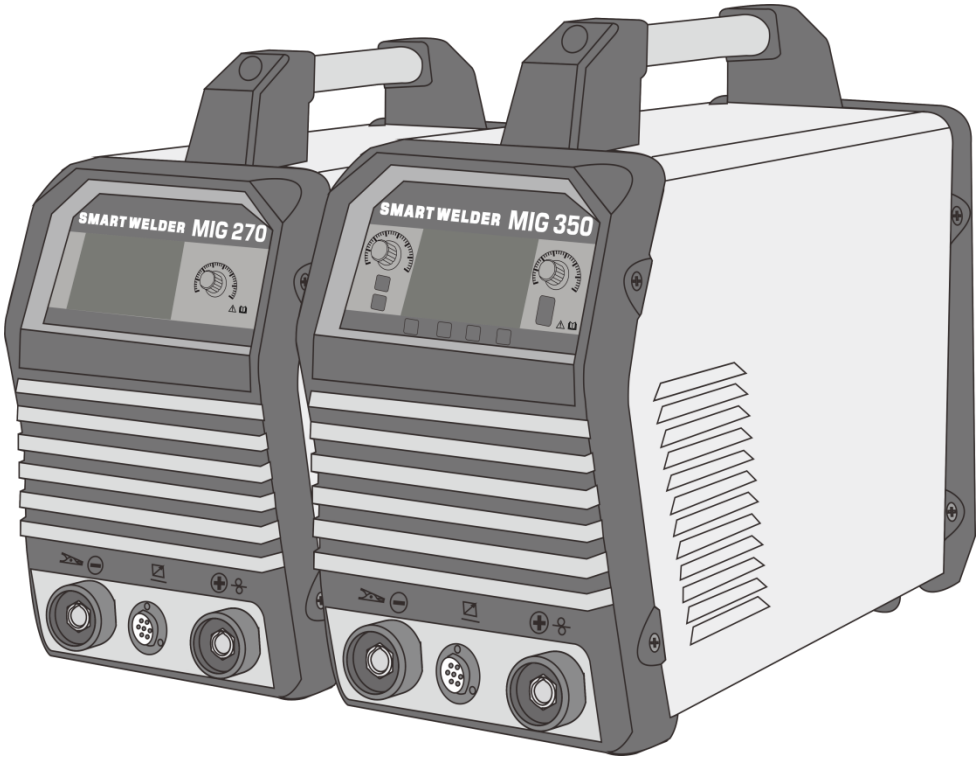
MIG-Inverter welding series DC welding machine

USER'S MANUAL



Please read this manual carefully before installation, use and maintenance

WARNING	**When the DC inverter welder works with AC welder, please don't let the output cable of two different machine connected together prevented from damage welder**
DANGER 	**Once you touch the electric parts will result in electric shock** ● Don't touch the electric parts. ● Make sure the welder connect to earth before using. ● Off power supply while assembly and maintenance. ● Don't use the welder while opening the case. ● Please use the good insulating gloves.
CAUTION 	**ARC、Spatter and slag may burn eyes and skin, abnormal noise may hurt hearing** ● Please use the welding mask to protect your face and eye ● Please use the welding clothes to protect your body ● Please use hearing protecting tool when it is noising
DANGER 	**Using welder in a narrow place or higher have the potential to cause electric shocks, stinging lead to falls and other accidents.** ● Please use the VRD device or build-in VRD welder in the following location ●2m or higher location with risk of falling, workers who may be exposed to bars and other places of grounding electrical conductivity. ● Please check the VRD device per the safety rule while operating
CAUTION 	**The dust, smoke or gas caused by welding are bad for health** ● Please use local exhaust ventilation equipment and respiratory protective equipment. ● When operating in narrow places, please check and accept monitoring of adequate ventilation, wearing of respiratory protective equipment ● Please don't use the welder in the degreasing, cleaning and spraying area
CAUTION 	**It may result in fire, blasting or other accident during welding** ● Please don't place any Combustible and flammable gases in the welding location. ● Please don't weld any airtight container, like oil tank or tube or others ● Please equip with fire apparatus in welding location.
CAUTION 	**Lifting Device:** **The standard package for this welder is carton or wooden box without any connector for lifting device, so when the welder arrive, please use the fork lift truck to move the machine and then open it.** ●When the welder equipped with rings for lifting, you can use the ring to transport the machine, but please notice that don't use roller to move the welder since it may damage the welder ● Please make sure all accessories have been removed when lifting ● When the welder is being lifted, please make sure there is nobody below the welder and there is someone to mention the passengers. ● Please don't use the crane to move the welder quickly. ● Please install the welder in accordance with the assembly direction.

WARNING	**Please make the generator's power is at least 2 times than the welder's rated power when using generators as power supply**

CONTENTS

1.MACHINE DESCRIPTION:

1)THIS SERIES OF PRODUCT FEATURES:

The carbon dioxide gas shielded welding machine is my company's R & D design of inverter technology manufacturing inverter welding machine, has the following advantages:

① strong adapt of grid voltage , ± 15% range can be used normally.

② simple design, beautiful, the atmosphere, small size, light weight, easy to carry.

③ the use of three-protection duct design, comprehensive protection of electronic devices.

④ This series of gas welding machine using current-mode PWM pulse width adjustment technology, IGBT Inverter technology, high-power fast recovery diode should be With the technology, make sure the reliability of the product and more stable.

⑤ with insufficient voltage, over heating, over current, phase-missed protection, to ensure product reliability.

⑥ output performance is stable, real-time monitoring of the output power of the welding, the effective management of the output current to ensure welding welding reliability.

⑦ has a good dynamic characteristics, easy arc, arc stability, easy to control the pool.

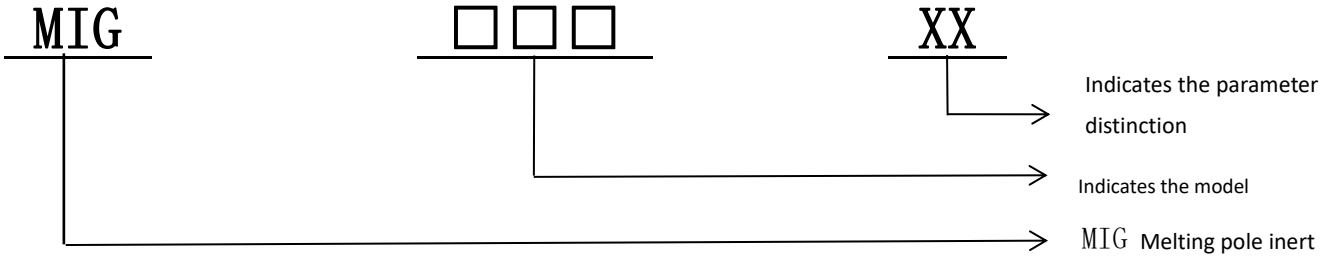
⑧ precise preset welding current, the use of more intuitive and convenient for different thickness of the work piece,sheet with a small current, thick plate with a large power Flow, to ensure the quality of welding and energy conservation.

⑨ digital key encoder adjustment, the interface is simple,with synergic and a unified, 2T / 4T, check wire and other functions; boot automatically restore the last parameter,Adjust the side. Integrated with 0.6,0.8,1.0 three kinds of wire CO2 gas protection welding synergic and a unified specification, just adjust a parameter can be to normal welding, and with the voltage fine-tuning function.

2)APPLICATION:

It is suitable for the welding of various kinds of metal materials such as carbon steel, alloy steel and nonferrous metals. It is suitable for the manufacture of metal parts, such as boiler pressure fuse manufacturing, industrial power station, aerospace industry, automobile and engineering vehicle manufacturing and construction.

