Technology Offer

Rotary hydraulic machine used as pump or motor

Summary

A Romanian research institute has developed a rotary hydraulic unit with radial pistons placed in a central rotor, which can be used either as a pump or as a motor, both in open circuit and closed circuit. The institute is looking for research, academic and industry partners in order to develop the product and for its technological transfer.

Creation Date	10 July 2014
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Details

Description

A team of researchers from a Romanian research institute have invented a hydraulic unit, which is made of a rotor with an odd number of pistons, arranged radially and equidistantly. The pistons are in permanent contact with a circular eccentric hole of a rolling track, which can be reversed in terms of its position in an external casing, embedded on a positioning pin, closed in the back side with a hydraulic connection cap, containing a distribution plate. By means of some semicircular slots, the distribution plate makes the hydraulic connection between the connecting port and the slots of pistons, as well as with a fastening cap in the front side. A drive shaft situated in a bearing is coupled to the rotor through a groove and a coil spring to create axial pressure on the front distribution. In the hydraulic connection cap, there are two check valves which take over the internal drainage flow and a selector valve which brings pressure in an offset chamber, in view of the hydrostatic axial balancing of the rotor.
The Romanian research institute is looking for EU partners (universities, institutes or SMEs), for research and/or technical cooperation agreements.

Advantages and Innovations

- the rotary hydraulic machine can be used either as a pump and as a motor, by the use of a front distribution through semicircular slots;
- having internal drainage, the rotary hydraulic machine can be used in closed circuit, without outer compensation of the drained flow;
- the correlation of the rotation direction of the drive shaft with the direction of oil movement can be done at one's will, by inverting the positioning of the rolling track on the blocking pin.

Stage of Development

Concept stage

IPR Status

Patents granted

Keywords

Technology

04002012	Other energy related machinery

Market

08003006	Power transmission equipment (including generators & motors)

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 are:
- research institutes and universities willing to develop new applications for the product, to test it in laboratory and in real conditions and
- 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