

WinFrog Device Group:	ROV
Device Name/Model:	CapJet Trencher
Device Manufacturer:	Nexans Norway
Device Data String(s) Output to WinFrog:	Space delimited ASCII telegram described below.
WinFrog Data String(s) Output to Device:	Space delimited ASCII telegram described below.
WinFrog Data Item(s) and their RAW record:	ROV DATA 502 (Unique to this driver) HEADING 409 ATTITUDE 413

DEVICE DESCRIPTION:

This driver is for interfacing to a CapJet Trencher for data logging and to provide it with data necessary for its operation. It requires the line segment heading and if the trencher is on a curve it requires the heading tangent to the curve.

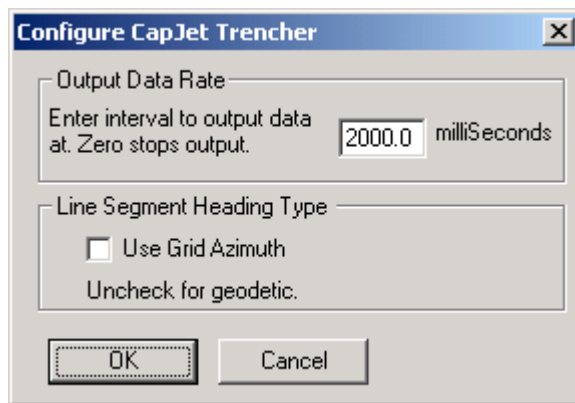
DEVICE CONFIGURATION INSTRUCTIONS

WINFROG I/O DEVICES > EDIT I/O:

Requires two RS232C Serial ports, one for input and one for output.
Configurable Parameters

WINFROG I/O DEVICES > CONFIGURE DEVICE:

When the Configure Device menu is selected the following dialog will appear.



Output Data Rate: This is the interval, in milliseconds, that the output string is to be transmitted at. Enter 0 to inhibit output.

Line Segment Heading Type: Select the type of line segment heading to place in the telegram that is to be output to the CapJet Trencher. This will be either a grid or geodetic azimuth.

**WINFROG VEHICLE TEXT WINDOW > CONFIGURE VEHICLE DEVICES > DEVICE
> EDIT OPTIONS:**

The **ROVDATA**, **HEADING**, and **ATTITUDE** data items can be added to the CapJet ROV vehicle. This will permit WinFrog to log raw data and to output data to the CapJet. All of the data items can be edited from the Configure Vehicle-Devices dialog box.

Data item: ROV, CapJet Trencher, ROVDATA

Configure ROV

Altitude Calculation
☐ Primary
☒ Secondary

Burial Depth Calculation
☐ Primary
☒ Secondary

Depth Sensor
Use sensor for ROV depth?
☒ Yes ☐ No

Graphics
☐ On ☒ Off

Odometer Based Positioning
Odometer (m)

Depth and Altimeter Sensor Configuration
☒ Use altitude and depth as corrected by the device
Correct attitude and depth.
☒ The default attitude data is from this device. If another attitude source is active, it will be used.
☐ Use offsets from the Device configuration.
☒ Use following offsets.

Altitude Sensor
Fore / Aft Port / Starboard Up / Down

Depth Sensor
Fore / Aft Port / Starboard Up / Down

OK Cancel

Altitude Calculation/Burial Depth Calculation:

Since the telegram from this device contains neither altitude nor depth of burial, these should be set to Secondary.

Graphics:

Turning on the Graphics will display the device name and a square at the location of the hydrophone, within the Graphics and Bird's Eye windows.

Use Sensor for ROV depth:

If Yes is selected, the depth found in the telegram for this device will be assigned to this vehicle. See below for corrections to this value. If No is selected, the depth must come from another data item for this vehicle to be assigned a depth.