3)MODEL DESCRIPTION:



4)LOGO DESCRIPTION:

	Read all safrty regulations and instructions		Earthing loop
	Disconnet the machine from the mains before instal-lation or adjustment		Attention.Warning of possi-ble user health damage
	Wear a welding mask		Movement direction
	Wear a dust mask		Unlocked
	Rotation direction		Locked

⚠ **note:Be sure to identify the product model on the nameplate, the same product model may have different parameters.**

2. MECHNICAL PARAMETERS TABLE:

Table 1

Model / parameter	MIG270Q		MIG270	MIG315	MIG350	MIG500
Power voltage (V)	1Phase AC220V±15%	1Phase AC380V±15%	1Phase AC220V±15%	3Phase AC380V±15%	3Phase AC380V±15%	3Phase AC380V±15%
Frequency (Hz)	50/60		50/60	50/60	50/60	50/60
Rated input current (A)	38	33	38	18	21	32
Output current adjustment (A)	55-200	55-270	55-200	55-270	55-350	55-450
Duty cycle (V)	26	32	26	32	36	38
Load duration (%)	40		40	40	60	50
Power factor	0.73	0.73	0.73	0.73	0.93	0.93
efficient(%)	≥80	≥85	≥85	≥85	≥85	≥85
Wire feeding speed (m/min)	3-24		3-24	3-24	3-24	3-24
After blowing time (S)	0-10		0-10	0-10	0-10	0-10
Welding wire diameter (mm)	0.8/1.0		0.8/1.0	0.8/1.0	0.8/1.0/1.2	1.0/1.2/1.6
Insulation class	F		F	F	F	F
Enclosure rating	IP21S		IP21S	IP21S	IP21S	IP21S
Applicable board thickness (mm)	Over 0.8		Over 0.8	Over 0.8	Over 0.8	Over 0.8
Output cable (mm2)	Over 25		Over 16	Over 25	Over 35	Over 50
Host weight (kg)	10.5		9	9	16	16
Host size (mm)	370*170*300		370*170*300	370*170*300	440*210*320	440*210*320

Table 2

Model / parameter	MIG315Y	MIG500Y	MIG160	MIG200	MIG200CI
Power voltage (V)	3Phase AC380V±15%	3Phase AC380V±15%	1Phase AC220V±15%	1Phase AC220V±15%	1Phase AC220V±15%
Frequency (Hz)	50/60	50/60	50/60	50/60	50/60
Rated input current (A)	18	35	20	20	34
Output current adjustment (A)	55-270	55-500	20-120	20-120	20-180
Duty cycle (V)	32	40	25	25	26
Load duration (%)	60	60	30	30	30
Power factor	0.73	0.93	0.73	0.73	0.73
efficient(%)	≥85	≥85	≥80	≥80	≥80
Wire feeding speed (m/min)	3-24	3-24	3-14	3-14	3-14
After blowing time (S)	0-10	0-10	-	-	0-10
Welding wire diameter (mm)	0.8/1.0	1.0/1.2/1.6	0.8/1.0	0.8/1.0	0.8/1.0
Insulation class	F	F	F	F	F
Enclosure rating	IP21S	IP21S	IP21S	IP21S	IP21S
Applicable board thickness (mm)	Over 0.8	Over 1.0	Over 0.8	Over 0.8	Over 1.0
Output cable (mm2)	Over 25	Over 50	Over 10	Over 10	Over16
Host weight (kg)	9	18	6	6	8
Host size (mm)	546*234*417	546*234*417	425*183*290	425*183*290	425*183*290

3.1.PANEL FUNCTION INSTRUCTION:

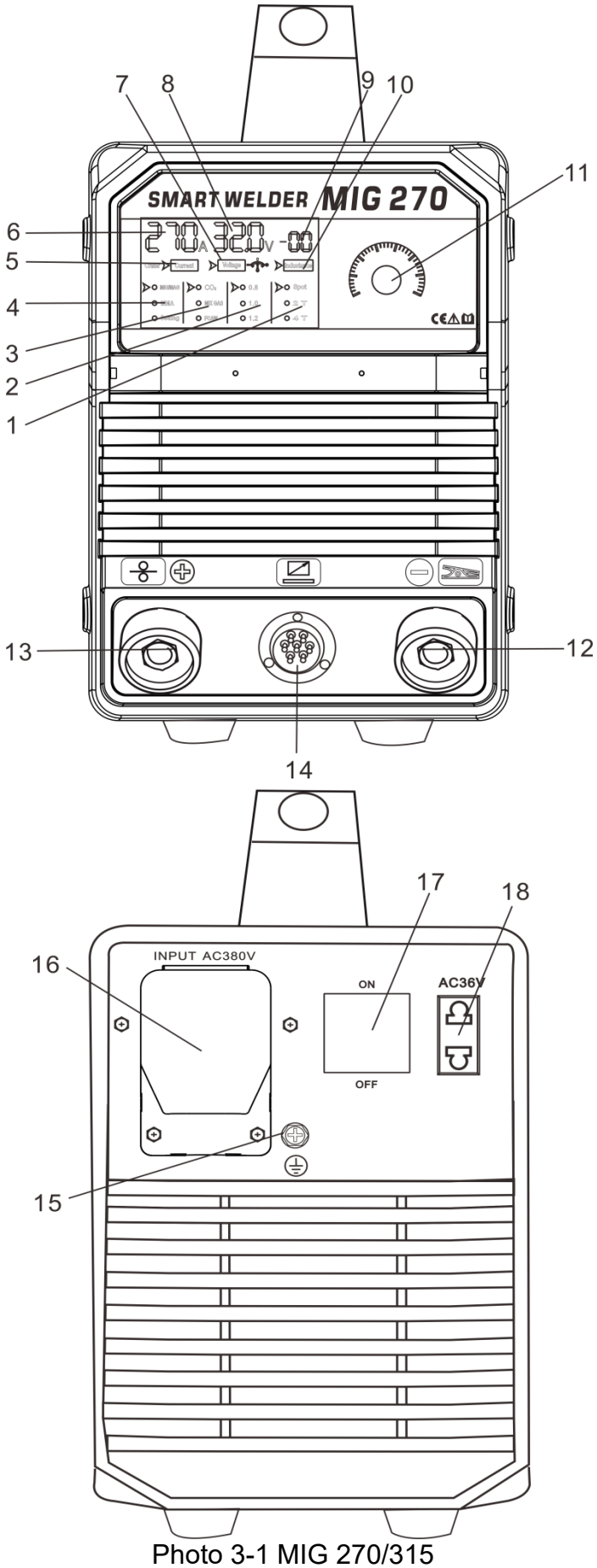


Photo 3-1 MIG 270/315

Function description:	
1	Spot/2T/4T
2	Wire diameter：0.8/1.0
3	CO2/Mix gas/Flux core
4	MIG/MMA/Setting
5	ARC crater current
6	Current display
7	ARC crater voltage
8	Voltage display
9	Inductance display
10	Inductance indicator
11	Adjust potentiometer/parameter setting adjustment knob
12	Output negative
13	Output positive
14	6-pin socket of wire feeder control line
15	Power switch
16	Input power cable
17	AC 36V Gas meter power supply
18	Grounding bolt

