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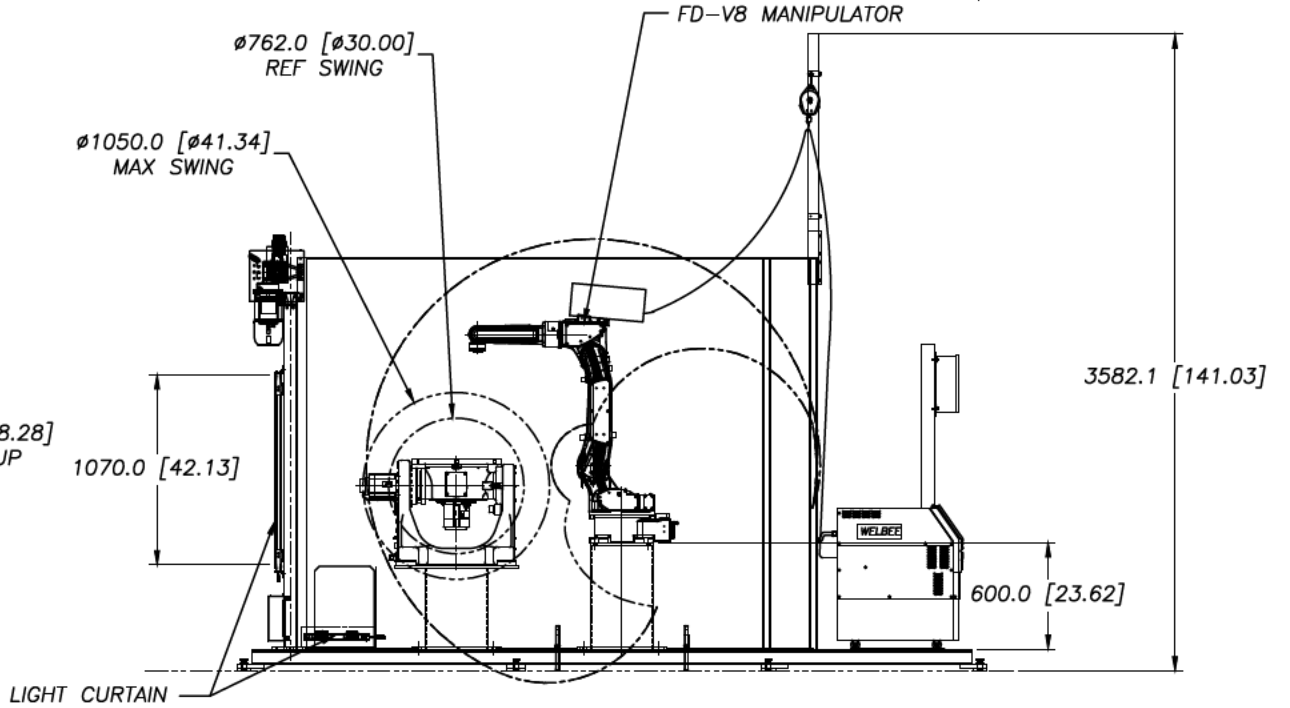
