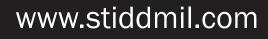


DIVER PROPULSION DEVICE

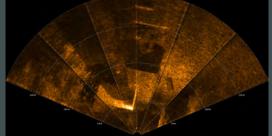




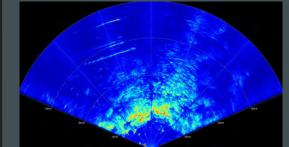


NEW! for 2016 **Precision Navigation** for Diver or DPD





S2 Dual Frequency SONAR





We Built The Best Combat Diver Vehicle ever ... and then

Made it Better

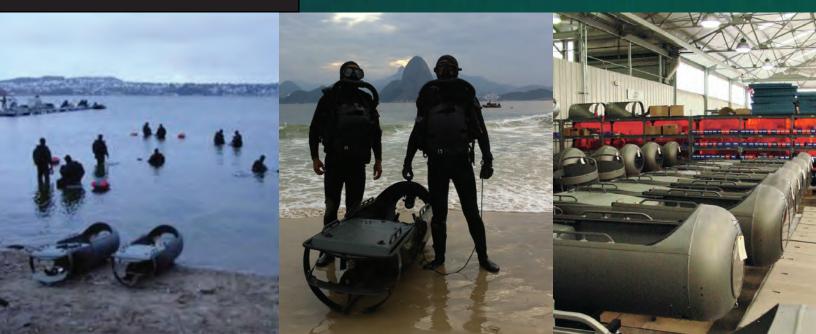


Navigation and Performance Enhancements for 2016





Over 500 DPDs in Operation Globally





The STIDD Diver Propulsion Device (DPD) Designed for and Certified by the U.S. Navy is the most widely used military-grade underwater mobility platform in the world.

Specifications & Features:

Submerged:	Fully submersible Diver Propulsion Device
Surface:	Craft can operate on the surface with very low profile
Hull:	Welded marine grade aluminum, hard coat anodized
Flotation:	Closed-cell PVC foam core composite
Viewport:	12 in (30.5 cm) diameter clear polycarbonate
Control:	Steering and depth control via a single-hand operated pitch/yaw control yoke.
Navigation:	Standard: Magnetic compass with luminous dial and depth gauge Optional: RNAV Electronic Navigation System with Doppler Optional: RNAV2 with SONAR and AUTOPILOT
Capacity:	1 or 2 divers (Can tow up to 4 additional divers)
Motor Controller:	Solid state pulse width modulator (PWM) motor controller
Propulsion:	Infinitely Variable Speed 28 VDC electric thruster

Operational Environment:

Surface:	Operational Temperature			
	(air)	20º F to 120º F	(-6° C to 48° C)	
	(water)	35° F to 95° F	(2º C to 35º C)	
Submerged:	Maximum Operating	g Depth:	115 FSW (35 m)	
	Optional: Deep Submergence (DS):		270 FSW (82 m)	
	Maximum Cache Time: 3 days			

Certifications:

Geruncations:					
AMU	DPD is the only export controlled "Approved for Military Use"(AMU) certified diver propulsion device in the world				
NAVSEA 9310	DPD Li-Ion Battery is 9310 certified				
NAVSEA 9290	DPD is Deep Submergence certified (pending)				
NATO NSN	NATO (National) Stock Number				
PATENTED: U.S. Patent N International Patents Per		TEDRITICIED			
Dimensions	5:	Contraction of the second			
LENGTH	Deployed: 87.8 in.	(223 cm) RTIF12			
	Stowed: 54.3 in.	(138 cm)			
BEAM/WIDTH	Deployed*: 42.5 in	. (108 cm)			
	Stowed: 24.0 in	. (61 cm)			
HEIGHT	Deployed: 24.0 in.	(61 cm)			
	Stowed: 24.0 in.	(61 cm)			

 \ast May be operated without bow planes which changes beam/width to 24 inches (61 cm)

* Dimensions vary depending on DPD Model selected

Navigate your way . . .

