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# LT6 Touch Screen Trimmer Mount Leak Detector



## Product Overview

Revision 2

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## 1. Summary

The improvements in electronic and pneumatic technology over the past 10 years have enabled a new leak tester to be designed which takes advantage of these improvements.

Features which have been added include:

### 1.1. *New Touchscreen Microprocessor control system*

- **Reliable** - Hardened against very high levels of mains spikes and static discharges.
- **Flexible** - can quickly be re-programmed for special needs.
- **Improved Accuracy** - 12 bit A/D convertor is 32 times as accurate as other designs.
- **Future-proof** - Large number of spare inputs and outputs to allow future expansion provided at no extra cost.
- **Easy to Set** - 240x128 pixel graphics touchscreen display allows quick, accurate setting and display of test parameters.
- **Easy to Fault Find** - Diagnostics are provided from the touchscreen, allowing engineers to quickly verify every part of the system.
- **International** - Since all information is presented on the touchscreen, it is easy to change the program to use another language (where the system is to be used in a non - English speaking country).

### 1.2. *Extra Functions*

Spare inputs and outputs are available to connect sensors for Handle Flash Detection, correct Number Failed Count, Jam detection, vision systems, alarms.

### 1.3. *Improved Safety*

Since all adjustments are from the front panel, it is no longer necessary for setters to have access to the inside of the control cabinet.

### 1.4. *Self-Diagnostics*

The cost of program memory is now very low, so it is easy to incorporate features that were not previously practical. Alarms can be displayed for : Incorrect threshold setting, test head misalignment, bottle crushing during test and high reject rate. For example, if channel 1 of a twin channel system produced significantly more rejects than channel 2, a message would be displayed “CHECK HEAD 1 ALIGNED”.

### 1.5. *Flexible Design*

The design is highly flexible with respect to software, electronics and pneumatics.

### 1.6. *Cost Effective*

The circuit card design is specifically for this application, and does not incorporate unnecessary components for another machine. However, great care has been taken to ensure that the system is flexible, re-programmable and reliable. Spare inputs and outputs have been incorporated so that extra functions can be added whenever required.

### 1.7. *Higher Reliability*

This is possible due to technology improvement, reduced component count, integration of all electrical functions onto the pcb, and an in-depth understanding of failure mechanisms.

## 1.8. Interference Immunity

The voltage spikes produced by electromechanical switching and static discharges can cause electronics to fail. This failure can be temporary (spurious operation) or permanent (component damage). To try to prevent spurious operation of the leak tester, it was common to wire all machine connections through various interference filter cards. This had varying degrees of success. It is now possible and preferable to suppress spikes and static discharges at the leak tester pcb terminals. This results in a much neater and easier to build system. The level of immunity of new designs is **extremely** high, far better than most bought-in industrial PLC's.

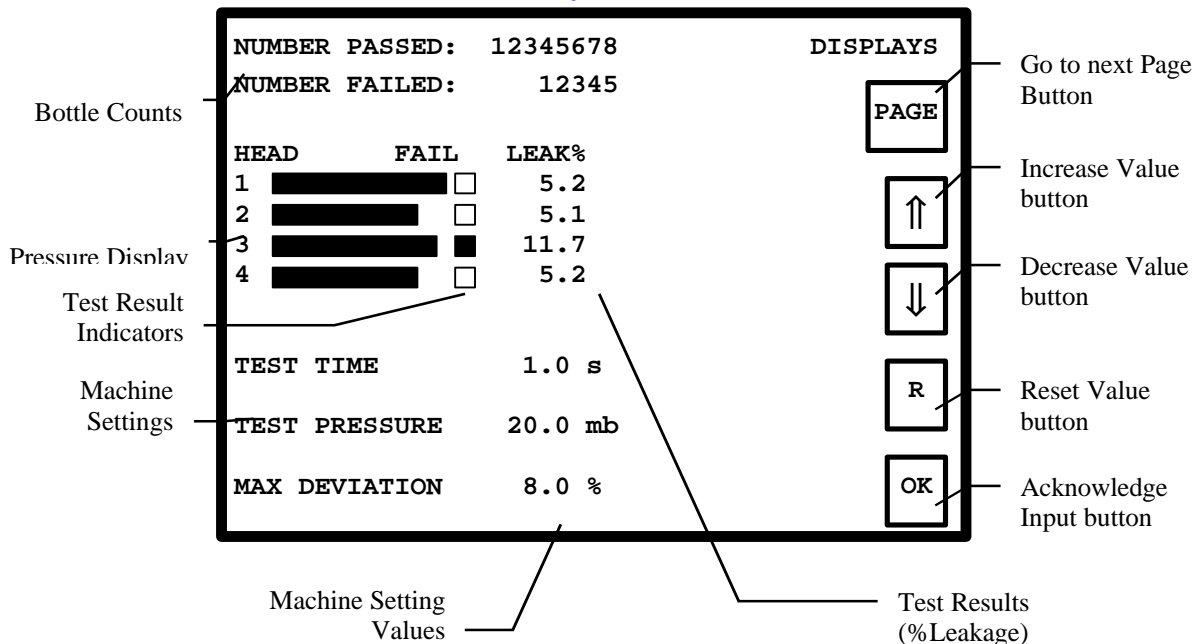
## 1.9. New Touch-Screen Operator Interface

It is now cost effective to use a modern touch-screen operator interface, rather than a simple digital readout. This has many advantages as follows:

- Extremely flexible design. Extra features and customisations can be easily integrated into existing systems.
- All test results, displays and counts are displayed together on the main displays page. This enables evaluation of the status of the system at a glance.
- All settings are displayed together on a settings page, allowing easy inspection and modification.
- All input and output states are displayed together on a diagnostics page. This allows quick fault finding.
- The graphics based nature of the screen allows descriptive text and graphics to appear identifying all settings , results and warnings.
- Setting changes can be locked out if required.

See below for an example of a screen layout (in this case, for a four channel leak detector system):

### 1.9.1. Main Screen Layout



### **1.10. New Features Summary**

- Improved Reliability
- Interference Immunity
- Improved Accuracy
- Improved Safety
- Adjustable Test Pressure
- Self Tuning Pressurisation Control
- Spare Inputs For Extra Functions
- Alarm Output Option
- Correct Number Failed count option for all trimmer configurations
- Full Touch Screen Operator Interface
- International Language Displays
- Self-Diagnostics
- Data Logging Options
- Spare I/Os brought out to standard plug
- Reduced Internal Wiring Complexity
- Panel Mounted Pneumatic Controls

## 2. Specification

<b>Electrical Power Supply</b>	110/120 single phase
<b>Electrical Connection</b>	10 pin HA-10 standard plug
<b>Electrical Power consumption</b>	150 VA maximum
<b>Air Supply</b>	4-10 bar
<b>Air Consumption</b>	1 litre / minute typical
<b>Minimum bottle volume</b>	250ml - 1/2 pint
<b>Maximum bottle volume</b>	25 litres - 5 gallon
<b>Test Pressure</b>	Adjustable, 5 - 50 mB.
<b>Cycle Time</b>	1.0 - 20.0 seconds, adjustable.
<b>Hole Size Detected</b>	Dependent on cycle time and container size. For a 500ml bottle and a 2 second test time, the hole detected would be 0.1mm.