RAPP HYDEMA U.S.

COMMITTED TO INNOVATING THE INDUSTRY

NOAA Trawl and Longline Workshop

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Usage of Auto Trawl during survey

Rapp incorporates the following standard auto trawl features:

- Measurement of wire lengths and winch speed
- Measurement of wire tension and hydraulic pressure
- Automatic shoot to a preset wire length
- Automatic heave
- Towing on a preset wire length
- Wire tension control during tow, automatic pay-out and pay-in with wave motions and automatic pay-out during snagging
- Equalizing of pressures during turning
- In addition to the more common features above, Rapp Trawl Control can control the trawl gear in numerous more sophisticated ways. The Trawl Control can be connected to a Net Mensuration system to receive data from trawl net sensors as well as offsets and other settings in the Pentagon System.

Definitions in the Rapp Auto Trawl

AUTO SPEED In most cases during pay out, the speed will be too slow if only displacement speed were available. Auto speed will maintain an operator-preset value for either tension or line speed based on what is chosen in the **Settings**-menu, line speed or tension. This enables operators to increase the speed too one suitable for their purposes without the risk of door failure.

FREEZE This function blocks normal regulation and freezes the existing difference in length and is selectable during towing. Once the button FREEZE has been pressed the function is active until you press the button again, though it will turned off automatically when passing safety range limit or by leaving towing. The function is available in menu screen **Manual override**.

INTEGRATION Term for being connected to echo sounder or trawl instrumentation systems like for instance Simrad ITI.

MANUAL OVERRIDE: Menu for overriding automatic modes. Operator is allowed to set a fixed PRESSURE OFFSET on starboard or port winch as well as activate individual port and starboard winch control in order to maintain desirable difference in length.

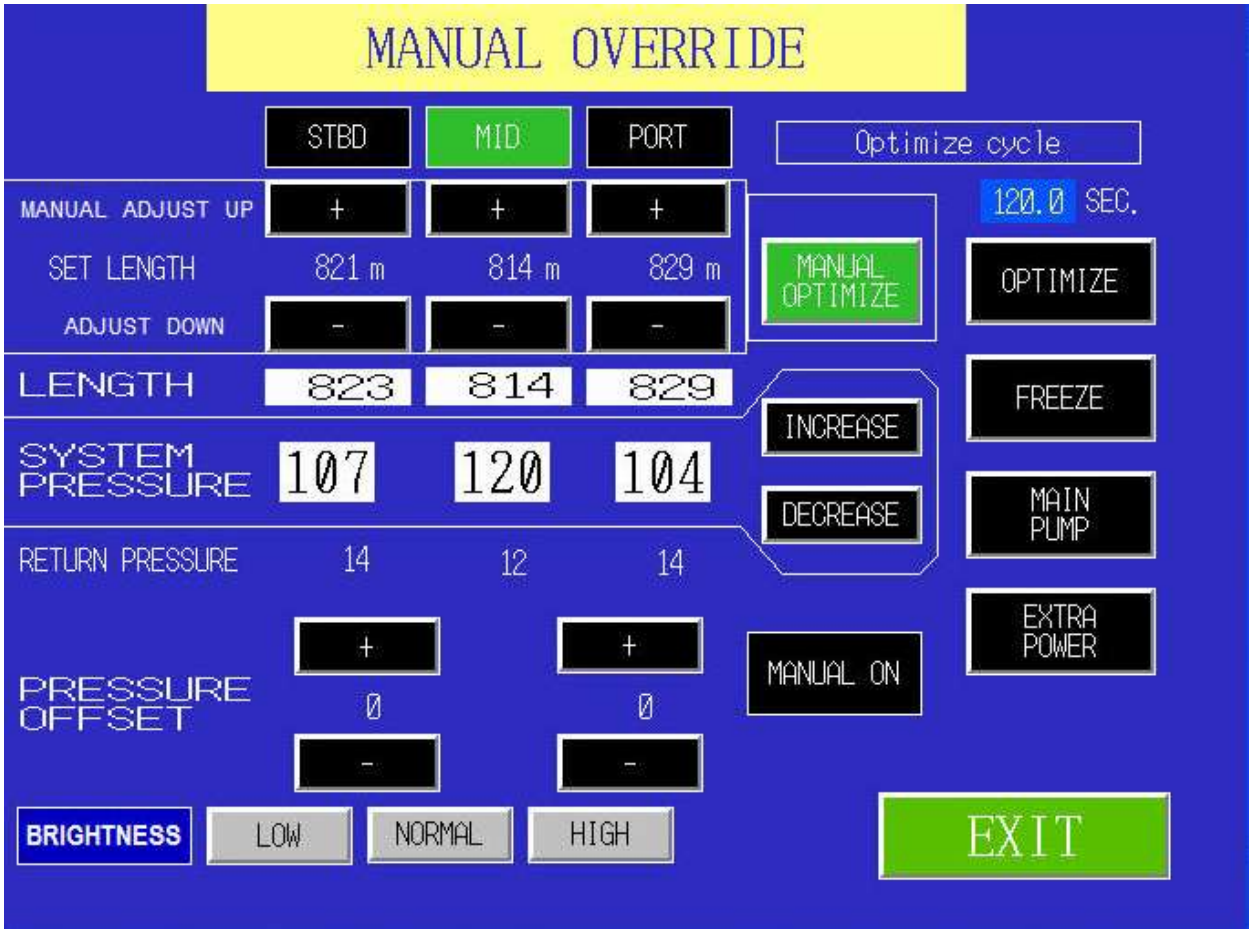
Definitions in the Rapp Auto Trawl

OPTIMIZE Initiates automatic regulation of the trawl when integrated with trawl instrumentation system. It is selectable from menu NS screen in towing mode and on PC menu tool bar.

PRESSURE EQUALIZING TDE When engaged, it connects the two main winches hydraulic pressure and tank pipes thus equalizing the pressure, and consequently the winches pull. TDE is automatically engaged in all auto modes but can be reset in towing mode. It will also be disengaged when using the function FREEZE in menu [MANUAL OVERRIDE].

PRESSURE OFFSET Gives an opportunity to compensate pressure drop difference on main winches. The compensation can only be added to Port or Stbd winch at a time. Offset valid both in Auto and in Manual modes.

Definitions in the Rapp Auto Trawl



Different ways of measuring the Wire Tension

- The other way is by load cell located on the blocks which the wire

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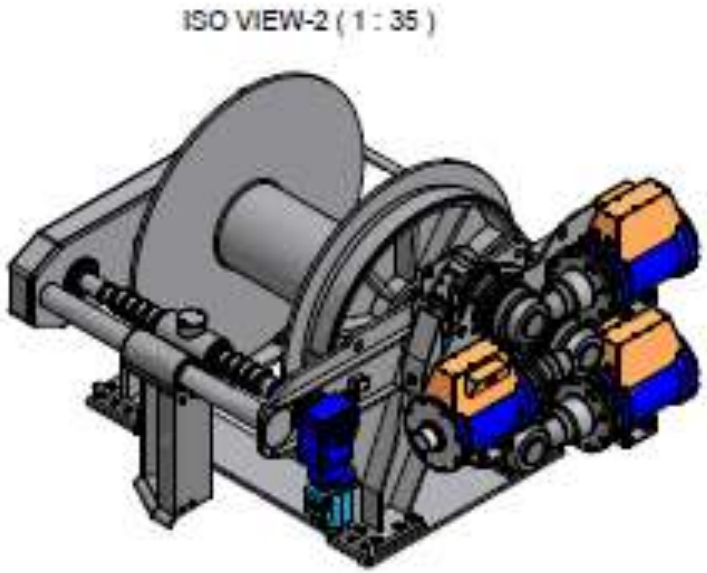
Different ways of measuring the Wire Tension

- The wire tension be measured by calculation of torque, pressure and Diameter of the drum and cable.
- Using Electric Winches amperage measured from the VFD Drives are used instead of Pressure.



