

Seacraft Special Submersibles





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Special for Special



Special for Specials Newest technological solutions

Seacraft submersibles

are designed to put cutting-edge technology into simple, robust, and lightweight devices. Based on long development and testing in the most hostile natural environments – underwater caves, flooded mines, freezing water, and great depths – we created a revolutionary propulsion concept. **Extreme power, high comfort, and intuitive operation** were enhanced by features and solutions crucial to gaining an advantage in modern warfare. This is how Seacraft's military line was born and developed in cooperation with the best special forces operators in the world.

Our products are designed to be **lighter, faster, and simpler** than everything existing on the market. Combining intuitive driving with simple service protocols and long no-maintenance intervals, we minimize the amount of training required and operational cost.

To fully discover our full special offer, and its advantages – we kindly invite you to further reading.

Series of unique features

- Engine working in full water immersion
- Magnetic propulsion
- Extremely silent work
- Zero-torque (post swirl stator)
- Built-in control screen
- Custom-designed electronics
- External hermetic charging socket
- 12V Power outlet
- Asymmetric and sealed battery





Engine working in full immersion

Seacraft created the first submersible in the world, in which the motor runs directly in the water. A specially designed and patented solution allows for **complete elimination of the drive shaft** and the need for unreliable seals and gear transmission used in other DPVs. The motor working in the water is much more durable and resistant to workload and as it is directly water cooled, completely eliminates overheating inside the scooter.

Simple and robust solution solves major flaws of other scooters, providing:

Magnetic propulsion

• Silent and covert operation, due to elimination of transmission systems. BLAC engine steering removes also electromagnetic noise.

Maximum power output without overheating, even for a long time.

• Long maintenance-free periods, easy and simple servicing.

No risk of flooding of the scooter's interior.

Extreme weight reduction, allowing to pack the power of an "old construction" 27 kg scooter, into a 16 kg ready-to-dive unit.



ZEKY

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Post-swirl stator

The torque effect is a natural consequence of the propeller's rotating action, which causes the water stream to swirl, and creates a turning force on the scooter handle thus increasing diver's fatigue.

Inspired by jet engine constructions, Seacraft developed a post-swirl stator system, which interacts with the propeller slipstream, changing its swirl to net thrust. This allows to completely eliminate the torque effect, and simultaneously increase the propulsion system efficiency, due to recovering usually lost water swirl rotation force.

Zero torque







Current gear indicates used power level. There are gears 1-9, gear "+" which is a booster gear and "R-" reverse.

Battery charge level allows for precise mission planning and control of remaining battery time.

Remaining run time and trigger time are displayed on the screen, based on current used gear and load.

Power outlet status icon indicates the current power set to be delivered by the external power outlet.

Control screen

TFT screen displays in covert red color all important information for the operator – current gear, battery charge level, remaining run time, and trigger time. With an installed power converter, it also displays the power intake and the voltage used by the connected device.

Fast dimming – the operator can quickly dim, or turn off the screen to avoid detection.

Ergonomic double steering handle with two triggers allows driving the scooter with one, or both hands. Pre-defined "double tap" functionalities provide instant acceleration to the maximum speed when needed.

One-handed control allows to fully control Seacraft scooters with one hand – including changing speed, and activating the engine.



Working efficiency

Seacraft's DPC is one of the first submersibles with a fully modeled hydrodynamic shielding, designed for the diver. It dramatically reduces a diver's drag, and water resistance, allowing for a very long range with high speed.

All elements of the drive system – engine, propeller, propelling nozzle, and post-swirl stator – were precisely designed taking into account speed and load parameters divers encounter under the water. The three-phase motor (currently the only one on the market) is controlled with a BLAC algorithm, minimizing the energy consumption. Seacraft devices have exceptional work efficiency and consume even up to **half the energy** required for propulsion as competing devices.





Power management

External hermetic charging socket allows for quick recharging of the scooter, without the need to open the unit. It is waterproof to 150 m, even without the charging port cap.