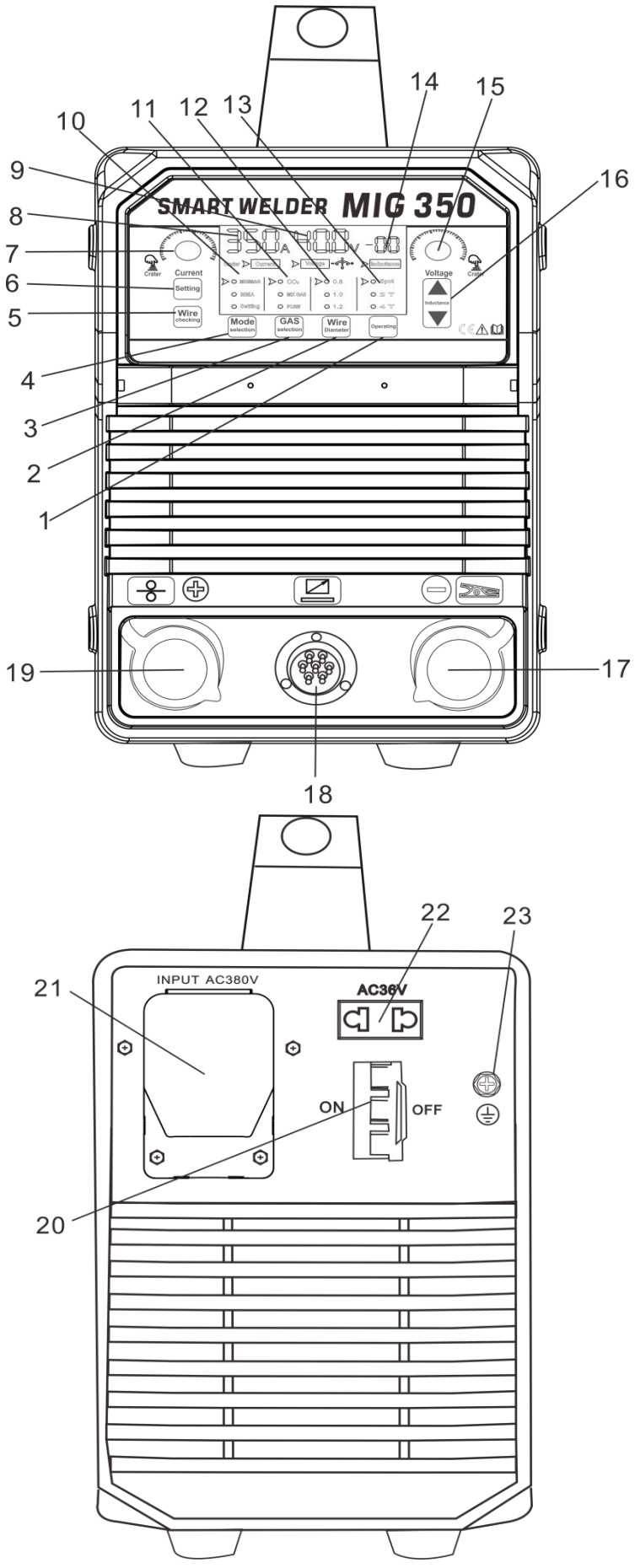


Photo 3-2 MIG 350

Function description:	
1	Operation selection button:Spot/2T/4T
2	Wire diam :0.8/1.0/1.2
3	Gas selection button:CO2/Mix gas/Flux core
4	Mode selection button：MIG/MMA/Setting
5	Wire checking
6	Parameter selection button：near and remote control /Synergy/Post gas time/Wire feeding voltage regulation/Wire feeding speed regulation/Reset
7	crater voltage adjusting(welding voltage adjusting when on near control mode）
8	Current display
9	Voltage display
10	MIG/MMA/Setting indicator
11	CO2/Mix gas/Flux core indicator
12	0.8/1.0/1.2 indicator
13	Spot/2T/4T Spot/2T/4T
14	Inductance parameter display
15	crater current adjusting (welding current adjusting when on control mode)
16	Inductance parameter adjustment (upward is +; downward is -)
17	Output negative
18	6-pin socket of wire feeder control line
19	Output positive
20	power switch
21	Input power cable
22	AC 36V gas meter power supply socket
23	Ground bolt

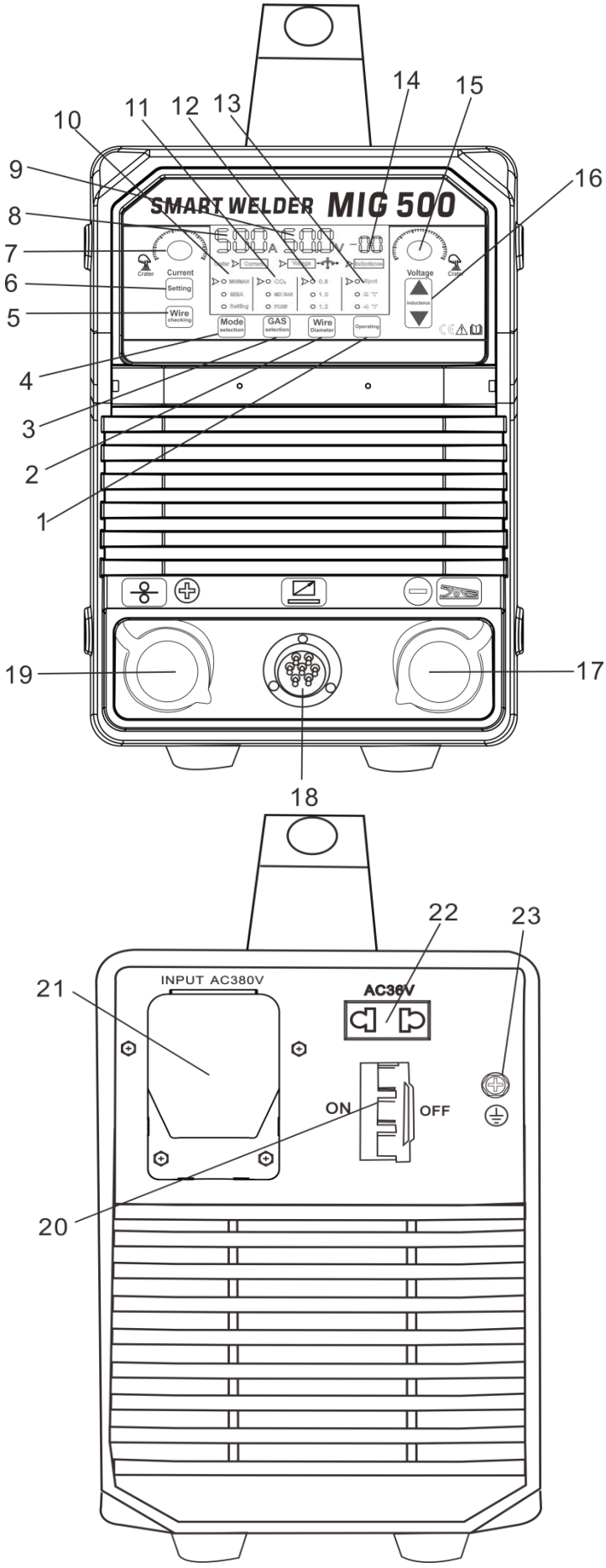


Photo 3-3 MIG 500

Function description:	
1	Operation selection button:Spot/2T/4T
2	Wire diam :1.0/1.2/1.6
3	Gas selection button:CO2/Mix gas/Flux core
4	Mode selection button：MIG/MMA/Setting
5	Wire checking
6	Parameter selection button：near and remote control /Synergy/Post gas time/Wire feeding voltage regulation/Wire feeding speed regulation/Reset
7	crater voltage adjusting(welding voltage adjusting when on near control mode）
8	Current display
9	Voltage display
10	MIG/MMA/Setting indicator
11	CO2/Mix gas/Flux core indicator
12	1.0/1.2/1.6 indicator
13	Spot/2T/4T Spot/2T/4T
14	Inductance parameter display
15	crater current adjusting (welding current adjusting when on control mode)
16	Inductance parameter adjustment (upward is +; downward is -)
17	Output negative
18	6-pin socket of wire feeder control line
19	Output positive
20	power switch
21	Input power cable
22	AC 36V gas meter power supply socket
23	Ground bolt

