

Hand Held Nutrunner Series

# ***HFC3000II***

***EVOLUTION CONTINUES***



**DAI-ICHI DENTSU LTD.**



# EVOLUTION

## EVOLUTIONARY HAND HELD ELECTRIC NUTRUNNER

# CONTINUES

High Performance and Flexible Hand Held NUTRUNNER

Compact and high durability resolver-based Servo Motor on a proven hardware platform.

### FASTENING

- Torque (Angle monitor) or Angle (Torque monitor) Control fastening.
- Judgment by Torque Rate, Time and total rundown revolution monitoring.
- Built in Gyro sensor for ergonomic / safety (Pistol type Tool) operation. Senses grip swing motion.
- Built in simple Sequence function. (Batch count, Multiple parameter.)

### CONTROLLER

- 64 Parameters Sets. (Selectable)
- Field bus connection. CC-Link, DeviceNet, Ethernet I/P, Profibus and others. (Optional)
- PC base user console (software) connection via Ethernet.
- Single phase power with wide voltage range : 100VAC-240VAC. (Auto sensing)
- Large, bright 6,3,3 digit (7 segment) LED (2 rows) located on front panel with easy to operate cursor function dedicated buttons.

### TOOL

- Motor : Improved dust-proof, oil-proof and reduced sized permanent magnet motor.
- Pre-amplifier : Embedded high-accuracy amplification of torque transducer signal and TOOL-ID system.

### QUALITY MANAGEMENT

- In-process inspection of the fastening cycle by monitoring torque, angle, torque rate and time.
- Visual (LED) and audio confirmation of fastening.
- Store up to 12,000 cycles of fastening data, 100 curve data and 500 abnormal history automatically.
- Store 1.8 million (8MB CF) fastening resultant data on Compact Flash memory card. (Optional module)









## HFC3000II

Straight Tool  
(Push to Start)



### Straight Tool (Push to Start)

Automatic start by pushing Tool down on fastener.  
High speed seating damper. (Optional)  
No torque reaction using a telescopic torque tube.  
Horizontal or Vertical use.

Tool Model	Max. Torque [N·m]	Torque Range [N·m]	Max. Speed [rpm]	Length [mm]	Weight [kg]	Output Drive Size [mm]
<b>HFT-030M80-DP-H</b>	30	7.5~28	980	288	1.8	9.5 (3/8)



Sample Application

Pistol Grip Tool



### Pistol Grip Tool

Ergonomic design.  
High speed, Light weight Tool with built-in motion (Gyro) sensor for safety.

Tool Model	Max. Torque [N·m]	Torque Range [N·m]	Max. Speed [rpm]	Length [mm]	Weight [kg]	Output Drive Size [mm]
<b>HFT-015M50-P1</b>	15	3.8~15	1,190	218	1.1	9.5 (3/8)
<b>HFT-035M80-P1</b>	35	8.8~35	778	242	1.37	9.5 (3/8)
<b>HFT-035M80-P1-X</b> (Top Cable Connection)	35	8.8~35	778	242	1.37	12.7 (1/2)
<b>HFT-060M80-P1-X</b>	60	15~60	461	275	1.5	9.5 (3/8)



60Nm Pistol Grip Tool  
Grip swingable mechanism.



35Nm Pistol Grip Tool  
High speed seating damper  
Top cable connection model.



Angle Tool



Straight Tool



## Angle Tool

For limited space applications.

Tool Model	Max. Torque [N·m]	Torque Range [N·m]	Max. Speed [rpm]	Length [mm]	Weight [kg]	Output Drive Size [mm]
<b>HFT-015M50-A1-20</b>	15	3.8~15	1,215	369	1.6	9.5 (3/8)
<b>HFT-025M80-A1-20</b>	25	6.3~25	1,070	389	1.7	9.5 (3/8)
<b>HFT-040M80-A1-20</b>	40	10~40	648	414	1.93	9.5 (3/8)
<b>HFT-060M80-A-20</b>	60	15~60	446	414	1.95	12.7 (1/2)
<b>HFT-080M120-A-20</b>	80	20~80	557	459.8	3	12.7 (1/2)
<b>HFT-130M120-A-20</b>	130	32.5~130	316	484.8	3.3	12.7 (1/2)
<b>HFT-200M120-A-20</b>	200	50~200	206	512.3	3.7	15.9 (5/8)
<b>HFT-300M120-A-20</b>	300	75~300	144	586	6.2	19.0 (3/4)