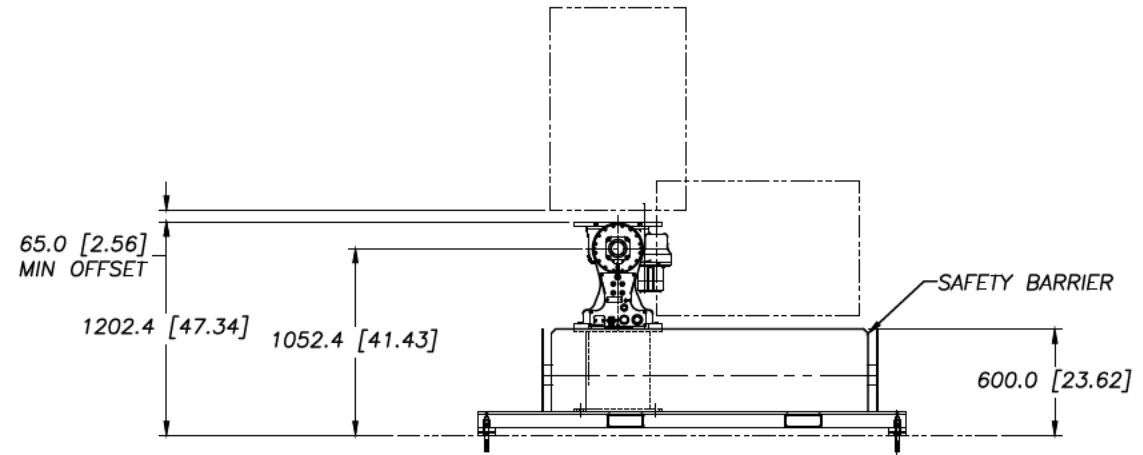
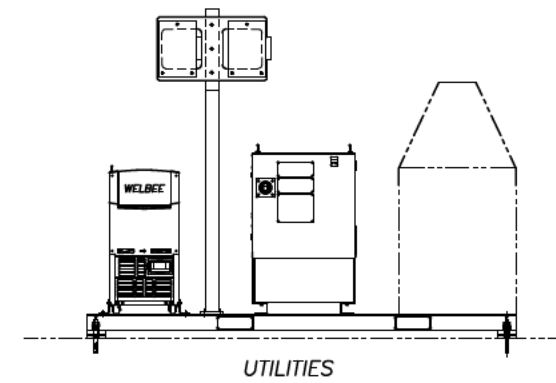
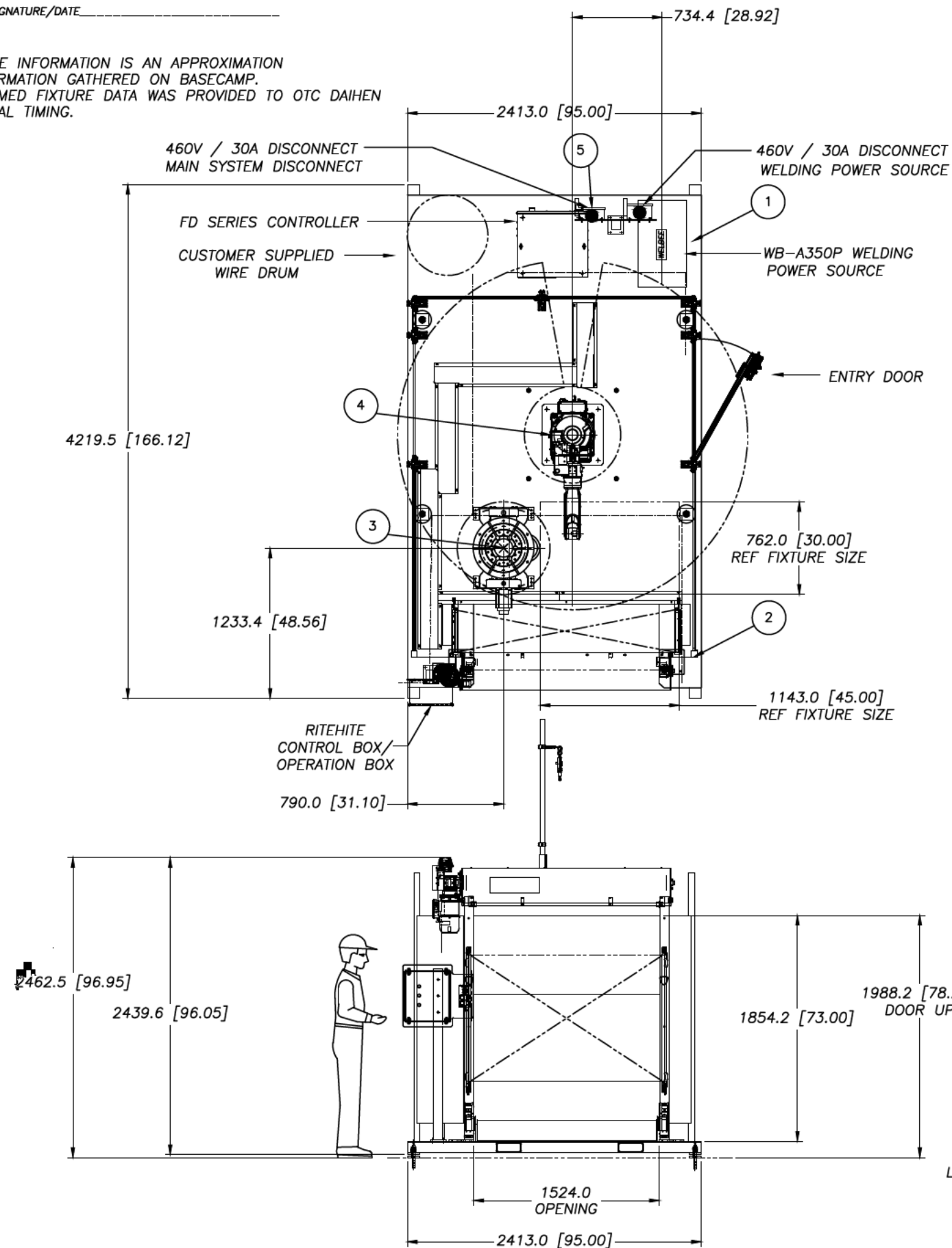