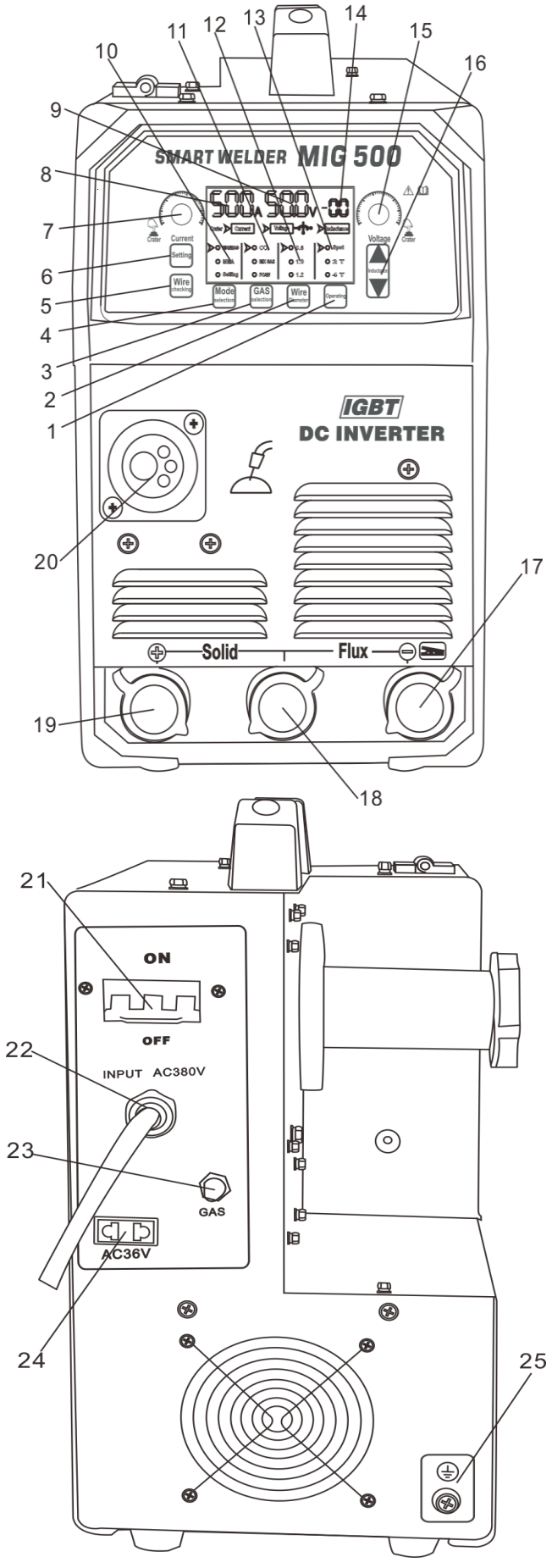


Photo 3-4 MIG 315Y/500Y

Function description:	
1	Operation selection button:Spot/2T/4T
2	Wire diam :1.0/1.2/1.6
3	Gas selection button:CO2/Mix gas/Flux core
4	Mode selection button：MIG/MMA/Setting
5	Wire checking
6	Parameter selection button：near and remote control /Synergy/Post gas time/Wire feeding voltage regulation/Wire feeding speed regulation/Reset
7	crater voltage adjusting(welding voltage adjusting when on near control mode）
8	Current display
9	Voltage display
10	MIG/MMA/Setting indicator
11	CO2/Mix gas/Flux core indicator
12	1.0/1.2/1.6 indicator
13	Spot/2T/4T Spot/2T/4T
14	Inductance parameter display
15	crater current adjusting (welding current adjusting when on control mode)
16	Inductance parameter adjustment (upward is +; downward is -)
17	Negative Output
18	Solid core/flux core switch adapter
19	Positive Output
20	Welding torch interface
21	power switch
22	power cable
23	Intake nozzle
24	AC 36V gas meter power supply socket
25	Ground bolt

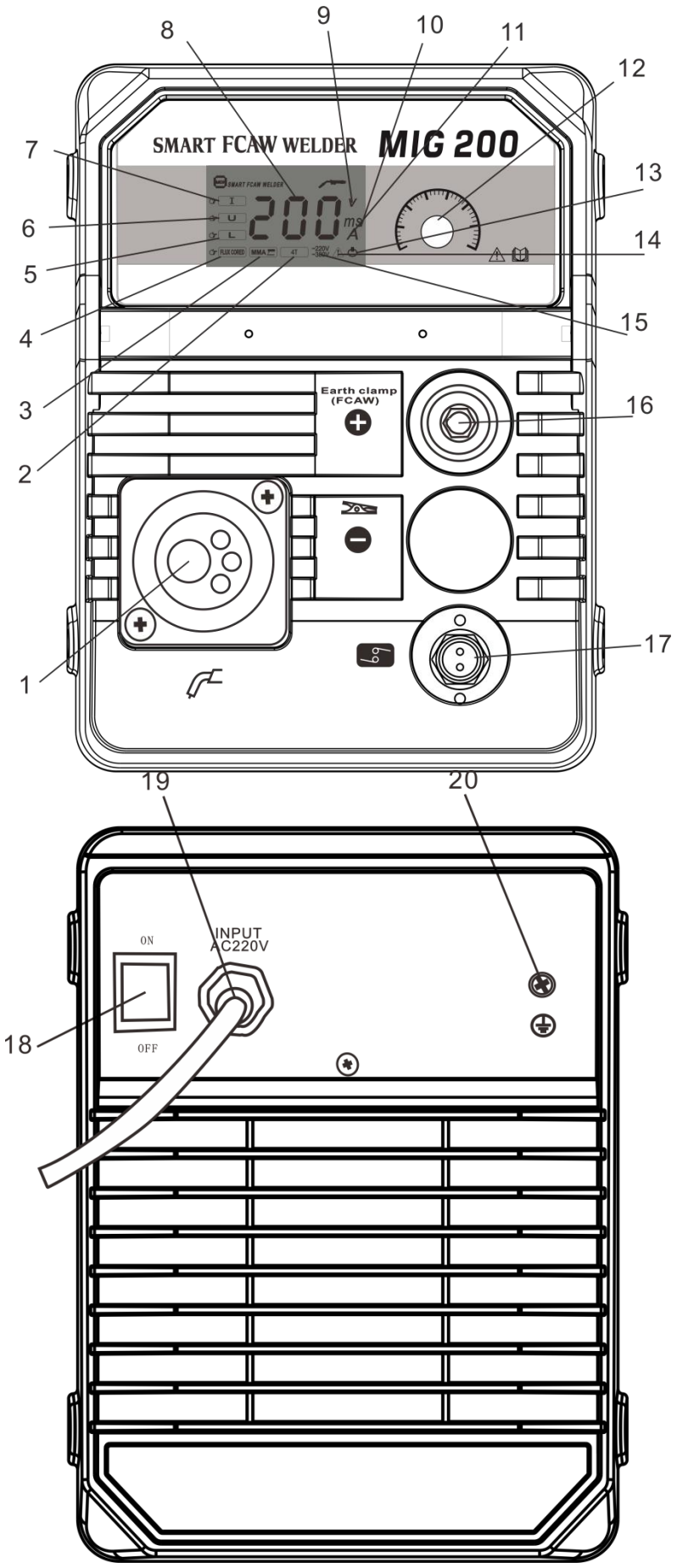


图 3-5 MIG160/200/220

功能描述：	
1	Welding torch interface
2	4T
3	MMA
4	FLUX CORED
5	Inductance parameter adjustment
6	Welding voltage
7	welding current
8	Current/Voltage/Inductance display
9	Voltage unit indicator
10	Time unit indicator
11	Current unit indicator
12	①current adjustment knob ②Press to switch functions
13	Power lamp
14	protection lamp
15	Input voltage indicator light
16	Positive Output (Earth clamp (FCAW))
17	Negative Output
18	power switch
19	power cable
20	Ground bolt

3.2.Operation instructions of single button panel ：

1. Adjusting method:

1.1 Press the encoder to blink the cursor, rotate the encoder to change the position of the cursor, press the encoder again to stop the blinking (or wait for 2 seconds, the cursor will automatically stop blinking).
1.2 When the cursor is not flashing, the rotary encoder can change the parameter value pointed by the cursor. The adjustable parameters are: arc closing current, arc closing voltage, inductance, welding machine mode, gas type, welding wire diameter, welding method.

