Blue Diamond Machinery

Battery Box Hybrid BESS

(10 / 30 / 90)

Efficient. Adaptable. Sustainable.

OVERVIEW

Battery Box Hybrid is Blue Diamond Machinery's proprietary hybrid Battery Energy Storage System (BESS) range, developed for demanding construction, mining, and remote-site applications. Combining intelligent battery storage with integrated gensets and optional solar input, it delivers the perfect balance between reliability and emissions reduction.

Engineered at our Clean Energy Hub in WA, each unit is ONE-ready and fully supported by our national service network.

KEY BENEFITS

- Hybrid operation with battery, generator, and solar integration
- Reduces genset runtime by up to 85%
- Significantly cuts fuel usage and CO_2 emissions
- Seamlessly manages peak and variable site loads
- Silent battery-only mode for night or low-load periods (0 dBA operation)
- Eliminates inefficient light-load generator operation (wet-stacking)
- Fast deployment and plug-and-play setup
- Fully monitored via ONE Intelligent Energy platform
- Supported by Overwatch 24/7 live monitoring
- Seamlessly integrates with existing site infrastructure

WHAT MAKES BATTERY BOX HYBRID DIFFERENT?

- Built In-House: Designed, tested, and assembled at our Clean Energy & Engineering Hub in Henderson
- ONE + Overwatch Enabled: Real-time control, predictive diagnostics, and 24/7 human-backed monitoring
- All-in-One System: Genset, battery bank, inverter/charger, MPPT, and BMS integrated in a single rugged enclosure
- Mine-Spec Compliant: Skid-mounted, weatherproof, and compliant with Australian standards
- Modular & Scalable: Available in 10, 30, and 90 kVA configurations to suit all site sizes
- ESG Ready: Tracks diesel saved and emissions abated for compliance and reporting

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USE CASES

- Large civil or mining sites with high and variable load profiles
- Remote projects needing clean overnight power and high daytime demand
- Generator-limited sites looking to improve fuel efficiency
- Noise-sensitive environments or council-regulated operations

TECHNICAL HIGHLIGHTS

- Battery Chemistry: LiFePO4 (safe, long-life)
- Storage: Up to 150 kWh
- Power Output: 10 / 30 / 90 kVA variants
- Charge Controller: Integrated solar MPPT
- Inverter/Charger: Intelligent switchover & fast charging
- Genset: Integrated Denyo or equivalent, ATS ready
- Construction: Skid-mount, IP54, mine-rated
- Telemetry: ONE platform integration + Overwatch 24/7 support

EXAMPLE LOAD PROFILE

Typical construction site with 35kW peak and 5–10kW baseline → Battery Box Hybrid reduces runtime by 70–85% depending on solar contribution.

SUSTAINABILITY IMPACT

Battery Box Hybrid supports Net Zero strategies and environmental compliance:

- Tracks fuel and CO_2 savings automatically
- Delivers low or zero-emission operation depending on mode
- Provides downloadable reports for ESG, ISO, and tender documentation

WHY CHOOSE BATTERY BOX HYBRID?

- ✓ Built, supported, and serviced in Australia
- ✓ Integrated ONE + Overwatch for live visibility and proactive fault response
- ✓ Fast install, scalable output, and hybrid-ready
- ✓ Designed to meet council, mine site, and construction compliance
- ✓ Monitor multiple units across sites via ONE – ideal for fleet and rental operators
- ✓ Ideal for hire or permanent installation across industries

From compact 10kVA units to high-output 90kVA systems, Battery Box Hybrid is the flexible, intelligent solution to cut diesel, noise, and emissions without compromising performance.

Model: 10 kVA

Model: 30 kVA

Contact us for specs, custom integrations, and hire or purchase options:

info@bluedm.com.au 1300 998 647 www.bluedm.com.au

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Battery Box Hybrid 10 - 30

Battery Box Hybrid range -

Efficient. Adaptable. Sustainable. The Battery Box Hybrid range is designed to deliver optimal power solutions forconstruction and mining environments, maximizing fuel savings and minimizing emissions with integrated battery and solar options.

Includes access to ONE Intelligent Energy -

a fleet management platform designed to use advanced analytics to reduce OPEX and achieve sustainability targets.

