ECOVOLVE

ED1000 BATTERY HI-TIP DUMPER

OPERATOR'S HANDBOOK

THIS OPERATOR'S HANDBOOK contains information for operating the ED1000.
This operator's hand book must be stored in the manual holder on the machine.
A full and comprehensive instruction guide can also be found in the OWNERS MANUAL which is supplied with the truck. The OWNERS MANUAL can also be found in the downloads section on the ecovolve website, www.ecovolve.eu.
The OWNERS MANUAL contains more detailed and complete information on the operation, maintenance, transport, servicing and technical data for the ED1000.

Manufacturer : Ecovolve

Model : ED1000

Serial number : . . . . . .

Date : . . . . . .

Contents

Safety regulations

Always follow the warnings contained within this operators handbook and on the ED1000 to avoid incidents and accidents from occuring unnecessarily.

The following symbols and the signal words DANGER, WARNING, CAUTION and ELECTRICAL WARNING indicate hazards and instructions.

Warning symbols.

Obey all the safety messages that follow these symbols to avoid injury:

	**DANGER! / WARNING!**	Indicates a hazardous situation which if not avoided could result in serious injury or death.
	**CAUTION!**	Indicates a hazardous situation which if not avoided could result in minor or moderate injury.
	**ELECTRICAL WARNING!**	Indicates a hazardous situation which if not avoided could result in serious injury or death.
	**CRUSH POINT WARNING!**	Indicates a hazardous situation which if not avoided could result in serious injury or death.
	**WHEEL CRUSH WARNING!**	Indicates a hazardous situation which if not avoided could result in serious injury.

Operator's personal protective equipment (PPE)

Safety boots must always be worn when operating the truck to avoid personal injury. For all other PPE requirements, follow the guidelines issued by the specific site that the truck is being operated on.

Decal warning symbols

	Warning! Read and understand the instructions in the manual before operating the truck.
	Indicates a right or left hand turn with the use of hand signals.
	Danger! Do not drive the truck with the skip in the raised position.
	Danger! When unloading the skip in the raised position keep clear of the risk zone.
	Danger! Do not empty the skip on steep gradients.
	Danger! Risk of over turning. Max gradient on uphill / downhill of 15º. Max gradient on the horizontal of 10º.
	Danger! Keep a safe distance when the skip is being emptied.
	Danger! Stand clear while the machine is being loaded.
	Warning! Do not over exceed the maximum load capacity 1000 Kg - 2200 lbs
	Warning! Personal protective equipment must be worn as required when operating the truck.
	Caution! Do NOT use high pressure water to clean the truck.

Operators platform and safety rails

⚠ CAUTION

The following section is an overview of the operators platform and safety rails.
All operators must read and fully understand the instructions before operating the truck.

Operators platform

The truck has a 2 position platform for the operator to stand on when operating the machine. In the raised position the operator can walk behind the truck (fig 1). In the lowered position the operator can operate the truck while standing on the platform (fig 2).
The truck will default to walk mode speed (4 km/h) when the platform is in the raised position..

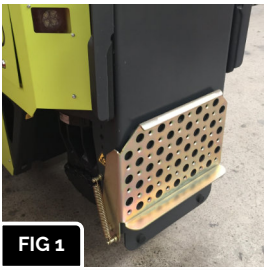


FIG 1

The platform in the raised position.

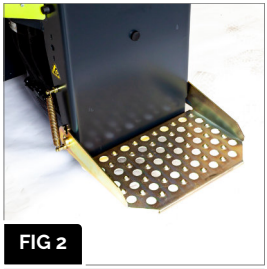


FIG 2

The platform in the lowered position

Safety rails

Every truck is equipped with foldaway safety rails for the protection of the operator.
Ensure that the safety rails are locked in the raised position when using the operators platform.
To lock the safety rails in place, raise the rails up and turn the lock to secure them (fig 4).

FIG 3

The safety rails in the lowered position.

FIG 4

The safety rails locked in the raised position.

Dashboard controls

⚠ CAUTION

The following section is an overview of the dashboard controls. All operators must read and fully understand the instructions before operating the truck.

Key ignition switch

Emergency stop button.

