ARMTECH®

Accurate, Reliable Measurement

ATL 600 - Mass Flow Measurement
ATL 700 - Relative Pressure Measurement
ATL 800 - Differential Pressure Measurement

Series of Air Leak Tester
Test Sequences
Basic Parameters
Primary Display
Technical Data
Apparatus Built-up

ARMTECH devotes itself to development and application of Accurate, Reliable, Measuring Technology.
ARMTECH is willing to share our technology and experience with you.
ARMTECH offers not only the products, but also the whole solution.
ARMTECH will be your right-hand man!

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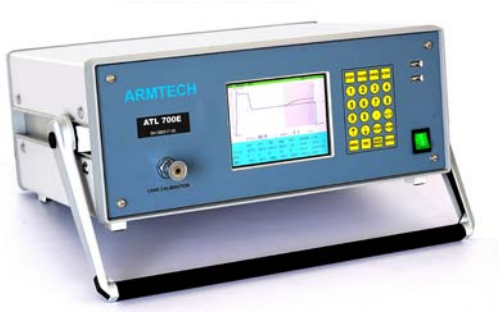
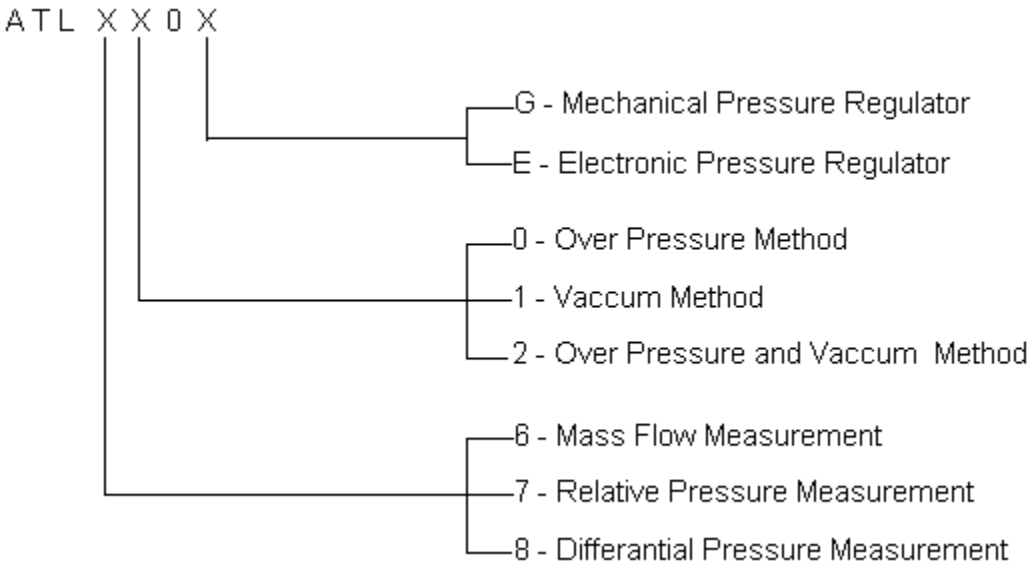
1 Series of Air Leak Tester

The air leak tester series ATL 700 measures the leakage in accordance with relative pressure change in the workpiece to be test. Its simple and reliable structure lead to a wide usage in different field.

Series ATL 800 use a separate differential Pressure transmitter to measure the pressure change in the workpiece, so that it has a higher resolution than relative measurement, particularly for the application needing higher test pressure.

Series ATL 600 measures the leak rate directly with a mass flow sensor. Because of the fast response time, This kind of air leak tester is a best solution for the workpiece with bigger cavity.





2 Test Sequences

A whole test procedure including 4 test sequences. How long is each test sequence depends on the structure and volume of the workpiece, the test pressure and the permitted leak rate.

Filling Phase – After starting the leak test, the workpiece will be firstly filled with the air to the required test pressure.

Stabilizing Phase –To avoid the measuring error caused by the turbulence, the compressed air in the workpiece need a certain time to calm down.

Measuring Phase – In this stage the pressure change in the workpiece (for relative and differential pressure measurement) or the air flow from the workpiece to atmosphere (for mass flow measurement) will be measured and be compared with the programmed limit value. It this pressure change or air flow is smaller than the limit value, the workpiece will be judged as good, and vice versa.

Venting Phase –The compressed air in the workpiece will be vented to atmosphere in this stage.

3 Basic Parameters

Leak Rate – Leak or not, is a relative concept. There are no workpiece which is absolute leak free. The permitted leak rate should be determined in such a criterion:
“Guarantee the high quality economically”

