A TEREX BRAND

Load Management System Service Manual

Serial Number Range	
GTH-2506 AU.3	From GTH250614-101
GTH-4014 AU	From GTH401414-101
GTH-4018 AU	From GTH401814-101

Part No. 57.4400.9218
Rev A
October 2015

Introduction

Important

Read, understand and obey the safety rules and operating instructions in the *Genie GTH-2506 AU.3 Operator's Manual* and *Genie GTH-4014/4018 AU Operator's Manual* before attempting any procedure described in this manual.

This manual provides detailed Load Management System (LMS) setup and configuration information for the machine owner and user. It also provides LMS service, repair and calibration procedures for service technicians.

It is a requirement that the persons carrying out service on the LMS are familiar with and have experience in telehandler operation, limitations and functionality. Therefore, it is recommended that LMS service, repair and calibration be performed at an authorized dealer service center.

Technical Publications

Genie has endeavored to deliver the highest degree of accuracy possible. However, continuous improvement of our products is a Genie policy. Therefore, product specifications are subject to change without notice.

Readers are encouraged to notify Genie of errors and send in suggestions for improvement. All communications will be carefully considered for future printings of this and all other manuals.

Contact Us:

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33 Kimberley St
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Parts and Service Support
1800 331 660

Serial Number Information

Genie offers the following Service Manuals for these models:

Title	**Part No.**

57.4400.9218 Rev A October 2015
First Edition, First Printing

Revision History

REVISION	DATE	SECTION	PROCEDURE / SCHEMATIC PAGE / DESCRIPTION
A	10/2015		Initial Release
			REFERENCE EXAMPLES:

Electronic Version

`Click on any procedure or page number highlighted in blue to view the update.

REVISION HISTORY

REVISION	DATE	SECTION	PROCEDURE / SCHEMATIC PAGE / DESCRIPTION
			REFERENCE EXAMPLES:

Electronic Version
Click on any procedure or page number highlighted in blue to view the update.

Serial Label

Genie
A TEREX BRAND

Model:
GTH-2506
Model Year: 2014
Designation:
ROUGH TERRAIN VARIABLE REACH TRUCK
Serial Number: GTH401414B-Xxxxx
Manufacture Date: DD/MM/YY
Mass: 22542 lbs / 10225 kg
Rated Capacity: 4000 kg
Nominal Power: 75 kW
Max drawbar pull provided for all the coupling hook: 30000 N
Max vertical load provided for all the coupling hook: 10000 N
Country of Manufacture: ITALY

Manufacturer:
TEREX Global GmbH
Mühlenstrasse 26
Switzerland

CE

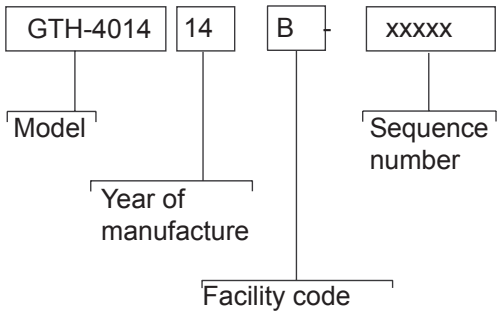
Genie
A TEREX BRAND

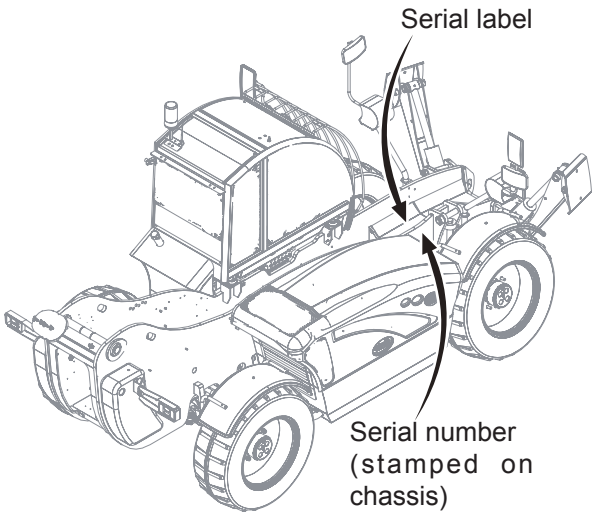
Model:
GTH-4014
Model Year: 2014
Designation:
ROUGH TERRAIN VARIABLE REACH TRUCK
Serial Number: GTH401414B-Xxxxx
Manufacture Date: DD/MM/YY
Mass: 22542 lbs / 10225 kg
Rated Capacity: 4000 kg
Nominal Power: 75 kW
Max drawbar pull provided for all the coupling hook: 30000 N
Max vertical load provided for all the coupling hook: 10000 N
Country of Manufacture: ITALY

Manufacturer:
TEREX Global GmbH
Mühlenstrasse 26
Switzerland

CE

Serial Number Legend:





SERIAL NUMBER LEGEND

Genie
A TEREX BRAND

Model:
GTH-2506
Model Year: 2014
Designation:
ROUGH TERRAIN VARIABLE REACH TRUCK
Serial Number: GTH250614B-Xxxxx
Manufacture Date: DD/MM/YY
Mass: TBA lbs / TBA kg
Rated Capacity: 2500 kg
Nominal Power: TBA kW
Max drawbar pull provided for all the coupling hook:
TBA N
Max vertical load provided for all the coupling hook:
TBA N
Country of Manufacture: ITALY

Manufacturer:
TEREX Global GmbH
Mühlenstrasse 26
Switzerland

CE

Safety Rules

Danger

Failure to obey the instructions and safety rules in this manual and the appropriate Operator's Manual on your machine will result in death or serious injury. Many of the hazards identified in the Operator's Manual are also safety hazards when maintenance and repair procedures are performed.

Do Not Perform Maintenance

Unless:

- ☑ **You are trained and qualified to perform maintenance on this machine.**
- ☑ **You read, understand and obey:**
  - **Manufacturer's instructions and safety rules**
  - **Employer's safety rules and worksite regulations**
  - **Applicable governmental regulations**
- ☑ **You have the appropriate tools, lifting equipment and a suitable workshop.**

SAFETY RULES

Personal Safety

Any person working on or around a machine must be aware of all known safety hazards. Personal safety and the continued safe operation of the machine should be your top priority.

Read each procedure thoroughly. This manual and the decals on the machine, Use signal words to identify the following:

Safety alert icon—used to alert personnel to potential personal injury hazards. Obey all safety messages that follow this icon to avoid possible injury or death.

⚠DANGER Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠CAUTION Indicates a potentially hazardous situation which, if not avoided, may cause minor or moderate injury.

NOTICE Indicates a potentially hazardous situation which, if not avoided, may result in property damage.

Be sure to wear protective eye wear and other protective clothing if the situation warrants it.

Be aware of potential crushing hazards such as moving parts, free swinging or unsecured components when lifting or placing loads. Always wear approved steel-toed shoes.

Workplace Safety

Be sure to keep sparks, flames and lighted tobacco away from flammable and combustible materials like battery gases and engine fuels. Always have an approved fire extinguisher within easy reach.

Be sure that all tools and working areas are properly maintained and ready for use. Keep work surfaces clean and free of debris that could get into machine components and cause damage.

Be sure any forklift, overhead crane or other lifting or supporting device is fully capable of supporting and stabilizing the weight to be lifted. Use only chains or straps that are in good condition and of ample capacity.

Be sure that fasteners intended for one time use (i.e., cotter pins and self-locking nuts) are not reused. These components may fail if they are used a second time.

Be sure to properly dispose of old oil or other fluids. Use an approved container. Please be environmentally safe.

Be sure that your workshop or work area is properly ventilated and well lit.

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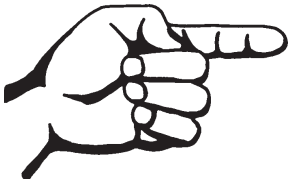

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LMS Components

Description

The Load Management System (LMS) is a safety system primarily designed to prevent further aggravating motion of the telehandler during the lifting cycle. The LMS uses information collected from various sensors to constantly monitor machine stability condition against rated capacities specified in load charts. During and overload event, the LMS restricts further aggravating motion of the load by disabling boom raise/lower, boom extend and tilt attachment forward. Apart from monitoring load and machine geometry, the LMS also integrates other aspects of machine operation such as valve bank control, joystick operation and operator access management. LMS functionality includes the following:

- Rated capacity limiter
- Dynamic load chart
- Attachment selection and management
- Boom control
- Outrigger control
- Display Diagnostic/debugging information
- Operator access management
- Human Machine Interface (HMI)

An electronic control unit (ECU) is used to control and monitor boom, outrigger and chassis tilt functions. It collects information from sensors and hydraulic control valves, which is then used to control and monitor boom movement. This information is shared between the ECU and display unit via CAN line. Communication between the ECU and machine components is two-way, this allows constant monitoring of all components connected to the ECU. This section contains a short description of the main hardware components which make up the LMS.

LMS COMPONENTS

Electronic Control Unit (ECU)

The ECU is located inside the cab behind the seat.

ECU

Display Unit

This unit is located inside the cab. There are two versions of the display units available: standard and enhanced version. Both models offer the same functionality, however the enhanced display unit has extra USB and camera ports. An enhanced display is required when either an ibutton reader or front camera are installed

LMS Display unit

LMS COMPONENTS

Pressure Transducers

Two pressure transducers are located in the lift cylinder.

Two pressure transducers are located in the fork cylinder.

The Pressure transducers output a 4 - 20 mA signal.

Pressure transducers

Angle/Length Sensor

The boom length and angle sensors are integrated into a single unit installed on the side of the boom. The boom length and angle sensors output a 4 - 20 mA signal.

Boom angle/length sensor

LMS COMPONENTS

Chassis Angle Sensor

The chassis angle sensor is located under the chassis cover, near the cabin.

The chassis angle sensor outputs a 2.5 ± 2 V signal for each axis (X and Y).

Chassis angle sensor

iButton Reader and Converter

The optional iButton reader is located in the interior panel near the joystick. The iButton reader is connected to the display unit through an iButton converter located behind the fuse/relay board.

iButton and iButton reader

iButton converter

Functional Description

Introduction

The LMS measures lift and levelling cylinder hydraulic pressure, and machine geometry to provide an estimate of the actual load being lifted. This estimated load is then compared against machine rated capacity determined from stored load charts. De-stabilising boom functions are disabled if the actual load exceeds the rated capacity of the machine for the given machine configuration.

Operation of the LMS is setup and configured by:

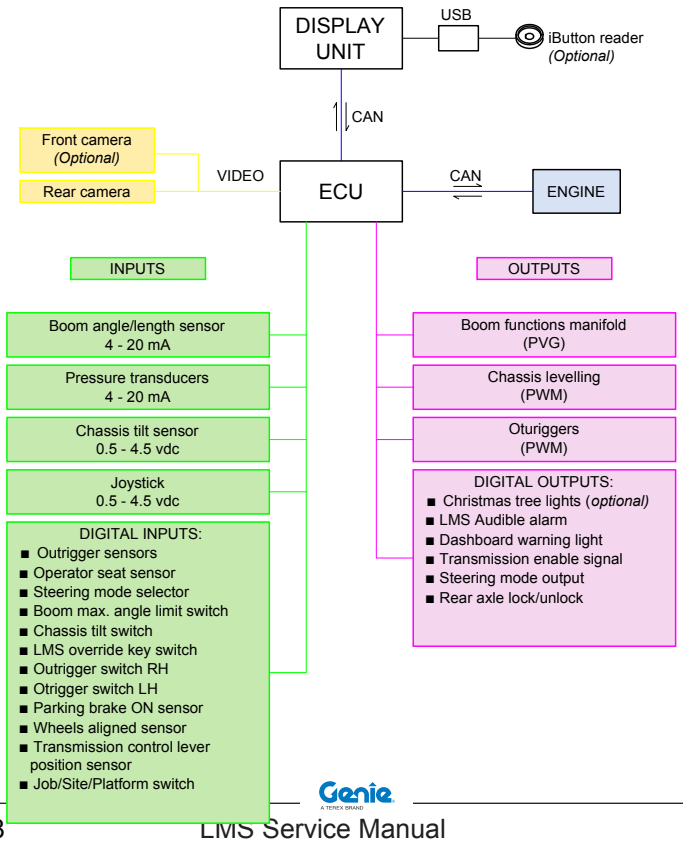
- ECU software
- Load charts
- User access permissions
- Parameter set

LMS - Machine interaction

The LMS is an integral part of the machine. Most machine functions are either monitored or managed by the ECU, or both. Sensors, buttons, switches and feedback signals from hydraulic valves are connected to the ECU to provide information about the machine status. The ECU utilises this information to assess the condition of various components and determine if the machine is functioning as it should be. The ECU also manages various components such as boom movements, outriggers, and engine based on the inputs received.

The following figure shows a basic representation

LOAD MANAGEMENT SYSTEM COMPONENT CONNECTION DIAGRAM



FUNCTIONAL DESCRIPTION

of how the LMS interacts with the machine.

The display unit is the interface between the machine and the operator; it connects to the ECU via a CAN network. Changes to ECU software, load charts, operator access permissions and parameter set are uploaded to the display unit using an USB flash drive via the USB port. A video input port is located at the back of the display unit to connect the rear camera; the enhanced display has an extra video input to connect an optional front camera. The ECU uses a dedicated CAN network to manage the engine. Analogue (voltage, current) and digital inputs, digital (digital output high side, digital output low side) and pulse width modulation (PWM) outputs are used to manage the rest of the machine components.

Feedback signals from sensors and hydraulic valves are connected to the ECU to monitor the state of such components. The ECU then reports faults via the display unit to assist operators and service technicians with troubleshooting the machine.

LMS - Operator Interaction

The operator interacts with the LMS via the display unit. This graphical interface relates information to the operator such as stability condition of the machine, faults, attachment selection and outrigger position (if equipped). It is also used to perform advanced procedures such calibration, troubleshooting and configuring user access permissions.

Primary and secondary home screens provide information to the operator about machine operation. The operator is able to monitor machine status via these screens; a warning/fault alarm is displayed in the home screen to alert the operator of a problem with the machine. The display unit is also fitted with an audible alarm used to alert the operator when the telehandler is approaching its maximum rated capacity or there is a hardware fault in the machine. See LMS operating instructions in telehandler Operator's Manual for details on how to navigate through the display unit menus.

Advanced operations reserved for maintenance personnel are also performed via the display unit. The display unit can be used to calibrate the machine, perform troubleshooting operations via accessing faults and warning pages, update ECU software, upload load charts, modify machine parameters and update user access permissions.

Software

It is possible to update all LMS software, setup and configuration data by using an USB flash drive to upload data via the display unit. ECU software, load charts and user permissions are contained in a single package file (extension '.WBPKG'). Uploading software and modifying parameters can only be performed by users with access level 2 or higher.

ECU software is specific to each machine model. For example, GTH-2506 AU.3 ECU software cannot be uploaded into a GTH-4014 AU telehandler. Each machine is hardware coded to prevent inadvertent upload of ECU software onto incorrect machine model. During ECU software upload, the system runs a consistency check between the machine's ECU and display unit; software cannot be downloaded into the ECU unless the consistency check returns a positive result.

The load charts contain geometry and rated capacity information for all attachments which are compatible with the particular machine model.

The parameter set is a single file (extension '.DB3') which contains machine specific data such as function speeds, calibration data and machine geometry data. The parameter set is specific to each machine model and must not be uploaded to incorrect machine model.

User access permissions are managed via the display unit and are used to prevent unauthorised use of the machine. When combined with the optional iButton reader, registered users are permitted to operate the machine after first placing the iButton on the iButton reader. If the machine is not equipped with an iButton reader and Login Access is enabled, users must log in via the display unit by entering a 4-digit pin.

GTH Operator Access Manager

The GTH Operator Access Manager (GOAM) is a web based application used to manage user access permissions for the LMS. The web application is accessible from the internet using a web browser. The application currently supports Mozilla Firefox or Google chrome. The web application allows dealers and customers to manage users and attachments by creating their own '.WBPKG' package files containing user access and attachment permissions relevant to their site/usage. See Section 7: GTH Operator Access Manager for detailed instruction on how to use the GOAM.

User Access Levels

The LMS is set up with different user access levels which prevent unauthorised modification of LMS setup or configuration. There are five different access levels depending on user role:

LEVEL	USER ROLE
0	Operator: Personnel whose task is to operate the machine.
2	Maintenance: Personnel who carry out regular maintenance.
3	Dealer: Customer's service technicians able to carry out advanced operations such as software update.
4	Service: Terex service technicians with the ability to carry out advanced operations.
5	Manufacturer: Terex engineers with the ability to change both, software and hardware machine setup.

The following table lists all LMS menu pages and items with their respective access levels.

Table legend:

M	Menu
L	Leaf

FUNCTIONAL DESCRIPTION

		Description	Level
M	**Home Menu**	**1st Stage menu** ◌	**0**
M	**Work**	Work menu ◌	0
L	Attachments	Attachment selection	0
L	Cameras	Camera menu	0
L	Front camera	Front camera images and present status	0
L	Rear camera	Rear camera images and present status	0
L	Camera settings	Camera settings	0
L	Rear camera Auto	Enables rear camera when transmission lever is set in the reverse position	0
L	Front camera Auto	Enabler front camera when transmission lever is set in the forward position	0
L	Load chart when boom moving	Allows load chart to be displayed when the boom is moving and transmission control lever is set in reverse position	0
F	Mute	Mute audible alarm (→)	0
M	**Alarms**	**Alarms menu** ◌	**0**
L	Active Alarms	View list of active alarms	0
L	Active Warnings	View list of active warnings	0
M	**Alarm History**	**Historical alarms menu** ◌	**2**
F	USB export	Export alarms and warnings to USB (→)	2
L	View alarms	View list of alarm history	2
F	Erase alarms	Erase alarm history (→)	4
L	View warnings	View list of warnings history	2
F	Erase warnings	Erase warnings history (→)	4
M	**Display**	**Display setting menu** ◌	**0**
L	Brightness	Adjust screen brightness	0
L	Language	Change display language	0
L	Date / Time	Change date / time	2
L	IP address	Change display IP address	2
L	Information	Display system information	0
L	Selected options	View currently selected options	0
M	**Maintenance**	**Maintenance menu** ◌	**2**
L	Options	Select / remove available options	2
M	**ECU**	**Electronic control unit menu** ◌	**2**
L	Check input	Check ECU input signals	2
L	Check output	Check, force ECU output signals	2

FUNCTIONAL DESCRIPTION

			Description	Level
F	Sw update		Manually Update ECU software (→)	2
F	Sw upload		Manually upload ECU software (→)	2
F	Restart		Restart ECU (→)	2
M	**Params**		**Parameters menu** ◌	**2**
F		Send	Send parameters database to ECU (→)	2
F		Receive	Receive parameters database from ECU (→)	2
F		Check	Compare ECU against Display parameters (→)	2
L		Display param	View and modify Display parameters	2
F		USB exp	Export all parameters to USB (→)	2
F		USB imp	Import all parameters from USB to Display (→)	2
L		ECU param	View and modify ECU parameters	2
F		Set default	Reset ECU parameters to default settings (→)	4
F	Load chart download		Download load charts to ECU	4
M	**Sensors**		**Sensor calibration menu** ◌	**2**
L	Weight		Weight calibration	2
L	Angle		Boom angle calibration	2
L	Boom len		Boom length calibration	2
L	Tilt sensor		Chassis sensor calibration	2
M	**Joysticks**		**Joystick calibration menu** ◌	**2**
L	X-axis		X axis calibration (fork tilt)	2
L	Y-axis		Y axis calibration (boom lower/raise)	2
L	Z-axis		Z axis calibration (boom extend/retract)	2
L	By-pass		LMS override	2
L	System update		Update system (software, load charts, users)	4
L	Gain tables		Used to enable load's 3D interpolation	4
M	**Configuration**		**Machine configuration menu** ◌	**4**
L	Available options		Set machine available options	4
M	ECU		Shortcut to maintenance/ECU	4
M	Sensors		Shortcut to maintenance/Sensors	4
M	Joystick		Shortcut to maintenance/Joystick	4
L	Bypass		Shortcut to maintenance/Bypass	4
	System update		Update system (software, load charts, users)	
F	Login / Logout		User login / logout screen	0
	Debug		Page used for debugging	

FUNCTIONAL DESCRIPTION

Table legend:

F	Function
bold	Menu
(→)	Action/function

Access Methods

The LMS can be configured for three different access methods:

- No password
- Log in access (4-digit PIN)
- iButton access

No Password: Operators are not required to log in to operate the machine. The attachment selection screen is displayed immediately after the LMS boot up sequence is complete.