**CUSTOM 1STA ECO-ARC 200 Cell; FD-V8, WB-A350P Cold Wire Servo TIG
Filler; Common base, wall & trailer assembly; Rite Hite Roller Door**

QTY	DESCRIPTION	MODEL NO.	PRICE
Custom Cell Components			
			Included
1	ECO-ARC 200 Custom 1STA Mechanical		
	- Common Base w/ Integrated Trailer,		
	- Robot Pedestal Positioner, Riser		
	- Rite Hite Roller Door Assembly @		
	- Operator Load/Unload		
	- Electrical Disconnect		
1	Trox Safety Fencing Enclosure		
	- Mounted to common base		
	- Arc Flash protective curtain installed		
	- Single Maintenance Access Door		
1	Rite Hite Roller Door Assembly		
	- Automated Barrier Door		
	- Defender Series, Cat 4 Safety compliant		
	- Armortex safety curtain material		
	- 40" per second operation speed (up/down)		
1	Omron Light Curtain Assembly		
	- Vertical light curtain mounted to Rite-Hite door		
	- Horizontal light curtain installed inside cell between interior Rite-Hite door and positioner		
1	Robot Retract Switch		
1	Assembly, Safety Switch, Positioner		
	- Non-contact Safety-rated Proximity Switch		
1	Misc Purchase Hardware		
1	Electrical System Assembly		
	- Main Panel, Robot Operation Boxes, J-Boxes, Cables, Electrical Purchase		
Robot Module			Included
1	Robot Manipulator	NV81-NEPU	
1	Control Unit (Including Relay Unit)	FD23-LV0000	
1	Teach Pendant (Cable length 8m)	FD19TP-DSINE	
1	Control Cables (5m)	FD19RB-1805	
1	Unit Transformer 10KVA for FD	4810-D018	
1	Cable Set, Step Down Transformer	L23634-JKQ	
1	Circuit Breaker, 10KVA	100-3857	
Welding Power Supply			Included
1	WB-A350P-460	WB-A350P-460	
Welding Kit			Included
1	Control Cables (5m)	FD19RB-5505	
1	Torch Adaptor	BBAWD-1801	
1	Power Cable w/ Dinse (7m)	BKPD7-6007	
1	Gas Hose	BKGGF-0603	
1	HA-15 Welbee Cooler: 460V ONLY	606891	
1	Wire Harness: Welbee to HA-15	K8133A00	
2	Plug, Male Water, 5/8	350P-W	
2	Fitting Adaptor	AW-404	
1	Adaptor	AW406	
2	Ferrite Core	100-0618	
2	Ferrite Clamp	100-2571	
1	AC Servo Control Unit	L22202A00	
1	Feeder Control Cable (7m)	AFRB-2207	
1	Cable, Shock Sensor (7m)	L23639B00	
1	Conduit, (3m)	L10697D00	
1	Conduit Assembly, Pull Feed Unit	L7318C00	
1	Cable Hanger	L6532B00	
1	Conduit Assembly for Steel	L10683K00	
1	Bracket Assy, Conduit Assembly	L11732B00	
1	Pull Feeder Unit	L11808A	
1	Shock Sensor Unit	L11808A	
1	Mounting Bracket	L11808E	
1	Torch , Water-Cooled TIG	L7632A00	
1	Power Cable Hoze (6m)	L7633E	
1	Torch Bracket (45 deg)	L11808F00	
1	Torch Gauge (45 deg)	L11861D00	
1	Tip Gauge	L11948G00	
2	Feed Roll, 1.2mm	L11930E00	
2	Pressure Roll, 1.2mm	L11932E00	
1	Wire Guide, Steel (1.2mm)	L12022E00	
1	Inlet Guide Assy	L11908D00	
1	Linekeeper	1L0271B01	
External Axis Kit			Included
1	External 2-Axis Kit	L23456A/L23457A	
1	Positioner, TB/Rotate, 300Kg	A2PF-300	
1	Cable, External Axis, 5m	L-20745A	
Required Software Options			Included
1	Synchromotion	L23820C	
1	Multi-Unit	L23820D	
1	TIG Pulse	L23820K	
1	TIG Arc Sensor (Including PCB & Cables)	A2L1R2	\$11,635.60
Weld Applications Development & Programming			
8	- Fixture review and part fit-up / repeatability @ OTC		\$800.00
16	- Weld parameter development @ OTC		\$1,600.00
40	- Part programming @ OTC		\$4,000.00
24	- On-Site support & program touch-up		\$2,400.00
	Technician Travel Time	Estimate	\$810.00
***Actual travel expenses are not included and will be invoiced on final billing			
Additional Options, Installation and Training			
1	Shipping from OTC	Shipping	TBD
2	Days of On-Site Setup and Installation	Installation	\$1,800.00
	Technician Travel Time	Estimate	\$150.00
***Actual travel expenses are not included and will be invoiced on final billing			
System Price			\$157,408.60
Weld Applications Development & Programming			\$9,610.00
Installation			\$1,950.00
Total System Price			\$168,968.60
Multi Cell Discount			(\$15,740.86)
Price for 1 cells and Weld Development			\$184,709.46
Price for 2 cells (Weld Development only once)			\$296,845.48
Price for 3 cells (Weld Development only once)			\$440,463.22

