



Operation and Maintenance Manual

Ultrasonic Wear Indicator 5

UWI 1-UP (ULTRASONIC
WEAR INDICATOR)

Language: Original Instructions



Scan to find and purchase genuine Cat® parts and related
service information.



Important Safety Information

Most accidents that involve product operation, maintenance and repair are caused by failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing potentially hazardous situations before an accident occurs. A person must be alert to potential hazards, including human factors that can affect safety. This person should also have the necessary training, skills and tools to perform these functions properly.

Improper operation, lubrication, maintenance or repair of this product can be dangerous and could result in injury or death.

Do not operate or perform any lubrication, maintenance or repair on this product, until you verify that you are authorized to perform this work, and have read and understood the operation, lubrication, maintenance and repair information.

Safety precautions and warnings are provided in this manual and on the product. If these hazard warnings are not heeded, bodily injury or death could occur to you or to other persons.

The hazards are identified by the "Safety Alert Symbol" and followed by a "Signal Word" such as "DANGER", "WARNING" or "CAUTION". The Safety Alert "WARNING" label is shown below.



The meaning of this safety alert symbol is as follows:

Attention! Become Alert! Your Safety is Involved.

The message that appears under the warning explains the hazard and can be either written or pictorially presented.

A non-exhaustive list of operations that may cause product damage are identified by "NOTICE" labels on the product and in this publication.

Caterpillar cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this publication and on the product are, therefore, not all inclusive. You must not use this product in any manner different from that considered by this manual without first satisfying yourself that you have considered all safety rules and precautions applicable to the operation of the product in the location of use, including site-specific rules and precautions applicable to the worksite. If a tool, procedure, work method or operating technique that is not specifically recommended by Caterpillar is used, you must satisfy yourself that it is safe for you and for others. You should also ensure that you are authorized to perform this work, and that the product will not be damaged or become unsafe by the operation, lubrication, maintenance or repair procedures that you intend to use.

The information, specifications, and illustrations in this publication are on the basis of information that was available at the time that the publication was written. The specifications, torques, pressures, measurements, adjustments, illustrations, and other items can change at any time. These changes can affect the service that is given to the product. Obtain the complete and most current information before you start any job. Cat dealers have the most current information available.

NOTICE

When replacement parts are required for this product Caterpillar recommends using original Caterpillar® replacement parts.

Other parts may not meet certain original equipment specifications.

When replacement parts are installed, the machine owner/user should ensure that the machine remains in compliance with all applicable requirements.

In the United States, the maintenance, replacement, or repair of the emission control devices and systems may be performed by any repair establishment or individual of the owner's choosing.

Table of Contents

Foreword 4

Safety Section

Safety Signs and Labels..... 5

Regulatory Compliance Information

Radio Frequency Components 6

Operation Section

Operation..... 9

Maintenance Section

Maintenance Interval Schedule..... 15

Reference Information Section

Reference Materials 17

Index Section

Index..... 18

Foreword

Literature Information

This manual should be stored in the operator's compartment in the literature holder or seat back literature storage area.

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 machine.

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.

Safety Section

i10384498

Safety Signs and Labels

SMCS Code: 7606

 **WARNING**

Do not operate or work on this equipment 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 Caterpillar dealer for replacement manuals. Proper care is your responsibility.

A person must be alert to potential hazards. A person should have the necessary training, skills, and tools to perform the functions properly.

Ensure that the product will not be damaged or the product will not be made unsafe by following the operation procedures given.

Before using the device, ensure the following conditions

- Read and understand this Operation and Maintenance Manual before operating or working with this device.
- Never use a device that has been damaged or malfunctioning.
- In the event of any problem, do not open the product. Contact the Dealer Service Network (DSN) for support.
- Ensure to disconnect the equipment from any power before cleaning. Do not use liquid or spray detergents for cleaning, use a damp cloth.
- Keep the product away from liquids.
- In the case of strange odors, noises originating from the product, immediately turn off the product. Contact the Dealer Service Network (DSN) for support.
- Wear suitable gloves while using this device may protect your hands from scratches and cuts.

