

Sorg presents new burner holder with integrated angle adjustment

Burner holders are an important component on fossil fuel furnaces. All burner and heating system manufacturers and furnace suppliers design their own burner holders.

The same weak points are found in most burner holder designs.

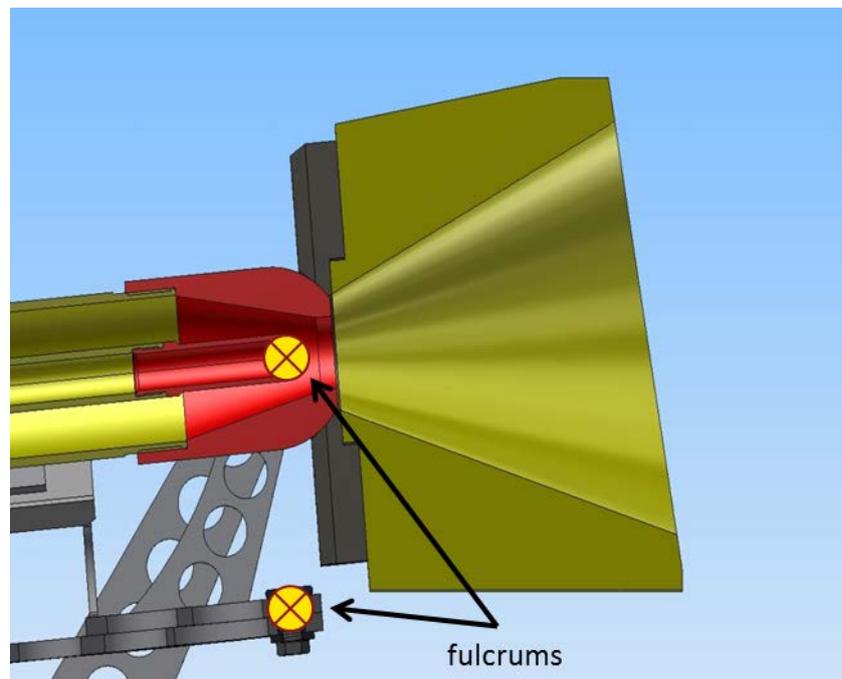
- Tools and a spirit level are required for the adjustment of the horizontal and vertical burner angles.
- Both angle adjustments have an influence on each other, as they are not separated mechanically and the fulcrum of the burner is not located at the burner nozzle. Adjustment of one angle influences the other so that the burner axis moves away from the burner block axis. These two axes must then be realigned.
- A cast iron sealing plate is mounted in front of the burner block to protect the block. There is a risk that this plate becomes displaced when the burner angle is adjusted.

The ever increasing restrictions on furnace emissions require tightly controlled furnace operation. This applies in particular to the burner settings, as these have a strong influence on emissions. Consequently, continuous monitoring of the settings is necessary coupled with adjustment of the burner angle during changes to operating conditions.

SORG has now developed a new burner holder with integrated angle adjustment to simplify burner set up. These type WSH and WSA holders are now available. These burner holders eliminate the disadvantages of all previous burner holders described above.

The decisive advantage of this burner holder is the location of the burner fulcrum directly in the nozzle head. This means that the exit point remains stationary when the burner is adjusted vertically or horizontally, and no realignment is required.

Moreover, no tools or measuring devices are required for setting or checking the burner adjustment. There are manual spindles for adjusting the burner angles and the set values can be read directly from the scales marked on the burner holder. The sealing plate is fixed to the burner

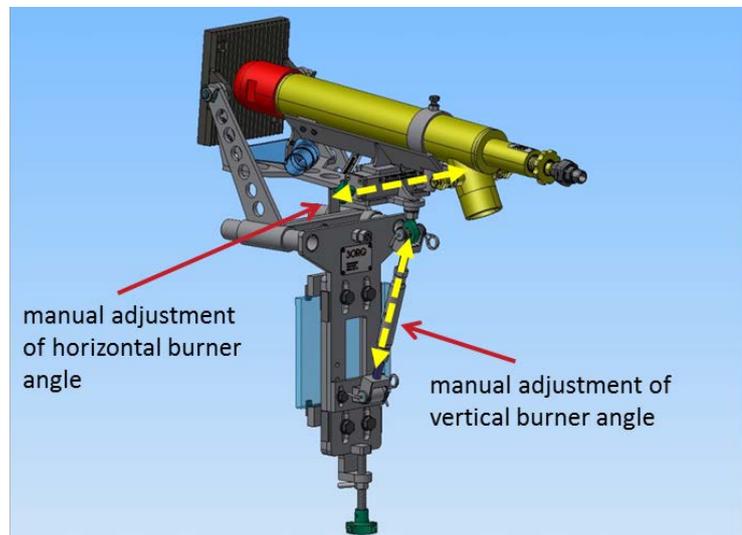


holder, so no additional fastening of the plate is necessary and the risk of displacement during burner adjustment is eliminated. Attachment of the holder to the existing furnace steel structure is straightforward.

