Axis Champ Gyroscopes

mountsopris.com/axis-champ-gyroscopes

April 22, 2020

Axis North Seeking Gyroscopes

Mount Sopris Instruments is a **proud distributor** and supporter of **Axis Mining Technology gyroscopes** in the **United States**. We **rent and sell a wide range** of their specialty **North Seeking Champ gyros** listed below. Gyros can be used as memory tools on a drill rig or as a wireline tool connected to standard logging cable. Please don't hesitate to **Contact Us** to set up a budget for rental or discuss a purchase.

CHAMP GYRO™

The Champ Gyro™ is an innovative North Seeking solid state gyro system that allows users to take high accuracy singleshot, multishot or orientation measurements at the push of a button

It's **tough, reliable, requires no starting azimuth** and is ready to survey within minutes. The Champ Gyro offers the ultimate in **simplicity, performance and productivity**.

At surface, the user initializes the Champ Gyro via the tablet. **Downhole, singleshot or multishot** measurements are taken at desired depths. On return to surface, data is downloaded via high speed wireless communication and is immediately accessible without any need for post processing or interpretation.

Run the Champ Gyro on wireline or in the **Champ OSA™ (Overshot Assembly)** which allows a survey to be taken each time you pull core, thus greatly reducing rig downtime associated with conventional surveys.

The Champ Gyro has a robust design capable of performing surveys for both diamond and RC holes in both surface and underground environments.

Housed in 36 mm (1.41 in.) running gear the Champ Gyro measures 1.64 meters (5.38 ft) long and weighs less than 7 kg (15.43 lbs). Battery modules have a 15 hour life and with two supplied as standard you will never run short on power.

FEATURES

- Memory North Seeking
- Singleshot, Multishot & Orientation
- Survey with Champ OSA™
- Power Up & Run
- Tough, Rugged & Reliable

CHAMP NAVIGATOR™

The Champ Navigator is a multifunctional North Seeking solid state gyro system allowing users to both align a drill rig and survey the drill hole – with one tool!

Capable of **survey speeds of up to 200 m (656 ft) per minute** utilizing Axis' proprietary **onPoint™ Adaptive Roll Technology**, the next generation Champ Navigator offers un-paralleled productivity and precision across a wider range of applications. While the Champ Gyro only allows for single and multishot measurements, the Champ Navigator allows for continuous measurements as well as rig alignment.

As with all Axis' solid state technology, the Champ Navigator is tough, reliable, and with North Seeking capability it can establish its own starting azimuth.

FEATURES

- Memory North Seeking
- Singleshot, Multishot & Orientation
- High Speed Continuous Operation
- onPoint™ Adaptive Roll Technology
- Survey with Champ OSA™
- Align a Drill Rig in 5 Minutes
- Tough Rugged & Reliable

For more detailed specifications, please see the **Axis Champ Navigator brochure** or **Contact Us** for a quote.

CHAMP OSA™

The Champ OSA™ (Overshot Assembly) is unique running gear which allows you to run a Champ Gyro™ survey as you retrieve a core sample

This innovative approach **eliminates the need for a separate survey run**. Survey every time you pull core with Champ Gyro™ in a Champ OSA™

FEATURES

- Significantly increases drilling productivity
- Integrates with any standard overshot and can be run in rod sizes from BQ to PQ
- Allows for wireless data download at surface
- Enables the driller to confidently run surveys without consuming setup procedures.

For more detailed specifications, please see the **Axis Champ OSA brochure** or **Contact Us** for a quote.

CHAMP PILOT™

The Champ Pilot is a continuous solid state gyro system that allows users to rapidly survey drill-holes with confidence

Capable of survey speeds of up to 200 m (656 ft) per minute utilizing Axis' **onPoint™ unique Adaptive Roll Technology**, the next generation Champ Pilot offers un-paralleled productivity and precision.

The next generation Champ Pilot's features and mode of operation, allows operators greater flexibility to survey a wider range of drillholes without complicated and time consuming setup procedures or deployment techniques.

Axis' onPoint™ proprietary Adaptive Roll Technology supports surveying continuously on rods, pump in or at high speed on cable, **reducing rig time associated with conventional surveys by up to 75%***.

Depth stations can be assigned manually or wirelessly via AMT's Electronic Depth Counter. Housed in 36 mm (1.41 in.) running gear, the Champ Pilot measures 1.64 meters (5.38 ft) long and weighs less than 7 kg (15.43 lbs). Battery modules have a 15 hour life and with two supplied as standard you will never run short on power.

