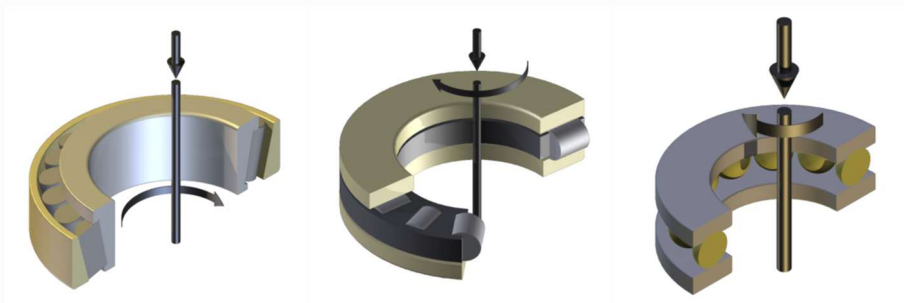


RCF 2 ROLLING BEARING TRIBOMETER

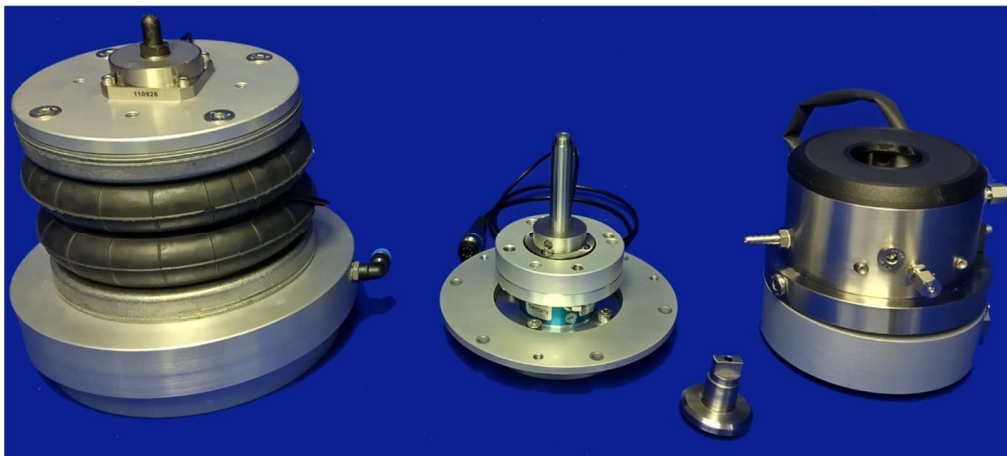
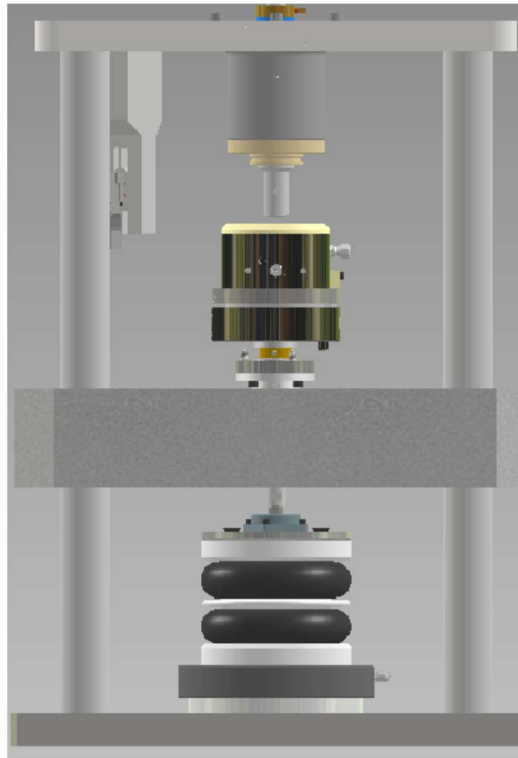
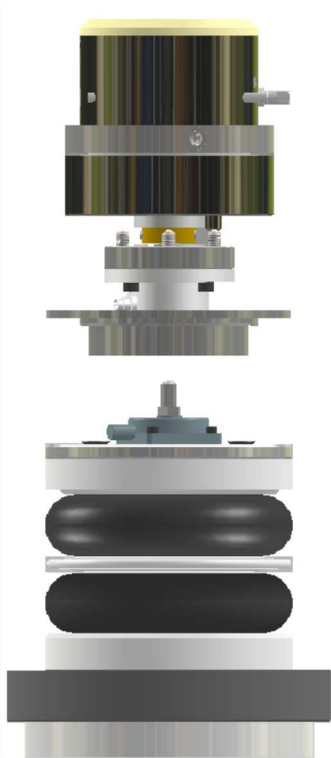