Two versions of the burner holder are available:

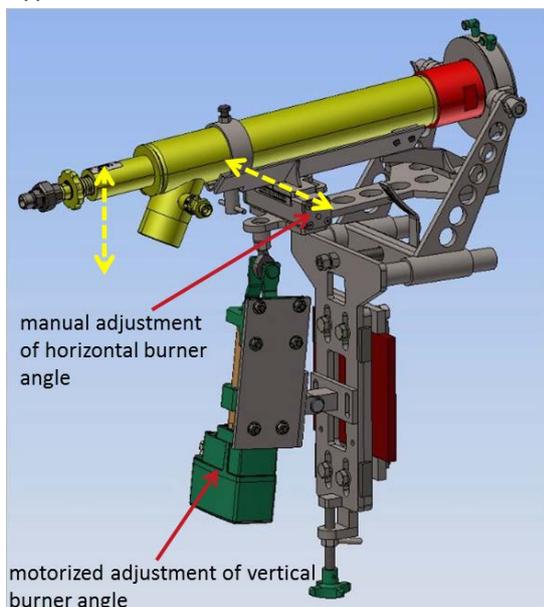
Type **WSH** with manual adjustment of both angles. This is the basic version. The angles set can be read on the scales.

Type **WSA** with manual adjustment of the horizontal angle (as with the WSH model), but with motorized adjustment of the vertical angle by means of an actuator.



Burner holder type Typ WSH

Type WSA burner holder



The actuator provides an output signal that can be connected to the SCADA system so that the set values can be displayed on the SCADA monitor. It is also possible to use the SCADA system to change the vertical adjustment from the control room. For the first time this enables the operator to adjust the burner whilst observing the influence on the flame pattern monitored by the furnace camera.

The activator moves at 1mm/s, which allows fine adjustment of the burner angle. In practical terms this means that the actuator adjusts the burner angle by 0,1° in 2 seconds. The actuator is suitable for temperatures up to 80°C, and additional cooling from the furnace cooling air

system can be added if required.

Holder type WSH can be upgraded easily to type WSA at any time.

For type WSA there is also the option of installing a local operating unit at the burners. Burner adjustment can then also be monitored directly in situ, in addition to adjustments carried out from the control room. The set angles are shown locally on a display and also on the SCADA system.

Control panel for local burner angle adjustment

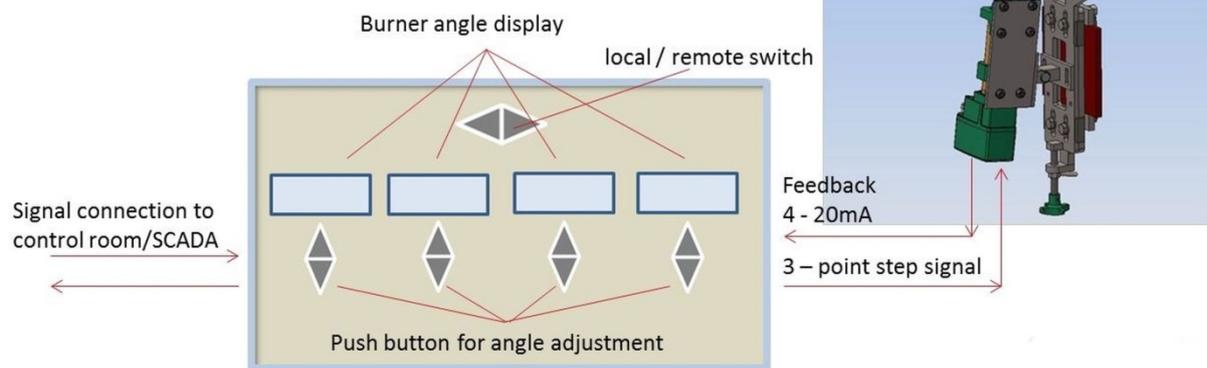


Diagram of local control unit and signal connections

The new type WSH and WSA burner holders are compatible with the Sorg burners NL4, NL5, SDB231 2F and SDB221 2F. In principle they are also suitable for use with other Sorg burners or even burners from different manufacturers. However, in each case the possibility must be checked by SORG engineers.

- 1 Burner
- 2 Burner seat
- 3 Burner block
- 4 Burner sealing plate
- 5 Sealing plate support
- 6 Burner holder attachment to furnace steelwork
- 7 Vertical adjustment
- 8 Horizontal adjustment
- 9 Furnace steelwork