2. Adjusting parameters:

2.1 Welding current: adjust the current knob of the wire feeder.
2.2 Welding voltage: adjust the voltage knob of the wire feeder.
2.3 Arc closing current: press the encoder, the cursor flashes, rotate the encoder to make the cursor point to "current", then press the encoder cursor to stop flashing (or wait for 2 seconds, the cursor stops flashing automatically), rotate the encoder to adjust the arc closing current Size, "Closing arc" will light up at the same time.
2.4. Arcing voltage: Press the encoder, the cursor flashes, and rotate the encoder to make the cursor point to "voltage", then press the encoder to stop the flashing (or wait for 2 seconds, the cursor will automatically stop flashing), and rotate the encoder to adjust the arcing voltage The “Closing Arc” lights up at the same time.
①Instructions for voltage matching: the left "-" is on, it means the voltage is low, the middle arrow "I" is on, the voltage is moderate, the right "+" is on, it means the voltage is high, and the "-I+" is not on, it means the standard voltage.
2.5 Inductance: Press the encoder, the cursor blinks, and rotate the encoder to make the cursor point to "inductance", then press the encoder to stop the blinking of the cursor (or wait 2 seconds for the cursor to stop blinking automatically), and rotate the encoder to adjust the inductance.
2.6 Welding machine mode: press the encoder, the cursor flashes, rotate the encoder, make the cursor point to the "gas shielded welding/manual welding/setting" column, and then press the encoder to stop the flashing (or wait for 2 seconds, the cursor automatically stops flashing), Rotary encoder can change the welding machine mode.
2.7 Gas type: press the encoder, the cursor flashes, rotate the encoder, make the cursor point to the "CO2/mixed gas/flux core welding" column, press the encoder again, the cursor stops flashing (or wait for 2 seconds, the cursor stops flashing automatically), rotate The encoder can change the gas type, and the flux-cored welding does not use gas.
2.8 Welding wire diameter: press the encoder, the cursor flashes, rotate the encoder, make the cursor point to the "0.8/1.0/1.2" column, and then press the encoder to stop flashing the cursor (or wait for 2 seconds, the cursor automatically stops flashing), the rotary encoder can Change the wire diameter.
2.9 Welding method: press the encoder, the cursor flashes, rotate the encoder, make the cursor point to the "spot welding/2T/4T" column, and then press the encoder cursor to stop flashing (or wait 2 seconds for the cursor to stop flashing automatically), rotate the encoder The welding method can be changed.

3. Setting mode

3.1 Post gas adjustment Pr.1: According to the adjustment steps in 2.6, turn on the "Setting" indicator in the "Gas shielded welding/manual welding/setting" column, press the encoder, the cursor flashes, and the rotary encoder setting code is adjusted to [Pr .1 1.5], press the encoder again and the cursor stops flashing (or after 2 seconds, the cursor automatically stops flashing), the rotary encoder changes the gas value, the range is 0~10.0 seconds, and the default value is 1.5 seconds.

3.2 Remote control current and voltage correction Pr.2: According to the adjustment steps in 2.6, turn on the "Setting" indicator in the "Gas shielded welding/manual welding/setting" column, press the encoder, the cursor flashes, and the rotary encoder setting code is adjusted to [Pr.2 IU], press the encoder again and the cursor will stop flashing (or wait for 2 seconds, the cursor will stop flashing automatically); turn the current and voltage knobs on the wire feeder head to the full scale for two times, then rotate the encoder and adjust the code Go to [Pr. 2 No] to not save the remote control current and voltage correction value, adjust the code to [Pr. 2 YES] to save the remote control current and voltage correction value.

3.3 Motor speed correction Pr.3: According to the adjustment steps in 2.6, turn on the “setting” indicator in the “gas shielded welding/manual welding/setting” column, press the encoder, the cursor blinks, and the rotary encoder setting code is adjusted to 【Pr .3 24.0], press the encoder again to stop blinking the cursor (or wait for 2 seconds, the cursor will stop blinking automatically); the rotary encoder can change the wire feeder speed, the default value is 24.0m/min.24v.

3.4 Factory restoration Pr.4: According to the adjustment step 2.6, turn on the "Setting" indicator in the "Gas shielded welding/manual welding/setting" column, press the encoder, the cursor flashes, and the rotary encoder setting code is adjusted to [Pr. 4 U1.0], then press the encoder cursor to stop flashing (or wait 2 seconds, the cursor stops flashing automatically); the rotary encoder code [Pr.4 No] does not restore the factory settings, [Pr.4 rES] restores the factory settings, U1.0 represents the current software version number.

3.5 Unified close setting Pr.5: According to the adjustment steps in 2.6, turn on the "Setting" indicator in the "Gas shielded welding/manual welding/setting" column, press the encoder, the cursor flashes, and the rotary encoder setting code is adjusted to [Pr .5 ONE], then press the encoder cursor to stop flashing (or wait 2 seconds, the cursor will stop flashing automatically); the rotary encoder code [Pr.5 No] means to turn on the unification, and [Pr.5 OFF] means to turn off the unification. Press the encoder, the cursor flashes, and the rotary encoder exits the setting.

3.6 The contents of the above operations will be automatically saved when exiting the setting mode.

3.3Operation instructions of double button panel ：

1. Adjusting parameters:

1.1. Welding current and voltage adjustment: when the remote control is turned on, turn the current and voltage knob of the wire feeder; when the remote control is off, turn the panel current and voltage encoder.
1.2. Arc closing current and voltage adjustment: press any encoder, the arc closing indicator light is on, and the current and voltage encoder is rotated.
1.3. Inductance adjustment: Press "▲" or "▼", the range is -10[hard]～10[soft].
1.4. Instructions for voltage matching instructions: "-" light voltage is low, "0" light voltage is moderate, "+" light voltage is high, "-0+" is not lighted as standard voltage.

2.Function selection

2.1. To select welding mode, shielding gas, welding wire diameter, operation mode, etc., press the corresponding button.
2.2. Wire checking: Press the inching button on the wire feeder or the wire inspection button on the panel, and the wire inspection indicator lights at the same time.

3.Setting Manual

Press the setting key to enter, rotate the current encoder to select the setting item, rotate the voltage encoder to modify the content, and then press the setting to save and exit.
3.1. [Pr. 0 Y-C】Remote control setting: ON-open, OFF-close.
3.2. [Pr. 1 GAS] Post air adjustment: range from 0 to 10.0S.
3.3. [Pr. 2 I—U] Wire feeder current and voltage correction: turn the current and voltage knob of the wire feeder to the left and right twice at full scale respectively, YES saves, No does not save.
3.4. [Pr. 3 S-d] Motor speed correction: range 10.0～33.0m/min.
3.5. [Pr. 4 ONE] Unified setting: ON-open, OFF-close.
3.6. [Pr. 5 U1.0] Factory restoration: U1.0 represents the current software version number, rES-restore, No-no restore.

