

BF-Series Operation Instructions

Rev 3
11.3.08



BF-Series Operation Instructions

Introduction

Various models that range from 0.3 - 10.4 lbf.in

High performance brushless motor design provides durability and reduces the standard maintenance costs for electric drivers.

Designed for high production environments. Minimal heat build-up even when tool is operated continuously.

Over Heat Protection (OHP) and Over Current Protection (OCP) protect driver from damage or malfunction. Features a LED display that signals the tool status for the operator.

Can be connected with the Scout Screw Counter.

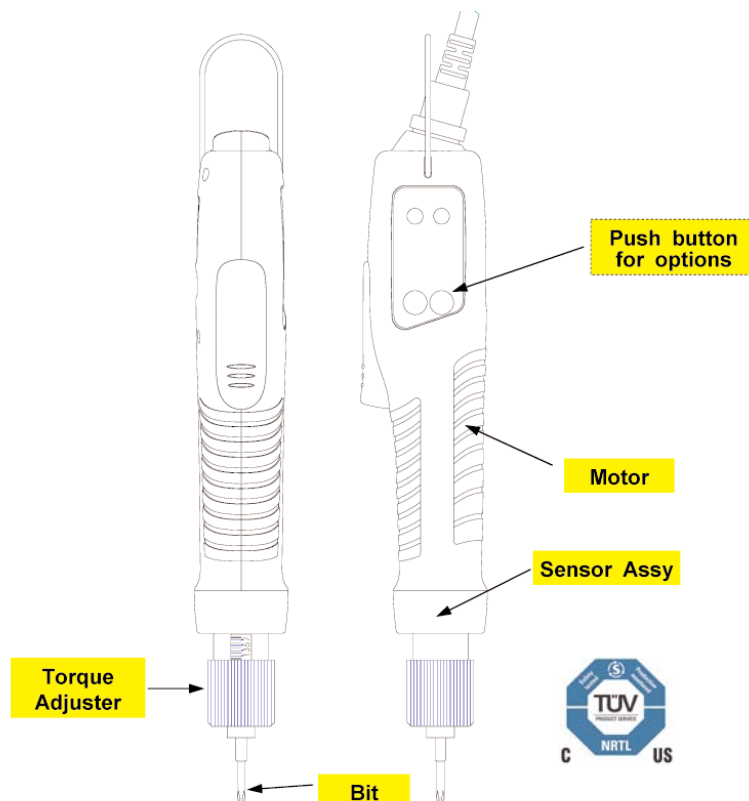
External torque adjustment scale.

Requires a Transformer (power supply).

All models are ESD designed and prevent the occurrence of electrostatic discharge, which improves production yields, manufacturing costs, product quality, product reliability, reputation and profitability.

Five style of drivers

- **Standard models:** (Lever Start & Push-to-Start)
- **Soft Stop models:** Precision "Soft-Stop" clutch prevents shock to sensitive assemblies like disk drives, plastics, electronics, etc. (Lever Start)
- **Time Control & Auto Reverse models:** Set the start, stop and operating direction of the tool. (Lever Start)
- **Plus models:** Features a selectable Double Hit Mode for soft joint applications and a selectable Soft Start mode (from 0.2-0.6 seconds). This option is available for Standard & Soft Stop screwdrivers (Lever Start & Push-to-Start)
- **Speed Control models:** Adjustable RPM setting on the tool (300- 700 RPM)



