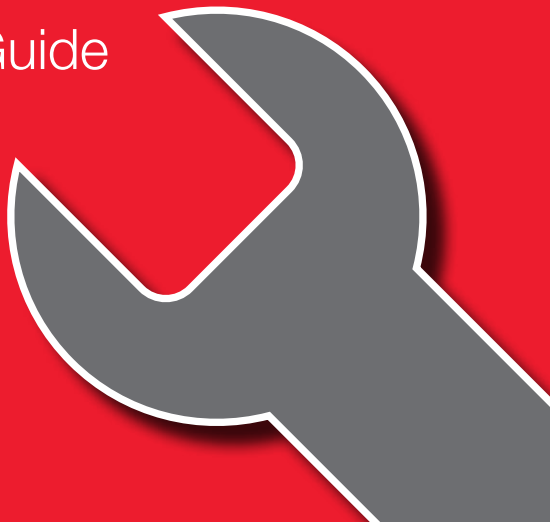




**Generator
Technologies**

STAMFORD[®]

Alternator Service Guide



Introduction

Scheduled service and repair are vital to the reliable operation of your alternator and the safety of those who come in contact with it.

The service activities included in this guide are intended to maximise the life of the alternator, but will not vary, extend or change the terms of the manufacturer's standard warranty or your obligations in that warranty.

Each service interval should be used as a guide only, and developed on the basis that the alternator was installed and is operated in accordance with the manufacturer's guidelines. If the alternator is located and/or

operated in adverse or unusual environmental conditions, the service intervals may need to be more frequent. The alternator should be continually monitored between service to identify any potential failure modes, signs of misuse, or excessive wear and tear.



Disclaimer

This guide contains guidance and instructions for servicing and maintenance of the alternator only.

Before operating the alternator, refer to the Installation, Service and Maintenance manual to make sure that all personnel who work on the equipment have access to the manual and all additional documentation supplied with it. Misuse and failure to follow the instructions, and the use of non-approved parts, may invalidate the product warranty and lead to potential accidents.

The manual is an essential part of the alternator and should be available to all users throughout its life.

This guide states service intervals and key components to inspect throughout the life of the alternator. Refer to the full instructions in the Installation, Service & Maintenance manual when servicing the alternator.

This guide is written for skilled electrical and mechanical technicians and engineers, who have prior knowledge and experience of generating equipment of this type. If in doubt, please seek expert advice or contact your local Cummins Generator Technologies subsidiary.



Notice

Information in this guide was correct at time of going to print. It may be superseded due to our policy of continuous improvement.

Please visit:

www.cumminsgeneratortechnologies.com
for latest documentation.



Safety Precautions



Safety Information and Notices

Danger, Warning and Caution panels are used in this manual to describe the sources of hazards, their consequences and how to avoid injury. Notice panels emphasize important or critical instructions.

DANGER

Danger indicates a hazardous situation which, if not avoided, WILL result in death or serious injury.

WARNING

Warning indicates a hazardous situation which, if not avoided, COULD result in death or serious injury.

CAUTION

Caution indicates a hazardous situation which, if not avoided, COULD result in minor or moderate injury.

NOTICE

Caution indicates a hazardous situation which, if not avoided, COULD result in minor or moderate injury.



General Guidance

NOTICE

These safety precautions are for general guidance and supplement your own safety procedures and all applicable laws and standards.

Skill Requirements of Personnel

Service and maintenance procedures must only be carried out by experienced and qualified engineers, who are familiar with the procedures and the equipment.

Risk Assessment

A risk assessment has been performed on this product by Cummins, however a separate risk assessment must be performed by the user/operating company to establish all personnel-related risks. All affected users must be trained on the identified risks. Access to the Power PlanUGenerator Set during operation must be restricted to persons who have been trained on these risks.



Personal Protective Equipment (PPE)

All persons operating, servicing, maintaining or working in or with a power plant or a generator set must wear appropriate Personal Protective Equipment (PPE) Recommended PPE includes:

- Ear and Eye Protection
- Head and face protection
- Safety footwear
- Overalls that protect the lower arms and legs

Ensure that all persons are fully aware of the emergency procedures in case of accidents.

Noise

WARNING

Noise from a running alternator can cause serious injury by permanent hearing damage. To prevent injury, wear appropriate personal protection equipment (PPE).

Maximum A-weighted noise emissions depend on alternator type. Contact the supplier for application-specific details.



Electrical Equipment

DANGER

Live electrical conductors can cause serious injury or death by electric shock and burns. To prevent injury and before removing covers over electrical conductors, isolate the generator set from all energy sources, remove stored energy and use lock out/tag out safety procedures.

All electrical equipment can be dangerous if not operated correctly. Always install, service and maintain the alternator in accordance with this manual. Work that requires access to electrical conductors must comply with all applicable local and national electrical safety procedures for the voltages involved and any site specific rules. Always use genuine branded replacement parts.

Lock Out/Tag Out

WARNING

Reconnected Energy Source
Accidental reconnection of energy sources during service and maintenance work can cause serious injury or death by electric shock, burns, crushing, severing or trapping. To prevent injury and before starting service and maintenance work, use appropriate lock out/tag out safety procedures to keep the generator set isolated from energy sources. Do not defeat or bypass the lock out/tag out safety procedures.



Lifting

DANGER

Falling mechanical parts can cause serious injury or death by impact, crushing, severing or trapping.

To prevent injury and before lifting:

- Check the capacity, condition and attachment of lifting equipment (crane, hoists and jacks, including attachments to anchor, fix or support the equipment).
- Check the capacity, condition and attachment of accessories for lifting (hooks, slings, shackles and eye bolts for attaching loads to lifting equipment).
- Check the capacity, condition and attachment of lifting fixtures on the load.
- Check the mass, integrity and stability (e.g. unbalanced or shifting center of gravity) of the load.

