

Vertical automatic stand

STAV

User Manual

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1. Introduction

STAV500 vertical test stand with electric drive is designed for FB50, FB200, FB500, FC50, FC200 and FC500 force gauges. Thanks to precise programming motion mechanism STAV500 enables to perform precise measurements during e.g. material resistance testing.

2. Complete set

Basic set consists:






1. Automatic stand
2. Mounting element (force meter mounting)
3. Power supply

3. Technical data

Type	Automatic stand STAV
Maximal tested force (max)	500N
Stroke (travel)	300mm
Maximal speed	300mm/min
Motion programmes memory	10
Max steps quantity in one cycle	8
Working temperature	0÷+40°C
Interfaces	RS232C, USB
Power supply	-230V 50Hz 100VA / 24V 4 A
Weight	22,5kg

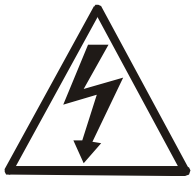
4. Stand keys



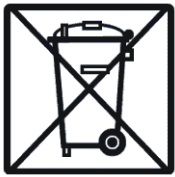
-  - turn on / off the stand,
-  – STOP safety button that disconnects motor's supply,
-  - back / during inscribing data used for deleting or used for returning to previous position (inscribing PIN code),
-  - enter (choosing option) / during inscribing data adds another position or used for moving to next position (inscribing PIN code),
-  - return to main screen.

Knob enables to move cursor up or down (moving the knob right or left) and choosing selected option (by pressing the knob).

5. Safety rules

	<p>It is necessary to follow the safety rules. Obeying this rules is crucial to avoid electrical shock, damaging the stand or other connected devices.</p>
<ul style="list-style-type: none">• Repairs and necessary regulations can be done by authorized personnel only• To avoid fire risk use a feeder of an appropriate type (supplied with stand) and supply voltage must be compatible with specified technical data.• Do not use the stand if the cover is open.• Do not use the stand in explosive conditions.• Do not use the stand in high humidity environment.• If the stand does not seem to operate properly, turn it off and don't use it until checked by authorized service centre.• During measurements keep safe distance from the moving elements and the sample.	

6. Disposal rules

	<p>According to current acts of law about protection of natural environment, wasted balances should not be put into waste containers together with ordinary waste.</p>
<ul style="list-style-type: none">• Wasted stand after operation period can be delivered to units authorised for gathering wasted electronic devices or to the place where it was bought.	

7. *Preparing to work*

The stand must be used in room where the following requirements must be fulfilled: temperature must be between 0 to 40°C, air humidity 20% ÷ 80%.



Stand must be set in room in such way as to allow easy access to safety button STOP !

Preparing device to work:

1. Put the stand on flat stable surface.
2. Carefully mount a force meter to the stand by using supplied mounting element.
3. Connect supply to stand.
4. Connect force meter to supply (if user doesn't use internal accumulators).
5. Turn on the force meter (press ON/OFF) and the stand (press I/Q).
6. The stand is ready to work.

8. General operation rules



During work keep hands in safe distance from sample and moving parts!



In case of any danger of losing health immediately press safety button STOP located on the device's front!

1. Make every effort to put the sample safely and stable before starting measurements.
2. During work keep hands in safe distance from sample and moving parts.

