Measuring
people's
safety

second
breath

wide opportunities for determining gas capacity of gas, vapour and combined filters

Test equipment DYNAMICS

using 9 gas, 4 vapor and hydrargyrum

APPLICATIONS & INDUSTRIES

- Gas, vapour and combined filters
- Industrial & fire safety, emergency protection
- RPE certification, research and design

For developers and manufacturers of respiratory protective equipment (RPE)

For certification bodies and testing laboratories

For research centers and universities

DESCRIPTION

Test equipment «Dynamics» prepares the gas-vapor-air mixture in accordance with the conditions for using the filter - the required temperature, relative humidity, concentration of the test agents.

In the test chamber, the mixture passes through the filter until the test agent is detected in the air sample at the outlet of the filter (breakthrough concentration) or until the filter protection time, which is set by the RPE manufacturer, expires.

CONFIGURATION:

Test different types of filters on the same test equipment. Configuration options for one test equipment design.

1) Dynamics G: up 2 to 7* test gases:

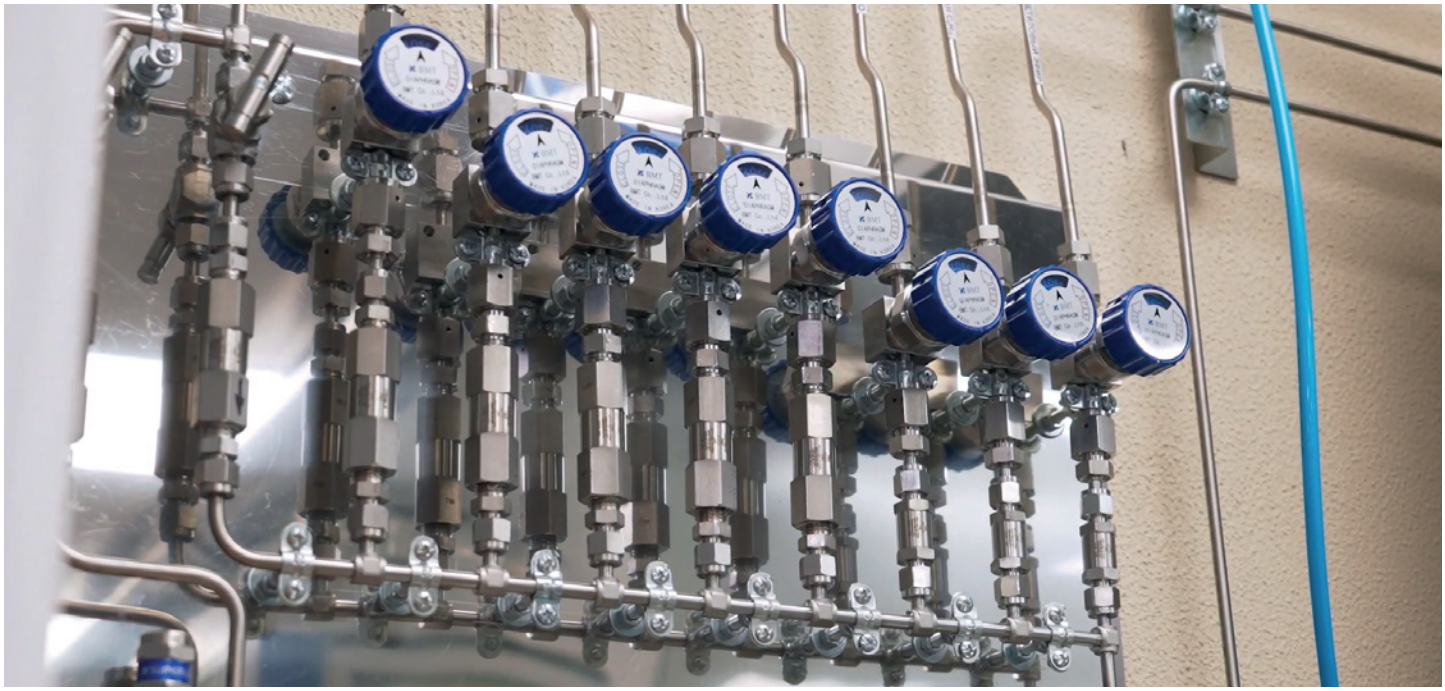
- Cl_2 chlorine
- SO_2 sulfur dioxide
- NH_3 ammonia
- C_2H_6O dimethyl ether
- C_4H_{10} isobutane
- H_2S hydrogen sulfide
- NO nitric oxide

