

Product: EXCAVATOR

Model: E120B EXCAVATOR 7NF

Configuration: E120B EXCAVATOR-TRACK TYPE 7NF00001-UP (MACHINE) POWERED BY S4K-T ENGINE

## **Operation and Maintenance Manual**

**Product Link - 121SR/321SR/420/421/ 522/523**

**Media Number -SEBU8142-04**

**Publication Date -01/01/2013**

**Date Updated -24/10/2017**

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## **Foreword**

### **Literature Information**

This manual should be stored in the literature holder.

This manual contains safety information, operation instructions, and maintenance recommendations.

Some photographs or illustrations in this publication show details or attachments that can be different from your product.

Continuing improvement and advancement of product design might have caused changes to your product which are not included in this publication. Read, study and keep this manual with the product.

Whenever a question arises regarding your product, or this publication, please consult your Cat dealer for the latest available information.

## **Safety**

The safety section lists basic safety precautions. In addition, this section identifies the text and locations of warning signs and labels used on the product.

## **Operation**

The operation section is a reference for the new operator and a refresher for the experienced operator. This section includes a discussion of gauges, switches, product controls, attachment controls, and programming information.

Photographs and illustrations guide the operator through correct procedures of checking, starting, operating and stopping the product.

Operating techniques outlined in this publication are basic. Skill and techniques develop as the operator gains knowledge of the product and its capabilities.

# Maintenance

The maintenance section is a guide to equipment care.

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## Safety Signs and Labels

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**Do not operate or work on this machine unless you have read and understand the instructions and warnings in the Operation and Maintenance Manuals. Failure to follow the instructions or heed the warnings could result in injury or death. Contact your Cat dealer for replacement manuals. Proper care is your responsibility.**

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## Safety Messages

**The warning film in Illustration 1 can be found in a location such as the dash. The warning film will be clearly visible to the operator during the normal operation of the machine.**

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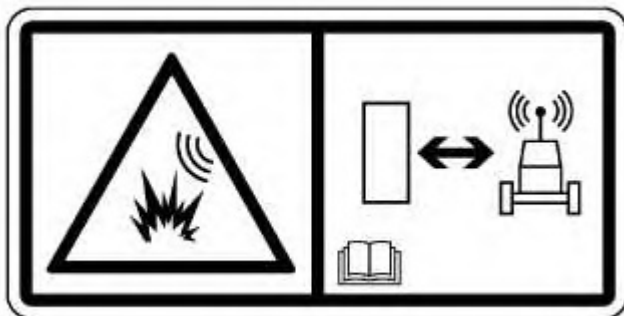


Illustration 1

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Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

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**This machine is equipped with a Caterpillar Product Link communication device. When electric detonators are used, this communication device should be deactivated within 12 m (40 ft) of a blast site, or within the distance mandated under applicable legal requirements. Failure to do so could cause interference with blasting operations and result in serious injury or death.**

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The blast site is defined as the area that handles explosive material during loading. Included is the perimeter that is formed by the loaded blast holes.

If the machine is required to work in or near a blasting site, the operator must disable the Product Link. That is, either the 121SR system or the 522/523 system must be disabled. One of the following methods are suggested in order to deactivate the Product Link 121SR system or the Product Link 522/523 system:

- Install a Product Link disconnect switch in the machine cab. This switch will allow the Product Link 121SR system or the Product Link 522/523 system module to be shut off. Refer to Special Instruction, REHS2365, "An Installation Guide for the Product Link PL121SR and for the PL300" or Special Instruction, REHS2368, "Installation Procedure For Product Link PL522/523 (Cellular)" for more details and installation instructions.
- While the blast site switch is in the OFF position, the Product Link 121SR system or the Product Link 522/523 system will no longer track Service Meter Unit (SMU) hours or VIMS data. A Service Meter Hours (SMH) adjustment will be required after power is restored to the Product Link system. Consult your Caterpillar dealer if there are any questions.
- Disconnect the Product Link 121SR system or the Product Link 522/523 system module from the main power source. This action is performed by disconnecting the wiring harness at the Product Link module.