4.ACCESSORY DRAWING：

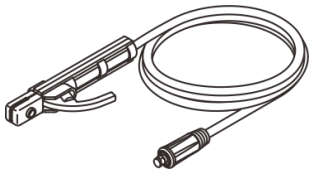


Photo 4-1electrode holder with cable

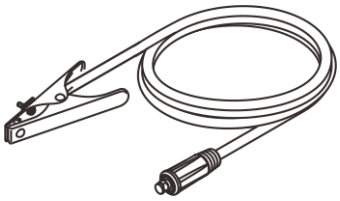


Photo 4-2earth clamp with cable

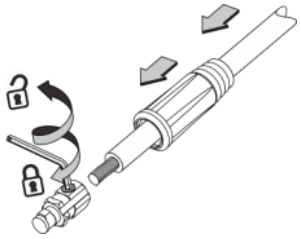


Photo 4-3Quick plug assembly way

Photo 4-4 inner hexagon wrench

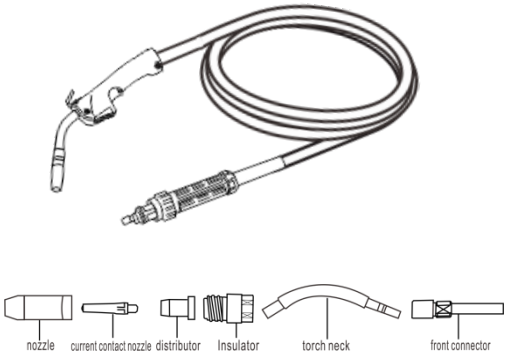


Photo 4-5 MIG torch

5.WELDING PARAMETERS RECOMMENDED TABLE:

The values listed in the table below are the general specification values under standard conditions.

		Thickness (mm)	Diameter (mm)	Gap (mm)	Current (A)	Voltage (V)	Speed (cm/min)	Genuine length (mm)	Gas flow (L/min)
Type I butt welding	Low welding speed	0.8	0.8,0.9	0	60~70	16~16.5	50~60	10	10
		1.0	0.8,0.9	0	75~85	17~17.5	50~60	10	10~15
		1.2	0.8,0.9	0	80~90	16~16.5	50~60	10	10~15
		1.6	0.8,0.9	0	95~105	17~18	45~50	10	10~15
		2.0	1.0,1.2	0~0.5	110~120	18~19	45~50	10	10~15
		2.3	1.0,1.2	0.5~1.0	120~130	19~19.5	45~50	10	10~15
		3.2	1.0,1.2	1.0~1.2	140~150	20~21	45~50	10~15	10~15
		4.5	1.0,1.2	1.0~1.5	160~180	22~23	45~50	15	15
		/	1.2	1.2~1.6	220~260	24~26	45~50	15	15~20
		/	1.2	1.2~1.6	220~260	24~26	45~50	15	15~20
		/	1.2	1.2~1.6	300~340	32~34	45~50	15	15~20
		/	1.2	1.2~1.6	300~340	32~34	45~50	15	15~20
	High welding speed	0.8	0.8,0.9	0	100	17	130	10	15
		1.0	0.8,0.9	0	110	17．5	130	10	15
		1.2	0.8,0.9	0	120	18．5	130	10	15
		1.6	1.0,1.2	0	180	19．5	130	10	15
		2.0	1.0,1.2	0	200	21	100	15	15
		2.3	1.0,1.2	0	220	23	120	15	20
		3.2	1.2	0	260	26	120	15	20

	Thickness (mm)	Diameter (mm)	Current (A)	Voltage (V)	Speed (cm/min)	Genuine length (mm)	Gas flow(L/min)
Angle joint welding	1.6	0.8,0.9	60~80	16~17	40~50	10	10
	2.3	0.8,0.9	80~100	19~20	40~55	10	10~15
	3.2	1.0,1.2	120~160	20~22	35~45	10~15	10~15
	4.5	1.0,1.2	150~180	21~23	30~40	10~15	20~25

		Thickness (mm)	Diameter (mm)	Vertical angle of welding torch (degree)	Current (A)	Voltage (V)	Speed (cm/min)	Genuine length (mm)	Gas flow (L/min)
Flat angle type T butt joint	Low welding speed	1.0	0.8,0.9	45^0	70~80	17~18	50~60	10	10~15
		1.2	0.9,1.0	45^0	85~90	18~19	50~60	10	10~15
		1.6	1.0,1.2	45^0	100~110	19~20	50~60	10	10~15
		2	1.0,1.2	45^0	115~125	19~20	50~60	10	10~15
		2.3	1.0,1.2	45^0	130~140	20~21	50~60	10	10~15
		3.2	1.0,1.2	45^0	150~170	21~22	45~50	15	15~20
		4.5	1.0,1.2	45^0	140~200	22~24	45~50	15	15~20
		6	1.2	45^0	230~260	24~27	45~50	20	15~20
		8.9	1.2,1.6	50^0	270~380	29~35	45~50	25	20~25
		12	1.2,1.6	50^0	400	32~36	35~40	25	20~25
	High welding speed	1.0	0.8,0.9	45^0	140	19~20	160	10	15
		1.2	0.8,0.9	45^0	130~150	19~20	120	10	15
		1.6	1.0,1.2	45^0	180	22~23	120	10	15~20
		2	1.2	45^0	210	24	120	15	20
		2.3	1.2	45^0	230	25	110	20	25
		3.2	1.2	45^0	270	27	110	20	25
		4.5	1.2	50^0	290	30	80	20	25
		6	1.2	50^0	310	33	70	25	25
Flat angle welding joint	Low welding speed	0．8	0.8,0.9	10^0	60~70	16~17	40~45	10	10~15
		1.2	0.8,0.9	30^0	80~90	18~19	45~50	10	10~15
		1.6	0.8,0.9	30^0	90~100	19~20	45~50	10	10~15
		2.3	0.8,0.9	47^0	100~130	20~21	45~50	10	10~15
			1.0,1.2	47^0	120~150	20~21	45~50	10	10~15
		3.2	1.0,1.2	47^0	150~180	20~22	35~45	10~15	20~25
		4.5	1．2	47^0	200~250	24~26	45~50	10~15	20~25
	High welding speed	2．3~3.2	1.2	47^0	220	24	150	15	15
				47^0	300	26	250	15	15

6.INSTALLTION NOTES：

If the connecting cable is too long, the arcing performance of the welding machine will have a great influence on the stability of the welding performance. Therefore, we recommend that you use the recommended configuration length. To reduce the voltage drop, please use a cable with a larger cross section.

1)Connect the grounding mark grounding screw attached to the rear of the welder to a cable larger than 6mm2 to reliably ground the welder casing.

2)According to the input voltage level of the welding machine, connect the power line to the distribution box of the corresponding voltage level, do not connect the wrong voltage, and ensure that the error of the supply voltage is within the allowable range.

3)Confirm that the input power cable, output welding tongs, and output ground wire are reliably connected. For the output interface, please refer to the connection method below and tighten it clockwise.

4)Pay attention to the polarity of the wiring. Generally, the wiring method of the DC welding machine has two positive connection methods and reverse connection method; (1) positive connection method, the welding clamp is connected to the negative pole, and the workpiece will have arc instability, large splash and sticky strips. In this case, the quick plug can be replaced to change the polarity. When there is an arc instability, large splash and sticking, etc., in this case, the quick plug can be replaced to change the polarity.

INSTALLATION STEPS：

1)The gas cylinder equipped with the carbon dioxide gas pressure reducing flow meter is closely connected with the gas inlet of the carbon dioxide inlet at the back of the machine.

2)Plug the ground wire quick plug into the corresponding quick socket on the front panel.

3)The wire spool equipped with the welding wire is mounted on the frame shaft of the wire feeder, and the hole position of the wire wire plate is aligned with the fixing bolt on the frame shaft.

4)Depending on the diameter of the wire used, choose a different wire feed slot.

5)Loosen the nut of the pressure roller, feed the welding wire into the wire feeder groove through the wire guide tube, adjust the pressure wire to press the welding wire to ensure that the welding wire does not slide, but the pressure should not be too large, to prevent the wire from being deformed and affecting the wire feeding.

6)The wire spool should be rotated clockwise to release the wire. In order to prevent the wire from loosening, the new wire disk head is often placed in the fixing hole on the side of the wire disk. In order to prevent the bent wire from being stuck during normal use, cut off this part of the wire.

7)The torch is inserted into the output socket of the front panel and tightened, and the wire is inserted into the gun body.

THIS STEP MUST BE OPERATED BY AN ELECTRICIAN！

According to the input voltage and current of the welding machine (see technical parameter table), connect the appropriate power supply line to the distribution box of the corresponding capacity. Do not connect the wrong voltage and ensure the error of the supply voltage is within the allowable range.

