

GYS TF-4RN Welding Wire Feeder Instruction Manual

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GENERAL INSTRUCTIONS


Read and understand the following safety instructions before use.
Any modification or update that is not specified in the instructions manual should not be undertaken.

The manufacturer is not liable for any injury or damage due to non compliance with the instructions featured in this manual.
In the event of problems or uncertainties, please consult a qualified person to handle the installation properly.

ENVIRONMENT

This equipment must only be used for welding operations in accordance with the limits indicated on the descriptive panel and/or in the user manual.
Safety instructions must be followed. In case of improper or unsafe use, the manufacturer cannot be held liable.

This equipment must be used and stored in a room free from dust, acid, flammable gas or any other corrosive agent. Operate the machine in an open, or well-ventilated area.

Operating temperature:
Use between -10 and +40°C (+14 and +104°F).

Storage between -20 and +55°C (-4 and 131°F).
Air humidity:
Lower or equal to 50% at 40°C (104°F).

Lower or equal to 90% at 20°C (68°F).
Altitude:

Up to 1000 meters above sea level (3280 feet).

INDIVIDUAL PROTECTION & OTHERS

Arc welding can be dangerous and can cause serious injury or even death.
Welding exposes the user to dangerous heat, arc rays, electromagnetic fields, risk of electric shock, noise and gas fumes. People wearing pacemakers are advised to consult a doctor before using the welding machine.
To protect oneself as well as others, ensure the following safety precautions are taken:


In order to protect you from burns and radiations, wear clothing without turn-up or cuffs. These clothes must be insulating, dry, fireproof, in good condition and cover the whole body.


Wear protective gloves which guarantee electrical and thermal insulation.


Use sufficient welding protective gear for the whole body: hood, gloves, jacket, trousers… (varies depending on the application/ operation). Protect the eyes during cleaning operations. Contact lenses are prohibited during use.
It may be necessary to install fireproof welding curtains to protect the area against arc rays, weld spatter and sparks.
Advise people around the working area to never look at the arc nor the molten metal, and to wear protective clothes.


Ensure ear protection is worn by the operator if the welding process exceeds the authorised noise limit (the same applies to any person in the welding area).

Keep hands, hair and clothes away from moving parts such as fans, and engines.
Never remove the safety covers from the cooling unit when the machine is plugged in. The manufacturer is not liable for any injury or damage caused due to non-compliance with the safety precautions.


Parts that have just been welded are hot and can cause burns when handled. When servicing the torch or electrode holder, make sure that it is cold enough by waiting at least 10 minutes before doing so. The cooling unit must be switched on when using a water-cooled torch to ensure that the liquid cannot cause burns.
It is important to secure the working area before leaving it to ensure protection of the goods and the safety of people.

WELDING FUMES AND GASES


Fumes, gas and dust produced during welding are hazardous to health. It is mandatory to ensure adequate ventilation and/ or extraction to keep fumes and gas away from the work area. Using an air fed welding helmet is recommended in case o insufficient ventilation in the workplace.
Check that the air supply is effective by referring to the recommended safety regulations.

Precautions must be taken when welding in small areas, and the operator will need supervision from a safe distance. In addition, the welding of certain materials containing lead, cadmium, zinc, mercury or beryllium may be particularly harmful.
Also remove any grease on the metal pieces before welding.
Gas cylinders must be stored in an open or ventilated area. They must be stored vertically and held by a support or trolley to limit the risk of fall.
Do not weld in areas where grease or paint are stored.

FIRE AND EXPLOSION RISKS


Protect the entire welding area. Flammable materials must be moved to a minimum safe distance of 11 meters.
A fire extinguisher must be readily available near the welding operations.

Be careful of spatter and sparks, even through cracks. It can be the source of fire or explosion.
Keep people, flammable materials/objects and containers that are under pressure at a safe distance.
Welding in closed containers or pipes should be avoided and , if they are opened, they must be emptied of any flammable or explosive material (oil, fuel, gas …).
Grinding operations should not be carried out close to the power supply or any flammable materials

GAS CYLINDERS


Gas leaking from the cylinders can lead to suffocation if present in high concentration around the work area (ventilation required).
Transport must be done safely: cylinders closed and welding machine switched off. They must be stored vertically and held by a support to limit the risk of falling.