Odometer Based Positioning:

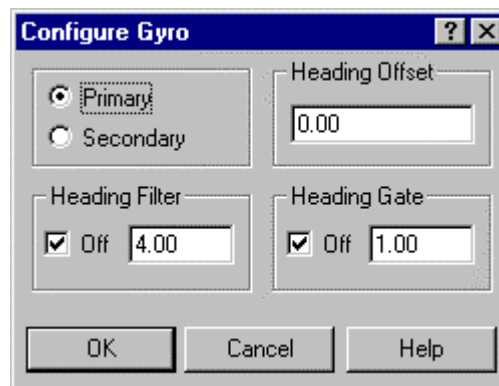
The odometer based positioning option is not used for this device.

Depth and Altimeter Sensor Configuration:

Altitude is not part of the telegram from the CapJet, so leave these three values at 0.0. Offsets of the depth sensor, relative to the CRP, can be input here. The Depth Offset is the vertical distance from the ROV's CRP to the sensor that provides depth information of the ROV. By entering horizontal offsets for the depth sensor, a depth correction due to pitch and roll can be applied. Add the ATTITUDE data item to the vehicle and set it to On and enter any pitch or roll correction as required. If the ATTITUDE data item is not added to the vehicle, the pitch and roll correction will be applied but with no pitch and roll corrections.

Data item: ROV, CapJet Trencher, HEADING

The configuration of the Heading is accomplished using the Configure Gyro dialog box. The device driver supplies a heading value for the ROV.



Heading Offset:

If the gyro is reading low, a positive offset (correction) should be applied.

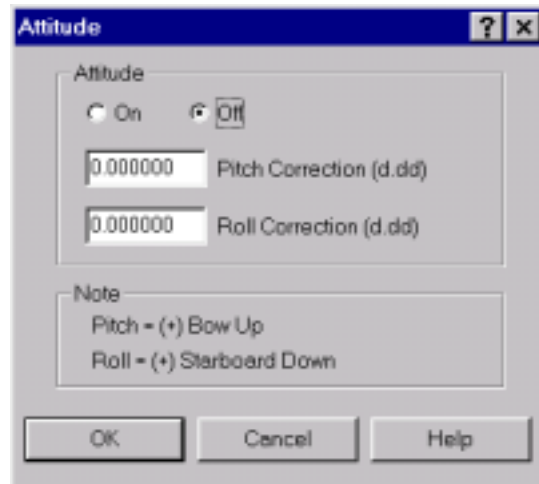
Heading Filter:

This value operates similar to the velocity filter in the Configure Vehicle-Devices dialog box. When 'on', the vehicles' heading value takes previous heading fixes into account – the number input in the Heading Filter Box – for a 'smoothed' heading display for the vessel.

Heading Gate:

When initiated, any heading deviations observed that are greater than the value input, will be ignored.

Data item: ROV, CapJet Trencher, ATTITUDE



Attitude:

The Attitude can be enabled (turned on) within the Attitude Window. By enabling the Attitude, the vessel position and sensor offsets are corrected for the pitch and roll, and in this case the default is off.

The Pitch and Roll correction values are added to the observed attitude values.

Data Telegram Formats

1) Telegram received FROM the Trencher

A space delimited ASCII string sent at 9600 Baud on a serial communications line

Depth heading pitch roll sworddepthport sworddepthstb speed speed2<CR><LF>

Numeric format : ##.### ##.### ##.### ##.### ##.### ##.### ##.### ##.###CRLF

Depth	Trencher depth positive below sea level	metres
Heading	Trencher heading	degrees
Pitch	Trencher pitch(bow up is positive)	degrees
Roll	Trencher roll(starboard down is positive)	degrees
SwordDepthport	Trencher port 'sword' depth (positive down)	meters
SwordDepthstb	Trencher starboard sword depth(positive down)	meters
Speed	Trencher speed (From Tensioner)	metres/second
Speed 2	Average Trencher Speed (10 minute period)	metres/second

2) Telegram Sent TO the Trencher

A space delimited ASCII string sent at 9600 baud on a second serial communications line

KP Easting Northing Segment_line_heading <CR><LF>

KP	Kilometre post value of Trencher's position on survey line	km
Easting	Trencher easting	metres
Northing	Trencher northing	metres
Line segment heading	heading of the current line segment in degrees, or heading of instantaneous tangent to curve if tracking a curve	degrees