## Straight Tool

For semi/automatic fixtured & handheld applications.  
(Requires telescopic torque tube or mounting plate mounting)

Tool Model	Max. Torque [N·m]	Torque Range [N·m]	Max. Speed [rpm]	Length [mm]	Weight [kg]	Output Drive Size [mm]
<b>HFT-010M50-S1-20</b>	10	2.5~10	1,800	331	1.3	9.5 (3/8)
<b>HFT-015M80-S1-20</b>	15	3.75~15	1,600	351	1.4	9.5 (3/8)
<b>HFT-025M80-S1-20</b>	25	6.25~25	1,000	351	1.43	9.5 (3/8)
<b>HFT-040M80-S-20</b>	40	10~40	694	351	1.43	9.5 (3/8)
<b>HFT-055M120-S-20</b>	55	13.75~55	861	404.5	2.4	12.7 (1/2)
<b>HFT-090M120-S-20</b>	90	22.5~90	488	417.5	2.7	12.7 (1/2)
<b>HFT-130M120-S-20</b>	130	32.5~130	318	417.5	2.7	12.7 (1/2)

\*NOTE: The example of CE compliant model is shown below.  
HFT-040M80-A1-20-CE



# Controller

## HFC3000II

### Front Panel

#### OK (ACCEPT)

Lights when the fastening result is within all programmed limits.

#### TOTAL OK (ACCEPT)

Lights when the number of fastening accepts set in the batch program are achieved.

#### TORQUE

Lights when torque values are selected to be displayed.

#### 6 digit 7 segment LED

Preset data ,result ,other data display.

#### 3 digit 7 segment LED

Work Number (parameter) display.



Work select, Data set cursor button.

#### SET

Button for setting program changes.

OK

TOTAL OK

NG

TORQUE

ANGLE

#### NG (REJECT)

Lights when the fastening result is outside of programmed limits.

#### ANGLE

Lights when angle values are selected to be displayed.

#### 3 digit 7 segment LED

Cycle count / Data number display.

#### CAL

Button for manual calibration check.

#### PRG

Button for selecting Run or Program mode.

#### RST

Button for resetting controller.

POWER

#### POWER

Main power switch

DDK HFC3000II

HFC-B024A

Controller type ..... HFC-B024A

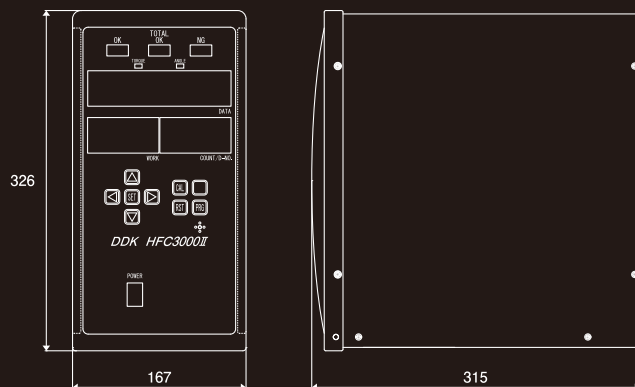
Drivable Motor type ..... M50 M80 M120

Input Power Voltage ..... Single phase 100 to 240VAC  $\pm 10\%$

Input Power Frequency ..... Both 50 / 60 Hz

Rated Power Consumption ..... 120W

Peak Current ..... 19A



## Tool Cable

Highly durable cable is used for all models

Part #	Length [m]	Remarks
C15-F7-M5	5	
C15-F7-M10	10	
C15-F7-M15	15	
C15-EF7-M5	5	Extension
C15-EF7-M10	10	Extension
C30-F8-M5-CE	5	CE
C30-F8-M10-CE	10	CE
C30-F8-M15-CE	15	CE



\* Maximum cable length is 15m.



### RS232C-2

ID data input.

### RS232C-1

Fastening result data Output.  
Utilized for connection to a PLC,  
printer, personal computer, etc.

### TOOL cable connector

### T/A monitor

Monitor output for Torque, Angle pulse,  
Current, speed.

### Electrical Leakage Breaker / Ground Fault detector.

Tool, Cable, Controller ground  
leakage sensing for safe operation.  
I = On  
O = Off

### Primary power-supply input connection.

Input for 100~240 VAC single-phase  
50/60Hz, +/- 10%  
AUTO SWITCHING.

