First Degree Fitness

VX-3FA

Fluid Assist with Smart Handle and External Power

User Guide

Table of Contents

INTRODUCTION

The NEW VX-3FA

The new VX-3FA brings together the functionality of a First Degree Fitness VX-3 Rower with Fluid Assist Motorized Level Control, with Smart Handle for Wireless Level Change.

Fluid Assist

- Replaceable Motor Control Module
- Motor Controlled Resistance Level
- Easy and Accurate Resistance Level Selection
- Change Level using the Interactive Performance Monitor (IPM) or Smart Handle

Smart Handle

- Easy Release Mechanism for Simple Replacement
- Low Power 2.4 GHz Wireless Technology with 5+ Meter Range
- Coded Wireless Signals - No *Cross-talk*
- Wirelessly Connect to *Fluid Assist*®
- Wirelessly Control Resistance Level

External Power

- Low cost external 6V Power Supply
- Easy access socket on tank frame leg
- Simple power-on procedure

Firmware Features

Fluid Assist

- Resistance Level Control
  - Motor Drive and Position Control
- Receive RF Data from *Smart Handle*
  - Level Up/Down Button Press and *Smart Handle* Battery State
- Simple Calibration Function
- Simple *Fluid Assist* to *Smart Handle* Pairing Function
  - Default Fluid Assist RF ID for configuration free Smart Handle replacement
- Communication between *Fluid Assist* and *Integrated Performance Monitor* (IPM)
  - Resistance Level Management
  - *Fluid Assist* and *Smart Handle* Battery States
  - *Fluid Assist* Special Function Management
- Power Management
  - Auto Power Down

Smart Handle

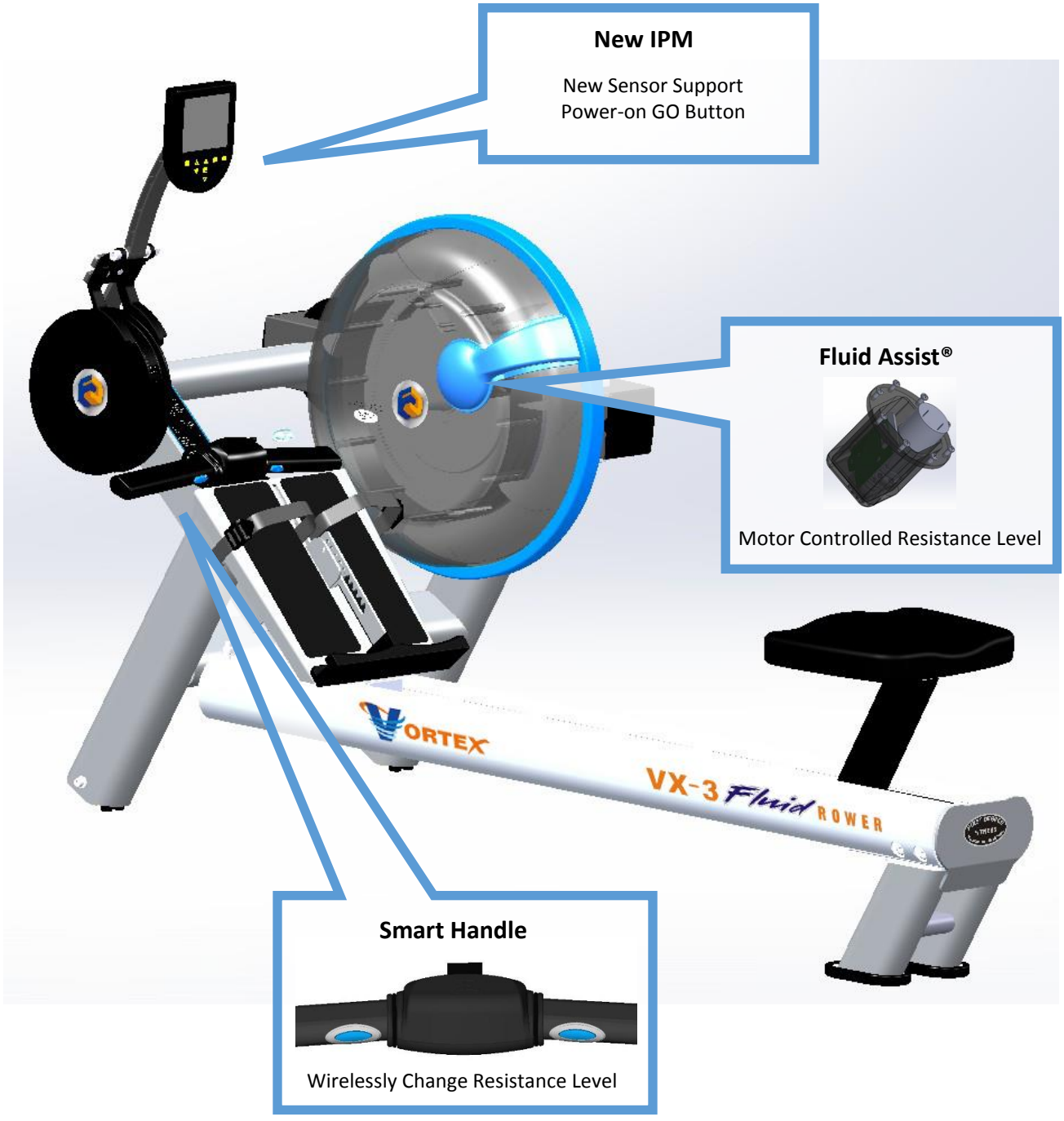
- RF Communication to *Fluid Assist*
  - Level Up/Down Button Presses
  - Battery Level Monitoring
- *Smart Handle* to *Fluid Assist* Pairing Function
- Power Management
  - Battery Saving and Auto Power Down
  - Battery level monitoring
  - Single button click to activate