General	
Model	Battery Box Hybrid 10/30
Rated Output Power	10kW
Maximum Apparent Power	10kVA
Maximum Active Power	10kW
Rated Voltage	240 Vac
Rated frequency	50 Hz
Power Factor	+/-0.8
Overload Capacity	100A 1S
Ingress Protection	IP54
Operating Temerature	-20 to +50oC
Sound Level	75dBA

Battery	
Battery Type	LiFePO4
Battery Module Quantity	6 units
Nominal Battery Energy	30.72kWh
Nominal Capacity	100Ah
Nominal Voltage	51.2V
Operating Vol. Range	44.8-57.6V
Nominal Power Output	30KW
Max. Power Output	30.72kW
Recommend Charging Current	50A
Recommend Discharging Current	50A

MPPT	
Rated Power	5800W
Rated charge current	100A
Battery voltage	48V
Max. PV short circuit current	70A
Input rated voltage	250V
Input voltage range	245~250Vac
Input current	≤23A
Maximum efficiency	99%

Battery Box Hybrid 10kVA	
Battery Capacity	45 kWh
Max Output	10 kW
Max Charge Rate	15 kW
Genset Size	15 kVA
Fuel Type	Diesel/Natural Gas
Battery Strings	1
Voltage	52V
Ideal Load Range	5 - 8 kW
Fuel Savings	Up to 50-70% (No Solar) / 70% (With 2 Solar Pods)
Ideal For	Small construction sites or low-load scenarios

Genset	
Rated power	15kVA/12kW
Rated voltage	240V
Rated frequency	50Hz
Rated current	55A
Fuel tank running hour	36H

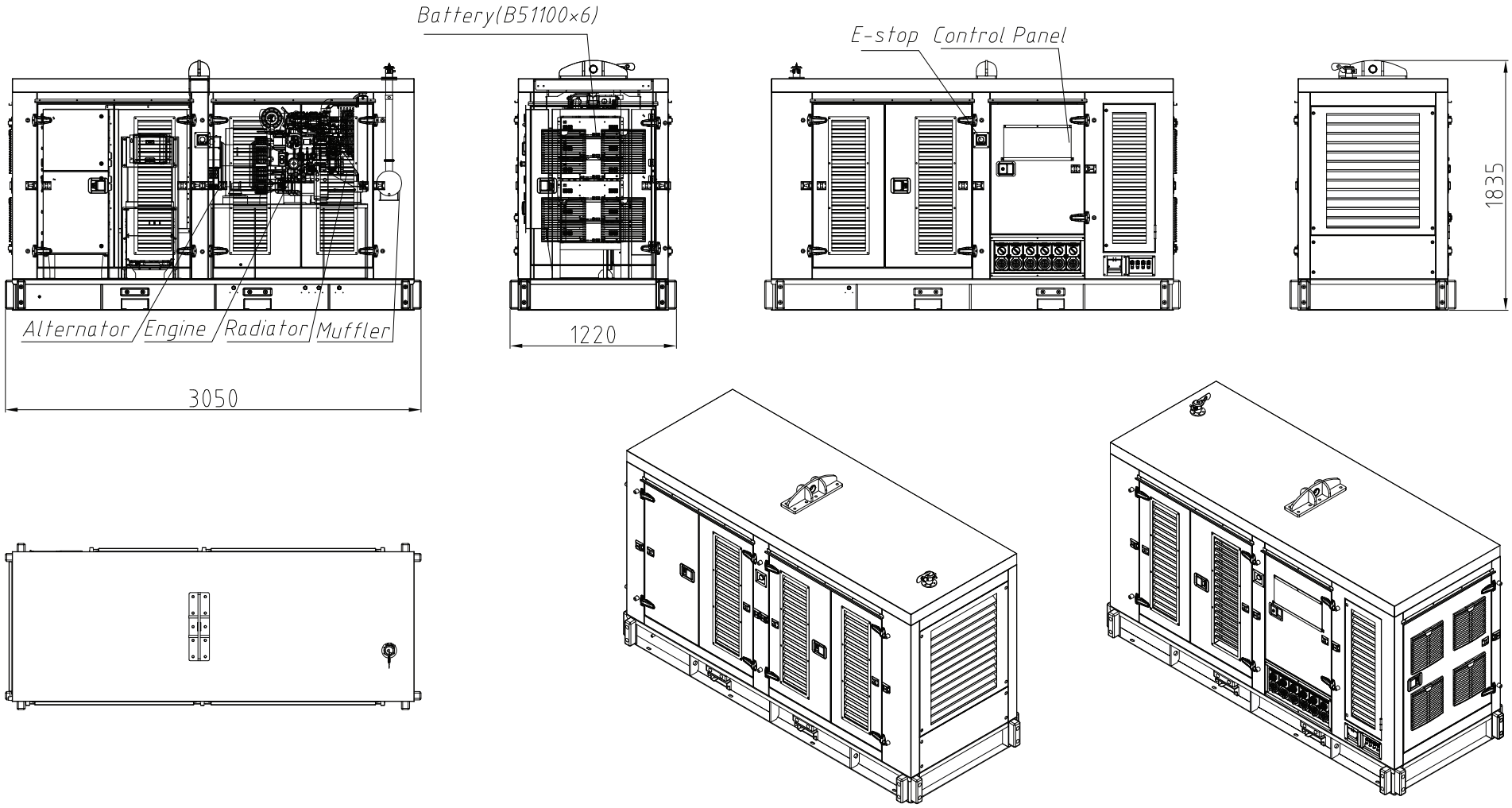
Overall	
Dimensions (LxWxH)	3050x1220x1835 mm
Weight	2400 Kg
Lift Points	Forlift Pockets, Lift & Drag Skid

