

The GUSTO Tool



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Quick Start Guide



1. Connect AC supply cable to receiver.

2. Ensure tool number sticker on the front of the tool matches the receiver channel.



3. Pop clamps!

Tool Operational Notes

The Process

Upon powering up the receiver, if the paired tool on the same channel is in range the 'Tool Present' light will turn on. If the battery status is low then the 'Low Battery' light will also illuminate and remain illuminated until the tool is recharged. After successfully popping a clamp several things will happen: The LED on the tool will indicate a popped clamp by showing either solid green if the battery is charged (above approximately 3.3V) or a flashing green if the tool battery is low. At the same time the green light on the process indicator will turn on for a time determined by the Process Indicator Duration Dial in the receiver box.

A GUSTO tool pairs with a receiver by transmitting a stream of data every 5 seconds containing battery status and channel information. So if the tool goes out of range or switches off the appropriate status LEDs on the receiver unit will update within 5 seconds.

If the tool is non-responsive the battery may have been depleted. The battery voltage can be measured by placing the probe of a voltmeter across the charger contacts. If it is below 3V it will not function and should be placed in the charging unit.

Tool Handling

The GUSTO Tool detects movement and vibration and certain guidelines should be followed to ensure robust behaviour. A false trigger may occur from the tool striking or being struck by a metallic object or surface at sufficient velocity thus the tool should be placed down - not dropped - when not in use. In addition, both the back plate of the tool and the end effector should always be firmly bolted in place. Ensure Loctite or other thread-locking compound is used when bolting down the tool back plate.

Tool LED Codes

The GUSTO Tool LED communicates various messages regarding the tool status. These LED codes are shown in Table 1.

Code	Meaning
1 Slow Flash	Normal Pop
4 Slow Flashes	Low Battery Pop
3 Fast Flashes	Start-up
3 Fast Flashes followed by 1 Slow Flash Repeating	IMU Communication Problem
2 Fast Flashes	Tool Entering Sleep Mode
5 Fast Flashes	Tool Waking Up From Sleep Mode

Table 1 - GUSTO Tool LED Codes

Battery Life, Charging and Sleep Functionality

The GUSTO Tool has an expected battery life of 4 days of continuous use (based on 2000 cars per day with 7 clamps per car) with a recharge time of approximately 3.5 hours. To recharge the tool simply place it in the drop-in charger – the blue LED indicates the charging unit is powered, the amber LED indicates that the tool is being charged and the green LED indicates that the tool is fully charged. **Note the charger is keyed** – be sure to align the groove in the radio cap as can be seen in Figure 1 with the key symbol on the charging unit.

The battery is user replaceable – it is a Panasonic PA-L2 3.7V 1950mAh Li-Ion battery. **If the charging contacts are shorted out the tool will shut down until it is placed into the charging unit.**

The tool will enter a low power sleep mode if the tool is placed down and left stationary for 3 minutes – the tool present lamp will also turn off. The tool LED will emit two fast flashes upon entering sleep mode and upon sensing movement from it being picked up will emit five fast flashes indicating that it has woken up. This functionality conserves power in environments when the tool is not in constant use – such as a manufacturing plant that does not operate 24 hours a day.

To replace the battery simply unscrew the back plate of the tool shown in Figure 1. Using a pair of long-nosed pliers, carefully remove the battery connector shown in Figure 2. Then take out the old battery and replace with the new battery, replacing the battery connector and back plate.

Error-Proofing Signal Duration

The duration of the error-proofing signal is controlled by adjusting potentiometer within the receiver unit. To open the receiver unit, disconnect the power and remove the four screws from the back of receiver. Slide off the back plate of the receiver unit. Then rotate the potentiometer shown in Figure 5 clockwise to reduce the duration or anticlockwise to increase the duration. To reassemble the unit, slide the plate back into position and screw down the front plates – ensuring the edge of the side plate is flush on the other side.

