



CG-6TM
AutogravTM
Gravity Meter
OPERATION MANUAL

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Chapter 1 Instrument overview



Figure 1-1 The CG-6 Autograv™ Gravity Meter

The CG-6 Autograv™ is an automated gravity meter that has a worldwide measurement range of over 8,000 mGals and a reading resolution of 0.0001 mGal. This enables the user to operate in both, detailed micro-gravity surveys and large scale regional or geodetic surveys.

Accurate measurements are taken by simply pressing a key, and under most field conditions it takes under one minute to carry out a reading. Additional measurement cycles of 60 seconds and 120 seconds can also be selected. The CG-6 Autograv™ obtains a reading by processing a continuous series of 0.1 second samples. The reading is displayed on the LCD screen directly in mGals. The acquired data is stored in a flash memory and can be downloaded at a later time.

The gravity sensor, control system and batteries are integrated into a single lightweight instrument housing.

Excellent protection from changes in ambient temperature and atmospheric pressure is achieved by sealing the CG-6 Autograv™ sensing element in a temperature stabilized sensor chamber. The broad operating temperature range of -40°C to +45°C enables the operator to use the CG-6 Autograv™ in many environments.

Internal tilt sensors constantly supply the CG-6 Autograv™ with tilt information in order to correct in real time measurements taken on unstable ground.

The CG-6 Autograv™ console has a set of two leveling arrows, which describe the direction required to rotate the adjustable leveling screws of the tripod in order to level the instrument.

The two internal Li-ion rechargeable batteries provide sufficient power to operate the CG-6 Autograv™ throughout a normal survey day.

An external tablet computer allows the user to easily setup the CG-6 Autograv™ and store the setup settings as well as plan and store the survey points. The tablet computer is pre-loaded with the LynxLG Land Gravity software that allows the user to quickly set up and plan the upcoming survey, remote recording and continuous monitoring of both gravity and tilt signals, and gives access to locational maps among its many functions.

A cold weather accessories kit (p/n 888405) is recommended for operating in ambient temperatures below -20°C.

Other available accessories include a Seco backpack (p/n 140220) and the trident gradient tripod (p/n 126370025).

Chapter 2 Getting started

Chapter layout

Chapter	Description
1. Overview	Description of the instrument
2. Getting started	Gives an overview of the manual and describes the instrument's components.
3. Setting up	Tells how to set up your CG-6 Autograv™ for a survey.
3. Operating	Tells how to operate your CG-6 Autograv™ during a survey.
4. Maintenance	Gives a brief overview of how to maintain and troubleshoot your CG-6 Autograv™.
5. Reference	Contains the technical specifications, instrument parts list and warranty information.
6. Theory of operation	Explains the scientific and instrumentation theory of the CG-6 Autograv™.

Symbols

 Important	Indicates an important topic, particular attention should be paid to this section.
 Note	Denotes information of particular interest to the user.
 Warning	Denotes a very important topic or a point concerning safety.

Actions, such as press, enter and edit are described in *italics*. Keypad buttons are **bolded**. Menu items are **BOLDED** and in capital letters.

The CG-6 Autograv™ is packed in a padded case (with the batteries stored separately and packaged individually to comply with IATA transport safety regulations) in order to protect the instrument during shipment and transportation to the field.



Figure 2-1 The CG-6 Autograv™ Gravity Meter and its transportation case



Important:

During shipment, the batteries must be removed from the instrument and stored separately. If you have just received your CG-6 Autograv™, the batteries will have a charge of approximately 30% and be disconnected from the instrument.

Unpacking the instrument

1. Press the red pressure release valve located in the front of the transportation case.
2. *Pull* up the tab of a link lock and *turn* the tab counter-clockwise to unfasten the lock from the keeper plate.
3. *Repeat* step 2 for the other link locks.



Figure 2-2 Location of the pressure release valve on the transportation case

Getting started

4. Open the CG-6 Autograv™ transportation case by lifting the lid.
5. Remove the CG-6 Autograv™ from the transportation case by *pulling* directly upward on the black rubber handle and visually *inspect* for any physical damage that may have occurred during transportation.



Important:

The CG-6 Autograv™ transportation case is equipped with a shockwatch monitor. This monitor is affixed to the side of the shipping box. Should you notice that the vial is red please contact Scintrex Limited immediately. Please refer to When to ship the unit on page 6-3.

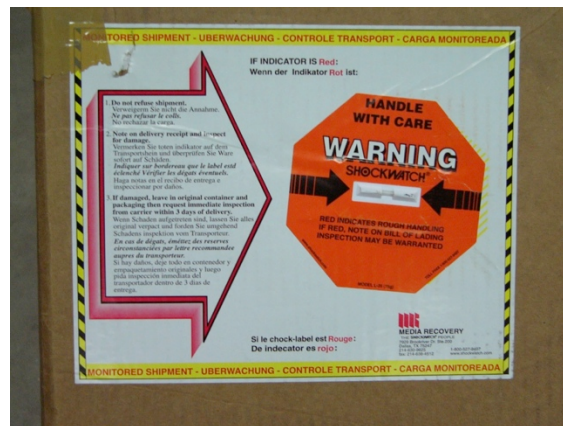


Figure 2-3 Shockwatch monitor

Location of the CG-6 Autograv™ sensor

The following picture shows the location of the CG-6 Autograv™ sensor.

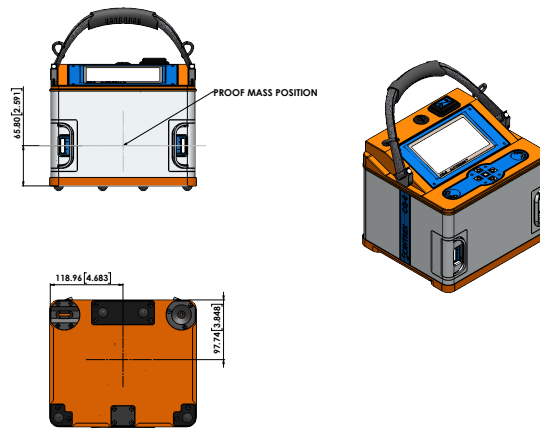


Figure 2-4 The CG-6 Autograv™ sensor location

Overview of the components

The following picture shows an overhead view of the all the components that are supplied with a standard CG-6 Autograv™ in its transportation case.



Figure 2-5 The CG-6 Autograv™ and its components

Assembling the batteries

Because of stringent IATA regulations, the CG-6 Autograv™ batteries must be shipped in individual packing, with a charge on no more than 30%. Before you can power up your CG-6 Autograv™, a minimal amount of assembly is required to attach the battery holder assembly (p/n 126370001) to the smart batteries (p/n 0221029). The following pictures illustrates the assembly procedure:



Note: The Allen screwdriver illustrated in the fourth frame (see next page) is supplied with the CG-6 Spare Parts Kit (p/n 888025).



Figure 2-6 Assembling the battery packs



Important: The battery cap assembly handle must be on the side of the battery where its logo is located, as per the last picture frame.

Overview of the console and keypad

The following picture shows the front panel of the instrument. It is comprised of a display for viewing menus and results; keypad for entering parameters and recording data.



Figure 2-7 The CG-6 Autograv™ Console and Keypad

The leveling arrows indicate the direction to turn the tripod leveling screws. The left-hand side arrow refers to the left-hand leveling screw and right-hand side arrow refers to the right-hand leveling screw. The right hand screw adjusts X and Y levels simultaneously.



Note: You will level the CG-6 Autograv™ by adjusting the right-hand screw first, then the left-hand screw.

You can navigate between the menus located at the bottom of the screen by using the up, down, left and right arrows. In any screen, *move* the cursor either to **BACK** or **CANCEL** and *press* the **Enter** button to go back to the previous screen.

Starting up the CG-6 Autograv™

When starting-up the CG-6 Autograv™ for the first time, or after it has been turned off for more than 24 hours, requires the following steps and waiting periods.

Powering up the CG-6 Autograv™. Please refer to the section entitled: Powering up the CG-6 Autograv™ below

Warm-up period: after you power up the CG-6 Autograv™, it requires a 2 hour warm-up time in order to reach the operating temperature.

Stabilization period: the instrument requires a 24 hour period after you power up to stabilize.

Setting up the instrument for field operations: Once the steps have been performed or attained, your CG-6 Autograv™ is ready for field use. For more details on the set up, please refer to the next chapter entitled: Setting up your CG-6 Autograv™.

Powering up the CG-6 Autograv™

The CG-6 Autograv™ can be powered either by:

- The 15V DC external power supply, or



Figure 2-8 Connecting the power supply to the CG-6 Autograv™

- by the two internal Smart Batteries supplied with the CG-6 Autograv™.



Figure 2-9 The CG-6 Autograv™ and batteries

If the batteries are in place when the external power supply is connected, the power supply will power the unit and also charge the batteries if necessary. When the batteries are fully charged the supply powers the unit so that the batteries maintain their full charge. The batteries are charged at the same time and take approximately 4 hours to charge.



Note: When the CG-6 Autograv™ is powered by two batteries, then both batteries will be solicited and will thus discharge in an equal manner.

Charging the CG-6 Autograv™ batteries

The CG-6 Autograv™ batteries are charged with the Smart Battery Charger (p/n 0221020):



Figure 2-10 The CG-6 Autograv™ Gravity Meter and the battery charger

Chapter 3 Setting up your CG-6 Autograv™

Setting up the CG-6 Autograv™

The CG-6 Autograv™ is supplied with a tablet computer (p/n 140148) that allows the user to quickly set up and plan the upcoming survey using the LynxLG Land Gravity software which is pre-loaded in the tablet computer. Please refer to LynxLG Land Gravity Software operation manual (p/n 115370003) for more details concerning the setup with the tablet computer.



Note: You can operate the CG-6 Autograv™ either with or without the tablet computer (p/n 140148). The tablet mode gives you more flexibility and allows you to remotely operate your CG-6 Autograv™ and access more advanced functions such as positional station maps for real-time navigation, station/route import capabilities (KML, GPX, Delimited ASCII) and creation of simple Bouguer maps. The CG-6 Autograv™ has a basic function menu, should you choose to operate it without the tablet computer.

Setting up CG-6 Autograv™ without a tablet computer

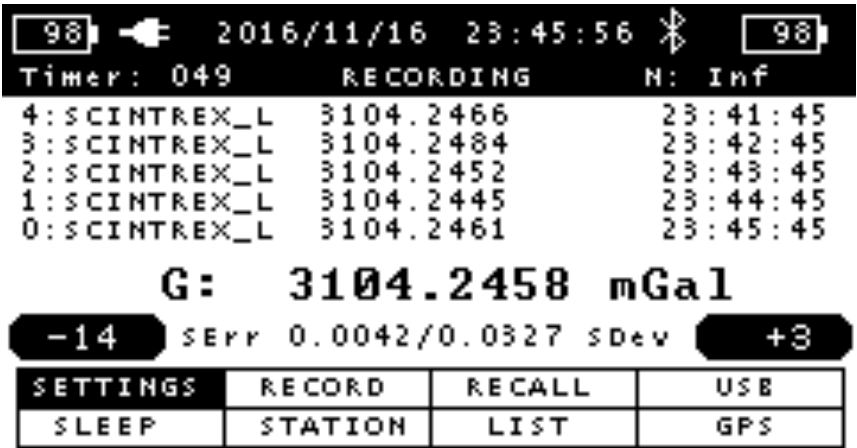


Figure 3-1 The main screen

The upper part of the main screen indicates the percentage of charge in each battery, the date and the time, the measure length (aka Timer), the meter status (whether it is IDLE or RECORDING) and the number of cycles.

The reading is displayed in mGals and below it, SDev the standard deviation of the samples used to calculate the reading and SErr, the standard error which is equal to the standard deviation divided by the square root of the number of current samples

Setting up

$SErr = SDev/\sqrt{N}$. Above it are displayed the five previous readings as recorded in the memory.

The inclination of the X axis in arcseconds is displayed on the left-hand-side and the inclination of the Y axis in arcseconds is displayed on the right-hand-side.

Putting in to sleep mode; shutting off the main display

The CG-6 Autograv™ can be put into sleep mode; ie. the main display and leveling arrows will be shut off. However, the meter itself will still remain on power.

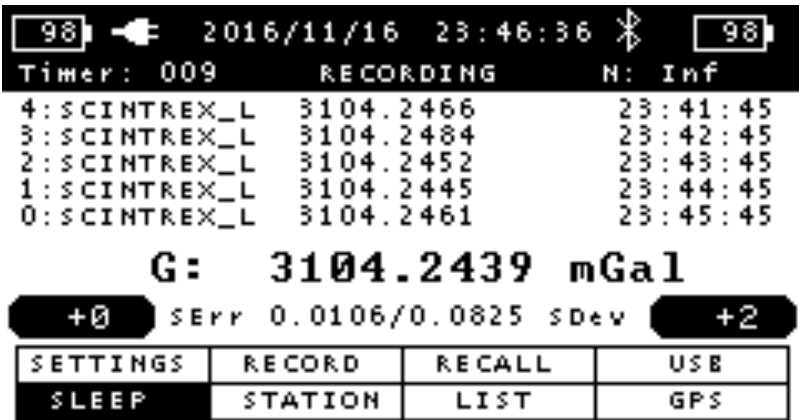


Figure 3-2 The main screen ready for sleep mode

From the main screen, *move* your cursor using the up, down, left or right arrows to **SLEEP** and *press* the **Enter** button.



Note: Once the CG-6 Autograv™ is in sleep mode, pressing any button will wake it up.

