

MD Series

Straight screwdrivers from 0,03 to 49 Nm



Lever start

Model	Torque (Nm)	Speed range (rpm)	Drive	Weight (g)	Suitable Controller	Code
MD2601-A	0.03 – 0.39	150 - 2000	Hex1/4"	430 g	MDC-26	4-1050500
MD2601-E	0.03 – 0.39	150 - 2000	Half moon	430 g	MDC-26	4-1050501
MD2602-A	0.05 – 0.68	150 - 2000	Hex1/4"	435 g	MDC-26	4-1050502
MD2602-E	0.05 – 0.68	150 - 2000	Half moon	435 g	MDC-26	4-1050503
MD2604-A	0.2 – 1.37	150 - 1500	Hex1/4"	515 g	MDC-26	4-1050504
MD2611-A	0.4 – 3.3	100 - 900	Hex1/4"	545 g	MDC-26	4-1090138
MD2616-A	0.5 – 4.9	100 - 620	Hex1/4"	545 g	MDC-26	4-1050506
MD3201-A	0.1 – 1.17	150 - 2000	Hex1/4"	675 g	MDC-32	4-1050507
MD3202-A	0.2 – 2.15	150 - 2000	Hex1/4"	685 g	MDC-32	4-1050508
MD3204-A	0.4 – 3.9	150 - 1500	Hex1/4"	850 g	MDC-32	4-1050509
MD3211-A	1 – 8.8	50 - 690	Hex1/4"	910 g	MDC-32	4-1050510
MD3216-A	2 – 13.7	50 - 470	Hex1/4"	905 g	MDC-32	4-1050511
MD3236-Q	4 – 27	50 - 210	SQ3/8"	1340 g	MDC-32	4-1050512
MD3264-Q	8 – 49	50 - 115	SQ1/2"	1330 g	MDC-32	4-1050513

Delivered without tool cable.

Push to start

Model	Torque (Nm)	Speed range (rpm)	Drive	Weight (g)	Suitable Controller	Code
MD2602-A/P	0.05 – 0.68	150 - 2000	Hex1/4"	435 g	MDC-26	4-1050652
MD2602-E/P	0.05 – 0.68	150 - 2000	Half moon	435 g	MDC-26	4-1050653
MD2604-A/P	0.2 – 1.37	150 - 1500	Hex1/4"	515 g	MDC-26	4-1050654
MD2611-A/P	0.4 – 3.3	100 - 900	Hex1/4"	545 g	MDC-26	4-1050655
MD2616-A/P	0.5 – 4.9	100 - 620	Hex1/4"	545 g	MDC-26	4-1050656
MD3201-A/P	0.1 – 1.17	150 - 2000	Hex1/4"	675 g	MDC-32	4-1050657
MD3202-A/P	0.2 – 2.15	150 - 2000	Hex1/4"	685 g	MDC-32	4-1050658
MD3204-A/P	0.4 – 3.9	150 - 1500	Hex1/4"	850 g	MDC-32	4-1050659

Delivered without tool cable.

Model	Code
Cable MD 3 m	4-1050582
Reinforced cable II MD 3 m	4-1050661
Cable MD 5 m	4-1050584
Reinforced cable II MD 5 m	4-1050662
Cable MD 8 m	4-1050605
Reinforced cable II MD 8 m	4-1050663



Standard cable

Reinforced cables are highly recommended for angle and pistol screwdrivers applications.

Screwdriver max torque can be lower than it's specification by 5% and 20% with extra long 5 and 8 meters cables.

