SanRex

INSTRUCTION MANUAL FOR WELDING WIRE FEEDER

SKY 4

DECLARATION OF CONFORMITY

According to
The Low Voltage Directive 2014/35/EU
The EMC Directive 2014/30/EU
The RoHS Directive 2011/65/EU

Type of equipment
WIRE FEEDER

Type of designation
SKY000012 - SKY 4

Brand name or trade mark
SanRex

Manufacturer or his authorized representatives established within the EEA: Name, address, phone, website:
SanRex Corporation, 50 Seaview Boulevard Port Washington
NEW YORK 11050-4618 USA
P. 001 516 625 1313
F. 001 516 625 8845

The following harmonized standard in force within the EEA has been used in the design:
EN 60974-1:2012 Ed.4, Arc welding equipment – Part 1: Welding power sources
EN 60974-10:2007 Ed.2, Arc welding equipment – Part 10: Electromagnetic compatibility (EMC)

Additional information: Restrictive use, Class A equipment, intended for use in locations other than residential.

By signing this document, the undersigned declares as manufacturer, or the manufacturer's authorized representative established within EEA, that the equipment in question complies with the safety requirements stated above.

Date	Signature	Position
01/09/2017		

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SAFETY

ELECTRIC SHOCK CAN KILL

- Disconnect the power supply before working on the welding machine.
- Do not work with deteriorated cable sheaths.
- Do not touch bare electrical parts.
- Ensure that all the panels covering the welding machine are firmly secured in place when the machine is connected to the mains supply.
- Insulate yourself from the work bench and from the floor (ground): use insulating footwear and gloves.
- Keep gloves, footwear, clothes, the work area and this equipment clean and dry.

PRESSURISED CONTAINERS CAN EXPLODE IF WELDED.

When working with a welding machine:
- do not weld pressurised containers .
- do not weld in environments containing explosive powders or vapours.

THE RADIATIONS GENERATED BY THE WELDING ARC CAN DAMAGE THE EYES AND CAUSE BURNING OF THE SKIN.

- Provide suitable protection for the eyes and body.
- **It is indispensable for contact lens wearers to protect themselves with suitable lenses and masks.**

NOISE CAN DAMAGE YOUR HEARING.

- Protect yourself suitably to avoid hearing damage.

FUMES AND GASES CAN DAMAGE YOUR HEALTH.

- Keep your head out of the reach of fumes.
- Provide suitable ventilation of the work area.
- If the ventilation is not sufficient, use an exhaust system that sucks from the bottom.

HEAT, SPLASHES OF MOLTEN METAL AND SPARKS CAN CAUSE FIRES.

- Do not weld near inflammable materials.
- Avoid having any type of fuel with you such as cigarette lighters or matches.
- The welding arc can cause burns. Keep the tip of the electrode far from your body and from other persons.

PREVENTION OF ELECTRIC SHOCKS

Take the following precautions when working with a welding machine:
- keep yourself and your clothes clean.
- do not be in contact with damp or wet parts when working with the welding machine.
- maintain suitable insulation against electric shock. If the operator has to work in a damp environment, he must take extreme care and wear insulating footwear and gloves.
- check the machine power cable frequently: it must be free from damage to the insulation. BARE CABLES ARE DANGEROUS. Do not use the machine if the power cable is damaged; it must be replaced immediately.
- if it is necessary to open the machine, first disconnect the power supply. Wait 5 minutes to allow the capacitors to discharge. Failure to take this precaution may expose the operator to dangerous risks of electric shock.
- never work with the welding machine if the protective cover is not in place.
- ensure that the earth connection of the power supply cable is perfectly efficient.

This machine has been designed for use in a professional and industrial environment. For other types of application contact the manufacturer. If **electromagnetic disturbances** are found it is the responsibility of the machine user to solve the problem with the technical assistance of the manufacturer.

It is forbidden for people with PACEMAKERS to use or come near the machine.

PREVENTION OF BURNS

To protect your eyes and skin from burns and ultraviolet rays:
- wear dark glasses. Wear suitable clothing, gloves and footwear.
- use masks with closed sides, having lenses and

protective glass according to standards (degree of protection DIN 10).
- warn people in the vicinity not to look directly at the arc.

PREVENTION OF FIRE
Welding produces splashes of molten metal.
Take the following precautions to prevent fire:
- ensure that there is a fire extinguisher in the welding area.
- remove all inflammable material from the immediate vicinity of the welding area.
- cool the welded material or let it cool before touching it or putting it in contact with combustible material
- never use the machine for welding containers of potentially inflammable material. These containers must be completely cleaned before they are welded.
- ventilate the potentially inflammable area before using the machine.
- do not use the machine in atmospheres containing high concentrations of powders, inflammable gases or combustible vapours.

