

ESB4-SXI Series

Automatic Shut-off
Precision Impact Driver



USER MANUAL



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!! Please Read all Instructions before Operation !!

Symbology Description

			
Please refer to the manual	Warning	Recyclable	Indoor use only

				
Keep away from moisture	Keep away from fire source	Do not take apart	Do not discard	Safety certification

Warning

Before operating device, please make sure that all main parts/ accessories are included/undamaged and please carefully read full user manual. Please adhere to the following safety precautions/operating instructions and basic safety measures to avoid fire, electric shock and personal injury ect.

1. Keep the workplace clean.
 - Do not operate or charge the device in rain or wet environments. This will help avoid danger and short-circuit damage to the device.
2. Pay attention to the environment of the workplace.
 - The device should always be used in a workplace with suitable lighting.
 - Do not let others operate the device unless it is assigned to them. Keep children and non personnel away to avoid danger.
 - Do not operate the device in a hazardous environment (flammable gas or liquid).
 - Do not operate the device when you are tired or intoxicated to avoid danger.
3. When the device is not in use, remove the battery and store it in a dry and safe place.
4. Please carefully set the device to appropriate torque according to the requirements of the application in order to avoid danger and defects, do not use the device for unintended applications, for example, drilling.
5. Do not wear loose clothing or jewelry, etc., to avoid personal injury.
6. Always use the device with appropriate accessories (belt hook, wrist straps, etc.) to assist in work and storage.
7. Carefully maintain tools and conduct regular inspection of the device and battery. In case of damage, use the designated repair center and keep the tool body clean, to avoid oil stains.
8. Unplug the power cord when the charging station is not in use.
9. If storing the device for an extended period of time, remove the rechargeable battery.
10. Please replace the specified lubricating oil regularly at least once a year to avoid damage to parts.
11. Please make sure to read and follow the precautions/operation instructions and basic safety measures in the manual. The company is not responsible for any danger caused by non-compliance.

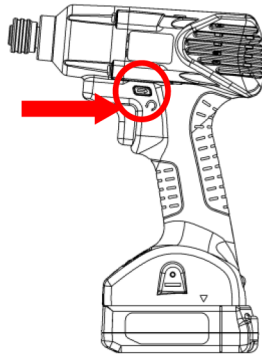
Safety Functions

Device Safety Functions

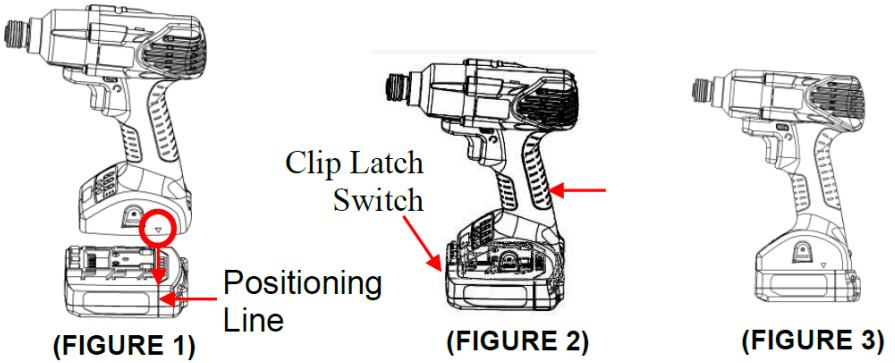
- Over-current protection
- Temperature protection
- Low speed & stall protection
- Low battery protection
- Forward and reverse three stage control protection
- Device sleep function (if tool is unused for 3 min)

Operating Instructions

1) Before using this device please fully charge the battery and attach it securely to ensure safety. Before removing the battery please make sure that the forward/reverse switch is in the middle position, as shown by the diagram below.