New IPM Functionality

- Resistance Level Control
- Self-Test Function
- Calibration Function
- Health Check Display
  - Fluid Assist & Smart Handle Battery Level
  - Current Level and Measured Motor Speed
- Smart Handle Pairing Display
  - Only required for multiple Fluid Assist installations.
  - For a single user this function is NOT required.
  - Simple Interactive Pairing Function
- Smart Handle battery level monitoring and indication
- Added Fluid Assist USB Support

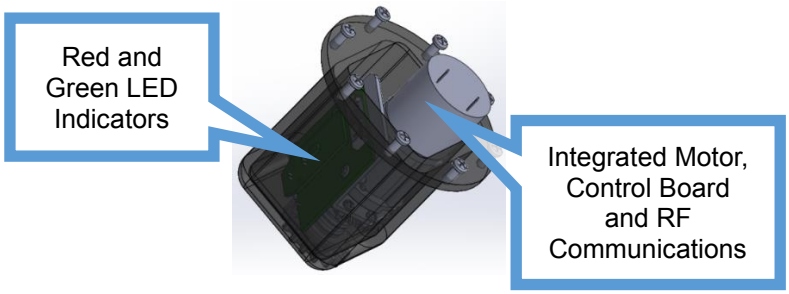
KNOWING YOUR VX-3FA

Overview

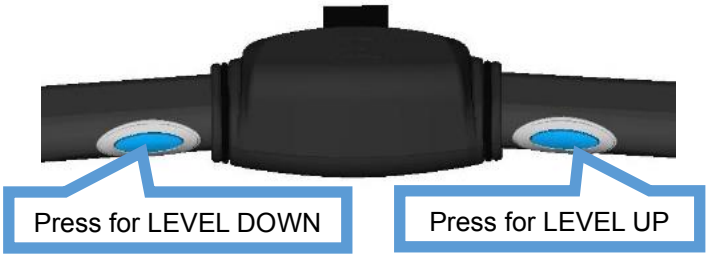


Fluid Assist

- Removable Motorized Resistance Control Module
- Green LED Indicator for Correct Function
- Red LED Indicator for Fault Conditions
- Both LED Indicators are visible through the tank shell
- Integrated 2.4GHz Wireless Communications



