

ELECTROFUSION CATALOGUE

Electrofusion Fittings &
Control Box



Electrofusion Product Guide 2017

Alwasail Industrial Company

The Pipes and Fittings Expert



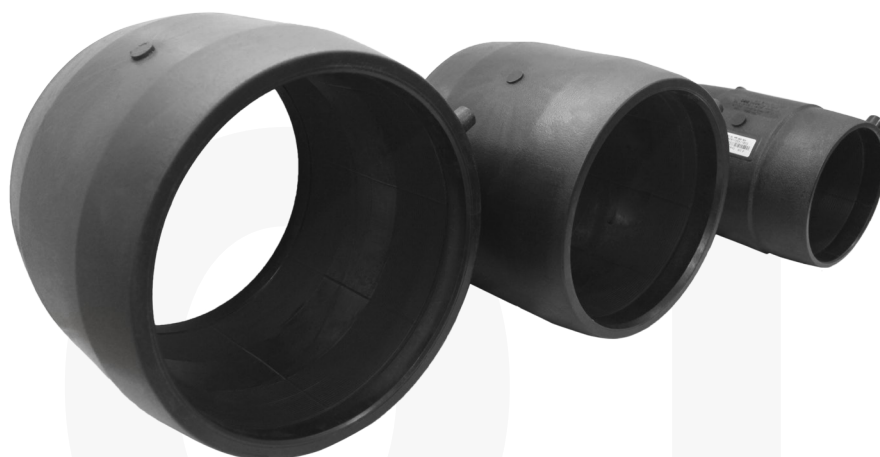
THE COMPANY

Alwasail Industrial Co. is one of the leading manufacturers of polyethylene pipes and fittings; mainly for irrigation, telecom, drinking water, firefighting networks and, gas and oil transport systems. It also produces rubber products and foam through its affiliate company Saudi Rubber Products (SRP).

Alwasail has grown to become one of the Saudi Arabia's largest manufacturers and suppliers of polyethylene products serving infrastructure and irrigation projects.

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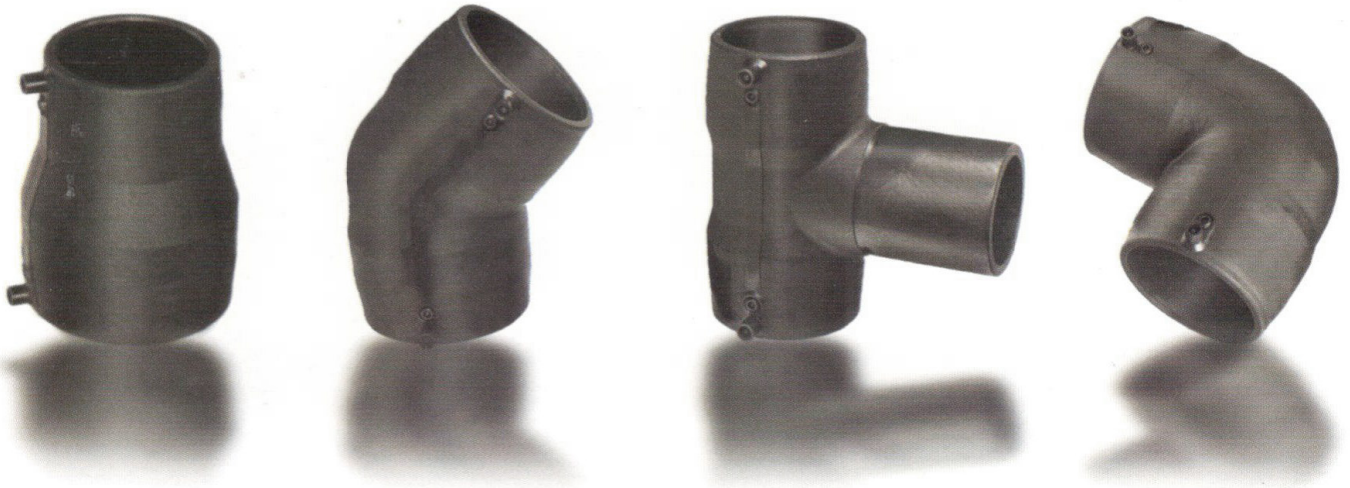
A close-up photograph of several black electrofusion fittings and pipes. The fittings are cylindrical with a flared end and a smaller diameter section. The pipes are also black and have a similar flared end. The background is a light, neutral color. A red diagonal shape is overlaid on the left side of the image, containing the title and text.

ELECTROFUSION FITTINGS

Electrofusion fittings are used, incorporating electrofusion control box, the heating coils melt the plastic of both the fitting and the pipe, causing them to fuse together.

The use of reliable PE fittings is required to obtain a high quality and durable PE pipe system.

The production quality, reliability, and flexibility of Alwasail's electrofusion fittings provides the certainty and peace of mind needed for polyethylene pipe jointing.



EF FITTINGS PRODUCT FEATURES

Fitting Type	Water (cold)	Gas
Coupler	PN16	6 Bar /10 Bar
Elbow	PN16	6 Bar /10 Bar
Equal Tee	PN16	6 Bar /10 Bar
Reducer	PN16	6 Bar /10 Bar
Tapping tee **	PN16 / PN 2.5	6 Bar /10 Bar
Branch Saddle **	PN16 / PN12.5	6 Bar
Transition Fittings	PN12.5	6 Bar

ISO PE Classification	Minimal Required Stress	Long-Term Hydrostatic Resistance at 20 °C
PE80	8 MPa	6.3 MPa
PE100	10 MPa	8 MPa

PE80 is widely used for gas, water, and industrial applications for many years.

