

For maximum performance of your alternator

STAMFORD AVK

POWERING TOMORROW, TOGETHER

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.

Find your local Authorised STAMFORD I AvK Parts and Service Dealer at:

www.stamford-avk.com



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 It may be superseded due to our policy of continuous improvement.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.stamford-avk.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 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

Notice refers to a method or practice which can result in product damage, or to draw attention to additional information or explanations.



General Guidance

NOTICE

These safety precautions are for general guidance. The information is intended to supplement your own safety procedures and applicable rules, laws and regulations.

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 or death and before lifting:

- Check the capacity, condition and attachment of lifting equipment.
- . Check the capacity, condition and attachment of accessories for lifting.
- . Check the capacity, condition and attachment of lifting point(s) on the load.
- . Check the mass, integrity and stability of the load.
- If available: Install drive end and non-drive end transit fittings to prevent movement and damage to bearings.
- . Keep the alternator horizontal when lifting.
- Do not use alternator lifting points for lifting a complete generator set.
- Do not use cooler lifting points for lifting the alternator or a complete generator set.
- Do not remove the lifting label attached to one of the lifting points.

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



⚠ 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.



Alternator Operating Areas

⚠ WARNING

Exposure to Ejected Debris and Particles

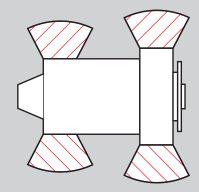
Ejected debris and particles can cause serious injury or death by impact, severing or puncturing. Exposure to mechanically driven release of debris and particles exists in all directions (horizontally and vertically) in the areas surrounding the alternator air outlet(s), air inlets(s) and the open shaft end (also commonly known as the Drive End (DE)). To prevent injury or death:

- Keep away from the air inlet(s) and air outlet(s) when the alternator is operating.
- Do not position operator controls near the air inlet(s) or air outlet(s).
- Do not cause overheating by running the alternator outside rating plate parameters.
- · Do not overload the alternator.
- · Do not operate an alternator displaying 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

Removing Safety Covers

A hazard exists when alternator safety covers are removed. Ejected debris and particles can cause serious injury or death by impact, severing or puncturing. Exposure to mechanically driven release of debris and particles exists in all directions (horizontally and vertically) where covers are removed. To prevent injury or death:

- 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



PO/P1 Alternator



PO/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



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| 7 | Alternator | Controls and Auxiliaries | Windings | Bearings |
|---|---|---|---|--|
| 1 | nspect | Inspect | Inspect | Inspect |
| | 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 Iest | Synchronisation settings Test Initial AVR set up AVR settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Condition of windings Customer settings for temperature sensors Test Insulation resistance of rotor, exciter and EBS Temperature sensors statically and during operations | Condition of bearings Customer settings for temperature sensors Test Temperature sensors statically and during operations |
| | Ambient temperature (inside and outside) | Cooling | Rectifier | Terminal Box |
| | and outside) Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running | Inspect Air flow (rate and direction while alternator is running) Condition of fan Test Condition of air filter | Inspect ■ Diodes and varistors | Inspect ■ All alternator/customer ■ Connections and cabling |

Post Commission 250 Hours/6 Months

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|--|--|--|---|--|
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| Inspect | Test | Inspect | Inspect | |
| Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations | AVR settings while alternator is running Function of auxiliaries Synchronisation parameters are within recommendations | Condition of windings Test Insulation resistance of all windings (P0/P1 test for LV) Insulation resistance of rotor, exciter and EBS Temperature sensors statically and during operations | ■ Condition of bearings | |
| while alternator is running | Cooling | Rectifier | Terminal Box | |
| Vibration while alternator is running | Inspect Condition of fan Test Condition of air filter Clean Air filter | Inspect ■ Diodes and varistors | Inspect ■ All alternator/customer connections and cabling | |

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1,000 Hours/1 Year Service

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| | conditions and excitations while alternator is running | Cooling | Rectifier | Terminal Box |
| | ■ Vibration while alternator is running | Inspect ■ Condition of fan | Inspect ■ Diodes and varistors | Inspect ■ All alternator/customer connections and cabling |
| | | Test ■ Condition of air filter Clean | | |
| | | Air filter | | |

10,000 Hours/2 Year Service

| 3 | 10,000 Hours/2 Year Service | | | |
|------------|---|---|--|---|
| 2 | Alternator | Controls and Auxiliaries | Windings | Bearings |
| חוניווומוט | Inspect | Inspect | Inspect | Inspect |
| | Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels | Anti condensation heater Test AVR settings while alternator is running Customer connections of auxiliaries Function of auxiliaries | Condition of windings Test Insulation resistance of all windings (PO/P1 test for LV) Temperature sensors statically and during operations | ■ Condition of bearings |
| | Test Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations | Synchronisation parameters are within recommendations Cooling | Rectifier | Terminal Box |
| | while alternator is running Vibration while alternator is running | Inspect ■ Condition of fan Test ■ Condition of air filter Clean ■ Air filter | Inspect ■ Diodes and varistors | Inspect ■ 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) | ■ Rectifier Service Kit ■ NDE Bearing Kit |
| A051C115 P0/P1 2 Bearing 30,000 Hour Service Kit) | ■ Rectifier Service Kit ■ DE and NDE Bearing Kit |

| Frame | Part Number | Description |
|-------|-------------|--------------------|
| P0/P1 | 45-1161 | Heater Kit UL 230V |
| P0/P1 | 45-1162 | Heater Kit UL 115V |
| P0/P1 | 45-1163 | Heater Kit UL 24V |
| P0/P1 | 45-1164 | Heater Kit UL 12V |

30,000 Hours/5 Year Service

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| ma | Alternator | Controls and Auxiliaries | Windings | Bearings |
| lte. | Inspect | Replace | Inspect | Replace |
| PO/P1 Alternato | Coupling arrangementEnvironmental conditions | Anti condensation heater | ■ Condition of windings | ■ Bearings |
| P0 | and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) | Test AVR settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Test ■ Insulation resistance of all windings (P0/P1 test for LV) ■ Temperature sensors statically and during operations ■ Insulation resistance of rotor, exciter and EBS | |
| | Electrical nominal operating conditions and excitations while alternator is running | Cooling | Rectifier | Terminal Box |
| | ■ Vibration while alternator is running | Inspect ■ Condition of fan Test ■ Condition of Air filter | Replace Diodes and varistors | Inspect All alternator/customer connections and cabling |

S0/S1 **Alternator**



Alternator

Commission 6 Month Service

Post Commission

1,000 Hour 1 Year Service

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10,000 Hours 2 Year Service

30,000 Hours 5 Year Service



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| Controls and Auxiliaries | Windings | Bearings |
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| Test ■ Initial AVR set up ■ AVR settings while | Inspect ■ Condition of windings | Inspect ■ Condition of bearings |
| alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Test ■ Insulation resistance of all windings (SO/S1 test for LV) ■ Insulation resistance of rotor, exciter and auxiliary | |
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| Cooling | Rectifier | Terminal Box |
| Inspect Air flow (rate and direction while alternator is running) Condition of fan | Inspect Diodes and varistors | Inspect All alternator/customer connections and cabling |
| | Test Initial AVR set up AVR settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations Cooling Inspect Air flow (rate and direction while alternator is running) | Test Initial AVR set up AVR settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations Test Insulation resistance of all windings (S∪/S1 test for LV) Insulation resistance of rotor, exciter and auxiliary Rectifier Inspect Inspect Inspect Inspect Inspect Diodes and varistors |

Post Commission 250 Hours/6 Months

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|-----------------|---|--|--|---|
| ma | Alternator | Controls and Auxiliaries | Windings | Bearings |
| <u>fe</u> | Inspect | Test | Inspect | Inspect |
| S0/S1 Alternato | Environmental conditions and cleanliness | AVR settings while alternator is running | Condition of windings | Condition of bearings |
| SO/ | Complete machine damage, loose parts, and earth bonds | ■ Function of auxiliaries | Test ■ Insulation resistance of all | |
| | ■ Guards, screens, warning | | windings (S0/S1 test for LV) Insulation resistance of | |
| | and safety labels | | rotor, exciter and auxiliary | |
| | Test | | | |
| | Ambient temperature (inside and outside) | | | |
| | Electrical nominal operating conditions and excitations | | | |
| | while alternator is running | Cooling | Rectifier | Terminal Box |
| | Vibration while alternator is running | Inspect | Inspect | Inspect |
| | | ■ Condition of fan | ■ Diodes and varistors | All alternator/customer connections and cabling |