APPROVAL SIGNATURE/DATE _____

NOTES:
ALL FIXTURE INFORMATION IS AN APPROXIMATION
FROM INFORMATION GATHERED ON BASECAMP.
NO CONFIRMED FIXTURE DATA WAS PROVIDED TO OTC DAIHEN
AT APPROVAL TIMING.



TOLERANCES UNLESS OTHERWISE SPECIFIED				MODEL No. 1		THIRD ANG		MATERIAL	
1 PLACE DECIMALS ±.04"	1 PLACE DECIMALS ±0.5mm	2 PLACE DECIMALS ±.02"	2 PLACE DECIMALS ±0.13mm	3 PLACE DECIMALS ±.005"	3 PLACE DECIMALS ±0.13mm	4 PLACE DECIMALS ±.0005"	4 PLACE DECIMALS ±0.013mm	CUSTOM	PROD. QTY: 1
ANGLES ±1°	DO NOT SCALE DRAWING	BREAK ALL SHARP EDGES UNLESS OTHERWISE SPECIFIED	4/21 ROTATED POSITIONER 180° SW	APPROVAL: CHIEF	DRAWING: SW	DATE: 1/21	ARTICLE: GENERAL ASSEMBLY	DWG No. 1M0896A00	1/1
STAMP PART NO. AND REVISION LETTER ON EACH PART				REV.	DATE	DESCRIPTION	DRAWN	DAIHEN INC.	



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FD Series Arc Welding Robot - Features and Benefits

Arc Welding Robot

Offers a wide working range with an independently articulated arm
Seamless digital connection with all OTC DAIHEN brand welding power supplies
Improved vibration restraining control provides smooth robot movement.
Built-in mechanical shock sensor
Single source technology – all components are manufactured by OTC DAIHEN
Highly versatile design supports most welding applications

FD11 Robot Controller

Windows XP based open architecture
Large memory capacity and 40 Input / 40 Output control signals
Advanced PLC functions allow for ladder diagram editing directly through the teach pendant
Network capabilities – connects to Ethernet, DeviceNet, and PROFIBUS connections (may require additional hardware)

Teach Pendant

Icon displays assist in quick & easy teaching
640x480 VGA color screen with LED backlight color display
3 position enable switch provides increased safety
Multi-screen function allows user to view up to 4 screens simultaneously
On-screen help function with complete instruction manuals
Standard touch screen display with jog dial operation



