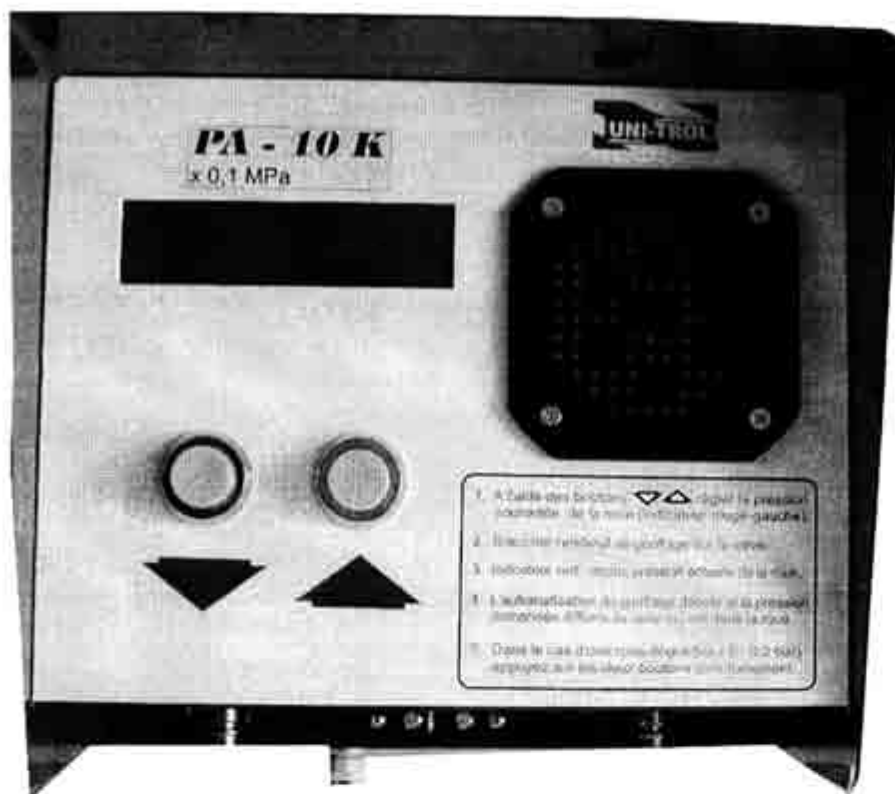


TYRE PRESSURE MEASUREMENT AND CONTROL DEVICE PA -10 K

Conformity Certificate



OPERATING INSTRUCTIONS

UNI – TROL Ltd

**COMPUTER BALANCING MACHINES
DIAGNOSTIC EQUIPMENT
WORKSHOP EQUIPMENT**

PRODUCTION PLANT – SALES OFFICE – PRODUCER'S SERVICE
Estrady 56
01-932 Warsaw

1. GENERAL INFORMATION – PURPOSE

The PA – 10K device was designed for the pressure measurement and control of vehicle tyres. Any other application of this device is improper and therefore forbidden. Before starting any work with the PA – 10K device, you should carefully read and understand the operating instructions and get acquainted with the user's workstand instructions placed on the device's front panel.

The producer and salesperson bear no responsibility for any injuries to persons or device damage resulting from improper device operation. The instruction manual should be kept in a place that is easily accessible during the PA – 10K device operation.

2. TECHNICAL DATA

- electrical supply	230 V; 50 Hz	+10%; -15%
- power consumption	30 VA	
- pneumatic supply	max. 1.05 MPa	
- measurement range	0 + 0.99 MPa	
- measurement precision	± 0.01 MPa	
- device weight	10 kg	
- dimensions (width/height/depth)	320 x 280 x 260	
- temperature	0 + +45°	
- humidity	up to 95 %	
- speech synthesizer	the device generates voice operating instructions and messages about existing emergency situations during the tyre pressure control	

3. EQUIPMENT (DELIVERY LIST)

The device's equipment consists of:

3.1. Pneumatic spiral conduit with double fitting for wheel tyre pumping (length ~ 15m)	pcs – 1
3.2. Rubber conduit with a terminal to be put on a wheel valve	pcs – 1
3.3. Rigid conduit with two-sided terminal for pumping of twin wheel tyres	pcs – 1
3.4. Quick-change connector with a herringbone terminal for the connection of supply conduit	pcs – 1
3.5. Rubber hole plugs	pcs – 2
3.6. Fuse-element 500 mA	pcs – 1
3.7. Attached documents	
- instruction manual	pcs – 1
- conformity certificate	pcs – 1
- type approval decision	pcs – 1
- verification certificate	pcs – 1
- guarantee certificate	pcs – 1

4. PRINCIPAL SAFETY RULES

The PA -10K device should be connected to the installation equipped with protection contact and external supply voltage switch.

