

WORK CLASS ROVS SYSTEMS



ENGINEERING EXCELLENCE UNDERWATER

SMD.CO.UK

CONFIGURABLE, CAPABLE AND CLASS LEADING ROV SYSTEMS

Building on a strong and unique legacy of over 40 years in subsea engineering, SMD entered the work class Remotely Operated vehicle (ROv) market in 2004 following the acquisition of Hydrovision. Since then SMD have designed and manufactured over 125 ROv systems for the oil and gas, oceanographic, defence, salvage, telecoms, special projects and renewable markets.

SMD offer a complete turnkey ROv system solution including the design and manufacture of Launch and Recovery Systems (LARS), winches, Tether Management Systems (TMS) and control cabins. Training and world-wide aftermarket (including offshore) support can also be provided. All SMD vehicles use multiplatform components from SMD's CurvetechTM product range. The components are cross system compatible and offer easy expandability for quick configuration for different applications.

WORK CLASS **ROV SYSTEMS**

COMPLETE TURNKEY ROV SOLUTION



1. SMD TMS

- → Tophat or garage models available
- Thrusters option \rightarrow → 250m to 1600m
- tether capacity → Latest multi-platform
- → CurevtechTM components

2. SMD LARS

- → A-Frame, gantry or cursor model
- → LARS available
- → 5Te 15Te Safe Working Load (SWL) variants
- \rightarrow Up to sea state 6
- → Custom ROV LARS available

3. SMD ROVS

- → Atom, Quasar, Quantum compact to heavy duty work class
- → 60hp to 250hp
 → DVECS II SCADA Control
- Advanced Dynamic \rightarrow Positioning (DP)
- → Latest multi-platform CurvetechTM components

4. SMD WINCHES

- 5Te 15Te SWL variants \rightarrow
- Lift or storage winches \rightarrow
- \rightarrow 500m 6500m umbilical capacity models
- \rightarrow Variable fleeting angles
- → Direct drum braking
- → Active Heave Compensator (AHC) options

CONTROL SYSTEMS LAYOUT



1. GENERAL

- \rightarrow Spacious and
- ergonomic layout Components can be cabin \rightarrow or ship mounted
- → Layout seats 5 people cabin or ship mounted
- \rightarrow Layout seats 5 people

2. VEHICLE CONTROL MODULE

- → Main system SCADA/PLC control components
- \rightarrow Control redundancy with automatic switchover

3. CONTROL DESK MODULE

- \rightarrow Choice of operator panel design
- Twin touchscreens and \rightarrow hardwire controls
- → Fighter or twin stick control options
- → Cyberchair control option

4. SCREEN MODULE

- → Choice of screen configuration
- \rightarrow 32" and 19" screen options
- → HDTV compatible

5. CUSTOMER INTERFACE MODULE

- → Extensive free rack space
- → Easy access to ROV
- communication channels \rightarrow Further expansion via survey kit options

6. HVTU/PDU Module

- → Choice of input voltage
- \rightarrow Voltage, current and phase monitoring
- → Easy access for maintenance

ULTRA COMPACT WORK CLASS ROV ATOM

SMD's Atom is an ultra compact work class ROV comparable in size to an electric ROV system. The vehicle is suitable for drill support, survey and light construction duties and can be mobilised on vessels and rigs with limited deck space. Designed with ease of operation and maintenance in mind, the Atom boasts the latest DVECSII distributed control, graphical displays and pilot aids coupled with proven powerful Curvetech[™] components. The Atom can be supplied as a complete package with SMD's ultra compact TMS and LARS.

FEATURES

- → Ultra compact work class ROV
- → Easy to operate and maintain with small on-deck footprint
- → Configurable for survey, drill support and renewables tasks
- ightarrow The he high performance alternative to an electric



ULTRA COMPACT WORK CLASS ROV ATOM

GENERAL

GENERAL	1 (000		
Depth rating	up to 4000msw		Сс
Dimensions	<i>,</i> ,		Сс
Length	2520mm (99.2in)		
Width	1500mm (59in)		
Height	1500mm (59in)		Ind
Weight in air			рс
(base system)	2000kg (4409 lbs)		
Payload	<u> </u>		UF
(base system)	150kg (331 lbs)		Sı
Through frame lift	1500kg (3307 lbs)		
Ū	0.		
PERFORMANCE	optional (low power)	Standard	Sı
Bollard pull			
Forward/aft	400kgf (882 lbs)	550kgf (1213 lbs)	Sı
Vertical (up)	330kgf (728 lbs)	330kgf (728 lbs)	
Surface performance			
Forward	2.9kn	3.5kn	
Lateral	2.3kn	2.8kn	
Vertical	2.0kn	2.0kn	
יכו נוכמו	ZUNII	ZUNII	

