# DC Control System

## MD & AD Series




**CERTIFIED**
CERTIFIED & DOCUMENTED fastening results. Supplied with FREE certification.

**LEANER**
Operate a LEANER production environment with flexible, configurable tool set up.

**COMPLIANCE**
Make fastening COMPLIANCE and documentation easy.

# Introduction

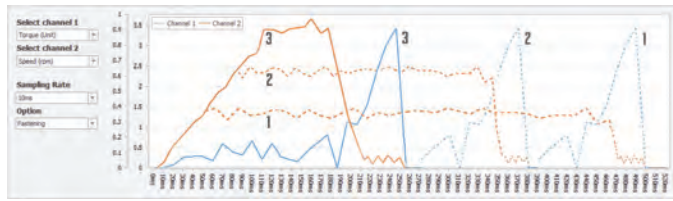
The MD or AD-Series is a durable torque and automation control system engineered for precise, accurate and repeatable torque control. The high performance torque fastening system by Mountz allows manufacturers to optimize the assembly area, reduce labor costs and increase productivity.

The DC control tool delivers cost savings and quality benefits through useful features such as digitally adjustable torque setting, variable torque and speed control, multiple I/O options for integration with PLC and other line control techniques. A PC based software package that can customize each fastening application is included with the product. The torque control system features error-proofing capabilities and screw counting. Multiple fastening strategies can be implemented for sensitive and/or difficult assembly joints. The system increases productivity as one tool can be programmed to do the job of multiple conventional tools; saving time, maintenance cost, space and training.




## Key Benefits

| | |
|---|---|
| Productivity | Increase productivity with one tool instead of 2 - 15 tools. Provides consistent repeatable process control and eliminates potential variations. |
| Flexibility | Easy integration into production line. Rapid reconfiguration for new production projects. |
| ROI | Optimum asset utilization. Tooling expense delivers favorable return of investment. |
| Quality | Traceability and error-proofing. Real time monitoring. Swiss DC servo motor provides precise, accurate and repeatable torque control. |
| I/O Interface | Digital I/O signals for communication with external devices such as PLC. |
| Controller | Up to 30 process sequences with 20 program steps. |
| Memory | Collect and save all fastening data on SD memory card. |
| Torque Analysis | Fastening torque data analysis (Standard Deviation, Mean, Average, CP, CPK ) with TPM (Torque Process Monitoring) Touch Screen accessory option. |



## Easy guidance to the optimized tightening process with built-in customizing simulation feature.

30 tightening presets,30 parameters within each preset.
This strategy can be extended up to 99 presets with optional TPM touch screen.

### Auto Customizing

Auto customizing feature can be utilized to optimize settings of pre-defined presets.

## Each Preset Program has the following customized parameters

| | |
|---|---|
| Tightening Mode | Torque control + angle monitoring (TC/AM) Angle control + torque monitoring (AC/TM) |
| Torque | Target torque, min/max torque, snug torque, seating torque, torque compensation |
| Angle | Target angle, min/max angle, free speed angle |
| Speed | Target speed, Free speed, Ramp up speed |
| Time | Soft start time, torque rising time, torque holding time |






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# Sequence Control

Sequence control by managing tightening preset # & screw number, time delay, Input & Output provides automation without PLC or sequence control device.

Can configure up to 30 presets and 30 models, consisting of up to 20 steps for each model. This feature can be extended up to 99 presets and 99 models with the optional TPM touch screen.

**Example**

**Step 1 - Input**
Detect work piece arrival on the position.

**Step 2 - Delay**
Time delay 0.5 second to the next step

**Step 3 - Output**
Lock the work piece with air cylinder

**Step 4 - Tightening**
Tightening total 7 with Preset #12

**Step 5 - Output**
Release the work piece from air cylinder lock




### Sample Program of Sequence Control




## Modbus Protocol Communication

MDC provides the Modbus RTU for RS232 and Modbus TCP/IP for the Ethernet port connection together.

