ORIshot

Multifunction Orientation Instrument

USER MANUAL

CTH200

This user manual explains how to use, configure and maintain the ORIshot orientation system. Please read and ensure you understand these guidelines before using the product.

Disclaimer

While every effort has been made to ensure that the information contained in the guide is accurate and complete, no liability can be accepted for any errors or omissions. Coretell reserves the right to change the specifications of the system described herein at any time without prior notice.

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Introduction

Congratulations! You are using the latest in digital survey instrumentation for down-hole exploration.

This user guide provides all the information you will need to use and care for your product.

ORIshot System

Handset

The ORIshot handset provides wireless connectivity to any ORIshot probe. You can configure, start a survey and analyse survey data effortlessly.

ORIshot handset layout and key button functions:

1. LCD screen
2. On/Off
3. Settings
4. LCD Backlight
5. Cancel/go back
6. Navigation keys
7. New Survey/shot
8. Take shot/survey
9. Get data
10. View data
11. USB Port on the back

ORIshot probe

The ORIshot probe is assembled as a single unit with a plastic sleeve screwed into a steel casing. The top of the plastic sleeve houses the wireless communications window and has the ORIshot probe identification number engraved into it.

The communications window enables the ORIshot probe to communicate to the handset using wireless technology.

Note: In order to ensure reliable communication between the Handset and ORIshot probe, please ensure the communications window is clearly visible when initiating a survey or downloading survey data (i.e. not covered)

1. Wireless communications window

LED Light

A flashing LED light is visible behind the wireless communications window to indicate the ORIshot probe status.

LED Colour	Frequency	Status
Green	7 sec	Paired as a **GREEN** ORIshot
RED	7 sec	Paired as a **RED** ORIshot
GREEN	2 sec	**GREEN** ORIshot has data
RED	2 sec	**RED** ORIshot has data
GREEN/RED	7 sec or > 1 sec	ORIshot not yet paired to handset
RED	> 1 sec	Please call technical support
None	0	Possible Flat Battery

Menu Options

Pairing

The ORIshot probe can be used with any ORIshot handset by following the pairing process. The ORIshot handset can be paired to two ORIshot probes simultaneously.

To pair a handset to a probe, please follow these steps:

1. Press the <S> button
2. Select “Ori pairing” from the menu
3. Select “Manual SN entry”
4. Select the Ori probe colour assignment. You can specify an Ori probe to be either **RED** or **GREEN**.
5. Enter the probe serial number (this probe serial number can be found engraved into the wireless communications window.
6. Press <OK>
7. If this is the first attempt at pairing the handset to the Ori, a pin code will be requested (disabled by default). Press <OK> to continue.
8. The display will show “Pairing to Device, Please Wait”, then “Connection to Ori successful.”

The handset is now paired to the probe and can be used to conduct surveys.

An LED light visible through the wireless communications window will now flash red or green to indicate the colour assigned to it.

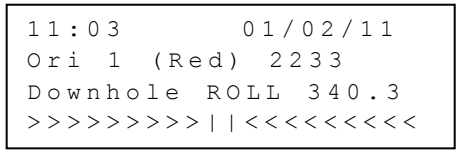
If you receive an error message while pairing, please go to the “No Response message” section at the back of this user manual.

Display Settings

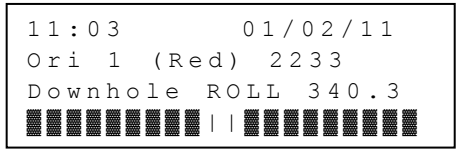
The ORIshot system provides a number of options to customise how the survey data is displayed. These options can be changed in the "Display Settings" menu. This menu can be found by pressing the <Settings> button and then scrolling down to "Display Settings".

The optional display settings are:

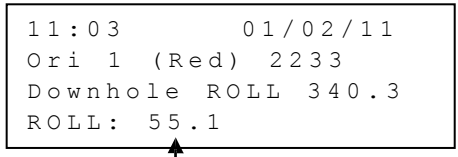
- **Arrows:** *Shows the survey data as a series of arrows.*



- **Bars:** *Shows the survey data as a series of bars*



- **Real-time ROLL**: *Displays the survey and real-time ROLL of the probe.*

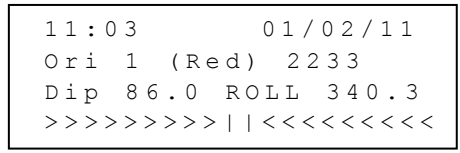


This number will change as you rotate the ORIshot probe. Top dead centre is located when the two ROLL numbers match.