DELIVERY OF THE MATERIAL

The package contains:
- N. 1 welding machine
- N. 1 instruction manual

Check that all the material listed above is included in the package. Inform your distributor if anything is missing. Check that all the material listed above is included in the package. Inform your distributor if anything is missing. Check that the machine has not been damaged in transport. If you see any sign of damage, consult the COMPLAINTS section for instructions. Before working with the machine, read the SAFETY and USE section of this manual.

COMPLAINTS

Complaints for damage during transport: If your equipment is damaged during transit you must present a claim to the carrier.
Complaints for faulty goods: All the equipment shipped is subjected to strict quality control. However, if your equipment does not work properly, consult your authorised dealer.

DISPOSAL OF ELECTRICAL AND ELECTRONIC EQUIPMENT

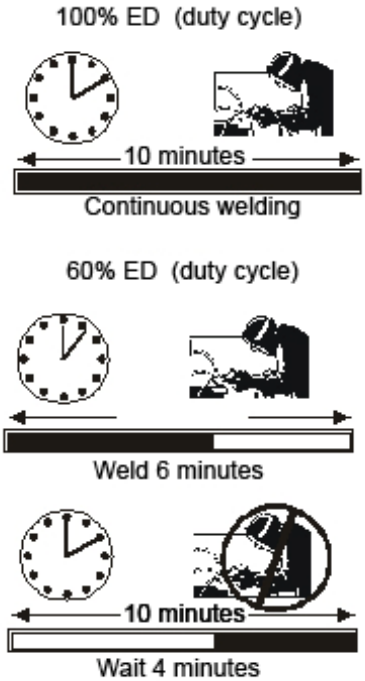
Do not dispose of electrical equipment together with normal waste! In observance of European Directive 2002/96/EC on Waste Electrical and Electronic Equipment and its implementation in accordance with national law, electrical equipment that has reached the end of its life must be collected separately and returned to an environmentally compatible recycling facility. As the owner of the equipment, you should get information on approved collection systems from our local representative. By applying this European Directive you will improve the environment and human health!

IN CASE OF MALFUNCTIONS, REQUEST ASSISTANCE FROM QUALIFIED PERSONNEL.

DUTY CYCLE AND EXCESSIVE TEMPERATURE

The duty cycle is the percentage of use of the welding machine in 10 minutes which the operator must respect to avoid the power supply output blocking due to exceeding working temperature. If the machine goes into excessive temperature protection mode:

1. This is indicating the unit has exceeded the Duty Cycle.
2. It is necessary to wait about 10 minutes before resuming welding.
3. Check the data plate on the unit or on see section TECHNICAL DATA in the Operating Manual..



We kindly thank You for the confidence You showed in purchasing one of our products.
We are sure You will not disappoint Your expectations; we ask You to read the instructions of this manual very carefully.

WARNING

This welding equipment has been designed, manufactured and tested to the highest quality standards to ensure long and trouble free life. However, regular maintenance is an essential part of keeping the machine operating in a reliable and safe manner and Your attention is drawn to any maintenance instructions that are contained in this manual.
In general, all welding equipment should be thoroughly inspected, tested and serviced at least annually. More frequent checking will be required when the equipment is heavily used.
Wear and tear, particularly in electro-mechanical and moving components, are gradual processes. Caught in time, repair costs are small and the benefits in performance, reliability and safety are significant. Left alone, they can put the equipment, and You, at risk.

GENERAL

The SKY 4 DIGIT wire Feeder is a feeding unit designed for use in MIG/MAG welding installations to feed hard, soft or tubular (cored) wires.
Details of the wire sizes handled are given in the specification (see technical notes).
A quick-fit central adaptor (Euroconnector) allows a full range of air and water cooled torches to be fitted quickly and with minimum preparation. The wire is fed by the feeder through driven by a DC Motor. Each feed roll has two alter-native grooves; this allows the feeding of two kinds of wire with each feed roll.
Standard facilities inclu-de:
- wire speed adjustment
- 2 stroke or 4 stroke performance options
- flowmeter controlled gas flow adjustment
- voltage or spot welding timer adjutment

ATTENTION: NWORLD reserves the rigth to alter characteristics at any time without notice.
NWORLD assumes no liability for results of a wrong application of the products which may cause damage to persons or equipment.