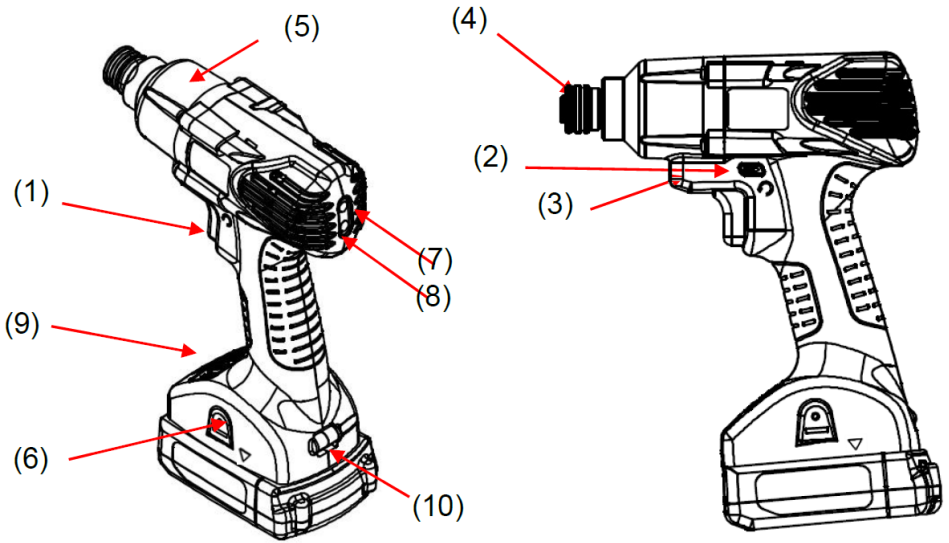
2) For battery installation and removal please refer to diagram below.



3) The device will provide audible (beep) and visual (lights) feedback if battery ID identification is failed once battery is attached. Please see table below.

DEVICE STATE	ACTION	FEEDBACK	INCORRECT	CORRECT
Tool in active mode	Press the trigger to exit sleep mode	Indicator Lights	Alternately flash red and green	Green will flash once and turn off
		Beep	Continuous beep	One beep
		Battery ID Identification	Device will not run	Device will operate normally
Tool in sleep mode	If battery ID is not completed within 7 sec after battery is installed device will enter sleep mode	Indicator Lights	None	None
		Beep	None	None



Operating Function Summary



No.	Description
1	Trigger
2	Forward/Reverse Switch
3	LED Work-light
4	Bit/Socket Holder
5	Aluminum Alloy Cover
6	Belt Hook Mount
7	Signal Display Light
8	Power Indicator Light
9	Display Panel
10	Wrist Strap Mount

Operating Function Summary

This device is an Impact Screwdriver. When the screw is tightened you will hear/feel a hammering sensation. This is completely normal and will continue to apply the impact until the desired fastening is completed.

1. Trigger: This device is capable of variable speed based on how far the trigger is pressed. Trigger must be fully pressed to achieve maximum speed.
2. Forward/Reverse Switch: When changing the forward and reverse switch lever, follow the arrow symbol  on the switch for forward(clockwise), or follow the arrow symbol  on the switch for reverse(counter-clockwise). Whenever the device is not in use, leave the forward and reverse switch lever in the middle position. **Leave the forward and reverse switch lever in the middle position, and press the trigger to select whether the LED work-light light is ON or OFF.
3. LED Work-light: LED is available for auxiliary lighting and can be switched on or off (see ** above).
4. Bit/Socket Holder: Pull bit holder cap outward to install the desired bit and release. To change the attached bit, pull bit-holder outward again to remove the bit.
5. Aluminum alloy cover: Fixed to gearbox.
6. Belt hook mount: Install belt hook in this location if desired.
7. Signal Display Light
8. Power Indicator Light
9. Display Panel: LED screen that displays configurations and batch status.
10. Wrist Strap Mount: Install wrist strap in this location if desired.

Operating Function Summary

Chemicals such as acetone, benzene, alcohol, thinner, ketones, trichloroethylene, etc. must not come into contact with the housing to avoid chemical damage.

Please operate the Charging Screwdriver carefully in accordance with the operating instructions. Do not drop or subject the device to unnecessary impact.

When the device is running, do not change the forward and reverse switch lever to avoid system error detection.

The mechanical wear of the device depends on the user's torque, time or frequency. The greater the torque, the longer the time or the higher the frequency, the faster the wear; after one month of use (8 hours every day, operating frequency 15Pcs/min) the minimum torque attenuation is about 2~3% of (the maximum is 3~5%), and the attenuation will gradually decrease and be stabilized over time. The user can periodically use a torque meter or torque wrench to determine if the torque output of the device meets the application requirements.

