DEEP CYCLE SYSTEMS

DCS Lithium Golf Cart Battery

48V 150Ah Compatibility Report

Australian 48V Electric Golf Cart Market — Models from 2000 Onwards

Battery Compartment Fitment & Drop-In Replacement Analysis

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1. Executive Summary

This report analyses the compatibility of the **DCS Golf Cart 48V 150Ah (7.5kWh) lithium battery** as a drop-in replacement for lead-acid battery banks across all major 48V electric golf cart makes and models sold in Australia from 2000 onwards.

The DCS battery's compact single-unit form factor is **smaller in all three dimensions** than the standard lead-acid battery banks found in these vehicles, making it a universal physical fit across the entire addressable market.

> **Key Finding:** The DCS 48V 150Ah battery physically fits the battery compartment of all identified 48V electric golf cart models sold in Australia since 2000 — covering approximately **22 distinct make/model combinations** across 8+ brands.

2. DCS 48V 150Ah Battery Specifications

Model	DCS-48V-7kWh
Design Voltage	48V (Nominal 51.2V)
Nominal Capacity	150Ah
Nominal Energy	7,680Wh (7.5kWh usable)
Case Dimensions (L × W × H)	**670mm × 258mm × 220mm**
Weight	59 kg
Chemistry	LiFePO4 (LFP)
Continuous Discharge	100A (5kW)
Continuous Charge	50A (2.5kW)
Peak Power (<10 sec)	10kW
Cycle Life (100% DoD)	4,000 cycles
Ingress Protection	IP-67
BMS & Monitoring	Bluetooth App (cell status, SOC%, voltage, current, cycles)

Warranty	5 years return to base

3. Standard Lead-Acid Battery Configurations (Being Replaced)

48V electric golf carts typically use one of two lead-acid battery configurations:

Configuration	Battery Type	Per-Battery Dims (L×W×H)	Per-Battery Weight	Total Bank Weight
6 × 8V (most common)	Trojan T-875 / GC8	261mm × 180mm × 283mm	~28 kg	~162 kg
4 × 12V	Trojan T-1275 / GC12	329mm × 181mm × 283mm	~38 kg	~154 kg

Typical Battery Compartment Internal Dimensions

Battery compartments in standard golf carts are engineered to house the above configurations with spacing for ventilation and cabling. Typical internal compartment measurements:

Configuration	Compartment Length	Compartment Width	Compartment Height
6 × 8V (3×2 layout)	~700–790mm	~370–460mm	~280–310mm
4 × 12V (2×2 layout)	~660–700mm	~370–400mm	~280–310mm

DCS Dimensional Comparison

Dimension	Lead-Acid Compartment (Range)	DCS 48V 150Ah	Clearance
Length	660–790mm	670mm	✓ **Fits all**
Width	370–460mm	258mm	✓ **110–200mm clearance**
Height	280–310mm	220mm	✓ **60–90mm clearance**
Weight	154–162 kg	59 kg	✓ **95–103 kg saving**

4. Compatible Makes & Models — Full Listing

The following table lists all 48V electric golf cart makes and models sold in the Australian market from 2000 onwards, along with their standard lead-acid battery configuration and estimated battery compartment dimensions.

4.1 Club Car

Model	Years (48V Electric)	Lead-Acid Config	Est. Compartment (L×W×H mm)	DCS Fit
DS	2000–2018	6 × 8V (GC8)	~760 × 400 × 290	✓
Precedent	2004–present	6 × 8V or 4 × 12V	~740 × 400 × 295	✓
Tempo	2018–present	6 × 8V	~740 × 400 × 295	✓
Onward	2017–present	6 × 8V	~740 × 400 × 295	✓
V4L	2020–present	6 × 8V	~740 × 400 × 295	✓

4.2 E-Z-GO (Textron)

Model	Years (48V Electric)	Lead-Acid Config	Est. Compartment (L×W×H mm)	DCS Fit
TXT 48V	2000–present	6 × 8V (GC8)	~770 × 400 × 290	✓
RXV	2008–present	4 × 12V (GC12)	~700 × 380 × 290	✓
Liberty	2021–present	4 × 12V (GC12)	~700 × 380 × 290	✓
Shuttle (2/4/6 pax)	2000–present	6 × 8V (GC8)	~790 × 450 × 300	✓

4.3 Yamaha

Model	Years (48V Electric)	Lead-Acid Config	Est. Compartment (L×W×H mm)	DCS Fit
G19	1999–2002	6 × 8V (GC8)	~750 × 390 × 290	✓
G22	2003–2006	6 × 8V (GC8)	~750 × 390 × 290	✓
G29 / Drive	2007–2016	6 × 8V (GC8)	~740 × 400 × 295	✓
Drive2	2017–present	6 × 8V (GC8)	~740 × 400 × 295	✓