INSTRUMENTS/TOOLING

Hydraulic channels Standard 1 Optional

Och iHCU (15LPM), 1ch (high flow) Torque tool controller 2ch iHCU (95LPM)

Video capability Standard Optional Gyro Standard Optional Lighting Manipulator Grabber 1

6 x channels composite 2 x HDTV channels Gyro compass NS FOG 2 x HID + 6 x halogen or LED 1 x 7F pos feedback (T4 compatible)

x 5F rate, heavy duty

Control cabin Control system 16 or 20ft, A60 ISO (optional zone II 3G) SMD DVECSII ROV control hardware Dual touch screens TFT video wall

380V-480Vac or 690Vac

ncoming ower supplies

UPGRADE OPTIONS

Survey kit 1	
	4
Survey kit 2	I
	1
Survey kit 3	I

2 x cameras 4 x RS232 channels Ethernet (10/100T) Interface for 2 x Seabat 7125 units or high band width instruments Interface for 2 x Seabat 7125/8125 units or high band width instruments

TYPICAL ATOM SYSTEM

- \rightarrow 6te A-Frame
- \rightarrow 6Te 3500m winch c/w 75kW HPU
- → Ultra Compact TMS
- \rightarrow Option available to suit customer requirements



DRILL SUPPORT/ GENERAL WORK CLASS ROV QUASAR

Quasar is the medium size vehicle in SMD's Q-series work class ROV range. Utilising the latest multi-platform Curvetech[™] components, the vehicle offers class-leading incurrent performance, tooling and instrument space and access for maintenance. Quasar is an excellent all round performer capable of survey, construction and drill support operations.

FEATURES

- \rightarrow Medium sized high power work class ROV
- \rightarrow Excellent performance and highly versatile
- → Configurable for survey, drill support and construction tasks
- → The essential all-rounder and backbone of your ROV fleet



DRILL SUPPORT/ GENERAL WORK CLASS ROV QUASAR

GENERAL

Depth rating Dimensions Length Width Height Weight in air (base system) Payload (base system) up to 4000msw 3200mm (126in)

1800mm (70.9in) 1800mm (70.9in)

3500kg (7716 lbs)

250kg (551 lbs) 3000kg (6614 lbs)

PERFORMANCE

Through frame lift

Bollard pullForward/aft750kgVertical (up)550kgSurface performance50kgForward3.5knLateral2.8knVertical 2.2kn

750kgf (1764 lbs) 550kgf (1213 lbs) 3.5kn

INSTRUMENTS/TOOLING

Hydraulic channels Standard Optional

Video capability Standard

Optional Gyro Standard

Optional

Lighting Manipulator

Grabber

12ch iHCU (15LPM), 1ch (high flow) Torque tool controller 2ch iHCU (95LPM) 12ch iHCU (15LPM)

6 x channels composite 2 x composite + 2 x HDTV channels

Gyro compass NS FOG 2 x HID + 6 or 12 x halogen or LED 1 x 7F pos feedback (T4 compatible) 1 x 5F rate, heavy duty

CONTROL CABIN

Control cabin Control system 20ft, A60 ISO (optional zone II 3G) SMD DVECSII ROV control hardware Dual touch screens TFT video wall

380V-480Vac or 690Vac

Incoming power supplies

UPGRADE OPTIONS

Survey kit 1 Survey kit 2 Survey kit 3 2 x cameras 4 x RS232 channels Ethernet (10/100T) Interface for 2 x Seabat 7125 units or high band width instruments Interface for 2 x Seabat 7125/8125 units or high band width instruments

TYPICAL QUASAR SYSTEM

→ 12Te Telescopic A-Frame

- → 12Te 3500m winch
- \rightarrow Extended TMS
- → Option available to suit customer requirements



HEAVY DUTY CONSTRUCTION CLASS ROV QUANTUM

Quantum is SMD's largest work class ROV suitable for heavy construction duties. Utilising the latest multiplatform Curvetech™ components, the vehicle offers class-leading in-current performance and extensive free tool and instrument space. Designed to cope with power intensive deepwater tasks, The Quantum is the ultimate subsea construction and survey tool.