1. Main panel buttons and screen display instructions



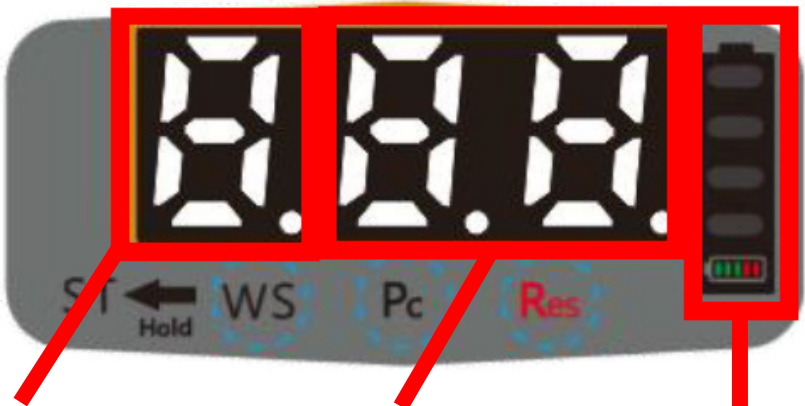
- Quickly browse the setting of the running program.
- Press and hold the  button to enter the remote control setup mode.



Pc Button - Quickly switch the running program.
Remember: After switching programs press the "Res" button to return to the screwdriver work screen.



Res Button - Sleep wakeup/clear counter/confirm



Program Number
(1~5)

Batch Count
(1~99)

Battery Status

2. DR-IRC1 Remote control overview

Select/Sequence		Program (1~5)
Bluetooth (Coming Soon!)		Batch Count (1~99)
Sound (On/Off)		Force
Lock		Impacts
Save		Limit (Threads/Rotation)

3. Operation function settings description

To enter service mode on the device press and hold



button for 3 seconds. Once in service mode display screen on the device will read "SEr"



Program







Choose Program [P01-P05]

1) Scroll through program with buttons. Once on desired program you can select additional functions to add into specific program.

2) **Single program setup:** Once program details have been set press the button and scroll through programs using buttons.

Once desired program is on the screen [for example P01] the selected program will continually loop and will not cycle through other programs.

3) **Multi-program (Sequence) setup:** Once program details have been set press the  button and scroll through programs using  buttons. Once desired program is on the screen press the  button again to enter into sequence. Once entered into sequence a series of dots will appear on the screen [for example P.0.1]. Continue to scroll through programs and add to sequence with  button if desired. Programs that were added to sequence will continue to cycle through in the order they were selected. For example, if you select P.0.1 and P.0.2, once the last screw of P.0.1 is installed the device will automatically cycle to P.0.2 and then switch back to P.0.1 once that batch is completed.

Program (Continued)



Bluetooth



Bluetooth Function Switches Bluetooth Capabilities On or Off
Coming Soon!

Sound



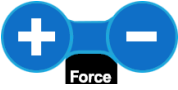

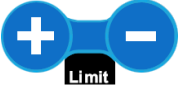



Switches audible feedback (beep) On or Off

Lock







Program Lock Switch Button:
1) Lcn (Locked): Program or parameters can not be adjusted on the device
2) LcF (Unlocked): Program and parameters can be adjusted on the device

<p>Save</p> 	<p>Save Function:</p> <ol style="list-style-type: none"> 1) After parameters are set, press the save button to save settings and exit the setup function. Tool display will return to the main screen. 2) After parameters are set, Device will not run for 30 seconds and will save settings automatically. Device will automatically return to the main screen. 3) Once device has returned to main screen press the "Res" button on the device to update batch count with updated settings.
<p>Batch Count</p> 	<p>Batch Count Setting:</p> <ol style="list-style-type: none"> 1) Batch count can be set from [n0F] & [n01]~[n99] fasteners depending on application needs. 2) Choose [n0F] only if you intend to turn off the screw count on the display.
<p>Force</p> 	<p>Impact Force Setting: Allows you to adjust the hammer strength based on application needs.</p> <p>ESB4-SXI-70,100 & 200 has force settings of 1~6 ESB4-SXI-50 has force settings of 1~3</p>
<p>Impacts</p> 	<p>Impact Fine-tune Setting:</p> <ol style="list-style-type: none"> 1) Impacts can be fine-tuned from [H0F] & [H01]~[H99] (H50 Max for ESB4-SXI-50) to reach desired torque. 2) Choose [H0F] for unlimited impacts (Shut-off disabled).
<p>Limit</p> 	<p>Limit rotation setup:</p> <ol style="list-style-type: none"> 1) Limit can be set from [L0F] & [L01]~[L99] rotations depending on application needs. 2) Choose [L0F] only if you intend to turn off the limit count on the display.