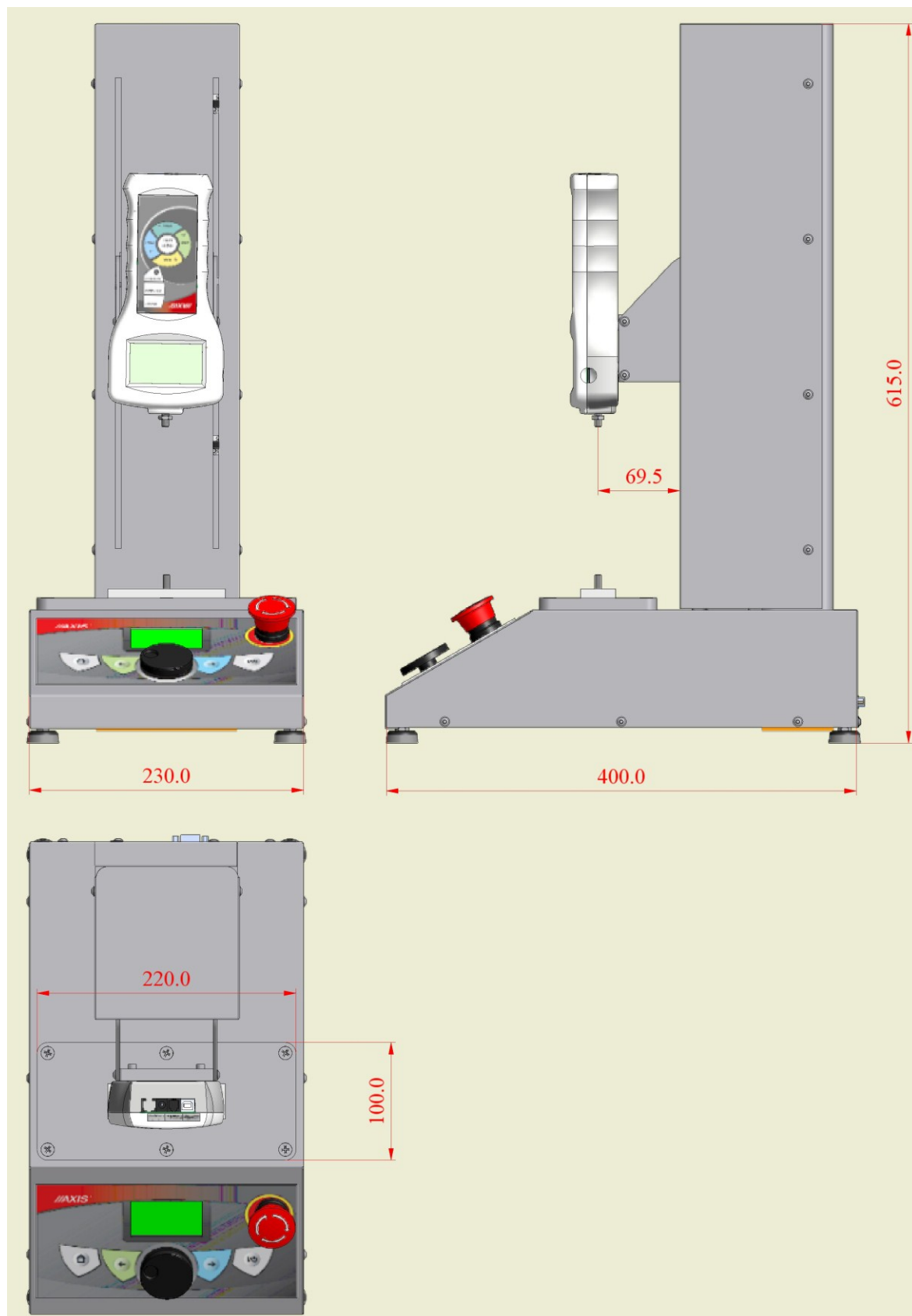
9. *Communication interface*

The stand is equipped with two serial interfaces: RS232C and USB.

RS232C is used to connect the stand to force meter in order to receive actual force value from the force meter.

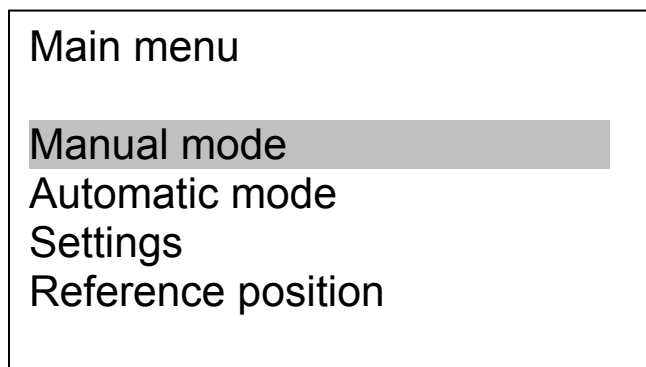
USB is used to connect computer with stand in order to send measurements to computer.

10. Dimensions



11. **Main menu**

After turning on the stand following menu appears:



User by turning knob changes selected position on the screen and enters it by pressing the knob or → key. Exit from selected option by pressing ←.