INSTALLTION

1- Feed rolls

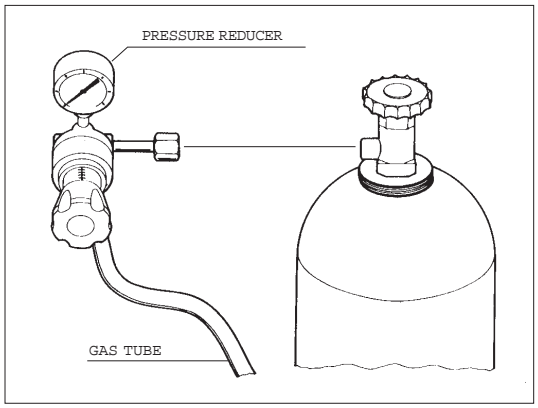
Before connecting the electrical and gas supplies, ensure that the equipment is set for the type and size of wire to be used. Check that the stamped on the feed roll is the same of the diameter of the wire used.

2- Interconnection

While the machine is switched off, connect the wire feeder to the power source with the fit connection cable. It is advisable to lay out the lead as straight as possible.

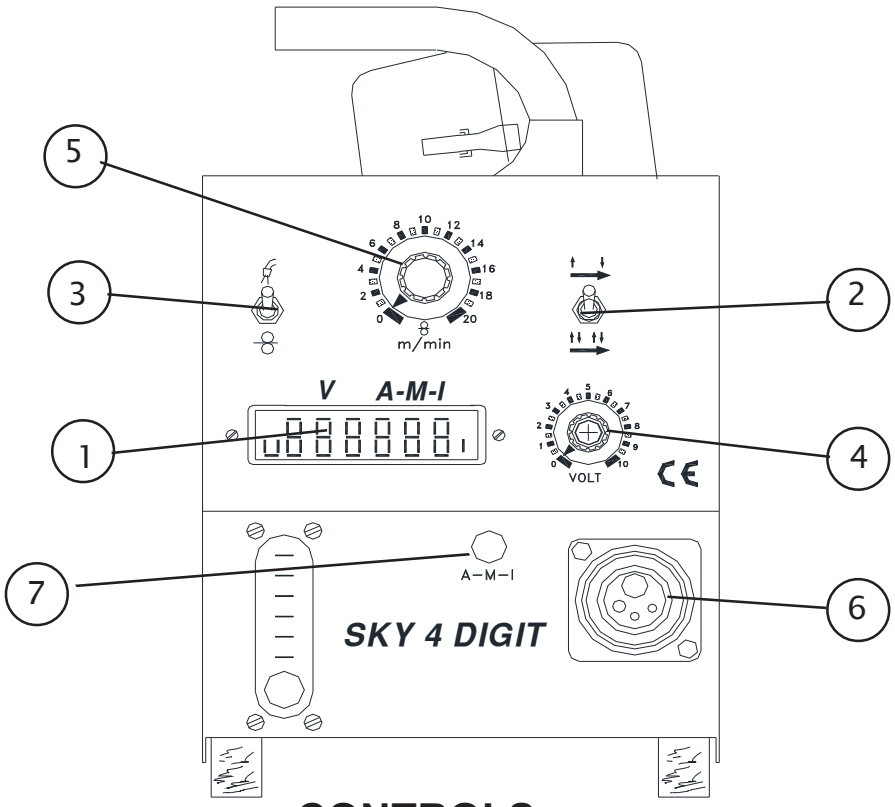
3- Gas

Connect the gas nipple placed on the rear of the wire feeder with the gas manometer of the gas bottle.



4- Torch

Check that the contact tip mounted on the torch head is fit for the wire used.
Remove the contact tip and using the torch button, feed the wire till it comes out of the torch itself. Refit the contact tip and ensure it is well tightened.



CONTROLS

1- Digital voltmeter and ammeter

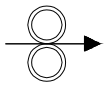
Volt, Amper, Meter x min., Inc x min.

2- 2/4 stroke latching

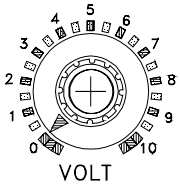
- Unlatched (2 stroke):
A - press: continuous welding whilst switch is held pressed
B - release: welding stops.
- Latched (4 Stroke):
A -press: gas purge
B -release: continuous welding
C -press: welding stops, gas flows continuously to cover welding bead
D -release: gas stops.

3- Gas purge / Wire inching selector

When operated, opens the gas valve in the unit, allowing the gas to flow through to thewelding torch. It is used when initially adjusting the gas flow and when purging the gas lines of air.