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1,000 Hours/1 Year Service

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| <u> </u> | Alternator | Controls and Auxiliaries | Windings | Bearings |
| | Inspect | Test | Inspect | Inspect |
| ou/ol Alternat | Environmental conditions and cleanliness | AVR settings while alternator is running | Condition of windings | Condition of bearings |
| 200 | Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels | Customer connections of auxiliariesFunction of auxiliaries | Insulation resistance of all windings (SO/S1 test for LV) Insulation resistance of rotor, exciter, and auxiliary The state of the state of rotor, exciter, and auxiliary The state of the state of the state of rotor, exciter, and auxiliary | |
| | Test | | Temperature sensors statically and during | |
| | Ambient temperature (inside and outside) | | operations | |
| | Electrical nominal operating conditions and excitations | | | |
| | while alternator is running | Cooling | Rectifier | Terminal Box |
| | Vibration while alternator is running | Inspect | Inspect | Inspect |
| | | ■ Condition of fan | ■ Diodes and varistors | All alternator/customer connections and cabling |

10,000 Hours/2 Year Service

| Iternator | Controls and Auxiliaries | Windings | Bearings |
|--|---|---|---|
| Inspect Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels | Inspect Anti condensation heater Test AVR settings while alternator is running Customer connections of auxiliaries Function of auxiliaries | Inspect ■ Condition of windings Test ■ Insulation resistance of all windings (S0/S1 test for LV) | Inspect ■ Condition of bearings |
| Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations | Cooling | Rectifier | Terminal Box |
| while alternator is running Vibration while alternator is running | Inspect ■ Condition of fan | Inspect ■ Diodes and varistors | Inspect ■ All alternator/customer connections and cabling |

S0/S1 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 S0/S1 alternator, the kits detailed in this table contain all parts necessary to execute the maintenance and repairs.

| Kit Number | Contents |
|--|---|
| A051C107 (S1 1 x Bearing 30,000 Hour Service Kit) | Rectifier Service KitNDE Bearing Kit |
| A054N489 (S0 1 x Bearing 30,000 Hour Service Kit) | Rectifier Service KitNDE Bearing Kit |
| A079B792 (S0L1 2 x Bearing 30,000 Hour Service Kit) | Rectifier Service KitNDE Bearing Kit |
| A079B793 (SOL2 2 x Bearing 30,000 Hour Service Kit) | Rectifier Service KitNDE Bearing Kit |
| A079B794 (S1L2 2 x Bearing 30,000 Hour Service Kit) | Rectifier Service Kit NDE Bearing Kit |

| Frame | Part Number | Description |
|-------|-------------|--------------------|
| S0/S1 | A054K278 | Heater Kit UL 12V |
| S0/S1 | A054K280 | Heater Kit UL 24V |
| S0/S1 | A054K282 | Heater Kit UL 115V |
| S0/S1 | A054K284 | Heater Kit UL 230V |

≥ 30.000 Hours/5 Year Service

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|------------------|--|---|---|--|
| ma | Alternator | Controls and Auxiliaries | Windings | Bearings |
| S0/S1 Alternator | Inspect Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) | Replace Anti condensation heater Test AVR settings while alternator is running Customer connections of auxiliaries Function of auxiliaries | Inspect ■ Condition of windings Test ■ Insulation resistance of all windings (SO/S1 test for LV) ■ Insulation resistance of rotor, exciter and auxiliary | Replace ■ Bearings |
| | Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running | Cooling Inspect ■ Condition of fan Test ■ Condition of Air filter | Rectifier Replace Diodes and varistors | Terminal Box Inspect ■ 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



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| Alternator | Controls and Auxiliaries | Windings | Bearings |
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| Inspect | Inspect | Inspect | Inspect |
| Alternator rating | Synchronisation settings | Condition of windings | ■ Condition of bearings |
| ■ Bedplate arrangement | | Customer settings for | Customer settings for |
| Coupling arrangement | Test | temperature sensors | temperature sensors |
| Environmental conditions and cleanliness | ■ Initial AVR set up | Test | Test |
| Complete machine damage, | AVR settings while alternator is running | Insulation resistance of all | ■ Temperature sensors |
| loose parts and earth bonds | Customer connections of | windings (UC22/UC27 test | statically and during |
| ■ Guards, screens, warning | auxiliaries | for LV/MV) | operations |
| and safety labels | ■ Function of auxiliaries | Temperature sensors statically and during | |
| Maintenance access | Synchronisation parameters are within recommendations | operations | |
| Test | | | |
| Ambient temperature (inside and outside) | Cooling | Rectifier | Terminal Box |
| ■ Electrical nominal operating | Inspect | Inspect | Inspect |
| conditions and excitations while alternator is running | Air flow (rate and direction while alternator is running) | ■ Diodes and varistors | All alternator/customer connections and cabling |
| ■ Vibration while alternator is running | Condition of fan | Three phase rectifier (if fitted) | connections and cabing |
| | Test | | |
| | Condition of air filter | | |
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Post Commission 250 Hours/6 Months

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|---|---|---|----------------------------------|
| Alternator | Controls and Auxiliaries | Windings | Bearings |
| Inspect | Test | Inspect | Inspect |
| Environmental conditions and cleanliness | AVR settings while alternator is running | ■ Condition of windings | ■ Condition of bearings |
| Complete machine damage, | ■ Function of auxiliaries | Test | Test |
| loose parts, and earth bonds | Synchronisation parameters are within recommendations | ■ Insulation resistance of all | ■ Temperature sensors |
| ■ Guards, screens, warning | are within recommendations | windings (UC22/UC27 test for LV/MV) | statically and during operations |
| and safety labels | | ■ Insulation resistance of | |
| Test | | rotor, exciter and PMG | |
| Ambient temperature (inside | | Temperature sensors statically and during | |
| and outside) | | operations | |
| Electrical nominal operating conditions and excitations | | Insulation resistance of | |
| while alternator is running | 0 8 | rotor, exciter and PMG | |
| ■ Vibration while alternator is | Cooling | Rectifier | Terminal Box |
| running | Inspect | Inspect | Inspect |
| | Condition of fan | ■ Diodes and varistors | ■ All alternator/customer |
| | | ■ Three phase rectifier (if fitted) | connections and cabling |
| | Test | (ii iiiteu) | |
| | Condition of air filter | | |
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□ 1,000 Hours/1 Year Service

| - | Alternator | Controls and Auxiliaries | Windings | Bearings |
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| ı | nspect | Test | Inspect | Inspect |
| ı | Environmental conditions and cleanliness | AVR settings while alternator is running | Condition of windings | Condition of bearings |
| | Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations | Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Test ■ Insulation resistance of all windings (UC22/UC27 test for LV/MV) ■ Insulation resistance of rotor, exciter, and PMG ■ Temperature sensors statically and during operations | Test ■ Temperature sensors statically and during operations |
| | while alternator is running | Cooling | Rectifier | Terminal Box |
| ŀ | Vibration while alternator is | | | |
| | running | Inspect | Inspect | Inspect |
| | | Condition of fan Test | Diodes and varistorsThree phase rectifier (if fitted) | All alternator/customer connections and cabling |
| | | Condition of air filter | | |
| | | Clean | | |
| | | ■ Air filter | | |

b 10,000 Hours/2 Year Service

| Alternator | Controls and Auxiliaries | Windings | Bearings |
|---|--|--|--|
| Coupling arrangement Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) | Inspect Anti condensation heater Test AVR settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Inspect ■ Condition of windings Test ■ Insulation resistance of all windings (UC22/UC27 test for LV/MV ■ Temperature sensors statically and during operations | Inspect Condition of bearings Test Temperature sensors statically and during operations |
| Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running | Cooling Inspect Condition of fan Test Condition of air filter Clean Air filter | Rectifier Inspect Diodes and varistors Three phase rectifier (if fitted) | Terminal Box Inspect ■ 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) | ■ Rectifier Service Kit ■ NDE Bearing Kit |
| A051C216 (UC22 2 Bearing 30,000 Hour Service Kit) | ■ Rectifier Service Kit ■ DE and NDE Bearing Kit |
| A051C218 (UC27 1 Bearing 30,000 Hour Service Kit) | ■ Rectifier Service Kit ■ DE and NDE Bearing Kit |
| A051C222 (UC27 2 Bearing 30,000 Hour Service Kit) | ■ Rectifier Service Kit ■ DE and NDE Bearing Kit |

| Frame | Part Number | Description |
|-----------|-------------|------------------------|
| UC22/UC27 | A053N107 | Heater Kit UL 110-125V |
| UC22/UC27 | A053N108 | Heater Kit UL 220-260V |