WARNING

Falling mechanical parts can cause serious injury or death by impact, crushing, severing or trapping.

To prevent injury and before lifting the alternator:

- Do not lift the complete generator set by the alternator lifting fixtures.
- Keep the alternator horizontal when lifting.
- Fit drive end and non-drive end transit fittings to single bearing alternators to keep the main rotor in the frame.

Do not remove the lifting label attached to one of the lifting points.



Alternator Operating Areas

WARNING

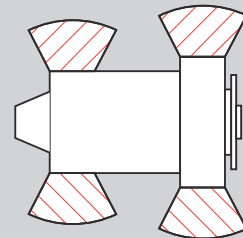
Debris ejected during catastrophic failure can cause serious injury or death by impact, severing or stabbing.

To prevent injury:

- Keep away from the air inlet and air outlet when the alternator is running.
- Do not put operator controls near the air inlet and air outlet.
- Do not cause overheating by running the alternator outside rating plate parameters.
- Do not overload the alternator.
- Do not run an alternator with excessive vibration.
- Do not synchronize parallel alternators outside the specified parameters.

Always wear suitable PPE when working in the hatched areas shown in the diagram or directly in-line with any air inlet/outlet.

Make sure this consideration is captured in your risk assessment.





Hazard Warning Labels



WARNING

Safety Cover Removed

A hazard exposed when a safety cover is removed can cause serious injury or death.

To prevent injury:

- Fit the safety labels at the locations shown on the back of the label sheet supplied.
- Observe the safety labels.
- Refer to the service manual before removing covers.

The generator set manufacturer is responsible for fitting the self-adhesive hazard warning labels supplied with the alternator.

Replace labels that are missing, damaged or painted over.



Hazard Warning Labels - continued



P0/P1 Alternator

P0/P1
Alternator



Commission

Post Commission
6 Month Service

1,000 Hour
1 Year Service

10,000 Hours
2 Year Service

30,000 Hours
5 Year Service



Commission			
Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> ■ Alternator rating ■ Bedplate arrangement ■ Coupling arrangement ■ Environmental conditions and cleanliness ■ Complete machine damage, loose parts and earth bonds ■ Guards, screens, warning and safety labels ■ Maintenance access <p>Test</p> <ul style="list-style-type: none"> ■ Ambient temperature (inside and outside) ■ Electrical nominal operating conditions and excitations while alternator is running ■ Vibration while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Synchronisation settings <p>Test</p> <ul style="list-style-type: none"> ■ Initial AVR set up ■ AVR settings while alternator is running ■ Customer connections of auxiliaries ■ Function of auxiliaries ■ Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of windings ■ Customer settings for temperature sensors <p>Test</p> <ul style="list-style-type: none"> ■ Insulation resistance of all windings (P0/P1 test for LV) ■ Insulation resistance of rotor, exciter and EBS ■ Temperature sensors while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of bearings ■ Customer settings for temperature sensors <p>Test</p> <ul style="list-style-type: none"> ■ Temperature sensors while alternator is running
	Cooling	Rectifier	Terminal Box
	<p>Inspect</p> <ul style="list-style-type: none"> ■ Air flow (rate and direction while alternator is running) ■ Condition of fan <p>Test</p> <ul style="list-style-type: none"> ■ Condition of air filter 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Diodes and varistors 	<p>Inspect</p> <ul style="list-style-type: none"> ■ All alternator/customer connections and cabling

Post Commission 250 Hours/6 Months			
Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> ■ Environmental conditions and cleanliness ■ Complete machine damage, loose parts, and earth bonds ■ Guards, screens, warning and safety labels <p>Test</p> <ul style="list-style-type: none"> ■ Ambient temperature (inside and outside) ■ Electrical nominal operating conditions and excitations while alternator is running ■ Vibration while alternator is running 	<p>Test</p> <ul style="list-style-type: none"> ■ AVR settings while alternator is running ■ Function of auxiliaries ■ Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of windings <p>Test</p> <ul style="list-style-type: none"> ■ Insulation resistance of all windings (P0/P1 test for LV) ■ Insulation resistance of rotor, exciter and EBS ■ Temperature sensors while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of bearings
	Cooling	Rectifier	Terminal Box
	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of fan <p>Test</p> <ul style="list-style-type: none"> ■ Condition of air filter <p>Clean</p> <ul style="list-style-type: none"> ■ Air filter 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Diodes and varistors 	<p>Inspect</p> <ul style="list-style-type: none"> ■ All alternator/customer connections and cabling

1,000 Hours/1 Year Service

Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> ■ Environmental conditions and cleanliness ■ Complete machine damage, loose parts, and earth bonds ■ Guards, screens, warning and safety labels <p>Test</p> <ul style="list-style-type: none"> ■ Ambient temperature (inside and outside) ■ Electrical nominal operating conditions and excitations while alternator is running ■ Vibration while alternator is running 	<p>Test</p> <ul style="list-style-type: none"> ■ AVR settings while alternator is running ■ Customer connections of auxiliaries ■ Function of auxiliaries ■ Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of windings <p>Test</p> <ul style="list-style-type: none"> ■ Insulation resistance of all windings (P0/P1 test for LV) ■ Insulation resistance of rotor, exciter, and EBS ■ Temperature sensors while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of bearings <p>Test</p> <ul style="list-style-type: none"> ■ Temperature sensors while alternator is running
	Cooling	Rectifier	Terminal Box
	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of fan <p>Test</p> <ul style="list-style-type: none"> ■ Condition of air filter <p>Clean</p> <ul style="list-style-type: none"> ■ Air filter 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Diodes and varistors 	<p>Inspect</p> <ul style="list-style-type: none"> ■ All alternator/customer connections and cabling

