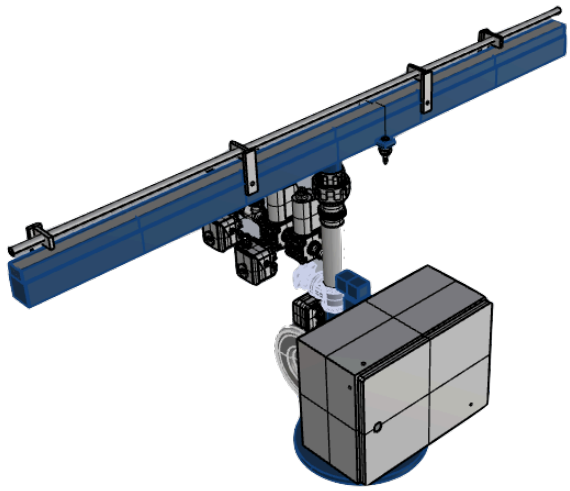
®

Santin
Bruciatori Industriali



**Operating instructions**

**GB**

# SCALDAFILO
## Burners

**Incorrect installation, adjustment, or misuse of this burner could result severe personal injury, or substantial property damage.**

**To the Equipment Owner:**

- Please read and carefully follow all instructions provided in this manual regarding your responsibilities in caring for your heating equipment.
- Contact a professional, qualified service technician for installation, start-up or service work.
- Save this manual for future reference.

REV. 3/11/16

# Table of Contents

GB

# General Information 1

**INTRODUCTION**
SCALDAFILO burners is a series designed for pre-heating solutions for screws industries and in any industrial applications. SCALDAFILO is equipped with gas train (one-stage) and standard command panel.

**MANUFACTURER INFORMATION**
**Bruciatori Industriali Santin S.n.c.**
Via G. di Vittorio, 15
20030 Senago (MI)
Phone. +39 02 99 813074
Fax. +39 02 99814391
Email. info@bruciatorisantin.com

**USERS**

This Manual has been written for people who will use the product as user or as owner, or installer and/or for maintenance service and/or for the final dismantling of the burner made by **"BRUCIATORI INDUSTRIALI SANTIN"**.

**AIM**

The purpose of this manual is to ensure safety use and installation.

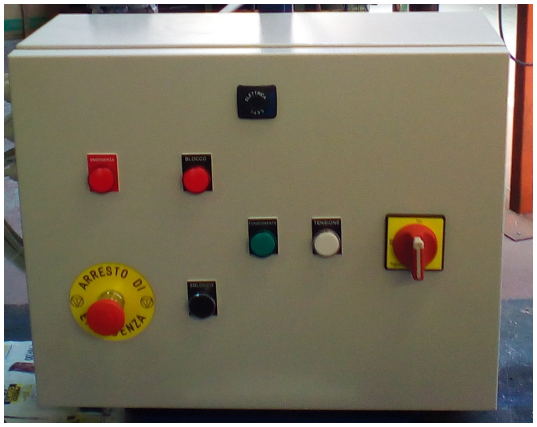
**GENERAL BURNER INFORMATION**

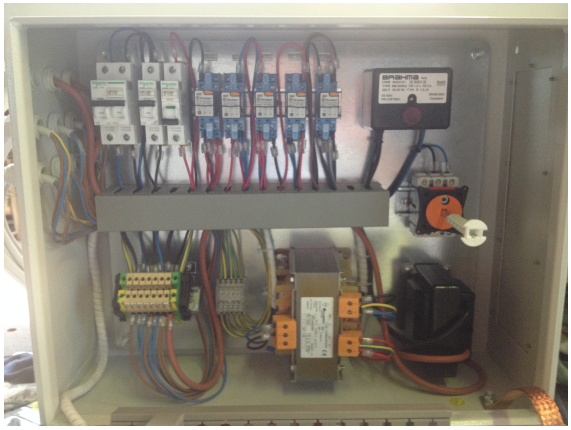
Available in the datasheet 110-1 datasheet LN