On the back side of the device housing there is a fuse-element with rated value of 500mA. It is not permitted to use fuse-elements with different ratings in case of exchange.

In order to connect the device to the air supply network you have to use a pneumatic hose with 1.6 MPa strength and not longer than 15m.

Any unauthorised change or constructional modification of the device, especially of the pneumatic, measurement and protection system, absolves the producer and the salesman from any responsibility.

5. CONSTRUCTION AND OPERATION DESCRIPTION

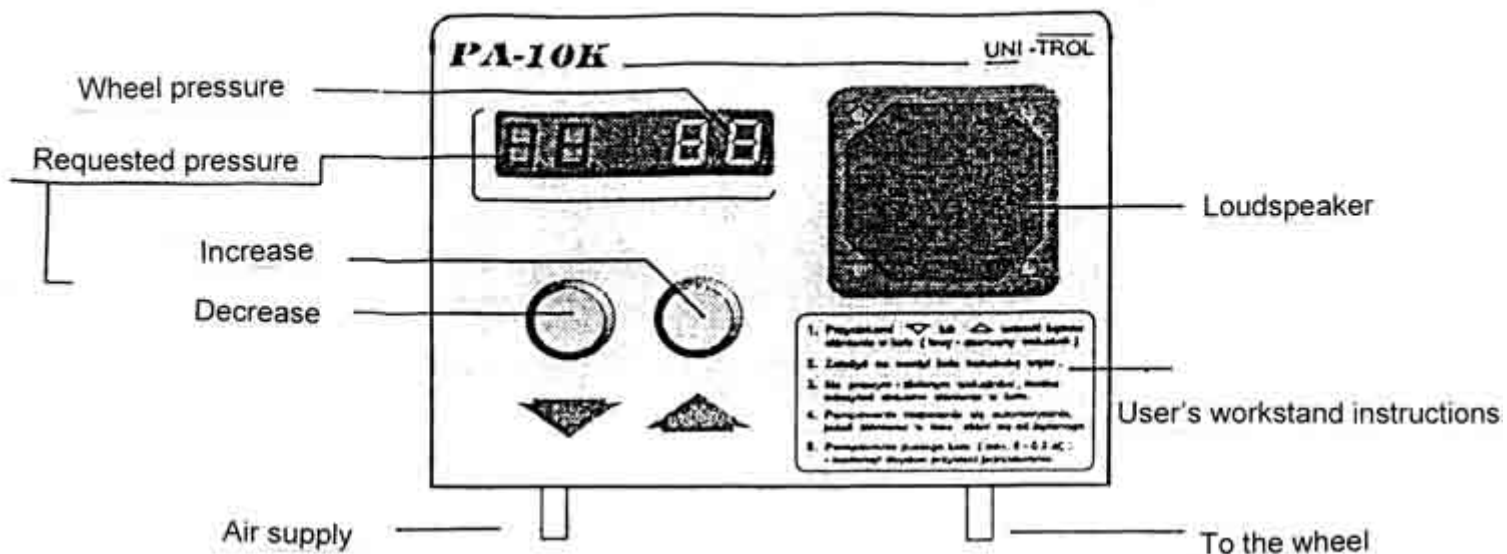
The PA –10K is a stationary device adapted for fixing it to a vertical wall.

On the front panel of the device there is:

- a digital display
- buttons for the adjustment of the requested pressure
- a loudspeaker

At the bottom of the device housing there are two connection pipes intended for the supply and pumping conduits.