Multi function display. Battery discharge and fault codes indicator.

Hi tip skip function lever.

Light switch
Up = On | Down = Off

Tiller head steering controller.

Tiller head controls

⚠ CAUTION

The following section is an overview of the tiller head controls.
All operators must read and fully understand the instructions before operating the truck.

FIG 1

Flashing Beacon & Motion Buzzer ON/OFF Switch

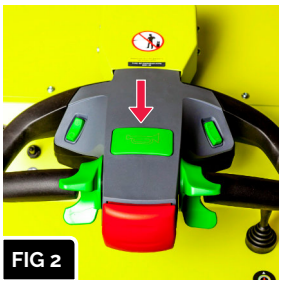


FIG 2

Horn Switch: Pressed IN will sound horn.

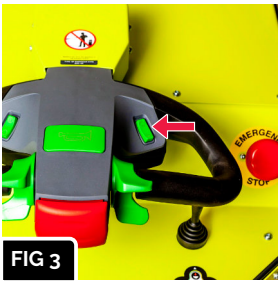


FIG 3

Speed Switch. Two options SLOW and FAST.

FIG 4

Traction paddles. Used to drive the truck

FIG 5

Traction paddles.
UP =Forward
DOWN = Reverse.

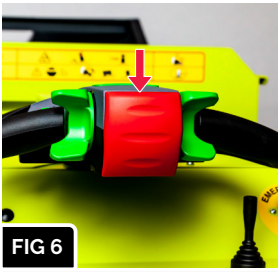


FIG 6

Body Protection Switch.

FIG 7

Body Protection Switch.

As a safety feature, if the truck is being operated in reverse and the operator collides with an object, their body will engage the body protection switch (fig 7).
This will automatically bring the truck to a stop and safely move the machine forward.

Operating the truck

Switching on the truck

- Ensure the tiller head is in the central position and disengage the emergency stop button.
- Insert the key into the key switch and turn clockwise from the zero position to position "II" and hold for 3 seconds. The traction wheel will reset and the multi function display unit will display the battery discharge status.
- The electrical system is switched on and the truck is ready for operation.

Switching off the truck

- Ensure the truck is at a complete stop.
- Turn the key anticlockwise to the zero position.
- Activate the emergency stop button.
- The electrical system is switched off and the brake is applied.

Driving

- The operator must familiarize themselves with the tiller head steering controls and traction paddles prior to driving the truck. The tiller head is used to steer the truck. The traction paddles are used to accelerate the truck in a forward or reverse motion.
- To drive forward, the traction paddles are pressed upwards. When the traction paddles are released the machine slows down to a standstill and the brakes are applied.
- To drive in reverse, the traction paddles are pressed downwards. When the traction paddles are released the machine slows down to a standstill and the brakes are applied.
- The speed of the truck depends on set position of the speed control switch and if the operators platform is in use.

Operating speeds

The truck has 3 operating speeds:

- Creeper mode under 1 kph: Engaged when the hi tip function is activated.
- Walking mode under 4 kph: Engaged when the operators platform is in the raised position.
- Full mode 7 kph: Engaged when the operators platform is in the lowered position.
- The operator can also manually select the slower or faster speed using the speed switch located on the tiller head.

Operating the hi tip skip functions

The truck is equipped with a high tip function. The skip lever is located on the dashboard which operates all the functions of the skip.

The skip lever functions in four positions:

- Tilting the skip FORWARD: Push the lever to the RIGHT.
- Tilting the skip BACK: Push the lever to the LEFT.
- RAISE the skip: Pull the lever BACK.
- LOWER the skip: Push the lever FORWARD.

Beacon

- For safety purposes the truck is equipped with a flashing beacon and motion buzzer.
- This can be activated using the switch on the left hand side of the tiller head.

Horn

- The horn is used as a warning signal, for instance at junctions and blindspots.
- The horn is situated on the top center of the tiller head.

Operating the Emergency stop button

- Press the emergency stop button to immediately shut down all powered functions.
  Use the emergency stop button in the event of a malfunction of controls or a dangerous situation.
- The emergency stop button is situated on the dashboard.