BF-Series Operation Instructions

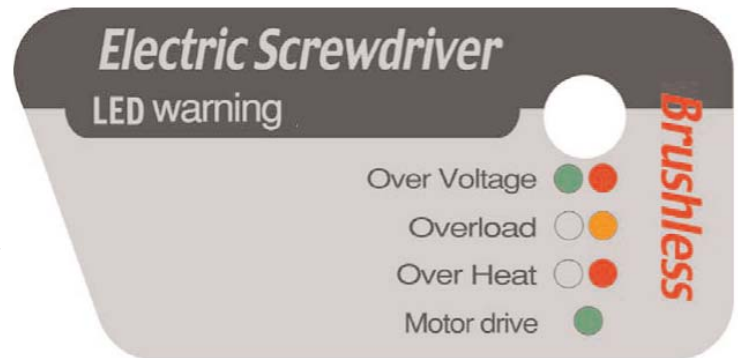
General Operation for BF-Series models





1. Attach cord to the BF Driver. Make sure notch in plug lines up with the notch on the socket. Tighten knurled ground ring.
2. Plug in transformer and check power indicator. If it is not on, check fuse in the transformer.
Transformers - Standard transformers feature a HIGH & LOW speed button. Select the appropriate speed for your application.
3. Select the speed first on the Transformer: HIGH or LOW, before connecting the electric screwdriver. (Note: if not then a sudden sharp peak of current will occur and the over current "led lights" turns on.
4. Attach cord to the transformer (Transformer required to operate the tool). Make sure notch in plug lines up with the notch on the socket. Tighten knurled ground ring.
5. Select a bit. Retract the bit collar. Insert the bit and release the retracted collar. To avoid damaging fasteners, make sure the proper bit is suitable for the head of the fastener.
6. The torque limit is determined by the tension of the coil spring housed in the torque adjustment nut. The tighter the coil spring is wound the higher the torque limit is raised. See Chart on page 10 & 11 to determine the appropriate torque adjustment setting.
7. Rotate the torque adjustment nut to set the torque limit. Turn clockwise to increase torque and counter clockwise to decrease torque. The scale adjacent to the Torque Adjustment Nut is a reference guide. The torque output from the driver can change depending on various fastening factors like friction, type of joint, and the type material being used like a washer.
8. Turn driver on and check for proper rotation. FOR-clockwise, REV-counterclockwise.
9. To apply torque, squeeze the lever (Push-to-Start models - place light downward pressure on the nose of the driver). The driver will automatically stop when the preset torque has been reached.
10. To remove the screw, turn the FOR/REV switch to REV

For operating the features of the "Plus" models see page 4. For the "Time (Angle) Control & Auto Reverse" models see page 5. For the "Speed Control" models see page 10.

Over Heat Protection (OHP) and Over Current Protection (OCP) Settings for Standard & Soft Stop models.

The BF drivers offer Over Heat Protection (OHP) and Over Current Protection (OCP) to protect the driver from damage or malfunction. Features a LED display that signals the tool status for the operator. It's located on the side. Below is the LED display indicator for reference.



LED	Status	Note
	Over Voltage	Blinks green & red - driver stops immediately as it's over DC32V. Automatically resets when it's below DC32V.
	Over Load	Blinks orange - driver stops immediately as it's over 2.5A. Automatically resets after 5 seconds.
	Over Heat	Blinks red - driver stops immediately as it's over 70°C. Automatically resets when it's below 70°C.
	Motor Drive	Green means motor is good.

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BF-Series Standard Plus Models & Soft Stop Plus Models

The “Plus” models feature a selectable Double Hit Mode for soft joint applications and a selectable Soft Start mode (from 0.2, 0.4 & 0.6 seconds). This option is only available with Standard & Soft Stop “Plus” models.

Double Hit Mode

The Double Hit mode is for very soft joint applications. When an electric screwdriver runs down a fastener and the tool clutches off once the preset torque is achieved there can be some joint relaxation that can occur. The Double Hit mode has the electric screwdriver perform a second hit to stabilize the torque for joint relaxation.

Joint relaxation is caused by the surface of part(s) embedding or by "soft parts" such as gaskets, plastics or spongy material, which collapses under the clamping force created in a torque condition. For Hard Joint applications there is no need to use the Double Hit mode.

The clutch of the electric driver works twice at the set torque under the "Double Hit" mode. The Double Hit will increase the repeatability accuracy at the target torque by double checking.

Operating the Double Hit Feature with “Plus” models

The default setting is OFF.

1. Press the Double Hit button for 2 seconds to turn ON Double Hit. (ON Status is indicated with LED - Orange). Note - When the motor is operating LED will be Green.

Soft Start Mode

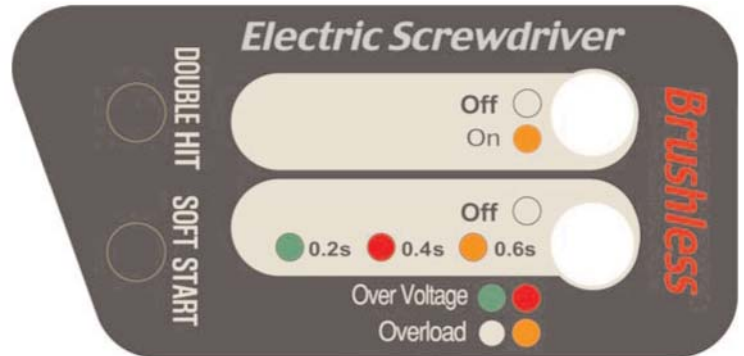
There are 3 different time settings for the Soft Start mode which are (0.2, 0.4 & 0.6 seconds). The default setting is OFF.





