



# APV Testex

## Cost Effective Cross Contamination Detection

Testex is offered as part of APV LifeTime<sup>SM</sup> Testing Services and is used to ascertain the integrity of plate heat exchanger plates. The patented Testex process is principally aimed at the hygienic market, where customers are particularly concerned with cross contamination. Testex can find holes as small as 3 microns, which makes it the most accurate test currently available on the market. The tests are performed at the customer's site and can be performed in as little as four hours if no plate failures are identified.

APV Testex process enables the complete testing of plate heat exchangers. With the use of state-of-the-art electronic monitoring equipment, each plate pack can be analyzed and hard copy results produced along with a test certificate providing a full audit trail.

When Testex was first introduced it was found that more than 30% of heat exchangers were shown to have defective plates. Regular testing enables problems to be eliminated before they develop into a major incident. Testex is a recognized method found in 3A standard T-603-07 as an accepted practice for the testing of HTST heat exchangers.

### Features of Testex:

- The Testex range can pick up even the smallest cracks
- Testing is carried out under pressure
- Utilizes state-of-the-art monitoring equipment
- Identifies the occurrence of cross contamination without the PHE being dismantled
- Adaptable to many models & sizes of PHE's

### Benefits of Testex:

- Provides the customer with plant safety assurance
- Production conditions are simulated as closely as possible during the tests
- Reduces false readings and human error
- Plant down-time is drastically reduced. Plates & gaskets are not unduly stressed
- A wide variety of PHE's can be tested, in differing environments

The comparison (below) details the cost savings of using Testex versus Dye Penetrant test at the customer location. The table depicts savings based on testing ER51TH three section heat exchanger containing 300 plates.

Number of Units	Testex	Dye Penetrant Test
1	\$500	\$760
2	\$1,000	\$1,520
3	\$1,500	\$2,280
Travel time & expenses are not included in the above costs		

APV LifeTime<sup>SM</sup> service assures our customers that their assets are being maintained by factory trained technicians using calibrated testing equipment. We recommend incorporating semi-annual TESTEX service into your preventative maintenance program. Contract APV LifeTime<sup>SM</sup> service customers enjoy discounts, priority response times, and regularly scheduled preventative maintenance from our experienced personnel. APV's portfolio of service programs helps you achieve excellence by allowing you and your associates to focus on your product, not on your equipment.



## Testex - Process Explanation

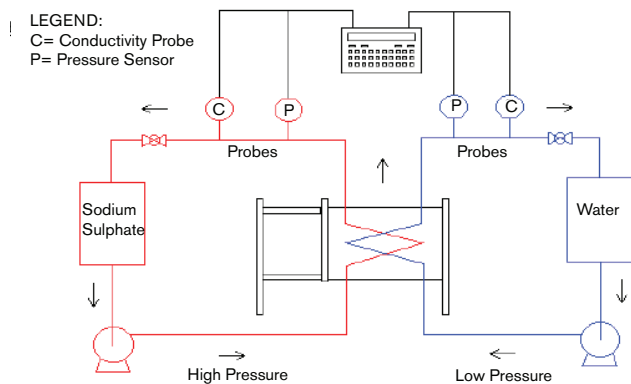
The Testex process consists of the detection of defective plates in the plate heat exchanger through Electrolytic Differential Analysis (EDA). EDA is used to determine if cross contamination is present. A consistent rise in the conductivity of the water indicates the presence of defective plates.

## Electric Differential Analysis (EDA)

Procedure:

- One side of the PHE filled with an electrolyte – usually sodium sulfate
- Other side filled with water
- Solution circulated using pumps
- The pressure of the electrolyte is increased to create a differential pressure of between 30 psi to 100psi
- The conductivity of the water is monitored
- Any consistent rise in conductivity of the water when pressure is applied indicates faulty plates

## EDA Illustration



Many of our customers have been delighted with the speed and efficiency that this service affords, compared with traditional methods. Land O'Lakes, one of the major dairies in America, has a maintenance agreement with APV covering the annual inspection of all their heat exchangers, as well as spares supply. Due to their proactive approach to quality, Land O'Lakes is enthusiastic about the Testex technology, because it provides them with an audit trail on all their heat exchange equipment.

**According to Dan Plinski, Director of Engineering at Land O'Lakes, Eastern Operations facility, in Carlisle, PA,** "with APV's service program we can identify heat exchanger problems and implement preventive actions prior to failure. Testex provides us with a clean, accurate and quick means of certifying the integrity of our plate heat exchangers."

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Issued: 01/2009 1101-01-08-2008-US

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