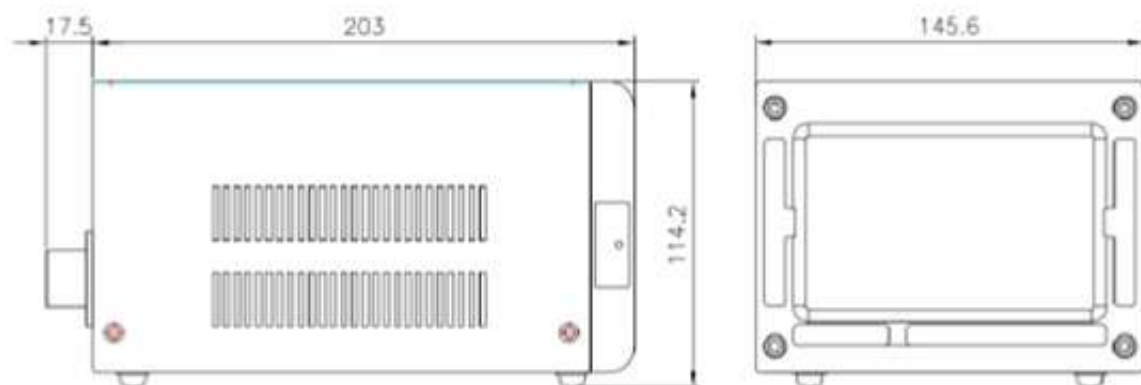


Reinforced cable II

MDC Controller Features



Optional lift-up Stand



Item	Spécifications MDC v2	
	MDC-26 v2 Code 4-1050665	MDC-32 v2 Code 4-1050666
Voltage in	AC230V, 50/60Hz, 2,5A	
Voltage out	DC38V 3.5A	
Fuse	2x T5A / 230V	
Operating environment	0 ~ 40°C / 15 ~ 80% RH (without dew)	
Front panel	5" LCD Color 800x480 dots – Touch & Multilingual menus	
Communication	1 x RS232C, 1 x Ethernet	
Protocol	Modbus RTU, Modbus TCP/IP	
I/O	15x inputs et 8x outputs assignable I/O SUB-D25 (7 inputs assigned to models)	
Tightening strategies	15	
Torque calibration	- 10% ~ +10%	
Screwdriver recognition	Auto detection of connected driver when power ON of controller	
Error display	Error code display (3 groups)	
Fastening verification	Fastening data verification (NG/OK) by the preset pattern of angle.	
SD card	Included one 8GB SD card- Industrial grade	
Dimensions et weight	146(L)x114(H)x203(P) – 2,5kg	

Optional accessories :

- RS232 Cable DB9 Male/DB9 Female 3 meters **Code : 4-1050598**
- USB to RS232 converter **Code : 4-1050597**
- Lift-up stand kit **Code : 4-1050592**
- Industrial SD card 8G **Code : 4-1290024**



MDC Controllers

Main features



Modbus protocol
RS232 Ethernet



PC - MDC web server



PC - ParaMon free software



PLC

Selection programmes

Programme 1	Programme 2	Programme 3
Programme 4	Programme 5	Programme 6
Programme 7	Programme 8	Programme 9
Programme 10	Programme 11	Programme 12
Programme 13	Programme 14	Programme 15
Modbus	Modbus	Modbus

Connexion

MDC-32 : 1.0.0
Modbus : 1.0.0
Modbus : 1.0.0
Modbus : 1.0.0
Modbus : 1.0.0

Contrôleur MDC

Paramètres | Commandes

Surveillance temps réel | Réglages

Paramètres

Vitesse | Paramètres avancés

Comptage | Réglages

Contrôleur | Réglages

Commandes

Commandes | Optimisation automatique

Surveiller | Recharger

Redémarrage | Paramètres par défaut

Réglages

Données de base | Réglages

Code de base | Code de base (défaut)

Maintenance

Opération

Programme 1 | 2019-04-21 11:54:37

OK | N.m

1.00

Couple: 1.00
Vitesse: 189 / 0
Temps: 940
Angle(A1/A2): 786 / 30
Comptage: 1 / 1
Angle contrôle: 29