10,000 Hours/2 Year Service

Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> ■ Coupling arrangement ■ Environmental conditions and cleanliness ■ Complete machine damage, loose parts, and earth bonds ■ Guards, screens, warning and safety labels <p>Test</p> <ul style="list-style-type: none"> ■ Ambient temperature (inside and outside) ■ Electrical nominal operating conditions and excitations while alternator is running ■ Vibration while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Anti condensation heater <p>Test</p> <ul style="list-style-type: none"> ■ AVR settings while alternator is running ■ Customer connections of auxiliaries ■ Function of auxiliaries ■ Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of windings <p>Test</p> <ul style="list-style-type: none"> ■ Insulation resistance of all windings (P0/P1 test for LV) ■ Temperature sensors while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of bearings
	Cooling	Rectifier	Terminal Box
	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of fan <p>Test</p> <ul style="list-style-type: none"> ■ Condition of air filter <p>Clean</p> <ul style="list-style-type: none"> ■ Air filter 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Diodes and varistors 	<p>Inspect</p> <ul style="list-style-type: none"> ■ All alternator/customer connections and cabling

P0/P1 Alternator 30,000 Hours/5 Year Service Kits

For the 30,000 hour service interval we recommend replacing several components in order to optimise the alternator's performance.

For the P0/P1 alternator, the kits detailed in this table contain all parts necessary to execute the maintenance and repairs.

Kit Number	Contents
A051C107 (P0/P1 1 Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ NDE Bearing Kit
A051C115 (P0/P1 2 Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ DE and NDE Bearing Kit

P0/P1 Alternator

30,000 Hours/5 Year Service

Alternator	Controls and Auxiliaries	Windings	Bearings
Inspect <ul style="list-style-type: none"> ■ Coupling arrangement ■ Environmental conditions and cleanliness ■ Complete machine damage, loose parts, and earth bonds ■ Guards, screens, warning and safety labels Test <ul style="list-style-type: none"> ■ Ambient temperature (inside and outside) ■ Electrical nominal operating conditions and excitations while alternator is running ■ Vibration while alternator is running 	Inspect <ul style="list-style-type: none"> ■ Anti condensation heater Test <ul style="list-style-type: none"> ■ AVR settings while alternator is running ■ Customer connections of auxiliaries ■ Function of auxiliaries ■ Synchronisation while alternator is running 	Inspect <ul style="list-style-type: none"> ■ Condition of windings Test <ul style="list-style-type: none"> ■ Insulation resistance of all windings (P0/P1 test for LV) ■ Temperature sensors while alternator is running ■ Insulation resistance of rotor, exciter and EBS 	Replace <ul style="list-style-type: none"> ■ Bearings
	Cooling	Rectifier	Terminal Box
	Inspect <ul style="list-style-type: none"> ■ Condition of fan Test <ul style="list-style-type: none"> ■ Condition of Air filter 	Inspect <ul style="list-style-type: none"> ■ Diodes and varistors 	Inspect <ul style="list-style-type: none"> ■ All alternator/customer connections and cabling

UC22/UC27 Alternator

UC22/UC27
Alternator



Commission

Post Commission
6 Month Service

1,000 Hour
1 Year Service

10,000 Hours
2 Year Service

30,000 Hours
5 Year Service



Commission			
Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> ■ Alternator rating ■ Bedplate arrangement ■ Coupling arrangement ■ Environmental conditions and cleanliness ■ Complete machine damage, loose parts and earth bonds ■ Guards, screens, warning and safety labels ■ Maintenance access <p>Test</p> <ul style="list-style-type: none"> ■ Ambient temperature (inside and outside) ■ Electrical nominal operating conditions and excitations while alternator is running ■ Vibration while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Synchronisation settings <p>Test</p> <ul style="list-style-type: none"> ■ Initial AVR set up ■ AVR settings while alternator is running ■ Customer connections of auxiliaries ■ Function of auxiliaries ■ Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of windings ■ Customer settings for temperature sensors <p>Test</p> <ul style="list-style-type: none"> ■ Insulation resistance of all windings (UC22/UC27 test for LV/MV) ■ Temperature sensors while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of bearings ■ Customer settings for temperature sensors <p>Test</p> <ul style="list-style-type: none"> ■ Temperature sensors while alternator is running
	Cooling	Rectifier	Terminal Box
	<p>Inspect</p> <ul style="list-style-type: none"> ■ Air flow (rate and direction while alternator is running) ■ Condition of fan <p>Test</p> <ul style="list-style-type: none"> ■ Condition of air filter 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Diodes and varistors ■ Three phase rectifier (if fitted) 	<p>Inspect</p> <ul style="list-style-type: none"> ■ All alternator/customer connections and cabling

Post Commission 250 Hours/6 Months			
Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> ■ Environmental conditions and cleanliness ■ Complete machine damage, loose parts, and earth bonds ■ Guards, screens, warning and safety labels <p>Test</p> <ul style="list-style-type: none"> ■ Ambient temperature (inside and outside) ■ Electrical nominal operating conditions and excitations while alternator is running ■ Vibration while alternator is running 	<p>Test</p> <ul style="list-style-type: none"> ■ AVR settings while alternator is running ■ Function of auxiliaries ■ Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of windings <p>Test</p> <ul style="list-style-type: none"> ■ Insulation resistance of all windings (UC22/UC27 test for LV/MV) ■ Insulation resistance of rotor, exciter and PMG ■ Temperature sensors while alternator is running ■ Insulation resistance of rotor, exciter and PMG 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of bearings <p>Test</p> <ul style="list-style-type: none"> ■ Temperature sensors while alternator is running
	Cooling	Rectifier	Terminal Box
	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of fan <p>Test</p> <ul style="list-style-type: none"> ■ Condition of air filter 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Diodes and varistors ■ Three phase rectifier (if fitted) 	<p>Inspect</p> <ul style="list-style-type: none"> ■ All alternator/customer connections and cabling

