



Operation and Maintenance Manual

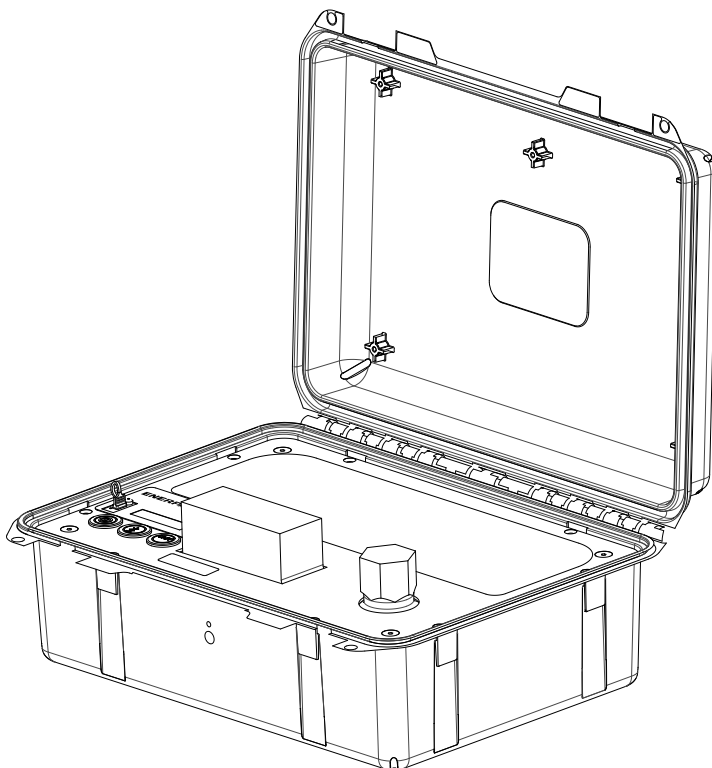
Enerpac STTC Safe T™ Torque Checker

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To reduce the risk of injury, users must read and understand this document before use.

ABOUT US

Enerpac is a global market leader in high pressure hydraulic tools, controlled force products, portable machining, on-site services and solutions for precise positioning of heavy loads. As a leading innovator with a 110-year legacy, Enerpac has helped move and maintain some of the largest structures on earth. When safety and precision matters, elite professionals in industries such as aerospace, infrastructure, manufacturing, mining, oil & gas and power generation rely on Enerpac for quality tools, services and solutions. For additional information, visit www.enerpac.com.



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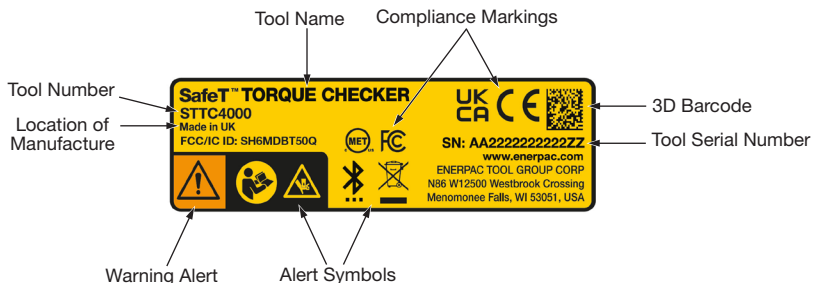


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WARRANTY

Refer to the Enerpac Global Warranty document for terms and conditions of the product warranty. Such warranty information can be found at www.enerpac.com.

NAMEPLATE



AVAILABLE LANGUAGES

L4500 is available in the following languages, visit www.enerpac.com for a copy.

- Weitere Sprachen finden Sie unter www.enerpac.com.
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- För andra språk, besök www.enerpac.com.
- 如需其他语言, 请前往 www.enerpac.com.

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1. Safety

Read all instructions carefully. Follow all recommended safety precautions to avoid personal injury as well as damage to the product and / or damage to other property. Enerpac cannot be responsible for any damage or injury from unsafe use, lack of maintenance, or incorrect operation. Do not remove warning labels, tags, or decals. In the event that any questions or concerns arise, contact Enerpac or a local Enerpac distributor for clarification.

Save these instructions for future use.

If you have never been trained on high-pressure hydraulic safety, consult your distributor or service center for information about Enerpac Hydraulic Safety Courses.

This manual follows a system of safety alert symbols, signals, words, and safety messages to warn the user of specific hazards. Failure to comply with these warnings could result in death or serious personal injury, as well as damage to the equipment or other property.

The Safety Alert Symbol appears throughout this manual. It is used to alert you to potential physical injury hazards. Pay close attention to Safety Alert Symbols and obey all safety messages that follow this symbol to avoid the possibility of death or serious injury.