## Other Films

The film in Illustration 2 can be found in a clearly visible location. A clearly visible location during the normal operation of the machine is described as the dash.

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Illustration 2

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The film in Illustration 2 is intended to inform the operator that the machine is equipped with a wireless transmitting device. Machine data, the condition of the machine, and the operation of the machine will be transmitted by the Product Link. The information is transmitted to Caterpillar and/or Caterpillar dealers to serve the customer better and to improve upon Caterpillar products and services. Transmission of information using Product Link is subject to legal requirements that may vary from location to location.

Refer to the Operation and Maintenance Manual, SEBU8142, "Operation" and the Operation and Maintenance Manual, SEBU8142, "Regulatory Compliance Section" for additional information.

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## Operation and Maintenance Manual

Product Link - 121SR/321SR/420/421/ 522/523

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## General Hazard Information

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**Do not operate or work on this machine unless you have read and understand the instructions and warnings in the Operation and Maintenance Manuals. Failure to follow the instructions or heed the warnings could result in injury or death. Contact your Cat dealer for replacement manuals. Proper care is your responsibility.**

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## Foreword

This document is a supplement to the Operation and Maintenance Manual for the machine. Permanently attach this document to the Operation and Maintenance Manual for the machine.

## Introduction

This document provides information about the operation of the following:

- Product Link 121SR/321SR systems
- Product Link 522/523 systems
- Product Link 420/421 systems

Machine operation and maintenance must not occur unless the instructions and warnings in the Operation and Maintenance Manual have been read and understood. The contents of this document must be understood before a machine that is equipped with any of the following:

- Product Link 121SR/321SR system

- Product Link 522/523 system
  - Product Link 420/421 system
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## Regulatory Compliance

SMCS - 1400; 4203; 4450; 7347; 7451; 7490; 7606

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### NOTICE

**The transmission of information using a Caterpillar Product Link communication device is subject to legal requirements. The legal requirements may vary from location to location, including, but not limited to, radio frequency use authorization. The use of a Caterpillar Product Link communication device must be limited to those locations where all legal requirements for the use of the Caterpillar Product Link communication device and communication network have been satisfied.**

**If equipment outfitted with the Caterpillar Product Link communication device is located in or relocated to a location where (i) legal requirements are not satisfied or (ii) transmitting or processing of such information across multiple locations would not be legal, Caterpillar disclaims any liability related to such failure to comply, and Caterpillar may discontinue the transmission of information from that equipment.**

**Consult your Cat dealer with any questions that concern the operation of the Product Link system in a specific country.**

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## PL121 and PL321 Radio Notices

### FCC Notice

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with limits for a class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/tv technician for help

Changes or modifications to this device without the express approval of Caterpillar may void the users authority to use this device.

## **Industry Canada Notice to Users**

This device complies with Industry Canadas license exempt RSSs. Operation is subject to the following two conditions:

- This device may not cause interference
- This device must accept any interference, including interference that may cause undesired operation of the device.

## **EU Notice to Users**

The PL121 and PL321 have been so constructed that they can be operated in Belgium without infringing applicable requirements on the use of their radio spectrum.

## **PL522 and PL523 Radio Notices**

### **FCC Notice**

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with limits for a class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/tv technician for help

Changes or modifications to this device without the express approval of Caterpillar may void the users authority to use this device.

### Industry Canada Notice to Users

This device complies with Industry Canadas license exempt RSSs. Operation is subject to the following two conditions:

- This device may not cause interference
- This device must accept any interference, including interference that may cause undesired operation of the device.

### EU Notice to Users

The PL522 and PL523 have been so constructed that they can be operated in Belgium without infringing applicable requirements on the use of their radio spectrum.