1,000 Hours/1 Year Service

Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels <p>Test</p> <ul style="list-style-type: none"> Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running 	<p>Test</p> <ul style="list-style-type: none"> AVR settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> Condition of windings <p>Test</p> <ul style="list-style-type: none"> Insulation resistance of all windings (UC22/UC27 test for LV/MV) Insulation resistance of rotor, exciter, and PMG Temperature sensors while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> Condition of bearings <p>Test</p> <ul style="list-style-type: none"> Temperature sensors while alternator is running
	Cooling	Rectifier	Terminal Box
<p>Inspect</p> <ul style="list-style-type: none"> Condition of fan <p>Test</p> <ul style="list-style-type: none"> Condition of air filter <p>Clean</p> <ul style="list-style-type: none"> Air filter 	<p>Inspect</p> <ul style="list-style-type: none"> Diodes and varistors Three phase rectifier (if fitted) 	<p>Inspect</p> <ul style="list-style-type: none"> All alternator/customer connections and cabling 	

10,000 Hours/2 Year Service

Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels <p>Test</p> <ul style="list-style-type: none"> Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> Anti condensation heater <p>Test</p> <ul style="list-style-type: none"> AVR settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> Condition of windings <p>Test</p> <ul style="list-style-type: none"> Insulation resistance of all windings (UC22/UC27 test for LV/MV) Temperature sensors while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> Condition of bearings <p>Test</p> <ul style="list-style-type: none"> Temperature sensors while alternator is running
	Cooling	Rectifier	Terminal Box
<p>Inspect</p> <ul style="list-style-type: none"> Condition of fan <p>Test</p> <ul style="list-style-type: none"> Condition of air filter <p>Clean</p> <ul style="list-style-type: none"> Air filter 	<p>Inspect</p> <ul style="list-style-type: none"> Diodes and varistors Three phase rectifier (if fitted) 	<p>Inspect</p> <ul style="list-style-type: none"> All alternator/customer connections and cabling 	

UC22/UC27 Alternator 30,000 Hours/5 Year Service Kits

For the 30,000 hour service interval we recommend replacing several components in order to optimise the alternator's performance.

For the UC22/UC27 alternator, the kits detailed in this table contain all parts necessary to execute the maintenance and repairs.

Kit Number	Contents
A051C212 (UC22 1 Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ NDE Bearing Kit
A051C216 (UC22 2 Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ DE and NDE Bearing Kit
A051C218 (UC27 1 Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ DE and NDE Bearing Kit
A051C222 (UC27 2 Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ DE and NDE Bearing Kit

UC22/UC27 Alternator

30,000 Hours/5 Year Service

Alternator	Controls and Auxiliaries	Windings	Bearings
Inspect <ul style="list-style-type: none"> ■ Coupling arrangement ■ Environmental conditions and cleanliness ■ Complete machine damage, loose parts, and earth bonds ■ Guards, screens, warning and safety labels Test <ul style="list-style-type: none"> ■ Ambient temperature (inside and outside) ■ Electrical nominal operating conditions and excitations while alternator is running ■ Vibration while alternator is running 	Inspect <ul style="list-style-type: none"> ■ Anti condensation heater Test <ul style="list-style-type: none"> ■ AVR settings while alternator is running ■ Customer connections of auxiliaries ■ Function of auxiliaries ■ Synchronisation while alternator is running 	Inspect <ul style="list-style-type: none"> ■ Condition of windings Test <ul style="list-style-type: none"> ■ Insulation resistance of all windings (UC22/UC27 test for LV/MV) ■ Temperature sensors while alternator is running ■ Insulation resistance of rotor, exciter and PMG 	Replace <ul style="list-style-type: none"> ■ Bearings Test <ul style="list-style-type: none"> ■ Temperature sensors while alternator is running
	Cooling	Rectifier	Terminal Box
	Inspect <ul style="list-style-type: none"> ■ Condition of fan Test <ul style="list-style-type: none"> ■ Condition of air filter 	Inspect <ul style="list-style-type: none"> ■ Diodes and varistors 	Inspect <ul style="list-style-type: none"> ■ All alternator/customer connections and cabling

HC4/HC5/HC6 Alternator

HC4/HC5/HC6
Alternator



Commission			
Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> ■ Alternator rating ■ Bedplate arrangement ■ Coupling arrangement ■ Environmental conditions and cleanliness ■ Complete machine damage, loose parts and earth bonds ■ Guards, screens, warning and safety labels ■ Maintenance access <p>Test</p> <ul style="list-style-type: none"> ■ Ambient temperature (inside and outside) ■ Electrical nominal operating conditions and excitations while alternator is running ■ Vibration while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Synchronisation settings <p>Test</p> <ul style="list-style-type: none"> ■ Initial AVR and PFC set up ■ AVR and PFC settings while alternator is running ■ Customer connections of auxiliaries ■ Function of auxiliaries ■ Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of windings ■ Customer settings for temperature sensors <p>Test</p> <ul style="list-style-type: none"> ■ Insulation resistance of all windings (HC4/HC5/HC6 test for LV/MV) ■ Temperature sensors while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of bearings ■ Customer settings for temperature sensors <p>Test</p> <ul style="list-style-type: none"> ■ Temperature sensors while alternator is running
	Cooling	Rectifier	Terminal Box
	<p>Inspect</p> <ul style="list-style-type: none"> ■ Air flow (rate and direction while alternator is running) ■ Condition of fan <p>Test</p> <ul style="list-style-type: none"> ■ Condition of air filter 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Diodes and varistors 	<p>Inspect</p> <ul style="list-style-type: none"> ■ All alternator/customer connections and cabling