Adjusting the settings

From the main screen, *move* your cursor to **SETTINGS** and *press* the **Enter** button. The following screen will appear:

SETTINGS		
BACK	SYSTEM	SURVEY
CALIB	CORREC	DRIFT CAL
INFO	FACTORY	TILT CAL

Figure 3-3 The settings screen

Adjusting the system settings

To access the System screen, *move* your cursor to **SYSTEM** and *press* the **Enter** button. The following screen will appear:

SYSTEM	
Backlight	On
Sound	Low
Level Window	10
Auto Contrast	On
Contrast Offset	0
System Time	2016/11/03 20:45:50
BACK	

Figure 3-4 The system screen

Adjusting the backlight

The backlight of your screen can be set to ON or OFF. To adjust the backlight, *move* the cursor to **Backlight** and *press* the **Enter** button. The following screen will appear:

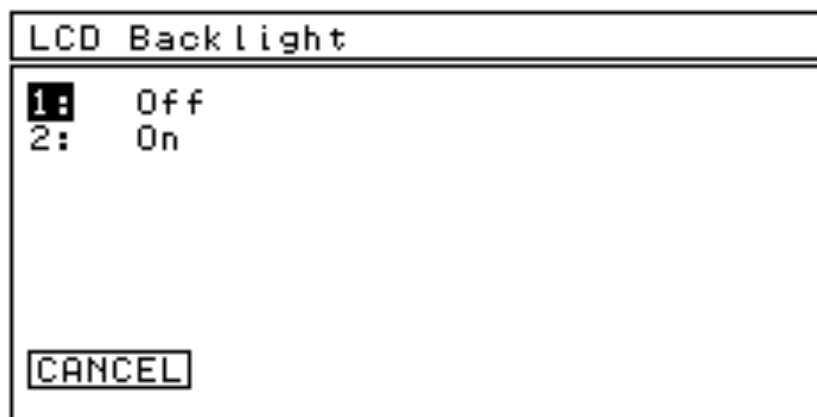


Figure 3-5 The backlight screen

The backlight can be set to **On** or **Off**. Move your cursor to either 1 or 2 and press the **Enter** button.

To exit this screen, move the cursor to **CANCEL** and press the **Enter** button.

Adjusting the buzzer volume

The volume of the buzzer can be set to either low, medium, high or disabled. To adjust the volume, move the cursor to **Sound** and press the **Enter** button. The following screen will appear:

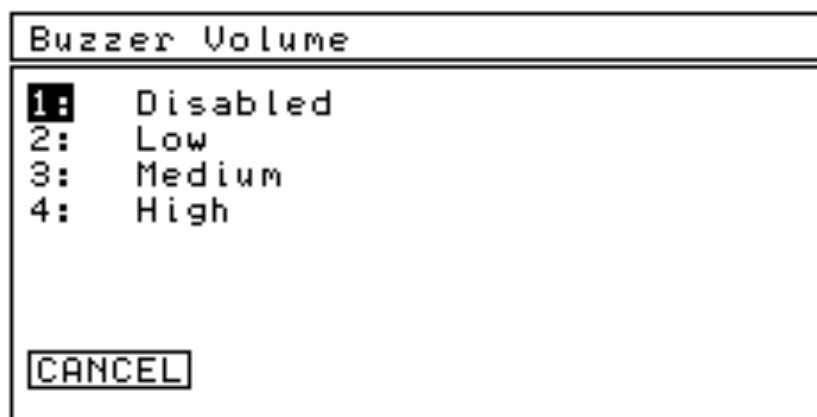


Figure 3-6 The buzzer volume screen

Move your cursor to either 1, 2, 3 or 4 and press the **Enter** button.

To exit this screen, move the cursor to **CANCEL** and press the **Enter** button.

Adjusting the window size of the level screen

To edit the window size of the level screen, move the cursor to **Level Window** and press the **Enter** button. The following screen will appear:

Enter Window Size [5 - 200]:			
10■			
7	8	9	
4	5	6	
1	2	3	
0			
[ACCEPT] [CLEAR] [←] [CANCEL]			

Figure 3-7 The level window size editing screen



Note: The level window size is the threshold under which the leveling arrows will appear as green. For instance, if the threshold is set to 20 arcseconds, then once the tilt of one of the axes is within ± 20 arcseconds, then the leveling arrow for this axis will appear green.

The level window size can be set (in arcseconds) to any value between 5 and 200. To enter the window size value, *move* the cursor to the chosen character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value of your window size, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

Adjusting the auto contrast of your screen

The automatic adjustment of the contrast of your screen can be set to ON or OFF. The auto contrast function should generally be left on at all times. The contrast will automatically be adjusted based on the lcd screen temperature. This is convenient when you are operating in field conditions, where the amount of sunshine can vary throughout the day. To adjust the auto contrast, *move* the cursor to **Auto Contrast** and *press* the **Enter** button. The following screen will appear:

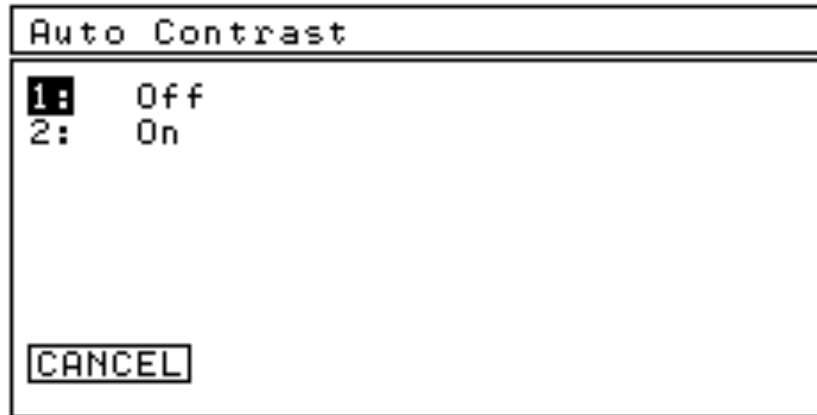


Figure 3-8 The auto contrast screen

To set the auto contrast to **On** or **Off**. Move your cursor to either 1 or 2 and *press* the **Enter** button.



Note: The auto contrast function should generally be left on at all times. The contrast will automatically be adjusted based on the lcd screen temperature.

To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

Adjusting the contrast offset of your screen

In conjunction with an automatic adjustment of the contrast of your screen (see previous section), you can also adjust the contrast offset (ie. the intensity), the higher the value, the darker your screen is. To *edit* the value of the contrast offset, *move* the cursor to **Contrast Offset** and *press* the **Enter** button. The following screen will appear:

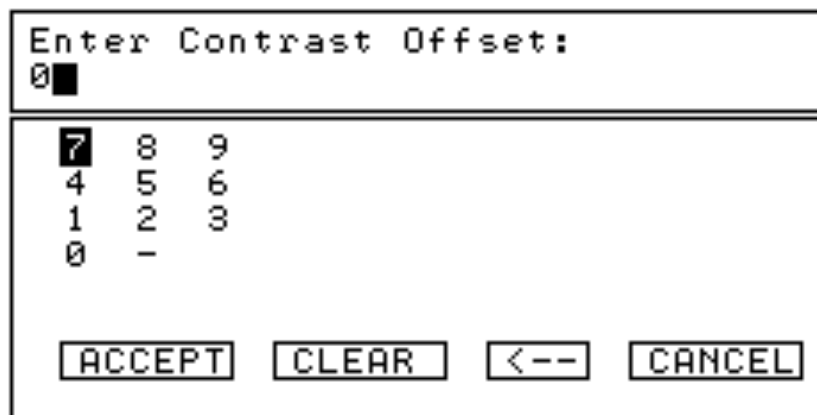


Figure 3-9 The contrast offset editing screen

The contrast offset can be set to any value between 0 and 40000.



Note:

If you enter a very high contrast offset value, your screen will be very dark.

To enter the contrast offset value, *move* the cursor to the chosen character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value of the contrast, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

Changing the value of your system time

The system time is the current time of your CG-6 Autograv™.



Note:

You can also manually synchronize the system time in Julian Time using the GPS signal. Please refer to Connecting the built-in GPS on page 4-3.

To *edit* the value of your system time, *move* the cursor to **System Time** and *press* the **Enter** button. The following screen will appear:

Please enter System time (UTC)	
Year	2000
Month	02
Day	14
Hour	02
Minute	46
Second	40
Accept	
Cancel	

Figure 3-10 The system time editing screen

To enter the year, *move* the cursor to Year and *press* the **Enter** button. The following screen will appear:

Enter Year (2000-2099):			
2000■			
7	8	9	
4	5	6	
1	2	3	
0			
ACCEPT CLEAR <-- CANCEL			

Figure 3-11 The year editing screen

Move the cursor to the chosen field character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

You will be returned to the system time editing screen.

To enter the month, *move* the cursor to Month and *press* the **Enter** button. The following screen will appear:

Enter Month (1-12):			
02■			
7	8	9	
4	5	6	
1	2	3	
0			
ACCEPT CLEAR <-- CANCEL			

Figure 3-12 The month editing screen

Move the cursor to the chosen field character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

You will be returned to the system time editing screen.

Setting up

To enter the day, *move* the cursor to Day and *press* the **Enter** button. The following screen will appear:

Enter Day (1-31):		
14		
7	8	9
4	5	6
1	2	0

Figure 3-13 The day editing screen

Move the cursor to the chosen field character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

You will be returned to the system time editing screen.

To enter the hour, *move* the cursor to Hour and *press* the **Enter** button. The following screen will appear:

Enter Hour (0-23):		
03		
7	8	9
4	5	6
1	2	3
0		
ACCEPT CLEAR <-- CANCEL		

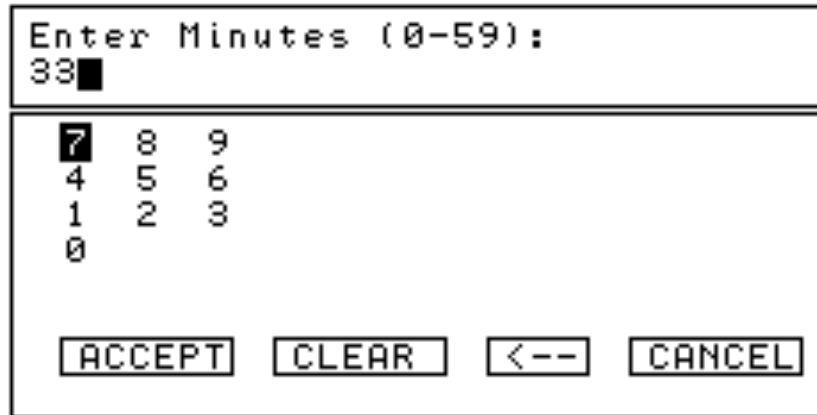
Figure 3-14 The hour editing screen

Move the cursor to the chosen field character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

Setting up

You will be returned to the system time editing screen.

To enter the minutes, *move* the cursor to Minute and *press* the **Enter** button. The following screen will appear:



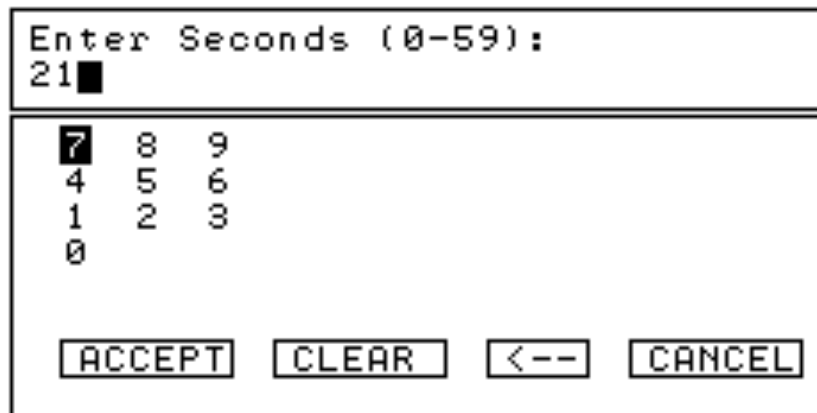
Enter Minutes (0-59):			
33			
7	8	9	
4	5	6	
1	2	3	
0			
[ACCEPT] [CLEAR] [<--] [CANCEL]			

Figure 3-15 The minute editing screen

Move the cursor to the chosen field character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

You will be returned to the system time editing screen.

To enter the seconds, *move* the cursor to Second and *press* the **Enter** button. The following screen will appear:



Enter Seconds (0-59):			
21			
7	8	9	
4	5	6	
1	2	3	
0			
[ACCEPT] [CLEAR] [<--] [CANCEL]			

Figure 3-16 The seconds editing screen

Move the cursor to the chosen field character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value, *move* the cursor to the **ACCEPT**

Setting up

field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

You will be returned to the system time editing screen.

To accept the new value of time, *move* the cursor to **Accept** and *press* the **Enter** button

To return to the Settings screen, *move* the cursor to **BACK** and *press* the **Enter** button

Survey settings

To access the Survey screen, *move* your cursor to **SURVEY** and *press* the **Enter** button. The following screen will appear:

SURVEY	
Survey	SurveyName
Operator	OperatorName
Cycles	3
Measure Length	60s
Record Delay	0
Record Raw tsf	Off
BACK	

Figure 3-17 The survey screen

Editing or creating the Survey Name

To *edit* or *create* the survey name, *move* the cursor to **Survey** and *press* the **Enter** button. The following screen will appear:

Enter Survey Name:
SurveyName█

7	8	9	A	B	C	D	E	F	G
4	5	6	H	I	J	K	L	M	N
1	2	3	O	P	Q	R	S	T	U
0	-	~	U	W	X	Y	Z	{	}
!	#	\$	%	&	+	(	)	-	@
^									

ACCEPT

CLEAR

<--

CANCEL

Figure 3-18 The survey name editing screen

Setting up

The Survey Name can be any combination of 31 alphanumeric characters. To type the Survey Name, *move* the cursor to the chosen character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with your survey name, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

Editing or creating the Operator Name

To *edit* or *create* the operator name, *move* the cursor to **Operator** and *press* the **Enter** button. The following screen will appear:

Enter Operator Name:										
OperatorName█										
7	8	9		A	B	C	D	E	F	G
4	5	6		H	I	J	K	L	M	N
1	2	3		O	P	Q	R	S	T	U
0	-	~		V	W	X	Y	Z	{	}
!	#	\$	%	&	+	(	)	-	@	^
ACCEPT		CLEAR		<--		CANCEL				

Figure 3-19 The operator name editing screen

The Operator Name can be any combination of 31 alphanumeric characters. To type the Operator Name, *move* the cursor to the chosen character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with your survey name, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

Entering the number of cycles

To *edit* the number of cycles at your station, *move* the cursor to **Cycles** and *press* the **Enter** button. The following screen will appear:

Enter Cycles (0 = Inf):			
0■			
7	8	9	
4	5	6	
1	2	3	
0			
ACCEPT		CLEAR	<-- CANCEL

Figure 3-20 The cycles screen



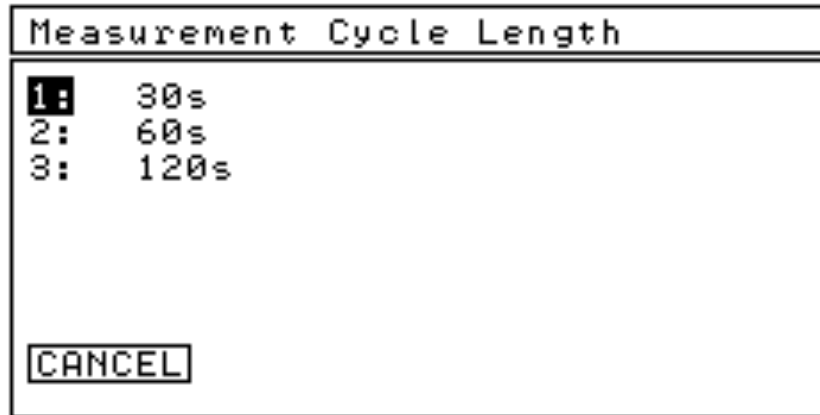
Note:

The number of cycles is defined as the number of times you successively repeat a reading at a given station. The Number of Cycles can be any value you choose between 1 and a large number of your choosing. A number of cycles equal to 0 is considered as infinite, meaning that the gravity meter is configured in the cycling mode and will measure until the reading process is manually stopped by the user.