1. Press the Soft Start button for 2 seconds to turn Soft Start.
 - Soft Start is ON and set for 0.2s (LED - Orange)
 - Soft Start is ON and set for 0.4s (LED - Orange blinks 1 time)
 - Soft Start is ON and set for 0.6s (LED - Orange blinks 2 time)

The Soft Start button is “wrap around” button meaning you can toggle through the settings continuously by pressing the button (OFF - 0.2s-0.4s-0.6s).

Over Heat Protection (OHP) and Over Current Protection (OCP) Settings for “Plus” models

The BF drivers offer Over Heat Protection (OHP) and Over Current Protection (OCP) to protect the driver from damage or malfunction. Features a LED display that signals the tool status for the operator. It's located on the side. Below is the LED display indicator for reference. The status of the “Plus” tools is indicated by two LED lights



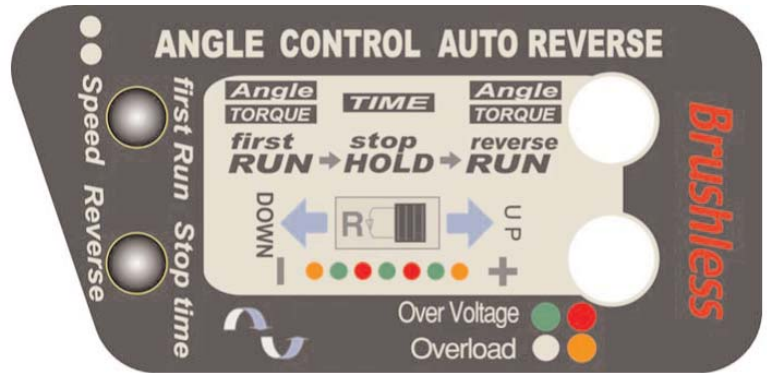
LED	Status	Note
	Over Voltage	Blinks green & red - driver stops immediately as it's over DC32V. Automatically resets when it's below DC32V.
	Over Load	Blinks orange - driver stops immediately as it's over 2.5A. Automatically resets after 5 seconds.
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BF-Series Time (Angle) Control & Auto Reverse models

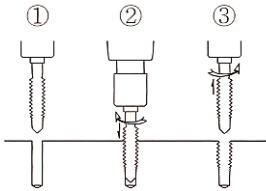
Set the start, stop and operating direction of the tool.

Ideal for installation of helically wound inserts, light tapping or gauging applications.



Example 1.

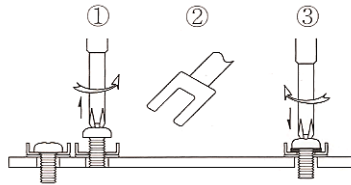
Start from selected rotation by the lever and immediately change rotation to reverse at the set torque or releasing the lever. Useful for Tapping and Helical fastening.



1. Start forward rotation.
2. Stop at the target torque or set time.
3. Auto reverse rotation and stop at releasing the lever or set time.

Example 2.

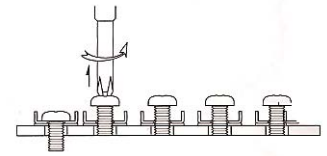
Start from Reverse rotation by the lever for set time (A) and stop for a set time (B), then auto run for Forward fastening by set torque.



1. Start from reverse rotation.
2. Stop at the set time and wait for set time.
3. Auto forward rotation and stop at the target torque.

Example 3.

Fasten or unfasten the set turns by timer.



Start, Stop and Direction.

There are three sequences for this process: Start, Stop and Direction. With one pull of the lever on the electric screwdriver all 3 sequences occur within programmed cycle.

Step Sequence	1 First Run	2 Stop & Hold	3 Reverse Run
Selecting Rotating Direction	Clockwise or Counterclockwise by F/R Switch		Reverse
Activating	Run and stop for set time (angle) or stop at the target torque	Stop and hold for set time	Rotate reverse until releasing the lever or stop at the preset torque or angle
Time (Angle) Setting	0-15 turns / 24 steps	0-6 sec / 14 steps	0-15 turns / 24 steps