Safety Alert Symbols are used in conjunction with certain Signal Words that call attention to safety messages or property damage messages and designate a degree or level of hazard seriousness. The Signal Words used in this manual are DANGER, WARNING, CAUTION, and NOTICE.

⚠ DANGER Indicates a hazardous situation that, if not avoided, will result in death or serious personal injury.

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

⚠ CAUTION Indicates a hazardous situation that, if not avoided, could result in minor or moderate personal injury.

NOTICE Indicates information considered important, but not hazard related (e.g. messages related to property damage). Please note that the Safety Alert Symbol will not be used with the signal word.

1.1 Safety Precautions



Failure to observe and comply with the following precautions could result in death or serious personal injury. Property damage could also occur.

- Always wear protective head-wear, ear protectors, footwear and gloves (at a minimum rigger type gloves) suitable for safe operation of the tool. The protective clothing must not interfere with safe operation of the tool or restrict the ability to communicate with co-workers.
NOTE: For the purposes of this manual “tool” refers to the wrench having its torque output checked.
- Be sure your workplace is safe. Follow the instructions in your workplace’s standard operating procedures and be sure to observe all communicated safety precautions.
- Do not place any part of the body between the wrench reaction foot and the reaction block.

- Do not place any objects between the wrench reaction foot and the reaction block. Keep the hoses away from the reaction points.
- Check hoses for any defects such as, kinks, cover worn and exposing steel braiding, blisters, cuts and burn marks. Never apply pressure to a damaged hose, doing so may cause it to rupture.
- Do not handle pressurized hoses or couplings; escaping oil under pressure can penetrate the skin, causing serious injury. Seek medical attention immediately if oil penetration is suspected.
- Ensure the pump is connected to the correct power source and voltage.
- Do not stand in the line of movement of the tool when it is in operation. If the tool separates from the Safe T™ Torque Checker during operation it will detach in that direction.
- Be aware that a Safe T™ Torque Checker that breaks during operation of the tool may become a high velocity projectile.
- Be sure appropriate guards are securely in position and free from damage.
- Keep your hands away from the torque wrench being checked. The checking process involves little visible movement. However, the pressures and loads are extreme.
- Maximum allowable torque to be applied to the Safe T™ Torque Checker is detailed in these instructions. Do not exceed the maximum permissible torque specified.
- Always be sure that pump is stopped and all pressure is fully relieved (0 psi/bar) before disconnecting or connecting hydraulic hoses. The sudden and uncontrolled release of pressurized oil could occur if hoses are disconnected while under pressure.
- Never attempt to connect or disconnect hoses while the pump is on and/or the system is pressurized.
- Be certain that all hose couplings are fully connected at both the pump and wrench ends before applying any hydraulic pressure. If the couplings are not fully connected, oil flow will be blocked, and the wrench could be subjected to excessive hydraulic pressures. Catastrophic failure of wrench could result.
- Never apply more hydraulic pressure to any tool, hose, fitting or accessory than the maximum allowable pressure as stated in the manufacturer's specifications. The system operating pressure must not exceed the pressure rating of the lowest rated component in the system.
- Be sure the operator has completed safety induction training, specific to the work surroundings. The operator should be thoroughly familiar with the controls and the proper use of the tool.
- The operator must be of at least the minimum age required by applicable local regulations, laws and the facility standard operating procedures.
- Do not abuse or overstress the hoses in any way. Do not bend the hoses excessively.
- Take every precaution to prevent oil leaks from occurring. High pressure oil leaks can penetrate the skin, resulting in serious injury.
- Never strike the tool while it is pressurized or under load. Components under tension may become dislodged, allowing them to become dangerous projectiles. Uncontrolled release of pressurized hydraulic oil could also occur.

- Avoid striking the tool at any time, even when it is not pressurized or under load. Striking the tool could cause permanent damage to wrench components and may affect the wrench calibration.
- Do not use solvents to clean the Safe T™ Torque Checker.
- Be sure to wear proper eye and hand protection when using solvent. Always follow the solvent manufacturer's safety and use instructions and any additional instructions included in the standard operating procedures for your work-site. Be certain there is adequate ventilation when using solvent.
- To prevent potential leaking, overheating or explosion of batteries please be advised to take following precautions:
 - Do not immerse the battery in water or seawater
 - Keep the battery in a cool dry environment during stand by period.
 - Do not use or leave the battery near a heat source such as fire or heater.
 - When recharging, use the battery charger specifically for that purpose.
- Be sure that the hex socket size corresponds to the size of the Safe T™ Torque Checker and wrench being checked. Failure to observe this precaution can result in the wrench becoming unstable and can lead to catastrophic failure of the tool.
- When the hex socket is placed on the Safe T™ Torque Checker a gap may exist between the reaction foot and the reaction block. When the tool is operated the reaction foot and point will make forceful contact. Be sure the wrench is fully engaged before applying hydraulic pressure.
- The torque required for specific applications may exceed the maximum torque capacity of the Safe T™ Torque Checker being used. Do not exceed the maximum allowable torque specified for the Safe T™ Torque Checker.
- Take care to avoid sharp bends and kinks in hydraulic hoses. Bends and kinks can cause severe back-up pressure and cause hose failure. Protect hoses from dropped objects; a sharp impact may cause internal damage to hose wire strands. Protect hoses from crush risks, such as heavy objects or vehicles; crush damage can cause hose failure.

