



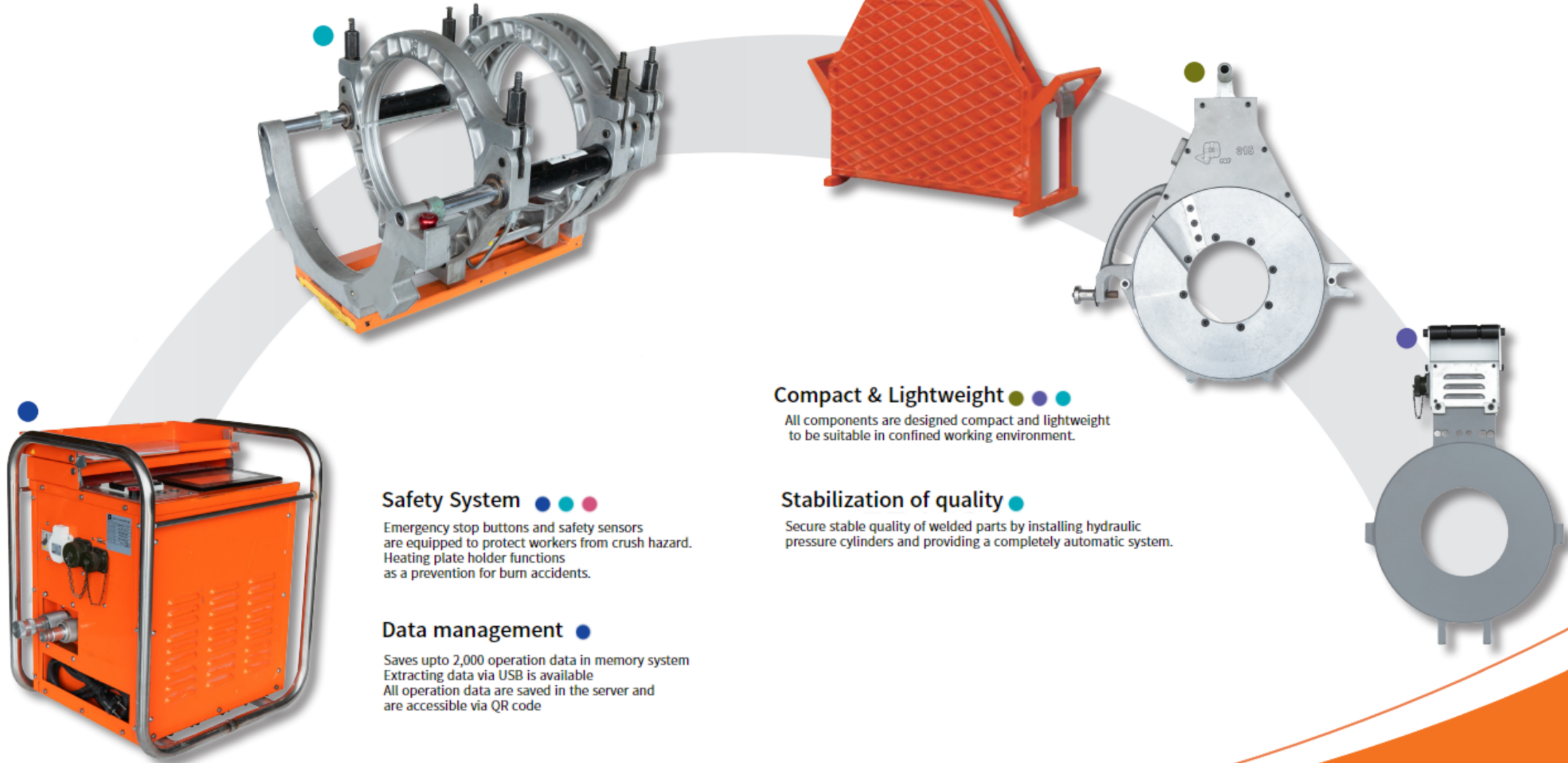
P&F

Plastic Welding Machine



For the Highest Level of

Safety | Convenience | Quality | Lightweight





P&F Welding Machine

02

- Co-developed with Samsung Electronics & Samsung Engineerings
- Approved exclusively at Samsung semiconductor site
- Adopted real-time welding data management system (accessible via QR code)

