

Technology Offer

Divider - adder for hydraulic flows

Summary

A Romanian research institute has invented a rotary hydraulic equipment with axial pistons, which can be used for hydraulic drive installations, for the synchronization of motions at various mechanisms. Although this equipment is only in the concept stage, it is previewed to have zero dividing errors and a two-way circulation of the fluid. The Institute is looking for partners in the field of research and production in order to develop the product and for technological transfer.

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| Creation Date | 20 June 2014 |
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| Reference | TORO20140617001 |

Details

Description

A Romanian research institute has developed a rotary hydraulic equipment with axial pistons, which eliminates the disadvantages presented by the gear hydraulic rotary dividers built on the principle of multiple pumps and slide valve and electromagnetic proportional control hydraulic dividers.

The divider-adder is made up of a tubular casing in which there is a rotor in a bearing on a hollow shaft, containing an odd number of axial pistons, each fitted on a cylindrical rod which can slide between two identical guide bushes, making each three compression chambers. Two of the compression chambers are equal in volume while the third one has a cumulative volume of the former two, that rest on a tilted disc in which an exit cap is pressed by the means of a cylindrical pin. The rotor is closed in the front side with two distribution caps that have two sets of distribution holes, in constant contact with an input cap, for the purpose of an accurate splitting of the flow into two equal flows on the travel direction, with the purpose of adding them together on the reversed travel direction, as an effect of the rotor spinning.

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

Advantages and Innovations

- the dividing error is practically zero, because the splitting is done by the same piston that slides in the same slot and along the same stroke, half a turn to the left and the other half turn to the right;
- the divider-adder has a two-way circulation, acting as a flow divider in one direction and as a flow adder in the opposite direction;
- the same sized device can work with a wide range of flow rates, as the ratio of the extreme permissible internal rotative speeds is very high.

Stage of Development

Concept stage

IPR Status

Patents granted

Keywords

Technology

02006002

Construction methods and equipment

02006006

Construction engineering (design, simulation)

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**

Dissemination

Send to Sector Group

Creative Industries

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, on the one hand, research institutes and universities willing to develop new applications for the product, to test it in laboratory and in real conditions and finally, on the other hand, 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