Log in access (4-digit pin): Operators are required to enter a 4-digit PIN to operate the machine's boom functions. The GTH Operator Access Manager can be used to enable or disable each attachment or 3000 kg limit for a particular operator. A log in screen is displayed after the LMS boot up sequence is complete which prompts the user to log in before machine's boom functions are enabled.

iButton: This access method operates in a similar manner to log in access, except that an iButton is required to operate the machine's boom functions. An iButton is an electronic coded key which contains user data. The optional iButton reader is located on the right hand side of the dashboard. The LMS automatically logs user off and disables the machine's boom functions when the iButton is removed from the iButton reader.

Procedures

System Update ('.WBPKG' file)

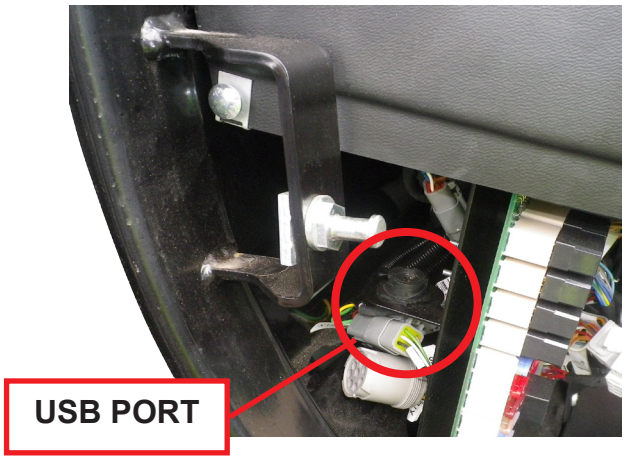
Minimum access level required: 2

User role: Maintenance, Dealer, Service, Manufacturer

This procedure is used to update the following: ECU software, load charts and user access permissions.

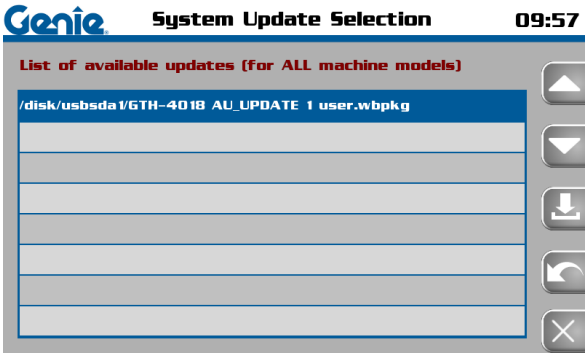
1. Copy '.WBPKG' package file onto an empty USB flash drive. The flash drive must meet the following requirements:
   - USB 2.0 compatible
   - Maximum capacity 8.0 Gb
   - File system FAT32
   - Virus-free
   - No built-in software is installed, e.g. anti-virus or backup utility.
2. Insert USB flash drive into USB port on the machine.

For telehandlers fitted with enhanced display (if equipped with iButton reader or front camera), use the USB port located at the front of the display unit. For telehandlers fitted with standard display, use USB port located under the dashboard. On GTH-4014 AU and GTH-4018 AU telehandlers, the USB port is located behind the fuse/relay board.



On GTH-2506 AU.3 telehandlers, the USB cable is located near the brake fluid reservoir.

3. Turn ignition switch to 'ON' position.
4. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).
5. Go to Home→Maintenance→System Update menu page. Wait until a list of available files on the USB flash drive are displayed.

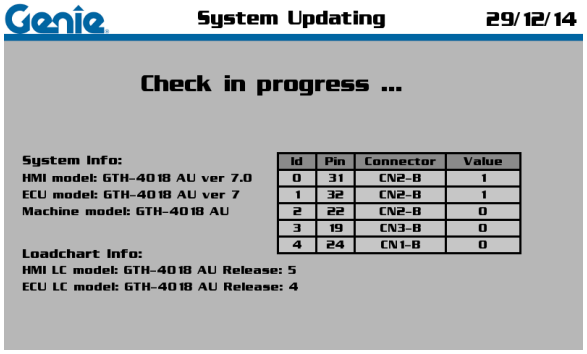


6. From the list of available files, select file with '.WBPKG' extension applicable to the telehandler model being updated.
7. Wait for the system to update and automatically reboot.

PROCEDURES

8. Log in again using the same user as previous. The system automatically checks display software, ECU software and load chart versions to establish if an update is required. Note that a machine cannot be updated with the same version of software or load tables currently installed on the machine.

9. Review information screen showing details of ECU software and load chart versions in display unit (HMI) and ECU. If an update is required, the system will prompt you to update the ECU software and/or the load charts. Select 'Yes' to confirm each update.



10. Wait for the system to complete the update.

Configuring Available Options

Minimum access level required: 4

User role: Service, Manufacturer

This procedure is used to configure available options for a machine. For example, the front camera option can be added after a front camera is installed on the machine. Note that this screen only makes a particular option available, but it doesn't enable it. To enable an option, see 'Enabling...' procedures in this section.

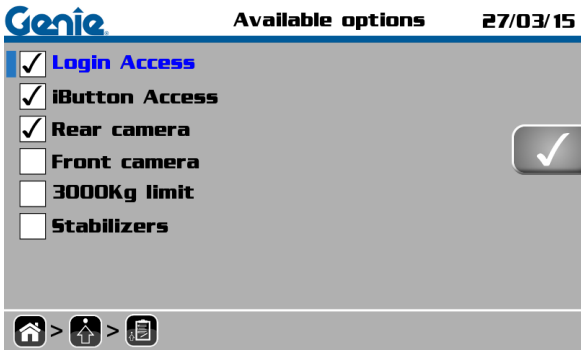
Currently, there are six options which can be configured on the machine depending on hardware availability and user requirements:

- Login Access
- iButton Access (if equipped)
- Rear camera (standard on all machines)
- Front camera (if equipped)
- 3000 kg limit
- Stabilizers

To make an option available:

1. Turn ignition switch to 'ON' position.

2. Log in to the LMS as Service or Manufacturer user (refer to Operator's Manual for detailed log in instructions). Go to 'Home→Config→Available options' menu.



3. Using the encoder button, select the required option and press the function button next to the tick symbol to enable of disable the option.

4. Press Escape button to return to menu.

PROCEDURES

Enabling Login Access

Minimum access level required: 2

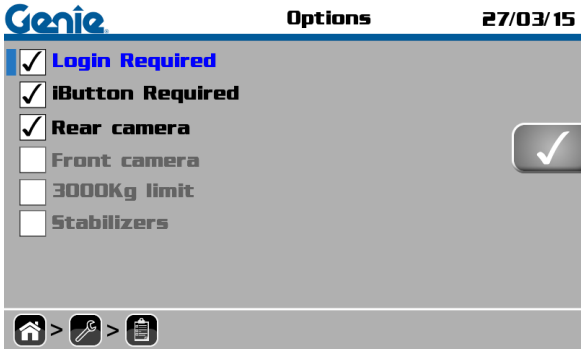
User role: Maintenance, Dealer, Service, Manufacturer

This procedure is used to enable/disable login access.

When login access is enabled, the operator must enter a 4-digit PIN before the machine's boom functions will operate. This option must be made available by menu: Home→Config→Available Options' before it can be enabled using this procedure. Options are displayed light grey to indicate that they are unavailable.

To enable login access:

1. Turn ignition switch to 'ON' position.
2. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).
3. Using the encoder button, to go to Home→Maintenance→Options menu.



4. Using the encoder button, select 'Login Required' and press the function button next to the tick symbol to enable the option.
5. Press Escape button to return to menu.

Enabling iButton Access

Minimum access level required: 2

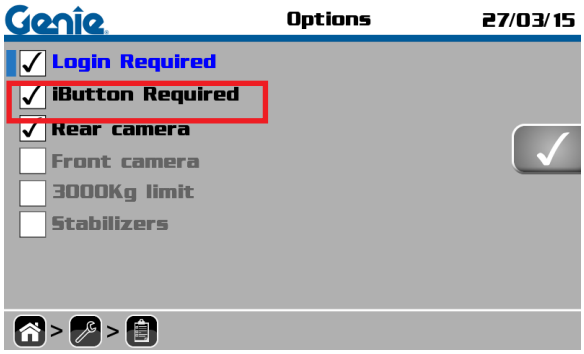
User role: Maintenance, Dealer, Service, Manufacturer

This procedure is used to enable/disable iButton access.

An iButton reader must be installed and this option must be made available via menu: Home→Config→Available Options before it can be enabled using this procedure. Options are displayed light grey to indicate that they are unavailable.

To enable iButton access:

1. Turn ignition switch to 'ON' position.
2. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).
3. Using the encoder button, to go to Home→Maintenance→Options menu.
4. Using the encoder button, select 'iButton Required' and press the function button next to the tick symbol to enable the option.
5. Press Escape button to return to menu.



PROCEDURES

Enabling Front or Rear Cameras

Minimum access level required: 2

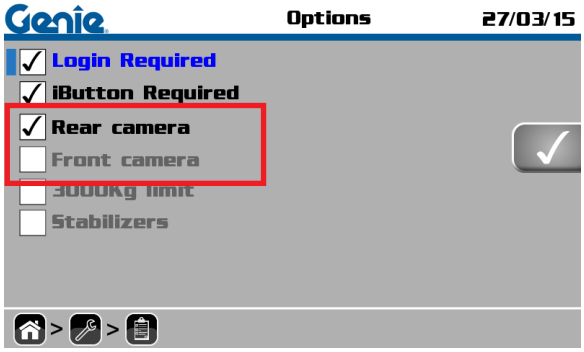
User role: Maintenance, Dealer, Service, Manufacturer

This procedure is used to enable/disable front or rear cameras.

The front or rear cameras must be installed each option must be and made available via menu: Home→Config→Available Options' before it can be enabled using this procedure. Options are displayed light grey to indicate that they are unavailable.

To enable the front or rear cameras:

1. Turn ignition switch to 'ON' position.
2. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).
3. Using the encoder button, to go to Home→Maintenance→Options menu.
4. Using the encoder button, select 'Front camera' or 'Rear camera' and press the function button next to the tick symbol to enable the option.



5. Press Escape button to return to menu

Enabling 3000 kg Limit

Minimum access level required: 2

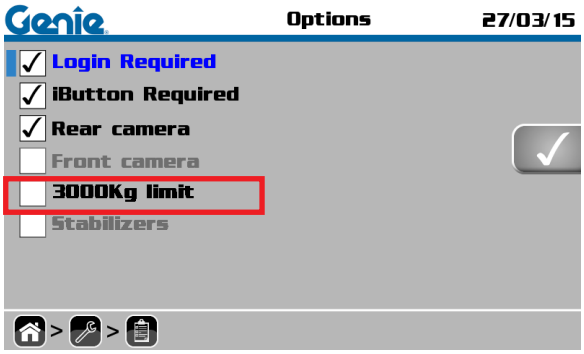
User role: Maintenance, Dealer, Service, Manufacturer

This procedure is used to enable/disable the 3000 kg rated capacity limit for telehandlers with lifting capacity greater than 3000 kg.

The 3000 kg rated capacity limit must be made available via menu: Home→Config→Available Options before it can be enabled using this procedure. Options are displayed light grey to indicate that they are unavailable.

To enable 3000 kg limit:

1. Turn ignition switch to 'ON' position.
2. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).
3. Using the encoder button, go to Home→Maintenance→Options menu.



4. Using the encoder button, select '3000 kg limit' and press the function button next to the tick symbol to enable the option.
5. Press Escape button to return to menu.

PROCEDURES

Checking ECU Inputs

Minimum access level required: 2

User role: Maintenance, Dealer, Service, Manufacturer

This procedure is used for troubleshooting the controls, switches and sensors monitored by the ECU.

The LMS input page is provided to assist service technicians identify machine faults. Do not attempt to carry out a maintenance/ repair procedure unless you are qualified to do so.

1. Turn ignition switch to 'ON' position.

2. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).

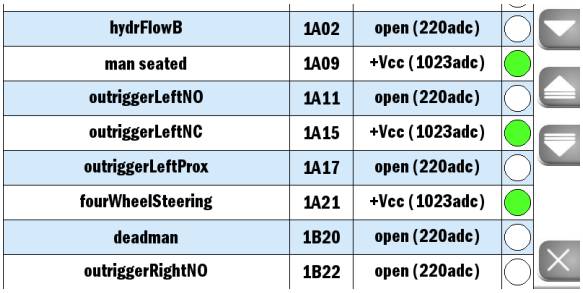
3. Using the encoder button, go to Home→Maintenance→ECU→Check input menu.

4. Scroll through input signals by pressing the function buttons next to the arrow symbols or by using the encoder wheel.

5. The following information is displayed for each input:

   - Column 1: Short description of input.
   - Column 2: ECU connector and pin number, e.g. 1A08 refers to connector 1A pin 08.
   - Input status and value: Input can be analogue voltage, analogue current or digital.
   - Input status indicator: Green for ON, and Red for OFF.

6. Press function button next to 'X' or Escape button to return to menu.



PROCEDURES

Checking/Forcing ECU Outputs

Minimum access level required: 2

User role: Maintenance, Dealer, Service, Manufacturer

This procedure is used for troubleshooting machine functions and indicators controlled by the ECU.

The LMS output page is provided to assist service technicians identify machine faults. Do not attempt to carry out a maintenance/repair procedure unless you are qualified to do so.

1. Turn ignition switch to 'ON' position.

2. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).

3. Using the encoder button, go to Home→Maintenance→ECU→Check output menu.

wheelAllign	1B04	OFF	
yellowLight	1B03	GND, 0.0V	
redLight	1B02	GND, 0.0V	
buzzer	1B01	OFF	
machineConf	1B27	ON	
greenLight	2A26	ON	
TransmEnable	2A19	OFF	
levelLight	2A02	ON	
rightSwayRight	2B29	OFF	
fourWheel	2B27	ON	

4. Scroll through input signals by pressing the function buttons next to the arrow symbols or by using the encoder wheel.

5. The following information is displayed for each output:
   - Column 1: Short description of output.
   - Column 2: ECU connector and pin number, e.g. 2B27 refers to connector 2B and pin 27.
   - Output status value: Outputs can be digital, digital output low side (LSD), digital output high side (HSD), or pulse wave modulation (PWM)
   - Output status indicator: Green for ON, and Red for OFF.

6. Output signals can be forced on or off by pressing the function button next to screwdriver symbol.

Ensure it is safe to force a signal ON or OFF before using this function.

Voltage is always present on low side and high side digital outputs, even when input is off. The ECU uses these signals for diagnostic purposes.

7. Press and hold function button for less than 5 seconds to toggle output signal.

8. Press and hold function button for longer than 7 seconds to toggle and latch output signal.

9. Press function button next to 'X' or Escape button to return to menu.

PROCEDURES

Viewing Active Alarms and Warnings

Minimum access level required: 0

User role: Operator, Maintenance, Dealer, Service, Manufacturer

This procedure is used for viewing active alarms or warnings. See 'Alarms and Warnings' section for a complete list of alarms and warnings.

The LMS active alarm and warning pages are provided to assist service technicians identify machine faults. Do not attempt to carry out a maintenance/ repair procedure unless you are qualified to do so.

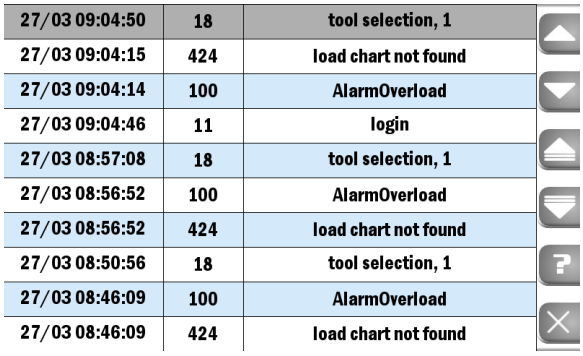
The LMS constantly monitors operation of the machine and alerts the operator when certain events such as faults or errors occur. These events are classified into alarms and warnings. Events which must be dealt with immediately are called alarms (e.g. faulty sensor, machine overloaded, incorrect parameter set); events which are of temporary nature are called warnings (e.g. PVG movement fault, chassis angle out of range). Both types of events may be able to hinder boom functions, depending on the particular machine function being affected.

Alarms and warnings occurring in real time are said to be active. These events are shown in the active alarms and warnings page for the duration of the fault or condition. Once the fault or condition has passed, the event is removed from the active alarms and warnings page.

After an alarm or warning is removed from the Active alarms and warnings page, it is recorded in the History alarms and warning page. This page contains all previous alarms and warnings which occurred after the last time alarm/warning history was deleted.

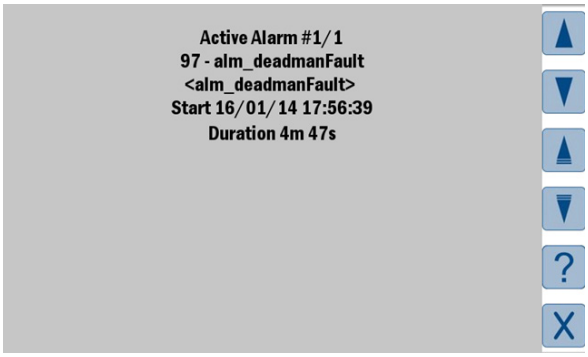
To view active alarms and warnings:

1. Turn ignition switch to 'ON' position.
2. Log in to the LMS as Operator (or higher level) user (refer to Operator's Manual for detailed log in instructions).
3. Using the encoder button, Go to 'Home→Alarms'. menu.
4. Press the function button next to 'Active Alm' or 'Active Warn' to view alarms or warnings.



27/03 09:04:50	18	tool selection, 1
27/03 09:04:15	424	load chart not found
27/03 09:04:14	100	AlarmOverload
27/03 09:04:46	11	login
27/03 08:57:08	18	tool selection, 1
27/03 08:56:52	100	AlarmOverload
27/03 08:56:52	424	load chart not found
27/03 08:50:56	18	tool selection, 1
27/03 08:46:09	100	AlarmOverload
27/03 08:46:09	424	load chart not found

5. Scroll through alarms or warnings by pressing the function buttons next to the arrow symbol or by using the encoder button.
6. The following information is displayed for each alarm or warning:
   - Column 1: Date/time stamp
   - Column 2: Alarm code
   - Column 3: Alarm name.
7. Press the function button next to the question mark symbol to display the following information:



- Alarm/warning number.
- Alarm/warning code and description
- CAN bus variable name
- Date/time stamp
- Duration

8. Press function button next to 'X' or Escape button to return to list of alarms or warnings.

9. Press function button next to 'X' or Escape button to return to the menu.

PROCEDURES

Viewing, exporting and deleting Alarm/Warning History

Minimum access level required for viewing: 2

User role: Maintenance, Dealer, Service, Manufacturer

Minimum access level required for exporting and deleting: 4

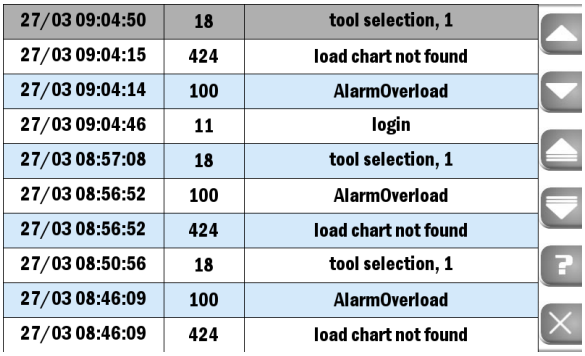
User role: Service, Manufacturer

This procedure is used for viewing, exporting and deleting alarm or warning history. See 'Alarms and Warnings' section for a complete list of alarms and warnings.