Introducing RNAV2 Precision Navigation for:



RNAV2 Precision Navigation System (p/n 4600-101) is an innovative electronic navigation system that can be either mounted in the DPD to enable precision navigation by combat

divers, or without divers for Autonomous Unmanned Vehicle (AUV) missions. Additionally, the RNAV2 can be dismounted in seconds for swimming in hand-held mode. In any role, the RNAV2 offers SOF personnel the unprecedented capability of a navigation tool for precise clandestine subsea navigation, mine countermeasures, beach reconnaissance, ship-attack, missions, object identification, and AUV operations.

The RNAV2 adjustable backlit 8.4" color LCD screen constantly displays the



RNAV2 installed in DPD

operator's position on a high resolution moving map display for instantaneous situational awareness. Position accuracy of 0.25% over distance traveled is achieved through a suite of high-accuracy on-board sensors and an optimized Kalman filter.

The RNAV2 is powered by an internal BB-2590/U Li-lon battery which provides system power for 7+ hours or 4.5+ hours when configured with the 2S Sonar Option forward imaging sonar.

RNAV2 includes the following cutting edge precision accuracy sensors:

- 600kHz Doppler Velocity Log (DVL)
- 3-axis compass module with sub 1° heading accuracy
- 40 channel GPS with <2.5m position accuracy
- Multi-state Kalman filter



The battery life enables 1500 full discharge cycles and is recharged though an external recharging port on the RNAV2. Recharge time is <8 hours. The simple to operate ergonomic input devices and user-friendly mission planning software allow all levels of users to create waypoints and routes and easily upload them into the RNAV2.



RNAV2 and AP2 Autopilot run on Greensea proprietary software

RNAV2 and AP2 Autopilot are powered by Greensea's proprietary Balefire software, which provides easy-to-use, highly accurate navigation and control system applications for military and commercial use. Surveillance, detection, identification, and prosecution of targets can be executed efficiently and repeatedly with the exclusive proprietary RNAV2/Greensea package.

The AP2 Autopilot provides instantaneous pitch, roll, and depth control for a stable platform and pinpoint navigational accuracy. Stability and control translates to accurate, reliable mission performance, while

divers in hostile environments are free to focus on the rather than vehicle control.

Greensea proprietary features:

- Station keeping
- Alarm management
- Target tracking
- Target-relative positioning
- Dynamic positioning
- Mission execution
- Single-screen, intuitive interface

Greensea's reliability, presentation, and performance make it the choice of leading military and scientific operators of manned, unmanned, subsea, and surface vessels worldwide.

Greensea partners with STIDD Systems, Inc. to provide advanced custom solutions for the DPD, RNAV2, AP2, Sub Boat, and other diver vehicles.

to Mission Success

DPD MOUNTED, DIVER PORTABLE & DPD-AUV Missions



The 2S Sonar Option for RNAV2 (p/n 4600-102) enhances the precision navigation capabilities of the innovative RNAV2, adding high quality forward-looking sonar images to the operator in low- and zero-visibility environments for precise long, or short range obstacle avoidance and/or target interrogation.



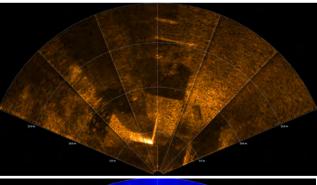
AP2 AUTOPILOT for RNAV2

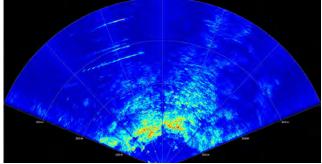


The AP2 Autopilot Option provides exceptional RNAV2 control of the DPD by dynamically adjusting vehicle pitch and heading, automatically keeping the DPD on its programmed or manually-selected course and depth, while accurately compensating for the effects of currents, diver motions, and changes in diver buoyancy.

AP2 Autopilot features include:

 AP2 Autopilot 2-axis control the of the DPD via integrated electro-mechanical actuators fitted to the pitch and rudder linkages of the DPD reduces power consumption, diver workload, and enroute time to destination by eliminating the inherent control inaccuracies of the typical oprerator.