Description

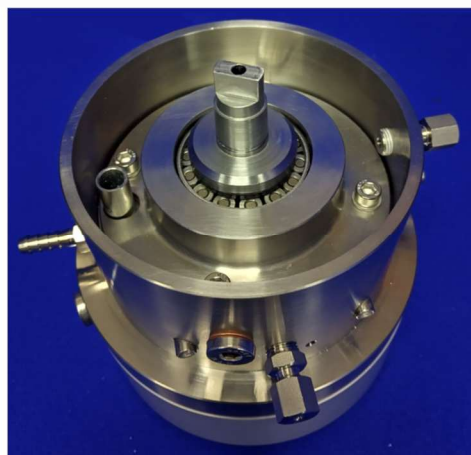
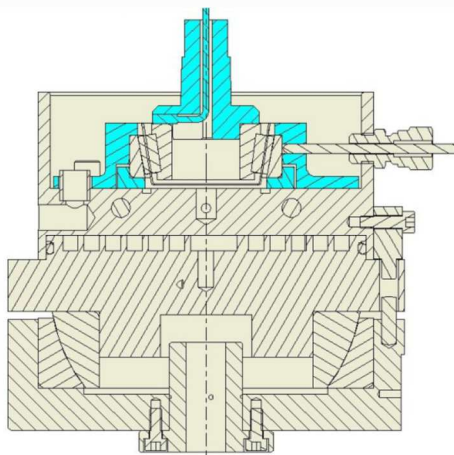
The RCF 2 Rolling Bearing Tribometer is designed for running friction loss tests on rolling element bearings, including large and heavy axial load taper roller bearings. Two alternative test assemblies are available, one for testing smaller bearings at loads up to 10 kN and one for testing large bearings at loads up to 40 kN. The maximum speed is 7,500 rpm.

RCF 2/10 Low Load Range Test Assembly

This assembly comprises a self-aligning test reservoir, with a central lubricant feed and drain. The reservoir is electrically heated and includes passages for circulating coolant. The reservoir is mounted directly on a 10 Nm in-line friction torque transducer. The assembly includes a servopneumatically controlled pneumatic load bellows with force transducer for load feedback: load range 200 to 10000 N.



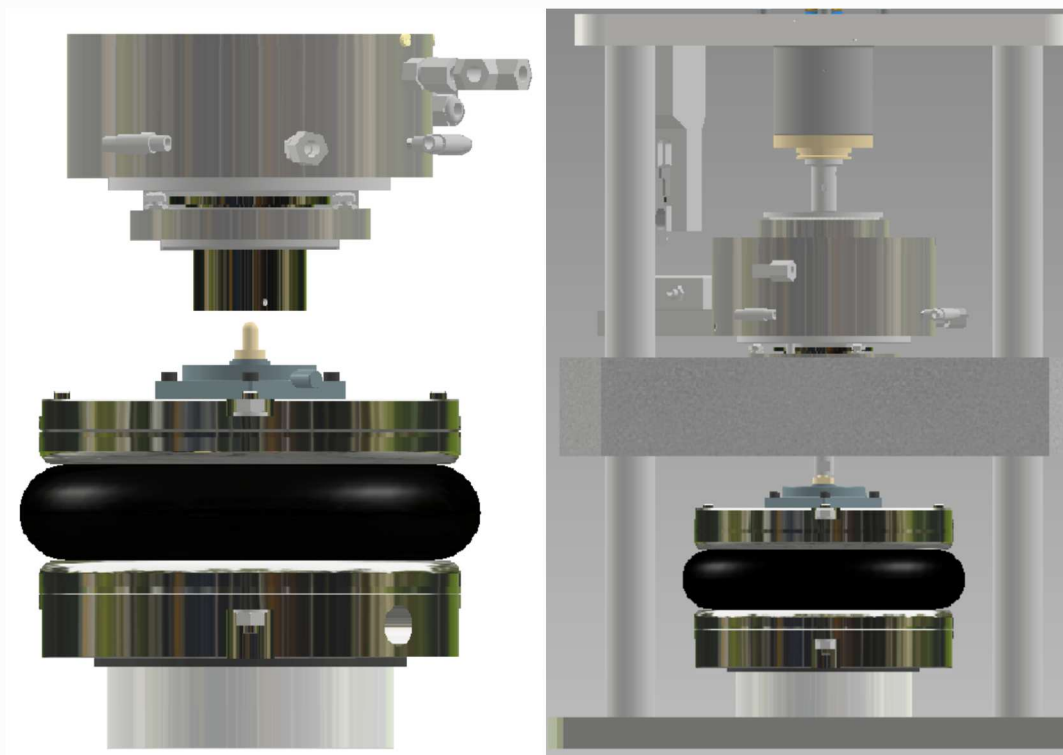
Load on the test bearing is reacted directly by the machine spindle bearings.



