



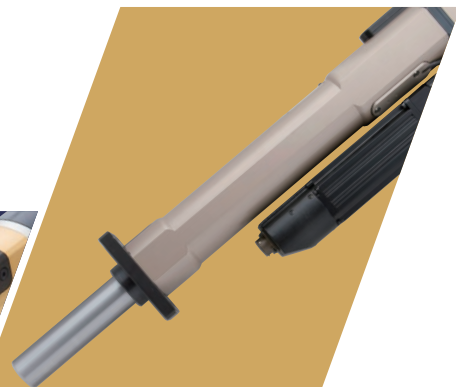
AFC3000

**FIXTURED
ELECTRIC
NUTRUNNER**



HFC3000II

**ELECTRIC
HANDHELD
NUTRUNNER**



DSP3000

**DIGITAL
SERVO
PRESS**



ELECTRICAL ASSEMBLY TOOLS

DAI-ICHI DENTSU LTD.

NUTRUNNER / HAND-HELD TOOL / SERVO PRESS

Features

Production Process Flexibility

Maximum 32 spindles
multi spindle control

128 Parameters
64 Sequences

Quality and Traceability

ISO5393
compliant

12,000 Stored Data
100 Curve Data

Patented high speed seating mechanism

Cycle time
reduction

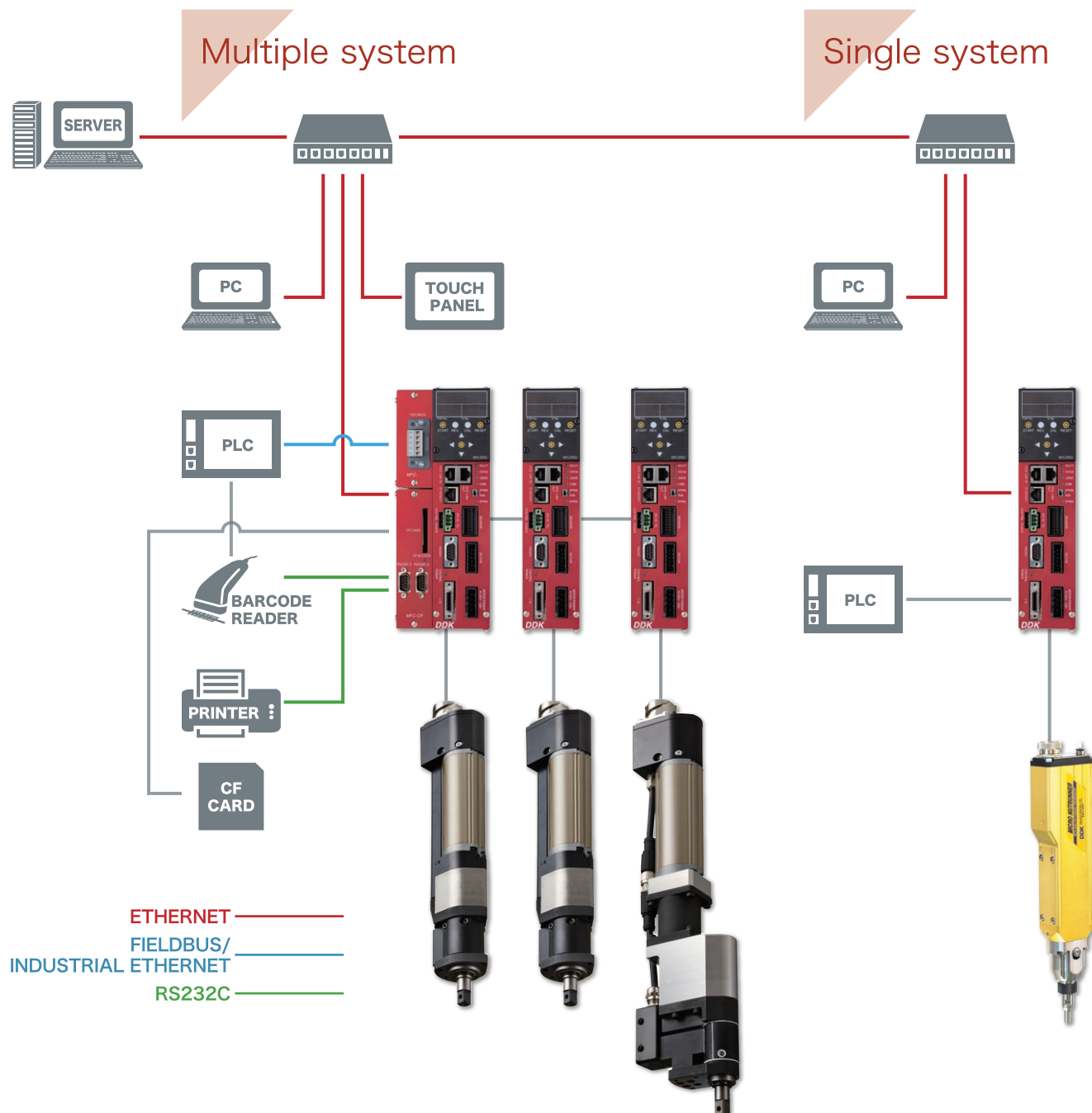
Torque overshoot
reduction

Wide Range of Tools

Minimum
0.2Nm

Maximum
5,000Nm

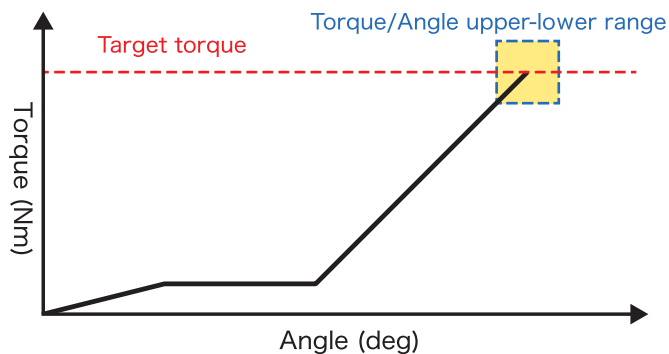
System Configuration (Image)



Control and Features

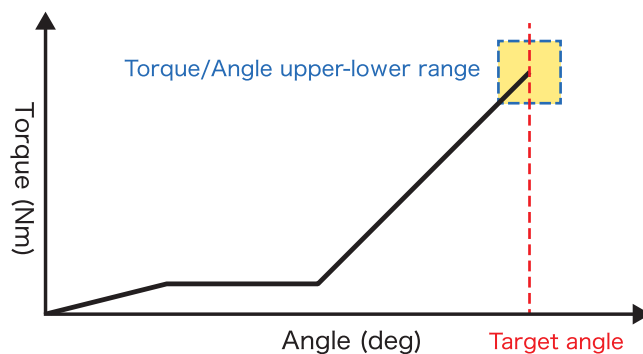
Torque method

Tighten to the set target torque value.



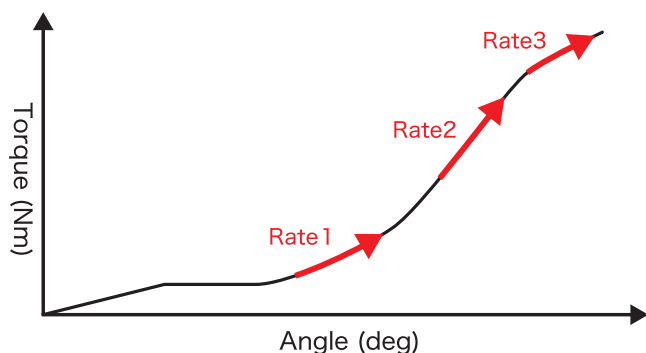
Angle method

Tighten to the set target angle value.



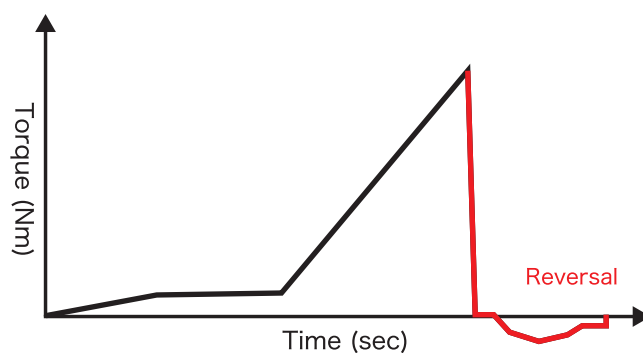
Rate judgement

Monitor the torque / angle slope rise and judge if outside of the set limits.



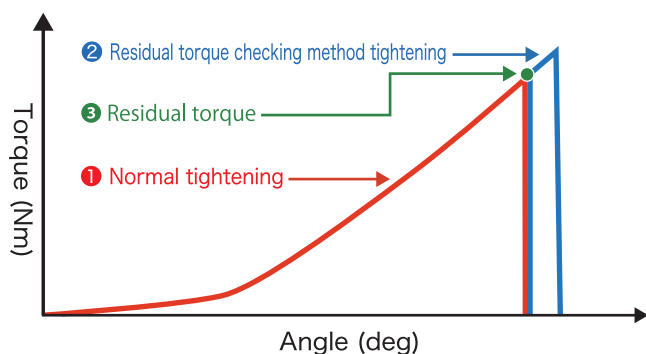
1 Pulse reverse

Allows the disengagement of a locked fastener in the socket after tightening.



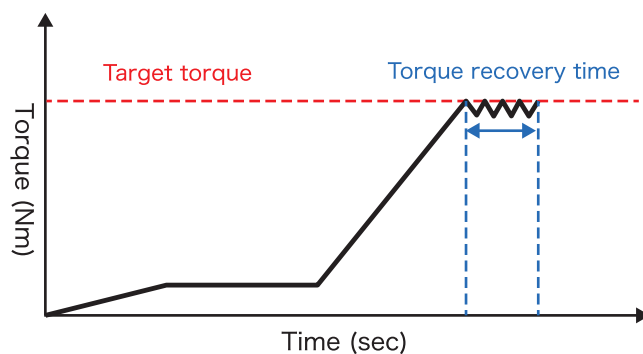
Residual torque checking method

Detects residual torque by re-fastening a previously tightened fastener.



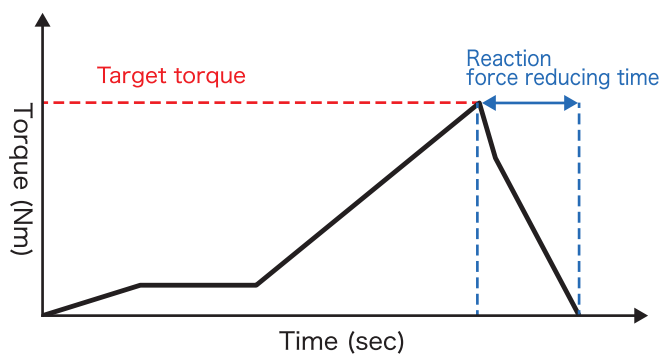
Torque recovery

Reduces torque loss after fastening by maintaining torque for a set period of time.



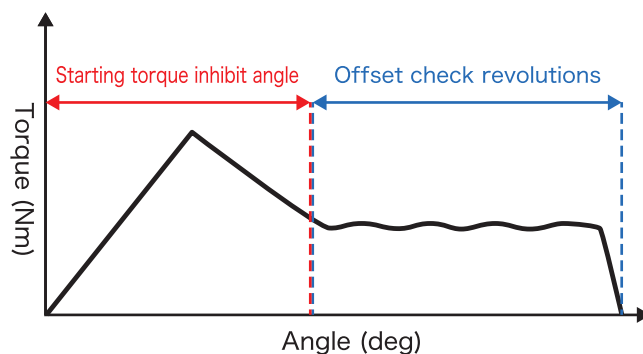
Reduce torque reaction

Function to reduce the torque reaction after reaching set torque.



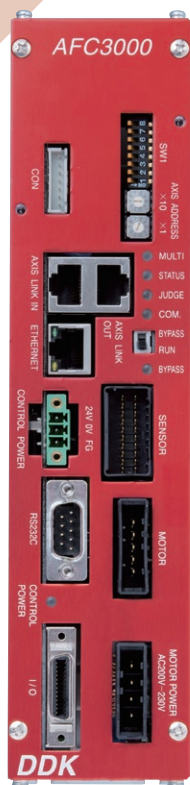
Offset check

Function which allows the detection of adverse external torque (ie. external gearing) which could detriment actual dynamic torque applied.