2) Dynamics G2: 2* gases:

- HCl hydrogen chloride
- AsH_3 arsenic hydrogen

*the numbe r of test agents in one test equipment is determined individually

PRINCIPLE OF OPERATION:



DATA SHEET (DYNAMICS G)

SPECIFICATIONS	VALUE	UNIT
The constant flow rate of the gas-vapor -air mixture through the tested product	30,0 ± 0,9 or 15,0 ± 0,5	dm^3 / min
Relative humidity of gas-vapor-air mixture	70 ± 2	%
Temperature of gas-vapor-air mixture	20	°C
The direction of the flow of gas-vapor-air mixture through the tested product	horizontal	
The volume concentration of the test agents in the gas-air-vapor mixture*:		%, vol.
• Chlorine (Cl_2)	0,05 to 1,00	
• Sulfur dioxide (SO_2)	0,05 to 1,00	
• Ammonia (NH_3)	0,05 to 1,00	
• Dimethyl ether (C_2H_6O)	0,05	
• Isobutane (C_4H_{10})	0,25	
• Hydrogen sulfide (H_2S)	0,05 to 1,00	
• Nitric oxide (NO)	0,25	
Overall dimensions (length×width×height)		mm
• control unit	590×480×365	
• test chamber (without filter)	427×200×245	
Power supply	50; 230	Hz, V
Power consumption	no more 3	kW
Consumption of air	no more 3	nm^3/h
Weight (without chiller)	no more 30	kg
Time to enter the mode	no more 20	min
Average life time	at least 10	years

TERM OF USE (G/G2)	VALUE	UNIT
Ambient temperature	18 to 25	°C
Atmosphere pressure	630 to 800	mm Hg
Relative humidity	10 to 80%	%
The test bench should be placed in a fume hood connected to the exhaust ventilation system		

DATA SHEET (DYNAMICS G2)

SPECIFICATIONS	VALUE	UNIT
The constant flow rate of the through the tested product	30,0 ± 0,9 or 15,0 ± 0,5	dm^3 / min
Relative humidity of gas-vapor-air mixture		%
• Hydrogen chloride	30 ± 10	
• Arsenic hydrogen	50 ± 3	
Temperature of gas-vapor-air mixture	20	°C
The direction of the flow of gas-vapor-air mixture through the tested product	horizontal	
The volume concentration of the test agents in the gas -vapor-air mixture*:		%, vol.
• Hydrogen chloride	0,2 to 0,4	
• Arsenic hydrogen	0,20 to 0,32	
Measured overshoot concentration of the test substance		ppm
• Hydrogen chloride	0 to 8 ± 20%	
• Arsenic hydrogen	0 to 1 ± 20%	
Overall dimensions (length×width×height)		mm
• control unit	530×250×510	
• test chamber (without filter)	427×200×245	
Power supply	50; 230	Hz, V
Power consumption	no more 1	kW
Consumption of air	no more 3	nm^3/h
Weight (without chiller)	no more 30	kg
Time to enter the mode	no more 20	min
Average life time	at least 5	years

DELIVERY COMPONENTS with test equipment

Name	Q-ty, pcs.
Gas analyzer	1
Tablet PC with installed software	1
Documentation set	1