****Please note: If you press and hold  buttons for each function it will speed up the selection of desired parameters.**



3-1. Secondary Function Settings Description

To enter service mode on the device press and hold  button for 3 seconds. Once in service mode display screen on the device will read "SEr" 


Once in service mode press the  button on the device to enter the secondary functions menu. Once in the secondary functions menu display screen on the device will read "SE2" 


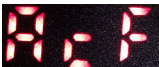
NG Confirm (ON/OFF)

Once in secondary functions menu press the  button on remote to toggle NG Confirm alert ON or OFF.

 = NG Confirm ON
 = NG Confirm OFF



OK All Confirm (ON/OFF)

Once in secondary functions menu press the  button on remote to toggle OK All Confirm alert ON or OFF.

 = OK All Confirm ON
 = OK All Confirm OFF

Ignore Friction (OFF, 1~99)

The ignore friction function can be used if the joint properties may cause the device to start impacting before the fastener is properly seated (ie. Soft Gasket Material). Ignore Friction function can be fine-tuned from "u01~u99" or turned OFF if not needed.

Once in secondary functions menu use the  buttons on remote to adjust Ignore Friction function.  = OFF

4. Device Visual(lights) & Audible(beep) feedback description

Function			Status	Lights	Beep (Sound on)
OK			Fastening is completed properly	Green light ON (Top)	1 Short beep
OK ALL			Fastening is completed for entire workpiece properly	Amber light ON (Top)	1 Long beep
NG			Fastening operation error	Red Light ON (Top)	Continuous short beep until trigger is released
Limit rotation error			If limit rotation value is not met and impact value has been achieved (Cross-thread)	Red Light ON (Top)	Continuous fast beep until trigger is released
Stripped Screw			If device drive continues to spin outside of normal parameters	Red Light ON (Top)	Continuous short beep until trigger is released
Sleep Mode			If device is unused for 180 sec, sleep mode is engaged	None	None
Overcurrent Protection (A)			If device senses an overcurrent fault, tool will disable for 10 seconds	Red Light ON (Top)	1 Long beep
			NOTE: To clear Overcurrent Protection error, pull trigger. If error does not clear, please allow additional cooldown time.		
Low Speed/Stall Protection			Error Detected	Continuous Red Light ON	3 Consecutive short beeps
Battery ID Identification Error			Device is disabled	Red/Green Light flashing alternatively	Continuous beep
Low Voltage Protection	SXI-200 SXI-100 SXI-70	<14.4V	Device functions normally	Red Light ON (Bottom)	None
	SXI-50	<10.8V			
Insufficient Voltage Protection	SXI-200 SXI-100 SXI-70	<14.4V	Device is disabled	Red Light Flashes (Bottom)	Continuous short beep until battery is removed
	SXI-50	<10.8V			

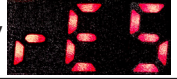
Additional Information Menu




To enter Additional Information Menu on the device press and hold



button for 3 seconds. Once in Additional

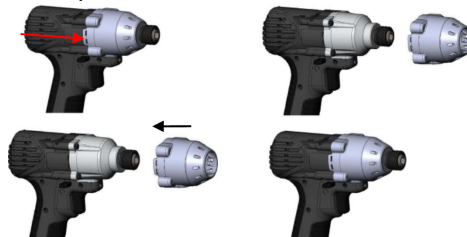
Information Menu display screen on the device will read "rES"



<p>Revision/ Firmware Version</p>	<p>Once in the Additional Information Menu press the  button to see Revision/Firmware Version (ie. n01005004)</p>
<p>Run in Reverse (Counter-Clockwise Operation)</p>	<p>Once in the Additional Information Menu press the  button to reverse the drive direction of the device and use programmed parameters</p>
<p>Factory Reset</p>	<p>Once in the Additional Information Menu press the  button to reset the device to factory settings</p>

Other Instructions

1. The optimal use of this device is no more than 8 hours per day.
2. All repair and maintenance should be completed by qualified repair technicians.
4. It is the responsibility of the management department of the facility this device is being used in to ensure this manual is provided and read to all operators or users. Do not attempt to repair this device by yourself.
6. To remove the protective cover, please remove the slots on both sides as shown in the following figure. To install the protective cover, hold the protective cover and make sure the notch is downward, then push the device into the cover until it clips in.



