



Empowering you to work smarter

BreakFree® Power Tube Expander

NTE11L

User Manual



Failure to follow warnings could
result in death or serious injury.

**SAVE THIS MANUAL
FOR FUTURE REFERENCE**

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BREAKFREE®
CORDLESS SERIES

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Safety Guide

Caution: Read this manual thoroughly before using.

- Keep the working area clean and tidy.
- Do not operate while under the influence of alcohol.
- Keep children and untrained people from using.
- Use original parts and auxiliary.
- Long time using may overheat its motor which activate overheat protection.
- Temperature higher than 158°F (70°C) or lower than 41°F (5°C) may activate the motor overheat or subcooled protection.
- Don't dismantle NTE11L at random which may void warranty.
- Product is warranted against defects in materials and workmanship for two years from the date of purchase.
- Dispose the battery according to local regulations.
- Pending patent.

Structure



Fig.1

Technical Parameters

Model	NTE11L
Tube OD	3/8", 1/2", 5/8", 3/4", 7/8", 1", 1-1/8"
Power	DC motor
Battery Capacity	Up to 200 expansions per charge
Time to Expanding	Complete an expansion in 12 seconds
Dimension	8.2"x2.6"x9.8" (209x67x249mm)
Weight	3.4 lbs

Battery pack

Battery	7.4V 2Ah 14.8Wh
Quick Charge	30 minutes
Ambient Temperature	41°F-104°F (5°C-40°C)

Charger

Power Supply	AC 100-240V (50/60Hz) 50W
Output Voltage	8.3V
Output Current	3.5A
Ambient Temperature	41°F-104°F (5°C-40°C)

Table 1

Operating Instructions for Tube Expander

1. Tube Expansion

1.1 Deburring copper tube.

Deburring is recommended before expanding, especially for 3/8" copper tubing.

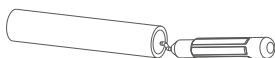


Fig.2

1.2 Anneal copper tube.

(Note1: Soft tube doesn't need to be annealed)

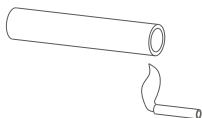


Fig.3

1.3 Insert copper tube onto expander head, press start button to operate.

The expander stops automatically after expansion is completed.

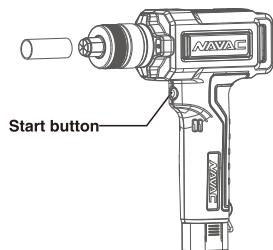


Fig.4

(If you accidentally press start button during operation, expander will stop working, press start button again to restore tube expansion operation)

(Note2: if start button is pressed but expander doesn't respond, manually release pressure by pushing pressure release button and then press start button again)

Operating Instructions for Tube Expander

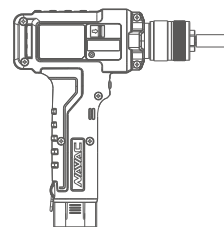
2. Pressure Relief

2.1. Automatic pressure relief

Expansion pressure will be relieved automatically after tube expansion process is completed.

2.2. Manual pressure relief

Manual pressure relief push button is to be used only when expander is running abnormally (pressure relief button is shown in the figure below). When pressure relief is needed, push this button in the direction of arrow to release pressure.



Pressure relief push button

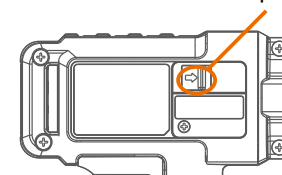


Fig.5

3. Illumination

3.1 Click light button to turn on light.

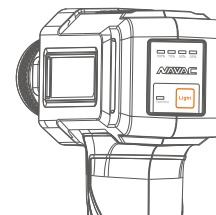


Fig.6

Operating Instructions for Tube Expander

4. Charge

4.1 Press tabs on both sides of battery to remove it.

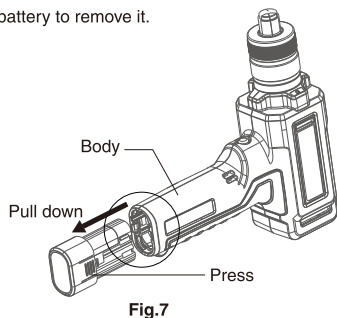


Fig.7

4.2 Make sure the battery pack is connected properly.

Charging

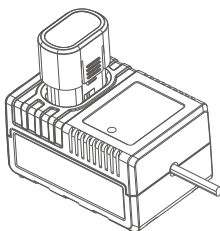
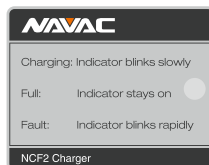


Fig.8



4.3 Place back the battery pack.

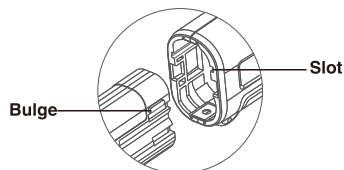


Fig.9

Operating Instructions for Tube Expander

5. Oil Change

To ensure the excellent performance of the expander, replace hydraulic oil every 1 year or every 6000 expansions.

5.1 How to change oil:

- 1). Put cone sleeve on the oil bottle cone, and then the O-ring.
- 2). Unscrew the small screw of oil change cover and remove it.
- 3). Use flat head screwdriver to unscrew the refueling plug (clean up dust near the refueling hole to prevent dust from falling into).
- 4). Turn expander upside down, press the exhaust pressure plate, drain old oil from expander, turn expander over, lay expander flat. (Dispose of used oil properly).
- 5). Press the exhaust pressure plate while inserting oil bottle into the refueling hole.
- 6). Loosen the exhaust pressure plate. After the exhaust pressure plate returns to its original position, press it repeatedly until no more bubbles get in oil bottle.
- 7). Pull away oil bottle, put back refueling plug screw, screw oil change cover back on expander.



1



2



3



4



5



6

Fig.10

Lubrication

Add appropriate amount of grease to the cone hole of expander head regularly to avoid expander head from being stuck or unable to reset during the expansion process due to poor lubrication.

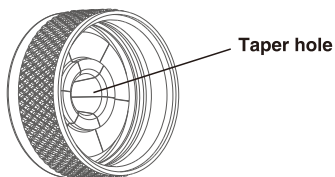


Fig.11

CAUTION

1. Put expander back into its box after work to prevent water and dust from entering expander.
2. If expander is used continuously for long time, it may trigger temperature protection, the indicator will flash 5 times. Wait until expander cools down for a while, after temperature drop back, you can use it again.
3. Expander will power off automatically if no activity for 20 seconds.
4. Use the dedicated oil bottle and hydraulic oil for oil change/refill to avoid damage to expander.
5. This expander is designed for soft copper tubes. If hard copper tube is used, tube must be annealed before operation, otherwise tube will not expand or will split. Hard copper tube that is not annealed will damage the tools and invalidate the warranty.
6. If abnormal shutdown occurs during operation, please follow below procedures:
 - a. Push manual pressure release button to release the pressure;
 - b. Remove and re-plug battery pack;
 - c. Start expander again to see if the problem is solved;
 - d. If problem is not solved, please contact NAVAC Technical Support.

[illegible]