GUSTO Tool External View

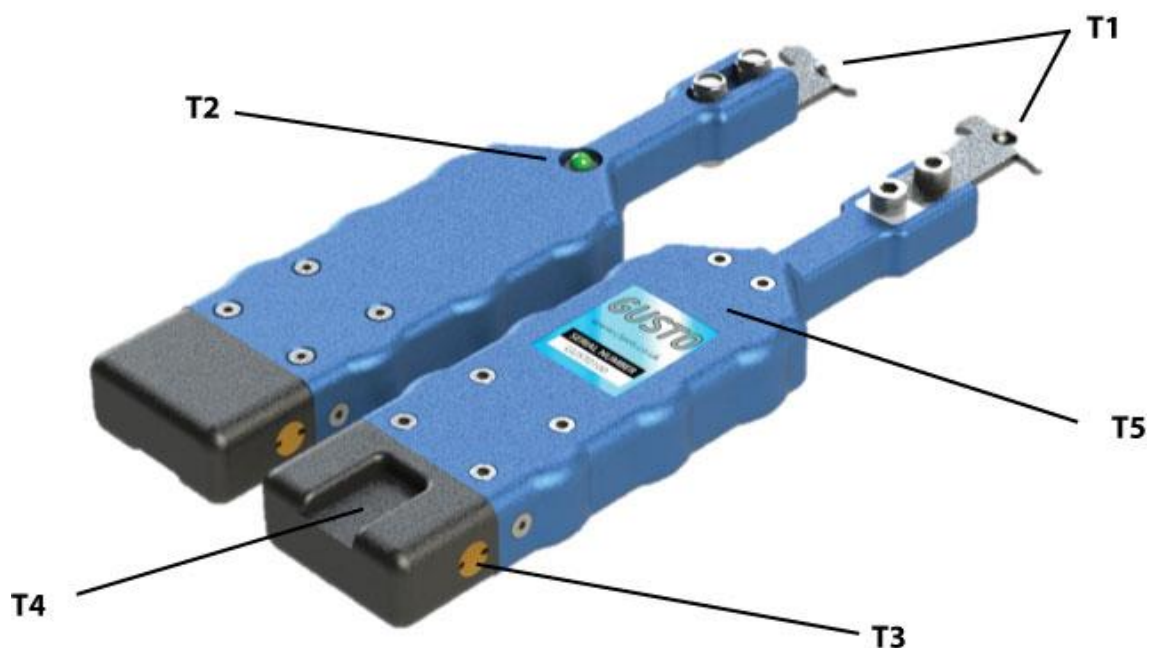


Figure 1 - External View of GUSTO Tool.

Ref	Description	Function
T1	End Effector	This is the part of the tool that interfaces with clamps to pop them. Different variations available.
T2	LED Indicator	The LED on the tool will indicate a popped clamp by showing either solid green if the battery is charged (above approximately 3.3V) or a flashing green if the tool battery is low.
T3	Charger Contact	The LED on the tool will indicate a popped clamp by showing either solid green if the battery is charged (above approximately 3.3V) or a flashing green if the tool battery is low.
T4	Radio Cap	Note the cap is keyed allowing the tool drop into the charger in only one orientation.
T5	Back Plate	Removing the six bolts in the plate allows access to the device internals.

GUSTO Tool Internal View

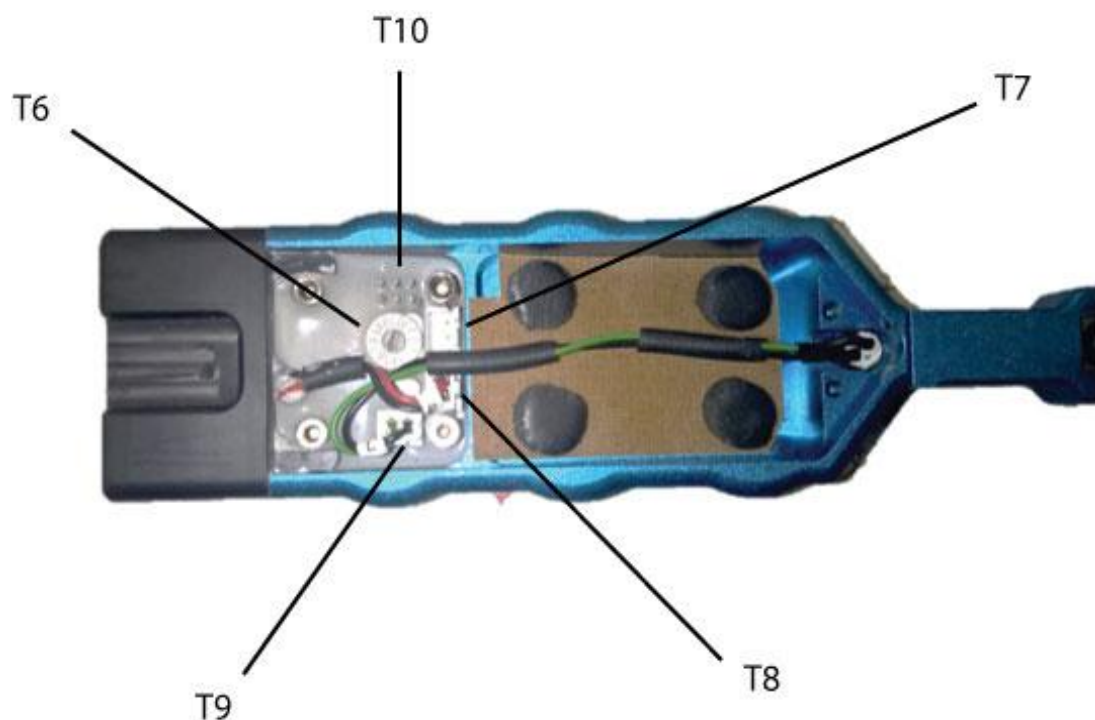


Figure 2 - Internal View of GUSTO Tool.