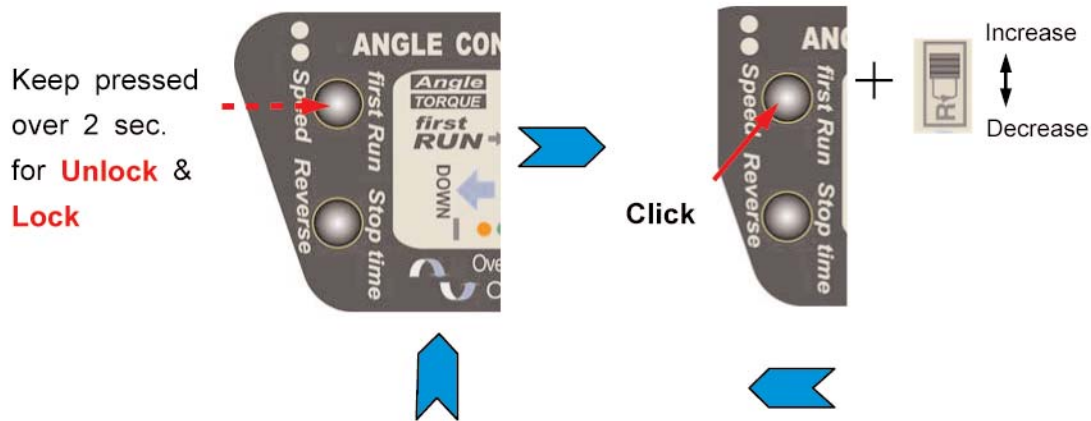
BF-Series Operation Instructions

Operating BF-Series Time Control & Auto Reverse models

Angle Setting for the first RUN

1. Keep the first Run button pressed for over 2 sec. for angle setting. Then press first Run button one by one for the desired rotating angle
2. Select the R position of F/R switch for increasing set angle or F position or decreasing set angle
3. Keep the first Run button pressed over 2 sec. for Lock & operating mode.

Click	0	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	2 0	2 1	2 2	2 3	2 4
Angle in turn	Off	$\frac{1}{4}$	$\frac{2}{4}$	$\frac{3}{4}$	1	$\frac{5}{4}$	$\frac{6}{4}$	$\frac{7}{4}$	2	$\frac{9}{4}$	$\frac{10}{4}$	$\frac{11}{4}$	3	4	5	6	7	8	9	1 0	1 1	1 2	1 3	1 4	1 5
LED	O	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	O

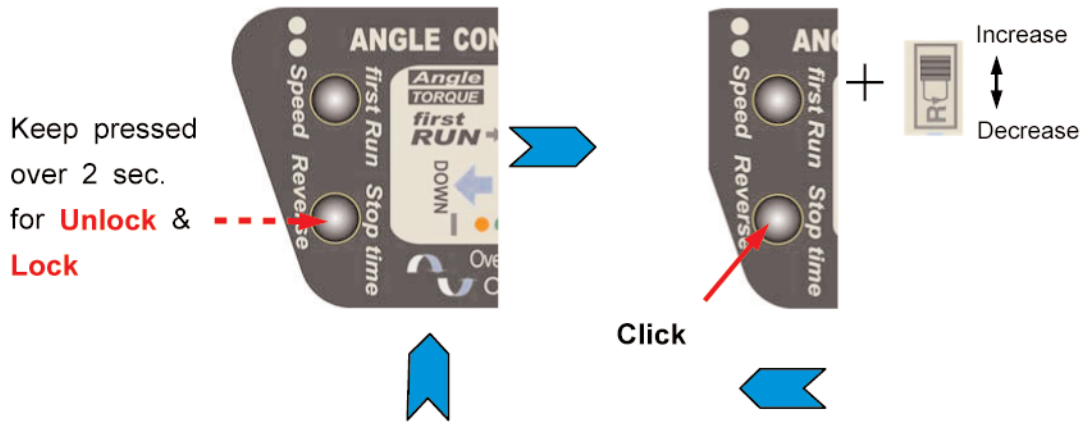


BF-Series Operation Instructions

Time Setting for STOP & HOLD

1. Keep the stop time button pressed over 2 sec. Then click the stop time button one by one for desired stop holding time.
2. Select the R position of F/R switch for increasing set time or F position for decreasing set time.
3. Keep the stop time button pressed over 2 sec. for Lock & operating mode.

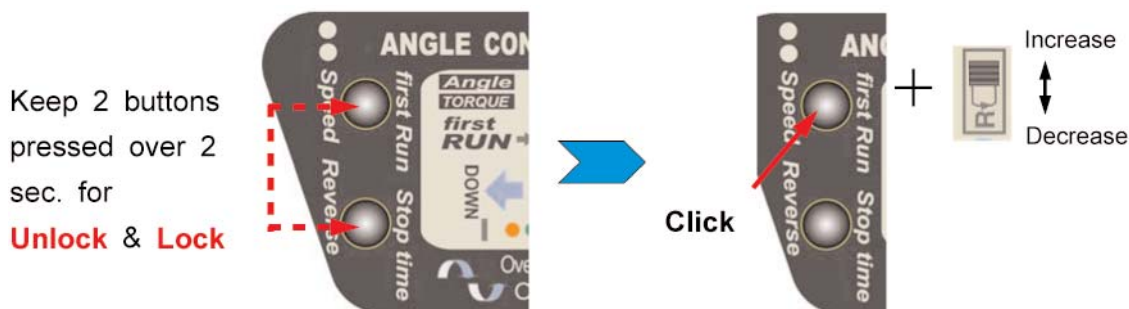
Click	0	1th	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th
Time (second)	Off	0.1	0.3	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
LED	Orange	G	R	G	R	G	R	G	R	G	R	G	R	G	O