Close the cylinder between two uses. Beware of temperature variations and sun exposure.
The cylinder must not be in contact with a flame, electric arc, torch, earth clamp or all other sources of heat.
Always keep gas cylinders away from electrical circuits, and therefore never weld a cylinder under pressure.
Be careful when opening the valve on the gas bottle, it is necessary to remove the tip of the valve and make sure the gas meets your welding requirements.

ELECTRICAL SAFETY


The electrical mains used must have an earth terminal. Use the recommended fuse size.
An electric shock could cause serious injuries or potentially even deadly accidents.

Do not touch any live part of the machine (inside or outside) when it is plugged in (Torches, earth cable, cables, electrodes) because they are connected to the welding circuit.
Before opening the device, it is imperative to disconnect it from the mains and wait 2 minutes, so that all the capacitors are discharged.
Do not touch the torch or electrode holder and the earth clamp at the same time.
Ensure that cables and torches are replaced by a qualified and authorised person if they are damaged. Make sure that the cable cross section is adequate with the usage (extensions and welding cables). Always wear dry clothes which are in good condition in order to be isolated from the welding circuit. Wear insulating shoes, regardless of the workplace/environment in which you work in.

INSTALLATION OF THE REEL AND LOADING OF THE WIRE


Isolation of the welder at the arc in relation to the welding voltage !
Not all the different parts involved in the welding current can be protected against direct human contact. The welder must therefore avoid the risks by following the relevant safety regulations. Even a contact at low current may take the operator by surprise and cause an incident.

- Wear dry and intact protective equipment (shoes with rubber soles/baked welder's protective gloves without rivets or staples)!
- Avoid direct contact with non-insulated or connecting sockets!
- Always place the welding torch or electrode holder on an insulated support!


Risk of burns where the welding current is connected!
If the connectors are not safely locked in place, the connectors and the cables may become hot and cause burns ! Check the welding connectors daily and lock them in place if needed by turning them clockwise.


Risk of electrocution !
If the weld is performed using different processes while the torch and the electrode holder are connected to material, a no-load voltage or welding voltage is applied to the circuits !
At the beginning of a job and during interruptions, always isolate the torch and the electrode holder !

ELECTRO-MAGNETIC EMISSIONS


The electric current flowing through any conductor causes electrical and magnetic fields (EMF). The welding current generates an EMF around the welding circuit and the welding equipment.

The EMF electromagnetic fields can interfere with certain medical implants, such as pacemakers. Protective measures must be taken for people having medical implants. For example, by restricting access to passers-by or conducting an individual risk evaluation for the welders.

All welders must use the following procedures to minimize exposure to electromagnetic fields from the welding circuit:

- position the welding cables together – fix them with a clamp, if possible;
- position yourself (upper body and head) as far away from the welding circuit as possible;
- never wrap the welding cables around the body;
- do not position the body between the welding cables. Hold both welding cables on the same side of your body;
- connect the earth clamp as close as possible to the welding area;
- do not work too close to, do not lean and do not sit on the welding machine
- do not weld when transporting the welding machine or its wire feeder.

 People wearing pacemakers are advised to consult their doctor before using this device.
Exposure to electromagnetic fields during welding can have other health effects that are not yet known.

TRANSPORT AND TRANSIT OF THE WIRE FEEDER

The wire feeder is equipped with handles for easy transportation. Be careful not to underestimate the weight of the machine. The handle cannot be used to hang or attach the machine on something else. Never lift the machine while there is a gas bottle on the support shelf. The transport rules applying to each item are different.
Do not carry the unit over people or objects.
The removal of the wire reel from the machine is recommended before undertaking any lifting operation.
The machine is fitted with non-insulated lifting eye bolts, they are designed for wire feeder maintenance and not for wire feeder lifting during welding operations. If they are used during welding, the eye bolts must be insulated from the building's earth.