P&F provides butt-fusion welding machine with an auto-hydraulic system. Optimized for the field environment, all welding operations are automated with a controller programmed in International Standards(ISO, DVS) to achieve consistent and superior welding quality regardless of worker's capability. In addition, all components are ultra-light, improving the convenience and safety of workers. In particular, it is widely used in sites with a small workspace, such as semiconductor sites.



What if we apply the QR code system?

Efficient fusion data management ► Saving cost

Standard

Fusion data management

QR CODE

after extracting the fusion data,

- manual input on excel based files
: takes time and prone to errors
- inspection
: higher risk with naked eyes
- data management
: difficult identifying the overall process rate of blueprints

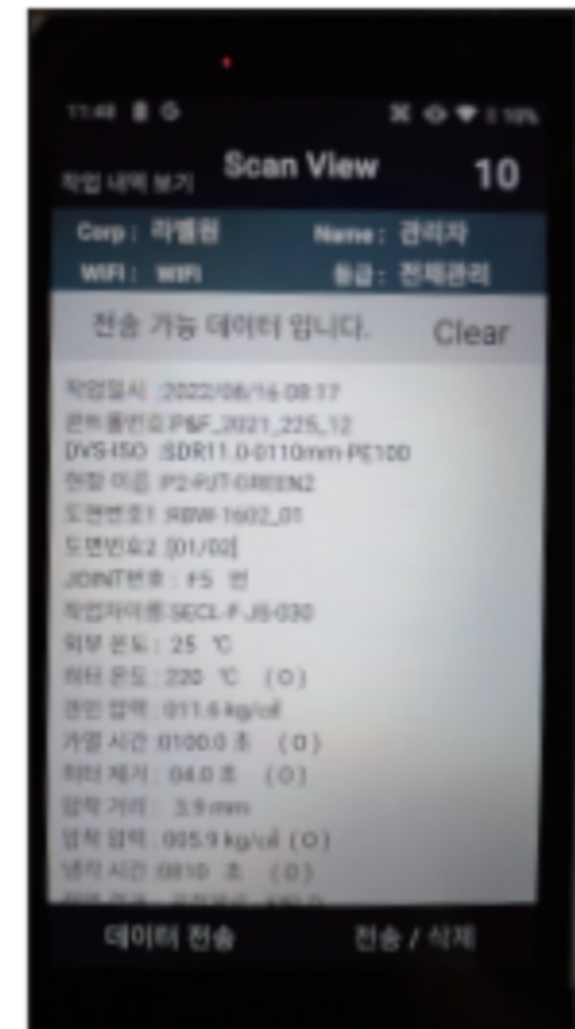


after converting the fusion data,

- scan the PDA to convert and send the digital data to the server
: no need of human work→saves time
- automatic inspection
: determine and filter repeating data
: determine and filter data errors
- data management
: data sent to the server is queried by each condition
: data are applicable into big data



Data print



QR code scan

Components



Machine body

Consists of a support frame, three clamps and two hydraulic cylinders. Emergency stop buttons, two safety sensors, and a distance sensor are installed to prevent injury to workers due to accidents such as crash hazard. The aluminum wheeled body is ultralightened to facilitate welding and movement in confined working environments.



Holder

Protects components (Milling Cutter, Heating plate) from external damage.



Milling Cutter

Milling cutter smoothens the cross section of the pipe. It is designed lightweight by using a self-developed high-performance motor. High performance bearings also prevent breakaways and overloads on disc plates.



