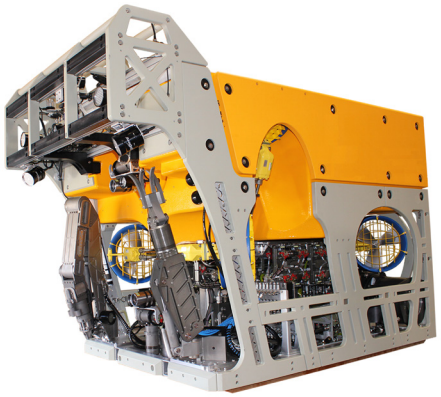
Schilling Robotics Heavy Duty (HD) ROV



The Heavy Duty (HD) system is an advanced design ROV with class leading performance, reliability, and maintainability. Configured with a Tether Management System (TMS) or in Freefly mode, the HD features innovative frame design and modular sub-systems coupled with a state-of-the-art control system. These attributes make the HD an optimum choice for IMR, drill support, heavy-duty construction operations as well as a vehicle to support ocean research, salvage and military scopes.

- Powerful, compact 150-hp HPU with 52-hp aux. output
- Extensive onboard tooling installation space
- StationKeep with independent thruster control
- 60-minute modular maintenance
- High-integrity hydraulic system, including all-stainless tubing

The HD modular design affords superior deck space, flight automation packages, tooling integration, a unique 60-minute maintenance philosophy, and high-integrity hydraulic system. It features substantial space for equipment payload at the vehicle's side and forward deck areas, with payload capacity biased toward the forward area. The compact system footprint is ideal for rapid transportation and mobilization across a range of subsea market sectors and segments.

Flight Automation

Schilling Robotics' ROVs feature the industry's most accurate StationKeep, which provides a highly stable flight with <10-cm accuracy. This is achieved by independently monitoring and adjusting the speed of each thruster in response to feedback from the onboard FOG or GYRO. Pilots can station the vehicle close to subsea structures and make precise position adjustments. Pilot assist functions also include AutoTrack mode whereby the system can accept survey data from a pre-existing route to enable the vehicle to fly a pre-planned route, at a speed controlled by the pilot.

In addition, the HD is the only vehicle that features an intelligent power management system, offering an automated load-balancing feature relative to hydraulic power demand levels, enabling operations to be completed from a level and stable platform. The advanced feature set provides pilots with the ability to increase productivity on the most challenging subsea tasks.

60-Minute Maintenance

Major sub-systems can be difficult and time consuming to repair on traditional ROV systems. Schilling Robotics has redesigned these to allow for maintenance in 60-minutes or less. This modular approach for all subsystems (controls, hydraulic, and electric) results in an overall reduction in maintenance time by a factor of 6 to 1. This increases a vessel's operational uptime, which is critical in the deepwater environment.

High Integrity Hydraulic System

The hydraulic system is manufactured entirely from CNC formed stainless steel tubing throughout the vehicle. By eliminating flexible hoses, the hydraulic system has the greatest possible integrity to avoid leakage. This superior level of core system integrity greatly improves environmental safety and reduces maintenance and repair requirements.

Tooling Integration

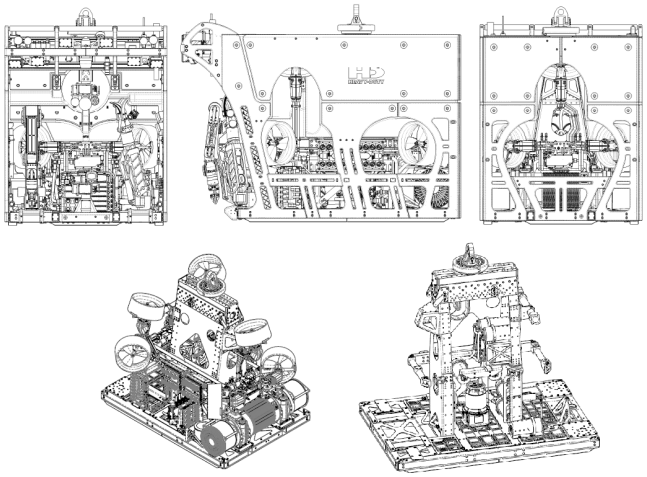
The HD's superior onboard tooling capacity, combined with versatile hydraulic tooling interfaces and simple control system, allow for rapid tooling integration. Tooling skids up to 3,000kg can be connected to the mounting interfaces beneath the ROV. Mechanical interfaces also provide for mounting tooling on the fore and aft vehicle faces. All equipment can be controlled from the work-flow based Hammerhead control system; the system enables users to rapidly configure and integrate additional tooling and sensors.

Auxiliary Pump > Subsea Performance

- Operating pressure: 207 Bar (3,000 psi)
- Maximum flow/pressure: 117 lpm (31 gpm at 3,000)

Specifications

Working Depth:	3,000 msw & 4,000 msw (Optional 5,000 mts & 6,000 msw Freefly)
Docking Interface SWL:	9,700 kg
Through-Frame Lift:	3,000 kg
Weight in Air:	3,600 kg
Dimensions:	2.9m X 1.7m X 1.9m
Payload:	150 kg to 250 kg
Peak Thrust Performance	
Forward/ Aft/ Lateral:	900 kgf
Vertical - Up/ Down:	850 kgf
Equipment Fit	
Manipulators:	Any Schilling Model
Cameras:	SD and HD Options
Depth Sensor:	Valeport
Heading Sensor:	IXblue Nano
DVL:	Nortek 500kHz
Lights:	8 x 120VAC and 2 x 24VDC
Pan and Tilt:	Schilling Electric
Valves:	(14) 8 lpm, (2) 32 pm, (1) 160 lpm
Hydraulic System	
HPU:	150-hp
Auxiliary:	52-hp
Operating Pressure:	207 Bar
Thrusters:	(7) Sub Atlantic



Digital Video Suite

The digital video-over-ethernet system can transport both HD and SD video, through H.264 compression, that can be annotated and recorded via the video PC on surface. The system can record up to 4 x HD streams simultaneously, and redundant HD video recording, annotation, and editing suites are provided as standard.

- High-definition, low-latency streaming video at 1920 x 1080 resolution, 60 frames per second
- Video streaming using H.264 compression over RTSP
- SD low-latency streaming video at NTSC/PAL resolution
- Topside video output: HDMI, NTSC/PAL analog video
- Enables 1080P HD video transmission over standard ethernet communications

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