

# Optical Probes



Tresch + Kieliger's optical probes are meticulously crafted to deliver reliable performance and accurate results, empowering businesses to maintain the highest standards of quality control and safety assurance.

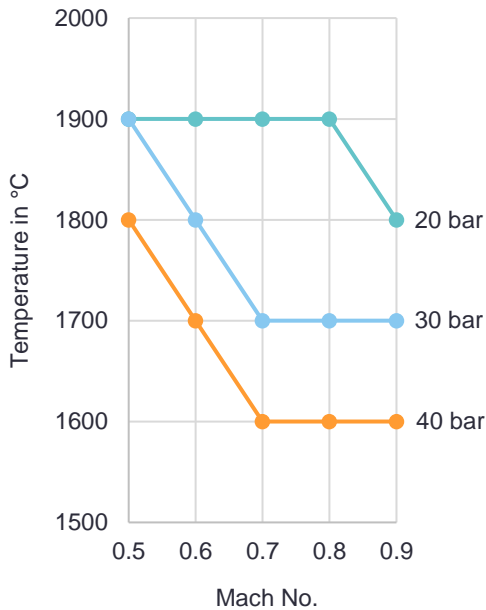
With cutting-edge technology and a commitment to innovation, we strive to exceed expectations and drive excellence in every inspection endeavour.

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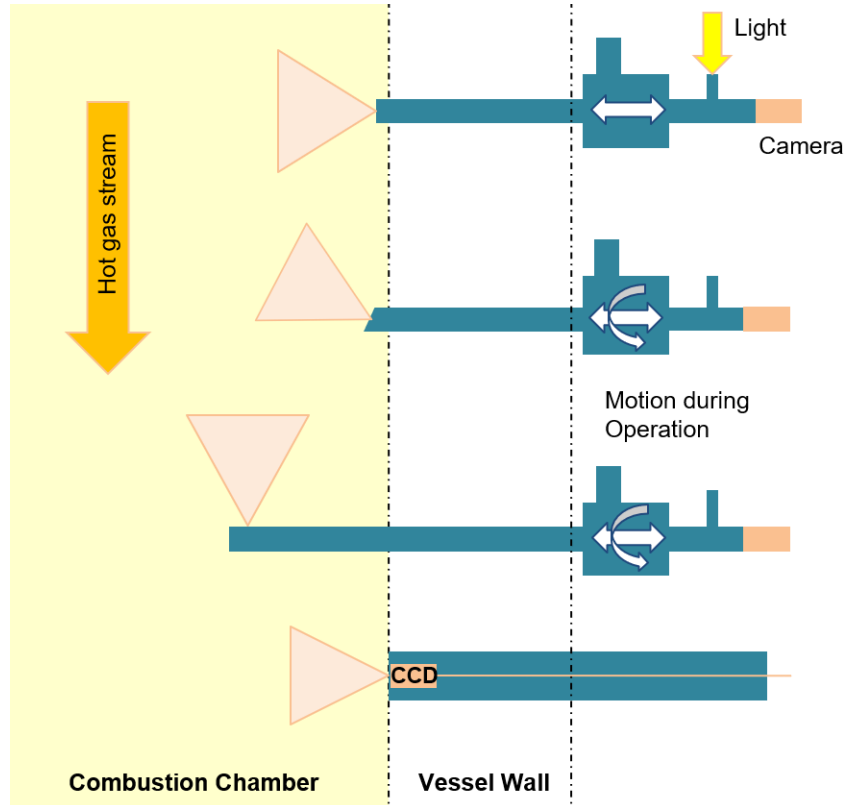
# Product Overview

## Tip Limits

Probe limits at the tip for different temperatures and pressures in regard of the hot gas Mach no. can be found in the diagram below:



## Probe Execution



## Features and Options

- Up to 40 bar(g) pressure
- HG temperature 1900 K
- Water cooled body and curtain air for glass
- Water cooled mini camera (CCD) with min. diameter of  $\varnothing 4$  mm
- Probe  $\varnothing$  min 18 mm
- Length up to 2000 mm
- Borescope min.  $\varnothing$  6-12 mm
- Borescope air-cooled
- For UV and laser measurements
- Viewing angle up to  $80^\circ$
- Viewing direction  $0^\circ, 30^\circ, 45^\circ, 80^\circ, 90^\circ$

## Accessories

- Pressure vessel (PV) lead-through
- Combustion chamber (CC) lead-through
- Probe support
- Control unit
- Electric focus device
- Electric pulling device
- Electric turning device up to  $300^\circ$

## Combination possibilities

incl. borescopes, light source, drive and camera systems

# Versatile and Effortless

## Our standardised Probe

Introducing our durable standardised probe SOS, built to thrive in all conditions. Engineered to withstand extreme temperatures and pressures, it is your reliable companion in the harshest environments.

