

Explosion-proof boiler camera

Model number: RB-EXTV

The RB-EXTV Explosion-proof Boiler Camera is a specialized CCTV system designed for high-temperature environments. It uses compressed air and circulating water for cooling, allowing the camera to be directly inserted into the furnace to observe the workpiece operation, material melting, flame shape, and other critical parameters. This system is widely applicable in industries such as metallurgy, power generation, cement, chemical engineering, and machinery. The RB-EXTV is mounted securely on the boiler wall and features automatic retraction and insertion functions. It incorporates a high-definition camera and a high-temperature-resistant borescope, which is installed inside a stainless steel cooling jacket. This cooling jacket, utilizing both water and air cooling, enables the camera to operate reliably for extended periods in high-temperature furnace conditions.



Product Features

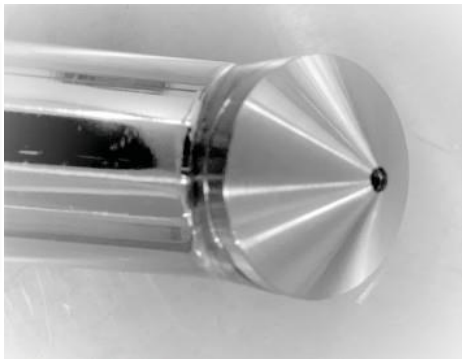
- Wide field of view 85°.
- Relay alarm output.
- High-definition digital video image, digital network port output.
- Can be inserted into the furnace to shoot in harsh high temperature environment.
- Camera can be automatically withdrawn from the furnace in case of over temperature, low air pressure, power failure, etc.
- Rodless cylinder retraction mechanism reduces system size and weight.
- 920mm borescope length is suitable for 500mm wall thickness, 787mm borescope length is suitable for 450mm wall thickness.

Technical Specification

Camera shot	
Lens length	920mm or 787mm
Viewing angle	Direct view 0°/Turn view 60°
Angular field of view	HxVxD 65°, 56°, 85°
Lens Mount	CS
Focus and Iris	Manually adjustable



Direct view 0°



Turn view 60°

Conditions of use	
Heat-resistant	Up to 2000°C
Cooling system	Compressed air and water cooling
Transmission device	Pneumatic Rodless Cylinder
Power supply	220VAC/50Hz

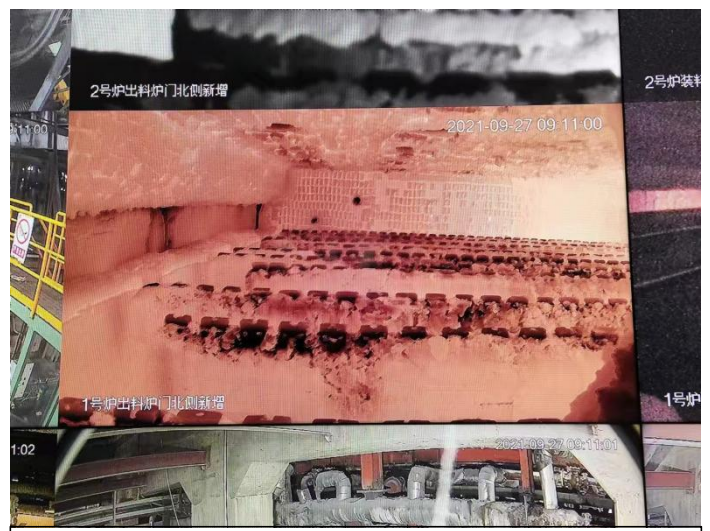
Compressed air requirements	
Air pressure	$\geq 0.5\text{MPa}$
Air flow rate	$\geq 30\text{m}^3/\text{h}$
Air temperature	$< 35^{\circ}\text{C}$
Air mass	Clean air free of dust, oil and water

Cooling water requirements	
Water inlet pressure	$\geq 0.3\text{MPa}$
Water flow rate	$\geq 1\text{m}^3/\text{h}$

Camera Specifications	
1/1.8" Progressive Scan CMOS.	
3 megapixels (2048 x 1536).	
30fps, can output real-time image.	
Support wide dynamic range up to 120dB, suitable for backlight environment monitoring.	
Support ONVIF(profile S/profile G), CGI, PSIA, ISAPI, GB/T28181 and EHOME protocol access.	
Support 10M/100M/1000M adaptive network interface.	
Supports BNC analogue output.	
Power Supply	DC12V $\pm 10\%$ / DC12V $\pm 10\%$ / PoE
Operating Temperature	-30°C~60°C
Power Consumption	<30W