Rotating speed setting

1. Keep the both first Run & stop time buttons pressed over 2 sec. for unlock. Then click one by one for the desired rotating speed.
2. Select the R position of F/R switch for increasing speed or F position for decreasing speed.
3. Keep the first Run button pressed over 2 sec. for Lock & operating mode.

Click	0	1st	2nd	3rd	4th	5th	6th	7th	8th
Speed (rpm)	700	650	600	550	500	450	400	350	300
LED	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●

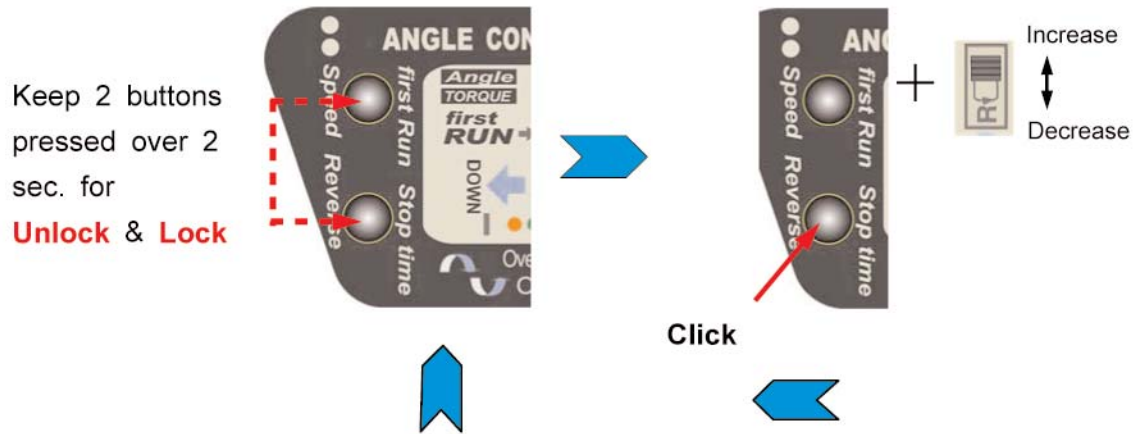


BF-Series Operation Instructions

Angle Setting for the reverse RUN





1. Keep the both first Run & stop time buttons pressed over 2 sec. for unlock. Then click stop time button one by one for the desired angle
2. Select the R position of F/R switch for increasing set angle or F position for decreasing set angle
3. Keep the stop time button pressed over 2 sec. for Lock & operating mode.

Click	0	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	2 0	2 1	2 2	2 3	2 4
Angle in turn	Off	1 4	2 4	3 4	1	5 4	6 4	7 4	2	9 4	10 4	11 4	3	4	5	6	7	8	9	1 0	1 1	1 2	1 3	1 4	1 5
LED	O	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	O



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Over Heat Protection (OHP) and Over Current Protection (OCP) Settings

LED	Status	Note
	Over Voltage	Blinks green & red - driver stops immediately as it's over DC32V. Automatically resets when it's below DC32V.
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	Over Heat	Blinks red - driver stops immediately as it's over 70°C. Automatically resets when it's below 70°C.
	Motor Drive	Green means motor is good.

Applications for BF-Series Time (Angle Control) & Auto Reverse models

Applications upon different settings.

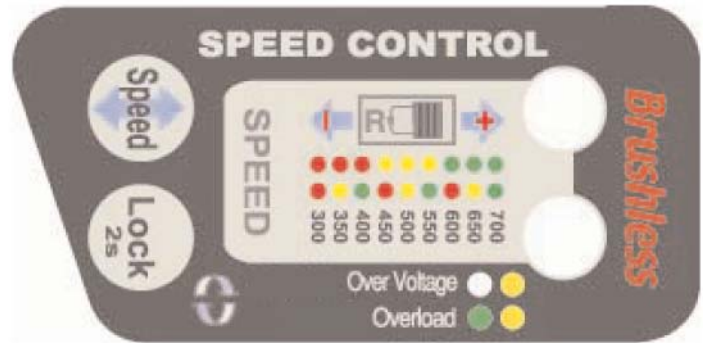
	first RUN <i>Angle</i>	stop HOLD <i>Time</i>	Auto Reverse <i>Angle</i>	Applications with different sequence in a cycle
Normal screwdriver	off	off	off	Normal screwdriver It stops at the set torque
Angle control	ON(1)	off	off	It stops at set angle(1)
Tapper or Insert fastening	ON(1)	ON(2)	ON(3) or OFF	It stops at set angle(1) and waits for set time(2), and makes reverse rotation to the set angle(3)
Wire inserting on terminal block	ON(1)	ON(2)	OFF	It stops at set angle(1) and waits for set time(2), and makes reverse rotation and stops at set torque