⚠ CAUTION

Failure to observe and comply with the following precautions could result in minor or moderate personal injury. Property damage could also occur.

- Always carry the Safe T™ Torque Checker in its case.
- Always position the wrench for maximum stability. Use the positioning handle to properly position tool during operation.
- Be sure reaction points are clear of obstructions during operation of the tool.
- Always use in a stable horizontal plane.

NOTICE

Failure to observe and comply with the following precautions could result in property damage and/or void the product warranty.

- Never carry the wrench by its hoses.
- Always use Enerpac pumps and hoses.
- Always use Enerpac replacement parts.
- The maximum torque of the Safe T™ Torque Checker must not be exceeded.

- Never operate the wrench with a hydraulic supply connection to the advance side only as this may damage the internal parts.
- In severe service conditions, be aware that the wrench must be inspected, cleaned and lubricated more frequently than normal.
- Check that the swivel post screws are tight prior to use.
- If oil leakage is present from wrench, replace seals as required before placing the wrench back into service.
- If the Safe T™ Torque Checker is dropped, have the tool inspected and checked for proper operation before placing it back into service.
- Always follow the inspection and maintenance instructions contained in this manual. Perform maintenance and inspection activities at the specified time intervals.
- Dispose of battery in accordance to local rules and guidance for Lithium-ion battery disposal.
- Pollution degree: Pollution Degree 2 (as defined in IEC 61010-1).
Note: Rated for indoor, dry location use only.
- Unit over 18kg should only be moved using approved manual handle procedures. Use of lifting aides advised.
- Mains overvoltage category rating: Overvoltage Category II (as defined in IEC 61010-1).

1.2 Safety Symbols



Warning alert symbol



Read operation manual symbol



Crush warning symbol



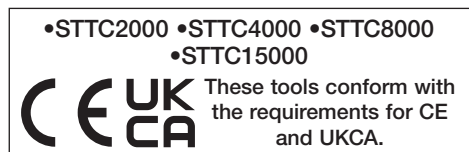
Bluetooth enabled symbol



Safety battery disposal warning

2. Compliance Statement(s)

2.1 Conformance to National and International Standards



Enerpac declares that the product(s) have been tested and conforms to applicable standards and the product(s) are compatible to all EU and UK Requirements.

Copies of the EU Declaration as well as the UK Self-Declaration are enclosed with each shipment.

2.2 Additional Compliances

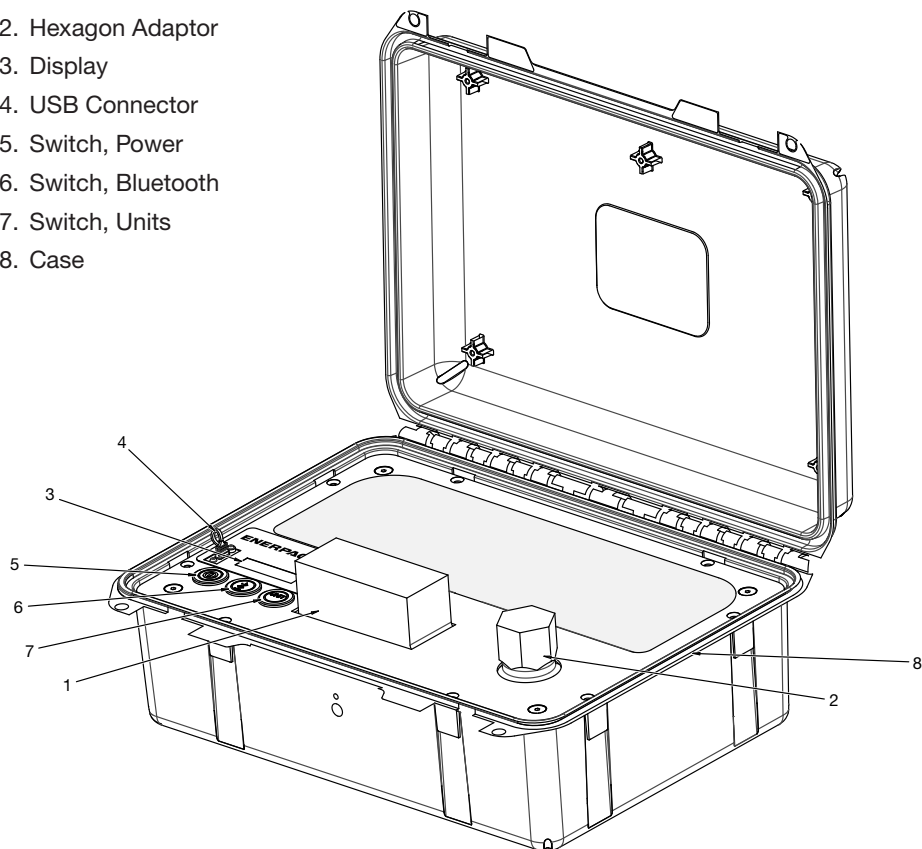
Enerpac declares that this/ these product(s) has/ have been tested and conforms to the following standards:

- EN61326-1: 2013,
- EN/IEC 61010-1: (Edition 3.1) 2010 +A1: 2016,
- FCC SH6MDBT50Q.

3. Features & Components

3.1 Safe T™ Torque Checker Features Diagram

1. Reaction Block
2. Hexagon Adaptor
3. Display
4. USB Connector
5. Switch, Power
6. Switch, Bluetooth
7. Switch, Units
8. Case



3.2 Feature Description

3.2.1 Selecting Suitable Insert

Select the correct size Hexagon or Square Insert to suit both the Safe T™ Torque Checker and the Wrench to be checked.

The Hexagon Insert must have a Male and Female hexagon that are the same sizes as the Wrench being checked and the Safe T™ Torque Checker.

The Square Insert must have must have a Female square and Female hexagon that are the same sizes as the Square Drive Wrench being checked and the Safe T™ Torque Checker.

⚠ CAUTION Ensure the correct size Insert is selected, using an incorrect Insert can result in breakage risking damage to the Safe T™ Torque Checker or harm to the user.

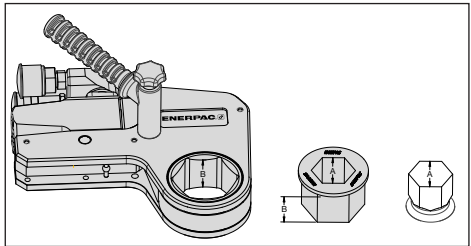


Figure 1: Hexagon Insert Size Selection

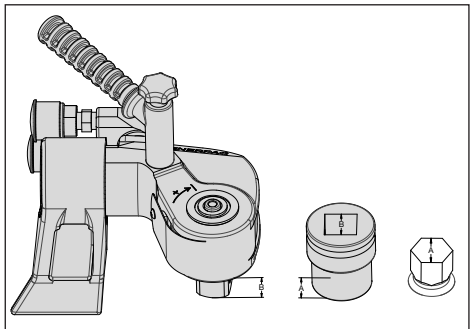


Figure 2: Square Insert Size Selection

3.2.2 Fitting the Hexagon Insert to the Wrench

Ensure the hexagon insert is passed through the wrench being checked, so that the flanged side of the insert is upper most when the wrench is fitted to the Safe T™ Torque Checker reaction arm hexagon adaptor.

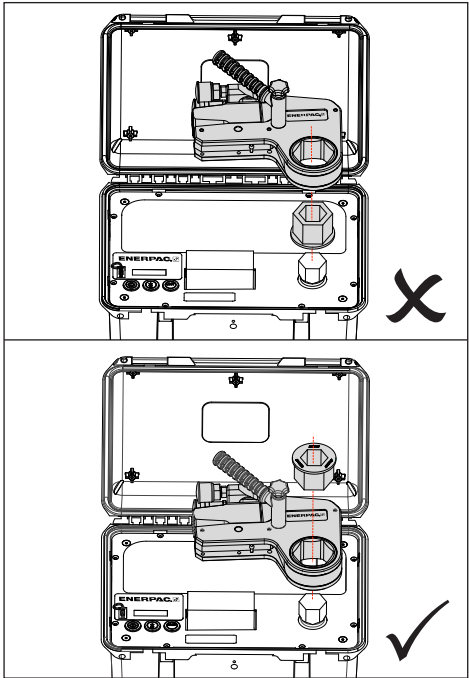


Figure 3: Hexagon Torque Wrench Installation

3.2.3 Fitting the Wrench to the Safe T™ Torque Checker

Place the wrench on to the hexagon adaptor, carefully positioning it onto the hexagon adaptor so that the wrench reaction foot is as close to the top horizontal plane of the reaction block of the Safe T™ Torque Checker as possible.