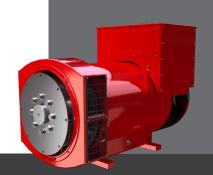
30,000 Hours/5 Year Service

| Alternator | Controls and Auxiliaries | Windings | Bearings |
|--|---|---|---|
| Inspect Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) | Replace Anti condensation heater Test AVR settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Inspect ■ Condition of windings Test ■ Insulation resistance of all windings (UC22/UC27 test for LV/MV) ■ Temperature sensors statically and during operations ■ Insulation resistance of rotor, exciter and PMG | Replace Bearings Test Temperature sensors statically and during operations |
| Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running | Inspect Condition of fan Test Condition of air filter | Rectifier Replace Diodes and varistors | Terminal Box Inspect All alternator/customer connections and cabling |

HC4/HC5/HC6 Alternator

HC4/HC5/HC6

Alternator



Commission Po

Post Commission 6 Month Service

1,000 Hour 1 Year Service 10,000 Hours 2 Year Service 30,000 Hours 5 Year Service



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| ž A | Iternator | Controls and Auxiliaries | Windings | Bearings |
|----------------|--|--|---|--|
| 9 , | nspect | Inspect | Inspect | Inspect |
| 2011/2011/4011 | Environmental conditions and cleanliness Complete machine damage, loose parts and earth bonds Guards, screens, warning and safety labels | Test Initial AVR and PFC set up AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Condition of windings Customer settings for temperature sensors Test Insulation resistance of all windings (H-C4/H-C5/H-C6 test for LV/MV) Temperature sensors statically and during operations | Condition of bearings Customer settings for temperature sensors Test Temperature sensors statically and during operations |
| | | Cooling | Rectifier | Terminal Box |
| • | Ambient temperature (inside and outside) | Cooling | Rectifier | Terminal Box |
| | Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running | Inspect Air flow (rate and direction while alternator is running) Condition of fan Test Condition of air filter | Inspect Diodes and varistors | Inspect All alternator/customer connections and cabling |

► Post Commission 250 Hours/6 Months

| POST COMMISSION 250 HOURS | 70 Monard | | |
|---|---|--|--|
| Alternator | Controls and Auxiliaries | Windings | Bearings |
| Inspect | Test | Inspect | Inspect |
| Environmental conditions and cleanliness | AVR and PFC settings while alternator is running | ■ Condition of windings | Condition of bearings |
| Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations | Function of auxiliaries Synchronisation parameters are within recommendations | Test Insulation resistance of all windings (HC4/HC5/HC6 test for LV/MV) Insulation resistance of rotor, exciter and PMG Temperature sensors statically and during operations Insulation resistance of rotor, exciter and PMG | Test Temperature sensors statically and during operations Clean Grease exhaust and trap (Re-greasable bearings only) Replace Grease for re-greasable bearings |
| while alternator is running Vibration while alternator is | Cooling | Rectifier | Terminal Box |
| running | Inspect Condition of fan Test Condition of air filter Clean Air filter | Inspect Diodes and varistors | Inspect All alternator/customer connections and cabling |

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1,000 Hours/1 Year Service

| Inspect | Alternator | Controls and Auxiliaries | Windings | Bearings |
|--|--|---|---|--|
| alternator is running Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running Vibration while alternator is running alternator is running alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations Insulation resistance of all windings (HC4/HC5/HC6 test for LV/MV) Insulation resistance of all windings (HC4/HC5/HC6 test for LV/MV) Insulation resistance of rotor, exciter, and PMG Temperature sensors statically and during operations Clean Grease exhaust and trap Terminal Box Inspect Condition of fan Test Condition of air filter | Inspect | Test | Inspect | Test |
| while alternator is running Vibration while alternator is running Inspect Condition of fan Rectifier Terminal Box Inspect Inspect All alternator/customer connections and cabling Test Condition of air filter | and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) Electrical nominal operating | alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters | Test ■ Insulation resistance of all windings (HC4/HC5/HC6 test for LV/MV) ■ Insulation resistance of rotor, exciter, and PMG ■ Temperature sensors statically and during | statically and during operations Replace Bearing greasee Clean |
| running Inspect Condition of fan Inspect Diodes and varistors Inspect All alternator/customer connections and cabling Test Condition of air filter | | Cooling | Rectifier | Terminal Box |
| ■ Air filter | ■ Vibration while alternator is | Inspect ■ Condition of fan Test ■ Condition of air filter Clean | Inspect | Inspect All alternator/customer |

10,000 Hours/2 Year Service

| Alternator | Controls and Auxiliaries | Windings | Bearings |
|--|---|---|---|
| Coupling arrangement Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) | Inspect ■ Anti condensation heater Test ■ AVR and PFC settings while alternator is running ■ Customer connections of auxiliaries ■ Function of auxiliaries ■ Synchronisation parameters are within recommendations | Inspect ■ Condition of windings Test ■ Insulation resistance of all windings (HC4/HC5/HC6 test for LV/MV) ■ Temperature sensors statically and during operations | Test Temperature sensors statically and during operations Replace Bearing grease Clean Grease exhaust and trap |
| and outside) Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running | Cooling Inspect Condition of fan Test Condition of air filter Clean Air filter | Rectifier Inspect Diodes and varistors | Terminal Box Inspect ■ 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.

| Frame | Part Number | Description |
|---------|----------------|------------------------|
| HC4 | A053M965 | Heater Kit UL 220-260\ |
| HC4 | A053M957 | Heater Kit UL 110-125\ |
| HC5/HC6 | A053N002 | Heater Kit UL 220-260\ |
| HC5/HC6 | A053M968 | Heater Kit UI 110-125V |

| | Kit Number | Contents |
|----------|---|---|
| | A051C225 (HC4 1 Bearing 30,000 Hour Service Kit) | ■ Rectifier Service Kit ■ NDE Bearing Kit |
| | A051C230 (HC4 2 Bearing 30,000 Hour Service Kit) | Rectifier Service Kit DE and NDE Bearing Kit |
| | A051C232 (HC5 1 SEALED Bearing 30,000 Hour Service Kit) | Rectifier Service Kit NDE Bearing Kit |
| | A051Z125 (HC5 1 RE-GREASABLE Bearing 30,000 Hour Service Kit) | Rectifier Service Kit Re-grease NDE Bearing Kit Cartridge and Cap |
| | A051C234 (HC5 2 SEALED Bearing 30,000 Hour Service Kit) | Rectifier Service Kit DE and NDE Bearing Kit Cartridge and Cap |
| | A051Z131 (HC5 2 RE-GREASABLE Bearing 30,000 Hour Service Kit) | Rectifier Service Kit Regrease DE and NDE Bearing Kit Cartridge and Cap |
| <u>'</u> | A051C237 (HC6 1 SEALED Bearing 30,000 Hour Service Kit) | Rectifier Service Kit NDE Bearing Kit Cartridge and Cap |
| , | A051Z133 (HC6 1 RE-GREASABLE Bearing 30,000 Hour Service Kit) | Rectifier Service Kit Re-grease NDE Bearing Kit Cartridge and Cap |
| | A051C243 (HC6 2 SEALED Bearing 30,000 Hour Service Kit) | Rectifier Service Kit DE and NDE Bearing Kit Cartridge and Cap |
| | A051Z137 (HC6 2 RE-GREASABLE Bearing 30,000 Hour Service Kit) | Rectifier Service Kit Regrease DE and NDE Bearing Kit Cartridge and Cap |

≥ 30,000 Hours/5 Year Service

| Alternator | Controls and Auxiliaries | Windings | Bearings |
|---|---|---|---|
| Coupling arrangement Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside | Replace Anti condensation heater Test AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Inspect Condition of Windings Test Insulation resistance of all windings (HC4/HC5/HC6 test for LV/MV) Temperature sensors statically and during operations Insulation resistance of rotor, exciter and PMG | Replace Bearings (sealed & re-greasable) Bearing grease Test Temperature sensors statically and during operations Clean Grease exhaust & trap |
| Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running | Cooling Inspect Condition of fan Test Condition of air filter Clean Air filter | Rectifier Replace Diodes and varistors | (re-greasable bearings only) Terminal Box Inspect All alternator/customer connections and cabling |

S4/S5/S6 Alternator

S4/S5/S6 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



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| Alternator Controls and Auxiliaries W Inspect Inspect In | | Windings | Bearings | |
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| 1 | nspect | Inspect | Inspect | Inspect |
| 00/00/10 | Coupling arrangement Finvironmental conditions and cleanliness Complete machine damage, loose parts and earth bonds | Synchronisation settings Test Initial AVR and PFC set up AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Condition of windings Customer settings for temperature sensors Test Insulation resistance of all windings Temperature sensors statically and during operations | Condition of bearings Customer settings for temperature sensors Test Temperature sensors statically and during operations |
| • | Ambient temperature (inside | Cooling | Rectifier | Terminal Box |
| | and outside) Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running | Inspect Air flow (rate and direction while alternator is running) Condition of fan Test Condition of air filter | Inspect ■ Diodes and varistors | Inspect ■ All alternator/customer connections and cabling |

