



BRUNTON[®]

Geo Lite Transit User Manual



 **PRECISION MADE IN THE USA**

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GEO LITE SPECIFICATIONS

Model: F-5030

Magnetism: NdFeB magnet

Dimensions (closed): 2.5 x 4.1 x 0.7" | 6.35 x 10.4 x 1.8 cm

(open): 2.5 x 7.4 x 0.7" | 6.35 x 18.8 x 1.8 cm

Weight (with lanyard): 3.0 ounces | 83g (global)

Compass Bearing Accuracy: +/- 1° with 2° graduations

Vial Inclinator Accuracy: +/-2.5° with 5° graduations

Lid Dip Dial Accuracy: +/-2.5° with 5° graduations

Baseplate Protractor Accuracy: +/- 1° with 2° graduations

1. INTRODUCTION

Congratulations on your purchase of the GEO LITE, a geology-specific version of the TruArc15 compass. This compass was designed with a new clip-off lanyard and fixed drive ring and reversed bearings in order to make it direct-reading and similar in function to one of our professional transits. The needle has been fully redesigned to give accurate bearings and back bearings and match well with our new azimuth ring. In order to facilitate map work and angle measurement, the baseplate has been printed as a protractor and the inclinometer spans a full 360 degrees. Additionally, the cover is made of super strong 50% glass-fill nylon (that is 100% recycled) and should protect your compass for years to come. Please familiarize yourself with the rest of this user manual to fully understand the GEO LITE's functionality.

2. COMPONENT DIAGRAMS

Figure 2a

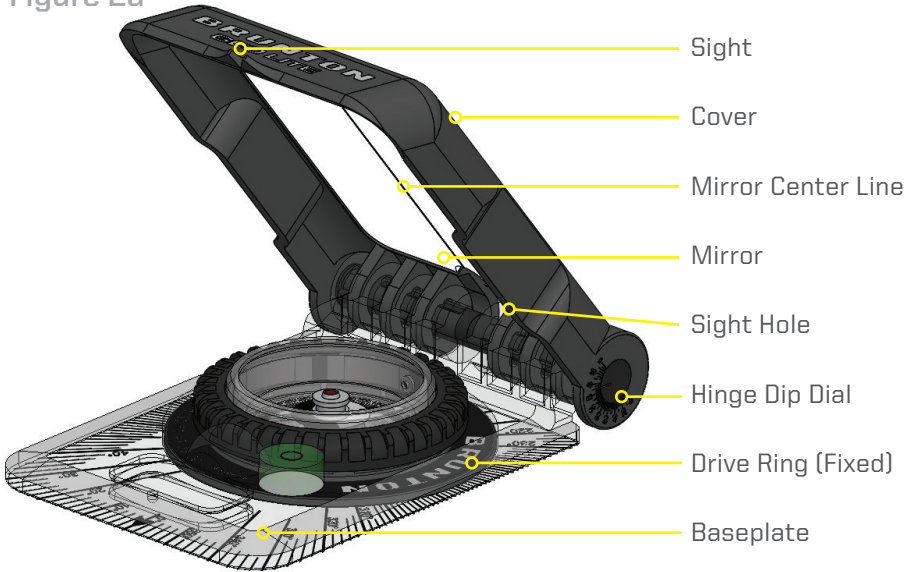
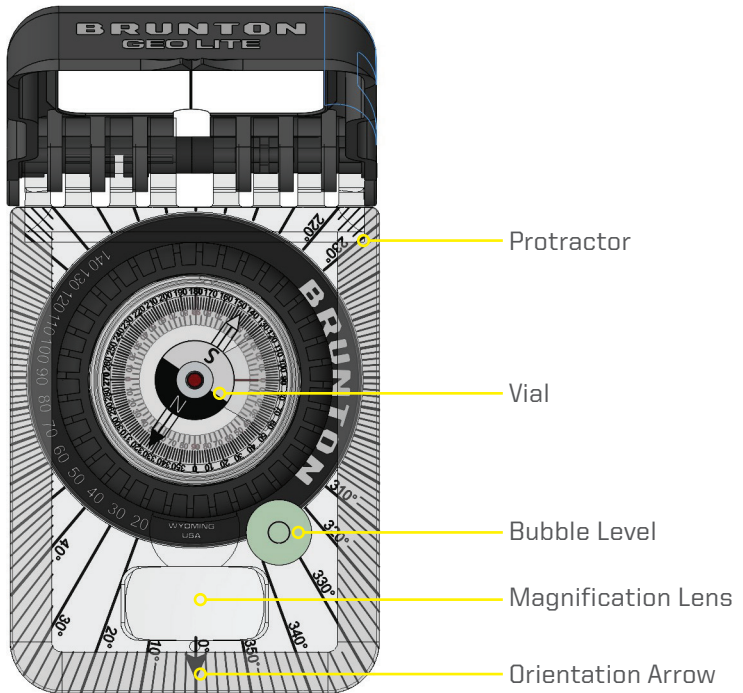
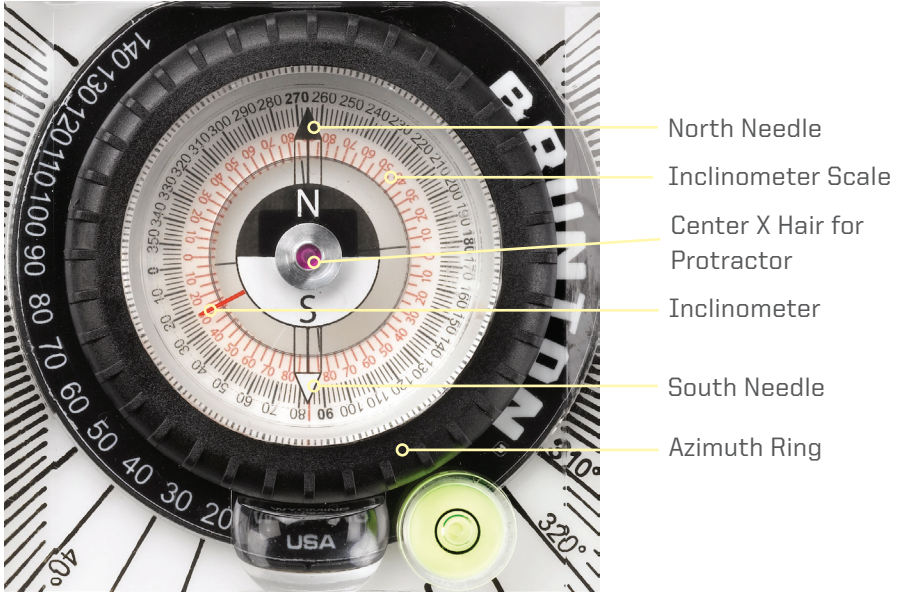