BF-Series Operation Instructions

BF-Series Speed Control model

Adjustable RPM setting on the tool (300- 700 RPM). Also features precision "Soft-Stop" clutch, which prevents shock to sensitive assemblies like disk drives, plastics, electronics, etc.

The BFC model is designed to monitor and control the speed at the set RPM in real time. The unit increases the power to the motor against the load, in order to overcome any decreased RPM by the load.



Three key features of the Speed Control model

1. Real time speed control
2. Easy speed adjustment control
3. Achieve the highest torque with the lowest RPM in the specified range of the driver

Operating the Speed Control model

1. The STC30 Plus needs to be set on the "High" setting.
2. Press the Lock button for 2 seconds for the speed setting mode.
3. Position the F/R slide switch in R or F to increase the speed (+) or decrease the speed (-) by pressing the Speed button. The speed is adjustable with increments of 50 RPM (increase or decrease). The two LEDs show the set speed combinations for setting the RPM for the tool.





RPM Settings

Selectable speed on the High (30V) setting of the STC30 Plus with increments of 50 RPMs (300 / 350 / 400 / 450 / 500 / 550 / 600 / 650 / 700).

4. Then select the operating speed setting. Then press the Lock button for 2 seconds and the speed setting will be set.

RPM	LED(L)	LED(R)
700	●	●
650	●	●
600	●	●
550	●	●
500	●	●
450	●	●
400	●	●
350	●	●
300	●	●

Over Heat Protection (OHP) and Over Current Protection (OCP) Settings

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Accessories

The EZ-Glider torque arms are designed to improve production and quality control during the assembly process. The arms securely keep electric or pneumatic drivers in perpendicular alignment to help prevent side loading or cross threading occurring during the assembly process. The EZ-Glider helps remove the operator's influence in the assembly process and strengthens quality control.



The ergonomic design of the EZ-Glider torque arms reduces RMI (repetitive motion injury) and CTS (carpal tunnel syndrome). The effortless handling of the torque arm provides comfortable tool operation and increased production. The torque arm can be installed in space-restricted areas



Torque Cover
(BF-Series models only)
Item # 145611
Protects the BF-Series from incidental or operator tampering of torque setting.

Vacuum Adapter Kit

Vacuum adapters kits can be mounted on an electric screwdriver. The screwdriver is fitted with a suction head that holds the screw on the bit, enabling the operator to pick it up with the tool itself. This is an effective, time saving device that works with most fasteners.

Accepts different size screws and various length fasteners.

Allows quick-change set-up at a low cost.

Mounts with threaded torque nut. The driver remains externally adjustable while allowing semi-automatic pickup of non-ferrous fasteners.



Item # 145612

Plug driver into vacuum supply or chose the Vacuum Ejector.

Mouthpiece and bit purchased separately.

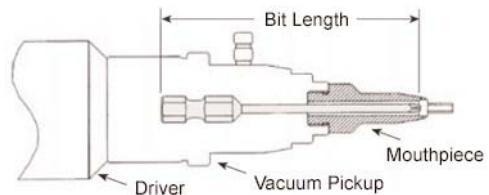
Mouthpieces

(Sold Separately from the Vacuum Adapter Kit)

Standard mouthpieces are manufactured of stainless steel, unless specified. The following items are required for Mountz to design a mouthpiece to fit your application.

Modification Requirements

1. Electric screwdriver model.
2. Torque Setting
3. Drive Size
4. Bit style and length
5. Fastener samples need to be submitted
6. Any special requirements, i.e. space restrictions



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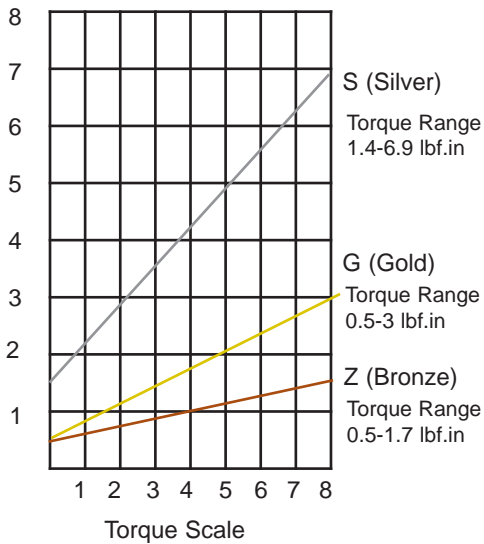
Torque Charts

These charts are meant to be used as guidelines for setting the torque on the BF-Series electric screwdrivers. The drivers have a torque scale on the torque adjustment nut showing reference numbers. These numbers determine the approximate torque setting. Refer to the charts to determine the reference number setting for your torque requirement.