FEATURES

- → SMD's most powerful ROV
- $\rightarrow\,$ Large payload and through frame lift to meet your heavy duty tooling needs
- ightarrow Configurable for survey and heavy construction tasks
- $\rightarrow\,$ The ultimate ROV for the most demanding of missions



HEAVY DUTY CONSTRUCTION CLASS ROV QUANTUM

GENERAL

Depth rating Dimensions Length Width Height Weight in air (base system) Payload (base system) up to 4000msw

3680mm (145in) 2000mm (78.7in) 2000mm (78.7in)

5000kg (11023 lbs)

350kg (772 lbs) 4000kg (8819 lbs)

PERFORMANCE

Through frame lift

Bollard pullForward/aft1Vertical (up)5Surface performance5Forward3Lateral2Vertical2

1100kgf (2425 lbs) 900kgf (1984 lbs)

3.5kn 2.8kn 2.2kn

INSTRUMENTS/TOOLING

Hydraulic channels Standard Optional Video capability Standard Optional Gyro Standard Optional Lighting Manipulator 1 Grabber

2 x 12ch iHCU (15LPM), 4ch iHCU (HFlow) Torque tool controller

8 x channels composite 2 x HDTV channels

Gyro compass NS FOG 12 x halogen or LED + 2 x HID x 7F pos feedback (T4 compatible) 1 x 5F rate, heavy duty

CONTROL CABIN

Control cabin Control system

Incoming power supplies

20ft, A60 ISO (optional zone II 3G) SMD DVECSII ROV control hardware Dual touch screens TFT video wall

380V-480Vac or 690Vac

UPGRADE OPTIONS

Survey kit 1 Survey kit 2 Survey kit 3 2 x cameras 4 x RS232 channels Ethernet (10/100T) Interface for 2 x Seabat 7125 units or high band width instruments Interface for 2 x Seabat 7125/8125 units or high band width instruments

TYPICAL QUANTUM SYSTEM

- → 12Te Telescopic A-Frame
- → 12Te 3500m winch
- \rightarrow Extended TMS
- → Option available to suit customer requirements



THE ROV. REIMAGINED.

A NEW PHILOSOPHY IN ROV DESIGN.

SMD's new future ready modular robotic platform has been optimised to give you better results with lower operational costs.

Innovations in propulsion and control offer new levels of stability, strength and reliability for winning across a wide range of subsea applications.

Modular design lets you optimise vehicle configuration for the job at hand and operate from a variety of motherships including conventional vessels, autonomous vessels and subsea resident docking stations.

HIGH PERFORMANCE COMPACT FL FCTRIC WORK CLASS ROV ATOM

VEHICLE SPECIFICATIONS

GENERAL

Standard

Optional

Length

Width

Height

Payload

Lateral

Depth rating

Dimensions

3000msw 1000, 2000, 4000, 6000msw 2600mm 1500mm 1560mm 2000kg 150kg 1500kg

PERFORMANCE

Weight in air (std)

Through Frame Lift

Aft TDU mounting

Bollard Pull (actual) Forward/aft 802kgf 802kgf Vertical (up) 790kgf

TBC

Surface Performance Forward 4.0kn 3.1kn Lateral Vertical 2.6kn Auto Functions Heading Depth Altitude ROV DP

Thruster Configuration

Horizontal vectored 4 x Curvetech® Flectric 300 Vertical 3 x Curvetech® Electric 300

POWER

Vehicle power system DC Total Power 102kW (137hp) Battery compatible Yes

TOOLING

Optional Hydraulic Power Unit 25kW (34hp) Spare Hydraulic Channels Standard 1x Curvetech® 8ch MCU Optional 1x Curvetech® Multi-ch LF/MF/HF 100LPM Instruments Video Capability Standard 3 x comp, 1 x HD Optional up to 12 x comp, 4 x HD Data 4 x Ethernet 10/100T, Standard 11 x serial RS232/485 16 x Ethernet 10/100T, Optional 44 x serial RS232/485 Lighting Standard Up to 16 dimmable LED Gyro Standard 1x Sonardyne Sprint Camera pan/tilt Standard Up to 2 Electric Instrument Power Standard 3.6kW Manipulator 1 x 7F (pos feedback heavy duty) Grabber 1x5F (rate, heavy duty) Control Cabin Standard 20ft, A60 ISO, Zone II option Control System