Figure 2b



2. COMPONENT DIAGRAMS

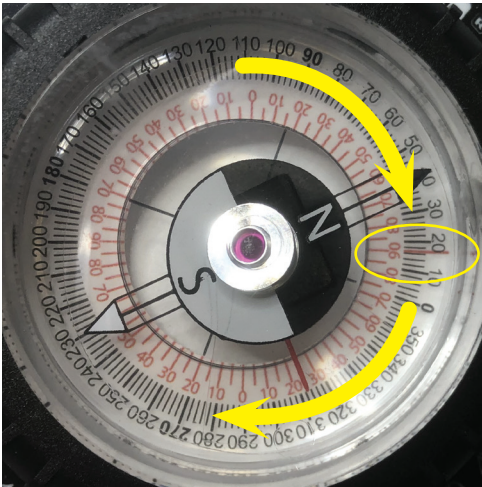
Figure 2c



3. MAGNETIC DECLINATION ADJUSTMENT

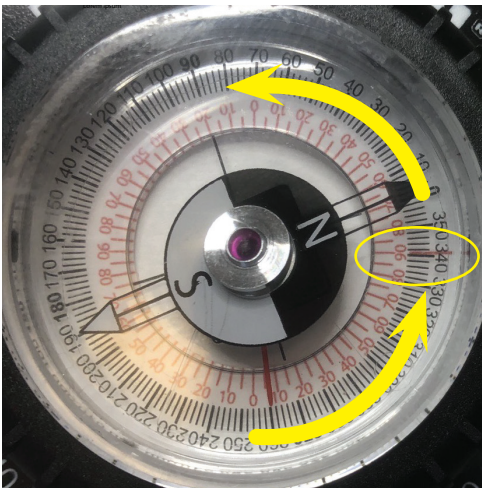
The vial in the GEO LITE can be turned without using tools to adjust for declination in a clockwise or counterclockwise direction. It comes set to zero declination. To adjust, simply pinch the center of the vial top and bottom with your thumb and index finger and rotate clockwise for east declination and counterclockwise for west declination. The red inclinometer degree marks will not turn with the vial and you should line the long red index line up with your local declination measurement.