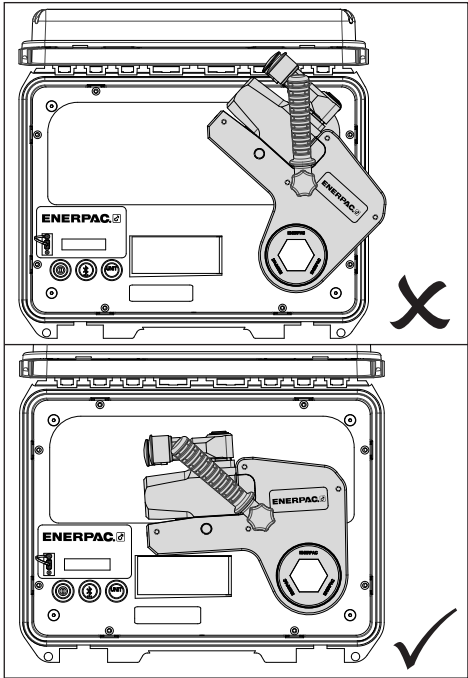


Figure 4: Hexagon Torque Wrench Placement

3.2.4 Fitting the Square Insert to the Wrench

Ensure the Square Drive Insert is fitted to the Safe T™ Torque Checker hexagon adaptor. The square drive of the torque wrench is inserted into the square port on the Insert. Ensure the reaction arm is fitted against the reaction block as detailed in section 3.2.5.

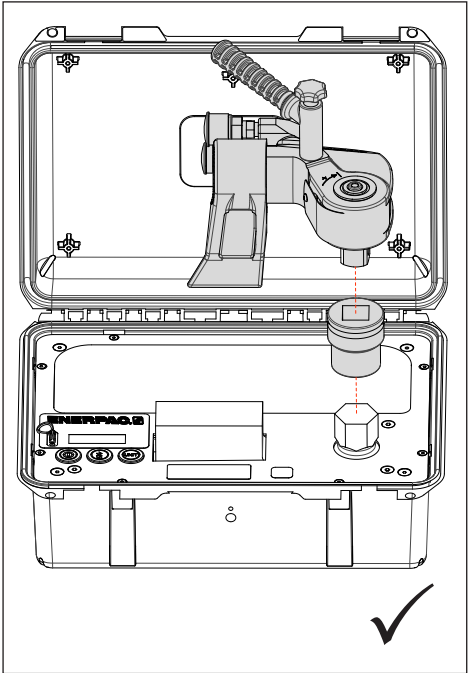


Figure 5: Square Drive Torque Wrench Installation

3.2.5 Fitting the Wrench Reaction Arm to the Safe T™ Torque Checker

When placing a wrench that uses a reaction arm, ensure that the reaction arm is aligned parallel with the Safe T™ Torque Checker reaction block for full engagement when activated.

CAUTION If the reaction arm is positioned so that it reacts against the corner of the reaction block and is not fully engaged with the full block, this will give false readings.

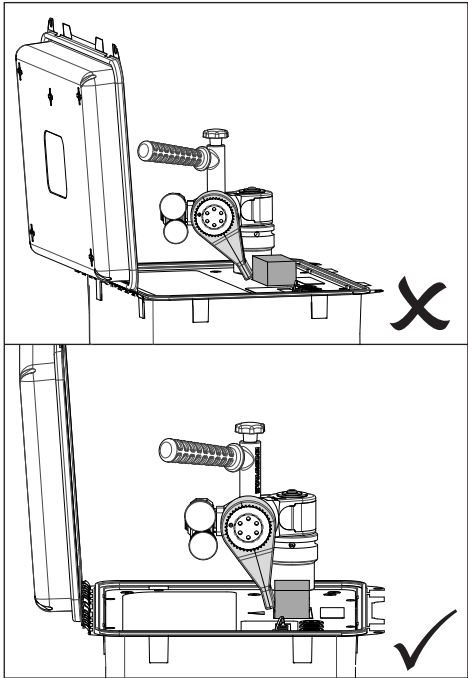


Figure 6: Reaction Arm Placement (side view)