### Modbus RTU

| Slave ID | F Code | Data | CRC |
|---|---|---|---|

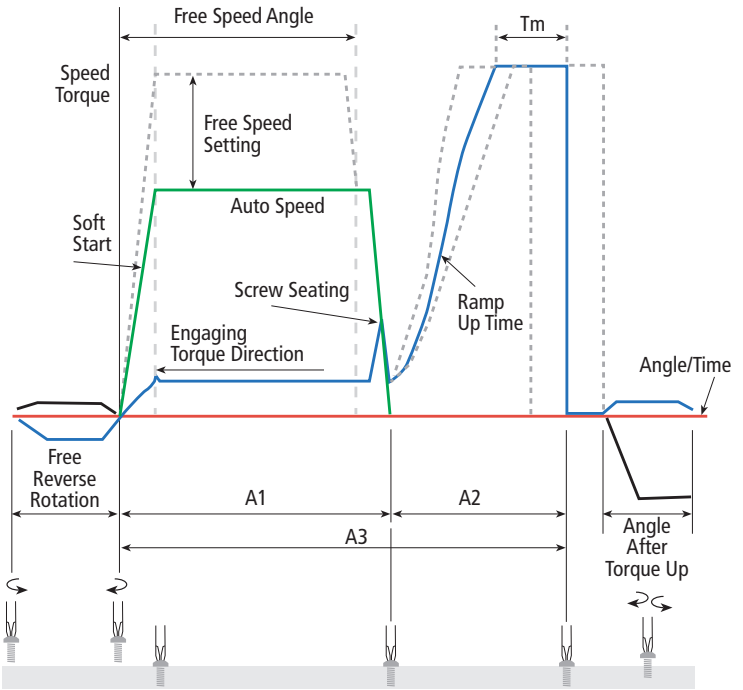
### Modbus TCP/IP ADU

| Transaction ID | Protocol ID | Length | Unit ID | F Code | Data | CRC |
|---|---|---|---|---|---|---|

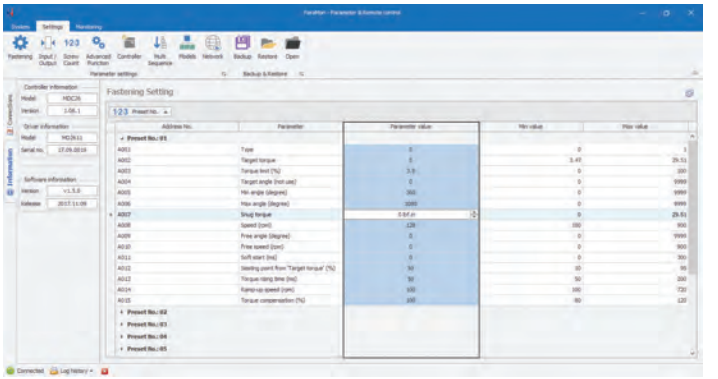
ADC provides the Modbus RTU for RS422 and Modbus TCP/IP for the Ethernet port connection together. ADC provides the synchronized fastening feature for up to 31 spindle drivers.

# Free PC Software "ParaMon"

- Provides easy parameter setting, data monitoring & analysis.
- 2 channel real time curve display for torque, speed, angle.
- Torque capability analysis for mean value, standard deviation, CP and CPK.
- Auto data output on every event in Modbus protocol.




## Fastening Parameter Setting



## Process Capability Analysis



## Remote Control Monitoring



## Real-Time Graph Monitoring (2 channel)





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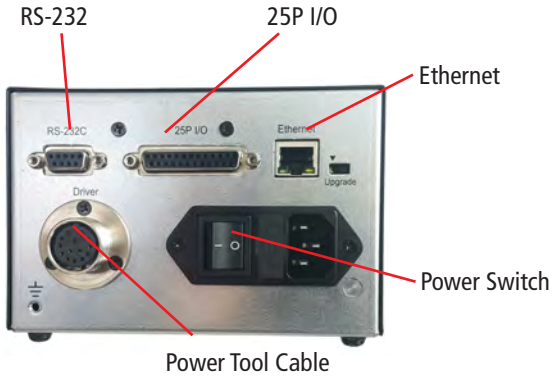
# MDC- Controllers
## for MD Electric Screwdrivers

### Features
- Preset selection capability: Front panel or 25P I/O
- Angle Control: 0.1 - 10 turns
- 30 Preset Parameters: Torque, Speed, Soft Start & Angle
- Auto detection of connected driver when controller is powered on*
- Error display: Error code display (3 groups)
- Fastening Quality Control: OK/NG monitoring of screw fastening by preset pattern of angle and/or time
- PC based program for parameter settings, monitoring and real time output
- Front panel 5"' Color LCD with touch screen
- Communication 1 x RS232C, 1 x Ethernet
- Protocol: Modbus, Open Protocol
- SD Card data memory slot (memory card included).

### Specifications
Input (Electric):
AC120VC / AC230V, 50/60Hz
Output (Electric): DC38V 3.5A
Dimension (WxLxH):
15" x 8" x 4 1/2"
Weight: 4.4 lbs

Note: Cannot simply swap driver models without going through a few set up steps, as all of the parameter values stored with the MDC controller will be related to the prior connected electric screwdriver model.