Post Commission 250 Hours/6 Months

| 1 031 00111111331011 230 110013/ | | | |
|---|---|--|--|
| Alternator | Controls and Auxiliaries | Windings | Bearings |
| Inspect | Test | Inspect | Inspect |
| Environmental conditions and cleanliness | AVR and PFC settings while alternator is running | Condition of windings | Condition of bearings |
| Complete machine damage, | Function of auxiliaries | Test | Test |
| loose parts, and earth bonds | Synchronisation parameters are within recommendations | Insulation resistance of all windings | Temperature sensors statically and during operations |
| Guards, screens, warning and safety labels | | Insulation resistance of rotor, exciter and PMG | Clean |
| est Ambient temperature (inside | | Temperature sensors statically and during operations | Grease exhaust and trap (Re-greasable bearings only) |
| and outside) | | Insulation resistance of | Replace |
| Electrical nominal operating conditions and excitations while alternator is running | | rotor, exciter and PMG | Grease for re-greasable bearings |
| Vibration while alternator is | Cooling | Rectifier | Terminal Box |
| running | Inspect | Inspect | Inspect |
| | Condition of fan | ■ Diodes and varistors | All alternator/customer connections and cabling |
| | Test | | |
| | Condition of air filter | | |
| | Clean | | |
| | Air filter | | |
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□ 1,000 Hours/1 Year Service

| A | Iternator | Controls and Auxiliaries | Windings | Bearings |
|---|--|---|---|---|
| T | and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Cest Ambient temperature (inside and outside) | Test AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Inspect Condition of windings Test Insulation resistance of all windings Insulation resistance of rotor, exciter, and PMG Temperature sensors statically and during operations | Test Temperature sensors statically and during operations Replace Bearing grease Clean Grease exhaust and trap |
| | conditions and excitations while alternator is running | Cooling Inspect Condition of fan Test Condition of air filter Clean Air filter | Rectifier Inspect Diodes and varistors | Terminal Box Inspect ■ All alternator/customer connections and cabling |

b 10,000 Hours/2 Year Service

| Iternator | Controls and Auxiliaries | Windings | Bearings |
|--|--|---|---|
| nspect | Inspect | Inspect | Test |
| Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Cest | Anti condensation heater Test AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters | Test Insulation resistance of all windings Temperature sensors statically and during operations | Temperature sensors statically and during operations Replace Bearing grease Clean Grease exhaust and trap |
| Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations | are within recommendations Cooling | Rectifier | Terminal Box |
| while alternator is running Vibration while alternator is running | Inspect Condition of fan Test Condition of air filter Clean Air filter | Inspect ■ Diodes and varistors | Inspect ■ All alternator/customer connections and cabling |

S4/S5/S6 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 S4/S5/S6 alternator, the kits detailed in this table contain all parts necessary to execute the maintenance and repairs.

| 053M965 | | |
|---------|------------------------|--|
| | Heater Kit UL 220-260V | |
| 053M957 | Heater Kit UL 110-125 | |
| 053N002 | Heater Kit UL 220-260V | |
| 053M968 | Heater Kit UL 110-125V | |
| | 053N002 | |

| Kit Number | | Co | ntents |
|------------|---|----|---|
| | A051C225 (HC4/S4 1 Bearing 30,000 Hour Service Kit) | _ | Rectifier Service Kit NDE Bearing Kit |
| | A051C230 (HC4/S4 2 Bearing 30,000 Hour Service Kit) | _ | Rectifier Service Kit DE and NDE Bearing Kit |
| | A051C232 (HC5/ S5/S5D 1 SEALED Bearing 30,000 Hour Service Kit) | | Rectifier Service Kit NDE Bearing Kit |
| | A051Z125 (HC5 / S5 1 RE-GREASABLE Bearing 30,000 Hour Service Kit | | Rectifier Service Kit Regrease NDE Bearing Kit Cartridge and Cap |
| | A051C234 (HC5 / S5 2 SEALED Bearing 30,000 Hour Service Kit) | | Rectifier Service Kit Sealed DE and NDE Bearing Kit Cartridge and Cap |
| ١ | A051Z131 (HC5 / S5 2 RE-GREASABLE Bearing 30,000 Hour Service Kit) | | Rectifier Service Kit Regrease DE and NDE Bearing Kit Cartridge and Cap |
| | A051C237 (HC6/S6/S6L1D G-H Core 1 SEALED Bearing 30,000 Hour Service Kit) | | Rectifier Service Kit Sealed DE and NDE Bearing Kit Cartridge and Cap |
| | A051C243 (HC6/S6/S6L1D G-H Core 2 SEALED Bearing 30,000 Hour Service Kit) | | Rectifier Service Kit Sealed DE and NDE Bearing Kit Cartridge and Cap |
| | A059R029 (S6L1D C-F Core 2 SEALED Bearing 30,000 Hour Service Kit) | | Rectifier Service Kit Sealed DE and NDE Bearing Kit Cartridge and Cap |
| | A051Z133 (HC6/S6 1 RE-GREASABLE Bearing 30,000 Hour Service Kit) | | Rectifier Service Kit Regrease NDE Bearing Kit Cartridge and Cap |
| | A051Z137 (HC6/S6 2 RE-GREASABLE Bearing 30,000 Hour Service Kit) | | Rectifier Service Kit Regrease DE and NDE Bearing Kit Cartridge and Cap |

30,000 Hours/5 Year Service

| Alternator Controls and Auxiliaries Wind Inspect Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts, and earth AVR and PFC settings while Irrangement AVR and PFC settings while | | | | |
|---|---|--|---|--|
| Alternator | Controls and Auxiliaries | Windings | Bearings | |
| Inspect Coupling arrangement Environmental conditions and cleanliness | Replace Anti condensation heater Test | Inspect ■ Condition of Windings Test | Replace Bearings (sealed & re-greasable Bearing grease | |
| Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) | AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Insulation resistance of all windings Temperature sensors statically and during operations Insulation resistance of rotor, exciter and PMG | Test Temperature sensors statically and during operations Clean Grease exhaust & trap (re-greasable bearings only) | |
| Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running | Cooling Inspect ■ Condition of fan Test ■ Condition of air filter Clean ■ Air filter | Rectifier Replace Diodes and varistors | Terminal Box Inspect ■ All alternator/customer connections and cabling | |

P7 Alternator

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



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| AILGIIIAU | Alternator | Controls and Auxiliaries | Windings | Bearings |
|-----------|--|---|---|---|
| | Inspect | Inspect | Inspect | Inspect |
| Ι. | Alternator rating | Synchronisation settings | ■ Condition of windings | ■ Condition of bearings |
| - | ■ Bedplate arrangement | | Customer settings for | Customer settings for |
| | Coupling arrangement | Test | temperature sensors | temperature sensors |
| | ■ Environmental conditions | ■ Initial AVR and PFC set up | | |
| | and cleanliness | AVR and PFC settings | Test | Test |
| | Complete machine damage, loose parts and earth bonds | settings while alternator is running | Insulation resistance of all windings (P7 test for LV/MV) | Temperature sensors statically and during |
| | Guards, screens, warning and safety labels | Customer connections of auxiliaries | Temperature sensors statically and during | operations |
| | ■ Maintenance access | Function of auxiliaries | operations | |
| | | Synchronisation parameters | | |
| | Test | are within recommendations | | |
| | Ambient temperature (inside and outside) | Cooling | Rectifier | Terminal Box |
| | ■ Electrical nominal operating | Inspect | Inspect | Inspect |
| | conditions and excitations while alternator is running | Air flow (rate and direction while alternator is running) | ■ Diodes and varistors | All alternator/customer connections and cabling |
| | ■ Vibration while alternator is running | Condition of fan | | |
| | | Test | | |
| | | Condition of air filter | | |
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Post Commission 250 Hours/6 Months

| POST COMMISSION 250 HOURS/6 MONTHS Alternator Controls and Auxiliaries W Inspect Test In | | | |
|--|--|--|--|
| Alternator | Controls and Auxiliaries | Windings | Bearings |
| Inspect Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations | Test AVR and PFC settings while alternator is running Function of auxiliaries Synchronisation parameters are within recommendations | Inspect Condition of windings Test Insulation resistance of all windings (P7 test for LV/MV) Insulation resistance of rotor, exciter and PMG Temperature sensors statically and during operations | Inspect ■ Condition of bearings Test ■ Temperature sensors statically and during operations Clean ■ Grease exhaust and trap (Re-greasable bearings only) Replace ■ Grease for re-greasable bearings |
| while alternator is running Vibration while alternator is running | Cooling Inspect Condition of fan Test Condition of air filter Clean Air filter | Rectifier Inspect Diodes and varistors | Terminal Box Inspect ■ All alternator/customer connections and cabling |

