ENGLISH

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Introduction

Thank you for purchasing one for our products.



Before using the equipment you should carefully read the instructions included in this manual.

It is also necessary to study all safety regulations, which are included in the attached document General regulations.

In order to get the best performance from the system and ensure that its parts last as long as possible, you must strictly follow the usage instructions and the maintenance regulations included in this manual. In the interest of customers, you are recommended to have maintenance and, where necessary, repairs carried out by the workshops of our service organisation, since they have suitable equipment and specially trained personnel available. All our machinery and systems are subject to continual development. We must therefore reserve the right to modify their construction and properties.

Description

Portable welding machines 220 / 270 / 320 MIG are designed as small and light high performance digital three-phase inverters. Digital controls ensure not only optimal setting of the welding characteristics, but its dynamic adaptation during the welding process as well. This way a substantially higher quality weld joint and simplification of welding process are achieved. Significant benefits are new functions, which help to keep the welding arc in an optimal working area. Due to this arc control technology excellent results may be achieved even by less experienced welders.
Digital and progressive hardware design enabled significant reduction in weight, dimensions and subsequently also in price of the new inverters. The performance part itself is overdesigned to ensure reliability, high performance and high load capacity.

WARNING: If machines work in a dusty environment, they need to be equipped with a dust filter. Filter prevents the machine from being contaminated with impurities, thus extending the interval of cleaning its internal parts. At the same time, it enhances reliability of the machine which highly depends on the level of contamination.

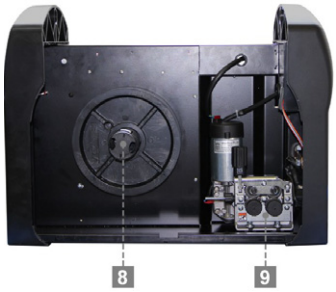
Warranty cannot be accepted if the machine is damaged by excessive dustiness while the filter is not properly mounted.

Description and installation

Pic. 1



1 - Output clamp (+)
2 - Output clamp (-)
3 - Remote control connector
4 - Control panel
5 - Protective gas inlet
6 - Main switch
7 - Supply cable
8 - Tenon of spool with wire
9 - Wire feeder



Placement of the machine
When choosing the position of the machine placement, be careful to prevent the machine from conducting impurities and getting them inside (for example flying particles from the grinding tool).

Connection of the machine to electrical supply
The 220, 270 and 320 MIG machines comply with safety class I requirements. This means that all metal parts, which are accessible without the necessity to take off the cover, are connected to protective grounding of the electrical supply. The machine can be connected to power supply only by a cable with a socket equipped with a protective ground contact. Always turn the machine on and off with the main switch! Do not use for turning off the terminating unit! The necessary protection is listed in the chapter “technical data”.

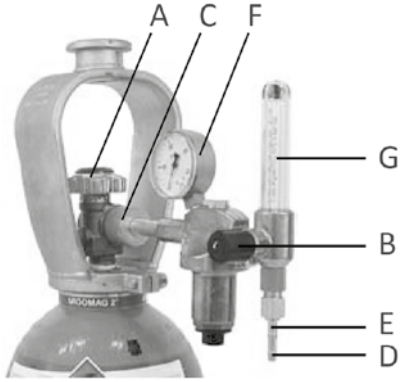
Technical data	220 MIG	270 MIG	320 MIG
Supply voltage 50/60 Hz	3x 400 V ±10 %	3x 400 V ±10 %	3x 400 V ±10 %
Duty cycle (100 %)	220 A	220 A	220 A
Duty cycle	-	270 / 60 %	300 / 40 %
Slow protection	16 A	16 A	25 A
Output voltage range	8-30 V	8-30 V	8-30 V
Peak welding current	> 500 A	> 500 A	> 500 A
Wire feeder speed	1 – 20 m/min	1 – 20 m/min	1 – 20 m/min
Output voltage	65 V	65 V	65 V
Input at no load	≤ 50 W	≤ 50 W	≤ 50 W
Efficiency max. Power	≥ 80 %	≥ 80 %	≥ 80 %
Diameter of weld. wire - steel, stainless steel	0.6-1.2 mm	0.6-1.2 mm	0.6-1.2 mm
Diameter of welding wire - aluminum	1.0-1.2 mm	1.0-1.2 mm	1.0-1.2 mm
Diameter of welding wire - tube	0.9-1.6 mm	0.9-1.6 mm	0.9-1.6 mm
Protective gases	CO_2, Ar, Ar+CO_2	CO_2, Ar, Ar+CO_2	CO_2, Ar, Ar+CO_2
Max. průměr cívky drátu	300 mm (15 kg)	300 mm (15 kg)	300 mm (15 kg)
Diameter of rolls	30 mm	30 mm	30 mm
Protection class	IP23S	IP23S	IP23S
Protection level	I	I	I
Diameters LxWxH	595x270x430 mm	595x270x430 mm	595x270x430 mm
Weight	27 kg	27 kg	27 kg

Welding torch cennection
Check whether there is bowden cable in the welding torch and a hole for the wire you are using. Use only wires, which are properly rated for the particular machine output. Insert the torch into the euro-connector 1 (pic. 1) and secure it with a sleeve nut.

