



# **TS350 LOAD CAPTURE INDICATOR FOR FORKLIFTS**

## **OPERATORS MANUAL**

### **VERSION 3 – August 2025**



### **! WARNING !**

THE PURPOSE OF THIS MANUAL IS TO PROVIDE THE USER WITH THE OPERATING PROCEDURES ESSENTIAL FOR THE PROMOTION OF PROPER MACHINE OPERATION FOR ITS INTENDED USE. THE IMPORTANCE OF PROPER USAGE CANNOT BE OVERSTRESSED. ALL INFORMATION IN THIS MANUAL SHOULD BE READ AND UNDERSTOOD BEFORE ANY ATTEMPT IS MADE TO OPERATE THE MACHINE.

SINCE THE MANUFACTURER HAS NO DIRECT CONTROL OVER MACHINE APPLICATION AND OPERATION, CONFORMANCE WITH GOOD SAFETY PRACTICE IN THIS AREA IS THE RESPONSIBILITY OF THE USER AND HIS OPERATING PERSONNEL.

ALL PROCEDURES ARE BASED ON THE USE OF THE SYSTEM UNDER PROPER OPERATING CONDITIONS, WITH NO DEVIATIONS FROM THE ORIGINAL DESIGN. ALTERATION AND OR MODIFICATION OF THE EQUIPMENT IS STRICTLY FORBIDDEN WITHOUT PRIOR WRITTEN APPROVAL FROM ELEC-MECH (PTY) LTD.

BEFORE OPERATING A MACHINE EQUIPPED WITH A SAFE-AID TS350 THE OPERATOR MUST READ THE INFORMATION IN THIS MANUAL CAREFULLY. CORRECT FUNCTIONING OF THE SYSTEM DEPENDS UPON ROUTINE DAILY INSPECTION AND ANY SUSPECTED FAULTS OR APPARENT DAMAGE SHOULD BE IMMEDIATELY REPORTED TO THE RESPONSIBLE PERSON BEFORE USING THE MACHINE.

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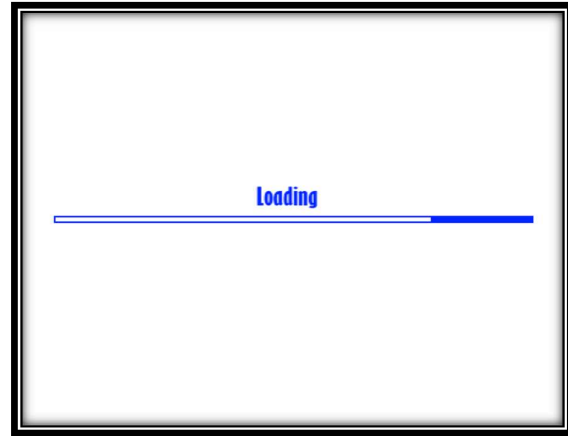
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## SYSTEM USE

The Safe-Aid TS350 unit is designed with ease of operation in mind. The system goes directly into the load capture screen after the system startup. All inputs to the system are done by the operator via the touch screen. The touch screen is sensitive to touch therefore it is **not** necessary to **push hard** on the screen (*if touch screen does not work or selects incorrectly see Touch Screen Calibration*).



## SYSTEM STARTUP

The TS350 display unit will automatically power up when the machine is switched on and the buzzer will sound once.

The system will run a CRC (cyclic redundancy check) to make sure that all raw data is correct.

Once the system has completed the CRC the buzzer will sound, and a set of internal diagnostics (watchdogs) will be utilised to verify that all inputs and outputs are working correctly.



At this point screen calibration can be done if required (see Touch Screen Calibration for process).

This screen displays the display serial number as well as the firmware version:

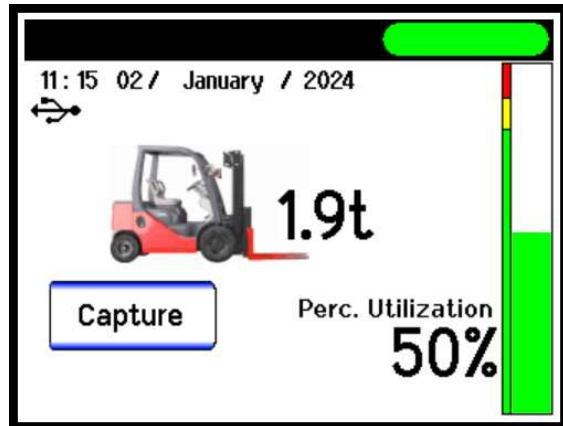
- S/N CLSS – serial number
- Version – Firmware Version

## OPERATING SCREEN

The system starts in the load capture screen.