Regulatory Compliance Information

Radio Frequency Components

i10364788

Wireless Device (Ultrasonic Wear Indicator (UWI 5) - If Equipped)

SMCS Code: 7008; 7600-ZM

Table 1

Model	Cat Part Number
UWI 5	633-8543 Indicator

WARNING

This equipment is equipped with a radio frequency device (s). When electric detonators are being used for blasting operations, radio frequency devices can cause interference, which can result in serious injury or death. Caterpillar recommends that the end user perform their own risk assessment to determine a safe operating distance, and, at all times, maintain the radio frequency device outside the distance mandated under all applicable national or local regulatory requirements.

WARNING

Explosion Hazard!

Connecting or disconnecting a live device in an area with volatile or flammable gases may cause an explosion resulting in serious injury or death.

Internal battery is not a serviceable component.

Do not remove or replace the internal battery unless external power has been disconnected or the area is free of ignitable concentrations.

WARNING

Explosion Hazard!

Connecting or disconnecting a live device in an area with volatile or flammable gases may cause an explosion resulting in serious injury or death.


Do not disconnect the device unless external power has been disconnected or unless the area is free of ignitable concentrations.

Reference: Refer to the Operation and Maintenance Manual of your product for additional information.

sDoC

(Simplified Declaration of Conformity)


European Union

 Caterpillar Inc. 100 NE Adams Peoria, IL 61629 USA

Hereby, Caterpillar Inc. declares this radio equipment is in compliance with directive "2014/53/EU". The full text of the European Declaration of Conformity is available at the following web address:

<https://www.cat.com/radio-compliance>

Great Britain

 Caterpillar Inc. 100 NE Adams Peoria, IL 61629 USA

Hereby, Caterpillar Inc. declares this radio equipment is in compliance with the relevant statutory requirements. The full text of the Great Britain Declaration of Conformity is available at the following web address:

<https://www.cat.com/radio-compliance>

Caterpillar suggests that the Declaration of Conformity is obtained shortly after purchase.

Specifications

The following Cat® Track Wear Sensor specifications are provided to aid in conducting any related hazard assessment and to ensure compliance with all local regulations:

Table 2

Radio Transceiver Specifications		
Model	Frequency Range	Transmitter Power
UWI 5	2.402 - 2.480 GHz	+8 dBm

Table 3

Radio Transmitter Specifications		
Model	Voltage	Maximum Current
UWI 5	3.6 VDC	500 mA

Disclaimer Notice

NOTICE

The transmission of information from this radio frequency device may be subject to various legal requirements depending on the jurisdiction in which the equipment outfitted with the device is located. These legal requirements may include, but are not limited to, radio frequency use authorization. The transmission of information from this device must be limited to those locations where all legal requirements for the use of this device and communication network have been satisfied. Note that if the equipment outfitted with this device is located in or relocated to a location where (i) the transmission of information from the device would not comply with the legal requirements of the local jurisdictional or (ii) the transmission 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 this system in a specific jurisdiction.

Certification Notices

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.


Users are not permitted to make changes or modify the device in any way. Changes or modifications not expressly approved by Caterpillar will void the user's authority to operate the equipment.

ISED (Canada) Statement

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

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

Certification Markings

 **Argentina – This device is approved for use in Argentina. Certificate ID: EX-2024-31543943- -APN-REYS#ENACOM - CT:24771.240325173400.37**



Australia – This device is approved for use in Australia.

Bolivia – This device is approved for use in Bolivia. Certificate No.: ATT 444/2024



Brazil – This device is approved for use in Brazil. Certificate No.: 06923-24-07855. CoC certificate No.: ICC 03.059/2024. The radio is designed for use in industrial and commercial installations by trained and qualified professionals, not for domestic use.