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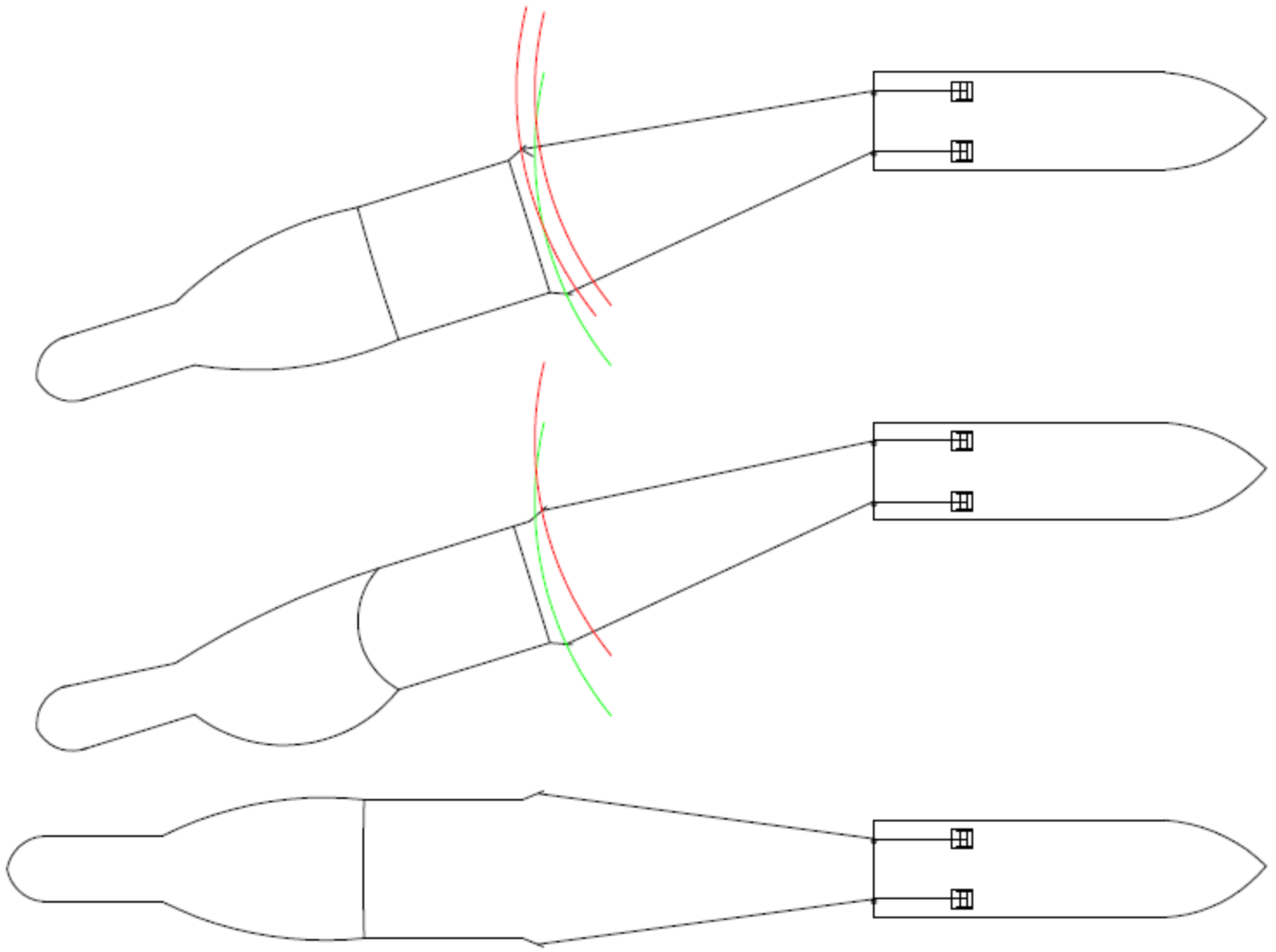

What to stay up on and ensure that the Auto Trawl continues to perform.

The following things should be done frequently or prior to major Survey

❖ Tune up the Hydraulic system

❖Make sure that the Level Winder system is working properly to ensure that both winches are pulling on same diameter.

❖ Calibrate the load cells and the computer

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Usage of Auto Trawl during survey Pros and Cons

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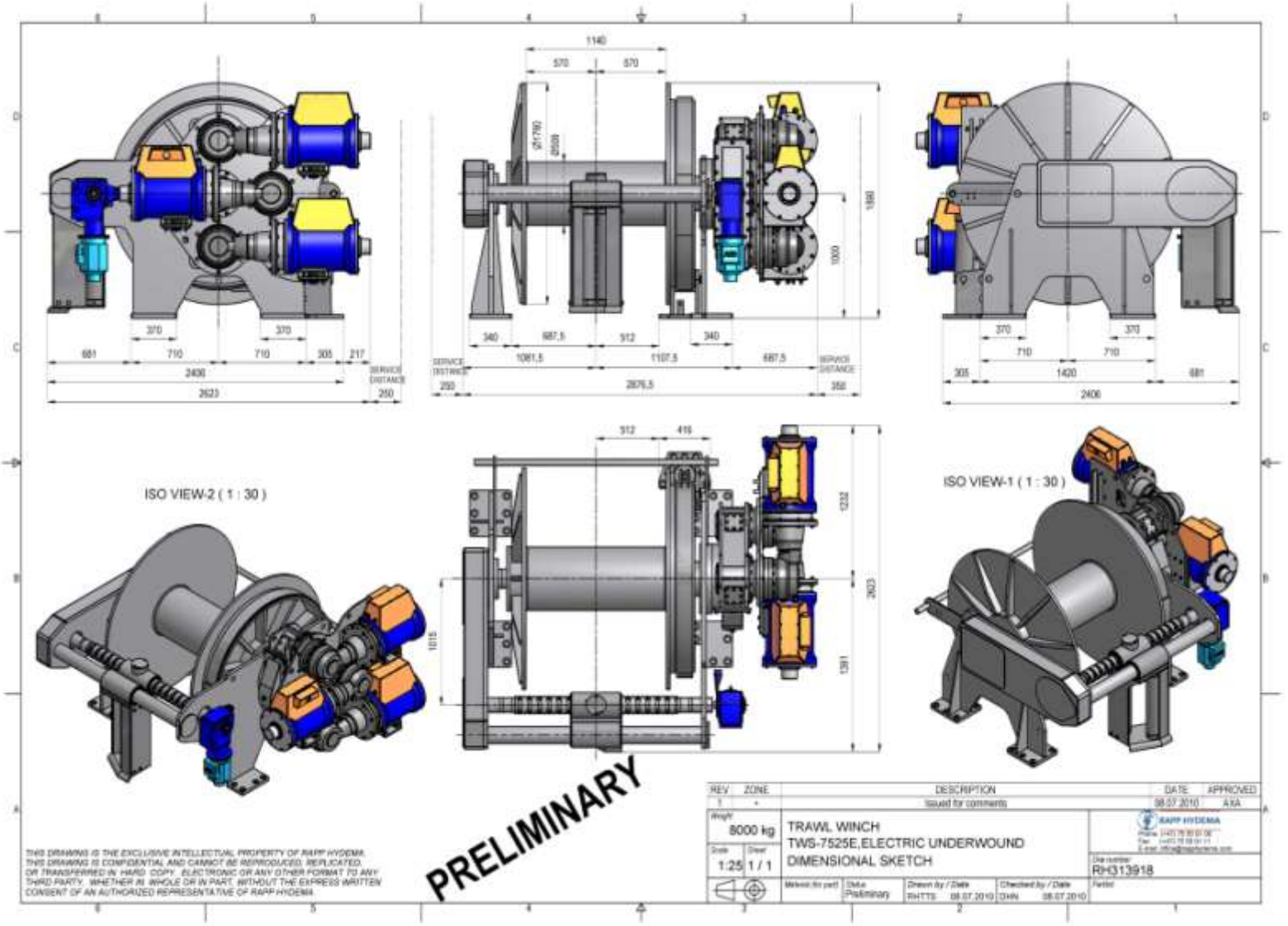
Trawl Winch