Earth cable connection
Use cable with sufficient cross-section (see table „technical data“). Connect cable into clamp 2 (pic. 1). The cable should be as short as possible and placed at the floor level or near it. Place the grounding clamp directly on the welded part (if possible). The touching surface must be clean and as big as possible - it must be cleaned from paint and rust.

Protective gas and gas tank installation
Use inert gases (for example argon, helium or argon-helium mixture) as a protection gas for welding. Make sure that the reduction valve suites the type of the gas you are using.

Gas tank installation
Always properly secure the gas tank in a vertical position in a special holder on the wall or in the cart. After you finish welding, do not forget to close the gas tank valve.

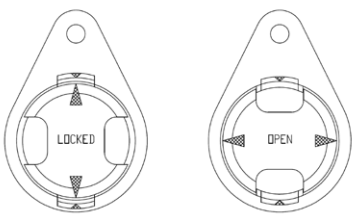


Pic. 2

The following installation instructions are applicable to the majority of pressure--reducing valve types:
1. Keep aside and open for a moment the cylinder valve “A” (pic. 2). Impurities or dirt, if any, will be blown away from the cylinder valve. **IMPORTANT NOTE!** Be careful because of the high gas pressure.
2. Turn the pressure controlling screw “B” of the valve until you feel the spring compression.
3. Close the valve.
4. Fit the valve over the gasket of the inlet connecting pipe onto the cylinder and tighten cap nut “C” using a wrench.
5. Fit on the hose adapter “D” with the cap nut “E” to the gas pipe and fasten with the hose clip.
6. Connect one end of the hose to the valve and the second end to the welding apparatus.
7. Tighten the cap nut with the hose at the valve.
8. Slowly open the cylinder valve. The cylinder pressure gauge “F” will indicate the pressure in the cylinder. **NOTE!** Do not consume the whole cylinder content. The cylinder should be replaced as soon as the pressure drops down to 2 bars.
9. Open the valve.
10. Press the torch button, while the apparatus is switched on.
11. Turn the pressure controlling screw “B” until the flow-meter “G” shows the required flow rate.

NOTE! After the completion of the welding operation close the cylinder valve. If not in service for a longer period, loosen the pressure controlling screw.

The wire spool instalation
Open the side cover of the wire magazine. Install wire feed pulleys appropriately for the particular wire type and diameter (as a standard, pulleys with a V groove for diameter 1.0 – 1.2 mm are installed).
Set the wire spool driver lock to the open position and attach the wire spool to the driver. The hole in the spool must slide into the driver peg. Use the included adapters for different spool types as needed. Set the wire spool driver lock to the closed position.

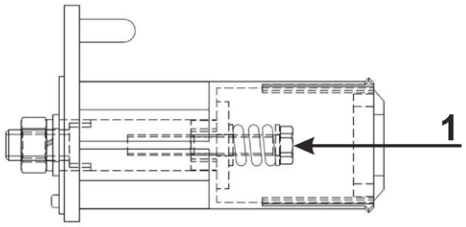


Pic. 3

Locked Opened

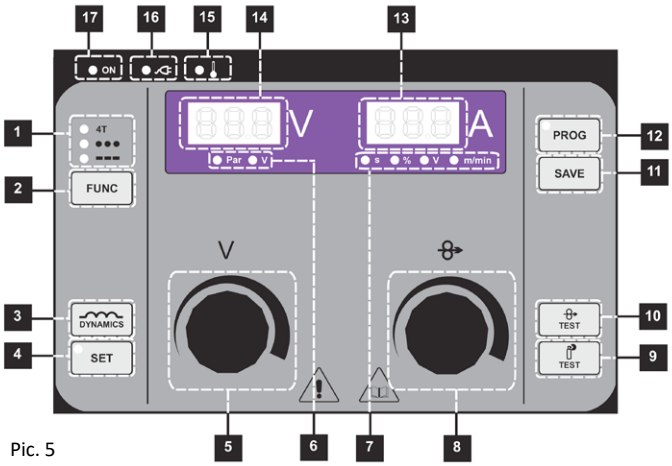
Connection of welding wire
Cut off the end of the wire fastened to the edge of the roller and lead it into the loading bowden, then through the roll of feed into the loading tube 10 cm at least. Check if the wire leads through the right feed groove. Tilt the holding-down roll down and return the holding-down mechanism into the vertical level. adjust the nut pressure of thrust to secure the wire feed without problems and deformation by too much thrust.

Welding wire spool brake adjustment
The wire feed speed can be regulated by selector 8 (pic. 5) on the front panel. The wire loading can be terminated by repeatedly pushing button 10 (pic. 5) or by pushing the torch button. During wire loading no gas will flow through the machine.



