length	Fastening End			Features*
		Size	Type	Sex		Size	Type	Sex	
UG-M-490	M-490	1/4	Hex	M	2 31/32	1/4	Hex	F	FS, M, ET
UG-M-490-2	M-490-2	1/4	Hex	M	2	1/4	Hex	F	FS, M, ET
UG-838	838	3/8	Square	F	1 1/2	1/4	Hex	F	FS, ET
UG-M-838	M-838	3/8	Square	F	2 5/8	1/4	Hex	F	FS, M, ET
UG-835	835	3/8	Square	F	1 1/2	5/16	Hex	F	FS, ET
UG-M-835	M-835	3/8	Square	F	2 3/4	5/16	Hex	F	FS, M, ET
UG-855	855	1/2	Square	F	1 1/2	5/16	Hex	F	FS, ET
UG-M-855	M-855	1/2	Square	F	2 3/4	5/16	Hex	F	FS, M, ET
UG-QR-308	QR-308	3/8	Square	F	1 3/4	1/4	Hex	F	FS, QR
UG-QR-508	QR-508	1/2	Square	F	2 1/8	1/4	Hex	F	FS, QR
UG-QR-314	QR-314	3/8	Square	F	2	7/16	Hex	F	FS, QR
UG-QR-514	QR-514	1/2	Square	F	2 1/8	7/16	Hex	F	FS, QR



*Features

- FS** Free Spinning Tool rotates independent of sleeve.
- M** Magnetic Tool is equipped with magnet that keeps the fastener in position during tightening.
- B** Bolt Clearance Tool is sprung so that bolts or nuts can withdraw into the socket.
- SF** Surface Drive Tool has special hex shape so that bolts and nuts are easier to insert.
- ET** Extended Tip Sleeve protrudes beyond the end of the bit holder and protects most of the standard insert.** The tip of the insert bit is free and in this way guarantees a better connection.

- QR** Quick Release Tool has a clamping device so that bits can be changed quickly and easily. The sleeve does not protrude beyond the end of the bit holder.

**Bit holder sleeves can be used with 1 inch/25 mm or 1 1/4 inch/32 mm long inserts. Tips of the sleeve can be changed to suit the requirements or as required. Sleeves can be cut to the required length or heated and adapted to the shape of the bolt head.

NOTES: Lengths stated apply for core length without sleeves. If not otherwise stated, the sleeve can protrude up to 2 mm beyond the end of the tool.

You cannot find the tool you need? Contact your Apex distributor, our customer service or refer to our web site www.apexpowertools.eu. In the majority of cases we can supply the item required as a special item. If necessary our team of experts will develop and produce specials to suit your requirements.

Apex Sockets & Universal Joints



■ Sockets

Apex sockets are the industry standard (black version). Available as standard, long, extra long, thin wall in the versions hex, double hex, square, double square, surface drive, fast lead, with fixed or spring-mounted magnet, Torx and various special versions.



■ Magnetic Sockets



On tightening conventional or hardened bolts, magnetic sockets ease the access to inaccessible areas. They are often also used in automation. Magnetic sockets start with "M" before the item number.



■ Sockets with Spring-Mounted Magnet



"MB" (Magnetic Bolt) sockets for tightening nuts on threaded studs. On tightening the spring-mounted magnet is compressed by the threaded stud and permits entry into the socket. These tools are also available in the "SM" (Magnetic Sleeve) version. The advantage of these tools is that the spring-mounted magnet is replaced by a magnetic sleeve and the threaded stud can enter all the way to the square drive. Magnetic bolt and sleeve magnet sockets start with "MB" or "SM" respectively before the item number. Also available as surface drive on request.



■ Surface Drive Sockets



This profile was developed for usage on spindle-operated machines. The large intermediate spaces permit flowing, fast fitting to nuts and screws; during this process the flats on the nut / screw come into contact with the surfaces of the round profiles. In this way the corners of the nuts / screws move freely in the spaces between the round profiles. These tools are only of limited use for impact tools. Surface drive sockets start with "SF" before the item number. Magnetic version on request.



■ Fast Lead Sockets



The chamfered edges on this socket permit quick fitting; unlike SF sockets in this case a fixed connection is made already on fitting. This special feature permits quick insertion of a hex. Fitting is therefore possible without shutting down the source of power. Fast lead sockets start with "FL" before the item number. Magnetic version on request.



■ Special Sockets

We supply spline, thread cutter holder and other sockets for your special application on request.



■ Extensions, Adapters and Joints

Apex supplies the necessary accessories to adapt sockets to just about every tool and every application.

Universal Joint Adapters,

with 3/8" square drive, extension, male square to female square



Standard version shown

Part Number Standard	Part Number Tension Type	Male Square	Female Square	Type of Locking	Largest Diameter
		in.	in.		mm
KAM-37-3*	KDM-37-3*	3/8	3/8	Pin	19
---	KDM-37-6*	3/8	3/8	Pin	19
---	KDM-37-B-3	3/8	3/8	Ball	19
KAM-38-6*	KDM-38-6*	3/8	3/8	Pin	22

Standard lengths are 3", 6", 9" and 12" (76, 152, 229 and 305 mm)

*Marks a standard part that is either available in stock or that has a delivery time of approx. 4 - 6 weeks at the most. There is no minimum order quantity for these parts.

Universal Joints**, Metric

with 3/8" drive, extension, hex, standard and with tension type



Tension type

Standard

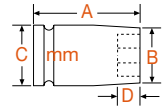
Part Number Standard	Part Number Tension Type	Across Flats Width	Shank Length	Socket Length	Diam. Socket	Diam. Socket End	Across Flats Depth
		mm	A	B	C	D	E
KA-6-10m-4*	---	10	102	20.6	19.1	15.1	9.5
KA-6-10m-6*	KD-6-10m-6*	10	152	20.6	19.1	15.1	9.5
KA-6-10m-9*	KD-6-10m-9*	10	229	20.6	19.1	15.1	9.5
---	KD-6-10m-12*	10	305	20.6	19.1	15.1	9.5
---	KD-7-11m-6	11	152	23.8	22.2	15.9	10.3
KA-7-11m-12	KD-7-11m-12	11	305	23.8	22.2	15.9	10.3
KA-7-12m-4*	---	12	102	23.8	22.2	17.5	10.3
KA-7-12m-6*	KD-7-12m-6*	12	152	23.8	22.2	17.5	10.3
KA-7-12m-9*	KD-7-12m-9*	12	229	23.8	22.2	17.5	10.3
KA-7-12m-12	KD-7-12m-12*	12	305	23.8	22.2	17.5	10.3
KA-7-13m-3*	---	13	76	25.4	22.2	17.5	11.9
KA-7-13m-4*	---	13	102	25.4	22.2	17.5	11.9
KA-7-13m-6*	KD-7-13m-6*	13	152	25.4	22.2	17.5	11.9
KA-7-13m-9*	KD-7-13m-9*	13	229	25.4	22.2	17.5	11.9
KA-7-13m-12*	KD-7-13m-12*	13	305	25.4	22.2	17.5	11.9
KA-7-14m-6*	KD-7-14m-6*	14	152	27.0	22.2	19.1	13.5
---	KD-7-14m-9*	14	229	27.0	22.2	19.1	13.5
KA-8-15m-3*	---	15	76	28.6	25.4	19.8	14.3
---	KD-8-15m-6*	15	152	28.6	25.4	19.8	14.3
KA-8-15m-9*	KD-8-15m-9*	15	229	28.6	25.4	19.8	14.3
KA-8-15m-12*	KD-8-15m-12*	15	305	28.6	25.4	19.8	14.3

**Universal joints are not allowed to be used with impact or pulsing tools. The maximum operating angle is 30°.

+ Thin wall.

Sockets, Metric

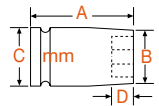
with 3/8" square drive, magnetic, thin wall, standard length



Part Number Fixed Magnet	Across Flats Width	Overall Length	Diameter Socket End	Diameter Drive End	Across Flats Depth
	mm		A	B	C
M-8mm43*	8	31.7	12.7	19.1	4.8
M-10mm43*	10	31.7	15.1	19.1	6.4
M-11mm43	11	38.1	15.9	19.1	7.2
M-12mm43*	12	38.1	17.5	19.1	7.2
M-13mm43*	13	38.1	19.1	19.1	8.7
M-14mm43	14	38.1	19.8	20.6	11.1
M-15mm43*	15	38.1	20.5	20.6	11.1

Sockets, Metric

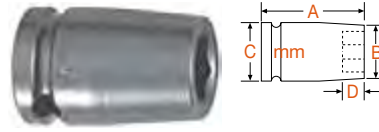
with 3/4" square drive, hex, standard length



Part Number Hex	Across Flats Width	Overall Length	Diameter Socket End	Diameter Drive End	Across Flats Depth
	mm		A	B	C
17mm17*	17	51	31.8	38.1	11.2
18mm17*	18	51	31.8	38.1	11.2
19mm17*	19	51	31.8	38.1	11.9
20mm17*	20	51	33.3	38.1	11.9
21mm17*	21	51	34.9	38.1	13.5
22mm17	22	51	38.1	38.1	14.3
22mm47*+	22	51	33.3	34.9	14.3
24mm17*	24	51	38.1	38.1	15.9
24mm47*+	24	51	34.9	34.9	15.9
26mm17*	26	51	41.3	41.3	15.9
27mm17	27	51	44.4	44.4	17.5
27mm47+	27	51	38.1	38.1	17.5
29mm17*	29	54	47.6	44.4	19.1
30mm17*	30	54	47.6	44.4	19.1
30mm47+	30	54	41.3	41.3	19.1
32mm17	32	54	50.8	44.4	20.6
32mm47+	32	54	44.4	44.4	20.6
33mm17*	33	54	50.8	44.4	20.6
36mm17	36	57	57.1	54.0	23.8
37mm17	37	57	57.1	54.0	23.8
41mm17	41	57	63.5	54.0	31.8
46mm17*	46	57	69.9	54.0	31.8

Apex Sockets

Sockets, Metric, with 1/2" square drive, hex and double hex, standard length



Part Number Hex	Part No. Double Square	Across Flats Width	Overall Length	Diameter Socket End	Diameter Drive End	Across Flats Depth
		mm	A	B	C	D
10mm15*	10mm15-D*	10	38.1	16.7	23.8	6.4
11mm15*	11mm15-D	11	38.1	17.5	23.8	7.2
12mm15*	12mm15-D*	12	38.1	19.1	23.8	7.2
13mm15*	13mm15-D*	13	38.1	22.2	23.8	8.7
14mm15*	14mm15-D*	14	38.1	22.2	23.8	11.1
15mm15*	15mm15-D*	15	38.1	23.8	23.8	11.1
16mm15*	16mm15-D*	16	38.1	25.4	25.4	11.1
17mm15*	17mm15-D*	17	38.1	28.6	28.6	11.1
18mm15*	18mm15-D*	18	38.1	28.6	28.6	11.1
19mm15*	19mm15-D*	19	38.1	28.6	28.6	11.9
20mm15*	---	20	38.1	31.7	31.7	11.9
21mm15*	21mm15-D*	21	38.1	31.7	31.7	13.5
22mm15*	22mm15-D	22	38.1	33.3	33.3	14.3
23mm15*	23mm15-D	23	38.1	34.9	34.9	15.9
24mm15*	24mm15-D*	24	38.1	34.9	34.9	15.9
25mm15*	---	25	38.1	38.1	38.1	15.9
26mm15	26mm15-D	26	38.1	38.1	38.1	15.9
27mm15*	27mm15-D	27	41.3	41.3	41.3	17.5
28mm15	---	28	41.3	41.3	41.3	19.1
29mm15	29mm15-D	29	41.3	44.4	44.4	19.1
30mm15	30mm15-D	30	41.3	44.4	44.4	19.1
32mm15	32mm15-D	32	44.4	44.4	44.4	20.6
33mm15	---	33	44.4	47.6	47.6	20.6
34mm15	---	34	47.6	47.5	47.5	20.5
35mm15	---	35	47.6	50.8	50.8	20.6
36mm15	---	36	47.6	50.8	50.8	23.8

Sockets, Metric, with 1/4" square drive, standard length, hex and double hex



Part Number Hex	Part Number Double Hex	Across Flats Width	Overall Length	Diameter Socket End	Diameter Drive End	Across Flats Depth
		in.	A	B	C	D
3.5mm11	---	3.5	22.2	6.4	12.7	2.4
4mm11*	---	4	22.2	6.4	12.7	2.4
4.5mm11	---	4.5	22.2	7.9	12.7	2.4
5mm11*	---	5	22.2	8.7	12.7	3.9
5.5mm11*	---	5.5	22.2	9.5	12.7	3.9
6mm11*	6mm11-D	6	22.2	9.5	12.7	3.9
7mm11*	7mm11-D*	7	22.2	11.1	12.7	4.8
8mm11*	8mm11-D*	8	25.4	12.7	12.7	4.8
9mm11*	9mm11-D	9	25.4	14.3	14.3	4.8
10mm11*	10mm11-D*	10	25.4	15.9	15.9	6.4
OS-10mm11*	---	10	25.4	14.3	14.3	6.4
11mm11*	11mm11-D	11	25.4	15.9	15.9	7.2
12mm11*	12mm11-D	12	25.4	17.5	17.5	7.2
13mm11*	13mm11-D	13	25.4	19.1	19.1	8.7
14mm11*	14mm11-D	14	25.4	20.6	20.6	11.1
15mm11*	---	15	25.4	22.2	22.2	11.1
16mm11*	---	16	25.4	22.2	22.2	11.1

APEX® WSK Series

Wobble Socket Adapter Kit



- ✓ *Improves productivity.*
- ✓ *Solves misalignment issues.*
- ✓ *Takes care of clearance problems.*
- ✓ *Extends tool life.*



The Historical Leader In
Industrial Fastener Tools
Features Another
INNOVATIVE PRODUCT

WSK Wobble Socket

WSK Wobble Socket

The Apex WSK Wobble Socket Adapter Kit can convert any fastener tool with a female square drive (3/8", 1/2", 5/8", 3/4", or 1") and a DIN groove into a Wobble socket. This will enable you to drive fasteners that may have a slight misalignment (up to 10 degrees) between the drive tool axis and the fastener axis. In addition, this will also prove extremely useful in hand-drive operations where clearance may be an issue.

KEY BENEFITS OF APEX WSK:

- Improves productivity by converting any existing socket into wobble immediately
- Can be used with standard sockets or application-specific specials
- Corrects misalignment up to 10 degrees
- Complete torque transfer due to minimal backlash
- Reduces cam-out caused by misalignment
- Improves tool life by engaging fastener correctly
- Easy to assemble



1 Any standard socket with a female square drive and a DIN groove
**Socket not included*

2 Various sized O-rings are available with the kit

3 The WSK Series Kit includes a spring and a pin to lock the wobble adapter to the customer's socket

4 Wobble socket adapter with a male square drive at one end and a female square drive at the other end

The Apex WSK Series Wobble Socket Kit, available in 5 different square drive sizes, consists of:

- Wobble socket adapter with a male wobble square drive at one end and a female square drive at the other
- * 1 or more O-rings of different diameters based on the socket drive diameter
- * 1 or more pins of different lengths based on the socket drive diameter
- * Spring
- Instruction card and a component usage card



Part No.	Wobble Socket Kit	Part No.	Accessories Kit*
WSK-C	3/8" square drive	WSK-C-REPL	Spare Parts Kit for WSK-C
WSK-E	1/2" square drive	WSK-E-REPL	Spare Parts Kit for WSK-E
WSK-F	5/8" square drive	WSK-F-REPL	Spare Parts Kit for WSK-F
WSK-G	3/4" square drive	WSK-G-REPL	Spare Parts Kit for WSK-G
WSK-H	1" square drive	WSK-H-REPL	Spare Parts Kit for WSK-H

*Spare Parts Kit includes O-Rings, Pins, & Spring

APEX®

Performance, Versatility & Quality

If precise finishing work (such as grinding or de-burring) is required, no tool is more suitable than the Dotco® grinder. Dotco's reputation in relation to performance, reliability and versatility is among the best in precision manufacturing. This reputation is the result of years of continuous improvements to the technical design and in production.

Dotco grinders are designed for the user. They are small, light and handy - without the need to compromise on performance. They are also elastomer-coated and comprise perfectly balanced parts so that vibration can be reduced to a minimum. Thanks to the optimal combination of tool characteristics, the user can concentrate on the achieving the best result in the shortest possible time.



Robust Tools for Demanding Jobs

Dotco® grinders meet the demanding requirements in various sectors including shipbuilding, tube manufacture, in the production of transport equipment and in welding applications. As in general a large amount of material is removed in these applications, Dotco grinders have motors with high speeds and powers.

To ensure absolute robustness, only high quality precision components are used for Dotco grinders. The motors are protected by aluminium or steel housings.



DOTCO Precision Grinders



50000 – 100000 rpm

44 Watt – 74 Watt

- Different configurations for all your applications
- Ideal for precision de-burring and metal removal
- Turbines and models with and without speed control available
- 12-03 gearless right angle model for reduced maintenance and downtime

Grinder Kits

220G-600-C2-K includes grinder, hose, collet chuck, chuck wrench, cylindrical plain burr (413680), cylindrical radius end burr (413681), cone and taper burr (413682) as well as tree point burr (413683) and carrying case.

14G-830 includes grinder, hose, collet chuck, chuck wrench, two wrenches – 1006626, three grinding wheels – 1005327, 1005338, 1005344, dressing stone – 1004908, hose assembly – 1021393, carrying case – 1021743, filter-lubricator – 1020888.



14G-830-Kit



15Z-720 Kit



15z-710

Air Marking Pen Series 15Z

- Piston motor with 44 Watt
- Throttle with sliding sleeve
- Stylus with carbide tip
- Excellently suited for marking different materials – from aluminium to titanium.
- Weight 113g

Model Number	Speed	Weight	Length	Diameter
	rpm	kg	mm	mm
15Z-710	20000	0.1	140	15

Air inlet tube: 1/8" NPT – use hoses with 3/16" (4.7 mm) inside diameter.
 Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.
 STANDARD EQUIPMENT: Stylus with carbide tip
 OPTIONAL: Replacement stylus with carbide tip - 1018081
 Air marking pen kit 15Z-720: 15Z-710 air marking pen, 1.5 m long air hose, 3/16" inside diameter with 1/8" NPT fittings, two 1/2" wrenches, carrying case

Model Number			Speed	Abrasive Capacity	Type Housing	Weight	Length	Chuck Size	Air Inlet Tube NPT
With Wheel Guard	Without Wheel Guard	Wrenchless Chuck	rpm			kg	mm		
Series 10-90 - (44 Watt) - front exhaust - turbine***									
	10R9000-03		100000	3/16" carbide bur, 3/16" diamond pin	A	0.2	137	3 mm	1/8"
	10R9000-08		100000	3/16" diamond pin	A	0.2	137	1/8"	1/8"
Series 10-95 - (74 Watt) - front exhaust - turbine***									
	10L9500-36		80000	1/4" carbide bur, 3/16" diamond pin	A	0.9	147	1/8"	1/4"
Series 12R91 without exhaust hose - (74 Watt) - speed control - rear exhaust - turbine***									
	12R9180-03*		65000**	1/8" carbide bur, 1/8" diamond pin	C	0.2	147	3 mm	1/8"
	12R9180-08*		65000**	1/8" carbide bur, 1/8" diamond pin	C	0.2	147	1/8"	1/8"
Series 12R91 with 1.2 m exhaust hose - (74 Watt) - speed control - rear exhaust - turbine***									
	12R9180-43*		65000**	1/8" carbide bur, 1/8" diamond pin	C	0.2	147	3 mm	1/8"
	12R9180-48*		65000**	1/8" carbide bur, 1/8" diamond pin	C	0.2	147	1/8"	1/8"
Series 12-03 - (74 Watt) gearless, right angle - rear exhaust									
	12R0380-13*		80000	1/4" carbide bur, 1/4" diamond pin	C	0.1	140	3 mm	1/8"
	12R0380-18		80000	1/4" carbide bur, 1/4" diamond pin	C	0.1	140	1/8"	1/8"
Series 10-04 - (74 Watt) - rear exhaust									
	10R0401-13*	10R0400-13*	60000	1/4" carbide bur, 1/4" diamond pin	A	0.1	147*	3 mm	1/8"
	10R0401-18*	10R0400-18 10R0412-18	60000	1/4" carbide bur, 1/4" diamond pin	A	0.1	147*	1/8"	1/8"
Series 12-04 - (74 Watt) - rear exhaust									
	12R0410-13*	12R0400-13*	60000	1/4" carbide bur, 1/4" diamond pin	C	0.1	147	3 mm	1/8"
	12R0410-18*	12R0400-18*	60000	1/4" carbide bur, 1/4" diamond pin	C	0.1	147	1/8"	1/8"

Housing identifier: A = Aluminium, C = Composite, S = Steel
 The wrenchless chuck models 10R0412 are 0.4" (10 mm) longer.
 *Additional exhaust hose lengths are available, but not as Rapid Select.
 **With speed control.

ATTENTION:
 Use oil-free, clean, dry air at max. 6.2 bar. Never oil turbine grinders. Failure to observe this point will degrade the service life and the operation of the turbine tools. Do not fasten quick disconnect coupling directly to the tool.

GENERAL:
 Minimum hose size 3/16" (4.8 mm)
 Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

STANDARD EQUIPMENT:
 Series 10-90: Corresponding collet chuck, chuck wrench, 2.1 m long air hose, replaceable cartridge filter in the hose.
 Series 10-95: Corresponding collet chuck, chuck wrench, 2.4 m long air hose, integrated air filter, speed regulator.
 Series 12R91: Corresponding collet chuck, chuck wrench, guard, 1.5 m long air hose.
 Series 12-03, 10-04 & 12-04: Corresponding collet chuck, chuck wrench, guard, 1.5 m long air hose, 0.3 m long outer hose.

OPTIONAL:
 Chucks: See catalogue SP-102
 Guard (series 10-90): See catalogue SP-102
 Cartridge filter in hose: 45-0211
 Exhaust hose: See catalogue SP-102



DOTCO Inline Grinders



12000 – 40000 rpm
150 Watt – 670 Watt

- Housing made of aluminium, composite or robust steel
- Comprehensive range of different speeds
- Models with front, side and rear exhaust available

Model Number			Speed	Abrasive Capacity	Type (Housing)	Weight	Length	Clamping Range mm***	Air Inlet NPT
Front Exhaust	Side Exhaust	Rear Exhaust	rpm			kg	mm		
Series 12-05 - (150 Watt) - with guard									
12R0500-36			40000	1/4" carbide bur	C	0.3	150	5.6 - 6.4	1/8"
Series 12-10 - (220 Watt) - chuck series 300									
12L1001-36		12L1081-36+	34000	1/2" carbide bur, 1" grinding wheel	C	0.4	152	5.6 - 6.4	1/4"
12L1000-36		12L1080-36▲+	30000	1/2" carbide bur, 1" grinding wheel	C	0.4	152	5.6 - 6.4	1/4"
12L1003-36•		12L1082-36•+	25000	1/2" carbide bur, 1" grinding wheel	C	0.4	152	5.6 - 6.4	1/4"
12S1008-36•			20000	1/2" carbide bur, 1" grinding wheel	C	0.4	152	5.6 - 6.4	1/4"
Series 10-10 - (220 Watt) - chuck series 300									
10L1001-36▲		10L1081-36	34000	1/2" carbide bur, 1" grinding wheel	A	0.3	117	5.6 - 6.4	1/4"
10L1000-36▲		10L1080-36▲	30000	1/2" carbide bur, 1" grinding wheel	A	0.3	117	5.6 - 6.4	1/4"
10L1003-36•		10L1082-36▲•	25000	1/2" carbide bur, 1" grinding wheel	A	0.3	117	5.6 - 6.4	1/4"
Series 12-20 - (450 Watt) - chuck series 200									
12L2000-01		12L2080-01▲+	25000	3/4" carbide bur, 1 1/2" grinding wheel	C	0.6	175	5.6 - 6.4	1/4"
12L2001-01•		12L2081-01•	20000	3/4" carbide bur, 1 1/2" grinding wheel	C	0.6	175	5.6 - 6.4	1/4"
12L2002-01•		12L2082-01•	18000	3/4" carbide bur, 1 1/2" grinding wheel	C	0.6	175	5.6 - 6.4	1/4"
Series 10-20 - (450 Watt) - chuck series 200									
10L2000-01 ▲		10L2080-01	25000	3/4" carbide bur, 1 1/2" grinding wheel	A	0.6	147	5.6 - 6.4	1/4"
Series 12-25 - (670 Watt) - chuck series 200									
12L2500-01		12L2580-01+	23000	1" carbide bur, 1 1/2" grinding wheel	C	0.8	185	5.6 - 6.4	1/4"
12L2502-01•		12L2582-01•+	18000	1" carbide bur, 1 1/2" grinding wheel	C	0.8	185	5.6 - 6.4	1/4"
12L2562-01•		12L2542-01•	12000*	1" carbide bur, 1 1/2" grinding wheel	C	0.8	188	5.6 - 6.4	1/4"
Series 10-25 - (670 Watt) - chuck series 200									
10L2500-01		10L2580-01	23000	1" carbide bur, 1 1/2" grinding wheel	A	0.6	159	5.6 - 6.4	1/4"
10B2500-01			23000	1" carbide bur, 1 1/2" grinding wheel	A	0.6	159	5.6 - 6.4	1/4"
10L2502-01•			18000	1" carbide bur, 1 1/2" grinding wheel	A	0.6	159	5.6 - 6.4	1/4"

Housing identifier: A = Aluminium, C = Composite, S = Steel

▲ Trigger start available

• Low oil blades

+ Model with exhaust hose available

*With speed control; with front exhaust 0.7" (18 mm) longer.

**Series 31G models with rear exhaust 0.6" (18 mm) longer.

***Also available in 6 mm.

Mounting capacity for grinding wheels depends on wheel diameter, thickness and overhang. You can obtain speed recommendations from the wheel manufacturer.

GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

Minimum hose inside diameter:

Series 12-05: 3/16" (4.8 mm)

Series 10-10, 12-10, 116: 1/4" (6.4 mm)

Series 10-20, 10-25, 12-20, 12-25, 136, 31G: 5/16" (7.9 mm)

STANDARD EQUIPMENT:

Series 12-05:

Corresponding collet chuck, chuck wrench, guard, 2.1 m long air hose.

Series 12-10, 12-20, 12-25, 10-10, 10-20, 10-25, 116, 136, 31G:

Corresponding collet chuck, chuck wrench

OPTIONAL:

Additional accessories: See catalogue SP-102

Exhaust hose (rear exhaust): See catalogue SP-102



12-05



12-20

DOTCO Inline Extended Grinders



18000 – 28 000 rpm

220 Watt – 670 Watt

- Extended housing
- Housing made of aluminium, composite or robust steel

Model Number			Speed	Abrasive Capacity	Type (Housing)	Weight	Length	Clamping Range mm**	Air Inlet NPT
Front Exhaust	Side Exhaust	Rear Exhaust	rpm			kg	mm		
Series 12-11 - (220 Watt) - 3" (76 mm) extension - chuck series 300									
12L1101-36		12L1181-36	28000	1/2" carbide bur, 1" grinding wheel	C	0.6	277	5.6 - 6.4	1/4"
12L1112-36●			25000	1/2" carbide bur, 1" grinding wheel	C	0.6	277	5.6 - 6.4	1/4"
Series 10-11 - (220 Watt) - 5" (127 mm) extension - chuck series 300									
10L1101-36		10L1181-36	28000	1/2" carbide bur, 1" grinding wheel	A	0.5	248	5.6 - 6.4	1/4"
10L1112-36▲			25000	1/2" carbide bur, 1" grinding wheel	A	0.5	248	5.6 - 6.4	1/4"
Series 12-26 - (670 Watt) - 5" (127 mm) extension - chuck series 200									
12L2600-01			22000	1" carbide bur, 1 1/2" grinding wheel	C	1.3	328	5.6 - 6.4	1/4"
		12L2682-01●	18000	1" carbide bur, 1 1/2" grinding wheel	C	1.3	328	5.6 - 6.4	1/4"
Series 12-26 - (670 Watt) - multiple extensions - chuck series 300									
		12S2674-2A●	18000	3/4" carbide bur, 1 1/2" grinding wheel	C	1.9	597	5.6 - 6.4	1/4"

Housing identifier: A = Aluminium, C = Composite, S = Steel

▲ Trigger start available

*With speed control

**Also available in 6 mm.

● Low oil blades

Mounting capacity for grinding wheels depends on wheel diameter, thickness and overhang. You can obtain speed recommendations from the wheel manufacturer.

GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

Minimum hose inside diameter:

Series 10-11, 12-11: 1/4" (4.8 mm)

Series 12-26, 136: 5/16" (7.9 mm)

Series 15 (speed control): 3/8" (9.5 mm)

STANDARD EQUIPMENT:

Corresponding collet chuck, chuck wrench

OPTIONAL:

Additional accessories: See catalogue SP-102

Exhaust hose (rear exhaust): See catalogue SP-102

MULTIPLE EXTENSIONS FOR SERIES 12-26:

Each extension changes the total length and the weight of the tool as follows:

Series 12-26 = 7.25" (184 mm) and 1.2 lbs. (0.54 kg).

The length and weight information in the table apply for model 2A.

1A = One extension

2A = Two extensions

3A = Three extensions etc.

Extensions are not available for all speeds.



DOTCO Right Angle Grinders

6000 – 30000 rpm
220 Watt – 670 Watt

- Suitable for numerous finishing and deburring tasks
- With and without gear
- Front, side, rear exhaust
- Heavy duty heads available for demanding applications
- Models with extended heads available



12-22
Heavy duty head



12-27
Heavy duty head

Model Number			Speed	Abrasive Capacity	Type (Housing)	Weight	Head Height*	Length	Clamping Range mm**	Air Inlet NPT
Front Exhaust	Side Exhaust	Rear Exhaust	rpm			kg	mm	mm		
Series 12LF - (290 Watt) - chuck series 300										
12LF201-36		12LF281-36	20000	1/2" carbide bur, 1" grinding wheel	C	0.5	69	168	5.6 - 6.4	1/4"
12LF200-36		12LF280-36	12000	1/2" carbide bur, 1" grinding wheel	C	0.5	69	168	5.6 - 6.4	1/4"
Series 10LF - (290 Watt) - chuck series 300										
10LF201-36		10LF281-36	20000	1/2" carbide bur, 1" grinding wheel	A	0.5	69	168	5.6 - 6.4	1/4"
10LF200-36		10LF280-36	12000	1/2" carbide bur, 1" grinding wheel	A	0.5	69	168	5.6 - 6.4	1/4"
Series 12-13 - (220 Watt) - gearless - chuck series 300										
		12L1380-36	30000	1/2" carbide bur, 1" grinding wheel	C	0.5	94	180	5.6 - 6.4	1/4"
		12L1381-36	25000	1/2" carbide bur, 1" grinding wheel	C	0.5	94	180	5.6 - 6.4	1/4"
		12L1382-36•	20000	1/2" carbide bur, 1" grinding wheel	C	0.5	94	180	5.6 - 6.4	1/4"
Series 12-23 - (380 Watt) - gearless - chuck series 200										
12L2384-01			20000	3/4" carbide bur, 1 1/4" grinding wheel	C	0.91	140	190	5.6 - 6.4	1/4"
Series 12-22 - (450 Watt) - chuck series 200 - heavy duty head										
		12L2252-01•	11000	3/4" carbide bur, 2" grinding wheel	C	1.5	99	236	5.6 - 6.4	1/4"
Series 12-22 - (450 Watt) - chuck series 300										
		12L2218-36	18000	1/2" carbide bur, 1" grinding wheel	C	0.8	69	191	5.6 - 6.4	1/4"
Series 12-27 - (670 Watt) - chuck series 200 - heavy duty head										
		12L2752-01	11000	1" carbide bur, 2" grinding wheel	C	1.5	99	249	5.6 - 6.4	1/4"
Series 12-27 - (670 Watt) - chuck series 300										
		12L2718-36	18000	3/4" carbide bur, 1 1/4" grinding wheel	C	0.9	74	203	5.6 - 6.4	1/4"

Housing identifier: A = Aluminium, C = Composite, S = Steel

*Overall height

**Also available in 6 mm.

• Low oil blades

Mounting capacity for grinding wheels depends on wheel diameter, thickness and overhang. You can obtain speed recommendations from the wheel manufacturer.

STANDARD EQUIPMENT:

Corresponding collet chuck, chuck wrench

OPTIONAL:

Additional accessories: See catalogue SP-102

Exhaust hose (rear exhaust): See catalogue SP-102

GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

Minimum hose inside diameter :

Series 12-12, 10-12, 12-13, 12-23, 116: 1/4" (4.8 mm)

Series 12-22, 12-27, 136: 5/16" (7.9 mm)



DOTCO Belt Sanders



12-12

12-13

12000 – 20000 rpm
220 Watt – 380 Watt

- Sanding, deburring, removing paint
- With and without gear
- Ergonomic housing reduces cold air transmission to the operator
- Series 12-23 can be used with interchangeable arms



12-23



Removing paint



Finishing difficult to access areas

Model Number		Speed	Belt Capacity	Type (Housing)	Contact Arm	Weight	Length	Air Inlet NPT
Front Exhaust	Rear Exhaust	rpm						
Series 12-12* - (220 Watt) - sanding belt								
	12L1281-36B2	20000	1/2" wide x 12" long sanding belt	C	Straight	0.6	287	1/4"
	12L1280-36B2	12000	1/2" wide x 12" long sanding belt	C	Straight	0.6	287	1/4"
Series 12-13* - (220 Watt) - gearless - sanding belt								
	12L1382-36B2•	20000	1/2" wide x 12" long sanding belt	C	Straight	0.6	287	1/4"
	12L1382-36B4•	20000	1" wide x 12" long sanding belt	C	Straight	0.8	287	1/4"
Series 12-23 - (380 Watt) - gearless - woven or non-woven belt								
	12L2384-B1	20000	5/8" or 3/4" wide x 18" long belt	C	Straight	1.1	381	1/4"
	12L2384-K1 (Kit)	20000	(For details see below)	C	Straight/offset	1.1	381	1/4"

Housing identifier: A = Aluminium, C = Composite, S = Steel
 • Low oil blades

GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.
 Minimum hose inside diameter 1/4" (6.4 mm)

STANDARD EQUIPMENT:

Series 12-12, 12-13: Sanding belt with 80 grit and 120 grit or a medium grit, non-woven belt, corresponding wrenches, lube gun and gear lubricant
 Series 12-23: Tool and contact arm, adjusting wrench

OPTIONAL:

Replace the "S" in the model number with "L" if you need a safety lever.
 Exhaust hose (rear exhaust): See catalogue SP-102
 Output drives: See catalogue SP-102
 Sanding belts: See catalogue SP-102

*Optional terminations for series 12-12 & 12-13
 (All models may not be available):
 -32 B x 1/4" 28 female thread; -36 B x 1/4" chuck

Dotco Kit 12L2384-K1

On ordering the Dotco kit 12L2384-K1 you will receive the tool and three interchangeable arms, belts and wrenches. With the Dotco kit 12L2384-K1 you are ready for practically any finishing project!

EQUIPMENT:

- 1 x tool with 3/4" wide, straight arm
- 2 x additional arms
 - 1 x 1/2" wide, straight arm
 - 1 x offset arm
- 3 x 1/4" x 18" aluminium oxide belts
 - 1 x 60 grit
 - 1 x 80 grit
 - 1 x 120 grit
- 3 x 1/2" x 18" aluminium oxide belts
 - 1 x 60 grit
 - 1 x 80 grit
 - 1 x 120 grit
- 2 x 3/4" x 18" aluminium oxide belts
 - 1 x 60 grit
 - 1 x 80 grit
- 1 x 3/4" x 18" medium non-woven belt



Wrenches & other parts

- 1 x 3/4" open end wrench (adjustable)
- 1 x 9/16" open end wrench (adjustable)
- 1 x 9/64" hex wrench
- 1 x 3/16" hex wrench
- 1 x 1/4" wrench
- 1 x wrench attachment
- 1 x chuck body
- 1 x carrying case with foam inserts

Grinding Attachments – Overview

Precision Grinders, Carbide Burs and Wheel Grinders

For finishing work during which a high level of robustness is required.



Attachments in Conical and Plug Form

For general grinding work on soft unalloyed steel, stainless steel, metal alloys and cast steel.

Applications include:

- Grinding and smoothing fillets, corners
- Gentle contours/curves
- Beveling edges prior to welding
- General grinding work in confined spaces
- Internal grinding work



Type 1 Wheels

For use with portable tools with horizontal shafts.

Applications include:

- Notch-free grinding
- Cleaning prior to welding
- Smoothing weld seams
- Grinding concrete or masonry products
- Removing seam lines on castings



Type 1 Cut-Off Wheels

Applications include cutting carbon and stainless steel, ferrous metals and cast iron



Type 6 and 11 Cup Grinding Wheels

For use with right angle tools and tools with vertical shafts.

- Type 6 – Cup grinding wheels (straight)
- Type 11 – Cup grinding wheels (conical)



Depressed Centre Grinding Wheels of Type 27/28

- Type 27 wheels are used at an angle between 30° and 45° in relation to the work piece. These wheels are not suitable for flat grinding.
- Type 28 wheels have a shape similar to a saucer and have contours that ensure the correct grinding angle. For this reason type 28 wheels are suitable for flat contact with the work piece.