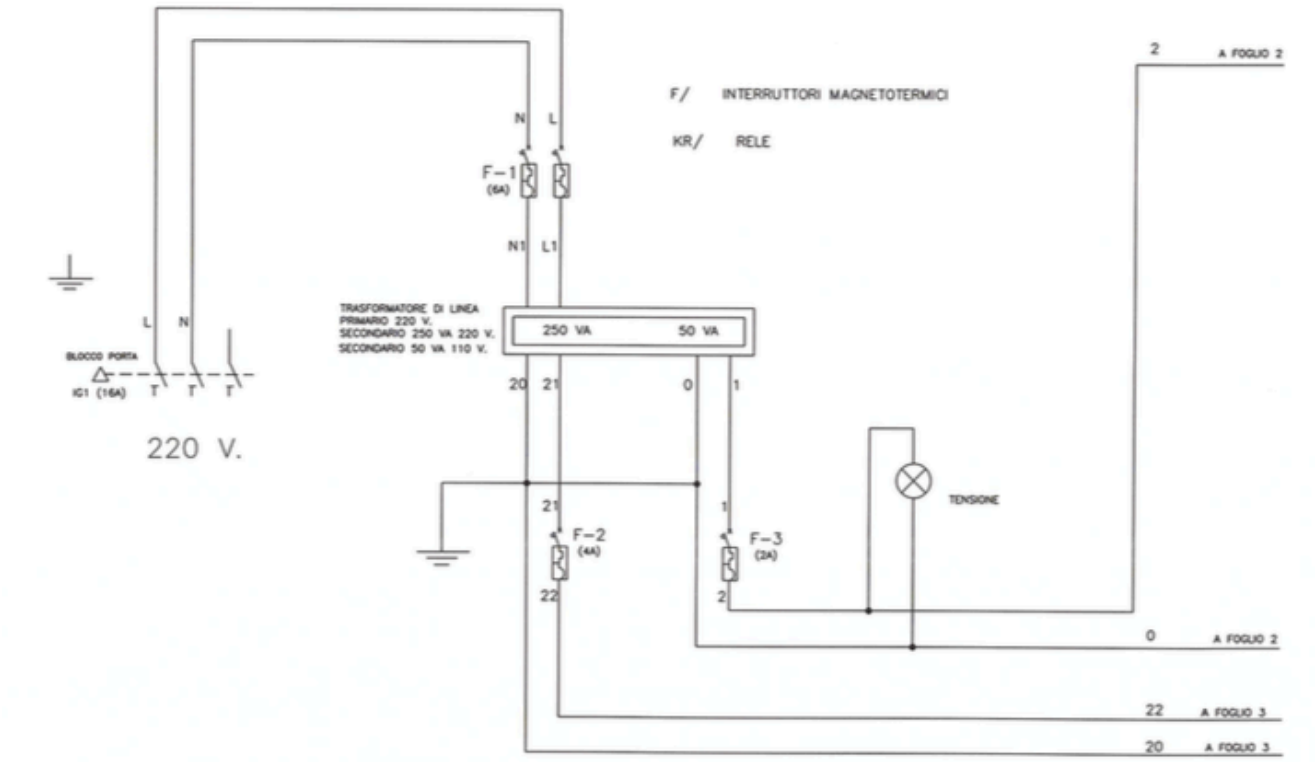
The combustion air must be free of any contaminants. Always provide opening to the outdoors in order to have fresh air.