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□ 1,000 Hours/1 Year Service

| Alternator | Controls and Auxiliaries | Windings | Bearings |
|--|---|---|--|
| Inspect | Test | Inspect | Inspect |
| Environmental conditions and cleanliness | AVR and PFC settings while alternator is running | Condition of windings | Condition of bearings |
| Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations | Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | ■ Insulation resistance of all windings (P7 test for LV/MV) ■ Insulation resistance of rotor, exciter, and PMG ■ Temperature sensors statically and during operations | Test Temperature sensors statically and during operations Clean Grease exhaust and trap (Re-greasable bearings only) Replace Grease for re-greasable bearings |
| while alternator is running | Cooling | Rectifier | Terminal Box |
| ■ Vibration while alternator is | Cooming | necune | Terminal box |
| running | Inspect | Inspect | Inspect |
| | Condition of fan | ■ Diodes and varistors | All alternator/customer connections and cabling |
| | Test | | |
| | Condition of air filter | | |
| | Clean | | |
| | Air filter | | |
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10,000 Hours/2 Year Service

| 10,000 Hours/2 Year Service | | | |
|---|---|---|--|
| Alternator | Controls and Auxiliaries | Windings | Bearings |
| Inspect | Inspect | Inspect | Inspect |
| Coupling arrangement | Anti condensation heater | ■ Condition of windings | ■ Condition of bearings |
| Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) Electrical nominal operating | Test AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Test ■ Insulation resistance of all windings (P7 test for LV/MV) ■ Temperature sensors statically and during operations | Test Temperature sensors statically and during operations Clean Grease exhaust and trap (Re-greasable bearings only) Replace Grease for re-greasable bearings |
| conditions and excitations while alternator is running | Cooling | Rectifier | Terminal Box |
| Vibration while alternator is running | Inspect Condition of fan Test Condition of air filter Clean Air filter | Inspect ■ Diodes and varistors | Inspect ■ 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.

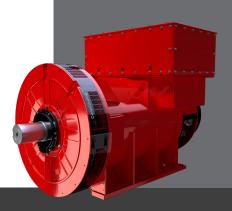
| Kit Number | Contents |
|--|---|
| A051C251 (P7/S7 LV & S7 HV 1 RE-GREASABLE Bearing 30,000 Hour Service Kit) | Rectifier Service KitNDE Bearing KitCartridge and Cap |
| A051Z145 (P7/S7 LV & S7 HV 1 SEALED Bearing 30,000 HourService Kit) | Rectifier Service KitNDE Bearing KitCartridge and Cap |
| A051C255 (P7 A-E core/S7 LV C-F core 2 RE-GREASABLE Bearing 30,000 Hour Service Kit) | ■ Rectifier Service Kit ■ DE Bearing Kit ■ Cartridge and Cap |
| A051C257 (P7 F-G core/S7 LV G-J core & S7 HV G-J core 2 RE-GREASABLE Bearing 30,000 Hour Service Kit) | Rectifier Service KitDE Bearing KitCartridge and Cap |

| Frame | Part Number | Description |
|--------|-------------|------------------------|
| P7 A-F | A053N003 | Heater Kit UL 220-260V |
| P7 A-F | A053M969 | Heater Kit UL 110-125V |
| P7 G-H | A053N109 | Heater Kit UL 220-260V |
| P7 G-H | A053M999 | Heater Kit UL 110-125V |

30,000 Hours/5 Year Service

| 30,000 Hours/5 Year Service | | | |
|--|---|--|--|
| Alternator | Controls and Auxiliaries | Windings | Bearings |
| Inspect | Replace | Inspect | Replace |
| Coupling arrangementEnvironmental conditions | Anti condensation heater | Condition of windings | ■ Bearings (Sealed & re-greasable) |
| and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test | Test AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | ■ Insulation resistance of all windings (P7 test for LV/MV) ■ Temperature sensors statically and during operations ■ Insulation resistance of rotor, exciter and PMG | Bearing grease Test Temperature sensors statically and during operations Clean |
| Ambient temperature (inside and outside)Electrical nominal operating | are within recommendations | , | Grease exhaust & trap (re-greasable bearings on |
| conditions and excitations while alternator is running | Cooling | Rectifier | Terminal Box |
| Vibration while alternator is running | Inspect Condition of fan Test Condition of air filter Clean Air filter | Replace Diodes and varistors | Inspect All alternator/customer connections and cabling |

S7 Alternator



S7 Alternator

Commission Post Commission 1,000 Hour 10,000 Hours 30,000 Hours 50,000 Hours 6 Month Service 1 Year Service 2 Year Service 5 Year Service 6 Year Service

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| Alternator | Controls and Auxiliaries | Windings | Bearings |
|--|---|---|---|
| Inspect | Inspect | Inspect | Inspect |
| Alternator rating | Synchronisation settings | ■ Condition of windings | ■ Condition of bearings |
| Bedplate arrangement | | ■ Customer settings for | Customer settings for |
| Coupling arrangement | Test | temperature sensors | temperature sensors |
| Environmental conditions | ■ Initial AVR and PFC set up | | |
| and cleanliness | AVR and PFC settings | Test | Test |
| Complete machine damage, loose parts and earth bonds | settings while alternator is running | Insulation resistance of all windings (P7 test for LV/MV) | Temperature sensors statically and during |
| Guards, screens, warning and safety labels | Customer connections of auxiliaries | Temperature sensors statically and during | operations |
| Maintenance access | ■ Function of auxiliaries | operations | |
| | Synchronisation parameters are within recommendations | | |
| Test | are within recommendations | | |
| Ambient temperature (inside and outside) | Cooling | Rectifier | Terminal Box |
| Electrical nominal operating | Inspect | Inspect | Inspect |
| conditions and excitations while alternator is running | Air flow (rate and direction while alternator is running) | ■ Diodes and varistors | All alternator/customer connections and cabling |
| Vibration while alternator is running | Condition of fan | | |
| | Test | | |
| | Condition of air filter | | |
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Post Commission 250 Hours/6 Months

| ternator | Controls and Auxiliaries | Windings | Bearings |
|--|--|--|--|
| spect | Test | Inspect | Inspect |
| Environmental conditions and cleanliness | AVR and PFC settings while alternator is running | Condition of windings | Condition of bearings |
| Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels est Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations | Function of auxiliaries Synchronisation parameters are within recommendations | Test Insulation resistance of all windings (P7 test for LV/MV) Insulation resistance of rotor, exciter and PMG Temperature sensors statically and during operations | Test Temperature sensors statically and during operations Clean Grease exhaust and trap (Re-greasable bearings onlessed) Replace Grease for re-greasable bearings |
| while alternator is running Vibration while alternator is | Cooling | Rectifier | Terminal Box |
| running | Inspect Condition of fan Heat exchanger seals (S7W only) Test Condition of air filter Clean Air filter | Inspect Diodes and varistors | Inspect All alternator/customer connections and cabling |

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□ 1,000 Hours/1 Year Service

| 3 | Alternator | Controls and Auxiliaries | Windings | Bearings |
|---|---|--|---|---|
| 2 | Inspect | Test | Inspect | Inspect |
| 5 | Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels | AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Test Insulation resistance of all windings (P7 test for LV/MV) Insulation resistance of rotor, exciter, and PMG | Condition of bearings Test Temperature sensors statically and during operations Clean |
| | Test ■ Ambient temperature (inside and outside) ■ Electrical nominal operating conditions and excitations | | Temperature sensors statically and during operations | Grease exhaust and trap (Re-greasable bearings only) Replace Grease for re-greasable bearings |
| | while alternator is running Vibration while alternator is | Cooling | Rectifier | Terminal Box |
| | violation while alternator is running | Inspect ■ Condition of fan ■ Heat exchanger seals Test ■ Condition of air filter Clean ■ Air filter | Inspect ■ Diodes and varistors | Inspect ■ All alternator/customer connections and cabling |

10,000 Hours/2 Year Service

| 10,000 hours/2 fear Service | | | |
|--|--|--|--|
| Alternator | Controls and Auxiliaries | Windings | Bearings |
| Inspect Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) | Inspect Anti condensation heater Test AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Windings Inspect ■ Condition of windings Test ■ Insulation resistance of all windings (P7 test for LV/MV) ■ Temperature sensors statically and during operations | Bearings Inspect Condition of bearings Test Temperature sensors statically and during operations Clean Grease exhaust and trap (Re-greasable bearings only) Replace Grease for re-greasable |
| Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running | Cooling Inspect Condition of fan Heat exchanger seals (S7W only) Test Condition of air filter Clean Air filter | Rectifier Inspect Diodes and varistors | bearings Terminal Box Inspect All alternator/customer connections and cabling |

S7 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 S7 alternator, the kits detailed in this table contain all parts necessary to execute the maintenance and repairs.

