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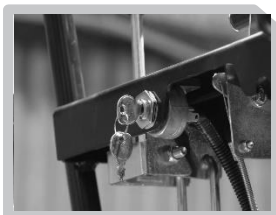
DEUTSCHER HE660e



ELECTRIC START AND BATTERY KIT INSTALLATION INSTRUCTIONS

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HE660e Models

36258 HE660e Deutscher Honda GXV390 with Pre-Installed Starter Motor ONLY

PLEASE NOTE

These instructions are for the installation of the Electric Starter Kit and Battery Pack to a HE660e self-propelled mower, fitted with a Honda engine that is equipped with a starter motor. Installation of the Electric Start Kit should be performed only by people with suitable knowledge, experience and mechanical competence in working with this type of equipment.

INTRODUCTION

Welcome to the Deutscher HE660e self-propelled mower “Electric Start Kit” assembly instruction manual. This guide will help you understand how to add the electric start kit, including the battery pack. The HE660 mower is built tough and has been engineered to give continuous service in the most rugged of conditions, whilst giving a smooth finish to any lawn, park or garden. The longevity and safe operation of the HE660 is dependent on the correct assembly, so if you have any questions or need clarification, please do not hesitate to contact us directly.

SAFETY INFORMATION

READ THESE INSTRUCTIONS IN DETAIL BEFORE INSTALLING THE ELECTRIC START KIT TO YOUR HE660E. KEEP ALL SUPPLIED ITEMS AWAY FROM WATER AND MOISTURE, WHEREVER POSSIBLE.

12 VOLT ELECTRICAL SAFETY

While 12-volt DC is generally considered low voltage and unlikely to cause an electric shock hazard due to the high resistance of the human body, it can be dangerous in certain situations, especially with high-amperage sources that can cause burns, sparks, or fires. Key safety practices include always using fuses, securing connections, protecting wires, and never creating short circuits.

FIRE AND DAMAGE PREVENTION

Only use the equipment supplied for this installation. A short circuit can generate significant heat, cause sparks, and start a fire. Ensure all connections are tight and secure. Ensure you secure all loose cables using the cable ties to prevent them from rubbing against sharp edges, which can damage the insulation. Use the supplied protective sleeving to add an extra layer of safety.

GENERAL ELECTRICAL SAFETY

Be careful to never accidentally connect the positive and negative terminals together. Make sure components are securely mounted to avoid accidental movement that could cause wires to become dislodged or abraded.

Keep your wiring organised and tidy to make it easier to inspect and less prone to damage.

MANUAL HANDLING

Due to the size and weight of the HE660e, lifting or moving the unit must be carried out by a minimum of two people. Attempting to lift it alone may result in serious personal injury.

IMPORTANT NOTICE

We recommend positioning the HE660e mower unit on a raised, sturdy platform (such as a strong table, workbench, or suitable stand) to perform this installation, as access beneath the mower is required.



The mower is **VERY HEAVY**. It is far safer to use ramps or a lifting device to put the mower onto a raised platform rather than attempting to lift it. Never attempt to lift the mower on your own. Ensure any platform used is stable and capable of supporting the full weight of the mower, including any additional weight from batteries or other installed components.

When the installation is complete, It is far safer to use ramps or a lifting device to place the mower back onto the ground rather than attempting to lift it.

NEVER ATTEMPT TO LIFT THE MOWER ON YOUR OWN

TOOLS REQUIRED

You will need to have the following tools to carry out this installation process:

- 2 x 13mm Spanners
- 1 x 7/16th Spanner
- 1 x Adjustable spanner
- 1 x Phillips Head Screwdriver
- 1 x Box Cutter Knife
- 1 x Roll of Electrical Tape
- 1 x T-Bar 10mm Socket
- 1 x Long Nose Pliers



UNBOXING INSTRUCTIONS

Begin by unboxing the battery and components and checking all components are included before proceeding with the installation.