The four– digit display consists of two two-digit indicators. The left red-coloured indicator displays the requested pumping pressure and the right green-coloured indicator displays the current pressure value inside the pumping hose.

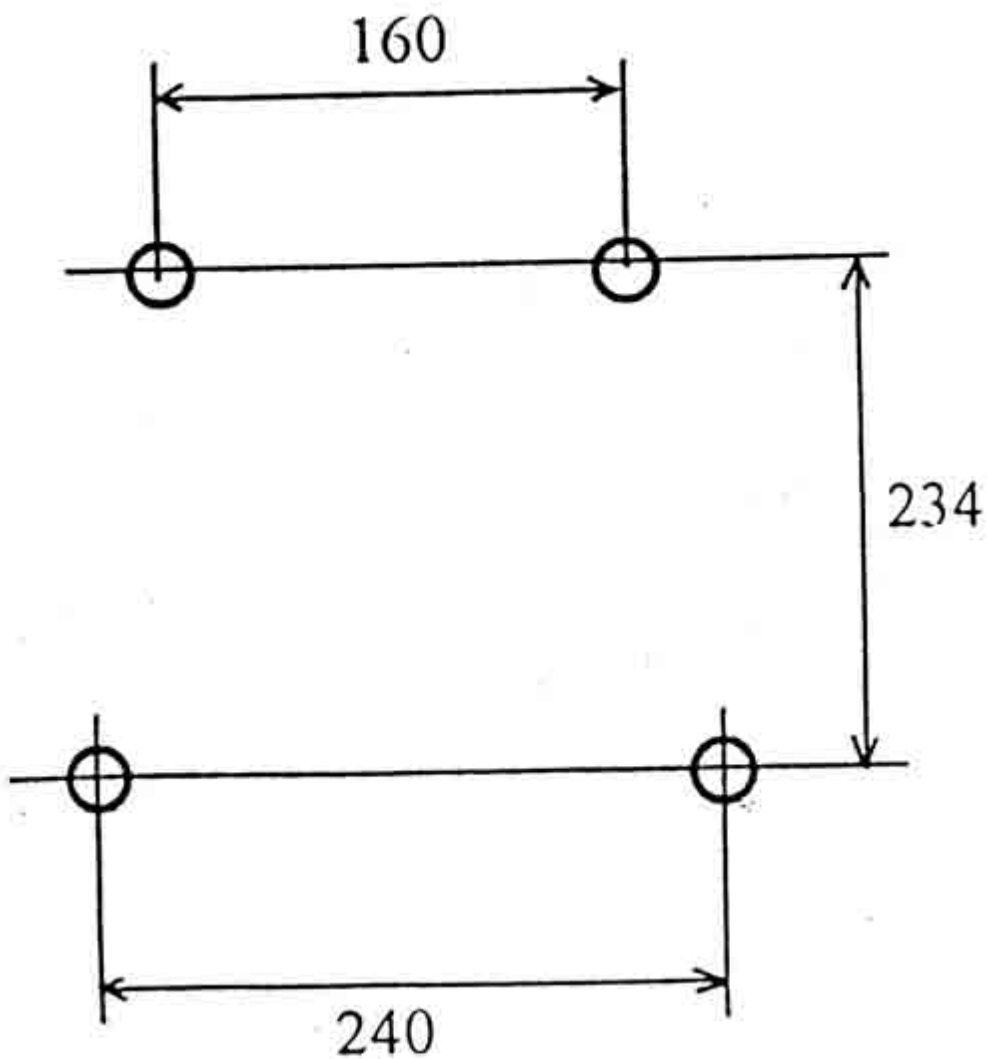


-Front panel drawing

In the device a temperature-compensated pressure converter with d.c. voltage supply was applied allowing for precise measurement of wheel tyre pressure. Two precise microprocessor-controlled electro-valves dose the air flow in order to balance the wheel tyre pressure with the requested pressure.

6. DEVICE INSTALLATION

The device should be installed on a vertical wall in the neighbourhood of an electrical and pneumatic network. Four holes should be drilled according to the drawing below. The two upper points are used for hanging the housing (you can use hooks or bolts with large heads), the two lower ones are used for the attachment and immobilization of the housing.



Hole axis spacing needed for the installation.