The LMS alarm and warning history pages are provided to assist service technicians identify machine faults. Do not attempt to carry out a maintenance/ repair procedure unless you are qualified to do so.

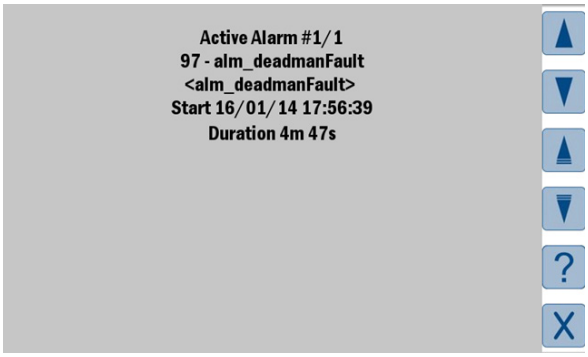
To view alarm or warning history:

1. Turn ignition switch to 'ON' position.
2. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).
3. Using the encoder button, go to Home→Alarms→History menu.
4. Press the function button next to 'View alm' or 'View warn' to access a list of historical alarms/ warning via the display screen.



27/03 09:04:50	18	tool selection, 1
27/03 09:04:15	424	load chart not found
27/03 09:04:14	100	AlarmOverload
27/03 09:04:46	11	login
27/03 08:57:08	18	tool selection, 1
27/03 08:56:52	100	AlarmOverload
27/03 08:56:52	424	load chart not found
27/03 08:50:56	18	tool selection, 1
27/03 08:46:09	100	AlarmOverload
27/03 08:46:09	424	load chart not found

5. Scroll through alarms or warnings by pressing the function buttons next to the arrow symbol or by using the encoder button.
6. The following information is displayed for each alarm or warning:
   - Column 1: Date/time stamp
   - Column 2: Alarm code
   - Column 3: Alarm name.
7. Press the function button next to the question mark symbol to display the following information:



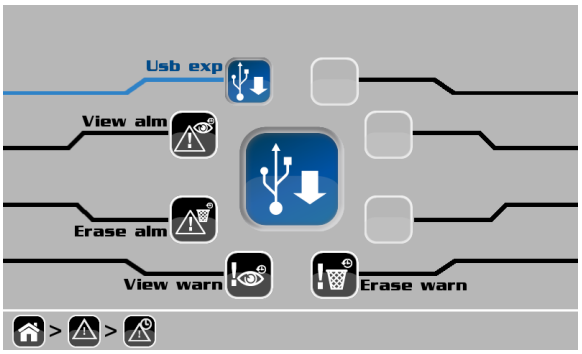
PROCEDURES

8. Press function button next to 'X' or Escape button to return to menu.

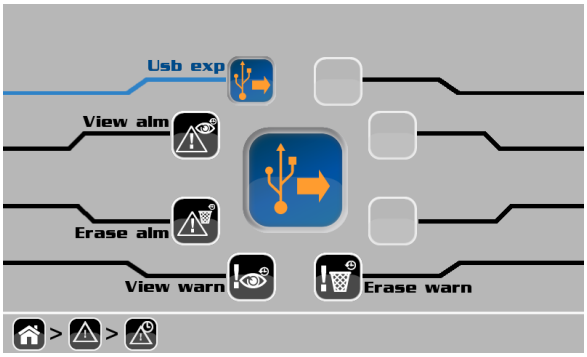
To export alarm and warning history:

1. Insert an empty USB flash drive into USB port on the machine.

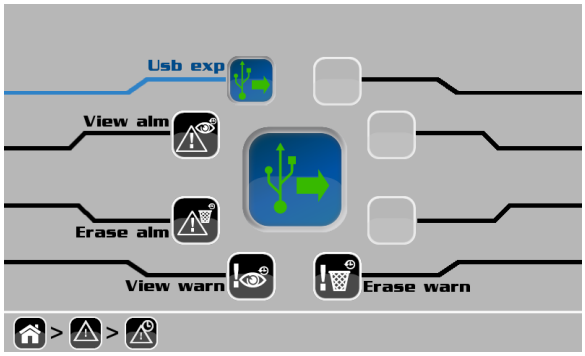
2. Press function button next to 'USB exp'.



3. Exporting alarm and warning history can take up to 6 minutes depending on the amount of data to be copied. The 'USB exp' icon changes colour to orange during export operation. Do not operate the machine during this time.



4. Wait for the 'USB exp' icon to change colour to green.



5. Remove USB flash drive.

To delete alarm or warning history:

Deleting alarm or warning history removes data from the LMS permanently. Once data is deleted it cannot be recovered.

1. From the 'Hist alm' menu, press the function button next to 'Erase alms' or 'Erase warn' to delete alarm or warning history.

PROCEDURES

Uploading ECU Software to Display Unit ('.MOT' file)

Minimum access level required: 2

User role: Maintenance, Dealer, Service, Manufacturer

This procedure is used to upload new ECU software ('.MOT') from a USB flash drive into the display unit.

Updating ECU software is a two step procedure. ECU software must be first loaded to display unit and then downloaded from display unit to ECU. Do not use this procedure for regular software updates, use the system update ('.WBPKG' package file).

To upload ECU software to display unit:

1. Copy '.MOT' ECU software file onto an empty USB flash drive.
2. Turn ignition switch to 'ON' position.
3. Log in to the LMS as Maintenance or higher user level (refer to Operator's Manual for detailed log in instructions).
4. Insert USB flash drive into USB port on the machine.
5. Using the encoder button, go to Home→Maintenance→ECU menu.
6. Press the function button next to 'Sw upload'.
7. Wait for system to complete the upload.
8. Proceed to 'Downloading ECU Software from Display Unit to ECU' section to complete ECU software update.

Downloading ECU Software from Display Unit to ECU

Minimum access level required: 2

User role: Maintenance, Dealer, Service, Manufacturer

This procedure is used to download ECU software from the display unit to the ECU.

Updating ECU software is a two step procedure. ECU software must be first loaded to display unit and then downloaded from display unit to ECU. Use this procedure only after installing a replacement ECU. Do not use this procedure for regular software updates, use the system update ('.WBPKG' package file).

Downloading incorrect software to the ECU could cause the machine to malfunction and could result in death or serious injury.

To download ECU software from the display unit to ECU:

1. Turn ignition switch to 'ON' position.
2. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).
3. Using the encoder button, go to Home→Maintenance→ECU menu.
4. Press the function button next to 'Sw update'
5. Wait for display unit to reboot.

PROCEDURES

Importing Parameter Set to Display Unit

Minimum access level required: 2

User role: Maintenance, Dealer, Service, Manufacturer

This procedure is used to import parameter set saved from a USB flash drive into the display unit.

The parameter set contains machine specific calibration data. The following calibration procedures must be performed when a generic parameter set is used to update parameter set on ECU:

- Chassis angle
- Boom length
- Boom angle
- Weight
- Joystick

To import parameter set into the display unit:

1. Copy '.DB3' parameter set file onto an empty USB flash drive.
2. Turn ignition switch to 'ON' position.
3. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).
4. Insert USB flash drive into USB port on the machine.
5. Using the encoder button, Go to Home→Maintenance→ECU→Params menu.
6. Press the function button next to 'USB imp'.
7. Wait for display unit to reboot.
8. Proceed to 'Sending Parameters from Display Unit to ECU' section to complete parameter set update.

PROCEDURES

Sending Parameter Set from Display Unit to ECU

Minimum access level required: 2

User role: Maintenance, Dealer, Service, Manufacturer

This procedure is used to send parameter set from the display unit to the ECU.

Uploading a parameter set is a two step procedure. The parameter set must be first imported into display unit and then sent from display unit to ECU.

Sending an incorrect parameter set to the ECU could cause the machine to malfunction and result in death or serious injury.

The parameter set contains machine specific calibration data. The following calibration procedures must be performed when a generic parameter set is used to update parameter set on ECU:

- Chassis angle
- Boom length
- Boom angle
- Weight
- Joystick

To send parameter set from the display unit to the ECU:

1. Turn ignition switch to 'ON' position.
2. Log in to the LMS as Maintenance or higher user level (refer to Operator's Manual for detailed log in instructions).
3. Using the encoder button, go to Home→Maintenance→ECU→Params menu.
4. Press the function button next to 'Send'.
5. Press function button next to 'Yes' when prompted to confirm command.
6. Wait for system to complete operation.

PROCEDURES

Sending Parameter Set from ECU to Display Unit

Minimum access level required: 2

User role: Maintenance, Dealer, Service, Manufacturer

This procedure is used to send parameter set from the ECU to the display unit.

Exporting a parameter set is a two step procedure. The parameter set must be first sent from ECU to display unit and then saved onto a USB flash drive.

To send parameter set from the ECU to the display unit:

1. Turn ignition switch to 'ON' position.
2. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).
3. Using the encoder button, go to Home→Maintenance→ECU→Params menu.
4. Press the function button next to 'Receive'
5. Press the function button next to 'Yes' when prompted to confirm command.
6. Wait for system to complete operation.
7. Proceed to 'Exporting Parameter Set from Display Unit to USB Flash Drive' to complete parameter set save.

PROCEDURES

Exporting Parameter Set from the Display Unit to USB Flash Drive

Minimum access level required: 2

User role: Maintenance, Dealer, Service, Manufacturer

This procedure is used to save parameter set from the display unit onto a USB flash drive.

Exporting a parameter set is a two step procedure. The parameter set must be first sent from ECU to display unit and then saved onto a USB flash drive.

To save parameter set from the display unit onto a USB flash drive:

1. Turn ignition switch to 'ON'
2. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).
3. Using the encoder button, go to Home→Maintenance→ECU→Params menu.
4. Press the function button next to 'USB exp'
5. Wait for system to complete the operation.
6. Press function button next to 'X' or 'Escape' button to return to menu.

PROCEDURES

Manually Changing Individual ECU Parameters

Minimum access level required: 2

User role: Maintenance, Dealer, Service, Manufacturer

This procedure is used to modify individual parameters.

Changing ECU parameters could cause the machine to malfunction and could result in death or serious injury.

Before changing ECU parameters, send parameter set from ECU to display unit and then export to USB flash drive.

To manually change individual ECU parameters:

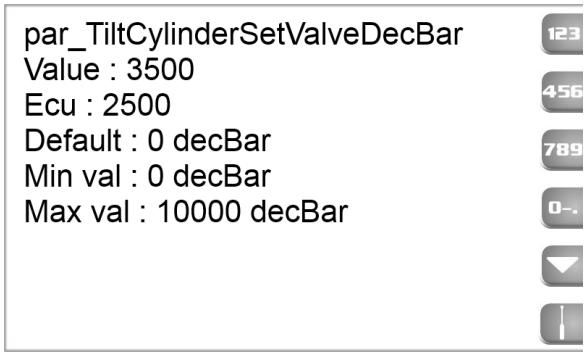
1. Turn ignition switch to 'ON' position.
2. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).
3. Using the encoder button, go to Home→Maintenance→ECU→Params menu.
4. Press the function button next to 'Ecu param'.

37	par_K1000Hoist	638 1/1000
38	par_CylinderBoomLiftingSurface_cm2	177 cm2
39	par_CylinderForkLiftingSurface_cm2	64 cm2
40	par_SteeringModality	0 -
41	par_BuzzerPreAlarmDuty	50 %
42	par_releaseCalibAutoHoist	15 rel
43	par_autoSampledDecAngleHoist_1	9 °/10
44	par_autoSampledDecAngleHoist_2	142 °/10
45	par_autoSampledDecAngleHoist_3	279 °/10
46	par_autoSampledDecAngleHoist_4	417 °/10

The parameters are colour coded as follows:

- Blue text: Display unit parameter has not been checked against ECU parameters.
- Black text: Display unit parameter is consistent with ECU parameter.
- Red text: Display unit parameter is not consistent with ECU parameter.

5. Scroll parameters by pressing the function button next to the arrow symbols or by using the encoder button.
6. Press the function button next to the screwdriver or the encoder button to modify the parameter. The parameter modification page will appear.



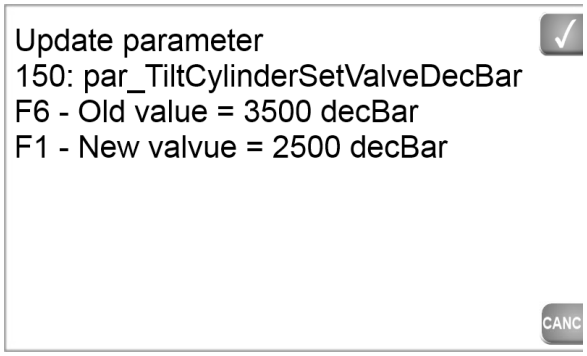
The parameter modification page shows:

- Parameter name
- Value: Modified parameter value
- Ecu: Current parameter value in ECU
- Default: Default parameter value
- Min Val: Minimum permissible parameter value
- Max Val: Maximum permissible parameter

value

7. Change the parameter value by pressing the function button next to the number icon. For example, press function button next to numbers '123' twice to enter the number '2' or 3 times to enter the number '3'. Note that parameter values must fall within the specified range shown on the screen. An out of range value will not be accepted by the ECU.

8. Press function button next to the screwdriver to save the parameter. The save parameter page will appear:



9. Press function button next to the tick to record the new parameter value to the ECU or press function key next to 'CANC' to cancel parameter change and keep the original value.

10. Press function button next to 'X' or 'Escape' button to return to menu.

PROCEDURES

Reset Parameter Set to Factory Defaults

Minimum access level required: 4

User role: Service, Manufacturer

This procedure is used to reset parameter set to factory defaults.

The parameter set contains machine specific calibration data. Resetting parameter set to factory defaults is reserved for factory use only.

To update ECU parameter set, refer procedure 'Sending Parameter Set from Display Unit to ECU'.

Download Load Charts to ECU

Minimum access level required: 2

User role: Maintenance, Dealer, Service, Manufacturer

This procedure is used to download load charts from the display unit to the ECU.

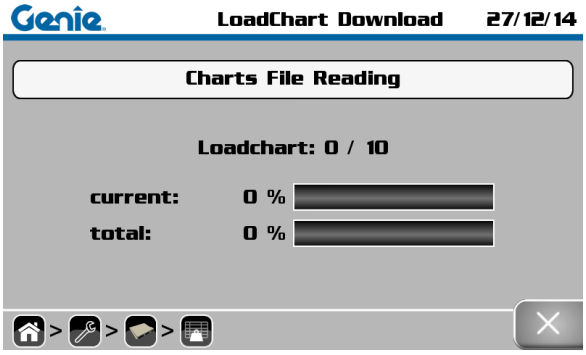
Use this procedure only after installing a replacement ECU. Do not use this procedure for regular software updates, use the System Update ('.WBPKG' package file).

Downloading incorrect load charts to the ECU could cause the machine to malfunction and could result in death or serious injury.

To download load charts to ECU:

1. Turn ignition switch to 'ON' position.
2. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).
3. Using the encoder button, go to Home→Maintenance→ECU menu.
4. Press the function button next to 'Loadchart dl'. The 'LoadChart Download' page will appear.

5. Press the function button next to the proceed symbol to start load chart download. A new page will be displayed which shows download progress.



Do not turn the power off until the procedure has completed (this procedure will take a few minutes to complete, depending on the number of load charts to be downloaded).

PROCEDURES

To Replace the ECU

Minimum access level required: 2

User role: Maintenance, Dealer, Service, Manufacturer

This procedure explains how to install a replacement ECU.

Improper set up of LMS could cause the machine to malfunction and result in death or serious injury.

To replace the ECU:

1. If possible, back up the parameter set onto a USB flash drive:.
   - Send parameter set from the ECU to the display unit (refer to procedure: 'Sending Parameter Set from ECU to Display Unit').
   - Export parameter set to a USB flash drive (refer to procedure: 'Exporting Parameter Set from Display Unit to USB Flash Drive').
2. Turn battery isolator switch off.
3. Remove original ECU and install replacement ECU.
4. Turn battery isolator switch on.
5. Download ECU software from the display unit to the ECU (refer to procedure: 'Downloading ECU software from Display Unit to ECU').
6. Download load charts from the display unit to the ECU (refer to procedure: 'Download Load Charts to ECU').
7. If a back up copy of the parameter set is available, copy the parameter set from a USB flash drive into the display unit (refer to procedure: 'Importing Parameter Set to the Display Unit'), otherwise go to the next step.
8. Send parameter set from the display unit to the ECU (Refer to procedure: 'Sending Parameter set to ECU').
9. Turn battery isolator switch off for at least 10 seconds.
10. Turn battery isolator switch on.
11. Perform function tests. Refer to Operator's Manual.

PROCEDURES

To Replace the Display Unit

Minimum access level required: 2

User role: Maintenance, Dealer, Service, Manufacturer

This procedure explains how to install a replacement display unit.

Improper set up of the LMS could cause the machine to malfunction and result in death or serious injury.

To replace the display unit:

1. If possible, back up the parameter set onto a USB flash drive:.

   - Send parameter set from the ECU to the display unit (refer to procedure: 'Sending Parameter Set from ECU to Display Unit').
   - Export parameter set to a USB flash drive (refer to procedure: 'Exporting Parameter Set from Display Unit to USB Flash Drive').

2. Turn battery isolator switch off.

3. Remove original display unit and install replacement unit.

4. Turn battery isolator switch on.

5. Perform system update (refer to procedure: 'System Update ('.WBPKG file')'). Ask the machine owner / manager to provide correct version of '.WBPKG' file, otherwise a generic file can be downloaded from www.genielift.com.au.

Note that customised user access permissions cannot be recovered from the original display unit. This information can only be loaded from a customised '.WBPKG' file. Performing a system update using the generic '.WBPKG' file will restore user access permissions to factory defaults.

During software update, check that the newly installed software and load tables on the display unit have the same or more recent version than the one on the ECU.

6. Copy parameters from the ECU to the display unit (refer to procedure: 'Sending Parameter Set from ECU to Display Unit').

7. Turn battery isolator switch OFF for at least 10 seconds.

8. Turn battery isolator switch ON.

9. Perform function tests Refer to Operator's Manual).

PROCEDURES

To Replace the Boom Length/Angle Sensor

Minimum access level required: 2

User role: Maintenance, Dealer, Service, Manufacturer

This procedure explains how to install a replacement boom length/angle sensor.

Improper set up of the LMS could cause the machine to malfunction and result in death or serious injury.

To replace the boom length/angle sensor:

1. Turn battery isolator switch off.
2. Remove original boom length/angle sensor and install replacement boom length/angle sensor.
3. Turn battery isolator switch on.
4. Calibrate boom length (refer procedure: 'Boom Length Sensor Calibration').
5. Calibrate boom angle (refer procedure: 'Boom Angle Sensor Calibration').