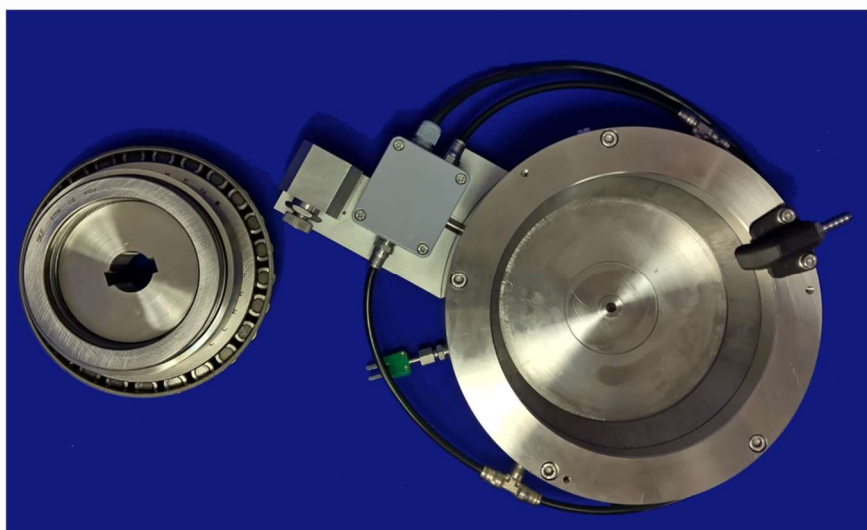
Custom bearing tooling is not included and must be ordered separately, to meet the user's specific requirements. The maximum bearing O/D that can be accommodated is 60 mm.

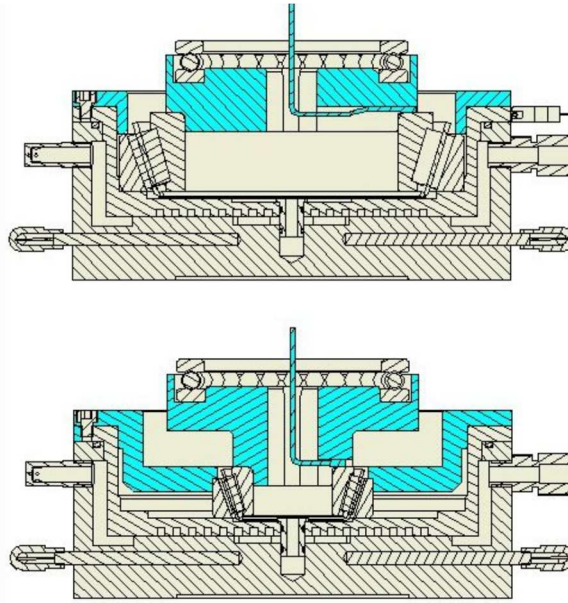
RCF 2/40 High Load Range Test Assembly

This assembly comprises a self-aligning test reservoir, with a central lubricant feed and drain. The reservoir is electrically heated and includes passages for circulating coolant. The reservoir has torque arm and is torque reaction mounted on a combination of taper roller bearing (for rotational freedom) and spherical plain bearing (for alignment). The torque arm reacts against a machine mounted load cell for friction torque measurement. The assembly includes a servo-pneumatically controlled pneumatic load bellows with force transducer for load feedback: load range 2000 to 40000 N.