7. OPERATING INSTRUCTIONS FOR THE PA – 10K DEVICE

7.1. SWITCHING ON THE DEVICE

ATTENTION!

You should observe in full the sequence of device connection operations.

The first thing to do is to switch on the air supply and after that the electrical supply

After switching on the electrical supply, the device measures the supply pressure and stores its value. That is why it is impossible to set the requested pressure by means of control buttons if the supply pressure is not present (improper sequence of supply connections). In this case the device generates the message "OUT OF RANGE" because the requested pressure set on the device panel will always exceed the supply pressure. You should then switch off and on the device again in order to reset it.

7.2. WAITING STATE

After the supply connection there will appear the inscription PA-10K on the digital indicator. If we press any button the voice user's instructions will start. These instructions are also printed on the device front panel. By pressing any button we can stop the generation of these voice instructions and enter the readiness state.

7.3. READINESS STATE

The readiness state of the device is indicated by displaying the pressure value inside the pumping conduit on the right green indicator (if the pumping conduit is not connected to the wheel valve then this pressure value equals 00) and the requested pressure value on the left red indicator.

7.4. SERVICE ZEROING OF THE DEVICE

ATTENTION!

This operation has to be carried out if the value on the right indicator is different from zero, the pumping hose is not connected to the wheel and the pumping hose pressure equals zero.

1. Switch off the electrical supply of the device
2. Ensure that the pumping hose pressure equals zero.
3. Press simultaneously **both buttons of the requested pressure control**.
4. Switch on the electrical supply (both buttons still pressed).
5. Wait until scores appear on the display and then release both buttons.
6. Press one of the a.m. buttons – on the display should appear "0".
7. Press one of the a.m. buttons – on the display should appear scores.
8. Press one of the a.m. buttons – on the display should appear the blinking inscription "PA-10K" – this means that the zeroing has been finished.

7.5 TURNING ON AND OFF THE SPEECH SYNTHESIZER

The generation of voice messages can be turned on or off. If during switching on the electrical supply we hold down the pressure decrease button, messages WILL BE TURNED OFF. Messages will be turned on if we hold down the pressure increase button during switching on the electrical supply. The holding-down time of the buttons in both cases – 3 s.

8. INSTRUCTIONS OF TYRE PRESSURE MEASUREMENT AND CONTROL

8.1. SETTING OF THE REQUESTED PUMPING PRESSURE ATTENTION!

You have to remember that the supply pressure should be higher than the requested pressure by at least 0.05 MPa.

With the left button (arrow downwards) we decrease the pressure value and with the right button (arrow upwards) we increase it.

One single touch of a button results in the pressure change of 0.01 MPa. Holding down a button for a while results in automatic repetition of its operation thus facilitating changes within higher range.

8.2. WHEEL PUMPING

After setting the pressure value to which the wheel should be pumped up, you have to put the pumping hose terminal on the wheel valve.

It is very important to carry out this operation carefully. Any air leaks at the hose terminal are not permitted.

On the right (green) indicator should appear the stable pressure value of the wheel.

The device will start pumping if for a few seconds the pressure of the connected hose is stable, different from the pressure set on the left red indicator and higher than 0.03 MPa. The 0.03 MPa limit was introduced to avoid pumping cycle start when the pumping hose is not connected to the wheel.

When pumping the wheel that has zero pressure the pumping cycle is activated manually by pressing **both buttons simultaneously**.

The start and the termination of the pumping cycle is confirmed by acoustic signals and voice messages.

The pumping cycle can be stopped by pressing any button. It is useful when we want to change the pressure during pumping cycle. In such a case the message of cycle interruption will be sent and the pumping cycle will be suspended. If the pumping hose is still connected to the wheel the device will automatically restart its operation after a while.

When the pressure of the pumped wheel reaches the requested pressure then the pumping cycle is terminated (both indicators, red and green, display the same value).

8.3. FAILURE SIGNALLING

The PA-10K device controls the pumping process and in case of any irregularities stops the process and signals them with a message. The failure situations are signalled in the following cases:

1. if during the pumping cycle it is detected that the current pressure is lower than the pressure before the pumping cycle start.
2. if after bleeding the pressure has increased.
3. if during the pumping cycle, after five trials, the wheel pressure has not changed.
4. if there is no supply pressure.

