NF-Series
Operation Instructions

Rev 2
1.20.11

Corporate Headquarters: 1080 North 11th Street, San Jose, CA 95112 Phone: (408) 292-2214 Fax: (408) 292-2733
www.mountztorque.com

NF-Series Operation Instructions

Introduction
Various models that range from 2.6-39 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.

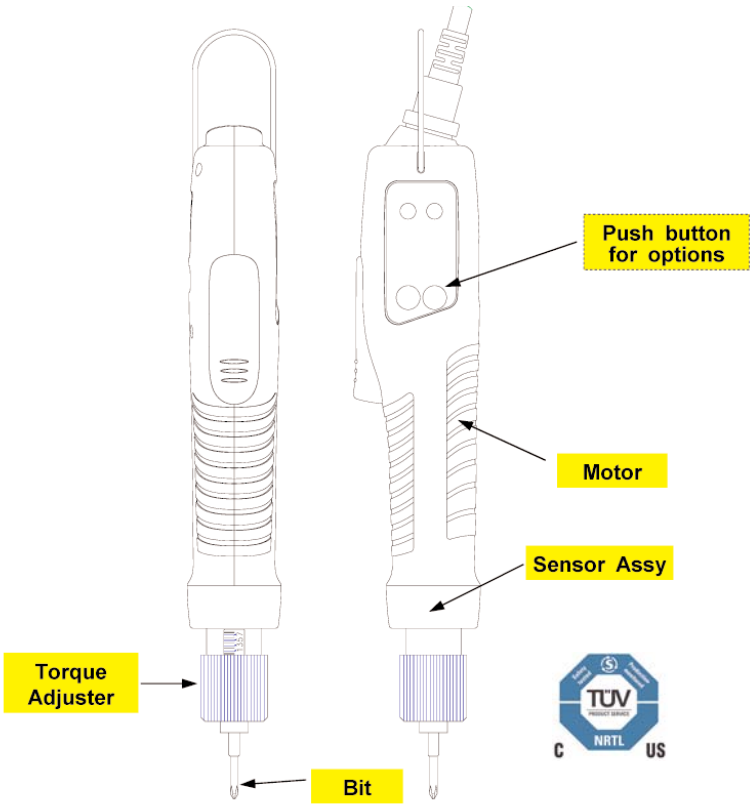
Can be connected with the Scout Screw Counter.

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.

Three style of drivers
- **Standard models:** Lever Start, Push-to-Start, Adjustable RPM setting on the tool.
- **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). Lever Start & Push-to-Start.



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NF-Series Operation Instructions

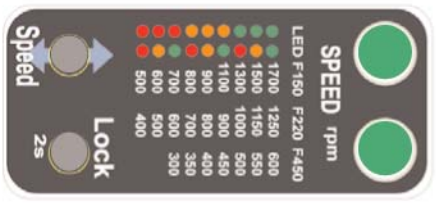
General Operation for NF-Series models

1. Attach cord to the NF 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.
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 13 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.

Panel of each Model

Standard models (Speed Control)



Plus models (Soft Start & Double Hit)

Time Control & Auto Reverse models

Alarm display by LED

no	Alarm	Description	Reset
1	Over Voltage (over 48V)	**Green** light blinks for 0.5s	Auto reset under 48V
2	Overload (4A/0.5s)	**Red** light blinks for 0.5s	Auto reset after 5s
3	Overheat (over 80℃ of motor)	**Orange** light blinks for 0.5s	Auto reset lower than 80℃
4	Driver Lock by external signal	**Orange** light On continuously	Auto reset by signal off

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NF-Series Operation Instructions

NF-Series Standard Models

The Standard NF models feature adjustable RPM setting on the tool. The RPM are selectable in increments of 50RPMs.

Adjusting the RPM settings
1) Keep pressing the Lock button for 2 second to visit to PROGRAM mode. Then two LED lights will display the set speed.
2) Select "Reverse" of F/R switch for increasing speed. Or select "Forward" of F/R switch for increasing speed.
3) Press "Speed" button and select the target speed. The set speed can be recognized by the colors of two LED as below.
4) Keep pressing the Lock button for 2 second to go back to operating(work) mode.