Fuel savings estimates are based on the following load profile data

Peak Load (kW)	Low Load (kW)	Solar Contribution (kW)	Runtime Reduction (%)	Max Savings (L/week)
7 kW	5 kW	8 kW	70%	**120 L**

Typical Construction Site Load Profile: Peak load of 35 kW for short durations and low load of 5-10 kW for the majority of the time.

Savings percentages are calculated both with and without solar pods. Actual savings may vary based on specific site conditions, usage patterns, and solar availability. All models are equipped with a built-in Genset ATS and BESS controller for seamless integration with site requirementsand optimal performance.



Fuel Tank Capacity : 160L 36Hrs@100%Load

Dimension : 3050mm x1220mm x1835mm

Dry Weight : 2400KG

AS BUILT

February 12, 2025

ORDER CODE: ADG24H32P102	SCALE: Not to Scale	MATERIAL:	QUANTITY: / WEIGHT:
	2025 / DATE / NAME / SIGNITURE	PART NAME: GA	
	DRAWINGED BY 12/02 YUN	USED FOR: APG-Hulk 10/30	
	CONTROLED BY 12/02 SUN		
	APPROVED BY 12/02 LIANG		
	DEPARTMENT: Engineering	PART NO.: PSG16.5/15	LOCATION: BUILDING 655 / A3
	BLUE DIAMOND MACHINERY	DRAWING NO.: AUPS15GA	
SIGN / VARIATION / DATE / NAME	FOUNDATION : BLUE DIAMOND	REVISION NO.: V1	

Battery Box Hybrid 30 - 90

Battery Box Hybrid range -

Efficient. Adaptable. Sustainable. The Battery Box Hybrid range is designed to deliver optimal power solutions forconstruction and mining environments, maximizing fuel savings and minimizing emissions with integrated battery and solar options.

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General	
Model	Battery Box Hybrid 30/90
Rated Output Power	30kW
Maximum Apparent Power	33kVA
Maximum Active Power	33kW
Rated Voltage	3P4W+PE, 415 Vac
Rated frequency	50 Hz
Power Factor	Listed: 0.8~1 leading or lagging
	Actual:0.1~1 leading or lagging
Overload Capacity	110%~120%:10min; 120%~130%:1min
	130%~150%:200ms
Ingress Protection	IP54
Operating Temerature	-20 to +50oC
Sound Level	75dBA

Engine	
Engine Model	Cummins QSB3.9-G33
Engine Type	4 Cylinders
Displacement	3.9 L
Rated Speed	1500 RPM
Rated Power / Speed	36 kW @1500 RPM