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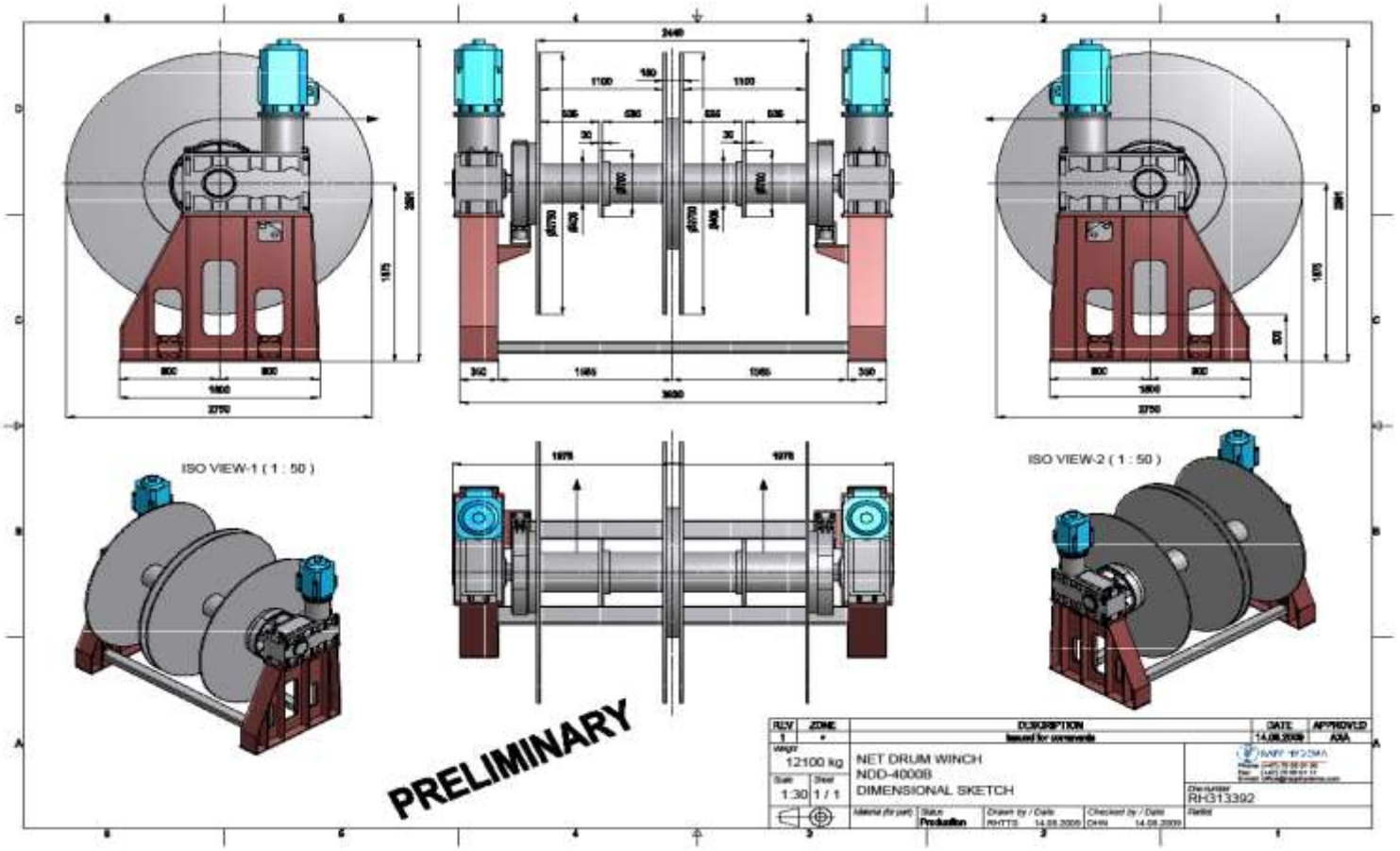
Split Net Reels



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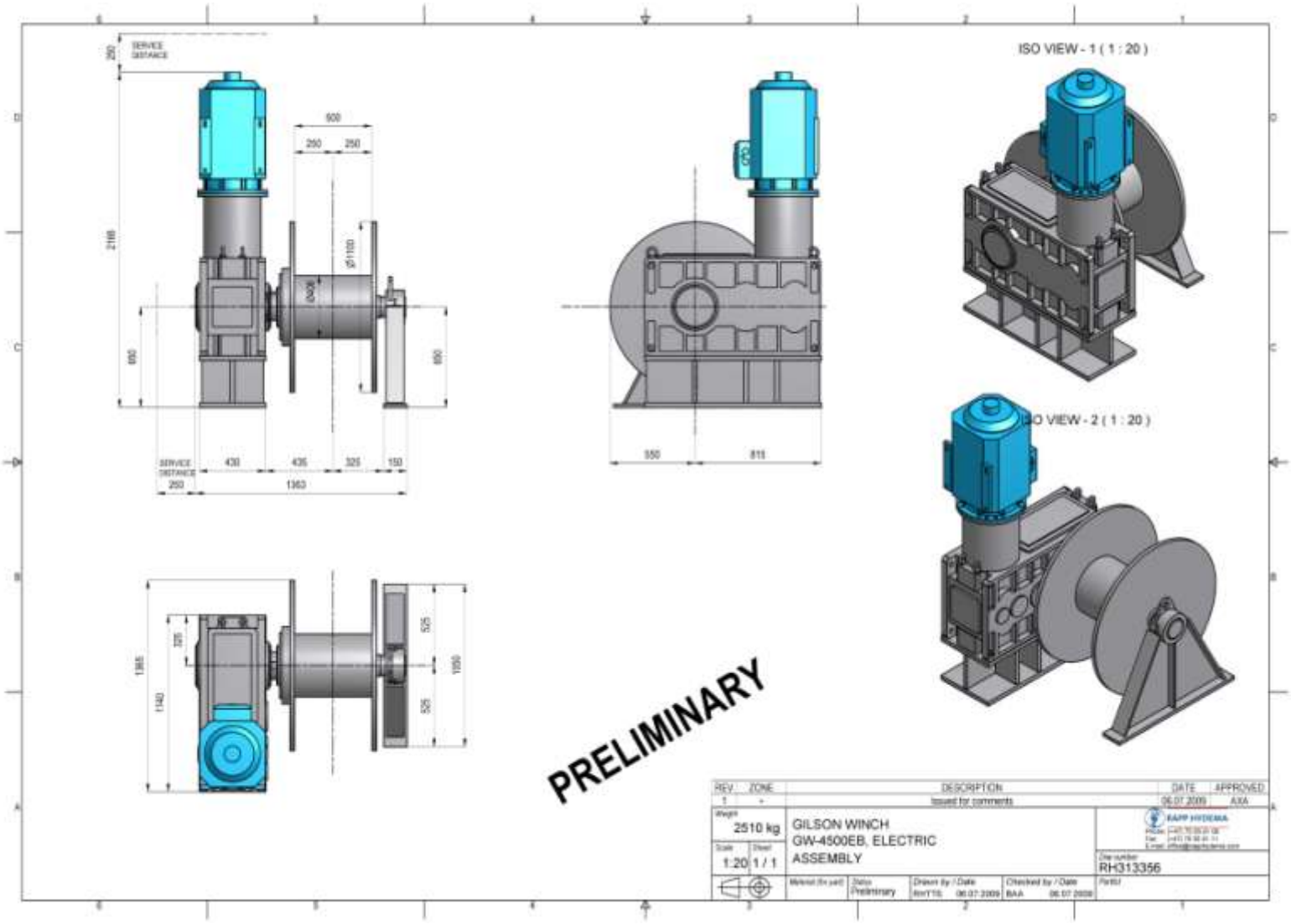
Gilson Winch



