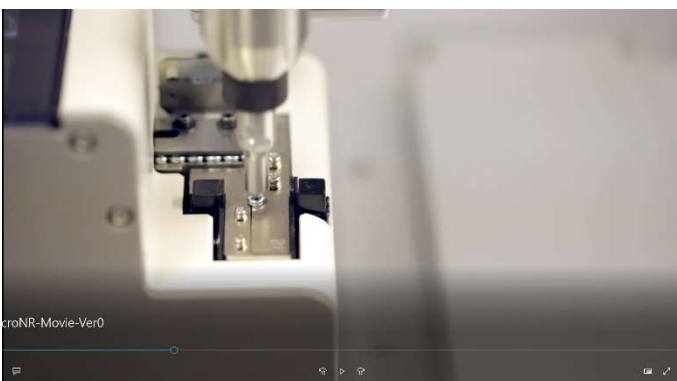
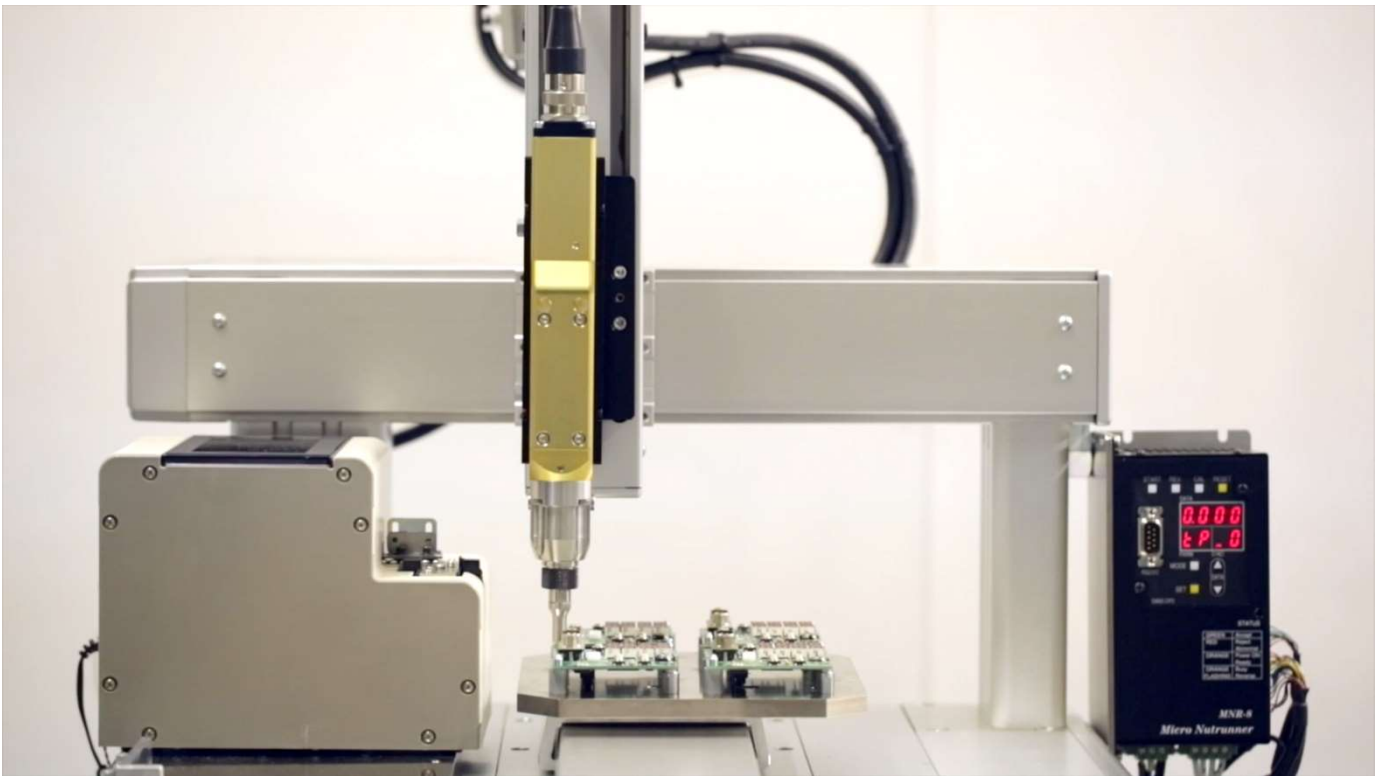
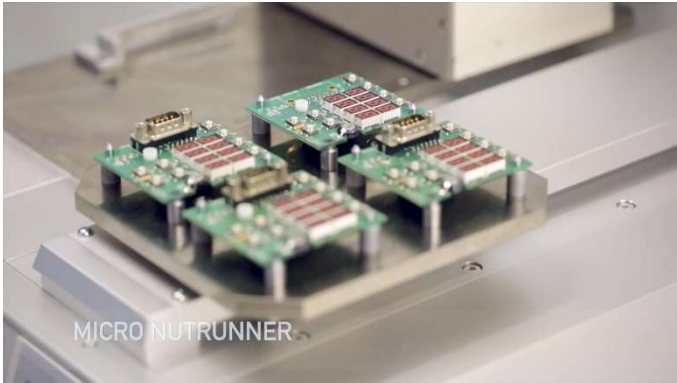