ORIshot Settings

Enables the user to show or hide the DIP information when viewing the survey data. Simply press the <Settings> button, then select "Ori Settings" from the menu and select the desired setting.

Screen layout (Show DIP):



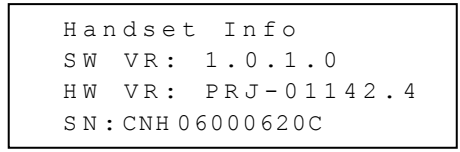
Screen layout (Hide DIP):

Info

To view the current software version of the handset or probe, please follow these steps:

1. Press the <S> button
2. Select "Info" from the menu
3. Select "Handset" or "Ori device"

The following screen will be displayed (or similar):

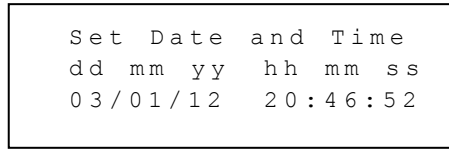


Date and Time

To set the date and time of the ORIshot system, please follow these steps:

1. Press the <S> button
2. Select “Date and Time” from the menu
3. Set the date and time using the <Arrow> keys
4. Press <OK> when you have finished

The following screen will be displayed:

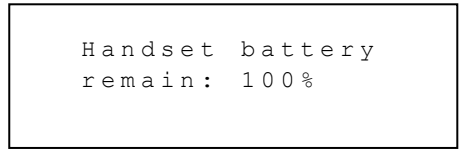


Battery Level

To check the battery level of the ORIshot handset, please follow these steps:

1. Press the <S> button
2. Select “Battery Level” from the menu
3. Battery level will be displayed

The following screen will be displayed:



Zero Roll Adjust

The ORIshot probe can be zeroed to any roll angle. To zero the ORIshot probe, please follow these steps:

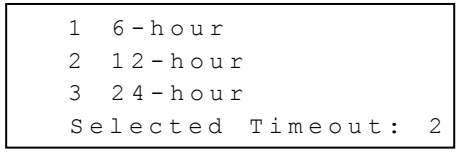
1. Press the <S> button
2. Select “Zero Roll Adjust” from the menu
3. Select your Ori device using the up & down arrows, then press <OK>
4. Press <OK> to perform a zero roll adjustment. The ORIshot probe ROLL will now read zero at the current position.

Please note: *The probe must be within communications distance from the handset to perform this function. Ensure the handset is no more than 2 metres from the probe.*

Survey Timeout

The ORIshot probe has a user selectable survey timeout feature. Use the survey timeout feature to set the maximum duration of any survey. Setting a survey timeout will ensure the ORIshot battery is not drained by leaving the probe in survey mode.

1. Press the <S> button
2. Select “Survey Timeout” from the menu
3. Select your desired timeout period using the up & down arrows to select between timeout options 1 (6hrs), 2 (12hrs) and 3 (24hrs).
4. then press <OK>



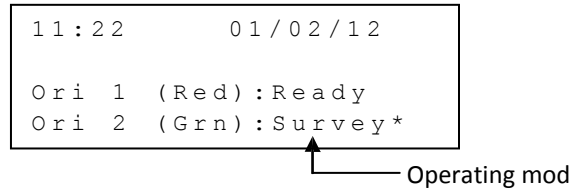
Please note: ***If data is not recovered within the survey timeout period, a new survey will need to be started.***

Main Screen

The ORIshot system allows the user to control two ORIshot probes with a single handset.

The main screen indicates which ORIshot probes are paired to the handset; it also indicates the operating mode of each ORIshot probe (please see below for information on operating modes).

Main screen layout: The below screen shows this particular handset is paired to two ORIshot probes. ORIshot probe 1 is **ready** to start a new survey; ORIshot probe 2 is currently in **survey** mode.