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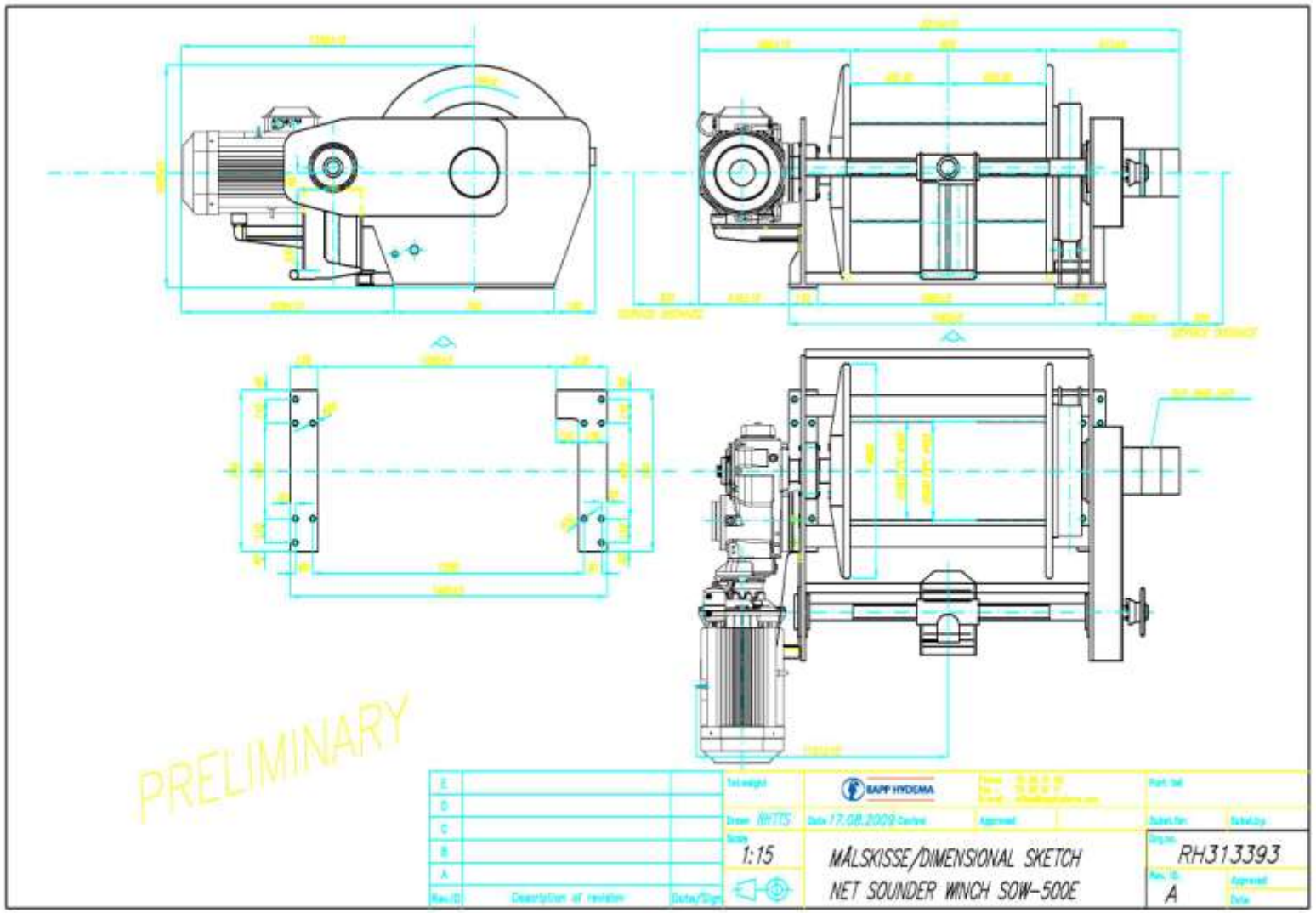
Net Sounder Winch



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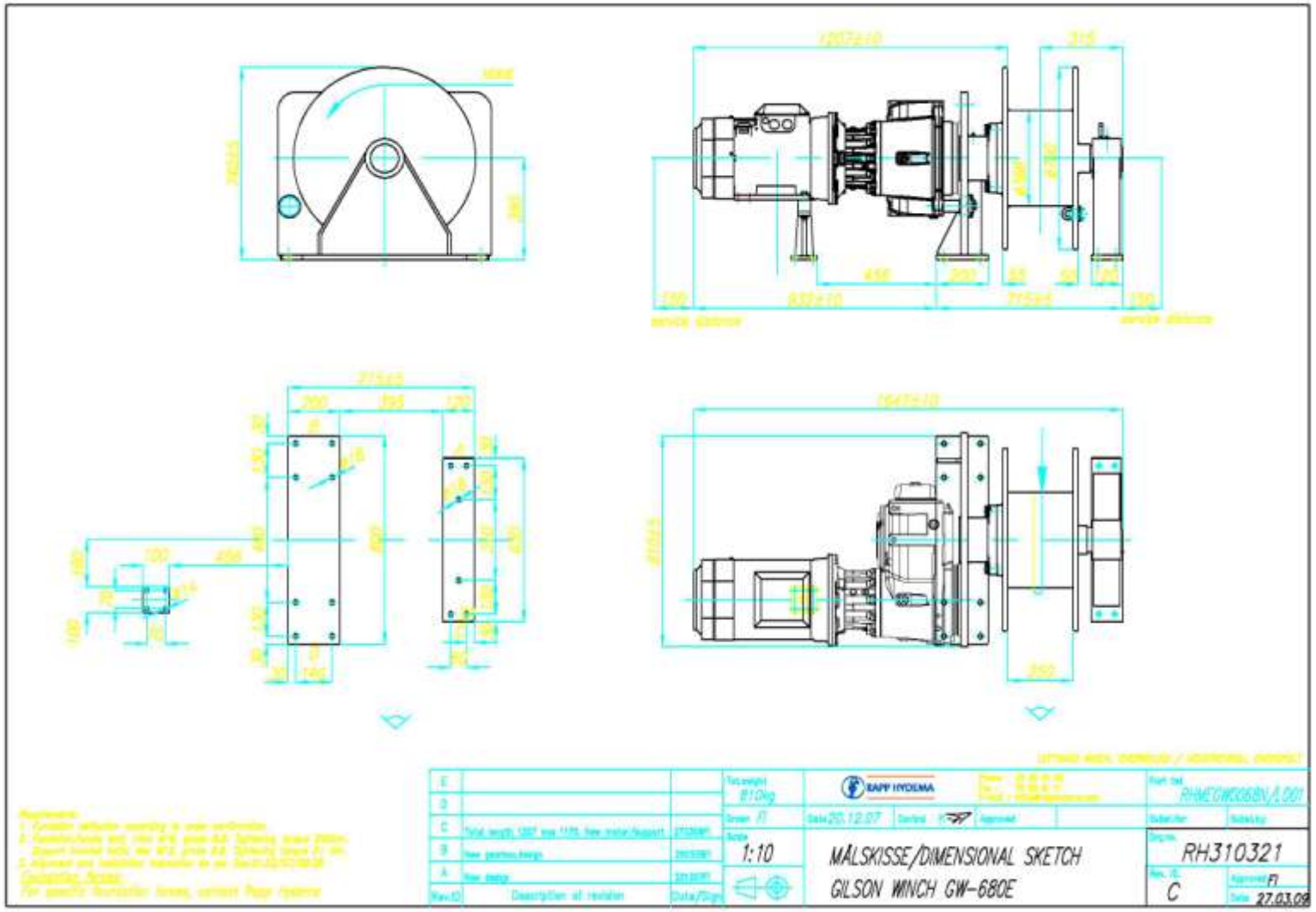
Outhaul Winch