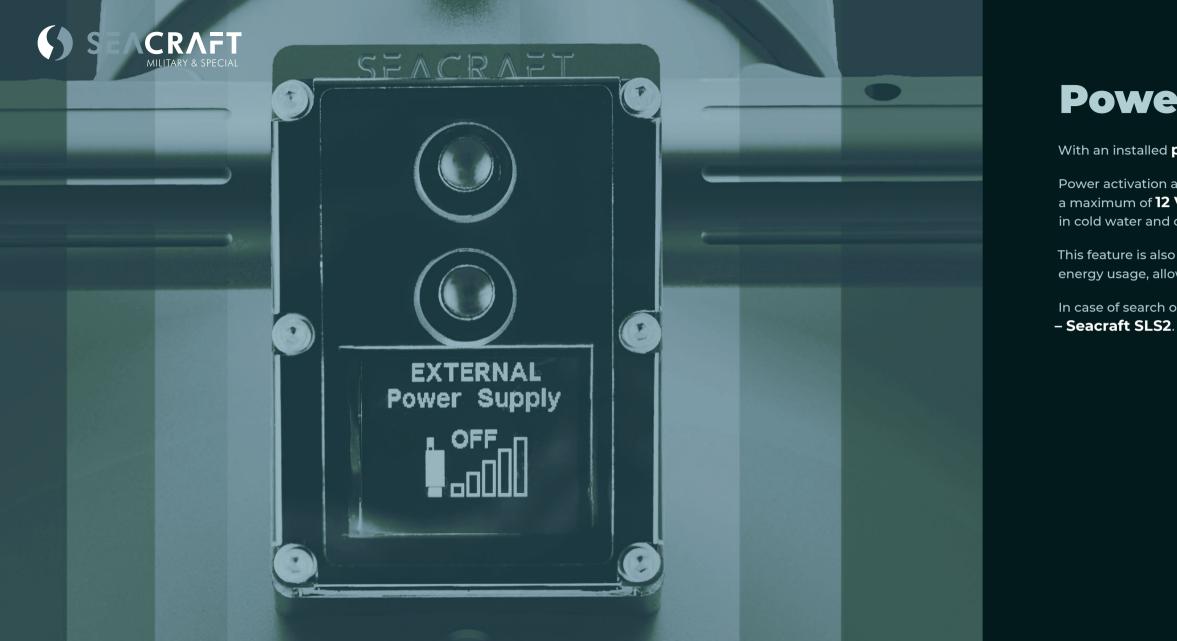
Seacraft scooters use the latest generation of **lithium-ion batteries**, characterized by very high capacity, high efficiency, resistance to harsh environments, and short charging times. The integrated battery control system provides constant multi-level protection and cell balancing. For special applications, optional Ni-Mh batteries may be installed.

Fast recharging means, that the standard battery will be recharged fully within 2-3 hours.

helicopter drop handling.

Battery construction is based on hard-welded cells, with asymmetric weight distribution. This results in a 'handles-up' position underwater, which provides easier and more intuitive operation. The battery is sealed and thus protected from damages due to water contact. It can be easily replaced with a new one or charged outside of the scooter.

Trimming system provides neutral buoyancy in all water salinities. It can be also configured to have a negative, or positive buoyant scooter. In addition, an optional external trimming system allows for easy



Power outlet

With an installed **power converter**, Seacraft DPVs may power external devices from their own battery.

Power activation and voltage choice are possible via the DPV's steering panel – in 5 steps, with a maximum of **12 V provided**. This allows for smooth control of the diver's personal **heating systems** in cold water and during long missions.

This feature is also used to connect external sonar scanning and navigation systems, which have a high energy usage, allowing for long operations **without additional battery packs**.

In case of search or patrol night missions, it is also possible to connect a dedicated **lighting system** – **Seacraft SLS2**.





is an extremely lightweight and powerful unit. Weighting just 15,75 kg, it is widely used where mobility and speed of reaction are crucial. Despite the very compact size, its range and speed are superior to most other, bigger scooters.

