

---

# **MODEL GE-50576-A**

---

## **BELT TENSION TESTER**

---



### **Operating Manual**

---

---

---

---

## TABLE OF CONTENTS

1.0	Overview .....	2
2.0	GE-50576-A Components .....	3
3.0	Display .....	4
4.0	Operation Instructions .....	5
5.0	Set-up .....	7
6.0	Noise Cancelation .....	8
7.0	Charging Instructions .....	9
8.0	Testing Belts .....	10
9.0	Maintenance .....	10
10.0	Technical Specifications and Certifications .....	11
11.0	Warranty .....	12



### SAFETY PRECAUTIONS

*Please read this section carefully to ensure safe operation.*

- Do not drop or allow GE-50576-A to be hit.
- Remove the microphone from GE-50576-A after use and place in the storage case.
- Do not use the tool near flammable substances.
- Do not use the tool near water or other liquids.
- When performing the test in vehicle, let the engine cool down before testing.

#### **CAUTION!**

- Do not store in a humid area.
- Do not place heavy objects on the GE-50576-A.
- Do not wash the tool with liquid cleaners. Wipe with a clean, dry cloth.
- Store the tool in an area away from heat or direct sunlight.
- **GE-50576-A goes into sleep mode after 5 minutes without operation, but does not power off. Users should perform the power-off operation manually after testing is complete.**

## 1.0 OVERVIEW

This manual explains the operation of GE-50576-A. Please read it carefully before using the GE-50576-A.

The GE-50576-A Acoustic Belt Tension Tester enables belt tension measurement with no direct contact. It measures the belt tension of engine accessory belt systems and Electronic Power Steering (EPS) steering racks. When the microphone is held close to the belt, and the belt is plucked, belt vibration is captured by the microphone, and the frequency is displayed.

For more detailed procedures, please consult published service information for the vehicle or component being serviced.

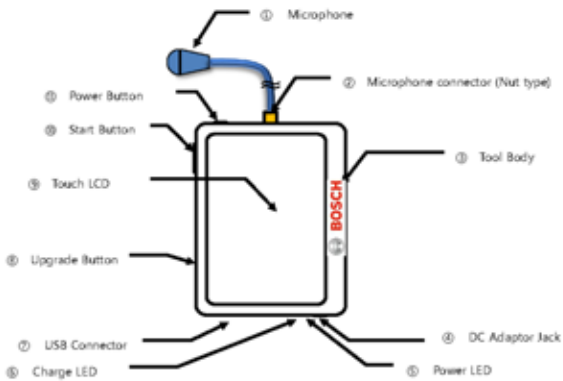
### 1.1 Complete Kit



The GE-50576-A is supplied as a complete kit that contains the components outlined in the table below and identified in the photo.

No.	Item No.	Description	Model Name / Specification
1	GE-50576-05	Li-Ion Battery	3.7V, 800mA
2	GE-50576-06	Storage Case	Material: Plastic / Dimensions: 160 x 100 x 60 mm
3	GE-50576-01	Acoustic Belt Tension Tester	Dimensions (approx): 10 x 75 x 20 mm
4	GE-50576-04	Touch Pen	General Resistance touch Pen
5	GE-50576-03	USB Cable	General USB Cable
6	GE-50576-02	Microphone	Uni-Directional Type, 30CM Flexible Type
7	GE-50576-07	LCD Protection Film (not shown)	Protection Film / 4.3 inch LCD
8	GE-50576-08	User Manual (not shown)	User Operation Manual
9	GE-50576-09	Protective Boot	Dimensions (approx): 10 x 75 x 20 mm

