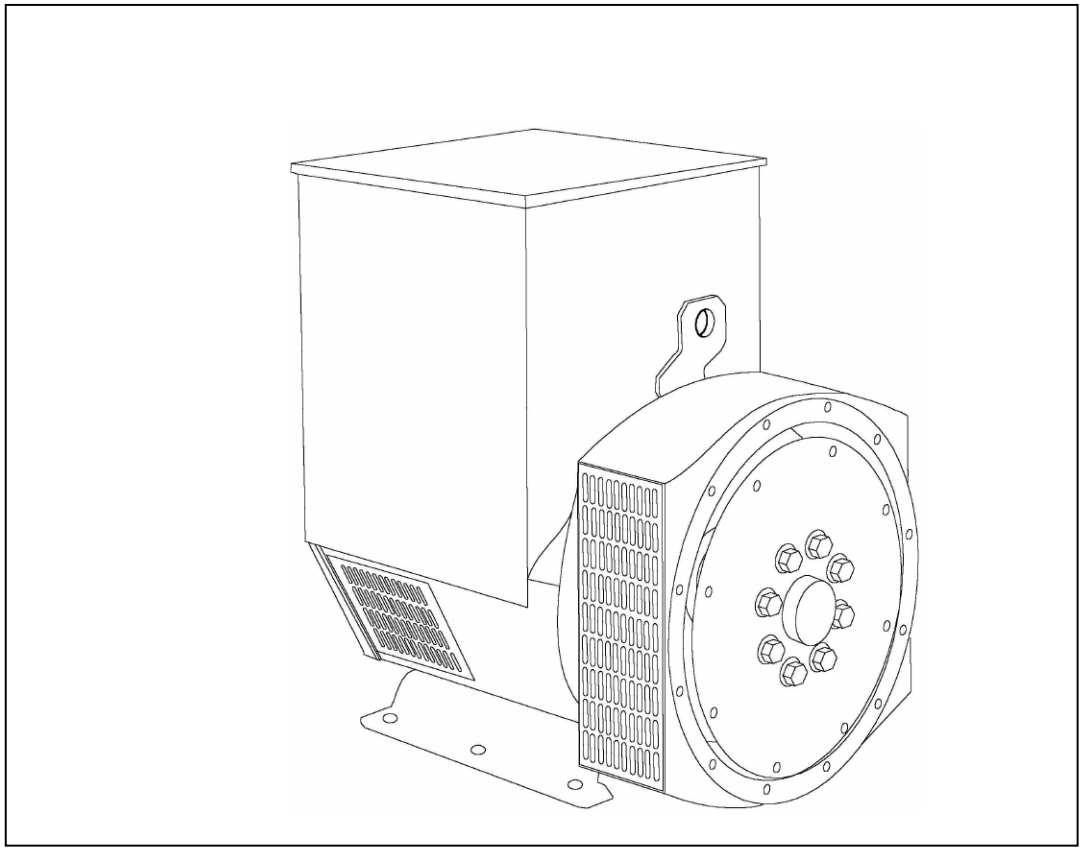
STAMFORD®

Installation, Service & Maintenance Manual
AC generators with the following for prefixes:
UCI; UCM; UCD 224 & 274



SAFETY PRECAUTIONS

Before operating the generating set, read the generating set operation manual and this generator manual and become familiar with it and the equipment.

SAFE AND EFFICIENT OPERATION CAN ONLY BE ACHIEVED IF THE EQUIPMENT IS CORRECTLY OPERATED AND MAINTAINED.

Many accidents occur because of failure to follow fundamental rules and precautions.

ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH.

Observe all **WARNING**/**CAUTION** notices.

- Ensure installation meets all applicable safety and local electrical codes. Have all installations performed by a qualified electrician.
- Do not operate the generator with protective covers, access covers or terminal box covers removed.
- Disable engine starting circuits before carrying out maintenance.
- Disable closing circuits and/or place warning notices on any circuit breakers normally used for connection to the mains or other generators, to avoid accidental closure.

Observe all IMPORTANT, CAUTION, WARNING, and DANGER notices, defined as:

Important ! **Important refers to hazard or unsafe method or practice which can result in product damage or related equipment damage.**

Caution ! **Caution refers to hazard or unsafe method or practice which can result in product damage or personal injury.**

Warning ! **Warning refers to a hazard or unsafe method or practice which CAN result in severe personal injury or possible death.**

Danger ! **Danger refers to immediate hazards which WILL result in severe personal injury or death.**

Due to our policy of continuous improvement, details in this manual which were correct at time of printing, may now be due for amendment. Information included must therefore not be regarded as binding.

Front Cover Photograph

This photograph is representative only. Several variations are available within the range of generators covered by this manual.

FOREWORD

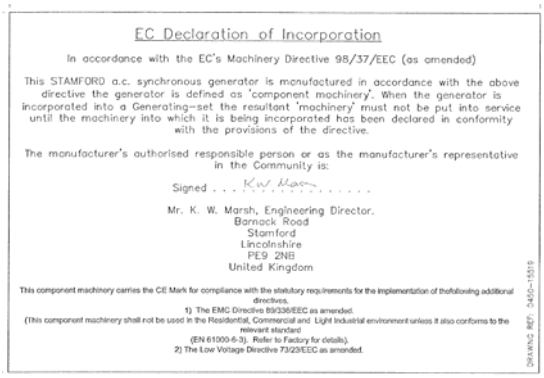
The function of this book is to provide the user of the Stamford generator with an understanding of the principles of operation, the criteria for which the generator has been designed, and the installation and maintenance procedures. Specific areas where the lack of care or use of incorrect procedures could lead to equipment damage and/or personal injury are highlighted, with **WARNING** and/or **CAUTION** notes, and it is important that the contents of this book are read and understood before proceeding to fit or use the generator.