To enter the Number of Cycles value, *move* the cursor to the chosen character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the chosen number of cycles, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button

Entering the reading length

To *edit* the length of your reading, *move* the cursor to **Measure Length** and *press* the **Enter** button. The following screen will appear:



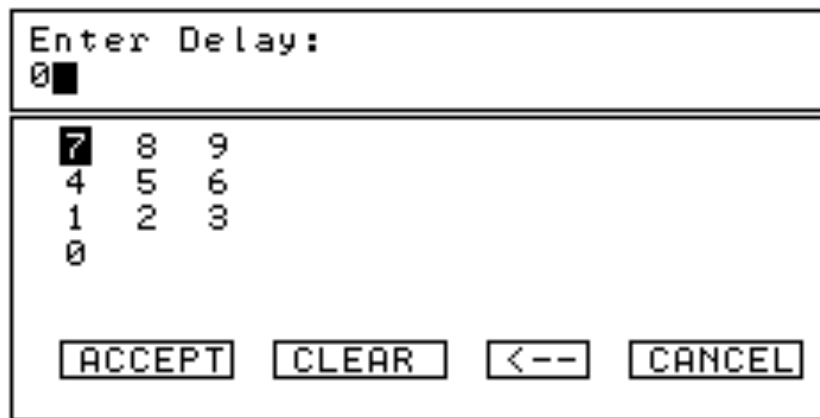
The screen displays the title "Measurement Cycle Length" at the top. Below the title, there are three options listed vertically: "1: 30s", "2: 60s", and "3: 120s". The first option, "1: 30s", is highlighted with a black cursor. At the bottom of the screen, there is a button labeled "CANCEL".

Figure 3-21 The measure length screen

The measurement length can be set to either 30 seconds, 60 seconds or 120 seconds. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter**

Entering a record delay value

You can enter a record delay value, in seconds, which will delay the start of the recording of data. This is convenient when operating in the field or during a drift test when you want to delay the start of a reading. To *edit* the value of the record delay, *move* the cursor to **Record Delay** and *press* the **Enter** button. The following screen will appear:



The screen displays the title "Enter Delay:" at the top. Below the title, there is a cursor pointing to the first digit of the number "0". Below the cursor, there is a numeric keypad with digits 0 through 9 arranged in a 3x3 grid. At the bottom of the screen, there are four buttons labeled "ACCEPT", "CLEAR", "<--", and "CANCEL".

Figure 3-22 The record delay editing screen

The record delay can be set to any value between 0 and a large number of your choosing. To enter the record delay value, *move* the cursor to the chosen character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value of the contrast, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

Recording the Raw tsf file

Setting up

You can choose to record the raw tsf file. *Move* the cursor to **Record Raw tsf** and *press* the **Enter** button. The following screen will appear:

Record Raw tsf file?	
1:	Off
2:	On
CANCEL	

Figure 3-23 The tsf recording screen

Move your cursor to either 1 or 2 and *press* the **Enter** button.

To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

To return to the Settings screen, *move* the cursor to **BACK** and *press* the **Enter** button

Viewing the instrument parameters

From the Settings screen *move* your cursor to **CALIB** and *press* the **Enter** button. The following screen will appear:

CALIBRATION	
GCAL1	7869.544000
G REF [mgals]	0.0000
TEMP COEFF	-0.125000
X SCALE	0.030521
X OFFSET	-245450.100000
Y SCALE	0.035453
Y OFFSET	-201783.700000
DRIFT RATE	-0.012000
DRIFT START	2016/09/28 16:08:27
BACK	

Figure 3-24 The instrument parameter screen

For a more detailed explanation of each of the The CG-6 Autograv™ instrument parameters, please refer to Chapter 7 Theory of Operation.

Changing the GCAL1 gravity meter constant

To *edit* the GCAL1 gravity meter constant, *move* the cursor to **GCAL1** and *press* the **Enter** button. The following screen will appear:

Enter GCAL1 Value: 7869.544█		
7 4 1 0	8 5 2 .	9 6 3 -
ACCEPT	CLEAR	<-- CANCEL

Figure 3-25 The GCAL1 editing screen

The GCAL1 value is set at the factory and should not be changed under normal circumstances. If however you choose to fine tune the GCAL1 value of your CG-6 Autograv™, please refer to Chapter 7 Theory of Operation. To enter the new GCAL1 value, *move* the cursor to the chosen character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

Changing the gravity reference value

To *edit* the gravity reference value, *move* the cursor to **G REF** and *press* the **Enter** button. The following screen will appear:

Enter Gravity Ref.: 0.0000█		
7 4 1 0	8 5 2 .	9 6 3 -
ACCEPT	CLEAR	<-- CANCEL

Figure 3-26 The gravity reference value editing screen

The gravity reference value can be any number between 0 and 8000, in mGals, and is subtracted from your current reading. To enter the gravity reference value, *move* the cursor to the chosen character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value, *move* the cursor to the **ACCEPT** field and

press the **Enter** button. To exit this screen, move the cursor to **CANCEL** and press the **Enter** button.

Changing the temperature coefficient parameter

To *edit* the temperature coefficient parameter, move the cursor to **TEMP COEFF** and press the **Enter** button. The following screen will appear:

Enter Tempco (mGal/mK):
-0.12338000

7 8 9
4 5 6
1 2 3
0 . -

ACCEPT CLEAR <-- CANCEL

Figure 3-27 The temperature coefficient editing screen

The temperature coefficient is a negative number between -0.1 and -0.2. To enter the temperature coefficient value, move the cursor to the chosen character and press the **Enter** button. To clear the entire field, move the cursor to the **CLEAR** field and press the **Enter** button. To clear the last character that was entered, move the cursor to the Backspace field and press the **Enter** button. Once you are satisfied with the value, move the cursor to the **ACCEPT** field and press the **Enter** button. To exit this screen, move the cursor to **CANCEL** and press the **Enter** button.

Changing the scale of your X level

To *edit* the scale of your X level, move the cursor to **X SCALE** and press the **Enter** button. The following screen will appear:

Enter X Level Scale:
0.03150000

7 8 9
4 5 6
1 2 3
0 . -

ACCEPT CLEAR <-- CANCEL

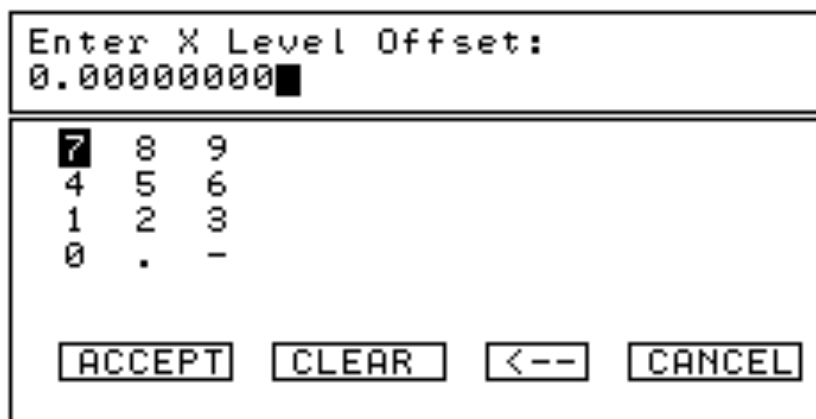
Figure 3-28 The X level scale editing screen

Setting up

The X Level scale can be any number between 0.025 and 0.035. To enter the X level scale value, *move* the cursor to the chosen character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

Changing the value of your X Level Offset

To *edit* the value of your X Level Offset, *move* the cursor to **X OFFSET** and *press* the **Enter** button. The following screen will appear:



Enter X Level Offset:			
0.00000000█			
7	8	9	
4	5	6	
1	2	3	
0	.	-	
[ACCEPT] [CLEAR] [<--] [CANCEL]			

Figure 3-29 The X Offset editing screen

The X Level Offset can be any number between 0.025 and 0.035. To enter the X Level Offset value, *move* the cursor to the chosen character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

Changing the scale of your Y level

To *edit* the scale of your Y level, *move* the cursor to **Y SCALE** and *press* the **Enter** button. The following screen will appear:

Enter Y Level Scale:			
0.03150000■			
7	8	9	
4	5	6	
1	2	3	
0	.	-	
ACCEPT		CLEAR	<-- CANCEL

Figure 3-30 The Y level scale editing screen

The Y Level scale can be any number between 0.025 and 0.035. To enter the Y level scale value, *move* the cursor to the chosen character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

Changing the value of your Y Level Offset

To *edit* the value of your Y Level Offset, *move* the cursor to **Y OFFSET** and *press* the **Enter** button. The following screen will appear:

Enter Y Level Offset:			
0.00000000■			
7	8	9	
4	5	6	
1	2	3	
0	.	-	
ACCEPT		CLEAR	<-- CANCEL

Figure 3-31 The Y Level Offset editing screen

The Y Level Offset can be any number between 0.025 and 0.035. To enter the Y Level Offset value, *move* the cursor to the chosen character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

Changing the value of your drift rate



Warning: Changing the drift rate or the drift start time will result in a step in your data.

To *edit* the value of your drift rate, *move* the cursor to **DRIFT RATE** and *press* the **Enter** button. The following screen will appear:

Enter Drift (mGal/day):			
0.00000000			
7	8	9	
4	5	6	
1	2	3	
0	.	-	
ACCEPT		CLEAR	<-- CANCEL

Figure 3-32 The drift rate editing screen

The drift rate can be any number you choose. To enter the drift rate, *move* the cursor to the chosen character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

Changing the value of your drift start time

The drift start time is the moment in time from which the drift of your CG-6 Autograv™ is compensated, and can be any date between now and the past.



Note:

You can manually synchronize the drift start time in Julian Time using the tablet computer. See LynxLG Land Gravity software manual (p/n 115370003) for more details.

To *edit* the value of your drift start time, *move* the cursor to **DRIFT START** and *press* the **Enter** button. The following screen will appear:

Enter Drift Start Time (UTC):	
Year	2016
Month	09
Day	28
Hour	16
Minute	08
Second	27
Accept	
Cancel	

Figure 3-33 The drift start time editing screen

To enter the year, *move* the cursor to Year and *press* the **Enter** button. The following screen will appear:

Enter Year (2000-2099):		
2000		
7	8	9
4	5	6
1	2	3
0		
ACCEPT CLEAR <-- CANCEL		

Figure 3-34 The year editing screen

Move the cursor to the chosen field character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

You will be returned to the drift start time editing screen.

To enter the month, *move* the cursor to Month and *press* the **Enter** button. The following screen will appear:

Enter Month (1-12):			
02█			
7	8	9	
4	5	6	
1	2	3	
0			
ACCEPT CLEAR <-- CANCEL			

Figure 3-35 The month editing screen

Move the cursor to the chosen field character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

You will be returned to the drift start time editing screen.

To enter the day, *move* the cursor to Day and *press* the **Enter** button. The following screen will appear:

Enter Day (1-31):			
14█			
7	8	9	
4	5	6	
1	2	3	
0			
ACCEPT CLEAR <-- CANCEL			

Figure 3-36 The day editing screen

Move the cursor to the chosen field character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

You will be returned to the drift start time editing screen.

Setting up

To enter the hour, *move* the cursor to Hour and *press* the **Enter** button. The following screen will appear:

Enter Hour (0-23):			
03			
7	8	9	
4	5	6	
1	2	3	
0			
ACCEPT CLEAR <-- CANCEL			

Figure 3-37 The hour editing screen

Move the cursor to the chosen field character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

You will be returned to the drift start time editing screen.

To enter the minutes, *move* the cursor to Minute and *press* the **Enter** button. The following screen will appear:

Enter Minutes (0-59):			
33			
7	8	9	
4	5	6	
1	2	3	
0			
ACCEPT CLEAR <-- CANCEL			

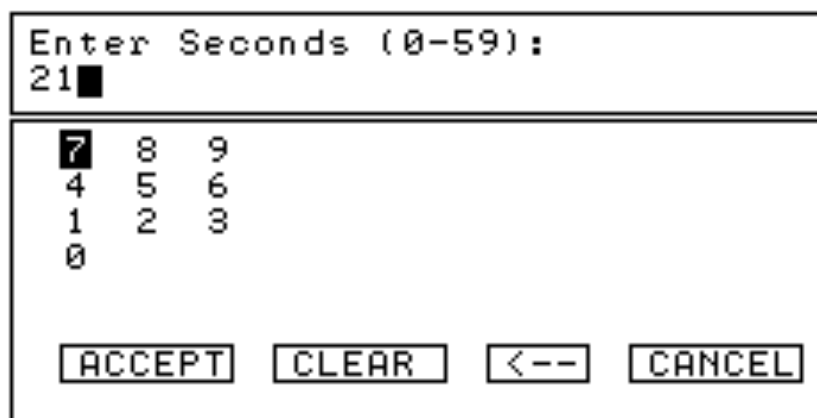
Figure 3-38 The minute editing screen

Move the cursor to the chosen field character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

Setting up

You will be returned to the drift start time editing screen.

To enter the seconds, *move* the cursor to Second and *press* the **Enter** button. The following screen will appear:



Enter Seconds (0-59):			
21■			
7	8	9	
4	5	6	
1	2	3	
0			
ACCEPT CLEAR <-- CANCEL			

Figure 3-39 The seconds editing screen

Move the cursor to the chosen field character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with the value, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

You will be returned to the drift start time editing screen.

To accept the new value of the drift start time, *move* the cursor to **Accept** and *press* the **Enter** button

To return to the Settings screen, *move* the cursor to **BACK** and *press* the **Enter** button.

Instrument corrections

You can enable or disable temperature, drift, earth tide or tilt corrections in your CG-6 AutogravTM.

