Wiping robot makes operator's life easier

More intelligence, less work

A prime example of an automated solution: cleaning spin-nerets. Thanks to its intelligent control system, the Oerlikon Manmade Fibers wiping robot not only saves production time, work and operating costs, it also generates benefits for HR and health management.

Sure, manual work also has its benefits. However, nobody – and particularly not operators – look forward to manually wiping the spinnerets in the spinning head. In a fiercely hot environment, it involves using a brass tool to remove residual melt from the extruded filaments from the spinneret. Here, lots of silicone oil is atomized from aerosol cans. In view of this overall extremely elaborate measure and the costs involved, production managers are hardly thrilled by the prospect of carrying out this task.

Because a maintenance job of this nature practically cries out for automation, Oerlikon Manmade Fibers has now developed a wiping robot. And a smart one at that, as its control unit is able to communicate with the production system. "This intelligent control system contains the solution's actual expertise, which networks machines and processes – very much in line with the Industrie 4.0 concept", explains Stephan Faulstich, POY Technology Manager at Oerlikon Barmag. Initially, this means: the information relating to all wiping positions, cycles and times can be saved in the management system. The robot accesses the saved wiping intervals in an automated and safety-relevant manner – without manual intervention, but accompanied by a whole range of advantages.

To this end, the robot can cope with up to 48 positions, corresponding to one entire production line. Both the wiping quality and the oil application remain constant around the clock. Furthermore, the silicone oil from canisters deployed here costs just a fraction of the manually-utilized 500-milliliter (ml) spray cans, which contain merely 12 ml of oil, as the lion's share is made up of propellant gases that are harmful to health and environment. So, applying oil from canisters saves costs for the procurement, storage and disposal of spray cans.

However, more decisive here is the impact of the intelligent control system, with whose help the spinning pump can be moved up and down in an automated and 'in-time' manner. To this end, pump stops can be kept to the absolute minimum using a robot, considerably reducing the impact of the wiping on both the polycondensation system process stability and on the yarn data of the spun yarn. And production times can be increased between two cleaning cycles as well: whereas repeated wiping is required after 48 hours in the case of the manual process, utilizing the robot extends the interval between two wiping processes to up to 60 hours. Customers have already been benefiting from such optimized times: Oerlikon Manmade Fibers wiping robots have been operating at two major yarn manufacturers in China for well over a year now.





Caption:
The wiping robot is suspended on a track system under the ceiling.
The wiping robot can cope with up to 48 positions corresponding to one entire production line.