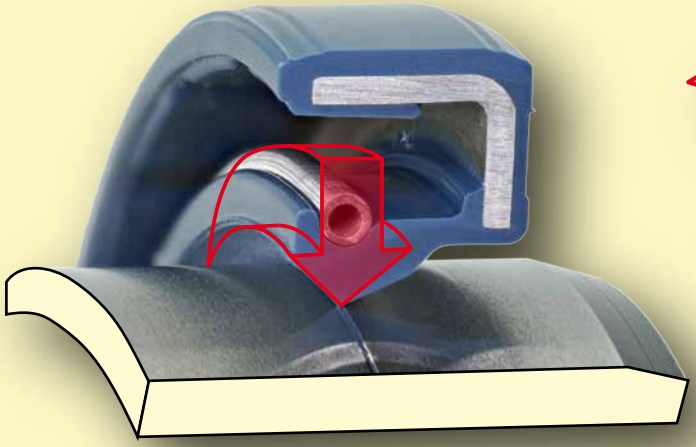
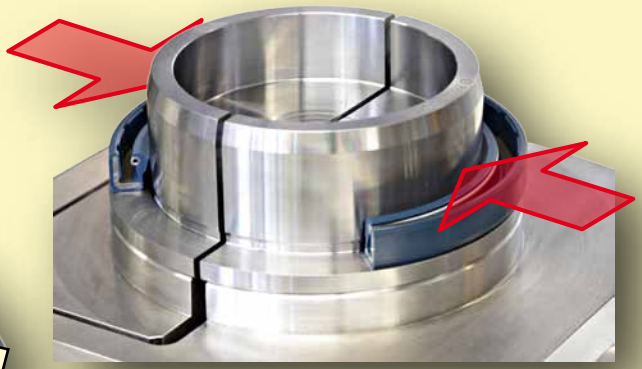
IMA - Radiameter

Measurement of Radial Load according to DIN 3761-9 with a fast, reliable and proven Desktop Device





measurement of radial load with unique diameter compensation for all types of seals

tabletop measurement device

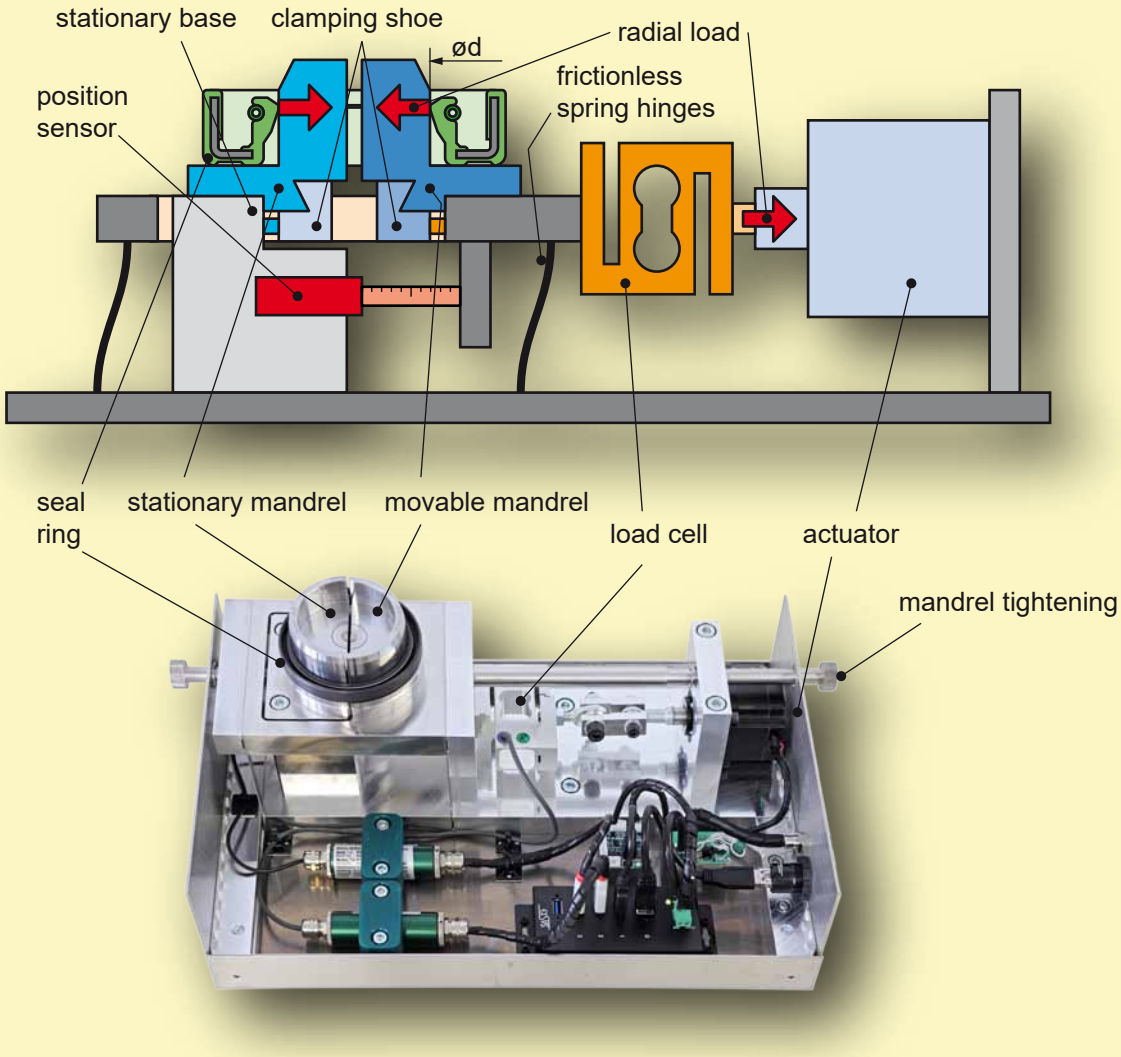
Working Principle

measuring device with changeable test mandrels, one stationary the other radial movable