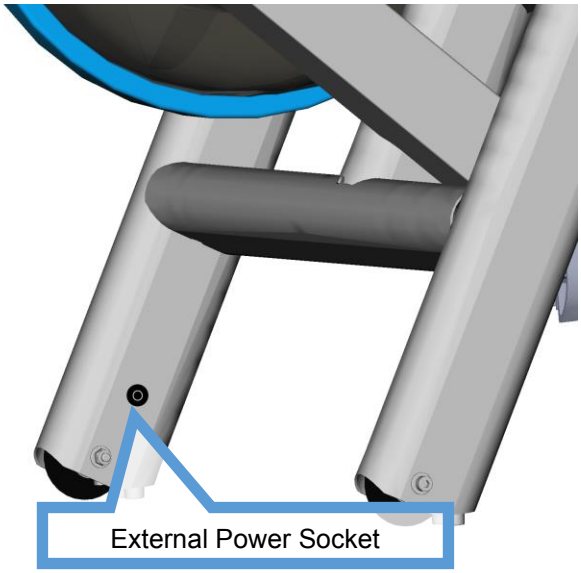
Smart Handle



- Ergonomically Designed Handle
- Resistance Level Control Buttons positioned for best use with thumbs
- Easy-to-Remove Protective Cover for Battery Change
- Quick Belt Release Mechanism for easy Belt or Handle Replacement

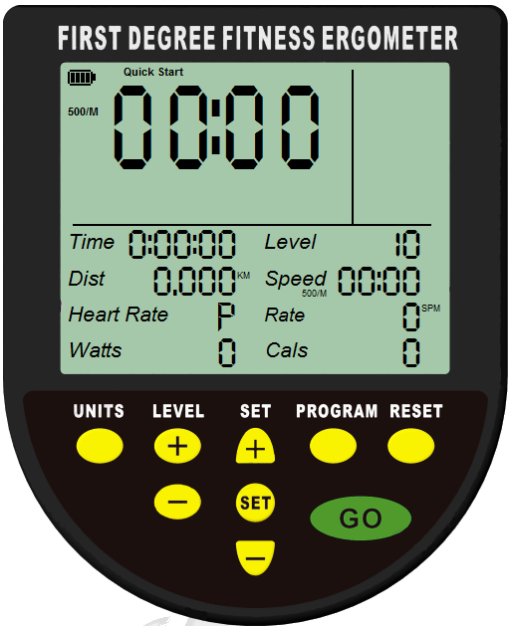
External Power

- Single 6V external PSU
- Socket at base of tank support leg
- Easy Connect and Power On procedure



New IPM

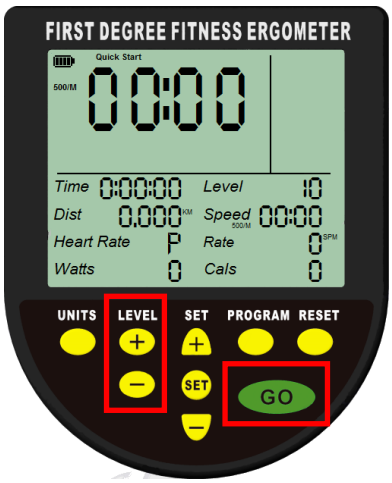
- New embedded rear connectors
- Faster CPU
- Support for new Optical Speed sensor
- Integrated GO Button for Power Control



Basic Operation

DO NOT DISCONNECT THE EXTERNAL POWER SUPPLY WHILE THE UNIT IS ON AS THIS MAY LEAD TO LOSS OF CALIBRATION

1. Ensure the External Power Supply is connected
2. Press GO on the IPM to power on
3. Press + or – on the Handle to activate
4. Press Level + or – on the IPM to change Level
5. Press Level + or – on the Smart Handle to change Level
6. The Battery Level Indicator will show 0 to 4 bars depending on Smart Handle battery level. If this indicator flashes then replace the Handle batteries.



