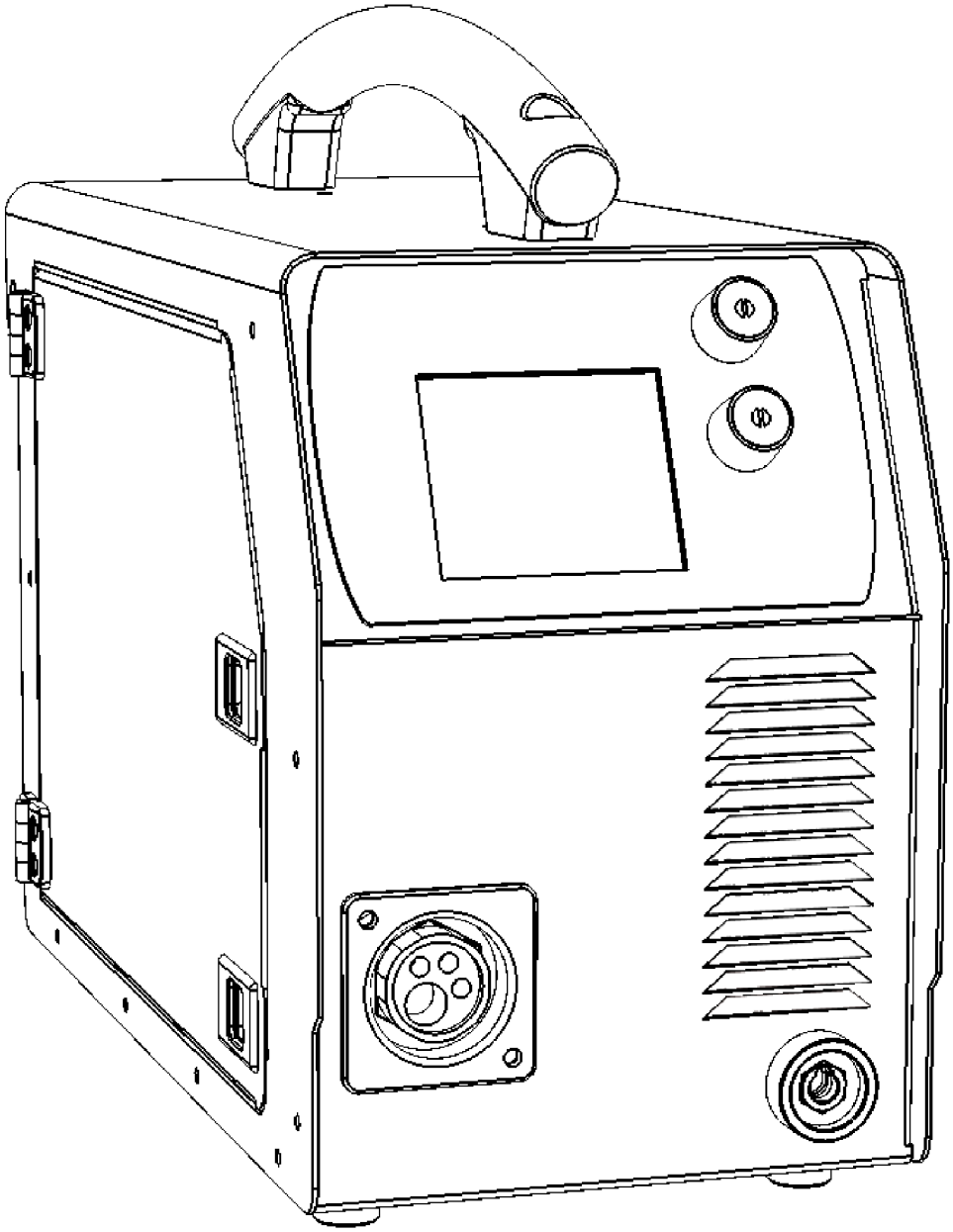


Pearl

SYNERGIC MIG

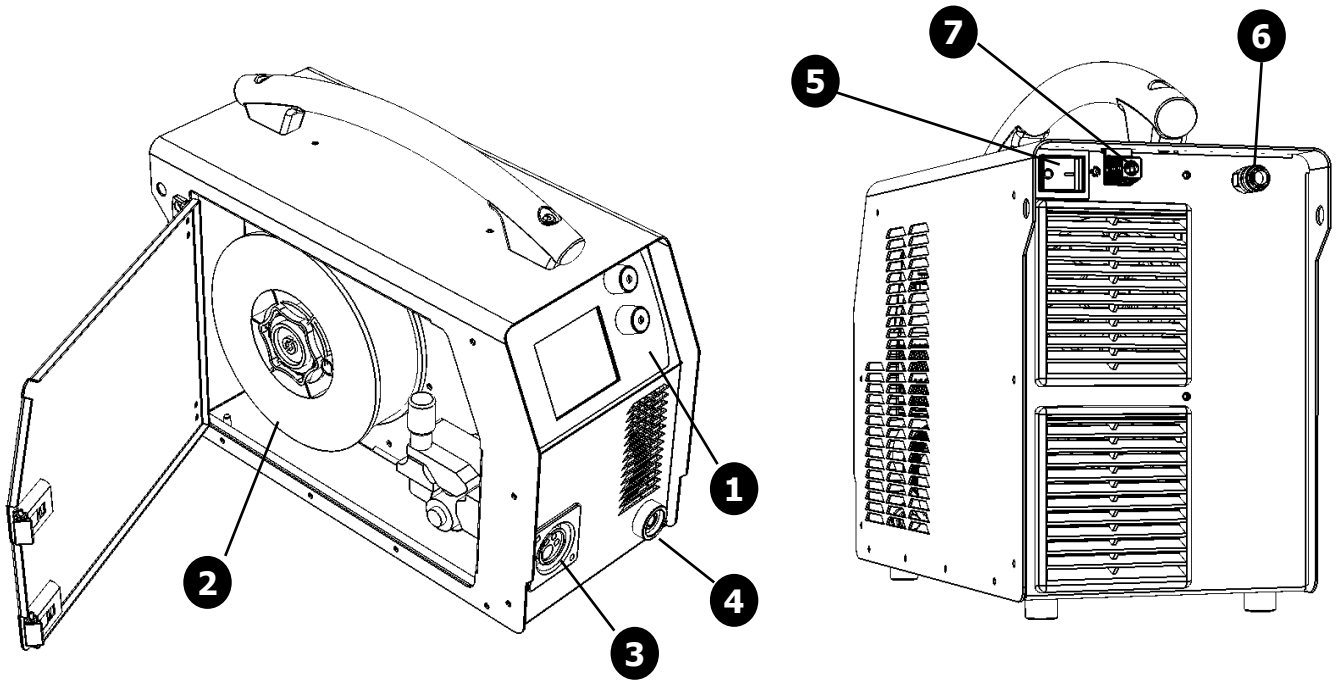
EN **10-15 / 34-40**

190.2
190.4 XL

73502-V2-13/01/2014

www.gys.fr

I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II

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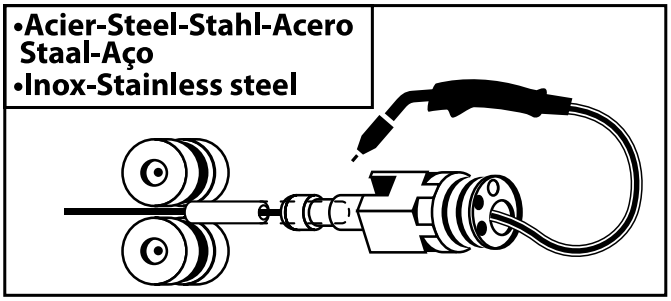
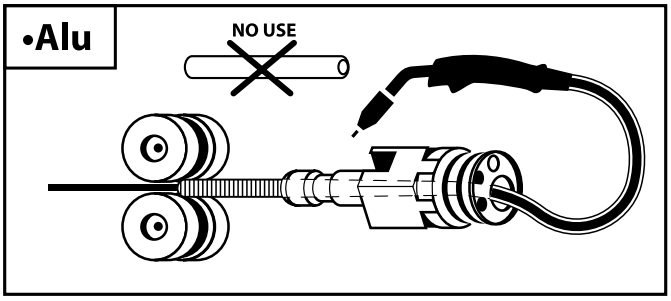