MICRO NUTRUNNER



Feature 1 **Minimizing equipment height**

- Compact tool ideal for tightening small screws
- Minimizing installation space by integrating vacuum head into main body

Micro-Nutrunner Tool

Vacuum Supply Port

172mm
(Actual Size)

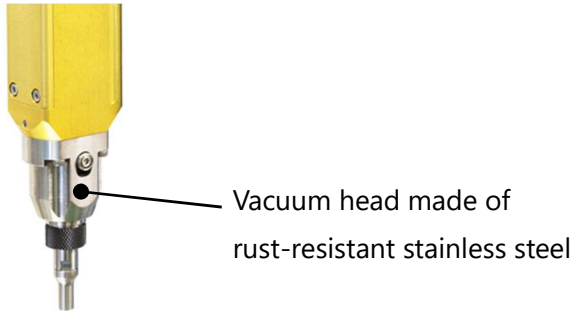
Vacuum Head
(Optional)



Feature 2

Vacuum head integrated into the main body (Option)

- Easy to install vacuum head to tool body
 - Vacuum head tip designed to screw shape (replaceable tips)
 - Supporting multi-materialization of small screws (corresponds to non-magnetic threads such as stainless steel and carbon)
-



Feature 3

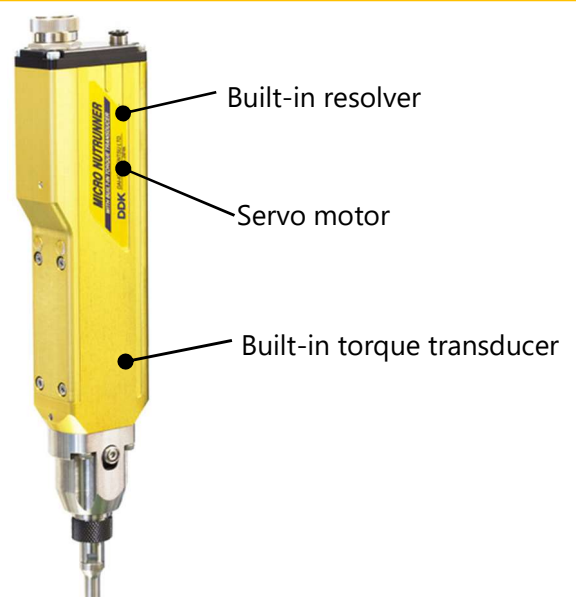
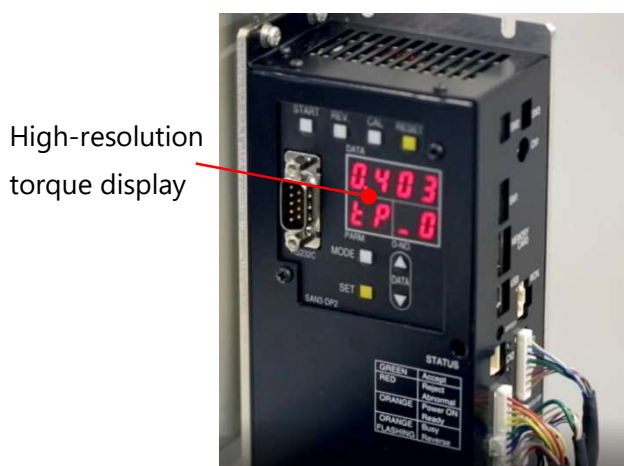
Torque accuracy unaffected by robot operation

- Minimizing the effect of external force on torque accuracy by integrating a torque transducer into the tool
-