Canada – This device is approved for use in Canada. ISED ID 3147A-BL653

Chile – This device is approved for use in Chile. Certificate No.: 110413/F-25

Colombia – This device is approved for use in Colombia. Certificate No.: 2024518529

Costa Rica – This device is approved for use in Costa Rica. Certificate No.: 08991-SUTEL-DGC-2024

Ecuador – This device is approved for use in Ecuador. Certificate ID: ARCOTEL-NRH-2024-001918

India – This device is approved for use in India. Authorization No.: ETA-SD-20241009600



Indonesia – This device is approved for use in Indonesia. Certification No: 103922/SDPPI/2024



Japan – This device is approved for use in Japan. RF module Certificate No.: 201-200063, Telecom Certificate No.: D180136003

Regulatory Compliance Information
Ultrasonic Wear Indicator (UWI 5) - If Equipped

Kazakhstan – This device is approved for use in Kazakhstan. Certificate No.: KZ 7500533.13.12.05109



Mexico – This device is approved for use in Mexico. Certificate ID: TCOE 9031.80.8085



New Zealand – This device is approved for use in New Zealand. Certificate No.: AS_5006351

Peru – This device is approved for use in Peru. Certificate ID: TRSS58114

Suriname – This device is approved for use in Suriname. Type Approval ID: T0181/21

Thailand – This device is approved for use in Thailand. Certificate No.: SD04262-24



United States – This device is approved for use in United States. FCC ID: SQGBL653

Vietnam – This device is approved for use in Vietnam.

Operation Section

Operation

i10378137

Operation

SMCS Code: 6129; 6461; 6700; 6700-KH; 7000; 7008; 7220; 7605; 7606

The Ultrasonic Wear Indicator 5 (UWI 5) measures the thickness of steel components by sending high frequency sound waves through the material to be measured. The elapsed time between sending and receiving the sound waves allows the tool to determine thickness.



Illustration 1

g07843865

Ultrasonic Wear Indicator 5 (UWI 5)

- (1) Probe connectors
- (2) Measurement reference
- (3) Battery level indicator
- (4) Bluetooth indicator
- (5) Power button
- (6) Micro-USB charging port

Internal Battery Charging

The indicator contains a non-serviceable, internal Nickel-Metal Hydride (Ni-MH) rechargeable battery. The battery is designed to last at least two years under normal operation. Connect the included USB charging cable to micro-USB charging port (6) to begin the charging process. Battery level indicator (3) will move from left to right to indicate the battery is charging and show the current battery level. If the lowest battery level continues to flash red and the indicator does not appear to be charging after a few hours, the indicator may need to be reset or the battery has reached the end of useful life. If all battery level indicators begin flashing, an error was detected during the battery charging process. Make sure the indicator is not being charged in an area that is too cold or too hot and restart the charging process to see if the error occurs again. If the battery charging process continues to fail, the indicator may need to be reset or the battery has reached the end of useful life.

Powering ON

Press power button (5) once to turn on the indicator. Battery level indicator (3) will show the current charge and Bluetooth indicator (4) will flash.

Powering OFF

Press and hold power button (5) for 3 seconds to turn off the indicator. The indicator will also power off after 3 minutes when not connected to a Bluetooth device.

Connecting Measurement Probe

Connect the two measurement probe connectors to the two probe connectors (1) on the top of the indicator. The two measurement probe connectors are interchangeable.

Connecting to CWMS Application

1. Install the Cat[®] Wear Management System (CWMS) mobile app on your mobile device. Allow location information if prompted by the mobile device operating system or the mobile application may not be able to connect to the indicator using Bluetooth.