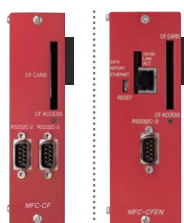


Controller and Expansion Unit

BASE UNIT



OPTIONAL UNIT



Display

User Friendly Display

- Displays full content with 6 digit / 2 row LED
- Easily operated cursor keys

Option1

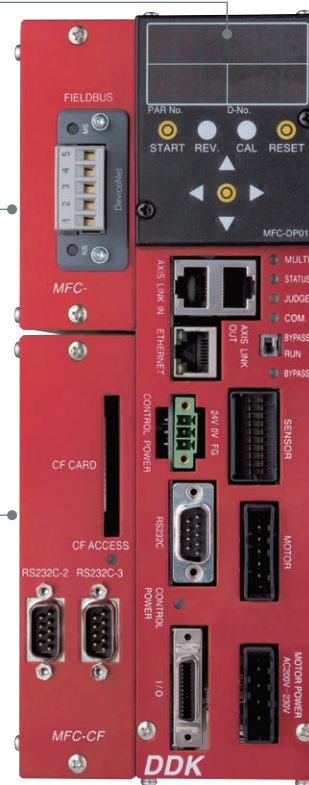
Fieldbus I/O Interfaces

- Various interfaces for direct PLC I/O & data connections

Option2

Expansion COM Ports and memory

- Compact Flash (CF) for result data
- Expansion RS232C Input / Output ports



Unit Model	MFC-S008	MFC-S024	MFC-S060	MFC-S120
Momentary Max. Peak Current	5.6Arms	17.0Arms	42.4Arms	84.8Arms
Transformer Capacity	0.3KVAxspindles	0.3KVAxspindles	0.8KVAxspindles	4.0KVAxspindles
Input power	single phase- AC100V-230V±10%			3-phase AC200~230V±10% 50/60H
Control Power	DC24V±10% 0.5A			DC24V±10% 1A
Operating Environment	temperature 0°C~+50°C humidity -below 90%RH			
RS232C communication	38400bps (default)/19200bps/9600bps, 1 port			
External analog monitor output	Torque analog voltage, angle pulse, CC/CW pulse etc.			
Axis Link Communication	Spindle Link Communication Port (connect Max. 32 spindles)			
Ethernet	PC communication port in conformity with IEEE802.3(100BASE-T)			
Standard I/O Connector	Input : 12 Output : 12			
Fastening Result Data memory	12000 Cycles max 500 last REJECT cycles			
TQ Curve Memory	Last 100 Curves Last 100 Reject Curves			

Controller	Tool Model Supported	display	option1	option2
MFC-S008 MFT2-S008	MFT-***M10-*	MFC-DP01	Fieldbus Industrial Ethernet	CF CFEA CFEB CFEC
MFC-S024 MFT2-S024	CFT-***RS1-*			
MFC-S060 MFT2-S060	NFT-***RM1/RM2-*			
MFC-S120 MFT2-S120	CFT-***RS3-*			
	NFT-***RM3-*			
	CFT-***RM4J-*			
	NFT-***RM4H-*			
	NFT-***RM5-*			

Optional model	Description	Unit Type
MFC-DT	Expansion Discrete I/O	Option1
MFC-CC	Input : 32 Output : 32	
MFC-DN	CC-Link V2	
MFC-PB	DeviceNet	
MFC-EN	PROFIBUS DP-V1	
MFC-EP	EtherNet/IP	
MFC-PN	PROFINET IO	
MFC-CI	CC-Link IE Field	
MFC-EC	EtherCAT	
MFC-CF	CompactFlash card supported	
	Expansion RS232C (2port)	
MFC-CFEA	With F-SERVER Ethernet port	Option2
	Expansion RS232C (1port)	
MFC-CFEB	With Open Protocol Ethernet port	
	Expansion RS232C (1port)	
MFC-CFEC	With ToolsNet Ethernet port	
	Expansion RS232C (1port)	



Control Pac

FRONT PANEL



BOTTOM VIEW

Tool cable connector

Connector for RS232C communication(data output)

T/A monitor connector

Power source breaker

Connector for Ethernet communication (PC communication)

Axis Link Communication Connector

Primary power source connector

Option: RS232C-2 communication connector (ID Data Input)

Option: Connector for special ethernet data output protocols

CF card slot

I/O Terminal

Various Fieldbus I/O interfaces

Unit Model	MFC-B060
Settings	Sequence: 64 Parameter: 128
Momentary Max. Peak Current	42.4Arms
Continuous AC Drive Current	5.2Arms
Input power	Single AC200~230V ±10%
Operating Environment	0°C~+45°C humidity below 90%RH
RS232C communication	38400bps (default)/19200bps/9600bps, 1port
External analog monitor output	Torque analog voltage, angle pulse, CC/CW pulse etc.
Axis Link Communication	Spindle Link Communication Port (connect Max. 32 spindles)
Ethernet	PC communication port in conformity with IEEE802.3(100BASE-T)
Standard I/O Connector	Input : 12 Output : 12
Option	Please refer to the Option1-4 on the left side
Fastening Result Data memory	12000 Cycles max 500 last Reject cycles
TQ. Curve Memory	Last 100 Curves Last 100 Reject Curves

Adapted tool model

Standard cable

CFT tool	CFT-***RS1-*	C30-FT3-M**
	CFT-***RS3-*	(M=length in meter Std:5, 10, 15 Max 25m)
NFT tool(RM)	NFT-***RM1-*	C30-FM2-M**
	NFT-***RM2-*	(M=length in meter Std:5, 10, 15 Max 25m)
	NFT-***RM3-*	

Control Pac model information

MFC - B060 - CC - IO - CF - EN

Series Controller size

Option1:
Fieldbus

CC	CC-Link
DN	DeviceNet
PB	PROFIBUS
PN	PROFINET I/O
EN	EtherNet IP
CI	CC-Link IE
EC	EtherCat
N	Without Fieldbus

Option2:
I/O termination

IO	With Terminal
N	Without Terminal

Option3:
CF card slot/
Extension RS232C-2
input port

CF	With CF card slot
N	Without CF card slot

Option4:
Optional Ethernet
for special data
protocols

EA	With F-SERVER Ethernet port
EB	With Open Protocol Ethernet port
EC	With ToolsNet Ethernet port
N	Without data report Ethernet port

Nutrunner Tools



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MFT & CFT TOOLS

Tool type	Model	Max.Torque [Nm]	Max.Speed [rpm]	Weight [kg]	Length [mm] *1	Square drive [mm]	Min.Pitch [mm]	Applicable controller
Micro	MFT-080M10-S1	0.8	2220	0.68	206	Hex. 6.35	31	MFC-S008
	MFT-160M10-S	1.6	1250	0.68	206	Hex. 6.35	31	MFC-S008
	MFT-240M10-S	2.4	800	0.68	206	Hex. 6.35	31	MFC-S008
Straight	CFT-051RS1-S/SL	5	1330	1.16	270	9.5	41	MFC-S024
	CFT-101RS1-S/SL (-H)	10	3000	1.26	275	9.5	39	MFC-S024
	CFT-201RS1-S/SL (-H)	20	1293	1.42	290	9.5	39	MFC-S024
	CFT-281RS1-S/SL (-H)	28	992	1.42	293	9.5	39	MFC-S024
	CFT-401RS1-S/SL (-H)	40	712	1.42	293	9.5	39	MFC-S024
	CFT-801RS3-S/SL (-H)	80	1015	3.4	372	12.7	50	MFC-S060
	CFT-132RS3-S1/S1L (-H)	130	574	3.4	372	12.7	50	MFC-S060
	CFT-202RS3-S/SL	200	387	4.3	390	15.9	59	MFC-S060
	CFT-302RS3-S/SL	300	260	5.8	440	19	71	MFC-S060
	CFT-502RM4J-S	500	238	13.5	500	25.4	89	MFC-S120
	CFT-802RM4J-S	800	150	15	566	25.4	96	MFC-S120
	CFT-113RM4J-S	1100	120	22	618	38.1	99	MFC-S120
	CFT-153RM4J-S	1500	88	28.5	633	38.1	115	MFC-S120
Offset	CFT-201RS1-O/OL	20	1221	2	362	9.5	25	MFC-S024
	CFT-401RS1-O/OL	40	712	2.4	368	9.5	29	MFC-S024
	CFT-801RS3-O/OL	80	1015	6	456	12.7	35	MFC-S060
	CFT-132RS3-O1/O1L	130	574	7.5	484	15.9	39	MFC-S060
	CFT-202RS3-O/OL	200	387	8.2	514	15.9	45	MFC-S060
	CFT-302RS3-O/OL	300	260	13	583	19	55	MFC-S060
	CFT-502RM4J-O	500	238	23.5	692	25.4	62	MFC-S120
Angle head (Straight tool sold separately)	CFT-802RM4J-O	800	150	31	788	25.4	71	MFC-S120
	RA025-CFT	25	1941(101)	1.0	104	9.5	29	CFT-101/201RS1-S
	RA040-CFT	40	836(201)	1.3	135	9.5	37	CFT-201/281RS1-S
	RA060-CFT	60	460(401)	1.3	135	12.7	37	CFT-401RS1-S
	RA080-120-CFT	80	656(801)	2.0	157	12.7	42	CFT-801RS3-S
	RA130-120-CFT	130	656(801)	2.3	169	12.7	46	CFT-801RS3-S
	RA200-120-CFT	200	371(132)	2.7	196.5	15.9	56	CFT-132RS3-S1
	RA300-120-CFT	300	250(202)	5.0	248	19	67	CFT-202RS3-S

*1 Length means the length of standard tool including the square drive.Connector parts are not included. Please refer to the drawings from the above QR code.

CFT Spindle Adaptor

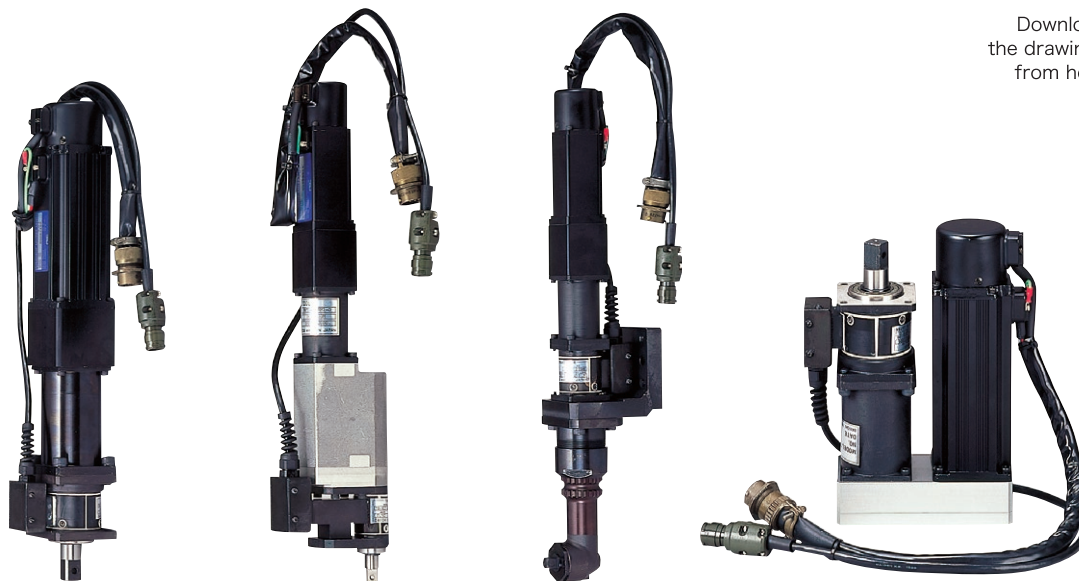
Model	Max.Torque [Nm]	Length [mm]	Stroke [mm]	Square drive [mm]	Applicable tool
CFT-SP401-40V	40	165	40	9.5	CFT-101RS1-S/SL (-H)
CFT-SP401-40HW	40	181	40	9.5	CFT-201RS1-S/SL (-H)
					CFT-281RS1-S/SL (-H)
					CFT-401RS1-S/SL (-H)
CFT-SP801-50V/H	80	217	50	12.7	CFT-801RS3-S/SL (-H)
CFT-SP132-50V/H	130	230	50	15.9	CFT-132RS3-S1/S1L (-H)
CFT-SP202-60V/H	200	253	60	19	CFT-202RS3-S/SL
CFT-SP302-70V/H	300	282	70	19	CFT-302RS3-S/SL
SP502Vertical/Horizontal	500	276	50	25.4	CFT-502RM4J-S