From the Settings screen *move* your cursor to **CORREC** and *press* the **Enter** button. The following screen will appear:

CORRECTIONS	
Temperature	Off
Drift	Off
Tide	Off
Level	Off
BACK	

Drift: -0.0000 mGal
Tide: -0.0318 mGal
Temperature: 112.2132 mGal
Tilt: 0.1139 mGal

Figure 3-40 The instrument corrections screen

Enabling or disabling the temperature correction

To *enable or disable* the temperature correction, *move* the cursor to **Temperature** and *press* the **Enter** button. The following screen will appear:

Temperature Correction	
1:	Off
2:	On
 CANCEL	

Figure 3-41 The temperature correction screen

To set the temperature correction to **On** or **Off**. *Move* your cursor to either 1 or 2 and *press* the **Enter** button.

To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

Enabling or disabling the drift correction

To *enable or disable* the drift correction, *move* the cursor to **Drift** and *press* the **Enter** button. The following screen will appear:

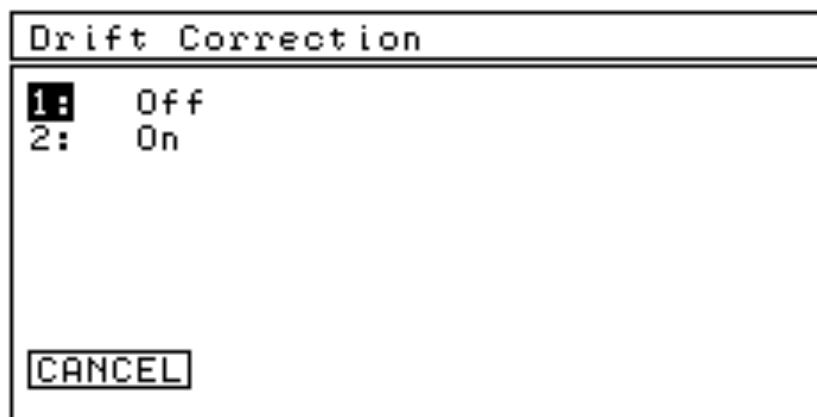


Figure 3-42 The drift correction screen

To set the drift correction to **On** or **Off**. Move your cursor to either 1 or 2 and *press* the **Enter** button.

To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

Enabling or disabling the tide correction

To *enable or disable* the tide correction, *move* the cursor to **Tide** and *press* the **Enter** button. The following screen will appear:

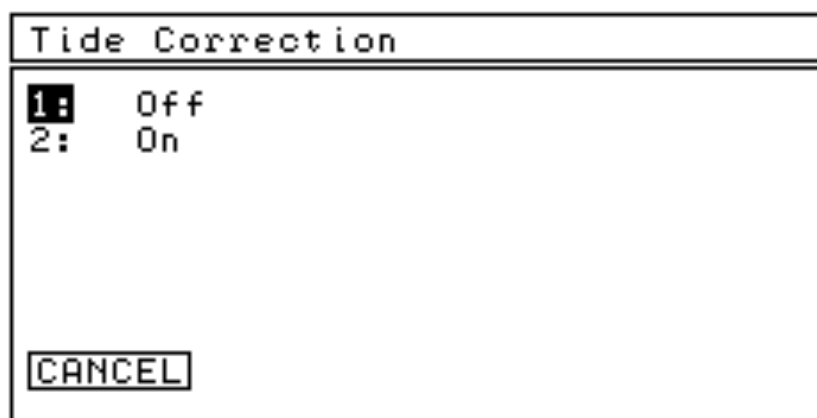


Figure 3-43 The tide correction screen

To set the tide correction to **On** or **Off**. Move your cursor to either 1 or 2 and *press* the **Enter** button.

To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

Enabling or disabling the tilt correction

To *enable or disable* the tilt correction, *move* the cursor to **Level** and *press* the **Enter** button. The following screen will appear:

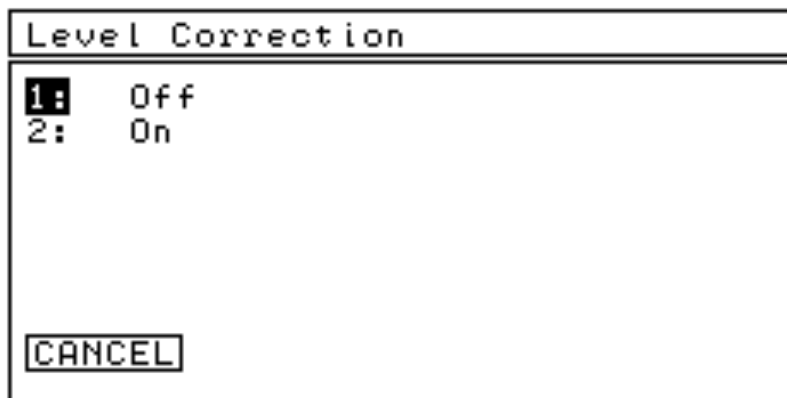


Figure 3-44 The tilt correction screen

To set the tilt correction to **On** or **Off**. *Move* your cursor to either 1 or 2 and *press* the **Enter** button.

To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

To return to the Settings screen, *move* the cursor to **BACK** and *press* the **Enter** button.

Performing a drift test

From time to time, you may want to adjust the drift compensation rate of your CG-6 Autograv™.



Important: Your CG-6 Autograv™ must be in the idle mode, ie. data recording must be stopped before you can perform a drift test. Furthermore, the measure length should be set to 60 seconds and the number of cycles should be set to a minimum of 240 cycles (ie. 4 hours of drift test) and preferably overnight.

To access the Drift test screen, *move* your cursor to **DRIFT CAL** and *press* the **Enter** button. The following screen will appear:

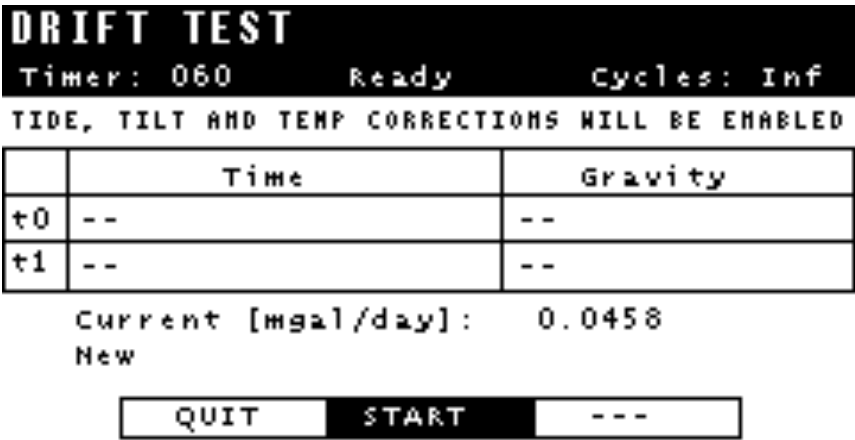


Figure 3-45 The drift test screen

Level your CG-6 Autograv™ as per Leveling the CG-6 Autograv™ on page 4-5. Once the leveling arrows are both green, you can proceed with the drift test.

To start the drift test, *move* your cursor to START and *press* the **Enter** button. The CG-6 Autograv™ is now in the drift test mode. The following screen will appear:

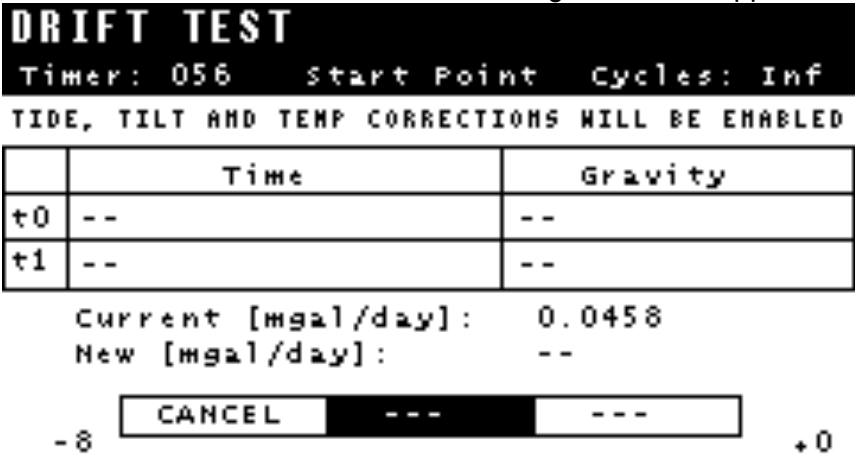


Figure 3-46 The drift test active screen

Once the first cycle is completed, the following screen will appear:

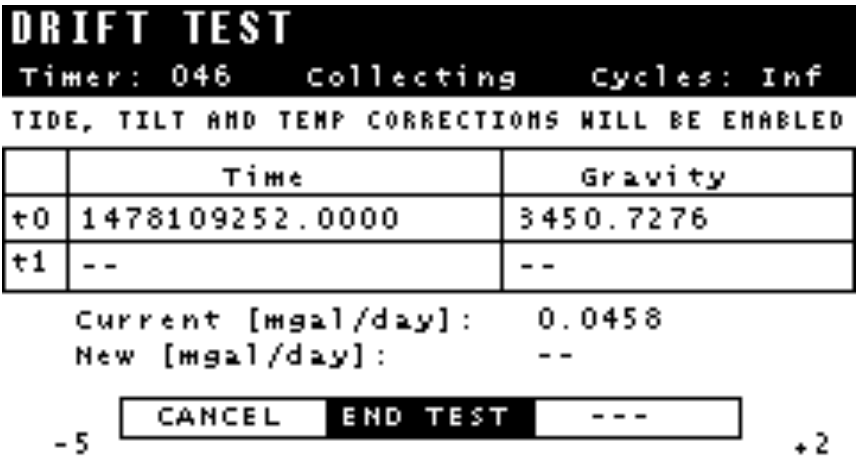


Figure 3-47 The drift test active screen following the first cycle

To *terminate* the drift test, you can either let your CG-6 Autograv™ complete the drift test by itself after having completed the number of cycles, or *move* the cursor to END TEST and press the **Enter** button.

The following screen will appear:

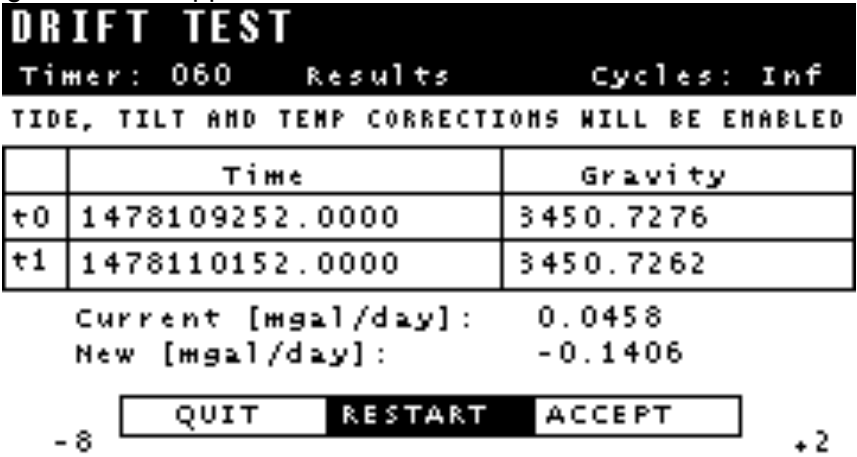


Figure 3-48 The drift test active screen following the drift test

The new drift rate is illustrated below the current drift rate. To accept your new drift rate, *move* the cursor to ACCEPT and press the **Enter** button. The following screen indicates that your new drift has been updated.

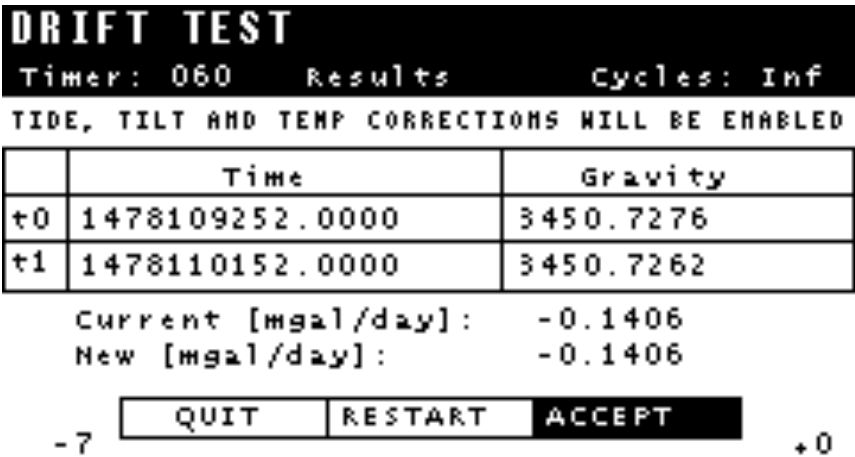


Figure 3-49 The drift test active screen with new drift rate

If you choose to not accept your new drift rate, *move* the cursor instead to QUIT and press the **Enter** button.

You are now returned to the Settings screen.

Once your drift test has been completed, a drift file (with extension .drift) is automatically created. To retrieve this file please refer to Retrieving your data on page 4-7 for more details. The following caption illustrate the drift file in the memory of your CG-6 Autograv™.