### 110V Controllers

MDC-26 Controller
**Item # 310157**
For driver models: MD-26 series

MDC-32 Controller
**Item # 310158**
For driver models: MD-32 series

### 230V Controllers

MDC-26 Controller
**Item # 310159**
For driver models: MD-26 series

MDC-32 Controller
**Item # 310160**
For driver models: MD-32 series

Controller connects to these devices **via Modbus protocol RS232 or Ethernet**

**TPM**



**PLC**



**PC**
(Free Software ParaMon)



# MD Electric Screwdrivers

## In-Line Models

| Model | Driver Type | Item # | Torque Ranges lbf.in | Torque Ranges S.I. | Adjustable Speed RPM | Grip Dia | Length | Drive Size | Weight |
|---|---|---|---|---|---|---|---|---|---|
| MD2601-A | Lever Start | **310005** | 0.26 - 3.4 | 2.9 - 38.4 cN.m | 150 - 2000 | 1 1/2" | 9" | 1/4 F/Hex | 1 lb. |
| MD2602-A | Lever Start | **310006** | 0.43 - 6.0 | 4.9 - 67.8 cN.m | 150 - 2000 | 1 1/2" | 9" | 1/4 F/Hex | 1 lb. |
| MD2604-A | Lever Start | **310007** | 1.7 - 12.1 | 19.2 - 136.7 cN.m | 150 - 1500 | 1 1/2" | 9" | 1/4 F/Hex | 1.1 lbs. |
| MD2611-A | Lever Start | **310008** | 3.4 - 29.5 | 38.4 - 333 cN.m | 100 - 900 | 1 1/2" | 9" | 1/4 F/Hex | 1.2 lbs. |
| MD2616-A | Lever Start | **310009** | 4.3 - 43.4 | 49 - 490 cN.m | 100 - 620 | 1 1/2" | 9" | 1/4 F/Hex | 1.2 lbs. |
| MD3201-A | Lever Start | **310010** | 0.86 - 10.4 | 9.7 - 117.5 cN.m | 150 - 2000 | 1 1/2" | 9" | 1/4 F/Hex | 1.5 lbs. |
| MD3202-A | Lever Start | **310011** | 1.7 - 19 | 19.2 - 214.7 cN.m | 150 - 2000 | 1 1/2" | 9" | 1/4 F/Hex | 1.5 lbs. |
| MD3204-A | Lever Start | **310012** | 3.4 - 34.7 | 38.4 - 392 cN.m | 150 - 1500 | 1 1/2" | 9" | 1/4 F/Hex | 1.9 lbs. |
| MD3211-A | Lever Start | **310013** | 8.6 - 78.1 | 1 - 8.8 N.m | 50 - 690 | 1 1/2" | 9" | 1/4 F/Hex | 2 lbs. |
| MD3216-A | Lever Start | **310014** | 17.3 - 121.5 | 2 - 13.7 N.m | 50 - 470 | 1 1/2" | 9" | 1/4 F/Hex | 2 lbs. |
| MD3236-Q | Lever Start | **310015** | 34.7 - 243 | 3.9 - 27.4 N.m | 50 - 210 | 1 1/2" | 9 1/2" | 3/8 Sq. Dr. | 2.9 lbs. |
| MD3264-Q | Lever Start | **310016** | 69.4 - 434 | 7.8 - 49 N.m | 50 -115 | 1 1/2" | 9 1/2" | 1/2 Sq. Dr. | 2.9 lbs. |

## Pistol Grip Models

| Model | Item # | Model | Item # | Torque Ranges lbf.in | Torque Ranges S.I. | Adjustable Speed RPM | Grip Dia | Length | Drive Size | Weight |
|---|---|---|---|---|---|---|---|---|---|---|
| MDP3201-AD | **310017** | MDP3201-A/U | **310035** | 0.86 - 10.4 | 9.7 - 117.5 cN.m | 150 - 2000 | 2" | 8 1/2" | 1/4 F/Hex | 1.6 lbs. |
| MDP3202-AD | **310018** | MDP3202-A/U | **310036** | 1.7 - 19 | 19.2 - 214.7 cN.m | 150 - 2000 | 2" | 8 1/2" | 1/4 F/Hex | 1.6 lbs. |
| MDP3204-AD | **310019** | MDP3204-A/U | **310037** | 3.4 - 34.7 | 38.4 - 392 cN.m | 150 - 1500 | 2" | 8 1/2" | 1/4 F/Hex | 2 lbs. |
| MDP3211-AD | **310020** | MDP3211-A/U | **310038** | 8.6 - 78.1 | 1 - 8.8 N.m | 50 - 690 | 2" | 8 1/2" | 1/4 F/Hex | 2.1 lbs. |
| MDP3216-AD | **310021** | MDP3216-A/U | **310039** | 17.3 - 121.5 | 2 - 13.7 N.m | 50 - 470 | 2" | 8 1/2" | 1/4 F/Hex | 2.1 lbs. |
| MDP3236-QD | **310022** | MDP3236-Q/U | **310040** | 34.7 - 243 | 3.9 - 27.4 N.m | 50 - 210 | 2" | 8 1/2" | 3/8 Sq. Dr. | 3.1 lbs. |
| MDP3264-QD | **310023** | MDP3264-Q/U | **310041** | 69.4 - 434 | 7.8 - 49 N.m | 50 -115 | 2" | 8 1/2" | 1/2 Sq. Dr. | 3.1 lbs. |

Note: A/D models have power tool cable connection located at the bottom grip section of the tool.
A/U models have power tool cable connection located at the top section of the tool.