Standard

touchscreens

suite Incoming power supply Optional

TMS Control /Interface

SMD ROV Control hardware Hybrid Cyberchair, Dual

4 x 32" TFT Video wall with video

380V-480Vac 690Vac 3 phase 60Hz/50Hz

SMD TophatE, SMD GarageE

DECK EQUIPMENT OPTIONS

SMD Lightweight Compact LARS Active or passive heave compensation Aramid/SWA umbilical choices



VEHICLE SPECIFICATION

GENERAL

Depth rating Standard 3000msw Optional 4000, 6000msw Dimensions Length ≤3306mm Width ≤1800mm Height ≤1900mm Weight in air (full construction spec) 4050kg Payload 400kg Through frame lift 4000kg Aft TDU mounting TBC

PERFORMANCE

Bollard pull (actual) Forward/aft 1300kqf 1300kgf Lateral Vertical (up) 1500kgf

Surface performance Forward 4.5k Lateral 3.5kn 3.7kn Vertical

Auto functions

Heading Depth Altitude ROV DP

Thruster configuration

Horizontal vectored 4 x Curvetech® 390 4 x Curvetech® 390

POWER

Electric

Vertical

Electric

Vehicle power system DC Total vehicle power Battery compatible

200kW (268hp) Yes

TOOLING

Depth rating Standard hydraulic power unit Optional hydraulic power unit (200hp)

- 50kW (68hp) -100kW (136hp) 150kW (2x isolated circuits)

Spare hydraulic channels Standard

1x Curvetech® 8ch MCU 1x Curvetech® multifunction HCU 8ch LF module 4ch MF module 2ch HF module

INSTRUMENTS Video capability

Standard Optional Data

Standard Optional

Lighting Standard Gyro Standard

Camera pan/tilt Standard

Instrument power Standard Manipulator Grabber

CONTROL CABIN Standard

Control system Standard

Incoming

Optional

power supply

20ft, A60 ISO, Zone II option

6 x comp, 2 x HD

Up to 12 x comp, 4 x HD

Up to 16 dimmable LED

1x Sonardyne Sprint

Up to 2 Electric

4kW

8 x Ethernet 10/100T, 22 x serial RS232/485

6 x Ethernet 10/100T, 44 x serial RS232/485

SMD ROV control hardware Hybrid Cyberchair, dual touchscreens 4 x 32"TFT video wall with video suite

1x7F (pos feedback heavy duty)

1x 5F (rate, heavy duty)

380V-480Vac 690Vac 3 phase 60Hz/50Hz TMS control/Interface MD GarageE

DECK EQUIPMENT OPTIONS

SMD lightweight compact LARS Active or passive heave compensation Aramid/SWA umbilical choice

CONTROL SYSTEM ROV DYNAMIC POSITIONING (DP)

SMD offers a range of advanced vehicle control options for each ROV system. Example flight modes include Bottom Lock DP and mid-Water DP which allow hover, cruise, step, rotate round and flight by designated way points. The ROV pilot can utilise data from multi-beam sonars to control the ROV relative to objects in the workspace, this enables accurate navigation and control during inspection and construction tasks.

TOPSIDE CONTROL

SMD's latest range of control cabins have been functionally and ergonomically designed to maximise productivity. Operator fatigue and discomfort is also reduced with an advanced easy to use touchscreen based Human machine Interface (HMI). SMD control cabins are highly configurable to meet specific requirements; from the type and layout of monitors right down to the style of joystick and even a choice of mood lighting. Alternatively the smD control system can be built in to a dedicated control space on a new or existing vessel.

Features

- → Modular confi guration
- → Ultra stable PLC hardware
- \rightarrow Intuitive SCADA front end
- \rightarrow Real time diagnostics
- → Touch screen control pads
- → Proven architecture



UPGRADABILITY - SURVEY KITS

SMD can provide advanced functionality with the use of additional survey kit options. These kits can be installed and removed as required and are available on all SMD ROVs to provide extra serial data channels, composite video channels and ethernet to support high data bandwidth applications such as multi-channel HDTV and SeaBat 7125/8125 sonar systems.



Four standard sizes of tophat Tether Management Systems (TMS) are available from SMD to suit a wide variety of applications. Standard units utilise a unique fleeting drum arrangement which offers a simple tether path for extended tether life. A variety of tether sizes can be accommodated with options. The Ultra Long Excursion (ULX) TMS can also accommodate vectored thrusters for subsea positioning.