PE100 is a higher performance, higher density PE, which demonstrates exceptional resistance to rapid crack propagation and long-term stress cracking. Due to the higher performance, this type of PE allows for thinner walls at the same operating pressure.

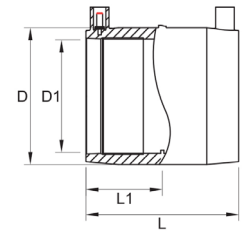
ELECTROFUSION APPROVAL TESTING

Typical Test	Test Criteria	Water Specification	Gas Specifications
20°C Hydrostatic test (5000 hrs)	PE80 - 9.5 Mpa PE100- 11 Mpa	N/A	GIS/PL2-4 GIS/PL2-6
80°C Hydrostatic test (1000 hrs)	PE80 - 4 Mpa PE100 - 5 Mpa	BS EN12201-3	BS EN1555-3 GIS/PL2-4 GIS/PL2-6
20°C Hydrostatic test (100 hrs)	PE80 - 10 Mpa PE100-12.4Mpa	BS EN12201-3	GIS/PL2-4 GIS/PL2-6 BS EN1555-3 ISO 8085
80°C Hydrostatic test (170 hrs)	PE80 - 4.6 Mpa PE100 - 5.5 Mpa	BS EN12201-3	GIS/PL2-4 GIS/PL2-6 BS EN1555-3 ISO 8085
Joint strength/adhesion (socket OD>90mm)	All samples have 75% ductility	WIS 4-32-08 BS EN12201-3	GIS/PL2-4 GIS/PL2-6 BS EN1555-3 ISO 8085
Joint strength/adhesion (socket OD ≤ 90mm and saddles)	No brittle failure at joint interface	BS EN12201-3	GIS/PL2-4 GIS/PL2-6 BS EN1555-3 ISO 8085 7
Material tests (taken from joint interface after fusion cycle)	MFR, OIT and density within specified limits	BS EN12201-3	GIS/PL2-4 GIS/PL2-6 BS EN1555-3 ISO 8085
Tapping tee cutter torque	No cracking or leaking after impact	BS EN12201-3	GIS/PL2-4 GIS/PL2-6 BS EN1555-3 ISO 8085
Branch saddle pull off	Outlet pipe to fall before fitting	Internal	Internal



COUPLER

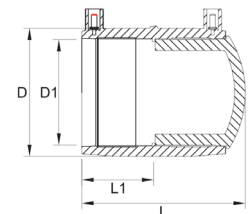
PE100 Black - Gas 10 Bar / Water PN16



Fitting Size (mm)	L (mm)	L1 (mm)	D (mm)	D1 (mm)	Fusion Time (secs)	Cooling Time (mins)	Box Quantity
20	77	37.5	29	20	35	3	80
25	77	37.5	33.5	25	30	3	80
32	77	37.5	43	32	45	3	100/75
40	77	44	51.5	40	40	5	90
50	90	44	65	50	90	5	70
63	93	49	77	63	35	3	20/25
75	102	61	100	75	50	5	45
90	125	60	110	90	90	10	27/30
110	122	70	133	110	160	10	10/18
125	144	75	151	125	200	10	12
140	154	89	176	140	200	10	6
160	181	86	195	160	300	20	4
180	186	91	220	180	360	20	4
200	222	92	243	200	440	20	4
225	224	109	276	225	600	30	2
250	220	108	301	250	600	30	2
280	260	126	345	280	600	30	1
315	261	127	386	315	900	30	1
355	260	126	437	355	900	30	1
400	290	142	475	400	TBC	TBC	1

END CAP

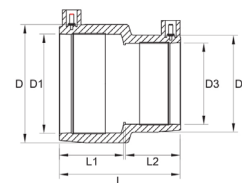
PE100 Black - Gas 10 Bar / Water PN16



Fitting Size (mm)	L (mm)	L1 (mm)	D (mm)	D1 (mm)	Fusion Time (secs)	Cooling Time (mins)	Box Quantity
20	82	37.5	29	20	35	3	80
25	82	37.5	33.5	25	30	3	80
32	84	37.5	43	32	45	3	100/75
40	97	44	51.5	40	40	5	90
50	101	44	61.5	50	90	5	70
63	115	49	77	63	35	3	20/25
75	125	61	100	75	50	5	45
90	133	60	110	90	90	10	27/30
110	164	70	133	110	160	10	10/18
125	175	75	151	125	200	10	12
140	236	89	176	140	200	10	6
160	202	86	195	160	300	20	4
180	214	91	220	180	360	20	4
200	215	92	243	200	440	20	4
225	222	109	276	225	600	30	2
250	220	108	301	250	900	30	2