Beside the a.m. points the device supply pressure is additionally controlled by the limitation of the maximum pressure which can be set with the increase button, to the value lower than the supply pressure by 0.05 MPa. Any attempt to exceed this value will generate the message "out of range" and the maximum requested pressure value remains unchanged.

9. REQUIREMENTS AND OPERATIONAL REMARKS

IMPORTANT!

The air supply installation is equipped with a dehydrator filter 10 μm which should be placed as near as possible to the device (directly on it if possible). Users of air installations most frequently apply one filter placed at the compressor. It does not protect the device valves from any impurities which can be found in the supply air pipes (rust pieces). In this case it is necessary to place an additional filter **directly by the device**.

Maximum pressure of the installation	1.05 MPa
Length of the pumping hose	up to 15 m

- The device can be installed outdoors but should be protected from direct influence of the atmospheric conditions. It is not recommended to locate the device in a very sunny place because it can result in overheating or making it difficult to read display indications.

- Switching on the device; **the first thing to do is to switch on the air supply and thereafter the electrical supply** (the device measures the supply pressure directly after switching it on).
- It is very important that the hose terminal is correctly put on the valve during wheel pumping. Any irregularities might lead to the loss of the device synchronisation. That is why it is recommended to keep the hose terminal in a good technical condition.
- It is not recommended to use a too long pumping hose. The device can handle any hose but the pumping process will take more time.
- It is not recommended to put on the hose any pumping guns or tips with a stop valve.
- After the removal of the wheel the pumping hose must be **open** (zero pressure). It is necessary for the correct operation of the device.

10. TROUBLESHOOTING

Malfunction type	Remedy
After switching on the supply the device shows no sign of operation. Dark display.	Check the supply voltage and the device fuse. If the supply voltage is correct and the fuse is good then transfer the device to the service.
After switching on the supply, with the wheel being disconnected (pumping hose pressure equals zero), the right indicator shows non-zero value.	Carry out service zeroing of the device. See the description in this manual. If it does not help transfer the device to the service.
After pressing the increase button (arrow upwards) the device shows no reaction or displays "out of range".	Check the supply pressure – it is too low or was zero when the electrical supply was switched on. Initialize the device by momentary switching off the electrical supply*).
The pumping cycle and the stabilisation time of the pumping hose pressure are too long. This can result in failure signalling.	Incorrect connection of the hose terminal and the wheel valve or faulty valve. Correct the connection or exchange the valve.
Audible hiss of the air escaping from the device interior. Possible maladjustment of the device.	Leak or impure valves. Transfer the device to the service.

*) If the device is permanently connected to the electrical network and momentary switching off the supply is troublesome then you can initialise the device by quick multiple (3 – 4 times) pressing, without holding down, simultaneously both buttons of the requested pressure control.

11. PACKING - TRANSPORTATION

The PA-10K device is packed in a carton that protects it from mechanical damage during transportation. The transportation is carried out by dispatching companies.

12. GUARANTEE – SERVICE

All repairs are carried out by the producer. Any repairs carried out by the user without prior notification to the producer results in the loss of guarantee. The guarantee period of the PA-10K device is 12 months.

13. SPARE PARTS LIST

- | | |
|-----------------------------|-----------------|
| 1. Valve of EVT 307 type | no. 07. 01. 008 |
| 2. Display panel for PA-10K | no. 06. 03. 020 |
| 3. Main panel for PA-10K | no. 06. 03. 019 |
| 4. Loudspeaker GD 10/2 | no. 05. 09. 061 |
| 5. Transformer TS-20 | no. 06. 01. 801 |
| 6. Push-button | no. 05. 09. 164 |