Main screen: Example

Operating Modes

The Ori probes can be in one of three operational modes:

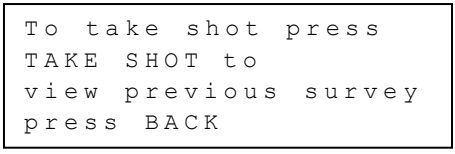
- **Ready:** *The Ori probe is not being used and is ready to start a new survey.*
- **Survey*:** *The Ori probe is currently being used to conduct a survey. No measurement (shot) has been taken.*
- **Survey:** *The Ori probe is currently being used to conduct a survey. A measurement (shot) has been taken and the* ORIshot probe is ready for retrieval*.*
- **Data:** *The survey has been completed and data from the Ori probe has been downloaded to the handset.*

Starting a new survey

To start a new survey simply press the <New Survey> button on the handset and follow the on-screen instructions.

After pressing <New Survey>, please follow these steps:

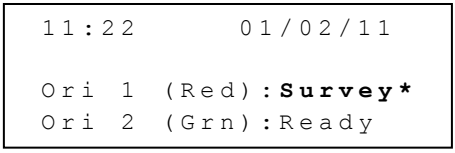
1. Select the ORIshot probe you wish to use, and press <OK>
2. If the ORIshot probe has been used previously the handset will display the following warning message “Are you sure you wish to overwrite survey data on this Ori?”
3. Press <OK> to overwrite old data and continue
4. The handset will connect to the Ori probe and initiate survey mode.
5. With the ORIshot probe in position on core, press <Take Measurement> to take a shot. Do not move the Ori probe while a shot is being taken. Moving the Ori probe will reduce the reliability of the survey data.



Multi Use – Multiple probes

Once a survey has been initiated you can press the <BACK> key and continue using the handset to perform other functions while waiting to take a measurement. This allows you to view data or initiate a survey on the second ORIshot probe at the same time.

When you press the <BACK> key the handset will show that the ORIshot probe is in **Survey*** mode but no measurement has been taken (indicated by an asterisk).

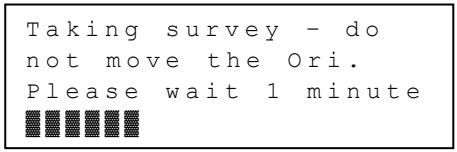


Resume Take Measurement

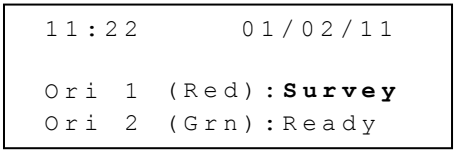
When the measurement (shot) is ready to be taken simply resume the survey by pressing <New Survey> and select the desired ORIshot probe. You can now press <Take Shot> to take a shot.

A message will be displayed: “Stabilse the Ori, and press OK.”

Press the <OK> button to take the shot.



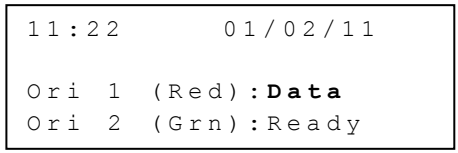
Once the survey has been completed the handset will show that the Ori probe is in **Survey** mode and that a measurement has been taken (i.e. no asterisk).



Recovering Data

When the survey has been completed pull the Ori probe out of the hole and press <Recover Data>. The handset will now download survey data from the selected ORIshot probe ready for viewing.

The handset will show that the ORIshot probe has **Data** ready for viewing.

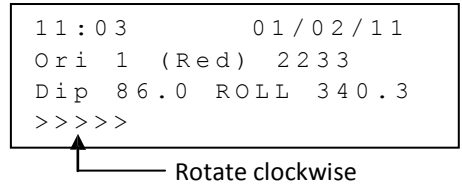


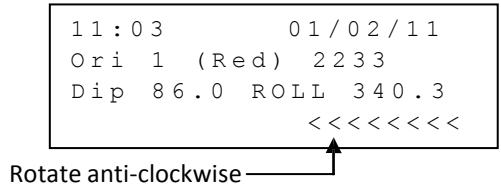
Please note: *The probe must be within communications distance from the handset to initiate a survey or to recover data, ensure the handset is no more than 2 metres from the probe. Once the survey has been initiated it is ready to be placed down the hole.*

Viewing Survey data

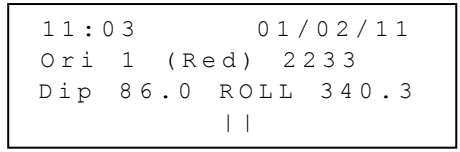
To view survey data press the <View Data> key and select the desired ORIshot probe.