Ref	Description	Function
T6	Channel Selector Switch	Use a small flat-bladed screwdriver to change to the desired channel. The tool number sticker on the front of the tool should be the same the channel selector switch. Note changing the channel may produce enough vibration to trigger the tool.
T7	Battery Connector	This three terminal connector connects the battery to the tool circuitry.
T8	Charger Contacts Connector	This two terminal connector connects the charging contacts to the battery.
T9	LED Connector	This two terminal connector connects the LED to the tool circuitry.
T10	Programming Header	This 6-pin header is used to program the tool.

Charging Unit External View

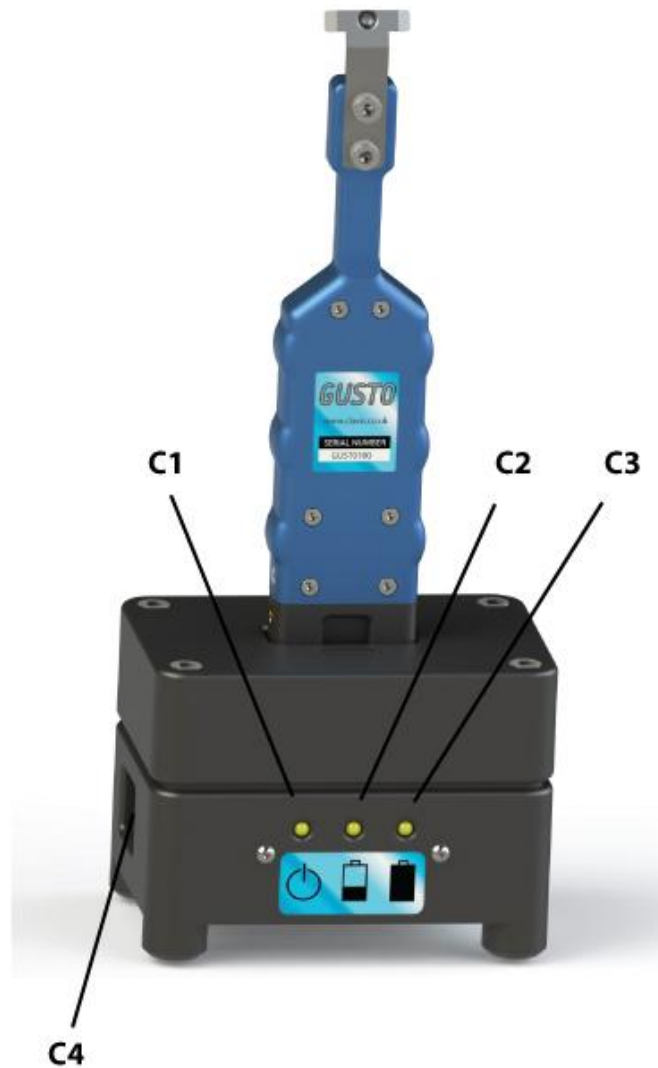


Figure 3 - External View of GUSTO Tool Charger.

Ref	Description	Function
C1	Power LED	This blue LED indicates that the unit is powered.
C2	Charging LED	This amber indicates that the tool is charging.
C3	Fully Charged LED	This green indicates that the tool is fully charged – which should take approximately 2.5 hours.
C4	AC Power Connector	

Receiver Unit External View



Figure 4 - External View of GUSTO Tool Receiver.

Ref	Description	Function
R1	Pop LED	This green LED will flash when the tool detects that a clamp has been popped.
R2	Low Battery LED	This red LED will turn on when the tool detects that the battery voltage is less than 3.3V and remain illuminated until the tool is recharged.
R3	Tool Present LED	This green LED will turn on and remain illuminated while the tool is in range of the receiver box. If the tool goes out of range this LED will turn off.
R4	Tool Enabled LED	This green LED indicates that the system is enabled by a 24V signal on Connector 'RJ'.
R5	Radio Carrier LED	This green LED will illuminate while data is being transmitted.
R6	Power LED	This LED indicates that the receiver has power.
R7	Channel Select Switch	This switch allows the radio channel of the receiver to be changed. As standard the unit offers 16 channels.
R8	Auxiliary Switch	No function currently implemented.

R9	Antenna	This is the radio antenna and must never be disconnected while the unit is powered.
R10	General purpose relay outputs	Connector for the process indicator; the pins output 24V.
R11	Error Proofing and System Enabled Connector*	The connector pins have the following configuration: <ul style="list-style-type: none"> • Pin 1: Optically Isolated Input (-) 0V. This disables the receiver. • Pin 2: Optically Isolated Input (+) 24V. • Pin 3: Volt-free contact (QLS Output). • Pin 4: Volt-free contact (QLS Output).
R12	AC Power Connector	
R13	Serial Output	No function currently implemented.

