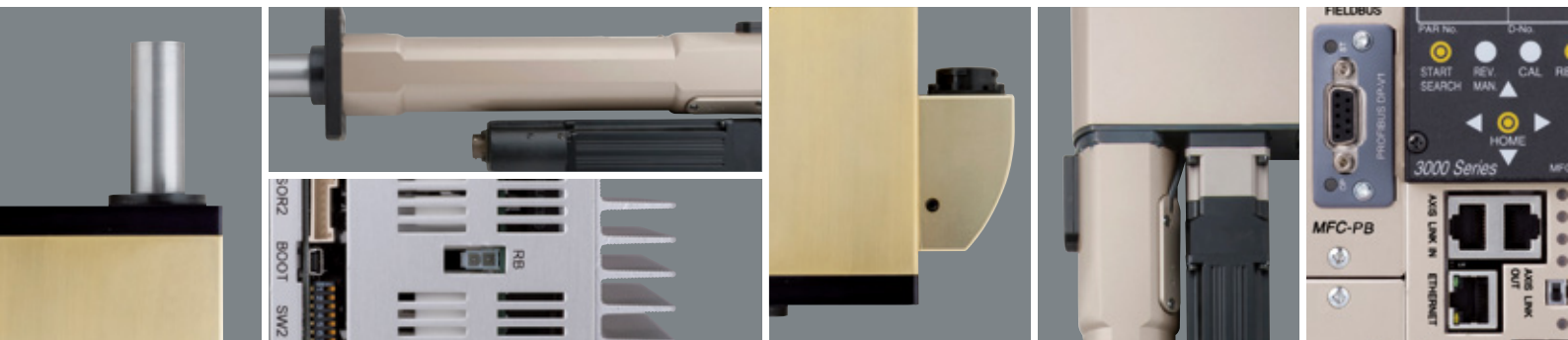




ELECTRICAL ASSEMBLY TOOLS
DAI-ICHI DENTSU LTD.