Applications for the 2S Sonar Option for RNAV include:

- Zero visibility Navigation
- Object Detection
- Obstacle Avoidance
- Situational Awareness
- Operations Monitoring
- Area Survey/Search & Recovery
- Diver/Swimmer Detection & Tracking
- DPD-mountable and diver swimmable operation for maximum mission efficiency
- The AP2 eliminates manual heading errors, deviations, depth excursions, and delayed diver response to changing environmental conditions, allowing the operator to focus on critical mission functions.
- AP2 Software control algorithms provide a smooth and safe descent/ascent rate, protecting the divers from undesired excursions.
- Manual override of RNAV2 commands via the control yoke, allows the operator to quickly change heading or depth when required.
- In NAV Mode, the AP2 follows preset routes and depths programmed into the RNAV2 during the mission planning process, transiting directly to a commanded waypoint at a commanded depth.
- In HDG Mode, the AP2 follows diver-selected heading commands while maintaining the present depth.

DPD Models for all Missions . . .

STIDD now offers an expanded lineup of three different DPD Models optimized to execute any mission profile with different combinations of SPEED, RANGE, and PAYLOAD CAPACITY.



STANDARD MODEL

The STIDD Diver Propulsion Device (DPD) is the most widely used military-grade underwater mobility platform in the world. The DPD enables divers to travel farther and faster with more payload than previously possible with any other diver propulsion device.

- NAVSEA 9310 Certified
- Approved for US Military Use (AMU Listing)
- Under contract to USMC, US Army, USSOCOM and many International SOF Maritime Units

EXTENDED RANGE MODEL

With the addition of a second High Capacity "MUSCLES" Lithium-Ion Battery System, the Standard DPD with Extended Range Option effectively doubles the Range.

- 200% the Range of a Standard DPD
- Two Batteries Required
- Same Dimensions & Certifications as Standard DPD

DUAL THRUSTER XT MODEL

The DPD with Dual Thruster (DPD-XT) provides operators not only additional speed and range, but also two independently redundant propulsion systems. The DPD-XT maintains all of the Standard DPD's exterior dimensions and certifications. The DPD-XT utilizes two (2) standard DPD batteries which power two (2) standard DPD thrusters. For missions that require extended speed and range, the Dual Thruster DPD is an ideal platform.

- 33% Faster than Standard DPD
- Redundant propulsion improves mission safety
- Twin high efficiency, low noise direct drive DC thruster motors
- Two Batteries
- Additional towing capacity: Easily tows 3-4 divers with full load

All models have the same proven and reliable standard DPD Dimensions and US Navy Certifications.

IFIED

ALL DPD MODELS CE

APPROVED FOR

MILITARY USE (AMU)

With All the Power Required

All DPD Models now available with STIDD's High Performance TEC2 Thruster providing Brute Power for Maritime SOF.

High Performance TEC2 THRUSTER

TEC2 High Performance Thruster (p/n 4600-1-200)

Brute Power for Maritime SOF

All DPD models are available with STIDD's NEW high-efficiency TEC2 Thruster, which provides a 25% increase in speed over our standard MIK Thruster.

- **Proprietary Magnetically Coupled Drive**
- No dynamic seals to maintain
- **Innovative Nozzle and Ducted Propeller**
- **Increased Diver Safety**
- **Significantly Improved Efficiency**
- Self-Regulating Motor Load Electronics for improved reliability



MAXIMUM DPD SPEEDS*

DPD (Single MIK Thruster)	2.7kt
DPD-XT (Dual MIK Thruster)	3.5kt
DPD-TEC2 (Single TEC2 Thruster)	3.5kt
DPD-XT-TEC2 (Dual TEC2 Thruster)	4.2kt

*All DPD speed & range values are based upon (1) diver. Actual performance may vary with diver, training, environmental conditions and equipment.