Site image

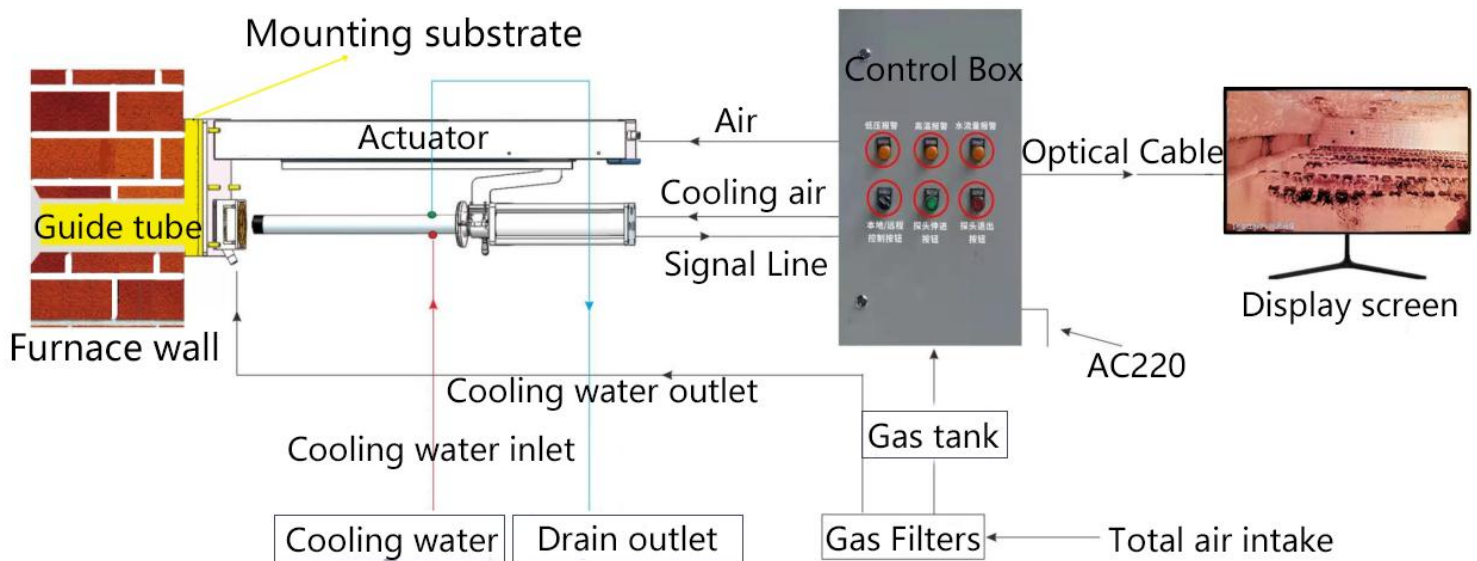


Rendering

Explosion-proof boiler camera with retraction device

The pneumatic retraction structure includes: cylinder, guide rail, and mounting bracket. The retraction control system adopts relay control, in the case of low cooling gas pressure, over temperature and power failure, the retraction device can automatically exit the furnace chamber to protect the camera system.

Video camera system structure diagram



On-site picture



Applications

Cement kilns - rotary kilns and coolers

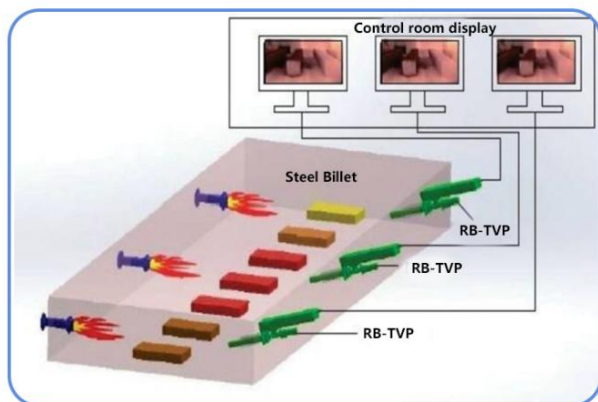
Metallurgy - heating furnaces

Glass - melting tanks

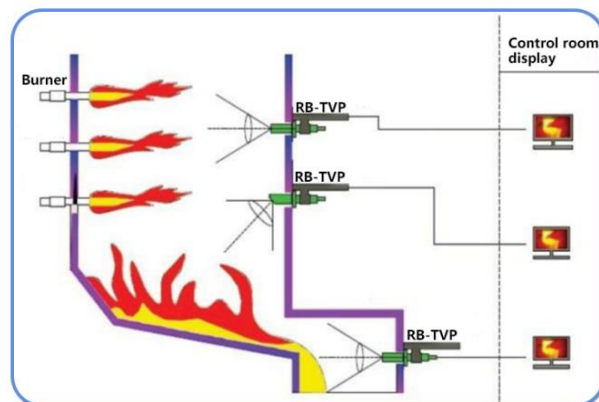
Electricity - boilers (coal-fired or gas-fired boilers)

Waste incinerators

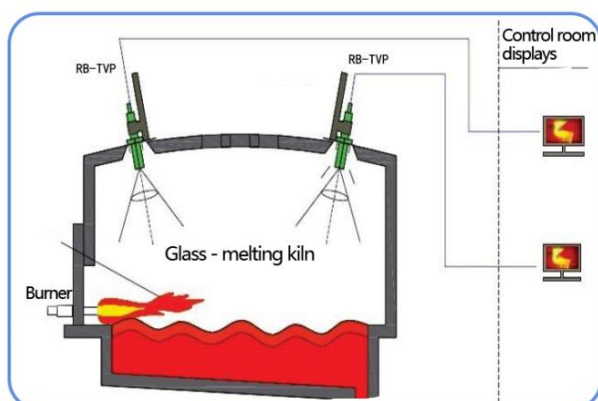
Biomass boilers



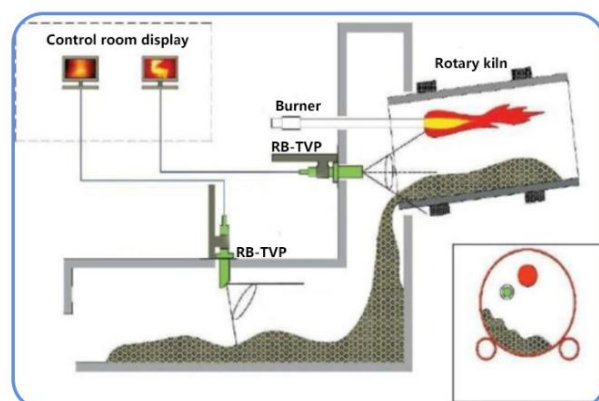
Steel and iron



Electric power



Electrode Furnace Imaging System



Clinker