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## Right Angle Models

| Model | Driver Type | Item # | Torque Ranges lbf.in | Torque Ranges S.I. | Adjustable Speed RPM | Grip Dia | Length | Drive Size | Weight |
|---|---|---|---|---|---|---|---|---|---|
| MDH2604-A | Right Angle | **310024** | 1.7 - 12.1 | 19.2 - 136.7 cN.m | 150 - 1500 | 2" | 12" | 1/4 F/Hex | 1.9 lbs. |
| MDH2611-A | Right Angle | **310025** | 3.4 - 29.5 | 38.4 - 333 cN.m | 100 - 900 | 2" | 12" | 1/4 F/Hex | 2 lbs. |
| MDH2616-A | Right Angle | **310026** | 4.3 - 43.4 | 49 - 490 cN.m | 100 - 620 | 2" | 12" | 1/4 F/Hex | 2 lbs. |
| MDH3201-A | Right Angle | **310027** | 0.86 - 10.4 | 9.7 - 117.5 cN.m | 150 - 2000 | 2" | 12" | 1/4 F/Hex | 2.4 lbs. |
| MDH3202-A | Right Angle | **310028** | 1.7 - 19 | 19.2 - 214.7 cN.m | 150 - 2000 | 2" | 12" | 1/4 F/Hex | 2.4 lbs. |
| MDH3204-A | Right Angle | **310029** | 3.4 - 34.7 | 38.4 - 392 cN.m | 150 - 1500 | 2" | 12" | 1/4 F/Hex | 2.8 lbs. |
| MDH3211-A | Right Angle | **310031** | 8.6 - 78.1 | 1 - 8.8 N.m | 50 - 690 | 2" | 12" | 1/4 F/Hex | 2.9 lbs. |
| MDH3216-A | Right Angle | **310032** | 17.3 - 121.5 | 2 - 13.7 N.m | 50 - 470 | 2" | 12" | 1/4 F/Hex | 2.9 lbs. |
| MDH3236-Q | Right Angle | **310033** | 34.7 - 243 | 3.9 - 27.4 N.m | 50 - 210 | 2" | 12" | 3/8 Sq. Dr. | 4.2 lbs. |
| MDH3264-Q | Right Angle | **310034** | 69.4 - 434 | 7.8 - 49 N.m | 50 -115 | 2" | 12" | 1/2 Sq. Dr. | 4.2 lbs. |

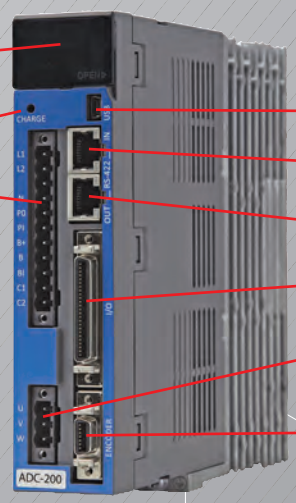
## Robotic Models

| Model | Driver Type | Item # | Torque Ranges lbf.in | Torque Ranges S.I. | Adjustable Speed RPM | Grip Dia | Length | Drive Size | Weight |
|---|---|---|---|---|---|---|---|---|---|
| MDA2201-E/C | Remote Start | **310042** | 0.08 - 0.60 | 0.9 - 6.7 cN.m | 100 - 1000 | 1 1/2" | 11" | 4mm D-Cut | 1.2 lbs. |
| MDA2601-E | Remote Start | **310043** | 0.26 - 3.4 | 2.9 - 38.4 cN.m | 150 - 2000 | 1 1/2" | 11" | 4mm D-Cut | 1.2 lbs. |
| MDA2602-A | Remote Start | **310044** | 0.43 - 6.0 | 4.9 - 67.8 cN.m | 150 - 2000 | 1 1/2" | 11" | 1/4 F/Hex | 1.2 lbs. |
| MDA2604-A | Remote Start | **310045** | 1.7 - 12.1 | 19.2 - 136.7 cN.m | 150 - 1500 | 1 1/2" | 11" | 1/4 F/Hex | 1.3 lbs. |
| MDA2611-A | Remote Start | **310046** | 3.4 - 29.5 | 38.4 - 333 cN.m | 100 - 900 | 1 1/2" | 11" | 1/4 F/Hex | 1.4 lbs. |
| MDA2616-A | Remote Start | **310047** | 4.3 - 43.4 | 49 - 490 cN.m | 100 - 620 | 1 1/2" | 11" | 1/4 F/Hex | 1.4 lbs. |
| MDA3201-A | Remote Start | **310048** | 0.86 - 10.4 | 9.7 - 117.5 cN.m | 150 - 2000 | 1 1/2" | 11" | 1/4 F/Hex | 1.7 lbs. |
| MDA3202-A | Remote Start | **310049** | 1.7 - 19 | 19.2 - 214.7 cN.m | 150 - 2000 | 1 1/2" | 11" | 1/4 F/Hex | 1.7 lbs. |
| MDA3204-A | Remote Start | **310050** | 3.4 - 34.7 | 38.4 - 392 cN.m | 150 - 1500 | 1 1/2" | 11" | 1/4 F/Hex | 2.1 lbs. |
| MDA3211-A | Remote Start | **310051** | 8.6 - 78.1 | 1 - 8.8 N.m | 50 - 690 | 1 1/2" | 11" | 1/4 F/Hex | 2.2 lbs. |
| MDA3216-A | Remote Start | **310051** | 17.3 - 121.5 | 2 - 13.7 N.m | 50 - 470 | 1 1/2" | 11" | 1/4 F/Hex | 2.2 lbs. |
| MDA3236-Q | Remote Start | **310053** | 34.7 - 243 | 3.9 - 27.4 N.m | 50 - 210 | 1 1/2" | 11" | 3/8 Sq. Dr. | 3.4 lbs. |
| MDA3264-Q | Remote Start | **310054** | 69.4 - 434 | 7.8 - 49 N.m | 50 -115 | 1 1/2" | 11" | 1/2 Sq. Dr. | 3.4 lbs. |