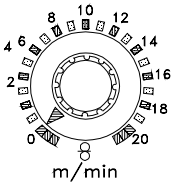


Operates the wire feed motor but not the other welding services.
It is used to 'inch' the wire through the equipment during setting up and adjustment procedures.



4- Welding voltage adjustment

Allows welding voltage when the wire feeder is combined to electronic power sources. In alternative to this function, we can put on wire feeder a potmeter to regulate a time of welding (spot welding)



5- Wire feed speed adjustment

Provides continuously variable wire feed speed control. The wire speed is directly proportional to welding current so that increasing the wire speed increases the current and vice-versa.

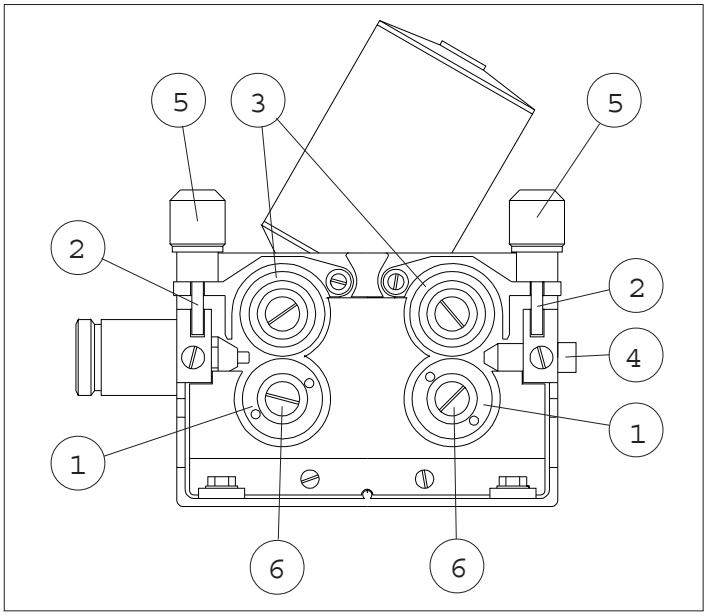
6- Central adaptor

Allows an easy connection to the welding torch simultaneously carrying power, torch button connection, gas and liner connections.

7- Central adaptor

This button permit to change the visual of Amper in Meter x minutes or Inc. x minutes. To any pressure you can change the parameters

HUB ASSEMBLY MOUNTING



1- Remove the hand (hub) nut from the hub assembly wire guide.

2- Place the wire reel on the hub so that the wire will be drawn off from the top. Ensure that the wire spool locates correctly on the small pin on the flange of the hub assembly wire guide. Refit the hub nut.

3- Release the end of 1 the wire , but do not allow the wire to loosen. Cut off the kinked portion of the wire removing any deformations. This must be done every time the wire is refed through the equipment.

4- Adjust the hub assembly by using the screw inside the hub assembly wire guide, so as to prevent the wire reel over-run (and subsequent wire entanglements), once the motor of the wire feeder stops.
Do not tighten the hub assembly too much: too much pressure will cause excessive drag.

5- By the fitting lever release the pressure roll (3) revolving on ball bearings and lift it. Thread the wire through the fitting inlet guide (4) and feed it out of the central adaptor.

6- Lower the pressure roll (3), refit it into the initial position by the lever (2), adjusting the pressure with the knob. Minimum pressure is sufficient so as not to allow the feeding rolls to slip. Excessive pressure will cause wire deformations and entanglements inside the liner (in case of aluwires) and generally early wear-and-tear of the wire feeding motor bushings. A scanty pressure will cause welding unevennesses.