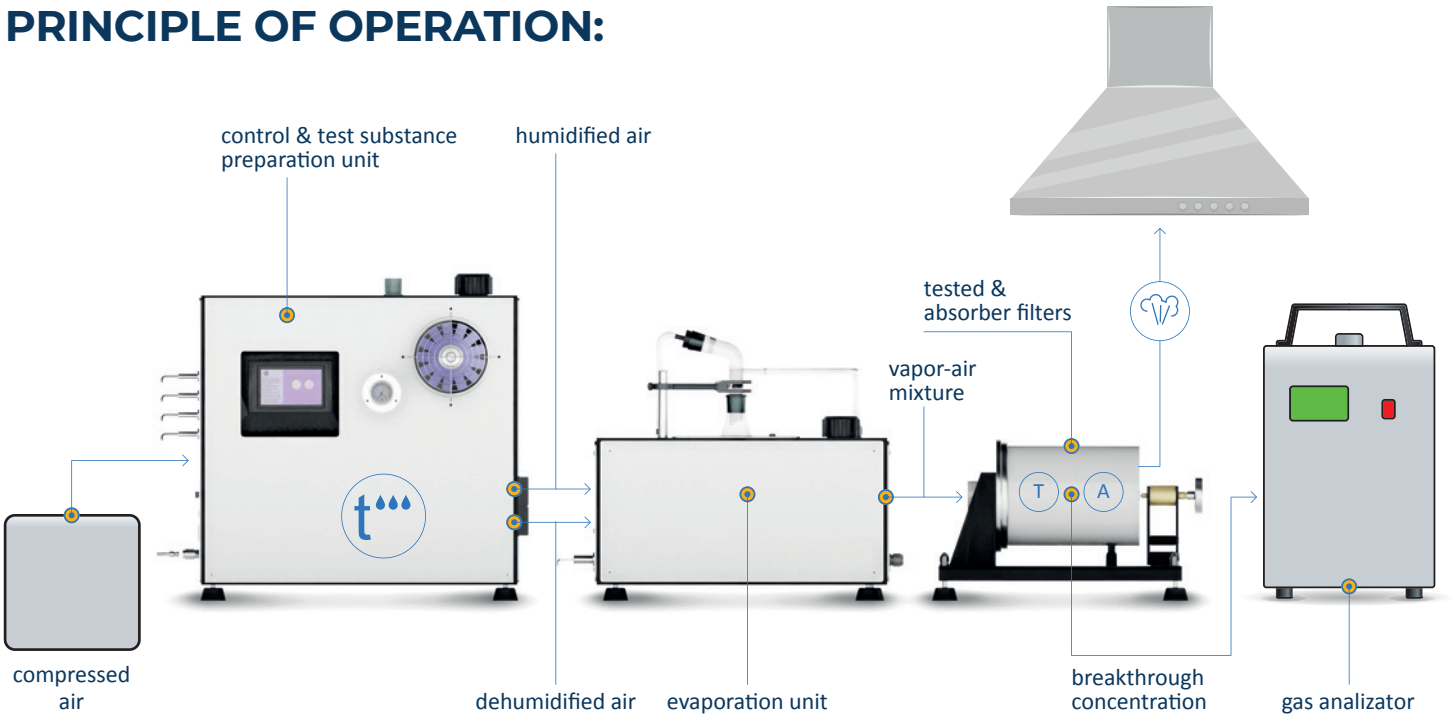
The complete set of delivery is given in the instruction manual

3) Dynamics V: up 1 to 4* vapors

C_6H_{12} cyclohexane
HCN hydrogen cyanide
C_3H_4O acrolein
C_6H_6 benzene

*the number of test agents in one test equipment is determined individually

PRINCIPLE OF OPERATION:



DATA SHEET (DYNAMICS V)