FM 1742

Scooter TAC1000 with additional ENC3M navigation console

TAC1000 scooter

Scooter TAC1000

Charger 400W 9S Lilon dedicated to TAC1000 | TAC2000 scooters

- hermetic charging port connector

Aluminium transport bracket Ø 160 mm

Universal sports camera mount, attached to the control module

Trimming weight 65 g – additional 3 pieces

Trimming weight 200 g – additional 2 pieces

Scooter harness 1,8 m with carabiner and two tensioners

Spare parts set for TAC1000 – set of seals, grease for seals, grease for engine, spare buttons

Direct battery charging connector for TAC1000 and TAC2000 scooters (hermetic plug)

Service key





is the most powerful and long lasting scooter in its class. With over 11 h runtime and a range of over 30 km, it is a tool for most demanding operations. Designed to withstand depths over 300 m, it can be easily transported outside of bigger submersibles, and weighing still only 22,75 kg does not create any problem to be carried by a single person. The perfect working base for Seacraft modular dual-scooter platform.

GM 1744

Scooter TAC2000 with additional ENC3M navigation console

TAC2000 scooter

Scooter TAC2000

- Charger 400W 9S Lilon dedicated to TAC1000 | TAC2000 scooters
- hermetic charging port connector
- Aluminium transport bracket Ø 208 mm
- Universal sports camera mount, attached to the control module
- Trimming weight 65 g additional 3 pieces
- Trimming weight 200 g additional 3 pieces
- Scooter harness 1,8 m with carabiner and two tensioners
- Spare parts set for TAC2000 set of seals, grease for seals, grease for engine, spare buttons
- Direct battery charging connector for TAC1000 and TAC2000 scooters (hermetic plug)

Service key



Diver using TAC2000 with assembled ENC3M on support base

MODEL MOTOR

Working time at op Working time at m Range* Range at maximur Maximum static th Top speed*** BATTERY Battery Li-Ion capa Nominal battery vo Maximum battery Minimum battery Charger operating Average time of ch Average time of ch DIMENSIONS Dimensions in mi Housing diameter Weight without ba Weight with batter

	TAC1000	TAC2000
ptimal speed (45 m/min.)*	>350 min.	>700 min.
naximum speed (gear 9)*	>95 min.	>220 min.
	>15,7 km	>31,5 km
m speed**	>7 km	>14 km
nrust	>350 N	>350 N
	>1,6 m/s	>1,6 m/s
acity	1000 Wh	2000 Wh
oltage	32,4 V	32,4 V
voltage (after charging)	37,8 V	37,8 V
voltage (after discharging)	26 V	26 V
y voltage (230 V, 50 Hz)	400 W	400 or 900 W
narging 90 %	3 h	6 or 3 h
narging 100 %	4 h	7 or 3,5 h
imeters	845 × 360 × 410	800 × 360 × 410
	160 mm	208 mm
attery and ballast	10 kg	12 kg
ry and fresh water ballast	15,75 kg	22,75 kg

Applicable in terms of a diver in standard chestmount oxygen rebreather, in a dry suit, in fresh water. Range tested for optimal speed.

Applicable for the diver in test configuration*, and gear 9. DPV automatically decreases maximum available power to gear 7, when the battery reaches 20 % of charge. For the exact speed profile, ask the manufacturer.

*** Top speed is acheived in lighweight configuration, using a special booster gear '+'



-



atter second at the

Dual scooters are used, where a **higher pulling force** and **cargo-transport capabilities** are required. The coupling platform has built-in, water-trimmable innovative buoyancy compensation chambers, allowing to assemble a navigation system, special equipment or simply load it with dry-bags.

scooters.

Seacraft dual-scooter platforms

A very easy and quick coupling system allows to split it in a few seconds into two fully independent



TFM1_1742 Dual TAC1000 platform – coupling system gen. II, wide platform

Dual TAC1000 with narrow platform, SLS2 and ENC3M with folded GPS mast.