Note: The E/C model is equipped with a bit cushion.

# ADC Controllers

## for AD Electric Screwdrivers, Robotic Spindle Models




### Features

- Mountable
- Preset selection capability: Front panel or 50P I/O
- Angle Control: 0.1 - 10 turns
- 15 Preset Parameters:
  Torque, Speed, Soft Start & Angle
- Auto detection of connected driver when controller is powered on*
- Error display: Error code display (3 groups)
- Fastening Quality Control:
  OK/NG monitoring of screw fastening by preset pattern of angle and/or time
- PC based program for parameter settings, monitoring and real time output
- Protocol: Modbus RTU

Note: Cannot simply swap driver models without going through a few set up steps, as all of the parameter values stored with the ADC controller will be related to the prior connected electric screwdriver model.

ADC-100 Controller **Item # 310072**
Output (Electric): 1.4A
For driver models:
AD050R

ADC-200 Controller **Item # 310073**
Output (Electric): 1.7A
For driver models:
AD100R

ADC-400 Controller **Item # 310074**
Output (Electric): 3.0A
For driver models:
AD150R

Controller connects to these devices **via Modbus protocol RS422 or USB**

**TPM**



**PLC**



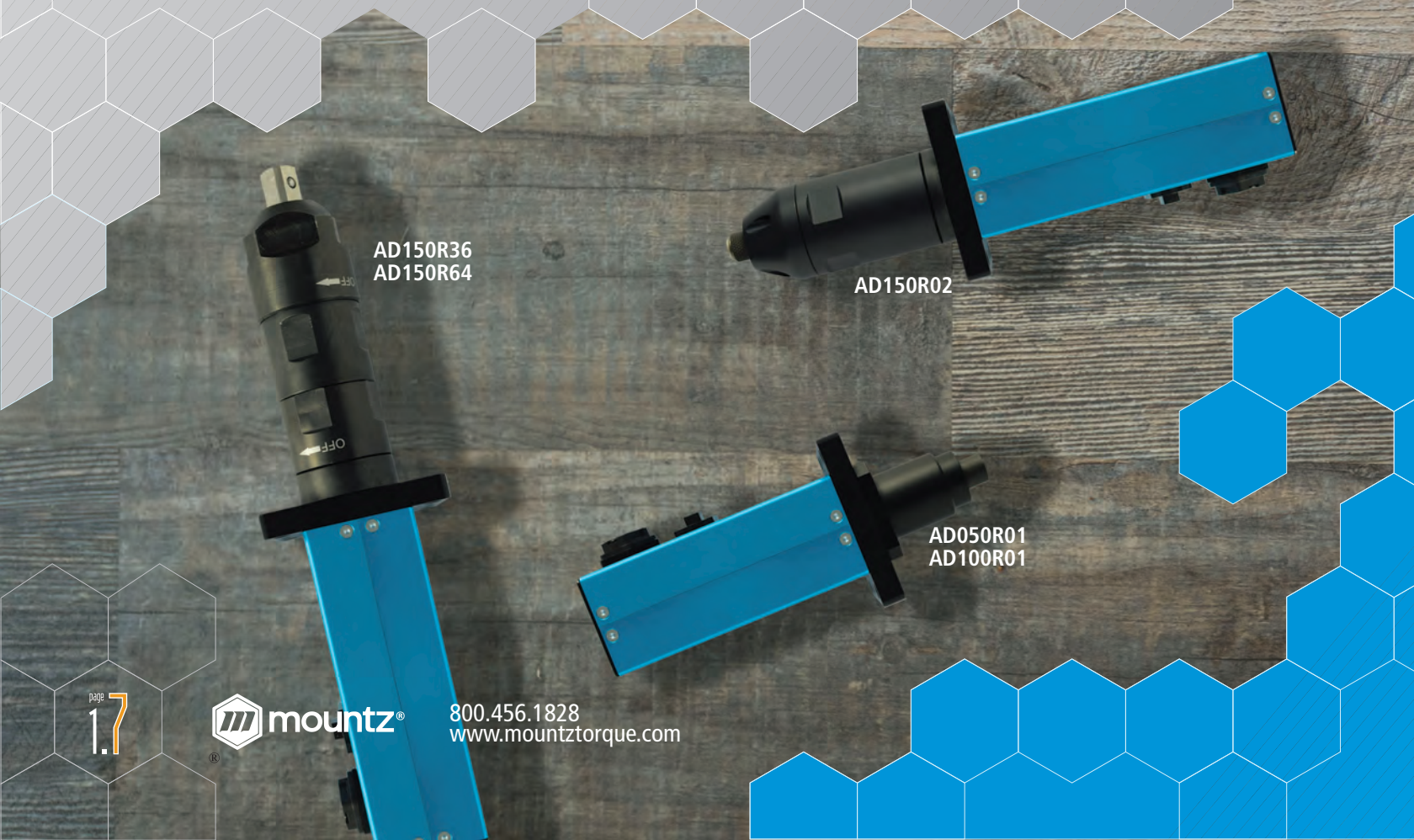
**PC**
(Free Software ParaMon)