The kit will contain:

- 1 x 12v Sealed Battery
- 1 x Battery Holder Box with Brackets Installed
- 1 x Wiring Loom
- 2 x Black heavy gauge electric wires (with ring connectors at each end)
- 1 x Rubber Mat
- 1 x Key Start Assembly Unit (Boxed) including 2 x Keys
- 1 x Length of Flexible Conduit
- 2 x M8 x 40mm Bolts with M8 Nyloc locking nuts.
- 1 x M6 Nyloc Nut with flat washer



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INSTALLATION

INSTALLING THE KEY START UNIT

1. Begin with the key start unit and remove the keys

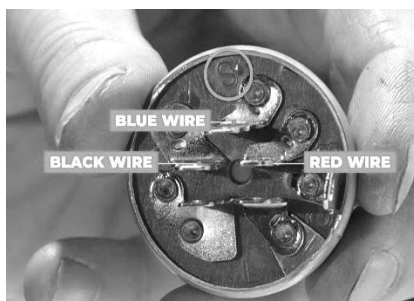


2. Remove the large nut and lock washer from the bottom of the start key unit and place it in a safe location nearby.



3. Remove the wiring harness from its packaging. This package will contain:
 - 1 x multi-wire loom consisting of 1 x blue, 1 x black and 1 x red wire with terminals attached
 - 1 x short red wire with terminals attached (ring and female connector)
 - 1 x short green wire with terminals attached (ring and male connector)
4. Now connect the multi-wire harness to the bottom of the key start unit as follows.
5. Ensure the "S" inscribed into the unit is held at the top of the key start unit.

6. Connect the Blue Wire to the terminal marked "S"
7. Connect the Black Wire to the terminal marked "M"
8. Connect the Red Wire to the terminal marked "B"



9. Make sure the terminals are securely connected by giving each wire terminal a crimp with the long nose pliers.
10. Install the Flexible Conduit over all the wires of the loom. The conduit has a split to allow it to be placed over the wires easier. Ensure the conduit is pushed up all the way to the key unit terminals
11. The black wire is shorter and will need to exit from the conduit about 3/4 way down. The Red and Blue wires should continue to be placed in the conduit all the way to the end.



12. Using your electrical tape, wrap the connectors on the key unit to help secure them, and protect them. Ensure the electrical tape is wrapped down the conduit for at least 50mm to assist in securing the connectors.
13. Wrap electrical tape around the conduit at the black wire (3/4 length) to help secure the wire and connector in place and avoid it being pulled out of the conduit. Wrap the tape at least 20mm on each side of the black wire.



14. Now it's time to install the starter key unit on to the mower. There is a pre-drilled hole on the control bar of the mower handlebars. Take the key starter unit with the bolt and lock washer (removed earlier) to the mower.
15. Insert the key start unit into the hole on the handlebar panel. Place the locking washer on to the unit and screw on the holding nut. Use an adjustable spanner to tighten the nut and secure the key start unit. Ensure you do not over tighten the nut as this may cause damage to the key start unit.



INSTALLING THE KEY START LOOM TO THE STARTER MOTOR

- 16. Now it's time to attach the other end of the key start unit loom wires.
- 17. You will need to use the Long Nose Pliers and T-Bar 10mm Socket

- 18. Attach the black wire that is located at 3/4 length on the loom to the mower's earth wire. The earth wire connector can be found already installed on the mower to the left-hand side of the engine (usually just below the red engine cover).



- 19. Plug the black wire connector to the earth wire and secure it by crimping the connector tight (using the long nose pliers).
- 20. Feed the end of the loom (red and blue wires) to the starter motor on the right side of the engine, ensuring the loom feeds behind the already installed relay (between the engine and the relay bracket).



- 21. It will be easier to use long nose pliers to grab the end of the loom and pull the wires from behind the oil filler tube.



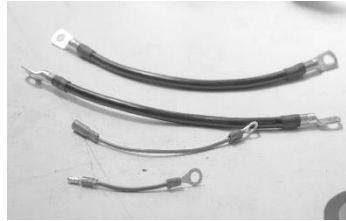
- 22. The red wire with a ring connector will be installed directly to the starter solenoid unit.
- 23. Using the 10mm T-bar socket, loosen and remove the top nut located on the top of the starter solenoid unit (the bronze-coloured terminal). You may need to use the long nose pliers to ensure you DON'T loosen the holding nut (lower) on this terminal.