NUTRUNNER / HAND-HELD TOOL / SERVO PRESS



DDK FULL DIGITAL SERVO PRESS SERIES

DSP3000



Advanced Precision Technology

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

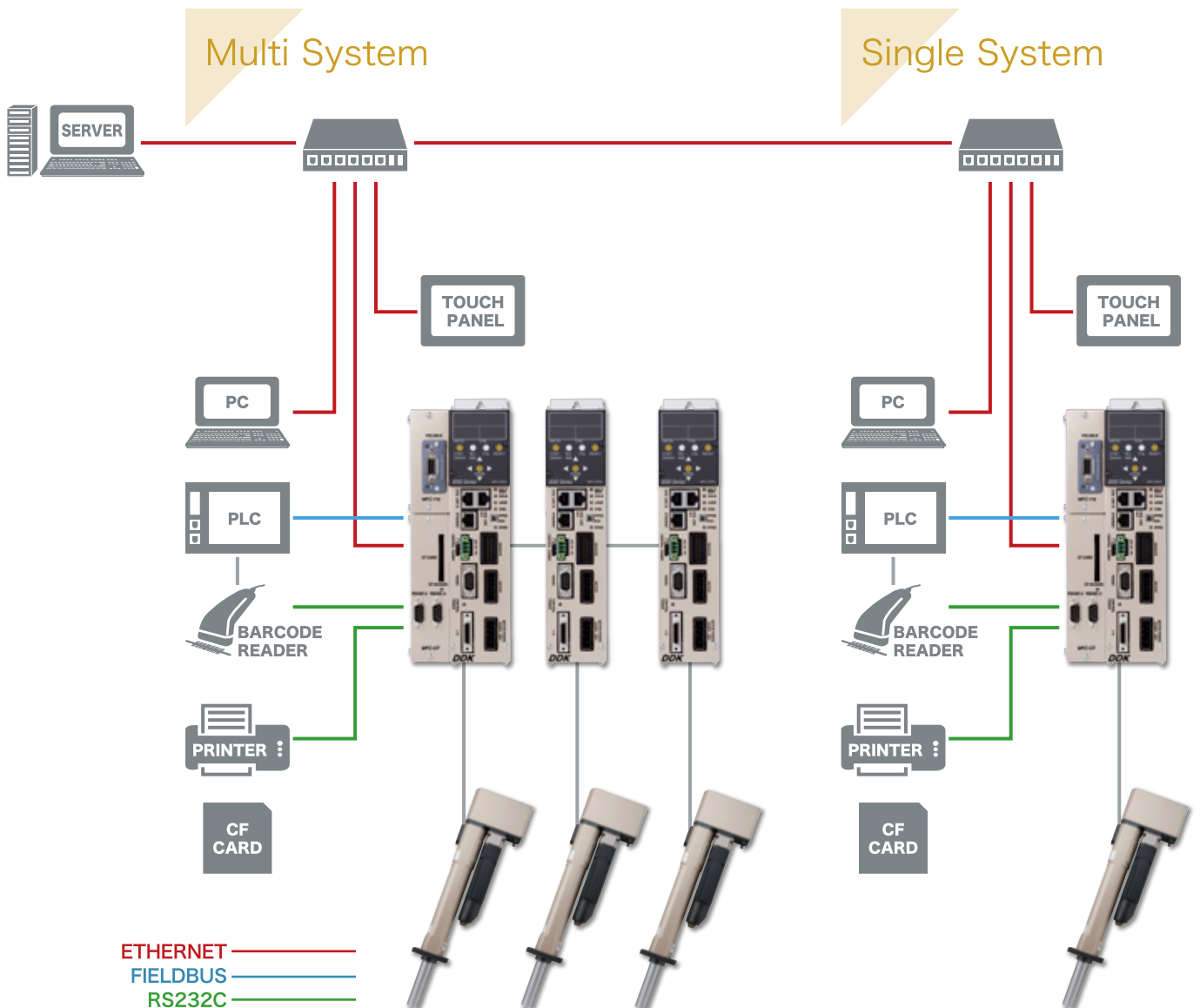
Distance display

1/1000 digit

Ultra slow press control

0.01 mm/s

SYSTEM CONFIGURATION (Conceptual diagram)



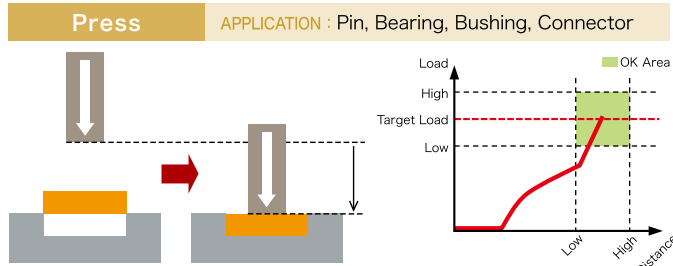
*"Multi Unit" not required in Multi system.

APPLICATION

AVAILABLE PRESS METHODS FOR VARIOUS APPLICATIONS

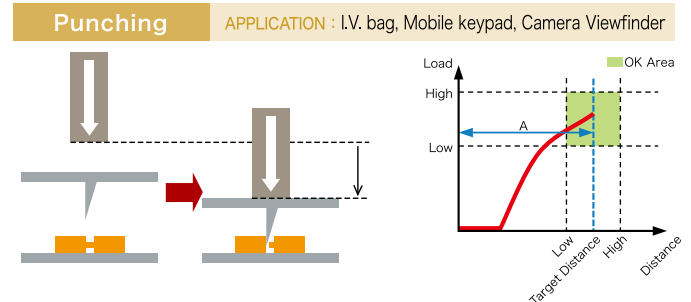
Load Method

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



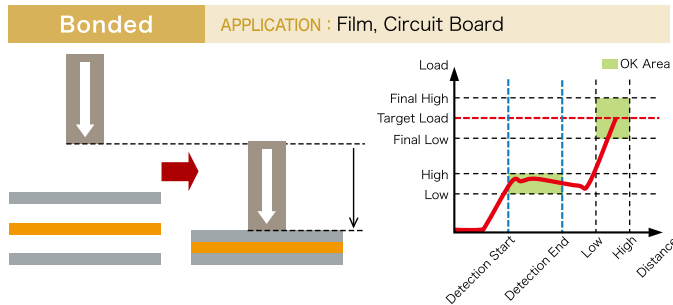
Distance Method

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



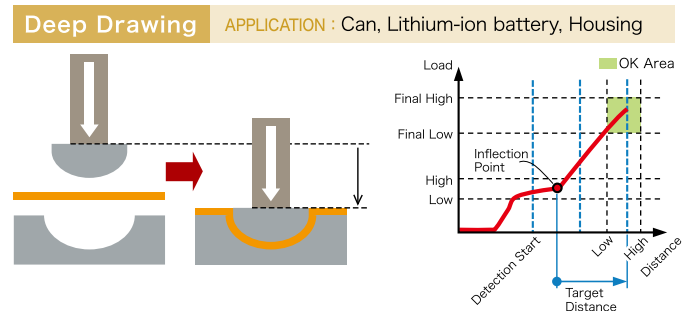
Specified Point Load Detection

Press by target load and judge the higher / lower load and distance. Judge the specified load simultaneously.