REDUCER

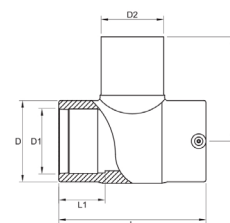
PE100 Black - Gas 10 Bar / Water PN16



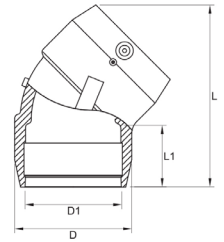
Fitting Size (mm)	L (mm)	L1 (mm)	D (mm)	D1 (mm)	Fusion Time (secs)	Cooling Time (mins)	Box Quantity
25 x 20	77	38.5	34	25	36.5	3	80
32 x 20	77	38.5	43	32	36.5	3	75
32 x 25	77	38.5	43	32	36.5	3	75
40 x 32	84	41	52	40	41	5	100
50 x 32	91	46.5	62	50	41	5	80
50 x 40	91	46.5	62	50	43	5	80
63 x 32	102	52	78	63	44	5	60
63 x 40	102	52.3	77	63	45	5	60
63 x 50	102	52	78	63	48	10	60
75 x 63	125	61	98	75	57	7	28
90 x 63	122.5	61	109.5	90	55	5	35
110 x 63	158	80	140	110	58	10	18
110 x 90	137.5	70	134	110	62	10	20
125 x 90	145	75	152	125	62.5	10	12
160 x 90	192	96	200	160	73	22	4
160 x 110	193	96	200	160	80	22	6
180 x 125	221	101	216	180	83	10	4

EQUAL TEE

PE100 Black - Gas 10 Bar / Water PN16



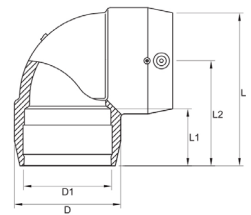
Fitting Size	L (mm)	L1 (mm)	D (mm)	D1 (mm)	Fusion Time (secs)	Cooling Time (mins)	Box Quantity
20 x 20 x 20 mm	98	35	44	20	78	3	75
25 x 25 x 25 mm	98	35	44	25	78	3	75
32 x 32 x 32 mm	98	35	44	32	78	3	50
40 x 40 x 40 mm	131	44	52	40	91	5	18
50 x 50 x 50 mm	141	43	64	50	104	5	25
63 x 63 x 63 mm	156	50	82	63	114	5	20
75 x 75 x 75 mm	174	60	97	75	126	10	12
90 x 90 x 90 mm	201	55	115	90	143	8	7
110 x 110 x 110 mm	239	73	139	110	167	10	6
125 x 125 x 125 mm	262	79	156	125	196	15	4
160 x 160 x 160 mm	313	89	200	160	211	20	2



45° ELBOW

PE100 Black - Gas 10 Bar / Water PN16

Fitting Size (mm)	L (mm)	L1 (mm)	D (mm)	D1 (mm)	Fusion Time (secs)	Cooling Time (mins)	Weight (kg)	Box Quantity
32mm x 45 deg	95	39	44	32	45	3	0.08	100
40 mm x 45 deg	108	41.5	53	40	50	5	0.1	70
50 mm x 45 deg	124	44.5	63.8	50	80	5	0.134	50
63 mm x 45 deg	135.4	50	78.5	63	35	5	0.25	30
75 mm x 45 deg	165	62	97	75	70	10	0.427	35
90 mm x 45 deg	192	82	117	90	110	10	0.765	18
110 mm x 45 deg	213	75	137	110	140	10	0.894	10
125 mm x 45 deg	240	81	154	125	140	10	1.22	6
160 mm x 45 deg	320	105	217	160	240	10	4.5	2
180 mm x 45 deg	320	105	217	180	240	20	3.13	2



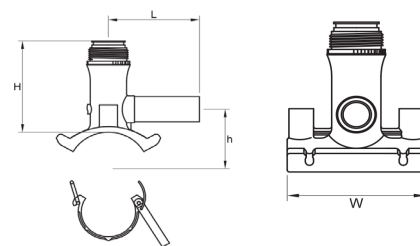
90° ELBOW

PE100 Black - Gas 10 Bar / Water PN16

Fitting Size	L (mm)	L1 (mm)	D (mm)	D1 (mm)	Fusion Time (secs)	Cooling Time (mins)	Box Quantity
20mm x 90 deg	82	44	64	36	20	3	40
25mm x 90 deg	72.4	37.5	55.4	33.85	25	3	100
32mm x 90 deg	84	40	62	44	32	3	80
40mm x 90 deg	115	50	83	67	40	5	55
50mm x 90 deg	115	50	83	67	50	10	50
63mm x 90 deg	123.3	50	84.1	80	63	5	25
75mm x 90 deg	141	53	92	95	75	5	25
90mm x 90 deg	165	59	106	113	90	10	15
110mm x 90 deg	205	71	135	137	110	15	6
125mm x 90 deg	228	72	152	154	125	15	6
160mm x 90 deg	320	104	211	213	160	10	2
180mm x 90 deg	320	104	211	213	180	20	2