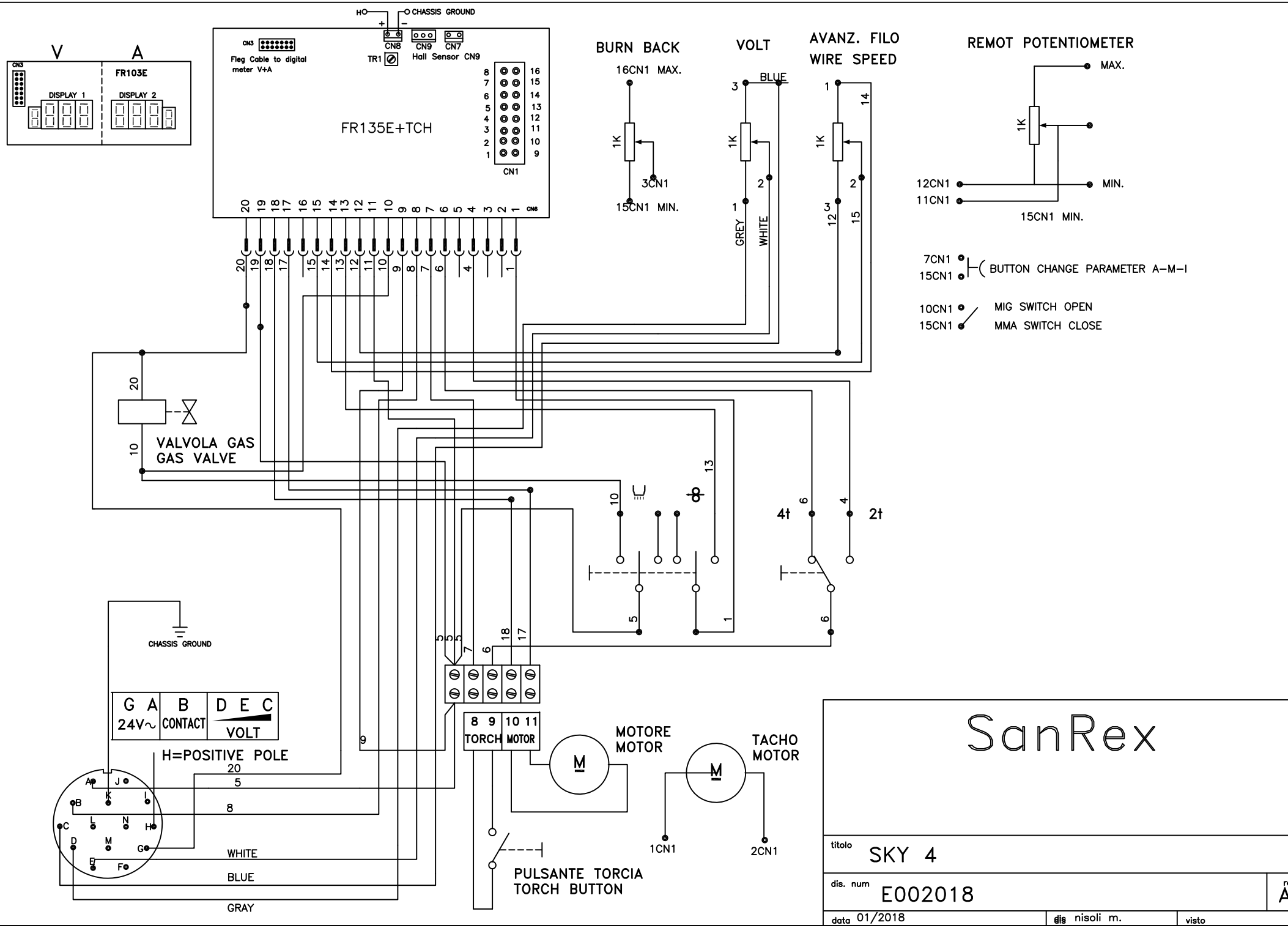
7- Connect the torch to the fitting adaptor and ensure that the wire is positively fed inside the torch lead liner. Remove the nozzle from the torch extremity and unscrew the contact tip. Feed the wire till it comes out of the torch.

8- Refit the contact tip keeping in mind that it must have the same diameter of the wire diameter used.

FEED ROLL REPLACEMENT

The feeding roll bears on its visible side the diameter of the wire which can be fed. Should this diameter not want to use, untighten the screw (6) blocking the feed roll and turn it or replace it. Every roll is provided with two grooves fitted for the feeding of wires with different diameters. Special feed rolls are available for flux cored and alu wires.

FAULT	POSSIBLE CAUSE AND REMEDY
1. Weld deposit 'Stringy' and incomplete	1a. Torch moved over workpiece too quickly 1b. Gas mixture incorrect
2. Weld deposit too thick	2a. Torch moved over workpiece too slowly 2b. Welding voltage too low
3. Arc unstable, excessive spatter while welding	3a. Torch held too far from the workpiece 3b. Rust, grease or paint on workpiece 3c. Insufficient shielding gas, check gas contents gauge, regulator setting and operation of gas valve
4. Frequent arc lengthening	4a. Torch held too close to the workpiece 4b. Intermittent break in the welding circuit caused by: a- Contact tip loose - Tighten b- Contact tip damaged - Replace c- Welding wire or torch liner worn out or damaged - Replace 4c. Wire inside the wire feeder slipping caused by: a- Restriction inside the wire (such as kinks) or of the contact tip- Check and replace if necessary b- Worn out feed rolls - Repla c- Outlet guide or pressure roll adjustme incorrect
5. Burning holes in the workpie	5a. Torch moved too slowly or erratically 5b. Welding volts too high 5c. Wire feed speed too high
6. Lack of penetrati	6a. Torch moved too fast 6b. Welding volts too low 6c. Wire feed speed too low