## Data Broadcast

The following Caterpillar Product Link communication device specifications are provided to aid in conducting any related hazard assessment and to ensure compliance with all local regulations:

Table 1

<b>Radio Transmitter Specifications</b>		
<b>Radio Model (Maximum)</b>	<b>Transmitter Frequency Range</b>	<b>Transmitter Power</b>
PL121	148 MHz - 150 MHz	5W typical, 10W max
PL420	824 MHz - 849 MHz	0.5W typical, 2W max
	880 MHz - 915 MHz	

	1710 MHz - 1785 MHz	
	1850 MHz - 1910 MHz	
PL421	824 MHz - 849 MHz	0.5W typical, 2W max
	880 MHz - 915 MHz	
	1710 MHz - 1785 MHz	
	1850 MHz - 1910 MHz	
PL522	824 MHz - 849 MHz	0.5W typical, 2W max
	880 MHz - 915 MHz	
	1710 MHz - 1785 MHz	
	1850 MHz - 1910 MHz	
PL523	824 MHz - 849 MHz	0.5W typical, 2W max
	880 MHz - 915 MHz	
	1710 MHz - 1785 MHz	
	1850 MHz - 1910 MHz	

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## Product Link

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**Note:** Your machine may be equipped with the Cat<sup>®</sup> Product Link<sup>™</sup> system.

The Cat Product Link communication device utilizes cellular and/or satellite technology to communicate equipment information. This information is communicated to Caterpillar, Cat dealers, and Caterpillar customers. The Cat Product Link communication device uses Global Positioning System (GPS) satellite receivers.

The capability of two-way communication between the equipment and a remote user is available with the Cat Product Link communication device. The remote user can be a dealer or a customer.

## Data Broadcasts

Data concerning this machine, the condition of the machine, and the operation of the machine is being transmitted by Cat Product Link to Caterpillar and/or Cat dealers. The data is used to serve the customer better and to improve upon Cat products and services. The information transmitted may include: machine serial number, machine location, and operational data, including but not limited to: fault codes, emissions data, fuel usage, service meter hours, software, and hardware version numbers and installed attachments.

Caterpillar and/or Cat dealers may use this information for various purposes. Refer to the following list for possible uses:

- Providing services to the customer and/or the machine
- Checking or maintaining Cat Product Link equipment
- Monitoring the health of the machine or performance
- Helping maintain the machine and/or improve the efficiency of the machine
- Evaluating or improving Cat products and services
- Complying with legal requirements and valid court orders

- Performing market research
- Offering the customer new products and services

Caterpillar may share some or all the collected information with Caterpillar affiliated companies, dealers, and authorized representatives. Caterpillar will not sell or rent collected information to any other third party and will exercise reasonable efforts to keep the information secure. Caterpillar recognizes and respects customer privacy. For more information, please contact your local Cat dealer.

## Operation in a Blast Site for Product Link Radios



**This equipment is equipped with a Cat<sup>®</sup> Product Link communication device. When electric detonators are being used for blasting operations, radio frequency devices can cause interference with electric detonators for blasting operations which can result in serious injury or death. The Product Link communication device should be deactivated within the distance mandated under all applicable national or local regulatory requirements. In the absence of any regulatory requirements Caterpillar recommends the end user perform their own risk assessment to determine safe operating distance.**

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Refer to your products Operation and Maintenance Manual Supplement, "Regulatory Compliance Information" for more information.

For information regarding the methods to disable the Cat Product Link communication device, please refer to your specific Cat Product Link manual listed below:

- Operation and Maintenance Manual, SEBU8142, "Product Link - 121SR/321SR/420/421/522/523"
- Operation and Maintenance Manual, SEBU8832, "Product Link PLE601, PL641, PL631, PL542, PL240, PL241, PL141, PL131, PL161, and G0100 Systems"

**Note:** If no radio disable switch is installed and the equipment will be operating near a blast zone, a Product Link radio disable switch may be installed on the equipment. The switch will allow the Cat Product Link communication device to be shut off by the operator from the equipment control panel. For more details and installation procedures, refer to the following:

- Special Instruction, "Installation Procedure for Product Link PLE640 Systems" REHS7339
- Special Instruction, "Installation Procedure for the Elite Product Link PLE601, PLE641, and PLE631 Systems", REHS8850
- Special Instruction, "Installation Procedure for the Product Link PL131, PL141, and PL161 Systems", SEHS0377

