

Technology Offer

Tribological device for pneumatic cylinders

Summary

A Romanian research institute has developed a device used to test pneumatic cylinders in lab conditions, which can highlight the influence of the lubrication and working pressure on the frictional forces. Although only in the concept stage, it will highlight the evolution of the frictional forces over time, after several hours of endurance. Partners in the field of research, academia and industry are sought for, in order to develop the product and for its technological transfer.

Creation Date	23 September 2014
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Reference	TORO20140619003

Details

Description

The tribological device developed by the Romanian research institute consists of two separate circuits, out of which one is running on ungreased air and the other on greased air, each controlled by a force transducer and by the same single pressure valve associated with a pressure sensor. The device can comparatively measure and record the variation of the occurring frictional forces.

The elaborated device has a pneumatic cylinder, in which there is located a piston provided with rods arranged bilaterally, powered by a pressurized control distributor. In connection with the rods, there have been installed a number of force transducers and sleeves which, at their turn, make the connections with the rods of some pistons arranged in two identical pneumatic cylinders. The first pneumatic cylinder represents the ungreased pressurized pneumatic circuit, together with some check valves, while the second one is the greased pressurized pneumatic circuit that uses some check valves and a "micro mist" lubricator. Both circuits are discharged by the same discharge valve at a pressure that is read by a pressure sensor, in order to measure internal frictional forces, in case of a dry friction compared to greased friction, at the same effective force developed.

The Romanian research institute is looking for EU partners (universities, institutes or SMEs), for research or technical cooperation agreements.

Advantages and Innovations

- the device directly measures the forces required for movement;
- it highlights the influence of work pressure on the frictional forces;
- the comparative recording of the frictional forces graphs is carried out very accurately, both for ungreased and greased air, as the effective force or the load is achieved in the same conditions;
- it can highlight the evolution of the frictional forces over time, after several hours of endurance.

Stage of Development

Concept stage

IPR Status

Patents granted

Comment Regarding IPR status

Patent granted by the Romanian State Office for Inventions and Trademarks.

Keywords

Technology

09001005 Mechanical Technology related to measurements

Market

08002002 Industrial measurement and sensing equipment

NACE

M.72.1.9 Other research and experimental development on natural sciences and engineering

Network Contact

Issuing Partner

NATIONAL INSTITUTE OF RESEARCH AND DEVELOPMENT FOR OPTOELECTRONICS

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Open for EOI : Yes

Client

Type and Size of Organisation Behind the Profile

R&D Institution

Year Established

0

Already Engaged in Trans-National Cooperation

No.

Languages Spoken

English

Client Country

Romania

Partner Sought

Type and Role of Partner Sought

The partners sought should be:

- research institutes and universities willing to develop new applications for the product, to test it in laboratory and in real conditions
- SMEs able to introduce it in the manufacturing process.

Type and Size of Partner Sought

SME 11-50, University, R&D Institution, SME 51-250

Type of Partnership Considered

Technical cooperation agreement
Research cooperation agreement