Battery	
Battery Type	LiFePO4
Battery Module Quantity	18 units
Nominal Battery Energy	92.16kWh
Nominal Capacity	100Ah
Nominal Voltage	460V
Operating Vol. Range	**402-508.5V**
Nominal Power Output	**30KW**
Max. Power Output	**30kW**
Recommend Charging Current	**50A**
Recommend Discharging Current	**50A**

AC Charger	
Rated Power	40kW
Input standard	Three-phase + PE
Input rated voltage	415V
Input voltage range	323~456Vac
Input current	≤80A
Input frequency	45~65Hz
Input inrush current	≤ 150% of rated input current
Maximum quiescent voltage	600Vac
Three-phase unbalance	>15% protection, ≤12% recovery
Output voltage range	50-1000Vdc
Output current range	0-133.3A
Voltage regulation accuracy	≤±0.5%
Flow stabilisation accuracy	≤±1%
Voltage Ripple Factor	≤±1%
Power-on overchargevoltage	≤±1%
Current slow start	3-10s

Battery Box Hybrid 30kVA	
Battery Capacity	90 kWh
Max Output	30 kW
Max Charge Rate	30 kW
Genset Size	30 kVA
Fuel Type	Diesel/Natural Gas
Battery Strings	3
Voltage	410V
Ideal Load Range	15 - 25 kW
Fuel Savings	Up to 65-85% (No Solar) / 85% (With 2 Solar Pods)
Ideal For Large construction or mining sites with high and variable power demands	

PV Charger	
Rated Power	45kW
Maximum PV Input Voltage	830V
Start-up Voltage	250V
MPPT Voltage Range	200~750 (430~750 @full load) V
Number of MPPT	1
Maximum Input Current of each MPPT	80A
Maximum Output Voltage	1000V
Working Voltage Range	430V-830V
Rated Output Current	80A
Maximum Output Current	80A

Genset	
Rated power	38kVA/30kW Inverter
Rated voltage	415/240V
Rated frequency	50Hz
Rated current	145A
Fuel tank running hour	24

Overall	
Dimensions (LxWxH)	3600x1520x2254 mm
Weight	3400 Kg
Lift Points	Forlift Pockets, Lift & Drag Skid

Fuel savings estimates are based on the following load profile data

Peak Load (kW)	Low Load (kW)	Solar Contribution (kW)	Runtime Reduction (%)	Max Savings (L/week)
20 kW	8-12 kW	8 kW	85%	**300 L**

Typical Construction Site Load Profile: Peak load of 35 kW for short durations and low load of 5-10 kW for the majority of the time.
Savings percentages are calculated both with and without solar pods. Actual savings may vary based on specific site conditions, usage patterns, and solar availability.
All models are equipped with a built-in Genset ATS and BESS controller for seamless integration with site requirementsand optimal performance.

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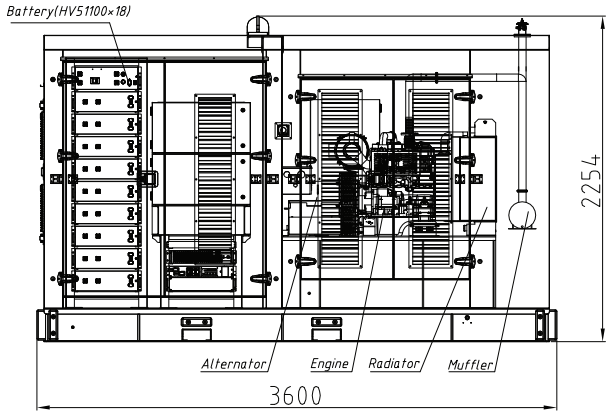
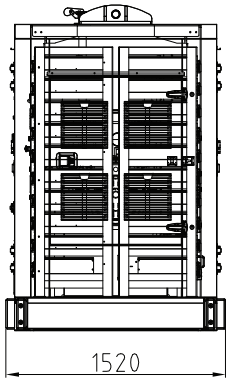
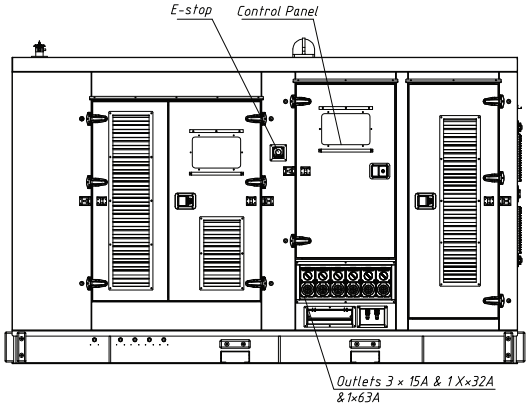
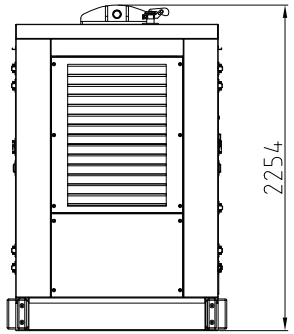
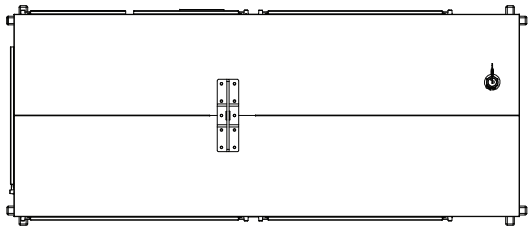
1300 998 647