Figure 3a shows 17 degrees EAST declination



Turn vial (the black numbers) clockwise for EAST declination

Figure 3b shows 19 degrees WEST declination



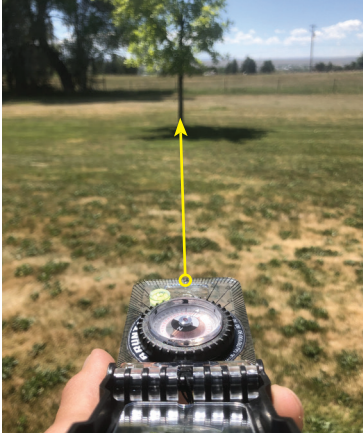
Turn vial (the black numbers) counterclockwise for WEST declination

4. MEASURING HORIZONTAL BEARINGS

Sight your landmark and capture your bearing one of two ways:

No mirror: spot your landmark (the tree in Figure 4a) and point orientation arrow towards it. Then read the bearing that the **N** side of the needle indicates.

Figure 4a



Mirror: spot your landmark (the tree in Figure 4b) through the peephole while looking at the vial through the mirror and read the bearing that the **S** side of the needle indicates.

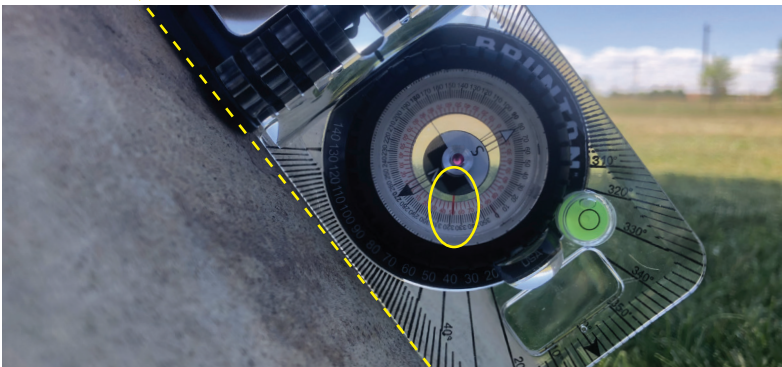
Figure 4b



5. MEASURING VERTICAL INCLINATION

Your GEO LITE is equipped with a plumb-bob inclinometer within the vial that rotates and reads a full 360 degrees. Place the long edge of the compass on the sloping that you want to measure (dotted line in Figure 5) and note the angle that the red line matches (in the circle in Figure 5).

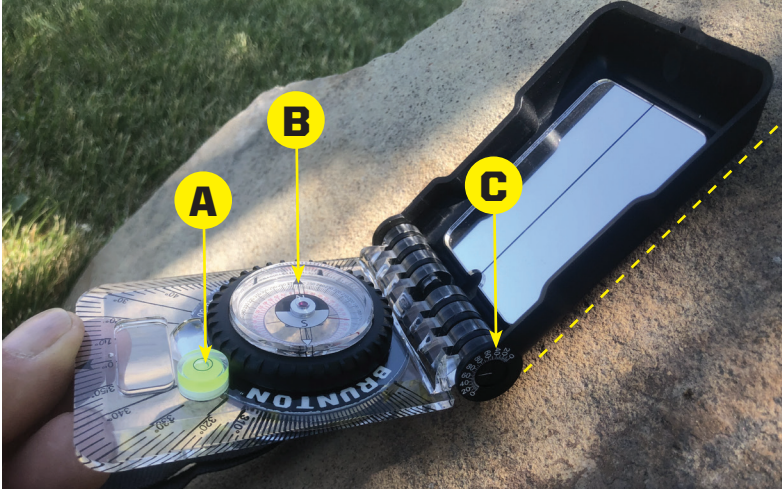
Figure 5



6. MEASURING DIP DIRECTION AND DIP ANGLE

To measure the dip direction and dip angle of a plane at the same time, place the GEO LITE lid flush to the surface to be measured (dotted line in Figure 6a). Level the baseplate and bubble level (A in Figure 6a). Measure the dip direction off of the needle (B in Figure 6a) and the dip angle from the lid dip dial (C in Figure 6a).

Figure 6b



Alternatively, you can measure strike directly by holding the long edge of the compass level against the dipping slab (line in Figure 6b).