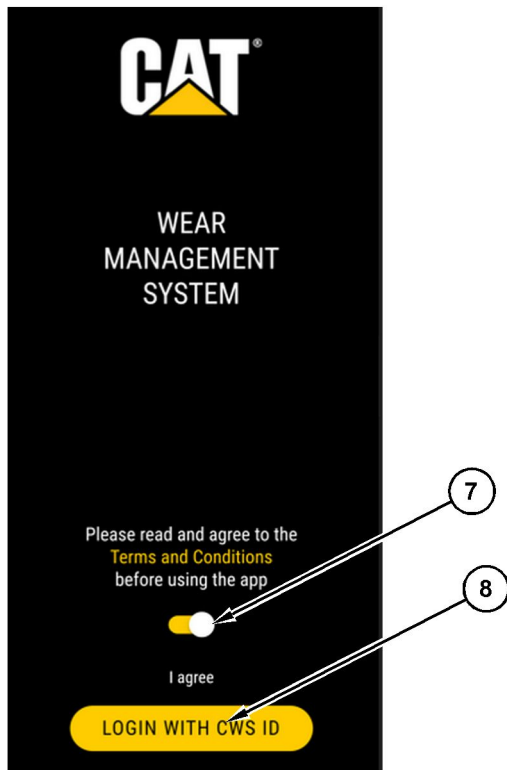


Illustration 2

g07846178

CWMS home screen

- (7) Switch
- (8) "LOGIN WITH CWS ID" button

2. Agree to the terms and conditions by clicking on switch (7) and select "LOGIN WITH CWS ID" button (8) on the CWMS home screen.



Illustration 3

g07851180

CWS login screen

- (9) Username field
- (10) "Continue" button

3. Enter CWS ID in username field (9) and click on "Continue" button (10) on the CWS login screen.

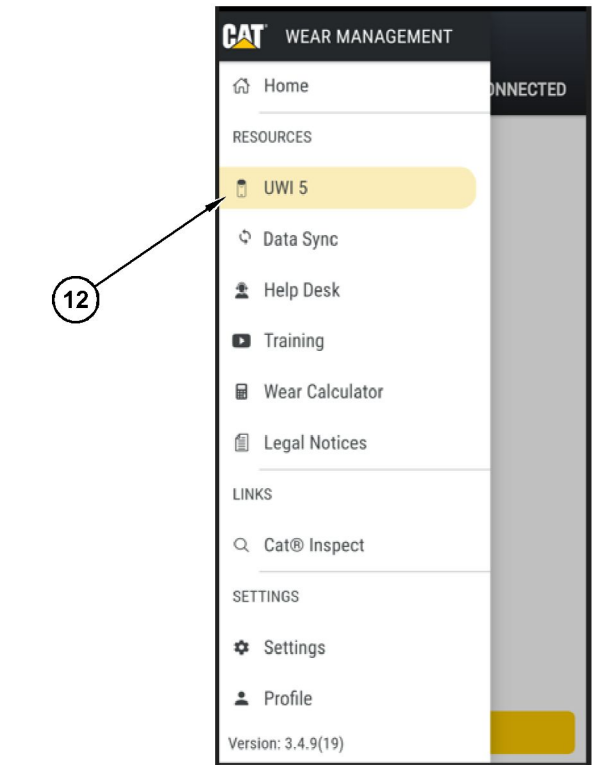
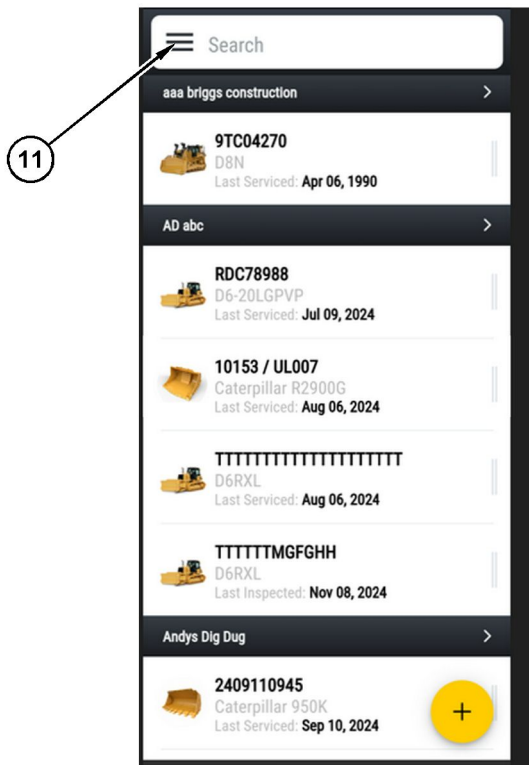