### Specifications

Input (Electric)
AC200-230V, 50/60Hz single phase
Dimension (WxLxH)
1 1/2"x 6 3/4"x 6 1/4"

Weight
ADC-100 & 200: 2 lbs.
ADC-400: 2.1 lbs






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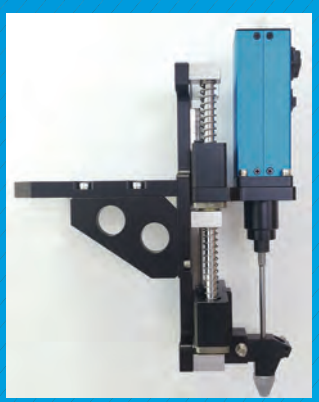

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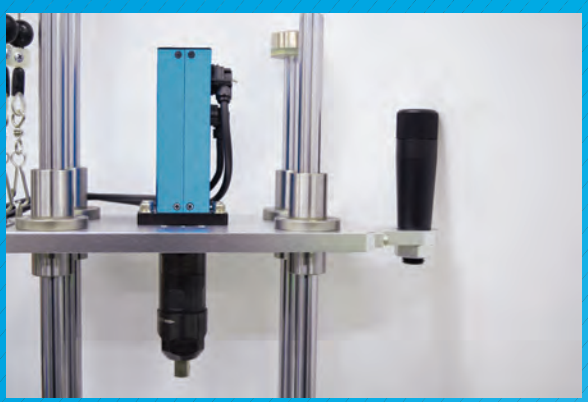
# AD Electric Screwdrivers

## Robotic Spindle Models

| Model | Driver Type | Item # | Torque Ranges lbf.in | Torque Ranges S.I. | Adjustable Speed RPM | Length | Drive Size |
|---|---|---|---|---|---|---|---|
| AD050R01-A/C | Remote Start | **310060** | 0.4 - 5.2 | 4.5 - 58.7 cN.m | 150 - 2000 | 6 7/8" | 1/4 F/Hex |
| AD050R01-E/C | Remote Start | **310061** | 0.4 - 5.2 | 4.5 - 58.7 cN.m | 150 - 2000 | 7 1/2" | 4mm D-Cut |
| AD100R01-A/C | Remote Start | **310062** | 1.7 - 10.4 | 19.2 - 117.5 cN.m | 150 - 2000 | 8 1/3" | 1/4 F/Hex |
| AD150R01-A/C | Remote Start | **310063** | 1.7 - 17.3 | 19.2 - 195.5 cN.m | 150 - 2000 | 8 1/3" | 1/4 F/Hex |
| AD150R02-A | Remote Start | **310064** | 3.4 - 24.3 | 38.4 - 274/6 cN.m | 150 - 2000 | 9" | 1/4 F/Hex |
| AD150R04-A | Remote Start | **310065** | 4.3 - 43.4 | 49 - 490 cN.m | 100 - 1200 | 9" | 1/4 F/Hex |
| AD150R11-A | Remote Start | **310066** | 13 - 86.8 | 1.5 - 9.8 N.m | 50 - 450 | 9 1/2" | 1/4 F/Hex |
| AD150R16-A | Remote Start | **310067** | 26 - 156.2 | 2.9 - 17.6 cN.m | 30 - 310 | 9 1/2" | 1/4 F/Hex |
| AD150R16-Q | Remote Start | **310068** | 26 - 156.2 | 2.9 - 17.6 cN.m | 30 - 310 | 9 1/2" | 3/8 Sq. Dr. |
| AD150R36-Q | Remote Start | **310069** | 43.4 - 260.4 | 4.9 - 29.4 N.m | 30 - 140 | 9 1/2" | 3/8 Sq. Dr. |
| AD150R64-Q | Remote Start | **310070** | 86.8 - 434 | 9.8 - 49 N.m | 30 - 75 | 9 1/2" | 3/8 Sq. Dr. |
| AD150R64-Q | Remote Start | **310071** | 86.8 - 434 | 9.8 - 49 N.m | 30 - 75 | 9 1/2" | 1/2 Sq. Dr. |