ADVANCED IPM FUNCTIONS

For standard IPM functionality please see the Ergometer (IPM) with USB Connectivity User Guide.

Auto Power-Down

The IPM will auto power-down following 10 minutes of inactivity. Fluid Assist will occasionally perform an auto-park, to ensure correct calibration, during this procedure. If so, the IPM will display a flashing OFF indicator until the auto-park is complete.

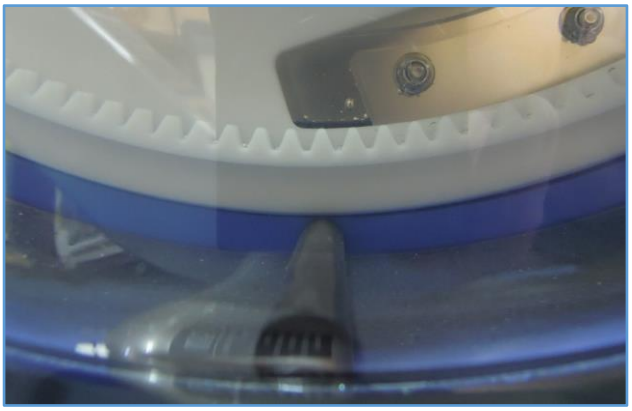
Manual Power-Down Function

It is not recommended but it is possible to manually power down the system. Simply press and hold UNITS and RESET until the display goes off or a flashing OFF is displayed (see above).

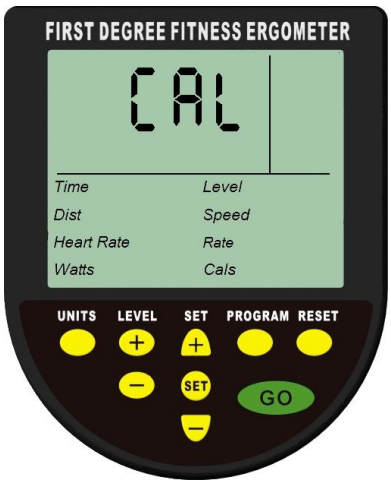
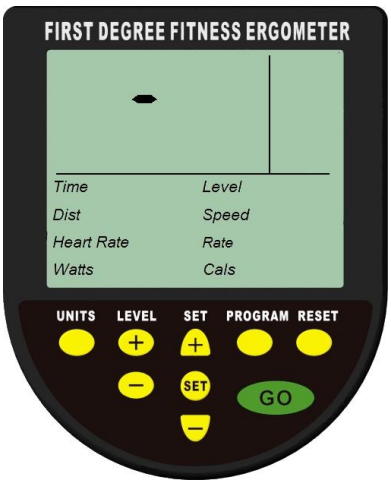
Calibration Function

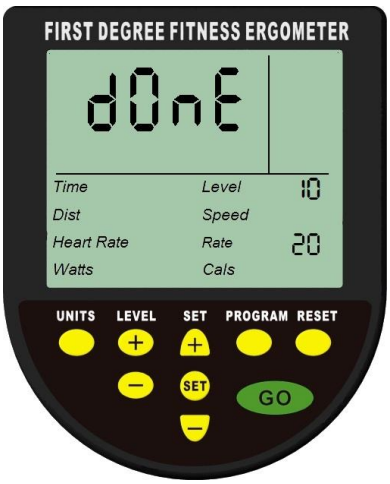
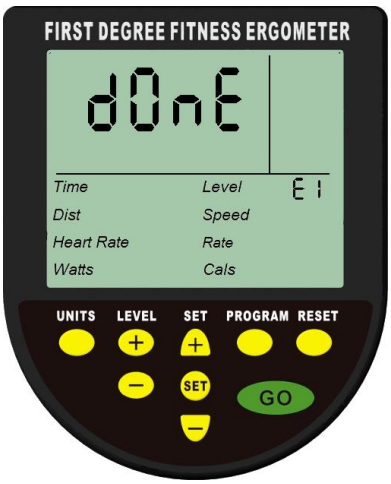
Calibration Check

