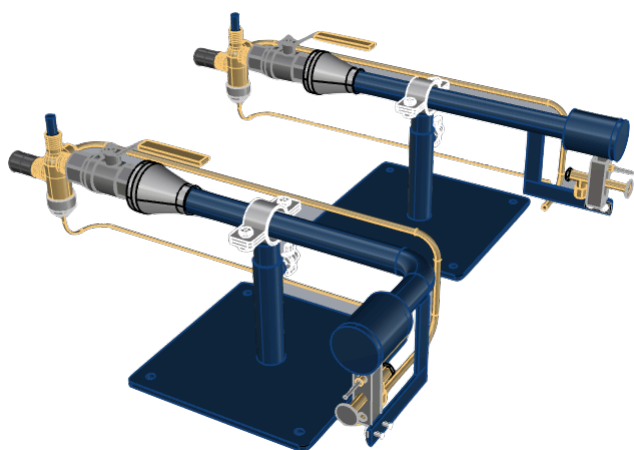


Bruciatori Santin

TR/TCU burner

[Bulletin 190-1 TR/TCU – 10/01/17]

MADE IN ITALY



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 document for future reference.



CAUTION!

Only qualified staff properly trained for work on Bruciatori Santin equipment are authorized for installation and maintenance. Some local authorities require the personnel involved in maintenance, repair and inspection to be certified. Manipulating the safety devices can result in unsafe operation of the burner system, which can cause severe or even lethal injuries!

GENERAL WARNING!

Only qualified staff properly trained for work on Bruciatori Santin equipment are authorized for regular burner system maintenance. Some local authorities require the personnel involved in maintenance, repair and inspection to be certified. Manipulating the safety devices can result in unsafe operation of the burner system, which can cause severe or even lethal injuries!

All personnel involved in the installation, integration, commissioning, maintenance, repair, inspection and operation of this burner system shall ensure that all the necessary health and safety requirements are fulfilled before commencing the work.

They should wear the appropriate personal protective equipment (PPE) together with – if applicable - required site-specific equipment.

This instruction manual must be stored in a place near the burner system and must be accessible for operators.

It is the responsibility of the company operating the machinery to keep an equipment history record of the integrated burner system, which is to include commissioning records with final settings, maintenance and inspection reports, as well as reports on modified settings and replacement of parts.

We advise to systematically add the above records to this instruction manual and keep the resulting binder (hardcopy) or folder (electronic) accessible for operators and service technicians.

Integrating the burner system into an overall installation according to assembly instructions and the instructions in this manual neither eliminates nor mitigates potential residual risks.

General residual risks are described in the assembly instructions.

Safety devices:

- All safety devices must always be in perfect and operative condition.
- Qualified staff must regularly check the safety devices to ensure that they are fully functional.
- Never deactivate any of the safety devices on the burner system.
- All safety devices must be in full working order before starting the burner system for the first time.
- Do not start up the burner system if any safety device is defective.
- Stop the burner system if a safety device fails during operation and restart it only after the safety device has been repaired.
- Wait until the burner system has been shut down and secured before removing any safety devices.

Dimensioni e Specifiche Dimensions and Specifications

Modelli Models	TR/TCU1/2	TR/TCU3/4	TR/TCU1	TR/TCU1-1/4
Gas Fuel	Metano/GPL Natural gas / LPG	Metano/GPL Natural gas / LPG	Metano/GPL Natural gas / LPG	Metano/GPL Natural gas / LPG
Ingresso gas Gas inlet	3/8F	3/8F	3/8F	3/8F
Capacità Kcal/h (kW/h) Capacity Kcal/h (kW/h)	20.000 (23)	30.000 (34)	60.000 (69)	80.000 (93)
Peso (kg) Weight	3	4	6	8

Description

TR burner belongs to the small burner category available in atmospheric solution. TR have curved body and TCU straight pipe.

Thanks to its small size and low thermal power they are particularly suitable to warm up small industrial ladle, melting pot and for ceramic processing in RAKU kilns.

