

# Mountaineers Required Compass Features

## Wilderness Navigation & Other Courses

Revised February 2023

1. **Adjustable declination:** This feature simplifies map and compass work. Most compasses with adjustable declination have an adjustment screw, usually brass or copper-colored, and a small key attached to the lanyard. Some have a 'tool-less', pinch-to-adjust feature.

- All students **MUST** have a compass with adjustable declination. The presence of a declination scale does not guarantee that it can be adjusted. Beware, you must be able to rotate the Orienting Arrow **independently** of the meridian (orienting) lines. See the **warning** below.
- Even if you already have a compass without adjustable declination, you may not use it in this course. Experience indicates that such compasses detract from the learning experience.

2. A **transparent rectangular base plate** with a direction of travel arrow or a sighting mirror.

- Transparency allows map features to be seen underneath the compass.
- A rectangular shape provides straight edges and square angles to plot on the map.

3. A **0 to 360 bezel** (the rotating housing) marked clockwise from 0 to 360 degrees in increments of two degrees or less. Bezels should be large to allow use with gloves - the larger size also improves accuracy. Do not get one marked in 0-90 degree quadrants OR one marked in 0-6400 mils!

4. **Meridian lines:** Parallel 'meridian lines' on the interior bottom of the circular compass housing rotate with the bezel when it is turned. Longer lines are better. Meridian lines run parallel to the north-south axis of the bezel, however turned, for use with a topo map.

5. A **ruler and/or gradient scale** engraved on one of the straight edges, used for measuring distances. In the U.S. 1:24000 scales (rather than 1:25000) are preferred. Both are acceptable.

6. A **3 to 4-inch base plate**. A longer straight edge makes map work easier.

### Additional recommendations

- A sighting mirror in the cover: May reduce error introduced when moving compass from eye-level after sighting to waist-level for reading the dial. Protects the bezel. May use as a signaling device.
- A liquid-filled housing: Reduces erratic needle movement (common on older compasses). In some cases, steadying the compass needle can be difficult. Don't lanyard-- swing a compass – a crash could start a leak.
- An inclinometer: A gravity driven arrow that allows you to measure slope angle.

**Current favorites:** Suunto and Silva are favorites. Brunton also has adjustable declination. Quality and usability vary, so **keep any receipt**. We have unfortunately seen defective compasses in the past. **WARNING** Do not buy the Prosight Map Compass from Sun Company, it does not meet our declination adjustable standards.

Maker	Models	Features +	Features -	Vendors	Cost
<b>Silva of Sweden</b> (Suzhou, China)	Ranger 2.0	Clinometer, Luminous	Declination obscured	Silva-USA, Online	~\$45-60
	Explorer Pro	No mirror, Bendable	Slope card	Silva-USA, Online	~\$35-50
<b>Suunto of Finland</b> (Finland)	MC-2 Pro	Northern Hemisphere	Lacks clinometer	REI, Online	~\$56
	M3-D Leader	Mirrorless			~\$44
	MC-2G Navigator	20 degree tilt margin			~\$95
<b>Brunton of Lander</b> (Riverton, Wyoming)	TruArc15	Global needle, mirror	Bezel may pop out	Cabela's, Online	~\$50-70
	TruArc 7	Global Needle, Fewer scales	Skinny Mirror		~\$40-50

Expect continuing improvements and corrections in models. Model variations and designations proliferate – insist on features 1 to 6 above. Beware cheap knock-offs. Remove plastic from Suunto mirrors and Brunton bezels before use. Small bubbles are OK but will later turn into large bubbles that will interfere with the needle.

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