### Features

**Versatile Viewing:** SOS is equipped with a lens endoscope or high-resolution mini camera; it offers flexibility for various viewing angles and a wide cone of vision.

**Effortless Maintenance:** Replaceable glass inserts and contamination reduction mechanisms streamline upkeep for uninterrupted workflow.

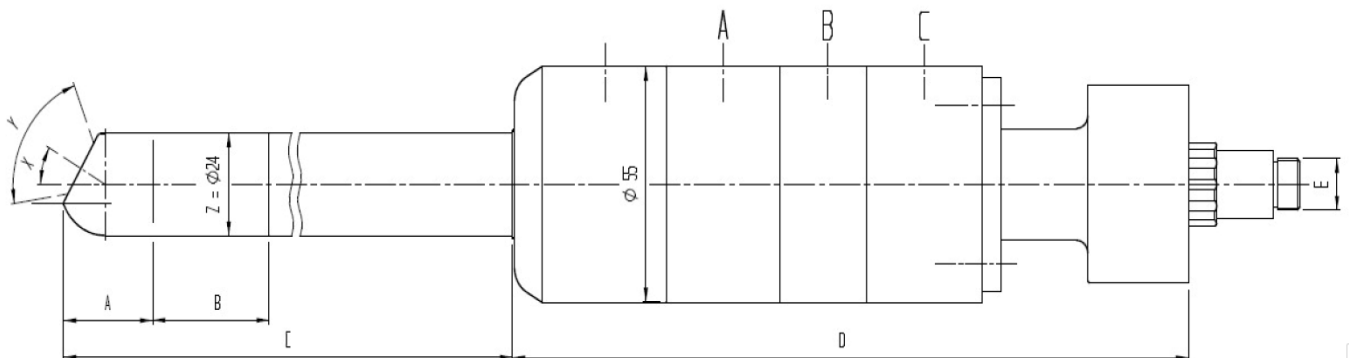
**Customizable Options:** Tailor your tool with accessories like rotary, lifting, and focusing drives. We accommodate customized requirements and dimensions.

Our general specifications:

- Operating Temperature max. 2000°C
- Operating Pressure max. 40 bar

### Measures

<b>A</b>	Probe tip	25 mm
<b>B</b>	Coated length	35 mm
<b>C</b>	Effective probe length	990 mm
<b>D</b>	Cooling media connection	190 mm
<b>E</b>	Camera adapter connection	M12x1
<b>X</b>	Standard view direction	0°, 30°, 45°
<b>Y</b>	Max. view angle	60° at 0° 80° at 30° 55 at 45°
<b>Z</b>	Probe diameter	24 mm
<b>L</b>	Max. standard length	1500 mm



### Details

	Pressure	Mass flow
<b>D</b> Cooling water (demineralized)	P min. = 15 bar P max = 30 bar	min. 120 g/s (temp. in at max. 20°C)
<b>E</b> Endoscope or camera cooling (air or nitrogen)	P min. = 6 bar P max = 15 bar	min. 3 g/s
<b>F</b> Curtain air for the viewing windows (air or nitrogen)	P min 12 bar over the combustion chamber pressure	min. 2 g/s

# Adaptable and Elastic

## Our flexible probe

Discover the versatility of our flexible probe FOS, equipped with a high-resolution mini camera for clear inspections and adaptable features tailored to diverse environments.

### Features

Equipped with a high-resolution mini camera, the FOS probe offers clear inspection capabilities with adjustable viewing angles and a wide field of vision.