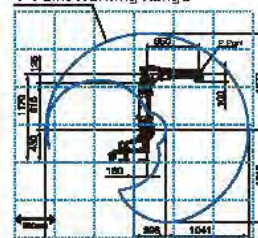
			FD-V8
Item			Specifications
Structure			Vertical articulated type
Number of axes			6
Max payload capacity			8 kg
Positional repeatability			+/- 0.08mm *Note 1*
Drive system			AC servo motor
Drive capacity			3016 w
Position feedback			Absolute encoder
Working Range	Arm	Axis J1(Rotation)	+/- 170° (+/-50) *Note 2*
		Axis J2(Lower arm)	-155°~+90°
		Axis J3 (Upper arm)	-170°~+190°
	Wrist	Axis J4 (Swing)	+/- 180°
		Axis J5 (Bending)	-50°~+230°
		Axis J6 (Twist)	+/- 360°
Max. Velocity	Arm	Axis J1(Rotation)	4.19 rad/s {240°/s} {3.32 rad/s {190°/s} *Note 3*
		Axis J2(Lower arm)	4.19 rad/s {240°/s}
		Axis J3 (Upper arm)	4.01 rad/s {230°/s}
	Wrist	Axis J4 (Swing)	7.50 rad/s {430°/s}
		Axis J5 (Bending)	7.50 rad/s {430°/s}
		Axis J6 (Twist)	11.00 rad/s {630°/s}
Wrist Load	Allowable Movement	Axis J4 (Swing)	17.6 N*m
		Axis J5 (Bending)	17.6 N*m
		Axis J6 (Twist)	7.8 N*m
	Allowable Movement of Inertia	Axis J4 (Swing)	0.43 kg*m²
		Axis J5 (Bending)	0.43 kg*m²
		Axis J6 (Twist)	0.09 kg*m²
Arm operation cross-sectional area			3.11m² x 340°
Ambient conditions			0~45°C,20 ~ 80%RH (No condensation)
Mass (weight)			140 kg
Upper arm payload capacity			10 kg *Note 4*
Installation type			Floor, ceiling or wall hanging type
Paint color			White (Munsell value 10gy9/1)



P Point Working Range



P Point Working Range



□ Floor-mounted ⊞ Wall or ceiling mounted

Note 1: The positional repeatability is pursuant to JIS B 8432 standards

Note 2: The values given in () apply when wall-mounted

Note 3: When wall mounted the working range of the J2 axis may be limited.

Note 4: The upper arm payload capacity varies by max. payload capacity.



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FD11 Controller Specifications

Daihen's most Advanced robot controller. Smaller, lighter, less energy, less maintenance, and refined operability—the FD11 sets a high bar for efficiency.



Model	FD11 Controller
Dimensions	Inches: 22.83 W x 21.34 D x 25.59 H
	mm: 580 W x 542 D x 650 H
Mass	Approximately 137 lbs (62 kg)
Ambient temperature range	32 to 113° F (0 to 45° C)
Ambient relative humidity range	20 to 80% RH (non condensing)
Power supply	3-phase 480/240 VAC ±10% -15%, 50/60 Hz with integrated transformer
"General purpose physical I/O"	40 inputs, 40 outputs (standard)
Memory capacity	160,000 instructions by PTP
	instruction in a single mechanism
Number of task programs	9,999
External memory	USB (Robot Control: 1 slot, Teach Pendant: 1 slot optional)
Color	Munsell notation 10GY 9/1

FD Series Teach Pendant Specifications

Our goal was to make teaching your robot as easy as possible, and we succeeded. Simple backups, Jog dial, touch screen, and high resolution LED screens are just a few of the features.



Model	Teach Pendant
Dimensions	Inches: 6.89 W x 12.83 D x 3.19 H
	mm: 175 W x 326 D x 81 H
Mass	Approximately 2.1 lbs (0.96 kg)
Operation device	Axis keys, TP selector switch, jog dial, enable switch, operation ready ON key, emergency stop button, USB memory slot (1 slot)
Display	5.7 inches, 640x480 pixels, 65536 colors, touch panel, LED backlit
IEC protection class	IP65
Cable length	26.25 ft (8 m) standard
	49.21 ft (15 m) optional



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TIG Welding Torches

TFUS350A

The standard package for TIG fusion applications. This package utilizes the standard OTC DAIHEN water cooled TIG torch (Model MWXC-3501), and is suitable for any TIG fusion welding application at welding currents up to 350A.