DOGA MDC-32 Advanced torque control technology

Monitoring

Graph | Input & Output | Network

Graph | Input & Output | Network

Graph | Input & Output | Network

Graph | Input & Output | Network

Graph | Input & Output | Network

MDC Controllers

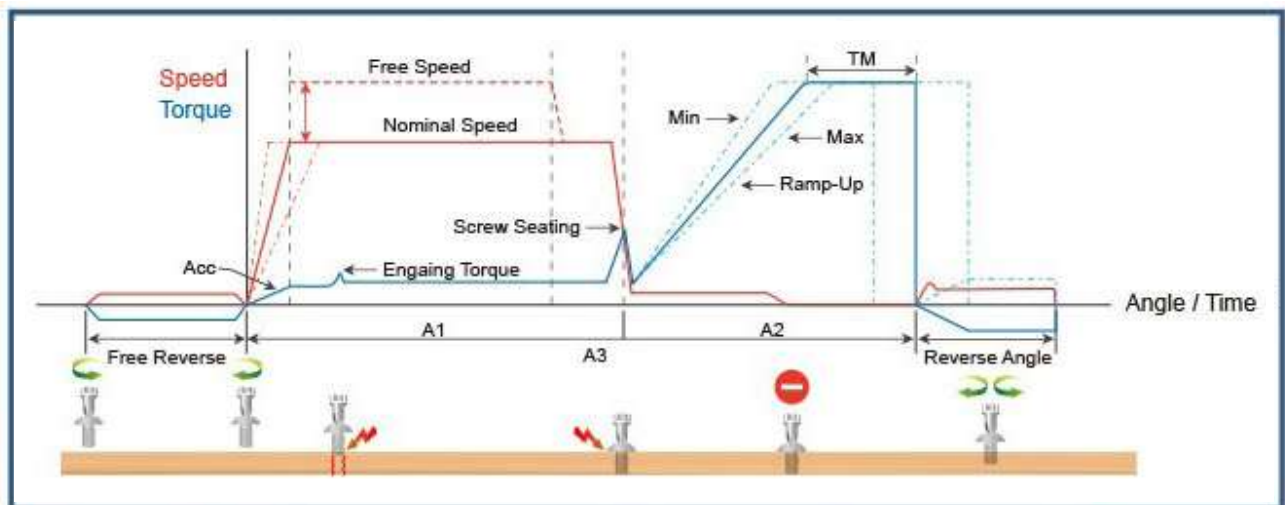
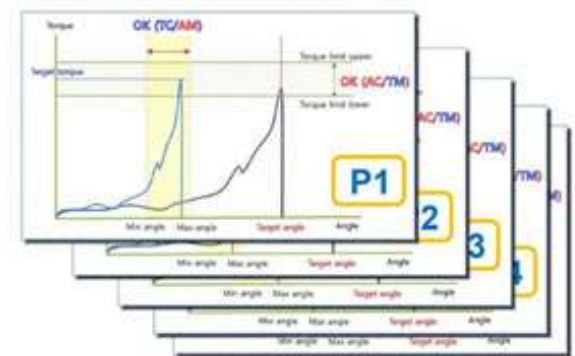
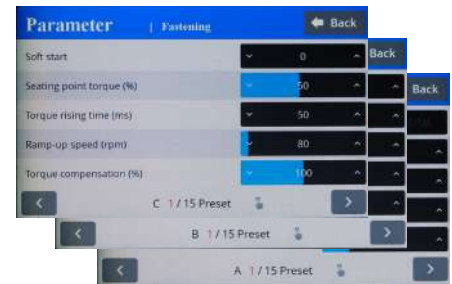
Torque and Angle tightening strategies

15 different tightening programs can be set in each MDC controllers.

Tightening direction may be different for each preset.

All parameters can be set independantly in each program as :

- Tightening strategy
 - Torque control + angle/monitoring TC / AM
 - Angle control + torque monitoring AC / TM
- Torque
 - Torque target, min torque, max torque, snug torque, seating point, torque compensation
- Angle
 - Angle target, angle min, angle max, angle for free speed
- Speed
 - Auto speed, free speed, ramp up speed
- Time
 - Soft start, torque rising time

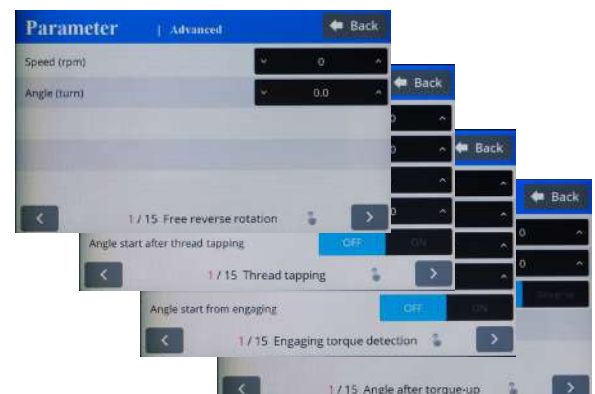


Advanced functions

Usefull advanced functions can be added to each preset :

- Free reverse rotation - to engage screw
- Thread tapping - to overcome a thread torque higher than target torque
- Engaging torque detection – to detect a lock nut
- Angle after torque up - to go reverse for inserts fitting

All functions can be set with different parameters for each program.





MDC Controllers

Models, Multisequences & Auto customizing

Multisequences programs

- MA and MB allow to chain several programs in a single cycle with a maintained trigger.
- A multisequence can be made up of 10 steps.
- A step is either a program, a loosening or a delay and can be repeated several times.

Example : achieving capability on a test bench.