ULTRA COMPACT TMS	METRIC	IMPERIAL
Suitable for use with ATOM		
Depth rating	3000, 4000msw	9842ft, 13123ft
Dimensions (Dia x H)	1500 x 1800mm	59.05 x 70.86in
Weight in air (base system)	1500kg	3307lb
Main lift capacity	6000kg	13228lb
Latch capacity	4000kg	8818lb
Tether capacity	300m	984.25ft
	(24.5mm tether)	
Tether speed	0.5m/sec	1.64ft/sec
COMPACT TMS	METRIC	IMPERIAL
Suitable for use with ATOM,		
Depth rating	3000, 4000msw	9842ft, 13123ft
Dimensions (Dia x H)	1775 x 2265mm	69.9 x 90.4in
Weight in air (base system)	2100kg	4630lb
Main lift capacity	12000kg	26456lb
Latch capacity	12000kg 26456lb	
Tether capacity	400m	1312ft
	(27mm tether)	
Tether speed	1m/sec (variable)	3.28ft/sec (variable)
EXTENDED TMS	METRIC	IMPERIAL
Suitable for use with QUAS	AR, QUANTUM	
Suitable for use with QUAS, Depth rating	AR, QUANTUM 3000, 4000msw	9842ft, 13123ft
Suitable for use with QUAS Depth rating Dimensions (Dia x H)	AR, QUANTUM 3000, 4000msw 2175 x 2475mm	9842ft, 13123ft 85.7 x 97.5in
Suitable for use with QUAS Depth rating Dimensions (Dia x H) Weight in air (base system)	AR, QUANTUM 3000, 4000msw 2175 x 2475mm 2750kg	9842ft, 13123ft 85.7 x 97.5in 6063lb
Suitable for use with QUAS Depth rating Dimensions (Dia x H) Weight in air (base system) Main lift capacity	AR, QUANTUM 3000, 4000msw 2175 x 2475mm 2750kg 12000kg	9842ft, 13123ft 85.7 x 97.5in 6063lb 26456lb
Suitable for use with QUAS Depth rating Dimensions (Dia x H) Weight in air (base system) Main lift capacity Latch capacity	AR, QUANTUM 3000, 4000msw 2175 x 2475mm 2750kg 12000kg 12000kg	9842ft, 13123ft 85.7 x 97.5in 6063lb 26456lb 26456lb
Suitable for use with QUAS Depth rating Dimensions (Dia x H) Weight in air (base system) Main lift capacity	AR, QUANTUM 3000, 4000msw 2175 x 2475mm 2750kg 12000kg 12000kg 915m	9842ft, 13123ft 85.7 x 97.5in 6063lb 26456lb
Suitable for use with QUAS Depth rating Dimensions (Dia x H) Weight in air (base system) Main lift capacity Latch capacity Tether capacity	AR, QUANTUM 3000, 4000msw 2175 x 2475mm 2750kg 12000kg 12000kg 915m (27mm tether)	9842ft, 13123ft 85.7 x 97.5in 6063lb 26456lb 26456lb 3001ft
Suitable for use with QUAS Depth rating Dimensions (Dia x H) Weight in air (base system) Main lift capacity Latch capacity	AR, QUANTUM 3000, 4000msw 2175 x 2475mm 2750kg 12000kg 12000kg 915m	9842ft, 13123ft 85.7 x 97.5in 6063lb 26456lb 26456lb
Suitable for use with QUAS Depth rating Dimensions (Dia x H) Weight in air (base system) Main lift capacity Latch capacity Tether capacity Tether speed	AR, QUANTUM 3000, 4000msw 2175 x 2475mm 2750kg 12000kg 12000kg 915m (27mm tether) 1m/sec (variable)	9842ft, 13123ft 85.7 x 97.5in 6063lb 26456lb 26456lb 3001ft 3.28ft/sec (variable)