* V: For vertical tightening H: For horizontal tightening



Nutrunner Tools

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NFT TOOLS

Tool type	Model	Max.Torque [Nm]	Max.Speed [rpm]	Weight [kg]	Length [mm] *1	Square drive [mm]	Min.Pitch [mm]	Applicable controller
Straight	NFT-101RM1-S1	10	500	2.1	311	9.5	41	MFC-S024
	NFT-201RM1-S	20	500	2.1	311	9.5	41	MFC-S024
	NFT-301RM2A-S	30	600	2.1	367	9.5	41	MFC-S024
	NFT-401RM1-S	40	250	2.1	311	9.5	41	MFC-S024
	NFT-801RM3-S	80	500	4.5	408	12.7	61	MFC-S060
	NFT-132RM3-S	130	395	5.5	417	15.8	61	MFC-S060
	NFT-202RM3-S	200	220	6	438	15.8	63	MFC-S060
	NFT-302RM3-S	300	150	9	456	19	77	MFC-S060
	NFT-303RM5-S	3000	39	70	946	44.5	172	MFC-S120
Offset	NFT-503RM5-S	5000	22	90	930	50.8	207	MFC-S120
	NFT-201RM1-O	20	500	2.7	388	9.5	25	MFC-S024
	NFT-301RM2A-O	30	600	3	466	9.5	29	MFC-S024
	NFT-401RM1-O	40	250	3	410	9.5	29	MFC-S024
	NFT-801RM3-O	80	500	6.8	497	12.7	35	MFC-S060
	NFT-132RM3-O	130	395	8	537	15.8	39	MFC-S060
	NFT-202RM3-O	200	220	9.5	573	15.8	45	MFC-S060
	NFT-302RM3-O	300	150	13.5	606	19	55	MFC-S060
Angle	NFT-201RM1-A55	31	321	4.2	433.5	12.7	37	MFC-S024
	NFT-401RM1-A55	56	160	4.2	433.5	12.7	37	MFC-S024
	NFT-801RM3-A130	124	321	8.5	551.5	15.8	46	MFC-S060
	NFT-132RM3-A250U	202	250	11.3	580	15.8	57	MFC-S060
	NFT-202RM3-A250U	255	140	11.8	601	15.8	57	MFC-S060
	NFT-202RM3-A380	310	142	16.9	640	19	75	MFC-S060
	NFT-302RM3-A550	466	96	22.2	658	25.4	75	MFC-S060
U type	NFT-101RM1-S1U	10	500	2.5	141 (150)	9.5	41	MFC-S024
	NFT-201RM1-SU	20	500	2.5	141 (150)	9.5	41	MFC-S024
	NFT-401RM1-SU	40	250	2.5	141 (150)	9.5	41	MFC-S024
	NFT-132RM3-SU	130	395	6.5	209 (221)	15.8	61	MFC-S060
	NFT-202RM3-SU	200	220	7	230 (221)	15.8	63	MFC-S060
	NFT-302RM3-SU	300	150	10	257 (221)	19	77	MFC-S060

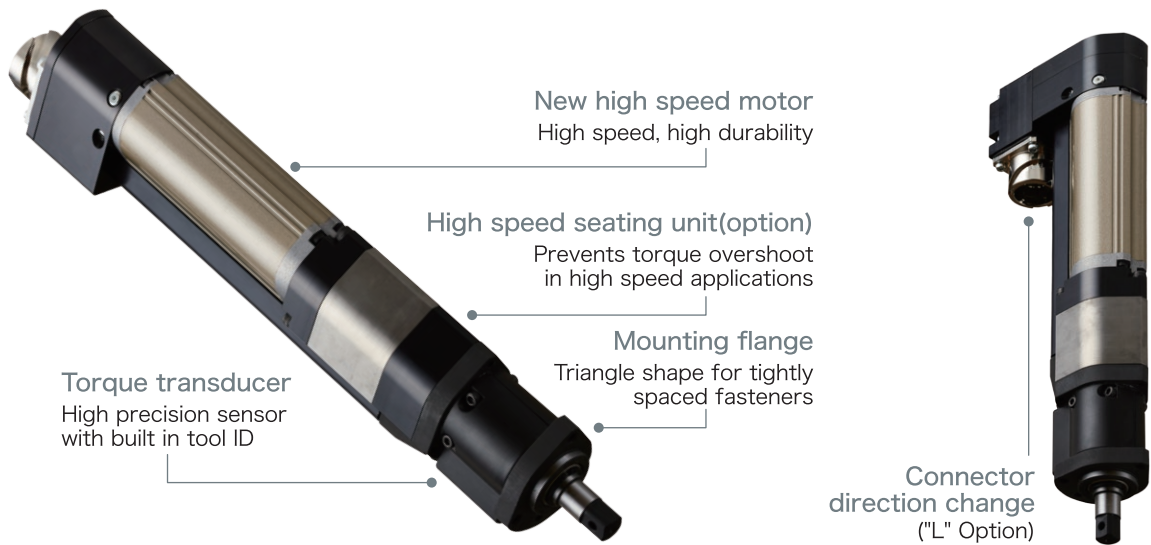
*1 Length means the length of standard tool including the square drive. Connector parts are not included. Please refer to the drawings from the above QR code.

NFT Spindle Adaptor

Model	Max.Torque [Nm]	Length [mm]	Stroke [mm]	Square drive [mm]	Applicable tool
SP201 Vertical/Horizontal	20	156	25	9.5	NFT-201RM1-S/SU
SP401 Vertical/Horizontal	40	180	40	9.5	NFT-401RM1-S/SU
SP801 Vertical/Horizontal	80	218	50	12.7	NFT-801RM3-S/SU
SP202 Vertical/Horizontal	200	237	50	15.8	NFT-132/202RM3-S/SU
SP302 Vertical/Horizontal	300	240	50	19	NFT-302RM3-S/SU



CFT Tool Features



CFT Tool Model Information

CFT - 201 RS1 - S - H

Series name Tool size Motor type High speed seating option Tool type

S	Straight
SL	Straight Tool Connector "L" Option
O	Offset
OL	Offset Tool Connector "L" Option

NFT Tool Model Information

NFT - 201 RM1 - S

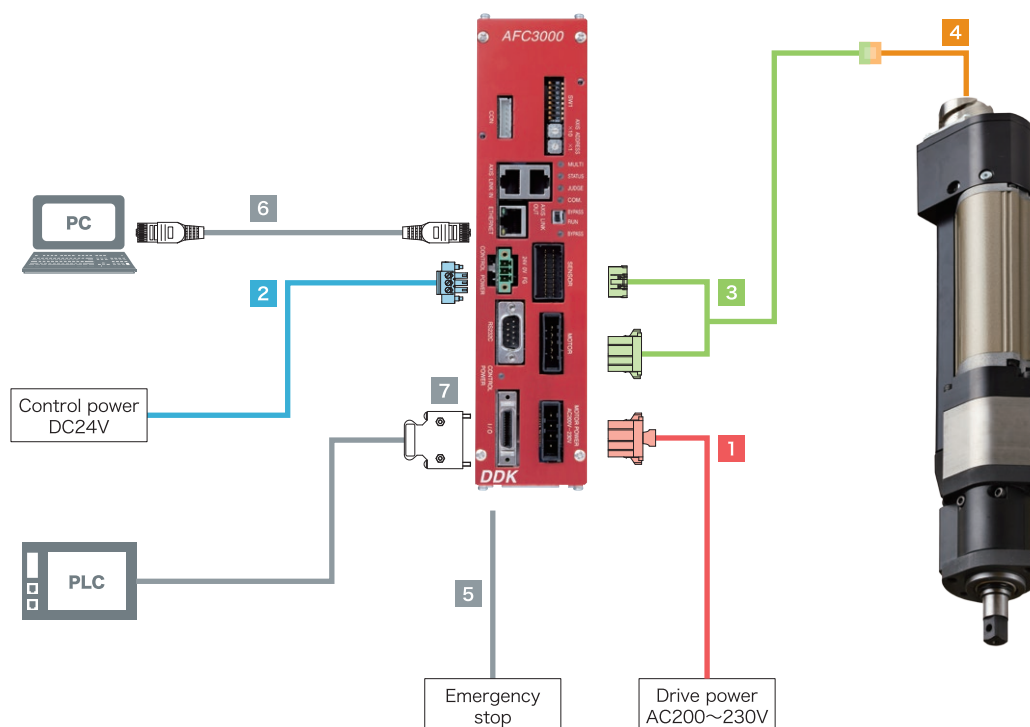
Series name Tool size Motor type ※1 Tool type

※1 Option



RM1A/RM2A/RM3A
"A" type adds motor connector directly mounted

S	Straight
O	Offset
A	Angle
SU	U type



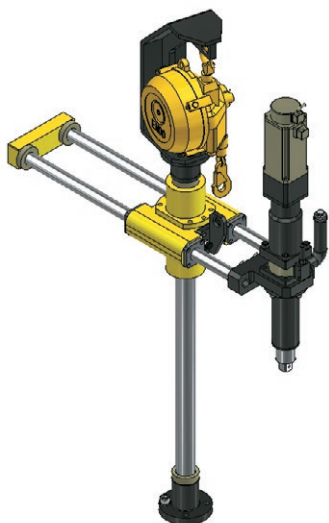
Cable Applicable Table

Cable Applicable Table		MFT ***MTO*	CFT ***RS1*	CFT ***RS3*	CFT ***RM4J*	NFT ***RM1*	NFT ***RM2*	NFT ***RM3*	NFT ***RM5*	Model	Standard length	CE *1	Remarks
1	Drive power cable for MFC-S008/S024/S060	■	■	■		■	■	■		C15-D1-M*	2m		Included in controller
	Drive power cable for MFC-S008/S024/S060(CE type)	■	■	■		■	■	■		C15-D1-M*-UC	2m	○	_____
	Drive power cable for MFC-S120				■				■	C15-D2-M*	2m		Included in controller
	Drive power cable for MFC-S120(CE type)				■				■	C15-D2-M*-UC	2m	○	_____
2	Control power cable for MFC	■	■	■	■	■	■	■		C30-DC1-M*	2m		_____
	Control power connector for MFC	■	■	■	■	■	■	■		MC1.5/3-STF-3.81	_____		Included in controller
3	Tool cable for MFT	■								C30-FT2-M*	3m/5m/10m	○	_____
	Tool cable for CFT-RS1/RS3		■	■						C30-FT1-M*	5m/10m/15m	○	_____
	Tool cable for NFT-RM1/RM2/RM3					■	■	■		C30-FM1-M*	5m/10m/15m		For Robot type, please add"-R" to the end of the model
	Tool cable for CFT-RM4J,NFT-RM4H				■					C30-FW4-M*	5m/10m/15m		For Robot type, please add"-R" to the end of the model
	Motor cable for NFT-RM5								■	C15-M1-M*	5m/10m/15m		For Robot type, please add"-UR" to the end of the model
	Preamplifier & Resolver cable for NFT-RM5								■	C30-PR5-M*	5m/10m/15m		_____
4 *1	Extension tool cable for MFT	■								C30-FT2-M*-E	3m/5m/10m		_____
	Extension tool cable for CFT-RS1/RS3		■	■						C30-FT1-M*-E	5m/10m/15m	○	_____
	Extension tool cable for NFT-RM1/RM2/RM3					■	■	■		C15-EF1-M*	2m/5m/10m		C15-EF2-M*-LR for robot type.
	Extension tool cable for CFT-RM4J,NFT-RM4H				■					C15-EF2-M*	2m/5m/10m		For Robot type, please add"-UR" to the end of the model
	Extension motor cable for NFT-RM5								■	C15-EM1-M*	5m		For Robot type, please add"-UR" to the end of the model
	Extension resolver cable for NFT-RM5								■	C15-ER1-M*	2m/5m/10m		For Robot type, please add"-UR" to the end of the model
	Extension preamplifier cable for all NFT motors				■	■	■	■	■	C15-EP1-M*	2m/5m/10m		For Robot type, please add"-UR" to the end of the model
5	Stop signal connector	■	■	■	■	■	■	■	■	MC1.5/2-STF-3.81	_____		Included in FieldBus Option 1
	Stop signal cable	■	■	■	■	■	■	■	■	C30-XA1-M2	2m		_____
6	Ethernet Crossover	■	■	■	■	■	■	■	■	C30-UL1-M3	3m		For direct connect
	Ethernet Straight	■	■	■	■	■	■	■	■	C30-UL2-M3	3m		For connect through HUB
7	Standard I/O connector	■	■	■	■	■	■	■	■	10126-3000PE	_____		Included in controller
	Standard I/O cable	■	■	■	■	■	■	■	■	C30-SU1-M3	3m		_____
	Extension Standard I/O cable	■	■	■	■	■	■	■	■	C30-SE1-M2	2m		_____
8	Axis communication cable	■	■	■	■	■	■	■	■	C15-A3-M03	0.3m		_____
	Axis communication connector	■	■	■	■	■	■	■	■	C30-AL2	_____		_____

*MFT,CFT tools are only compatible to CE.Please change to the control power cable to CE compatible model. *You need to change the Control power cable model to "-UC" but you don't need to change any other cables.
*1 Please use one extension and the total cable length of 15m or less for MFT, 25m or less for CFT・NET. *Cable length except standard is available as option.