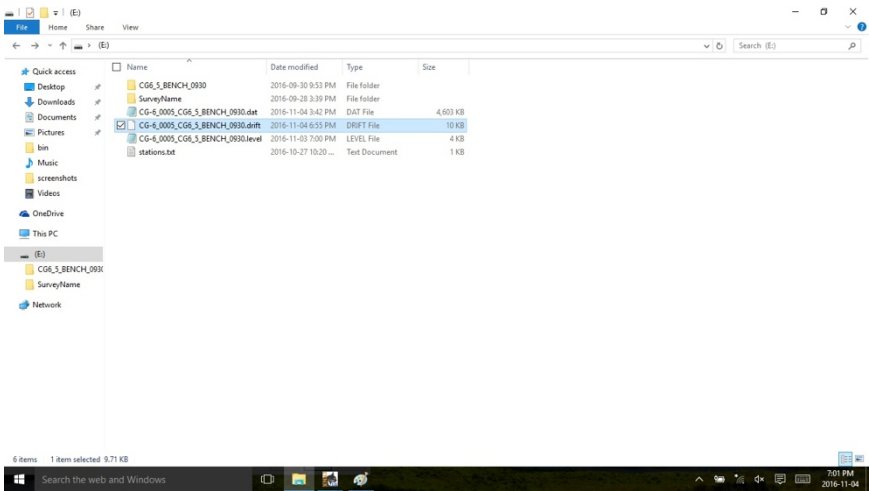


Figure 3-50 The drift file root folder

The following caption illustrates a typical drift file:

Setting up

```

CG-6 Survey
Survey Name: CG_6_BENCH_0930
Instrument Serial Number: 0000000000000000
Created: 2016-11-04 18:10:126

CG-6 Calibration
Operator: SCINTREX
Gcall [mgal]: 8306.243164
Goff [ADU]: -830606.000000
Gref [mgal]: 0.0000
X Scale [arc-sec/ADU]: 0.030574
Y Scale [arc-sec/ADU]: 0.031275
X Offset [ADU]: -63181.994907
Y Offset [ADU]: 115126.644093
Temperature Coefficient [mgal/mC]: -0.147400
Drift Rate [mgal/day]: -0.140572
Drift Zero Time: 2016-11-02 17:37:121
Firmware Version: 20161103-2

/Station Date Time CorrGrav StdDev StdErr RawGrav X Y SensorTemp Tidecorr Tiltcorr Tempcorr Driftcorr MeasurDur Inst
SCINTREX_LAB_31 2016-11-04 18:08:26 3450.7470 0.0471 0.0061 3538.5806 -0.1 -3.6 -595.5184 -0.0525 0.0002 -87.7813 0.2841 60 0.000 43.71
SCINTREX_LAB_31 2016-11-04 18:09:26 3450.7461 0.0382 0.0036 3538.5788 0.8 -3.6 -595.5121 -0.0524 0.0002 -87.7806 0.2842 60 0.000 43.71
SCINTREX_LAB_31 2016-11-04 18:10:26 3450.7461 0.0286 0.0037 3538.5785 1.2 -3.2 -595.5279 -0.0522 0.0002 -87.7804 0.2843 60 0.000 43.71
SCINTREX_LAB_31 2016-11-04 18:11:26 3450.7470 0.0108 0.0040 3538.5786 0.2 -2.8 -595.5255 -0.0521 0.0001 -87.7797 0.2844 60 0.000 43.71
SCINTREX_LAB_31 2016-11-04 18:12:26 3450.7464 0.0111 0.0040 3538.5785 0.6 -3.6 -595.5258 -0.0520 0.0002 -87.7802 0.2845 60 0.000 43.71
SCINTREX_LAB_31 2016-11-04 18:13:26 3450.7459 0.0235 0.0030 3538.5773 0.8 -4.0 -595.5151 -0.0519 0.0003 -87.7797 0.2846 60 0.000 43.71
SCINTREX_LAB_31 2016-11-04 18:14:26 3450.7468 0.0170 0.0048 3538.5773 2.0 -2.5 -595.5277 -0.0518 0.0002 -87.7796 0.2847 60 0.000 43.71
SCINTREX_LAB_31 2016-11-04 18:15:26 3450.7469 0.0110 0.0040 3538.5779 2.6 -2.4 -595.5285 -0.0517 0.0002 -87.7795 0.2848 60 0.000 43.71
SCINTREX_LAB_31 2016-11-04 18:16:26 3450.7464 0.0262 0.0034 3538.5775 0.6 -3.3 -595.5284 -0.0516 0.0002 -87.7797 0.2849 60 0.000 43.71
SCINTREX_LAB_31 2016-11-04 18:17:26 3450.7471 0.0256 0.0031 3538.5781 0.5 -3.9 -595.5186 -0.0515 0.0002 -87.7797 0.2850 60 0.000 43.71
SCINTREX_LAB_31 2016-11-04 18:18:26 3450.7466 0.0286 0.0037 3538.5780 0.3 -3.3 -595.5141 -0.0514 0.0001 -87.7802 0.2851 60 0.000 43.71
SCINTREX_LAB_31 2016-11-04 18:19:26 3450.7455 0.0208 0.0027 3538.5771 0.6 -3.4 -595.5253 -0.0513 0.0001 -87.7805 0.2852 60 0.000 43.71
SCINTREX_LAB_31 2016-11-04 18:20:26 3450.7452 0.0091 0.0038 3538.5763 1.5 -4.8 -595.5288 -0.0512 0.0001 -87.7802 0.2853 60 0.000 43.71
SCINTREX_LAB_31 2016-11-04 18:21:26 3450.7472 0.0280 0.0036 3538.5779 2.8 -4.7 -595.5141 -0.0511 0.0005 -87.7800 0.2854 60 0.000 43.71
SCINTREX_LAB_31 2016-11-04 18:22:26 3450.7475 0.0258 0.0033 3538.5785 2.1 -4.3 -595.5244 -0.0510 0.0003 -87.7803 0.2855 60 0.000 43.71
SCINTREX_LAB_31 2016-11-04 18:23:26 3450.7453 0.0407 0.0053 3538.5762 1.0 -4.9 -595.5128 -0.0509 0.0004 -87.7803 0.2856 60 0.000 43.71

```

Figure 3-51 The drift file

Performing a level calibration test

From time to time, you may want to adjust the scale and offset values of your CG-6 Autograv™ tilt sensors.



Important: Your CG-6 Autograv™ must be in the idle mode, ie. data recording must be stopped before you can perform a level calibration test. Furthermore, the measure length should be set to 30 and the number of cycles should be set to 1 cycle and preferably on a gravity calibration table or very stable surface.

To access the Tilt test screen, *move* your cursor to **TILT CAL** and *press* the **Enter** button. The following screen will appear:

LEVEL CALIBRATION TEST
 Timer: 030 Ready Cycles: 000
 Click START to begin level cals.

	CURRENT	NEW
Xs	0.030710	
Xo	-63153.7	
Ys	0.031316	
Yo	115192.3	

+0 QUIT START -- +0

Figure 3-52 The level calibration test screen

Level your CG-6 Autograv™ as per Leveling the CG-6 Autograv™ on page 4-5. Once the leveling arrows are both green, you can proceed with the tilt test.

Move your cursor to **START** and *press* the **Enter** button. The following screen will appear:

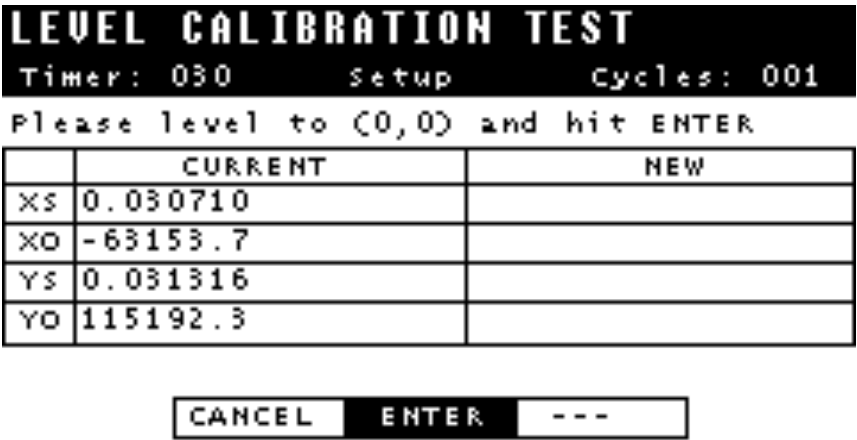


Figure 3-53 The level calibration test screen in setup mode

Level your CG-6 Autograv™ to 0 arcseconds on X and Y and press the **Enter** button. The following screen will appear:

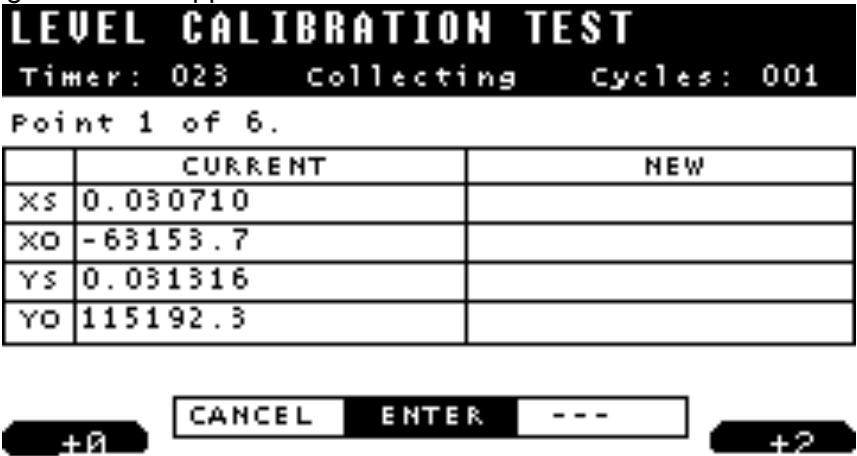


Figure 3-54 The level calibration test screen in collecting mode, point 1

Your CG-6 Autograv™ is now collecting data. At the end of the cycle (30 seconds), the following screen will appear:

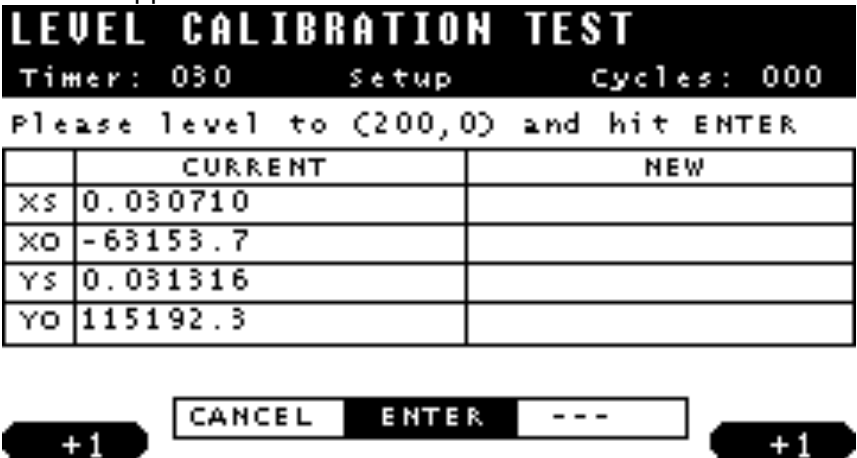


Figure 3-55 The level calibration test screen at the end of the point 1

Setting up

Level your CG-6 Autograv™ to 200 arcseconds on X and 0 arcseconds on Y and press the **Enter** button. The following screen will appear:

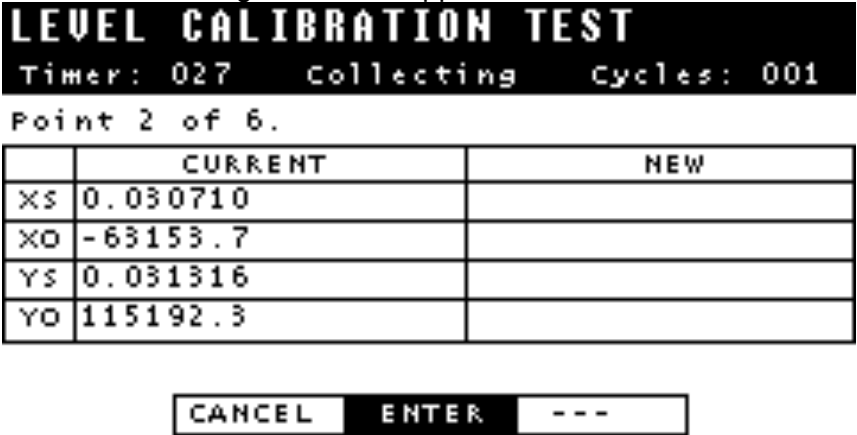


Figure 3-56 The level calibration test screen in collecting mode, point 2

Your CG-6 Autograv™ is now collecting data. At the end of the cycle (30 seconds), the following screen will appear:

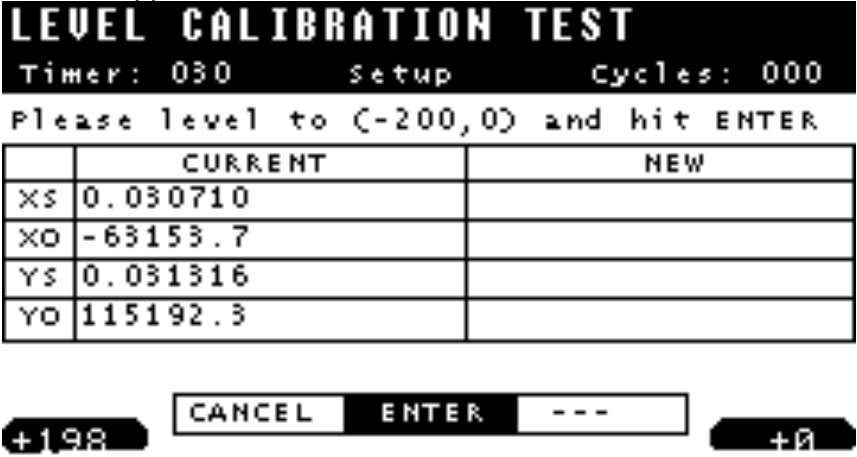


Figure 3-57 The level calibration test screen at the end of the point 2

Level your CG-6 Autograv™ to -200 arcseconds on X and 0 arcseconds on Y and press the **Enter** button. The following screen will appear:

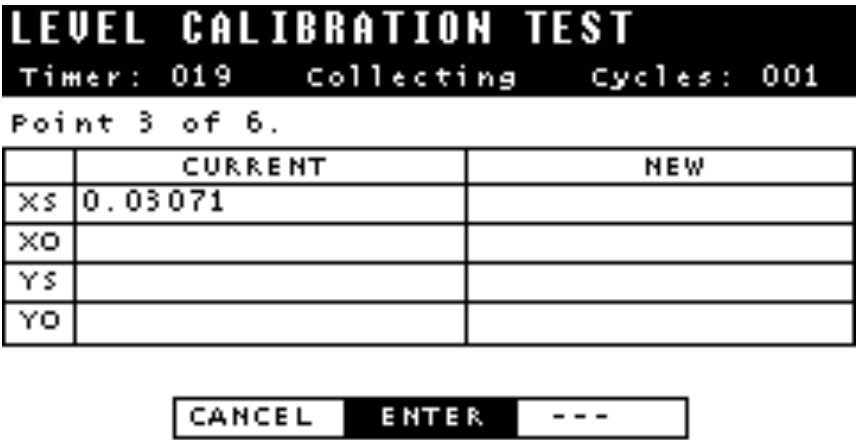


Figure 3-58 The level calibration test screen in collecting mode, point 3

Your CG-6 Autograv™ is now collecting data. At the end of the cycle (30 seconds), the following screen will appear:



Figure 3-59 The level calibration test screen at the end of the point 3

Level your CG-6 Autograv™ to 0 arcseconds on X and 200 arcseconds on Y and press the **Enter** button. The following screen will appear:

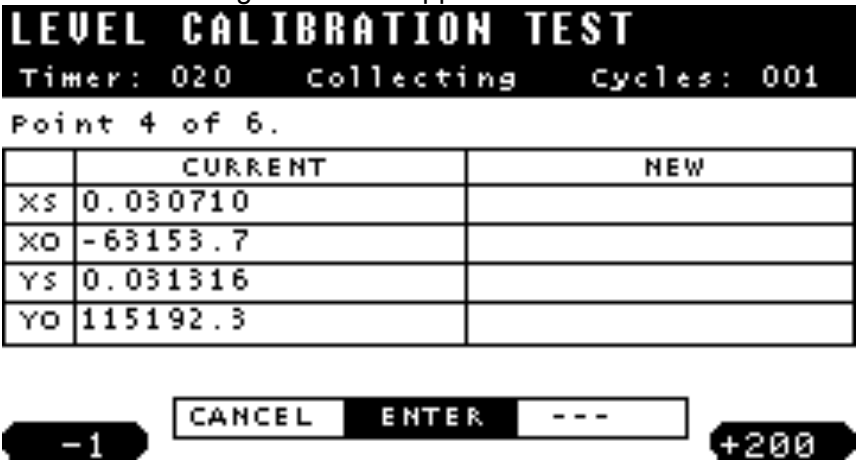


Figure 3-60 The level calibration test screen in collecting mode, point 4

Setting up

Your CG-6 Autograv™ is now collecting data. At the end of the cycle (30 seconds), the following screen will appear:

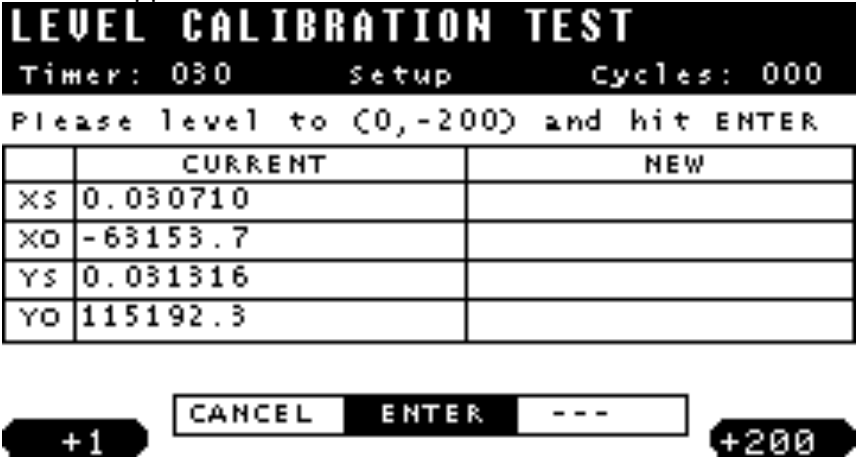


Figure 3-61 The level calibration test screen at the end of the point 4

Level your CG-6 Autograv™ to 0 arcseconds on X and -200 arcseconds on Y and press the **Enter** button. The following screen will appear:

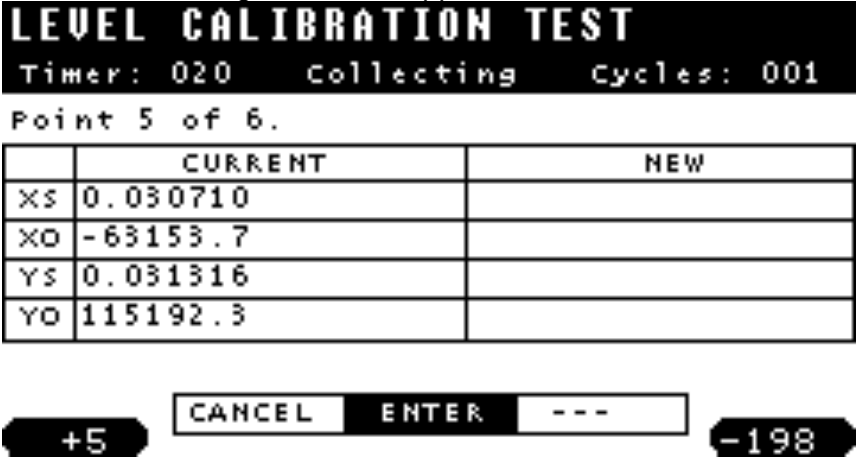


Figure 3-62 The level calibration test screen in collecting mode, point 5

Your CG-6 Autograv™ is now collecting data. At the end of the cycle (30 seconds), the following screen will appear:

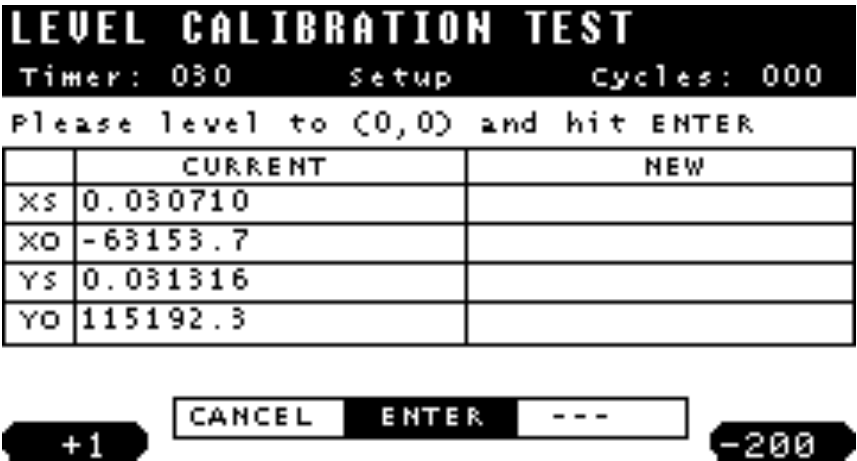


Figure 3-63 The level calibration test screen at the end of the point 5

Level your CG-6 Autograv™ to 0 arcseconds on X and 0 arcseconds on Y and press the Enter button. The following screen will appear:

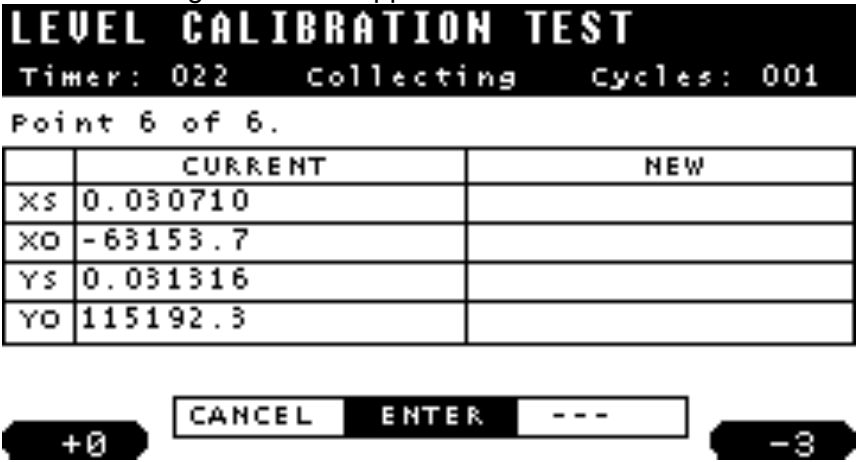


Figure 3-64 The level calibration test screen in collecting mode, point 6

Your CG-6 Autograv™ is now collecting data. At the end of the cycle (30 seconds), the following screen will appear:

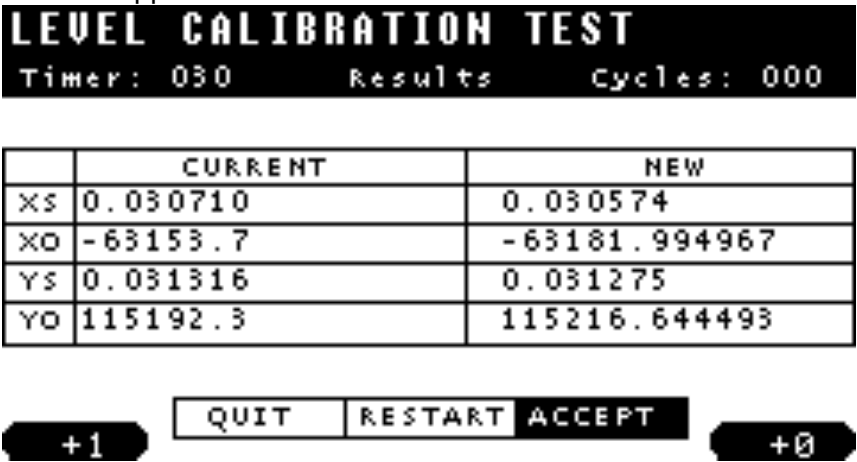


Figure 3-65 The level calibration test screen at the end of the point 6

Setting up

To accept the new tilt offset and scale values, *move* the cursor to **ACCEPT** and *press* the **Enter** button. To exit without accepting the new tilt offset and scale values, move the cursor to **QUIT** and *press* the **Enter** button. To restart the level calibration test, move the cursor to **RESTART** and *press* the **Enter** button.

Once your level calibration test has been completed, a level calibration file (with extension .level) is automatically created. To retrieve this file please refer to Retrieving your data on page 4-7 for more details. The following caption illustrate the level calibration file in the memory of your CG-6 Autograv™:

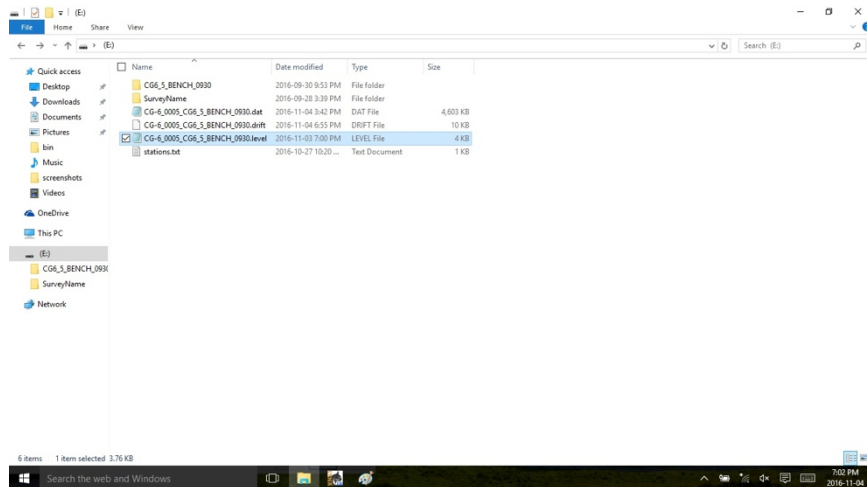


Figure 3-66 The level calibration file root folder

The following caption illustrates a typical drift file:

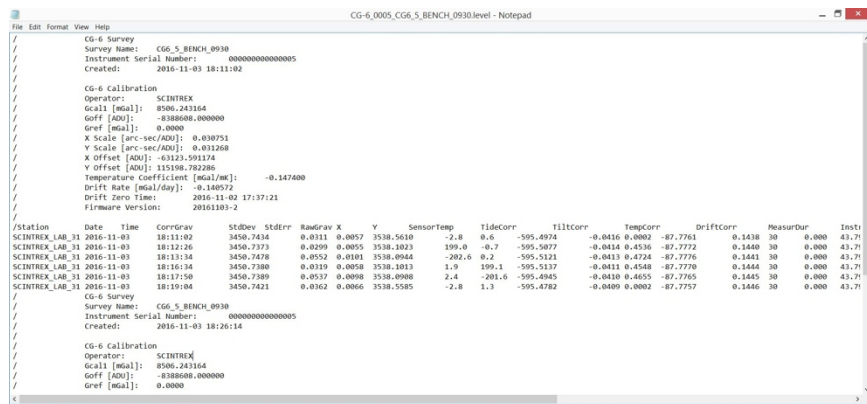


Figure 3-67 The level calibration file

System information of your CG-6 Autograv™.

To access the system information screen, *move* your cursor to **INFO** and *press* the **Enter** button. The following screen will appear:



Figure 3-68 The system information screen

The system information screen displays the following: serial number of your CG-6 Autograv™, the firmware version, the percentage of memory in use and the sensor temperature (in degrees C).



Important: The factory menu is only accessible to Scintrex engineers.

You have now completed the setup of your CG-6 Autograv™.

Chapter 4 Operating the CG-6 Autograv™ in the field

By now you have familiarized yourself with your CG-6 Autograv™ and have properly configured it for your upcoming survey.

This chapter reviews the basic steps required to carry out a survey. They include the following:

- Creating a station for a gravity point that you will occupy
- Retrieving the pre-set list of gravity points you will occupy
- Connecting your built-in GPS
- Taking a measurement with the CG-6 Autograv™
- Recording the data collected with the CG-6 Autograv™
- Retrieving the data collected with the CG-6 Autograv™
- Recalling the data collected with the CG-6 Autograv™

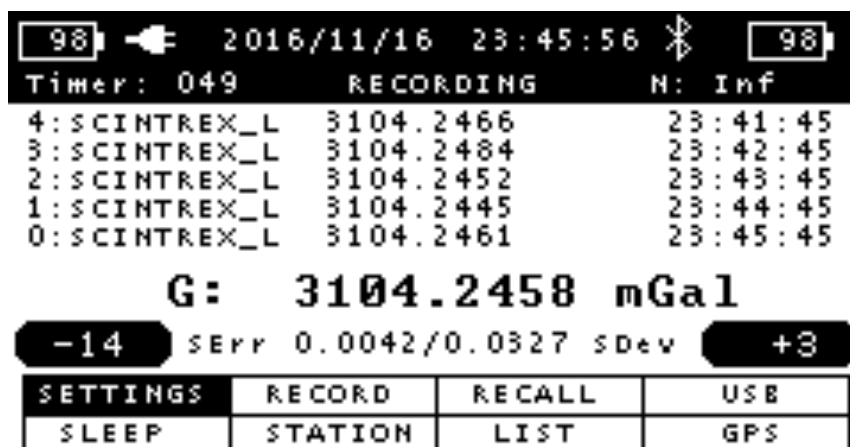


Figure 4-1 The CG-6 Autograv™ main screen

Creating a gravity station or point

From the main screen, *move* your cursor to **STATION** and *press* the **Enter** button. The following screen will appear:

STATION	
Station	EXAMPLESTATION1
Latitude	39.9789300
Longitude	-105.0681700
Elevation	1527.00
Instr. Height	0.00
BACK	

Figure 4-2 The station screen

From this screen, you can create a new station or gravity point, which will have a station name, a latitude value, a longitude value, an elevation value as well as an instrument height value; used for the free air correction during the processing stage.