■ Speed display by two LED color (Standard model)

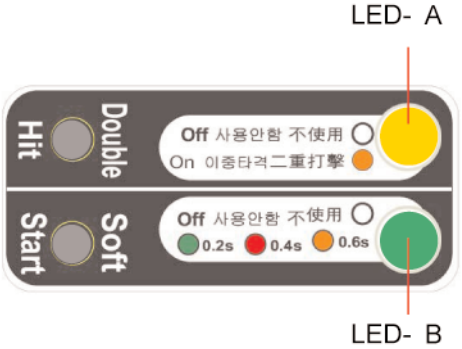
Model	LED	●●	●●	●●	●●	●●	●●	●●	●●	●●
	Button	1th	2nd	3rd	4th	5th	6th	7th	8th	9th
NF150	RPM	800	900	1000	1100	1200	1300	1400	1500	1700
NF220	RPM	600	650	700	750	800	900	1000	1100	1250
NF450	RPM	300	340	380	415	450	490	530	565	600

NF-Series Plus Models

The Plus models feature a selectable Double Hit Mode for soft joint applications and a selectable Soft Start mode (from 0.2-0.6 seconds).

The Plus model operate only at single speed, which is maximum speed range listed in the data sheet.
NF150 Plus Models: 1700 RPM
NF220 Plus Models: 1250 RPM
NF450 Plus Models: 650 RPM

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.

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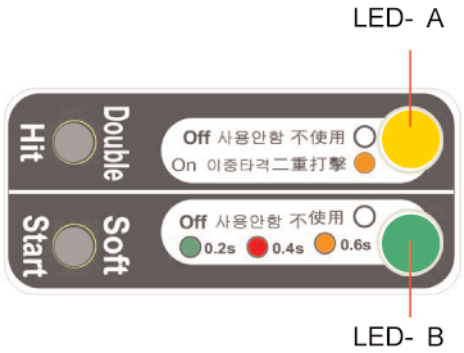
NF-Series Operation Instructions

NF-Series Plus Models (Continued)

1) Press the Double Hit button to select this mode. The LED (A) will display the color Orange.
2) When the motor runs, the LED (A) will display the color 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 select this mode.
- Soft Start is ON and set for 0.2s (LED - Green)
- Soft Start is ON and set for 0.4s (LED - Red)
- Soft Start is ON and set for 0.6s (LED - Orange)

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).

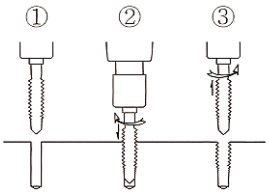
NF-Series Time Control & Auto Reverse models

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

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

Example 1

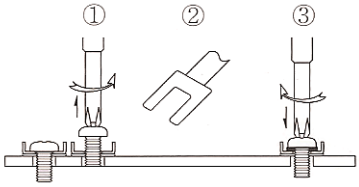
Start from selected rotation by the lever and immediately change rotation to reverse at the set torque or releasing the lever. Useful for Tapping and Helical fastening.



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

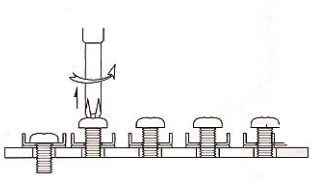
Start from Reverse rotation by the lever for set time (A) and stop for a set time (B), then auto run for Forward fastening by set torque.



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.



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NF-Series Operation Instructions

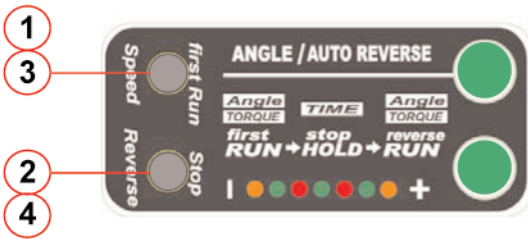
NF-Series Time Control & Auto Reverse models (Continued)

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**
Rotating Direction	Clockwise or Counterclockclockwise by F/R Switch		Reverse
Activating	Screwdriver runs to the set time (angle) & stops. It always stops at set torque, even it doesn't reach set time (angle)	Stop and hold for set time	Rotate reverse until releasing the lever or stop at the preset torque
Time (Angle) Setting	0-5 sec / 30 steps	0-5 sec / 12 steps	None

Screwdriver stops immediately when the lever is released during any part of the sequence.