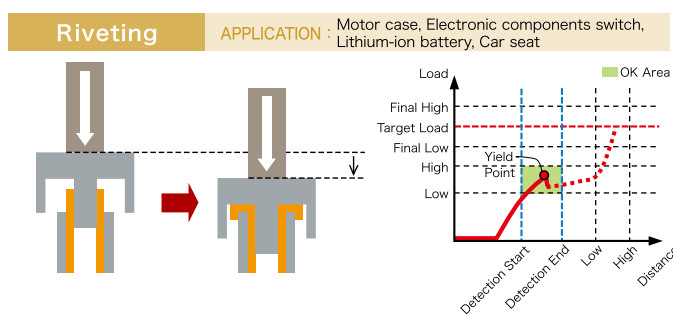
Load Rise Detection and Distance Method

Calculate load rise point within the specified distance area and judge the higher / lower load and distance from this point after pressing the target distance.



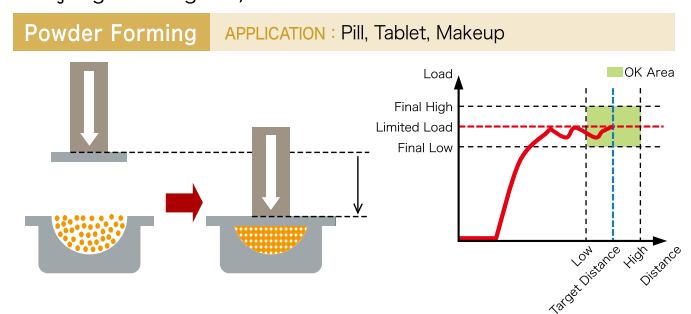
Load Drop Detection

Press by 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

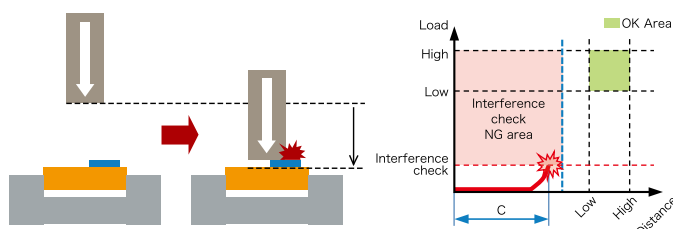
Press by the target load with load limit and judge the higher / lower load and distance.



CHECK FUNCTION

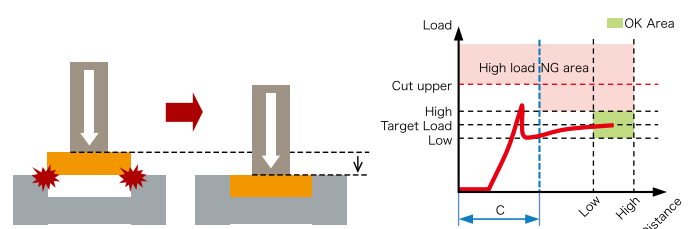
Interference Check

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



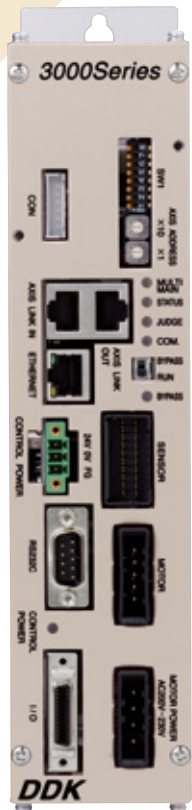
Starting Load Detection

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



CONTROLLER & EXPANSION UNIT

Controller



Optional Accessories



MFC-DP01

Improved operability

- 6 digits / 2 stage display
- Arrow keys with improved operability

MFC

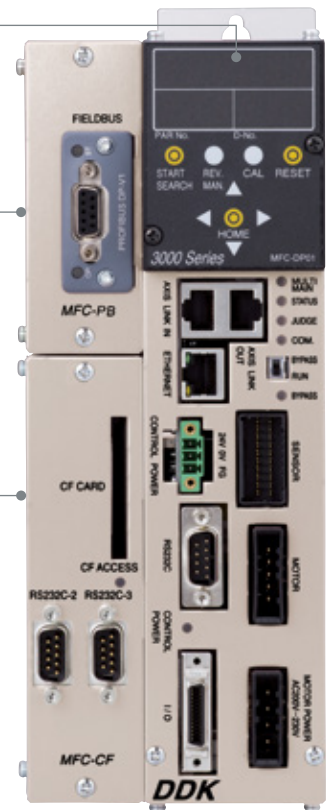
Fieldbus Interface option

Available interfaces

- Expansion D-I/O Connector .. [MFC-DT-S]
Input:32ch / Output:32ch
- CC-Link Ver2.00(Ver1.10) [MFC-CC-S]
- DeviceNet.....[MFC-DN-S]
- PROFIBUS DP-V1[MFC-PB-S]
- EtherNet/IP[MFC-EN-S]
- PROFINET IO[MFC-PN-S]
- EtherCAT.....[MFC-EC-S]
- CC-Link IE Field[MFC-CI-S]

