

Process optimisation in regulator production: New modules integrated into the M2R assembly line

The range of versions of the M2R medium pressure two-stage regulator has undergone continuous development over the last few years and has been adjusted to suit ever changing market requirements. This has resulted in a whole series of different configurations which comply with the wide-ranging requirements of international markets in terms of flexible design and multiple-connection capability.

To take account of this development, efforts have been made on the production side to make the production facilities fit for handling the increased range of versions. With the exception of the connections, the same components have been used right across the range for the M2R basic unit. The various connectors are screwed straight into the regulator housing. This was also the starting point for the optimisation. In the past the inlet and outlet connectors have been screwed into position in a manual operation at a separate workstation.



This stage of connector installation has now been integrated into the existing semi-automatic manufacturing cell. An additional module has been installed for this purpose in which the glue is supplied by a dosing unit to ensure that a uniform bead of glue is applied every time independently of the operator.

After the glue application, the connector is screwed into the housing and then

tightened by a torque screwdriver. During this screwing process the system also monitors the screw-in depth. This achieves a high level of process reliability for the assembly of the inlet and outlet connectors. In addition, a module for testing the strength and tightness has been integrated into the manufacturing cell. There are two independent testing stations in this where the following tests are carried out fully automatically:

- Strength test
- Tightness test at two test pressures (Elster gas pressure regulators are generally checked for leak tightness at two pressures so that pressure-dependent leakage points such as O-ring seals can be reliably detected)
- Test of LPCO bypass flow
- Initial test of the safety shut-off valve (SSV) internal tightness

Two independent testers are used to carry out these tests. These computer-monitored, fully automatic tests guarantee an extremely high level of process reliability.



With this investment in improving production quality and increasing process reliability, Elster is once again underlining the significance it attaches to new markets.