MULTISEAL TAPPING TEE U/P

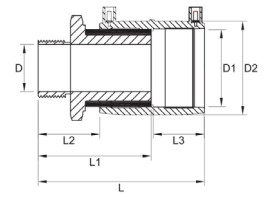
PE100 Black - Gas 10 Bar / Water PN16



Fitting Size (mm)	L (mm)	L1 (mm)	D (mm)	D1 (mm)	Fusion Time (secs)	Cooling Time (mins)	Box Quantity
40 x 20mm	105	110	27	120	40	3	10
40 x 25mm	105	110	27	120	40	3	10
40 x 32mm	105	110	27	120	40	3	10
50 x 20mm	105	110	27	120	40	3	10
50 x 25mm	105	110	27	120	40	3	10
50 x 32mm	105	110	27	120	40	3	10
63 x 20mm	105	119	62	120	70	10	10
63 x 25mm	105	119	62	120	70	10	10
63 x 32mm	105	119	62	120	70		10
75 x 20mm	105	110	62	120	100	10	10
75 x 25mm	105	110	77	120	100	10	10
75 x 32mm	105	110	77	120	100	10	10
90 x 20mm	105	110	77	120	100	10	10
90 x 25mm	105	110	77	120	100	10	10
90 x 32mm	105	110	77	120	100	10	10
110 x 20mm	105	117	77	120	80	10	10
110 x 25mm	105	117	86	120	80	10	10
110 x 32mm	105	117	86	120	80	10	10
125 x 20mm	105	117	86	120	80	10	10
125 x 25mm	105	117	95	120	80	10	10
125 x 32mm	105	122	95	120	80	10	10
160 x 20mm	105	122	95	120	100	10	10
160 x 25mm	105	122	112	120	100	10	10
160 x 32mm	105	122	112	120	100	10	10
180 x 20mm	105	122	112	120	100	10	10
180 x 25mm	105	122	122	120	100	10	10
180 x 32mm	105	122	122	120	100	10	10
200 x 20mm	105	122	122	120	100	10	10
200 x 25mm	105	122	132	120	100	10	10
200 x 32mm	105	122	132	120	100	10	10
225 x 20mm	105	122	122	120	100	10	10
225 x 25mm	105	122	122	120	100	10	10
225 x 32mm	105	122	122	120	100	10	10

MALE TRANSITION COUPLER

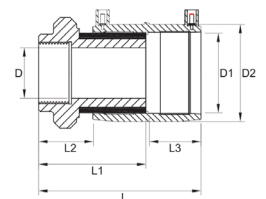
PE100 Black - Gas 10 Bar / Water PN16



Fitting Size	L (mm)	L1 (mm)	D (mm)	D1 (mm)	Fusion Time (secs)	Cooling Time (mins)	Box Quantity
25 mm x 3/4"	114	79	34	17	30	3	60
32 mm x 1/2"	114	79	34	23	45	3	50
32mm x 3/4"	114	79	34	23	45	3	50
32mm x 1"	114	79	34	23	45	3	50
32 mm x 1 1/4"	114	79	34	23	45	3	50
32 mm x 1 1/2"	114	79	34	23	45	3	50
40 mm x 1"	126	81	34	29	40	5	50
40 mm x 1 1/4"	126	83	34	29	40	5	30
40 mm x 1 1/2"	126	83	34	29	40	5	30
40 mm x 2"	126	88	34	29	40	5	30
50 mm x 1"	134	86	34	29	40	5	20
50 mm x 1 1/4"	136	88	36	38	80	5	20
50 mm x 1 1/2"	136	88	36	38	80	5	20
50 mm x 2"	141	93	41	38	80	5	15
63 mm x 1 1/4"	154	97	36	48	35	3	15
63 mm x 1 1/2"	154	97	36	48	35	3	15
63 mm x 2"	159	102	41	48	35	3	15

FEMALE TRANSITION COUPLER

PE100 Black - Gas 10 Bar / Water PN16



Fitting Size	L (mm)	L1 (mm)	D (mm)	D1 (mm)	Fusion Time (secs)	Cooling Time (mins)	Box Quantity
25 mm x 3/4"	106	68	26	17	30	3	60
32 mm x 1"	106	68	26	23	45	3	50
40 mm x 1"	116	73	26	29	40	5	30
40 mm x 1 1/4"	116	73	26	29	40	5	30
40 mm x 1 1/2"	116	73	26	29	40	5	30
50 mm x 1 1/2"	126	78	26	38	80	5	20
50 mm x 2"	126	78	26	38	80	5	15
63 mm x 1 1/2"	148	91	30	48	35	3	15
63 mm x 2"	148	91	30	48	35	3	15

ELECTROFUSION JOINING PROCEDURES

1. Clean the pipe ends, or the area to be fused, by removing dirt, mud, and other debris from pipe ends. Clean water can be used for initial cleaning of pipe surfaces before scraping and isopropyl alcohol is recommended after scraping.



2. Check the pipe if there's any out-of-round condition. If fusion area is found to be out-of-round, take appropriate steps to bring fusion area back within required tolerances.

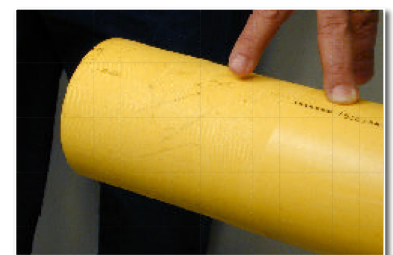
3. When installing a coupling, it is necessary for the pipe ends to have a square and even cut. This can be accomplished by various methods. (e.g. a blade-type pipe cutter, a wood saw and a clamp to use as a guide, a tubing cutter, or a chainsaw without bar oil for larger pipe sizes)



4. Identify the location of the fitting to be installed on the pipe and mark the area with a non-greasy marker.

If installing a coupler, measure the total length of the coupler to be installed. Make a mark (with a non-grease marker) from the pipe end that is 1/2 the total length of the coupler. This mark is for stab depth purposes and will ensure that the pipe end is inserted in the center of the coupler.

5. Check the pipe surface for any embedded debris that may cause damage to scraping tools, and once more make sure that the outer pipe surface is clean and free of any dirt or mud that could recontaminate the scraped pipe surfaces.