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titolo SKY 4		
dis. num E002018		rev A
data 01/2018	dis nisoli m.	visto

TECHNICAL DATES

POWER SUPPLY VOLTAGE		42V AC
DIMENSIONS:	Height (inc. of handle)	340mm
	Width	320mm
	Length (inc. of connectors)	550mm
WEIGHT (approx.)		16 kg

<table>
<tr><td colspan="2"></td><td colspan="2">SanRex</td></tr>
<tr><td colspan="2"></td><td colspan="2">Made in Italy</td></tr>
<tr><td colspan="2">Type SKY 4</td><td colspan="2"></td></tr>
<tr><td colspan="2">IP 23 S</td><td colspan="2">NORM. EN 60974-1
EN 60974-10 CE</td></tr>
<tr><td rowspan="2">U_1 24Vac
50/60 Hz</td><td>X</td><td>60%</td><td>100%</td></tr>
<tr><td>I_2</td><td>550 A</td><td>465 A</td></tr>
<tr><td>I_1 0 - 5 A</td><td></td><td colspan="2">1-20 m/min</td></tr>
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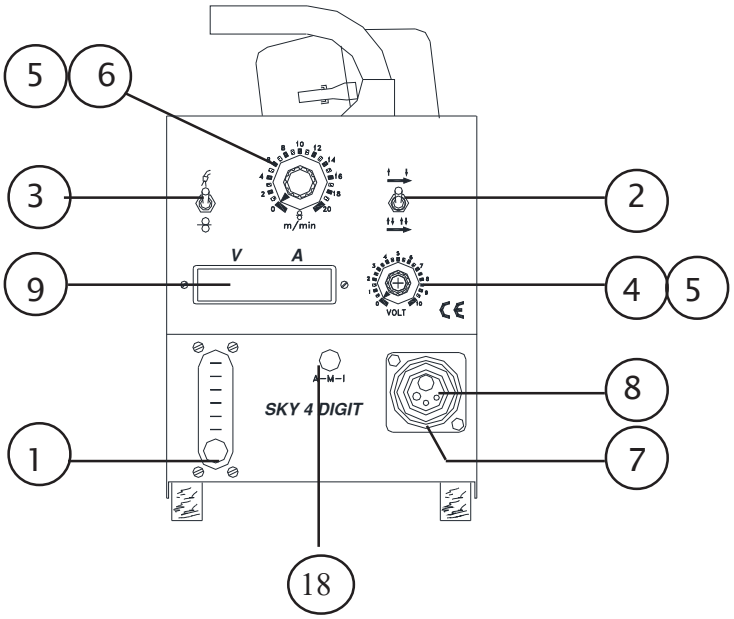
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6
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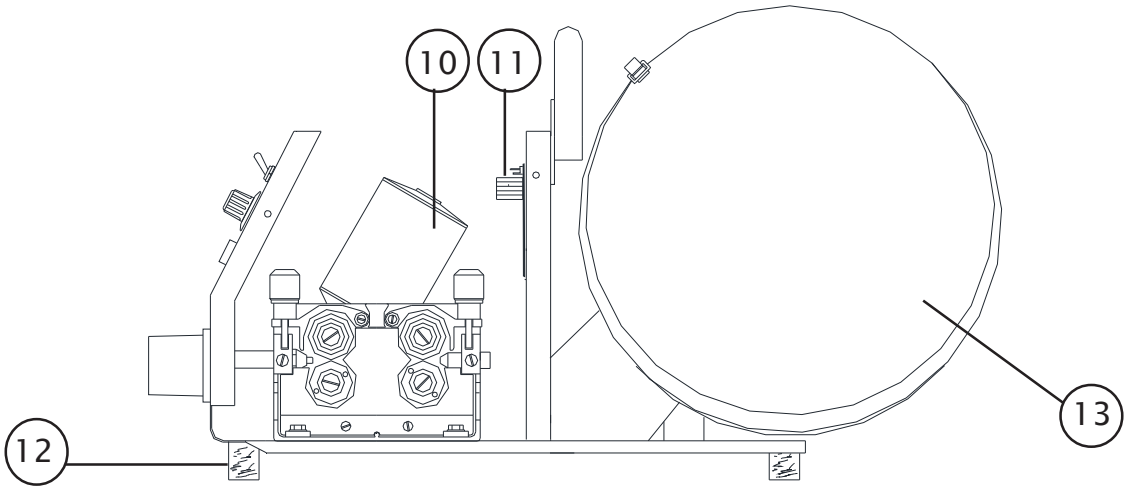
m/min
V
A
VOLT
SKY 4 DIGIT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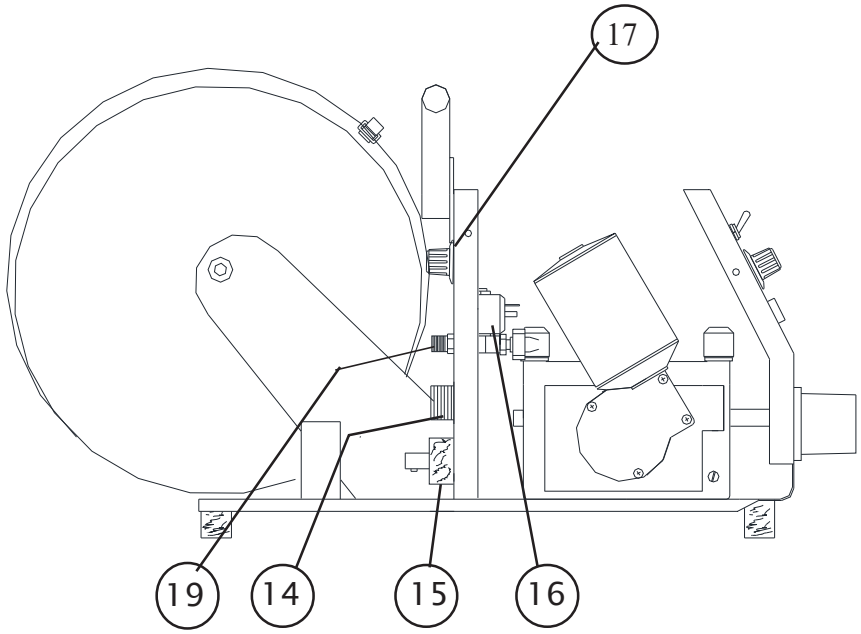
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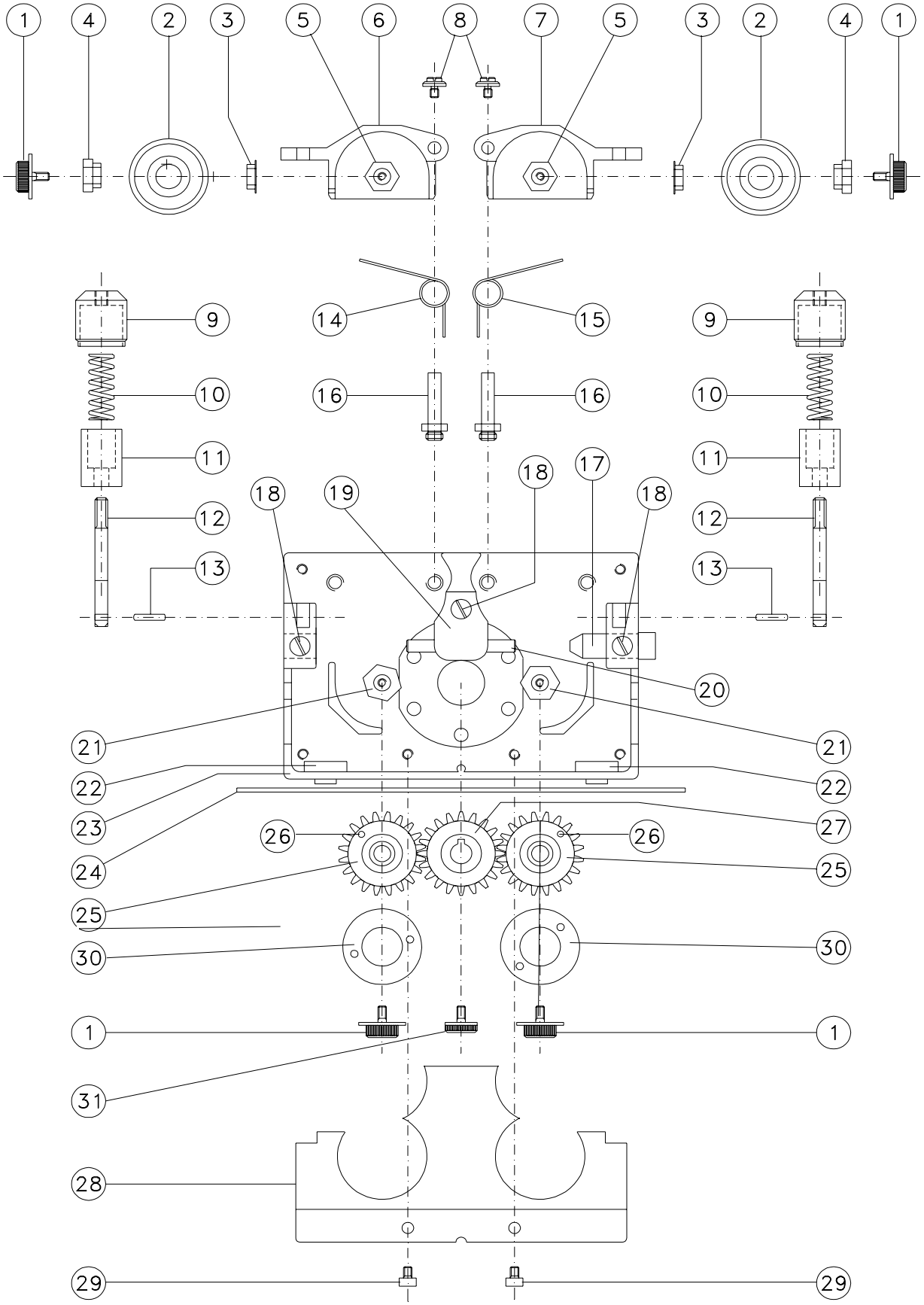
SPARE PARTS