Post Commission 250 Hours/6 Months			
Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> ■ Environmental conditions and cleanliness ■ Complete machine damage, loose parts, and earth bonds ■ Guards, screens, warning and safety labels <p>Test</p> <ul style="list-style-type: none"> ■ Ambient temperature (inside and outside) ■ Electrical nominal operating conditions and excitations while alternator is running ■ Vibration while alternator is running 	<p>Test</p> <ul style="list-style-type: none"> ■ AVR and PFC settings while alternator is running ■ Function of auxiliaries ■ Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of windings <p>Test</p> <ul style="list-style-type: none"> ■ Insulation resistance of all windings (HC4/HC5/HC6 test for LV/MV) ■ Insulation resistance of rotor, exciter and PMG ■ Temperature sensors while alternator is running ■ Insulation resistance of rotor, exciter and PMG 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of bearings <p>Test</p> <ul style="list-style-type: none"> ■ Temperature sensors while alternator is running <p>Clean</p> <ul style="list-style-type: none"> ■ Grease exhaust and trap (Re-greasable bearings only) <p>Replace</p> <ul style="list-style-type: none"> ■ Grease for re-greasable bearings
	Cooling	Rectifier	Terminal Box
	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of fan <p>Test</p> <ul style="list-style-type: none"> ■ Condition of air filter <p>Clean</p> <ul style="list-style-type: none"> ■ Air filter 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Diodes and varistors 	<p>Inspect</p> <ul style="list-style-type: none"> ■ All alternator/customer connections and cabling

1,000 Hours/1 Year Service

Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels <p>Test</p> <ul style="list-style-type: none"> Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running 	<p>Test</p> <ul style="list-style-type: none"> AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> Condition of windings <p>Test</p> <ul style="list-style-type: none"> Insulation resistance of all windings (HC4/HC5/HC6 test for LV/MV) Insulation resistance of rotor, exciter, and PMG Temperature sensors while alternator is running 	<p>Test</p> <ul style="list-style-type: none"> Temperature sensors while alternator is running <p>Replace</p> <ul style="list-style-type: none"> Bearing grease <p>Clean</p> <ul style="list-style-type: none"> Grease exhaust and trap
	Cooling	Rectifier	Terminal Box
<p>Inspect</p> <ul style="list-style-type: none"> Condition of fan <p>Test</p> <ul style="list-style-type: none"> Condition of air filter <p>Clean</p> <ul style="list-style-type: none"> Air filter 		<p>Inspect</p> <ul style="list-style-type: none"> Diodes and varistors 	<p>Inspect</p> <ul style="list-style-type: none"> All alternator/customer connections and cabling

10,000 Hours/2 Year Service

Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels <p>Test</p> <ul style="list-style-type: none"> Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> Anti condensation heater <p>Test</p> <ul style="list-style-type: none"> AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> Condition of windings <p>Test</p> <ul style="list-style-type: none"> Insulation resistance of all windings (HC4/HC5/HC6 test for LV/MV) Temperature sensors while alternator is running 	<p>Test</p> <ul style="list-style-type: none"> Temperature sensors while alternator is running <p>Replace</p> <ul style="list-style-type: none"> Bearing grease <p>Clean</p> <ul style="list-style-type: none"> Grease exhaust and trap
	Cooling	Rectifier	Terminal Box
<p>Inspect</p> <ul style="list-style-type: none"> Condition of fan <p>Test</p> <ul style="list-style-type: none"> Condition of air filter <p>Clean</p> <ul style="list-style-type: none"> Air filter 		<p>Inspect</p> <ul style="list-style-type: none"> Diodes and varistors 	<p>Inspect</p> <ul style="list-style-type: none"> All alternator/customer connections and cabling

HC4/HC5/HC6 Alternator 30,000 Hours/5 Year Service Kits

For the 30,000 hour service interval we recommend replacing several components in order to optimise the alternator's performance.

For the HC4/HC5/HC6 alternator, the kits detailed in this table contain all parts necessary to execute the maintenance and repairs.

Kit Number	Contents
A051C225 (HC4 1 Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ NDE Bearing Kit
A051C230 (HC4 2 Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ DE and NDE Bearing Kit
A051C232 (HC5 1 SEALED Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ NDE Bearing Kit
A051Z125 (HC5 1 RE-GREASABLE Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ Re-grease NDE Bearing Kit ■ Cartridge and Cap
A051C234 (HC5 2 SEALED Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ DE and NDE Bearing Kit ■ Cartridge and Cap
A051Z131 (HC5 2 RE-GREASABLE Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ Regrease DE and NDE Bearing Kit ■ Cartridge and Cap
A051C237 (HC6 1 SEALED Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ NDE Bearing Kit ■ Cartridge and Cap
A051Z133 (HC6 1 RE-GREASABLE Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ Re-grease NDE Bearing Kit ■ Cartridge and Cap
A051C243 (HC6 2 SEALED Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ DE and NDE Bearing Kit ■ Cartridge and Cap
A051Z137 (HC6 2 RE-GREASABLE Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ Regrease DE and NDE Bearing Kit ■ Cartridge and Cap

HC4/HC5/HC6 Alternator

30,000 Hours/5 Year Service

Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> ■ Coupling arrangement ■ Environmental conditions and cleanliness ■ Complete machine damage, loose parts, and earth bonds ■ Guards, screens, warning and safety labels <p>Test</p> <ul style="list-style-type: none"> ■ Ambient temperature (inside and outside) ■ Electrical nominal operating conditions and excitations while alternator is running ■ Vibration while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Anti condensation heater <p>Test</p> <ul style="list-style-type: none"> ■ AVR and PFC settings while alternator is running ■ Customer connections of auxiliaries ■ Function of auxiliaries ■ Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of Windings <p>Test</p> <ul style="list-style-type: none"> ■ Insulation resistance of all windings (HC4/HC5/HC6 test for LV/MV) ■ Temperature sensors while alternator is running ■ Insulation resistance of rotor, exciter and PMG 	<p>Replace</p> <ul style="list-style-type: none"> ■ Bearings (sealed & re-greasable) ■ Bearing grease <p>Test</p> <ul style="list-style-type: none"> ■ Temperature sensors while alternator is running <p>Clean</p> <ul style="list-style-type: none"> ■ Grease exhaust & trap (re-greasable bearings only)
	Cooling	Rectifier	Terminal Box
	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of fan <p>Test</p> <ul style="list-style-type: none"> ■ Condition of air filter <p>Clean</p> <ul style="list-style-type: none"> ■ Air filter 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Diodes and varistors 	<p>Inspect</p> <ul style="list-style-type: none"> ■ All alternator/customer connections and cabling

