

 **West Marine**



400C

18407643
WITH COMPASS

400

18407650
WITHOUT COMPASS



Owner's Manual

400C 18407643 (with compass)

400 18407650 (without compass)

- Waterproof, dust-proof, all-weather binoculars are designed for boating and other rugged outdoor activities
- Nitrogen gas inside the binocular eliminates fogging and mold on internal lens surfaces even under extremely severe conditions, including rainstorms and high humidity
- 400C's internal rangefinder scale and illuminated compass help users determine the distance or size of objects, as well as their direction
- High-index BaK-4 prisms produce a bright, sharp image with vivid contrast for detailed viewing
- Rubber-coated body provides great shock resistance and a comfortable, secure grip
- Internal center focus
- Compact and convenient

- 1 Fold-down eyecups
- 2 Internal center focus adjustment
- 3 Diopter adjustment
- 4 Strap holder HIDDEN FROM VIEW
- 5 Main body
- 6 Compass housing [400C only]
- 7 Compass light switch [400C only]
- 8 Battery compartment [400C only]
HIDDEN FROM VIEW
- 9 Objective lens



Fig. 1

Eyepiece Distance Adjustment

For best viewing, the binoculars should be adjusted for the individual user so that eyepieces line up with the user's eyes. The distance between the eyes, called "interpupillary distance," varies from person to person. To achieve perfect alignment of lens to eye, follow these simple steps:

1. Hold your binoculars in the normal viewing position.
2. Grasp each barrel firmly. While looking through the binoculars, move the barrels closer together or farther apart until you see a single circular field. Reset your binocular to this position each time you use it. The eye distance setting is indicated on the scale located on the binocular hinge.

Diopter Setting and Internal Center Focus

The diopter setting corrects for vision differences between the user's two eyes, so the binoculars can be focused correctly for both eyes. To adjust the diopter:

1. Set the right eyepiece to 0 and look at an object that is approximately 100 feet (30 m) away.
2. Keeping both eyes open, cover the right objective (front) lens with your hand.
3. Adjust center focus wheel until image in the left eyepiece appears sharp.
4. Cover the left objective (front) lens, then rotate the right eyepiece until the image appears sharp again.
5. The diopter setting is now correct for your eyes, and you need only adjust the center focus to view objects at different distances. Note the diopter setting for future use.

Fold-down Eyecups

To use binoculars while wearing eyeglasses or sunglasses, fold the rubber eyecups down. This will allow you to bring your eyes closer to the binoculars, improving your field of view. To use binoculars without glasses, fold the rubber eyecups up into the extended position..

Reading the Rangefinder Reticle [400C]

The rangefinder scale is a useful navigation tool if you know the size or distance of an object. If you know an object's size, you can use the rangefinder to calculate its distance. Conversely, if you know the object's distance, you can calculate its size.

1. To measure distance, simply apply the following formula:

$$\text{Distance} = \frac{1000 \times \text{Object Height}}{\text{Rangefinder Scale Reading}}$$

Example (to find distance): if the object is 20 meters high and the rangefinder scale reading is 16 (Fig. 3), then:

$$\frac{20 \text{ m (height)} \times 1000}{16 \text{ (rangefinder scale reading)}} = 1,250 \text{ m (distance)}$$

2. To measure object size, the formula becomes:

$$\text{Object Size} = \frac{\text{Distance} \times \text{Rangefinder Scale Reading}}{1000}$$

Example: if the object is 1,250 meters away and the rangefinder scale reading is 16, then:

$$\frac{1,250 \text{ m (distance)} \times 16}{1000} = 20 \text{ m (object size)}$$



Fig. 2

Using the Compass [400C]

READING: When you look into the eyepiece, you will see a compass window with figures and lines below the field of view. The compass shows orientations as angles: north is 0° , east is 90° , south is 180° and west is 270° . Between numbers, each line represents 1° . After aligning the object with the rangefinder scale in the center of the field, read the compass.

LOCATING YOUR POSITION: These binoculars, together with a chart and protractor, can be used to locate your position. For example, the binoculars plus the map in Fig. 3 could be used to determine the location of a boat sailing within the map's area:

1. From the boat, use the binoculars to locate the buoy shown on the chart (Fig.3). In this example, the compass would show that the buoy is located 190° from the boat.
2. Use this information to determine the direction from the buoy to the boat. (To do this, subtract 180° if the object's reading is 180° or greater; add 180° if the reading is less than 180° .) So, 190° (direction from boat to buoy) - $180^\circ = 10^\circ$ (direction from buoy to boat).
3. On the map, draw a line from the buoy extending in a 10° direction (10° from magnetic north). You now know your boat is somewhere along this line (Fig. 4).
4. To determine your boat's exact position, use the binoculars to locate a second object, the lighthouse. The compass will show that the direction from your boat to the lighthouse is 300° .
5. Then calculate the direction from the lighthouse to your boat: $300^\circ - 180^\circ = 120^\circ$.
6. Finally, draw a line extending 120° from the light-house (Fig. 5). Your boat is located at the point where the two lines intersect.

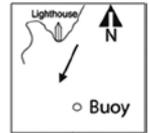


Fig. 3



Fig. 4



Fig. 5

Compass Light [400C]

To read your compass in the dark, press the compass light switch (8) to illuminate it in red light.

Batteries [400C]

Two batteries (included) are required to operate the compass light. To install: unscrew the battery cover (9) on the underside of binoculars' main body. Install the two batteries, positive (+) side facing up, and screw the cover back into place. All of the following batteries are suitable for use with your 400C binoculars: AG12, GP186, LR43, and 1176A.