1. Set Level 20
2. Visually check the position of the reservoir outlet hole
3. If this is not correct then follow the Calibration Procedure below



Calibration Procedure

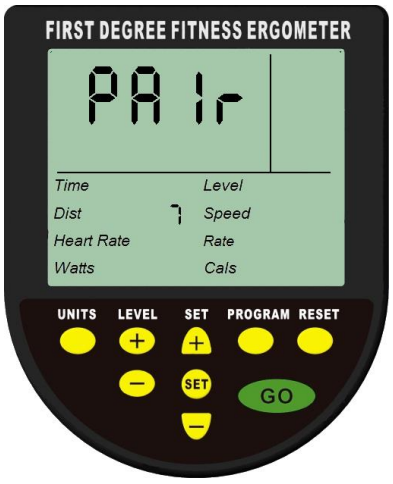
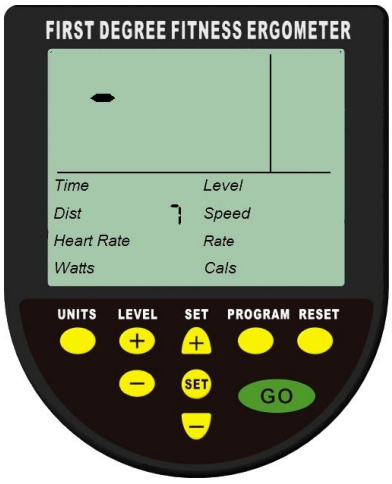
<table>
<tr>
<td> 
</td>
<td> 
</td>
</tr>
<tr>
<td>1. Preset RESET to clear the monitor
2. Press and hold SET and Level + for 5 seconds</td>
<td>6. During Calibration the IPM will show animated progress in the upper display and the Green Fluid Assist LED Indicator will illuminate while the motor is running.</td>
</tr>
</table>

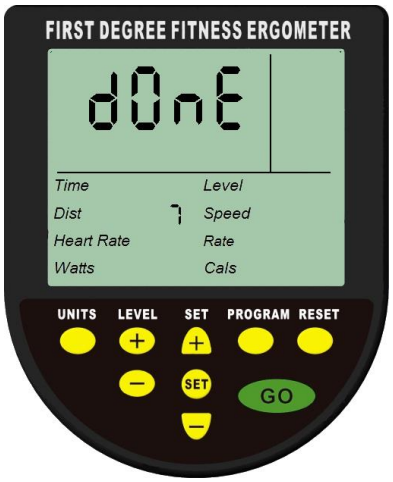
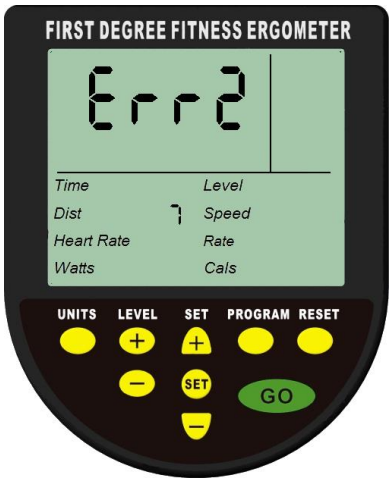
3. The display will show CAL 4. Press SET to start Calibration 5. OR press any other button to cancel and return to main display screen.	7. Wait until display shows 'dOnE'
	
8. On success the display will show Level 10 and the Motor Speed in the *Rate* field. This is the equivalent time taken to change from Level 1 to Level 20 in seconds. ***The ideal range for this value is 15-25s.*** 9. Press any key to return to main display	10. When a fault occurs the error number will be shown with the Err message. ***See the Troubleshooting Section for further information*** 11. Press any key to return to main display

Pairing Function

Note: This is only required when there are more than one VX-3FA in the same location

For multiple VX-3FA sites each one needs to be assigned a different Fluid Assist ID to avoid cross talk. It is suggested that the assigned IDs range from 1 to n, where n is the number of VX-3FAs, beginning the pairing process at 1 then repeating for each additional VX3-FA.