Figure 6b



7. MEASURING TREND AND PLUNGE

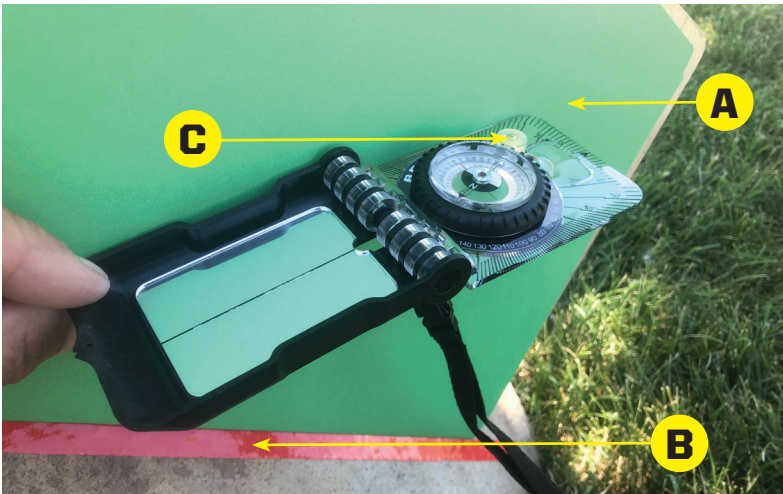
Identify the linear feature that you would like to measure the trend and plunge of (the RED tape for enhanced visibility in Figure 7a).

Figure 7a



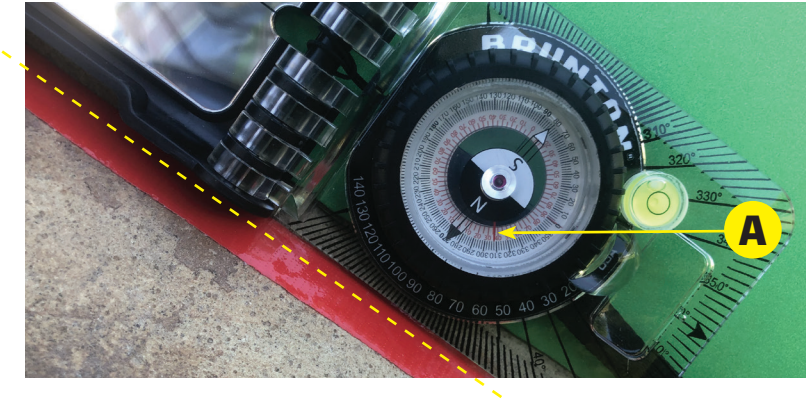
Place an object such as your map board (the GREEN sheet labeled A in Figure 7b) directly on the linear feature (RED tape labeled B in Figure 7b) and then place the side edge of the GEO LITE flush against the board. Keeping the map board on the line, rotate the board until the bubble level is centered (labeled C in Figure 7b) and the board is dead vertical. The needle now reads the trend, or plunge direction.

Figure 7b



Plunge angle can then be determined by holding the back of the GEO LITE flush against the board in the same vertical orientation (yellow dotted line in Figure 7c) on the lineation and then by reading the red inclinometer (labeled A in Figure 7c).

Figure 7c



The GEO LITE can also be used to measure simultaneous trend and plunge (Figure 7d). Level the baseplate (A in Figure 7d) while holding it against your board (yellow dotted line in figure 7d) and align the lid with the dipping plan (thick yellow line in figure 7d) Then read the dial on the cover for dip angle and the appropriate end of the needle for dip direction or dip azimuth.

Figure 7d



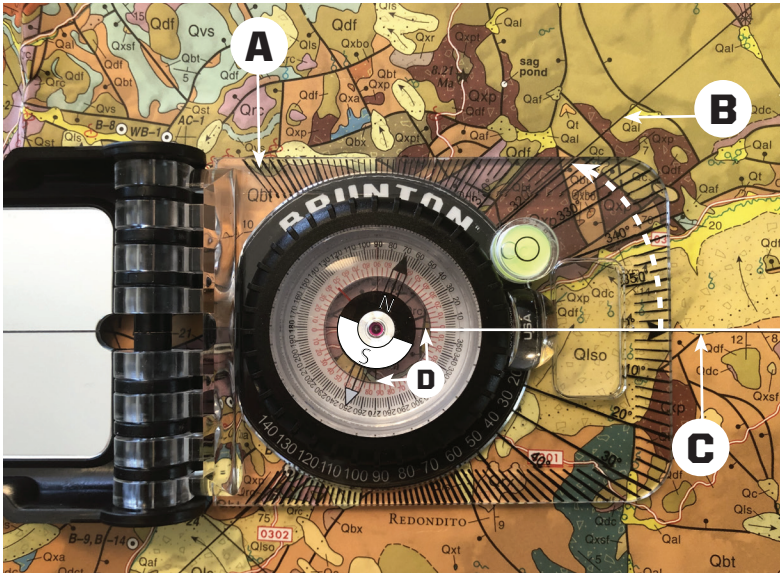
8. BASEPLATE PROTRACTOR USE

The protractor printed onto the bottom of the baseplate (A in Figure 8a) can be used in many ways and the following section will show how to measure angles and draw them.