| Frame | Part Number | Description |
|--------|----------------------|--|
| S7 C-G | A053N003 | Heater Kit UL 220-260V |
| S7 C-G | A053M969 | Heater Kit UL 110-125V |
| S7 H-K | A053N109 | Heater Kit UL 220-260V |
| S7 H-K | A053M999 | Heater Kit UL 110-125V |
| S7 HV | A053M999 A064T028 | Heater Kit UL 110V Heater Kit UL 240V |

| Kit Number | Contents | |
|---|---|--|
| A051C251 (P7/S7 LV/S7 WLV & S7 HV 1 RE-GREASABLE Bearing 30,000 Hour Service Kit) | Rectifier Service KitNDE Anti-Friction Bearing KCartridge and Cap | |
| A051Z145 (P7/S7 LV & S7 HV 1 SEALED Bearing 30,000 Hour Service Kit) | Rectifier Service KitNDE Anti-Friction Bearing KCartridge and Cap | |
| AO76H555 (S7 LV K core 1 BEARING RE-GREASABLE Bearing 30,000 Hour Service Kit) | Rectifier Service KitNDE Anti-Friction Bearing KCartridge and Cap | |
| A051C255 (P7 A-E core/S7 LV C-F core & S7 WLV D-J core 2 REGREASABLE Bearing 30,000 Hour Service Kit) | Rectifier Service KitAnti-Friction Bearing KitCartridge and Cap | |
| AO76H557 (S7 LV K core 2 BEARING RE-GREASABLE Bearing 30,000 Hour Service Kit) | Rectifier Service KitAnti-Friction Bearing KitCartridge and Cap | |
| A051C257 (P7 F-G core/S7 LV G-J core /S7 WLV D-J core & S7 HV G-J core 2 RE-GREASABLE Bearing 30,000 Hour Service Kit) | Rectifier Service KitAnti-Friction Bearing KitCartridge and Cap | |

30,000 Hours/5 Year Service

| Iternator | Controls and Auxiliaries | Windings | Bearings |
|---|---|--|--|
| nspect | Replace | Inspect | Replace |
| Coupling arrangement Environmental conditions | Anti condensation heater | Condition of windings | Anti-friction bearings (sealed & re-greasable) |
| and cleanliness | Test | Test | ■ Bearing grease |
| Complete machine damage, loose parts, and earth bonds | AVR and PFC settings while alternator is running | Insulation resistance of all windings (S7 test for LV) | Test |
| Guards, screens, warning and safety labels | Customer connections of auxiliaries | Temperature sensors statically and during | Temperature sensors statically and during |
| | ■ Function of auxiliaries | operations Insulation resistance of | operations |
| est | Synchronisation parameters are within recommendations | rotor, exciter and PMG | Clean |
| Ambient temperature (inside and outside) | | | Grease exhaust & trap (re-greasable bearings only |
| Electrical nominal operating conditions and excitations while alternator is running | Cooling | Rectifier | Terminal Box |
| Vibration while alternator is | Inspect | Replace | Inspect |
| running | Condition of fan | ■ Diodes and varistors | All alternator/customer |
| | Heat exchanger seals (S7W only) | | connections and cabling |
| | Test | | |
| | Condition of air filter | | |
| | Clean | | |
| | ■ Air filter | | |
| | | | |

S7 Alternator 50,000 Hours Service Parts - Sleeve Bearing

For the 50,000 hour service interval we recommend inspecting and replacing if necessary non drive end and drive end bearing shells in order to optimise the alternator's performance.

| Part Number | Contents |
|-------------|-----------------------|
| A067T920 | ■ Drive Bearing Shell |
| A067T658 | ■ Drive Bearing Shell |
| | |

S7 does not have Insulated bearings so we do not need the extra page like the A7

50,000 Hours

| 2 30,000 110013 | | | |
|--|---|---|--|
| Alternator | Controls and Auxiliaries | Windings | Bearings |
| Alternator Inspect Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test | Test AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Inspect Condition of windings Test Insulation resistance of all windings (S7 test for LV) Temperature sensors statically and during operations Insulation resistance of rotor, exciter and PMG | Replace Bearing shells Test Temperature sensors statically and during operations Clean Grease exhaust & trap (re-greasable bearings only) |
| Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running | Cooling Inspect Condition of fan Heat exchanger seals Bearing shells Test Condition of air filter Clean Air filter | Rectifier Inspect Diodes and varistors | Terminal Box Inspect ■ All alternator/customer connections and cabling |

A7 Alternator



Alternator

Commission Post Commission 1,000 Hour 10,000 Hours 30,000 Hours 50,000 Hours 6 Month Service 1 Year Service 2 Year Service 5 Year Service 6 Year Service

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Commission

| Alternator Inspect | Controls and Auxiliaries | Windings | Bearings |
|--|---|--|--|
| Inspect | Inspect | Inspect | Inspect |
| Alternator rating Bedplate arrangement Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts and earth bonds Guards, screens, warning and safety labels | Synchronisation settings Test Initial AVR and PFC set up AVR and PFC settings settings while alternator is running Customer connections of auxiliaries | Condition of windings Customer settings for temperature sensors Test Insulation resistance of all windings Temperature sensors statically and during operations | Condition of bearings Customer settings for temperature sensors Test Temperature sensors statically and during operations |
| Maintenance access Test Ambient temperature (inside | Function of auxiliaries Synchronisation parameters are within recommendations Cooling | Rectifier | Terminal Box |
| and outside) Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running | Inspect Inspect Condition of fan Test Condition of air filter | Inspect ■ Diodes and varistors | Inspect ■ All alternator/customer connections and cabling |

► Post Commission 250 Hours/6 Months

| POSE COMMINSSION 250 HOURS/O MODITUS | | |
|--------------------------------------|--|--|
| Windings | Bearings | |
| Inspect | Inspect | |
| nile Condition of windings | ■ Condition of bearings | |
| | Test Temperature sensors statically and during operations Clean Grease exhaust and trap (Re-greasable bearings only) Replace Grease for re-greasable bearings | |
| Rectifier | Terminal Box | |
| Inspect ■ Diodes and varistors | Inspect All alternator/customer connections and cabling | |
| 6 | Inspect Condition of windings Test Insulation resistance of all windings Insulation resistance of rotor, exciter and PMG Temperature sensors statically and during operations Rectifier Inspect | |

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1,000 Hours/1 Year Service

| Alternator | Controls and Auxiliaries | Windings | Bearings |
|---|---|---|--|
| Inspect | Test | Inspect | Inspect |
| Environmental conditions and cleanliness | AVR and PFC settings while alternator is running | ■ Condition of windings | Condition of bearings |
| Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) Electrical nominal operating | Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Test Insulation resistance of all windings Insulation resistance of rotor, exciter, and PMG Temperature sensors statically and during operations | Test ■ Temperature sensors statically and during operations Clean ■ Grease exhaust and trap (Re-greasable bearings only) Replace ■ Grease for re-greasable |
| conditions and excitations while alternator is running | Cooling | Rectifier | bearings Terminal Box |
| ■ Vibration while alternator is | Cooling | Reculier | Terminal Box |
| running | Inspect Condition of fan Heat exchanger seals Test Condition of air filter Clean Air filter | Inspect Diodes and varistors | Inspect ■ All alternator/customer connections and cabling |

| 10,000 Hours/2 fear Service | | | |
|---|---|--|--|
| Alternator | Controls and Auxiliaries | Windings | Bearings |
| Inspect Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Inspect Anti condensation heater Test AVR and PFC settings what alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parametr | Inspect Anti condensation heater Test AVR and PFC settings while alternator is running Customer connections of auxiliaries | Inspect Condition of windings Test Insulation resistance of all windings Temperature sensors statically and during operations | Inspect Condition of bearings Test Temperature sensors statically and during operations Clean Grease exhaust and trap (Re-greasable bearings onl |
| Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running | Inspect Condition of fan Heat exchanger seals (A7W only) Test Condition of air filter Clean Air filter | Rectifier Inspect Diodes and varistors | Terminal Box Inspect All alternator/customer connections and cabling |

A7 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 A7 alternator, the kits detailed in this table contain all parts necessary to execute the maintenance and repairs.

