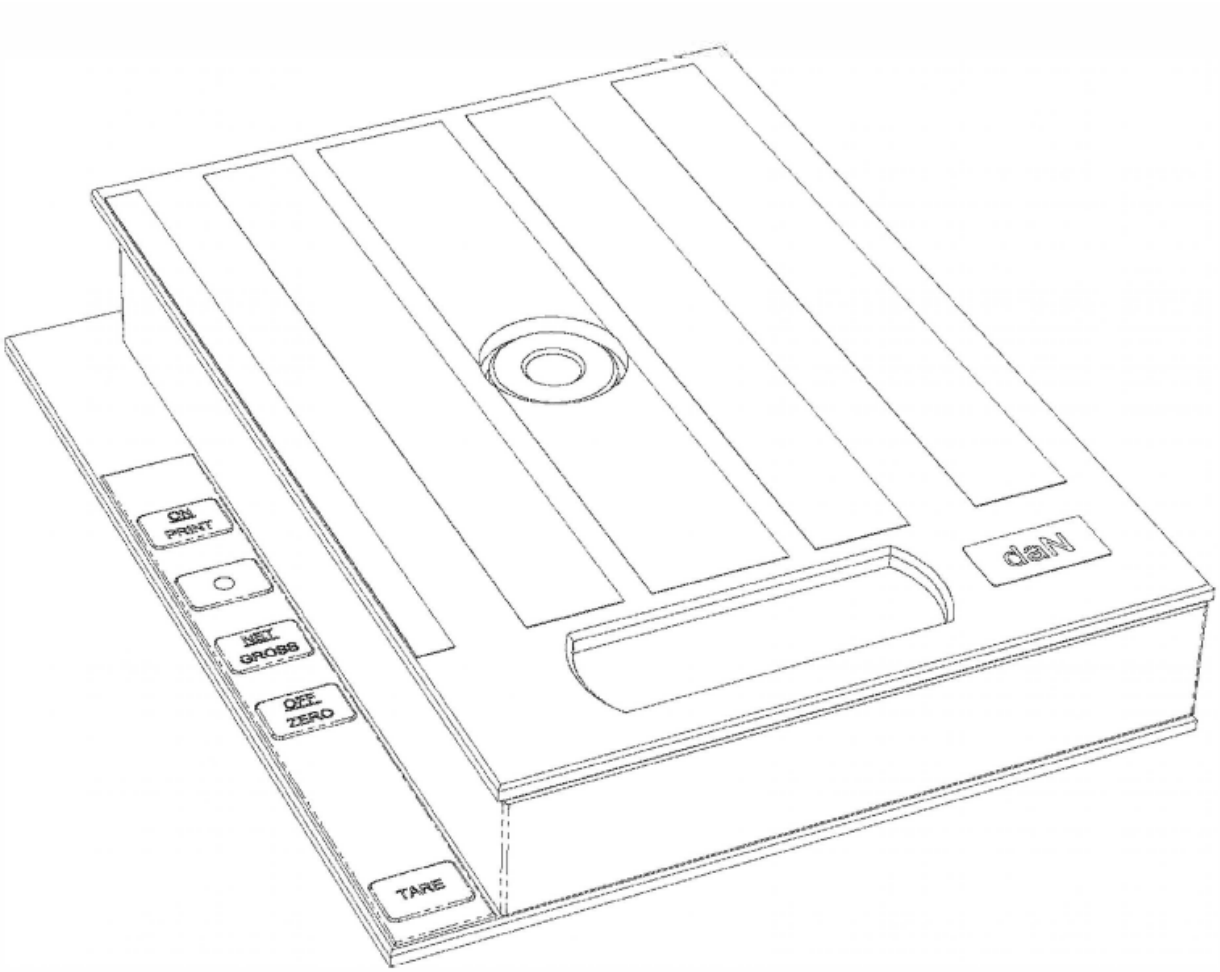
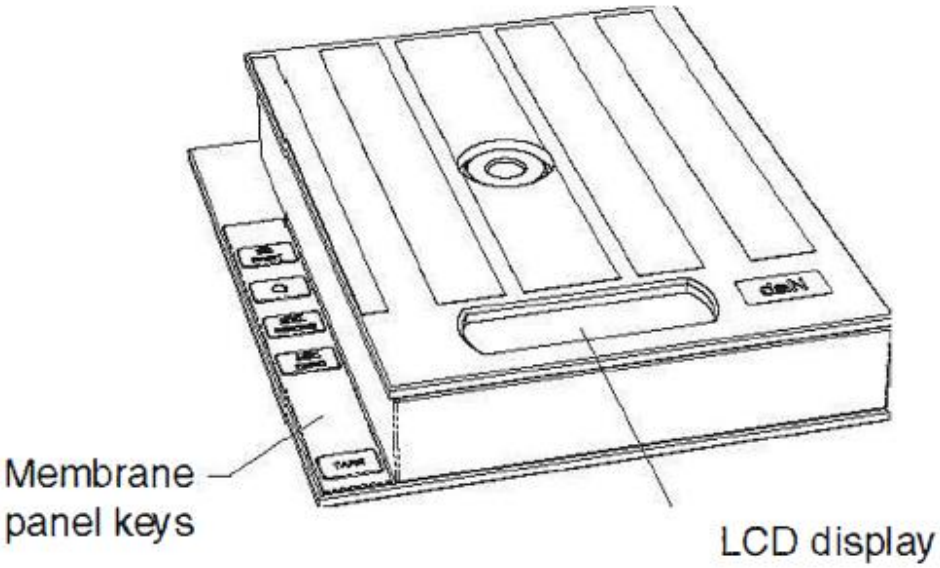
Manual Force Meter Weighingblock VB3-10K lbf/daN