P7 Alternator

P7
Alternator



Commission

Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> ■ Alternator rating ■ Bedplate arrangement ■ Coupling arrangement ■ Environmental conditions and cleanliness ■ Complete machine damage, loose parts and earth bonds ■ Guards, screens, warning and safety labels ■ Maintenance access <p>Test</p> <ul style="list-style-type: none"> ■ Ambient temperature (inside and outside) ■ Electrical nominal operating conditions and excitations while alternator is running ■ Vibration while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Synchronisation settings <p>Test</p> <ul style="list-style-type: none"> ■ Initial AVR and PFC set up ■ AVR and PFC settings while alternator is running ■ Customer connections of auxiliaries ■ Function of auxiliaries ■ Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of windings ■ Customer settings for temperature sensors <p>Test</p> <ul style="list-style-type: none"> ■ Insulation resistance of all windings (P7 test for LV/MV) ■ Temperature sensors while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of bearings ■ Customer settings for temperature sensors <p>Test</p> <ul style="list-style-type: none"> ■ Temperature sensors while alternator is running
	Cooling	Rectifier	Terminal Box
	<p>Inspect</p> <ul style="list-style-type: none"> ■ Air flow (rate and direction while alternator is running) ■ Condition of fan <p>Test</p> <ul style="list-style-type: none"> ■ Condition of air filter 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Diodes and varistors 	<p>Inspect</p> <ul style="list-style-type: none"> ■ All alternator/customer connections and cabling

Post Commission 250 Hours/6 Months

Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> ■ Environmental conditions and cleanliness ■ Complete machine damage, loose parts, and earth bonds ■ Guards, screens, warning and safety labels <p>Test</p> <ul style="list-style-type: none"> ■ Ambient temperature (inside and outside) ■ Electrical nominal operating conditions and excitations while alternator is running ■ Vibration while alternator is running 	<p>Test</p> <ul style="list-style-type: none"> ■ AVR and PFC settings while alternator is running ■ Function of auxiliaries ■ Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of windings <p>Test</p> <ul style="list-style-type: none"> ■ Insulation resistance of all windings (P7 test for LV/MV) ■ Insulation resistance of rotor, exciter and PMG ■ Temperature sensors while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of bearings <p>Test</p> <ul style="list-style-type: none"> ■ Temperature sensors while alternator is running <p>Clean</p> <ul style="list-style-type: none"> ■ Grease exhaust and trap (Re-greasable bearings only) <p>Replace</p> <ul style="list-style-type: none"> ■ Grease for re-greasable bearings
	Cooling	Rectifier	Terminal Box
	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of fan <p>Test</p> <ul style="list-style-type: none"> ■ Condition of air filter <p>Clean</p> <ul style="list-style-type: none"> ■ Air filter 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Diodes and varistors 	<p>Inspect</p> <ul style="list-style-type: none"> ■ All alternator/customer connections and cabling

1,000 Hours/1 Year Service

Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels <p>Test</p> <ul style="list-style-type: none"> Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running 	<p>Test</p> <ul style="list-style-type: none"> AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> Condition of windings <p>Test</p> <ul style="list-style-type: none"> Insulation resistance of all windings (P7 test for LV/MV) Insulation resistance of rotor, exciter, and PMG Temperature sensors while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> Condition of bearings <p>Test</p> <ul style="list-style-type: none"> Temperature sensors while alternator is running <p>Clean</p> <ul style="list-style-type: none"> Grease exhaust and trap (Re-greasable bearings only) <p>Replace</p> <ul style="list-style-type: none"> Grease for re-greasable bearings
	Cooling	Rectifier	Terminal Box
	<p>Inspect</p> <ul style="list-style-type: none"> Condition of fan <p>Test</p> <ul style="list-style-type: none"> Condition of air filter <p>Clean</p> <ul style="list-style-type: none"> Air filter 	<p>Inspect</p> <ul style="list-style-type: none"> Diodes and varistors 	<p>Inspect</p> <ul style="list-style-type: none"> All alternator/customer connections and cabling

10,000 Hours/2 Year Service

Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels <p>Test</p> <ul style="list-style-type: none"> Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> Anti condensation heater <p>Test</p> <ul style="list-style-type: none"> AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> Condition of windings <p>Test</p> <ul style="list-style-type: none"> Insulation resistance of all windings (P7 test for LV/MV) Temperature sensors while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> Condition of bearings <p>Test</p> <ul style="list-style-type: none"> Temperature sensors while alternator is running <p>Clean</p> <ul style="list-style-type: none"> Grease exhaust and trap (Re-greasable bearings only) <p>Replace</p> <ul style="list-style-type: none"> Grease for re-greasable bearings
	Cooling	Rectifier	Terminal Box
	<p>Inspect</p> <ul style="list-style-type: none"> Condition of fan <p>Test</p> <ul style="list-style-type: none"> Condition of air filter <p>Clean</p> <ul style="list-style-type: none"> Air filter 	<p>Inspect</p> <ul style="list-style-type: none"> Diodes and varistors 	<p>Inspect</p> <ul style="list-style-type: none"> All alternator/customer connections and cabling

P7 Alternator 30,000 Hours/5 Year Service Kits

For the 30,000 hour service interval we recommend replacing several components in order to optimise the alternator's performance.

For the P7 alternator, the kits detailed in this table contain all parts necessary to execute the maintenance and repairs.