•Acier-Steel-Stahl-Acero
Staal-Aço
•Inox-Stainless steel

B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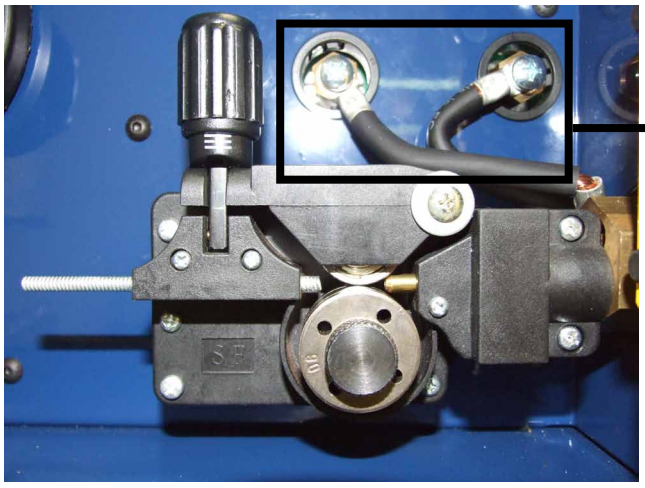
III



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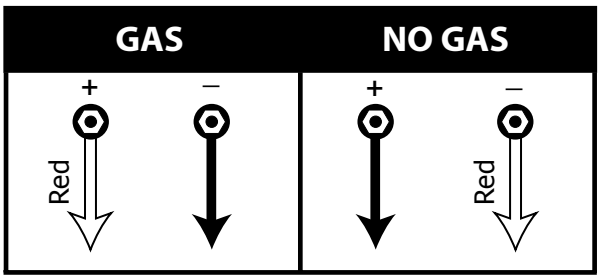
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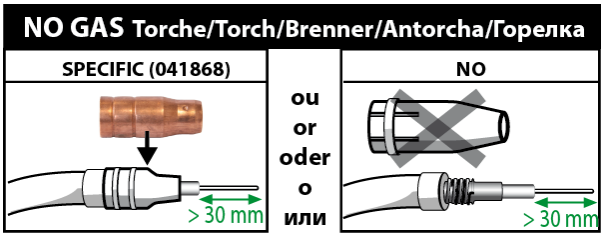
NO GAS Torche/Torch/Brenner/Antorcha/Горелка
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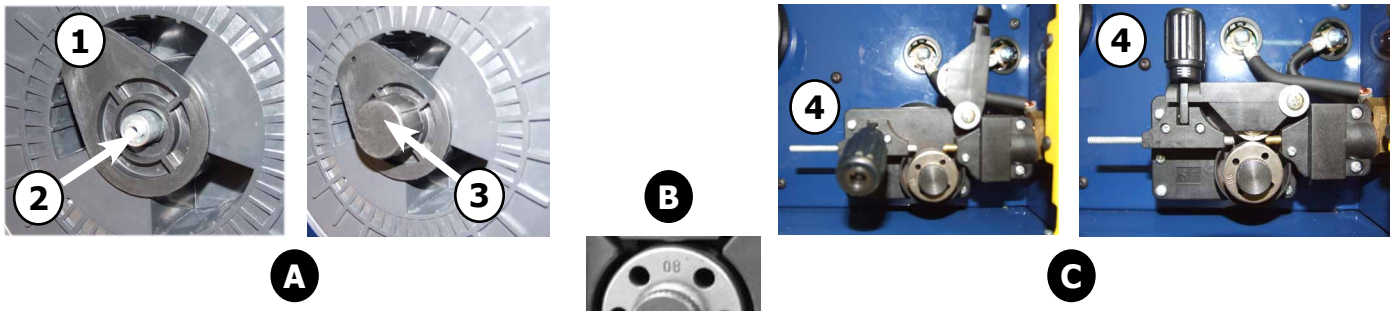
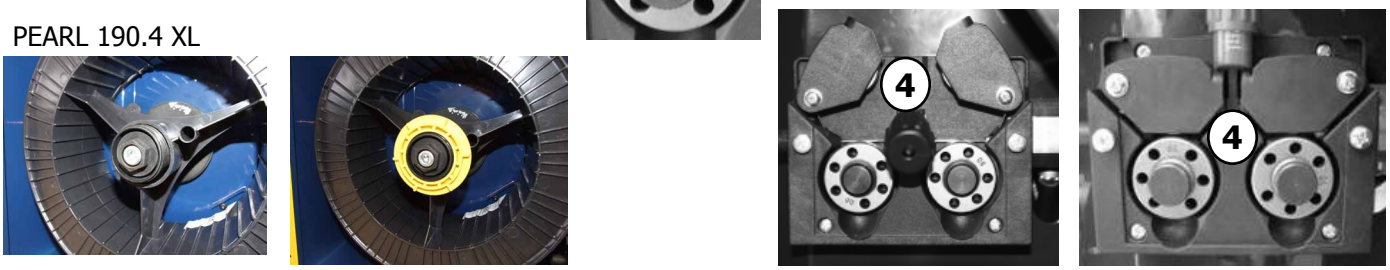
IV