Applications

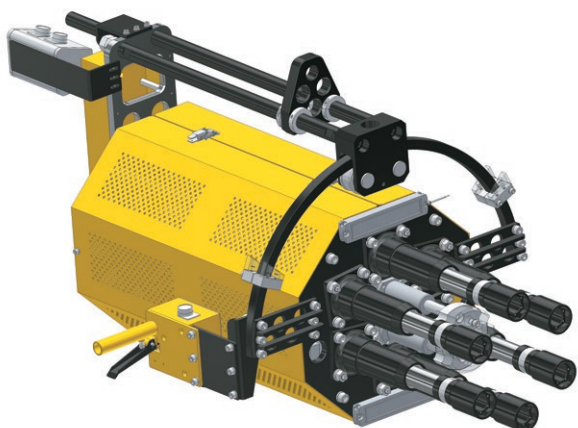
Sliding arm for manual production



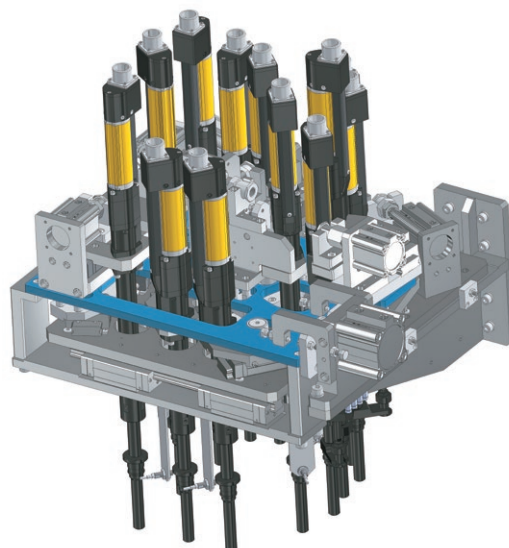
Multi-spindle manually-operated hanging head



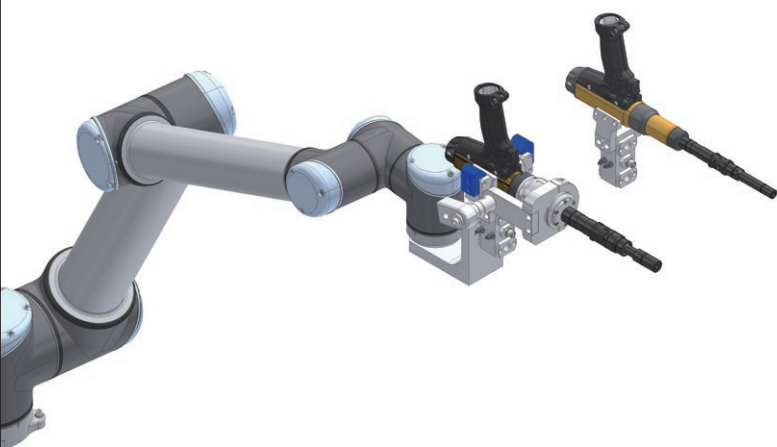
Tire fastening systems



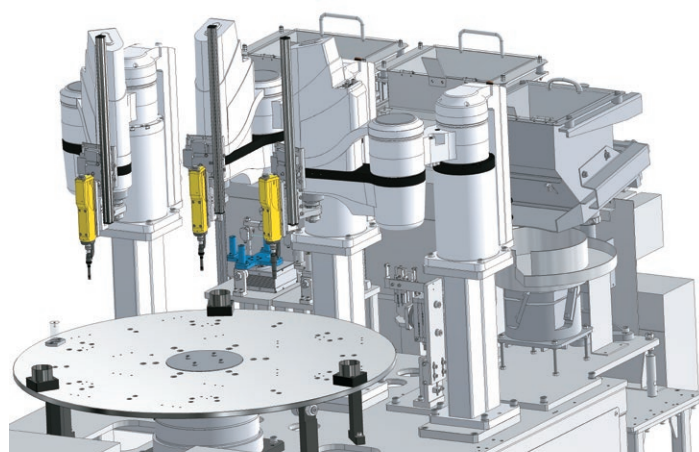
Open type, machine mount - variable pitch systems



Robotic systems (with tool change function)



Dial table type Micro-nutrunner systems

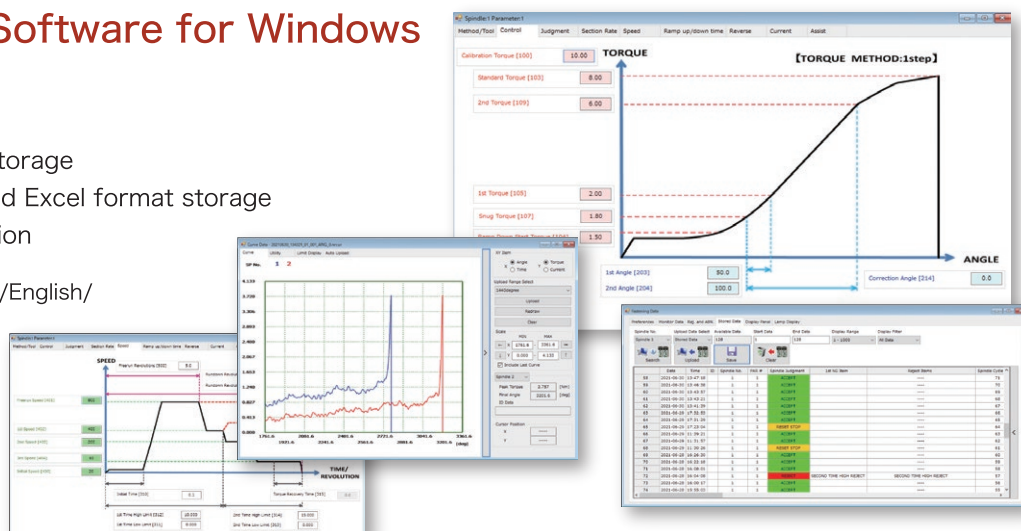


User Console Software

Setup / Monitor Software for Windows (MFC-UC-N)

- ☐ Simple graphic settings
- ☐ Result data Collection & Storage
- ☐ Fastening curve display and Excel format storage
- ☐ Fastening Sequence function

*Supported language: Japanese/English/
Chinese/Korean/Indonesian

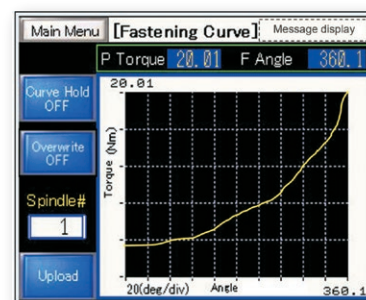


Touch Panel Features

5.7-inch touch panel for AFC3000 (GP-4301 TM)

- ☐ Waveform and result data display available
- ☐ Parameters can be displayed and edited
- ☐ Judgment lamp display
- ☐ Equipped with support functions for equipment adjustment (Axis BYPASS, CAL)

Set
Parameters
without PC

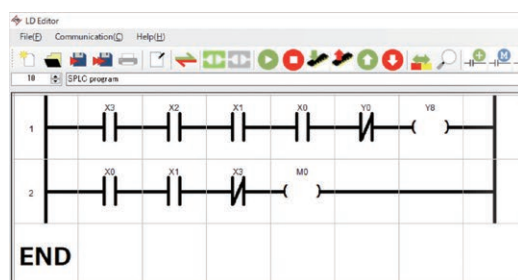


Software PLC

Built-in PLC Function No control panels result in cost savings.

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

*Dedicated software required.



F Server

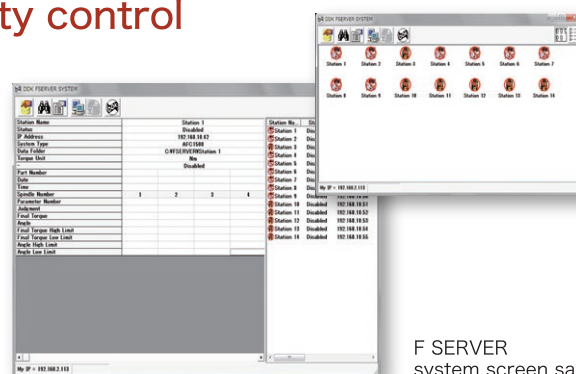
AFC3000 can improve reliability of quality control by interfacing to customers database.

Specifications

- ☐ Up to 32 stations can be connected.
- ☐ 100Mbps Ethernet Connection.
- ☐ Works with HFC Systems.

Data Saving

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



F SERVER
system screen sample

Features

EVOLUTIONARY HAND HELD ELECTRIC NUTRUNNER

High Performance and Flexible Hand Held NUTRUNNER

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

**FASTENING****CONTROLLER****TOOL****QUALITY
MANAGEMENT**

- 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.)
- The "Patented Anti Cross Thread Function" is achieved by detecting the level of bolt engagement. (Option) (Patent No. 6412041)
- 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.
- Built-in PLC Function : Directly control external I/O.
- 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.
- Transducer : All tools include torque transducer for high accuracy fastening
- 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)

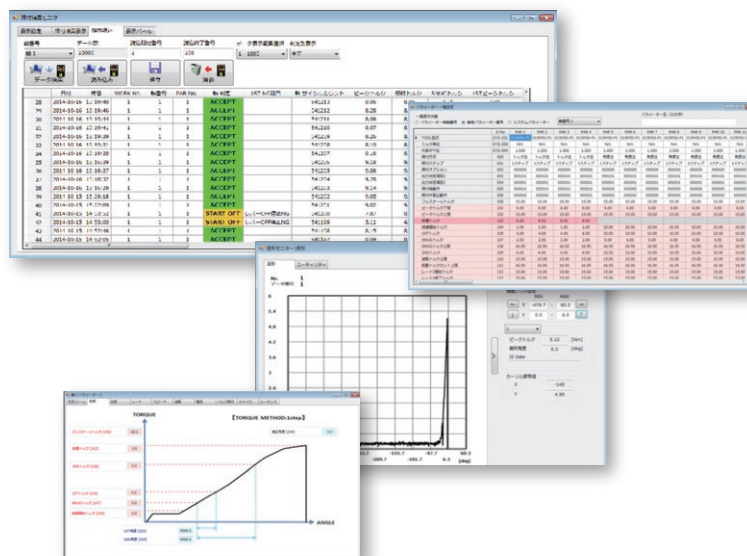
User Console Software

Setup / Monitor Software for Windows (HFC-UC-N)

- ☐ 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.

*Supported language:

Japanese/English/Chinese/Korean/Indonesian

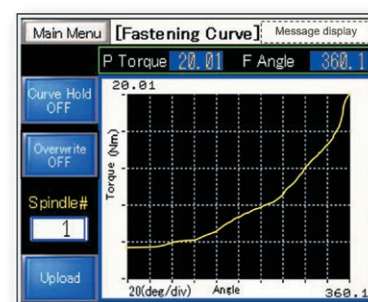


Touch Panel Features

5.7-inch touch panel for HFC3000II (GP-4301TM)

- ☐ Waveform and result data display available
- ☐ Parameters can be displayed and edited
- ☐ Judgment lamp display
- ☐ Equipped with support functions for equipment adjustment (Axis BYPASS, CAL)

Set
Parameters
without PC

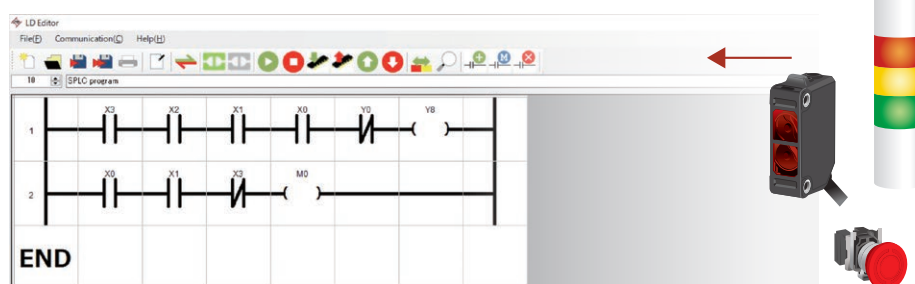


Software PLC

Built-in PLC Function No control panels result in cost savings.

Direct control of lamps, switches, conveyors is possible.
(Input:16 Output:12)

*Dedicated software required.



