LOGGING TOOL TESTING

An Informational Guide - Logging Tool Equipment Testing at IDDO

Ice Drilling Design & Operations (IDDO)
Space Science & Engineering Center (SSEC)
University of Wisconsin-Madison
IDDO CONTACT INFORMATION

IDDO Home Office
University of Wisconsin-Madison
AOSS/SSEC Building
1225 W. Dayton Street
12th Floor
Madison, WI 53706
TESTING LOCATION

Equipment that needs to be tested can either be brought with the investigator to Madison or can be shipped to the IDDO Warehouse in advance to the attention of Anna Claussen or the individual IDDO Engineer working with you for the testing.

IDDO Warehouse
1 Marsh Court
Suite 15
Madison, WI 53718
608-223-0852
CONTACT INFORMATION

If shipping your tool to Madison in advance of the testing, please contact Anna Claussen to determine the best shipping method:

Anna Claussen
608-890-0711
anna.claussen@ssec.wisc.edu

Please be sure to provide tracking information to ensure your device is properly received at the off-campus IDDO Warehouse, as the warehouse is not staffed at all times.
TESTING COORDINATION

• Please coordinate all testing with Anna Claussen or her designee

• Actual testing of your device will be performed under the guidance and assistance of another IDDO engineer

• Testing will occur at the off-campus IDDO warehouse

• Prior to the testing, investigators should draft a test plan, outlining their desired objectives for the testing, any connectivity or power requirements and any safety concerns or other questions

• The IDDO engineer will review the plan and will discuss any questions or concerns with the investigator

• Both the IDDO engineer and the investigator will approve the test plan prior to initiating the testing
TESTING CAPABILITIES

Pressure Vessel Specifications

- Internal Diameter: 10 inches
- Internal Length: 120 inches
- Cylinder tested to 5000 psi per JARP J-102 specification
- Vessel can only be operated and pressurized by an IDDO engineer and with an IDDO approved fluid.
- Hydrostatic testing is the only preferred method of pressure testing at IDDO.
- Gearhart-Owen pigtail terminated through bulkhead connector to the external terminal block.
NOTES:
1. Test cylinder at 5,000 P.S.I. per JARP J-102 spec.
2. Torque cap screw item no. 3, per JARP J-126 spec. (1.25-12 UNF)
4. Order seal kit no.
5. No paint
6. Protect ports for shipping.

Approved
Jim Hoffman

LEO GERING
DESIRED

UNIVERSITY OF WISCONSIN
JARP INDUSTRIES INC.
UNIVERSAL, WISCONSIN

CYLINDER ASSEMBLY

2/27/2017
LOGGING WINCHES

IDDO Deep Logging Winch

Capabilities
• Max Depth: 4000 meters
• Standard four-conductor logging cable
• The cable is headed with a standard 1-inch outer-diameter Gearhart-Owen variant
• Broadband slip-ring connector
• Can transmit both analog and high speed digital signals from DC to ~10 MHz.

Intermediate Depth Logging Winch

Capabilities
• Max Depth: 1500 meters
• Standard four-conductor logging cable
• The cable is headed with a standard 1-inch outer-diameter Gearhart-Owen variant
• Broadband slip-ring connector
• Can transmit both analog and high speed digital signals from DC to ~10 MHz.
LOGGING WINCHES

USGS Logging Winch

Capabilities

• Max Depth: 4000 meters
• Standard four-conductor logging cable
• The cable is headed with a standard 1-inch outer-diameter Gearhart-Owen variant
• Broadband slip-ring connector
• Can transmit both analog and high speed digital signals from DC to 250 MHz.
## Connector Information

### Intermediate Depth Logging Winch (IDLW)
- Amphenol pinout is:
  - A = CL 1
  - B = CL 2
  - C = CL 3
  - D = CL 4
  - E = Armor
  - F = (open)
  - G = Enc A
  - H = (open)
  - J = Enc B
  - K = (open)
  - L = Enc Gnd
  - M - U = (open)
- Surface tool connection: Amphenol PT06A-14-18P
- User connection: Amphenol PT02A-14-18S or PT01A-14-18S or other equivalent

### IDDO Deep Logging Winch
- Pins A-D are the internal conductors.
- Surface tool connection: Amphenol PT02E-8-4PW
- User connection: Amphenol PT06E-8-4SW or PT06A-8-4SW

### USGS Logging Winch
- Pins A-D are the internal conductors
- Pin H is the armor
- Surface tool connection: Amphenol MS3102A-18-8P
- User connection: Amphenol MS3106A-18-8S

**Note:** For all three winches, on user side of Amphenol connections, the shell designation letter can be varied.

A = general duty
E/F = sealed w/strain relief
R = lightweight sealed

IDLW and Deep Winch wiring is straight through A-A, B-B, etc. and uses the positioning detailed to the left. View shown is looking into the GO cablehead.
SYNCING THE PAYOUT/TENSION DATA

Intermediate Depth Logging Winch (IDLW)
• Payout data is available as encoder pulses utilizing the surface tool connection.
• Calibration for meters is 500 pulse/rev, 0.0006672 meter/pulse, quadrature x1.
• Tension is only available via display.

IDDO Deep Logging Winch
• Payout and tension readings are available through either an Ethernet RJ45 connector (user needs male) or RS-232 9 pin D-sub connector (user needs female) [TX: Pin3, RX: Pin2, Com: Pin5].
• Format is LCI-90i MTNW1 protocol.
• Payout data is also available as encoder pulses via an Amphenol MS3102E14S-6P connection (user needs an Amphenol MS3106E14S-6S).
  [Pin A: 0V, Pin B: +V, Pin D: B signal, Pin E: A signal]
• Calibration for meters is 72 pulse/rev, 720.007 pulse/meter, quadrature x4.

USGS Logging Winch
• Payout data is available as encoder pulses via an Amphenol MS3102R14S-6P connection (user needs an Amphenol MS3106E14S-6S).
  [Pin A: 0V, Pin B: +V, Pin C: Z signal, Pin D: B signal, Pin E: A signal]
• Calibration for meters is 120 pulse/rev, 0.00254 meter/pulse, quadrature x1.
• Tension is only available via display.
SAFETY INFORMATION

• The IDDO Warehouse is an active equipment development, maintenance and storage facility. All posted signage as well as instructions from IDDO staff shall be observed at all times.

• Personal Protective Equipment (PPE) is available for your use, if desired or necessary (e.g. ear plugs, safety glasses, etc.)

• Investigators shall understand that performing pressure testing and connectivity testing on their device can potentially be destructive and that pressurized fluid could enter their device

• IDDO is not responsible for any damages that occur to the device being tested

• Pressure testing performed at IDDO shall serve only as a reference, and no logging tool equipment certification will be provided

• Any questions or concerns should be addressed, prior to the testing, with either Anna Claussen or the IDDO engineer with whom the test will be conducted
TRAVEL INFORMATION

Investigators are responsible for making all travel arrangements and for payment of all arrangements.

- **Air travel** - Dane County Regional Airport (MSN)
- **Rental Car**
- **Lodging**
  - The closest hotel to the IDDO Warehouse is the Sleep Inn, however there are limited dining options in the area.
  - Madison has numerous other hotel options – those that are in the Central/Downtown region are particularly convenient to food and entertainment options.