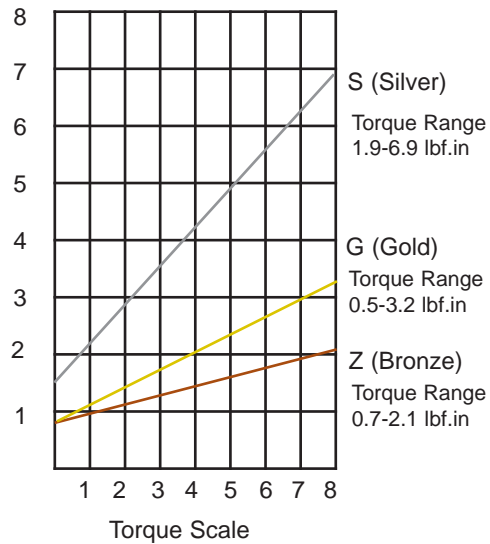
How to Read the Torque Charts

Torque ranges (lbf.in) approximate tightening torque, operated on 30V. Figures below each chart indicate scale setting on the tool. Some drivers have more than one spring. Select the appropriate spring to achieve the desired torque setting.

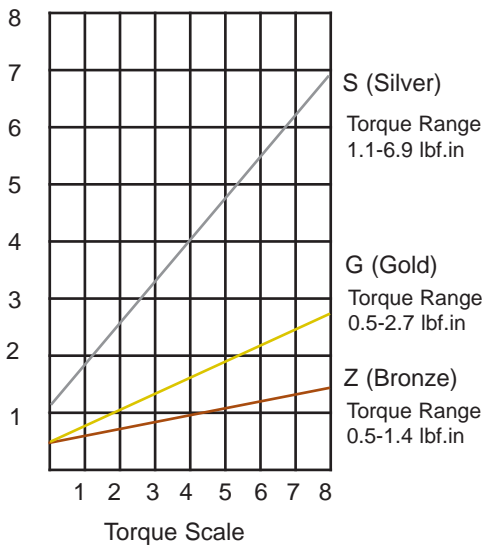
lbf.in BF080 & BFT080



lbf.in BF080P



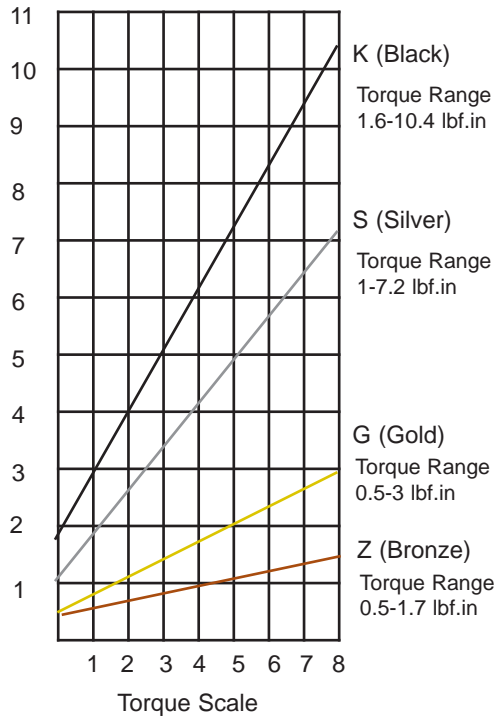
lbf.in BFS080



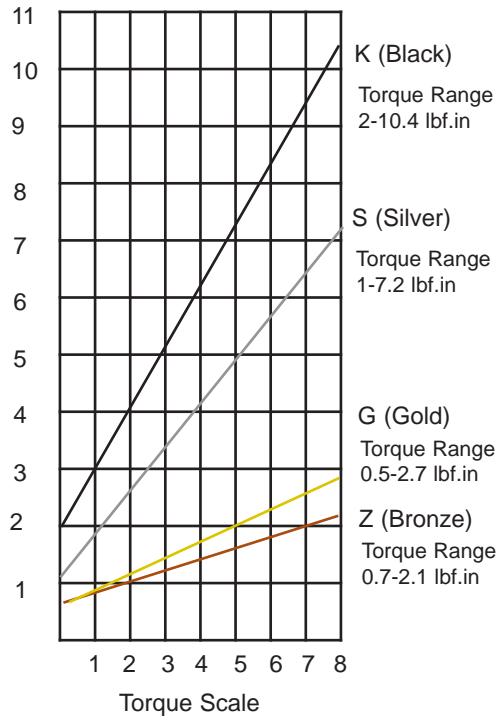
BF-Series Operation Instructions

Torque Charts (Continued)

