



Same reliable design. New improved interface.





Welding's **EVEN BETTER Electronic Engine**



Welbee P400 II





OTC DAIHEN invested over 10 million dollars and 6 years to develop welding's best electronic engine - Welbee, our custom LSI ASIC chip.

Delivering an industry leading 20nsec response time, that is 50 million arc adjustments every second of the weld! 4X faster response than our nearest competitor! This enables our clean welding results including support for CO2 welding and the reduction and elimination of expensive Helium gas.

Better welds enabled by better technology, for the welder.

Welbee P500L II

Welbee M350 II

Same great low-maintenance durability

Welbee side-flow structure

High dust resistance

Sensitive electronic components are separated and isolated from damaging dust accumulation.

Easy maintenance

Cooling fans adjust to accommodate duty cycle and ambient air temperature. Blow-out with compressed air can be performed without removing covers.

Same great model line-up, only better

New and improved operator control panel

Easier to access welding info

Detailed function display

Settings, functions and errors are displayed in detail reducing the need for an operation manual.

F1:Standard/Extended cable mode
When welding is unstable with the long extended power cable over 30m length, Extended cable mode may improve welding stability.
OFF: STANDARD mode ON : Extended power mode
≡5 MENU ÔSELECT ©ENTER

Welding results display

Welding results including time, wire consumption, heat input and more are displayed at the conclusion of each weld.

WELDING Result										
Welding Time	5.8 sec									
Total Welding Time	0 mm									
Heat Input	15.206 kJ									
Total Wire Consumption	0.00 Kg									
Moter Current	1.50 A									
Number of Welding Point	1									

User-friendly functions

Welding guide function

Welding conditions can automatically be set simply by selecting the joint type and plate thickness. This function supports the setting of conditions for those who are unfamiliar with welding work.



Improved Current / Voltage digital display

140% larger than prior model for improved visibility.

Easy-to-read LCD panel display

Text font size and background color are adjustable to improve visibility.

* Welding conditions are guidelines and do not guarantee welding results.



Welbee II DC pulse / Wave pulse

Welbee P500L II Welbee P400L II Welbee P400 II

Welbee pulse welding has been refined improving welding of steel, stainless steel and aluminum.

Better pulse welding for all materials

Mild steel

No special technique is required to obtain beautiful welding results with less spatter and uniform bead toes.

• Welding current: 115A • Arc voltage: 23.1V • Plate thickness: 0.8" Welding conditions • Wire dia.: φ0.045" • Travel speed: 24in/min • Shielding gas: 80%Ar+20%CO2

Stainless steel

Controlled droplet transfer enables to obtain good weld beads even with highly viscous stainless steel wire's molten droplets.

Welding conditions

• Welding current: 115A • Arc voltage: 21.0V • Plate thickness: 0.8" • Wire dia.: φ0.045" • Travel speed: 24in/min • Shielding gas: 100%Ar

Aluminum

Beautiful weld beads can be obtained by suppressing the generation of fine particle spatter.

• Welding current: 55A • Arc voltage: 18.5V • Plate thickness: 0.8" Welding conditions

• Wire: Hard aluminum ϕ 0.045" • Travel speed: 14in/min • Shielding gas: 100%Ar







NEW

Al-enhanced SmartPulse welding

OTC DAIHEN has implemented Al-enhanced pulse welding with automatic adjustment of the welding waveform for optimal, high-speed welding.

Advantages include elimination of undercut and reduction of adhered spatter, delivering a higher quality weld with a consistent appearance.

Welding conditions

- · Welding mode: Mild steel DC pulse
- Plate thickness: 1/16"
- Wire dia.: φ0.045'
- Travel speed: 60in/min
- Shielding gas: 80%Ar-20%CO2
- *1 The Rule Base is a method of processing da on the input rules.
- * Automatic machine mode of mild steel pulse is supported only.

Smar	tPulse high-speed welding	l comparison	• Function No.84,85
Auto-adjust	Smart pu	lse_OFF	Smart pulse_ON
switching Welding conditions	230A / 29.0V	230A	/ 23.5V
State of arcing	Undercut	Increased spatter	Stable welding
Bead appearance	Generated undercut	Adhered spatter	
lata based		1-1-1-1-1-1	Good bead 30mm appearance
Cross-section	<u>3mm</u>	<u>3mm</u>	<u>3mm</u>
	Open arc caused undercut.	Lower voltage prevented undercut but increased spatter.	Smart pulse reduced spatter and achieved good welding results.