DPD-XT-TEC2 (Dual Thruster)

(Single Thruster)

"MUSCLES" LITHIUM-ION POWER SYSTEM

Massive Unit Small Cell Lithium Energy System

Developed to give the DPD a better performing, more reliable, higher value, virtually maintenance-free power source, the DPD Lithium-Ion Battery System utilizes rigid cylinder lithium-cobalt cells - the most advanced, most mature cell technology available. Each "MUSCLES" battery consists of cells arranged in series and parallel arrays, monitored by proprietary control, balancing and safety circuits

The DPD Lithium-Ion Advantage

- **Maximum Performance with Minimal Maintenance**
- **NAVSEA 9310 Certified**
- May be shipped via commercial cargo aircraft
- Partial cycles are cumulative. No "memory" effect
- Best overall performance and economy of any electric propulsion system

U.S. and International Patents Issued and Pending

Haul all the Gear...

The DPD provides combat divers three (3) versatile options for carrying combat equipment to include; Internal, External, and Towable POD.

1. INTERNAL CARGO HOLD

Up to 3 ft³ (85L) of cargo can be stowed in the DPD's forebody section secured by a cargo net. Internal cargo can include diver personal gear or mission equipment. With optional Cargo Bag with Neutral Buoyancy Unit (NBU) Pouches and the optional (NBU) Packs, divers are able to make their internally carried cargo neutrally buoyant.





(Above) Cargo Bag contoured fits into the DPD cargo area. Once the bag is filled with equipment it can be made neutral with the addition of the NBU Packs.



(Left) Neutral Buoyancy Unit (NBU) Pack contains 64 NBU cells. Each cell provides 1lb (500g) of buoyancy. For use with the Contoured Cargo Bag, or other load out containers.

2. EXTERIOR CARGO TIE-DOWN POINTS

Versatile cargo points, positioned port and starboard on the DPD fore body, allow operators to attach weapons, hooks, and other cargo to the DPD while underway.





External



With Maximum Cargo Capacity

When all options are used together operators expand available cargo capacity to over 15 cu-ft (425L) enabling the easy transport of all required gear.

3. CP2 CARGO POD Low-Drag Towable Capsule

The new CP2 DPD Cargo POD (p/n 4510-400), provides an additional 12 cubic feet (340L) of cargo space with minimal additional drag, when towed behind the Diver Propulsion Device (DPD). Optimized for minimal drag using advanced CFD (Computational Fluid Dynamics), and extensively dive-tested under real world conditions, the Cargo POD is fabricated from marine alloy aluminum and hardcoat anodized for prolonged corrosion resistance and rugged durability. Neutral buoyancy is provided by hard-mounted rigid foam volumes in the nose and tail sections. The 21 inch (0.53m) diameter and 92.5 inch (2.4m) length are compatible with NATO submarine torpedo tubes.

DPD Cargo POD features:

- Hinged Hatch, allowing full access to the interior
- Positive spring-loaded gloved-hand operable hatch lock
- Internal tie down rails to secure gear
- Bow tow-eye for quick link to DPD
- Forward and aft lifting eyes for fast launch and recovery
- Stabilizing stern planes for positive tracking without pitch or yaw
- Multiple vents for quick fill/drain
- Four (4) Hand Holds for easy manual lift/carry



(Above) Internal tie down rails to secure gear

(Right) Forward and aft Lifting Eyes for fast launch and recovery



Bow tow-eye for quick link to DPD





CP2 Specifications:

Material: Finish: Hardware & fittings: Cargo Volume: Cargo Weight (air): Cargo Access: Cargo Hatch: Cargo length, max : Cargo hatch lock: Cargo Tie Downs: Drag Load: Diameter: Length: Weight, empty (air): Weight (salt water): Lifting Handles: Lifting Points:

Marine aluminum alloy Hardcoat anodized 316L Stainless steel 12 cu-ft (340L) 700 lbs (317kg) max Hinged hatch 18 in x 48 in (0.5m x 1.2m) 66 in (1.7m) Spring-loaded latch Three (3) 48 in (1.2m) rails Minimal 21 in (0.53m) 93.5 in (2.4m) 80lbs (36.3kg) Olbs (Okg) Four (4) Forward and aft

The POD weighs 80lbs (36kg) in air, and may be loaded with up to 700lbs (317kg) of neutrally buoyant cargo. The POD is towed from the DPD aft tow point. Horizontal and vertical Stern Planes keep the POD aligned within the shadow of the DPD, resulting in minimal additional drag. An additional Cargo POD may be added to double DPD cargo capacity from 12 cu-ft (340L) to 24cu-ft (680L).