F Server

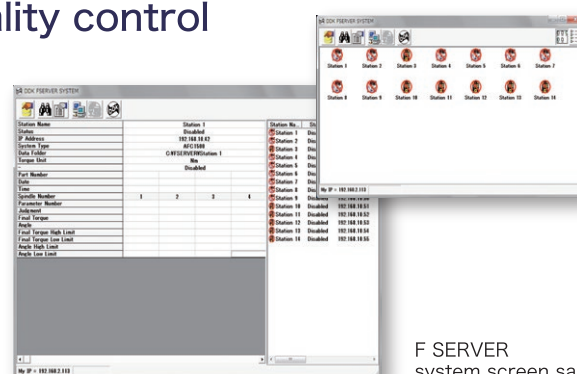
HFC3000II can improve reliability of quality control by interfacing to customers database.

Specifications

- ☐ Up to 32 stations can be connected.
- ☐ 100Mbps Ethernet Connection.
- ☐ Works with AFC Systems.

Data Saving

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



F SERVER
system screen sample

Handheld Nutrunner Tools

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



For limited space
applications.

Pistol Grip Tool

Tool type	Max. Torque [N·m]	Torque Range [N·m]	Max. Speed [rpm]	Length [mm]	Weight [kg]	Output Drive Size [mm]
HFT-015M50-P1	15	3.8~15	1,190	218	1.1	9.5 (3/8)
HFT-030M120-P1	30	7.5~30	1,540	260	1.8	9.5 (3/8)
HFT-035M80-P1	35	8.8~35	778	242	1.37	9.5 (3/8)
HFT-035M80-P1-X (Top Cable Connection)	35	8.8~35	778	242	1.37	9.5 (3/8)
HFT-050M120-P1	50	12.5~50	869	260	1.8	9.5 (3/8)
HFT-060M80-P1-X	60	15~60	461	275	2.5	12.7 (1/2)
HFT-080M120-P1	80	20~80	570	266	1.9	12.7 (1/2)
HFT-200M120-P1	200	50~200	216	317	3.3	19.0 (3/4)

Angle Tool

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

*CE compliant models are indicated by "CE" at the end. (e.g., HFT-040M80-A1-20-CE)

*Pistol tools and straight tools with "Anti Cross Thread Function" are indicated by "GA" at the end. (e.g., HFT-030M120-P1-GA)

*Please contact us for more details on angle tools.



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



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.

Straight Tool

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

Straight Tool (Push to Start)

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

Sample
Application



Controller

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.



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.

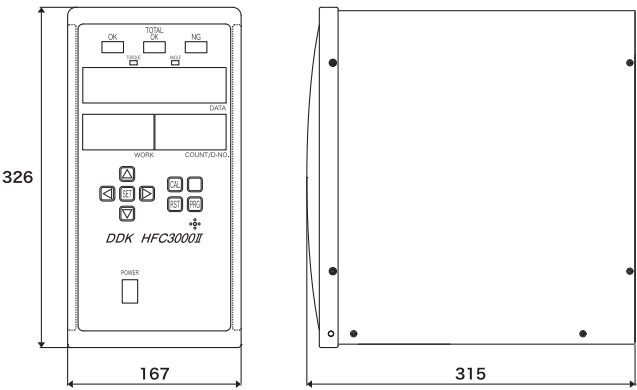
RST

Button for resetting controller.

POWER

Main power switch

Controller type	HFC-B024A
Drivable Motor type	M50 M80 M120
Input Power Voltage	Single phase 100 to 240VAC ±10%
Input Power Frequency	Both 50 / 60 Hz
Rated Power Consumption	120W
Peak Current	19A



Tool Cable

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

Highly durable cable is used for all models



*Maximum cable length is 15m.

BOTTOM VIEW

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 MON.

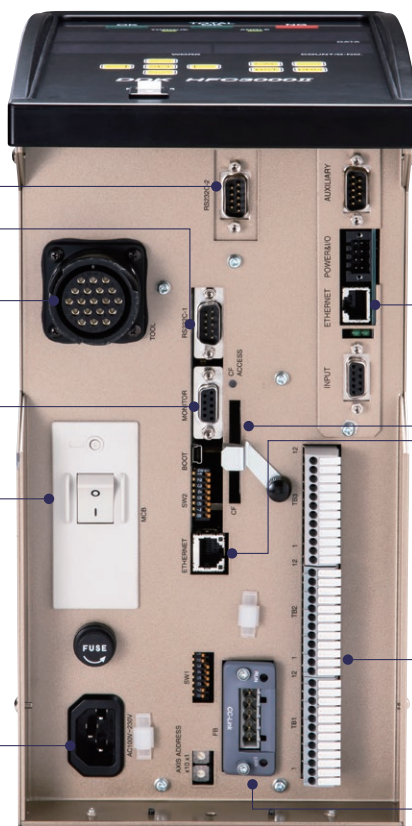
Monitor output for Torque, Angle pulse,
Current, speed.

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.



DATA REPORT ETHERNET

Optional Ethernet port for reporting data
in special protocols.
(F-SERVER, QDAS, TOOLSNET, 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 - EA - CE

Series Name Servo Size

Option 1 : Fieldbus

CC	CC-Link V1/V2
DN	DeviceNet
PB	PROFIBUS-DP V1
PI	PROFINET I/O
EI	EtherNet IP
EC	EtherCAT
CI	CC-Link IE Field
FB	Base plate only
N	Without Fieldbus

Option 2 : Terminal

IO	With Terminal
N	Without Terminal

Option 3 : CF card slot Extension RS232C-S input port

CF	With CF card slot
N	Without CF card slot

Option 4 : Optional Ethernet for special data protocols

EA	With F-SERVER Ethernet port
EB	With Open Protocol Ethernet port
EC	With ToolsNet Ethernet port
N	Without data report Ethernet port

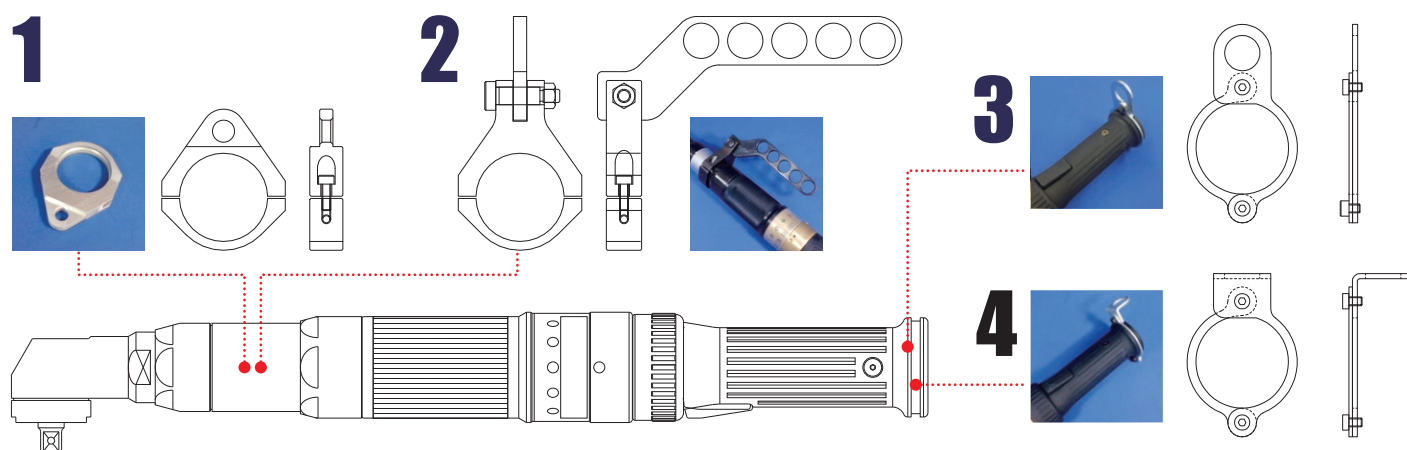
Option 5 : CE compliant

CE	Yes
N	No

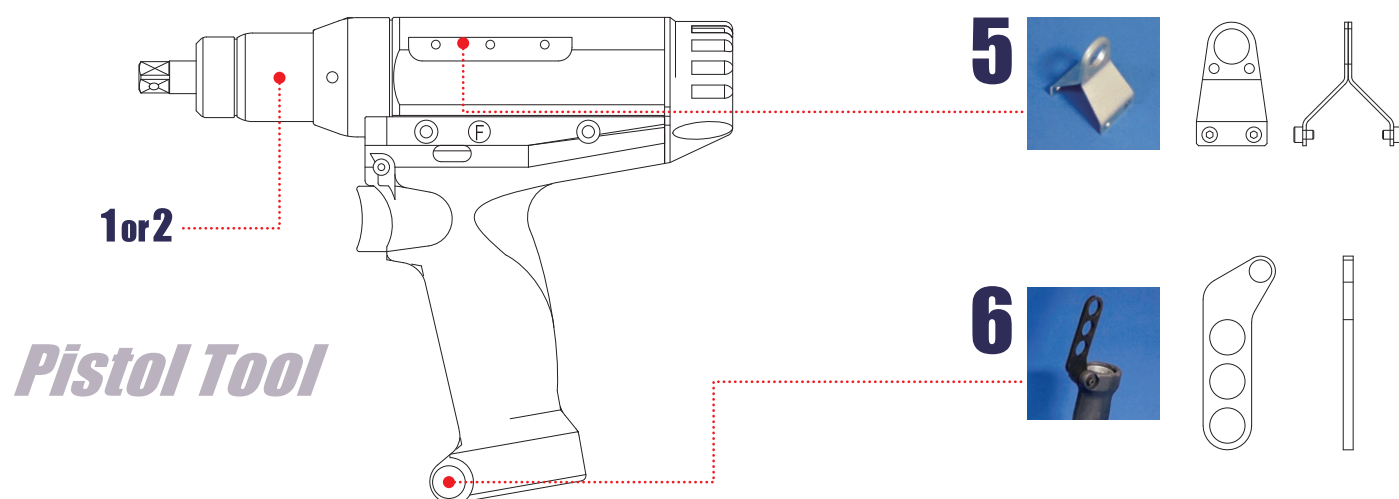


*HFC3000II compliant to CE. Necessary to select with CE compliant.

Accessories/Applications



Angle Tool



Pistol 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	

Accessories/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



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



60Nm Pistol Type

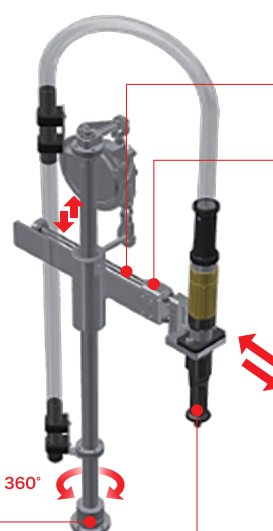
Specifications and designs of the products are subject to change without notice due to improvements.

Accessories/Arm

Swivel Arm



Sliding Arm



Space-saving arm

The arm is compactly held in home position.

Home position holder

Space-saving installation

360°

Selectable grips



Rotary grip switch



Fixed grip switch



Push to start type Fixed grip

Features

Flexibility

Multi Press Control

Parameter settings : Max 128

Sequence settings : Max 64

*Expansion unit is required.

Data Manageability

CF Card

Store press operation result, curve and program.