The following screen will be displayed showing the current orientation of the ORIshot probe.





Use the arrows or bars on the screen to rotate the ORIshot probe to the correct position. The screen will show two bars when the core is aligned.

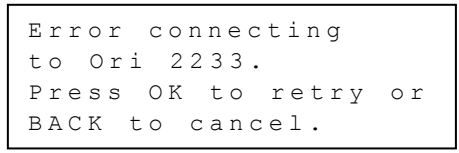


Core aligned: Example

No Response message

The ORIshot system uses wireless technology for communication between the handset and the probe and avoids the need for wires, direct line of sight or for the user to disassemble the probe to download survey data.

In some circumstances the handset may not be able to communicate to the probe. When this occurs the following screen is displayed.



This may be caused by a number of reasons. If you see this message please review the following checklist and press <OK> to retry:

- Ensure the distance between the handset and the probe is no more than 2 metres
- Ensure there are no obstacles between the handset and the probe
- Ensure the communications window is clearly visible (i.e. Clear line of sight)
- Check that the ORIshot probe LED is flashing, if no flashing can be seen please check the batteries

Changing batteries

The ORIshot has been designed to allow the user to change the handset and probe batteries.

Please note*: Probe batteries must be purchased from Coretell. The use of unapproved batteries will void the product warranty and may damage the ORIshot's internal circuitry. Handset batteries can be purchased from outside supplier.*

Handset

To change the handset batteries:

1. Unscrew the three screws on the back of handset
2. Open the battery cover, remove the old batteries and replace with the new batteries
3. Ensure batteries are the correct way round
4. Close battery cover, ensure gasket seal is in place and fasten the three screws.

ORIshot Probe

To change the Ori probe battery, please follow these steps:

1. Unscrew the plastic sleeve from the metal casing
2. The battery pack can be removed by gently twisting the plastic casing at the join point (approximately halfway down)
3. Disconnect the existing battery and replace with the new battery (as supplied by Coretell)
4. Pair the ORIshot probe with the handset to ensure the system is working correctly after battery replacement
5. Ensure O-rings are in place and fasten battery into place
6. Screw the plastic sleeve back into the metal casing

1. Coretell approved battery
2. Battery connector
3. O-Ring seals
4. Threaded housing (screwed into metal casing)
5. Wireless communications w i n d o w

Calibration and Handling

The ORIshot probe has been calibrated to a high level of precision – please see Specifications for more details.

The ORIshot probe is a precision instrument and therefore should be treated with care. Extreme temperatures, heavy impacts, severe vibrations or general rough handling will reduce the accuracy of the probe and may damage the internal circuitry.

It is recommended that the Orishot probe be returned for maintenance and recalibration every 12 months to ensure a high level of precision and reliability is maintained in the field.

Final Word

Thank-you for choosing the Coretell ORIshot system.

The ORIshot system has been designed for accuracy, ease of use, and low maintenance, ensuring you get the maximum return on your investment.

If you have any queries or comments about the ORIshot system or wish to learn more about our range of mining instrumentation, please visit our website at www.coretell.com.au.

We hope you enjoy using the ORIshot camera system.

The Coretell Team.

Specifications

ORIshot Probe	
Part Number	CNPS100
Operational temperature	-10°C to +70°C (+14°F to +158°F)
Storage temperature	-10°C to +120°C (14°F to +248°F)
Operating time	2 years (depending upon use)
Inclination accuracy	± 0.4 RMS*
Azimuth accuracy	± 0.4 RMS*
Power source	Alkaline battery (Non-rechargeable)
Communication	Wireless ISM 2.4GHz
Communication distance	1.5 – 2.0 meters
Ingress Rating	IP67

**It is recommended that the ORIshot Camera is calibrated every 12 months to ensure accuracy is maintained.*

ORIshot Handset	
Part Number	CTH200
Operational temperature	0°C to +60°C (+32°F to +140°F)
Storage temperature	-10°C to +120°C (14°F to +248°F)
Operating time	2 years (depending upon use)
Power source	6 x AA Alkaline batteries (Non-rechargeable)
Communication	Wireless ISM 2.4GHz
Ingress Rating	IP65

NOTE: Specifications subject to change without notice.