2200 – 6200 rpm

220 Watt – 1270 Watt

- Numerous tools available to suit your application requirements
- Front, side, rear exhaust

Model Number			Speed rpm	Abrasive Capacity		Type (Housing)	Weight kg	Length mm	Height** mm	Clamping Range mm***	Air Inlet NPT	
Front Exhaust	Side Exhaust	Rear Exhaust		Buffing Brush	Polishing Wheel							
Series 12-10 - (220 Watt) - chuck series 200												
			12L1093-01	5000	3"	3"	C	0.7	183	5.6 - 6.4	1/4"	
			12L1092-01	3200	3"	3"	C	0.7	183	5.6 - 6.4	1/4"	
Series 12-25 - (670 Watt) - chuck series 200												
			12L2594-01	6200	4"	6"	C	0.9	236	5.6 - 6.4	1/4"	
			12L2593-01	4700	4"	6"	C	0.9	236	5.6 - 6.4	1/4"	
			12L2592-01	3200	4"	6"	C	0.9	236	5.6 - 6.4	1/4"	
Series 12-27 & 10-27 - (670 Watt) - 5/8"-11 threaded spindle												
			12L2762-80•	4500*	4"	6"	C	1.5	267	98	5/8" - 11	1/4"
			12L2760-80•	3300*	4"	6"	C	1.5	267	98	5/8" - 11	1/4"
			12L2760-80	3300*	4"	6"	A	1.8	236	98	5/8" - 11	1/4"
Series 12-42 - (1270 Watt) - 5/8"-11 male threaded spindle												
			12L4203-80•	3400	4"	8"	C	2.9	346	98	5/8" - 11	1/2"

Housing identifier: A = Aluminium, C = Composite, S = Steel

*With speed control

**Overall height

***Also available in 6 mm.

• Low oil blades

GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

Minimum hose inside diameter

Series 12-10: 1/4" (6.4 mm)

Series 12-25, 12-27, 10-27: 5/16" (7.9 mm)

Series 12-42: 1/2" (12.7 mm)

STANDARD EQUIPMENT:

Series 12-10, 12-25: Corresponding collet chuck and chuck wrench

Series 10-27, 12-27: Spindle wrench

Series 12-42: Nut, washer, spacer ring and wrench

OPTIONAL:

Chucks: See catalogue SP-102

Exhaust hose (rear exhaust): See catalogue SP-102

Additional grip series 12-10: 6188

Additional grip series 12-25: 8088

DOTCO Buffer/Polisher Accessories

Spiralcool™ Backing Pads

For Dotco sanders with 5/8"-11 threaded spindles. The contour of the backing pad produces an airflow that cools the disc and prevents the excessive accumulation of material.

Flexibility	Part No. – Backing Pad Diameter (Max. Rated Speed)				
	4"	4 1/2"	5"	7"	9"
	12000 rpm	11000 rpm	10000 rpm	7000 rpm	6000 rpm
Flexible	14-2197	14-2255	14-2115	14-2529	14-2202
Medium	14-2198	14-2256	14-2116	14-2200	14-2203
Rigid	14-2199	14-2257	14-2117	14-2201	

Save-A-Disc Pads

For Dotco sanders with 5/8"-11 threaded spindle. Ribs on the backing plate cause a flexing action that throws off accumulated material.



Diameter Inch	Max. rpm	Part No.			
		Assembly	Pad Only	Plate Only	Nut Only
5	7500	14-2515	14-2521	14-2522	14-2525
7	7500	14-2517	14-2521	14-2523	14-2525
9	7500	14-2519	14-2521		14-2525

PSA Disc Holders

Chuck:
Fit PSA disc holder directly in the chuck (1/8" or 1/4").



For Threaded Spindle:
Remove threaded shank from the PSA disc holder. Using the spindle adapter table, select the correct spindle and fit to the holder.

Part No.	PSA Disc Diameter	Shank Diameter	PSA Disc Female Thread
14-1146	1/2"	1/8"	5-40 female
14-1105	1/2"	1/4"	5-40 female
14-1147	3/4"	1/8"	5-40 female
14-1107	3/4"	1/4"	5-40 female
14-1170	1"	1/8"	5-40 female
14-1110	1"	1/4"	5-40 female
14-1111	1-1/2"	1/4"	1/4"-20 female
14-1112	2"	1/4"	1/4"-20 female
14-1113	3"	1/4"	1/4"-20 female
14-1114	4"	1/4"	1/4"-20 female

Spindle Adapters

For use with PSA disc holders.



Part No.	Adapter Description		
	Thread (for Tool Spindle)	Thread (for PSA Disc Holder)	Max. Disc Diameter
14-1142	1/4"-28 Male	5-40 Male	1"
14-1144	1/4"-28 Male	1/4"-20 Male	4"
14-2903	5/8"-11 Male	5/16"-24 Male	4"
14-1212	5/8"-11 Male	1/4"-20 Male	4"
14-1211	5/8"-11 Female	3/8"-24 Male	4"

Nut

For use with Dotco sanders with 5/8"-11 threaded spindle.



Part No.	Tool Series
14-2118	5/8"-11 threaded spindle

Wrench

For use with backing pad nut 14-2118.



Part No.	Tool Series
14-2319	5/8"-11 threaded spindle

Sanding Disc Cutter

With the aid of a scale, discs with a diameter of max. 9" can be cut to a diameter of 3" or 4". The double bevel cutting device leaves round cut edges that do not fray or crumble.



Part No.	Description
14-2535	Sanding disc cutter
Replacement Blades	
14-2590	Upper blade
14-2591	Lower blade

Miniature Drill Chucks

For use with Dotco series 12-12.
For adapting right angle grinders with threaded spindle to drilling and disc sanding application (with PSA disc holders) and light grinding tasks.



Shaft Diameter	Part No.	
	Assembly	Chuck
1/8"	14-1102*	14-0158**
1/4"	14-1104*	14-0168***
6 mm	14-1094	14-0170***

* NOTE: For 1/4"-28 female thread**
** NOTE: For 5/16"-24 female thread - 1/8" chuck***
*** NOTE: For 3/8"-24 female thread - 1/4" chuck

NEW
Cleco®
Heritage Series

Durable.
Powerful.
Lightweight.

Cleco® industrial grinders have been trusted in the industry for decades.

The design has been imitated by numerous competitors but its ruggedness and durability have never been duplicated.

Introducing the new Cleco® Heritage 216, 236, and 25 Series, with the latest in advanced material and motor technology.

These tools deliver durability, power, yet are lighter and more capable than before.



Industrial Grinders – Heritage Series

Heritage 216 Series



This compact and powerful grinder family has been copied by many competitors since its debut 30 years ago. Today, Cleco® brings you a grinder that is up to 40% lighter and more efficient than ever.

- Compact and powerful 0.7HP motor (0.5 Kw)
- Lightweight and rugged advanced alloy housing
- 12 variations available to meet any range of performance needs
- Accommodates up to 1" (25mm) Carbide Burrs, 4" (100mm) Type 1 Wheels, and 4 1/2" (115mm) Type 27 Wheels
- Recognizable in its high visibility Cleco® Orange

Heritage 236 Series



Versatility and ruggedness defines the 236 Series by serving demanding fields such as foundries, shipyards and other heavy industries world-wide.

- Robust and efficient 0.9HP motor (0.7 Kw)
- Lightweight and rugged advanced alloy housing; including an ultra-compact angle head
- 35 variations available to meet any range of performance needs
- Accommodates up to 1" (25mm) Carbide Burrs, 4" (100mm) Type 1 Wheels, 5" (125mm) Type 27 Wheels, and 1.25" (31mm) Cone or Plug Wheels
- Recognizable in its high visibility Cleco® Orange

Heritage 25 Series



As THE heavy-duty workhorse of the family, the 25 Series is engineered for serious material removal. Lightweight, rugged, and powerful; these tools mean business.

- Powerful and governed 1.4HP motor (1.0 Kw) for maximum material removal
- Lightweight and rugged advanced alloy housing
- 16 models, including the lightest-weight extended inline grinders weighing only 3.0 lbs (1.4 Kg)
- Accommodates up to 1" (25mm) Carbide Burrs, 2" (50mm) Mounted Wheels, 7" (180mm) Type 27 Wheels, to 1.25" (31mm) Cone or Plug Wheels
- Recognizable in its high visibility Cleco® Orange

Model	Description	Termination ⁽¹⁾	Abrasive Capacity ⁽²⁾	Max. free speed		Power ⁽³⁾		Length		Weight		SCFM @ F/S
				rpm	hp	Kw	in	mm	lbs	kg		
HERITAGE 216 SERIES 0.7HP (0.5Kw)												
216GLF-115A-C4	Right Angle Grinder, Front Exhaust	1/4" Collet	1" (25mm) Car. Burr, 2" (50mm) Wheel	11,500	0.6	0.4	7.1	180	2.4	1.1	25	
216GLFC-165A-C4	Right Angle Grinder, Front Exhaust	1/4" Collet	3/4" (19mm) Carbide Burr	16,500	0.6	0.4	9.1	231	1.7	0.8	25	
216GLSC-165A-C4	Right Angle Grinder, Side Exhaust	1/4" Collet	3/4" (19mm) Carbide Burr	16,500	0.6	0.4	6.3	160	1.7	0.8	25	
216GLF-115A-W3T4	Right Angle Grinder, Front Exhaust	3/8"-24 External Thread	4" (100mm) Type 1	11,500	0.6	0.4	7.1	180	2.7	1.2	25	
216GLFB-135A-W3T4	Right Angle Grinder, Front Exhaust	3/8"-24 External Thread	4" (100mm) Type 1	13,500	0.6	0.4	9.6	244	2.1	1.0	25	
216GLSB-135A-W3T4	Right Angle Grinder, Side Exhaust	3/8"-24 External Thread	4" (100mm) Type 1	13,500	0.6	0.4	9.1	231	2.4	1.1	25	
216GLF-115A-D3T4	Right Angle Grinder, Front Exhaust	3/8"-24 External Thread	4" (100mm) Type 27	11,500	0.6	0.4	7.1	180	2.7	1.2	25	
216GLF-115A-D3T45	Right Angle Grinder, Front Exhaust	3/8"-24 External Thread	4 1/2" (115mm) Type 27	11,500	0.6	0.4	7.1	180	2.7	1.2	25	
216GLFB-135A-D3T4	Right Angle Grinder, Front Exhaust	3/8"-24 External Thread	4" (100mm) Type 27	13,500	0.6	0.4	9.1	231	2.7	1.2	25	
216GLSB-135A-D3T4	Right Angle Grinder, Side Exhaust	3/8"-24 External Thread	4" (100mm) Type 27	13,500	0.6	0.4	9.1	231	2.4	1.1	25	
216GLFB-250-C4	Inline Grinder, Front Exhaust	1/4" Collet	3/4" (19mm) Carbide Burr	25,000	0.7	0.5	6.3	160	1.3	0.6	27	
216GLSB-250-C4	Inline Grinder, Side Exhaust	1/4" Collet	3/4" (19mm) Carbide Burr	25,000	0.7	0.5	6.3	160	1.3	0.6	27	
HERITAGE 236 SERIES 0.9HP (0.7Kw)												
236GLF-115A-C4	Right Angle Grinder, Front Exhaust	1/4" Collet	1" (25mm) Car. Burr, 2" (50mm) Wheel	11,500	0.8	0.6	7.6	193	2.6	1.2	29	
236GLR-115A-C4	Right Angle Grinder, Rear Exhaust	1/4" Collet	1" (25mm) Car. Burr, 2" (50mm) Wheel	11,500	0.8	0.6	8.3	211	2.1	1.0	36	
236GLSC-115A-C4	Right Angle Grinder, Side Exhaust	1/4" Collet	1" (25mm) Car. Burr, 2" (50mm) Wheel	11,500	0.8	0.6	9.6	244	2.0	0.9	28	
236GLFC-165A-C4	Right Angle Grinder, Front Exhaust	1/4" Collet	4" (100mm) Type 1	16,500	0.8	0.6	9.6	244	2.0	0.9	30	
236GLR-115A-D3T4	Right Angle Grinder, Rear Exhaust	3/8"-24 External Thread	1" (25mm) Car. Burr, 2" (50mm) Wheel	11,500	0.8	0.6	8.3	211	2.5	1.1	36	
236GLRB-135A-D3T4	Right Angle Grinder, Rear Exhaust	3/8"-24 External Thread	1" (25mm) Car. Burr, 2" (50mm) Wheel	13,500	0.6	0.4	7.6	193	2.0	0.9	33	
236GLF-115A-W3T4	Right Angle Grinder, Front Exhaust	3/8"-24 External Thread	4" (100mm) Type 1	11,500	0.8	0.6	7.6	193	3.0	1.4	29	
236GLFB-135A-W3T4	Right Angle Grinder, Front Exhaust	3/8"-24 External Thread	4" (100mm) Type 1	13,500	0.8	0.6	9.6	244	2.0	0.9	29	
236GLS-115A-W3T4	Right Angle Grinder, Side Exhaust	3/8"-24 External Thread	4" (100mm) Type 1	11,500	0.8	0.6	8.3	211	2.5	1.1	33	
236GLSB-115A-W3T4	Right Angle Grinder, Side Exhaust	3/8"-24 External Thread	4" (100mm) Type 1	11,500	0.6	0.4	9.6	244	2.0	0.9	28	
236GLSB-135A-W3T4	Right Angle Grinder, Side Exhaust	3/8"-24 External Thread	4" (100mm) Type 1	13,500	0.6	0.4	9.6	244	2.0	0.9	28	
236GLF-115A-D3T4	Right Angle Grinder, Front Exhaust	3/8"-24 External Thread	4" (100mm) Type 27	11,500	0.8	0.6	7.6	193	3.0	1.4	29	
236GLFB-135A-D3T4	Right Angle Grinder, Front Exhaust	3/8"-24 External Thread	4" (100mm) Type 27	13,500	0.8	0.6	9.6	244	2.0	0.9	29	
236GLR-115A-D3T45	Right Angle Grinder, Rear Exhaust	3/8"-24 External Thread	4" (100mm) Type 27	11,500	0.8	0.6	8.3	211	2.5	1.1	36	
236GLRB-135A-W3T4	Right Angle Grinder, Rear Exhaust	3/8"-24 External Thread	4" (100mm) Type 27	13,500	0.6	0.4	7.6	193	2.0	0.9	36	
236GLS-115A-D3T4	Right Angle Grinder, Side Exhaust	3/8"-24 External Thread	4" (100mm) Type 27	11,500	0.8	0.6	7.6	193	2.5	1.1	33	
236GLSB-135A-D3T4	Right Angle Grinder, Side Exhaust	3/8"-24 External Thread	4" (100mm) Type 27	13,500	0.6	0.4	9.6	244	2.0	0.9	28	
236GLF-115A-D3T45	Right Angle Grinder, Front Exhaust	3/8"-24 External Thread	4 1/2" (115mm) Type 27	11,500	0.8	0.6	7.6	193	3.0	1.4	29	
236GLR-115A-D3T5	Right Angle Grinder, Rear Exhaust	3/8"-24 External Thread	4 1/2" (115mm) Type 27	11,500	0.8	0.6	8.3	211	2.5	1.1	36	
236GLR-115A-W3T4	Right Angle Grinder, Rear Exhaust	3/8"-24 External Thread	4 1/2" (115mm) Type 27	11,500	0.8	0.6	8.3	211	2.5	1.1	36	
236GLRE-115A-D5T45	Right Angle Grinder, Rear Exhaust	5/8"-11 External Thread	4 1/2" (115mm) Type 27	11,500	0.8	0.6	7.6	193	3.5	1.6	32	
236GLS-115A-D3T45	Right Angle Grinder, Side Exhaust	3/8"-24 External Thread	4 1/2" (115mm) Type 27	11,500	0.8	0.6	7.6	193	2.5	1.1	33	
236GLS-115A-D5T45	Right Angle Grinder, Side Exhaust	5/8"-11 External Thread	4 1/2" (115mm) Type 27	11,500	0.8	0.6	7.6	193	2.5	1.1	33	
236GLR-115A-D5T45	Right Angle Grinder, Rear Exhaust	5/8"-11 External Thread	5" (125mm) Type 27	11,500	0.8	0.6	8.3	211	2.5	1.1	36	
236GEL-240-C4	Inline Grinder, Extended, Side Exhaust	1/4" Collet	1" (25mm) Car. Burr, 2" (50mm) Wheel	24,000	0.9	0.7	12.4	315	2.3	1.0	30	
236GELR-180-C4	Inline Grinder, Extended, Rear Exhaust	1/4" Collet	1" (25mm) Car. Burr, 2" (50mm) Wheel	18,000	0.6	0.4	12.3	312	2.2	1.0	27	
236GLF-180-C4	Inline Grinder, Front Exhaust	1/4" Collet	1" (25mm) Car. Burr, 2" (50mm) Wheel	18,000	0.9	0.7	6.8	173	1.4	0.6	30	
236GLF-250-C4	Inline Grinder, Front Exhaust	1/4" Collet	1" (25mm) Car. Burr, 2" (50mm) Wheel	25,000	0.9	0.7	6.8	173	1.4	0.6	30	
236GLR-250-C4	Inline Grinder, Rear Exhaust	1/4" Collet	1" (25mm) Car. Burr, 2" (50mm) Wheel	25,000	0.9	0.7	7.4	188	1.3	0.6	35	
236GLS-180-C4	Inline Grinder, Side Exhaust	1/4" Collet	1" (25mm) Car. Burr, 2" (50mm) Wheel	18,000	0.9	0.7	6.8	173	1.4	0.6	28	
236GLS-240-C4	Inline Grinder, Side Exhaust	1/4" Collet	1" (25mm) Car. Burr, 2" (50mm) Wheel	24,000	0.9	0.7	6.8	173	1.4	0.6	29	
236GLR-180-C4	Inline Grinder, Rear Exhaust	1/4" Collet	4" (100mm) Type 1	18,000	0.9	0.7	7.4	188	1.3	0.6	35	
236GLR-200-C4	Inline Grinder, Rear Exhaust	1/4" Collet	4" (100mm) Type 1	20,000	0.9	0.7	7.4	188	1.3	0.6	35	
236GLF-250-C6	Inline Grinder, Front Exhaust	3/8" Collet	1" (25mm) Car. Burr, 2" (50mm) Wheel	25,000	0.9	0.7	6.8	173	1.4	0.6	30	
236GLR-180-W3T4	Inline Grinder, Rear Exhaust	3/8"-24 External Thread	1" (25mm) Car. Burr, 2" (50mm) Wheel	18,000	0.9	0.7	7.3	185	1.8	0.8	35	
236GELR-180-P3T	Inline Grinder, Extended, Rear Exhaust	3/8"-24 External Thread	1.25" (31mm) Cone or Plug Wheel	18,000	0.6	0.4	12.3	312	2.3	1.0	27	
236GEL-240-P3T	Inline Grinder, Extended, Side Exhaust	3/8"-24 External Thread	1.25" (31mm) Cone or Plug Wheel	24,000	0.9	0.7	12.3	312	2.3	1.0	30	

Air Inlet: 216G and 236G series = 1/4" NPT, 25G series = 3/8" NPT

(1) 1/4" Collet will accommodate a shank size of 7/32" (5.56mm) to 1/4" (6.35mm). Additional collet sizes available as an accessory.

(2) Note: Mounted wheel capacity depends on wheel diameter, thickness and overhang. Consult cutting device manufacturer for speed recommendations.

(3) Note: All tools performance rated at 90psi (6.2 bar)

Industrial Grinders – Heritage Series

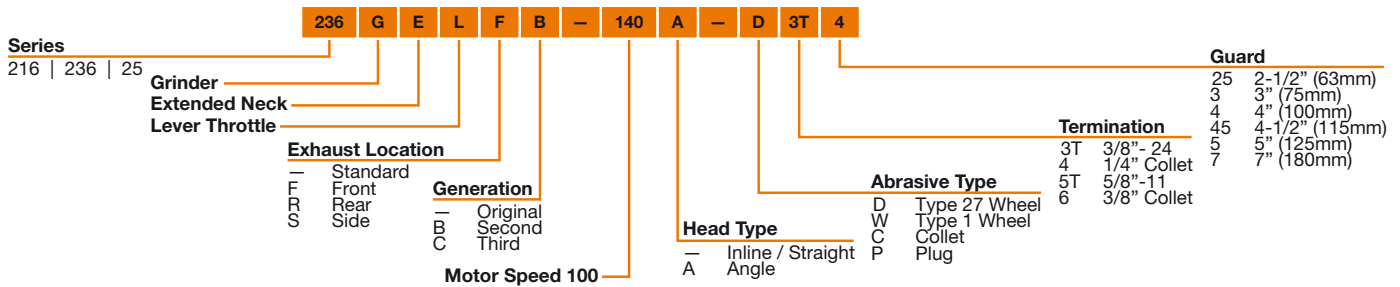
Model	Description	Termination ⁽¹⁾	Abrasive Capacity ⁽²⁾	Max. free speed		Power ⁽³⁾		Length		Weight		SCFM @ F/S
				rpm	hp	Kw	in	mm	lbs	kg		
HERITAGE 25 SERIES 1.4HP (1.0Kw)												
25GL-60A-D5T7	Right Angle Grinder, Side Exhaust	5/8"-11 External Thread	7" (180mm) Type 27	6,000	1.2	0.9	10.0	254	5.6	2.5	12	
25GL-60A-W5T7	Right Angle Grinder, Side Exhaust	5/8"-11 External Thread	7" (180mm) Type 1	6,000	1.2	0.9	10.0	254	5.6	2.5	12	
25GL-77A-D5T7	Right Angle Grinder, Side Exhaust	5/8"-11 External Thread	7" (180mm) Type 27	7,700	1.2	0.9	10.0	254	5.6	2.5	12	
25GL-85A-D5T7	Right Angle Grinder, Side Exhaust	5/8"-11 External Thread	7" (180mm) Type 27	8,500	1.2	0.9	10.0	254	5.6	2.5	12	
25GL-85A-W5T7	Right Angle Grinder, Side Exhaust	5/8"-11 External Thread	7" (180mm) Type 1	8,500	1.2	0.9	10.0	254	5.6	2.5	12	
25GELC-120-C4	Inline Grinder, Extended, Side Exhaust	1/4" Collet	1" (25mm) Car. Burr, 2" (50mm) Wheel	12,000	1.4	1.0	14.4	368	3.0	1.4	12	
25GELC-180-C4	Inline Grinder, Extended, Side Exhaust	1/4" Collet	1" (25mm) Car. Burr, 2" (50mm) Wheel	18,000	1.4	1.0	14.5	368	3.0	1.4	30	
25GELC-140-P3T	Inline Grinder, Extended, Side Exhaust	3/8"-24 External Thread	1.25" (31mm) Cone or Plug Wheel	14,000	1.4	1.0	14.5	368	3.0	1.4	21	
25GELC-180-P3T	Inline Grinder, Extended, Side Exhaust	3/8"-24 External Thread	1.25" (31mm) Cone or Plug Wheel	18,000	1.4	1.0	14.5	368	3.0	1.4	30	
25GELC-120-W3T25	Inline Grinder, Extended, Side Exhaust	3/8"-24 External Thread	2.5" (63mm) Type 1	12,000	1.4	1.0	14.4	368	3.4	1.5	12	
25GELC-120-W3T3	Inline Grinder, Extended, Side Exhaust	3/8"-24 External Thread	3" (75mm) Type 1	12,000	1.4	1.0	14.4	368	3.7	1.7	12	
25GELC-140-W 3T3	Inline Grinder, Extended, Side Exhaust	3/8"-24 External Thread	3" (75mm) Type 1	14,000	1.4	1.0	14.5	368	3.7	1.7	21	
25GELC-180-W3T3	Inline Grinder, Extended, Side Exhaust	3/8"-24 External Thread	3" (75mm) Type 1	18,000	1.4	1.0	14.9	378	3.7	1.7	30	
25GELC-120-W3T4	Inline Grinder, Extended, Side Exhaust	3/8"-24 External Thread	4" (100mm) Type 1	12,000	1.4	1.0	14.4	368	3.7	1.7	12	
25GL-120-W3T4	Inline Grinder, Side Exhaust	3/8"-24 External Thread	4" (100mm) Type 1	12,000	1.4	1.0	10.0	254	3.0	1.4	12	
25GELC-180-P5T	Inline Grinder, Extended, Side Exhaust	5/8"-11 External Thread	1.25" (31mm) Cone or Plug Wheel	18,000	1.4	1.0	14.9	378	3.2	1.5	30	

Air Inlet: 216G and 236G series = 1/4" NPT, 25G series = 3/8" NPT

(1) 1/4" Collet will accommodate a shank size of 7/32" (5.56mm) to 1/4" (6.35mm). Additional collet sizes available as an accessory.

(2) Note: Mounted wheel capacity depends on wheel diameter, thickness and overhang. Consult cutting device manufacturer for speed recommendations.

(3) Note: All tools performance rated at 90psi (6.2 bar)



These tools deliver durability, power, yet are lighter and more capable than before.

Cleco Heritage Grinder 25 Series at work in the steel construction - compactly and highly competitive.



NEW Cleco®

Vertical Grinders

For applications requiring **maximum material removal**, The New Cleco® Vertical Grinder is the solution.

Engineered for heavy-use industrial applications, this product is built to deliver unmatched productivity and maximum material removal.

The Cleco Vertical Grinder is ideally suited for all environments of heavy metal fabrication.

QUALITY

The Cleco® Vertical Grinders are engineered for **maximum reliability**. All products are **100% tested to ensure the highest quality**.

Cleco Vertical Grinders require less maintenance and have more user “up time” to ensure the most from your investment.

SAFETY

All Cleco Vertical Grinders come standard with **safety lock throttle lever, industrial governor, and ANSI compliant guards**.

Safety is of the utmost importance in any work environment. Cleco Vertical Grinders meet the highest safety standards.

VERSATILITY

Reversible Throttle Handle and interchangeable 6” (150mm), 7” (180mm), and 9” (230mm) guards.

Cleco Vertical Grinders can be easily and quickly configured for a variety of user preferences and applications.

ERGONOMICS

Reduced weight by up to 0,7 kg and reduced height by almost 25mm.

Improved ergonomics with Cleco Vertical Grinders enable a more efficient usage and higher operator productivity.

POWER

The Cleco® Vertical Grinders are engineered for maximum reliability. All products are 100% tested to ensure the highest quality.

Cleco Vertical Grinders require less maintenance and have more user “up time” to ensure the most from your investment.



DURABILITY

Streamlined one piece all metal housing and handles are engineered for ultimate ruggedness.

Cleco Vertical Grinders can withstand the most abusive environments.





MODEL	EXTERNAL THREAD	ABRASIVE CAPACITY	MAX. FREE SPEED	POWER	HEIGHT	WEIGHT	AIR INLET (NPT)	AIR CONSUMPTION FREE SPEED (l/s)
			rpm	W	mm	kg		
2300 Watt SERIES								
3060AVL-06	5/8" - 11 External Thread	6" (150mm) Type 11	6000	2300	175	4,6	1/2"	9
3060AVL-07	5/8" - 11 External Thread	7" (180mm) Type 27	6000	2300	175	4,4	1/2"	9
3060AVL-09	5/8" - 11 External Thread	9" (230mm) Type 27	6000	2300	175	4,7	1/2"	9
3100 Watt SERIES								
4060AVL-06	5/8" - 11 External Thread	6" (150mm) Type 11	6000	3100	208	5,3	1/2"	13,7
4060AVL-07	5/8" - 11 External Thread	7" (180mm) Type 27	6000	3100	208	5,0	1/2"	13,7
4060AVL-09	5/8" - 11 External Thread	9" (230mm) Type 27	6000	3100	208	5,4	1/2"	13,7

2300 W



3100 W



GUARD Options



150 mm

180 mm

230 mm

Cleco®

1660 & 2260 Angle Grinders

QUALITY

The Cleco® Angle Grinders are engineered for maximum reliability. All products are 100% tested to ensure the highest quality.

Cleco Angle Grinders require less maintenance and have more user "up time" to ensure the most from your investment.



For applications requiring maximum material removal and ergonomics, the new Cleco® 1660 and 2260 Angle Grinders are the solution.

Engineered for heavy-use industrial applications, this product is built to deliver unmatched productivity from an angle grinder.

SAFETY

All Cleco Angle Grinders come standard with safety lock throttle lever, industrial governor, and CAGI compliant guards.

Safety is of the utmost importance in any work environment. Cleco Angle Grinders meet the highest safety standards.

VERSATILITY

- Reversible Throttle Handle
- Dual Auxiliary Handle positions
- Full range of guards to accommodate all common abrasives
- Rotatable exhaust

Cleco Angle Grinders can be easily and quickly configured for a variety of user preferences and applications.

ERGONOMICS

- Dual auxiliary handle positions
- Ergonomic designed throttle handle
- "Weight Forward" motor architecture

Improved ergonomics with Cleco Angle Grinders enable a more efficient usage and higher operator productivity.

POWER

1.2kW or 1.6kW vane motors are engineered for maximum sustained power.

Cleco Angle Grinders provide maximum power to generate maximum material removal.



DURABILITY

- Streamlined Angle Head
- All metal housings
- Advanced spiral bevel gears
- Reinforced auxiliary handle

Cleco Angle Grinders withstand the most abusive environments with superior life.

Product Specifications



MODEL	DESCRIPTION	MAXIMUM FREE SPEED	POWER*	OUTPUT CONFIGURATION						HEIGHT**	WEIGHT	AIR IN-LET	m³/h
		rpm	kW	TERMINATION	Abrasive Size	Type 27	Type 27/42	Type 27/29	Type 1/41	mm	kg		
1.2kW SERIES													
1660AGL-04	Right Angle Grinder	12,000	1.2	3/8"-24 External Thread	4" (100mm)	X	X		X	68.6	2.0	1/2"	37.2
1660AGL-45	Right Angle Grinder	12,000	1.2	5/8"-11 External Thread	4.5" (115mm)	X	X	X	X	68.6	2.0	1/2"	37.2
1660AGL-05	Right Angle Grinder	12,000	1.2	5/8"-11 External Thread	5" (125mm)	X	X	X	X	68.6	2.0	1/2"	37.2
1660AGL-05-M14	Right Angle Grinder	12,000	1.2	M14 External Thread	5" (125mm)	X	X	X	X	68.6	2.0	1/2"	37.2
1.6kW SERIES													
2260AGL-06	Right Angle Grinder	8,400	1.6	5/8"-11 External Thread	6" (150mm)	X	X		X	73.7	3.3	1/2"	57
2260AGL-07	Right Angle Grinder	8,400	1.6	5/8"-11 External Thread	7" (180mm)	X	X		X	73.7	3.3	1/2"	57

*All tools performance rated at 6.2 bar
 **Height measured over spindle



Guard options



Dotco® drills are used daily in applications ranging from aerospace to oil fields and refineries. Three styles are available: pistol grip, straight handle (straight drills) and right angle models (right angle drills). Drills in this section have a power of between 0.3 and 0.9 HP. Additional grips are also available for some models.

Parts Interchangeability

Tool maintenance can be both time-consuming and expensive. For this reason Dotco products have been developed with a high level of interchangeability of spare parts. As fewer spare parts are required for the repair of our tools, the inventory of necessary parts can be reduced and the repair of the tools simplified.

Precision Manufactured Parts

The principle is simple – precision products can be manufactured with precision manufactured parts. Irrespective of whether a spindle, a drill chuck, a motor or an angle head, our parts are manufactured from the best materials and with the most accurate tolerances. You will understand why we are proud of the 0.0005" runout on our clamping tools.

Latest Ergonomics - Adapted to the Human Hand.

The Dotco drill has long been valued as a workhorse in industry for demanding, repeated precision requirements in today's workbenches. During further development the drill has been extensively re-designed and ergonomically designed. Dotco drills offer more comfort and better productivity, and at the same time ensure less fatigue, risk of injury and lost working time. Of course, we have also adapted their performance to the new look.





A Wonder of Technology and Ergonomics

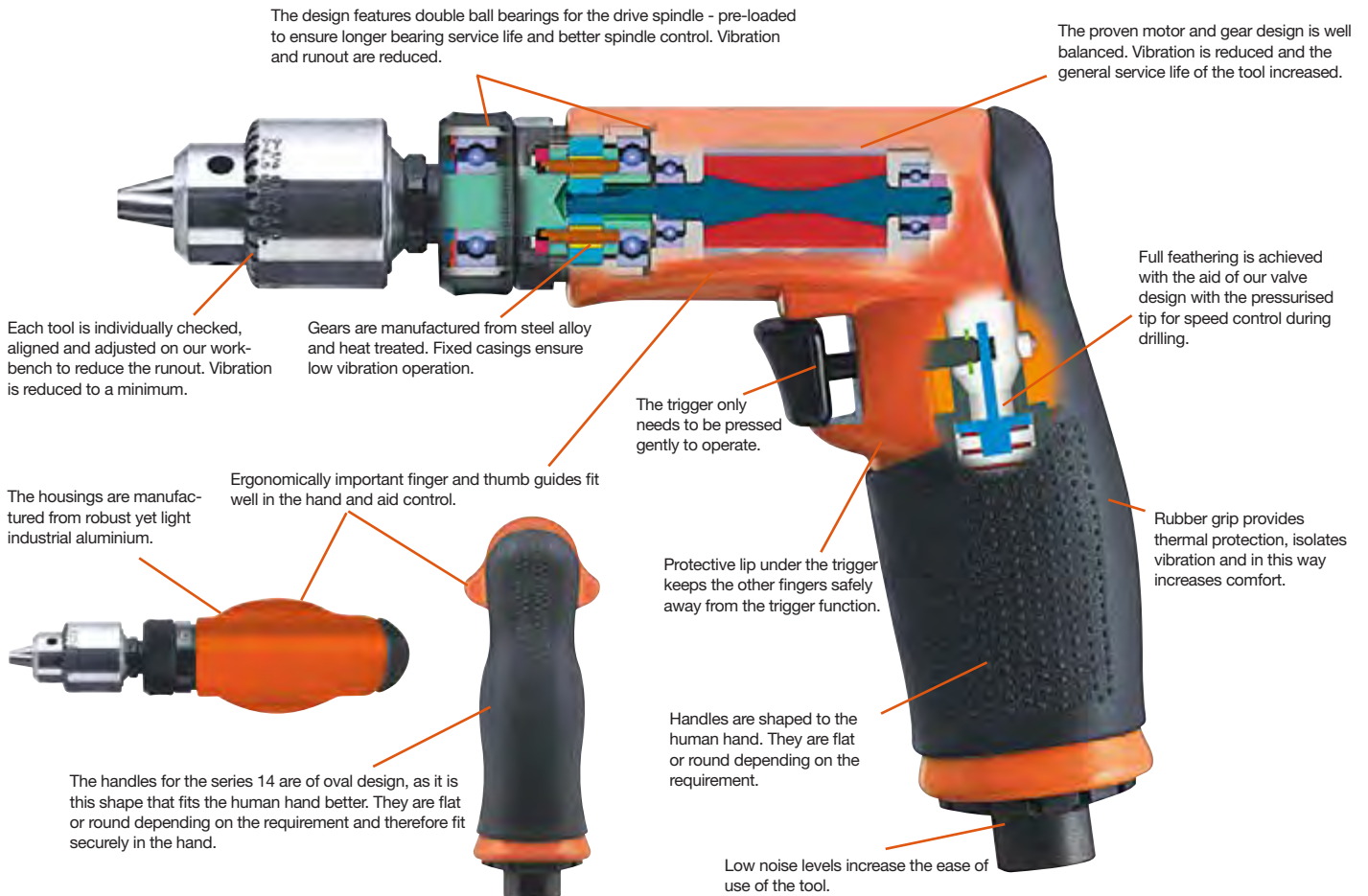
We have been able to make these extraordinary improvements thanks to new technology. Prototypes are now available quickly due to our in-house design platform so we can develop models in real time, provide prototypes to users and then further refine the ergonomic and performance criteria with their feedback.

The handles for the series 14 are of oval design, as it is this shape that fits the human hand better. The tool lies securely in the hand.

Our development work has also resulted in the integration of a rubber grip for better temperature control, as compressed air in the metal housing makes the tool appear cold and reduces speed and efficiency.

In addition, the objective is direct force transmission so that the operator can use the tool with the greatest possible control, the greatest possible direct force, the lowest possible angular force and the lowest possible fatigue at the wrist. For this reason we have developed drills with ergonomic finger and thumb guides. And for this reason we have also fitted a protective lip under the trigger so that the other fingers are kept safely away from the trigger function.

It is only necessary to press the trigger gently. The trigger mechanism comprises a valve with a pressurised tip. As soon as the trigger resistance is overcome, you can start working.



500 – 28500 rpm
220 Watt – 300 Watt

- Large selection of tools for your application
- Rear exhaust
- Some models available with angle head
- Ergonomically important finger and thumb guides aid control



330 – 29000 rpm
300 Watt – 670 Watt

- Non-reversible
- Ergonomically important finger and thumb guides aid control
- Excellently suited to aerospace, metal and wood working



DOTCO Drill Specifications

Model Number	Speed	Drill Diameter (Capacity)	Type (Housing)	Weight	Length	Head Height	Drill Chuck Size	Air Inlet NPT
	rpm			kg	mm	mm		
Series 15LF straight - (300 Watt)								
15LF081-38+	5300	1/4"	C	0.6	203	---	1/4"	1/4"
15LF082-38+	4000	1/4"	C	0.6	203	---	1/4"	1/4"
15LF083-38+	3300	1/4"	C	0.6	203	---	1/4"	1/4"
15LF087-38+	600	1/4"	C	0.9	236	---	1/4"	1/4"
Series 15-14 right angle - (220 Watt)								
15L1489-38	3600*	1/4"	C	0.7	203	76	1/4"	1/4"
15L1488-38	2400*	1/4"	C	0.7	203	76	1/4"	1/4"

Housing identifier: A = Aluminium, C = Composite, S = Steel

*Idle gear

+Model available without chuck, replace termination number -38 with -40.