IFMI_1742	DL
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	Bal
	Spa (sea spa pro cha

ooter TAC1000 – 2 pieces

uminium transport box with dedicated insert foam for dual TAC1000 platform – 2 pieces

1000 scooters coupling set – gen. II, wide platform

arger 400W 9S Lilon dedicated to TAC1000 I TAC2000 scooters permetic charging port connector

versal sports camera mount, attached to the control module – 2 pieces

mming weight 65 g – additional 6 pieces

nming weight 200 g – additional 4 pieces

poter harness 1,8 m with carabiner and two tensioners – 2 pieces

ect battery charging connector for TAC1000 and TAC2000 scooters (hermetic plug) – 2 pieces

vice key – 2 pieces

ooter trigger's lock (for two triggers) – 2 pieces

v bar – 2 pieces

last belt for TAC1000 – 2 pieces

are parts set for dual TAC1000 platform eals set for TAC1000 scooter – 14 pieces, grease for seals 100 ml, engine grease 10 ml, are rubber buttons for steering module – 8 pieces, scooter's screen protective foil – 2 pieces, opeller – 2 pieces, cap nut – 2 pieces, post-swirl stator – 2 pieces, arger socket cap with 2 seals – 2 pieces)



TGM1_1744 Dual TAC2000 platform – coupling system gen. II, wide platform

Aluminium transport box with dedicated insert foam for dual TAC2000 platform – 2 pieces TAC2000 scooters coupling set – gen. II, wide platform Charger 400W 9S Lilon dedicated to TAC1000 I TAC2000 scooters - hermetic charging port connector Universal sports camera mount, attached to the control module – 2 pieces Trimming weight 65 g – additional 6 pieces Trimming weight 200 g – additional 4 pieces Scooter harness 1,8 m with carabiner and two tensioners – 2 pieces Direct battery charging connector for TAC1000 and TAC2000 scooters (hermetic plug) – 2 pieces Service key – 2 pieces Scooter trigger's lock (for two triggers) – 2 pieces Tow bar – 2 pieces Ballast belt for TAC1000 – 2 pieces Spare parts set for dual TAC2000 platform (seals set for TAC2000 scooter – 18 pieces, grease for seals 100 ml, engine grease 10 ml, spare rubber buttons for steering module – 8 pieces, scooter's screen protective foil – 2 pieces, propeller – 2 pieces, cap nut – 2 pieces, post-swirl stator – 2 pieces, charger socket cap with 2 seals – 2 pieces)

Dual TAC2000 with wide platform, and ENC3M platform

Scooter TAC2000 – 2 pieces



MODEL

TFM1_1742	TGM1_1744
>490 min.	>980 min.
>95 min.	>220 min.
>22,1 km	>44,1 km
>9,1 km	>18,2 km
>700 N	>700 N
>2,0 m/s	>2,0 m/s
2 × 1000 Wh	2 × 2000 Wh
32,4 V	32,4 V
37,8 V	37,8 V
26 V	26 V
400 W	400 or 900 W
3 h	6 or 3 h
4 h	7 or 3,5 h
	 >490 min. >95 min. >22,1 km >9,1 km >700 N >2,0 m/s 2 × 1000 Wh 32,4 V 37,8 V 26 V 400 W 3 h

ms of a diver in standard chestmount oxygen rebreather, in a dry suit, in fresh water. Range tested for optimal speed.

** Applicable for the diver in test configuration*, and gear 9. DPV automatically decreases maximum available power to gear 7, when the battery reaches 20 % of charge. For the exact speed profile, ask the manufacturer.