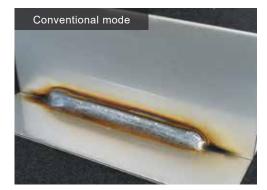


Welding's Even Better Electronic Engine



Improved stainless steel waveform delivers beautiful bead appearance.

The soft arc created by our new waveform realizes stable droplet transfer while suppressing the weld scale. Also, the short arc length improves arc position aiming and manipulation.







- Welding current: 200A
- Arc voltage: 26.7V
- Plate thickness: 0.08"
- Wire dia.: φ0.045"
- Travel speed: 40in/min
- Shielding gas: 98%Ar+2%CO2

Improved performance for low slag wires Option NEW Low-slag wire is now supported, eliminating the unstable arc in high speed welding. This mode reduces problems such as meandering, undercut, and large spatter adhesion caused by low Si wire. Cross-section Cross-section Welding conditions Standard pulse mode Low-slag wire mode Welding current: 270A Arc voltage: 27.8V Base metal: galvanized steel 45g/m² 0.09in Wire dia.: φ0.045in Travel speed: 51.2in/min Shielding gas: 80%Ar+20%CO2 Spatter adhesion and undercut occur. Good weld bead with no defects MS-MIG Welbee P500L II Welbee P400L II Welbee P400 II

Optimum aluminum welding mode for medium thick plate



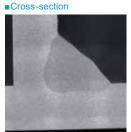
In aluminum welding in the medium and high current ranges, the arc tends to become unstable, which causes such problems such as bead meandering and poor penetration. OTC DAIHEN developed MS-MIG is resistant to this disturbance, keeping the welding current constant for beautiful weld beads with consistent penetration.

* Applicable only to hard aluminum wire with a diameter of 1/16in

Welding conditions

- Welding current: 280A
- Plate thickness: 0.4in
 Shie
- Wire: Hard aluminum φ1.6in
- Travel speed: 16in/minShielding gas: 100%Ar







Welbee P500L II Welbee P400L II Welbee M350L II

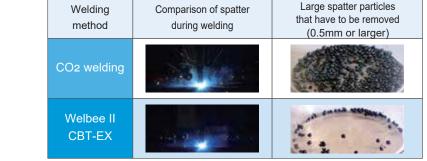
Low-Spatter (L-Mode) powered by Welbee's precision control

Spatter can be reduced by up to 80% in low, medium and high current ranges.

Less weld spatter on the base metal means less post-weld cleanup prior to assembly or finishing. Less post-weld cleanup means more parts in less time.

Shielding gas: CO2

• Welding current: 200A • Travel speed: 20in/min



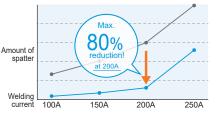


Welding conditions

• Wire dia.: φ0.045in

Welding time: 2.5min

Low spatter comparable to those in MAG welding can be achieved even in CO2 welding.



MAG welding					
	unt of patter		Max. 60% reduction! <u>at 200A</u>		
	elding urrent	100A	150A	200A	250A

DC welding

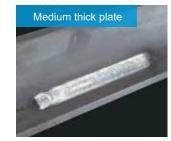
Common to the series

Fine control for DC welding on all materials and current ranges.

Delivers uniform weld beads with consistent appearance under adverse conditions such as varying arc length and high-speed welding. Reliable results during manual, semi-automatic and automatic operation.



- Arc voltage: 16.9V
- Plate thickness: 1/16in
- Travel speed: 18in/min
- Shielding gas: AR/CO2



Stable arc realizes flat weld beads even at high current.

Welding conditions

- Welding current: 300A
- Arc voltage: 35.0V
- Plate thickness: 0.35in
- Wire: Mild steel flux cored φ0.045in
- Travel speed: 14in/min
- · Shielding gas: CO2

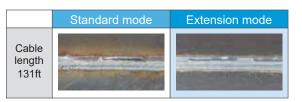
Convenience and stability provided by extension mode

Stable and reliable results in extended applications

Welding conditions

• Wire dia. : φ0.045in

- Welding current: 250A Arc voltage: 29.0V
 - Plate thickness: 1/4in Travel speed: 16in/min
 - Shielding gas: CO2

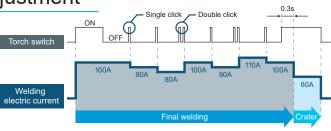


Welbee II Smart function

Common to the series

Torch triggered welding current adjustment

You can increase or decrease the output current by any preset amount of change by operating the torch switch (single click/double click). If you want to change the input heat during welding in accordance with sheet-thickness changes, you can change the welding conditions without suspending your welding work.