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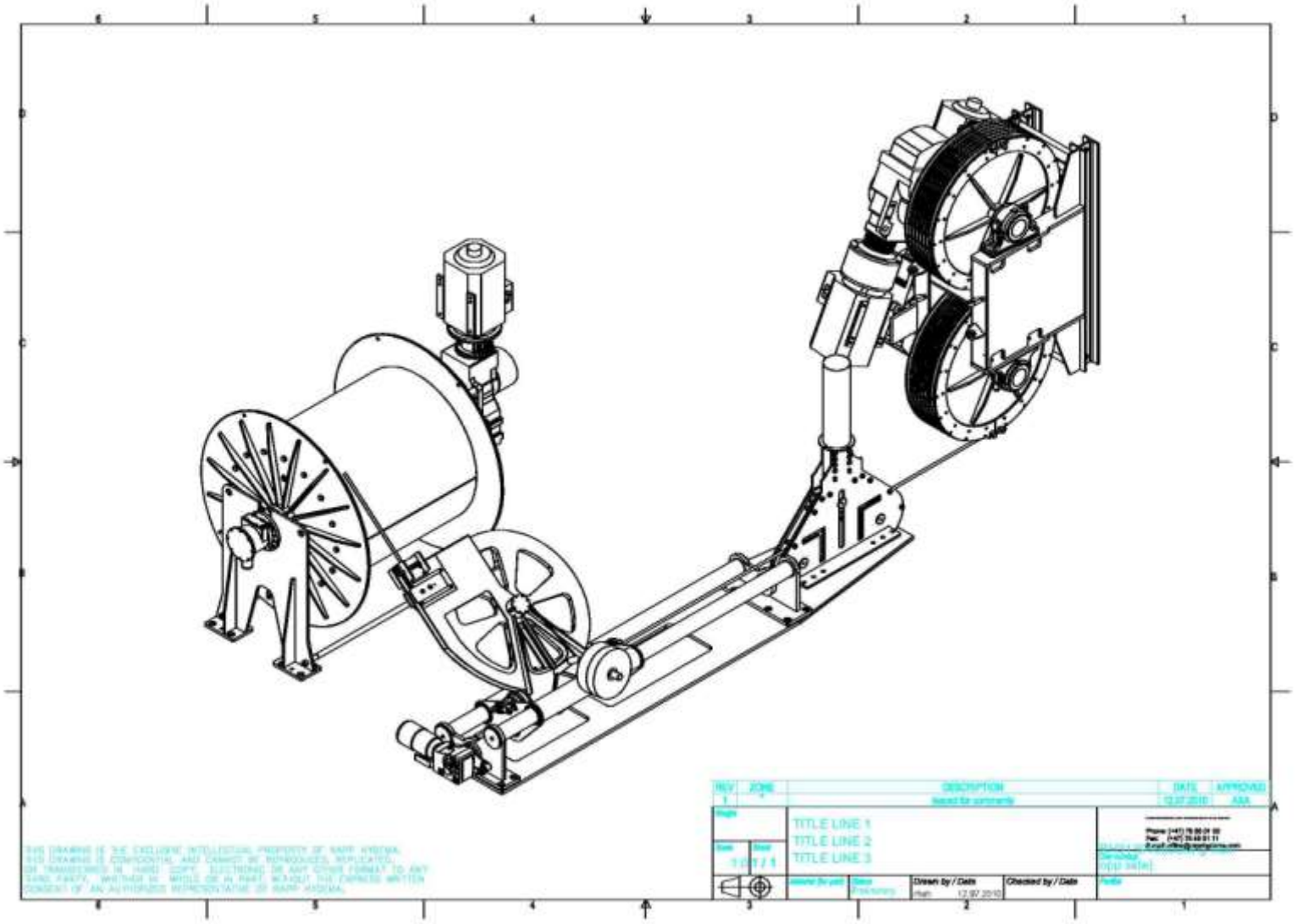
Oceanographic Winch System