The screenshot shows the 'Parameter' screen for 'Multi Sequence'. It has a 'Back' button at the top right. The screen is divided into two columns. The left column lists steps 1 to 5: 'Fastening', 'Fastening', 'Delay (10 ms)', 'Loosening (0.1 turn)', and 'End'. The right column shows corresponding parameters: 'Preset : 1', 'Preset : 2', '10', '30', and a blank field. Navigation arrows are at the bottom.

Sequencing Models

- There are 15 sequencing models of 20 steps with assignable tightening program, batch counting and logical I/O management.
- Each step can control :
 - A tightening batch(TC/AM ou AC/TM) with a counter of Ok result
 - An Output activation
 - An Input monitoring
 - A time delay
 - A bar code reading

The screenshot shows the 'Parameter' screen for 'Model'. It has a 'Back' button at the top right. The screen is divided into two columns. The left column lists steps 1 to 5: 'Input', 'Fastening', 'Fastening', 'Output', and 'Barcode'. The right column shows corresponding parameters: 'Port : 9', 'Preset : 1', 'Preset : 3', 'Port : 5', and 'Barcode : 2'. Navigation arrows are at the bottom.

- A report « model complete » validates the end of the model (sequence end) .

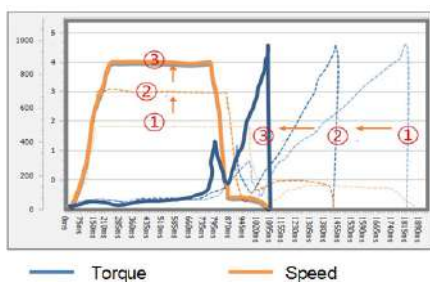
Sample program of sequence control :

- Step 1 - Input
 - Detect worlpiece arrival on the position
- Step 2 - Delay
 - Time delay 0.5second to th next step
- Step 3 - Output
 - Lock the workpiece with air cylinder
- Step 4 - Tightening
 - Tightening total 7 with Preset #12
- Step 5 - Output
 - Release the work piece from air cylinder



Auto customizing program

- Optimize the tightening parameters and the cycle time :



- optimized speed according to the target torque level
- free angle and free speed calculation for fast run down
- seating point adjustment

The screenshot shows the 'Remote' screen for 'Auto customizing'. It has a 'Back' button at the top right. The screen is divided into two main sections: 'Preset no & info' and 'Result info'. The 'Preset no & info' section shows '1' and various parameters like Torque, Speed, F.Speed, F.Angle, and S.Point. The 'Result info' section shows 'A1/A2 : 2055 / 61' and other results. Navigation arrows and buttons like 'Soft', 'Hard', 'Apply', and 'Stop' are at the bottom.

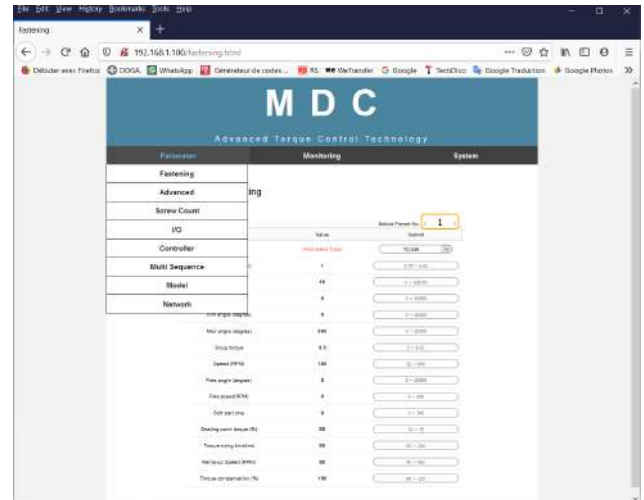
Free PC software

Integrated Web server – ParaMon Software

MDC controller integrated Web Server

Without software preinstalled on your computer you have the ability to access each MDC controller connected via Ethernet using your web browser and simply entering the IP address of each controller in a navigation tab.

All functions for parameters setting and saving and monitoring are available.



Software ParaMon MDCv2 – free download from www.doga.fr

Ethernet or RS232 connection.

It includes all parameters configuration and saving and monitoring functions also available on the web server.

Several windows can be opened at same time to display and edit settings simultaneously.

Multi-channel graph (torque, angle, speed, time) allow a precise analysis of your assembly and settings optimization.

Tightening curves and results can be monitored in real time and saved for later offline viewing.

