

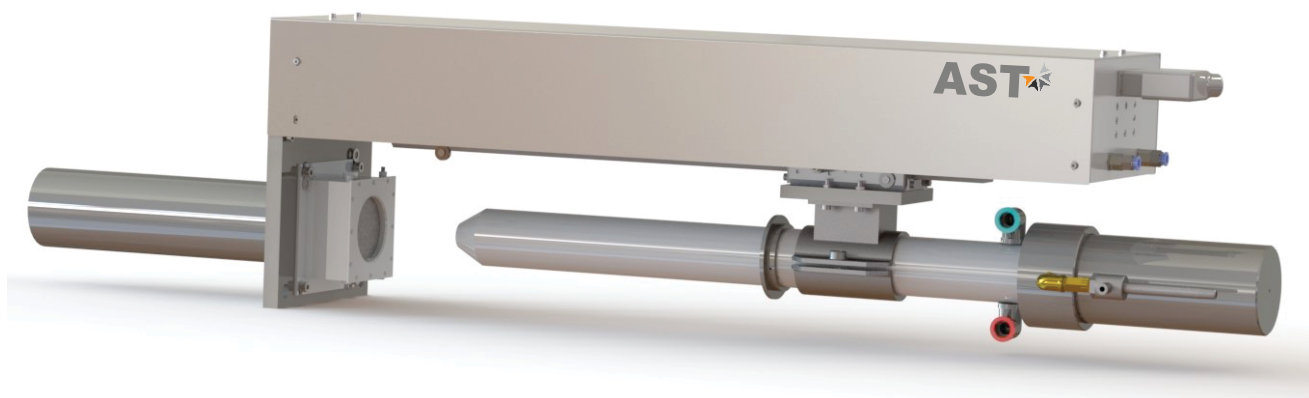
€ Furnace Monitoring High Temperature Camera System

High Temperature Furnace monitoring live video camera system **AST TFV-750, TFV-750/OV, TFV-1100 & TFV-1100/OV** provides wide angle view of burner flames, material alignment & other process conditions in furnace, kiln, boiler, cooler, reheating furnace or other combustion chamber. The **AST TFV** Series is mounted on wall of the furnace.

The system has auto-retraction & auto insertion which is regulated by control cabinet with PLC & pneumatic control system.

It uses special HD camera with high precision pin hole lens which is mounted inside stainless steel probe. The probe is equipped with vortex air & water cooling system that enables the system to work in high temperature environment & also continuous supply of air keeps the lens clean.

The camera is inserted through a shutter which opens with the force of camera probe & shuts the furnace opening when the probe retracts.

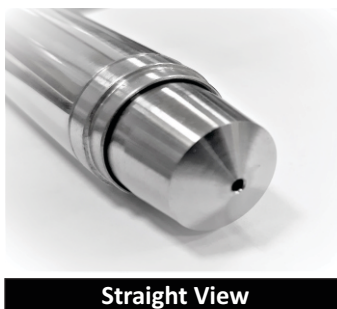


Features

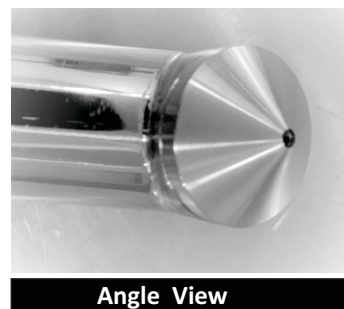
- Wide angle of view 85°.
- Relay alarm outputs for DCS.
- Clear live video in low/high light condition.
- Working in harsh and high ambient conditions.
- Rodless cylinder reduce size and weight of system.
- Two Stage air filtration system for clear view and smooth working of system.
- 600mm Stroke useful in wall thickness of 400mm and 800mm Stroke in wall thickness of 600mm.

Technical Specifications

Pinhole Lens Tube	
Lens Length	820 mm & 1080 mm
Angle of View	Straight view 0° Elbow view 60°
Field of View	HxVxD 65°, 56°, 85°
Mount	CS
Focus & Iris	Manual Adjustable



Straight View



Angle View

Technical Specifications

Technical Data

Environment	Up to 2000°C
Cooling system	Vortex air cooling/water cooling
Transmission device	Pneumatic air cylinder
Power supply	220VAC 50Hz

High Temperature Video Camera

Model

TFV-750	Straight View Video Camera
TFV-750/OV	Elbow View Video Camera
TFV-1100	Straight View Video Camera
TFV-1100/OV	Elbow View Video Camera