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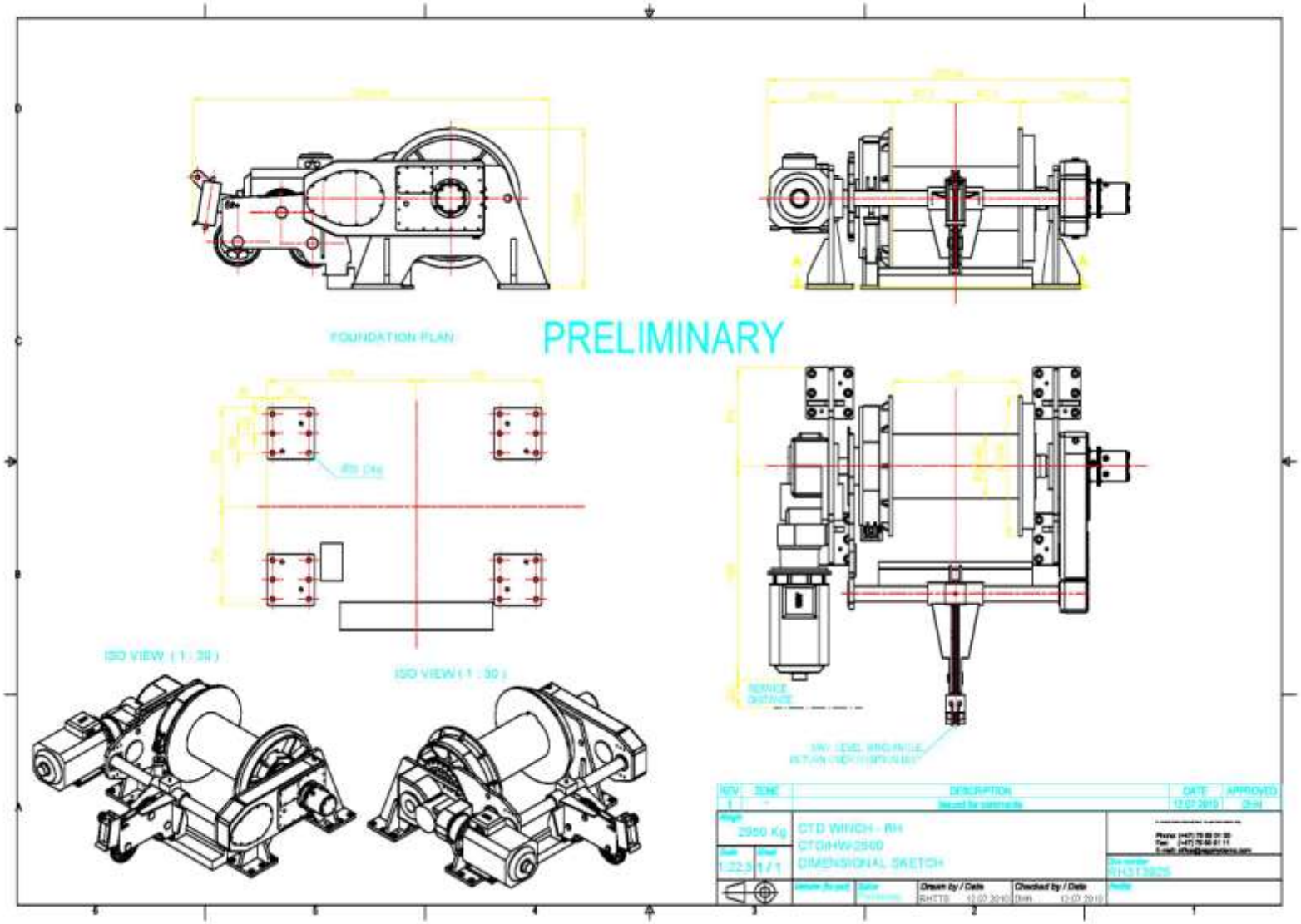
Hydrographic Winch



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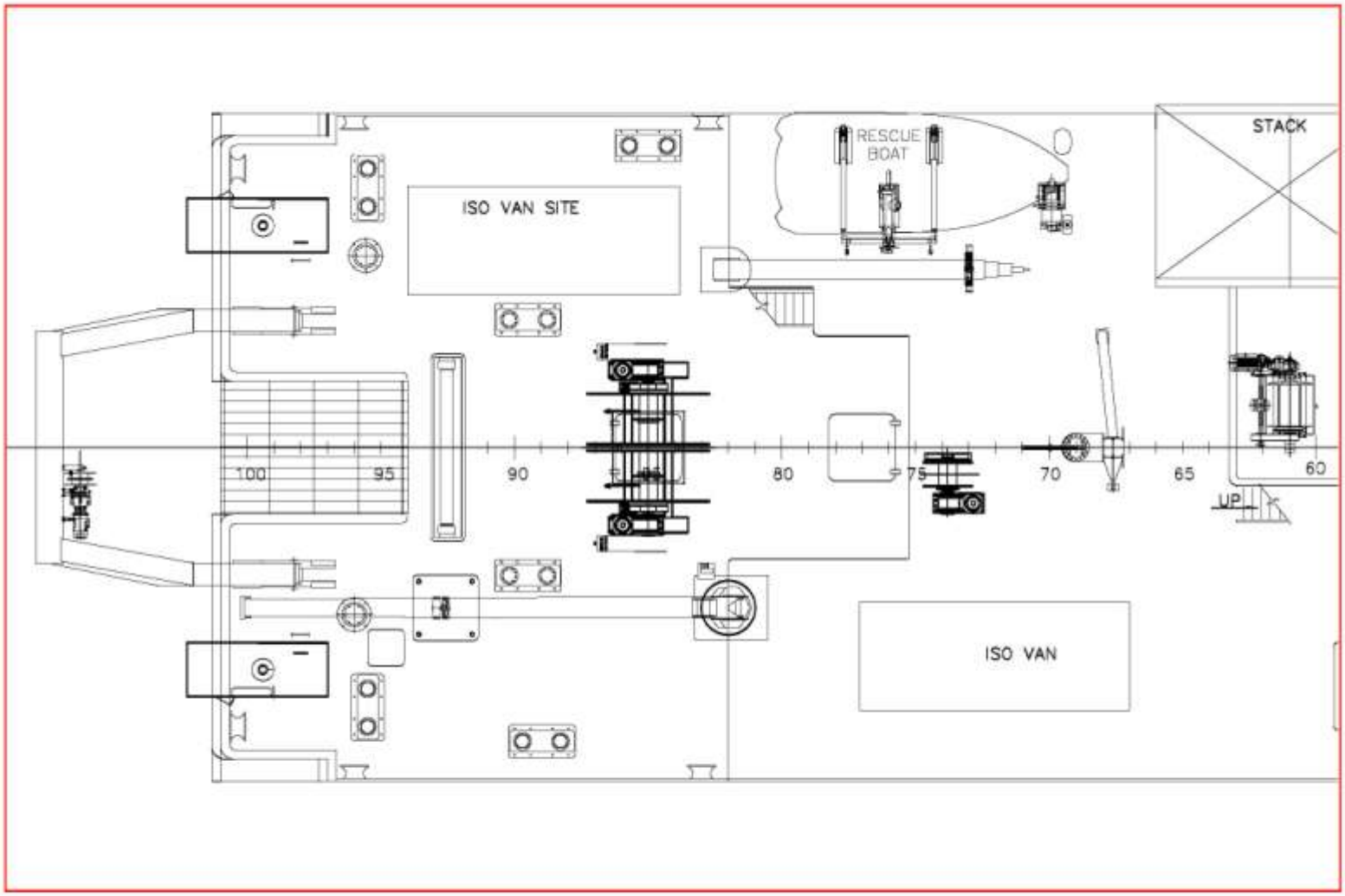
Aft Deck Layout. Split Net Reel, Gilson Winch, Net Sound and Outhaul Winch.