Note: These models (A/C and E/C) are equipped with a bit cushion.





# Accessories

## TPM (Torque Process Monitoring) Touch Screen

This touch screen can be used for data collection, programming the MDC or ADC controller as well as monitoring the fastening process.

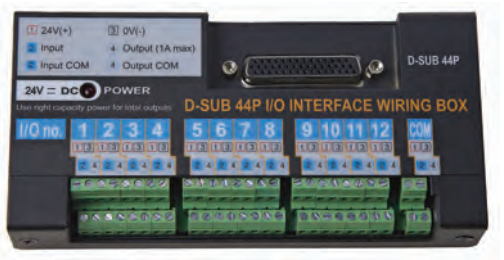
- 8" color TFT LCD
- Power - DC24V 1A
- Connection to MDC or ADC controller via RS232 or RS422
- Total 99 presets programs
- Total 99 model programs
- 7 inputs to select 99 programs
- Data memory in SD card
- Include same settings of MDC or ADC controller
- Easy mounting on the panel
- Fastening torque data analysis (Standard Deviation, Mean, Average, CP, CPK)

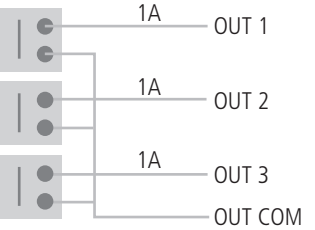


for MD-Series **Item # 310004**

for AD-Series **Item # 310097**

## 44P I/O Wiring Box




It provides easy and convenient wiring for 12 inputs and outputs for a MDC or ADC controller by sharing one single 24V power source. (Input power: 24VDC 1A)

44P I/O Wiring Box, **Item# 310055**

AC Adapter, **Item# 14-GCM6913**

I/O Cables needed to connect to controller.

I/O Cable 3m (44P Male to 25P Male)
**Item# 310057**

I/O Cable 3m (AD-50P-3M-DSUB44)
**Item# 310087**

| D_Sub 44P | | D_Sub 44P | | D_Sub 44P | | D_Sub 44P | | D_Sub 44P | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | IN 1 | 10 | IN 10 | 19 | OUT 4 | 28 | - | 37 | Out Com |
| 2 | IN 2 | 11 | IN 11 | 20 | OUT 5 | 29 | Out Com | 38 | - |
| 3 | IN 3 | 12 | IN 12 | 21 | OUT 6 | 30 | Out Com | 39 | - |
| 4 | IN 4 | 13 | - | 22 | OUT 7 | 31 | 24V+ | 40 | - |
| 5 | IN 5 | 14 | IN Com | 23 | OUT 8 | 32 | 24V+ | 41 | - |
| 6 | IN 6 | 15 | IN Com | 24 | OUT 9 | 33 | 24V+ | 42 | - |
| 7 | IN 7 | 16 | OUT 1 | 25 | OUT 10 | 34 | - | 43 | - |
| 8 | IN 8 | 17 | OUT 2 | 26 | OUT 11 | 35 | Out Com | 44 | - |
| 9 | IN 9 | 18 | OUT 3 | 27 | OUT 12 | 36 | Out Com | | |

## Auto Bit Socket Trays




A preset program or torque setting is automatically selected in the MD-Series tools once a bit or socket is removed from the bit socket tray.

Connects to MDC Controllers.

8 bit or 4 bit holder ports with sensors.

**System requires 3 components**
1.Select Bit Socket Tray Option:

Bit Socket Tray (4 Bit Holders)
7.5 mm, 10mm, 15 mm, 18mm
Item# **310092**

Bit Socket Tray (8 Bit Holders)
7.5 mm, 10mm, 15 mm, 18mm (2 of each)
Item# **310093**

2. Add SMPS Adapter

SMPS Adapter (24VDC 1A)
(It Includes a UL 2P 110V Power cord plug).*
Item# **310102**

Note: * For 220V, purchase Item # 310110 along with #310102
Model: Power Cord for SMPS Adapter (220V CE Plug)
Item# **310110**

3. Select Communication Cable that connects the Bit Socket Tray to the MDC Controller.

Model: Cable 25P I/O (M-M) 3 Meters
Item# **310112**

Model: Cable 25P I/O (M-M) 5 Meters
Item# **310115**

## Bit Holders

Additional bit holder inserts can be purchased separately for the bit socket tray.



