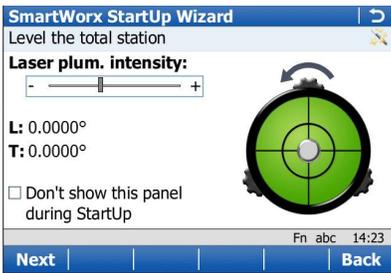


Quickstart for Leica SmartWorx Viva Robotic - setting up a standard topographic survey

TECHNICAL SUPPORT 1-855-414-9453 Chris or John

Turn on the total station, then the Robotic controller (CS15 or CS10)



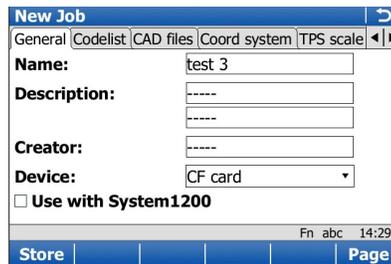
If the startup wizard is on, you'll first see the leveling icon. Tap the laser plumb. Intensity to increase/decrease the dot size/brightness. Level up the total station then tap Next.

Enter a Temperature & Pressure, or 0 ppm on the next screen and tap Next

If the startup wizard is not active, set up the job in Jobs & Data menu



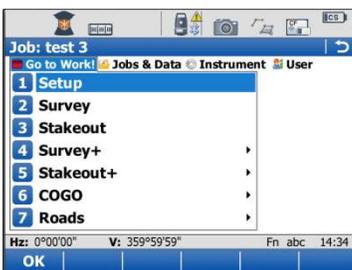
Select New, Tap Next



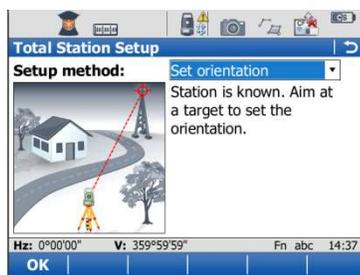
Enter job name, Tap Store



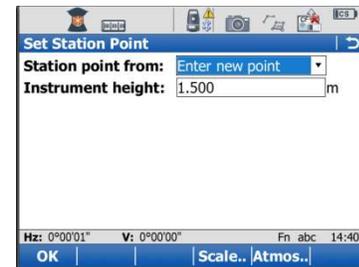
Select Go to Work



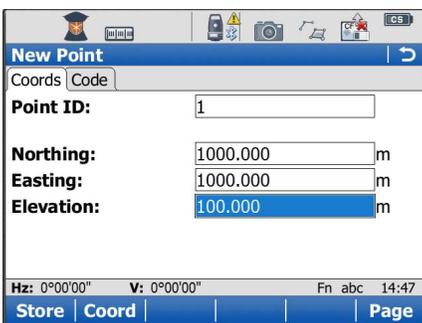
Select Setup (note: tap on the Prism symbol at the top to select The 360 style prism)



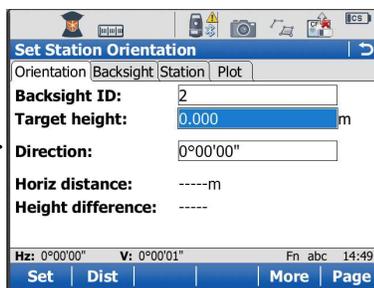
Select method (orientation for a new site, Known Backsight if you've traversed to a new setup, or Resection)



key in the height measured from ground to dot on side of TS12 Tap OK



Ente a station coordinate, STORE (may be 0,0,0)



enter Backsight ID and target ht. Press DIST for distance if required. Tap SET



Setup is complete. Tap Go to Work to select the task you want

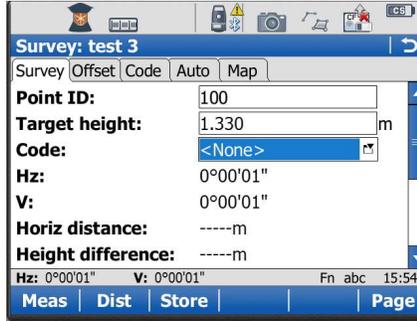
SEE NEXT PAGE FOR SURVEY SCREEN

NOTE: SMARTWORX WORKS IN AZIMUTH. DO NOT SET ZERO ON YOUR BACKSIGHT IF YOU ARE USING THE "KNOWN BACKSIGHT" METHOD AS THIS WILL ROTATE YOUR SURVEY