Ethernet

High-speed data communication

Accuracy

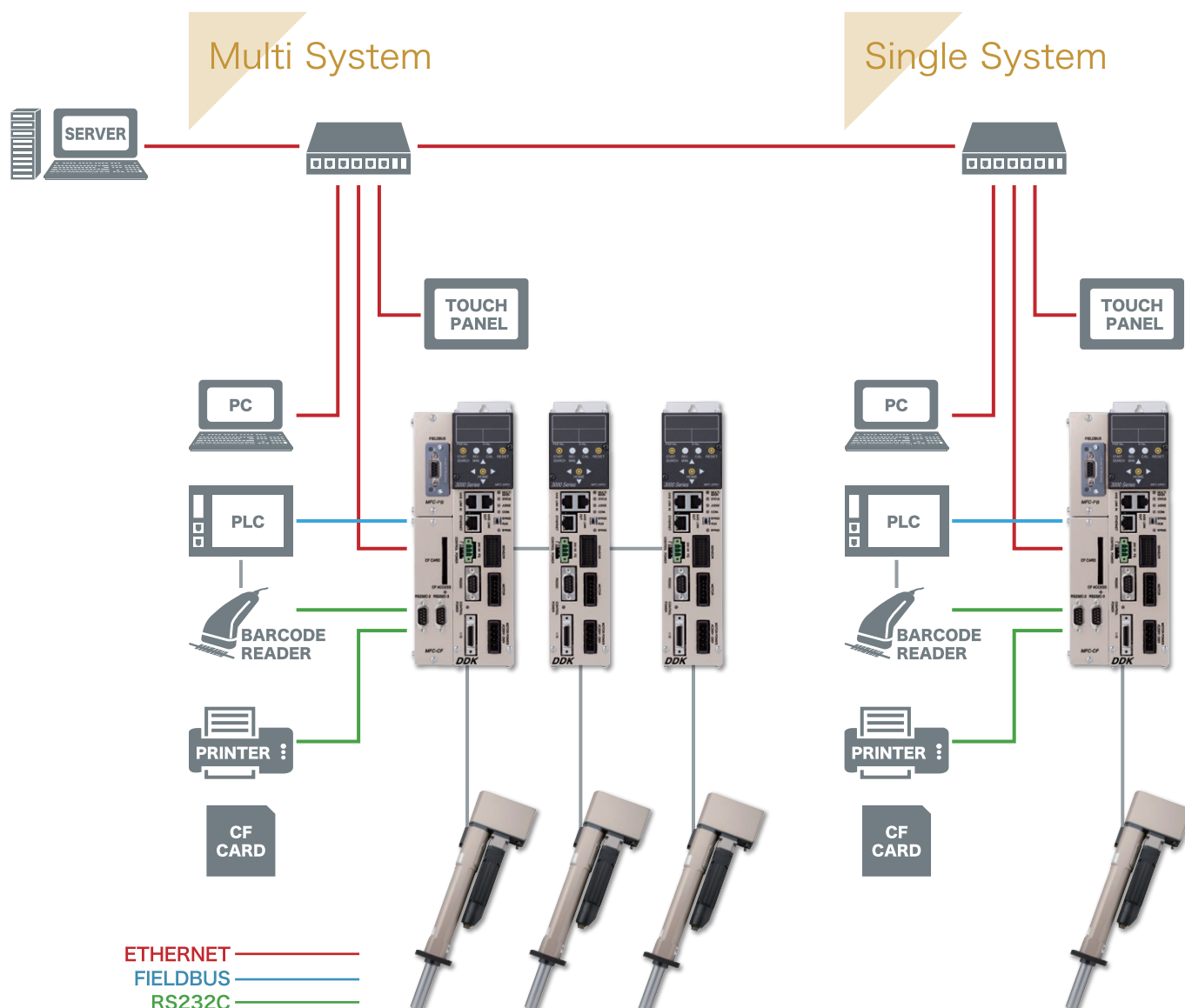
Distance display

1/1000 digit

Ultra slow press control

0.01 mm/s

System Configuration (Conceptual diagram)



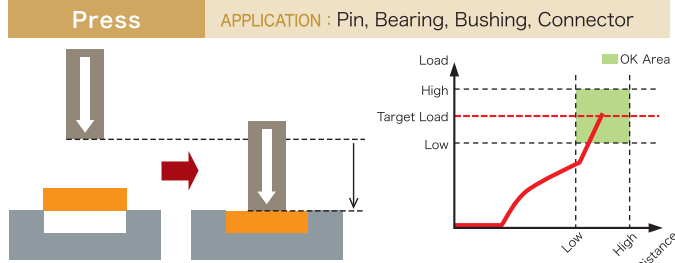
*"Multi Unit" not required in Multi system.

Application

AVAILABLE PRESS METHODS FOR VARIOUS APPLICATIONS

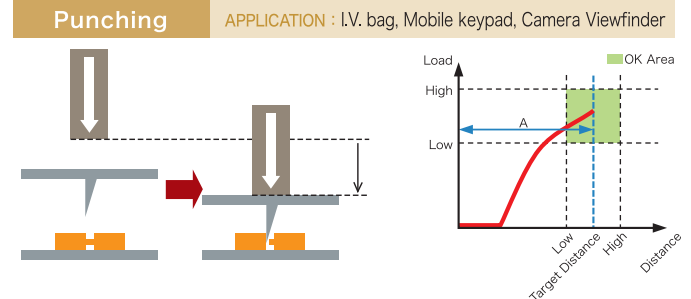
Load Method

Run to the target load, judge upper & lower limit of the load & distance.



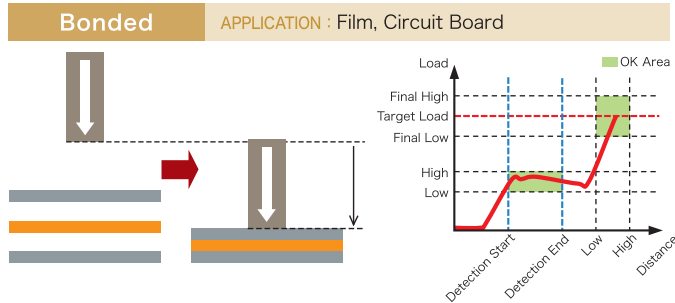
Distance Method

Run to the target distance, judge upper & lower limit of the load & distance.



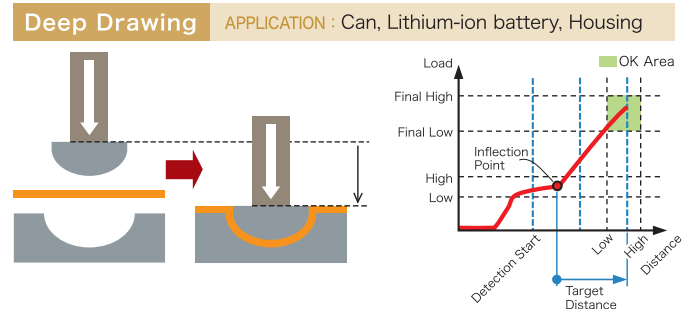
Specified Point Load Detection

Press to target load and judge the higher / lower load and distance. Judge the load at a specified distance simultaneously.



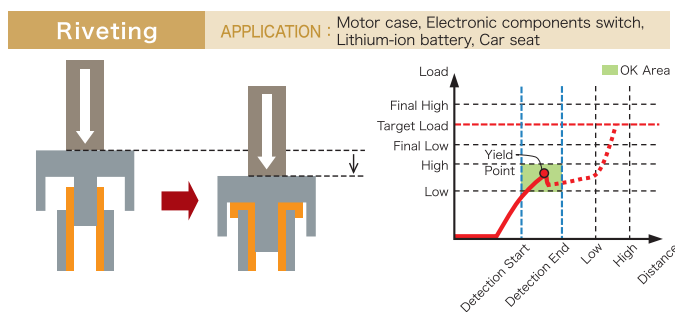
Distance Control with Load Rise Detection

Calculate load rise point within the specified distance area then press to a distance relative to this point and judge the higher / lower load and distance.



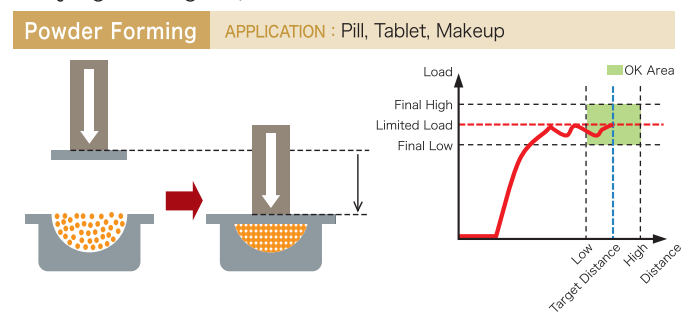
Load Drop Detection

Press to the target load, but servo press stops when it detects the load drop point on pressing and judge higher / lower load and distance.



Constant Load Distance Method

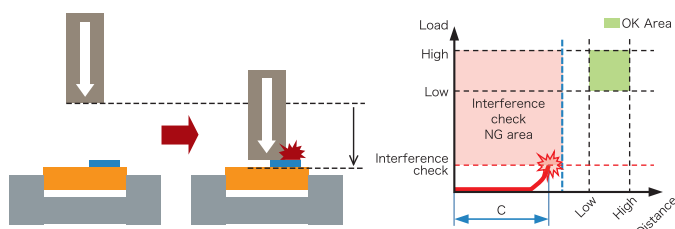
Press to the target load without exceeding a load limit and judge the higher / lower load and distance.



Check Function

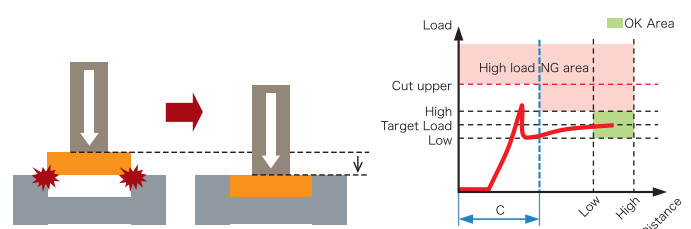
Interference Check

The servo press detects an interference check load, and stops pressing at this point, before part damage occurs.



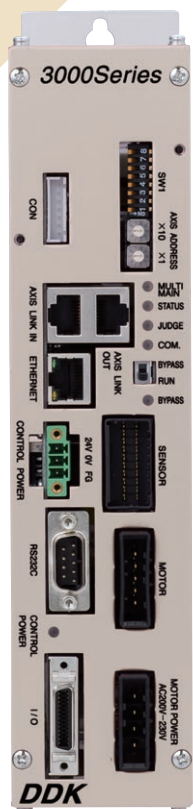
Starting Load Detection

If the starting load is higher than the target load, the press can be set to ignore / detect this initial spike within a set range.



Controller and Expansion Unit

BASE UNIT



OPTIONAL UNIT



Display

User Friendly Display

- Displays full content with 6 digit / 2 row LED
- Easily operated cursor keys

Option1

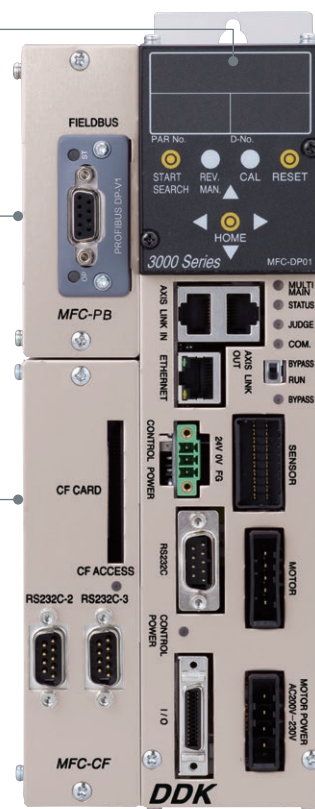
Fieldbus I/O Interfaces

- Various interfaces for direct PLC I/O & data connections

Option2

Expansion COM Ports and memory

- Compact Flash (CF) for result data
- Expansion RS232C Input / Output ports



Unit Model	MFC-S024S	MFC-S060S	MFC-S120S
Momentary Max. Peak Current	17.0Arms	42.4Arms	84.8Arms
Transformer Capacity	0.3KVA×spindles	0.8KVA×spindles	4.0KVA×spindles
Input power	3-phase AC200~230V±10% 50/60H		
Control Power	DC24V±10% 0.5A		DC24V±10% 1A
Operating Environment	temperature 0°C~+50°C humidity -below 90%RH		
RS232C communication	38400bps (default)/19200bps/9600bps, 1 port		
External analog monitor output	Load analog voltage, Distance pulse, CW/CCW pulse etc.		
Axis Link Communication	Spindle Link Communication Port (connect Max. 32 spindles)		
Ethernet	PC communication port in conformity with IEEE802.3(100BASE-T)		
Standard I/O Connector	Input : 12	Output : 12	
Fastening Result Data memory	12000 Cycles max	500 last REJECT cycles	
TQ Curve Memory	Last 100 Curves	Last 100 Reject Curves	

Adjustment and maintenance of the Servo Press at start-up

Operational Display
Model: 17P-19011



Controller	Tool Model Supported	Power Consumption (Max Rating)	display	option1	option2
MFC-S024S MFCT2-S024S	DPM-***H1-*	80W	MFC-DP01	Fieldbus Industrial Ethernet	CF CFEA
MFC-S060S MFCT2-S060S	DPS-***R3-*	200W			
	DPR-***R3-*	200W			
	DPL-***R3-*	200W			
MFC-S120S MFCT2-S120S	DPS-***R4J-*	1.5kW			
	DPR-***R5-*	3.0kW			
	DPL-***R4J-*	1.5kW			
	DPL-***R5-*	3.0kW			