14. PERIODICAL OPERATIONAL INSPECTION

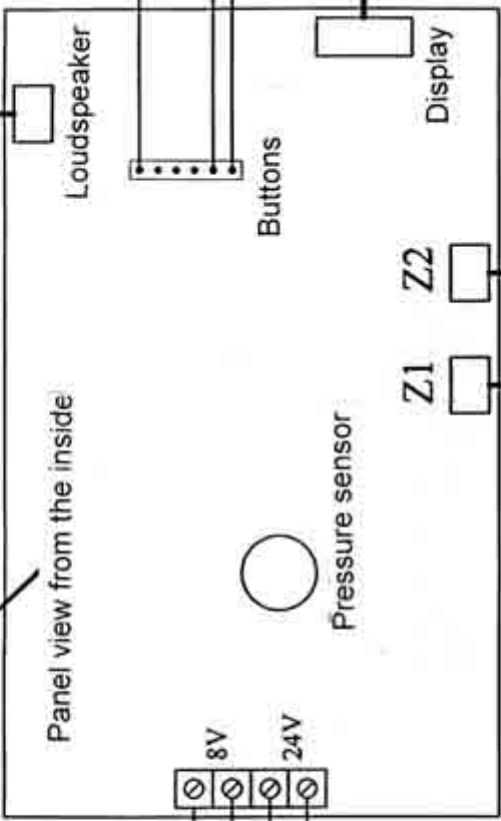
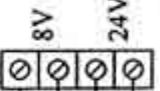
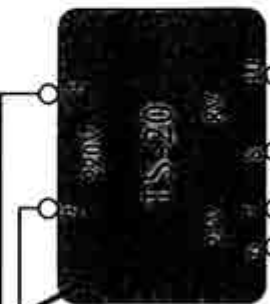
The PA-10K device should have a valid verification certificate. If within the certificate validity there appears suspicion that manometer's deviations exceed the limits of admissible deviations then you have to check the correctness of device indications on your own or send the device to the producer.

05.09.061

06.01.801

06.03.019

Mains transformer



Panel view from the inside

Loudspeaker

Buttons

Pressure sensor

Z1

Z2

Display



Pressure control buttons

05.09.164

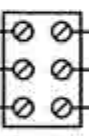
Fuse 0.5 A



Protective terminal



Connection block



Yellow-green



Pumping valve



Bleed valve



Display

06.03.020

07.01.008

INSTALLATION DIAGRAM

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CONFORMITY DECLARATION

Conformity Declaration CE

According to the directives: 98/37/CE and 89/336/CEE

We: Uni-Trol Ltd
Estrady 56
01-932 Warszawa
Poland

Declare on our exclusive responsibility that the product

Device for vehicle tyre pressure measurement and control
type **PA10K**

which is concerned by this declaration, is in conformity with the following legal regulations:

- **directive 98/37/CE (machine safety);**
- **directive 89/33/CEE and the modifications below (electromagnetic compatibility).**

In order to verify the conformity with the legal regulations one consulted the corresponding standards or other standard documents:

- PN – EN 292 – 1/2000 Machines – Safety – Basic notions, general design principles – Basic terminology, methodology – Part 1;
- PN – EN 292 – 2/2000 Machines – Safety – Basic notions, general design principles – Basic terminology, methodology – Part 2;
- PN – EN 50081 – 1/1996 Electromagnetic compatibility – General requirements concerning emission – Commercial, living and light industry environment –Part 1;
- PN – EN 50081 – 2/1996 Electromagnetic compatibility – General requirements concerning emission – Industrial environment –Part 2;
- PN – EN 50082 – 1/1999 Electromagnetic compatibility – General requirements concerning disturbance resistance – Commercial, living and light industry environment –Part 1;
- PN – EN 50082 – 2/1997 Electromagnetic compatibility – General requirements concerning disturbance resistance – Industrial environment –Part 2;
- PN – EN 60204 – 1/2001 Machine safety – Equipment of electrical machines – Part 1
General requirements
- PN – EN 61204 /2001 D.C. low voltage feeders – Safety requirements and characteristics;
- PN – EN 61293 /2000 Marking of electrical devices with ratings concerning electrical supply
- Safety requirements;
- 62/2002 Electrical components
- PN – EN 983 / 1999 Machine safety – Requirements concerning safety of hydraulic and pneumatic systems with their elements – Pneumatics

This declaration concerns all products manufactured according to the technical documentation which is contained in this declaration.

03.04.2004

President of the Management Board

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Signature
mgr inż. *[Signature]*
Tukowski