

Package Test Systems
LIPPKE 4000 and LIPPKE 4500
for flexible, semi-rigid and rigid packages





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The Package Test Systems **LIPPKE 4000** and **LIPPKE 4500** are designed for leakage and seal strength measurement on practically all types of flexible, semi-rigid and rigid packages. The systems provide exact, definable and reproducible test conditions.

- The **LIPPKE 4000** is ideally suited for direct application on the production line because it is very robust and easy to operate.
- The computerized system **LIPPKE 4500** provides extended analysis facilities, storage and documentation of the test results. Main applications are research and development.

Field of application

- Determination of optimal sealing parameters
- Quality control
- Packaging material clarification and sorting
- Validation of packaging machines

Advantages

- High flow option for porous packaging testing (i.e. Tyvek®)
- Real hole size calculation with flow sensor
- Compliance with FDA regulation 21 CFR part 11
- Validation documentation for IQ/OQ
- Easy to integrate - several interfaces are available (LAN, USB and Bluetooth)
- Immediate availability of test results in the company network
- High data security because of central data processing
- System can be operated with barcode reader or touchscreen
- Package testing and oxygen analysis in one system
- Multilingual user guidance

Test Methods

- **Seal Strength Test**
By increasing the internal pressure of the package at a given rate to the point when the seal will burst (Burst test in compliance with ASTM F2054).
- **Leakage Testing**
A pre-selected pressure builds up in the package and is then held at a constant level for the required test time. The pressure loss after that time is an indication of package integrity and can be used to calculate the hole size (Pressure loss measurement and leakage testing according to ASTM F2095).
- **Creep Test**
A constant pressure builds up in the package. The time it takes for the seal to peel is an indication of the peelability (Creep test in compliance with ASTM F1140).
- **Leak Size Determination**
A pre-selected pressure builds up in the package and is then held at a constant level. The flow needed to keep the pressure constant is an indication of the leak size (according to the law of Hagen-Poiseuille).
- **Oxygen Analysis**
Determination of the residual oxygen in MAP packaging.

All above-mentioned tests can be combined.

LIPPKE 4500



Application Samples



ASTM Restraining Plate

for limiting package expansion of closed pouches (conforms to ASTM standard F2054).
The plate is adjustable from 1/4 inches to 3 inches in 1/4 inches steps.



Pneumatic Package Clamp PPC 300

for burst testing of open ended pouches (conforms to ASTM standard F1140).
The plate fixture acts to limit the expansion of the package.



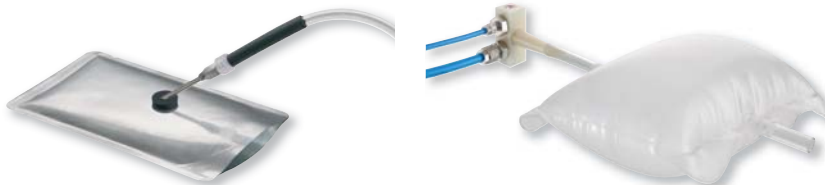
Stainless Steel Stand

for testing semi-rigid and rigid packages. A choice of needle heads and filters ensures optimal package adaptation and the protection of the sensor from contaminants.



Adaptor

customer-specific adaptor for testing tubes, bottles and infusion pouches.



Technical Data

Air pressure supply:
4,0 - 8,0 bar / 60 - 120 psi
Supply voltage:
100 - 250 V AC
Mains frequency:
50/60 Hz ± 1 Hz

Environmental temperature:
+15 °C - +40 °C

Environmental RH:
0 % - 90 % non condensing

Protection Class:
IP 54

Pressure units:
mbar, mmHg, psi

Test Time:
1 s - 9.999 min

Three Measuring Ranges:

- 1) 0 ... 1.000 mbar / 0 ... 14,5 psi
- 2) 0 ... 3.000 mbar / 0 ... 43,5 psi
- 3) 0 ... 7.000 mbar / 0 ... 101,5 psi

Resolution per Measuring Range:

- 1) 0,1 mbar / 0,0015 psi
- 2) 1 mbar / 0,015 psi
- 3) 1 mbar / 0,015 psi

Accuracy of Measurement:

- 1) ± 0,5 mbar / 0,007 psi or 1 %*
- 2) ± 2 mbar / 0,03 psi or 1 %*
- 3) ± 5 mbar / 0,07 psi or 1 %*

Repeatability per Measuring Range :

- 1) ± 0,5 mbar / 0,007 psi or 1 %*
- 2) ± 2 mbar / 0,03 psi or 1 %*
- 3) ± 5 mbar / 0,07 psi or 1 %*

* whichever is greater

Standards:

- ASTM F1140
- ASTM F2054
- ASTM F2095
- ASTM F2096

About us

PAUL LIPPKE HANDELS-GMBH have been distributing innovative test systems to the packaging, pharmaceutical and food industry for more than 30 years. To help our customers to improve their products we are dedicated to providing innovative high-quality products, first-class application consulting and excellent technical support.

We consider the MOCON Permeation Measurement Systems for oxygen, water vapor and CO₂ and our LIPPKE Package Test Systems our key products. We are proud to have built an extensive customer base and enjoy a close collaboration in research and development, production and quality assurance and control applications. Lippke has sub-agents serving most of the European countries and cooperates with MOCON's distributors world-wide. We measure our success by the satisfaction of our customers and the level of business we achieve.

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