

Refractory brick drilling system

For process nozzle 4 ... 6" or DN 90 ... DN 175

Model RD80

WIKA data sheet AC 80.23

Applications

- The use of the WIKA refractory brick drilling system produces the required straight hole on the centre line of the process nozzle transition

Special features

- New installations shall be equipped with ASME 6" [DN 150] process nozzles
- Discuss existing process nozzles such as 2 ... 4" [DN 50 ... DN 100] with WIKA authorised engineers
- WIKA refractory brick stopper is available as part of the WIKA refractory brick drilling system
- Available for immediate shipment



WIKA refractory brick drilling system, model RD80

Description

The WIKA refractory brick drilling system and suitable bit assembly is used to drill straight, accurate and centre line holes, through the refractory brick and lining of a thermal stage reactor out of a sulphur recovery unit (SRU) - Claus Process.

The drilling system is rigidly mounted to the process nozzle and works to keep the core drill bit concentric with and on the centre line of the nozzle while the first process-side protection tube (primary protection tube) hole is being drilled through the refractory brick lining.

The final result following that procedure is a straight and accurate hole that ensures a proper fit of the primary protection tube and the high-temperature thermocouples models TC82/TC83 Calitum® and having the temperature monitoring exactly on that point location of the operator's needs.

The qualified installation procedure following the instructions of experienced personnel or supervisors allow the refractory brick to move in line with the protection tube, meanwhile the thermal reactor is in operation and compensates for the static behaviour of the independent high-temperature thermocouples models TC82/TC83 Calitum®. This technical innovation protects the thermocouple from breakage and also has multiple safety barriers.

Remark:

We strongly advise not to drill this important and precisely fitting hole hands-free and without using a WIKA refractory brick drilling system.

Please contact authorised personnel immediately if you need assistance.

Specifications

Specifications	
Flange size	ASME 4 ... 6" or DN 90 ... DN 175
Process nozzle ID	3.44" [87 mm] or larger
Nozzle height and refractory brick thickness	Up to 17.72" [450 mm] with basic drill bit
	Add extension piece if longer length is necessary
Hole size	1.61 ... 3.58" [41 ... 91 mm] Others on request
Drill bit	Diamond core type incl. water cooling system
Drilling machine	Powerful 2,200 W motor Nominal voltage 230 V Rated speed 0 ... 510 / 0 ... 1,150 / 0 ... 2,500 rpm
Accessories	<ul style="list-style-type: none"> ■ Water tank incl. pump ■ Copper sealing ring 1 1/4" ■ Quick and easy coupling ■ Water hose extension 5 m [16.4 ft] ■ Drill bit extension; length as required 7.88 ... 19.68" [200 ... 500 mm] or longer

Hole drilling procedure

- Start by putting the WIKA refractory brick stopper in place before the refractory is installed. This will help to generate a flat and accurate face location at the transition of the process nozzle to the refractory.
- After the new refractory brick has set, remove the WIKA refractory brick stopper and install the drilling system on to the process flange.
- Assemble the diamond drill bit, water swivel and drilling machine.
- Put the drill bit down into the drilling system and connect the water hose.
- Ease the bit down against the refractory brick lining and start the water cooling.
- Hold or clamp the drilling machine securely to prevent injuries and drill through the refractory brick lining.
- Inspect the quality of the hole and the flat and accurate surface of the refractory brick lining.

Remark:

Some refractory contractors will not allow drilling with water cooling, because some types of heat-resistant glue (cement) could be damaged or washed out by contact with steam or water. Please ask the refractory brick manufacturer/contractor to determine the compatibility of the castable to wet drilling.

Drilling the hole dryly is possible, but will need more time and may require more than one diamond drill bit due to wear and tear.

Please contact authorised personnel immediately if you need assistance.



Refractory brick drill centre assembly

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The specifications given in this document represent the state of engineering at the time of publishing.
We reserve the right to make modifications to the specifications and materials.



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