SPECIFICATIONS	VALUE	UNIT
Constant flow rate of vapor-air mixture through the tested product	30 ± 0,5 and 15 ± 0,5	dm^3 / min
Relative humidity of vapor-air mixture	50 ± 3 and 70 ± 2	%
Temperature of vapor-air mixture	20 and 23 ±5	°C
The volume concentration of the test substance in the vapor -air mixture:		%, vol.
• cyclohexane (C6H12)	0,05 to 0,80 ± 10 %	
• hydrogen cyanide (HCN)	0,04 to 1,00 ± 10 %	
• acrolein (C3H4O)	0,010 to 0,011 ± 10 %	
• benzene (C6H6)	0,31 to 0,77 ± 10 %	
The range of measured overshoot concentrations of the test agents		ppm
• cyclohexane (C6H12)	0,2 to 457,0 no more ± 20 %	
• hydrogen cyanide (HCN)	0,1 to 30,0 no more ± 20 %	
• acrolein (C3H4O)	0,04 to 1,72 no more ± 20 %	
• benzene (C6H6)	0,77 to 31 no more ± 20 %	
Overall dimensions (length×width×height)		mm
• evaporation unit	495×350×325	
• control & test substance preparation unit	580×250×515	
• test chamber	425×220×285	

SPECIFICATIONS	VALUE	UNIT
Power supply	50; 230	Hz, V
Power consumption	no more 2	kW
Consumption of air	no more 3	nm^3/h
Weight (without chiller)	no more 30	kg
Time to enter the mode	no more 60	min
Average life time	at least 5	years

TERM OF USE	VALUE	UNIT
Ambient temperature	19 to 21	°C
Atmosphere pressure	630 to 800	mm Hg
Relative humidity	10 to 80%	%

DELIVERY COMPONENTS with test equipment

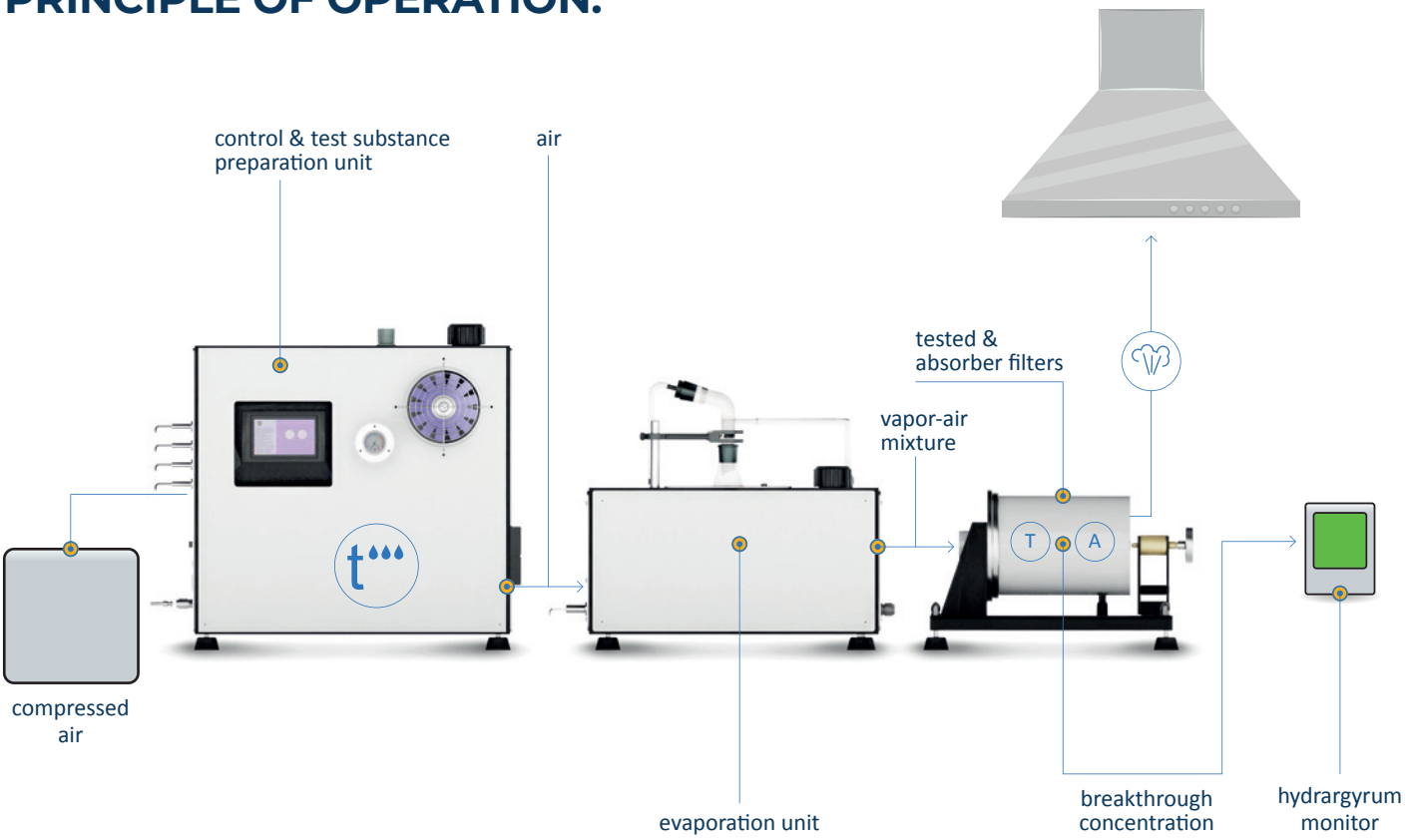
Name	Q-ty, pcs.
Gas analyzer	1
Evaporation flask	1
Tablet PC with installed software	1
Documentation set	1