| Frame | Part Number | Description |
|--------|-------------|---------------------------------------|
| A7 D | A053N003 | Heater Kit UL 220-260V 2 cartridge |
| A7 D | A053M969 | Heater Kit UL 110-125V 2 cartridge |
| A7H-K | A053N109 | Heater Kit UL 220-260V 4 cartridge |
| A7 H-K | A053M999 | Heater Kit UL 110-125V 4 cartridge |

| Kit Number | Contents |
|--|---|
| A051C251 (A7 LV & A7 W LV D, H & J Core 1 RE-GREASABLE Bearing 30,000 Hour Service Kit) | Rectifier Service KitNDE Anti-Friction Bearing KitCartridge and Cap |
| A051Z145 (A7 LV all cores 1 SEALED Bearing 30,000 Hour Service Kit) | Rectifier Service Kit NDE Anti-Friction Bearing Kit Cartridge and Cap |
| A076H555 (A7 LV K core 1 BEARING RE-GREASABLE Bearing 30,000 Hour Service Kit) | Rectifier Service Kit NDE Anti-Friction Bearing Kit Cartridge and Cap |
| A051C255 (A7 LV & A7 W LV D core 2 REGREASABLE Bearing 30,000 Hour Service Kit) | Rectifier Service KitDE Anti-Friction Bearing KitCartridge and Cap |
| A076H557 (A7 LV K & A7W LV K core 2 RE-GREASABLE Bearing 30,000 Hour Service Kit) | Rectifier Service Kit Anti-Friction Bearing Kit Cartridge and Cap |
| A051C257 (A7 LV & A7 W LV H & J core 2 RE-GREASABLE Bearing 30,000 Hour Service Kit) | Rectifier Service Kit Anti-Friction Bearing Kit Cartridge and Cap |

| Iternator | Controls and Auxiliaries | Windings | Bearings |
|---|--|---|--|
| nspect | Replace | Inspect | Replace |
| Coupling arrangement Environmental conditions | Anti condensation heater | ■ Condition of windings | Anti-friction bearings (sealed & re-greasable) |
| and cleanliness Complete machine damage, | Test ■ AVR and PFC settings while | Test ■ Insulation resistance of all | ■ Bearing grease |
| loose parts, and earth bonds Guards, screens, warning and safety labels | alternator is running Customer connections of auxiliaries Function of auxiliaries | windings (S7 test for LV) Temperature sensors statically and during operations Insulation resistance of | Test Temperature sensors statically and during operations |
| Test ■ Ambient temperature (inside and outside) | Synchronisation parameters are within recommendations | rotor, exciter and PMG | Clean ■ Grease exhaust & trap (re-greasable bearings only |
| Electrical nominal operating conditions and excitations while alternator is running | Cooling | Rectifier | Terminal Box |
| Vibration while alternator is running | Inspect Condition of fan Heat exchanger seals (S7W only) Test Condition of air filter Clean Air filter | Replace Diodes and varistors | Inspect All alternator/customer connections and cabling |

A7 Alternator 30,000 Hours/5 Year Service Kits - Insulated Bearings

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

For the A7 alternator, the kits detailed in this table contain all parts necessary to execute the maintenance and repairs.

| Frame | Part Number | Description |
|-------|-------------|---------------------------------------|
| A7 D | A053N003 | Heater Kit UL 220-260V 2 cartridge |
| A7 D | A053M969 | Heater Kit UL 110-125V 2 cartridge |
| А7Н-К | A053N109 | Heater Kit UL 220-260V 4 cartridge |
| А7Н-К | A053M999 | Heater Kit UL 110-125V 4 cartridge |

| Kit Number | Contents |
|--|---|
| A078Y655 (A7 LV & A7 WLV D core 2 INSULATED Bearing 30,000 Hour Service Kit) | Rectifier Service KitInsulated Bearing KitCartridge and Cap |
| A078Y654 A7 LV & A7WLV H,J core 2 INSULATED Bearing 30,000 Hour Service Kit) | Rectifier Service KitInsulated Bearing KitCartridge and Cap |
| A078Y656 (A7 LV K core 2 INSULATED Bearing 30,000 Hour Service Kit) | Rectifier Service KitInsulated Bearing KitCartridge and Cap |

| 30,000 nours/3 rear service | • | | |
|--|---|--|--|
| Alternator | Controls and Auxiliaries | Windings | Bearings |
| Inspect | Replace | Inspect | Replace |
| Coupling arrangementEnvironmental conditions | Anti condensation heater | ■ Condition of windings | Insulated bearings (sealed & re-greasable) |
| and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test | Test AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Test Insulation resistance of all windings (S7 test for LV) Temperature sensors statically and during operations Insulation resistance of rotor, exciter and PMG | Test Temperature sensors statically and during operations Clean |
| Ambient temperature (inside and outside) | | | Grease exhaust & trap (re-greasable bearings only) |
| Electrical nominal operating conditions and excitations while alternator is running | Cooling | Rectifier | Terminal Box |
| ■ Vibration while alternator is running | Inspect Condition of fan Heat exchanger seals (S7W only) Test Condition of air filter Clean Air filter | Replace Diodes and varistors | Inspect ■ All alternator/customer connections and cabling |

A7 Alternator 50,000 Hours/6 Years Service Parts - Sleeve Bearing

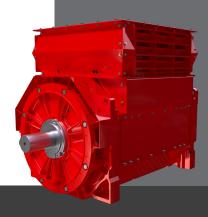
For the 50,000 hour service interval we recommend inspecting and replacing if necessary non drive end and drive end bearing shells in order to optimise the alternator's performance.

| Part Number | Contents |
|-------------|-----------------------|
| A067T920 | ■ Drive Bearing Shell |
| A067T658 | ■ Drive Bearing Shell |

50,000 Hours

| Alternator | Controls and Auxiliaries | Windings | Bearings |
|--|---|--|---|
| Inspect | Test | Inspect | Replace |
| Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside | AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Test Insulation resistance of all windings (A7 test for LV) Temperature sensors statically and during operations Insulation resistance of rotor, exciter and PMG | Bearing shells Test Temperature sensors statically and during operations Clean Grease exhaust & trap (re-greasable bearings only) |
| and outside) Electrical nominal operating conditions and excitations | Cooling | Rectifier | Terminal Box |
| while alternator is running Vibration while alternator is running | Inspect Condition of fan Heat exchanger seals Bearing shells Test Condition of air filter Clean Air filter | Inspect ■ Diodes and varistors | Inspect ■ All alternator/customer connections and cabling |

P80 Alternator



P80 Alternator

Commission

Post Commission 6 Month Service 1,000 Hour 1 Year Service 10,000 Hours 2 Year Service



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| 3 | Alternator | Controls and Auxiliaries | Windings | Bearings |
|----------|--|---|--|--|
| AIICIIIa | Inspect | Inspect | Inspect | Inspect |
| 000 | 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 Test | Synchronisation settings Test Initial AVR and PFC set up AVR and PFC settings settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Condition of windings Customer settings for temperature sensors Test Insulation resistance of all windings (P80 test for MV/HV) Temperature sensors statically and during operations | Condition of bearings Customer settings for temperature sensors Test Temperature sensors statically and during operations |
| | Ambient temperature (inside and outside) | Cooling | Rectifier | Terminal Box |
| | and outside) Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running | Inspect Air flow (rate and direction while alternator is running) Condition of fan Test Condition of air filter | Inspect ■ Diodes and surge suppressors | Inspect ■ All alternator/customer connections and cabling |

Post Commission 250 Hours/6 Months

| 5 ∣ | Post Commission 250 Hours/6 Months | | | |
|-----|--|--|---|--|
| 2 | Alternator | Controls and Auxiliaries | Windings | Bearings |
| | Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations | Test AVR and PFC settings while alternator is running Function of auxiliaries Synchronisation parameters are within recommendations | Inspect Condition of windings Test Insulation resistance of all windings (P80 test for MV/HV) Insulation resistance of rotor, exciter and PMG Temperature sensors statically and during operations | Inspect Condition of bearings Test Temperature sensors statically and during operations Clean Grease exhaust and trap (Re-greasable bearings only) Replace Grease for re-greasable bearings |
| | while alternator is running Vibration while alternator is running | Cooling Inspect Condition of fan Test Condition of air filter Clean Air filter | Rectifier Inspect ■ Diodes and surge suppressors | Terminal Box Inspect ■ All alternator/customer connections and cabling |

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5 1,000 Hours/1 Year Service

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|---|---|---|---|
| Alternator | Controls and Auxiliaries | Windings | Bearings |
| Alternator Inspect | Test | Inspect | Inspect |
| and cleanliness and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations | AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Test Insulation resistance of all windings (P80 test for MV/HV) Insulation resistance of rotor, exciter, and PMG Temperature sensors statically and during operations | Condition of bearings Test Temperature sensors statically and during operations Clean |
| while alternator is running Vibration while alternator is | Cooling | Rectifier | Terminal Box |
| running | Inspect ■ Condition of fan Test ■ Condition of air filter Clean ■ Air filter | Inspect ■ Diodes and surge suppressors | Inspect All alternator/customer connections and cabling |

| 10,000 nours/2 rear Service | | | |
|--|---|---|--|
| Alternator | Controls and Auxiliaries | Windings | Bearings |
| Inspect Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) Electrical nominal operating | Inspect Anti condensation heater Test AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Inspect Condition of windings Test Insulation resistance of all windings (P80 test for MV/HV) Temperature sensors statically and during operations | Inspect Condition of bearings Test Temperature sensors statically and during operations Clean Grease exhaust and trap (Re-greasable bearings only) Replace Grease for re-greasable bearings |
| conditions and excitations while alternator is running | Cooling | Rectifier | Terminal Box |
| ■ Vibration while alternator is running | Inspect Condition of fan Test Condition of air filter Clean Air filter | Inspect ■ Diodes and surge suppressors | Inspect ■ 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.