Pic. 4

Dismount the gas tip of welding torch. Unscrew the flow drawing tip.
Connect the socket plug into the network. Turn on the main switch 6 (pic. 1) to position I.
Press button 10 (pic. 5) - the welding wire is lead into the torch without gas. The speed of the leading-in can be adjusted with the potentiometer 8 (pic. 5). Press button 10 on control panel (or switch on torch) again to stop lead-in of wire.
Before welding use anti-spatter spray in the space of gas tube and flow drawing tie. In that way you prevent adherence of metal spatter and prolong the life of gas tube
ATTENTION! During wire threading don´t aim the torch against eyes!



Pic. 5

Panel of functions

Control and signal elements on the digital panel – description of functions:
Pos. 1 **Diodes of 4T, spot welding, spot welding with delay.** The control lights are on, if these modes are active.
Pos. 2 **FUNC button.** Individual modes can be selected with this button.
Pos. 3 **DYNAMICS button.** By pushing this button the mode for arc hardness setting is entered. The hardness value is then set with selector 8. By choosing a low value we get a softer arc and bigger weld penetration of the material. By choosing a higher value we will get a bigger weld deposit. By choosing the correct arc dynamics selection we regulate spatter.
Pos. 4 **SET mode button with a control light for selection of function parameter.** After pushing this button we enter a mode, which allows us to change the values of individual functions. Switching between functions is made by swinging of selector 5. If the button is activated, the LED control light will go on.
Pos. 5 **Selector for setting of welding voltage and switching between functions in the SET mode.**
Pos. 6 **Diode showing the display mode.**
Pos. 7 **Diode showing the unit of value on the display.**
Pos. 8 **Selector for setting of wire feed speed and values in the SET mode.**
Pos. 9 **Gas test button.** By pushing this button countdown for setting of gas flow will start. The time is shown on display 13. The countdown can be terminated by repeatedly pushing the button 9 or the welding torch button.
Pos. 10 **Wire loading button.** After pushing button 10 the loading of wire is started. The loading process can be stopped by pushing button 10 again or by the welding torch button.
Pos. 11 **The SAVE button.** This button allows saving of the set parameters into

preselections PrG1 to PrG20.

Pos. 12 **PROG button with control.** This button serves for programs display. By pushing this button we enter the program selection mode. The programs are chosen by selector 8. The chosen program is confirmed by repeatedly pushing button 12.

Pos. 13 **Display showing the wire feed speed, welding voltage/value and the functions status.** During welding the display shows the welding voltage value. After termination of welding this value remains on the display for approximately three seconds. In an idle state the wire feed speed is displayed. During setting in the SET mode the status of the selected function is displayed – either off or the selected function value.

Pos. 14 **Display showing voltage value or the selected function type.** During welding and three seconds after its termination the display shows the welding voltage value. After welding termination, the value remains on display for another three seconds. In the SET mode the abbreviation of the function currently being set is displayed.

Pos. 15 **The temperature indicator light.** The temperature indicator signals the machine overheating.

Pos. 16 **The input voltage indicator.** The indicator light is on when the input voltage is out of range.

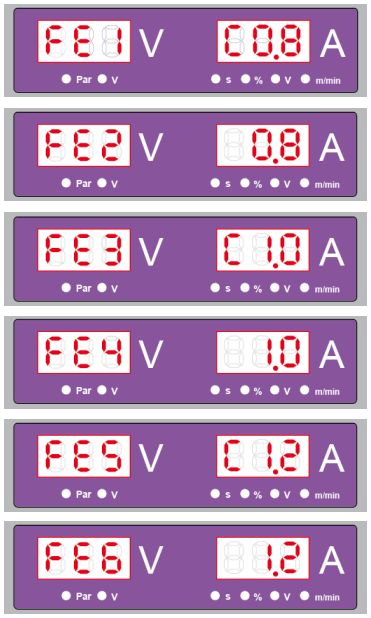
Pos. 17 **The indicator inverter ON.** The indicator is on when the output part of the machine is running.

Function SYNERGIC

Activation of SYNERGIC function

Press button PROG (pos. 12) and by switch 8 choose one of synergic programs.

Description of synergic programs is on page 38.



FE1	C0.8	CO_2 – wire 0,8 mm
FE2	0.8	82 % Ar, 18 % CO_2 – wire 0.8 mm
FE3	C1.0	CO_2 – wire 1,0 mm
FE4	1.0	82% Ar, 18 % CO_2 – wire .0 mm
FE5	C1.2	CO_2 – wire 1.2 mm
FE6	1.2	82 % Ar, 18 % CO_2 – wire 1.2 mm

Confirm the selected program by pressing button PROG (pos. 12).
Assumed welding current glows on the left display, on the right display adjusted correction of wire shift. By the left switch (pos. 5) the voltage correction (from -9 to +9) is selected. During whirling by the right switch (pos. 8) the speed of wire is shown on the right display (pos. 13) and assumed welding current on the left display (pos. 14). Assumed welding current can be adjusted by the right switch.