 Stray welding currents can damage earth connections, damage electrical equipment and cause overheating of components which could result in fire.

- All welding connections must be firmly secured, check regularly !
- Make sure that the metal part fixation is strong and without any electrical problems !
- Attach or hang all the electrically conductive elements, such as the trolley or lifting systems in order to insulate them !
- Do not place any electrical equipment such as drills on top of the welding machine or its trolley without insulating them!
- Always place welding torches or electrodes holders on an insulated surface when they're not in use!

EQUIPMENT INSTALLATION

- Place the wire feeder on a floor with a maximum incline of 10°.
  Provide sufficient floor space to ventilate the feeder and access the controls.
- This equipment must be used and stored in a place protected from dust, acid, gas or any other corrosive substance.
  The dispenser must be protected from driving rain and not exposed to sunlight.
- The machine protection level is IP21, which means :
  – Protection against acess to dangerous parts from solid bodies of a ≥12.5mm diameter and, Protection against vertically falling drops.

GYS does not incur any responsibility regarding damages to both objects and persons that result from an incorrect and/or dangerous use of the machine.

MAINTENANCE / RECOMMENDATIONS



- Maintenance should only be carried out by a qualified person. A yearly maintenance is recommended.
- Ensure the machine is unplugged from the mains, and then wait 2 minutes before carrying out maintenance work. High voltage and currents inside the machine are high and dangerous.
- Regularly remove the case and remove any excess dust. Take the opportunity to have the electrical connections checked by a qualified person, with an insulated tool.
- Regularly check the condition of the connection cable between the wire feeder and the machine. If found damaged, the interconnection cable must be replaced.
    - Leave the hose reel openings free for air intake and outlet.
    - Do not use this unit to defrost pipes, recharge batteries/capacitors or start engines.
- Warning ! If a transport/handling solution (e.g. trolley) other than the one recommended by the manufacturer is used to move the unit while welding, make sure that the transport/handling tool is insulated from the case of the wire feeder.
- All the side doors of the wire feeder must be closed when the unit is switched on.

INSTALLATION – PRODUCT OPERATION

Only qualified personnel authorised by the manufacturer should perform the installation of the welding equipment. During the installation, the operator must ensure that the machine is disconnected from the mains.

Only qualified personnel authorized by the manufacturer should perform the installation of the welding equipment. During set up, the operator must ensure that the machine is unplugged.

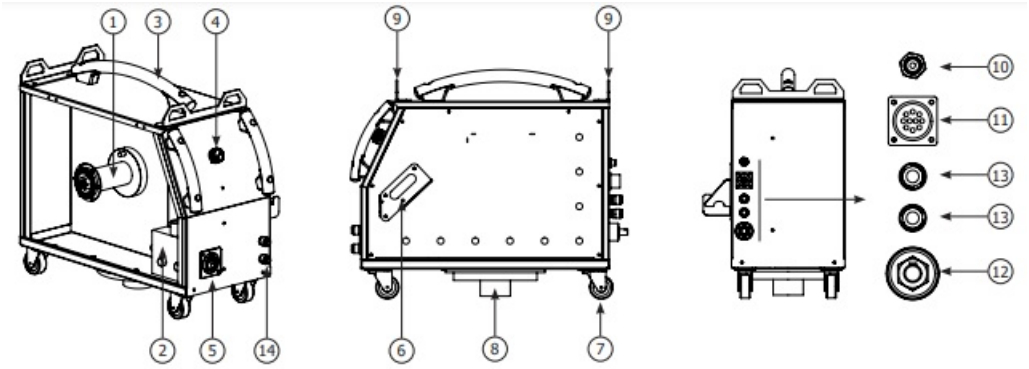

Risk of injury due to moving parts!
The wire feeders contain moving parts that may catch hand, hair, clothes or tools which can lead to injuries! Take extra care.