MFC-CF-S

Compact Flash Data Expansion
CF Card Slot with Access LED
RS232C IN / OUT Expansion



Controller Model	MFC-S024S	MFC-S060S	MFC-S120S
------------------	-----------	-----------	-----------

Peak Maximum Current	17.0A	42.4A	84.8A
----------------------	-------	-------	-------

Transformer Capacity	0.3KVA×Press	0.8KVA×Press	4.0KVA×Press
----------------------	--------------	--------------	--------------

Input Power	3 phase AC200~ 230V±10% 50/60Hz		
-------------	---------------------------------	--	--

Control Power	024S,060S.....DC24V±10% 0.5A 120S.....DC24V±10% 1.0A		
---------------	---	--	--

Display	6 digit×2 lines 7 segments LED display, Function switch : 9pcs		
---------	--	--	--

Switch	Bypass Slide Switch : RUN / BYPASS switch Setting Switch : For setting by user (front of unit) Axis Setting Switch : Maximum 32 spindles settable. Internal Setting Switch : 8 bit for adjustment by manufacturer (Unit bottom)		
--------	--	--	--

LED	MULTI LED, STATUS LED, JUDGE LED, COMLED, BYPASS LED, CONTROL POWER LED, Ethernet LED		
-----	--	--	--

RS232C communication	38400bps(Default) / 19200bps / 9600bps, 1port		
----------------------	---	--	--

External Analog Monitor Output	Load analog voltage, Distance pulse, CW/CCW pulse etc.		
--------------------------------	--	--	--

Axis Communication	Axis communication port(Maximum No. of connections: 32spindles)		
--------------------	---	--	--

Ethernet	PC communication port in conformity with IEEE802.3(100 BASE-T)		
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Standard I/O	Input: Bidirectional photo coupler input DC 12V 5mA / DC 24V 10mA No. of input points12ch *Both NPN(sink/-common) type and PNP(source/+common) type connectable Output:Photo MOS relay contact point DC 24V 30mA No. of output points12ch *Both NPN(sink/-common) type and PNP(source/+common) type connectable		
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Controller	Applicable Tool	Power Consumption (Max Rating)	Display	Expansion1	Expansion2
MFC-S024S	DPM-***H1-*	80W	MFC-DP01 Display Unit	MFC-**-S Fieldbus Connection	MFC-CF-S MFC-CFEN-S
	DPT-***R1-*	60W			
MFC-S060S	DPS-***R3-*	200W			
	DPT-***R3-*	200W			
MFC-S120S	DPS-***R4J-*	1.5kW			
	DPS-***R5-*	3.0kW			
	DPT-***R4H-*	1.5kW			
	DPT-***R5-*	3.0kW			

Optional Model	Mounting Connector	Classification	
MFC-DP01	Touch Panel	Display	CC-Link DeviceNet
MFC-DT-S	Expansion I/O (Input:32ch / Output:32ch)	Expansion Unit 1	
MFC-CC-S	CC-Link V2	Expansion Unit 1	EtherNet/IP
MFC-DN-S	DeviceNet	Expansion Unit 1	
MFC-PB-S	PROFIBUS DP-V1	Expansion Unit 1	PROFINET
MFC-EN-S	EtherNet/IP	Expansion Unit 1	
MFC-PN-S	PROFINET IO	Expansion Unit 1	PROFINET
MFC-EC-S	EtherCAT	Expansion Unit 1	
MFC-CI-S	CC-Link IE Field	Expansion Unit 1	EtherCAT
MFC-CF-S	Compact Flash card, Expansion RS232C(2ports)	Expansion Unit 2	

Outline	①	②	③	④	⑤	
	DPS	102	R5	20	FB	①Tool Type
	DPM	050	H1	10	P	②Max Load
	DPT	021	R1	15	FSB	③Motor Type
						④Stroke(x10mm)
						⑤Press Type

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]	Stroke [mm]*1	Weight [Kg]	Total Length [mm]	Shaft [mm]	Applicable Controller
DPS-051R3-20FB	5 (0.51)	1.8 (0.18)	333	200	16.4	575	40	MFC-S060S
DPS-101R3-20/30/40FB	10 (1.02)	2.7 (0.28)	222	200/300/400	16.4	575	40	MFC-S060S
DPS-301R4J-20/30/40FB	30 (3.06)	10.8 (1.1)	250	200/300/400	36.5	660	50	MFC-S120S
DPS-501R4J-20/30/40FB	50 (5.1)	13.5 (1.38)	200	200/300/400	62	760	60	MFC-S120S
DPS-501R5-20FB	50 (5.1)	21.5 (2.19)	200	200	74	760	60	MFC-S120S
DPS-801R4J-20FB	80 (8.16)	18 (1.84)	150	200	98	855	100	MFC-S120S
DPS-102R5-20/40FB	100 (10.2)	32 (3.26)	133	200/400	110	855	100	MFC-S120S
DPS-202Y5-20FB	200 (20.39)	73 (7.44)	120	200	218	1030	120	MFC-GSC*2