Sliding F/R switch works for:
Operating (Work) mode
1) Rotating direction (FOR-REV)

Program modes
1) First run angle (Increase / Decrease) with "First Run (Speed)" button
2) Time (Increase / Decrease) with "Stop (Reverse)" button
3) Rotation speed (Increase / Decrease) with "Speed (First Run)" button
4) Reverse run angle (Increase / Decrease) with "Reverse (Stop)" button

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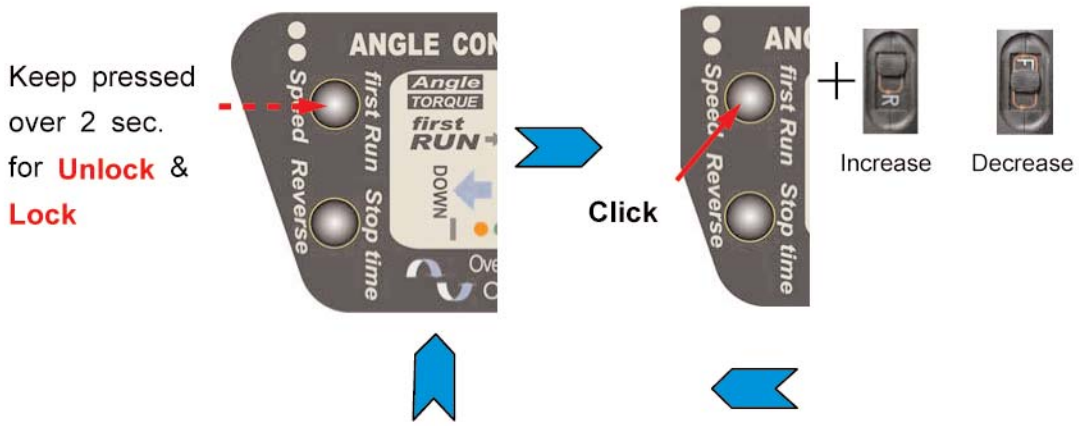
NF-Series Operation Instructions

NF-Series Time Control & Auto Reverse models (Continued)

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 locking the tool into this setting.

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	10	11	12	13	14	15
LED	O	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	O



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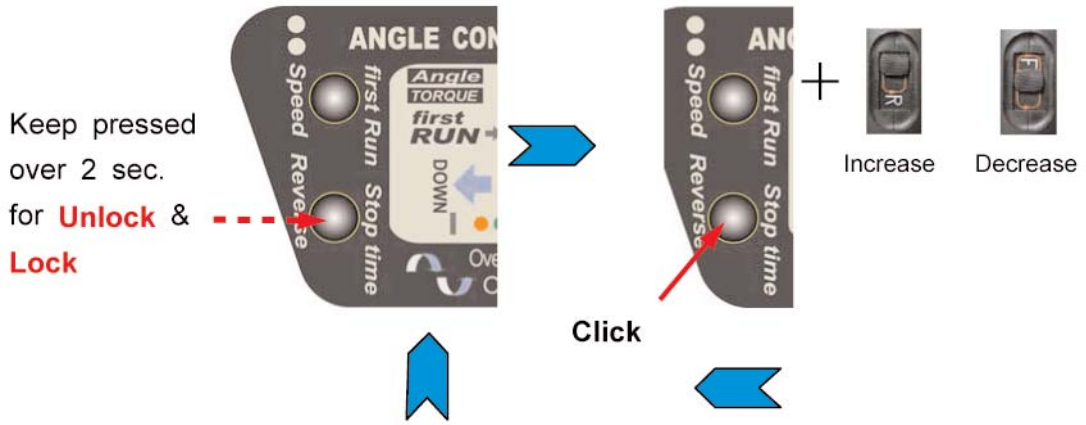
NF-Series Operation Instructions

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 locking the tool into this setting.