## Quickstart for Viva Survey (topography)



Select Go to Work, Survey



Type in your target point ID & height  
Highlight the Code field, type the point Description/code

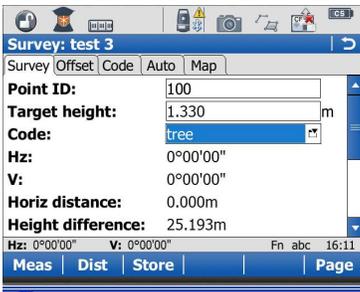


SmartWorx will search the codelist.  
If the code is not in your list, tap New, then Store, then OK to use it

Press Meas to take a measurement and store it, or Dist to view the distance first (can turn an angle offset if needed) then Store.

### LOCKING ONTO THE PRISM (see notes next page for other tips)

To activate Powersearch, press F12 or tap on the  button and select Powersearch from the Favourites menu. In the top left of the display, a lock symbol should change from unlocked (see below) to locked.

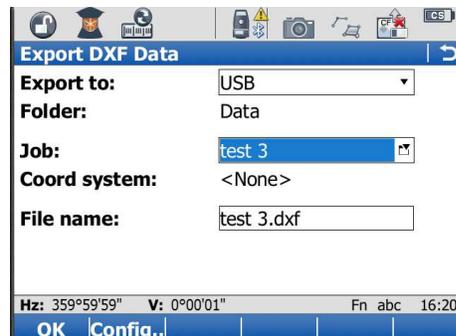
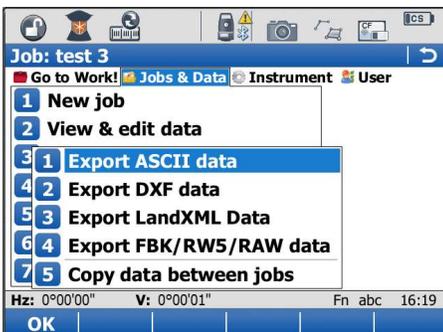


When the instrument is locked on, tap on  beside the prism symbol to Change to continuous measure mode. Then when you reach a target point you can enter a code and press Store which will go faster.

You can also store points at a set interval by pressing  then Config and setting the interval you want in the Log Auto Points tab. Save the changes then select the Auto tab to start recording.

To traverse to a new point simply measure your new nail or hub the same as a regular topo point, then tap  to go back and select the Setup routine again once you've moved the instrument up to this new point and select "known backsight" as the method.

**Exporting Data** at the main menu select Jobs & Data, Export, then the format you want. Then choose the destination path (the simplest is to put a memory stick in the bottom of the controller, and the data will go in the Data folder). Press Config to set up the export, ie. What info & coordinate order. To backup the whole job select User, Tools, Transfer & send the JOB from Internal memory to USB





**Importing Data for Layout:** put a USB stick in the controller, then go to USER,Tools, Format to get it ready. Then copy a text file of your layout points to the DATA folder. Insert the USB back into the controller, and go to Jobs & Data, Import. Press F2 Config to check that the coordinate sequence matches your file. Also note that you can attach a DXF drawing to the job by putting the dxf into the Data folder of your memory stick, then select Jobs & Data, Job Properties and look at the CAD files tab. Press F2 ADD and select your drawing.

### **TO KEY IN COORDINATES OF NEW POINTS**

Select "JOBS & DATA", then View & Edit Data, & select F2 NEW to create a new point

### **TO TRAVERSE TO A NEW STATION POINT**

Before moving, first record three points that you will also be able to record from the next setup in case you need to correct anything in your CAD software and need these as 'match points"

Measure to your new station point as you would any other topo point (see top of page 2). Once measured and stored

press  to go back a screen and select Setup. Choose "Known Backsight" as your method.