### Bottom View

### DATA REPORT ETHERNET

Optional Ethernet port for reporting data in  
special protocols.  
(FECNET, QDAS, TOOLNET, etc)

### CF CARD

Fastening result, and curve data can be stored.  
(Optional)

### ETHERNET

Ethernet port for connecting the HFC3000  
Userconsole software PC.

### TB1

Discrete I/O (Inputs / Outputs) connection.

### FIELDBUS Connection

CC-Link, DeviceNet, Ethernet I/P, Profibus or  
others can be added as option.

## Controller Model

# HFC - B024A - CC - IO - CF - EN - CE

Series Name

Servo Size

#### Option 1 : Fieldbus

<b>CC</b>	CC-Link V1/V2
<b>DN</b>	DeviceNet
<b>PB</b>	PROFIBUS-DPV1
<b>PI</b>	PROFINET I/O
<b>EI</b>	EtherNet IP
<b>FB</b>	Base plate only
<b>N</b>	Without Fieldbus

#### Option 2 : Terminal

<b>IO</b>	With Terminal
<b>N</b>	Without Terminal

#### Option 3 : CF card slot

<b>CF</b>	With CF card slot
<b>N</b>	Without CF card slot

#### Option 4 : Data Report Ethernet port

<b>EN</b>	With Data Report Ethernet port
<b>N</b>	Without Data Report Ethernet port

#### Option 5 : CE compliant

<b>CE</b>	Yes
<b>N</b>	No



HFC3000II compliant to CE.  
Necessary to select with CE compliant.

# HFC3000II



# Software

## HFC3000II

### User Console Software

#### Setup and Monitor

- Parameter edit and save.
- Data Monitor, Stored data (12,000 Cycles) and curve (100 Cycles) can be uploaded.
- Fastening curve can be displayed and automatically saved.
- Reject and abnormal report file can be created separately.

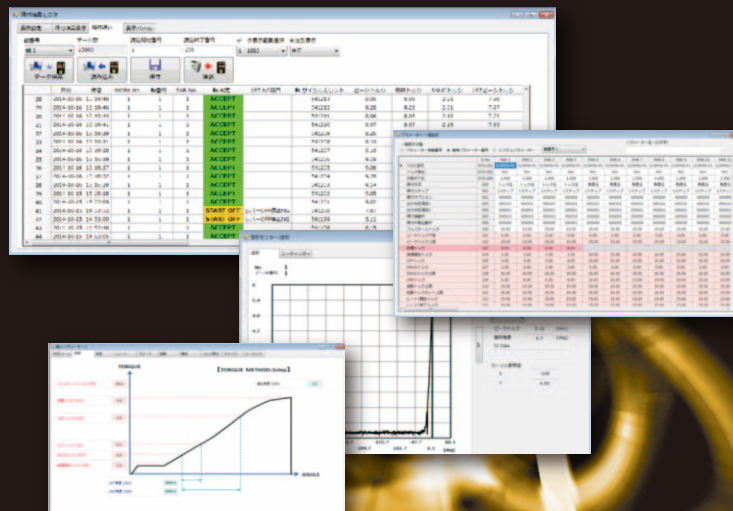
Japanese

English

Korean

Chinese

Indonesian

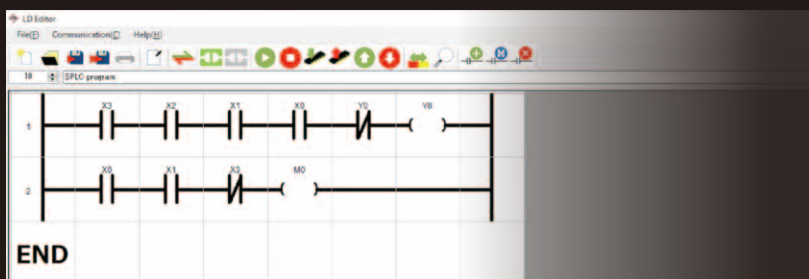


### SOFTWARE PLC

#### Built-in PLC Function

**No control panels result in cost savings.**

- Direct control of lamps, switches, conveyors is possible. (Input:13 Output:12)



\*Dedicated software required.