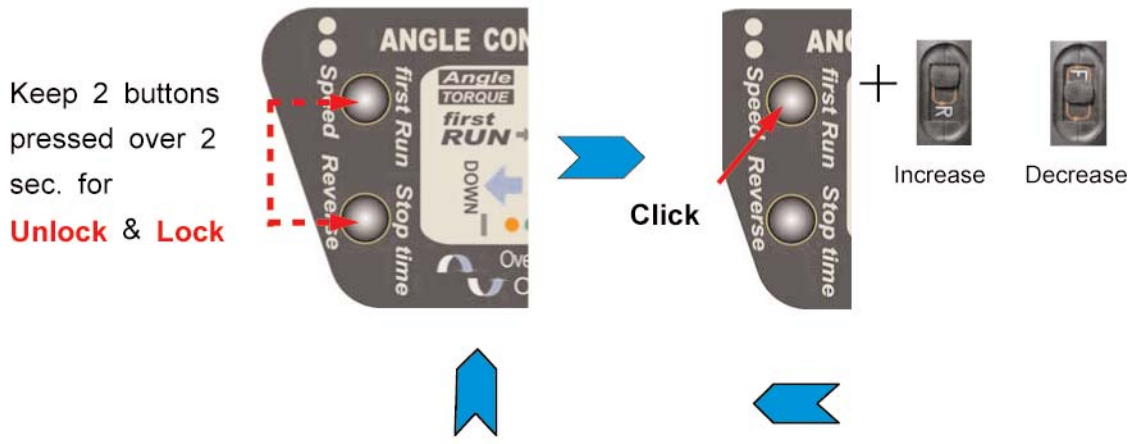
Click	0	1th	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th
Time (second)	Off	0.1	0.3	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
LED	Orange	R	G	R	G	R	G	R	G	R	G	R	G	R	O



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 locking the tool into this setting.

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



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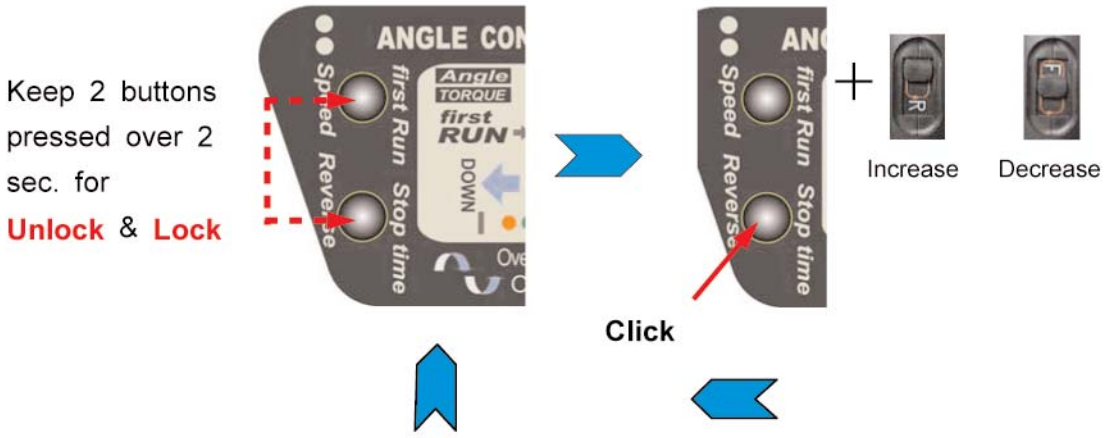
NF-Series Operation Instructions

NF-Series Time Control & Auto Reverse models (Continued)
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 locking the tool into this setting..

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	10	11	12	13	14	15
LED	O	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	O



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NF-Series Operation Instructions

NF-Series Time Control & Auto Reverse models (Continued)

Applications for NF-Series Time (Angle Control) & Auto Reverse models
Applications upon different settings.

	first RUN ***Angle***	stop HOLD ***Time***	Auto Reverse ***Angle***	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