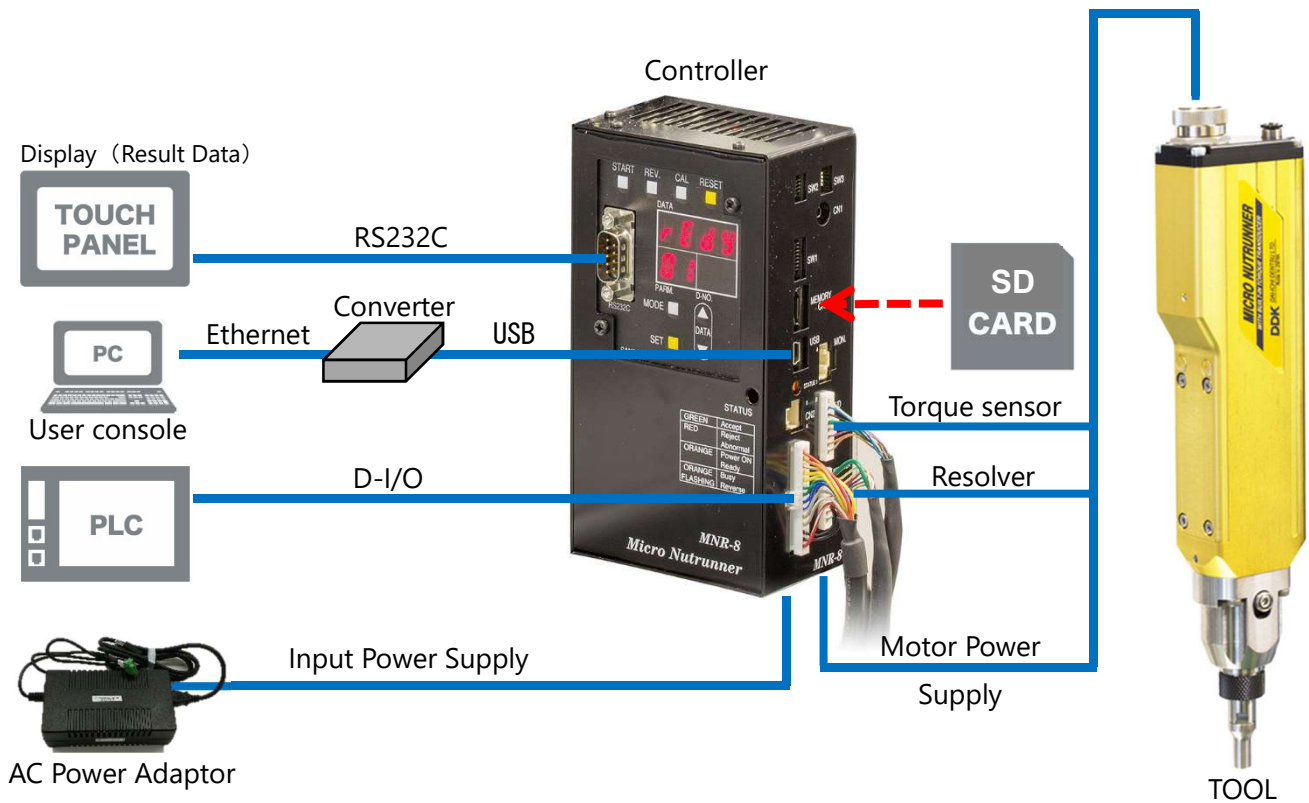
Feature 4

Ultra-low torque detectable

- Providing highly accurate tightening by using low-inertia servo motor
 - Detecting Screw rotation angle by using built-in resolver
 - Displaying torque with high resolution, 0.001 Nm
-



System Configuration



Note) Refer to “Vacuum specification” for an air circuit diagram of the optional vacuum mechanism

Controller Specification



Item	Description
Model	MNR-8
Tightening method	Torque / Angle method (First attained method)
Number of tightening parameters	8
Self-diagnosis and protection function	Transducer zero level voltage, Transducer CAL voltage, disconnection detection, input power supply voltage, motor overload, resolver abnormal, amplifier overheat, etc.
Input power supply	24-36VDC \pm 5%
Power consumption	0.2kVA
Control signal	Inputs: Bidirectional optocoupler: 6 points (maximum voltage 30 V, current 7 mA) Outputs: Photoelectric MOS relay: 6 points (maximum applied voltage 30 V, load current 7 mA) ※NPN, PNP
Communication port RS232C	User console setting software connection (* 1) Serial result data output port
Communication port USB	User console setting software connection (* 1) * Optional Ethernet Sold separately
External memory	Micro SD card (FAT 16 2 GB or less) For 2 GB: Save approximately 240,000 tightening result cycle data
Upper (PC, PLC) communication	If you want to receive the tightening setting change or tightening result from the upper side (PC, PLC, etc.) Please refer to "MNR-8" USB Communication Specifications.