**Mating Connector to Error Proofing and System Enabled Input:*

4+Earth Female Harting Connector:

RS Part Number: 181-0498

Manufacturer Part Number: 0920004271101

Hood:

RS Part Number: 181-0606

Manufacturer Part Number: 09200031440

Receiver Unit Internal View

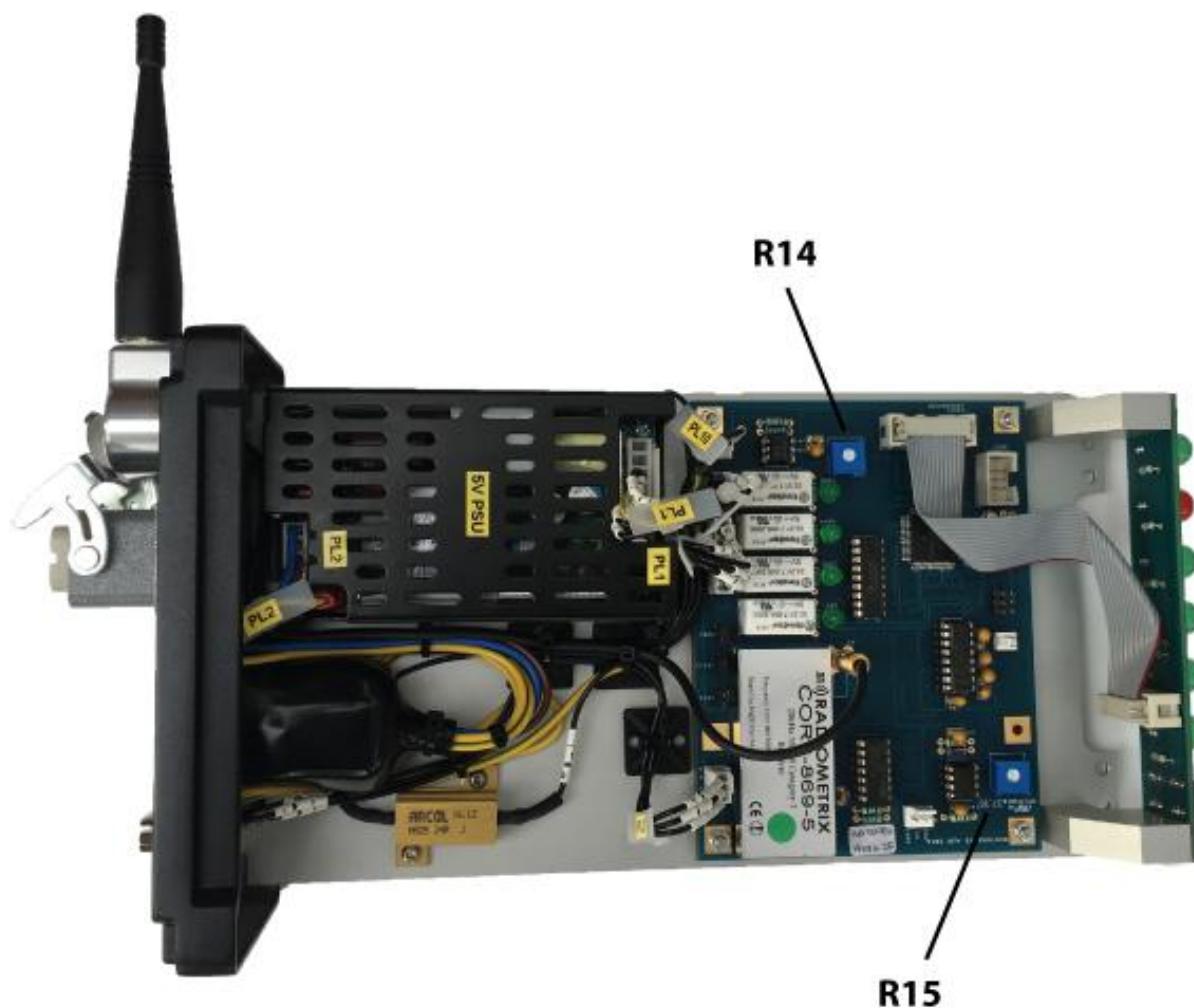


Figure 5 - Internal View of GUSTO Tool Receiver.

Ref	Description	Function
R14	Error Proofing Duration Dial	This potentiometer controls the duration of the error- proofing signal. Turn anti-clockwise to increase the signal duration and clockwise to decrease the duration. The duration range is approximately 0.5-5 seconds.
R15	Radio Sensitivity Dial	This controls the sensitivity of the radio receiver and should not be altered from the default setting.