To measure the angular difference between two features (B and C in Figure 8a):

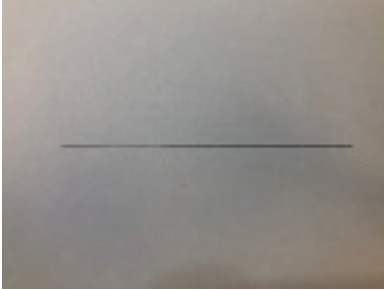
Align the cross hairs that are printed on the bottom of the vial (D in Figure 8a) the vertex of two intersecting lines dead center under the pivot, which is where all of the protractor lines converge. The difference is the dotted arrow (also an angle).

Figure 8a



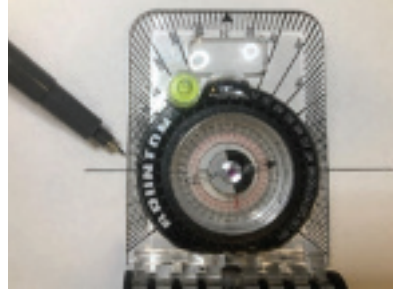
To draw a 32° angle using the protractor, follow the steps below (Figures 8b, 8c, 8d, 8e, 8f and 8g). This is a common practice done when creating geologic maps or cross sections.

Figure 8b



1. Draw a line (Figure 8b).

Figure 8c



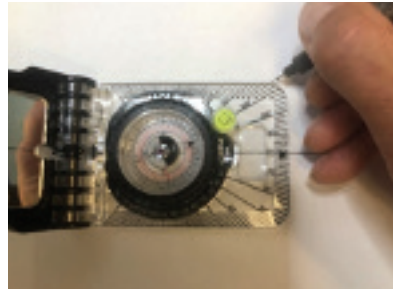
2. Make a small 90° cross mark to center the pivot on (Figure 8c).

Figure 8d



3. It should look like this (Figure 8d).

Figure 8e

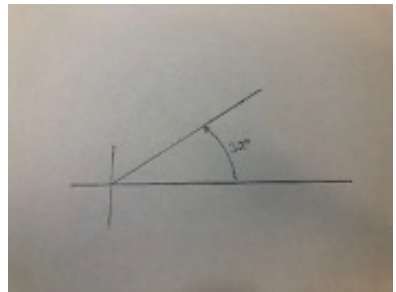


4. Match cross mark with the cross hairs on the vial and mark the desired angle (Figure 8e).

Figure 8f



Figure 8g



5. Use the edge of the baseplate to draw the angle (Figures 8f & 8g).

9. BRUNTON LIMITED WARRANTY

Brunton warrants your manufactured product to remain free of defects during the warranty period. Brunton's products are intended to be used in harsh outdoor environments. As such, the Brunton Limited Warranty does not cover normal wear and tear, damage due to misuse or rough handling or chemical exposure, and alteration. Products not registered will not be covered under the Brunton Limited Warranty.

Warranty Period:

The Brunton Limited Warranty is valid for one year from the date of purchase. Products seeking warranty must be accompanied by proof of original purchase and completion of Product Registration on Brunton.com.

Obtaining access to Brunton Limited Warranty:

Requests for warranty may be made by contacting Warranty Services at 1-800-443-4871 or help@bruntongroup.com.

Should a defect occur in your Brunton branded product which is not due to negligence or by fault or accident, and if the product qualifies for the Brunton Limited Warranty, we shall, at our option, either repair or replace it without charge, and will pay the cost of return shipment to you (you must pay for cost of shipment to Brunton). Refunds are only available for those items purchased directly from Brunton.com within 30 days of purchase.

Limitation of Liability:

BRUNTON SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. THERE ARE NO OTHER EXPRESS WARRANTIES BEYOND THE BRUNTON LIMITED WARRANTY UNLESS MANDATORY LAW PROVIDES OTHERWISE. THESE WARRANTY TERMS ARE SUBJECT TO CHANGE WITHOUT NOTICE.