



FUGRO

FCV[®] 3000 (200HP)

The FCV 3000 is designed and built in-house by Fugro and offers the next generation of performance and capability to our world-wide customer base. The FCV 3000 reflects the Fugro commitment to Remote Technology Solutions and incorporates a range of internally developed expertise to help us deliver information from collected data, faster, better and with enhanced accuracy.

Over the years Fugro has developed a wide range of innovative technology and solutions to better address our customers' needs, so it is logical that when we turn our attention to the objectives of our ROV Business Line, we build the new generation of capability on a stable platform of field proven components and include our own particular brand of innovation.

Key capabilities that are incorporated into the FCV 3000 is designed to improve the efficiency of the operations and address the need to provide greater spatial awareness to the Operations Team.

Together with its console installed Simulator the FCV 3000 offers:

- Real time visualisation of the local subsea environment – helicopter view
- Mission rehearsal tools – Simulation and Planning
- Semi autonomous functionality
- 3 Dimensional Dynamic Positioning
- Pilot Training whilst ROV is on deck

In addition to its ability to carry a full instrumentation package, the FCV 3000 has class leading mechanical / hydraulic tooling interfaces that include:

- Mechanical Interface: Fugro proprietary 4-point
- Through Frame Lift: 3,000 Kg at 3 g
- Tooling: up to 430 LPM @ 210 bar
- IHPU: 90 LPM @ 210 bar
- Bi-directional Solenoid: 30 Solenoid Valve Channels
- Servo Valves: 8, being 7 Thruster + 1 spare
- Remote Control IVP: 4 x NG3 + 1xNG6
- High Flow IVP: 4 x 90 LPM fully proportional



FCV 3000 (200HP) being launched from an ultra deep water drillship.



Like its in-house built predecessors, the FCV 3000 is part of an evolving system design that provides the customers with all of the essential demands of the deep water ROV System such as a 3.5 knot forward speed delivery by its 200 Hp hydraulic power system and high power vectored thrust design. This base level of standard capability, combined with the industry leading Sonar, Camera and Manipulator Systems of the 3,000 msw rated FCV 3000 will immediately allow the unit to be recognised as a market leading solution to the rigours of deep water intervention and support.

At the heart of the FCV 3000 is Fugro's proven control & communications system based on single-mode fibre-optic technology including Fugro's own design / build SMFO multiplexer, giving an exceptionally high data throughput and features switching in the event of failure of a fibre. The high end multiplexer handles up to 3 HD cameras and 12 conventional cameras (8 simultaneously) and provides a wide range of data communications protocols facilitating efficient integration of add-on tools and sensors. The data highway of the FCV 3000 can cater for up to 20 GB, which is sufficient to run the ROV, the TMS, 3 x HD cameras, full survey data suite including dual MBES (such as Reson 7125) and still have sufficient headroom to allow a range of other specialist sensors to be operated simultaneously.

FCV® 3000 (200HP)

Technical Specifications

Dimensions

| | |
|--------|------------------------------|
| Length | 3.315 m |
| Height | 1.73 m (excl TMS) |
| Width | 1.76 m (excl TMS) |
| Weight | 4.2 Te (incl 400 Kg payload) |

Power

| | |
|------------------------------|--------------------------------|
| Motor | 1 x 2850 VAC @ 150 kW (200 Hp) |
| Hydraulic Pump Flow | 430 LPM @ 60 Hz |
| Hydraulic Pump Pressure | 210 bar (main) |
| Single Phase Electric Supply | 10 KVA , 24 VDC & 110 VAC |
| Tooling | up to 430 LPM @ 60 Hz |

Speed

| | |
|--------------------|-----------------------|
| Forward / Aft | 3.98 knots (2.05 m/s) |
| Lateral | 2.99 knots (1.54 m/s) |
| Vertical up / down | 3.09 knots (1.58 m/s) |

Thrusters

| | |
|-----------------------------|----------------------|
| 4 x 15" vectored Horizontal | Fwd/Lateral: 1209 Kg |
| 3 x 15" vectored | Vertical: 1239 Kg |

Sensors

| | |
|----------------|---|
| Heading | TOGSNAV |
| DVL | TOGSNAV |
| Pitch and Roll | TOGSNAV |
| Depth | TOGSNAV |
| Altimeter | Simrad 1007 Digital Altimeter |
| Sonar | Simrad MS1171 6000 m digital |
| Cameras | 12 x SD Cameras, 8 at any one time 3 x HD Cameras (Optional) |
| Data | RS232, RS485 TTL Ethernet and Gb Ethernet |
| Lighting | 12 x 24 VDC Dimmable LED lights 4 x 110 VAC Flood Lights |

Manipulators

| | |
|---------------|---------------------|
| Manipulator 1 | Schilling TITAN 4 |
| Manipulator 2 | Schilling RigMaster |
| Optional | Schilling Atlas |

Control System

| | |
|-----------------|---------------------------|
| Vehicle Control | Fugro Proprietary ERA-004 |
| FO Multiplexer | Fugro Proprietary SMFO |

Tooling

| | |
|-------------------------|-------------------------------|
| Mechanical Interface | Fugro Proprietary – 4 point |
| Through Frame Lift | 3,000 Kg |
| Tooling IHPU | 90 LPM @ 210 bar |
| Bi-Directional Solenoid | 30 x Solenoid Valve Channels |
| Servo Valves | 8, being 7 Thruster + 1 spare |
| Remote control IVP | 4 NG3 + 1 NG6 |
| High flow IVP | 4 x 90 LPM |

Power Requirements

| | |
|------------------|--|
| System (typical) | 500 KVA, 380-500 VAC 3-ph supply 50/60 Hz. 60 Hz for optimum performance |
|------------------|--|

Main Lifting Umbilical

37 mm Ø double armoured
Optimised design with single mode fibres in robust steel tube

TMS

| | |
|----------------------|------------------------------------|
| Type | Top Hat , PSSL Type 4, 11 Te SWL |
| Tether | 600 m of 30 mm diameter tether |
| Dimensions | 1.8 m (Dia) x 2.0 m (H) |
| Weight: In Air/Water | 2.5 Te / 1.5T e (inc 600 m tether) |