

HOW I DID MY DPV RESEARCH

NAVIGATING THE NOISE, MANUFACTURER OPTIONS, AND AIR TRAVEL REGULATIONS



CUTTING THROUGH THE NOISE

When I started looking at DPVs, I realized there is a lot of noise out there. Everyone had a catch of why theirs was better than the competitors. I concentrated mostly on three main manufacturers: **Dive Xtras, SUEX, and Seacraft.**

Before making a decision, I needed to define my use case: since much of my diving involves travel, I needed something that could hold up to airline scrutiny, TSA scrutiny, my own scrutiny, and wouldn't break the bank or wear me out dragging it through airports. Domestically, regulations are uniform, but international travel introduces challenges—language barriers, misinterpretations, or local tourist taxes.

1. CHECKED BAGGAGE STRATEGY

- **Standard Limits:** US air carriers typically define a checked bag as 62 Linear Inches (*Length + Width + Height*) and under 50 lbs. Scuba gear easily taxes that weight limit.
- **The Upper-Tier Airline Loophole:** Many upper-tier carriers offer a dimension loophole for sporting goods equipment.
- **Sporting Goods Rule:** If categorized as sporting equipment (scuba is explicitly listed by carriers), bags up to 100 Linear Inches receive no oversize fee, as long as weight stays under 50 lbs.

CHECKED BAG CATCH

Even if the DPV frame fits checked bag rules, **lithium-ion batteries are strictly forbidden in checked luggage** with zero exceptions!

2. BATTERY & CARRY-ON REALITY

Internal Non-Removable Batteries: Must be brought inside the cabin as carry-on luggage.

- **Carry-On Size Tightness:** Standard carry-on limits are roughly 21.5" × 15.5" × 8" (45 Linear Inches)—giving you very little room to work with.
- **TSA / FAA / Airline Rules:**
 - Batteries < 100 Wh are permitted in carry-on.
 - Batteries 100–160 Wh are capped at a max of 2 batteries.
 - Anything > 160 Wh is not allowed.

3. THE CUMULATIVE BATTERY LIMIT WARNING

What catches most divers off guard is the total number of sub-100Wh batteries allowed. You are limited in the total quantity of batteries you can physically carry onto the aircraft.

When you tally up your DPV batteries alongside your dive lights, video lights, GoPros, cameras, dive computers, iPads, and phones—they all count together against your limit!

AVOID AN UNEDUCATED PURCHASE

That is a lot of mud to throw out there, but if you aren't aware of the current regulatory climate, it is very easy to make an uneducated purchase—only to be denied boarding on your way to a bucket-list trip. We definitely don't want that!

DPV SPECIFICATION SHEET

COMPREHENSIVE TECHNICAL & AIRLINE COMPLIANCE COMPARISON MATRIX



AIRLINE CARRY-ON RULES

DPVs with segmented battery modules under 100 Wh pass IATA carry-on flight limits. Single packs over 100 Wh are restricted.

MODULAR TOOL BATTERY

Dive Xtras models utilize dual commercial tool batteries (e.g., 2x DeWalt DCB612), yielding 6x97 Wh total flight-compliant modules.

COMPACT FORM FACTORS

Linear inches (L+W+H) dictate standard luggage packability. Seacraft GO! offers the smallest displacement at 44.5".

MASTER DPV SPECIFICATION COMPARISON TABLE

MODEL	DIMENSIONS (L×W×H)	LINEAR INCHES	WEIGHT	BATTERY TYPE	AIRLINE TRAVEL	TOTAL WH	SEGMENTED WH
SUEX VR NEMO	20.0" × 13.4" × 16.6"	50.0"	18.7 lbs (w/o) / 25.8 lbs (w/ batt)	Removable	NO TRAVEL	292.9 Wh	NOT SEGMENTED
SUEX VR VOYAGER	20.0" × 13.4" × 16.6"	50.0"	18.7 lbs (w/o) / 25.8 lbs (w/ batt)	Removable	TRAVEL FRIENDLY	355.6 Wh	4 × 88.9 Wh
SUEX VR QUANTUM	20.0" × 13.4" × 16.6"	50.0"	18.7 lbs (w/o) / 25.8 lbs (w/ batt)	Removable	NO TRAVEL	585.7 Wh	NOT SEGMENTED**
Dive Xtras Blacktip Travel	24.0" × 12.0" × 14.5"	50.5"	30.4 lbs (w/ 2x DCB612)	Removable (2x DCB612)	TRAVEL FRIENDLY	582 Wh	6 × 97 Wh
Dive Xtras Blacktip Tech	29.7" × 12.0" × 14.5"	56.2"	30.4 lbs (w/ 2x DCB612)	Removable (2x DCB612)	TRAVEL FRIENDLY	582 Wh	6 × 97 Wh
Dive Xtras CudaX Tech	24.6" × 12.5" × 15.0"	52.1"	34.4 lbs (w/ 2x DCB612)	Removable (2x DCB612)	TRAVEL FRIENDLY	582 Wh	6 × 97 Wh
Dive Xtras CudaX Exploration	29.9" × 12.5" × 15.0"	57.4"	40.4 lbs (w/ 2x DCB612)	Removable (2x DCB612)	TRAVEL FRIENDLY	582 Wh	6 × 97 Wh
Seacraft GO!	20.5" × 11.0" × 13.0"	44.5"	21.4 lbs (w/ batt)	Removable	TRAVEL FRIENDLY	582 Wh	6 × 97 Wh