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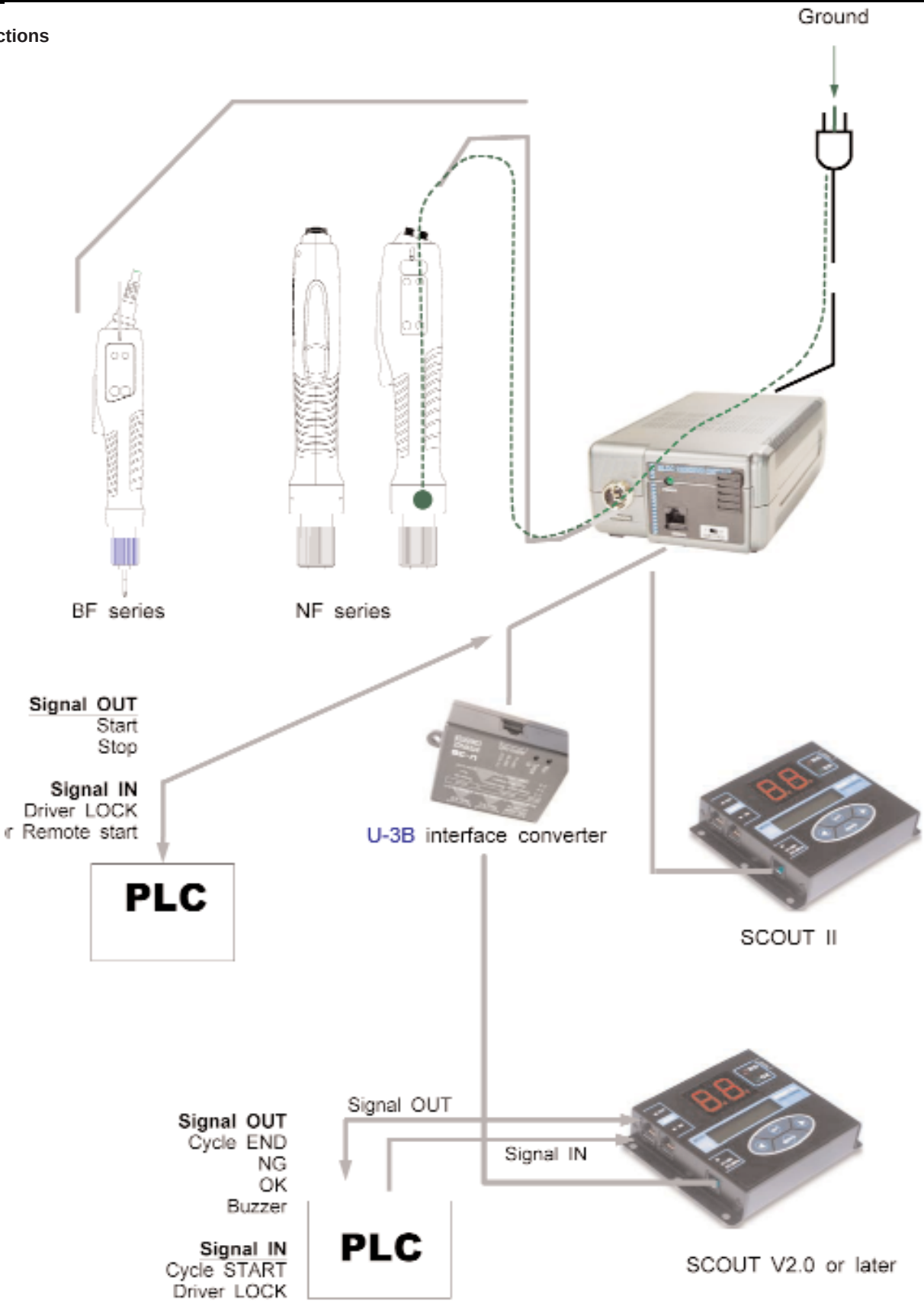
NF-Series Operation Instructions

Connections



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NF-Series Operation Instructions

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 protects the NF-Series from incidental or operator tampering of torque setting. Allows for color-coding of specific torque values in production areas.

Black Torque Cover (Item # 145654)
Blue Torque Cover (Item # 145655)
Green Torque Cover (Item # 145656)
Gold Torque Cover (Item # 145657)
Gray Torque Cover (Item # 145658)

Scout screw counter helps manufacturers detect and eliminate costly screw-fastening errors during the assembly process. Using a screw counter is like putting the eyes and ears of a quality control manager where they are needed most - right on the assembly area. The scout is designed to detect cross threading, omissions, unfinished rundowns and cycle complete. The screw counter takes the control of the assembly process out of the operator's hands.