To Replace the Chassis Angle Sensor.

Minimum access level required: 2

User role: Maintenance, Dealer, Service, Manufacturer

This procedure explains how to install a replacement chassis angle sensor.

Improper set up of the LMS could cause the machine to malfunction and result in death or serious injury.

To replace the chassis angle sensor:

1. Turn battery isolator switch off.

The sensor is located on the chassis below the chassis cover.

2. Remove the cab side and chassis covers.

3. Remove original chassis angle sensor and install a replacement chassis angle sensor.

4. Replace the cabin side and chassis covers.

5. Turn battery isolator switch on.

6. Calibrate chassis angle sensor (refer procedure: 'Chassis Angle Sensor Calibration:).

PROCEDURES

To Replace a Pressure Transducer

Minimum access level required: N/A

User role: N/A

This procedure explains how to install a replacement pressure transducer.

Improper set up of the LMS could cause the machine to malfunction and result in death or serious injury.

Make sure the boom is supported with an appropriate lifting device before removing pressure transducer from hydraulic cylinder.

To replace a pressure transducer:

1. Turn battery isolator switch off.

2. Remove original pressure transducer and install replacement pressure transducer.

Calibration is not required after replacing a pressure transducer.

3. Turn battery isolator switch on.

To Install the iButton Reader

Minimum access level required: 4
User role: Service, Manufacturer

This procedure explains how to install the iButton reader.

Improper set up of the LMS could cause the machine to malfunction and result in death or serious injury.

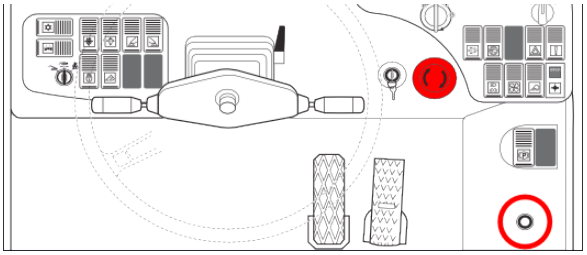
To install the iButton reader:
1. Turn battery isolator switch off.

An iButton reader can only be installed on machines fitted with an enhanced display unit.

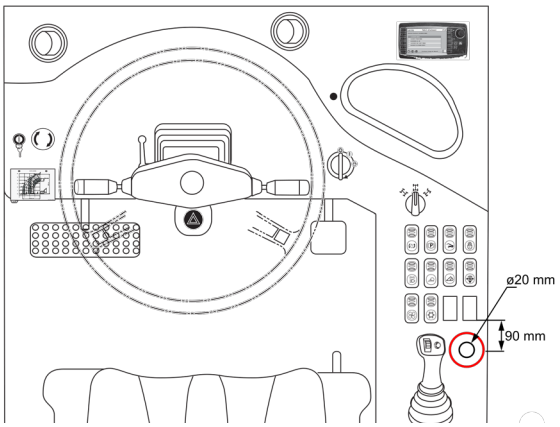
2. If the machine has a standard display unit (enhanced display units have an USB port on the bottom right corner of the front face), replace standard display unit with and enhanced display unit (refer to procedure: 'To Replace the Display Unit').

3. Install the iButton reader on the right side interior panel as shown.

GTH-4014/4018 AU

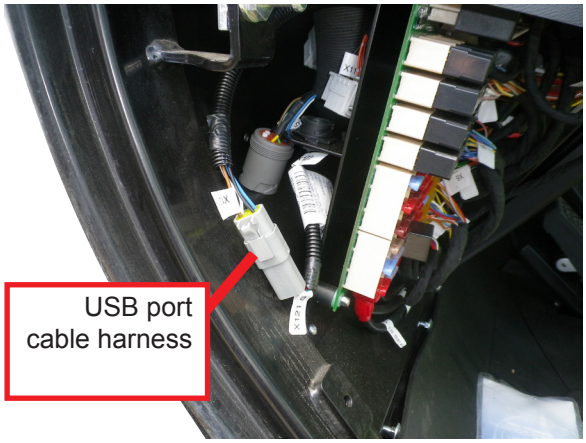


GTH-25016 AU.3



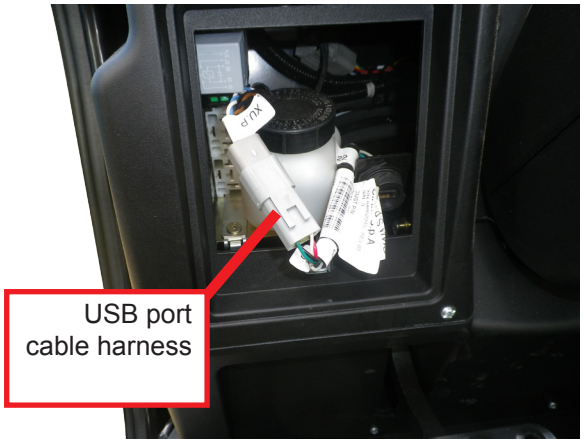
4. Remove USB port cable harness and connect iButton converter to cable harness behind fuse/ relay board.

GTH-4014/4018 AU CABLE HARNESS



PROCEDURES

GTH-2506 AU.3 USB CABLE HARNESS



5. Route iButton cable to fuse/relay board and connect to iButton converter

6. Make iButton access available (refer procedure: 'Configuring Available Options').

7. Enable iButton access (refer procedure: 'Enabling iButton Access').

To Replace the iButton Reader or iButton Converter

Minimum access level required: N/A

User role: N/A

This procedure explains how to replace the iButton reader or iButton converter.

Improper set up of the LMS could cause the machine to malfunction and result in death or serious injury.

To replace the iButton reader or iButton converter:

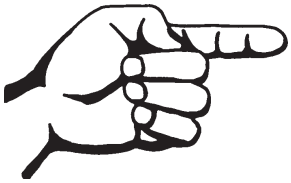
1. Turn battery isolator switch off.

2. Remove original iButton reader or converter and install replacement iButton reader or converter.

LMS set up is not required after replacing an iButton reader or iButton converter.

3. Turn battery isolator switch on

PROCEDURES



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Calibration

Chassis Angle Sensor Calibration

Minimum access level required: 2

User role: Maintenance, Dealer, Service, Manufacturer

This procedure is used to calibrate the chassis angle sensor in both pitch and roll directions.

Improper calibration of the LMS could affect LMS accuracy and result in death or serious injury.

1. Turn ignition switch to 'ON' position.

2. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).

3. Park the machine on level ground with the boom horizontal and fully retracted.

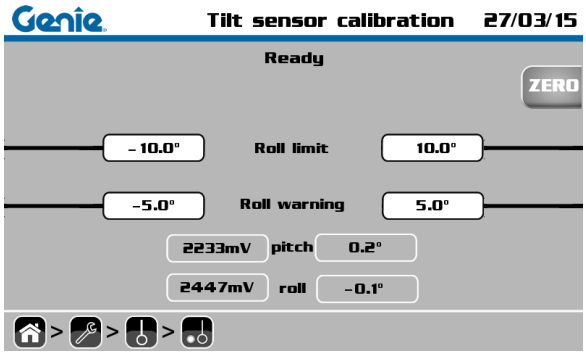
4. GTH-4014/4018 AU only: Using a digital inclinometer positioned on chassis side plate in front of cab, adjust chassis level to set angle to 90 ±0.1°.

5. Using the encoder button, go to 'Home→Maintenance→Sensors'. menu.

6. Press the function button next to 'Tilt sensor'

7. A calibration warning message will be displayed. Press function button next to 'Yes' to proceed with calibration. Press function button next to 'No' to cancel calibration.

8. Press the function button next to 'ZERO' to zero the angle value. The pitch and roll angle values shown at the bottom of the screen should now be equal to zero.



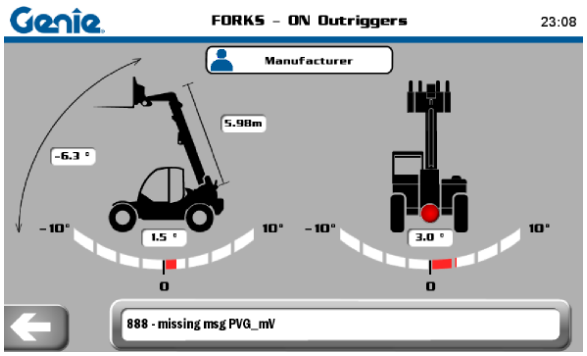
9. Check that values to the left and right of the word 'Roll limit' are set to -10.0° and 10.0°. and the values to the left and right of the word 'Roll warning' are set to -5.0° and 5.0°. If any of these values is incorrect, press function key next to the incorrect value to change it.

10. Press the Escape button to return to menu page.

11. Press the Home button to return to the primary home screen.

CALIBRATION

12. Press the function button next to the right arrow icon to display the secondary home screen.



13. GTH-4014/4018 AU only: Using a digital inclinometer positioned on chassis side plate in front of cab, adjust chassis level to set angle to 90 ±0.1°. Press 'ALT ZERO' button on digital inclinometer to get new reference point. Adjust chassis level and check that displayed roll angle is within ±0.1° of the measured value.

14. GTH-4014/4018 AU only: Using a digital inclinometer positioned on top edge of chassis side plate, adjust chassis inclination using outriggers and check that displayed pitch angle is within ±0.1° of measured value.

15. GTH-2506 AU.3 only: Using a digital inclinometer positioned on chassis side plate in front of cab, drive machine to a location with level ground until digital inclinometer display angle 90 ±0.1° . Press 'ALT ZERO' button on digital inclinometer to get new reference point. Adjust chassis level by driving two wheels of the same side on ramps. Check that displayed roll angle is within ±0.1° of measured value.

16. GTH-2506 AU.3 only: Using a digital inclinometer positioned vertically on front plate of chassis, adjust chassis inclination by driving the machine up or downhill until digital inclinometer displays angle 90 ±0.1°. Press 'ALT ZERO' button on digital inclinometer to get new reference point. Adjust chassis inclination by driving the machine up or downhill. Check that displayed pitch angle is within ±0.1° of measured value.

17. Repeat chassis angle sensor calibration if difference between displayed and measured values exceeds specification.

CALIBRATION

Boom Length Sensor Calibration

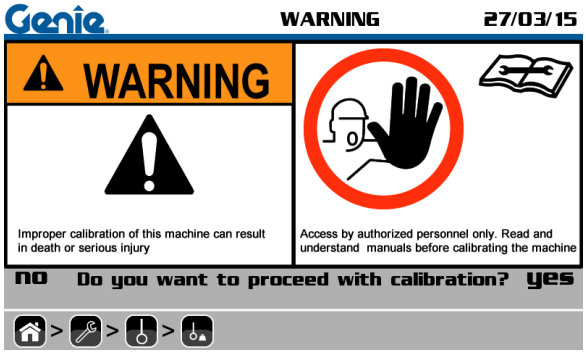
Minimum access level required: 2

User role: Maintenance, Dealer, Service, Manufacturer

This procedure is used to calibrate the boom length sensor.

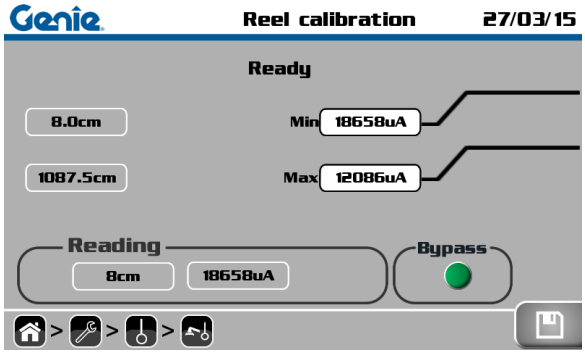
Improper calibration of the LMS could affect LMS accuracy and result in death or serious injury.

1. Turn ignition switch to 'ON' position.
2. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).
3. Park the machine on level ground with the boom horizontal.
4. Using the encoder button, go to Home→Maintenance→Sensors menu.
5. Press the function button next to 'Boom len'.
6. A calibration warning message will be displayed. Press function button next to 'Yes' to proceed with calibration. Press function button next to 'No' to cancel calibration.



The LMS alarm condition is disabled when bypass indicator is green. Bypass mode is required to perform calibration of boom length/angle sensor. Do not make fast or jerky movements during calibration.

7. When the reel calibration page is displayed, raise the boom to approximately 45°.



8. Extend the boom approximately 0.5 m.
9. Fully retract the boom
10. Press function button next to 'Min'.
11. Fully extend the boom.
12. Press function button next to 'Max'.
13. Press function button next to the disc save icon.

CALIBRATION

Boom Angle Sensor Calibration

Minimum access level required: 2

User role: Maintenance, Dealer, Service, Manufacturer

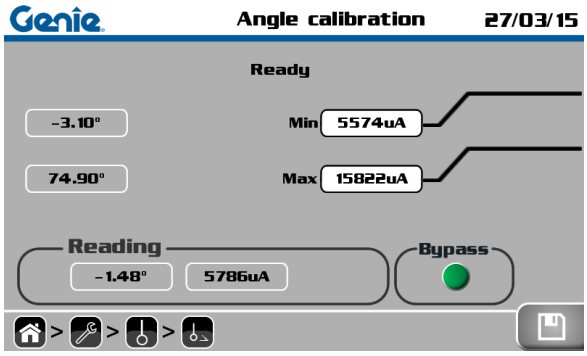
This procedure is used to calibrate the boom angle sensor.

Improper calibration of the LMS could affect LMS accuracy and result in death or serious injury.

1. Turn ignition switch to 'ON' position.
2. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).
3. Park the machine on level ground with the boom horizontal and fully retracted.
4. Using a digital inclinometer on bottom edge (GTH-2506AU.3) or top edge (GTH-4014/4018 AU) of chassis side plate, check that the measured pitch angle is 0 ±0.1°.
5. Using the encoder button, go to Home→Maintenance→Sensors menu.
6. Press the function button next to 'Angle'.
7. A calibration warning message will be displayed. Press function button next to 'Yes' to proceed with calibration. Press function button next to 'No' to cancel calibration.

The LMS alarm condition is disabled when bypass indicator is green. Bypass mode is required to perform calibration of boom length/angle sensor. Do not make fast or jerky movements during calibration.

8. When the angle calibration page is displayed, lower the boom to minimum angle.



9. Press the function button next to 'Min'.
10. Fully raise the boom
11. Press the function button next to 'Max'.
12. Press the function button next to the disc save icon.

CALIBRATION

Weight Calibration

Minimum access level required: 2

User role: Maintenance, Dealer, Service, Manufacturer

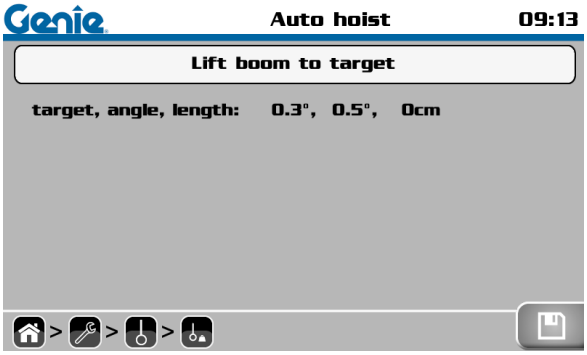
This procedure is used to calibrate the boom weight indicator.

Improper calibration of the LMS could affect LMS accuracy and result in death or serious injury.

1. Turn ignition switch to 'ON' position.
2. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).
3. Remove the attachment from the machine.
4. Park the machine on level ground.
5. Level the attachment frame.
6. Position the boom fully retracted and at minimum.
7. Using the encoder button, go to Home→Maintenance→Sensors menu.
8. Press the function button next to 'Weight'.
9. A calibration warning message will be displayed. Press function button next to 'Yes' to proceed with calibration. Press function button next to 'No' to cancel calibration.

Do not make fast or jerky movements during calibration.

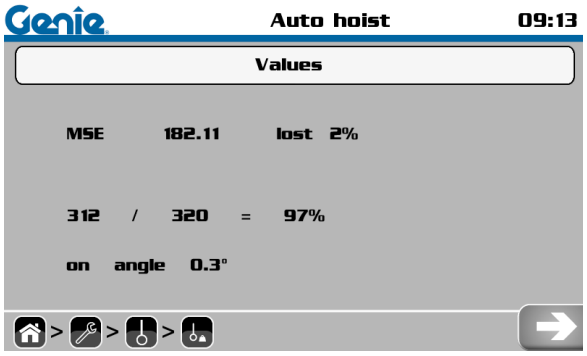
10. The calibration page will appear. A message in the white window shows instructions to follow during calibration.



11. Raise the boom to the target angle shown on the calibration page. Always approach the target angle from below. Actual boom angle must be within ±0.5° of the target angle.

CALIBRATION

12. With the engine running at idle speed, fully extend the boom. A results summary page will appear when maximum extension is reached.



13. Press the function button next to the proceed arrow icon.

14. Retract the boom

15. Repeat steps 11 to 14 until the final calibration point has been reached. A saving progress page will appear to show the saving progress. Do not turn the machine off until the save operation is complete.

16. The save page will appear when saving is complete.

17. Press the Home button to return to the primary home screen.

18. Attach the standard forks attachment to the machine.

19. Using the encoder button, go to Home→Work→Attachments.

20. Use the encoder button to select 'Forks'.

21. Press the function button next to the disc save icon.

22. Move the boom throughout the full range of motion and check that 'Actual' load value is 0 ± 80 kg.

23. Repeat weight calibration if 'Actual' load value exceeds specification.

CALIBRATION

Joystick Calibration - Fork Tilt (X) Axis

Minimum access level required: 2

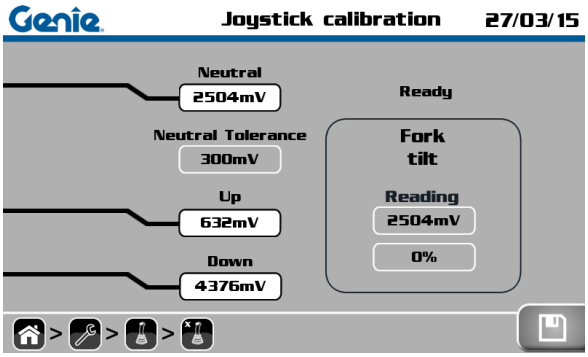
User role: Maintenance, Dealer, Service, Manufacturer

This procedure is used to calibrate the fork tilt (X) axis of the joystick.

Improper calibration of the LMS could affect LMS accuracy and result in death or serious injury.

1. Turn ignition switch to 'ON' position.
2. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).
3. Using the encoder button, go to Home→Maintenance→Joysticks menu.
4. Press the function button next to 'X axis'.
5. A calibration warning message will be displayed. Press function button next to 'Yes' to proceed with calibration. Press function button next to 'No' to cancel calibration.

6. Check that the joystick is in the neutral position.
7. Press function button next to 'Neutral'.
8. Move and hold the joystick full stroke to the left.
9. Press function button next to 'Up'.



10. Release the joystick.
11. Move and hold the joystick full stroke to the right.
12. Press function button next to 'Down'.
13. Release the joystick.
14. Press the function button next to the disc save icon.