DPD OPTIONS & ACCESSORIES

4600-101

RNAV2 Precision Navigation System

Innovative electronic navigation system for use by combat divers, mounted in the DPD, or dismounted in seconds for swimming in hand-held mode. Includes GPS, DVL, KALMAN Filter, internal battery and charger.

4600-102

S2 Sonar Option for RNAV2

Enhances the precision navigation capabilities of the RNAV2, adding high quality forward-looking sonar images to the operator in low and zero visibility environments for precise long or short range obstacle avoidance and/or target interrogation.

4600-120

AP2 Autopilot Option for RNAV2

Provides exceptional RNAV2 control of the DPD by dynamically adjusting vehicle pitch and heading, automatically keeping the DPD on its programmed or manually selected course and depth, while accurately compensating for the effects of current, diver motion, and changes in diver buoyancy.

4600-121

RNAV2 Tactical Mission Planning/Debrief Terminal

The mission planning workstation allows for a computerized method of planning and optimizing mission parameters for use with the RNAV2 navigation system. Post mission debriefing capabilities allows the users to review actual tracks and transit depths, recorded sonar images, marked target positions etc.

4600-125

RNAV2 DPD Mount & Mounting Provisions

Includes all DPD modifications and hardware required to mount and operate the RNAV2 in the DPD.

4600-126

RNAV2-S2 DPD Mount & Mounting Provisions

Includes all DPD modifications and hardware required to mount the RNAVS2 in the DPD. Requires 4600-125 RNAV2 DPD Mount & Mounting Provisions.

4600-127 GPS Float

Deployable/retractable GPS antenna cable reel with a 15m deployment length. GPS antenna in a buoyant pressure-proof float easily deploys to the surface by releasing out the minimum cable necessary to reach the surface. Clandestine low-viz GPS float quickly re-acquires signal even in heavy seas. Cable retracts via the hand crank spool eliminating the requirement to manually wrap the cable around a fixed spool. Other cable lengths available upon request.

4510-256 Standard RNAV with Doppler

High accuracy flat-screen electronic moving map navigation system for DPD. Provides exceptional accuracy for surface and submerged situational awareness on dimmable dual displays using GPS, DVL and heading sensor input data.

4510-258 RNAV Mission Planner (Only for use with Standard RNAV)

Enables full mission planning during operational preparation and transfer of information from mission planning PC to one or multiple RNAV systems. Download mission tracks recorded by the RNAV system to PC for mission debriefing. Includes: PC-Planner software, C-Map chip reader and 2MB user card.

4510-259

RNAV "C-Map" Digital Electronic Charts (Only for use with Standard RNAV)

Universally recognized database. Provides reliable topographic, obstruction, depth, navigational aid, and bathymetric data, worldwide. Specify required area of coverage.

4510-259 RNAV "C-Map" Digital Electronic Charts (Only for use with Standard RNAV)

Universally recognized database. Provides reliable topographic, obstruction, depth, navigational aid, and bathymetric data, worldwide. Specify required area of coverage.

4510-252

Deployable GPS Antenna

Pressure–proof GPS antenna on 49.5 inch (126 cm) locking and pivoting mast. Mounts to existing DPD. Provides signal to RNAV while submerged. Cable and connector included

4510-112

DPD "MUSCLES" Li-Ion Battery Charger

Charges one (1) DPD Li-Ion Battery from full discharge to full charge in eleven (11) hours. (NSN 6130-01-536-0585)

4510-118

Spare DPD " MUSCLES " Li-Ion Propulsion Battery

Contained in sealed Pressure-Proof Battery Container. (NSN 6140-01-536-0008)

451**0**-130

DPD Contoured Cargo Bag w/NBU Pouches

Cargo bag contoured to fit into the DPD cargo area and be made neutral with NBUs $\left(\text{p/n}\;4510\text{-}944\right)$

4510-131 Heavy-Duty Carry Bag DPD (A)

Protective Nylon zippered bag for hand-carrying the DPD.