6. Scrape the outside of the pipe surface to remove oxidation and other contaminants. Use an appropriate scraping tool as recommended by Central Plastics. Scrape the pipe surface until the outer layer or "skin" of the pipe has been removed to expose a clean, virgin pipe material. Inspect the entire scraped area to ensure total scraping coverage. If a coupling is to be pushed completely over one pipe end, scrape the pipe end for the entire length of the coupler to prevent contamination of the coupler by sliding over the un-scraped pipe. Do not use abrasives, grinding wheels, or other devices that do not cleanly remove the contaminated material.

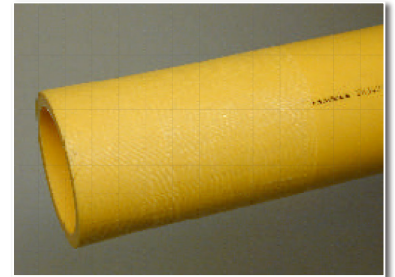


NOTE: The purpose of scraping is to remove material from the pipe surface. Simply roughing the fusion area will not allow an acceptable bond to take place.

7. Avoid touching the scraped pipe surface or the inside of the coupler as body oils and other contaminants can affect fusion joint performance. If the surfaces become contaminated, clean thoroughly with a clean, lint-free towel and a minimum 70% concentration of isopropyl alcohol and allow to dry before assembling.

Do not use alcohol with any additives other than water.

CAUTION: AVOID ALL POSSIBLE RECONTAMINATION OF THE PREPARED SURFACE.



8. Place the fitting on the area to be fused and restrain using an approved restraint device.



Use rubber mallet (or metal hammer and wood blocks) to move coupler onto the pipe, if necessary. Ensure that stab depth marks are properly located and visible.

9. Attach processor leads to the fitting and proceed with fusion as described for standard joining.



10. Disconnect and remove processor leads when fusion cycle is complete. It is a good practice to note the time required before clamp removal and mark it on the fitting if necessary.

11. Allow the fitting to cool following the recommended cooling time before pressure testing or rough handling





ELEKTRA CONTROL BOX

Having an excellent partnership with Ritmo, we are capable of distributing high-quality control boxes for our clients. These control boxes mainly used for fusing HDPE pipes in pipelines for potable water and gas systems.

ELEKTRA 400 & ELEKTRA 800

Working Range: ELEKTRA 400 Ø 20 - 400mm; ELEKTRA 800 Ø 20 - 800mm



Elektra is a universal electrofusion machine, suitable for welding HDPE and PP couplings (from 8 to 48V). It is available in two versions: ELEKTRA 400, ELEKTRA 800. The Elektra machine is made in compliance with Italian and international standards, and is composed of:

Versatile machine body. Capable of adapting different cooperation needs, inside the French, The control panel can be tilted upward or be positioned horizontally to the ground.

Optical Scanner – barcode reading system (or optical pen, upon request) that has automatic settings for welding parameters. There are nonetheless two manual settings available: by setting the welding tension/time parameters, and by input the numerical code indicated under the bar code.

Built-in memory with 4000 welding cycles, featuring the possibility of transferring data to a PC/Laptop, to an external USB storage device, or to a serial printer RS – 232.

Large graphic display

STANDARD COMPOSITION

- Universal adapter;
- Optical scanner;
- Manual scraper;
- Transport case.

For quotations, contact or visit us at visit www.alwasail.com



TECHNICAL FEATURES

	ELEKTRA 400		ELEKTRA 800
Working range	400 ÷ 20mm		20 ÷ 800 mm
Working output voltage	48 ÷ 8 v (**)		
Single phase power supply	110V 50/60 Hz	230 V 50/60 Hz	230 V 50/60
Max absorbed power	2500 W	2700 W	3500 W
Max output current	100 A		
60% Duty Cycle output	65 A	70 A	90 A
Operating mode	Barcode / Manual (numerical code or tension / time)		
Connections	USB for external memory and RS 232 serial printer		
Memory capacity	4000 reports		
Protection degree	IP 54		
External T° reading probe	± 1° C		
Outside T° range	-10 ÷ + 50° C		
Display	128 x 64 graphic backlighted LCD		
Welding hose length	3 mt		
Dimension	358 x 285 x 302 mm		
Weight	19.5 Kg		22.5 Kg



