

**ROV CONTROL SYSTEM PRODUCTS**

iVP – intelligent Torque Tool Controller

Key Features:

- Modular intelligent valve pack (iVP)
- Proportional control throughout
- Cost effective field proven technology
- Hosts all standard smart torque tools
- Real-time torque & turns feedback
- ‘Open loop’ or ‘Smart’ failsafe modes
- 5 functions – expandable to 12
- External sensor capability



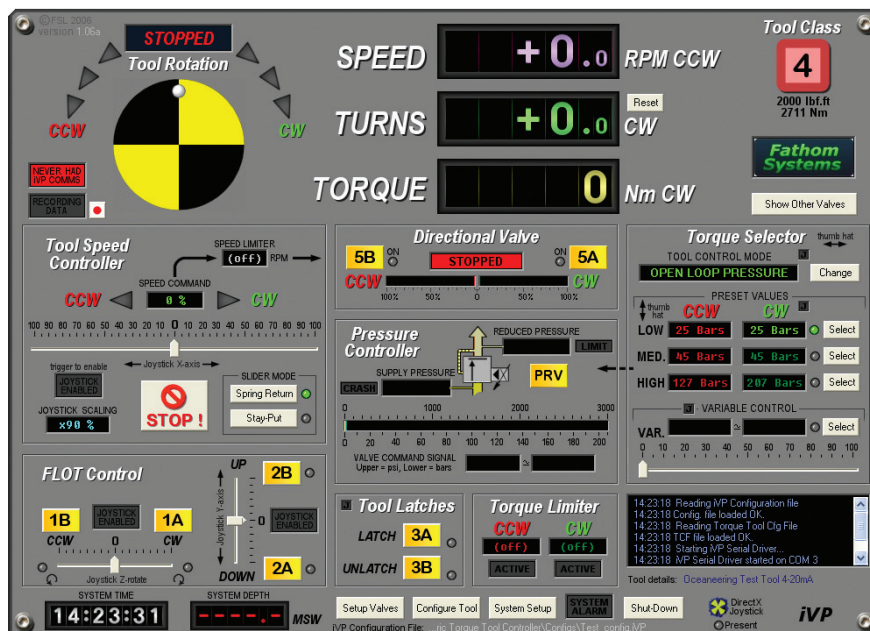
Product Overview:

The intelligent Torque Tool Controller, providing proportional flow & pressure control, is a member of the iVP – intelligent valve pack family of products. The fully integrated subsea unit is supplied with a dedicated PC operating Fathom Systems Windows® based control software. The easy to use Graphical User Interface (GUI) guarantees that critical operations can be performed to the highest and safest levels.

The system can be interfaced with all standard API17D and Petrobras torque tools. In the absence of a tool, a simulator is available that verifies torque and turns feedback before diving.

Real time torque and turns feedback and a single channel video overlay provide the operator with all the tools required for a safe and successful operation. The control software offers 4 different operating modes – Open & Closed Loop Pressure, Smart Pressure and Smart Torque.

The proportional valves provide accurate and smooth control of the hydraulic functions without the need for external fixed flow throttles.



General

- Electronics Module (Burton or SubConn Host Options)
- Wandfluh NG3 Valve type WDPF-A03
- Wandfluh NG3 Valve type WDPF-A06
- Wandfluh PO Check Valve types BDERV3
- SUN High Flow Pressure Relief Valves
- System & Depth Pressure TXD's
- Single Input & Return to Tank

Sensors

- Depth TXD: 300 Bar 0-5v
- System and Reduced Pressure TXD: 600 Bar 0-10v
- Strain Gauge Input: Constant current source to 4 wire strain gauge TXD. Set-up for 350 or 700 ohm bridges for 10v excitation
- Quadrature & Single Pulse Turns Counter

Mechanical

- Depth Rating: 3000msw
- P, T, Fill & Drain: 3/8" BSPP
- NG3 Valve: 1/4" BSPP
- NG6 Valve: 3/8" BSPP
- Material: 6082T6 Al Hard Anodised to BS5599, Dyed Black & Dichromate Sealed to 50 Microns
- Weight in Air: 19kgs
- Weight in Water: 12.5kgs
- App Dims 477 x 249 x 180 (in mm, centre to centre of mounting holes for 5-F System)

Electrical

- Power: 24V DC ($\pm 10\%$) smoothed & regulated
- Data: RS232/RS422 (for use with ROV MUX)
- Host Interface: SubConn BH10MSS (spec 44 wire) or Burton 5507-1508
- External Sensor Interface: SubConn
- MCBH6FSS x 2, MCBH8FSS x 2 (Spec 44 wire)

Electronics Set-Up Options

- Processor, Valve Power Driver, Low Voltage & Diagnostics, Two Channel Fast Counter, Torque Transducer & Torque Tool Interface Electronics
- 12 & 16 bit analogue and 8 x digital inputs for instrumentation
- Local LED status of telemetry, power supplies, water ingress and alarms visible through viewport

Software Features

- Smart Torque Tool Graphical Representations, Password Protection, Automatic Calibration, Alarm Control, Diagnostics Valve and Electronics Operation, Optional Video Overlay, Data Logging, Emergency Stop, System Presets, Water Ingress Alarms

Topside Control

- Branded Laptop PC (IBM LeNovo Think Pad), Saitek X52-Pro Joystick & Throttle Suite, USB/RS232 Converter, Optical Mouse
- Optional Panasonic Toughpad CF31