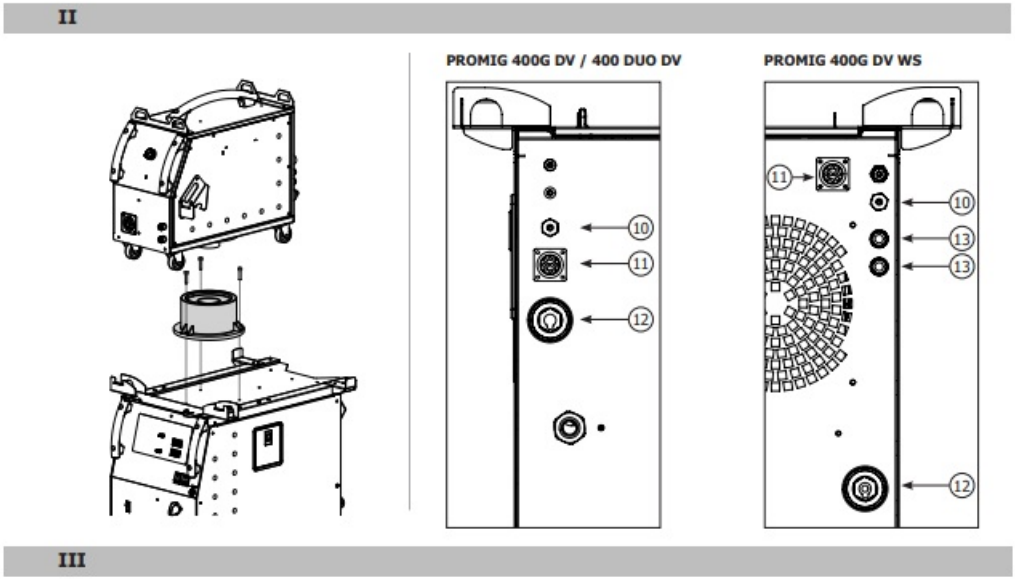
- Do not place your hand on mobile/pivoting/wire feeding parts of the machine!
- Make sure that all panels remain closed when in use !
- Do not wear gloves when feeding the wire through or changing reel.

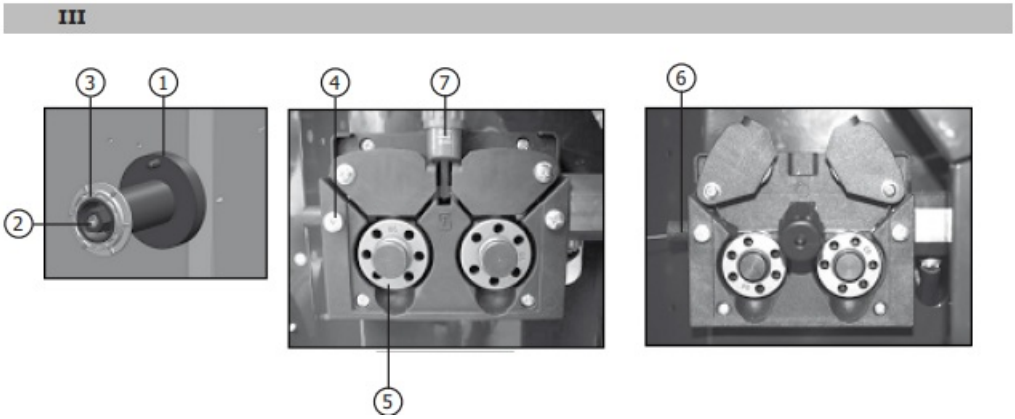
DESCRIPTION

TF-4RN is an air-cooled separate wire feeder for the 3-phase MIG/MAG generators MIG 400G/400 DUO. It

accepts 200 and 300 mm wire reels.
The TF-4RN is equipped with a swivel support to be fixed on the generator.
TF-4W is an air-cooled separate wire feeder for the 3-phase MIG/MAG generators MIG 400G DV WS. It accepts 200 and 300 mm wire reels.
The TF-4W is equipped with a swivel support to be fixed on the generator







