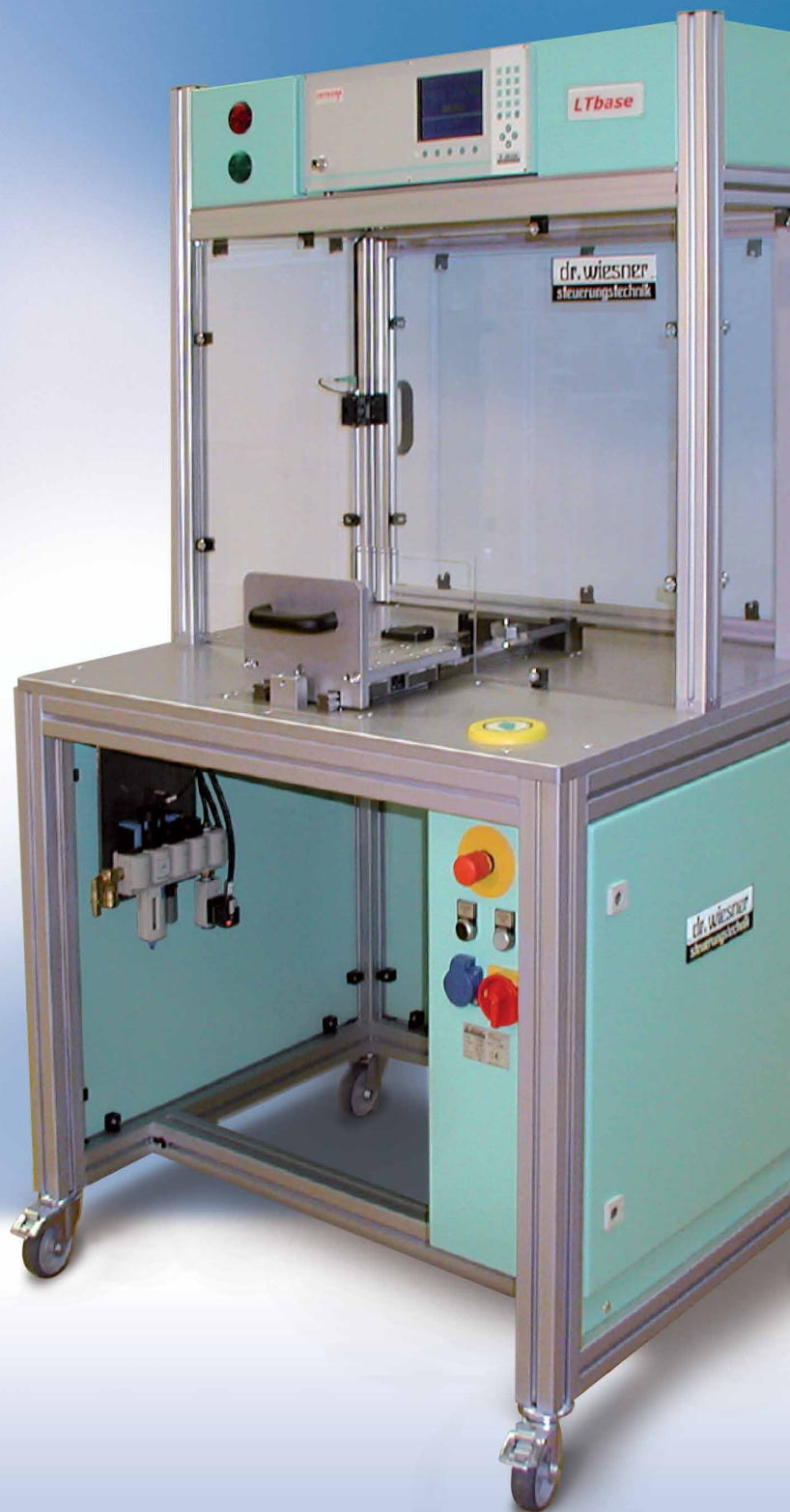


## **LTbase**

Turnkey universal test bench for all pneumatic leakage and flow testings

- Workbench complete with shielded-off working area
- Component feeding via drawer unit
- Protective device complete with maintenance access gate
- Leakage testing system INTEGRA