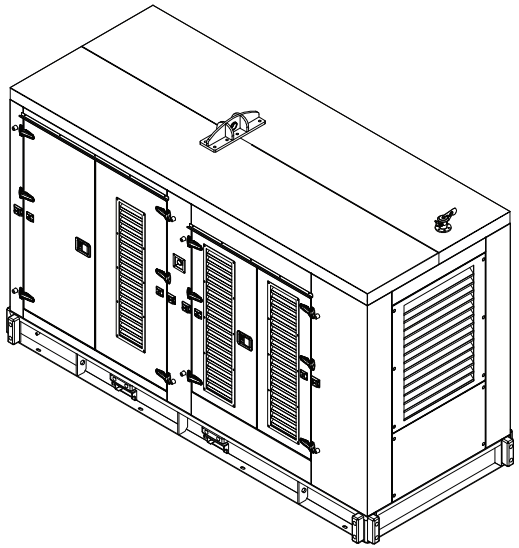


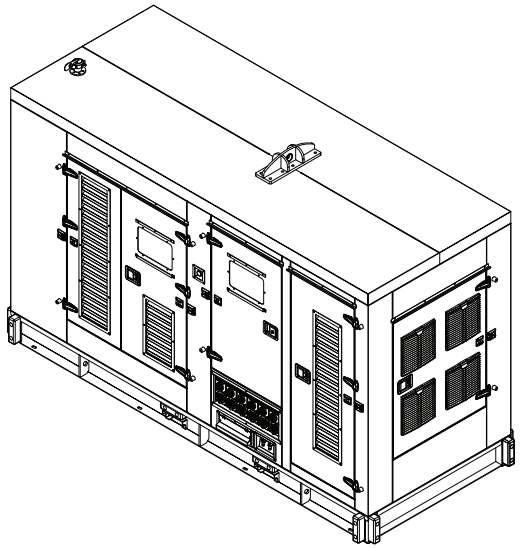












Fuel Tank Capacity : 210L 24Hrs@100%Load

Dimension : 3600mm x1520mm x2254mm

Dry Weight : 3400KG

AS BUILT
DECEMBER 23, 2024

ORDER CODE: ADG24H32P102				SCALE: Not to Scale			
				2024	DATE	NAME	SIGNITURE
				DRAWINGED BY	23/12	YUN	
				CONTROLED BY	23/12	SUN	
				APPROVED BY	23/12	LIANG	
				DEPARTMENT: Engineering			
				BLUE DIAMOND MACHINERY			
				FOUNDATION : BLUE DIAMOND			
SIGN	VARIATION	DATE	NAME				

MATERIAL:	QUANTITY:	WEIGHT:
PART NAME: GA		
USED FOR: APG-Hulk 30/90		
PART NO.: YSG42/38	LOCATION: BUILDING 655	A3
DRAWING NO.: AUYS38		
REVISION NO.: V1		

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