## CFH SF 3100

# CFH Svets-Fix SF 3100 Portable Welding and Soldering Machine

**Model: SF 3100 (Item No. 52500)**



## Introduction

This manual provides essential instructions for the safe and effective use of your CFH Svets-Fix SF 3100 Portable Welding and Soldering Machine. This gas-powered device is designed for various soldering and brazing tasks, suitable for both professional craftsmen and DIY enthusiasts. Please read all instructions carefully before operation.


*Image: The CFH Svets-Fix SF 3100 kit, showing the carrier frame, gas cylinders, and soldering torch.*

## Safety Information

**WARNING:** Improper use of this equipment can lead to serious injury or death. Always follow safety guidelines.

- Always wear appropriate personal protective equipment (PPE), including welding safety glasses (included), gloves, and protective clothing.
- Ensure adequate ventilation in the work area to prevent inhalation of fumes.
- Keep flammable materials away from the work area.
- Never point the lit torch at yourself or others.
- Store gas cylinders in a cool, dry, well-ventilated area, away from direct sunlight and heat sources.
- Check all connections for leaks before each use.
- Do not modify the equipment. Use only original CFH replacement parts and accessories.


*Image: A person demonstrating the use of a CFH gas soldering torch on copper pipes, highlighting the practical application of the tool.*

## Setup

Your CFH Svets-Fix SF 3100 comes as a complete set, ready for use with disposable gas cylinders.

### Included Components:

- Carrier frame with strap
- Special gas canister (e.g., AT 3000, 65% Butane / 25% Propane)
- Oxygen bottle
- Hose set
- Welding safety glasses
- Four nozzles

### Assembly Instructions:

1. Place the special gas canister and oxygen bottle securely into the carrier frame.
2. Connect the hose set to the gas canister and oxygen bottle outlets, ensuring a tight fit.
3. Attach the soldering torch to the other end of the hose set.
4. Select and attach the appropriate nozzle for your task to the torch head.
5. Before lighting, check all connections for leaks using a suitable leak detection spray or soapy water. Bubbles indicate a leak.


*Image: Detailed view of the CFH Svets-Fix SF 3100 components, illustrating the connections for gas cylinders, hoses, and the torch.*

## Operation

The CFH Svets-Fix SF 3100 is a versatile gas soldering tool suitable for soft soldering, brazing, repairing, installing, crafting, melting, thawing, heating, flaming, hardening, tinning, and shaping.

### Understanding Soldering:

Soldering is a process that joins two or more metal parts by melting and flowing a filler metal (solder) into the joint. The solder hardens upon cooling, creating a strong connection. Solder is typically a fusible metal alloy,

and modern solders are generally lead-free.

### Requirements for Proper Soldering:

- **Heat Source:** The CFH Svets-Fix SF 3100 provides an open flame, gas-powered heat source.
- **Cleanliness:** A cleaning fleece is essential for quickly cleaning the soldering point.
- **Solder:** Use solder appropriate for the metal connection. Many solders already contain flux.

### Soft Soldering vs. Brazing:

- **Brazing (Hard Soldering):** Required for gas installations, hot water heating installations with flow temperatures above 110 °C, and heating oil lines. Brazed joints are generally 10 times stronger than soft soldered joints.
- **Soft Soldering:** Recommended for drinking water pipe installations up to 28 mm outer diameter.
- For other applications, both brazing and soft soldering can be used with the correct solder. The procedures are largely similar, with the main difference being the working temperature and the type of solder used.

### Soldering Copper Pipes:

Copper pipes are durable, hygienic, and relatively easy to process. They have been a reliable choice in craftsmanship for centuries. Copper pipes can be joined using either soft or hard soldering methods, both of which are effective. The choice depends on the required working temperature and the specific solder.

### Step-by-Step Soldering Process:

1. **Clean the Parts:** Rub the metal parts clean with a cleaning fleece until they are metallically bright.
2. **Apply Flux (if not in solder):** Apply soldering paste (flux) evenly to the end of the pipe.
3. **Assemble Joint:** Push the fitting firmly onto the pipe end.
4. **Heat and Solder:** Apply heat with the torch to the joint. Once the joint reaches the correct temperature, bring the solder directly to the soldering point. The solder will melt and flow into the joint. Remove the heat and allow the joint to cool and solidify naturally.

*Image: Visual guide detailing the soldering process, from preparing the surface to applying solder.*

## Maintenance

Regular maintenance ensures the longevity and safe operation of your CFH Svets-Fix SF 3100.

- **Cleaning:** After each use, allow the torch to cool completely. Clean the nozzle and torch tip with a wire brush or appropriate cleaning tool to remove any residue. Wipe down the body of the torch and hoses with a damp cloth.
- **Inspection:** Periodically inspect hoses for cracks, cuts, or signs of wear. Check all connections for tightness. Replace any damaged components immediately.
- **Storage:** Disconnect gas cylinders when not in use for extended periods. Store the unit in a clean, dry place, away from extreme temperatures and out of reach of children.
- **Gas Cylinders:** Replace disposable gas cylinders as needed. Ensure proper disposal of empty cylinders according to local regulations.

## Troubleshooting

If you encounter issues with your CFH Svets-Fix SF 3100, refer to the following common problems and solutions:

| Problem | Possible Cause | Solution |
|---|---|---|
| No flame or weak flame | Empty gas cylinder, clogged nozzle, loose connection. | Replace gas cylinder, clean nozzle, tighten connections. |
| Gas leak detected | Loose connection, damaged hose/seal. | Tighten all connections. If leak persists, replace damaged component. Do not operate with a leak. |
| Difficulty igniting | Insufficient gas flow, faulty igniter (if applicable). | Ensure gas valves are fully open. Check igniter for damage. |

If the problem persists after attempting these solutions, please contact CFH customer support.

## Specifications

| Feature | Detail |
|---|---|
| Brand | CFH |
| Model Number | 52500 |
| Power Source Type | Gas-powered |
| Material | Metal |
| Color | Blue |
| Included Components | Carrier frame with strap, Special gas canister, Hose set, Welding safety glasses, Oxygen bottle |
| Batteries Required | No |

| Feature | Detail |
| --- | --- |
| First Available Date | August 18, 2012 |

## Warranty and Support

For warranty information, technical support, or to order replacement parts, please contact CFH customer service directly. Refer to the product packaging or the official CFH website for contact details.

**Manufacturer:** CFH

**Item Number:** 52500