Kit Number	Contents
A051C251 (P7 1 Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ (A-G) NDE Bearing Kit
A051Z145 (P7 1 SEALED Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ NDE Bearing Kit ■ Cartridge and Cap
A051C255 (P7 2 BRG 30,000 Hour Service Kit, A-E)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ (A-E) DE and NDE Bearing Kit
A051C257 (P7 2 BRG 30,000 Hour Service Kit, F-G)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ (F-G) DE and NDE Bearing Kit
A051Z149 (P7 2 SEALED Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ DE and NDE Bearing Kit ■ Cartridge and Cap

P7 Alternator

30,000 Hours/5 Year Service

Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> ■ Coupling arrangement ■ Environmental conditions and cleanliness ■ Complete machine damage, loose parts, and earth bonds ■ Guards, screens, warning and safety labels <p>Test</p> <ul style="list-style-type: none"> ■ Ambient temperature (inside and outside) ■ Electrical nominal operating conditions and excitations while alternator is running ■ Vibration while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Anti condensation heater <p>Test</p> <ul style="list-style-type: none"> ■ AVR and PFC settings while alternator is running ■ Customer connections of auxiliaries ■ Function of auxiliaries ■ Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of windings <p>Test</p> <ul style="list-style-type: none"> ■ Insulation resistance of all windings (P7 test for LV/MV) ■ Temperature sensors while alternator is running ■ Insulation resistance of rotor, exciter and PMG 	<p>Replace</p> <ul style="list-style-type: none"> ■ Bearings (Sealed & re-greasable) ■ Bearing grease <p>Test</p> <ul style="list-style-type: none"> ■ Temperature sensors while alternator is running <p>Clean</p> <ul style="list-style-type: none"> ■ Grease exhaust & trap (re-greasable bearings only)
	Cooling	Rectifier	Terminal Box
	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of fan <p>Test</p> <ul style="list-style-type: none"> ■ Condition of air filter <p>Clean</p> <ul style="list-style-type: none"> ■ Air filter 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Diodes and varistors 	<p>Inspect</p> <ul style="list-style-type: none"> ■ All alternator/customer connections and cabling

P80 Alternator

P80
Alternator



Commission

Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> ■ Alternator rating ■ Bedplate arrangement ■ Coupling arrangement ■ Environmental conditions and cleanliness ■ Complete machine damage, loose parts and earth bonds ■ Guards, screens, warning and safety labels ■ Maintenance access <p>Test</p> <ul style="list-style-type: none"> ■ Ambient temperature (inside and outside) ■ Electrical nominal operating conditions and excitations while alternator is running ■ Vibration while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Synchronisation settings <p>Test</p> <ul style="list-style-type: none"> ■ Initial AVR and PFC set up ■ AVR and PFC settings while alternator is running ■ Customer connections of auxiliaries ■ Function of auxiliaries ■ Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of windings ■ Customer settings for temperature sensors <p>Test</p> <ul style="list-style-type: none"> ■ Insulation resistance of all windings (P80 test for MV/HV) ■ Temperature sensors while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of bearings ■ Customer settings for temperature sensors <p>Test</p> <ul style="list-style-type: none"> ■ Temperature sensors while alternator is running
	Cooling	Rectifier	Terminal Box
	<p>Inspect</p> <ul style="list-style-type: none"> ■ Air flow (rate and direction while alternator is running) ■ Condition of fan <p>Test</p> <ul style="list-style-type: none"> ■ Condition of air filter 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Diodes and surge suppressors 	<p>Inspect</p> <ul style="list-style-type: none"> ■ All alternator/customer connections and cabling

Post Commission 250 Hours/6 Months

Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> ■ Environmental conditions and cleanliness ■ Complete machine damage, loose parts, and earth bonds ■ Guards, screens, warning and safety labels <p>Test</p> <ul style="list-style-type: none"> ■ Ambient temperature (inside and outside) ■ Electrical nominal operating conditions and excitations while alternator is running ■ Vibration while alternator is running 	<p>Test</p> <ul style="list-style-type: none"> ■ AVR and PFC settings while alternator is running ■ Function of auxiliaries ■ Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of windings <p>Test</p> <ul style="list-style-type: none"> ■ Insulation resistance of all windings (P80 test for MV/HV) ■ Insulation resistance of rotor, exciter and PMG ■ Temperature sensors while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of bearings <p>Test</p> <ul style="list-style-type: none"> ■ Temperature sensors while alternator is running <p>Clean</p> <ul style="list-style-type: none"> ■ Grease exhaust and trap (Re-greasable bearings only) <p>Replace</p> <ul style="list-style-type: none"> ■ Grease for re-greasable bearings
	Cooling	Rectifier	Terminal Box
	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of fan <p>Test</p> <ul style="list-style-type: none"> ■ Condition of air filter <p>Clean</p> <ul style="list-style-type: none"> ■ Air filter 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Diodes and surge suppressors 	<p>Inspect</p> <ul style="list-style-type: none"> ■ All alternator/customer connections and cabling

1,000 Hours/1 Year Service

Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels <p>Test</p> <ul style="list-style-type: none"> Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running 	<p>Test</p> <ul style="list-style-type: none"> AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> Condition of windings <p>Test</p> <ul style="list-style-type: none"> Insulation resistance of all windings (P80 test for MV/HV) Insulation resistance of rotor, exciter, and PMG Temperature sensors while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> Condition of bearings <p>Test</p> <ul style="list-style-type: none"> Temperature sensors while alternator is running <p>Clean</p> <ul style="list-style-type: none"> Grease exhaust and trap (Re-greasable bearings only) <p>Replace</p> <ul style="list-style-type: none"> Grease for re-greasable bearings
	Cooling	Rectifier	Terminal Box
	<p>Inspect</p> <ul style="list-style-type: none"> Condition of fan <p>Test</p> <ul style="list-style-type: none"> Condition of air filter <p>Clean</p> <ul style="list-style-type: none"> Air filter 	<p>Inspect</p> <ul style="list-style-type: none"> Diodes and surge suppressors 	<p>Inspect</p> <ul style="list-style-type: none"> All alternator/customer connections and cabling