- 24. Completely remove the top nut and washer.
- 25. Connect the red wire to the terminal but DO NOT replace the top nut just yet.
- 26. Connect the blue wire male connector to the matching black wire female connector already located on the mower and hanging next to the starter solenoid unit.

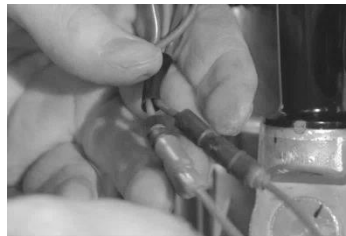
27. Ensure the male and female connectors are secure and tight.
28. Now grab the remaining wires with connectors, as follows:

- 1 x short RED wire with terminals attached (ring and female connectors)
- 1 x short GREEN wire with terminals attached (ring and male connector)
- 2 x BLACK heavy gauge electric wires (with a ring connector each end)



29. You will find a wire harness hanging from the black fined electrical box (voltage regulator) with a selection of wires and connectors visible.

30. Connect the short green wire male connector to the green wire female connector. You may need to use long nose pliers to make the connection secure.
31. Connect the short red wire female connector to the red wire male connector. You may need to use long nose pliers to make the connection secure.



32. Route the loose ring connectors of each of these wires (red and green) behind the oil filler tube. You may need to use long nose pliers to pull the wires and connectors through.



33. Install a heavy gauge black wire on to the solenoid terminal (you left the top nut off earlier).
34. Also place the RED wire ring connector on to the same starter solenoid terminal
35. Now install the washer and top nut back on to this terminal.



36. Tighten the top not using the 10mm T-bar socket. Ensure the nut is secure but do not overtighten as this may cause damage to the terminal.

37. Using the 10mm T-bat socket, loosen and remove the nut and bolt holding the black finned box (voltage regulator) to the engine. Be careful not to drop the nut or bolt.
38. Place the ring connector of the green wire on the bolt and reconnect the regulator box back on to the engine (as it was previously). Tighten to ensure the regulator is secure (but not overtight)



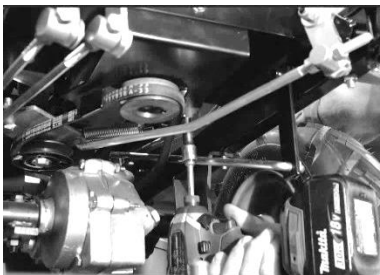
39. Loosen and remove the Engine chassis bolt and nut located near the starter motor.



The other end of the bolt (nut) is located underneath the mower unit near the drive belt assembly.

Use caution when placing hands under the mower unit, as there may be sharp edges or components

40. It is recommended that you use a 13mm socket and power drill with an extension 13mm socket attachment to remove the starter motor chassis nut and bolt.



This makes it much easier, especially if this process is being carried out by one person.

41. Once loosened, pull the bolt up through the chassis. This may be easier if using long nose pliers to grab the bolt.
42. Place the bolt through the remaining (2nd) black wire ring and reinsert the bolt back into the chassis. This may be easier if using long nose pliers to hold the bolt or simply use the black heavy gauge wire to assist in relocating the bolt into the chassis hole.

43. Place the nut back on the bolt (underneath the mower) and re tighten. This nut and bolt should be quite tight.
44. It is suggested you use a 13mm socket and power drill with an extension 13mm socket attachment to install the starter motor chassis nut and bolt. This makes it much easier, especially if this process is being carried out by one person.

INSTALLING THE BATTERY BOX

45. Grab the included battery box and the 2 x nuts and bolts with washers
46. Place the bolts through each of the holes in the battery box brackets.
47. Locate the battery box with the open end facing upwards and install the bolts through the 2 x brackets and into chassis holes located just behind the rear wheel of the mower unit. A threaded stud will be visible on the battery box facing outwards.



48. Place a nylon locking nut on each of the bolts (on the inside of the chassis).
49. Tighten and secure the battery box to the mower unit.