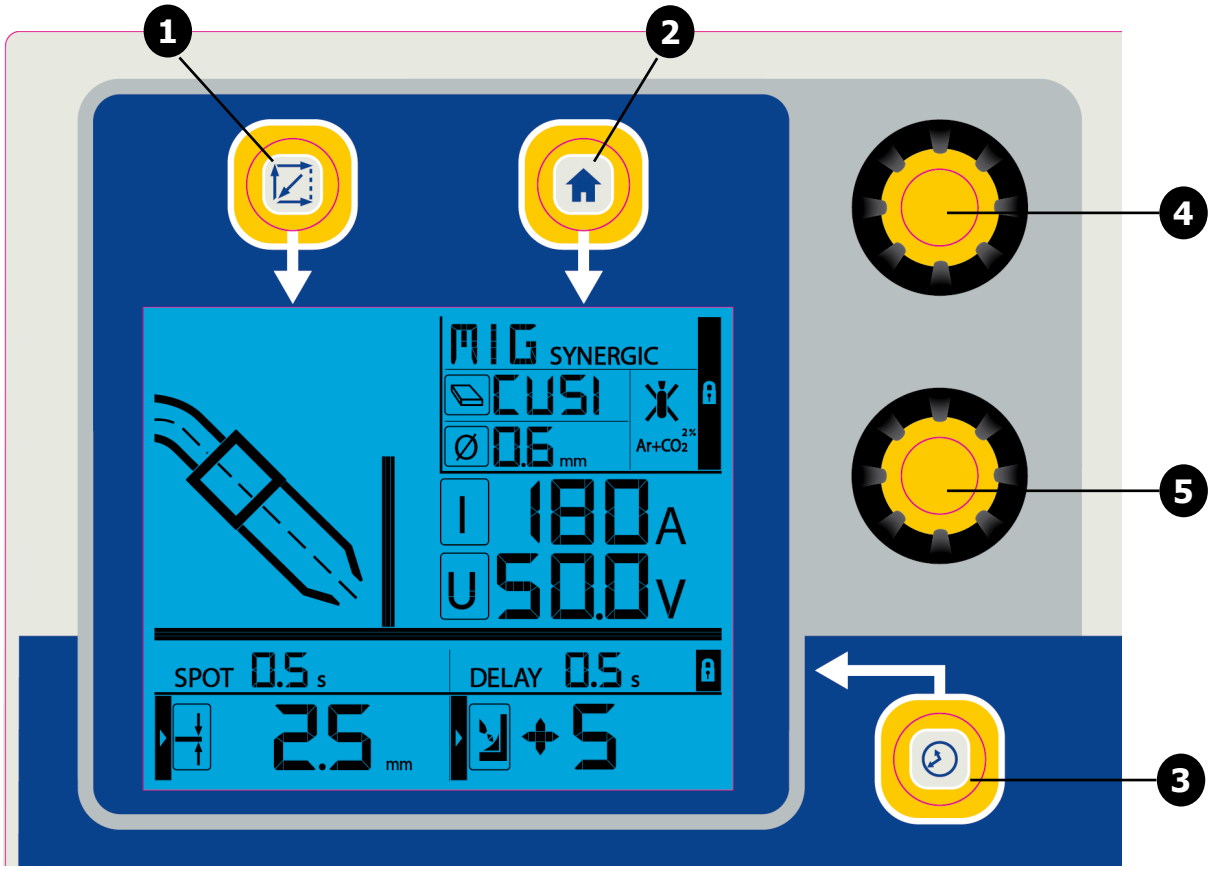
PEARL 190.2



PEARL 190.4 XL



V



DESCRIPTION

Thank you for chosing this machine. To get the best use from your machine, please read the following carefully :
The PEARL 190.2 / PEARL 190.4 XL is a semi-automatic welding unit; it is ventilated for semi-automatic welding (MIG or MAG) It is capable of welding steel, stainless steel and aluminium, and with it's « synergic wire speed » function adjustment is easy and fast.

ELECTRICITY SUPPLY

The absorbed current (I1eff) is indicated on the device at maximum usage. Check that the power supply and its protection (fuse and/or circuit breaker) are compatible with the current needed for use. In some countries, it might be necessary to change the plug to allow maximum performance. The device must be installed so that the mains socket is accessible.
Do not use an extension cable with a diameter of less than 1.5mm². PEARL 190.2/PEARL 190.4 XL is delivered with a 16amp plug (TYPE CEE7-7), and the machine features a highly efficient PFC and Flexible Voltage technology.
This machine must be connected to an EARTHED power supply between 110V and 230V, 50/60 Hz, and protected by a 16A circuit breaker (32A on 110V 30mA trip)
- When using on a voltage below 165vEFF this will limit the current draw to 16A
- If the voltage is <85V or >265V, the machine will not start
- Protected against surges - PEARL will shut off automatically in case of overvoltage

DEVICE PRESENTATION (FIG I)

1 : Push-button setting for welding mode (Manual or Synergic).
2 : Wire Reel holder - Ø 100/200 mm (PEARL 190.2) or 200/300mm (PEARL XL 190.4)
3 : European standard torch connection.
4 : Earth clamp socket.
5 : On/Off switch.
6 : Solenoid Valve.
7 : Power Cable (2.10 m)

SEMI-AUTOMATIC WELDING FOR STEEL / STAINLESS STEEL (MAG MODE)

PEARL 190.2 & PEARL 190.4 XL can weld Steel wire 0.6/0.8/1.0mm, and Stainless Steel of 0.8/1.0mm
The machine is originally equipped to function with Ø 0.8mm Steel, or Stainless Steel wire. The contact tube, the groove of the roller and the sleeve of the torch are all compatible with 0.8mm wire. Should you wish to weld 0,6 wire, use a torch of maximum 3m long. You will also need to change the contact tip (Fig II A). The wire reel is reversable (0.6 / 0.8mm) and will need to be inserted so that the figure 0.6 is visible.
For use with Steel, the gas requirement is argon + CO2. (Ar+CO2).. The proportion of CO2 required will vary depending on the use. For Stainless Steel, use the combination of 2% CO2 For specific gas requirements, please contact your gas distributor. The gas flow in steel is between 8 and 12 Litres/minute depending on the environment.

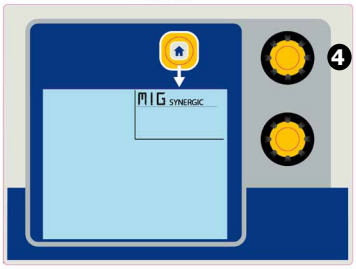
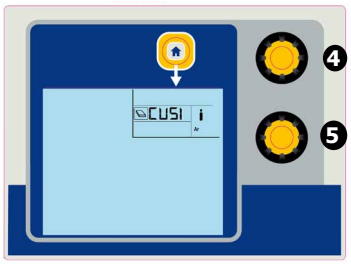
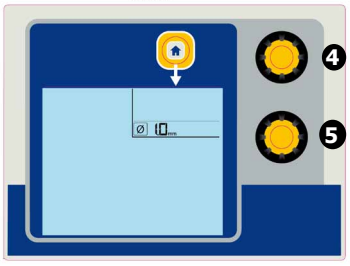
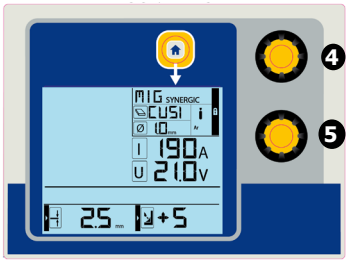
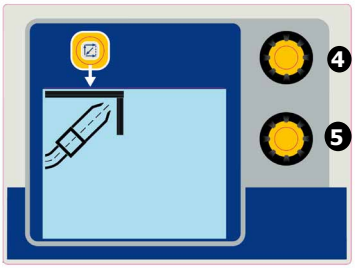
SEMI-AUTOMATIC WELDING FOR ALUMINIUM (MIG MODE)

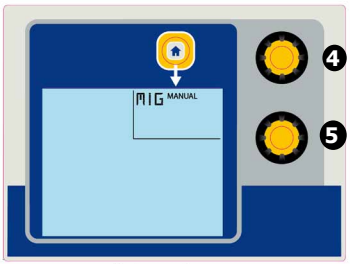
This machine is capable of welding Aluminium wire of 0.8 and 1.0mm
For use with aluminium, the gas requirement is pure argon (Ar). For the specific gas requirements please contact your distributor. The gas flow in Aluminium is between 15 and 25 Litres/minute depending on the environment, and the experience of the welder.
The differences between use with Steel and Aluminium are :
- Rollers : Use specific rollers for Aluminium welding.
- Pressure : Adjust the pressure of the drive rolls to prevent the wire being crushed.
- Capillary Tube : Only use a capilliary tube for welding with Steel or Stainless Steel.
- Torch : Use a special Aluminium Torch with a teflon sheath to reduce friction. DO NOT cut the sheath close to the joint, it is used to guide the wire from the the rollers.
- Contact tube : Use a special aluminium contact tube specific to the diameter of wire being used.