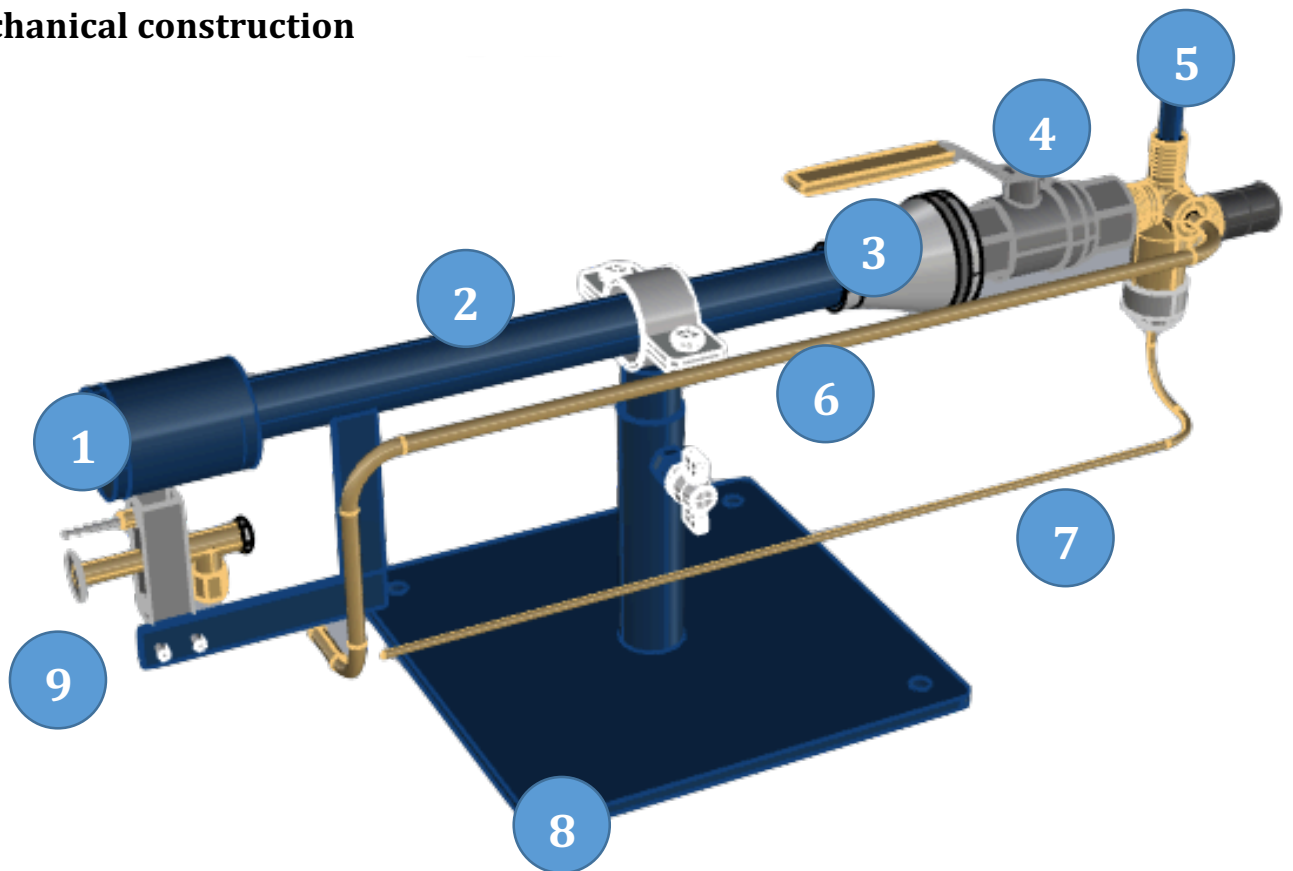
TR gas burner is equipped with basement.

TR series burner is designed to works with natural gas / LPG with minimum pressure of 1bar. It may be equipped with safety valve, thermocouple and pilot.

TR can be supplied with safety an ignition KIT.

CAUTION: It is dangerous to use any fuel burning equipment unless it is equipped with suitable flame sensing devices and automatic fuel shut-off valves.

Mechanical construction



Position	Description
1	TC
2	Burner tube
3	Air regulator with cone
4	Manual gas regulator
5	Safety valve B3 1/4 - gas inlet 3/8 F
6	Copper pipe for pilot
7	Thermocouple 600 mm
8	Basement
9	Pilot

Residual risks

Integrating the burner system into an overall installation according to assembly instructions and the instructions in this manual neither eliminates nor mitigates potential residual risks. General residual risks are described in the assembly instructions.