CALIBRATION

Joystick Calibration - Boom Raise/ Lower (Y) Axis

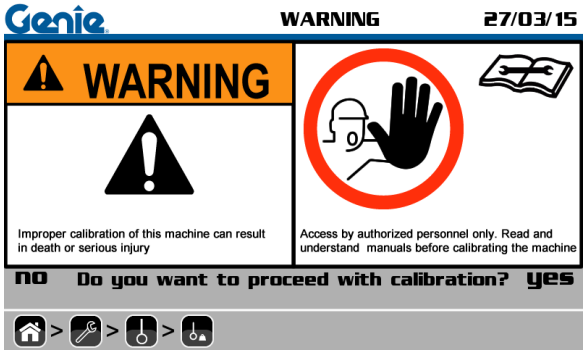
Minimum access level required: 2

User role: Maintenance, Dealer, Service, Manufacturer

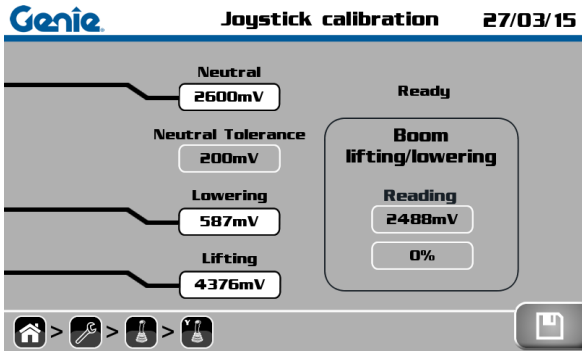
This procedure is used to calibrate the boom raise/ lower (Y) axis of the joystick.

Improper calibration of the LMS could affect LMS accuracy and result in death or serious injury.

1. Turn ignition switch to 'ON' position.
2. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).
3. Using the encoder button, go to Home→Maintenance→Joysticks menu.
4. Press the function button next to 'Y axis'.
5. A calibration warning message will be displayed. Press function button next to 'Yes' to proceed with calibration. Press function button next to 'No' to cancel calibration.



6. Check that the joystick is in the neutral home position.
7. Press function button next to 'Neutral'.



8. Move and hold the joystick full stroke forwards.
9. Press function button next to 'Lowering'.
10. Release the joystick.
11. Move and hold the joystick full stroke rearwards.
12. Press function button next to 'Lifting'.
13. Release the joystick.
14. Press the function button next to the disc save icon.

Joystick Calibration - Boom Telescope (Z) Axis

Minimum access level required: 2

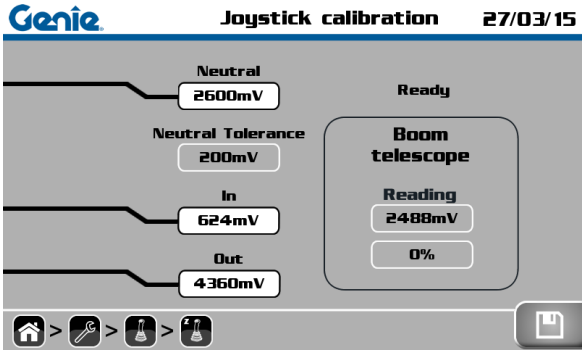
User role: Maintenance, Dealer, Service, Manufacturer

This procedure is used to calibrate the boom telescope (Z) axis of the joystick.

Improper calibration of the LMS could affect LMS accuracy and result in death or serious injury.

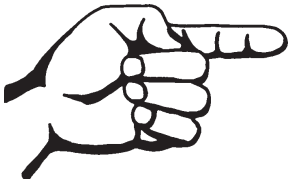
1. Turn ignition switch to 'ON' position.
2. Log in to the LMS as Maintenance (or higher level) user (refer to Operator's Manual for detailed log in instructions).
3. Using the encoder button, go to Home→Maintenance→Joysticks menu.
4. Press the function button next to 'Z axis'.
5. A calibration warning message will be displayed. Press function button next to 'Yes' to proceed with calibration. Press function button next to 'No' to cancel calibration.

6. Check that the yellow thumb rocker switch is in the neutral home position.
7. Press function button next to 'Neutral'.



8. Move and hold the yellow thumb rocker switch full stroke forwards.
9. Press function button next to 'Out'.
10. Release the yellow thumb rocker switch.
11. Move and hold the yellow thumb rocker switch full stroke rearwards.
12. Press function button next to 'In'.
13. Release the yellow thumb rocker switch.
14. Press the function button next to the disc save icon.

CALIBRATION



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Alarms and Warnings

CODE	NAME	CAUSE	REMEDY
11	alm_login	Login is executed	
12	alm_logout	Logout is executed	
18	alm_tool_selection	Tool selected or changed	
82	alm_truckParamInit	The ECU has problem on the parameter values. The problem can be: ■ Value is out of range ■ Parameter was never set: ■ New parameter added ■ New ECU installation (ECU was not programmed) ■ CRC error (memory problem) **If this alarm is present all ECU outputs are cut off.**	■ If new ECU installation: import param value from USB and after select 'send' from Maintenance →ECU →Params →Send ■ If ECU software just updated and new SW has new parameters: new parameters must be set with new value in according to SW release documentation. ■ Otherwise: contact Terex.
83	alm_compensationWrongParam	The value of ECU parameters 151, 152,153 and from 250 to 262 are wrong	Set parameters in order to have these equations valid: p151 < p152 < p153 p250 < p251 < … < p255 < p256 p257 < p258 < … < p261 < p262
84	alm_ECU_model_mismatch	The installed SW on ECU doesn't match the machine model. The machine model detected using cable detector is different from ECU model software	■ Check cable ■ Install correct machine model package update
85	alm_display_model_mismatch	The installed SW on HMI doesn't match the machine model. The machine model detected using cable detector is different from HMI model software	■ Check cable ■ Install correct machine model package update
88	alm_display_sw_version_mismatch	The installed SW release on HMI is different from ECU SW release (alarm is generated from HMI).	■ Update ECU SW (Maintenance →ECU →SwUpdate)

CODE	NAME	CAUSE	REMEDY
89	alm__sw_version_mismatch	The installed SW release on HMI is different from ECU SW release (alarm is generated from ECU).	■ Update ECU SW (Maintenance →ECU →SwUpdate)
90	alm_healthMonitorErr	**The ECU has detected hardware problem** (internal or external)	■ Try to switch off the battery and try to restart the system. ■ If this alarm persists, switch off again the battery and check power connections, 'GND sense' pin and CANbus connections. ■ If this alarm persists, try to change ECU
97	alm_deadmanFault	Joystick function enable switch is pressed with joystick in neutral position for a time greater than parameter 95	■ Check Function Enable switch input
98	alm_suppliesErr	The ECU has detected problem on power supply	■ Check power connections
100	AlarmOverload	The machine is in overload due: ■ RCL → param 268 with boom length → param 266 ■ RCL → param 268 + 267 with boom length < param 266 (due extra load when boom is full retracted)	■ Retract boom in order to have no limitation
101	PrealarmOverload	The machine is in approaching overload due: ■ RCL → param 269	
401	alm_angleNotCalib	Boom Angle sensor is not calibrated	■ Calibrate boom length sensor
407	alm_joyXFault	Joystick Axis X analogue input is in error. Voltage value of axis X is out of range [param82 – param88; param83 + param88]	■ Check Joystick Axis X voltage input connection ■ Check parameters 82, 83 or 88
408	alm_joyYFault	Joystick Axis Y analogue input is in error. Voltage value of axis Y is out of range [param84 – param88; param85 + param88]	■ Check Joystick Axis Y voltage input connection ■ Check parameters 84, 85 or 88

CODE	NAME	CAUSE	REMEDY
409	alm_joyZFault	Joystick Roller analogue input is in error. Voltage value of roller is out of range [param86 – param88; param87 + param88]	■ Check Joystick Axis X voltage input connection ■ Check parameters 86, 87 or 88
421	alm_loadchart_mismatch	■ HMI LC model and/or release is different from ECU LC model and/or release ■ ECU LC model is different from ECU SW model	■ Download LC into the ECU (Maintenance →ECU →Loadchart dl) ■ Check Load Chart file in sheet 'General data input': ■ Value of cell at the right of 'Model:' (cell E7) ■ Value of cell at the right of 'Release:' (cell E11)
422	alm_loadchart_display_model_mismatch	Load chart model is wrong. The load chart file used during update creation is for another machine model.	■ Rebuild update with correct load chart file
424	LoadChartNotFound	The LC of selected tool is not found on ECU memory	■ Download LC into the ECU (Maintenance→ECU→loadchart dl)
425	LoadChartNotValid	The ECU rise this alarm when: ■ Actual LC is not loaded correctly (ECU memory problem or ECU without LC) ■ The part number/rev LC of selected tool are different in HMI and ECU	■ Download LC into the ECU (Maintenance→ECU→loadchart dl)
426	alm_pitchFault	Pitch angle input is out of range [500mV; 4500mV]	■ Check pitch angle installation and connection
427	alm_rollFault	Roll angle input is out of range [500mV; 4500mV]	■ Check roll angle installation and connection
428	overloadBypass	Overload bypass is active	
435	alm_reelNotCalib	Boom Length sensor is not calibrated	■ Calibrate boom length sensor
436	alm_pressureNotCalib	Weight calibration is not executed	■ Perform weight calibration
437	alm_joyXNotCalib	Joystick Axis X is not calibrated	■ Calibrate joystick axis

CODE	NAME	CAUSE	REMEDY
438	alm_joyYNotCalib	Joystick Axle Y is not calibrated	■ Calibrate joystick axis
439	alm_joyZNotCalib	Joystick Roller is not calibrated	■ Calibrate joystick roller
440	alm_tonne3Limited	The payload weight on machine is greater than 3000kg and 3 tonne limit is enable	
600	wrn_chassisOutOfRange	Chassis sensor input value is out of operative range	■ Check sensor and connection
601	wrn_reelOutOfRange	Boom length sensor input current is out of operative range	■ Check sensor and connection
602	wrn_angleOutOfRange	Boom Angle sensor input current is out of operative range	■ Check sensor and connection
603	wrn_lowPressHoistOutOfRange	Pressure sensor value of lower chamber of lifting cylinder is out of operative range	■ Check sensor and connection
604	wrn_upPressHoistOutOfRange	Pressure sensor value of upper chamber of lifting cylinder is out of operative range	■ Check sensor and connection
605	wrn_lowPressForkliftOutOfRange	Pressure sensor value of lower chamber of levelling cylinder is out of operative range	■ Check sensor and connection
606	wrn_upPressForkliftOutOfRange	Pressure sensor value of upper chamber of levelling cylinder is out of operative range	■ Check sensor and connection
607	wrn_PVGMovementFault	There is at least one electro valve with problem	■ Check valves status and connection
608	wrn_OutriggerFault	Inconsistency values on outrigger position sensor: the fault is detected if the left or right outrigger sensors are in bad position. In detail, the warning is raised when all following condition are true at the same time: ■ The contact NO is closed ■ The contact NC is open ■ The proximity 'outrigger is stowed' is open	■ Check outrigger sensor connections
610	wrn_LSD_PHY_Fault	There is a short circuit to VBat or for a LSD output current is too high (load impedance too low)	■ Check LSD connections

CODE	NAME	CAUSE	REMEDY
611	wrn_PVG_PHY_Fault	There is a under-voltage or over-voltage fault in PVG circuit	■ Check power ECU connections
612	wrn_HSD2_DIG_PHY_Fault	■ There is a short circuit to ground or Vbat on the output or for a HSD output current is too high (load impedance too low) ■ There is an open circuit on the output	■ Check HSD 2Ampere output connections
613	wrn_HSD4_DIG_PHY_Fault	■ There is a short circuit to ground or Vbat on the output or for a HSD output current is too high (load impedance too low) ■ There is an open circuit on the output	■ Check HSD 4Ampere output connections
614	wrn_PVGLockUnlockFault	PVG feedback Lock/unlock value is in fault: The difference between PVG output voltage and PVG feedback voltage is greater than 200 mV	■ Check Lock/unlock valve status and connection
615	wrn_PVGBoomExtRetrFault	PVG feedback Extend/Retract value is in fault: The difference between PVG output voltage and PVG feedback voltage is greater than 200 mV	■ Check Extend/Retract valve status and connection
616	wrn_PVGBoomUpDownFault	PVG feedback Boom Up/Dw value is in fault: The difference between PVG output voltage and PVG feedback voltage is greater than 200 mV	■ Check Boom Up/Down valve status and connection
617	wrn_PVGTiltFault	PVG feedback Tilt value is in fault: The difference between PVG output voltage and PVG feedback voltage is greater than 200 mV	■ Check Boom Tilt valve status and connection
618	wrn_SteeringModalityFault	The steering selector switch is broken. Both contacts of switch are connected to battery	■ Check steering selector switch connections
619	wrn_WorkingModalityFault	The working selector switch is broken. Both contacts of switch are connected to battery	■ Check working selector switch connections

CODE	NAME	CAUSE	REMEDY
620	wrn_AntitippingSensorFault	The sensors used to estimate the weight, are broken or are out of range or are not correctly calibrated.	■ Check connection of the following sensors: ■ Boom angle sensor ■ Boom length sensor ■ Lifting cylinder pressure sensors ■ Levelling cylinder pressure sensors ■ Check other active warnings in order to detect which sensor is broken or is not correctly calibrated.
621	wrn_OutriggerStowingNotAllowed	The actual weight is too heavy in order to stow the outrigger (the load chart with outrigger OFF doesn't allow to lift actual weight)	■ Retract the boom in order to permit the outrigger stowing

GTH Operator Access Manager

Getting Started

The GTH Operator Access Manager (GOAM) is a web based application used to manage user access and attachment permissions. The person responsible for managing the GOAM can control who can operate the machine and which attachments they are able to use.

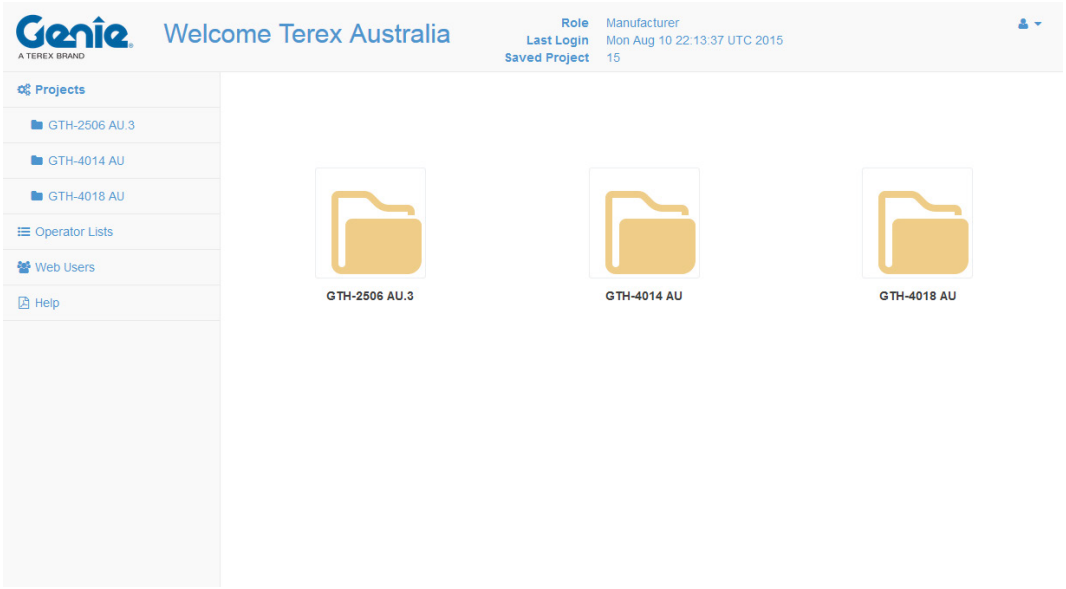
The GOAM is accessed from the internet using a web browser. Currently supported web browsers are Mozilla Firefox and Google Chrome; the application can be accessed from the following web page:

http://www.genielift.com.au/service

Log in using the username and password provided. Note that username and password are case sensitive.

GTH OPERATOR ACCESS MANAGER

The GOAM home page displays user information on the top of the screen and a navigation menu on the left.



GTH OPERATOR ACCESS MANAGER

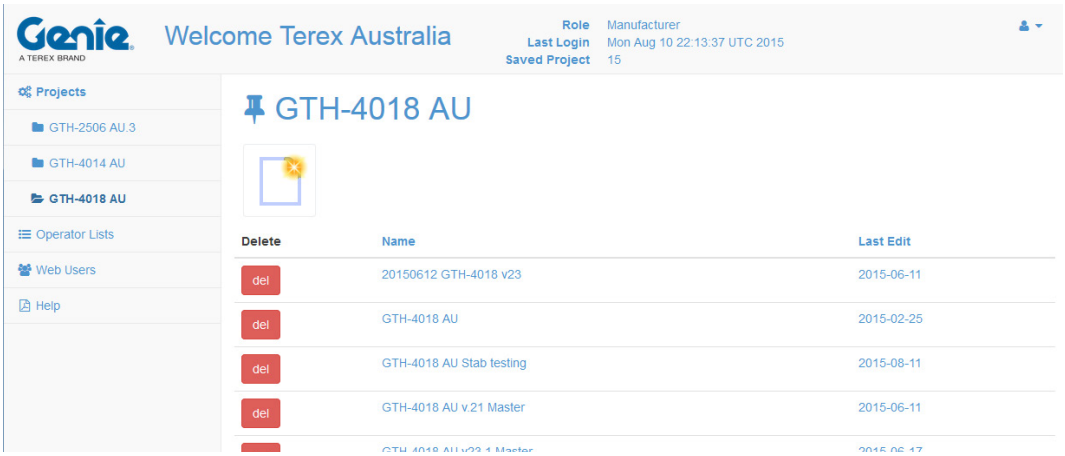
Creating a Project

User access and attachment permissions are managed by creating projects. Projects contain user information, load charts, machine software and parameter set. Projects are specific to a particular telehandler model. The projects menu shows a tab for each telehandler model.