TECHNICAL PLATFORM BREAKDOWN

SUEX VR Series Overview:

- **VR Voyager (TRAVEL FRIENDLY):** Designed for air travel with 4 × 88.9 Wh segmented sub-100Wh modules.
- **VR Quantum (NO TRAVEL):** High-capacity 585.7 Wh single-pack DPV for tech dives where AIR TRAVEL isn't required.
- **VR Nemo (NO TRAVEL):** Entry-level DPV with single 292.9 Wh pack exceeding 100 Wh carry-on limits.

Dive Xtras & Seacraft Comparison:

- **Dive Xtras Platform (TRAVEL FRIENDLY):** Powered by 2x commercial tool batteries (e.g. DeWalt DCB612). Each battery is internally split into 3 × 97 Wh modules, totaling 6 × 97 Wh (582 Wh total).
- **Seacraft GO! (TRAVEL FRIENDLY):** Ultra-compact DPV featuring a 582 Wh segmented battery (6 × 97 Wh) and industry-leading 44.5 linear inches.

* Travel classification rule: Units with non-segmented batteries > 100 Wh are designated NO TRAVEL. Units with segmented battery modules ≤ 100 Wh are designated TRAVEL FRIENDLY under IATA carry-on guidelines. Dimensions reflect full bounding box (shroud & handles).

**SUEX sells an optional battery pack that will make the DPV TRAVEL FRIENDLY.

DPV PERFORMANCE & PRICING

SPEED, BOOST MODE CAPABILITIES, CRUISE PARAMETERS, RANGE, AND TOTAL OWNERSHIP COST



BOOST MODE DYNAMICS
Provides temporary burst thrust beyond standard maximum continuous output. Useful for navigating high-flow currents.

CRUISE EFFICIENCY
Cruise metrics reflect cruising speeds designed to optimize battery endurance and total achievable distance.

POWER SOURCE CONSIDERATION
Performance metrics assume ideal conditions. Actual results vary depending on diver size, trim, and battery health.

PERFORMANCE & PRICING COMPARISON TABLE

MODEL	CONTINUOUS MAX SPEED	BOOST SPEED	BOOST RUNTIME	CRUISE SPEED	RUNTIME @ CRUISE	RANGE @ CRUISE	MSRP (USD)
SUEX VR VOYAGER	230 ft/min (70 m/min)	N/A (No Boost)	N/A	148 ft/min (45 m/min)	~130 min	~3.7 miles (6 km)	\$6,830
Dive Xtras Blacktip (Travel & Tech)	210 ft/min (64 m/min)	238 ft/min (72.5 m/min)	7 min	150 ft/min (45.7 m/min)	~123 min (w/ 2x 12Ah)	~3.5 miles (5.6 km)	\$2,089 (Travel) \$2,309 (Tech) + batteries (~\$250 ea; req. 2)
Dive Xtras CudaX Tech	290 ft/min (88.3 m/min)	324 ft/min (98.7 m/min)	1 min burst (up to 36 min/dive)	150 ft/min (45.7 m/min)	~190 min (w/ 2x 12Ah)	~5.6 miles (9 km)	\$7,499 + batteries (~\$250 ea) (req. 2 ea)
Dive Xtras CudaX Exploration	290 ft/min (88.3 m/min)	324 ft/min (98.7 m/min)	1 min burst (up to 36 min/dive)	150 ft/min (45.7 m/min)	~400 min (w/ 4x 12Ah)	~11.3 miles (18.1 km)	\$7,800 + batteries (~\$250 ea) (req. 4 ea)
Seacraft GO!	230 ft/min (70 m/min)	295 ft/min (90 m/min)	10 min	148 ft/min (45 m/min)	~220 min	~6.2 miles (10 km)	\$5,495

Manufacturer specifications subject to diver displacement, water salinity, temperature, trim, and battery health/configuration.

DPV FIELD OBSERVATIONS & VERDICT

PERSONAL INSIGHTS, ECOSYSTEM FLEXIBILITY, LONG-TERM RELIABILITY, AND
VALUE ANALYSIS



SUEX VR VOYAGER

WHAT I LIKE (PROS)

- **Brand Reputation:** Backed by SUEX's legendary engineering, premium build quality, and proven history in extreme exploration diving.
- **Travel-Friendly Battery:** Segmented 4 × 88.9 Wh battery design satisfies IATA carry-on rules without sacrificing internal battery integration.