Item # 145790

Screw presenters are small, tabletop devices used to organize and automate work areas and production cells. Screw presenters make assemblers and the assembly process more efficient by mechanically presenting a screw to a fixed pick up point. The inexpensive screw presenter is an alternative tool instead of the cumbersome and very expensive screwfeeder systems.

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NF-Series Operation Instructions

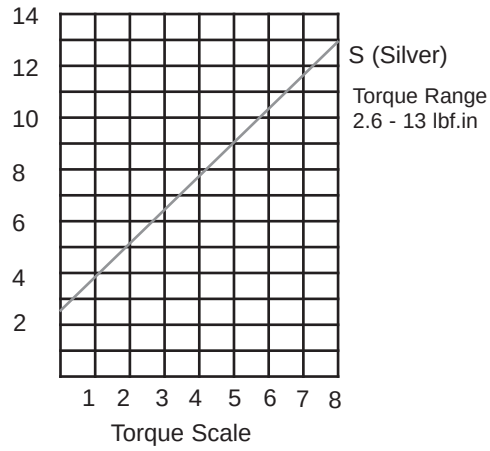
Torque Charts

These charts are meant to be used as guidelines for setting the torque on the NF-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.

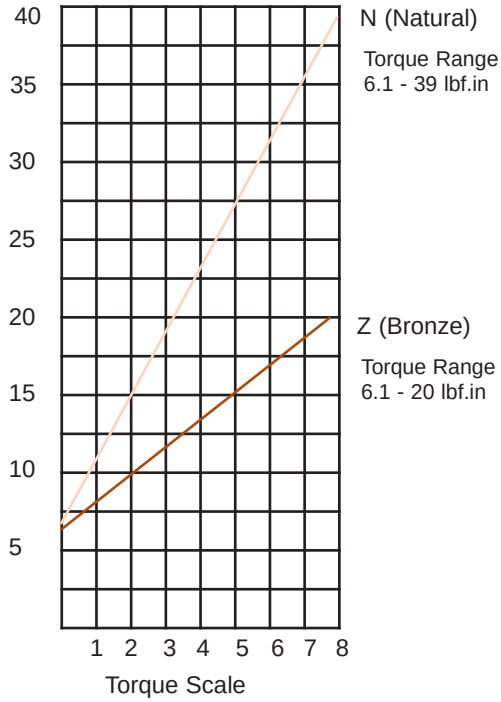
How to Read the Torque Charts

Torque ranges (lbf.in) approximate tightening torque, operated with no load at maximum speed

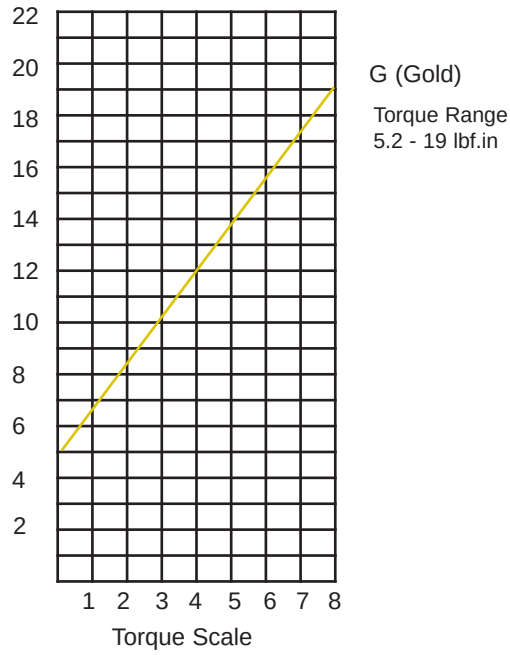
lbf.in NF150



lbf.in NF450



lbf.in NF220



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NF-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 NF-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 NF-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 45 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.mountztorque.com
Download a “Service Form” and include a copy when you send the tools in to be serviced.

Looking for Fasteners?
www.mrmetric.com

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