Creating the station name

The Station Name can be any combination of 31 alphanumeric characters. From the station, *move* your cursor to **Station** and *press* the **Enter** button. The following screen will appear:

Enter Station Name:										
StationName█										
7	8	9		A	B	C	D	E	F	G
4	5	6		H	I	J	K	L	M	N
1	2	3		O	P	Q	R	S	T	U
0	-	~		V	W	X	Y	Z	{	}
!	#	\$	%	&	+	(	)	-	@	^
ACCEPT			CLEAR		<--		CANCEL			

Figure 4-2 The station name editing screen

To type the Station Name, *move* the cursor to the chosen character and *press* the **Enter** button. To clear the entire field, *move* the cursor to the **CLEAR** field and *press* the **Enter** button. To clear the last character that was entered, *move* the cursor to the Backspace field and *press* the **Enter** button. Once you are satisfied with your survey name, *move* the cursor to the **ACCEPT** field and *press* the **Enter** button. To exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

Entering the latitude of your gravity station or point

You can manually enter the latitude of your gravity station or point.

Retrieving the pre-set list of stations

The LynxLG Land Gravity software allows you to create a pre-set list of stations. Please refer to LynxLG Land Gravity software operation manual (p/n 115370002) for more details.

From the main screen, *move* your cursor to **STLIST** and *press* the **Enter** button. The following screen will appear:

```
Stations Found: 05      < 00/00 >
>000: EXAMPLESTATION1
 001: EXAMPLESTATION2
 002: EXAMPLESTATION3
 003: EXAMPLESTATION4
 004: EXAMPLESTATION5
```

CANCEL

Figure 4-3 The station list screen

To choose a given station, *move* your cursor to the selected station and *press* the **Enter** button. You will then be returned to the main measurement screen.

If you do not want to use a pre-set station and exit this screen, *move* the cursor to **CANCEL** and *press* the **Enter** button.

Connecting the built-in GPS

From the main screen, *move* your cursor to **GPS** and *press* the **Enter** button. The following screen will appear:

```
                                01/01/00  00:12:47
CG-6  GPS
GPS Status:  -SEARCHING-
Latitude:    0.00000000
Longitude:   0.00000000
Time:
Date:
Elevation:
```

BACK	GET POS	SYNCTIME
------	---------	----------

Figure 4-4 The GPS screen

The GPS status will appear as "SEARCHING". Once a sufficient number of satellites is obtained, the Latitude, Longitude, Time, Date and Elevation fields will automatically be populated. The following screen will appear:

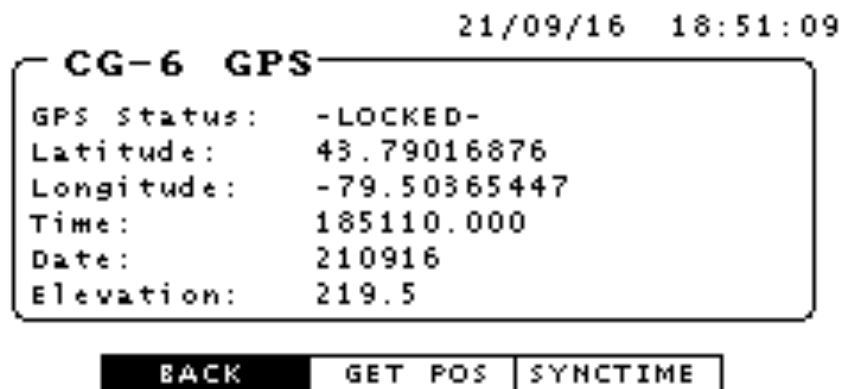


Figure 4-5 The GPS active screen

You can also refresh the current position of your CG-6 Autograv™ by *moving* your cursor to **GET POS** and *pressing* the **Enter** button. The following screen will appear:

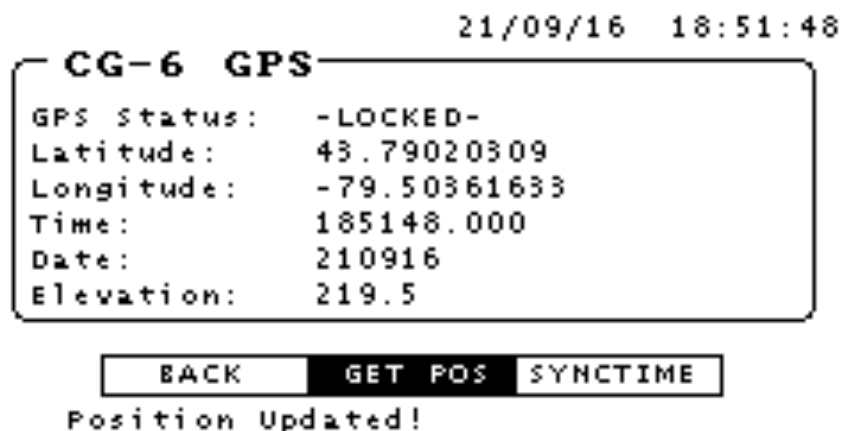


Figure 4-7 The GPS screen with locked position

Furthermore, you can also synchronize the time of the real time clock of your CG-6 Autograv™ with the GPS time by *moving* your cursor to **SYNCTIME** and *pressing* the **Enter** button. The following screen will appear:

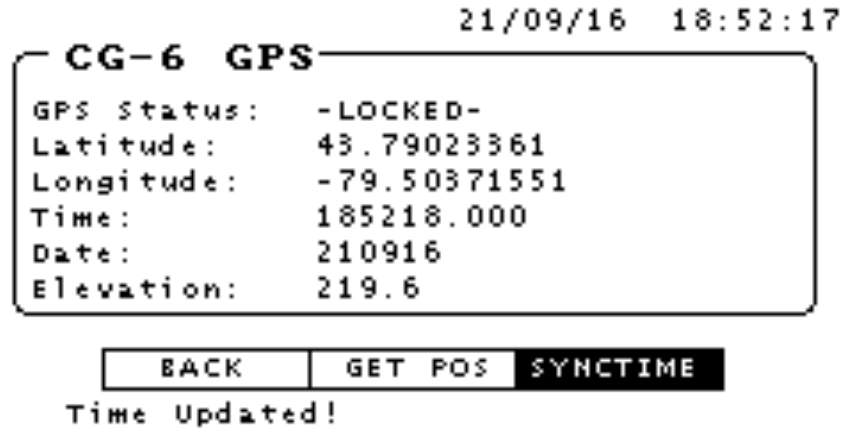


Figure 4-8 The GPS screen with locked time

To exit this screen, *move* the cursor to **BACK** and *press* the **Enter** button.

Taking a measurement with the CG-6 Autograv™

Placing the CG-6 Autograv™ on its tripod

Place the CG-6 Autograv™ on its tripod as illustrated below.



Figure 4-9 Placing the CG-6 Autograv™ on its tripod

Leveling the CG-6 Autograv™

The CG-6 Autograv™ provides two types of read-outs useful for leveling the instrument. The first is a digital reading of the X and Y level displayed in arcseconds on the screen. The second is a set of two leveling arrows, which describe the direction required to rotate the adjustable arms of the leveling tripod in order to level the instrument.

Operating

When the instrument is first placed on the tripod, the level arrows will likely be red or orange, depending on how far off-level the instrument is sitting. To level the instrument, rotate the adjustable knobs on the tripod in the direction indicated by the arrows until the lights turn green. The user may observe the numerical levels on the screen in order to gauge the amplitude of rotation required to reach level.

Depending on the requirements for a given survey, the user may select the acceptable range (the range that turns the leveling arrows green) for the level correction via the menu screen, as described in “Adjusting the windows size of the level screen” on page 3-4.



Figure 4-10 Levelling arrows



Important:

You should level the Y axis first, then level the X axis.

Taking a measurement



Note:

In order to mitigate disturbing the stability of the CG-6 Autograv™ during a measurement by touching the gravity meter, it is recommended to take a measurement with LynxLG Land Gravity software installed on the supplied tablet computer (p/n 140148).

From the main screen, *move* your cursor to **RECORD** and *press* the **Enter** button. The word RECORDING will appear in the upper part of the screen.

Operating

The duration of the reading is determined by the measurement CYCLE LENGTH and NUMBER OF CYCLES. If this has not yet been set up, please proceed immediately to Survey settings.

Once the measurement cycle length and number of cycles have been reached, the leveling arrows will flash magenta and your data will automatically be stored in the flash memory of your CG-6 Autograv™.



Note:

During the measurement, data is continuously stored in real time. Therefore, you will not lose your data if you stop recording suddenly.

Recalling your data

You can recall all of the previously recorded data. It will appear sequentially.

From the main screen, *move* your cursor to **RECALL** and *press* the **Enter** button. The following screen will appear:

```
(CG-6_0005_CG6_5_BENCH_0930.dat)
Points Found: 521 4359.038 kb < 00/43 >
001: SCINTREX_ 3450.7212 08:36:56
002: SCINTREX_ 3450.7206 08:37:56
003: SCINTREX_ 3450.7195 08:38:56
004: SCINTREX_ 3450.7201 08:39:56
005: SCINTREX_ 3450.7201 08:40:56
006: SCINTREX_ 3450.7197 08:41:56
007: SCINTREX_ 3450.7216 08:42:56
008: SCINTREX_ 3450.7206 08:43:56
009: SCINTREX_ 3450.7208 08:44:56
010: SCINTREX_ 3450.7208 08:45:56
011: SCINTREX_ 3450.7204 08:46:56
012: SCINTREX_ 3450.7205 08:47:56
```

Figure 4-11 The data recall screen

To exit this screen, *press* the **Enter** button.

Retrieving your data

Connect your USB-A to USB-B cable (p/n 200239) between the USB-B connector on your CG-6 Autograv™ and any USB-A connector on your laptop or tablet computer.



Figure 4-12 The CG-6 Autograv™ USB-B port

From the main screen, *move* your cursor to **USB** and *press* the **Enter** button. The following screen will appear:

USB Device Mode

EXIT

Figure 4-12 The USB screen



Important: Your CG-6 Autograv™ must be in the idle mode, ie. data recording must be stopped before you can start USB Device Mode.

Your CG-6 Autograv™ will then appear as a mass storage device on your computer as illustrated below. You can easily transfer files to your computer like using a USB flash drive.

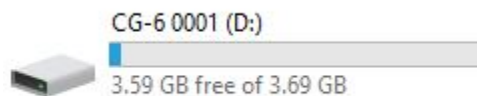


Figure 4-13 The CG-6 Autograv™ as a mass storage device on your computer

Operating

The file structure of your CG-6 Autograv™ is illustrated by the diagram below.

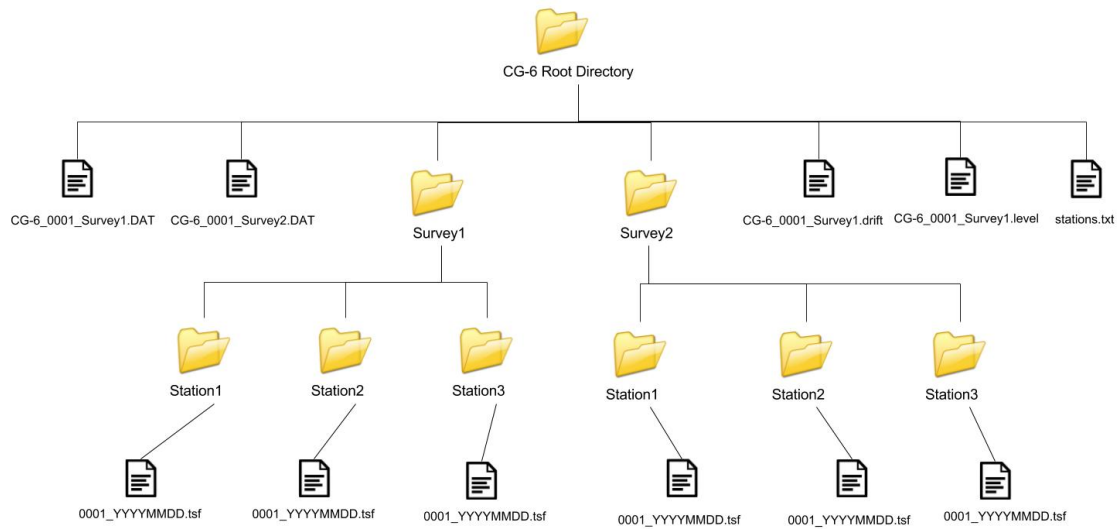


Figure 4-14 File structure of a CG-6 Autograv™

Filtered Data File (.DAT)

Filtered data file stores the filtered gravity readings and other measurements (standard deviation, X/Y levels, sensor temperature, etc.) at the frequency specified by the measurement cycle length you selected (30s, 60s or 120s).

After you start data recording, a new line of readings will be written to the filtered data file each time the measurement cycle length is reached.

The filtered data file is stored under the root directory of your CG-6 Autograv™, with file name:

\\CG-6_XXXX_SurveyName.DAT

XXXX is the last 4 digits of the meter's serial number.

Here is an example of a filtered data file.