*** Top speed is acheived in lighweight configuration, using a special booster gear '+'









Power Converter

DM 1701

Power converter with E/O cable output (70 cm) – installed in new Seacraft scooter

UM 1093

E/O cable output – adapter + cable only (70 cm)



Light system



UM 1798

Seacraft Light System SLS2

SLS2	
Light output:	2 × 3600 lumens
Power	2 × 30 W
Beam angle	14°
Colour temperature	5700 K
LED type	2 × XHP70.2
Power supply	DC stabilized 12 V / 2.5 A via DPV's power converter and external E/O power outlet
Thermal protection	Yes
ON/OFF control	Individual, with a magnetic slide switch
Brightness adjustment	Via the buttons on the DPV display
Working time	Depending on the battery capacity. As an example: Minimum 15 h at 100 % power with a fully charged Seacraft 1000 Wh battery (when the DPV engine is not running)



Batteries





FM 1746

Battery dedicated to scooter TAC1000, nominal voltage: 37,5 V; nominal capacity: 1000 Wh; weight: 5,5 kg



GM 1748

Battery dedicated to scooter TAC2000, nominal voltage: 37,5 V; nominal capacity: 2000 Wh; weight: 10,5 kg





UM 1750

Charger 400 W 9S Li-Ion dedicated to TAC1000 and TAC2000 scooters

UM 1785

Charger 900 W 9S Li-Ion dedicated to TAC2000 scooter

UM 1751

Direct battery charging connector for TAC1000 and TAC2000 scooters.



Chargers





UM 1758

Charger 400W 9S Li-Ion dedicated to TAC1000 and TAC2000 scooters – hermetic charging port connector

UM 1756

Charger 900W 9S Li-Ion dedicated to TAC2000 scooter – hermetic charging port connector



UM 1754

Direct battery charging connector for TAC1000 and TAC2000 scooters (hermetic plug)

UM 1755

USB charging outlet $(2 \times 5 V)$ – from scooter's hermetic charging port.

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Transport cases



SEACRAS

Allows for connecting two independent scooters together, in order to create a dual-scooter platform



Aluminium transport box with dedicated insert foam for dual TAC1000 platform



TGM 1720

Aluminium transport box with dedicated insert foam for dual TAC2000 platform



Coupling platforms

TUM 1000

Scooters coupling platform – wide, for cargo bags or ENC3M platform (dedicated to TAC1000 and TAC2000 scooters) with adjustable buoyancy floats - gen. II

TUM 1100

Scooters coupling platform – narrow (dedicated to TAC1000 and TAC2000 scooters) with adjustable buoyancy floats – gen. II



Example of coupling set assembly, narrow platform and TAC2000 brackets.

TFM 1800

TAC1000 scooters coupling set – gen. II, wide platform

TGM 1800

TAC2000 scooters coupling set – gen. II, wide platform

TFM 1500

TAC1000 scooters coupling set – gen. II, narrow platform

TGM 1500

TAC2000 scooters coupling set – gen. II, narrow platform

Each coupling set contains the chosen platform (wide or narrow), 4 matching transport brackets and 5 coupling connectors sets (one as a spare).



Coupling connectors

Multipurpose brackets



TUM 1758

Coupling connector's set – front and rear – 1 piece

FM 1757

Multipurpose transport bracket Ø 160 mm (dedicated for TAC 1000 model)







Transport brackets

FM 1751

Aluminium transport bracket Ø 160 mm (dedicated for TAC1000 models)

GM 1753

Transport bracket Ø 160 mm (dedicated for TAC1000 models)

FM 1752

Aluminium transport bracket Ø 208 mm (dedicated for TAC2000 models)

GM 1754

Transport bracket Ø 208 mm (dedicated for TAC2000 models)





UM 1792 Scooter trigger's lock – 2 pieces

Used for temporary locking scooter's trigger. Very useful on long-range distances.

UM 1793

Tow bar. Highly increases operator's comfort, by transferring scooter's pull on the body in optimal way.