Deactivation of SYNERGIC function

Press button PROG (pos. 12). By switch 8 choose OFF.



Confirm by pressing the buton PROG (pos. 12) again.

Saving of optimalized synergic program

After choosing a program and optimalization of its parameters we can save it as a new program on any program´s position Pr 1 – Pr 20.

1. Optimize parameters
2. Press button SAVE
3. Choose number of program under which you want to save it.
4. Hold the SAVE button until symbol -S- is shown on display. Now the new program is saved.



Loading of saved program

1. Press button SAVE
2. Choose one of program Pr 1 – Pr 20
3. Shortly press button SAVE



On the display makes light symbol -L- and the chosen program is set. The parameters of adjusted program, voltage and speed of wire remain to glow on display. Only values saved in programs Pr1 – Pr20 could be changed.

Temperature protection

The machines are equipped with protective thermostats on all its performance parts. In case of overheating (for example as a result of exceeding the maximum allowed cycle), welding is automatically interrupted and the temperature control light will go on at the control panel and the display will show „-t-“. After cooling off the overheating message disappears and the machine is ready for operation. After welding termination always let the machine cool down. If the machine is shut off prematurely and turned back on, the ventilator will not start even if the machine is not completely cooled off.

Ventilator

The machine is equipped with automatic blower turn-off function. If the machine is idle for several minutes, the blower will be automatically shut off. This is the state when you turn the machine on. This functions leads to electric energy savings and noise reduction in case the machine is idle for longer period of time.

Operation

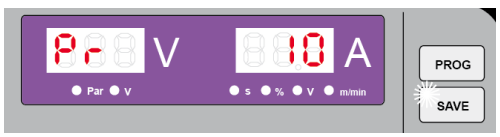
Welding in places where there is danger of explosion and fire is prohibited!
Welding vapors may be harmful to your health. Assure good ventilation during welding!

Preset programs selection

Push the SAVE 11 button (pic. 5). The indicator near the button will come on. Select a suitable program (one of programs marked 1-20) with selector 8 (pic. 5). Confirm activation by repeatedly pushing the SAVE 11 button (the indicator light will go off).

Custom programs selection

Push the SAVE button (pos. 11, pic. 5). The indicator near the button will come on. Select a suitable position from positions 1 – 20 with selector 8. After you selected functions and parameters, confirm activation by repeatedly pushing the SAVE button. The indicator light will go off. If you don’t push the SAVE button in the time limit 3 seconds, the program will not be saved and the action is canceled.



Custom programs saving

Custom programs can be saved in positions Pr 1 – 20 after setting your chosen functions and parameters. Push the SAVE button (pos. 11, pic. 5). Select one of the positions marked 1 – 20 with selector 8. Confirm the saving by pushing the SAVE button again. If the SAVE button is not pushed within 3 seconds, the program will be not saved and the action will be canceled.

Functions selection and setting up its parameters

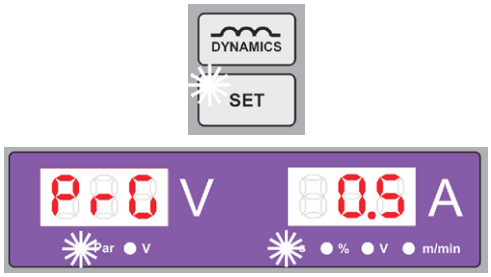
By pressing button SET 2 you can get into setting mode where can be adjusted particular functions and its parameters. The LED on button SET will light up. Switching

between functions is made by potentiometer 5 (pic. 5), changing of parameters by potentiometer 8 (pic. 5). By pressing SET again or after a few second without any activity the setting mod is leaved.
NOTE! Functions and its parameters cannot be changed during welding process. During welding only welding current and speed of wire feed can be changed.

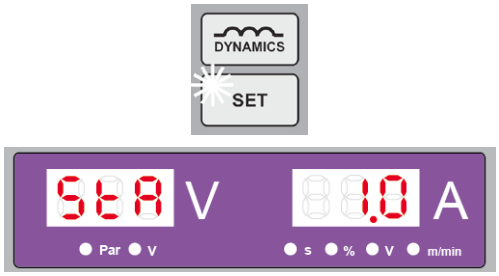
Functions

Function	Description	Disp.	Value range
Pre-Gas Time	Pre-gas	PrG	0.1 - 2 s
Start Level	Approaching speed	StA	1 - 20 m/s
Hot Start	Hot Start off	Hot	OFF
	Hot Start - increasing of current and speed of wire feeder	Hot	1 - 100 %
	Hot Start - duration	Hot	0.5 - 5 s
Crater Fill	Crater fill off	CrA	OFF
	Crater fill - decreasing of current and speed of wire feeder	CrA	from 0 to -60 %
	Crate fill - duration	CrA	0.5 - 10 s
Burn Back	Burn out of wire	bb	0.01 - 1 s
Post-Gas Time	Post-gas	PoG	0.2 - 10 s
Spot Time	Lenght of spot	bod	1 - 10 s
Pause Time	Lenght of pause	PAU	1 - 10 s
Dynamics	Manual mode	DYN	0 - 50
	Synergic mode	DYN	from -9 to +50

Pre Gas Time
This function ensures on-time presence of the protective gas, which prevents weld oxidation during welding commencement.