1. Preset RESET to clear the monitor 2. Press and hold UNITS and LEVEL UP for 5 seconds 3. Use + or – (above & below SET) to change the Fluid Assist ID displayed in the *Distance* field 4. Press SET to initiate Pairing or any other button to cancel and return to main display screen.	5. The display will animate while waiting for a Smart Handle *Pairing Signal* 6. On the *Smart Handle* press and hold both buttons to complete the pairing process.
	
7. On success, the display will show 'dOnE' 8. Press any key to return to main display	9. On failure. If there is no Smart Handle Signal after 20 seconds the display will show 'Err' with an error number. ***See the Troubleshooting Section for further information*** 10. Press any key to return to main display
11. Repeat from #1 assigning a different Fluid Assist ID for each VX3-FA	

Health Check Function

1. Preset RESET to clear the monitor 2. Press and hold SET and LEVEL DOWN for 5 seconds 3. The display will show Fluid Assist External Power Level in the Main Display Area. This should be around 6V. 4. The Smart Handle Battery Level is displayed just below Fluid Assist Battery Level ***Ideal Voltage Range is 2.2V to around 3.3V. If this is less than 2.2V consider changing the Smart Handle Batteries.*** 5. Press LEVEL UP OR LEVEL DOWN to change Level. This will update the Motor Speed Indicator, shown in the Rate field. ***The ideal range for this value is 15-25s.*** 6. Press any other key to return to main display	 *A simple timer will also be displayed*

BASIC MAINTAINANCE

For advanced service related issues please see the relevant service notes on our website.

Smart Handle

Changing the Batteries

1. Remove the O-rings holding the protective rubber cover in place
2. Remove the rubber cover by sliding it along the belt
3. Remove the battery clip. Ensure you do not lose this
4. Replace the 2 x AAA batteries. Alkaline AAA batteries are recommended
5. Replace the clip and rubber cover
6. Re-secure the cover using the O-rings

TROUBLESHOOTING

Error Codes

Fluid Assist

- **E1 = Motor/Position Sensor Error (Can occur when a level change is started)**
- **E2 = Calibration error (Can only occur when calibrating)**

Handle Pairing

- **Err1 = Invalid Handle ID**
- **Err2 = Timeout – No handle found**
- **Err3 = General Pairing Error (THIS SHOULD NEVER HAPPEN)**

Fluid Assist

LED Indicators

Green LED	***Red LED***	***Meaning***	***Action***
ON	OFF	Motor OK	None
ON	ON	Motor OK but not Calibrated	**Perform Calibration Function on IPM**
-	Flashing (1s ON/1s OFF)	Motor/Position Sensor Failure ***If the motor moves while changing level then this is a sensor issue otherwise it is a faulty motor.***	***Replace Motor Module***
-	Flashing (2s ON/2s OFF)	Calibration Sensor Error	***Replace Motor Module***

Smart Handle

LED Indicators

Green LED	***Red LED***	***Meaning***	***Action***
OFF	OFF	Either Button Pressed. Low Battery Level.	Replace Batteries
ON	OFF	Level Down Press OK	None
OFF	ON	Level Up Press OK	None
ON	ON	Button pressed but handle is not paired	Perform Pairing Function on IPM and Smart Handle
Single Flash	OFF	Fluid Assist is powered down or unavailable	Check Fluid Assist is powered on
-	Single Flash	Fluid Assist is powered down or unavailable	Check Fluid Assist is powered on
ON	ON	Pairing Initiated	None
Fast Flashing for 1 second	-	Pairing Success	None
-	Fast Flashing for 1 second	Pairing Fail – Fluid Assist is powered down or unavailable	Check Fluid Assist is powered on