High Power Type(P-Type:Bonding)

DPS-051R3-20PB	5 (0.51)	5 (0.51)	88	200	17	575	40	MFC-S060S
DPS-101R4J-20PB	10 (1.02)	10 (1.02)	200	200	21	575	40	MFC-S120S
DPS-301R4J-20PB	30 (3.06)	30 (3.06)	66	200	38	660	50	MFC-S120S
DPS-501R5-20PB	50 (5.1)	50 (5.1)	53	200	79	760	60	MFC-S120S
DPS-801R5-20PB	80 (8.16)	80 (8.16)	40	200	116	855	100	MFC-S120S
DPS-102R5-20PB	100 (10.2)	100 (10.2)	32	200	116	855	100	MFC-S120S
DPS-202Y5-20PB	200 (20.39)	200 (20.39)	40	200	222	1030	120	MFC-GSC*2

*1 Other strokes are available optionally.
*2 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]	Shaft [mm]	Applicable Controller
DPM-050H1-10P	0.5 (0.05)	0.49 (0.05)	130	100	4.0	270	40	MFC-S024S
DPM-011H1-10F	1 (0.1)	0.49 (0.05)	130	100	4.0	270	40	MFC-S024S



DPT PRESS(Non-stocking-by order)

Standard Type(F-Type:Fitting)

Model	Max Rated Load [kN(ton)]	Max Continuous Load [kN(ton)]	Maximum Speed [mm/s]	Standard Stroke [mm]*2	Weight [Kg]	Total Length [mm]	Shaft [mm]	Applicable Controller
DPT-021R1-15FSB	1.96 (0.2)	0.43 (0.04)	416	150	10	432	30	MFC-S024S
DPT-051R2A-25FSB	4.90 (0.5)	0.86 (0.09)	333	250	30	665	40	MFC-S024S
DPT-101R3-25FSB	9.81 (1.0)	2.16 (0.22)	277	250	55.5	690	60	MFC-S060S
DPT-151R3-25FSB	14.71 (1.5)	2.16 (0.22)	277	250	55.5	690	60	MFC-S060S
DPT-201R3-25FSB	19.61 (2.0)	3.6 (0.37)	166	250	53	690	60	MFC-S060S
DPT-301R4H-25FSB	29.42 (3.0)	6.74 (0.69)	320	250	62	744	60	MFC-S120S
DPT-501R4H-25FSB	49.03 (5.0)	10.8 (1.1)	200	250	86	885	80	MFC-S120S
DPT-701R4H-25FSB	68.64 (7.0)	16.2 (1.65)	133	250	104	885	80	MFC-S120S
DPT-102R5-25FGB	98.1 (10.0)	32.4 (3.3)	116	250	285	927	100	MFC-S120S
DPT-152R5-25FGB	147.1 (15.0)	48.7 (4.97)	77	250	410	1007	130	MFC-S120S
DPT-202R5-25FGB	196.1 (20.0)	64.93 (6.62)	58	250	650	1116	130	MFC-S120S