GASLESS WIRE WELDING

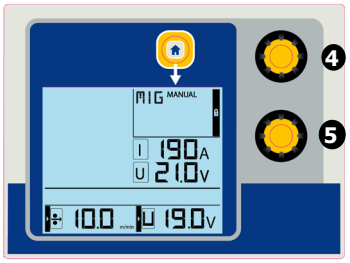
PEARL 190.2 & PEARL 190.4 XL is capable of gasless wire welding up to 0.9mm, provided that the polarity is reversed (fig C) respecting a maximum pressure of 5Nm. For parameters of use, please refer to the instructions indicated on page 7. Welding gasless wire with a standard nozzle can lead to overheating and deterioration of the torch. It is recommended to use a "No Gas" nozzle (ref. 041868), or remove the genuine nozzle (Fig. III D).

SETTINGS PANEL (FIG V)

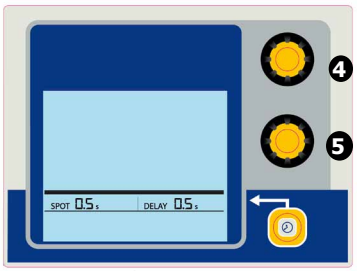
Synergic mode	 + ❹	• SETUP button + Button (4) : to select the SYNERGIC or MANUAL mode	
	 + ❺ et ❹	• SETUP button + Button (5) : switching to material settings (see table page 7) • SETUP button + Button (4) : to select the type of material, the recommanded gas is then displayed	
	 + ❺ et ❹	• SETUP button + Button (5) : to enter into the settings of the Ø of the wire • SETUP button + Button (4) : to choose the diameter of the wire. List based on other criteria informed	
	❺ et ❹	• Button (4) : to change the thickness to be welded • Button (5) : to change the arc length The values U and I appear on the display when welding	
	<u>Advices</u> This mode allows quick and easy welding and has been optimised for welding angled pieces. To obtain an identical butt weld, it is recommended to slightly reduce the setting of metal thickness. The arc length: Lengthens (0 -> +9) or shorter (0 -> -9) to allow more or less penetration of the metal. The display will show the changes to allow more comprehensive setting. If you are welding for the first time, we recommend you set the arc length to 0.		
	 + ❺ et ❹	Choice of welding angle : <u>only on SYNERGIC mode</u> • Angle button + Button (4) : to select the torch position • Angle button + Button (5) : to select butt weld or fillet weld	

<table>
<tr><td rowspan="3">Manual mode</td><td>+
❹</td><td>• SETUP button + Button (4) : to select SYNERGIC or MANUAL mode</td><td> 
</td></tr>
<tr><td>❺ et ❹</td><td>• Button (4) : to adjust the wire speed

• Button (5) : to adjust the welding voltage

The values U and I appear on the display when welding</td><td> 
</td></tr>
<tr><td colspan="3"><u>Advices</u>
The wire speed adjustment is often determined « by the noise »: the arc must be stable and have a low crackling.
If the speed is too low, the arc is not continuous.
If the speed is too high, the arc crackles and the wire pushes back the torch.</td></tr>
<tr><td rowspan="2">SPOT / DELAY</td><td>+
❺ et ❹</td><td>Cycle management of the torch

• Button SPOT / DELAY + button (4): to adjust the «SPOT» parameter. Switch to «2T» position when the value is zero

• Button SPOT / DELAY + button (5): to adjusts the «Delay» parameter. Inactive when the value is zero</td><td> 
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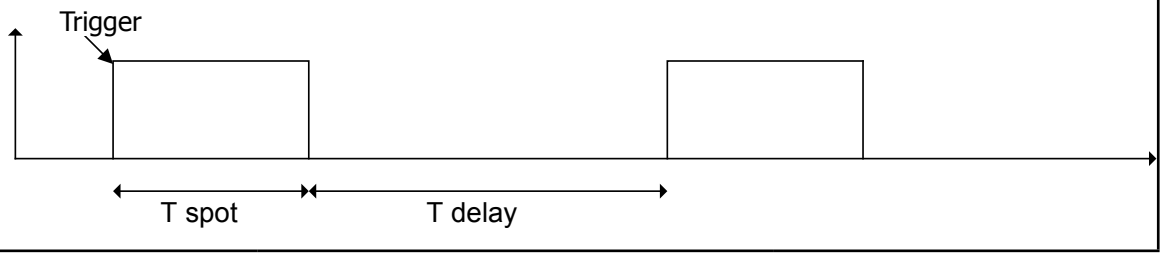
<tr><td colspan="3"> 
</td></tr>
</table>

PROCESS OF REELS AND TORCHES ASSEMBLY (FIG IV):

• Remove the contact tube and its support (fig D), and the nozzle (fig E) from the torch.
Fig A : • Position the wire reel on the reel support :
- PEARL 190.4 XL : Pay attention to the driving pin when positionning the reel. For a 200mm reel assembly, tighten (3) to the maximum.
- PEARL 190.2 : the adapter (1) is to be used only for 200mm wire reel assembly
• Adjust the reel brake (2) to avoid reel movement tangling the wire when welding stops. Be careful not to tighten too much.
Fig B : • The drive rollers included have 2 grooves (0,6 and 0,8). The visible diameter indicated on the roller when fitted in place is the diameter currently in use (ie. 0.8mm is visible for use with 0.8mm wire). To weld aluminium or gasless wire, use the appropriate drive rollers.
Fig C : To select the adjustment of the drive rollers
• Loosen the drive roller knob (4) as far as possible and insert the wire, tighten the knob again slightly
• Start the motor by pressing the trigger of the torch
• Tighten the knob whilst pressing the trigger until the wire starts to move.

Nb : When welding with Aluminium, use the minimum possible pressure to avoid crushing the wire

• Let about 5cm of wire out of the torch, then put the contact tube (fig. D), and the nozzle (fig. E) adapted to the wire to be used at the extremity.

GAS COUPLING

The PEARL is equipped with a fast connection. Use the adapter supplied with your machine.

Displayed on screen	FE	FE	ALG 5	SS	FC	CuSi 3	CuAL 8	ALSi 5	ALSi 12
Process	MAG	MAG	MIG	MAG	MAG	MIG	MIG	MIG	MIG
Gas	Ar+CO^2	CO^2	Ar	Ar+CO^2 2%		Ar	Ar	Ar	Ar
Possible Ø	0.6 - 0.8 - 1.0	0.6 - 0.8 - 1.0	0.8 - 1.0	0.8 - 1.0	0.9 -1.2	0.8 - 1.0	0.8	1.0	1.0

DUTY CYCLE & WELDING ENVIRONMENT IN USE

• The welding unit describes a flat output characteristic (constant voltage). The duty cycles following the standard EN60974-1 (at 40°C on a 10mn cycle) are indicated in the table here below:

X / 60974-1 @ 40°C (T cycle = 10 min)	I max	60% (T cycle = 10 min)	100% (T cycle = 10 min)
PEARL 190.2	22% @ 190 A	120 A	90 A
PEARL 190.4 XL	22% @ 190 A	120 A	90 A

Note : The machines' duty cycle has been tested at room temperature (40°C) and has been determined by simulation.