GENERAL

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

Minimum hose inside diameter

Series 15LF, 15-14: 1/4" (6.4 mm)

Series 15-29: 5/16" (7.9 mm)

STANDARD EQUIPMENT

Jacobs drill chuck (with thread), chuck key, additional grip (all straight models with keyed type chuck larger than 1/4")

OPTIONAL

Exhaust hose (rear exhaust): See catalogue SP-102

Additional grip: 539602

Model Number		Speed	Drill Diameter (Capacity)	Weight**	Length**	Drill Chuck Size	Air Inlet NPT
With Drill Chuck	3/8"-24 Male Thread	rpm		kg	mm		
Series 14CF - (300 Watt) - non-reversible							
	14CFS90-38	29000	1/4"	0.68	145	1/4"	1/4"
	14CFS91-38	5200	1/4"	0.68	145	1/4"	1/4"
	14CFS92-38	3800	1/4"	0.68	145	1/4"	1/4"
	14CFS93-38	3200	1/4"	0.68	145	1/4"	1/4"
	14CFS94-38	2400	1/4"	0.72	145	1/4"	1/4"
	14CFS95-38	1000	1/4"	0.82	175	1/4"	1/4"
	14CFS96-38	700	1/4"	0.82	175	1/4"	1/4"
	14CFS97-38	600	1/4"	0.82	175	1/4"	1/4"
Series 14CN - (450 Watt) - non-reversible							
	14CSL90-38	14CSL90-40	20000	1/4"	0.95	160	1/4"
	14CSL98-38	14CSL98-40	6000	1/4"	0.95	160	1/4"
	14CSL91-38	14CSL91-40	5200	1/4"	0.95	160	1/4"
	14CSL92-38	14CSL92-40	3200	1/4"	0.95	160	1/4"
	14CSL95-51	14CSL95-40	1300	3/8"	1.31	205	3/8"
	14CSL97-51	14CSL97-40	500	3/8"	1.31	205	3/8"
Series 14CN - (670 Watt) - non-reversible							
	14CNL90-38	14CNL90-40	20000	1/4"	1.00	173	1/4"
	14CNL98-38	14CNL98-40	6000	1/4"	1.00	173	1/4"
	14CNL91-51	14CNL91-40	5200	3/8"	1.08	183	3/8"
	14CNL92-51	14CNL92-40	3200	3/8"	1.08	183	3/8"
	14CNL95-51	14CNL95-40	1300	3/8"	1.27	218	3/8"
	14CNL97-53	14CNL97-40	500	1/2"	1.59	231	1/2"

GENERAL:

See catalogue SP-102 for additional features and advantages.

Air inlet tube: use 1/4" NPT - hoses with 5/16" (7.9 mm) inside diameter.

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

STANDARD EQUIPMENT:

14CF: Jacobs drill chuck (with thread), chuck key

14CS, 14CN: Jacobs drill chuck (with thread), chuck key, additional grip (all models with keyed type chuck larger than 1/2")

OPTIONAL:

Exhaust hose: See catalogue SP-102

320 – 5600 rpm

300 Watt – 670 Watt

- Impressive range of speeds for your drilling applications
- Comprehensive range of angle heads - 45°, mini 90°, 360°, compact or heavy duty 90°



Optional Angle Heads

(NOTE: Not all models are available with all angle heads.)

Term. No.	Spindle Thread
-----------	----------------

Series 600 miniature angle head

- 61 #10-32 female thread
- 62 1/4"-28 female thread
- 63 9/32"-40 female thread
- 64 5/16"-24 female thread



Term. No.	Spindle Thread
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Series 700 compact angle head

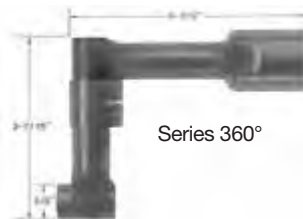
- 72 1/4"-28 female thread
- 73 9/32"-40 female thread
- 74 5/16"-24 female thread



Term. No.	Spindle Thread
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360° miniature angle head

- 91 #10-32 female thread
- 92 1/4"-28 female thread



Term. No.	Spindle Thread
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45° miniature angle head

- 42 1/4"-28 female thread
- 43 9/32"-40 female thread
- 44 5/16"-24 female thread



Term. No.	Spindle Thread
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Series 500 angle head heavy duty

- 52 1/4"-28 female thread
- 53 9/32"-40 female thread
- 54 5/16"-24 female thread
- 55 3/8"-24 female thread
- 59 1/4" keyed type chuck
- 59NC 3/8"-24 male thread



DOTCO Right Angle Drill Specifications

Model Number	Speed	Drill Diameter (Capacity)	Type (Housing)	Weight	Length	Spindle Size	Air Inlet NPT
	rpm			kg	mm		
Light duty head - series 15LF - (300 Watt) - rear exhaust							
15LF281-62	5300	1/4"	C	0.75	272	1/4"-28*	1/4"
15LF282-62	4000	1/4"	C	0.75	272	1/4"-28*	1/4"
15LF283-62	3300	1/4"	C	0.75	272	1/4"-28*	1/4"
15LF284-62	2400	1/4"	C	0.85	282	1/4"-28*	1/4"
15LF285-62	1000	1/4"	C	0.85	300	1/4"-28*	1/4"
15LF286-62	750	1/4"	C	0.85	300	1/4"-28*	1/4"
15LF287-62	600	1/4"	C	0.85	300	1/4"-28*	1/4"
Light duty head - series 15LS - (450 Watt) - rear exhaust							
15LS281-62	5430	1/4"	C	1.05	292	1/4"-28*	1/4"
15LS282-62	3370	1/4"	C	1.05	292	1/4"-28*	1/4"
15LS283-62	2010	1/4"	C	1.05	292	1/4"-28*	1/4"
15LS284-62	1660	1/4"	C	0.85	315	1/4"-28*	1/4"
15LS285-62	1360	1/4"	C	0.85	323	1/4"-28*	1/4"
15LS286-62	840	1/4"	C	0.85	323	1/4"-28*	1/4"
15LS287-62	500	1/4"	C	0.85	323	1/4"-28*	1/4"
Light duty head - series 15LN - (670 Watt) - rear exhaust							
15LN288-62	5600	1/4"	C	1.15	305	1/4"-28*	1/4"
15LN281-62	5000	1/4"	C	1.15	305	1/4"-28*	1/4"
15LN282-62	3100	1/4"	C	1.15	305	1/4"-28*	1/4"
15LN284-62	1530	1/4"	C	1.15	305	1/4"-28*	1/4"
Heavy duty head - series 15LF - (300 Watt) - rear exhaust							
15LF281-52	3700	1/4"	C	0.75	280	1/4"-28*	1/4"
15LF282-52	2800	1/4"	C	0.75	280	1/4"-28*	1/4"
15LF283-52	2300	1/4"	C	0.75	280	1/4"-28*	1/4"
15LF285-52	700	1/4"	C	0.95	305	1/4"-28*	1/4"
15LF286-52	525	1/4"	C	0.95	305	1/4"-28*	1/4"
15LF287-52	420	1/4"	C	0.95	305	1/4"-28*	1/4"
Heavy duty head - series 15LS - (450 Watt) - rear exhaust							
15LS281-52	3800	1/4"	C	1.05	297	1/4"-28*	1/4"
15LS282-52	2360	1/4"	C	1.05	297	1/4"-28*	1/4"
15LS283-52	1410	1/4"	C	1.05	297	1/4"-28*	1/4"
15LS287-52	350	1/4"	C	1.25	330	1/4"-28*	1/4"
Heavy duty head - series 15LN - (670 Watt) - rear exhaust							
15LN288-52	3900	1/4"	C	1.15	310	1/4"-28*	1/4"
15LN281-52	3500	1/4"	C	1.15	310	1/4"-28*	1/4"
15LN282-52	2170	1/4"	C	1.15	310	1/4"-28*	1/4"
15LN283-52	1300	1/4"	C	1.15	310	1/4"-28*	1/4"
15LN284-52	1070	1/4"	C	1.35	343	1/4"-28*	1/4"
15LN285-52	870	1/4"	C	1.35	343	1/4"-28*	1/4"
15LN286-52	540	1/4"	C	1.35	343	1/4"-28*	1/4"
15LN287-52	320	1/4"	C	1.35	343	1/4"-28*	1/4"

Housing identifier: A = Aluminium, C = Composite, S = Steel
*Female thread

GENERAL:
Minimum hose inside diameter
Series 15LF, 15LS, 15LN: 1/4" (6.4 mm)
Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

STANDARD EQUIPMENT:
Light duty tools:
Series 600 miniature angle head with 1/4"-28 female thread
Heavy duty tools:
Series 500 heavy duty head with 1/4"-28 female thread

OPTIONAL:
For safety lever replace the "S" in the model number with "L".
Exhaust hose (rear exhaust): See catalogue SP-102
Chucks for 9/32"-40 connections: See catalogue SP-102

OPTIONAL CHUCK CONNECTIONS:
NOTE: The part numbers in the above table are equipped with a series 600 (-62) angle head with 1/4"-28 female thread. The models for heavy duty are equipped with series 500 (-52) angle heads with a 1/4"-28 female thread. On ordering other angle head configurations the related termination number from the tables in the catalogue SP-102 is to be stated instead of the standard termination number -62 or -52.
Not all models are available with all angle heads.

Optional Drill Drives

For use with Dotco series 15LF, 15LS and 15LN - capacity: 1/4" diameter drill.

These drill drives can be ordered separately as accessories or in conjunction with a complete tool. In the case of the order of a complete tool, use the basic model number from the related catalogue page for series 15LF, 15LS and 15LN and replace the termination numbers (e.g. -32) with the termination numbers for the required special drive (e.g. -71).

Model Number	Term. No.	Threaded Spindle
Compact angle head series 700		
1025477	- 72	1/4"-28 female thread
1025476	- 73	9/32"-40 female thread
1025668	- 74	5/16"-24 female thread
Miniature angle head series 600		
1025314	- 61	#10-32 female thread
1025409	- 62	1/4"-28 female thread
1025313	- 63	9/32"-40 female thread
1025328	- 64	5/16"-24 female thread
Heavy duty angle head series 500		
1021289	- 52	1/4"-28 female thread
1021292	- 53	9/32"-40 female thread
1021291	- 54	5/16"-24 female thread
1025780	- 55	3/8"-24 female thread
45° angle head		
1025730	- 42	1/4"-28 female thread
1025731	- 43	9/32"-40 female thread
1025733	- 44	5/16"-24 female thread
360° angle head		
1025696	- 91	#10-32 female thread
1025694	- 92	1/4"-28 female thread



1025447



1025409



1021289



1025730



1025694



1021620

Part Number	Term. No.	Drill Chuck
Heavy duty angle head		
1021620	- 59	Series 500 angle head with drill chuck, capacity 1/4"
1021620	- 59NC	Series 500 angle head without drill chuck, 3/8"-24 male thread

Simple. Versatile. Robust.

Powerful Cleaning Up.

Dotco tools are known for their durability, reliability and versatility. They are one of the leading brands in the material removal sector. The quality is expressed in the outstanding design combined with excellent technology, as a result the tools are not only small, handy and light, but also robust enough for demanding environments.

This aspect also applies to the new Dotco Venturi X – the 2-in-1 compressed air vacuum system and air blow gun. Your aid for cleaning your workplace! In any sectors of industry they are now indispensable: in manufacturers, at machine tool manufacturers, in the automotive industry, on working wood, in the aerospace industry, in shipyards, in foundries etc.



Model Number VX-1KIT		
D E T A I L S	Min. hose inside diameter	8 mm
	Recommended air pressure	6,2 bar
	Ø air consumption	95 l/min
	Noise	84 dBA
	Length	145 mm
	Weight	0,68 kg
	Air inlet tube	1/4" NPT
	Vibration (m/s ²)	< 0,4 m/s ²



Series MP4400

Orbital Sander

- The low shape gives the operator more control and better comfort during sanding.
- Consumes less air than comparable tools – ideal for smaller workshops with small compressors, but is also economical in large industrial plants.
- The low weight and low vibration are advantages of the high-strength polymer material.
- 3/16" sanding pattern for fine finishing or 3/32" sanding pattern for high quality finishing.
- Different levers permit the user to visually differentiate between 3/16" and 3/32" tools.



Three interchangeable grips to reduce fatigue and improve operator comfort are supplied with each sander.



Special cylinder for more power, higher speed and longer service life.

The floating rotor design reduces internal friction for better power transmission, more straightforward maintenance and a longer service life.

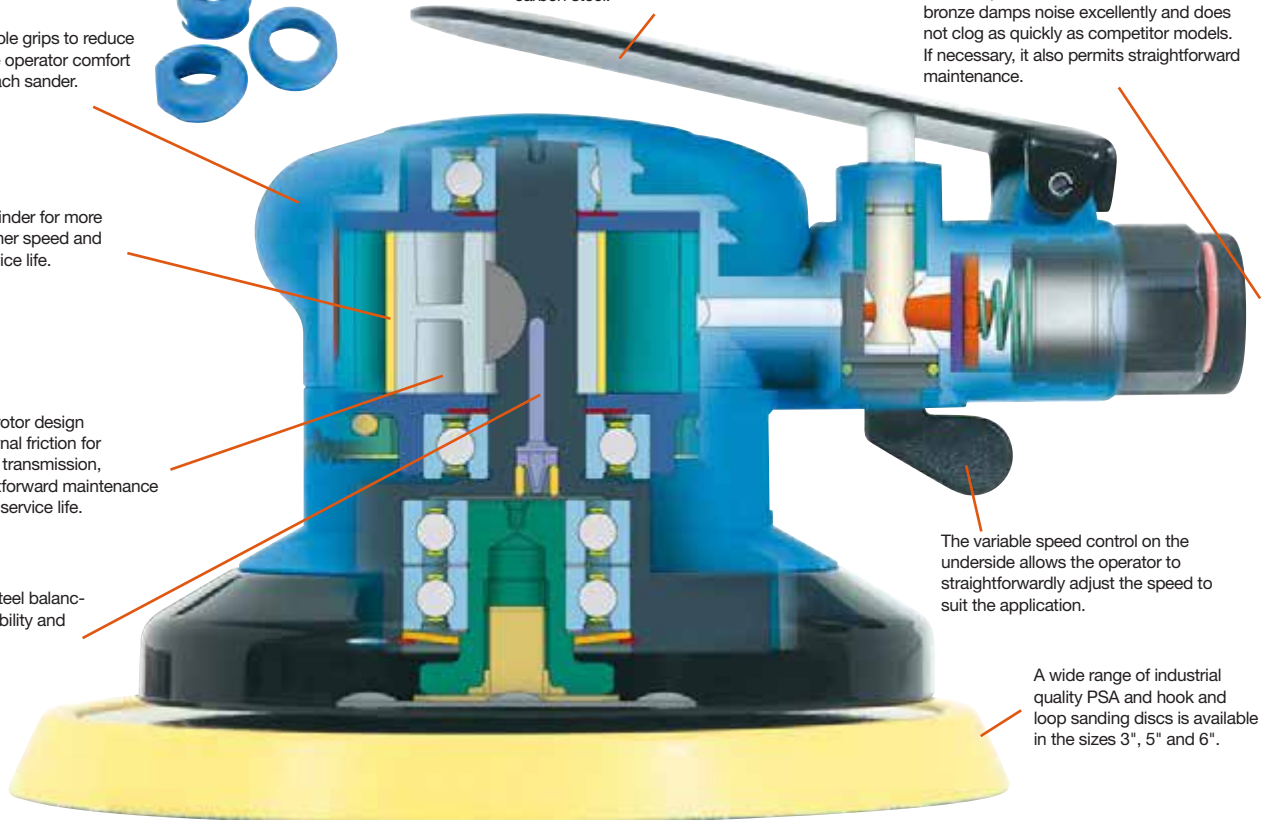
Hardened alloy steel balancing shaft for durability and long service life.

Lever made of durable high-strength carbon steel.

The one-piece muffler made of sintered bronze damps noise excellently and does not clog as quickly as competitor models. If necessary, it also permits straightforward maintenance.

The variable speed control on the underside allows the operator to straightforwardly adjust the speed to suit the application.

A wide range of industrial quality PSA and hook and loop sanding discs is available in the sizes 3", 5" and 6".



Master Power Sander Specifications

Model Number		Sanding Pad Size	Speed	Weight	Height	Length
3/16"	3/32"		rpm	kg	mm	mm
12000 rpm - non-vacuum						
MP4400-03		3.5	12000	0.71	84.58	129.79
MP4400-05*	MP4403-05*	5.0	12000	0.73	84.58	139.19
MP4400-06*	MP4403-06	6.0	12000	0.76	84.58	139.19
12000 rpm - central vacuum						
MP4400-35		5.0	12000	0.75	84.58	179.32
12000 rpm - central vacuum						
MP4400-15		5.0	12000	0.78	84.58	196.75

GENERAL:

Air inlet tube 1/4" NPT

Minimum hose size 1/4"

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube, threaded mounting 5/16-24,

Air consumption: 0.43 m³/min

STANDARD EQUIPMENT:

Instruction manual and spare parts list.

3/8" low profile, medium density premium urethane backing pad

3 interchangeable grips:

70421900 - 2 1/2"

70422000 - 2 3/4"

70422100 - 3"

OPTIONAL:

Vacuum hose: 100704300

Spare parts kit: 88004400

Rotor & blades kit: 70444800

Available with hook and loop fastening.



MP4400-03



MP4400-05



MP4403-05
(mit 3/32"
Chromhebel)



MP4400-06



MP4400-35

Orbital Sander

- 9500 rpm
- Precise feathering throttle produces a better result
- Integrated air pressure regulator for maximum operator control
- Light, but nevertheless durable handle made of composite material
- Interchangeable handle for operation by right or left-handers



High Speed High Performance Vertical Sander

- Ideal for deburring, light sanding and rust removal
- Developed for sanding contours and difficult to access areas
- Variable speed regulator for control while working
- Ergonomic handle for operator comfort
- Lower noise pressure level and lighter than competitor models
- 7/16"-20 spindle thread



Model Number	Speed	Sanding Disc (Capacity)	Length	Weight	Hose Size	Air Consumption	Air Inlet NPT
	rpm		mm	kg	mm	m ³ /min.	
Orbital sander							
MP4425	9500	6"	203	1.3	6.4	0.57	1/4"
Right angle sander							
MP6151	14000	5"	160	0.95	10	0.62	1/4"

GENERAL:

Air inlet tube 1/4" NPT
 Use a hose with 10 mm inside diameter for MP4425.
 Use a hose with 6.4 mm inside diameter for MP6151.
 Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

STANDARD EQUIPMENT:

Instruction manual and spare parts list.
 MP4425: 543021 6" PSA pad

OPTIONAL:

6" H&L pad for model MP4425 - no. 543023
 60538 Master Guard oil (approx. 0.1 l)
 60539 Master Guard oil (approx. 1.0 l)
 63593 8" hose
 22034 Hose line lubricator

Master Power Die Grinders



MP4424



MP4430



MP4458

1.18" diameter

MP4424 & MP4430 Die Grinders

- Ideal for general applications such as grinding small welding seams, polishing and deburring sharp edges.
- Ergonomic handle for operator comfort
- Integrated centrifugal regulator
- 360° air inlet tube swivel
- Exhaust to rear, guides air away from the working area
- 1/4" chuck

MP4458

- Robust steel housing
- Ergonomic design
- Front exhaust
- 1/4" chuck - series 200



Model Number	Power Watt	Speed	Wheel Diameter	Carbide Bur	Length	Weight	Hose	Air Consumption	Air Inlet NPT	Chuck Size
		rpm						m ³ /min.		
MP4424	220	20000	1"	1/2"	160	0.55	10	0.51	1/4"	1/4"
MP4430	220	23000	1"	1/2"	153	0.41	10	0.48	1/4"	1/4"
MP4458	220	25000	1 1/2"	1"	154	0.60	10	0.65	1/4"	1/4"

GENERAL:
Air inlet tube 1/4" NPT
Use a hose with 1/4" (6.4 mm) inside diameter.
Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

STANDARD EQUIPMENT:
Collect chuck, collet chuck wrench

OPTIONAL:
MP4424 & MP4430:
70619500 3/16" chuck;
70610500 1/4" chuck;
70610600 6 mm chuck
MP4424:
543944 - approx. 0.45 l angle head grease

MP4200 & MP4201

- Ideal for precision de-burring
- Light, ergonomically designed and vibration-free
- Exhaust to rear, guide air away from the working area
- Standard with hose and 1.5 metre supply hose and 0.3 metre exhaust hose
- Ideal for difficult to access areas
- Slim comfortable design with ergonomic grip for operator comfort
- Double bearing for improved service life on MP4200 inline version
- Includes 1/8" and 3 mm collet chuck



MP4200

MP4201

Model Number	Power Watt	Speed	Abrasive (Capacity)		Length mm	Weight kg	Hose	Air Consumption	Air Inlet NPT	Chuck Size
		rpm	Carbide Bur	Diamond Pin			Inside Diameter	m ³ /min.		
Straight										
MP4200	100	70000	1/4"	1/4"	136	0.2	5 mm	0.23	1/8"	1/8", 3 mm
Angle										
MP4201	100	70000	1/4"	1/4"	150	0.2	5 mm	0.23	1/8"	1/8", 3 mm

GENERAL:

Air inlet tube 1/4" NPT
 Use a hose with 1/4" (6.4 mm) inside diameter.
 Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

STANDARD EQUIPMENT:

Collect chuck, collet chuck wrench

OPTIONAL:

MP4200 - 70617600 1/8" chuck kit (5 pieces), 70620200PT, 3 mm chuck kit (5 pieces)
 MP4201 - 70618800 1/8" chuck kit (5 pieces), 70620400PT, 3 mm chuck kit (5 pieces)

Master Power Drills



MP1454-38

MP1454-38

- Motor power 220 Watt
- Non-reversible
- Ergonomic design with comfort grip
- Small size is ideal for difficult to access areas; grip is almost at 90° to the spindle
- Trigger start for variable speeds
- Exhaust through the grip
- Weight 0.68 kg
- 3/8"-24 thread mounting



MP1457-51

MP1457-51

- Motor power 750 Watt
- Non-reversible
- Double-row ball bearing for high runout accuracy
- Parts interchangeable with Master Power nutrunners
- 2-stage trigger start for gentle starting
- Integrated muffler
- Hardened, precision ground parts for longer service life
- 3/8"-24 thread mounting

Model Number	Speed	Power Watt	Chuck (Capacity)	Length	Weight	Air Consumption	Air Inlet NPT
	rpm			mm			
MP1454-38	3000	220	6.5 mm	140.0	0.68	0.34	1/4"
MP1457-51	2600	750	10 mm	191.0	0.85	0.71	1/4"

GENERAL:
 Air inlet tube 1/4" NPT
 Use a hose with 1/4" (6.4 mm) inside diameter.
 Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

STANDARD EQUIPMENT:
 Chuck and chuck key.
 Instruction manual and parts list.

MP1463-51

- Motor power 750 Watt
- Reversible
- Ball bearings on output spindle for high runout accuracy
- Parts interchangeable with Master Power nutrunners
- 2-stage trigger start for gentle starting
- Integrated muffler
- Hardened, precision ground parts for longer service life
- 3/8"-24 thread mounting



MP1463-51

MP1458-55

- Motor power 900 Watt
- Non-reversible
- Ball bearings on output spindle for high runout accuracy
- Parts interchangeable with Master Power nutrunners
- 2-stage trigger start for gentle starting
- Integrated muffler
- Hardened, precision ground parts for longer service life
- 3/8"-24 thread mounting



MP1458-55

Model Number	Speed	Power Watt	Chuck (Capacity)	Length	Weight	Spindle Offset	Air Inlet NPT
	rpm			mm	kg	mm	
MP1463-51	1800	750	10 mm	173.0	1.1	20.6	1/4"
MP1458-55	1200	900	13 mm	229.0	0.95	20.6	1/4"

GENERAL:
 Air inlet tube 1/4" NPT
 Use a hose with 1/4" (6.4 mm) inside diameter.
 Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

STANDARD EQUIPMENT:
 Chuck and chuck key.
 Instruction manual and parts list.

MP2264B
MP2265B

HEAVY-DUTY INDUSTRIAL AIR IMPACT DRIVERS

For decades, craftsmen have depended on **Master Power Impact Drivers** to deliver reliable performance in a variety of assembly, maintenance, and repair industries.

The **New MP2264B and MP2265B** improves upon performance, durability, and comfort to deliver superior value over the competition.



EASY TO USE

Suspension bail to reduce operator fatigue.

EASY TO OWN

Easy to disassemble and simple to service.

ROBUST

Light-weight metal housing suitable for the most demanding production environment.

CAPABLE

Tried-and-true motor and impact mechanism have been tuned to deliver more power while improving durability.

COMPACT

At 152 mm in length and weighting in at 0.98 kg, it is the lightest and most compact tool in its class.

COMFORTABLE

No reaction tool with oil-resistant NBR grip for superior protection against slip, chemicals, and vibration.

PROVEN

High-precision components tested to the highest standards in the industry.

SILENT

Swivel exhaust with new silencer design cuts the noise in half with no effect on power.



Detachable clip adds versatility while staying out of the way



4-position speed adjustment for precise control. One-hand forward/reverse lever can be positioned for right- or left-hand use.



MP2265B with 3/8" Pin Detent Square Drive



MP2264B with 1/4" Hex Quick Change Bit Holder



PRODUCT SPECIFICATIONS

Model	Output Drive	Working Torque Range	Max Torque	Free Speed	Sound Level		Blows Per Minute	Vibration	Weight	Length	Avg. Air Consumption		Air Inlet	Min. Hose ID
					Pressure dBA	Power dBA					FS L/s	Load L/s		
MP2264B	1/4" Hex Quick Change	14-122	150	10000	84	91	2000	2,2	0,98	152	4	16	1/4"	10
MP2265B	3/8" Pin-Detent Square	14-122	150	10000	84	91	2000	2,2	0,98	152	4	16	1/4"	10

All tool performance rated at 6.2 bar

Master Power Impact Wrenches

Series MP2260

- Higher power-weight ratio
- Speed of a nutrunner, performance of an impact wrench
- Ideal for soft fastening cases
- 4 integrated speed settings for variable torques
- Smooth, efficient impact mechanism prevents torque reaction
- 100% ball-bearing design
- Reversible
- Detachable belt clip (MP2264, MP2265)



MP2264B



MP2266



MP2265B

Model Number	Output Drive	Torque Range	Speed	Impacts per Minute	Bolt Size	Weight	Air Consumption
	in.	Nm	rpm		mm		
Pistol							
MP2264B	1/4 quick-change chuck	13.5 - 135	10000	1700	10	1.0	0.57
MP2265B	3/8 square drive*	13.5 - 135	10000	1700	10	1.0	0.57
Straight							
MP2266	1/4 quick-change chuck	13.5 - 135	9500	1700	10	1.0	0.57

GENERAL:
 Air inlet tube 1/4" NPT
 Use a hose with 1/4" (6.4 mm) inside diameter.
 Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.
 *Pin locking

STANDARD EQUIPMENT:
 Instruction manual and parts list.

OPTIONAL:
 60538 Master Guard oil (approx. 0.1 l)
 60539 Master Guard oil (approx. 1.0 l)
 22034 Hose line lubricator
 70497000 Flow regulator
 88007045 Trigger start assembly kit, MP2264, MP2265

Master Power Impact Wrenches in action

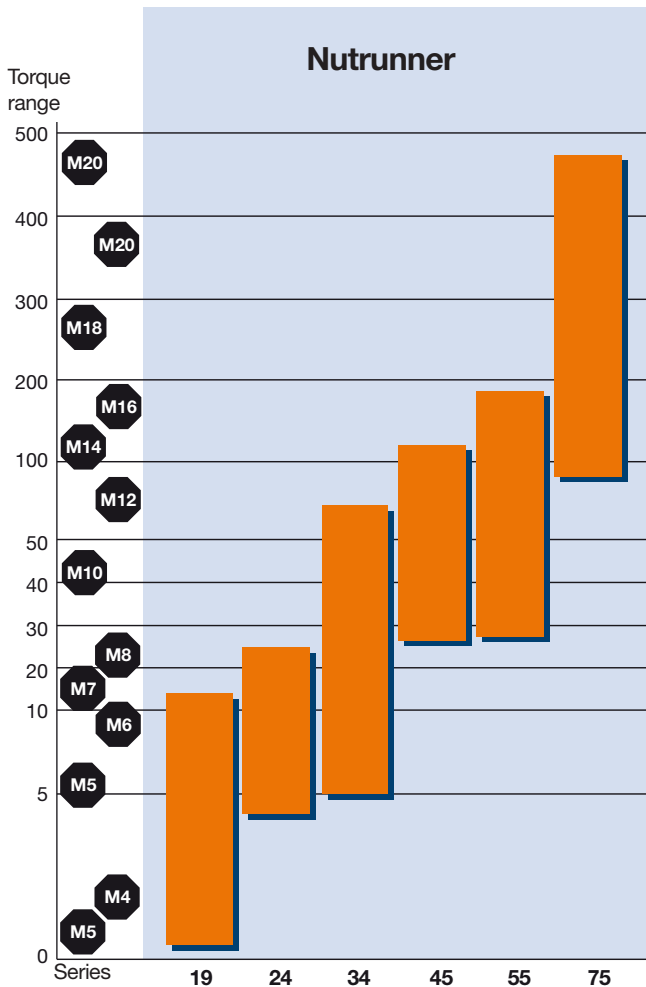


Versatile applications:

- Flange assembly on a hand work place
- Carpentry wood tightening applications
- Pump assembly
- Applications with bits or sockets possible



Selecting Your Cleco Nutrunner



Cleco offers over 500 different nutrunners of which the majority can be equipped with a wide variety of drive options. As a result there are over 3000 different nutrunner combinations that make it possible to adapt the tool exactly to the requirements of the application.

The following points should be taken into account on tool selection: Ergonomic factors associated with man - tool - application, requirements on torque and speed, accessibility of the tool and the fastener, fastener variations, skills of the user and the compressed air supply.

The performance of the tool can be affected by the compressed air supply. Due to the following factors the air pressure provided to the tool may vary significantly: distance of the tool from the compressor, diameter of the supply lines, pressure drop, manifolds, hose lengths and diameters and fittings. All the performance data stated for the tools is based on an inlet pressure of 6.2 bar (90 psig) at an appropriate flow rate with the tool in operation.

Clean Operation

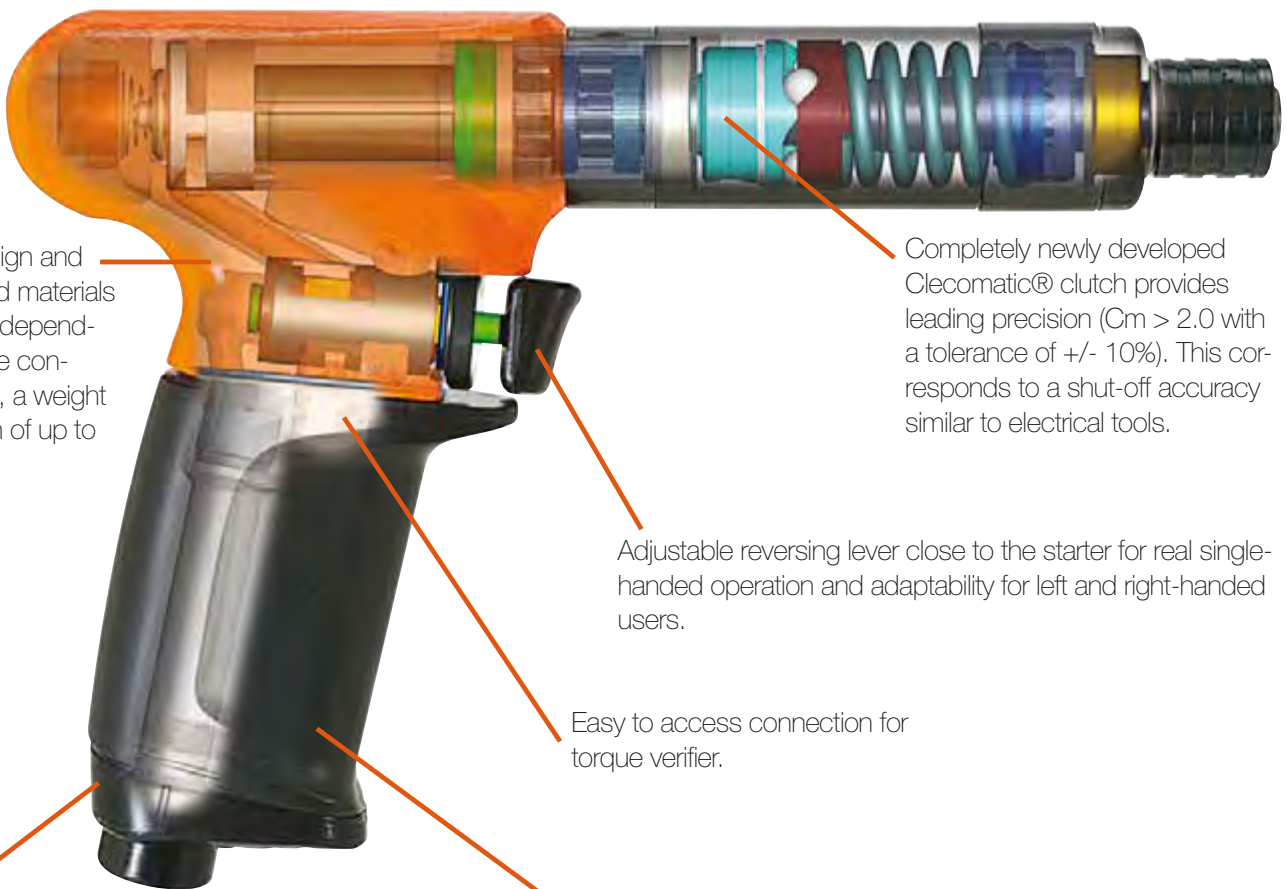
The Cleco nutrunner series 24 and 34 are equipped with low-oil blades. This aspect is important for assembly tasks in which cleanliness plays an important role.



Precision. Durability.

Legendary Reliability.

Your productivity is our first priority. For this reason during the development of the new Cleco 19 series we have successfully combined your experience with our specialist knowledge. The result was the most precise, durable and easiest to use nutrunner family on the market. The Cleco 19 series offers you the optimal solution for most demanding fastening applications where precision, repeatability and service life must meet very high requirements.



New design and advanced materials achieve, depending on the configuration, a weight reduction of up to 19%.

Completely newly developed Clecomatic® clutch provides leading precision ($C_m > 2.0$ with a tolerance of $\pm 10\%$). This corresponds to a shut-off accuracy similar to electrical tools.

Adjustable reversing lever close to the starter for real single-handed operation and adaptability for left and right-handed users.

Easy to access connection for torque verifier.

Two interchangeable grips for all hand sizes offer increased flexibility as well as reduced operating costs.

Soft-touch grip integrated into re-designed handle to ensure the best protection against temperature, chemicals, vibration and slipping. For the operator this signifies improved ergonomics and significantly less fatigue.



Productivity.

P I S T O L	Model Number		Torque Range		Free Speed (rpm)	19P		19T		Air Inlet NPT	Recom- mended Hose Size
	19P Series	19T Series	Min. Nm	Max. Nm		Length (mm)	Weight (kg)	Length (mm)	Weight (kg)		
Pistol version with push & trigger start and Clecomatic® clutch											
	19PCA02Q	19TCA02Q	0.6	2.1	2800	206	0.6	202	0.7	1/4"	3/8"
	19PCA03Q	19TCA03Q	0.6	2.9	1900	211	0.7	207	0.7	1/4"	3/8"
	19PCA04Q	19TCA04Q	1.1	4.5	1100	206	0.6	202	0.7	1/4"	3/8"
	19PCA05Q	19TCA05Q	1.1	5.1	660	216	0.7	212	0.7	1/4"	3/8"
	19PCA06Q	19TCA06Q	1.1	5.1	260	216	0.7	212	0.7	1/4"	3/8"
	19PCA07Q	19TCA07Q	1.7	6.8	660	216	0.7	212	0.7	1/4"	3/8"
	19PCA09Q	19TCA09Q	1.7	8.9	470	248	0.7	235	0.8	1/4"	3/8"
Pistol version with trigger start and Clecomatic® clutch											
	19PTA02Q	19TTA02Q	0.6	2.1	2800	204	0.6	199	0.7	1/4"	3/8"
	19PTA03Q	19TTA03Q	0.6	2.9	1900	209	0.7	204	0.7	1/4"	3/8"
	19PTA04Q	19TTA04Q	1.1	4.5	1100	204	0.6	199	0.7	1/4"	3/8"
	19PTA05Q	19TTA05Q	1.1	5.1	660	214	0.7	210	0.7	1/4"	3/8"
	19PTA06Q	19TTA06Q	1.1	5.1	260	214	0.7	210	0.7	1/4"	3/8"
	19PTA07Q	19TTA07Q	1.7	6.8	660	214	0.7	210	0.7	1/4"	3/8"
	19PTA09Q	19TTA09Q	1.7	8.9	470	248	0.7	235	0.8	1/4"	3/8"
	19PTA15Q	19TTA15Q	5.1	14.7	260	247	0.9	243	0.9	1/4"	3/8"
Pistol version with direct output drive											
	19PTS02Q	19TTS02Q		2.1	2800	150	0.5	146	0.5	1/4"	3/8"
	19PTS03Q	19TTS03Q		2.9	1900	155	0.5	154	0.5	1/4"	3/8"
	19PTS04Q	19TTS04Q		4.5	1100	150	0.5	146	0.5	1/4"	3/8"

All tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube. Air consumption generally 310 l/min.