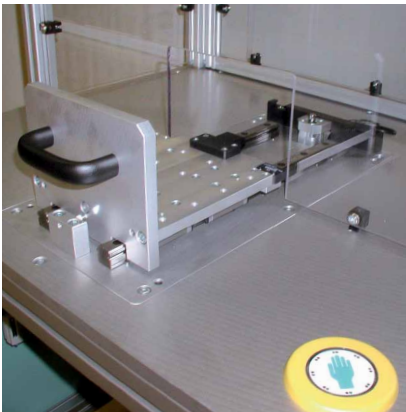
Leakage test

Flow test

Functional test

## The basis for a complete test bench

The **LTbase** basic test bench is designed as a manual workstation for all types of pneumatic leakage and flow testing. It can be fitted with a clamping and sealing device for individual components but is already equipped as it is with all basic features making up a complete test workstation. All that need to be incorporated are the holding fixtures and the movement-sequence functions for customer-specific specimens.



Drawer unit for parts fixture

### Basic outfit

- Workbench complete with shielded-off working area
- Component feeding via drawer unit
- Protective device complete with maintenance access gate
- Safety design in compliance with DIN EN ISO 13849 (New Machine Directive) performance level d
- Emergency STOP circuit
- Leakage testing system **INTEGRA RD1**
- Complete sequence control system for individual testing devices
- Triggering of "good" component marking function
- "Bad" component handling function prepared for
- Basic pneumatic outfit (maintenance unit and valve center)
- Basic electrical outfit (230V / 50 Hz)



## Description of sequence run

- The operator inserts the test specimen the specific component holding fixture mounted to the drawer unit.
- The drawer is pushed in manually, which ensures that the protective device is completely closed off.
- The safety switch on the drawer closes the monitoring circuit controlling the protective gate and releases the operating-power function.
- The program test-run sequence is now unleashed on the **INTEGRA** leakage test system as follows:
  - Interlocking of the drawer unit takes place in the rear end position.
  - Subject to having previously been installed, the initiator/s denoting "Component inserted/attachments present on test specimen" will be queried
  - All customer-specific sequence

movements undergo querying in the basic position, provided the corresponding initiators have previously been installed.

- Customer-specific movement 1 (e.g. hold-down) is started up; arrival in working position (if monitored) is awaited.
- Customer-specific movement 2 (e.g. sealing 1) is started up; arrival in working position (if monitored) is awaited.
- Customer-specific movement 3 (e.g. sealing 2) is started up; arrival in working position (if monitored) is awaited.
- Test cycle is started up.
- If testing reveals a bad "NIO" part, a red lamp will light up and all follow-on sequences will be stopped until the result has been acknowledged

by the operator via push-button control.

- If the test reveals a good "IO" part, a green lamp will light up and the test specimen will be marked as a satisfactory component, provided an appropriate marking facility is installed.
- All movements are run in the reverse order back to the home position.
- The drawer interlock function is released.

- The operator can now pull out the drawer, which in turn switches off the operating power through interruption of the safety circuit.
- The operator then removes the test specimen from the component holding fixture.
- Following a NIO result, the bad components need to be dumped into a reject bin through a discharge duct where installed.

## Testing

Depending on the version of the INTEGRA leakage testing system employed, all common testing procedures are possible applying excess-pressure or vacuum action control, viz.:

- Leakage testing applying the relative pressure method
- Leakage testing applying the differential pressure method
- Leakage testing applying the mass-flow method
- Leakage testing applying the volume-current method

The INTEGRA leakage testing system also makes provision for numerous additional functions, e.g.

- Measured-data recording facilities via a serial interface
- Statistical functions
- Integral measured-data storage module
- 256 test parameters with individually adjustable routine times and limiting values
- Individual specimen-test result allocation where a scanner is linked up

The complete functional and performance scope of the INTEGRA leakage testing system will be gathered from the descriptions provided in the INTEGRA special brochure.

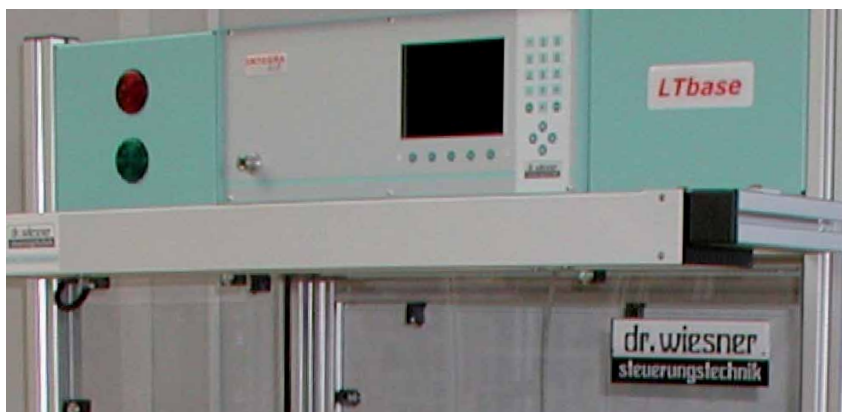
## Design Concept of Protective- and Emergency-STOP Systems