Optional model	Description	Unit Type
MFC-DT-S	Expansion I/O (Input:32ch / Output:32ch)	Option1
MFC-CC-S	CC-Link V2	
MFC-DN-S	DeviceNet	
MFC-PB-S	PROFIBUS DP-V1	
MFC-EN-S	EtherNet/IP	
MFC-PN-S	PROFINET IO	
MFC-EC-S	EtherCAT	
MFC-CI-S	CC-Link IE Field	
MFC-CF-S	Compact Flash card, Expansion RS232C(2ports)	Option2
MFC-CFEA-S	With F-SERVER Ethernet port Expansion RS232C (1port)	



Press Tools



DPS SLIM LINE PRESS

Standard Type (F-Type: Fitting)

Model	Max Rated Load [kN(ton)]	Max Continuous Load [kN(ton)]	Maximum Speed [mm/s]	Standard Stroke [mm]	Weight [Kg]	Total Length [mm]	Applicable Controller	Manufacturable Stroke [mm]
DPS-051R3-20FB	5 (0.51)	1.8 (0.18)	333	200	16.4	575	MFC-S060S	300/400/500
DPS-101R3-20FB	10 (1.02)	2.7 (0.28)	222	200	16.4	575	MFC-S060S	300/400/500
DPS-301R4J-20FB-CE	30 (3.06)	10.8 (1.1)	250	200	36.5	660	MFC-S120S	300/400/500/600
DPS-501R4J-20FB-CE	50 (5.1)	13.5 (1.38)	200	200	62	760	MFC-S120S	300/400/500/600
DPS-501R5-20FB	50 (5.1)	21.5 (2.19)	200	200	74	760	MFC-S120S	300/400/500/600
DPS-801R4J-20FB-CE	80 (8.16)	18 (1.84)	150	200	98	855	MFC-S120S	300/400/500/600
DPS-102R5-20FB	100 (10.2)	32 (3.26)	133	200	110	855	MFC-S120S	300/400/500/600
DPS-202Y5-20FB	200 (20.39)	73 (7.44)	120	200	218	1030	MFC-GSC *1	300/400/500/600

High Power Type (P-Type: Bonding)

Model	Max Rated Load [kN(ton)]	Max Continuous Load [kN(ton)]	Maximum Speed [mm/s]	Standard Stroke [mm]	Weight [Kg]	Total Length [mm]	Applicable Controller	Manufacturable Stroke [mm]
DPS-051R3-20PB	5 (0.51)	5 (0.51)	88	200	17	575	MFC-S060S	300/400/500
DPS-101R4J-20PB-CE	10 (1.02)	10 (1.02)	200	200	21	575	MFC-S120S	300/400/500
DPS-301R4J-20PB-CE	30 (3.06)	30 (3.06)	66	200	38	660	MFC-S120S	300/400/500/600
DPS-501R5-20PB	50 (5.1)	50 (5.1)	53	200	79	760	MFC-S120S	300/400/500/600
DPS-801R5-20PB	80 (8.16)	80 (8.16)	40	200	116	855	MFC-S120S	300/400/500/600
DPS-102R5-20PB	100 (10.2)	100 (10.2)	32	200	116	855	MFC-S120S	300/400/500/600
DPS-202Y5-20PB	200 (20.39)	200 (20.39)	40	200	222	1030	MFC-GSC *1	300/400/500/600

*1 Please contact us.



DPM MINI PRESS

Model	Max Rated Load [kN(ton)]	Max Continuous Load [kN(ton)]	Maximum Speed [mm/s]	Standard Stroke [mm]	Weight [Kg]	Total Length [mm]	Applicable Controller
DPM-011H1-10F	1 (0.1)	0.49 (0.05)	130	100	4.0	270	MFC-S024S



DPL LOW PROFILE PRESS *1

Model	Max Rated Load [kN(ton)]	Max Continuous Load [kN(ton)]	Maximum Speed [mm/s]	Standard Stroke [mm]	Weight [Kg]	Total Length [mm]	Applicable Controller	Manufacturable Stroke [mm]
DPL-101R3-20FB	10 (1.02)	2.6 (0.27)	222	200	19	411	MFC-S060S	300
DPL-301R4J-20FB-CE	30 (3.06)	10.8 (1.1)	250	200	35	479	MFC-S120S	300
DPL-501R4J-20FB-CE	50 (5.1)	13.5 (1.38)	200	200	49	527	MFC-S120S	300
DPL-102R5-20FB-CE	100 (10.2)	32 (3.26)	133	200	96	603	MFC-S120S	300

*1 DPL tool require the detent mechanism



DPR STRAIGHT PRESS

Model	Max Rated Load [kN(ton)]	Max Continuous Load [kN(ton)]	Maximum Speed [mm/s]	Standard Stroke [mm]	Weight [Kg]	Total Length [mm]	Applicable Controller
DPR-101R3-30FB	10 (1.02)	2.5 (0.25)	238	300	31	1005	MFC-S060S
DPR-301R4J-30FB-CE	30 (3.06)	8.3 (0.84)	250	300	52	1045.5	MFC-S120S
DPR-501R4J-30FB-CE	50 (5.1)	10.4 (1.06)	200	300	104	1148	MFC-S120S

Model information

DPS - 301 - R4J - 20

FB - CE - P

Motor type										- NPN P PNP			
Series name		Max load		Stroke*1				Tool type		CE option			
DPS Slim Type		011	1kN	501	50kN	10	100mm	40	400mm	FB	Standard Type	CE	Compatible
DPM Mini Type		051	5kN	801	80kN	20	200mm	50	500mm	PB	High Power Type	-	Non-compatible
DPL Low Profile Type		101	10kN	102	100kN	30	300mm	60	600mm				
DPR Straight Type		301	30kN	202	200kN								

Limit sensor polarity

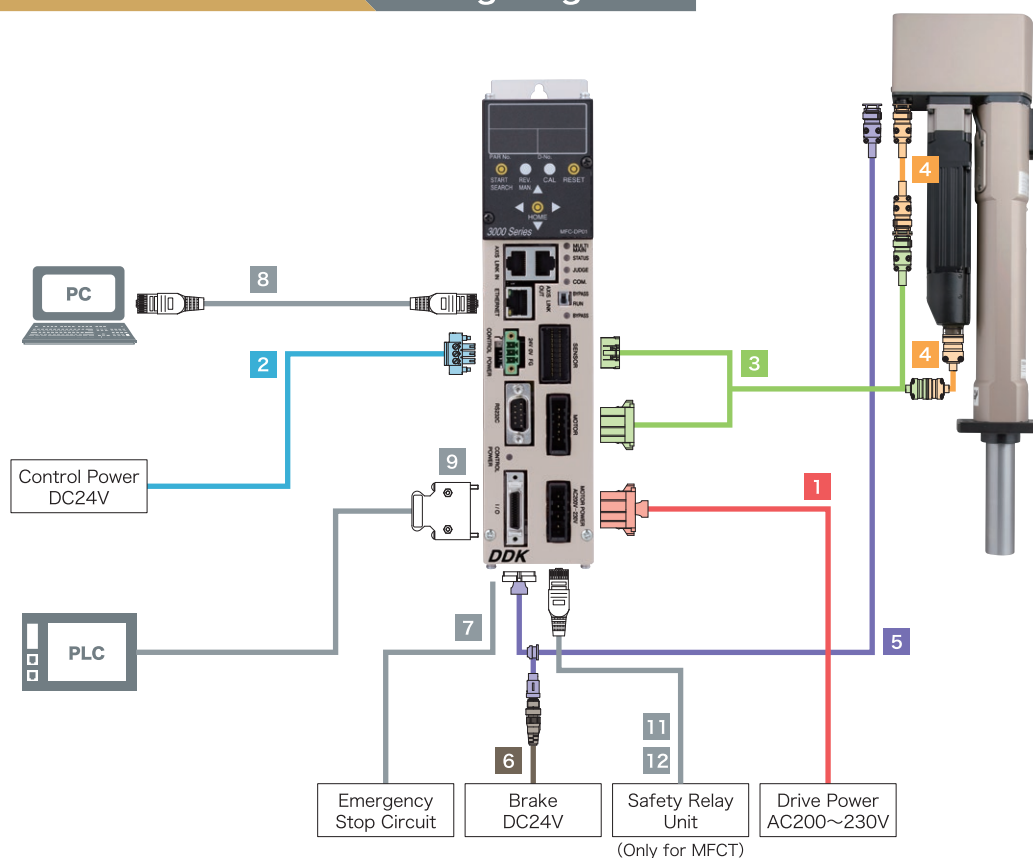
- NPN

P PNP

*1 Some strokes cannot be manufactured depending on the series. Some strokes are made to order. Please contact us for details.

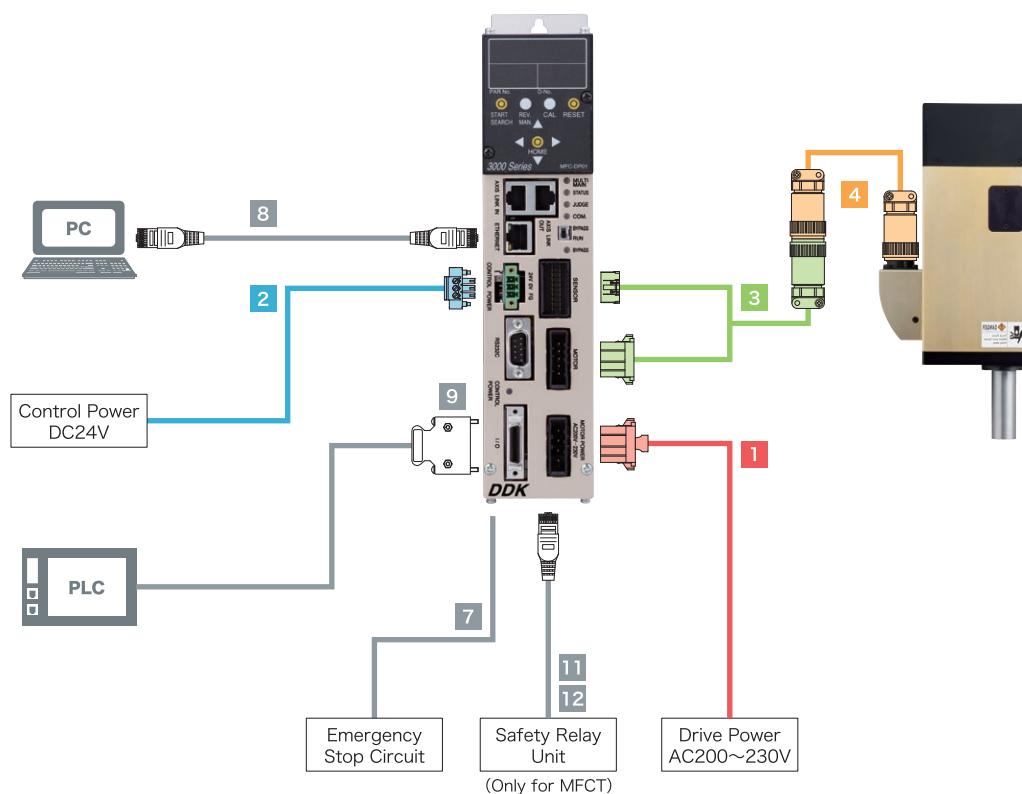
DPS PRESS

Wiring Diagram



MINI PRESS

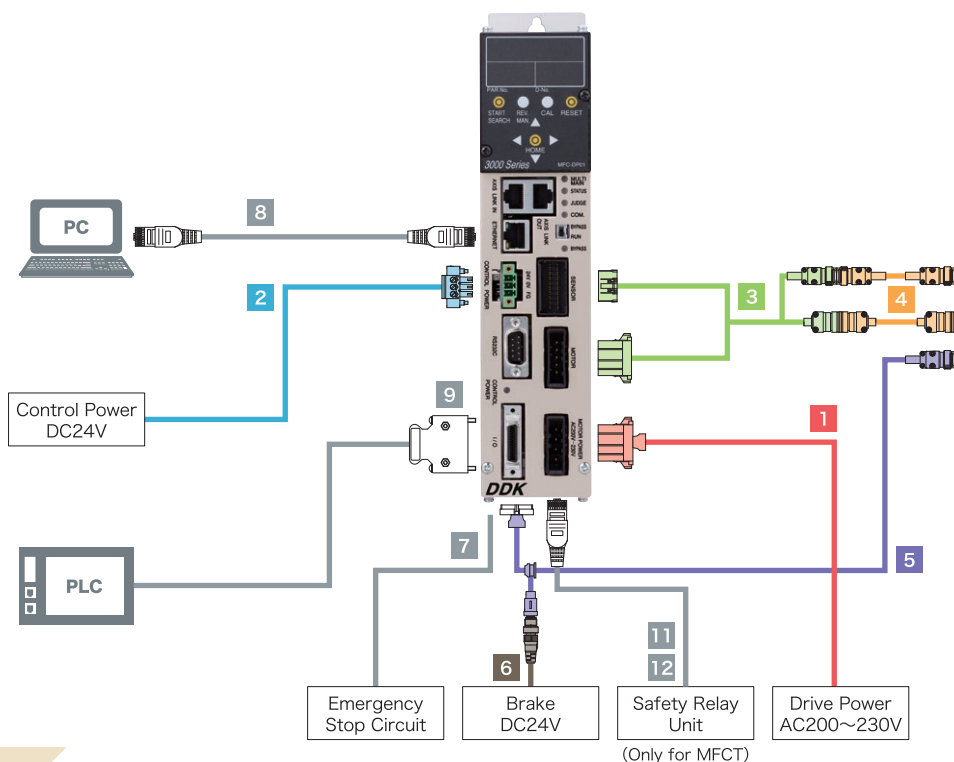
Wiring Diagram



*This diagram is for reference, Details refer to manual.