Cleco Pneumatic Inline Nutrunners

19 Series

Torque range: 0.6 - 5.1 Nm

- Push-to-start and lever push-to-start
- Torque adjustment from exterior
- 1/4" quick-change chuck

8 Series

Torque range: 1.7 - 8.5 Nm

- Push-to-start and lever push-to-start
- Push-button reverse
- Quick-change chuck

88 Series

Torque range: 1.7 - 19 Nm

- Push-to-start and push & lever start
- Push-button reverse
- Quick-change chuck or 3/8" square drive

NEW!

19SPA05Q

NEW!

19SCA05Q

88RSA-5CQ

8RSA-10BQ



Model Number	Torque Range		Speed	Length	Weight	Air Consumption		
	Tool	With Std. Spring				Air Inlet NPT	Min. Hose Inside Diameter	Air Consumption m ³ / min.
1/4" Quick-Change Chuck	Nm	Nm	rpm	mm	kg			
Push-to-start - push-button reverse								
19BPA02Q	0.6 - 2.1	0.6 - 2.1	2300	230	0.63	1/8"	3/16"	0.31
19BPA03Q	0.6 - 2.9	0.6 - 2.1	1600	235	0.64	1/8"	3/16"	0.31
19BPA04Q	1.1 - 4.5	1.1 - 4.3	920	230	0.61	1/8"	3/16"	0.31
19BPA05Q	1.1 - 5.1	1.1 - 4.3	560	240	0.67	1/8"	3/16"	0.31
19BPA06Q	1.1 - 5.1	1.1 - 4.3	220	240	0.68	1/8"	3/16"	0.31
Push-to-start - reversible								
19SPA02Q	0.6 - 2.1	0.6 - 2.1	2800	230	0.63	1/8"	3/16"	0.31
19SPA03Q	0.6 - 2.9	0.6 - 2.1	1900	235	0.64	1/8"	3/16"	0.31
19SPA04Q	1.1 - 4.5	1.1 - 4.3	1100	230	0.61	1/8"	3/16"	0.31
19SPA05Q	1.1 - 5.1	1.1 - 4.3	660	240	0.67	1/8"	3/16"	0.31
19SPA06Q	1.1 - 5.1	1.1 - 4.3	260	240	0.68	1/8"	3/16"	0.31
Lever push-to-start - reversible								
19SCA02Q	0.6 - 2.1	0.6 - 2.1	2800	249	0.69	1/8"	3/16"	0.31
19SCA03Q	0.6 - 2.9	0.6 - 2.1	1900	254	0.70	1/8"	3/16"	0.31
19SCA04Q	1.1 - 4.5	1.1 - 4.3	1100	249	0.66	1/8"	3/16"	0.31
19SCA05Q	1.1 - 5.1	1.1 - 4.3	660	259	0.73	1/8"	3/16"	0.31
19SCA06Q	1.1 - 5.1	1.1 - 4.3	260	259	0.74	1/8"	3/16"	0.31

**Short housing

GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube. Weight does not include additional grip.

STANDARD EQUIPMENT:

Operation and maintenance instructions
 Additional grip for models with more than 10 Nm torque capacity.
 All torque springs necessary to achieve the stated torque.

STANDARD EQUIPMENT:

Additional grip (861006)

OPTIONAL:

Additional accessories: See catalogue SP-1000
 Torque springs: See catalogue SP-1000

Model Number		Torque Range	Speed	Length	Weight	Air Consumption		
1/4" Quick-Change Chuck	3/8" Square Drive	Nm	rpm	mm	kg	Air Inlet NPT	Min. Hose Inside Diameter	Air Consumption m ³ / min.
8RSA-10BQ		1.7 - 7.3	800	260	1.1	1/4"	1/4"	0.54
8RSA-7BQ		1.7 - 8.5	550	260	1.1	1/4"	1/4"	0.54
8RSA-5BQ		1.7 - 8.5	400	260	1.1	1/4"	1/4"	0.54
88RSA-7CQ	88RSA-7C-3	1.7 - 10	550	241	1.2	1/4"	1/4"	0.54
88RSA-5CQ	88RSA-5C-3	1.7 - 18	400	241	1.2	1/4"	1/4"	0.54
8RSAL-10BQ		1.7 - 6.8	800	302	1.3	1/4"	1/4"	0.54
88RSAL-5CQ	88RSAL-5C-3	1.7 - 18	400	282	1.4	1/4"	1/4"	0.54

GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube. Weight does not include additional grip.

STANDARD EQUIPMENT:

Operation and maintenance instructions
 Additional grip for models with more than 10 Nm torque capacity.
 All torque springs necessary to achieve the stated torque.

STANDARD EQUIPMENT:

Additional grip (861006)

OPTIONAL:

Additional accessories: See catalogue SP-1000
 Torque springs: See catalogue SP-1000

Cleco Pneumatic Pistol Grip Nutrunners

88 Series

Torque range: 1.7 - 20 Nm

- Quick-change chuck or square drive
- Reversible
- Trigger start and push & trigger start



88RSAPT-5C-3

Model Number		Torque Range	Speed	Length	Weight	Air Consumption		
1/4" Quick-Change Chuck	3/8" Square Drive	Nm	rpm	mm	kg	Air Inlet NPT	Min. Hose I.D.	Air Consumption m ³ / min.
Push and trigger start sliding knob reverse								
88RSAPT-7CQ		1.7 - 10	550	229	1.4	1/4"	1/4"	0.54
88RSAPT-5CQ	88RSAPT-5C-3	1.7 - 18	400	229	1.4	1/4"	1/4"	0.54
88RSAPT-2CQ		1.7 - 20	200	248	1.5	1/4"	1/4"	0.54
Sliding knob reverse								
88RSATP-7CQ	88RSATP-7C-3	1.7 - 10	550	225	1.4	1/4"	1/4"	0.54
88RSATP-5CQ	88RSATP-5C-3	1.7 - 18	400	225	1.4	1/4"	1/4"	0.54
88RSATP-2CQ	88RSATP-2C-3	1.7 - 20	200	245	1.5	1/4"	1/4"	0.54

GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.
Weight does not include additional grip.

STANDARD EQUIPMENT:

Operation and maintenance instructions
Additional grip for models with more than 10 Nm torque capacity.
All torque springs necessary to achieve the stated torque.

STANDARD EQUIPMENT IF LISTED:

Additional grip (861006)

OPTIONAL:

Additional accessories: See catalogue SP-1000
Bits & finders: See catalogue SP-1000
Torque springs: See catalogue SP-1000



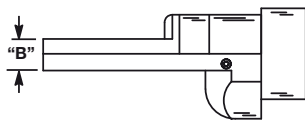
24 Series

Torque range: 14 - 40 Nm

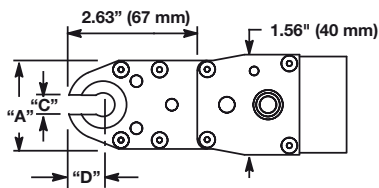
- One hand, two position throttle
- External torque adjustment
- Auto alignment socket

Dimensions

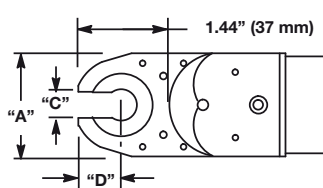
T2, T3 & T4 Head Height



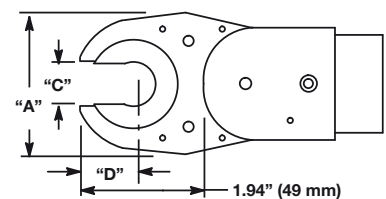
T2 Head



T3 Head



T4 Head



Model Number	Speed rpm	Torque Range Nm	Weight kg	Length mm	Socket Size mm	"A" mm	"B" mm	"C" mm	"D" mm
Drive									
24RTA12	670	5 - 12	1.2	305	NA	NA	NA	NA	NA
Drive with attachment									
24RTA20T2	240	14 - 20	2.0	426	---	36	14	7.0	13.5
24RTA30T3	175	20 - 30	2.0	426	---	42	15	11.9	18.5
24RTA40T4	130	26 - 40	2.3	449	---	60	15	17.0	23.5

*Varies with socket size.

GENERAL:

Air inlet tube NPT 1/4"

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

OPTIONAL:

For the appropriate socket refer to catalogue SP-1000.

Signal kit for torque verifier: 301937PT (see catalogue SP-1000)

NOTE: The models listed are examples. Use the table on the following page for models that are not listed.

Cleco Pneumatic Right Angle Nutrunners

19 Series

Torque range: 0.5 - 11 Nm

- Class-leading accuracy and repeatability
- External torque adjustment (Clecomatic models)
- Reversible
- 1/4" & 3/8" square drive

24 Series

Torque range: 4.0 - 23 Nm

- External torque adjustment (Clecomatic models)
- 3/8" square drive
- One torque spring to achieve the specified torque
- Oilless blades

34 Series

Torque range: 8.0 - 75 Nm

- External torque adjustment (Clecomatic models)
- 3/8" and 1/2" square drive
- Indexable angle head
- One torque spring to achieve the specified torque
- Oilless blades

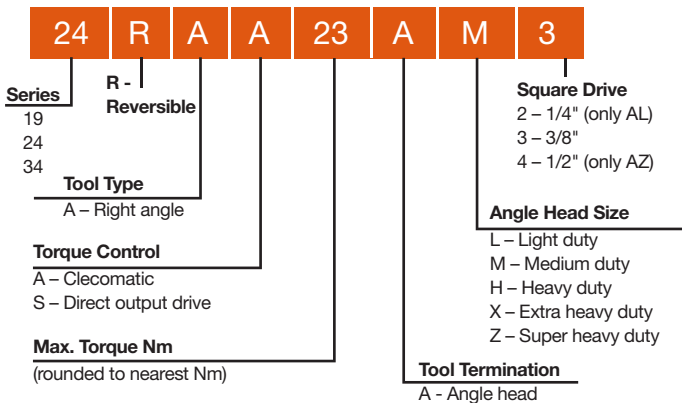


19RAA07AH2

24RAA11AL3

24RAA23AM3

Nomenclature



Model Number		Torque Range*		Speed	Length	Weight	Head Height	Side to Centre	Air Consumption		
		Tool	With Standard Spring						Air Inlet NPT	Min. Hose I.D.	Air Cons. m ³ / min.
1/4" Sq. Dr.	3/8" Sq. Dr.	Nm	Nm	rpm	mm	kg	mm	mm			
19 series - reversible - Clecomatic clutch											
		0.6 - 2.1	0.6 - 2.1	2400	303	0.8	27	9	1/8"	3/16"	0.31
	19RAA02AH3	0.7 - 2.4	0.7 - 2.4	2100	316	0.8	30	13	1/8"	3/16"	0.31
		0.6 - 3.1	0.6 - 2.4	1650	310	0.8	27	9	1/8"	3/16"	0.31
	19RAA03AH3	0.7 - 3.4	0.7 - 2.7	1450	321	0.8	30	13	1/8"	3/16"	0.31
		1.4 - 4.7	1.4 - 4.7	950	305	0.8	27	9	1/8"	3/16"	0.31
		1.4 - 5.7	1.4 - 4.7	570	316	0.8	27	9	1/8"	3/16"	0.31
	19RAA06AH3	1.5 - 6.0	1.5 - 5.4	850	316	0.8	30	13	1/8"	3/16"	0.31
		1.5 - 6.8	1.5 - 5.4	500	326	0.9	30	13	1/8"	3/16"	0.31
	19RAA09AH3	2.0 - 8.5	3.4 - 8.5	500	326	0.9	30	13	1/8"	3/16"	0.31
		2.0 - 11.3	3.4 - 11.3	340	312	1.0	30	13	1/8"	3/16"	0.31
	19RAA12AH3	2.0 - 11.3	3.4 - 11.3	200	326	0.9	30	13	1/8"	3/16"	0.31

*Applications above 5.7 Nm can degrade the service life of the spindle/output drive.

GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

STANDARD EQUIPMENT:

Operation and maintenance instructions
Torque adjusting wrench
All torque springs necessary to achieve the stated torque.

OPTIONAL:

Additional accessories: See catalogue SP-1000
Non-reversible kit: 207030
Signal kit for torque verifier: 301106 (only Clecomatic clutch)
Overhose: 207019
Quick-change chuck and 1/4" magnetic square drive only available for AH3 models.
Quick-change chuck: Replace AH3 with AHQ; 1/4" magnetic square drive: Replace AH3 with AHM.

Model Number		Torque Range	Speed	Length	Weight	Head Height	Side to Centre	Air Consumption		
								Air Inlet NPT	Min. Hose I.D.	Air Cons. m ³ / min.
3/8" Sq. Dr.	1/2" Sq. Dr.	Nm	rpm	mm	kg	mm	mm			
24 series - reversible - Clecomatic clutch										
		4 - 5.5	2200	358	1.2	27.5	12.0	3/8"	8"	0.68
		5 - 7	1770	358	1.2	27.5	12.0	3/8"	8"	0.68
		7 - 11	1260	358	1.2	27.5	12.0	3/8"	8"	0.68
		6 - 12	1200	360	1.3	29.5	14.4	3/8"	8"	0.68
		10 - 19	700	380	1.4	29.5	14.4	3/8"	8"	0.68
		12 - 23	600	380	1.4	29.5	14.4	3/8"	8"	0.68
34 series - reversible - Clecomatic clutch										
		5.5 - 8	2060	368	1.2	27.5	12.0	3/8"	8"	0.96
		7 - 11	1675	368	1.2	27.5	12.0	3/8"	8"	0.96
		9 - 15	1185	370	1.3	29.5	14.4	3/8"	8"	0.96
		13 - 26	710	390	1.5	31.0	14.4	3/8"	8"	0.96
		14 - 28	580	390	1.5	31.0	14.4	3/8"	8"	0.96
		17 - 33	545	393	1.6	34.5	17.1	3/8"	8"	0.96
		18 - 37	480	397	1.5	34.5	17.1	3/8"	8"	0.96
		24 - 47	385	397	1.5	34.5	17.1	3/8"	8"	0.96
		34 - 68	255	411	1.7	41.0	18.0	3/8"	8"	0.96
		38 - 75	155	431	1.8	41.0	18.0	3/8"	8"	0.96
	34RAA68AZ4	34 - 68	255	411	1.7	41.0	18.0	3/8"	8"	0.96
	34RAA75AZ4	38 - 75	155	431	1.8	41.0	18.0	3/8"	8"	0.96

GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

STANDARD EQUIPMENT:

Operation and maintenance instructions
Torque adjusting wrench
Adjusting tool for clutch

OPTIONAL:

Additional accessories: See catalogue SP-1000
Assembly wrench: 201898
Signal kit for torque verifier: 301937PT
Non-reversible kit: 204999
Exhaust overhose: 204978

Cleco Pneumatic Right Angle Nutrunners

55 Series

Torque range: 32 - 176 Nm

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

75 Series

Torque range: 95 - 430 Nm

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

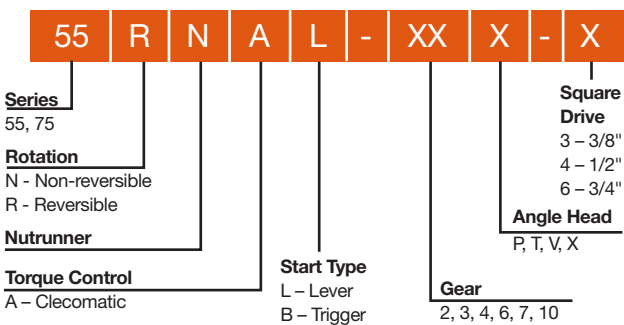


55RNAL-3T-4



75RNAL-2X-4

55 & 75 model number example



Model Number		Torque Range	Speed	Length	Weight	Head Height	Side to Centre	Angle Head	Air Consumption		
1/2" Sq. Dr.	3/4" Sq. Dr.								Nm	rpm	mm
55 & 75 series - lever start - reversible											
55RNAL-6T-4		32 - 65	370	489	3.5	50	22	T	1/2"	1/2"	1.56
55RNAL-4P-4		35 - 73	330	486	3.3	41	18	P	1/2"	1/2"	1.56
55RNAL-4T-4		39 - 87	280	489	3.5	50	22	T	1/2"	1/2"	1.56
55RNAL-3P-4		49 - 109*	220	486	3.3	41	18	P	1/2"	1/2"	1.56
55RNAL-3T-4		58 - 129	190	489	3.5	50	22	T	1/2"	1/2"	1.56
55RNAL-2T-4		81 - 170*	140	489	3.5	50	22	T	1/2"	1/2"	1.56
75RNAL-3V-4		95 - 190	175	556	6.0	64	28	V	1/2"	1/2"	1.98
75RNAL-2V-4		122 - 255*	130	556	6.0	64	28	V	1/2"	1/2"	1.98
75RNAL-3X-6		150 - 305	110	575	6.8	70	37	X	1/2"	1/2"	1.98
75RNAL-2X-6		203 - 410	80	575	6.8	70	37	X	1/2"	1/2"	1.98
55 & 75 series - lever start - non-reversible											
55NAL-3T-4		58 - 136	270	489	3.5	50	22	T	1/2"	1/2"	1.56
55NAL-2T-4		68 - 176*	200	489	3.5	50	22	T	1/2"	1/2"	1.56
75NAL-2V-4		135 - 271	210	556	5.9	64	28	V	1/2"	1/2"	1.98
75NAL-2X-6		215 - 430	130	575	6.7	70	37	X	1/2"	1/2"	1.98

*The tool maximum torque exceeds the maximum torque of the output drive; increased maintenance is to be expected if the tool is operated in the upper torque range.

GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

STANDARD EQUIPMENT:

Operation and maintenance instructions
Torque reaction mounting plate (75 series)
All torque springs necessary to achieve the stated torque.

OPTIONAL:

Additional accessories: See catalogue SP-1000

Cleco Nutrunners for High Torques

45 Series Inline

Torque range: 14 - 62 Nm

- Button start
- Twist ring reverse



45RNAB-4-3

55 Series Inline

Torque range: 27 - 91 Nm

- Lever start
- Twist ring reverse



55RNAL-4-4

64 Series Pistol

Torque range: 34 - 3850 Nm

- Button start
- Reversible
- Swingbar



64TTS640D8

Selectork 64 Series

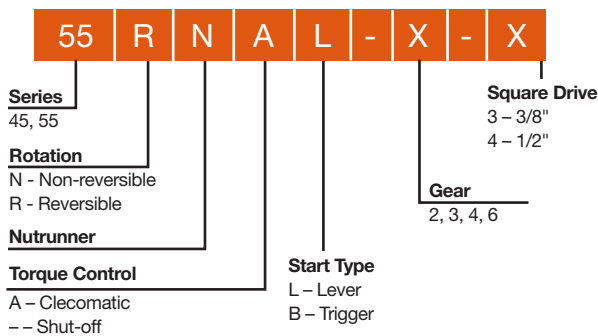
Torque range: 26 - 3850 Nm

- Pistol grip
- Reversible
- Swingbar
- Selectork adjustment permits compressed air regulation at the tool for the individual situation from a common air line

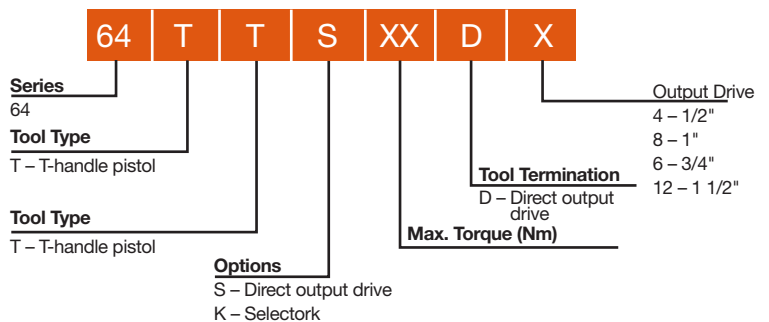


Selectork 64TTK34D4

45 & 55 model number example



64 model number examples



Model Number	Torque Range	Drive Size	Free Speed	Length	Weight*	Air Consumption		
	Nm		rpm	mm	kg	Air Inlet NPT	Min. Hose I.D.	Air Cons. m ³ / min.
45 Series - inline - Clecomatic - trigger start - twist ring reverse								
45RNAB-6-3	14 - 22	3/8	740	368	2.4	3/8"	10"	0.94
45RNAB-4-3	19 - 30	3/8	560	368	2.4	3/8"	10"	0.94
45RNAB-3-3	24 - 45	3/8	370	368	2.4	3/8"	10"	0.94
45RNAB-2-4	31 - 62	1/2	270	368	2.4	3/8"	10"	0.94
55 Series - inline - Clecomatic - lever start - twist ring reverse								
55RNAL-4-4	27 - 46	1/2	560	410	3.0	1/2"	13"	1.56
55RNAL-3-4	34 - 69	1/2	370	410	3.0	1/2"	13"	1.56
55RNAL-2-4	46 - 91	1/2	270	410	3.0	1/2"	13"	1.56

*Weight without reaction bar.

GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

STANDARD EQUIPMENT:

Operation and maintenance instructions
Aluminium torque reaction bar.

OPTIONAL:

Steel torque reaction bar: 869770
Additional accessories: See catalogue SP-1000

Model Number		Torque Range	Drive Size	Free Speed	Length	Weight*	Air Consumption		
Notn-Selectork	Selectork	Nm		rpm	mm	kg	Air Inlet NPT	Min. Hose I.D.	Air Cons. m ³ / min.
Pistol - trigger start - reversible									
64TTS34D4	64TTK34D4	26 - 34	1/2"	725	291	2.9	3/8"	1/2"	1.70
64TTS44D4	64TTK44D4	33 - 44	1/2"	570	291	2.9	3/8"	1/2"	1.70
64TTS55D4	64TTK55D4	41 - 55	1/2"	445	291	2.9	3/8"	1/2"	1.70
64TTS75D4	64TTK75D4	56 - 75	1/2"	340	291	2.9	3/8"	1/2"	1.70
64TTS90D4	64TTK90D4	68 - 90	1/2"	270	291	2.9	3/8"	1/2"	1.70
64TTS110D4	64TTK110D4	83 - 110	1/2"	225	291	2.9	3/8"	1/2"	1.70
64TTS125D4	64TTK125D4	94 - 125	1/2"	200	291	2.9	3/8"	1/2"	1.70
64TTS140D4	64TTK140D4	105 - 140	1/2"	180	291	2.9	3/8"	1/2"	1.70
64TTS150D6	64TTK150D6	113 - 150	3/4"	160	316	3.7	3/8"	1/2"	1.70
64TTS175D6	64TTK175D6	131 - 175	3/4"	135	316	3.7	3/8"	1/2"	1.70
64TTS205D6	64TTK205D6	154 - 205	3/4"	115	316	3.7	3/8"	1/2"	1.70
64TTS255D6	64TTK255D6	191 - 255	3/4"	95	316	3.7	3/8"	1/2"	1.70
64TTS345D6	64TTK345D6	259 - 345	3/4"	70	316	3.7	3/8"	1/2"	1.70
64TTS425D6	64TTK425D6	319 - 425	3/4"	55	316	3.7	3/8"	1/2"	1.70
64TTS570D6	64TTK570D6	428 - 570	3/4"	42	329	3.9	3/8"	1/2"	1.70
64TTS640D8	64TTK640D8	480 - 640	1"	32	404	6.6	3/8"	1/2"	1.70
64TTS750D8	64TTK750D8	563 - 750	1"	27	404	6.6	3/8"	1/2"	1.70
64TTS930D8	64TTK930D8	698 - 930	1"	22	404	6.6	3/8"	1/2"	1.70
64TTS1260D8	64TTK1260D8	945 - 1260	1"	16	404	6.6	3/8"	1/2"	1.70
64TTS1475D8	64TTK1475D8	1106 - 1475	1"	14	404	6.6	3/8"	1/2"	1.70
64TTS1820D8	64TTK1820D8	1365 - 1820	1"	11	404	6.6	3/8"	1/2"	1.70
64TTS1985D8	64TTK1985D8	1489 - 1985	1"	10	404	6.6	3/8"	1/2"	1.70
64TTS3850D12	64TTK3850D12	2888 - 3850	1 1/2"	5	546	14.6	3/8"	1/2"	1.70

*Weight without reaction bar.

GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

STANDARD EQUIPMENT:

Operation and maintenance instructions
Aluminium torque reaction bar.
Steel torque reaction bar (tool above 67 Nm)
Bucking bar collar with handle (64TTS3850D12 & 64TTK3850D12)

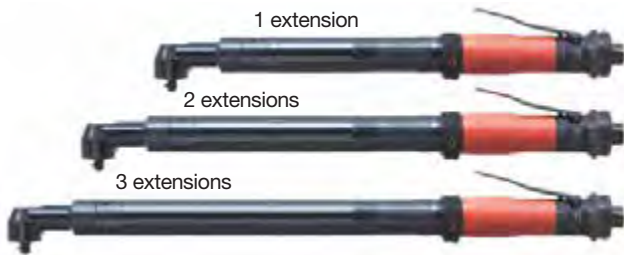
OPTIONAL:

Steel torque reaction bar: for 64...D4 tools: 48047128
Additional accessories: See catalogue SP-1000

Cleco Pneumatic Assembly Tool Accessories

Torque Reaction Bar

Part Number	Description	Used On...
869770	Steel bar	45, 55 Series inline
48047128	Steel bar	64...D4
46037081	Bucking bar collar with handle	64...D4
46177030	Bucking bar collar with handle	64...D6
46607058	Bucking bar collar with handle	64...D8

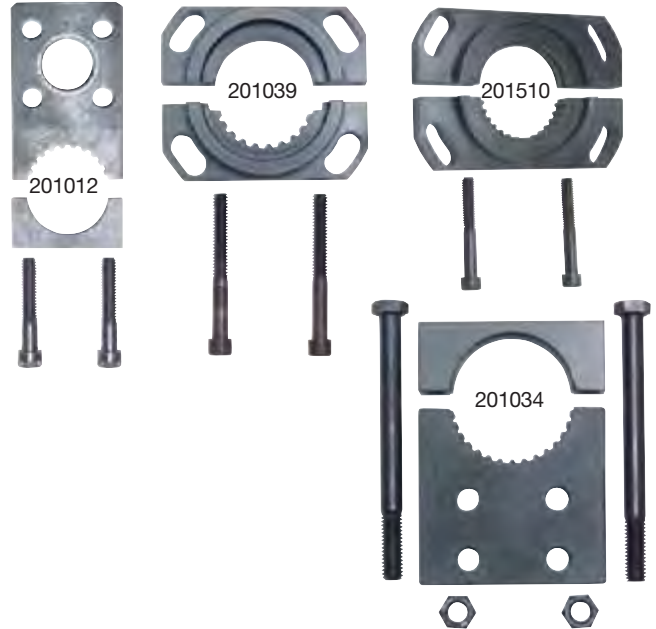


Extension Kit (3.5")

Part Number	Used On...
301081	34 Series (37 Nm or more)
301108	24/34 Series (36 Nm or less)

Torque Reaction Mounting Plate

Part Number	Description	Used On...
201012	Torque reaction plate	45, 55 Series
201039	Fixed tool plate	45, 55 Series
201510	Torque reaction plate	75 Series
201034	Torque reaction plate	75 series (standard)



Angle Head Covers

Part Number	Used On...	
	Tool Series	Angle Head
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



Holder for Angle Nutrunner

Part Number	Used On...
941293	Suitable for all Angle Nutrunners, delivered as a pair.



Assembly Wrench

Part Number	Description
201898	Two required



Torque Verifier Kit Air Signal for Clutch Shut-Off

Part Number	Used On...
201900	24/34 Series Clecomatic (old version)
301937PT	24/34 Series Clecomatic (new version)
301106	19 Series Clecomatic



Rotating Suspension Bail

Part Number	Used On...
541715-5	24, 34 Series
54397004	64...D4
46437006	64...D6
46607016	64...D8
46037036	64...D12



Joint Simulator

Description	Torque Range	Width	Height	Length	Part Number
	Nm	mm	mm	mm	
Joint simulator	300 - 15	264	406	667	550006



The Cleco H-Series Pulse Nutrunners in Action



When Speed Counts

Fastening an axial piston motor using a Cleco H-Series pulse nutrunner without shut-off



35PHH653

Critical Fastening Cases

Fastening motor attachments using Cleco H-Series pulse shut-off nutrunner



55PTHH403



If Accuracy Is Required

Fastening plugs to a pump using a Cleco H-Series pulse shut-off nutrunner



35PTHH403

Reaction-Free Production

Fastening transformers using Cleco inline pulse shut-off nutrunner



7STHFC55Q

Cleco C-Series Pulse Nutrunners - Specifications

PTH, STH Series

Torque Range 2,6 - 400Nm

Bolt Size M3 - M20

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



160PTHFC256
Pulse Tool for
100Nm - 160Nm



400PTHFC206
Pulse Tool for
250Nm - 400Nm



7STH/15STH/35STH
In-Line Pulse Tool
for 2,6Nm - 35Nm

Model Number	Drive Type	Bolt Size (mm)	Torque Range (Nm)	Free Speed (RPM)	Weight (kg)	Side to Center (mm)	Length (mm)	Air consumption Free Speed / Pulsen	Noise (dB A)	Vibrations (m/s ²)	Hose I.D.
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C-Series – Pistol Grip – Shut-Off Models

140PTHFC25Q	7/16" Swf.	M12	100 - 140	2 500	2,6	36	251	0,28 / 0,72	< 77	< 2,5	1/2"
160PTHFC256	Carré 3/4"	M16	100 - 160	2 500	2,6	36	245	0,25 / 0,72	< 77	< 2,5	1/2"

C-Series – Pistol Grip – Shut-Off Models – Trigger Throttle

250PTHFC226	Carré 3/4"	M16	160 - 250	2 200	4,0	42	261	0,4 / 0,95	< 76	< 2,5	1/2"
400PTHFC206	Carré 3/4"	M18	250 - 400	2 000	5,3	48	279	0,6 / 1,2	< 82	< 2,5	1/2"

In-Line – Push-to-Start

7STHFA55Q	1/4" Swf.	M5	2,6 - 6,6	5500	0,83	24	224	0,2 / 0,16	<70	< 2,5	3/8"
35STHFA40Q	7/16" Swf.	M8	15 - 35	2000-4000	1,35	28	270	0,45/0,3	<77	< 2,5	3/8"
35STHFA404	Carré 1/2"	M8	15 - 35	2000-4000	1,3	28	260	0,45/0,3	<77	< 2,5	3/8"

C-Series – In-Line – Lever

7STHFC55Q	1/4" Swf.	M5	2,6 - 6,6	5500	0,93	24	262	0,2/0,16	<70	< 2,5	3/8"
15STHFC40Q	1/4" Swf.	M6	5 - 15	4000	1,1	19	289	0,1/0,3	<65	< 2,5	3/8"
35STHFC404	7/16" Swf.	M8	12 - 26	2000-4000	1,5	28	300	1,5/1,45	<75	< 2,5	3/8"
35STHFC40Q	Carré 1/2"	M8	15 - 35	2000-4000	1,5	28	310	1,5/1,45	<75	< 2,5	3/8"
15STHC40Q	1/4" Swf.	M8	5 - 15	3000	1,1	19	289	0,1/0,3	<65	< 2,5	3/8"

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

Cleco[®]

H-SERIES PULSE TOOLS

DURABLE.

ECONOMICAL.

LOW MAINTENANCE.

We are constantly improving our products to guarantee you optimum productivity.

The Cleco H-Series combines legendary durability with unmatched repeatability so you will be able to complete every joint quickly and reliably.

Due to the excellent power-weight ratio, you will not want to put it down again.



UNBEATABLE PERFORMANCE.

With 54 models 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.

Pulse Tools



Outstanding Ergonomics

Leading motor design combined with new body development provides exceptional biotechnology. Less vibrations allow for greater operator comfort.



Powerful and Efficient 3-Chamber Air Motor

With speed governor and oilless blades. Reduces tightening time with increased torque. Unique design reduces blade wear and lowers total cost of ownership.



3-Chamber Motor Housing



50% Lower Air Consumption at Free-Speed

Innovative centrifugal speed control does not release the entire capacity before run down has ended. Enables operation to as low as 4 bar. Lower air consumption drives lower cost of ownership.



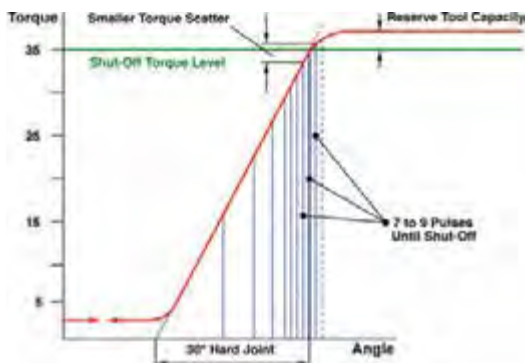
Easy Torque Set-Up

Simply insert hex into rear port of tool.



High-Precision Shut-Off

Mechanism ranges close to electric tool characteristics at a tolerance of +/- 10% at Six Sigma.



Hard Joint Reference



Easily Adjustable Motor Speed

Ensures accuracy on hard joints. Can be locked into place to prevent accidental modification.

NEW Reduced Tool Maintenance
 Double-chambered pulse unit with built-in automatic oil reserve. Up to 500,000 cycles before the first service.



Completely Re-Engineered Pulse Unit
 Delivers market-leading repeatability for hard and soft joints.



Drive Spindle Bearing



Automatically Activated Expansion Chamber

Anti-Wobble Socket



Drive Spindle Bearing Support

Ships Ready for Error-Proofing



Works with existing TVP torque verifier. Port located near air inlet to maximize ergonomics.



Standard Air Signal-Indicating Tool Shut-Off for use with Cleco TVP Error-Proofing System





Model Number	Drive Type	Torque Range	Free Speed	Weight	Side to center	Air consumption				
		Nm	Rpm			NPT	Hose I.D.	Free Speed m ³ /min	Load m ³ /min	
H-SERIES PISTOL GRIP SHUT-OFF MODELS										
7PTHH352	1/4" Sq.Dr.	4-7	3500	0,79	21	1/4"	3/8"	0,1	0,25	
7PTHH35Q	1/4" QC	4-7	3500	0,79	21	1/4"	3/8"	0,1	0,25	
11PTHH352	1/4" Sq.Dr.	6-11	3500	0,82	21	1/4"	3/8"	0,15	0,3	
11PTHH35Q	1/4" QC	6-11	3500	0,85	21	1/4"	3/8"	0,15	0,3	
11PTHH353*	3/8" Sq.Dr.	6-11	3500	0,83	21	1/4"	3/8"	0,15	0,3	
20PTHH40Q	1/4" QC	10-20	4000	0,87	21	1/4"	3/8"	0,15	0,3	
20PTHH403*	3/8" Sq.Dr.	10-20	4000	0,86	21	1/4"	3/8"	0,15	0,3	
35PTHH40Q	1/4" QC	20-35	4000	1,05	24	1/4"	3/8"	0,2	0,4	
35PTHH403*	3/8" Sq.Dr.	20-35	4000	1,05	24	1/4"	3/8"	0,2	0,4	
55PTHH403*	3/8" Sq.Dr.	30-55	4000	1,15	24	1/4"	3/8"	0,3	0,6	
80PTHH35Q	7/16" QC	50-80	3500	1,45	28,5	1/4"	3/8"	0,3	0,6	
80PTHH354	1/2" Sq.Dr.	50-80	3500	1,40	28,5	1/4"	3/8"	0,3	0,6	
110PTHH30Q	7/16" QC	75-110	3000	1,70	28,5	1/4"	1/2"	0,4	0,8	
120PTHH304	1/2" Sq.Dr.	75-120	3000	1,70	28,5	1/4"	1/2"	0,4	0,8	

PTHHA = Add "A" after "HH" in model number to denote Top Air Inlet option when ordering.
 (*) 7/16" Quick Change Chuck available separately as an accessory.

General: Tool performance rated at 6 bar air pressure.
 Standard Equipment: Suspension bail and torque adjusting wrench.
 Torque signal port (pistol grip models only).



Model Number	Drive Type	Torque Range	Free Speed	Weight	Side to center	Air consumption				
		Nm	Rpm			NPT	Hose I.D.	Free Speed m ³ /min	Load m ³ /min	
H-SERIES PISTOL GRIP NON-SHUT-OFF MODELS										
7PHH602	1/4" Sq.Dr.	4-7	6000	0,77	21	1/4"	3/8"	0,3	0,25	
7PHH60Q	1/4" QC	4-7	6000	0,79	21	1/4"	3/8"	0,3	0,25	
11PHH653*	3/8" Sq.Dr.	6-11	6500	0,79	21	1/4"	3/8"	0,35	0,3	
11PHH652	1/4" Sq.Dr.	6-11	6500	0,78	21	1/4"	3/8"	0,35	0,3	
11PHH65Q	1/4" QC	6-11	6500	0,80	21	1/4"	3/8"	0,35	0,3	
20PHH753*	3/8" Sq.Dr.	10-20	7500	0,84	21	1/4"	3/8"	0,4	0,3	
20PHH75Q	1/4" QC	10-20	7500	0,86	21	1/4"	3/8"	0,4	0,3	
35PHH653*	3/8" Sq.Dr.	20-35	6500	1,02	24	1/4"	3/8"	0,55	0,4	
35PHH65Q	1/4" QC	20-35	6500	1,03	24	1/4"	3/8"	0,55	0,4	
55PHH603*	3/8" Sq.Dr.	30-55	6000	1,12	24	1/4"	3/8"	0,75	0,6	
80PHH604	1/2" Sq.Dr.	50-80	6000	1,40	28,5	1/4"	3/8"	0,7	0,6	
80PHH60Q	7/16" QC	50-80	6000	1,41	28,5	1/4"	3/8"	0,7	0,6	
110PHH55Q	7/16" QC	75-110	5500	1,66	28,5	1/4"	1/2"	0,9	0,8	
120PHH554	1/2" Sq.Dr.	75-120	5500	1,65	28,5	1/4"	1/2"	0,9	0,8	

PHHA = Add "A" after "HH" in model number to denote Top Air Inlet option when ordering.
 (*) 7/16" Quick Change Chuck available separately as an accessory.