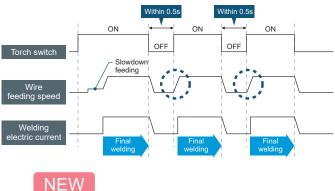


*You cannot use this function when the analog remote controller is connected

High-speed tack start

Slow wire feed can be overridden if the torch trigger is pulled within 1/2 second of previous weld, speeding up your tack welds and expanding your productive output.

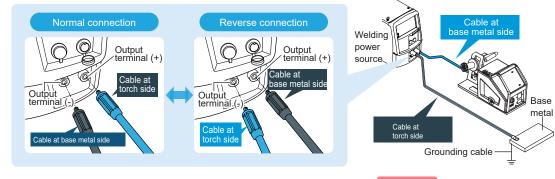
Straight polarity (DCEN) mode



NEW

Remote controller switching knob

By setting the function number "38", welding can be performed with straight polarity (DCEN - electrode negative), including galvanized steel welding.



Evolved multifunctional remote controller

OTC DAIHEN's NEW multifunction remote controller supports selected assignment of 6 commonly used functions to the selector switch.

				[1]	[2]	[3]
	1	Crate	er setting	Crater OFF	Crater ON (with pulse)	Crater ON (No pulse)
	2	Gas	check	OFE	OFF	ON
	3	Constant	penetration	OFF OFF	OFF OFF	ON ON ON
	4	Tac	k start	ÖFF	ÖFF	ŎŇ
Switching	5	Read out of we	elding conditi	ons		
knob			P400LII P500LII	CBT-EX DC low spatter	DC pulse	DC
		Welding	P400II	DC pulse	DC wave pulse	DC
	6	process	M350LII	CBT-EX DC low spatter	DC	DC
			M350II M500II		-	

Welbee II IoT functionality, machine-connected control and integrated quality control

PC-based access to recorded welding data

With the USB port equipped as standard, various data can easily be read. By using the "Smart Wave Viewer" from DAIHEN website, you can easily graph the welding data on your PC.



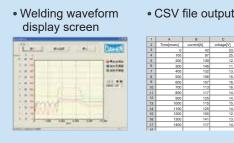


You can easily edit and manage data by using USB.

List of data that can be output

· Simple data log: Current · voltage · wire feed setting and actual measurement,

- Abnormal log: Recording the past 10 abnormal codes,
- Welding conditions,
- Welding result management: Weld points, Wire consumption, Total weldingtime, Welding monitoring, Total operating time,
- Internal function setting values



* Various software can be downloaded for free from OTC HP (https://www.daihen.co.jp/products/welder/software/)

Access to the



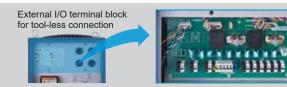
Easy connection to external devices



A lineup of interfaces are abundantly available for connecting to other robots. A wide range of options are available according to particular communication specifications

Connection method	Format
Analog	IFR-101WB
EtherNet/IP	IFR-800EI
PROFIBUS	IFR-800PB
DeviceNet	IFR-800DN
PROFINET	IFR-800PN

Simply open the access panel on the back of the welding power source to Wire feeder for robot connect easily to external equipment



Wire feeder	Model	CMRE-742
* Applicable wire dia.	mm	(0.8), 0.9, 1.0, 1.2, (1.4), (1.6)
Type of wire		Solid wire, Flux cored wire
Wire feeding speed	m/min	22
External dimensions (W×D×H)	mm	195x275x235 (No cable is included.)
Mass	kg	7

* For using the wire diameters given in parentheses, optional part is required.

Welbee II

Option PC-based and connected Welbee weld monitoring

Data from up to 100 welding power sources can be collectively monitored on a PC to support quality control.

Capable of checking the operating status of the welding power sources even at a remote location.

On the collected monitoring screen, you can monitor not only the operating status of each welding power source but also errors and warnings at a glance.



Visualized welding results.

Welding data can be organized in an easy-to-understand manner for each "worker," "work," and "welding power source," which can be used for planning and reviewing the work processes.



Monitoring parameters

* Check the instruction manual for details.