USB Storage Device



RITMO Transfer

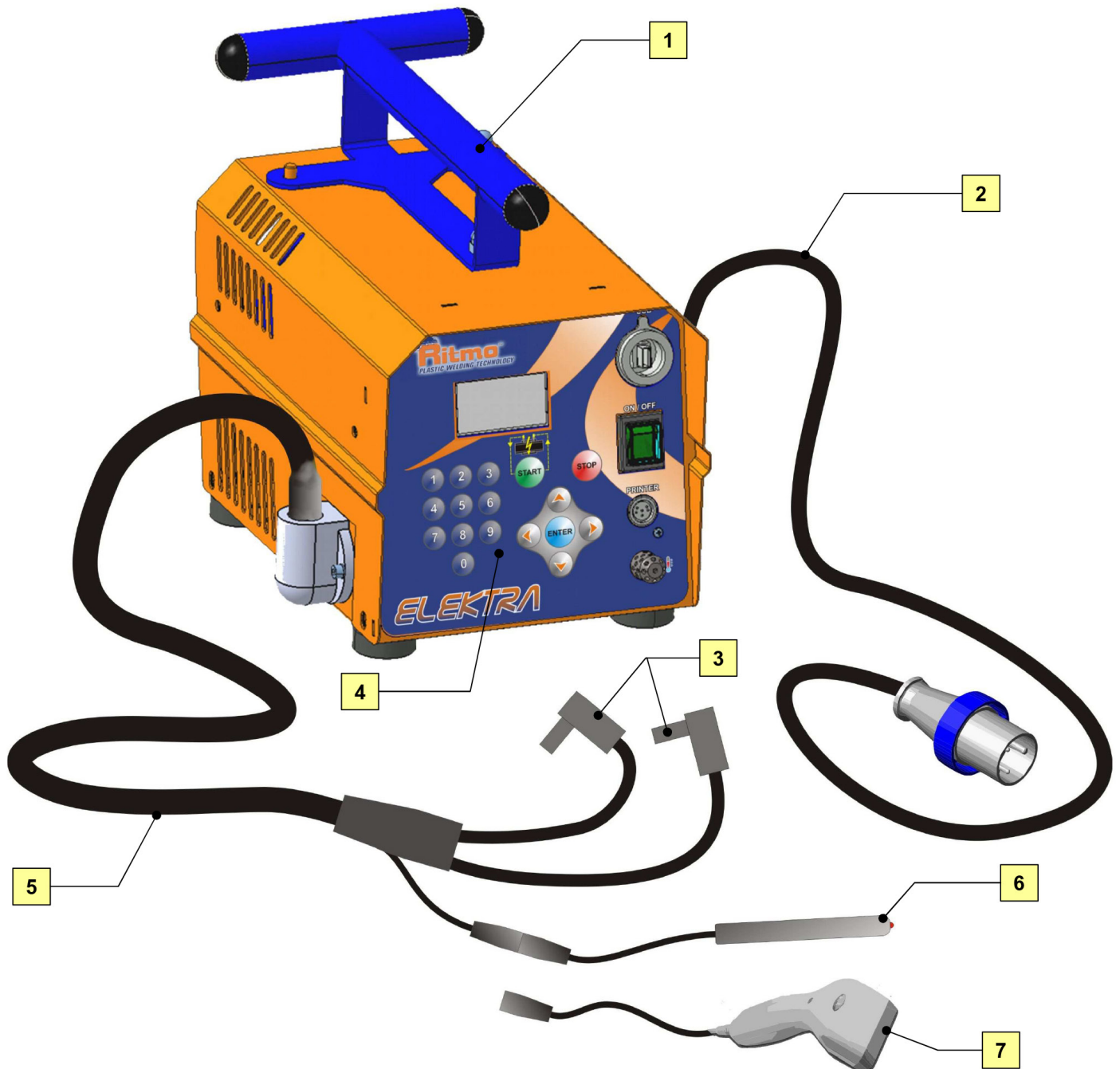
ON REQUEST (ACCESSORIES)

- Transfer kit for transferring welding data from the welding machine to a portable serial printer
- Data transfer software (Ritmo Transfer)
- Optical pen, for reading barcodes.



Agro, Aquatechnik, Aquatherm, Banninger, Central Plastic, Coprax, Degaz, Durapipe, Geco System Nupi (Elofit, Niron, Polysistem), Girpi, Eurostandard, Firat, Fusion, Georg, Fischer, Innoge, Hydroblock, Manibs, Plasson, Plastitalia, Riesselman, Simona, Strengweld, Technima, Tega, Uponor, Wavin (Monoline).

PARTS DESCRIPTION



1. Lifting handle
2. Power cable
3. Fusion Connectors
4. Control Panel
5. Fusion Cable
6. Optical Pen for bar code reading
7. Scanner for bar code reading (optional)

CONTROL PANEL



- A. Display
- B. Numeric keyboard
- C. Menu/Cursor scroll keys
- D. ENTER key (Confirms data set and proceeds to next step)
- E. External temperature probe
- F. Connector for Serial Printer / Data Transfer to PC
- G. ON/OFF Switch
- H. USB Port for Data Transfer to USB memory
- I. STOP Key (Exits from menu without saving data. Stops fusion process)
- J. START Key (Begins Fusion)

TECHNICAL FEATURES

	ELEKTRA 400 110V	ELEKTRA 400 220V	ELEKTRA 800 220V
Max Working Range	400mm	400 mm	800 mm
Fusable Materials	PE / PP / PP- R	PE / PP / PP- R	PE / PP / PP- R
Dimensions	358 x 285 x 302 mm	358 x 287 x 302 mm	358 x 285 x 302mm
Weight (without transport	19 ,5 kg	19, 5 kg	22, 5 kg
Required Tension	110 V ± 15%	220 ± 15%	220 V ± 15%
Frequency	60 Hz	60 Hz	60 Hz
Max power absorbed	2500W	2700W	3500W
Nominal current	22A	12A	16 A
Fusion nominal current Duty cycle 30% (ISO 12178-	75A	80A	15 A
Fusion nominal current Duty Cycle 60% (ISO	65A	70A	90A
Fusion nominal current Duty cycle 100% (ISO 112176-2)	55A	60A	80A
Working Temperature	- 10 °C ÷ + 40 °C	- 10 °C ÷ + 40 °C	- 10 °C ÷ + 40 °C
Fusion tension	8 ÷ 48 V	8 ÷ 48 V	8 ÷ 48 V
Max amperage	100 A	100 A	120 A
Ambient thermometer accuracy	± 1 °C	± 1 °C	± 1 °C
Degree of protection	IP 54	IP 54	IP 54
Connector's diameter	F 4 mm	F 4 mm	F 4 mm

CONNECTIONS AND GENERATOR'S FEATURES

We remind you to follow what prescribed by laws UNI CEI and to respect D. Lgs. 09/04/08 n°81

Fusion machine can work with alternating current between the minimum value of 195V (94V for 110V version) and max value of 265V (127V for 110V version). The frequency may vary between 50Hz and 60Hz.