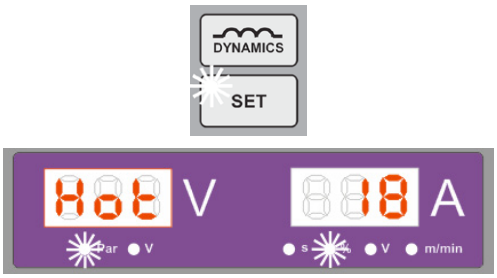


Start Level
The function enables problem-free arc ignition without unnecessary spatter and “jerking” of the welding torch. The welding wire is moved at the preset approach speed by pushing the torch button. At the moment of welding wire contact with the material, the arc is ignited and the speed is automatically switched to the preset welding moving speed.

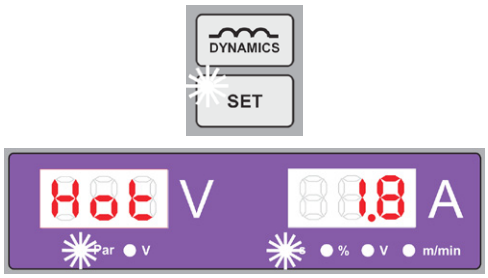


HOT START
The HOT START function is mostly used when welding aluminum, where it facilitates the creation of better arc ignition and higher quality weld start.
In case of activation the function, the following parameters can be set:

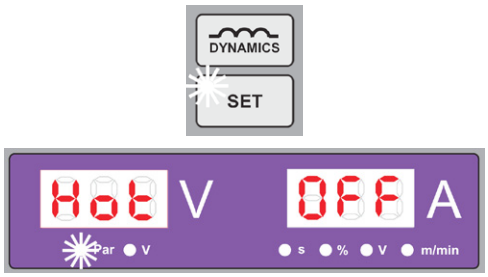
Current and speed of feed – change the current and wire feed speed in % in comparison with value adjusted on display.



Time – period for which the function is active.

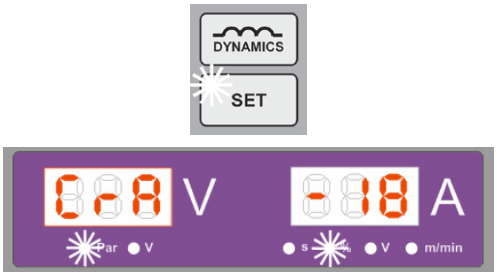


The function can be completely turned off by choosing OFF.

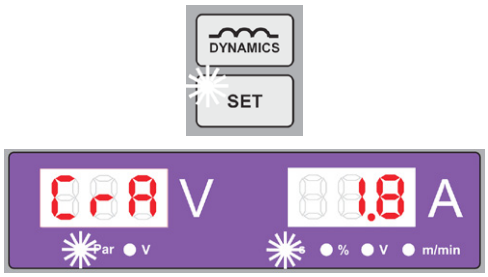


Crater fill
This function is used at welding termination. This function serves to fill the end crater and creation of a high quality good looking weld finish.
In case of activation the function, the following parameters can be set:

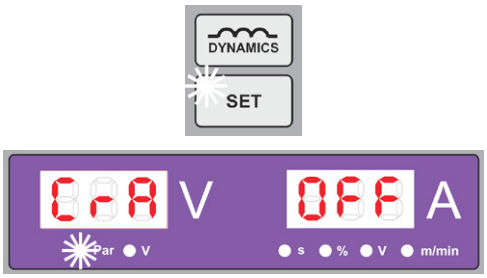
Current and speed of feed - change the current and wire feed speed in % in comparison with value adjusted on display.



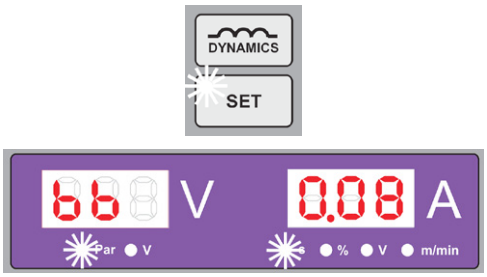
Time – period for which the function is active.



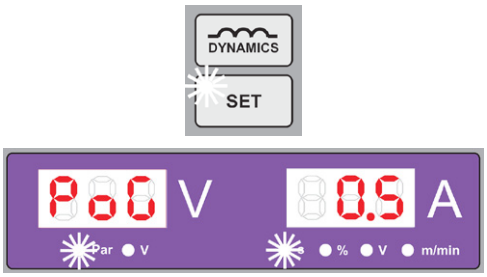
The function can be completely turned off by choosing OFF.