Access to the detailed condition of the welding power sources.

On the individual monitoring screen, welding current, arc voltage, and wire feed conditions can be checked and also welding abnormalities can be detected immediately by setting the upper and lower limits.



Quality control and traceability

Welding data is automatically graphed and the results can be checked at a glance. Welding results are stored in a database and can easily be retrieved.



Wireless LAN

Hub

Ethernet

communicatior cable

Welbee Inverte

Welding current (Setting)	Welding voltage (Setting)	Welding current (Measured)	Welding voltage (Measured)
Wire feed speed (Measured)	Starting signal	Primary input voltage	Motor current
Various error codes	Power source's interior temperature	FAN rotation speed	Wire feed load rate

Max.

units can be connected

Welbee welding monitor's system configuration

Standard configuration

- Extension board kit for welding power source
- Welding monitor software for PC

Items to be prepared by customer

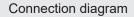
- PC (Ethernet connectable)
 - Supported OS: Windows8.1, 10
 - Required memory capacity: Min. 8GB,
 - Display: Min. 32bit color / Min. 1920 x 1080 resolution
- Ethernet communication hub (when connecting multiple units)
- Ethernet communication cable
- Wireless LAN interface (for wireless connection)

* The number of connectable devices may be limited depending on your PC and communication environment.

* When you use the extension board kit (E-2560), you can use the latest welding monitor by preparing only the PC software (K-7496).



Welbee **I** Specification



- The parts in this color are standard components. (CO₂/MAG air cooling specification)
- The parts in this color are components of WCD-300 pr WCL-500 optional klits
- *1 Use the K5791G00 voltage detection cable (5m) attached to the welding power supply unit. (Only for Low spatter model)
- The voltage detection cable is not necessary when you do not use the CBT-EX (low-spatter) mode.

*1 When selecting the CBT-EX mode (DC low spatter), use the voltage detection cable K5791G00 (5m) (optional)with the welding power source WB-M352L/P402L/P502L. • Standard configuration

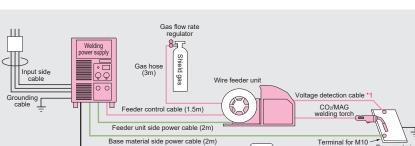
	General brand name	Welbee Inv	verter M350L II	Welbee Inverter M350 II	Welbee Inverter M500 II	Welbee Inverter P400 II		Welbee Inverter P400L II				Welbee Inverter P500L II						
	 Welding power source 	WB-	M352L	WB-M352	WB-M502	١	WB-P402			WB-P402L				WB-P502L				
	Usage	CO2/MAG Air cooled	CBT-EX (DC low spatter)	CO2/MAG Air cooled	CO2/MAG Air cooled	CO2/MAG Air cooled	Aluminum MIG, Air cooled	Aluminum MIG, Water cooled	CO2/MAG Air cooled	CBT-EX (DC low spatter)	Aluminum MIG, Air cooled	Aluminum MIG, Water cooled	CO2/MAG Air cooled	CBT-EX (DC low spatter)	CO₂/MAG Water cooled	Aluminum MIG, Air cooled	Aluminum MIG, Water cooled	
	Wire feeder	CM-	743U	CM-743U	CM-743U		CM-743U		CM-743U				CM-743U					
	Welding torch	BT3510-30UT (45)(60)	BT3500V-30UT ^{*1}	BT3510-30UT (45)(60)	BT3510-30UT (45)(60)	BT3510-30UT (45)(60)	BTA300-30U (40)	T BTAW400-30UT (45)(60)	BT3510-30UT (45)(60)	BT3510V-30UT (45)	BTA300-30UT (40) *2	BTAW400-30UT (40)	BT5000-30UT (45)(60)	BT3510V-30UT (45) *2	BTW500-30UT (45)(60)	BTA300-30UT (40)	BTAW500-30UT (40)	
Power caple	m ipsum Regulator/Flow meter kits	WCI	D-300	WCD-300	WCL-500		WCD-300	·		WCD-300		•		+	WCL-500		<u> </u>	

*1 When selecting the CBT-EX mode (DC low spatter), attach the voltage detection adapter (K5952E00) to the wire feeder CM-743