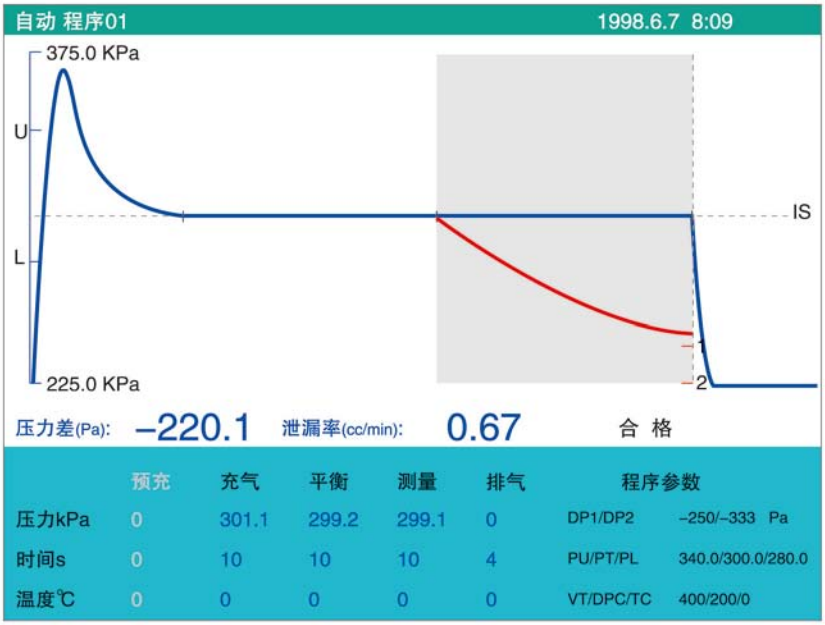
Test Pressure – The leak rate of the same workpiece is different, if you test it with different pressure. Therefore, the test pressure must be defined for leak test.

Test Volume – The test volume including the volume of the workpiece and the test air pipe.

Cycle Time – The mass production request short cycle time,. It must be taken into consideration , how to realize an accurate and reliable measurement in a short cycle time.

4 Primary Display

All air leak tester adopt 6.4 inch LCD colour Monitor. The primary display would provide the user rich information:



- The (blue) curve of test pressure in the complete test procedure
- The (red) curve of pressure change or leak rate in measuring phase
- The measured pressure, pressure change and leak rate real time
- Test results ACCEPT or REJECT
- Remaining time of the actual test phase
- Test parameters such as programmed test pressure and its monitoring value, limit pressure change or leak rate, test volume etc.

5 Technical Data

Test Pressure Range:	- 90 kPa ~ 0 ~ 1.0 MPa
Test Pressure Resolution:	0.1 KPa
Pressure Change Range:	± 999.9 Pa ~ ± 9,999 Pa
Pressure change Resolution:	from 0.1 Pa
Leak Rate Display Range:	± 999.99 cm^3/min
Leak Rate Display Resolution:	0.01 cm^3/min

16 Test Program: The air leak tester can store 16 sets of test parameters. All test parameters of each test program are free programmable This is helpful if there are different type of workpiece need to be tested by one air leak tester.

Self-Test: The automatic Self-Test function allow you to check the airtightness of the air leak tester itself, the status of I/O-Signals and the valves inside.

Different Test Mode: Leak test, Leak location, continuous test

Operation Mode:
Manual – the test running could be controlled manually through the keyboard
Automatic – the test running could be controlled by the external signals from the I/O Interface

Display language: Chinese and English, changeable

Data Storage: The last 10,000 sets of measuring results

Data Processing: Analysis of the test data upon request, and output of following statistical values:
Max. value, Min. value, Mean value,
standard deviation
ACCEPT-Counter, REJECT-Counter

Air Supply: Quick coupling at the rear side of the air leak tester
At least 100KPa higher than the required test pressure.

Power Supply: 220 VAC/50 Hz, 50W, Plug at the rear side,
Main switch at the front side of the air leak tester

Metal Cabinet:	Aluminium, grey-white
Weight:	approx. 15 kg
Dimensions:	approx. 480（Width）x 210（Height）x 440 mm（Depth）

6 Apparatus Built-up

6.1 Standard Built-up

Operation System:	ARM 9, Linux 2.6
Display:	6.4 inch LCD colour monitor，640 x 480 pixel
Keyboard:	4 x 6 Membrane keyboard
Pressure Control:	- Precise mechanical pressure regulator, manual adjustment, or - Electronic pressure regulator, automatic adjustment according to the programmed test pressure, convenient for the application with different test pressure
I/O Interface:	Digital I/O control interface, at the rear side of the air leak tester. Input of external signals controlling the running of the air leak tester, Output of ACCEPT or REJECT result signals.
Data Interface:	1 serial interface, at rear side of the air leak tester, To output the test data to PLC or PC of customer side 1 ethernet interface, at rear side of the air leak tester, To send the test data to customer's server 2 USB interface, at front side of the air leak tester, For copying the test data to USB-Memory-Stick
Calibration Coupling:	Quick coupling at front side of the air leak tester, for leak simulation and calibration of the leak test system
Workpiece Coupling:	Screw connection at rear side of the air leak tester, for connecting the workpiece.
Sample Coupling:	Quick coupling at rear side of the air leak tester, for connecting the sample part.

6.2 Options

Air Filtration unit:	With pressure regulator, dirt and water trap for air supply
Vent valve:	To vent the test air in the workpiece
External Operation Terminal:	With 3 push buttons: START TEST, CANCEL TEST, LEAK LOCATION 3 indicator lights: ACCEPT, REJECT, TEST RUNNING 1 thumb wheel switch for test program selection
Temperature compensation:	The temperature difference between workpiece and ambient has great influence on the test result, with the help of temperature compensation function, such influence could be reduced
Data Processing Software:	This Data Processing Software could be installed on the customer's data terminal, to collect and display the test data in real time, and converse the data in Excel-Format for statistics, analysis, products trace and quality control.

6.3 Accessories

- 1 plug for power supply
- 1 quick coupling for air supply
- 2 screw fittings for connecting workpiece
- 1 Calibration certificate
- 1 operation instruction
- 1 Back-up-CD with operating system and leak test program