Operating

```
// CG-6 Survey
// Survey Name: Survey1
// Instrument Serial Number: 000000000000001
// Created: 2016-11-12 20:28:29
//
// CG-6 Calibration
// Operator: Scintrex
// Gsall [mGal]: 8272.719000
// Goff [ADU]: -8388608.000000
// Gref [mGal]: 0.0000
// X Scale [arc-sec/ADU]: 0.030793
// Y Scale [arc-sec/ADU]: 0.030434
// X Offset [ADU]: -81115.800000
// Y Offset [ADU]: -177456.140000
// Temperature Coefficient [mGal/°C]: -0.125380
// Drift Rate [mGal/day]: -0.012000
// Drift Zero Time: 2016-01-01 02:02:02
// Firmware Version: 20161103-2
//
// Station Date Time CorrGrav StdDev StdErr RawGrav X Y SensorTemp TideCorr TiltCorr TempCorr DriftCorr MeasurDur InstrHeight LatUser LonUser ElevUser LatGPS LonGPS ElevGPS Corrections
// Station1 2016-11-12 21:17:29 3001.0900 1.7756 0.2292 2990.0484 6.1 -14.8 109.8599 -0.1067 0.0030 11.1483 3.8016 60 0.000 43.800000 -79.500000 200.00 43.790184 -79.503983 202.4 01010
// Station1 2016-11-12 21:18:29 2999.9948 1.6411 0.2119 2984.2397 6.8 -14.0 146.5525 -0.1067 0.0029 15.8618 3.8016 60 0.000 43.800000 -79.500000 200.00 43.790146 -79.503960 202.4 01010
// Station1 2016-11-12 21:19:29 2998.9803 1.5173 0.1959 2978.8696 5.7 -14.6 180.5399 -0.1067 0.0031 20.2174 3.8016 60 0.000 43.800000 -79.500000 200.00 43.790092 -79.503807 198.9 01010
// Station1 2016-11-12 21:20:29 2998.0425 1.3973 0.1804 2973.9080 6.2 -15.5 211.8597 -0.1067 0.0032 24.2412 3.8016 60 0.000 43.800000 -79.500000 200.00 43.789948 -79.503899 195.9 01010
// Station1 2016-11-12 21:21:29 2997.1789 1.2940 0.1671 2969.3262 6.8 -14.6 240.5533 -0.1067 0.0029 27.9594 3.8017 60 0.000 43.800000 -79.500000 200.00 43.789845 -79.503960 195.1 01010
// Station1 2016-11-12 21:22:29 2996.3788 1.1974 0.1546 2965.0915 6.8 -15.4 267.5533 -0.1067 0.0032 31.3940 3.8017 60 0.000 43.800000 -79.500000 200.00 43.789833 -79.504013 194.9 01010
// Station1 2016-11-12 21:23:29 2995.6396 1.1055 0.1427 2961.1791 6.7 -15.9 292.3273 -0.1067 0.0036 34.5672 3.8017 60 0.000 43.800000 -79.500000 200.00 43.790016 -79.504150 193.1 01010
// Station1 2016-11-12 21:24:29 2994.9588 1.0230 0.1321 2957.5636 7.4 -14.4 315.1401 -0.1067 0.0027 37.4998 3.8017 60 0.000 43.800000 -79.500000 200.00 43.790108 -79.503983 190.9 01010
// Station1 2016-11-12 21:25:29 2994.3222 0.9429 0.1217 2954.2215 5.4 -14.3 336.2178 -0.1067 0.0028 40.2074 3.8017 60 0.000 43.800000 -79.500000 200.00 43.790222 -79.504129 186.9 01010
// Station1 2016-11-12 21:26:29 2993.7404 0.8708 0.1124 2951.1368 6.4 -13.7 355.7598 -0.1067 0.0027 42.7103 3.8017 60 0.000 43.800000 -79.500000 200.00 43.790112 -79.504250 185.4 01010
// Station1 2016-11-12 21:27:29 2993.2015 0.8062 0.1041 2948.2855 6.7 -12.4 373.7533 -0.1066 0.0024 45.0226 3.8017 60 0.000 43.800000 -79.500000 200.00 43.790092 -79.504092 186.4 01010
// Station1 2016-11-12 21:28:29 2992.7066 0.7442 0.0961 2945.6549 6.9 -12.0 390.3661 -0.1066 0.0021 47.1583 3.8017 60 0.000 43.800000 -79.500000 200.00 43.790119 -79.504089 196.9 01010
// Station1 2016-11-12 21:29:29 2992.2460 0.6840 0.0883 2943.2218 6.6 -13.2 405.7340 -0.1065 0.0024 49.1308 3.8017 60 0.000 43.800000 -79.500000 200.00 43.790127 -79.504091 201.6 01010
```

Figure 4-15 Sample Filtered Data File from a CG-6 Autograv™

Raw TSF File (.tsf)

A raw tsf file is a file that keeps the raw readings during your measurement. Each line of the file has

- a time stamp
- 10 raw gravity readings (ADC unit)
- raw X and Y level readings (ADC unit)
- raw temperature reading (ADC unit)
- tide correction (mGal)
- a status bit

If Record Raw tsf is enabled, a new line of readings will be appended to the file each second during your recording.

Raw tsf files are organized by surveys, stations and dates, with the file path below.

\\SurveyName\\StationName\\XXXX_YYYYMMDD.tsf

CG-6 will automatically create a new raw tsf file when a new survey or station is selected or when the clock passes midnight during recording.

Here is a sample raw tsf file.

```
[DATA]
2016 11 16 23 36 36 -2245049 -2245059 -2245055 -2245072 -2245190 -2245409 -2245551 -2245402 -2245028 -2244796 -141733 -258357 -5476970 -0.093668 0
2016 11 16 23 36 37 -2245196 -2245172 -2245109 -2244718 -2244389 -2244405 -2244674 -2244942 -2245095 -2245162 -141780 -258322 -5477117 -0.093667 0
2016 11 16 23 36 38 -2245016 -2245019 -2245210 -2245185 -2245154 -2245129 -2245104 -2245074 -2245043 -2245023 -141793 -258331 -5477021 -0.093666 0
2016 11 16 23 36 39 -2245140 -2245151 -2245133 -2245021 -2245030 -2245055 -2245084 -2245095 -2245097 -2245112 -141821 -258314 -5477013 -0.093665 0
2016 11 16 23 36 40 -2245042 -2245041 -2245049 -2245044 -2245096 -2245094 -2245094 -2245091 -2245078 -2245059 -141788 -258290 -5477015 -0.093664 0
2016 11 16 23 36 41 -2245006 -2245024 -2245045 -2245052 -2245019 -2245009 -2245028 -2245057 -2245052 -2245019 -141779 -258328 -5476893 -0.093663 0
2016 11 16 23 36 42 -2245380 -2245419 -2245405 -2245240 -2244907 -2244607 -2244824 -2244868 -2245066 -2245273 -141768 -258344 -5476945 -0.093663 0
2016 11 16 23 36 43 -2245169 -2245229 -2245216 -2245143 -2245078 -2245079 -2245137 -2245186 -2244885 -2245052 -141667 -258340 -5477030 -0.093662 0
2016 11 16 23 36 44 -2245055 -2245021 -2245013 -2245011 -2245023 -2245066 -2245125 -2245183 -2245250 -2245119 -141704 -258227 -5476920 -0.093661 0
2016 11 16 23 36 45 -2245443 -2245513 -2245502 -2245397 -2245230 -2245057 -2244927 -2244858 -2244829 -2244811 -141720 -258339 -5476971 -0.093660 0
2016 11 16 23 36 46 -2245388 -2244755 -2244700 -2244649 -2244644 -2244717 -2244877 -2245101 -2245317 -2245426 -141660 -258222 -5476928 -0.093659 0
2016 11 16 23 36 47 -2245098 -2245126 -2245149 -2245099 -2245082 -2245048 -2245003 -2244985 -2245008 -2245054 -141734 -258417 -5477033 -0.093658 0
2016 11 16 23 36 48 -2245047 -2245047 -2245035 -2245150 -2245169 -2245184 -2245170 -2245122 -2245071 -2245047 -141712 -258250 -5477077 -0.093657 0
```

Figure 4-16 Sample Raw TSF File from a CG-6 Autograv™

Drift Test (.drift) and Tilt Calibration (.level) file

Operating

A drift test file or tilt calibration file will be recorded during your drift test or tilt calibration. They have the same format as the filtered data file (.DAT), and can be found under your CG-6 root directory. They come in the following file names.

```
\CG-6_XXXX_SurveyName.drift  
\CG-6_XXXX_SurveyName.level
```

Pre-set Stations File (stations.txt)

This is where the pre-set stations list is stored. You can add, remove or modify pre-set stations by editing this file.

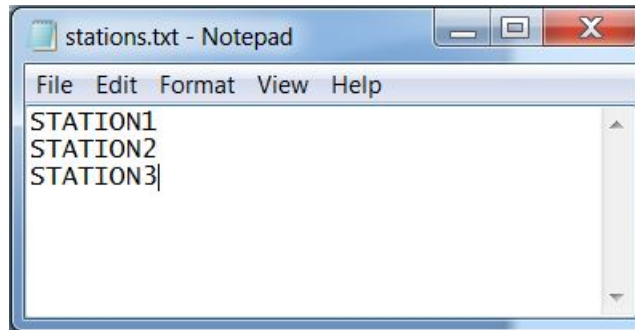


Figure 4-17 Sample Pre-set Stations File from a CG-6 Autograv™

Chapter 5 Maintaining your CG-6 Autograv™ and troubleshooting



Important:

Care must be exercised in handling your CG-6 Autograv™. Excessive shocks and vibrations should be avoided.

Troubleshooting

Despite the fact that your CG-6 Autograv™ is a very reliable instrument, there can be circumstances where problems may occur. The following table lists some of these problems and their attempted solution. However, please do not hesitate to contact us. See “Warranty and Repair” for the office information.

Problem	Possible Cause	Possible Solution
CG-6 Autograv™ will not power up.	Battery is depleted or meter is not plugged into AC.	Plug in Power Supply (p/n 128370015) and/or install a fully charged battery.
	Battery is not fully seated in instrument.	Firmly but carefully push on the battery caps to ensure they are fully seated in the battery compartment.
Battery is not charging and discharging in the normal manner - e.g. charges more quickly than normal and has reduced capacity.	Battery calibration has been lost.	Insert battery into any slot of the Smart Battery Charger (p/n 0221020). Light will change from flashing green to solid green.
Reading appears to be out of range or reading is close in value to GCAL1 and ERR/SD is low.	Sensor may be sticking.	Gently tap the front panel underneath the CG-6 Autograv™ name with your finger several times.
Data does not transfer.	USB-B to USB-A cable is not connected between CG-6 Autograv™ and PC.	Connect Cable. See Retrieving your data.

Chapter 6 Reference information

CG-6 Autograv™ technical specifications

Tablet computer and CG-6 Autograv™ specifications are subject to change without notice

Sensor Type	Fused quartz using electrostatic nulling
Reading Resolution	0.1 microGal
Standard Deviation	<5 microGal
Operating Range	World-wide (8,000 mGal without resetting)
Residual Drift	<10 microGal/day
Uncompensated Drift	<200 microGal/day
Range of Automatic Tilt Compensation	±200 arcseconds
Tares	Typically <5 microGal for shock up to 20G
Automated Corrections	Tide, instrument tilt, temperature, drift
Data Output Rate	User selectable up to 10 Hz
GPS Accuracy	2.5m typical accuracy
Touch-Free Operation	Handheld Tablet Computer with Bluetooth
Battery Capacity	2 x 6.8 Ah (10.8V) rechargeable lithium smart batteries. Full day operation at 25°C (77°F)
Power Consumption	5.2 Watts at 25°C (77°F)
Operating Temperature	-40°C to +45°C (-40°F to 113°F) Optional high temp version to +55C (131°F)
Digital Data Output	USB and Bluetooth
Dimensions	21.5 cm (H) x 21 cm x 24 cm (8.5 in x 8.2 in x 9.4 in)
Weight	5.2 kg (11.5 lbs) including batteries
Standard System Contains	CG-6 Autograv™ Gravity Meter CG-6 Tripod 2 Rechargeable Smart Batteries Battery Charger Tablet computer + accessories LynxLG Land Gravity Software Power Supply and USB Cable Transportation Case Shoulder Strap User Manual Quick Start Guide Carrying Bag Plug Adaptor Kit Spare Parts Kit

Shipping weight and dimensions	97cm x 60 x 55 (H) (38in x 24 x 22 (H)), 26 kg, (60 lb).
Available Options and Accessories	High-Temperature (HT) Meter Upgrade Cold Weather Survey Accessories Seco Backpack Spare Meter Batteries Spare Tablet Computer Batteries Trident Gradient Tripod Spare Battery Holder Assembly Extended Legs Tripod

Instrument parts list

CG-6 Autograv™ Standard Accessories

Item Description	Part Number
CG-6 Autograv™ includes:	101370001
CG-6 Autograv	129370005
Meter Tripod	126370037
Tablet Computer	140148
Battery Pack (x2)	0221029
Battery Holder Assembly (x2)	126370001
AC to DC Power Supply	128370015
Smart Battery Charger	0221020
USB-B to USB-A Cable	200239
Spare Parts Kit	888025
Kit Plug Adaptor	400128
CG-6 Quick Start Guide	115370002
Scintrex Product Manuals	800700
CG-6 Carrying Bag	888012
LynxLG Land Gravity Software Manual	115370003
CG-6 Shipping Case Assembly	888010

CG-6 Autograv™ Optional Accessories

Item Description	Part Number
10-hour tablet computer battery	400020
Smart Battery	0221029
Seco Backpack	140220
Battery Holder Assembly	126370001
Cold weather kit	888405
Trident Gradient Tripod & Shipping Case Assembly	101370003

Warranty and repair

Warranty

All Scintrex equipment, with the exception of consumable items, is warranted against defects in materials and workmanship for a period of one year from the date of shipment from our plant. Should any defects become evident under normal use during the warranty period, Scintrex will make the necessary repairs free of charge.

This warranty does not cover damage due to misuse or accident and may be voided if the instrument console is opened or tampered with by persons not authorized by Scintrex.

Repair

When to ship the unit

Please do not ship your instrument for repair until you have communicated the nature of the problem to our Customer Service Department by e-mail, telephone, facsimile or mail. Our Customer Service Department may suggest certain simple tests or steps for you to do, which may solve your problem without the time and expense involved in shipping the instrument back to Scintrex for repair. If the problem cannot be resolved, our personnel will request that you send the instrument to our plant for the necessary repair.

Description of the problem

When you describe the problem, please include the following information:

- The symptoms of the problem,
- How the problem started,
- If the problem is constant, intermittent or repeatable,
- If constant, under what conditions does it occur,
- Any printouts demonstrating the problem

Shipping instructions

No instrument will be accepted for repair unless it is shipped prepaid. After repair, it will be returned collect, unless other arrangements have been made with Scintrex. Please mention the instrument's serial number in all communications regarding equipment leased or purchased from Scintrex.

Instruments should be shipped to:

SCINTREX Limited
222 Snidercroft Road
Concord, ON, Canada
L4K 2K1

Telephone: +1 905 669 2280
Fax: +1 905 669 9899

Chapter 7 **Theory of operation**

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