Standard specification

General Name			We	lbee Inverter M35	OL II		Welbe	e Inverter M350 II		Welbee Inverter M500 II		Welbee Inverter	P400 II		Welb	ee Inverter P4	00L II	Welbee Inverter P500L I
Welding Power Source Model			١	WB-M352L			W	/B-M352		WB-M502		WB-P402			WB-P40	2L	WB-P502L	
Phase(s)		Sing	le-phase	Thr	ee-phase	Singl	e-phase	Three-p	ohase	Three-phase only	Singl	e-phase	Tł	hree-phase	Single-phase Three-phase			Three-phase only
Rated input voltage	V	208/230	460	208/230	460	208/230	460	208/230	460	460	208/230	460	208/230	460	208/230	208/230	460	460
Rated input current	А	58.0	25	43.3	19.6	54.2	23.7	42.5	18.8	31.7	53.6	30	54	26.1	56.3	56.2	26.3	31.7
Rated Input	kVA	12.1	11.5	15.6	15.6	11.3	10.9	15.3	15.0	25.2	11.2	13.8	19.7	20.8	13.4	25.2	25.2	25.4
100% Output Current	A	194	194	271	271	194	194	271	271	500	194 (126)	194 (126)	310 (283)	310 (283)	194(126)	310(283)	310(283)	387(350)
Rated Duty Cycle (Pulse)	%	60	60	60	60	60	60	60	60	100	60 (40)	60 (40)	60 (50)	60 (50)	60 (40)	60 (50)	60 (50)	60 (80)
Rated Output Current (Pulse)	A	250	250	350	350	250	250	350	350	500	250 (200)	250 (200)	400	400	250 (200)	400	400	500 (400)
Rated Load Voltage	V	26.5	26.5	31.5	31.5	26.5	26.5	31.5	31.5	39	24	26.5	34	34	24	34	34	30 (34)
Output Current Range (Pulse)	А	10-250	10-250	10-350	30-350	20-250	20-250	20-350	20-350	20-500	30-250 (200)	30-250 (200)	30-400	30-400	30-250(200)	30-400	30-400	30-500
Output Voltage Range (Pulse)	V	12-26.5	12-26.5	12-31.5	12~36	12-26.5	12-26.5	12-31.5	12-31.5	12-39	12-26.5	12-26.5	12-34	12~34	12-26.5	12-34	12~34	12-39
Max no-load voltage	V	78	70	79	70	78	70	79	70	81	78	70	92	80	78	92	80	92
Welding program in memory	#		100	-			1	00		100			100		100			100
External dimensions (W×D×H)	mm(in)	39	95x710x810 (15.	6x28x31.9)			395x710x810	0 (15.6x28x31.9)		395 × 710 × 810 (15.6x28x31.9)		395 × 710 × 8	10 (15.6x28x3	31.9)	395 × 710) × 810 (15.6x	28x31.9)	395 × 710 × 810 (15.6x28x31
Mass	kg(lb)		85 (18	7.4)			85 (187.0)		77 (170)		80	(176.4)			80 (176.4)		81(178.5)
Cable Kit (Optional)	P/N		WCD-	300			WCD-300		WCL-500		W	CD-300			WCD-300		WCL-500	
Cable size	mm²(AWG)		60 (2	/0)			60(2/0)		80(4/0)		6) (2/0)		60 (2/0)			80(4/0)	
Grounding Cable	mm²(AWG)		6 or m	ore			6 or more		10 or more	10 or more				10 or more			10 or more	
•Wire feeder	Model		CM	743U			CM 743 with	n K595E00 Alum	ainum Kit									
•wire feeder	wodel			7430			GW-743 WIU	I NJ9JEUU Aluli	iniuni Kit									

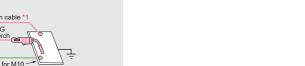
•Wire feeder	Model		C	CM-743 with K595E00 Aluminum Kit						
Applicable wire			S Co	Hard aluminum Soft aluminum						
*4 Applicable wire dia.	mm		(0.8), 0.9, 1	1.0, 1.2, (1.6)	(1.0), 1.2, 1.6					
Wire feed speed	m/min		2	22(Max)		22(Max)	22(Max)	ix)		
*3 External dimensions (W×D×F) mm		254	× 611 × 393	254 × 611 × 393	285 × 723 × 393	285 × 723	× 393		
Weight	kg			31		14	15	16		
Cooling system			Ai	r cooling		Water cooling	Air cooling	Water co	oling	
 Welding torch 	Model	BT3500-30UT	BT3510-30UT	BT5000-30UT ^{*5}	BT3510V-30 *5	BTW500-30	BTA300-30	BTAW400-30	BTAW500-30	
Rated current	А	350	350	500	350	500	300	400	500	
*4 Applicable wire dia.	mm	(0.9), (1.0), 1.2	(0.9), (1.0), 1.2 (0.9), (1.0), 1.2, (1.4) (1.2), 1.4, (1.6) (0.9), (1.0), 1.2, (1.4)				(1.0), 1.2, (1.6)	1.2, (1.6)	(1.2), 1.6	
Duty cycle	%	30	60	60	60	100	50	100	80	
Cable length	m	3, (4.5, 6)	3, (4.5, 6)	3, (4.5, 6)	3, (5)	3, (5)	3	3	3	