DEVICE PRESENTATION

1. Coil holder 200 & 300 mm
2. Motorized hose reel
3. Carrying handle
4. Yarn speed potentiometer
5. Euro torch connector
6. Side torch support
7. Wheels
8. Upper part of the turret

9. Lifting support
10. Gas connection of the connecting harness
11. Connector cable control cable for the connecting harness
12. Connector cable power cable of the connecting harness

    TF-4RW :
13. Water connections of the connecting harness
14. Water connections of the torch

ASSEMBLY & CONNECTION

Attaching the turret to the generator
The turret is fixed on the reel support of the reel reel. Remove the retaining screw and then the turret. Use the 3 screws already present on the generator to mount the lower turret element on it. The upper part of the turret, already mounted on the reel, is embedded in it.

Connection of the connecting harness between the reel and the generator:
Make sure the generator is switched off before performing this operation.

- Connect the power cable of the connecting harness between the connectors (12), taking care to tighten the connectors securely.
- Connect the control cable of the connecting harness between the connectors (11).
- Connect the gas hose of the connecting harness between the connectors (10).

For WS versions only:
Connect the water pipes between the fittings (13).

WIRE REEL INSTALLATION

- Open the door of the machine et remove the retaining screw (3)
- Position the reel on to the support (1).
- Adjust the reel brake (2) to avoid reel movement tangling the wire when the welding stops. Be careful not to tighten too much – the reel must rotate without straining the motor.
- Tighten the plastic screw firmly (3).
- For the first use :
    - Release the fixing screw of the wire guide (4)
    - Put the rollers in place (5). The visible diameter on the roller should be equal to the wire diameter used.
    - Place the wire guide (6) as close as possible to the roller but without touching it, then tighten the fixing screw.
- To select the adjustment of the drive rollers: loosen the drive roller knob as far as possible (7), insert the wire until it exits the other side by about 2cm. Start the motor by pressing the torch trigger, tighten the knob whilst pressing the trigger. Bend the wire where it comes out of the nozzle and hold it in place to stop its progress – the setting is correct when the guide roller slides over the wire, even when it is blocked at the end of the torch.

USE

TF-4 allows the user welding using the parameters set on the MIG generator. To adjust the settings to the type

and diameter of wire used, please refer to the generator's manual.
It is possible to change the wire speed, in synergic or manual mode using the potentiometer on the front panel.
In order to use the separate wire feeder's torch, press the trigger – the LEDs on the generator's control panel will start to flash, indicating the change of torch.
The Speed of the wire feeder is between 1m/min to 20m/min. The maximum gas pressure must not exceed 5 bars (0.5 MPa).

WARNING: The torch connected to the generator (DUO version) must be put on its support before using the torch connected to the wire feeder. If this advice is not followed, a powerful electrical arc can occur causing serious injury and damage.

COMPATIBILITY

The wire feeder TF-4 is only compatible with the PROMIG / POWERMIG range. Please refer to the electrical drawing for technical features of the wire feeder motor.

TROUBLESHOOTING

Symptoms	**Reasons**	**Solutions**
There are sparks between the elect rode and the filler wire.	Metal fillings have accumulated on t he drive roller.	Clean the drive roller and the reels with an air- gun.
Failure to start welding	No gas	Gas valve closed or bottle empty
The gas is continuous	Solenoid valve blocked or dirty	Remove, check and clean the solenoid valve.
The torch overheats	The torch is not suitable for the wire feeder duty cycle	Change the torch for a one which is suitable for the machine
	The wire skids in the rollers	Check the roller pressure or replace it.

The welding wire speed is not cons tant.	Frein de bobine trop serré	Desserrer en agissant sur la vis de frein de la bobine de fil
	Covering wire guide in the torch	Vérifier la torche
	incompatible.	Vérifier la pression des galets
	Reel brake too tight	Adjust the reel brake
	The torch is bent which might inhibi t the wire output	Check the torch
	The rollers slide over the wire	Check and tighten the roller screws
	Sheath crushed	Change it
	Roller grooves do not match the dia meter of wire used	Change for size suitable for wire us ed.