Illustration 4 g07846187

CWMS main screen

(11) Side menu icon

4. Click on side menu icon (11) on the CWMS main screen.

Illustration 5 g07846189

CWMS side menu screen

(12) UWI 5 menu item

5. Select UWI 5 menu item (12) on CWMS side menu screen.

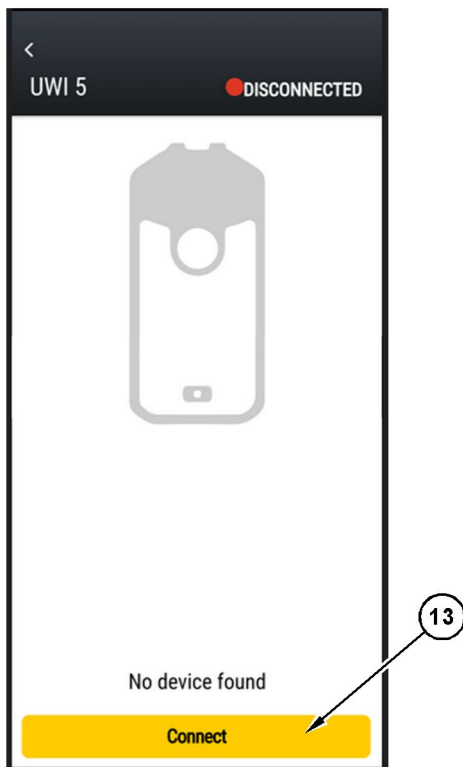


Illustration 6 g07846237
CWMS UWI 5 connection screen
(13) "Connect" button

6. Select "Connect" button (13) on the CWMS UWI 5 connection screen. The UWI 5 must be powered on and Bluetooth indicator (4) must be flashing to connect. If more than one UWI 5 is powered on and not connected nearby, the CWMS mobile app will connect to the first indicator that is found.

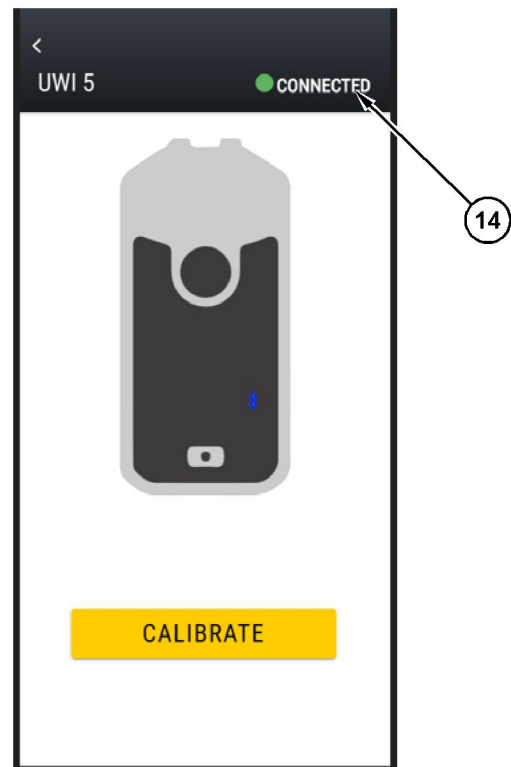


Illustration 7 g07846252
CWMS UWI 5 calibrate screen
(14) Connection status

7. Connection status (14) in the upper right of the screen will change from "Disconnected" to "Connected" and the UWI 5 Bluetooth indicator (4) will no longer flash when the Bluetooth connection is established.

Check Measurement Reference

After the UWI 5 is connected to the CWMS mobile application using Bluetooth and the measurement probe is connected, measurement reference (2) needs to be checked to verify the indicator and measurement probe are operating correctly.