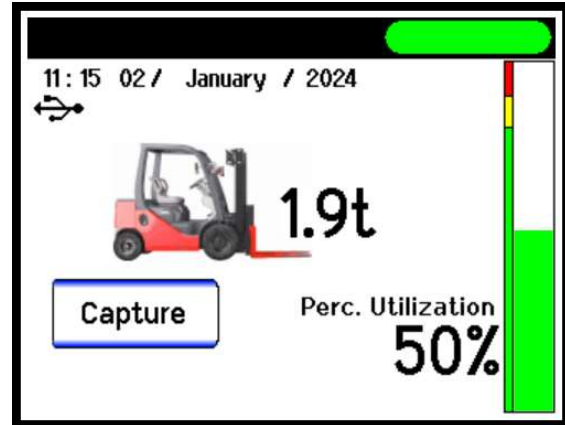
The following functions can be set:

- Set Date / Time / Brightness and System Information
- Capture – capture current load.
- Cancel Last Pallet – auto mode only.
- Tare Load



## MANUAL PALLET WEIGHING

The pallet weight will be displayed above the forklift's forks. Once the pallet has been lifted above / off the ground entirely and the load has settled and is above the threshold / trigger value (set by the installer), then the Capture button will be displayed for capturing – via switch, foot pedal, manual switch or by pressing the **Capture** button on the screen. The load is recorded if the **Capture** button is cleared and the system beeps once to confirm the load has been logged. Each individual pallet load will be saved to the data logger if the switch has been pressed and the load captured successfully.



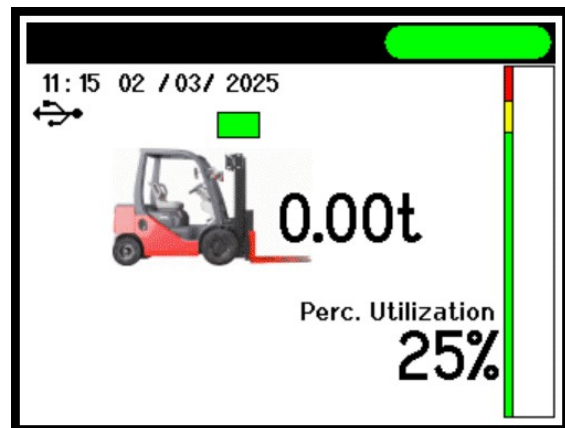
If a load is lifted that is higher than the threshold / trigger value and then the lifted load moves below the threshold without pressing the **Capture** (Button or Switch), the system will trigger a **Missed Capture** error. The system will then prompt the operator to retake the load that was missed. A **Missed Capture** button will appear, the system will beep intermittently, and a **Retake Load Press Capture** message will be displayed. If the load is lifted again, the message will clear, the beeping will stop, and the **Capture** button will be displayed.



## AUTO PALLET WEIGHING

The TS350 will automatically monitor the load above the minimum threshold & capture the peak load after a preset time once going back below the minimum threshold. These two values are set by the installer at the time of installation.

If the installer has set the mode to auto capture loads, the load will automatically be captured when lifting a load and then moving under the threshold. **No Capture button will appear.**



11:15 02 / 03 / 2025



If the load is below the threshold / trigger value set, a white block above the mast of the forklift image indicates that the lifted load is under the threshold value. No logging of the load occurs if the block is white

11:15 02 / 03 / 2025



Once the load exceeds the threshold / trigger value, there is a delay of 3 seconds. This is to prevent false logs of lifts caused by spikes in the hydraulic pressure due to uneven conditions (bumps). Once the threshold value is exceeded and for 3 seconds

thereafter, the block will be coloured yellow to indicate that the 3 second delay is active, and the load is not being logged / recorded.