- Special Instruction, "Installation Procedure for the Pro Product Link PL641 and PL631 Systems", REHS9111
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## **Operation and Maintenance Manual S4K AND S6K ENGINES BASIC ENGINE COMPONENTS**

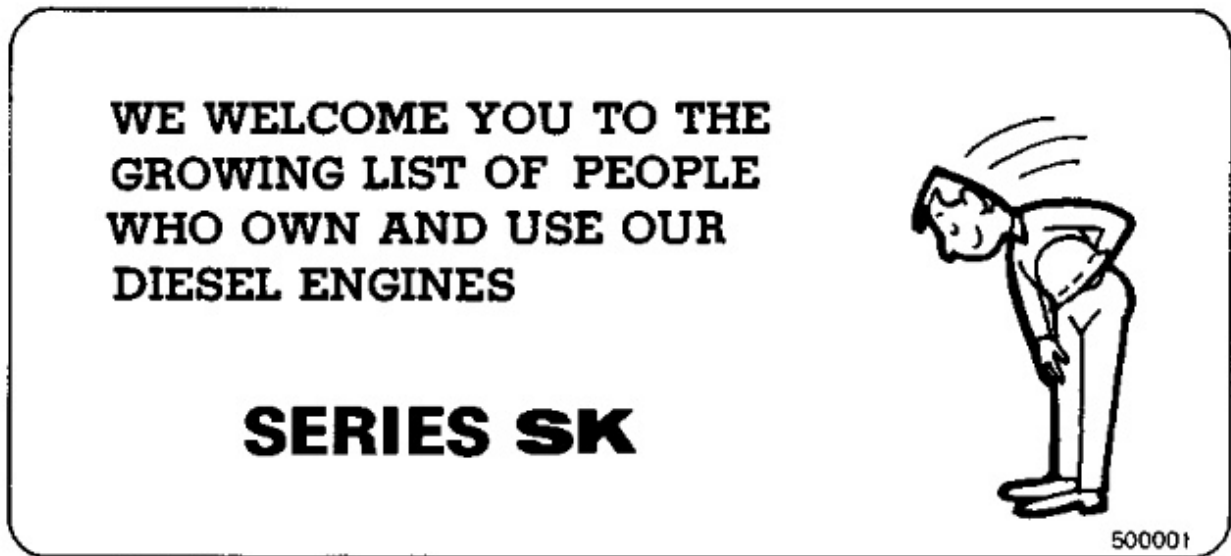
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## **Introduction**

SMCS - 7606




This manual is written to familiarize you with the operation and maintenance of your Mitsubishi diesel engines, and provide important safety information. We suggest that you carefully read this manual to learn about your new engines.

After reading this manual, be sure to keep it near your engine as a ready reference when you need it. See your Mitsubishi dealer for any further information you feel you need. He will be glad to help you and answer any questions you may have about handling of your new engines.

The descriptions, illustrations and specifications contained in this manual were in effect at the time it was approved for printing. Mitsubishi reserves the right to change specifications or design without notice and without incurring obligation.

WARNINGS, CAUTIONS and NOTES are used in this manual to emphasize important and critical instructions. They are used for the following conditions:

 (WARNING) .....	Operating procedures, practices, etc., which if not correctly followed, will result in personal injury or death.
<b>CAUTION</b> .....	Operating procedures, practices, etc., which if not strictly observed, will result in damage to or destruction of engine.
<b>NOTE</b> .....	An operating procedure, condition, etc., which is essential to highlight.
✓ .....	Right or normal
✗ .....	Wrong or abnormal (service needed)