*1: Switch the RS232C or USB port by controller setting

Tool specification



Model	Maximum torque [Nm]	Maximum speed [rpm] *2	Output shaft size [mm]	Weight [g]	Full length [mm]
MFT-080M10-S1	0.8	1660(DC36V) 1100(DC24V)	Hex.6.35	660	215.5
MFT-240M10-S	2.4	600(DC36V) 400(DC24V)	Hex.6.35	680	215.5

*2 : Maximum speed varies depending on supply voltage

Others

Item	Description
Pressing load at tightening	About 6.67N (=0.68 kgf) (*3)

*3: Reference Example Model (MFT-080M10-S1)

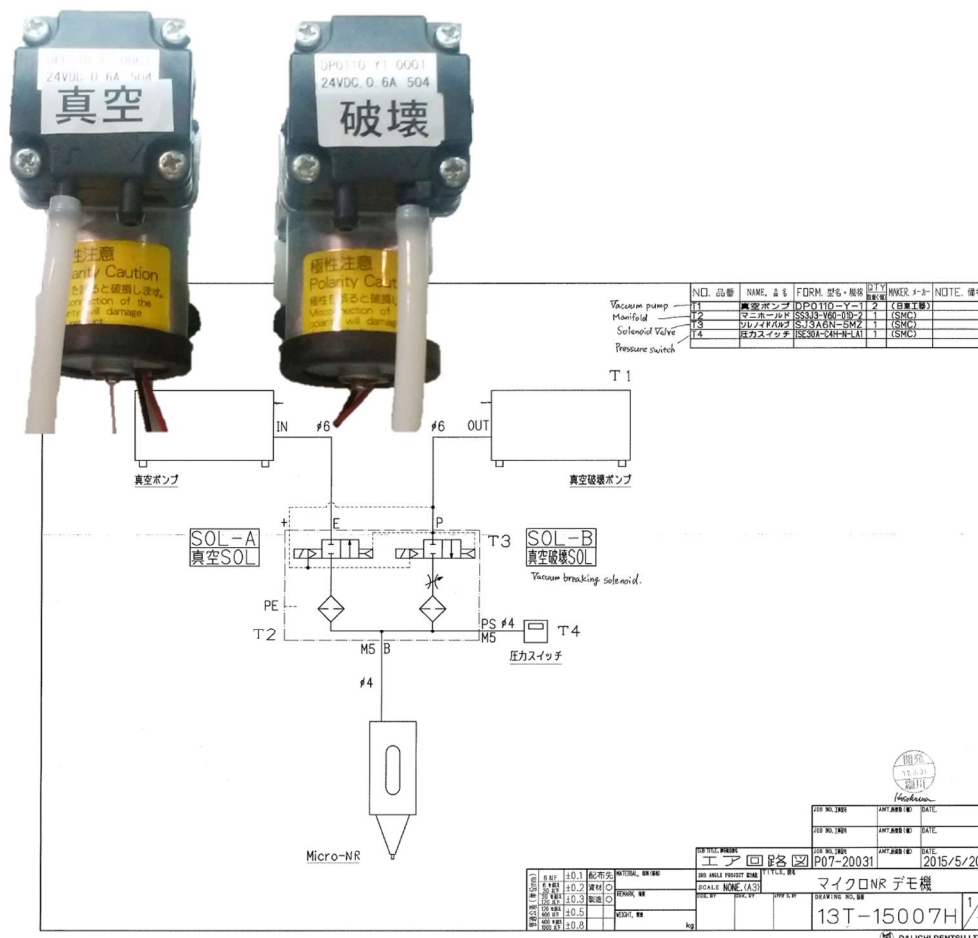
Vacuum specification



(Supplied by user)

Item	Description
Reference screw pressure (negative pressure)	-30kPa ~ -50kPa (*4)
Reference Vacuum Air Circuit Diagram	Refer to the separate document "13T - 15007H 1/1".
Reference nutrunner tool weight	(920)g Vacuum head shape changes the overall tool weight.

* 4: Reference example with M3 screw




CE Marking




We would appreciate it if you would contact us about CE marking.