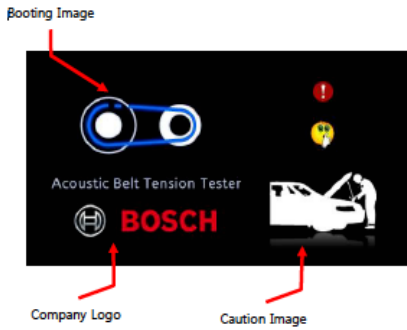
## 2.0 COMPONENTS



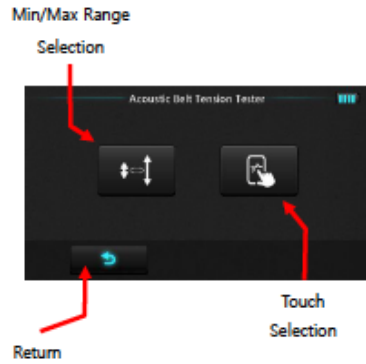
No.	Name	Description	Remark
1	Microphone	Flexible shaft directional microphone	
2	MIC Connector	Nut type microphone connector	
3	Tool Body	Tool Body	
4	DC Adaptor Jack	AD/DC converter adaptor jack DC 12V, 2A output is recommended when USB charging is not available	<ul style="list-style-type: none"> <li>• <b>Power On:</b> Blinks Green for 4 seconds, then turns solid Green</li> <li>• <b>Normal Status:</b> Solid Green</li> <li>• <b>Red Blink:</b> Sleep mode – up to 5 minutes</li> <li>• <b>Green/Red Blink:</b> Timed out – Power must be turned Off, then back On</li> </ul>
5	Power LED	LED displays power status	<ul style="list-style-type: none"> <li>• Power on: Blinks Green for 4 seconds, then turns solid Green</li> <li>• Normal status: Solid Green</li> <li>• Red Blink: Sleep mode (up to 5 minutes)</li> <li>• Green/Red Blink: Timed out – Power must be turned Off, then back On</li> </ul>
6	Charge LED	Displays charge status. Note: If the unit is powered on while being charged (via DC adapter or USB cable) the charge LED turns green.	<ul style="list-style-type: none"> <li>• Red: Charging</li> <li>• Blinking Red: Low Battery</li> <li>• Green: Charge complete</li> </ul>
7	USB Connector	USB connection port for charging & firmware update	
8	Update Button	Depress the update button through the hole in the case when software updates are required.	
9	Touch LCD	Resistive touch panel LCD display	3.4", 480RGB, 272 dots
10	Start Button	Mechanical start button Operation is the same as on the main display	
11	Power Button	Mechanical Power on/off (Sliding type) <ul style="list-style-type: none"> <li>• Power On : Slide left to turn on</li> <li>• Power Off : Slide right to turn off</li> <li>• Auto Sleep mode: Automatic LCD power-off after 5 minutes without operation. Wakes up when the screen is touched.</li> </ul>	Sleep mode is not the same as Power Off. The processor is active, but the display is off.

## 3.0 DISPLAY

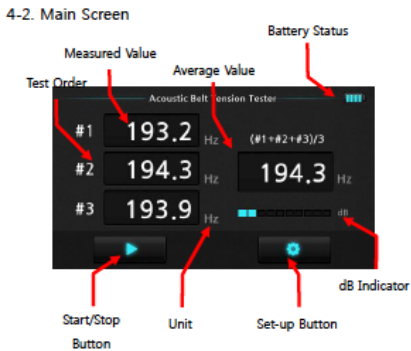
### 3.1 Booting Screen



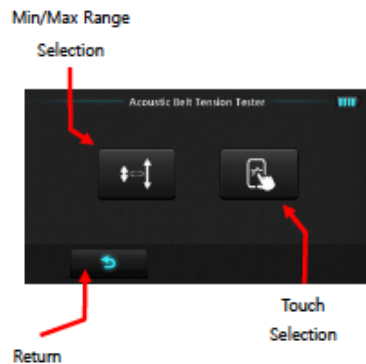
### 3.3 Set-up Selection Screen







### 3.2 Main Screen



### 3.4 Min/Max Range Setting



	Push to Start Test
	Push to Pause Test, Hold to Resume Test
	Set-up mode
	Sound Decibel

---

---

---

## 4.0 OPERATION

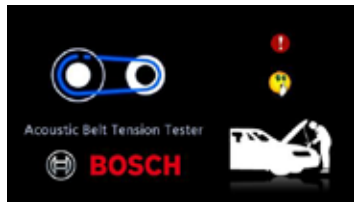
1. Remove the microphone from the storage case and carefully connect it to the GE-50576-A.



2. Slide the power button to turn on the unit. The Power LED will blink, then turn solid green.



3. In normal operation, the Booting Screen is displayed immediately after powering on. Please minimize background noise as much as possible during testing.