The complete set of delivery is given in the instruction manual

4) Dynamics Hg

Hg hydrargyrum

PRINCIPLE OF OPERATION:



DATA SHEET (DYNAMICS Hg)

SPECIFICATIONS	VALUE	UNIT
The constant flow rate of the vapor -air mixture through the tested product	30 ± 0,50 and 15 ± 0,25	dm^3 / min
Relative humidity of vapor-air mixture	70 ± 2	%
Temperature of vapor-air mixture	20 ±1	°C
Mercury vapor concentration in Vapor-air-mixture	13 ±1	mg/m^3
Measured overshoot concentration of mercury vapor	00002 to 0,12, no more ± 20%	mg/m^3
Overall dimensions (length×width×height)		mm
• control unit	530×250×510	
• Hg evaporation unit	495×350×325	
• test chamber (without filter)	427×200×245	
Power supply	50; 230	Hz, V
Power consumption	no more 2	kW
Consumption of air	no more 3	nm^3/h
Weight	no more 50	kg
Time to enter the mode	no more 60	min
Average life time	at least 5	years

TERM OF USE (G/G2)	VALUE	UNIT
Ambient temperature	18 to 25	°C
Atmosphere pressure	630 to 800	mm Hg
Relative humidity	10 to 80%	%
The test bench should be placed in a fume hood connected to the exhaust ventilation system		

DELIVERY COMPONENTS with test equipment

Name	Q-ty, pcs.
Hydrargyrum monitor	1
Evaporation flask	1
Tablet PC with installed software	1
Documentation set	1