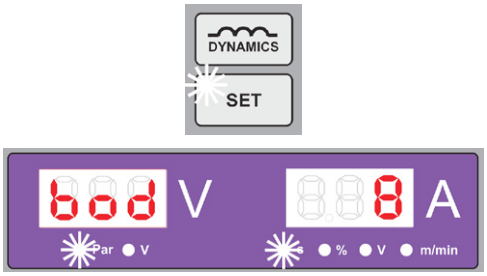
BURN BACK
This function prevents welding wire sticking to melt or the contact tip if properly set. Setting of this function influences the “ball” at the end of the welding wire and subsequently the quality of the next arc ignition.



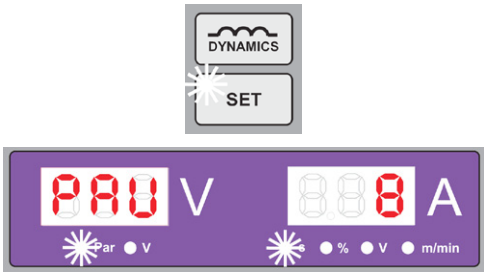
Post gas time
This function assures the protective gas presence after welding termination, which prevents the weld end oxidation.



If the Spot Time mode is activated, the pulse time setting option in the SET mode is activated.



If the Pause Time mode is activated, the pause time setting option in the SET mode is activated.



Remote Control (RC)



RC OFF – remote control is off



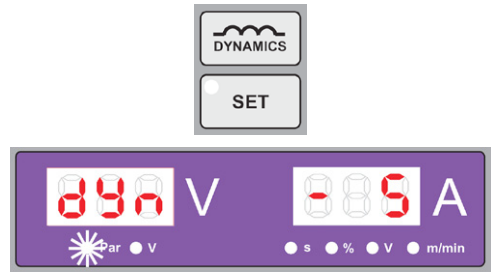
RC AnA – analog (torch with 10 kΩ potentiometer)



RC dIG – digital (torch with Up/Down buttons)

Preinstalled programs tables are listed on page 38.

DYNAMICS mode
By pushing the Dynamics 3 button (pic. 5) we switch to the arc hardness setting mode. The hardness is set by selector 8 (pic. 5). Confirm the settings by pushing the Dynamics button again or by waiting until the time limit runs out. The settings are saved in both cases. The mode can be selected and saved regardless of the program type (user or preset).



Setting of welding voltage and wire feed speed
The welding voltage value is selected by selector 5 (pic. 5).
The welding wire feed speed is adjusted by selector 8 (pic. 5).



Error message display

During machine operation some errors and breakdowns may appear which will be announced by an Err sign and error code. The following ones are important for the user:

Err -t- (TEMP – overheating)
Activation of the machine heat protection. Wait till the machine cools down and then continue your work.



Err 1 (POWERSUPPLY – over/under voltage in the power supply)
The input clamps’ voltage (power supply cable) is outside the machine toleration.



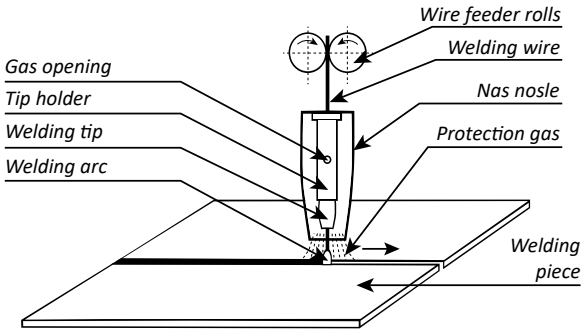
Err 8 (ERR OUT SHORT)
When turning the machine on – short on the input clamps (for instance the grounding cable and cable with the electrode holder are shorted, or it can signify a machine problem).



Some error messages can be deleted only by turning the machine on and off with the main switch.

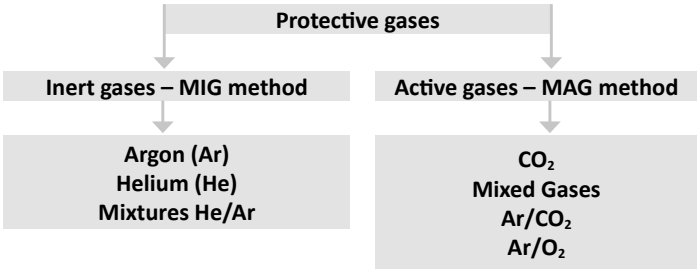
MIG/MAG welding method

Principle of MIG/MAG welding
Welding wire is lead from the roller into the flow drawing tie with the use of the feed. Arc joins thawing wire electrode with welding material. Welding wire functions as a carrier of the arc and as the source of additional material at the same time. Protective gas flows from the spacer who protects arc and the whole weld against the effects of surrounding atmosphere (pic. 6).