### FSERVER

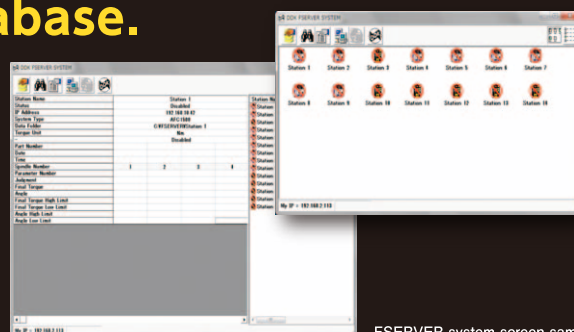
**HFC3000II can improve reliability of quality control by interfacing to customers database.**

#### Specifications

- ☐ Up to 32 station can be connected.
- ☐ 100Mbps Ethernet Connection.
- ☐ Windowx XP, Windows 7. (32 bit)
- ☐ Works with AFC, HFC, and DSP System.

#### Data Saving

- ☐ TEXT File format.
- ☐ File can be created by Date/Time or Part ID.

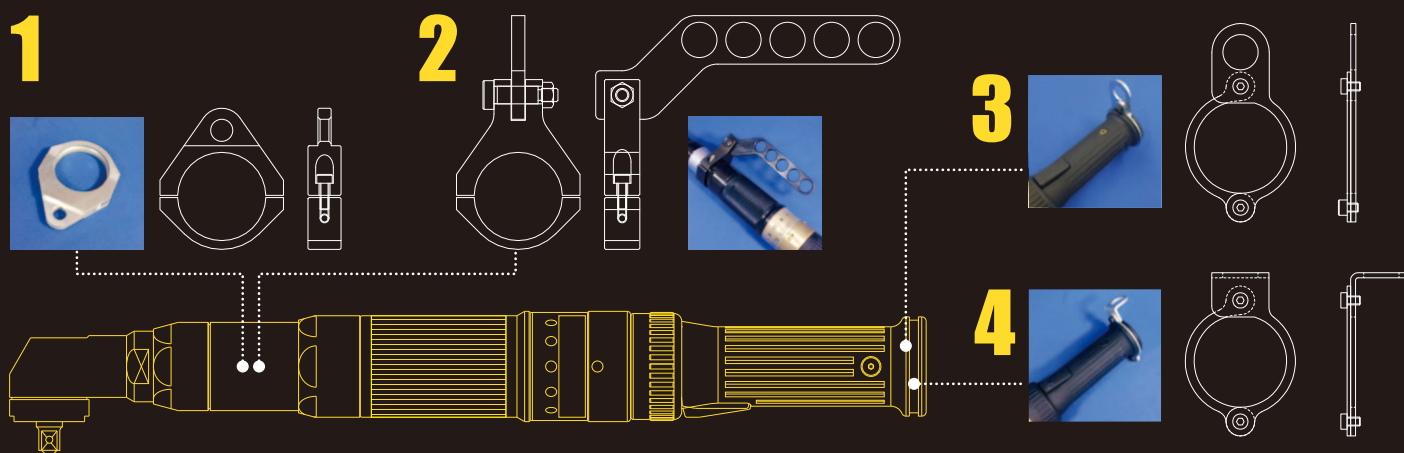


FSERVER system screen sample

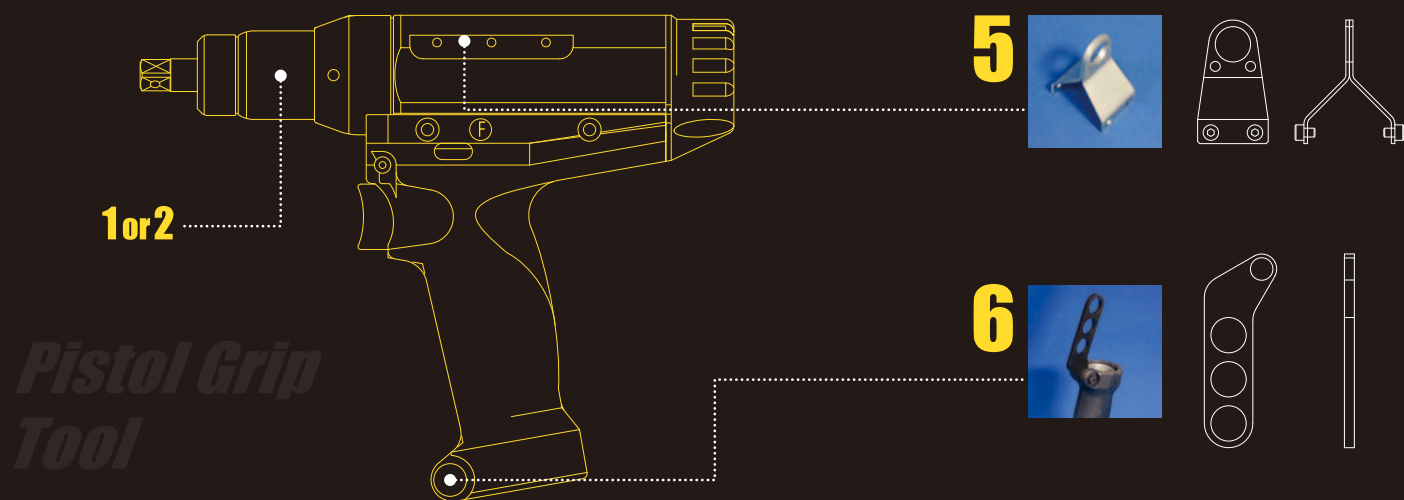


### Applications

Tools can be installed as required using multiple accessories.



*Angle Tool*



*Pistol Grip Tool*

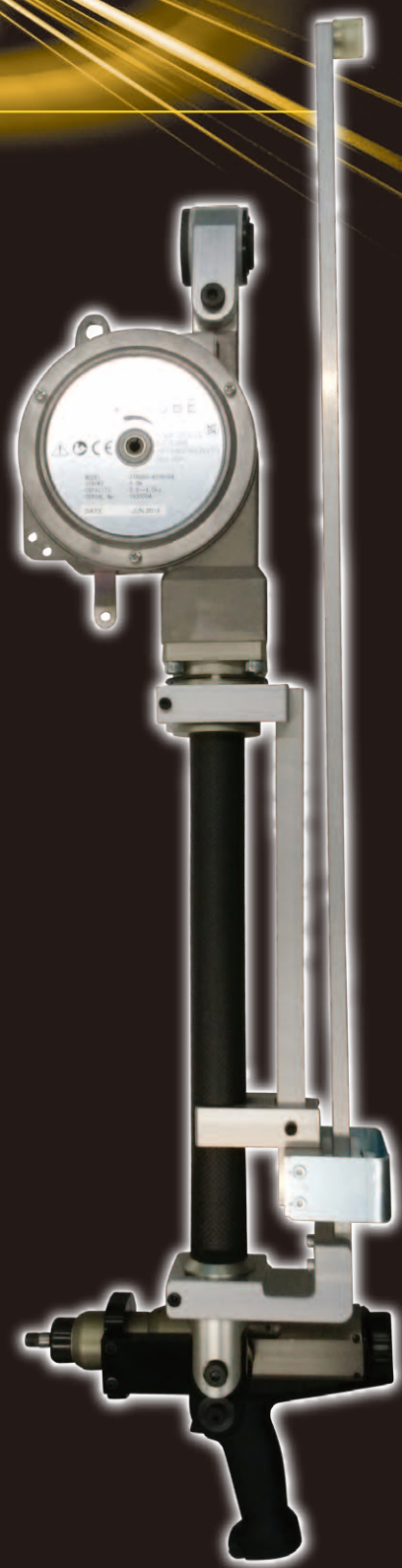
#	Product Name	Size	Model	Usage
1	Hanging Hook	φ40	HFA-TF01	Angle Tool under 60Nm, Straight Tool under 40 Nm
		φ52	HFA-TF02	Angle Tool over 80Nm, Straight Tool over 80 Nm
2	Hanger Arm	φ40	HFA-TF04	Angle Tool under 60Nm, Straight Tool under 40 Nm
		φ52	HFA-TF05	Angle Tool over 80Nm, Straight Tool over 80 Nm
3	Hanging Hook Grip End		HFA-TF06	Commonly used for Angle and Straight tool
4	L Shape Hanging Hook Grip End		HFA-TF07	Commonly used for Angle and Straight tool
5	Hanging Hook Grip End		HFA-TF08	Pistol Type Tool
6	Upside down hanger		HFA-TF09	Pistol Type Tool
—	L Shape Handle		HFA-HA01	Straight tool under 40 Nm
—	Torque Reaction Plate		HFA-RP01	Straight tool under 40 Nm



### Carbon Torque Tube

**Reduces Torque Reaction /  
Improves ergonomics of  
manual fastening.**

- ◆ Usability .....
  - Dampens torque reaction and vibration.
  - Smooth movement with carbon material.
  - Tighten with one hand.
- ◆ Compact ..... Built-in balancer design.