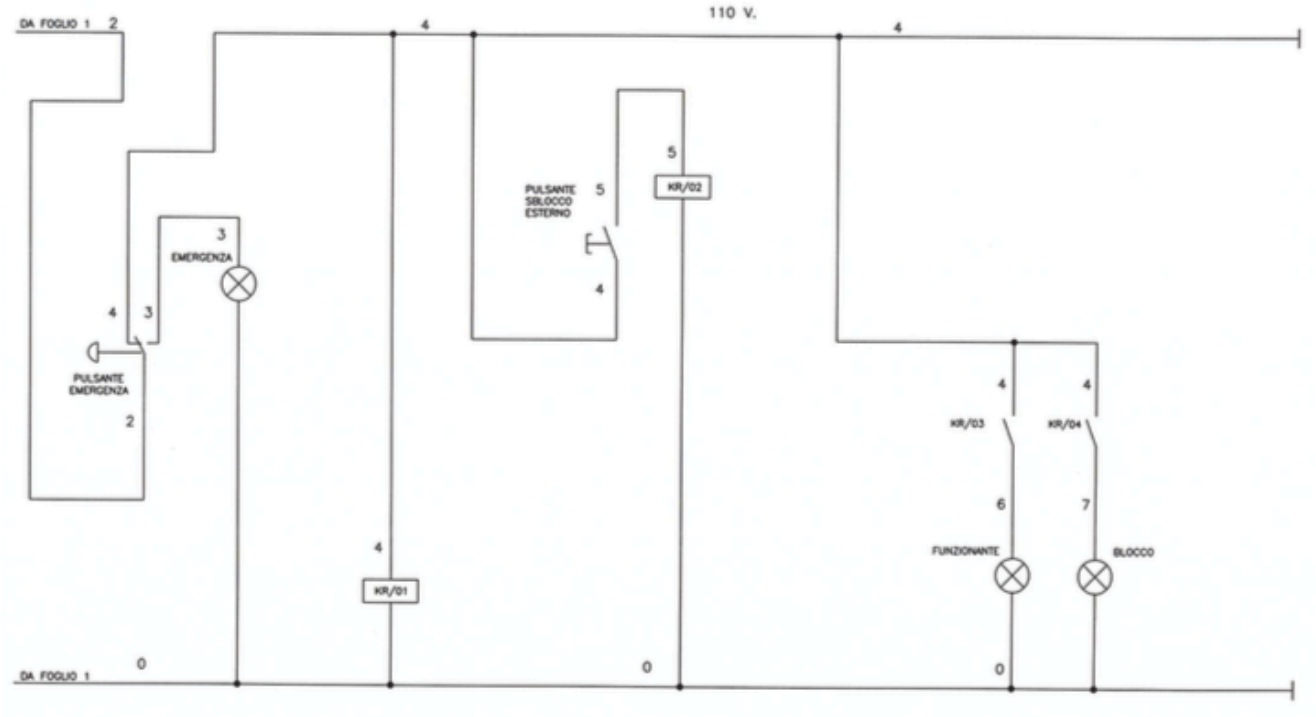
** Provide access to the burner for inspection and maintenance services **

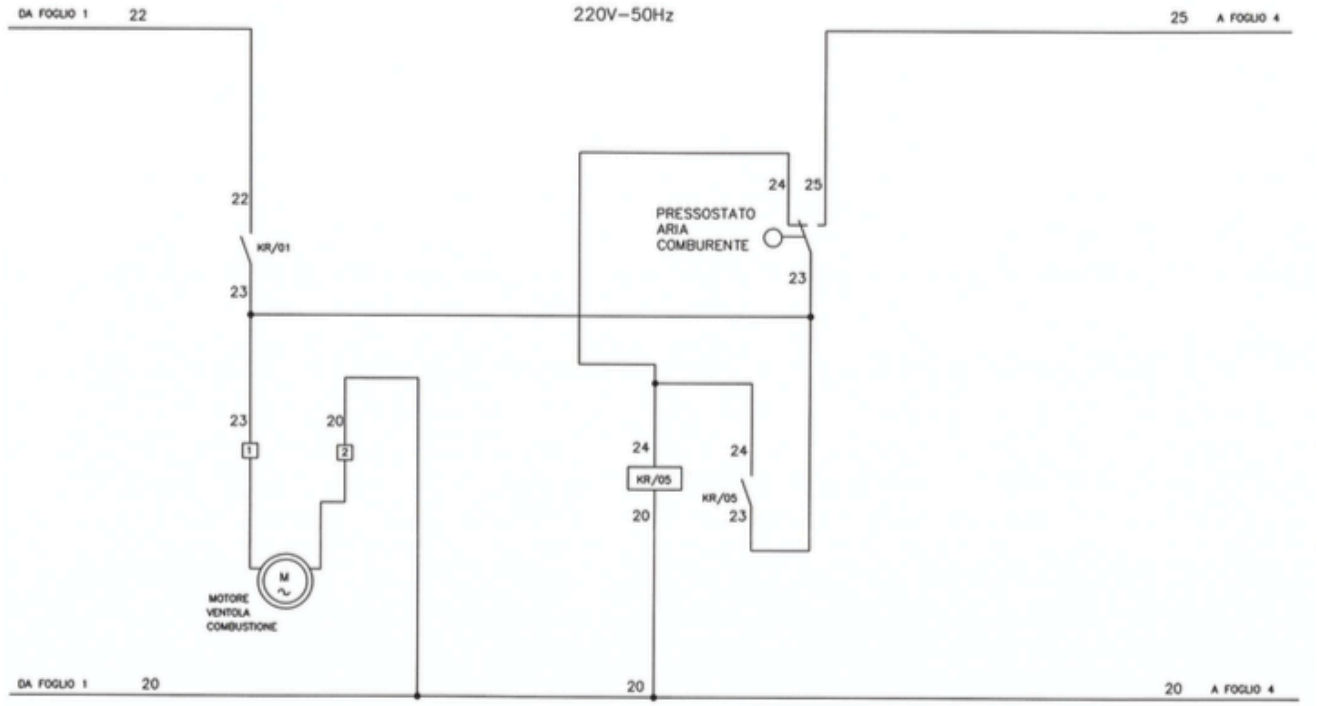
**ELECTRICAL WIRING - Command panel CEPI212 400 X 500**