POS.	DESCRIPTION	PART NO.
1	Flowmeter	FLM000001
2	1 pole switch	DVT000002
3	2 pole switch	DVTM00002
4	1 kohm potentiometer	POT002870
5	Knob	MAN002226
6	1 Kohm potentiometer	POT002870
7	Bushing	ATC00431C
8	Central adapter	ATC000547
9	Digital Volt+Amper FR 103E	FR000103E
10	24V 110W left motor	MTR000773
11	PCB FR135E	FR000135E
12	Rubber foot	PDG001426
13	15kg coil cover	CBN150001
14	14 pole connector	CNT000005
15	welding connector	CPP000002
16	24V ac gas valve	ELV001003
17	1 khom potentiometer	POT002870
18	Button change parameter	PLS000001
19	US gas connectors	RACG00005

TYPE NW 01042



TYPE NW 01042

pos.	piece	Description		part. NO.
1	4	Vite fiss.rulli	screw	VTE000001
2	2	Cuscinetto	Ball bearing	CTS002725
3	2	Distanziale piccolo	Spacer narrow	DPF000895
4	2	Distanziale grande	Spacer large	DGF020040
5	2	Perno portarullo	Axle	PPR100004
6	1	Portarullo sinistro	Pressure arm left	PRS100005
7	1	Portarullo destro	Pressure arm right	PRD100007
8	1	Vite fissaggio portarullo	Screw	VFC100006
9	1	Nottolino x fusione	Fine adjustment	NOT100008
10	2	Molla 30 x 18	Spring	ATC005123
11	2	Bussola x fusione	Pressure base	BFS100010
12	2	Tirante (filetto M5)	Axle	TRF100011
13	2	Perno asticella	Axle	PAS100012
14	1	Molla destrorsa	Spring	MDX100013
15	1	Molla sinistorsa	Spring	MSX100014
16	2	Perno portarulli	Axle	000100015
17	1	Guidafilo d'ingresso	Inlet guide	GFI000254
18	3	Vite T.C. T.cacc. 6x8 zinc.	Screw	VTC008545
19	1	Supporto per fusione	Guide	SPF100022
20	1	Tubetto Centrale	Wire Guide	TCN100023
21	2	Perno per fusione	Axle	PFS100026
22	2	Isolatore	Insulation	ISFRF0027
23		Piatto per Fusione	Feed Plate	PPF100028
24	1	Piastra Isolante	Insulation plate	PIS100030
25	2	Ingranaggio Mosso	Gear roll	IRG100002
26	2	Spinetta per ingranaggi	Guide pin	SPN000001
27	2	Ingranaggio Motore	Gear roll	IRG100029
28	2	Protezione per fusione	Protection	PRF100031
29	2	Vite T.C esag.inc.M5x6	Screw	VTC100032
30	2	Rullo D.37 0,9.1,2 C.S.	Drive Roll	RUL005126
	2	Rullo D.37 0,8.1,0 C.S	Drive Roll	RUL005130
	2	Rullo D.37 1,2.1,6 C.S	Drive Roll	RUL005116
	2	Rullo D.37 1,2R.1,2R C.S	Drive Roll	RUL005199
31	1	Vite Fiss.rulli x fus.	Screw	VTE000002

Model _

Serial N. _