Features

- Memory Solid State
- Power Up & Run
- High Speed Continuous Operation
- onPoint™ Adaptive Roll Technology
- Reduce Survey Time by 75%*
- Survey on Cable, Rods or Pump In
- Deploy by Inner-tube or Standalone

For more detailed specifications, please see the **Axis Champ Pilot Gyro brochure** or **Contact Us** for a quote.

CHAMP GYRO SRO™

Reliability, Simplicity & Performance. Surface readout and memory capability on a unique solid state North Seeking platform.

The next generation Champ Gyro SRO offers high speed continuous survey capability at speeds of up to 200 m (656 ft) per minute as well as singleshot, multishot or orientation modes of operation.

Operations can be run in surface readout or memory mode, providing unprecedented flexibility to survey the widest range of applications. A robust intelligent design, low maintenance and cost of repair ensures the SRO's cost of ownership is the lowest in the industry.

As with all Axis technology, it's remarkably simple to operate. Run on E-line, the Champ Gyro SRO provides real time North Seeking gyro data to any surface PC or download data acquired in memory mode via high speed wireless communication.

Once powered up the probe requires less than 60 seconds to warm up before its ready to be run downhole. A 5 min in-hole gyrocompass is all that is required prior to running in high speed continuous mode.

Axis' onPoint™ proprietary Adaptive Roll Technology offers high roll tolerance and surveying speeds up to 200m (656 ft) per min. Alternatively, North Seeking singleshot, multishot or orientation measurements can be taken as and when required. Running on cable, encoder depth (e-line or memory) is automatically integrated with azimuth and inclination data throughout the survey.

SRO can be used confidently to run on rods horizontal, pump in surveys, orientation of motor or wedges and much more. This is the only gyro available for purchase fro Axis Mining Technology.

Features

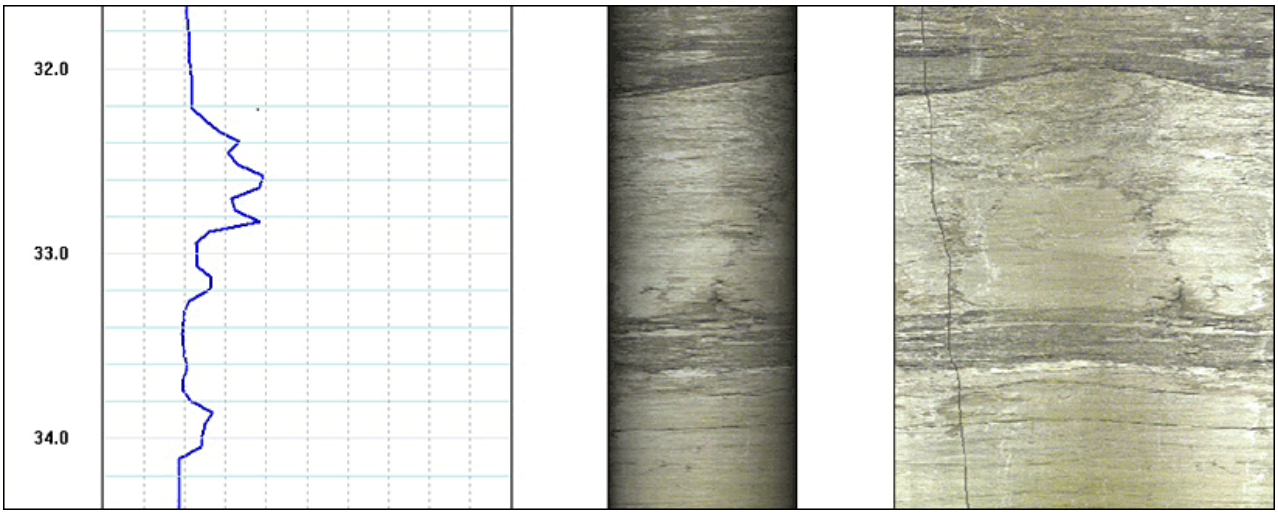
- North Seeking Solid State
- Singleshot, Multishot & Orientation
- High Speed Continuous Operation
- onPoint™ Adaptive Roll Technology
- Measure at Any Inclination
- Surface Readout or Memory
- Low Cost of Ownership

For more detailed specifications, please see the **Axis Champ SRO Gyro English brochure,** the **Axis Champ SRO Gyro Spanish brochure,** or **Contact Us** for a quote.