4510-137

Maintenance Cart (B)

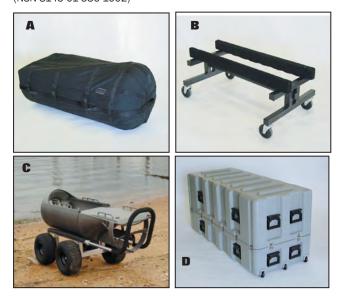
Wheeled cart for use when servicing or storing the DPD.

4510-138 DPD All Terrain Dolly (C)

Wheeled cart with welded aluminum frame, four (4) all-terrain tires and collapsible handle. Launches the DPD over rough terrain and over the beach to water.

4510-155 Reusable Shipping Container (D)

Molded IATA-Approved HDPE Container with foam inserts. For one (1) DPD plus Battery and Accessories. Stainless Hardware. (NSN 8145-01-536-1002)



DPD OPTIONS & ACCESSORIES

4530-9-332 Unique Identification (UID) Tag

Provides for the coding, identification and marking of DPD and selected options in compliance with MIL STD 130



4510-920

Extended Range Option

(Left) Doubles the range of a DPD, includes: B-Link Electronic Interface, (shown left) Neutral Buoyancy Cradle, Installation Hardware and O&M Manual. A second (spare) DPD "MUSCLES" Li-Ion Battery is required (p/n 4510-118). (NSN 4220-01-536-1467)

4510-935 Operational Spare Parts & Consumables

Includes the parts and consumables to operate one (1) DPD for approximately four (4) years. (NSN 4220-01-538-5983)

DPD Thruster Bench Test Power Supply is

included with DPD Long Term Maintenance

4510-940 Long Term Maintenance Spare Parts

Includes all spare parts required to perform DPD depot maintenance and non-warranty repair for one (1) DPD for approximately four (4) years. (NSN 2590-01-536-1576)



DPD Electrical Diagnostic Bench Test Kit is included with DPD Long Term Maintenance Special Tools.

4510-941

Long Term Maintenance Special Tools

Includes all special tools required to perform depot level maintenance. (NSN 4220-01-536-1448)

Special Tools.

4510-944 Neutral Buoyancy Unit (NBU) Pack

Contains 64 NBU cells, each cell provides 1 lb. (500g) of buoyancy. For use with Contoured Cargo Bag (p/n 4510-130) or other load out container. (NSN 4220-01-538-5980)

4510-943 Provisioning Parts List (PPL)

Listing of all recommended replaceable parts and LRUs for the DPD with current FY pricing. 4510-200 Field Service Kit All tools required to service and maintain the DPD while in operational deployment. (NSN 4220-01-538-5984)

DEEP SUBMERGENCE DPD OPTION

270 FSW (82m)

4500-100-DS Deep Submergence DPD Vehicle

Includes: All required NAVSEA Approved components to extend transport/operating depth to 270 FSW (82m), including: Deep Submergence DPD "MUSCLES" Li-lon Propulsion Battery in sealed Pressure-Proof Battery Container (p/n 4510-118-DS), Deep Submergence rated Thruster and Throttle pressure containers; and O&M Manual (p/n 4510-125). Charger (p/n 4510-112) not included.

4510-118-DS Deep Submergence DPD BATTERY

"MUSCLES" Li-Ion Propulsion Battery Same configuration as a standard DPD battery, but housed in a NAVSEA approved Machined Billet pressure container. When combined with Deep Submergence Upgrade Kit (p/n 4510-253), extends the transport/operating depth of a DPD (p/n 4510-100) to 270FSW (82m).