Controller

Controllers that automatically implement reliable fusion processes through advanced system monitoring and automated processes make it easier for users to perform standardized tasks. In addition, a large 155mm x 85mm touch screen allows the operator to quickly and easily modify settings for the task, and saves up to 2000 datas. Not only can the operation data be moved by using USB, but it also can manage data and keep track of fusion work by adopting a QR code system.







Heating Plate

The Teflon-coated heating plate melts the cross section of the pipe/fitting. The power cable can be stored separately with its removable cable.

Model Standards

Every model of P&F Welding machine manages its own standard of operations.

PRODUCT RANGE	
P&F #2	OD 63mm - 225mm
P&F #3	OD 225mm - 315mm
P&F #4	OD 315mm - 400mm
P&F #5	OD 450mm - 500mm
P&F #6	OD 500mm - 630mm
P&F #8	OD 710mm - 800mm
P&F #10	OD 800mm - 1000mm
P&F #12	OD 1000mm - 1200mm
P&F #16	OD 1200mm - 1600mm
P&F #18	OD 1600mm - 1800mm
P&F #20	OD 1800mm - 2000mm
P&F #26	OD 2000mm - 2600mm

Quality Reliability Inspection			
구분	기존 용착기 사용	개발 용착기 사용	결과
비드모양검사			DVS, ASTM 기준 비드 형상 균일 ➔ 합격
용착부 인장시험			KS M 3408 기준 (인장강도 19.6 MPa 이상) 기존 22.4 MPa, 개발 22.9 MPa ➔ 합격



Model Specification

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Specification	P&F 225	P&F 315	P&F 400	P&F 500
Suitable size	63~225mm	225~315mm	315~400mm	400~500mm
Suitable material	HDPE	HDPE	HDPE	HDPE
Max. production rate	2000 cycles	2000 cycles	2000 cycles	2000 cycles
Rated voltage	220V 60Hz 14A	220V 60Hz 16A	220V 60Hz 20A	220V 60Hz 40A
Power consumption	3900W	4100W	4900W	8900W
Heating temperature	220°C ±10°C	220°C ±10°C	220°C ±10°C	220°C ±10°C
Reaching time of Max. temp	8mins	10mins	12mins	14mins
Optimal site temp	-10~40°C	-10~40°C	-10~40°C	-10~40°C
Body size	500x397x245	530x480x430	620x595x550	730x740x680
Milling cutter size	350x290x480	500x300x620	620x350x720	720x380x880
Heater size	350x70x440	400x80x630	475x55x710	600x55x850
Holder size	530x205x290	640x210x380	760x230x415	915x295x545
Controller size	440x370x525	440x370x525	440x370x525	600x380x650
Body weight	28kg	36kg	56kg	107kg
Milling cutter weight	12kg	17kg	27kg	52kg
Heater weight	4.8kg	8kg	9kg	15kg
Holder weight	4.5kg	7kg	9kg	16kg
Controller weight	37kg	37kg	37kg	53kg
Total Weight	86.5kg	105kg	138kg	243kg

Specification	P&F 630
Suitable size	500~630mm
Suitable material	HDPE
Max. production rate	2000 cycles
Rated voltage	220V 60Hz 50A
Power consumption	9800W
Heating temperature	220°C ±10°C
Reaching time of Max. temp	16mins
Optimal site temp	-10~40°C
Body size	956x999x877
Milling cutter size	800x449x937
Heater size	700x36x771
Holder size(Milling cutter)	554x391x713
Holder size(Heater)	698x336x676
Controller size	600x380x650
Body weight	128kg
Milling cutter weight	65kg
Heater weight	20kg
Holder weight(Milling cutter)	15kg
Holder weight(Heater)	20kg
Controller weight	53kg
Total Weight	301kg