4. The Main Screen is displayed. Place the microphone close to the belt (approx. 1cm) without bending the microphone shaft excessively.

To ensure proper readings, some values may need to be adjusted to reduce the impact of background noise. Refer to Section 7, Noise Cancellation for more information.




5. Touch Start button on the screen or push Start button on the tester body. The button image will change to a red square, and a tone will sound.




- 
- 
- 
6. Pluck the belt (while minimizing background noise) and the result will display on the screen. When a reading is registered on GE-50576-A, a tone will sound, and the start button image changes from   .



7. Please wait to perform the next pluck until the image changes back to . When the start/stop button is ready, pluck the belt again. GE-50576-A displays the result and calculated average.



8. After three readings, the start button image changes to  again. To re-test, touch the start button on the screen, or push the mechanical start button on the tool body.




9. GE-50576-A can be paused at any time during testing by touching the start button on the screen, or pressing the mechanical start button on the tool body.




10. To re-set GE-50576-A, touch or press either start button for more than 3 seconds. All current results will be cleared, and the unit will go back to the first step.






## 5.0 SET-UP

1. To go to the set-up menu, touch the icon on the right .
2. The Set-up menu includes two settings, min/max value and touch screen re-calibration.




The first button  allows adjustment of the tested frequency limits. The min/max threshold can be adjusted from 100~500 Hz by touching the left/right. A single touch will move +/- 1 increment, and holding the arrow will move +/- 5 increments.

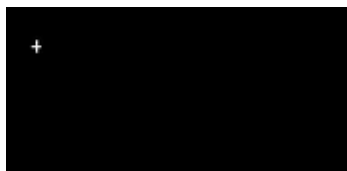


When the desired values are displayed, touch the center button  to save these settings. A tone will sound to indicate a successful save. Touch the right button  to return to the default setting. Touch, the left button  to return to the previous menu,



To re-calibrate the touch screen, touch the second button on the set-up screen .

When a “+” symbol appears on the display, press the center of the “+”. After 5 steps for each corner and the center, the display will return to the set-up menu.



### WARNING!

GE-50576 units are calibrated before shipment. They do not require recalibration unless the touch screen is not working properly (mis-aligned). If recalibration is needed use a small firm-pointed device such as an ink-pen rather than the stylus pen this is included with the tool (GE-50576- 04). This pen is soft pointed and will not re-calibrate properly.



---

---

---

## 6.0 NOISE CANDELLATION

1. To reduce the effects of background noise, the frequency range specification of the belt being measured must be known. Please refer to published service information for the vehicle or component being serviced.

2. If possible, make the measurements in a quiet area.



3. If background noise causes interference, touch the set-up button and choose the Min/Max setting menu



4. Adjust the min/max range as follows;

- Min: Service information specification -100Hz
- Max: Service information specification +100Hz



5. Perform the test again with normal background noise, and adjust threshold again to a tighter range if background noise continues to be an issue.

- Min: Service information specification - 50Hz
- Max: Service information specification +50Hz



---

---

---

## 7.0 CHARGING INSTRUCTIONS

**Note:** As the battery level decreases, the battery status indicator changes from four segments (full) to zero segments (empty).



**Step 1:** Turn off the power to the tool.

**Step 2:** Connect the USB cable to the USB connector on the bottom of the tool body. When connecting to the USB port, the end of the cable should be inserted correctly to the lap-top computer or USB hub.



Some regions may require a DC adapter. In these regions, connect the adaptor to the adaptor jack on the bottom of the tool body.

**Note:** If the unit is powered on while being charged (via DC adapter or USB cable), the charge LED will turn green.



---

---

---

## 8.0 TESTING BELTS

**Note:** Please refer to vehicle service information for belt specifications



Engine accessory belt



Limited access EPS Rack



Split Case EPS Rack

## 9.0 MAINTENANCE

After completing a testing session, manually turn off the power, disconnect the microphone from the tools and store it safely.

Charge the tool until charge LED turns to green

To prevent possible damage, remove the battery from the tool when storing GE-50576-A for an extended period of time.