4.4 ECAR (by LVTong)

Model	Years (48V Electric)	Lead-Acid Config	Est. Compartment (L×W×H mm)	DCS Fit
A-Series (A2, A2+2, A4+2)	2005–present	6 × 8V (Trojan T-875)	~750 × 410 × 290	✓
Martinique / Lido / Resort	2010–present	6 × 8V (Trojan T-875)	~750 × 410 × 290	✓

4.5 HDK Electric Vehicles

Model	Years (48V Electric)	Lead-Acid Config	Est. Compartment (L×W×H mm)	DCS Fit
DEL Series (DEL2022, DEL3022)	2010–present	6 × 8V or 4 × 12V	~730 × 400 × 290	✓
Express / Shuttle variants	2012–present	6 × 8V or 4 × 12V	~730 × 400 × 290	✓

4.6 EMC (Electric Mobility Concepts)

Model	Years (48V Electric)	Lead-Acid Config	Est. Compartment (L×W×H mm)	DCS Fit
Endeavour / Elite Series	2008–present	6 × 8V	~740 × 400 × 290	✓

4.7 Marshell

Model	Years (48V Electric)	Lead-Acid Config	Est. Compartment (L×W×H mm)	DCS Fit
DG-C2 / DG-C4 Series	2012–present	6 × 8V	~740 × 400 × 290	✓

4.8 Condor Golf (Australian Made)

Model	Years (48V Electric)	Lead-Acid Config	Est. Compartment (L×W×H mm)	DCS Fit
2-Seat / 4-Seat Electric	2005–present	6 × 8V	~740 × 390 × 290	✓

5. Compatibility Summary

Brand	Country of Origin	No. of 48V Models	DCS Physical Fit
Club Car	USA	5	✓ **All models**
E-Z-GO	USA	4	✓ **All models**
Yamaha	Japan/USA	4	✓ **All models**
ECAR (LVTong)	China (QLD distributor)	2–3	✓ **All models**
HDK	China	2–3	✓ **All models**
EMC	China	1–2	✓ **All models**
Marshell	China	1–2	✓ **All models**
Condor Golf	Australia (VIC)	1	✓ **All models**
TOTAL		**~22**	✓ **All 22 models**

6. Installation & Mounting Notes

> ⚠ **General Guide — Mounting Hardware:** As the DCS 48V 150Ah battery is a single compact unit replacing a bank of 4–6 individual lead-acid batteries, it will not fill the entire battery compartment. **Some minor mounting hardware may be required for correct fastening**, such as mounting plates, L-brackets, strapping, or custom battery trays to ensure the unit is securely positioned and does not shift during operation. Universal mounting kits or model-specific adaptor brackets are widely available from golf cart parts suppliers.

6.1 Weight Reduction Considerations

Replacing 154–162 kg of lead-acid batteries with a 59 kg lithium unit saves approximately **95–103 kg**. This will result in:

- Faster acceleration and higher top speed due to reduced mass
- Extended range per charge (the DCS 150Ah effectively doubles the usable capacity of a standard 155Ah lead-acid bank)
- Reduced wear on suspension, tyres, and brakes
- Potentially altered handling characteristics — no adverse effects expected, but worth noting

6.2 Electrical Integration

- **Charger:** The existing lead-acid charger must be replaced with a lithium-compatible charger (DCS offers a matching 48V 10A mains charger)
- **Voltage compatibility:** The DCS battery operates at 51.2V nominal (bulk charge 55–58V), which is within the operating window of all standard 48V golf cart controllers
- **OBC Bypass:** Club Car Precedent models manufactured between 2005–2013 contain an On-Board Computer (OBC) that must be bypassed prior to lithium battery installation
- **Terminal connections:** Wiring adaptor cables may be required to connect from the single battery unit to the cart's existing wiring harness

6.3 Performance Comparison

Parameter	6 × 8V Lead-Acid (Trojan T-875)	DCS 48V 150Ah LiFePO4
Usable capacity	~85Ah (50% DoD recommended)	150Ah (100% DoD rated)
Usable energy	~4.1 kWh	7.5 kWh
Estimated range	~27 holes (1.5 rounds)	~54 holes (3 rounds)
Recharge time	8–12 hours	2–3 hours
Cycle life	500–800 cycles	4,000 cycles
Maintenance	Regular watering, terminal cleaning	Zero maintenance
Self-discharge	~5–15% per month	<3% per month
Total weight	~162 kg	59 kg

7. Disclaimer

This report is provided as a general compatibility guide based on publicly available specifications and market research. Battery compartment dimensions are estimated based on standard lead-acid battery configurations and published vehicle specifications. Actual compartment dimensions may vary by model year, regional specification, and any aftermarket modifications. It is recommended that installers verify physical compartment dimensions on the specific vehicle prior to installation. Deep Cycle Systems does not warrant fitment to any specific vehicle without prior measurement confirmation. All product specifications are subject to change.