4510-253 Deep Submergence Upgrade Kit Kit includes all required NAVSEA approved component

Kit includes all required NAVSEA approved components to increase transport/operating depth of a standard DPD (p/n 4510-100) to 270 FSW (82m). Deep Submergence Upgrade kit does not include DPD Deep Submergence Li-lon Propulsion Battery (p/n 4510-118-DS), which must be purchased separately.

4510-210

Deployment Load Out Kit

All parts and consumables required to support the DPD during both operational deployment and emergency field repairs for one (1) DPD for approximately four (4) years. (NSN 4220-01-538-5985) 4510-125 DPD 0&M Manual CD format, in plastic case.

4510-930 Basic Maintenance & Operator Training Course (Level 1)

Comprehensive three (3) day Instructional course for up to ten (10) students, performed by a STIDD senior technician/operator at customer facility, covering all aspects of DPD maintenance and operation. Includes all consumables and travel costs for the instructor.

4510-931

Advanced Maintenance & Repair Training Course (Level 2)

Comprehensive two (2) day Instructional course for up to ten (10) students, performed at the STIDD facility or customer facility, covering all aspects of DPD maintenance and repair including troubleshooting and repair of key DPD components. Includes instructor travel costs.

(Requires p/n 4510-940 and p/n 4510-941)

4510-932 Factory Technical Support 4510-933

ON-SITE Technical Support * 4510-934

ON-SITE Operational Training and Support *

4510-220 Load Out Training & Support (Required with p/n 4510-210)

* For services rendered in CONUS. Consult factory for details.

MILITARY EXHIBIT SCHEDULE & IN-WATER DEMOS

Our military exhibit booth is an ideal place to see STIDD Sub Boats and discuss your requirements with STIDD's team of expert acquisition specialists. Please check our website for exact show dates.

STIDD also invites approved users to visit our Sub Boat Test Facility in South Florida for in-water demonstrations. On-site demonstrations at customer's facility are also possible. Contact STIDD for more details

With over 450 units in operation by US and International Special Operations Forces (SOF), the STIDD DPD is the most widely used Combat Diver Propulsion Vehicle (DPV) in the world.

STIDD Systems, Inc. is proud to support these Military Units and International Organizations, including:

- U.S. Special Operations Command
- United States Marine Corps
- Navy Special Warfare Command
- Army Special Forces Command
- North Atlantic Treaty Organization (NATO) Members and Major Non-NATO Allies (MNNA)
- Association of South East Asian Nation Members (ASEAN)

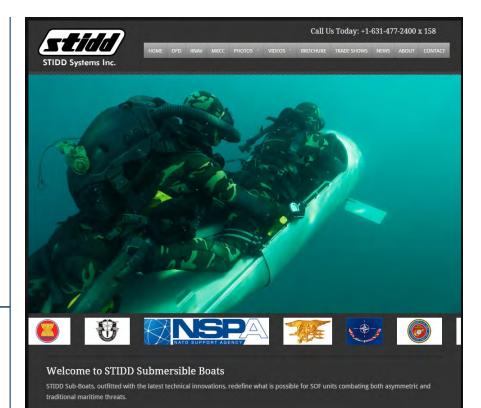


STIDD Systems Inc. P.O. Box 87 • 220 Carpenter Street Greenport, New York 11944 Phone: 631-477-2400 Ext. 158 Fax 631-477-1095 email: sales@stidd.com

CAGE CODE OW5E3

U.S. and International Patents Issued and Pending.

Specifications and availability of all STIDD Systems, Inc. products are subject to change without notice. REV 05/10/2016



stiddmil.com

The STIDD Military Products website includes the latest, most up to date unclassified information on STIDD Military Submersibles

To become an authorized STIDD Military Website User Contact: 631-477-2400 ext 158 or e-mail sales@stiddmil.com



- DPD (Diver Propulsion Device) Items Items are on GSA Contract No. GS-07F-0101K www.gsaadvantage.gov
- STIDD Systems is a Small Business Entity.
 - STIDD Submersible Boats are subject to ITAR controls. US Department of State DTC license required for export.

www.stiddmil.com