TORCH SPECIFICATIONS

Item	Specification
Name	MWXC-3501
Max. Operating Current	350A
Rated Duty Cycle	100%
Applicable Wire Diameter	1/16" (1.6mm), 0.094" (2.4mm), 0.125" (3.2mm)[STANDARD]
Cooling System	Water cooling
Shock Sensor	Built-in



TFIL350A

The standard package for TIG filler applications. This package utilizes the standard OTC DAIHEN water cooled TIG torch (Model MWXC-3501, and includes the required wire feeder and filler guides. This program is suitable for any TIG filler welding application at welding currents up to 350A.

TORCH SPECIFICATIONS

Item	Specification
Name	MWXC-3501
Max. Operating Current	350A
Rated Duty Cycle	100%
Applicable Wire Diameter	0.030" (0.8mm), 0.035" (0.9mm), 0.040" (1.0mm), 0.045" (1.2mm), 0.052" (1.4mm), 0.062" (1.6mm)
Cooling System	Water cooling
Shock Sensor	Built-in



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WB-A350P Digital AC/DC TIG Inverter Welding Power Supply

The WB-A350P is a digital inverter TIG welder capable of running AC, DC and AC+DC hybrid welding modes.

Equipped with a unique combination of high-current output, high-frequency output and high duty-cycle performance.

The WB-A350P is part of the WELBEE Series of OTC DAIHEN digital inverter welding power supplies. All WELBEE welding power supplies have built-in robot interfaces and are optimized to perform with the FD11 robot controller, resulting in the highest possible degree of robotic welding control.

Item	Specification
Name	WB-A350P
TIG Welding Modes	AC, DC and AC+DC Hybrid
Number of Phases	3-phase
Rated Input Voltage	460/480VAC $\pm 10\%$ (50/60Hz)
Rated Input (AC TIG)	12.2kVA (10.2kW)
Rated Input (DC TIG)	12.3kVA (10.8kW)
Rated Output Current	350A
Rated Load Voltage	24V
Output Current Range (AC and AC+DC Hybrid TIG)	5-350A (soft mode: 5~250A)
Output Current Range (DC TIG)	2-350A
Rated Output Voltage Range	12-34 V
Maximum No-Load Voltage	70V/77V
Rated Duty Cycle	40%
Torch Cooling Method	Air / Water (with HA-15-1 watercooler)
Arc Start Method	high frequency start
Pulse Frequency	0.1 ~ 999Hz
Pulse Width	5 ~ 95%
AC Frequency	30 ~ 500Hz
Temperature Range	14°F to 104°F
Moisture Range	50% or less (104°F), 90% or less (68°F)
Storage Temperature Range	-4°F to 131°F
External Dimensions	15.6" x 28.0" x 25.2" (395mm x 710mm x 640mm)
Weight	123lbs. (56kg)

A350P Key Features and Benefits

Improved Arc Stability in Low Current Range

With improved arc stability in the low current range (5A in AC and AC+DC Hybrid mode, 2A in DC mode), delivering reliable, consistent welding of thin sheets. Burn-through is eliminated while full penetration and fusion are insured.

Concentrated Arc with High Frequency Output

Output frequencies up to 500Hz deliver concentrated, focused arc energy into the weld joint, achieving better penetration with improved efficiency.

User-Friendly Interface

All WELBEEs are operated via a simple interface that revolves around a single knob that adjusts the voltage and current (wire speed) and visual buttons. A large LED is used to display settings and weld parameters. The buttons can easily be pushed even while wearing welding gloves.

Higher Output Current for Higher Duty Cycle Production

Delivering output current of 350A at 40% duty cycle and 270A at 100% duty cycle, high speed plate welding is achieved.

Other Key Features & Specifications

- Supported materials: aluminum, mild steel, stainless steel, inconel, titanium
- AC+DC Hybrid welding delivers efficient TIG welds while extending the life of the torch
- Robot-ready via built-in FieldBus interface.
- Plug+Play connection to OTC DAIHEN FD-series robots.
- Welding's Best Electronic Engine (WELBEE) with Digital Inverter, now for manual use.
- 100 job memory for manual, semi-automatic and retrofit use.
- 3-speed "Fan on demand" IGBT switching circuit.
- Water pressure detection kit standard.