F/ INTERRUTTORI MAGNETOTERMICI
KR/ RELE
2 A FOGLIO 2
N L
F-1 (6A)
N1 L1
TRASFORMATORE DI LINEA
PRIMARIO 220 V.
SECONDARIO 250 VA 220 V.
SECONDARIO 50 VA 110 V.
250 VA
50 VA
BLOCCO PORTA
IG1 (16A)
220 V.
20 21 0 1
TENSIONE
F-2 (4A)
F-3 (2A)
22
0 A FOGLIO 2
22 A FOGLIO 3
20 A FOGLIO 3


110 V.
DA FOGLIO 1
PULSANTE SBLOCCO ESTERNO
KR/02
EMERGENZA
PULSANTE EMERGENZA
KR/03
KR/04
FUNZIONANTE
BLOCCO
KR/01
DA FOGLIO 1


DA FOGLIO 1
22
220V-50Hz
25
A FOGLIO 4
22
KR/01
23
PRESSOSTATO
ARIA
COMBURENTE
24
25
23
23
20
1
2
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KR/05
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KR/05
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M
MOTORE
VENTOLA
COMBUSTIONE
DA FOGLIO 1
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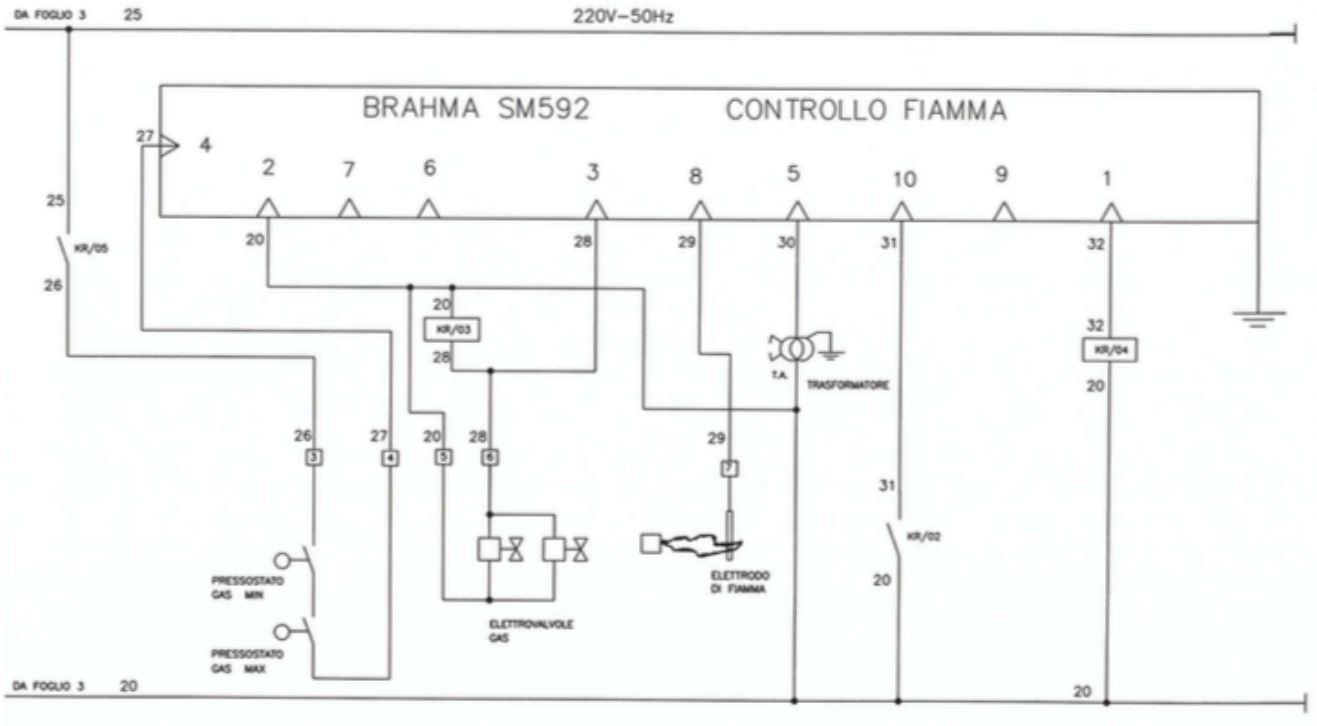
A FOGLIO 4


