

PS BOX is a set of optical measurements heads, fixtures and supporting rings which allows to scan a profile of internal surface of small and extra small pipes.

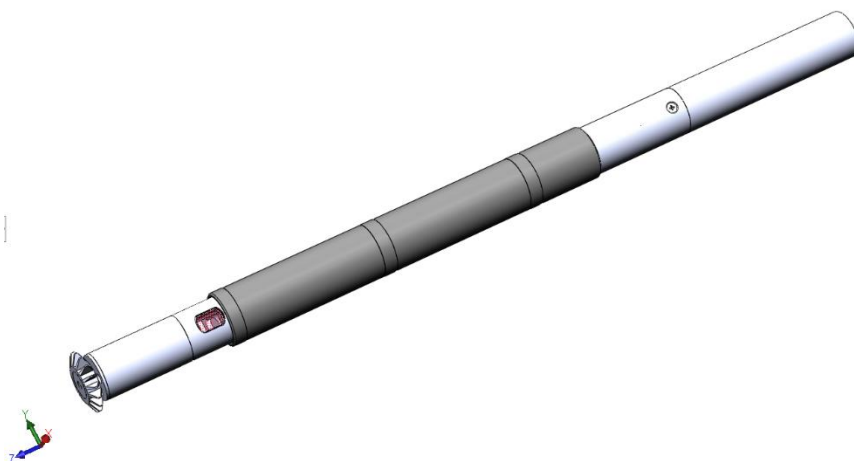
FEATURES

- non-contact laser 3D scanning
- laser alignment *)

APPLICATION

Quality and geometric dimensions check during production as well as periodic inspection.

- Smooth and Profiled pipes
- Stators and etc



MEASURABLE PARAMETERS

The instrument allows for measurement of:

- Inner diameter
- Ovality
- Out-of-roundness
- Straightness *)

The instrument scans profile of inner surface and performs:

- Surface anomalies detection
- Calculation of the deviation from the shape
- Calculation of the geometric dimensions of the profile of the inner surface

The system performs laser-alignments using integrated PSD sensor and external laser emitter.

DESCRIPTION

PS BOS is a set of measurement heads (ROT). Each measurement head covers a particular diameter range. A measurement head is equipped with a special fixture/supporting rings/spacer (if necessary) which allow to conveniently insert the head inside the pipe, perform inspection and then remove it.

Measurement heads have onboard a rotating laser scanner, encoder and straightness detector*. It combines the sensors data to get the full 360° cross-sectional profile of the pipe or stator.

Straightness measurement is performed with an integrated PSD module that measures deviation from a reference laser beam. An external laser source is needed when a straightness (alignment) option is ordered. A straightness option is available on request for a few models of ROTs.

The head is moved along the pipe manually using a telescopic rod. An external auto feeder is available on request,

Measurement results are displayed on a PC in real time. Measured data can be displayed, protocolled and archived according to customer requirements. PANASONIC FZ-G1 Tablet is offered as a standard user interface.

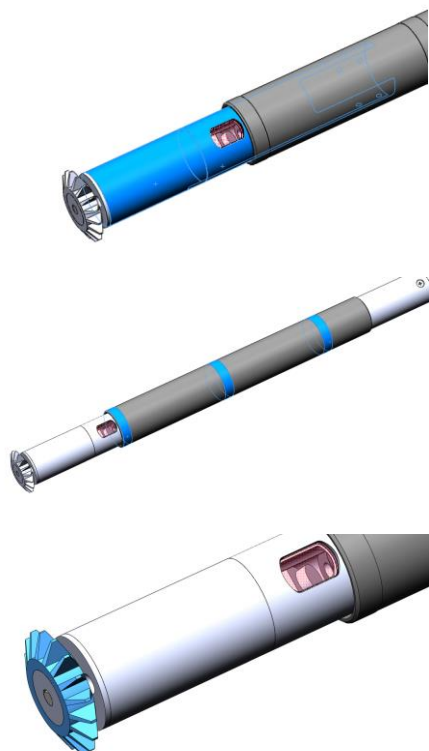
PS BOX is supplied in rugged Pelican box. Every PS BOX is tailored made and can include one or many measurement heads, fixtures/supporting rings/spacers for particular application. As all solutions are unified, any box can be upgraded in the future to cover more measurement tasks.

The minimal measurable diameter of the pipe at the moment is 16,5 mm. Minimal diameter of the pipe for which a straightness (alignment) option is available – 25 mm.

SPECIFICATION

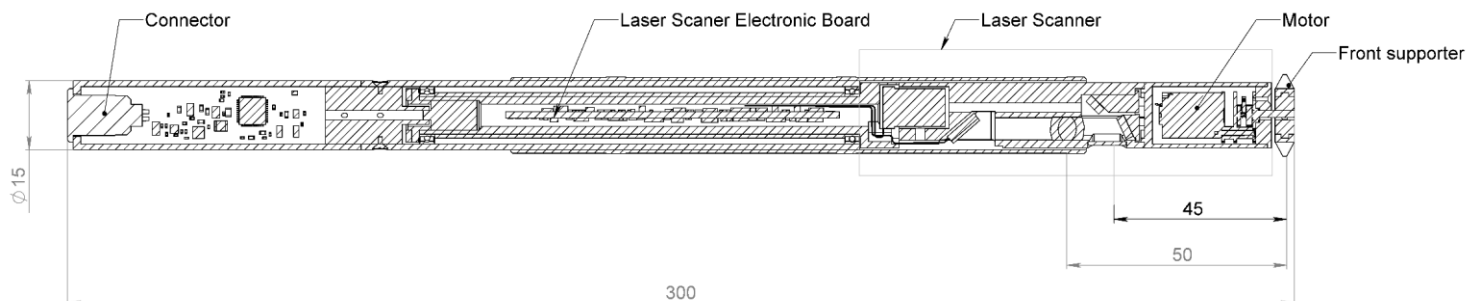
	5 mm with accuracy of 5 μ m 10 mm 7 μ m 15 mm 0,01 mm 20 mm 0,015 mm
Diameter Range, mm	Customer when ordering can choose any Base Diameter from 18 mm (16,5 on request) and diameter range from the list above. A measurement head will measure diameters from Base Diameter to Base Diameter + Diameter Range. <u>For example</u> , ROT20-25 measures pipes with diameter range of 20-25 mm and accuracy of 5 μ m.
Number of scanners in one head	1 (binocular scanners are available as well)
Pipe length, m	Up to 10 (theoretically can be longer)
Straightness channel range, mm	+/- 2.5
Movement method	Manual by rod or Auto feeder
Connection "probe"- "computer"	Wire
Power	220 V 50 Hz 200 W via power supply

A measurement head is a long cylinder which consists of:



- Laser rotating scanner (highlighted)
 This is a miniature rotating triangulation sensor. Made as a small cylinder with diameter of 15 mm, it allows to measure pipes of any kinds with inner diameter from 16 mm.
 The sensor is linked to a high resolution rotating encoder that secures stable scanning of internal surface of the pipe.
- Centering rings (highlighted)
 Easily interchangeable rings center a measurement head inside the pipe. A gap between the pipe and the head should not be more that 0,5 mm during measuring.
- Front supporter (highlighted)
 It supports the end of the head and helps the motor integrated in the head to rotate the laser scanner.
- Electronic boards;
- Cable connector;

OVERALL DIMENSIONS



Minimal distance from the pipe edge to the first cross-section which can be measured is 45 mm. In case you need to inspect the pipe from the very beginning please order a special manual or auto feeder.

Where to buy

D-TEST OMS HQ (contact us to find out a contact of our rep in your country)

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