## 10.0 SPECIFICATIONS, CERTIFICATIONS AND MAINTENANCE

<b>Frequency Range</b>	100~500Hz Fixed for GM (Adjustable between 100~500) Optional no-cost firmware upgrade to extend frequency range to 10-800 Hz
<b>Microphone Length</b>	30 cm
<b>Dimension</b>	4.71" x 2.94" x 0.71" (119.7 x 74.7 x 18 mm)
<b>Weight</b>	3.88 oz (110g)
<b>Battery Type</b>	Rechargeable Li-Ion Battery, 3.7V, 800mA
<b>Battery Life</b>	Approx. 24 hours, continuous use
<b>Battery Recharging</b>	Via any USB Port of PC or using USB Charger (not supplied) Normal Charge Time 4-5 hours with USB port, 2-3 hours with separate USB Charger (12V DC)
<b>Operating Temperature</b>	50°F to 122°F (10°C to 50°C)
<b>Humidity</b>	80% RH
<b>Scope of Delivery</b>	GE-50576-A Acoustic Belt Tension Tester, touch pen, microphone, USB cable, Rechargeable Li-Ion Battery and protection cover in a portable zipper pouch.
<b>Battery Warranty</b>	Six months
<b>Warranty</b>	One year
<b>Country of Origin</b>	South Korea

### Certification / Patent

No.	Cert / Patent	Date	Region
1	FCC	6/20/2012	NA
2	CE	6/20/2012	EU
3	IC	6/20/2012	Canada
4	KC	6/20/2012	S. Korea
5	ROHS	6/20/2012	Global
6	WEEE	6/20/2012	Global
7	KR Patent 10-201200085154	2/28/2013	S. Korea
8	PCT PCT/KR2012/008965	2/28/2013	Global

---

---

---

## 11.0 WARRANTY

ELECTROMATIC Equipment Co., Inc. (ELECTROMATIC) warrants to the original purchaser that this product is of merchantable quality and confirms in kind and quality with the descriptions and specifications thereof. Product failure or malfunction arising out of any defect in workmanship or material in the product existing at the time of delivery thereof which manifests itself within one year from the sale of such product, shall be remedied by repair or replacement of such product, at ELECTROMATIC's option, except where unauthorized repair, disassembly, tampering, abuse or misapplication has taken place, as determined by ELECTROMATIC. All returns for warranty or non-warranty repairs and/or replacement must be authorized by ELECTROMATIC, in advance, with all repacking and shipping expenses to the address below to be borne by the purchaser.

THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE WARRANTY OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE OR APPLICATION. ELECTROMATIC SHALL NOT BE RESPONSIBLE NOR LIABLE FOR ANY CONSEQUENTIAL DAMAGE, OF ANY KIND OR NATURE, RESULTING FROM THE USE OF SUPPLIED EQUIPMENT, WHETHER SUCH DAMAGE OCCURS OR IS DISCOVERED BEFORE, UPON OR AFTER REPLACEMENT OR REPAIR, AND WHETHER OR NOT SUCH DAMAGE IS CAUSED BY MANUFACTURER'S OR SUPPLIER'S NEGLIGENCE WITHIN ONE YEAR FROM INVOICE DATE.

Some State jurisdictions or States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. The duration of any implied warranty, including, without limitation, fitness for any particular purpose and merchantability with respect to this product, is limited to the duration of the foregoing warranty. Some states do not allow limitations on how long an implied warranty lasts but, notwithstanding, this warranty, in the absence of such limitations, shall extend for one year from the date of invoice.

ELECTROMATIC Equipment Co., Inc.  
600 Oakland Ave. Cedarhurst, NY 11516—USA  
Tel: 1-800-645-4330/ Tel: 516-295-4300/ Fax: 516-295-4399

Every precaution has been taken in the preparation of this manual. Electromatic Equipment Co., Inc., assumes no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of information contained herein. Any brand or product names mentioned herein are used for identification purposes only, and are trademarks or registered trademarks of their respective holders



# **ELECTROMATIC**

**E Q U I P M E N T C O . , I N C .**

600 Oakland Ave., Cedarhurst, NY 11516 – USA  
TEL: 516-295-4300 • FAX: 516-295-4399