DA FOGLIO 3
25
220V-50Hz
BRAHMA SM592
CONTROLLO FIAMMA
27
4
2
7
6
3
8
5
10
9
1
25
KR/05
26
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28
29
30
31
32
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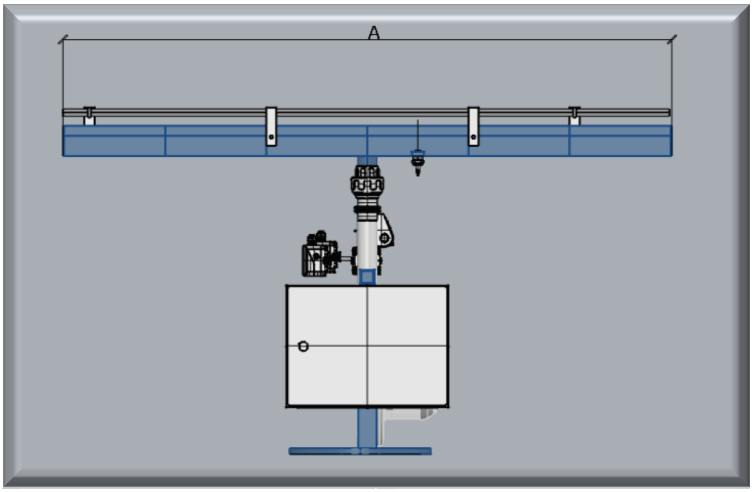
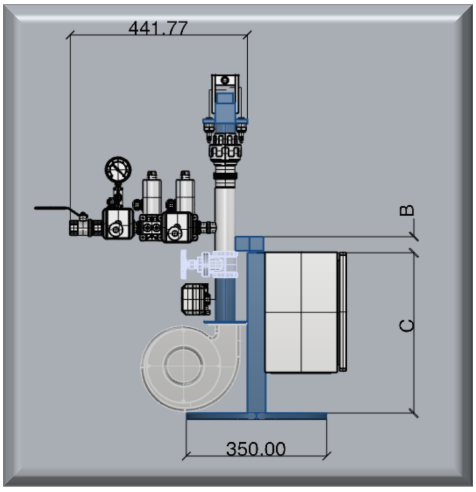
KR/03
28
32
KR/04
20
T.A.
TRASFORMATORE
26
27
20
28
29
31
3
4
5
6
7
KR/02
20
PRESSOSTATO
GAS MIN
PRESSOSTATO
GAS MAX
ELETTROVALVOLE
GAS
ELETTRODO
DI FIAMMA
DA FOGLIO 3
20
20