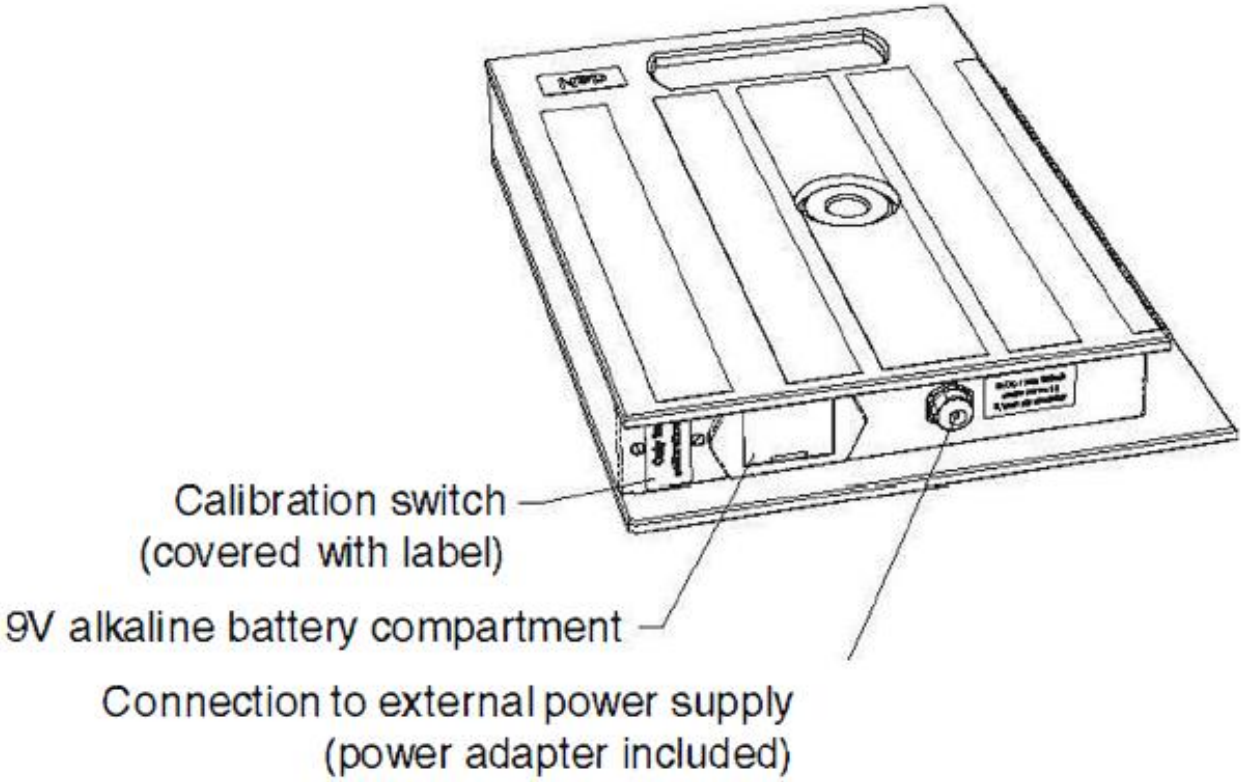


Vetek Weighing AB
Hantverksvägen 15
76493 VÄDDÖ

tel 0176-20 89 20
http://www.vetek.com
e-mail: info@vetek.com

VETEK
ALLT INOM VÄGNING





Vetek Weighing AB
Hantverksvägen 15
76493 VÄDDÖ

tel 0176-20 89 20
http://www.vetek.com
e-mail: info@vetek.com

Table of contents

	Page
Introduction, Keyboard Functions	2
Configuration and Setup Menu. Display	3
Parameters	4
Calibration	5
Specifications and Displayed Error Codes	6
Fault localization and repair	7
Instruction for handling	8