UM 1767

Universal ball mount, attached to transport bracket



UM 1757

Universal sports camera mount, attached to the control module

UM 1759

Internal scooter ballast mounting plate

UM 1775

Trimming weight 65 g – "model 2020"

UM 1776

Trimming weight 200 g – "model 2020"

UM 1760

de

Scooter harness 1,8 m with carabiner and two tensioners



A A	UM 1761	
	Professional aluminium tensioners, 2 pieces	
		TANT .
	UM 1762	
Q -0	Harness for the nose of scooter with a carabiner	
	UM 1764	
5	Service key	
•	FM 1765	
SEACRAFT	Universal Scooter stand 160 mm (dedicated for TAC1000 models)	

GM 1766

Scooter stand 208 mm (dedicated for TAC2000 models)

FM 1755

Ballast belt for TAC1000

GM 1756

Ballast belt for TAC2000

UM 1782

Marine propeller

49



50

9	UM 1783		
ک	Cap nut		
	UM 1789		
	Post swirl stator		
	UM 1784		
2	Charger socket cap – "model 2017		The second se
	UM 1791		
Ź	Charger socket cap – "model 2020)"	
		and Contraction and Contraction	

GM 1788

Rotor

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FM 1762

Seals set for TAC1000 scooter – 7 pieces

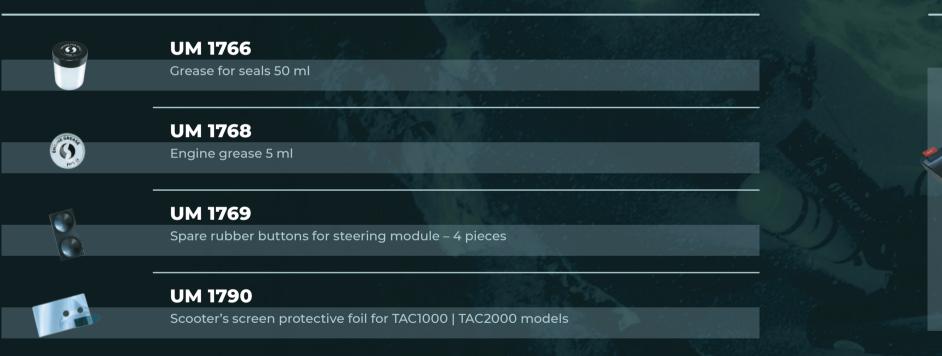
GM 1763

Seals set for TAC2000 scooter – 9 pieces

UM 1765

Grease for seals 14 ml





TF M 1757

Spare parts set for dual TAC1000 platform (seals set for TAC1000 scooter – 12 pieces, grease for seals 100 ml, engine grease 10 ml, spare rubber buttons for steering module – 8 pieces, scooter's screen protective foil – 2 pieces, propeller – 2 pieces, cap nut – 2 pieces, post-swirl stator – 2 pieces, charger socket cap – 2 pieces)

TG M 1757

Spare parts set for dual TAC2000 platform (seals set for TAC2000 scooter – 16 pieces, grease for seals 100 ml, engine grease 10 ml, spare rubber buttons for steering module – 8 pieces, scooter's screen protective foil – 2 pieces, propeller – 2 pieces, cap nut – 2 pieces, post-swirl stator – 2 pieces, charger socket cap – 2 pieces)





is a user-friendly **navigation system**, working based on IMU and dead-reckoning principles. This results in a very compact, lightweight, and affordable navigation system, which often outperforms big traditional underwater navigation systems.

It can be used in various operation modes:

Diver using TAC2000 with assembled ENC3M on support base



standalone, without any sensors – with attached GPS module – works perfectly for subsurface operation, or as simple dive parameters and navigation display for a diver;

with connected speed sensor, allows for **precise navigation** in full diving mode;

• in a complete set with speed sensor and **GPS buoy** assembled on a dedicated support base (which allows assembling also backup measurement instruments). This system supports navigation in full diving mode while recalibrating the fixed position covertly (if required), in order to improve the approach precision.