Requirement of Compressed Air

Pressure	4 ~ 7 Kg/cm ²
Volume Flow	50 m ³ /h
Temperature	<35°C
Quality	Dust, Oil & Moisture free clean air

Requirement of Cooling Water

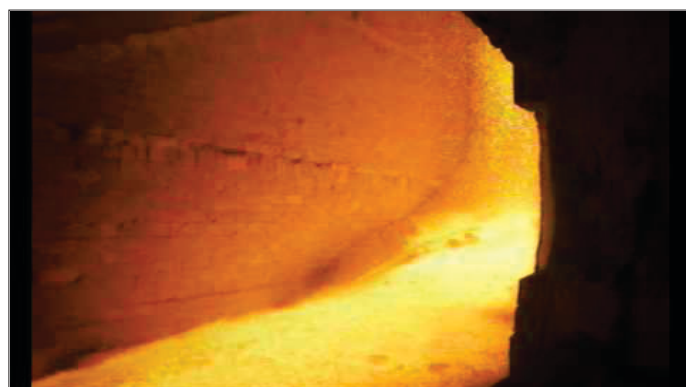
Inlet pressure	4 ~ 7 Kg/cm ²
Volume flow	0.2-1 m ³ /h

CCD Camera Specification

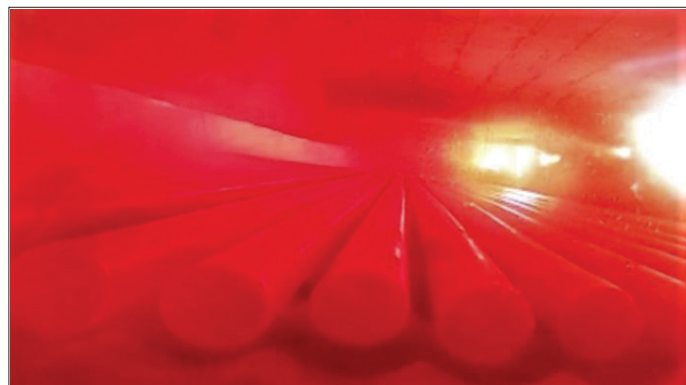
CCD sensor	Color SONY 1/3 " Super HAD CCD
TV Line	Black and white 650 lines
Lens	5 times manual/electric zoom lens
OSD	5 buttons remote menu adjustable
Illumination	0.005Lux @F2.0
Image	Manual adjustable
Scanning System	2:1 Interlace
SNR	More than 48dB
Scanning Frequency(H)	PAL : 15.625 KHz / NTSC : 15.734KHz
Scanning Frequency(V)	PAL : 50Hz / NTSC : 59.94Hz
Synchronization	Inner synchronization
Gamma Coefficient	$\gamma = 0.45$
Electric Shutter	Electric shutter EI(1/50~1/100, 000sec)
Gain Control	Auto/manual adjustable
Color to Black	Manual adjustable
Video Output	Composite 1 [Vp-p] 75(Ω)
Power	DC12V ($\pm 10\%$)
Power Consumption	Less than 120mA
Working Temperature	-10°C ~ +70°C (Humidity : 10%RH ~ 60%RH)
Storage Temperature	-20°C ~ +60°C (Humidity : 10%RH ~ 60%RH)



KILN CAMERA VIEW



COOLER CAMERA VIEW



REHEATING FURNACE CHARGING CAMERA VIEW



REHEATING FURNACE DISCHARGING CAMERA VIEW

CONTROL PANEL SPECIFICATIONS

Components

Electronic Components

- PLC
- HMI
- T/C to volt converter
- SMPS 12VDC
- SMPS 24VDC
- Relay Card
- 2 Pole MCB