10,000 Hours/2 Year Service

Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels <p>Test</p> <ul style="list-style-type: none"> Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> Anti condensation heater <p>Test</p> <ul style="list-style-type: none"> AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> Condition of windings <p>Test</p> <ul style="list-style-type: none"> Insulation resistance of all windings (P80 test for MV/HV) Temperature sensors while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> Condition of bearings <p>Test</p> <ul style="list-style-type: none"> Temperature sensors while alternator is running <p>Clean</p> <ul style="list-style-type: none"> Grease exhaust and trap (Re-greasable bearings only) <p>Replace</p> <ul style="list-style-type: none"> Grease for re-greasable bearings
	Cooling	Rectifier	Terminal Box
	<p>Inspect</p> <ul style="list-style-type: none"> Condition of fan <p>Test</p> <ul style="list-style-type: none"> Condition of air filter <p>Clean</p> <ul style="list-style-type: none"> Air filter 	<p>Inspect</p> <ul style="list-style-type: none"> Diodes and surge suppressors 	<p>Inspect</p> <ul style="list-style-type: none"> All alternator/customer connections and cabling

P80 Alternator 30,000 Hours/5 Year Service Kits

For the 30,000 hour service interval we recommend replacing several components in order to optimise the alternator's performance.

For the P80 alternator, the kits detailed in this table contain all parts necessary to execute the maintenance and repairs.

Kit Number	Contents
A051C282 (P80 1 Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ NDE Bearing Kit
A051C285 (P80 2 Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ Bearing Kit Frame R, S, & T
A051C291 (P80 2 Bearing 30,000 Hour Service Kit)	<ul style="list-style-type: none"> ■ Rectifier Service Kit ■ Bearing Kit Frame X, Y, & Z

P80 Alternator

30,000 Hours/5 Year Service

Alternator	Controls and Auxiliaries	Windings	Bearings
<p>Inspect</p> <ul style="list-style-type: none"> ■ Coupling arrangement ■ Environmental conditions and cleanliness ■ Complete machine damage, loose parts, and earth bonds ■ Guards, screens, warning and safety labels <p>Test</p> <ul style="list-style-type: none"> ■ Ambient temperature (inside and outside) ■ Electrical nominal operating conditions and excitations while alternator is running ■ Vibration while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Anti condensation heater <p>Test</p> <ul style="list-style-type: none"> ■ AVR and PFC settings while alternator is running ■ Customer connections of auxiliaries ■ Function of auxiliaries ■ Synchronisation while alternator is running 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of windings <p>Test</p> <ul style="list-style-type: none"> ■ Insulation resistance of all windings (P80 test for MV/HV) ■ Temperature sensors while alternator is running ■ Insulation resistance of rotor, exciter and PMG 	<p>Replace</p> <ul style="list-style-type: none"> ■ Bearings (sealed & re-greasable) ■ Bearing grease <p>Test</p> <ul style="list-style-type: none"> ■ Temperature sensors while alternator is running <p>Clean</p> <ul style="list-style-type: none"> ■ Grease exhaust & trap (re-greasable bearings only)
	Cooling	Rectifier	Terminal Box
	<p>Inspect</p> <ul style="list-style-type: none"> ■ Condition of fan <p>Test</p> <ul style="list-style-type: none"> ■ Condition of air filter 	<p>Inspect</p> <ul style="list-style-type: none"> ■ Diodes and surge suppressors 	<p>Inspect</p> <ul style="list-style-type: none"> ■ All alternator/customer connections and cabling

Guaranteed **STAMFORD**[®]

We guarantee that every product we produce matches the quality, robustness, and proven performance you expect from the STAMFORD range. Built to our quality assured standards, STAMFORD products benefit from a global support network, extensive research and development, and world-leading expertise.

Where people need power, businesses rely on genuine STAMFORD alternators. Proven expertise in design, development, manufacturing, customer support and servicing, ensures quality in every aspect of our business.

Visit **genuine-stamford.com** to find out how we are protecting our customers and their businesses against the dangers of illegal, counterfeit and imitation products and taking action.



The Power of MoreTM

Selecting the right alternator for the right application in today's complex world is our goal - making your life simpler. We understand the performance requirements that each application and operating environment demands. Our knowledgeable and experienced Customer Engineers align individual customers' power needs with the most suitable alternator specification.

We take pride in our global reputation for Technical Support and After Sales Service, continually adding new, trained engineers in locations near to our customers, worldwide.

Cummins engineers are experienced professionals trained in electrical, electronic and mechanical engineering and are ready to help at any point in the **STAMFORD** alternator lifecycle, minimising risk of unexpected downtime.

What this means to you:

- 24 hour response to service emergencies, 7 days a week
- Trained engineers available locally, speaking the local language
- Commissioning of alternators onsite
- Onsite bearing maintenance and bearing condition monitoring
- Onsite insulation integrity checks
- AVR and accessories set up onsite
- Extensive aftermarket distribution for genuine **STAMFORD** parts

Applications Support Email:

applications@cummins.com

Customer Service Help Desk:

Phone: **+44 (0)1780 484732 (24 hours)**

Email: **service-engineers@cumminsgeneratortechnologies.com**



info@cumminsgeneratortechnologies.com

Copyright 2015, Cummins Generator Technologies Ltd. All rights reserved.
Cummins and the Cummins logo are registered trade marks of Cummins Inc.
AvK and STAMFORD are registered trade marks of Cummins Generator Technologies Ltd.

Part No. PG_SSG_P_EN_AF Rev.01