General: Tool performance rated at 6 bar air pressure.
 Standard Equipment: Suspension bail



931041
Tool Holder

Model Number	Description
ACCESSORIES	
931041	Tool Holder - Rubber, 1 piece
934918	Signal-Kit for torque verifier TVP110
935472	7/16" Quick-Change Chuck for 11/20/35/55PTHH/PTHHA/PHH/PHHA
935965	Vibration absorber for 35/55PTHHA/PHHA
935966	Vibration absorber for 80/110/120PTHHA/PHHA
928483	Filler Unit
935718	Connector (Angle)
936695PT	Reserve Oil Filling Set (Syringe and Distancer)
539317	Hydraulic Oil (One Quart)

TVP-110-30-D (230V)* Torque verifier; 2,72kg; W x H x D 222 x 232 x 105mm

* = Power cable, air signal-transducer, one 8m-cable for connection with air signal-transducer as well as one 2,3m-air hose for connection with transducer at the tool are included in delivery.
 NOTICE: Tool has to be equipped with a Signal-Kit for TVP-110.

936695PT
Reserve Oil Filling Set



Model Number	Description Sut-off	Model Number	Description Non-sut-off
PROTECTIVE COVERS			
937442PT	7/11/20PTHHA/7/11/20PHHA	937447PT	7/11/20PTHH/7/11/20PHH
937443PT	35PTHHA/35PHHA	937448PT	35PTHH/35PHH
937444PT	55PTHHA/55PHHA	937449PT	55PTHH/55PHH
937445PT	80PTHHA/80PHHA	937450PT	80PTHH/80PHH
937446PT	110/120PTHHA/110/120PHHA	937451PT	110/120PTHH/110/120PHH



Protective
Cover

Customer Feedback:

At MAN in Salzgitter we are using several pulse tools in very challenging applications where we make high demands on torque, durability and follow-up costs. The types of Cleco pulse tools which I am using in production are meeting these requirements perfectly, both in terms of repeatability, maintenance costs and quality. They work maintenance free until today since placing them into operation 15 months ago.

*Dirk Schupmann
Planning Support
MAN Truck & Bus AG*



Typical industry application of impulse nutrunners:

WIND ENERGY



AEROSPACE



OFFROAD & CONSTRUCTION



HEAVY TRUCKS



DRIVE-LINE ASSEMBLY



GENERAL INDUSTRY



AGRICULTURE



AUTOMOTIVE



RAILROAD



Cleco WP & WT Series Impact Wrenches

WP Series

Torque range:
350 - 2.250 Nm

Bolt size:
M24 - M30

- Lever and trigger start
- Reversible

WP-2049-6



WT Series with Spade Handle

Torque range:
1,000 - 4,000 Nm

Bolt size:
M30 - M36

- Trigger start
- Second handle
- Reduced maintenance due to oil bath lubrication
- Reversible

WT-2109-8



Model Number	Bolt Size	Square Output Drive	Torque Range	Impacts per Minute	Free Speed	Length	Weight	Side to Centre	Air Consumption		
	Size								Torque Range	Min. Hose Size	Air Cons. m ³ / min.
	mm										

Pistol grip - trigger control

WP-2060B-8	M24	1	350 - 1200	1000	4000	197	5.5	46	3/8"	3/8"	1.70
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Pistol grip - trigger control - with higher reverse power***

WP-2059-8	M24	1	350 - 1,100	1000	4000	197	5.5	46	3/8"	3/8"	1.70
WP-2109B-8	M30	1	1000 - 2250	880	4300	241	9.4	56	1/2"	3/8"	2.83

General information:
Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

Optional equipment:
86909 Locking pin for WL-200
Additional accessories:
See catalogue SP-1000

Standard equipment:
Operating manual and maintenance instructions

**Square drive with sprung pin

***With increased breakaway torque in reverse

2059 Series: 1200 ft.-lbs. (1600 Nm)

2109 Series: 2500 ft.-lbs. (3400 Nm)

Model Number	Suitable for Bolt Size	Square Output Drive	Torque Range	Impacts per Minute	Free Speed	Length	Weight	Side to Centre	Air Consumption		
									Inside Trigger	Torque Range	Min. Hose Size

Trigger control - spade handle

WT-2110-8	M30	1	1000 - 2250	880	4600	327	9.5	56	1/2"	1/2"	2.83
WT-2120-12	M36	1 1/2	1600 - 4000	850	3300	362	12.5	59	1/2"	5/8"	2.97

Trigger control - spade handle - with higher reverse power*

WT-2109-8	M30	1	1000 - 2,250	880	4300	327	9.5	56	1/2"	1/2"	2.83
WT-2119-12	M36	1 1/2	1600 - 3500	820	3300	362	13.1	59	1/2"	5/8"	2.97

General information:
Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

Optional equipment:
Yoke for second handle
Second handle

Additional accessories:
See catalogue SP-1000

Standard equipment:
Operating manual and maintenance instructions

2109 Series: 2500 ft.-lbs. (3400 Nm)

2119 Series: 3500 ft.-lbs. (4700 Nm)

*With increased breakaway torque in reverse

**WE CHALLENGE YOU TO FIND A
TOUGHER AIR IMPACT WRENCH**



NEW Impact Wrenches Comparison

TOUGH TOOLS. EASY CHOICE.

For over 120 years, Cleco has exclusively supplied the global industrial market. Where other tools are born and bred for garages and tire shops, we make tools that are engineered and primed for the most grueling industrial environments. Where other tools weaken, seize, or become difficult to repair, our tools will endure and keep on tackling your toughest challenges. Count on Cleco Industrial Air Impact Wrenches for TOUGH TOOLS. EASY CHOICE.



CWC Series
Premium Composite



CWM Series
Premium Metal



CV Series
Value Composite

Twin hammer impact mechanism	●	●	●
High-efficiency air motor	●	●	●
Variable speed trigger	●	●	●
One-hand push button forward/reverse	●		
Integrated protective bumper	●		
No-charge modular muffler system	●		●
Soft-grip handle		●	
Available in pin and ring anvil	●	●	●
Composite housing	●		●
All-metal housing		●	
Accessory tool hanger		●	
Available in extended anvil	●		
Warranty	2 year	2 year	1 year

Cleco Assembly Tools



- DC Electrical Assembly Systems
- Intelligent Spindles
- Pulse Tools
- Assembly Screwdrivers & Nutrunners
- Impact Wrenches
- Fixtured Assembly Solutions
- Custom Assembly Solutions

DOTCO Material Removal Tools



- Angle Grinders
- Vertical Grinders
- Precision Grinders
- Die Grinders
- Industrial Drilling Solutions
- Aircraft Drills
- Percussion Tools
- Buffers, Polishers, and Sanders

APEX Industrial Fastener Tools



- Industrial Grade Bits and Sockets
- Universal Joints
- Anti-Marring Protective Covers
- Impact Tool Sockets, Adapters, and Extensions
- Specialty Fastener Tools

New Cleco Impact Wrenches CWC Series

CWC SERIES

THE ULTIMATE BALANCE OF PERFORMANCE, ERGONOMICS, AND DURABILITY.

CWC Series combines powerful performance, rock-solid durability, and user-preferred ergonomics into one comfortable and lightweight package. A reliable twin hammer mechanism and industrial grade bearings further ensure that the CWC Series delivers long-lasting productivity.

Impacting mechanism with advanced triple cycle heat treatment: ensures sustained high performance

Integrated raised bumper: protects your investment

High output Cleco motor: powerful, balanced, and easy to service

Available in regular and extended pin or ring anvil: tackles hard-to-reach applications with ease

Variable-speed trigger: precise control

Industrial-grade bearings: long-lasting power delivery

Silencer muffler: included with the tool for sound reduction

One-hand push button forward/reverse: superior ergonomics

Ergonomic comfort-grip handle: resistant to chemicals, temperatures, and dampens vibration



CWC-250QC
CWC-250R

CWC-375P
CWC-375R

CWC-500P
CWC-500R

CWC-500PE
CWC-500RE

CWC-750P

Drive Size and Style	1/4" Pistol	3/8" Pistol	1/2" Pistol	1/2" Pistol, Extended Anvil	3/4" Pistol
Max Applied Torque – Nm	65	610	1085	1085	1890
Max Breakaway Torque – Nm	100	745	1600	1600	2440
Free Speed – RPM	13,000	10,000	8000	8000	6500
Length – mm	152	152	186	244	215
Weight – kg	0,9	1,3	2	2,1	3,5
Warranty Period	2 Years	2 Years	2 Years	2 Years	2 Years
Impacting Sound Level* – dB(A)	87	90	87	87	90

*Sound level with muffler installed

Output Options: QC – 1/4" Quick Change Chuck | R – Retaining Ring | P – Pin Anvil or Pin Hole | RE – Extended Retaining Ring Anvil | PE – Extended Pin Anvil

CWM SERIES

ENGINEERED FOR HEAVY-DUTY APPLICATIONS IN THE MOST DEMANDING ENVIRONMENTS.

The CWM Series is built to thrive in the face of adversity. It's been dragged by a hose, dropped from two stories, bashed on concrete, and left outside in extreme environments to make sure it performs whenever and wherever you need it to.

Rugged all-metal construction:
withstands heavy abuse

Available with pin or ring anvil:
added versatility

Impacting mechanism with advanced triple cycle heat treatment:
ensures trouble-free high performance in the most challenging work environments

Variable-speed trigger:
precise control

Large lever forward-reverse and speed settings:
easy to operate

Soft-touch grip:
protects against slip, temperature, and vibration



Drive Size and Style	3/8" Pistol	1/2" Pistol	3/4" Pistol
Max Applied Torque – Nm	450	1200	1720
Max Breakaway Torque – Nm	610	1620	2330
Free Speed – RPM	12.000	9000	6000
Length – mm	140	180	210
Weight – kg	1,5	2,6	4,7
Warranty Period	2 years	2 years	2 years
Impacting Sound Level – dB(A)	89	90	91

Output Options: R – Retaining Ring | P – Pin Anvil or Pin Hole

New Cleco Impact Wrenches CV Series

CV SERIES

HIGH TORQUE, LOW WEIGHT, UNBEATABLE VALUE.

The CV Series is a practical and rugged workhorse for general industrial production, repair, and maintenance. Lightweight, balanced, and comfortable, the CV Series deliver Cleco performance at an unbeatable value.

Durable Cleco motor:
high power-to-weight ratio

**Dial forward, reverse,
and speed settings:**
for quick adjustment



**Available with pin
or ring anvil:**
added versatility

**Powerful twin hammer
mechanism:**
delivers sustained power
with little reaction to the
end user

Variable-speed trigger:
precise control

Silencer muffler:
included with the tool
for sound reduction

**Rugged metal
end plate:**
protects against
drop and misuse



**CV-375R
CV-375P**

NEW!



CV-375R-4



**CV-500R
CV-500P**



CV-750P



CV-750P-8

Drive Size and Style	3/8" Pistol	1/2" Pistol	1/2" Pistol	3/4" Pistol	1" Pistol
Max Applied Torque – Nm	560	560	1050	1760	1760
Max Breakaway Torque – Nm	690	690	1490	2030	2030
Free Speed – RPM	8000	8000	8500	5500	5500
Length – mm	157	157	193	221	231
Weight – kg	1,3	1,3	2,2	3,7	3,8
Warranty Period	1 Year	1 Year	1 Year	1 Year	1 Year
Impacting Sound Level* – dB(A)	87	87	89	91	91

*Sound level with muffler installed

Output Options: R – Retaining Ring | P – Pin Anvil or Pin Hole

The Series TVP-100 torque verifier provides low-cost certainty during assembly for pneumatic, rotating and pulsing nutrunners.

The new Cleco torque verifiers TVP-100 improve the assembly process as user errors due to releasing the trigger too early, stripping the screw thread or re-hits are indicated.

The Series TVP-100 is designed for usage with pneumatic Cleco shut-off nutrunners and Cleco pulse shut-off nutrunners with torque verifier kit.

The Series TVP-100 provides optical and acoustic feedback both for individual fastening parameters and for fastening groups and in this way ensures that each element is correctly and completely fastened.

Building on the TME controller technology from Cleco, the user interface on the series TVP-100 permits straightforward setup and operation of the tool.

The Series TVP-100 measures the fastening sequence on the pneumatic tool connected. Deviations from a normal fastening sequence due to re-hits, stripping threads, prematurely releasing the trigger or a number of other variables result in an acoustic and optical NOK signal from the verifier that notifies the operator of the error. While the measuring and control electronics TME111 check the tool and therefore the fastening process, the Series TVP-100 represents a cost-effective option for checking the shut-off process.



Cleco Torque Verifier Specifications



Features

- Check nutrunner settings with optical and acoustic OK/NOK indication
- On-screen check on the individual nutrunner status with count function
- Graphic indication with a graph for each fastening
- Saves 1,000 processes
- Sequence control feature
- 8 parameter sets available for different applications
- "Auto Cal" permits quick, straightforward tool set-up for different fastening types
- Password-protected
- Different languages can be selected

TVP-100 Torque Verifier

Model Number		Language	Weight	Width	Height	Depth
115VAC*	230VAC*		kg	mm	mm	mm
TVP-110-15-U	TVP-110-30-U	English	2.72	222	232	105
TVP-110-15-D	TVP-110-30-D	German	2.72	222	232	105
TVP-110-15-S	TVP-110-30-S	Spanish	2.72	222	232	105
TVP-110-15-P	TVP-110-30-P	Portuguese	2.72	222	232	105

*230VAC units are CE certified.

All model numbers include power cable, air signal transducer, 8 metre cable for connection of the TVP to air signal transducer and 2.3 metre air line for connection of the transducer to the tool.

NOTE: The tool must be equipped with a signal kit for the torque verifier.

24 V inputs/outputs:

Inputs: Up to 8 applications
Batch accept
Reject

Outputs: Cycle accept
OK indication
NOK indication

Torque Verifier Kits

Part Number	For the Tools...
301106	19SCA & 19RAA Series
302021PT	19TTA & 19PTA Series
201900	24RAA & 34RAA Series (old version)
301937PT	24RAA & 34RAA Series (new version)
934918	PTH Series pulse nutrunners (C & D & H Series)

Cable for Dig. I/O

Part Number	Description
941195-100	Connection cable for digital I/O, 12 PIN round connector to flying lead, length 10 m

Cable

Part Number	Description
207237	115 V transducer and cable
207238	230 V transducer and cable

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

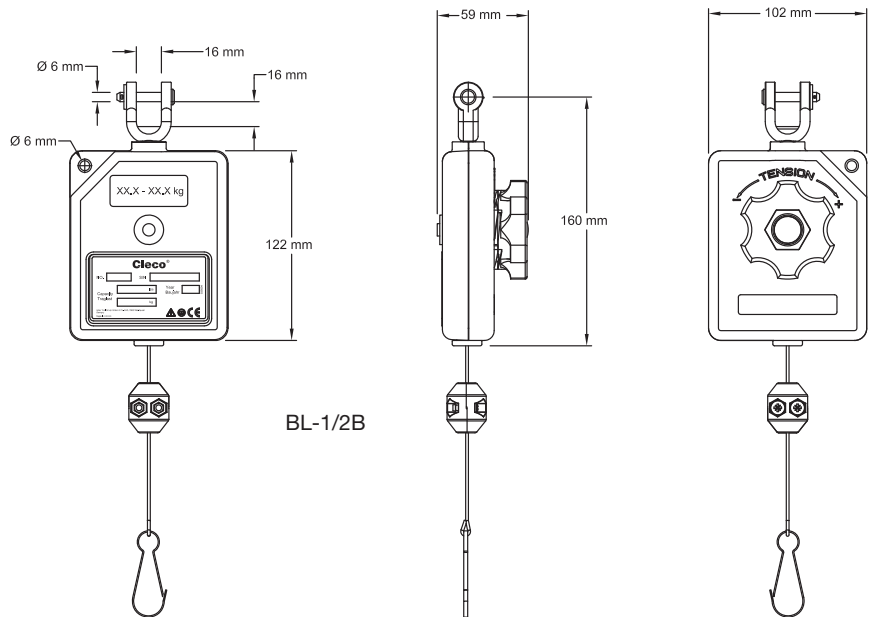


Load Capacity Range 0.5 - 1.8 kg



BL-1B

- Impact-resistant plastic housing
- Resilient, durable spring
- Mounting eye can be rotated 360°
- Mounting point for safety chain
- Adjustable cable stop
- Adjustment of the spring tension using external rotary knob
- Nylon rope

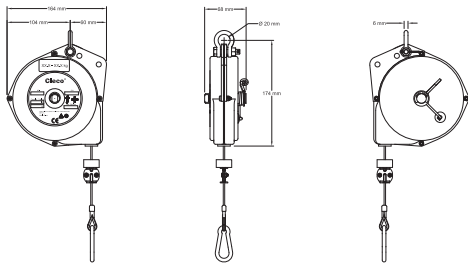


BL-1/2B

Model Number	Load Capacity	Rope	Weight
	kg	m	kg
BL-1B	0.5 - 0.9	1.6	0.43
BL-2B	0.9 - 1.8	1.6	0.43

Load Capacity Range 0.4 - 2.3 kg

- Steel housing, colour orange RAL2004
- Adjustable cable stop permits adjustment of tool to the required height
- Cable diameter 2.5 mm
Option: 939597 safety chain (L=0.38 m)



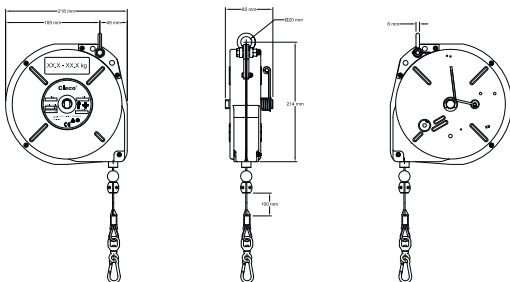
BL-3B



BL-3B

Load Capacity Range 1.8 - 10 kg

- Steel housing, colour orange RAL2004
- Spring break protection
- Adjustable cable stop permits adjustment of tool to the required height
- Carabiner hook can be rotated 360°
- Cable diameter 2.5 mm
Option: 939597 safety chain (L=0.38 m)



BL-5C / 7C / 10C



BL-7C

Model Number	Load Capacity	Rope	Weight
	kg	m	kg
BL-3B	0.4 - 2.3	2.4	1.8
BL-5C	1.8 - 4.5	2.4	3.8
BL-7C	3.6 - 6.8	2.4	3.8
BL-10C	7.3 - 10.0	2.4	4.2

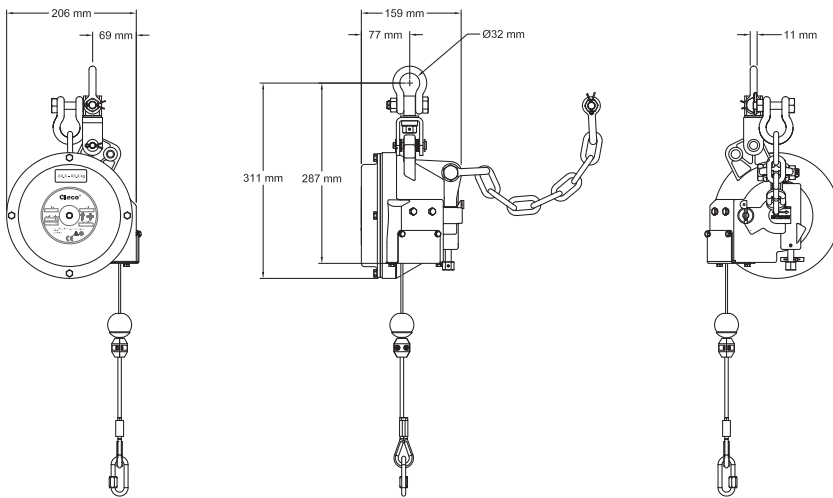
Cleco Balancers BM Series

Load Capacity Range 2.3 - 30 kg

- Aluminium housing
- Spring break protection
- Adjustable cable stop permits adjustment of tool to the required height
- Manual drum locking
- Coated cable drum against wear
- Mounting bar can be rotated 360°
- Cable diameter 3.0 mm
- Option: 939536 safety chain



BM-14B



BL-5B / 9B / 14B / 18B / 23B / 30B

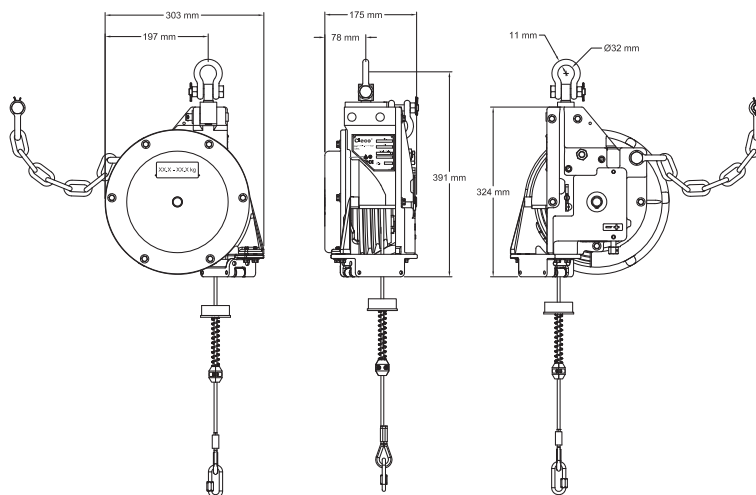
Model Number	Load Capacity	Rope	Weight
	kg	m	kg
BM-5B	2.3 - 5.0	1.8	7.4
BM-9B	5.0 - 9.0	1.8	7.4
BM-14B	9.0 - 14.0	1.8	7.4
BM-18B	13.0 - 18.0	1.8	7.4
BM-23B	18.0 - 23.0	1.8	7.4
BM-30B	23.0 - 30.0	1.8	7.4

Load Capacity Range 31 - 45 kg



BH-39B

- Aluminium housing
 - Spring break protection
 - Adjustable cable stop permits adjustment of tool to the required height
 - Manual drum locking
 - Coated cable drum against wear
 - Mounting bar can be rotated 360°
 - Cable diameter 5.0 mm
- Option: 939536 safety chain



BH-39B / 41B / 45B

Model Number	Load Capacity	Rope	Weight
	kg	m	kg
BH-39B	31.0 - 39.0	2.1	17
BH-41B	36.0 - 41.0	2.1	17
BH-45B	40.0 - 45.0	2.1	17

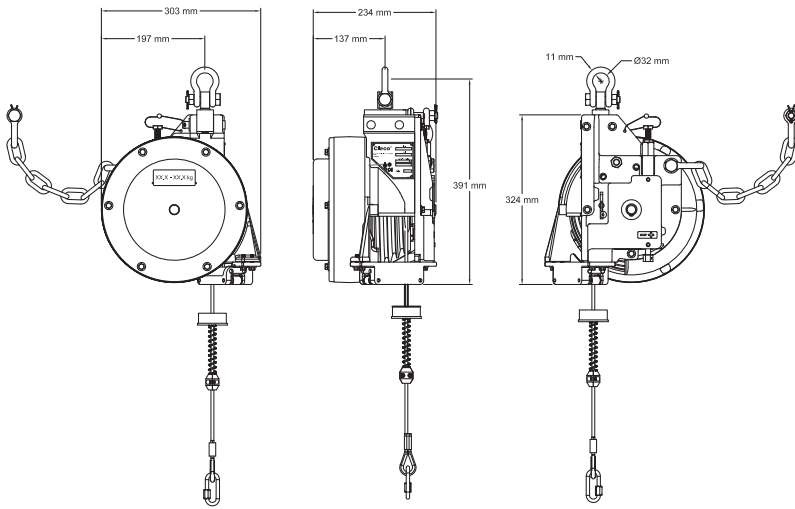
Cleco Balancers BH Series

Load Capacity Range 38.3 - 91 kg

- Two-spring model
 - Aluminium housing
 - Spring break protection
 - Adjustable cable stop permits adjustment of tool to the required height
 - Manual drum locking
 - Coated cable drum against wear
 - Mounting bar can be rotated 360°
 - Cable diameter 5.0 mm
- Option: 939536 safety chain



BH-52B

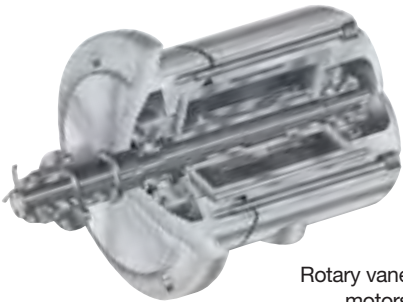


BL-52B / 57B / 66B / 75B / 79B / 91B

Recommendable:
Additional securing using safety chain/rope

Model Number	Load Capacity	Rope	Weight
	kg	m	kg
BH-52B	38.3 - 52.0	2.1	24
BH-57B	52.0 - 57.0	2.1	24
BH-66B	56.0 - 66.0	2.1	24
BH-75B	65.0 - 75.0	2.1	24
BH-79B	72.0 - 79.0	2.1	24
BH-91B	79.0 - 91.0	2.1	24

Select the Right Pneumatic Power Motor for Your Application



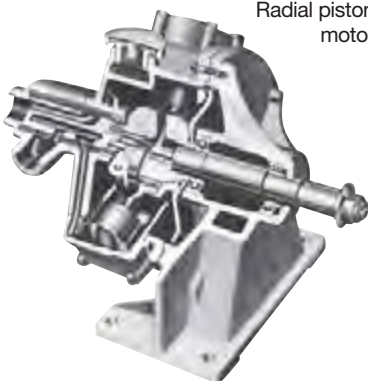
Rotary vane
motors



Axial piston
motor



Radial piston
motor



The Apex Tool Group's pneumatic power motors have been developed for flexibility and reliability. Cleco pneumatic power motors cover a wide range of applications where compressed air is advantageous: powering compressed air machinery, raising foundry copes and drags, rotating a turntable, mixing paint, powering cranes, actuating valves or as a power source for mechanical gripper arms or universal joints

Rotary Vane Motor*

The Apex Tool Group offers two types of these motors, the large Cleco MR Series (1.0 to 7.5 HP) with spring-loaded blades and small to medium sizes (0.14 to 2.3 HP). All motors have been designed for durability with precision heavy-duty bearings and multiple blade rotors for smooth power. There is a wide range of speeds and torques as well as a selection of foot, face, or flange mountings. These motors require compressed air line lubrication for long, trouble-free service. Install the lubricator as close as possible to the motor. These motors operate satisfactorily even in environments with high temperatures up to 93° C (200° F).

Axial Piston Motor*

These small, light Cleco motors are ideal for installation in tight spaces. The rugged design and precision manufacturing of these motors permit long service life with minimum maintenance. Generously sized spindle bearings permit an overhung weight on spindle with no external support.

High torques are an inherent characteristic of compressed air piston motors, a feature that makes them very attractive for applications that required high starting loads. The overlapping of power impulses in axial piston motors permits even torque and full power in both directions of rotation. These motors should be operated under load and horizontally. Axial piston motors are ideal for start-stop operation. It is not recommended to operate them at speeds greater than 75% of free speed. Their enclosed design permits usage in corrosive or dusty environments. These motors operate satisfactorily even in environments with high temperatures up to

93° C (200° F). Lubrication nipples are provided for lubrication. It is recommended to equip compressed air lines with filters and lubricators. Install the lubricator as close as possible to the motor.

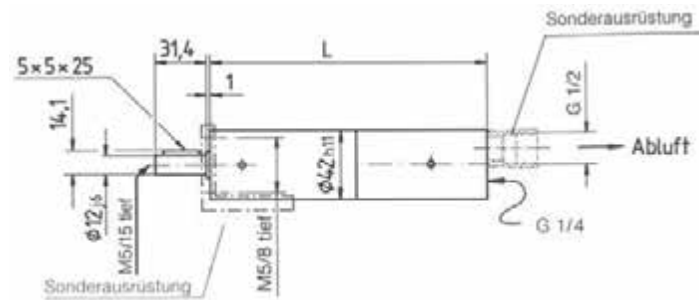
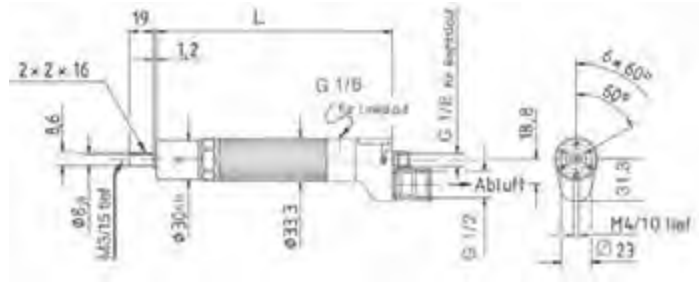
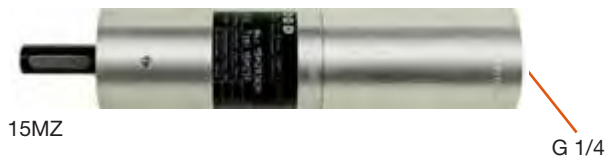
Radial Piston Motor*

The heavy-duty design makes these motors suitable for continuous operation. The balanced crankshaft is mounted on roller bearings. An oil slinger ring distributes oil to all moving parts of the motor. Oil level and drain plugs are easily accessible.

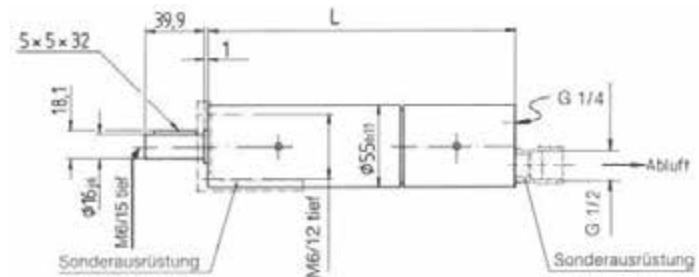
High torques are an inherent characteristic of compressed air piston motors, a feature that makes them very attractive for applications that require high starting loads. The overlapping of power impulses in radial piston motors permits even torque and full power in both directions of rotation. At least two pistons are always on a power stroke. These motors should be operated under load and horizontally. It is not recommended to operate them at speeds greater than 75% of free speed. The motors operate satisfactorily even in environments with high temperatures up to 93° C (200° F). It is recommended to equip compressed air lines with lubricators. Install the lubricator as close as possible to the motor.

* You will find the complete range of pneumatic power motors online in the full catalogue SP-104 at www.apexpowertools.eu

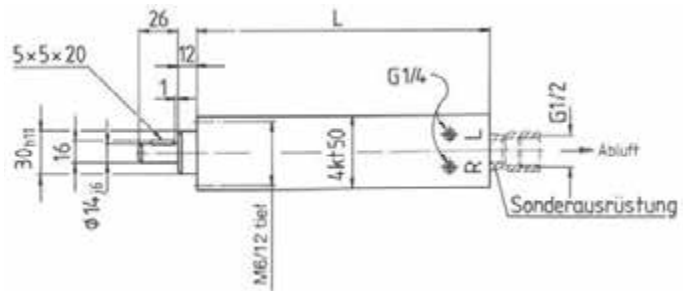
Small Blade Motors



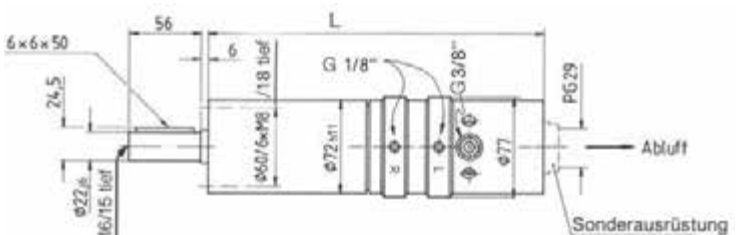
Special equipment: Connection ring for exhaust air
 Mounting bracket
 Order number 922795
 Order number 930157



Special equipment: Mounting bracket
 Exhaust air
 Order number 930157
 Order number 922907



Special equipment: Connection ring for exhaust air
 Order number 922907



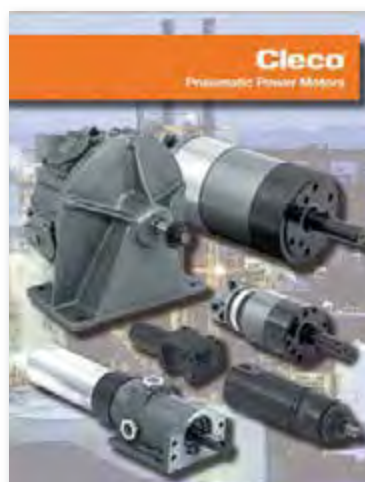
Power Class 0.06–1.10 kW

Highest Power		Speed rpm	Stall Torque Nm	Air Consumption Full Load** m³/min.	Noise level free speed dB(A)	Max. Load Output Drive Spindle		Length mm	Weight kg	Type Series	Order Number
kW	rpm					Radial N	Axial N				
Non-reversible (clockwise rotating)											
0.06	2150	4300	0.6	0.16	67	80	40	171	0.48	8MZ	8MZN502M
0.06	1250	2500	0.9	0.16	67	100	50	171	0.48	8MZ	8MZN503M
0.06	675	1350	1.7	0.16	67	120	60	184	0.53	8MZ	8MZN504M
0.06	400	800	2.8	0.16	67	140	70	184	0.53	8MZ	8MZN505M
0.06	240	480	4.8	0.16	67	170	85	184	0.53	8MZ	8MZN506M
Reversible											
0.06	2150	4300	0.6	0.16	67	80	40	171	0.48	8MZ	8MZR507M
0.06	1250	2500	0.9	0.16	67	100	50	171	0.48	8MZ	8MZR508M
0.06	675	1350	1.7	0.16	67	120	60	184	0.53	8MZ	8MZR509M
0.06	400	800	2.8	0.16	67	140	70	184	0.53	8MZ	8MZR510M
0.06	240	480	4.8	0.16	67	170	85	184	0.53	8MZ	8MZR511M
Reversible											
0.32	2350	4700	2.6	0.41	79	200	100	154	0.75	15MZ	15MZR359M
0.29	1090	2180	5.0	0.41	79	250	125	154	0.75	15MZ	15MZR360M
0.22	725	1450	6.0	0.41	79	290	145	169	0.85	15MZ	15MZR361M
0.22	415	830	10.4	0.41	79	350	175	169	0.85	15MZ	15MZR362M
0.22	230	460	17.6	0.41	79	430	215	169	0.85	15MZ	15MZR363M
Reversible											
0.45	1830	3660	4.7	0.56	77	420	210	215	1.64	25MZ	25MZR149M
0.45	1000	2000	8.6	0.56	77	500	250	215	1.64	25MZ	25MZR151M
0.41	570	1140	13.7	0.56	77	580	290	215	1.68	25MZ	25MZR155M
0.41	325	650	24.2	0.56	77	715	360	215	1.68	25MZ	25MZR157M
0.41	190	380	41.0	0.56	77	840	420	215	1.68	25MZ	25MZR159M
Reversible											
0.38	175	350	42	0.46	79	1050	525	194	1.84	25MZV	25MZVR624M
0.35	125	250	53	0.46	79	1180	590	194	1.85	25MZV	25MZVR625M
Reversible											
1.10	1400	2800	13.0	0.90	77	660	330	237	3.10	35MZ	35MZR385M
1.10	600	1200	32.0	0.90	76	860	430	237	3.10	35MZ	35MZR386M
1.10	300	600	65.0	0.90	76	1100	550	261	3.50	35MZ	35MZR387M
1.10	155	310	130.0	0.90	76	1400	700	261	3.50	35MZ	35MZR388M
Reversible with speed regulation											
0.55	75	150	123	0.80	72	1800	900	261	3.50	35MZ	35MZR389M
0.35	52	104	91	0.75	71	2100	1050	261	3.50	35MZ	35MZR390M
0.08	23	46	40	0.55	70	2500	1250	261	3.50	35MZ	35MZR391M

**Air consumption in unloaded state.

All performance data stated on this page relate to 6 bar inlet air pressure.

You will find the complete range of pneumatic power motors online in the full catalogue SP-104 at www.apexpowertools.eu



Cleco
Pneumatic Power Motors ...

Catalogue: SP-104



Cleco Electrical Assembly Tools Overview

Cleco fastening technology is used worldwide and in all industries. This technology is used in aerospace, automotive, environment, wind energy, agriculture and a great number of different applications in general industry where quality critical requirements are the rule. The complete product portfolio of transducer-based electric tools from the Cleco and DGD brands is used worldwide for safety critical applications in the automotive industry where exact precision and traceability are required. And finally, our range of DC electric tools is used in one of the most demanding environments, aircraft assembly, where "good enough" is never acceptable.

Because of our emphasis on perfection, you can surpass yourself. Our customers view us as strategic partners and not purely as vendors, as we have an unusual focus on

complete fastening solutions instead of just on the product. And in the Apex Tool Group we welcome the challenge of market leadership that this approach brings.

The Systems

Cleco's exemplary fastening systems provide unmatched performance, productivity and responsibility in quality and safety critical assembly applications.

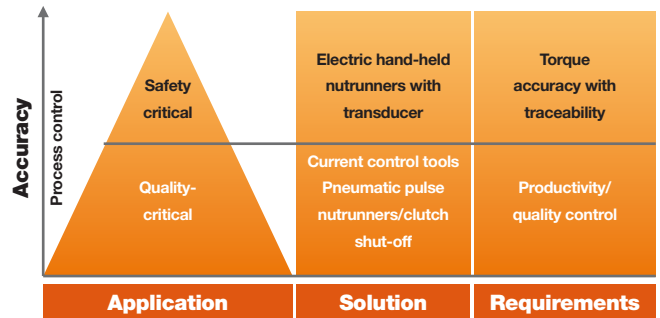
Long service life, speed and ergonomics are achieved with the corded Cleco DC electric tools with a complete product range of tool configurations and a range of controller options.