MACHINE INSTALLATION DIAGRAM:

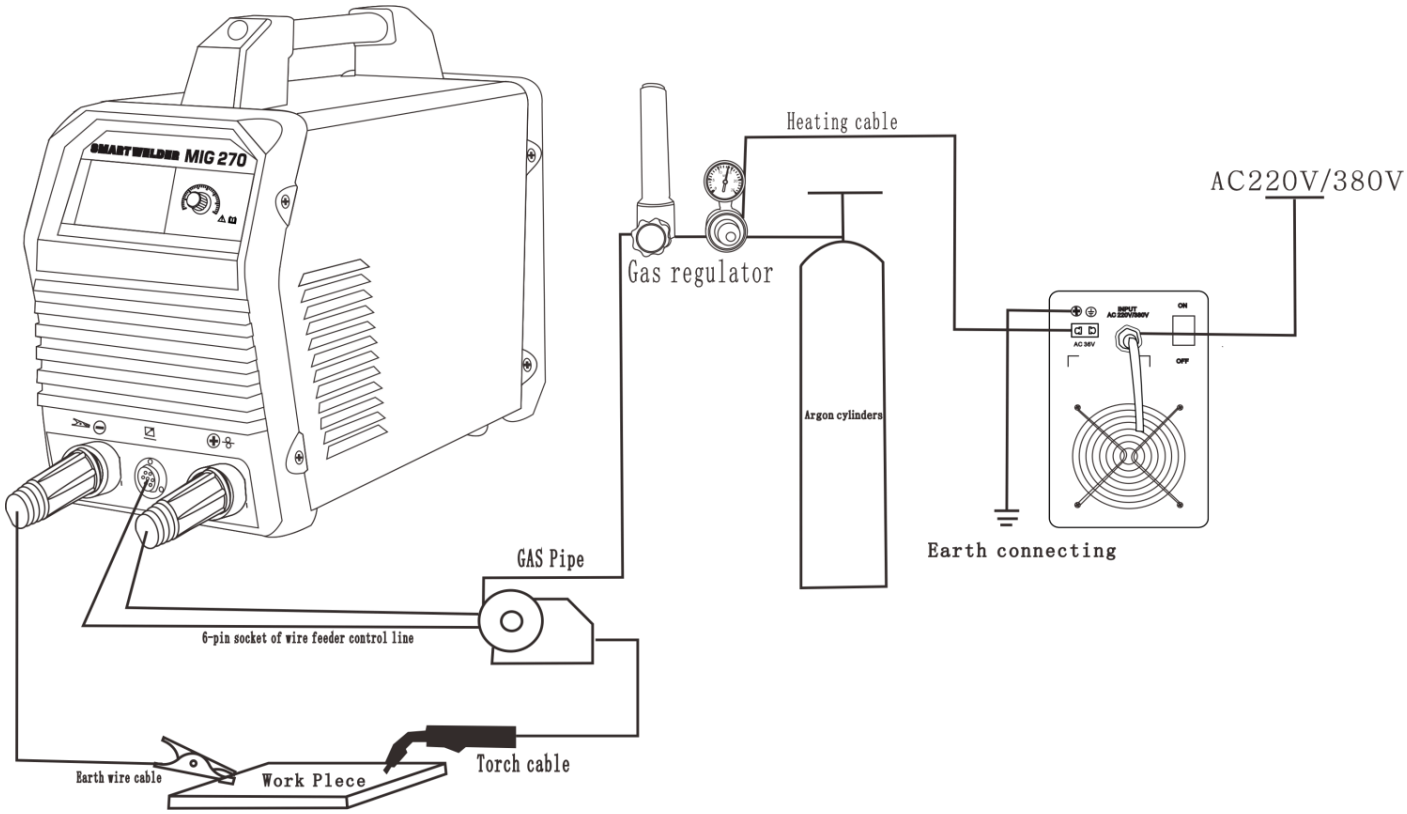


Photo 6-1 Installation of Instruction, using MIG270 as a installing example

7.PRECAUTIONS AND PREVENTIVE MEASURES:

1.ENVIRONMENT:

1)The welding operation should be carried out in a relatively dry environment, the air humidity should generally not exceed 90%.

2) The ambient temperature should be between -10C and 40C.

3) Avoid welding in the sun or in the rain, do not let water or rain into the welding machine.

4) to avoid welding in the dust or corrosive gas environment.

5) to avoid a strong air flow in the environment for gas protection welding operation.

2.SECURITY POINTS:

Our welding machine has been installed over voltage, over current and overheating protection circuit, when the grid voltage, output current and the machine temperature exceeds the set standard, the welder will automatically stop working; but excessive use (such as voltage over High) will still cause damage to the welder, so you still need to note the following:

TO ENSURE GOOD VENTILATION:

Our welding machine is a small welder, in operation, there is a large working current through, natural ventilation can not meet the requirements of welding machine cooling, so built a fan to effectively cool the welding machine to make it work smoothly. The user should confirm that the ventilation is not covered or blocked, the distance between the welder and the surrounding objects should be not less than 0.3 meters, the user should always pay attention to maintain good ventilation, which for the welding machine work better and ensure a longer life is very important.

1)PROHIBIT OVERLOAD PROHIBIT

The user should remember to observe the maximum allowable load current (relative to the optional

load duration) at any time, keeping the welding current not exceeding the maximum allowable load current. Current overload will significantly shorten the life of the welder, and may even burn the welding machine.

2)PROHIBIT THE VOLTAGE IS TOO HIGH

The supply voltage is listed in the "main performance parameters" table. In general, the voltage

compensation circuit within the welder will ensure that the welding current is kept within the permissible range. If the power supply voltage exceeds the allowable value, it will damage the welder, the user should be fully aware of this situation, and take appropriate precautions.

3)Each welding machine is attached with a grounding screw and marked with a ground mark. Before use, use across-section greater than 6mm2 cable, the welding machine shell can be reliably grounded to release static electricity or to prevent accidents due to leakage may occur.

4)If the welder operates beyond the standard duty cycle, the welder may suddenly enter the protected

state and suspend the work, which means that the welder exceeds the standard load duration, excessive heat triggers the temperature control switch, so that the welder stops working The red indicator light on the front panel lights up. In this case, you do not have to unplug the power plug so that the cooling fan can continue to work for the welding machine to cool. When the red light is off, the temperature drops to the standard range, you can start welding again.

8.WELDING PROBLEMS ENCOUNTERED AND ANALYSIS：

The phenomena listed here may be related to the accessories, welding materials, environmental factors and power supply conditions you are using. Please try to improve the environment and avoid such situations.

A. ARC PROBLEMS.AND EASY TO BREAK ARC

1) Check that the wire clamp is in good contact with the workpiece.

2)Check whether the connection points are bad.

B. THE OUTPUT CURRENT DOES NOT REACH THE RATED VALUE

The supply voltage deviation from the rated value will cause the output current value to differ from the set value. When the supply voltage is below the rated value, the maximum output current of the welder may be lower than the rated value.

C. THE CURRENT CAN NOT BE STABILIZED DURING THE USE OF THE WELDER

This may be related to the following factors：

1) grid voltage changes；

2) serious interference from the grid or other electrical equipment.

D. Welding seam

1)Check the air supply circuit for leaks.

2)Base metal surface there is no oil, dirt, rust, paint and other impurities.

9.ROUTINE MAINTENANCE：

1) regular dust, with dry and clean compressed air is generally used in smoke and contaminated air in the welding machine at least once a month to do dust treatment.

2) Compressed air to the required pressure, so as not to damage the welding machine components.

3) Check the internal electrical connection to confirm the good (especially the connector), strengthen the loose contact, if there is oxidation of the use of sandpaper to remove the oxide film, re-connected.