QL40-CAL – 3-Arm Caliper

mountsopris.com/ql40-cal-3-arm-caliper

August 28, 2014



Description

The QL40-CAL Caliper probe records a single continuous borehole diameter log by means of three mechanically coupled arms in contact with the borehole wall. The 3 arm caliper measurement is a useful first log to determine the borehole condition before running other well logging probes.

Applications

- Borehole diameter measurement
- Borehole volume calculation before borehole completion, cementation

- Fracture and cavity localization
- Rock integrity evaluation
- Often used in the implementation of environmental correction equations for other logs

Operating Conditions

Borehole Fluid
[X] Water
[X] Mud
[X] Dry

Casing
[X] Uncased
[X] PVC Borehole
[X] Steel

Centralization
[_] Required
[X] Not Necessary

Features & Benefits

- Calibrated measurement of borehole diameter in inches, centimeters, or millimeters
- Can be combined with other well logging tools of the QL product line or operated as a standalone tool
- Operates on any standard wireline (mono, 4 or 7 conductor, coax)
- Easy exchangeable caliper arm lengths and wear tips

Specifications – Metric/English

Specification	Metric	Imperial
Diameter	42 mm	1.7 inches
Length	1.78 m	70.3 inches
Weight	10 kg	22 lbs.
Max. Temp.	70ºC	158ºF
Max. Pressure	200 bar	2900 psi

Sensor: Micro-processer controlled potentiometer
Standard Arms: 50 to 406 mm/ 2 to 16 inch borehole diameter
Extended Arms: up to 736 mm/ up to 29 inch borehole diameter
Accuracy: 1 mm
Resolution: 0.5 mm

QL Stack Possibilities

- **QL40CAL** + QL40GR (Gamma) + QL40MGS (Magnetic Susceptibility): Mining, Exploration
- **QL40CAL** + QL40GR (Gamma) + QL40OBI (Optical Televiewer): Exploration, Bedding Planes, Fractures
- **QL40CAL** + QL40GR (Gamma) + QL40ABI (Acoustic Televiewer): Exploration, Bedding Planes, Fractures
- **QL40CAL** + QL40GR (Gamma) + QL40RES (Resistivity)+ QL40FTC (Fluid Res, Temp): Hydrogeologist's Tool, Groundwater exploration and assessment