WHAT I DISLIKE (CONS)

- **Price-to-Performance Ratio:** At \$6,830, it carries a heavy premium while offering modest speed (230 ft/min with no Boost Mode) and range (~3.7 miles).
- **Underwhelming Power:** Hard to justify the cost when competitors like the Seacraft GO! or Dive Xtras lineup deliver equal or superior speed and endurance for equal or substantially less money.

DIVE XTRAS LINEUP

WHAT I LIKE (PROS)

- **Open-Source Software:** Bluetooth access to open-source VESC software allows custom tuning of motor speed, power curves, and operational parameters.
- **Thriving User Ecosystem:** Strong community that actively shares custom firmware setups, tweaks, and technical insights outside factory walls.
- **Commercial Battery Convenience:** Uses standard power tool batteries (e.g., DeWalt FLEXVOLT). Easily replaceable anywhere globally if batteries fail on a trip.
- **Customization & Aftermarket Options:** Support for custom handles, accessory mounts, and optimization are readily available.

WHAT I DISLIKE (CONS)

- **Stock Handle Upgrades:** The provided factory handle on the Blacktip DPV line is functional, but it is usually one of the first upgrades performed by owners seeking tailored ergonomics.
- **Separate Battery Cost:** Base MSRP does not include required tool batteries (~\$250 each), adding \$500–\$1,000 to total initial investment.

SEACRAFT GO!

WHAT I LIKE (PROS)

- **Impressive Range-to-Size Ratio:** Outstanding ~6.2 miles of cruise range and ~220 min runtime in an ultra-compact 21.4 lb package.
- **Simple Mechanics:** The Magnetic driven propeller reduces the number of failure points. No shaft seal means one less place that could induce water into the DPV.
- **Strong Core Specs:** Excellent max speed (230 ft/min continuous / 295 ft/min boost) in a very lightweight form factor.

WHAT I DISLIKE (CONS)

- **Modular Reliability Risk:** Splitting the battery into six separate interlocking modules introduces six potential points of failure and additional electrical contacts to maintain.
- **Proprietary Ecosystem:** A closed system with no Bluetooth access or end-user ability to tweak and customize software settings.

Final observations represent personal testing, owner community feedback, and technical evaluation for airline-compliant DPV selection.

PERSONAL DECISION & FIELD VALIDATION

REAL-WORLD CAVE DIVING APPLICATION, LOCAL SUPPORT, AND FINAL RECOMMENDATION



1. REAL-WORLD FIELD OBSERVATIONS

- **Cave Guide Validation:** During extensive cave diving in Mexico (Yucatán Peninsula), the vast majority of DPVs encountered were either Dive Xtras (primarily Blacktips) or high-end SUEX units.
- **Local Market Presence:** Seeing local cave guides rely on Dive Xtras on a daily basis provided invaluable real-world proof of durability, ease of maintenance, and field reliability.
- **Seacraft Absence:** While Seacraft offers impressive specs on paper, they were virtually non-existent in Mexican caves likely due to a lack of local distribution and technician support.

2. COST & TRAVEL REALITY

- **SUEX Constraints:** High-end SUEX models were financially out of reach and impossible to travel with by air due to non-segmented battery packs.
- **Dive Xtras Advantage:** Provided the ideal balance of airline compliance, accessible entry cost, and modular versatility without travel compromises.

3. RUGGEDNESS & COMMUNITY

- **Built for Harsh Conditions:** Proven exceptionally rugged, holding up flawlessly to demanding environments, salt water, and rough terrain transit.
- **US-Made & Community Support:** Made in the USA with an active, thriving user and aftermarket community. Divers aren't locked into the manufacturer for upgrades.
- **Ecosystem Options:** Wide range of custom handles, accessory mounts, and aftermarket parts readily available.

4. PENETRATION & SAFETY

- **Heavy Towing Power:** Flawless runtime and thrust even when carrying multiple stage tanks, cameras, and heavy exploration gear.
- **Rule of Thirds Margin:** Diving limits are reached before battery thirds are reached during overhead penetration.

KEY DECISION FACTORS

- **Local Support Availability:** Mexico cave hub presence.
- **Power Tool Batteries:** Standard DeWalt tool packs replaceable anywhere.
- **Open-Source VESC:** Tailored power curves & speed parameters.
- **Airline Compliance:** Carry-on compliant sub-100Wh battery segments.

FINAL RECOMMENDATION & VERDICT

Overall, **Dive Xtras** has proven to be an outstanding investment for travel-based cave diving. It delivers an unbeatable combination of real-world endurance, field reliability, airline compatibility, and community-backed longevity.

Final observations represent personal testing, owner community feedback, and technical evaluation for airline-compliant DPV selection.