MACHINE MAINTENANCE DETAILS

Machine maintenance or alteration should only be carried out by a qualified person. Failure to comply may void the warranty. Any maintenance or action performed on the machine should be done with power supply off (machine disconnected from the power supply network), wait at least 5 minutes before any operation, block access to the installation if necessary.
Daily :
Check the torch, the rollers and the tightening, the connections.

Twice a year :

- Clean the inside of the machine with a compressed air cleaner.
- Make sure not to put any conductor inside the machine, such as the torch.
- Check the wear and coupling of the connections, retighten if necessary.
- Check the following parts: electrical, gas, wire reel support, wire feeding motor and bottle support.

WARRANTY

The warranty covers faulty workmanship for 2 years from the date of purchase (parts and labour).

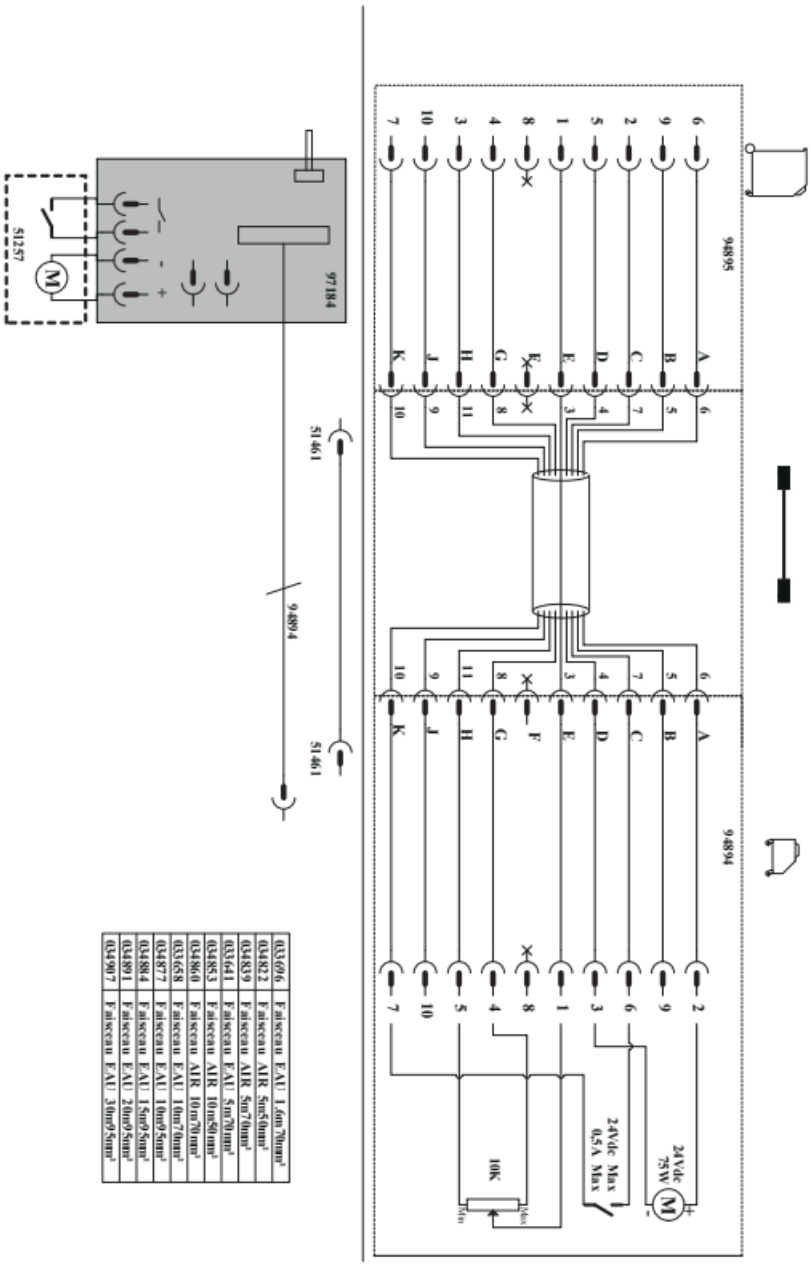
The warranty does not cover:

- Transit damage.
- Normal wear of parts (eg. : cables, clamps, etc..).
- Damages due to misuse (power supply error, dropping of equipment, disassembling).
- Environment related failures (pollution, rust, dust).