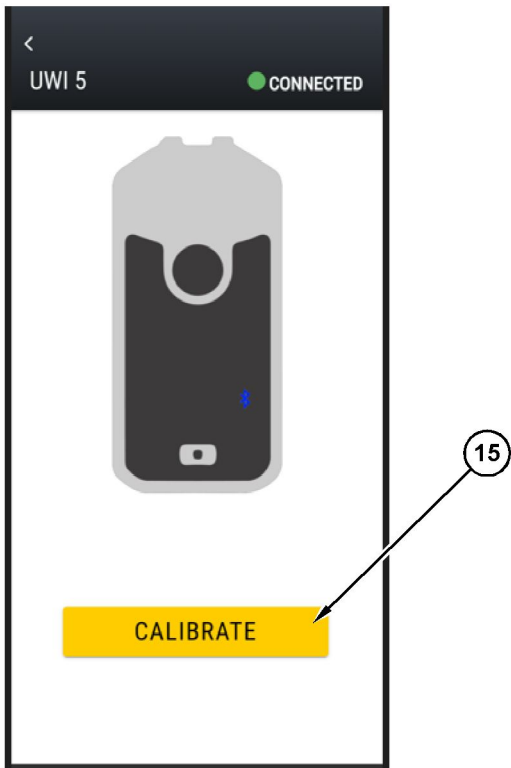


Illustration 8
UWI 5 calibration screen
(15) "CALIBRATE" button

g07846256



Illustration 9
UWI 5 and measurement probe
(16) Measurement probe
(2) Measurement reference

g07846257

1. Apply a small amount of ultrasonic couplant to measurement reference (2) or the face of measurement probe (16) and hold measurement probe (16) against measurement reference (2).
2. Press "CALIBRATE" button (15) to begin the calibration process.

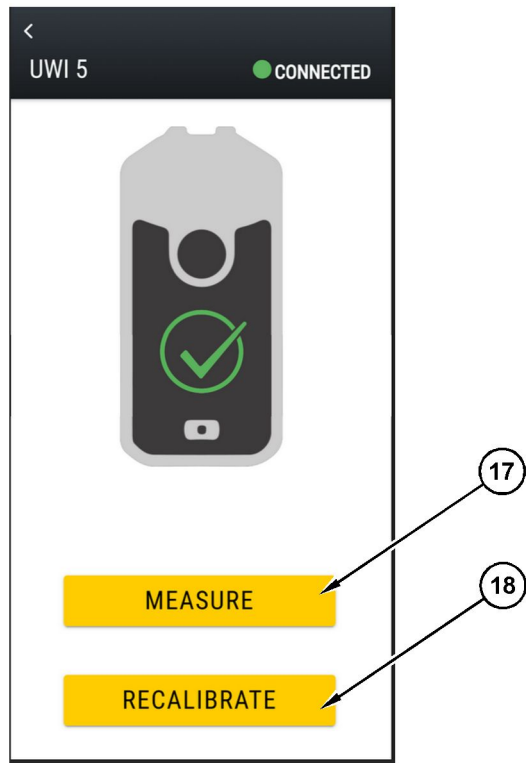


Illustration 10 g07846909

CWMS UWI 5 measurement screen

- (17) "MEASURE" button
(18) "RECALIBRATE" button

- After the calibration is successful, press "MEASURE" button (17) to verify measurement reference (2) measures 6.35 mm (0.25 inch). The measurement screen can also be used to measure any steel component thickness by holding measurement probe (16) against the component that needs to be measured and clicking on "MEASURE" button (17). Press "RECALIBRATE" button (18) to verify the function and measurement of the indicator and measurement probe.

Device Reset

If there are issues related to the charging or operation of the (Ultrasonic Wear Indicator 5) UWI 5, a device reset may restore normal operation. Press and hold power button (5) for at least 10 seconds to initiate a device reset.

