

Cleco[®]
Production Tools

Homologation

Document no: 006/2021

CellTek[™]

Cordless Assembly Tools

Type: Cleco - CTBAW653

Order no.: CTBAW653



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Cleco - CTBAW653

Right Angle Tool

Order no.: CTBAW653



Machine type:	Cordless Assembly Tools
Torque range:	17 Nm to 65 Nm
Max speed:	220 rpm
Certified serial nos.:	GE0181, GE0187, GE0189

Contents:	Overview C_m/C_{mk} values General specifications tool and controller Power Tools Sales & Service Centers Machine capability study and graphs Measurement capability test
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Apex Tool Group
Cordless Assembly Tools

C_m / C_{mk} values achieved
According VDI/DE 2647 February 2013

Accuracy class: 7 %

Tool model	Serial nos.	Test data	30 %		80 %		100 %	
			30° ±5°	360° ±15°	30° ±5°	360° ±15°	30° ±5°	360° ±15°
CTBAW653		Break time	5 s	15 s	5 s	35 s	8 s	60 s
		Test torque	31,40 Nm		55,40 Nm		65,00 Nm	
		Speed in 1st stage	220 rpm	220 rpm	220 rpm	220 rpm	220 rpm	220 rpm
		Speed in last stage	50 rpm	50 rpm	50 rpm	50 rpm	50 rpm	50 rpm
		Angle start torque	15,70 Nm		27,70 Nm		32,50 Nm	
	GE0181	C _m	2,26	3,24	2,73	3,03	3,07	3,63
		C _{mk}	2,26	2,65	2,45	2,13	2,81	2,44
	GE0187	C _m	2,27	3,48	2,45	3,14	2,27	2,55
		C _{mk}	2,19	2,96	2,44	2,44	2,24	1,91
	GE0189	C _m	2,85	3,66	2,61	3,38	2,88	3,04
C _{mk}		2,71	2,47	2,34	2,27	2,64	2,08	
Min. C _m /C _{mk}		C _m	2,26	3,24	2,45	3,03	2,27	2,55
		C _{mk}	2,19	2,47	2,34	2,13	2,24	1,91

	Target:	≥ 1.67	Rating
Capability index	C_m	2,26	OK
	C_{mk}	1,91	OK

Tolerances of rotational angle homologation
Measurements without angle correction

Tool model	Serial nos.	Test data	60 % of max. torque		80 % of max. torque	
			40°		180°	
CTBAW653		Break time	5 s		15 s	
		Angle start torque	13,00 Nm		13,00 Nm	
		Test torque	39,00 Nm		52,00 Nm	
		Speed in 1st stage	220 rpm		220 rpm	
		Speed in last stage	50 rpm		50 rpm	
	GE0181	Torque	±	3,87 %	±	4,73 %
		Angle	±	1,4°	±	4,3°
	GE0187	Torque	±	4,08 %	±	5,48 %
		Angle	±	1,3°	±	3,6°
	GE0189	Torque	±	4,62 %	±	5,21 %
Angle		±	1,2°	±	4,3°	
Torque		Target: ±	7 %	Target: ±	7 %	
		Actual: ±	4,62 %	Actual: ±	5,48 %	
Rating		OK		OK		
Angle		Target: ±	5°	Target: ±	10°	
		Actual: ±	1,4°	Actual: ±	4,3°	
Rating		OK		OK		

Apex Tool Group

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		
			40°		180°		
CTBAW653		Break time	5 s		15 s		
		Angle start torque	13,00 Nm		13,00 Nm		
		Test torque	39,00 Nm		52,00 Nm		
		Speed in 1st stage	220 rpm		220 rpm		
		Speed in last stage	50 rpm		50 rpm		
	GE0181	Torque	±	4,87 %	±	5,08 %	
		Angle	±	1,9°	±	3,7°	
	GE0187	Torque	±	4,95 %	±	5,71 %	
		Angle	±	1,5°	±	3,8°	
	GE0189	Torque	±	4,43 %	±	4,92 %	
		Angle	±	1,5°	±	3,4°	
			Torque	Target: ±	7,00 %	Target: ±	7,00 %
				Actual: ±	4,95 %	Actual: ±	5,71 %
		Rating	OK		OK		
		Angle	Target: ±	5°	Target: ±	10°	
			Actual: ±	1,9°	Actual: ±	3,8°	
		Rating	OK		OK		

Document no: 006/2021
Date: 10.06.2021

Annex 1
Page 1 of 2

Test sheet no. 1a

General specifications

Manufacturer: Apex Tool Group **Assembly tool type:** Cordless Assembly Tools
Tool model: CTBAW653 **Serial numbers:** GE0181, GE0187, GE0189
Torque range: 17 Nm to 65 Nm

		2000 mAh	5000 mAh
Rated capacity:			
Battery voltage:		18 Volt	
Weight (without battery):		1,70 kg	
Weight (with battery):		2,13 kg	2,43 kg
Maximum speed at the first stage:		220 rpm	
Maximum speed at the final stage:		220 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):	40 runs	195 runs
	Hard joint (H):	110 runs	610 runs
Temperature of electrical tools: (After 100 measurements with soft joint at 80% torque)		start	end
	at the output drive:	21 °C	32 °C
	on the electric motor:	21 °C	42 °C
	on the handle:	21 °C	34 °C
Output type:		Square drive	
Output drive size:		3/8 "	

Document no: 006/2021
Date: 10.06.2021

Annex 1

Page 2 of 2

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

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