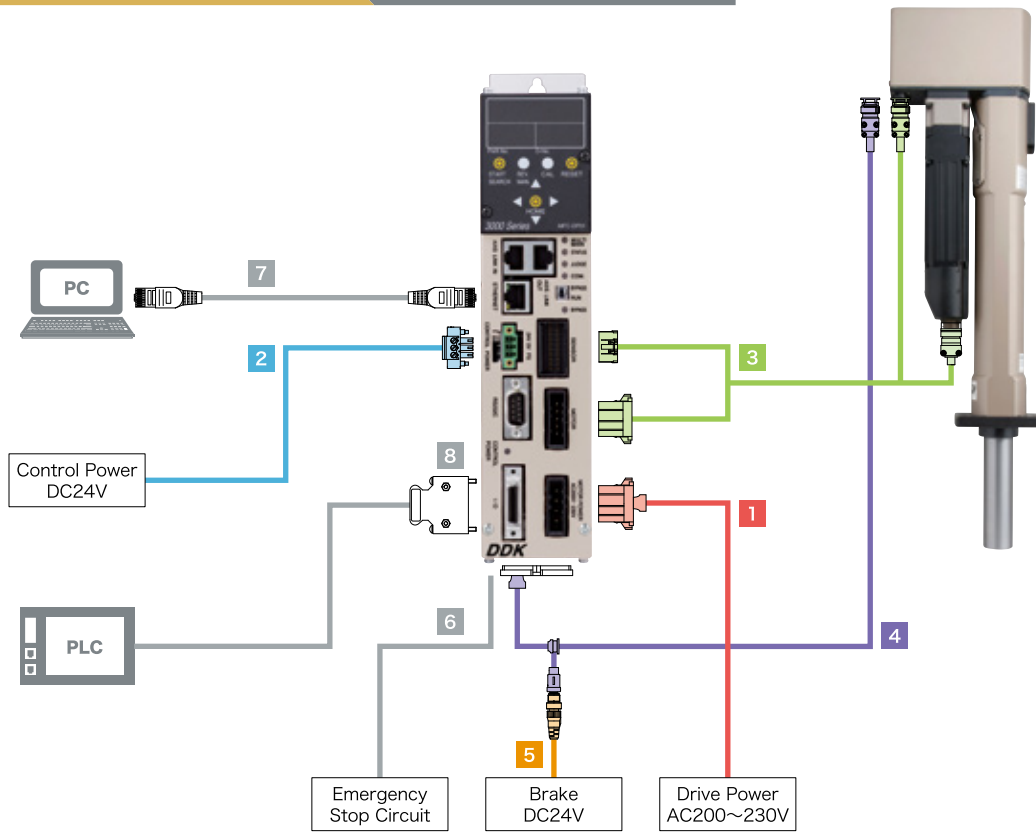
High Power Type((P-Type:Bonding)

DPT-021R3-15PSB	1.96 (0.2)	1.96 (0.2)	208	150	13	445	30	MFC-S060S
DPT-051R3-25PSB	4.90 (0.5)	4.90 (0.5)	95	250	33	663	40	MFC-S060S
DPT-101R4H-25PSB	9.81 (1.0)	9.81 (1.0)	133	250	58.5	690	60	MFC-S120S
DPT-151R4H-25PSB	14.71 (1.5)	14.71 (1.5)	114	250	61.5	700	60	MFC-S120S
DPT-201R4H-25PSB	19.61 (2.0)	19.61 (2.0)	80	250	63	723	60	MFC-S120S
DPT-301R4H-25PSB	29.42 (3.0)	29.42 (3.0)	64	250	68	773	60	MFC-S120S
DPT-501R5B-25PSB	49.03 (5.0)	49.03 (5.0)	58	250	115	885	80	MFC-S120S
DPT-701R5-25PSB	68.64 (7.0)	68.64 (7.0)	41	250	135	888	80	MFC-S120S
DPT-102R5B-25PGB	98.1 (10.0)	98.1 (10.0)	29	250	310	926	100	MFC-S120S
DPT-152R5B-25PGB	147.1 (15.0)	147.1 (15.0)	22	250	450	962	130	MFC-S120S
DPT-202R5-25PGB	196.1 (20.0)	196.1 (20.0)	16	250	620	1055	130	MFC-S120S

*3 Stroke change is available per 50mm as option.(limited per tool.)