- Put a spot on the ground below the current instrument location then move the total station and set it up over the new station point (mark you left from the previous shot for reference)
- At the Set Station Point screen set the "Station Point from" option to "JOB"
- On this same screen you can now set the Point ID to the point number you are currently set up over and type in the new instrument height. Press OK
- On the Set Station Orientation screen set the Backsight ID to your last instrument location and take the pole/prism to that location. Use power search to locate the prism. Set the prism type at the top to the 360 prism if it isn't already
- Press DIST. The instrument will measure a distance then display the error at the bottom of the screen (delta hz dist and delta height). Note these, then hold the prism level again and press SET to complete the setup

### **COORDINATE GEOMETRY – USING FOR CHECKS**

If you do inverses all the time you can assign a hotkey to this function. Press Fn then  and choose option 9. Hot keys. Define one of the function keys as "COGO Inverse". Otherwise to access COGO, select Go To Work, COGO

**Measure to a Line** – you can use two points to define a line, & SmartWorx will show you stations and offsets

Select Go To Work, Survey+, Measure to ref Line. Choose Measure to Line, and fill the prompts to define a line then take a measurement to see where you are in relation

### **Notes on Locking to prism**

The Leica system can take more shots per second than any system available when locked, but I do get questions about how to stay locked and get locked on the prism quickly, without having it accidentally find another target.

- Assign a Hotkey to "Lock Interrupt" which will tell the instrument to wait where its currently pointed. Select USER, Work settings, Hotkeys & set "Toggle lock find/int" for F11 & press OK to accept. When you know you'll be putting down the prism, if you press this hotkey first the instrument will stay where it is. When you raise the prism again press F11 again and it will immediately lock



Set a Powersearch Window:

before you leave the instrument, on the Controller go to Instrument, TPS Settings, Prism search settings and choose the Powersearch Window (assign a hotkey if you do this a lot). Aim top left then bottom right to set.

- When you press Powersearch, make sure you let the instrument finish, and you see the Lock symbol in the top left of the controller before you move.
- With the TS15, use the Image screen to help find the prism. The instrument will turn to where you tap
- If the instrument is already pointed in your general direction, there is no need to Powersearch, just press DIST or the Lock Find/Int hotkey to initiate the auto target recognition
- In heavy traffic areas you may need to use the joystick which is found by pressing . The guidelights should come on and once its pointed in your general direction press DIST or Find/Int hotkey
- Use the scope cover in heavy rain to keep the lens clear. Select Instrument, TPS Settings, Meas & Target settings and change visibility options at the bottom for Rain & Fog

### Check & Adjust

When you first receive the instrument and about once a month thereafter it is recommended to complete a field check. This is done on the total station, without the controller and is the only time you need to insert the memory card into the TS12/TPS1200 (TS15 and newer use internal memory, no card required).

- Select Tools, Check / Adjust
- Run #1 “Combined” with circle prism 50 – 100m away, pressing CONT to save results
- Run #2 “Tilt Axis” sighting a straight edge (eg. Ruler) either right in front of the instrument on a sidewalk or flat surface (need steep angle) or set up the prism at a very steep angle. Save the results. The distance away is not a factor, so even 2-3m will suffice

Running this function on a regular basis will provide the best results. Also ensuring your tripod head is tight and there is no “play” in the legs.

OTHER QUESTIONS CALL Tech Support at 1-855-214-9453. Some terminology may be different than you’re used to, but SmartWorx is a comprehensive program that includes all the functions you’ve seen on competitive systems

### Notes on stored points

SmartWorx allows for storing duplicate point ID’s and will automatically warn if the new point is outside the set tolerance. There is a Point Class system used to identify the type of stored record of every point:

CTRL – point has been typed in or uploaded from a control file

REF – has been used for an instrument setup (occupy or backsight)

MEAS – single measured record, eg. a topo point, or computed COGO point

AVG - combined average of all MEAS records

It is recommended that you create a 2<sup>nd</sup> job file to use as a “Control Job” separate from your “Working Job” where new data is stored for topo or stakeouts. When you select Setup, on the Set Station Point screen select your control Job for the “Station point from” option.