Emergency stop button in normal operation

- Pull the emergency stop button up.
  The emergency stop button is unlocked.
  The truck is ready for operation.
- Push the emergency stop button down.
  The electrical system of the truck is switched off.
  The driving, steering and lifting functions of the truck are deactivated.
  The brake remains active.

Parking

In the interest of safety, It is the operators responsibility to ensure that the truck is parked in a safe and secure manner.
When parking the truck:

- The start key must be turned anticlockwise to "0" to turn off the truck.
- Activate the emergency stop button.
- The safety rails and platform should be put in the retracted position.
- If the truck is not in use for an extended period of time, it should be stored in a protected area or indoors.
- If parking the truck on an incline, use the wheel chock provided as an added safety measure.

If the truck is switched on and unattended for a period longer than 9 minutes the machine will automatically switch all power off.

Battery discharge indicator

- The battery's discharge indicator (BDI) is the rate at which the battery discharges during the operation of the truck. The operator can check the status of the battery by viewing the multi function display (fig 1). The display is located on the dashboard.
- The battery's discharge status is shown on the display and is also indicated by the row of 5 LED's situated below the display.
- As the battery capacity decreases, the digital display shows the BDI status from 100% to 0%. Simultaneously the 5 LEDs turn off one after the other as the battery discharges.
- When the battery becomes critically low the truck will default to limp mode.
  The operator must navigate the truck to the nearest charge point and recharge the battery fully before continuing with work duties.

It is recommended to recharge the battery when the residual battery capacity is reading less than 10% on the digital display.

BDI percentage:

- BDI percentage 90% and above - All 5 LEDs illuminated.
- BDI percentage between 70% and 90% - First 4 LEDs illuminated.
- BDI percentage between 50% and 70% = First 3 LEDs illuminated.
- BDI percentage between 30% and 50% = first 2 LEDs illuminated.
- BDI percentage between 10% and 30% = First LED illuminated.

FIG 1

Multi function display. Battery discharge and fault codes indicator.

Charging the battery

- The battery charging port is located at the rear of the truck above the operators platform (fig 1). The dumper is supplied with a 3m charging cable.
- Ensure the truck is parked safe and securely, remove the key and activate the emergency stop button prior to charging the battery.
- The truck is supplied with a 3m charging cable from the factory. Extension cords must be 3-wire cord no longer than 30m (100') at 10 AWG or 7.5m (25') at 16 AWG, per UL guidelines.
- When charging the battery the operator must determine what power source is being used on the work site, 110V or 220V. If in doubt ask the supervisor.
- The charging cable has a blue socket, this is to be plugged into the rear mounted charging port at the rear of the vehicle (fig 2). The remaining plug is connected to the power source outlet socket.
- During the battery charging process, the battery charge status is displayed on the Delta Q battery charger which can be viewed through a panel located at the side of the truck (fig 3). A full description of the battery charge indicator and all the other features of the Delta Q charger can be found on page 11.
- When the battery is fully charged, remove the power cable from the power outlet and the truck. Power on the truck with the key to recommence work after the charge is complete.

⚠ WARNING

Never operate the truck while the battery is charging.

FIG 1

The location of the battery charging port at the rear of the truck.

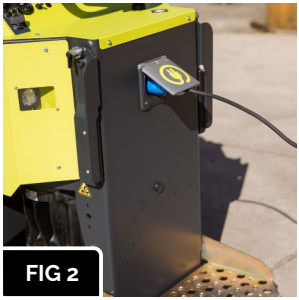


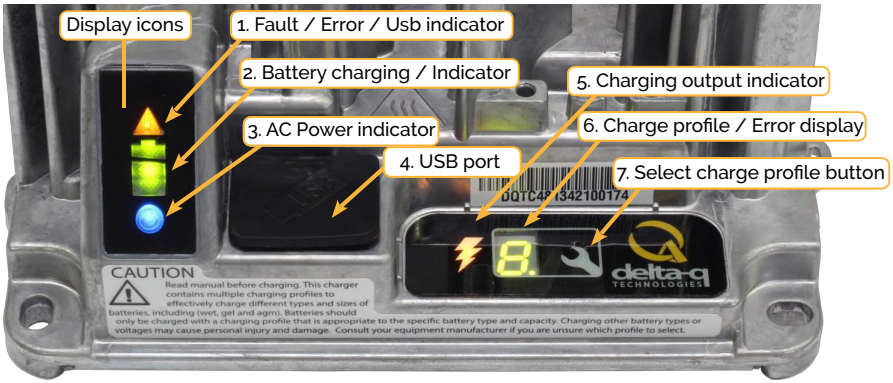
FIG 2

Connect the battery charging cable into the charging port.