Suitable for use with QUAS Depth rating Dimensions (Dia x H) Weight in air (base system) Main lift capacity Latch capacity Tether capacity Tether speed ULX TMS	AR, QUANTUM 3000, 4000msw 2175 x 2475mm 2750kg 12000kg 12000kg 915m (27mm tether) 1m/sec (variable) METRIC	9842ft, 13123ft 85.7 x 97.5in 6063lb 26456lb 26456lb 3001ft
Suitable for use with QUAS Depth rating Dimensions (Dia x H) Weight in air (base system) Main lift capacity Latch capacity Tether capacity Tether speed ULX TMS Suitable for use with QUAS	AR, QUANTUM 3000, 4000msw 2175 x 2475mm 2750kg 12000kg 915m (27mm tether) 1m/sec (variable) METRIC AR, QUANTUM	9842ft, 13123ft 85.7 x 97.5in 6063lb 26456lb 26456lb 3001ft 3.28ft/sec (variable) IMPERIAL
Suitable for use with QUAS Depth rating Dimensions (Dia x H) Weight in air (base system) Main lift capacity Latch capacity Tether capacity Tether speed ULX TMS Suitable for use with QUAS Depth rating	AR, QUANTUM 3000, 4000msw 2175 x 2475mm 2750kg 12000kg 915m (27mm tether) 1m/sec (variable) METRIC AR, QUANTUM 3000, 4000msw	9842ft, 13123ft 85.7 x 97.5in 6063lb 26456lb 26456lb 3001ft 3.28ft/sec (variable) IMPERIAL 9842ft, 13123ft
Suitable for use with QUAS Depth rating Dimensions (Dia x H) Weight in air (base system) Main lift capacity Latch capacity Tether capacity Tether speed ULX TMS Suitable for use with QUAS Depth rating Dimensions (Dia x H)	AR, QUANTUM 3000, 4000msw 2175 x 2475mm 2750kg 12000kg 915m (27mm tether) 1m/sec (variable) METRIC AR, QUANTUM 3000, 4000msw 2435 x 2320mm	9842ft, 13123ft 85.7 x 97.5in 6063lb 26456lb 26456lb 3001ft 3.28ft/sec (variable) IMPERIAL 9842ft, 13123ft 95.9 x 91.4in
Suitable for use with QUAS Depth rating Dimensions (Dia x H) Weight in air (base system) Main lift capacity Latch capacity Tether capacity Tether speed ULX TMS Suitable for use with QUAS Depth rating Dimensions (Dia x H) Weight in air (base system)	AR, QUANTUM 3000, 4000msw 2175 x 2475mm 2750kg 12000kg 915m (27mm tether) 1m/sec (variable) METRIC AR, QUANTUM 3000, 4000msw 2435 x 2320mm 4500kg	9842ft, 13123ft 85.7 x 97.5in 6063lb 26456lb 26456lb 3001ft 3.28ft/sec (variable) IMPERIAL 9842ft, 13123ft 95.9 x 91.4in 9921lb
Suitable for use with QUAS Depth rating Dimensions (Dia x H) Weight in air (base system) Main lift capacity Latch capacity Tether capacity Tether speed ULX TMS Suitable for use with QUAS Depth rating Dimensions (Dia x H) Weight in air (base system) Main lift capacity	AR, QUANTUM 3000, 4000msw 2175 x 2475mm 2750kg 12000kg 915m (27mm tether) 1m/sec (variable) METRIC AR, QUANTUM 3000, 4000msw 2435 x 2320mm 4500kg 12000kg	9842ft, 13123ft 85.7 x 97.5in 6063lb 26456lb 26456lb 3001ft 3.28ft/sec (variable) IMPERIAL 9842ft, 13123ft 95.9 x 91.4in 9921lb 26456lb
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(27mm tether)