## DRAWINGS & SPECIFCATIONS

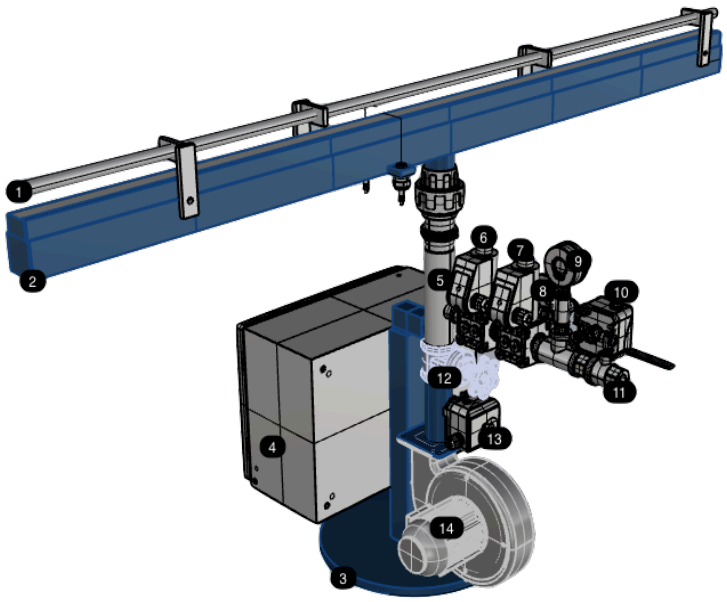



| Model | A (mm) | B (mm) | C (mm) |
|---|---|---|---|
| SCALDAFILO500 | 500 | 40-300 | 400 |
| SCALDAFILO750 | 750 | 40-300 | 400 |
| SCALDAFILO1000 | 1000 | 40-300 | 400 |
| SCALDAFILO1500 | 1500 | 40-300 | 400 |

| Model | Capacity Kcal/h (KW) |
|---|---|
| SCALDAFILO500 | 6.000 (7) |
| SCALDAFILO750 | 8.000 (9) |
| SCALDAFILO1000 | 10000 (12) |
| SCALDAFILO1500 | 12000 (14) |

| POS | Description |
|---|---|
| 1 | Stainless steel Tube 3/8 for screw |
| 2 | Burner LN |
| 3 | Support |
| 4 | Command panel |
| 5 | MIXER100 Blower version |
| 6 | Gas safety solenoid |
| 7 | Gas safety solenoid |
| 8 | Max gas pressure switch |
| 9 | Pressure gauge with tap |
| 10 | Min gas pressure switch |
| 11 | Ball valve Gas inlet 3/8 |
| 12 | Air flow regulator |
| 13 | Air pressure switch |
| 14 | Blower |
| | |
| | |



# Safety 2

Before installation and use, read these instructions carefully. The burner must be installed and commissioned according to the place of use.
The Bruciatori Industriali Santin is not liable for damages caused by inobservance of the following manual or incorrect use of the burner.
**Incorrect installation, adjustment, or misuse of this burner could result severe personal injury, or substantial property damage.**

**RISKS**

**WARNING**

- The burner could have hot surface and different parts could be sharp. Always wear personal protective equipment when moving closer to the burner.
- All gas burners are able to produce explosions if improperly installed. Do not forget to follow any safety steps.
- Do not switch on the burner if it is damaged.
- Do not allow exhaust to accumulate in the work area. Poisoning and explosion risks.
- Contact Bruciatori Industriali Santin for further information.

**PROFESSIONAL USE**

Only qualified personnel with specific technical and/or training experience with combustion systems must operate on the burner and on all mechanical and electrical part of the combustion system.

# Technical guide 3

In this chapter you will find all information to develop the system with the correct control system, install and adjust the burner. Please read thoroughly.

**BURNER INSTALLATION**

**Please note.**
The pipe connection is a critical choice. The following suggestions can help you:

- Ensure that size of air and gas pipe are large enough to avoid excessive pressure loses.
- The number of elbows is kept to a minimum.
- Flexible pipe can cause more pressure drop than standard pipe. Check flexible detail.
- Put in a pipe union in a burner can simplify maintenance service.

Only qualified personnel with specific technical and/or training experience with combustion systems must operate on the burner and on all mechanical and electrical part of the combustion system

SCALDAFILO burner is equipped with support. The burner must be secured to the ground using specific plug.

SCALDAFILO:
Gas connection 3/8 F
Electrical connection: 230V

## Note

For all and full information about LN (SCALDAFILO) series, refer to the "Datasheet 110-1".

Before switch on the burner please make the following checks:

- Control air and gas leaks
- Ensure that bolts and all components are properly installed
- Ensure that power supply is correct, according to wiring diagram
- Ensure that gas train is properly installed and in the correctly oriented.
- Ensure the correct blower rotation.

**CONTROL SYSTEM:**

Gas input range is controlled by a regulator placed on the solenoids. SM592 control unit manage the burner lighting and control the flame.