11:15 02 / 03 / 2025



Once the 3 second delay has elapsed, the block turns green, and the system now monitors the highest peak for data logging and will print this record to the USB flash drive. The green block will be reset only when the load moves back under the threshold / trigger value.

## TARE LOAD

The Tare Load is activated by pressing directly on the Lifted Load then the load will be zeroed allowing for a reading excluding the original weight. The original weight (gross) is still considered when calculating the percentage of utilisation therefore the TS350 will still give the correct 90% and 100% warnings. Once pressed the Actual Load will flash showing no value, only 0,0t. If a load is now lifted, only the new load lifted will be displayed excluding the original tare load. To return to the gross load, press the Actual Load again, it will stop flashing and the gross load will be displayed.

## CANCEL LAST PALLET

### AUTO MODE ONLY

If and incorrect auto capture was done the **Cancel Last Pallet** option can be used.

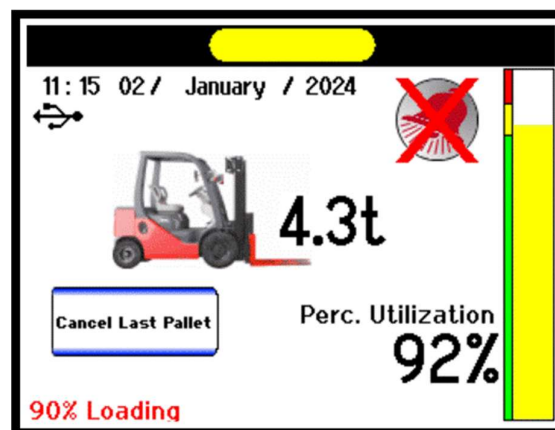
- Press the **Cancel Last Pallet** button.
- Press **Yes**
- Only the last pallet lifted can be cancelled i.e. Cancel Last Pallet button will not show when the number of pallets is 0 or the last pallet has been cancelled.



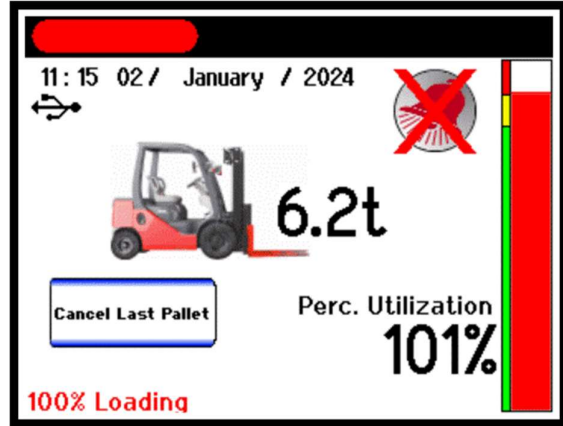
## ERROR CONDITIONS & ALARMS

The TS350 system will alert the operator to the following conditions:

**90% Loading** - when the actual load is greater than or equal to 90% and less than 100% of the Limit weight. The buzzer will sound intermittently to alert the operator.



**100% Loading** – when the actual load is greater than or equal 100% of the Limit weight, the buzzer will sound.



**Txd Err - Transducer Error** – Pressure transducer faulty or damaged cable, the buzzer will sound – Call Installer if this error occurs.



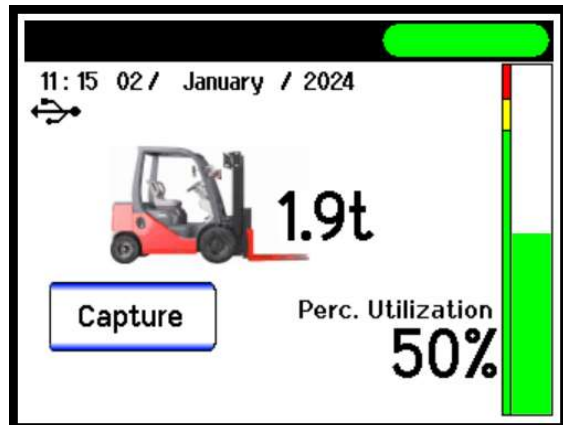
For all errors the buzzer sign  will appear after 5 seconds. To override press the sign and

the overridden sign  will appear. If a second error occurs the buzzer will sound again.