Introduction

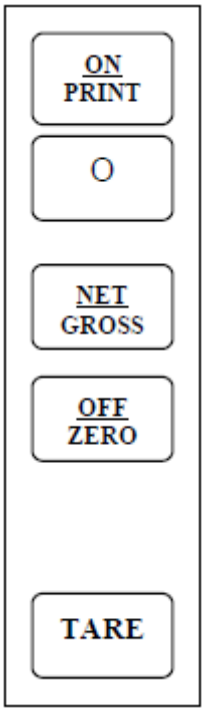
Veteks VB3-10K series of Weighingblocks are rugged digital Force Meter made in strong aluminium. It comes standard with a large (.75") LCD screen for easy readout. All setup parameters may be entered via the membrane panel keys. The Force Meter has an ”intelligent” auto power off function.

The Force Meter is developed for general force measuring. The setup parameters are altered through the Setup menu while a few other parameters are altered through the User menu. The configuration section of the manual explains how to use the five front panel keys to manoeuver and save settings in both menus.

The Force Meter is equipped with 9 V alkaline battery. If the battery is not good enough to ensure a correct value the Force Meter will turn off.

Keyboard functions

The calibration switch besides the battery is only for calibration.



Indicator ON

O button Toggles between daN/lbf if activated. To Change primary start up unit see below

Toggles between Gross and Net weight/force display only if a Tare has been established.

Sets Force Meter to display "0" when in Gross mode, and within zero band range. **When pushed in for 3 seconds, the Force Meter switches off.**

Used to establish a Tare (**zero the Force Meter**) while in either Gross mode or Net mode. This operation cannot be performed at or below Gross zero.

Vetek Weighing AB
Hantverksvägen 15
76493 VÄDDÖ

tel 0176-20 89 20
http://www.vetek.com
e-mail: info@vetek.com

Configuration

Setup menu.

To do this configuration you need to have a good acknowledge how a digital electronic Force Meter works. Note: If the Force Meter fails, it is not always sure the Force Meter needs a configuration.

Except the **Normal Meny** the Weighingblock has two menus.
The Setup menu, containing most of the indicator's functional Setup parameters, consists of 15 separate menu selections, each with its own sub-menu of choices.

The User menu, except A5 and A10 containing most of the indicator's serial communication parameters which not are shown in this manual.

SETUP MENY

1. Turn the power **OFF**.
2. Press Calibration Switch one time.
3. Turn the indicator **ON**.
4. The display shows "**F1**" to indicate that the unit is in Setup menu mode.
5. To move to a new “F” heading, use **TARE** or **ON** to move up or down.
6. To move to the selection value, press **ZERO** once.
7. Increase the flashing digit by pressing **lb/kg**. Decrease the flashing digit by pressing **ZERO**.
8. To save the value, press **NET**.
9. Press **O** to go back to parameter number.
10. To go back to normal menu press Calibration Switch one time for normal mode.

NOTES ON THE SETUP MENU

There is an **F21** sub-menu present that is for FACTORY USE ONLY!

DISPLAY

LCD Enunciator	MEANING
→0←	Better known as the “Center of Zero” enunciator, this light is active whenever the displayed weight is within ± 0.25 divisions of true zero.
N	Indicates that the indicator is displaying net weight/force.
G	Indicates that the indicator is displaying gross weight/force.
T	Indicates that a tare weight/force has been established in the system.
bAtt	Indicates a low battery condition. Replace the alkaline battery.
▸◂	Indicates stable weighing.