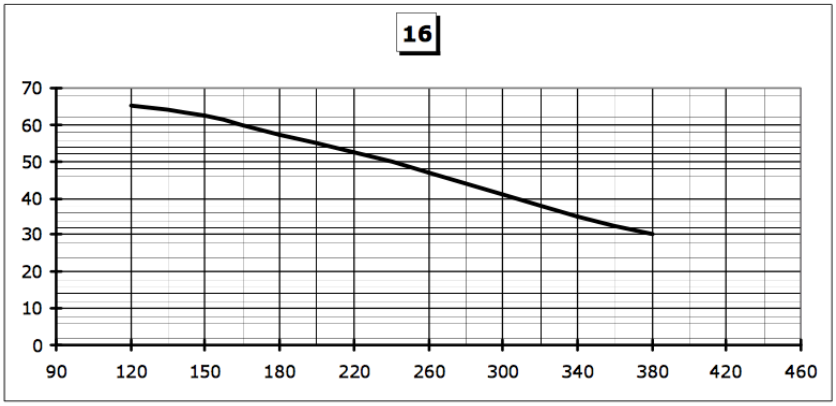
SCALDAFILO is equipped with 8 KV ignition transformer 230V (model 1820 Santin)

Air pressure switch controls the blower pressure.

Gas pressure switches control gas pressure.

**BLOWER:** 230V

| | mm $H_2O$ |
|---|---|
| MODEL | EP-AP 16 |
| Hp | 0,08 |
| W | 59 |
| r.p.m. | 2800 |
| Air flow Min./ Max. ($m^3/h$) | 120 / 380 |
| Max. Pressure (mm H2O) | 65 |



# Burner's adjustment 4

**BURNER SETTINGS**

In this chapter you will find all steps on how to adjust the burner system.

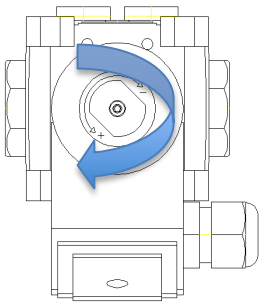
**WARNING**

- **Do not bypass any steps. Fire or explosion could result.**
- **All gas valve and cocks must be closed.**
- **Don not touch electrodes. Electroshock could result.**
- **Air / gas taps must be open during measures. Do not forget to close after that. Leak could result.**
- **Set the ratio regulator in order to have a stable pressure. The pressure should not exceed the maximum pressure rating of gas pressure switch.**
- **Set the air pressure switch 15 mbar below the blower pressure.**
- **Set the low gas pressure switch 15 mbar below the gas pressure inlet the gas train.**
- **Set the high gas pressure switch 15 mbar above the gas pressure inlet the gas train**
- **If the system doesn't start and stop automatically you must close all gas cocks. Fire or explosion could result.**

1. Turn the main selector in 1 position. Blower starts. Check the correct rotation. During this operation gas valves must be closed. Set the air pressure between 0,5 and 1,5 mbar. Low pressure will produce longer flame and high pressure will produce shorter flame.

2. Burner ignition

3. Set fire gas using gas flow regulator on the solenoids as in the picture below.



To set the gas solenoids the screw has to be screw or unscrew on the top of the coil.
"-" to decrease the gas flow rate
"+" to increase the gas flow rate

4. Check gas setting and all devices.

5. Stop the system and repeat again

# Maintenance and common issues 5

**MAINTENACE**

An accurate maintenance program extends the life of the machine and assures high performance. The general cleaning of the machine represents a very important security factor together with the compliance of the following instructions:

**WARNING**

- **We suggest checking yearly the parts in the list below. If the environment is dirty the check must be monthly.**

a) Leak test on gas train.
b) Check the correct operation of control unit sequence and all alarm system.
c) Check gas and air pressure switches.
d) Check flame rod and ignition electrode conditions.
e) Control air and gas ratio
f) Test valves and solenoids.
g) Visual check of cable and gas/air connections.
h) Control the flame thought the pipe sight in order to control the flame conditions.
i) Control all components and clean / replace if necessary.