The Cleco LiveWire™ system offers the most cost-effective fastening solution for safety-critical applications available worldwide. The combination of cordless tools with WLAN communication gives the operator the necessary mobility and flexibility for higher productivity and reduces costs due to system damage. The controller, which can manage up to 16 cordless tools, utilises the latest wireless encryption technology and in the process provides unmatched cost savings in industry.

If the cumulative effects of all these components is taken into consideration – the tools, the controllers, the software, the flexibility, the accessories and the support – you can clearly see why Cleco fastening systems set the standards for all DC electric tool systems.

Applications



Durability. Speed.

Cost-effective solution for maximum performance in quality-critical applications.

The electrical assembly tools from Cleco with current control are more mature than the compressed air tools with pneumatic clutch and torque verifier available on the market. The patented current control systems from Cleco impress with higher productivity, more sophisticated error detection and increased flexibility in use.

Our control systems are recognised worldwide as a first-class software interface. And that is not only due to their straightforward operation, but also due to the basic programming features, programming graphics and process feedback in real-time. Our latest development ("Auto. Program") takes the guesswork out of programming. Simply enter the torque shut-off value for the product group and the software automatically compiles the program for the production application.



Unrestricted speed control



Adjustable angle heads permit flexible orientation.



Ergonomics.

Why current control instead of pneumatic clutch?

Higher Productivity

- Up to 2 to 3-times faster
- Unrestricted speed control
- Up to 25 % less noise
- Cleaner working environment
- Automatic torque programming
- Proven durability in use

Better Error Detection

- Counter display with 96 positions
- LED with 9 tools for the operator
- 8 configurable I/O
- Prepared for fieldbus
- Memory for 5,000 tightening stages
- Expanded system diagnostics
- Barcode product group selection

High Process Flexibility

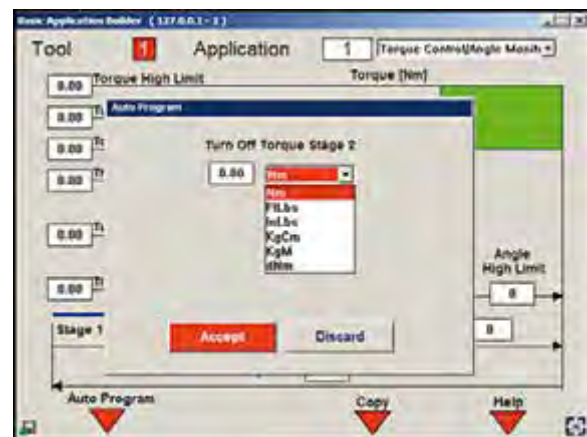
- 255 programmable fastening processes
- 6 configurable stages per process
- Angle of rotation process control/monitoring
- Process control of the fastening process also counter clockwise
- Low maintenance effort – no clutch
- 100 m cable length

Easy to setup: 1-2-3-go!

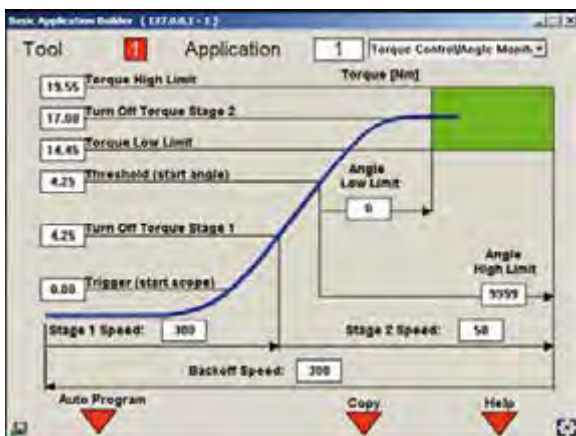
1. Select "Basic" on the menu.



2. Enter the final torque.



3. The tool is programmed automatically



Go! Ready for production.



Cleco Global Controller Overview

mPro400GC Global Controller

- Graphic user interface
- Fully programmable
- Local storage of up to 10,000 fastening operations
- LAN support
- Fieldbus options available

Master/primary controller

Secondary controller



MPRO400GC-M



MPRO400GC-P



MPRO400GC-S

mPro400GC-SG Global Controller

The mPro400GC-SG controller provides the same capabilities and functions as the mPro400GC-M controller with the additional benefit of panel mounting.



Model	Description	Tool Compatibility	Weight	Width	Height	Depth
			kg	mm	mm	mm
MPRO400GC-P	Primary	Cleco 18 & 48 Series, Cleco LiveWire, DGD Intelligent Spindle*	13.9	261.62	378.46	327.66
MPRO400GC-S	Secondary	Cleco 18 & 48 Series	12.7	261.62	378.46	327.66
MPRO400GC-M	Master	Cleco LiveWire, DGD Intelligent Spindle*	10.6	261.62	378.46	327.66
MPRO400GC-SG	Panel mounting	Cleco LiveWire, DGD Intelligent Spindle, 1, 2, 3, 4				

*A quotation is necessary to be able to take into account the hardware configuration.

NOTE: 17/47/67 and matrix versions of the 18/48 Series tools require the isolating transformer 544185PT for use with primary/secondary controllers. Mounting panel can be used for various control cabinet solutions.

Torque Monitoring mPro400GC-E & mPro400GC-I Global Controller



- Single channel
- Economical
- Remote programming
- Local storage of up to 5,000 fastening operations
- LAN support
- Input voltage 115/230VAC
- Connectors:
 - 1x serial
 - 1x TM-COM
 - 1x Ethernet
- Inputs/outputs: 8x 24 V inputs, 8x 24 V outputs



MPRO400GC-E & MPRO400GC-I

All 67 Series tools require an isolating transformer (544185PT) for operation with a Cleco Global Controller.



Model	Description	Tool Compatibility	Weight	Width	Height	Depth
			kg	mm	mm	mm
MPRO400GC-E	Economy	Cleco 18 & 48 E_E Series*	14.8	261.62	378.46	327.66
MPRO400GC-I	Current shutdown	Cleco 18 & 48 C_E Series**	14.8	261.62	378.46	327.66

*NOTE: 17/47/67 and matrix versions of the 18/48 Series tools require the isolating transformer 544185PT for use

**NOTE: 48 Series tools require 230 VAC.

STANDARD EQUIPMENT:
TM-COM remote programming software, null modem serial cable and crossover Ethernet cable

Cleco Corded Right Angle Nutrunners with Transducer

Right Angle Series

Torque range 2 - 230 Nm Bolt size M5 - M16

- Brushless motor
- High-resolution resolver
- Integrated transducer
- Memory chip with all relevant tool data



XX	E	A	E	XXX	XXX	X
Motor Supply 18, 48 E - Electrical		Connector E Air-LB				Locking Pin locking B - Ball locking
Tool Type A - Right angle				Output Drive AL2 - 1/4" sq. dr. AM4 - 1/2" sq. dr. AL3 - 3/8" sq. dr. AH4 - 1/2" sq. dr. AM3 - 3/8" sq. dr. MH4 - 1/2" sq. dr. AX6 - 3/4" sq. dr.		
Max. Torque (Nm) Under 60 Nm, rounded up to next 1 Nm. Above 60 Nm, rounded up to next 5 Nm.						

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Angle Head	
						Side to Centre	Height
	Nm	rpm	kg		mm	mm	mm
18EAE08AL2	2 - 8	3000	1.3	1/4"	345	13	36
18EAE15AM3	4 - 15	1300	1.5	3/8"	376	15	41
18EAE22AM3	5 - 22	920	1.5	3/8"	376	15	41
18EAE28AM3	6 - 28	700	1.5	3/8"	376	15	41
48EAE15AL3	3 - 15	2855	1.7	3/8"	398	15	41
48EAE28AL3	6 - 28	1300	1.9	3/8"	410	15	41
48EAE41AM3	9 - 41	1090	2.0	3/8"	440	19	48
48EAE58AM3	12 - 58	770	2.0	3/8"	440	19	48
48EAE58AM4	12 - 58	770	2.0	1/2"	440	19	48
48EAE90AH4	18 - 87	515	3.0	1/2"	470	21	58
48EAE105AH4	21 - 104	340	3.0	1/2"	470	21	58
48EAE135MH4	27 - 133	265	3.3	1/2"	485	24	61
48EAE175AX6	36 - 176	190	4.6	3/4"	549	27	69
48EAE230AX6	46 - 230	145	4.6	3/4"	549	27	69

*Weights do not include tool cable or reaction bar.

GENERAL:
All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:
Air-LB connector. Ball locking optional
Tool available with matrix connector on request.

OPTIONAL:
Standard tool cable 961259-XX, RA rotating cable 961260-XX,
straight rotating cable 961251-XX, extension cable 961249-XX.
Additional accessories: See catalogue SP-1020.



67EA235AL6

Right Angle Series

Torque range
46 - 2,000 Nm

Bolt size
M18 - M36

- Brushless motor
- High-resolution resolver
- Integrated transducer
- Memory chip with all relevant tool data

All 67 Series tools require an isolating transformer (544185PT) for operation with a Cleco Global Controller.



XX	E	A	XXXX	XXX	X
Motor 67	Supply E - Electrical			Locking Pin locking	
Tool Type A - Right angle			Output Drive AL6 - 3/4" sq. dr. AM6 - 3/4" sq. dr. ML6 - 3/4" sq. dr. AH8 - 1" sq. dr.		
Max. Torque (Nm) Under 60 Nm, rounded up to next 1 Nm. Above 60 Nm, rounded up to next 5 Nm.					

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Angle Head	
						Side to Centre	Height
	Nm	rpm	kg	mm	mm	mm	
67EA235AL6	46 - 230	135	5.9	3/4"	655	26	58
67EA255AL6	55 - 255	115	5.9	3/4"	655	26	58
67EA310ML6	60 - 310	100	9.2	3/4"	739	27	65
67EA340AM6	70 - 335	90	9.5	3/4"	803	35	79
67EA460AM6	95 - 460	66	9.5	3/4"	803	35	79
67EA570AM6	115 - 570	53	9.5	3/4"	803	35	79
67EA860AH8	175 - 860	33	10.3	1"	643	38	237
67EA1035AH8	210 - 1035	25	10.5	1"	668	38	237
67EA1340AH8	270 - 1340	20	10.5	1"	668	38	237
67EA1700AH8	340 - 1700	16	10.5	1"	668	38	237
67EA2010AH8	400 - 2000	13	10.5	1"	668	38	237

*Weights do not include tool cable or reaction bar.
NOTE: All 67 Series tools require an isolating transformer (544185PT) for operation with a Cleco Global Controller. Contact your regional service centre for commissioning support.

GENERAL:
All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:
Matrix connector

OPTIONAL:
Standard tool cable 542778-XX, RA rotating cable 542780-XX, straight rotating cable 544056-XX, extension cable 542779-XX.
Additional accessories: See catalogue SP-1020.

Cleco Corded Inline Nutrunners with Transducer

Inline Series

Torque range
2 - 150 Nm

Bolt size
M5 - M14

XX	E	S	E	XXX	XX	X
Motor 18, 48	Supply E - Electrical	Connector E Air-LB			Locking Pin locking B - Ball locking	Output Drive Q - Quick-change chuck D2 - 1/4" sq. dr. D3 - 3/8" sq. dr. D4 - 1/2" sq. dr.
Tool Type S - Inline						
Max. Torque (Nm) Under 60 Nm, rounded up to next 1 Nm. Above 60 Nm, rounded up to next 5 Nm.						



18ESE06Q



48ESE25D3

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Side to Centre
	Nm	rpm	kg		mm	mm
18ESE06Q	2 - 6	4000	1.1	1/4" QC	312	23
18ESE06D2	2 - 6	4000	1.1	1/4" sq dr.	300	23
18ESE12Q	3 - 12	1820	1.2	1/4" QC	330	23
18ESE12D3	3 - 12	1820	1.2	3/8" sq. dr.	315	23
18ESE17Q	4 - 17	1290	1.2	1/4" QC	330	23
18ESE17D3	4 - 17	1290	1.2	3/8" sq. dr.	315	23
18ESE22D3	5 - 22	985	1.2	3/8" sq. dr.	315	23
18ESE31D3	7 - 31	695	1.2	3/8" sq. dr.	315	23
48ESE12Q	3 - 12	4000	1.4	1/4" QC	343	23
48ESE12D2	3 - 12	4000	1.4	1/4" sq dr.	330	23
48ESE25D3	6 - 25	1820	1.5	3/8"	345	23
48ESE36D3	8 - 36	1290	1.5	3/8"	345	23
48ESE48D3	10 - 48	985	1.5	3/8"	351	23
48ESE65D4	13 - 65	750	2.4	1/2"	420	29
48ESE90D4	19 - 90	510	2.5	1/2"	435	29
48ESE125D4	26 - 125	360	2.5	1/2"	435	29
48ESE150D4	31 - 150	240	2.5	1/2"	435	29

*Weights do not include tool cable.

GENERAL:

All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:

Air-LB connector. Additional grip included with 18ES12Q and 18ES12D3.
Tool available with matrix connector on request.
Reaction bar included with inline tools with torque 17 - 150 Nm.

OPTIONAL:

See page 86

Mounting plates: 543231 (all except the sizes listed below in catalogue SP-1020)

543235 - 18ESE06Q/D2, 48ESE12Q/D2

49087108 - 48ESE65D4, 48ESE90D4, 48ESE125D4 & 48ESE150D4

Additional accessories: See catalogue SP-1020.

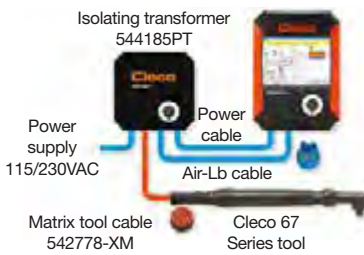
Inline Series

Torque range
13 - 4,050 Nm

Bolt size
M10 - M42



All 67 Series tools require an isolating transformer (544185PT) for operation with a Cleco Global Controller.



67ES135D4

XX	E	S	XXXX	XXX	X
Motor 67	Supply E - Electrical				Locking Pin locking up to 1/2" B - Ball locking
Tool Type S - Inline			Output Drive D4 - 1/2" sq. dr. D6 - 3/4" sq. dr. D8 - 1" sq. dr. D12 - 1 1/2" sq. dr.		
Max. Torque (Nm) Under 60 Nm, rounded up to next 1 Nm. Above 60 Nm, rounded up to next 5 Nm.					

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Side to Centre
	Nm	rpm	kg		mm	mm
67ES65D4	13 - 64	535	4.7	1/2"	533	33
67ES105D4	21 - 104	330	4.7	1/2"	533	33
67ES135D4	27 - 135	245	4.7	1/2"	533	33
67ES190D6	38 - 190	165	5.3	3/4"	521	33
67ES285D6	57 - 285	115	5.3	3/4"	521	33
67ES385D6	77 - 386	83	5.3	3/4"	521	33
67ES475D6	95 - 475	67	5.4	3/4"	531	33
67ES610D6	122 - 610	50	5.4	3/4"	531	33
67ES850D8	170 - 848	33	7.7	1"	605	38
67ES1050D8	210 - 1050	27	7.7	1"	605	38
67ES1670D8	334 - 1668	17	7.7	1"	605	38
67ES2060D8	412 - 2060	14	7.7	1"	605	38
67ES4050D12	810 - 4050	6	20.5	1 1/2"	622	60

*Weights do not include tool cable or reaction bar (if tool equipped with a reaction bar).
NOTE: All 67 Series tools require an isolating transformer (544185PT) for operation with a Cleco Global Controller.

GENERAL:
All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:
Matrix connector, reaction bar, additional reaction bar for 67ES4050D12.

OPTIONAL:
See page 86
Additional accessories: See catalogue SP-1020.

Cleco Coded Pistol Grip Nutrunners with Transducer

Pistol Grip Series

Torque range
2 - 1000 Nm

Bolt size
M5 - M22



XX	E	P	E	XXX	XX	X
Motor 18, 48	Supply E - Electrical	Connector E Air-LB			Locking Pin locking up to 1/2"	Output Drive
Tool Type P - Pistol				Output Drive Q - Quick-change chuck D2 - 1/4" sq. dr. D3 - 3/8" sq. dr. D4 - 1/2" sq. dr. D6 - 3/4" sq. dr. D8 - 1" sq. dr.		
Max. Torque (Nm) Under 60 Nm, rounded up to next 1 Nm. Above 60 Nm, rounded up to next 5 Nm.						

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Side to Centre
	Nm	rpm	kg		mm	mm
18EPE06Q	2 - 6	4000	1.0	1/4" QC	178	21
18EPE06D2	2 - 6	4000	1.0	1/4"	165	21
18EPE12Q	3 - 12	1820	1.1	1/4" QC	196	21
18EPE12D3	3 - 12	1820	1.1	3/8"	183	21
18EPE17Q	4 - 17	1290	1.1	1/4" QC	196	21
18EPE17D3	4 - 17	1290	1.1	3/8"	183	21
18EPE22D3	5 - 22	985	1.1	3/8"	183	21
18EPE31D3	7 - 31	695	1.1	3/8"	183	21
48EPE12Q	3 - 12	4000	1.2	1/4" QC	208	21
48EPE12D2	3 - 12	4000	1.2	1/4"	196	21
48EPE25D3	5 - 25	1820	1.3	3/8"	213	21
48EPE36D3	8 - 36	1290	1.3	3/8"	213	21
48EPE48D3	10 - 48	985	1.4	3/8"	218	21
48EPE65D4	13 - 65	750	2.3	1/2"	290	28
48EPE90D4	19 - 90	510	2.4	1/2"	305	28
48EPE125D4	26 - 125	360	2.4	1/2"	305	28
48EPE150D4	31 - 150	240	2.4	1/2"	305	23
48EPE200D6	125 - 195	180	4.3	3/4"	410	29
48EPE500D6	300 - 500	53	4.5	3/4"	410	29
48EPE1000D8	500 - 1000	33	7.3	1"	486	38

*Weights do not include tool cable or swivel bail.

GENERAL:
All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:
Air-LB connector.
Additional grip included with 18EPE12Q and 18EPE12D3.
Reaction bar included with pistol grip tools with torque 17 - 1000 Nm. Ball locking optional tool available with matrix connector on request.

OPTIONAL:
See page 86
Additional accessories: See catalogue SP-1020.



18EPE06QP

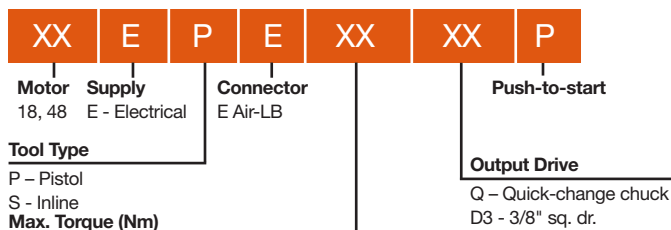


18ESE06QP

Push-to-Start Series

Torque range
2 - 12 Nm

Bolt size
M5 - M6



Max. Torque (Nm)
Under 60 Nm, rounded up to next 1 Nm.

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Side to Centre
	Nm	rpm	kg		mm	mm
18EPE06QP	2 - 6	4000	1.19	1/4" QC	238	21
18EPE06D3P	2 - 6	4000	1.19	3/8"	224	21
18EPE12QP	3 - 12	1820	1.27	1/4" QC	196	21
18EPE12D3P	3 - 12	1820	1.27	3/8"	224	21
18ESE06QP	2 - 6	4000	1.31	1/4" QC	375	23
18ESE06D3P	2 - 6	4000	1.31	3/8"	360	23
18ESE12QP	3 - 12	1820	1.40	1/4" QC	375	23
18ESE12D3P	3 - 12	1820	1.40	3/8"	360	23

*Weights do not include tool cable or swivel bail.

GENERAL:
All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:
Air-LB connector. Additional grip (301857) included with 18EPE12Q and 18EPE12D3.
Tool available with matrix connector on request.

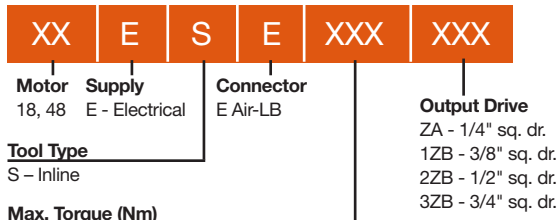
OPTIONAL:
See page 86
Additional accessories: See catalogue SP-1020.

Cleco Corded Inline Floating Spindle Nutrunners with Transducer

Inline Floating Spindle Series

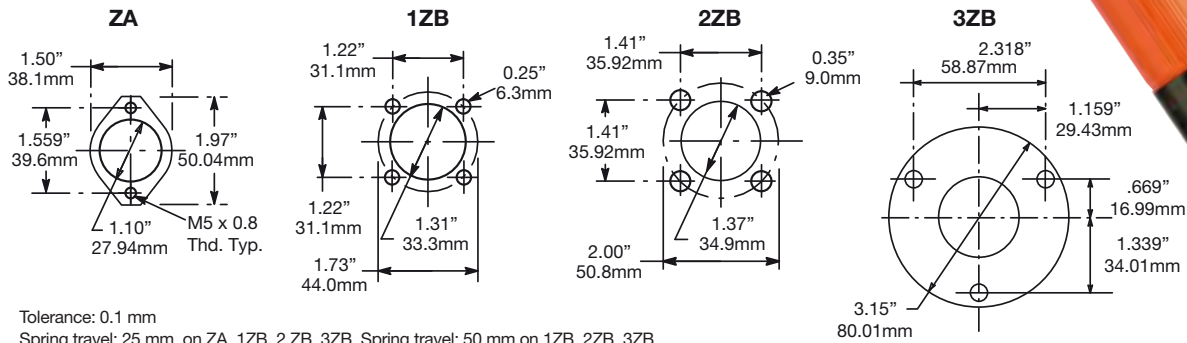
Torque range
2 - 248 Nm

Bolt size
M5 - M16



48ESE7012ZB

Hole pitch dimensions



Tolerance: 0.1 mm

Spring travel: 25 mm on ZA, 1ZB, 2ZB, 3ZB Spring travel: 50 mm on 1ZB, 2ZB, 3ZB

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Side to Centre
	Nm	rpm	kg		mm	mm
18ESE06ZA	2 - 6	4000	1.4	1/4"	394	23
18ESE12ZA	3 - 12	1820	1.5	1/4"	406	23
18ESE17ZA	4 - 17	1290	1.5	1/4"	406	23
48ESE12ZA	3 - 12	4000	1.5	1/4"	425	23
48ESE271ZB	8 - 27	1820	2.6	3/8"	559	23
48ESE361ZB	7 - 36	1290	2.6	3/8"	559	23
48ESE602ZB	11 - 57	855	3.8	1/2"	620	28
48ESE702ZB	14 - 68	570	3.8	1/2"	620	28
48ESE802ZB	17 - 82	450	4.4	1/2"	678	31
48ESE1152ZB	25 - 115	320	4.4	1/2"	678	31
48ESE1502ZB	31 - 150	245	4.4	1/2"	678	31
48ESE1653ZB	33 - 165	220	6.6	3/4"	726	40
48ESE2503ZB	50 - 248	145	6.6	3/4"	726	40

*Weights do not include tool cable or reaction bar (if tool equipped with a reaction bar).

GENERAL:

All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:

Air-LB connector.
Tool available with matrix connector on request.

OPTIONAL:

See page 86
Additional accessories: See catalogue SP-1020.



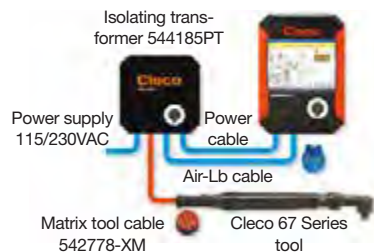
67ES2060Z8

Inline Floating Spindle Series

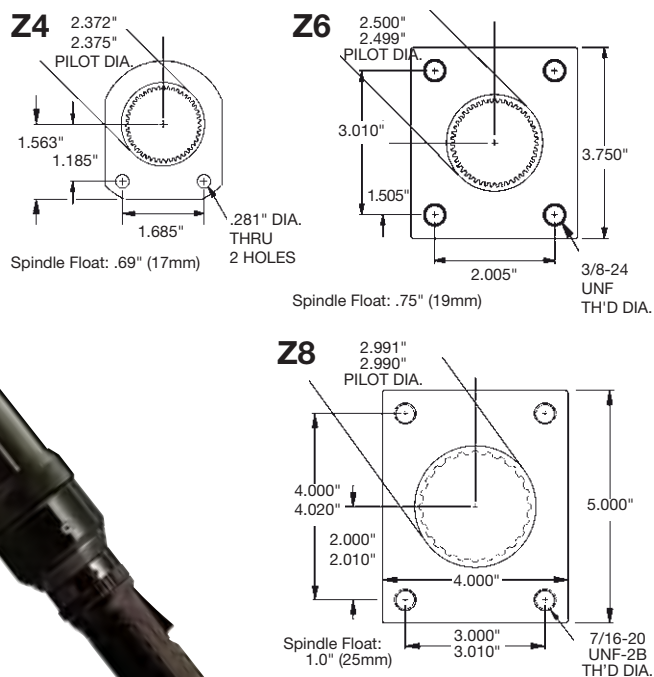
Torque range
13 - 2,060 Nm

Bolt size
M6 - M36

All 67 Series tools require an isolating transformer (544185PT) for operation with a Cleco Global Controller.



Mounting plates, dimensions



67 **E** **S** **XXXX** **XX**

Motor 67
Electric
Tool Type S - Inline
Max. Torque (Nm) Under 60 Nm, rounded up to next 1 Nm. Above 60 Nm, rounded up to next 5 Nm.
Output Drive Z4 - 1/2" sq. dr. Z6 - 3/4" sq. dr. Z8 - 1" sq. dr.

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Side to Centre
	Nm	rpm	kg		mm	mm
67ES65BZ4	13 - 64	535	4.9	1/2"	533	33
67ES105BZ4	21 - 104	330	4.9	1/2"	533	33
67ES135BZ4	27 - 135	245	4.9	1/2"	533	33
67ES190Z6	38 - 190	165	7.1	3/4"	559	33
67ES285Z6	57 - 285	115	7.1	3/4"	559	33
67ES385Z6	77 - 386	83	7.1	3/4"	559	33
67ES475Z6	95 - 475	67	7.3	3/4"	569	33
67ES610Z6	122 - 610	50	7.3	3/4"	569	33
67ES850Z8	170 - 848	33	9.1	1"	605	38
67ES1050Z8	210 - 1050	27	9.1	1"	605	38
67ES1670Z8	334 - 1668	17	9.1	1"	605	38
67ES2060Z8	412 - 2060	14	9.1	1"	605	38

*Weights do not include tool cable or reaction bar (if tool equipped with a reaction bar).
NOTE: All 67 series tools require an isolating transformer (544185PT) for operation with a Cleco Global Controller.

GENERAL:
All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:
Matrix connector, 67 series mounting plate.

OPTIONAL:
Standard tool cable 542778-XX, RA rotating cable 542780-XX, straight rotating cable 544056-XX, extension cable 542779-XX. Additional accessories: See catalogue SP-1020.

Cleco Corded Hold & Drive Nutrunners with Transducer

Hold & Drive Series

Torque range
11 - 227 Nm

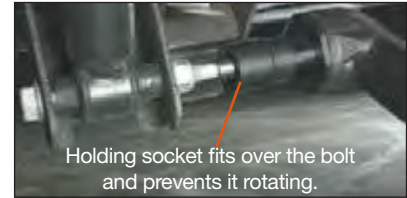


48EAE115H

"Hold & Drive" bolts are used with these tools for automotive and truck chassis applications. They reduce the assembly operation to one person who works from one side of the workpiece. The bolt is held by the tool while the nut is tightened from the same side.



Hold & Drive tool approaches the application.



Holding socket fits over the bolt and prevents it rotating.



Tool is pressed down and started until the socket engages and fastens the bolt.

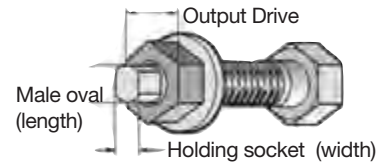
Hold & Drive nomenclature

Angle head nomenclature



48 Motor 48	E Electric	A Tool Type A - Right angle Max. Torque	E Connector E Air-LB	XXX Head Type H - Hold & Drive	H Head Type H - Hold & Drive	H Head Type H - Hold & Drive	X Holder Shape F - Female sq. dr. M - Male sq. dr. T - Torx O - Female oval	XX Holder Shape F - Female sq. dr. M - Male sq. dr. T - Torx O - Female oval	X Holder Shape F - Female sq. dr. M - Male sq. dr. T - Torx O - Female oval	XX Oval Dim. (length) If socket type = 0 (female oval)	X Oval Dim. (length) If socket type = 0 (female oval)
					Retainer Shaft				Hold Socket (width across flats)		
					3 - 3 1/2"				EA - 1/4		
					4 - 4"				ME - 11 mm (7/16")		
					5 - 5 3/8"				EC - 3/8		
					6 - 5 7/8"				M5 - 5 mm		
					9 - 9 1/2"				M6 - 6 mm		
									MA - 7 mm		
									MB - 8 mm (5/16")		
									MC - 9 mm		
									MD - 10 mm		
									30 - T30		
									40 - T40		
									45 - T45		
									50 - T50		

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



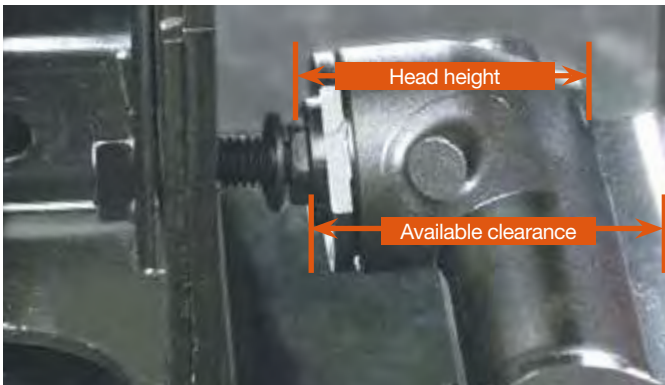
Model Number	Torque Range	Speed	Length	Weight*	Head Height	Side to Centre
	Nm	rpm	mm	kg	mm	mm
48EAE53H	11 - 53	850	512	3.60	61	27
48EAE75H	15 - 74	600	512	4.03	61	27
48EAE110H	23 - 112	400	512	4.03	61	27
48EAE135H	28 - 134	270	522	4.03	61	27
48EAE230H	47 - 227	150	563	4.79	61	27

*Weights do not include tool cable or reaction bar.
NOTE: To order a tool, use socket and tool nomenclatures. Only order the socket nomenclature for complete head assembly. Consult the parts list for individual socket part numbers.

GENERAL:
All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:
Air-LB connector. Spring travel 25.4 mm standard for holding bits.
Tool available with matrix connector on request.

OPTIONAL:
Additional accessories: See catalogue SP-1020.



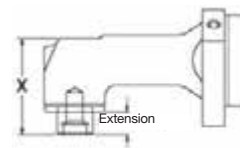
Flush socket tools have plenty of clearance for applications with little space. Electric flush socket tools fasten with much greater precision than tools with a crowfoot attachment.

Flush Socket Series

Torque range
4.9 - 230 Nm

Bolt size
M8 - M21

- Motor resolver
- High-resolution resolver
- Integrated transducer
- Memory chip with all relevant tool data



X dimension for flush socket

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



Flush socket tool nomenclature



Motor
18
48

Electric

Connector
E Air-LB

Tool Type
A - Right angle

Max. Torque

F1 - 16, 23, 30 Nm F3 - 53, 75, 110 Nm
F2 - 37, 52 Nm F4 - 135, 230 Nm
Under 60 Nm, rounded up to next 1 Nm.
Above 60 Nm, rounded up to next 5 Nm.

Head Type

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

Socket nomenclature



Flush Socket
1 F1
2 F2
3 F3
4 F4

Output Drive

0 - Standard 1 - Fast lead 2 - Magnetic

Extension

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

Socket Size

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

Model Number	Head Type	Torque Range	Speed	Weight*	Length	Angle Head	
						Side to Centre	Height
						mm	mm
18EAE16F1	F1	4.9 - 16	1225	2.00	406	14	39
18EAE23F1	F1	4.6 - 23	860	2.00	406	14	39
18EAE30F1	F1	6.0 - 30	655	2.00	406	14	39
48EAE37F2	F2	8.0 - 37	1225	2.43	474	17	43
48EAE52F2	F2	11 - 52	860	2.43	474	17	43
48EAE53F3	F3	11 - 53	850	2.74	509	22	59
48EAE75F3	F3	15 - 75	600	2.74	509	22	59
48EAE110F3	F3	23 - 110	400	3.38	521	22	59
48EAE135F4	F4	27 - 135	270	4.03	522	27	61
48EAE230F4	F4	47 - 230	150	4.79	563	27	61

*Weights do not include tool cable or reaction bar (if tool equipped with a reaction bar).
NOTE: To order a tool, use socket and tool nomenclatures. Only order the socket nomenclature for complete head assembly. Consult the parts list for individual socket part numbers.

GENERAL:

All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:

Air-LB connector. Tool available with matrix connector on request.

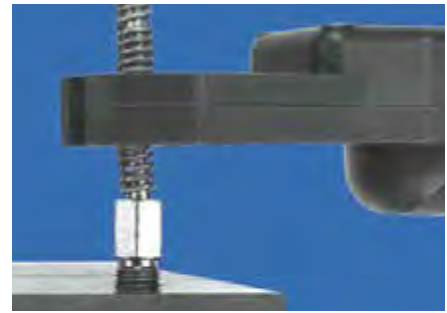
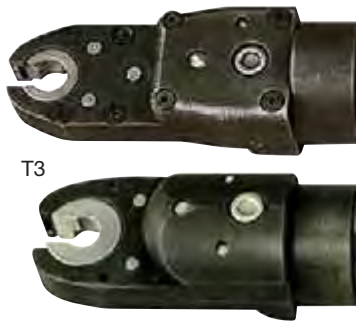
OPTIONAL:

Additional accessories: See catalogue SP-1020.

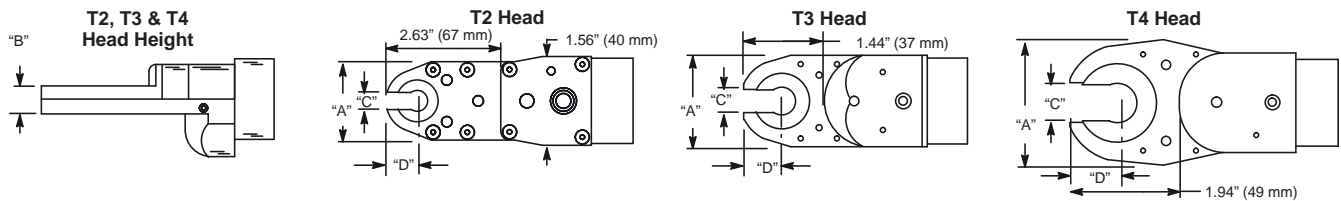
Cleco Corded Tube Nutrunners with Transducer

Tube Nut Series

Torque range
10 - 40 Nm



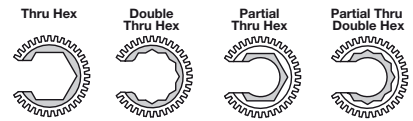
The 48ET tube nut wrench changes direction each time the lever is actuated. If the direction of rotation is counter clockwise, the socket stops in the open position.



Tube nut tool nomenclature

XX	E	T	E	XX	XX	KSX	XX	XX	X
Motor 48	Electric	Connector E Air-LB				Head Type KS2 - T2 KS3 - T3 KS4 - T4			Output Drive 0 - Partial thru hex 1 - Thru hex
Tool Type T - Tube nut						Extension 0 - Flush 4 - 1/2" 8 - 1" 2 - 1/4" 6 - 3/4"			
Max. Torque (Nm) Under 60 Nm, rounded up to next 1 Nm.						Socket Sizes			
Head Type T2 - 20 Nm T3 - 30 Nm T4 - 40 Nm									

Socket nomenclature



2 - Double thru hex
3 - Partial double thru hex

Max. 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

Socket Sizes

EA - 1/4"	M5 - 5 mm	MH - 14 mm	MP - 22 mm
EC - 3/8"	M6 - 6 mm	MI - 15 mm	MQ - 23 mm
EE - 1/2"	MA - 7 mm	MJ - 16 mm (5/8")	MR - 24 mm (15/16")
EF - 9/16"	MB - 8mm (5/16")	MK - 17mm	MS - 25 mm
EH - 11/16"	MD - 10 mm	ML - 18 mm	MT - 26 mm
EJ - 13/16"	ME - 11 mm (7/16")	MM - 19 mm (3/4")	MU - 27 mm (1 1/16")
EK - 7/8"	MF - 12 mm	MN - 20 mm	
EM - 1"	MG - 13 mm	MO - 21 mm	

Model Number	Max. Output Drive	Torque Range	Speed	Weight*	Length	Head			
						A Width	B Blade Height	C Opening	D End/Centre
						Nm	rpm	kg	mm
48ETE20T2	1/2"	10 - 20	1425	2.0	430	36	14	7	13
48ETE30T3	3/4"	15 - 30	1030	2.0	422	42	15	13	19
48ETE40T4	1 1/16"	20 - 40	770	2.3	454	60	15	18	24

*Weights do not include tool cable or reaction bar.