## REAL TIME CLOCK

The TS350 system has an internal real time clock which displays date and time on the main running screen in the top left-hand corner. It is imperative that the date and time are correct as the data logging utilises this when errors are logged.

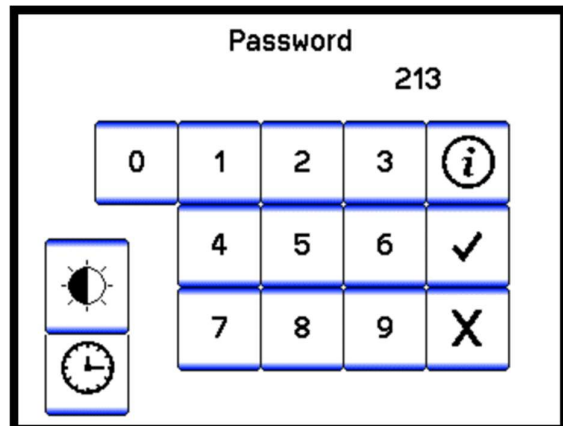
See Set Date & Time to change.



## SET DATE & TIME


The date and time can be adjusted as required. If the date and time does not save or shows incorrect after setting or powering down the battery for the real time clock may be faulty. Battery replacement must be done in the factory or by a trained technician.

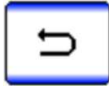
Use the following steps to adjust the date & time:

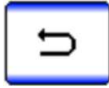


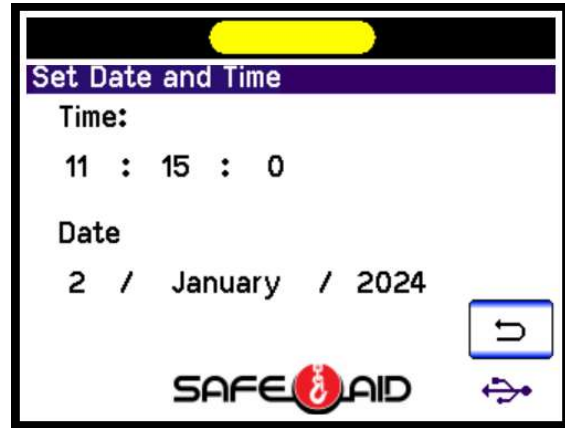
1. Press the top left-hand corner and the **Password** screen will be displayed.



2. Press the  and the Set Date & Time screen will be displayed. Select the data to be adjusted and set the correct time and date.
3. Time format is 24 Hour Clock hh : mm : ss
4. Date format is dd / mm / yyyy
5. Once the time & date have been adjusted



press the  button to return to the operating screen.




## SCREEN BRIGHTNESS

The screen backlight can be set as required.

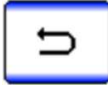
Use the following steps to adjust the screen brightness:


1. Press the top left-hand corner and the **Password** screen will be displayed.

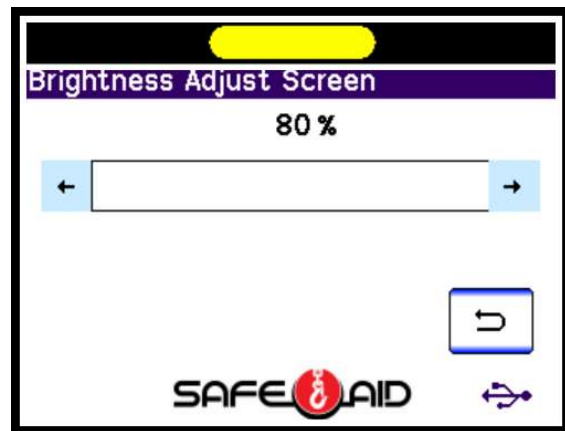
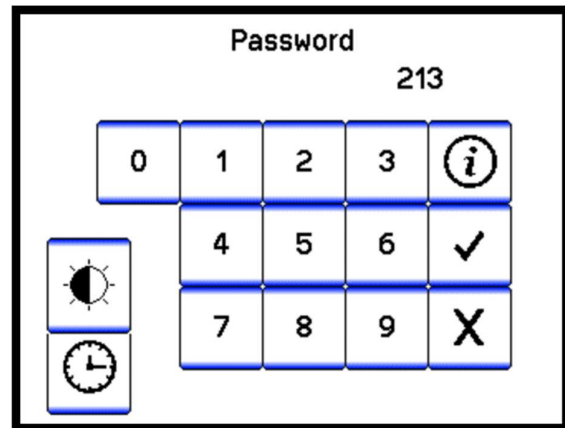


2. Press the  and the Brightness adjust screen will be displayed. Use the slider bar to adjust the screen to the required brightness.

