

Modern Techniques for Remanufacturing Hydraulic Equipment in the Context of Circular Economy and Energy Efficiency

Cătălin Dumitrescu¹, Adinel Gavrus², Radu Rădoi¹, Ștefan Șefu¹,
Alexandru-Polifron Chiriță¹, Ana-Maria Popescu¹, Dragoș Preda³

1 National R&D Institute for Optoelectronics, Subsidiary Hydraulics and Pneumatics Research
Institute, 14, Cutitul de Argint Street, district 4, Bucharest, Romania

2 Institut National des Sciences Appliquées de Rennes, Rennes, France

3 S.C. Rolix Impex Series S.R.L., 256 Basarabia Boulevard, district 3, Bucharest, Romania
dumitrescu.ihp@fluidas.ro

Abstract. The article presents several current methods of remanufacturing hydraulic components, a trend that is encouraged, on the one hand, by concerns about reducing material consumption in the context of the circular economy - some of these materials being expensive or in short supply. On the other hand, remanufacturing by modern methods can lead to a decrease in energy consumption in the devices concerned, due to obtaining shapes that are difficult to achieve by classical procedures. Among the remanufacturing processes considered there are additive manufacturing, metal coating, reverse engineering, etc.

An important step in the remanufacturing process is testing of components, which certifies the achievement of performances at least equivalent to those of the original products. To this end, the article presents a test bench solution with the help of which tests can be carried out on hydraulic devices such as hydraulic pumps and (linear or rotary) motors, hydraulic directional control valves or other types of valves.

Keywords: remanufacturing, additive manufacturing, reverse engineering, circular economy, energy efficiency, test bench

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