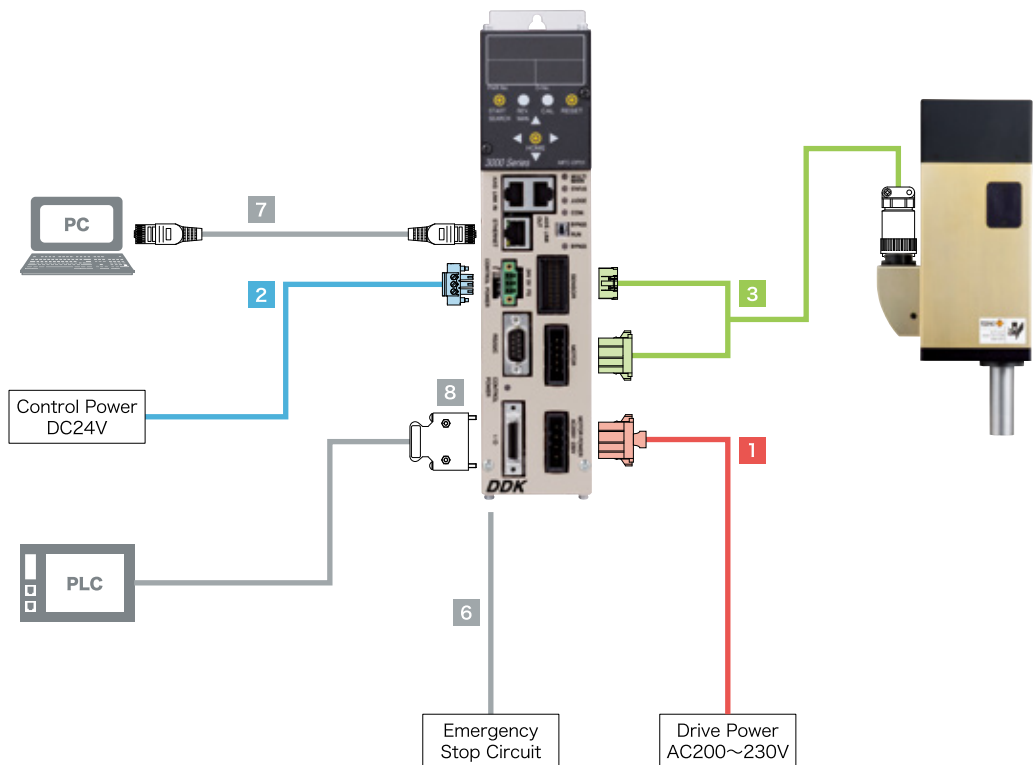
DPS SLIM LINE PRESS

WIRING DIAGRAM



DPM MINI PRESS

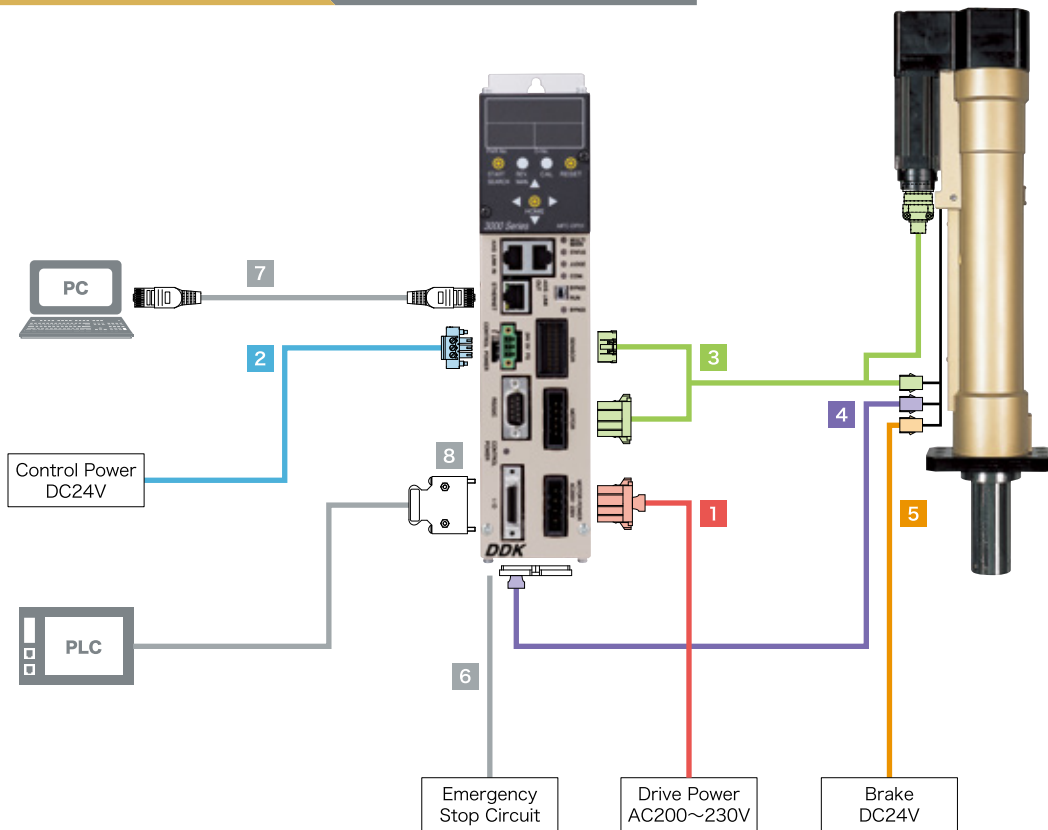
WIRING DIAGRAM



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

DPT PRESS

WIRING DIAGRAM



Cable Applicable Table

No.	Cable Name	DPS03R3S*	DPS04R4J*	DPS05R5S*	DPM01H1*	DPT01R1*	DPT02R2*	DPT03R3*	DPT04R4H*	DPT05R5*	Model	Standard length	Remarks
1	Drive Power Cable for MFC-S024S / S060S	■			■	■	■	■			C15-D1-M*	2m/5m	Included in controller.
	Drive Power Cable for MFC-S120S		■	■						■	C15-D2-M*	2m/5m	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 RM1 / RM2 / RM3	■				■	■	■			C30-FM1-M*	5m/10m	
	Tool Cable for RM4J		■						■		C30-FW4-M*	5m/10m	
	Preamplifier & Resolver Cable for RM5			■						■	C30-PR5-M*	5m/10m	
	Motor Cable for RM5			■						■	C15-M1-M*	5m/10m	
	Tool Cable for H1				■						C30-FH1-M*	5m/10m	
4	Limit Sensor & Brake Cable	■	■	■							C30-L3-M*	5m/10m	
	Limit Sensor & Brake Cable(Standard specification)					■	■	■	■	■	C30-L1-M*	5m/10m	
	Limit Sensor & Brake Cable(USA specification)					■	■	■	■	■	C30-L2-M*	5m/10m	
5	Brake Cable	■	■	■							C15-B3-M1-U	1m	
	Brake Cable(Standard specification)					■	■	■	■	■	C15-B1-M*	5m/10m	
	Brake Cable(USA specification)					■	■	■	■	■	C15-B2-M*	5m/10m	
	Extention Brake Cable	■	■	■							C15-EB3-M*-U	5m/10m	
6	Stop Signal Cable	■	■	■	■	■	■	■	■	■	C30-XA1-M*	(2m)	
	Stop Signal Connector	■	■	■	■	■	■	■	■	■	MC1.5/2-STF-3.81		Included in controller.*1
7	ETHERNET Crossover	■	■	■	■	■	■	■	■	■	C30-UL1-M*	3m	For direct conenction.
	ETHERNET Straight	■	■	■	■	■	■	■	■	■	C30-UL2-M*	3m	For connecting through Hub.
