ON-LINE VALVE TESTING
State-of-the-art and cost-effective on-line testing of valves in the field

ON-SITE AND ON-LINE
With on-line valve testing, accurate measurements of safety valves can be made – on-site and on-line – to evaluate the performance of new and existing valves. With on-line valve testing, you improve the efficiency of safety valve testing and reduce costs.

The testing is fast, reliable and effective. With Dens’ equipment and procedures, we test valves from 25+ mm unions. We test all types of safety valves for steam, air, gas and liquid systems with some few exceptions.

HOW ON-LINE VALVE TESTING WORKS
The principle behind on-line valve testing is the use of a hydraulic force that is greater than the closing force on the valve stem. A mechanical rig is placed on top of the valve to be tested and the hydraulic force applied is supplied by a separate hydraulic pump.

THE ADVANTAGES OF HOT TESTING – TESTING UNDER PRESSURE
The advantage of hot testing is that production does not need to be stopped for testing valves. This also means lower fuel costs, since the system’s pressure does not need to be increased for on-line testing.

With on-line valve testing, steam pressure is not increased as with conventional hot testing of safety valves.

On-line valve testing is performed on site. The valve does not need to be removed, which minimises the risks otherwise associated with demounting and transporting valves. On-line valve testing is therefore also ideal for welded valves. Only those valves that are in need of service and repair are removed from the production system.

On-line valve testing saves time and money. On-line testing of safety valves also takes less time than conventional testing.

On-line valve testing during normal operation also automatically means testing under normal conditions, that is, testing under normal process temperatures and pressures. Unreliable, artificial compensation for temperature and pressure, as is done in conventional testing, is not required.

The working environment for on-line valve testing is also significantly better than that for conventional testing. Among other things, the sound level is greatly reduced in comparison with conventional testing. The risk of damage to valves that can arise in conventional testing, e.g., erosion in the valve seat, is minimised with on-line valve testing. This increases the life of the valves.

THE ADVANTAGES OF COLD TESTING – TESTING WITH NO PRESSURE
Cold testing means significantly lower costs for testing valves during the construction of new production facilities, since the valves do not need to be demounted to be tested and set for production operation. Working with safety valves is thus made easier. Only the valves that need service are demounted and removed from the system, which shortens the stoppage time. Correctly set safety valves mean that unplanned production stoppages and consequently significant financial losses can be avoided.
IS ON-LINE VALVE TESTING APPROVED EVERYWHERE?
In Denmark, Dens has approval from Arbejdstilsynet (the Danish Working Environment Authority) to perform all testing together with third party. In Sweden, Dens has developed its own method for controls and approval with a number of facility owners, which means that the facility owner becomes the third party. In other facilities, Dens works with ÅF and Inspecta among others as the third party.

ON-LINE VALVE TESTING – THE INTERACTION BETWEEN TECHNICIANS AND TECHNOLOGY

The on-line valve testing method was developed and patented all over the world 20 years ago by Furmanite as “Trevitest”. Trevitest was subsequently developed into on-line valve testing through Swedish research.

Before the advent of Trevitest and on-line valve testing, testing safety valves required demounting all valves for examination in workshops. This conventional way of working also meant that the facility’s production had to be shut down completely. The whole process was time-consuming and very costly.

*On-line valve testing reduces environmental impact, assures the safety and reliability of facilities, and saves time and money.*