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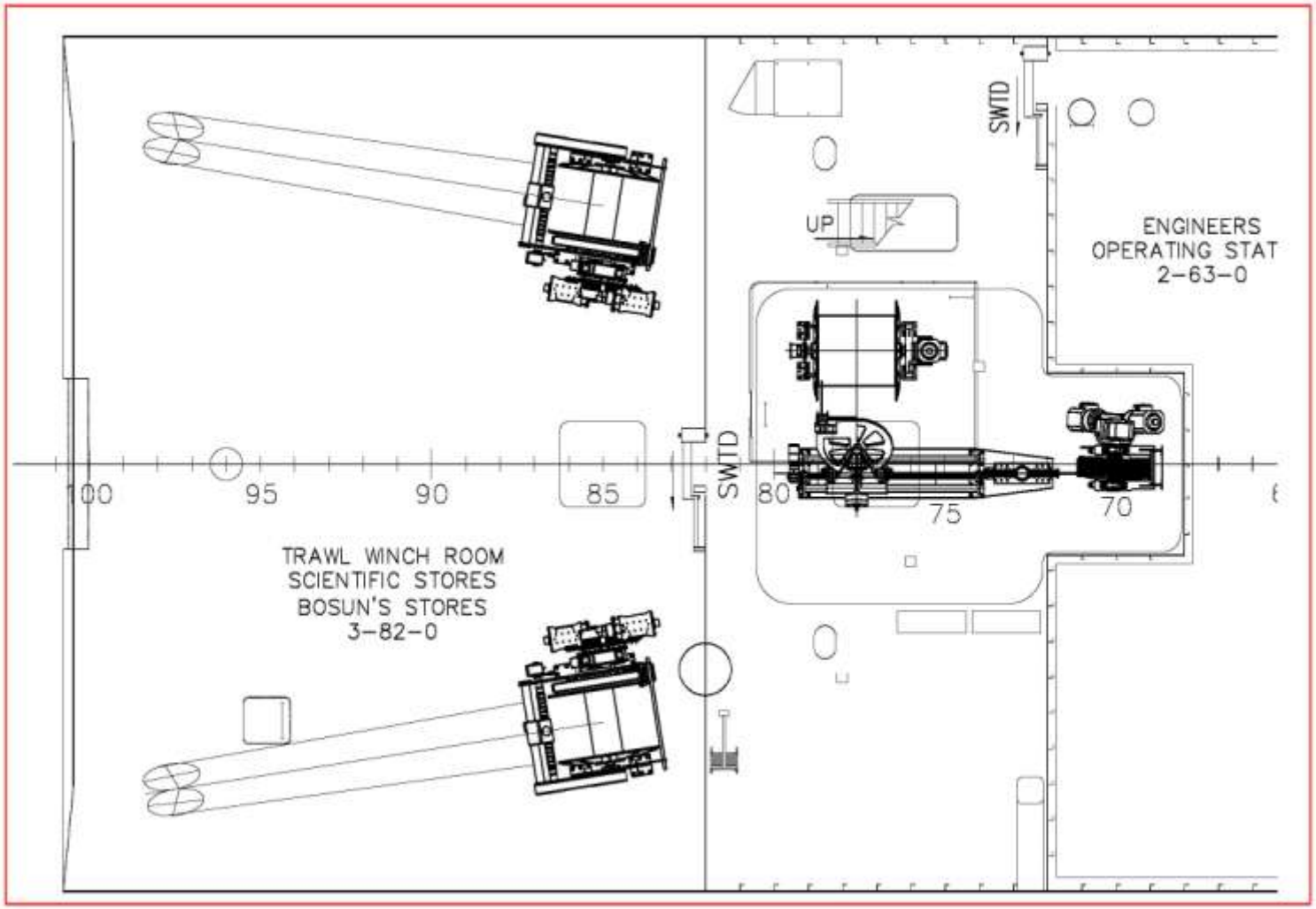
Oceanographic Winch System and Main Trawl Winches



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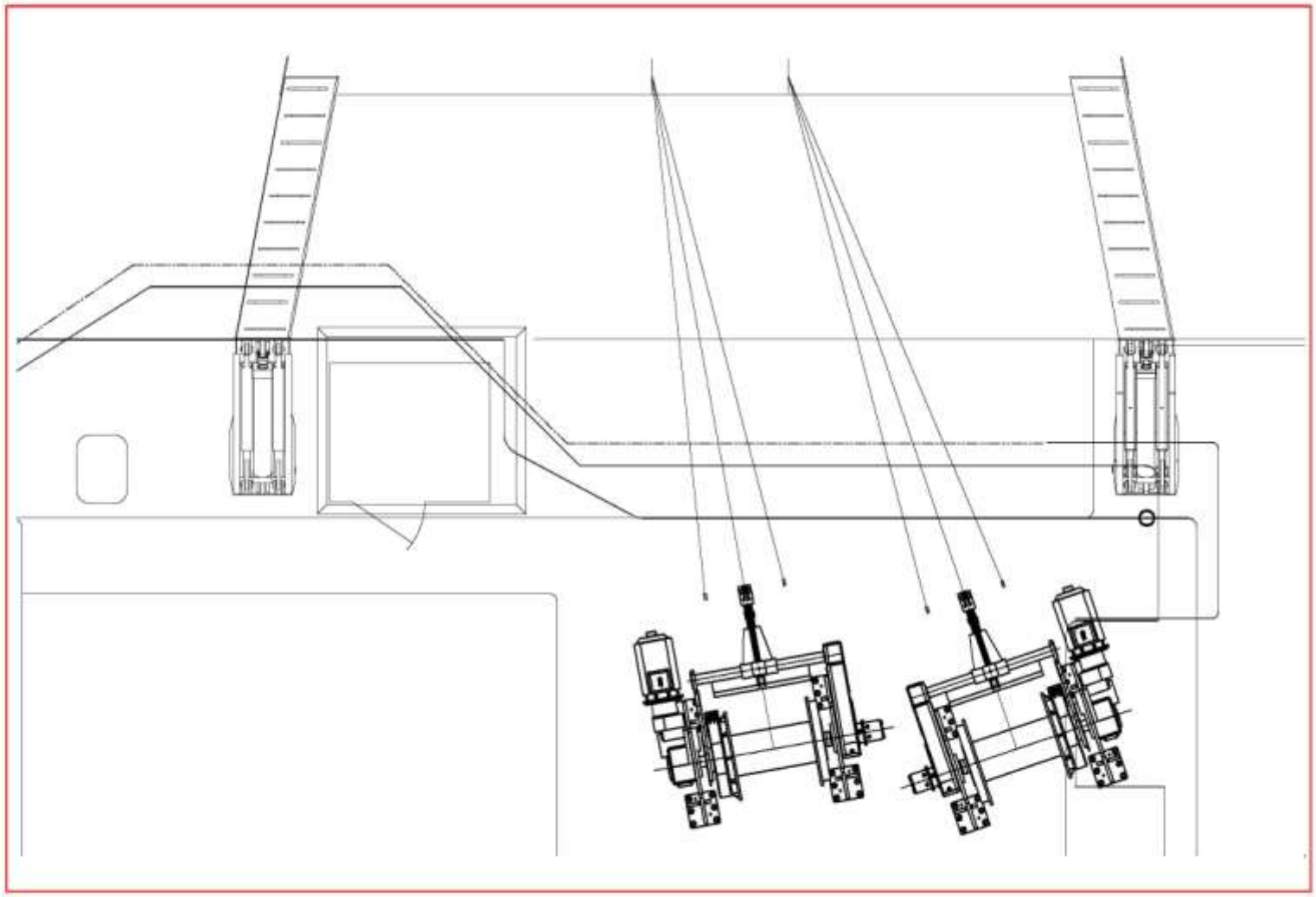
Layout Hydrographic Winches