4)Avoid water or moisture in the welder, otherwise blow dry in time, measure the insulation with a Megohm meter (including between the connection nodes and between the connection point and the casing). Welding work can only be continued if no abnormalities are confirmed.

5) If the welder is not used for a long time, the welder should be put in the original packaging and stored in a dry environment.

Note: all maintenance, maintenance work must be completely cut off the power situation under the circumstances, please open the chassis before the confirmation has been unplugged Power plug.

10. EARLIER CHECKING FOR THE ABNORMAL:

Don't too early to judge the malfunction of the welding machine even if the abnormal phenomenon,such as cannot welding, arc instability,welding effect is not good.

Welding machine is normal, but often due to some far from the fault reasons, caused the abnormal phenomena.For example, parts loose,switch settings forgotten, and error setting , cable break of , gas hose burst, etc.Therefore, before to make fault judgment fixing, please try to check first, there are quite a part can be solved.

It is in the sense to make early diagnosis of the general welding exception list below.Finding the abnormal phenomenon from the project bar of the top right table.Please respectively according to the corresponding marked "○" in the table below to inspection and maintenance.

Earlier Checking Diagram For The Abnormal:

Abnormal Items / Area and Item to be Inspected and Maintained		Not arc starting	No gas out	No Wire Feeding	Bad Arc Ignition	Unstable Arc	Dirt on Edge of Weld Seam	Wire Stick to Parent material	Wire Stick to Conductive Tip	Blowhole Formed
Distribution Boxes (Input Protection Devices)	1. Turn on power supply or not? 2. Fuse burnt out 3. Connection joint loose	○	○	○	○	○	○			
Input Cable	1. Examine whether the cable is cut off. 2. Connection joint loose 3. Over heat	○	○	○	○	○	○			
Welding Power Operation	Turn on power supply or not? 2. Phase Lacking	○	○	○	○	○	○	○	○	
Gas Cylinder and Gas Regulator	1.Turn on gas supply 2. Residual Amount of Gas in the Cylinder 3. Set value for flow 4. Connection joint loose					○				○
Gas supply hose (the whole line from the high pressure cylinder to the weld gun)	1. Connection joint loose 2. Gas hose damaged									○
Wire feeder	1. Wire feeding wheel does not match with the diameter of wire in texturing tube 2. Crackle on wire feeding wheel, groove blocked up or defect 3. Too tight or loose of the handle. Wire powder accumulated on the inlet of SUS pipe			○	○	○	○		○	

Weld torch and cable	Weld torch cable rolled up or over curved Adaptability of conductive tip, wire feeding pipe and cable diameter Worn, blocked up or deformation, etc.				○	○	○		○	
Body of weld torch	1. Loose connection of conductive tip, nozzle and nozzle contactor 2. Contactor of weld torch body is not plunged in or tightened well						○			○
Power supply cable of weld torch as well as cable of switch control	1.Break off (bending fatigue) 2.Damaged by weight drop	○	○	○		○		○		
Surface Condition of Parent material and length that wire stretches out	1.Oil, dirty, rust and paint residues 2.Too long length of wire stretched out				○	○	○	○		○
Output Cable	1.Cross-section of cable that connects to parent material is not enough 2.Loose connection of （+），(-）output cable 3. Bad electric conductivity of parent material				○	○	○			
Lengthened Cable	1.Cross-section of cable is not enough 2.It is rolled up or folded				○	○	○	○		
Work Condition for Welding	Welding current, voltage, angle of weld torch, welding rate and wire length stretched out should be confirmed once again				○	○	○	○	○	

11.DAILY CHECK:

Wire feeder

Part	Check point	Remarks
Pressing handle	Is the pressing handle adjusted to an appropriate pressure-applied indicator line? (Special attention: it is strictly prohibited to damage the welding wire under Φ1.2mm)	It will cause unstable wire feeding and arc.
Wire-guide tube	1. Is the cut powder and scrap accumulated in the end of the wire-guide tube and the rim of wire-feeding reel?	Clean the cut powder and scrap. Check the reason and correct the problem thoroughly.
	2. Does the diameter of the welding wire match the inner diameter of the wire-guide tube?	The mismatch would cause unstable arc, or the cut powder and scrap.
	3. Check if the end center of the wire-guide tube is aligned with the groove center of the wire-feeding reel (visual inspection).	The misalignment would cause the cut powder and unstable arc.
Wire-feeding wheel	1. Does the diameter of the welding wire match the nominal diameter of the wire-feeding reel? 2. Check if the groove of the wire-feeding reel is blocked.	1. It would cause the welding wire to produce the cut powder, the wire-feeding hose to be blocked, and the arc to be unstable. 2. Replace it with a new one if any abnormality occurs.
Pressing wheel	Check the running stability. Check if the pressure-applied side of the welding wire is worn away and the contact side is narrowed.	It would cause poor wire feeding and unstable arc.
Part		
Cable of the welding torch	1. Is the cable of the welding torch over-bended? 2. Is the metal joint of the fast plug loose?	1. It would cause poor wire feeding. 2. The over-bended cable would cause unstable arc.
Output cable	1. The cable insulation is worn away and damaged. 2. The cable joint is exposed (the insulation is damaged) and loose. (the welded area of the power terminal, and the joint of the base material and the cable)	In order to ensure human safety and stable welding, please use appropriate check methods according to the working site. ● Daily check General and simple ● Regular check Thorough and detailed
Input cable	1. Is the input and output terminal of the input protection device of the switch cabinet securely connected? 2. Is the safety device securely connected? 3. Is the cable in the input terminal of the welding power source securely connected. 4. Is the input cable exposed as its insulation is worn away or damaged during the wiring.	
Grounding cable	1. Is the grounding cable of the welding power source broken? Is it securely connected? 2. Is the grounding cable of the base material broken. Is it securely connected?	Be sure to make daily check in order to prevent the current leakage and ensure the safety.

12.MALFUNCTION AND TROUBLESHOOTING

MIG160,200,220,270,315,350,500,315Y,500Y

malfunction and troubleshooting.

Malfunction	Remedy
Digital display meter light off Fan doesn't run But no output	1.Confirm the power switch is closed. 2.The power supply connect with input cable is electricity 3.Whether the three-phase rectifier bridge is damaged 4.Parts of the auxiliary power on the control board malfunction(Contact with the dealer)
Digital display meter light on Fan run well But no output	1.Check if the various patch cords in the machine are in poor contact. 2.There is an open circuit or poor contact at the output connection. 3.The control line on the welding torch is broken or the micro switch is damaged. 4.The control circuit is damaged. (Contact the dealer)
Digital display meter light on Fan run well Digital display abnormal	1.may be over current protection. Please turn off the power supply. When the abnormal indicator light is off and then restarted, it can be restored. 2,may be overheat protection,don't need to shut down for 2-3 minutes,the machine can naturally return to normal. 3.may be the inverter circuit is faulty. (Contact the dealer). 4.may be damaged by the secondary rectifier diode (contact the dealer).
Digital display meter light on Fan run well Have Welding output No gas	1. Confirm whether the gas meter has gas output 2. Confirm whether the solenoid valve socket has voltage. 3. Check if the solenoid valve is damaged. 4. It may be a fault in the wire feeder circuit (contact the dealer).
Digital display meter light on Fan doesn't run	1. Check if the fan socket has 24V voltage. 2. the fan may be damaged, replace the same type of fan
Fan run well Have Welding output Gas meter is icy	1. Confirm if the gas meter is damaged. 2. Check if the fuse of the gas meter socket is burnt out. 3, may be high frequency transformer damage (contact dealer)

If you still can't work normally after the above adjustment and overhaul, please contact your local dealer or our after-sales service department.

⚠ Note: The following operations require the operator to have sufficient electrical expertise and comprehensive safety knowledge. Operators should have valid qualifications that demonstrate their competence and knowledge. Before performing maintenance, we recommend that you first and locally The dealer gets in touch and gets approval.