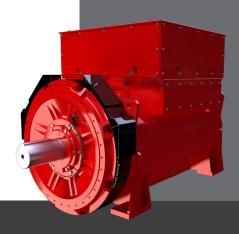
For the P80 alternator, the kits detailed in this table contain all parts necessary to execute the maintenance and repairs.

| Kit Number | Contents |
|--|---|
| A051C282 (P80 1 Bearing 30,000 Hour Service Kit) | ■ Rectifier Service Kit ■ NDE Bearing Kit |
| A051C285 (P80 2 Bearing 30,000 Hour Service Kit) | Rectifier Service Kit Bearing Kit Frame R, S, & T |
| A051C291 (P80 2 Bearing 30,000 Hour Service Kit) | ■ Rectifier Service Kit ■ Bearing Kit Frame X, Y, & Z |

| Frame | Part Number | Description |
|-------|-------------|---------------|
| P80 | 45-1029 | Heater Kit UL |

| 30,000 Hours/5 fear Service | ; | | |
|--|--|--|---|
| Alternator | Controls and Auxiliaries | Windings | Bearings |
| Inspect | Replace | Inspect | Replace |
| Coupling arrangementEnvironmental conditions | Anti condensation heater | ■ Condition of windings | Bearings (sealed & re-greasable) |
| and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) | AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | ■ Insulation resistance of all windings (P80 test for MV/HV) ■ TTemperature sensors statically and during operations ■ Insulation resistance of rotor, exciter and PMG | Bearing grease Test Temperature sensors statically and during operations Clean Grease exhaust & trap (re-greasable bearings only) |
| Electrical nominal operating conditions and excitations while alternator is running | Cooling | Rectifier | Terminal Box |
| ■ Vibration while alternator is running | Inspect Condition of fan Test Condition of air filter | Replace Diodes and surge suppressors | Inspect All alternator/customer connections and cabling |

S9 Alternator



S9 Alternator

Commission

Post Commission 6 Month Service 1,000 Hour 1 Year Service 10,000 Hours 2 Year Service





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Commission

| Alternator | Controls and Auxiliaries | Windings | Bearings |
|---|---|--|--|
| nspect | Inspect | Inspect | Inspect |
| 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 | Synchronisation settings Test Initial AVR and PFC set up AVR and PFC settings settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Condition of windings Customer settings for temperature sensors Test Insulation resistance of all windings (P80 test for MV/HV) Temperature sensors statically and during operations | Condition of bearings Customer settings for temperature sensors Test Temperature sensors statically and during operations |
| Ambient temperature (inside and outside) | Cooling | Rectifier | Terminal Box |
| Electrical nominal operating conditions and excitations while alternator is running Vibration while alternator is running | Inspect Air flow (rate and direction while alternator is running) Condition of fan Test Condition of air filter | Inspect ■ Diodes and surge suppressors | Inspect ■ All alternator/customer connections and cabling |
| | | | |

Post Commission 250 Hours/6 Months

| 3 | POST CONTINUESSION 250 HOURS/O WIOTILIS | | | |
|----------|---|---|---|--|
| <u> </u> | Alternator | Controls and Auxiliaries | Windings | Bearings |
| | Inspect | Test | Inspect | Inspect |
| 5 | Environmental conditions and cleanliness | AVR and PFC settings while alternator is running | Condition of windings | Condition of bearings |
| | Complete machine damage, | ■ Function of auxiliaries | Test | Test |
| | loose parts, and earth bonds | Synchronisation parameters are within recommendations | Insulation resistance of all windings (P80 test for | Temperature sensors statically and during operations |
| | Guards, screens, warning and safety labels | | MV/HV) | |
| | , | | Insulation resistance of rotor, exciter and PMG | Clean |
| | Test | | ■ Temperature sensors | Grease exhaust and trap (Re-greasable bearings only) |
| | Ambient temperature (inside and outside) | | statically and during operations | Replace |
| | Electrical nominal operating conditions and excitations while alternator is running | | | Grease for re-greasable bearings |
| | Vibration while alternator is | Cooling | Rectifier | Terminal Box |
| | running | Inspect | Inspect | Inspect |
| | | Condition of fan | ■ Diodes and surge suppressors | All alternator/customer connections and cabling |
| | | Test | | |
| | | Condition of air filter | | |
| | | Clean | | |
| | | Air filter | | |
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b 1,000 Hours/1 Year Service

| Alternator | Controls and Auxiliaries | Windings | Bearings |
|--|---|---|--|
| Inspect | Test | Inspect | Inspect |
| Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations | AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Test Insulation resistance of all windings (P80 test for MV/HV) Insulation resistance of rotor, exciter, and PMG Temperature sensors statically and during operations | ■ Condition of bearings Test ■ Temperature sensors statically and during operations Clean ■ Grease exhaust and trap (Re-greasable bearings only) Replace ■ Grease for re-greasable bearings |
| while alternator is running Vibration while alternator is | Cooling | Rectifier | Terminal Box |
| running | Inspect ■ Condition of fan Test ■ Condition of air filter Clean ■ Air filter | Inspect ■ Diodes and surge suppressors | Inspect ■ All alternator/customer connections and cabling |

10 000 Hours/2 Vaar Sarvica

| ō | 10,000 Hours/2 Year Service | | | |
|---------------|---|--|---|--|
| mai | Alternator | Controls and Auxiliaries | Windings | Bearings |
| S9 Alternator | Coupling arrangement Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels Test Ambient temperature (inside and outside) Electrical nominal operating | Inspect Anti condensation heater Test AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters are within recommendations | Inspect Condition of windings Test Insulation resistance of all windings (P80 test for MV/HV) Temperature sensors statically and during operations | Inspect Condition of bearings Test Temperature sensors statically and during operations Clean Grease exhaust and trap (Re-greasable bearings only) Replace Grease for re-greasable bearings |
| | conditions and excitations while alternator is running | Cooling | Rectifier | Terminal Box |
| | ■ Vibration while alternator is running | Inspect Condition of fan Test Condition of air filter Clean Air filter | Inspect ■ Diodes and surge suppressors | Inspect ■ All alternator/customer connections and cabling |

S9 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 S9 alternator, the kits detailed in this table contain all parts necessary to execute the maintenance and repairs.

| Kit Number | Contents |
|---|---|
| A065P433 (S9 1 Bearing 30,000 Hour Service Kit) | ■ Rectifier Service Kit ■ NDE Bearing Kit |
| A065P434 (S9 2 Bearing 30,000 Hour Service Kit) | ■ Rectifier Service Kit ■ Bearing Kit Frame A - D |
| A065P435 (S9 2 Bearing 30,000 Hour Service Kit) | ■ Rectifier Service Kit ■ Bearing Kit Frame E - F |
| A065P436 (S9 2 Bearing 30,000 Hour Service Kit) | ■ Rectifier Service Kit ■ Bearing Kit Frame G - H |

| Frame | Part Number | Description |
|-------|-------------|---------------|
| S9 | A059S757 | F9 Heater Kit |

| Alternator | Controls and Auxiliaries | Windings | Bearings |
|---|--|--|---|
| nspect Coupling arrangement Environmental conditions and cleanliness Complete machine damage, loose parts, and earth bonds Guards, screens, warning and safety labels | Replace Anti condensation heater Test AVR and PFC settings while alternator is running Customer connections of auxiliaries Function of auxiliaries Synchronisation parameters | Inspect Condition of windings Test Insulation resistance of all windings (P80 test for MV/HV) Temperature sensors statically and during operations Insulation resistance of | Replace Bearings (sealed & re-greasable) Bearing grease Test Temperature sensors statically and during operations |
| Ambient temperature (inside and outside) Electrical nominal operating conditions and excitations | are within recommendations Cooling | rotor, exciter and PMG Rectifier | Clean ■ Grease exhaust & trap (re-greasable bearings only Terminal Box |
| | Inspect Condition of fan Test Condition of air filter | Replace Diodes and surge suppressors | Inspect ■ 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 **stamford-avk.com/verify** to find out how we are protecting our customers and their businesses against the dangers of illegal, counterfeit and imitation products and taking action.



Ultimate Peace of Mind

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.

Our 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

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