## LIST OF COMMON ISSUES

| Problem | Possible Cause | Possible solution |
|---|---|---|
| **Burner does not start** | There is incorrect power supply<br><br>The spark electrode is dirty<br><br>The spark electrode is not grounded to the burner | Check the wiring diagram<br><br>Clean the spark electrode<br><br>Clean the spark electrode |
| **Burner has an insufficient flame signal** | UV or flame sensor are dirty<br><br>Flame sensor is grounded to the burner | Clean the flame sensor<br><br>Check and adjust the position of ceramic insulation |
| **The low fire flame is unstable and burner has an incorrect air/gas ratio** | Insufficient air<br><br>Insufficient gas<br><br>Incorrect air / gas ratio | Adjust the air regulator<br><br>Adjust gas regulator<br><br>Adjust the gas/air setting |
| **The burner is unstable and produces smoke and soot** | Incorrect air /gas ratio<br><br>Devices on gas train are dirty | Adjust the gas/air setting<br><br>Clean all possible devices on gas train or replace them |
| **The burner does not reach maximum capacity** | Gas pressure low<br><br>Solenoids/valve gas flow regulator have closed<br><br>Blower rotates in incorrect direction | Adjust gas pressure<br><br>Adjust gas flow regulators<br><br>Check blower wiring |
| **The system can not start the ignition sequence** | Air pressure switch does not work<br><br>Min gas pressure switch does not work<br><br>Max gas pressure switch does not work<br><br>Control unit is damaged<br><br>Power supply is off | Check air pressure switch adjustment<br><br>Check min gas pressure switch adjustment<br><br>Check max gas pressure switch adjustment<br><br>Check the correct operation of control unit<br><br>Check the wiring diagram and main power line |
| **The burner does not reset after block** | Control unit is damaged | Check the correct operation of control unit |

# Disassembly 6

**REMOVAL OF ELECTRICAL AND GAS CONNECTIONS**

**WARNING**

**Only qualified personnel with specific technical and/or training experience with combustion systems must operate on the burner and on all mechanical and electrical part of the combustion systems.**

**During this operation all gas valve and cocks must be closed.**

**HANDLING**

There are two possible ways of handling:

- By wooden box containing the machine;
- By simple shifting of the machine.

For both handlings, risks of falls, bumps or upsetting due to the movement of load should be avoided. Suitable accessories should be used to move the box.

Protect the components from:

- Weather
- Dirt
- Moisture
- Excessive temperature and humidity

**STORAGE**

If the machine has to be stored for a considerable period of time, it has to be protected from humidity and dust. Wrap up with plastic material for better isolation.

# Dismantling 7

**DECLARATION**

Burner dismantling can be done directly by the customer, following the indications below.

**PLATE DISTRUCTION**

Remove all machine plates on the burner and destroy them completely.

**LIST OF MATERIALS**

The burner does not contain any unsafe material. Materials for possible disassembling are classified as follows:

- ✓ Metallic parts of iron, copper, stainless steel, cast iron and aluminium;
- ✓ Plastic;

**SELF-DISASSEMBLY**

If the Customer wish to disassemble the machine by himself, it is necessary to separate different materials and commit local companies for waste disposal.

# Spare parts 8

For spare parts information contact our technical support

**Note.**
In accordance with the manufacturer's policy of continual product improvement, the product presented in this document is subject to change without notice or obligation. All data / graphs shown in this document are approximate.

# Certification 8

Noi, Bruciatori Industriali Santin Snc
Via G. di Vittorio, 15
20030 Senago (Milano)

Dichiariamo sotto la nostra responsabilità che il/i prodotto/i:

Bruciatore tipo: SCALDAFILO 500/750/1000/1500
Rampa gas: Monostadio 3/8
Pannello di comando: Std CEPI212 per SCALDAFILO
Altro: Certificazione per Ns modello standard

Forniti dalla Bruciatori Industriali Santin con riferimento ordine 1275, ai quali si applica la presente dichiarazione, è/sono in conformità con i requisiti essenziali stabiliti dalle Direttive Europee:

- 2006/42/EC (Direttiva Macchine)
- 2004/108/EC (EMC)

è/sono conformi con i requisiti essenziali delle norme armonizzate:

- EN746-2: UNI EN 756-2: Apparecchiature di processo termico industriale – requisiti di sicurezza per la combustione e per la movimentazione ed il trattamento dei combustibili.
- ENISO13489-1/2: Parti di sistema di comando legate alla sicurezza. Parte 1: Principi generali per la progettazione – Parte2 Validazione
- EN60204-1: Equipaggiamento elettrico delle macchine – Parte 1: Regole generali
- EN61439-1-2: Apparecchiature assiemate di protezione e di manovra per bassa Tensione (Quadri BT) Parte 1: Regole generali – Parte 2: Quadri di potenza

**Questa quasi-macchina non deve essere messa in funzione affinché la macchina finale in cui deve essere incorporata è stata dichiarata conforme alle disposizioni presenti nella direttiva 2006/42/EC**

Senago 01/01/2016 Firma

Bruciatori Industriali Santin s.n.c.

®


**BRUCIATORI INDUSTRIALI SANTIN Snc**

**Di Santin Massimiliano & Santin Alessandro**

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