7. For testing this device it is recommended to use our company's specified testing equipment.
8. This screwdriver is of clutch type mechanical control and the test conditions is per ISO 6789.

Main Technical Parameters

Model	ESB4-SXI-200	ESB4-SXI-100	ESB4-SXI-70	ESB4-SXI-50
Input Voltage	14.4V			10.8V
Speed (RPM)	0~1700	0~2000	0~2600	0~1900
Impacts (BPM)	0~2100	0~2600	0~3400	0~2860
Torque	25~200 Nm 18.4~147.5 ftlb	20~100 Nm 14.7~73.7 ftlb	20~70 Nm 14.7~51.6 ftlb	5~50 Nm 3.7~36.9 ftlb
Recommended Torque Tester	KTM-IWT400			KTM-IWT50
Weight (Less Battery)	1.5 kg / 3.3 lbs	1.0 kg / 2.2 lbs		0.98 kg / 2.1 lbs
Recommended Duty Cycle	1.0 sec ON ~ 3.0 sec OFF			
Battery	SKC-LB1425			SKC-LB1025M
Charging Station	ESB-CHG70			ESB-CHG50XA

Application Tips:

The Main Technical Parameters and Curve Chart are meant to be used as a general guideline for setting the device to your desired torque. Final torque should always be tested with appropriate testing hardware (Torque Tester, Torque Wrench, etc.)

Tightening conditions

Tightening torque will vary, even with the same bolt, according to grade, length, and torque coefficient.

Tightening time

Longer tightening time results in increased tightening torque. Excessive tightening, however, adds no value and reduces the life of the tool.

Different bolt diameters

The size of the bolt diameter affects the tightening torque. Generally, as the bolt diameter increases, tightening torque rises.

Curve Chart

Model	ESB4-SXI-200				ESB4-SXI-100				ESB4-SXI-70				ESB4-SXI-50			
Input Voltage	14.4V												10.8V			
Speed (RPM)	0~1700				0~2000				0~2600				0~1900			
Impacts (BPM)	0~2100				0~2600				0~3400				0~2500			
Torque	25~200 Nm 18.4~147.5 ftlb				20~100 Nm 14.7~73.7 ftlb				20~70 Nm 14.7~51.6 ftlb				5~50 Nm 3.7~36.9 ftlb			
Approximate Torque Output based on Fastener Size (using force setting below)	M12	M14	M16	M20	M10	M12	M14	M16	M8	M10	M10	M12	M6	M8	M10	M12
	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm
	15	25	25	25	8	20	20	28	8	8	20	20	3	3	5	12
	110	120	140	200	40	70	90	100	30	40	60	70	20	20	30	50
ftlb	ftlb	ftlb	ftlb	ftlb	ftlb	ftlb	ftlb	ftlb	ftlb	ftlb	ftlb	ftlb	ftlb	ftlb	ftlb	
11	18.4	18.4	18.4	5.9	14.7	14.7	20.6	5.9	5.9	14.7	14.7	2.2	2.2	3.7	8.8	
81.1	88.5	103.2	147.5	29.5	51.6	66.3	73.7	22.1	29.5	44.2	51.6	14.7	14.7	22.1	36.8	
Force Setting	F06												F03			
Weight Less Battery	1.5 kg / 3.3 lbs				1.0 kg / 2.2 lbs								0.98 kg / 2.1 lbs			
Duty Cycle	1.0 sec ON ~ 3.0 sec OFF															
Dimensions (L x H) Less Battery	219mmx220mm 8.6 in x8.7 in				174mm x 202mm 6.8 in x 7.9 in											
Battery	SKC-LB1425												SKC-LB1025M			
Charger	ESB-CHG70												ESB-CHG50XA			
Remote Control	DR-IRC1															



ESB4-SXI Series