Use earth connection at all times with differential switch on circuit breaker 16A (32A for 110V version) with “slow” curve. Power peaks when beginning fusion can reach 3500VA. Fusion machine can operate with an ambient temperature between –10 °C and +40°C.

Dimensions of electrofusion couplers used will determine the power required by a generator. Power may also vary according to connections, cleanliness and connection's conditions, as well as according to generator's features.

WARNING: during fusion procedure DO NOT connect other tools to generator.

Generator's power decreases of about 10% every 1000 m of altitude.

Use power cables with section of 2,5 mm² (6 mm² for 110V version) with a maximum length of 20 m. Cable has to be completely unwound and extended.

CHECKS AND MAINTENANCE

Before performing fusions and before connecting to a power outlet, check the following:

NOMINAL TENSION AND FREQUENCY: see technical features (page 17)

OUTLETS AND EXTENTION CABLES: they must be suitable for the power absorbed by machine

CABLES: isolation has to be intact, they have to be placed away from areas where vehicles transit and where they can be damaged.

MACHINE BODY: it has to be isolated and placed steadily.

Keep the machine and cables clean and dry. Before cleaning operations disconnect it from the power supply. Use a soft cloth with water and alcohol (avoid any other solvent).

ELEKTRA is an electronic equipment therefore it has to be handled safely avoiding impacts and sudden temperature changes. To guarantee correct functioning for as long as possible, operators has to perform frequent checks on the following components :

- Connectors and adapters
- Power cables and fusion cables
- Display
- Mechanical structure (frame, box).

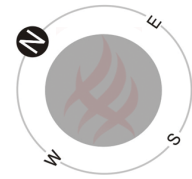
In any case of anomaly, the machine has to be checked by the manufacturer or by an authorized service center. In any case, the machine has to be serviced every two years by the manufacturer or by an authorized service center.



SAFETY STANDARDS

- **WARNING!** When using electrical tools, follow safety standards to avoid fire and electrical hazards.
- **KEEP WORKPLACE CLEAN.** Untidiness on the workplace may cause accidents.
- **CAREFUL TO AMBIENT CONDITIONS.** Do not expose electrical tools or fusion machines to the rain. Do not use electrical tools or fusion devices in humid or wet places. Make sure lighting is appropriate. Do not use electrical tools or fusion machines near liquids or inflammable gases.
- **PROTECT YOURSELF FROM ELECTRIC HAZARD.** Avoid contact with objects connected to earth. Be careful not to touch electrical cables.
- **KEEP UNAUTHORIZED PEOPLE AWAY FROM WORKPLACE.** Electrical tools and fusion machines can be used only by authorized people. Keep unauthorized people away from the workplace.
- **KEEP ELECTRIC TOOLS AND FUSION MACHINES IN A SAFE PLACE.** Electrical tools, fusion machines, and tools, in general, have to be stored in dry and safe places not reachable by unauthorized people.
- **DO NOT OVERWORK POWER TOOLS.** Keep within limits given by the manufacturer for the best performance, for more time and in safe conditions.
- **ALWAYS USE SPECIFIC TOOLS AND ACCESSORIES ACCORDING TO THE JOB.** Always use accessories compatible with fusion machine (be careful especially with power generators, extensions for power cables, fusion cable, and adapters). Let power tools to cool down after using for a long time. The use of tools or accessories different from the ones recommended by the manufacturer may cause injuries to the operator, affect the performance of the fusion machine and other tools, and void warranty.
- **DO NOT USE CABLES OF FUSION MACHINE OR OTHER TOOLS FOR INCORRECT PURPOSES.** Do not use cables to move the machine around or to disconnect from the power outlet. Protect cables and fusion machine from warm environments and contact with sharp objects.
- **ALWAYS USE SPECIAL ALIGNERS.** Always align pipes and fittings using special aligner to help perform a correct fusion and a safe job.