	Standard I/O Cable	■	■	■	■	■	■	■	■	■	C30-SU1-M*	2m	
8	Standard I/O Connector	■	■	■	■	■	■	■	■	■	10126-3000PE		Included in controller.
	Expansion I/O Cable	■	■	■	■	■	■	■	■	■	C30-SE1-M*	2m	
9	Axis Communication Cable	■	■	■	■	■	■	■	■	■	C15-A3-M*	0.3m/1m	
10	Axis Communication Connector	■	■	■	■	■	■	■	■	■	C30-AL2		
11	RS232C Communication Cable	■	■	■	■	■	■	■	■	■	C30-TU1-M*	3m	

*1 Except for MFC-DT
* Cable length except standard is available as optional.

VARIOUS FUNCTIONS

Protection Functions

Self-Diagnosis	Offset Load Check	Press / Controller Mismatch Check	Servo Motor Protection *1
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Pressing Functions

Target load stop	Target distance stop	Target load holding	Target distance holding	Monitoring Position, Load, Time
Continuous position accuracy $\pm 0.01\text{mm}$ *2	No. of parameter Single 32 Multi 128	Load Range 0.25kN~ 200kN	Maximum Connecting tool NO. 32	Maximum Sequence NO. 64

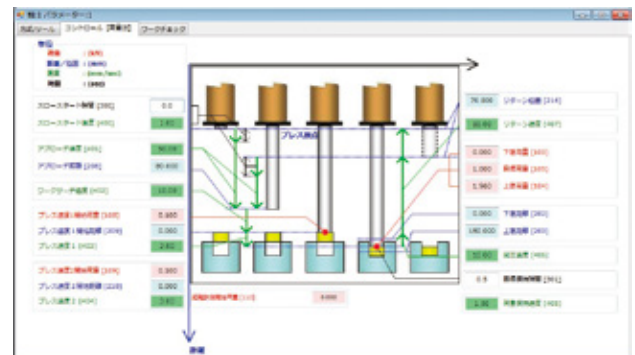
*1 Over current, Over load, Over voltage, Temperature etc. *2 Depends on Press model

USER CONSOLE SOFTWARE

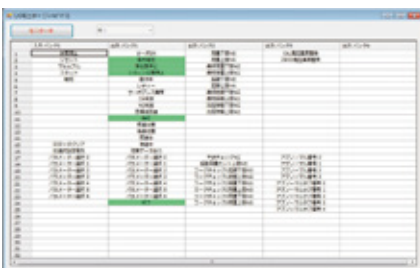
WINDOW'S® BASED CONFIGURATION, PROGRAMMING AND MONITOR SOFTWARE

- Easy graphical set up
- Result data collection & storage
- Load/distance curve data to Excel data
- Press Sequence Functions
- Interface setup/Monitor function

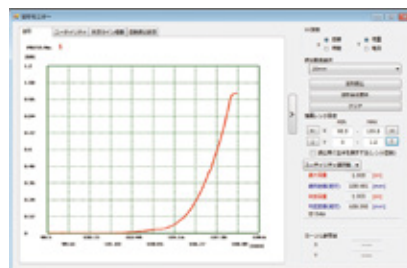
Press Setting Display



I/O Monitor



Load Curve Display



Press Result Display



ELECTRICAL ASSEMBLY TOOLS
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