Vetek Weighing AB
Hantverksvägen 15
76493 VÄDDÖ

tel 0176-20 89 20
http://www.vetek.com
e-mail: info@vetek.com

PARAMETER	DESCRIPTION	CODE/VALUE
F1 Graduations	Specifies number of the Weighingblocks graduations.	**daN = 5000** **lbf = 12500**
F2 Span Gain	Filter 10 normal measuring, 80 fast measuring	**10** 80
F3 Zero Track	Selects the range within which the Force Meter will automatically zero.	0d, 0.5d, **1d,** 3d, 5d
F4 Zero Range	Selects the range within which the Force Meter may be zeroed. Note that the indicator must be in standstill to zero the Force Meter.	100% 1.9% 2% **20%**
F5 Motion Band	Sets the level at which motion is detected by comparing the present display update with the previous one.	0,25 **1d** 3d 5d 10d
F6 Digital Filter	Averages weight readings to produce higher accuracy. The higher the filter number, the greater the accuracy but the slower the response time. Choose 4 or 8 unless a very fast response is needed.	1 2 4 **8**
F7 Overload Limit	Selects the desired formula which determines the point at which the indicator shows overload ("□□□□").	FS **FS + 2%** FS + 1d FS + 9d
F8 Calib. Unit	Selects the primary base unit to be used in the **calibration process**. Also the default unit for normal operation. "1" = primary unit is lbf. "2" = primary unit is in daN. **NOTE! Do not change this value unless a new calibration is made.**	**1 = lbf** **2 = daN**
F9 Display Div.	Determines the desired weight increments. Value should be consistent with legal requirements.	1 **2 = daN** **5 = lbf**
F10 Decimal Pt.	Determines location of the decimal point.	**0** 0,0 0,00 0,000 0,0000
F11	Not used, always set to 0	**0**
F12	Primary start up unit 1 = lbf. Primary start up unit 2 = daN	**1 = lbf** **2 = daN**
F13 and F14	Not used for VB2-10K version	
F15	Conversion unit between daN/lbf and lbf/daN. Value depends on which primary calibration unit the VB2-10K is calibrated in see F8 above. **NOTE! Do not change this value unless a new calibration is made.**	If F8=2, set value **2,2481** If F8=1, set value **0,4448**
F16-F17 Calibration	Places indicator into the zero calibration routine. Scrolling down with the **ZERO** key one level begins the procedure. See page 5	Press **ZERO** key to begin sequence
F18-F20	Not relevant for this VB2-10K version	
A5 Disable the lb/kg Key	Allows the lb/kg key to be disabled so that an operator cannot accidentally press the key and change the displayed units. "0" = Disable the daN/lbf toggle function "1" = Enable the daN/lbf toggle function	**0** **1**
A10 Auto Power Off Period	Selects the auto off time period in minutes: "Off" = Disabled (Always ON)	1, 2, 4, 10, **20,** 60, off
A1,2,3,4,6,7,8,9	Not relevant for this VB2-10K version	
F21 Factory Reset	This sub-menu will reset all parameters in the "F" and "A" menu to the default settings. **USE WITH CAUTION!**	Press the **ZERO** key twice to execute.

Vetek Weighing AB
Hantverksvägen 15
76493 VÄDDÖ

tel 0176-20 89 20
http://www.vetek.com
e-mail: info@vetek.com

VETEK
ALLT INOM VÄGNING

Calibration

We recommend the Force Meter to be calibrated at yearly intervals. The minimum test force that can be used is 70% of full-Force Meter capacity.

To calibrate the zero point using the F16 zero calibration procedure:

1. Turn the power **OFF**
2. Press the Calibration Switch once.
3. Turn the power **ON** and the display will show F1, if not go back to point 1.
4. Scroll to "**F 16**". Use the **TARE** or **PRINT** key to move up or down. (If necessary press **O** to go back to parameter number.)
5. Press **ZERO**. The display will momentarily show "**C 0**" followed by a value. (If necessary press **O** to go back to parameter number.)
6. After making sure that there are no weights on the platform, press **ZERO** to zero out the displayed value.
7. Press **NET** to save the zero point value. The display will show "**EndC0**"momentarily, and then revert back up to F16. At this time, proceed to the F17 span calibration to complete indicator calibration.

To calibrate the max point using the F17 span calibration procedure:

1. Scroll to "**F 17**", then press **ZERO** to enter span calibration menu.
2. The display will momentarily show "**C 1**" for the span calibration, followed by a value with one flashing digit. This value will be zero. Place the test force on the Force Meter.
3. Pressing **TARE** or **ON** will change the position of the flashing digit.
4. Increase the flashing digit by pressing **O**. Decrease the flashing digit by pressing **ZERO**.
5. After setting the exact value, press **NET** to save the value.
6. If the calibration was successful, the display will show "**EndC1**" momentarily, and then revert back up to F17.
7. "**Err0**" – The calibration test force or the adjusted keyed-in weight is larger than the full capacity of the Force Meter. Change the calibration test force or check the input data.
8. "**Err1**" – Change the calibration test force or check the input data.
9. "**Err2**" – The internal resolution of the Force Meter is not high enough to accept the calibration value. Select a larger parameter for the Span Gain (F2).
10. Press Calibration Switch one time for normal mode.