1m/sec (variable) 3.28ft/sec (variable)

Tether speed

SMD.CO.UK

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GARAGE TMS ROV PROTECTION & OPERATIONAL VERSATILITY

Three sizes of Garage Tether Management System (TMS) are available from SMD suitable for accommodating a wide variety of work class ROVs. All offer height adjustment and space for installation of tooling. Many parts are interchangeable with SMD's ROV and tophat TMS range. The SMD Garage TMS can also be offered with thrusters for subsea positioning.

COMPACT GARAGE Suitable for use with ATOM		IMPERIAL
Depth Rating	3000, 4000msw	9842ft, 13123ft
Overall Dimensions		
$(L \times W \times H)$	3650 x 2340	143.7 x 92.2 x 171.5in
	x 4355mm	
Garage Dimensions		
$(L \times W \times H)$	3175 x 1830 x 2410mm	125 x 72.1 x 94.9in
Weight in air (base system)	3600kg	7937lb
Main lift capacity	8000kg	17637lb
ROV wt capacity	4000kg	8819lb
Tether capacity	400m (
	27mm tether)	1312ft
Tether speed	1m/sec	3.28ft/sec
EXTENDED GARAGE	METRIC	IMPERIAL
Suitable for use with QUAS		00/05-101005
Depth Rating	3000, 4000msw	9842ft, 13123ft
Overall Dimensions	0050 0/00	4407 004 4047
$(L \times W \times H)$	3650 x 2490	143.7 x 98.1 x 194.7in
	x 4945mm	
Garage Dimensions	0175 1000	125 x 78 x 106.3in
$(L \times W \times H)$	3175 x 1980 x 2700mm	125 X 78 X 106.310
Weight in air	x Z/UUIIIII	
Weight in air	5000kg	11024lb
(base system)	5000kg	1102410

26455lb

15432lb 3001ft

3.28ft/sec

(base system)	5000kg
Main lift capacity	12000kg
ROV wt capacity	7000kg
Tether capacity	915m
	(27mm tether)
Tether speed	1m/sec

Ν

HEAVY DUTY GARAGE METRIC IMPERIAL

Suitable for use with QUAN	ITUM	
Depth Rating	3000, 4000msw	9842ft, 13123ft
Overall Dimensions		
$(L \times W \times H)$	4825 x 3015	190 x 118.7 x 194.7in
	x 4945mm	
Garage Dimensions		
$(L \times W \times H)$	4000 x 2020	157.5 x 79.6 x 118.1in
	x 3000mm	
Weight in air		
(base system)	6000kg	13228lb
Main lift capacity 1	5000kg	33069lb
ROV wt capacity	8000kg	17637lb
Tether capacity	915m	
	(27mm tether)	3001ft
Tether speed	1m/sec	3.28ft/sec



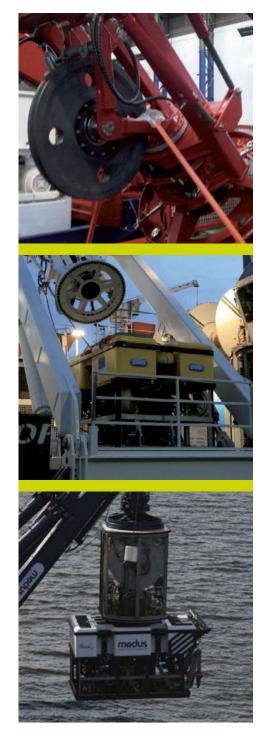
LARS WORK IN ALL CONDITIONS

SMD have been designing and manufacturing Launch and Recovery Systems (LARS) for over 20 years. ROV systems can be offered from 5Te – 15Te safe working load in a variety of configurations to suit various applications. A-Frame launch systems are generally offered but gantry and heavy weather cursor launch systems are also available.

6TE A-FRAME (FIXED - FREE SWIM) Suitable for use with ATOM, SWL Weight Operational Dimensions* (L x W x H) Outreach Width between legs Snubber	METRIC QUASAR (no TMS) 6Te 13, 10.1Te 5500 x 3020 x 6875mm 3320mm 2300mm	IMPERIAL 227lb 22,266lb 216.6 x 118.9 x 270.7in 130.8in 90.6in Latch and rotate
6TE A-FRAME		
(FIXED) Suitable for use with ATOM, SWL Weight Operational Dimensions* (L x W x H) Outreach Width between legs Snubber	METRIC TMS 6Te 13, 12.5Te 27, 6060 x 2500 x 8305mm 3490mm 2028mm	IMPERIAL 227lb 557lb 238.6 x 98.5 x 327in 137.4in 79.8in Latch and rotate
8TE A-FRAME		
(FIXED) Suitable for use with QUAS, SWL Weight Operational Dimensions* (L x W x H) Outreach Width between legs Snubber	METRIC AR, TMS 8Te 17, 15.5Te 34, 6000 x 3400 x 9390mm 4355mm 2860mm	IMPERIAL 637lb 172lb 236.3 x 133.9 x 370.7in 171.5in 112.6in Latch and rotate
12TE A-FRAME		
(TELESCOPIC) Suitable for use with QUAN SWL Weight Operational Dimensions* (L x W x H)	12Te 26, 25Te 55, 7000 x 3630 x 10100mm	456lb 116lb 275.6 x 143 x 397.7in
Outreach Width between legs Snubber Short Base Option Operational Dimensions* (L x W x H)	5410mm 2900mm 6000 x 3630 x 10100mm	213in 114.1in Latch and rotate 236.2 x 143 x 397.7in
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WINCH SYSTEMS WORK IN ALL CONDITIONS

SMD

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SMD winch systems are designed to compliment SMD LARS. Various sizes and styles are available with umbilical capacities ranging from 500m to 6500m. Models are available capable of handling Steel Wired Armour (SWA) or aramid (soft) umbilicals.

