

**Cleco**<sup>®</sup>  
Production Tools

## Homologation

Document no: 005/2021

**CellTek**<sup>™</sup>

Cordless Assembly Tools

Type: Cleco - CTBAW213

Order no.: CTBAW213



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## Cleco - CTBAW213

### Right Angle Tool

Order no.: CTBAW213



<b>Machine type:</b>	Cordless Assembly Tools
<b>Torque range:</b>	5,2 Nm to 21 Nm
<b>Max speed:</b>	735 rpm
<b>Certified serial nos.:</b>	GC0115, GC0118, GC0121

<b>Contents:</b>	Overview $C_m/C_{mk}$ values
	General specifications tool and controller
	Power Tools Sales & Service Centers
	Machine capability study and graphs
	Measurement capability test

**Homologation of nutrunners**

Apex Tool Group

**C<sub>m</sub> / C<sub>mk</sub> values achieved**

Accuracy class: 7 %

**Cordless Assembly Tools**

According VDI/DE 2647 February 2013

Tool model	Serial nos.	Test data	30 %		80 %		100 %	
			30° ±5°	360° ±15°	30° ±5°	360° ±15°	30° ±5°	360° ±15°
CTBAW213		Break time	5 s	12 s	5 s	25 s	5 s	45 s
		Test torque	<b>9,94 Nm</b>		<b>17,84 Nm</b>		<b>21,00 Nm</b>	
		Speed in 1st stage	735 rpm	735 rpm	735 rpm	735 rpm	735 rpm	735 rpm
		Speed in last stage	50 rpm	50 rpm	50 rpm	50 rpm	50 rpm	50 rpm
		Angle start torque	4,97 Nm		8,92 Nm		10,50 Nm	
	GC0115	C <sub>m</sub>	4,84	6,40	7,14	5,62	5,92	8,02
		C <sub>mk</sub>	3,52	3,35	5,72	3,86	5,07	5,03
	GC0118	C <sub>m</sub>	3,51	4,03	3,15	4,17	3,44	4,21
		C <sub>mk</sub>	3,37	3,00	3,14	3,32	3,33	3,39
	GC0121	C <sub>m</sub>	3,38	5,23	4,25	4,95	3,33	4,08
C <sub>mk</sub>		3,07	3,59	3,77	3,63	2,98	2,88	
Min. C <sub>m</sub> /C <sub>mk</sub>		C <sub>m</sub>	3,38	4,03	3,15	4,17	3,33	4,08
		C <sub>mk</sub>	3,07	3,00	3,14	3,32	2,98	2,88

	Target:	≥ 1.67	Rating
Capability index	<b>C<sub>m</sub></b>	<b>3,15</b>	<b>OK</b>
	<b>C<sub>mk</sub></b>	<b>2,88</b>	<b>OK</b>

**Tolerances of rotational angle homologation  
Measurements without angle correction**

Tool model	Serial nos.	Test data	60 % of max. torque		80 % of max. torque	
			<b>40°</b>		<b>180°</b>	
CTBAW213		Break time	5 s		5 s	
		Angle start torque	4,20 Nm		4,20 Nm	
		Test torque	12,60 Nm		16,80 Nm	
		Speed in 1st stage	300 rpm		300 rpm	
		Speed in last stage	50 rpm		50 rpm	
	GC0115	Torque	±	2,21 %	±	1,98 %
		Angle	±	0,9°	±	2,8°
	GC0118	Torque	±	2,04 %	±	3,53 %
		Angle	±	0,9°	±	2,2°
	GC0121	Torque	±	2,91 %	±	3,50 %
Angle		±	0,9°	±	3,0°	
Torque		Target: ±	7 %	Target: ±	7 %	
		Actual: ±	2,91 %	Actual: ±	3,53 %	
Rating		<b>OK</b>		<b>OK</b>		
Angle		Target: ±	5°	Target: ±	10°	
		Actual: ±	0,9°	Actual: ±	3,0°	
Rating		<b>OK</b>		<b>OK</b>		