Pic. 6

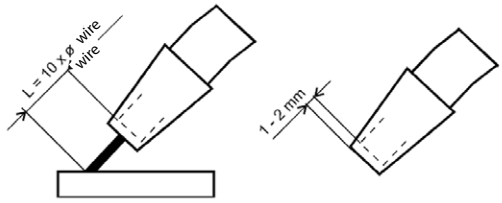
Protective gases



Pic. 7

Adjusting of welding parameters

For proximate adjusting of welding current and voltage for MIG/MAG is used formula $U_2 = 14 + 0{,}05 \times I_2$. According to this formula can be calculated required voltage. When adjusting voltage, we must calculate with its decrease during welding. Decrease is about 4,8 V / 100 A. Adjusting of welding current - for chosen voltage set required welding current by increasing or decreasing of wire feeding speed, eventually slightly tune voltage so that welding arc is stable. For good quality of weld and optimal adjusting of welding current is necessary the range of supply girder from welded material to be approximately 10x diameter of welding wire (pic. 8).



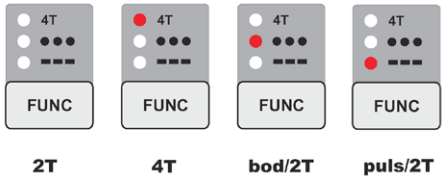
Pic. 8

Welding in MIG/MAG method

a) With the machine disconnected from power supply, connect the welding torch to the out connector 1 (pic. 1) and the grounding cable to the connector 2.
b) Connect the gas hose from the gas bottle reduction valve to the 5 output (pic. 1) on the rear panel. Turn the gas on with the gas bottle valve.
c) Connect the machine to power supply.
d) Turn on the main switch 6 (pic. 1)
e) Wait until the welding machine test runs through – all display indicator lights will be on for several seconds.
f) Install the wire spool according to the spool installation chapter.
g) Load the wire to the wire feed according to the relevant chapter.
h) Perform the brake adjustment by following the brake adjustment chapter.
i) Set the gas flow by following the gas bottle installation chapter.
j) Choose the welding mode you wish to use.

Welding mode selection

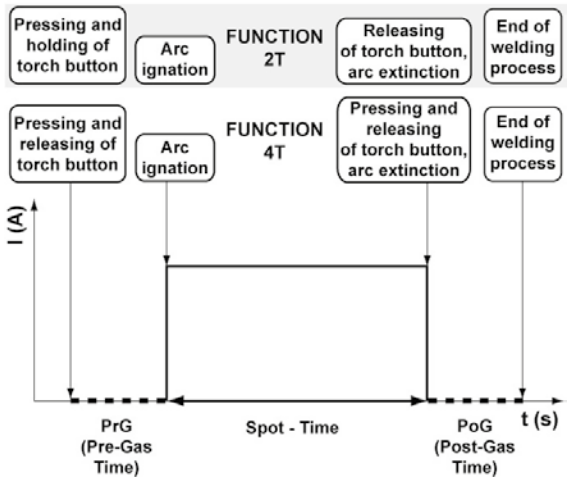
By pushing button 2 (pic. 5) select welding mode (2-stroke, 4-stroke, spot welding or pulsation).



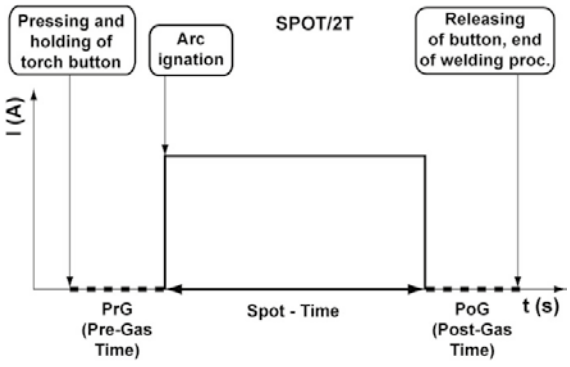
Pic. 8

TWO-STROKE
Welding process is started by only the pressing the switch of the torch. The switch must always be held during the welding process and it can be interrupted releasing the switch of the torch.

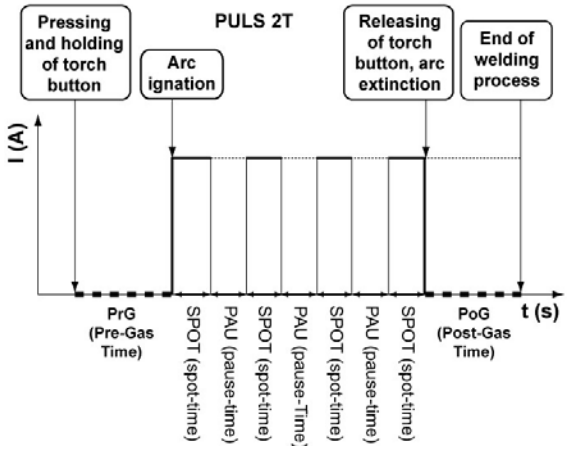
FOUR–STROKE
Pushing the torch button will start the welding process. After its release the welding process continues. After another push and release of the torch button the welding process is terminated.



