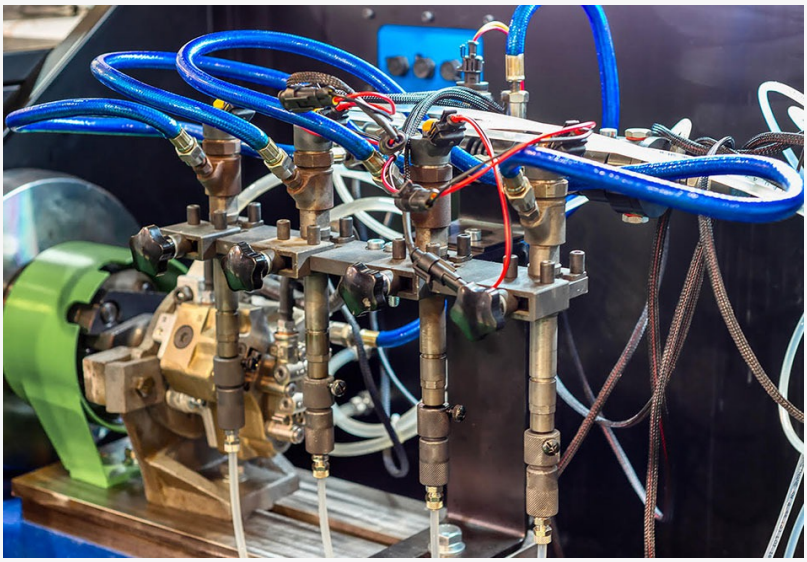
Top #5 of most common errors during leak testing and how to avoid them

There are several errors that you may encounter during the leak test of your products. We will mention them, illustrating the problems to medium to long term.



The most common errors during leakage and flow tests and how to avoid them

MODENA, ITALY, April 19, 2021 /EINPresswire.com/ -- There are several errors that you may encounter on a daily basis during the leak test of your products.

Below we will mention some of them, illustrating the problems to medium to long term.

1) Using the wrong leak detection method

Determining whether a leak test or leak detection method for a particular application is suitable is its leak rate. Unfortunately this simple rule is often violated. For example, plastic parts are tested using the pressure decay method without considering their deformability and changes in volume due to compressed air.

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2) Repeated tests on the same piece

The leak test must be carried out on one piece, only once. However, it is often the case that the operator, after the first test deviation, carries out a new leak test on the same component, obtaining a better result. This operation is wrong because carrying out a double test (especially if the air is not discharged from the workpiece) leads to a double settling of the air inside the component, thus lowering the pressure

drop in Dp.
What is obtained in these cases are therefore false "good pieces" for the leak test, while in reality they are waste components.

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3) Tests on parts not at room temperature

The most influential phenomenon in the leak test is the temperature.
Testing a component that is not at the same temperature as the environment in which the instrument is located can lead to an increase in the pressure inside the workpiece. This causes an increase in the pressure read by the instrument, masking any leaks or returning an error result for positive drop.
There are functions specifically designed to compensate for these variations (or transients), but it is recommended to test your parts under the optimum conditions for leak testing, thus keeping the components to be tested in the same working environment and isolating the test station from draughts, so as to avoid temperature changes.

4) Use of unsuitable pipes and positions

The use of spiral or too soft hoses (e.g. silicone), combined with unsuitable positions (e.g. with soft and thick rubber gaskets), creates problems of poor repeatability of measurements and positive drop phenomena.
Another frequent problem is the incorrect sizing of the closing systems with pneumatic cylinders which, if activated with too high a pressure and using too thick rubber gaskets, create the problem of positive drop.
The only way to have stable, precise and truthful measurements is to use straight Rilsan tubes, of the shortest possible length, and to build positions with O-rings with metal seal on metal.

5) Negligence of operators

It often happens that the operators, during the test, perform operations not suitable for the correctness of the leak test. Touching pipes or parts during the test, moving gears or moving parts during the test can distort the test results.
Testing stations must be designed to isolate the component under test from incorrect operation and be away from heat or cold sources.

In order to obtain reliable results from the leak and flow tests, it is worth testing each piece only once, with great care, under stable temperature conditions and using suitable pipes and fittings.

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