NOTE: To order a tool, use socket and tool nomenclatures. Order T2XXXX for a complete head assembly (e.g. T2MF02). To order individual sockets, use the prefix KS (e.g. KS2EA01 for a T2 1/4" flush, though hex socket).

GENERAL:

All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:

Air-LB connector. Tool available with matrix connector on request.

OPTIONAL:

See page 86

Additional accessories: See catalogue SP-1020.

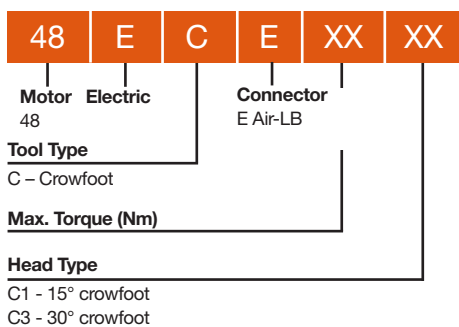


Crowfoot Series

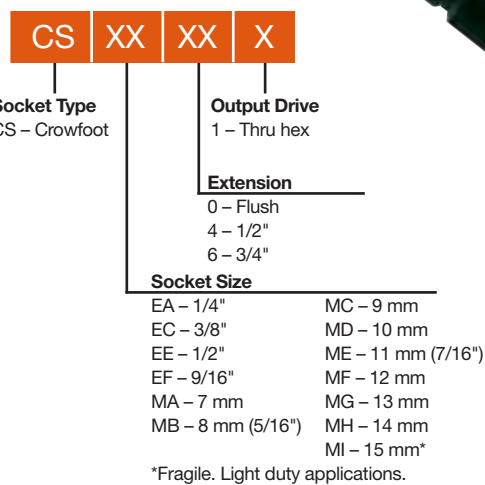
Torque range
7 - 30 Nm

Bolt size
M6 - M8

Crowfoot tool nomenclature

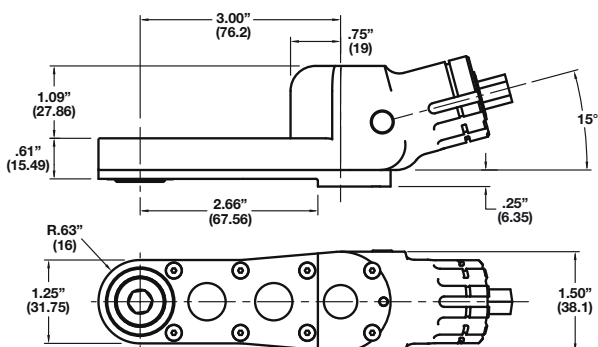


Socket nomenclature

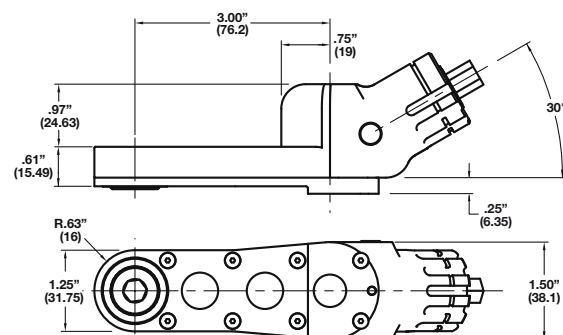


48ECE30C 1

C1 - 15° head (part number 301959)
Max. recomm. torque: 30 Nm



C3 - 30° head (part number 301960)
Max. recomm. torque: 30 Nm



Model Number		Torque Range	Speed	Weight*	Length
15° Head	30° Head	Nm	rpm	kg	mm
48ECE30C1	48ECE30C3	10.5 - 30	860	2.3	521

*Weights do not include tool cable or reaction bar.
NOTE: To order a tool, use socket and tool nomenclatures. To order individual sockets, use the prefix KS (e.g. CSEA01 for a 1/4" flush, though hex socket).

GENERAL:
All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:
Air-LB connector. Tool available with matrix connector on request.

OPTIONAL:
Additional accessories: See catalogue SP-1020.

Cleco Corded Right Angle Floating Spindle Nutrunners with Transducer

Right Angle Series with Floating Spindle

Torque range
5.1 - 255 Nm

Bolt size
M7 - M18



48EAE135S461

Right angle series with floating spindle nomenclature

XX	E	A	X	XXX	XX	X	X
Motor 18 48 67	Electric Tool Type A - Right angle	Connector - Air-LB			Sq. Dr. 3 - 3/8" (S1, S2) 4 - 1/2" (S3, S4) 6 - 3/4" (S4)	Extension 1 - 1.13" (S1), 1.00" (S2 & S3), 1.25" (S4) 2 - 2.13" (S1), 3.00" (S2), 2.5" (S4 1/2") 5 - 5.13" (S2), 4.25" (S4) 6 - 6.0" (S4 1/2"), 7.0" (S4 3/4") 11 - 11.0" (S4 3/4")	
Max. Torque (Nm)				Tool Termination			
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) S4 head - 150, 185, 210, 235 or 255 Nm (67 Series)				S1 Sliding (floating) spindle S2 Sliding (floating) spindle S3 Sliding (floating) spindle S4 Sliding (floating) spindle			

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Side to Centre
	Nm	rpm	kg		mm	mm
18EAE16S131	5.1 - 16	1225	2.00	3/8"	406	14
18EAE23S131	7.2 - 23	860	2.00	3/8"	406	14
18EAE30S131	6.0 - 30	655	2.00	3/8"	406	14
48EAE37S231	8.0 - 37	1225	2.43	3/8"	474	17
48EAE52S231	11 - 52	860	2.43	3/8"	474	17
48EAE53S341	11 - 53	850	2.74	1/2"	509	22
48EAE75S341	15 - 75	600	2.74	1/2"	509	22
48EAE95S341	20 - 95	460	3.38	1/2"	521	22
48EAE110S341	23 - 110	400	3.38	1/2"	521	22
48EAE135S461	28 - 135	270	4.03	3/4"	522	27
48EAE230S461	47 - 230	150	4.79	3/4"	563	27
67EA150S461	30 - 150	210	5.90	3/4"	655	26
67EA185S461	37 - 185	170	5.90	3/4"	655	26
67EA210S461	42 - 210	155	5.90	3/4"	655	26
67EA235S461	46 - 230	135	5.90	3/4"	655	26
67EA255S461	55 - 255	115	5.90	3/4"	655	26

*Weights do not include tool cable or mounting plate.

NOTE: All 67 Series tools require an isolating transformer (544185PT) for operation with a Cleco Global Controller

GENERAL:

All tools must be used with Apex Tool Group approved cables and controllers.

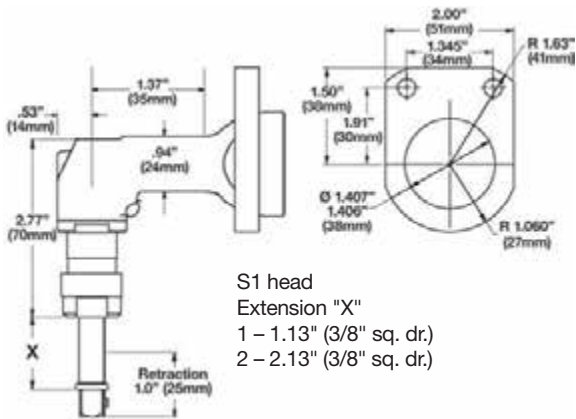
STANDARD EQUIPMENT:

18-/48 tools: Air-LB connector, mounting plate.
Tool available with matrix connector on request.
67 tools: Matrix connector, mounting plate.

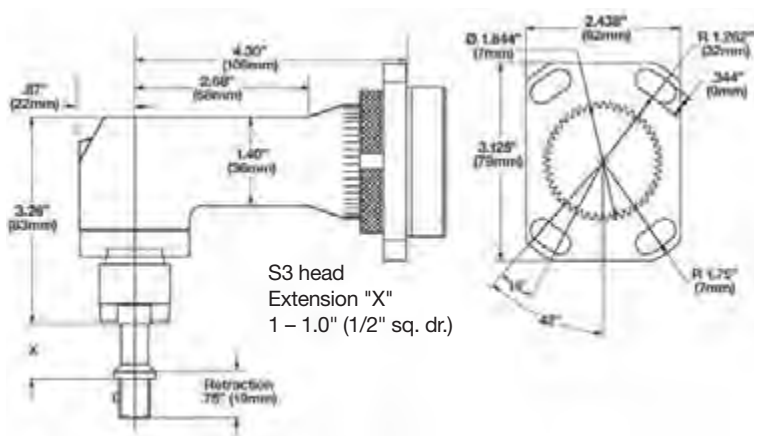
OPTIONAL:

Additional accessories: See catalogue SP-1020.

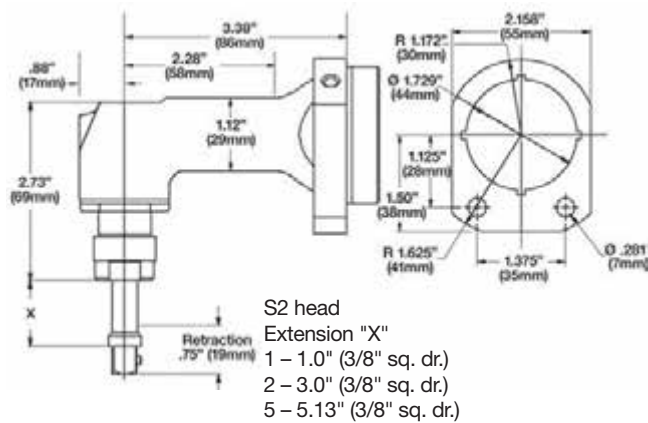
18EA, 48EA & 67EA floating spindle right angle heads



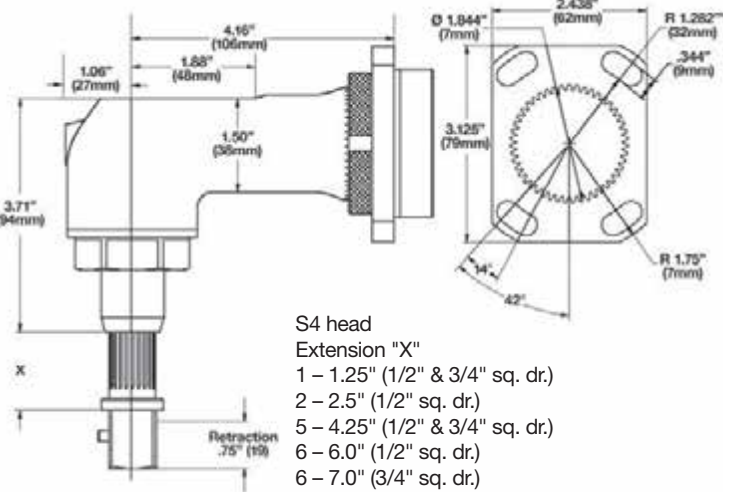
S1 head
Extension "X"
1 - 1.13" (3/8" sq. dr.)
2 - 2.13" (3/8" sq. dr.)



S3 head
Extension "X"
1 - 1.0" (1/2" sq. dr.)



S2 head
Extension "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 "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.)

Cleco Current Control Right Angle Nutrunners

Right Angle Series

Torque range
2 - 230 Nm

Bolt size
M5 - M16



XX	C	A	E	XXX	XXX	X
Motor 18, 48	Current Control	Connector E - Air-LB				Locking Pin locking B - Ball locking
Tool Type A - Right angle				Output Drive AL2 - 1/4" sq. dr. AM4 - 1/2" sq. dr. AL3 - 3/8" sq. dr. AH4 - 1/2" sq. dr. AM3 - 3/8" sq. dr. MH4 - 1/2" sq. dr. AX6 - 3/4" sq. dr.		
Max. Torque (Nm) Under 60 Nm, rounded up to next 1 Nm. Above 60 Nm, rounded up to next 5 Nm.						

Model Number	Torque Range Nm	Speed rpm	Weight* kg	Output Drive	Length mm	Angle Head	
						Side to Centre mm	Height mm
18CAE08AL2	2 - 8	3000	1.3	1/4"	345	13	36
18CAE15AM3	4 - 15	1300	1.5	3/8"	376	15	41
18CAE22AM3	5 - 22	920	1.5	3/8"	376	15	41
18CAE28AM3	6 - 28	700	1.5	3/8"	376	15	41
48CAE15AL3	3 - 15	2855	1.7	3/8"	398	15	41
48CAE28AL3	6 - 28	1300	1.9	3/8"	410	15	41
48CAE41AM3	9 - 41	1090	2.0	3/8"	440	19	48
48CAE58AM3	12 - 58	770	2.0	3/8"	440	19	48
48CAE58AM4	12 - 58	770	2.0	1/2"	440	19	48
48CAE90AH4	18 - 87	515	3.0	1/2"	470	21	58
48CAE105AH4	21 - 104	340	3.0	1/2"	470	21	58
48CAE135MH4	27 - 133	265	3.3	1/2"	485	24	61
48CAE175AX6	36 - 176	190	4.6	3/4"	549	27	69
48CAE230AX6	46 - 230	145	4.6	3/4"	549	27	69

*Weights do not include tool cable or reaction bar.

GENERAL:
All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:
Air-LB connector, locking ball optional.

OPTIONAL:
Standard tool cable 961259-XX, RA rotating cable 961260-XX, straight rotating cable 961251-XX, extension cable 961249-XX. Additional accessories: See catalogue SP-1020.



Inline Series

Torque range
2 - 150 Nm

Bolt size
M5 - M14

48CSE25D3

18CSE06Q

XX	C	S	E	XXX	XXX	X
Motor 18, 48	Current Control	Connector E - Air-LB		Output Drive		Locking Pin locking B - Ball locking
Tool Type S - Inline			Max. Torque (Nm) Under 60 Nm, rounded up to next 1 Nm. Above 60 Nm, rounded up to next 5 Nm.			
				Output Drive Q - Quick-change chuck D2 - 1/4" sq. dr. D3 - 3/8" sq. dr. D4 - 1/2" sq. dr.		

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Side to Centre
	Nm	rpm	kg		mm	mm
18CSE06Q	2 - 6	4000	1.1	1/4" QC	312	23
18CSE06D2	2 - 6	4000	1.1	1/4"	300	23
18CSE12Q	3 - 12	1820	1.2	1/4" QC	330	23
18CSE12D3	3 - 12	1820	1.2	3/8"	315	23
18CSE17Q	4 - 17	1290	1.2	1/4" QC	330	23
18CSE17D3	4 - 17	1290	1.2	3/8"	315	23
18CSE22D3	5 - 22	985	1.2	3/8"	315	23
18CSE31D3	7 - 31	695	1.2	3/8"	315	23
48CSE12Q	3 - 12	4000	1.4	1/4" QC	343	23
48CSE12D2	3 - 12	4000	1.4	1/4"	330	23
48CSE25D3	6 - 25	1820	1.5	3/8"	345	23
48CSE36D3	8 - 36	1290	1.5	3/8"	345	23
48CSE48D3	10 - 48	985	1.5	3/8"	351	23
48CSE65D4	13 - 65	750	2.4	1/2"	420	29
48CES90D4	19 - 90	510	2.5	1/2"	435	29
48CSE125D4	26 - 125	360	2.5	1/2"	435	29
48CSE150D4	31 - 150	240	2.5	1/2"	435	29

*Weights do not include tool cable or reaction bar.

GENERAL:

All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:

Air-LB connector, additional handle with 18CSE12Q and 18CSE12D3. Reaction bar included with inline tools with torque 17 - 150 Nm.
Ball locking optional

OPTIONAL:

Mounting plates: 543231 (all except those listed below)

543235 - 18ES06Q/D2, 48ES12Q/D2

49087108 - 48ES65D4, 48ES90D4, 48ES125D4, 48ES150D4

Additional accessories: See catalogue SP-1020.

Cleco Current Control Pistol Grip Nutrunners

Pistol Grip Series

Torque range
2 - 150 Nm

Bolt size
M5 - M14



XX	C	P	E	XXX	XX	X
Motor 18, 48	Current Control	Connector E Air-LB			Locking Pin locking B - Ball locking	Output Drive
Tool Type P - Pistol				Max. Torque (Nm) Under 60 Nm, rounded up to next 1 Nm. Above 60 Nm, rounded up to next 5 Nm.		
				Q - Quick-change chuck D2 - 1/4" sq. dr. D3 - 3/8" sq. dr. D4 - 1/2" sq. dr.		

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Side to Centre
	Nm	rpm	kg		mm	mm
18CPE06Q	2 - 6	4,00	1.0	1/4" QC	178	21
18CPE06D2	2 - 6	4000	1.0	1/4"	165	21
18CPE12Q	3 - 12	1820	1.1	1/4" QC	196	21
18CPE12D3	3 - 12	1820	1.1	3/8"	183	21
18CPE17Q	4 - 17	1290	1.1	1/4" QC	196	21
18CPE17D3	4 - 17	1290	1.1	3/8"	183	21
18CPE22D3	5 - 22	985	1.1	3/8"	183	21
18CPE31D3	7 - 31	695	1.1	3/8"	183	21
48CPE12Q	3 - 12	4000	1.2	1/4" QC	211	21
48CPE12D2	3 - 12	4000	1.2	1/4"	196	21
48CPE25D3	6 - 25	1820	1.3	3/8"	213	21
48CPE36D3	8 - 36	1290	1.3	3/8"	213	21
48CPE48D3	10 - 48	985	1.4	3/8"	218	21
48CPE65D4	13 - 65	750	2.3	1/2"	274	28
48CPE90D4	19 - 90	510	2.4	1/2"	287	28
48CPE125D4	26 - 125	360	2.4	1/2"	287	28
48CPE150D4	31 - 150	240	2.4	1/2"	287	23

*Weights do not include tool cable or reaction bar.

GENERAL:

All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:

Air-LB connector, swivel bail, additional handle with 18CPE12Q & 18CPE12D3.
Reaction bar included with inline tools with torque 17 - 150 Nm. Ball locking optional

OPTIONAL:

Standard tool cable 961259-XX, RA rotating cable 961260-XX,
straight rotating cable 961251-XX, extension cable 961249-XX.
Additional accessories: See catalogue SP-1020.

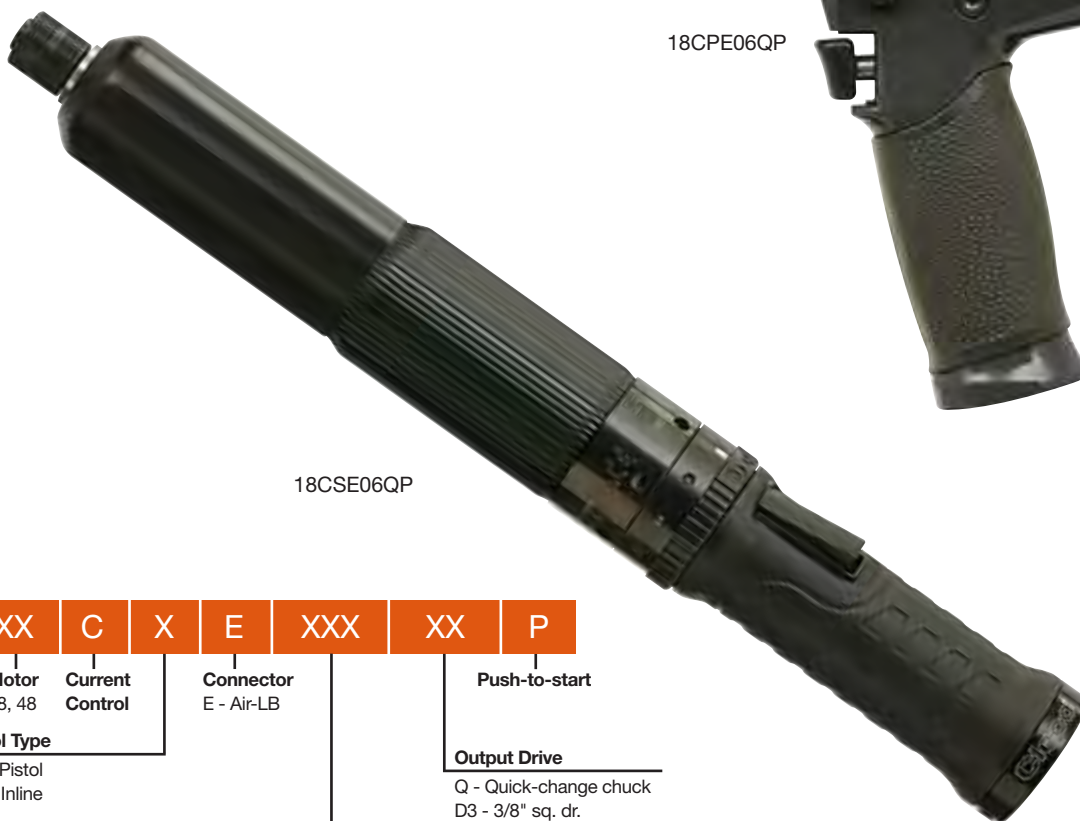
Push-to-Start Series

Torque range
2 - 12 Nm

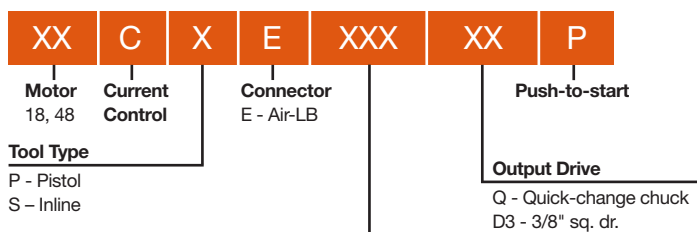
Bolt size
M5 - M6



18CPE06QP



18CSE06QP



Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Side to Centre
	Nm	rpm	kg		mm	mm
18CPE06QP	2 - 6	4000	1.19	1/4" QC	238	21
18CPE06D3P	2 - 6	4000	1.19	3/8"	224	21
18CPE12QP	3 - 12	1820	1.27	1/4" QC	238	21
18CPE12D3P	3 - 12	1820	1.27	3/8"	224	21
18CSE06QP	2 - 6	4000	1.31	1/4" QC	375	23
18CSE06D3P	2 - 6	4000	1.31	3/8"	360	23
18CSE12QP	3 - 12	1820	1.40	1/4" QC	375	23
18CSE12D3P	3 - 12	1820	1.40	3/8"	360	23

*Weights do not include tool cable or reaction bar.

GENERAL:

All tools must be used with Apex Tool Group approved cables and controllers.

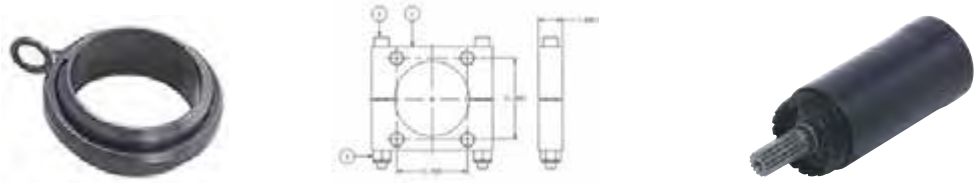
STANDARD EQUIPMENT:

Air-LB connector, swivel bail pistol models, additional handle (301857) with 18CPE12Q & 18CPE12D3.

OPTIONAL:

Standard tool cable 961259-XX, RA rotating cable 961260-XX, straight rotating cable 961251-XX, extension cable 961249-XX. Additional accessories: See catalogue SP-1020.

Cleco Electric Control Nutrunners – Accessories



Tool Type	Model Number	Cover	Rotating Suspension Bail	Mounting Plate	Extension Kit
Right angle	17/18EA08AL2	205832	541715-2	---	---
	17/18EA...AM3	205834	541715-2	---	535832
	47/48EA...AM3/4	543070	541715-2	543235	---
	47/48EA...AH4	543070	541715	543230	542428
	47/48EA135MH4	543071	541715	543230	542428
	47/48EA...AX6	205838	541715	543232	---
	67EA...AL6	---	35007004	49097101	48316033
			(included in the standard equipment for the tool)		
	67EA...AM6	---	48A17006	45017152	---
			(included in the standard equipment for the tool)		
Flush socket	17/18EA...F1...	---	541715-2	57217101 (screw 57218103 required)	
	47/48EA...F2...	---	541715-2	43287131	
	47/48EA...F3...	---	541715-2	49097101 (lock nut 49098103 required)	
	47/48EA...F4...	205838	541715	49097101 (lock nut 49098103 required)	
Hold-N-Drive	47/48EA ...H...over 100NM	205838		49097101 (lock nut 49098103 required)	
	47/48EA ...H...under 100NM	205838	541715-2	49097101 (lock nut 49098103 required)	

Joint Simulator with Mounting Plate for Hard/Soft Fastening Cases

Order No.	Description
W09164K	5 Nm hard/15 Nm soft
W08780K	10 Nm hard/30 Nm soft
W08779K	20 Nm hard/50 Nm soft

Available on request up to 400 Nm.

W08779K



Protective Tool Covers

Tool Model	Order No.
18E...AL2	936 382
18E...AM3	936 383
48E...AM3	936 387
48E...AH4	936 384
48E...MH4	936 385PT
48E...AX6	936 386PT

Tool & cable tester

Order No.	Description
961024	Tool & Cable Tester Tool memory programming
542991	Tool & Cable Tester

Note: Adapter cable for Air-LB tool on request.



Protective Cable Covers

Tool version	Cable Scratch Protect Cover	Version
18../48.. Angle nutrunner (Length of the cover 1,4m)	961265PT	Suitable for fixed straight cables and swivel toolcables
18../48.. Angle nutrunner (Length of the cover 2,5 m)	961268PT	Suitable for fixed straight cables and swivel toolcables



Tool Cable with Air-Lb

Order No.	Description
961259-XXX	Standard cable with fixed connector
961260-XXX	Standard cable with rotating right angle connector
961250-XXX	Special cable, highly flexible for greatest possible durability, fixed connector
961251-XXX	Special cable, highly flexible for greatest possible durability, rotating inline connector
961252-XXX	Special cable, highly flexible for greatest possible durability, rotating right angle connector

Extension Cable with Air-Lb

Order No.	Description
961249-XXX	Standard extension cable
961248-XXX	Connection cable from the STMH module in the control cabinet to the tool cable



Extension Cable with Matrix Connector

Tool	Extension	Rotating Cable	Extension	
			Ft.	M
542778-1M*	542779-1M	542780-1M*	3	1
542778-2M	542779-2M	542780-2M*	6	2
542778-3M*	542779-3M	542780-3M	9	3
542778-6M	542779-6M	542780-6M	19.5	6
542778-8M	542779-8M	542780-8M	26	8
542778-10M	542779-10M	542780-10M	33	10
542778-15M	542779-15M	542780-15M	49	15
	542779-20M		66	20
	542779-25M		82	25
	542779-30M		98	30
	542779-40M		131	40
542778-50M	542779-50M	542780-50M	164	50

* Must be used with the extension cable 542779.

Rotating tool cable, can be rotated by approx. 330°



Extension cable 542779-3M



Light. Intelligent. Full

LiveWire 2 offers functions for precise torque, angle and speed control for safety-critical fastening cases, packed in a new, light, wireless design. With more than 1700 fastening operations per battery charge and the quick charging feature you are assured long tool operating times for the assembly of your safety-critical applications.

LiveWire™ has been designed and tested for usage in a harsh industrial environment.

New Diversity Antenna System (2.4/5 GHz)

- Optimised 5GHz performance
- Double antenna system
- Uniband 3 support up to 5.825 GHz / channel 165



Digital Process Control

- Autom. joint number worker prompting
- Autom. selection of the process visualisation
- Configurable error handling



Electronic intelligence

- Integrated controller with current/power monitoring
- Integrated servo with I/O signal processing
- Supply voltage is measured automatically
- 512-cycle memory buffer



performance. Without Cables.

Expansion Platform for Optional Accessories

- Barcode scanner (order no.: 937240PT)
Makes possible real-time barcode data acquisition
- Adjustable auto parameter selection configuration option for enable and disable
- Tag/sensor for various locating systems possible (on request)
- Individual customer-specific expansion solutions possible
- Gyroscope



Scanner 937240PT (optional)



Configurable LED joint illumination



Operator display

- Operator information in real-time
- 3-line adjustable LCD display
- Status indications:
 - Green LCD = IO
 - Yellow LCD = OK
 - Red LCD = NOK / error
 - Green LED = OK
 - Red LED = NOK
- Configurable application buttons

Modular Fastening System



One nutrunner controller can acquire up to 16 combined fastening tools and control them based on the process.

The Most Cost-Effective Solution for Safety-

Savings of up to 50 % compared to Conventional Systems!

Mobility is one of the main advantages of wireless communication. LiveWire™ from Cleco combines the freedom and flexibility of cordless tools in fastening applications where documentation is required. By using a 2.4 GHz/5 GHz WLAN (Wireless Local Area Network) interface (industry standard) as well as the highest level security encryption and authentication plus 512-cycle tool buffer memory, LiveWire™ ensures safety-critical data transmissions are never jeopardised.



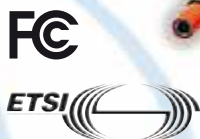
Up to 16*
LiveWire Tools
1 Line
Controller

***Contact Regional
Application Center
for requirements
greater than 10.**

Critical Screwed Joints on the Market.

Up to 83% More Productivity!

Cleco LiveWire™ tools are also available with Vmax™, a corded solution that offers lasting tool performance and increases the speed by up to 83 % without compromising accuracy or service life. These innovations operate on the same principle using which up to 10 tools are controlled by one nutrunner controller. In this way up to 50 % of the costs are saved compared to conventional systems. The new Vmax™ technology also takes into account the power supply used and immediately regulates the maximum tool speed. LiveWire™ with Vmax™ combines the performance you need with one of most versatile cordless systems on the market.



WLAN Tech. Data/ Options:

Features	2.4 & 5 GHz Tools with LiveWire Memory Chip* 17B... and 47B... Series
Standard	IEEE 802.11a/b/g/n
Security	WEP • 64/128-bit encryption WPA/WPA2/802.1x 128-bit TKIP/CCMP encryption • Pre-shared key mode (PSK) LEAP, PEAP • 802.1x EAP authentication (LEAP, PEAP, TLS, TTLS GTC, MD5, OTP, PAP, CHAP, MSCHAP, SCHAPv2, TTLS MSCHAPv2) on request
Range	Typically up to 50 m (164' 0.5")
Canals	1 – 13 (2.401 – 2.483 GHz) 36 – 165 (5.17 - 5.825 GHz)
Transmit power	15 dBm @ 5GHz 20 dBm @ 2.4 GHz (b)
Sensitivity	-94 dBm (@1 Mbps) -80 dBm (@ 5 GHz)
Modulation	DSSS/OFDM

** All important WLAN settings incl. the individual MAC addresses are stored in the interchangeable LiveWire memory chip. This feature permits, even in a secured WLAN, straightforward, quick tool replacements by simply changing the LiveWire memory chip.*

Numerous Application



Cordless Right Angle Nutrunner for Motor Assembly

Fastening accessories using a Cleco right angle nutrunner incl. tool bail on a balancer.



Straightforward Fastening using LiveWire Pistol Grip Nutrunner

Fastening armrest using a Cleco pistol grip nutrunner.



Safety-Critical Fastening Using A LiveWire Right Angle Nutrunner

Seat frame fastening using Cleco LiveWire right angle nutrunner at a well-known international vehicle seat manufacturer.



Areas for LiveWire™ Tools



Cleco LiveWire fastening tools at the Austrian sports car manufacturer KTM in Graz. LiveWire right angle and pistol grip nutrunners combined with a cordless electronic torque wrench on a common nutrunner controller. Cordless productivity for all safety-critical joints on the premium sports car X-Bow.



Cleco LiveWire I-Wrench

WLAN torque wrench in professional case. Can be perfectly integrated into Cleco LiveWire systems and works together with Cleco LiveWire nutrunners and Cleco/DGD nutrunner controllers.

P Angle Head is for Performance

The new 'P' series of angle heads were designed to meet the rigorous production standards of the automotive industry.

Durable, precision, spiral cut gears extend preventive maintenance intervals to 500,000 cycles, nearly twice our previous design.

Werkstoff	Serien-Nr.	Tastentaste	30%		80%		100%	
			200 kNm	200 kNm	200 kNm	200 kNm	200 kNm	200 kNm
CNC-DRIFTSCHRAUBE	720004	Start-Vorwärtsgang	100000	100000	100000	100000	100000	100000
			100000	100000	100000	100000	100000	100000
			100000	100000	100000	100000	100000	100000
			100000	100000	100000	100000	100000	100000
			100000	100000	100000	100000	100000	100000
			100000	100000	100000	100000	100000	100000
			100000	100000	100000	100000	100000	100000
			100000	100000	100000	100000	100000	100000
			100000	100000	100000	100000	100000	100000
			100000	100000	100000	100000	100000	100000
CNC-DRIFTSCHRAUBE	720005	Start-Vorwärtsgang	100000	100000	100000	100000	100000	100000
			100000	100000	100000	100000	100000	100000
			100000	100000	100000	100000	100000	100000
			100000	100000	100000	100000	100000	100000
			100000	100000	100000	100000	100000	100000
			100000	100000	100000	100000	100000	100000
			100000	100000	100000	100000	100000	100000
			100000	100000	100000	100000	100000	100000
			100000	100000	100000	100000	100000	100000
			100000	100000	100000	100000	100000	100000



This new design achieves a higher degree of machine capability with all tools being qualified to a Cm/Cmk value greater than 2.0 at +/- 7%.

One Platform for all Accessories

The modular accessory platform is now standard for both the LiveWire and LiveWire 2 series of tools allowing accessory modules to be added or changed without having to disassemble and reassemble the tool.



By adding an on-board gyroscope the tool is able to compensate for operator influence that might affect an angle controlled or monitored rundown.



The tool location module is used to define the work area of a tool to a specific product or area on the assembly line.



LiveWire Mini-Spindles

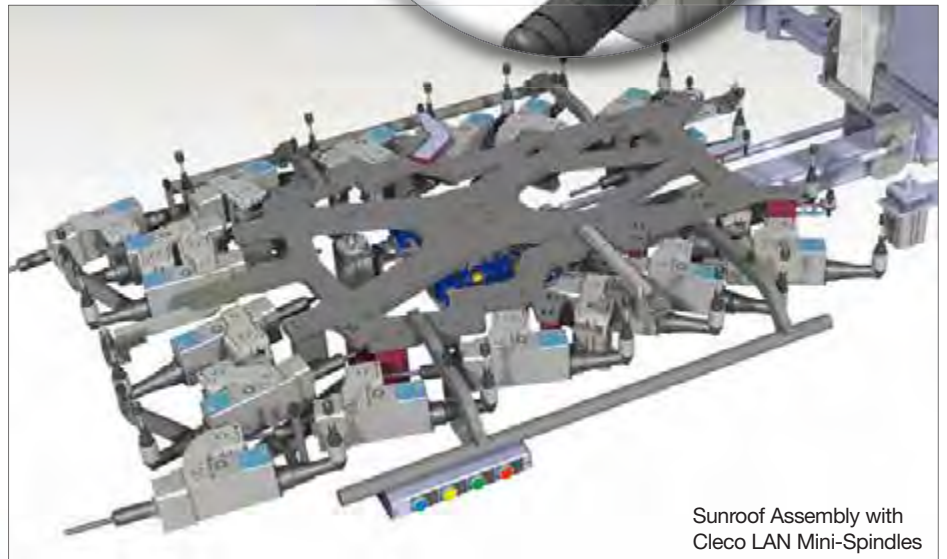
The Right Fit

LiveWire Mini-Spindles combine the flexibility of wired or wireless connectivity with the modularity of a fixtured spindle application.



Designed for unique applications with space limitations, LiveWire Mini-Spindles eliminate the need for complex fixtures and extensive festooning of cables typically associated with fixtured spindle applications.

Mini-Spindles are available in right-angle and inline configurations with either a fixed or floating spindle. Recommended application torques are 3 to 35 Nm.



Sunroof Assembly with Cleco LAN Mini-Spindles



LAN Mini Spindle



PM48 LAN

For inquiries on Mini-Spindles, including project design, deployment, and installation, contact your Regional Application Center. Locations can be found at: <http://www.ApexPowerTools.com>

New LiveWire 2 Right Angle Nutrunners with Transducer

LiveWire 2 Right Angle Nutrunners

Torque range
5.5 - 65 Nm

Bolt size
M5 - M10

- About 360 g lighter than LiveWire tools
- Flexible expansion platform
- Brushless precision motor
- Exact torque measurement by transducer
- Integrated intelligent functions with power management and I/O signal processing
- Integrated servo



47BAYPB65P4L

Nomenclature for weight-reduced LiveWire 2 right angle nutrunners

47	B	A	Y	P	B	XXX	XXX	X	L
Motor 47	Supply B - Battery/ PM48				Version B - 26-48 V		Output Drive Size P3 - 3/8" square drive spiral geared		Tool Series L - LiveWire 2 Series
Version A - Right angle				Peripherals P - Expansion platform				Output Drive Locking - Pin locking B - Ball locking	
Data Transfer Y - WLAN: Dual band 2.4 GHz, 5 GHz							Max. Torque Nm		
							15 - 15 Nm 35 - 35 Nm 21 - 21 Nm 48 - 48 Nm 28 - 28 Nm 65 - 65 Nm		

LiveWire 2 Right Angle Nutrunner	Torque Range	Free Speed (rpm)			Weight without Battery	Output Drive Size Square Drive	Length incl. Battery	
		Battery Types		PM48			26 V	44 V
Model Number	Nm	26 V*	44 V*	48 V	kg	mm		
47BAYPB15P3L	5.5-15	487	891	891	1,83	3/8"	581	562
47BAYPB21P3L	8-21	370	680	680	1,83	3/8"	581	562
47BAYPB28P3L	10-28	264	482	482	1,83	3/8"	581	562
47BAYPB35P3L	12-35	255	446	446	1,88	3/8"	583	564
47BAYPB48P3L	18-48	181	316	316	1,97	3/8"	596	577
47BAYPB65P4L	15-65	135	236	236	2,07	1/2"	598	580

*Free speeds with fully charged battery.