• These are Class-A devices. They are designed to be used in an industrial or professional environment. In a different environment, it can be difficult to ensure electromagnetic compatibility, due to conducted disturbances as well as radiation. The devices PEARL 190.2 et PEARL 190.4 XL comply with IEC 61000 -3-12.

ADVICE & THERMAL PROTECTION

This device is equipped with a multi-speed ventilator, regulated by the inside temperature. When the machine's thermal protection is activated, it will not deliver any current. The over-heating icon will appear on the screen, and will flash until the temperature of the machine has returned to normal.

• Do not block/cover the ventillation holes, ensure free flow of air.

• Whilst in thermal protection mode leave the machine plugged into the mains after welding to allow it to cool.

General observations

• Always respect the basic rules of welding

• Always work in an adequately ventillated area

• Do not work on a damp surface.

MAINTENANCE / ADVICE

• Maintenance should only be carried out by a qualified person.

• Switch the machine off, ensure it is unplugged, and that the ventilator inside has stopped before carrying out maintenance work. (DANGER High Voltage and Currents).

• GYS recommends removing the steel cover 2 or 3 times a year to remove any excess dust. Take this opportunity to have the electrical connections checked by a qualified person with an insulated tool.

• Regularly check the condition of the power supply cord. If damaged, it will need to be replaced by the manufacturer, its' after sales service or a qualified person.

SAFETY

Arc welding can be dangerous and can cause serious and even fatal injuries.
Protect yourself and others.
Ensure the following safety precautions are taken:

Arc radiation	Protect yourself with a helmet fitted with filters in compliance with EN169 or EN 379.
Rain, steam, damp	Use your welding unit in a clean/dry environment (pollution factor ≤ 3), on a flat surface, and more than one meter from the welding work-piece. Do not use in rain or snow.
Electric shock	This device must only be used with an earthed power supply. Do not touch the parts under tension. Check that the power supply is suitable for this unit.
Falls	Do not move the unit over people or objects.
Burns	"Wear protective (fire-proof) clothing (cotton, overalls or jeans). Wear protective gloves and a fire-proof apron. Ensure other people keep a safe distance from the work area and do not look directly at the welding arc. Protect others by installing fire-proof protection walls."
Fire risks	Remove all flammable products from the work area. Do not work in presence of flammable gases.
Fumes	Do not inhale welding gases and fumes. Use the device in a well ventilated environment, with artificial extraction if welding indoors.
Additional precautions	"Any welding operation undertaken in precautions - rooms where there is an increased risk of electric shocks, - Poorly ventilated rooms, - In the presence of flammable or explosive material, should always be approved by a «responsible expert», and made in presence of people trained to intervene in case of emergency. Technical protection as described in the Technical Specification CEI/IEC 62081 must be implemented. Welding in raised positions is forbidden, except in case of safety platforms use."

People wearing Pacemakers are advised to see their doctor before using this device.
Do not use the welding unit to unfreeze pipes.
Handle gas bottles with care - there is increased danger if the bottle or its valve are damaged.

TROUBLESHOOTING

SYMPTOMS	POSSIBLE CAUSES	REMEDIES
The welding wire speed is not constant.	Debris is blocking up the opening.	"Clean out the contact batch or change it and replace the anti-adherence product. Ref.041806."
	The wire skids in the rollers.	"• Control the roller pressure or replace it. • Wire diameter non-compatible with roller • Covering wire guide in the torch non-compatible."
The wire-feeder motor doesn't operate.	Reel or roller brake too tight.	Release the brake and rollers.
	Electrical supply problem.	Check that the power switch is in the "On" position.
Bad wire feeding.	Covering wire guide dirty or damaged.	Clean or replace
	The drive roller is too loose	Tighten the drive roller knob
	Reel brake too tight	Release the brake
No welding current	Bad connection to the main supply.	Check the mains connection and look if the plug is fed by 400 V (3PH) power socket.
	Bad earth connection.	Check the earth cable (connection and clamp condition).
	Torch trigger inoperative.	Check the torch trigger / replace torch
The wire jams (after the rollers)	Guide wire sheath crushed.	Check the sheath and torch body.
	Wire jammed in the torch	Clean or replace.
	No capillary tube.	Check the presence of capillary tube.
	Wire speed too fast	Reduce the wire speed
The welding bead is porous	The gas flow rate is not sufficient.	Adjust flow range 15 to 20 L / min.
		Clean the working metal.
	Gas bottle empty.	Replace it.
	Gas quality unsatisfactory.	Replace it.
	Air flow or wind influence.	Prevent drafts, protect welding area.
	Gas nozzle dirty.	Clean or replace the gas nozzle.
	Poor quality wire.	Use suitable WIRE for MIG-MAG welding.
	Surface to weld in bad condtion. (rust, etc…)	Clean the metal before welding.
Very important flashing particules.	Arc voltage too low or too high.	See welding settings.
	Bad earth connection.	Adjust the earth cable for a better connection.
	Insufficient gas flow.	Adjust the gas flow.
No gas flow at the end of the torch.	Bad gas connection.	Check the gas connection at the welding machine. Check the flowmeter and the solenoid valves.
The display shows - - -	Overvoltage detected.	Check the voltage at the mains
The machine turns on but nothing appears on the screen	The mains voltage is < 85V or > 265v	Check the voltage at the mains

CONDITIONS DE GARANTIE FRANCE

• La garantie n'est valable que si le bon a été correctement rempli par le vendeur.
• La garantie couvre tout défaut ou vice de fabrication pendant 1 an, à compter de la date d'achat (pièces et main d'œuvre).
• La garantie ne couvre pas les erreurs de tension, incidents dus à un mauvais usage, chute, démontage ou toute autre avarie due au transport.
• La garantie ne couvre pas l'usure normale des pièces (Ex. : câbles, pinces, etc.).

En cas de panne, retournez l'appareil à la société GYS (port dû refusé), en y joignant :
• Le présent certificat de garantie validé par le vendeur
• Une note explicative de la panne.
Après la garantie, notre SAV assure les réparations après acceptation d'un devis.

Contact SAV :
Société Gys-134 Bd des Loges
BP 4159-53941 Saint-Berthevin Cedex
Fax: +33 (0)2 43 01 23 75 - Tél: +33 (0)2 43 01 23 68

HERSTELLERGARANTIE

Die Garantieleistung des Herstellers erfolgt ausschließlich bei Fabrikations- oder Materialfehlern, die binnen 12 Monate nach Kauf angezeigt werden (Nachweis Kaufbeleg). Nach Anerkenntnis des Garantieanspruchs durch den Hersteller bzw. seines Beauftragten erfolgen eine für den Käufer kostenlose Reparatur und ein kostenloser Ersatz von Ersatzteilen. Der Garantiezeitraum bleibt aufgrund erfolgter Garantieleistungen unverändert.

Ausschluss:
Die Garantieleistung erfolgt nicht bei Defekten, die durch unsachgemäßen Gebrauch, Sturz oder harte Stöße sowie durch nicht autorisierte Reparaturen oder durch Transportschäden, die infolge des Einsendens zur Reparatur, hervorgerufen worden sind. Keine Garantie wird für Verschleißteile (z. B. Kabel, Klemmen, Vorsatzscheiben etc.) sowie bei Gebrauchsspuren übernommen.