Change primary start up unit to daN or lbf procedure:

1. Turn the power **OFF**
2. Press the Calibration Switch once.
3. Turn the power **ON** and the display will show "**F 1**".
4. Scroll to **"F 12"**, then press **ZERO** to enter.
5. Use the **TARE** or **PRINT** key to change the value to the desired value:
   Primary start up unit **1 = lbf**. Primary start up unit **2 = daN**
6. Press **NET** to save
7. Press Calibration Switch one time for normal mode.

Vetek Weighing AB
Hantverksvägen 15
76493 VÄDDÖ

tel 0176-20 89 20
http://www.vetek.com
e-mail: info@vetek.com

VETEK
ALLT INOM VÄGNING

Specifications and displayed error codes

Model	Capacity / Graduation	Dimension mm	Battery	Own weight
VB2- 10K	Max 10000 daN / 2 daN Or 22000 lbf / 5lbf	260 x 210 x 54	1 pcs alkaline 9 V	3,2 kg

OPERATOR INTERFACE

Display	0.75" (19 mm) 7-segment, Liquid Crystal, 6-Digit
Additional Symbols	Net, Gross, Stable, Tare, lb, kg, Zero
Keyboard	5-key flat membrane panel
Operating Temperature	-10 to +40 grad C
Storage Temperature	-25 to +70 grad C

ENVIRONMENTAL

Operating Temperature	-10 to +40 grad C
Storage Temperature	-25 to +70 grad C

CODE	MODE	MEANING / POSSIBLE SOLUTION
❒❒❒❒❒	Normal Operating Mode	Gross Overload. A force greater than the rated capacity has been applied to the Force Meter. Remove the force from the platter or try re-calibrating the Force Meter. Otherwise, check for a bad load cell connection or possible load cell damage due to overloading.
bAtt	Normal Operating Mode	Indicates a low battery condition.
Err 0	Span Calibration Mode (F17)	Keyed-in force value is larger than full-Force Meter capacity. Use a smaller test force or check keyed-in value.
Err 1	Span Calibration Mode (F17)	Keyed-in force value is less than 1% of full-Force Meter capacity. Use a larger test force or check keyed-in value.
Err 2	Span Calibration Mode (F17)	There is not enough load cell signal to produce the internal counts necessary to properly calibrate the Force Meter. First check all load connections. Use F16 mode to view internal counts. See Appendix C for more information.
Err 3	All Modes	Non-volatile memory read error. One or more setup parameters have been lost.
Err 4	All Modes	Non-volatile memory writes error. The unit needs service.
Err 5	Key-in Span Calibration Mode (F20)	You have attempted to enter a zero value for C1. Enter a known calibration value greater than zero.
Err 7	Initialization	No reading from the ADC. Make sure there is a load cell(s) connected to the indicator at start-up.
Err 9	Normal Operating Mode	Span calibration value has been lost. Re-calibrate the Force Meter.

Vetek Weighing AB
Hantverksvägen 15
76493 VÄDDÖ

tel 0176-20 89 20
http://www.vetek.com
e-mail: info@vetek.com

VETEK
ALLT INOM VÄGNING

Fault localization and repair.

Fault localization

If the Weighingblock is "dead".
1. Check the battery. Use only a 9 V alkaline battery.

If the Force Meter starts but the display shows wrong.

1. Calibrate the Force Meter.
2. If it not works.
3. The Force Meter must be demounted.

Demounting.

1. Demount the Weighingblock carefully.
2. Check the inside visually. Look for bad cables and connections.
3. If needed, clean the PC-board.

If the Force Meter shows F1

1. Probably has the Calibration Switch been changed to calibration mode?
2. Reset to normal mode.
3. Press **OFF** and **ON**.

Check the Loadcell

1. Check the Loadcell with a universal volt instrument, see encl table. The pin close to the corner is number 1.

Pin	Description
1	Out +5VDC
2	In +
3	Out 0 VDC
4	In -

Check the excitation voltage, it should be aprox 5 VDC.
The output from the Loadcell (pin 2 and 4) will increase from aprox. 0 to 10 mV for the capacity range.

If some parameters by mistake has been changed.

1. If only the first,F1, has been changed. Set back to right value in accordance to the table.
2. If many parameters has been changed. Check all parameter values. Probably it is necessary to calibrate the Weighingblock.

Vetek Weighing AB
Hantverksvägen 15
76493 VÄDDÖ

tel 0176-20 89 20
http://www.vetek.com
e-mail: info@vetek.com

VETEK
ALLT INOM VÄGNING