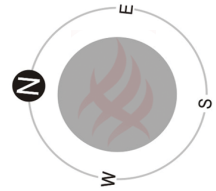
HEAD OFFICE AND FACTORY MAPS



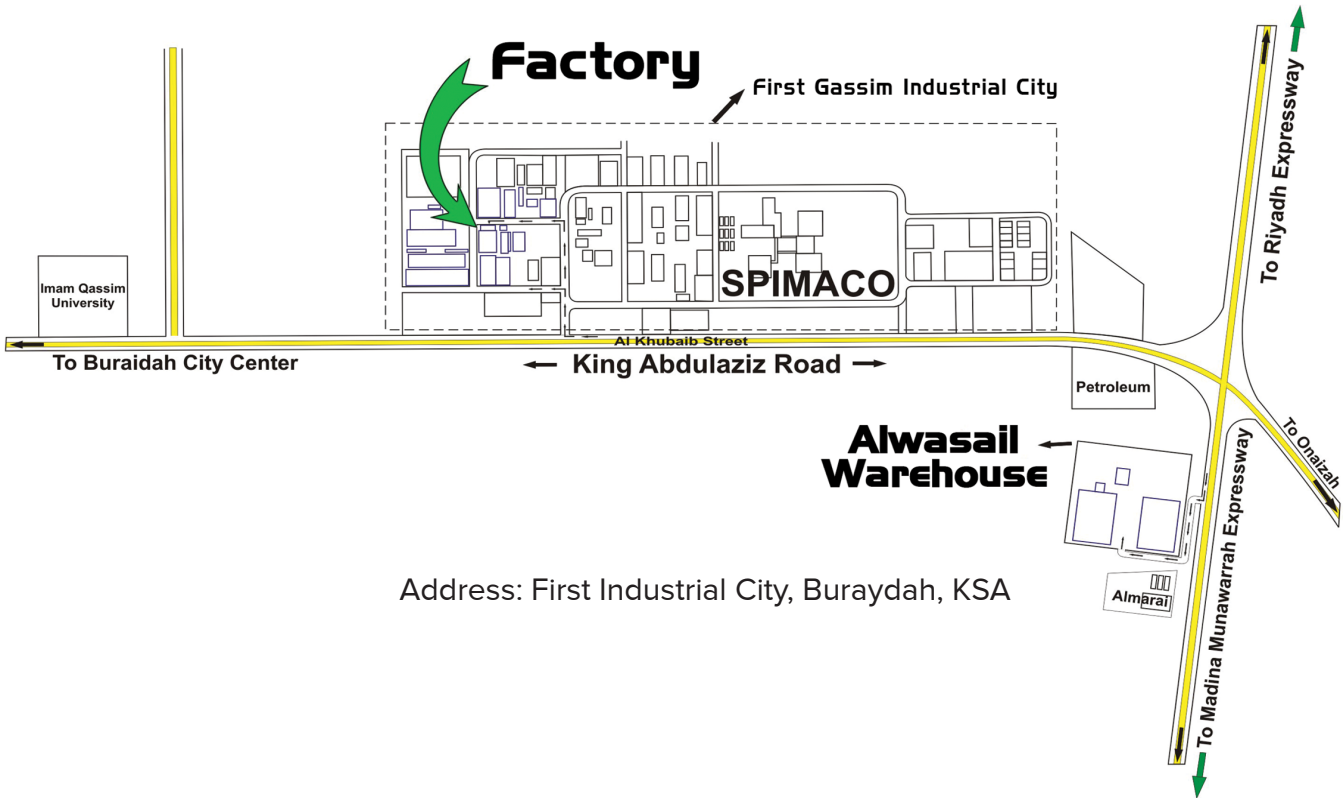
Head Office



Address: Omar Bin Khattab Street, Buraydah, KSA



Factory



Address: First Industrial City, Buraydah, KSA

SALES NETWORK

Alwasail is ranked as one of the top manufacturers of pipes and fittings in the Kingdom. It sells its products through 3 main channels:

- Contractors for civil works,
- Retailers to farmers and small contractors through its branches, and
- Export sales.

It has 25 branches in the Kingdom and plans to open another 2 in 2017. These branches cover the entire Kingdom and bring cash sales to the company. The company also has 4



SALES BRANCHES

Location	P.O. Box	Tel. No.	Fax No.	Mobile No.	
Buraidah (Head Office)	124	016-3821785 / 016-3821901	016-3811203	-	-
Buraidah (Main Branch)	124	016-3816658	016-3811306	0500561985	0505983631
Buraidah (Al Muwattah Branch)	124	016-3249419	016-3257076	0506390297	0506423598
Dammam	8893	013-8171375	013-8176347	0555206658	0506419643
Hail	2393	016-5435219	016-5322138	0506317256	0555836704
Hafouf		013-5825534	013-5825634	0506419643	-
Makkah		012-5308448	012-5308448	0503135068	0506351903
Jeddah		012-275735 / 012-6654536	012-274659 / 012-6657473	0506420914	0500526883
Jizan		017-3274880	017-3274883	0556523214	0506346456
Al Jouf		017-3274883	014-6246840	0550862202	-
Al Kharj		011-5501616	011-5510458	0506404317	0553175424
Madinah		014-8461493	-	0506415610	0553140279
Najran		017-5440611	017-5441986	0551350070	-
Onaizah		016-3624758	016-3610128	0506418763	0555638188
Riyadh Main Branch		011-4508431 / 011-4508432	011-4508422	0500590147	0539000617
Riyadh (Salam Street)		011-4114679	011-4111914	0506401979	-
Tabouk		014-4211389	014-4288374	0553148535	0506358753
Taif		012-7402179	-	0506403967	0500809917
Wadi Dawasir		011-7845051	-	0504492224	-
Zulfi		016-4224927	016-4232421	0554339071	-
Qarya Al Olaya		013-3861960	-	0555175623	-
Al Ola		014-8846636	-	0506348947	-
Khamis Mushait		017-2371622	017-2371260	0502964282	0506358753
Sajir		-	-	0555837887	-
Egypt		-	-	00201062900600	-
United Arab Emirates	48980	00971-4-2668040	00971-4-2668035	00971-4-506117612	00971-4-506506063
Export Department	21599	011-4508431-EXT 4423	011-4548057	0506375685	-



ELECTROFUSION CATALOGUE

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ALWASAIL  الوسائل
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