DPL PRESS/DPR PRESS

Wiring Diagram



Cable Applicable Table

No.	Cable Name	DPM-H1*	DPS-R3*	DPS-L4L*	DPS-R5*	DPR-R3*	DPR-L4L*	DPL-R4L*	DPL-R5*	Model	Standard length	Remarks
1	Drive Power Cable for MFC(T)-S024S / S060S	■	■			■				C15-D1-M*	2m	Included in controller
	Drive Power Cable for MFC(T)-S120S			■	■		■	■	■	C15-D2-M*	2m	Included in controller
2	Control Power Cable	■	■	■	■	■	■	■	■	C30-DC1-M*	2m	
	Control Power Connector	■	■	■	■	■	■	■	■	MC1.5/3-STF-3.81		Included in controller
3	Tool Cable for RM3		■			■				C30-FM1-M*	5m/10m/15m	For Robot type, please add "R" to the end of the model
	Tool Cable for RM4J			■		■	■			C30-FW4-M*	5m/10m/15m	For Robot type, please add "R" to the end of the model
	Preamplifier & Resolver Cable for RM5				■			■		C30-PR5-M*	5m/10m/15m	
	Motor Cable for RM5				■			■		C15-M1-M*	5m/10m/15m	For Robot type, please add "UR" to the end of the model
	Tool Cable for H1	■								C30-FH1-M*	5m/10m/15m	
4	Extension tool cable for RM3		■			■				C15-EF1-M*	2m/5m/10m	C15-EF2-M*-UR for robot type. For Robot type, please add "UR" to the end of the model
	Extension tool cable for RM4J			■		■	■			C15-EF2-M*	2m/5m/10m	For Robot type, please add "UR" to the end of the model
	Extension resolver cable for RM5				■			■		C15-ER1-M*	2m/5m/10m	For Robot type, please add "UR" to the end of the model
1	Extension preamplifier cable for RM5				■			■		C15-EP1-M	2m/5m/10m	For Robot type, please add "UR" to the end of the model
	Extension motor cable for RM5				■			■		C15-EM1-M*	2m	For Robot type, please add "UR" to the end of the model
	Extension tool cable for RH1	■								C15-EF4-M*	2m/5m/10m	
5	Limit Sensor & Brake Cable		■	■	■	■	■	■	■	C30-L3-M*	5m/10m	
6	Brake Cable		■	■	■	■	■	■	■	C15-B3-M1-U	1m	
1	Extension Brake Cable		■	■	■	■	■	■	■	C15-EB3-M-U	5m/10m	
7	Stop Signal Connector	■	■	■	■	■	■	■	■	MC1.5/2-STF-3.81		Included in FieldBus Option 1
	Stop Signal Cable	■	■	■	■	■	■	■	■	C30-XA1-M*	2m	
8	ETHERNET Crossover(For PC, touch panel connection)	■	■	■	■	■	■	■	■	C30-UL1-M*	3m	For direct connect
	ETHERNET Straight(For PC, touch panel connection)	■	■	■	■	■	■	■	■	C30-UL2-M*	3m	For connect through HUB
9	Standard I/O Connector	■	■	■	■	■	■	■	■	10126-3000PE		Included in controller
	Standard I/O Cable	■	■	■	■	■	■	■	■	C30-SU1-M3	3m	
	Extension Standard I/O Cable	■	■	■	■	■	■	■	■	C30-SE1-M2	2m	
10	Axis Communication Cable	■	■	■	■	■	■	■	■	C15-A3-M*	0.3m/1m	
	Axis Communication Connector	■	■	■	■	■	■	■	■	C30-AL2		
11	Hard Wire Safety Cable	■	■	■	■	■	■	■	■	C30-HW1-M3	3m*2	For MFCT controller only
12	Bypass Jumper	■	■	■	■	■	■	■	■	JZSP-CVH05-E		For MFCT controller only

*1 Please use one extension and the total cable length of 20m or less

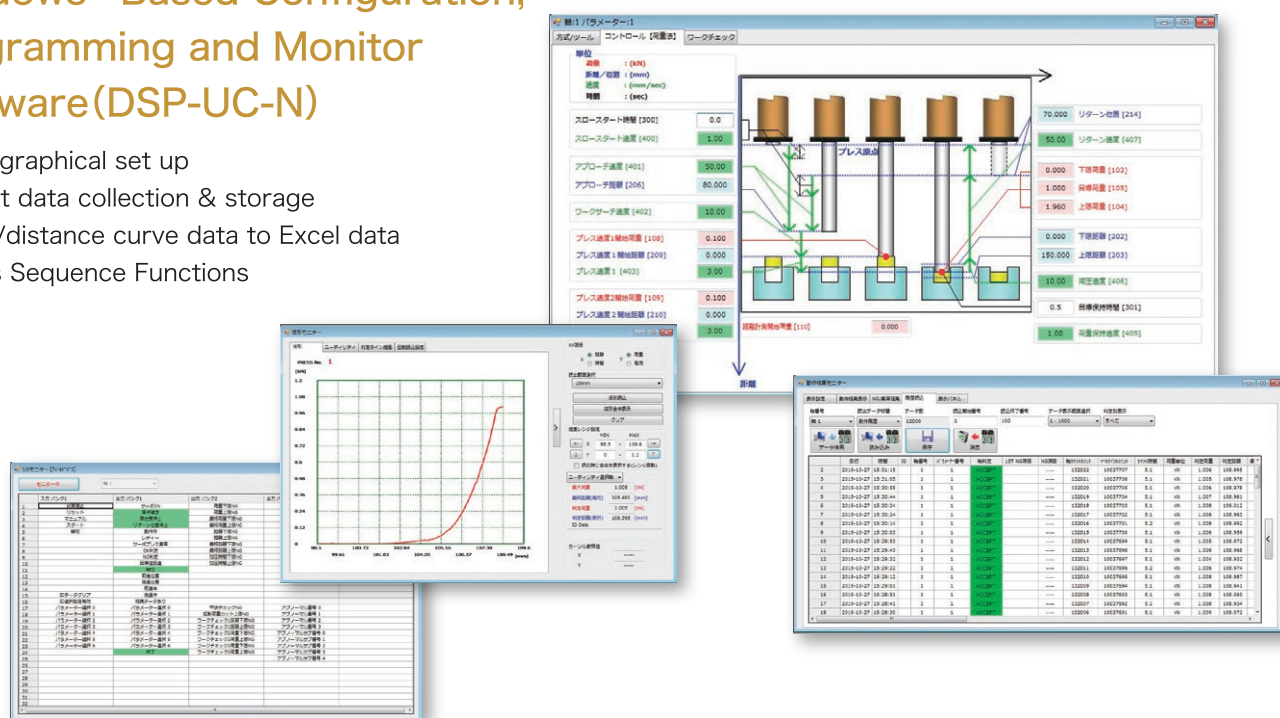
*2 Maximum length.

*Cable length except standard is available as option.

User Console Software

Windows® Based Configuration, Programming and Monitor Software (DSP-UC-N)

- ☐ Easy graphical set up
- ☐ Result data collection & storage
- ☐ Load/distance curve data to Excel data
- ☐ Press Sequence Functions

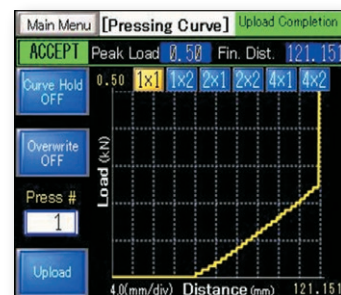


Touch Panel Features

5.7-inch touch panel for DSP3000 (GP-4301TM)

- ☐ Waveform and result data display available
- ☐ Parameters can be displayed and edited
- ☐ Judgment lamp display
- ☐ Equipped with support functions for equipment adjustment (Axis BYPASS, CAL)

Set
Parameters
without PC

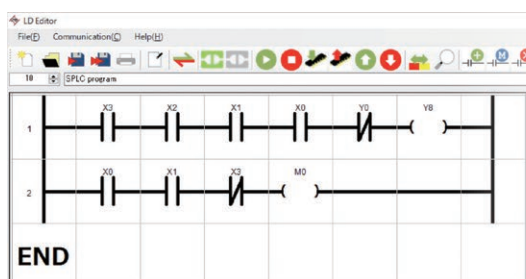


Software PLC

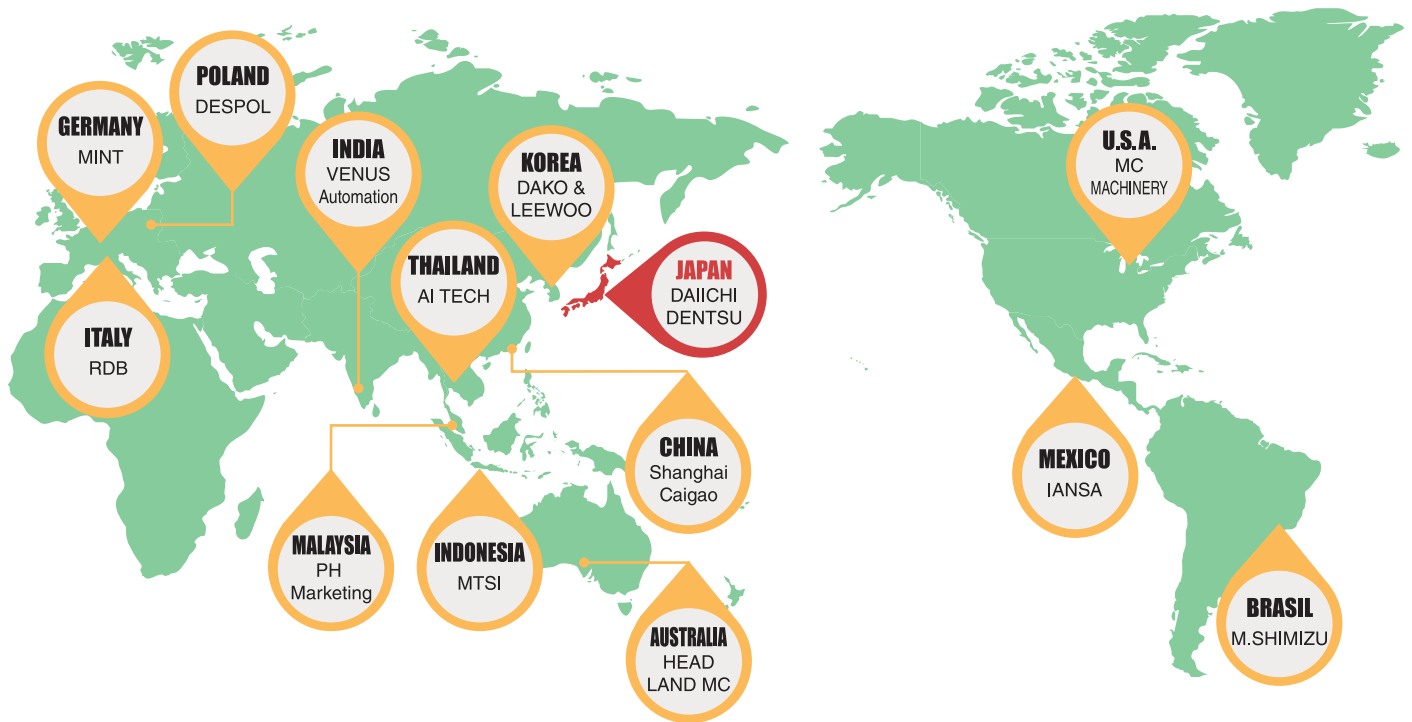
Built-in PLC Function No control panels result in cost savings.

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

*Dedicated software required.



DISTRIBUTION NETWORK



JQA-QMA13393



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