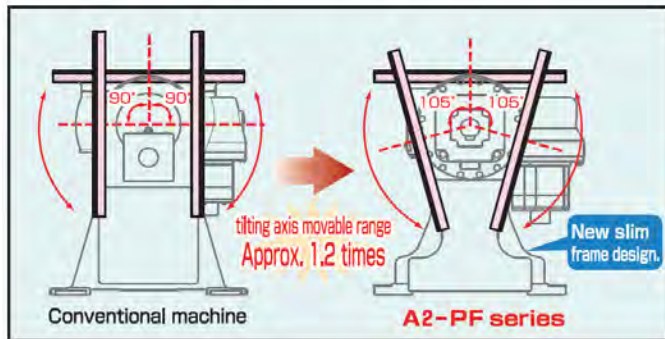




TILT-ROTATE POSITIONERS features and benefits

OTC Tilt-Rotate positioner is designed for arc welding application. It is re-designed for high-speed and more versatility.

Easy connection and installation feature is also save time and effort for integration. There are 3 variations in payload from 660 lbs (300kg) to 2203 lbs (1000kg).

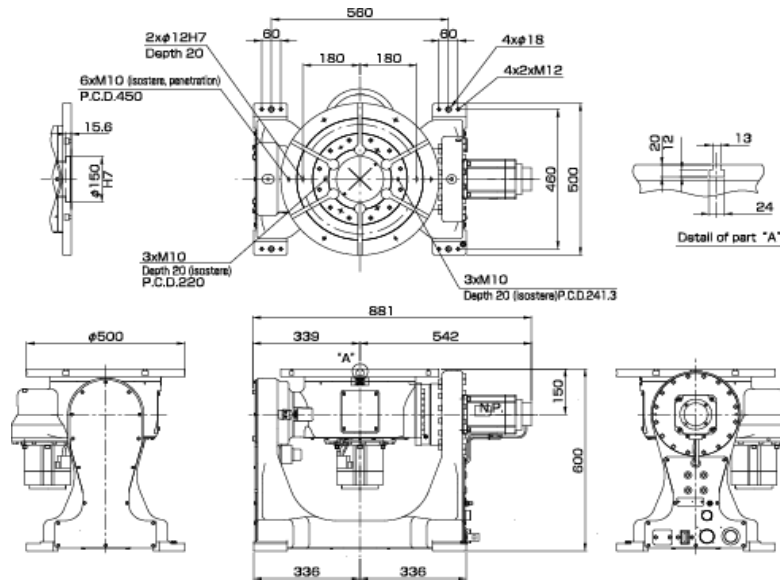


Model A2PF-1000

Specifications

Item		A2PF-300	A2PF-500	A2PF-1000
Max. Payload [lbs]		660 (300kg)	1101 (500kg)	2203 (1000kg)
Max. Offset of C.O.G from center		3.94"(100mm) at maximum load	3.15"(80mm) at maximum load	3.55"(90mm) at maximum load
Max. Offset of C.O.G from disk surface		5.91"(150mm) at maximum load	4.92"(125mm) at maximum load	7.01"(178mm) at maximum load
Rotation Speed	Tilt	2.18 rad/s (125 deg/s)	1.47 rad/s (84 deg/s)	1.4 rad/s (82 deg/s)
	Rotate	3.14 rad/s (180 deg/s)	2.83 rad/s (162 deg/s)	2.9 rad/s (166 deg/s)
Moving Range	Tilt	-135 to +135 deg	-135 to +135 deg	-135 to +135 deg
	Rotate	400 deg	400 deg	400 deg
Rotational moment	Tilt	882Nm	1347Nm	3704 Nm
	Rotate	294Nm	392Nm	882 Nm
Allowable Inertia	Tilt	30.5 kgm ²	47.3 kgm ²	187.9 kgm ²
	Rotate	9.1 kgm ²	26.2 kgm ²	53.1 kgm ²
Repeatability		0.0031" (0.08mm)		
Weight [lbs]		572.7lbs (260Kg)		1034lbs (470Kg)
Max. Weld Current		500A 100%		
Installation		Floor Mount		
Temperature Rating		0-45 deg (Celsius) 20-80% (Humidity)		
Color		White		

A2PF-300 & A2PF-500 Specs



A2PF-1000 Specs