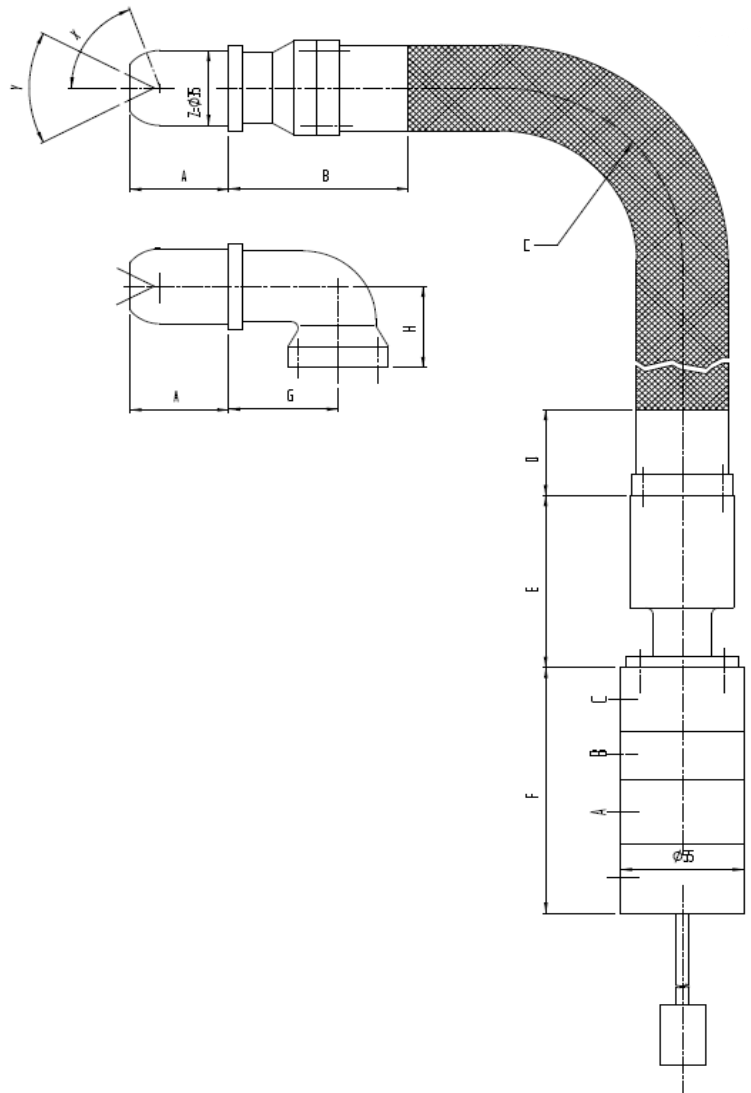
Featuring interchangeable head pieces for diverse environments and a flexible shaft for manoeuvrability, our probes adapt to various inspection needs.

Our general specifications:

- Operating Temperature max. 2000°C
- Operating Pressure max. 40 bar

### Measures

<b>A</b>	Probe tip	40 mm
<b>B</b>	Rigid length	60 mm
<b>C</b>	Flexible length Bending radius min.	≤ 2000 mm 150 mm
<b>D</b>	Rigid length	50 mm
<b>E</b>	PV lead through	specifiable
<b>F</b>	Cooling media connection and distributor	0° - 80°
<b>X</b>	Viewing direction infinitely adjustable	0° - 70°
<b>Y</b>	Viewing angle	max. 55°
<b>Z</b>	Probe diameter	35 mm



### Details

	Pressure	Mass flow
<b>D</b> Cooling water (demineralized)	P min. = 15 bar P max = 30 bar	min. 150 g/s (temp. in at max. 40°C)
<b>E</b> Endoscope or camera cooling (air or nitrogen)	P min. = 6 bar P max = 15 bar	min. 150 g/s

# Solutions for more Optical Probe Accessories

Effortlessly explore with our lead-through accessories, ensuring precision with our Probe Support and Control Unit. Customize your setup with rotary drives, lifting drives, and focusing devices, seamlessly integrating for enhanced inspections.

## Unlocked Versatility

Navigate challenging environments effortlessly with our lead-through accessories, enabling seamless exploration in pressure vessels and combustion chambers.

With our Probe Support and Control Unit you can ensure precision and stability during inspections, guaranteeing optimal performance and accuracy.

## Customisable Solutions

Elevate your inspection capabilities with our range of customizable accessories, including rotary drives (up to 300°), lifting drives, and focusing devices.

With different combination possibilities such as borescopes, light sources, drives, and camera systems, you can create the perfect setup for your specific requirements.

## Seamless Integration

Our optical probe accessories seamlessly integrate with existing inspection systems, ensuring compatibility and ease of use.

Whether you're upgrading your current setup or starting fresh, our accessories effortlessly adapt to enhance your inspection capabilities without disruption.



*Unlock new possibilities and elevate your inspection processes to new heights with Tresch + Kieliger's optical probe accessories.*