Model Specification

07

Specification	P&F 800
Suitable size	710~800mm
Suitable material	HDPE
Max. production rate	2000 cycles
Rated voltage(Controller)	380V 60Hz 30A
Rated voltage(Milling cutter)	220V 60Hz 15A
Power consumption(Controller)	10500W
Power consumption(Milling cutter)	3300W
Heating temperature	220°C ±10°C
Reaching time of Max. temp	18mins
Optimal site temp	-10~40°C
Body size	1138x1040x1117
Milling cutter size	970x490x1138
Heater size	869x36x940
Holder size(Milling cutter)	687x400x807
Holder size(Heater)	824x400x867
Controller size	420x307x510
Hydraulic pump size	346x261x575
Body weight	156kg
Milling cutter weight	80kg
Heater weight	30kg
Holder weight(Milling cutter)	25kg
Holder weight(Heater)	30kg
Controller weight	30kg
Hydraulic pump weight	34kg
Total Weight	385kg

Specification	P&F 1000	P&F 1200	P&F 1600	P&F 1800	P&F 2000	P&F 2600
Suitable size	800~1000mm	900~1200mm	1200~1600mm	1400~1800mm	1600~2000mm	2250~2600mm
Suitable material	HDPE	HDPE	HDPE	HDPE	HDPE	HDPE
Max. production rate	2000 cycles	2000 cycles	2000 cycles	2000 cycles	2000 cycles	2000 cycles
Rated voltage	380V 60Hz	380V 60Hz	380V 60Hz	380V 60Hz	380V 60Hz	380V 60Hz
Power consumption	25KW	36KW	46KW	70KW	80KW	136KW
Heating temperature	220°C ±10°C	220°C ±10°C	220°C ±10°C	220°C ±10°C	220°C ±10°C	220°C ±10°C
Reaching time of Max. temp	30mins	30mins	35mins	35mins	35mins	35mins
Optimal site temp	-10~40°C	-10~40°C	-10~40°C	-10~40°C	-10~40°C	-10~40°C
Body size	2550x1720x1860	2900x2100x2030	3600x2800x2400	3800x2600x2700	4000x2800x2900	5600x4000x4200
Milling cutter size	1750x500x1200	2000x500x1350	2500x500x1700	2900x500x2100	3000x500x2400	3500x2000x2600
Heater size	1550x300x1250	1700x300x1430	2200x300x1800	2500x300x2400	2700x300x2500	2700x2000x2400
Holder size	1000x900x1150	1200x1000x1500	1800x1100x1900	2000x1300x2000	2200x1400x2400	3500x2000x2500
Controller size	950x550x700	950x550x700	950x550x700	1160x700x650	1500x600x650	1255x940x1060
Body weight	1006kg	2270kg	4486kg	5200kg	7200kg	24000kg
Milling cutter weight	356kg	380kg	1072kg	1500kg	2000kg	3700kg
Heater weight	90kg	130kg	252kg	300kg	480kg	1600kg
Holder weight	70kg	120kg	230kg	310kg	600kg	1500kg
Controller weight	80kg	90kg	120kg	150kg	540kg	800kg
Total Weight	1602kg	2290kg	6160kg	7460kg	10820kg	31600kg

HDPE Welding Academy

Based on the professional fusion technology and quality management know-how of Hyundai Pipe, we train P&F's identic systems and development instructions in a more user-friendly manner. In addition, we implement qualification tests that issue certificates which proves the theoretical and practical qualification of the worker.

COURSE

- Theoretical education and examination
- Practical training and examination
- Issuance of training certificate





Reference

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Project	Standard	Client
Samsung Electronics Pyeongtaek semiconductor P3	P&F 225 - 630	Samsung Electronics
Songdo Eddison	P&F 225 - 630	Samsung Biologics
Incheon International Airport Terminal 2	P&F 225	Hanwha Engineering & Construction
Tongyeong LNG Terminal	P&F 225 - 800	Hanwha Engineering & Construction
Ulsan LNG Terminal	P&F 225 - 1800	Daewoo Engineering & Construction
Gangneung Anin Coal-fired Power Plant	P&F 500 - 2600	Samsung C&T
Daesan Eco-industrial Area Desalination	P&F 630	GS Engineering & Construction





THANK YOU

P&F