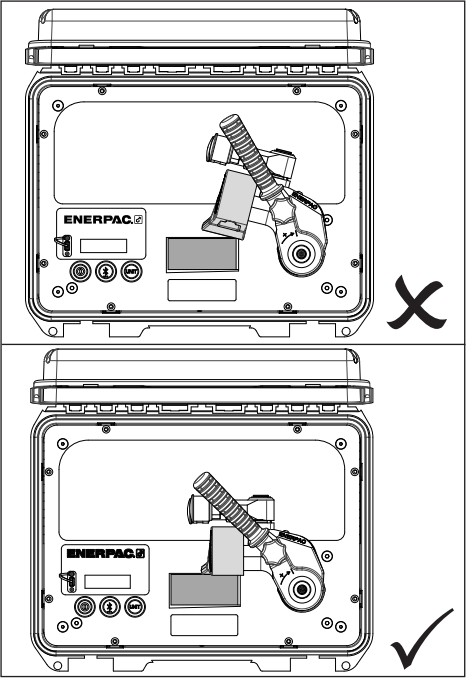
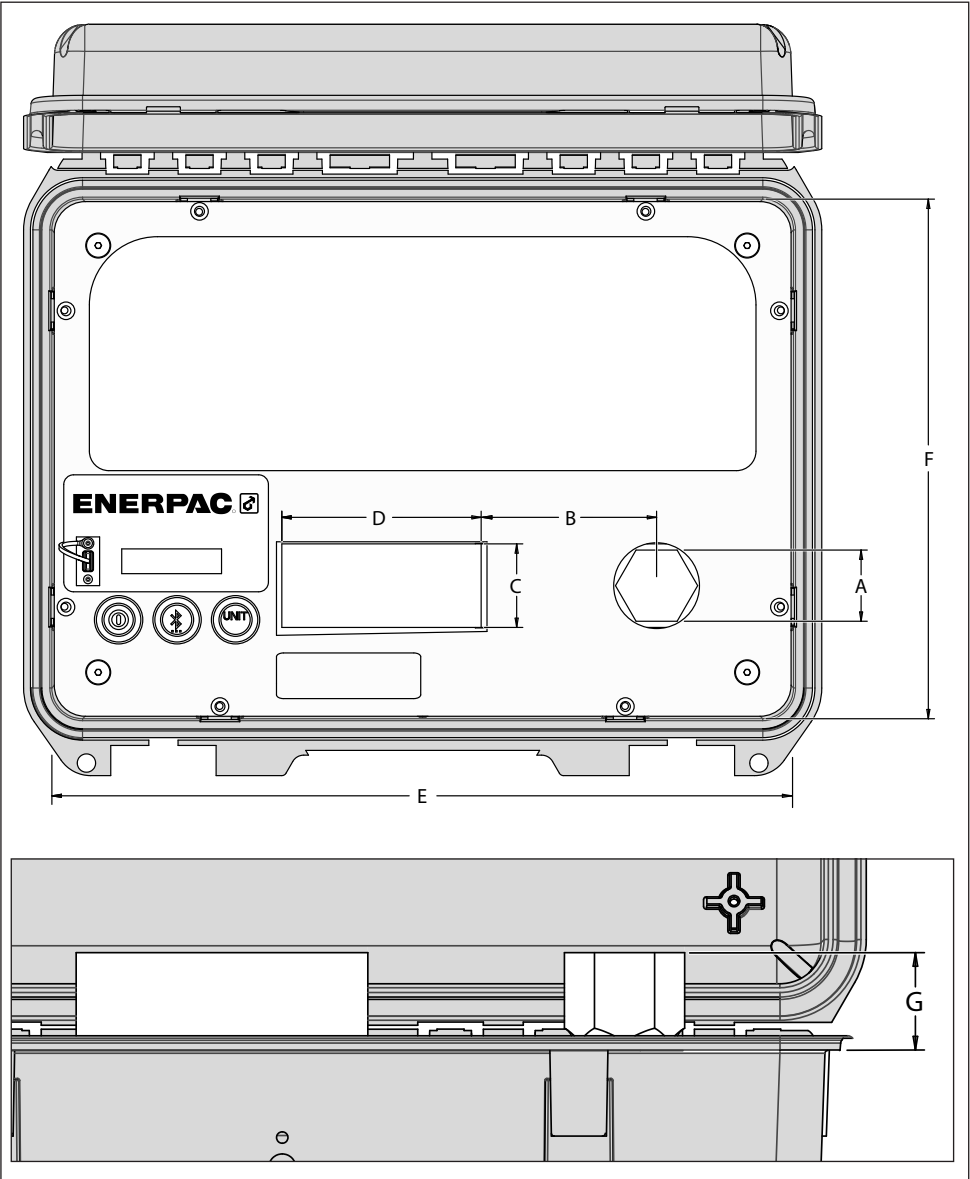


Figure 7: Reaction Arm Placement (top view)