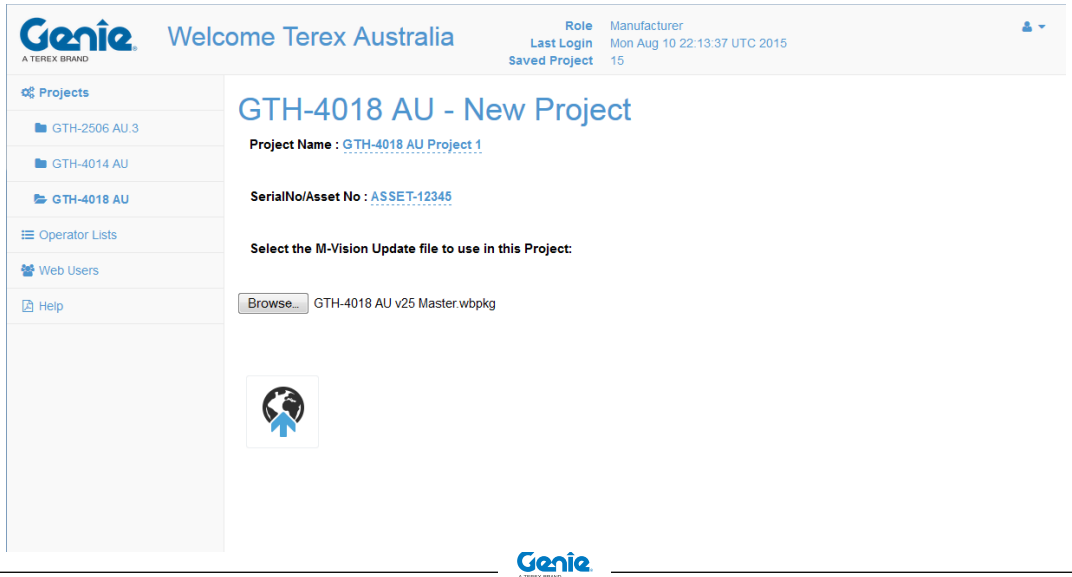
To create a project:

1. Click on required model in the navigation menu to open the project folder which contains a list of saved projects.

2. Clink on the  create button to create a new project.

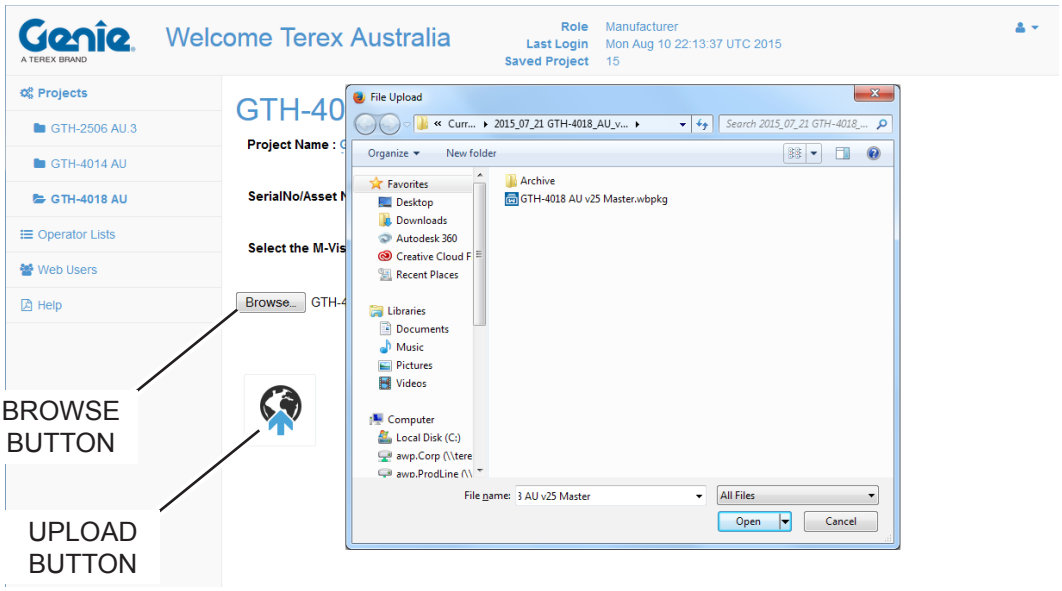


3. Enter project name (mandatory) and machine serial no. or asset no. (optional).



GTH OPERATOR ACCESS MANAGER

4. Click on the 'Browse' button and select generic'.WBPKG' package file for applicable machine model. The generic '.WBPKG' file only contains basic users and can be downloaded from: www.genielift.com.au/service.



5. Click on the 'Upload' button. The upload process will take about a minute and then the project page will be displayed.

6. The project page displays the following information:

   6.1. Save button: Press to save project. Once project is saved, save button is replaced with the download button.

   6.2. Import Operators List: Multiple operators can be added to a project in a single step by importing a previously saved operator list (refer to 'Operator Lists' section).

   6.3. Export Operators List: The operator list from a project can be saved so that the same operators can be easily added to another project.

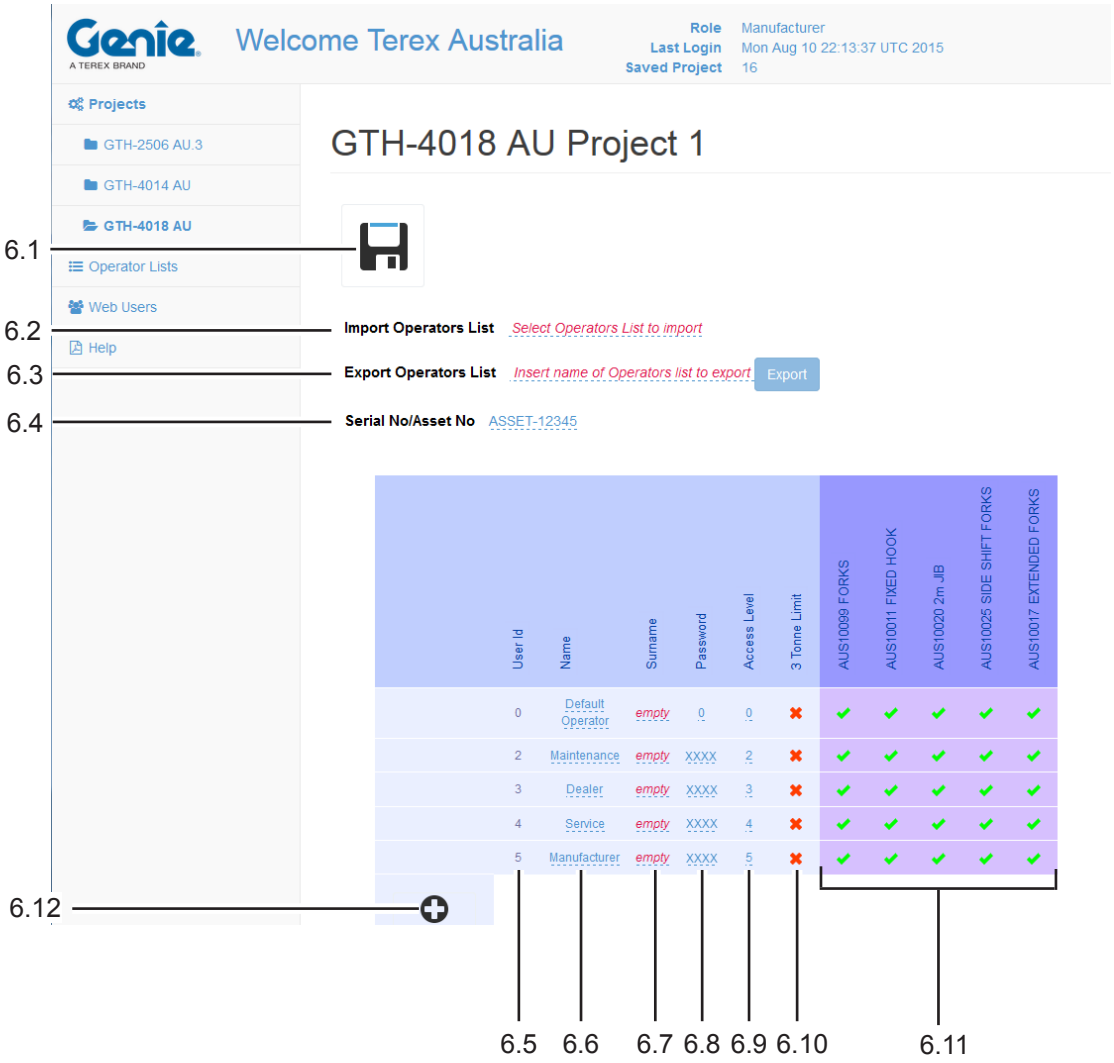
   6.4. Serial No/Asset No.: Serial number or asset number of machine.

   6.5. User ID: User ID's are automatically generated by the application when a new user is added. User ID's 0 to 5 are reserved for default users.

   6.6. Name: Name of user. First name of default users can not be changed.

   6.7. Surname: Surname of user. Surname of default users can not be changed.

GTH OPERATOR ACCESS MANAGER



6.8. Password: 4-digit PIN required to log in to display unit. Default user passwords can only be changed when logged in as Manufacturer user. Logged in users can only modify passwords of subordinate users, e.g. an access level 3 user can only change password for access level 0 and 2 users.

6.9. Access Level: Users can only be added with access level 0, i.e. Operators.

6.10. 3 Tonne Limit: When this field is ticked, the LMS limits the rated capacity of all attachments selected by the user to a maximum of 3 tonne.

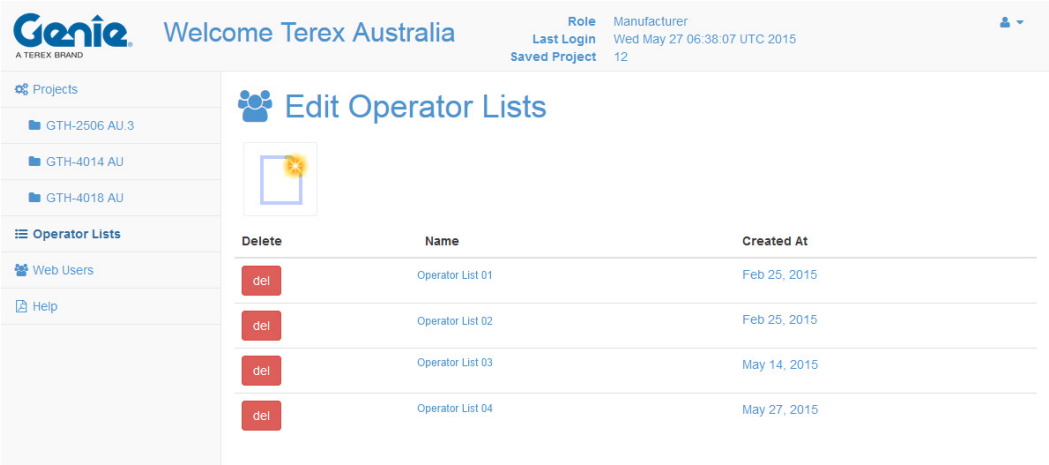
6.11. Attachment List: List of available attachments approved for use with the machine. Attachments with a tick are available for the user to select.

6.12. Add User Button: Click on button to add a new operator user.

GTH OPERATOR ACCESS MANAGER

Creating Operator Lists

Multiple operators can be added to a project in a single step by importing a previously saved operator list. The operator lists page shows a list of previously created operator lists, these can be edited by clicking on the list name or deleted by clicking on the 'del' button.



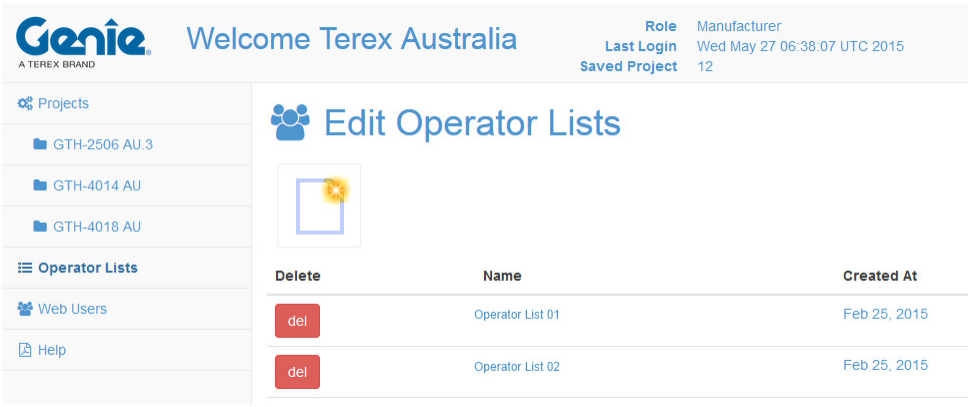
There are two ways to create an operator list:

- Create a new operator list and add individual operators.
- Export operators from an existing project (refer to 'Creating a Project' section).

To create a new operator list and add individual operators:

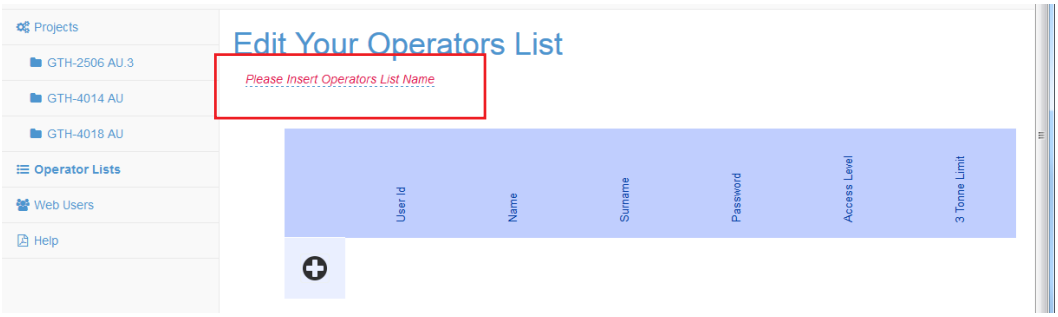
1. Click on 'Operator Lists' in the navigation menu to open operator lists page.

2. Click on the  'create' icon.



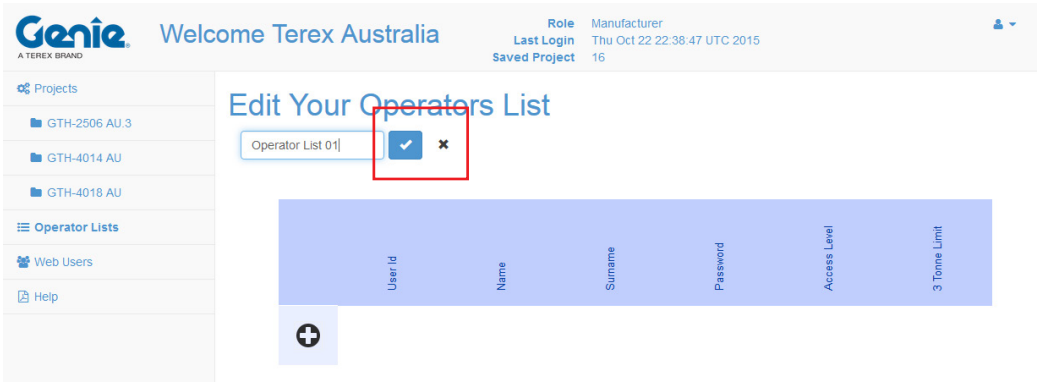
GTH OPERATOR ACCESS MANAGER

3. Click on 'Please Insert Operators List Name' field.



4. Enter name for the operators list.

5. Click on the tick button to accept or the cross button to discard the operator list name.



6. Click on the Add button to add a new operator.

7. Click on the following fields and enter the information for the operator:

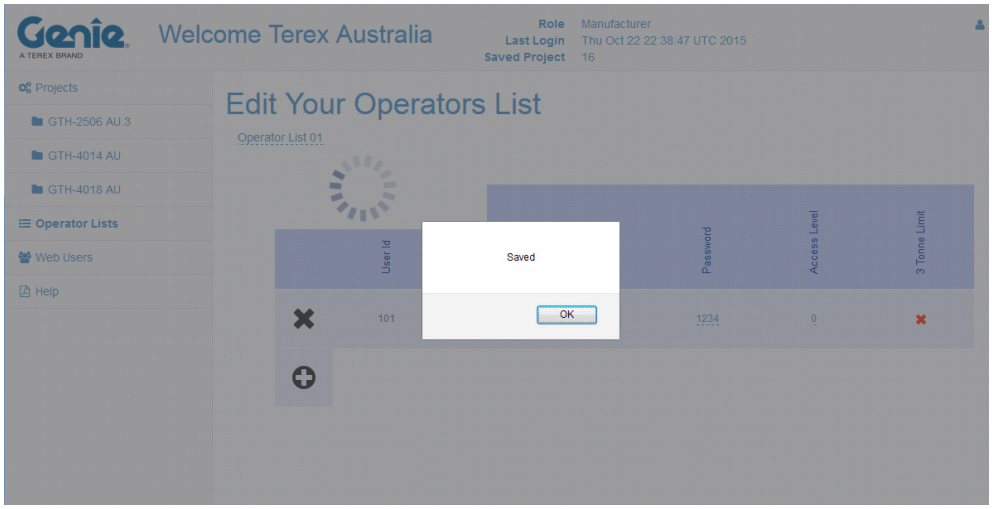
- Name
- Surname
- Password (4-digitn PIN)
- 3 Tonne limit

GTH OPERATOR ACCESS MANAGER

8. The save button is displayed when all mandatory fields have been entered.

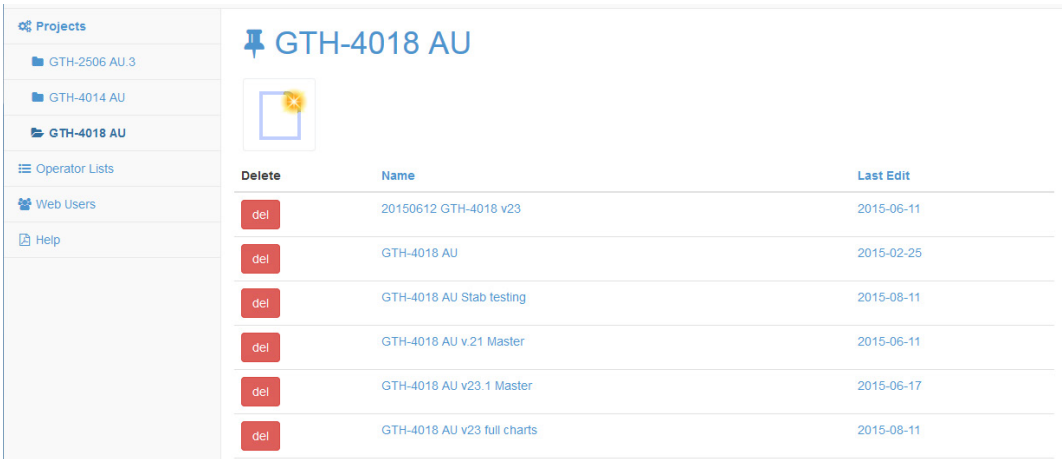
9. Click on the save button to save the operator list.

10. Click on the OK button to continue.



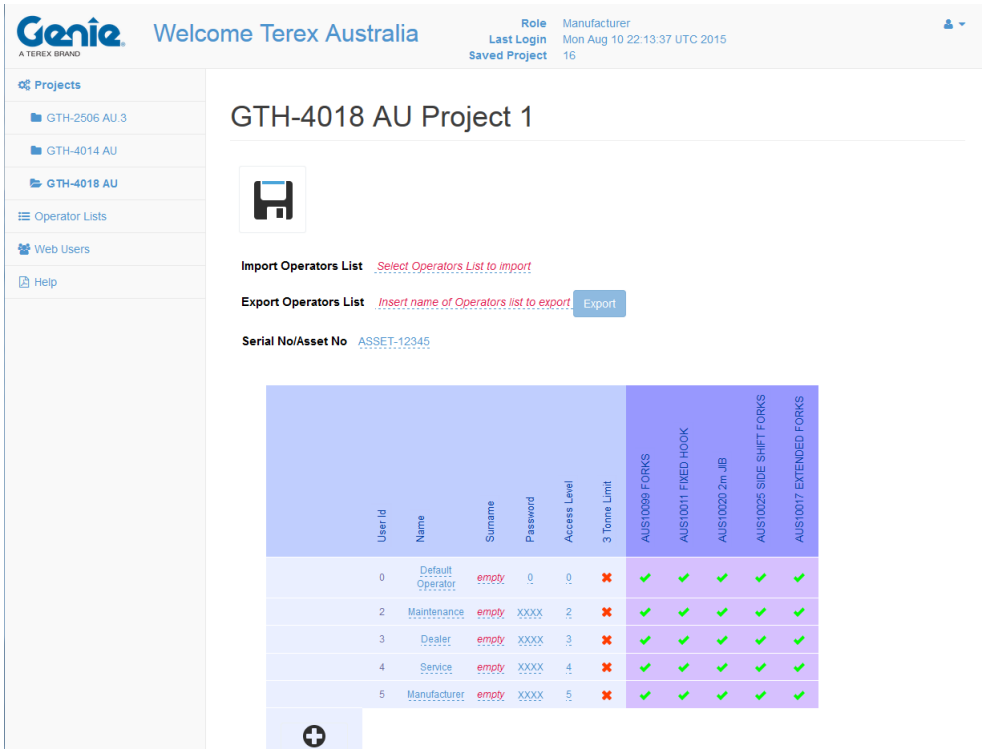
To export operators from an existing project:

1. Click on the required machine model in the navigation menu to open project folder which contains a list of saved projects.