Bit Holder
(Hole Size 18mm)
Item# **310104**

Bit Holder
(Hole Size 7.5mm)
Item# **310107**

Bit Holder
(Hole Size 15mm)
Item# **310105**

Bit Holder
(Hole Size 3mm)
Item# **310108**

Bit Holder
(Hole Size 10mm)
Item# **310106**

Bit Holder
(Plain)
Item# **310109**



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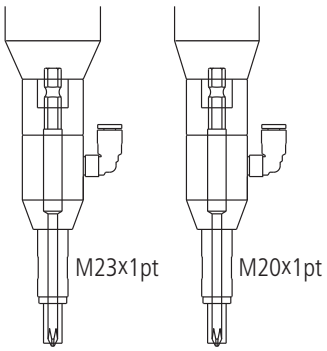
## Vacuum Adapter Kits

**Item # 310075**
**Specification:**
for 1/4 F/Hex Dr, M20
**Bit:** Ohmi V-17, 70mmL
**Screwdriver Type:**
MD2601-A AD050R01-A
MD2602-A AD100R01-A
MD2604-A AD150R01-A
MD2611-A AD150R02-A
MD2616-A
MD3201-A
MD3202-A

**Item # 310076**
**Specification:**
for 1/4 F/Hex Dr, M23
**Bit:** Ohmi V-17, 70mmL
**Screwdriver Type:**
MD3204-A AD150R04-A
MD3208-A AD150R11-A
MD3210-A AD150R16-A
MD3211-A AD150R16-Q
MD3216-A

**Item # 310077**
**Specification:**
for 4mm D-Cut Dr, M20
**Bit:** Dia 4mm half moon
**Screwdriver Type:**
MD2201-E
MD2601-E
AD50R01-E

Note: MD3236, MD3264, AD150R36, and AD150R64 models are not compatible with vacuum adapter kit.




Mouthpiece and bit purchased separately.






## Torque Cover Bit Holders

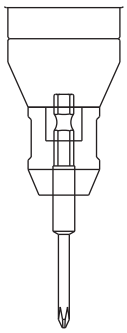
Provides better bit concentricity for a long length bit.

**Item # 310078**
**Specification:**
for 1/4 F/Hex Dr, M20
**Bit:** Ohmi V-17, 70mmL
**Screwdriver Type:**
MD2601-A AD050R01-A
MD2602-A AD100R01-A
MD2604-A AD150R01-A
MD2611-A AD150R02-A
MD2616-A
MD3201-A
MD3202-A

**Item # 310079**
**Specification:**
for 1/4 F/Hex Dr, M23
**Bit:** Ohmi V-17, 70mmL
**Screwdriver Type:**
MD3204-A AD150R04-A
MD3208-A AD150R11-A
MD3210-A AD150R16-A
MD3211-A AD150R16-Q
MD3216-A

**Item # 310080**
**Specification:**
for 4mm D-Cut Dr, M20
**Bit:** Dia 4mm half moon
**Screwdriver Type:**
MD2201-E
MD2601-E
AD50R01-E

Note: MD3236, MD3264, AD150R36, and AD150R64 models are not compatible with torque cover bit holders.






## MDC Controller Cables

RS232 Cable
(DB9 Male x DB9 Female, 2m)
Item# **773856**



Cable
(USB to RS232 Adapter)
Item# **773069**



I/O Cable 3m
(44P Male to 25P Male)
Item# **310057**



## Power Tool Cables

(for MD-Series Tools only)

The driver cable connects the MD-Series electric screwdriver to the MDC controller.

Note! Each MD electric screwdriver is supplied with the standard 3 meter length cable.

3m Length Cable
Item# 310056

5m Length Cable
Item# 310088



## Spindle Cable Sets (Power & Encoder)

(for AD-Series Tools only)

Note! Each AD robotic spindle screwdriver is supplied with the standard 3 meter length spindle cable set.

| Item # | Model | Desc. |
|---|---|---|
| **310081** | CB-AD01-3M | 3m |
| **310082** | CB-AD01-5M | 5m |
| **310083** | CB-AD01-7M | 7m |
| **310084** | CB-AD01-10M | 10m |

## ADC Controller I/O Cables

(for AD-Series Tools only)

| Item # | Model | Description |
|---|---|---|
| **310085** | AD-50P-3M-OPEN | Standard, with numbering |
| **310086** | AD-50P-3M-DSUB25 | Connect to U-2 interface box |
| **310087** | AD-50P-3M-DSUB44 | Connect to 44P I/O wiring box |



















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