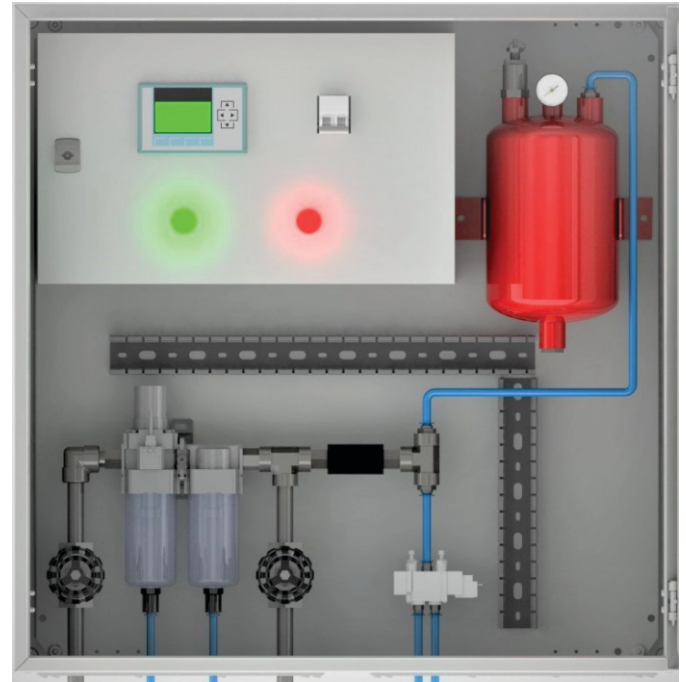
Pneumatic Components

- Air Filter Regulator
- Mist separator
- Digital Pressure Switch
- Speed Controllers
- Solenoid Valve
- Non Return Valve
- Gate Valve

PLC Logic Lock Points

The auto retraction system will work when any one of the below condition occur

- Temperature Increase
- Water Flow rate Decrease
- Air Pressure Decrease
- Power Failure

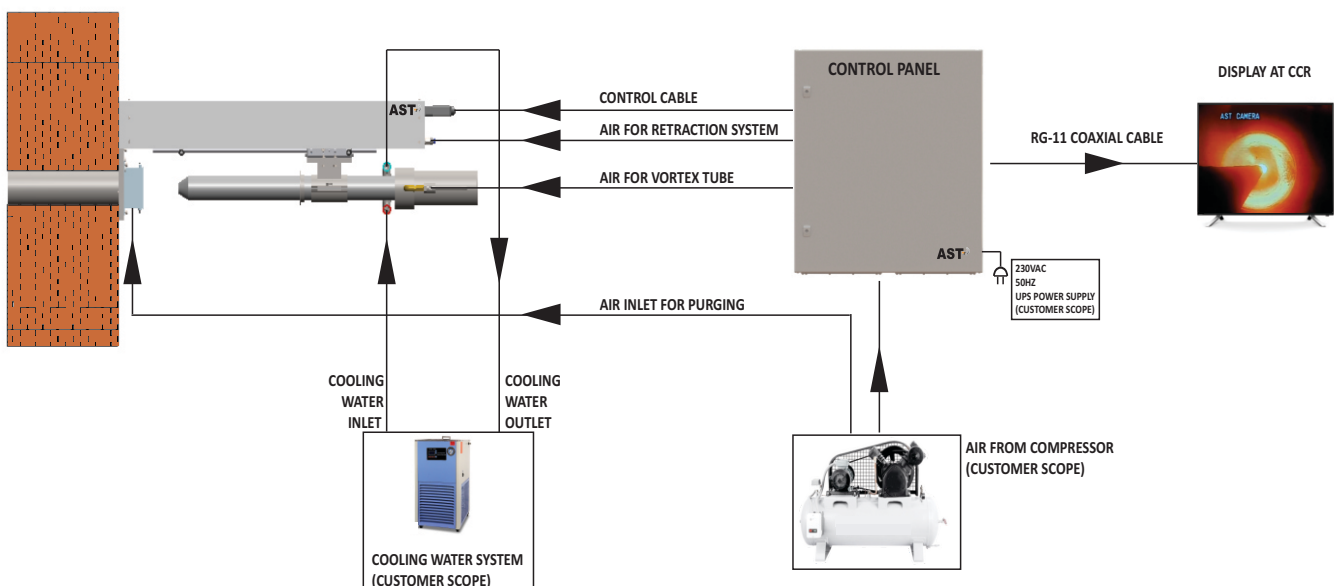


Air Reservoir Tank : 5 liters Capacity air tank with quick release valve and pressure gauge .