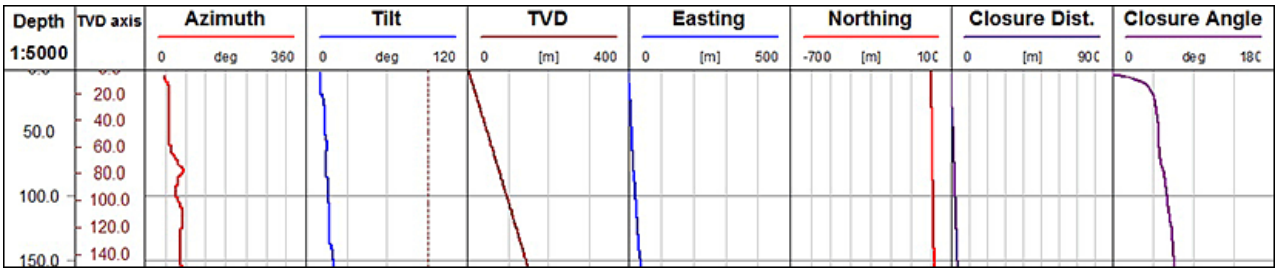
Documentation

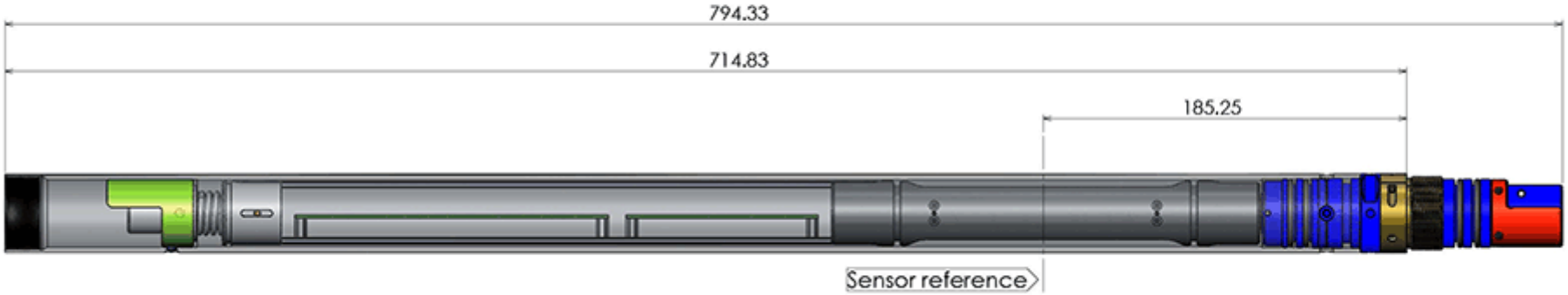
Data Sheet
User Guide

QL40-DEV – Borehole Deviation

mountsopris.com/ql40-dev-borehole-deviation

August 15, 2014




794.33
714.83
185.25
Sensor reference

Description

The QL40-DEV Borehole Deviation probe measures the direction relative to magnetic north, inclination and trajectory of the borehole. Measurements are based on the “Applied Physics Systems” 544 orientation sensor containing both a 3-axis fluxgate magnetometer and a 3-axis accelerometer.

Deviation parameters are calculated in real time and displayed as continuous logs during the measurement. Deviation data can be processed further using the WellCAD software and deviation module. The WellCAD deviation module includes various 2D and 3D display options for deviation data from classical bull’s eye, projection and closure 2D views to 3D cubic and cylindrical displays

The QL40-DEV tool is stackable within the Quick Link (QL) product line or it can be run as a standalone tool.

Applications

- Borehole True Vertical Depth
- Borehole trajectory based on direction, inclination and drift measurement
- True bed thickness
- Location of magnetic beds or steel piles near borehole (z-component of magnetometer)

Operating Conditions

Borehole Fluid
[X] Water
[X] Mud
[X] Dry

Casing
[X] Uncased
[X] PVC Borehole
[_] Steel

Centralization
[X] Non-Magnetic Centralizers
[_] Not Necessary

Features & Benefits

- In comparison with tools from competitors, the QL40-DEV is capable of recording exceedingly accurate Inclination and Azimuth data.
- Operates on any standard wireline (Mono, 4, 7 conductor, or Coax)
- Slim, 40 mm diameter. One-person operation.

- Can be combined with other logging tools of the QL product line or operated as a standalone tool.
- Measurements are accurate and consistent.

Specifications – Metric/English

Specification	Metric	Imperial
Diameter	40 mm	1.57 in.
Length	0.715 m	28″
Weight	3.4 kg	7.5 lbs.
Max. Temp.	70ºC	158ºF
Max. Pressure	200 bar	2900 psi

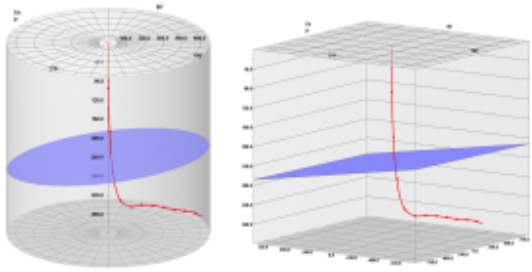
Sensor: APS 544
Orientation: 3-Axis Magnetometer, 3-Axis Accelerometer
Inclination Range: 0-180º
Inclination Accuracy: ± 0.5º
Azimuth Range: 0-360º
Azimuth Accuracy: ± 1.2º

QL Stack Possibilities

- **QL40DEV** + QL40GR (Gamma): Deviation and Gamma Correlation
- **QL40DEV** + QL40CAL (Caliper): Borehole Volume and Orientation
- **QL40DEV** + QL40SGR (Spectral Gamma): Clay Typing, Detailed Lithology, Ore Body Identification

WellCAD Deviation Module

WellCAD® Software is an advanced log processing and visualization software recommended for use with all Mount Sopris logging probes. The WellCAD Deviation Module, used in conjunction with the QL40-DEV Deviation probe provides:



QL40-DEV WellCAD Deviation Module

- A variety of 2D and 3D display options including 2D Classical Bull's Eye, Projection, and Closure and 3D Cubic and Cylindrical.
- Multiple well paths and target layers can be displayed.
- Processing techniques: Northing, Easting, Total Vertical Distance (TVD), Closure Distance, Closure Angle, and Dog Leg Severity (DLS).

- Correction for Magnetic Declination and shows Estimation of Uncertainty.

For more information, please refer to the WellCAD Deviation Module Data Sheet.

Documentation

Data Sheet
User Guide