LENSATIC MAP COMPASS

Instruction for Use

Foreword

The idea of map compass is to measuring angles and searching for directions or locations. However, in the outdoors, map compass can not provide as much convenience and precision as lensatic compass does. Lensatic map compass combines the functions of the map compass and the lensatic compass. The lensatic map compass is assembled by transparent liquid box, acrylic ruler and magnifier. These special materials make it light, small, and easy to carry. No matter in searching for the location of the destination on the map, or in the outdoors; even for the purpose of calculating the distance, the lensatic map compass will make your work easier and more precisely.

1. Index Line
2. Holes for Drawing Map Symbols
3. Aim Slot A
4. Scale Ring
5. Bezel Arrow
6. Rotating Plate
7. Magnifier
8. Aim Slot B
9. Floating Magnetic Dial
10. Scale A
11. Scale B
12. Scale C
13. Scale D
14. Scale E

Common knowledge about compass

Generally, we do not really concern about the definitions of "North" and "South" when we use these two words. However, we must understand these words can be defined in two terms: "geographic term" and "magnetic term". In geographic term, it is based on geography and related to the tracks of the earth longitudes. Geographic polar axes and equator are interrelated with those on the map. The directions and locations measured by lensatic map compass are much different from those measured by magnetic compass. Usually, on an ordinary map the upside is the direction of the geographical north and the downside is the geographical south. The magnetic polar axes are close to geographic polar axes but not exactly the same. The angle caused by these two axes is called "Amplitude" or "Inclined angle of the location". The amplitude is different in every area and the topography map of each place never resembles to others. In order to get the actual direction and locations on the map you must either subtract or add the local variation (the varying value of each area). For the local variation is western, subtract the variation from the reading, if it is eastern, add the variation to the reading on your compass.(Fig.2)

How to use a compass to find the direction and location on the map?

To find a destination on the map, you must firstly find your current location as C, destination as D.

1) In the first step, you must spread out the folding ruler and turn the Bezel arrow ⑤ to ▲ position. (Fig.3)

2) Place the compass on a flat-topped table without disturbance by magnetic & metal, turn the map and compass in the north direction.

3) Keep the map in north direction, move the ruler, use the Drawing holes ② marked the starting point C on the map and destination D, connect this two points into a line. Put the unfolding ruler on the line, make the Index line ① point at your target D, read out the right north angle (e.g.: 330˚). (Fig.4)

4) Due to the small graduation of the Floating magnetic dial ⑨ in capsule not easy to read, so user can turn the Bezel arrow ⑤ to meet the N point on the Floating magnetic dial ⑨. From the Scale ring④, you can easy to read the angle (330˚). That is the direction of the destination and the user forwarding. (Fig.5)

How to find your destination in the outdoors?

In the above example, you have find out your location on the map. However, in the real situation which the forwarding direction?

1) Now, you already know the angle of destination D(e.g.: 330°); turn Bezel arrow ⑤ to zero where is the ▲ on the Scale ring ④. (Fig.3)

2) Standing at the starting point, set the folding ruler into 90°, and adjust the Magnifier ⑦ to right position (about 70°). (Fig.6)

Let your eye near to the Magnifier ⑦, through magnifier, you can see the Floating magnetic dial ⑨. Made the Bezel arrow ⑤ to 330° on the Floating magnetic dial ⑨ and turn your body towards this direction. This is the direction you are forwarding. (Fig.7)

3) Keep in this direction, see through the upper Aim's slot B ⑧ and the folding ruler's Aim slot A ③, looking for a big target (e.g. big tree or lighthouse...) which is in the same direction. User can use this as a target, toward and forwarding this way. (Fig.8)

4) After you find the target, repeat the step, until finally arrive the ultimate destination.

How to find the direction and location of your current place on the map with Lensatic Map Compass when you get lost?

I In this step, user have to find out the angle in the real situation and then use this figure to find your current location on the map.

1) Firstly, stand on a hill from where you can see two special targets (e.g. Mountain E or Lake H) directly with your eyes and it has be shown on the map.

2) Adjust the direction of the map, make the direction of the map and the compass at the same direction, fix and remain still.

3) At user's standing point through the Magnifier ⑦ to find out the target E. Then, get the angle (345°). User can make the Bezel arrow ⑤ fix on the opposite direction of the Scale ring ④ 345° position. (This is to make the user to see the angle more clear and easier). As shown on the Fig.9, the arrow must be position at N. (Fig.9)

4) Place the compass flat on the map and adjust keep the Floating magnetic dial ⑨'s N with Bezel arrow ⑤ together. Then, move the compass, until the topside of the acrylic ruler meet with E point, along the ruler draw a straight line. (Fig.10)

5) Repeat the action to find the angle for target H, e.g. 15° draw another straight line. The meeting point of the two lines is your position on the map. (Fig.11)

Measuring the distance and length

The topography map used in mountain climbing, travel, or races usually use meter, kilometer, mile, or inch to measure the distance or length. There are three kind of scales on Lensatic Map Compass and can accommodate various kinds of map scales to measure the distance. You can use the attached thread to draw the approximate length on the map and then calculate the approximate distance of the route. (Fig.12)

Figure 2 words:

Magnetic North

Magnetic North Line

Map North Circles of Longitude Variation

Figure 4 words:

Map

D

C

Figure 5 words:

D

Figure 6 words:

About 70°

Set at 90°

Figure 7 words:

Forwarding direction 330°

Figure 8 words:

Forwarding direction 330°

Figure 10&11 words:

345°Mountain E

15°Lake H

Magnetic North Line

Present Place

Figure 12 words:

Scale A

Scale B

Scale C

Scale D

Scale E