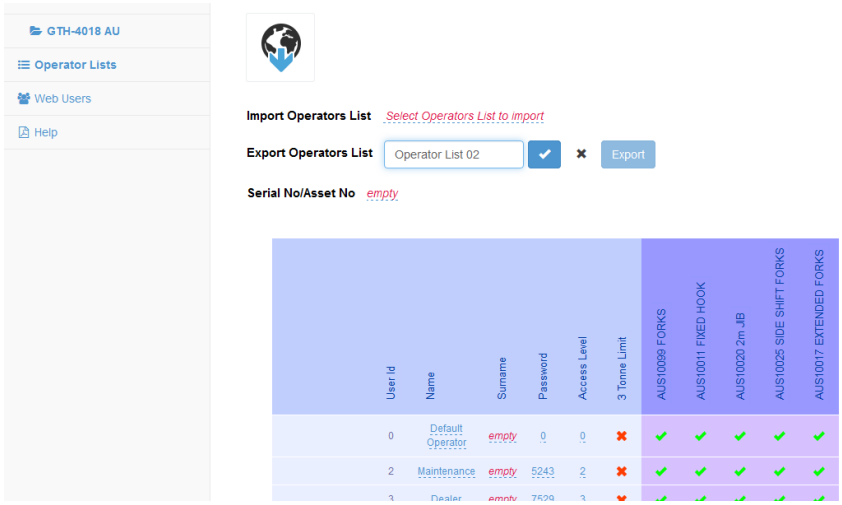


GTH OPERATOR ACCESS MANAGER

2. Click on the project to open the project page with the operator names to be exported.

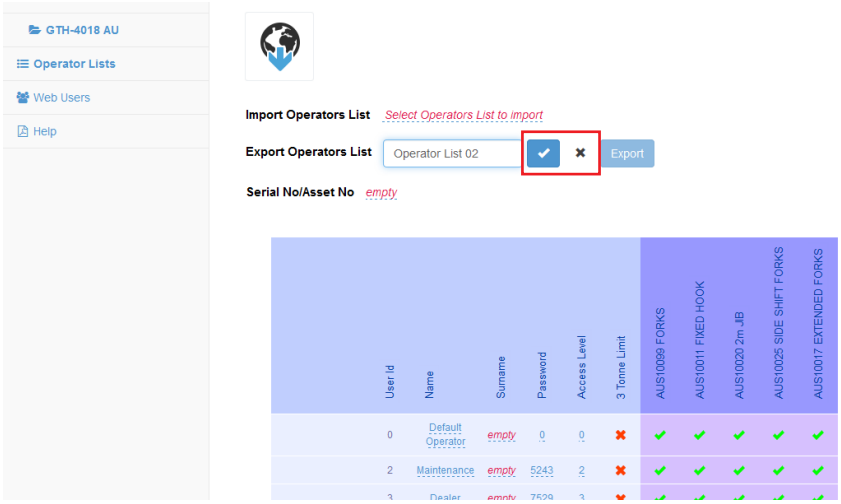


3. Click on field 'Export Operators List' and enter a name for the operators list to be exported.



GTH OPERATOR ACCESS MANAGER

4. Click on the tick button to accept or the cross button to discard the operator list name

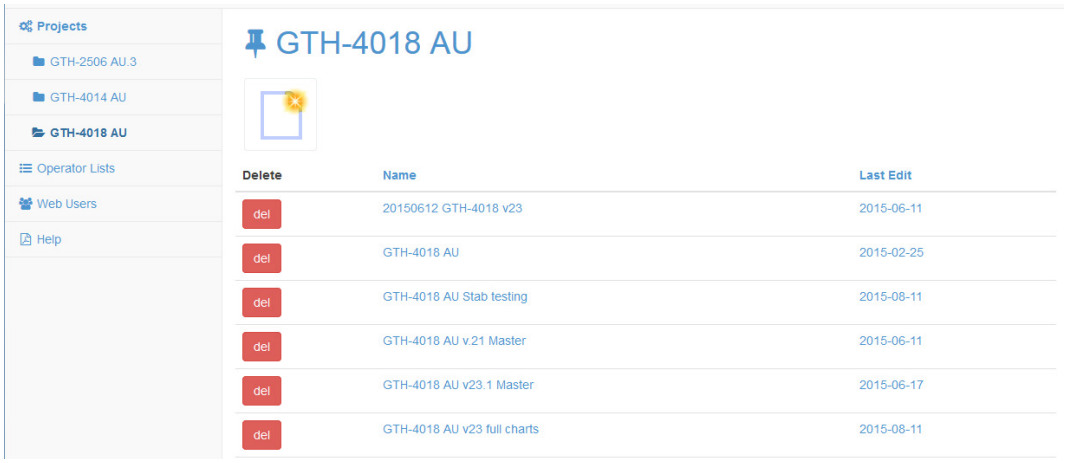


5. Click the Export export button to save the operators list.

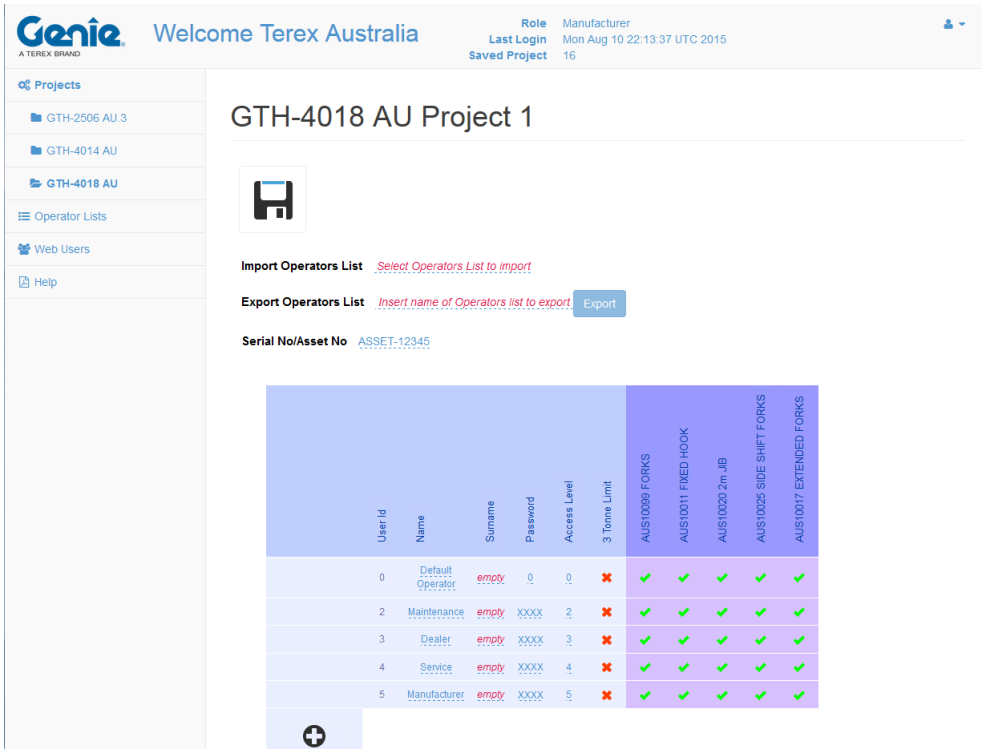
GTH OPERATOR ACCESS MANAGER

Adding Individual Operators to a Project

1. Click on the required model in the navigation menu to open project folder which contains a list of saved projects.



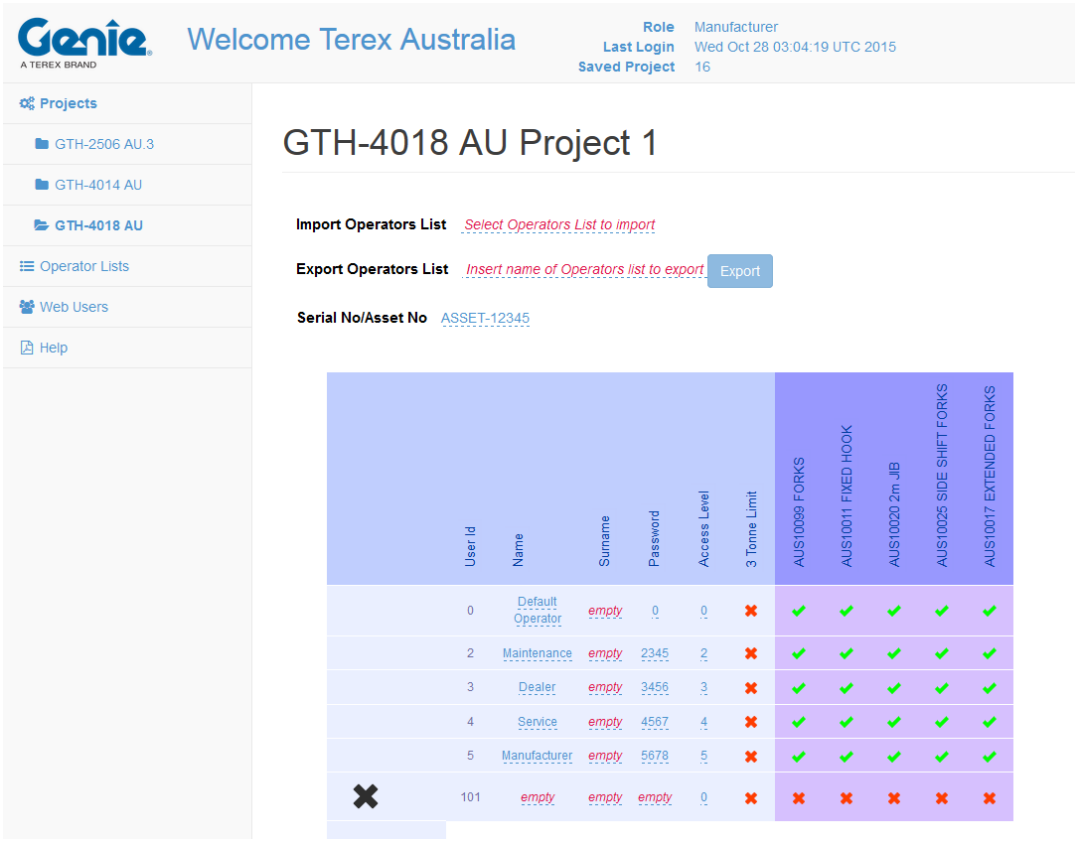
2. Click on the project to open the project page.



3. Click on the Add button to add a new operator.

GTH OPERATOR ACCESS MANAGER

4. Click on the following fields and enter the information for the added operator:
   - Name
   - Surname
   - Password (4-digitn PIN)
   - 3 Tonne limit



5. Select the attachments to be available to the operator from the list of available attachments. Attachments with a tick are available for the user to select.

6. The save button is displayed when all mandatory fields have been entered.

7. Click on the save button to save the operator list.

8. Click on the OK button to continue.

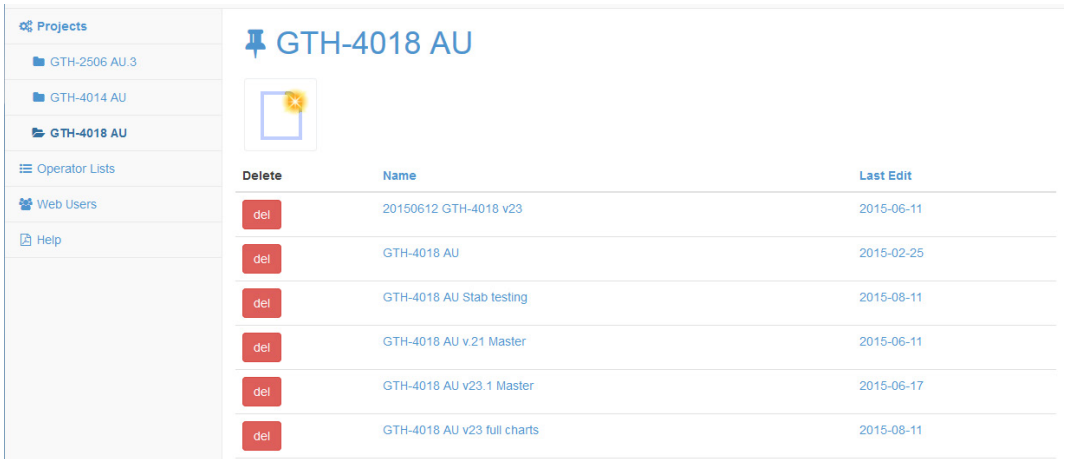
GTH OPERATOR ACCESS MANAGER

Creating a '.WBPKG' Package File

The '.WBPKG' file is required to update the ECU software, load charts and user access permissions (refer to procedure 'System Update').

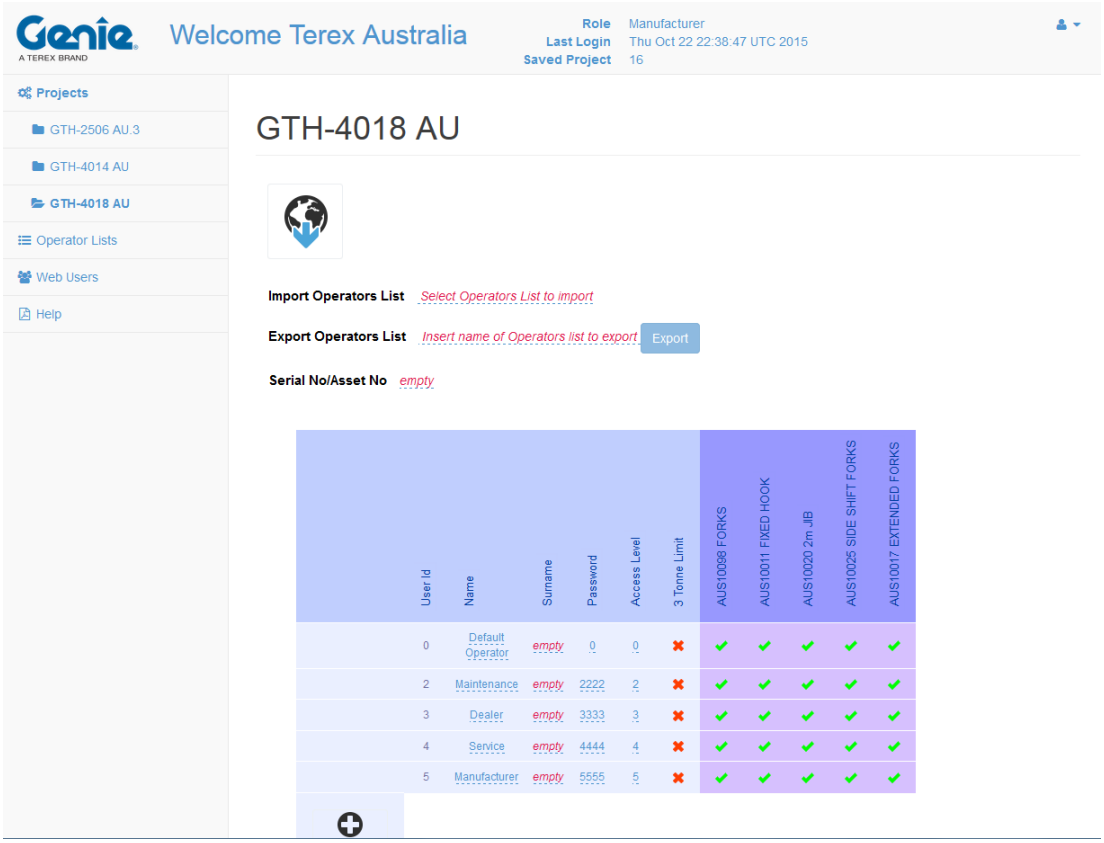
To create a '.WBPKG' file:

1. Click on the required model in the navigation menu to open project folder which contains a list of saved projects.



2. Click on a project to open the project page.

GTH OPERATOR ACCESS MANAGER



3. Click on the download button to create and download .'WBPKG' package file. The download process will take about a minute. Refer to web browser help menu for instructions on how to check progress of download and the location where downloads are saved.

4. Copy '.WBPKG' to an empty USB flash drive.

GTH OPERATOR ACCESS MANAGER

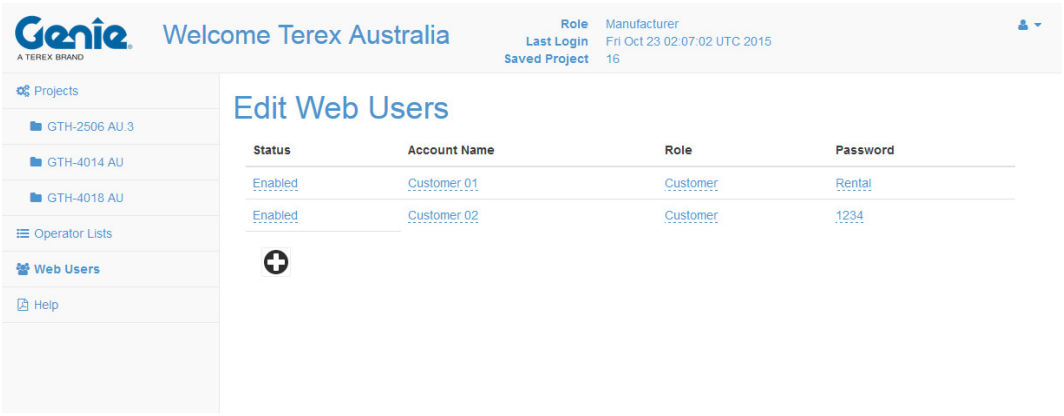
Web Users

There are three web user roles: Manufacturer, Dealer, and Customer. All web users are able to create/edit projects, download '.WBPKG' package files, and create/modify operator lists. Manufacturer and Dealers web users can also create subordinate web users. For example, when Dealer01 creates web user Customer01, Customer01 becomes is a subordinate of Dealer01; Customer01 cannot be seen by another dealer.

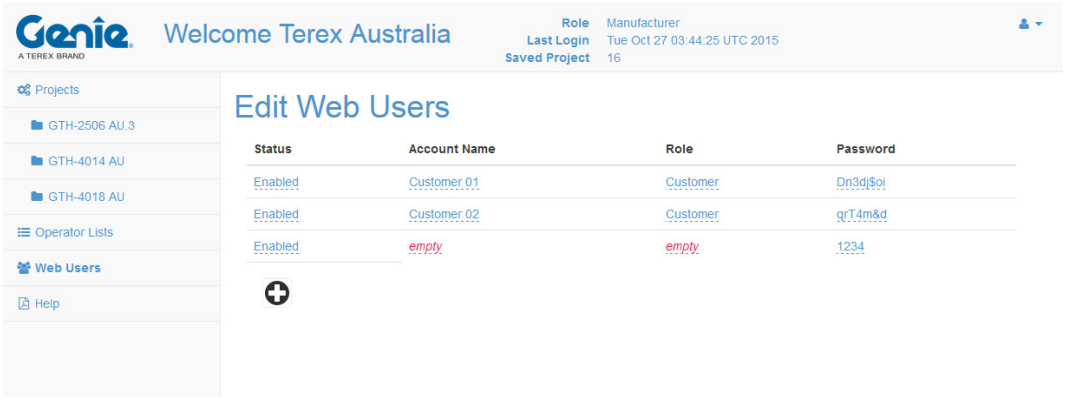
The web user page shows a list of previously created web users, these can be edited by clicking on a field. Web users can not be deleted, but can be disabled if they are no longer required.