Das betreffende Gerät bitte immer mit Kaufbeleg und kurzer Fehlerbeschreibung ausschließlich über den Fachhandel einschicken. Die Reparatur erfolgt erst nach Erhalt einer schriftlichen Akzeptanz (Unterschrift) des zuvor vorgelegten Kostenvoranschlags durch den Besteller. Im Fall einer Garantieleistung trägt GYS ausschließlich die Kosten für den Rückversand an den Fachhändler.

DÉCLARATION DE CONFORMITÉ :

Gys atteste que les postes de soudure PEARL 190.2 et PEARL 190.4 XL sont fabriqués conformément aux exigences des directives Basse tension 2006/95/CE du 12/12/2006, et aux directives CEM 2004/108/CE du 15/12/2004.
Cette conformité est établie par le respect des normes harmonisées EN60974-1 de 2005, EN 50445 de 2008, EN 60974-10 de 2007.
Le marquage CE a été apposé en 2013.

DECLARATION OF CONFORMITY :

The equipment described on this manual is conform to the instructions of low voltage 2006/95/CE of 12/12/2006, and the instructions of CEM 2004/108/CE of the 15/12/2004.
This conformity respects the standards EN60974-1 of 2005, EN 50445 de 2008, EN60974-10 of 2007.
CE marking was added in 2013.

KONFORMITÄTSERKLÄRUNG :

GYS erklärt, dass die Schweißanlage PEARL 190.2 und PEARL 190.4 XL richtlinienkonform mit folgenden europäischen Bestimmungen hergestellt wurden: Niederspannungsrichtlinie 2006/95/CE –12.12.2006 und EMV- Richtlinien 2004/108/CE – 15.12.2004 elektromagnetische Verträglichkeit- hergestellt wurden. Dieses Gerät stimmt mit den harmonisierten Normen EN60974-1 von 2005, EN 50445 von 2008, EN60974-10 von 2007 überein.
CE Kennzeichnung: 2013.

DECLARACIÓN DE CONFORMIDAD :

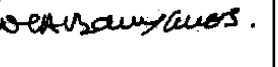
Gys certifica que los aparatos de soldadura PEARL 190.2 y PEARL 190.4 XL son fabricados en conformidad con las directivas baja tensión 2006/95/CE del 12/12/2006, y las directivas compatibilidad electromecánica 2004/108/CE del 15/12/2004. Esta conformidad está establecida por el respeto a las normas EN60974-1 de 2005, EN 50445 de 2008, EN 60974-10 de 2007.
El marcado CE fue fijado en 2013.

ДЕКЛАРАЦИЯ О СООТВЕТСТВИИ:

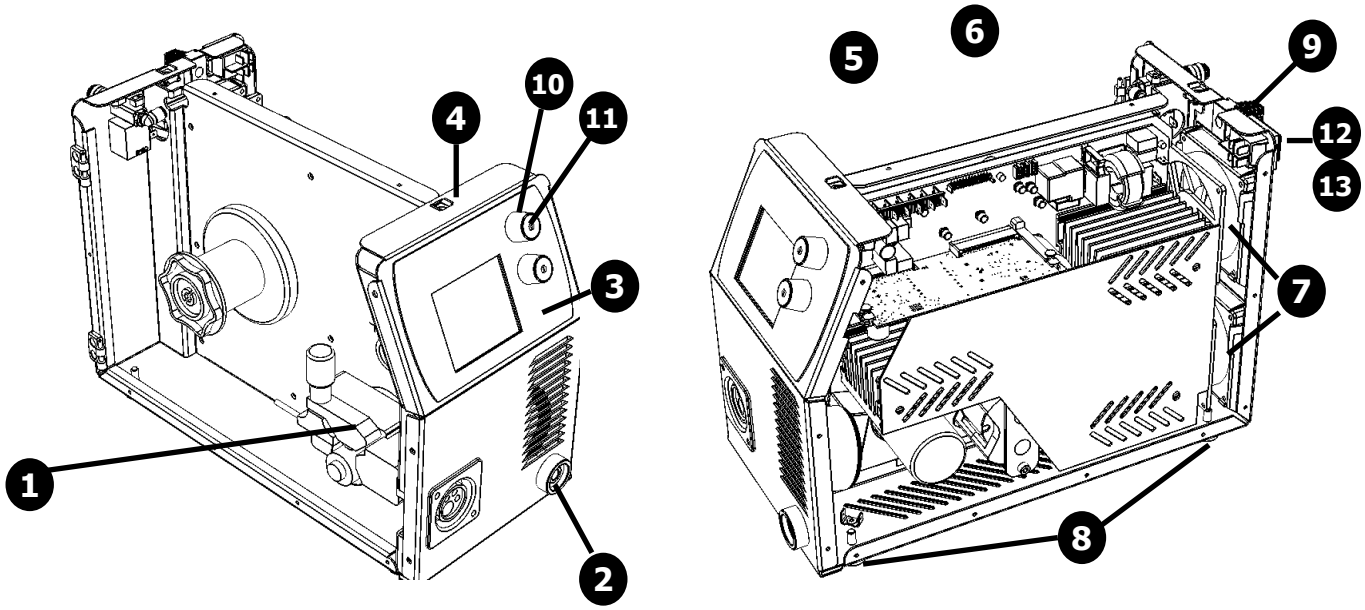
Gys заявляет, что сварочные аппараты PEARL 190.2 и PEARL 190.4 XL произведены в соответствии с директивами Евросоюза 2006/95/CE о низком напряжении от 12/12/2006, а также с директивами CEM 2004/108/CE от 15/12/2004.
Данное соответствие установлено в соответствии с согласованными нормами EN60974-1 2005 г, EN 50445 2008 г, EN 60974-10 2007 г.
Маркировка EC нанесенна в 2013 г.