FIG 3

The location of the Delta Q battery charger at the side of the truck.

Delta Q IC1200 Battery charger overview



IC1200 Display icons

1. Solid red = Charger fault View error display panel for details (**6.**)	**3.** Solid blue = AC power available
1. Flashing amber = External error condition View error display panel for details (**6.**)	**2.** Flashing green = Low state of charge **2.** Solid green = High state of charge
1. Flashing green = USB port active Solid green = safe to remove USB drive	**2.** Flashing green = High state of charge **2.** Solid green = Charge complete

1. The **Fault / error /USB indicator** will display faults, errors and USB activity shown in the table above. If a fault or error is indicated check the **(6.) error display panel** for the code and find the description in the "charger error and fault codes" list below.
2. The **Battery charging indicator** has 4 states as shown in the table above.
3. The **AC power indicator** will illuminate solid blue when the charger is connected to AC power
4. The **USB Host Port** allows data to be transferred to and from the charger using a standard USB flash drive, including the downloading of charge tracking data and updating of the charger's software and / or charge profiles.
5. The **Charging Output Indicator** means that the charger output is active, and there is a potential risk of electric shock.
6. The **Charge profile / Error display panel** shows one of four possible codes to indicate different conditions:
   - 'F' codes meaning that an internal fault condition has caused charging to stop.
   - 'E' codes meaning that an external error condition has caused charging to stop.
   - 'P' code meaning that the charger programming mode is active.
   - 'USB' code meaning that the USB interface is active, the USB drive should not be removed.
   - The 'E,' 'F' and 'P' codes will appear, then are followed by three numbers and a period to indicate different conditions (e.g. E-0-0-4). See the "Charger Fault Codes" or "Charger Error Codes" in the troubleshooting section of the owners manual for details on these conditions and their solutions.
7. The **Select charge profile button** is used to select a charge profile from those stored on the charger. Up to 25 charge profiles can be stored. See the "Selecting A Charge Profile" in the charger section in the owners manual for instructions.

Transporting the truck

The Ecovolve ED1000 is easily transportable. It is comparatively lightweight for its capacity and can be loaded on to a vehicle with a load rating of 1300 kg minimum. The operator's platform can be raised up and the safety rails can be lowered down for ease of transportation.

⚠ WARNING

When LOADING the truck onto a suitable transport vehicle ensure that the following points are adhered to.

- Use suitable ramps with an adequate loading capacity.
- Clean the truck to reduce the hazard of dirt and debris falling from the machine during transport.
- Confirm the transport vehicle is suitable for the transport task and that it is rated to carry a mass of 1300 Kg or 2866 lbs.
- Move the truck slowly and follow directions from people assisting with the loading and alignment of the machine onto the transport vehicle.
- Secure the truck to the transport vehicle using only the machines anchor points as described in the next section.

⚠ WARNING

When LIFTING the truck onto a suitable transporter ensure that the following points are adhered to.

- Confirm that the lifting device has adequate lifting capacity and reach to perform the lifting operation.
- Clean the truck to reduce the hazard of dirt and debris falling from the machine during transport.
- Use only the lifting points as described in the next section to lift the truck onto a suitable transport vehicle.

⚠ DANGER

Keep clear when lifting the truck onto the transport vehicle.

Lifting and anchor points

- The truck is equipped with two lifting eyes and five anchor points which are used in conjunction with straps or chains to lift and also to secure the machine to the transport vehicle.
- Use certified slings and chains to lift and secure the truck during transport.
- The assigned lifting eyes and anchor points must be used with approved straps or chains. The truck must be anchored at all times during transportation.