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Tolerances of rotational angle homologation

Cordless Assembly Tools

Measurements with angle correction

Tool model	Serial nos.	Test data	60 % of max. torque	80 % of max. torque
			<b>40°</b>	<b>180°</b>
<b>CTBAW213</b>		Break time	5 s	5 s
		Angle start torque	4,20 Nm	4,20 Nm
		Test torque	12,60 Nm	16,80 Nm
		Speed in 1st stage	300 rpm	300 rpm
		Speed in last stage	50 rpm	50 rpm
	GC0115	Torque	± 2,86 %	± 1,76 %
		Angle	± 1,1°	± 2,5°
	GC0118	Torque	± 2,09 %	± 3,58 %
		Angle	± 1,2°	± 2,8°
	GC0121	Torque	± 3,34 %	± 3,53 %
		Angle	± 1,0°	± 3,0°
			Torque	Target: ± 7,00 %
		Actual: ± 3,34 %		Actual: ± 3,58 %
		Rating	<b>OK</b>	<b>OK</b>
		Angle	Target: ± 5°	Target: ± 10°
			Actual: ± 1,2°	Actual: ± 3,0°
		Rating	<b>OK</b>	<b>OK</b>

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Annex 1  
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**Test sheet no. 1a**

**General specifications**

**Manufacturer:** Apex Tool Group                      **Assembly tool type:** Cordless Assembly Tools  
**Tool model:** CTBAW213                                      **Serial numbers:** GC0115, GC0118, GC0121  
**Torque range:** 5,2 Nm to 21 Nm

		2000 mAh	5000 mAh
Rated capacity:			
Battery voltage:		18 Volt	
Weight (without battery):		1,44 kg	
Weight (with battery):		1,87 kg	2,17 kg
Maximum speed at the first stage:		735 rpm	
Maximum speed at the final stage:		735 rpm	
Minimum speed at the final stage:		0 rpm	
Sound pressure level at maximum speed: (acc. to DIN EN 62841-1:2016-07, DIN EN 62841-2-2:2015-05)		63,0 dB(A)	
Number of duty cycles with a battery at 100% torque	Soft joint (L):	110 runs	320 runs
	Hard joint (H):	410 runs	1120 runs
Temperature of electrical tools: (After 100 measurements with soft joint at 80% torque)		start	end
	at the output drive:	21 °C	31 °C
	on the electric motor:	21 °C	40 °C
	on the handle:	21 °C	35 °C
Output type:		Square drive	
Output drive size:		3/8 "	

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Annex 1

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**Test sheet no. 1b**

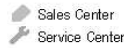
**Specifications of controller**

**Manufacturer:** Apex Tool Group                      **Serial number:** AXABH0001  
**Controller type:** MPRO400GCD-P                      **Software version:** S168813-1.12.0.61436-Test 03.03.21

Fastening Strategy:	Current shut-off:	Yes
	Torque control:	Yes
	Torque control, angle monitoring:	Yes
	Angle control, torque monitoring:	Yes
	Yield point control:	Yes
	Pre-load control:	No
Options:	Prevailing torque:	Yes
	Angle correction:	Yes
	Pulsing:	No
	Tighten - loosen - tighten:	Yes
	Tapping screw monitoring:	Yes
	Left-hand rundown:	Yes
	Other procedures:	Yes, see documentation
Angle of rotation resolution:		1 degree
Torque accuracy:		1 %
Programming:	Keyboard:	Yes
	External PC:	Yes
	Text display:	Yes
	Display:	Yes
	LCD display:	No
Printer interface:		Yes
Additional inputs and outputs:		2 Serial 8 Digital in, 8 Digital out 2 Fieldbus modules 3 USB
Isolation transformer:		No, galvanic isolated power supply
Network:		Yes

## POWER TOOLS SALES & SERVICE CENTERS

Please note that all locations may not service all products.  
Contact the nearest Cleco® Sales & Service Center for the appropriate facility to handle your service requirements.



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