6-core control cable (3m)

 $\left(00 \right)$

Analog remote controller (Optional)

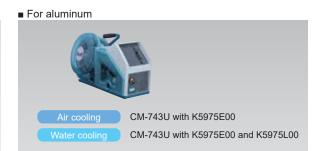




For steel and stainless steel

*1 For CBT-EX (DC low spatter), the voltage detection adapter (K5952E00) is required. * When you use a pack wire, prepare the guide adapter (K5977J04) .

Wire feeder with maximized safety, operability and durability



Optional parts

Extension cable

	5m	10m	15m	20m
Control cable of wire feeder side (10 cores)	BKCPJ-1005	BKCPJ-1010	BKCPJ-1015	BKCPJ-1020
Control cable for analog remote controller (6 cores)	BKCPJ-0605	BKCPJ-0610	BKCPJ-0615	BKCPJ-0620
Control cable for digital panel	BKCAN-0509	BKCAN-0514	BKCAN-0519	BKCAN-0524

* No standard power cable (2m) is required when using an extension cable.
* If you use an automatic machine or a current value close to the rated current, use a one-rank thicker cable.

* According to the extension wiring regulations, the thickness of the power cable is 60mm² for 400A or less, 80mm² for 500A or less, and 100mm² for 600A or less. (For a rated duty cycle of 50%)

Voltage detection cable

	5m	10m	15m	20m
Voltage detection cable	K5791G00	K5416N00	—	K5791E00

How to install

Voltage detection adaptor

When using CBT-EX (DC low spatter), attach it to the wire feeder (CM-743U).		
Part name Part No.		
Voltage detection adapter	K5952E00	

Welding torch

• MIG welding torch for stainless steel

Part name	Model	BTS3510-xxUT
Applicable wire dia.	mm	(0.9), (1.0), 1.2
Specified max current	A	300A
Duty cycle	%	30%
Cooling method		Air cooling
Cable length	m	3m, 4.5m, 6m

Remote controller

Analog remote controller			
	Part name	Part No.	
	Analog remote controller(3m)	K5804S00	



• Conversion cable for conventional analog remote controller (K5804S00)

Part name	Part No.
Conversion cable	K8116E00

Digital remote controller

(One set of the following three items are needed.)

Part name	Model	
Digital remote controller (Main unit)	E-2452	
CAN communication cable	BKCAN-0410(10m)	
	BKCAN-0420(20m)	
BKCAN conversion connector	K5810B00	
* Software update is necessary.		

Please contuct your dealer for details.

Voltage detection line for welding torch

Prepare it when using CBT-EX (DC low spatter) with a MIG torch for stainless steel. Dort nom Deut Ma

Fait liallie	Part No.	
Voltage detection cable	K5791G00	

Cooling water circulator

Part name	Model / Part No.
Cooling water circulator	WTCB-M1

* When using a water-cooled welding torch with WB-M502, prepare a water-cooling kit (K5848A00) in addition to the above. Contact your dealer or OTC's sales office to install the water cooling kit.

TIG solenoid valve kit

Part name	Part No.
TIG solenoid valve kit	K8197A00

* Conversion cable (BKPJT- 60R2) is separately required for WB-M502/P502L.

Panel for wire feeder

Analog panel

Current/voltage setting and inching can be operated v as with analog re

in the came may ac mar analog remote contaction			
	Part name	Part No.	
	Analog panel	K8028A00	



K8116E00 Conversion cable * Control cable BKCPJ-06xx is separately required. * Function switching by F2 cannot be used.

• Digital panel

Such operations as current/voltage setting, inching, and storage/reading of parameter setting can be made in the same way as a digital remote controller.

Part name	Model
Digital panel	E-2628

* Control cable BKCAN-05xx is separately required.





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