Part #	Max Torque [N·m]	Stroke [mm]	Max Hanging Weight [kg]	Weight [kg]
TTR060-4100-04	60	1,000	2.0~4.0	5.5
TTR200-4100-05	200	1,000	3.0~5.0	6.0

#### Sample Application



60Nm Pistol Type

30Nm Push to start type tool  
Torque Tube can be used for vertical  
or horizontal application.

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

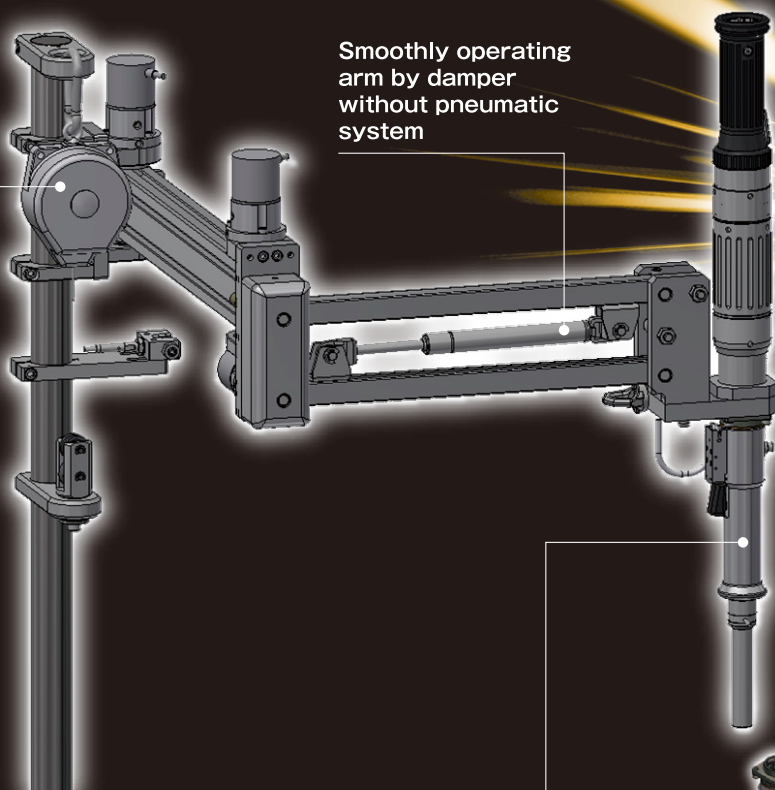


# Arm

## Positioning Arm

Automatically returning to home position when an operator takes hand off a grip.

Smoothly operating arm by damper without pneumatic system



## Sliding Arm

Selectable grips



Rotary grip switch



Fixed grip switch



Push to start type Fixed grip

Space-saving arm

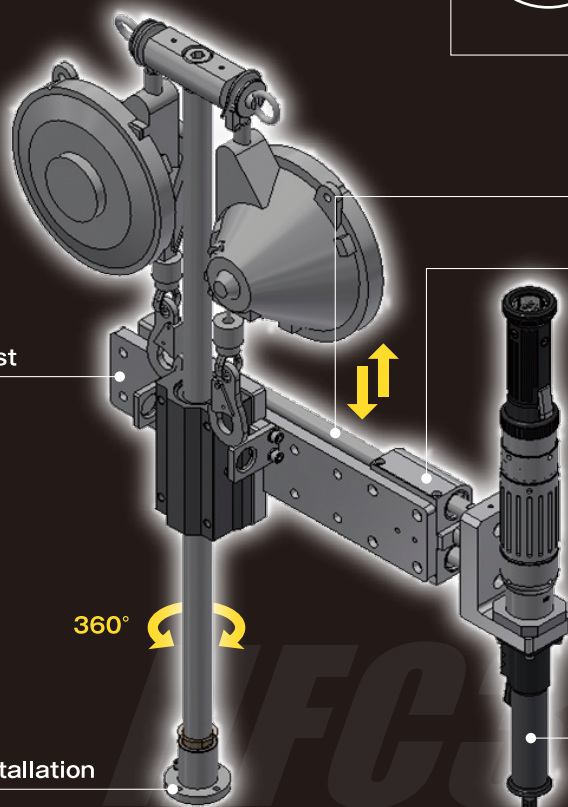
The arm is compactly held in home position.