STAMFORD Service, Sales and Technical staff of are always ready to assist and reference to the company for advice is welcomed.

Warning ! **Incorrect installation, operation, servicing or replacement of parts can result in severe personal injury or death, and/or equipment damage. Service personnel must be qualified to perform electrical and mechanical service.**

EC DECLARATION OF INCORPORATION

All Stamford generators are supplied with a declaration of incorporation for the relevant EC legislation, typically in the form of a label as below.



EC Declaration of Incorporation

In accordance with the EC's Machinery Directive 98/37/EEC (as amended)

This STAMFORD a.c. synchronous generator is manufactured in accordance with the above directive the generator is defined as 'component machinery'. When the generator is incorporated into a Generating–set the resultant 'machinery' must not be put into service until the machinery into which it is being incorporated has been declared in conformity with the provisions of the directive.

The manufacturer's authorised responsible person or as the manufacturer's representative in the Community is:

Signed . . . K.W. Marsh . . . . . .

Mr. K. W. Marsh, Engineering Director.
Barnack Road
Stamford
Lincolnshire
PE9 2NB
United Kingdom

This component machinery carries the CE Mark for compliance with the statutory requirements for the implementation of thefollowing additional directives.
1) The EMC Directive 89/336/EEC as amended.
(This component machinery shall not be used in the Residential, Commercial and Light Industrial environment unless it also conforms to the relevant standard (EN 61000-6-3). Refer to Factory for details).
2) The Low Voltage Directive 73/23/EEC as amended.

DRAWING REF: 0450-15519

Under the EC Machinery Directive section 1.7.4. It is the responsibility of the generator set builder to ensure the generator identity is clearly displayed on the front cover of this book.

CE

ELECTROMAGNETIC COMPATIBILITY

Additional Information

European Union
Council Directive 89/336/EEC

For installations within the European Union, electrical products must meet the requirements of the above directive, and STAMFORD ac generators are supplied on the basis that:

- They are to be used for power-generation or related function.
- They are to be applied in one of the following environments:

  Portable (open construction - temporary site supply)
  Portable (enclosed - temporary site supply)
  Containerised (temporary or permanent site supply)
  Ship-borne below decks (marine auxiliary power)
  Commercial vehicle (road transport / refrigeration etc) Rail transport (auxiliary power)
  Industrial vehicle (earthmoving, cranes etc)
  Fixed installation (industrial - factory / process plant)
  Fixed installation (residential, commercial and light industrial - home / office / health)
  Energy management (Combined heat and power and/or peak lopping)
  Alternative energy schemes.
- The standard generators are designed to meet the 'industrial' emissions and immunity standards. Where the generator is required to meet the residential, commercial and light industrial emissions and immunity standards reference should be made to document reference N4/X/011, as additional equipment may be required.
- The installation earthing scheme involves connection of the generator frame to the site protective earth conductor using a minimum practical lead length.
- Maintenance and servicing with anything other than factory supplied genuine STAMFORD parts will invalidate warranty and our liability for EMC compliance.
- Installation, maintenance and servicing is carried out by adequately trained personnel fully aware of the requirements of the relevant EC directives

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SECTION 1
INTRODUCTION

1.1 INTRODUCTION

The UC22/27 range of generators is of brushless rotating field design, available up to 660V/50Hz (1500 rpm) or 60Hz (1800 rpm), and built to meet BS5000 Part 3 and international standards.
All the UC22/27 range are self-excited with excitation power derived from the main output windings, using either the SX460/SX440/SX421 AVR. The UC22 is also available with specific windings and a transformer controlled excitation system.

A permanent magnet generator (PMG) powered excitation system is available as an option using either the MX341 or MX321 AVR.

Detailed specification sheets are available on request.

1.2 DESIGNATION

UC(D) I 224C2 (example)		
UC UCD	- -	Standard range Generators Dedicated range
I	-	Applications, M = Marine I = Industrial,
22	-	22 or 27 mm centre height
4	-	Number of poles, 4 or 6
C	-	Core Size
2	-	Number of bearings

1.3 SERIAL NUMBER LOCATION AND IDENTITY NUMBER LOCATION

Each generator is metal stamped with it's own unique serial number, the location of this number is described below.

UCI and UCM generators have their serial number stamped into the upper section of the drive end frame to end bracket adaptor ring, shown as item 31 in the parts lists at the back of this book.

UCD generators have their serial number stamped into the top of the drive end adaptor /fan shroud casting. If for any reason this casting is removed, it is imperative that care is taken to refit it to the correct generator to ensure correct identification is retained.

Inside the terminal box two adhesive rectangular labels have been fixed, each carrying the generators unique identity number. One label has been fixed to the inside of the terminal box sheet metal work, and the second label fixed to the main frame of the generator.

1.4 RATING PLATE

The generator has been supplied with a self adhesive rating plate label to enable fitting after final assembly and painting.

It is intended that this label will be stuck to the outside of the terminal box on the left hand side when viewed from the N.D.E. To assist with squarely positioning the label, location protrusions have been made in the sheet metalwork.

A CE Mark label is also supplied loose for fitment after final assembly and painting. This should be attached to an external surface of the Generator at a suitable location where it will not be obscured by the customer's wiring or other fittings.

The surface in the area where a label is to be stuck must be flat, clean, and any paint finish be fully dry before attempting to attach label. Recommended method for attaching label is peel and fold back sufficient of the backing paper to expose some 20 mm of label adhesive along the edge which is to be located against the sheet metal protrusions. Once this first section of label has been carefully located and stuck into position the backing paper can be progressively removed, as the label is pressed down into position. The adhesive will achieve a permanent bond in 24 hours.
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