3. Once the brightness has been adjusted press



the  button to return to the operating screen.



## TOUCH SCREEN CALIBRATION

*If the screen is not responding correctly to touch, the touch screen may need to be calibrated. Make sure that the Front Facia (Sticker) is in good condition (no dents or damage) as this can affect the touch screen. Replace Front Facia if damaged.*

Switch the TS350 display power off, power up the TS350 while pressing in the middle of the screen.

While the splash screen is on, keep pressing in the centre of the screen for a full five seconds until the touch calibration is activated and loaded. Immediately lift your finger and follow the on-screen instructions.

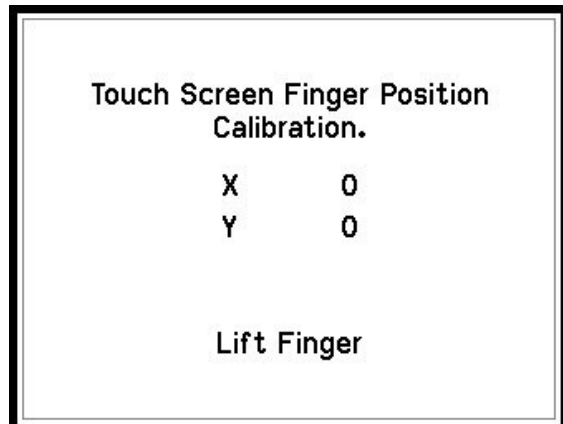
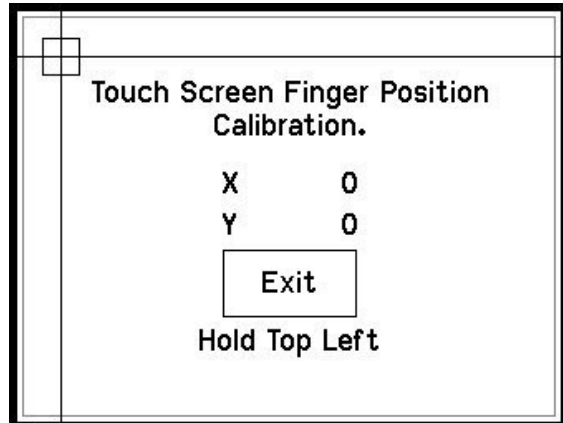
If by accident the calibration screen has been entered, press the **Exit** button without pushing anywhere else on the screen to continue with normal start up procedures.

If the touch screen calibration is required, follow the below procedure:

Press and hold finger where the two lines meet inside the small box at the top left-hand corner. Calibration works fine when using a finger but for better results use a pen taking care not to press too hard or the screen will be damaged.

Hold finger/pen in this area until prompted to lift. Prompts will then be given for three more touch zones resulting in co-ordinates for all four corners of the screen.

Once calibration is complete the software automatically goes to the working screen.