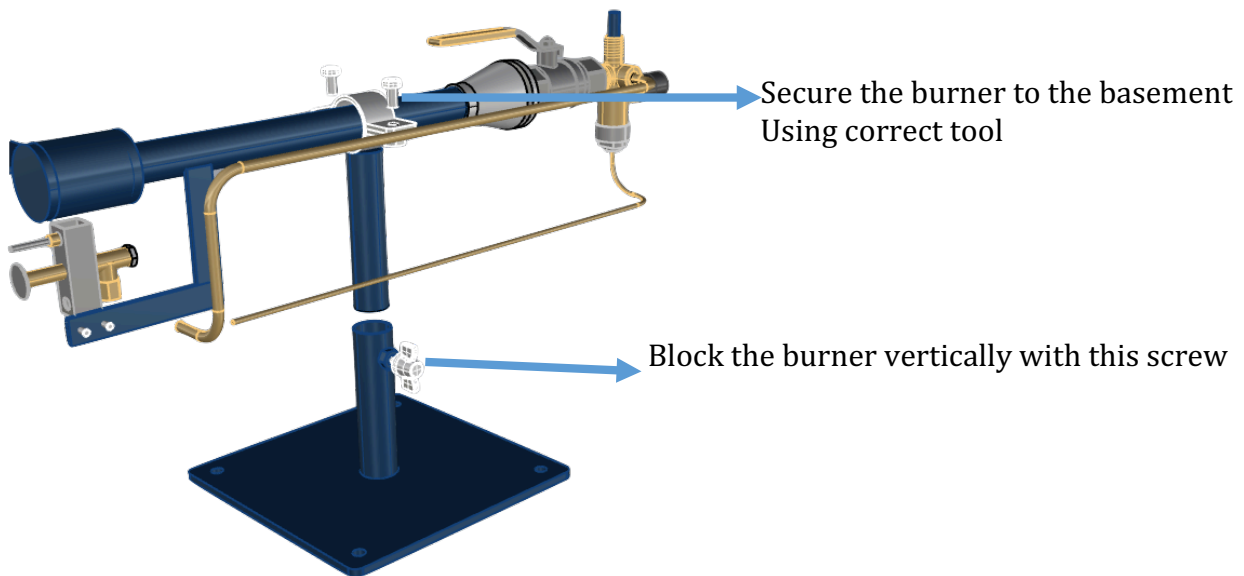
P.N. Used with other TC documents - <http://www.bruciatorisantin.com/en/reserved> - the purpose of this manual is to ensure safety use and installation.

Technical data

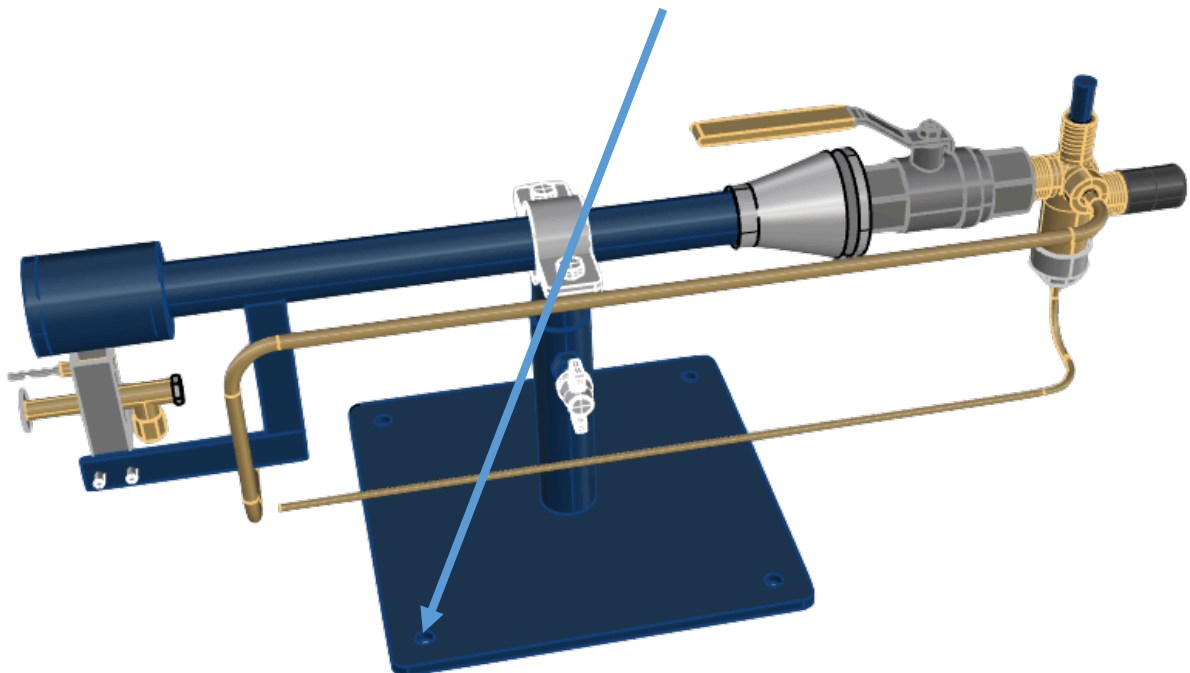
- Atmospheric burner
- Gas inlet 1 bar
- Ignition 1,5 V (optional) on request electrical box with ignition transformer 230V