To create a web user:

1. Click on 'Web User' in the navigation menu to open the web user page.



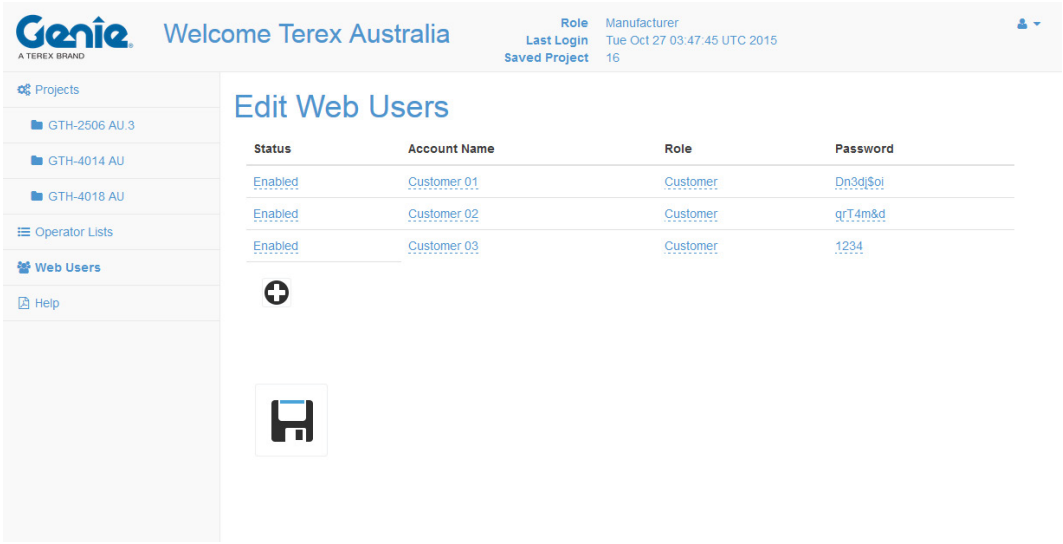
2. Click on the plus button to add a new web user.



GTH OPERATOR ACCESS MANAGER

3. Click on the following fields and enter the information for the web user:
   - Status: Click on status to toggle between 'Enabled' and 'Disabled'.
   - Account name: Name of web user.
   - Role: Role of web user, either a Dealer or Customer. A Dealer web user can create subordinate customer web users, but Customer web users are unable to create web users.
   - Password: The default password is '1234'. The passwords for subordinate web users are visible but can only be changed while logged in as that web user.
4. The save button is displayed when all fields have been entered.

5. Click on the save button to save the web user.

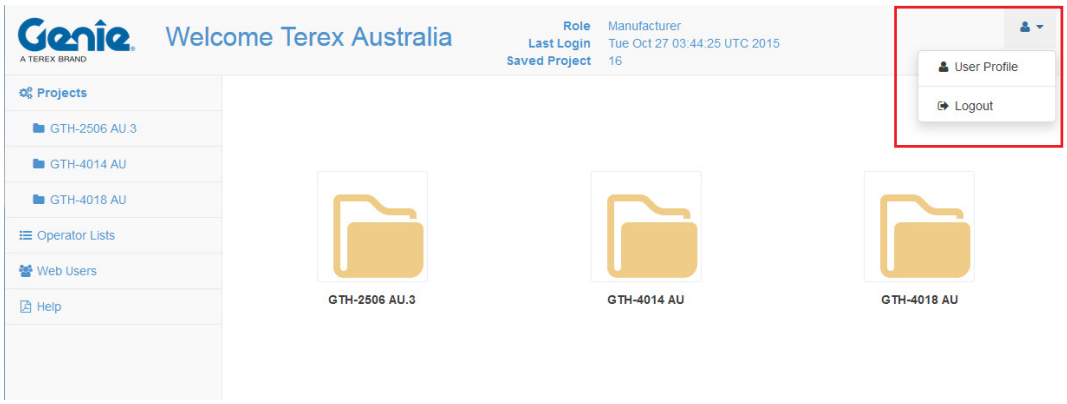


GTH OPERATOR ACCESS MANAGER

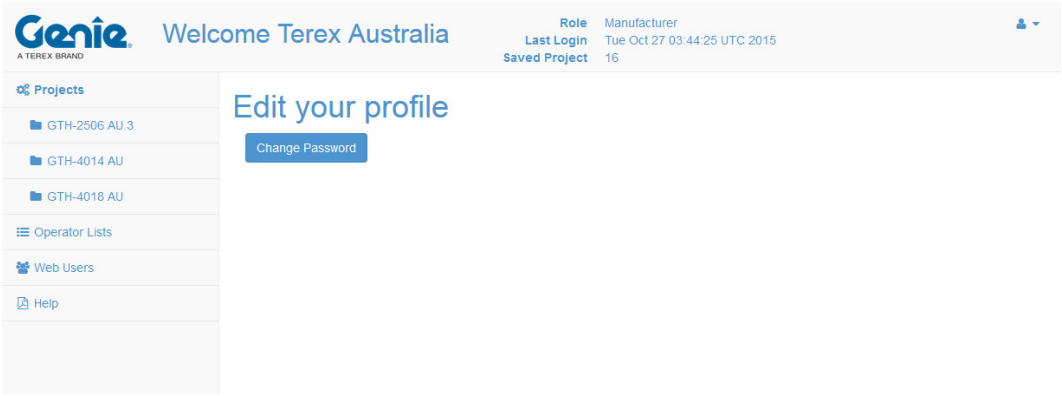
To change the web user password:

1. Log in to the web application (refer to 'Getting Started' section).

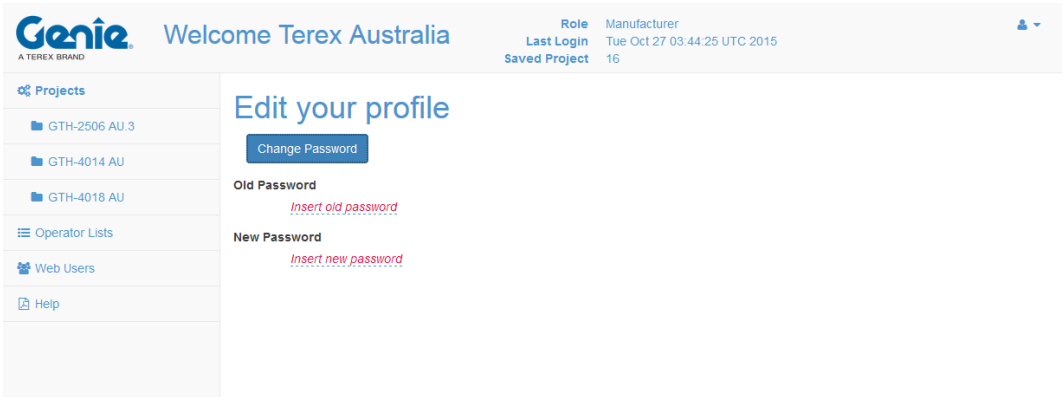
2. Click on the 'User Profile' button located in the top right corner of the page.



3. Click on 'Change Password'

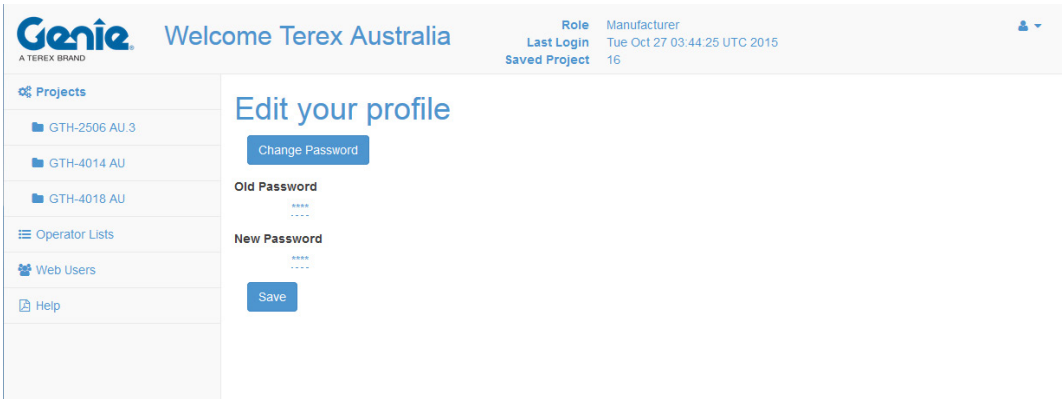


4. Enter the current and new passwords.



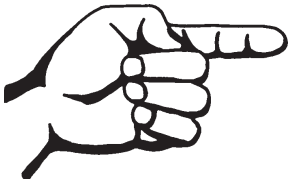
Passwords are case sensitive, they can include all alpha-numeric characters and symbols except for the following: >, <, ;, ", /, \, |, ?, *. It is recommended to make password 8 to 10 characters long.

5. The save button is displayed when both old and new passwords have been entered.



6. Click on the save button to save the new password.

GTH OPERATOR ACCESS MANAGER



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iButton User Manager

iButton User Manager Application

iButtons are configured using a MS windows based application called 'iButton User Manager'. A computer with a spare USB port and running Microsoft Windows 7 is required to run the application. The application reads user information from '.WBPKG' files and saves it into an iButton connected to the computer via an iButton reader/ writer.

The iButton manager must be installed on the computer using installation file ' iButton User Manager 0.1.1.0 setup.exe'. The installation file can be downloaded from Genie support web page: www.genielift.com.au/service.

Configuring an iButton

The following is required to configure iButtons:

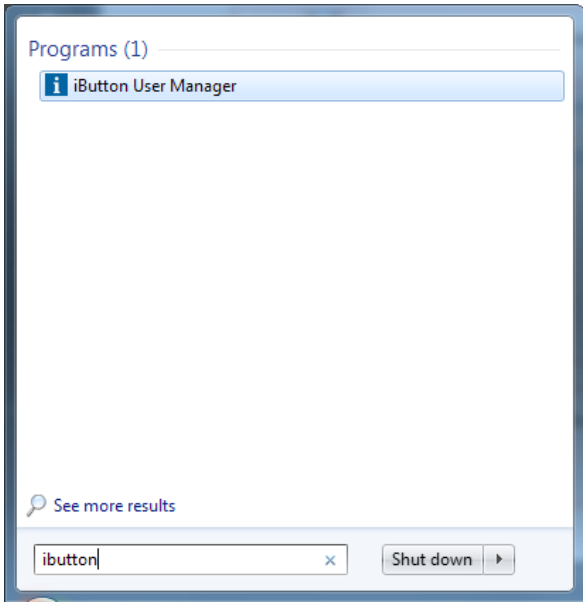
- Computer running Microsoft Windows 7 with installed iButton Manager Application and a spare USB 2.0 compatible port;
- USB iButton reader
- iButton;
- '.WBPKG' package file containing user access permissions.

To configure an iButton:

1. Turn the computer on and log in as per usual procedure.

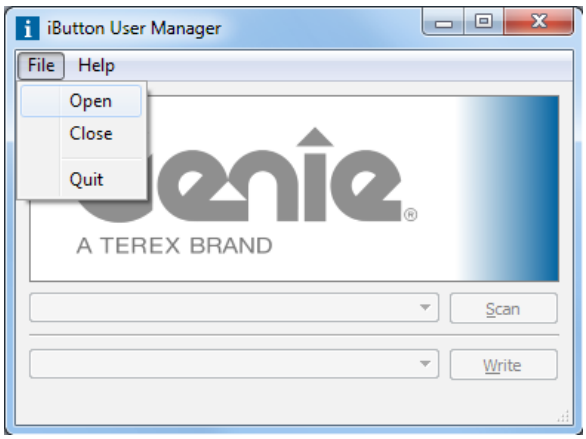
2. Download '.WBPKG' file from GOAM. Refer to 'Creating a '.WBPKG' Package File' section.

3. Click on Start button and type 'iButton' in the search field to locate the iButton manager application.



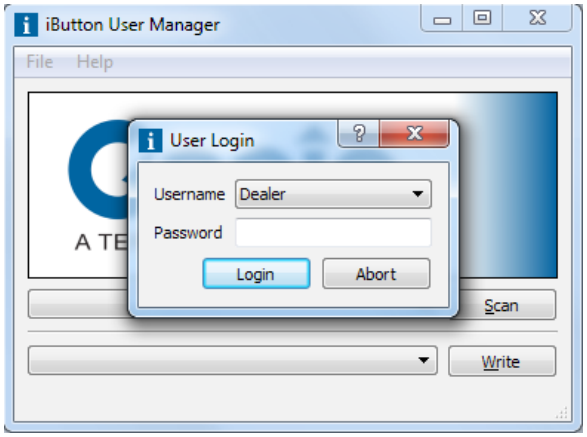
4. Click on 'iButton User Manager'.

5. In iButton User Manager window, go to File→Open and select '.WBPKG' package file downloaded in item 2.



IBUTTON USER MANAGER

6. Enter Log in details. Refer 'Creating a Project' section for username and password details.

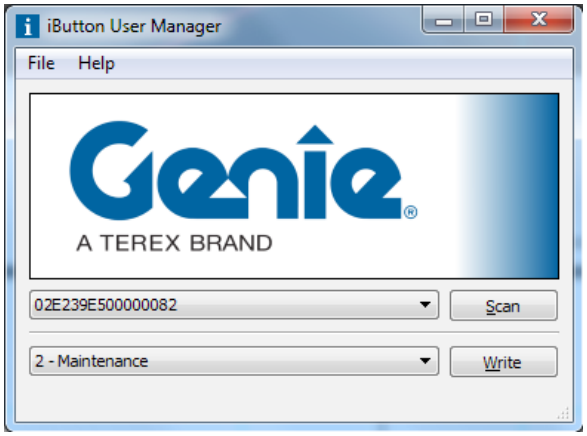


Username and password required to use the iButton User Manager can be found in the '.WBPKG' file being opened. Refer to GOAM section.

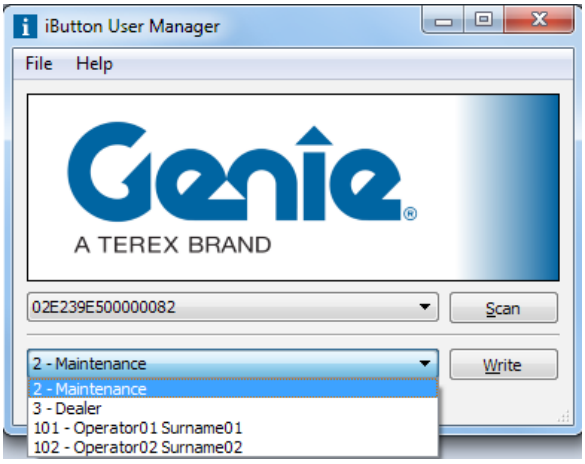
7. Connect USB iButton reader to computer USB port.

8. Insert iButton into iButton reader.

9. Click on scan button. iButton identification number appears on iButton list.



10. Select a user from the user drop down list.



11. Click on write button.

12. Remove iButton.

13. Repeat steps 8 to 12 to configure another iButtons.

Troubleshooting

Troubleshooting Guide

Always note alarms and warnings displayed on the display unit before using this troubleshooting guide. Refer to 'Alarms and Warnings' section for further information.

PROBLEM	POSSIBLE CAUSE	REMEDY
GENERAL		
LMS display won't turn on	■ Blown fuse (F102); ■ Loose display unit power connector; ■ Faulty display screen;	■ Replace fuse: ■ Check connector: ■ Replace display screen.
Unable to select a different attachment.	■ Boom angle too high ■ New attachment not permitted for logged in operator (attachment name is greyed out).	■ Lower the boom below 15°. ■ Request person controlling machine access to upgrade attachment permissions.
Machine won't drive	■ Transmission control lever set to neutral; ■ Parking brake is ON ■ Faulty seat switch.	■ Set transmission control lever to forward or reverse. ■ Disengage the parking brake ■ Check seat switch input signal via the LMS display screen in ECU input signals page. ■ Check machine seat switch wiring; ■ Test the seat switch.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	REMEDY
Unable to raise the outriggers	■ LMS is in alarm because the rated capacity has been exceeded; ■ Boom angle is greater than 40°; ■ Boom is extended more than 100 mm and angle is greater than 25°; ■ Operator is not logged in to LMS; ■ Attachment selection not confirmed in LMS; ■ Actual load is too heavy for load chart position when OFF outriggers.	■ Retract the boom, if possible, to increase the machine's rated capacity; ■ Unload the machine; ■ Lower boom angle; ■ Retract or lower the boom; ■ Log in to LMS; ■ Confirm attachment selection; ■ Retract the boom or remove excess load before raising the outriggers.
Unable to lower the outriggers	■ Boom angle is greater than 40°; ■ Boom is extended more than 100 mm and angle is greater than 25°;	■ Lower boom angle; ■ Retract or lower the boom;
Estimated load is greater than 100kg while machine is unloaded.	■ Incorrect attachment selection; ■ Machine is out of calibration.	■ Select correct attachment via display unit; ■ Re-calibrate machine.
Machine with rated capacity greater than 3000 kg won't lift more than 3000 kg.	■ Telehandler 3000 kg load limit is enabled; ■ Logged in operator is restricted to 3000 kg.	■ Request person controlling machine access to disable 3000 kg limit; ■ Request person controlling machine access to upgrade operator permissions.
Override key switch doesn't work	■ Job site/road mode/platform selector switch is set to road mode; ■ Job site/road mode/platform selector switch is set to platform mode; ■ The function enable switch on joystick is pressed; ■ Boom function joystick is out of neutral position; ■ Boom function joystick is out of calibration;	■ Set selector switch to job site mode; ■ Set selector switch to job site mode; ■ Release the Function Enable button ■ Release the joystick ■ Re-calibrate the joystick
Overload audible alarm sounds when the boom is fully raised with or without load.	■ Boom up proximity sensor set incorrectly;	■ Adjust sensor position

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	REMEDY
Reverse/front camera viewing screen is black	■ Camera lens is dirty or obstructed; ■ Incorrect camera settings	■ Clean camera lens and remove any obstruction from the lens; ■ Adjust camera brightness, contrast and colour.
Reverse/front camera viewing screen is blue	■ Camera is not connected; ■ Faulty cable harness; ■ Faulty camera	■ Connect camera; ■ Replace harness; ■ Replace camera.
Camera view is mirrored.	■ Incorrect camera mirror setting.	■ Change camera settings.
Overload audible alarm doesn't sound when machine is overloaded.	■ Alarm is in mute; ■ Faulty wiring; ■ Faulty buzzer.	■ Un-mute alarm; ■ Check machine wiring; ■ Replace faulty buzzer.
Boom telescope out movement stops before the machine reaches its maximum rated capacity.	■ Machine's hydraulic capacity has been reached.	■ Remove excess load.
SOFTWARE UPDATE		
There are no files listed on 'System Update' page	■ USB flash drive is not inserted; ■ USB flash drive is empty; ■ USB flash drive is not compatible with display unit; ■ USB flash drive is faulty.	■ Insert flash drive; ■ Copy .'WBPKG' package file to USB flash drive; ■ Use a different USB flash drive; ■ Replace USB flash drive.
iButton doesn't work	■ iButton reader is not enabled; ■ iButton is not inserted into iButton reader; ■ USB flash drive is inserted into USB port on display unit; ■ Faulty iButton; ■ iButton operator information not registered in display unit operator list.	■ Enable iButton reader; ■ Check that the iButton is inserted correctly in iButton reader; ■ Remove USB flash drive, turn battery isolator off for at least 5 seconds, turn power on; ■ Replace iButton ■ Add operator to project using GOAM and update system, refer to 'System Update' section.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	REMEDY
Unable to select 'iButton Access' from 'Options' page.	■ iButton reader and converter is not installed on the machine; ■ iButton Access has not been enabled in the configuration screen or option is unavailable (displayed greyed out).	■ Install iButton reader and converter; ■ Make iButton Access option available (refer to 'Configuring Available Options' section); ■ Enable iButton Access option (refer to 'Enabling iButton Access' option).

TROUBLESHOOTING

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