The **ENC3M** is designed in a way, that supports the operator in fulfilling various mission types. Different GPS receivers may be connected to a standard device:



Modular construction

• **Rigid mast** optimized for the low hydrodynamic draft. It is used when stopping is not an option, or a constant position fix is needed (in rivers for example);

> • **GPS type B** module receiver which can be installed directly on the console, with a 10 cm compact cable connection. The same module can be directly attached to the ENC3M with a 10 cm cable or used with a 3 m, or 10 m long cable and additional buoyancy floats. Cables can be easily switched with the same GPS module.





ENC3M navigation system

PEM 1800	Navigation platform ENC3M – complete set
	Electronic Navigation Console ENC3M
	Electronic Navigation Console ENC3M speed sensor type B
	GPS buoy dedicated to ENC3M – type A (includes GPS receiver hard-fixed on 10 m cable)
	Support base for mounting ENC3M and backup measuring instruments (compass, depth meter, chemical light)
	Transport case with dedicated insert foam for ENC3M navigation platform
	Charging cable for ENC3M
	Spare parts set for ENC3M (speed sensor – 1 piece, screen's protective foil – 1 piece, spare seals set – 1 set [4 pieces], charging port plug – 2 pieces, spare rubber buttons for ENC3M console – 4 pieces)



ENC3M



EM 1730

Electronic Navigation Console ENC3M

EM 1731

Electronic Navigation Console ENC3M speed sensor type B

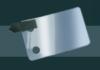


EM 1733

GPS buoy dedicated to ENC3M – type A (includes GPS receiver hard-fixed on 10 m cable)

EM 1782

Electronic Navigation Console ENC3M speed sensor – type C (compact)



2



EM 1700

ENC3M spare parts set (speed sensor – 1 piece, screen's protective foil – 1 piece, spare seals set – 2 pieces, charging port plug – 2 pieces)

EM 1735

ENC3M screen's protective foil

EM 1736

Spare seals set for ENC3M – 2 pieces

EM 1737

ENC3M charging port plug

EM 1738

Charging cable for ENC3M



ENC3M



EM 1720

GPS module dedicated to ENC3M – type B, module only

EM 1825

GPS type B float – to send GPS receiver to the surface



DPC – Diver Propulsion Craft

is a lightweight, fast, long-range, multi-use (surface and underwater) transport vehicle. In order to move faster underwater, we created a fully hydrodynamic shielded high-power craft, made from lightweight composite materials. It can work both as a "small boat" – using an integrated inflation / emergency breathing system, as well as fully submerged SDV (max. depth up to 100 m).

Features:

- Intuitive use, not requiring specialistic training

- Easy transportation
- Lowest weight in this class
- Safe battery voltages
- Very low detectability
- Abitilty to work in any climate conditions
- Extremely efficient and silent propulsion

- Optimised for comfort and ergonomy with high speed driving
- Great maneuverability both underwater, and on the surface
- Simple and robust modular construction
- Assembly and disassembly of components without tools
- Great mechanical resistance
- Big thrust, allowing to pull entire divers team
- Highly amagnetic construction



Norms, certifications and quality control

We ensure highest industrial standards for design and production of all our products. All Secraft products are manufactured in accordance with **AQAP 2110:2016** (NATO Quality Assurance Requirements for Design, Development and Production), ISO 9001:2015, and PN-EN ISO 14001:2015.

Seacraft factory quality control runs rigorous testing on every manufactured product. Each manufactured scooter goes through:

pressure chamber test – 60 minutes on test depth

battery capacity test with 25 A load

functional tests in water pool, with thrust measurement and monitoring and real burntime on maximum power

electrical and electronic tests

internal quality control with machining and production quality

Signed test reports are stored for each individual unit.











Seacraft provides the possibility of designing and developing solutions tailored for specific military and combat units needs. Marine Tech SA – the manufacturer of Seacraft DPVs – has a military concession and can manufacture combat-dedicated equipment when cooperating with relevant local partners, which also possess a military equipment trade concession. In order to discuss tailored military orders – **contact us**.

Marine Tech SA NCAGE code is 99QRH.

Customized military orders



To discover the full Seacraft military offer, contact us: www.seacraft.eu/military military@seacraft.eu