Our products shall be used with being installed into equipment. Therefore, our CE declaration of conformity shall fall within the scope of EC directives for an instrument incorporated in equipment. Our declaration shall give no guarantee in conformity of EC directives for your machines or whole equipment into which our products are installed. When your equipment into which our products are installed is exported to or used in regions of Europe as a finished product, you shall ensure your own CE declaration of conformity for the equipment.

EC declaration of conformity

	
Dai-ichi Dentetsu Ltd 1-5-4-1, Shimoshinbashi, Chiyoda-city, Tokyo, 102-0034, Japan Phone +81-042-440-1465 Fax/Facsimile +81-042-440-1436	
DECLARATION OF INCORPORATION	
We hereby declare that the following our product conforms with the essential health and safety requirements of EC Directives so that the product is to be incorporated into end-machinery. The product must not be put into service until end-machinery has been declared in conformity with the provisions of the Directives. We also declare that undertaking to transmit, in response to a reasoned request by the national authorities, relevant information on the partly completed machinery.	
Product	: AFC3000 Axis Control Unit
Model No.	: MFC-5024
Serial No.	:
Manufacturer	: DAI-ICHI DENTETSU LTD.
Authorized person to compile the technical file	: Itaru Goto (Dai-ichi Dentetsu Ltd.) 690-3, Onsen, Kami-City, Gifu, Japan
Directives	: EMC Directive 2004/108/EC
The above product has been evaluated for conformity with above directives using the following European standards. The technical construction file (TCF) for this product is retained at the above manufacturer's location and it is compiled according to ANNEX VII part B.	
EMC Directive EMI EN61000-6-4 2007+A1:2011 EMS EN61000-6-2:2005	
Signature	: _____
Date	: _____
Name/Title	: Shiro Yoshoka / Director
Being the responsible person appointed and employed by the manufacturer.	

Accessory

Item	Model / Part	Description
CABLE 	CMN-F1-M3	Length : 3M
	CMN-F1-M5	Length : 5M
I/O CABLE 	CMN-O1-M2	Length : 2M
Electrostatic protective cover 	14T-15017-E07	-
Bit (for commercial products) ※Recommended item 	V17 NO.0X7X75(3X30) /OHMI SEIKI CO., LTD.	Screwdriver Bit number 0 (JIS standard small screws M1.4 to M2.6)
	V17 NO.1X7X75(3.5X30) /OHMI SEIKI CO., LTD.	Screwdriver Bit number 1 (JIS standard small screw M2 to M2.6 (truss screw - M3))
	V17 NO.2X7X75(3.5X30) /OHMI SEIKI CO., LTD.	Screwdriver Bit number 2 (JIS standard small screws M3 to M5)
Power supply(36VDC)	PLA150F-36 /COSEL	-
Power supply(24VDC)	PLA150F-24 /COSEL	-
AC power adaptor (36VDC) 	PW-150A2-1Y-360E	Output voltage: DC36V, Output current : 4.2A, Maximum output: 150VA
Communication converter	REX-USB60F /RATOC Systems, Inc.	-
Micro SD Card	SDSDQ-2048 /SanDisk	-
USB / Ethernet converter 	DS-510 /silex technology	USB Device server
USB CABLE	U2C-M**BK / ELECOM	Length:0.5-5.0M / -
	U2C-MXN**BK / ELECOM	Length:0.5-2.5M / Ultra-fine cable type
	U2C-MF**BK / ELECOM	Length:0.5-5.0M / Ferrite core attachment type

Peripheral equipment (Reference)

Name	Image	Contact information
Screw Presenter	<p>Screw feeder (SAQ) With screw tilt correction mechanism</p> 	<p>SAWA</p> <p>https://sawahb.com/</p>
		<p>OHTAKE</p> <p>http://www.ohtake-root.co.jp/</p>
Screw holder	<p>Vacuum suction method Custom made with any screw and bit</p>  <p>Mechanical system Mechanical chuck possible for non-magnetic screws</p> 	<p>SAWA</p> <p>https://sawahb.com/</p>
Vacuum pump	<p>Vacuum generation (no compressor necessary) power supply type (electromagnetic vibration)</p> 	<p>SAWA</p> <p>https://sawahb.com/</p>
Screw plate	-	

Reference material

Micro Nutrunner Micro NR System MNR-8 Unit Instruction Manual (S0140131N-J)

Micro Nutrunner MNR System: User Console Instruction Manual (S0140130L-J)

NOTE) Specifications and designs of the products are subject to change without notice due to improvements.



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