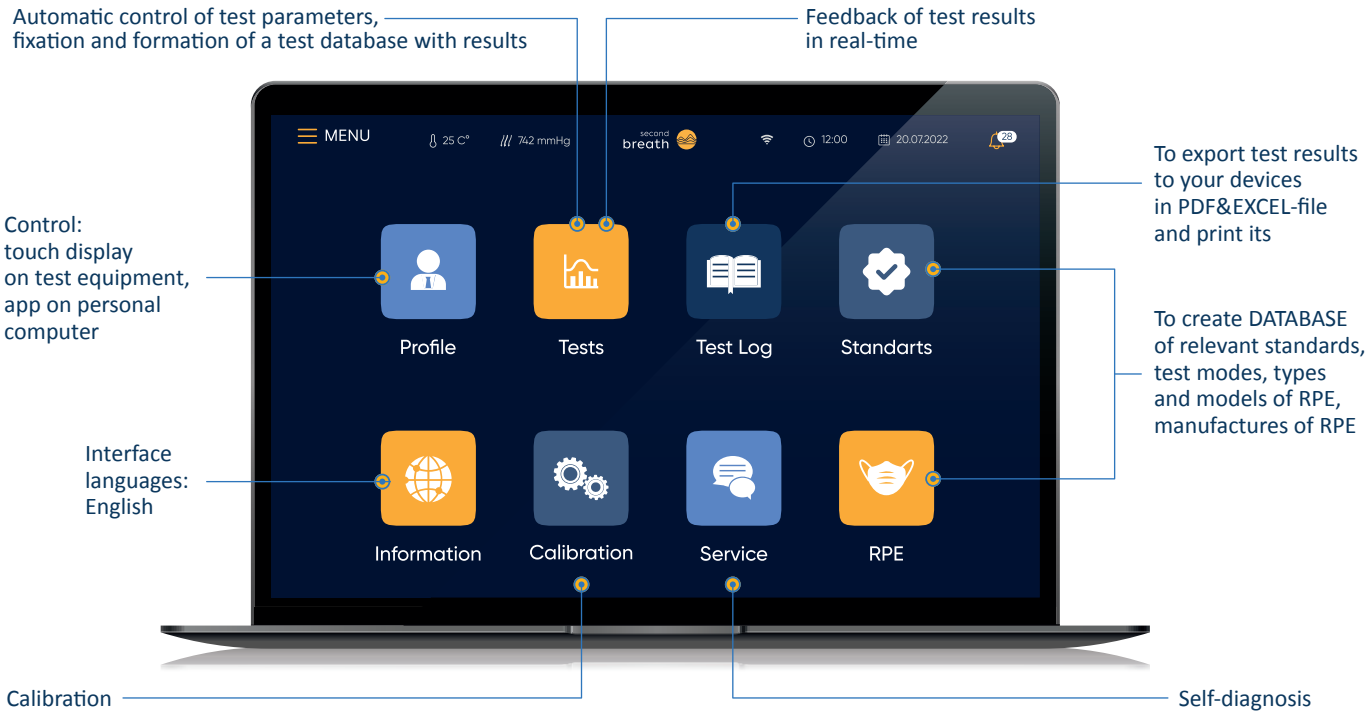
The complete set of delivery is given in the instruction manual

RELEVANT STANDARDS* for Dynamics G, G2, V, Hg:

EN 1827, EN 12941, EN 12942, EN 14387, EN 405

*meets one or more standards. If you require testing to a standard not listed, please contact us.

SOFTWARE PLATFORM POSSIBILITIES



WHY TEST EQUIPMENT DYNAMICS?

1. **Universal platform for research & quality control of RPE**
   The software and technical capabilities of the «Dynamics» test equipment are suitable for most tests of gas and combined filters according to international standards, and in case of changes or new ones, you do not have to partially or completely replace the equipment — the settings are simply and flexibly changed* in the software.
   *within technical possibilities

2. **Modern way of control**
   No more manual switching. To control the test equipment, an application is used on a touch-screen display and the app on a personal computer with a simple and convenient interface in English. It is possible to quickly and easily master the control of the «Dynamics» and involve even a laboratory intern in the work.

3. **Increases the productivity of the testing process**
   Thanks to its own unique development of hardware and software, «Dynamics» quickly comes to the mode (from 20 to 60 minutes, depending on test agent).
   The tests do not require the constant operator presence. Test equipment «Dynamics» software automatically maintains test parameters, records and stores their results.

SERVICE

Warranty
from 12 months

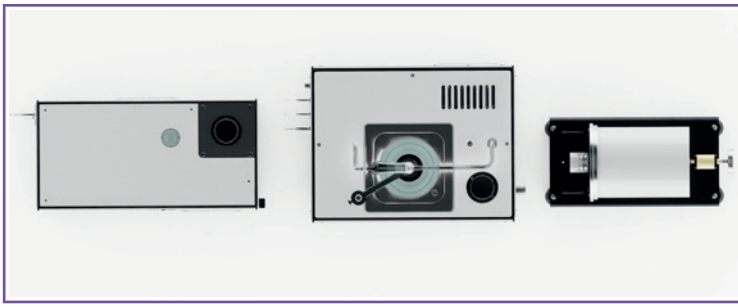
Training
of the Customer's staff

Service support
for the entire period of use

Development of the equipment
according to your terms of reference

WATCH PRESENTATION VIDEO:

Click here



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