If the UWI 5 is still not operating as expected, check the ultrasonic measurement probe (14), cable, and probe connectors (1) for damage. Replace ultrasonic probe with a known good probe and check operation again. Contact the Dealer Service Network (DSN) for additional support.

i10384427

Storage

SMCS Code: 0355; 1401; 4480; 5927; 6282-505; 6461; 7541; E100; E200



Illustration 11 g07851254

Ultrasonic Wear Indicator 5 (UWI 5) and measurement probe

- (1) UWI 5
(2) Measurement probe

Store UWI 5 (1) and measurement probe (2) in a clean, dry location to prevent corrosion or damage when not in use. Do not expose UWI 5 (1) to direct sunlight when not in use. UWI 5 (1) and measurement probe (2) can be stored in the protective carrying case that ships with the kit when not in use. Periodically charge the battery if UWI 5 (1) will not be used for more than 6 months to avoid affecting battery life.

Maintenance Section

i10388191

Maintenance Interval Schedule

SMCS Code: 1000; 1400; 3030; 4203; 4450; 4469; 4480; 4490; 4491; 5070; 5612; 5927; 6282-041; 6319; 6320; 6345; 6346; 6461; 6700; 6700-041; 6700-041-KH; 6901; 7000; 7004-JST; 7007; 7008; 7220; 7312; 7327; 7400; 7451; 7490; 7500; 7519; 7541; 7605; 7615; 7730; E100; E200

Ensure that all safety information, warnings, and instructions are read and understood before any operation or any maintenance procedures are performed.

The user is responsible for the performance of maintenance. All adjustments, the use of proper lubricants, fluids, filters, and the replacement of components due to normal wear and aging are included. Failure to adhere to proper maintenance intervals and procedures may result in diminished performance of the product and/or accelerated wear of components.

Products that operate in severe operating conditions or that experience abnormally high fuel consumption may require more frequent maintenance. Refer to the maintenance procedure for any other exceptions that may change the maintenance intervals.

Note: Before each consecutive interval is performed, all maintenance from the previous interval shall be performed.

When Required

“ Ultrasonic Wear Indicator - Clean“ 16

i10383272

Ultrasonic Wear Indicator - Clean

SMCS Code: 7450-070

Turn off the Ultrasonic Wear Indicator 5 (UWI 5) before cleaning. Refer to "Operation" for more information on turning off the UWI 5.

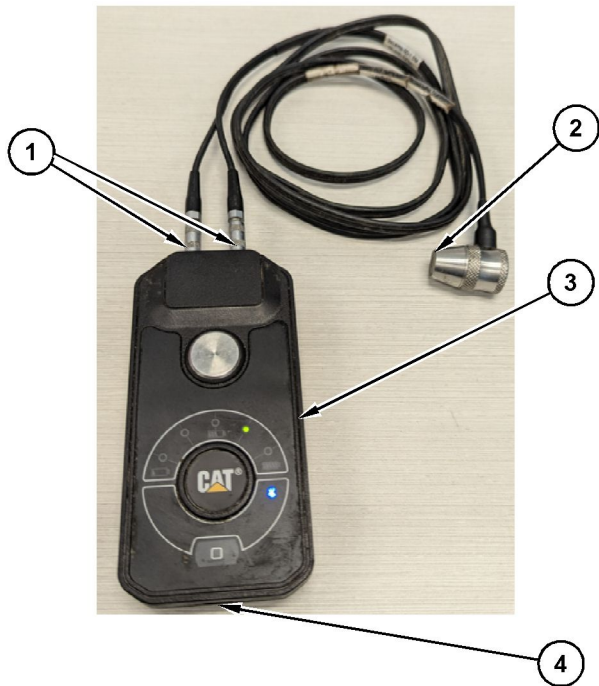


Illustration 12

g07847253

UWI 5 and measurement probe

- (1) Probe connectors
- (2) Measurement probe
- (3) Plastic case
- (4) Micro-USB connector

Cleaning

The UWI 5 is intended for outdoor use and in a wide range of environmental conditions, but care must be taken to protect it and keep it clean. Plastic case (3) has a gasket seal around micro-USB connector (4) and is water and dust resistant.