12. **Reference position**

After turning on the stand and before measurements start user must select *Reference position* – this option moves the force meter to base position.

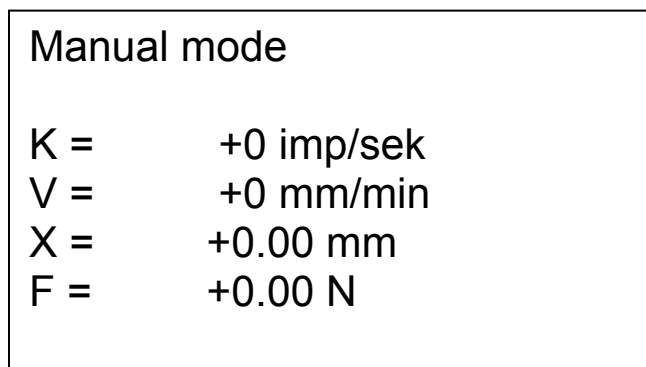
Thanks to base position driver can evaluate start position.

Setting base position must be executed after each ON/OFF.

Setting base position is required to use automatic mode.

13. **Manual mode**

In manual mode user by turning the knob moves force meter mounted on stand.



On the screen actual information are displayed:

K – knob rotary speed (impulse/second),

V – force meter travel speed (mm/min),

X – force meter position (mm),

F - force value (N ; displayed if the force meter is connected to stand by RS232C)
Pressing knob will cause displaying sign *UP Down* and automatic moving the force meter with maximal speed in chosen direction.

Attention:

If before choosing manual mode user didn't set base position the X parameter will show „?” symbol.

14. Automatic mode

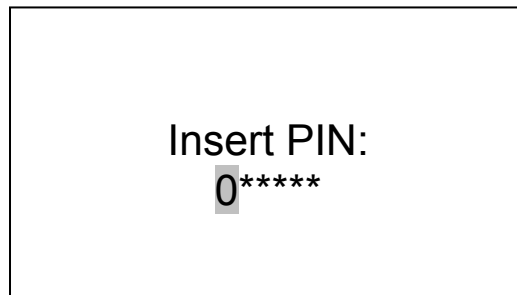
After choosing in main menu *Automatic mode* , the user chooses motion programme (programmed earlier by user: *Settings* menu → *Motion programs editing*). After choosing proper programme by using knob user enters chosen setting and following positions indicate:

Position name	Description
<i>Start</i>	Measurement start.
<i>Go to ref. pos.</i>	Stand goes to base position for this programme.
<i>Reset cycle Counter</i>	Zeroing motion cycle counter.
<i>V[mm/min]</i>	Actual speed.
<i>x[mm]</i>	Actual position.
<i>F[N]</i>	Actual force on force meter display.
<i>Cycle no.</i>	Actual cycle number.
<i>Step</i>	Actual step number (each cycle can be divided into max 8 steps)
<i>x< / x></i> <i>t< / t></i> <i>F< / F></i> <i>tc< / tc></i>	Condition of actual step dependent on movenet, time force or cycle time
<i>t step [sek]</i>	Actual step time.
<i>t cycle [sek]</i>	Actual cycle time.
<i>t motion [sek]</i>	The whole motion actual time

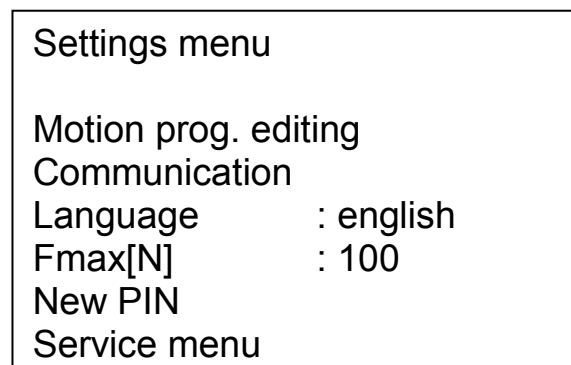
After setting reference position for chosen programme (*Go to ref. pos.*) we choose *Start* and start measurement. User checks actually displayed data eg. actual motion speed or actual cycle number.

15. Settings

Entrance to settings is locked with PIN code.