Typical installation

TR and TCU are provided with special basement vertically adjustable.



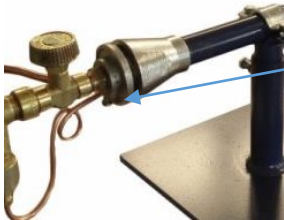
Secure the burner to the ground using the specific holes as shown in the picture below.



Set the burner height according to the application.

Set the gas flow using gas regulator (open and close the valve)

Set the air flow using the aluminium disk. Block the regulation using the screw on the disk.



Pilot

FB have a pilot SIT system. To set the pilot follow these simple instructions.



Open and close the gate to set the air.

Turn the screw here inside to set the gas flow.

Burner control

These burners work in atmospheric air and with 1 bar gas pressure

TR and TCU are equipped with thermocouple as flame sensor.

Burner system must be equipped with suitable safety equipment comply to EU 2009/142/EC

Ignite the system with ignition transformer 1,5V or 7,5/8 KV.

Piping tips

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 losses.
- 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.

Start & Stop procedures

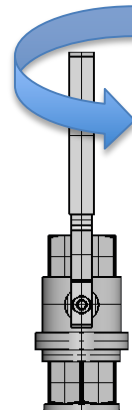
1. Set the gas pilot
2. Open the main gas valve
3. Push the blue button on the valve and keep pushed for few seconds
4. Light the pilot with igniter (opt) or manually with torch
5. Set main gas flow with regulator
6. Check that every part of the burner is in a good condition

Caution! Do not turn off the blower until the chamber temperature is below 80°C.

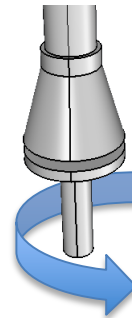
To stop the burner, close the main gas valve.

Burner adjustment

How to set gas flow:



How to set the air flow:



List of common issues

Problem	Possible Cause	Possible solution
Burner does not start	There is incorrect power supply	Check the wiring diagram
	The spark electrode is dirty	Clean the spark electrode
	The spark electrode is not grounded to the burner	Clean the spark electrode
Burner has an insufficient flame signal	UV or flame sensor are dirty	Clean the flame sensor
	Flame sensor is grounded to the burner	Check and adjust the position of ceramic insulation
Flame too long or short	Incorrect air / gas ratio	Adjust ratio mixer
Backfires	Mixture pressure	Adjust ratio mixer
	High temperature in the chamber	Protecting the burner

Maintenance

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.

Leak test on gas train.

Check the correct operation of control unit sequence and all alarm system.

Check gas and air pressure switches.

Check flame rod and ignition electrode conditions.

Control air and gas ratio

Test valves and solenoids.

Visual check of cable and gas/air connections.

Control the flame through the pipe sight in order to control the flame conditions.

Control all components and clean / replace if necessary.

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.

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- The performances mentioned are indicative. Performance and dimensions are guidelines only. The information contained in this catalogue is updated at the time of printing but can be changed without notice or obligation to notify.
- All data / graphs shown in this document are approximate.

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