Note: The UWI 5 is not waterproof and can be damaged if water and dirt are allowed to enter.

If moisture does enter plastic case (3), the UWI 5 should be allowed to dry out before operating again. Contact the Dealer Service Network (DSN) for assistance.

Wipe the UWI 5 gently with a soft and dry cloth for cleaning.

Note: Do not use aromatic hydrocarbons or chlorinated solvents for cleaning. These chemicals may react with the plastics used in the case, keypad, and display and may cause damage.

Removing Ultrasonic Couplant Residue

Any excess ultrasonic couplant residue should be removed from plastic case (3) and measurement probe (2) with a clean dry cloth before the residue dries. The standard ultrasonic couplant is water soluble and a clean damp cloth can be used to remove any dried residue.

Probe and Micro-USB Connectors Clean

Measurement probe connectors (1) on the top and micro-USB connector (4) on the bottom of the UWI 5 must be kept clean and free from contamination. Allowing dirt to enter the contacts can cause interference in plugging in connectors or making proper contact. Always leave measurement probe (2) connected to probe connectors (1) when not in use or in storage to prevent contamination.

Reference Information Section

Reference Materials

i07422670

Reference Material

SMCS Code: 1000; 1054; 108K; 1261; 1263; 1300; 1308; 1926; 3030; 4450; 4469; 4480; 4490; 4491; 5068; 5070; 5927; 6282; 6319; 6320; 6461; 6700; 7000; 7342; 7451; 7605; 7615; E100; E200

Additional literature regarding your product may be purchased from your local Cat dealer or by visiting publications.cat.com. Use the product name, sales model, and serial number to obtain the correct information for your product.

publications.cat.com

i10061487

Decommissioning and Disposal

SMCS Code: 1000; 1021; 4450; 4480; 5927; 6319; 6320; 6700; 7000; 7002; 7541; E100; E200

When the product is removed from service, local regulations for the product decommissioning will vary. Disposal of the product will vary with local regulations.

Improperly disposing of waste can threaten the environment. Obey all local regulations for the decommissioning and disposal of materials.

Contact your Cat dealer for the correct procedure on the decommissioning and disposal of this product.

Index

D

Decommissioning and Disposal 17

F

Foreword 4
Literature Information 4
Maintenance 4
Operation 4
Safety 4

I

Important Safety Information 2

M

Maintenance Interval Schedule 15
When Required 15
Maintenance Section 15

O

Operation 9
Check Measurement Reference 12
Connecting Measurement Probe 9
Connecting to CWMS Application 9
Device Reset 14
Internal Battery Charging 9
Powering OFF 9
Powering ON 9
Operation Section 9

R

Radio Frequency Components 6
Reference Information Section 17
Reference Material 17
Reference Materials 17
Regulatory Compliance Information 6

S

Safety Section 5
Safety Signs and Labels 5
Storage 14

T

Table of Contents 3

U

Ultrasonic Wear Indicator - Clean 16
Cleaning 16

W

Wireless Device (Ultrasonic Wear Indicator
(UWI 5) - If Equipped) 6
Certification Markings 7
Certification Notices 7
Disclaimer Notice 7
sDoC 6
Specifications 6

Product and Dealer Information

Note: For product identification plate locations, see the section "Product Identification Information" in the Operation and Maintenance Manual.

Delivery Date: _____

Product Information

Model: _____

Product Identification Number: _____

Engine Serial Number: _____

Transmission Serial Number: _____

Generator Serial Number: _____

Attachment Serial Numbers: _____

Attachment Information: _____

Customer Equipment Number: _____

Dealer Equipment Number: _____

Dealer Information

Name: _____ Branch: _____

Address: _____

Dealer Contact

Phone Number

Hours

Sales: _____

Parts: _____

Service: _____

M0175667
©2025 Caterpillar
All Rights Reserved

CAT, CATERPILLAR, LET'S DO THE WORK, their respective logos, "Caterpillar Corporate Yellow", the "Power Edge" and Cat "Modern Hex" trade dress as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