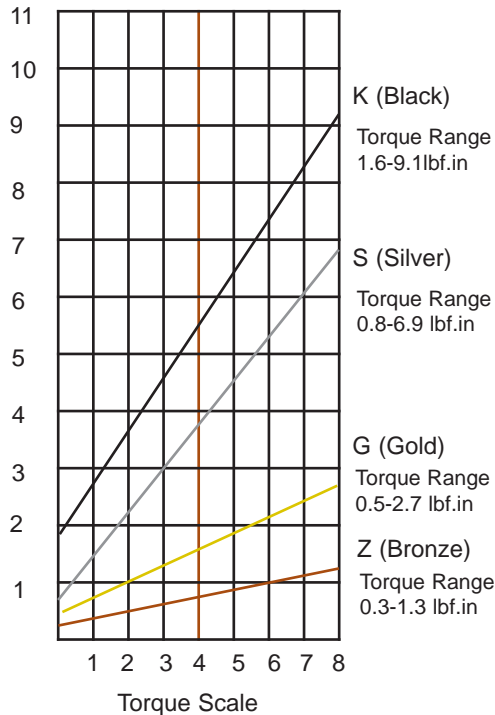
lbf.in BF120 & BFT120



lbf.in BF120P



lbf.in BFS120 & BFC120





BF-Series Operation Instructions

Testing Power Tools:

1. Application Method: Use a torque analyzer in “Peak Mode” with a rotary transducer between the power tool and the actual application. This is the best way to test since you are using the actual joint as the test station. You will see the actual torque applied to the fastener. **Caution:** Variances in tool performance may occur do to the addition of the rotary transducer.
2. Simulated Method: Always use a quality joint rate simulator (run down adapter) with a torque analyzer when testing power tools in a simulated application. Use Joint rate and Breakaway methods to obtain most accurate torque readings in a simulated rundown.

Care

1. The BF-Series screwdrivers are a precision torque control instrument and should be handled with care at all times.
2. Only use the transformers listed in the Mountz catalog or website for appropriate BF-Series driver model (If you have any questions regarding the appropriate transformer set-up, contact Mountz Customer Service Department).
3. Operate under safe conditions. Do not place in operation where such objects as hair, strings, clothing, etc. can become tangled in the rotating bit.
4. Keep away from moisture. Never use in high humid, moist or damp environment.

Service

Mountz Inc. features an experienced calibration and repair staff. Our trained technicians can calibrate and repair most any tool. Mountz provides rapid service with quality that you can trust as we offer three state-of-the-art calibration lab and repair facilities that can calibrate up to 20,000 lbf.ft.

With over 40 years of experience, Mountz’s in-depth knowledge of torque is reflected in our tool’s craftsmanship and our ability to provide solutions to both common and uncommon torque applications. We perform calibrations in accordance with ANSI/NCSL-Z540. Mountz is dedicated solely to the manufacturing, marketing and servicing of high quality torque tools.

Tool Service & Repair Capability

Torque Wrenches: Click, Dial, Beam, Cam-Over & Break-Over

Torque Screwdrivers: Dial, Micrometer, Preset & Adjustable

Torque Analyzers/Sensors: All brands

Electric Screwdrivers: All brands

Air Tools: All brands

Impact Wrenches, Drills, Pulse Tools, Grinders, Percussive Tools,
Air Screwdrivers, Nutrunners, DC Controlled Nutrunners

Torque Multipliers: All brands

Mountz Service Locations

Eastern Service Center

19051 Underwood Rd.
Foley, AL 36535
Phone: (251) 943-4125
Fax: (251) 943-4979

Western Service Center

1080 N.11th Street
San Jose, CA 95112
Phone: (408) 292-2214
Fax: (408) 292-2733

Mexico Service Center

Mountz Mexico SA de CV Chihuahua
Av. Cristobal Colon #15343
Col. Paseos de Chihuahua
Chihuahua, Chih. Mexico CP 31125
Phone: (614) 481-0023
Fax: (614) 481-0053

www.ETorque.com

Download a “Service Form” and include a copy
when you send the tools in to be serviced.