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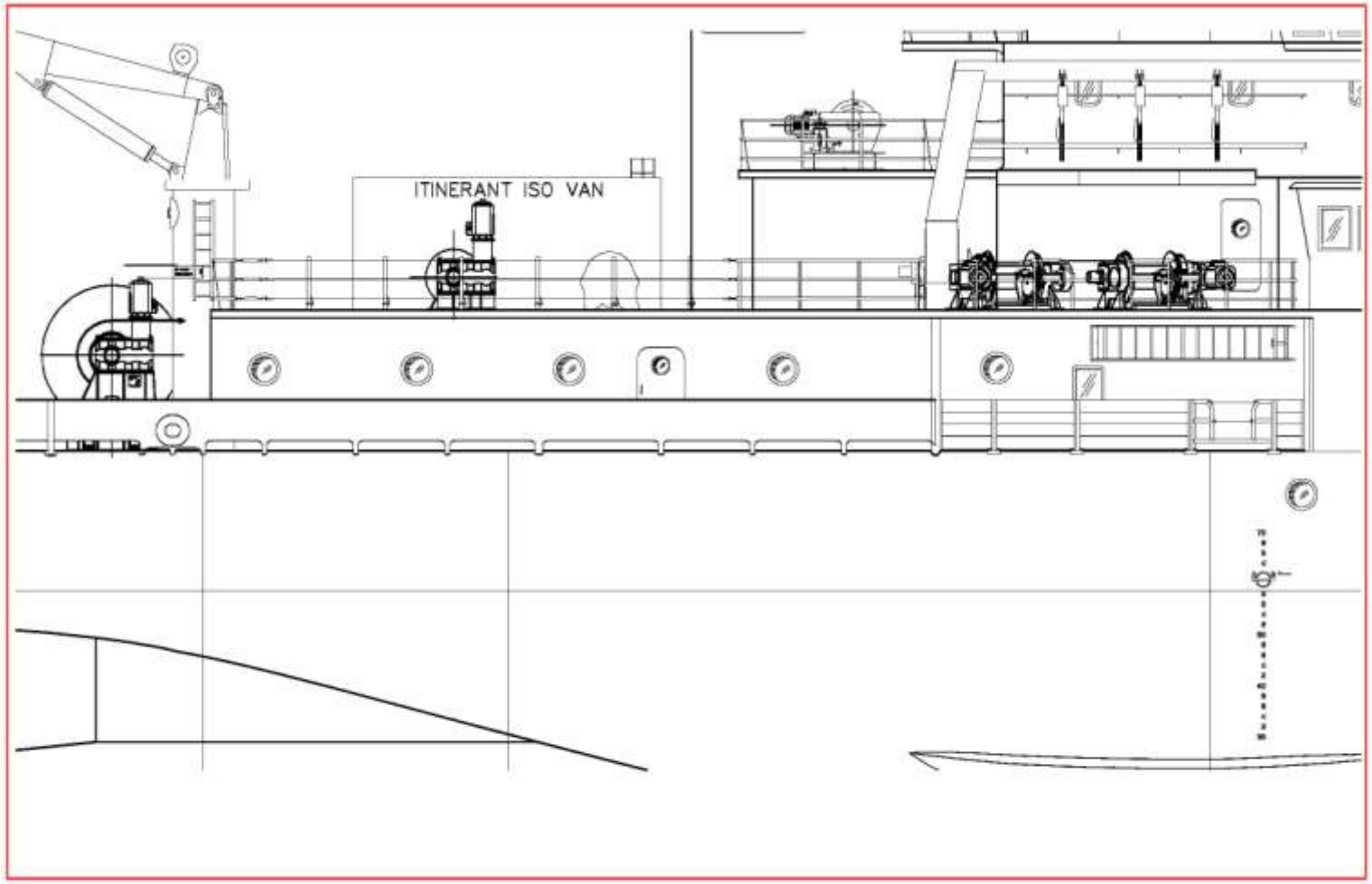
Oceanographic, NS, and Gilson Winches Layout



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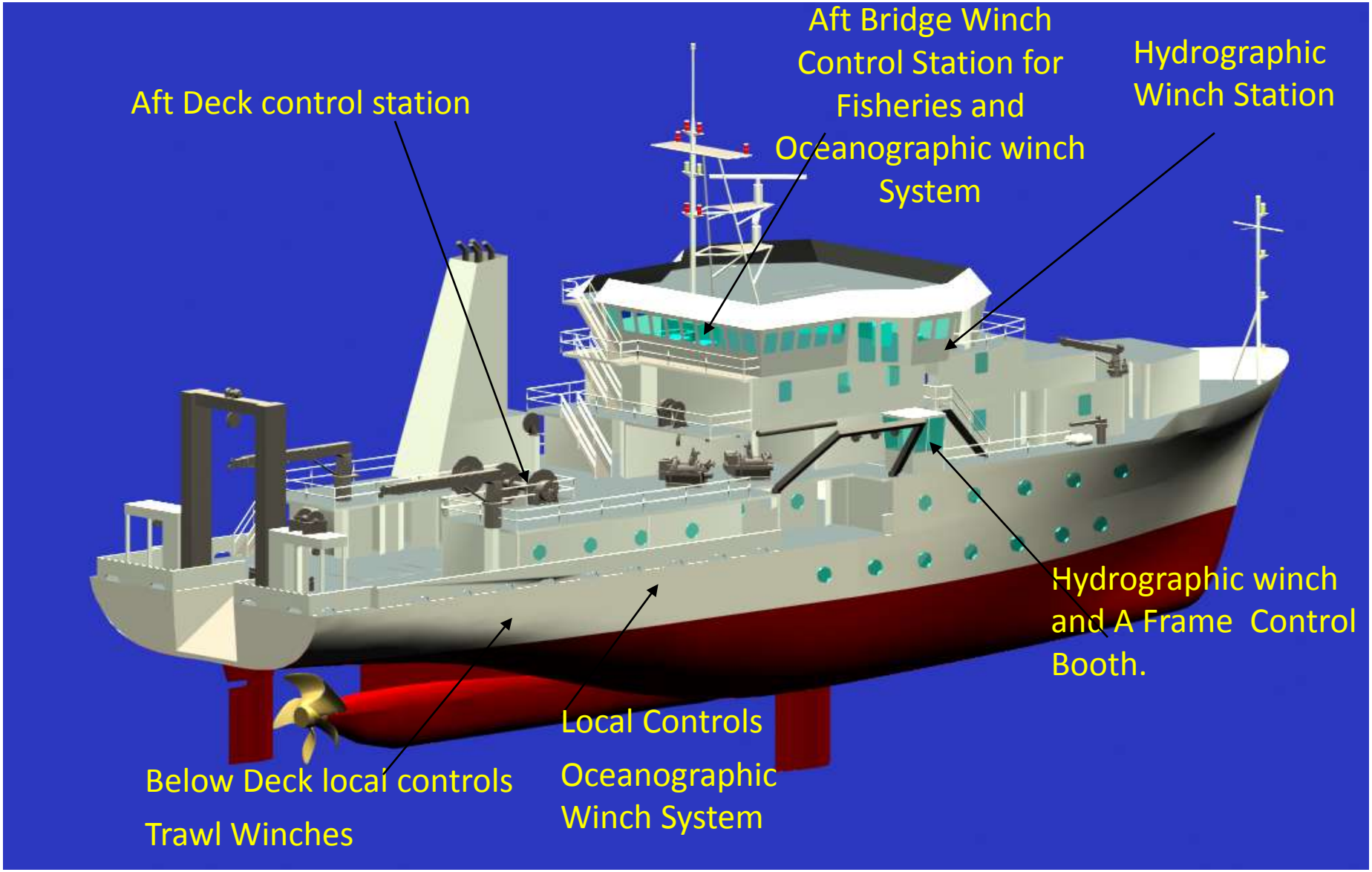
Control Stations : FSV-6



PTS *Pentagon*®: Rapp's State-of-the-art Winch Control System for fisheries and other Research.

- ***Integrates with Echo Sounder, Trawl Instrumentation and More***
- ***Enhanced User Friendliness***
- ***Uses Up To Four Winches Simultaneously, For All Types Of Trawling***
- ***High Quality Display Gives Overall View Of Trawl Performance***
- ***Safe And Trouble Free Operation By High Grade Marine Quality PLC And State Of The Art PC.***

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