01/08/2013
Société GYS
134 BD des Loges
53941 Saint-Berthevin
France

Nicolas BOUYGUES
Président Directeur Général

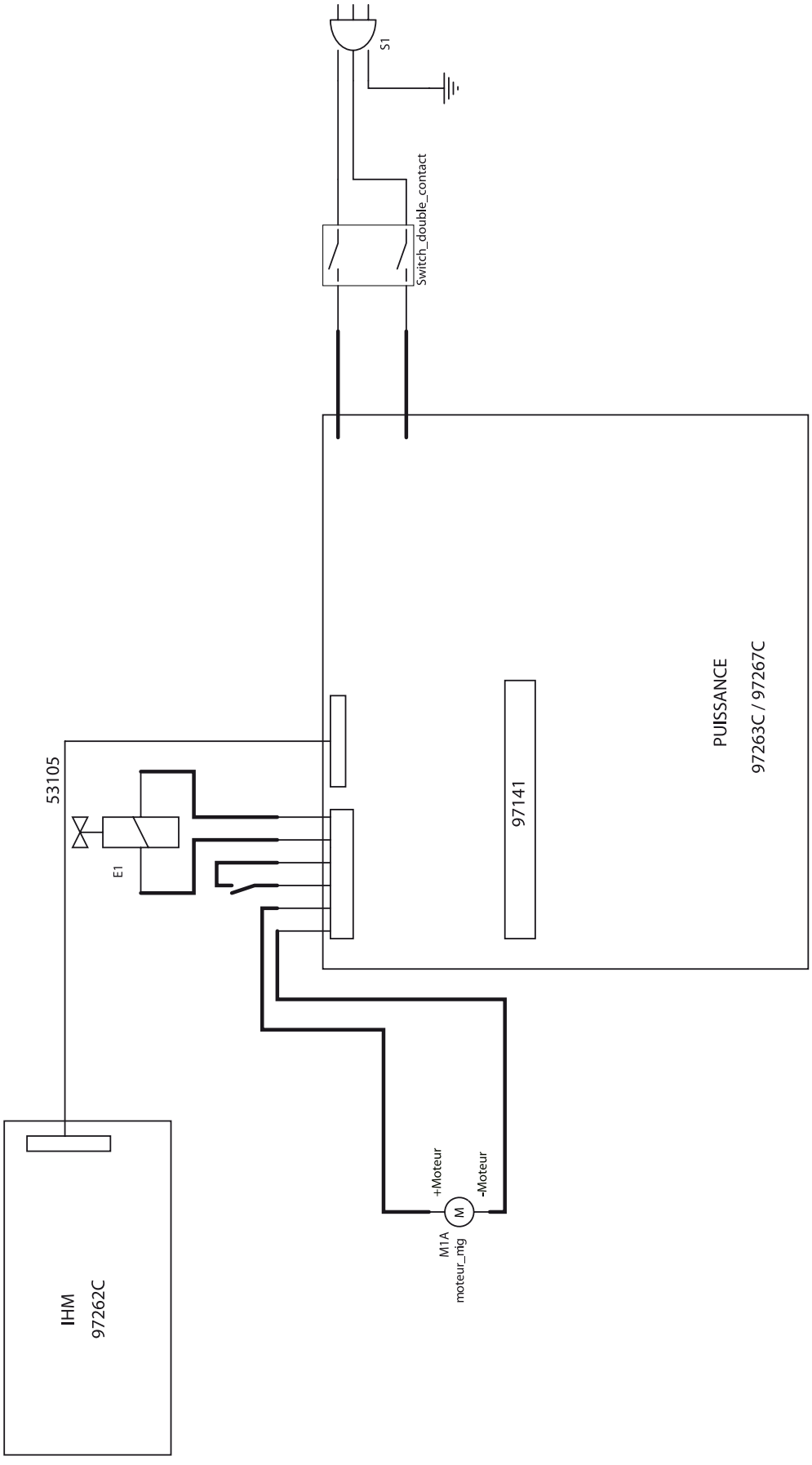


PIÈCES DE RECHANGE / SPARE PARTS / ERSATZTEILE/ PIEZAS DE RECAMBIO/ ЗАПЧАСТИ

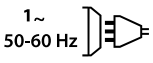
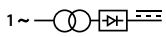


N°		PEARL 190.2	PEARL 190.4 XL
1	Motodévidoir (sans galet) / Wire feeder (without roller) / Drahtvorstub (ohne Drahtrollen) / Devanadera (sin rodillos) / Подающий механизм (без роликов)	51108	51135
2	Connecteur 1/4 cable de masse / Earth cable connector (1/4) / (-) Texasbuchse (1/4) / Conector cable de masa (1/4) / Коннектор (1/4) кабеля массы	51469	
3	Clavier de commande / Control Keyboard / Bedientastatur / Teclado de mando / Панель управления	51931	
4	Carte affichage / Display card / Anzeigzekarte /Carta de fijación / Плата отображения	97262C	
5	Carte d'alimentation / Power supply card / Netzteilekarte /Carta de alimentación / Плата питания	97141C	
6	Carte de puissance / Power circuit board / Stromkarte/ Carta de potencia / Силовая плата	97263C	97267C
7	Ventilateur / Fan /Ventilator/Ventilador / вентилятор	51032	
8	Pieds / Feet / Füsse / Pies / Ножки	71140	
9	Câble d'alimentation / Supply cable / Netzstromkabel / Cable de alimentación / Шнур питания	21489	
10	Bouton noir / Black Button / Knopf scharz / botón negro / кнопки черный	73083	
11	Cache bouton / Button cover / Deckel für Knopf / Tapa de botón / Крышка кнопки	73084	
12	Interrupteur /Switch / Schalter /Conmutador / переключатель	52467	
13	Cache interrupteur / Switch cover / Schalterdeckel / Tapa de interruptor / Крышка переключателя	52463	
	Nappe /Ribbon cable /Bandkabel /Cable plano / ленточный кабель	53105	

SCHÉMA ÉLECTRIQUE / CIRCUIT DIAGRAM /SCHALTPLAN/ DIAGRAMA ELECTRICO/ЭЛЕКТРИЧЕСКАЯ СХЕМА



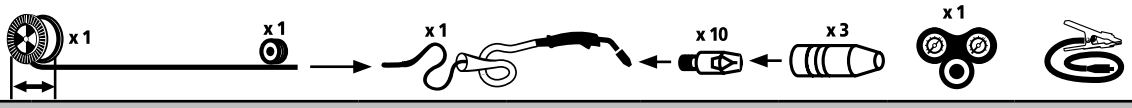
ICONES / SYMBOLS / ZEICHENERKLÄRUNG

A	Ampères - Amps - Ampere - Amperios - Ампер
V	Volt - Volt - Volt - Voltios - Вольт
Hz	Hertz - Hertz - Hertz - Hertz - Герц
	- Soudage MIG/MAG (MIG: Metal Inert Gas / MAG: Metal Active Gas) - MIG/MAG Welding (MIG: Metal Inert Gas / MAG: Metal Active Gas) - MIG/MAG Schweißen (MIG: Metal Inert Gas/ MAG: Metal Active Gas) - Soldadura MIG/MAG (MIG: Metal Inert Gas / MAG: Metal Active Gas) - Полуавтоматическая сварка MIG/MAG (MIG: Metal Inert Gas / MAG: Metal Active Gas)
	- Convient au soudage dans un environnement avec risque accru de choc électrique. La source de courant elle-même ne doit toutefois pas être placée dans de tels locaux. - Adapted for welding in environment with increased risks of electrical shock. However, the welding source must not be placed in such places. - Geeignet für Schweißarbeiten im Bereich mit erhöhten elektrischen Risiken. Trotzdem sollte die Schweißquelle nicht unbedingt in solchen Bereichen betrieben werden. - Adaptado a la soldadura en un entorno que comprende riesgos de choque eléctrico. La fuente de corriente ella misma no debe estar situada dentro de tal locales. - Адаптирован для сварки в среде с повышенным риском электрошока. Однако сам источник питания не должен быть расположен в таких местах.
IP21	- Protégé contre l'accès aux parties dangereuses avec un doigt, et contre les chutes verticales de gouttes d'eau - Protected against rain and against fingers access to dangerous parts - Geschützt gegen Berührung mit gefährlichen Teilen und gegen senkrechten Wassertropfenfall - Protegido contra el acceso a las partes peligrosas con los dedos, y contra las caídas verticales de gotas de agua - Аппарат защищен от доступа рук в опасные зоны и от вертикального падения капель воды Сварка на постоянном токе
	- Courant de soudage continu. - Welding direct current. - Gleichschweißstrom. - La corriente de soldadura es continua. - Сварка на постоянном токе.
	- Alimentation électrique monophasée 50 ou 60Hz - Single phase power supply 50 or 60Hz - Einphasige Netzversorgung mit 50 oder 60Hz - Alimentación eléctrica monofásica 50 o 60 Hz - Однофазное напряжение 50 или 60Гц
U0	- Tension assignée à vide - Rated no-load voltage - Leerlaufspannung - Tensión asignada de vacío - Напряжение холостого хода.
U1	Tension assignée d'alimentation. - rated supply voltage. - Netzspannung. - Tensión de la red. - Напряжение сети.
I1max	- Courant d'alimentation assigné maximal (valeur efficace). - Rated maximum supply current (effective value). - Maximaler Versorgungsstrom (Effektivwert). - Corriente máxima de alimentación de la red. - Максимальный сетевой ток (эффективная мощность)
I1eff	- Courant d'alimentation effectif maximal. - Maximum effective supply current. - Maximaler tatsächlicher Versorgungsstrom. - Corriente de alimentación efectiva máxima. - Максимальный эффективный сетевой ток.
EN60 974-1	- L'appareil respecte la norme EN60974-1. - The device complies with EN60974-1 standard relative to welding units. - Das Gerät entspricht der Norm EN60974-1 für Schweißgeräte. - El aparato está conforme a la norma EN60974-1 referente a los aparatos de soldadura. - Аппарат соответствует европейской норме EN60974-1.
	- Transformateur-redresseur monophasé. - Rectifier-Single-phase converter - Einphasiger Trafo/Frequenzumwandler - Transformador-rectificador monofàsico, - однофазный инвертор, с трансформацией и выпрямлением.
X(40°C)	- Facteur de marche selon la norme EN 60974-1 (10 minutes – 40°C). - Duty cycle according to the standar EN 60974-1 (10 minutes – 40°C). - Einschaltdauer gemäß EN 60974-1 (10 Minuten – 40°C). - Factor de marcha según la norma EN 60974-1 (10 minutos – 40°C). - ПВ% по норме EN 60974-1 (10 минут – 40°C).
I2 ...%	I2: courant de soudage conventionnnel correspondant. - I2: corresponding conventional welding current. - I2: entsprechender Schweißstrom. - I2: Corrientes correspondientes. - I2: Токи, соответствующие X*