Lifting

- The two lifting eyes are designed so that the truck can be lifted safely to a suitable transport vehicle (fig 1 and fig 2).
- When using the lifting eyes it is advised to use a 'D' shackle to connect them. This will povide an easier and more secure connection for the chain hooks when lifting the truck.

Anchor

- The five tie down points on the truck are designed to anchor the truck to the transport vehicle while in transit (fig 3, 4, 5 and fig 6).

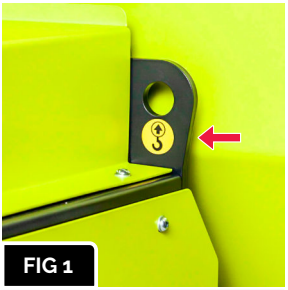


FIG 1

The lifting points are identified by this symbol.

FIG 2

The locations of the two lifting points on the truck.

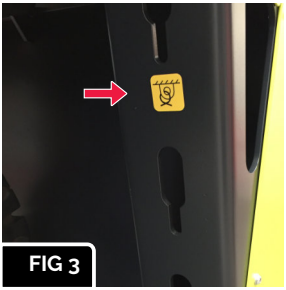


FIG 3

The anchor points are identified by this symbol.

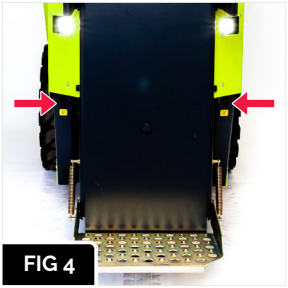


FIG 4

The locations of the anchor points on each lower side of the chassis at the rear of the truck.

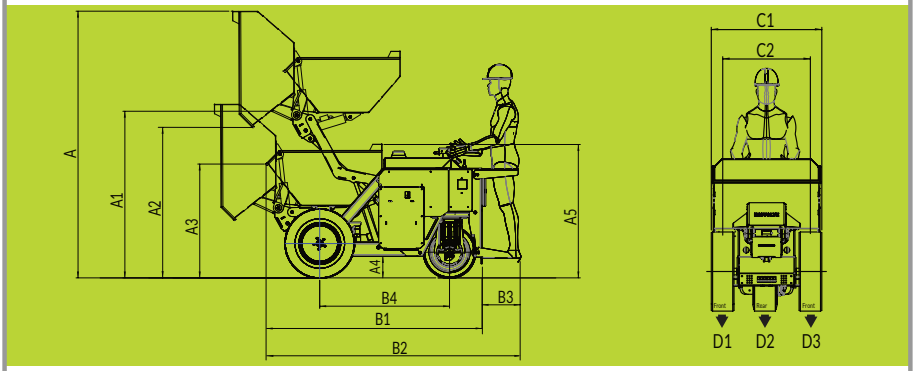
FIG 5

The locations of the anchor points on both sides of the crank.

FIG 6

The location of the anchor point at the front of the vehicle.

ED1000 Metric key measurements and ground pressure

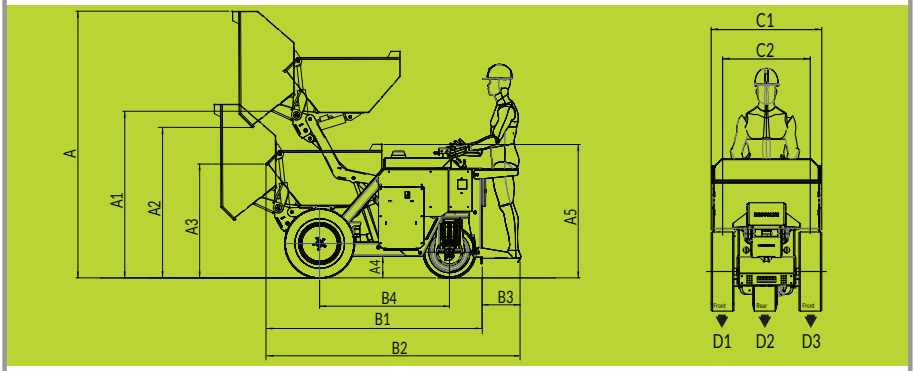


	A	A1	A2	A3	A4	A5
mm	2610	1630	1470	1120	180	1310

	B1	B2	B3	B4	C1	C2
mm	2060	2390	340	1210	990	780

Ground pressure (Kg)	D1 (Front)	D2 (Rear)	D3 (Front)
Unladen weight 1200 Kg	280	635	280
Laden weight 2000 Kg	650	700	650