50. Insert the rubber mat into the battery box.



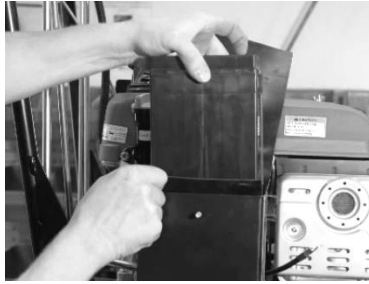
Allow a 2cm overlap on the mat on the outside edge of the battery box. The larger part of the mat will be used to cover and secure the battery once installed.



INSTALLING THE BATTERY

51. Install the battery into the battery box so that it sits within the rubber mat. Ensure the battery is inserted into the battery box with the battery label facing inwards (towards the engine).

The battery terminals should be closest to the engine.



52. Remove the nut from the forward battery (-) terminal and connect the negative (-) black wire cable (attached to the chassis bolt) to the battery and tighten using a Phillips head screwdriver to secure.
53. Remove the nut from the rear battery (+) terminal and connect the positive (+) black wire cable (attached to the starter solenoid) to the battery and tighten using a Phillips head screwdriver to secure.

Always use caution when connecting battery terminals to equipment and ensure you do not cause sparks.

54. Pull the rubber mat over and down the outside of the battery box, ensuring the connected wires are located suitably, and force the rubber mat over the threaded stud. It may take some force as you will need to pierce the rubber mat to allow the stud to go through. Ensure you place the rubber mat in a way that securely holds the battery in the box.



55. Place the supplied flat washer and nut on to the threaded stud and tighten to hold the mat firmly.



56. The Battery Installation is now complete.
57. Remove the key from the ignition unit (on the handlebars) and re-check all connections and bolts to ensure they are firm and installed correctly.

Carefully remove the mower unit from the raised stand and place it on the ground.

TROUBLE SHOOTING

YOUR DEUTSCHER HP660E IS NOW REDAY FOR USE

We hope you enjoy many trouble-free years of service with your HE660e. Videos showing the mower assembly process and the battery kit installation can be found on our website:

www.deutschermowers.com.au

The videos are located within the tab HE660 Mower.

If you find the electric start does not work initially, check all the electrical connections to ensure they are correct and secure. Also look for any damage to wires and connectors and replace them as needed. Only replace wires and connectors with those supplied by Deutscher Mowers.

Check to see that the battery has charge and if not, use a suitable battery charger unit to recharge the battery. Ensure you disconnect the battery from the mower before charging. Follow all instructions provided with the charger before connecting the charger to the battery.

WARRANTY

DEUTSCHER MOWERS PTY. LTD. will repair or replace, free of charge, any mower or part of a mower that is defective in materials or workmanship (or both) for a period of 24 months from the date of purchase. If parts or units are replaced, the replacement period will be no longer than 3 months.

This does not cover normal wear, abuse or servicing procedures not in accordance with the user's manual. Parts such as blades, blade bolts, tyres and v-belts, that can be subject to use beyond their normal intended working limits, are also excluded.

This warranty is void if parts other than genuine parts have been used or if repairs or modifications have been made without the manufacturers' written authority.

This warranty does not obligate the manufacturer, agents or dealers to cover transport costs incurred in the repair or replacement of any defective part. It does not obligate the manufacturer, agents or dealers to cover any other costs associated with making the warranty claim. (e.g. telephone calls)
The engine on this mower is covered by the engine manufacturer's warranty supplied with the mower. For your nearest engine dealer,

Phone: Honda M.P.E.: **1800 241 173**

To claim a warranty the owner must return the mower (at the owner's expense) to an authorized dealer, then give the authorized dealer a clear explanation of the defect. A list of authorized dealers can be found on the Deutscher Mowers website, or the location of the nearest authorized dealer can be determined by telephoning the telephone number listed below.

Our goods come with guarantees that cannot be excluded under Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

The benefits to the owner given by this warranty are in addition to other rights and remedies of the owner under a law in relation to goods or services to which the warranty relates.

FOR YOUR RECORDS

Model:	HE660e Electric Start Kit
Serial number:	<hr/>
Date of Purchase:	<hr/>
Mower Purchased From:	<hr/>