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› Kohler Genuine OEM Electric Starter Instruction Manual

KOHLER 25 098 21-S

Kohler Genuine OEM Electric Starter Instruction Manual

Model: 25 098 21-S

1. INTRODUCTION

This manual provides essential information for the proper handling, installation, and maintenance of your Kohler Genuine OEM Electric Starter, model 25 098 21-S. This component is designed to meet the exact specifications of original equipment, ensuring reliable performance for compatible engines. Please read this manual thoroughly before attempting any installation or service.

2. SAFETY INFORMATION

WARNING:

- Always disconnect the battery's negative terminal before working on any electrical components of the engine to prevent accidental starting or electrical shock.
- Wear appropriate personal protective equipment (PPE), including safety glasses and gloves, when handling engine components.
- Ensure the engine is cool before beginning any work to avoid burns.
- This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm (Proposition 65 warning). Handle with care and wash hands after handling.
- If you are unsure about any installation steps, consult a qualified service technician or refer to the specific engine service manual.

3. PRODUCT OVERVIEW

The Kohler Genuine OEM Electric Starter (Part Number: 25 098 21-S) is a critical component for initiating engine operation. It is a direct replacement for OEM part numbers 21163-0756 and 21163-7023. This starter is compatible with various Kawasaki engine models, including but not limited to:

- Kawasaki: FS541V-AS30, FS600V-CS24, FS600V-DS24, FS730V-AS19

- FX481V-BS09, FX541V-DS05, FX541V-ES00, FX600V-DS05, FX600V-DS11
- FX600V-ES00, FX600V-ES02, FX600V-FS09, FX651V-ES00
- FS691V-AS24, FS691V-AS26, FS691V-AS28, FS691V-ES00
- FX730V-AS29, FX730V-AS31, FX730V-AS40, FX730V-ES00



Figure 3.1: Front view of the Kohler Electric Starter, showing the main body and solenoid. This view highlights the overall construction and mounting points.

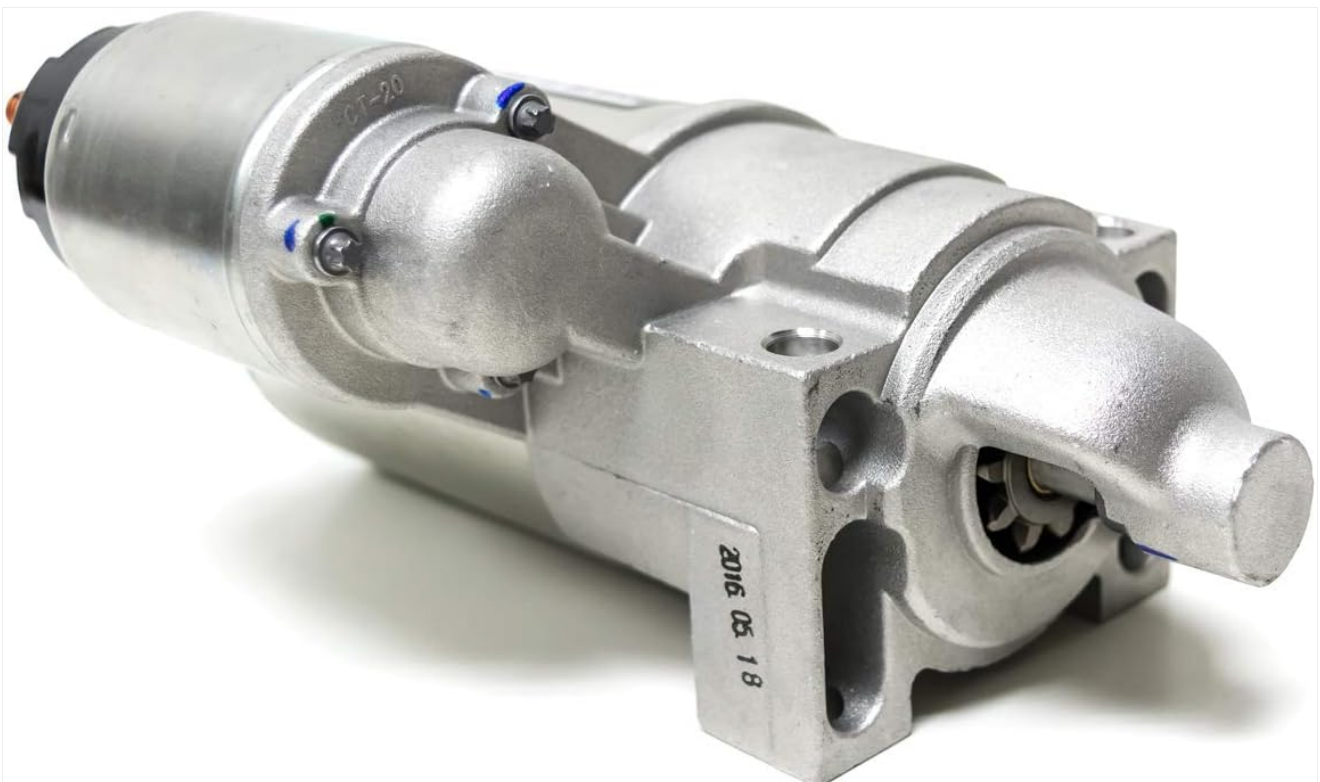


Figure 3.2: Side view of the starter, focusing on the pinion gear (bendix) which engages with the engine's flywheel to crank the

engine. The mounting flange is also visible.



Figure 3.3: Rear view of the starter, illustrating the electrical connection points for the battery cable and the ignition switch signal wire. Proper connection is crucial for operation.