6TE SWA WINCH	METRIC	IMPERIAL
Suitable for use with ATOM SWL Capacity	6Te 3500m	13227lb
Weight (exc. Umbilical)	(27.2mm umbilical) 10.25Te) 11483ft 22597lb
Operational Dimensions* (L x W x H)	3400 x 2900 x 2680mm	133.9 x 114.2 x 105.6in
Main Drive Brake Built in HPU		Bosch Rexroth Full load, direct band Yes (75kW)
8TE SWA WINCH	METRIC	IMPERIAL
Suitable for use with QUAS. SWL Capacity	AR 8Te 3500m (31.5mm umbilical)	17637lb 11483ft
Weight (exc. Umbilical) Operational Dimensions*	13.4Te	29542lb
$(L \times W \times H)$	3400 x 2900 x 3190mm	133.9 x 114.2 x 125.6in
Main Drive Bosch Brake Built in HPU		Rexroth Full load, direct band Yes (75kW)
12TE SWA WINCH	METRIC	IMPERIAL
Suitable for use with QUAS. Capacity	4500m (35mm umbilical)	SWL 12Te 26455lb 14763ft
Weight (exc. Umbilical) Operational Dimensions* (L x W x H)	14.8Te 32629lb 3400 x 2900	133.9 x 114.2 x 132.4in
Main Drive Bosch Brake Built in HPU	x 3360mm	Rexroth Full load, direct band No (separate
		110/150kW)
15TE SWA WINCH Suitable for use with QUAS. SWL	15Te	IMPERIAL 14763lb
Capacity	4500m (43mm umbilical)	11483ft
Weight (exc. Umbilical) Operational Dimensions*	19.6Te	43211lb
$(L \times W \times H)$	6060 x 2440 x 3660mm	238.6 x 96.1 x 144.1in
Main Drive Brake Built in HPU		Bosch Rexroth Full load, direct band No (separate
* Excluding deck mounts		150/220kW)
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SPECIAL PROJECTS

BESPOKE SUBSEA SOLUTIONS AND SPECIALIST HANDLING EQUIPMENT

Drawing on many years of experience and expertise SMD can supply bespoke products ranging from a specific tool skid to a fully integrated ROV system to meet unique functional, operational or environmental requirements.

This capability also extends to developing new equipment which is complementary to an existing fleet of vehicles to enhance performance and competitive advantage whilst maintaining an established corporate identity or unique selling point.Past projects include customer specific ROV systems for trenching applications, oceanographic exploration, hazardous fluid salvage, and military range maintenance.

RESEARCH AND DEVELOPMENT PROJECTS

ADVANCED VEHICLE CONTROLS (AVC)

With the utilisation of various sensor equipment on a workclass ROV, there is the opportunity and potential to combine the acquired data to enable autonomous and/ or semi-autonomous functionalities on the vehicle. SMD, in collaboration with SeeByte, have developed an AVC Suite which is integrated with SMD's DVECS platform. On top of the current DVECS functions such as mid water and pipe tracking, the AVC (with the relevant sensor equipment) enables the operator/pilot to perform tasks such as object recognition, target tracking/locking, cruise control and automatic waypoint navigation, all with a single click of a button on an intuitive controls interface.

A WROV FOR CHALLENGING ENVIRONMENTS

By being the only ROV supplier who manufactures complete systems, SMD are aware of the challenging environments which our systems are subjected to. We employ specific engineering tools to analyse and simulate the work class ROV under specific conditions in order to obtain performance and efficiency figures. This enables the design process to meet the clients' requirements.

SMD SIMULATOR

In addition to the evolution of the DVECS platform, SMD is also advancing our simulator technology with the latest physics engine capabilities. This enables SMD to create new scenarios for mission planning and training for clients, thus optimising the customer interaction.





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ENGINEERING EXCELLENCE UNDERWATER