SPOT TIME welding
It is used for welding by individual short spots, whose length can be continuously adjusted. By pressing the switch on the torch, the time circuit is started, which starts the welding process and after the set time it turns off. After further pressing the button, the whole process is repeated.



PULSE welding
It is used for welding by short spots. Length of these spots and pauses can be continuously adjusted. Depending on the gas type used, wire diameter and strength of the material (alternatively the welding current) determine the feasible program with preset parameters according to table on page 38. If none of the preselected programs fits your needs, choose one of the positions in SAVE 1-20, where you can save your own programs.



Problems solving

Display is not on - no voltage is entering the machine.

- Check the main fuses, replace burned fuses.
- Check the main supply cable and replace faulty parts.

The machine is not welding properly.
During welding the spatter is big, the weld is porous.

- Check the welding parameters setting or reset them.
- Check the gas connection and attachment of the gas hose.
- Check the grounding clamp, make sure it is properly attached and the grounding cable is not damaged. Change the grounding position and replace damaged parts if necessary.
- Check the welding torch cable and connector. Tie connections and replace damaged parts.
- Check replacement parts of the welding torch. Clean and replace damaged parts.

The welding machine is overheated and the signal light is on.

- Check that there is sufficient free space behind and in front of the machine necessary for proper air circulation.
- Check that the vents in front of the fans or fans itself are not blocked.

Maintenance

Please pay attention to the main power supply! It is necessary to disconnect it during any manipulation with the welding machine. During maintenance planning the frequency and circumstances of the machine's use must be considered. Considerate use and preventive maintenance helps in avoidance of unnecessary breakdowns and failures.

Regular maintenance and check-up

Perform the check-up according to CSN EN 60974-4. Always check the condition of the welding and supply cables before using the machine. Do not use damaged cables.
Perform visual check-up:
1) torch holder, the welding current clamp
2) power supply
3) welding circuit
4) covers
5) control and indicator elements
6) overall condition

Every six months

Disconnect the machine from the electrical outlet and wait for about two minutes (the charge inside the machine condensers will dissipate). Then remove the machine cover. Clean all dirty electrical connections and retie any loose ones.
Clean all internal parts from dust and dirt, for instance with a soft brush or with a vacuum cleaner.
NOTE: Be careful when using compressed air in order to not damage any parts.
Never use solvents or thinners (for example acetone etc.), because they may damage plastic parts and signs on the front panel.
Only a technician with electrotechnical qualification may repair this machine.
WARNING! Depending on environment, in which the machine works, it can be necessary to clean interior of the machine more often (e.g. each week).

Storage

The machine must be stored in a clean and dry room. Protect the machine from rain and direct sunlight.

Poznámky / Note / Bemerkungen / Uwaga

Osvědčení o jakosti a kompletnosti výrobku Testing certificate / Qualitätszertifikat des Produktes / Deklaracja Jakości i Kompletności			
Název a typ výrobku Type Bennenung und Typ Nazwa i rodzaj produktu	◯ **220 MIG** ◯	◯ **270 MIG** ◯	◯ **320 MIG**
Výrobní číslo stroje: Serial number: Herstellungsnummer der Maschine: Numer produkcyjny maszyny:		Výrobní číslo PCB: Serial number PCB: Herstellungsnummer PCB: Numer produkcyjny PCB:	
Výrobce Producer Produzent Producent			
Razítko OTK Stamp of Technical Control Department Stempel der technische Kontrollabteilung Pieczątka Kontroli Jakości			
Datum výroby Date of production Datum der Produktion Data produkcji			
Kontroloval Inspected by Geprüft von Sprawdził			

Záruční list / Warranty certificate / Garantieschein / Karta Gwarancyjna	
Datum prodeje Date of sale Verkaufsdatum Data sprzedaży	
Razítko a podpis prodejce Stamp and signature of seller Stempel und Unterschrift des Verkäufers Pieczątka i podpis sprzedawcy	

Záznam o provedeném servisním zákroku / Repair note Eintrag über durchgeführten Serviseingriff / Zapis o wykonaniu interwencji serwisowej			
Datum převzetí servisem Date of take-over Datum Übernahme durch Servisabteilung Data odbioru przez serwis	Datum provedení opravy Date of repair Datum Durchführung der Reparatur Data wykonania naprawy	Číslo reklamač. protokolu Number of repair form Nummer des Reklamationsprotokoll Numer protokołu reklamacyj	Podpis pracovníka Signature of serviceman Unterschrift von Mitarbeiter Podpis pracownika

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Producent zastrzega sobie prawo do zmian.

01/2021