4. SETUP AND INSTALLATION

Installation of an electric starter requires mechanical aptitude and adherence to safety protocols. If you are not comfortable performing this procedure, it is recommended to seek professional assistance.

4.1 Pre-Installation Checks

- Verify that the new starter matches the specifications of the old unit and is compatible with your engine model.
- Ensure all necessary tools are available (wrenches, sockets, battery terminal cleaner, etc.).
- Inspect the battery and battery cables for corrosion or damage. Clean terminals as needed.

4.2 Installation Steps (General Guide)

1. **Disconnect Battery:** Disconnect the negative (-) battery cable first, followed by the positive (+) cable.
2. **Locate and Remove Old Starter:** Identify the existing starter motor. Disconnect all electrical connections (battery cable, solenoid wire) from the old starter. Remove the mounting bolts securing the starter to the engine block or bell housing. Carefully remove the old starter.
3. **Inspect Mounting Area:** Clean the mounting surface on the engine to ensure a flush fit for the new starter.
4. **Install New Starter:** Position the new Kohler starter in place and hand-tighten the mounting bolts. Ensure

proper alignment before fully tightening the bolts to the manufacturer's specified torque.

5. **Connect Electrical Wires:** Reconnect the electrical wires to the new starter. Typically, a large cable connects from the battery's positive terminal to the main terminal on the starter solenoid, and a smaller wire connects from the ignition switch to the solenoid's signal terminal. Ensure all connections are clean and secure.
6. **Reconnect Battery:** Reconnect the positive (+) battery cable first, then the negative (-) battery cable.
7. **Test Operation:** Attempt to start the engine to verify proper starter function.

Note: Specific engine models may have variations in starter location and wiring. Always refer to your engine's service manual for detailed, model-specific instructions.

5. OPERATING PRINCIPLES

The electric starter is an electromechanical device designed to crank the engine until it starts. When the ignition key is turned to the "start" position, electrical current flows to the starter solenoid. The solenoid then performs two main functions:

- **Engages the Pinion Gear:** It pushes the starter's pinion gear forward to mesh with the teeth on the engine's flywheel.
- **Completes the Circuit:** It closes a heavy-duty electrical contact, allowing a large surge of current from the battery to flow directly to the starter motor.

The starter motor then rapidly spins the engine's crankshaft, initiating the combustion process. Once the engine starts, the ignition key is released, the solenoid disengages the pinion gear from the flywheel, and the starter motor stops.

6. MAINTENANCE

The Kohler Genuine OEM Electric Starter is largely a sealed unit and requires minimal routine maintenance. However, regular inspection of related components can prolong its lifespan and ensure reliable starting.

- **Battery Condition:** Ensure your battery is fully charged and in good condition. A weak battery can strain the starter.
- **Cable Connections:** Periodically inspect battery cables and starter connections for corrosion, looseness, or damage. Clean and tighten as necessary.
- **Mounting Bolts:** Check that the starter's mounting bolts remain tight to prevent vibration and potential damage.
- **Engine Condition:** Ensure the engine is properly tuned and maintained. An engine that is difficult to start due to other issues (e.g., fuel, ignition) will put excessive strain on the starter.

7. TROUBLESHOOTING

If your engine fails to crank or start, the starter may be a contributing factor. Here are some common symptoms and potential causes:

Symptom	Potential Cause	Action
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Symptom	Potential Cause	Action
No Crank, No Click: Engine does not turn over, and no sound from starter when key is turned.	Dead battery, loose/corroded battery cables, faulty ignition switch, open circuit in starter wiring.	Check battery charge and terminals. Inspect all starter wiring for continuity and secure connections. Test ignition switch.
No Crank, Single Click: Engine does not turn over, but a single click is heard from the starter solenoid.	Weak battery, corroded battery cables, faulty starter solenoid (internal contacts), seized engine.	Charge/test battery. Clean battery and starter terminals. If battery is good, solenoid may be faulty. Check if engine is seized by trying to turn crankshaft manually.
Slow Crank: Starter turns engine over slowly, but it doesn't start.	Weak battery, corroded battery cables, high resistance in starter circuit, worn starter motor.	Charge/test battery. Clean all electrical connections. Inspect cables for internal corrosion. Starter motor may be failing.
Starter Spins, Engine Doesn't Crank: Starter motor runs, but engine does not turn over.	Faulty starter drive (bendix) not engaging flywheel, damaged flywheel teeth.	Inspect starter pinion gear and flywheel teeth for damage. Starter drive may need replacement.

If troubleshooting steps do not resolve the issue, professional diagnosis and repair may be necessary.

8. SPECIFICATIONS

Attribute	Value
Brand	KOHLER
Model Number	25 098 21-S
OEM Part Number	99996-6120
Replaces Part Numbers	21163-0756, 21163-7023
Material	Copper
Wattage	1.1 KW
Phase Type	Three Phase (Note: This might be a data entry error, as starters are typically DC and single phase for small engines. Confirm with manufacturer if critical.)
Item Weight	0.01 ounces (Note: This is likely an error in the source data, as a starter weighs significantly more. Actual weight will be several pounds.)
Package Dimensions	8.5 x 7 x 5 inches

9. WARRANTY AND SUPPORT

As a Genuine OEM part, this Kohler Electric Starter is backed by Kohler's standard warranty for replacement parts. For specific warranty terms, conditions, and duration, please refer to the official Kohler website or contact Kohler customer support directly. Keep your purchase receipt as proof of purchase.

For technical support or further inquiries, please visit the official [KOHLER Store on Amazon](#) or the main Kohler website.