In case of failure, return the unit to your distributor together with:

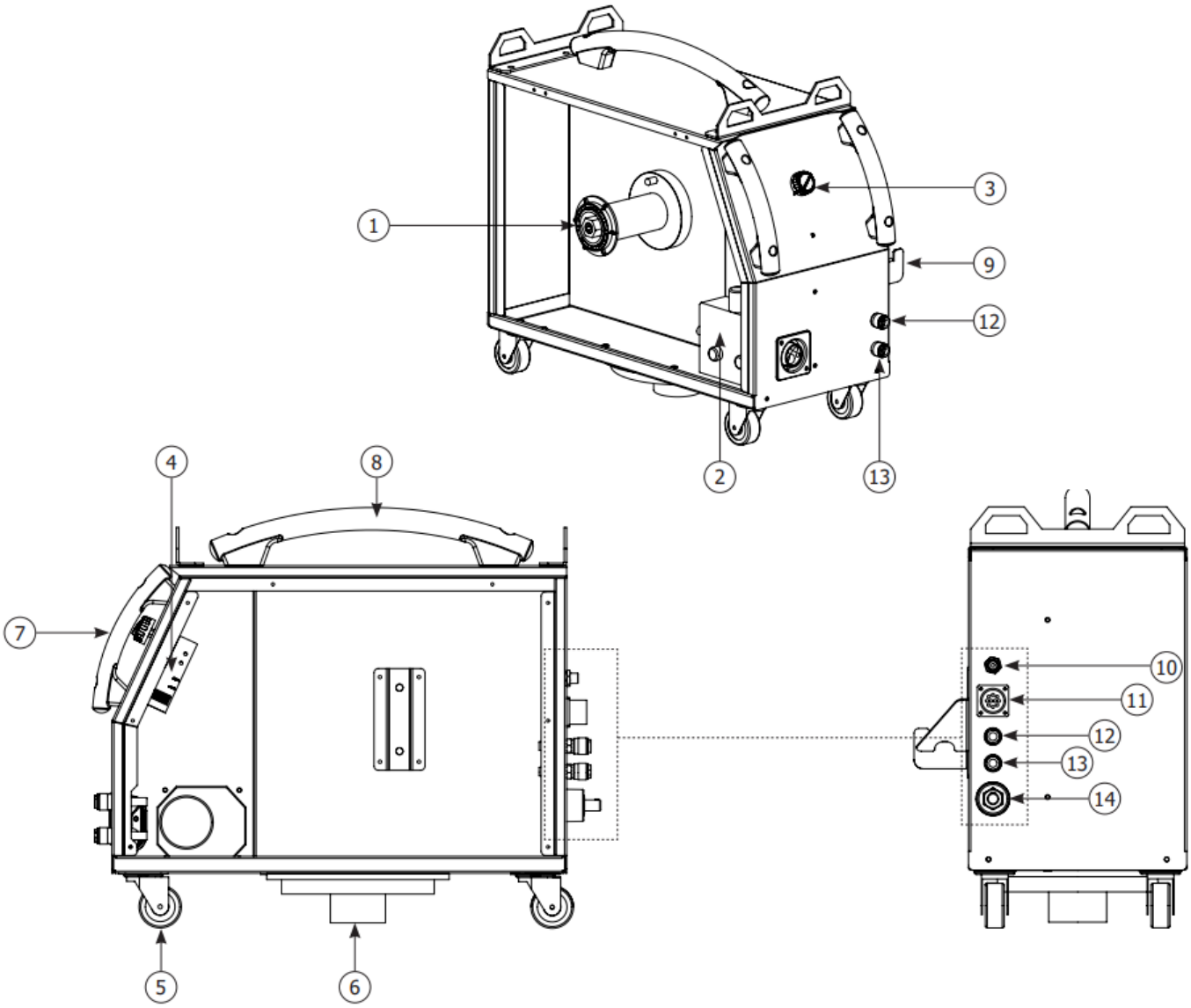
- The proof of purchase (receipt etc …)
- A description of the fault reported