Default PIN code is „000000” but it can be changed. By using ← and → keys change indicator position, move the knob to choose digit, press the knob to confirm inscribed PIN code. After entering settings submenu user can edit motion programmes, communication settings, menu language, maximal force, change PIN code and enter service menu (only for AXIS staff).



15.1 Motion prog. editing

Motion prog. editing enables inscribing motion program settings such as eg. reference position, cycles quantity or steps quantity in one cycle. By using this settings user has many options to adjust programmed motion to his needs and sample. Precise description of each option below:

Name	Values	Description
Name	Max 14 signs	Motion program name edition
Reference pos.	-	Displays actual reference position.
Set reference pos.	-	Setting reference position.
Positive dir.	Down Up	Setting direction down or up as positive.
Cycle count	1 ÷ 9999	Setting measurement cycles quantity.
Steps count	Max 8	Setting steps quantity in one cycle.
Manual mode	-	Preview in manual mode.
Motion prog. test	-	Motion program test. STAV/STAH will execute 1 cycle according to settings.
Step n – test	-	N-step test. STAV/STAH will execute n-step according to settings.
Speed	20-300	Setting movement speed [mm/min] for n-step.
Continue condition step		Step will be executed until chosen condition will be completed:
	x<	Movement value (position) smaller than
	x>	Movement value (position) bigger than
	F<	Force value smaller than
	F>	Force value bigger than

t<	Step time under
tc<	Step time over
d<	Covered distance smaller than

One of below:

[mm]	0-200mm	Inscribing position value or covered distance depending on chosen continue condition step
[N]	0-200N	Inscribing force value if F< or F> condition was chosen
[sek]	0-200s	Inscribing time value if t< or tc< value was chosen

Depending on steps quantity menu positions quantity increases.

After setting all settings user exits by using ← key.

To start programmed motion user goes back (using ← key) to main menu and chooses *Automatic mode* position. Then user chooses proper motion program name (chapter 14).

15.2 Communication

In *Communication* submenu user can set RS232C serial interface parameters. User can choose information send to computer: cycle number, time, position and force. Using knob user selects which information will be send.

Communication	
Period	: 000100
Baud	: 128000
Cycle no.	: <input type="checkbox"/>
Time	: <input type="checkbox"/>
Position	: <input type="checkbox"/>
Force	: <input type="checkbox"/>

15.3 Maximal force (F_{max})

Setting maximal force, which can act on force meter. F_{max} secures force meter from overloading. To use it connect force meter by RS232 joint to the stand and check if on stand's display there's information about actual force.

Maximal value possible to set is 500N.

15.4 New PIN

New PIN submenu enables to change PIN code that secures access to *Settings* menu. Using ← and → keys user changes indicator position, by moving knob digit value changes and then by pressing knob user confirms new PIN. New PIN must be inscribed twice to not make any mistake.

New PIN

Set new PIN

Confirm PIN

0*****

15.5 Service menu

Service menu is only for AXIS service.

Communicates

Communicate/ state	Reason	Solution
POSITION UNKNOWN	Reference position is not known	Choose in main menu <i>Reference position</i>
NO SUPPLY	Stand engine supply off – security STOP buton pressed	Turn off STOP button. If the button is off then contact AXIS service.
OVERLOAD	Stand loaded above Fmax value	Change Fmax value or use other sample which needs lower force. If still the stand is overloaded contact AXIS service.



Declaration of Conformity

The last two digits of the year in which the CE marking was affixed: 16

We:

AXIS Spółka z o.o. 80-125 Gdańsk, ul.Kartuska 375B

confirm with all responsibility that the stand:

STAV500

marked with **CE** comply with the following:

Directive 2004/108/EC (electromagnetic compatibility) and harmonized norms:

- EN 61000-6-3:2008+A1:2012
- EN 61000-4-3:2007 +A1:2008+A2:2011

Informacje dodatkowe:

Additional information:

- Conformity evaluation were carried out by Laboratorium Badawcze Oddziału Instytutu Elektrotechniki in Gdańsk, accredited by PCA (AB007), examination report nr 037/LMC-934/2014 from 20.05.2014 r.

Per pro Director of AXIS Sp. z o.o.:

Production Manager

Jan Kończak

Gdańsk, 22-10-2015 r.

Notes