



TITLE: MAN-ROBOT COLLABORATIVE POLISHING / ROUGHING TOOL

TECHNOLOGY DESCRIPTION

It is a polishing tool designed to be attached to the end effector of an industrial or collaborative robot. It is equipped with two sensors that measure the force generated by the robot on the surface and the force generated by the operator on the tool. If the robot is already equipped with a sensor on its end effector, one of them can be removed from the tool. The robot can therefore respond to both signals so that it can be used to teach the robot to perform a task (case of expert operators) or also for training new operators.

The tool is equipped with a motor that allows the rotary movement of a polishing or roughing disc, at a constant speed, chosen by the operator through the human-machine interface (HMI). The system provides also the possibility of setting the optimum speed in case

of known tasks. The HMI can be removed from the rest of the tool attached to the robot to avoid collisions with the environment in case of autonomous work or it can be used in another robot.

The tool is equipped at its base, as an option, with a coupling system consisting on a dumper and a spring that allows the robot to make contact with the surface smoothly and that can be electronically locked once the polishing process starts to avoid robot instabilities during the task.

BUSINESS APLICACIÓN SECTORS

Industrial sectors where the application of surface roughing / polishing operations are required, such as automotive sector, furniture sector, manufacture of porcelanic items or leather industry.

TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

The fundamental advantages of the system are its versatility and manoeuvrability that allows the roughing / polishing operation to be carried out easily, avoiding damages on the surface and also allowing new operators learning by doing.

TECHNOLOGY DEVELOPMENT LEVEL

A prototype is available for development and commercialization.

INTELLECTUAL PROPERTY RIGHTS

Protected by utility model in Spain. The rights correspond to the Miguel Hernández University of Elche (51%) and Polytechnic University of Valencia (49%)

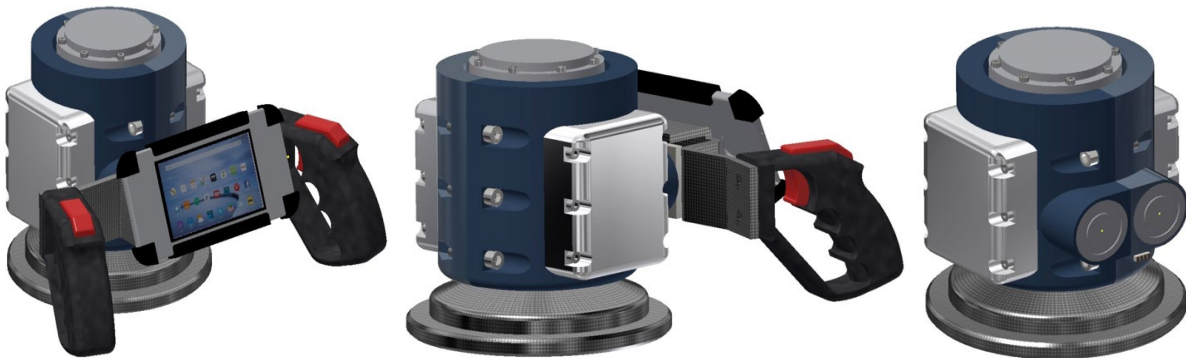
SEARCHED COLABORACIÓN

Collaboration with interested companies to carry out proof of concept that facilitate its industrial implementation and commercialization.

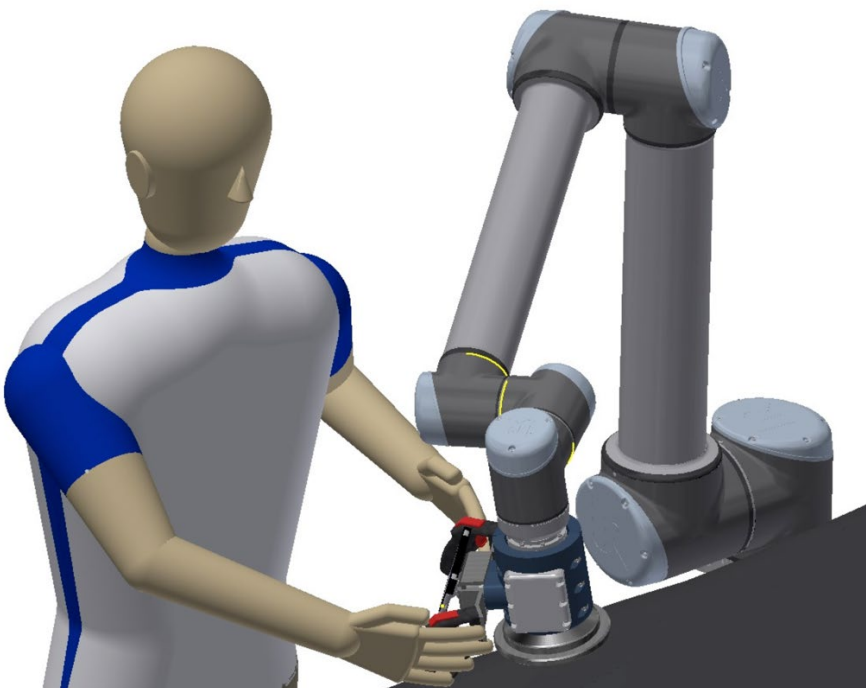


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RELATED PICTURES



Picture 1: Collaborative polishing tool



Picture 2: Operator carrying out a polishing task using a robot



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