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Media Number -XEBU2046-00

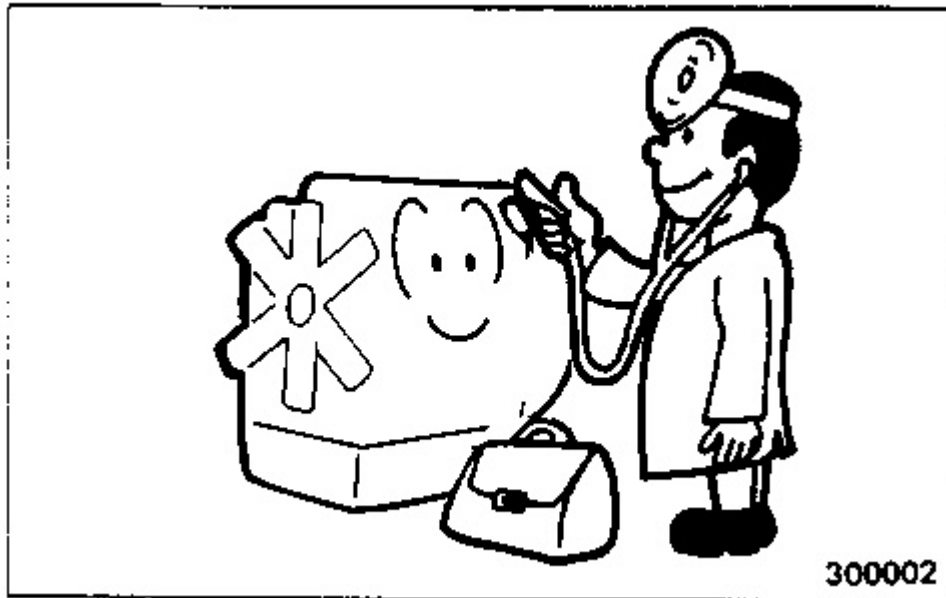
Publication Date -01/06/1991

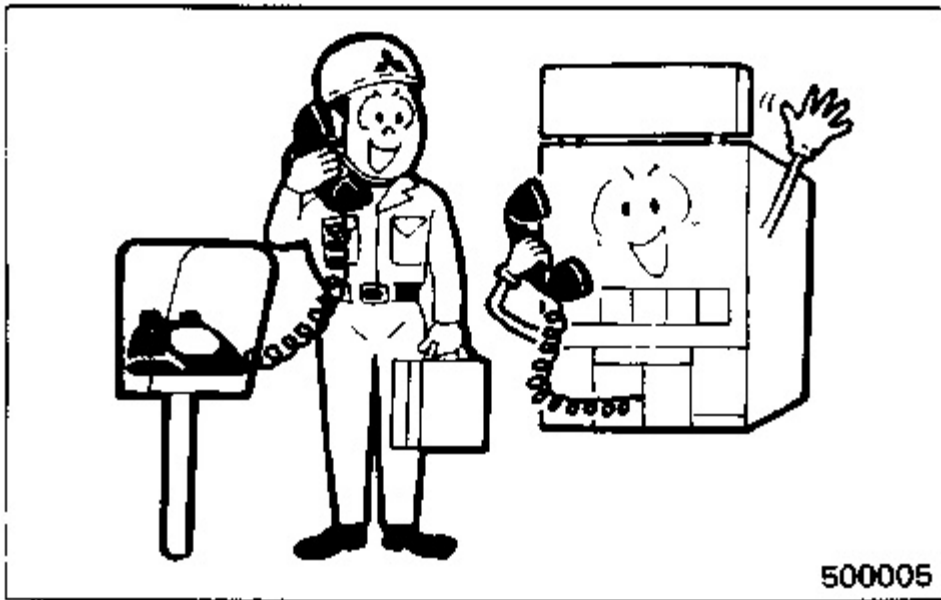
Date Updated -13/10/2001

### Your Engine And Mitsubishi

SMCS - 7606

#### Service Assistance





Your Mitsubishi dealer is vitally interested in your complete satisfaction with the Mitsubishi engine you purchased from him. He is anxious to know that all of your service needs are quickly and courteously filled.

Mitsubishi has established district and regional offices throughout the world to help each dealer make himself more helpful to you. Should you feel that you require service assistance beyond that which your dealer is providing, the Mitsubishi office in your area will be pleased to work with you and your dealer.

If your engine is transferred to elsewhere from the original place of use registered with Mitsubishi, be sure to have the registration changed. Consult your Mitsubishi dealer for the necessary procedure.

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