General: All tools must be used with a suitable Cleco/DGD nutrunner controller or PC software solution.

Weight of the batteries 26-V Li-ion battery 0.50 kg, 44V Li-ion battery 0.85 kg

Optional accessories: Batteries, battery chargers, scanner, sockets and bits are not included in the standard equipment. You will find all accessories on pages 145-147 of this catalogue.

LiveWire Right Angle Series

Torque range
5.5 - 90 Nm

Bolt size
M5 - M10

- Brushless precision motor
- High-resolution resolver
- Exact torque measurement by transducer
- Integrated electronic intelligence with power management and I/O signal processing
- Integrated servo

47BAYPB21P3



Right angle nutrunner nomenclature

47	B	A	X	X	B	XXX	XXX	X
Motor 47	Supply B - Batt./PM48				Input Voltage B - 26-48V		Output Drive Size P3 - 3/8" Sq. dr. spiral geared P4 - 1/2" Sq. dr. spiral geared	Output Drive Locking - Pin locking B - Ball locking
Tool Version A - Right angle		Data Transfer Y - WLAN: Dual band 2.4 GHz, 5 GHz Z - Xbee: IEEE 802.15.4 (4 tools per access point)			Peripherals S - Barcode scanner - None P - Expansion platform		Max. Torque (Nm) 15 - 15 Nm 48 - 48 Nm 21 - 21 Nm 70 - 70 Nm 28 - 28 Nm 90 - 90 Nm 35 - 35 Nm	

Right Angle Nutrunner	Torque Range	Free Speed (rpm)			Weight Without Battery	Output Drive Size Square	Length with Battery	
		Batteries		PM48			26 V	44 V
Order No.	Nm	26 V*	44 V*	48 V	kg	mm	mm	mm
47BAYPB15P3	5.5-15	485	890	890	2,20	3/8"	585	565
47BAYPB21P3	8-21	370	680	680	2,20	3/8"	585	565
47BAYPB28P3	10-28	260	480	480	2,20	3/8"	585	565
47BAYPB35P3	12-35	255	445	445	2,25	3/8"	588	568
47BAYPB48P3	18-48	180	315	315	2,34	3/8"	600	580
47BAYSB70P4	24-70	123	216	216	4.18	1/2"	691	672
47BAYSB90P4	40-90	80	140	140	4.18	1/2"	691	672

* Free speed with fully charged battery.

General: All tools must be used with a suitable Cleco/DG nutrunner controller or PC software solution.

Weight of the batteries 26-V Li-ion battery 0.50 kg, 44V Li-ion battery 0.85 kg

Optional accessories: Batteries, battery chargers, scanner, sockets and bits are not included in the standard equipment. You will find all accessories on pages 145-147 of this catalogue.

Cordless Pistol Grip Nutrunners with Transducer



17BPYSB13Q

(The Apex µ-Guard bit shown above is not included in the standard equipment.)

Pistol Grip Series

Torque range
3.0 - 13 Nm

Bolt size
M5 - M6

- Brushless precision motor
- High-resolution resolver
- Exact torque measurement by transducer
- Integrated electronic intelligence with power management and I/O signal processing
- Integrated servo



Pistol grip nutrunner nomenclature

17	B	P	X	X	B	XX	Q
Motor 17	Supply Battery/PM48				Input Voltage B - 26-48V		Type of Output Drive Q - Quick-change chuck
Tool Version P - Pistol grip		Options S - Barcode Scanner - None P - Expansion Platform		Max. Torque (Nm) 05 - 5 Nm 07 - 7 Nm 09 - 9 Nm 13 - 13 Nm			
Data Transfer Y - WLAN: Dual band 2.4 GHz, 5 GHz Z - Xbee: IEEE 802.15.4 (4 tools per access point)							

Pistol Grip Nutrunner	Torque Range	Free Speed (rpm)			Weight w/o Battery	Output Drive Size Hex	Length	Height with Battery & Scanner	
		Batteries		PM48				26 V	44 V
Order No.	Nm	26 V*	44 V*	48 V	kg	mm	mm		
17BPYSB05Q	3-5	1639	2428	2428	1.52	1/4"	220	330	318
17BPYSB07Q	3-7	1161	1721	1721	1.52	1/4"	220	330	318
17BPYSB09Q	3-9	887	1314	1314	1.52	1/4"	220	330	318
17BPYSB13Q	3-13	629	931	931	1.52	1/4"	220	330	318

*Free speed with fully charged battery.
All tools must be used with a suitable Cleco/DGD nutrunner controller or PC software solution.
Weight of the batteries 26-V Li-ion battery 0.50 kg, 44V Li-ion battery 0.85 kg

Batteries, battery chargers, scanner, sockets and bits are not included in the standard equipment. You will find all accessories on pages 145-147 of this catalogue.

Tube Nut Series

Torque range
10 - 40 Nm

Bolt size
M6 - M8

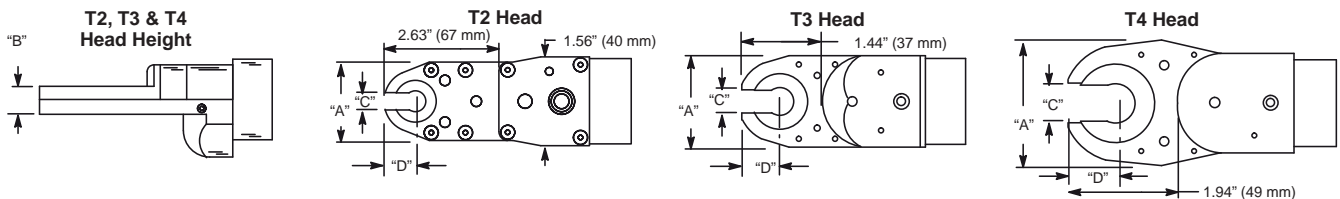
- Brushless precision motor
- High-resolution resolver
- Exact torque measurement by transducer
- Integrated electronic intelligence with power management and I/O signal processing
- Integrated servo



On the 47BT tube nutrunner a single lever controls the tightening of the fastener and the return of the hex socket to the open position. This flexibility paired with proven performance significantly increases productivity during assembly.



47BTYSB20T2



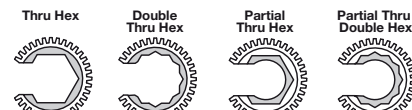
Tube nutrunner nomenclature

47	B	T	X	X	X	XX
Motor 47	Supply B - Batt./PM48				Input Voltage B-26V-48V	
Tool Version T - Tube nut wrench				Options S - Barcode scanner - None		
Data Transfer Y - WLAN: Dual band 2.4 GHz, 5 GHz Z - Xbee: IEEE 802.15.4 (4 tools per access point)				Head Size T2 - 20 Nm T3 - 30 Nm T4 - 40 Nm		
Socket Sizes						

EA - 1/4"	M5 - 5 mm	MH - 14 mm	MP - 22 mm
EC - 3/8"	M6 - 6 mm	MI - 15 mm	MQ - 23 mm
EE - 1/2"	MA - 7 mm	MJ - 16 mm (5/8")	MR - 24 mm (15/16")
EF - 9/16"	MB - 8 mm (5/16)	MK - 17 mm	MS - 25 mm
EH - 11/16"	MD - 10 mm	ML - 18 mm	MT - 26 mm
EJ - 13/16"	ME - 11 mm (7/16)	MM - 19 mm (3/4")	MU - 27 mm (1 1/16")
EK - 7/8"	MF - 12 mm	MN - 20 mm	
EM - 1"	MG - 13 mm	MO - 21 mm	

Socket identifier

KSX	XX	XX	X
Head Size KS2 - T2 KS3 - T3 KS4 - T4			
Type of Output Drive 0 - Partial thru hex 1 - Thru hex 2 - Double thru hex 3 - Partial double thru hex			
Extensions 0 - Flush 2 - 1/4" 4 - 1/2" 6 - 3/4"			
Max. Hex Socket Sizes MG, EE T2 head version MM, 3/4" T3 head version MU, 1 1/16" T4 head version 00, ## (special) All head versions			



Tube Nutrunner	Torque Range	Free Speed (rpm)			Weight w/o Battery	Output Drive Size	Length with Battery		Head			
		Batteries	PM48				26 V	44 V	A	B	C	D
Order No.	Nm	26 V*	44 V*	48 V	kg		mm		mm	mm	mm	mm
47BTYSB20T2	10-20	260	455	455	2.57	1/2"	598	579	36	14	7	13
47BTYSB30T3	15-30	188	329	329	2.57	3/4"	588	569	42	15	12	19
47BTYSB40T4	20-40	141	247	247	2.93	1 1/16"	612	593	60	15	17	24

*Free speed with fully charged battery.

General: All tools must be used with a suitable Cleco/DGD nutrunner controller or PC software solution. Weight of the batteries 26-V Li-ion battery 0.50 kg, 44V Li-ion battery 0.85 kg

Optional accessories: Batteries and battery chargers are not included in the standard equipment. You will find all accessories on pages 145-147 of this catalogue.

For special versions of sockets, please use the prefix "KS" (e. g.: KS2EA01 for a T2 head, 1/4", flush, thru hex)

Cordless Crowfoot Nutrunners With Transducer

Crowfoot Series

Torque range
10.5 - 30 Nm

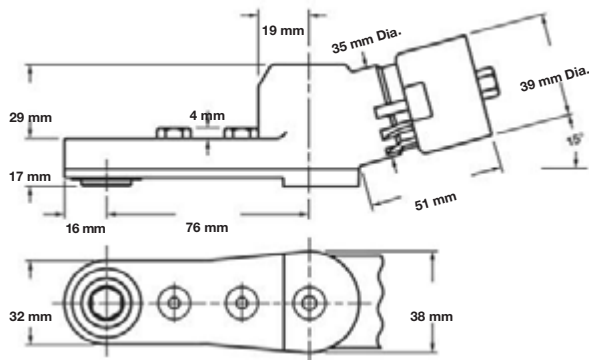
Bolt size
M6 - M8

- Brushless precision motor
- High-resolution resolver
- Exact torque measurement by transducer
- Integrated electronic intelligence with power management and I/O signal processing
- Integrated servo

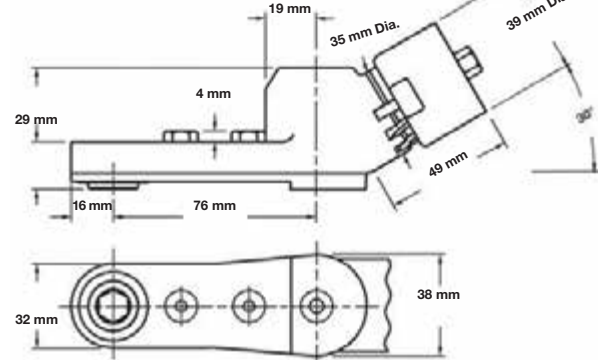


47BCYSB30C1

C1 – 15° head (order no. 301071)
Maximum recommended torque: 30 Nm



C3 – 30° head (order no. 301072)
Maximum recommended torque: 30 Nm



Crowfoot nutrunner nomenclature

Socket identifier

47	B	C	X	X	B	XX	CS	XX	X	X
Motor 47	Supply B - Batt./PM48				Input Voltage B - 26V-48V		Head CS - Crowfoot			Type of Output Drive 1 - Thu hex
Tool Version C - Crowfoot nutrunner				Options S - Barcode scanner - None		Head Version C1 - 15° C3 - 30°			Extensions 0 - Flush 4 - 1/2" 6 - 3/4"	
Data Transfer Y - WLAN: Dual band 2.4 GHz, 5 GHz Z - Xbee: IEEE 802.15.4 (4 tools per access point)									Socket Sizes	
									EA - 1/4" MA - 7 mm MF - 12 mm	
									EC - 3/8 MB - 8 mm (5/16) MG - 13 mm	
									EE - 1/2 MC - 9 mm MH - 14 mm	
									EF - 9/16 MD - 10 mm MI - 15 mm	
									ME - 11 mm (7/16)	

Crowfoot Nutrunner	Torque Range	Free Speed (rpm)			Weight Without Battery	Output Drive Size	Length with Battery	
		Batteries		PM48			26 V	44 V
Order No.	Nm	26 V*	44 V*	48 V	kg	mm	mm	
47BCYSB30C1	10.5-30	186	326	326	2.81	15	667	648
47BCYSB30C3	10.5-30	186	326	326	2.81	15	660	641

* Free speed with fully charged battery.

General: All tools must be used with a suitable Cleco/DGD nutrunner controller or PC software solution.

Weight of the batteries 26-V Li-ion battery 0.50 kg, 44V Li-ion battery 0.85 kg

Optional accessories: Batteries and battery chargers are not included the standard equipment. You will find all accessories on pages 133 and 134 of this catalogue.

For special versions of sockets, please use the prefix "CS" (e.g.: CSEE01 for 1/2", flush, thru hex)

Cordless Freedom

or

Corded High-Speed



The Choice Is Yours.

44V Li-Ion Battery Technology

- Up to 83 % faster than with 26 V battery
- Up to 1700 fastening operations/battery charge (hard fastening case)
- Service life > 800 charging cycles
- Integrated intelligence
 - Display for charge state, charging cycles
 - PC diagnostics interface (936492PT)
- Battery can be changed with 1 hand, 1 central locking tab

To ensure maximum availability, the cells and the electronics are embedded in an optimally designed holder.

Central locking tab



5-segment display for additional status information on the battery

Charge cycles – ind. after removal from charger*

Indication	Charge Cycles
■ ■ ■ ■ ■	0 – 199
■ ■ ■ ■ □	200 – 399
■ ■ ■ □ □	400 – 599
■ ■ □ □ □	600 – 799
■ □ □ □ □	> 800

* Flashing indication for 5 sec. after battery is removed from the battery charger.

Charge state – indication with active battery*

Indication	Charge State
□ □ □ □ □	Sleep mode or faulty
■ □ □ □ □	< 20 %
■ ■ □ □ □	20 – 40 %
■ ■ ■ □ □	40 – 60 %
■ ■ ■ ■ □	60 – 80 %
■ ■ ■ ■ ■	80 – 100 %

* Normal indication as long as battery is not in the sleep mode.

Multi-Battery Charger for 26/44 V Batteries

- Automatic battery detection 26 V/44 V
- Charging time only 1 hour
- Autom. wide range input (85-275 VAC)
- LEDs for supply voltage and status

Charger Indication for Informative State Information

Supply Voltage

LED Indic.	Status
●	No supply voltage
●	Supply voltage OK



Red/green LED for Charge State and Fault

LED Indication	Status
●	No indication No battery inserted
●	Slow green flashing (0,5 Hz) Charge state > 80 %
●	Fast green flashing (1 Hz) Charge state < 80 %
●	Green flashing Charge state battery 100 %
●	Red flashing Excessively high battery cell temperature
●	Fast red flashing (2 Hz) Battery fault (Short circuit, faulty cells, etc.)



936491PT



LiveWire Power Module PM 48

- Up to 83 % higher speeds!
- Wide range input – (85-275 VAC)
- LEDs for power & status
- Electronic monitoring
- Solid metal housing
- Low weight – only 3.1 kg
- For LiveWire & LiveWire2 Tools

Power Module PM 48

Order No.	Weight kg	Width mm	Height mm	Depth mm
961350PT	3.1	240	120	150

2 m cable included

Comparison of the Speed Increase

Series	Tool Type	Free Speed (rpm)		Increase in %
		26 V Battery	48 V Power Module	
Pistol grip design	17BPYSB05Q	1639	2428	48 %
	17BPYSB07Q	1161	1721	48 %
	17BPYSB09Q	887	1314	48 %
	17BPYSB13Q	629	931	48 %
Right angle design	47BAYPB15P3	485	890	84 %
	47BAYPB15P3L	487	891	83 %
	47BAYPB21P3	370	680	84 %
	47BAYPB28P3	260	480	85 %
	47BAYPB28P3L	264	482	83 %
	47BAYPB35P3	255	445	75 %
	47BAYPB35P3L	255	446	75 %
	47BAYPB48P3	180	315	75 %
	47BAYPB48P3L	181	316	75 %
	47BAYPB65P4L	135	236	75 %
	47BAYSB70P4	123	216	76 %
	47BAYSB90P4	80	140	75 %

mPro400GC Nutrunner Controller

- Up to 16 tools per controller (LiveWire + corded + inline floating spindle nutrunners)
- 10.4" display with extra wide viewing angle
- Touchscreen with screen keypad
- Compatible with corded and cordless tools
- Redundant Ethernet and fieldbus connections
- Serial and USB interfaces
- 8 configurable I/O 24 V
- Separate system bus
- Fieldbus module optional

mPro400GC nomenclature

mPRO	400GC	X
Type of Nutrunner Controller	Series	Type M – Master P – Primary



Nutrunner Controller

Order No.*	Description	Weight	Width	Height	Depth*
		kg	mm	mm	mm
mPRO400GC-M	Master controller, touchscreen display, no servo module, fieldbus modules optional	10.6	267	381	336
mPRO400GC-P	Primary controller, touchscreen display, integrated servo module for corded hand-held nutrunners, fieldbus optional	14	267	381	336

*Including mounting plate



The LiveWire battery tools can also be used on the nutrunner controllers mPro400S/ mPro400SE/ mPro400SG/ CPM3/ CPM6/ CPM9 and on other DGD/ Cleco controllers. Ask us - we will offer you the best possible, most effective solutions for your fastening processes.

Batteries

Order No.	Description	Weight
		kg
935377	26 V Li-ion	0.50
936400PT	44 V Li-ion	0.85



935377



936400PT

Battery Chargers

Order No.	Description
935391	26 V battery charger
935382	26 V battery charger (UK)
936491PT	26 V/44 V battery charger
935302	26 V 4-fold battery charger



935391



936491PT



935302

Vmax PM48/PM48-LAN Power Module

Order No.	Weight	Width	Length	Depth
	kg	mm	mm	mm
961350PT	3,0	120	240	150
941466PT	4,0	10	340	150

2 m power cable incl.



vmax
961350PT



941466PT

961369-060

Vmax Cables

Tool Cable	Order No.	Extension
	Order No.	
961341-***	961342-***	
961369-060	--	

***Length: 030=3 m, 060=6 m,
080=8 m, 100=10 m

Maximum 20 m total length



961341-030



961342-030

Diagnostics Device for 44 V Batteries

Order No.	Description
936492PT	Battery diagnostic device incl. software CD

- USB interface to the PC
- Indication for discharge cycles, total voltage and voltage per cell
- Ideal for battery monitoring
- Simplified troubleshooting

Battery service interface enables charge cycles and cell voltages to be read via USB



936492PT

Compact Flash Cards

Suitable for mPro400GC / SG Controllers

Order No.	Description
S961592	Compact Flash card 1GB (blank)
S961593	Compact Flash card 2GB (blank)
S961594	Compact Flash card 16GB (blank)



Software

Order No.	Description
S168677	mProRemote.Net software for remote programming and control of all mPro systems



Accessories for Cordless LiveWire Fastening Technology

Barcode Scanner for Platform & LiveWire2 tools.

Order No.	Description
937240PT	Barcode scanner Class2 for LiveWire 2 and Platform tools

(If you need a class 1 scanner please order number 961621PT)



Gyroscope for LiveWire 2 and Platform tools

Order No.	Description
942039PT	Gyroscope module for LiveWire 2 and Platform tools



LiveWire WLAN Access Points

Order No.	Description
961390	XBEE 802.15.4 base station
961300	868 MHz base station (only for EU)
961506PT	Access Point Siemens Scalance (incl. W788-1 M12, 2xANT 795-4MC & termination)
S981511	Ethernet cable M12 to RJ45, 2 m
S133463-020	Power cable 24V for mPro400GC, 2m

WLAN range: 30-50 m, XBEE 30 m max.
IEEE 802.11a/b/g/h/n (depending on tool)
Max. 16 tools per WLAN access point



Tool Holders

Order No.	Description
935144	Tool holder for pistol grip tools incl. IrDA
935396	Tool holder for pistol grip tools
935290	Tool holder for right angle tools up to 50 Nm incl. IrDA
935395	Tool holder for right angle tools up to 50 Nm
935170	Infrared interface with cable
935998	Tool holder for right angle tools from 70 Nm
935999	Tool holder for right angle tools from 70 Nm incl. IrDA



LiveWire Additional Grip

Order No.	Description
301837	Additional handle for pistol grip tools



Serial Extension Cables for Tool Holder

Order No.	Description
935154	3 m extension cable for tool holder IrDA
935155	6 m extension cable for tool holder IrDA
935157	10 m extension cable for tool holder IrDA

Fieldbus Modules

Order No.	Module Description
544171PT	Fieldbus Devicenet
544172PT	Fieldbus Ethernet-IP 1 x RJ45
544278PT	Fieldbus Ethernet-IP 2 x M12
544354PT	Fieldbus Ethernet-IP 2 x RJ45
544173PT	Fieldbus Profibus DB9
544174PT	Fieldbus Profinet 2 x RJ45
544211PT	Fieldbus Modbus/TCP 1 x RJ45
S133173	Fieldbus Profibus DP-V1 M12
S133174	Fieldbus Profinet IO M12



System Bus Accessories

Order No.	Description
S133405	System bus stack lamp without buzzer
S133406	System bus control box with buzzer
S133410	System bus 4-position socket tray
S133411	System bus 8-position socket tray
S133420	System bus stack lamp with buzzer
S133436	System bus 32 I/O expansion with housing
S133437	System bus 16 I/O expansion with housing
S961830	System bus 16 I/O expansion (built-in module for control cabinets)
960392	System bus 32 I/O expansion (built-in module for control cabinets)



S133420 Stack light



S133410 Socket tray



S133406 Control box with buzzer

Protective Tool Covers

Order No.	Description
936372	Protective covers for right angle tool 47BA..15-28AM3 Also suitable for LiveWire 2 tools.
936373	Protective covers for right angle tool 47BA..35-50AM3 Also suitable for LiveWire 2 tools.
937704PT	Protective covers for right angle tool 47BA..15-28 Nm, P3+P3L Also suitable for LiveWire 2 tools.
937706PT	Protective covers for right angle tool 47BA..35Nm, P3 +P3L Also suitable for LiveWire 2 tools.
937708PT	Protective covers for right angle tool 47BA..48Nm, P3 +P3L Also suitable for LiveWire 2 tools.
937711PT	Protective covers for right angle tool 47BA..70Nm/90Nm P4
936424PT	Protective covers for scanner on 47BA tools Not suitable for LiveWire 2 tools.
937210PT	Protective covers for display on 47BA tools Not suitable for LiveWire 2 tools.
936489PT	Protective covers for LiveWire pistol grip tools 17BP.. - black
942182PT	Protective covers for LiveWire pistol grip tools 17BP.. - green



936489PT



936489PT



936372



942182PT



936372



937704PT...

Accessory Cables

Order No.	Description
960225	Ethernet patch cable - 2 m
960007	Serial null module cable - 3 m
935170	Serial interface IrDA with cable - 1 m
S133408-005	System bus cable - 0.5 m
S133408-020	System bus cable - 2 m
S133408-050	System bus cable - 5 m
S133408-200	System bus cable - 20 m
S133408-500	System bus cable - 50 m
S133412	System bus terminating connector



960007



S-133408-020



960225



S133412



935170

Tool Suspension Bails

Order No.	Description
1110909	Standard tool suspension bail (not for LiveWire 2 L Series)
S387983	Rotating suspension bail for right angle nutrunner (not for LiveWire 2 L Series)
S387884	Rotating suspension bail with bracket for right angle nutrunner (not for LiveWire 2 L Series)
942045PT	Standard tool suspension bail for LiveWire 2 L
942185PT	Rotating suspension bail for LiveWire 2 L Series



1110909



S387983



942185PT



942045PT



S387884

Electrical Torque Wrench I-Wrench



I - WRENCH	Model Name	Description	Torque Range	Output Drive	Length	Weight
			(Nm)	(mm)	(mm)	(kg)
	I-Wrench 15	Torque & angle wrench	1.5 - 15	9 x 12	393	0.80
	I-Wrench 30	Torque & angle wrench	3 - 30	9 x 12	393	0.86
	I-Wrench 70	Torque & angle wrench	7 - 70	9 x 12	498	0.93
	I-Wrench 100	Torque & angle wrench	10 - 100	9 x 12	498	0.93
	I-Wrench 200	Torque & angle wrench	20 - 200	14 x 18	629	1.50
	I-Wrench 300	Torque & angle wrench	30 - 300	14 x 18	779	1.86
	I-Wrench 400	Torque & angle wrench	40 - 400	14 x 18	879	2.00
	I-Wrench 600	Torque & angle wrench	60 - 600	14 x 18	1057	3.65
	I-Wrench 800	Torque & angle wrench	80 - 800	Ø 20	1330	5.10
	I-Wrench 1000	Torque & angle wrench	100 - 1000	Ø 20	1610	6.25
	I-Wrench 1200	Torque & angle wrench	120 - 1200	Ø 30	1715	7.00



NOMENCLATURE	Product Number	Description
		No Barcode Scanner, with Rubber Protection, with WLAN Module, with Tool Detection
	PRW-0015-0110-WI	Cleco LiveWire I-Wrench 15
	PRW-0030-0110-WI	Cleco LiveWire I-Wrench 30
	PRW-0070-0110-WI	Cleco LiveWire I-Wrench 70
	PRW-0100-0110-WI	Cleco LiveWire I-Wrench 100
	PRW-0200-0110-WI	Cleco LiveWire I-Wrench 200
	PRW-0300-0110-WI	Cleco LiveWire I-Wrench 300
	PRW-0400-0110-WI	Cleco LiveWire I-Wrench 400
	PRW-0600-0110-WI	Cleco LiveWire I-Wrench 600
	PRW-0800-0110-WI	Cleco LiveWire I-Wrench 800
	PRW-1000-0110-WI	Cleco LiveWire I-Wrench 1000
	PRW-1200-0110-WI	Cleco LiveWire I-Wrench 1200
	With Barcode Scanner, with Rubber Protection, with WLAN Module, with Tool Detection	
	PRW-0015-1110-WI	Cleco LiveWire I-Wrench 15
	PRW-0030-1110-WI	Cleco LiveWire I-Wrench 30
	PRW-0070-1110-WI	Cleco LiveWire I-Wrench 70
	PRW-0100-1110-WI	Cleco LiveWire I-Wrench 100
	PRW-0200-1110-WI	Cleco LiveWire I-Wrench 200
	PRW-0300-1110-WI	Cleco LiveWire I-Wrench 300
	PRW-0400-1110-WI	Cleco LiveWire I-Wrench 400
	PRW-0600-1110-WI	Cleco LiveWire I-Wrench 600
	PRW-0800-1110-WI	Cleco LiveWire I-Wrench 800
	PRW-1000-1110-WI	Cleco LiveWire I-Wrench 1000
	PRW-1200-1110-WI	Cleco LiveWire I-Wrench 1200



Explanation of Nomenclature

P R W
I-Wrench for production

0 0 1 5
0015-1200 - I-Wrench torque

0 1 1 0
0110 - No barcode scanner, with rubber protection
1110 - With barcode scanner, with rubber protection

W I
WI - with WLAN module

Cordless. Flexible.

Your Productivity – Your Freedom

Our Cleco LiveWire I-Wrench is a truly universal production tool for meeting your flexible manufacturing needs. It is the perfect tool for fastening operations on your components. It is also suitable for your production line, as it enables you to use various fastening strategies with torque/angle. The patented angle measurement system, the colour touchscreen and the high memory capacity of 1 GB make the Cleco LiveWire I-Wrench the most flexible and versatile torque/angle wrench on the market.



Torque correction factor /
angle for special tools

Can be operated using:

- mPro400GC
- PC / HMI (using mProRemote software)
- Directly on the server
- Or controlled remotely

Production

- WLAN 2.4 and 5 GHz.
- Client or stand-alone.
- Torque tightening with angle monitoring.
- Angle tightening with torque monitoring.
- Wireless data and curve transfer to the Global Controller.

User-Friendly.

Precision

- ± 0.5% display error at 20% - 100% nominal torque
- ± 1% display error at 10% - 20% nominal torque
- ± 0.5° display error on the angle
- Angle resolution 0,1°



Navigation

Menu prompts with colour touchscreen display or navigation buttons

- Torque & angle data
- Graphs on the controller
- Application images

Features

- 1 GB memory for
- 20,000 measurements
- 20,000 graphs
- 1000 parameter sets
- 9 hrs. battery operating time



Automatic tool detection

Barcode scanner

Colour touchscreen

Optical user prompts & feedback by vibration

Temperature-independent angle measurement

Rechargeable Li-ion battery

USB interface

LiveWire I-Wrench Specifications

Model Number	Model Name	Description
Accessories on the Tool		
313110030	I-Wrench-DRP	Rubber protection with screen protection
Other Accessories		
197140013	I-Wrench-PU	Programming unit with tool detection
197130020	TAW-PSS3-RP 15/30	Charging station for Cleco LiveWire I-Wrench 15/30 Nm with rubber protection
197130021	TAW-PSS3-RP 70/100	Charging station for Cleco LiveWire I-Wrench 70/100 Nm with rubber protection
197130022	TAW-PSS3-RP 200	Charging station for Cleco LiveWire I-Wrench 200 Nm with rubber protection
197130023	TAW-PSS3-RP 300	Charging station for Cleco LiveWire I-Wrench 300 Nm with rubber protection
197130024	TAW-PSS3-RP 400	Charging station for Cleco LiveWire I-Wrench 400 Nm with rubber protection
197130025	TAW-PSS3-RP 600	Charging station for Cleco LiveWire I-Wrench 600 Nm with rubber protection
197130026	TAW-PSS3-RP 800	Charging station for Cleco LiveWire I-Wrench 800 Nm with rubber protection
197130027	TAW-PSS3-RP 1000	Charging station for Cleco LiveWire I-Wrench 1000 Nm with rubber protection
197130028	TAW-PSS3-RP 1200	Charging station for Cleco LiveWire I-Wrench 1200 Nm with rubber protection
313210042	I-Wrench-BA	Li-ion battery 3.7 V
197140025	I-Wrench-EC1	External battery charger for 1 battery with J21
197990008	I-Wrench-USB	USB cable 2 m
961506PT	Access point	Siemens Scalance (incl. W788-1 M12, 2xANT 795-4MC & termination)
S981511		Ethernet cable M12 to RJ45, 2 m
S133463-020		Power cable 24V for mPro400GC, 2m
333110016	Chip	Chip for tool detection
102110003	SQnet	SQnet FTA software for programming & downloading data (stand-alone mode)

Further accessories available on request. Please contact our sales & service centres.
Please note: Ratchets are not included and must be ordered separately. This statement also applies to sockets that you can order from our Apex bits & sockets range.



Rubber protection with screen protection



Programming unit with tool detection



Li-ion battery 3.7 V



USB cable 2 m



PRW charging cradle



Siemens Scalance Access Point



External charger 1 battery

R A T C H E T S	Without Tool Detection (Fully Prepared for the Installation of Tool Detection)		With Tool Detection	
	Model Number	Description	Model Number	Description
	197170001	9 x 12 - 1/4"	197179001	TR 9 x 12 - 1/4"
	197170002	9 x 12 - 3/8"	197179002	TR 9 x 12 - 3/8"
	197170003	9 x 12 - 1/2"	197179003	TR 9 x 12 - 1/2"
	197170005	14 x 18 - 1/2"	197179005	TR 14 x 18 - 1/2"
	197170006	14 x 18 - 3/4"	197179006	TR 14 x 18 - 3/4"
	197170007	Ø 20 - 3/4"		
	197170008	Ø 30 - 1"		
	197170145	Insert for customer spec. application 9 x 12		
	197170146	Insert for customer spec. application 14 x 18		



O P E N - E N D E D I N S E R T T O O L S	Product Description	Product No. Without Tool Detection	Product No. With Tool Detection
		7 mm 9X12	197 17 0024
	8 mm 9X12	197 17 0025	197 17 9025
	9 mm 9X12	197 17 0026	197 17 9026
	10 mm 9X12	197 17 0027	197 17 9027
	11 mm 9X12	197 17 0028	197 17 9028
	12 mm 9X12	197 17 0029	197 17 9029
	13 mm 9X12	197 17 0030	197 17 9030
	14 mm 9X12	197 17 0031	197 17 9031
	15 mm 9X12	197 17 0032	197 17 9032
	16 mm 9X12	197 17 0033	197 17 9033
	17 mm 9X12	197 17 0034	197 17 9034
	18 mm 9X12	197 17 0035	197 17 9035
	19 mm 9X12	197 17 0036	197 17 9036
	13 mm 14X18	197 17 0037	197 17 9037
	14 mm 14X18	197 17 0038	197 17 9038
	15 mm 14X18	197 17 0039	197 17 9039
	16 mm 14X18	197 17 0040	197 17 9040
	17 mm 14X18	197 17 0041	197 17 9041
	18 mm 14X18	197 17 0042	197 17 9042
	19 mm 14X18	197 17 0043	197 17 9043
	21 mm 14X18	197 17 0044	197 17 9044
	22 mm 14X18	197 17 0045	197 17 9045
	24 mm 14X18	197 17 0046	197 17 9046
	25 mm 14X18	197 17 0047	197 17 9047
	27 mm 14X18	197 17 0048	197 17 9048
	30 mm 14X18	197 17 0049	197 17 9049
	32 mm 14X18	197 17 0050	197 17 9050

Further open-ended and ring insert tools are available on request. Please contact our sales & service centres.

Repair. Service. Support.

Service & Support

Even the most reliable tools require maintenance and care from time to time. The Apex Tool Group is also your capable partner for service and maintenance to ensure that your productivity is retained.

Fixed Price Repair

The Apex Tool Group offers fixed price repairs in accordance with your requirements and wishes.



Quotations for repairs without delays and loss of time.

Repairs are undertaken by our qualified staff.

Production in your organisation with the tool in use.

Optimised Processes – Quick & Cost-Effective

- The Apex Tool Group service centres will take over all service and repair tasks for Apex Tool Group products.
- The Apex Tool Group service centres, representatives and subsidiaries will provide you directly with quotations and prices.
- The service processes are subject to continuous optimisation such that development, troubleshooting and return can be undertaken as quickly as possible.

Fixed Price Repair Services

- All costs known.
- No surprises due to parts or labour.
- Defined repair tasks.
- No additional administrative costs.
- No quotation processing for you.

Service Engineers

- Our service engineers have extensive training in the maintenance and repair of all Apex Tool Group products.
- Continuous further training of our team ensures our engineers have the necessary specialist knowledge and skills for future tasks.

Cost and Time Saving and no Surprises!

After Sales Service.

Genuine Spare Parts



The Apex Tool Group service centres only use genuine spare parts. As a consequence the performance and reliability of the tools again meet the high requirements on Apex Tool Group products.

Certification

Our latest nutrunner inspection systems with hybrid technology can be traced back to the standards used in a DKD laboratory, which operates in accordance with DIN EN ISO / IEC 17025, as well as a calibration certificate in accordance with VDI / VDE 2646.

After Sales Service

The Apex Tool Group service centres offer much more than just service and repairs. Our additional services as part of our after sales service:

- Training courses for applications & repairs.
- Seminars on systems & fastening technology.
- Service concepts for fastening technology.
- Preventive maintenance and customer service.
- Machine capability verification based on VDI/VDE 2647.
- Optimisation of your screw fastening processes.
- Support during the commissioning of fastening technology.
- Spare parts, spare part kits.
- Software solutions and expansions.
- Remote maintenance (online support, remote access).

Sales & Service Centers

There are Apex Tool Group service Centers all over the world to ensure there is always somebody close to you. Our strategy is to continuously optimise and expand our Apex Tool Group service centres for your future service and repair tasks.

Please contact your local sales and service centre on service issues. The after sales support services available may vary depending on the location and may be adapted to specific market requirements.

You will also find our regional dealer and sales partner network on our website www.apexpowertools.eu.



Strong Brands

With the Power Tools division, the Apex Tool Group offers a complete series of high quality industrial tools and related accessories – some of the most powerful and respected brands in the industry.



All Information Available Online for Download

Manuals, technical drawings, installation instructions, product images as well as homologation information is available in the download area of our website.





Tube cleaners and expanders, rolling motors ...

Catalogue: [SP-1100](#)



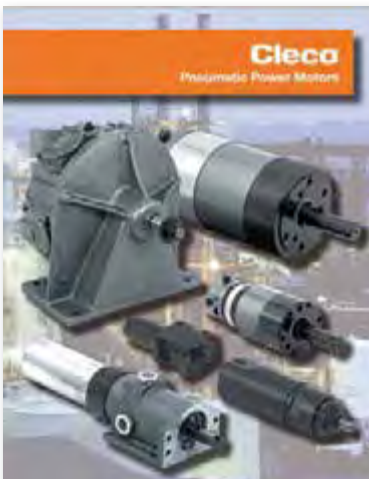
Bits, sockets and universal joints

Catalogue: [TC-100](#)



Material removal tools, drills, grinders, polishers ...

Catalogue: [SP-102](#)



Cleco Pneumatic power motors ...

Catalogue: [SP-104](#)



Cleco and DGD DC electric assembly tools

Catalogue: [SP-1020](#)



Cleco Pneumatic assembly tools

Catalogue: [SP-1000](#)



Assembly, material removal and grinding tools

Catalogue: [SP-904](#)

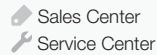


Service/ after market services

www.apexpowertools.eu

POWER TOOLS SALES & SERVICE CENTERS

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



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