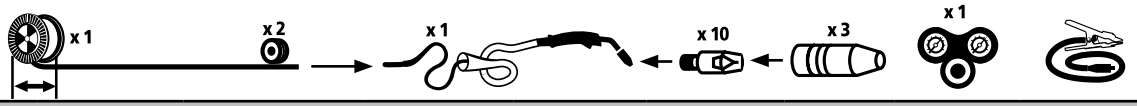
ICONES / SYMBOLS / ZEICHENERKLÄRUNG

U2 ...%	- U2: Tensions conventionnelles en charges correspondantes. - U2: conventional voltages in corresponding load. - U2: entsprechende Arbeitsspannung. - U2: Tensiones convencionales en carga. - U2: соответствующие сварочные напряжения*.
CE	- Appareil conforme aux directives européennes. - The device complies with European Directive. - Gerät entspricht europäischen Richtlinien. - El aparato está conforme a las normas europeas. - Устройство соответствует европейским нормам.
	- Conforme aux normes GOST (Russie). - Conform to standards GOST / PCT (Russia). - in Übereinstimmung mit der Norm GOST/PCT. - Conforme a la normas GOST (PCT) (Rusia). - Продукт соответствует стандарту России (PCT).
	- L'arc électrique produit des rayons dangereux pour les yeux et la peau (protégez-vous !). - The electric arc produces dangerous rays for eyes and skin (protect yourself !). - Der elektrische Lichtbogen verursacht Strahlungen auf Augen und Haut (Schützen Sie sich !). - El arco produce rayos peligrosos para los ojos y la piel (¡ Protéjase !). - Электрическая дуга производит опасные лучи для глаз и кожи (защитите себя!). - Внимание! Сварка может вызвать пожар или взрыв.
	- Attention, souder peut déclencher un feu ou une explosion. - Caution, welding can produce fire or explosion. - Achtung! Schweißen kann Feuer oder Explosion verursachen. - Cuidado, soldar puede iniciar un fuego o una explosión. - Внимание! Сварка может вызвать пожар или взрыв.
	- Attention ! Lire le manuel d'instruction avant utilisation. - Caution ! Read the user manual. - Achtung! Lesen Sie die Betriebsanleitung. - Cuidado, leer las instrucciones de utilización. - Внимание ! Читайте инструкцию по использованию.
	- Produit faisant l'objet d'une collecte sélective - Ne pas jeter dans une poubelle domestique. - Separate collection required, Do not throw in a domestic dustbin. - Für die Entsorgung Ihres Gerätes gelten besondere Bestimmungen (Sondermüll). Es darf nicht mit dem Hausmüll entsorgt werden. - Este aparato es objeto de una recolección selectiva. No debe ser tirado en un cubo doméstico. - Продукт требует специальной утилизации. Не выбрасывать с бытовыми отходами.
	- Information sur la température (protection thermique) - Temperature information (thermal protection) - Information zur Temperatur (Thermoschutz) - Información de la temperatura (protección térmica) - Информация по температуре (термозащита)

ACCESSOIRES/ACCESSORIES / ZUBEHÖR / ACCESORIOS / АКСЕССУАРЫ



PEARL 190.2									
	ø 100	ø 200	0.6 - 1.0						
Acier/Steel/Stahl	086593 (ø0.6) 086609 (ø0.8)	086128 (ø0.8) 086135 (ø1.0)	042339 (ø0.6/0.8) 041189 (ø0.8/1.0)	041592 (ø0.6/0.8 - 3m) 041608 (ø1.0/1,2 - 3m)	041424 (150A - 3m)	041905 (ø0.6) 041912 (ø0.8) 041929 (ø1.0)	041875	20L/min 041998 30L/min 041622 (FR) 041646 (UK) 041219 (DE)	043770 (150/200A - 2m) 16 mm²
Inox/Stainless/ Edelstahl	086616 (ø0.8)	086326 (ø0.8)							
No Gas	086104 (ø0.9)	086623 (ø0.9)	042346 (ø0.9/1.2)				041868		
Alu	-	086555 (ø0.8) (AG5)	041196 (ø0.8/1.0)	041578 (ø0.8 - 3m) 041585 (ø1.0/1,2 - 3m)	041462 (150A - 3m)	041059 (ø0.8) 041066 (ø1.0)	041875		
	086685 (ø0.8) (AlSi5)	-							
	086678 (ø0.8) (AlSi12)								



PEARL 190.4 XL									
	ø 200	ø 300	0.6 - 1.0						
Acier/Steel/Stahl	086128 (ø0.8) 086135 (ø1.0)	086166 (ø0.6) 086227 (ø0.8) 086234 (ø1.0	042353 (ø0.6/0.8) 042360 (ø0.8/1.0)	041592 (ø0.6/0.8 - 3m) 041608 (ø1.0/1,2 - 3m)	041424 (150A - 3m)	041905 (ø0.6) 041912 (ø0.8) 041929 (ø1.0)	041875	20L/min 041998 30L/min 041622 (FR) 041646 (UK) 041219 (DE)	043770 (150/200A - 2m) 16 mm²
Inox/Stainless/ Edelstahl	086326 (ø0.8)	-							
No Gas	086623 (ø0.9)	-	042407 (ø0.9/1.2)				041868		
Alu	086555 (ø0.8) (AG5)	086524 (ø1.0) (AG5)	042377 (ø0.8/1.0)	041578 (ø0.8 - 3m) 041585 (ø1.0/1,2 - 3m)	041462 (150A - 3m)	041059 (ø0.8) 041066 (ø1.0)	041875		
	-	-							
	-	-							