ED1000 Imperial key measurements and ground pressure



	A	A1	A2	A3	A4	A5
Inch	103	64	58	44	7	51.6

	B1	B2	B3	B4	C1	C2
Inch	81.0	94.2	13.3	47.8	39	30.8

Ground pressure (Lbs)	D1 (Front)	D2 (Rear)	D3 (Front)
Unladen weight 2634 Lbs	617	1400	617
Laden weight 4409 Lbs	1433	1543	1433

Operator's daily check list

All operator's must complete the daily checklist at the start of each working day prior to the operation of the truck.
The truck must not be used if any item on the checklist is faulty or damaged.
Any faults or damage to the truck must be reported to the relevant authority.

1	Check for damage to bodywork and the chassis
2	Check the brakes and check the wheels and tyres for damage
3	All grease points are adequately greased
4	Inspect hydraulic hoses and connections for leaks
5	Speed switch function and horn
6	Traction paddles
7	Body protection switch
8	Multi function display is working correctly
9	All lights and motion buzzer
10	Emergency Stop button
11	All the functions of the skip lever
12	The operator's platform and safety rails
13	The charging cable and connections
14	Check that all the front and rear wheel retaining nuts are tight

NOTE: Please refer to the servicing section (5) in the owner's manual for information on the specified torque settings on the front and rear wheel retaining nuts.
The owners manual can be found in the downloads section on the Ecovolve website - www.ecovovle.eu.

⚠ CAUTION

It is the operator's responsibility to report any faults or damage on the truck to the site supervisor or relavent authority.
The operator's weekly check list and the full service and maintenance instructions for the truck are fully covered in the relevent sections of the owner's manual which can be found in the downloads section on the ecovolve website - www.ecovolve.eu.

CE Certificate

EU Declaration of Conformity

ECOVOLVE

We,

Ecovolve Ltd

Of,

Dublin Road, Ballybrittas, Co. Laoise, Ireland

Declare under our sole responsibility as the body autherised to prepare the technical file for the product:

ED1000 High Tip Electric Dumper

Complies with the following EHSR's of the 2006/42/EC – Machinery Directive and its amending directives Appendix 1, subchapters: 1.1.3, 1.1.4, 1.1.5, 1.1.6, 1.1.7, 1.1.8, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 1.2.4.2, 1.2.4.3, 1.2.4.4, 1.2.5, 1.2.6, 1.2.7, 1.2.8, 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.5, 1.3.6, 1.3.7, 1.3.8, 1.3.8.2, 1.3.9, 1.4.1, 1.4.2, 1.4.2.2, 1.4.2.3, 1.4.3, 1.5.1, 1.5.2, 1.5.3, 1.5.4, 1.5.5, 1.5.6, 1.5.7, 1.5.8, 1.5.9, 1.5.10, 1.5.11, 1.5.12, 1.5.13, 1.5.14, 1.5.15, 1.5.16, 1.6.1, 1.6.2, 1.6.3, 1.6.4, 1.6.5, 1.7.1, 1.7.1.1, 1.7.1.2, 1.7.2, 1.7.3, 1.7.4, 1.7.4.1, 1.7.4.2, 1.7.4.3, 1.7.5

We declare the technical file for this machine were compiled according to Appendix VII Part B and undertake to forward these to market monitoring authorities by request via our technical department. Commissioning of the machine is acceptable as it complies with the provisions of all applicable EC directives.

This declaration is invalidated by any modification outside the scope of those intended by the manufacturer.

For the intended purpose of

Handling and Dumping of materials

Authorised representative for the compliation of the relevant technical documentation and issuer of Declaration of Conformity:

Signed: _____ Date: _____

Ecovolve Ltd

Dublin Road, Ballybrittas, Co Laoise, Ireland

CE

Place of issue:**Republic of Ireland**

www.ecovolve.eu