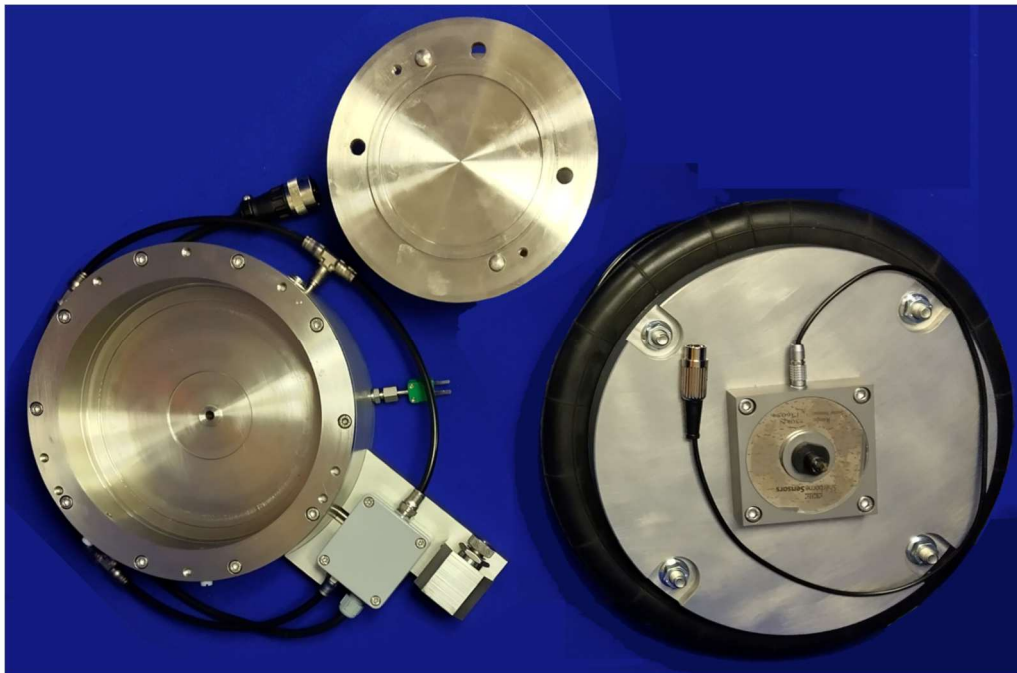


Load on the test bearing is reacted by a ball thrust bearing mounted on the underside of the machine spindle housing, thus ensuring loads are not reacted by the machine spindle bearings.





Custom bearing tooling is not included and must be ordered separately, to meet the user's specific requirements. The maximum bearing O/D that can be accommodated is 180 mm.



Lubricant Circulation System

A lubricant service module is recommended for all types of test adapter. The PSM-O service module has a sump tank with immersion heater, delivery and scavenge pumps and oil to water heat exchanger, for cooling.

A separate water supply or laboratory chiller can be connected to the test adapter cooling passages, to provide additional cooling capacity, if required.

Control and Data Acquisition

Control and data acquisition are implemented via host PC running COMPEND Windows compatible software, in conjunction with a Phoenix Tribology USB micro-controller interface.

Automatic control is implemented via user programmable test sequences. Manual control is implemented using on screen toggles. Data is stored to hard disc in either .csv or .tsv file formats.

Technical Specifications

Contact Configurations:	Taper Roller Bearing Angular Contact Bearing Thrust Ball Bearing Roller Thrust Bearing
Rotational Speed:	100 to 7,500 rpm
Motor:	4.0 kW ac @ 1,500 rpm 50% overload available for 30 seconds
Heated Block Power:	550 W
Temperature Sensor:	k-type thermocouple
Vibration Sensor:	piezo-electric type with adjustable threshold sensitivity and cut-off time
Interface:	Serial Link Interface Module
Software:	COMPEND 2000

Controlled Parameters	Rotational Speed Temperature Load Test Duration
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Recorded Parameters	Rotational Speed Friction Torque Temperatures Number of Revolutions Test Duration Vibration Sensor Output
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RCF 2/10 Low Load Range Test Assembly

Friction Torque:	10 Nm In-line Torque Transducer
Load Reaction:	Spindle Bearings

Spindle Bearing Load: 10,000 N @ 3,000 rpm
4,000 N @ 7,500 rpm
Maximum Test Bearing O/D: 60 mm
Maximum Temperature: 150°C

RCF 2/40 High Load Range Test Assembly

Friction Torque: Torque Arm and Load Cell
Load Reaction: Bearing Housing
Spindle Bearing Load: 40,000 N
Maximum Test Bearing O/D: 180 mm
Maximum Temperature: 150°C

Services

Electricity: 380/415 V, three phase,
50/60 Hz, with neutral & earth 7.5 kW
Clean, dry air: 4 cfm at 8 bar (120 psi)

Installation

Floor-standing machine: 900 x 600 x 2000 mm high, 250 kg
Bench-mounting cabinet: 530 x 420 x 300 mm high, 20 kg
Packing Specifications: 2.2 m³, GW 600 kg, NW 450 kg