Any interruption of the safety circuit by opening the maintenance access gate will immediately shut off the operating power to the facility and, as a consequence, bring about instant stoppage of all movements taking place in the program cycle. This switches off the voltage supply to all valves which respond by retracting in an interlocked state to mid position, thus blocking the various movements, regardless of the state of the control outputs. The basic outfit of the **LTbase** includes a solenoid valve that switches when the protective system is closed. Its purpose is to release

a set of stop valves, with which each and every movement should be equipped. Release of these stop valves serves to increase the braking effect of movements in progress. In addition, vertical movements of heavy units should be equipped with pneumatically triggered clamping devices designed to bring about reliable stoppage of the unit and to prevent any dropping in the switched-off state. Triggering of these clamping devices is also possible via the inbuilt release valve.



Switchgear cabinet and valve center



INTEGRA leakage testing system and optional lighted work station

Switching on of the workstation and subsequent automatic home-position travel motion is only possible with the drawer in the pushed-in state. In the event of any emergency stoppage, the "control system ON" circuit will additionally be interrupted and, as a result, the complete pneumatic system vented.



## Technical Information

### Basic pneumatic outfit

- Maintenance unit 1/4 inch (Festo) incorporating
  - manual shutoff valve
  - filter
  - pressure governor incorporating pressure gauge
  - soft-start valve
- Profi-bus valve center (Festo) incorporating
  - 5/2-way valve (drawer interlock function)
  - Vacant space
  - 3/2-way valve (release function)
- Installation of **INTEGRA** leakage testing system
- Rapid-action coupling (behind shutoff valve) for servicing operations

#### Optional:

- fixture control unit:
  - 5/3-way valve (movement 1 / hold-down)
  - 5/3-way valve (movement 2 / sealing 1)
  - 5/3-way valve (movement 3 / sealing 2)
  - Vacant space



Dorsal maintenance access gate

### Basic electrical outfit

- Connection 230 V / 50 Hz
- Switchgear cabinet incorporating
  - Master switch
  - Control-system ON circuit
  - Emergency STOP circuit
  - Safety-guard circuit
  - Power pack 24 V 5 A
  - Service plug-in receptacle
- OK/NOK display lamps (within operator's line of vision)
- Capacitive acknowledgement pushbutton (mounted to working panel within operator's grasp)
- Magnetic safety-sensor for start release
- Profi-bus control concept
- Linkage of **INTEGRA** leakage testing system

#### Optional:

- fixture control unit:
  - 8-fold input module with M8 jacks for:
    - "Component-present" function
    - "Bad-part" discharge duct
    - Movement 1 AS/GS
    - Movement 2 AS/GS
    - Movement 3 AS/GS
- Lighted work station

### Basic mechanical outfit

- Four guide pulleys 100 mm, of which two lockable, loading capacity (total) 8000 N
- Dimensions:
 

Width allover	800 mm
Width working area	770 mm
Depth allover	800 mm
Depth working area	430 mm
Depth drawer panel	190 mm
Height / bench top	930 mm
Height / drawer panel	980 mm
Installation height <b>INTEGRA</b>	1600 mm
Overall height	1800 mm

- Profile-section system: Bosch Rexroth

- Bench tops of anodized aluminum

- Drawer system with central double-guides
 

Width / drawer panel	220 mm
Loading capacity/vertical	Static 2 x 37.500 N
	Dynamic: 2 x 22.400 N
Admissible rolling moment	2 x 295 Nm
Loading capacity in opposed slide-in direction	250 N

#### Optional:

- Width allover 1000 mm
- Width working area 970 mm
- Depth allover 1000 mm
- Depth working area 530 mm
- Depth drawer panel 290 mm (only in combination with depth allover 1000 mm)
- Drawer system with two parallel double guides
 

Width drawer panel	220 mm
Loading capacity vertical	Static 4 x 37.500 N
	Dynamic 4 x 22.400 N