Instructions for Care

To protect the binoculars, store them in their case and keep them in a dry area. Never leave them out in direct sunlight (such as on a car dashboard) for long periods of time. Avoid banging and dropping.

Extremely Important Note

It is not necessary to clean binoculars internally. Any attempt to take the binoculars apart or clean them internally will result in damage and void the warranty.

West Marine Limited Warranty

What Does This Limited Warranty Cover?

West Marine warrants to the original retail purchaser of the West Marine product, where the purchase is made in the United States, that the product will be free from defects in materials and craftsmanship with only the limitations or exclusions set out below.

How Long Does This Limited Warranty Last?

This limited warranty is valid for thirty (30) years from the date of the original retail purchase from West Marine within the United States (the "Limited Warranty Term").

The warranty period is not extended if we repair or replace a warranted product or any parts. West Marine reserves the right to change the availability of limited warranties, at its discretion, but any changes will not be retroactive and will only apply to subsequent purchases.

What Does This Limited Warranty Not Cover?

This limited warranty does not cover:

- Software.
- Commercial or industrial use or operation.
- Normal maintenance items or normal wear and tear.
- Problems resulting from fire or submergence in water or other liquids [DELETE IF PRODUCT OF WATER PROOF].
- If the product was damaged, modified or altered by you.
- If the product was used as part of any conversion kits, subassemblies, or any configurations not appropriate or contemplated for this product or its use.
- If damage or loss occurring during return shipment of the product to West Marine or its authorized service representative.
- If the product was subject to improper service, repair, installation, storage, maintenance, alteration or application.
- Problems that result from accident, neglect, abuse, misuse or issues with electrical power.
- Problems caused by accessories, parts or components added to the product that are not appropriate for this product or its use.

THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE (OR JURISDICTION TO JURISDICTION). WEST MARINE'S RESPONSIBILITY FOR MALFUNCTIONS AND DEFECTS IN HARDWARE IS LIMITED TO REPAIR OR REPLACEMENT AS SET FORTH IN THIS WARRANTY STATEMENT. ALL EXPRESS AND IMPLIED WARRANTIES FOR THE PRODUCT INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN TIME TO THE LIMITED WARRANTY TERM (AS SPECIFIED ABOVE). NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER THE LIMITED WARRANTY TERM HAS EXPIRED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

WE DO NOT ACCEPT LIABILITY BEYOND THE REMEDIES PROVIDED FOR IN THIS LIMITED WARRANTY OR FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES INCLUDING, WITHOUT LIMITATION, ANY LIABILITY FOR THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES, FOR PRODUCTS NOT BEING AVAILABLE FOR USE, FOR PERSONAL INJURY AND/OR FOR LOST PROPERTY, DATA OR SOFTWARE. OUR LIABILITY AND THE MAXIMUM AMOUNT FOR WHICH WE ARE RESPONSIBLE WILL BE NO MORE THAN THE AMOUNT YOU PAID FOR THE PRODUCT THAT IS THE SUBJECT OF A CLAIM. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

What Must I Do To Keep the Warranty in Effect?

- You must keep your receipt or other appropriate documentation as proof of the date of sale and purchase.
- You must keep your serial number or order number for the product. This is found on the product itself or on your receipt.
- You must not do any of the things that will make the warranty invalid as provided for in this warranty statement.
- You must use, install, maintain and operate the product in accordance with published specifications and the user's manual.

What Do I Do If I Need Warranty Service?

- Before the warranty expires, please call us at 1-800-BOATING. Please also have your West Marine serial number or order number available.
- When you contact us, we will issue a Return Material Authorization Number for you to include with your return. We will also provide you the address of where to ship the product.
- You must return the product to us in its original or equivalent packaging, prepaid shipping charges, and insure the shipment or accept the risk if the product is lost or damaged in shipment.

What Will West Marine Do?

During the Limited Warranty Term, if the product you return to us proves to be defective in materials or workmanship and not for the reasons which would otherwise disqualify it (as explained above), we will:

- Repair the product or, if we are unable to repair it, replace it with a comparable product that is new or refurbished;
- Or, as an alternative, at West Marine's option, we will refund you the original purchase price;
- If we repair or replace the product, we will return the repaired or replacement product to you; and
- Pay to ship the repaired or replacement product to you if you use an address in the United States (excluding Puerto Rico and U.S. possessions and territories). Otherwise, we will ship the product to you freight collect.

If we determine that the problem is not covered under this warranty, we will notify you of this when we return your product to you to the address you provide us in the United States (excluding Puerto Rico and U.S. possessions and territories).

We use new and refurbished parts made by various manufacturers in performing warranty repairs and in building replacement parts and systems. Refurbished parts and systems are parts or systems that have been returned to West Marine, some of which were never used by a customer. Replacement parts and systems are covered for the remaining time left in the Limited Warranty Term for the product you bought. West Marine owns all parts removed from repaired products.

Maintenance is the Owner's Responsibility

Cleaning, polishing, lubricating, replacing filters, tuning, replacing worn parts, using your purchased product according to the user's manual, and regularly maintaining your purchased product is your responsibility.

What if I purchased a Plus Protection Plan?

Service will be provided to you under the terms of the Plus Protection Plan contract. Please refer to that contract for details on how to obtain service.

How State Law Relates to the Warranty

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Caution

Do not use this product to view the sun. Looking at or near the sun with or without binoculars may cause instant and irreversible damage to your eyes. Eye damage is often painless, so there is no warning to the observer that damage has occurred until it is too late. Children should always have adult supervision when using binoculars.