CIRCUIT DIAGRAM



033696	Faisceau EAU 1.6m 70mm²
034822	Faisceau AIR 5m50mm²
034839	Faisceau AIR 5m70mm²
033641	Faisceau EAU 5m70mm²
034853	Faisceau AIR 10m50mm²
034860	Faisceau AIR 10m70mm²
033658	Faisceau EAU 10m70mm²
034877	Faisceau EAU 10m95mm²
034884	Faisceau EAU 15m95mm²
034891	Faisceau EAU 20m95mm²
034907	Faisceau EAU 30m95mm²

SPARE PARTS



1. Wire reel support 71613
2. Wire feeder 51257
3. Potentiometer 73018
4. Board 97184C
5. Wheels 71181
6. Swivel support 72006
7. Handle 56047
8. Carrying handle 56014
9. Torch support 98689GF
10. Gas connector 71699
11. Connector 53086
12. Red water connector 71695
13. Blue water connector 71694
14. T50 connector 51476

TECHNICAL SPECIFICATIONS

TF 4		
Power supply voltage (DC) – generator output		U_1 = 24V-3A
Motor speed		1.0-20.0 m/mn
Torch connector		EURO
Supported wire reels		200 mm / 300 mm
Supported wires		Fe : 0.6 mm – 1.2 mm
		SS : 0.8 mm – 1.2 mm
		Al : 1.0 mm – 1.2 mm
		Cored : 0.9 mm – 1.2 mm
Duty cycle at 40°C (10 min)* Standard IEC 60974-1.	60%	270A
	100%	220A
Protectice gas (Pmax = 5 bar)		Depending on the material to weld
Drive roller type		B (ext. Ø 37 mm / int. Ø 9 m m)

Functionning temperature	-10°C +40°C
Storage temperature	-20°C +55°C
Protection level	IP21
Dimensions (LxWxH)	60 x 26 x 51.5 cm
Weight	18 kg

 To avoid damaging the reel, the duty factor of the welding power source must always be lower than that indicated on the reel.

ICONS

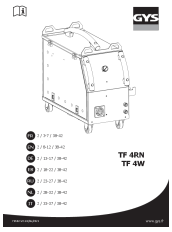
	Caution ! Read the user manual.
IEC 60974-5	The wire feeder complies with the IEC 60974-5 standa rd.
	Wire feeder symbol
IP21	– Protected against the access of dangerous parts fro m solid bodies of a Ø ≥12,5mm and water.
	– Direct welding current.

X(40°C)	– Duty cycle according to standard EN 60974-1 (10 mi nutes – 40°C)
I2	– Corresponding conventional welding current.
U2	– U2: conventional voltages in corresponding load.
A	Amperes
	– Machine(s) compliant with European directives The declaration of conformity is available on our website.
	– EAEC Conformity marking (Eurasian Economic Com munity).
	– Equipment in compliance with British requirements. The British Declaration of Conformity is available on o ur website
	Recy-clable product that falls within waste sorting reco mmendations
	– Equipment in conformity with Moroccan standards. T he declaration C م) CMIM) of conformity is available on our website (see cover page).

	– This hardware is subject to waste collection accordin g to the European directives 2002/96/UE. Do not thro w out in a domestic bin/waste !
	– Temperature information (thermal protection).
	– Gas purge
	– Gas input
	– Cooling liquid input.
	– Cooling liquid output.

GYS
1, rue de la Croix des Landes
CS 54159
53941 SAINT-BERTHEVIN Cedex
France

Documents / Resources

	GYS TF-4RN Welding Wire Feeder [pdf] Instruction Manual TF-4RN, TF 4W, Welding Wire Feeder

References

- Arc Welding, Battery Chargers & Body Repair | GYS

Manuals+,