4. Technical Product Data

4.1 Safe T™ Torque Checker Dimensional Diagram



4.2 Safe T™ Torque Checker Dimensional Table

			Model Number			
			STTC2000	STTC4000	STTC8000	STTC15000
Maximum Torque	Ft.lbs		2140	4383	8893	16100
	Nm		2900	5950	12000	21800
Weight	lbs		13.2	17.6	41.9	59.5
	kg		6	8	19	27
Dimensions	A	inch [mm]	1 3/16" [30]	1 7/16" [36]	2" [50]	2 5/8" [na]
	B	inch [mm]	3.03 [77]	3.54 [90]	4.51 [114.5]	5.47 [139]
	C	inch [mm]	1.44 [36.51]	1.69 [42.86]	2.25 [57.15]	2.94 [74.61]
	D	inch [mm]	3.15 [80]	4.03 [102.25]	3.84 [97.5]	4.41 [112]
	E	inch [mm]	14.88 [378]	14.88 [378]	22.16 [563]	22.16 [563]
	F	inch [mm]	10.39 [264]	10.39 [264]	17.20 [437]	17.20 [437]
	G	inch [mm]	1.17 [29.6]	1.48 [37.6]	1.89 [48.1]	2.35 [59.6]

4.3 Case External Dimensions

			Model Number			
			STTC2000	STTC4000	STTC8000	STTC15000
Dimensions	L	inch [mm]	16.3 [414]	16.3 [414]	24.57 [624]	24.57 [624]
	W	inch [mm]	12.9 [328]	12.9 [328]	19.61 [498]	19.61 [498]
	H	inch [mm]	12.9 [328]	12.9 [328]	6.6 [168]	6.6 [168]
Weight	lbs		5.1	5.1	15.0	15.0
	kg		2.3	2.3	6.8	6.8
Input voltage			100-240VAC, 50/60Hz, 0.3A			
Output voltage			5V, 2.0A			

5. Operation

⚠ CAUTION Before activating the wrench, ensure that all safety precautions are being followed. Take note of potential pinch points when handling the torque wrench during testing.

⚠ CAUTION Do not operate unit where water ingress is possible.

⚠ CAUTION Indoor use only.
Operating temperature range 10-45C.
Altitude up to 2000m. Maximum 90% relative humidity, non-condensing.

5.1 Digital Display Set-Up

5.1.1 Digital Buttons

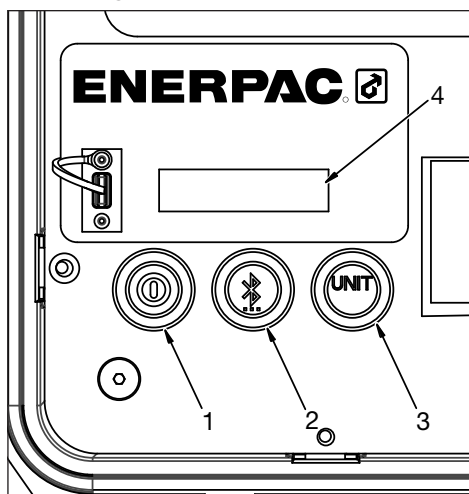


Figure 8: Digital Buttons and Display

1. Power - On/Off
2. Bluetooth
3. Units - Engineering Units
4. Digital Display Window

5.1.2 Digital Display Window

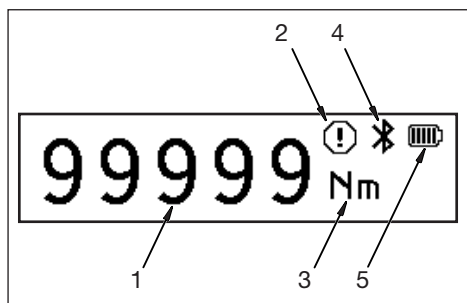


Figure 9: Digital Display Icons

1. Torque value
2. Warning symbol
3. Engineering units
4. Bluetooth status
5. Battery Indicator

5.1.3 Power Up

On power up the Enerpac logo will be displayed on the LCD.

5.1.4 Torque Value

The torque value is displayed in the centre of the display.

5.1.5 Engineering Units

The engineering units are displayed to the right of the torque measurement. Using the "Units" button the operator can select between Newton meters (Nm) or foot pound (ft.lbs measurement units. The selection of units is stored between power cycles.

5.1.6 Battery Indication

The battery symbol on the top right-hand side of the display. This shows the battery level and charge status. For battery recharging information, see Section 5.2

5.1.7 Bluetooth Indication

Bluetooth is reserved for future models and not applicable for this edition.

5.1.8 Warning symbol

The warning symbol is displayed to the right of the torque measurement.