Home position holder

Slide length adjust

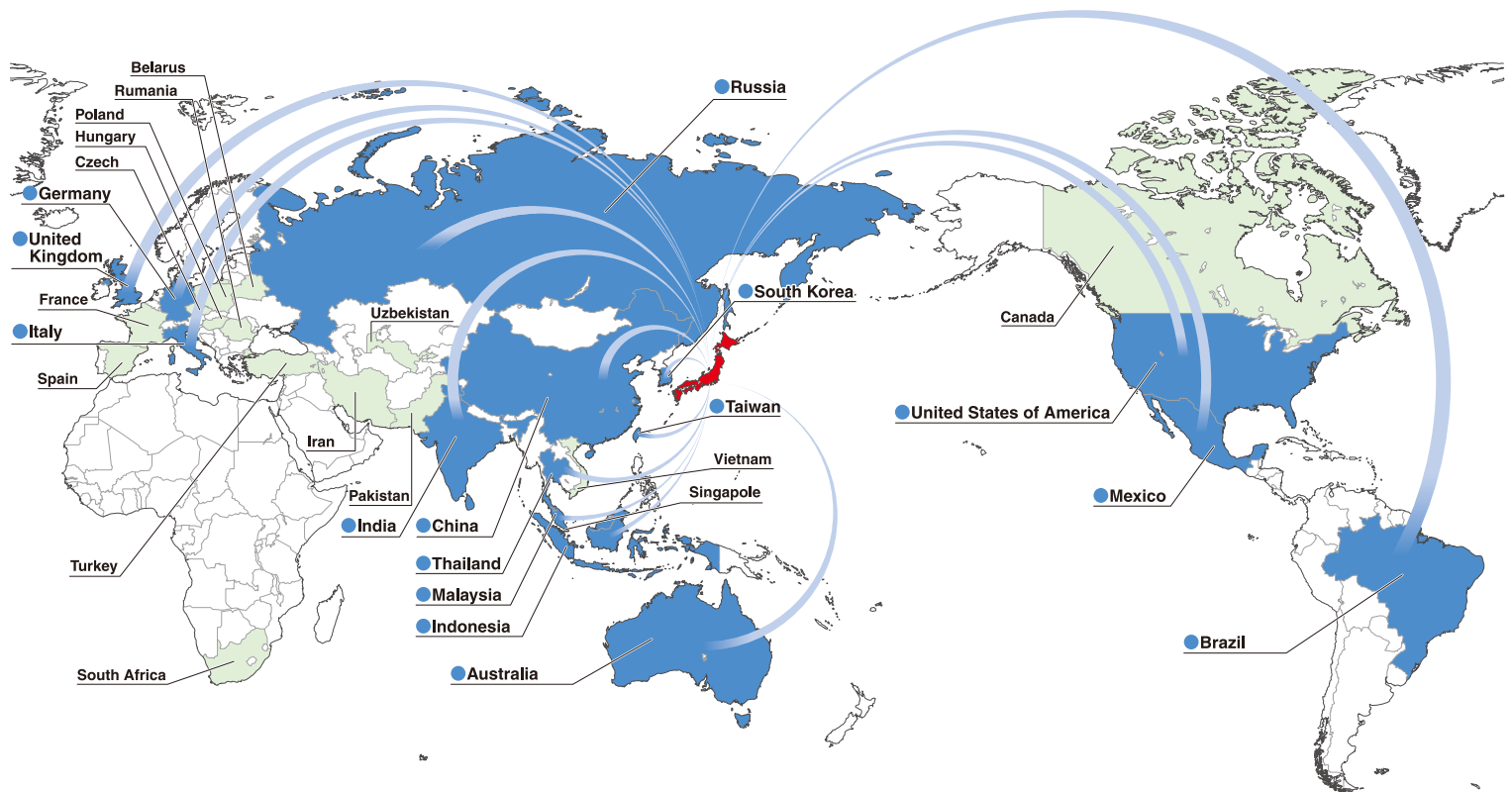
360°

Space-saving installation





# Global Delivery Map



※ Blue dot: Service Available  
Green dot: Delivery Record



ELECTRICAL ASSEMBLY TOOLS  
**DAI-ICHI DENTSU LTD.**

NUTRUNNER / HAND-HELD TOOL / SERVO PRESS

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