Furnace Camera System With Retraction Device

Pneumatic Retraction Mechanism : - This includes guide rail, pneumatic rod less cylinder, mounting block. This system inserts / retracts the camera system as per the logic input from the PLC. It also has rugged 10 pin two part connector for connection between control unit and camera system

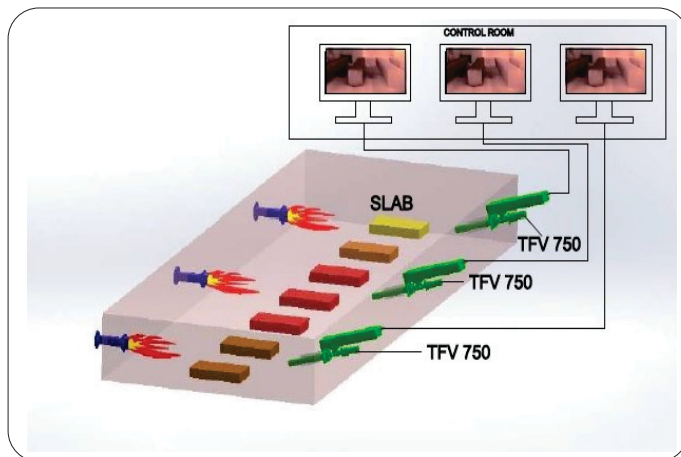
Schematic Diagram Of Video Camera System



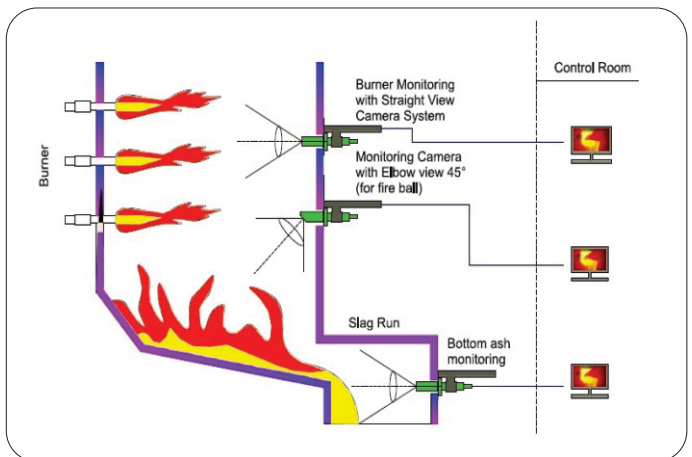
SCHEMATIC DIAGRAM CAMERA SYSTEM

- Cement Industries - Kiln & Cooler
- Steel Industries - Reheating Furnace
- Power Industries - Boilers
- Glass Industries - Melting Furnace
- Incinerator
- Waste Heat Treatment Boiler
- Bio Mass Boiler

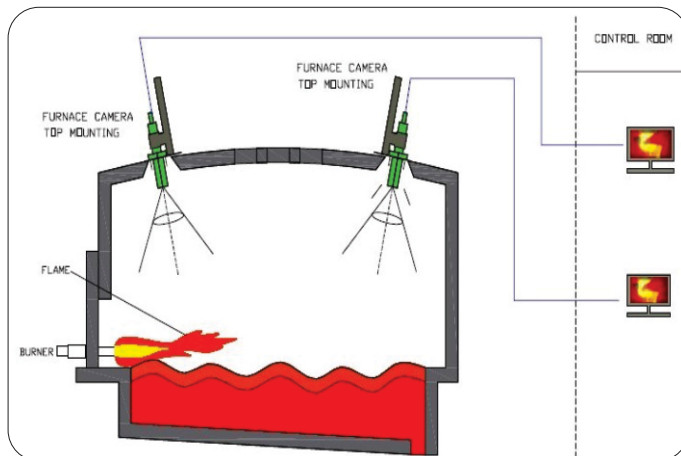
Steel Industries



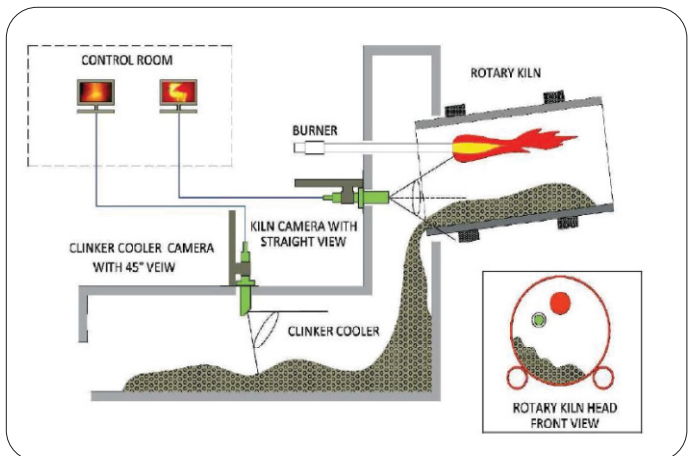
Power Industries



Glass Industries



Cement Industries



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