5.1.9 Display Function Timings

To maximise battery life, the STTC will switch itself off after a period of no activity. There are two separate shut-down timers as follows:

5 minutes with no load. If the STTC is powered on and then left idle with no load applied to the reaction beam, it will turn itself off after 5 minutes.

30 minutes with load. If the STTC is powered on and then left idle with load applied to the reaction beam, it will turn itself off after 30 minutes. If the load is removed and then reapplied the 30-minute timer restarts to ensure that the unit does not turn itself off when in active use.

5.2 Battery Charging

The low-battery indicator on the display module will show an empty battery symbol, when battery charging is required.

To recharge the unit's battery, use the included Enerpac USB-C power supply. Battery charging will take approximately 3-hours from zero capacity to full capacity.

If the battery is very low on power up, the display will show a battery symbol to indicate battery charging is required and the unit will power down.

5.3 Operation

Press ON/OFF button to power unit.

Fit wrench for checking to hex adaptor and reaction block. See section 3.2

Before starting the test ensure torque reading on screen is zero.

CAUTION If the Safe T™ Torque Checker does not zero this is a fault and the unit must be returned an Authorized Enerpac Service Center for repair/ recalibration.

NOTICE Display will read zero until 1 % of the maximum rated torque is applied.

If needed, select a different measurement unit.

Operate hydraulic pump as per its operating instructions. Ensure pump safety instructions are followed as necessary.

The torque reading will appear on the display module.

An on-screen display warning and buzzer will sound to indicate when maximum input torque is reached.

CAUTION Care must be taken to avoid exceeding the maximum input torque or damage to Safe T™ Torque Checker may result.

To power off the unit, press the ON/OFF button and hold it for 2-seconds. The unit will then power off.

6. Storage

6.1 Recommended Storage

Store the Safe T™ Torque Checker in a clean, dry place and protect against mechanical or electrical damage.

7. Maintenance

7.1 General Maintenance

Other than cleaning and keeping the unit charged ready for its next use, no maintenance is required.

Cleaning frequency depends on factors known only to the user. The amount of contaminants in the working area is one factor. A Safe T™ Torque Checker used in a clean room environment will require less maintenance than a Safe T™ Torque Checker used outdoors and dropped in loose dirt or sand.

1. When cleaning is required, clean the surfaces with clean dry cloth.
2. Avoid using solvents, keep solvents away from control pad membrane.

 **CAUTION** Safe T™ Torque Checker contains no user serviceable parts.

7.2 Repair/ Recalibration

Safe T™ Torque Checker unit that require repair or recalibration should be returned to an Authorized Enerpac Service Center

7.3 Software Updates

Firmware updates and release dates will be announced via Enerpac product bulletins. Product can then be updated by an Authorized Enerpac Service Center.

Ensure unit is powered from the Enerpac USB-C power supply.

7.4 Safe T™ Torque Checker Servicing

The Safe T™ Torque Checker is supplied with a calibration certificate from the date of its manufacture. Enerpac recommends each unit is serviced after two years or 4,000 cycles, whichever comes first.

Please contact your local Enerpac distributor or approved Enerpac service center for further details.

8. Troubleshooting

8.1 Troubleshooting Guide

Fault	Possible Cause	Corrective Action
Screen not displaying correctly	Check for LCD display for damage.	Contact Enerpac Service center.
Incorrect measurement.	Incorrect or poor connections or incorrect wrench position.	Check hydraulic connections, hoses and pump pressure.
		Check torque wrench is reacting against reaction arm on its correct side.
No torque reading	Incorrect or poor connections or incorrect wrench position.	Check hydraulic connections, hoses and pump pressure.
		Check torque wrench is reacting against reaction arm on its correct side.
Button not working as expected.	Contaminate interfering with function.	Check mechanical action is free.
		Check button is free of contamination.
		Clean button using soft cloth.
Unit not charging	Faulty connections.	Ensure Enerpac USB power supply is used.
		Check USB interface is free of contamination. Clean as necessary.
		Check USB cable for damage. Check Enerpac USB power supply for damage.
	Check battery temperature	Maximum charging temperature: 45°C Minimum charging temperature: 10°C

Fault	Possible Cause	Corrective Action
Unit will not switch on.	Battery discharged.	Check battery is charged (see section 5.3).
		Check button function.
Blank Screen	Battery discharged.	Check battery is charged (see section 5.3).
	Check for LCD display for damage.	Contact Enerpac Service center.

8.2 Error Codes

Error Code	Description
1111,1000	Strain gauge out of range - low value.
1111,2000	Strain gauge out of range - high value.
1111,3000	Measurement Overload error.
1111,8000	Measurement stabilise error. The torque reading did not stabilise within 30 seconds.

Notes

[illegible]

Notes

[illegible]

Notes

[illegible]