→ when a seal ring is mounted on the mandrels, the radial load of the seal ring pushes the mandrels together

→ the position of the movable mandrel is measured and dragged back to the nominal diameter ød by an actuator

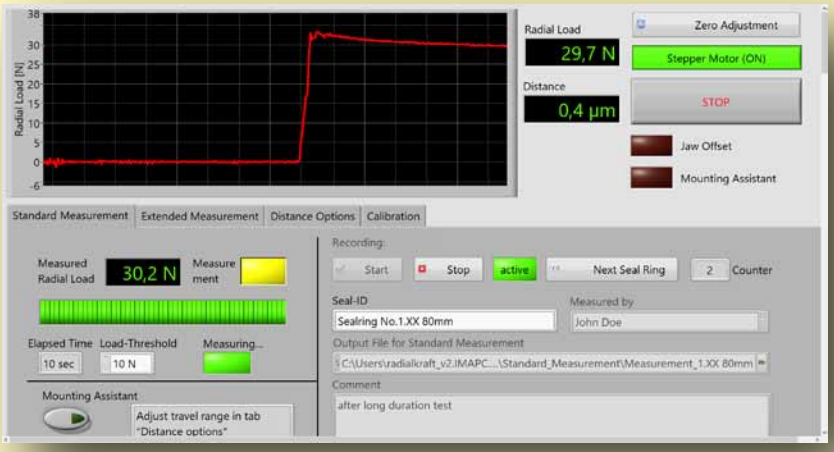
→ the radial load applied by the seal ring is detected by an inline load cell



Key Features

- **proven and tested:** the measurement principle is according to the well established DIN 3761-9 method.
- **high accuracy**: by using spring hinges all moving parts are supported frictionless.
- **robust design:** with convenient jigs, the load cell and mandrel position can be calibrated by the operator at any time.
- **best practice:** since the distance between the mandrels is controlled, the radial load is always determined at nominal sealing diameter. Such a diameter compensation is crucial when stiff seals like PTFE lip seals, O-Rings or even hydraulic seals have to be measured. The IMA-Radiameter is the onliest commercial measuring device available with diameter compensation.
- **easy-assembly-mode:** For easy seal mounting the mandrels can be moved together, which decreases mounting force considerably.
- **convenient:** the mandrels have a new improved clamping sytem which is easier to manufacture, self aligning and tightened by clamping shoes - no tools needed. Existing mandrels can still be used with an adapter.
- **most versatile:** the mandrels can be made up to 300 mm test diameter, also adapters for other mandrel clamping sytems are available.
- **large band width for radial load:** by selecting an appropriate load cell, a load range can be handled from low 0-30 N (soft, small diameter seals) up to high 20-3000 N (hydraulic seals).
- **data documentation:** measurement data is recorded and can be exported, shorttime (1 or 10 sec.) or longtime measurements (over hours/days) are easy to configure.
- **user friendly:** the Windows based software helps and guides the user on data aquisition.

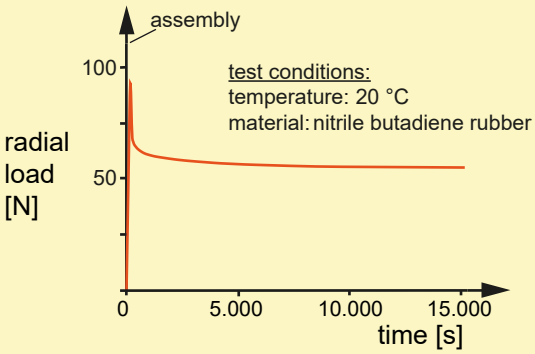
IMA - Radiameter Control



- user friendly control, based on Lab-View
- stand alone software
- realtime radial load display
- configurable basic measurement
- longtime measurement
- data recording
- online operating instructions
- free configurable measurement plans
- force- and position calibration

Possible Applications

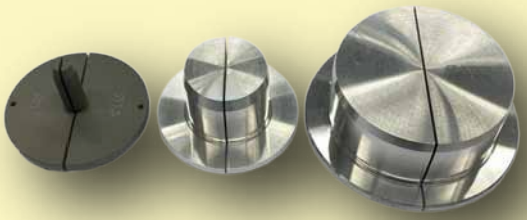
- quality control for seal production or for seal assembly
- failure analysis
- measuring of time-dependant relaxation behaviour
- comparision of different seal types or seal manufacturers
- comparision before and after field tests
- measuring with and without garter spring in order to distinguish between spring and elastomer radial load
- identification of material properties for FE simulations



Optional Available

- version with tempering chamber
- integrated air heating up to 150°C
- by external liquid cooler and heat exchanger down to -40°C

Accessory



mandrels in different material and diameter

adapter for existing mandrels made according DIN 3761-9 layout

Benefit from the measurement device development driven by the research activities at the fluid sealing group at Institute of Machine Components of University of Stuttgart

Technical Data IMA-Radiameter

configurable force sensors	up to 3000 N
split mandrel measurement	according DIN 3761-9
exchangeable split mandrels	
measurable sealing diameter	up to 300 mm
diameter compensated design	
automated measuremement data recording	
easy-assembly-mode for stiff seals	
data export via text file	
sampling frequency	4 Hz
power supply	230 V / 110 V
interface to computer	USB 2.0 or higher
dimensions (H x W x D)	134 x 475 x 282 mm
weight	18 kg

A Cooperation between:

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