## FUSE PROTECTION

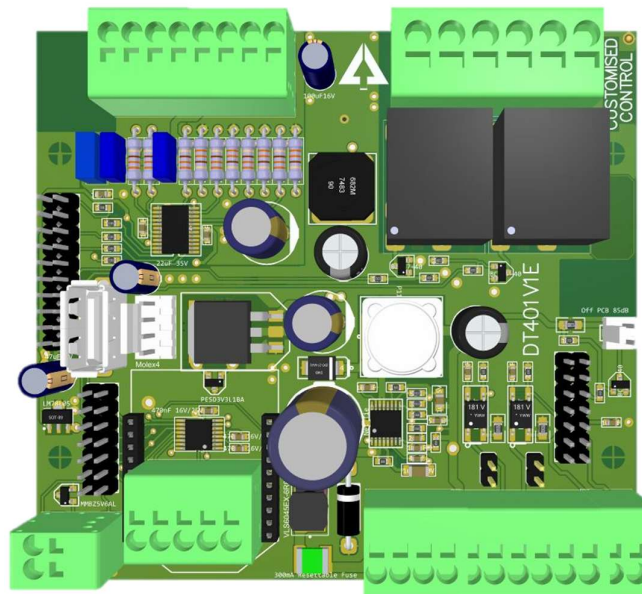
Operating Voltage Range: 10–48 VDC

To protect against overcurrent and short-circuit conditions, the TS350 is equipped with a resettable fuse.

The fuse characteristics are:

<b>TRIP TIME</b>	4 Seconds
<b>HOLD CURRENT</b>	500mA

This resettable fuse automatically restores functionality once the fault condition is cleared, ensuring minimal downtime and enhanced safety.

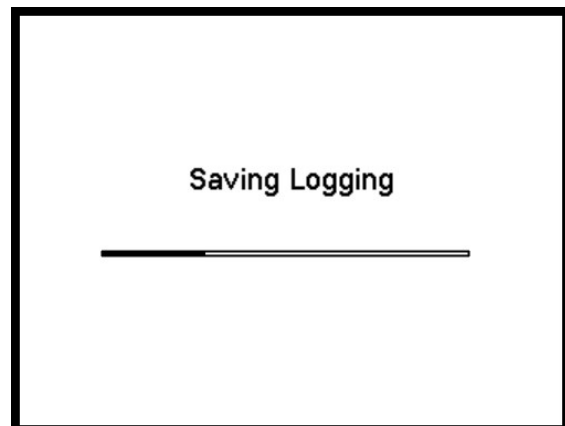


Note: For earlier versions of the PC board, a fixed 2A blade fuse is used instead. Please refer to the appropriate version-specific manual to confirm fuse type and replacement procedures.

## DOWNLOADING LOGGED FILES

The logged data from the TS350 display unit is transferred from the TS350 internal memory to the USB flash drive and then inserted into a PC manually to allow the data to be managed. The TS350 may hold a maximum of 4000 records so ensure downloads are done on a regular basis. Logged data is saved as DAILY files. The following process will run through the download of the files from the USB flash drive:

1. Insert a USB flash drive into the USB port at the rear of the TS350 display.
2. Ensure that the USB flash drive uses a FAT32 file system (usually default / standard unless changed) and not NTFS or EXFAT. If not, reformat the USB drive to a FAT32 file system as data may not be downloaded correctly.
3. The system will prompt the user to **Download Logs** - either download **Current** or **All**.
  - All Logs refers to all contents on the internal memory of the TS350 unit.
  - Current refers to all records from the last download to the current.
4. Select either **All** or **Current**.
5. The system will then transfer the data to the USB flash drive. A screen with **Saving Logging** will appear if successful and a loading bar will indicate progress.
6. Do not remove the USB flash drive while the system is saving to the device. Only once the loading bar is finished and the user has waited for 3 to 4 seconds is it safe to remove the USB flash drive. If removed while saving, data may be lost.
7. Remove the USB flash drive and insert into a PC.
8. Select the applicable Drive (Removable Device) on the PC.
9. Select the **Forklift** folder.






DT400bin	06/04/2023 12:04	File folder
DT400Dat	04/09/2023 11:17	File folder
ForkLift	08/01/2024 08:01	File folder

The log file is structured as follows:

- FL – first 2 letters are for Forklift.
- \_SN1854 – TS350 display unit serial number.
- \_160124 – Day, Month & Year the file was created on the TS350 display unit.

10. Select the required log file.

Name	Date modified	Type	Size
 FL_SN1854_160124	16/01/2024 14:08	Microsoft Excel Co...	1 KB
 FL_SN1857_120124	12/01/2024 08:47	Microsoft Excel Co...	2 KB
 FL_SN1857_160124	16/01/2024 13:38	Microsoft Excel Co...	1 KB

- Data is stored in .CSV file (comma-separated values) which is a text file that has a specific format allowing data to be saved in a table structured format. This file can be opened with the any compatible program e.g., Excel, Google Sheets or Notepad.